FCC 15B TEST REPORT

No. I21Z62810-EMC01

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile phone

Model Name: 5031A, 5131A

FCC ID: 2ACCJH161

with

Hardware Version: 05

Software Version: SVN:01

Issued Date: 2022-01-27

Note:

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Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z62810-EMC01	Rev.0	1st edition	2022-01-25
I21Z62810-EMC01	Rev.1	2nd edition.Updata the information of AE.	2022-01-27

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1. Test Laboratory

1.1. Testing Location

CTTL(BDA)

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

1.2. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2022-01-04

Testing End Date: 2022-01-21

1.4. Signature

An Hui

(Prepared this test report)

Zhang Ying

(Reviewed this test report)

Zhang Xia

Deputy Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	TCL Communication Ltd.
Address /Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City:	Hong Kong
Postal Code:	/
Country:	China
Telephone:	0086-755-36645759
Fax:	0086-755-36612000-81722

2.2. Manufacturer Information

Company Name:	TCL Communication Ltd.
Address /Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City:	Hong Kong
Postal Code:	/
Country:	China
Telephone:	0086-755-36645759
Fax:	0086-755-36612000-81722

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

3.1. About EUT

Description	GSM/UMTS/LTE Mobile phone
Model Name	5031A, 5131A
FCC ID	2ACCJH161

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

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1(5031A)	351613330000121	05	SVN: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	Note
AE1-1	Adapter	CBA0058AAAC5
AE1-2	Adapter	CBA0058AAAC7
AE1-3	Adapter	CBA0058ABAC5
AE1-4	Adapter	CBA0058ACAC5
AE1-5	Adapter	CBA0058AG9C5
AE1-6	Adapter	CBA0058AGAC5
AE1-7	Adapter	CBA0058AANC5
AE1-8	Adapter	CBA0058AGAC7
AE1-9	Adapter	CBA0058ABAC7
AE1-9	Adapter	CBA0058ABNC5
AE2-1	USB Cable	CDA3122005C8
AE2-2	USB Cable	CDA3122005C2
AE3-1	Battery	CAB2880000C7
AE3-2	Battery	CAB2880001C1
AE4-1	Headset	CCB0046A10C1
AE4-2	Headset	CCB0046A10C4
AE4-3	Headset	CCB0049A10C1

AE1-1

Model	CBA0058AAAC5
Manufacturer	PUAN
Length	/

AE1-2

Model	CBA0058AAAC7
Manufacturer	CHENYANG
Length	/

AE1-3

Model	CBA0058ABAC5
Manufacturer	PUAN
Length	/

AE1-4

Model	CBA0058ACAC5
Manufacturer	PUAN
Length	/

AE1-5

Model	CBA0058AG9C5
Manufacturer	PUAN
Length	/

AE1-6

Model	CBA0058AGAC5
Manufacturer	PUAN
Length	/

AE1-7

Model	CBA0058AANC5
Manufacturer	PUAN
Length	/

AE1-8

Model	CBA0058AGAC7
Manufacturer	CHENYANG
Length	/

AE1-9

Model	CBA0058ABAC7
Manufacturer	CHENYANG
Length	/

AE1-10

Model	CBA0058ABNC5
Manufacturer	PUAN
Length	/

AE2-1

Model	CDA3122005C8
Manufacturer	PUAN
Length	/

AE2-2

Model	CDA3122005C2
Manufacturer	SHENGHUA
Length	/

AE3-1

Model	TLi028C7
Manufacturer	VEKEN
Capacitance	3000mAh
Nominal voltage	/
SN	CAB2880000C7

AE3-2

Model	TLi028C1
Manufacturer	BYD
Capacitance	3000mAh
Nominal voltage	/
SN	CAB2880001C1

AE4-1

Model	CCB0046A10C1
Manufacturer	JUWEI
Length	/

AE4-2

Model	CCB0046A10C4
Manufacturer	MEIHAO
Length	/

AE4-3

Model	CCB0049A10C1
Manufacturer	JUWEI
Length	/

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

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1-1	EUT1+AE1-1+AE2-1/AE2-2+ AE3-1/AE3-2+AE4-1	Charger+ Real Camera+ + GSM850 idle
Set.1-2	EUT1+AE1-2+AE2-1/AE2-2+ AE3-1/AE3-2+AE4-2	Charger+ Real Camera+ + GSM850 idle
Set.1-3	EUT1+AE1-1+AE2-1/AE2-2+ AE3-1/AE3-2+AE4-3	Charger+ Real Camera+ + GSM850 idle
Set.2	EUT1+AEX+AE2-1/AE2-2+ AE3-1/AE3-2	Charger+MP4
Set.3	EUT1+AEX+AE2-1/AE2-2+ AE3-1/AE3-2+AE4-3	Charger+FM
Set.4	EUT1+AE3/AE4 + AE5	USB SD TO PC+ Front Camera

Note： The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM 850MHz,WCDMA Band5, LTE Bands 5/12/13/17/26, The measurement results showed here are worst cases of different bands.

3.5. General Description

Equipment Under Test (EUT) is a model of GSM/UMTS/LTE Mobile phone with integrated antenna.

It supports

GSM Frequency Band	GSM 900/GSM 1800/GSM 1900/GSM 850
UMTS Frequency Band	FDD Band I/ II / IV / V / VIII
LTE Frequency Band	LTE FDD Bands 2/3/4/5/7/8/12/13/17/26/28/66 LTE FDD Bands 38/40.

It has MP3, Camera, USB memory, FM, Bluetooth 5.0, Wi-Fi (802.11b/g/n, 802.11n supports 20MHz and 40MHz bandwidth,) , GNSS functions.

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

Samples undergoing test were selected by the client.

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

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	2019
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-1 (23 meters × 17meters × 10meters) 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, 10 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 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)**

7. Test Equipments Utilized

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	Rohde & Schwarz	1 year	2022-03-22
2	Test Receiver	ESCI	100766	Rohde & Schwarz	1 year	2022-03-09
3	Shielding Room	S81	/	ETS-Lindgren	/	/
4	Test Receiver	ESU 26	100376	Rohde & Schwarz	1 year	2022-09-15
5	Universal Radio Communication Tester	8960	MY48361083	Agilent	1 year	2022-06-01
6	Dual-Ridge Waveguide Horn Antenna	VULB 9163	514	Schwarzbeck	1 year	2022-03-22
7	Dual-Ridge Waveguide Horn Antenna	3117	00119024	ETS-Lindgren	1 year	2022-04-11
8	Universal Radio Communication Tester	CMW500	159408	Rohde & Schwarz	1 year	2022-03-08
9	Signal Source	SMF100a	101295	Rohde & Schwarz	1 year	2022-11-04
10	PC	M4000e-17	M706GWXD	Lenovo	N/A	N/A
11	Printer	P1606dn	VNC3L52122	HP	N/A	N/A

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 (charging mode) 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 3/10 meters from the EUT. During the tests, the antenna height 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.

A.1.2 EUT Operating Mode:

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging 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 Section 3.4, are investigated. Only the worst case emissions 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.

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.

Limit(10m)=Limit(3m)+20[log(3/10)]

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：5.16dB, 1GHz-18GHz：5.44dB, *k*=2.

Note： The measurement results showed here are worst cases of the combinations of different Battery, cables and Headset.

Note:The measurement results showed here are worst cases.

Measurement results for Set.1-1:

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
30.097000	28.2	100.0	V	158.0	-1.3	11.8	40.0
33.686000	26.6	100.0	V	233.0	-0.8	13.4	40.0
37.954000	26.9	100.0	V	184.0	-0.1	13.1	40.0
63.562000	21.8	100.0	V	116.0	-1.5	18.2	40.0
98.773000	23.7	118.0	V	189.0	-0.8	19.8	43.5
185.006000	24.1	100.0	V	0.0	-2.3	19.4	43.5

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/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)
17598.500	43.39	-16.6	40.6	19.35	54.0	10.6	V
17599.500	43.37	-16.6	40.6	19.30	54.0	10.6	V
17596.000	43.35	-16.6	40.6	19.37	54.0	10.6	V
17601.000	43.31	-16.6	40.6	19.25	54.0	10.7	V
17602.500	43.21	-16.6	40.6	19.18	54.0	10.8	V
17595.000	43.19	-16.7	40.6	19.23	54.0	10.8	V

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/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)
16946.500	55.7	-17.9	41.2	32.38	74.0	18.3	H
16449.000	55.6	-18.4	41.1	32.90	74.0	18.4	V
17029.000	55.4	-18.1	41.2	32.39	74.0	18.6	V
17584.000	55.4	-16.9	40.6	31.70	74.0	18.6	V
17602.000	55.3	-16.6	40.6	31.26	74.0	18.7	V
16973.500	55.3	-18.0	41.2	32.07	74.0	18.7	V

Measurement results for Set.1-2:

EUT1 Charger2+Back Camera+GSM 850MHz idle Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
35.529000	21.9	125.0	V	194.0	-0.5	18.1	40.0
41.252000	21.3	100.0	V	45.0	0.2	18.7	40.0
46.102000	20.4	110.0	V	253.0	0.1	19.6	40.0
63.562000	20.1	110.0	V	46.0	-1.5	19.9	40.0
98.773000	18.6	100.0	V	47.0	-0.8	24.9	43.5
203.630000	17.7	125.0	H	47.0	-1.3	25.8	43.5

EUT1 Charger2+Back Camera+GSM 850MHz idle Mode/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)
17603.000	43.35	-16.6	40.6	19.34	54.0	10.6	V
17600.500	43.26	-16.5	40.6	19.19	54.0	10.7	V
17598.500	43.26	-16.6	40.6	19.21	54.0	10.7	V
17602.500	43.25	-16.6	40.6	19.23	54.0	10.7	V
17593.500	43.22	-16.7	40.6	19.30	54.0	10.8	V
17592.500	43.18	-16.7	40.6	19.28	54.0	10.8	V

EUT1 Charger2+Back Camera+GSM 850MHz idle Mode/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)
18000.000	52.1	-18.1	40.3	29.88	74.0	21.9	H
17999.500	51.4	-18.1	40.3	29.24	74.0	22.6	V
17999.000	52.7	-18.1	40.3	30.48	74.0	21.3	H
17998.500	51.7	-18.1	40.3	29.49	74.0	22.3	V
17998.000	52.4	-18.1	40.3	30.15	74.0	21.6	V
17997.500	51.3	-18.1	40.3	29.12	74.0	22.7	V

Measurement results for Set.1-3:

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
30.970000	31.7	100.0	V	259.0	-1.2	8.3	40.0
35.626000	27.9	100.0	V	200.0	-0.5	12.1	40.0
40.864000	25.9	100.0	V	167.0	0.2	14.1	40.0
60.264000	20.7	110.0	V	8.0	-0.5	19.3	40.0
98.676000	24.5	100.0	V	193.0	-0.8	19.0	43.5
185.394000	23.2	100.0	V	-4.0	-2.2	20.3	43.5

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/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)
17591.500	43.35	-16.8	40.6	19.48	54.0	10.6	V
17595.000	43.30	-16.7	40.6	19.34	54.0	10.7	V
17598.000	43.27	-16.6	40.6	19.24	54.0	10.7	V
17590.000	43.26	-16.8	40.6	19.42	54.0	10.7	V
17592.000	43.25	-16.7	40.6	19.36	54.0	10.8	V
17586.000	43.24	-16.9	40.6	19.50	54.0	10.8	V

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode/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)
17168.000	56.2	-18.0	41.0	33.12	74.0	17.8	V
17588.500	55.6	-16.8	40.6	31.83	74.0	18.4	H
17404.000	55.5	-17.2	40.8	31.91	74.0	18.5	V
17576.500	55.3	-17.1	40.6	31.81	74.0	18.7	V
17148.500	55.3	-17.9	41.0	32.11	74.0	18.7	V
17163.500	55.2	-18.0	41.0	32.15	74.0	18.8	V

Measurement results for Set.2:

EUT1 Charger1+MP4 Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
30.388000	29.0	100.0	V	125.0	-1.3	11.0	40.0
34.074000	30.7	100.0	V	237.0	-0.7	9.3	40.0
36.984000	32.5	100.0	V	257.0	-0.3	7.5	40.0
39.894000	34.0	100.0	V	47.0	0.2	6.0	40.0
51.437000	20.7	100.0	V	291.0	0.0	19.3	40.0
181.320000	23.8	100.0	V	0.0	-2.9	19.7	43.5

EUT1 Charger1+MP4 Mode/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)
17598.500	43.61	-16.6	40.6	19.57	54.0	10.4	V
17597.500	43.46	-16.6	40.6	19.44	54.0	10.5	V
17601.000	43.43	-16.6	40.6	19.37	54.0	10.6	V
17599.500	43.40	-16.6	40.6	19.33	54.0	10.6	V
17598.000	43.36	-16.6	40.6	19.33	54.0	10.6	V
17593.000	43.33	-16.7	40.6	19.42	54.0	10.7	V

EUT1 Charger1+MP4 Mode/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)
17123.000	55.4	-18.0	41.1	32.37	74.0	18.6	V
16883.000	55.3	-18.1	41.2	32.19	74.0	18.7	V
16745.500	55.3	-17.7	41.2	31.79	74.0	18.7	V
17496.000	55.1	-17.5	40.7	31.90	74.0	18.9	V
17164.500	55.1	-18.0	41.0	32.01	74.0	18.9	V
17123.000	55.4	-18.0	41.1	32.37	74.0	18.6	V

Measurement results for Set.3:

EUT1 Charger1+FM Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
30.970000	28.4	100.0	V	153.0	-1.2	11.6	40.0
35.044000	28.6	100.0	V	265.0	-0.6	11.4	40.0
42.416000	28.3	100.0	V	256.0	0.1	11.7	40.0
63.562000	21.4	100.0	V	149.0	-1.5	18.6	40.0
99.937000	24.2	110.0	V	83.0	-0.5	19.3	43.5
183.260000	23.9	100.0	V	-5.0	-2.6	19.6	43.5

EUT1 Charger1+FM Mode/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)
17596.500	43.62	-16.6	40.6	19.63	54.0	10.4	V
17599.500	43.41	-16.6	40.6	19.34	54.0	10.6	V
17595.000	43.36	-16.7	40.6	19.40	54.0	10.6	V
17604.000	43.30	-16.6	40.6	19.31	54.0	10.7	V
17603.000	43.29	-16.6	40.6	19.27	54.0	10.7	V
17601.500	43.27	-16.6	40.6	19.23	54.0	10.7	H

EUT1 Charger1+FM Mode/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)
16997.000	56.0	-18.1	41.2	32.87	74.0	18.0	H
17500.500	55.5	-17.5	40.7	32.27	74.0	18.5	V
17605.000	55.3	-16.6	40.6	31.30	74.0	18.7	V
17491.500	55.2	-17.6	40.7	32.07	74.0	18.8	V
17012.500	55.2	-18.1	41.2	32.10	74.0	18.8	V
16423.500	55.1	-18.3	41.1	32.30	74.0	18.9	V

Measurement results for Set.4:

EUT1 USB + SD + Front Camera Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
36.790000	30.7	100.0	V	125.0	-0.3	9.3	40.0
38.148000	32.9	100.0	V	27.0	-0.1	7.1	40.0
299.951000	33.4	100.0	H	281.0	0.8	12.6	46.0
330.312000	32.2	100.0	H	270.0	2.2	13.8	46.0
518.104000	42.2	125.0	V	-19.0	6.5	3.8	46.0
664.186000	32.1	100.0	V	77.0	8.9	13.9	46.0

EUT1 USB + SD + Front Camera Mode/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)
17595.000	42.26	-16.7	40.6	18.30	54.0	11.7	V
17597.000	42.18	-16.6	40.6	18.17	54.0	11.8	V
17593.500	42.13	-16.7	40.6	18.21	54.0	11.9	V
17596.000	42.12	-16.6	40.6	18.14	54.0	11.9	V
17599.500	42.11	-16.6	40.6	18.04	54.0	11.9	H
17602.000	42.10	-16.6	40.6	18.06	54.0	11.9	V

EUT1 USB + SD + Front Camera Mode/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)
17114.000	54.6	-18.1	41.1	31.58	74.0	19.4	V
17603.000	54.6	-16.6	40.6	30.60	74.0	19.4	V
17124.500	54.5	-18.0	41.1	31.46	74.0	19.5	H
17403.500	54.4	-17.2	40.8	30.80	74.0	19.6	V
17588.000	54.2	-16.8	40.6	30.41	74.0	19.8	H
17601.500	54.1	-16.6	40.6	30.08	74.0	19.9	H

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode, Set.1-1

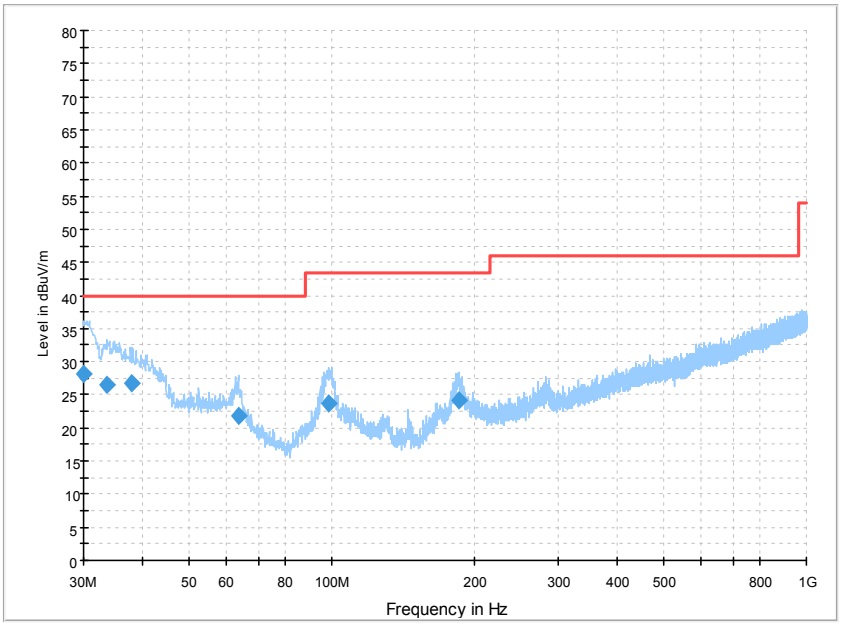

Figure A.1 Radiated Emission from 30MHz to 1GHz

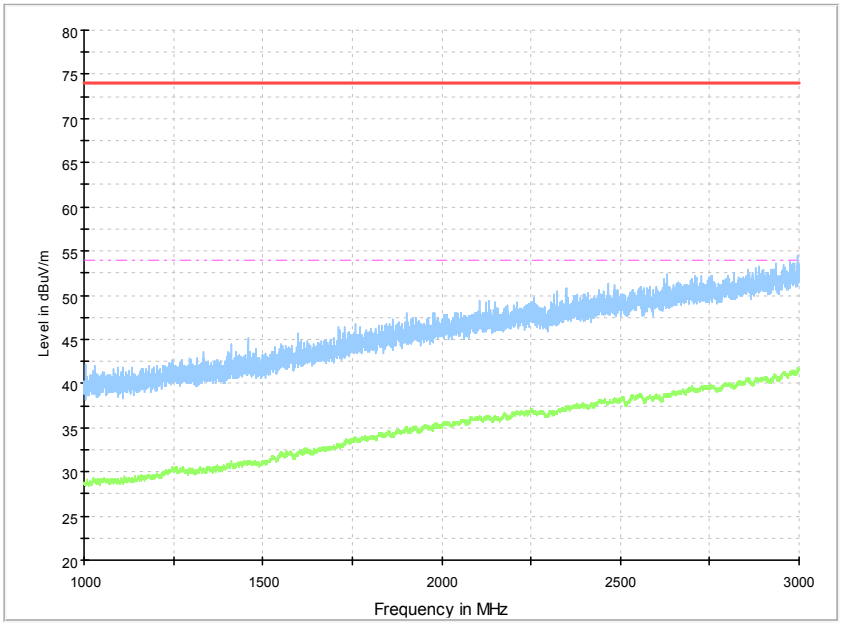

Figure A.2 Radiated Emission from 1GHz to 3GHz

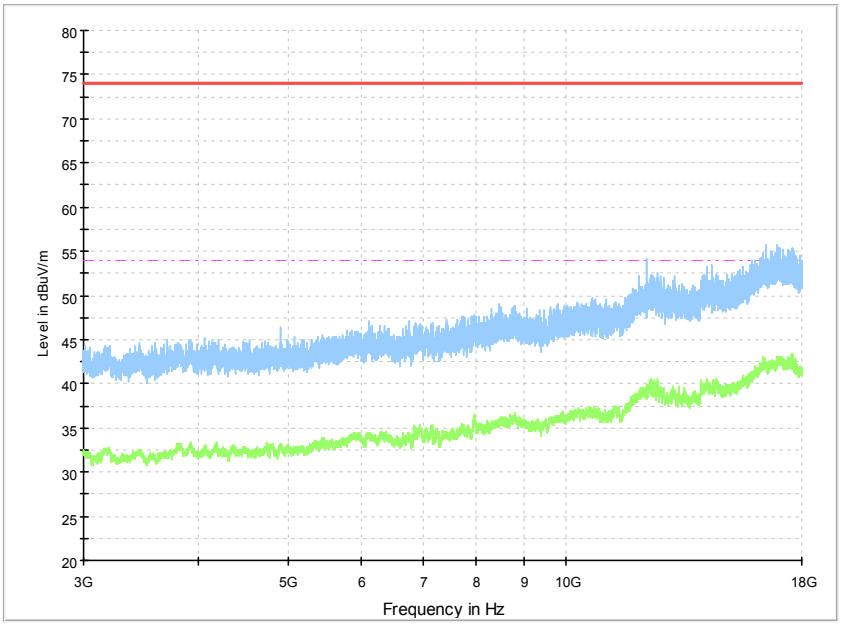

Figure A.3 Radiated Emission from 3GHz to 18GHz

EUT1 Charger2+Back Camera+GSM 850MHz idle Mode, Set.1-2

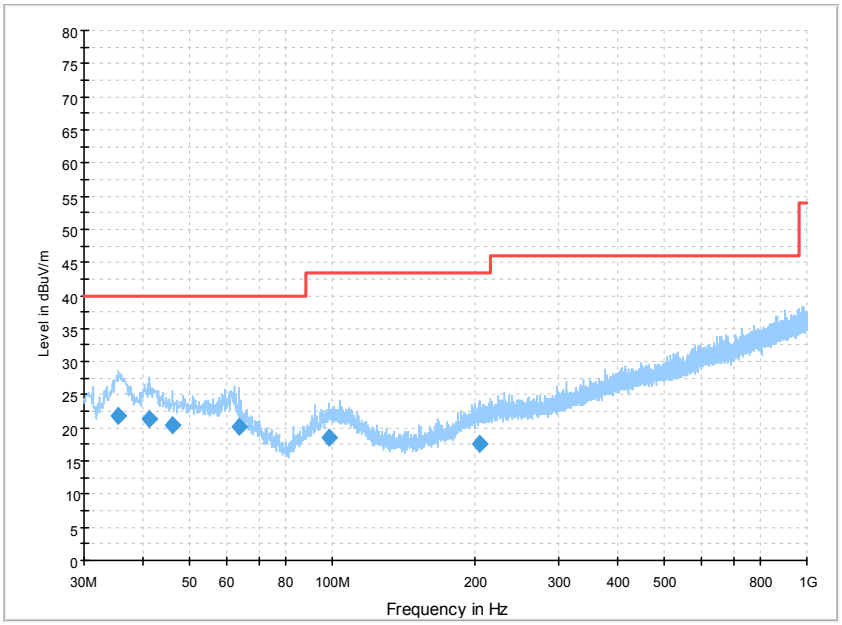

Figure A.4 Radiated Emission from 30MHz to 1GHz

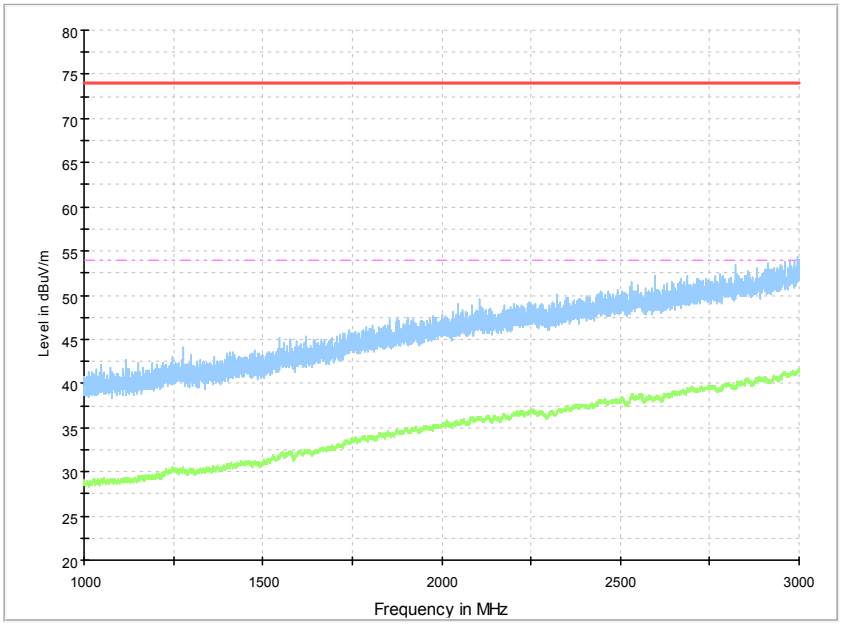

Figure A.5 Radiated Emission from 1GHz to 3GHz

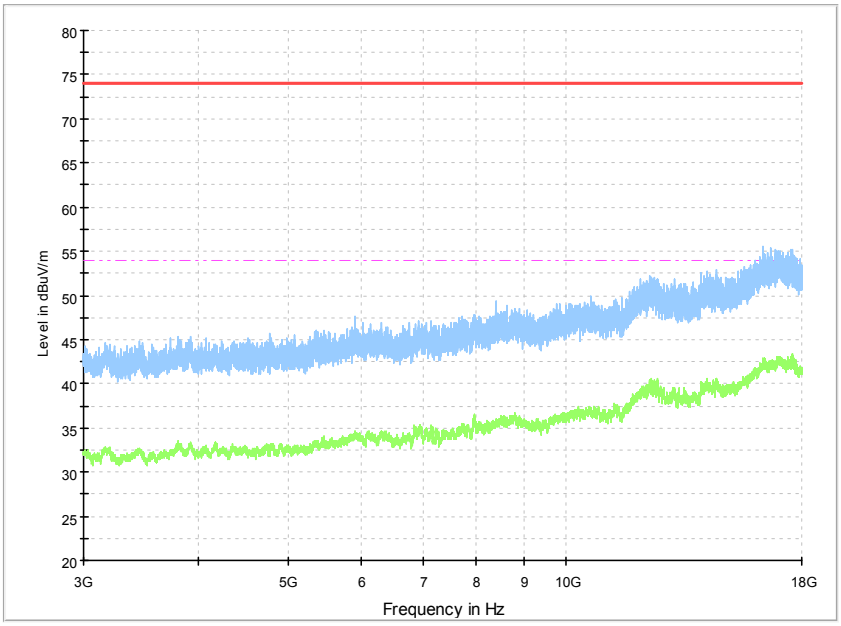

Figure A.6 Radiated Emission from 3GHz to 18GHz

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode, Set.1-3

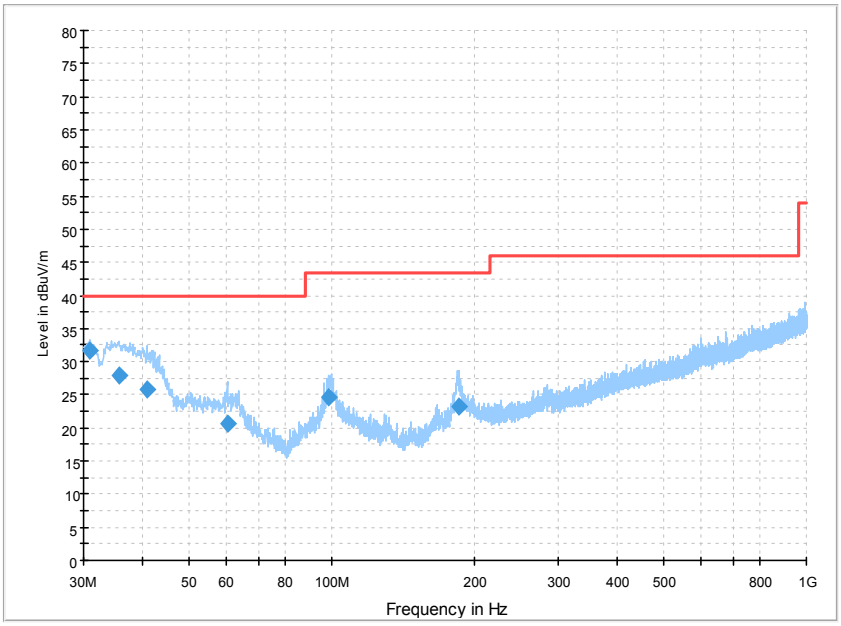

Figure A.7 Radiated Emission from 30MHz to 1GHz

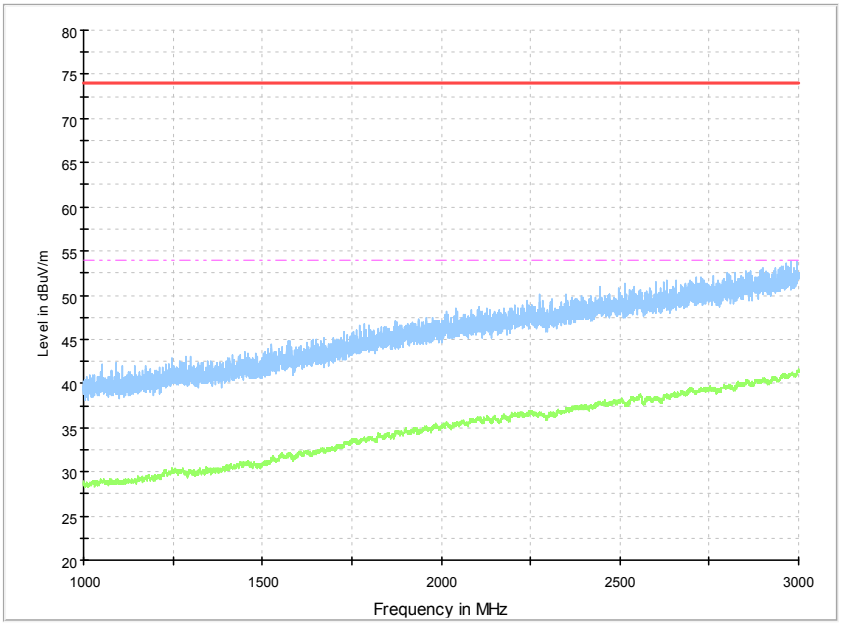

Figure A.8 Radiated Emission from 1GHz to 3GHz

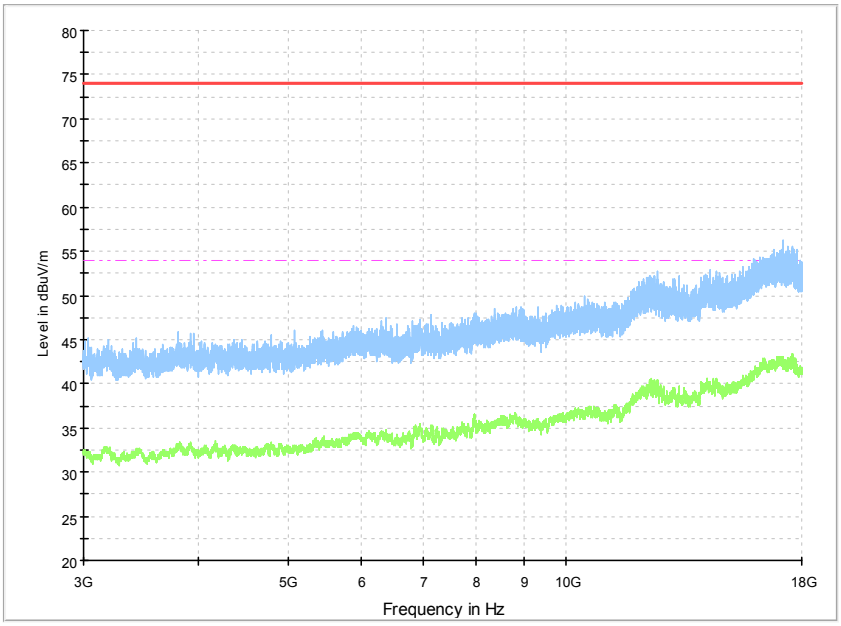

Figure A.9 Radiated Emission from 3GHz to 18GHz

EUT1 Charger1+MP4 Mode, Set.2

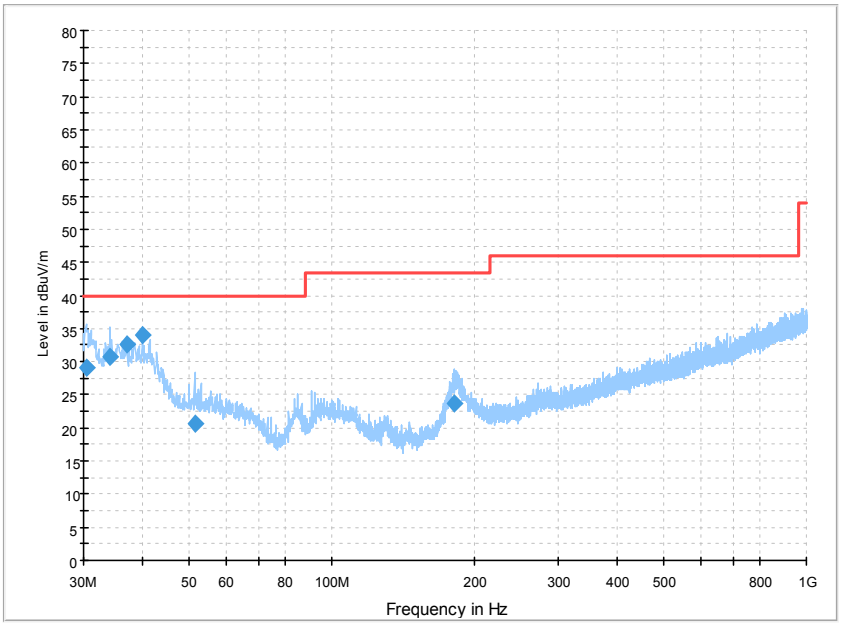

Figure A.10 Radiated Emission from 30MHz to 1GHz

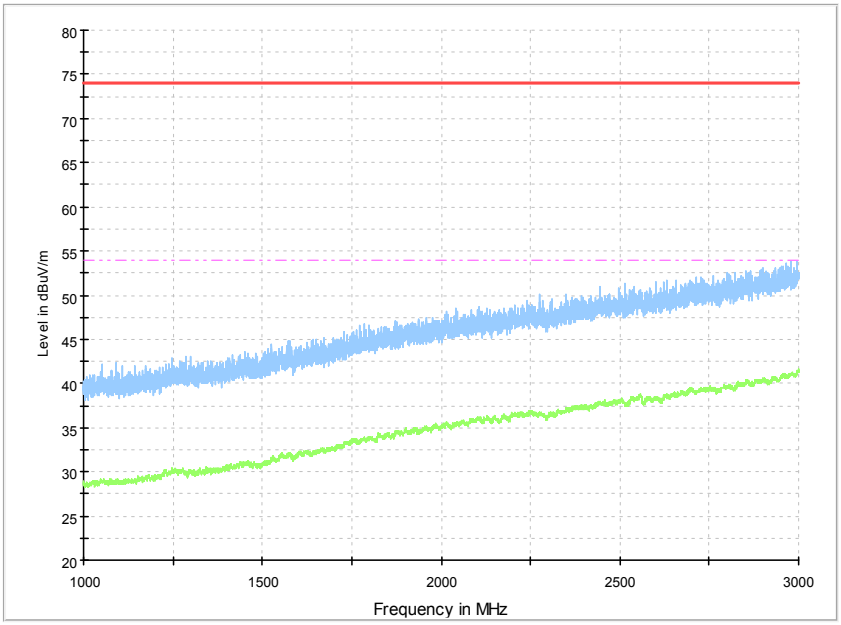

Figure A.11 Radiated Emission from 1GHz to 3GHz

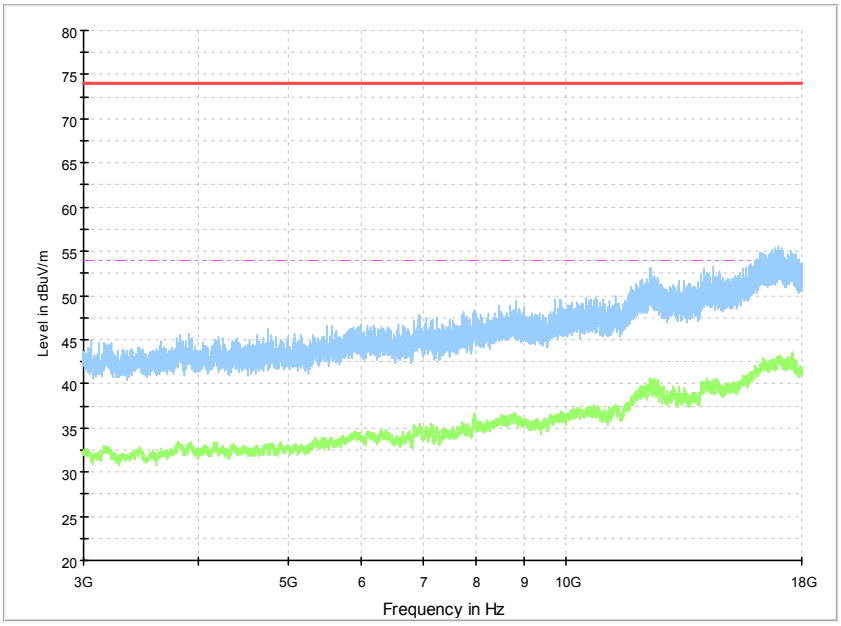

Figure A.12 Radiated Emission from 3GHz to 18GHz

EUT1 Charger1+FM Mode, Set.3

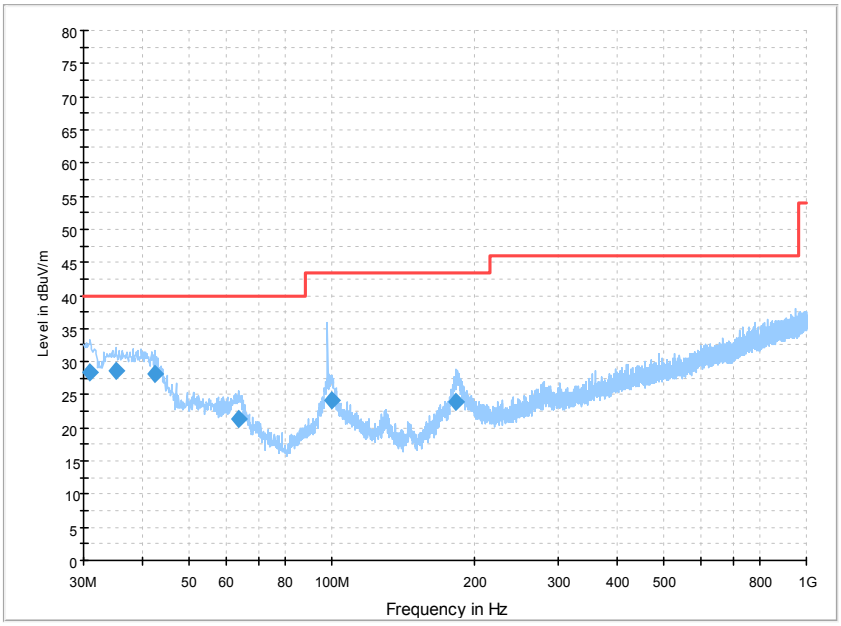

Figure A.13 Radiated Emission from 30MHz to 1GHz

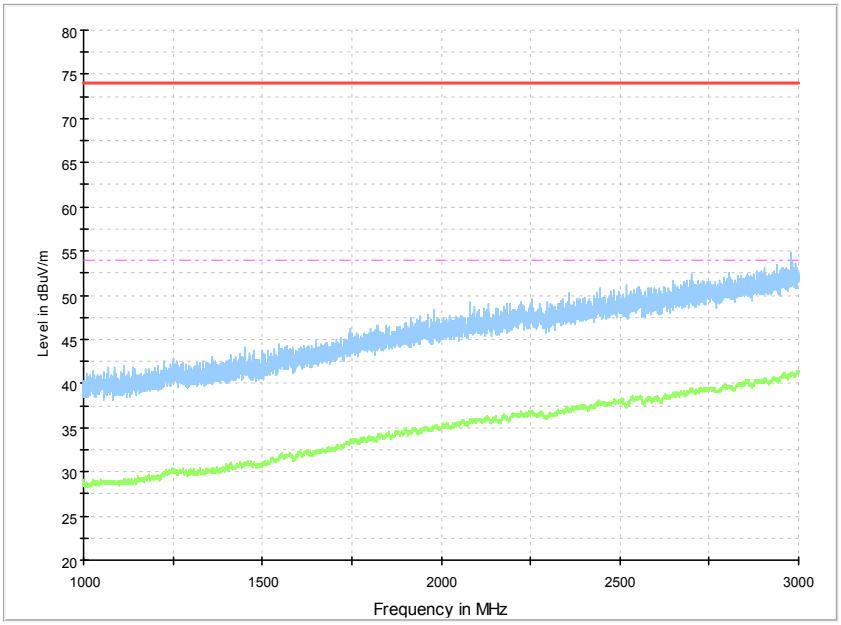

Figure A.14 Radiated Emission from 1GHz to 3GHz

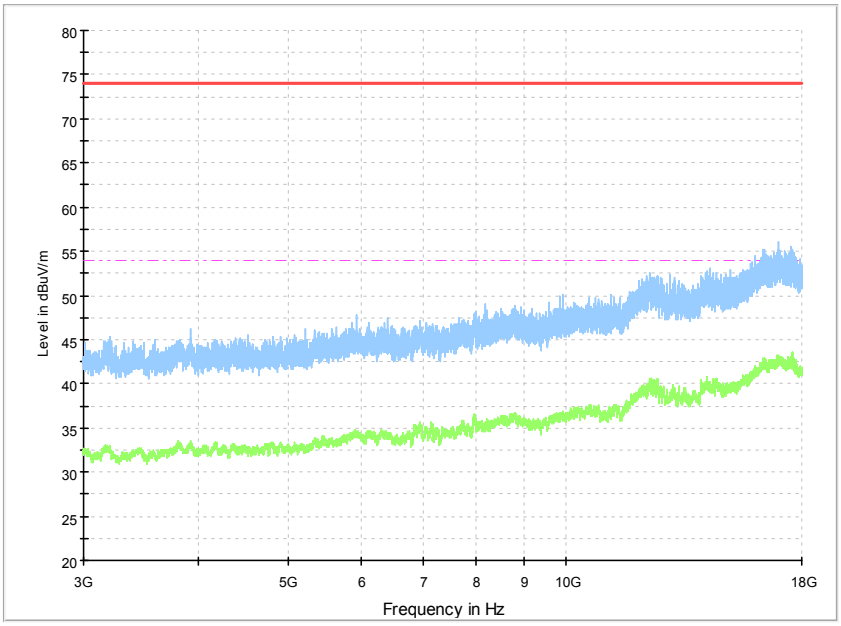

Figure A.15 Radiated Emission from 3GHz to 18GHz

EUT1 USB + SD + Front Camera Mode, Set.4

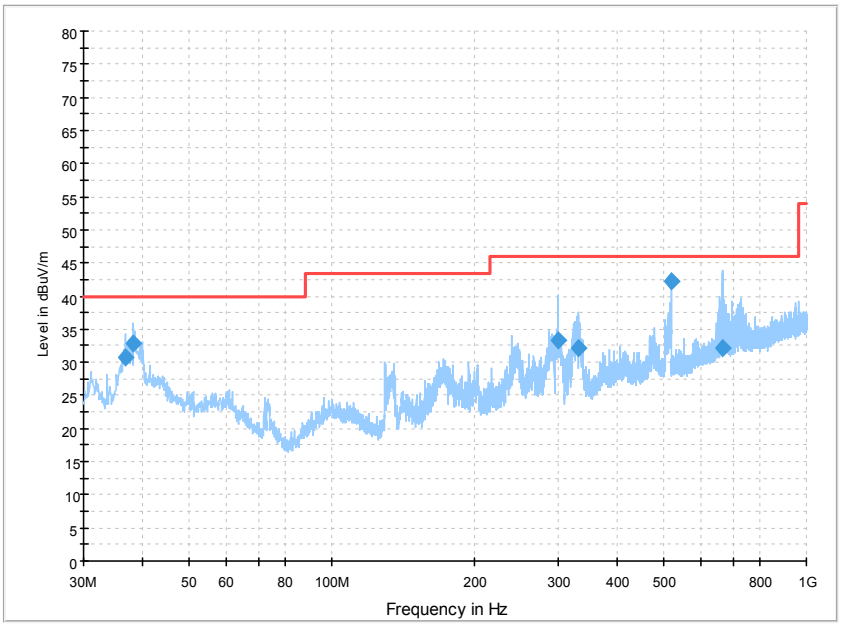

Figure A.16 Radiated Emission from 30MHz to 1GHz

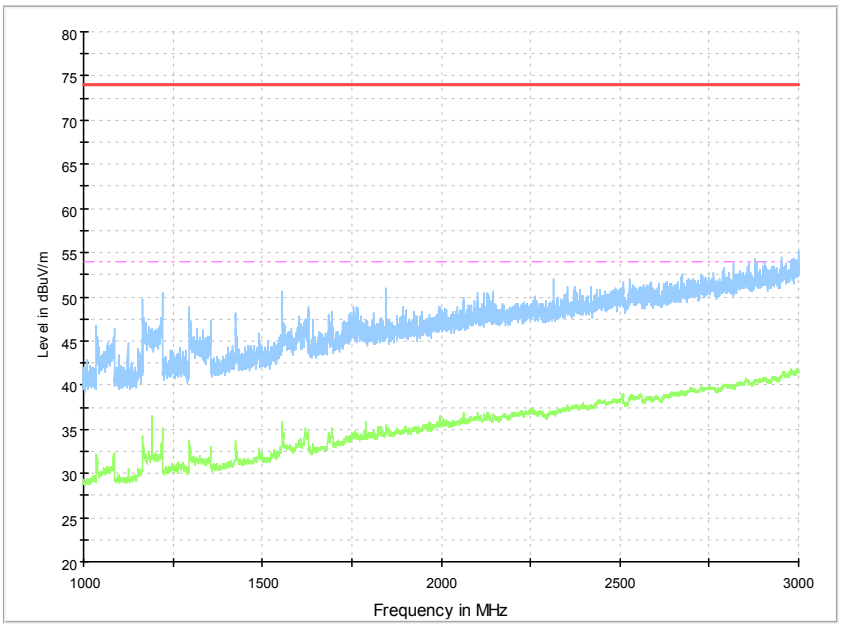

Figure A.17 Radiated Emission from 1GHz to 3GHz

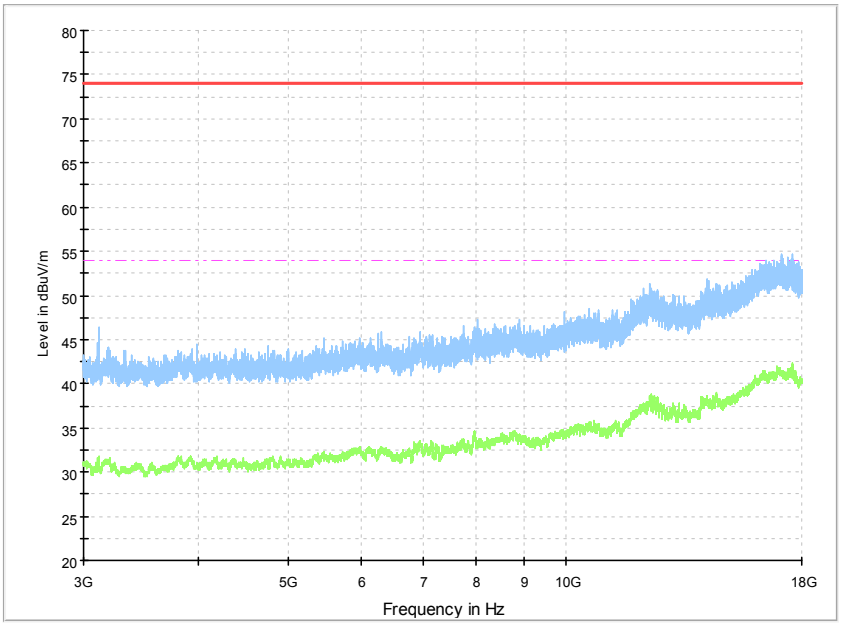

Figure A.18 Radiated Emission from 3GHz to 18GHz

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 charging mode and usb mode.

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*=3.08dB, *k*=2.

Note： The measurement results showed here are worst cases of the combinations of different Battery, cables and Headset.

Note:The measurement results showed here are worst cases.

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode, Set.1-1

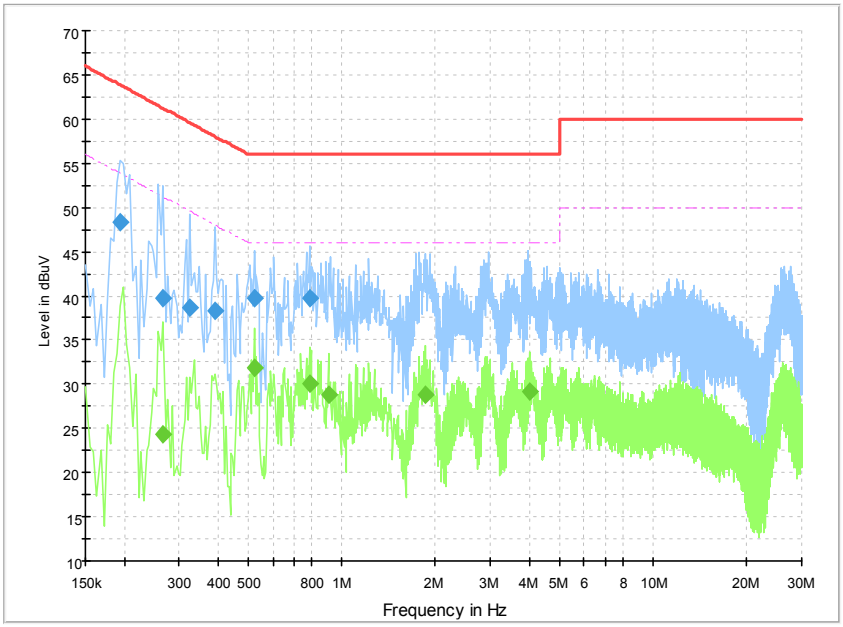

Figure A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	48.4	5000.0	9.000	On	L1	19.9	15.4	63.8
0.267000	39.7	5000.0	9.000	On	N	19.8	21.5	61.2
0.325500	38.7	5000.0	9.000	On	N	19.8	20.9	59.6
0.393000	38.3	5000.0	9.000	On	L1	19.9	19.7	58.0
0.523500	39.8	5000.0	9.000	On	L1	19.9	16.2	56.0
0.789000	39.7	5000.0	9.000	On	L1	19.8	16.3	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.267000	24.3	5000.0	9.000	On	N	19.8	26.9	51.2
0.523500	31.8	5000.0	9.000	On	L1	19.9	14.2	46.0
0.789000	30.1	5000.0	9.000	On	L1	19.8	16.0	46.0
0.906000	28.7	5000.0	9.000	On	L1	19.7	17.3	46.0
1.860000	28.9	5000.0	9.000	On	L1	19.7	17.1	46.0
3.993000	29.1	5000.0	9.000	On	L1	19.6	16.9	46.0

EUT1 Charger2+Back Camera+GSM 850MHz idle Mode, Set.1-2

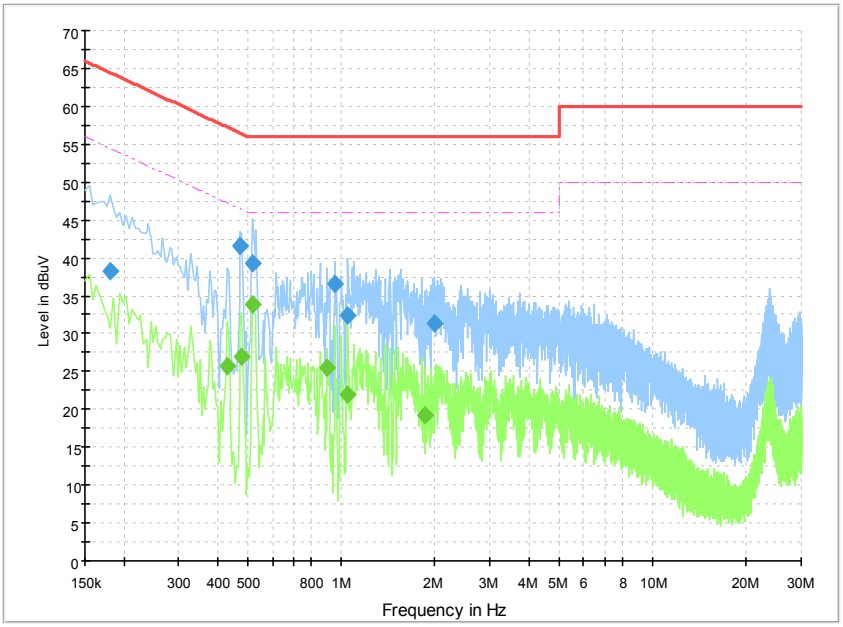

Figure A.20 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.181500	38.3	5000.0	9.000	On	N	20.0	26.1	64.4
0.474000	41.6	5000.0	9.000	On	L1	19.9	14.8	56.4
0.519000	39.3	5000.0	9.000	On	N	19.9	16.7	56.0
0.951000	36.6	5000.0	9.000	On	L1	19.8	19.4	56.0
1.050000	32.4	5000.0	9.000	On	N	19.8	23.6	56.0
1.986000	31.3	5000.0	9.000	On	N	19.7	24.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.429000	25.6	5000.0	9.000	On	N	19.9	21.6	47.3
0.478500	27.1	5000.0	9.000	On	N	19.9	19.3	46.4
0.519000	33.9	5000.0	9.000	On	L1	19.9	12.1	46.0
0.901500	25.4	5000.0	9.000	On	L1	19.7	20.6	46.0
1.050000	21.9	5000.0	9.000	On	N	19.8	24.1	46.0
1.855500	19.3	5000.0	9.000	On	L1	19.7	26.7	46.0

EUT1 Charger1+Back Camera+GSM 850MHz idle Mode, Set.1-3

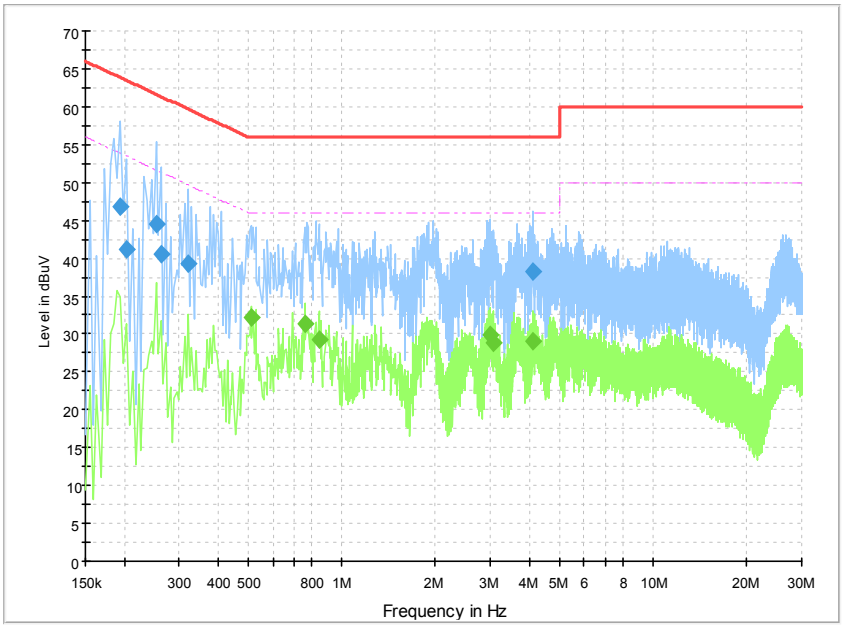

Figure A.21 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	46.9	5000.0	9.000	On	L1	19.9	16.9	63.8
0.204000	41.3	5000.0	9.000	On	N	19.9	22.2	63.4
0.253500	44.6	5000.0	9.000	On	L1	19.9	17.1	61.6
0.262500	40.6	5000.0	9.000	On	L1	19.8	20.7	61.4
0.321000	39.4	5000.0	9.000	On	L1	19.9	20.3	59.7
4.110000	38.2	5000.0	9.000	On	L1	19.6	17.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	32.3	5000.0	9.000	On	L1	19.9	13.7	46.0
0.762000	31.4	5000.0	9.000	On	L1	19.8	14.6	46.0
0.843000	29.3	5000.0	9.000	On	L1	19.8	16.7	46.0
2.994000	29.9	5000.0	9.000	On	L1	19.6	16.1	46.0
3.079500	28.9	5000.0	9.000	On	L1	19.6	17.1	46.0
4.110000	29.1	5000.0	9.000	On	L1	19.6	16.9	46.0

EUT1 Charger1+MP4 Mode, Set.2

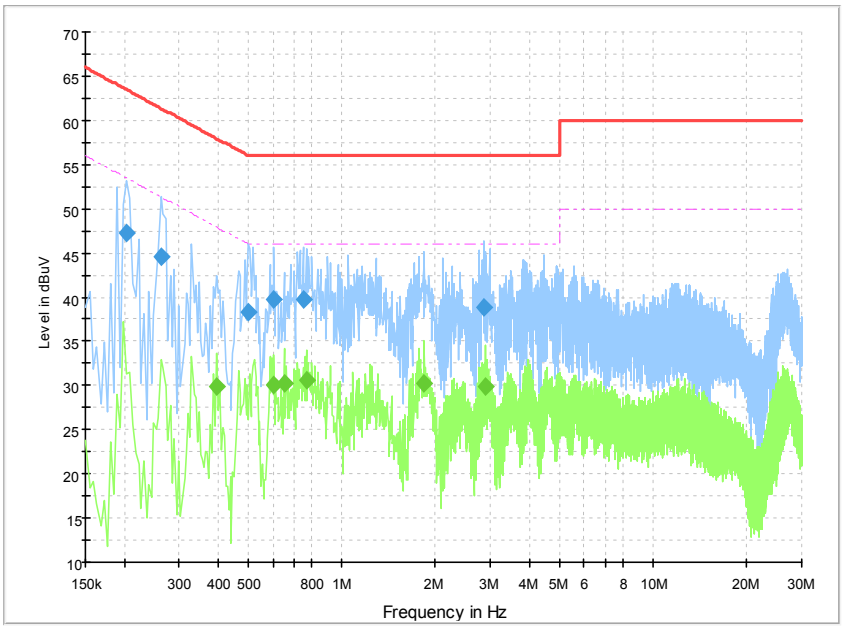

Figure A.22 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	47.3	5000.0	9.000	On	L1	19.9	16.2	63.4
0.262500	44.6	5000.0	9.000	On	L1	19.8	16.7	61.4
0.501000	38.2	5000.0	9.000	On	L1	19.9	17.8	56.0
0.604500	39.8	5000.0	9.000	On	L1	19.8	16.2	56.0
0.753000	39.7	5000.0	9.000	On	L1	19.8	16.3	56.0
2.872500	38.9	5000.0	9.000	On	L1	19.6	17.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.397500	29.9	5000.0	9.000	On	L1	19.9	18.0	47.9
0.604500	30.0	5000.0	9.000	On	L1	19.8	16.0	46.0
0.654000	30.2	5000.0	9.000	On	L1	19.8	15.8	46.0
0.771000	30.6	5000.0	9.000	On	L1	19.8	15.4	46.0
1.842000	30.2	5000.0	9.000	On	L1	19.7	15.8	46.0
2.881500	29.9	5000.0	9.000	On	L1	19.6	16.1	46.0

EUT1 Charger1+FM Mode, Set.3

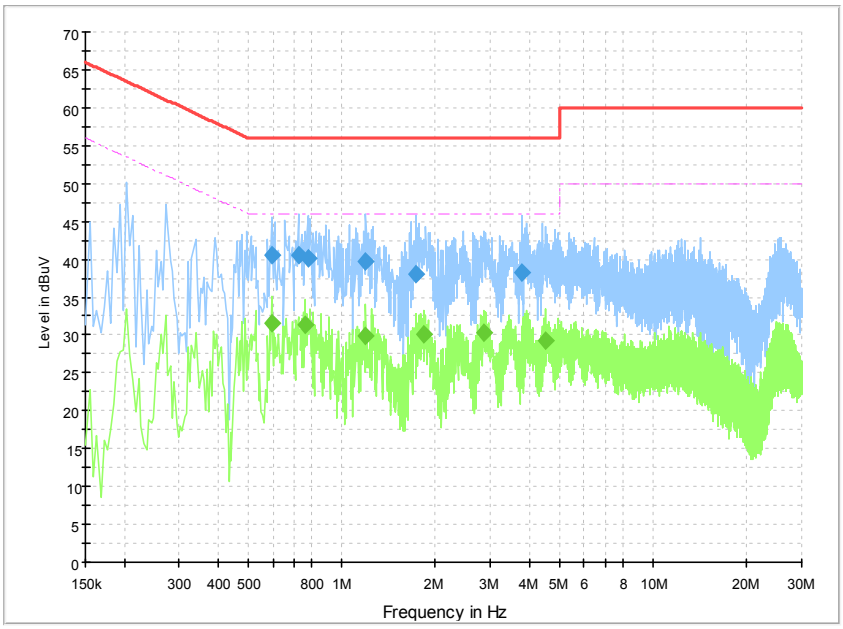

Figure A.23 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.595500	40.5	5000.0	9.000	On	L1	19.8	15.5	56.0
0.726000	40.6	5000.0	9.000	On	L1	19.8	15.4	56.0
0.780000	40.2	5000.0	9.000	On	L1	19.8	15.8	56.0
1.194000	39.8	5000.0	9.000	On	L1	19.7	16.2	56.0
1.734000	38.0	5000.0	9.000	On	L1	19.7	18.0	56.0
3.795000	38.3	5000.0	9.000	On	L1	19.6	17.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.595500	31.6	5000.0	9.000	On	L1	19.8	14.4	46.0
0.762000	31.4	5000.0	9.000	On	L1	19.8	14.6	46.0
1.194000	29.8	5000.0	9.000	On	L1	19.7	16.2	46.0
1.833000	30.2	5000.0	9.000	On	L1	19.7	15.8	46.0
2.845500	30.4	5000.0	9.000	On	L1	19.6	15.6	46.0
4.506000	29.3	5000.0	9.000	On	L1	19.6	16.7	46.0

EUT1 USB + SD + Front Camera Mode, Set.4

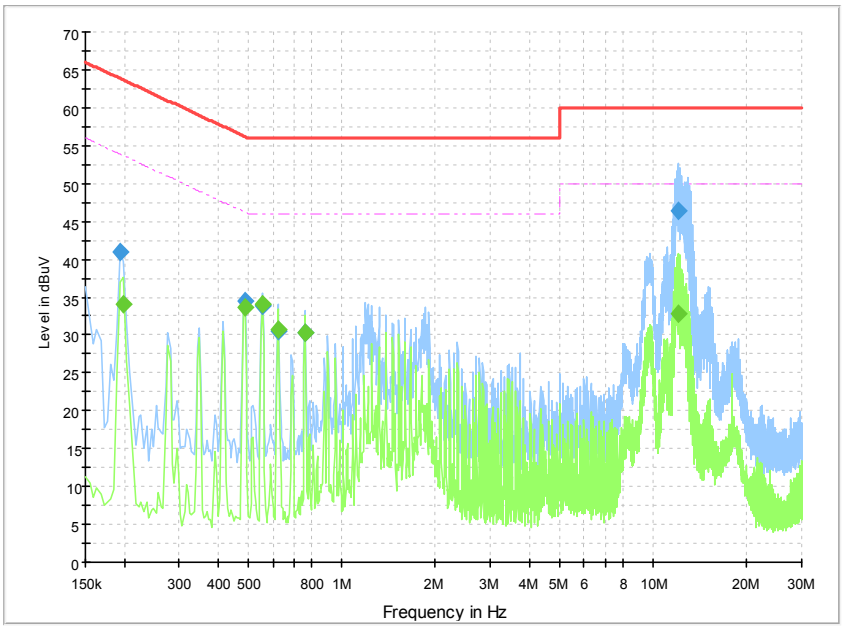

Figure A.24 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	40.9	5000.0	9.000	On	L1	19.9	23.0	63.8
0.487500	34.5	5000.0	9.000	On	N	19.9	21.8	56.2
0.555000	33.8	5000.0	9.000	On	L1	19.9	22.2	56.0
0.622500	30.5	5000.0	9.000	On	N	19.8	25.5	56.0
0.762000	30.4	5000.0	9.000	On	L1	19.8	25.6	56.0
11.980500	46.5	5000.0	9.000	On	L1	19.8	13.5	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.199500	34.0	5000.0	9.000	On	N	19.9	19.6	53.6
0.487500	33.6	5000.0	9.000	On	N	19.9	12.7	46.2
0.555000	34.1	5000.0	9.000	On	L1	19.9	11.9	46.0
0.622500	30.7	5000.0	9.000	On	N	19.8	15.3	46.0
0.762000	30.3	5000.0	9.000	On	L1	19.8	15.7	46.0
11.980500	32.9	5000.0	9.000	On	L1	19.8	17.1	50.0

ANNEX B: Persons involved in this testing

Test Item	Tester
Conducted Continuous Emission	Guo Qian
Radiated Continuous Emission	LI Zongliang

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