



FCC 15B TEST REPORT

No. I21Z62081-EMC01

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile phone

Model Name: 6102D

FCC ID: 2ACCJH146

with

Hardware Version: 05

Software Version: MW59

Issued Date: 2021-12-14

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: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z62081-EMC01	Rev.0	1 st edition	2021-12-14

CONTENTS

1. TEST LABORATORY.....	4
1.1. TESTING LOCATION.....	4
1.2. TESTING ENVIRONMENT.....	4
1.3. PROJECT DATA.....	4
1.4. SIGNATURE.....	4
2. CLIENT INFORMATION.....	5
2.1. APPLICANT INFORMATION.....	5
2.2. MANUFACTURER INFORMATION.....	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE).....	6
3.1. ABOUT EUT.....	6
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST.....	6
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	6
3.4. EUT SET-UPS.....	9
3.5. GENERAL DESCRIPTION.....	9
4. REFERENCE DOCUMENTS.....	10
4.1. REFERENCE DOCUMENTS FOR TESTING.....	10
5. LABORATORY ENVIRONMENT.....	11
6. SUMMARY OF TEST RESULTS.....	12
7. TEST EQUIPMENTS UTILIZED.....	13
ANNEX A: MEASUREMENT RESULTS.....	14
ANNEX B: PERSONS INVOLVED IN THIS TESTING.....	40

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: 2021-11-12

Testing End Date: 2021-11-26

1.4. Signature



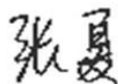
An Hui

(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: 0086-755-36611722
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: 0086-755-36611722
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	6102D
FCC ID	2ACCJH146

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	57026950000780/	05	MW59
	357026950001598		

*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
AE1-1	Adapter	CBA0059AATC1
AE1-2	Adapter	CBA0059AATC5
AE1-3	Adapter	CBA0059AAAC7
AE1-4	Adapter	CBA0059ACNC5
AE1-5	Adapter	CBA0059AAAC5
AE1-6	Adapter	CBA0059ABAC7
AE1-7	Adapter	CBA0059AANC5
AE1-8	Adapter	CBA0059AAAC5
AE1-9	Adapter	CBA0059ABTC5
AE1-10	Adapter	CBA0059ABAC5
AE1-11	Adapter	CBA0059ABTC1
AE2-1	USB Cable	CDA0000123C8
AE2-2	USB Cable	CDA0000123C1
AE3-1	Battery	CAC4850002C7
AE3-2	Battery	CAC4850000C1
AE4-1	Headset	CCB0046A15C1
AE4-2	Headset	CCB0049A12C1
AE4-3	Headset	CCB0076A10C1

AE1-1	
Model	CBA0059AATC1
Manufacturer	/
Length	/

AE1-2

Model	CBA0059AATC5
Manufacturer	/
Length	/

AE1-3

Model	CBA0059AAAC7
Manufacturer	/
Length	/

AE1-4

Model	CBA0059ACNC5
Manufacturer	/
Length	/

AE1-5

Model	CBA0059AAAC5
Manufacturer	/
Length	/

AE1-6

Model	CBA0059ABAC7
Manufacturer	/
Length	/

AE1-7

Model	CBA0059AANC5
Manufacturer	/
Length	/

AE1-8

Model	CBA005AAAAAC5
Manufacturer	/
Length	/

AE1-9

Model	CBA0059ABTC5
Manufacturer	/
Length	/

AE1-10

Model	CBA0059ABAC5
Manufacturer	/
Length	/

AE1-11

Model	CBA0059ABTC1
Manufacturer	/
Length	/

AE2-1

Model	CDA0000123C8
Manufacturer	/
Length	/

AE2-2

Model	CDA0000123C1
Manufacturer	/
Length	/

AE3-1

Model	CAC4850002C7 TLp048A7
Manufacturer	VEKEN
Capacitance	4500mAh
Nominal voltage	/

AE3-2

Model	CAC4850000C1 TLp048A1
Manufacturer	BYD
Capacitance	4500mAh
Nominal voltage	/

AE4-1

Model	CCB0046A15C1
Manufacturer	/
Length	/

AE4-2

Model	CCB0049A12C1
Manufacturer	/
Length	/

AE4-3

Model	CCB0076A10C1
Manufacturer	/
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+AE1-3+AE2-1/AE2-2+ AE3-1/AE3-2+AE4-3	Charger+ Real Camera+ + GSM850 idle
Set.2	EUT1+AE1-1+AE2-1/AE2-2+ AE3-1/AE3-2	Charger+MP4
Set.3	EUT1+AE1-1+AE2-1/AE2-2+AE3-1/AE3-2+AE4-1	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 Band 5, 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(W2100)/FDD Band II(W1900)/FDD Band V(W850)/FDD Band VIII(W900)
LTE Frequency Band	LTE FDD Bands 1/3/5/7/8/20/28, LTE FDD Bands 38/40/41.

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 °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, 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 °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)

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

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.

$$\text{Limit}(10\text{m})=\text{Limit}(3\text{m})+20[\log(3/10)]$$

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:

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

Where

G_A : Antenna factor of receive antenna

G_{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)
30.679000	35.0	125.0	V	-30.0	-1.2	5.0	40.0
34.656000	39.3	125.0	V	120.0	-0.6	0.7	40.0
35.044000	39.3	125.0	V	255.0	-0.6	0.7	40.0
43.774000	31.0	125.0	V	120.0	0.1	9.0	40.0
53.474000	25.5	125.0	V	120.0	-0.1	14.5	40.0
260.957000	28.2	112.0	H	91.0	0.0	17.8	46.0

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)
17592.000	42.94	-16.7	40.6	19.06	54.0	11.1	V
17587.000	42.82	-16.9	40.6	19.06	54.0	11.2	V
17583.500	42.81	-17.0	40.6	19.14	54.0	11.2	V
17592.500	42.75	-16.7	40.6	18.85	54.0	11.3	H
17593.000	42.74	-16.7	40.6	18.83	54.0	11.3	V
17594.500	42.71	-16.7	40.6	18.76	54.0	11.3	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)
17612.000	55.5	-16.8	40.6	31.72	74.0	18.5	V
17503.000	55.0	-17.5	40.7	31.76	74.0	19.0	H
17104.500	54.7	-18.1	41.1	31.66	74.0	19.3	H
17505.500	54.6	-17.5	40.7	31.38	74.0	19.4	V
17043.000	54.6	-18.1	41.2	31.52	74.0	19.4	H
16347.000	54.5	-17.9	41.0	31.27	74.0	19.5	H

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)
30.000000	33.4	125.0	V	180.0	-1.3	6.6	40.0
30.679000	32.6	125.0	V	165.0	-1.2	7.4	40.0
31.746000	29.3	113.0	V	150.0	-1.1	10.7	40.0
34.365000	27.1	113.0	V	150.0	-0.7	12.9	40.0
42.901000	22.3	100.0	V	-30.0	0.1	17.7	40.0
56.869000	20.8	125.0	V	150.0	-0.3	19.2	40.0

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)
17593.500	42.79	-16.7	40.6	18.87	54.0	11.2	V
17591.500	42.79	-16.8	40.6	18.92	54.0	11.2	V
17596.500	42.79	-16.6	40.6	18.79	54.0	11.2	V
17586.500	42.72	-16.9	40.6	18.97	54.0	11.3	V
17588.000	42.72	-16.8	40.6	18.93	54.0	11.3	H
17591.000	42.71	-16.8	40.6	18.85	54.0	11.3	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)
17632.500	54.9	-17.3	40.6	31.57	74.0	19.1	V
17215.000	54.8	-18.1	41.0	31.92	74.0	19.2	H
17722.000	54.7	-17.7	40.5	31.91	74.0	19.3	H
17772.000	54.7	-18.1	40.5	32.27	74.0	19.3	H
16459.000	54.7	-18.4	41.2	31.93	74.0	19.3	H
16995.000	54.5	-18.1	41.2	31.34	74.0	19.5	H

Measurement results for Set.1-3:
EUT1 Charger3+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)
30.679000	33.8	125.0	V	135.0	-1.2	6.2	40.0
31.067000	31.8	100.0	V	300.0	-1.2	8.2	40.0
45.035000	23.7	113.0	V	149.0	0.1	16.3	40.0
54.735000	25.3	125.0	V	105.0	-0.2	14.7	40.0
203.048000	22.7	112.0	H	121.0	-1.3	20.8	43.5
271.239000	24.7	100.0	H	90.0	0.2	21.3	46.0

EUT1 Charger3+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)
17588.000	42.93	-16.8	40.6	19.14	54.0	11.1	V
17588.500	42.91	-16.8	40.6	19.11	54.0	11.1	V
17590.500	42.88	-16.8	40.6	19.04	54.0	11.1	V
17592.000	42.86	-16.7	40.6	18.97	54.0	11.1	V
17601.500	42.82	-16.6	40.6	18.78	54.0	11.2	V
17595.500	42.79	-16.7	40.6	18.82	54.0	11.2	H

EUT1 Charger3+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)
16986.000	55.5	-18.0	41.2	32.36	74.0	18.5	V
17146.500	55.2	-17.9	41.1	32.02	74.0	18.8	V
17501.500	55.0	-17.5	40.7	31.76	74.0	19.0	V
17416.000	54.9	-17.4	40.8	31.54	74.0	19.1	V
17615.000	54.8	-16.9	40.6	31.10	74.0	19.2	H
17585.500	54.8	-16.9	40.6	31.10	74.0	19.2	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	32.1	113.0	V	149.0	-1.3	7.9	40.0
34.753000	33.9	125.0	V	300.0	-0.6	6.1	40.0
44.356000	29.4	125.0	V	135.0	0.1	10.6	40.0
55.220000	24.4	125.0	V	121.0	-0.2	15.6	40.0
90.237000	19.2	113.0	V	300.0	-2.7	24.3	43.5
211.390000	23.5	125.0	H	225.0	-1.1	20.0	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)
17592.500	42.76	-16.7	40.6	18.87	54.0	11.2	V
17590.500	42.74	-16.8	40.6	18.89	54.0	11.3	V
17599.000	42.67	-16.6	40.6	18.62	54.0	11.3	V
17594.500	42.66	-16.7	40.6	18.72	54.0	11.3	V
17591.500	42.65	-16.8	40.6	18.78	54.0	11.4	H
17582.000	42.64	-17.0	40.6	19.00	54.0	11.4	V

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)
17197.000	54.9	-18.1	41.0	31.98	74.0	19.1	V
17591.500	54.6	-16.8	40.6	30.70	74.0	19.4	H
17479.500	54.6	-17.7	40.7	31.55	74.0	19.4	H
16993.000	54.5	-18.0	41.2	31.39	74.0	19.5	V
16982.500	54.4	-18.0	41.2	31.20	74.0	19.6	V
17168.000	54.4	-18.0	41.0	31.33	74.0	19.6	V

Measurement results for Set.3:
EUT1 Charger1+MP4 Mode/QP detector

Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBuV/m)
30.291000	32.2	113.0	V	149.0	-1.3	7.8	40.0
34.850000	34.1	125.0	V	150.0	-0.6	5.9	40.0
45.132000	28.1	100.0	V	135.0	0.1	11.9	40.0
48.721000	25.8	100.0	V	135.0	0.1	14.2	40.0
90.043000	18.2	100.0	V	315.0	-2.8	25.3	43.5
241.460000	25.9	100.0	H	135.0	0.0	20.1	46.0

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)
17594.000	42.68	-16.7	40.6	18.74	54.0	11.3	V
17591.500	42.66	-16.8	40.6	18.79	54.0	11.3	V
17590.500	42.63	-16.8	40.6	18.78	54.0	11.4	V
17588.500	42.62	-16.8	40.6	18.83	54.0	11.4	V
17594.500	42.62	-16.7	40.6	18.68	54.0	11.4	H
17593.500	42.60	-16.7	40.6	18.68	54.0	11.4	H

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)
17232.500	55.0	-18.0	41.0	32.06	74.0	19.0	V
17596.500	54.9	-16.6	40.6	30.95	74.0	19.1	V
17607.000	54.8	-16.7	40.6	30.90	74.0	19.2	V
17481.500	54.7	-17.7	40.7	31.67	74.0	19.3	V
16957.500	54.6	-17.9	41.2	31.34	74.0	19.4	V
17055.000	54.6	-18.1	41.1	31.60	74.0	19.4	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)
35.626000	32.5	100.0	V	239.0	-0.5	7.5	40.0
43.968000	34.5	125.0	V	254.0	0.1	5.5	40.0
44.550000	34.2	125.0	V	135.0	0.1	5.8	40.0
233.215000	31.1	100.0	H	270.0	-0.3	14.9	46.0
288.602000	29.8	100.0	H	0.0	0.6	16.2	46.0
516.746000	32.4	100.0	V	-30.0	6.5	13.6	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)
17584.000	42.68	-16.9	40.6	19.00	54.0	11.3	V
17599.500	42.60	-16.6	40.6	18.54	54.0	11.4	V
17587.500	42.54	-16.9	40.6	18.77	54.0	11.5	V
17590.500	42.53	-16.8	40.6	18.68	54.0	11.5	V
17588.500	42.52	-16.8	40.6	18.72	54.0	11.5	V
17600.000	42.48	-16.5	40.6	18.40	54.0	11.5	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)
17589.500	55.5	-16.8	40.6	31.71	74.0	18.5	H
17402.000	55.3	-17.2	40.8	31.70	74.0	18.7	V
17610.500	55.0	-16.8	40.6	31.17	74.0	19.0	H
17598.500	54.7	-16.6	40.6	30.68	74.0	19.3	V
17584.000	54.6	-16.9	40.6	30.96	74.0	19.4	V
17578.500	54.6	-17.1	40.6	31.05	74.0	19.4	V

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

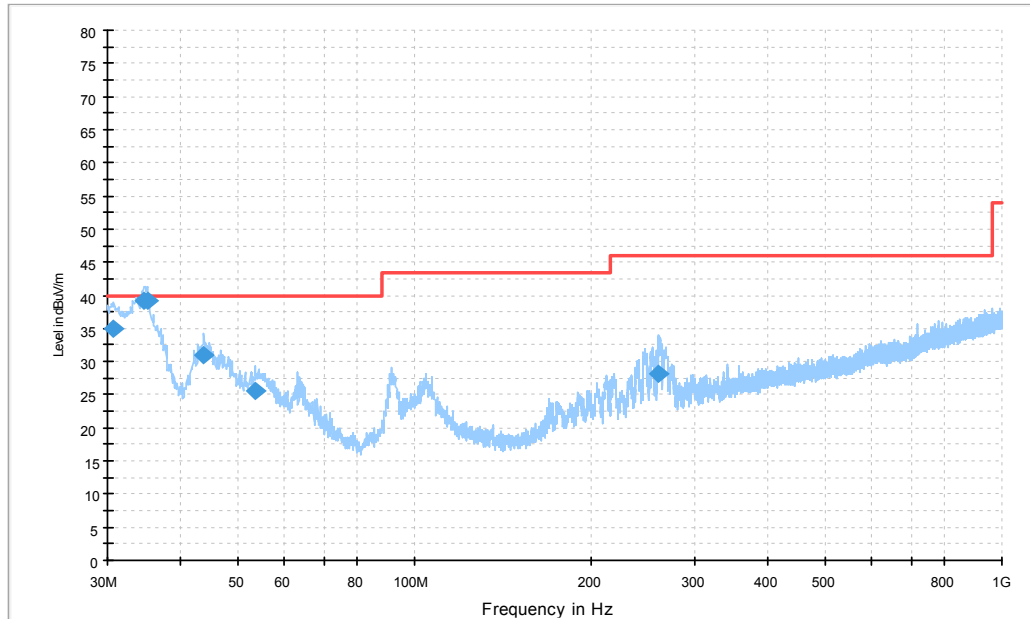


Figure A.1 Radiated Emission from 30MHz to 1GHz

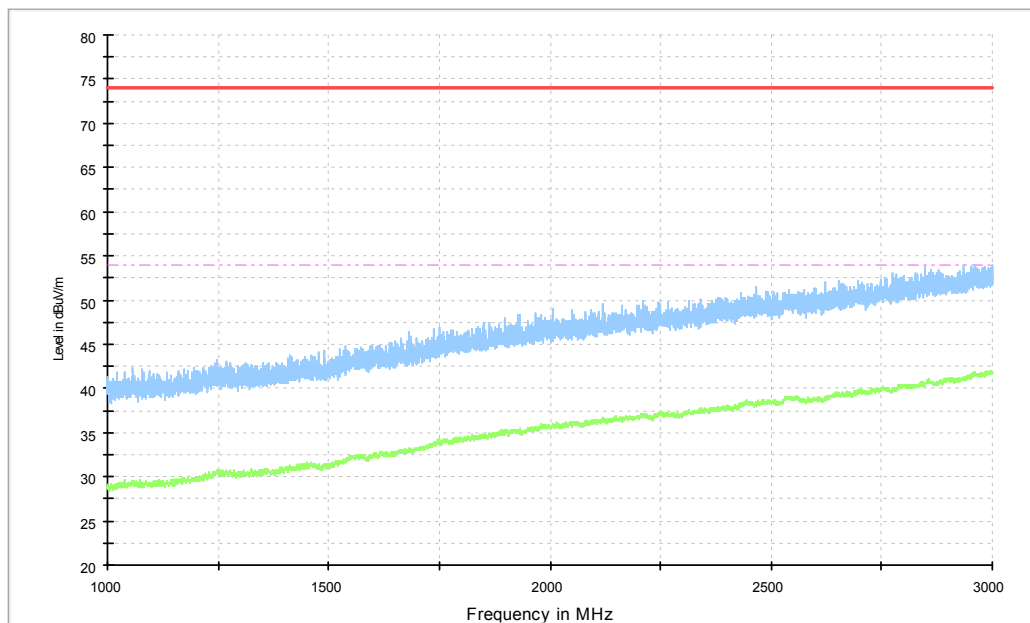


Figure A.2 Radiated Emission from 1GHz to 3GHz

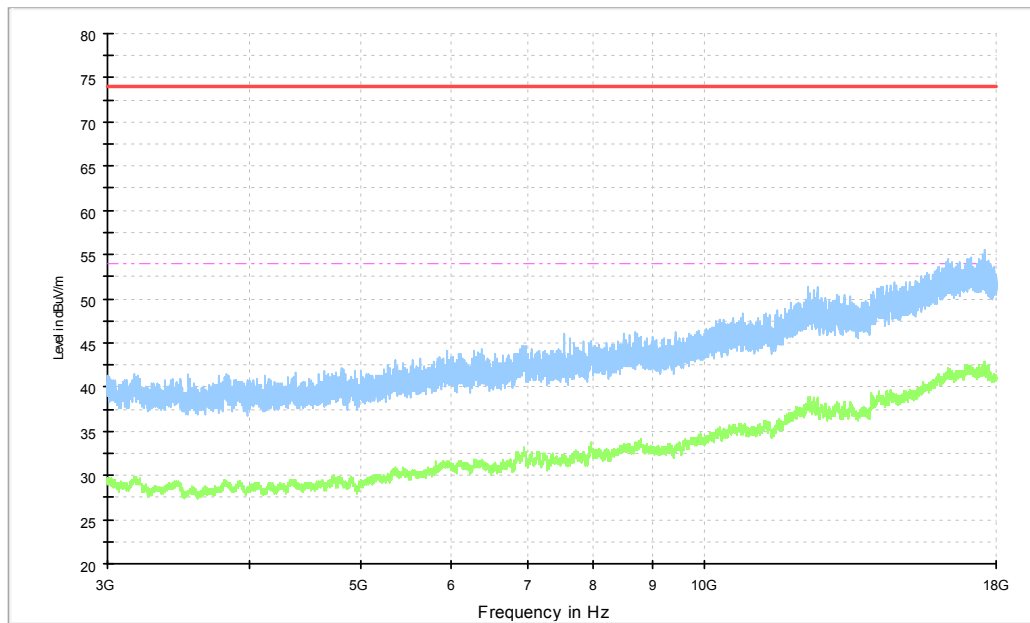


Figure A.3 Radiated Emission from 3GHz to 18GHz

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

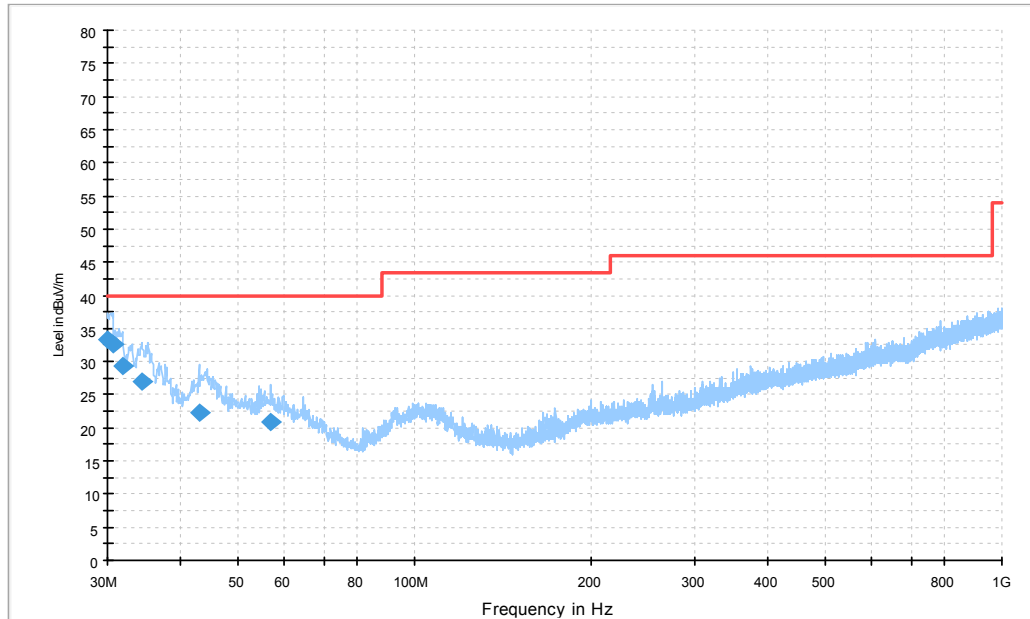


Figure A.4 Radiated Emission from 30MHz to 1GHz

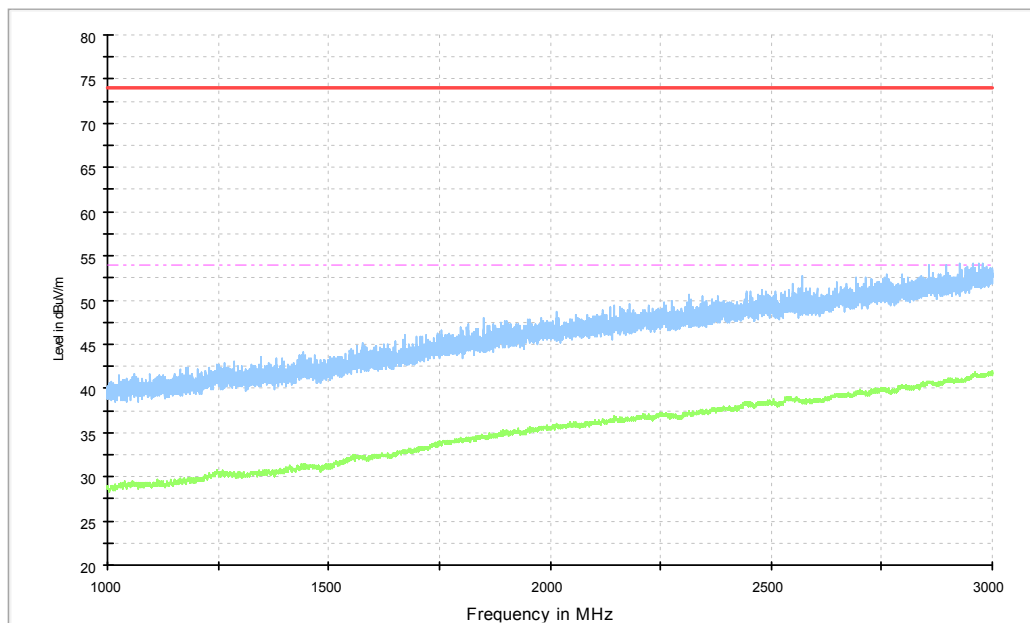


Figure A.5 Radiated Emission from 1GHz to 3GHz

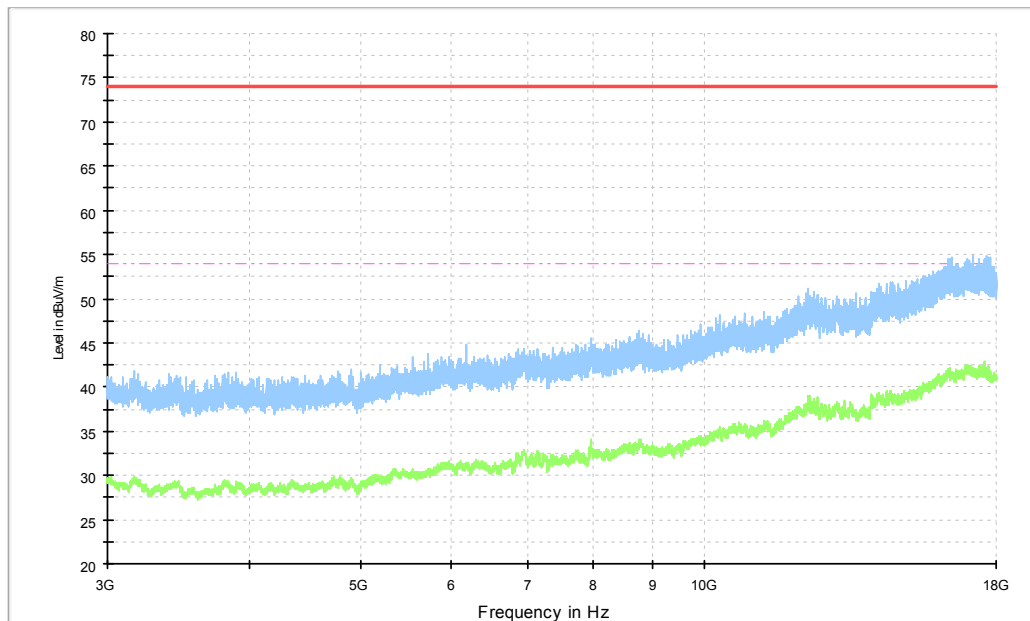


Figure A.6 Radiated Emission from 3GHz to 18GHz

EUT1 Charger3+Back Camera+GSM 850MHz idle Mode, Set.1-3

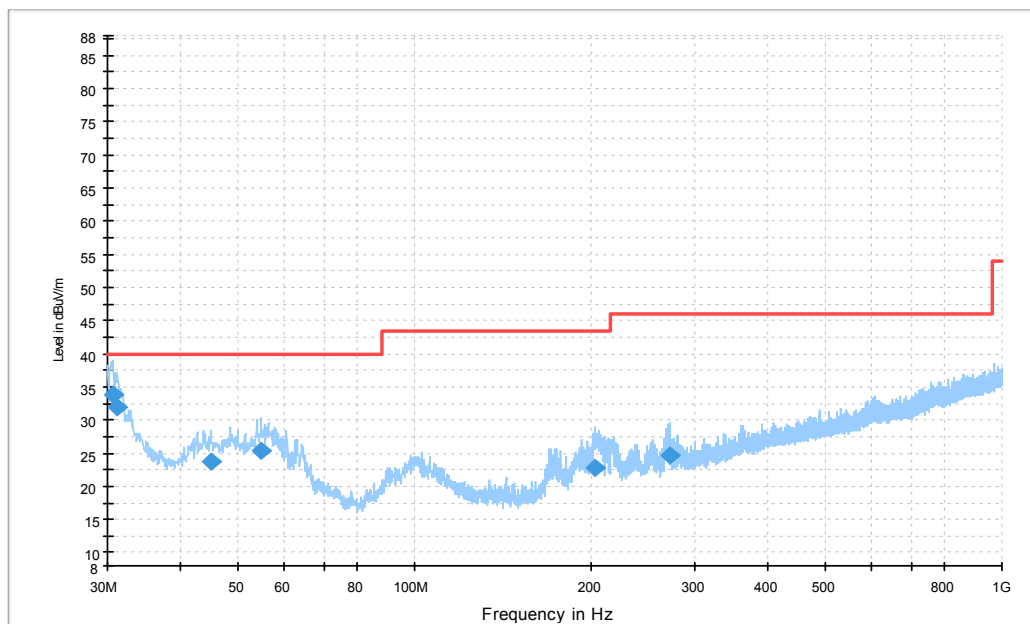


Figure A.7 Radiated Emission from 30MHz to 1GHz

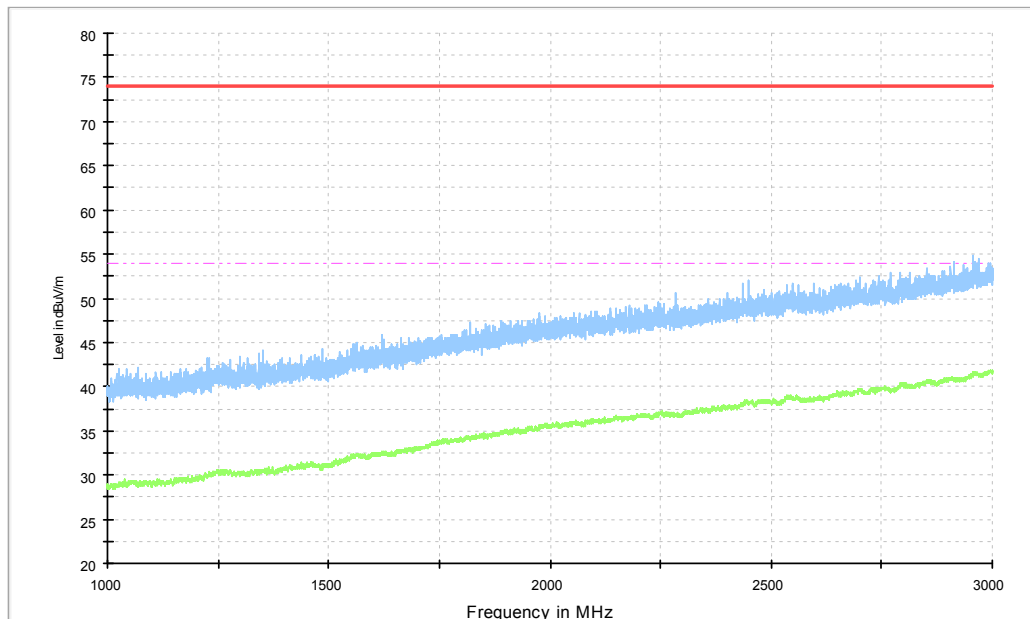


Figure A.8 Radiated Emission from 1GHz to 3GHz

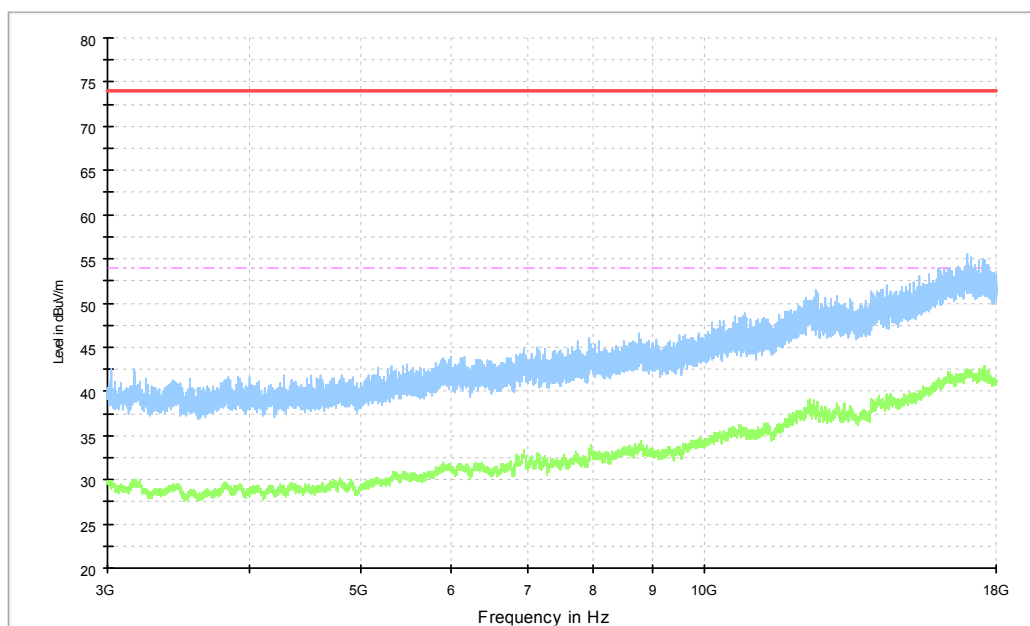


Figure A.9 Radiated Emission from 3GHz to 18GHz

EUT1 Charger1+MP4 Mode, Set.2

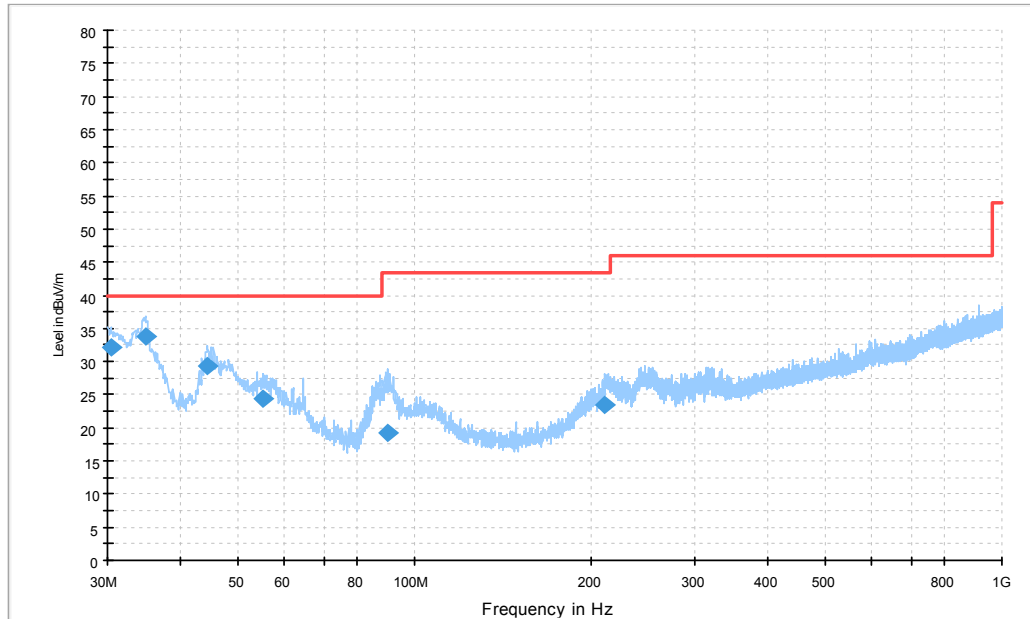


Figure A.10 Radiated Emission from 30MHz to 1GHz

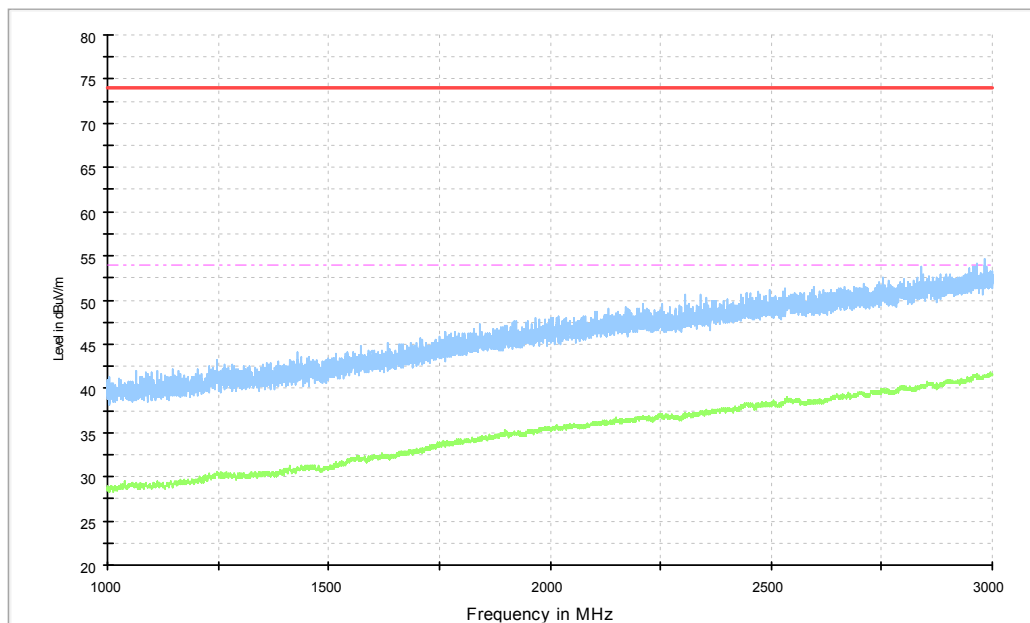


Figure A.11 Radiated Emission from 1GHz to 3GHz

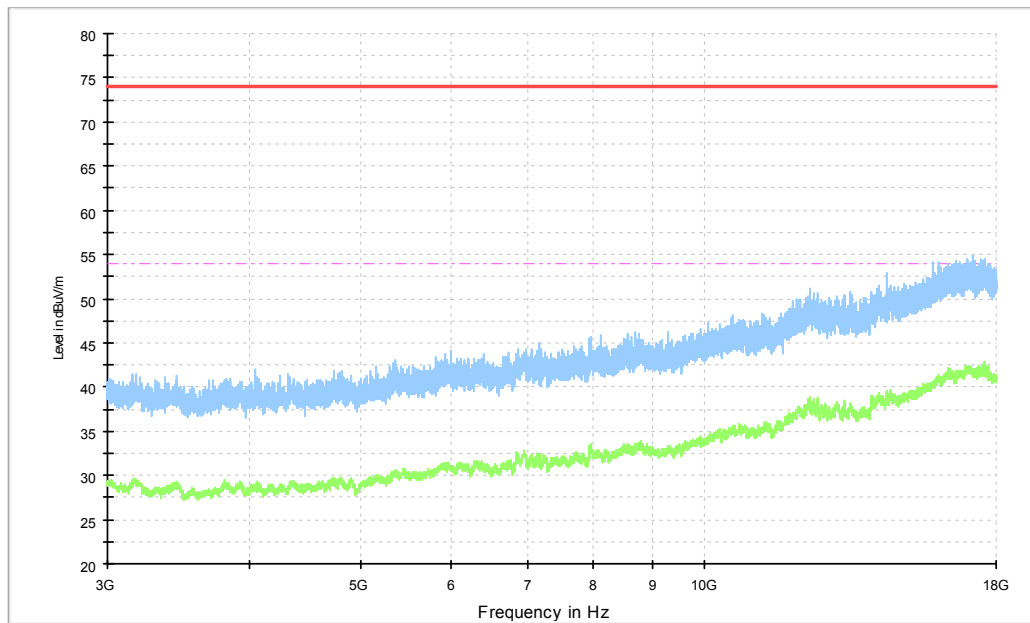


Figure A.12 Radiated Emission from 3GHz to 18GHz

EUT1 Charger1+FM Mode, Set.3

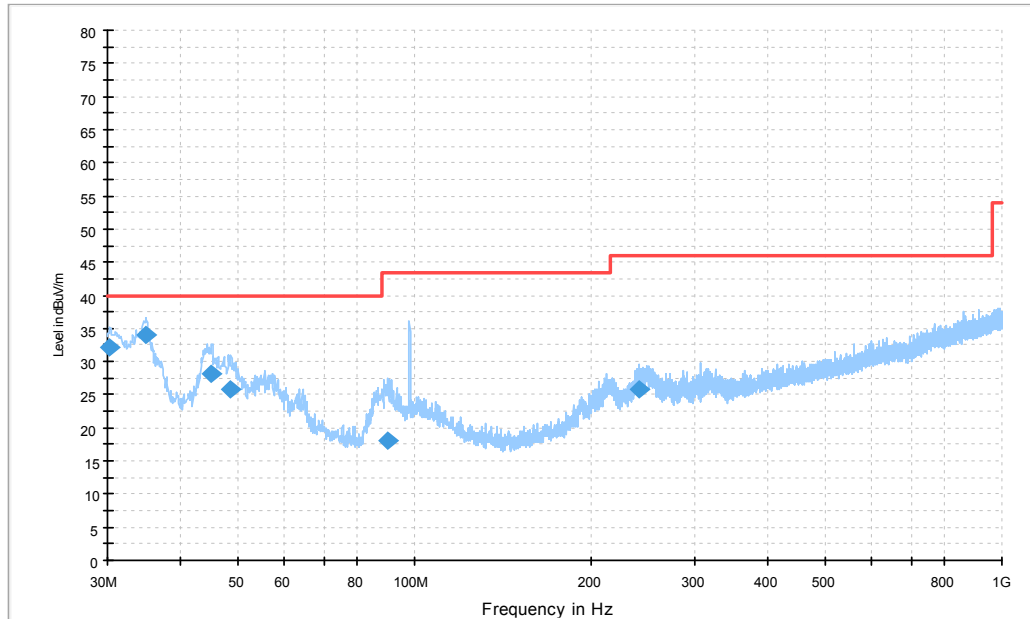


Figure A.13 Radiated Emission from 30MHz to 1GHz

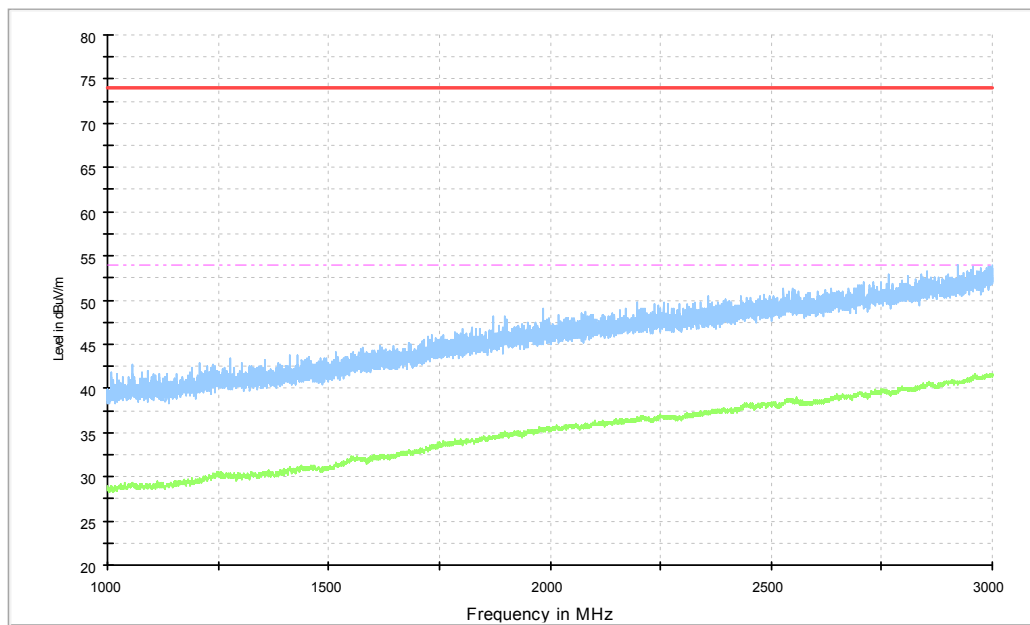


Figure A.14 Radiated Emission from 1GHz to 3GHz

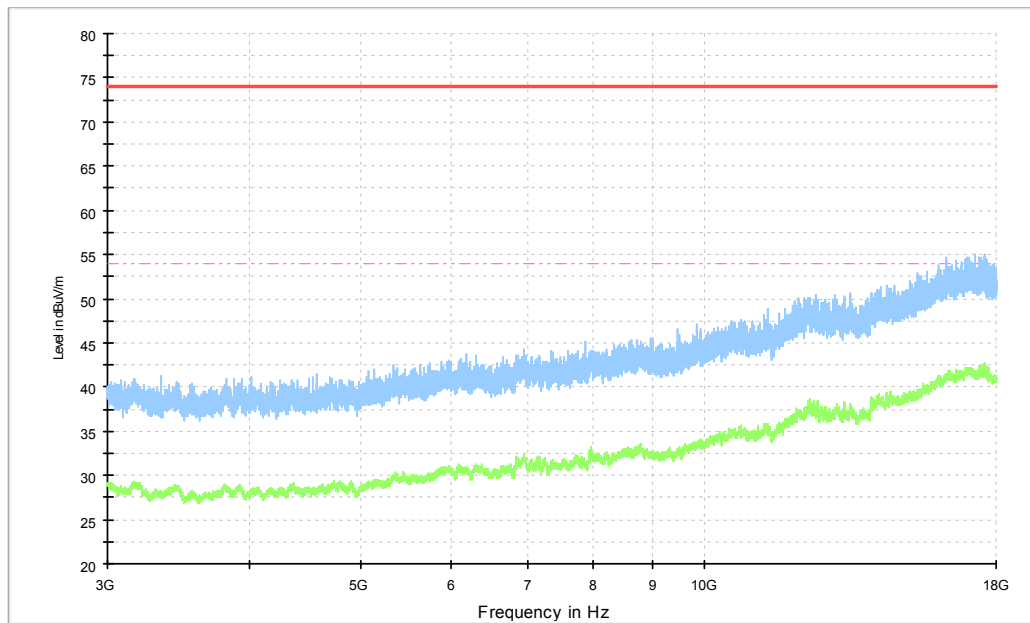


Figure A.15 Radiated Emission from 3GHz to 18GHz

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

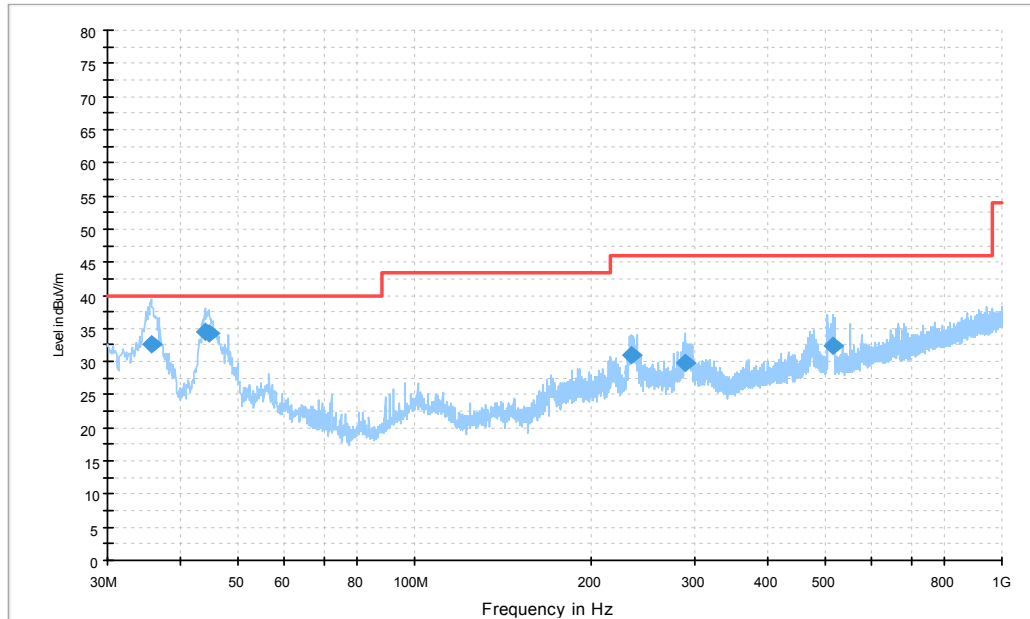


Figure A.16 Radiated Emission from 30MHz to 1GHz

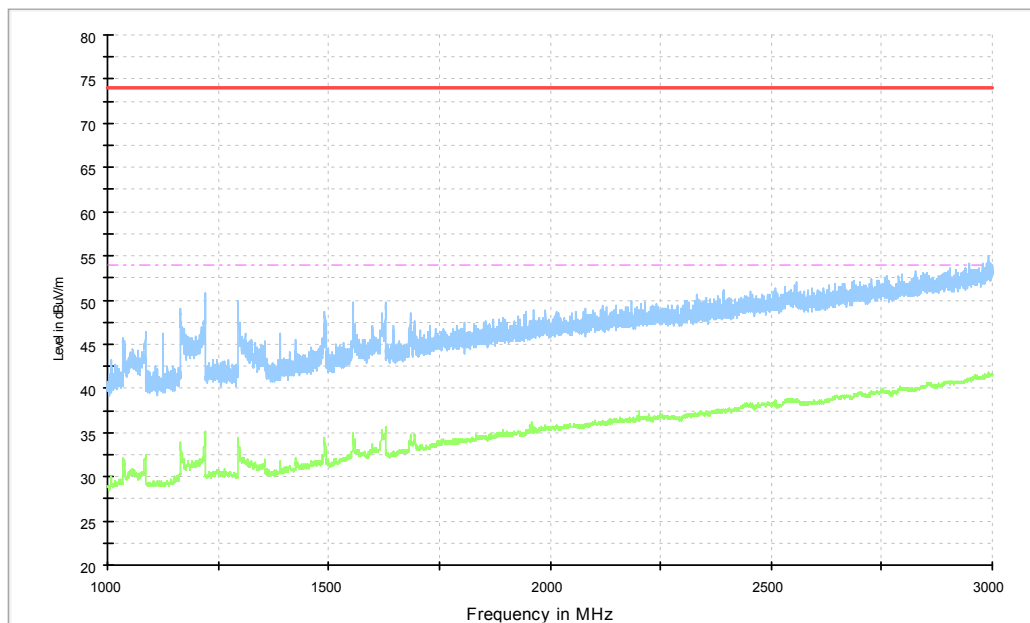


Figure A.17 Radiated Emission from 1GHz to 3GHz

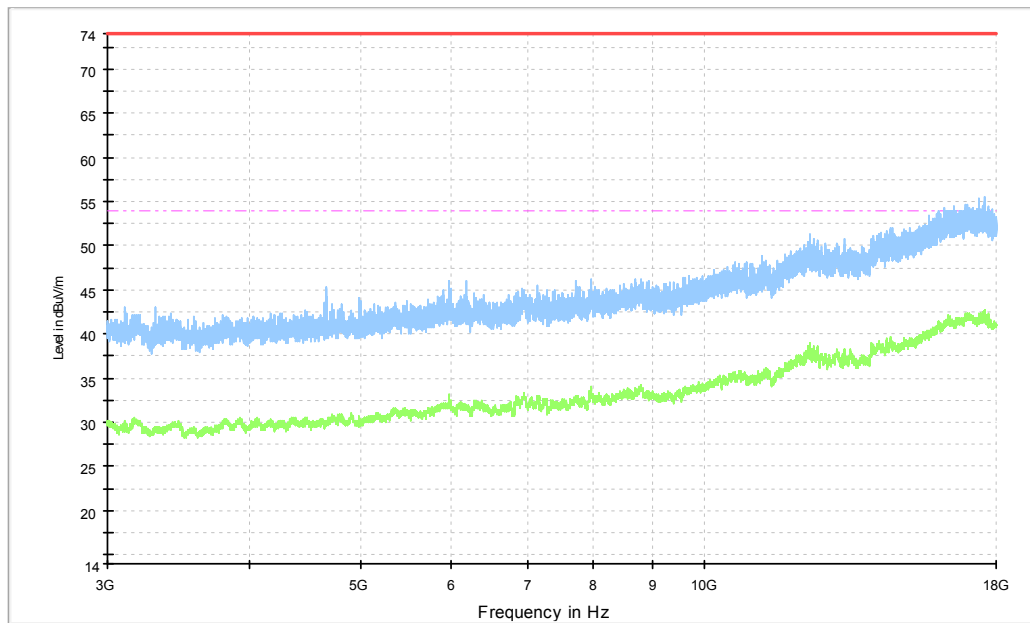


Figure A.18 Radiated Emission from 3GHz to 18GHz

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 (dB μ 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: $U=3.08\text{dB}$, $k=2$.

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

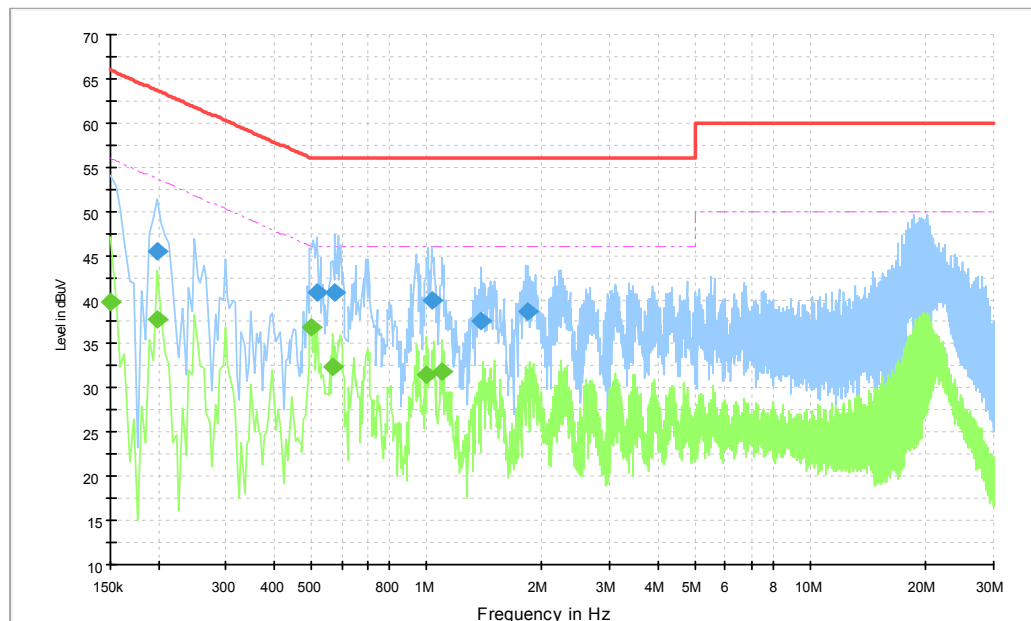


Figure A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.199500	45.5	3000.0	9.000	On	L1	19.9	18.1	63.6
0.519000	40.9	3000.0	9.000	On	N	19.9	15.1	56.0
0.577500	40.8	3000.0	9.000	On	N	19.8	15.2	56.0
1.027500	39.8	3000.0	9.000	On	N	19.7	16.2	56.0
1.392000	37.6	3000.0	9.000	On	L1	19.7	18.4	56.0
1.824000	38.7	3000.0	9.000	On	N	19.7	17.3	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	39.7	3000.0	9.000	On	N	19.8	16.3	56.0
0.199500	37.8	3000.0	9.000	On	N	19.9	15.8	53.6
0.501000	36.9	3000.0	9.000	On	N	19.9	9.1	46.0
0.568500	32.4	3000.0	9.000	On	N	19.8	13.6	46.0
1.000500	31.6	3000.0	9.000	On	N	19.7	14.4	46.0
1.099500	31.9	3000.0	9.000	On	N	19.7	14.1	46.0

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

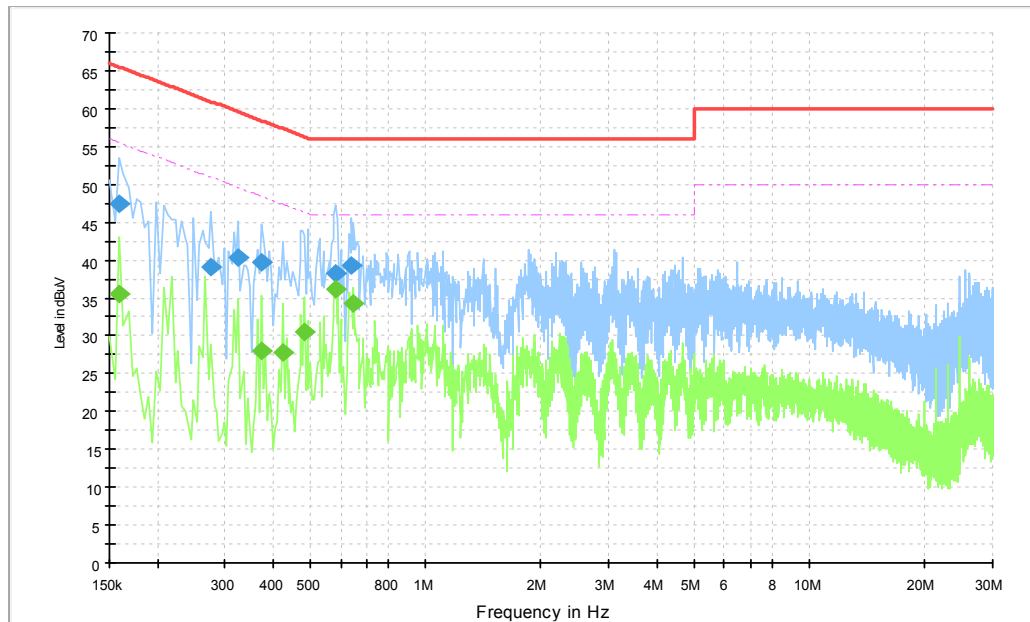


Figure A.20 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	47.4	3000.0	9.000	On	N	20.0	18.1	65.5
0.276000	39.0	3000.0	9.000	On	L1	19.9	21.9	60.9
0.325500	40.3	3000.0	9.000	On	L1	19.9	19.3	59.6
0.375000	39.8	3000.0	9.000	On	N	19.9	18.6	58.4
0.582000	38.2	3000.0	9.000	On	N	19.8	17.8	56.0
0.640500	39.3	3000.0	9.000	On	N	19.8	16.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.159000	35.5	3000.0	9.000	On	N	20.0	20.0	55.5
0.375000	28.1	3000.0	9.000	On	L1	19.9	20.3	48.4
0.424500	27.9	3000.0	9.000	On	L1	19.9	19.5	47.4
0.483000	30.5	3000.0	9.000	On	L1	19.9	15.8	46.3
0.582000	36.1	3000.0	9.000	On	L1	19.8	9.9	46.0
0.649500	34.3	3000.0	9.000	On	L1	19.8	11.7	46.0

EUT1 Charger3+Back Camera+GSM 850MHz idle Mode, Set.1-3

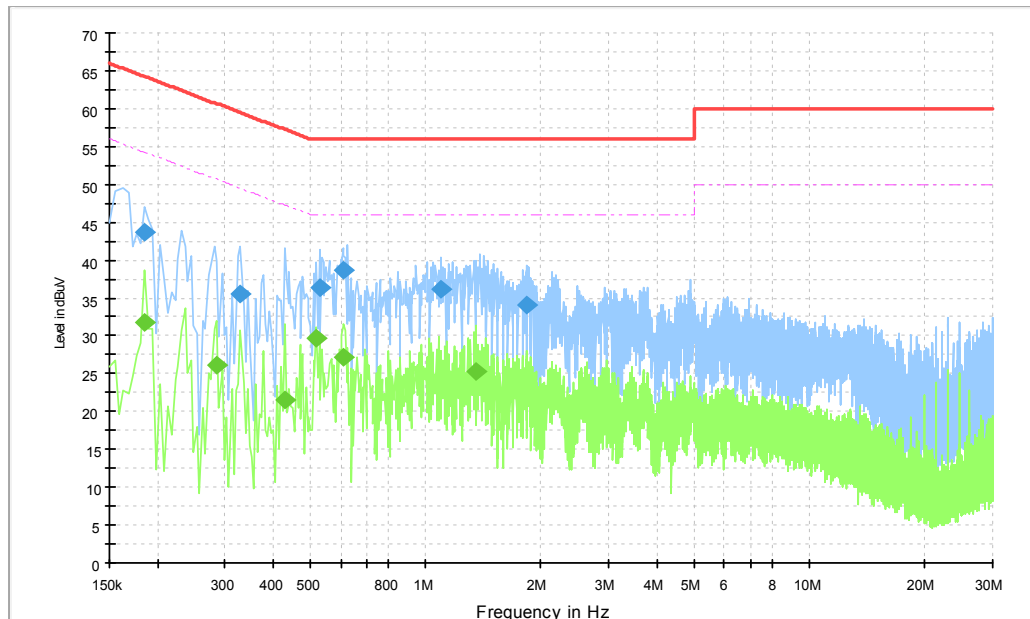


Figure A.21 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.186000	43.7	3000.0	9.000	On	N	20.0	20.5	64.2
0.330000	35.6	3000.0	9.000	On	L1	19.8	23.8	59.5
0.528000	36.4	3000.0	9.000	On	L1	19.8	19.6	56.0
0.609000	38.8	3000.0	9.000	On	L1	19.8	17.2	56.0
1.095000	36.1	3000.0	9.000	On	L1	19.7	19.9	56.0
1.842000	34.2	3000.0	9.000	On	N	19.7	21.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.186000	31.8	3000.0	9.000	On	L1	20.0	22.4	54.2
0.285000	26.1	3000.0	9.000	On	L1	19.9	24.6	50.7
0.429000	21.4	3000.0	9.000	On	L1	19.9	25.8	47.3
0.519000	29.7	3000.0	9.000	On	N	19.9	16.3	46.0
0.613500	27.2	3000.0	9.000	On	L1	19.8	18.8	46.0
1.351500	25.3	3000.0	9.000	On	L1	19.7	20.7	46.0

EUT1 Charger1+MP4 Mode, Set.2

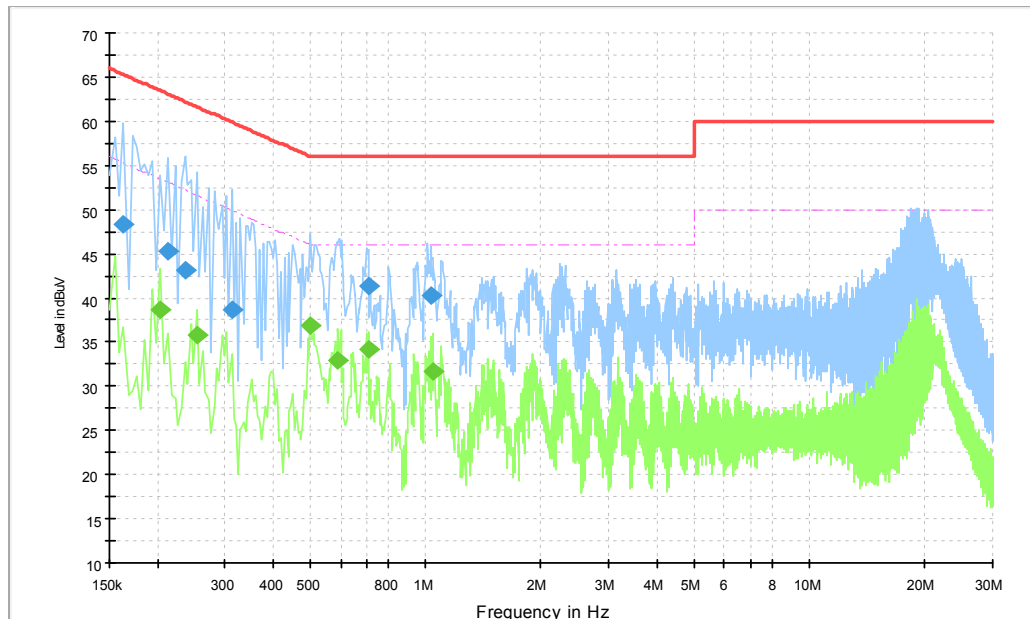


Figure A.22 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.163500	48.3	3000.0	9.000	On	N	20.0	17.0	65.3
0.213000	45.3	3000.0	9.000	On	N	19.9	17.7	63.1
0.235500	43.1	3000.0	9.000	On	N	19.9	19.2	62.3
0.312000	38.6	3000.0	9.000	On	N	19.9	21.3	59.9
0.708000	41.4	3000.0	9.000	On	N	19.8	14.6	56.0
1.032000	40.2	3000.0	9.000	On	N	19.7	15.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.204000	38.7	3000.0	9.000	On	N	19.9	14.8	53.4
0.253500	35.9	3000.0	9.000	On	N	19.8	15.8	51.6
0.501000	36.8	3000.0	9.000	On	N	19.9	9.2	46.0
0.591000	32.9	3000.0	9.000	On	N	19.8	13.1	46.0
0.708000	34.3	3000.0	9.000	On	N	19.8	11.7	46.0
1.041000	31.7	3000.0	9.000	On	N	19.7	14.3	46.0

EUT1 Charger1+FM Mode, Set.3

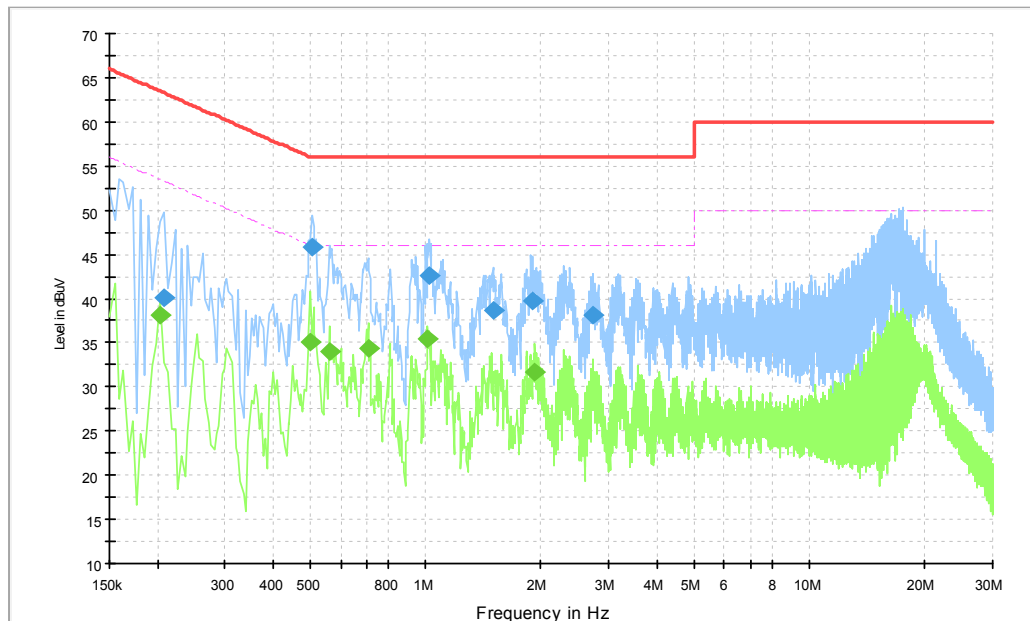


Figure A.23 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.208500	40.0	3000.0	9.000	On	L1	19.9	23.2	63.3
0.505500	45.9	3000.0	9.000	On	L1	19.9	10.1	56.0
1.023000	42.5	3000.0	9.000	On	L1	19.7	13.5	56.0
1.495500	38.7	3000.0	9.000	On	L1	19.7	17.3	56.0
1.896000	39.7	3000.0	9.000	On	L1	19.7	16.3	56.0
2.728500	38.1	3000.0	9.000	On	L1	19.6	17.9	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.204000	38.1	3000.0	9.000	On	N	19.9	15.4	53.4
0.501000	35.1	3000.0	9.000	On	L1	19.9	10.9	46.0
0.559500	34.0	3000.0	9.000	On	N	19.9	12.0	46.0
0.708000	34.3	3000.0	9.000	On	N	19.8	11.7	46.0
1.014000	35.5	3000.0	9.000	On	N	19.7	10.5	46.0
1.927500	31.7	3000.0	9.000	On	N	19.7	14.3	46.0

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

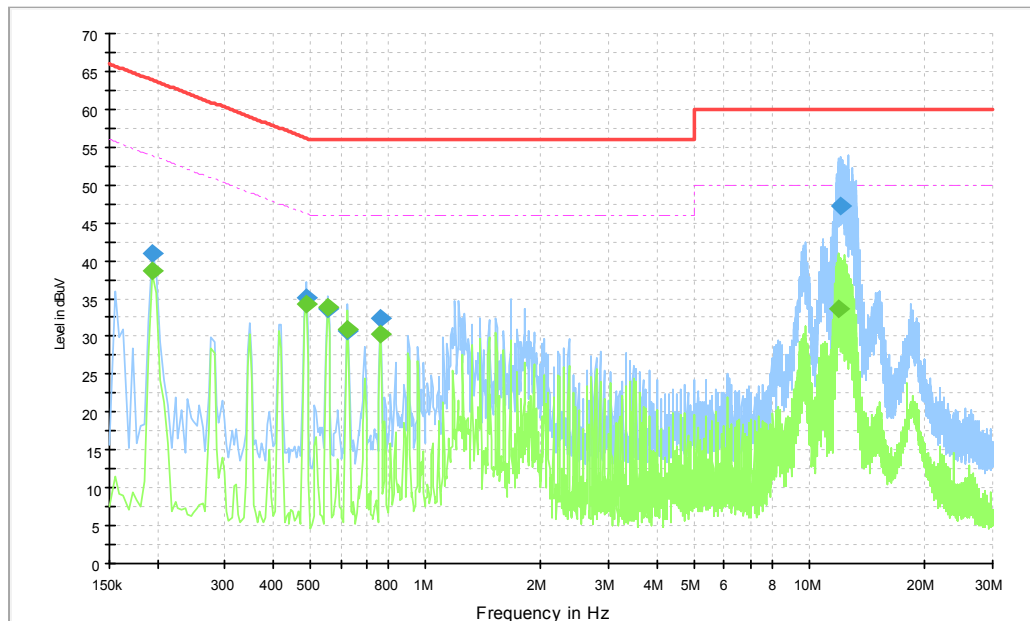


Figure A.24 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.195000	41.0	3000.0	9.000	On	L1	19.9	22.8	63.8
0.487500	35.1	3000.0	9.000	On	L1	19.9	21.1	56.2
0.555000	33.7	3000.0	9.000	On	L1	19.9	22.3	56.0
0.622500	30.7	3000.0	9.000	On	N	19.8	25.3	56.0
0.766500	32.4	3000.0	9.000	On	N	19.8	23.6	56.0
11.985000	47.2	3000.0	9.000	On	L1	19.8	12.8	60.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.195000	38.6	3000.0	9.000	On	L1	19.9	15.2	53.8
0.487500	34.3	3000.0	9.000	On	L1	19.9	11.9	46.2
0.555000	33.9	3000.0	9.000	On	N	19.9	12.1	46.0
0.622500	30.8	3000.0	9.000	On	N	19.8	15.2	46.0
0.762000	30.4	3000.0	9.000	On	N	19.8	15.6	46.0
11.967000	33.6	3000.0	9.000	On	L1	19.8	16.4	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*****