FCC 15B TEST REPORT

No. I21Z60727-EMC01

for

BLU Products,Inc.

Smart Phone

Model Name: B140DL

FCC ID: YHLBLUB140DL

with

Hardware Version: V1.0

Software Version: BLU_B140DL_V11.0.01.05.01.04_FSec

Issued Date: 2021-06-15

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.

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z60727-EMC01	Rev.0	1st edition	2021-06-15

CONTENTS

1. Test Laboratory

1.1. Testing Location

Location 1: CTTL(huayuan North Road)

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

1.2. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2021-06-01

Testing End Date: 2021-06-11

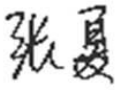
1.4. Signature

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:	BLU Products,Inc.
Address /Post:	10814 NW 33rd St # 100 Doral, FL 33172,USA
Contact:	Zeng wei
Email:	zwei@ctasiasz.com
Telephone:	305.715.7171
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2.2. Manufacturer Information

Company Name:	BLU Products,inc
Address /Post:	10814 NW 33rd St # 100 Doral, FL 33172,USA
Contact:	Zeng wei
Email:	zwei@ctasiasz.com
Telephone:	305.715.7171
Fax:	305.436.8819

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

3.1. About EUT

Description	Smart Phone
Model Name	B140DL
FCC ID	YHLBLUB140DL

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	353011720019744	V1.0	BLU_B140DL_V11.0.01.05.01.04_FSec

*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	Note
AE1	Battery	/	/
AE2	Charger	/	/
AE3	USB Cable	/	/
AE4	USB Cable	/	/
AE5	Headset	/	/

AE1

Model	PT34H406082J
Manufacturer	Ningbo Veken Battery Co., Ltd.
Capacitance	3310mAh
Nominal voltage	3.85V

AE2

Model	P101-BTC130-000
Manufacturer	Dong Guan City GangQi Electronic Co., Ltd.
Length of cable	/

AE3

Model	T365-011B
Manufacturer	Shenzhen Yihuaxing Electronics CO.,Ltd.
Length of cable	/88806-025

AE4

Model	88806-025
Manufacturer	Shenzhen Chuangyitong Technology Co., Ltd.
Length of cable	/

AE5

Model	Headset
Manufacturer	/
Length of cable	/

*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	EUT1+ AE1 + AE2+ AE3/AE4	Charger1
Set.2	EUT1+ AE1 + AE3/AE4+AE5	USB+FM

Note：

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM 850MHz,WCDMA Band5, LTE Bands 5/12/13/26/71. The measurement results showed here are worst cases of different bands.

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(huayuan North Road)**
2	Conducted Emission	15.107(a)	A.2	P	**CTTL(huayuan North Road)**

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI	100344	R&S	2022-02-23	1 year
2	LISN	ESH3-Z5	825562/028	R&S	2021-10-15	1 year
3	Universal Radio Communication Tester	CMW500	116588	R&S	2021-12-07	1 year
4	Signal Generator	SMBV100A	260613	R&S	2022-01-06	1 year
5	Test Receiver	ESU 26	100235	R&S	2022/02/23	1 Year
6	EMI Antenna	VULB 9163	483	SCHWARZBECK	2021/08/27	1 year
7	EMI Antenna	3115	6914	ETS-Lindgren	2022-02-03	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 Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V9.01.0	R&S
Conducted Emission	EMC32 V8.52.0	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 (charging mode) at distances of 10 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/1MHz	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：5.40dB, 1GHz-18GHz：4.32dB, *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:

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

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
55.802000	13.82	29.50	15.72	297.0	V	283.0
78.015000	12.33	29.50	17.21	125.0	V	-25.0
141.938000	10.23	33.10	22.83	121.0	V	-9.0
146.982000	9.63	33.10	23.43	219.0	V	-9.0
154.354000	9.38	33.10	23.68	125.0	V	20.0
476.879000	15.00	35.60	20.56	336.0	V	291.0

EUT1 Charger + Back Camera +GSM 850MHz idle Mode/Average detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17983.000	47.9	-29.1	46.7	30.298	H	54	6.1
17975.633	47.2	-29.1	46.7	29.601	H	54	6.8
17986.400	47.2	-29.1	46.7	29.598	V	54	6.8
17873.633	47.0	-29.4	46.0	30.439	V	54	7.0
17974.500	46.9	-29.1	46.7	29.301	V	54	7.1
17961.467	46.8	-29.1	46.7	29.201	H	54	7.2

EUT1 Charger + Back Camera +GSM 850MHz idle Mode/Peak detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17938.233	56.0	-29.4	46.7	38.739	V	74	18.0
17952.400	55.8	-28.9	46.7	38.083	V	74	18.2
17960.333	55.8	-29.1	46.7	38.201	H	74	18.2
17980.733	55.8	-29.1	46.7	38.198	V	74	18.2
17990.933	55.7	-29.1	46.7	38.098	H	74	18.3
17955.233	55.6	-28.9	46.7	37.883	V	74	18.4

Measurement results for Set.1:

EUT1 Charger+MP4 Mode/QP detector

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
55.220000	13.99	29.50	15.55	345.0	V	271.0
78.015000	11.95	29.50	17.59	121.0	V	-23.0
90.722000	11.64	33.10	21.42	125.0	V	276.0
141.162000	9.33	33.10	23.73	125.0	V	30.0
175.985000	9.04	33.10	24.02	102.0	V	92.0
253.585000	9.99	35.60	25.57	125.0	V	109.0

EUT1 Charger+MP4 Mode/Average detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17986.400	47.2	-29.1	46.7	29.598	V	54	6.8
17990.933	47.1	-29.1	46.7	29.498	V	54	6.9
17896.867	47.0	-29.5	46.0	30.580	V	54	7.0
17992.633	47.0	-29.1	46.7	29.398	V	54	7.0
17939.367	46.8	-29.4	46.7	29.539	V	54	7.2
17948.433	46.7	-28.9	46.7	28.983	H	54	7.3

EUT1 Charger+MP4 Mode/Peak detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17852.667	56.2	-29.3	46.0	39.582	H	74	17.8
17956.933	56.2	-28.9	46.7	38.483	V	74	17.8
17969.967	55.7	-29.1	46.7	38.101	H	74	18.3
17948.433	55.6	-28.9	46.7	37.883	H	74	18.4
17981.867	55.4	-29.1	46.7	37.798	H	74	18.6
17984.133	55.3	-29.1	46.7	37.698	H	74	18.7

Measurement results for Set.2:

EUT1 USB + FM Mode/QP detector

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
31.164000	25.02	29.50	4.52	125.0	V	277.0
32.037000	21.28	29.50	8.26	111.0	V	247.0
71.904000	18.89	29.50	10.65	103.0	V	198.0
167.934000	17.36	33.10	15.70	103.0	V	69.0
216.046000	23.50	35.60	12.06	125.0	V	13.0
495.600000	24.95	35.60	10.61	227.0	V	30.0

EUT1 USB+FM Mode/Average detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17976.767	48.1	-29.1	46.7	30.501	H	54	5.9
17967.700	47.3	-29.1	46.7	29.701	H	54	6.7
17985.833	47.2	-29.1	46.7	29.598	V	54	6.8
17966.000	47.1	-29.1	46.7	29.501	H	54	6.9
17963.733	47.0	-29.1	46.7	29.401	H	54	7.0
17941.633	46.8	-28.9	46.7	29.083	V	54	7.2

EUT1 USB+FM Mode/Peak detector

Frequency (MHz)	Result (dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dBμV)	Polarity	Limit (dBμV/m)	Margin (dB)
17964.867	56.8	-29.1	46.7	39.201	V	74	17.2
17978.467	56.7	-29.1	46.7	39.101	V	74	17.3
17972.233	56.0	-29.1	46.7	38.401	V	74	18.0
17998.867	55.9	-29.1	46.7	38.298	V	74	18.1
17960.333	55.9	-29.1	46.7	38.301	H	74	18.1
17963.733	55.6	-29.1	46.7	38.001	V	74	18.4

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

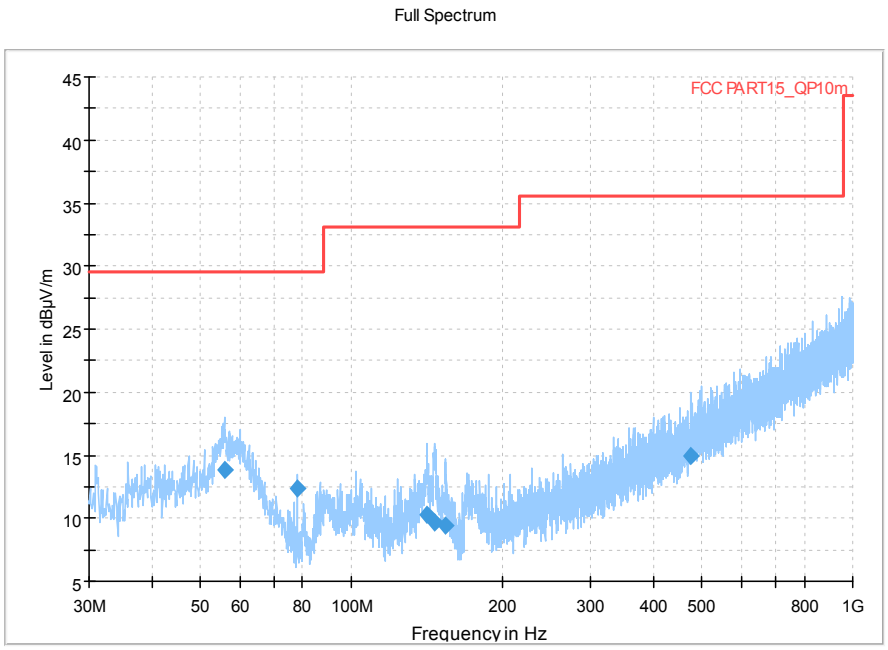

Figure A.1 Radiated Emission from 30MHz to 1GHz

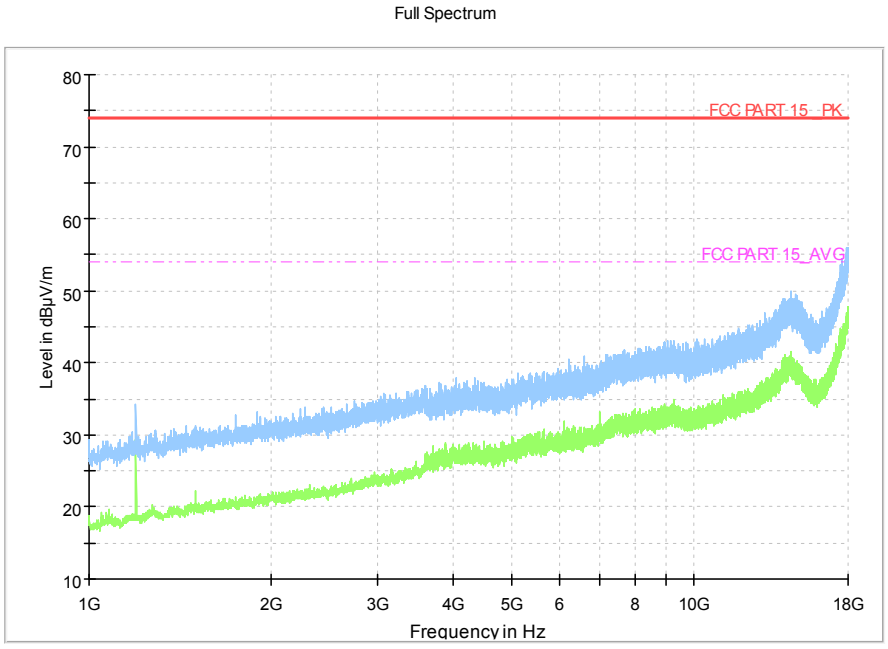

Figure A.2 Radiated Emission from 1GHz to 18GHz

EUT1 Charger+MP4 Mode, Set.1

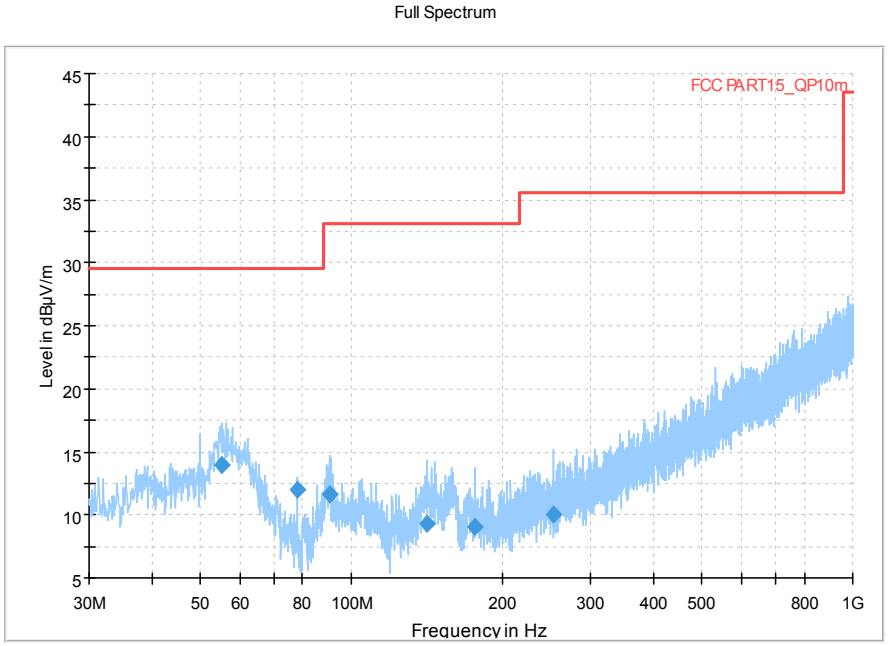

Figure A.3 Radiated Emission from 30MHz to 1GHz

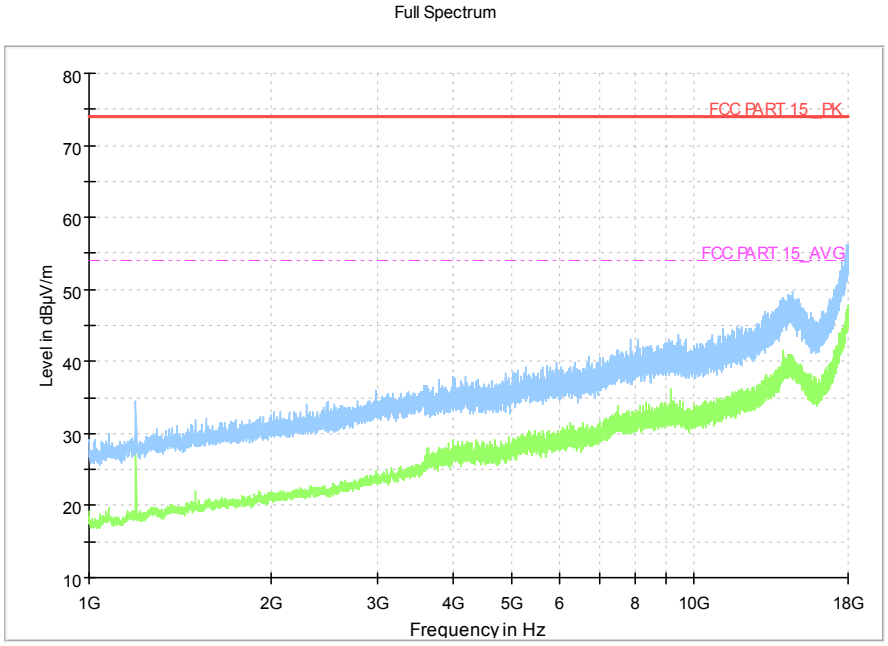

Figure A.4 Radiated Emission from 1GHz to 18GHz

EUT1 USB+FM Mode, Set.2

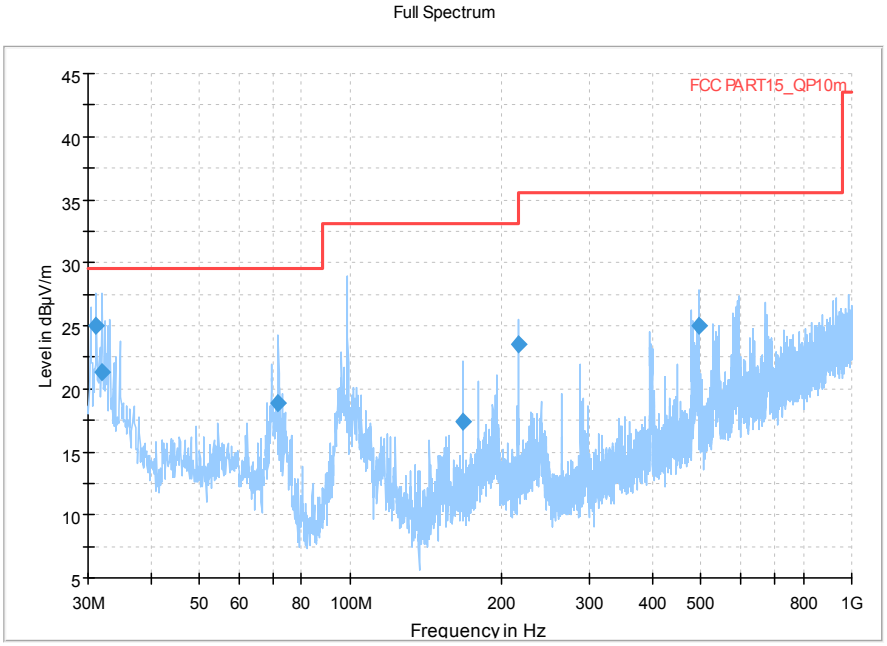

Figure A.5 Radiated Emission from 30MHz to 1GHz

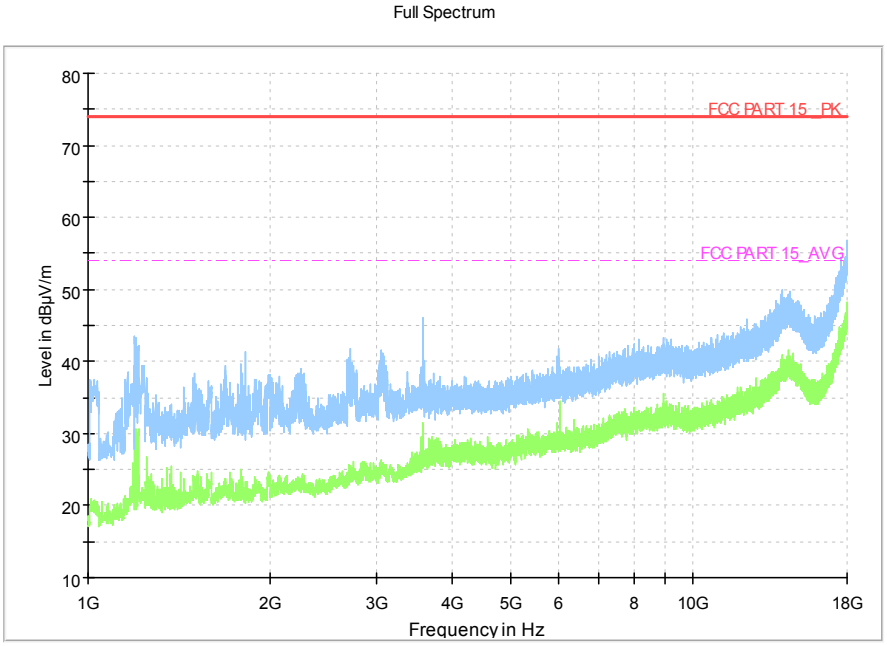

Figure A.6 Radiated Emission from 1GHz to 18GHz

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. During the test MS is connected to a charger in the case of charging 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*=3.10dB, *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 Charger+Back Camera+GSM 850MHz Idle Mode, Set.1

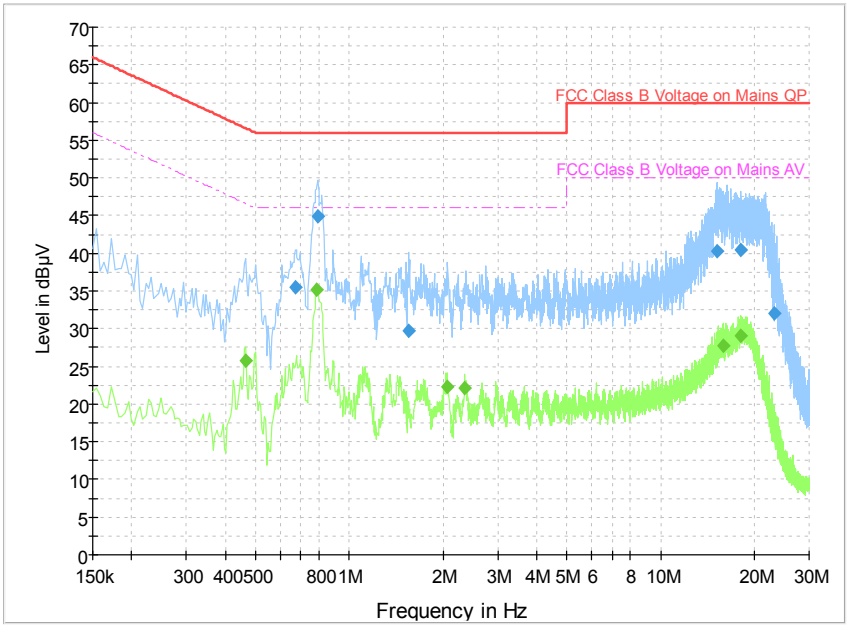

Figure A.10 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.672000	35.5	GND	L1	9.9	20.5	56.0
0.793500	44.9	GND	N	10.0	11.1	56.0
1.549500	29.6	GND	L1	10.0	26.4	56.0
15.162000	40.4	GND	N	11.4	19.6	60.0
18.024000	40.5	GND	L1	11.8	19.5	60.0
23.280000	32.1	GND	L1	12.3	27.9	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.465000	25.7	GND	N	10.0	20.9	46.6
0.784500	35.2	GND	L1	10.0	10.8	46.0
2.062500	22.3	GND	N	10.0	23.7	46.0
2.350500	22.1	GND	L1	10.1	23.9	46.0
15.913500	27.8	GND	L1	11.5	22.2	50.0
18.136500	29.1	GND	L1	11.8	20.9	50.0

EUT1 Charger+MP4 Mode, Set.1

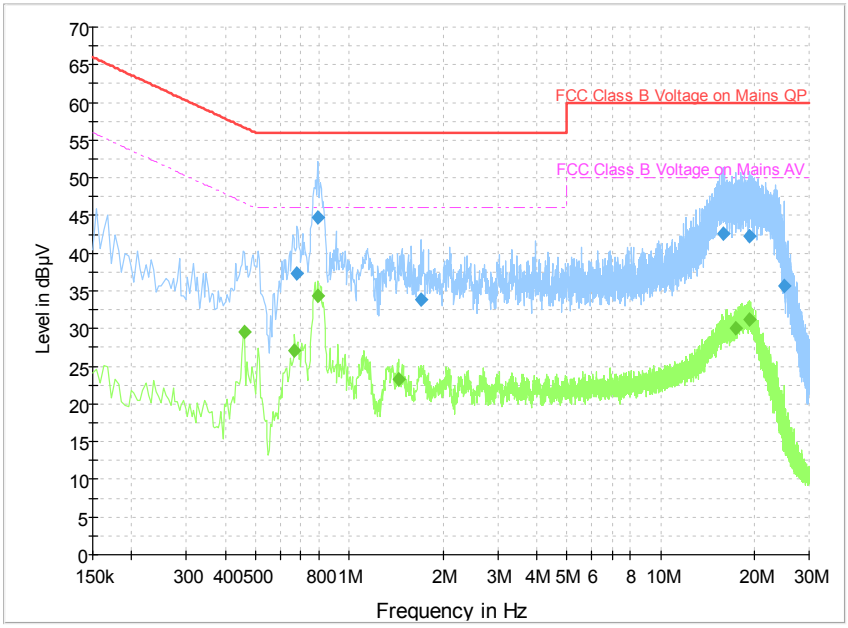

Figure A.11 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.681000	37.4	GND	N	9.9	18.6	56.0
0.793500	44.8	GND	N	10.0	11.2	56.0
1.702500	33.8	GND	L1	10.0	22.2	56.0
15.855000	42.6	GND	L1	11.5	17.4	60.0
19.261500	42.3	GND	N	11.9	17.7	60.0
24.868500	35.7	GND	N	12.2	24.3	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.460500	29.5	GND	L1	10.0	17.2	46.7
0.667500	27.1	GND	L1	9.9	19.0	46.0
0.793500	34.3	GND	L1	10.0	11.7	46.0
1.441500	23.3	GND	L1	10.0	22.7	46.0
17.430000	30.0	GND	L1	11.7	20.0	50.0
19.234500	31.1	GND	N	11.9	18.9	50.0

EUT1 USB+FM Mode, Set.2

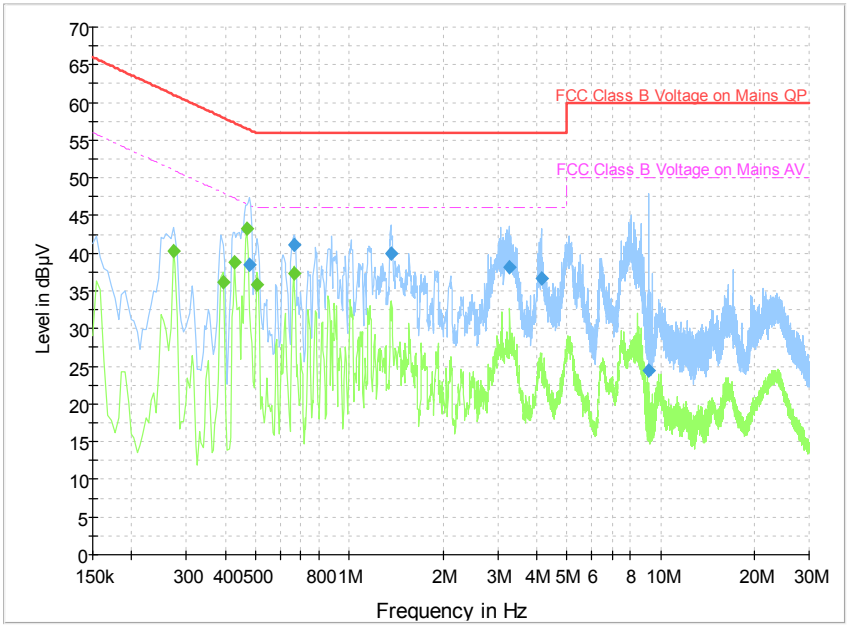

Figure A.12 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.478500	38.4	GND	N	10.0	17.9	56.4
0.663000	41.2	GND	L1	9.9	14.8	56.0
1.360500	39.9	GND	L1	10.0	16.1	56.0
3.255000	38.1	GND	L1	10.0	17.9	56.0
4.137000	36.7	GND	L1	10.1	19.3	56.0
9.150000	24.4	GND	L1	10.5	35.6	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.271500	40.3	GND	N	10.0	10.8	51.1
0.393000	36.2	GND	L1	10.0	11.8	48.0
0.429000	38.7	GND	L1	10.0	8.5	47.3
0.469500	43.3	GND	L1	10.0	3.2	46.5
0.505500	35.9	GND	L1	10.0	10.1	46.0
0.663000	37.4	GND	L1	9.9	8.6	46.0

ANNEX B: Persons involved in this testing

Test Item	Tester
Conducted Continuous Emission	Li Pengfei,Zhang Tianli
Radiated Continuous Emission	Yang Mengke

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