FCC 15B TEST REPORT

No. I20Z60571-EMC01

for

Client name: Shenzhen Tinno Mobile Technology Corp.

Product name: U318AA

Model name: Smart phone

With

FCC ID: XD6U318AA

Hardware Version: V1.0

Software Version: U318AAV01.14.11

Issued Date: 2020-06-03

Note:

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

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

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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

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

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

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I20Z60571-EMC01	Rev.0	1st edition	2020-05-25
I20Z60571-EMC01	Rev.1	Add the conversion formula in P12	2020-06-03
I20Z60571-EMC01	Rev.2	Delete the FM describe in P12	2020-06-04

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

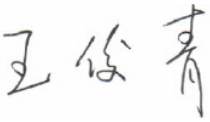
Testing Start Date: 2020-02-27

Testing End Date: 2020-03-06

1.4. Signature

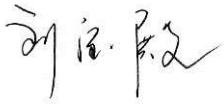
Zhang Ying

(Prepared this test report)



Wang Junqing

(Reviewed this test report)



Liu Baodian

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address:	4/F, H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan East Road, Nan Shan District,Shenzhen, P.R.China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-86095550
Fax:	/

2.2. Manufacturer Information

Company Name:	Shenzhen Tinno Mobile Technology Corp.
Address:	4/F, H-3 Building,OCT Eastern Industrial Park. NO.1 XiangShan East Road, Nan Shan District,Shenzhen, P.R.China
City:	Shenzhen
Postal Code:	/
Country:	China
Telephone:	0755-86095550
Fax:	/

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

3.1. About EUT

Description	Smart phone
Model Name	U318AA
FCC ID	XD6U318AA

This device contains the receivers which tune and operate between 30MHz-960MHz in the following bands:
GSM850MHz, WCDMA850MHz, LTE bands 5/12/14.

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
EUT5	864862040015529	V1.0	U318AAV01.14.11

*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	Battery	/	/
AE2	Charger	/	/
AE3	Charger	/	/
AE4	USB Cable	/	/
AE5	USB Cable	/	/

AE1

Model	LT25H426271B
Manufacturer	Shenzhen BYD Lithium Battery Company Limited
Capacitance	2500mAh
Nominal voltage	3.85 V

AE2

Model	TN-050100U6
Manufacturer	Guangdong Beicom Electronics Co.,Ltd
Length of cable	/

AE3

Model	TN-050100U6
Manufacturer	Dong Guan City GangQi Electronic Co.,Ltd.
Length of cable	/

AE4

Model	P103-BP6130-010/ STN-A108A
Manufacturer	/
Length of cable	/

AE5

Model	P103-BP6130-020/336366
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.5-1	EUT5 + AE1 + AE2 + AE4	Charger
Set.5-2	EUT5 + AE1 + AE3 + AE4	Charger
Set.5-3	EUT5 + AE1 + AE4	USB
Set.5-4	EUT5 + AE1 + AE5	USB

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	10-1-16 Edition
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

Semi-anechoic chamber SAC-2 (10 meters×6.7meters×6.1meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 1Ω
Normalised site attenuation (NSA)	< ±4 dB, 3 m 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 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
Location Column	1/2/4	The test is performed in test location 1/2/4 which is described in section 1.1 of this report

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

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI 3	100344	Rohde & Schwarz	2021-02-26	1 year
2	LISN	ESH3-Z5	825562	Rohde & Schwarz	2020-10-05	1 year
3	EMI Antenna	VULB 9163	483	Schwarzbeck	2020-09-17	1 year
4	EMI Antenna	3117	00139065	ETS-Lindgren	2020-11-15	1 year
6	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
7	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
8	Keyboard	L100	CN0RH659658907ATOI40	DELL	N/A	N/A
9	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A
12	Test Receiver	ESU26	100235	Rohde & Schwarz	2021-03-05	1 year

Location 1: CTTL(huayuan North Road)

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 2.2, 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.

Measurement results for Set.5-1:

Charging and GSM850MHz idle QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
18000.000	55.4	-45.6	44.5	56.5	74.0	H
17996.600	55.2	-17.7	45.6	27.3	74.0	H
17988.667	55.1	-17.7	45.6	27.2	74.0	V
17998.867	54.7	-17.7	45.6	26.8	74.0	H
17977.333	54.7	-17.7	45.6	26.8	74.0	H
17895.167	54.6	-18.5	45.6	27.5	74.0	H

Charging and GSM850MHz idle Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17962.033	46.5	-17.7	45.6	18.6	54.0	H
17995.467	46.1	-17.7	45.6	18.2	54.0	H
17993.200	46.1	-17.7	45.6	18.2	54.0	V
18000.000	46.0	-45.6	44.5	47.1	54.0	H
17963.167	45.9	-17.7	45.6	18.0	54.0	H
17993.767	45.8	-17.7	45.6	17.9	54.0	H

Charging and WCDMA band 5 idle QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17986.967	55.3	-17.7	45.6	27.4	74.0	H
17979.600	55.0	-17.7	45.6	27.1	74.0	H
17992.067	54.2	-17.7	45.6	26.3	74.0	V
17878.167	54.1	-18.5	45.6	27.0	74.0	H
17986.400	54.0	-17.7	45.6	26.1	74.0	H
17963.733	54.0	-17.7	45.6	26.1	74.0	H

Charging and WCDMA band 5 idle Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17979.033	46.3	-17.7	45.6	18.4	54.0	H
17967.700	46.2	-17.7	45.6	18.3	54.0	H
17996.600	46.0	-17.7	45.6	18.1	54.0	V
17877.033	46.0	-18.5	45.6	18.9	54.0	H
17871.933	45.8	-18.5	45.6	18.7	54.0	H
17985.833	45.8	-17.7	45.6	17.9	54.0	H

Charging and LTE Band 5 idle QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17984.133	54.9	-17.7	45.6	27.0	74.0	H
17986.967	54.8	-17.7	45.6	26.9	74.0	H
17980.167	54.7	-17.7	45.6	26.8	74.0	V
17995.467	54.6	-17.7	45.6	26.7	74.0	H
17998.867	54.5	-17.7	45.6	26.6	74.0	H
18000.000	54.5	-45.6	44.5	55.6	74.0	H

Charging and LTE Band 5 idle Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17984.133	46.2	-17.7	45.6	18.3	54.0	H
17996.600	46.0	-17.7	45.6	18.1	54.0	H
17969.400	45.9	-17.7	45.6	18.0	54.0	V
17991.500	45.9	-17.7	45.6	18.0	54.0	H
17993.200	45.8	-17.7	45.6	17.9	54.0	H
17992.633	45.8	-17.7	45.6	17.9	54.0	H

Charging and LTE Band 12 idle QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
18000.000	55.6	-45.6	44.5	56.7	74.0	H
17990.933	55.2	-17.7	45.6	27.3	74.0	H
17993.200	54.8	-17.7	45.6	26.9	74.0	V
17988.667	54.7	-17.7	45.6	26.8	74.0	H
17975.067	54.6	-17.7	45.6	26.7	74.0	H
17871.367	54.4	-18.5	45.6	27.3	74.0	H

Charging and LTE Band 12 idle Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17981.867	46.8	-17.7	45.6	18.9	54.0	H
17989.800	46.2	-17.7	45.6	18.3	54.0	H
17897.433	45.8	-18.5	45.6	18.7	54.0	V
17962.600	45.8	-17.7	45.6	17.9	54.0	H
17970.533	45.7	-17.7	45.6	17.8	54.0	H
17825.467	45.6	-18.5	45.6	18.5	54.0	H

Charging and LTE Band 14 idle QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17956.933	54.6	-17.7	45.6	26.7	74.0	H
17969.400	54.5	-17.7	45.6	26.6	74.0	H
17952.400	54.2	-17.7	45.6	26.3	74.0	V
17986.400	54.1	-17.7	45.6	26.2	74.0	H
17997.167	54.0	-17.7	45.6	26.1	74.0	H
17899.700	54.0	-18.5	45.6	26.9	74.0	H

Charging and LTE Band 14 idle Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17997.167	46.7	-17.7	45.6	18.8	54.0	H
17994.900	46.6	-17.7	45.6	18.7	54.0	H
17969.400	46.3	-17.7	45.6	18.4	54.0	V
17999.433	46.2	-17.7	45.6	18.3	54.0	H
17975.633	45.9	-17.7	45.6	18.0	54.0	H
17985.267	45.9	-17.7	45.6	18.0	54.0	H

Charging and Rear Camera QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17995.467	55.9	-17.7	45.6	28.0	74.0	H
17985.267	55.3	-17.7	45.6	27.4	74.0	H
17992.633	55.0	-17.7	45.6	27.1	74.0	V
17873.067	55.0	-18.5	45.6	27.9	74.0	H
17989.800	55.0	-17.7	45.6	27.1	74.0	H
17993.200	54.7	-17.7	45.6	26.8	74.0	H

Charging and Rear Camera Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17962.033	46.5	-17.7	45.6	18.6	54.0	H
17995.467	46.1	-17.7	45.6	18.2	54.0	H
17993.200	46.1	-17.7	45.6	18.2	54.0	V
18000.000	46.0	-45.6	44.5	47.1	54.0	H
17963.167	45.9	-17.7	45.6	18.0	54.0	H
17993.767	45.8	-17.7	45.6	17.9	54.0	H

Measurement results for Set.5-2:

Charging and Front Camera QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17980.733	54.7	-17.7	45.6	26.8	74.0	H
17878.733	54.1	-18.5	45.6	27.0	74.0	H
17980.167	54.0	-17.7	45.6	26.1	74.0	V
17985.833	53.9	-17.7	45.6	26.0	74.0	H
17999.433	53.8	-17.7	45.6	25.9	74.0	H
17976.200	53.8	-17.7	45.6	25.9	74.0	H

Charging and Front Camera Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17878.733	47.5	-18.5	45.6	20.4	54.0	H
17993.767	46.7	-17.7	45.6	18.8	54.0	H
17965.433	46.4	-17.7	45.6	18.5	54.0	V
17996.033	46.3	-17.7	45.6	18.4	54.0	H
17998.867	46.1	-17.7	45.6	18.2	54.0	H
17997.167	45.8	-17.7	45.6	17.9	54.0	H

Measurement results for Set.5-3:

USB /QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17892.333	54.7	-18.5	45.6	27.6	74.0	H
1500.933	54.5	-40.3	25.3	69.5	74.0	H
17976.200	54.2	-17.7	45.6	26.3	74.0	V
17991.500	54.1	-17.7	45.6	26.2	74.0	H
18000.000	53.9	-45.6	44.5	55.0	74.0	H
17983.567	53.9	-17.7	45.6	26.0	74.0	H

USB /Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
2991.833	48.4	-38.6	28.9	58.1	54.0	H
1500.933	48.2	-40.3	25.3	63.2	54.0	H
17989.800	46.5	-17.7	45.6	18.6	54.0	V
17994.900	46.0	-17.7	45.6	18.1	54.0	H
17984.700	45.8	-17.7	45.6	17.9	54.0	H
17945.033	45.7	-17.7	45.6	17.8	54.0	H

Measurement results for Set.5-4:

USB /QP detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17992.633	54.7	-17.7	45.6	26.8	74.0	H
17983.000	54.6	-17.7	45.6	26.7	74.0	H
17980.167	54.5	-17.7	45.6	26.6	74.0	V
3583.433	54.4	-37.4	32.1	59.7	74.0	H
17884.400	54.2	-18.5	45.6	27.1	74.0	H
17994.333	54.1	-17.7	45.6	26.2	74.0	H

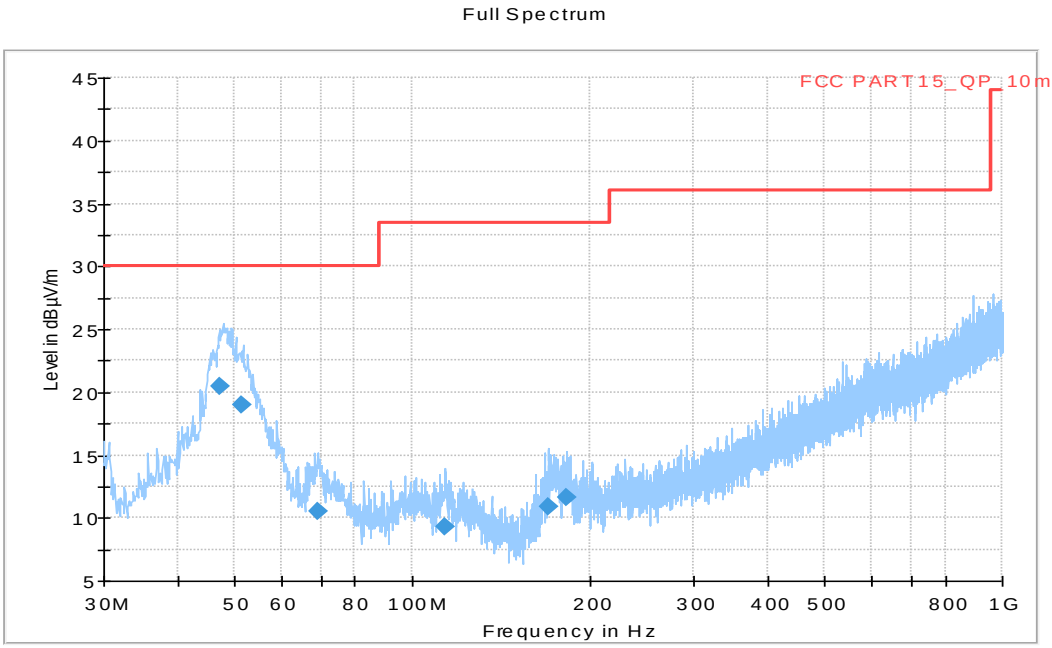
USB /Average detector

Frequency (MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dB μ V/m)	Limit (dBμV/m)	Polarity
17998.300	46.8	-17.7	45.6	18.9	54.0	H
17979.033	46.5	-17.7	45.6	18.6	54.0	H
17987.533	46.3	-17.7	45.6	18.4	54.0	V
17993.767	46.0	-17.7	45.6	18.1	54.0	H
17977.333	45.9	-17.7	45.6	18.0	54.0	H
17964.300	45.7	-17.7	45.6	17.8	54.0	H

Sample calculation: Peak detector, 17998.300 MHz

Result =P_{Mea} (18.9dBμV)+ G_A (45.6dB/m)+ G_{PL}(-17.7 dB) =46.8dBμV/m

Charging and GSM850MHz idle Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.151000	20.44	30.00	9.56	1000.0	120.000	125.0	V	68.0
51.271000	19.00	30.00	11.00	1000.0	120.000	119.0	V	97.0
69.008000	10.47	30.00	19.53	1000.0	120.000	103.0	V	176.0
113.725000	9.31	33.50	24.21	1000.0	120.000	117.0	V	-29.0
170.419000	10.90	33.50	22.62	1000.0	120.000	111.0	V	150.0
183.029000	11.65	33.50	21.87	1000.0	120.000	178.0	V	1.0

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

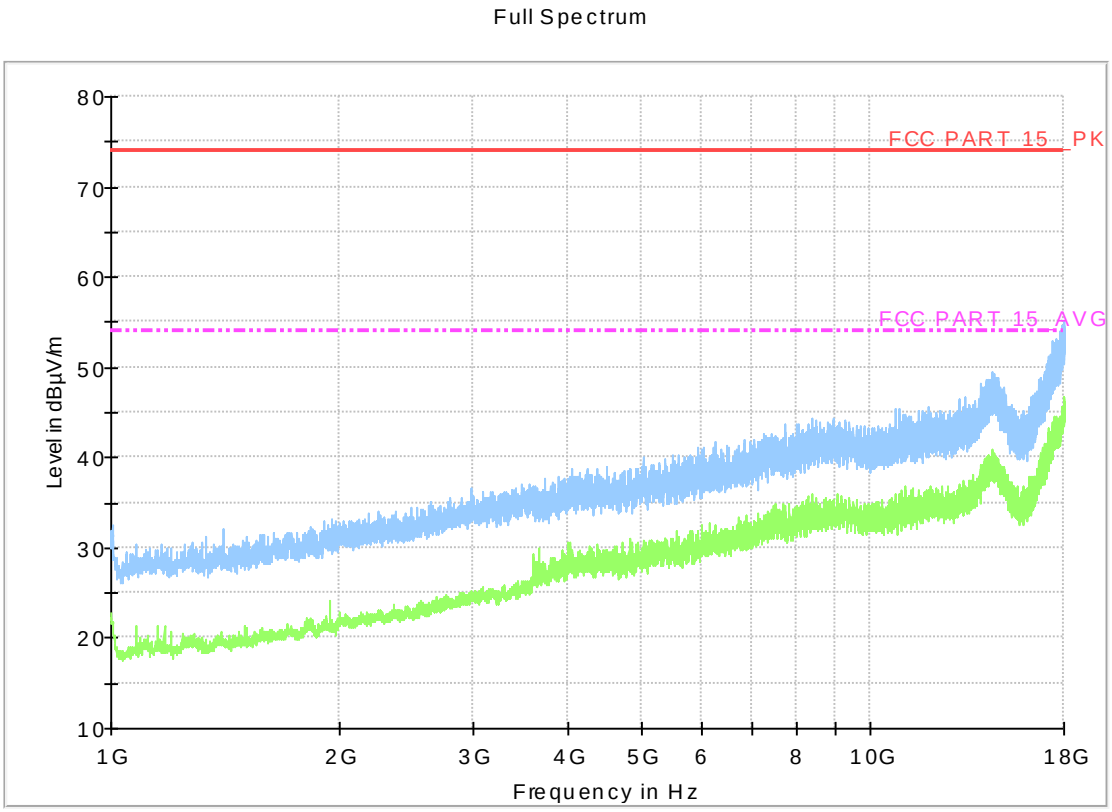
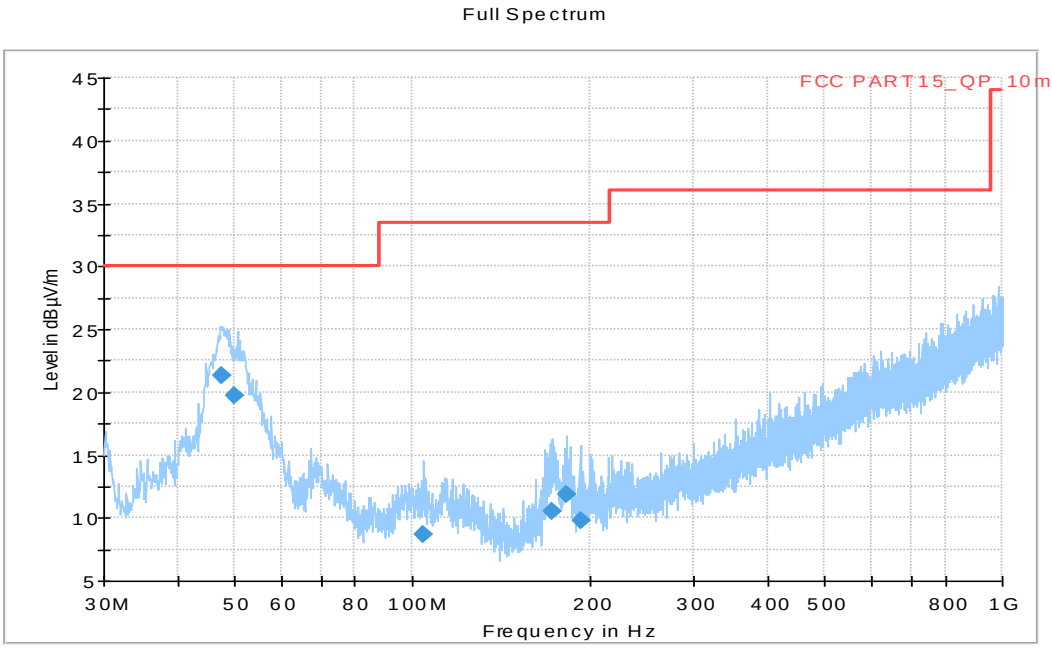


Figure A.2 Radiated Emission from 1GHz to 18GHz

Charging and WCDMA band 5 idle Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.594000	21.38	30.00	8.62	1000.0	120.000	125.0	V	30.0
49.964000	19.73	30.00	10.27	1000.0	120.000	108.0	V	272.0
104.270000	8.70	33.50	24.82	1000.0	120.000	282.0	V	210.0
172.802000	10.53	33.50	22.99	1000.0	120.000	210.0	V	107.0
183.001000	11.85	33.50	21.67	1000.0	120.000	112.0	V	-30.0
193.089000	9.84	33.50	23.68	1000.0	120.000	125.0	V	-28.0

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

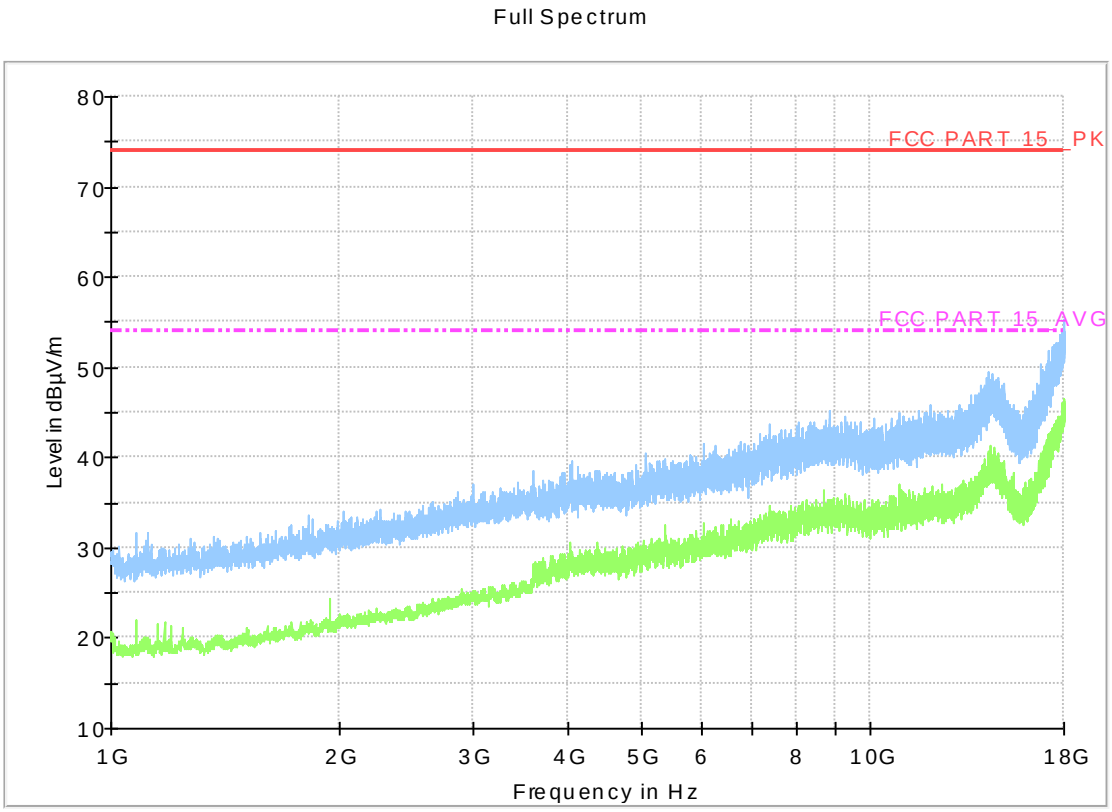
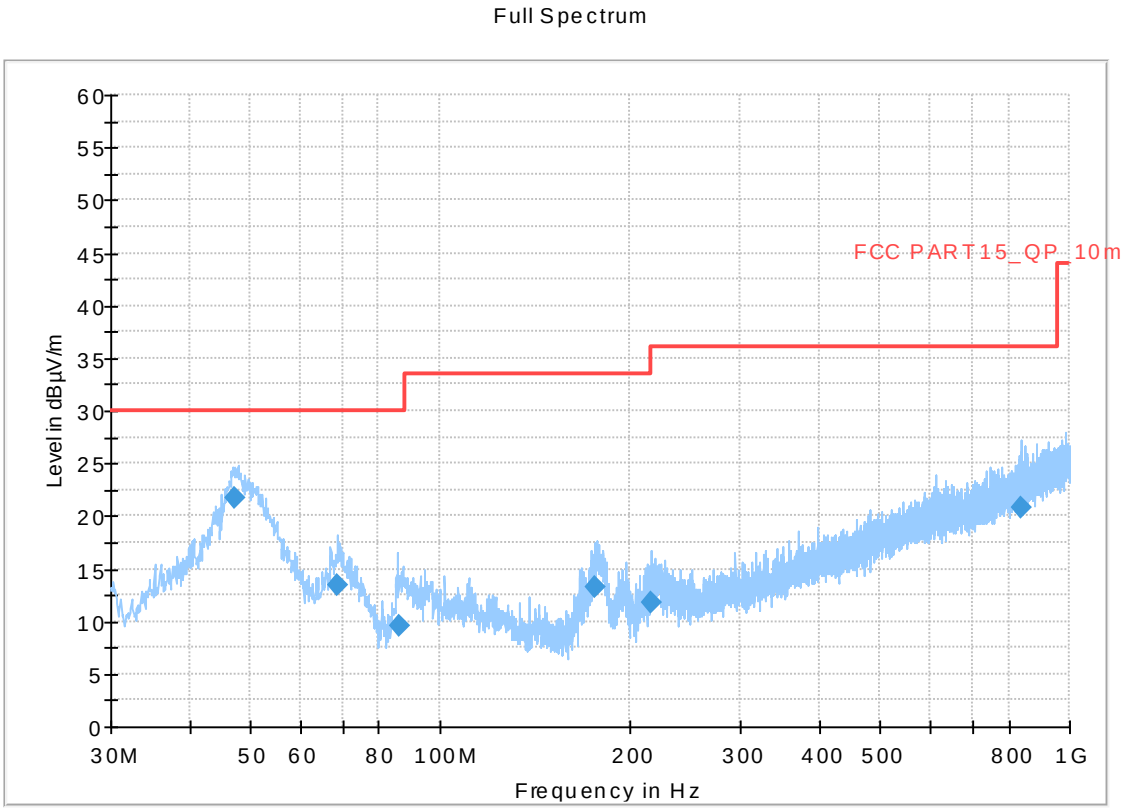


Figure A.4 Radiated Emission from 1GHz to 18GHz

Charging and LTE Band 5 idle Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.271000	21.66	30.00	8.34	1000.0	120.000	125.0	V	280.0
68.883000	13.42	30.00	16.58	1000.0	120.000	220.0	V	210.0
86.278000	9.56	30.00	20.44	1000.0	120.000	383.0	V	184.0
175.851000	13.31	33.50	20.21	1000.0	120.000	117.0	V	3.0
217.002000	11.76	36.00	24.26	1000.0	120.000	108.0	V	115.0
836.634000	20.76	36.00	15.26	1000.0	120.000	125.0	V	300.0

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

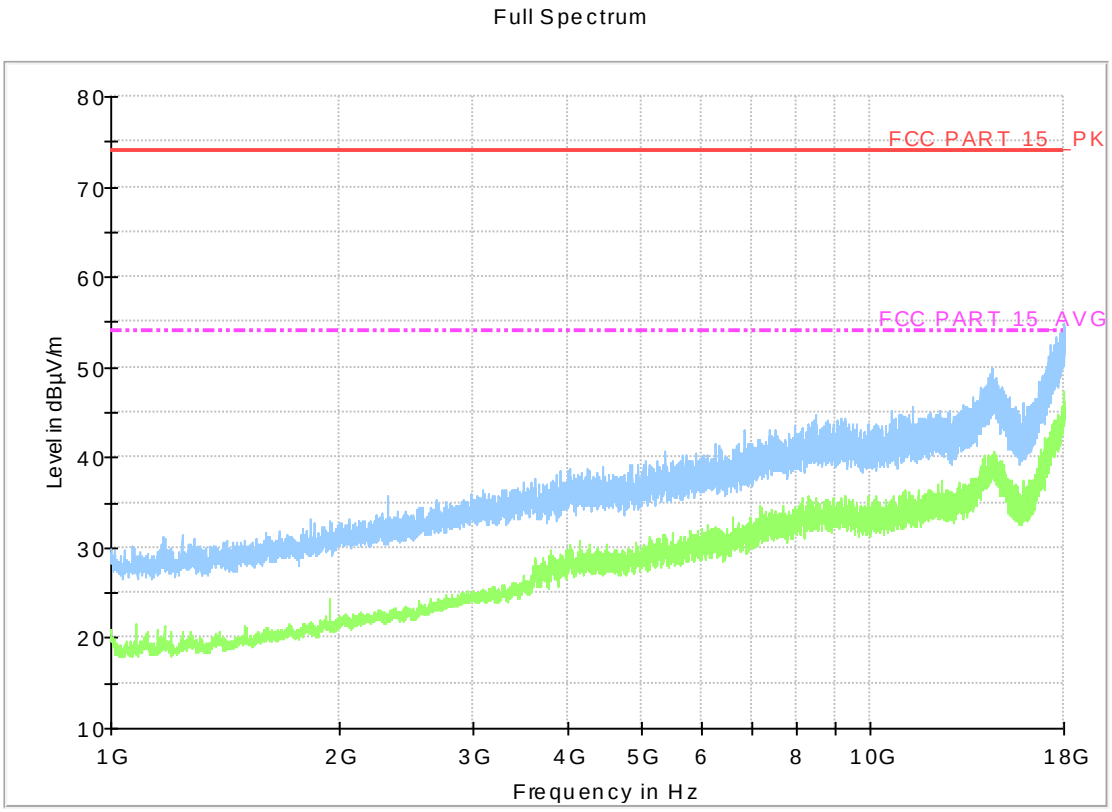
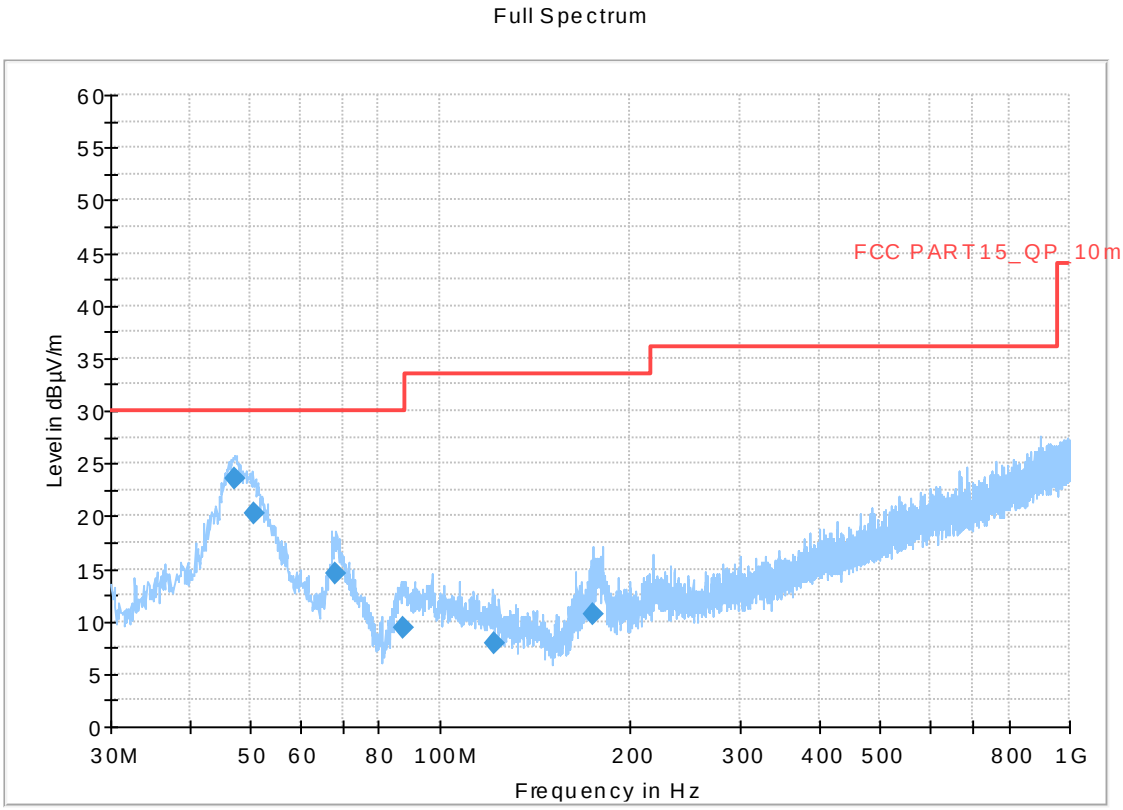


Figure A.6 Radiated Emission from 1GHz to 18GHz

Charging and LTE Band 12 idle Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.289000	23.49	30.00	6.51	1000.0	120.000	375.0	V	4.0
50.587000	20.22	30.00	9.78	1000.0	120.000	100.0	V	-3.0
68.232000	14.52	30.00	15.48	1000.0	120.000	100.0	V	-24.0
87.549000	9.40	30.00	20.60	1000.0	120.000	304.0	V	-23.0
121.873000	7.87	33.50	25.65	1000.0	120.000	125.0	V	0.0
175.329000	10.59	33.50	22.93	1000.0	120.000	125.0	V	102.0

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

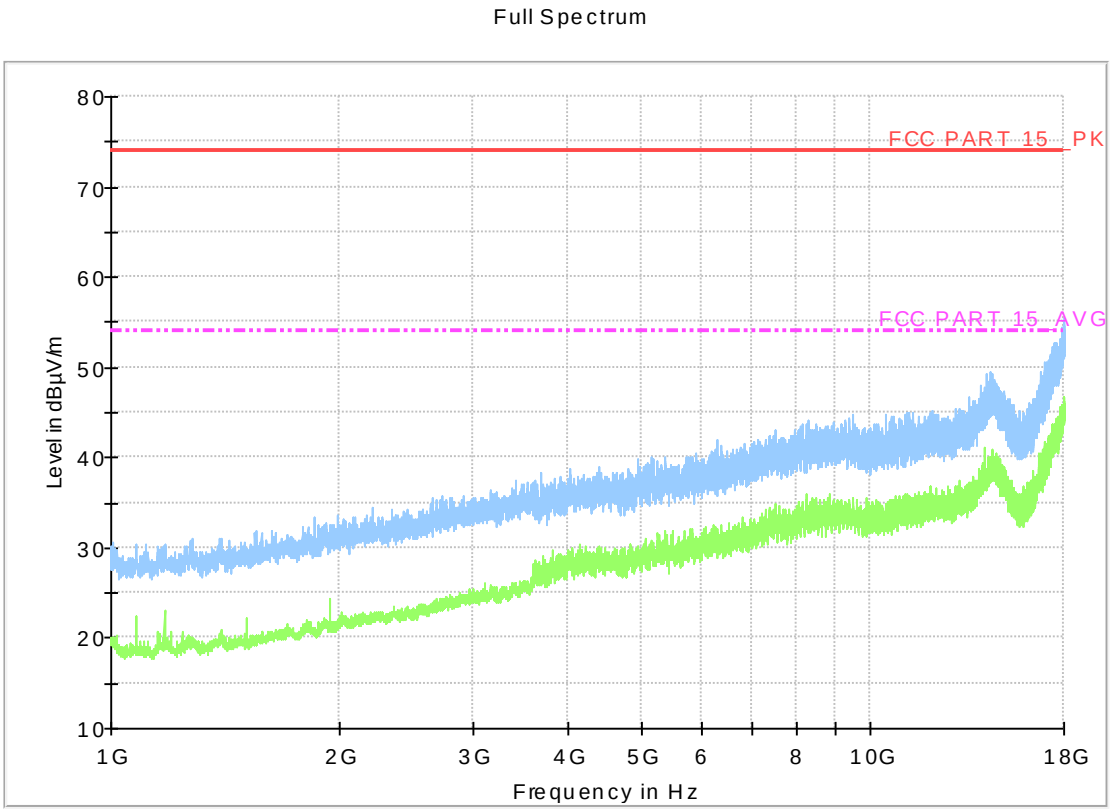
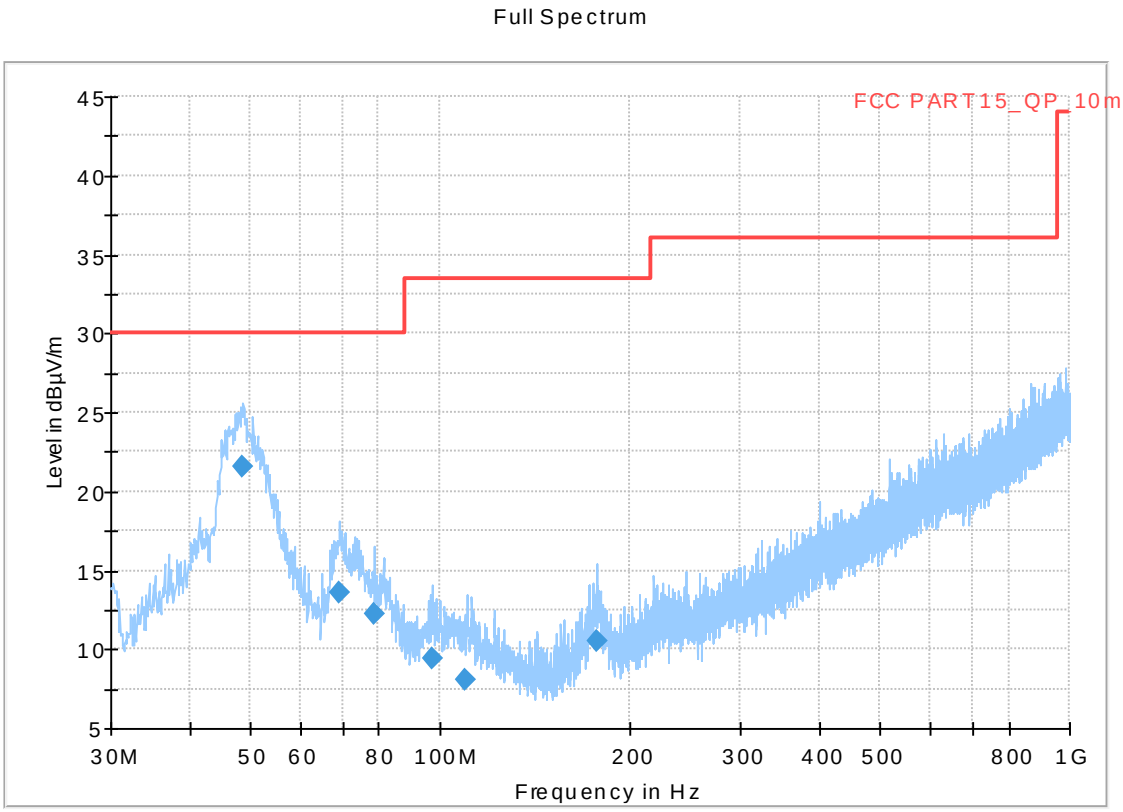


Figure A.8 Radiated Emission from 1GHz to 18GHz

Charging and LTE Band 14 idle Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
48.624000	21.57	30.00	8.43	1000.0	120.000	120.0	V	210.0
69.211000	13.58	30.00	16.42	1000.0	120.000	125.0	V	210.0
78.537000	12.20	30.00	17.80	1000.0	120.000	125.0	V	249.0
97.147000	9.45	33.50	24.07	1000.0	120.000	375.0	V	151.0
109.910000	8.03	33.50	25.49	1000.0	120.000	118.0	V	171.0
177.228000	10.53	33.50	22.99	1000.0	120.000	106.0	V	282.0

Figure A.9 Radiated Emission from 30MHz to 1GHz

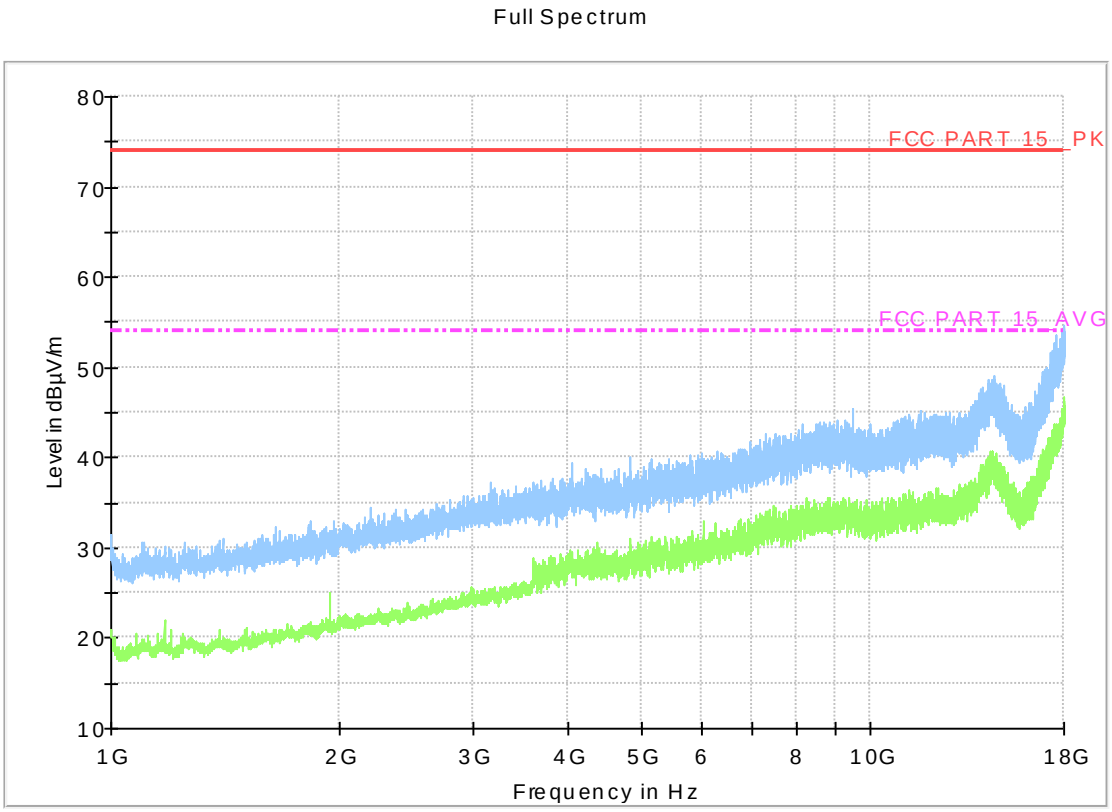
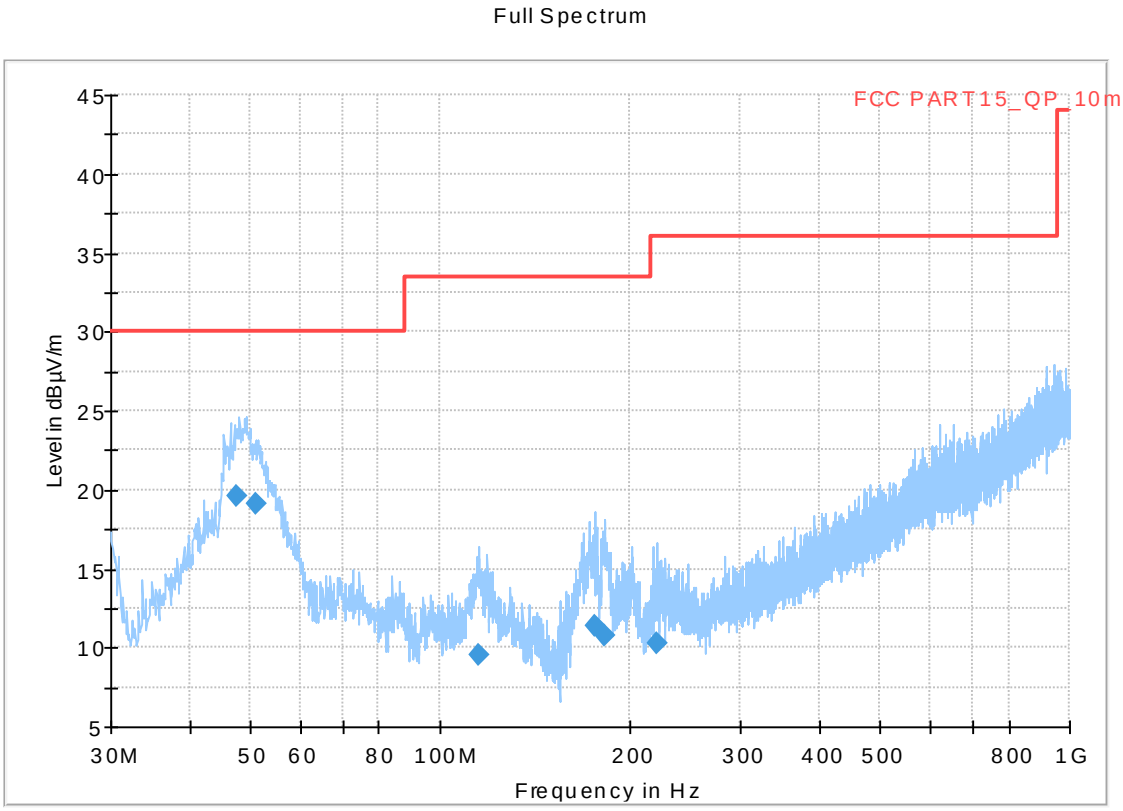


Figure A.10 Radiated Emission from 1GHz to 18GHz

Charging and Rear Camera Mode, Set.5-1



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.502000	19.58	30.00	10.42	1000.0	120.000	179.0	V	261.0
50.920000	19.16	30.00	10.84	1000.0	120.000	101.0	V	292.0
114.917000	9.48	33.50	24.04	1000.0	120.000	101.0	V	-21.0
176.428000	11.44	33.50	22.08	1000.0	120.000	188.0	V	0.0
182.923000	10.82	33.50	22.70	1000.0	120.000	277.0	V	-8.0
220.684000	10.24	36.00	25.78	1000.0	120.000	116.0	V	23.0

Figure A.11 Radiated Emission from 30MHz to 1GHz

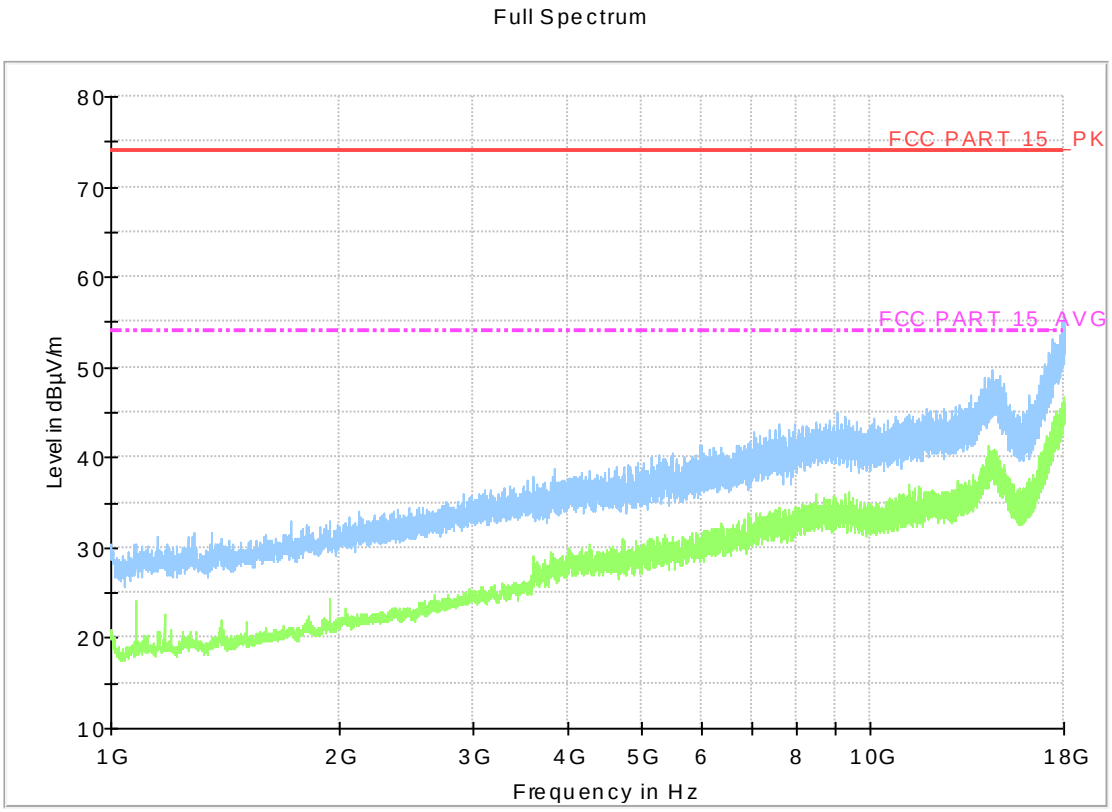
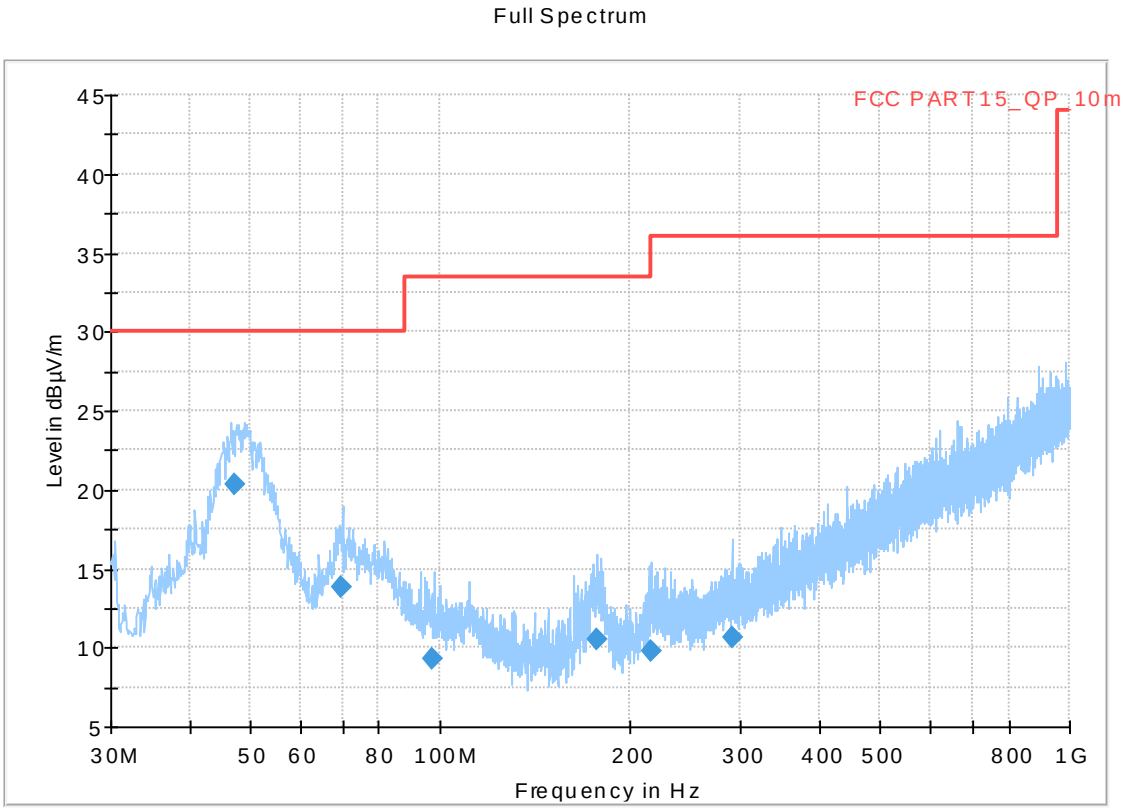


Figure A.12 Radiated Emission from 1GHz to 18GHz

Charging and Front Camera Mode, Set.5-2



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
47.090000	20.30	30.00	9.70	1000.0	120.000	125.0	V	20.0
69.844000	13.85	30.00	16.15	1000.0	120.000	103.0	V	293.0
97.406000	9.28	33.50	24.24	1000.0	120.000	125.0	V	283.0
178.105000	10.50	33.50	23.02	1000.0	120.000	106.0	V	-18.0
216.148000	9.82	36.00	26.20	1000.0	120.000	125.0	V	-27.0
290.722000	10.59	36.00	25.43	1000.0	120.000	376.0	V	-3.0

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

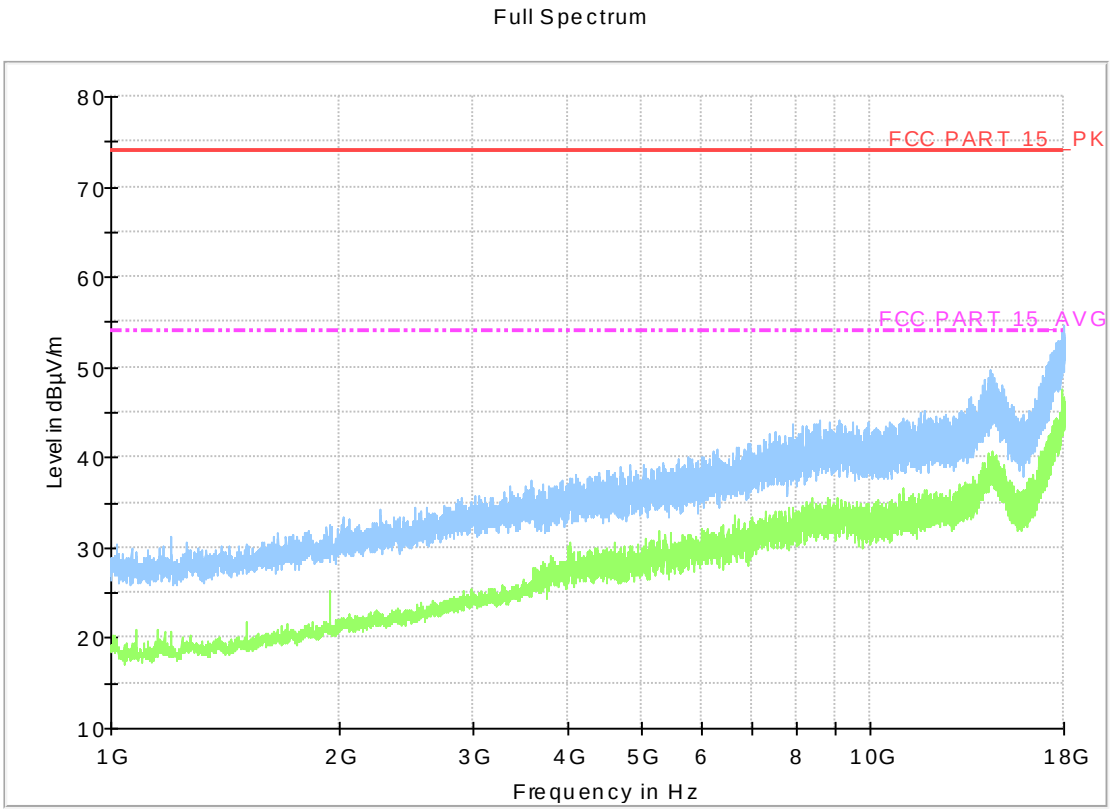
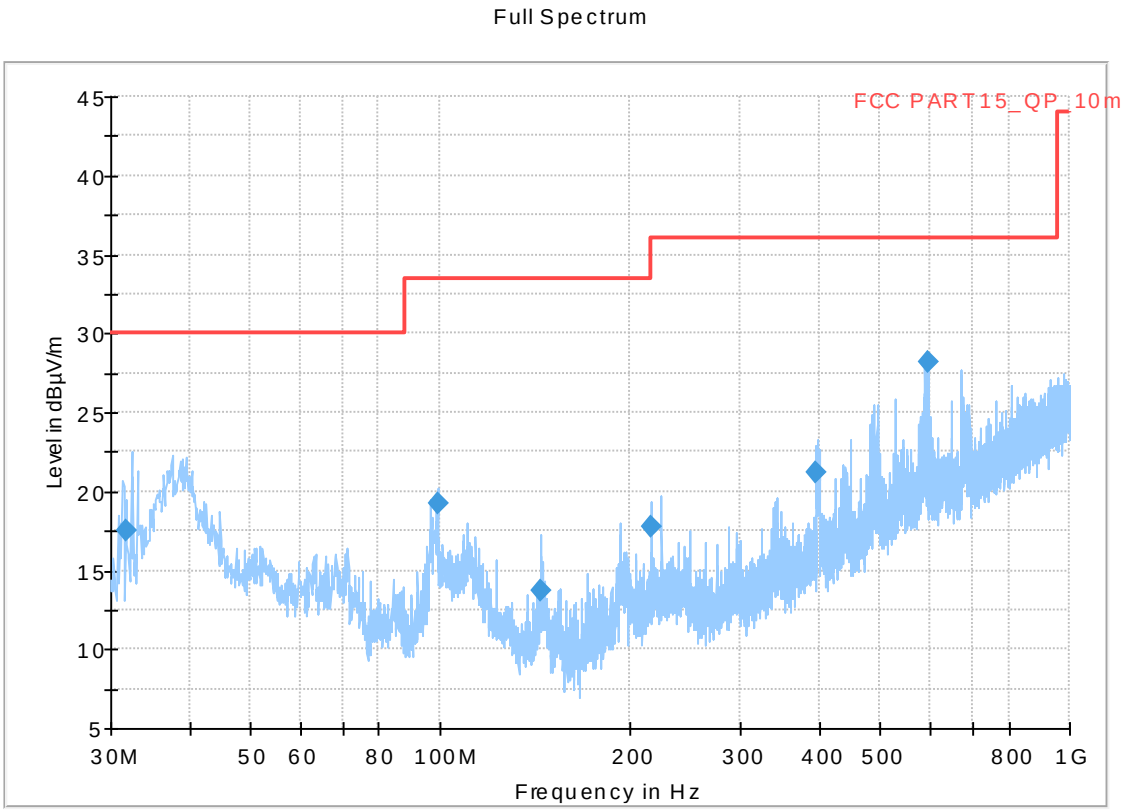


Figure A.14 Radiated Emission from 1GHz to 18GHz

USB Mode, Set.5-3



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.788000	17.48	30.00	12.52	1000.0	120.000	277.0	V	258.0
99.041000	19.24	33.50	14.28	1000.0	120.000	102.0	V	-26.0
144.363000	13.72	33.50	19.80	1000.0	120.000	100.0	V	-21.0
216.009000	17.78	36.00	18.24	1000.0	120.000	110.0	V	280.0
396.272000	21.16	36.00	14.86	1000.0	120.000	385.0	V	-5.0
595.413000	28.21	36.00	7.81	1000.0	120.000	225.0	V	-26.0

Figure A.15 Radiated Emission from 30MHz to 1GHz

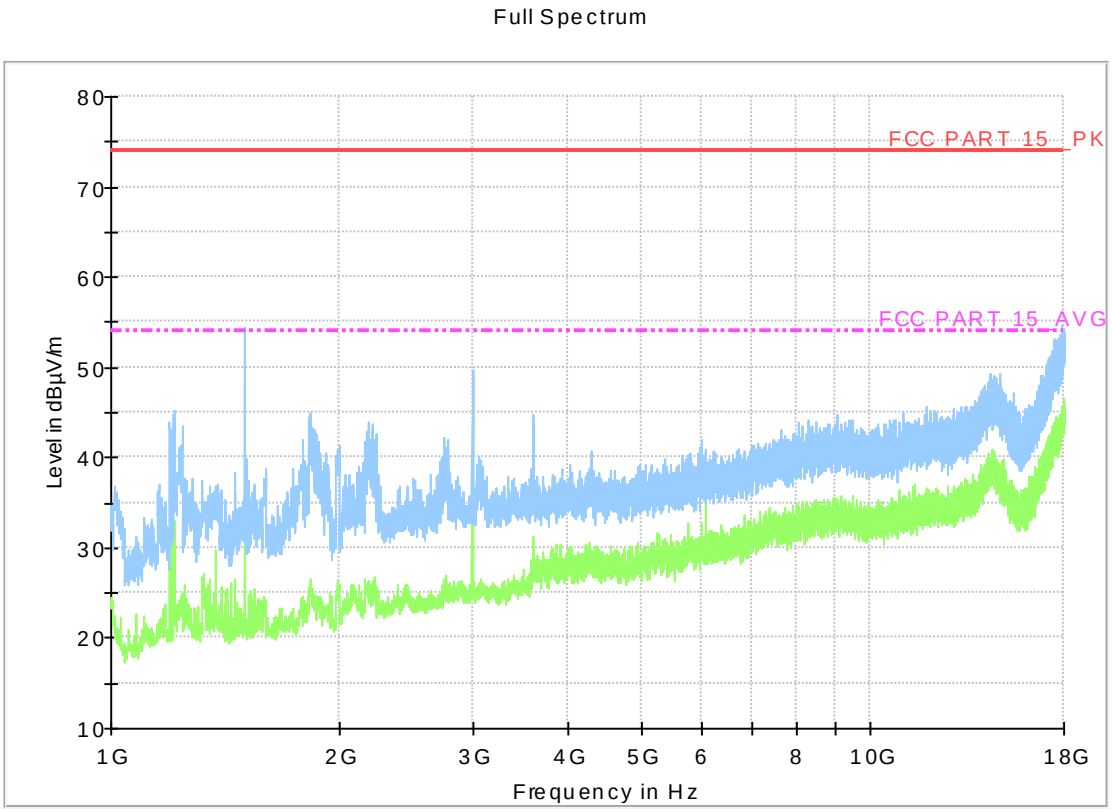
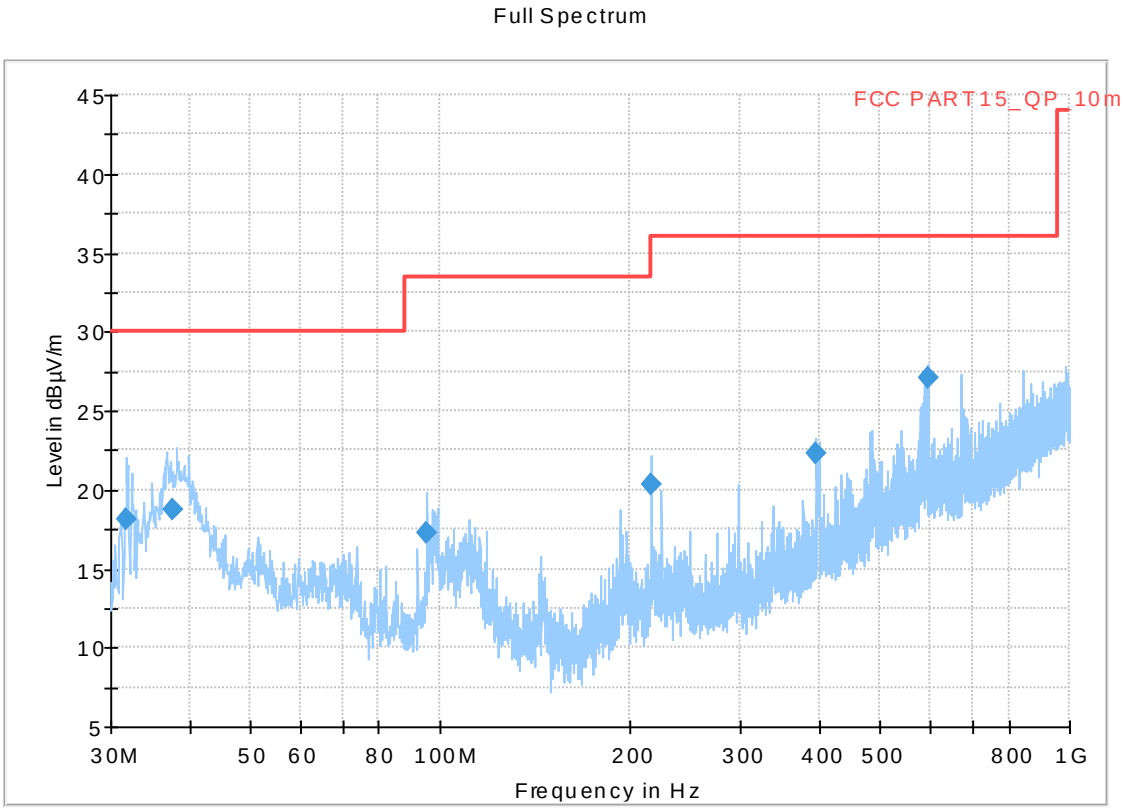


Figure A.16 Radiated Emission from 1GHz to 18GHz

USB Mode, Set.5-4



Final_Result

Frequency (MHz)	QuasiPeak (dBuV//m)	Limit (dBuV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
31.746000	18.07	30.00	11.93	1000.0	120.000	119.0	V	249.0
37.608000	18.72	30.00	11.28	1000.0	120.000	105.0	V	241.0
95.415000	17.22	33.50	16.30	1000.0	120.000	184.0	V	60.0
216.009000	20.35	36.00	15.67	1000.0	120.000	100.0	V	210.0
396.309000	22.28	36.00	13.74	1000.0	120.000	325.0	V	3.0
594.189000	27.04	36.00	8.98	1000.0	120.000	205.0	V	-30.0

Figure A.17 Radiated Emission from 30MHz to 1GHz

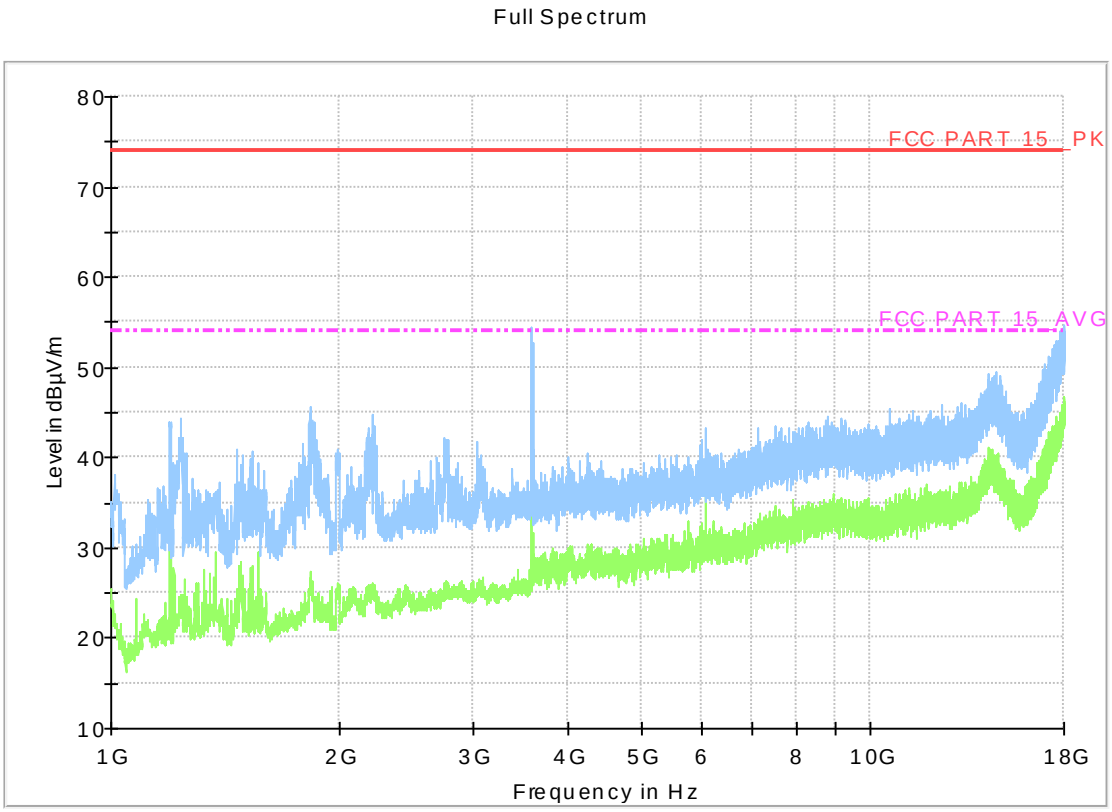


Figure A.18 Radiated Emission from 1GHz to 18GHz

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*=3.08dB, *k*=2.

Charging and Rear Camera Mode, Set.5-1

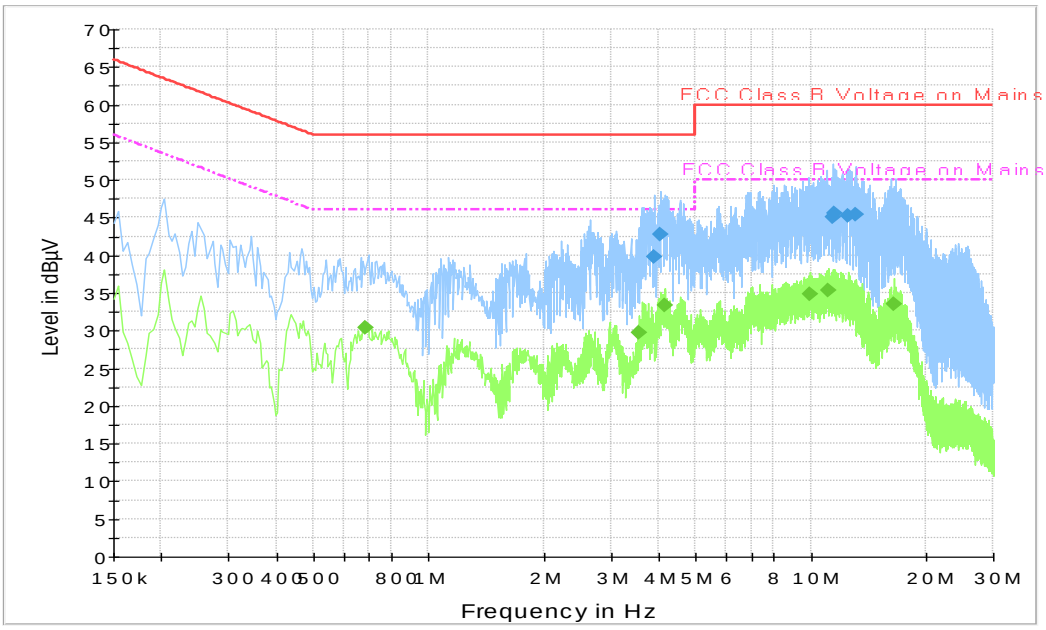


Figure A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
3.885000	39.7	N	10.0	16.3	56.0
4.047000	42.7	L1	10.0	13.3	56.0
11.449500	45.1	L1	10.4	14.9	60.0
11.571000	45.5	L1	10.4	14.5	60.0
12.484500	45.2	L1	10.5	14.8	60.0
13.078500	45.3	L1	10.5	14.7	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.685500	30.4	L1	10.0	15.6	46.0
3.561000	29.8	L1	9.9	16.2	46.0
4.137000	33.3	L1	10.0	12.7	46.0
9.942000	34.8	L1	10.3	15.2	50.0
11.125500	35.4	L1	10.4	14.6	50.0
16.548000	33.5	L1	10.7	16.5	50.0

Charging and Front Camera Mode, Set.5-2

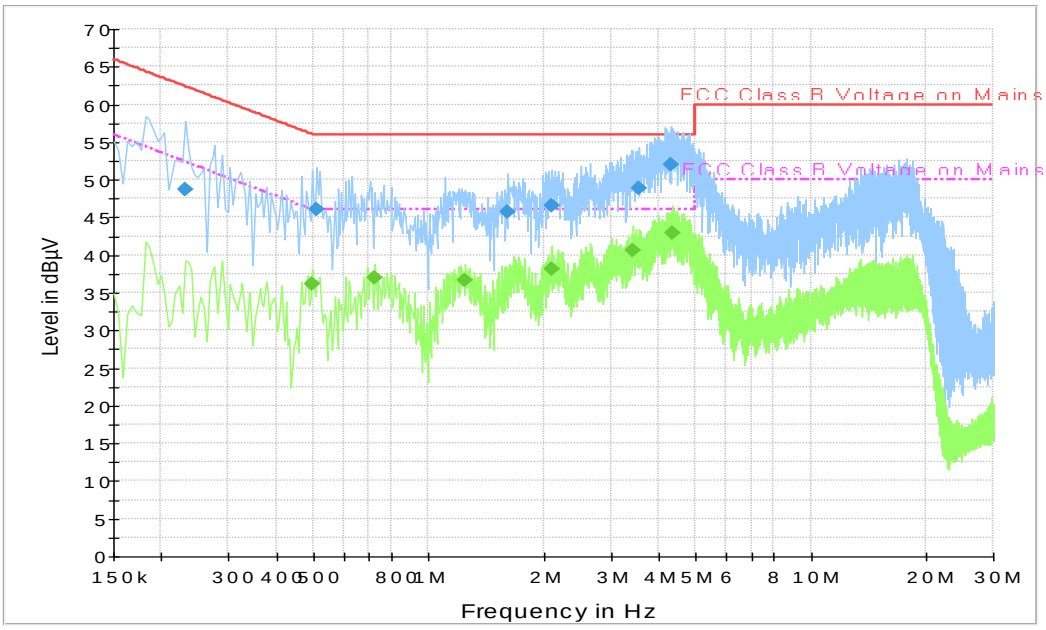


Figure A.20 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.231000	48.7	L1	10.0	13.7	62.4
0.510000	46.1	L1	10.0	9.9	56.0
1.617000	45.7	L1	10.1	10.3	56.0
2.094000	46.6	L1	10.1	9.4	56.0
3.561000	48.9	L1	9.9	7.1	56.0
4.312500	52.0	L1	10.0	4.0	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.496500	36.2	L1	10.0	9.9	46.1
0.726000	37.0	L1	10.0	9.0	46.0
1.248000	36.7	L1	10.0	9.3	46.0
2.094000	38.2	L1	10.1	7.8	46.0
3.435000	40.6	L1	9.9	5.4	46.0
4.357500	42.9	L1	10.1	3.1	46.0

USB Mode, Set.5-3

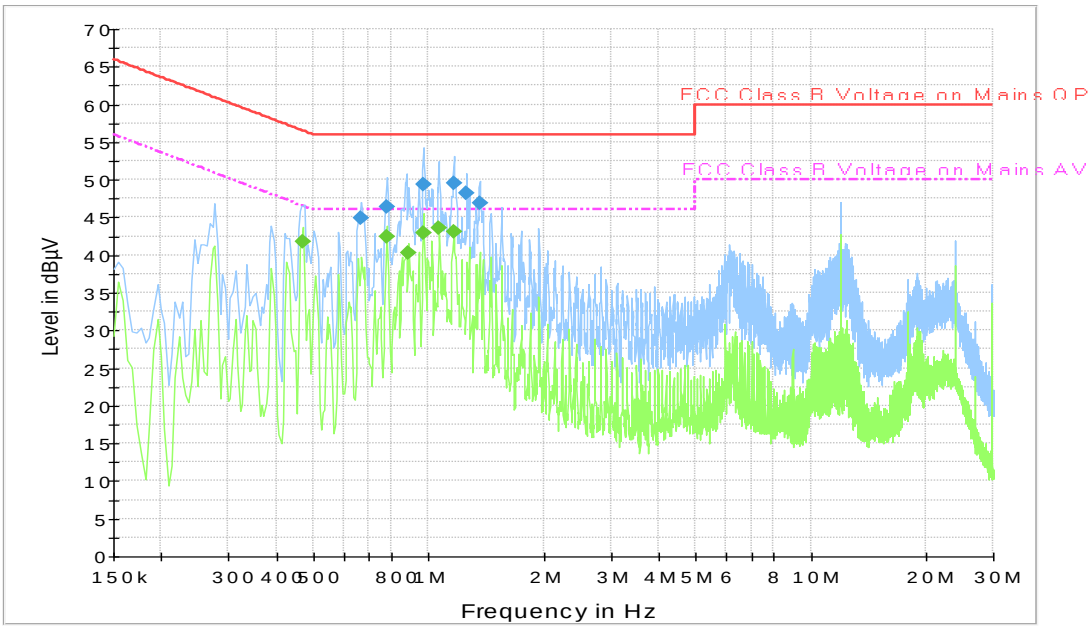


Figure A.21 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.667500	44.8	N	10.1	11.2	56.0
0.780000	46.3	L1	10.0	9.7	56.0
0.969000	49.4	N	10.1	6.6	56.0
1.167000	49.5	N	10.1	6.5	56.0
1.257000	48.3	N	10.1	7.7	56.0
1.360500	46.9	N	10.1	9.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.469500	41.8	N	10.0	4.7	46.5
0.775500	42.4	N	10.1	3.6	46.0
0.888000	40.4	L1	10.0	5.6	46.0
0.969000	42.9	N	10.1	3.1	46.0
1.068000	43.7	L1	10.0	2.3	46.0
1.167000	43.1	N	10.1	2.9	46.0

USB Mode, Set.5-4

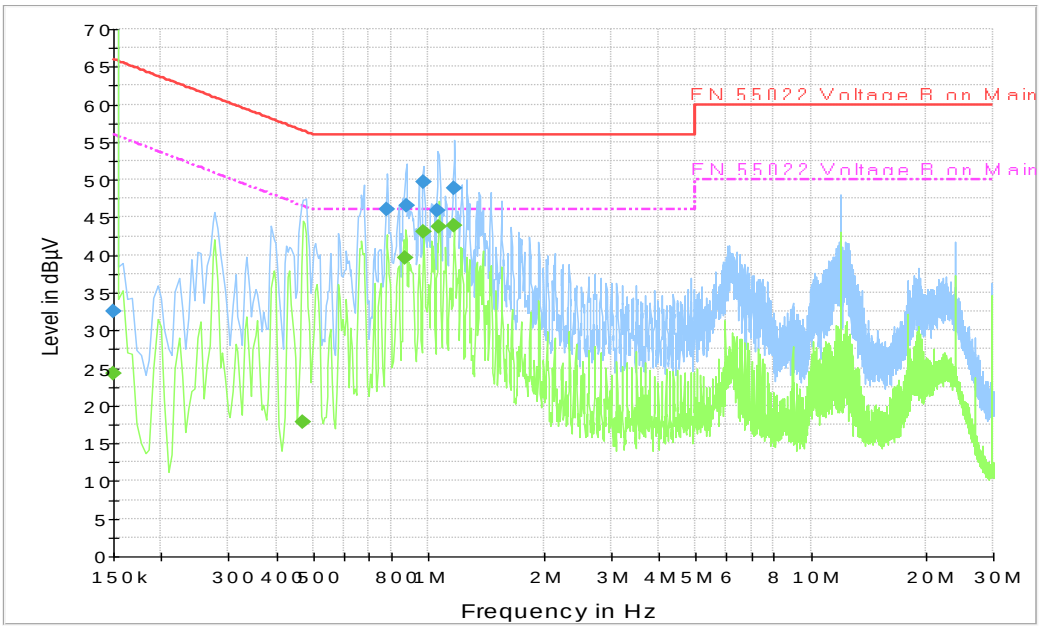


Figure A.22 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	32.5	L1	10.0	33.5	66.0
0.780000	46.1	N	10.1	9.9	56.0
0.874500	46.5	L1	10.0	9.5	56.0
0.969000	49.6	N	10.1	6.4	56.0
1.059000	45.9	N	10.1	10.1	56.0
1.171500	48.9	L1	10.0	7.1	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	24.3	L1	10.0	31.7	56.0
0.469500	17.8	L1	10.0	28.7	46.5
0.870000	39.5	N	10.1	6.5	46.0
0.969000	43.1	N	10.1	2.9	46.0
1.068000	43.7	L1	10.0	2.3	46.0
1.162500	43.8	L1	10.0	2.2	46.0

ANNEX B: Persons involved in this testing

Test Item	Tester
Conducted Continuous Emission	Wang Huan; Li Pengfei
Radiated Continuous Emission	Zhang Ying; Yan Hanchen

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