



TEST REPORT

No. I23Z61303-EMC01

for

TCL Communication Ltd.

GSM/UMTS/LTE Mobile phone

Model Name: T432J

FCC ID: 2ACCJH175

with

Hardware Version: 03

Software Version: MYS0

Issued Date: 2023-07-13

Note:

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Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z61303-EMC01	Rev.0	1st edition	2023-07-13

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

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2005 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

CTTL (huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

1.3. Testing Environment

Normal Temperature: 15-35° C
Relative Humidity: 20-75%

1.4. Project data

Testing Start Date: 2023-06-13
Testing End Date: 2023-07-12

1.5. Signature



Zhang Ying

(Prepared this test report)



An Hui

(Reviewed this test report)



Shi Suolan

(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: TCL Communication Ltd.
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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
Contact: Annie Jiang
Email: nianxiang.jiang@tcl.com
Telephone: +86 755 3661 1621

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

3.1. About EUT

Description	GSM/UMTS/LTE Mobile phone
Model Name	T432J
FCC ID	2ACCJH175
Extreme vol. Limits	3.6VDC to 4.4VDC (nominal: 3.85VDC)

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

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Note
UT22a	/	/	/	/
UT26a	016458000201287	03	MYS0	/

*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	Manufacturer
AE1-1	Battery	TLi028C7	NINGBO VEKEN BATTERY CO.,LTD
AE2-1	Charger	UC13US	HUIZHOU PUAN ELECTRONICS CO.,LTD
AE2-3	Charger	UC13US	JIANSU CHENYANG ELECTRONICS CO.,LTD
AE3	USB cable	CDA0000123C1	HUIZHOU JUWEI ELECTRONICS CO.,LTD

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

Note: The USB cables are shielded.

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.4	UT22a + AE1-1 + AE2-1 + AE3	EUT + charger1 US
Set.15	UT26a + AE1-1 + AE2-2 + AE3 + Headset	EUT + charger3 US
Set.16	UT26a + AE1-1 + AE3 + Headset	EUT + USB + Headset FM

Note: GSM/UMTS/LTE Mobile phone manufactured by TCL Communication Ltd. According to the declaration of changes, adding the test as chapter 3.5.

The Other results are cited from the initial model. The report number for initial model is I23Z60906-EMC1.

3.5. Test summary

I23Z60906

EUT set-up No.	Test mode	Test result	
		Radiated Emission	Conducted Emission
Set.4	Charger+Real Camera+ RX GSM850	Pass	Pass
Set.4	Charger+MP4 + RX LTE band 12	Pass	Pass

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EUT set-up No.	Test mode	Test result	
		Radiated Emission	Conducted Emission
Set.15	Charger+Real Camera+ LTE band 13	Pass	/
Set.15	Charger+Front Camera + RX WCDMA band 5	Pass	Pass
Set.15	Charger+MP4 + RX LTE band 17	Pass	/
Set.15	Charger+FM + RX LTE band 26	Pass	Pass
Set.16	USB TO PC+ RX LTE band 71	Pass	Pass

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	2021
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 M
Ground system resistance	< 4
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz

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

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

7. Test Equipments Utilized

I23Z60906

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI 3	100344	R&S	2024-02-20	1 year
2	LISN	ENV216	101200	R&S	2023-05-30	1 Year
3	Test Receiver	ESW44	103144	R&S	2023-10-25	1 year
4	EMI Antenna	BULB 9163	01223	Schwarzbeck	2023-07-24	1 year
5	Dual-Ridge Waveguide Horn Antenna	3115	00167250	ETS-Lindgren	2023-06-19	1 year
6	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
7	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
8	Keyboard	L100	CN0RH6596589 07ATOI40	DELL	N/A	N/A
9	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A
10	Signal generator	SMF100A	101295	R&S	2024-01-08	1 year
11	Universal Radio Communication Tester	CMW500	150344	R&S	2024-01-03	1 year

Test Item	Test Software and Version	Software Vendor
Conducted Emission	EMC32 V8.52.0	R&S
Radiated Emission	EMC32 V10.60.20	R&S

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NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI 3	100344	R&S	2024-02-20	1 year
2	LISN	ENV216	101200	R&S	2024-06-04	1 Year
3	Test Receiver	ESW44	103144	R&S	2023-10-25	1 year
4	EMI Antenna	BULB 9163	01223	Schwarzbeck	2023-07-24	1 year
5	Dual-Ridge Waveguide Horn Antenna	3115	6914	ETS-Lindgren	2024-05-07	1 year
6	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
7	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
8	Keyboard	L100	CN0RH6596589 07ATOI40	DELL	N/A	N/A
9	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A



NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
10	Signal generator	SMBV100A	260613	R&S	2024-02-14	1 year
11	Universal Radio Communication Tester	CMW50	150344	R&S	2024-01-03	1 year

Test Item	Test Software and Version	Software Vendor
Conducted Emission	EMC32 V8.53.0	R&S
Radiated Emission	EMC32 V11.50.00	R&S

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission

Reference

FCC: CFR Part 15.109(a).

A.1.1 Method of measurement

The field strength of radiated emissions from the unintentional radiator (USB mode of MS and charging mode of MS) at distances of 3/10 meters 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 USB mode and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging mode.

The EUT was tested while operating in licensed band Rx mode with Camera/MP3. 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.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

A.1.3 Measurement Limit

Frequency range (MHz)	Field strength limit ($\mu\text{V/m}$)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

A.1.4 Test Condition

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/3MHz	15	Peak, Average

A.1.5 Measurement Results

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty:

Frequency range	Measurement uncertainty
30MHz-1GHz	5.18dB, k=2
1GHz-18GHz	5.54dB, k=2

Measurement results for Set.4, Charger + REAR Camera + GSM 850 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
57.063000	10.66	29.54	18.88	303.0	V	215.0
101.974000	8.53	33.06	24.53	275.0	H	21.0
117.203000	8.64	33.06	24.42	125.0	V	-17.0
141.259000	6.62	33.06	26.44	108.0	V	112.0
202.951000	7.60	33.06	25.46	225.0	H	266.0
317.799000	10.51	35.56	25.05	125.0	V	225.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17999.660	42.2	-29.1	46.7	24.6	54.0	11.8	H
17819.120	42.2	-29.6	46.0	25.9	54.0	11.8	V
17230.240	42.2	-29.6	43.4	28.4	54.0	11.8	V
17997.960	42.1	-29.1	46.7	24.5	54.0	11.9	H
17998.980	42.1	-29.1	46.7	24.5	54.0	11.9	H
17365.900	42.1	-30.0	43.4	28.7	54.0	11.9	V

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17439.340	53.6	-29.7	44.4	39.0	74.0	20.4	V
17511.420	53.3	-29.3	44.4	38.2	74.0	20.7	V
17495.780	53.0	-29.8	44.4	38.4	74.0	21.0	V
17991.160	52.9	-29.1	46.7	35.3	74.0	21.1	H
17950.020	52.9	-28.9	46.7	35.2	74.0	21.1	V
17981.640	52.9	-29.1	46.7	35.3	74.0	21.1	H

Measurement results for Set.4, Charger + MP4 + LTE band 12 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
41.058000	13.14	29.54	16.40	175.0	V	45.0
45.229000	13.36	29.54	16.18	125.0	V	-43.0
59.003000	16.93	29.54	12.61	183.0	V	265.0
99.937000	9.32	33.06	23.74	107.0	V	135.0
248.541000	9.44	35.56	26.12	108.0	V	202.0
316.732000	16.38	35.56	19.18	125.0	V	86.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17994.900	42.4	-29.1	46.7	24.8	54.0	11.6	V
17446.480	42.3	-29.9	44.4	27.8	54.0	11.7	V
17996.940	42.3	-29.1	46.7	24.7	54.0	11.7	V
17450.560	42.2	-29.9	44.4	27.7	54.0	11.8	H
17290.080	42.2	-29.7	43.4	28.5	54.0	11.8	H
17975.520	42.2	-29.1	46.7	24.6	54.0	11.8	H

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17940.840	52.9	-28.9	46.7	35.2	74.0	21.1	H
17980.960	52.6	-29.1	46.7	35.0	74.0	21.4	V
17998.980	52.5	-29.1	46.7	34.9	74.0	21.5	V
17990.140	52.4	-29.1	46.7	34.8	74.0	21.6	V
17421.320	52.4	-29.7	44.4	37.8	74.0	21.6	H
17526.720	52.4	-29.3	44.4	37.4	74.0	21.6	H

Measurement results for Set.15, Charger + REAR Camera + LTE band 13 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
43.289000	12.17	29.54	17.37	225.0	V	-45.0
55.123000	12.03	29.54	17.51	175.0	V	136.0
96.445000	12.01	33.06	21.05	275.0	V	150.0
178.313000	12.70	33.06	20.36	125.0	V	252.0
204.891000	18.43	33.06	14.63	108.0	V	217.0
315.374000	11.65	35.56	23.91	325.0	H	72.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17990.820	39.8	-29.1	46.7	22.2	54.0	14.2	H
17458.380	39.7	-29.9	44.4	25.2	54.0	14.3	V
17989.120	39.6	-29.1	46.7	22.0	54.0	14.4	H
17694.000	39.5	-30.0	45.2	24.2	54.0	14.5	H
17358.420	39.5	-30.0	43.4	26.1	54.0	14.5	H
17537.940	39.5	-29.3	44.4	24.5	54.0	14.5	V

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17959.880	50.2	-28.9	46.7	32.5	74.0	23.8	H
17998.640	50.2	-29.1	46.7	32.6	74.0	23.8	H
17259.820	50.2	-30.0	43.4	36.9	74.0	23.8	V
17309.120	50.0	-29.5	43.4	36.1	74.0	24.0	H
17951.720	49.9	-28.9	46.7	32.2	74.0	24.1	H
16976.260	49.7	-29.9	41.5	38.1	74.0	24.3	V

Measurement results for Set.15, Charger + Front Camera + WCDMA 850 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
48.818000	13.08	29.54	16.46	125.0	V	225.0
95.475000	11.25	33.06	21.81	202.0	V	-31.0
160.368000	10.72	33.06	22.34	100.0	V	-28.0
195.967000	14.03	33.06	19.03	183.0	V	45.0
204.891000	19.95	33.06	13.11	100.0	V	45.0
327.596000	15.29	35.56	20.27	275.0	H	291.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17243.160	40.3	-30.0	43.4	27.0	54.0	13.7	V
17294.160	40.0	-29.7	43.4	26.3	54.0	14.0	V
17450.220	39.9	-29.9	44.4	25.4	54.0	14.1	V
17259.820	39.8	-30.0	43.4	26.5	54.0	14.2	H
17962.600	39.8	-29.1	46.7	22.2	54.0	14.2	H
17999.320	39.7	-29.1	46.7	22.1	54.0	14.3	V

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17991.8	50.2	-29.1	46.7	32.6	74.0	23.8	V
17329.9	50.2	-29.7	43.4	36.5	74.0	23.8	H
17569.6	50.2	-29.8	45.2	34.7	74.0	23.8	V
17383.2	50.1	-29.8	43.4	36.6	74.0	23.9	H
17702.2	50.1	-29.7	45.2	34.6	74.0	23.9	V
17573.6	50.0	-29.8	45.2	34.5	74.0	24.0	V

Measurement results for Set.15, Charger + MP4 + LTE band 17 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
44.744000	12.37	29.54	17.17	325.0	V	-4.0
52.698000	12.34	29.54	17.20	125.0	V	72.0
95.960000	13.93	33.06	19.13	100.0	V	188.0
156.003000	9.69	33.06	23.37	108.0	V	-18.0
204.018000	18.90	33.06	14.16	125.0	V	227.0
318.866000	14.03	35.56	21.53	100.0	V	22.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17244.180	40.6	-30.0	43.4	27.3	54.0	13.4	H
17923.160	40.6	-29.4	46.7	23.3	54.0	13.4	H
17993.540	40.5	-29.1	46.7	22.9	54.0	13.5	V
17771.860	40.4	-29.6	46.0	24.1	54.0	13.6	V
17971.440	40.4	-29.1	46.7	22.8	54.0	13.6	H
17997.960	40.3	-29.1	46.7	22.7	54.0	13.7	H

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17991.5	51.1	-29.1	46.7	33.5	74.0	22.9	V
17312.9	51.1	-29.5	43.4	37.2	74.0	22.9	H
17605.9	50.8	-29.5	45.2	35.1	74.0	23.2	H
17275.5	50.7	-29.7	43.4	37.1	74.0	23.3	V
17297.6	50.4	-29.7	43.4	36.7	74.0	23.6	V
17325.4	50.3	-29.7	43.4	36.6	74.0	23.7	V

Measurement results for Set.15, Charger + FM + LTE band 26 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
45.229000	11.66	29.54	17.88	302.0	V	202.0
96.251000	17.05	33.06	16.01	100.0	V	-5.0
172.784000	12.74	33.06	20.32	100.0	V	265.0
185.976000	15.83	33.06	17.23	108.0	V	239.0
205.764000	19.81	33.06	13.25	125.0	V	45.0
316.732000	16.51	35.56	19.05	325.0	H	72.0

Charging Mode/Average detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17454.640	40.3	-29.9	44.4	25.8	54.0	13.7	H
17994.220	40.2	-29.1	46.7	22.6	54.0	13.8	H
17445.460	40.1	-29.9	44.4	25.6	54.0	13.9	V
17757.580	40.0	-29.6	46.0	23.7	54.0	14.0	V
17679.380	40.0	-29.9	45.2	24.6	54.0	14.0	V
17998.640	39.9	-29.1	46.7	22.3	54.0	14.1	V

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17908.540	50.5	-29.3	46.0	33.9	74.0	23.5	H
17364.880	50.2	-30.0	43.4	36.8	74.0	23.8	V
17714.740	50.2	-29.7	45.2	34.7	74.0	23.8	H
17556.640	50.1	-29.5	44.4	35.2	74.0	23.9	H
17549.500	50.1	-29.5	44.4	35.2	74.0	23.9	H
17942.200	50.1	-28.9	46.7	32.4	74.0	23.9	V

Measurement results for Set.16, USB + LTE B71 idle:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
95.281000	12.25	33.06	20.81	125.0	V	59.0
107.212000	16.88	33.06	16.18	125.0	V	128.0
113.808000	20.91	33.06	12.15	100.0	V	126.0
148.728000	18.83	33.06	14.23	125.0	V	149.0
215.949000	23.14	33.06	9.92	100.0	V	176.0
528.871000	28.81	35.56	6.75	225.0	V	-5.0

Charging Mode/Average detector

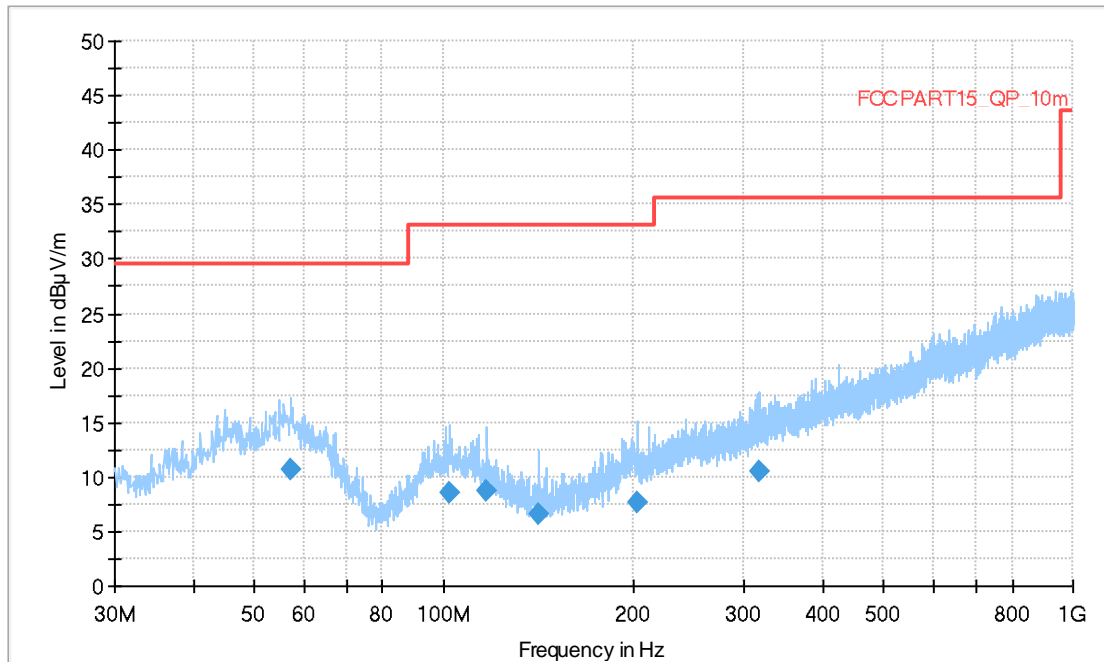
Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
6049.340	45.0	-37.8	34.4	48.4	54.0	9.0	H
6049.680	43.8	-37.8	34.4	47.2	54.0	10.2	V
6051.040	43.5	-37.8	34.4	46.9	54.0	10.5	V
6050.700	42.8	-37.8	34.4	46.2	54.0	11.2	H
17995.240	42.2	-29.1	46.7	24.6	54.0	11.8	V
17919.760	42.2	-29.3	46.7	24.9	54.0	11.8	V

Charging Mode/Peak detector

Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
16888.540	51.9	-29.9	41.5	40.3	74.0	22.1	V
17813.340	51.7	-29.6	46.0	35.4	74.0	22.3	H
17992.180	51.7	-29.1	46.7	34.1	74.0	22.3	H
17994.560	51.6	-29.1	46.7	34.0	74.0	22.4	V
17464.840	51.5	-30.1	44.4	37.2	74.0	22.5	V
17659.320	51.5	-29.6	45.2	35.9	74.0	22.5	V

Measurement results for Set.4, Charger + REAR Camera + GSM 850 idle:

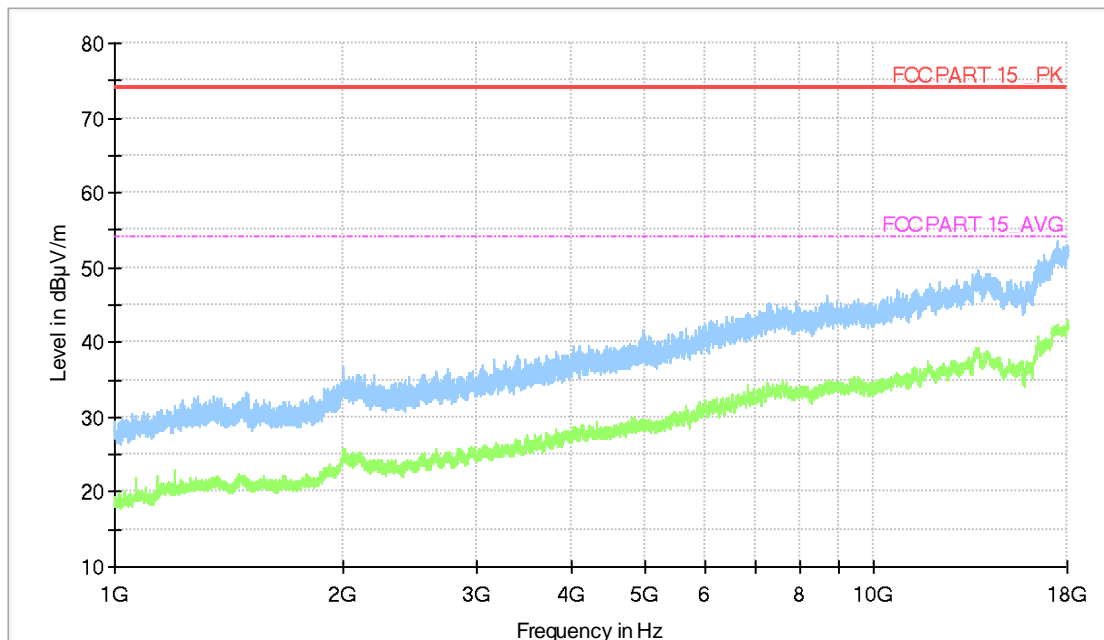
Full Spectrum



- ◆ Preview Result 1-PK+
- * Critical_Freqs PK+
- FCCPART15_QP_10m
- ◆ Final_Result QPK
- × MaxPeak-PK+ (Sindle)
- + QuasiPeak-QPK (Sindle)

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

Full Spectrum



- AVG_MAXH
- PK+ MAXH
- * Critical_Freqs AVG
- * Critical_Freqs PK+
- FCCPART_15_PK
- - - FCCPART_15_AVG
- ◆ Final_Result PK+
- ◆ Final_Result AVG

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

Measurement results for Set.4, Charger + MP4 + LTE band 12 idle:

Full Spectrum

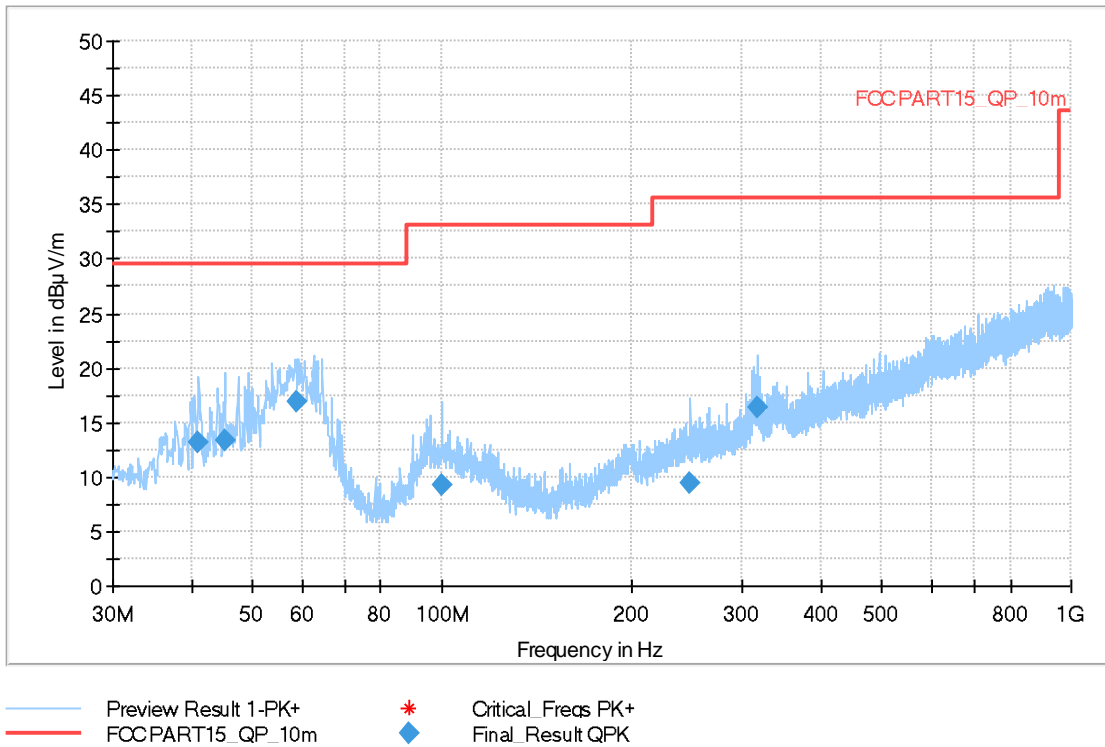


Fig A.3 Radiated Emission from 30MHz to 1GHz

Full Spectrum

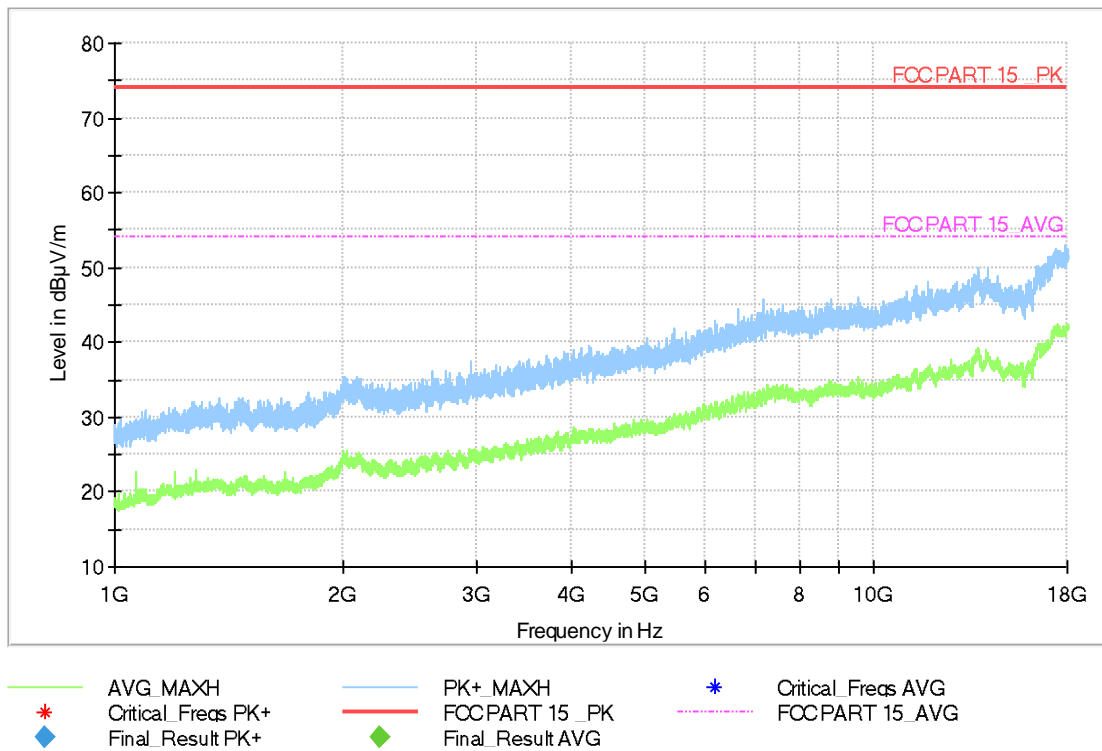


Fig A.4 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.5, Charger + REAR Camera + LTE band 13 idle:

Full Spectrum

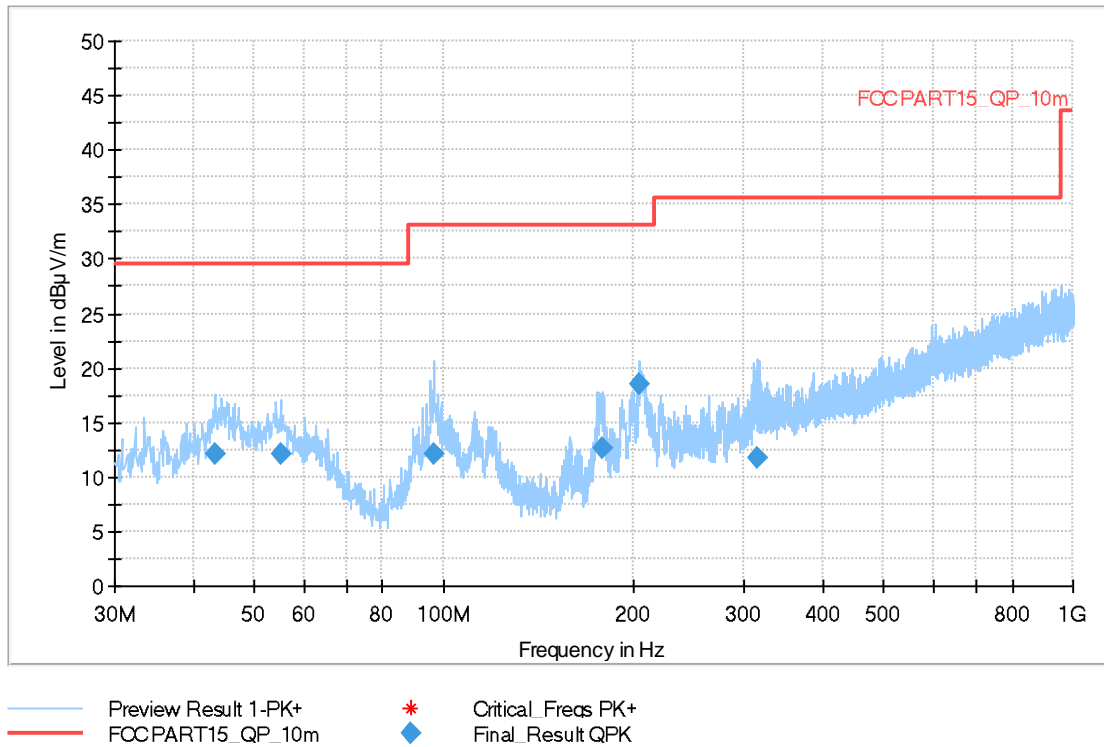


Fig A.5 Radiated Emission from 30MHz to 1GHz

Full Spectrum

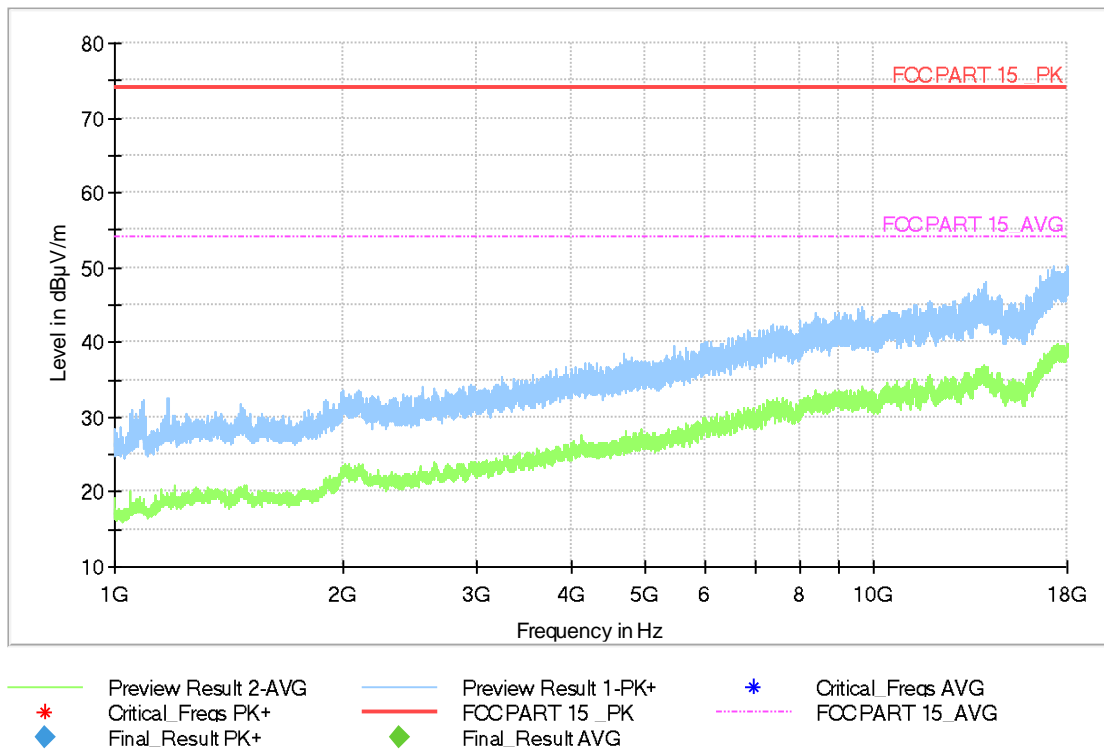


Fig A.6 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.15, Charger + Front Camera + WCDMA 850 idle:

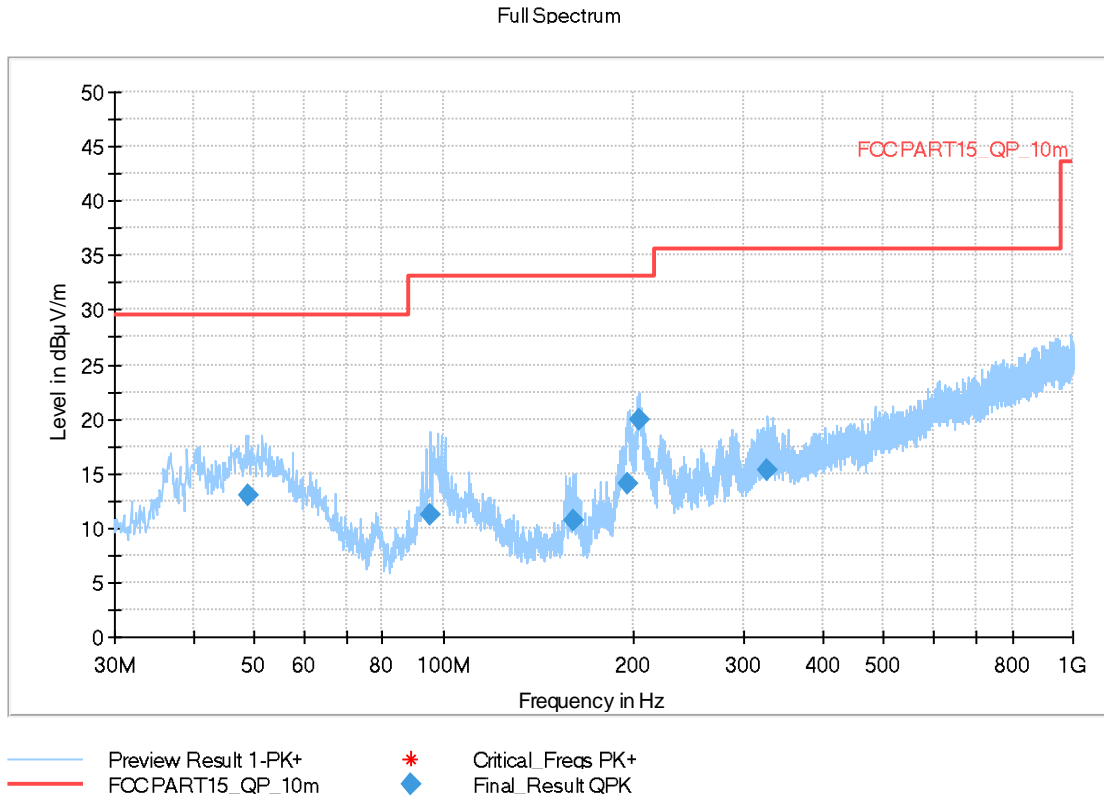


Fig A.7 Radiated Emission from 30MHz to 1GHz

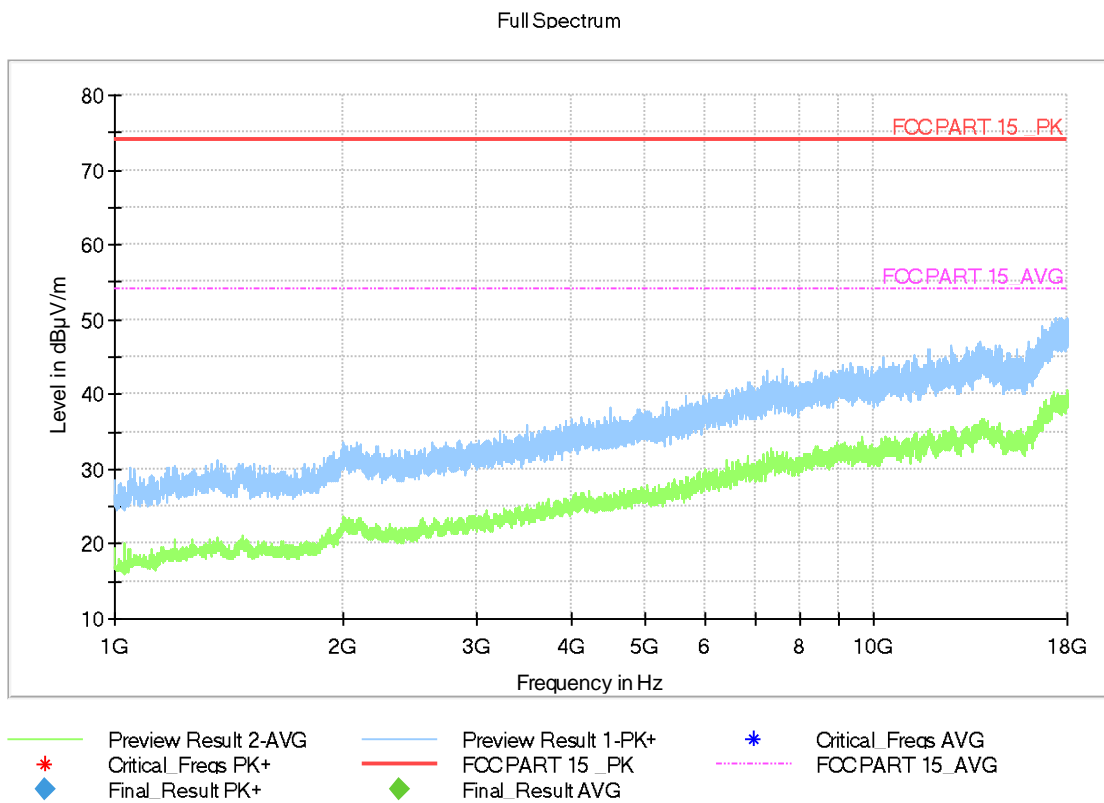


Fig A.8 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.15, Charger + MP4 + LTE band 17 idle:

Full Spectrum

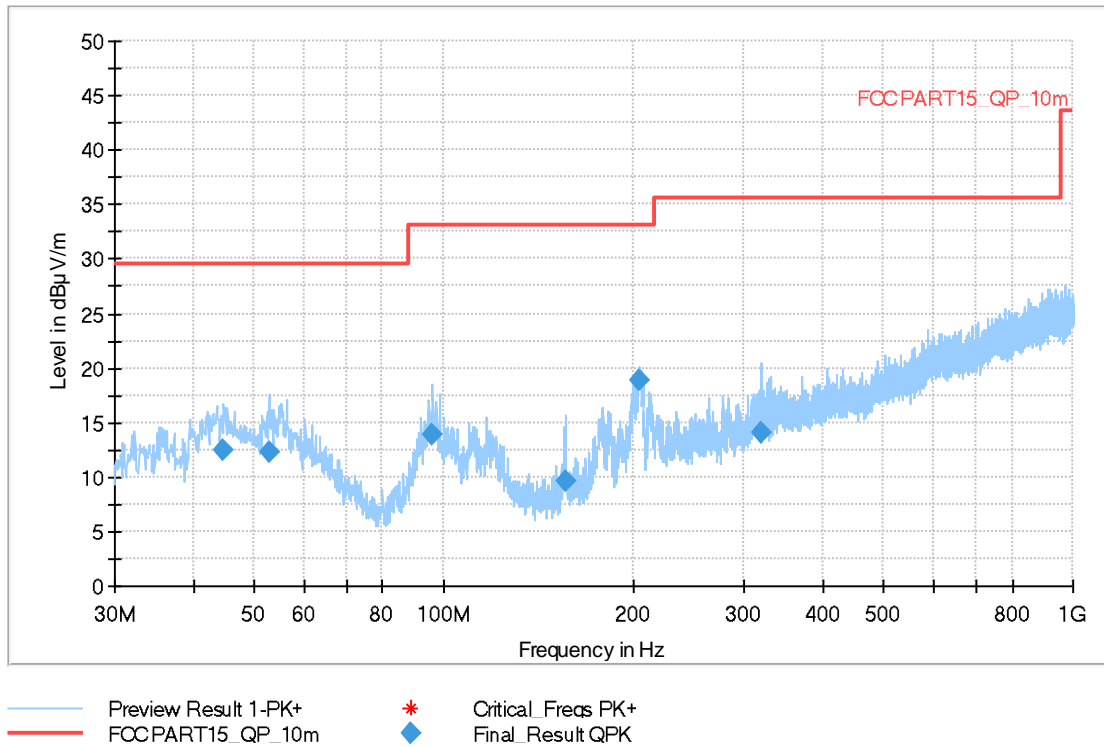


Fig A.9 Radiated Emission from 30MHz to 1GHz

Full Spectrum

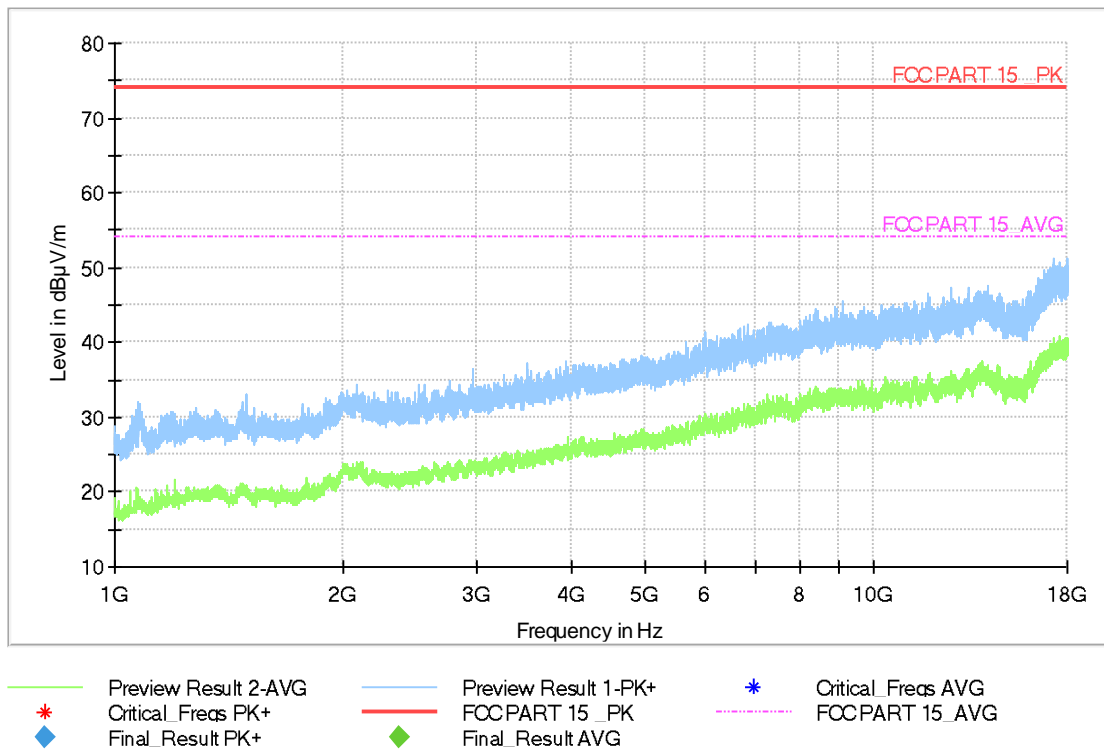
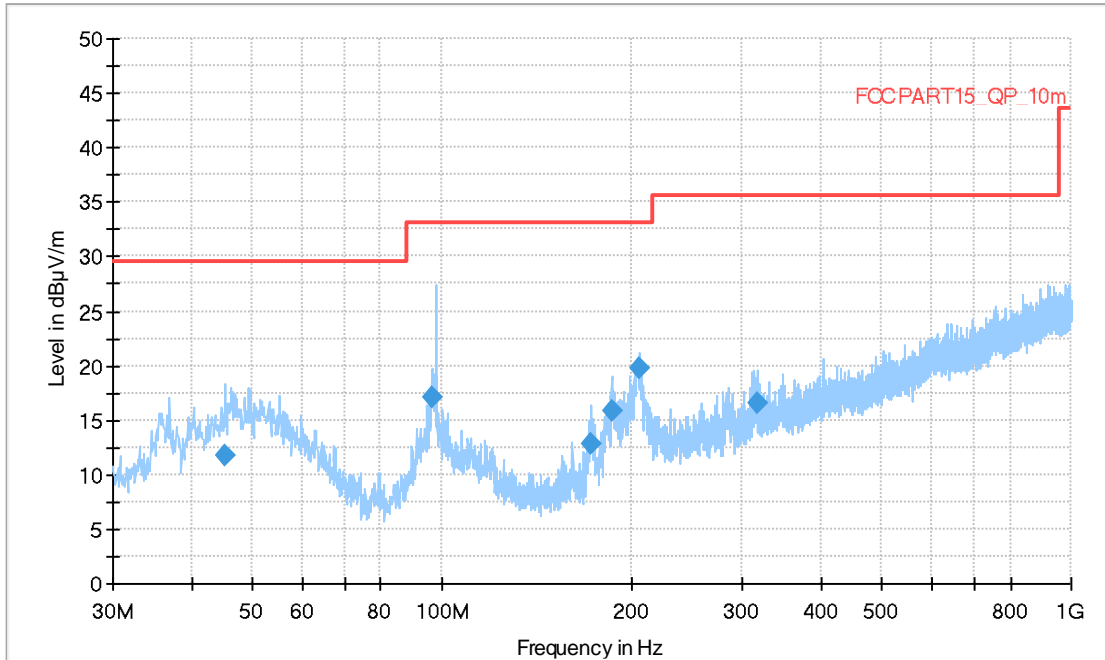


Fig A.10 Radiated Emission from 1GHz to 18GHz

Measurement results for Set.15, Charger + FM + LTE band 26 idle:

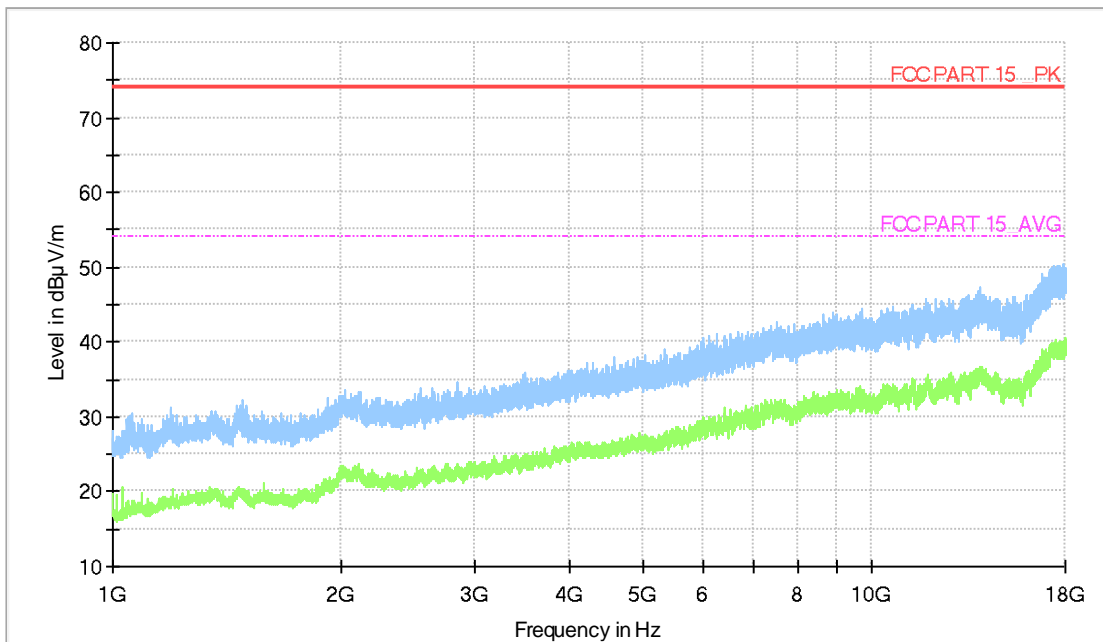
Full Spectrum



- ◆ Preview Result 1-PK+ Final_Result QPK
- * Critical_Freqs PK+ MaxPeak-PK+ (Single)
- FCCPART15_QP_10m QuasiPeak-QPK (Single)
- + (Symbol)

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

Full Spectrum



- Preview Result 2-AVG
- * Critical_Freqs PK+ Final_Result PK+
- Preview Result 1-PK+
- ◆ Final_Result AVG
- * Critical_Freqs AVG
- FCCPART_15_PK
- FCCPART_15_AVG

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

Measurement results for Set.16, USB + LTE B71 idle:

Full Spectrum

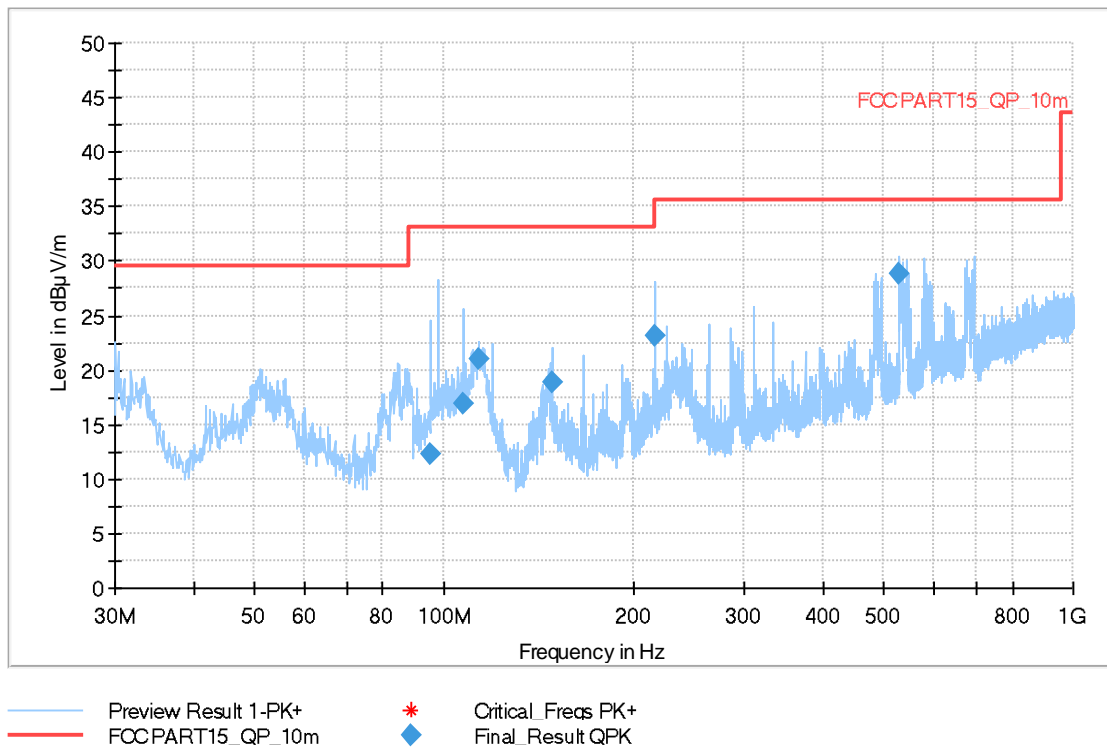


Fig A.13 Radiated Emission from 30MHz to 1GHz

Full Spectrum

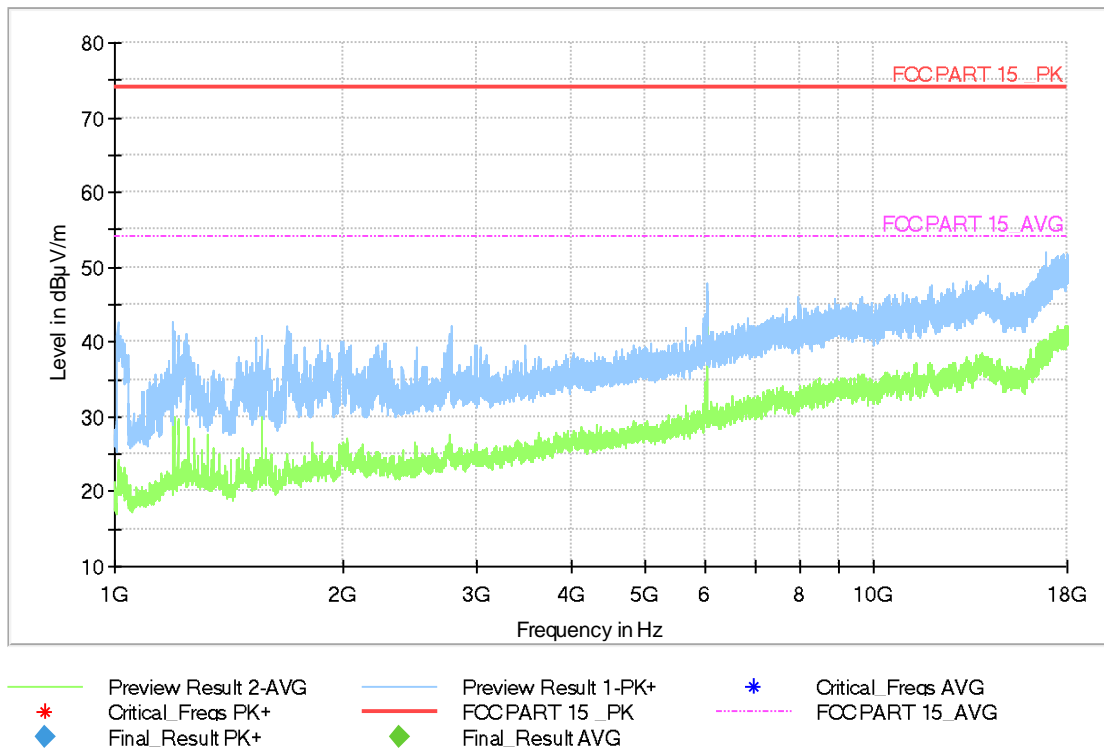


Fig A.14 Radiated Emission from 1GHz to 18GHz

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 USB mode and charging mode. During the test MS is connected to a PC via a USB cable in the case of USB mode and is connected to a charger in the case of charging mode. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

Note: I/O information: Printer – USB, Mouse – PS/2, Keyboard – USB.

A.2.3 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dB 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: $U= 3.08 \text{ dB}$, $k=2$.

Measurement results for Set.4, Charger + REAR Camera + GSM 850 idle:

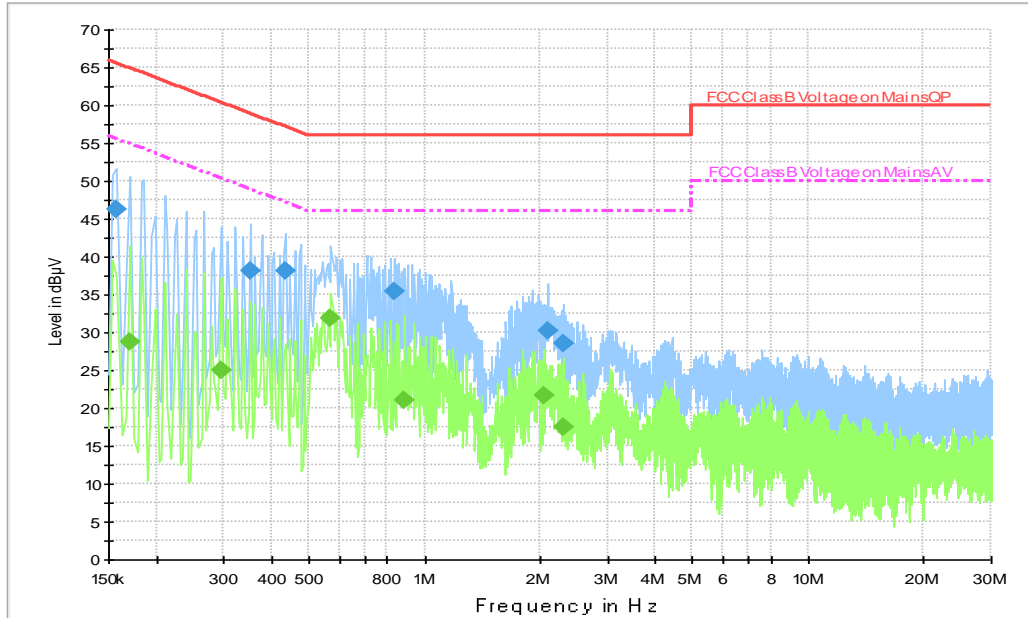


Fig A.15 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	46.3	2000.0	9.000	On	L1	19.8	19.2	65.6
0.350000	38.1	2000.0	9.000	On	L1	19.7	20.9	59.0
0.434000	38.1	2000.0	9.000	On	L1	19.7	19.0	57.2
0.834000	35.4	2000.0	9.000	On	L1	19.7	20.6	56.0
2.094000	30.2	2000.0	9.000	On	N	19.6	25.8	56.0
2.290000	28.5	2000.0	9.000	On	N	19.6	27.5	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.170000	28.8	2000.0	9.000	On	L1	19.7	26.1	55.0
0.294000	25.1	2000.0	9.000	On	L1	19.7	25.3	50.4
0.570000	31.8	2000.0	9.000	On	L1	19.7	14.2	46.0
0.886000	21.1	2000.0	9.000	On	N	19.6	24.9	46.0
2.054000	21.7	2000.0	9.000	On	L1	19.6	24.3	46.0
2.290000	17.4	2000.0	9.000	On	N	19.6	28.6	46.0

Measurement results for Set.4, Charger + MP4+ LTE band 12 idle:

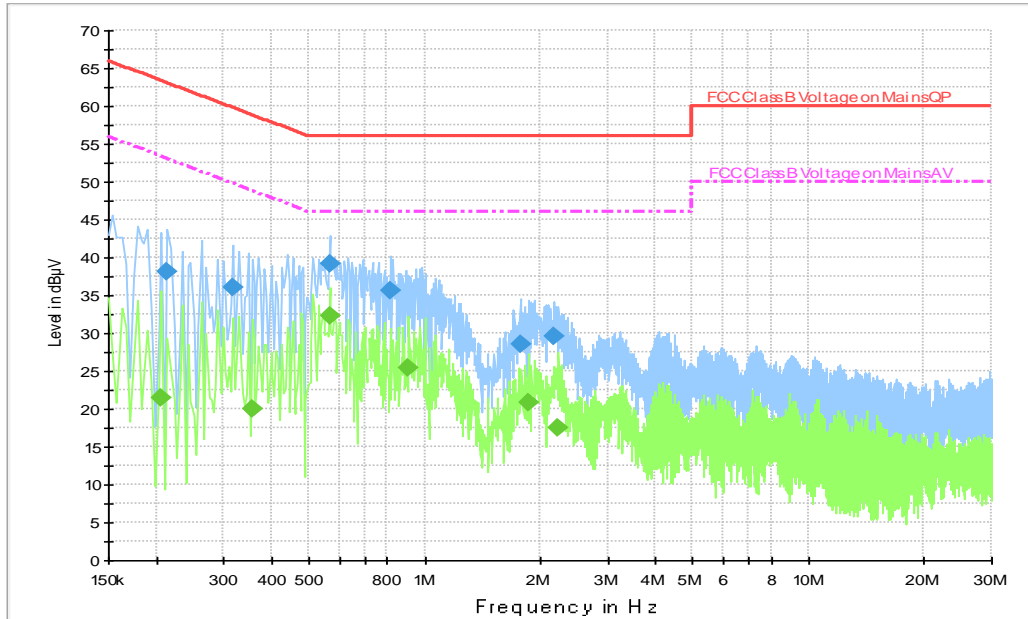


Fig A.16 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.214000	38.0	2000.0	9.000	On	N	19.7	25.0	63.0
0.318000	36.0	2000.0	9.000	On	L1	19.7	23.7	59.8
0.566000	39.3	2000.0	9.000	On	L1	19.7	16.7	56.0
0.814000	35.6	2000.0	9.000	On	L1	19.7	20.4	56.0
1.774000	28.4	2000.0	9.000	On	L1	19.6	27.6	56.0
2.174000	29.6	2000.0	9.000	On	N	19.6	26.4	56.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.206000	21.5	2000.0	9.000	On	L1	19.7	31.8	53.4
0.354000	19.9	2000.0	9.000	On	N	19.7	29.0	48.9
0.566000	32.3	2000.0	9.000	On	L1	19.7	13.7	46.0
0.910000	25.5	2000.0	9.000	On	L1	19.7	20.5	46.0
1.870000	20.7	2000.0	9.000	On	L1	19.6	25.3	46.0
2.234000	17.5	2000.0	9.000	On	N	19.6	28.5	46.0

Measurement results for Set.15, Charger + Front camera+ WCDMA band 5 idle:

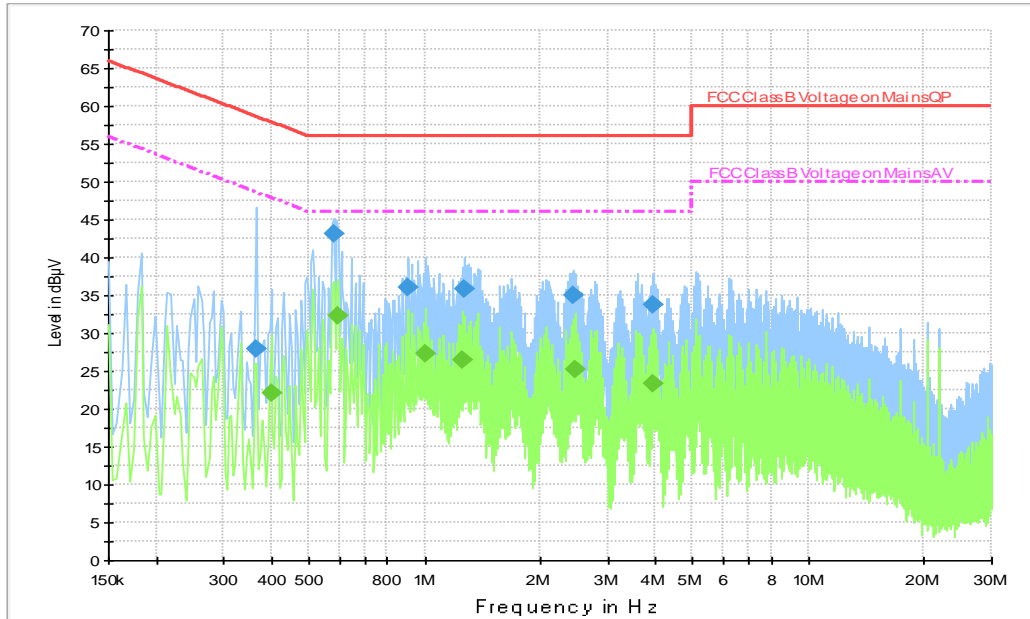


Fig A.17 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.366000	27.9	2000.0	9.000	On	L1	19.7	30.7	58.6
0.578000	43.1	2000.0	9.000	On	L1	19.7	12.9	56.0
0.910000	36.1	2000.0	9.000	On	L1	19.7	19.9	56.0
1.270000	35.7	2000.0	9.000	On	L1	19.7	20.3	56.0
2.430000	35.1	2000.0	9.000	On	L1	19.6	20.9	56.0
3.926000	33.7	2000.0	9.000	On	L1	19.6	22.3	56.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.398000	22.0	2000.0	9.000	On	L1	19.7	25.9	47.9
0.594000	32.4	2000.0	9.000	On	L1	19.7	13.6	46.0
1.006000	27.3	2000.0	9.000	On	L1	19.7	18.7	46.0
1.254000	26.4	2000.0	9.000	On	L1	19.6	19.6	46.0
2.458000	25.3	2000.0	9.000	On	L1	19.6	20.7	46.0
3.926000	23.2	2000.0	9.000	On	L1	19.6	22.8	46.0

Measurement results for Set.15, Charger + FM+ LTE band 26 idle:

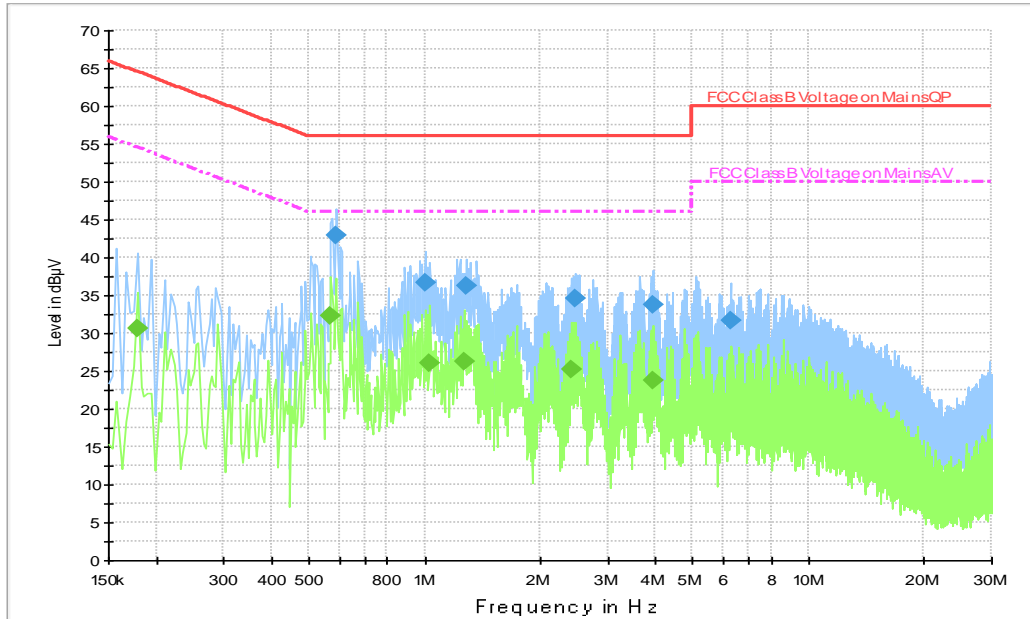


Fig A.18 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.590000	42.9	2000.0	9.000	On	L1	19.7	13.1	56.0
1.002000	36.7	2000.0	9.000	On	L1	19.7	19.3	56.0
1.282000	36.3	2000.0	9.000	On	L1	19.7	19.7	56.0
2.458000	34.6	2000.0	9.000	On	L1	19.6	21.4	56.0
3.938000	33.8	2000.0	9.000	On	L1	19.6	22.2	56.0
6.246000	31.6	2000.0	9.000	On	L1	19.6	28.4	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.178000	30.5	2000.0	9.000	On	L1	19.7	24.0	54.6
0.570000	32.2	2000.0	9.000	On	L1	19.7	13.8	46.0
1.034000	26.0	2000.0	9.000	On	L1	19.7	20.0	46.0
1.266000	26.2	2000.0	9.000	On	L1	19.7	19.8	46.0
2.414000	25.2	2000.0	9.000	On	L1	19.6	20.8	46.0
3.954000	23.7	2000.0	9.000	On	L1	19.6	22.3	46.0

Measurement results for Set.16, USB+ LTE band 71 idle:

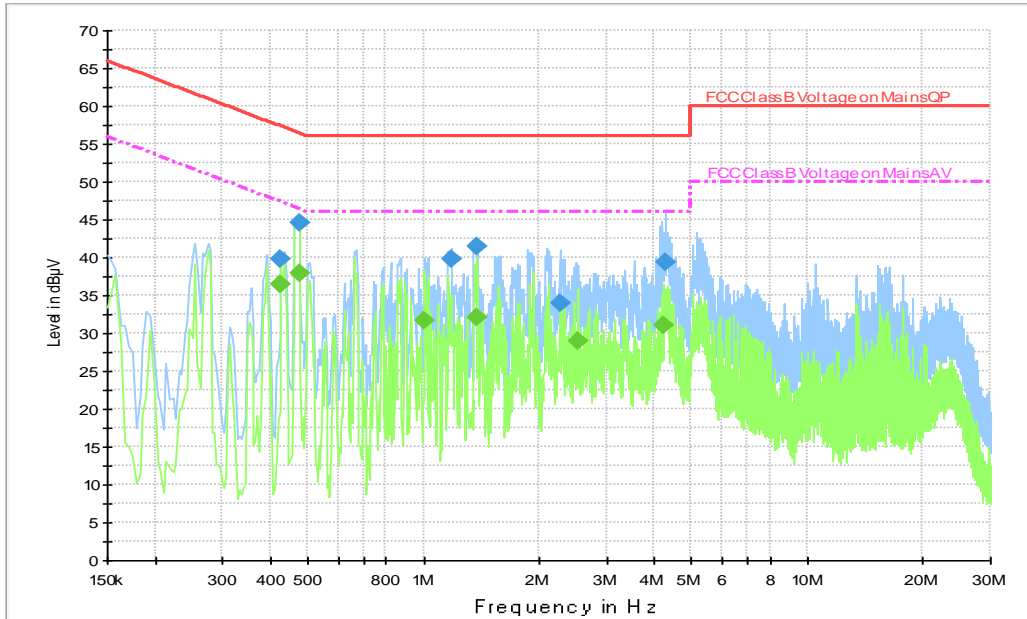


Fig A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.426000	39.8	2000.0	9.000	On	L1	19.7	17.6	57.3
0.474000	44.5	2000.0	9.000	On	N	19.7	12.0	56.4
1.182000	39.8	2000.0	9.000	On	L1	19.7	16.2	56.0
1.378000	41.5	2000.0	9.000	On	L1	19.6	14.5	56.0
2.262000	34.0	2000.0	9.000	On	N	19.6	22.0	56.0
4.282000	39.4	2000.0	9.000	On	L1	19.6	16.6	56.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.426000	36.4	2000.0	9.000	On	L1	19.7	10.9	47.3
0.474000	38.0	2000.0	9.000	On	N	19.7	8.5	46.4
1.006000	31.8	2000.0	9.000	On	L1	19.7	14.2	46.0
1.378000	32.1	2000.0	9.000	On	L1	19.6	13.9	46.0
2.518000	28.9	2000.0	9.000	On	N	19.6	17.1	46.0
4.214000	31.1	2000.0	9.000	On	N	19.6	14.9	46.0

ANNEX B: PERSONS INVOLVED IN THIS TESTING

Test Item	Test operator
Conducted Emission	Yan Hanchen & Li Pengfei
Radiated Emission	Zhang Tianli & Ding Zai

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