



TEST REPORT

No. I21Z62218-EMC01

for

vivo Mobile Communication Co., Ltd.

Mobile Phone

Model Name: V2127

FCC ID: 2AUCY-V2127V

with

Hardware Version: MP_0.1

Software Version: PD2166EF_EX_A_3.6.0

Issued Date: 2022-02-22

Note:

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Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I21Z62218-EMC01	Rev.0	1 st edition	2022-02-16
I21Z62218-EMC01	Rev.1	Added the Test summary in P7	2022-02-22

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: 2021-11-24
Testing End Date: 2021-11-27

1.5. Signature



Zhang Ying

(Prepared this test report)



An Hui

(Reviewed this test report)



Zhang Xia

Deputy Director of the laboratory
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: vivo Mobile Communication Co., Ltd.
Address: No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Contact: xiangjianfeng
Telephone: 188 2371 0059
Email: xiangjianfeng@vivo.com

2.2. Manufacturer Information

Company Name: vivo Mobile Communication Co., Ltd.
Address: No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Contact: xiangjianfeng
Telephone: 188 2371 0059
Email: xiangjianfeng@vivo.com

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

3.1. About EUT

Description	Mobile Phone
Model Name	V2127
FCC ID	2AUCY-V2127V
Extreme vol. Limits	3.6VDC to 4.45VDC (nominal: 3.87VDC)

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
UT05a	/	/	/

*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	Charger	/	/
AE2	Charger	/	/
AE3	Charger	/	/
AE4	Charger	/	/
AE5	Battery	/	inbuilt
AE6	HeadSet	/	/
AE7	USB Cable	/	/

AE1

Model	V1820L0B1-EU
Manufacturer	Dongguan Aohai Technology Co.,Ltd

AE2

Model	V1820L0B1-UK
Manufacturer	Dongguan Aohai Technology Co.,Ltd.

AE3

Model	V1820L0B1-AU
Manufacturer	Dongguan Aohai Technology Co.,Ltd.

AE4

Model	V1820L0B1-US
Manufacturer	Dongguan Aohai Technology Co.,Ltd

AE5

Model	B-T6
Manufacturer	Dongguan NVT Technology Co.,Ltd

AE6

Model	XE160
Manufacturer	/

AE7

Model BK-C-32
 Manufacturer vivo

*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.1-1	EUT05a + AE5 + AE1 + AE7	Charger
Set.1-2	EUT05a + AE5 + AE2 + AE7	Charger
Set.1-3	EUT05a + AE5 + AE3 + AE7	Charger
Set.1-4	EUT05a + AE5 + AE4 + AE7	Charger
Set.2	EUT05a + AE5 + AE7 + AE6	USB + FM

Note: Mobile Phone manufactured by vivo Mobile Communication Co., Ltd. V2127 is a variant model based on V2127. According to the declaration of changes, All The results are cited from the initial model. The report number for initial model is I21Z62219-EMC01.

3.5. Test summary

EUT set-up No.	AE	Test mode	Test result	
			Radiated Emission	Conducted Emission
Set.1-1	V1820L0B1-EU	GSM850 idle	Pass	Pass
Set.1-2	V1820L0B1-UK	WCDMA 850 idle	Pass	Pass
Set.1-3	V1820L0B1-AU	LTE band 5 idle	Pass	Pass
Set.1-4	V1820L0B1-US	LTE band 12 idle	Pass	Pass
Set.1-4	V1820L0B1-US	LTE band 13 idle	Pass	/
Set.1-4	V1820L0B1-US	LTE band 17 idle	Pass	/
Set.2	XE160	USB + FM	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	2020
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 (10 meters×6.7meters×6.1meters) 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 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 6000 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 M
Ground system resistance	< 4

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

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	LISN	ENV216	101200	R&S	2022-05-30	1 Year
2	Test Receiver	ESCI 7	100344	R&S	2022-02-23	1 year
3	Test Receiver	ESU26	100235	R&S	2022-02-23	1 year
4	EMI Antenna	VULB 9163	1223	Schwarzbeck	2022-03-22	1 Year
5	EMI Antenna	3115	6914	ETS-Lindgren	2022-02-03	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

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 FM/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.

The model of the PC is M4000E-17, and the serial number of the PC is M706GWXD. 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.1.3 Measurement Limit

Frequency range (MHz)	Field strength limit ($\mu\text{V}/\text{m}$)		
	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:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (worst case): $U = 5.54 \text{ dB}$, $k=2$.

Measurement results for Set.1-1, GSM850 idle, charger V1820L0B1-EU:

Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.966000	10.17	29.54	19.37	325.0	V	60.0	-11.5
87.230000	12.76	29.54	16.78	118.0	V	61.0	-15.4
122.053000	12.33	33.06	20.73	107.0	V	30.0	-14.6
155.615000	18.66	33.06	14.40	125.0	V	10.0	-15.2
200.526000	15.08	33.06	17.98	107.0	V	120.0	-11.8
333.028000	17.48	35.56	18.08	125.0	V	100.0	-7.6

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)
17998.867	46.1	-29.1	46.7	28.498	54.0	7.9	V
17954.667	46.0	-28.9	46.7	28.283	54.0	8.0	H
17979.600	45.9	-29.1	46.7	28.301	54.0	8.1	V
17897.433	45.9	-29.5	46.0	29.480	54.0	8.1	H
17249.733	45.8	-30.0	43.4	32.464	54.0	8.2	V
17947.300	45.6	-28.9	46.7	27.883	54.0	8.4	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)
17966.000	55.2	-29.1	46.7	37.6	74.0	18.8	V
17382.900	54.8	-29.8	43.4	41.3	74.0	19.2	H
17260.500	54.7	-29.7	43.4	41.1	74.0	19.3	V
16885.367	54.5	-29.9	41.5	42.9	74.0	19.5	V
17944.467	54.5	-28.9	46.7	36.8	74.0	19.5	H
17986.400	54.5	-29.1	46.7	36.9	74.0	19.5	V

Measurement results for Set.1-2, WCDMA 850 idle, charger V1820L0B1-UK:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
48.818000	10.06	29.54	19.48	282.0	V	120.0	-11.2
87.036000	9.49	29.54	20.05	282.0	V	210.0	-15.4
121.471000	11.60	33.06	21.46	107.0	V	30.0	-14.5
153.966000	18.06	33.06	15.00	101.0	V	10.0	-15.4
197.810000	17.58	33.06	15.48	101.0	V	60.0	-12.0
425.275000	13.41	35.56	22.15	220.0	V	241.0	-5.3

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)
17961.467	46.0	-29.1	46.7	28.401	54.0	8.0	H
17952.967	45.8	-28.9	46.7	28.083	54.0	8.2	H
17972.233	45.7	-29.1	46.7	28.101	54.0	8.3	V
17954.100	45.7	-28.9	46.7	27.983	54.0	8.3	V
17945.033	45.6	-28.9	46.7	27.883	54.0	8.4	V
17983.567	45.6	-29.1	46.7	27.998	54.0	8.4	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)
17386.300	56.7	-29.8	43.4	43.2	74.0	17.3	H
17949.567	55.9	-28.9	46.7	38.2	74.0	18.1	V
17935.400	54.9	-29.4	46.7	37.6	74.0	19.1	V
17966.567	54.9	-29.1	46.7	37.3	74.0	19.1	V
17956.367	54.8	-28.9	46.7	37.1	74.0	19.2	H
17838.500	54.6	-29.7	46.0	38.3	74.0	19.4	V

Measurement results for Set.1-3, LTE band 5 idle, charger V1820L0B1-AU:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
55.414000	11.83	29.54	17.71	101.0	V	151.0	-11.3
125.157000	11.09	33.06	21.97	321.0	V	10.0	-14.9
151.444000	16.91	33.06	16.15	101.0	V	9.0	-15.8
170.650000	15.57	33.06	17.49	125.0	V	-29.0	-14.6
199.847000	15.82	33.06	17.24	100.0	V	62.0	-11.8
321.582000	13.55	35.56	22.01	101.0	V	151.0	-7.9

Charging 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)
17959.200	46.0	-28.9	46.7	28.283	54.0	8.0	V
17926.333	45.8	-29.4	46.7	28.539	54.0	8.2	V
17641.867	45.7	-29.6	45.2	30.053	54.0	8.3	V
17969.967	45.7	-29.1	46.7	28.101	54.0	8.3	H
17441.267	45.6	-29.9	44.4	31.117	54.0	8.4	H
18000.000	45.6	-29.2	47.0	27.843	54.0	8.4	H

Charging 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)
17926.333	56.0	-29.4	46.7	38.7	74.0	18.0	H
17916.133	54.9	-29.3	46.7	37.6	74.0	19.1	V
17988.667	54.8	-29.1	46.7	37.2	74.0	19.2	H
17345.500	54.6	-30.0	43.4	41.2	74.0	19.4	V
17765.967	54.6	-29.6	46.0	38.3	74.0	19.4	V
17945.033	54.5	-28.9	46.7	36.8	74.0	19.5	V

Measurement results for Set.1-4, LTE band 12 idle, charger V1820L0B1-US:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
53.474000	12.03	29.54	17.51	101.0	V	80.0	-11.4
85.775000	12.40	29.54	17.14	119.0	V	60.0	-15.8
125.351000	13.70	33.06	19.36	118.0	V	10.0	-15.0
146.982000	18.68	33.06	14.38	121.0	V	-10.0	-15.9
171.911000	17.41	33.06	15.65	118.0	V	-26.0	-14.5
197.713000	14.60	33.06	18.46	100.0	V	60.0	-12.0

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)
17968.267	46.0	-29.1	46.7	28.401	54.0	8.0	H
17971.667	45.9	-29.1	46.7	28.301	54.0	8.1	V
17996.033	45.9	-29.1	46.7	28.298	54.0	8.1	H
17978.467	45.6	-29.1	46.7	28.001	54.0	8.4	V
17932.000	45.5	-29.4	46.7	28.239	54.0	8.5	V
17248.600	45.5	-30.0	43.4	32.164	54.0	8.5	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)
17966.567	55.5	-29.1	46.7	37.9	74.0	18.5	V
17984.700	55.1	-29.1	46.7	37.5	74.0	18.9	V
17960.333	54.8	-29.1	46.7	37.2	74.0	19.2	V
17943.900	54.7	-28.9	46.7	37.0	74.0	19.3	H
17894.033	54.7	-29.5	46.0	38.3	74.0	19.3	H
17518.900	54.6	-29.3	44.4	39.5	74.0	19.4	H

Measurement results for Set.1-4, LTE band 13 idle, charger V1820L0B1-US:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
37.760000	11.69	29.54	17.85	230.0	V	80.0
56.384000	11.04	29.54	18.50	285.0	V	193.0
91.886000	7.76	33.06	25.30	230.0	V	102.0
141.453000	15.62	33.06	17.44	100.0	V	210.0
186.849000	15.50	33.06	17.56	101.0	V	-19.0
525.088000	15.14	35.56	20.42	188.0	V	-29.0

Charging 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)
17349.467	46.6	-29.97	43.36	33.21	54.00	7.40	H
17983.567	46.6	-29.06	46.66	29.00	54.00	7.40	V
17946.733	46.5	-28.94	46.66	28.78	54.00	7.50	V
17997.733	46.3	-29.06	46.66	28.70	54.00	7.70	H
17208.933	46.3	-29.49	42.36	33.43	54.00	7.70	V
17960.900	46.3	-29.06	46.66	28.70	54.00	7.70	V

Charging 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)
17944.467	55.90	-28.94	46.66	38.18	74.00	18.10	H
17184.000	55.90	-29.49	42.36	43.02	74.00	18.10	V
17925.767	55.80	-29.40	46.66	38.54	74.00	18.20	H
17883.833	55.80	-29.53	45.95	39.38	74.00	18.20	H
17061.033	55.60	-29.77	42.36	43.01	74.00	18.40	V
17240.100	55.50	-30.02	43.36	42.16	74.00	18.50	H

Measurement results for Set.1-4, LTE band 17 idle , charger V1820L0B1-US:
Charging Mode/QP detector

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
54.832000	10.84	29.54	18.70	275.0	V	280.0	-11.3
75.687000	10.06	29.54	19.48	176.0	V	-29.0	-16.5
125.351000	12.84	33.06	20.22	225.0	V	61.0	-15.0
145.333000	18.10	33.06	14.96	118.0	V	-9.0	-15.8
169.486000	18.00	33.06	15.06	101.0	V	-28.0	-14.8
203.145000	14.43	33.06	18.63	125.0	V	60.0	-11.7

Charging 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)
17900.833	46.5	-29.3	46.0	29.872	54.0	7.5	H
17959.767	46.3	-28.9	46.7	28.583	54.0	7.7	H
17963.733	46.1	-29.1	46.7	28.501	54.0	7.9	V
17321.700	45.8	-29.7	43.4	32.140	54.0	8.2	V
17643.567	45.6	-29.6	45.2	29.953	54.0	8.4	H
17989.233	45.5	-29.1	46.7	27.898	54.0	8.5	V

Charging 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)
17954.667	54.7	-28.9	46.7	37.0	74.0	19.3	V
17955.233	54.7	-28.9	46.7	37.0	74.0	19.3	V
17897.433	54.6	-29.5	46.0	38.2	74.0	19.4	V
17442.400	54.5	-29.9	44.4	40.0	74.0	19.5	H
17950.700	54.4	-28.9	46.7	36.7	74.0	19.6	H
17893.467	54.3	-29.5	46.0	37.9	74.0	19.7	H

Measurement results for Set.2, FM + USB:
USB Mode/QP detector

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
34.559000	19.56	29.54	9.98	284.0	V	30.0	-13.6
83.350000	22.16	29.54	7.38	125.0	V	60.0	-16.5
95.281000	23.48	33.06	9.58	176.0	V	81.0	-13.3
166.770000	24.29	33.06	8.77	101.0	V	173.0	-14.9
238.162000	21.77	35.56	13.79	125.0	V	190.0	-10.5
673.886000	27.98	35.56	7.58	200.0	V	0.0	-0.2

USB Mode/Average detector

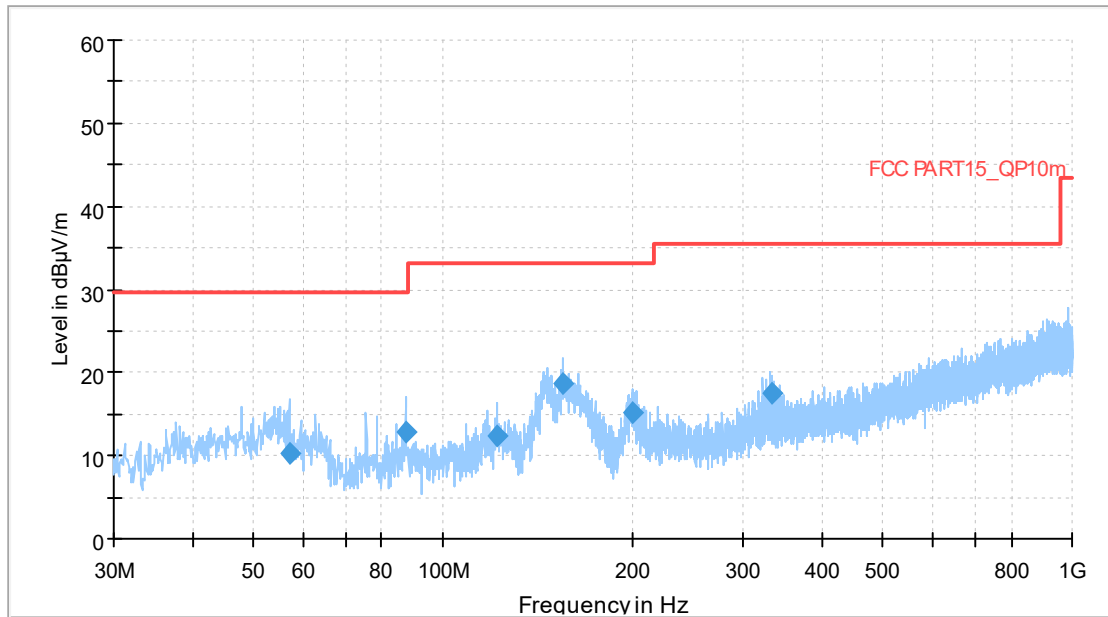
Frequency (MHz)	Measurement Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)
17959.767	46.2	-28.9	46.7	28.483	54.0	7.8	V
17985.833	46.0	-29.1	46.7	28.398	54.0	8.0	V
17926.333	46.0	-29.4	46.7	28.739	54.0	8.0	H
17168.700	46.0	-29.8	42.4	33.417	54.0	8.0	H
17952.400	45.9	-28.9	46.7	28.183	54.0	8.1	V
17920.100	45.9	-29.4	46.7	28.639	54.0	8.1	H

USB 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)
17950.700	56.9	-28.9	46.7	39.2	74.0	17.1	V
17989.800	55.7	-29.1	46.7	38.1	74.0	18.3	V
17452.033	55.4	-29.9	44.4	40.9	74.0	18.6	H
17905.933	55.4	-29.3	46.0	38.8	74.0	18.6	V
16961.867	55.3	-29.9	41.5	43.7	74.0	18.7	H
17876.467	55.1	-29.4	46.0	38.5	74.0	18.9	V

Measurement results for Set.1-1, GSM850 idle, charger V1820L0B1-EU:

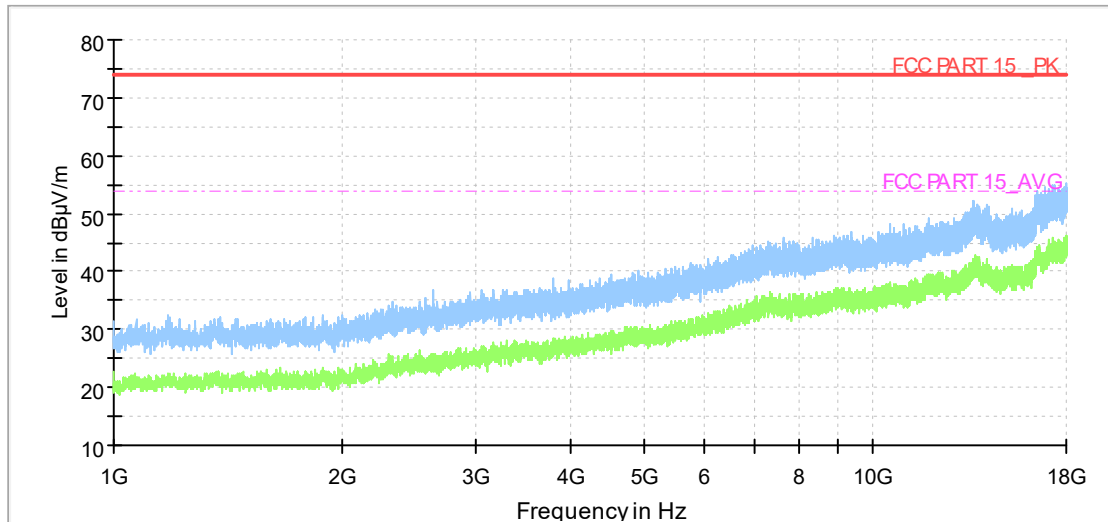
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum

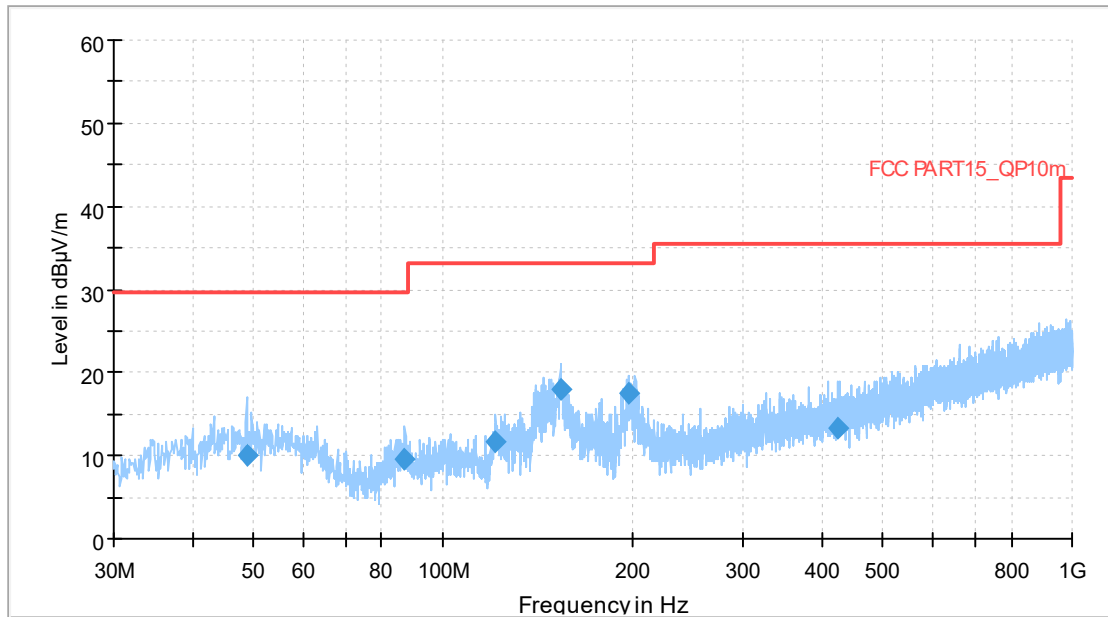


- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.1-2, WCDMA 850 idle, charger V1820L0B1-UK:

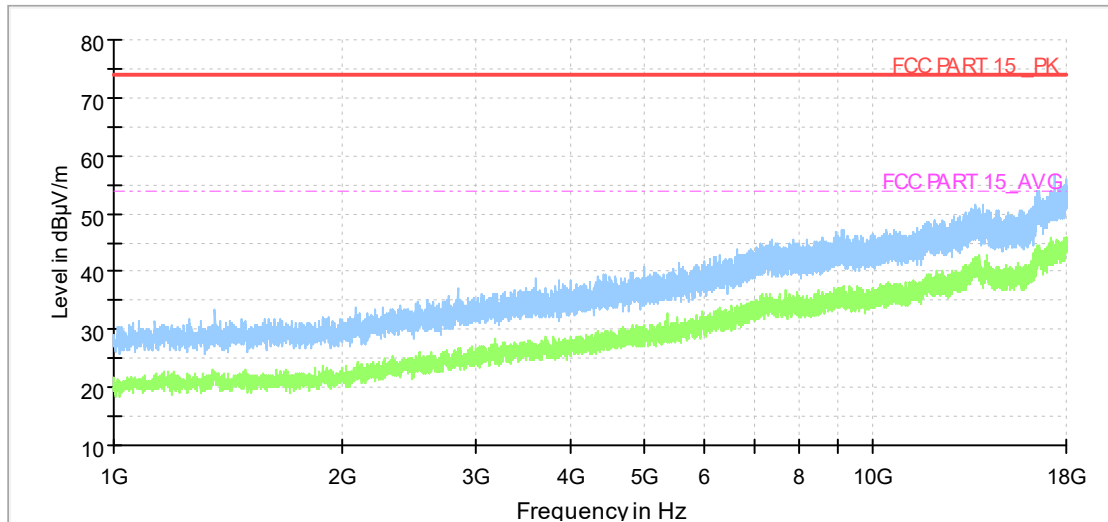
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum

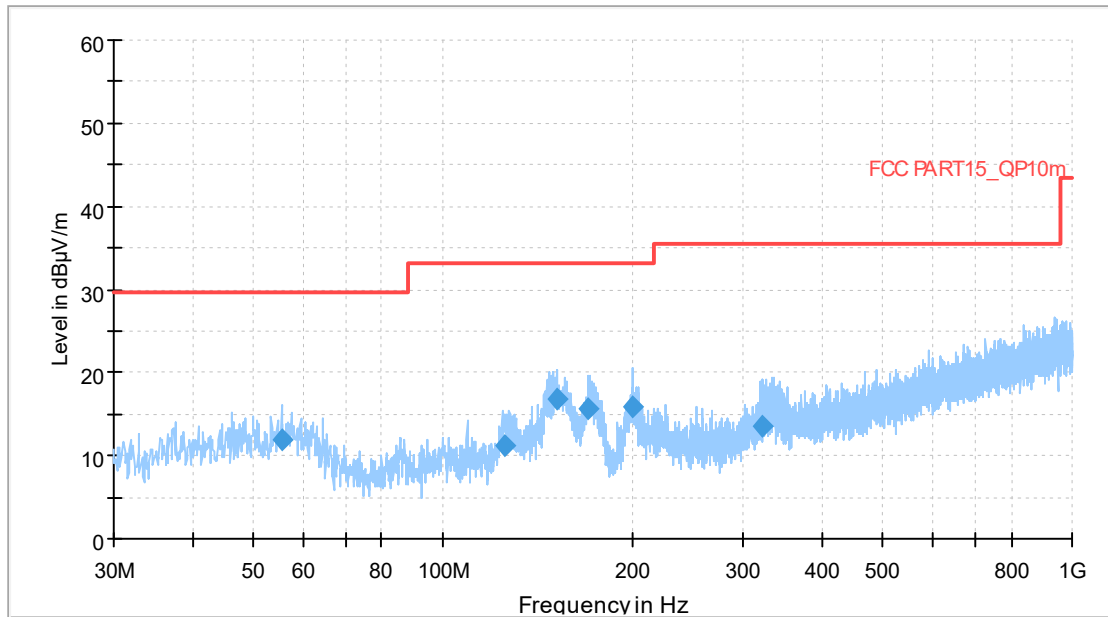


- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.1-3, LTE band 5 idle, charger V1820L0B1-AU:

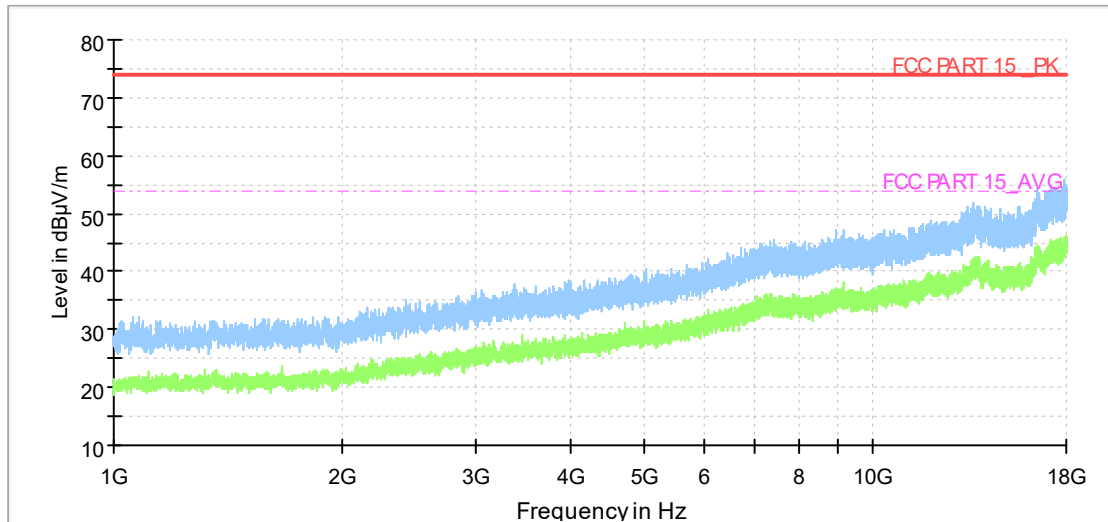
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum

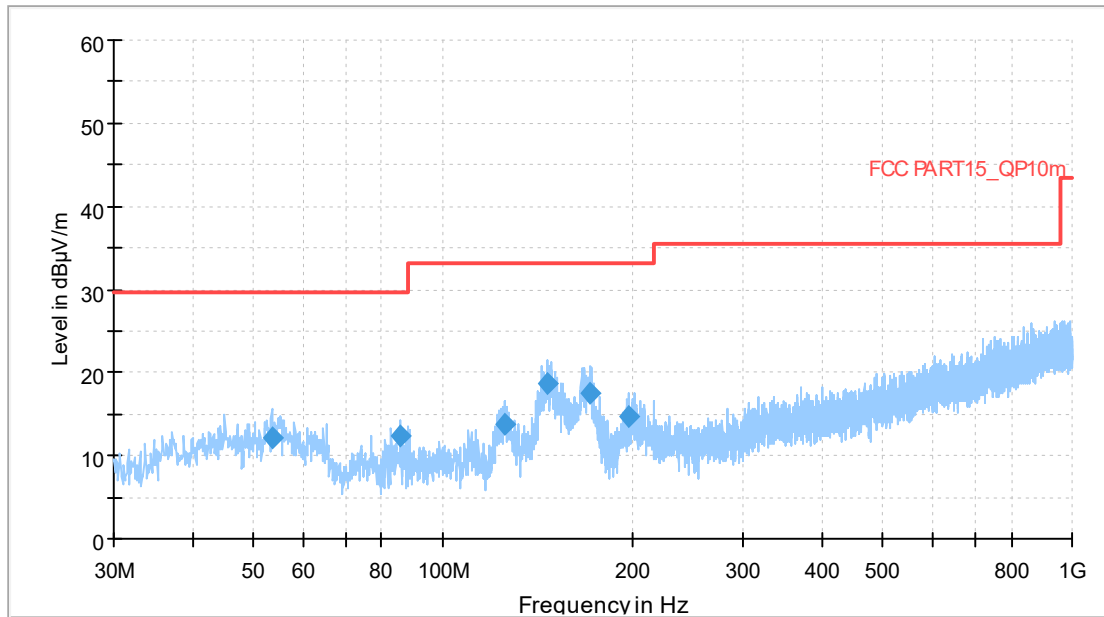


- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.1-4, LTE band 12 idle, charger V1820L0B1-US:

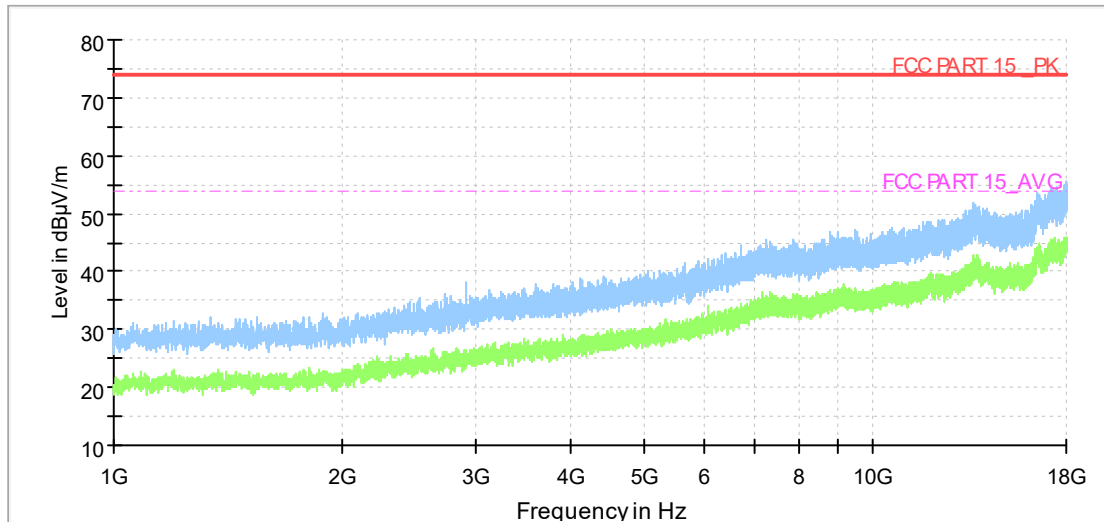
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum

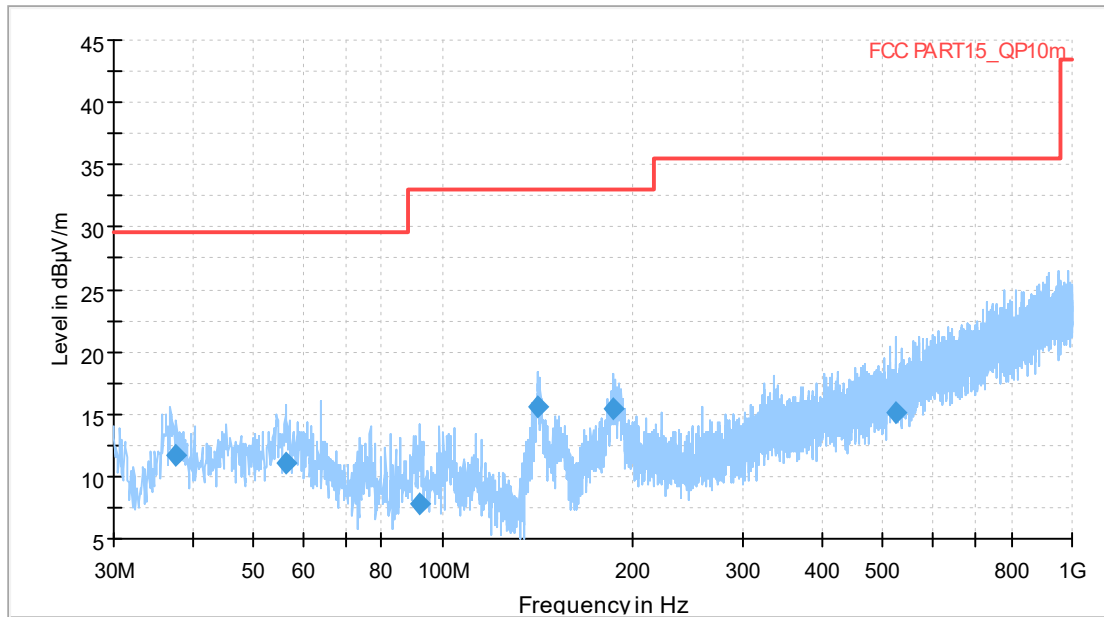


- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.1-4, LTE band 13 idle, charger V1820L0B1-US:

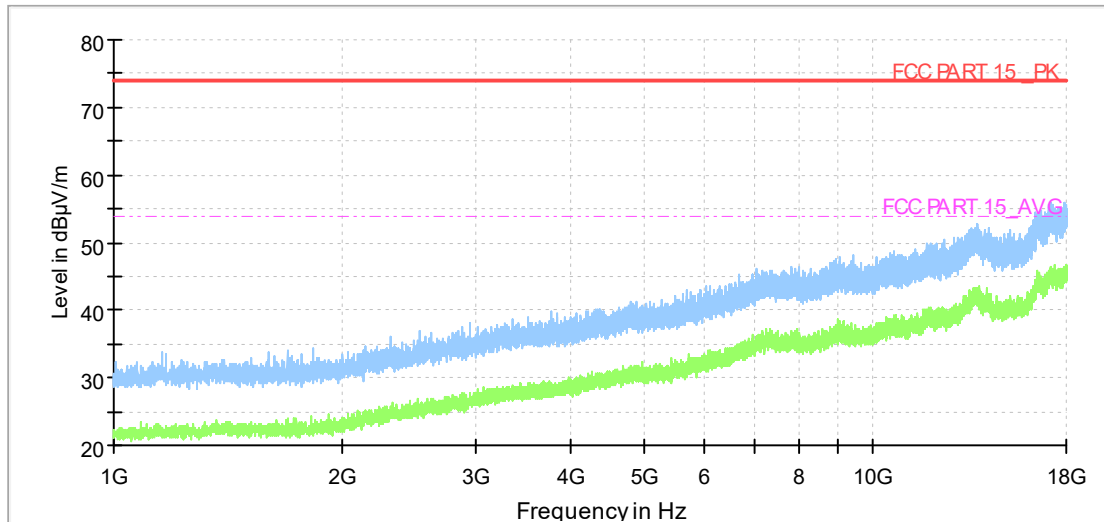
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum

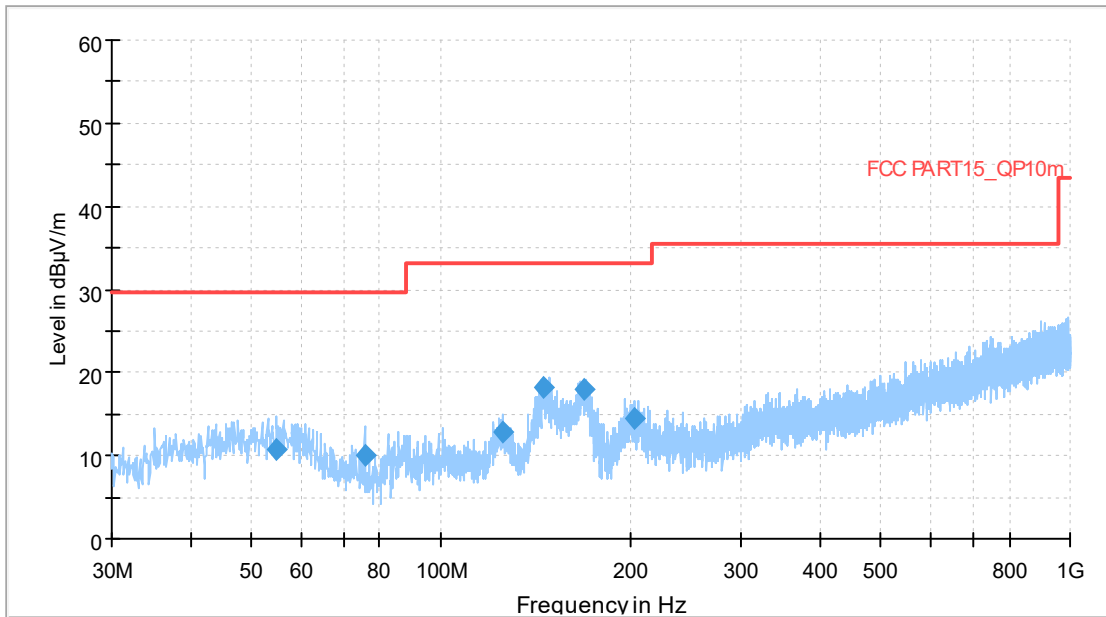


- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.1-4, LTE band 17 idle , charger V1820L0B1-US:

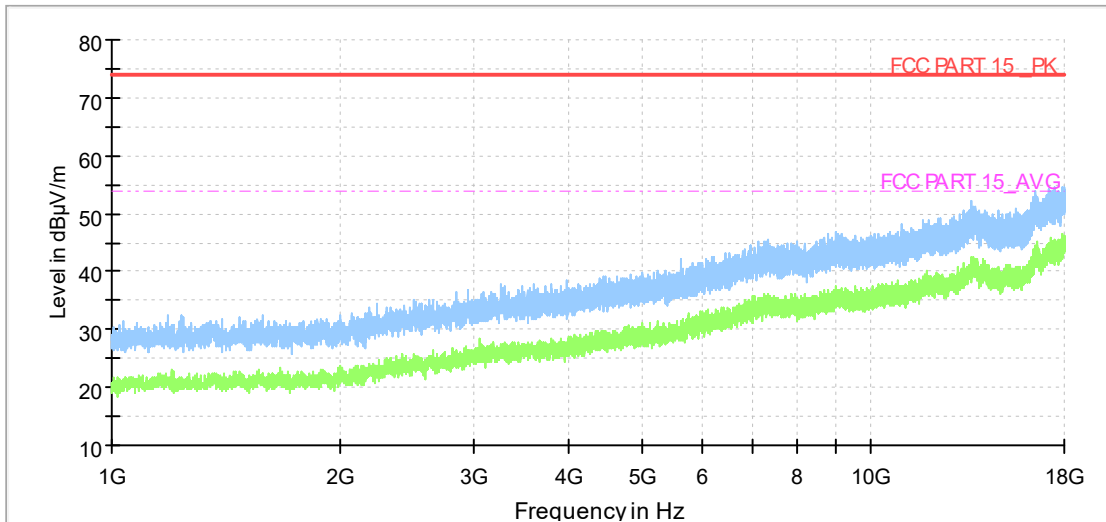
Full Spectrum



- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART15_QP10m [..]
- ◆ Final_Result QPK [Final_Result.Result:4]

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

Full Spectrum



- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-PK+ [Preview Result 1.Result:1]
- * Critical_Freqs AVG [Critical_Freqs.Result:5]
- * Critical_Freqs PK+ [Critical_Freqs.Result:4]
- FCC PART 15_PK [..]
- - - FCC PART 15_AVG [..]
- ◆ Final_Result PK+ [Final_Result.Result:4]
- ◆ Final_Result AVG [Final_Result.Result:5]

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

Measurement results for Set.2 , FM + USB:

Full Spectrum

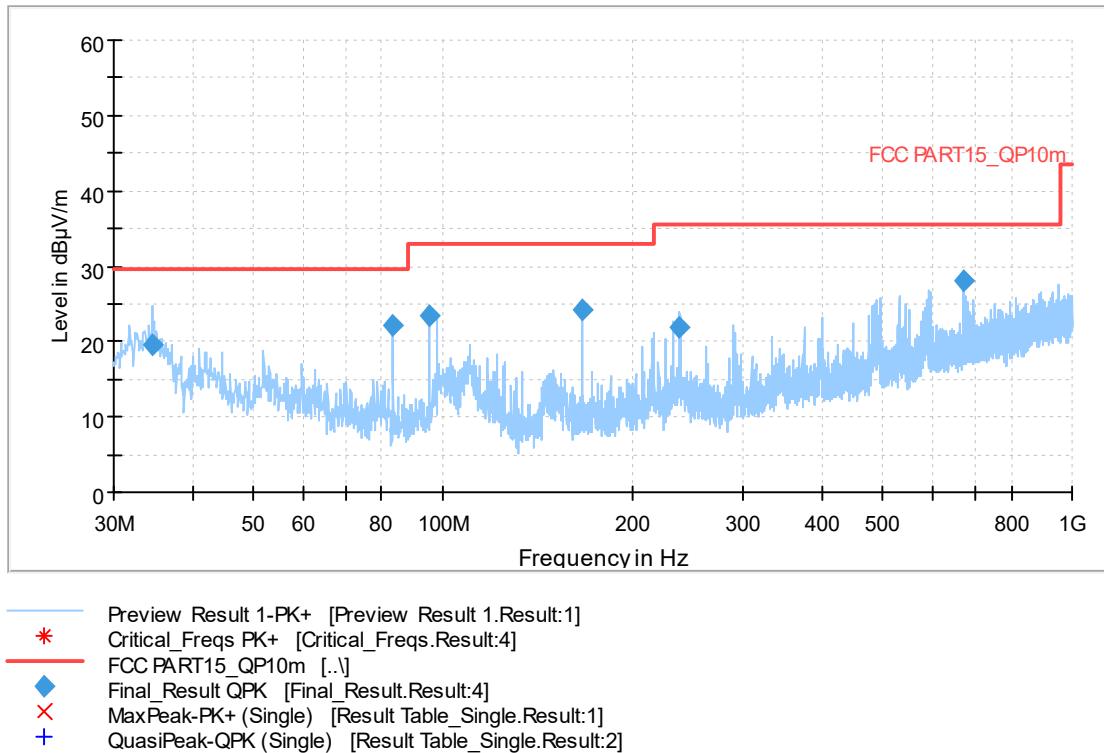


Fig A.13 Radiated Emission from 30MHz to 1GHz

Full Spectrum

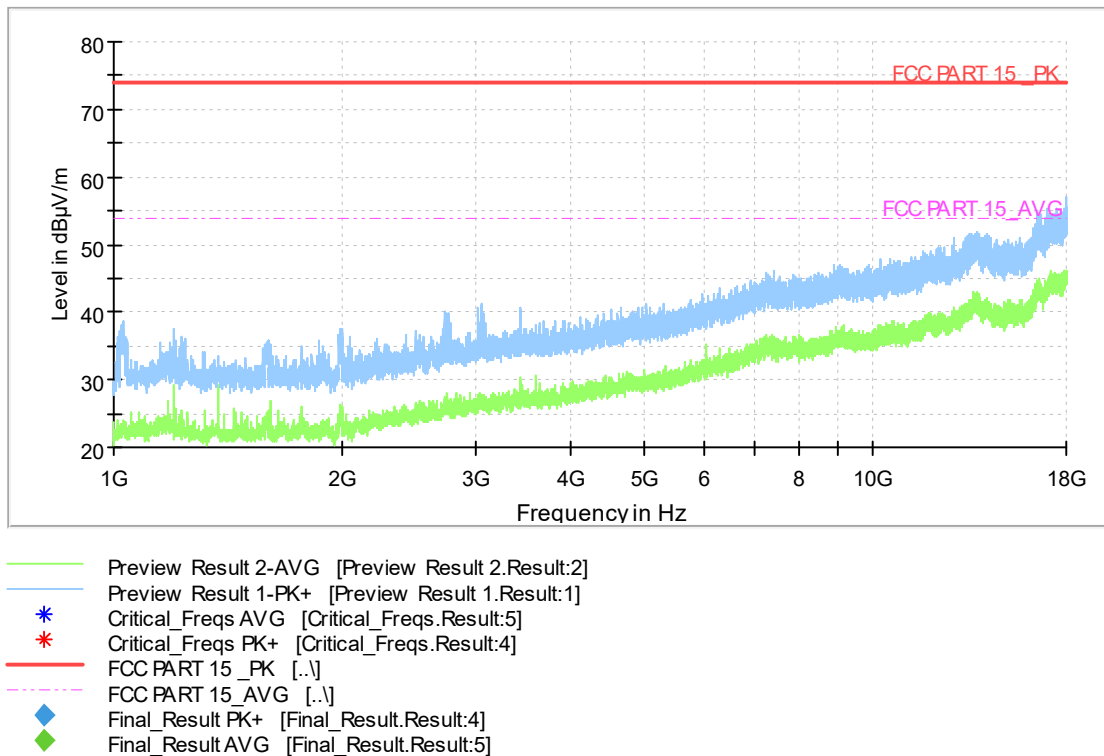


Fig A.14 Radiated Emission from 1GHz to 18GHz

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 model of the PC is DELL M4000E-17, and the serial number of the PC is M706GWXD. 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: $U= 3.08$ dB, $k=2$.

Charging Mode, Set.1-1, GSM850 idle, charger V1820L0B1-EU:

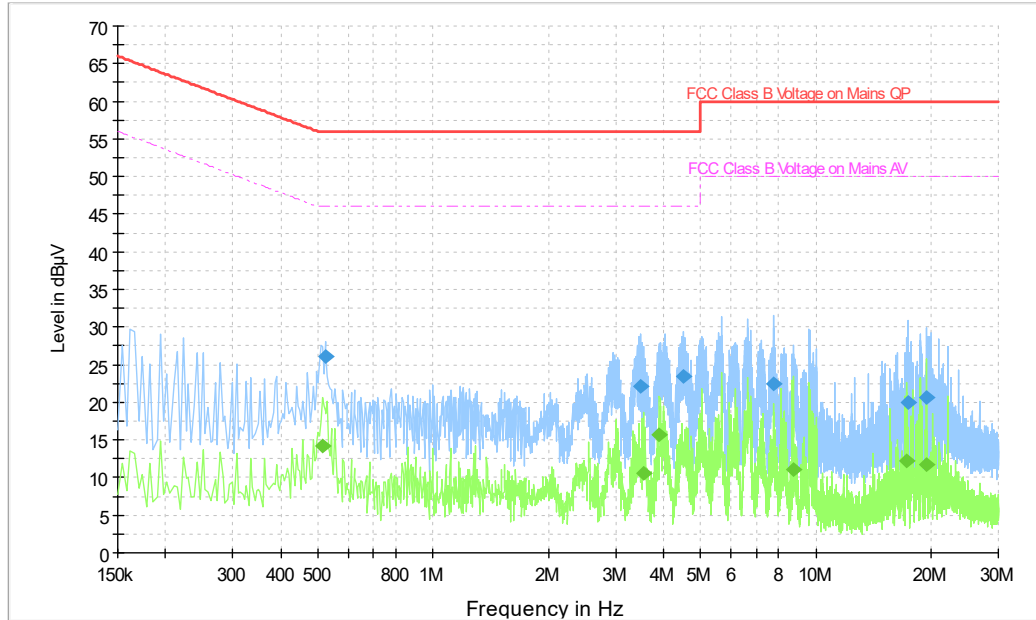


Fig A.15 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.522000	26.0	L1	19.9	30.0	56.0
3.486000	22.2	N	19.7	33.8	56.0
4.522000	23.5	N	19.7	32.5	56.0
7.750000	22.5	N	19.7	37.5	60.0
17.374000	20.0	L1	19.9	40.0	60.0
19.434000	20.6	L1	19.9	39.4	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.514000	14.2	N	20.0	31.8	46.0
3.546000	10.6	N	19.7	35.4	46.0
3.910000	15.7	L1	19.5	30.3	46.0
8.714000	11.0	L1	19.6	39.0	50.0
17.294000	12.3	L1	19.9	37.7	50.0
19.434000	11.7	L1	19.9	38.3	50.0

Charging Mode, Set.1-2, WCDMA 850 idle, charger V1820L0B1-UK:

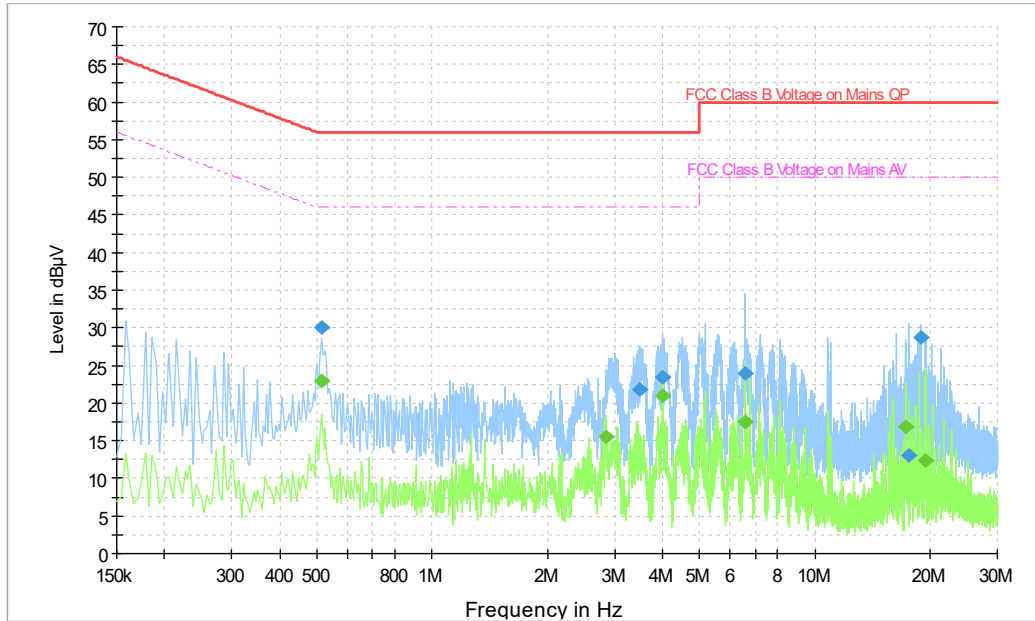


Fig A.16 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.514000	30.1	L1	19.9	25.9	56.0
3.498000	21.8	N	19.7	34.2	56.0
4.002000	23.5	N	19.7	32.5	56.0
6.602000	24.0	N	19.7	36.0	60.0
17.602000	13.0	N	20.0	47.0	60.0
18.906000	28.8	L1	19.9	31.2	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.514000	22.9	L1	19.9	23.1	46.0
2.846000	15.5	L1	19.5	30.5	46.0
4.006000	20.9	L1	19.6	25.1	46.0
6.590000	17.4	N	19.7	32.6	50.0
17.242000	16.8	L1	19.9	33.2	50.0
19.434000	12.4	L1	19.9	37.6	50.0

Charging Mode, for Set.1-3, LTE band 5 idle, charger V1820L0B1-AU:

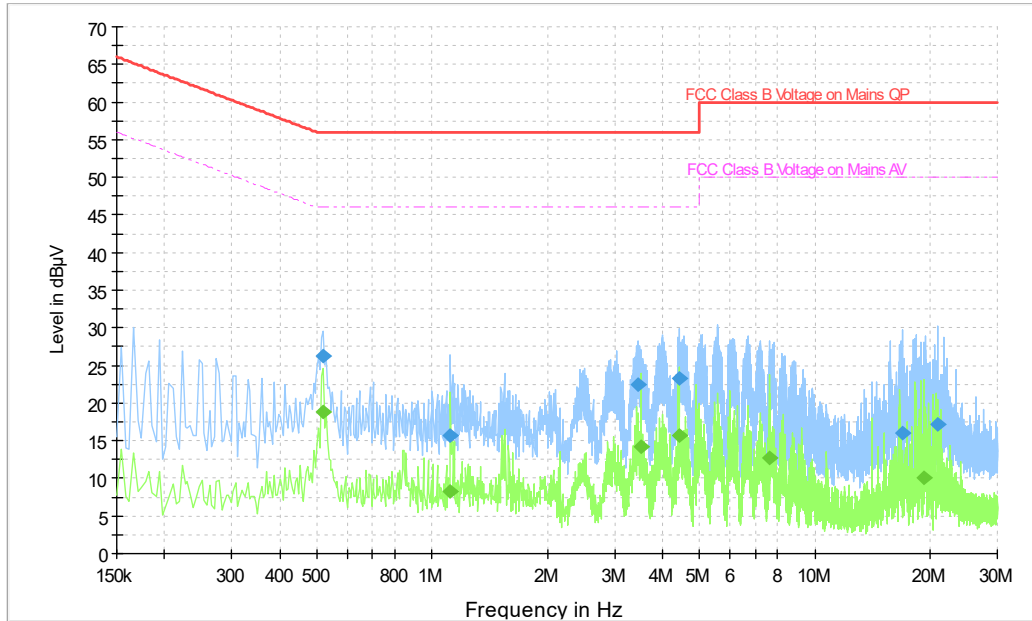


Fig A.17 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.518000	26.2	L1	19.9	29.8	56.0
1.118000	15.6	L1	19.5	40.4	56.0
3.458000	22.4	N	19.7	33.6	56.0
4.422000	23.3	L1	19.6	32.7	56.0
16.930000	16.0	L1	19.9	44.0	60.0
20.870000	17.2	L1	19.9	42.8	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.518000	18.8	L1	19.9	27.2	46.0
1.118000	8.2	L1	19.5	37.8	46.0
3.530000	14.2	L1	19.5	31.8	46.0
4.422000	15.8	L1	19.6	30.2	46.0
7.638000	12.8	L1	19.5	37.2	50.0
19.302000	10.1	L1	19.9	39.9	50.0

Charging Mode, for Set.1-4, LTE band 12 idle, charger V1820L0B1-US:

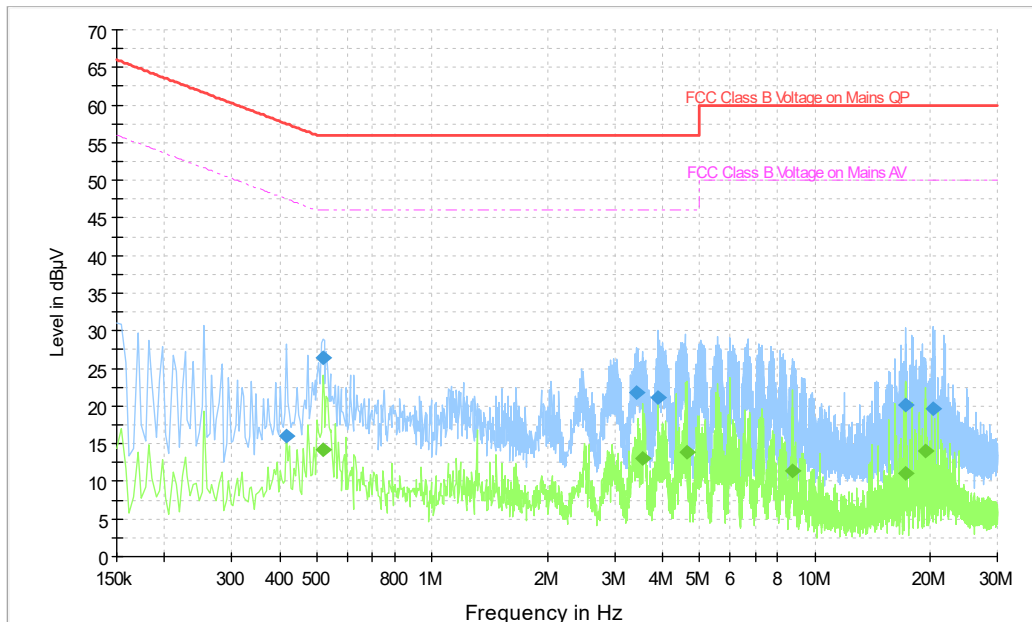


Fig A.18 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.418000	16.0	N	19.9	41.5	57.5
0.518000	26.4	L1	19.9	29.6	56.0
3.414000	21.8	N	19.7	34.2	56.0
3.894000	21.1	N	19.7	34.9	56.0
17.222000	20.2	L1	19.9	39.8	60.0
20.422000	19.6	L1	19.9	40.4	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.518000	14.1	N	20.0	31.9	46.0
3.562000	13.0	L1	19.5	33.0	46.0
4.626000	13.9	L1	19.6	32.1	46.0
8.778000	11.3	L1	19.6	38.7	50.0
17.250000	11.1	L1	19.9	38.9	50.0
19.458000	14.0	L1	19.9	36.0	50.0

Charging Mode, for Set.2, FM + USB:

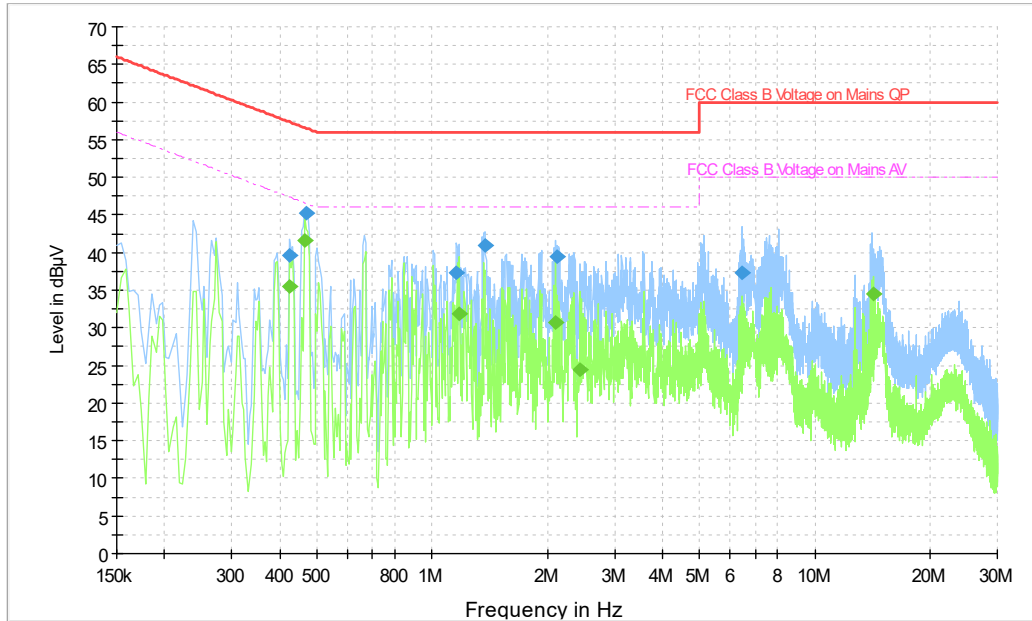


Fig A.19 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.426000	39.7	L1	19.9	17.7	57.3
0.470000	45.2	L1	19.9	11.3	56.5
1.158000	37.4	L1	19.6	18.6	56.0
1.374000	40.9	N	19.8	15.1	56.0
2.130000	39.5	L1	19.5	16.5	56.0
6.470000	37.3	N	19.7	22.7	60.0

Final Result 2

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.426000	35.4	N	19.9	11.9	47.3
0.466000	41.7	N	20.0	4.9	46.6
1.182000	31.9	L1	19.5	14.1	46.0
2.098000	30.8	L1	19.5	15.2	46.0
2.438000	24.4	N	19.7	21.6	46.0
14.214000	34.4	L1	19.8	15.6	50.0



ANNEX B: PERSONS INVOLVED IN THIS TESTING

Test Item	Test Software and Version	Software Vendor	Test operator
Conducted Emission	EMC32 V8.5.2	R&S	Meng Qingbo
Radiated Emission	EMC32 V9.01.00	R&S	Zhang Tianli

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