



TEST REPORT

No.B17N00462-EMC

for

Huawei Technologies Co.,Ltd.

HUAWEI MediaPad M3 Lite

Model Name: CPN-W09

FCC ID: QISCPN-W09

with

Hardware Version: A088e

Software Version: CPN-W09C331B005SP01

Issued Date: 2017-06-26

Test Laboratory:

FCC 2.948 Listed: No.342690

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.

Test Laboratory:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

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

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
B17N00462-EMC	Rev.0	1st edition	2017-05-18
B17N00462-EMC	Rev.0	2nd edition	2017-06-26

CONTENTS

1. TEST LABORATORY	4
1.1. TESTING LOCATION	4
1.2. TESTING ENVIRONMENT	4
1.3. PROJECT DATA	4
1.4. SIGNATURE	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION	5
2.2. MANUFACTURER INFORMATION	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	6
3.1. ABOUT EUT	6
3.2. INTERNAL IDENTIFICATION OF EUT	6
3.3. INTERNAL IDENTIFICATION OF AE	6
3.4. EUT SET-UPS	7
4. REFERENCE DOCUMENTS	8
4.1. REFERENCE DOCUMENTS FOR TESTING	8
5. LABORATORY ENVIRONMENT	9
6. SUMMARY OF TEST RESULTS	10
7. TEST FACILITIES UTILIZED	11
ANNEX A: MEASUREMENT RESULTS.....	12

1. Test Laboratory

1.1. Testing Location

Address: TCL International E city No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen, Guangdong, China
Postal Code: 518048
Telephone: +86(755)33322000
Fax: +86(755)33322001

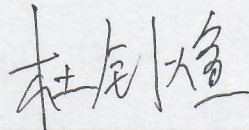
1.2. Testing Environment

Normal Temperature: 15-35℃
Relative Humidity: 20-75%

1.3. Project data

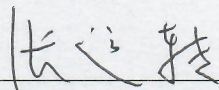
Testing Start Date: 2017-04-17
Testing End Date: 2017-05-04

1.4. Signature



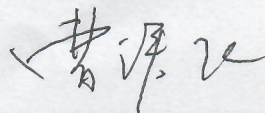
Du Zhaoxuan

(Prepared this test report)



Zhang Yunzhuan

(Reviewed this test report)



Cao Junfei

Director of the laboratory
(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Huawei Technologies Co., Ltd
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen 518129, P.R. China

2.2. Manufacturer Information

Company Name: Huawei Technologies Co., Ltd
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen 518129, P.R. China

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

3.1. About EUT

Description	HUAWEI MediaPad M3 Lite
Model Name	CPN-W09
FCC ID	QISCPN-W09

The Equipment Under Test (EUT) are a model of HUAWEI CPN-W09 with integrated antenna.

Remark: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed information.

3.2. Internal Identification of EUT

EUT ID* SN or IMEI

EUT1 KVPBBEB730600173

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

3.3. Internal Identification of AE

AE ID*	Description	SN
AE1	Battery	/
AE2	Travel charger	/
AE3	USB cable	/

AE1-1

Model	HB3080G1EBC
Manufacturer	Huawei Technologies Co., Ltd
Capacity	4650mAh
Nominal Voltage	3.8V

AE1-2

Model	HB3080G1EBW
Manufacturer	Huawei Technologies Co., Ltd
Capacity	4650mAh
Nominal Voltage	3.8V

AE2-1

Model	HW-050200U01
Manufacturer	Shezhen Huntkey Electric Co.,Ltd
SN	H786K3H1501190

AE2-2

Model	HW-050200U01
Manufacturer	HUIZHOU BYD ELECTRONIC CO.,LTD
SN	B78690H1L23610

AE2-3

Model	HW-050200U01
Manufacturer	DONG GUAN PHITEK ELECTRONICS COL.,LTD.
SN	P78616H1L13404

AE3-1

Model	CUBB01M-HC306-DH
Manufacturer	FOXCONN INTERCONNECT TECHNOLOGY LIMITED.

AE3-2

Model	L99U2018-CS-H
Manufacturer	Luxshare Precision industry Co., Ltd

AE3-3

Model	CD-U0405-1042
Manufacturer	CONNREX (SHEN ZHEN) INDUSTRIAL, LTD

AE3-4

Model	H09-000543
Manufacturer	SHEN ZHEN PANG NGAI INDUSTRIAL CO., LTD

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

3.4. EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1-1+AE2-1+ AE3-1	Charging mode
Set.2	EUT1+ AE1-1+AE2-2+ AE3-2	Charging mode
Set.3	EUT1+ AE1-1+AE2-3+ AE3-3	Charging mode
Set.4	EUT1+ AE1-1+AE2-1+ AE3-4	Charging mode
Set.5	EUT1+ AE1-1+ AE3-1	USB mode
Set.6	EUT1+ AE1-1+ AE3-2	USB mode
Set.7	EUT1+ AE1-1+ AE3-3	USB mode
Set.8	EUT1+ AE1-1+ AE3-4	USB mode

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	10-1-2016 Edition
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2014

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3 m distance, from 30 to 1000 MHz

Shield room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-10000MHz,>90dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω

Fully-anechoic chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	0.014MHz-1MHz,>60dB; 1MHz-18000MHz,>90dB
Electrical insulation	> 2MΩ
Ground system resistance	< 4 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 18 GHz, 3 m distance
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:	
P	Pass
NA	Not applicable
F	Fail

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

7. Test Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CALDUE DATE	CAL PERIOD
1.	Test Receiver	ESCI	100701	R&S	2017.08.09	1 year
2.	Test Receiver	ESR7	101675	R&S	2017.07.21	1 year
3.	Spectrum Analyzer	FSP 40	100378	R&S	2017.12.15	1 year
4.	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2020.02.27	3 years
5.	LISN	ESH2-Z5	100196	R&S	2018.01.05	1 year
6.	Horn Antenna	3117	00066585	ETS-Lindgren	2019.03.05	3 years
7.	Universal Radio Communication Tester	CMU200	114544	R&S	2017.09.09	1 year
8.	PC	2OET-A00DC D	PF-OIYDAK	Lenovo	/	/
9.	Printer	P1008	VNF6C12491	HP	/	/
10.	Mouse	MO28UOL	44B39412	Lenovo	/	/
11.	Chamber	FACT5-2.0	4166	ETS-Lindgren	2018.05.13	3 years

Project	Name	Version
Radiated Emission	EMC32	Version 10.01.00
Conducted Emission	EMC32	Version 8.53.0

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission (§15.109(a))

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 a distance of 3 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 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:

Charging mode: The MS is synchronized to SS, and able to respond to paging messages and incoming call. An established call has been released. The MS is connected to a charger.

USB mode: The model of the PC is Lenovo 2OET-A00DCD, and the serial number of the PC is PF-OIYDAK. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

A.1.3 Measurement Limit

Limit from CFR Part 15.109(a)

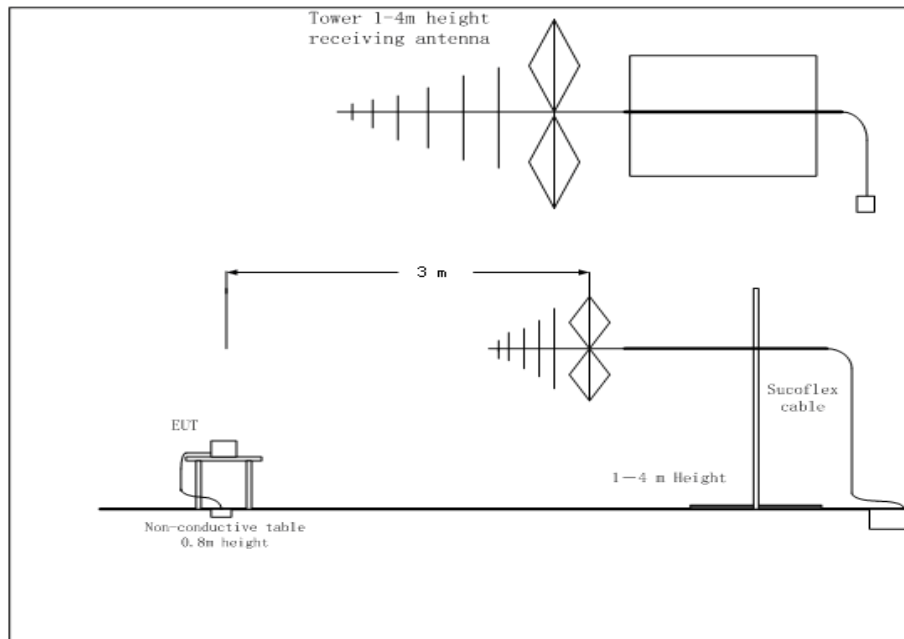
Frequency range (MHz)	Field strength limit (μV/m)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

*Note: The original limit is defined at 10m test distance. This limit is calculated according to CISPR requirements.

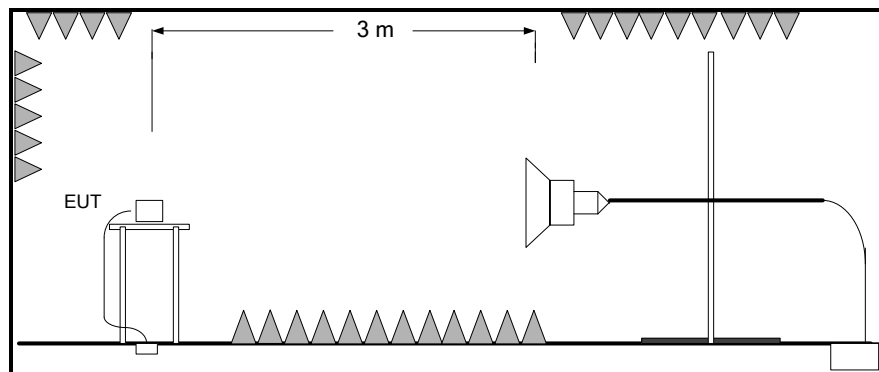
A.1.4 Test Condition

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz (IF bandwidth)	5
Above 1000	1MHz/3MHz	15

**A.1.5 Test set-up:
30MHz-1GHz**



1GHz-18GHz



A.1.6 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.

Note: the result contains vertical part and Horizontal part

RE Measurement uncertainty: 30M-1GHz: 5.12dB (k=2);
1GHz-18GHz: 4.48 dB (k=2)

Set.1 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14287.500000	55.73	74.00	18.27	H	11.4
14744.000000	56.86	74.00	17.14	V	11.9
15683.000000	58.95	74.00	15.05	V	12.6
16209.000000	59.36	74.00	14.64	H	13.1
16780.000000	59.50	74.00	14.50	V	13.9
17355.500000	59.21	74.00	14.79	H	14.0

Set.1 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14529.500000	44.68	54.00	9.32	V	11.8
15149.500000	45.55	54.00	8.45	H	12.1
15749.500000	47.25	54.00	6.75	V	12.8
16219.500000	47.57	54.00	6.43	H	13.1
16742.500000	48.26	54.00	5.74	H	13.9
17373.000000	47.71	54.00	6.29	H	14.0

Set.2 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14531.500000	56.41	74.00	17.59	H	11.8
15179.500000	56.93	74.00	17.07	H	12.2
15711.500000	59.50	74.00	14.50	H	12.7
16270.000000	58.60	74.00	15.40	H	13.2
16708.000000	60.39	74.00	13.61	V	13.8
17323.500000	59.37	74.00	14.63	V	14.0

Set.2 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14180.500000	44.36	54.00	9.64	V	11.2
15159.000000	45.40	54.00	8.60	H	12.1
15749.000000	46.97	54.00	7.03	V	12.8
16221.000000	47.55	54.00	6.45	H	13.1
16739.000000	48.12	54.00	5.88	V	13.9
17343.000000	47.67	54.00	6.33	H	14.0

Set.3 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14175.500000	56.24	74.00	17.76	H	11.2
14578.000000	57.35	74.00	16.65	H	11.9
15730.500000	58.33	74.00	15.67	H	12.7
16208.000000	58.74	74.00	15.26	H	13.1
16785.000000	59.33	74.00	14.67	H	13.9
17262.500000	60.38	74.00	13.62	V	13.9

Set.3 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14545.000000	44.54	54.00	9.46	V	11.9
15141.500000	45.57	54.00	8.43	H	12.1
15692.000000	47.22	54.00	6.78	V	12.7
16215.000000	47.56	54.00	6.44	H	13.1
16734.000000	48.15	54.00	5.85	H	13.8
17322.500000	47.66	54.00	6.34	H	14.0

Set.4 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14240.000000	56.23	74.00	17.77	V	11.3
15080.000000	56.76	74.00	17.24	H	12.1
15759.500000	59.44	74.00	14.56	V	12.8
16274.500000	58.50	74.00	15.50	H	13.2
16737.000000	59.73	74.00	14.27	V	13.8
17451.000000	59.29	74.00	14.71	H	14.0

Set.4 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14153.000000	44.50	54.00	9.50	V	11.2
15143.500000	45.48	54.00	8.52	V	12.1
15698.000000	47.16	54.00	6.84	H	12.7
16204.500000	47.71	54.00	6.29	V	13.1
16786.000000	48.25	54.00	5.75	H	13.9
17319.500000	47.86	54.00	6.14	V	13.9

Set.5 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14508.000000	56.77	74.00	17.23	V	11.8
15173.000000	56.90	74.00	17.10	V	12.1
15747.000000	59.04	74.00	14.96	V	12.8
16176.000000	58.60	74.00	15.40	V	13.1
16806.500000	59.66	74.00	14.34	H	13.9
17332.000000	59.27	74.00	14.73	V	14.0

Set.5 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14543.000000	44.46	54.00	9.54	V	11.9
15181.500000	45.71	54.00	8.29	H	12.2
15703.500000	47.24	54.00	6.76	H	12.7
16226.500000	47.59	54.00	6.41	V	13.1
16783.000000	48.46	54.00	5.54	V	13.9
17374.500000	47.87	54.00	6.13	H	14.0

Set.6 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14349.500000	56.00	74.00	18.00	V	11.5
15125.000000	57.18	74.00	16.82	H	12.1
15725.000000	58.55	74.00	15.45	V	12.7
16268.000000	59.63	74.00	14.37	H	13.2
16831.000000	60.00	74.00	14.00	V	13.9
17731.500000	59.24	74.00	14.76	H	13.9

Set.6 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14152.000000	44.53	54.00	9.47	V	11.2
15157.000000	45.59	54.00	8.41	H	12.1
15707.000000	47.07	54.00	6.93	V	12.7
16203.500000	47.53	54.00	6.47	V	13.1
16789.000000	48.50	54.00	5.50	H	13.9
17299.500000	47.81	54.00	6.19	V	13.9

Set.7 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
13965.500000	56.14	74.00	17.86	H	10.8
15179.500000	57.21	74.00	16.79	H	12.2
15750.000000	58.92	74.00	15.08	V	12.8
16191.000000	59.06	74.00	14.94	H	13.1
16799.000000	60.05	74.00	13.95	V	13.9
17364.000000	60.37	74.00	13.63	V	14.0

Set.7 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)
14166.500000	44.31	54.00	9.69	H	11.2
15164.500000	45.53	54.00	8.47	V	12.1
15700.000000	47.22	54.00	6.78	V	12.7
16216.500000	47.58	54.00	6.42	V	13.1
16790.000000	48.33	54.00	5.67	H	13.9
17330.500000	47.77	54.00	6.23	H	14.0

Set.8 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)
14402.000000	55.91	74.00	18.09	V	11.5
15177.500000	56.83	74.00	17.17	H	12.2
15700.500000	58.78	74.00	15.22	H	12.7
16170.000000	59.25	74.00	14.75	H	13.1
16771.000000	59.60	74.00	14.40	V	13.9
17343.500000	59.85	74.00	14.15	V	14.0

Set.8 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)
14155.500000	44.35	54.00	9.65	H	11.2
15147.000000	45.38	54.00	8.62	H	12.1
15687.500000	47.21	54.00	6.79	H	12.7
16201.500000	47.41	54.00	6.59	V	13.1
16792.500000	48.26	54.00	5.74	V	13.9
17324.000000	47.55	54.00	6.45	V	14.0

Note: The measurement result of Set.1, Set.2, Set.3, Set.4, Set.5, Set.6, Set.7 and Set.8 showed here are worst cases of combinations of different batteries and USB cables.

Charging mode: Set 1

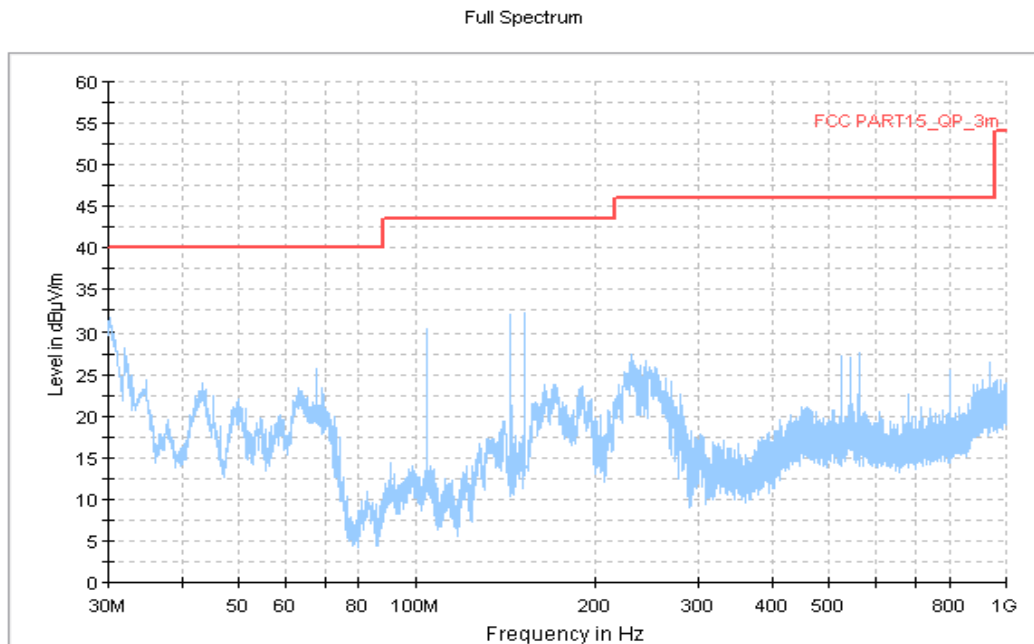


Figure A.1 Radiated Emission from 30MHz to 1GHz

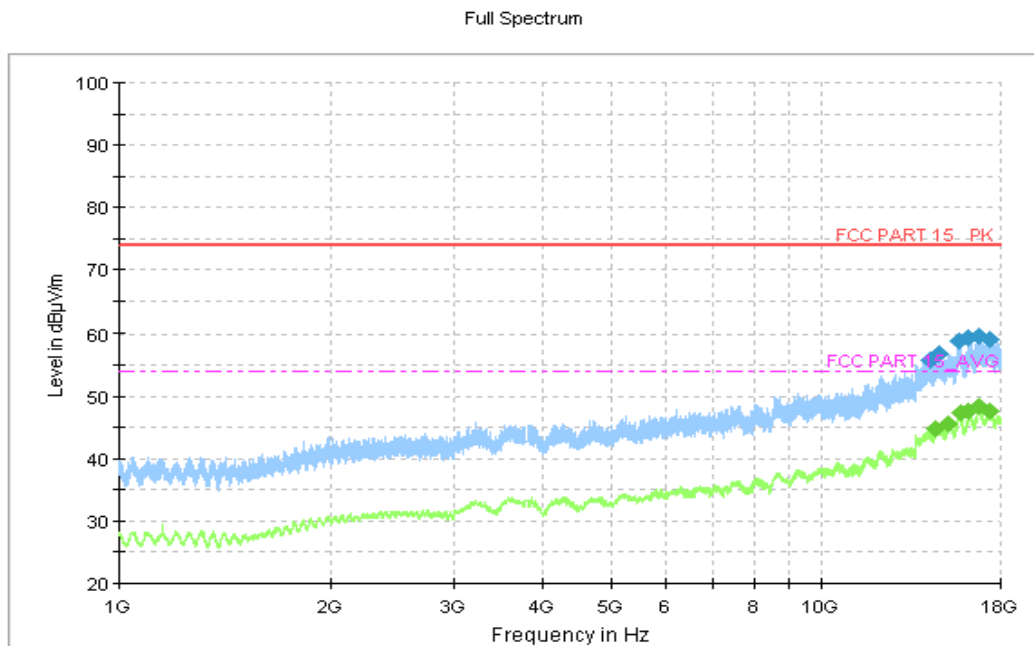


Figure A.2 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 2

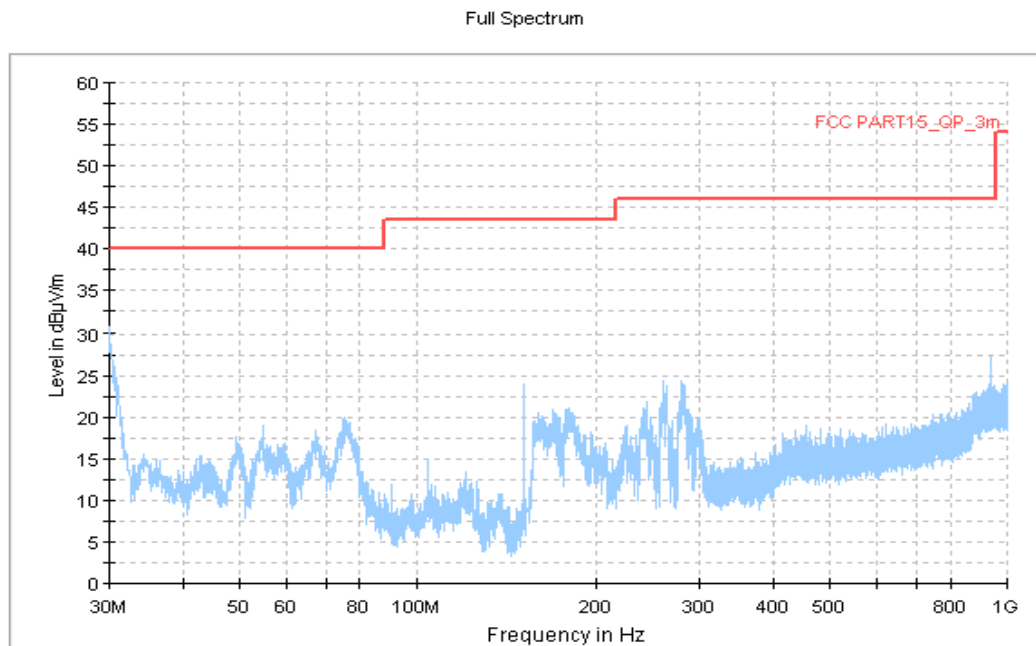


Figure A.3 Radiated Emission from 30MHz to 1GHz

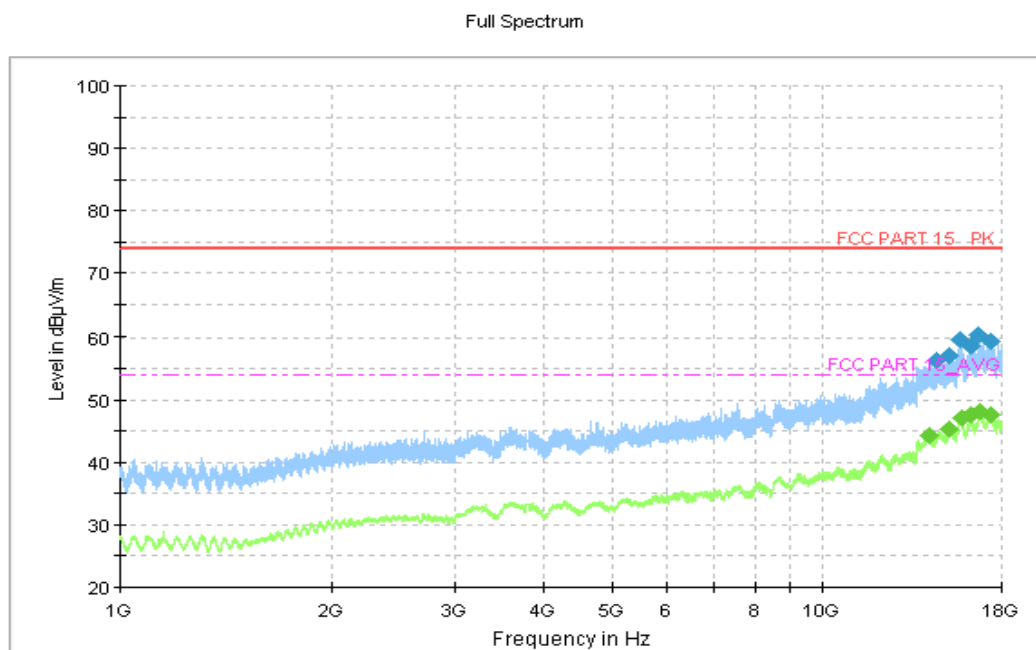


Figure A.4 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 3

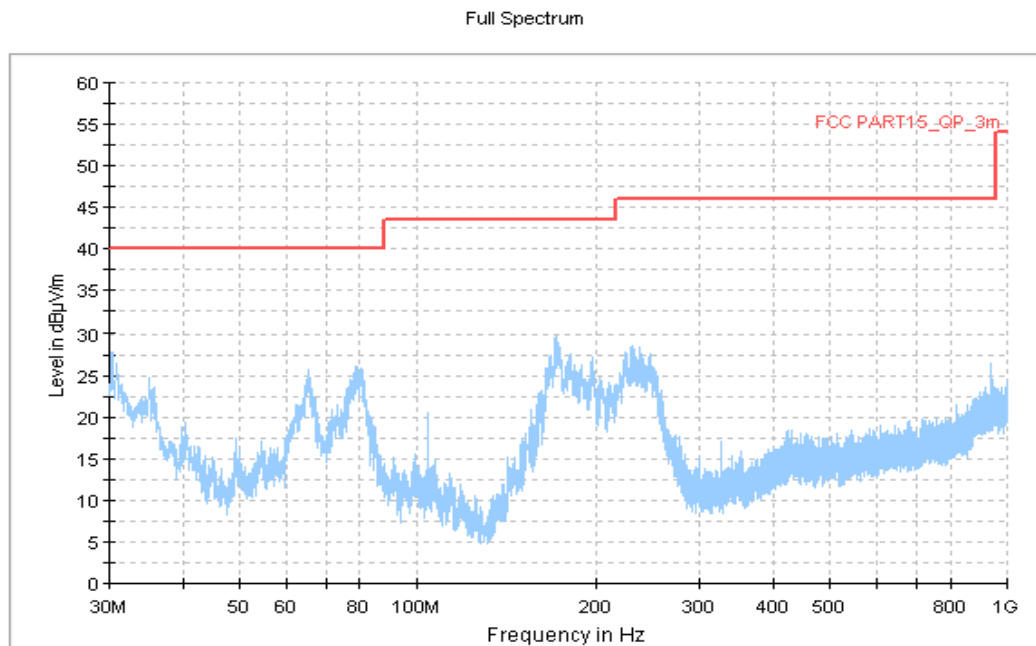


Figure A.5 Radiated Emission from 30MHz to 1GHz

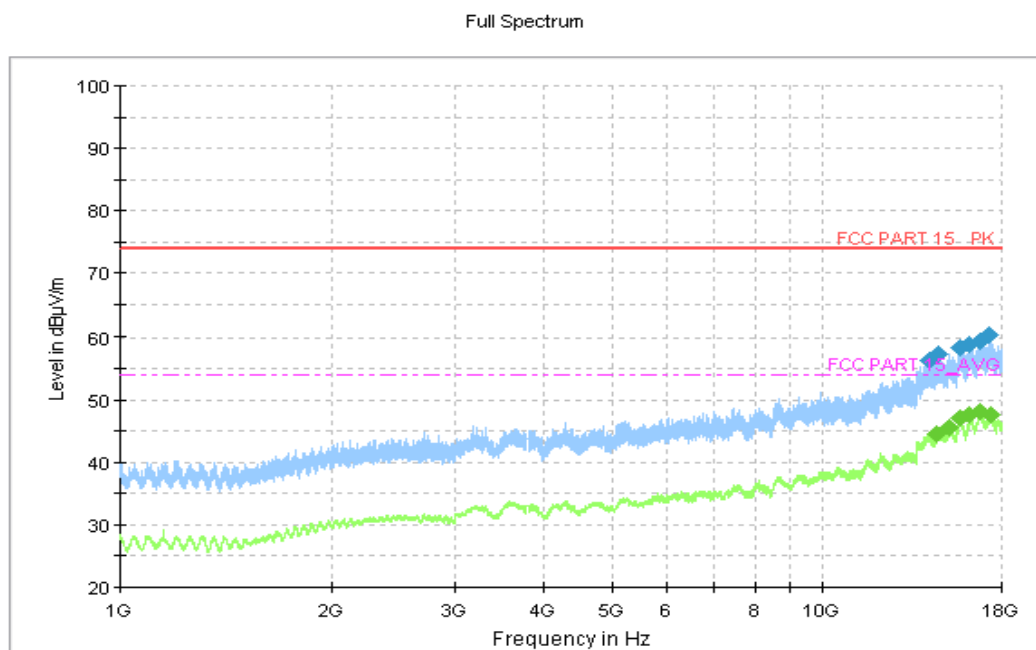


Figure A.6 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 4

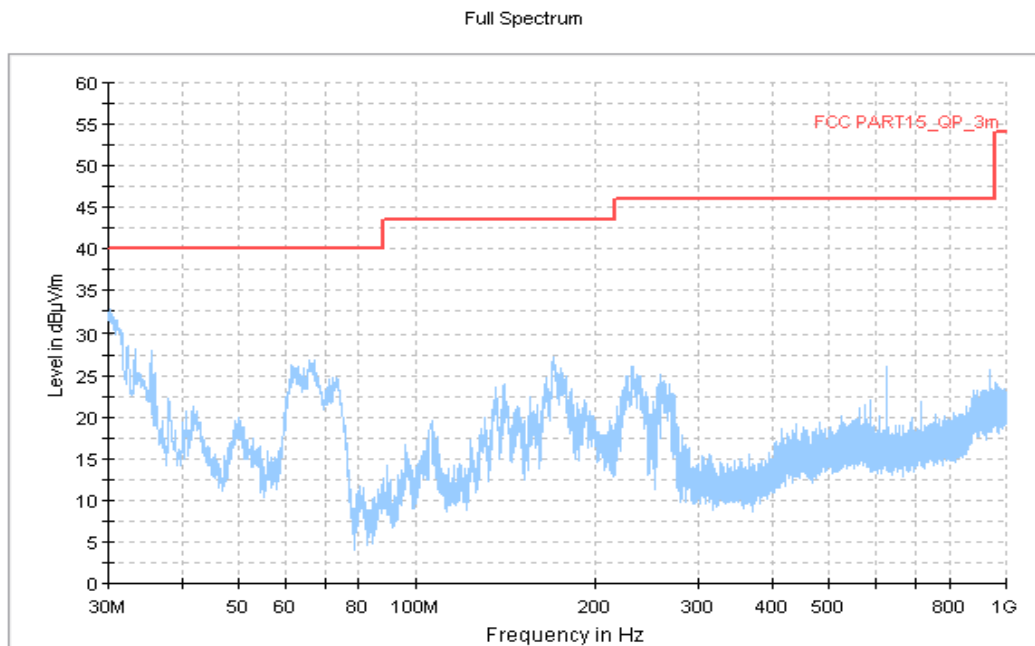


Figure A.7 Radiated Emission from 30MHz to 1GHz

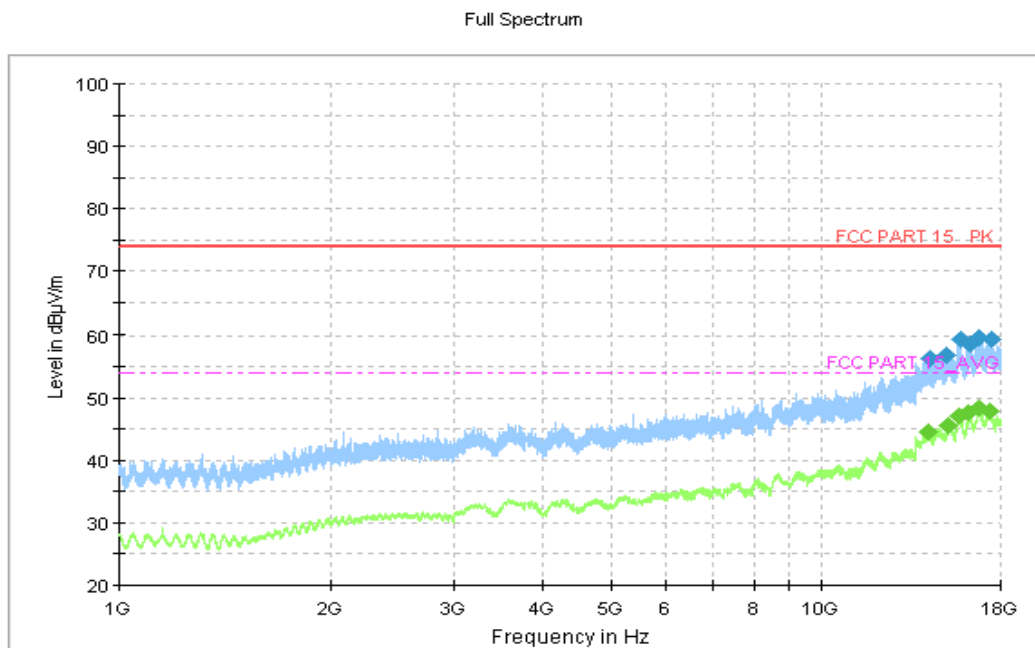


Figure A.8 Radiated Emission from 1GHz to 18GHz

USB mode: Set 5

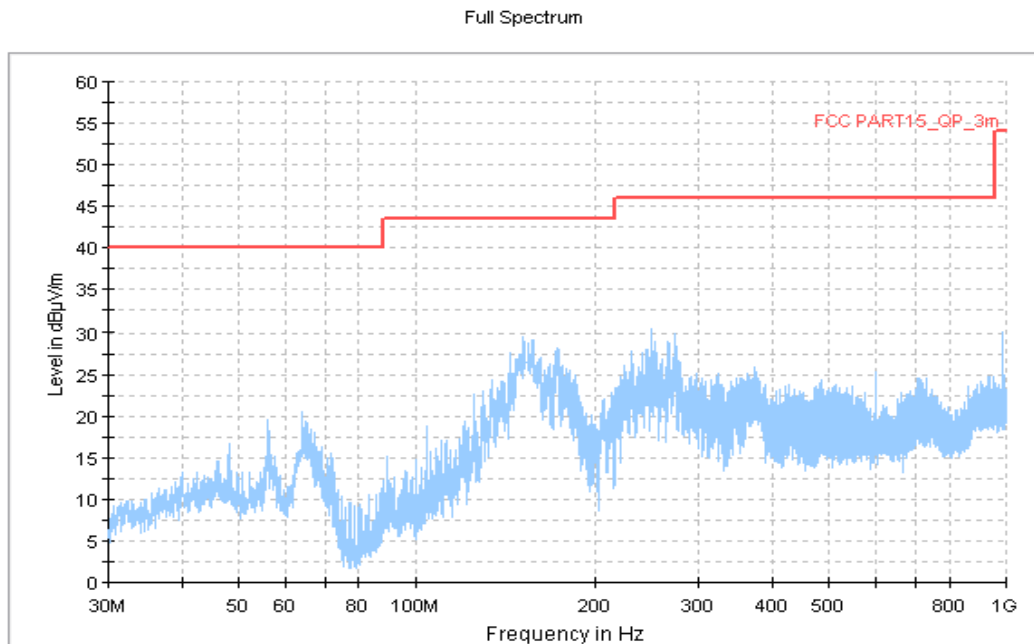


Figure A.9 Radiated Emission from 30MHz to 1GHz

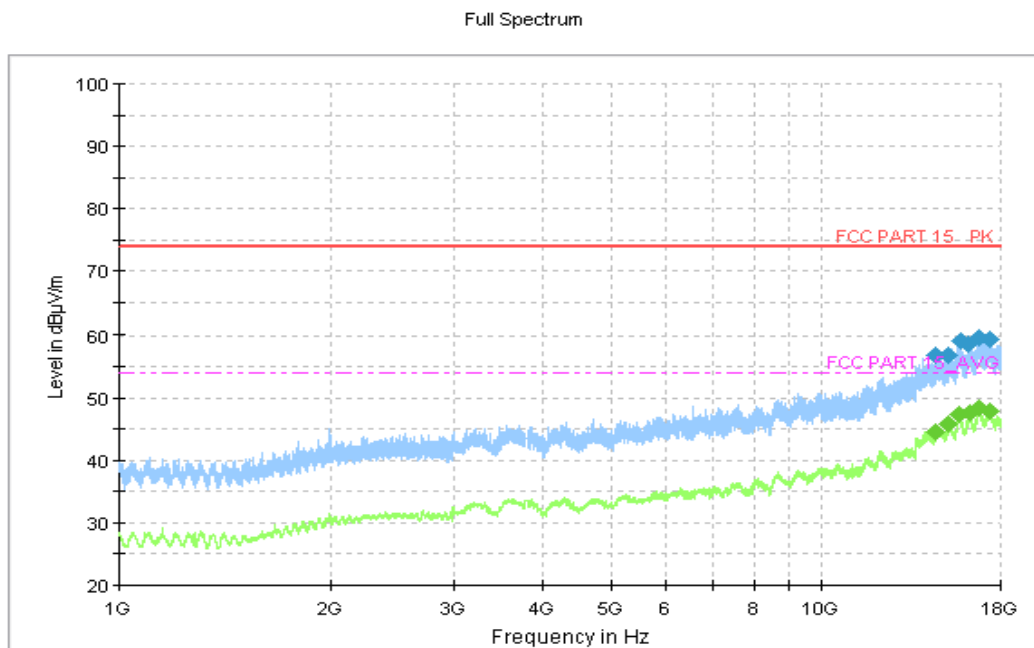


Figure A.10 Radiated Emission from 1GHz to 18GHz

USB mode: Set 6

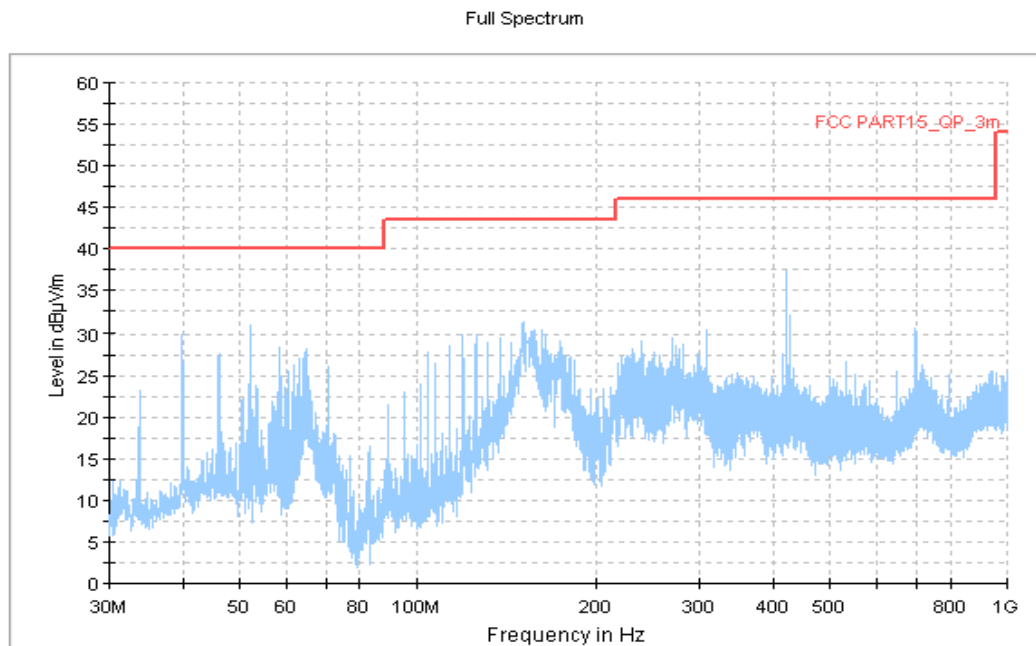


Figure A.11 Radiated Emission from 30MHz to 1GHz

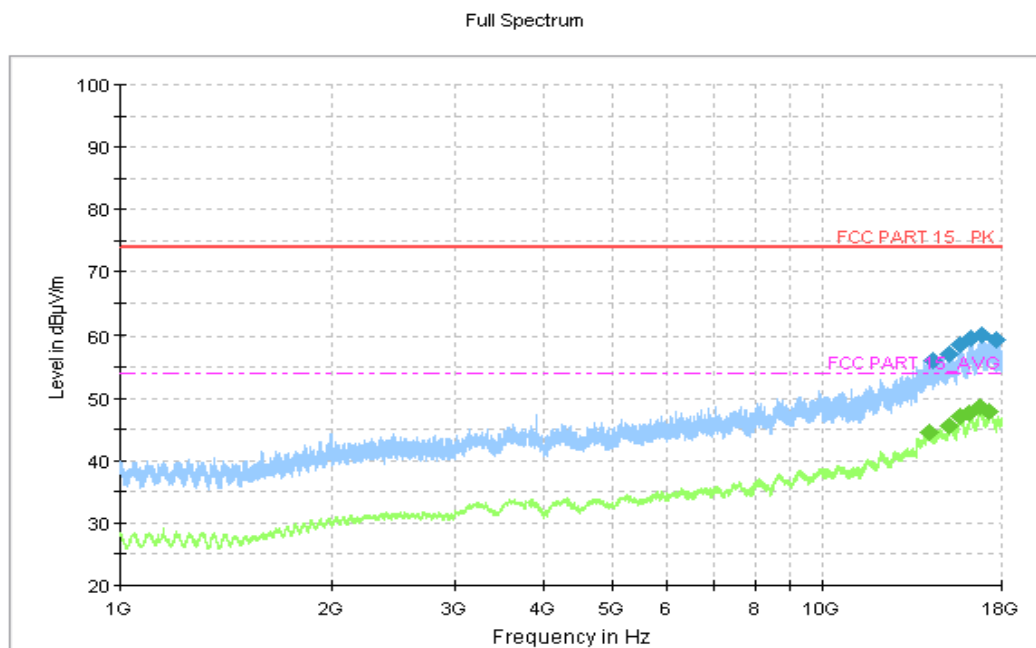


Figure A.12 Radiated Emission from 1GHz to 18GHz

USB mode: Set 7

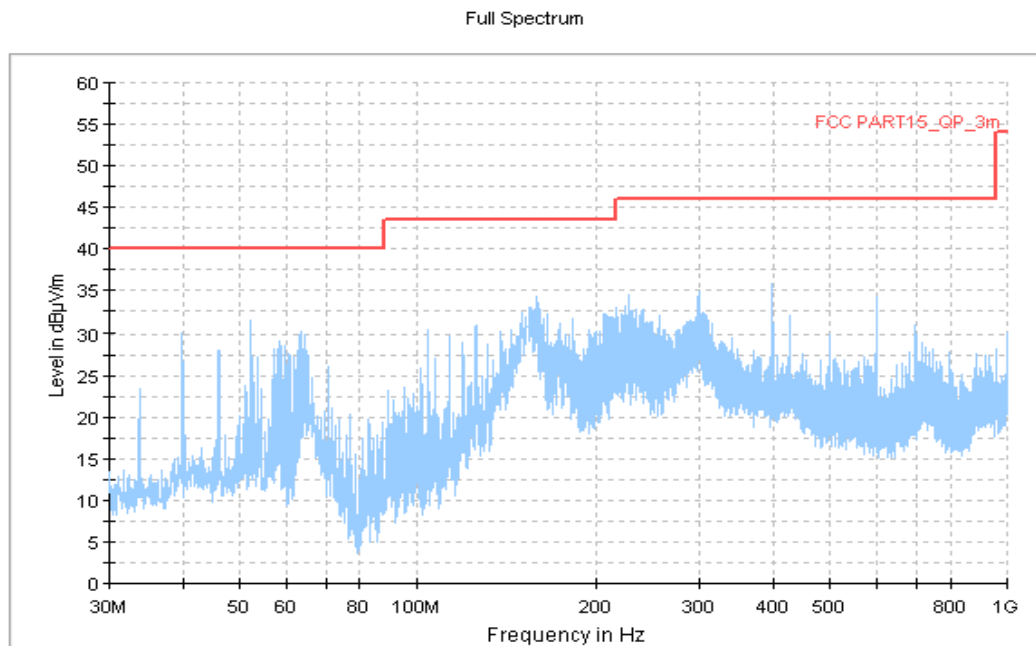


Figure A.13 Radiated Emission from 30MHz to 1GHz

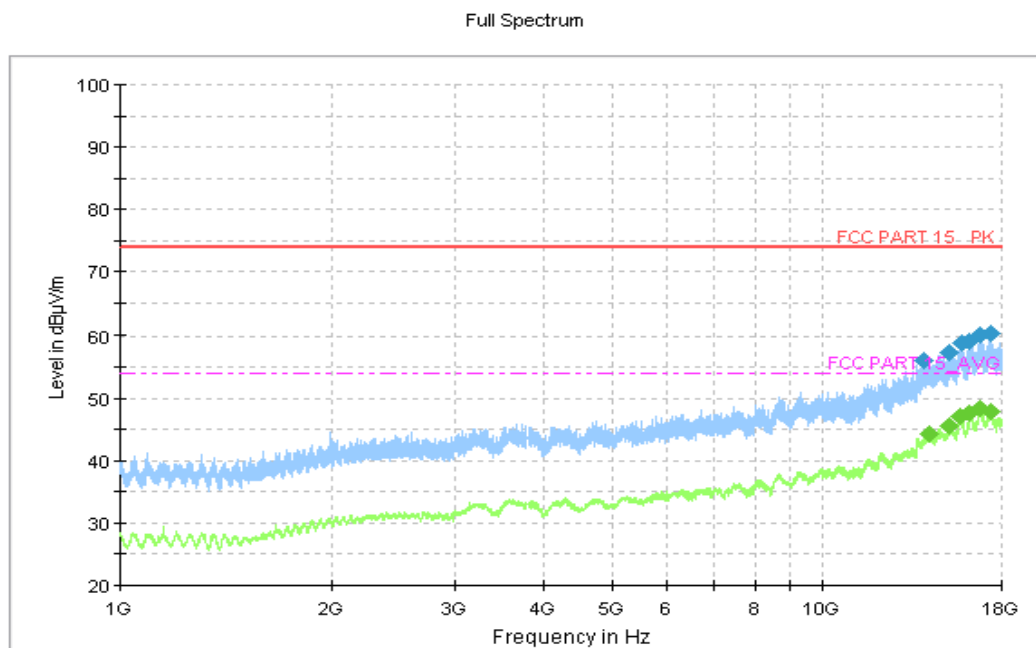


Figure A.14 Radiated Emission from 1GHz to 18GHz

USB mode: Set 8

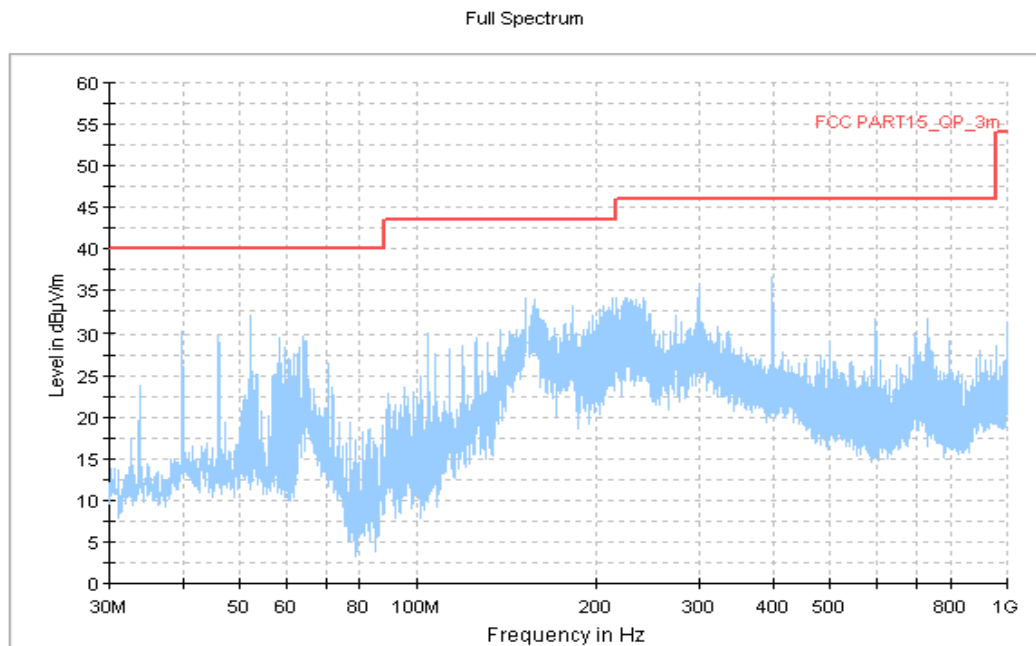


Figure A.15 Radiated Emission from 30MHz to 1GHz

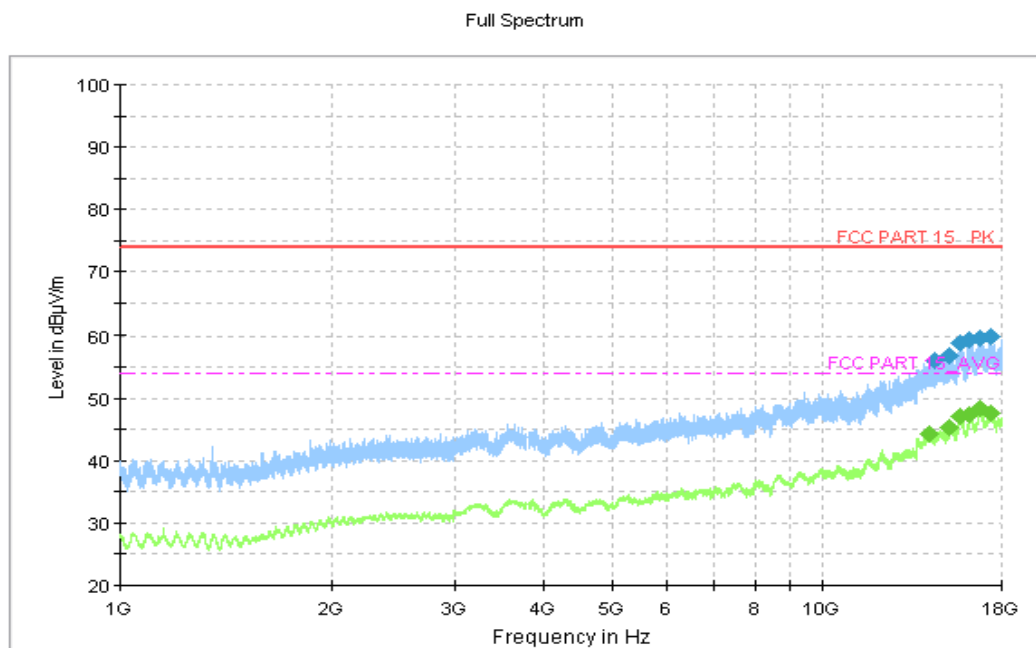


Figure A.16 Radiated Emission from 1GHz to 18GHz

A.2 Conducted Emission (§15.107(a))**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:

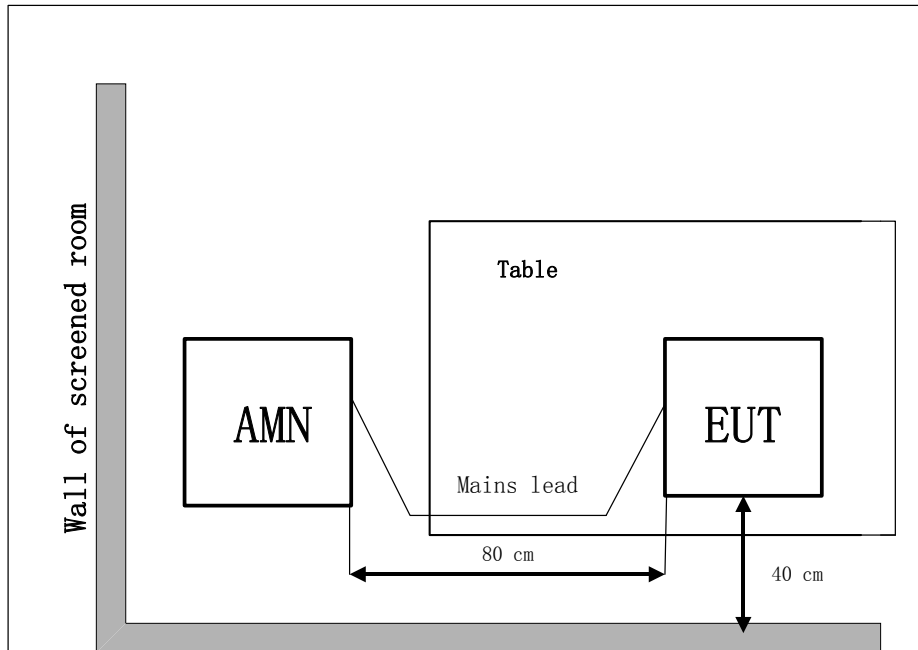
Charging mode: The MS is synchronized to SS, and able to respond to paging messages and incoming call. An established call has been released. The MS is connected to a charger.

USB mode: The model of the PC is Lenovo 2OET-A00DCD, and the serial number of the PC is PF-OIYDAK. The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.

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 set-up:



A.2.5 Test Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60
240	60

RBW	Sweep Time(s)
9kHz	1

CE Measurement uncertainty: 3.06 dB (k=2)

A.2.6 Measurement Results

Charging mode:Set.1

Voltage:120V

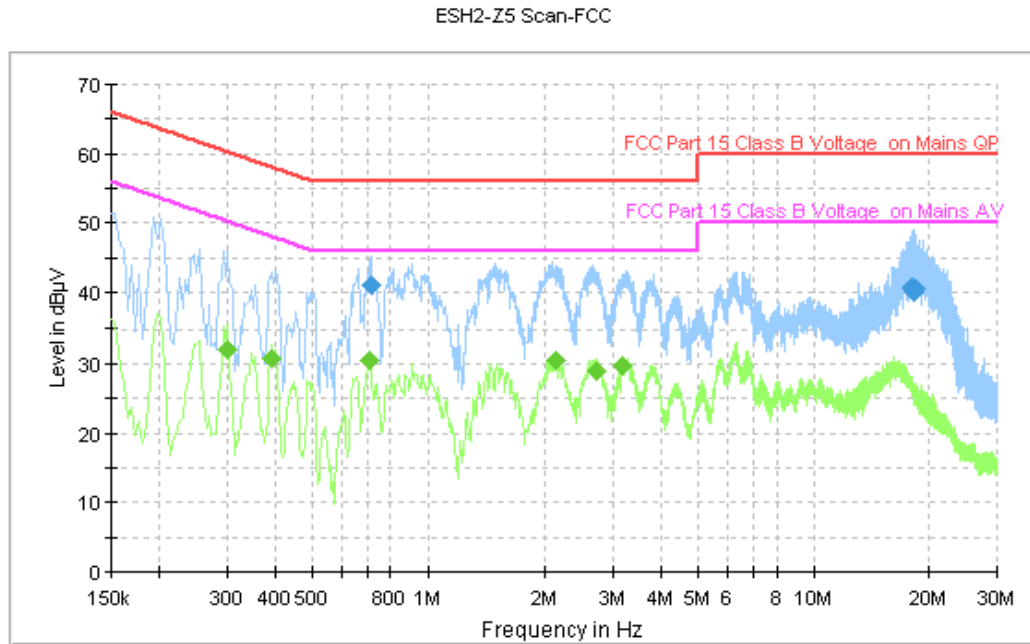


Figure A.17 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.710000	41.0	GND	N	9.5	15.0	56.0
17.962000	40.9	GND	N	9.9	19.1	60.0
17.986000	40.5	GND	N	9.9	19.5	60.0
18.186000	40.1	GND	N	9.9	19.9	60.0
18.322000	40.4	GND	N	9.9	19.6	60.0
18.390000	40.6	GND	N	9.9	19.4	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.302000	32.1	GND	N	9.6	18.1	50.2
0.394000	30.9	GND	N	9.6	17.1	48.0
0.706000	30.4	GND	N	9.5	15.6	46.0
2.126000	30.4	GND	N	9.6	15.6	46.0
2.706000	29.0	GND	N	9.6	17.0	46.0
3.194000	29.7	GND	N	9.6	16.3	46.0

Charging mode:Set.2

Voltage:120V

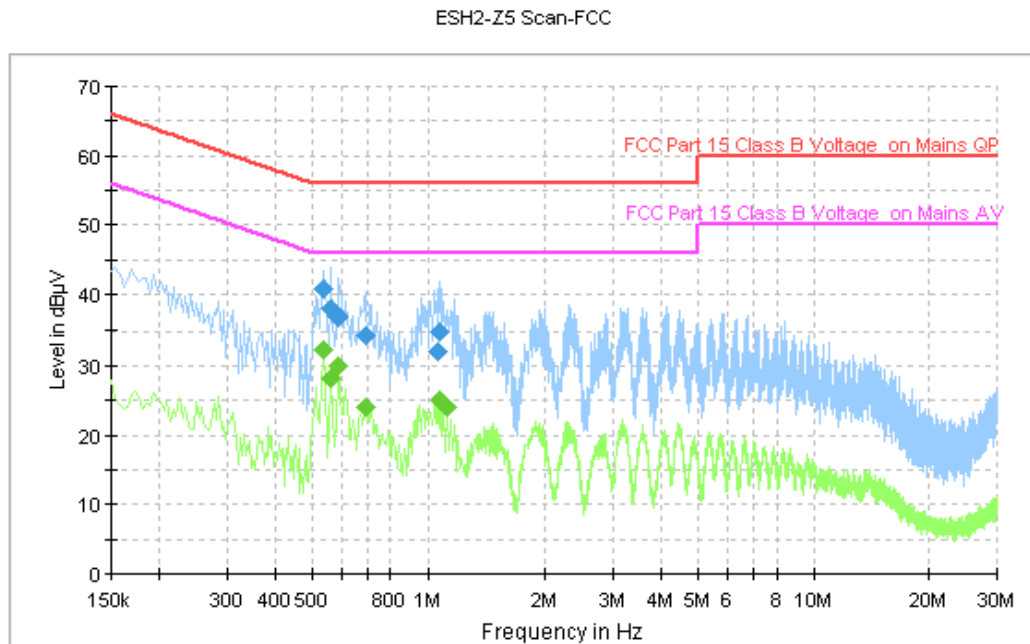


Figure A.18 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	40.7	GND	N	9.7	15.3	56.0
0.562000	37.9	GND	N	9.7	18.1	56.0
0.582000	36.9	GND	N	9.6	19.1	56.0
0.690000	34.4	GND	N	9.5	21.6	56.0
1.058000	31.9	GND	N	9.6	24.1	56.0
1.070000	35.0	GND	N	9.6	21.0	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.538000	32.2	GND	N	9.7	13.8	46.0
0.562000	28.1	GND	N	9.7	17.9	46.0
0.586000	30.0	GND	N	9.6	16.0	46.0
0.694000	24.0	GND	N	9.5	22.0	46.0
1.074000	25.2	GND	N	9.6	20.8	46.0
1.122000	24.1	GND	N	9.6	21.9	46.0

Charging mode:Set.3

Voltage:120V

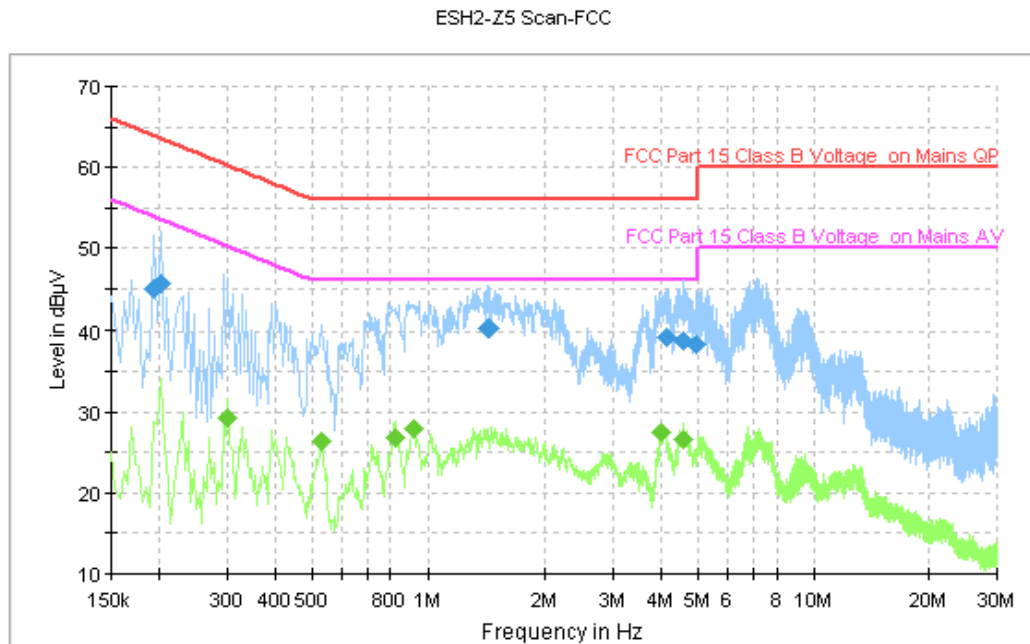


Figure A.19 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.194000	45.0	GND	N	9.6	18.9	63.9
0.202000	45.6	GND	N	9.6	17.9	63.5
1.426000	40.4	GND	N	9.5	15.6	56.0
4.146000	39.1	GND	N	9.6	16.9	56.0
4.594000	38.8	GND	N	9.6	17.2	56.0
4.958000	38.4	GND	N	9.6	17.6	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.302000	29.2	GND	N	9.6	21.0	50.2
0.530000	26.5	GND	N	9.7	19.5	46.0
0.822000	26.8	GND	N	9.5	19.2	46.0
0.922000	27.9	GND	N	9.6	18.1	46.0
3.990000	27.6	GND	N	9.6	18.4	46.0
4.594000	26.5	GND	N	9.6	19.5	46.0

Charging mode:Set.4

Voltage:120V

ESH2-Z5 Scan-FCC

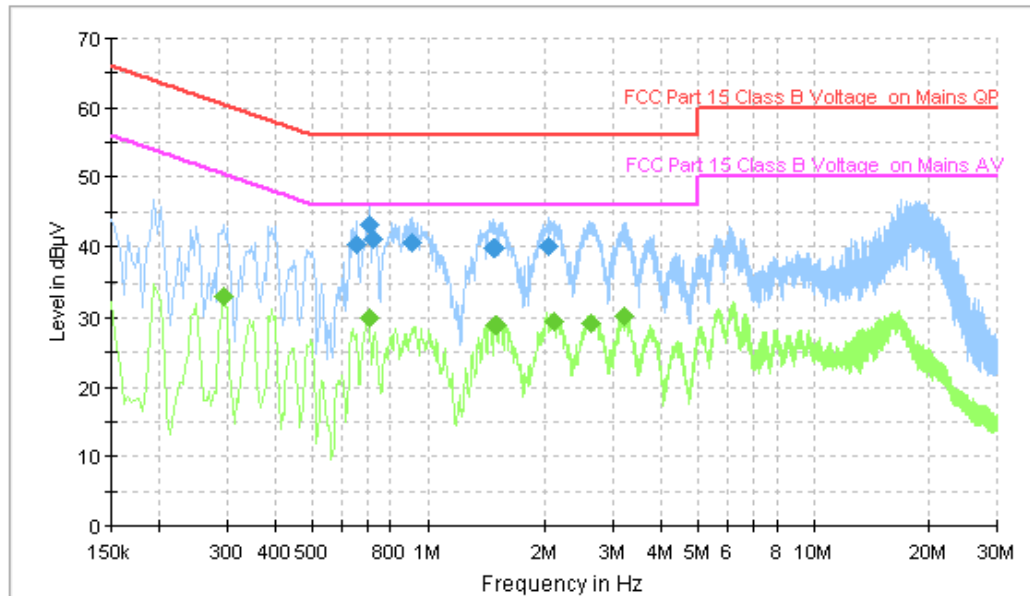


Figure A.20 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.654000	40.2	GND	N	9.6	15.8	56.0
0.702000	43.0	GND	N	9.5	13.0	56.0
0.722000	41.2	GND	N	9.5	14.8	56.0
0.906000	40.5	GND	N	9.6	15.5	56.0
1.486000	39.8	GND	N	9.6	16.2	56.0
2.046000	39.9	GND	N	9.6	16.1	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.294000	32.9	GND	N	9.6	17.5	50.4
0.702000	29.9	GND	N	9.5	16.1	46.0
1.502000	29.0	GND	N	9.6	17.0	46.0
2.118000	29.5	GND	N	9.6	16.5	46.0
2.626000	29.3	GND	N	9.6	16.7	46.0
3.214000	30.2	GND	N	9.6	15.8	46.0

USB mode:Set.5
Voltage:120V

ESH2-Z5 Scan-FCC

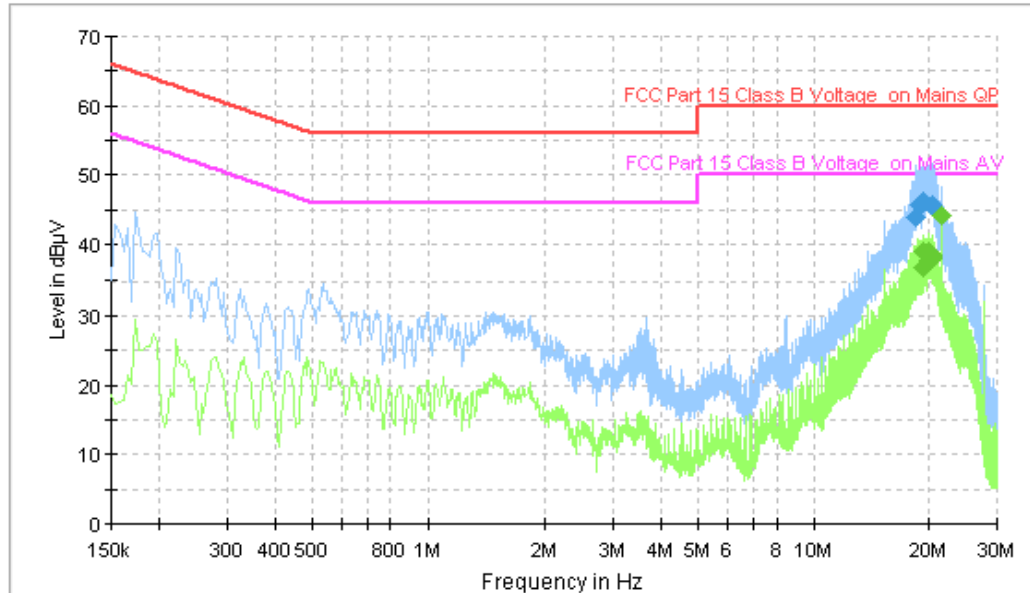


Figure A.21 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
18.382000	44.0	GND	N	9.9	16.0	60.0
18.846000	45.8	GND	N	10.0	14.2	60.0
19.110000	45.8	GND	N	10.0	14.2	60.0
19.338000	46.2	GND	N	10.0	13.8	60.0
20.270000	45.8	GND	N	10.0	14.2	60.0
20.478000	45.5	GND	N	10.0	14.5	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
19.314000	37.0	GND	N	10.0	13.0	50.0
19.338000	39.0	GND	N	10.0	11.0	50.0
20.026000	39.0	GND	N	10.0	11.0	50.0
20.386000	38.1	GND	N	10.0	11.9	50.0
20.478000	38.4	GND	N	10.0	11.6	50.0
21.502000	44.2	GND	N	10.0	5.8	50.0

USB mode:Set.6

Voltage:120V

ESH2-Z5 Scan-FCC

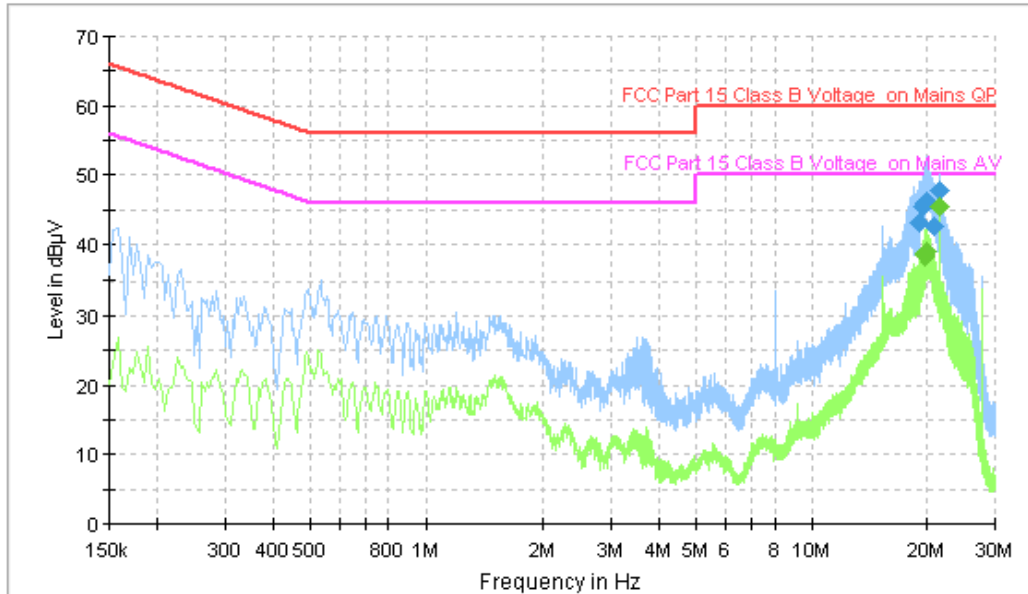


Figure A.22 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.146000	43.1	GND	N	10.0	16.9	60.0
19.574000	45.5	GND	N	10.0	14.5	60.0
19.738000	46.0	GND	N	10.0	14.0	60.0
19.990000	46.3	GND	N	10.0	13.7	60.0
20.802000	42.7	GND	N	10.0	17.3	60.0
21.502000	47.7	GND	N	10.0	12.3	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.690000	38.4	GND	N	10.0	11.6	50.0
19.698000	38.5	GND	N	10.0	11.5	50.0
19.782000	38.7	GND	N	10.0	11.3	50.0
19.866000	39.0	GND	N	10.0	11.0	50.0
19.990000	39.1	GND	N	10.0	10.9	50.0
21.506000	45.4	GND	N	10.0	4.6	50.0

USB mode:Set.7

Voltage:120V

ESH2-Z5 Scan-FCC

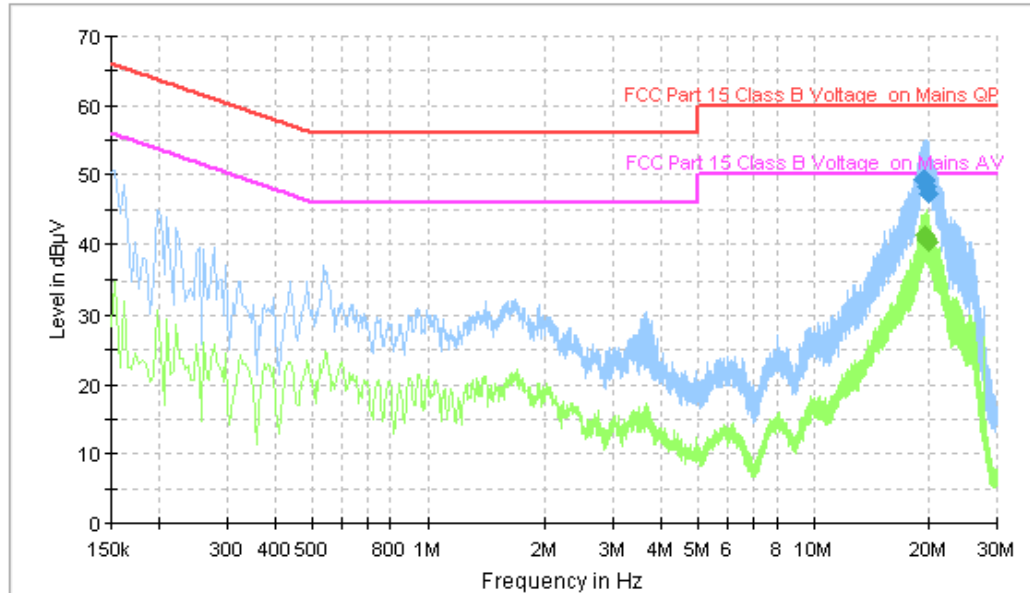


Figure A.23 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.310000	49.4	GND	N	10.0	10.6	60.0
19.430000	49.4	GND	N	10.0	10.6	60.0
19.530000	49.2	GND	N	10.0	10.8	60.0
19.562000	49.1	GND	N	10.0	10.9	60.0
19.806000	48.2	GND	N	10.0	11.8	60.0
19.998000	47.3	GND	N	10.0	12.7	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.394000	41.3	GND	N	10.0	8.7	50.0
19.454000	41.3	GND	N	10.0	8.7	50.0
19.546000	41.3	GND	N	10.0	8.7	50.0
19.722000	40.7	GND	N	10.0	9.3	50.0
19.806000	40.5	GND	N	10.0	9.5	50.0
19.830000	40.4	GND	N	10.0	9.6	50.0

USB mode:Set.8

Voltage:120V

ESH2-Z5 Scan-FCC

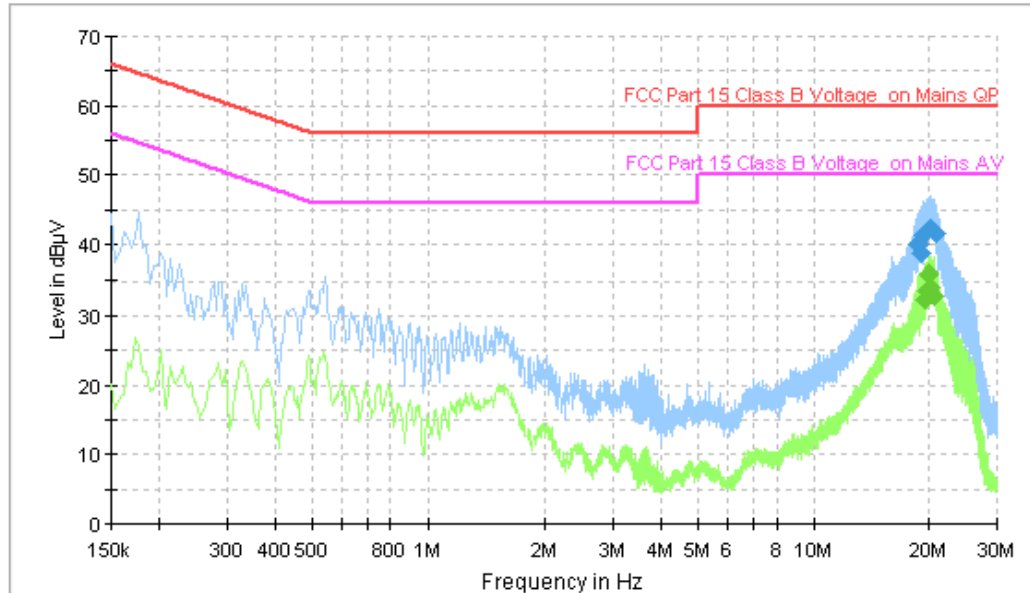


Figure A.24 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
18.686000	40.1	GND	N	9.9	19.9	60.0
18.838000	40.0	GND	N	10.0	20.0	60.0
18.970000	38.7	GND	N	10.0	21.3	60.0
19.314000	41.4	GND	N	10.0	18.6	60.0
20.186000	42.4	GND	N	10.0	17.6	60.0
20.822000	41.6	GND	N	10.0	18.4	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
19.550000	32.3	GND	N	10.0	17.7	50.0
19.558000	32.4	GND	N	10.0	17.6	50.0
19.658000	33.5	GND	N	10.0	16.5	50.0
19.902000	36.0	GND	N	10.0	14.0	50.0
20.086000	34.0	GND	N	10.0	16.0	50.0
20.538000	32.8	GND	N	10.0	17.2	50.0

Charging mode:Set.1

Voltage:240V

ESH2-Z5 Scan-FCC

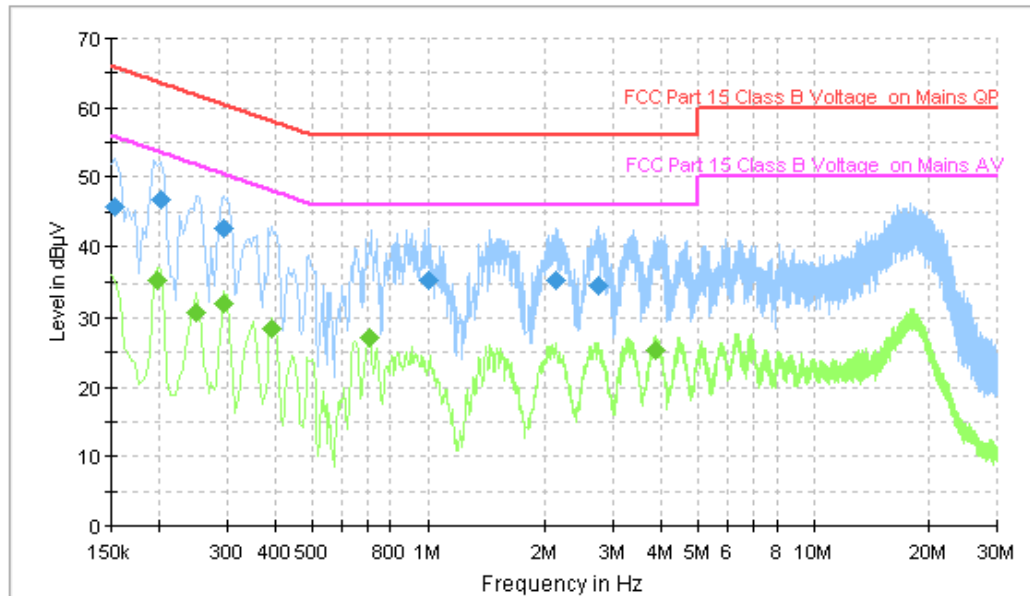


Figure A.25 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154000	45.7	GND	N	9.6	20.1	65.8
0.202000	46.8	GND	N	9.6	16.8	63.5
0.294000	42.6	GND	N	9.6	17.8	60.4
1.002000	35.3	GND	N	9.5	20.7	56.0
2.142000	35.3	GND	N	9.6	20.7	56.0
2.758000	34.7	GND	N	9.6	21.3	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	35.3	GND	N	9.6	18.4	53.7
0.250000	30.7	GND	N	9.6	21.1	51.8
0.294000	32.1	GND	N	9.6	18.3	50.4
0.394000	28.4	GND	N	9.6	19.6	48.0
0.706000	27.2	GND	N	9.5	18.8	46.0
3.866000	25.4	GND	N	9.6	20.6	46.0

Charging mode:Set.2

Voltage:240V

ESH2-Z5 Scan-FCC

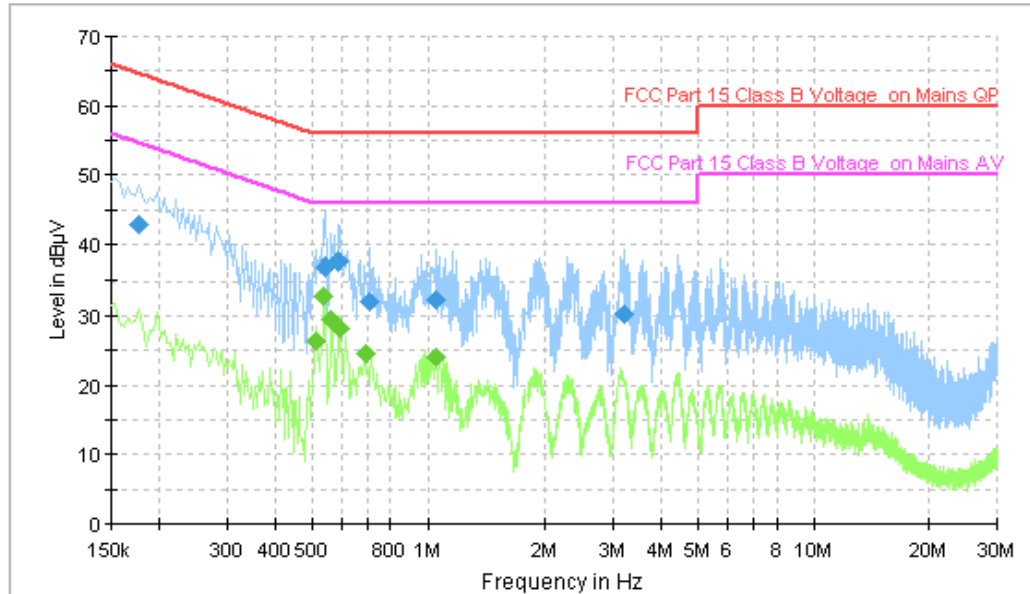


Figure A.26 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.178000	42.8	GND	N	9.6	21.7	64.6
0.542000	36.9	GND	N	9.7	19.1	56.0
0.586000	37.8	GND	N	9.6	18.2	56.0
0.706000	32.0	GND	N	9.5	24.0	56.0
1.054000	32.4	GND	N	9.6	23.6	56.0
3.226000	30.2	GND	N	9.6	25.8	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.514000	26.4	GND	N	9.7	19.6	46.0
0.538000	32.9	GND	N	9.7	13.1	46.0
0.562000	29.5	GND	N	9.7	16.5	46.0
0.590000	28.1	GND	N	9.6	17.9	46.0
0.690000	24.5	GND	N	9.5	21.5	46.0
1.050000	24.1	GND	N	9.5	21.9	46.0

Charging mode:Set.3

Voltage:240V

ESH2-Z5 Scan-FCC

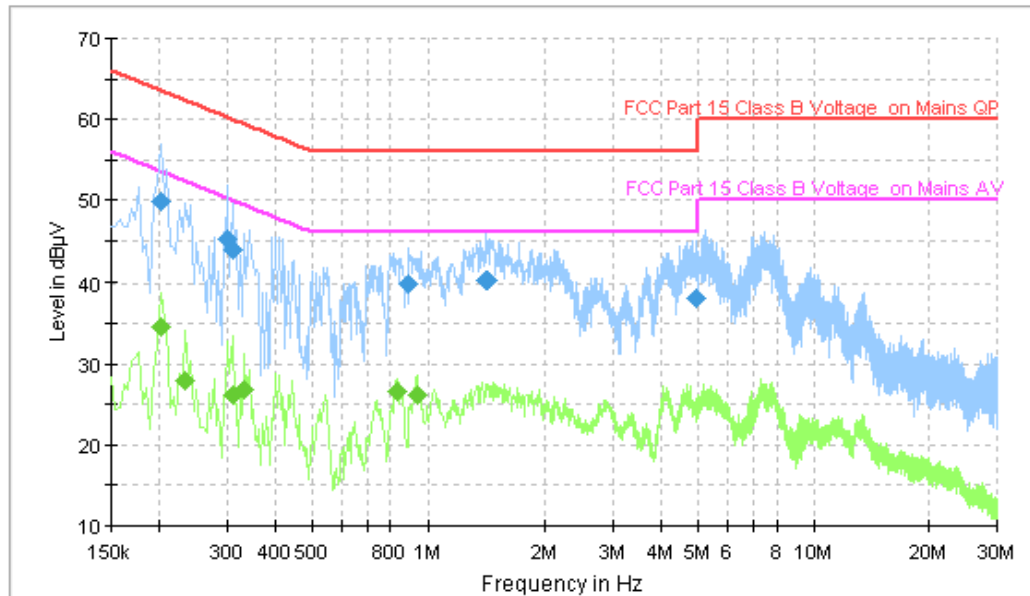


Figure A.27 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.202000	49.8	GND	N	9.6	13.7	63.5
0.302000	45.3	GND	N	9.6	14.9	60.2
0.310000	43.8	GND	N	9.6	16.2	60.0
0.894000	39.8	GND	N	9.6	16.2	56.0
1.418000	40.4	GND	N	9.5	15.6	56.0
4.954000	38.1	GND	N	9.6	17.9	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dB μ V)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.202000	34.5	GND	N	9.6	19.1	53.5
0.234000	28.0	GND	N	9.6	24.3	52.3
0.310000	26.2	GND	N	9.6	23.7	50.0
0.334000	26.8	GND	N	9.6	22.6	49.4
0.830000	26.5	GND	N	9.5	19.5	46.0
0.938000	26.1	GND	N	9.6	19.9	46.0

Charging mode:Set.4
Voltage:240V

ESH2-Z5 Scan-FCC

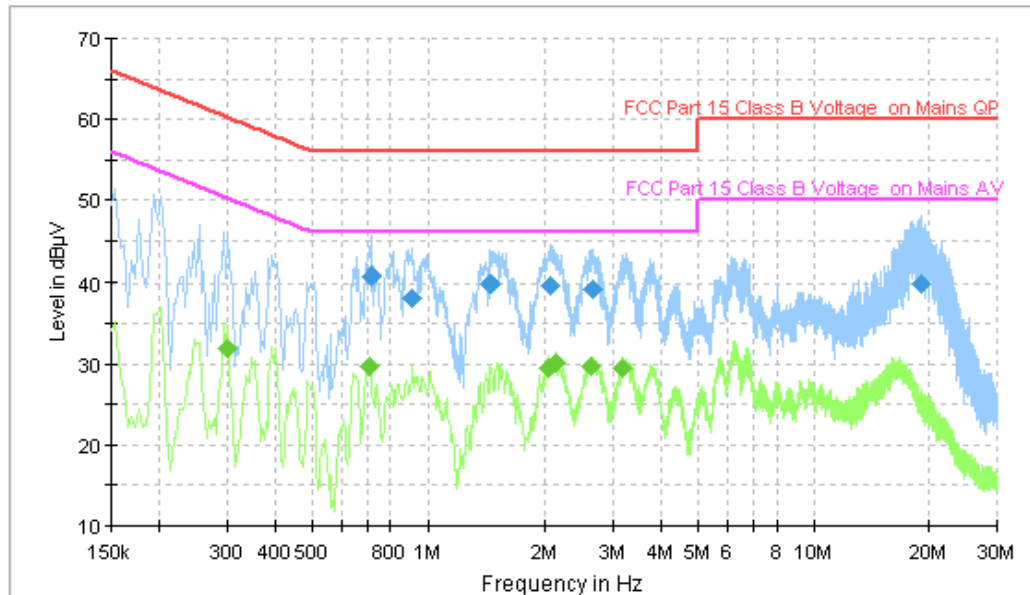


Figure A.28 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.710000	40.8	GND	N	9.5	15.2	56.0
0.914000	38.2	GND	N	9.6	17.8	56.0
1.454000	39.9	GND	N	9.5	16.1	56.0
2.066000	39.7	GND	N	9.6	16.3	56.0
2.650000	39.2	GND	N	9.6	16.8	56.0
18.982000	40.0	GND	N	10.0	20.0	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.302000	31.8	GND	N	9.6	18.4	50.2
0.706000	29.8	GND	N	9.5	16.2	46.0
2.034000	29.5	GND	N	9.6	16.5	46.0
2.130000	30.2	GND	N	9.6	15.8	46.0
2.646000	29.6	GND	N	9.6	16.4	46.0
3.194000	29.6	GND	N	9.6	16.4	46.0

USB mode:Set.5

Voltage:240V

ESH2-Z5 Scan-FCC

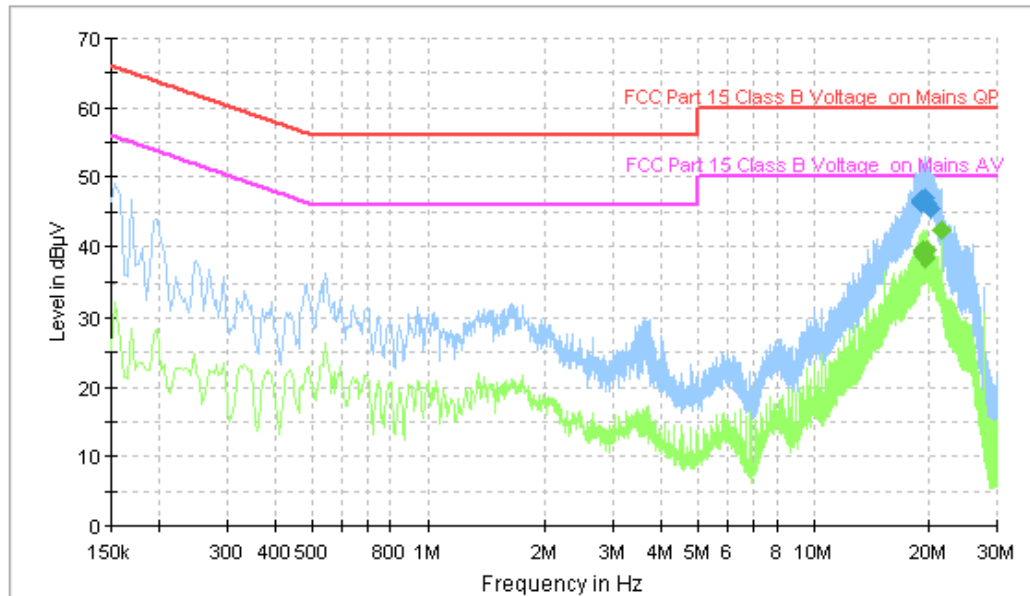


Figure A.29 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
18.974000	46.3	GND	N	10.0	13.7	60.0
19.050000	46.6	GND	N	10.0	13.4	60.0
19.118000	46.7	GND	N	10.0	13.3	60.0
19.450000	47.0	GND	N	10.0	13.0	60.0
19.602000	46.3	GND	N	10.0	13.7	60.0
20.138000	45.5	GND	N	10.0	14.5	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
19.218000	38.9	GND	N	10.0	11.1	50.0
19.302000	39.6	GND	N	10.0	10.4	50.0
19.334000	39.2	GND	N	10.0	10.8	50.0
19.486000	38.4	GND	N	10.0	11.6	50.0
19.678000	39.5	GND	N	10.0	10.5	50.0
21.506000	42.3	GND	N	10.0	7.7	50.0

USB mode:Set.6

Voltage:240V

ESH2-Z5 Scan-FCC

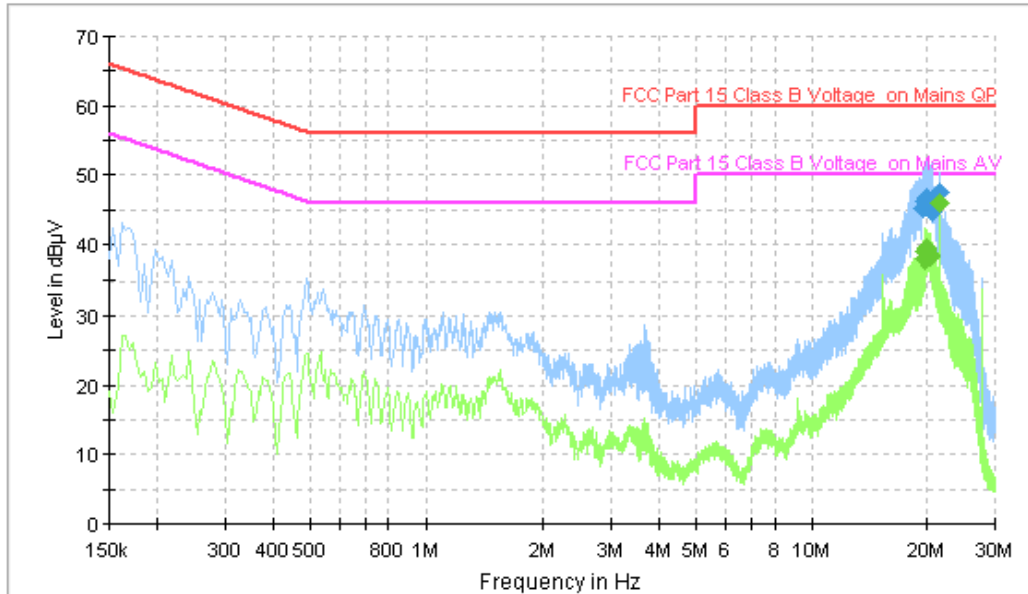


Figure A.30 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.506000	45.1	GND	N	10.0	14.9	60.0
19.778000	46.3	GND	N	10.0	13.7	60.0
19.886000	46.7	GND	N	10.0	13.3	60.0
20.146000	46.4	GND	N	10.0	13.6	60.0
20.554000	44.8	GND	N	10.0	15.2	60.0
21.502000	47.7	GND	N	10.0	12.3	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.634000	38.1	GND	N	10.0	11.9	50.0
19.802000	38.9	GND	N	10.0	11.1	50.0
19.886000	39.2	GND	N	10.0	10.8	50.0
19.986000	39.4	GND	N	10.0	10.6	50.0
20.362000	38.5	GND	N	10.0	11.5	50.0
21.502000	45.9	GND	N	10.0	4.1	50.0

USB mode:Set.7

Voltage:240V

ESH2-Z5 Scan-FCC

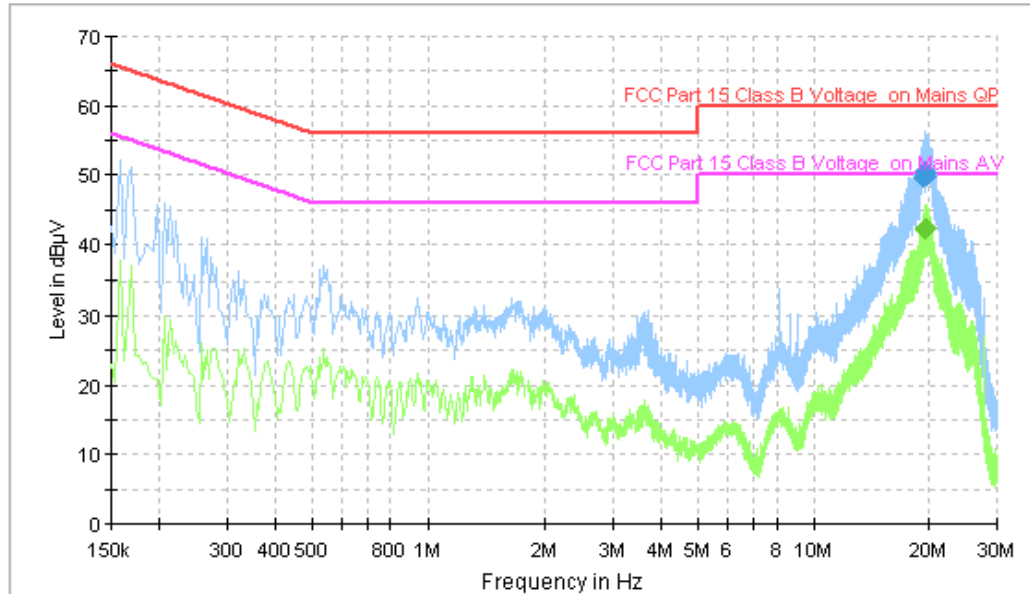


Figure A.31 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.270000	49.6	GND	N	10.0	10.4	60.0
19.406000	50.2	GND	N	10.0	9.8	60.0
19.558000	50.5	GND	N	10.0	9.5	60.0
19.622000	50.4	GND	N	10.0	9.6	60.0
19.674000	50.2	GND	N	10.0	9.8	60.0
19.810000	49.9	GND	N	10.0	10.1	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.406000	42.1	GND	N	10.0	7.9	50.0
19.558000	42.3	GND	N	10.0	7.7	50.0
19.574000	42.4	GND	N	10.0	7.6	50.0
19.582000	42.4	GND	N	10.0	7.6	50.0
19.658000	42.4	GND	N	10.0	7.6	50.0
19.690000	42.4	GND	N	10.0	7.6	50.0

USB mode:Set.8

Voltage:240V

ESH2-Z5 Scan-FCC

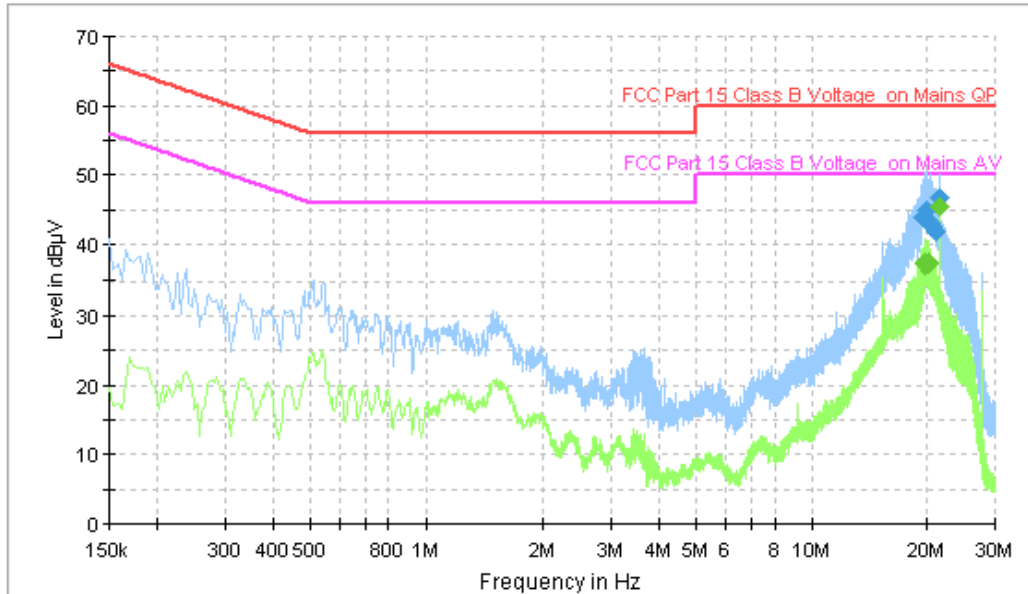


Figure A.32 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.418000	43.8	GND	N	10.0	16.2	60.0
19.930000	45.0	GND	N	10.0	15.0	60.0
20.430000	43.2	GND	N	10.0	16.8	60.0
20.574000	42.5	GND	N	10.0	17.5	60.0
20.986000	41.7	GND	N	10.0	18.3	60.0
21.506000	46.8	GND	N	10.0	13.2	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.638000	37.1	GND	N	10.0	12.9	50.0
19.646000	37.1	GND	N	10.0	12.9	50.0
19.654000	37.2	GND	N	10.0	12.8	50.0
19.814000	37.6	GND	N	10.0	12.4	50.0
20.090000	37.4	GND	N	10.0	12.6	50.0
21.502000	45.4	GND	N	10.0	4.6	50.0

END OF REPORT