



TEST REPORT

No.B17N00148-EMC

for

Huawei Technologies Co.,Ltd.

Smart Phone

Model Name: TRT-LX1

FCC ID: QISTRTRT-LX1

with

Hardware Version: HL1TRTM

Software Version: TBD

Issued Date: 2017-03-01

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:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
B17N00148-EMC	Rev.0	1st edition	2017-03-01



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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°C
Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2017-02-20
Testing End Date: 2017-02-28

1.4. Signature

Du Zhaoxuan

(Prepared this test report)

Zhang Yunzhan

(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 China

2.2. Manufacturer Information

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



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

3.1. About EUT

Description	Smart Phone
Model Name	TRT-LX1
FCC ID	QISTR-T-LX1

The Equipment Under Test (EUT) are a model of Smart Phone with integrated antenna.

The EUT supports GPRS service and EGPRS service.

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	863560030055783
EUT2	863560030053150
EUT3	863560030055510

*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	data cable	/
AE1-1		
Model	HB406689ECW	
Manufacturer	Sunwoda Electronic CO.,LTD	
Capacity	3900mAh	
Nominal Voltage	3.6V	
AE1-2		
Model	HB406689ECW	
Manufacturer	HUIZHOU DESAY BATTERY CO LTD	
Capacity	3900mAh	
Nominal Voltage	4.35V	
AE1-3		
Model	HB406689ECW	
Manufacturer	SCUD(FUJIAN)Electronics CO.,LTD	
Capacity	3900mAh	
Nominal Voltage	3.82V	



AE2-1		
Model		HW-050200U01
Manufacturer		HUIZHOU BYD BATTERY CO LTD
SN		B78994GAP02319
AE2-2		
Model		HW-050200U01
Manufacturer		SHEZHEN HUNTKEY ELECTRIC CO.,LTD
SN		H789K3GCT00852
AE2-3		
Model		HW-050200U01
Manufacturer		Dongguan Phitek Electronics Co.,LTD
SN		P67715GC501770
AE3-1		
Model		L99U2017-CS-H
Manufacturer		Luxshare Precision industry Co., Ltd
AE3-2		
Model		H09-000577
Manufacturer		SHEN ZHEN PANG NGAI INDUSTRIAL CO.,LTD
AE3-3		
Model		CD-U0405-1143
Manufacturer		CONNREX (SHEN ZHEN) INDUSTRIAL,LTD
AE3-4		
Model		CUBB01M-HC304-DH
Manufacturer		FOXCONN INTERCONNECT TECHNOLOGY LIMITED.

*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	EUT2+ AE1-2+AE2-2+ AE3-2	Charging mode
Set.3	EUT3+ AE1-3+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	EUT2+ AE1-2+ AE3-2	USB mode
Set.7	EUT3+ AE1-3+ 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	10-1-2015 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 330	Schwarzbeck	2017.04.22	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	E5515C	GB44051324	Agilent	2017.05.18	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

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)

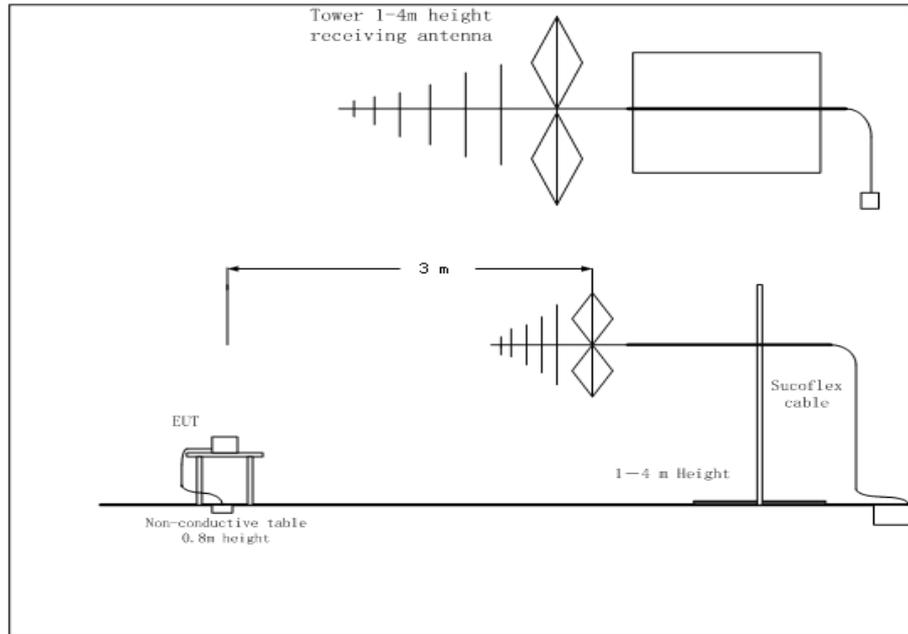
Frequency range (MHz)	Field strength limit ($\mu\text{V}/\text{m}$)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

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

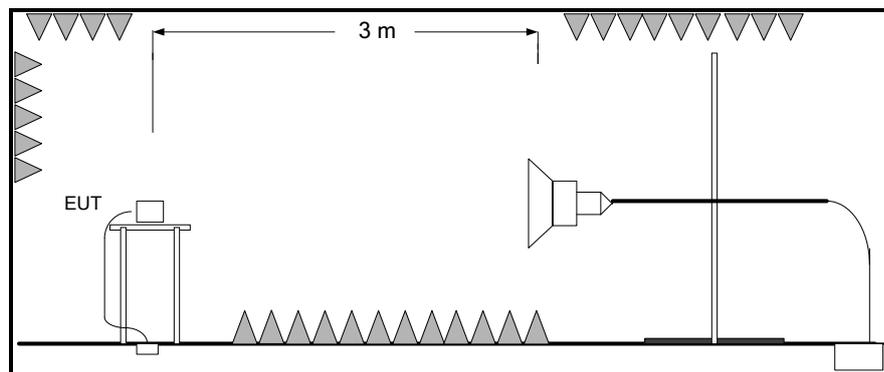
A.1.4 Test Condition

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)	PMea (dBμV)
13914.500000	53.88	74.00	20.12	H	10.9	42.98
14140.000000	55.13	74.00	18.87	H	11.2	43.93
14744.000000	56.11	74.00	17.89	H	11.9	44.21
15694.000000	57.14	74.00	16.86	H	12.7	44.44
16225.500000	58.70	74.00	15.30	H	13.1	45.6
16681.500000	57.79	74.00	16.21	H	13.8	43.99

Set.1 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dBμV/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dBμV)
13919.000000	42.34	54.00	11.66	H	10.8	31.54
14516.500000	43.51	54.00	10.49	H	11.8	31.71
15180.500000	44.43	54.00	9.57	H	12.2	32.23
15780.500000	45.82	54.00	8.18	H	12.8	33.02
16225.500000	46.15	54.00	7.85	H	13.1	33.05
16785.500000	46.55	54.00	7.45	H	13.9	32.65

Set.2 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14538.500000	54.93	74.00	19.07	H	11.9	43.03
15152.000000	55.78	74.00	18.22	H	12.1	43.68
15671.500000	57.25	74.00	16.75	H	12.6	44.65
16248.500000	56.76	74.00	17.24	H	13.2	43.56
16912.000000	57.61	74.00	16.39	H	14.0	43.61
17373.000000	56.49	74.00	17.51	H	14.0	42.49

Set.2 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14532.500000	43.47	54.00	10.53	H	11.8	31.67
15135.000000	44.17	54.00	9.83	H	12.1	32.07
15764.500000	45.19	54.00	8.81	H	12.8	32.39
16236.000000	45.32	54.00	8.68	H	13.1	32.22
16827.500000	45.61	54.00	8.39	H	13.9	31.71
17355.500000	45.23	54.00	8.77	H	14.0	31.23

Set.3 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14168.500000	55.13	74.00	18.87	H	11.2	43.93
15089.000000	55.72	74.00	18.28	H	12.1	43.62
15765.500000	57.14	74.00	16.86	H	12.8	44.34
16353.500000	55.67	74.00	18.33	H	13.4	42.27
17189.000000	56.36	74.00	17.64	H	13.9	42.46
17379.500000	56.64	74.00	17.36	H	14.0	42.64

Set.3 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14512.500000	43.57	54.00	10.43	H	11.8	31.77
15116.000000	43.92	54.00	10.08	H	12.1	31.82
15754.500000	44.94	54.00	9.06	H	12.8	32.14
16308.000000	44.75	54.00	9.25	H	13.3	31.45
16793.500000	45.42	54.00	8.58	H	13.9	31.52
17293.000000	44.75	54.00	9.25	H	13.9	30.85

Set.4 Charging mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14033.500000	55.74	74.00	18.26	H	10.9	44.84
15030.500000	56.27	74.00	17.73	H	12.1	44.17
15830.000000	56.19	74.00	17.81	H	12.8	43.39
16338.500000	55.80	74.00	18.20	H	13.4	42.4
16781.500000	57.12	74.00	16.88	H	13.9	43.22
17308.000000	55.74	74.00	18.26	H	13.9	41.84

Set.4 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14513.000000	43.59	54.00	10.41	H	11.8	31.79
15090.000000	43.88	54.00	10.12	H	12.1	31.78
15772.500000	44.86	54.00	9.14	H	12.8	32.06
16241.500000	44.59	54.00	9.41	H	13.2	31.39
16770.500000	45.22	54.00	8.78	H	13.9	31.32
17442.500000	44.69	54.00	9.31	H	14.0	30.69

Set.5 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14470.000000	54.92	74.00	19.08	H	11.7	43.22
15096.000000	55.33	74.00	18.67	H	12.1	43.23
15786.000000	56.33	74.00	17.67	H	12.8	43.53
16361.500000	56.23	74.00	17.77	H	13.5	42.73
16873.500000	57.95	74.00	16.05	H	14.0	43.95
17406.500000	55.87	74.00	18.13	H	14.0	41.87

Set.5 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14548.000000	43.44	54.00	10.56	H	11.9	31.54
15077.000000	43.81	54.00	10.19	H	12.1	31.71
15762.500000	44.92	54.00	9.08	H	12.8	32.12
16277.500000	44.71	54.00	9.29	H	13.2	31.51
16786.000000	45.15	54.00	8.85	H	13.9	31.25
17375.500000	44.34	54.00	9.66	H	14.0	30.34

Set.6 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14543.000000	54.77	74.00	19.23	H	11.9	42.87
15119.000000	55.54	74.00	18.46	H	12.1	43.44
15749.500000	56.34	74.00	17.66	H	12.8	43.54
16336.000000	55.37	74.00	18.63	H	13.4	41.97
16784.000000	56.45	74.00	17.55	H	13.9	42.55
17843.500000	55.71	74.00	18.29	H	13.8	41.91

Set.6 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14533.500000	43.30	54.00	10.70	H	11.9	31.4
15126.500000	43.77	54.00	10.23	H	12.1	31.67
15790.500000	44.73	54.00	9.27	H	12.8	31.93
16192.000000	44.33	54.00	9.67	H	13.1	31.23
16755.000000	45.09	54.00	8.91	H	13.9	31.19
17437.500000	44.31	54.00	9.69	H	14.0	30.31

Set.7 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14508.500000	54.84	74.00	19.16	H	11.8	43.04
15066.000000	56.58	74.00	17.42	H	12.1	44.48
15753.500000	56.99	74.00	17.01	H	12.8	44.19
16208.000000	56.48	74.00	17.52	H	13.1	43.38
16795.000000	56.75	74.00	17.25	H	13.9	42.85
17424.500000	55.88	74.00	18.12	H	14.0	41.88

Set.7 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14530.500000	43.44	54.00	10.56	H	11.8	31.64
15066.500000	43.80	54.00	10.20	H	12.1	31.7
15734.000000	44.87	54.00	9.13	H	12.7	32.17
16256.500000	44.49	54.00	9.51	H	13.2	31.29
16793.500000	44.94	54.00	9.06	H	13.9	31.04
17342.000000	44.37	54.00	9.63	H	14.0	30.37

Set.8 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14053.500000	54.73	74.00	19.27	H	11.0	43.73
15085.000000	55.25	74.00	18.75	H	12.1	43.15
15841.000000	55.99	74.00	18.01	H	12.9	43.09
16389.000000	55.80	74.00	18.20	H	13.5	42.3
16780.500000	56.76	74.00	17.24	H	13.9	42.86
17407.000000	55.67	74.00	18.33	H	14.0	41.67

Set.8 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Limit (dB μ V/m)	Margin(dB)	Polarity	ARpl (dB)	PMea (dB μ V)
14535.500000	43.53	54.00	10.47	H	11.9	31.63
15136.500000	43.71	54.00	10.29	H	12.1	31.61
15783.000000	44.92	54.00	9.08	H	12.8	32.12
16267.000000	44.56	54.00	9.44	H	13.2	31.36
16794.000000	45.00	54.00	9.00	H	13.9	31.1
17437.500000	44.53	54.00	9.47	H	14.0	30.53

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

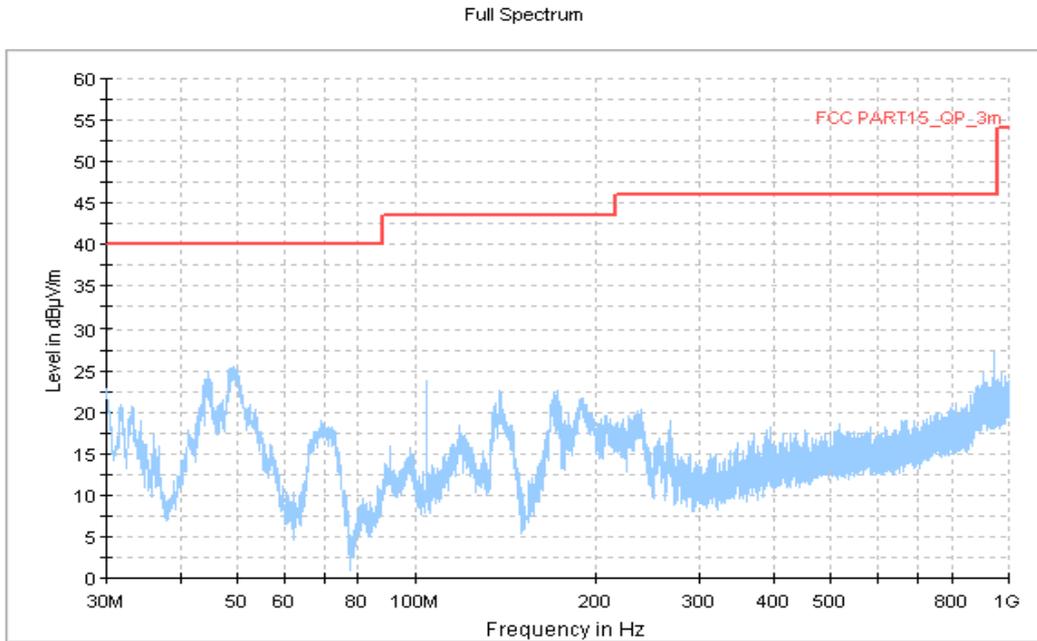


Figure A.1 Radiated Emission from 30MHz to 1GHz

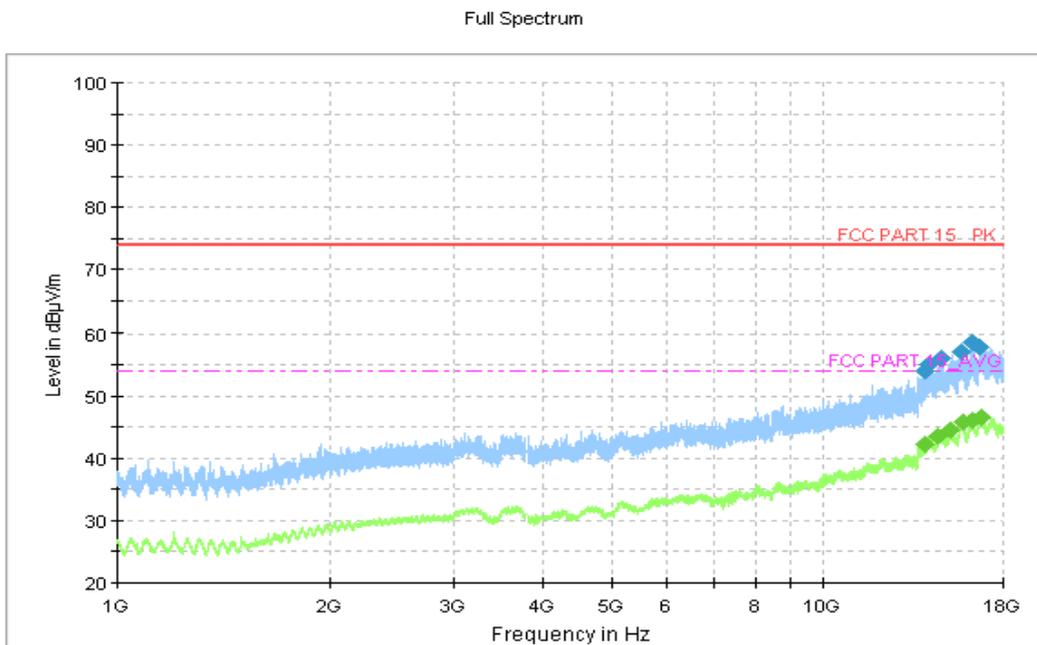


Figure A.2 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 2

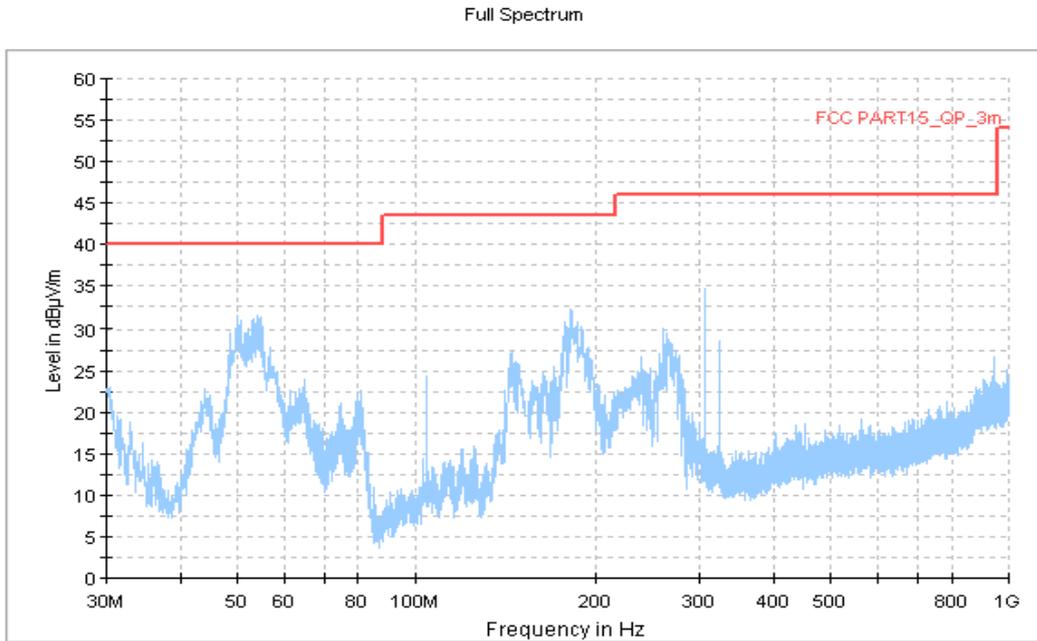


Figure A.3 Radiated Emission from 30MHz to 1GHz

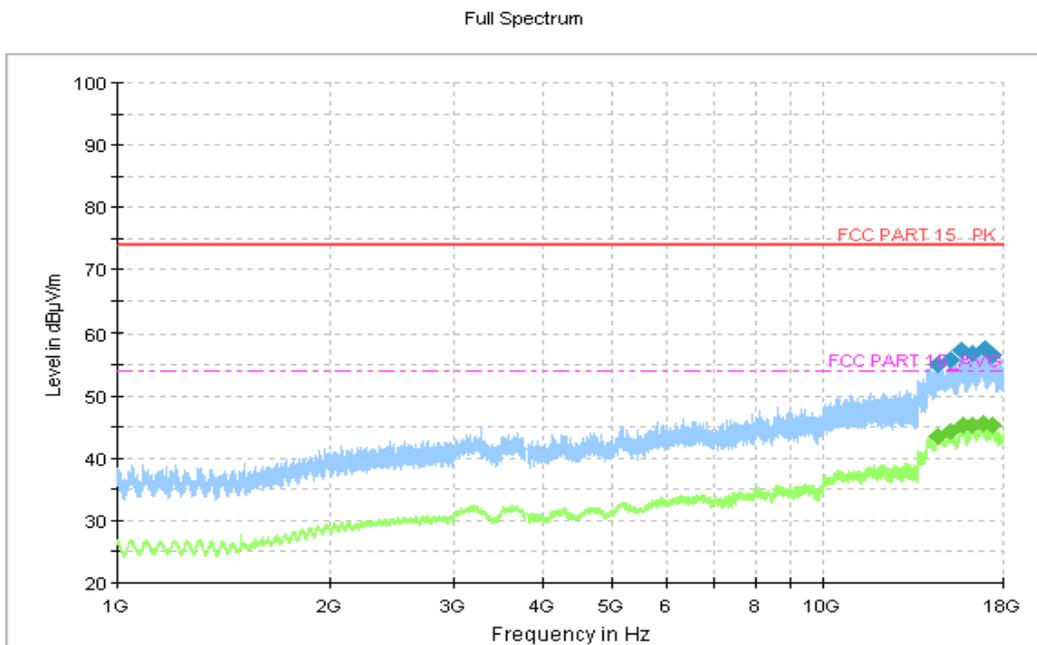


Figure A.4 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 3

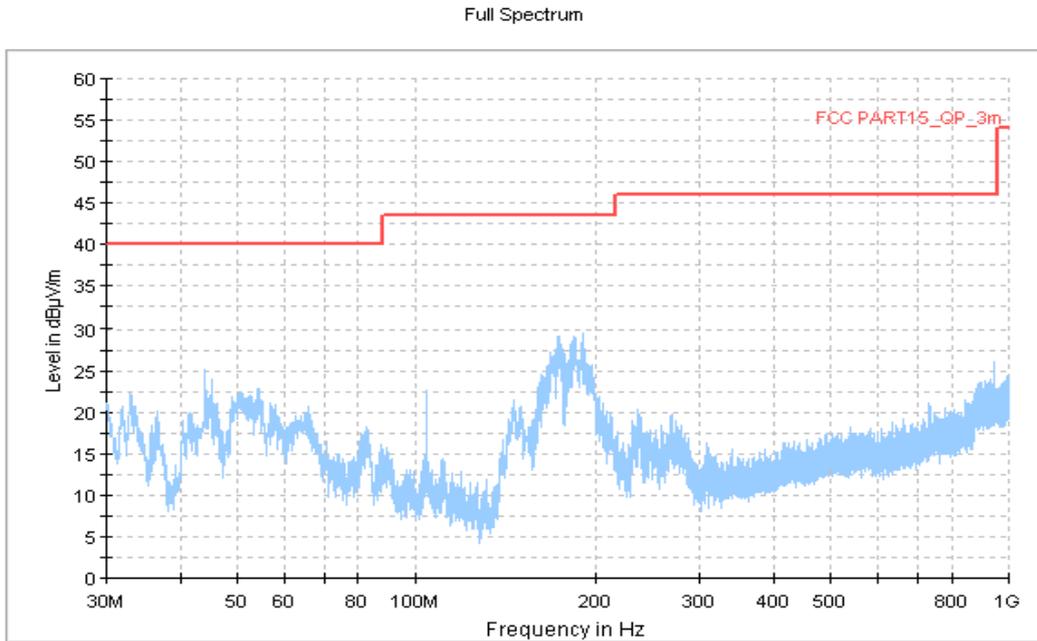


Figure A.5 Radiated Emission from 30MHz to 1GHz

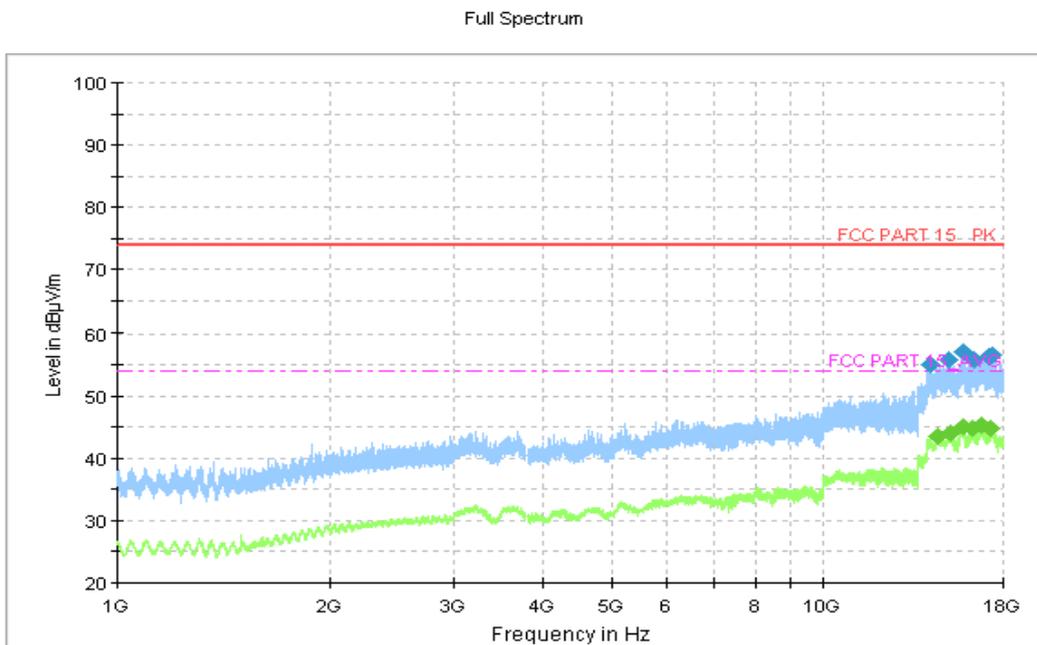


Figure A.6 Radiated Emission from 1GHz to 18GHz

Charging mode: Set 4

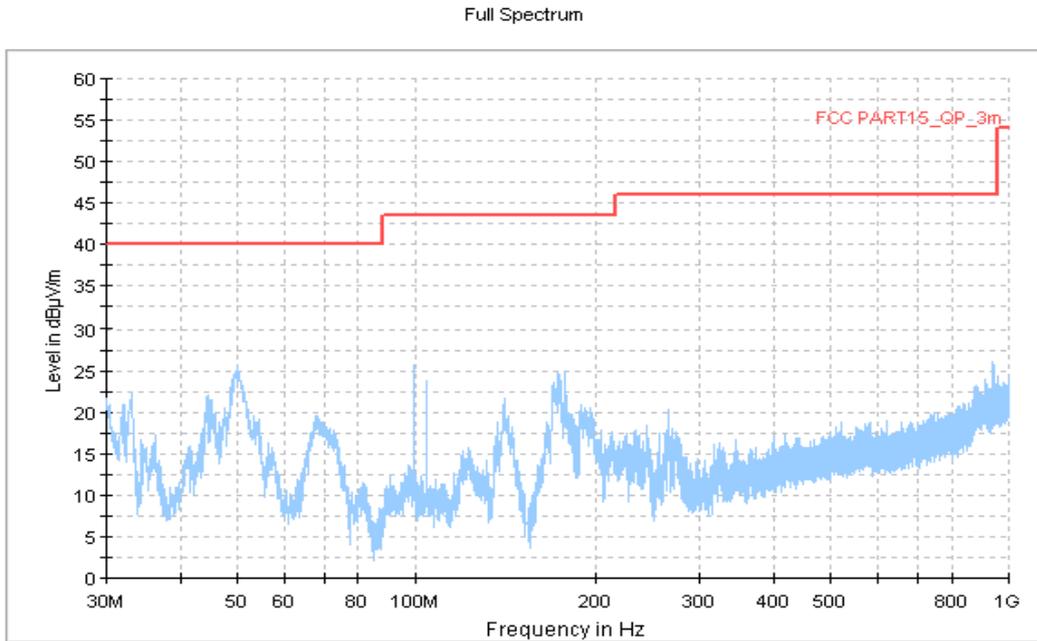


Figure A.7 Radiated Emission from 30MHz to 1GHz

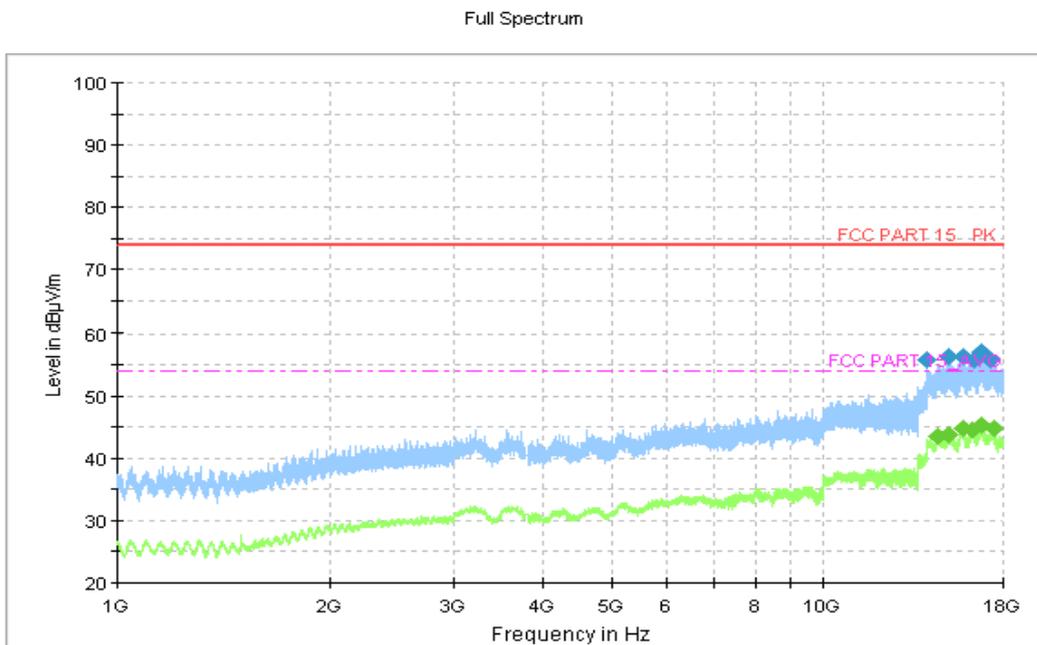


Figure A.8 Radiated Emission from 1GHz to 18GHz

USB mode: Set 5

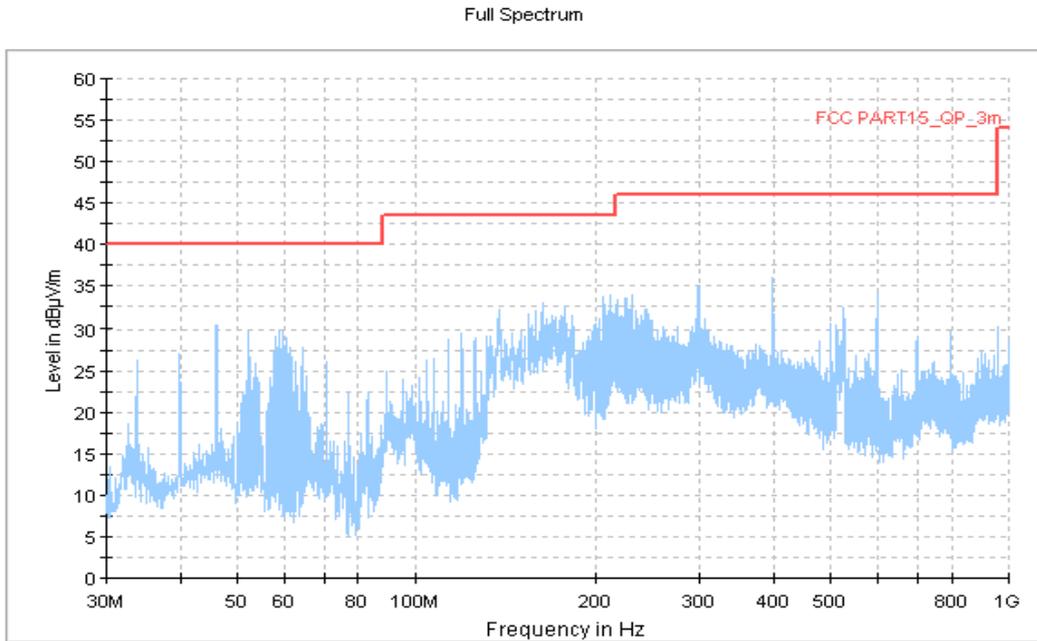


Figure A.9 Radiated Emission from 30MHz to 1GHz

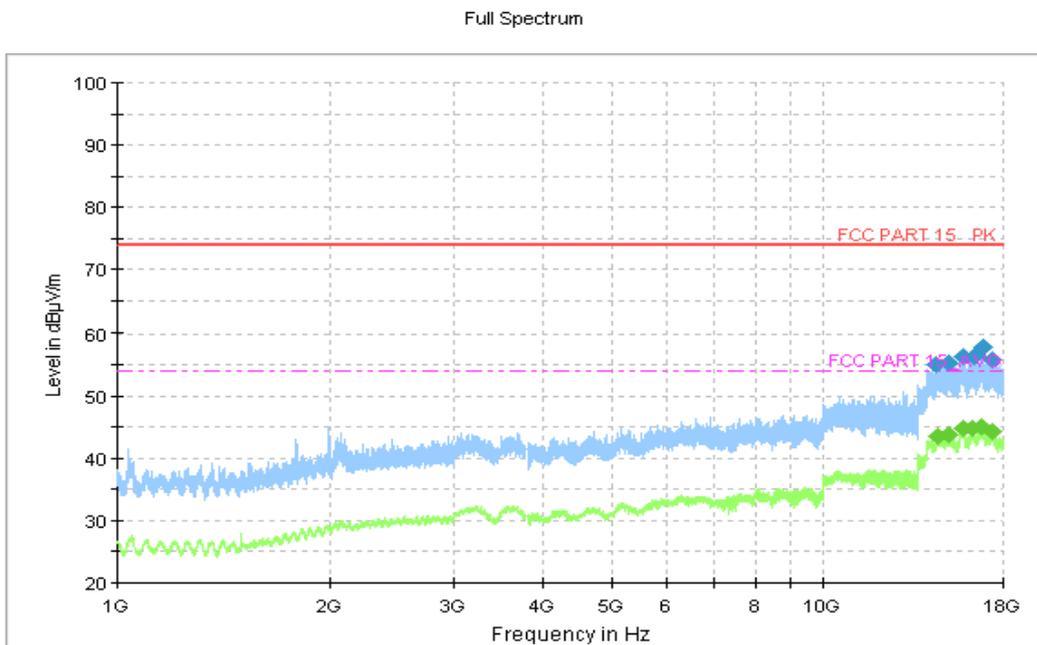


Figure A.10 Radiated Emission from 1GHz to 18GHz

USB mode: Set 6

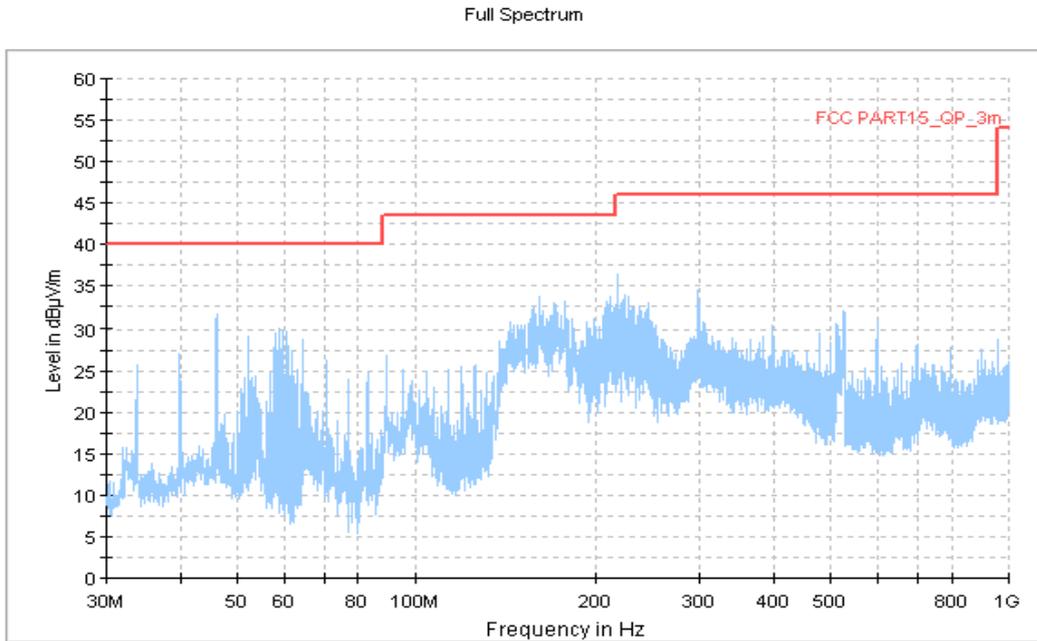


Figure A.11 Radiated Emission from 30MHz to 1GHz

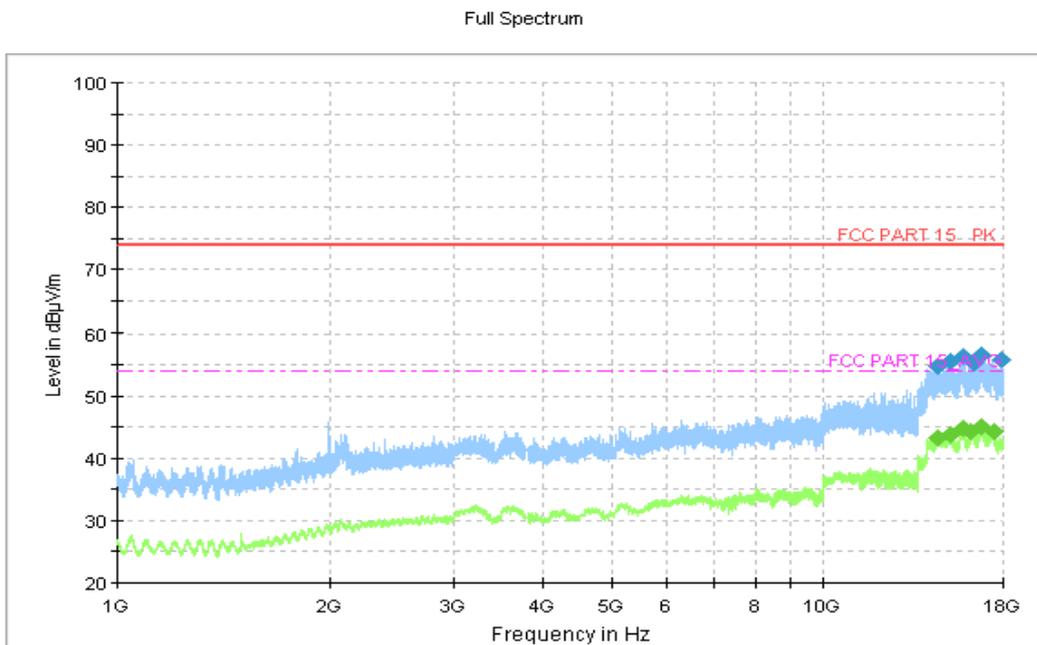


Figure A.12 Radiated Emission from 1GHz to 18GHz

USB mode: Set 7

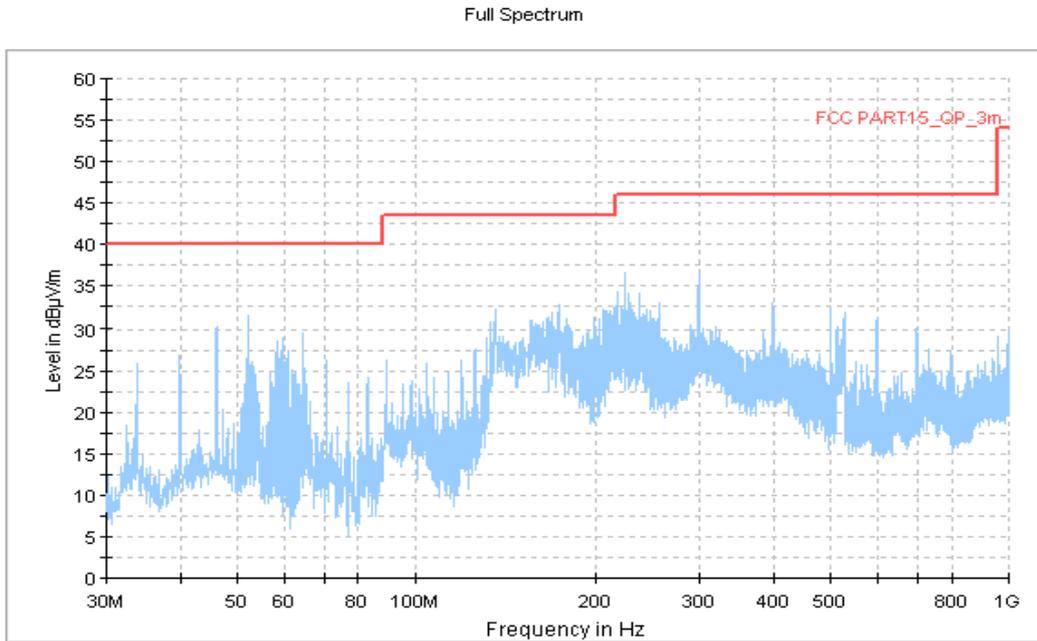


Figure A.13 Radiated Emission from 30MHz to 1GHz

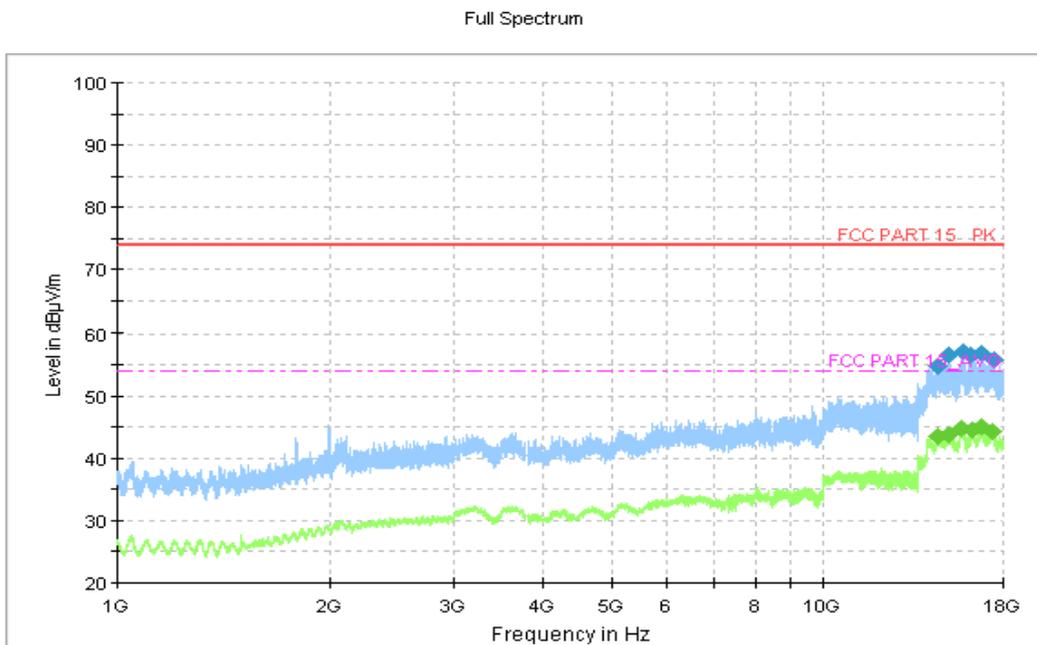


Figure A.14 Radiated Emission from 1GHz to 18GHz

USB mode: Set 8

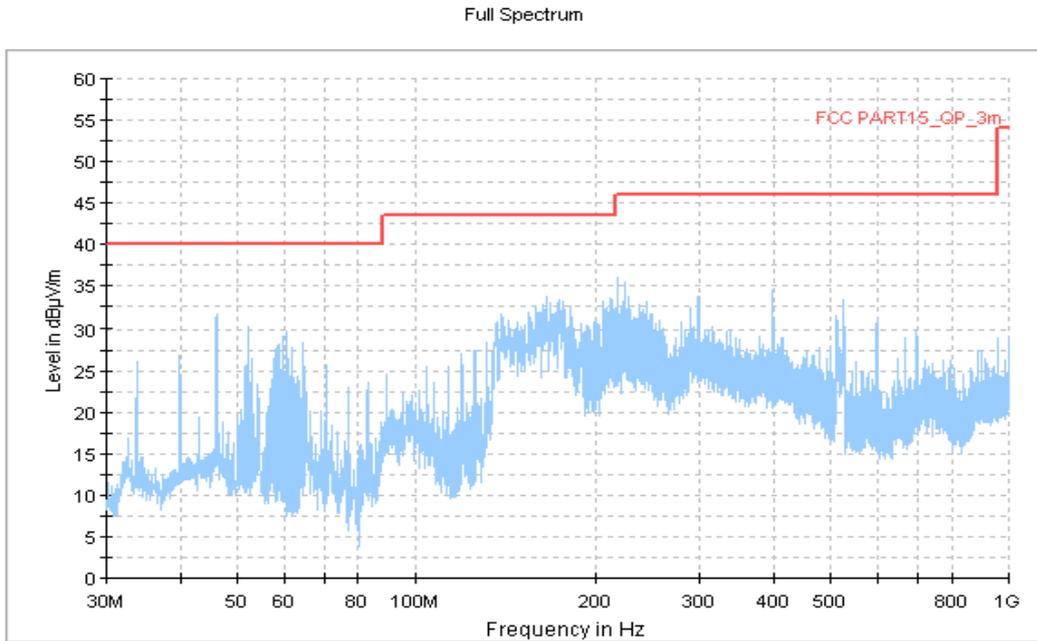


Figure A.15 Radiated Emission from 30MHz to 1GHz

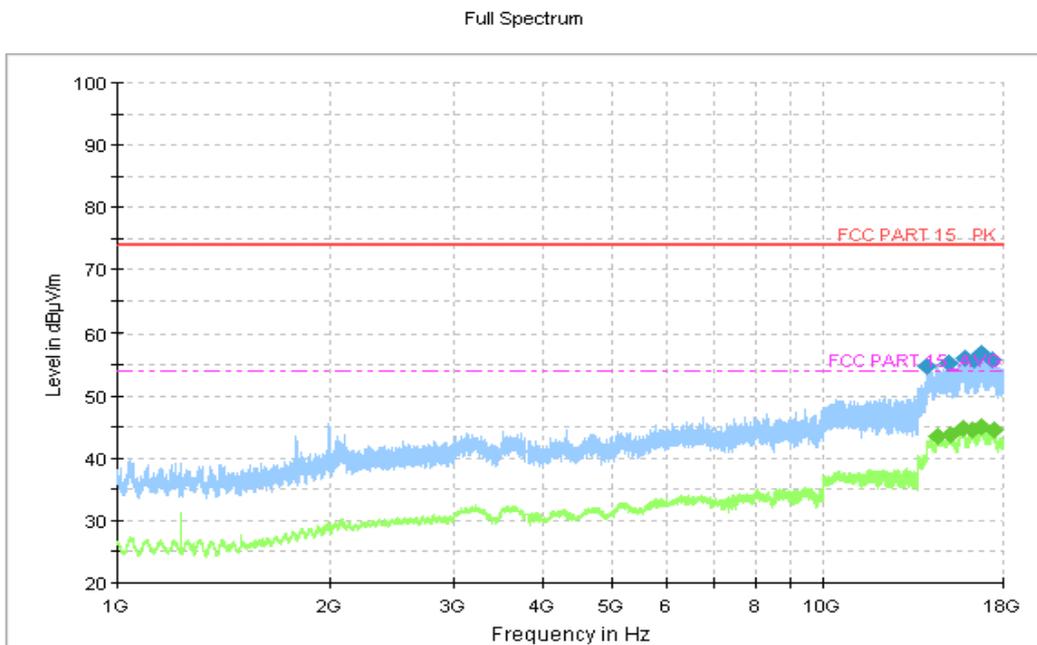


Figure A.16 Radiated Emission from 1GHz to 18GHz

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:

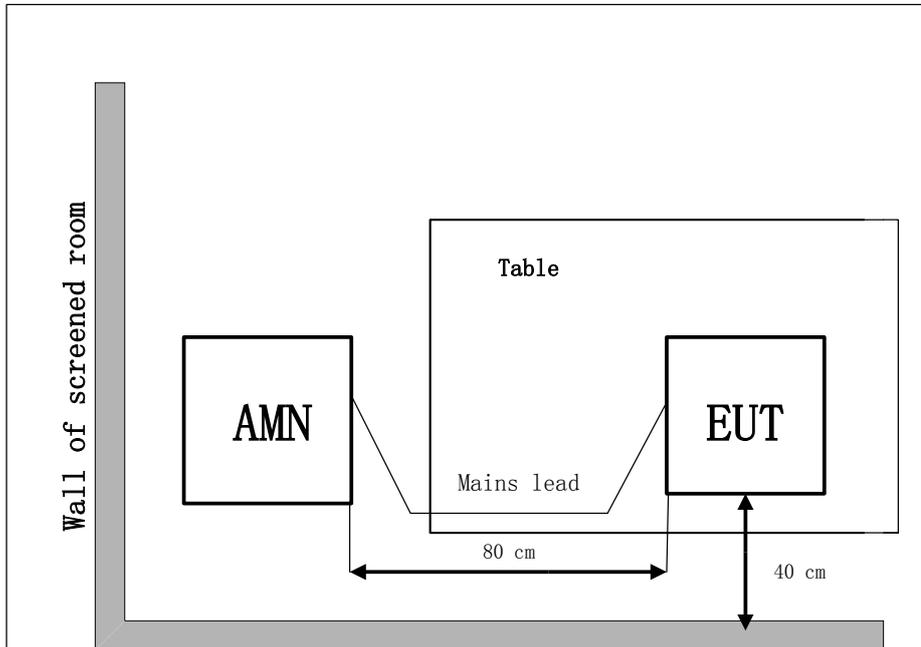
Charging mode: The MS is synchronized to SS, and able to respond to paging messages and incoming call. An established call has been released. The MS is connected to a charger.

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 (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 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

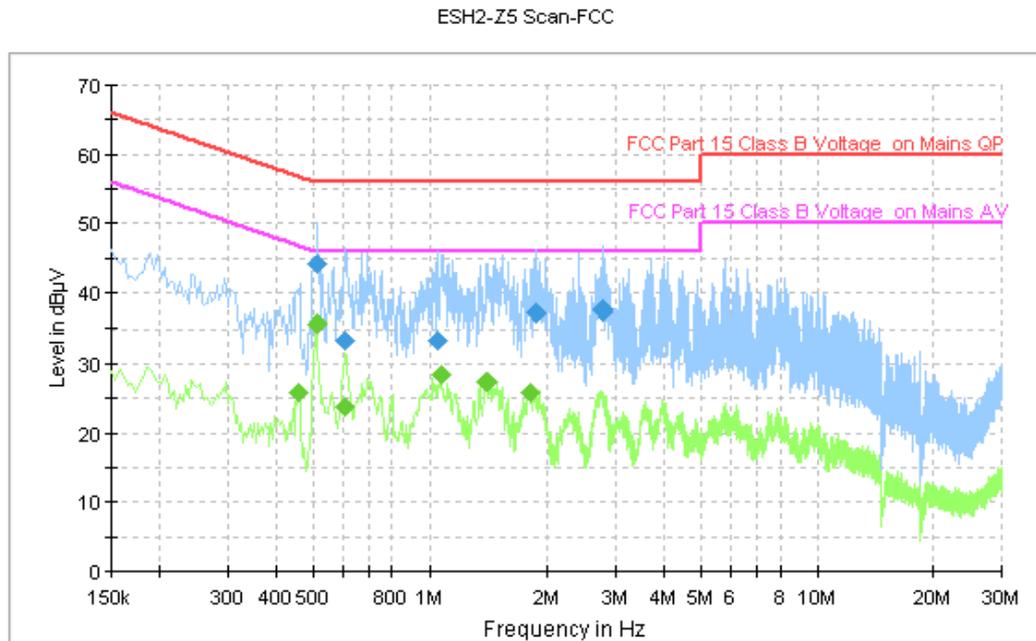


Figure A.17 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.514000	44.1	GND	N	9.7	11.9	56.0
0.602000	33.4	GND	N	9.6	22.6	56.0
1.054000	33.4	GND	N	9.6	22.6	56.0
1.862000	37.2	GND	N	9.5	18.8	56.0
2.782000	37.3	GND	N	9.6	18.7	56.0
2.790000	37.8	GND	N	9.6	18.2	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.458000	25.9	GND	N	9.7	20.8	46.7
0.510000	35.5	GND	N	9.7	10.5	46.0
0.602000	23.9	GND	N	9.6	22.1	46.0
1.070000	28.3	GND	N	9.6	17.7	46.0
1.398000	27.4	GND	N	9.6	18.6	46.0
1.802000	25.7	GND	N	9.5	20.3	46.0

Charging mode: Set.2
Voltage: 120V

ESH2-Z5 Scan-FCC

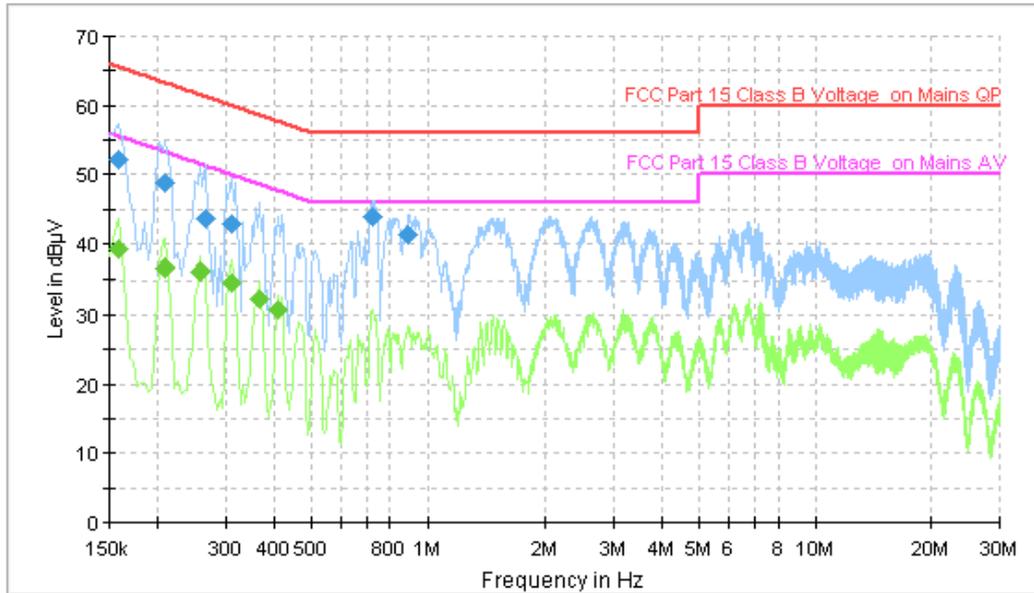


Figure A.18 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	52.3	GND	N	9.6	13.3	65.6
0.210000	48.9	GND	N	9.6	14.3	63.2
0.266000	43.6	GND	N	9.6	17.6	61.2
0.310000	42.8	GND	N	9.6	17.1	60.0
0.718000	44.0	GND	N	9.5	12.0	56.0
0.894000	41.3	GND	N	9.6	14.7	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	39.2	GND	N	9.6	16.4	55.6
0.210000	36.7	GND	N	9.6	16.5	53.2
0.258000	36.1	GND	N	9.6	15.4	51.5
0.310000	34.6	GND	N	9.6	15.3	50.0
0.366000	32.4	GND	N	9.6	16.2	48.6
0.410000	30.8	GND	N	9.7	16.9	47.6

Charging mode: Set.3
Voltage: 120V

ESH2-Z5 Scan-FCC

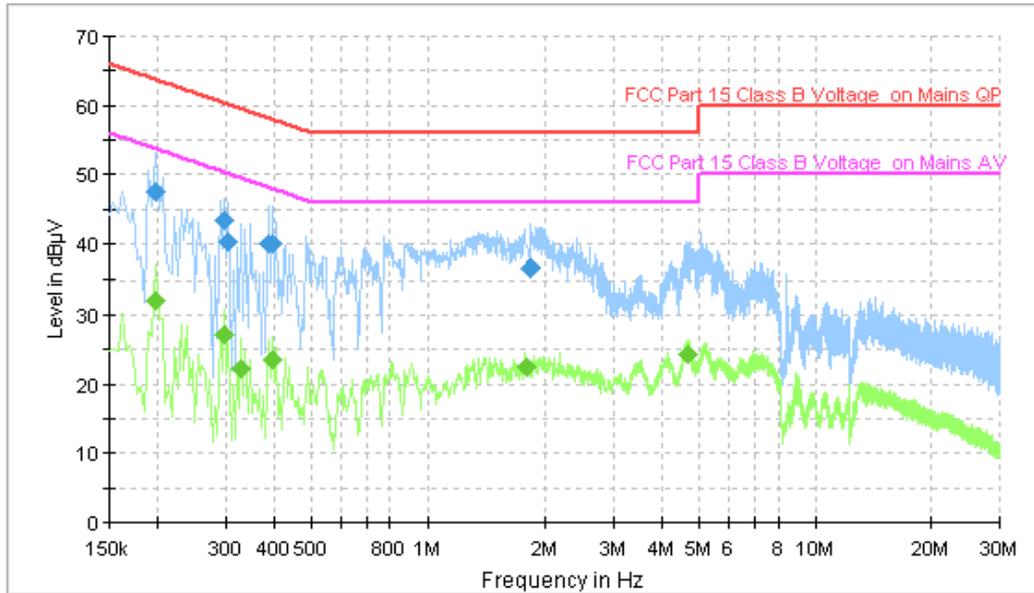


Figure A.19 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	47.6	GND	N	9.6	16.1	63.7
0.298000	43.5	GND	N	9.6	16.8	60.3
0.306000	40.2	GND	N	9.6	19.9	60.1
0.390000	40.1	GND	N	9.6	17.9	58.1
0.398000	39.9	GND	N	9.6	18.0	57.9
1.822000	36.7	GND	N	9.5	19.3	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	32.1	GND	N	9.6	21.6	53.7
0.298000	27.1	GND	N	9.6	23.2	50.3
0.330000	22.3	GND	N	9.6	27.2	49.5
0.398000	23.6	GND	N	9.6	24.3	47.9
1.782000	22.6	GND	N	9.6	23.4	46.0
4.686000	24.2	GND	N	9.6	21.8	46.0

Charging mode:Set.4
Voltage:120V

ESH2-Z5 Scan-FCC

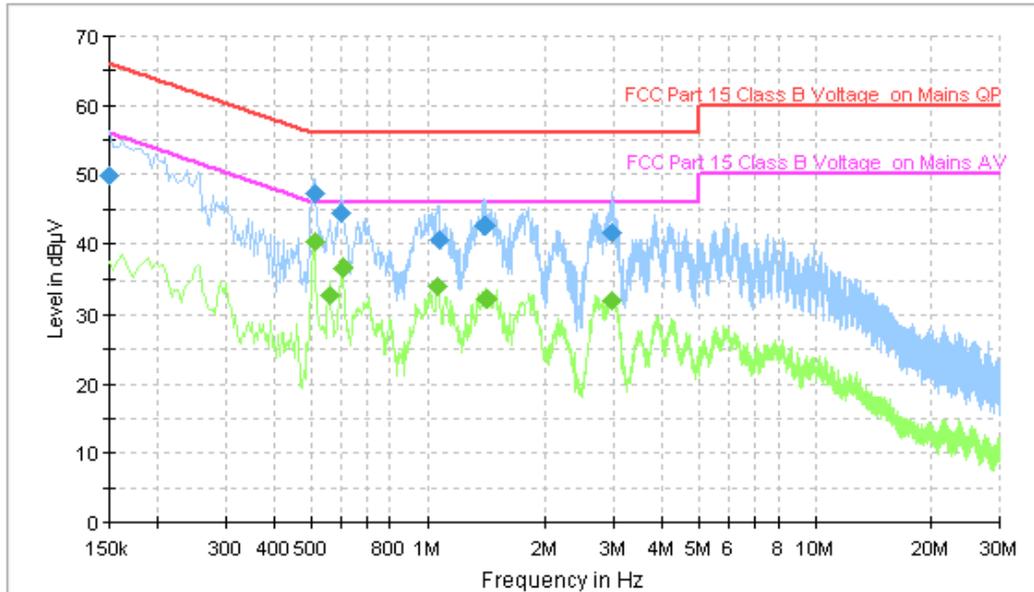


Figure A.20 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	49.8	GND	N	9.6	16.2	66.0
0.510000	47.4	GND	N	9.7	8.6	56.0
0.598000	44.4	GND	N	9.6	11.6	56.0
1.074000	40.5	GND	N	9.6	15.5	56.0
1.394000	42.5	GND	N	9.6	13.5	56.0
2.974000	41.5	GND	N	9.6	14.5	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	40.2	GND	N	9.7	5.8	46.0
0.558000	32.7	GND	N	9.7	13.3	46.0
0.602000	36.6	GND	N	9.6	9.4	46.0
1.066000	34.2	GND	N	9.6	11.8	46.0
1.410000	32.3	GND	N	9.5	13.7	46.0
2.978000	31.9	GND	N	9.6	14.1	46.0

USB mode:Set.5
Voltage:120V

ESH2-Z5 Scan-FCC

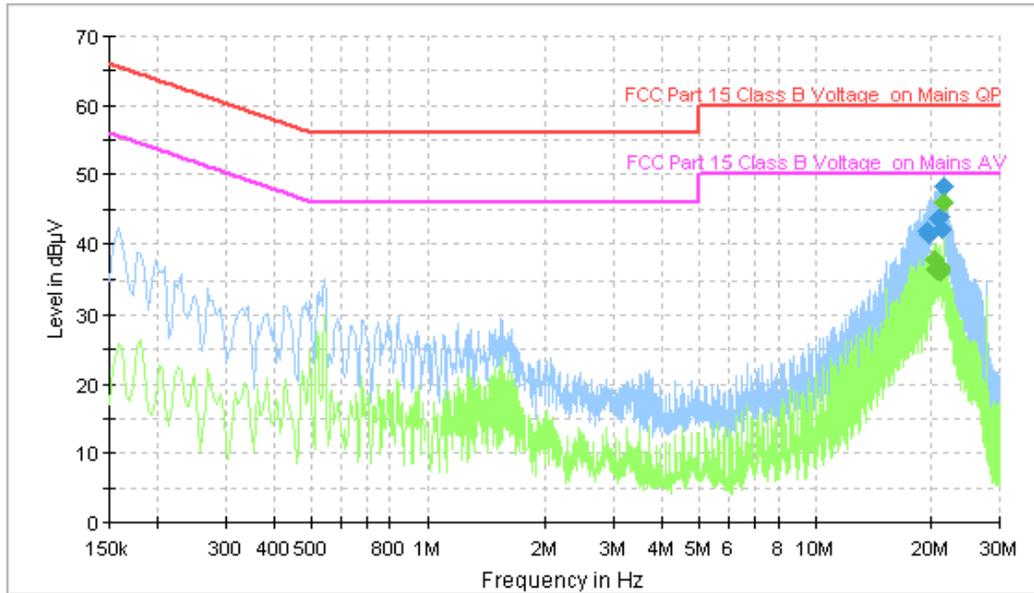


Figure A.21 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.454000	41.8	GND	N	10.0	18.2	60.0
19.642000	41.4	GND	N	10.0	18.6	60.0
20.738000	43.7	GND	N	10.0	16.3	60.0
21.006000	43.9	GND	N	10.0	16.1	60.0
21.250000	42.1	GND	N	10.0	17.9	60.0
21.502000	48.3	GND	N	10.0	11.7	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
20.402000	37.8	GND	N	10.0	12.2	50.0
20.486000	36.6	GND	N	10.0	13.4	50.0
20.578000	36.5	GND	N	10.0	13.5	50.0
20.974000	36.8	GND	N	10.0	13.2	50.0
21.058000	36.2	GND	N	10.0	13.8	50.0
21.502000	45.9	GND	N	10.0	4.1	50.0

USB mode:Set.6
Voltage:120V

ESH2-Z5 Scan-FCC

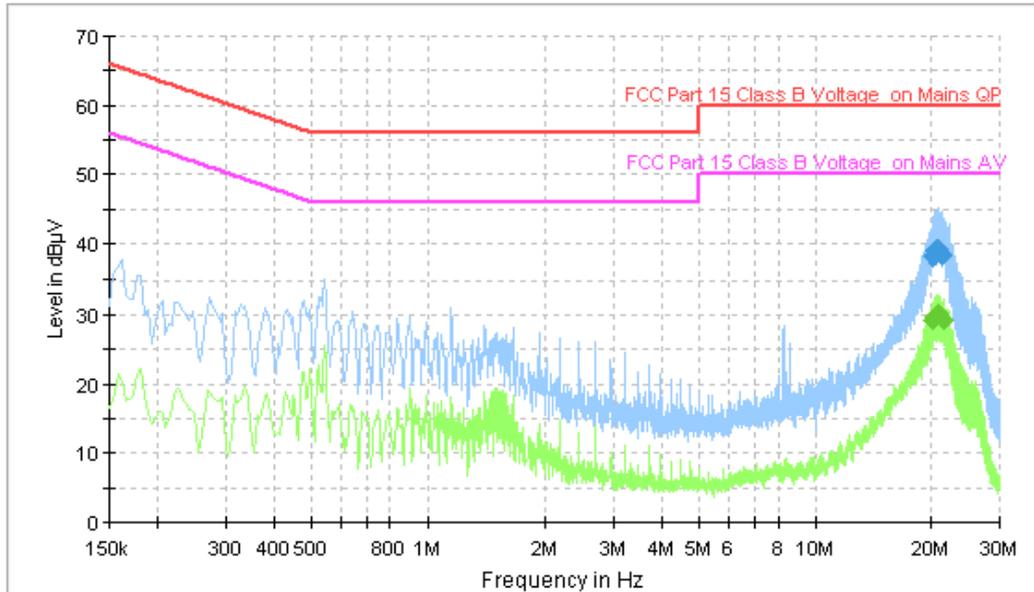


Figure A.22 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
20.134000	38.3	GND	N	10.0	21.7	60.0
20.378000	39.1	GND	N	10.0	20.9	60.0
20.586000	39.2	GND	N	10.0	20.8	60.0
20.690000	39.0	GND	N	10.0	21.0	60.0
20.874000	39.2	GND	N	10.0	20.8	60.0
21.310000	38.4	GND	N	10.0	21.6	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
20.194000	29.2	GND	N	10.0	20.8	50.0
20.302000	29.8	GND	N	10.0	20.2	50.0
20.554000	29.9	GND	N	10.0	20.1	50.0
20.706000	29.9	GND	N	10.0	20.1	50.0
20.890000	30.1	GND	N	10.0	19.9	50.0
21.502000	29.2	GND	N	10.0	20.8	50.0

USB mode:Set.7
Voltage:120V

ESH2-Z5 Scan-FCC

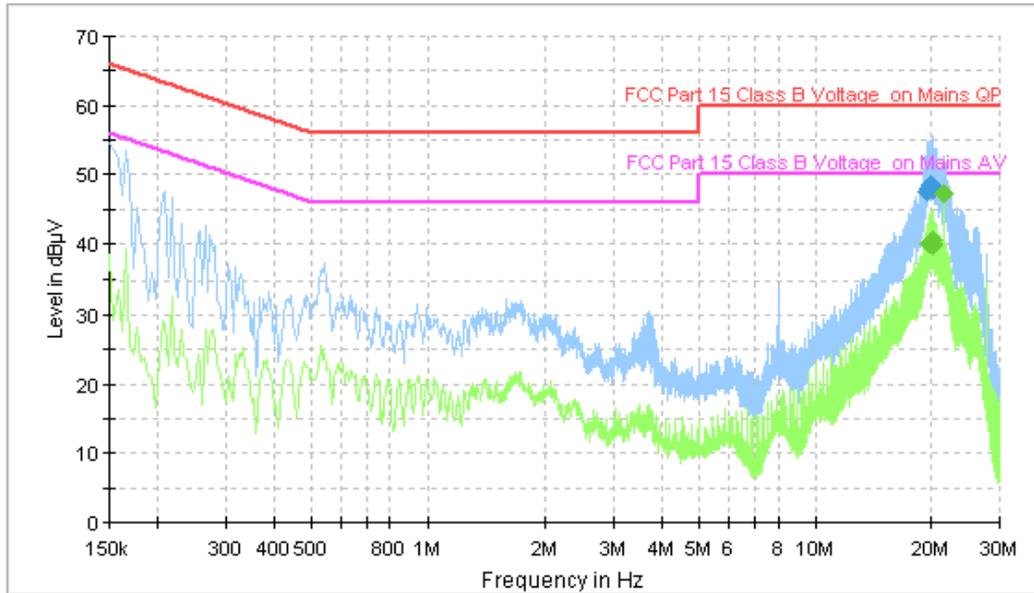


Figure A.23 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.550000	47.6	GND	N	10.0	12.4	60.0
19.778000	47.9	GND	N	10.0	12.1	60.0
19.878000	48.2	GND	N	10.0	11.8	60.0
19.894000	48.5	GND	N	10.0	11.5	60.0
20.114000	47.9	GND	N	10.0	12.1	60.0
20.154000	47.9	GND	N	10.0	12.1	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.778000	40.1	GND	N	10.0	9.9	50.0
19.878000	40.3	GND	N	10.0	9.7	50.0
20.038000	40.1	GND	N	10.0	9.9	50.0
20.062000	40.5	GND	N	10.0	9.5	50.0
20.146000	39.9	GND	N	10.0	10.1	50.0
21.506000	47.4	GND	N	10.0	2.6	50.0

USB mode:Set.8
Voltage:120V

ESH2-Z5 Scan-FCC

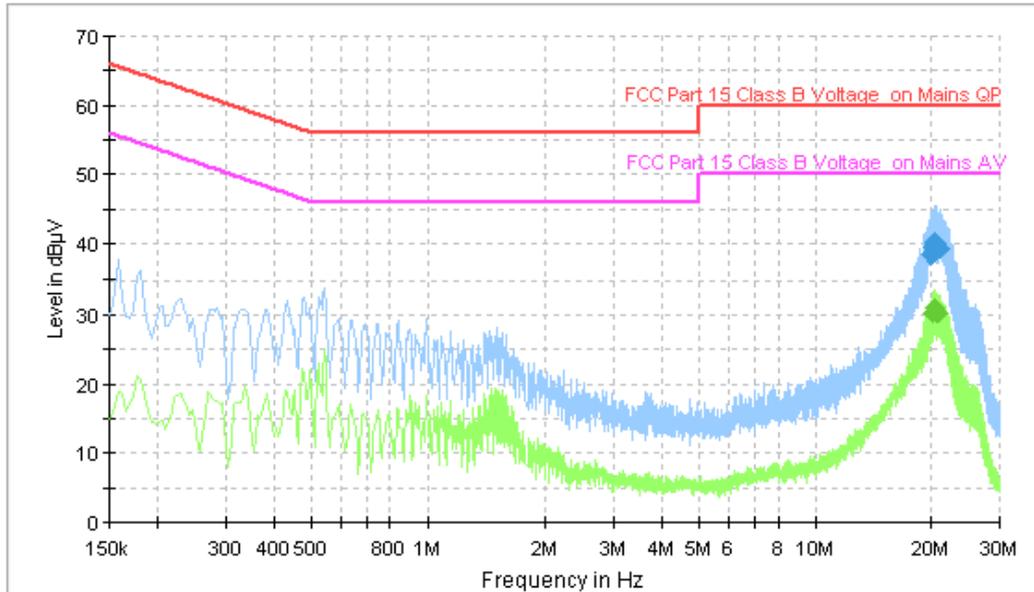


Figure A.24 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.862000	38.6	GND	N	10.0	21.4	60.0
20.214000	39.5	GND	N	10.0	20.5	60.0
20.342000	40.1	GND	N	10.0	19.9	60.0
20.450000	40.3	GND	N	10.0	19.7	60.0
20.582000	40.0	GND	N	10.0	20.0	60.0
21.138000	39.2	GND	N	10.0	20.8	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
20.222000	30.2	GND	N	10.0	19.8	50.0
20.298000	30.6	GND	N	10.0	19.4	50.0
20.382000	30.9	GND	N	10.0	19.1	50.0
20.482000	30.9	GND	N	10.0	19.1	50.0
20.702000	30.1	GND	N	10.0	19.9	50.0
20.786000	30.2	GND	N	10.0	19.8	50.0

Charging mode:Set.1
Voltage:240V

ESH2-Z5 Scan-FCC

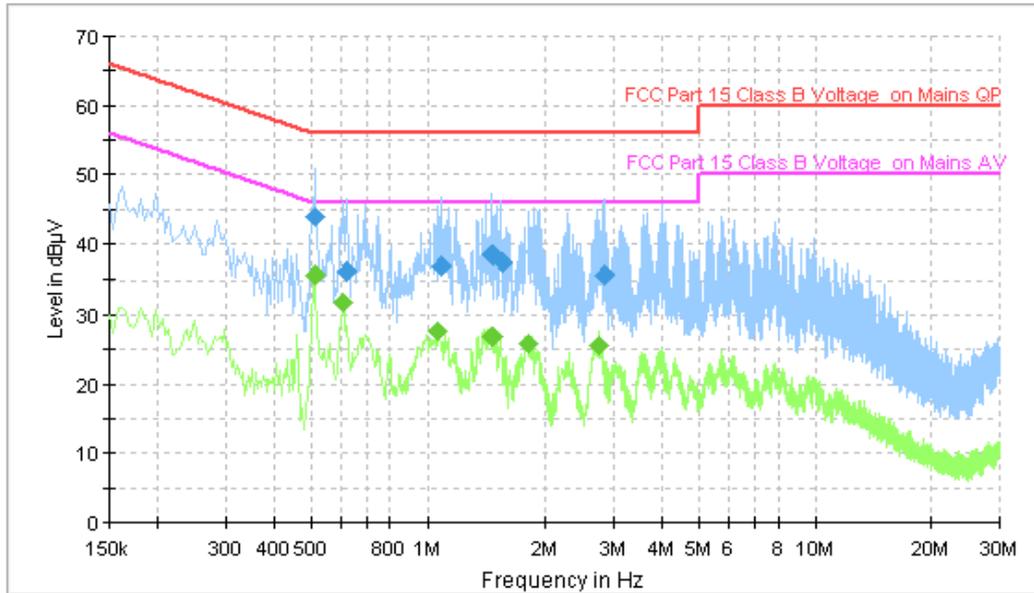


Figure A.25 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	44.0	GND	N	9.7	12.0	56.0
0.618000	36.3	GND	N	9.6	19.7	56.0
1.090000	36.8	GND	N	9.6	19.2	56.0
1.458000	38.5	GND	N	9.5	17.5	56.0
1.542000	37.5	GND	N	9.6	18.5	56.0
2.854000	35.6	GND	N	9.6	20.4	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.510000	35.7	GND	N	9.7	10.3	46.0
0.606000	31.7	GND	N	9.6	14.3	46.0
1.066000	27.8	GND	N	9.6	18.2	46.0
1.458000	26.8	GND	N	9.5	19.2	46.0
1.802000	25.9	GND	N	9.5	20.1	46.0
2.742000	25.6	GND	N	9.6	20.4	46.0

Charging mode: Set.2
Voltage: 240V

ESH2-Z5 Scan-FCC

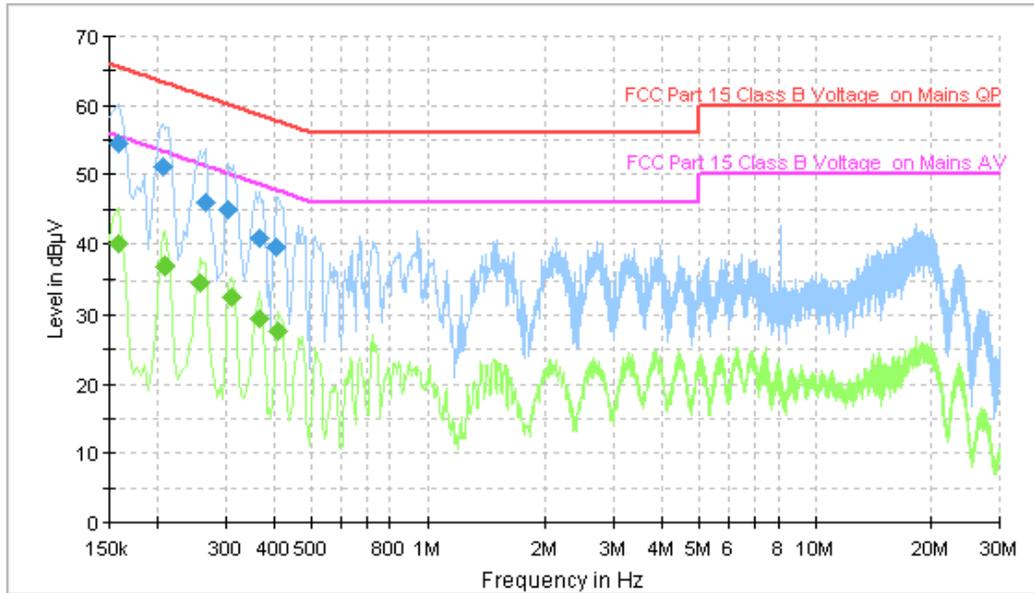


Figure A.26 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	54.5	GND	N	9.6	11.0	65.6
0.206000	51.1	GND	N	9.6	12.2	63.4
0.266000	46.0	GND	N	9.6	15.2	61.2
0.306000	45.0	GND	N	9.6	15.0	60.1
0.366000	40.8	GND	N	9.6	17.8	58.6
0.406000	39.4	GND	N	9.7	18.3	57.7

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	40.1	GND	N	9.6	15.5	55.6
0.210000	36.9	GND	N	9.6	16.3	53.2
0.258000	34.6	GND	N	9.6	16.9	51.5
0.310000	32.5	GND	N	9.6	17.5	50.0
0.366000	29.4	GND	N	9.6	19.1	48.6
0.410000	27.6	GND	N	9.7	20.0	47.6

Charging mode:Set.3
Voltage:240V

ESH2-Z5 Scan-FCC

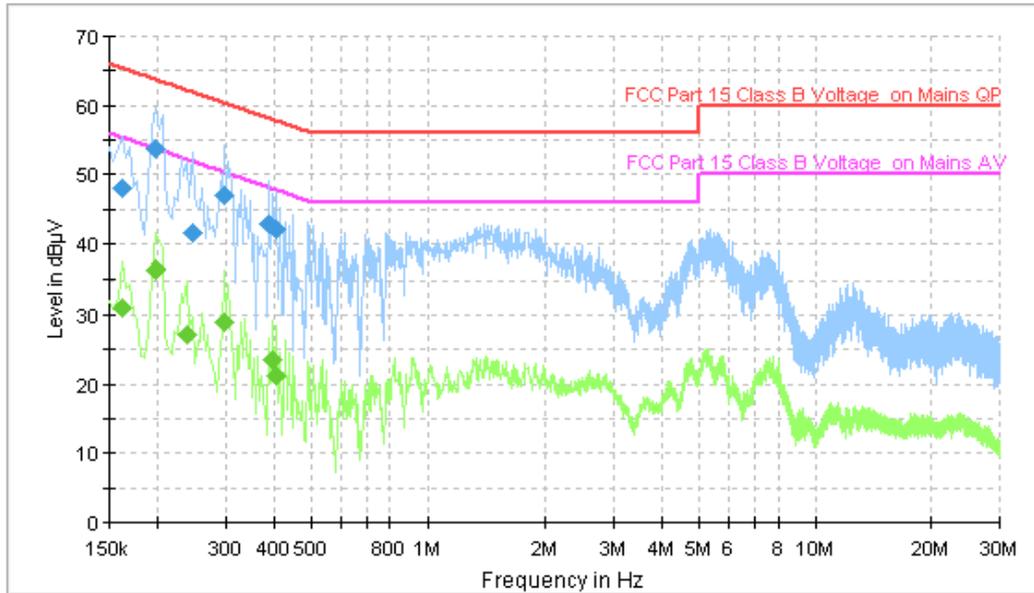


Figure A.27 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.162000	48.1	GND	N	9.6	17.3	65.4
0.198000	53.7	GND	N	9.6	10.0	63.7
0.246000	41.5	GND	N	9.6	20.4	61.9
0.298000	47.0	GND	N	9.6	13.3	60.3
0.390000	42.9	GND	N	9.6	15.1	58.1
0.406000	42.0	GND	N	9.7	15.7	57.7

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.162000	31.1	GND	N	9.6	24.3	55.4
0.198000	36.5	GND	N	9.6	17.2	53.7
0.238000	27.0	GND	N	9.6	25.2	52.2
0.298000	28.9	GND	N	9.6	21.4	50.3
0.398000	23.4	GND	N	9.6	24.5	47.9
0.406000	21.2	GND	N	9.7	26.6	47.7

Charging mode:Set.4
Voltage:240V

ESH2-Z5 Scan-FCC

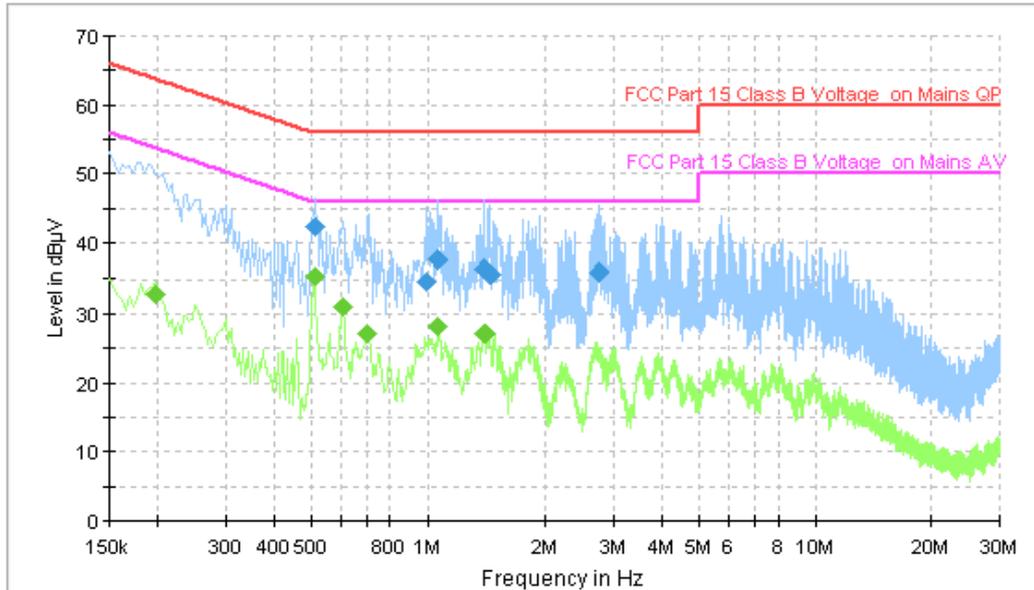


Figure A.28 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.514000	42.2	GND	N	9.7	13.8	56.0
0.998000	34.5	GND	N	9.5	21.5	56.0
1.066000	37.8	GND	N	9.6	18.2	56.0
1.402000	36.4	GND	N	9.6	19.6	56.0
1.454000	35.6	GND	N	9.5	20.4	56.0
2.754000	35.9	GND	N	9.6	20.1	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.198000	32.9	GND	N	9.6	20.8	53.7
0.510000	35.4	GND	N	9.7	10.6	46.0
0.602000	31.1	GND	N	9.6	14.9	46.0
0.698000	27.0	GND	N	9.5	19.0	46.0
1.066000	28.0	GND	N	9.6	18.0	46.0
1.398000	27.1	GND	N	9.6	18.9	46.0

USB mode:Set.5
Voltage:240V

ESH2-Z5 Scan-FCC

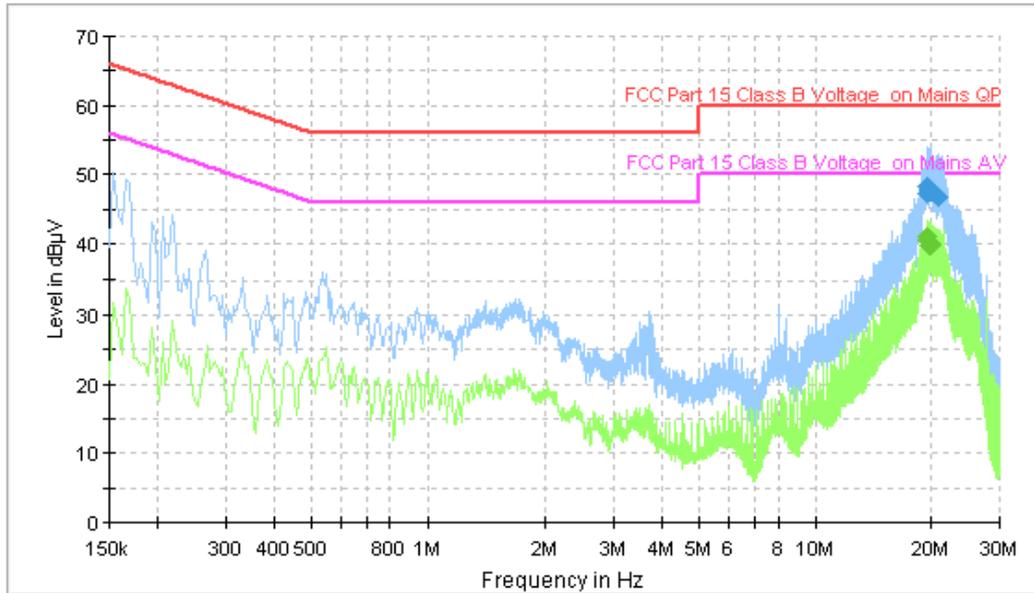


Figure A.29 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.406000	47.2	GND	N	10.0	12.8	60.0
19.566000	48.3	GND	N	10.0	11.7	60.0
19.642000	48.1	GND	N	10.0	11.9	60.0
19.798000	47.8	GND	N	10.0	12.2	60.0
20.018000	47.6	GND	N	10.0	12.4	60.0
20.738000	46.9	GND	N	10.0	13.1	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.414000	40.7	GND	N	10.0	9.3	50.0
19.566000	41.0	GND	N	10.0	9.0	50.0
19.650000	39.7	GND	N	10.0	10.3	50.0
19.658000	39.8	GND	N	10.0	10.2	50.0
19.834000	40.0	GND	N	10.0	10.0	50.0
19.850000	39.8	GND	N	10.0	10.2	50.0

USB mode:Set.6
Voltage:240V

ESH2-Z5 Scan-FCC

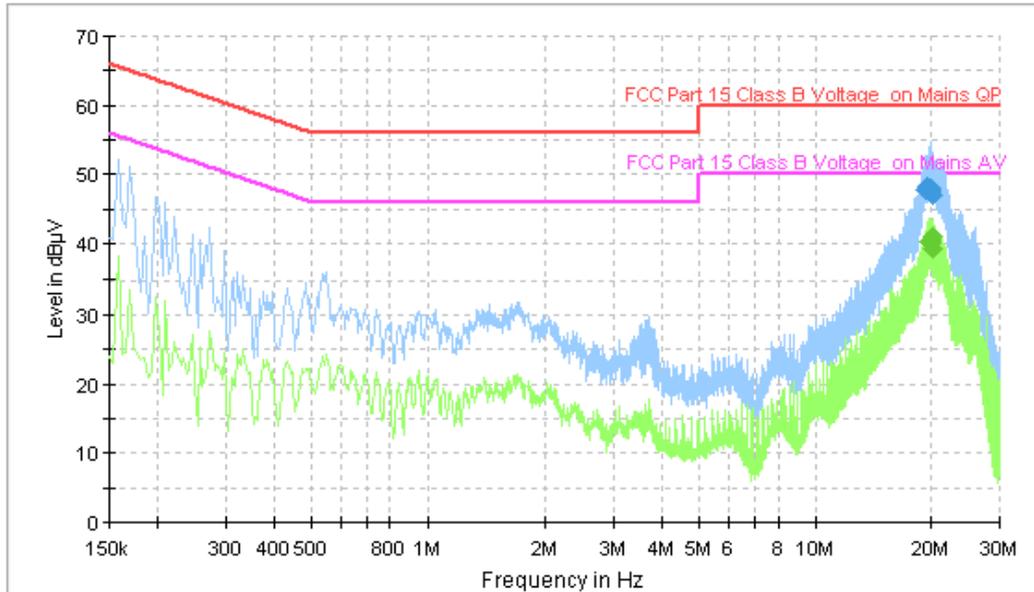


Figure A.30 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.338000	47.7	GND	N	10.0	12.3	60.0
19.530000	48.2	GND	N	10.0	11.8	60.0
19.858000	48.0	GND	N	10.0	12.0	60.0
19.890000	47.8	GND	N	10.0	12.2	60.0
20.002000	47.5	GND	N	10.0	12.5	60.0
20.142000	47.1	GND	N	10.0	12.9	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.674000	40.4	GND	N	10.0	9.6	50.0
19.866000	40.4	GND	N	10.0	9.6	50.0
19.882000	40.0	GND	N	10.0	10.0	50.0
19.942000	40.4	GND	N	10.0	9.6	50.0
20.134000	41.0	GND	N	10.0	9.0	50.0
20.142000	39.4	GND	N	10.0	10.6	50.0

USB mode:Set.7
Voltage:240V

ESH2-Z5 Scan-FCC

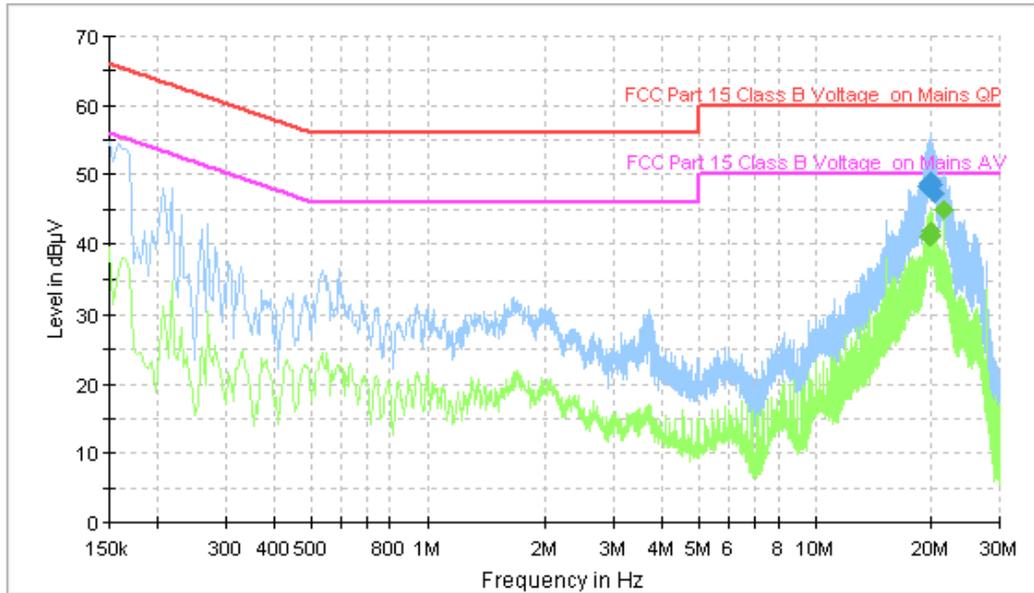


Figure A.31 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.594000	48.4	GND	N	10.0	11.6	60.0
19.670000	48.9	GND	N	10.0	11.1	60.0
19.822000	49.1	GND	N	10.0	10.9	60.0
19.882000	49.0	GND	N	10.0	11.0	60.0
20.106000	48.5	GND	N	10.0	11.5	60.0
20.346000	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)
19.738000	41.0	GND	N	10.0	9.0	50.0
19.822000	41.2	GND	N	10.0	8.8	50.0
19.830000	41.3	GND	N	10.0	8.7	50.0
19.922000	41.0	GND	N	10.0	9.0	50.0
20.022000	41.8	GND	N	10.0	8.2	50.0
21.506000	45.0	GND	N	10.0	5.0	50.0

USB mode:Set.8
Voltage:240V

ESH2-Z5 Scan-FCC

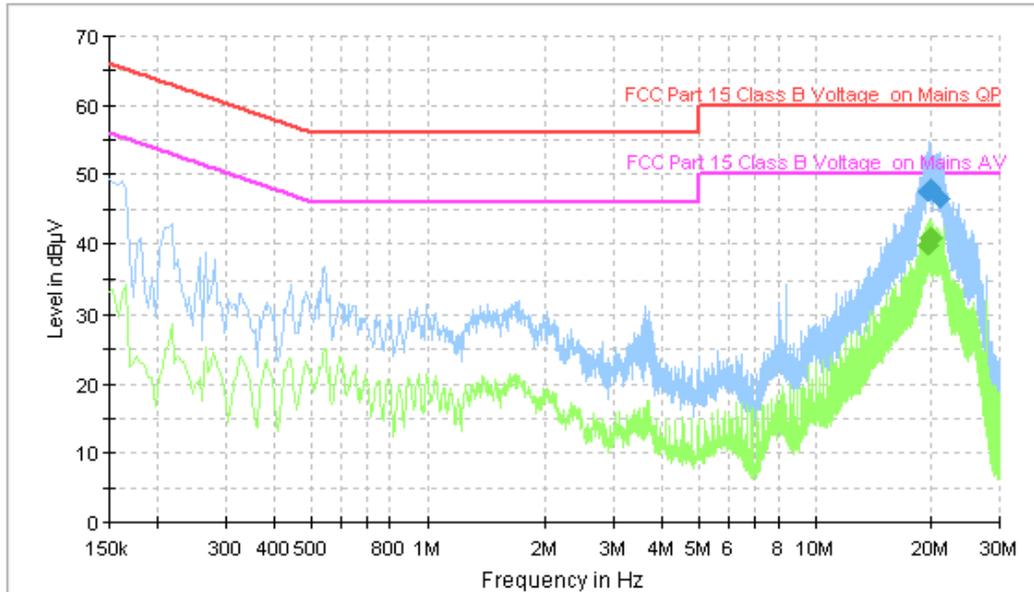


Figure A.32 Conducted Emission

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.430000	47.5	GND	N	10.0	12.5	60.0
19.622000	47.8	GND	N	10.0	12.2	60.0
19.750000	47.6	GND	N	10.0	12.4	60.0
19.906000	48.1	GND	N	10.0	11.9	60.0
20.874000	46.8	GND	N	10.0	13.2	60.0
21.098000	46.5	GND	N	10.0	13.5	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
19.422000	39.7	GND	N	10.0	10.4	50.0
19.682000	40.8	GND	N	10.0	9.2	50.0
19.774000	39.7	GND	N	10.0	10.3	50.0
19.790000	40.8	GND	N	10.0	9.2	50.0
19.906000	41.1	GND	N	10.0	8.9	50.0
20.134000	40.9	GND	N	10.0	9.1	50.0

END OF REPORT