



TEST REPORT

No. 2013EEB00584-EMC

for

Shenzhen Sang Fei Consumer Communications Co., Ltd

WCDMA digital mobile phone

Model Name: Philips W8555

Marketing Name: Philips W8555

FCC ID: VQRCTW8555

with

Hardware Version: W8555_V01

Software Version: Philips_W8555_V01

Issued Date: 2013-12-13

Test Laboratory:

FCC 2.948 Listed: No.310359

IC O.A.T.S listed: No.6629C-1

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 TMC Beijing.

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1. Test Laboratory

1.1. Testing Location

Company Name: TMC Shenzhen, Telecommunication Metrology Center of MIIT
Address: No. 12 Building, Shangsha Innovation and Technology Park, Futian District
Postal Code: 518048
Telephone: +86(0)755-33322000
Fax: +86(0)755-33322001

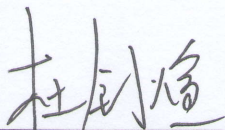
1.2. Testing Environment

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

1.3. Project data

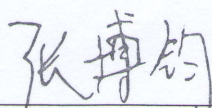
Testing Start Date: 2013-11-20
Testing End Date: 2013-12-12

1.4. Signature



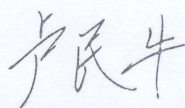
Du Zhaoxuan

(Prepared this test report)



Zhang Bojun

(Reviewed this test report)



Lu Minniu

Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Shenzhen Sang Fei Consumer Communications Co., Ltd
Address /Post: 11 Science and Technology Road, Shenzhen
Hi-tech Industrial Park, Nanshan District, Shenzhen, PRC
City: Shenzhen
Postal Code: 518057
Country: China
Telephone: 0755-86138466
Fax: 0755-26503914

2.2. Manufacturer Information

Company Name: Shenzhen Sang Fei Consumer Communications Co., Ltd
Address /Post: 11 Science and Technology Road, Shenzhen
Hi-tech Industrial Park, Nanshan District, Shenzhen, PRC
City: Shenzhen
Postal Code: 518057
Country: China
Telephone: 0755-86138466
Fax: 0755-26503914

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

3.1. About EUT

Description	WCDMA digital mobile phone
Model Name	Philips W8555
Marketing Name	Philips W8555
FCC ID	VQRCTW8555

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	/	W8555_V01	Philips_W8555_V01

*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
AE1	Battery	/
AE2	Travel charger	/
AE3	USB cable	/

AE1

Model	AB3300BWMC
Manufacturer	Harbin Coslight Power Co Ltd
Capacitance	3300mAh
Nominal Voltage	3.8V

AE2-1

Model	A31-500650
Manufacturer	dongguan aohai power technology co.Ltd
Length of DC line	81cm

AE2-2

Model	3208SF
Manufacturer	Salcomp Co., Ltd. (Shenzhen)
Length of DC line	81cm

AE3

Model	/
Manufacturer	/
Length of cable	81cm

*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 + AE2-1	Charging mode
Set.2	EUT1+ AE1 + AE3	USB mode
Set.3	EUT1+ AE1 + AE2-2	Charging 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	10-1-2012 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	2003

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber (11.20 meters×6.10meters×5.60meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω

Conducted 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	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber (11.20 meters×6.10 meters×6.60 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2MΩ
Ground system resistance	< 0.5 Ω
Voltage Standing Wave Ratio (VSWR)	≤ 6 dB, from 1 to 6 GHz, 3 m distance

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 Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CAL PERIOD
1	Test Receiver	ESCI	100701	R&S	2014.07.31	1 year
2	Test Receiver	ESCI	100702	R&S	2014.07.31	1 year
3	Test Receiver	FSP 40	100378	R&S	2013.12.21	1 year
4	BiLog Antenna	VULB9163	9163 330	Schwarzbeck	2014.02.24	3 years
5	LISN	ESH2-Z5	100196	R&S	2014.01.23	1 year
6	Dual-Ridge Waveguide Horn Antenna	3117	00066577	ETS-Lindgren	2016.04.01	3 years
7	Universal Radio Communication Tester	E5515C	GB47460389	Agilent	2014.08.01	1 year

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 - 2003, 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:

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 Lenovo Thinkcentre M4099t, and the serial number of the PC is SA08850737. 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 of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

*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
1000-6000	1MHz/1MHz	15

A.1.5 Measurement Results

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

The measurement results are obtained as described below:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Note: the result contains vertical part and Horizontal part

Set.1 Charging mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV)	Polarity
1152	31.5	-5.1	36.6	V
1812	31.4	-0.6	32	H
2357	37.1	1.7	35.4	V
2455	35.1	1.9	33.2	V
3676.125	34.8	3.8	31	H
5857.875	35.9	7.1	28.8	V

Set.2 USB mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{Mea} (dBuV)	Polarity
1080	36.1	-5.6	41.7	V
1500	41.4	-3.4	44.8	V
1596	40.8	-2.5	43.3	V
2357	37.1	1.7	35.4	V
3000	41	3	38	V
4500.375	38.1	5.5	32.6	V

Set.3 Charging mode

Frequency(MHz)	Result(dBuV/m)	A_{Rpl} (dB)	P_{mea} (dBuV)	Polarity
1152	31.7	-5.1	36.8	V
1815	31.5	-0.6	32.1	V
2357	37.2	1.7	35.5	V
3240	35.2	3.3	31.9	H
3674.25	34.9	3.8	31.1	H
5995.5	35.9	7.2	28.7	V

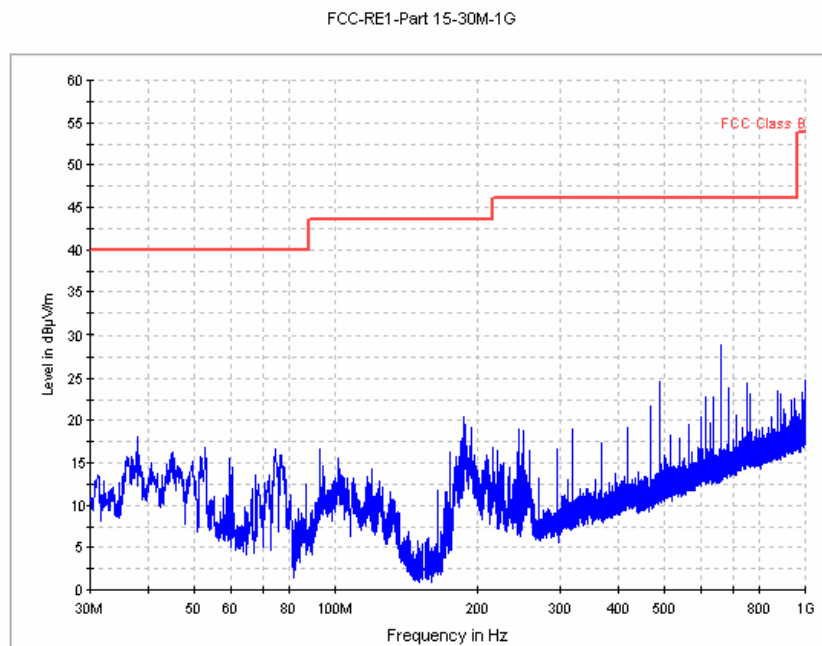


Figure A.1 Radiated Emission from 30MHz to 1GHz (Set.1, Charging mode)

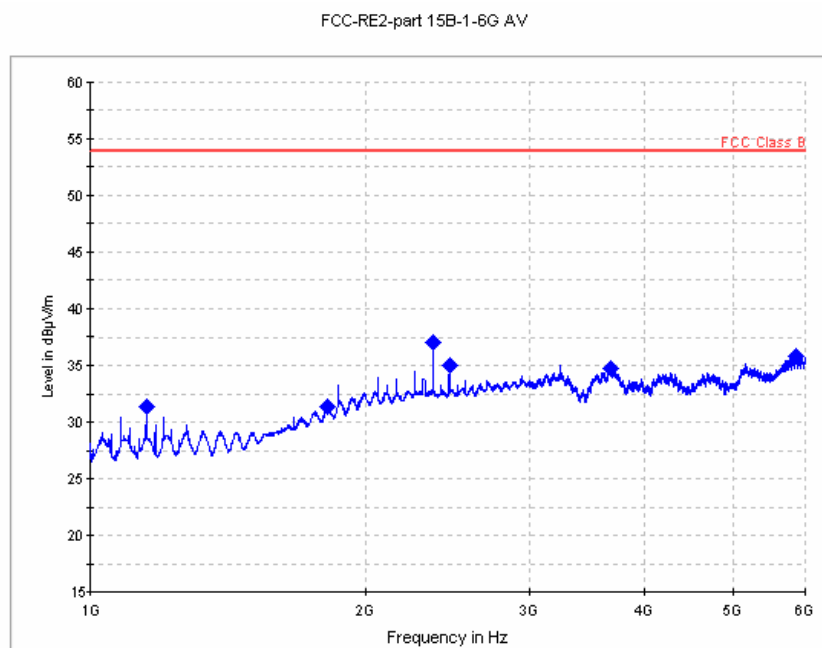


Figure A.2 Radiated Emission from 1GHz to 4GHz (Set.1, Charging mode)

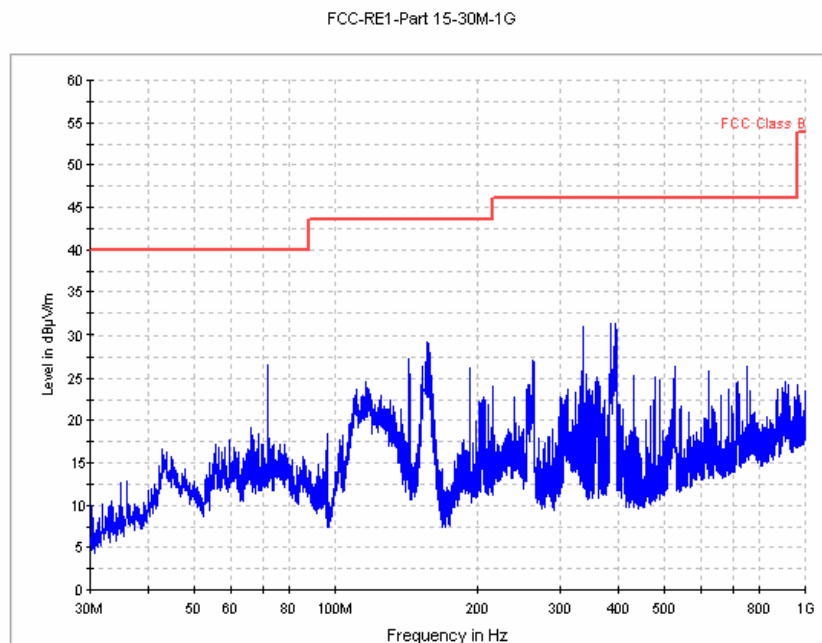


Figure A.3 Radiated Emission from 30MHz to 1GHz (Set.2, USB mode)

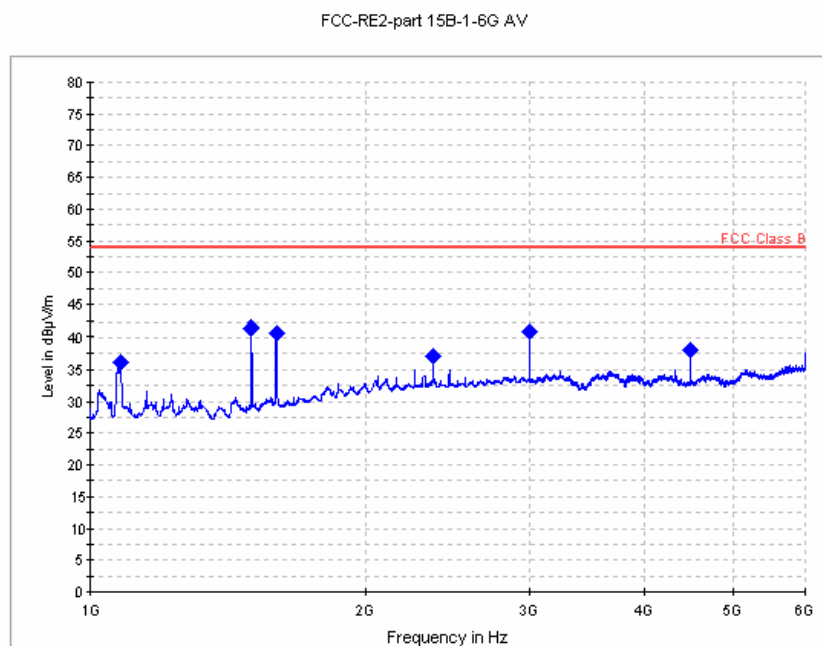


Figure A.4 Radiated Emission from 1GHz to 4GHz (Set.2, USB mode)

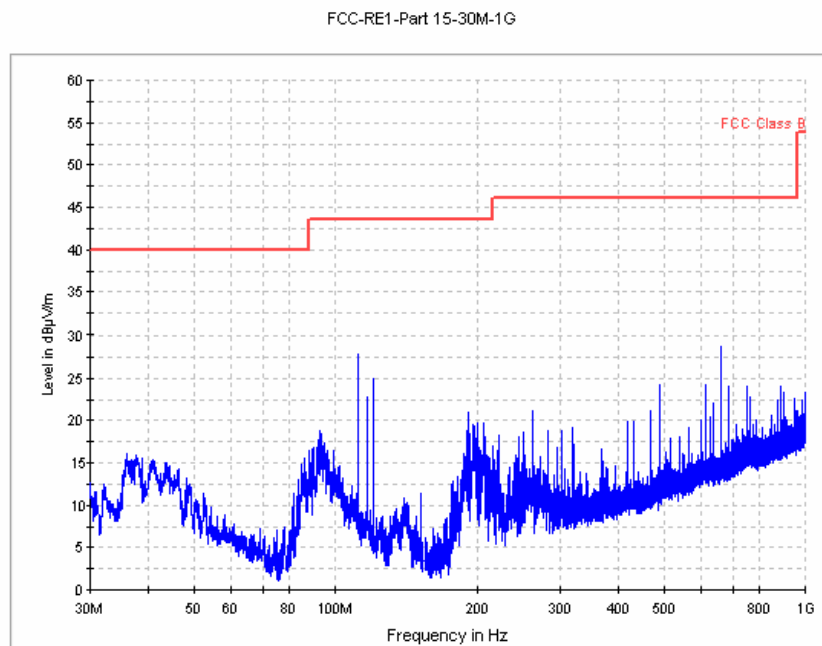


Figure A.5 Radiated Emission from 30MHz to 1GHz (Set.3, Charging mode)

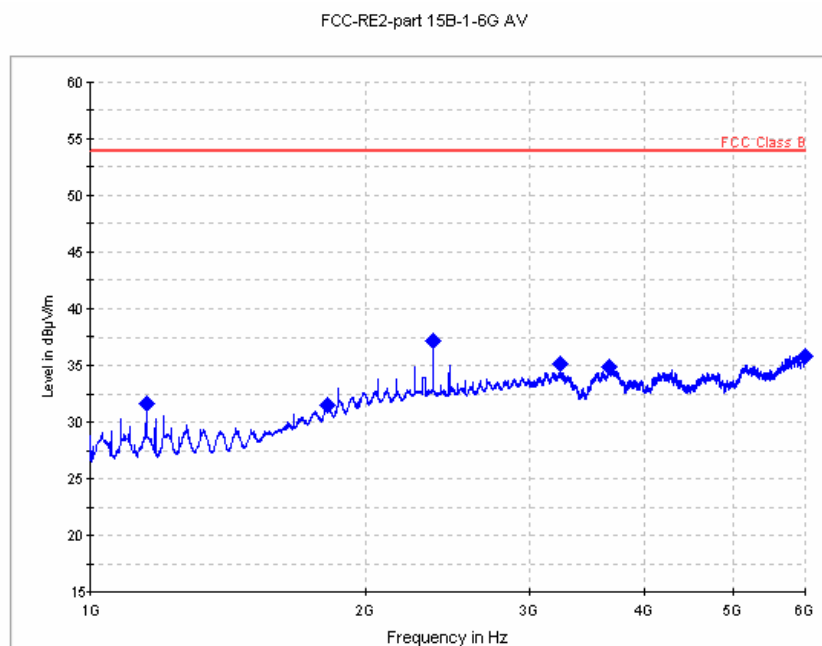


Figure A.6 Radiated Emission from 1GHz to 4GHz (Set.3, Charging mode)

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 - 2003, section 7.2.

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 Lenovo Thinkcentre M4099t, and the serial number of the PC is SA08850737. 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 Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60

RBW	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

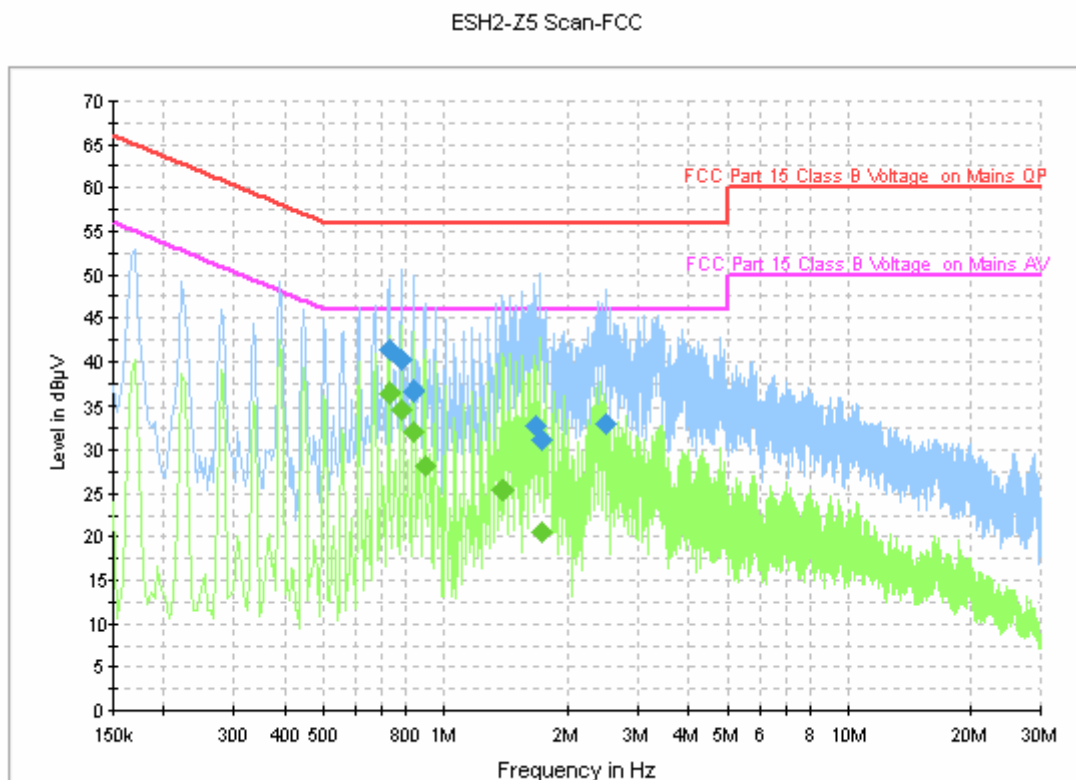


Figure A.7 Conducted Emission (Set.1, Charging mode)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.726000	41.4	FLO	L1	10.0	14.6	56.0
0.782000	40.2	FLO	L1	10.1	15.8	56.0
0.838000	36.8	FLO	L1	10.0	19.2	56.0
1.674000	32.8	FLO	L1	10.1	23.2	56.0
1.730000	31.1	FLO	L1	10.1	24.9	56.0
2.478000	33.0	FLO	N	10.2	23.0	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.726000	36.5	FLO	L1	10.0	9.5	46.0
0.782000	34.7	FLO	L1	10.1	11.4	46.0
0.838000	32.0	FLO	L1	10.0	14.0	46.0
0.894000	28.1	FLO	L1	10.1	17.9	46.0
1.394000	25.4	FLO	L1	10.1	20.6	46.0
1.730000	20.5	FLO	L1	10.1	25.5	46.0

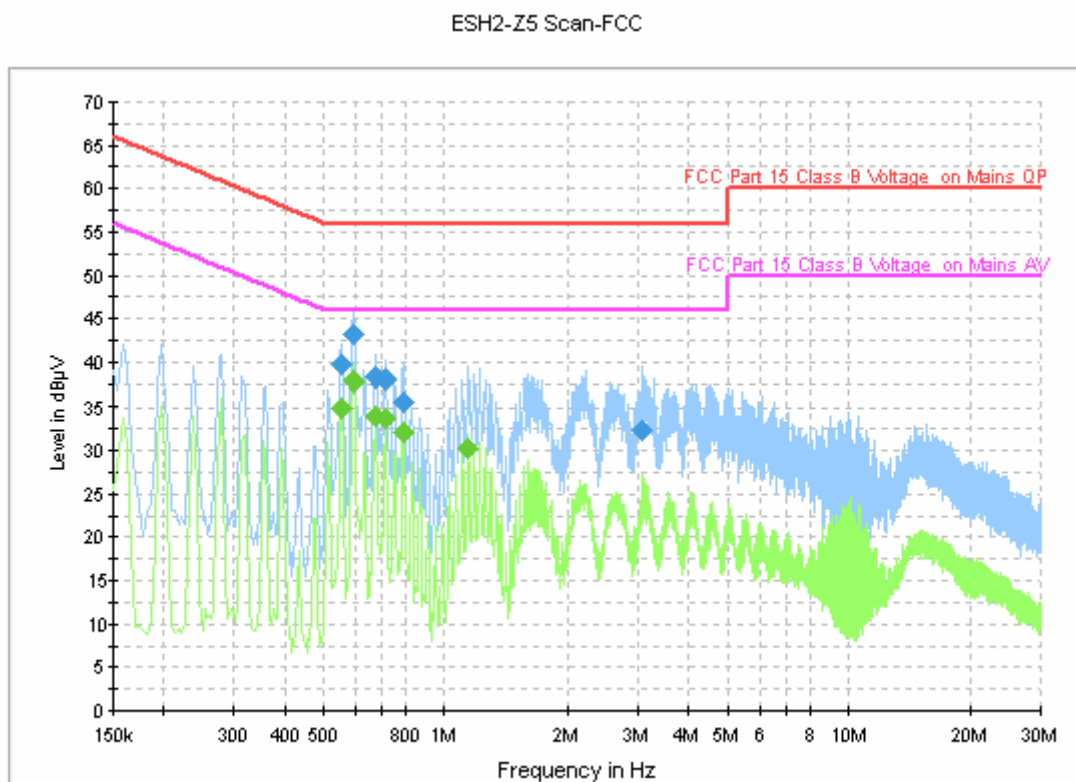


Figure A.8 Conducted Emission (Set.2, USB mode)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.554000	39.8	FLO	L1	10.1	16.2	56.0
0.594000	43.1	FLO	L1	10.1	12.9	56.0
0.670000	38.4	FLO	L1	10.0	17.6	56.0
0.710000	38.2	FLO	L1	10.0	17.8	56.0
0.790000	35.6	FLO	N	10.1	20.4	56.0
3.066000	32.3	FLO	L1	10.2	23.7	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.554000	34.9	FLO	L1	10.1	11.1	46.0
0.594000	38.0	FLO	L1	10.1	8.0	46.0
0.670000	34.0	FLO	L1	10.0	12.0	46.0
0.710000	33.8	FLO	L1	10.0	12.2	46.0
0.790000	32.2	FLO	L1	10.1	13.8	46.0
1.146000	30.2	FLO	L1	10.1	15.8	46.0

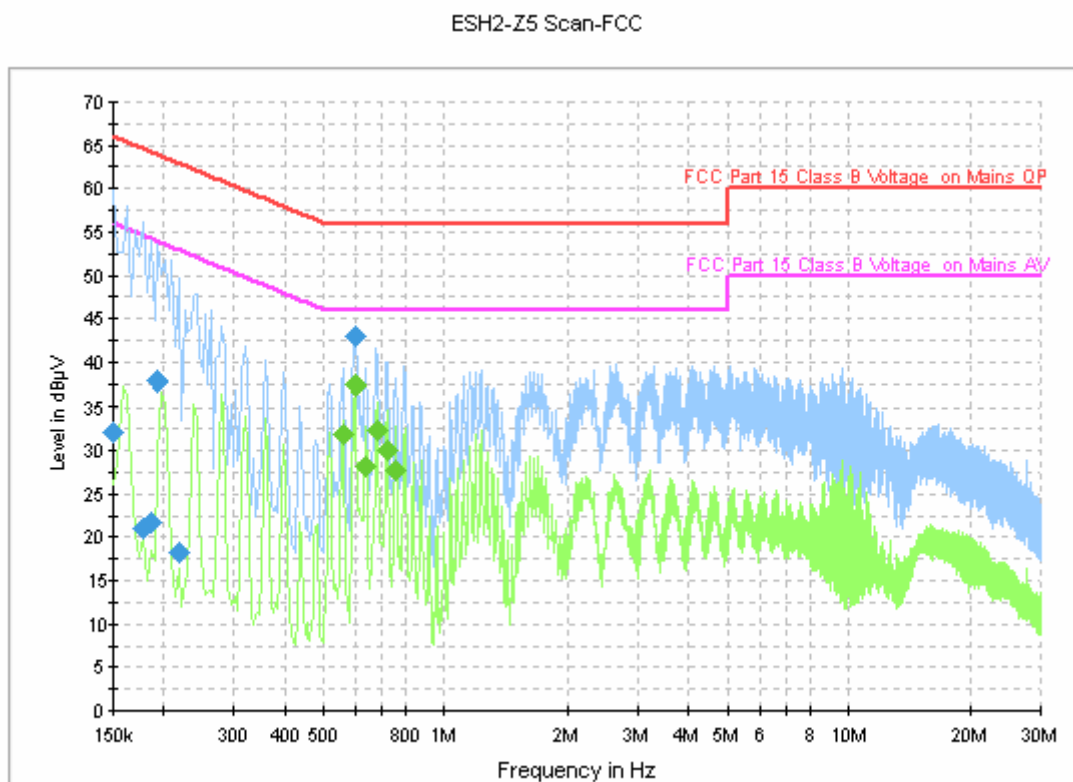


Figure A.9 Conducted Emission (Set.3, Charging mode)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	32.1	FLO	N	10.1	33.9	66.0
0.178000	21.0	FLO	N	10.1	43.6	64.6
0.186000	21.8	FLO	N	10.1	42.4	64.2
0.194000	37.8	FLO	N	10.1	26.1	63.9
0.218000	18.2	FLO	N	10.0	44.7	62.9
0.598000	43.0	FLO	L1	10.1	13.0	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.558000	31.9	FLO	L1	10.1	14.1	46.0
0.598000	37.4	FLO	L1	10.1	8.6	46.0
0.638000	28.2	FLO	L1	10.0	17.8	46.0
0.678000	32.4	FLO	L1	10.0	13.6	46.0
0.718000	30.0	FLO	L1	10.0	16.0	46.0
0.758000	27.7	FLO	L1	10.1	18.3	46.0

END OF REPORT