TEST REPORT

No.I14N01249-EMC

for

Shenzhen Sang Fei Consumer Communications Co., Ltd.

WCDMA digital mobile phone

Model Name: Philips V387

Marketing Name: PHILIPS

FCC ID: VQRCTV387

with

Hardware Version: V387_V01

Software Version: Philips_V387_V01

Issued Date: 2015-01-21

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.

Tel:+86(0)10-62304633, Fax:+86(0)10-62304633Email:cttl@chinattl.com, website:www.chinattl.com

REPORT HISTORY

Report Number	Revision	Description	Issue Date
I14N01249-EMC	Rev.0	1st edition	2015-01-21

CONTENTS

1. Test Laboratory

1.1. TestingLocation

Address:	No.12, ShangSha Innovation and Technology Park, Futian District, Shenzhen, Guangdong, China
Postal Code:	518048
Telephone:	+86(755)33322000
Fax:	+86(755)33322001

1.2. TestingEnvironment

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

1.3. Project data

Testing Start Date:	2014-10-29
Testing End Date:	2015-01-20

1.4. Signature

Du Zhaoxuan

(Prepared this test report)

Cao Junfei

(Reviewed this test report)

Zhang Bojun

Director of the laboratory

(Approved this test report)

2. ClientInformation

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

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

3. Equipment UnderTest (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	WCDMA digital mobile phone
Model Name	Philips V387
Marketing Name	Philips
FCC ID	VQRCTV387

3.2. Internal Identification of EUT

EUT ID*	SN or IMEI
N0.1	/

*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

Model	AB4400AWMC
Manufacturer	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Capacitance	4400mAh
Nominal voltage	3.7V

AE2

Model	A68-502000
Manufacturer	Shenzhen Sang Fei Consumer Communications Co., Ltd.
Length of cable	78cm

AE3

Model	/
Manufacturer	/
Length of cable	78cm

*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	Charging mode
Set.2	EUT1+ AE1 + AE3	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	10-1-2014 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 ℃, Max. = 30 ℃
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 ℃, Max. = 35 ℃
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 ℃, Max. = 30 ℃
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 ℃, Max. = 30 ℃
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 Facilities Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CALDUE DATE	CAL PERIOD
1.	Test Receiver	ESCI	100701	R&S	2015.07.30	1 year
2.	Test Receiver	ESCI	100702	R&S	2015.07.30	1 year
3.	Spectrum Analyzer	FSP 40	100378	R&S	2015.12.19	1 year
4.	BiLog Antenna	VULB9163	9163 329	Schwarzbeck	2017.01.20	3 years
5.	LISN	ESH2-Z5	100196	R&S	2015.01.14	1 year
6.	Dual-Ridge Waveguide Horn Antenna	3117	00066577	ETS-Lindgren	2016.04.01	3 years
7.	Universal Radio Communication Tester	E5515C	GB44051324	Agilent	2015.05.20	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 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 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:

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

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 / Peak detector

Frequency(MHz)	Result(dBuV/m)	Polarity	A_{Rpl} (dB)	Margin(dB)	Limit (dBµV/m)
14463.000000	57.9	V	13.0	16.1	74.0
14972.000000	57.2	H	13.8	16.8	74.0
15764.000000	58.9	H	14.1	15.1	74.0
16353.000000	58.5	V	15.2	15.5	74.0
16777.000000	59.5	V	15.2	14.5	74.0
17267.000000	58.7	V	15.3	15.3	74.0

Set.1 Charging mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Polarity	A_{Rpl} (dB)	Margin(dB)	Limit (dBµV/m)
14398.000000	44.6	H	13.4	9.4	54.0
15050.000000	45.1	H	13.3	8.9	54.0
15776.000000	46.8	H	14.2	7.2	54.0
16355.000000	46.8	V	15.2	7.2	54.0
16849.000000	47.4	V	15.6	6.6	54.0
17393.000000	46.9	H	15.6	7.1	54.0

Set.2 USB mode / Peak detector

Frequency(MHz)	Result(dBuV/m)	Polarity	A_{Rpl} (dB)	Margin(dB)	Limit (dBµV/m)
14176.000000	57.7	H	12.5	16.3	74.0
15133.000000	58.2	V	12.8	15.8	74.0
15742.000000	59.6	H	14.0	14.4	74.0
16347.000000	60.0	H	15.1	14.0	74.0
16752.000000	60.1	V	15.1	13.9	74.0
17378.000000	60.2	H	15.5	13.8	74.0

Set.2 USB mode / Average detector

Frequency(MHz)	Result(dBuV/m)	Polarity	A_{Rpl} (dB)	Margin(dB)	Limit (dBµV/m)
14405.000000	45.7	H	13.4	8.3	54.0
15051.000000	46.3	H	13.3	7.7	54.0
15775.000000	48.0	H	14.2	6.0	54.0
16321.000000	48.0	V	15.0	6.0	54.0
16833.000000	48.7	V	15.5	5.3	54.0
17331.000000	48.1	H	15.5	5.9	54.0

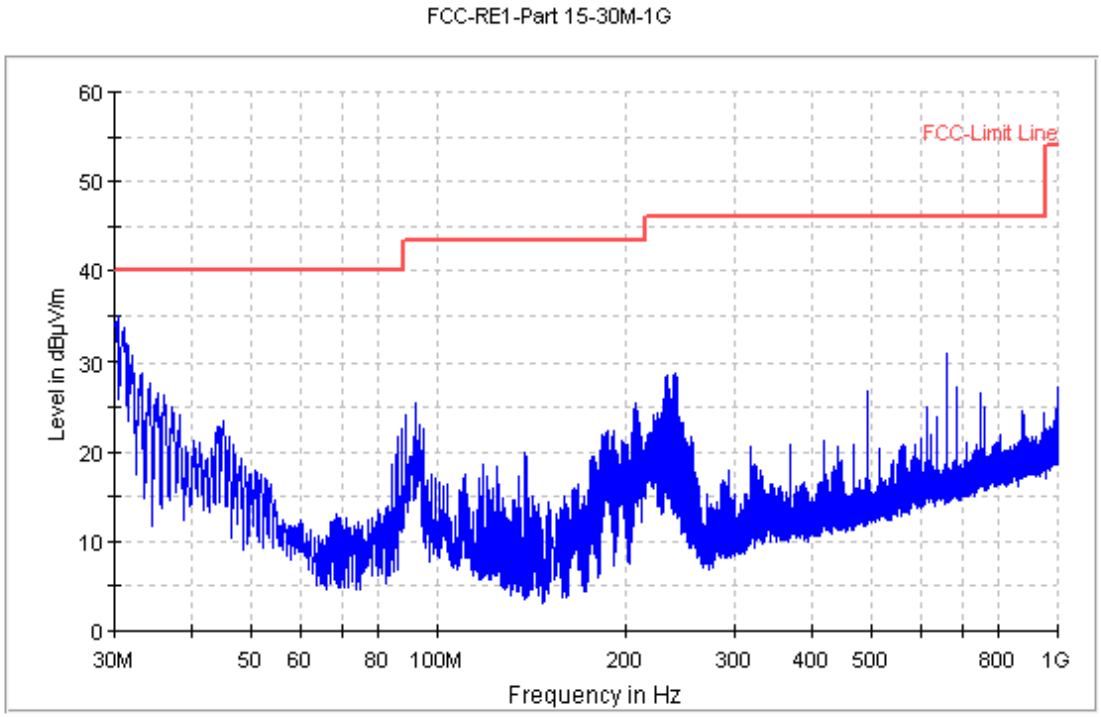

Figure A.1 Radiated Emission from 30MHz to 1GHz (Set.1, Charging mode)

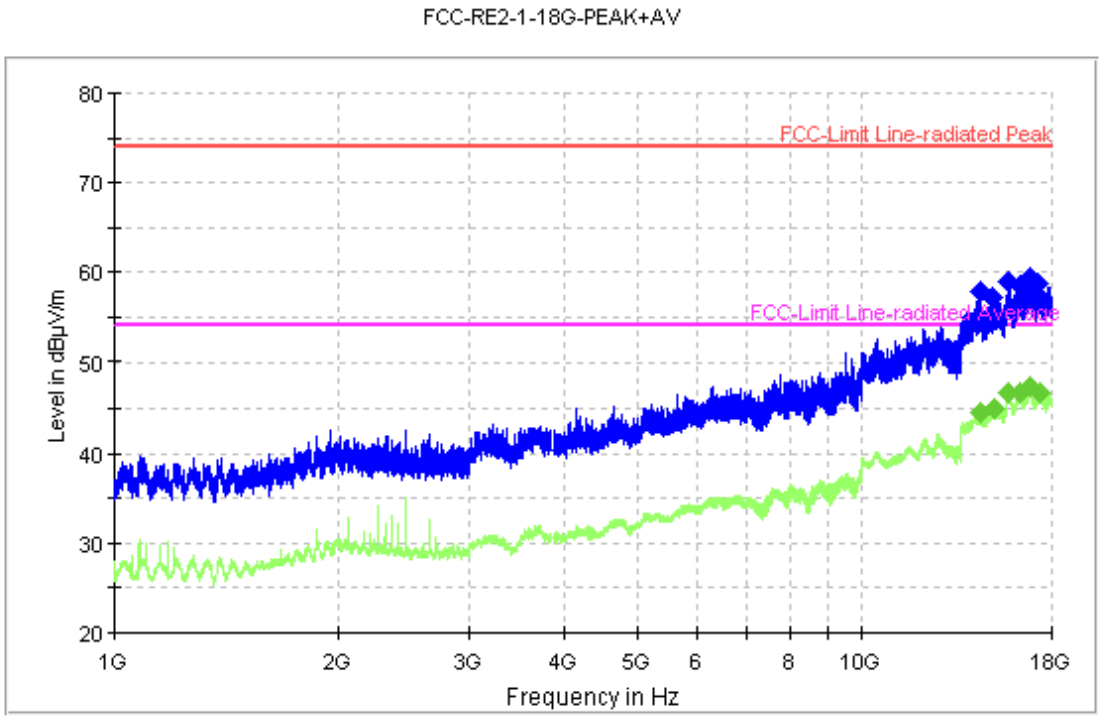

Figure A.2 Radiated Emission from 1GHz to 18GHz (Set.1, Charging mode)

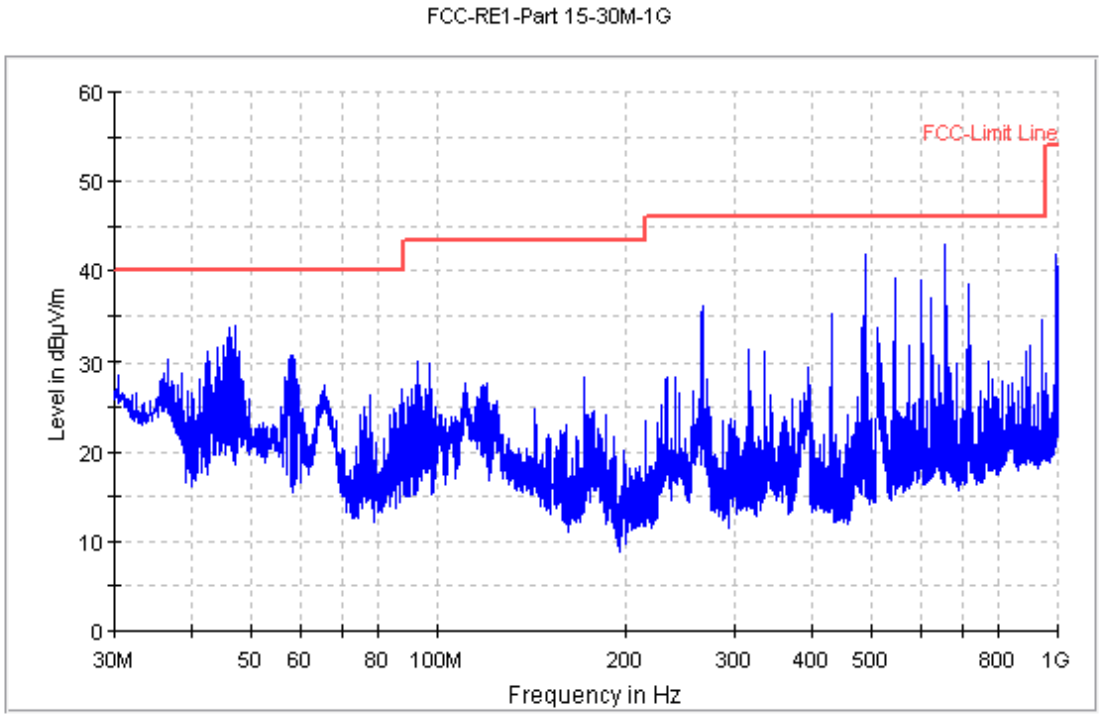

Figure A.3 Radiated Emission from 30MHz to 1GHz (Set.2, USB mode)

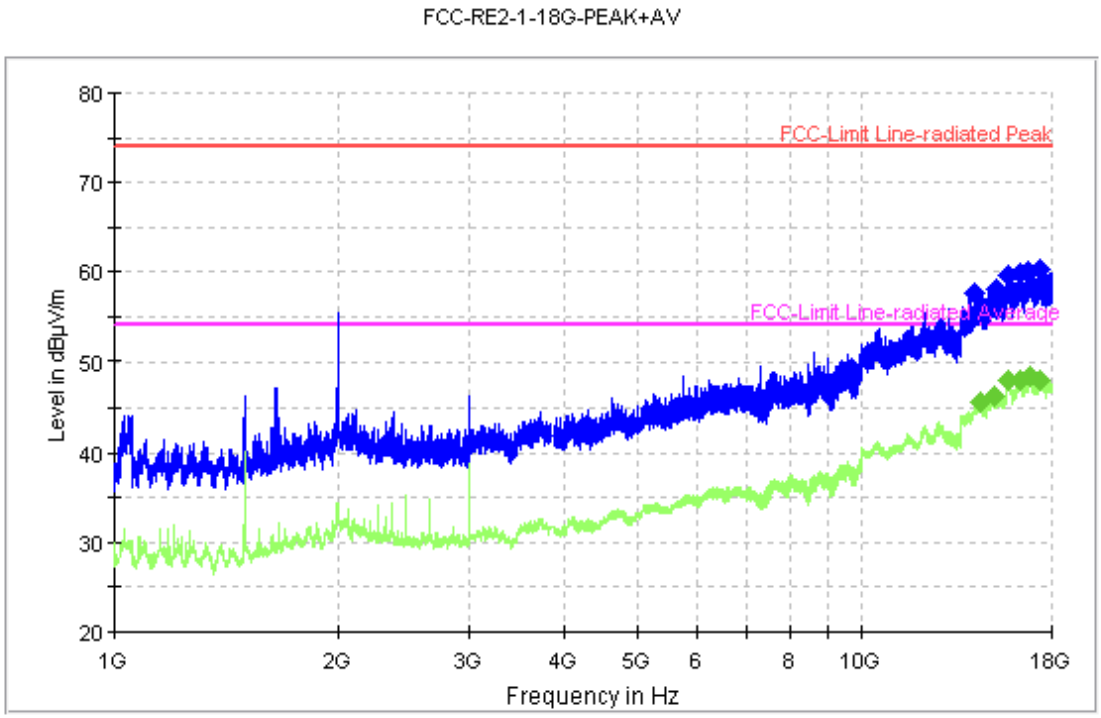

Figure A.4 Radiated Emission from 1GHz to 18GHz (Set.2, USB mode)

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 (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 Condition in charging mode

Voltage（V）	Frequency（Hz）
120	60

RBW	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

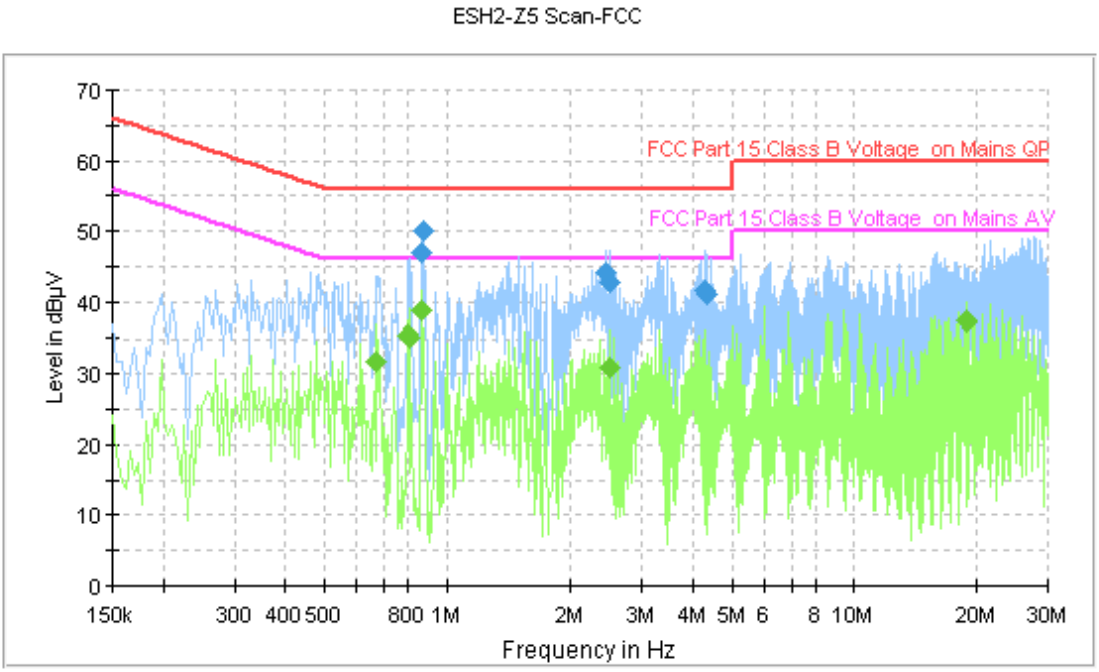

Figure A.5 Conducted Emission (Set.1, Charging mode)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.870000	47.1	FLO	L1	10.1	8.9	56.0
0.882000	49.9	FLO	N	10.1	6.1	56.0
2.442000	44.3	FLO	N	10.2	11.7	56.0
2.510000	42.7	FLO	N	10.2	13.3	56.0
4.278000	41.7	FLO	N	10.2	14.3	56.0
4.346000	41.0	FLO	N	10.2	15.0	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.670000	31.8	FLO	L1	10.0	14.2	46.0
0.802000	35.5	FLO	L1	10.1	10.5	46.0
0.810000	35.1	FLO	L1	10.1	10.9	46.0
0.870000	38.8	FLO	L1	10.1	7.2	46.0
2.486000	30.9	FLO	L1	10.2	15.1	46.0
18.922000	37.3	FLO	L1	10.5	12.7	50.0

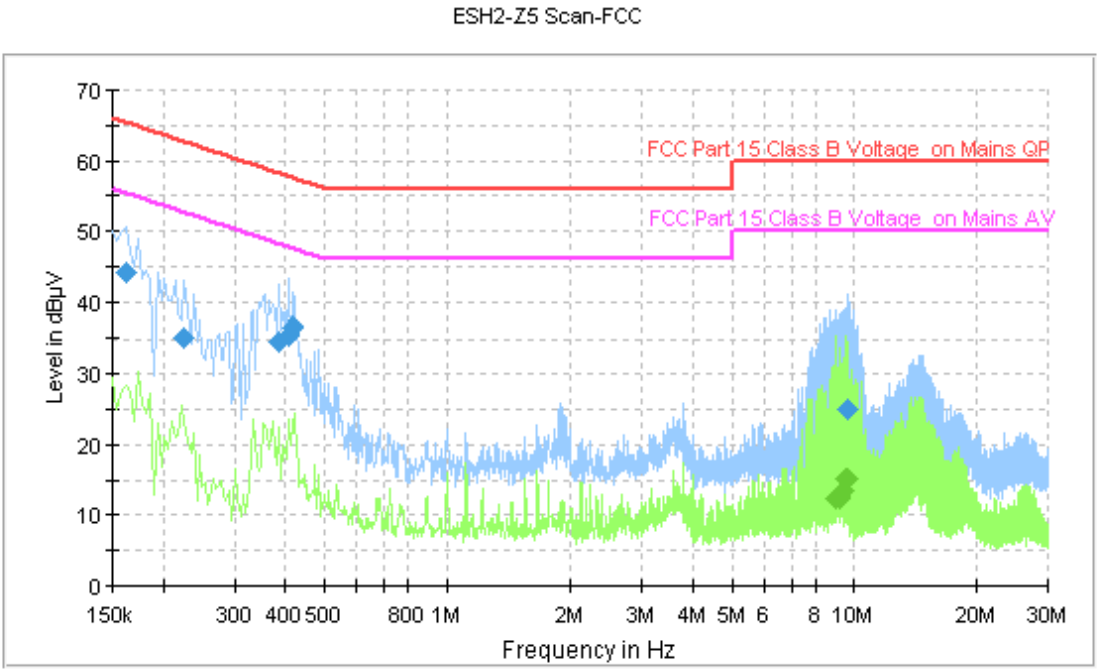

Figure A.6 Conducted Emission (Set.2, USB mode)

Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.162000	44.2	FLO	N	10.1	21.2	65.4
0.226000	35.0	FLO	L1	10.0	27.6	62.6
0.386000	34.5	FLO	N	10.0	23.6	58.1
0.406000	35.5	FLO	N	10.1	22.3	57.7
0.418000	36.7	FLO	L1	10.0	20.8	57.5
9.578000	25.0	FLO	N	10.4	35.0	60.0

Final Measurement Detector 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
9.022000	12.5	FLO	N	10.3	37.5	50.0
9.242000	12.8	FLO	N	10.3	37.2	50.0
9.258000	12.3	FLO	L1	10.3	37.7	50.0
9.462000	13.4	FLO	N	10.3	36.6	50.0
9.478000	15.2	FLO	L1	10.3	34.8	50.0
9.578000	15.1	FLO	N	10.4	34.9	50.0

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