TEST REPORT

No. 2013TAR148

for

TCT Mobile Limited

HSUPA/HSDPA/UMTS triband/GSM quadband mobile phone

Model Name: Megane 1SIM US

Marketing Name: ONE TOUCH 5020A

FCC ID: RAD343

with

Hardware Version: PIO

Software Version: v2C56-0

Issued Date: Feb. 21st, 2013

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.

Test Laboratory:

DAkks accreditation (DIN EN ISO/IEC 17025): No. D-PL-12123-01-01

FCC 2.948 Listed: No.733176

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

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

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

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CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China
Postal Code:	100191
Telephone:	0086-10-62304633-2561
Fax:	0086-10-62304633-2504

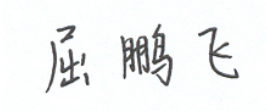
1.2. Testing Environment

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

1.3. Project data

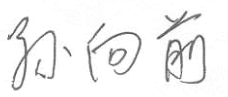
Testing Start Date:	Jan. 23rd, 2013
Testing End Date:	Jan. 24th, 2013

1.4. Signature



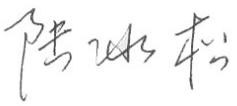
Qu Pengfei

(Prepared this test report)



Sun Xiangqian

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	TCT Mobile Limited
Address /Post:	12F/B, TCL Tower, Gaoxin Nanyi Road, Nanshan District, Shenzhen, Guangdong, P.R. China. 518057
City:	Shenzhen
Postal Code:	518057
Country:	China
Contact Person:	Lv Meixian
Contact Email	meixian.lv@tcl.com
Telephone:	0086-755-33956929
Fax:	0086-755-36645072

2.2. Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	12F/B, TCL Tower, Gaoxin Nanyi Road, Nanshan District, Shenzhen, Guangdong, P.R. China. 518057
City:	Shenzhen
Postal Code:	518057
Country:	China
Telephone:	0086-755-33956929
Fax:	0086-755-36645072

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

3.1. About EUT

Description	HSUPA/HSDPA/UMTS triband/GSM quadband mobile phone
Model Name	Megane 1SIM US
Marketing Name	ONE TOUCH 5020A
FCC ID	RAD343
Extreme vol. Limits	3.5VDC to 4.2VDC (nominal: 3.8VDC)

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT4	013511000150053	PIO	v2C56-0

*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	Battery	/
AE3	Travel charger	/
AE4	Travel charger	/
AE5	Travel charger	/
AE6	Travel charger	/
AE7	USB cable	/
AE8	USB cable	/
AE9	USB cable	/
AE10	USB cable	/

AE1

Model	CAB60B0000C1
Manufacturer	BYD
Capacitance	1400mAh
Nominal voltage	3.7V

AE2

Model	CAB60B0000C2
Manufacturer	BAK
Capacitance	1400mAh
Nominal voltage	3.7V

AE3/AE4

Model	CBA3007AG0C1
Manufacturer	BYD
Length of cable	\

AE5/AE6

Model	CBA3007AG0C3
Manufacturer	Yingju
Length of cable	\

AE7

Model	CDA3122005C1
Manufacturer	Juwei
Length of cable	/

AE8

Model	CDA3122002C1
Manufacturer	Juwei
Length of cable	/

AE9

Model	CDA3122005C2
Manufacturer	Shenhua
Length of cable	/

AE10

Model	CDA3122002C2
Manufacturer	Shenhua
Length of cable	/

*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.7	EUT4+ AE1/AE2 + AE7	USB
Set.8	EUT4+ AE1/AE2 + AE3+AE7	Charger
Set.9	EUT4+ AE1/AE2 + AE5+AE7	Charger

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	10-1-10 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 SAC-2 (10 meters×6.7meters×6.1meters) 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	> 2 MΩ
Ground system resistance	< 1Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Fully-anechoic chamber FAC-3 (9 meters×6.5 meters×4 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	> 2 MΩ
Ground system resistance	< 1 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80 to 4000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz

Control room/ conducted chamber 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	> 2 MΩ
Ground system resistance	< 0.5 Ω

6. SUMMARY OF TEST RESULTS

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

Clause	List	Clause in FCC rules	Verdict
1	Radiated Emission	15.109(a)	P
2	Conducted Emission	15.107(a)	P

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE
1	Test Receiver	ESU26	100376	R&S	2013-11-07
2	EMI Antenna	VULB 9163	9163-514	Schwarzbeck	2014-11-10
3	EMI Antenna	3117	00139065	ETS-Lindgren	2014-07-31
4	LISN	ESH2-Z5	829991/012	R&S	2013-04-16
5	Test Receiver	ESCI	100344	R&S	2013-03-28
6	Universal Radio Communication Tester	CMU200	102228	R&S	2013-07-07
7	PC	OPTIPLEX 755	3908243625	DELL	N/A
8	Monitor	E178FPc	CN-OWR979-64180-7AJ-D2MS	DELL	N/A
9	Printer	LaserJet 1160	CNM2D33740	HP	N/A
10	Keyboard	L100	CN0RH659658907ATOI40	DELL	N/A
11	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A
12	Universal Radio Communication Tester	E5515C	MY48361083	Agilent	2013-03-16

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission (§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 DELL OPTIPLEX 755, and the serial number of the PC is 3908243625. 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

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

A.1.4 Test Condition

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz IF Bandwidth	5
1000-4000	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:

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.

Set.7 USB mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	G_A (dB/m)	P_{mea}(dBuV)	Polarity
2989.200	40.0	-29.0	33.8	35.179	VERTICAL
3000.000	40.0	-28.4	34.1	34.272	VERTICAL
2875.400	39.9	-27.8	33.8	33.903	VERTICAL
2990.200	39.9	-29.0	33.8	35.079	VERTICAL
2988.600	39.9	-29.0	33.8	35.079	HORIZONTAL
2990.600	39.9	-29.0	33.8	35.079	VERTICAL

Set.8 Charging mode

Frequency(MHz)	Result(dBuV/m)	GPL (dB)	GA (dB/m)	PMea(dBuV)	Polarity
3000.000	40.0	-28.4	34.1	34.272	VERTICAL
2989.800	40.0	-29.0	33.8	35.179	VERTICAL
2999.600	40.0	-29.0	33.8	35.179	VERTICAL
2875.400	40.0	-27.8	33.8	34.003	HORIZONTAL
2989.200	40.0	-29.0	33.8	35.179	VERTICAL
2991.400	40.0	-29.0	33.8	35.179	HORIZONTAL

Set.9 Charging mode

Frequency(MHz)	Result(dBuV/m)	GPL (dB)	GA (dB/m)	PMea(dBuV)	Polarity
2990.200	40.0	-29.0	33.8	35.179	VERTICAL
2999.800	40.0	-29.0	33.8	35.179	HORIZONTAL
2989.600	40.0	-29.0	33.8	35.179	VERTICAL
2999.200	39.9	-29.0	33.8	35.079	HORIZONTAL
2989.800	39.9	-29.0	33.8	35.079	HORIZONTAL
2991.200	39.9	-29.0	33.8	35.079	VERTICAL

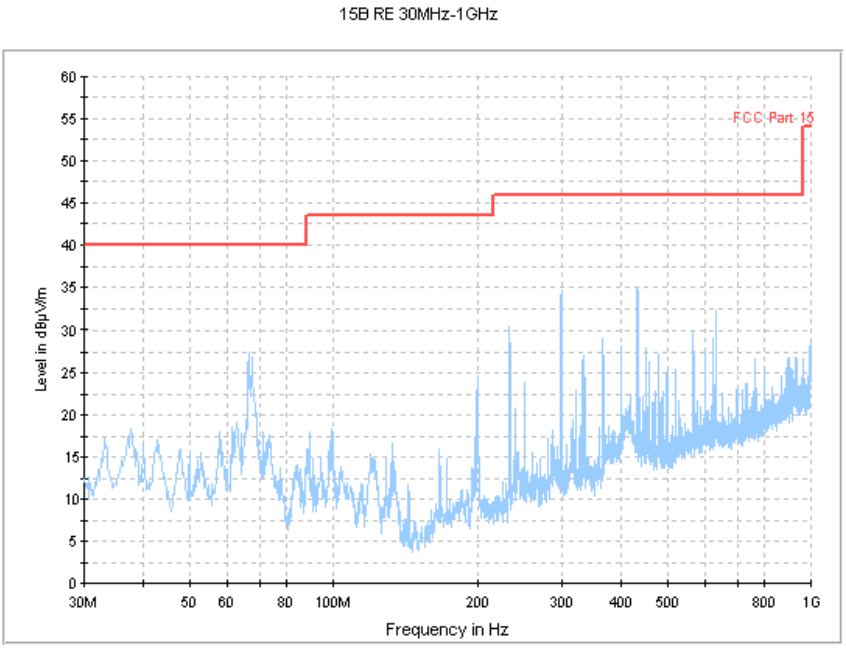


Figure A.1 Radiated Emission from 30MHz to 1GHz (Set.7, USB mode)

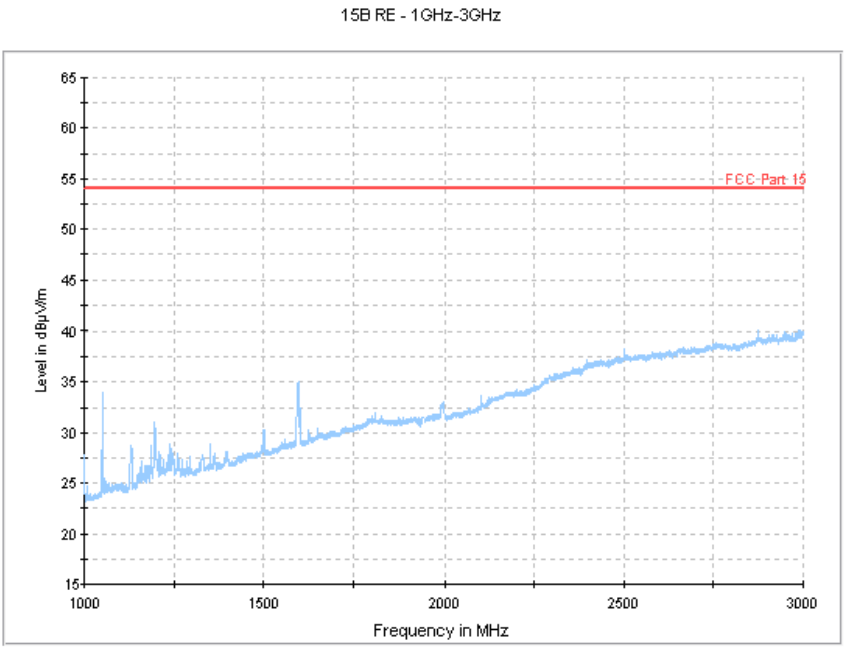


Figure A.2 Radiated Emission from 1GHz to 3GHz (Set.7, USB mode)

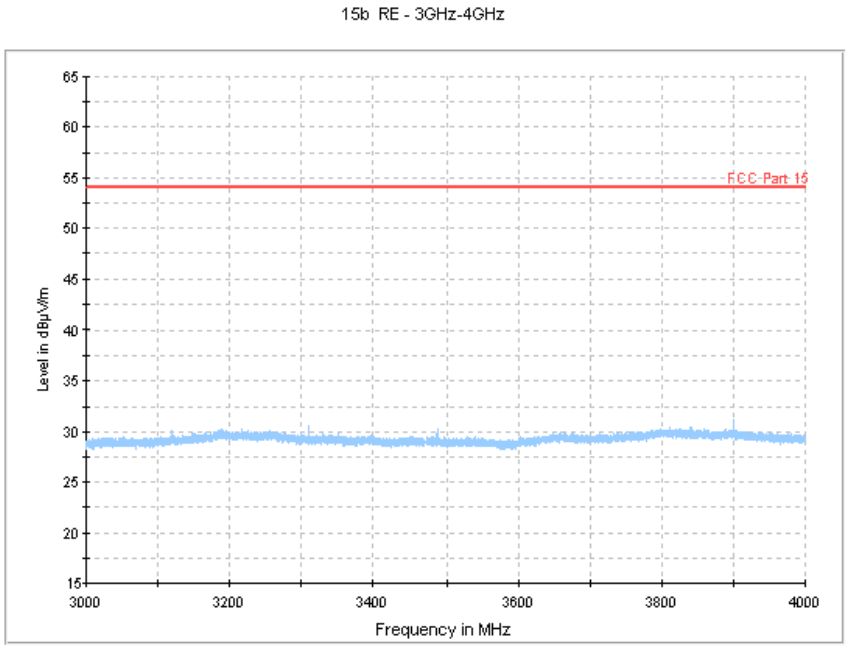


Figure A.3 Radiated Emission from 3GHz to 4GHz (Set.7, USB mode)

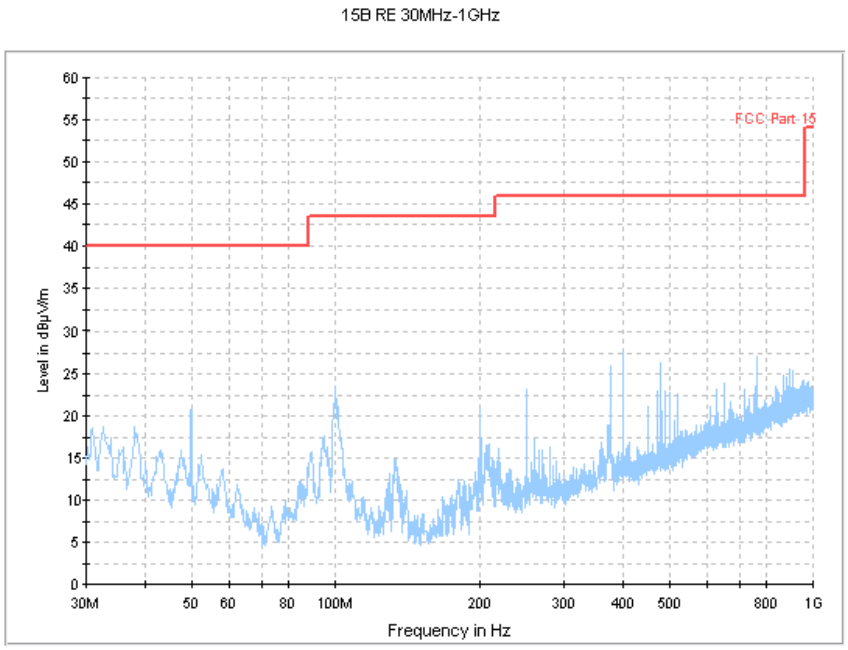


Figure A.4 Radiated Emission from 30MHz to 1GHz (Set.8, Charging mode)

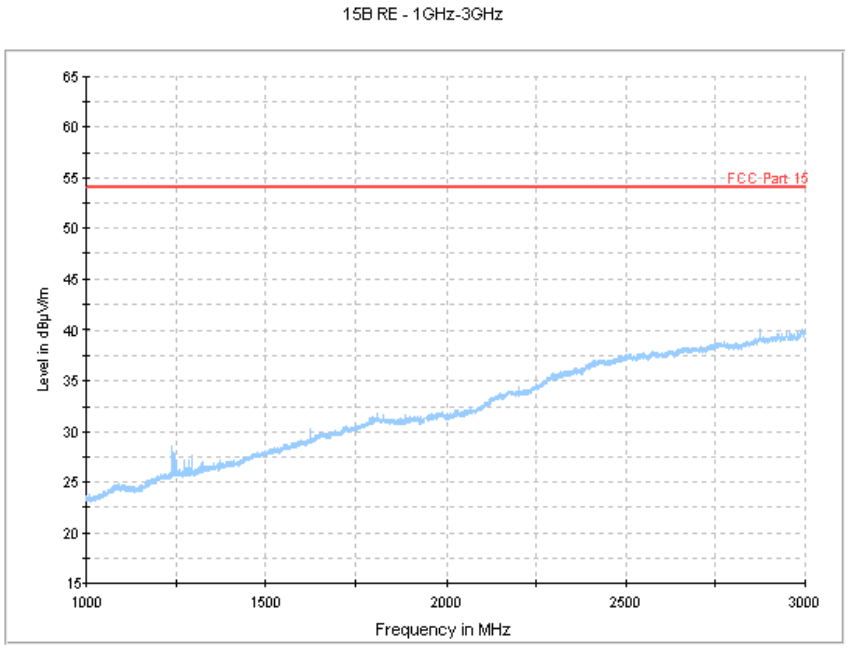


Figure A.5 Radiated Emission from 1GHz to 3GHz (Set.8, Charging mode)

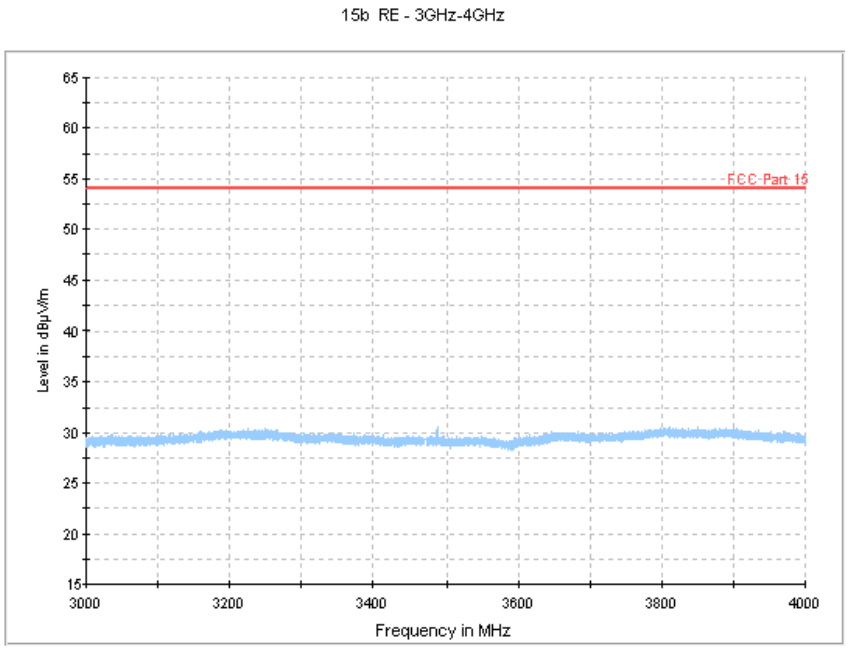


Figure A.6 Radiated Emission from 3GHz to 4GHz (Set.8, Charging mode)

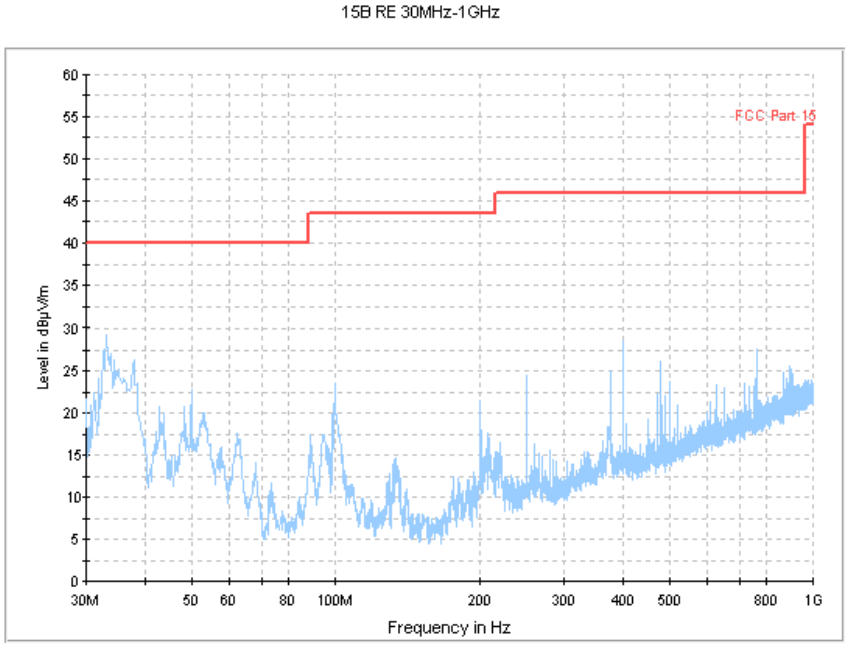


Figure A.7 Radiated Emission from 30MHz to 1GHz (Set.9, Charging mode)

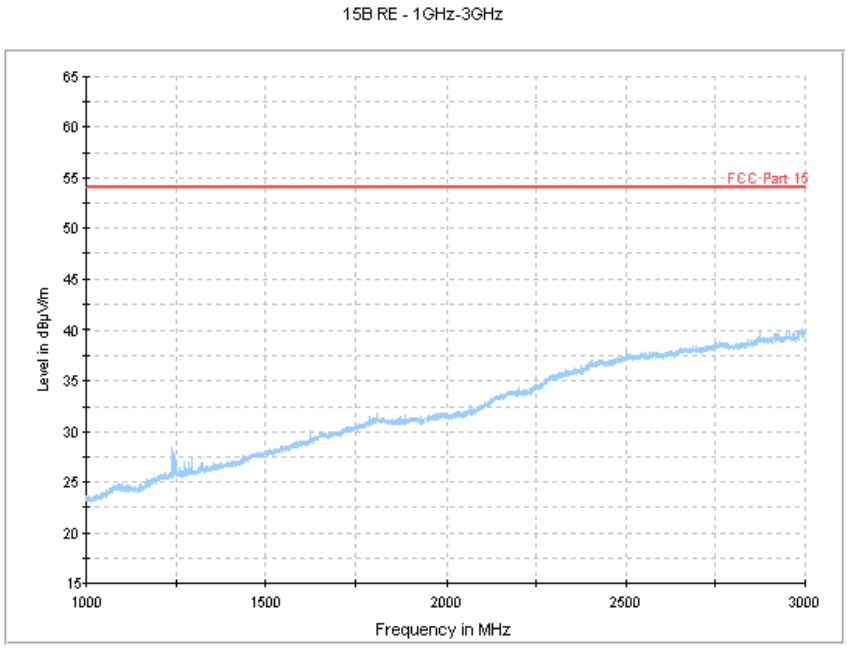


Figure A.8 Radiated Emission from 1GHz to 3GHz (Set.9, Charging mode)

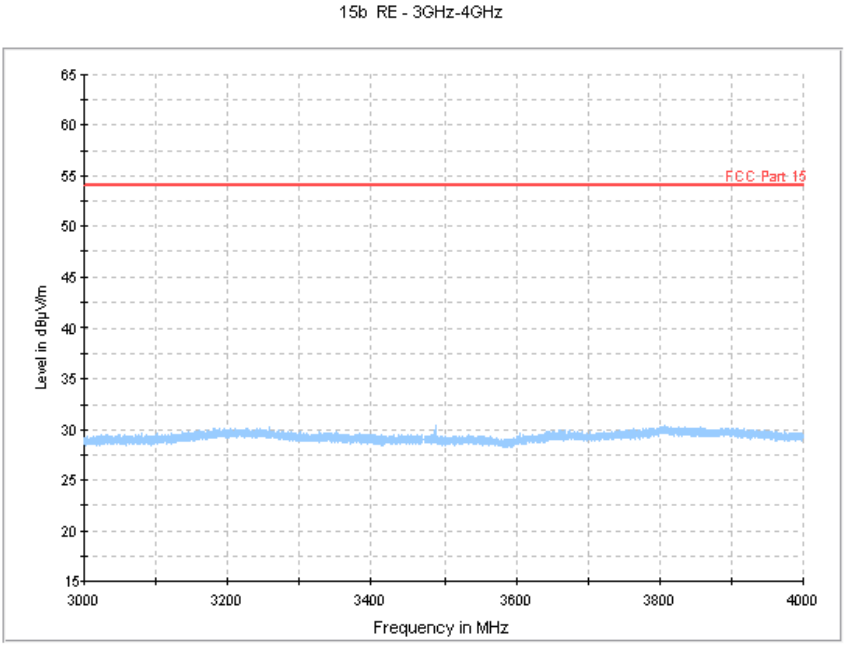


Figure A.9 Radiated Emission from 3GHz to 4GHz (Set.9, Charging mode)

A.2 Conducted Emission (§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 DELL OPTIPLEX 755, and the serial number of the PC is 3908243625. 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

IF Bandwidth	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

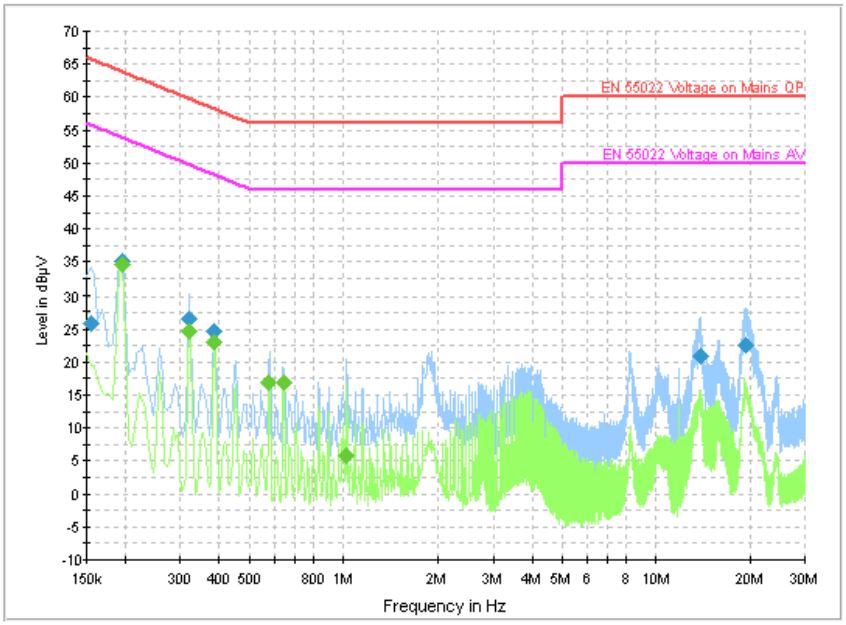


Figure A.10 Conducted Emission (Set.7, USB mode)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	25.8	GND	L1	10.0	40.0	65.8
0.195000	35.0	GND	N	10.0	28.9	63.8
0.321000	26.7	GND	N	10.0	33.0	59.7
0.384000	24.6	GND	L1	10.0	33.6	58.2
13.812000	21.0	GND	L1	9.7	39.0	60.0
19.329000	22.7	GND	N	9.6	37.4	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	34.6	GND	N	10.0	19.2	53.8
0.321000	24.6	GND	N	10.0	25.1	49.7
0.384000	23.1	GND	L1	10.0	25.1	48.2
0.577500	16.9	GND	L1	10.0	29.1	46.0
0.645000	16.9	GND	N	10.0	29.1	46.0
1.027500	5.9	GND	L1	10.0	40.1	46.0

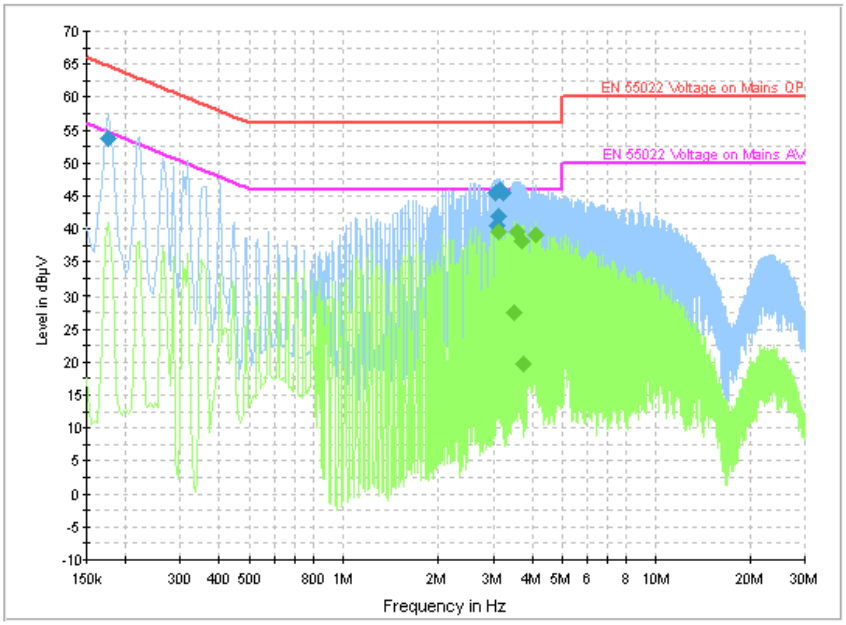


Figure A.11 Conducted Emission (Set.8, Charging mode)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177000	53.8	GND	N	10.0	10.8	64.6
3.034500	45.6	GND	N	10.0	10.4	56.0
3.075000	40.6	GND	N	10.0	15.4	56.0
3.120000	41.9	GND	N	10.0	14.1	56.0
3.165000	45.9	GND	L1	10.0	10.1	56.0
3.210000	45.3	GND	N	10.0	10.7	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
3.120000	39.6	GND	L1	10.0	6.4	46.0
3.516000	27.5	GND	N	10.0	18.5	46.0
3.561000	39.5	GND	L1	10.0	6.5	46.0
3.691500	38.1	GND	N	10.0	7.9	46.0
3.736500	19.8	GND	L1	10.0	26.2	46.0
4.087500	39.1	GND	N	10.0	6.9	46.0

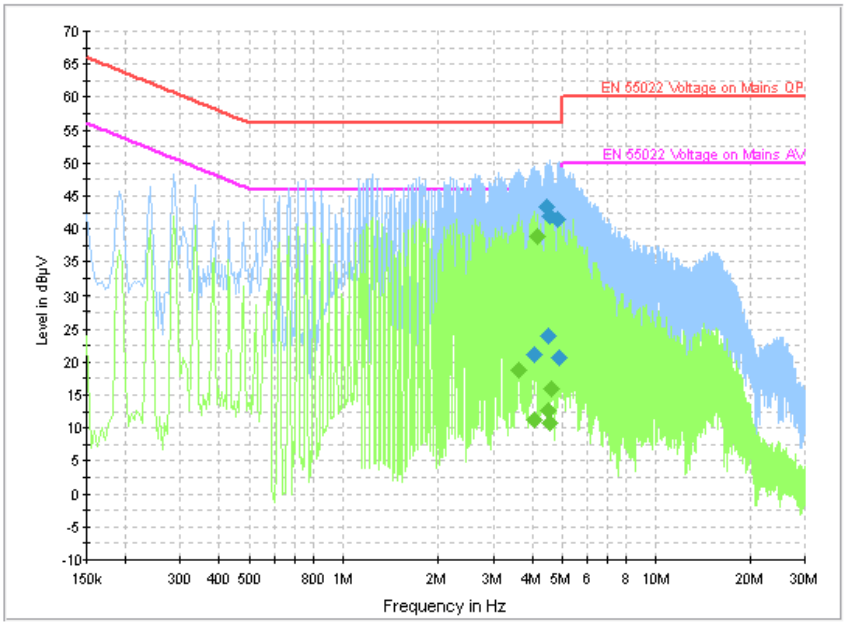


Figure A.12 Conducted Emission (Set.9, Charging mode)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
4.056000	21.1	GND	N	10.0	34.9	56.0
4.443000	43.4	GND	N	10.0	12.6	56.0
4.483500	24.1	GND	N	10.0	31.9	56.0
4.537500	41.8	GND	N	10.0	14.2	56.0
4.839000	41.4	GND	L1	10.0	14.6	56.0
4.879500	20.7	GND	L1	10.0	35.3	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
3.628500	18.7	GND	N	10.0	27.3	46.0
4.056000	11.3	GND	N	10.0	34.7	46.0
4.132500	38.9	GND	L1	10.0	7.1	46.0
4.483500	12.8	GND	N	10.0	33.2	46.0
4.537500	10.7	GND	N	10.0	35.3	46.0
4.627500	15.9	GND	N	10.0	30.1	46.0

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