TEST REPORT

No. I14Z45824-EMC01

for

TCT Mobile Limited

Tablet

Model Name: I211

FCC ID: RAD469

with

Hardware Version: PIO

Software Version: vAA9

Issued Date: Apr. 29th, 2014

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:

FCC 2.948 Listed: No.733176

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

Location A

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52, Huayuan Bei Road, Haidian District, Beijing, P.R. China
Postal Code:	100191

1.2. Testing Environment

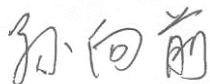|	
Normal Temperature:	15-35℃
Relative Humidity:	20-75%

1.3. Project data

Testing Start Date:	Apr. 23rd, 2014
Testing End Date:	Apr. 25th, 2014

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:	5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China.
City:	Shanghai
Postal Code:	201203
Country:	China
Contact Person:	Gong Zhizhou
Contact Email	zhizhou.gong@jrdcom.com
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

2.2. Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China.
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

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

3.1. About EUT

Description	Tablet
Model Name	I211
FCC ID	RAD469
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
EUT3	/	PIO	vAA9

*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	Remarks
AE1	Battery	/	Irremovable
AE2	Battery	/	Irremovable
AE3	Battery	/	Irremovable
AE4	Travel charger	/	TCT-CHR-1002
AE5	Travel charger	/	TCT-CHR-1819
AE6	USB cable	/	TCT-DC-0501
AE7	USB cable	/	TCT-DC-0120
AE8	USB cable	/	TCT-DC-0710
AE9	USB cable	/	/
AE10	USB cable	/	/

AE1
Model	CAC2820001CD
Manufacturer	Meibai
Capacitance	2820 mAh
Nominal voltage	3.7V

AE2
Model	CAC2820003CC
Manufacturer	JingNeng
Capacitance	2820 mAh
Nominal voltage	3.7V

AE3
Model	CAC2820002C2
Manufacturer	SCUD
Capacitance	2820 mAh
Nominal voltage	3.75V

AE4

Model	CBA3000AG0C1
Manufacturer	Tenpao
Length of cable	/

AE5

Model	CBA3000AG0C2
Manufacturer	BYD
Length of cable	/

AE6

Model	CDA3122002C2
Manufacturer	Shenghua
Length of cable	100cm

AE7

Model	CDA3122002C1
Manufacturer	JUWEI
Length of cable	100cm

AE8

Model	CDA0000034C1
Manufacturer	JUWEI
Length of cable	15cm

AE9

Model	CDA3122005C2
Manufacturer	Shenghua
Length of cable	/

AE10

Model	CDA3122005C1
Manufacturer	JUWEI
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.1	EUT3+ AE1/AE2/AE3 + AE4+ AE6/AE7/AE8	Charger
Set.2	EUT3+ AE1/AE2/AE3 + AE5+ AE6/AE7/AE8	Charger
Set.3	EUT3+ AE1/AE2/AE3 + AE6/AE7/AE8	USB

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 - Unintentional Radiators	10-1-13 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	2009

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber SAC-1 (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ±4 dB, 10 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz－1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Verdict Column	P	Pass
	NA	Not applicable
	F	Fail
Location Column	A/B/C/D	The test is performed in test location A, B, C or D which are described in section 1.1 of this report

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

7. Test Equipments Utilized

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI	100344	R&S	2015-03-03	1 year
2	Test Receiver	ESCI 7	100948	R&S	2014-07-18	1 year
3	Universal Radio Communication Tester	CMU200	109914	R&S	2015-04-13	1 year
4	Test Receiver	FSV	101047	R&S	2014-06-30	1 year
5	LISN	ESH2-Z5	829991/012	R&S	2015-04-14	1 year
6	EMI Antenna	VULB 9163	9163-234	Schwarzbeck	2016-09-16	3 years
7	EMI Antenna	3115	6914	ETS-Lindgren	2014-12-15	3 years
8	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
9	Monitor	E178FPc	CN-OWR979-64180-7AJ-D2MS	DELL	N/A	N/A
10	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
11	Keyboard	L100	CN0RH659658907ATOI40	DELL	N/A	N/A
12	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A

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 distances of 10 meters(for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested in accordance with the procedures of ANSI C63.4 - 2009, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3/10 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 380, and the serial number of the PC is 2X1YV2X. 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 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 above limit is for 3 meters test distance. 10 meters' limit is got by converting.

A.1.4 Test Condition

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/1MHz	15	Peak, Average

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.

Measurement uncertainty (worst case): U = 4.3 dB, k=2.

Measurement results for Set.1:

Charging Mode/Average detector

Frequency(MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dBμV)	Polarity
5331.813	37.1	-34.8	34.6	37.300	VERTICAL
5332.094	36.9	-34.8	34.6	37.100	VERTICAL
5332.375	36.4	-34.8	34.6	36.600	HORIZONTAL
5331.531	36.2	-34.8	34.6	36.400	VERTICAL
5332.656	35.4	-34.8	34.6	35.600	VERTICAL
9993.813	35.4	-24.2	38.0	21.600	HORIZONTAL

Charging Mode/Peak detector

Frequency(MHz)	Result(dBμV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dBμV)	Polarity
9997.750	47.8	-24.2	38.0	34.000	VERTICAL
9985.938	47.6	-24.2	38.0	33.800	VERTICAL
9983.125	47.1	-24.2	38.0	33.300	VERTICAL
9992.406	47.0	-24.2	38.0	33.200	VERTICAL
9964.844	46.9	-24.2	38.0	33.100	VERTICAL
9989.875	46.9	-24.2	38.0	33.100	HORIZONTAL

Measurement result for Set.2:

Charging Mode/Average detector

Frequency(MHz)	Result(dBµV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dBµV)	Polarity
5331.813	37.2	-34.8	34.6	37.400	VERTICAL
5332.094	37.1	-34.8	34.6	37.300	VERTICAL
5332.375	36.4	-34.8	34.6	36.600	HORIZONTAL
5331.531	36.2	-34.8	34.6	36.400	VERTICAL
9994.656	35.4	-24.2	38.0	21.600	HORIZONTAL
9994.094	35.4	-24.2	38.0	21.600	VERTICAL

Charging Mode/Peak detector

Frequency(MHz)	Result(dBµV/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea}(dBµV)	Polarity
9102.250	47.6	-26.7	38.4	35.900	VERTICAL
9098.313	47.6	-26.7	38.4	35.900	VERTICAL
9778.094	47.3	-24.8	38.0	34.100	HORIZONTAL
9804.813	47.1	-24.8	38.0	33.900	VERTICAL
9984.250	47.1	-24.2	38.0	33.300	VERTICAL
9978.063	47.0	-24.2	38.0	33.200	HORIZONTAL

Measurement result for Set.3:

USB Mode/Average detector

Frequency(MHz)	Result(dBµV/m)	G_{PL} (dB)	G_A (dB/m)	P_{mea}(dBµV)	Polarity
1874.969	36.1	-35.6	25.3	46.400	HORIZONTAL
1874.688	35.9	-35.6	25.3	46.200	VERTICAL
1880.313	35.7	-35.6	25.3	46.000	VERTICAL
5332.094	35.6	-34.8	34.6	35.800	VERTICAL
1880.031	35.4	-35.6	25.3	45.700	VERTICAL
1879.750	35.4	-35.6	25.3	45.700	HORIZONTAL

USB Mode/ Peak detector

Frequency(MHz)	Result(dBµV/m)	G_{PL} (dB)	G_A (dB/m)	P_{mea}(dBµV)	Polarity
3199.094	48.8	-38.3	30.9	56.200	VERTICAL
3198.813	48.3	-38.3	30.9	55.700	VERTICAL
3198.531	48.1	-38.3	30.9	55.500	VERTICAL
3198.250	48.0	-38.3	30.9	55.400	HORIZONTAL
1498.375	47.8	-40.3	24.1	64.000	VERTICAL
9994.656	47.8	-24.2	38.0	34.000	HORIZONTAL

Note: The measurement results of Set.1, Set.2 and Set.3 showed here are worst cases of the combinations of different batteries and USB cables.
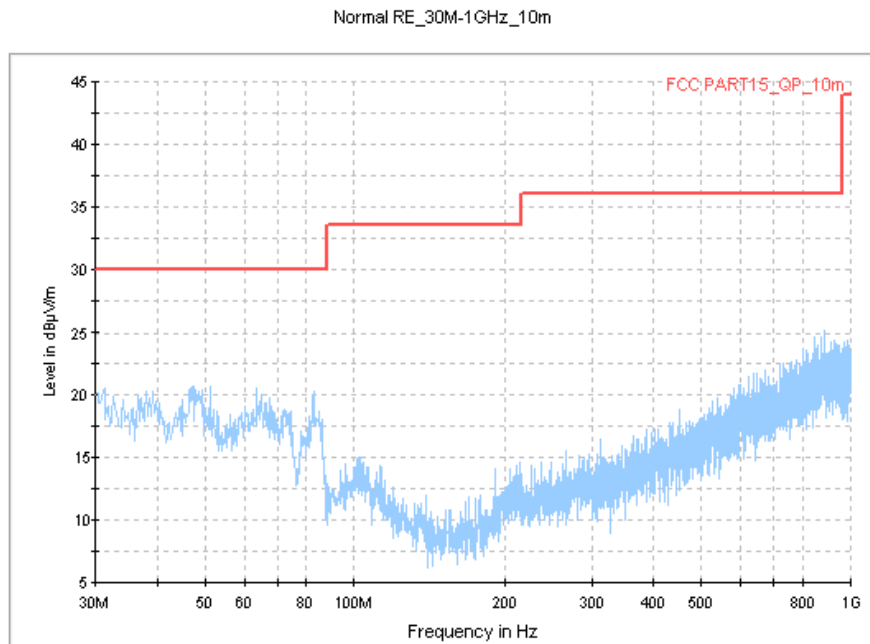
Charging Mode, Set.1

Normal RE_30M-1GHz_10m

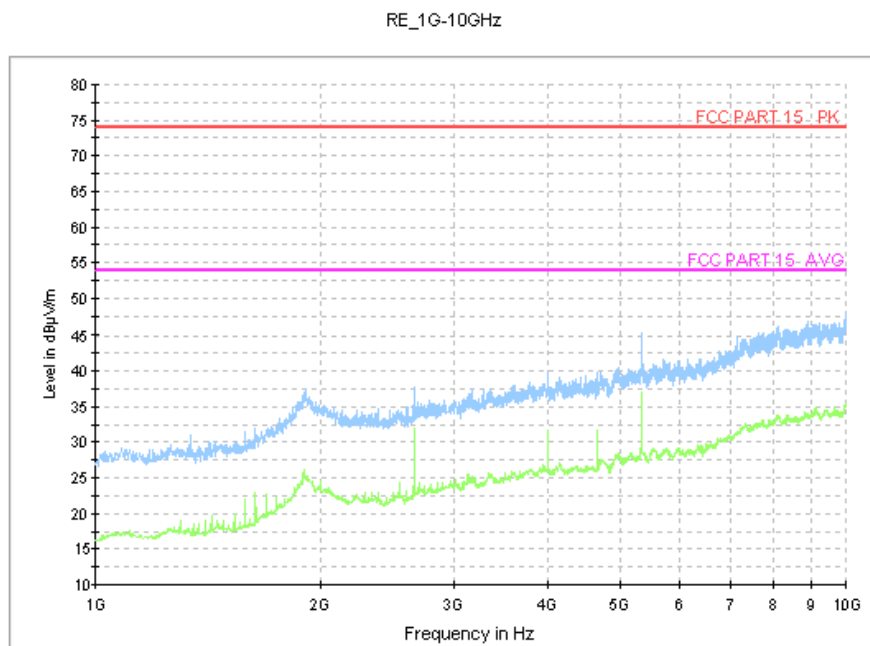**Figure A.1 Radiated Emission from 30MHz to 1GHz**

RE_1G-10GHz

Figure A.2 Radiated Emission from 1GHz to 10GHz
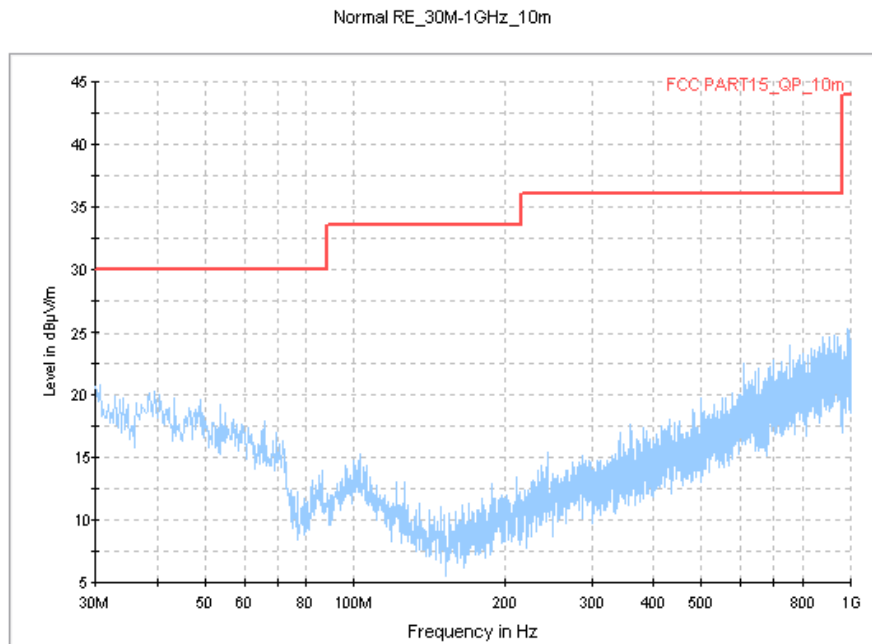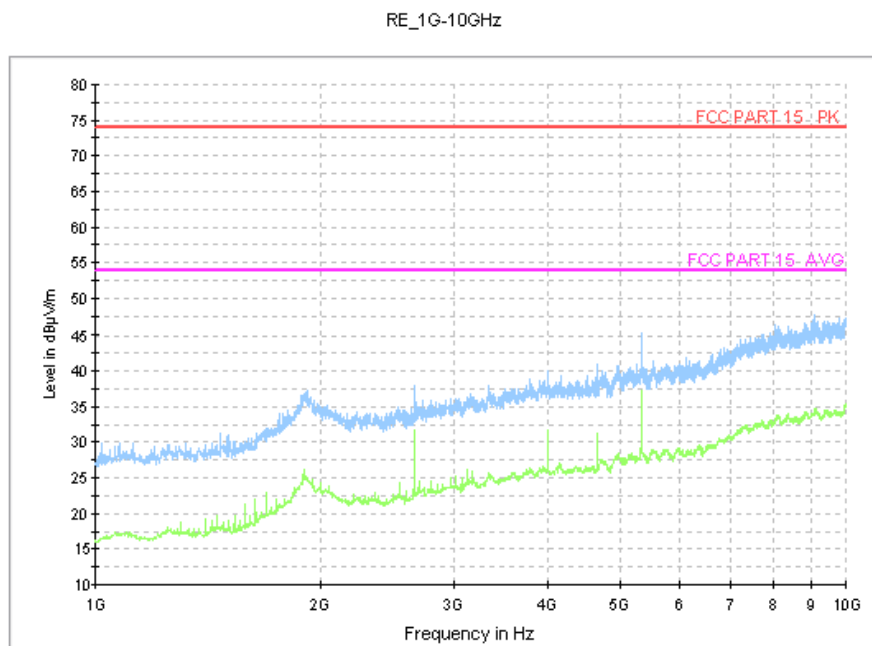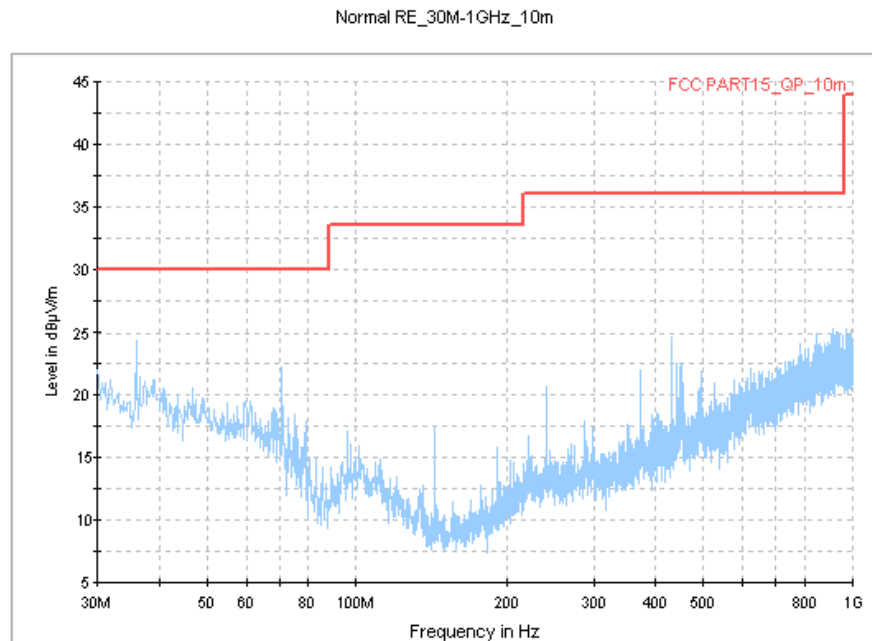
Charging Mode, Set.2

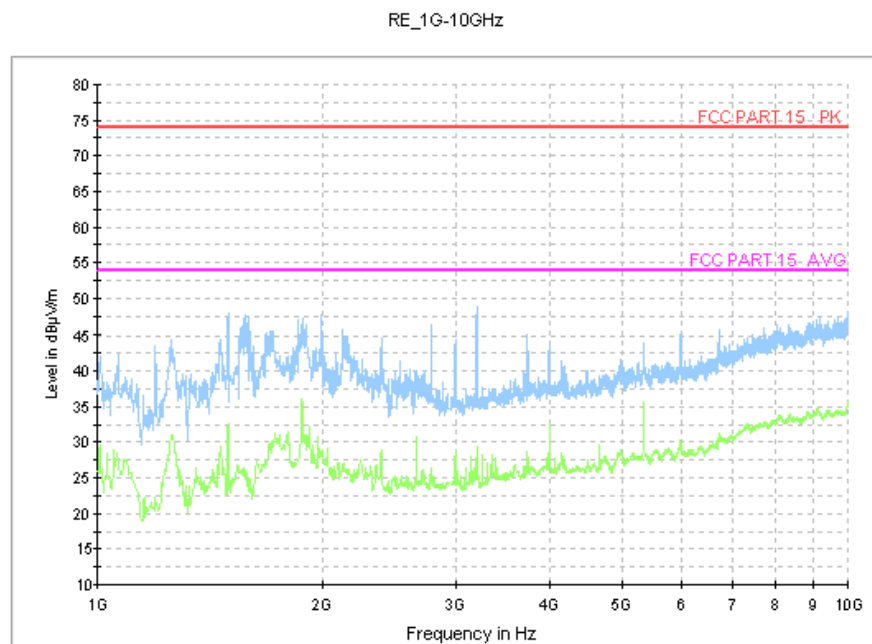**Figure A.3 Radiated Emission from 30MHz to 1GHz**

Figure A.4 Radiated Emission from 1GHz to 10GHz

USB Mode, Set.3

Normal RE_30M-1GHz_10m

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

RE_1G-10GHz

Figure A.6 Radiated Emission from 1GHz to 10GHz

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 - 2009, 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 380, and the serial number of the PC is 2X1YV2X. 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/IF bandwidth	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

Measurement uncertainty: *U*= 2.9 dB, *k*=2.
Charging Mode, Set.1
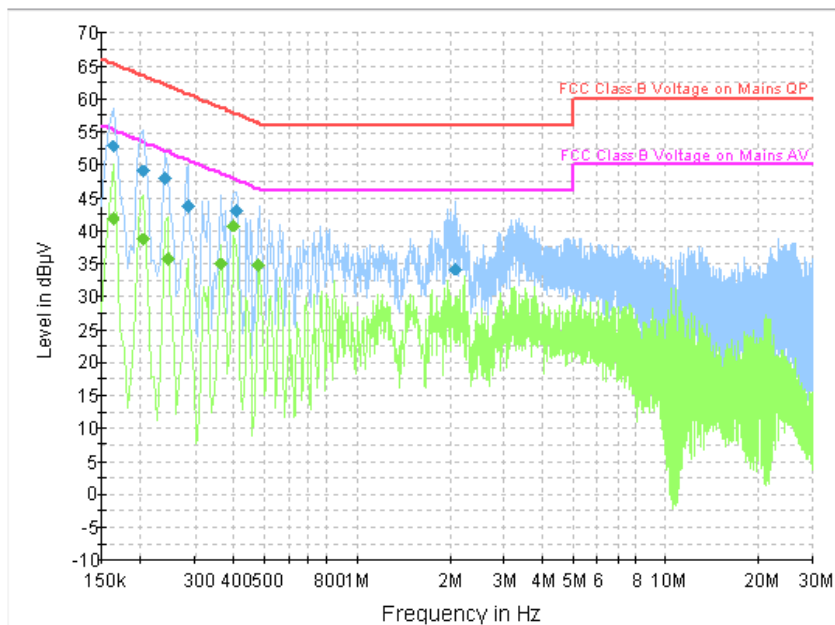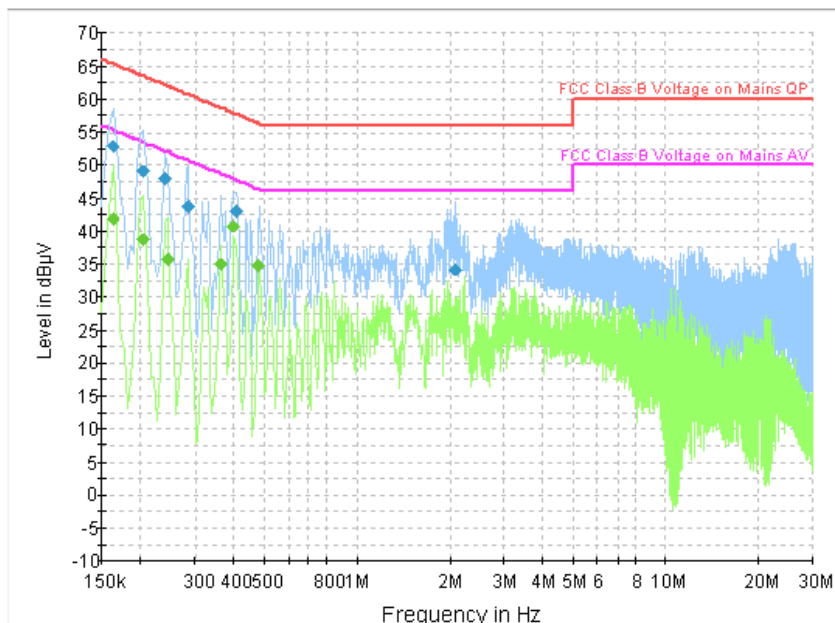

Figure A.7 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dB μV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
Frequency (MHz)	QuasiPeak (dB μV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.163500	52.9	GND	L1	9.8	12.4	65.3
0.204000	49.0	GND	L1	9.8	14.4	63.4
0.240000	48.0	GND	N	9.8	14.1	62.1
0.285000	43.7	GND	L1	9.8	17.0	60.7
0.406500	43.0	GND	L1	9.8	14.7	57.7
2.076000	34.2	GND	N	9.7	21.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dB μV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB μV)
0.163500	42.0	GND	L1	9.8	13.3	55.3
0.204000	38.6	GND	L1	9.8	14.8	53.4
0.244500	35.6	GND	L1	9.8	16.4	51.9
0.366000	35.0	GND	L1	9.8	13.6	48.6
0.402000	40.8	GND	L1	9.8	7.0	47.8
0.483000	34.8	GND	L1	9.8	11.5	46.3

Note: The measurement results showed here are worst cases of the combinations of different batteries and USB cables.

Charging Mode, Set.2
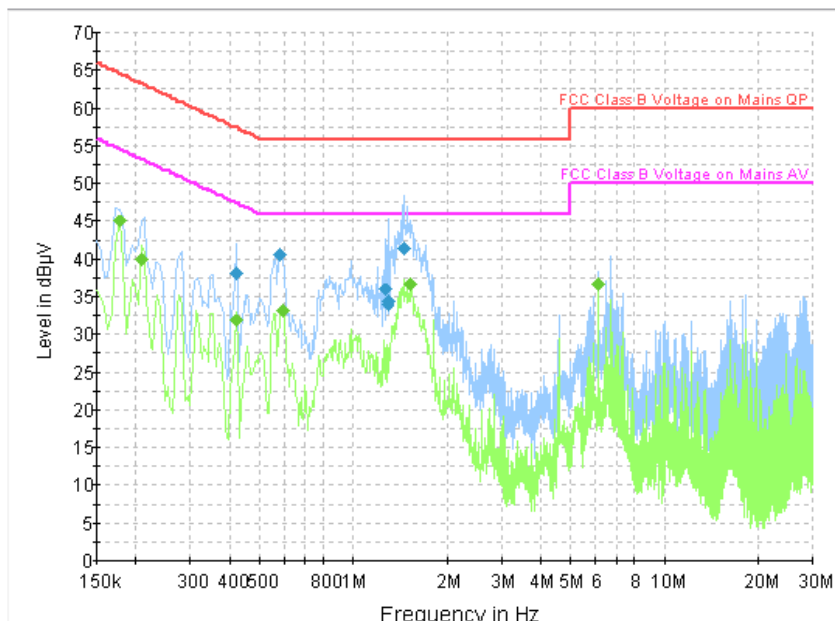

Figure A.8 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.163500	52.9	GND	L1	9.8	12.4	65.3
0.204000	49.0	GND	L1	9.8	14.4	63.4
0.240000	48.0	GND	N	9.8	14.1	62.1
0.285000	43.7	GND	L1	9.8	17.0	60.7
0.406500	43.0	GND	L1	9.8	14.7	57.7
2.076000	34.2	GND	N	9.7	21.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.163500	42.0	GND	L1	9.8	13.3	55.3
0.204000	38.6	GND	L1	9.8	14.8	53.4
0.244500	35.6	GND	L1	9.8	16.4	51.9
0.366000	35.0	GND	L1	9.8	13.6	48.6
0.402000	40.8	GND	L1	9.8	7.0	47.8
0.483000	34.8	GND	L1	9.8	11.5	46.3

Note: The measurement results showed here are worst cases of the combinations of different batteries and USB cables.

USB Mode, Set.3

Figure A.9 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.420000	38.1	GND	N	9.8	19.3	57.4
0.582000	40.7	GND	L1	9.8	15.3	56.0
1.266000	36.0	GND	L1	9.7	20.0	56.0
1.288500	34.0	GND	L1	9.7	22.0	56.0
1.306500	34.6	GND	N	9.7	21.4	56.0
1.450500	41.5	GND	L1	9.7	14.5	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177000	45.1	GND	N	9.8	9.5	54.6
0.208500	39.9	GND	L1	9.8	13.4	53.3
0.420000	31.8	GND	N	9.8	15.6	47.4
0.595500	33.2	GND	N	9.8	12.8	46.0
1.527000	36.6	GND	N	9.7	9.4	46.0
6.099000	36.7	GND	N	9.7	13.3	50.0

Note: The measurement results showed here are worst cases of the combinations of different batteries and USB cables.

END OF REPORT