



TEST REPORT

No. I14Z45769-EMC01

for

TCT Mobile Limited

CDMA EVDO BC0/BC1 mobile phone

Model Name: Yaris-5 NA

Marketing Name: A564C

FCC ID: RAD476

with

Hardware Version: PIO

Software Version: 4FAJ

Issued Date: May 29st, 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.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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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°C
Relative Humidity: 20-75%

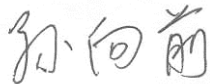
1.3. Project data

Testing Start Date: May 12th, 2014
Testing End Date: May 21st, 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	CDMA EVDO BC0/BC1 mobile phone
Model Name	Yaris-5 NA
Marketing Name	A564C
FCC ID	RAD476
Extreme vol. Limits	3.5VDC to 4.35VDC (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
EUT1	A100003BC18899	PIO	4FAJ
EUT2	A100003BC18895	PIO	4FAJ

*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	/	1445769BA009
AE2	Battery	/	1445769BA006
AE3	Travel charger	/	1445769CH010
AE4	Travel charger	/	1445769CH003
AE5	USB cable	/	1445769DC005
AE6	USB cable	/	1445769DC001
AE7	USB cable	/	/

AE1, AE2

Model	CAB2000013C2
Manufacturer	SCUD
Capacitance	2000 mAh
Nominal voltage	3.8V

AE3, AE4

Model	CBA3000AG0C1
Manufacturer	TEN PAO
Length of cable	/

AE5, AE6

Model	CDA3122002C1
Manufacturer	Juwei
Length of cable	99cm

AE7

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.1	EUT1+ AE1 + AE3 + AE5	Charger
Set.2	EUT1+ AE1 + AE5	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	2016-09-15	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-OWR979-6 4180-7AJ-D2M S	DELL	N/A	N/A
10	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
11	Keyboard	L100	CN0RH659658 907ATOI40	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 ($\mu\text{V}/\text{m}$)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the 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:

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

Where

G_A : Antenna factor of receive antenna

G_{PL} : Path Loss

P_{Mea} : Measurement result on receiver.

Measurement uncertainty (worst case): $U = 4.3 \text{ dB}$, $k=2$.

Measurement results for Set.1:

Charging Mode/Average detector

Frequency(MHz)	Result(dB μ V/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dB μ V)	Polarity
5965.625	28.8	-33.5	35.1	27.200	VERTICAL
5971.875	28.8	-33.5	35.1	27.200	VERTICAL
5964.063	28.8	-33.5	35.1	27.200	HORIZONTAL
5974.375	28.7	-33.5	35.1	27.100	VERTICAL
5956.719	28.7	-33.5	35.1	27.100	HORIZONTAL
5945.938	28.7	-33.5	35.1	27.100	VERTICAL

Charging Mode/Peak detector

Frequency(MHz)	Result(dB μ V/m)	G_{PL} (dB)	G_A (dB/m)	P_{Mea} (dB μ V)	Polarity
5798.281	41.2	-33.8	35.1	39.900	VERTICAL
5737.031	41.1	-33.8	35.1	39.800	HORIZONTAL
5943.125	41.0	-33.5	35.1	39.400	VERTICAL
5976.563	40.8	-33.5	35.1	39.200	VERTICAL
5697.969	40.8	-34.2	35.1	39.900	HORIZONTAL
5732.656	40.8	-33.8	35.1	39.500	VERTICAL

Measurement result for Set.2:

USB Mode/Average detector

Frequency(MHz)	Result(dB μ V/m)	G _{PL} (dB)	G _A (dB/m)	P _{mea} (dB μ V)	Polarity
1894.531	35.8	-35.0	25.3	45.500	VERTICAL
1874.688	35.7	-35.6	25.3	46.000	VERTICAL
1894.688	33.6	-35.0	25.3	43.300	VERTICAL
1894.844	33.3	-35.0	25.3	43.000	VERTICAL
1874.531	33.2	-35.6	25.3	43.500	VERTICAL
1909.531	33.1	-34.6	25.3	42.400	HORIZONTAL

USB Mode/ Peak detector

Frequency(MHz)	Result(dB μ V/m)	G _{PL} (dB)	G _A (dB/m)	P _{mea} (dB μ V)	Polarity
1988.438	49.9	-35.7	25.3	60.300	VERTICAL
1993.750	48.7	-35.7	25.3	59.100	HORIZONTAL
1994.219	48.4	-35.7	25.3	58.800	VERTICAL
1498.750	47.5	-40.3	24.1	63.700	VERTICAL
1498.594	47.4	-40.3	24.1	63.600	HORIZONTAL
1499.375	47.4	-40.3	24.1	63.600	VERTICAL

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

Charging Mode, Set.1

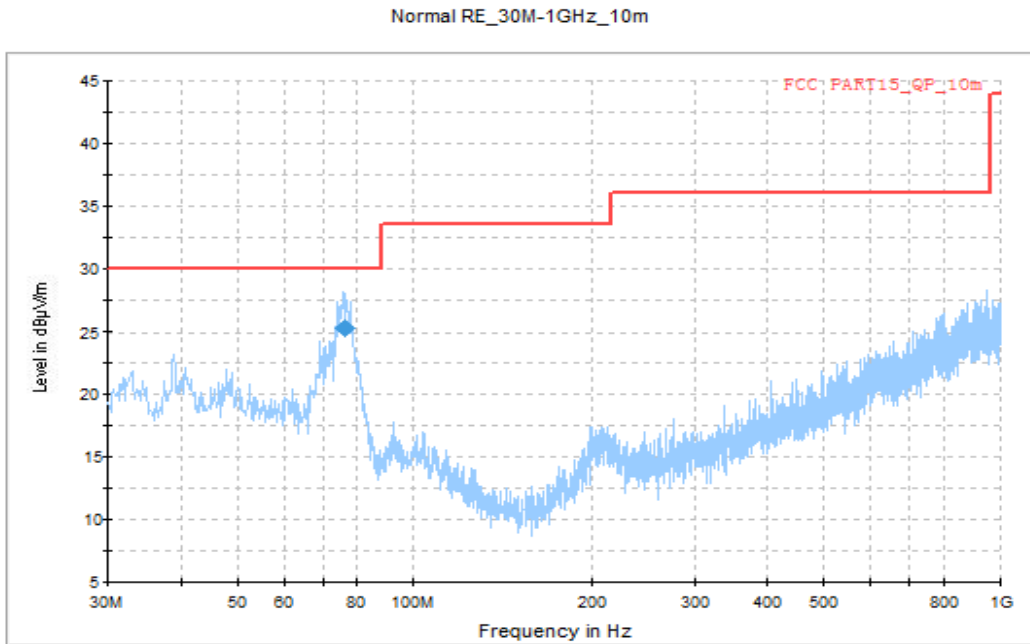


Figure A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
76.553750	25.3	221.0	V	300.0	-23.0	4.7	30.0

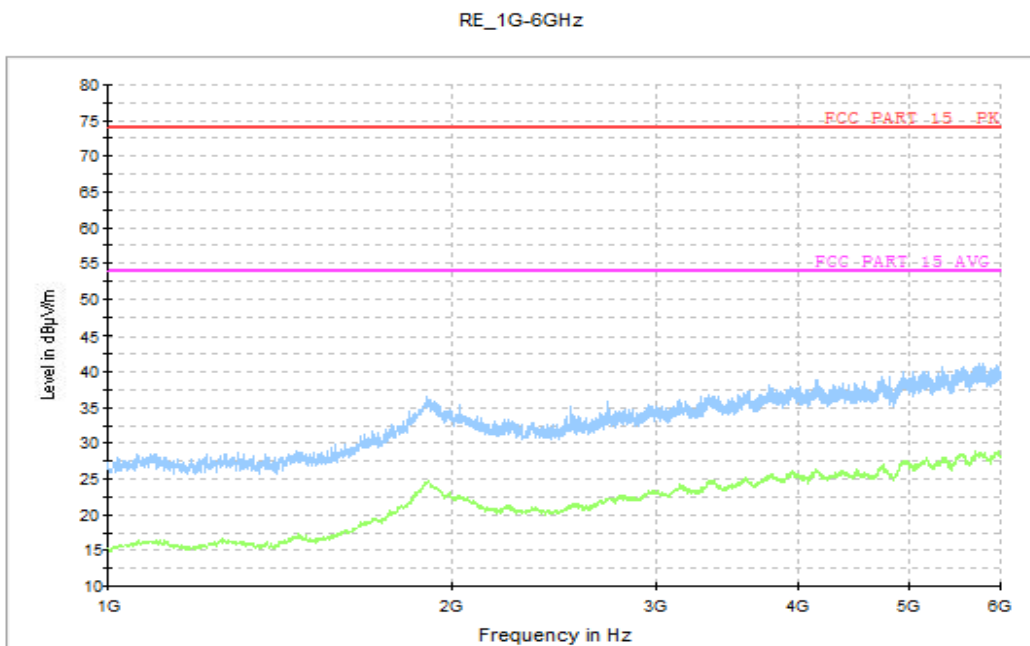


Figure A.2 Radiated Emission from 1GHz to 6GHz

USB Mode, Set.2

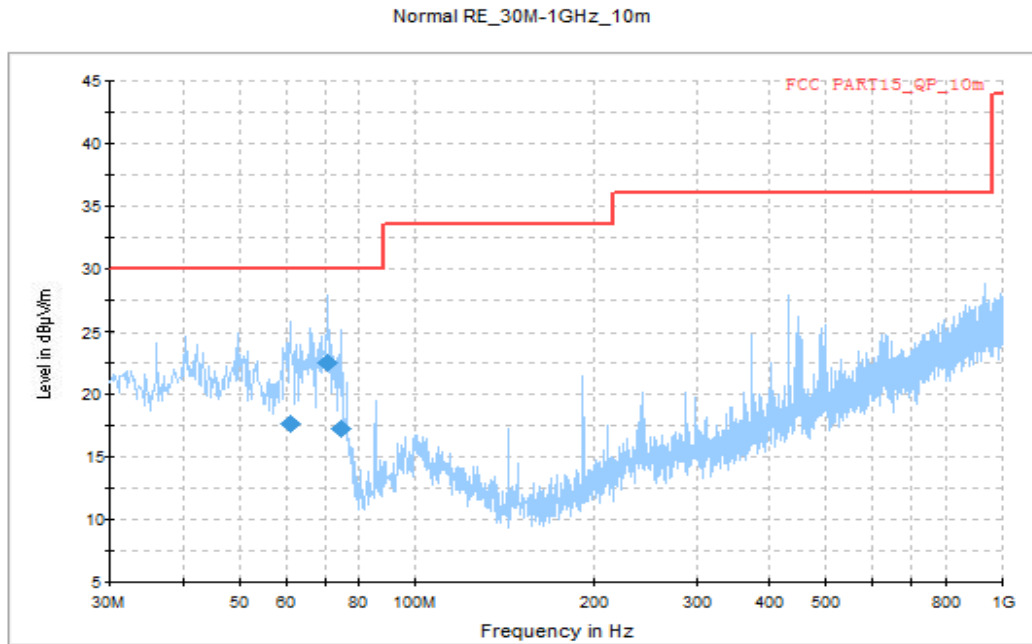


Figure A.5 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dB µV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB µV/m)
60.920000	17.7	325.0	V	240.0	-18.8	12.3	30.0
70.921250	22.5	275.0	V	30.0	-21.5	7.5	30.0
74.502500	17.3	209.0	V	151.0	-22.4	12.7	30.0

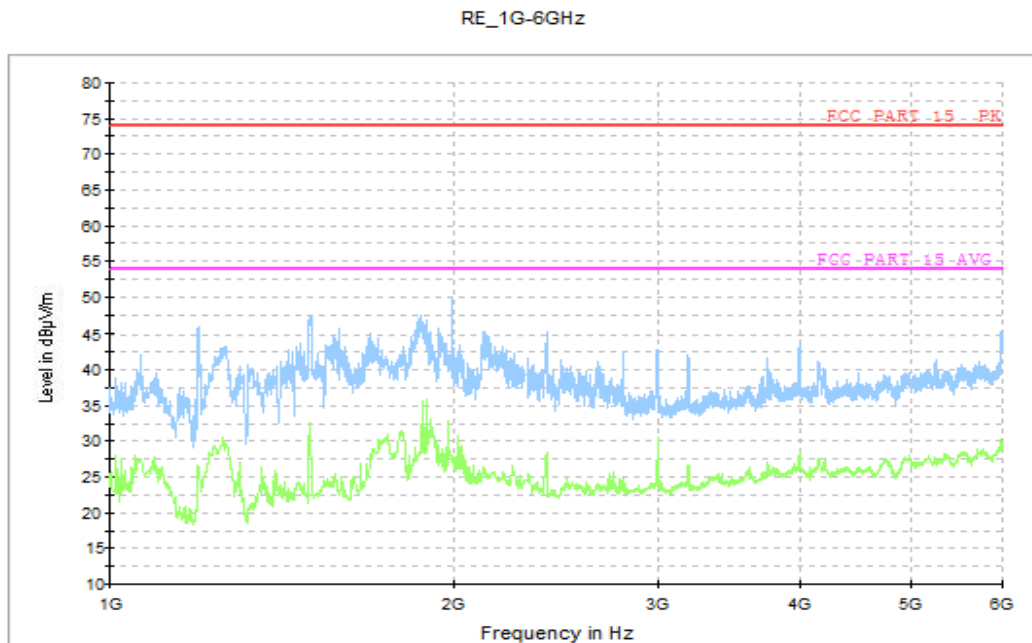


Figure A.6 Radiated Emission from 1GHz to 6GHz

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 7.3.

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 (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/IF bandwidth	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

Measurement uncertainty: $U= 2.9$ dB, $k=2$.

Charging Mode, Set.1

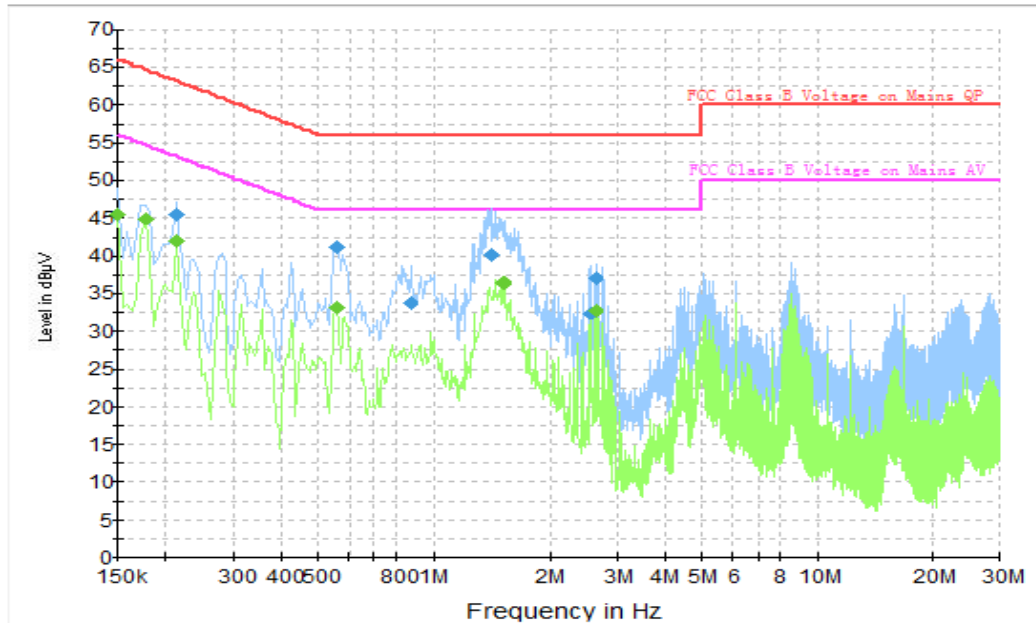


Figure A.7 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.213000	45.4	GND	L1	9.8	17.7	63.1
0.559500	41.0	GND	N	9.8	15.0	56.0
0.865500	33.6	GND	L1	9.8	22.4	56.0
1.410000	40.0	GND	N	9.7	16.0	56.0
2.562000	32.4	GND	L1	9.7	23.6	56.0
2.656500	36.9	GND	L1	9.7	19.1	56.0

Final Result 2

Frequency (MHz)	Average (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.150000	45.4	GND	L1	9.8	10.6	56.0
0.177000	44.9	GND	L1	9.8	9.7	54.6
0.213000	42.0	GND	L1	9.8	11.1	53.1
0.559500	33.1	GND	N	9.8	12.9	46.0
1.527000	36.4	GND	L1	9.7	9.6	46.0
2.634000	32.6	GND	L1	9.7	13.4	46.0

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

USB Mode, Set.2

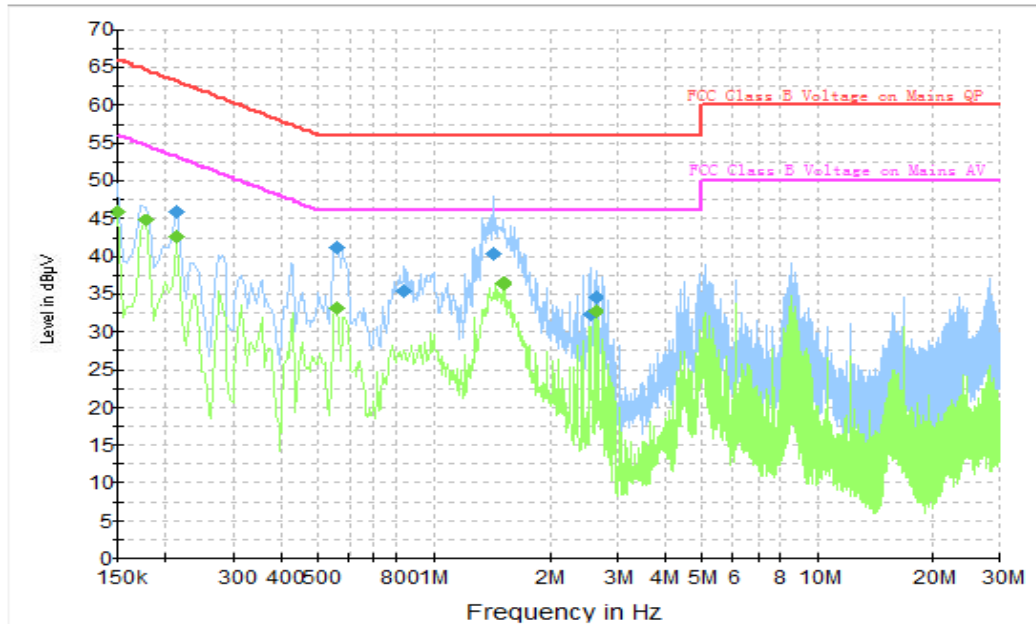


Figure A.9 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.213000	45.8	GND	L1	9.8	17.3	63.1
0.559500	41.2	GND	N	9.8	14.8	56.0
0.834000	35.4	GND	L1	9.8	20.6	56.0
1.423500	40.2	GND	L1	9.7	15.8	56.0
2.562000	32.2	GND	N	9.7	23.8	56.0
2.634000	34.5	GND	N	9.7	21.5	56.0

Final Result 2

Frequency (MHz)	Average (dB µV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.150000	45.9	GND	L1	9.8	10.1	56.0
0.177000	44.7	GND	L1	9.8	9.9	54.6
0.213000	42.7	GND	L1	9.8	10.4	53.1
0.559500	33.1	GND	N	9.8	12.9	46.0
1.527000	36.4	GND	N	9.7	9.6	46.0
2.634000	32.7	GND	N	9.7	13.3	46.0

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

END OF REPORT