TEST REPORT

No. 2012TAR056

for

TCT Mobile Limited

CDMA2000 Triple bands mobile phone

Model Name: Aeneas Duralife

Marketing Name: ONE TOUCH 988

FCC ID : RAD284

with

Hardware Version: V02

Software Version: vK29

Issued Date: 2012-08-21

Test Laboratory:
DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02
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
Tel:+86(0)10-62304633 , Fax:+86(0)10-62304633 Email:welcome@emcite.com. www.emcite.com

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52, Huayuan beilu, Haidian District, Beijing, P. R. China
Postal Code:	100191
Telephone:	00861062304633
Fax:	00861062304633

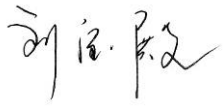
1.2. Testing Environment

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

1.3. Project data

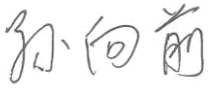
Testing Start Date:	Jul 18, 2012
Testing End Date:	Jul 20, 2012

1.4. Signature



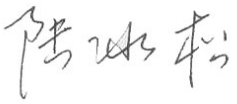
Liu Baodian

(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, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China.
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	+86-21-61460890
Fax:	+86-21-61460602

2.2. Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China.
City:	Shanghai
Postal Code:	201203
Country:	China
Telephone:	+86-21-61460890
Fax:	+86-21-61460602

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

3.1. About EUT

Description	CDMA2000 Triple bands mobile phone
Model Name	ONE TOUCH 988
FCC ID	RAD284
Extreme vol. Limits	3.5VDC to 4.2VDC (nominal: 3.7VDC)

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MII 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	A100000869C336	V02	vK29

*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	Travel Adapter	/
AE2	Battery	/
AE3	USB Cable	/
AE4	Battery	/
AE5	USB Cable	/

AE1

Model	CBA3000AG0C1
Manufacturer	BYD
Length of DC line	USB Connector

AE2

Model	CAB60BA000C1
Manufacturer	SCUD
Capacitance	1400mAh
Nominal Voltage	3.7V

AE3

Model	CDA3122002C2
Manufacturer	Shenhua
Length of DC line	100cm

AE4

Model	CAB60B0000C2
Manufacturer	BAK
Capacitance	1400mAh
Nominal Voltage	3.7V

AE5

Model	CDA3122002C1
Manufacturer	Juwei
Length of DC line	100cm

*AE ID: is used to identify the test sample in the lab internally.

EUT set-ups

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1+AE2/AE4+AE3/AE5	--
Set.2	EUT1+ AE2/AE4+AE3/AE5	--

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
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

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	> 2 MΩ
Ground system resistance	< 0.5 Ω

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

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	ESCI	100344	R&S	2013-03-28
3	Spectrum Analyzer	ESU26	100376	R&S	2012-11-08
4	BiLog Antenna	VUL9163	514	Schwarzbeck	2014-11-10
5	LISN	ESH2-Z5	829991/012	R&S	2013-04-16
6	Universal Radio Communication Tester	CMU200	100680	R&S	2012-09-05
7	Universal Radio Communication Tester	E5515C	MY48363198	Agilent	2013-07-09
8	Dual-Ridge Waveguide Horn Antenna	3117	00139065	ETS-Lindgren	2014-07-31
9	PC	OPTIPLEX 755	3908243625	DELL	N/A
10	Monitor	E178FPc	CN-OWR979-64 180-7AJ-D2MS	DELL	N/A
11	Printer	DeskJet D2368	TH72E12G7Q	HP	N/A
12	Keyboard	L100	CN0RH6596589 07ATOI40	DELL	N/A
13	Mouse	VR-301	6927225500198	XINGYU	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 a distance of 3 meters is tested. Tested in accordance with the procedures of ANSI C63.4 - 2003, section 8.3.

A.1.2 EUT Operating Mode:

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.
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	100KHz/300KHz	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”, and including the gain of receive antenna and the path loss.

The measurement results are obtained as described below:

Result = P_{Mea} + F_A + G_{PL}

Where

F_A: Receive Antenna Factor

G_{PL}: Cable Loss

P_{Mea}: The measurement result on receiver.

Charging Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB/m)	P_{Mea}(dBuV)	Polarity
2771.800	38.7	-27.1	33.3	32.531	HORIZONTAL
2774.800	38.7	-27.1	33.3	32.513	HORIZONTAL
2769.600	38.7	-27.1	33.3	32.500	VERTICAL
2778.200	38.7	-26.3	33.3	31.751	VERTICAL
2777.400	38.7	-26.3	33.3	31.736	VERTICAL
2767.000	38.7	-27.1	33.3	32.480	VERTICAL

USB Mode

Frequency(MHz)	Result(dBuV/m)	G_{PL} (dB)	F_A (dB/m)	P_{mea}(dBuV)	Polarity
3000.000	40.3	-28.4	34.1	34.583	VERTICAL
2776.200	39.0	-26.3	33.3	32.009	VERTICAL
2776.400	38.9	-26.3	33.3	31.928	VERTICAL
2773.600	38.9	-27.1	33.3	32.645	HORIZONTAL
2772.400	38.8	-27.1	33.3	32.609	HORIZONTAL
2776.600	38.8	-26.3	33.3	31.846	VERTICAL

Charging Mode

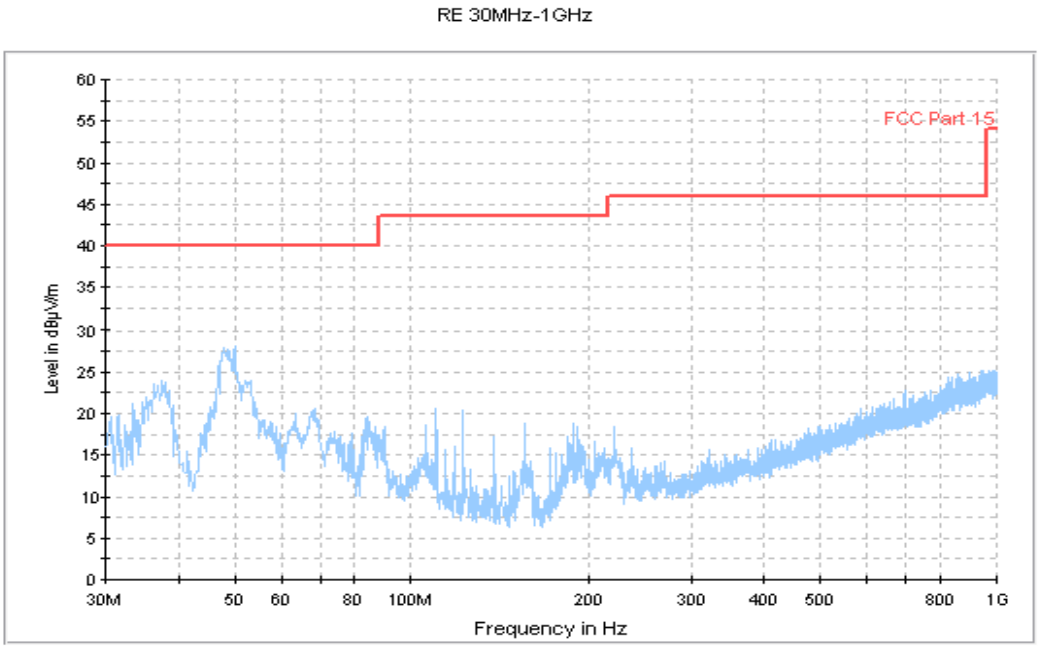


Figure A.1 Radiated Emission from 30MHz to 1GHz

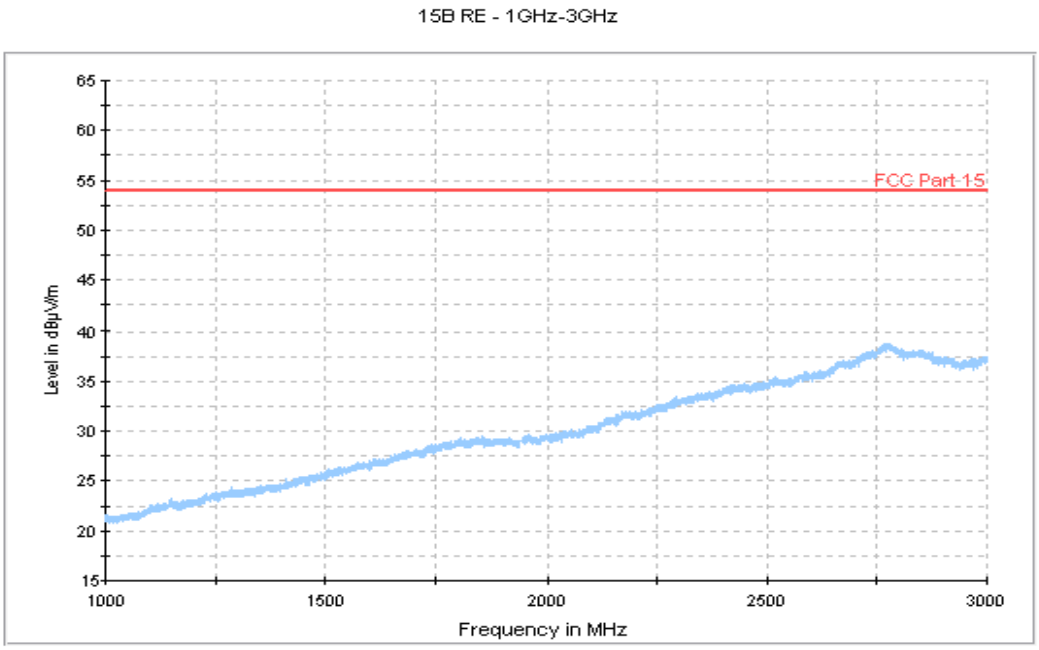


Figure A.2 Radiated Emission from 1GHz to 3GHz

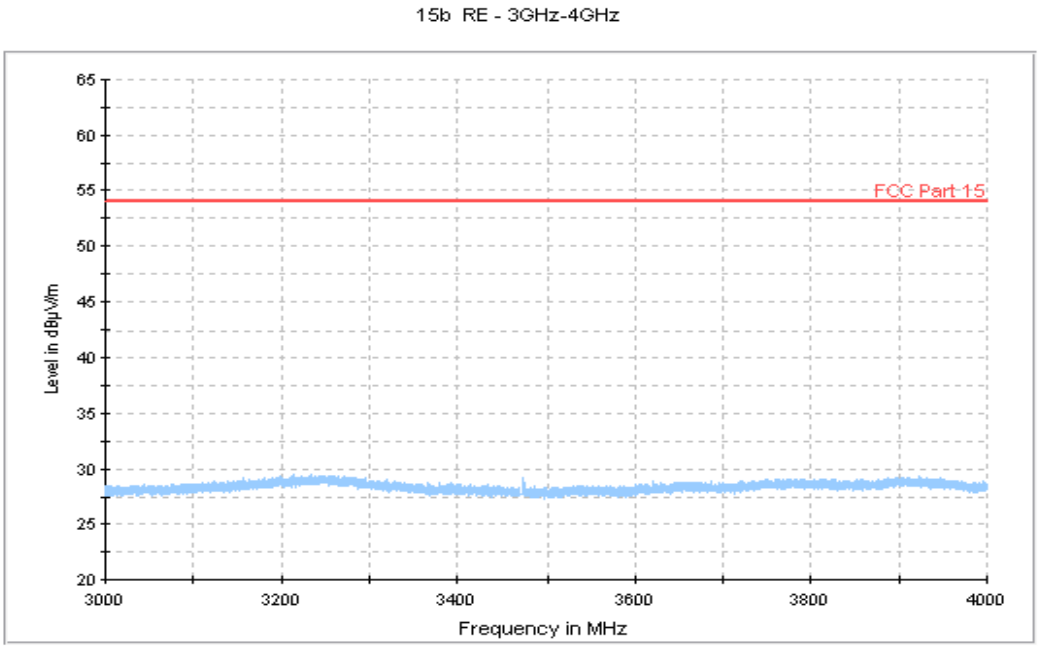


Figure A.3 Radiated Emission from 3GHz to 4GHz

USB Mode

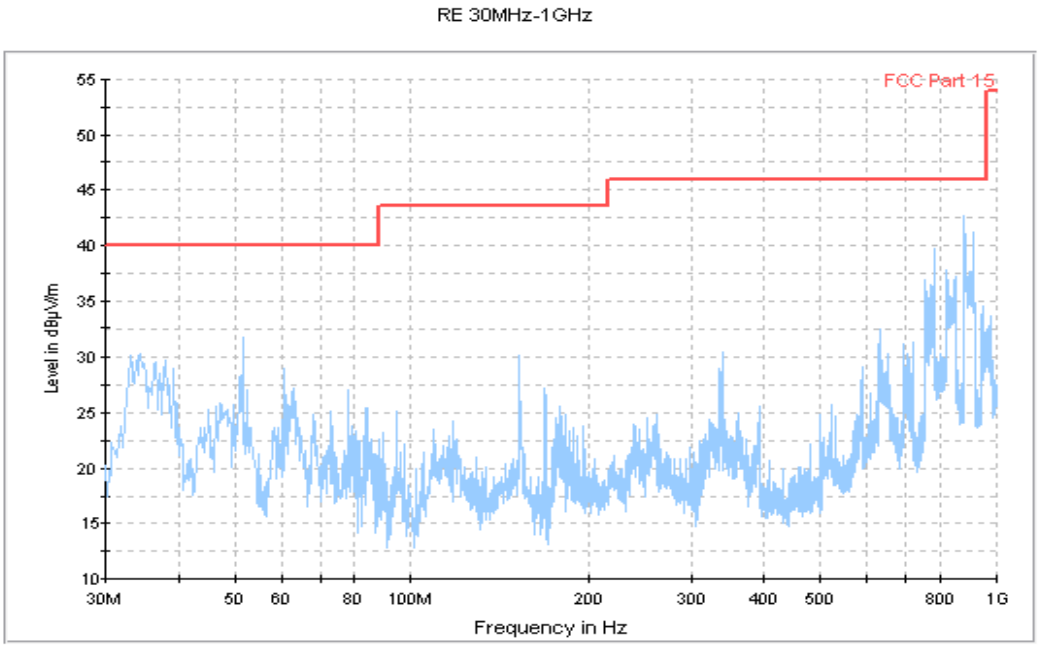


Figure A.4 Radiated Emission from 30MHz to 1GHz

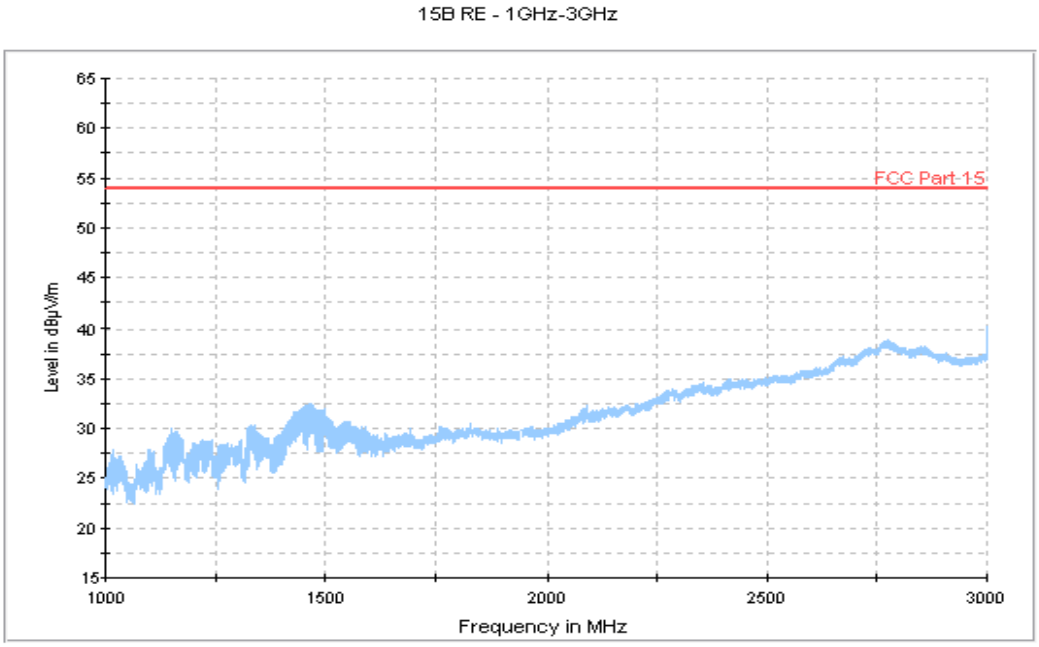


Figure A.5 Radiated Emission from 1GHz to 3GHz

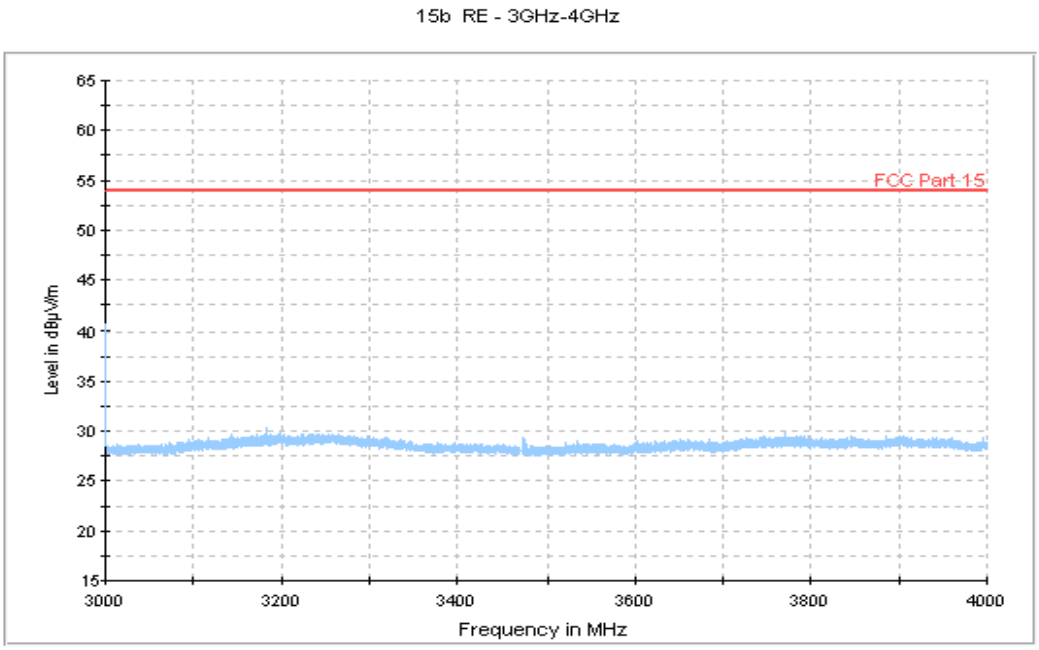


Figure A.6 Radiated Emission from 3GHz to 4GHz

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

RBW	Sweep Time(s)
9kHz	1

A.2.4 Measurement Results

Charging Mode

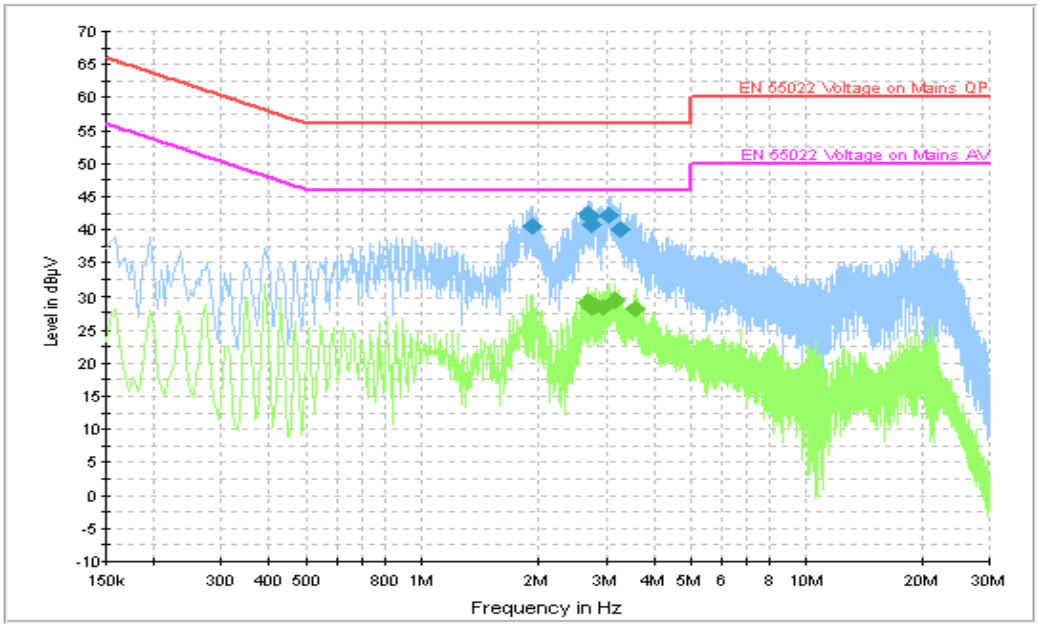


Figure A.7 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.932000	40.5	GND	L1	10.0	15.5	56.0
2.670000	42.3	GND	L1	10.0	13.7	56.0
2.710500	41.9	GND	L1	10.0	14.1	56.0
2.760000	40.8	GND	L1	10.0	15.2	56.0
3.057000	42.1	GND	L1	10.0	13.9	56.0
3.273000	40.1	GND	L1	10.0	15.9	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.670000	29.1	GND	L1	10.0	16.9	46.0
2.751000	28.4	GND	L1	10.0	17.6	46.0
2.823000	28.7	GND	L1	10.0	17.3	46.0
2.944500	28.6	GND	L1	10.0	17.4	46.0
3.138000	29.3	GND	L1	10.0	16.7	46.0
3.561000	28.3	GND	L1	10.0	17.7	46.0

USB Mode

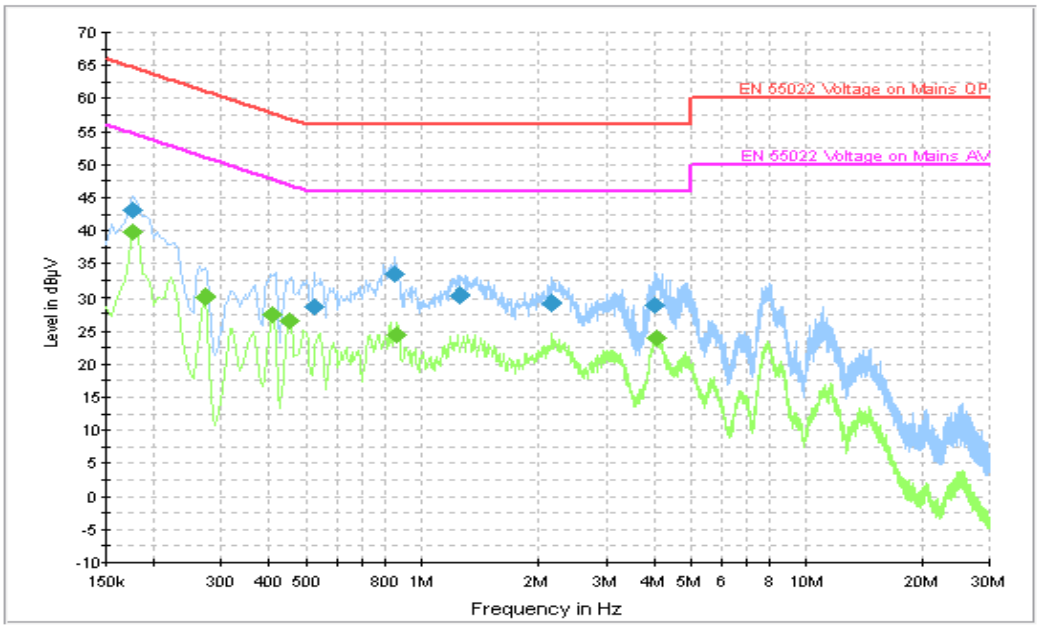


Figure A.8 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177000	43.1	GND	N	10.0	21.5	64.6
0.523500	28.7	GND	N	10.0	27.3	56.0
0.847500	33.5	GND	L1	10.0	22.5	56.0
1.252500	30.3	GND	N	10.0	25.7	56.0
2.170500	29.2	GND	N	10.0	26.8	56.0
3.997500	28.8	GND	N	10.0	27.2	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177000	39.9	GND	N	10.0	14.8	54.6
0.271500	30.2	GND	N	10.0	20.9	51.1
0.406500	27.4	GND	N	10.0	20.3	47.7
0.451500	26.5	GND	N	10.0	20.3	46.8
0.865500	24.4	GND	L1	10.0	21.6	46.0
4.074000	24.0	GND	N	10.0	22.0	46.0

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