



# TEST REPORT

No. I14Z47271-EMC01

for

**ZTE Corporation**

**WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone**

**Model Name: ZTE Blade Vec, Blade Vec, ZTE Blade Vec 3G, Blade  
Vec 3G**

**FCC ID: SRQ-ZTEBLADEVEC**

with

**Hardware Version: wnqB**

**Software Version: TEL\_MX\_TB25S\_BladeVecV1.0.0**

**Issued Date: Aug. 26<sup>th</sup>, 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:**

**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**

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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: Aug. 19<sup>th</sup>, 2014  
Testing End Date: Aug. 19<sup>th</sup>, 2014

### **1.4. Signature**



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**Qu Pengfei**  
**(Prepared this test report)**



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**Sun Xiangqian**  
**(Reviewed this test report)**



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**Lu Bingsong**  
**Deputy Director of the laboratory**  
**(Approved this test report)**

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: ZTE CORPORATION  
Address /Post: ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. China  
City: Shenzhen  
Postal Code: 518057  
Country: China  
Contact Person: Zhang Wen  
Contact Email: /  
Telephone: +86-21-68897541  
Fax: +86-21-50801070

### **2.2. Manufacturer Information**

Company Name: ZTE CORPORATION  
Address /Post: ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. China  
City: Shenzhen  
Postal Code: 518057  
Country: China  
Contact Person: Zhang Wen  
Contact Email: /  
Telephone: +86-21-68897541  
Fax: +86-21-50801070

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

#### **3.1. About EUT**

Description	WCDMA/GSM (GPRS) Dual-Mode Digital Mobile Phone
Model Name	ZTE Blade Vec, Blade Vec, ZTE Blade Vec 3G, Blade Vec 3G
FCC ID	SRQ-ZTEBLADEVEC

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	865047020013343	wnqB	TEL_MX_TB25S_BladeVecV1.0.0

\*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	Note
AE1	Travel charger	/	1447271CH001
AE2	Travel charger	/	1447271CH002
AE3	Travel charger	/	1447271CH003
AE4	USB cable	/	1447271DC001
AE5	USB cable	/	1447271DC002
AE6	USB cable	/	1447271DC003
AE7	Headset	/	1447271HS001
AE8	Headset	/	1447078HS002

AE1, AE2, AE3

Model	STC-A51A-Z
Manufacturer	DOKOCOM
Length of cable	/

AE4, AE5, AE6

Model	USB-MU5-W-100-L
Manufacturer	/
Length of cable	100cm

AE7, AE8

Model	HMZ17-CTIA-3.5
Manufacturer	/
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+ AE3 + AE6	Charging mode
Set.2	EUT1+ AE6	USB mode

## **4. Reference Documents**

### **4.1. Reference Documents for testing**

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 15, Subpart B	Radio frequency devices	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	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m 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

**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

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Radiated Emission	15.109(a)	B.1	P	A
2	Conducted Emission	15.107(a)	B.2	P	A

## 7. Test Equipments Utilized

NO.	NAME	TYPE	SERIES NUMBER	PRODUCER	CAL. DUE DATE	CAL. INTERVAL
1.	LISN	ESH2-Z5	829991/012	R&S	2015-04-14	1 Year
2.	Universal Radio Communication Tester	CMU200	109914	R&S	2015-04-13	1 Year
3.	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	
4.	Monitor	E178FPc	CN-OWR979-64180-7AJ-D2 MS	DELL	N/A	
5.	Printer	P1606dn	VNC3L52122	HP	N/A	
6.	Keyboard	L100	CN0RH65965 8907ATOI40	DELL	N/A	
7.	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	
8.	Test Receiver	ESCI 7	100948	R&S	2015-07-16	1 Year
9.	EMI Antenna	VULB 9163	9163-234	Schwarzbeck	2016-09-15	3 Years
10.	EMI Antenna	3115	6914	ETS-Lindgren	2014-12-15	3 Years
11.	Test Receiver	FSV40	101047	R&S	2015-07-03	1 Year

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission**

#### **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 (above 1GHz) and 10 meters (below 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 meters (above 1GHz) and 10 meters (below 1GHz) 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 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 ( $\mu\text{V/m}$ )		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

#### **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

$G_{\text{PL}}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

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

#### Measurement result for Set.1:

##### Charging Mode/Average detector

Frequency(MHz)	Result(dB $\mu$ V/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity
17883.125	49.8	-18.5	45.6	22.700	V
17866.125	49.7	-18.5	45.6	22.600	V
17900.656	49.7	-18.5	45.6	22.600	V
17878.875	49.6	-18.5	45.6	22.500	V
17890.031	49.6	-18.5	45.6	22.500	H
17896.938	49.6	-18.5	45.6	22.500	V

##### Charging Mode/Peak detector

Frequency(MHz)	Result(dB $\mu$ V/m)	$G_{\text{PL}}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity
17881.531	61.8	-18.5	45.6	34.700	V
17958.031	61.7	-17.7	45.6	33.800	V
17886.313	61.6	-18.5	45.6	34.500	V
17894.813	61.5	-18.5	45.6	34.400	V
17932.000	61.4	-17.7	45.6	33.500	V
18000.000	61.3	-17.7	44.5	34.500	H

**Measurement result for Set.2:**

**USB Mode/Average detector**

Frequency(MHz)	Result(dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dB $\mu$ V)	Polarity
17886.844	49.9	-18.5	45.6	22.800	V
17881.000	49.8	-18.5	45.6	22.700	V
17876.750	49.8	-18.5	45.6	22.700	H
17906.500	49.7	-18.5	45.6	22.600	V
17883.656	49.7	-18.5	45.6	22.600	V
17874.625	49.6	-18.5	45.6	22.500	V

**USB Mode/ Peak detector**

Frequency(MHz)	Result(dB $\mu$ V/m)	G <sub>PL</sub> (dB)	G <sub>A</sub> (dB/m)	P <sub>mea</sub> (dB $\mu$ V)	Polarity
17913.938	62.0	-18.5	45.6	34.900	V
17987.781	61.7	-17.7	45.6	33.800	V
17916.594	61.5	-17.7	45.6	33.600	V
17862.938	61.4	-18.5	45.6	34.300	V
17909.688	61.2	-18.5	45.6	34.100	V
17847.000	61.2	-18.5	45.6	34.100	V

Charging Mode, Set.1

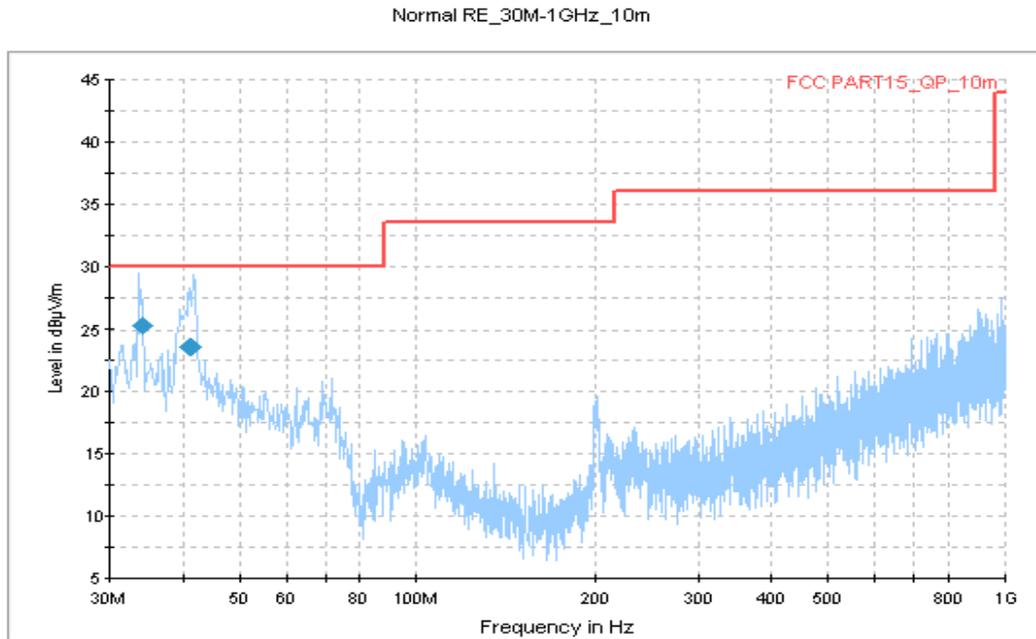


Figure A.1 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
34.298750	25.3	100.0	V	201.0	-18.8	4.7	30.0
40.913750	23.7	200.0	V	187.0	-17.5	6.3	30.0
41.280000	23.6	100.0	V	210.0	-17.5	6.4	30.0

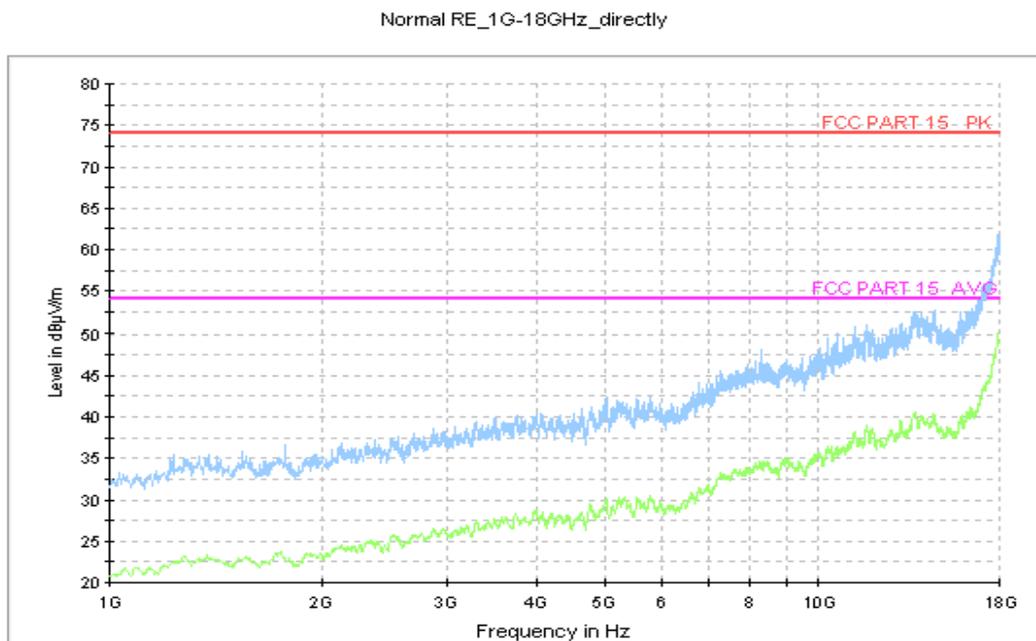


Figure A.2 Radiated Emission from 1GHz to 18GHz

USB Mode, Set.2

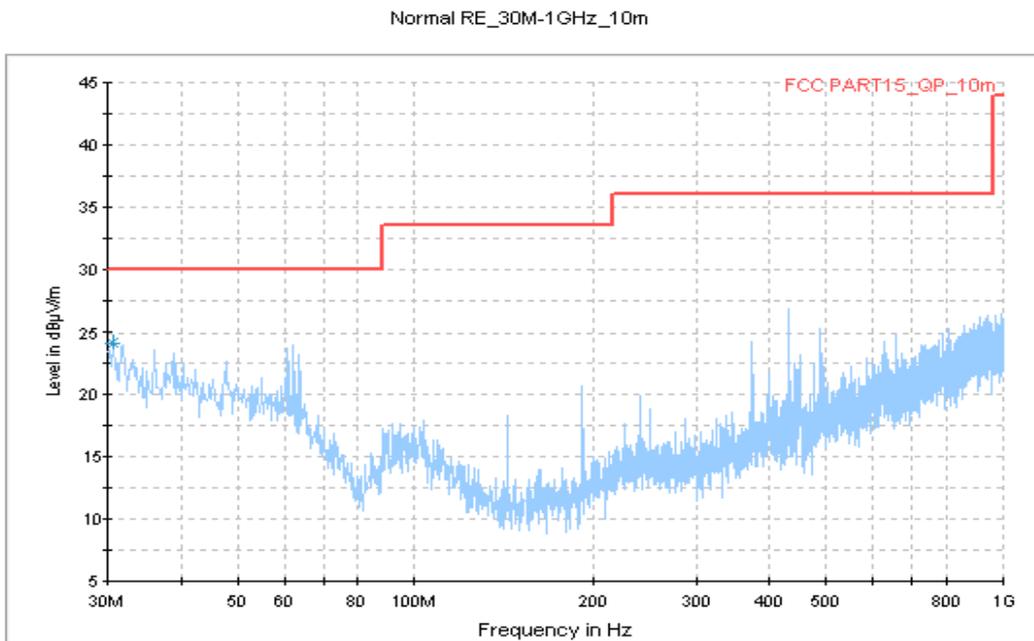


Figure A.3 Radiated Emission from 30MHz to 1GHz

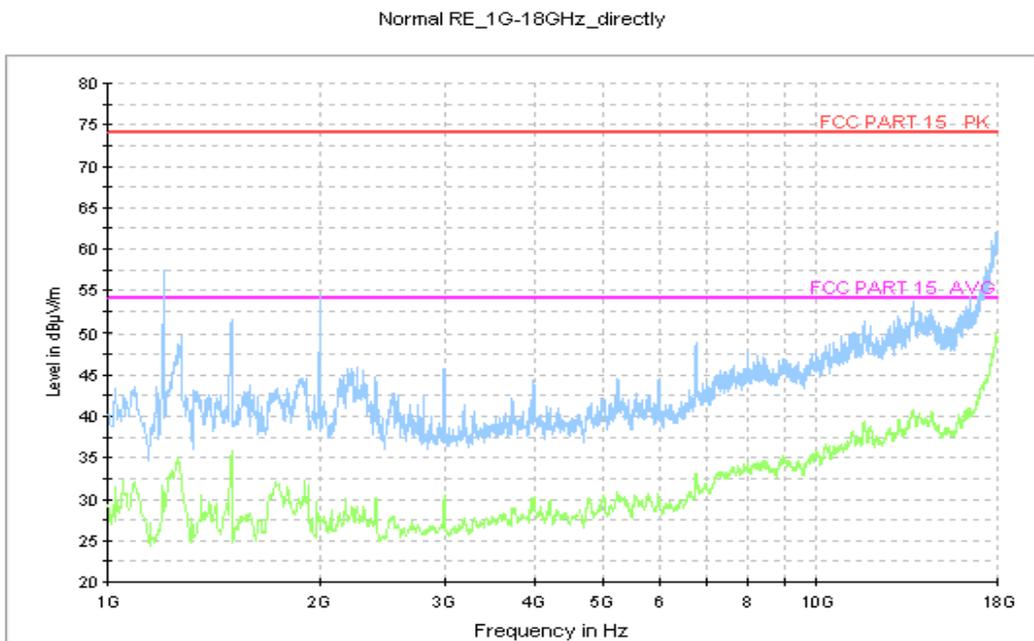


Figure A.4 Radiated Emission from 1GHz to 18GHz

## A.2 Conducted Emission

### 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 - 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 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 $\mu$ 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

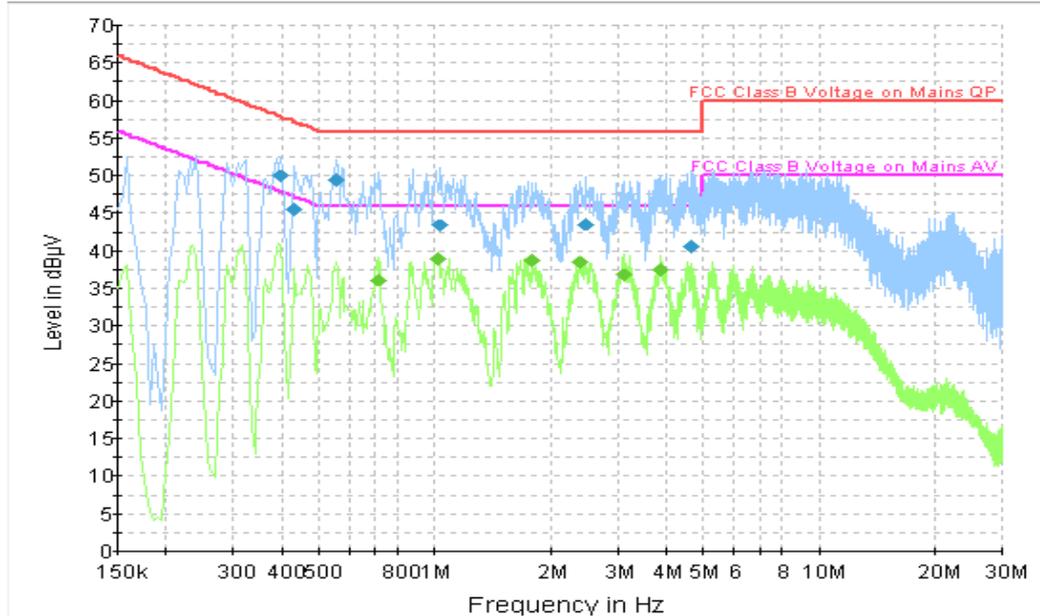


Figure A.5 Conducted Emission

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.397500	50.0	GND	L1	9.8	7.9	57.9
0.433500	45.6	GND	L1	9.8	11.6	57.2
0.555000	49.5	GND	N	9.8	6.5	56.0
1.036500	43.5	GND	L1	9.7	12.5	56.0
2.485500	43.6	GND	L1	9.7	12.4	56.0
4.650000	40.7	GND	L1	9.8	15.3	56.0

#### Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.717000	36.1	GND	L1	9.8	9.9	46.0
1.014000	38.9	GND	L1	9.7	7.1	46.0
1.792500	38.8	GND	L1	9.7	7.2	46.0
2.395500	38.5	GND	L1	9.7	7.5	46.0
3.129000	36.9	GND	L1	9.7	9.1	46.0
3.853500	37.4	GND	L1	9.7	8.6	46.0

USB Mode, Set.2

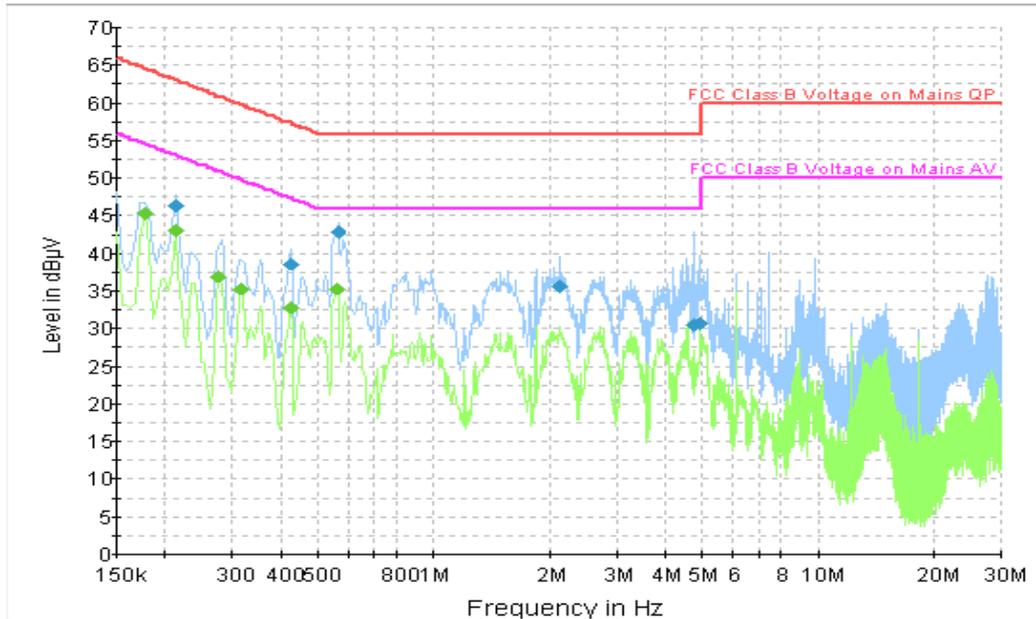


Figure A.6 Conducted Emission

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.213000	46.4	GND	N	9.8	16.7	63.1
0.424500	38.6	GND	N	9.8	18.7	57.4
0.564000	42.9	GND	L1	9.8	13.1	56.0
2.125500	35.6	GND	N	9.7	20.4	56.0
4.749000	30.5	GND	N	9.7	25.5	56.0
4.942500	30.8	GND	N	9.8	25.2	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.177000	45.5	GND	N	9.8	9.1	54.6
0.213000	43.1	GND	N	9.8	10.0	53.1
0.276000	36.9	GND	N	9.8	14.0	50.9
0.316500	35.3	GND	N	9.8	14.5	49.8
0.424500	32.8	GND	N	9.8	14.5	47.4
0.559500	35.4	GND	L1	9.8	10.6	46.0

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