

FCC REPORT

Applicant: B mobile HK Limited

Address of Applicant: Ground floor, 144 Un Chau Street, Sham Shui Po, Hong Kong

Equipment Under Test (EUT)

Product Name: B mobile

Model No.: QS304

FCC ID: ZSW-QS304

Applicable standards: FCC CFR Title 47 Part 15 Subpart B: 2011

Date of sample receipt: 23 Apr., 2013

Date of Test: 24 Apr., to 26 Apr.,2013

Date of report issued: 27 Apr.,2013

Test Result : Pass *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2 Version

Version No.	Date	Description
00	27 Apr.,2013	Original

Prepared by:

Mila

Date:

27 Apr.,2013

Report Clerk

Reviewed by:

Jackey Li

Date:

27 Apr.,2013

Project Engineer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION	5
5.1 CLIENT INFORMATION	5
5.2 GENERAL DESCRIPTION OF E.U.T.....	5
5.3 TEST MODE	5
5.4 DESCRIPTION OF SUPPORT UNITS	6
5.5 LABORATORY FACILITY	6
5.6 LABORATORY LOCATION.....	6
5.7 TEST INSTRUMENTS LIST.....	7
6 TEST RESULTS AND MEASUREMENT DATA.....	8
6.1 CONDUCTED EMISSION	8
6.2 RADIATED EMISSION	11
7 TEST SETUP PHOTO	17
8 EUT CONSTRUCTIONAL DETAILS	19

4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	Pass
Radiated Emission	Part15.109	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	B mobile HK Limited
Address of Applicant:	Ground floor, 144 Un Chau Street, Sham Shui Po, Hong Kong
Manufacturer:	FORTUNE SHIP TECHNOLOGY (HK) LIMITED
Address of Manufacturer:	ROOM A 11/F, HO LEE COMMERCIAL BUILDING, 38-44 D'AGUILAR STREET, CENTRAL, HONG KONG
Factory:	SHENZHEN EASIECOM ELECTRONIC CO.,LTD
Address of Factory:	Floor3,Building A,Sailian Industrial Park,Fourth Industrial Zone,Shuitian Community,Shiyan Street,Baoan District,Shenzhen.

5.2 General Description of E.U.T.

Product Name:	B mobile
Model No.:	QS304
AC adapter:	Input:100-240V AC,50/60Hz 0.2A Output:5.0V DC MAX 500mA
Power supply:	Rechargeable Li-ion Battery DC3.7V/800mAh

5.3 Test Mode

Operating mode	Detail description
Downloading mode	Keep the EUT in Downloading mode(Worst case)
Playing mode	Keep the EUT in Playing mode
Recording mode	Keep the EUT in Recording mode
FM mode	Keep the EUT in FM receiver mode

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	PC	OPTIPLEX745	N/A	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
HP	Printer	CB495A	05257893	DoC

5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

- **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: 0755-23118282
Fax: 0755-23116366

5.7 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2012	June 08 2013
2	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr.01 2013	Mar. 31 2014
3	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 04 2012	June 03 2013
4	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 30 2012	May. 29 2013
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2013	Mar. 31 2014
7	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2013	Mar. 31 2014
8	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2013	Mar. 31 2014
9	Coaxial Cable	CCIS	N/A	CCIS0019	Apr. 01 2013	Mar. 31 2014
10	Coaxial Cable	CCIS	N/A	CCIS0087	Apr. 01 2013	Mar. 31 2014
11	Amplifier(10KHz-1.3GHz)	HP	8447D	CCIS0003	Apr. 01 2013	Mar. 31 2014
12	Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	June 09 2012	June 08 2013
13	Spectrum analyzer	Rohde & Schwarz	FSP	CCIS0023	May 29 2012	May 28 2013
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A

Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2012	June 08 2013
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	May 25 2012	May. 24 2013
3	LISN	CHASE	MN2050D	CCIS0074	Apr. 01 2013	Mar. 31 2014
4	Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2013	Mar. 31 2014

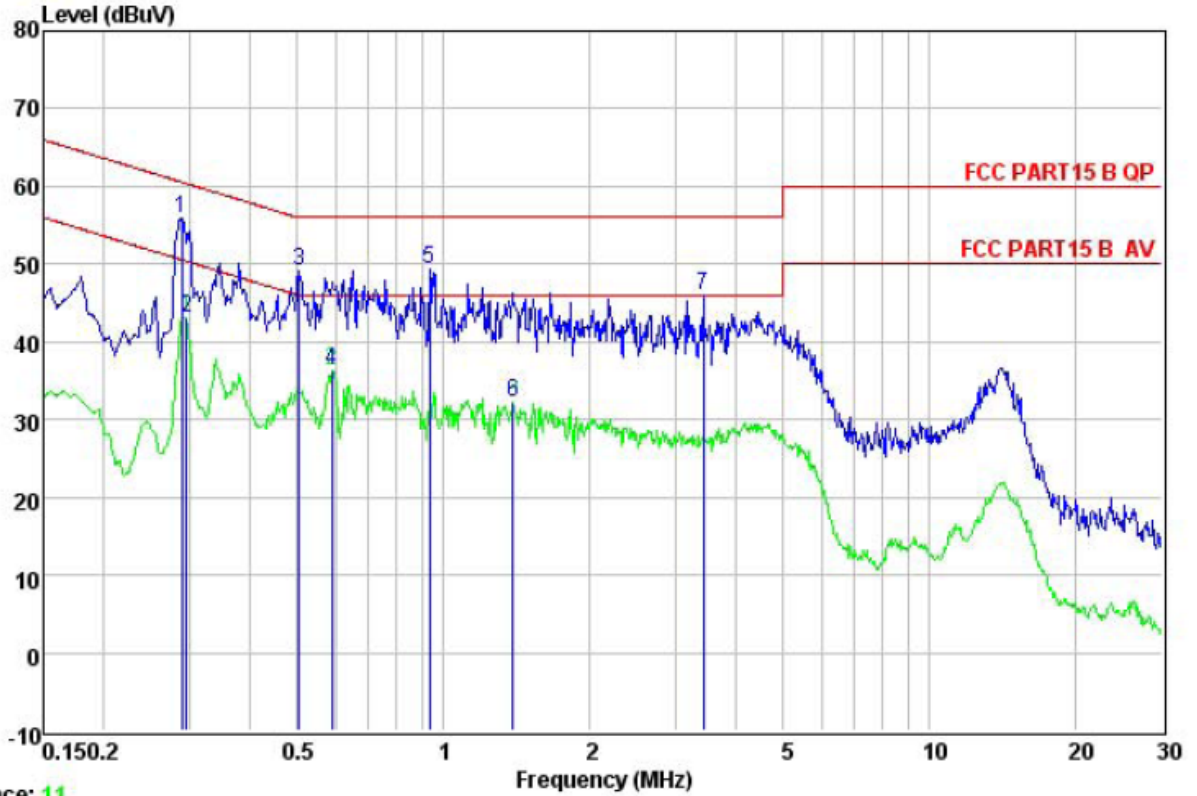
6 Test results and Measurement Data

6.1 Conducted Emission

Test Requirement:	FCC Part15 B Section 15.107														
Test Method:	ANSI C63.4:2003														
Test Frequency Range:	150kHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9kHz, VBW=30kHz														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBμV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>0.5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>	Frequency range (MHz)	Limit (dBμV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	0.5-30	60	50
Frequency range (MHz)	Limit (dBμV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
0.5-30	60	50													
Test setup:	<p>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test procedure	<ol style="list-style-type: none"> The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. 														
Test environment:	Temp.: 23 °C Humid.: 56% Press.: 1 01kPa														
Measurement Record:	Uncertainty: 3.28dB														
Test Instruments:	Refer to section 5.7 for details														
Test mode:	Pre-scan all test mode in the section 5.3, and found the blew mode which it is worse case mode.														
Test results:	Pass														

Measurement data:

Line:

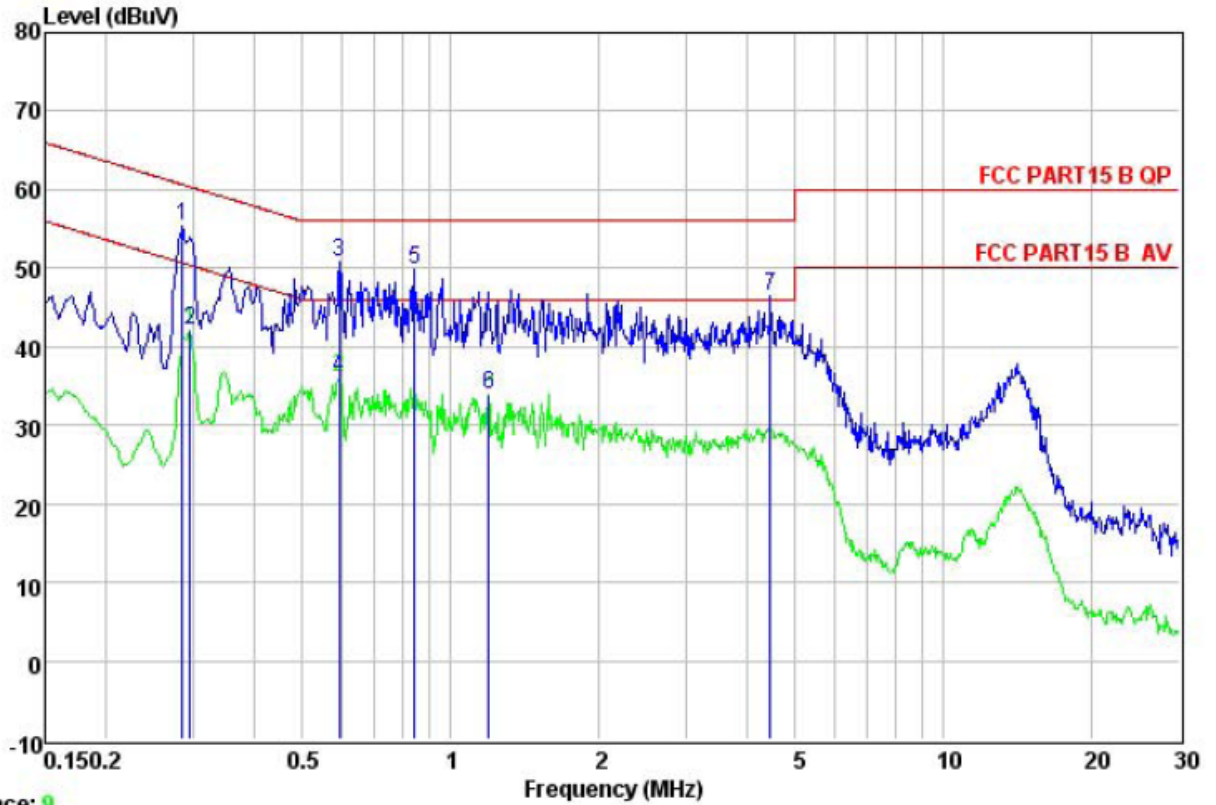


Trace: 11

Site : CCIS Conducted Test Site
 Condition : FCC PART15 B QP LISN LINE
 EUT : MOBILE
 Model : QS304
 Test Mode : PC mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: jacky
 Remark :

	Read Freq	Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.289	44.93	10.26	0.74	55.93	60.54	-4.61	QP
2	0.296	32.17	10.26	0.74	43.17	50.37	-7.20	Average
3	0.505	38.14	10.27	0.76	49.17	56.00	-6.83	QP
4	0.589	25.43	10.23	0.76	36.42	46.00	-9.58	Average
5	0.933	38.24	10.20	0.86	49.30	56.00	-6.70	QP
6	1.388	21.51	10.24	0.50	32.25	46.00	-13.75	Average
7	3.417	34.76	10.29	0.90	45.95	56.00	-10.05	QP

Neutral:



Trace: 9
 Site : CCIS Conducted Test Site
 Condition : FCC PART15 B QP LISN NEUTRAL
 EUT : MOBILE
 Model : QS304
 Test Mode : PC mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: jacky
 Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.285	44.50	10.24	0.74	55.48	60.68	-5.20	QP
2	0.296	31.05	10.24	0.74	42.03	50.37	-8.34	Average
3	0.595	39.89	10.22	0.77	50.88	56.00	-5.12	QP
4	0.595	25.02	10.22	0.77	36.01	46.00	-9.99	Average
5	0.844	38.85	10.18	0.82	49.85	56.00	-6.15	QP
6	1.191	22.89	10.22	0.74	33.85	46.00	-12.15	Average
7	4.454	35.19	10.28	0.88	46.35	56.00	-9.65	QP

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

6.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 6000MHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	960MHz-1GHz	54.0		Quasi-peak Value	
Above 1GHz	54.0		Average Value		
	74.0		Peak Value		
Test setup:	Below 1GHz				
Above 1GHz					

Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test environment:	Temp.: 25 °C Humid.: 55% Press.: 1 01kPa
Measurement Record:	Uncertainty: 4.88dB
Test Instruments:	Refer to section 5.7 for details
Test mode:	Pre-scan all test mode in the section 5.3, and found the bleed mode which it is worse case mode.
Test results:	Passed

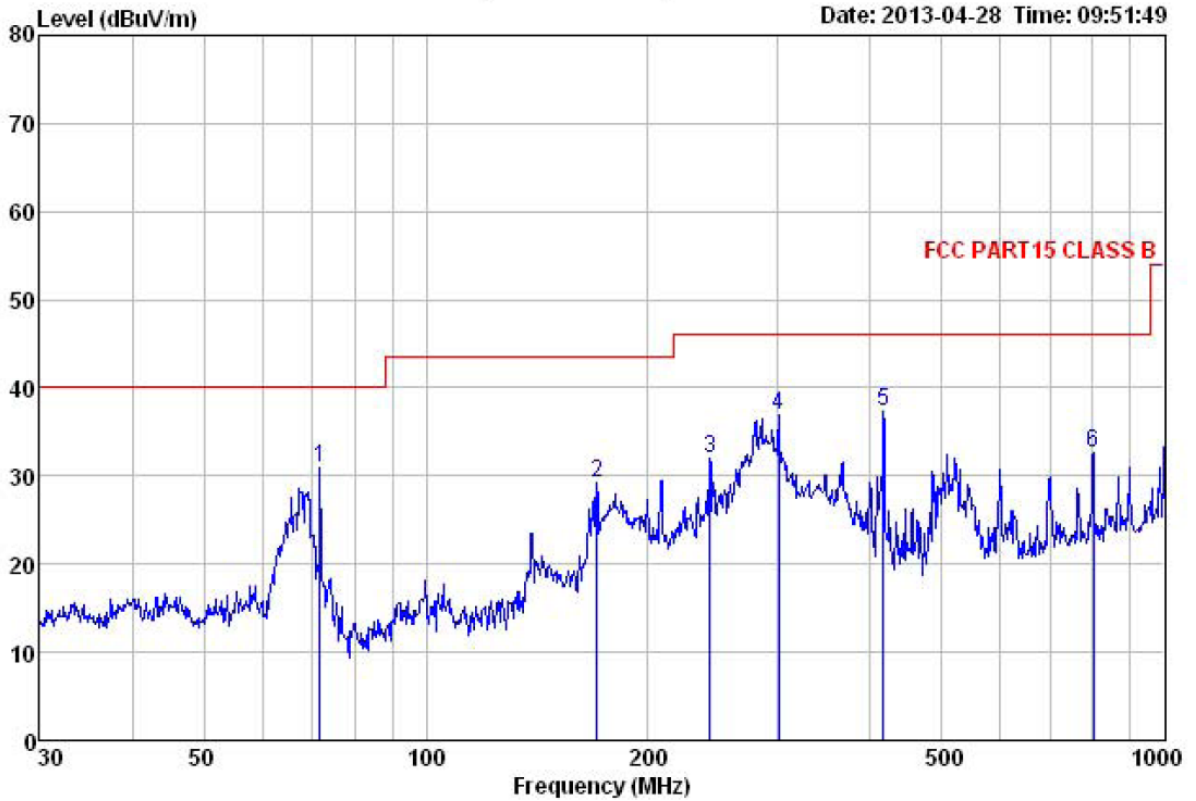
Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.

Measurement Data

Below 1GHz

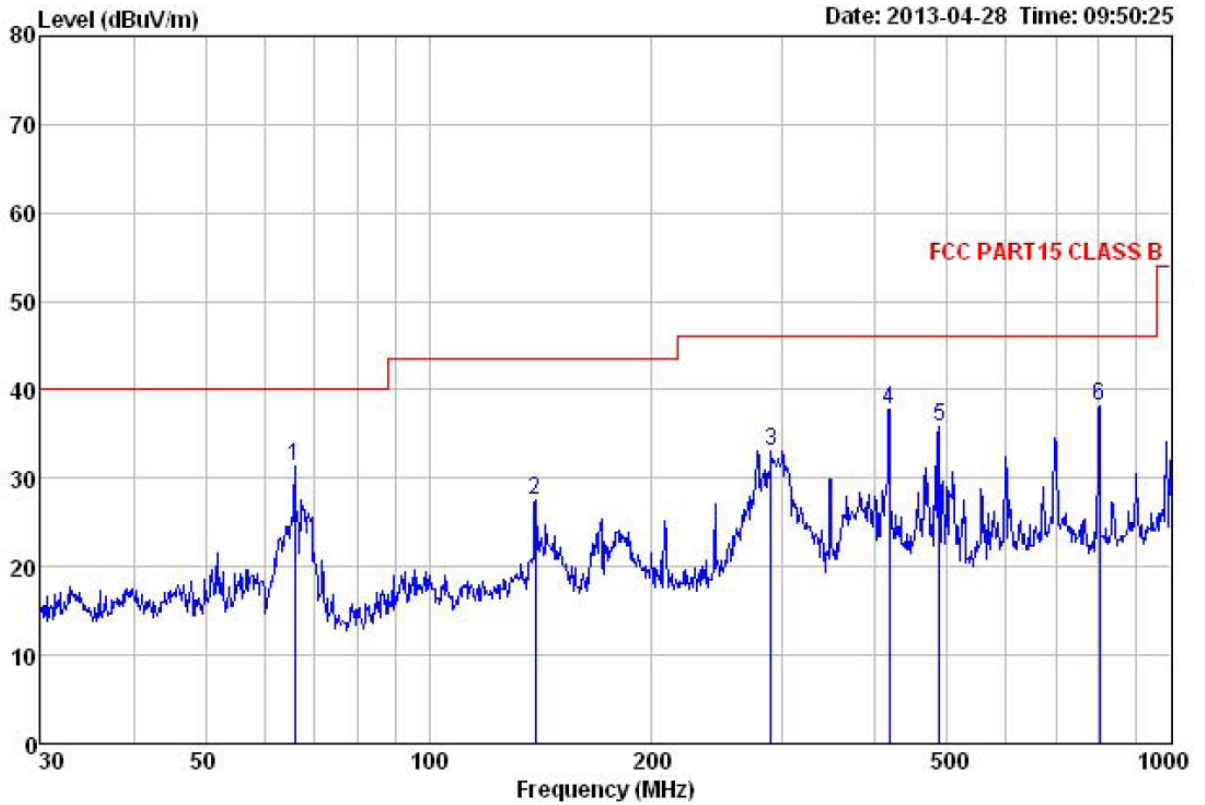
Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
 Job NO. : 111RF
 EUT : MOBILE
 Test mode : PC Mode
 Power Rating : AC 120V /60Hz
 Environment : Temp:24°C Humi:65% Atmos:101Kpa
 Test Engineer: Jacky

	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	71.832	51.22	8.32	1.56	30.14	30.96	40.00	-9.04
2	170.195	46.28	8.97	2.66	28.78	29.13	43.50	-14.37
3	242.525	46.73	12.08	2.82	29.63	32.00	46.00	-14.00
4	300.367	50.40	13.06	2.94	29.44	36.96	46.00	-9.04
5	416.179	48.95	15.39	3.12	30.11	37.35	46.00	-8.65
6	801.786	38.58	20.06	4.34	30.40	32.58	46.00	-13.42

Vertical:

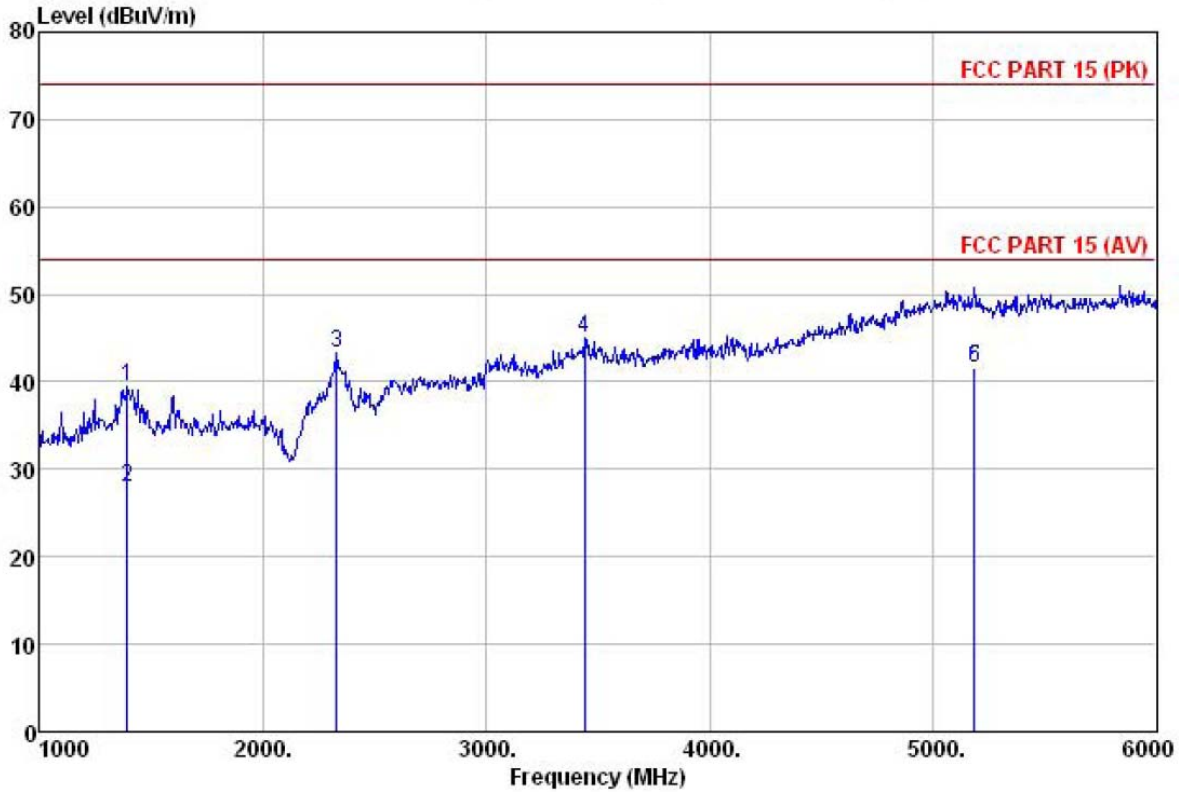


Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
 Job NO. : 111RF
 EUT : MOBILE
 Test mode : PC Mode
 Power Rating : AC 120V /60Hz
 Environment : Temp:24°C Humi:65% Atmos:101Kpa
 Test Engineer: Jacky

	ReadAntenna	Cable	Preamp		Limit	Over	
Freq	Level	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	66.034	49.36	10.30	1.41	29.78	31.29	40.00 -8.71
2	139.361	46.41	8.19	2.39	29.39	27.60	43.50 -15.90
3	289.002	46.79	12.84	2.91	29.46	33.08	46.00 -12.92
4	417.641	49.42	15.43	3.12	30.13	37.84	46.00 -8.16
5	487.315	46.50	16.26	3.51	30.52	35.75	46.00 -10.25
6	801.786	44.20	20.06	4.34	30.40	38.20	46.00 -7.80

Above 1GHz

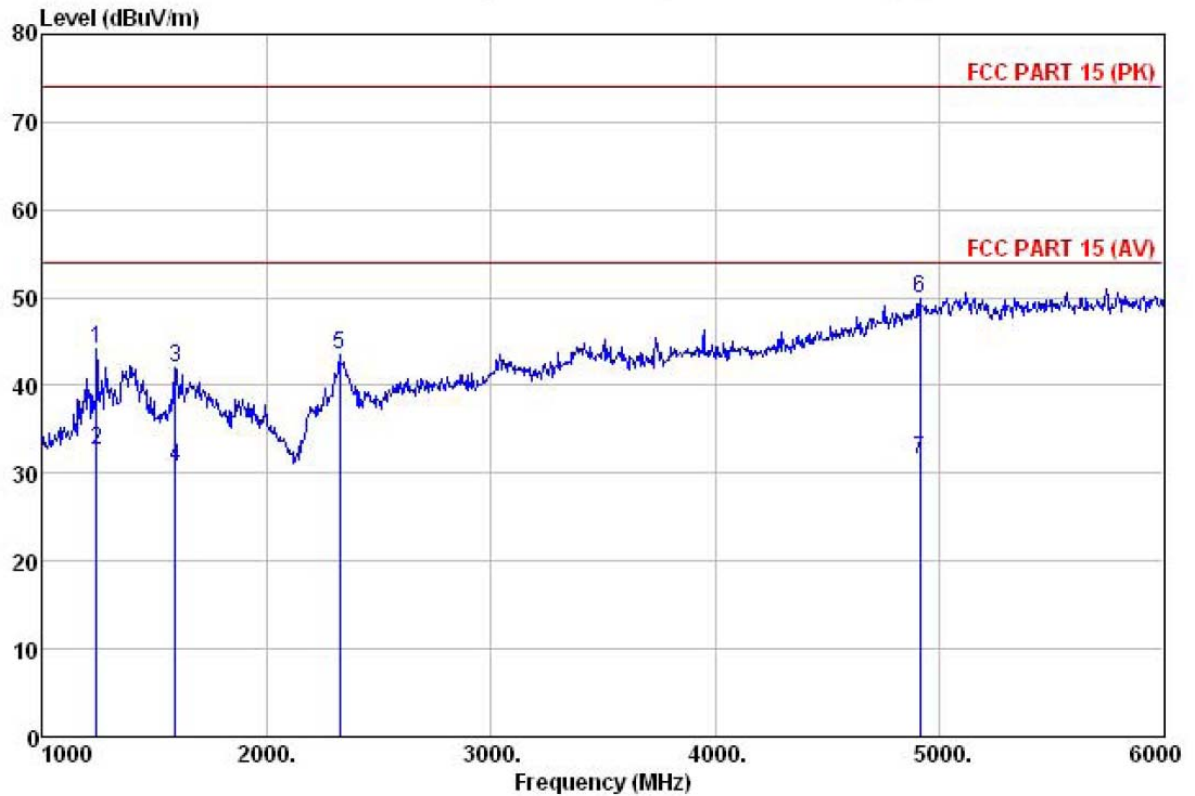
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 Job NO. : 111RF
 EUT : MOBILE
 Test mode : PC Mode ABOVE 1G
 Power Rating : AC 120V /60Hz
 Environment : Temp:24°C Humi:65% Atmos:101Kpa
 Test Engineer: Jacky

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1390.000	51.18	25.50	3.70	40.94	39.44	74.00 -34.56 Peak
2	1390.000	39.64	25.50	3.70	40.94	27.90	54.00 -26.10 Average
3	2330.000	45.96	27.89	5.35	35.98	43.22	74.00 -30.78 Peak
4	3440.000	49.25	28.60	6.36	39.21	45.00	74.00 -29.00 Peak
5	5185.000	40.64	31.96	9.13	40.08	41.65	74.00 -32.35 Peak
6	5185.000	40.64	31.96	9.13	40.08	41.65	54.00 -12.35 Average

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 Job NO. : 111RF
 EUT : MOBILE
 Test mode : PC Mode BA0VE 1G
 Power Rating : AC 120V /60Hz
 Environment : Temp:24°C Humi:65% Atmos:101Kpa
 Test Engineer: Jacky

	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1240.000	56.10	25.49	3.54	40.90	44.23	74.00	-29.77 Peak
2	1240.000	44.54	25.49	3.54	40.90	32.67	54.00	-21.33 Average
3	1590.000	53.93	24.98	4.08	40.97	42.02	74.00	-31.98 Peak
4	1590.000	42.73	24.98	4.08	40.97	30.82	54.00	-23.18 Average
5	2325.000	46.22	27.89	5.35	35.98	43.48	74.00	-30.52 Peak
6	4915.000	49.36	31.59	9.02	40.10	49.87	74.00	-24.13 Peak
7	4915.000	31.16	31.59	9.02	40.10	31.67	54.00	-22.33 Average