FCC REPORT

Applicant:	Etoway Technology Co., Ltd.
Address of Applicant:	Room 1005, Building A, Stars Plaza, #38 Hongli Road, Futian, Shenzhen China

Equipment Under Test (EUT)

Product Name:	Mobile phone
Model No.:	FORCE V4
Trade mark:	Etoway
FCC ID:	2AAJD-FORCEV4
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B
Date of sample receipt:	22 May, 2015
Date of Test:	23 May, to 15 Jun., 2015
Date of report issued:	15 Jun., 2015
Test Result:	Pass *

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*15 Jun., 2015*	*Original*

Prepared by: Luna Gao ***Date:*** *15 Jun., 2015*

Report Clerk

Reviewed by: Wimer Zhang ***Date:*** *15 Jun., 2015*

Project Engineer

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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:	Etoway Technology Co., Ltd.
Address of Applicant:	Room 1005, Building A, Stars Plaza, #38 Hongli Road, Futian, Shenzhen China
Manufacturer:	ShenZhen Etoway Electronics Co., Ltd.
Address of Manufacturer:	Room 1005, Building A, Stars Plaza, #38 Hongli Road, Futian, Shenzhen China

5.2 General Description of E.U.T.

Product Name:	Mobile phone
Model No.:	FORCE V4
Power supply:	Rechargeable Li-ion Battery DC3.7V-1000mAh
AC adapter :	Input:100-240V AC,50/60Hz Output:5V DC MAX 1A

5.3 Test Mode

Operating mode	Detail description
PC mode	Keep the EUT in Downloading mode(Worst case)
Charging+Recording mode	Keep the EUT in Charging+Recording mode
Charging+Playing mode	Keep the EUT in Charging+Playing mode
Charging+GPS mode	Keep the EUT in Charging+GPS receiver mode
Charging+FM mode	Keep the EUT in Charging+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
MERCURY	Wireless router	MW150R	12922104015	FCC ID

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: +86-755-23118282
Fax: +86-755-23116366

5.7 Test Instruments list

Radiated Emission:

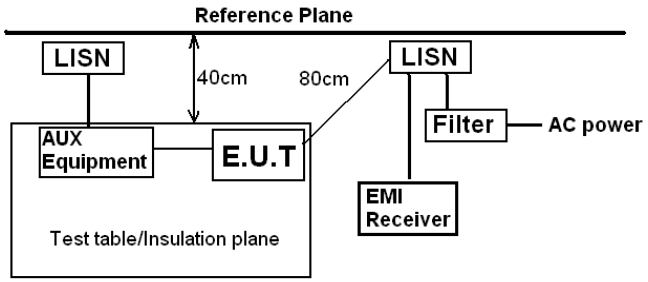
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	03-28-2015	03-28-2016
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	03-28-2015	03-28-2016
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
5	Amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	04-01-2015	03-31-2016
6	Amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	04-01-2015	03-31-2016
7	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2015	03-31-2016
8	Horn Antenna	ETS-LINDGREN	3160	GTS217	04-01-2015	03-31-2016
9	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A
10	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A
11	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	03-28-2015	03-28-2016
12	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	03-28-2015	03-28-2016
13	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2015	03-31-2016
14	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	03-28-2015	03-28-2016
15	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	04-08-2015	04-08-2016

Conducted Emission:

Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	11-10-2012	11-09-2015
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	03-28-2015	03-28-2016
3	LISN	CHASE	MN2050D	CCIS0074	03-28-2015	03-28-2016
4	Coaxial Cable	CCIS	N/A	CCIS0086	04-01-2015	03-31-2016

6 Test results and Measurement Data

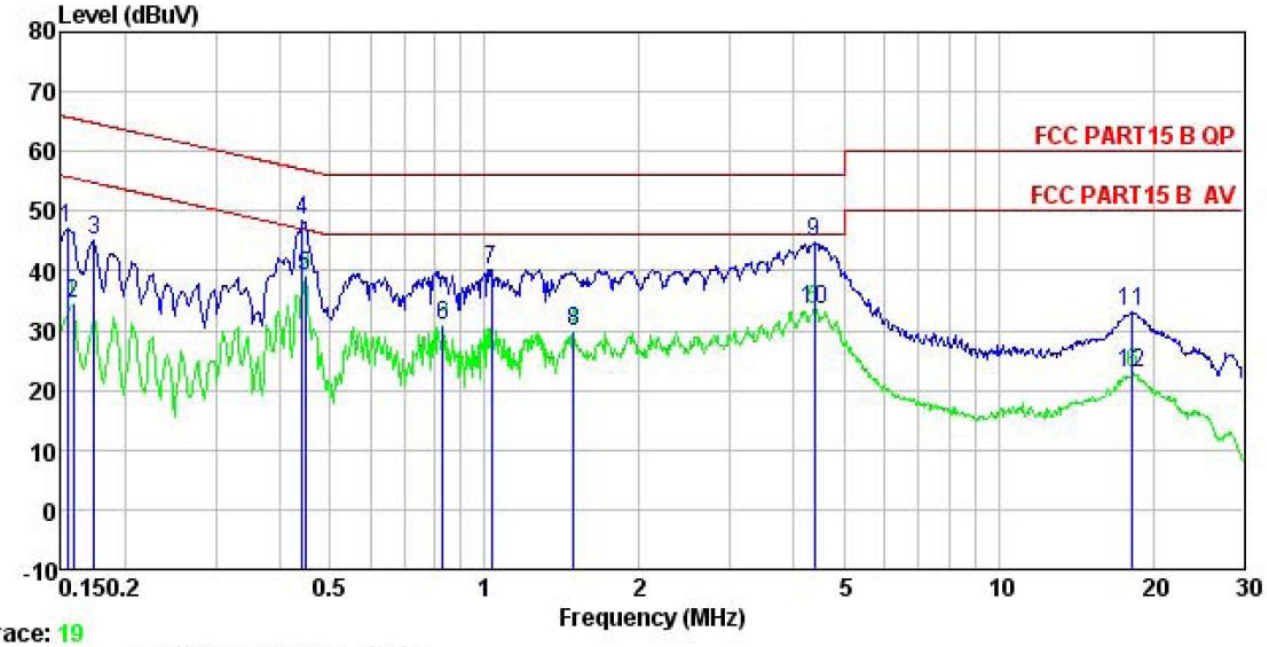
6.1 Conducted Emission

<table>
<tr><td>Test Requirement:</td><td colspan="3">FCC Part 15 B Section 15.107</td></tr>
<tr><td>Test Method:</td><td colspan="3">ANSI C63.4:2009</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="3">150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="3">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="3">RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBµV)</td></tr>
<tr><td></td><td>Quasi-peak</td><td>Average</td></tr>
<tr><td></td><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td></td><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td></td><td>0.5-30</td><td>60</td><td>50</td></tr>
<tr><td></td><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr>
<tr><td>Test setup:</td><td colspan="3"> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test procedure</td><td colspan="3">1. 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.
2. 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).
3. 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: 2009 on conducted measurement.</td></tr>
<tr><td>Test environment:</td><td colspan="3">Temp.: 23 °C Humid.: 56% Press.: 1 01kPa</td></tr>
<tr><td>Measurement Record:</td><td colspan="3">Uncertainty: 3.28dB</td></tr>
<tr><td>Test Instruments:</td><td colspan="3">Refer to section 5.7 for details</td></tr>
<tr><td>Test mode:</td><td colspan="3">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="3">Pass</td></tr>
</table>

Measurement data:

Line:

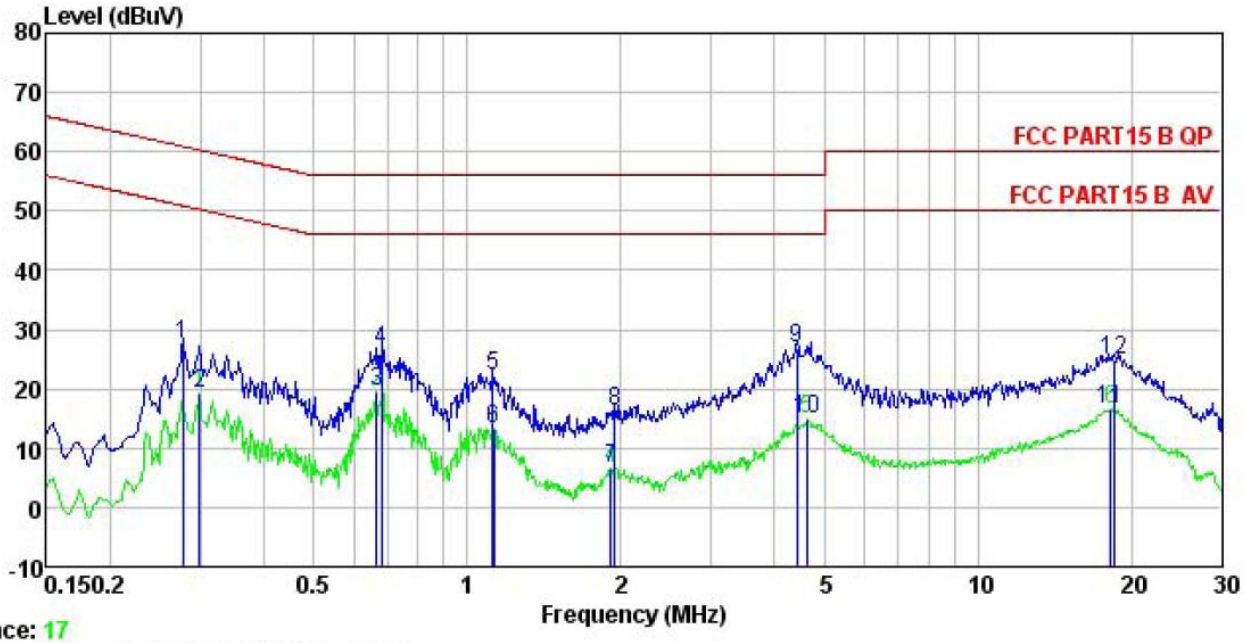


Trace: 19

Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN LINE
EUT : Mobile phone
Model : FORCE V.4
Test Mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	36.21	0.27	10.78	47.26	65.78	-18.52	QP
2	0.158	23.36	0.27	10.78	34.41	55.56	-21.15	Average
3	0.174	33.99	0.27	10.77	45.03	64.77	-19.74	QP
4	0.442	37.31	0.28	10.74	48.33	57.02	-8.69	QP
5	0.447	28.27	0.28	10.74	39.29	46.93	-7.64	Average
6	0.830	19.96	0.23	10.82	31.01	46.00	-14.99	Average
7	1.032	29.19	0.25	10.87	40.31	56.00	-15.69	QP
8	1.487	18.54	0.26	10.92	29.72	46.00	-16.28	Average
9	4.384	33.69	0.29	10.87	44.85	56.00	-11.15	QP
10	4.384	22.48	0.29	10.87	33.64	46.00	-12.36	Average
11	18.232	22.04	0.33	10.91	33.28	60.00	-26.72	QP
12	18.232	11.65	0.33	10.91	22.89	50.00	-27.11	Average

Neutral:



Trace: 17

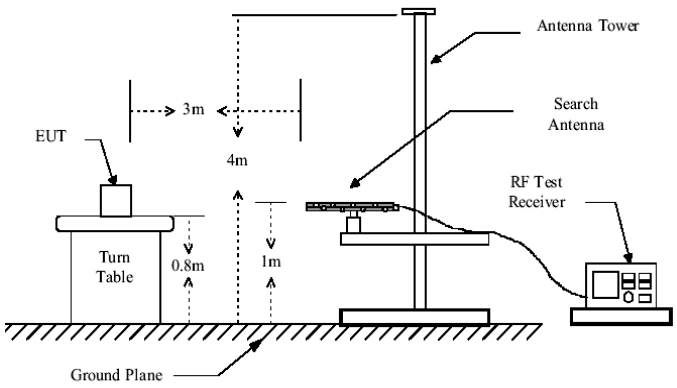
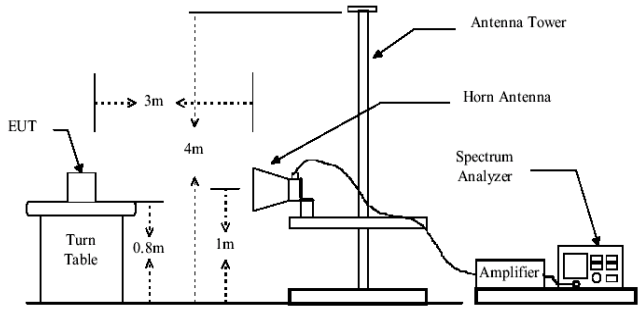
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN NEUTRAL
EUT : Mobile phone
Model : FORCE V.4
Test Mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: YT
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.277	16.59	0.26	10.74	27.59	60.90	-33.31	QP
2	0.299	8.10	0.26	10.74	19.10	50.28	-31.18	Average
3	0.665	8.55	0.20	10.77	19.52	46.00	-26.48	Average
4	0.679	15.65	0.19	10.77	26.61	56.00	-29.39	QP
5	1.123	10.98	0.23	10.88	22.09	56.00	-33.91	QP
6	1.129	2.28	0.23	10.89	13.40	46.00	-32.60	Average
7	1.908	-4.57	0.29	10.95	6.67	46.00	-39.33	Average
8	1.949	5.08	0.29	10.96	16.33	56.00	-39.67	QP
9	4.430	15.65	0.28	10.87	26.80	56.00	-29.20	QP
10	4.622	3.88	0.28	10.86	15.02	46.00	-30.98	Average
11	18.232	5.55	0.26	10.91	16.72	50.00	-33.28	Average
12	18.524	13.71	0.26	10.91	24.88	60.00	-35.12	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

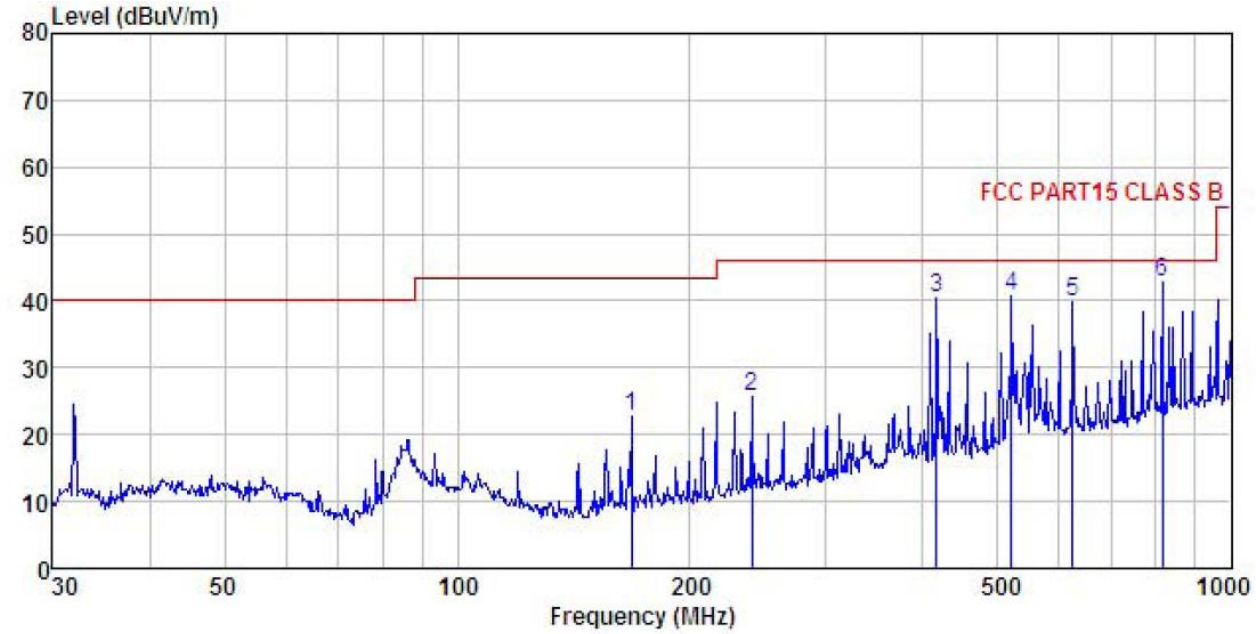
Test Requirement:	FCC Part 15 B Section 15.109				
Test Method:	ANSI C63.4:2009				
Test Frequency Range:	30MHz to 6000MHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average 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:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. 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:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Below 1GHz

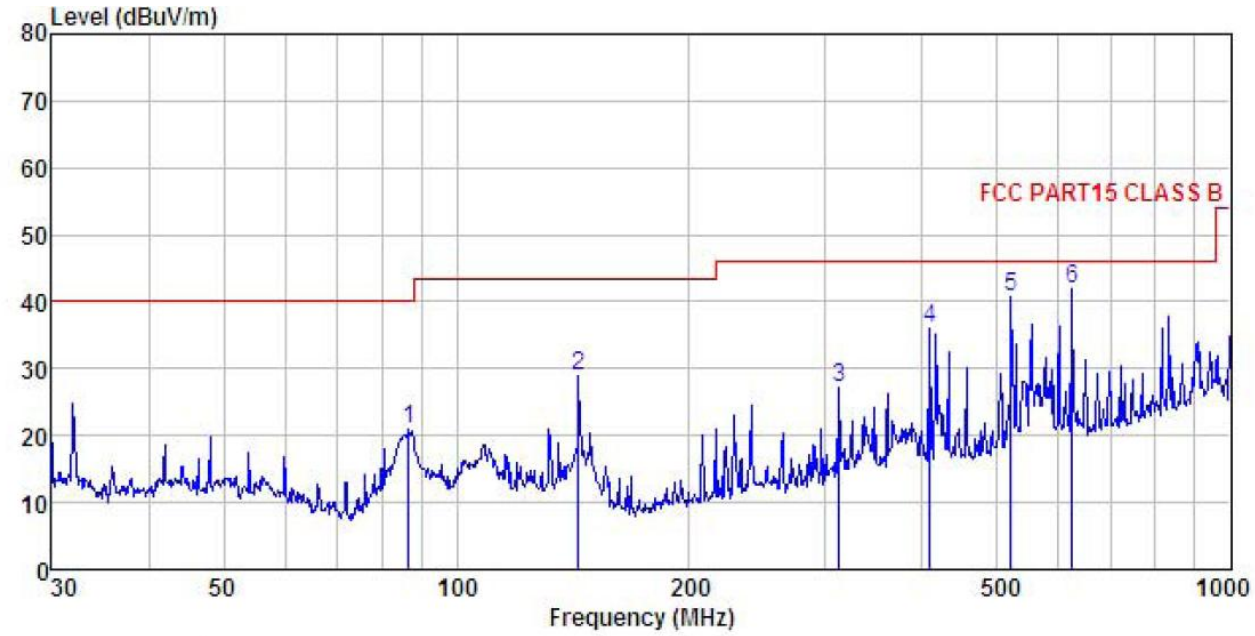
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
EUT : Mobile phone
Model : FORCE V4
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: YT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBm	dB/m	dB	dB	dBm/m	dBm/m	dB	
1	167.824	41.46	8.90	1.34	29.07	22.63	43.50	-20.87	QP
2	239.987	40.52	12.09	1.58	28.59	25.60	46.00	-20.40	QP
3	416.179	51.71	15.39	2.16	28.81	40.45	46.00	-5.55	QP
4	520.888	50.17	17.00	2.46	29.01	40.62	46.00	-5.38	QP
5	625.078	47.48	18.54	2.71	28.86	39.87	46.00	-6.13	QP
6	815.968	47.51	20.24	3.20	28.13	42.82	46.00	-3.18	QP

Vertical:

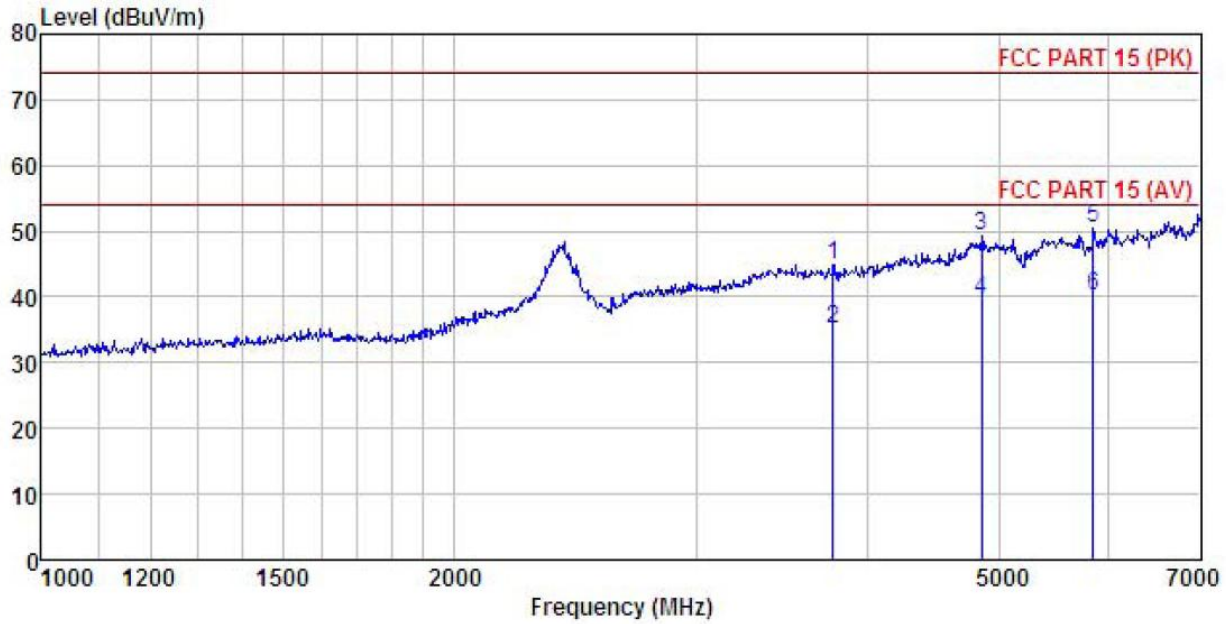


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
EUT : Mobile phone
Model : FORCE V4
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBm	dB/m	dB	dB	dBm/m	dBm/m	dB	
1	86.807	38.78	10.89	0.89	29.59	20.97	40.00	-19.03	QP
2	143.830	48.68	8.22	1.28	29.25	28.93	43.50	-14.57	QP
3	312.179	40.60	13.22	1.81	28.48	27.15	46.00	-18.85	QP
4	408.946	47.26	15.27	2.14	28.80	35.87	46.00	-10.13	QP
5	520.888	50.27	17.00	2.46	29.01	40.72	46.00	-5.28	QP
6	625.078	49.65	18.54	2.71	28.86	42.04	46.00	-3.96	QP

Above 1GHz

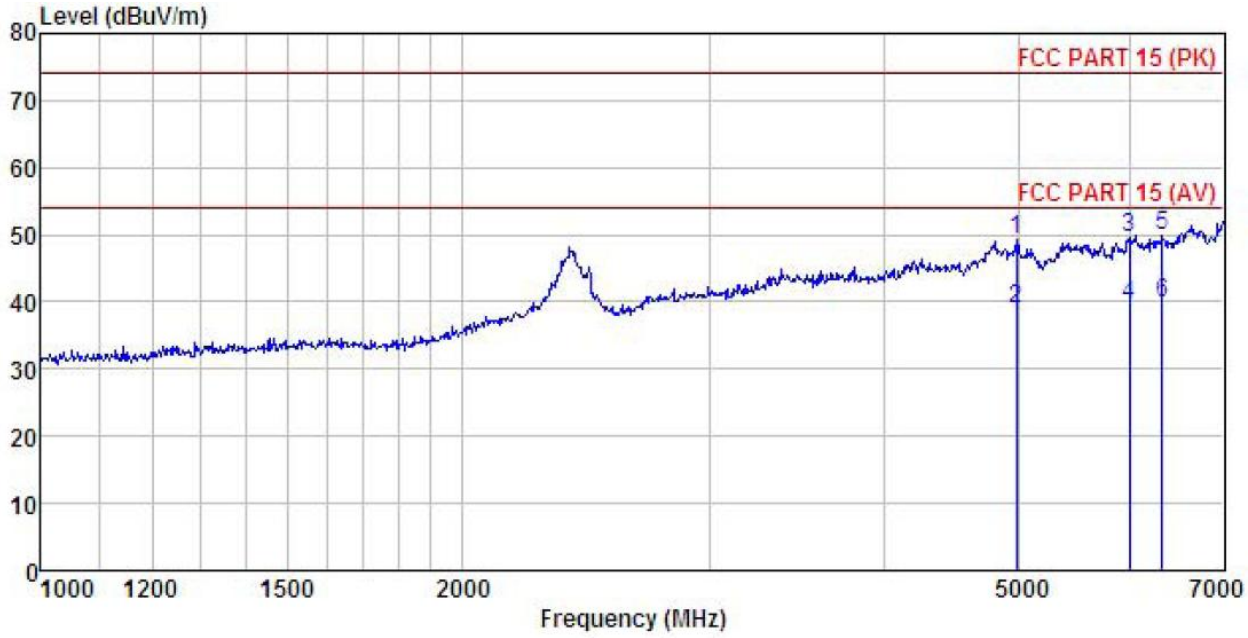
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
EUT : Mobile phone
Model : FORCE V4
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: YT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3777.478	46.70	29.47	9.26	40.54	44.89	74.00	-29.11	Peak
2	3777.478	36.89	29.47	9.26	40.54	35.08	54.00	-18.92	Average
3	4845.901	47.24	31.56	10.61	40.19	49.22	74.00	-24.78	Peak
4	4845.901	37.58	31.56	10.61	40.19	39.56	54.00	-14.44	Average
5	5852.603	46.83	32.71	11.75	40.69	50.60	74.00	-23.40	Peak
6	5852.603	36.47	32.71	11.75	40.69	40.24	54.00	-13.76	Average

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
EUT : Mobile phone
Model : FORCE V4
Test mode : PC Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: YT
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4979.731	46.90	31.74	10.75	40.00	49.39	74.00	-24.61	Peak
2	4979.731	36.47	31.74	10.75	40.00	38.96	54.00	-15.04	Average
3	5990.874	45.88	32.76	11.89	40.88	49.65	74.00	-24.35	Peak
4	5990.874	35.74	32.76	11.89	40.88	39.51	54.00	-14.49	Average
5	6326.346	45.50	33.55	11.94	41.07	49.92	74.00	-24.08	Peak
6	6326.346	35.48	33.55	11.94	41.07	39.90	54.00	-14.10	Average