FCC REPORT

Applicant: GRUN MOBILE LLC

Address of Applicant: 2315 NW 107TH AVE SUITE 1M01 Mailbox 33 MIAMI FL 33172

Equipment Under Test (EUT)

Product Name: Mobile phone

Model No.: U422

Trade mark: Grun mobile

FCC ID: 2ACFG-U422

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 13 May 2015

Date of Test: 14 May to 29 May 2015

Date of report issued: 01 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	*01 Jun., 2015*	*Original*

Prepared by: Sera Xiang ***Date:*** *01 Jun., 2015*

Report Clerk

Reviewed by: Gavin Liu ***Date:*** *01 Jun., 2015*

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part 15.107	Pass
Radiated Emission	Part 15.109	Pass

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

5 General Information

5.1 Client Information

Applicant:	GRUN MOBILE LLC
Address of Applicant:	2315 NW 107TH AVE SUITE 1M01 Mailbox 33 MIAMI FL 33172
Manufacturer:	GRUN MOBILE LLC
Address of Manufacturer:	2315 NW 107TH AVE SUITE 1M01 Mailbox 33 MIAMI FL 33172
Factory:	dongguan tianruixiang communication equipment limited
Address of Factory:	1, 2, 3F, B building, NO.1, keyuan 9 road, tangxia district dongguan China

5.2 General Description of E.U.T.

Product Name:	Mobile phone
Model No.:	U422
Power supply:	Rechargeable Li-ion Battery DC3.7V-1400mAh
AC adapter :	Input:100-240V AC,50/60Hz 0.15A Output:5V DC MAX 500mA

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
FM mode	Keep the EUT in FM receiver mode
GPS mode	Keep the EUT in GPS 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: +86-755-23118282
Fax: +86-755-23116366

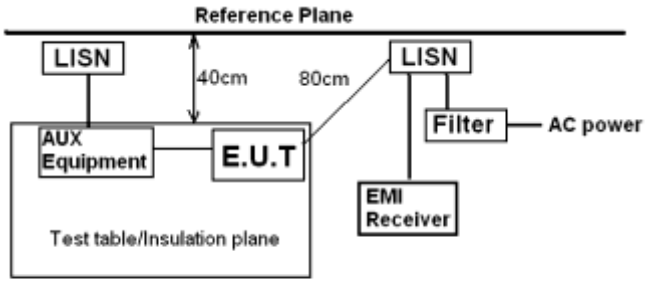
5.7 Test Instruments list

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

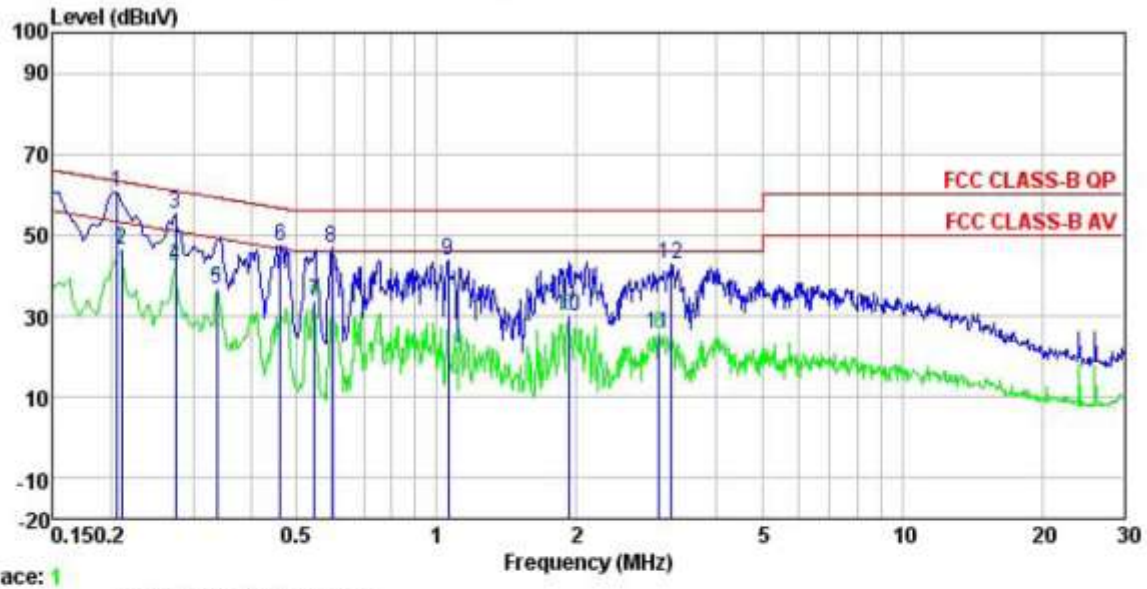
6.1 Conducted Emission

<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 C63.4:2003</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: 2003 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:

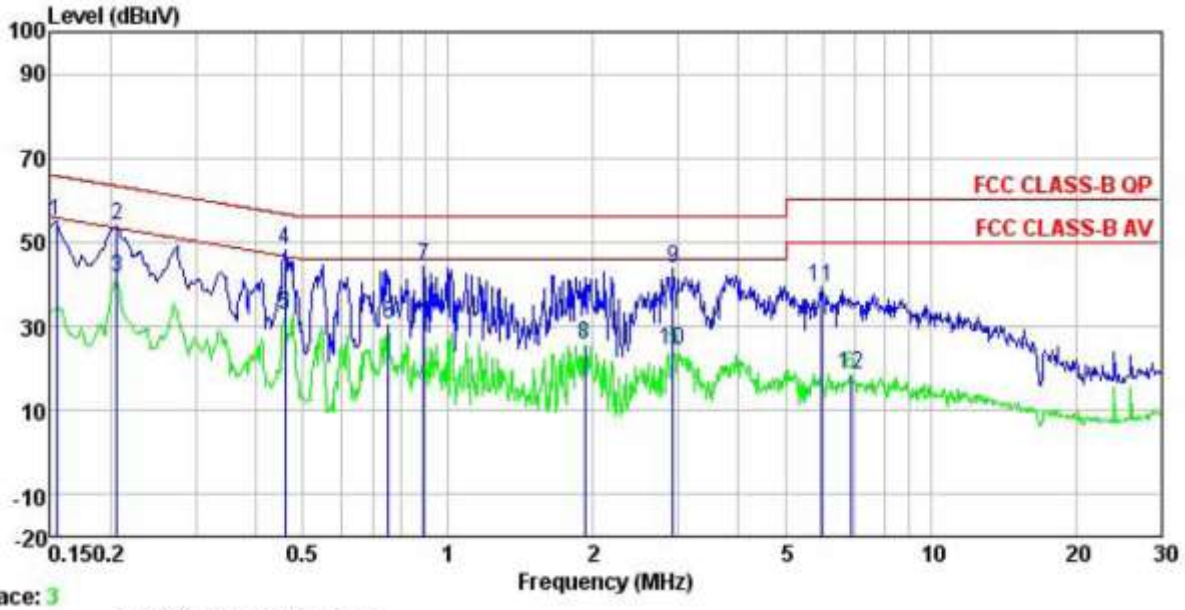


Trace: 1

Site : CCIS Shielding Room
Condition : FCC CLASS-B QP LISN LINE
EUT : Mobile Phone
Model : U422
Test Mode : PC mode
Power Rating : AC120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Colin
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.206	49.67	0.28	10.76	60.71	63.36	-2.65	QP
2	0.211	35.23	0.28	10.76	46.27	53.18	-6.91	Average
3	0.274	44.30	0.26	10.74	55.30	60.98	-5.68	QP
4	0.274	31.22	0.26	10.74	42.22	50.98	-8.76	Average
5	0.337	25.78	0.27	10.73	36.78	49.27	-12.49	Average
6	0.461	36.13	0.29	10.75	47.17	56.67	-9.50	QP
7	0.546	22.49	0.27	10.76	33.52	46.00	-12.48	Average
8	0.595	35.74	0.25	10.77	46.76	56.00	-9.24	QP
9	1.060	32.81	0.25	10.88	43.94	56.00	-12.06	QP
10	1.918	18.69	0.26	10.95	29.90	46.00	-16.10	Average
11	3.009	14.51	0.27	10.92	25.70	46.00	-20.30	Average
12	3.190	31.51	0.27	10.91	42.69	56.00	-13.31	QP

Neutral:



Trace: 3

Site : CCIS Shielding Room
Condition : FCC CLASS-B QP LISN NEUTRAL
EUT : Mobile Phone
Model : U422
Test Mode : PC mode
Power Rating : AC120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Colin
Remark :

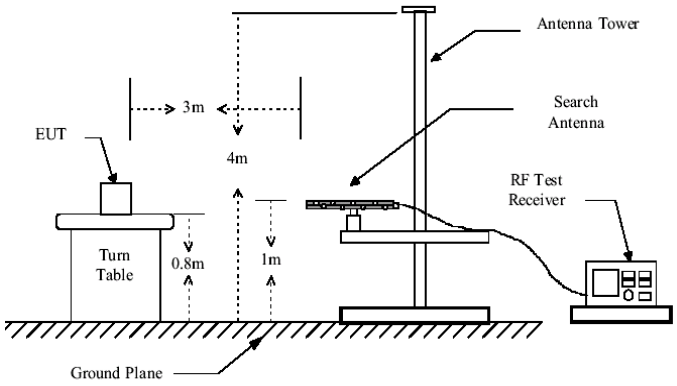
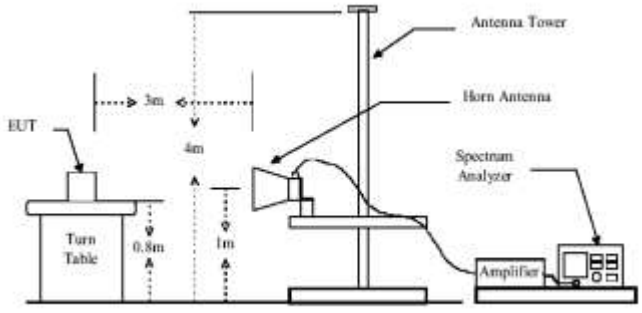
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	43.93	0.25	10.78	54.96	65.78	-10.82	QP
2	0.206	42.80	0.25	10.76	53.81	63.36	-9.55	QP
3	0.206	30.60	0.25	10.76	41.61	53.36	-11.75	Average
4	0.459	37.15	0.28	10.75	48.18	56.71	-8.53	QP
5	0.459	21.71	0.28	10.75	32.74	46.71	-13.97	Average
6	0.751	19.59	0.19	10.79	30.57	46.00	-15.43	Average
7	0.890	32.97	0.21	10.84	44.02	56.00	-11.98	QP
8	1.918	14.50	0.29	10.95	25.74	46.00	-20.26	Average
9	2.931	32.35	0.29	10.92	43.56	56.00	-12.44	QP
10	2.931	12.91	0.29	10.92	24.12	46.00	-21.88	Average
11	5.929	28.29	0.27	10.82	39.38	60.00	-20.62	QP
12	6.841	7.40	0.26	10.80	18.46	50.00	-31.54	Average

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

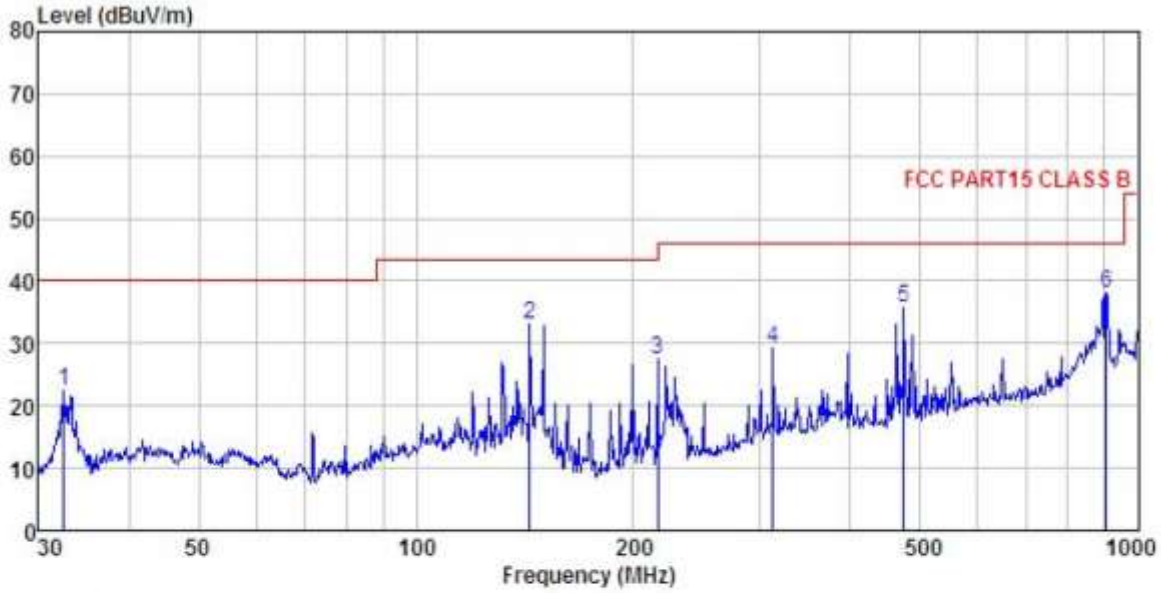
Test Requirement:	FCC Part 15 B Section 15.109				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 6000MHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 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

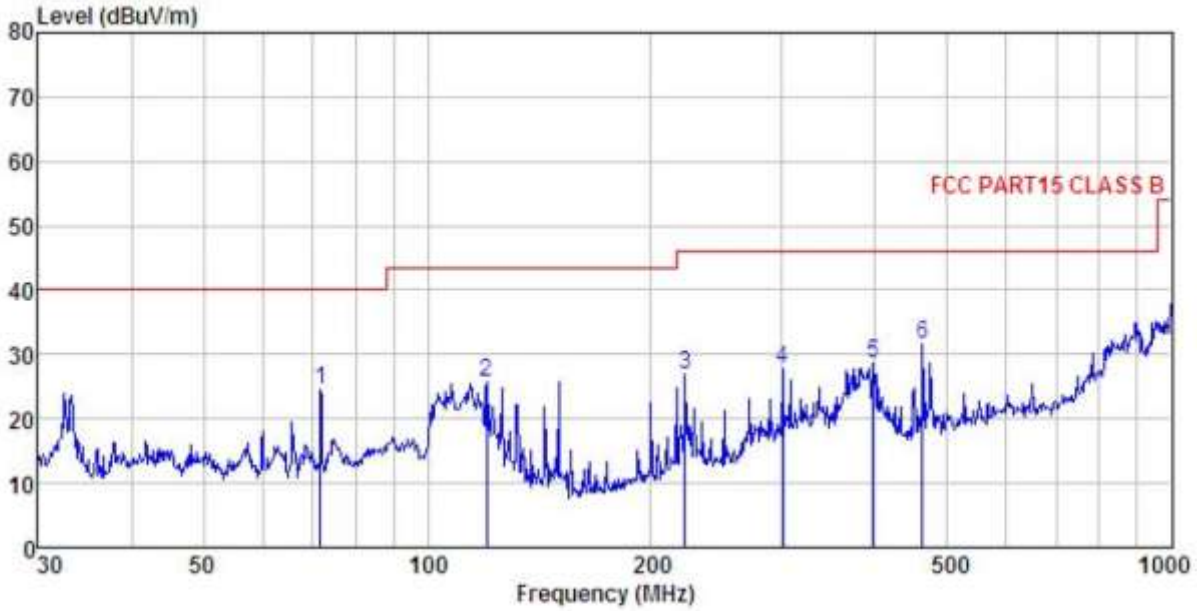
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
EUT : mobile phone
Model : U422
Test mode : PC
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Colin
REMARK :

	Freq	ReadAntenna 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	32.520	39.62	12.31	0.46	29.96	22.43	40.00	-17.57	QP
2	143.830	52.96	8.22	1.28	29.25	33.21	43.50	-10.29	QP
3	216.024	43.70	11.07	1.46	28.73	27.50	46.00	-18.50	QP
4	312.179	42.68	13.22	1.81	28.48	29.23	46.00	-16.77	QP
5	473.835	46.26	15.95	2.33	28.91	35.63	46.00	-10.37	QP
6	903.309	41.43	21.12	3.36	27.87	38.04	46.00	-7.96	QP

Vertical:

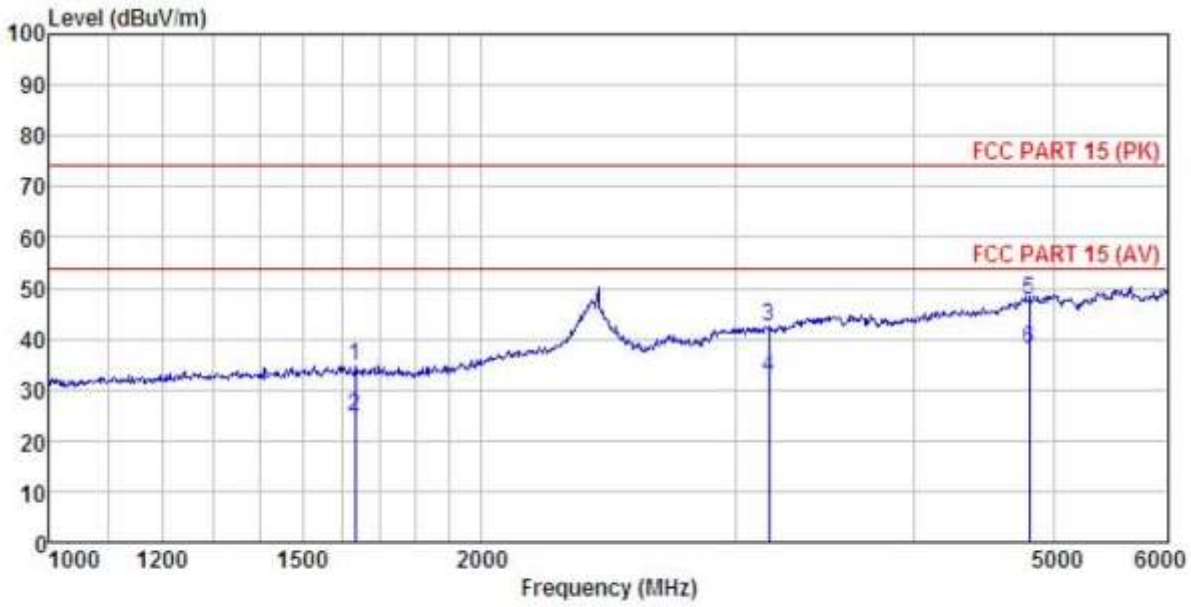


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
EUT : mobile phone
Model : U422
Test mode : PC
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Colin
REMARK :

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	71.832	45.02	8.32	0.80	29.71	24.43	40.00	-15.57	QP
2	120.277	43.47	10.38	1.12	29.39	25.58	43.50	-17.92	QP
3	222.170	42.78	11.25	1.49	28.69	26.83	46.00	-19.17	QP
4	300.367	41.43	13.06	1.77	28.45	27.81	46.00	-18.19	QP
5	397.633	40.24	15.01	2.11	28.77	28.59	46.00	-17.41	QP
6	462.346	42.58	15.65	2.29	28.89	31.63	46.00	-14.37	QP

Above 1GHz

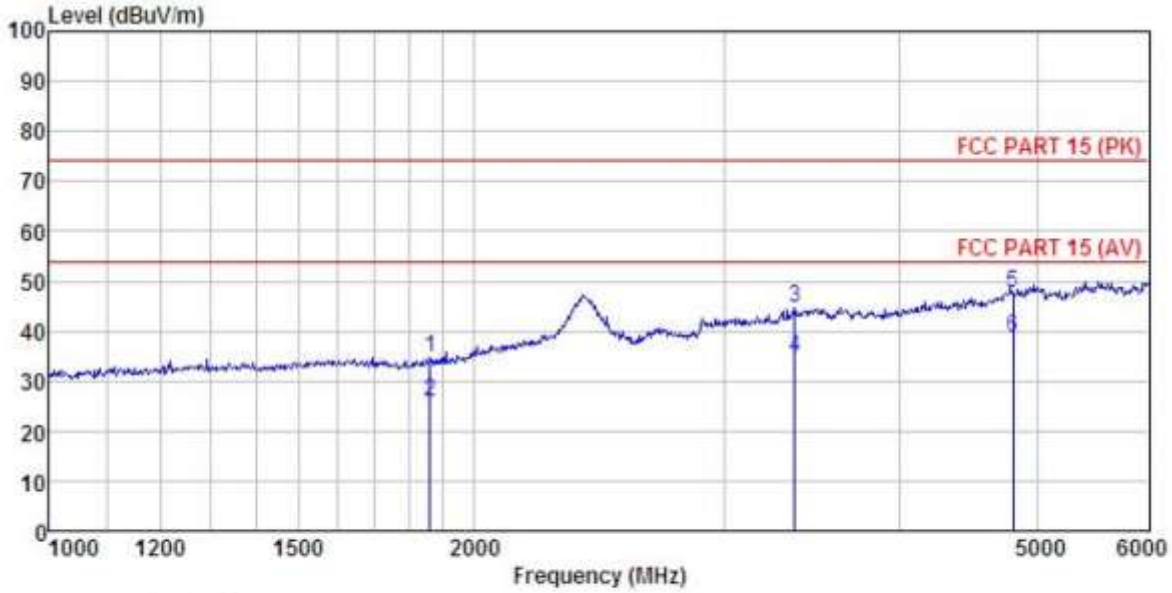
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
EUT : mobile phone
Model : U422
Test mode : PC
Power Rating : AC120V/60Hz
Environment : Temp:25.5'C Huni:55%
Test Engineer: Colin
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	1632.919	45.80	24.90	5.14	40.97	34.87	74.00	-39.13	Peak
2	1632.919	35.66	24.90	5.14	40.97	24.73	54.00	-29.27	Average
3	3170.612	46.29	28.82	8.16	40.69	42.58	74.00	-31.42	Peak
4	3170.612	36.36	28.82	8.16	40.69	32.65	54.00	-21.35	Average
5	4808.328	45.62	31.53	10.57	40.24	47.48	74.00	-26.52	Peak
6	4808.328	36.18	31.53	10.57	40.24	38.04	54.00	-15.96	Average

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
EUT : mobile phone
Model : U422
Test mode : PC
Power Rating : AC120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Colin
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	1860.314	44.58	25.60	5.51	40.93	34.76	74.00	-39.24	Peak
2	1860.314	35.81	25.60	5.51	40.93	25.99	54.00	-28.01	Average
3	3367.760	46.73	28.35	8.54	39.15	44.47	74.00	-29.53	Peak
4	3367.760	37.05	28.35	8.54	39.15	34.79	54.00	-19.21	Average
5	4808.328	45.88	31.53	10.57	40.24	47.74	74.00	-26.26	Peak
6	4808.328	36.79	31.53	10.57	40.24	38.65	54.00	-15.35	Average