Report No: CCIS13030006304

FCC REPORT

Applicant:	Zechin Technology Co., Ltd
Address of Applicant:	Unit804,8th Floor Desay Tech Building Gaoxin Road South, Nanshan District Shenzhen, China

Equipment Under Test (EUT)

Product Name:	GSM mobile phone
Model No.:	GT401
FCC ID:	HA4-GT401
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B: 2011
Date of sample receipt:	13 Mar., 2013
Date of Test:	26 Mar., to 11 Apr.,2013
Date of report issued:	12 Apr.,2013
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	12 Apr.,2013	*Original*

Prepared by: Lisa chen ***Date:*** 12 Apr.,2013

Report Clerk

Reviewed by: Vincent chen ***Date:*** 12 Apr.,2013

Project Engineer

3 Contents

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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:	Zechin Technology Co., Ltd
Address of Applicant:	Unit804,8th Floor Desay Tech Building Gaoxin Road South, Nanshan District Shenzhen, China
Manufacturer:	Zechin Technology Co., Ltd
Address of Manufacturer:	Unit804,8th Floor Desay Tech Building Gaoxin Road South, Nanshan District Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	GSM mobile phone
Model No.:	GT401
AC adapter:	Input:100-240V AC,50/60Hz 0.2A Output:5V DC MAX 500mA
Power supply:	Rechargeable Li-ion Battery DC3.7V/820mAh

5.3 Operating Modes

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
TV mode	Keep the EUT in TV 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

6 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

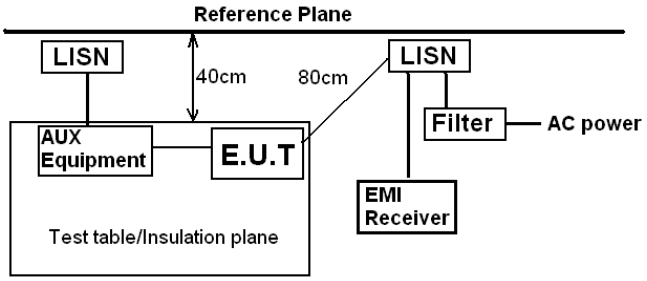
7 Test results and Measurement Data

7.1 Conducted Emissions

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:	

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:



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

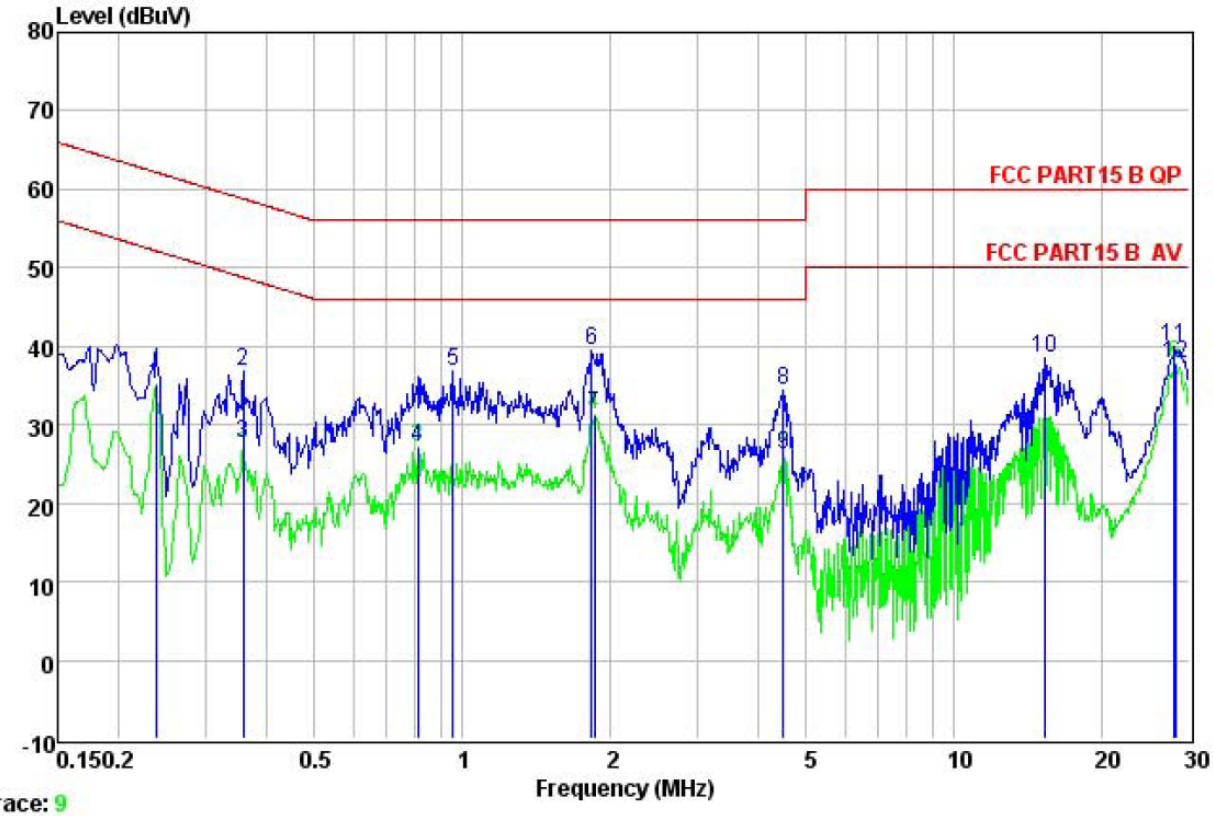
Test procedure

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.

Test environment:	Temp.:	23 °C	Humid.:	56%	Press.: 1 01kPa
Measurement Record:					**Uncertainty: 3.28dB**
Test Instruments:	Refer to section 6 for details				
Test mode:	Pre-scan all test mode in the section 5.3, and found the below mode which it is worse case mode.				
Test results:	Pass				

Measurement data:

Line:

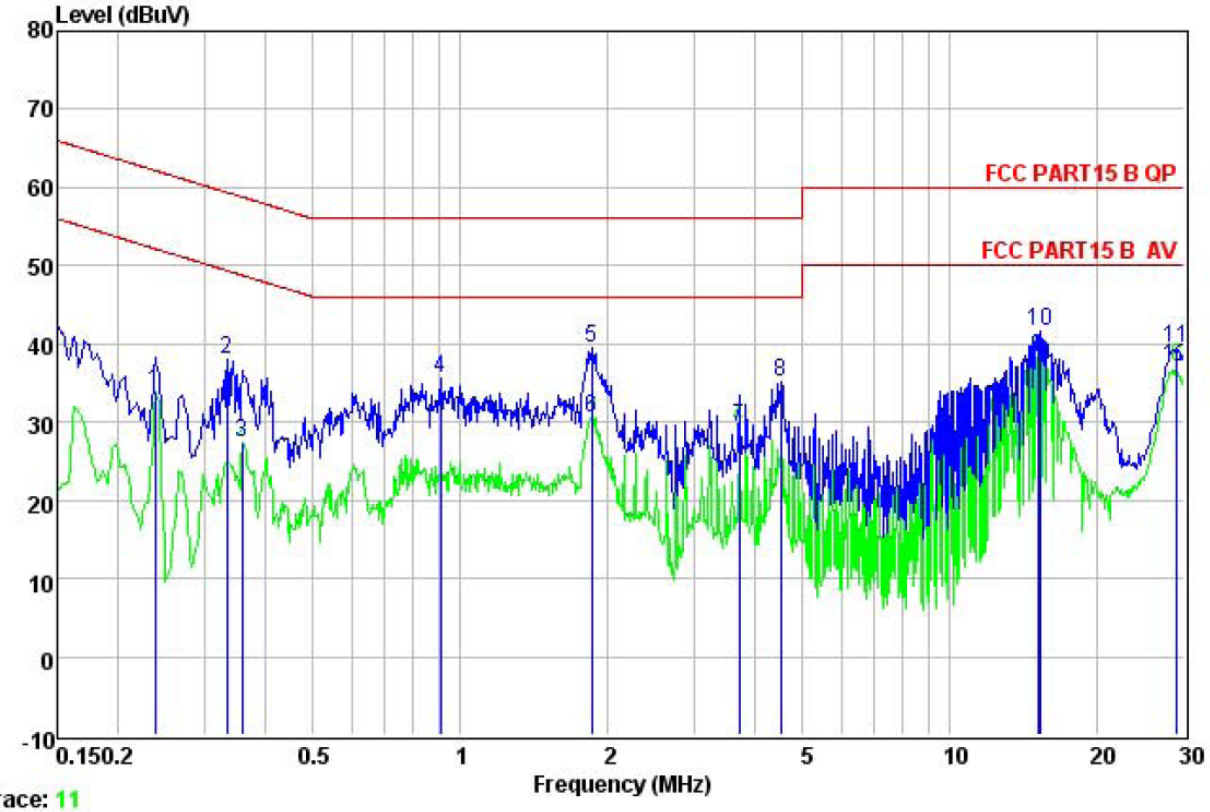


Trace: 9

Site : CCIS Conducted Test Site
Condition : FCC PART15 B QP LISN LINE
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test Mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: Vincent

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.238	24.15	10.23	0.75	35.13	52.17	-17.04	Average
2	0.358	25.70	10.27	0.73	36.70	58.78	-22.08	QP
3	0.358	16.54	10.27	0.73	27.54	48.78	-21.24	Average
4	0.809	16.08	10.19	0.81	27.08	46.00	-18.92	Average
5	0.953	25.63	10.21	0.86	36.70	56.00	-19.30	QP
6	1.829	29.21	10.27	0.06	39.54	56.00	-16.46	QP
7	1.848	21.05	10.27	0.06	31.38	46.00	-14.62	Average
8	4.478	23.35	10.29	0.88	34.52	56.00	-21.48	QP
9	4.478	15.11	10.29	0.88	26.28	46.00	-19.72	Average
10	15.307	27.31	10.24	0.90	38.45	60.00	-21.55	QP
11	28.003	28.21	10.76	0.87	39.84	60.00	-20.16	QP
12	28.152	26.14	10.76	0.87	37.77	50.00	-12.23	Average

Neutral:



Trace: 11

Site : CCIS Conducted Test Site
Condition : FCC PART15 B QP LISN NEUTRAL
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test Mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp: 23 'C Huni:56% Atmos:101KPa
Test Engineer: Vincent

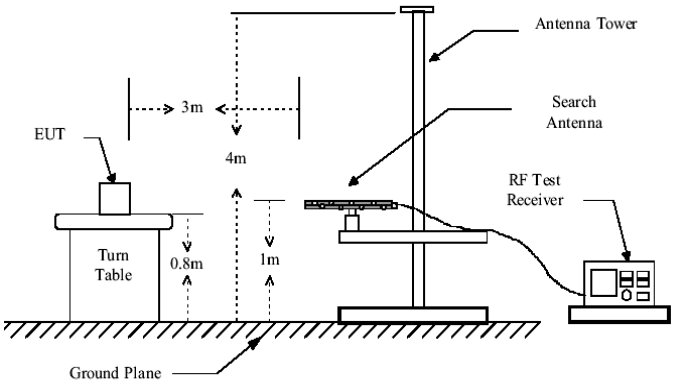
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.238	23.03	10.23	0.75	34.01	52.17	-18.16	Average
2	0.334	27.13	10.25	0.73	38.11	59.35	-21.24	QP
3	0.358	16.50	10.25	0.73	27.48	48.78	-21.30	Average
4	0.909	24.52	10.19	0.85	35.56	56.00	-20.44	QP
5	1.848	29.03	10.26	0.06	39.35	56.00	-16.65	QP
6	1.848	20.25	10.26	0.06	30.57	46.00	-15.43	Average
7	3.700	18.11	10.28	0.89	29.28	46.00	-16.72	Average
8	4.501	23.98	10.28	0.88	35.14	56.00	-20.86	QP
9	15.066	27.12	10.23	0.90	38.25	50.00	-11.75	Average
10	15.307	30.58	10.24	0.90	41.72	60.00	-18.28	QP
11	28.908	27.78	10.80	0.87	39.45	60.00	-20.55	QP
12	29.061	25.38	10.81	0.87	37.06	50.00	-12.94	Average

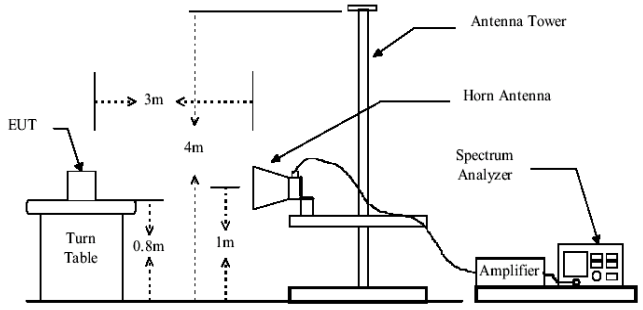
Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

7.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 6000MHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz
 

Above 1GHz
 

</td></tr>
</table>

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.: 24 °C Humid.: 65% Press.: 1 01kPa
Measurement Record:	**Uncertainty: 4.88dB**
Test Instruments:	Refer to section 6 for details
Test mode:	Pre-scan all test mode in the section 5.3, and found the below mode which it is worse case mode.
Test results:	Passed

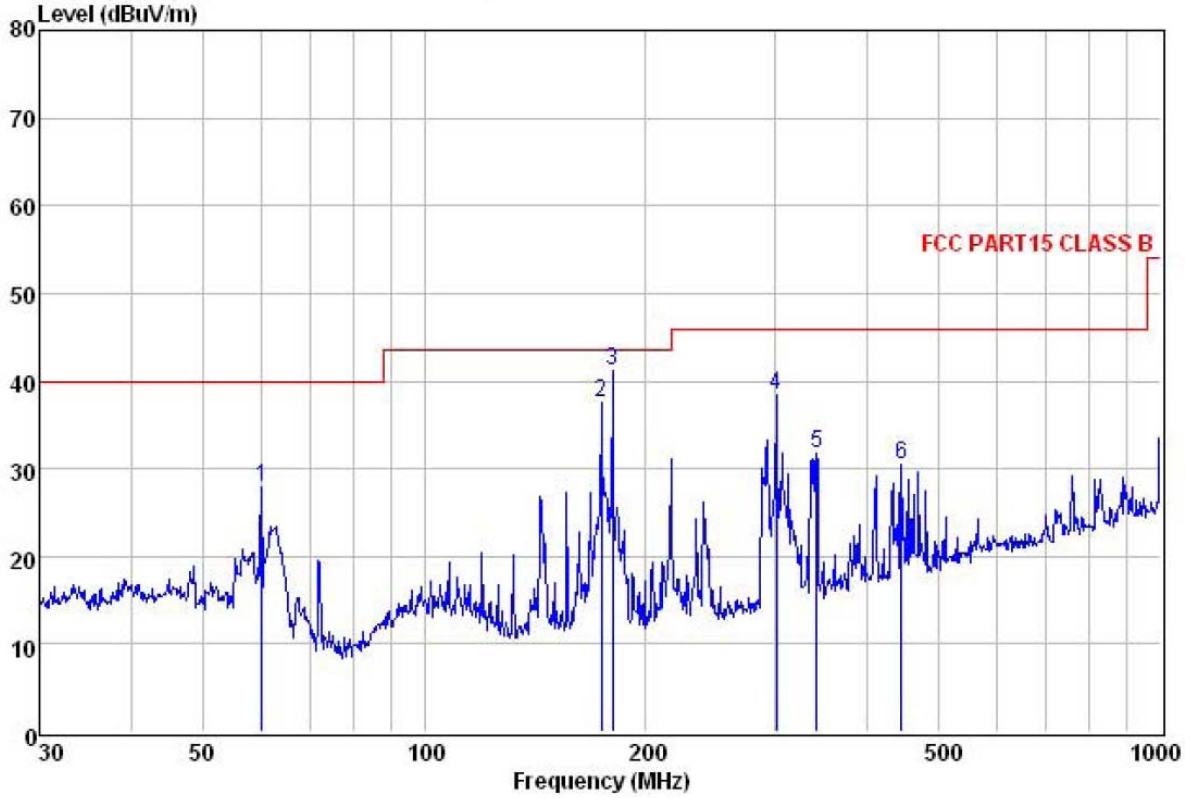
Remark:

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

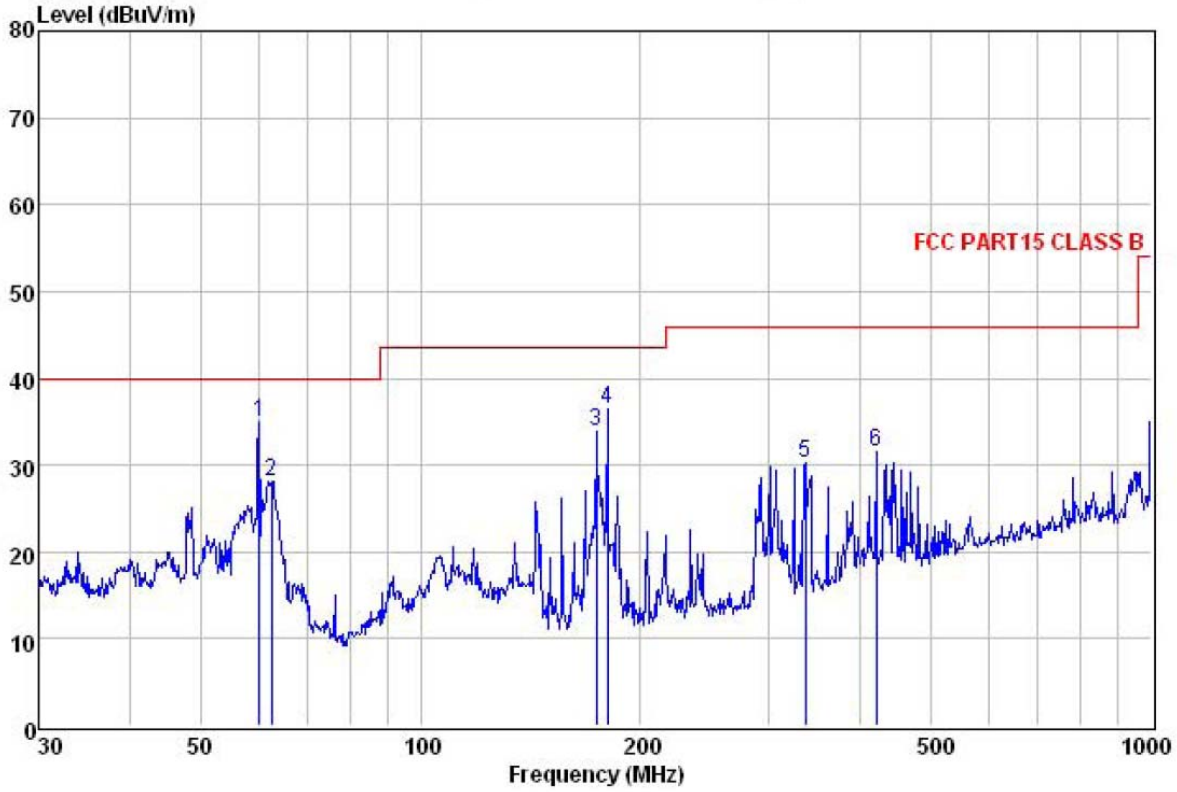
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp:25'C Huni:55% Atmos:101Kpa
Test Engineer: Vincent

	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	60.069	43.08	12.69	1.38	29.21	27.94	40.00	-12.06	QP
2	173.814	53.43	9.23	2.68	27.87	37.47	43.50	-6.03	QP
3	180.017	55.35	9.68	2.73	26.51	41.25	43.50	-2.25	QP
4	300.367	51.86	13.06	2.94	29.44	38.42	46.00	-7.58	QP
5	340.782	44.11	14.15	3.07	29.64	31.69	46.00	-14.31	QP
6	444.851	42.06	15.57	3.19	30.46	30.36	46.00	-15.64	QP

Vertical:

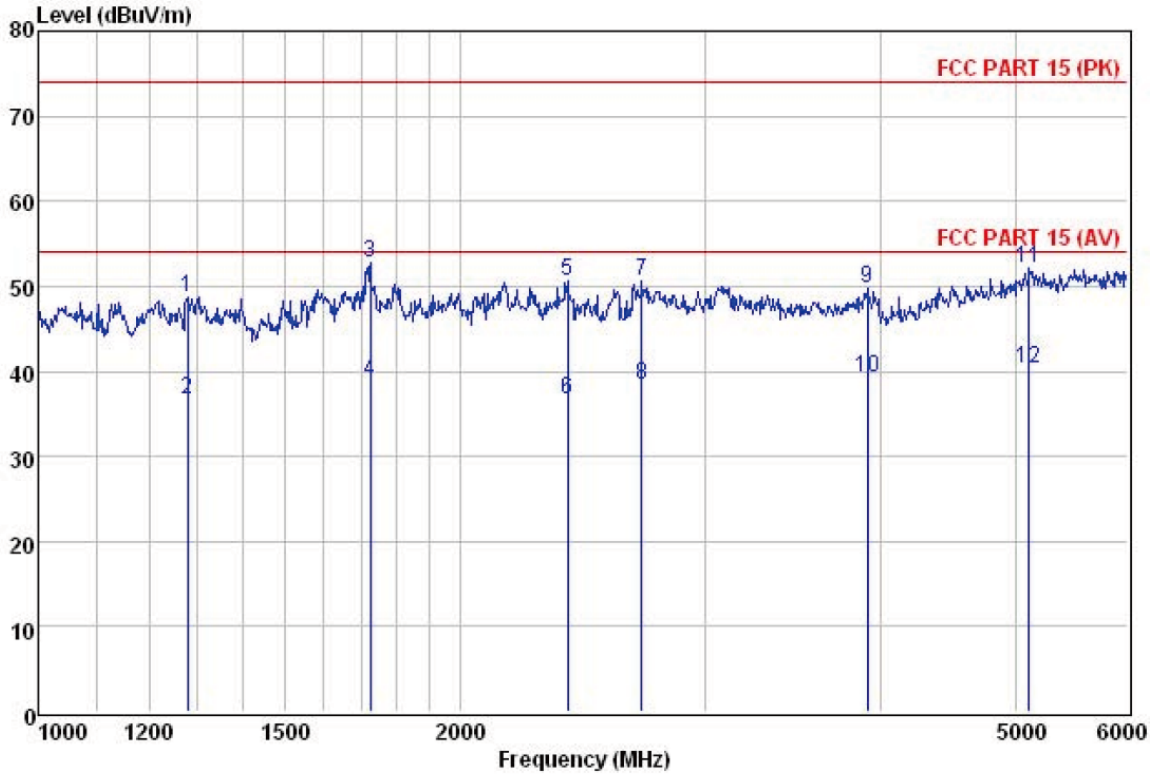


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp:25°C Huni:55% Atmos:101Kpa
Test Engineer: Vincent

	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	60.069	50.20	12.69	1.38	29.21	35.06	40.00	-4.94	QP
2	62.431	44.46	11.77	1.38	29.45	28.16	40.00	-11.84	QP
3	173.814	49.84	9.23	2.68	27.87	33.88	43.50	-9.62	QP
4	180.017	50.47	9.68	2.73	26.51	36.37	43.50	-7.13	QP
5	336.035	42.85	13.99	3.05	29.61	30.28	46.00	-15.72	QP
6	420.580	43.09	15.47	3.13	30.17	31.52	46.00	-14.48	QP

Above 1GHz

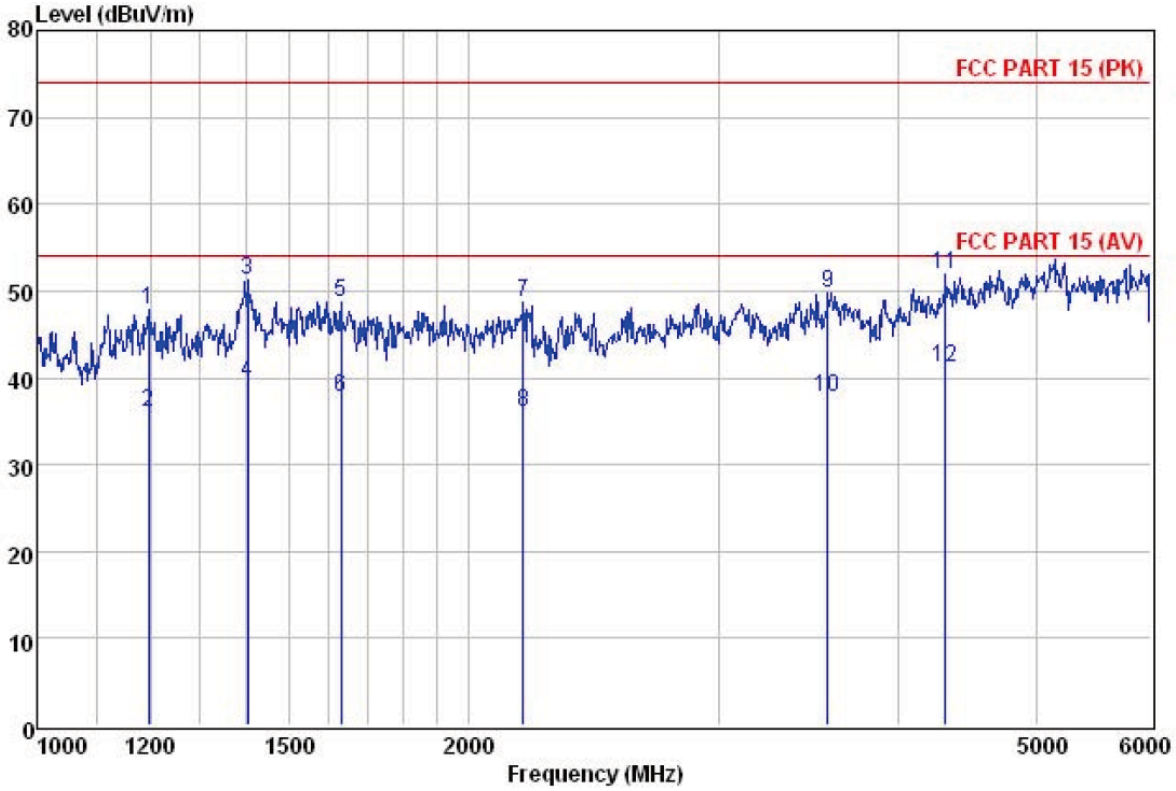
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp:25'C Huni:55% Atmos:101Kpa
Test Engineer: Vincent

	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	1278.223	39.25	25.51	3.57	19.63	48.70	74.00	-25.30	Peak
2	1278.223	27.28	25.51	3.57	19.63	36.73	54.00	-17.27	Average
3	1727.174	51.60	25.01	4.47	28.33	52.75	74.00	-21.25	Peak
4	1727.174	37.63	25.01	4.47	28.33	38.78	54.00	-15.22	Average
5	2388.809	47.39	27.58	5.67	30.10	50.54	74.00	-23.46	Peak
6	2388.809	33.51	27.58	5.67	30.10	36.66	54.00	-17.34	Average
7	2698.334	46.73	28.16	6.06	30.41	50.54	74.00	-23.46	Peak
8	2698.334	34.52	28.16	6.06	30.41	38.33	54.00	-15.67	Average
9	3909.967	39.21	29.77	7.58	26.86	49.70	74.00	-24.30	Peak
10	3909.967	28.74	29.77	7.58	26.86	39.23	54.00	-14.77	Average
11	5106.433	34.67	32.11	9.13	23.88	52.03	74.00	-21.97	Peak
12	5106.433	23.05	32.11	9.13	23.88	40.41	54.00	-13.59	Average

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
Job No. : 063RF
EUT : GSM mobile phone
Model : GT401
Test mode : Downloading mode
Power Rating : AC 120V/60Hz
Environment : Temp:25'C Huni:55% Atmos:101Kpa
Test Engineer: Vincent

	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	1196.231	38.34	24.88	3.50	18.81	47.91	74.00	-26.09	Peak
2	1196.231	26.53	24.88	3.50	18.81	36.10	54.00	-17.90	Average
3	1403.042	43.87	25.40	3.72	21.66	51.33	74.00	-22.67	Peak
4	1403.042	31.91	25.40	3.72	21.66	39.37	54.00	-14.63	Average
5	1630.930	46.36	24.90	4.18	26.73	48.71	74.00	-25.29	Peak
6	1630.930	35.42	24.90	4.18	26.73	37.77	54.00	-16.23	Average
7	2188.024	46.28	27.81	5.22	30.71	48.60	74.00	-25.40	Peak
8	2188.024	33.80	27.81	5.22	30.71	36.12	54.00	-17.88	Average
9	3568.514	42.21	29.11	6.16	27.78	49.70	74.00	-24.30	Peak
10	3568.514	30.17	29.11	6.16	27.78	37.66	54.00	-16.34	Average
11	4314.907	38.51	30.44	8.21	25.21	51.95	74.00	-22.05	Peak
12	4314.907	27.74	30.44	8.21	25.21	41.18	54.00	-12.82	Average