FCC REPORT

Applicant:	DELTA NETWORK PTE. LTD.
Address of Applicant:	2 INTERNATIONAL BUSINESS PARK #01-23 STRATEGY, THE SINGAPORE 609930

Equipment Under Test (EUT)

Product Name:	MOBILE PHONE
Model No.:	COOL
Trade mark :	ALVO
FCC ID:	Z6PALVOCOOL
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B: 2010
Date of sample receipt:	Dec. 12, 2011
Date of Test:	Dec. 13-20, 2011
Date of report issued:	Dec. 21, 2011
Test Result :	Pass *

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

Authorized Signature:

Stephen Guo
Laboratory Manager

2 Version

Version No.	Date	Description
00	Dec. 21, 2011	*Original*

Prepared by: Collin. He ***Date:*** Dec. 21, 2011

Project Engineer

Reviewed by: Hans. Hu ***Date:*** Dec. 21, 2011

Reviewer

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 OPERATING MODES 5
5.4 DESCRIPTION OF SUPPORT UNITS 5
5.5 DEVIATION FROM STANDARDS 6
5.6 ABNORMALITIES FROM STANDARD CONDITIONS 6
5.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER 6
5.8 TEST FACILITY 6
5.9 TEST LOCATION 6

6 TEST INSTRUMENTS LIST 7

7 TEST RESULTS AND MEASUREMENT DATA 8

7.1 CONDUCTED EMISSIONS 8
7.2 RADIATED EMISSION 11

8 TEST SETUP PHOTO 17

9 EUT CONSTRUCTIONAL DETAILS 18

4 Test Summary

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

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

5 General Information

5.1 Client Information

Applicant:	DELTA NETWORK PTE. LTD.
Address of Applicant:	2 INTERNATIONAL BUSINESS PARK #01-23 STRATEGY, THE SINGAPORE 609930
Manufacturer:	SHENZHEN UNITED TIME TECHNOLOGY CO.,LTD.
Address of Manufacturer/	Room 1001 Microprofit Building,6 Gaoxin south Road, High-Tech Park, Nanshan district ,Shenzhen, P.R. China
Factory:	HUIZHOU UNITED TIME TECHNOLOGY CO.,LTD.
Address of Factory:	2# songbai road, south zone, Cyber Park,huizhou,Guangdong.

5.2 General Description of E.U.T.

Product Name:	MOBILE PHONE
Model No.:	COOL
Trade mark :	ALVO
AC adapter:	Trade mark: ALVO Model : COOL Input: AC 100-240V 50/60Hz Output: DC 5V 500mA
Power supply:	Type: lithium-ion 3.7V 1100mAh Voltage: DC 3.7V
Test voltage:	AC 120V/ 60Hz

5.3 Operating Modes

Operating mode	Detail description
Exchange mode (internal memory)	Keep the EUT in exchanging data between the internal memory with PC
Exchange mode (TF card)	Keep the EUT in exchanging data between the TF card with PC

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number
DELL	PC Host	OPTIPLEX745	GTS237
DELL	MONITOR	VS12490	GTS237-1
DELL	KEYBOARD	SK-8115	GTS237-2
DELL	MOUSE	MOC5UO	GTS237-3
HP	Printer	CB495A	05257893

5.5 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna.
Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.6 Abnormalities from Standard Conditions

None.

5.7 Other Information Requested by the Customer

None.

5.8 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, July 20, 2010.

● **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.9 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China
Tel: 0755-27798480
Fax: 0755-27798960

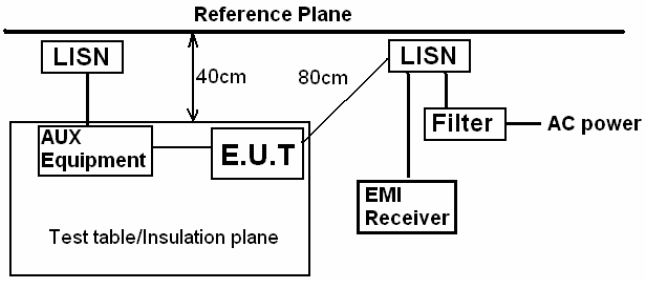
6 Test Instruments list

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	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 30 2011	Mar. 29 2012
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 04 2011	Jul. 03 2012
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 30 2011	June 29 2012
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012
8	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012
9	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012
9	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012
10	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 04 2011	Jul. 03 2012
11	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 04 2011	Jul. 03 2012
12	Band filter	Amindeon	82346	GTS219	Apr. 01 2011	Mar. 31 2012
13	Temp. Humidity/ Barometer	Oregon Scientific	BA-888	GTS248	May 11 2011	May 10 2012

Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS252	Jul. 04 2011	Jul. 03 2012
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 04 2011	Jul. 03 2012
3	10dB Pulse Limit	Rohde & Schwarz	N/A	GTS224	Jul. 04 2011	Jul. 03 2012
4	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 04 2011	Jul. 03 2012
5	LISN	ETS-LINDGREN	3816/2	GTS232	Jul. 04 2011	Jul. 03 2012
6	Coaxial Cable	GTS	N/A	GTS227	Apr. 01 2011	Mar. 31 2012
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

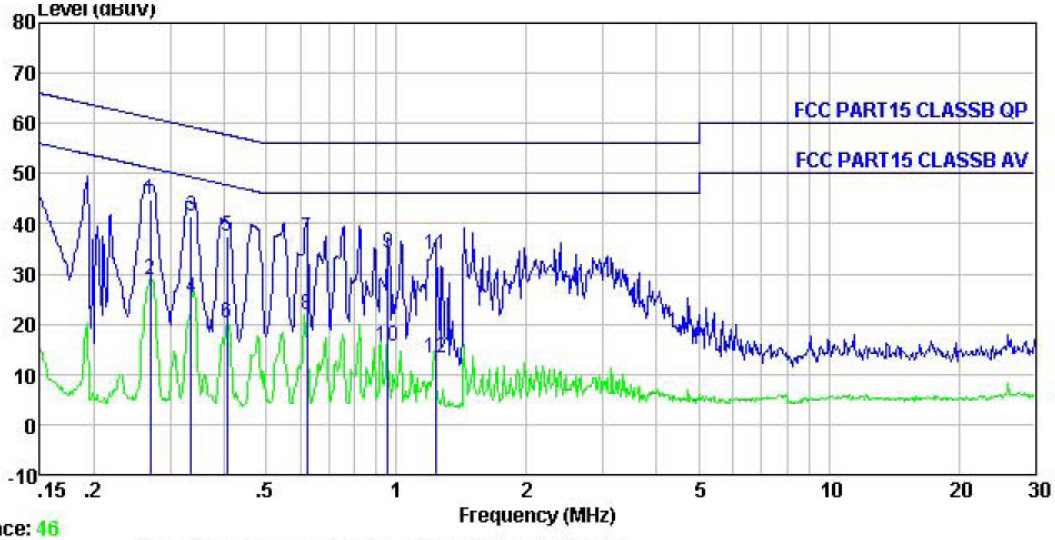
7 Test results and Measurement Data

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.: 25 °C Humid.: 52% Press.: 1 012mbar
Measurement Record:	Uncertainty: ± 3.45dB
Test Instruments:	Refer to section 6 for details
Test mode:	Pre-scan all test mode in the section 5.3, and found the bleow mode which it is worse case mode.
Test results:	Pass

Measurement data:

Line:

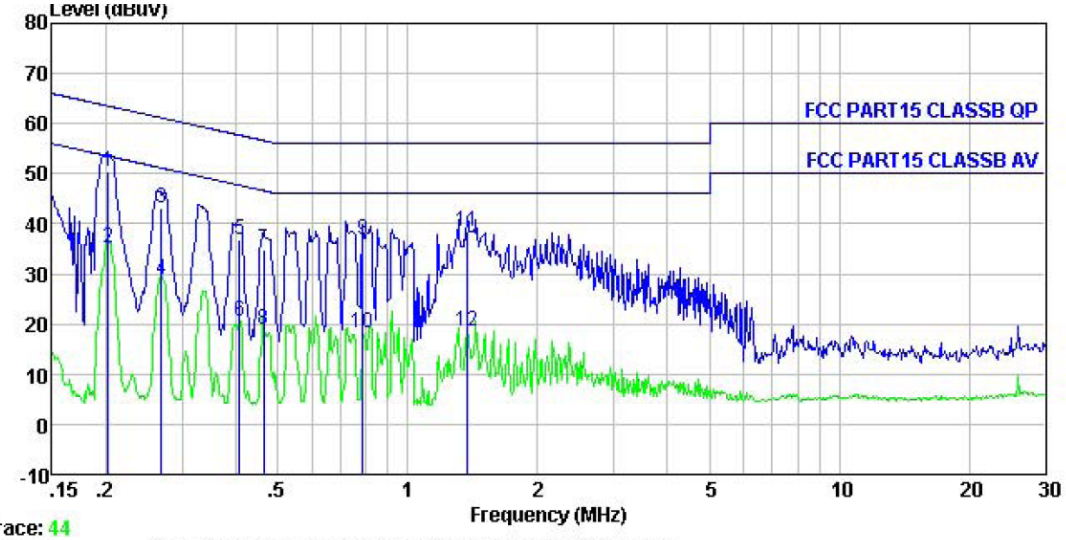


Trace: 46

Condition : FCC PART15 CLASSB QP LISN(2011) LINE
Job No. : 1001RF
Test Mode : PC mode
Test Engineer: Gavin

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.270	44.03	0.62	0.10	44.75	61.12	-16.37	QP
2	0.270	28.17	0.62	0.10	28.89	51.12	-22.23	Average
3	0.336	40.79	0.60	0.10	41.49	59.31	-17.82	QP
4	0.336	24.42	0.60	0.10	25.12	49.31	-24.19	Average
5	0.406	36.93	0.58	0.10	37.61	57.73	-20.12	QP
6	0.406	19.62	0.58	0.10	20.30	47.73	-27.43	Average
7	0.621	36.42	0.53	0.10	37.05	56.00	-18.95	QP
8	0.621	21.28	0.53	0.10	21.91	46.00	-24.09	Average
9	0.958	33.53	0.48	0.10	34.11	56.00	-21.89	QP
10	0.958	15.04	0.48	0.10	15.62	46.00	-30.38	Average
11	1.229	33.12	0.45	0.10	33.67	56.00	-22.33	QP
12	1.229	12.53	0.45	0.10	13.08	46.00	-32.92	Average

Neutral:



Trace: 44

Condition : FCC PART15 CLASSB QP LISN(2011) NEUTRAL
Job No. : 1001RF
Test Mode : PC mode
Test Engineer: Gavin

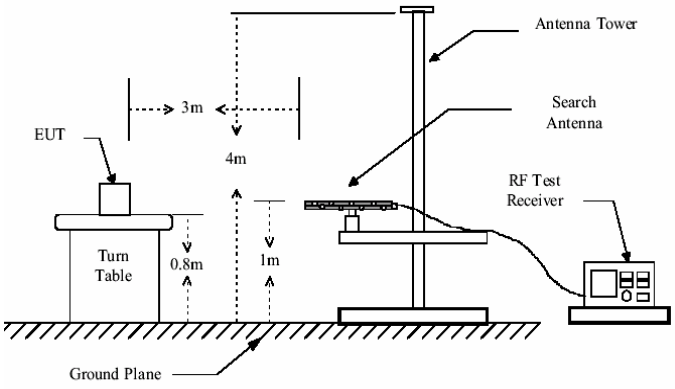
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.202	49.80	0.66	0.10	50.56	63.54	-12.98	QP
2	0.202	34.47	0.66	0.10	35.23	53.54	-18.31	Average
3	0.269	42.55	0.62	0.10	43.27	61.16	-17.89	QP
4	0.269	28.24	0.62	0.10	28.96	51.16	-22.20	Average
5	0.408	36.06	0.58	0.10	36.74	57.68	-20.94	QP
6	0.408	19.80	0.58	0.10	20.48	47.68	-27.20	Average
7	0.464	34.17	0.56	0.10	34.83	56.63	-21.80	QP
8	0.464	18.39	0.56	0.10	19.05	46.63	-27.58	Average
9	0.788	36.16	0.50	0.10	36.76	56.00	-19.24	QP
10	0.788	17.53	0.50	0.10	18.13	46.00	-27.87	Average
11	1.374	37.88	0.44	0.10	38.42	56.00	-17.58	QP
12	1.374	17.91	0.44	0.10	18.45	46.00	-27.55	Average

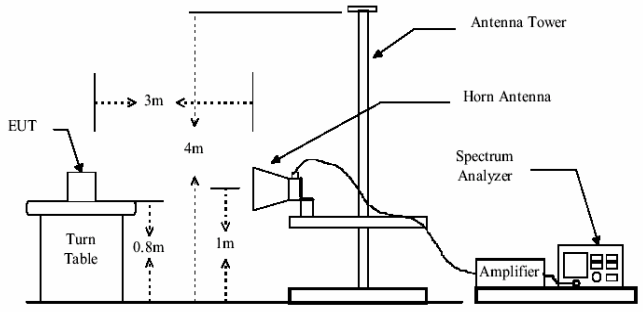
Notes:

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
 

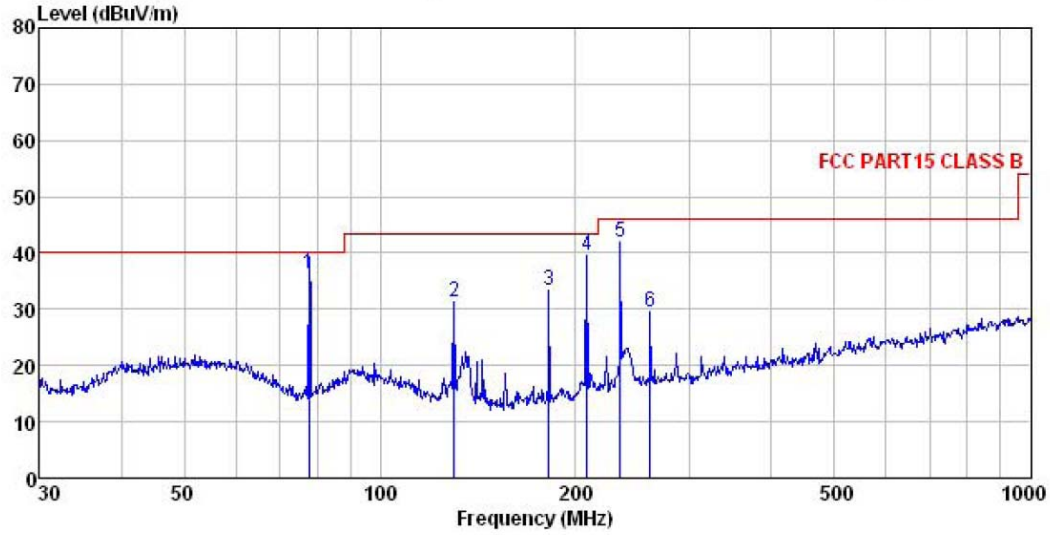
</td></tr>
</table>

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.: 25 °C Humid.: 52% Press.: 1 012mbar
Measurement Record:	Uncertainty: ± 4.5dB
Test Instruments:	Refer to section 6 for details
Test mode:	Pre-scan all test mode in the section 5.3, and found the bleow mode which it is worse case mode.
Test results:	Passed

Measurement Data

■ **Below 1G**

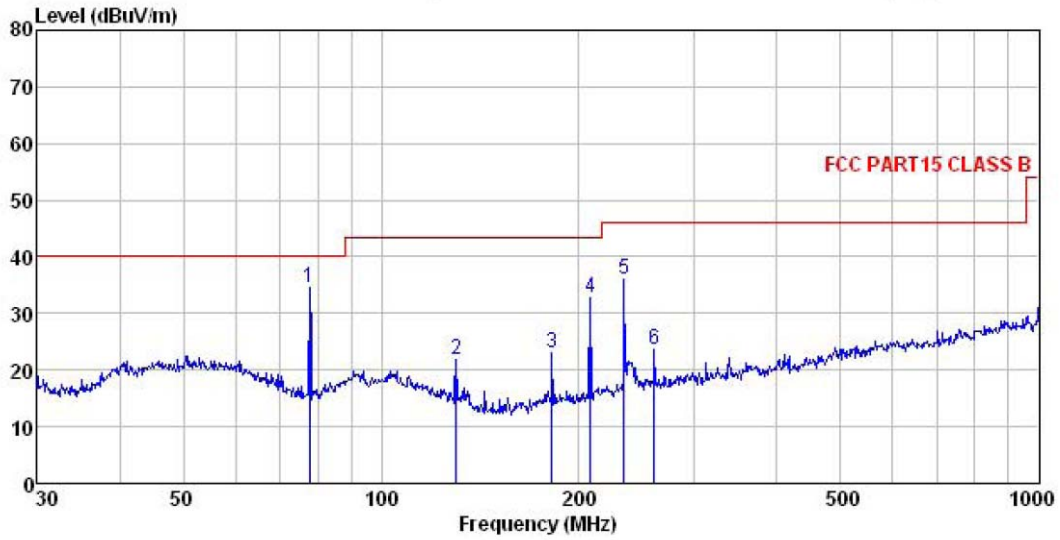
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163 (2011-11) HORIZONTAL
Job No. : 1001RF
Test mode : PC Mode
Test Engineer: Joe

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	77.87	56.32	11.26	0.42	31.83	36.17	40.00	-3.83	QP
2	129.92	53.52	9.03	0.56	31.86	31.25	43.50	-12.25	QP
3	181.92	55.07	9.84	0.67	32.17	33.41	43.50	-10.09	QP
4	207.85	60.16	10.81	0.74	32.27	39.44	43.50	-4.06	QP
5	234.17	61.58	11.83	0.85	32.28	41.98	46.00	-4.02	QP
6	260.14	48.72	12.16	0.95	32.29	29.54	46.00	-16.46	QP

Vertical:

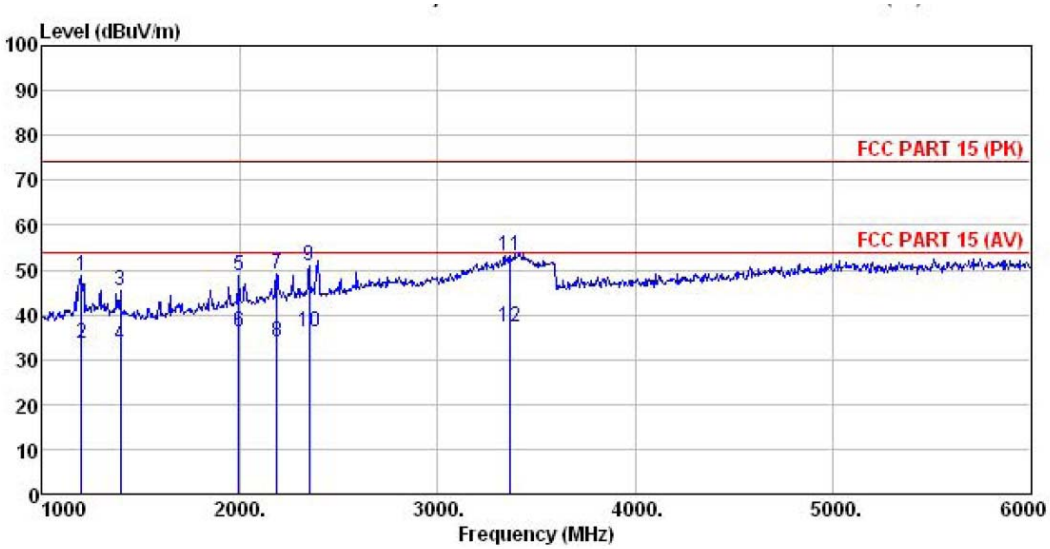


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163 (2011-11) VERTICAL
Job No. : 1001RF
Test mode : PC Mode
Test Engineer: Joe

	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	77.87	54.74	11.26	0.42	31.83	34.59	40.00	-5.41	QP
2	129.92	44.03	9.03	0.56	31.86	21.76	43.50	-21.74	QP
3	181.92	44.56	9.84	0.67	32.17	22.90	43.50	-20.60	QP
4	207.85	53.35	10.81	0.74	32.27	32.63	43.50	-10.87	QP
5	234.17	55.64	11.83	0.85	32.28	36.04	46.00	-9.96	QP
6	260.14	42.83	12.16	0.95	32.29	23.65	46.00	-22.35	QP

■ **Above 1G**

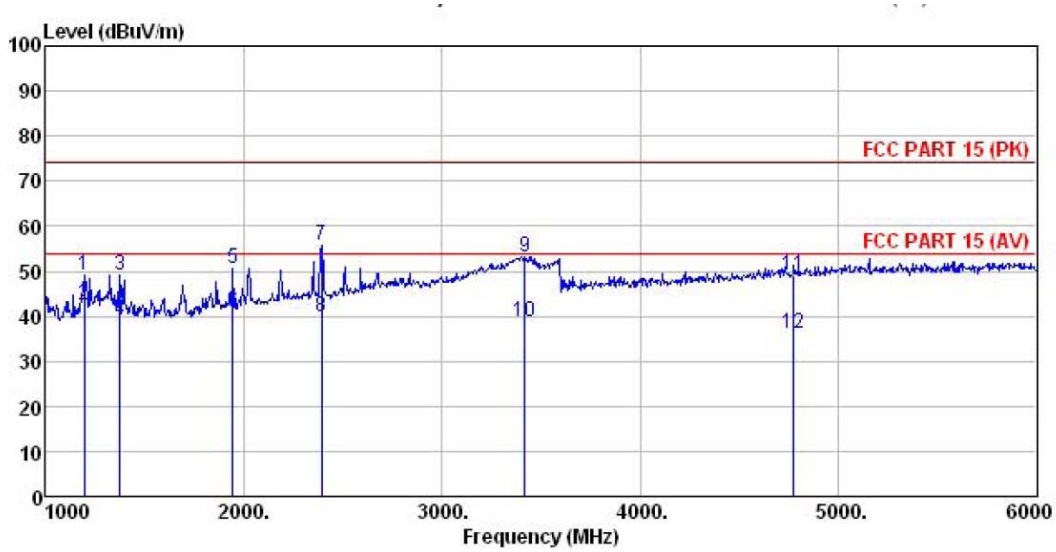
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) HORIZONTAL
Job No. : 1001RF
Test mode : PC mode
Test Engineer: Joe

	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	1200.00	55.50	25.02	2.60	34.55	48.57	74.00	-25.43	Peak
2	1200.00	40.35	25.02	2.60	34.55	33.42	54.00	-20.58	Average
3	1395.00	51.76	25.40	2.87	34.60	45.43	74.00	-28.57	Peak
4	1395.00	39.65	25.40	2.87	34.60	33.32	54.00	-20.68	Average
5	1995.00	53.90	26.13	3.50	34.70	48.83	74.00	-25.17	Peak
6	1995.00	41.29	26.13	3.50	34.70	36.22	54.00	-17.78	Average
7	2185.00	52.44	27.81	3.66	34.76	49.15	74.00	-24.85	Peak
8	2185.00	37.25	27.81	3.66	34.76	33.96	54.00	-20.04	Average
9	2350.00	54.17	27.71	3.79	34.82	50.85	74.00	-23.15	Peak
10	2350.00	39.46	27.71	3.79	34.82	36.14	54.00	-17.86	Average
11	3365.00	55.16	28.35	4.73	35.12	53.12	74.00	-20.88	Peak
12	3365.00	39.17	28.35	4.73	35.12	37.13	54.00	-16.87	Average

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) VERTICAL
Job No. : 1001RF
Test mode : PC mode
Test Engineer: Joe

	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	1195.00	56.22	24.88	2.59	34.55	49.14	74.00	-24.86	Peak
2	1195.00	49.35	24.88	2.59	34.55	42.27	54.00	-11.73	Average
3	1375.00	55.28	25.61	2.84	34.59	49.14	74.00	-24.86	Peak
4	1375.00	45.12	25.61	2.84	34.59	38.98	54.00	-15.02	Average
5	1945.00	56.00	25.93	3.45	34.69	50.69	74.00	-23.31	Peak
6	1945.00	46.29	25.93	3.45	34.69	40.98	54.00	-13.02	Average
7	2390.00	59.12	27.58	3.81	34.83	55.68	74.00	-18.32	Peak
8	2390.00	43.29	27.58	3.81	34.83	39.85	54.00	-14.15	Average
9	3420.00	54.98	28.53	4.79	35.13	53.17	74.00	-20.83	Peak
10	3420.00	40.38	28.53	4.79	35.13	38.57	54.00	-15.43	Average
11	4775.00	47.22	31.50	5.85	35.46	49.11	74.00	-24.89	Peak
12	4775.00	34.36	31.50	5.85	35.46	36.25	54.00	-17.75	Average

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor