Report No.: GTSE12090115901

TEST REPORT

Applicant:	Dongguan Yuanfeng Technology Co., Ltd.
Address of Applicant:	No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China
Equipment Under Test (EUT)	
Product Name:	Tablet PC
Model No.:	MW13-1003, MW13-1001, MW13-1002, MW13-1004, MW13-1005, MW13-1006, MW13-1007, MW13-1008, MW13-1009
FCC ID:	YNGMW13-1003
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2010
Date of sample receipt:	October 08, 2012
Date of Test:	October 10-15, 2012
Date of report issue:	October 15, 2012
Test Result :	PASS *

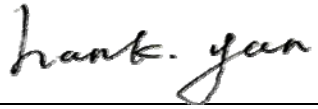
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*October 15, 2012*	*Original*

Prepared By:  ***Date:*** *October 15, 2012*

Project Engineer

Check By:  ***Date:*** *October 15, 2012*

Reviewer

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4 Test Summary

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

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

5 General Information

5.1 Client Information

Applicant:	Dongguan Yuanfeng Technology Co., Ltd.
Address of Applicant:	No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China
Manufacturer :	Dongguan Yuanfeng Technology Co., Ltd.
Address of Manufacturer :	No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China
Factory:	Dongguan Yuanfeng Technology Co., Ltd.
Address of Factory :	No.62, South Fumin Road, Fumin Industrial Park, Dalang Town, Dongguan City, Guangdong, P.R. China

5.2 General Description of E.U.T.

Product Name:	Tablet PC
Model No.:	MW13-1003, MW13-1001, MW13-1002, MW13-1004, MW13-1005, MW13-1006, MW13-1007, MW13-1008, MW13-1009
Remark:	Only the Model No. MW13-1003 was tested, since the electrical circuit design, PCB layout, Electrical Parts and Figure are identical to the basic model, except the outer decoration.
Antenna Type:	Integral Antenna
Antenna gain:	2.65dBi (declare by Applicant)
Power supply:	Model No. HNC050200X Input: AC 100-240V 50/60Hz 0.35A Output: DC 5V 2A DC 3.7V Li-ion Battery

5.3 Test mode

Test mode:	
Playing mode	Keep the EUT in Playing mode
Video Record mode	Keep the EUT in Video Recording mode
PC mode	Keep the EUT in exchanging data mode.
HDMI mode	Keep the EUT in HDMI output mode.

5.4 Test Facility

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

● **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

● **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.

5.5 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

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
HP	Printer	CB495A	05257893	DoC
DELL	PC	OPTIPLEX745	GTS312	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC
PHILIPS	LCD TV	19PFL3120/T3	AU1A1212002906	DoC

5.7 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.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

6 Test Instruments list

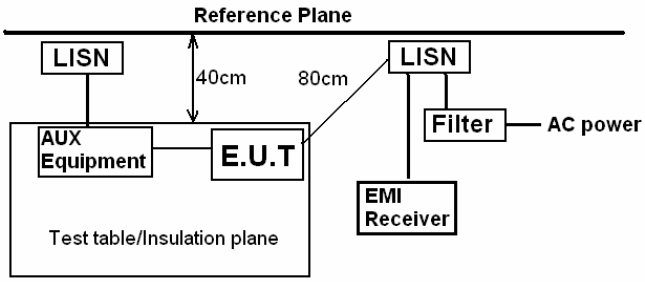
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 30 2011	Mar. 29 2013
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jul. 07 2012	Jul. 06 2013
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Mar. 10 2012	Mar. 09 2013
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Mar. 10 2012	Mar. 09 2013
6	RF Amplifier	HP	8347A	GTS204	Jul. 07 2012	Jul. 06 2013
7	Preamplifier	HP	8349B	GTS206	Jul. 07 2012	Jul. 06 2013
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 07 2012	Jul. 06 2013
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 07 2012	Jul. 06 2013
11	Thermo meter	N/A	N/A	GTS256	Jul. 07 2011	Jul. 06 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)	GTS264	Sep. 08 2011	Sep. 07 2013
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 03 2012	Jul. 02 2013
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 03 2012	Jul. 02 2013
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 03 2012	Jul. 02 2013
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 03 2012	Jul. 02 2013
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 03 2012	Jul. 02 2013
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 10 2012	July 09 2013

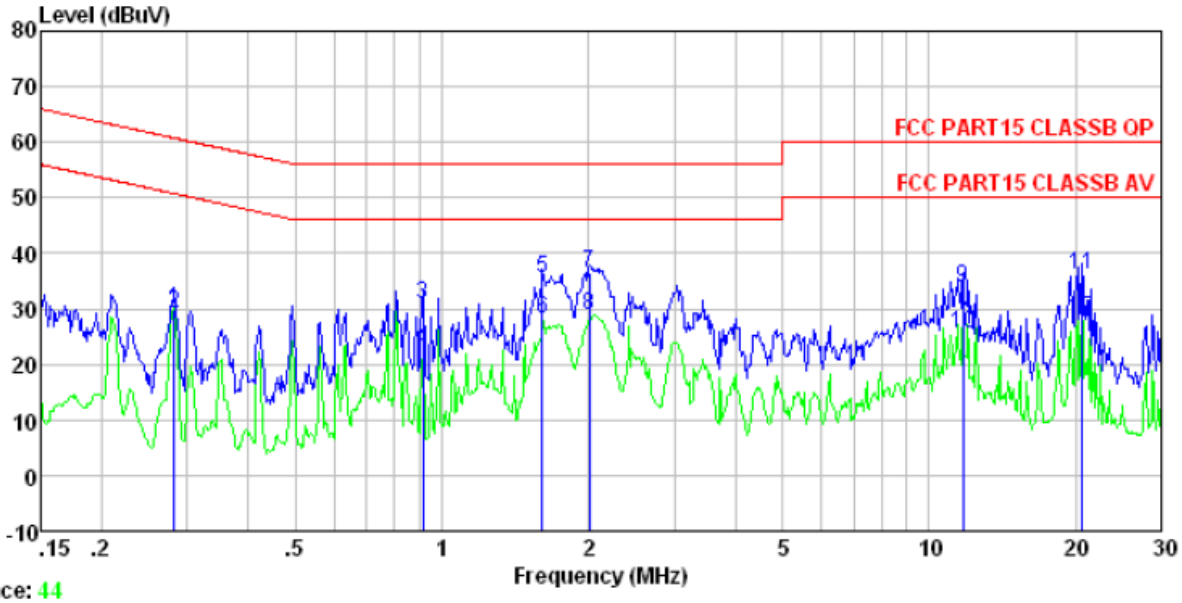
7 Test Results and Measurement Data

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, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
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.). This provides 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 refer 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 Instruments:	Refer to section 6 for details
Test mode:	Pre-scan all modes in section 5.3, and found the PC mode which is the worst mode, so only the data of worst mode was show on the test report.
Test results:	Pass

Measurement Data

Line:

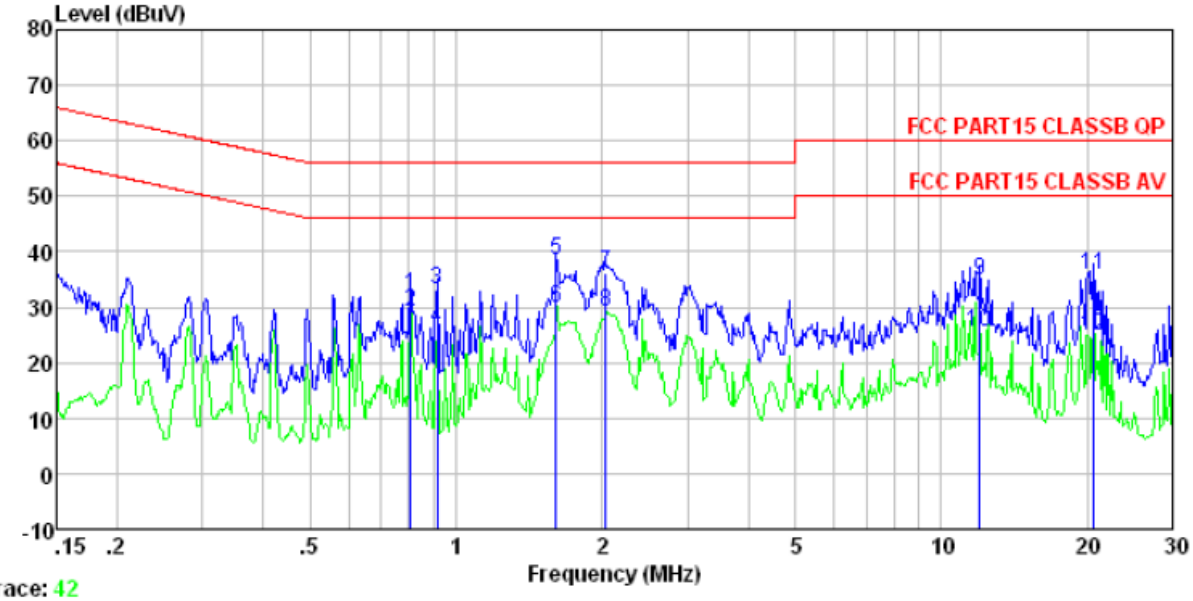


Trace: 44

Condition : FCC PART15 CLASSB QP LISN-2012 LINE
Job No. : 1159RF
Test Mode : PC Mode
Test Engineer: Edward

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.282	30.11	-0.22	0.10	29.99	60.76	-30.77	QP
2	0.282	29.31	-0.22	0.10	29.19	50.76	-21.57	Average
3	0.914	31.12	-0.21	0.10	31.01	56.00	-24.99	QP
4	0.914	22.49	-0.21	0.10	22.38	46.00	-23.62	Average
5	1.610	35.55	-0.23	0.10	35.42	56.00	-20.58	QP
6	1.610	28.29	-0.23	0.10	28.16	46.00	-17.84	Average
7	2.012	36.55	-0.24	0.10	36.41	56.00	-19.59	QP
8	2.012	28.96	-0.24	0.10	28.82	46.00	-17.18	Average
9	11.745	34.01	-0.44	0.20	33.77	60.00	-26.23	QP
10	11.745	25.69	-0.44	0.20	25.45	50.00	-24.55	Average
11	20.594	36.44	-0.64	0.21	36.01	60.00	-23.99	QP
12	20.594	28.61	-0.64	0.21	28.18	50.00	-21.82	Average

Neutral:



Trace: 42

Condition : FCC PART15 CLASSB QP LISN-2012 NEUTRAL
Job No. : 1159RF
Test Mode : PC Mode
Test Engineer: Edward

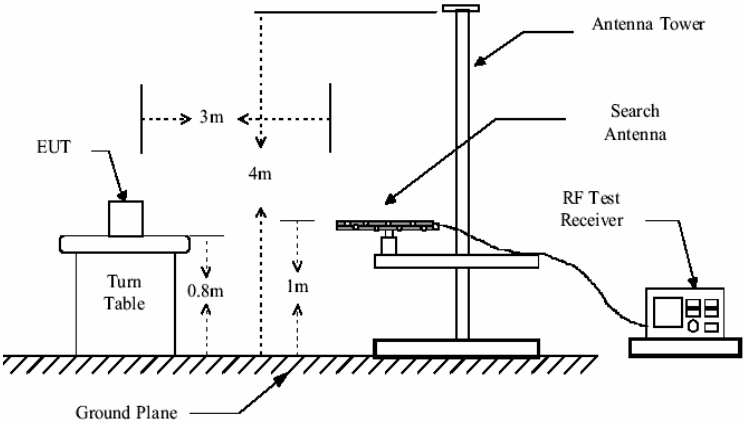
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.804	32.11	-0.08	0.10	32.13	56.00	-23.87	QP
2	0.804	29.06	-0.08	0.10	29.08	46.00	-16.92	Average
3	0.914	33.11	-0.09	0.10	33.12	56.00	-22.88	QP
4	0.914	26.17	-0.09	0.10	26.18	46.00	-19.82	Average
5	1.610	38.55	-0.10	0.10	38.55	56.00	-17.45	QP
6	1.610	29.91	-0.10	0.10	29.91	46.00	-16.09	Average
7	2.033	36.02	-0.11	0.10	36.01	56.00	-19.99	QP
8	2.033	29.05	-0.11	0.10	29.04	46.00	-16.96	Average
9	11.996	35.05	-0.32	0.20	34.93	60.00	-25.07	QP
10	11.996	25.50	-0.32	0.20	25.38	50.00	-24.62	Average
11	20.594	36.04	-0.54	0.21	35.71	60.00	-24.29	QP
12	20.594	25.15	-0.54	0.21	24.82	50.00	-25.18	Average

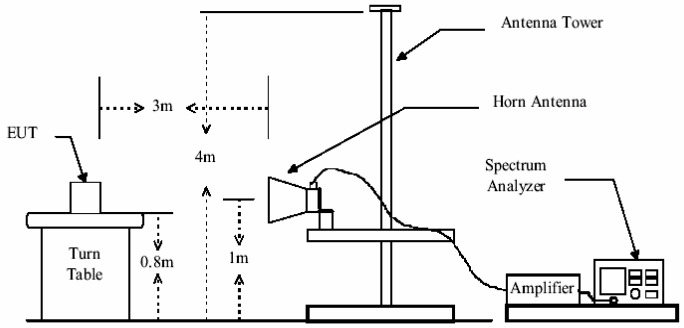
Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + 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 6GHz</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>120kHz</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>AV</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>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>
1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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 rota 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.
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz</td></tr>
</table>

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


Above 1GHz


</td></tr>
<tr><td>Test environment:</td><td>Temp.: 25 °C Humid.: 52% Press.: 1 012mbar</td></tr>
<tr><td>Measurement Record:</td><td>Uncertainty: ± 4.5dB</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6 for details</td></tr>
<tr><td>Test mode:</td><td>Pre-scan all modes in section 5.3, and found the PC mode which is the worst mode, so only the data of worst mode was show on the test report.</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

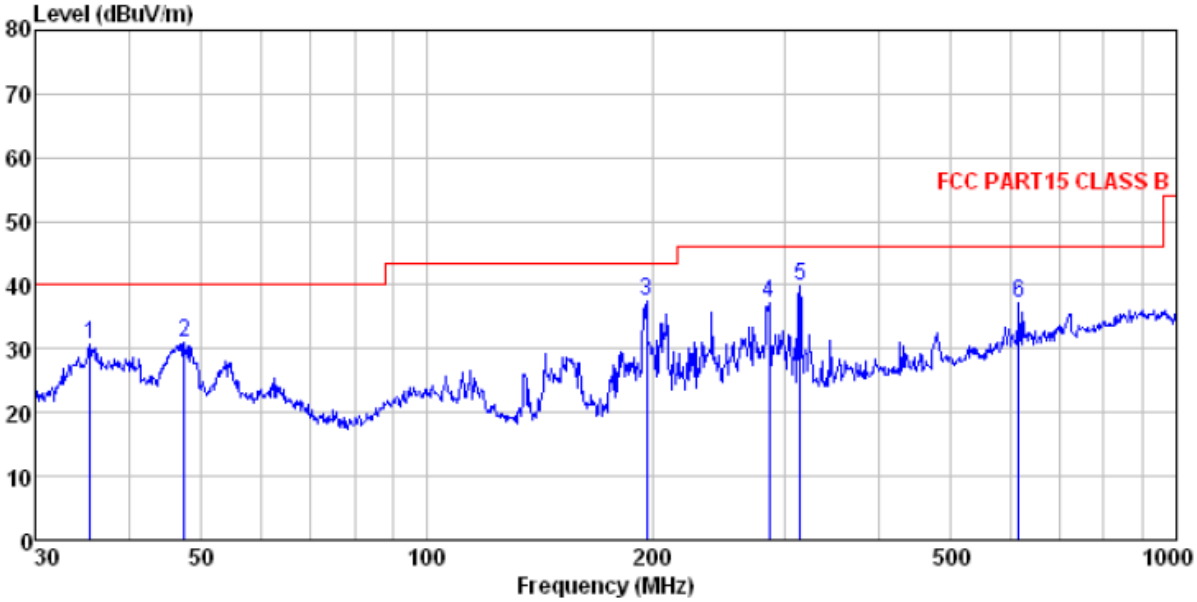
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

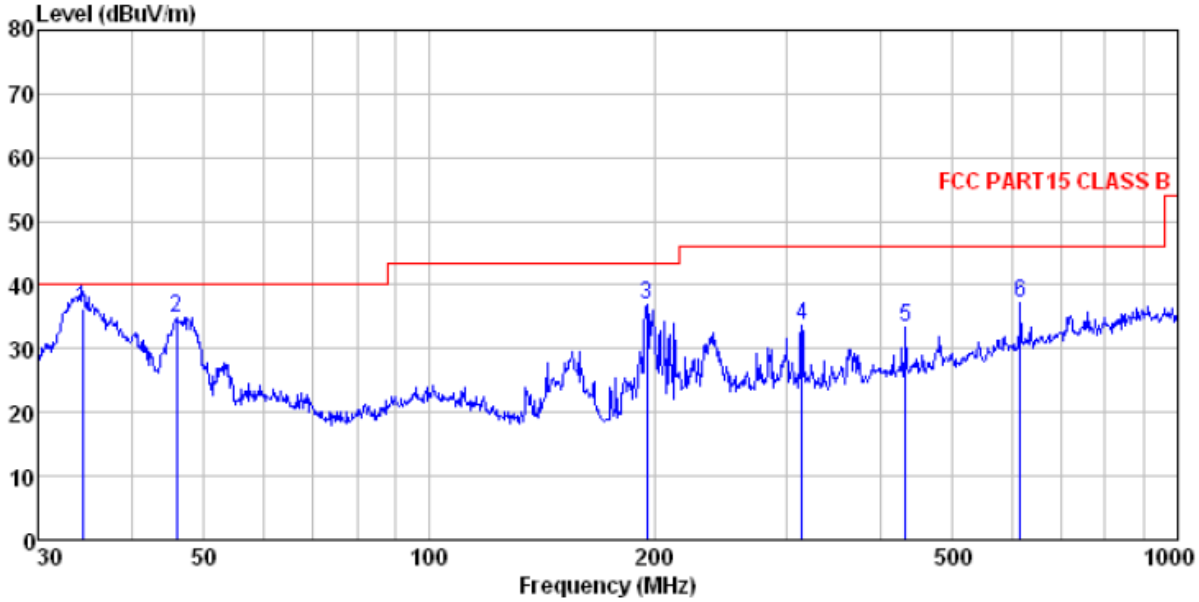
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163 -2012-05 HORIZONTAL
Job No. : 1159RF
Test Mode : PC Mode
Test Engineer: Hank

	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	35.499	46.24	15.92	0.61	32.06	30.71	40.00	-9.29	QP
2	47.492	45.59	16.52	0.74	31.98	30.87	40.00	-9.13	QP
3	196.510	54.20	13.57	1.82	32.13	37.46	43.50	-6.04	QP
4	285.978	51.14	15.81	2.29	32.18	37.06	46.00	-8.94	QP
5	314.377	53.23	16.26	2.44	32.13	39.80	46.00	-6.20	QP
6	616.372	43.67	20.71	3.79	31.07	37.10	46.00	-8.90	QP

Vertical:

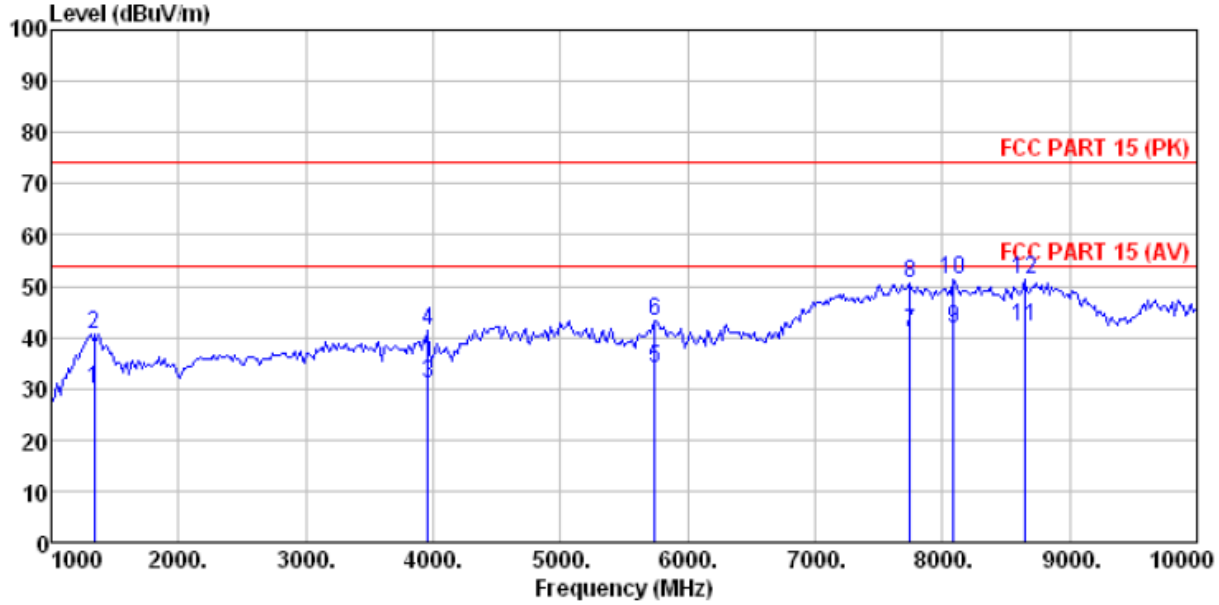


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163 -2012-05 VERTICAL
Job No. : 1159RF
Test Mode : PC Mode
Test Engineer: Hank

	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	34.396	52.11	15.80	0.60	32.06	36.45	40.00	-3.55	QP
2	46.016	49.61	16.56	0.73	32.00	34.90	40.00	-5.10	QP
3	195.137	53.54	13.57	1.81	32.13	36.79	43.50	-6.71	QP
4	314.377	47.22	16.26	2.44	32.13	33.79	46.00	-12.21	QP
5	432.546	44.67	17.54	3.01	31.78	33.44	46.00	-12.56	QP
6	616.372	43.76	20.71	3.79	31.07	37.19	46.00	-8.81	QP

Above 1GHz

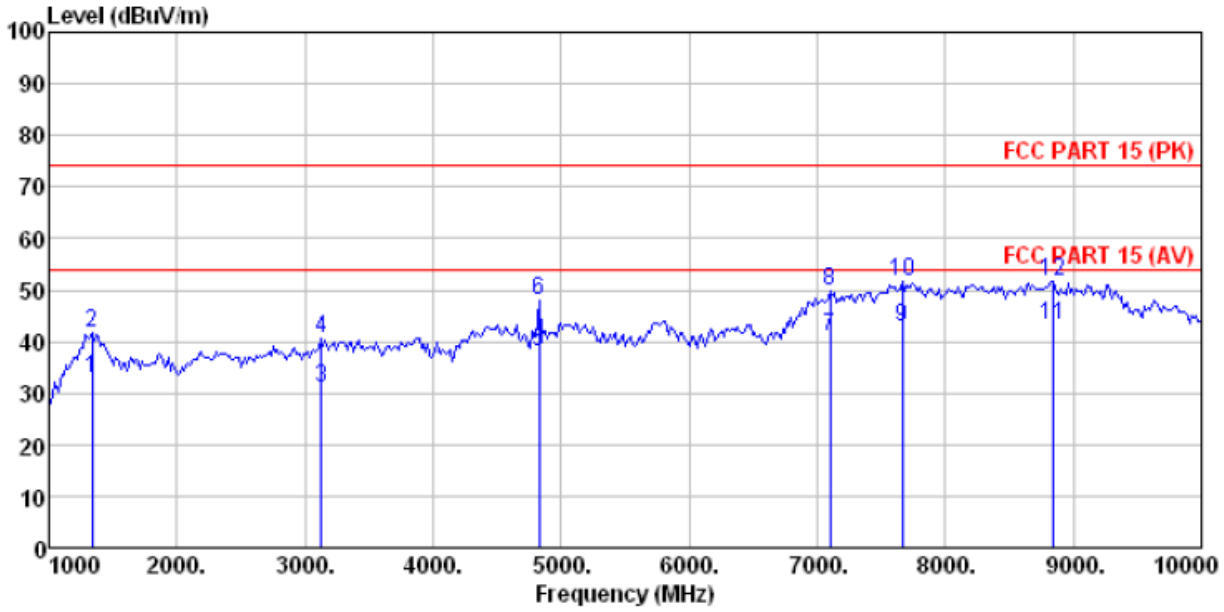
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
Job No. : 1159RF
Test Mode : PC mode
Test Engineer: Hank

	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	1340.000	20.35	25.69	4.57	20.79	29.82	54.00	-24.18	Average
2	1340.000	31.10	25.69	4.57	20.79	40.57	74.00	-33.43	Peak
3	3958.000	20.34	29.62	7.79	26.80	30.95	54.00	-23.05	Average
4	3958.000	30.57	29.62	7.79	26.80	41.18	74.00	-32.82	Peak
5	5743.000	15.34	32.56	9.86	23.85	33.91	54.00	-20.09	Average
6	5743.000	24.51	32.56	9.86	23.85	43.08	74.00	-30.92	Peak
7	7749.000	19.66	37.00	11.96	27.76	40.86	54.00	-13.14	Average
8	7749.000	29.40	37.00	11.96	27.76	50.60	74.00	-23.40	Peak
9	8089.000	20.10	37.23	12.24	27.96	41.61	54.00	-12.39	Average
10	8089.000	29.63	37.23	12.24	27.96	51.14	74.00	-22.86	Peak
11	8650.000	18.66	36.77	13.12	26.64	41.91	54.00	-12.09	Average
12	8650.000	28.00	36.77	13.12	26.64	51.25	74.00	-22.75	Peak

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
Job No. : 1159RF
Test Mode : PC mode
Test Engineer: Hank

	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	1340.000	23.42	25.69	4.57	20.79	32.89	54.00	-21.11	Average
2	1340.000	32.34	25.69	4.57	20.79	41.81	74.00	-32.19	Peak
3	3125.000	25.40	28.82	6.19	29.36	31.05	54.00	-22.95	Average
4	3125.000	34.78	28.82	6.19	29.36	40.43	74.00	-33.57	Peak
5	4825.000	21.64	31.79	8.62	24.17	37.88	54.00	-16.12	Average
6	4825.000	31.74	31.79	8.62	24.17	47.98	74.00	-26.02	Peak
7	7103.000	19.85	35.87	11.59	26.23	41.08	54.00	-12.92	Average
8	7103.000	28.49	35.87	11.59	26.23	49.72	74.00	-24.28	Peak
9	7664.000	21.60	36.89	11.92	27.60	42.81	54.00	-11.19	Average
10	7664.000	30.33	36.89	11.92	27.60	51.54	74.00	-22.46	Peak
11	8837.000	18.67	37.00	13.42	26.03	43.06	54.00	-10.94	Average
12	8837.000	27.42	37.00	13.42	26.03	51.81	74.00	-22.19	Peak