TEST REPORT

Applicant:	DINGOO DIGITAL TECHNOLOGY LIMITED
Address of Applicant:	UNIT 2209, 22/F., WU CHUNG HSE., 213 QUEEN?S RD. EAST, WANCHAI, Hong Kong

Equipment Under Test (EUT)

Product Name:	Game Player
Model No.:	A380e, A320, A320e, A330, A380, A388, A390
FCC ID:	YDKA380E
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2012
Date of sample receipt:	August 12, 2013
Date of Test:	August 12-27, 2013
Date of report issue:	August 27, 2013
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	*August 27, 2013*	*Original*

Prepared By: hank.yan ***Date:*** *August 27, 2013*

Project Engineer

Check By: Hans.Hu ***Date:*** *August 27, 2013*

Reviewer

3 Contents

Page

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:	DINGOO DIGITAL TECHNOLOGY LIMITED
Address of Applicant:	UNIT 2209, 22/F., WU CHUNG HSE., 213 QUEEN?S RD. EAST, WANCHAI, Hong Kong
Manufacturer:	DINGOO DIGITAL TECHNOLOGY LIMITED
Address of Manufacturer:	UNIT 2209, 22/F., WU CHUNG HSE., 213 QUEEN?S RD. EAST, WANCHAI, Hong Kong

5.2 General Description of EUT

Product Name:	Game Player
Model No.:	A380e, A320, A320e, A330, A380, A388, A390
Test Model No.:	A380e
Remark:	*All models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.*
Power supply:	Adapter: Model No.: TC-JU-USB Input: AC 100-240V 50/60Hz 0.15A Output: DC 5V 1A

5.3 Test mode

Test mode:	
TF Card Video Playing mode	Keep the EUT in video Playing mode
PC mode	Keep the EUT in exchanging data mode.
AV Out mode	Keep the EUT in video playing mode with AV output.

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, June 28, 2013.

● **Industry Canada (IC) —Registration No.: 9079A-2**

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-2, June 26, 2013.

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
Lenovo	PC Host	M6900	EA05257893	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	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

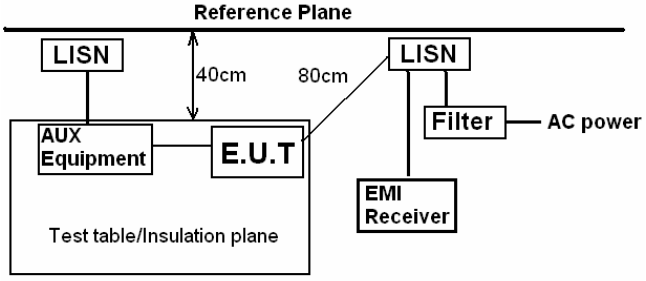
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2013	Mar. 28 2014
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jun. 29 2013	Jun. 29 2014
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Jun. 29 2013	Jun. 29 2014
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Jun. 29 2013	Jun. 29 2014
6	RF Amplifier	HP	8347A	GTS204	Jun. 29 2013	Jun. 29 2014
7	Preamplifier	HP	8349B	GTS206	Jun. 29 2013	Jun. 29 2014
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 07 2013	Jul. 06 2014
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 07 2013	Jul. 06 2014
11	Thermo meter	N/A	N/A	GTS256	Jul. 01 2013	Jul. 01 2014

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	7.3(L)x3.1(W)x2.9(H)	GTS252	Sep. 08 2011	Sep. 07 2013
2	EMI Test Receiver	R&S	ESCS30	GTS223	Jun. 29 2013	Jun. 29 2014
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	Jun. 29 2013	Jun. 29 2014
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jun. 29 2013	Jun. 29 2014
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	Jun. 29 2013	Jun. 29 2014
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 07 2013	Jul. 06 2014
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	Jul. 27 2013	Jul. 27 2014

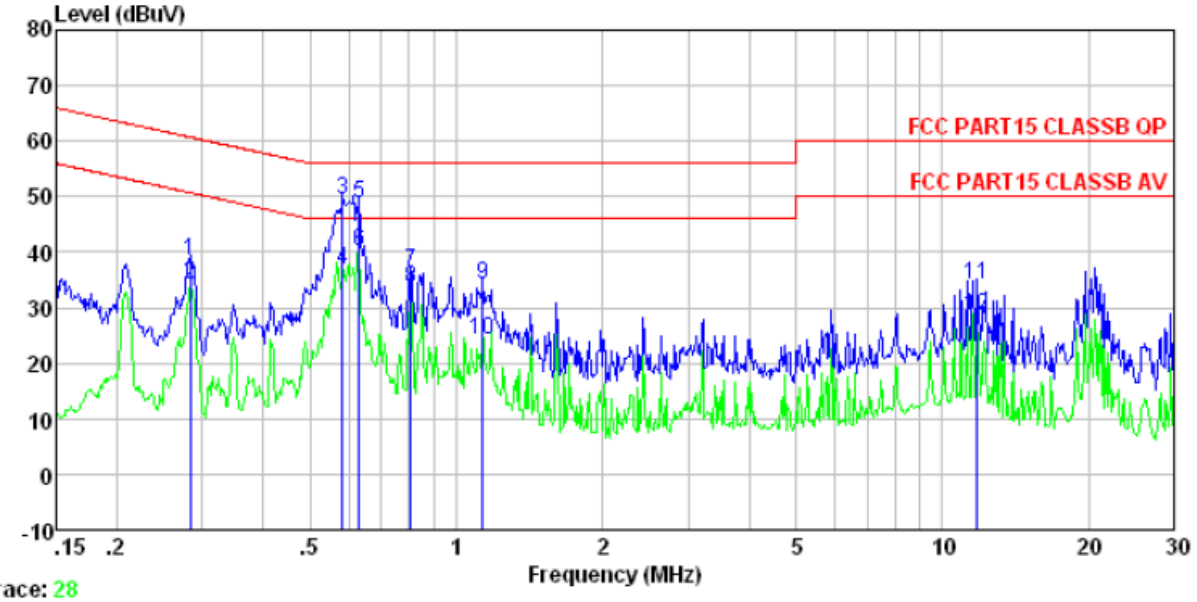
7 Test Results and Measurement Data

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, 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:

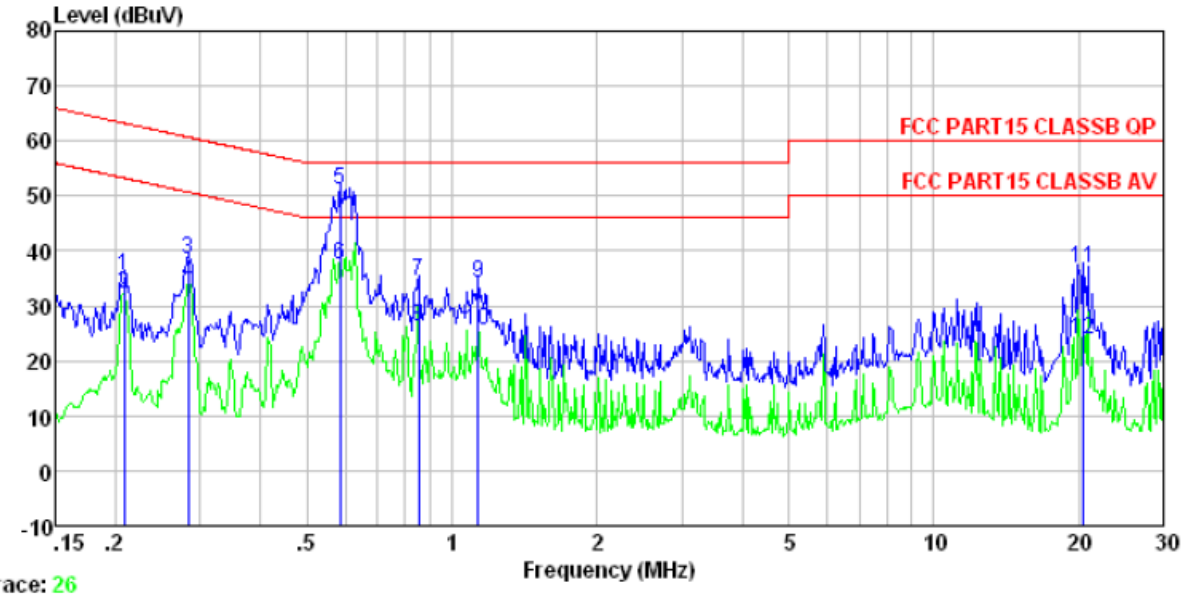


Trace: 28

Condition : FCC PART15 CLASSB QP LISN-2012 LINE
Job No. : 1338RF
Test mode : PC Mode
Test Engineer: yang

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.283	38.46	-0.22	0.10	38.34	60.72	-22.38	QP
2	0.283	34.14	-0.22	0.10	34.02	50.72	-16.70	Average
3	0.582	49.71	-0.21	0.10	49.60	56.00	-6.40	QP
4	0.582	36.85	-0.21	0.10	36.74	46.00	-9.26	Average
5	0.630	49.02	-0.20	0.10	48.92	56.00	-7.08	QP
6	0.630	40.37	-0.20	0.10	40.27	46.00	-5.73	Average
7	0.804	36.73	-0.20	0.10	36.63	56.00	-19.37	QP
8	0.804	33.47	-0.20	0.10	33.37	46.00	-12.63	Average
9	1.135	34.16	-0.21	0.10	34.05	56.00	-21.95	QP
10	1.135	24.47	-0.21	0.10	24.36	46.00	-21.64	Average
11	11.807	34.34	-0.44	0.20	34.10	60.00	-25.90	QP
12	11.807	28.67	-0.44	0.20	28.43	50.00	-21.57	Average

Neutral:



Trace: 26

Condition : FCC PART15 CLASSB QP LISN-2012 NEUTRAL
Job No. : 1338RF
Test mode : PC Mode
Test Engineer: yang

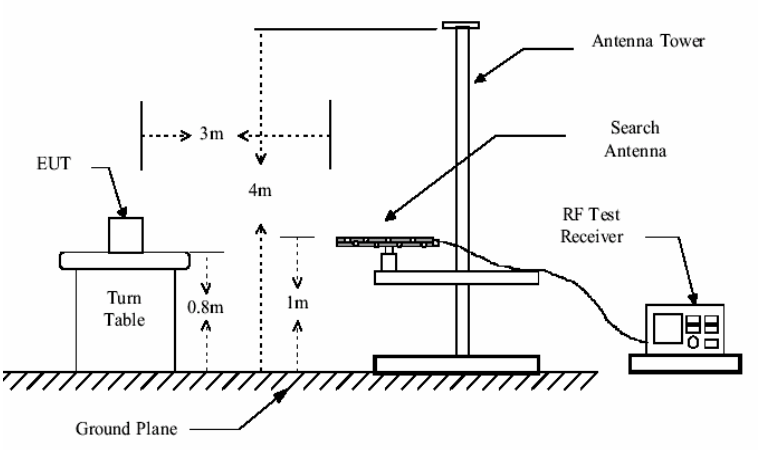
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.208	35.49	-0.09	0.10	35.50	63.27	-27.77	QP
2	0.208	32.14	-0.09	0.10	32.15	53.27	-21.12	Average
3	0.283	38.50	-0.09	0.10	38.51	60.72	-22.21	QP
4	0.283	34.07	-0.09	0.10	34.08	50.72	-16.64	Average
5	0.585	51.20	-0.08	0.10	51.22	56.00	-4.78	QP
6	0.585	37.47	-0.08	0.10	37.49	46.00	-8.51	Average
7	0.853	34.49	-0.09	0.10	34.50	56.00	-21.50	QP
8	0.853	26.34	-0.09	0.10	26.35	46.00	-19.65	Average
9	1.135	34.24	-0.09	0.10	34.25	56.00	-21.75	QP
10	1.135	25.48	-0.09	0.10	25.49	46.00	-20.51	Average
11	20.486	37.00	-0.54	0.21	36.67	60.00	-23.33	QP
12	20.486	24.18	-0.54	0.21	23.85	50.00	-26.15	Average

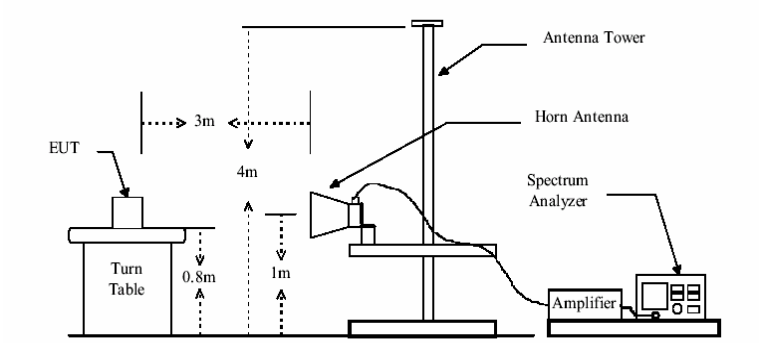
Notes:

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>

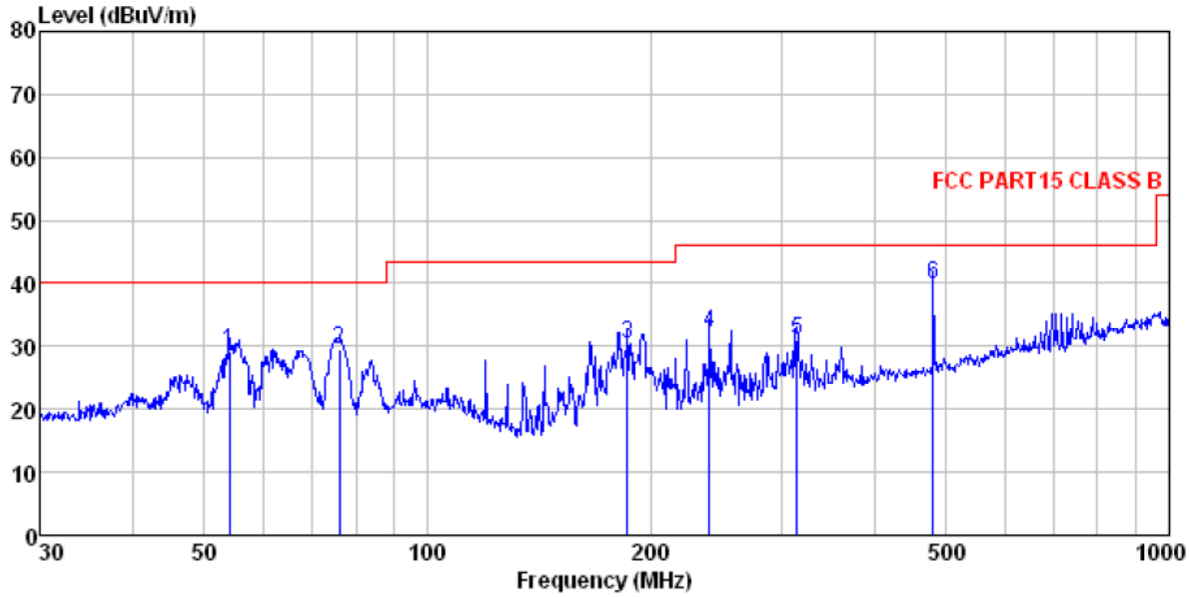
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

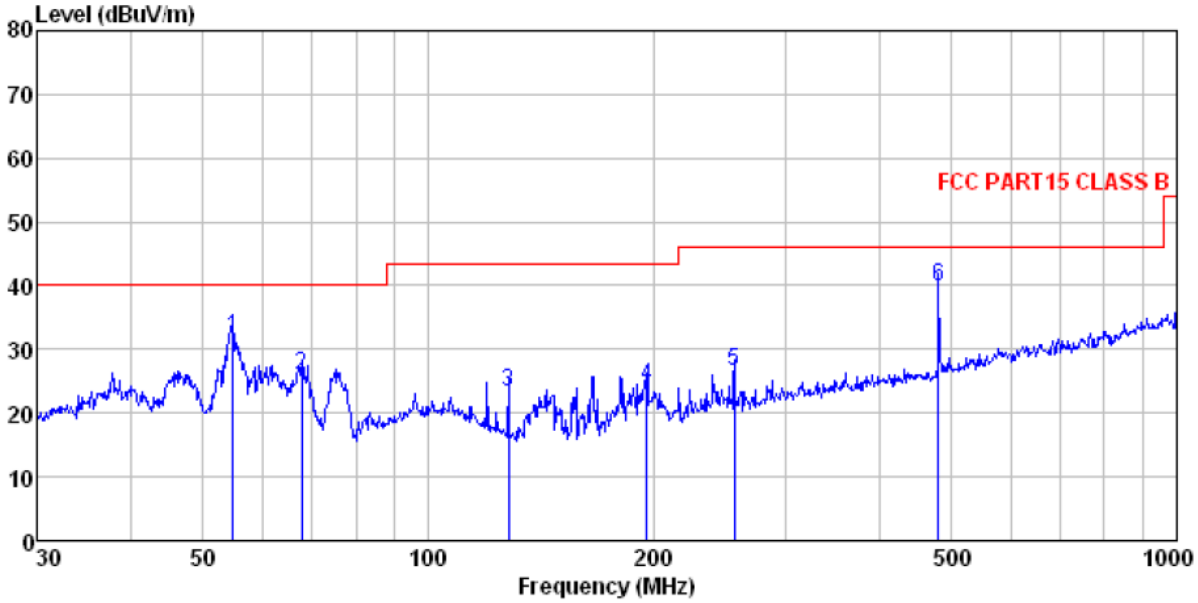
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL
Job No. : 1338RF
Test Mode : PC mode
Test Engineer: Bing

	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	54.071	45.33	15.06	0.81	31.95	29.25	40.00	-10.75	QP
2	75.977	50.27	9.97	0.99	31.81	29.42	40.00	-10.58	QP
3	185.788	48.57	12.16	1.77	32.10	30.40	43.50	-13.10	QP
4	239.987	48.12	14.09	2.07	32.16	32.12	46.00	-13.88	QP
5	314.377	45.38	15.26	2.44	32.13	30.95	46.00	-15.05	QP
6	480.528	50.12	18.07	3.22	31.62	39.79	46.00	-6.21	QP

Vertical:

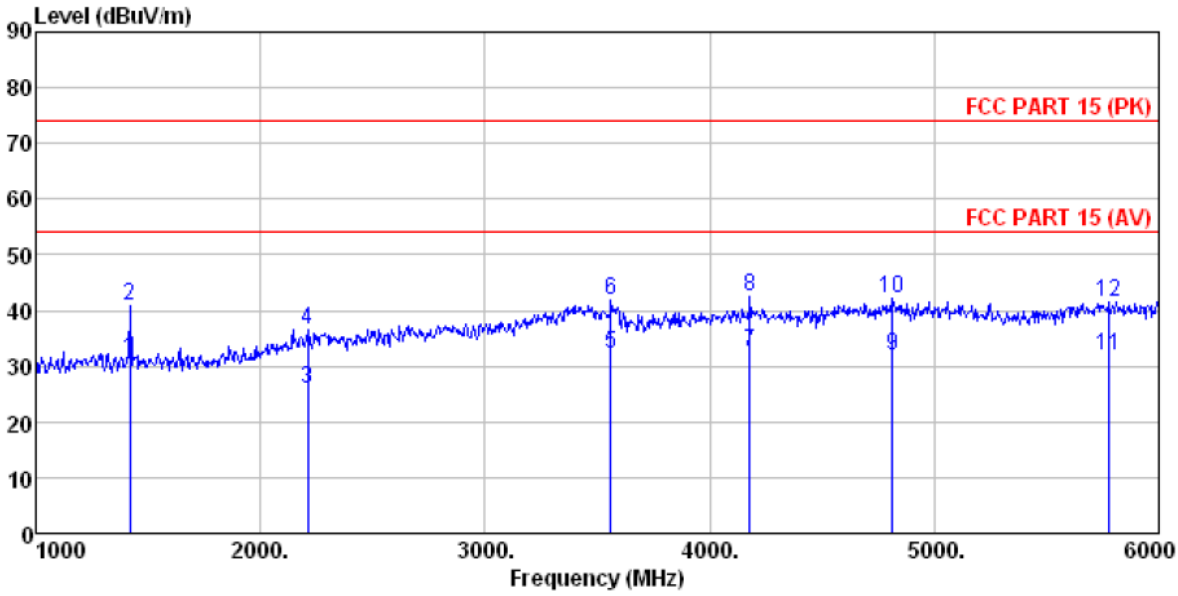


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
Job No. : 1338RF
Test Mode : PC mode
Test Engineer: Bing

	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	54.835	48.10	15.02	0.82	31.95	31.99	40.00	-8.01	QP
2	67.675	45.43	11.61	0.92	31.89	26.07	40.00	-13.93	QP
3	128.113	42.59	11.22	1.42	31.90	23.33	43.50	-20.17	QP
4	195.822	42.08	12.57	1.82	32.13	24.34	43.50	-19.16	QP
5	256.521	42.40	14.06	2.16	32.16	26.46	46.00	-19.54	QP
6	480.528	50.13	18.07	3.22	31.62	39.80	46.00	-6.20	QP

Above 1GHz

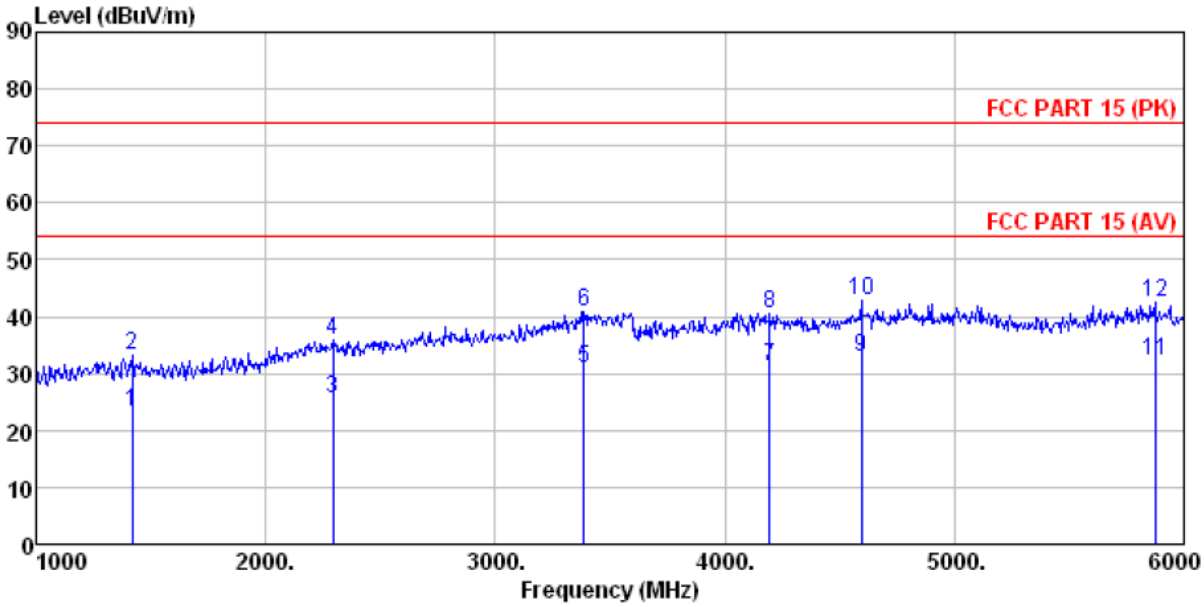
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
Job No. : 1338RF
Test Mode : PC mode
Test Engineer: Bing

	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	1420.000	34.53	25.49	4.63	33.47	31.18	54.00	-22.82	Average
2	1420.000	44.26	25.49	4.63	33.47	40.91	74.00	-33.09	Peak
3	2210.000	27.09	27.97	5.19	34.23	26.02	54.00	-27.98	Average
4	2210.000	37.52	27.97	5.19	34.23	36.45	74.00	-37.55	Peak
5	3560.000	28.88	29.09	7.07	32.67	32.37	54.00	-21.63	Average
6	3560.000	38.38	29.09	7.07	32.67	41.87	74.00	-32.13	Peak
7	4180.000	26.31	30.14	8.04	31.98	32.51	54.00	-21.49	Average
8	4180.000	36.17	30.14	8.04	31.98	42.37	74.00	-31.63	Peak
9	4815.000	23.59	31.79	8.61	32.09	31.90	54.00	-22.10	Average
10	4815.000	33.71	31.79	8.61	32.09	42.02	74.00	-31.98	Peak
11	5775.000	21.67	32.61	9.90	32.26	31.92	54.00	-22.08	Average
12	5775.000	31.27	32.61	9.90	32.26	41.52	74.00	-32.48	Peak

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
Job No. : 1338RF
Test Mode : PC mode
Test Engineer: Bing

	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	1420.000	26.52	25.49	4.63	33.47	23.17	54.00	-30.83	Average
2	1420.000	36.41	25.49	4.63	33.47	33.06	74.00	-40.94	Peak
3	2295.000	26.42	27.97	5.28	34.13	25.54	54.00	-28.46	Average
4	2295.000	36.62	27.97	5.28	34.13	35.74	74.00	-38.26	Peak
5	3385.000	28.31	28.57	6.74	32.89	30.73	54.00	-23.27	Average
6	3385.000	38.46	28.57	6.74	32.89	40.88	74.00	-33.12	Peak
7	4195.000	24.87	30.18	8.05	31.96	31.14	54.00	-22.86	Average
8	4195.000	34.23	30.18	8.05	31.96	40.50	74.00	-33.50	Peak
9	4595.000	24.93	31.51	8.42	31.98	32.88	54.00	-21.12	Average
10	4595.000	34.80	31.51	8.42	31.98	42.75	74.00	-31.25	Peak
11	5875.000	21.79	32.74	10.04	32.20	32.37	54.00	-21.63	Average
12	5875.000	31.83	32.74	10.04	32.20	42.41	74.00	-31.59	Peak