



Shenzhen EBO Technology Co., Ltd.

1-4F, Huafeng Science Park, Xin'an Sixth Road, 82th District, Bao'an,
Shenzhen, China.
Telephone: +86-755-29451282,
Fax: +86-755-22639141

Report No.: FCC14-RTE011702
Page 1 of 19

TEST REPORT

Applicant: Archos SA
Address of Applicant: 12 Rue Ampere 91430 Igny, France

Equipment Under Test (EUT)

Product Name: ARCHOS 90 Neon
Model No.: AC90NE
Trade mark: ARCHOS
FCC ID: SOVAC90NE
Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2012
Date of sample receipt: January 07, 2014
Date of Test: January 07-17, 2014
Date of report issued: January 17, 2014
Test Result : PASS *

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

Authorized Signature:

Kevin Yu
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of EBO International Electrical Approvals or testing done by EBO International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by EBO International Electrical Approvals in writing.

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2 Version

Version No.	Date	Description
00	January 17, 2014	Original

Prepared by:

Hank. Yan

Date:

January 17, 2014

Project Engineer

Reviewed by:

Hans. Hu

Date:

January 17, 2014

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:	Archos SA
Address of Applicant:	12 Rue Ampere 91430 Igny, France
Manufacturer:	Archos SA
Address of Manufacturer:	12 Rue Ampere 91430 Igny, France

5.2 General Description of EUT

Product Name:	ARCHOS 90 Neon
Model No.:	AC90NE
Power supply:	Model No.:THX-050200KB Input: AC 100~240V~50/60Hz 0.65A MAX Output: 5.0V 2.A DC 3.7V Li-ion Battery

5.3 Test mode and voltage

Test mode:	
Playing mode	Keep the EUT in video playing mode
Video Record mode	Keep the EUT in Video Recording mode
PC mode	Keep the EUT in data exchanging with PC mode.
Test voltage:	AC 120V/60Hz



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 fully 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 Approval
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. 07 2013	Sep. 06 2014
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
8	Thermo meter	KTJ	TA328	GTS233	Jul. 01 2013	Jul. 01 2014

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 09 2013	July 08 2014

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7 Test Results and Measurement Data

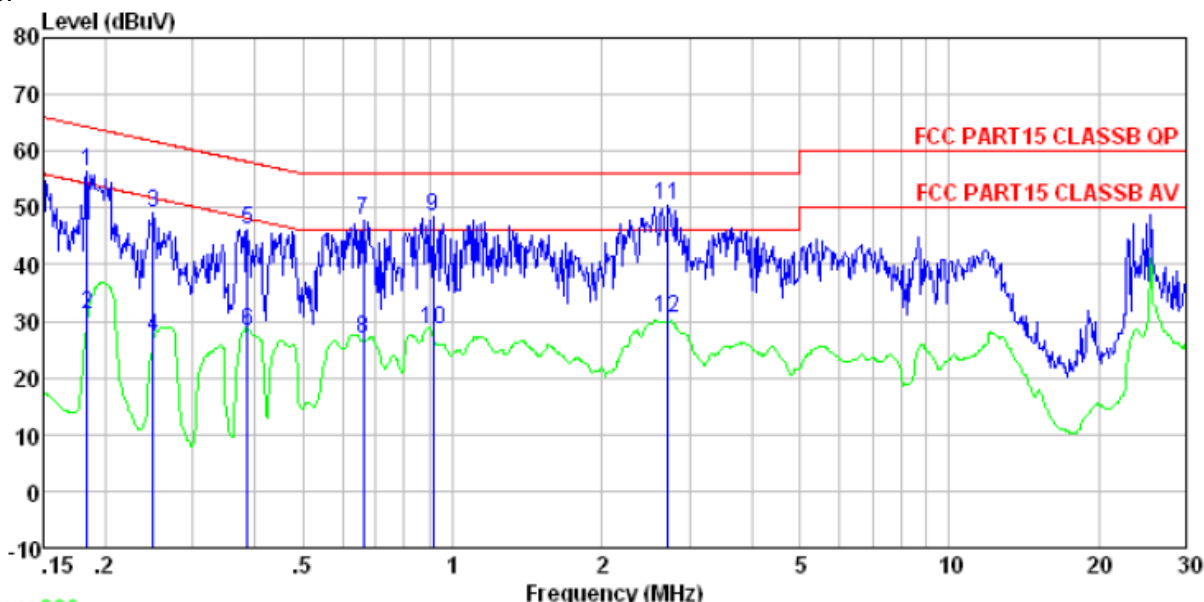
7.1 Conducted Emissions

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:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>0.5-30</td><td>60</td><td>50</td></tr></table>					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
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 procedure	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. 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). 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 setup:	<div><div><div>Reference Plane</div><div><div><div>LISN</div><div>AUX Equipment</div><div>E.U.T</div></div><div>40cm</div><div>80cm</div><div><div>LISN</div><div>Filter</div><div>EMI Receiver</div></div><div>AC power</div></div><div>Test table/Insulation plane</div></div><div><div>Remark:</div><div>E.U.T: Equipment Under Test</div><div>LISN: Line Impedance Stabilization Network</div><div>Test table height=0.8m</div></div></div>																		
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:	Refer to section 5.3 for details. All of the mode were tested and found the “PC mode” is the worst case. Only the data of worst case was reported.																		
Test results:	Pass																		



Measurement Data

Line:



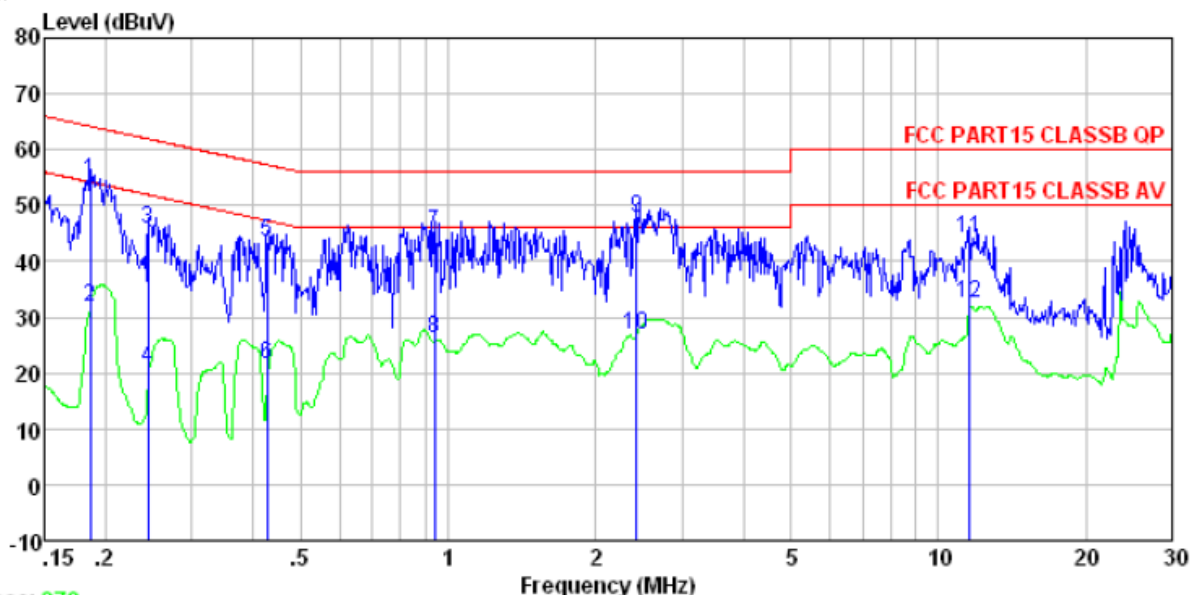
Trace: 280
Condition : FCC PART15 CLASSB QP LISN-2013 LINE
Job No. : 0004RF
Test mode : PC mode
Test Engineer: Liu

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.183	56.07	0.14	0.13	56.34	64.33	-7.99	QP
2	0.183	31.07	0.14	0.13	31.34	54.33	-22.99	Average
3	0.249	48.72	0.12	0.11	48.95	61.78	-12.83	QP
4	0.249	26.95	0.12	0.11	27.18	51.78	-24.60	Average
5	0.387	45.93	0.11	0.11	46.15	58.12	-11.97	QP
6	0.387	27.93	0.11	0.11	28.15	48.12	-19.97	Average
7	0.661	47.36	0.14	0.13	47.63	56.00	-8.37	QP
8	0.661	26.63	0.14	0.13	26.90	46.00	-19.10	Average
9	0.914	48.09	0.14	0.13	48.36	56.00	-7.64	QP
10	0.914	28.09	0.14	0.13	28.36	46.00	-17.64	Average
11	2.721	50.05	0.14	0.15	50.34	56.00	-5.66	QP
12	2.721	30.34	0.14	0.15	30.63	46.00	-15.37	Average

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Neutral:



Trace: 278
Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
Job No. : 0004RF
Test mode : PC mode
Test Engineer: Liu

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.186	54.29	0.07	0.13	54.49	64.20	-9.71	QP
2	0.186	31.48	0.07	0.13	31.68	54.20	-22.52	Average
3	0.244	45.66	0.06	0.11	45.83	61.95	-16.12	QP
4	0.244	20.66	0.06	0.11	20.83	51.95	-31.12	Average
5	0.428	43.29	0.06	0.11	43.46	57.29	-13.83	QP
6	0.428	21.46	0.06	0.11	21.63	47.29	-25.66	Average
7	0.938	44.94	0.07	0.13	45.14	56.00	-10.86	QP
8	0.938	25.94	0.07	0.13	26.14	46.00	-19.86	Average
9	2.422	47.48	0.10	0.15	47.73	56.00	-8.27	QP
10	2.422	26.48	0.10	0.15	26.73	46.00	-19.27	Average
11	11.559	43.56	0.31	0.20	44.07	60.00	-15.93	QP
12	11.559	32.06	0.31	0.20	32.57	50.00	-17.43	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.

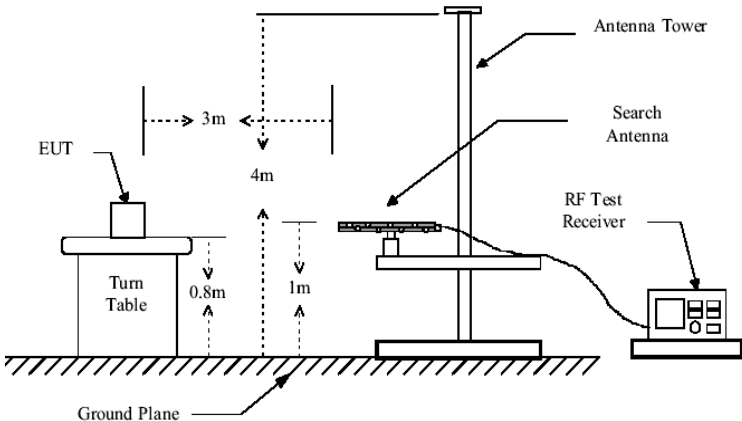
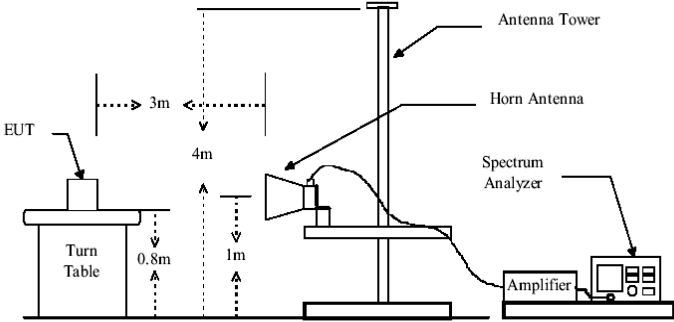
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7.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109																								
Test Method:	ANSI C63.4:2003																								
Test Frequency Range:	30MHz to 6GHz																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></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>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr></table>					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	
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:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></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>					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
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 Procedure:	<div>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.</div> <div>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.</div> <div>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.</div> <div>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.</div> <div>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</div> <div>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</div>																								

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	average method as specified and then reported in a data sheet.
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
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:	Refer to section 5.3 for details. All of the mode were tested and found the "PC mode" is the worst case. Only the data of worst case was reported.
Test results:	Pass

Note:

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

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

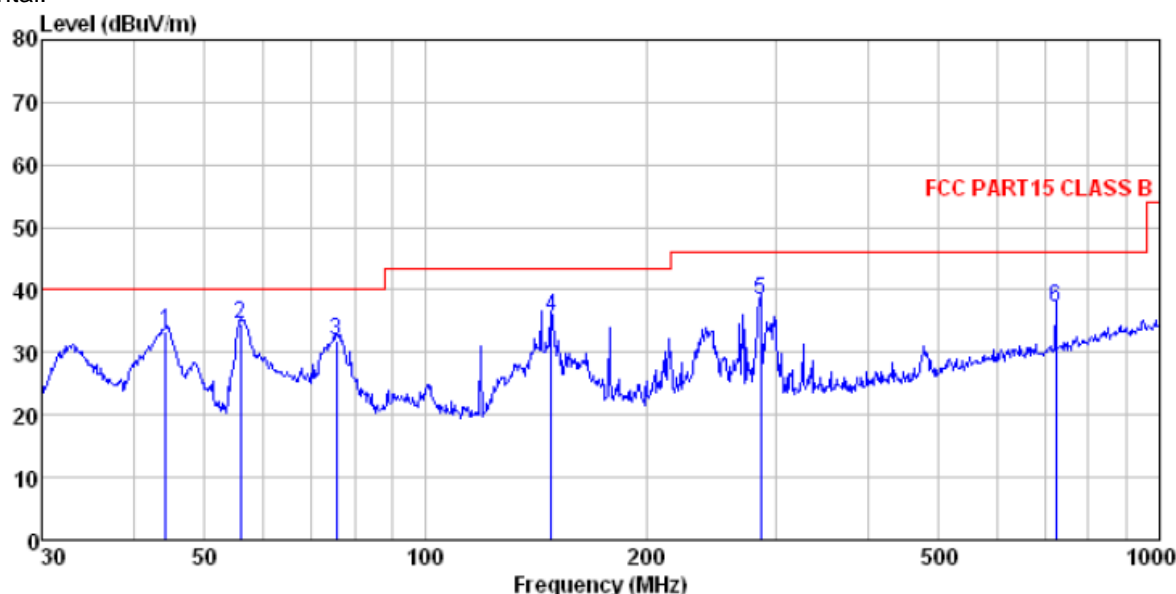
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Measurement Data

Below 1GHz

Horizontal:



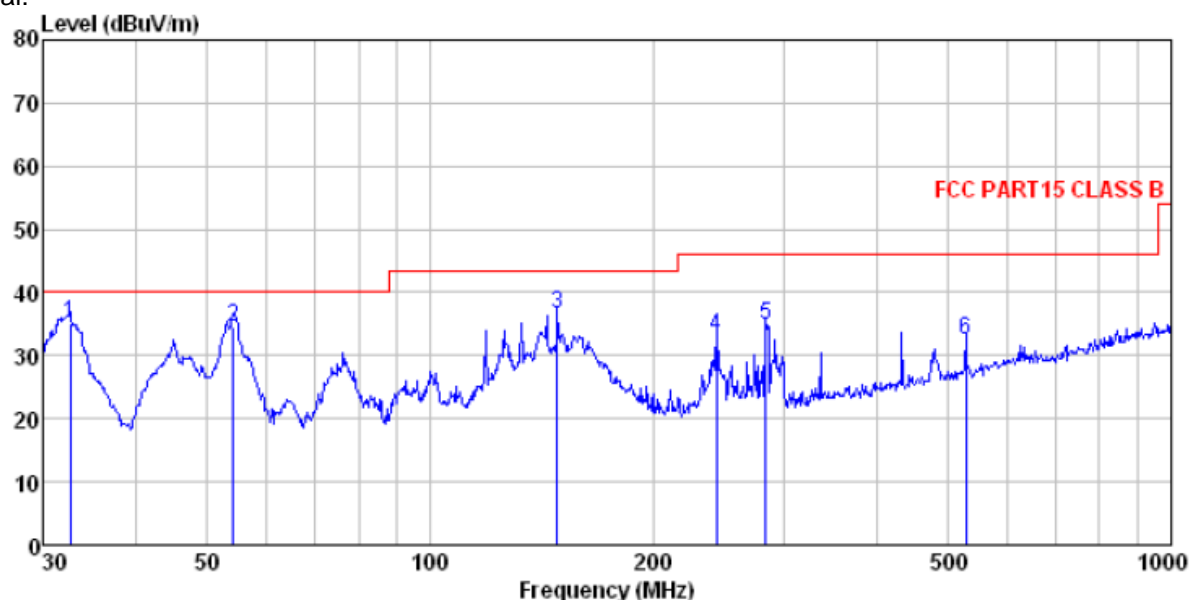
Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL
Job No. : 0004RF
Test Mode : PC mode
Test Engineer: ying

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	44.275	49.12	15.55	0.71	32.01	33.37	40.00	-6.63	QP
2	56.001	50.64	14.95	0.83	31.95	34.47	40.00	-5.53	QP
3	75.711	52.80	9.91	0.99	31.81	31.89	40.00	-8.11	QP
4	148.441	55.84	10.25	1.56	31.98	35.67	43.50	-7.83	QP
5	285.978	53.59	14.78	2.29	32.18	38.48	46.00	-7.52	QP
6	721.726	43.07	21.10	4.17	31.22	37.12	46.00	-8.88	QP

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Vertical:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
Job No. : 0004RF
Test Mode : PC mode
Test Engineer: ying

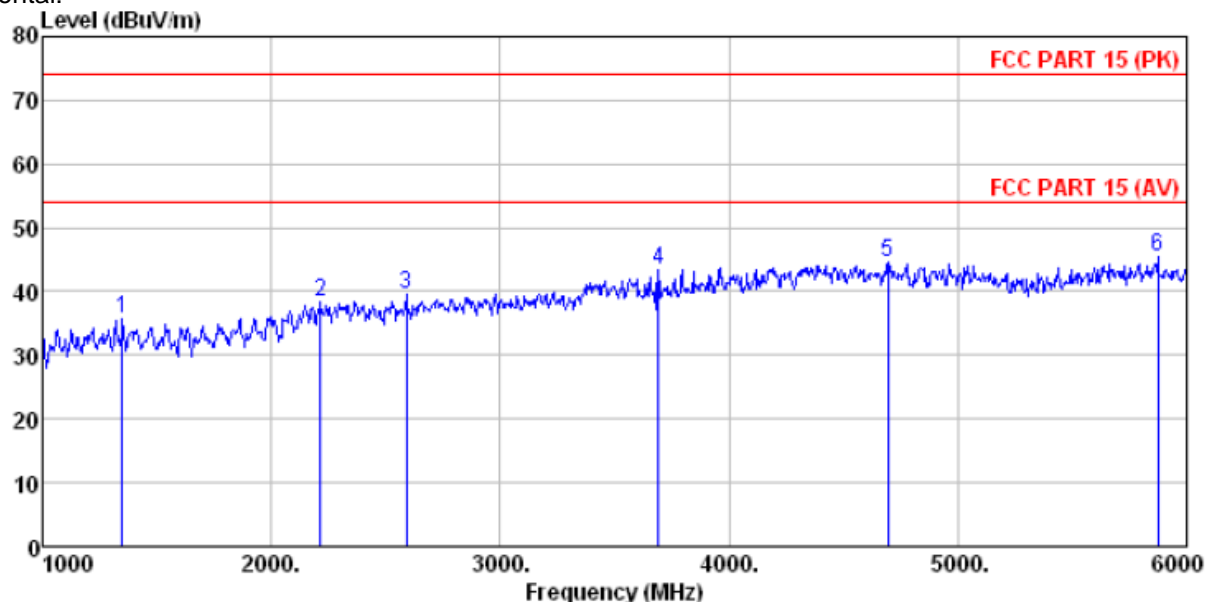
	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
		Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	32.634	52.15	14.31	0.58	32.06	34.98	40.00	-5.02 QP
2	54.261	50.70	15.05	0.81	31.95	34.61	40.00	-5.39 QP
3	148.441	56.63	10.25	1.56	31.98	36.46	43.50	-7.04 QP
4	243.377	49.05	14.08	2.09	32.16	33.06	46.00	-12.94 QP
5	283.979	49.94	14.75	2.29	32.17	34.81	46.00	-11.19 QP
6	528.246	41.29	19.15	3.43	31.41	32.46	46.00	-13.54 QP

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Above 1GHz

Horizontal:



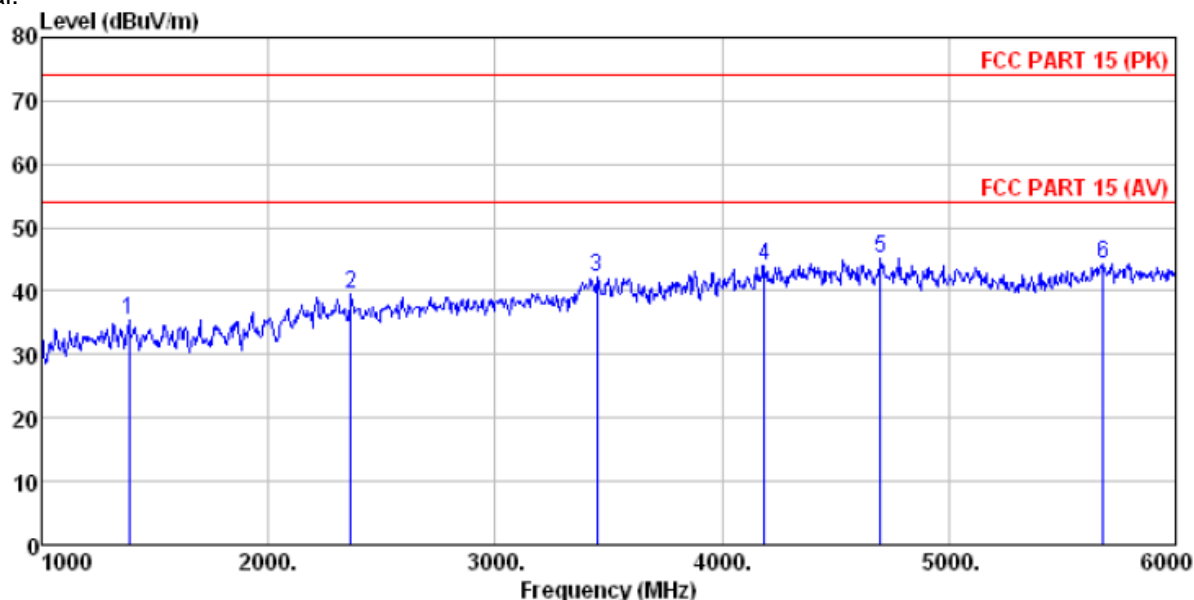
Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
Job No. : 0004RF
Test Mode : PC mode
Test Engineer: ying

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1350.000	38.85	25.71	4.58	33.36	35.78	74.00	-38.22 Peak
2	2215.000	39.53	27.98	5.20	34.23	38.48	74.00	-35.52 Peak
3	2590.000	39.85	27.77	5.57	33.78	39.41	74.00	-34.59 Peak
4	3690.000	39.44	29.22	7.32	32.54	43.44	74.00	-30.56 Peak
5	4695.000	36.38	31.65	8.51	32.03	44.51	74.00	-29.49 Peak
6	5875.000	34.76	32.74	10.04	32.20	45.34	74.00	-28.66 Peak

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Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
Job No. : 0004RF
Test Mode : PC mode
Test Engineer: ying

	Freq	ReadAntenna	Cable Preamp		Limit	Over		
		Level	Factor	Loss Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1385.000	38.52	25.62	4.61	33.42	35.33	74.00	-38.67 Peak
2	2365.000	40.43	27.67	5.36	34.05	39.41	74.00	-34.59 Peak
3	3450.000	39.27	28.80	6.86	32.81	42.12	74.00	-31.88 Peak
4	4185.000	37.82	30.18	8.04	31.98	44.06	74.00	-29.94 Peak
5	4700.000	37.10	31.65	8.51	32.04	45.22	74.00	-28.78 Peak
6	5680.000	34.51	32.44	9.77	32.33	44.39	74.00	-29.61 Peak

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