

FCC Report

Applicant: Shenzhen Firstview Electronic Co., Ltd.

Address of Applicant: 3-4/F, Block B, Huafeng 1st Technology Zone Baoan Main Road, Baoan District, Shenzhen, China

Equipment Under Test (EUT)

Product Name: 14.1 inch net book

Model No.: VNB14002IE, EMT144

FCC ID: YW51401

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2014

Date of sample receipt: November 04,2015

Date of Test: November 05-11,2015

Date of report issue: November 12,2015

Test Result : PASS *

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

Authorized Signature:

A handwritten signature of Robinson Lo is written over a circular blue stamp. The stamp contains the text "GLOBAL TECHNOLOGY SERVICES" around the top and "GTS GLOBAL TESTING" in the center.

Robinson Lo

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 GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	November 12, 2015	Original

Prepared By:

Edward Pan

Date:

November 12, 2015

Project Engineer

Check By:

Hank. yao

Date:

November 12, 2015

Reviewer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
4.1 MEASUREMENT UNCERTAINTY	4
5 GENERAL INFORMATION	5
5.1 CLIENT INFORMATION	5
5.2 GENERAL DESCRIPTION OF EUT	5
5.3 TEST MODE	5
5.4 TEST FACILITY	6
5.5 TEST LOCATION	6
5.6 DESCRIPTION OF SUPPORT UNITS	6
5.7 DEVIATION FROM STANDARDS	6
5.8 ABNORMALITIES FROM STANDARD CONDITIONS	6
5.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER	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
Radiated Emissions	Part15.109	PASS

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

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

Remark: Test according to ANSI C63.4:2014

5 General Information

5.1 Client Information

Applicant:	Shenzhen Firstview Electronic Co., Ltd.
Address of Applicant:	3-4/F, Block B, Huafeng 1st Technology Zone Baoan Main Road, Baoan District, Shenzhen, China
Manufacturer:	Shenzhen Firstview Electronic Co., Ltd.
Address of Manufacture:	3-4/F, Block B, Huafeng 1st Technology Zone Baoan Main Road, Baoan District, Shenzhen, China

5.2 General Description of EUT

Product Name:	14.1 inch net book
Model No.:	VNB14002IE, EMT144
Power Supply:	Adapter: Model:HLT-003-0502500U Input:AC100-240V~50/60Hz, 0.35A Output:DC 5V 2500mA Or DC 3.7V 10000mAh Li-ion Battery

5.3 Test mode

Test mode:	
PC working mode	Keep the EUT in Burning test mode.
HDMI mode	Keep the EUT in video playing and HDMI output mode.
TF card playing mode	Keep the EUT in video playing mode.

5.4 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 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.

Room 301-309, 3th Floor, Block A, Huafeng Jinyuan Business Building, No. 300 Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	FCC approval
Kingston	TF card	SD-C01G	FCC DOC
DELL	KEYBOARD	SK-8115	FCC DOC
DELL	MOUSE	MOC5UO	FCC 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	July. 03 2015	July. 02 2020
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	July. 03 2015	July. 02 2016
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July. 06 2015	July. 05 2016
5	RF Amplifier	HP	8347A	GTS204	July. 03 2015	July. 02 2016
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial cable	GTS	N/A	GTS210	Jul. 05 2015	Jul. 04 2016
8	Thermo meter	N/A	N/A	GTS256	July. 07 2015	July. 06 2016
9	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015	Mar. 26 2016

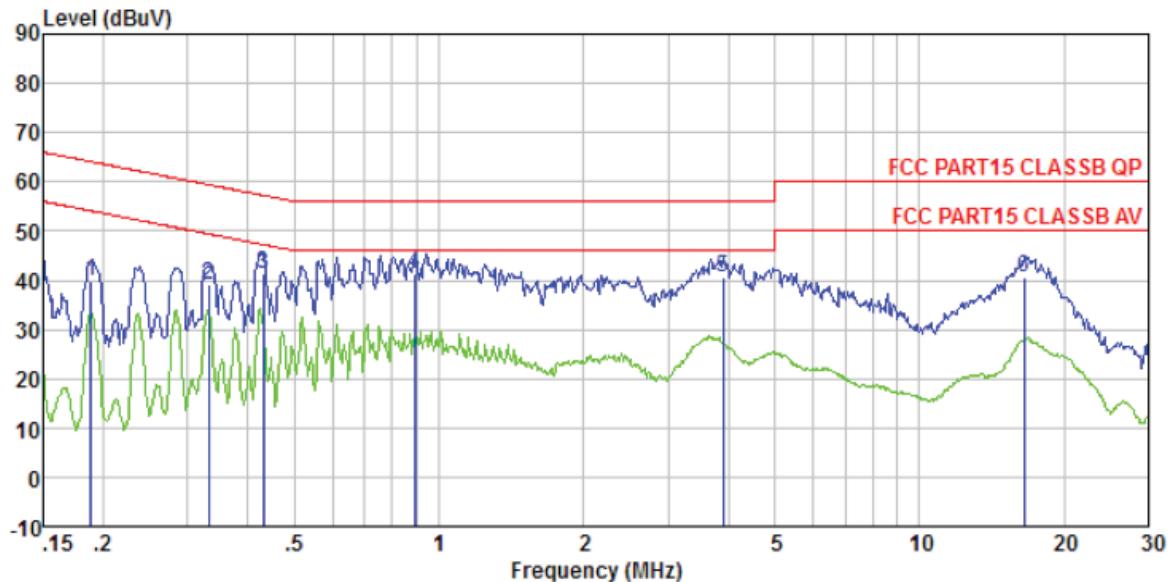
Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May. 16 2014	May. 15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April. 29 2015	April. 29 2016
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	July. 03 2015	July. 02 2016
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July. 03 2015	July. 02 2016
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	July. 03 2015	July. 02 2016
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 05 2015	Jul. 04 2016
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Thermo meter	KTJ	TA328	GTS233	July. 07 2015	July. 06 2016

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	July. 07 2015	July. 06 2016

7 Test Results and Measurement Data

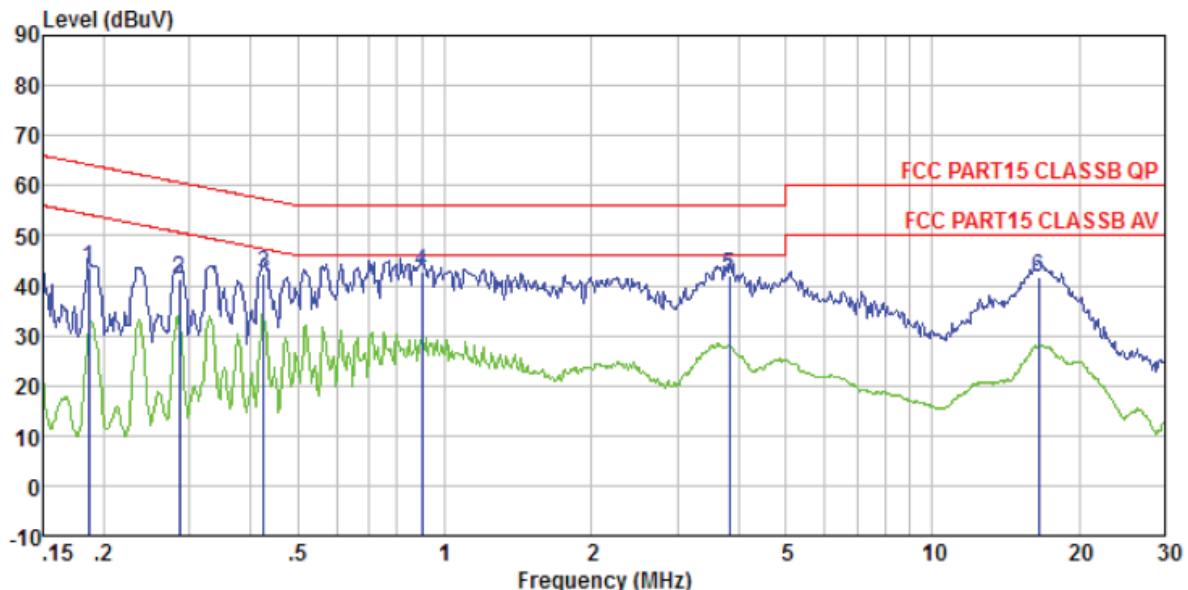
7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107																
Test Method:	ANSI C63.4:2014																
Test Frequency Range:	150KHz to 30MHz																
Class / Severity:	Class B																
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto																
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <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>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table>			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
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															
	<p>* Decreases with the logarithm of the frequency.</p>																
Test setup:	<p>Reference Plane</p> <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>																
Test procedure:	<ol style="list-style-type: none"> 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: 2014 on conducted measurement. 																
Test Instruments:	Refer to section 6 for details																
Test mode:	Refer to section 5.3 for details																
Test results:	Pass																

Measurement Data
Line:


Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 LINE
 Job No. : 1996RF
 Test mode : Burning test mode
 Test Engineer: Joe

Freq	Level	Limit	Over	Remark
		Line	dBuV	
1	0.188	39.72	64.11	-24.39 QP
2	0.332	38.92	59.40	-20.48 QP
3	0.431	41.25	57.24	-15.99 QP
4	0.890	41.23	56.00	-14.77 QP
5	3.901	40.44	56.00	-15.56 QP
6	16.486	40.61	60.00	-19.39 QP

Neutral:


Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
 Job No. : 1996RF
 Test mode : Burning test mode
 Test Engineer: Joe

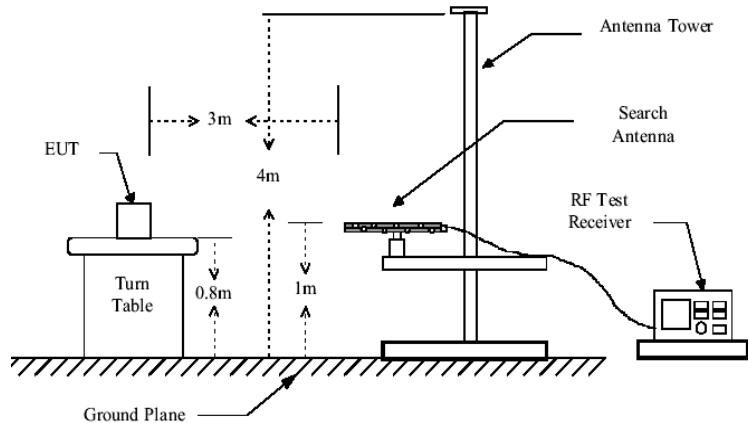
Freq MHz	Level dBuV	Limit	Over	Remark
		Line dBuV	Limit dB	
1 0.186	43.49	64.20	-20.71	QP
2 0.286	41.42	60.63	-19.21	QP
3 0.426	42.32	57.33	-15.01	QP
4 0.899	42.66	56.00	-13.34	QP
5 3.840	41.85	56.00	-14.15	QP
6 16.486	41.71	60.00	-18.29	QP

Notes:

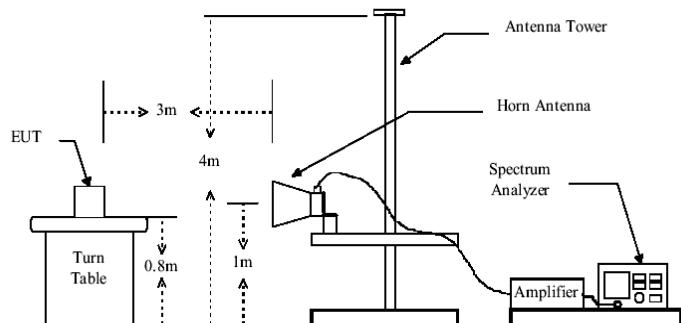
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109																								
Test Method:	ANSI C63.4:2014																								
Test Frequency Range:	30MHz to 10GHz																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table border="1"> <thead> <tr> <th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr> <tr> <td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr> <tr> <td></td><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr> </tbody> </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																					
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Limit:	<table border="1"> <thead> <tr> <th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr> </thead> <tbody> <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> </tbody> </table>					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.00	Quasi-peak Value	88MHz-216MHz	43.50	Quasi-peak Value	216MHz-960MHz	46.00	Quasi-peak Value	960MHz-1GHz	54.00	Quasi-peak Value	Above 1GHz	54.00	Average Value	74.00	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.00	Quasi-peak Value																							
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960MHz-1GHz	54.00	Quasi-peak Value																							
Above 1GHz	54.00	Average Value																							
	74.00	Peak Value																							
Test Procedure:	<ol style="list-style-type: none"> 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. 																								
Test setup:	Below 1GHz																								



Above 1GHz



Test environment:	Temp.: 25 °C	Humid.: 52%	Press.: 1 012mbar
Measurement Record:	Uncertainty: $\pm 4.5\text{dB}$		
Test Instruments:	Refer to section 6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Note:

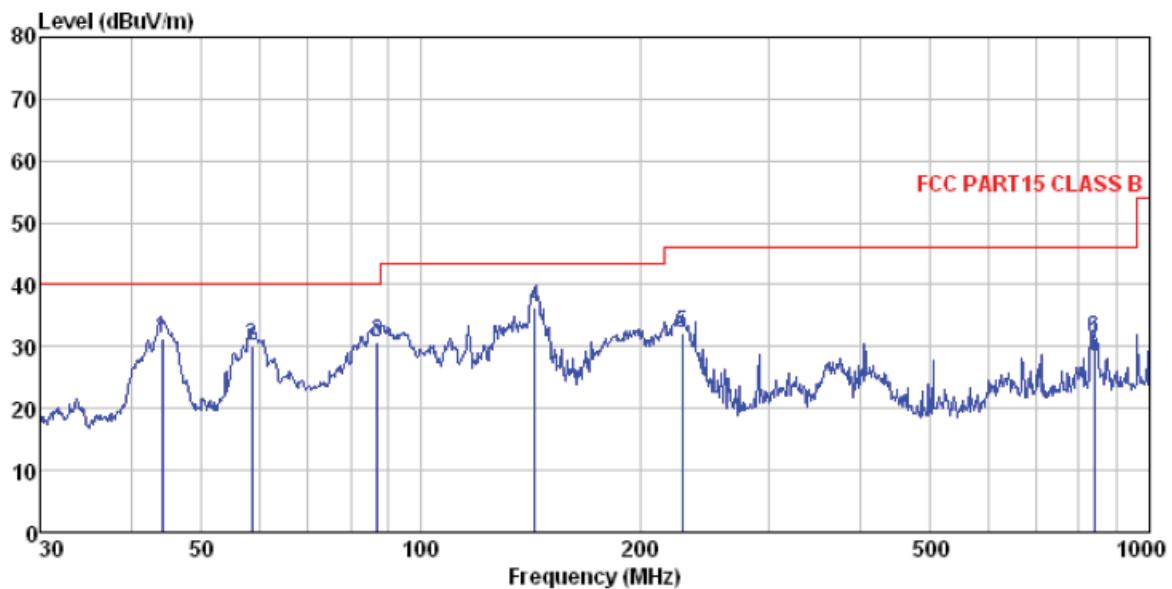
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

Horizontal:



Condition : FCC PART15 CLASS B VULB9163-2013M HORIZONTAL

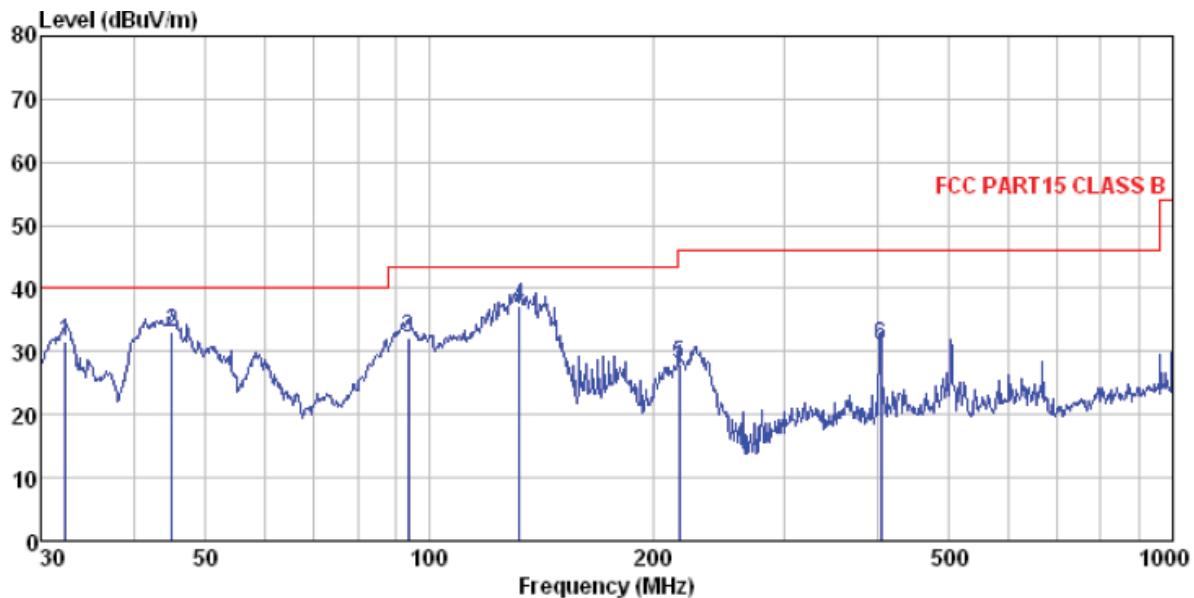
Job No. : 1996RF

Test Mode : Burning test mode

Test Engineer: Rong

Freq	ReadAntenna	Cable	Preamp	Limit	Over	Line	Limit	Remark
	Level	Factor	Loss					
MHz	dBuV	dB/m		dB				
1	44.120	45.13	15.56	0.71	30.02	31.38	40.00	-8.62 QP
2	58.613	44.31	14.78	0.85	29.93	30.01	40.00	-9.99 QP
3	87.112	46.34	13.03	1.09	29.76	30.70	40.00	-9.30 QP
4	143.326	54.11	10.22	1.53	29.44	36.42	43.50	-7.08 QP
5	228.490	46.04	13.57	2.01	29.47	32.15	46.00	-13.85 QP
6	839.182	33.36	22.46	4.62	29.16	31.28	46.00	-14.72 QP

Vertical:



Condition : FCC PART15 CLASS B VULB9163-2013M VERTICAL

Job No. : 1996RF

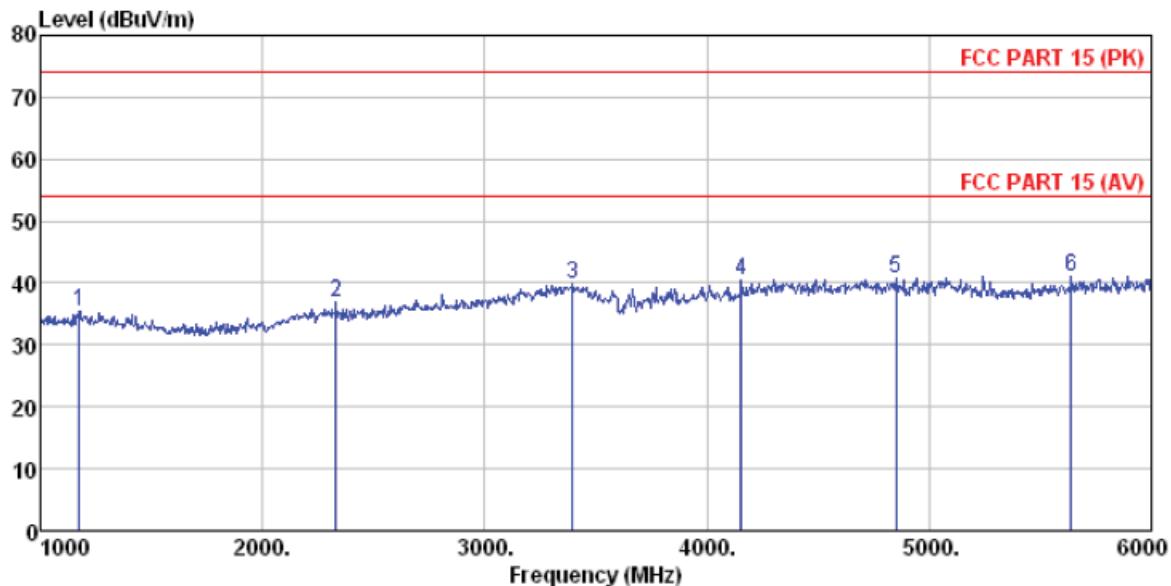
Test Mode : Burning test mode

Test Engineer: Rong

	ReadAntenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	32.406	46.65	14.32	0.58	30.09	31.46	40.00 -8.54 QP
2	45.058	46.95	15.55	0.72	30.02	33.20	40.00 -6.80 QP
3	93.768	46.06	14.58	1.14	29.73	32.05	43.50 -11.45 QP
4	132.221	54.62	10.77	1.45	29.50	37.34	43.50 -6.16 QP
5	216.783	42.44	13.10	1.94	29.36	28.12	46.00 -17.88 QP
6	404.667	40.44	17.18	2.88	29.49	31.01	46.00 -14.99 QP

Above 1GHz

Horizontal:



Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) HORIZONTAL

Job No. : 1996RF

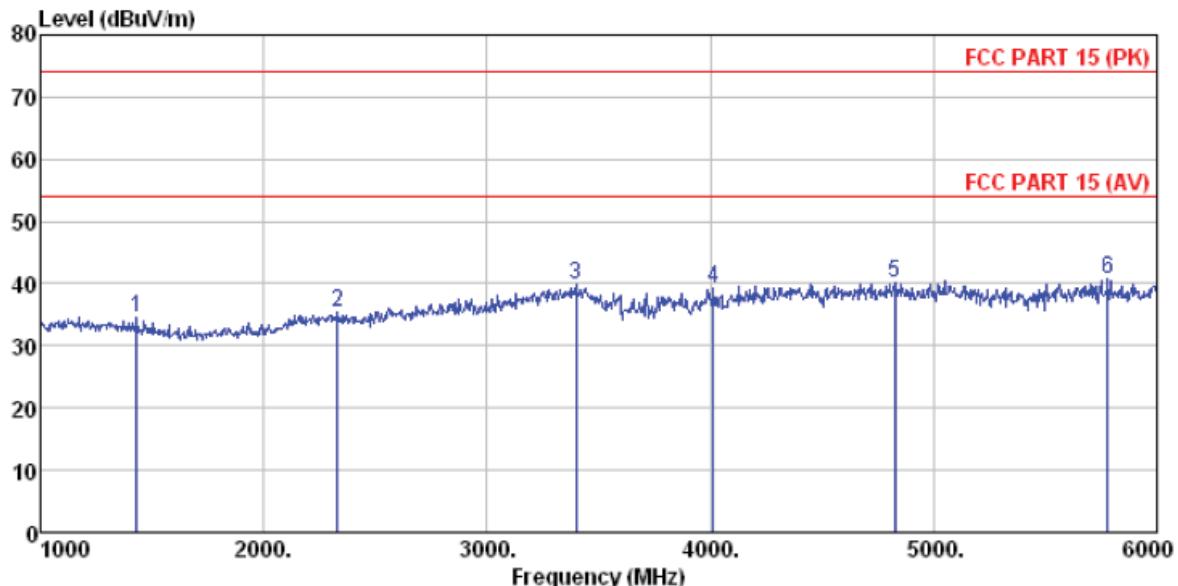
Test Mode : Burning test mode

Test Engineer: Rong

Freq	Read	Antenna	Cable	Preamp	Limit Level	Over Line	Over Limit	Remark
	Level	Factor	Loss	Factor				
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 1175.000	38.80	25.20	4.45	33.04	35.41	74.00	-38.59	Peak
2 2330.000	37.94	27.80	5.32	34.09	36.97	74.00	-37.03	Peak
3 3395.000	37.32	28.60	6.76	32.87	39.81	74.00	-34.19	Peak
4 4155.000	34.24	30.06	8.02	32.00	40.32	74.00	-33.68	Peak
5 4850.000	32.49	31.82	8.63	32.11	40.83	74.00	-33.17	Peak
6 5640.000	31.19	32.36	9.70	32.35	40.90	74.00	-33.10	Peak

Remark : no emission found for above 6GHz , so only worse case is reported.

Vertical:



Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) VERTICAL

Job No. : 1996RF

Test Mode : Burning test mode

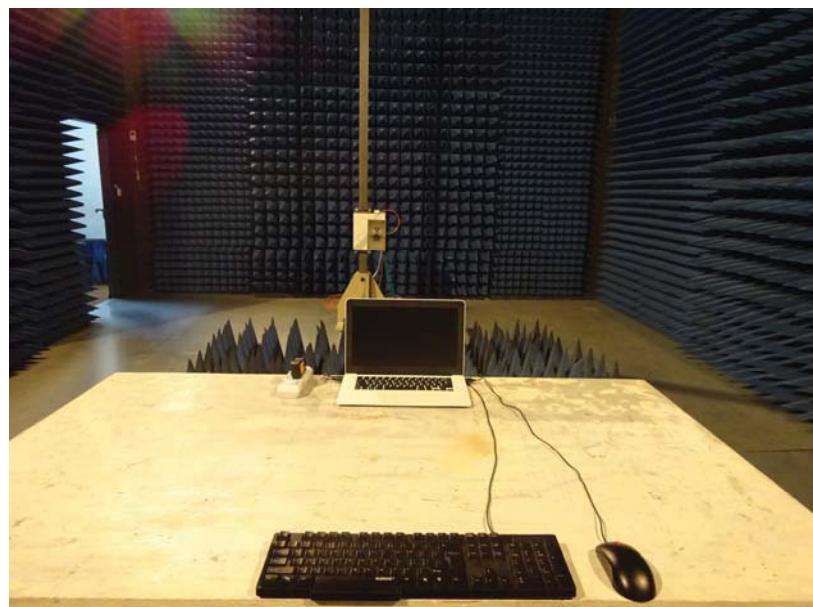
Test Engineer: Rong

Freq	Read	Antenna	Cable	Preamp	Limit	Over	Remark
	MHz	dBuV	Level	Factor	Loss	Factor	
1	1430.000	37.82	25.42	4.64	33.47	34.41	74.00 -39.59 Peak
2	2330.000	36.25	27.80	5.32	34.09	35.28	74.00 -38.72 Peak
3	3400.000	37.22	28.60	6.76	32.87	39.71	74.00 -34.29 Peak
4	4015.000	33.70	29.71	7.88	32.17	39.12	74.00 -34.88 Peak
5	4825.000	31.96	31.79	8.62	32.10	40.27	74.00 -33.73 Peak
6	5780.000	30.35	32.61	9.90	32.26	40.60	74.00 -33.40 Peak

Remark : no emission found for above 6GHz , so only worse case is reported.

8 Test Setup Photo

Radiated Emission



Conducted Emission



9 EUT Constructional Details

Reference to the test report No. GTSE15100199601

----- End -----