
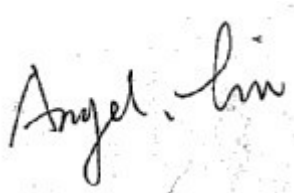
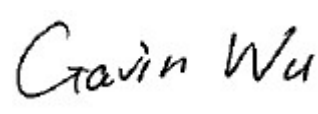


# TEST REPORT

<b>Report No.:</b>	<b>EM201200126-6</b>	<b>Application No.:</b>	<b>ZJ00013959</b>
<b>Client:</b>	CHESTER CREEK TECHNOLOGIES INC.		
<b>Address:</b>	205 WEST 2ND STREET, SUITE 130, DULUTH, MN 55802, U.S.A.		
<b>Sample Description:</b>	2.4GKeyboard+Optical Mouse Combo		
<b>Model:</b>	WVBB+MS		
<b>Test Location:</b>	EMC Laboratory of Guangzhou GRG Metrology and Test Co., Ltd.		
<b>Test Specification:</b>	FCC 15.249:2010		
<b>Issue Date:</b>	2012-05-04		
<b>Test Result:</b>	Pass.		
<b>Tested By:</b>	<b>Reviewed By:</b>	<b>Approved By:</b>	
Apple li / Test Engineer	Angel Liu/ Technical Support	Gavin Wu / Manager	
			
Date: 2012-05-04	Date: 2012-05-04	Date: 2012-05-04	
<b>Other Aspects:</b>			
None			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			

GRG Metrology and Test Technology Co., Ltd.

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<http://www.grgtest.com>

Ver.: 2.0 / 01. Jan. 2011

### **DIRECTIONS OF TEST**

- 1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.**
- 2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

## TABLE OF CONTENTS

<b>1. TEST RESULT SUMMARY .....</b>	<b>4</b>
<b>2. GENERAL DESCRIPTION OF EUT.....</b>	<b>5</b>
<b>2.1 APPLICANT.....</b>	<b>5</b>
2.2 MANUFACTURER .....	5
2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST .....	5
2.4 TEST OPERATION MODES .....	5
<b>3. LABORATORY AND ACCREDITATIONS .....</b>	<b>6</b>
<b>3.1 LABORATORY.....</b>	<b>6</b>
<b>3.2 ACCREDITATIONS .....</b>	<b>6</b>
<b>3.3 MEASUREMENT UNCERTAINTY .....</b>	<b>6</b>
<b>3.4 LIST OF USED TEST EQUIPMENT AT GRGT .....</b>	<b>7</b>
<b>4. EMISSION TEST .....</b>	<b>8</b>
<b>4.1 INTENTIONAL RADIATORS FIELD STRENGTH.....</b>	<b>8</b>
4.1.1 LIMITS.....	8
4.1.2 TEST PROCEDURE.....	8
4.1.3 TEST SETUP.....	9
4.1.4 TEST RESULTS.....	10
4.2 RADIATED ELECTROMAGNETIC DISTURBANCE .....	11
4.2.1 LIMITS.....	11
4.2.2 TEST PROCEDURES .....	11
4.2.3 TEST SETUP.....	13
4.2.4 TEST RESULTS.....	15
4.3 OUT OF BAND EMISSIONS .....	21
4.3.1 LIMITS.....	21
4.3.2 TEST PROCEDURES .....	21
4.3.3 TEST SETUP.....	22
4.3.4 TEST RESULTS.....	23
4.4 CONDUCTED EMISSION MEASUREMENT .....	24
4.4.1 LIMITS.....	24
4.4.2 TEST PROCEDURES .....	24
4.4.3 TEST SETUP.....	25
4.4.4 TEST RESULTS.....	26

**1. TEST RESULT SUMMARY**

<b>FCC 15.249:2010</b>			
<b>Standard</b>	<b>Item</b>	<b>Limit / Severity</b>	<b>Result</b>
<b>FCC 15.249:2010</b>	Intentional radiators Field Strength	FCC Part 15.249(a)	PASS
	Radiated Electromagnetic Disturbance	FCC Part 15.249 (e)	PASS
	Conduction Emissions	FCC Part 15.207	PASS
	Out of Band Emissions	FCC Part 15.249(d)	PASS

## **2. GENERAL DESCRIPTION OF EUT**

### **2.1 APPLICANT**

Name: CHESTER CREEK TECHNOLOGIES INC.  
Address: 205 WEST 2ND STREET, SUITE 130, DULUTH, MN 55802, U.S.A.

### **2.2 MANUFACTURER**

Name: ACCESSPRO ELECTRONICS CO., LTD.  
Address: ROOM 3B27, 3F, NO. 5, SEC. 5, HSIN YI ROAD, TAIPEI, TAIWAN, R.O.C.

### **2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST**

Equipment: 2.4GKeyboard+Optical Mouse Combo  
Model No.: WVBB+MS  
Trade Name: CHESTER CREEK  
Power Supply: Keyboard+ Mouse :DC 3V(Battery Size: 1.5 “AA”\*2)  
Dongle:DC 5V(USB Port)  
Channel 2402MHz~2480MHz  
Channel number 79  
Note: /

### **2.4 TEST OPERATION MODES**

Test mode: Mode 1:Fixed frequency mode that continuous transmission with 100% duty cycle  
Mode 2:connected with PC

### 3. LABORATORY AND ACCREDITATIONS

#### 3.1 LABORATORY

The tests and measurements refer to this report were performed by EMC Laboratory of Guangzhou GRG Metrology and Test Co., Ltd.

Add. : 163 Pingyun Rd, West of Huangpu Ave, Guangzhou, 510656, P. R. China

Telephone: +86-20-38699959, 38699960, 38699961

Fax : +86-20-38695185

#### 3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

<b>USA</b>	FCC Listed Lab No. 688188
<b>China</b>	CNAS NO.L0446
<b>China</b>	DILAC No.DL175
<b>Canada</b>	Registration No.:8355A-1

#### 3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

<b>Measurement</b>		<b>Frequency</b>	<b>Uncertainty</b>
Radiated Emission	Horizontal	30MHz~1000MHz	4.2dB
	Horizontal	1GHz~18GHz	4.2dB
	Vertical	30MHz~1000MHz	4.4dB
	Vertical	1GHz~18GHz	4.4dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

**3.4 LIST OF USED TEST EQUIPMENT AT GRGT**

<b>Name of Equipment</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial Number</b>	<b>Calibration Due</b>
<b>Radiated Emission</b>				
Bi-Log Antenna	ETS-LINDGREN	3142C	75971	2012-07-30
EMI Receiver	Rohde & Schwarz	ESCI	100529	2012-06-09
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120E318	2011-09-24
<b>Intentional radiators Field Strength</b>				
EMI Receiver	Rohde & Schwarz	ESCI	100529	2012-06-09
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120E318	2011-09-24
<b>Out of Band Emissions</b>				
Out of Band Emissions	Rohde & Schwarz	ESCI	100529	2012-06-09
<b>CE</b>				
L.I.S.N	SCHWARZBECK	NSLK 8127	8127450	2012-08-21
ISN	TESEQ	ISN-T8	24821	2012-06-08
EMI Receiver	R&S	ESCS30	100317	2012-06-08

## 4. EMISSION TEST

### 4.1 INTENTIONAL RADIATORS FIELD STRENGTH

#### 4.1.1 LIMITS

Frequency (MHz)	Field Strength
2400~2483.5	50(millivolts/meter)
Field Strength of Harmonics	500(microvolts/meter)

#### 4.1.2 TEST PROCEDURE

##### Procedure of Test

Radiated emission tests shall be made with the receive or transmit antenna located at a horizontal distance of 3 m plus half of the maximum width of the EUT being tested, measured from the centre of the EUT. The tests shall be performed with the equipment configured as closely as possible to its typical, practical operation. Unless stated otherwise, cables and wiring shall be as specified by the manufacturer and the equipment shall be in its housing (or cabinet) with all covers and access panels in place. Any deviation from normal EUT operating conditions shall be included in the test report.

The EUT (on a non-conductive support structure, where applicable) shall be placed on a remotely operated turntable, to allow the EUT to be rotated. The height of the EUT above the ground plane shall be according to the following requirements.

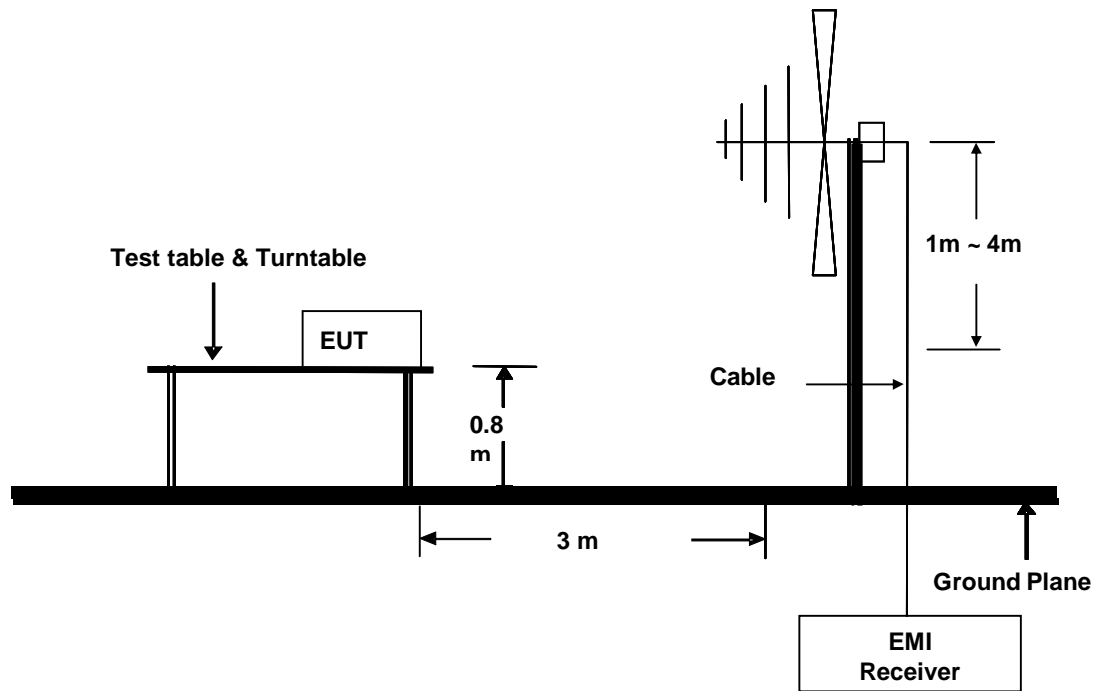
- Table-top equipment is placed on a non-conductive set-up table with height  $0,8\text{ m} \pm 0,01\text{ m}$ , ANSI C63.10:2009 specifies the method to determine the impact of the non-conductive set-up table on test results.
- Floor-standing equipment is placed on a non-conductive support, as specified in the applicable product standard. If there are no EUT height placement requirements in the product standard, the EUT shall be placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane.

Interface cables, loads, and devices should be connected to at least one of each type of the interface ports of the EUT and, where practical, each cable shall be terminated in a device typical for its actual use. Where there are multiple interface ports of the same type, a typical number of these devices shall be connected to devices or loads. It is sufficient to connect only one of the loads, provided that it can be shown, for example by preliminary testing, that the connection of further ports would not significantly increase the level of disturbance (that is, more than 2 dB) or significantly degrade the immunity level.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the test.



### 4.1.3 TEST SETUP



**4.1.4 TEST RESULTS**

<b>Test Result:</b>	<b>Pass</b>	<b>Polarization:</b>	<b>Horizontal</b>
<b>Standard:</b>	<b>(RE)FCC PART 15 3m_PEAK</b>	<b>Power Source:</b>	<b>USB Supply</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Date:</b>	<b>2012-4-11</b>
<b>Temp./Hum.(%RH):</b>	<b>25/57%RH</b>	<b>Time:</b>	<b>17:43:34</b>
<b>EUT:</b>	<b>Dongle</b>	<b>Model:</b>	<b>WVBB+MS</b>
<b>Note:</b>			

<b>Polarization</b>	<b>Frequency</b>	<b>Reading</b>	<b>Correct</b>	<b>Result</b>	<b>Limit</b>	<b>Over Limit</b>	<b>Remark</b>
	<b>(MHz)</b>	<b>(dBuV/m)</b>	<b>Factor(dB/m)</b>	<b>(dBuV/m)</b>	<b>(dBuV/m)</b>	<b>(dB)</b>	
Vertical	2402	33.91	27.25	61.16	114.00	-52.84	peak
Vertical	2402	16.95	27.25	44.20	94.00	-49.80	AVG
Horizontal	2402	44.49	27.25	71.74	114.00	-42.26	peak
Horizontal	2402	25.05	27.25	52.30	94.00	-41.70	AVG
Vertical	2441	33.12	27.40	60.52	114.00	-53.48	peak
Vertical	2441	17.10	27.40	44.50	94.00	-49.50	AVG
Horizontal	2441	45.05	27.40	72.45	114.00	-41.55	peak
Horizontal	2441	23.90	27.40	51.30	94.00	-42.70	AVG
Vertical	2480	31.46	27.53	58.99	114.00	-55.01	peak
Vertical	2480	15.97	27.53	43.50	94.00	-50.50	AVG
Horizontal	2480	43.79	27.53	71.32	114.00	-42.68	peak
Horizontal	2480	23.07	27.53	50.60	94.00	-43.40	AVG

## 4.2 RADIATED ELECTROMAGNETIC DISTURBANCE

### 4.2.1 LIMITS

Frequency (MHz)	Quasi-peak(dB $\mu$ V/m)
30 ~ 88	40
88~216	43.5
216 ~ 960	46
Above 960	54

**NOTE:** (1) The lower limit shall apply at the transition frequencies.

Frequency (GHz)	PEAK and AVG(dB $\mu$ V/m)
Above 1G	74 PEAK
Above 1G	54 AVG

### 4.2.2 TEST PROCEDURES

#### Procedure of Preliminary Test

Radiated emission tests shall be made with the receive or transmit antenna located at a horizontal distance of 3 m plus half of the maximum width of the EUT being tested, measured from the centre of the EUT. The tests shall be performed with the equipment configured as closely as possible to its typical, practical operation. Unless stated otherwise, cables and wiring shall be as specified by the manufacturer and the equipment shall be in its housing (or cabinet) with all covers and access panels in place. Any deviation from normal EUT operating conditions shall be included in the test report.

The EUT (on a non-conductive support structure, where applicable) shall be placed on a remotely operated turntable, to allow the EUT to be rotated. The height of the EUT above the ground plane shall be according to the following requirements.

- Table-top equipment is placed on a non-conductive set-up table with height 0,8 m  $\pm$  0,01 m, ANSI C63.10:2009 specifies the method to determine the impact of the non-conductive set-up table on test results.
- Floor-standing equipment is placed on a non-conductive support, as specified in the applicable product standard. If there are no EUT height placement requirements in the product standard, the EUT shall be placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane.

Interface cables, loads, and devices should be connected to at least one of each type of the interface ports of the EUT and, where practical, each cable shall be terminated in a device typical for its actual use. Where there are multiple interface ports of the same type, a typical number of these devices shall be connected to devices or loads. It is sufficient to connect only one of the loads, provided that it can be shown, for example by preliminary testing, that the connection of further ports would not significantly increase the level of disturbance (that is, more than 2 dB) or significantly degrade the immunity level.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

**Procedure of Final Test**

EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test. The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level. Record at least six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only QP reading is presented. The test data of the worst-case condition(s) was recorded.

**Procedure of Final Test**

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

### 4.2.3 TEST SETUP

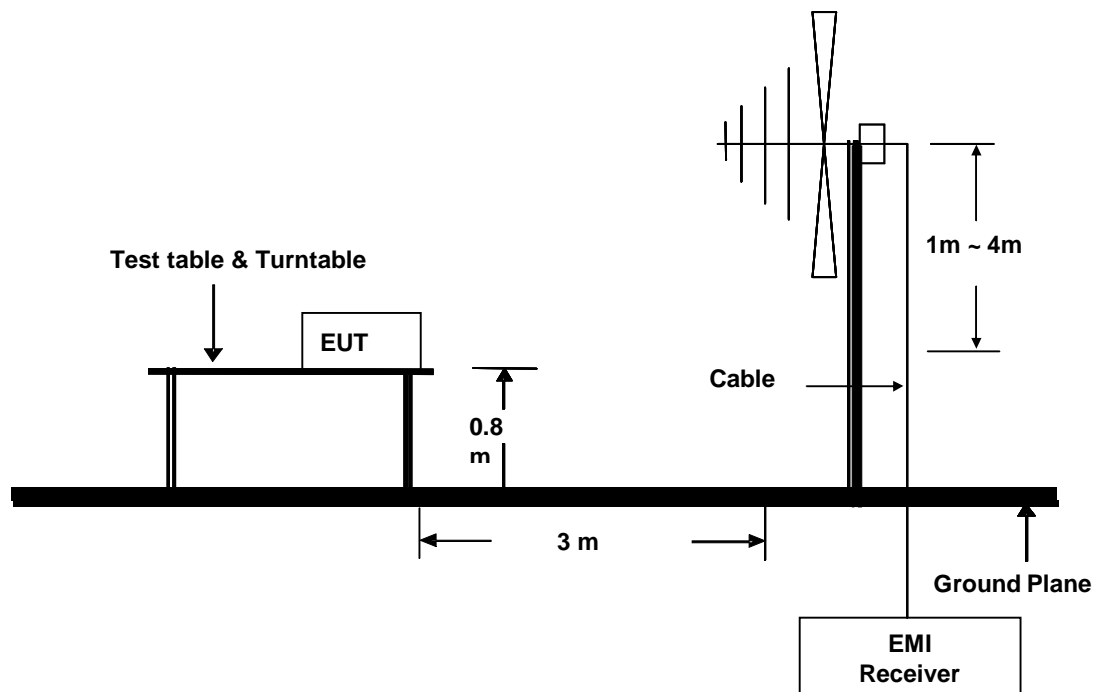
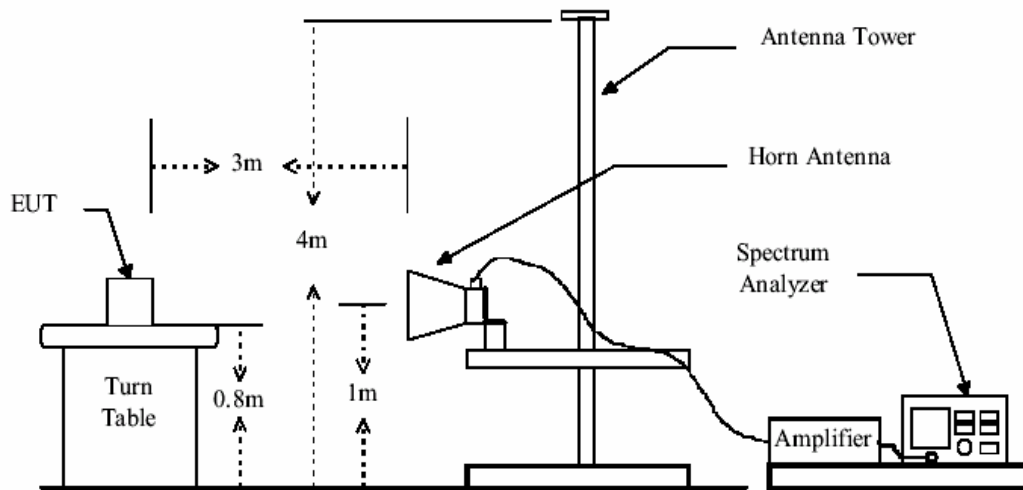


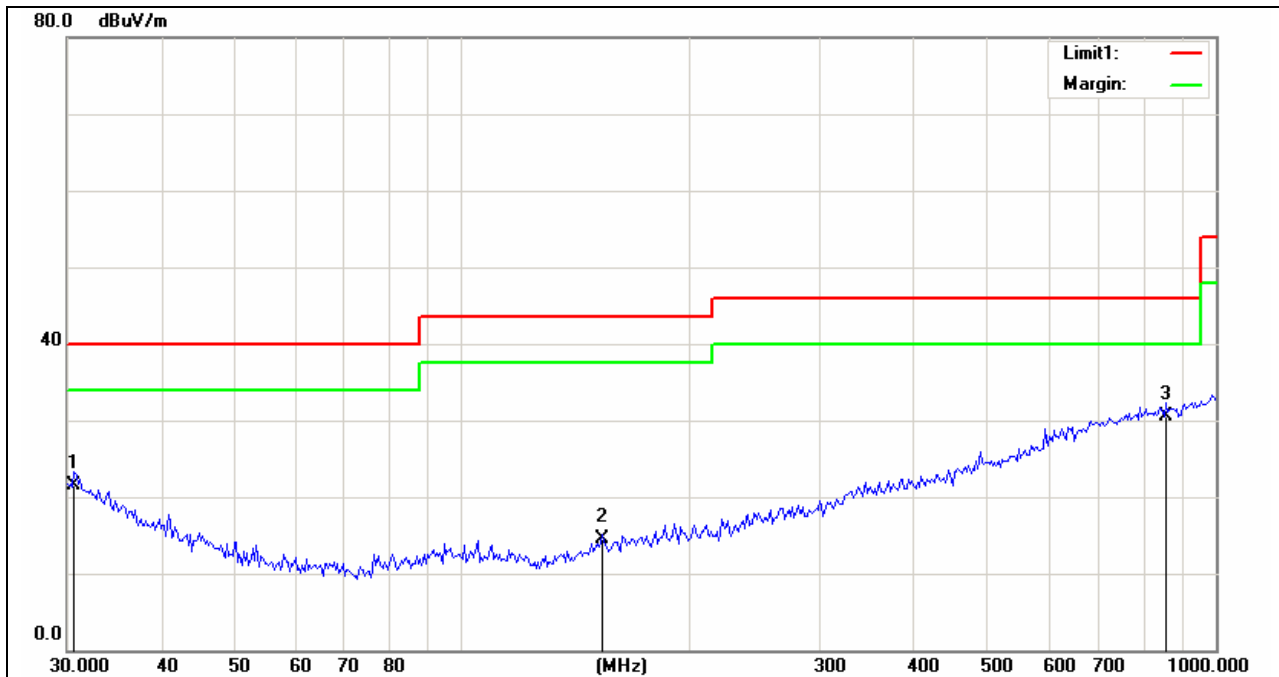
Figure 1. 30MHz to 1GHz radiated emissions test configuration



**Figure 2 Above 1GHz radiated emissions test configuration**

#### 4.2.4 TEST RESULTS

Test Result:	Pass	Probe:	Vertical
Standard:	(RE)FCC PART 15 3m	Power Source:	USB
Test item:	Radiation Test	Date:	2012-4-11
Temp./Hum.(%RH):	25/57%RH	Time:	15:26:05
EUT:	Dongle	Model:	WVBB+MS
Note:	2402MHZ		

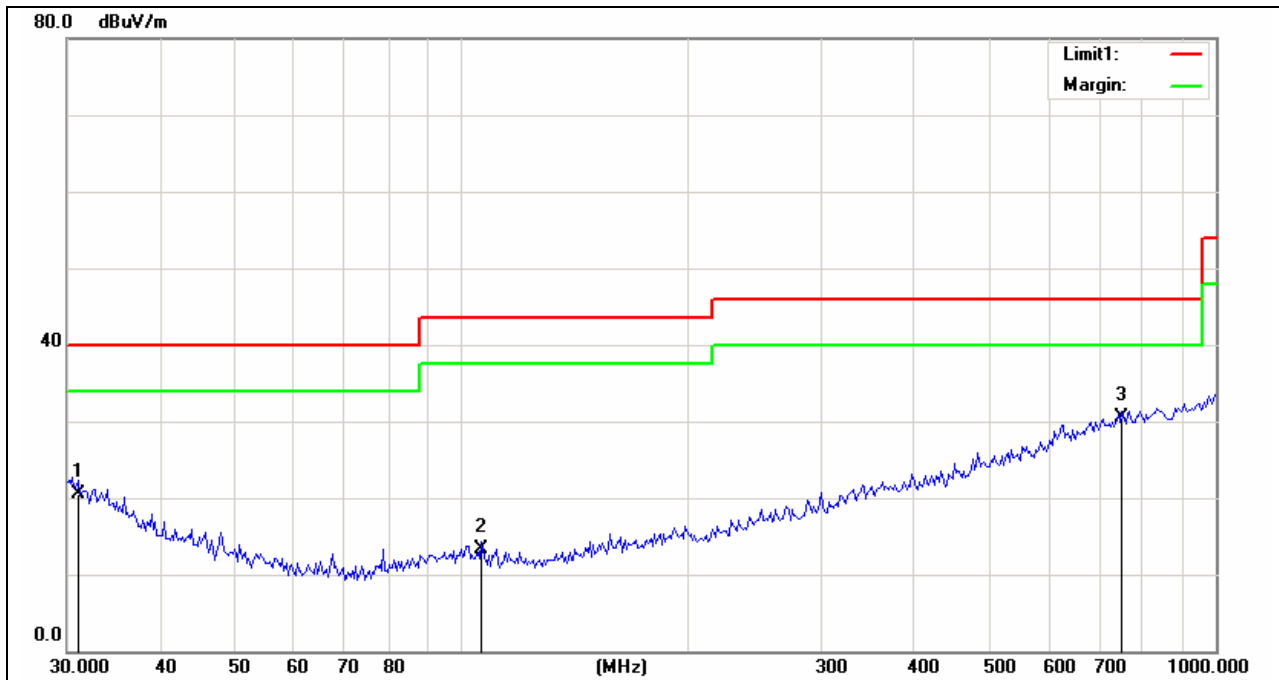


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	30.6816	2.59	19.01	21.60	40.00	-18.40	QP
2	153.9250	4.14	10.36	14.50	43.50	-29.00	QP
3	859.2236	5.19	25.31	30.50	46.00	-15.50	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3624.890	57.06	74.00	-16.94	PEAK
2	3624.890	47.22	54.00	-6.78	AVG
3	4923.882	59.24	74.00	-14.76	PEAK
4	4923.882	48.25	54.00	-5.75	AVG
5	8223.640	64.16	74.00	-9.84	PEAK
6	8223.640	52.01	54.00	-1.99	AVG

<b>Test Result:</b>	Pass	<b>Probe:</b>	Horizontal
<b>Standard:</b>	(RE)FCC PART 15 3m	<b>Power Source:</b>	USB
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012-4-11
<b>Temp./Hum.(%RH):</b>	25/57%RH	<b>Time:</b>	15:36:05
<b>EUT:</b>	Dongle	<b>Model:</b>	WVBB+MS
<b>Note:</b>	2402MHZ		



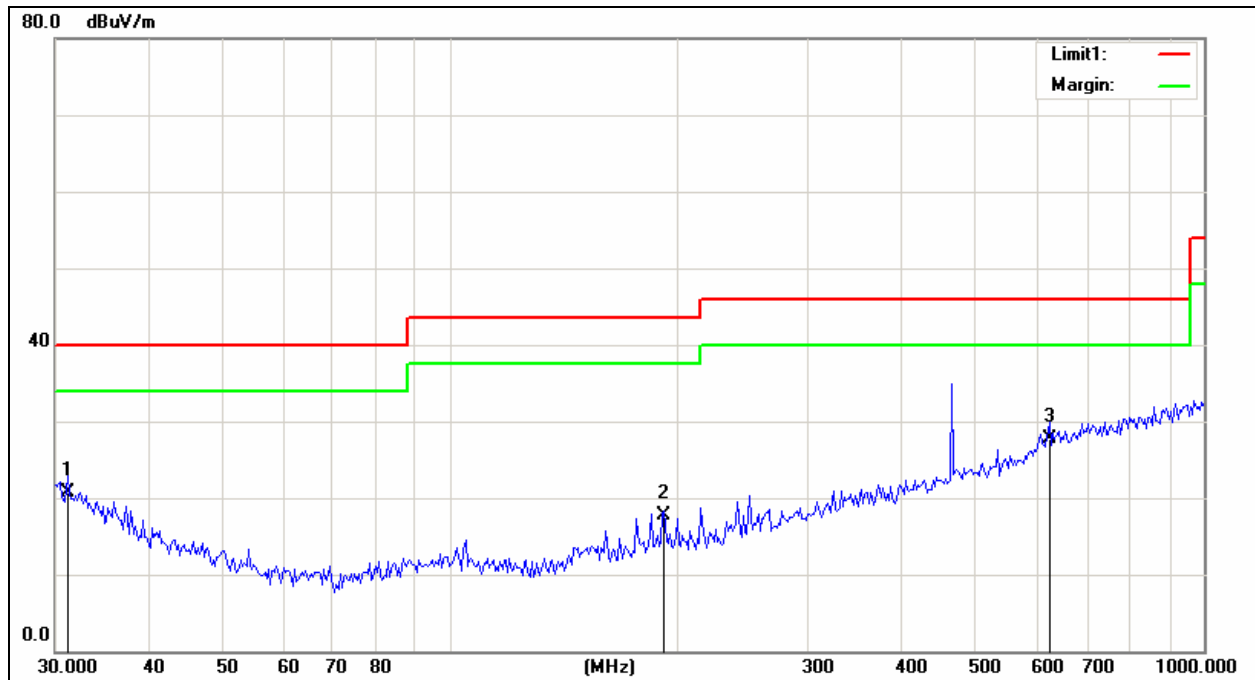
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	31.0288	1.81	18.79	20.60	40.00	-19.40	QP
2	106.2270	3.71	9.69	13.40	43.50	-30.10	QP
3	750.8165	6.28	24.22	30.50	46.00	-15.50	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3638.291	56.58	74.00	-17.42	PEAK
2	3638.291	45.60	54.00	-8.40	AVG
3	4960.356	59.88	74.00	-14.12	PEAK
4	4960.356	47.80	54.00	-6.20	AVG
5	9391.964	64.62	74.00	-9.38	PEAK
6	9391.964	46.50	54.00	-7.50	AVG



<b>Test Result:</b>	Pass	<b>Probe:</b>	Vertical
<b>Standard:</b>	(RE)FCC PART 15 3m	<b>Power Source:</b>	USB
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012-4-11
<b>Temp./Hum.(%RH):</b>	25/57%RH	<b>Time:</b>	15:46:05
<b>EUT:</b>	Dongle	<b>Model:</b>	WVBB+MS
<b>Note:</b>	2441MHZ		

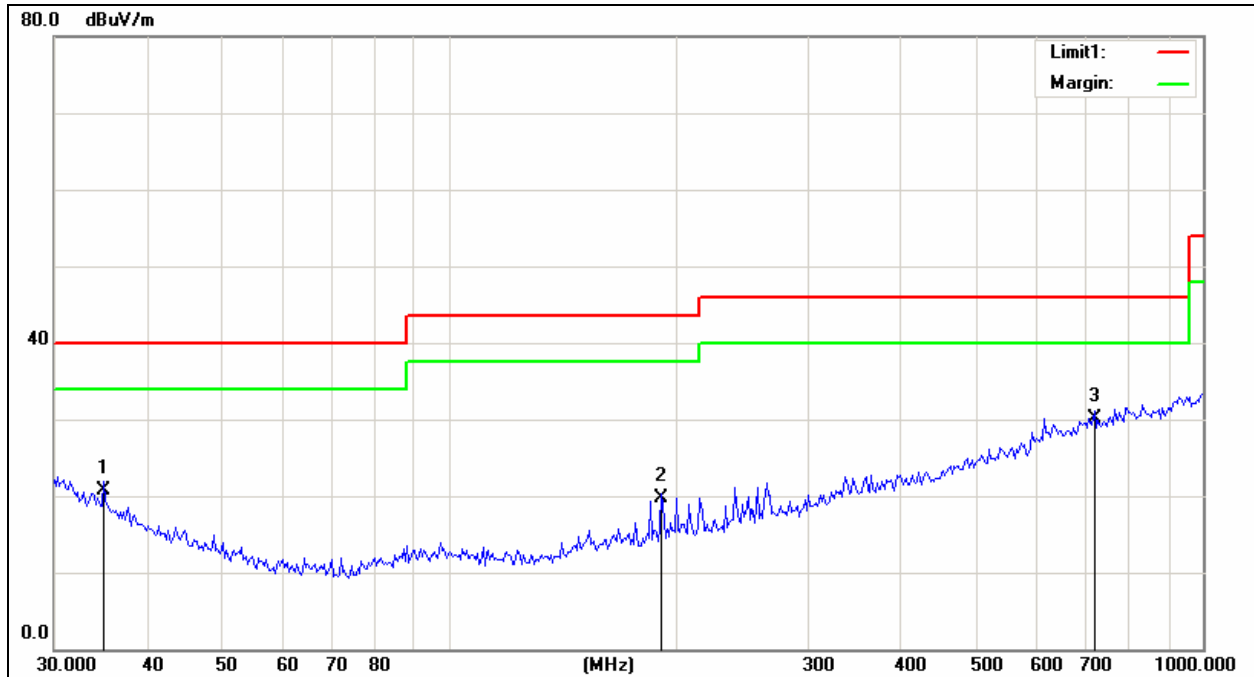


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	31.2036	2.12	18.68	20.80	40.00	-19.20	QP
2	192.7213	6.36	11.44	17.80	43.50	-25.70	QP
3	623.7305	5.00	22.80	27.80	46.00	-18.20	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3624.890	56.59	74.00	-17.41	PEAK
2	3624.890	46.67	54.00	-7.33	AVG
3	4923.882	59.81	74.00	-14.19	PEAK
4	4923.882	47.53	54.00	-6.47	AVG
5	8193.351	64.35	74.00	-9.65	PEAK
6	8193.351	51.67	54.00	-2.33	AVG

<b>Test Result:</b>	Pass	<b>Probe:</b>	Horizontal
<b>Standard:</b>	(RE)FCC PART 15 3m	<b>Power Source:</b>	USB
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012-4-11
<b>Temp./Hum.(%RH):</b>	25/57%RH	<b>Time:</b>	15:56:05
<b>EUT:</b>	Dongle	<b>Model:</b>	WVBB+MS
<b>Note:</b>	2441MHZ		

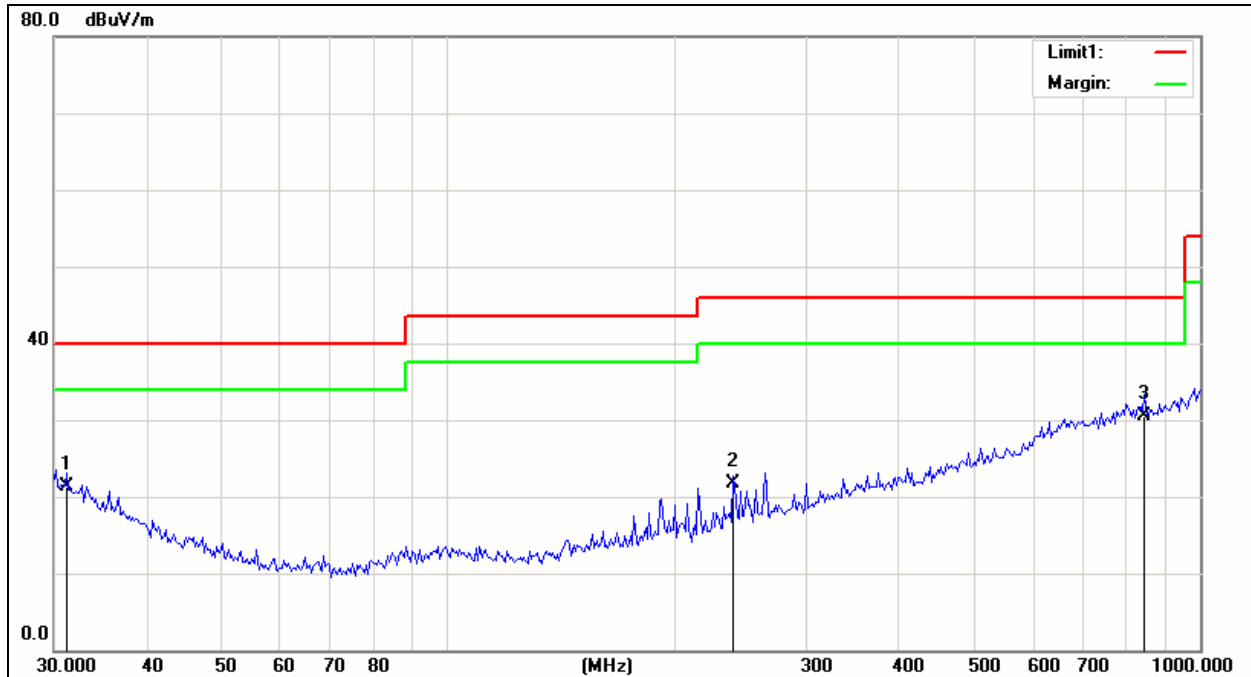


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	34.9151	4.36	16.44	20.80	40.00	-19.20	QP
2	191.6416	8.35	11.45	19.80	43.50	-23.70	QP
3	717.8106	5.96	24.24	30.20	46.00	-15.80	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3651.741	57.33	74.00	-16.67	PEAK
2	3651.741	47.67	54.00	-6.33	AVG
3	4960.356	59.76	74.00	-14.24	PEAK
4	4960.356	48.89	54.00	-5.11	AVG
5	8073.304	64.49	74.00	-9.51	PEAK
6	8073.304	50.22	54.00	-3.78	AVG

<b>Test Result:</b>	Pass	<b>Probe:</b>	Vertical
<b>Standard:</b>	(RE)FCC PART 15 3m	<b>Power Source:</b>	USB
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012-4-11
<b>Temp./Hum.(%RH):</b>	25/57%RH	<b>Time:</b>	15:26:56
<b>EUT:</b>	Dongle	<b>Model:</b>	WVBB+MS
<b>Note:</b>	2480MHZ		

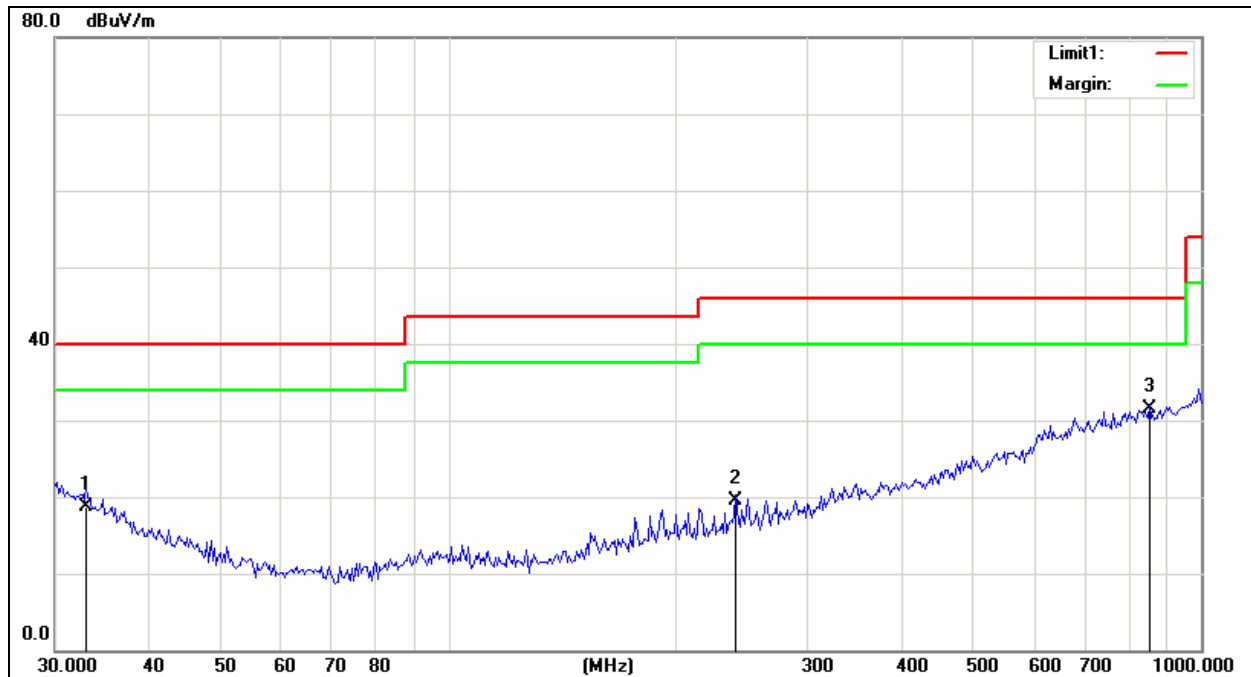


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	31.2036	2.62	18.68	21.30	40.00	-18.70	QP
2	239.9439	8.42	13.28	21.70	46.00	-24.30	QP
3	844.8599	5.41	25.19	30.60	46.00	-15.40	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3902.529	56.58	74.00	-17.42	PEAK
2	3902.529	46.67	54.00	-7.33	AVG
3	5165.841	59.42	74.00	-14.58	PEAK
4	5165.841	47.90	54.00	-6.10	AVG
5	8438.826	64.63	74.00	-9.37	PEAK
6	8438.826	50.22	54.00	-3.78	AVG

<b>Test Result:</b>	<b>Pass</b>	<b>Probe:</b>	<b>Horizontal</b>
<b>Standard:</b>	<b>(RE)FCC PART 15 3m</b>	<b>Power Source:</b>	<b>USB</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Date:</b>	<b>2012-4-11</b>
<b>Temp./Hum.(%RH):</b>	<b>25/57%RH</b>	<b>Time:</b>	<b>15:26:56</b>
<b>EUT:</b>	<b>Dongle</b>	<b>Model:</b>	<b>WVBB+MS</b>
<b>Note:</b>	<b>2480MHZ</b>		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	33.0073	1.20	17.60	18.80	40.00	-21.20	QP
2	241.2964	6.26	13.34	19.60	46.00	-26.40	QP
3	854.4088	6.27	25.23	31.50	46.00	-14.50	QP

Emission above 1GHz:

No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	3747.296	56.65	74.00	-17.35	PEAK
2	3747.296	46.67	54.00	-7.33	AVG
3	5623.413	59.12	74.00	-14.88	PEAK
4	5623.413	47.90	54.00	-6.10	AVG
5	7780.825	63.66	74.00	-10.34	PEAK
6	7780.825	50.22	54.00	-3.78	AVG

Remark:

The disturbance above 10G was very low, and the above harmonics were the highest point could be found when testing , so only the above harmonics had been displayed.

## **4.3 OUT OF BAND EMISSIONS**

### **4.3.1 LIMITS**

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

### **4.3.2 TEST PROCEDURES**

#### **Procedure of Test**

Radiated emission tests shall be made with the receive or transmit antenna located at a horizontal distance of 3 m plus half of the maximum width of the EUT being tested, measured from the centre of the EUT. The tests shall be performed with the equipment configured as closely as possible to its typical, practical operation. Unless stated otherwise, cables and wiring shall be as specified by the manufacturer and the equipment shall be in its housing (or cabinet) with all covers and access panels in place. Any deviation from normal EUT operating conditions shall be included in the test report.

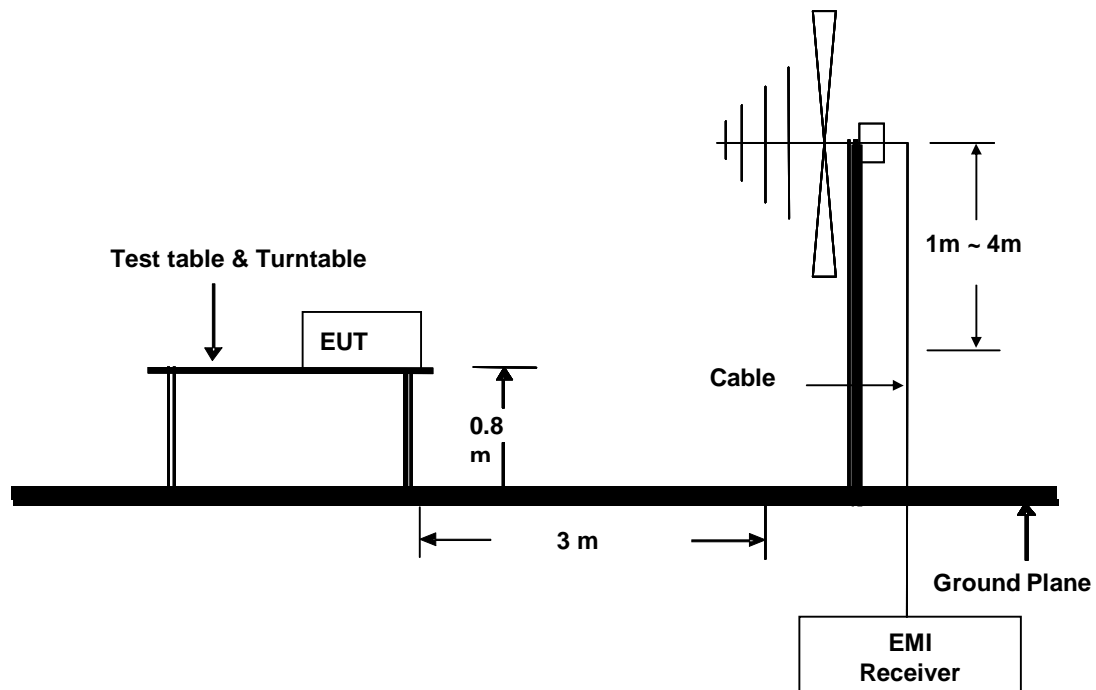
The EUT (on a non-conductive support structure, where applicable) shall be placed on a remotely operated turntable, to allow the EUT to be rotated. The height of the EUT above the ground plane shall be according to the following requirements.

- Table-top equipment is placed on a non-conductive set-up table with height  $0,8\text{ m} \pm 0,01\text{ m}$ , ANSI C63.10:2009 specifies the method to determine the impact of the non-conductive set-up table on test results.
- Floor-standing equipment is placed on a non-conductive support, as specified in the applicable product standard. If there are no EUT height placement requirements in the product standard, the EUT shall be placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane.

Interface cables, loads, and devices should be connected to at least one of each type of the interface ports of the EUT and, where practical, each cable shall be terminated in a device typical for its actual use. Where there are multiple interface ports of the same type, a typical number of these devices shall be connected to devices or loads. It is sufficient to connect only one of the loads, provided that it can be shown, for example by preliminary testing, that the connection of further ports would not significantly increase the level of disturbance (that is, more than 2 dB) or significantly degrade the immunity level.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the test.

### 4.3.3 TEST SETUP



#### 4.3.4 TEST RESULTS

The field strength was measured with an EMI measuring receiver and 1 MHz RBW / VBW for peak and with 1MHz RBW / 10Hz VBW for average at a distance of 3m

##### Peak Measurement:

No.	Frequency	Reading	Correct	Result	Limit	Over Limit	Antenna polarization
	(MHz)	(dBuV/m)	Factor (dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2395.192	51.47	2.66	54.13	74.00	-19.87	Horizontal
2	2483.590	51.60	5.88	57.48	74.00	-16.52	Horizontal
3	2395.192	50.60	2.66	53.26	74.00	-20.74	Vertical
4	2483.590	51.14	5.88	57.02	74.00	-16.98	Vertical

##### AV Measurement:

No.	Frequency	Reading	Correct	Result	Limit	Over Limit	Antenna polarization
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2395.192	32.55	2.66	35.21	54.00	-18.79	Horizontal
2	2483.590	28.60	5.88	34.48	54.00	-19.52	Horizontal
3	2395.192	31.56	2.66	34.22	54.00	-19.78	Vertical
4	2483.590	29.00	5.88	34.88	54.00	-19.12	Vertical

## 4.4 CONDUCTED EMISSION MEASUREMENT

### 4.4.1 LIMITS

Frequency range	Limits (dB $\mu$ V)	
	Quasi-peak	Average
150kHz $\sim$ 0.5MHz	66 $\sim$ 56	56 $\sim$ 46
0.5 MHz $\sim$ 5 MHz	56	46
5 MHz $\sim$ 30 MHz	60	50

**NOTE:** (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150kHz to 0.5MHz.

### 4.4.2 TEST PROCEDURES

#### Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or

- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

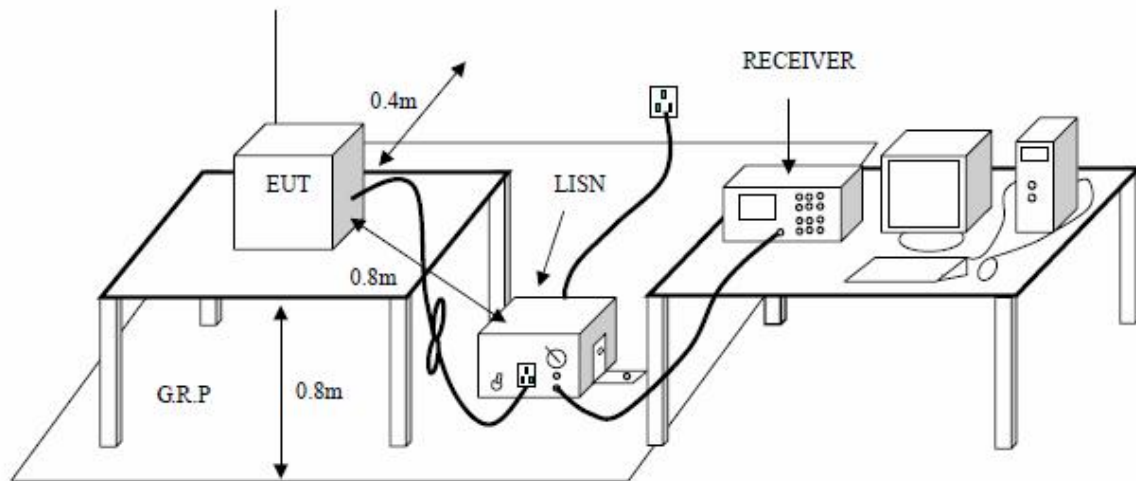
#### Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least



the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

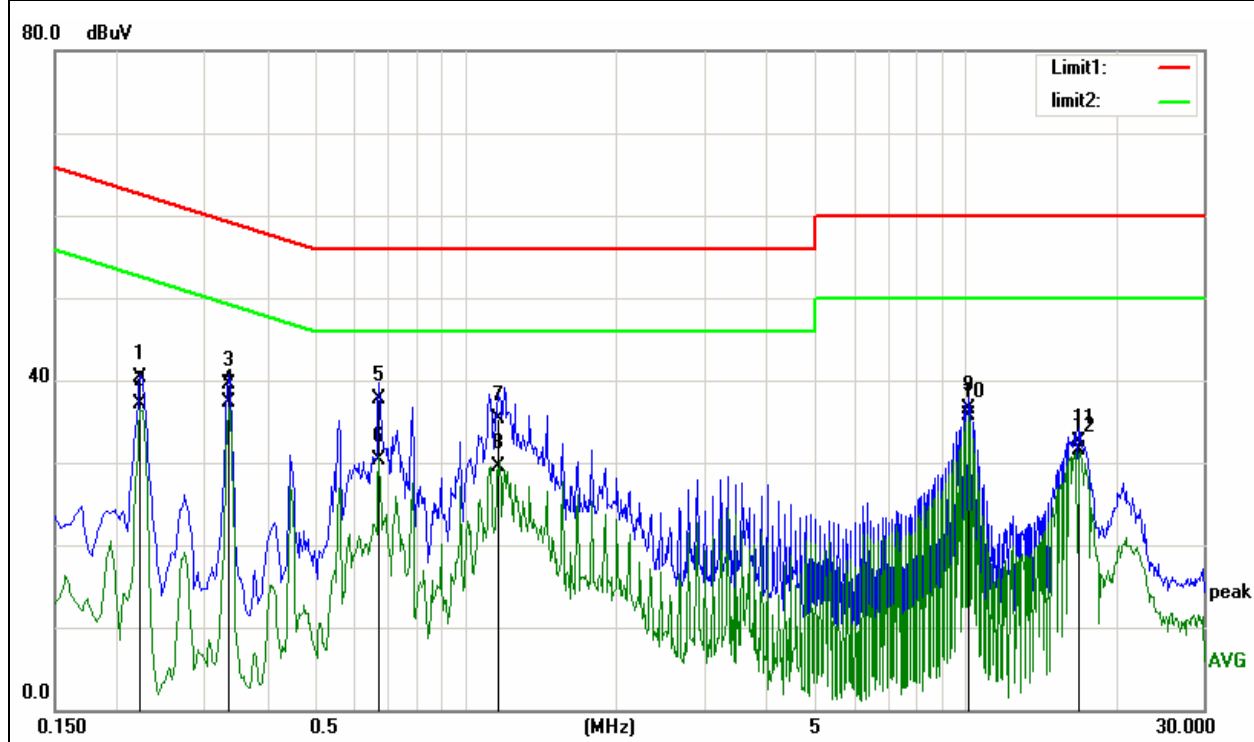
#### 4.4.3 TEST SETUP



#### 4.4.4 TEST RESULTS

Test Result:	Pass	Probe:	L1
Standard:	(CE)FCC PART 15 class B_QP	Power Source:	AC 120V/60Hz
Test item:	Conduction Test	Date:	2012-4-9
Temp./Hum.(%RH):	22/50%RH	Time:	20:32:35
EUT:	Dongle	Model:	WVBB+MS

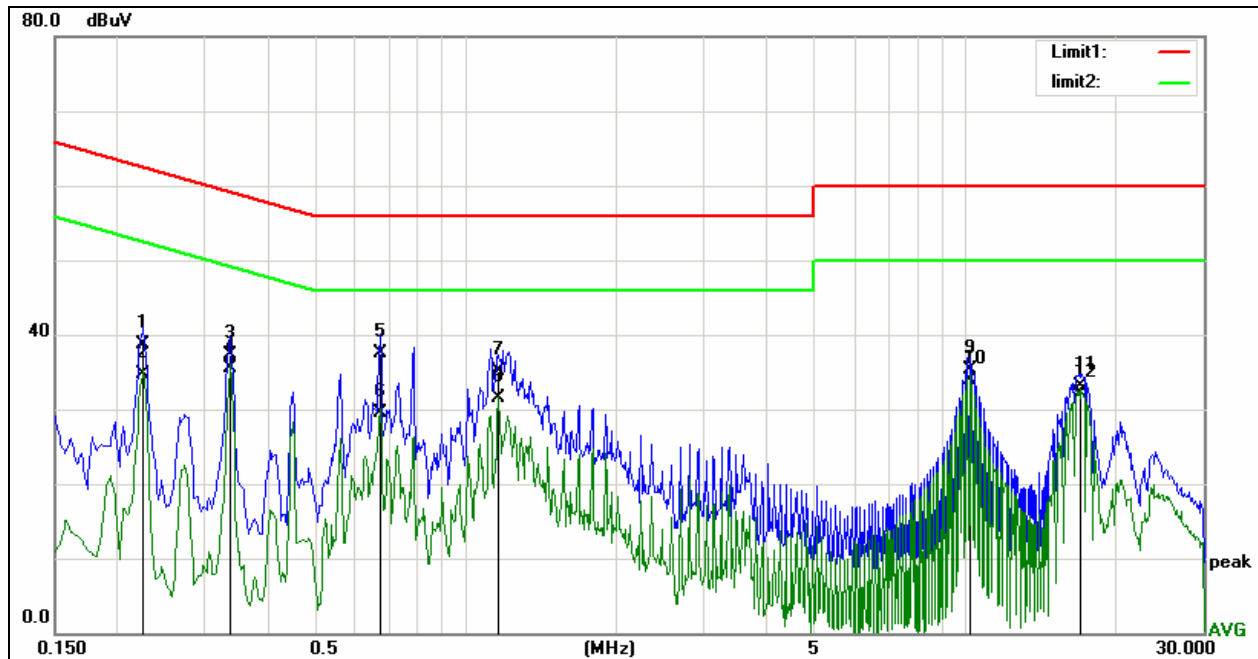
Note:



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.2220	39.29	1.01	40.30	62.74	-22.44	QP
2	0.2220	36.19	1.01	37.20	52.74	-15.54	AVG
3	0.3339	38.65	0.85	39.50	59.35	-19.85	QP
4	0.3339	36.45	0.85	37.30	49.35	-12.05	AVG
5	0.6700	37.27	0.43	37.70	56.00	-18.30	QP
6	0.6700	29.87	0.43	30.30	46.00	-15.70	AVG
7	1.1620	34.80	0.50	35.30	56.00	-20.70	QP
8	1.1620	29.10	0.50	29.60	46.00	-16.40	AVG
9	10.1540	35.79	0.81	36.60	60.00	-23.40	QP
10	10.1540	34.89	0.81	35.70	50.00	-14.30	AVG
11	16.8460	31.64	0.96	32.60	60.00	-27.40	QP
12	16.8460	30.64	0.96	31.60	50.00	-18.40	AVG

<b>Test Result:</b>	<b>Pass</b>	<b>Probe:</b>	<b>N</b>
<b>Standard:</b>	<b>(CE)FCC PART 15 class B_QP</b>	<b>Power Source:</b>	<b>AC 120V/60Hz</b>
<b>Test item:</b>	<b>Conduction Test</b>	<b>Date:</b>	<b>2012-4-9</b>
<b>Temp./Hum.(%RH):</b>	<b>22/50%RH</b>	<b>Time:</b>	<b>20:32:35</b>
<b>EUT:</b>	<b>Dongle</b>	<b>Model:</b>	<b>WVBB+MS</b>

Note:



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.2260	37.73	0.97	38.70	62.59	-23.89	QP
2	0.2260	33.73	0.97	34.70	52.59	-17.89	AVG
3	0.3379	36.46	0.84	37.30	59.25	-21.95	QP
4	0.3379	34.66	0.84	35.50	49.25	-13.75	AVG
5	0.6740	37.07	0.43	37.50	56.00	-18.50	QP
6	0.6740	29.17	0.43	29.60	46.00	-16.40	AVG
7	1.1620	34.70	0.50	35.20	56.00	-20.80	QP
8	1.1620	31.10	0.50	31.60	46.00	-14.40	AVG
9	10.2020	34.59	0.81	35.40	60.00	-24.60	QP
10	10.2020	33.19	0.81	34.00	50.00	-16.00	AVG
11	17.0380	32.20	1.00	33.20	60.00	-26.80	QP
12	17.0380	31.10	1.00	32.10	50.00	-17.90	AVG

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