

FCC REPORT

Applicant: Wellitec Development Ltd.

Address of Applicant: 37/F, One Midtown, No.11, Hoi Shing Road, Tsuen Wan, Hong Kong

Equipment Under Test (EUT)

Product Name: 2.4GHz Wireless Mouse in car style

Model No.: 95904, 95903, 95905, 95906, 95908, 95910, 95911, 95912

FCC ID: 2AAP995904

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013

Date of sample receipt: July 11, 2014

Date of Test: July 11-18, 2014

Date of report issued: July 18, 2014

Test Result : PASS *

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

Authorized Signature:



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	July 18, 2014	Original

Prepared By:

Sam. Gao

Date:

July 18, 2014

Project Engineer

Check By:

hank. yan

Date:

July 18, 2014

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

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

5 General Information

5.1 Client Information

Applicant:	Wellitec Development Ltd.
Address of Applicant:	37/F, One Midtown, No.11, Hoi Shing Road, Tsuen Wan, Hong Kong
Manufacturer:	Wellitec Development Ltd.
Address of Manufacturer:	37/F, One Midtown, No.11, Hoi Shing Road, Tsuen Wan, Hong Kong

5.2 General Description of EUT

Product Name:	2.4GHz Wireless Mouse in car style
Model No.:	95904, 95903, 95905, 95906, 95908, 95910, 95911, 95912
Test Model No.:	95904
Remark:	<i>All above models are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the appearance color and model name for commercial purpose.</i>
Operation Frequency:	2408MHz~2474MHz
Channel numbers:	34
Channel separation:	2MHz
Modulation type:	FSK
Antenna Type:	PCB Antenna
Antenna gain:	-2dBi
Power supply:	DC 1.5V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2408	10	2426	19	2444	28	2462
2	2410	11	2428	20	2446	29	2464
3	2412	12	2430	21	2448	30	2466
4	2414	13	2432	22	2450	31	2468
5	2416	14	2434	23	2452	32	2470
6	2418	15	2436	24	2454	33	2472
7	2420	16	2438	25	2456	34	2474
8	2422	17	2440	26	2458		
9	2424	18	2442	27	2460		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2408MHz
The middle channel	2440MHz
The Highest channel	2474MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode with FSK modulation.
REMARK :New battery is used during all test .	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	85.26	86.24	83.78

Final Test Mode:

The EUT was tested in FSK modulation,According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number
IBM Thinkpad	Notebook PC	2374	L3-G0686

5.5 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.

5.6 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

5.7 Other Information Requested by the Customer

None.

6 Test Instruments list

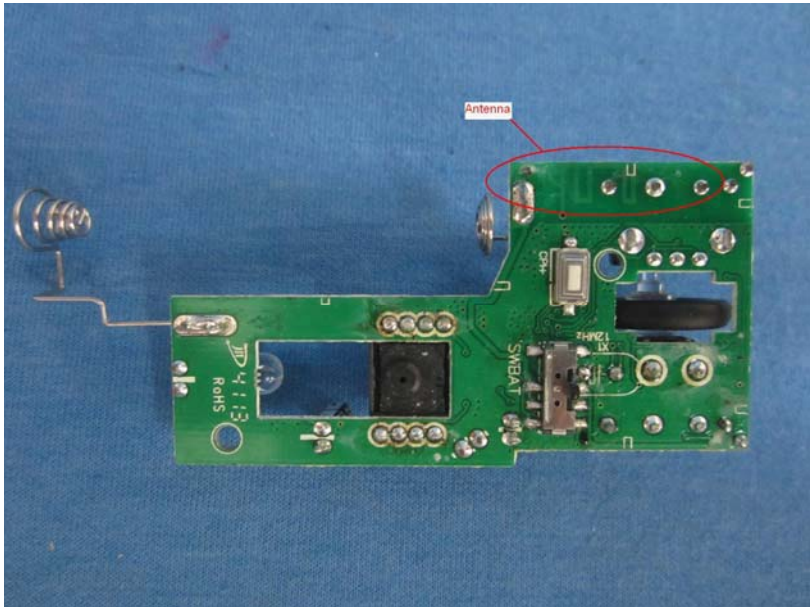
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 28 2014	Mar. 27 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Dec. 05 2013	Dec. 04 2014
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun. 30, 2015
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 23 2014	Feb. 22 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015

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. 07 2013	Sep. 06 2015
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 01 2014	Jun. 30, 2015
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 01 2014	Jun. 30, 2015
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 01 2014	Jun. 30, 2015
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 01 2014	Jun. 30, 2015
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 01 2014	Jun. 30, 2015
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

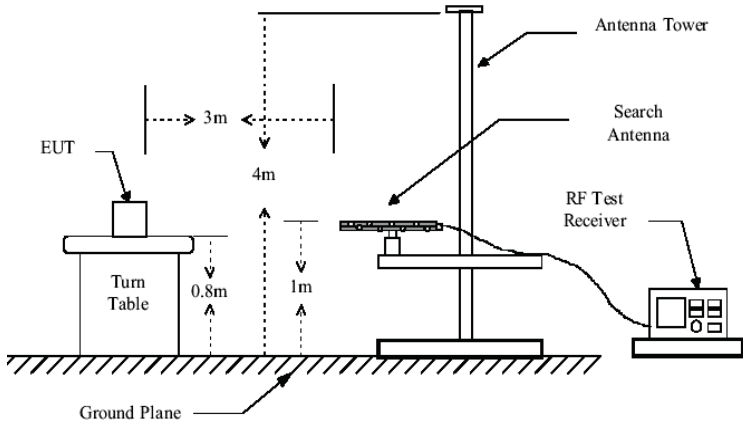
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015

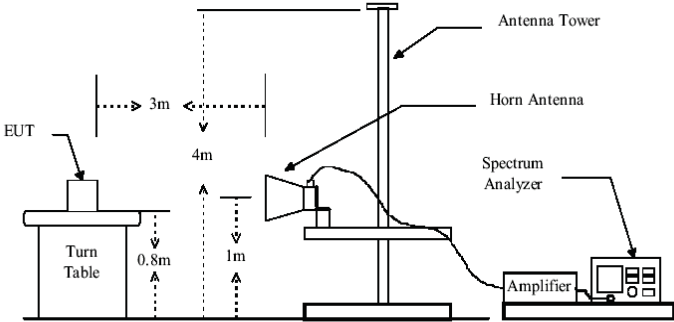
7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>	
E.U.T Antenna: <p><i>The antenna is PCB Antenna, the best case gain of the antenna is -2dBi</i></p>	
	

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	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: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark
	2400MHz-2483.5MHz		94.00		Average Value
			114.00		Peak Value
Limit: (Spurious Emissions)	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
Limit: (band edge)	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.				
Test setup:	Below 1GHz				
					
	Above 1GHz				

	 <p>The diagram illustrates the test setup. An EUT (Equipment Under Test) is placed on a Turn Table at a height of 0.8m. The Turn Table is rotated 360 degrees. The EUT is positioned 3m away from the Antenna Tower. The Antenna Tower is a variable-height antenna tower with a Horn Antenna. The antenna height is varied from 1m to 4m. The Spectrum Analyzer is connected to the Antenna Tower via an Amplifier. The Spectrum Analyzer is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p>
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 Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2408.00	83.39	27.57	5.40	30.12	86.24	114.00	-27.76	Vertical
2408.00	81.23	27.57	5.40	30.12	84.08	114.00	-29.92	Horizontal
2440.00	82.76	27.48	5.43	30.06	85.61	114.00	-28.39	Vertical
2440.00	80.98	27.48	5.43	30.06	83.83	114.00	-30.17	Horizontal
2474.00	81.48	27.50	5.46	29.99	84.45	114.00	-29.55	Vertical
2474.00	81.06	27.50	5.46	29.99	84.03	114.00	-29.97	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2408.00	63.08	27.57	5.40	30.12	65.93	94.00	-28.07	Vertical
2408.00	61.45	27.57	5.40	30.12	64.30	94.00	-29.70	Horizontal
2440.00	62.46	27.48	5.43	30.06	65.31	94.00	-28.69	Vertical
2440.00	60.79	27.48	5.43	30.06	63.64	94.00	-30.36	Horizontal
2474.00	61.99	27.50	5.46	29.99	64.96	94.00	-29.04	Vertical
2474.00	61.00	27.50	5.46	29.99	63.97	94.00	-30.03	Horizontal

Remark : RBW=3MHz VBW=10MHz , Peak detector for PK value , AV detector for AV value.

7.3.2 Spurious emissions

■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
49.01	38.11	15.31	0.76	31.97	22.21	40.00	-17.79	Vertical
119.02	36.94	12.69	1.35	31.85	19.13	43.50	-24.37	Vertical
249.43	37.32	14.07	2.12	32.16	21.35	46.00	-24.65	Vertical
451.14	36.17	17.58	3.09	31.71	25.13	46.00	-20.87	Vertical
661.15	36.11	20.67	3.95	31.13	29.60	46.00	-16.40	Vertical
785.09	36.73	21.87	4.40	31.30	31.70	46.00	-14.30	Vertical
43.35	35.82	15.56	0.70	32.02	20.06	40.00	-19.94	Horizontal
133.15	36.38	10.67	1.46	31.92	16.59	43.50	-26.91	Horizontal
334.86	35.75	15.92	2.54	32.07	22.14	46.00	-23.86	Horizontal
636.13	35.00	20.59	3.86	31.10	28.35	46.00	-17.65	Horizontal
739.66	37.00	21.29	4.24	31.25	31.28	46.00	-14.72	Horizontal
87.73	36.22	13.18	1.09	31.73	18.76	40.00	-21.24	Horizontal

■ Above 1GHz

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4816.00	32.84	31.79	8.61	32.09	41.15	74.00	-32.85	Vertical
7224.00	28.41	36.19	11.66	31.99	44.27	74.00	-29.73	Vertical
9632.00	26.84	38.01	14.16	31.58	47.43	74.00	-26.57	Vertical
12040.00	*					74.00		Vertical
14448.00	*					74.00		Vertical
4816.00	33.43	31.79	8.61	32.09	41.74	74.00	-32.26	Horizontal
7224.00	28.07	36.19	11.66	31.99	43.93	74.00	-30.07	Horizontal
9632.00	22.84	38.01	14.16	31.58	43.43	74.00	-30.57	Horizontal
12040.00	*					74.00		Horizontal
14448.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4816.00	22.46	31.79	8.61	32.09	30.77	54.00	-23.23	Vertical
7224.00	18.66	36.19	11.66	31.99	34.52	54.00	-19.48	Vertical
9632.00	16.54	38.01	14.16	31.58	37.13	54.00	-16.87	Vertical
12040.00	*					54.00		Vertical
14448.00	*					54.00		Vertical
4816.00	23.57	31.79	8.61	32.09	31.88	54.00	-22.12	Horizontal
7224.00	18.66	36.19	11.66	31.99	34.52	54.00	-19.48	Horizontal
9632.00	12.33	38.01	14.16	31.58	32.92	54.00	-21.08	Horizontal
12040.00	*					54.00		Horizontal
14448.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle channel
---------------	----------------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	35.10	31.85	8.66	32.12	43.49	74.00	-30.51	Vertical
7320.00	29.52	36.37	11.72	31.89	45.72	74.00	-28.28	Vertical
9760.00	26.13	38.35	14.25	31.59	47.14	74.00	-26.86	Vertical
12200.00	*					74.00		Vertical
14640.00	*					74.00		Vertical
4880.00	34.23	31.85	8.66	32.12	42.62	74.00	-31.38	Horizontal
7320.00	27.74	36.37	11.72	31.89	43.94	74.00	-30.06	Horizontal
9760.00	22.21	38.35	14.25	31.59	43.22	74.00	-30.78	Horizontal
12200.00	*					74.00		Horizontal
14640.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	25.63	31.85	8.66	32.12	34.02	54.00	-19.98	Vertical
7320.00	19.33	36.37	11.72	31.89	35.53	54.00	-18.47	Vertical
9760.00	16.02	38.35	14.25	31.59	37.03	54.00	-16.97	Vertical
12200.00	*					54.00		Vertical
14640.00	*					54.00		Vertical
4880.00	24.44	31.85	8.66	32.12	32.83	54.00	-21.17	Horizontal
7320.00	17.15	36.37	11.72	31.89	33.35	54.00	-20.65	Horizontal
9760.00	12.45	38.35	14.25	31.59	33.46	54.00	-20.54	Horizontal
12200.00	*					54.00		Horizontal
14640.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4948.00	33.26	31.91	8.71	32.16	41.72	74.00	-32.28	Vertical
7422.00	28.57	36.56	11.77	31.80	45.10	74.00	-28.90	Vertical
9896.00	26.28	38.81	14.35	31.82	47.62	74.00	-26.38	Vertical
12370.00	*					74.00		Vertical
14844.00	*					74.00		Vertical
4948.00	33.01	31.91	8.71	32.16	41.47	74.00	-32.53	Horizontal
7422.00	27.10	36.56	11.77	31.80	43.63	74.00	-30.37	Horizontal
9896.00	22.76	38.81	14.35	31.82	44.10	74.00	-29.90	Horizontal
12370.00	*					74.00		Horizontal
14844.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4948.00	23.95	31.91	8.71	32.16	32.41	54.00	-21.59	Vertical
7422.00	18.33	36.56	11.77	31.80	34.86	54.00	-19.14	Vertical
9896.00	16.25	38.81	14.35	31.82	37.59	54.00	-16.41	Vertical
12370.00	*					54.00		Vertical
14844.00	*					54.00		Vertical
4948.00	22.76	31.91	8.71	32.16	31.22	54.00	-22.78	Horizontal
7422.00	17.33	36.56	11.77	31.80	33.86	54.00	-20.14	Horizontal
9896.00	12.87	38.81	14.35	31.82	34.21	54.00	-19.79	Horizontal
12370.00	*					54.00		Horizontal
14844.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.

7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	45.77	27.59	5.38	30.18	48.56	74.00	-25.44	Horizontal
2400.00	46.97	27.58	5.39	30.18	49.76	74.00	-24.24	Horizontal
2390.00	46.88	27.59	5.38	30.18	49.67	74.00	-24.33	Vertical
2400.00	49.24	27.58	5.39	30.18	52.03	74.00	-21.97	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	30.84	27.59	5.38	30.18	33.63	54.00	-20.37	Horizontal
2400.00	31.62	27.58	5.39	30.18	34.41	54.00	-19.59	Horizontal
2390.00	31.87	27.59	5.38	30.18	34.66	54.00	-19.34	Vertical
2400.00	34.64	27.58	5.39	30.18	37.43	54.00	-16.57	Vertical

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	48.24	27.53	5.47	29.93	51.31	74.00	-22.69	Horizontal
2500.00	45.70	27.55	5.49	29.93	48.81	74.00	-25.19	Horizontal
2483.50	48.36	27.53	5.47	29.93	51.43	74.00	-22.57	Vertical
2500.00	45.51	27.55	5.49	29.93	48.62	74.00	-25.38	Vertical

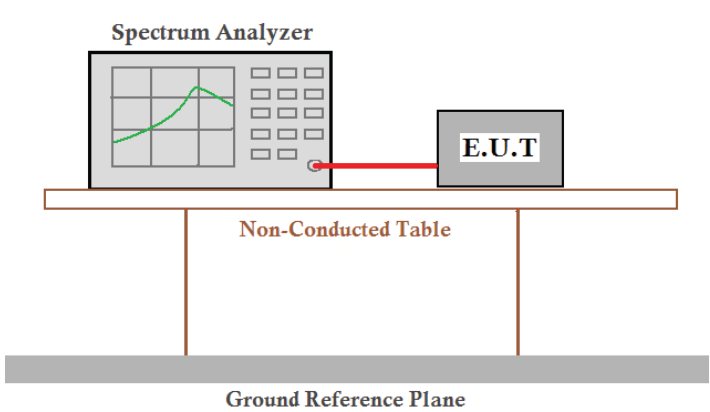
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	33.48	27.53	5.47	29.93	36.55	54.00	-17.45	Horizontal
2500.00	30.87	27.55	5.49	29.93	33.98	54.00	-20.02	Horizontal
2483.50	33.45	27.53	5.47	29.93	36.52	54.00	-17.48	Vertical
2500.00	30.78	27.55	5.49	29.93	33.89	54.00	-20.11	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

7.4 20dB Occupy Bandwidth

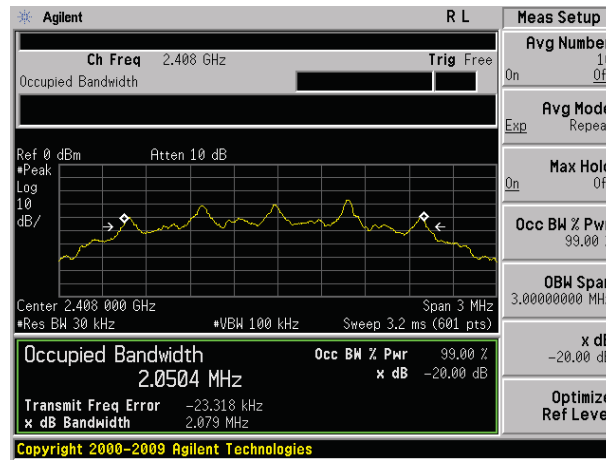
Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	2.079	Pass
Middle	2.074	Pass
Highest	2.079	Pass

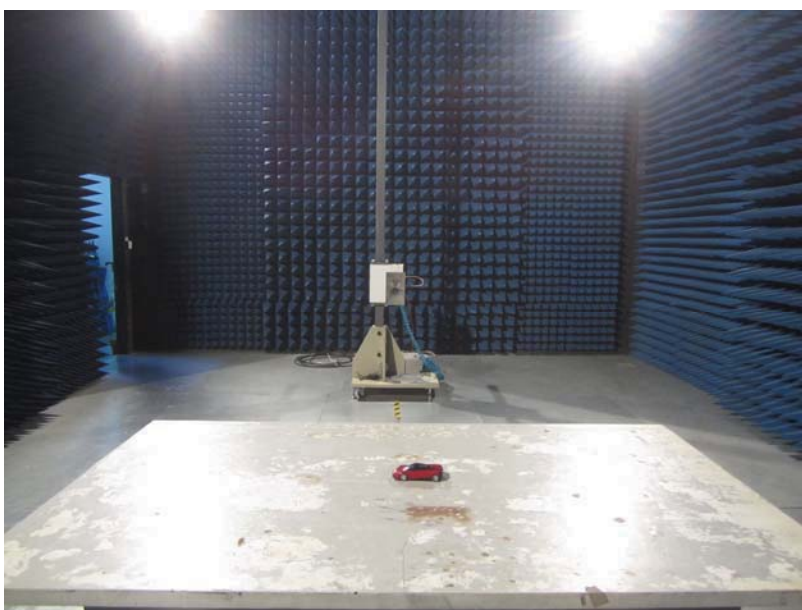
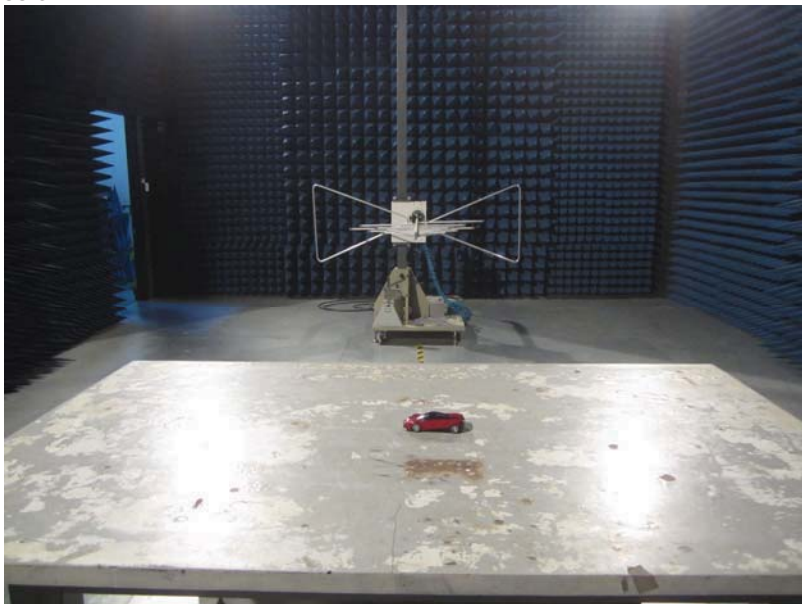
Test plot as follows:

Remark : Low , mid , high channel all have been tested , the low channel is the worse case and reported



8 Test Setup Photo

Radiated Emission



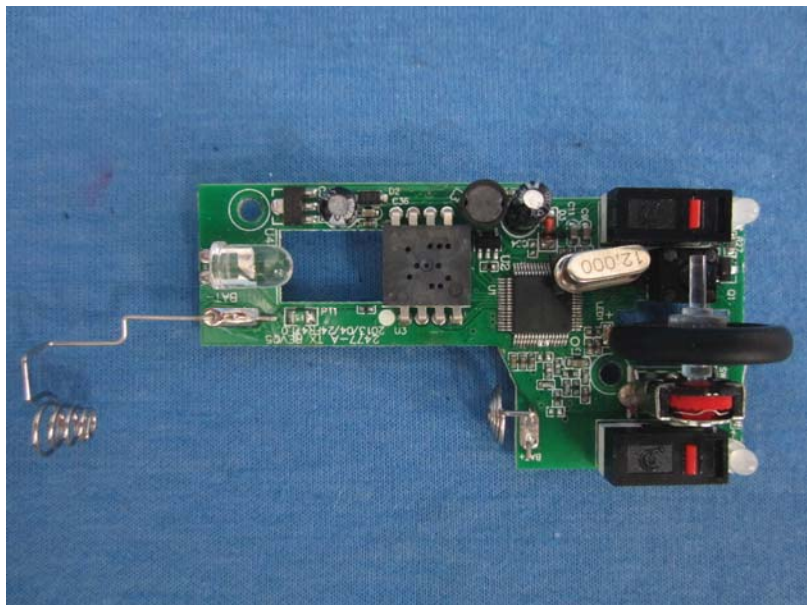
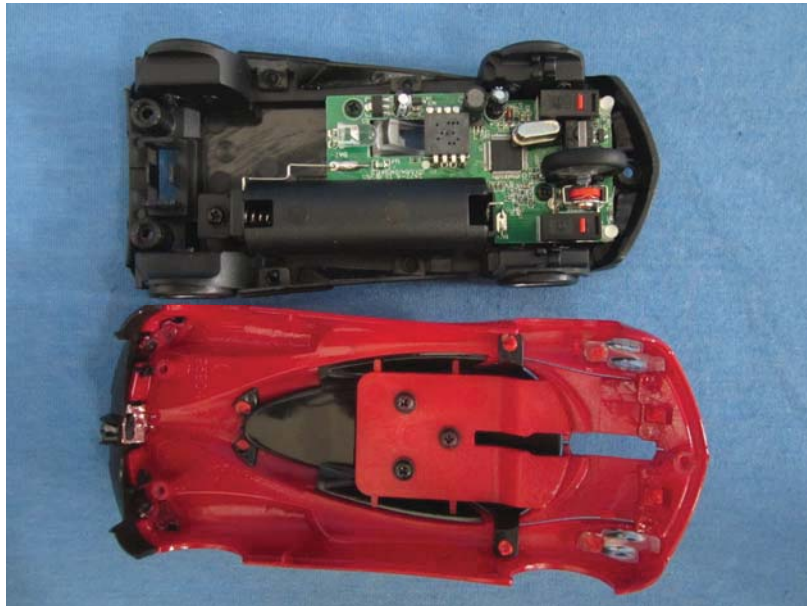
9 EUT Constructional Details

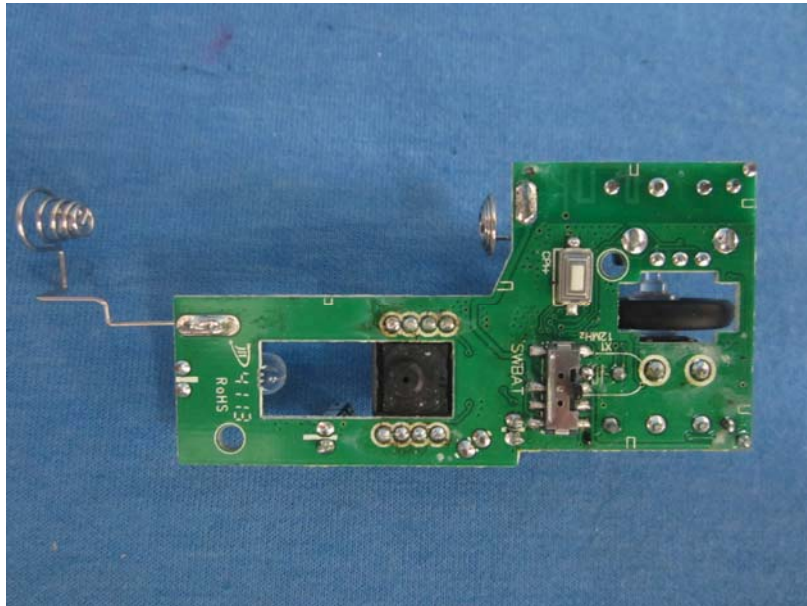












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