FCC RADIO TEST REPORT

Prepared For :	Shenzhen Sunlight Technology Co,. Ltd. 2nd floor, 7th Building, Lianjian Industrial Park, Huarong Road, Longhua Town, Bao'An District, ShenZhen, 518109, China
Product Name:	HEmouse Wireless Mouse
Trade Name	N/A
Model :	HE-RF001
Prepared By :	DongGuan Precise Testing Service Co.,Ltd.
	Room 203-204, 2F, Xinye Building, No.67 Shijing, Guanzhang Road, Dongguan, China Tel: 86-769-23368601 Fax: 86-769-23368602 http:// www.pts-testing.com
Test Date:	Nov. 1 2012-Nov. 11 2012
Date of Report :	Nov. 12 2012
Report No.:	PT1201019011E

TEST CERTIFICATION

Product:	HEmouse Wireless Mouse
Model:	HE-RF001
Applicant:	**Shenzhen Sunlight Technology Co,. Ltd.** 2nd floor, 7th Building, Lianjian Industrial Park, Huarong Road, Longhua Town, Bao'An District, ShenZhen, 518109, China
Factory:	**Shenzhen Sunlight Technology Co,. Ltd.** 2nd floor, 7th Building, Lianjian Industrial Park, Huarong Road, Longhua Town, Bao'An District, ShenZhen, 518109, China
Test specification	
Standard:	FCC Part15.249
Test procedure:	ANSI C63.4-2003
FCC ID:	R5KHE-RF001
Test Voltage:	DC 3.7V by battery(DC 5V by USB for charging)

The above equipment has been tested by DongGuan Precise Testing Service Co.,Ltd.and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results Date to production tolerance and measurement uncertainties.

Prepared by : Jonas Song

Assistant

Reviewer : David Liu

Supervisor

Approved & Authorized Signer : Jacky Ou

Jacky Ou / Manager

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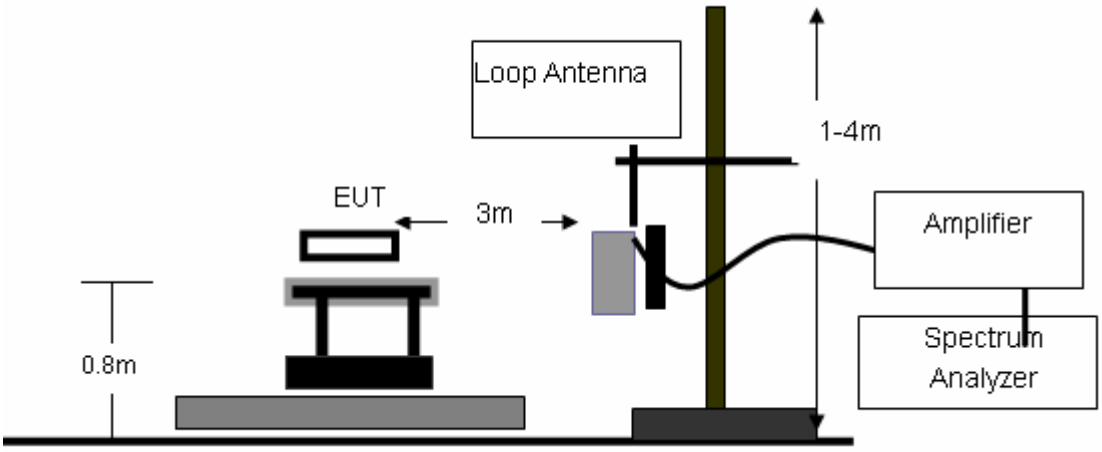

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C (15.249) & RSS-Gen Issue 3 & RSS-210 Issue 8			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.203	Antenna Requirement	Pass	
15.249	Radiated Spurious Emission	Pass	
15.249	Occupied Bandwidth	Pass	

NOTE:
(1) ” N/A” denotes test is not applicable in this Test Report.

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1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd
Add. : 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration No.:238937; IC Registration No.:9270A-1
CNAS Registration No.:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	Radiated Emission Test	±3.17dB
3	RF power,conducted	±0.16dB
4	Spurious emissions,conducted	±0.21dB
5	All emissions,radiated(<1G)	±4.68dB
6	All emissions,radiated(>1G)	±4.89dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>HEmouse Wireless Mouse</td></tr>
<tr><td>Trade Name</td><td>N/A</td></tr>
<tr><td>Model Name</td><td>HE-RF001</td></tr>
<tr><td>OEM Brand/Model Name</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a HEmouse Wireless Mouse
<table>
<tr><td>Operation Frequency:</td><td>2402~2479 MHz</td></tr>
<tr><td>Channel Number</td><td>16</td></tr>
<tr><td>Modulation Type:</td><td>GFSK</td></tr>
<tr><td>Antenna Designation:</td><td>PCB antenna</td></tr>
<tr><td>Antenna Gain(Peak)</td><td>0 dBi</td></tr>
<tr><td>Bit Rate of Transmission</td><td>40 bits</td></tr>
<tr><td>RF output Power:</td><td>85.73dBuV@3m</td></tr>
</table></td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Power Source</td><td>DC Voltage supplied from battery</td></tr>
<tr><td>Power Rating</td><td>DC 3.7V from battery(DC 5V by USB for charging)</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
<tr><td>Products Covered</td><td>N/A</td></tr>
<tr><td>EUT Modification(s)</td><td>N/A</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

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2.

Group	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (MHz)
01	2402	2425	2446	2471
02	2405	2428	2451	2474
03	2409	2431	2454	2477
04	2413	2434	2457	2479

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	PCB Antenna	NA	0	Antenna

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2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	2402MHz
Mode 2	2447MHz
Mode 3	2479MHz
Mode 4	Link mode

For Conducted Emission	
Final Test Mode	Description
-	Link mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	2402MHz
Mode 2	2447MHz
Mode 3	2479MHz

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

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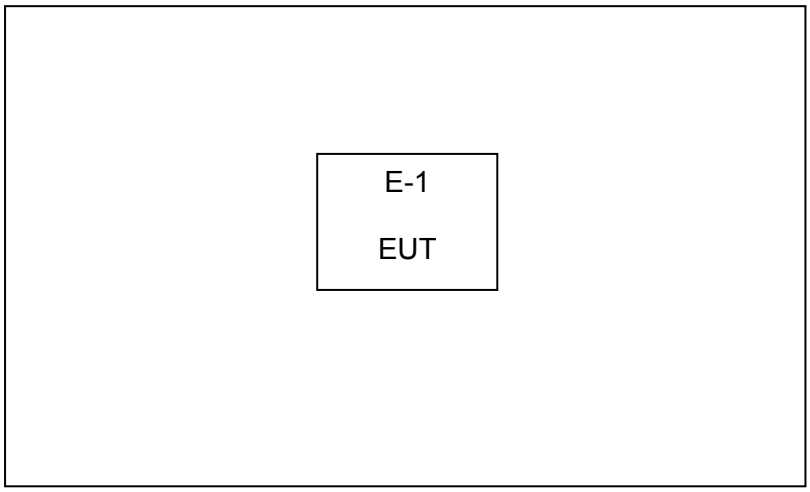
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

RE



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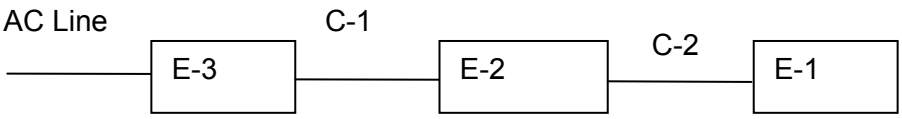

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2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	HEmouse Wireless Mouse	N/A	HE-RF001	R5KHE-RF001	N/A	EUT
E-2	Notebook	IBM	2366			
E-3	Adapter	IBM	08K8202			

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	YES	60cm	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.4.1 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test Equipment:						
No	Test Equipment	Manufacturer	Model No	Serial No	Last Cal. Date dd-mm-yy	Cal. Due Date dd-mm-yy
1	Spectrum Analyzer	Agilent	E4407B	160400005	2012-4-25	2013-4-24
2	Test Receiver	R&S	ESPI7	101318	2012-4-25	2013-4-24
3	Bilog Antenna	TESEQ	CBL6111D	31216	2012-4-25	2013-4-24
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2012-4-25	2013-4-24
5	Spectrum Analyzer	ADVANTEST	R3182	150900201	2012-4-25	2013-4-24
6	Low Noise Pre Amplifier	Tsj	MLA-0120 -A02-34	2648A04738	2012-4-25	2013-4-24
7	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	451	2012-4-25	2013-4-24
8	Loop Antenna	ARA	PLA-1030/B	1029	2012-3-20	2013-3-19

Conduction Test equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Last Cal. Date dd-mm-yy	Cal. Due Date dd-mm-yy
1**	Test Receiver	R&S	ESCI	101160	2012-4-25	2013-4-24
2	LISN	R&S	ENV216	101313	2012-4-25	2013-4-24
3	LISN	Kyoritsu	KNW-407	8-1789-3	2012-4-25	2013-4-24
4**	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2012-4-25	2013-4-24
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2012-4-25	2013-4-24
6	Absorbing clamp	R&S	MDS-21	100423	2012-4-25	2013-4-24

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3. TEST RESULT

3.1 ANTENNA REQUIREMENT

3.1.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

3.1.2 EUT ANTENNA

The EUT antenna is PCB Antenna. It comply with the standard requirement.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP002.
0.50 -5.0			56.00	46.00	LP002.
5.0 -30.0			60.00	50.00	LP002.

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

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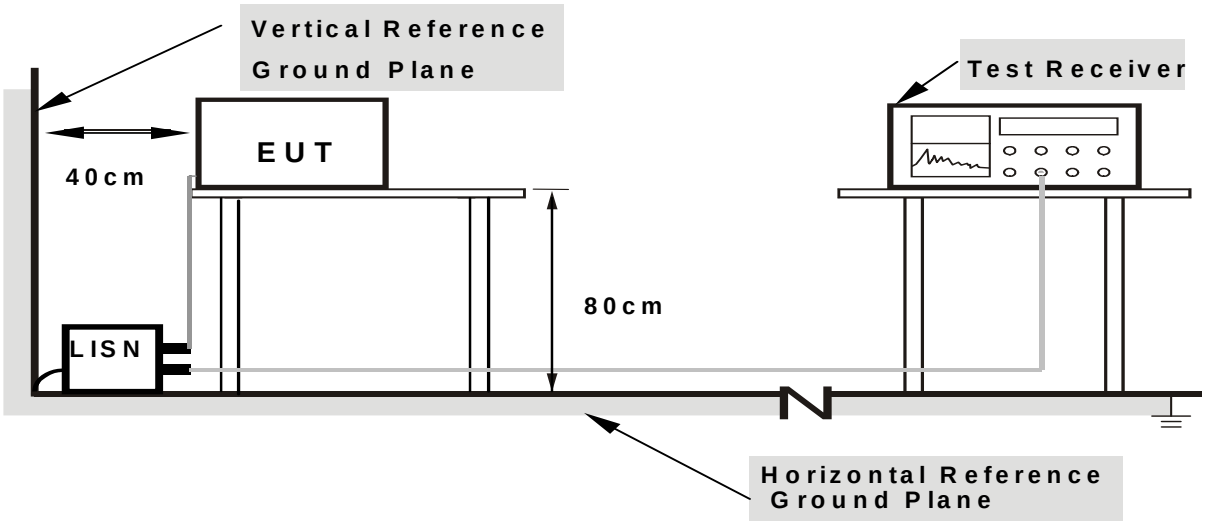
3.2.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 DEVIATION FROM TEST STANDARD

No deviation

3.2.4 TEST SETUP



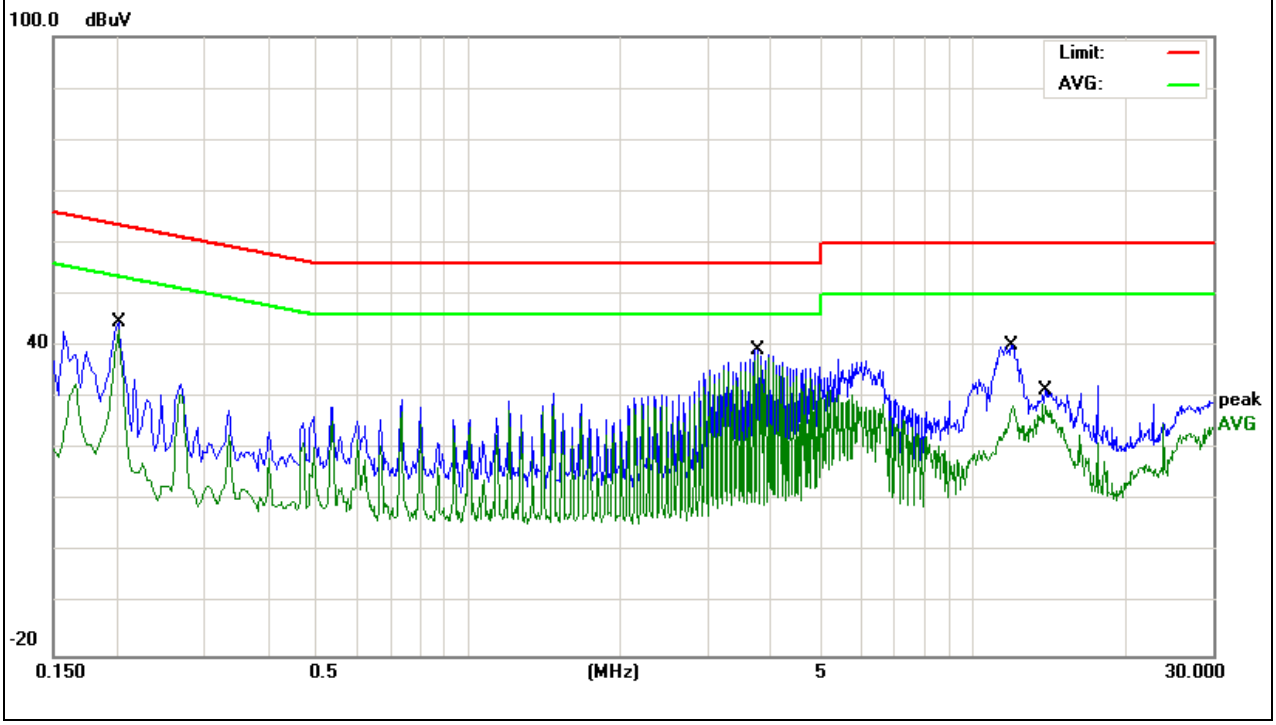
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.2.5 TEST RESULT

EUT：	HEmouse Wireless Mous	Model Name. ：	HE-RF001
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2012-11-3
Test Mode：	Charging	Phase：	L
Test Voltage ：	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.202	34.27	10.43	44.7	63.52	-18.82	QP
0.202	32.58	10.43	43.01	53.52	-10.51	AVG
3.75	28.72	10.65	39.37	56	-16.63	QP
3.75	27.68	10.65	38.33	46	-7.67	AVG
11.9817	29.48	10.71	40.19	60	-19.81	QP
13.7939	17.96	10.72	28.68	50	-21.32	AVG

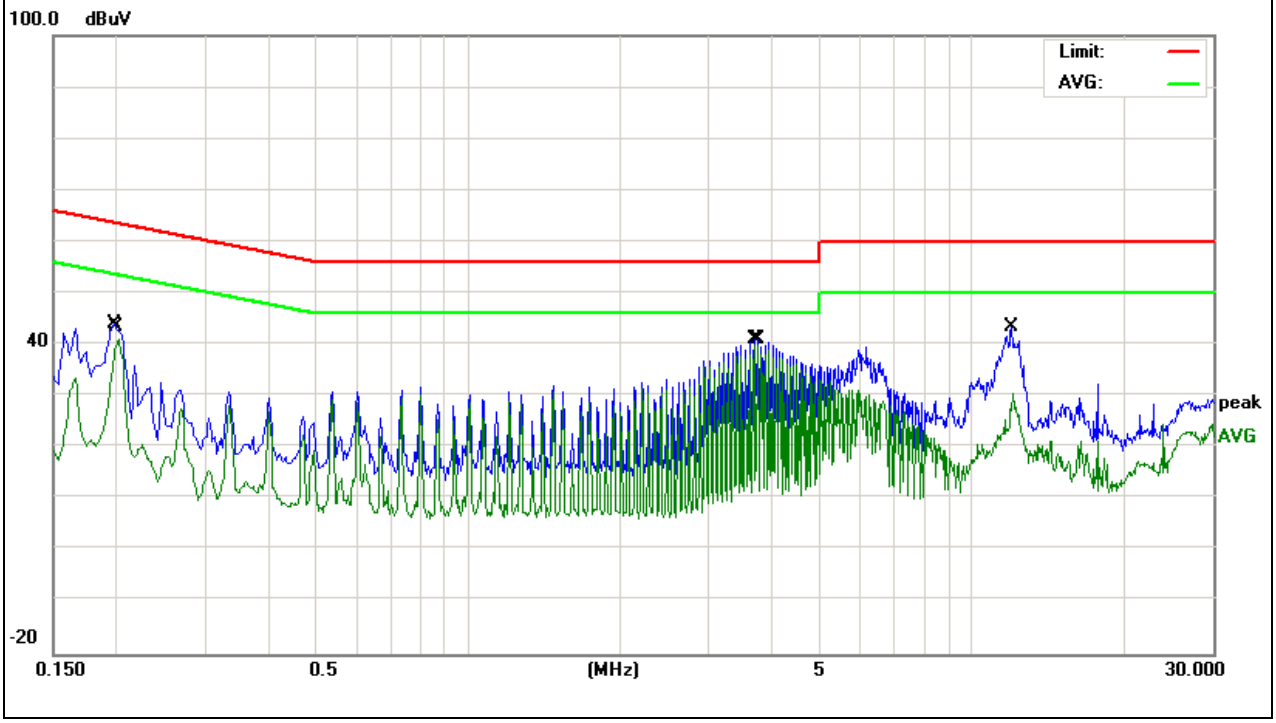
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



EUT：	HEmouse Wireless Mous	Model Name. ：	HE-RF001
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Test Date：	2012-11-3
Test Mode：	Charging	Phase：	N
Test Voltage ：	DC 5V From PC AC 120V/60Hz		

Freq. (MHz)	Reading (dBuV)	Factor (dBuV)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector
0.198	33.71	10.42	44.13	63.69	-19.56	QP
0.202	30.72	10.43	41.15	53.52	-12.37	AVG
3.6819	30.45	10.65	41.1	56	-14.9	QP
3.75	29.3	10.65	39.95	46	-6.05	AVG
11.9539	32.81	10.71	43.52	60	-16.48	QP
12.0014	19.85	10.71	30.56	50	-19.44	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. N/A means All Data have pass Limit



3.3 RADIATED EMISSION MEASUREMENT

3.3.1 Radiated Emission Limits (FCC 15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note:

(1) The tighter limit applies at the band edges.

(2) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.249)

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

Notes:

(1) 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.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

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3.3.2 TEST PROCEDURE

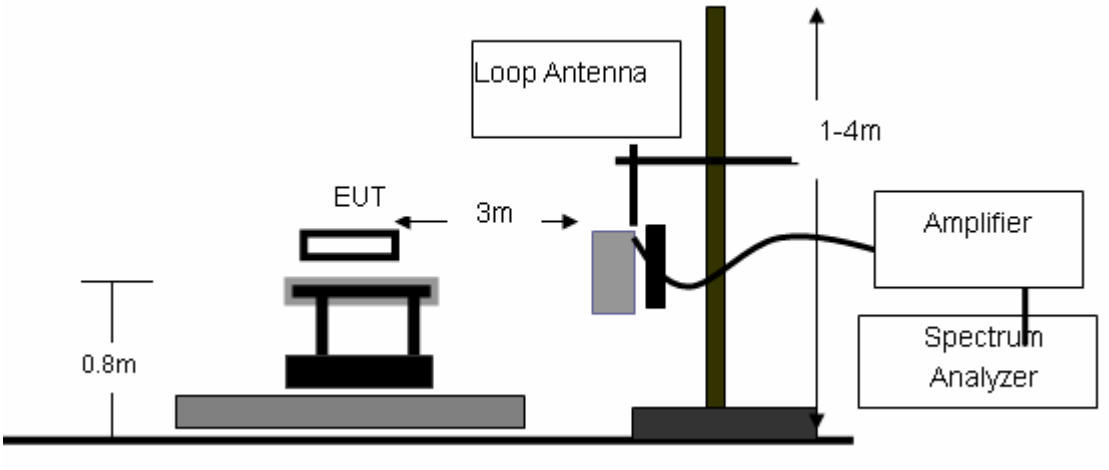
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement. performed pretest to three orthogonal axis.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3.3 DEVIATION FROM TEST STANDARD

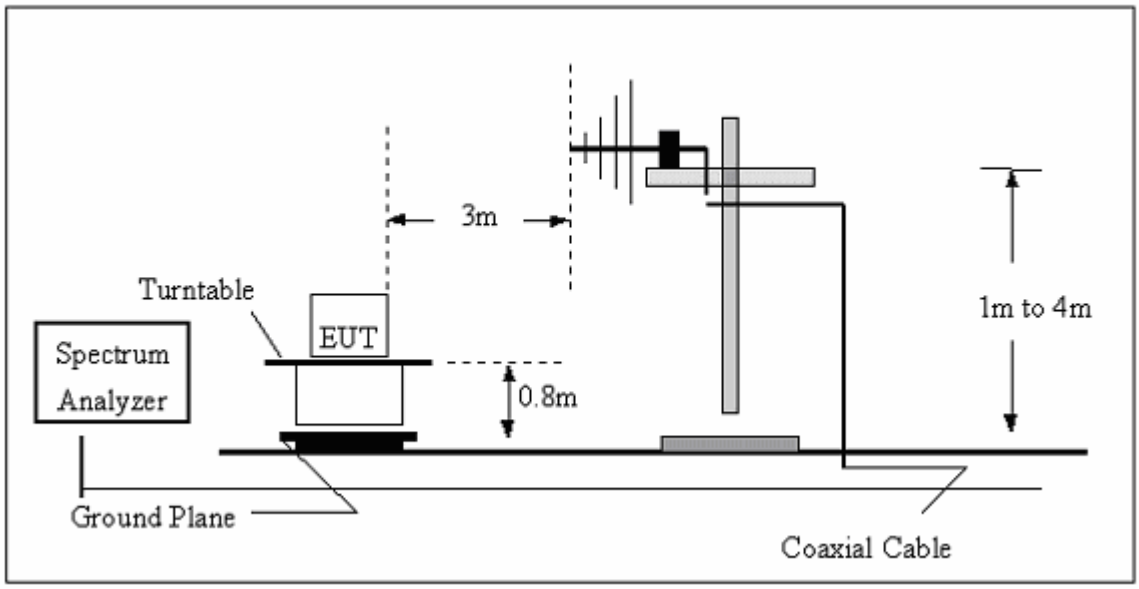
No deviation

3.3.4 TEST SETUP

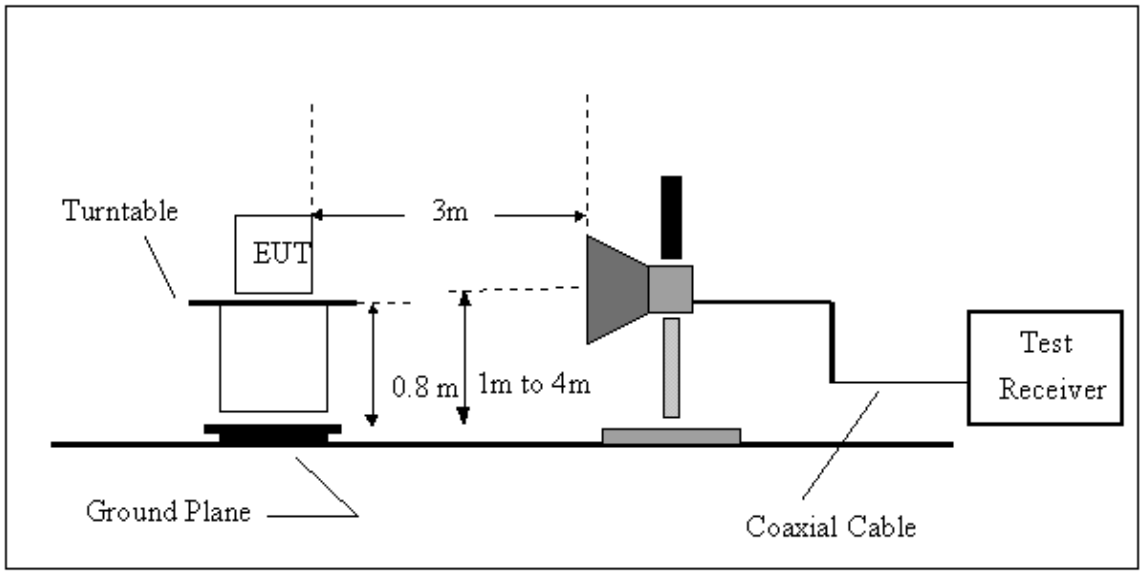
(A) Radiated Emission Test Set-Up Frequency Below 30 MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.3.5 TEST RESULTS (BLOW 30MHz)

EUT：	HEmouse Wireless Mouse	Model Name. ：	HE-RF001
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =20 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

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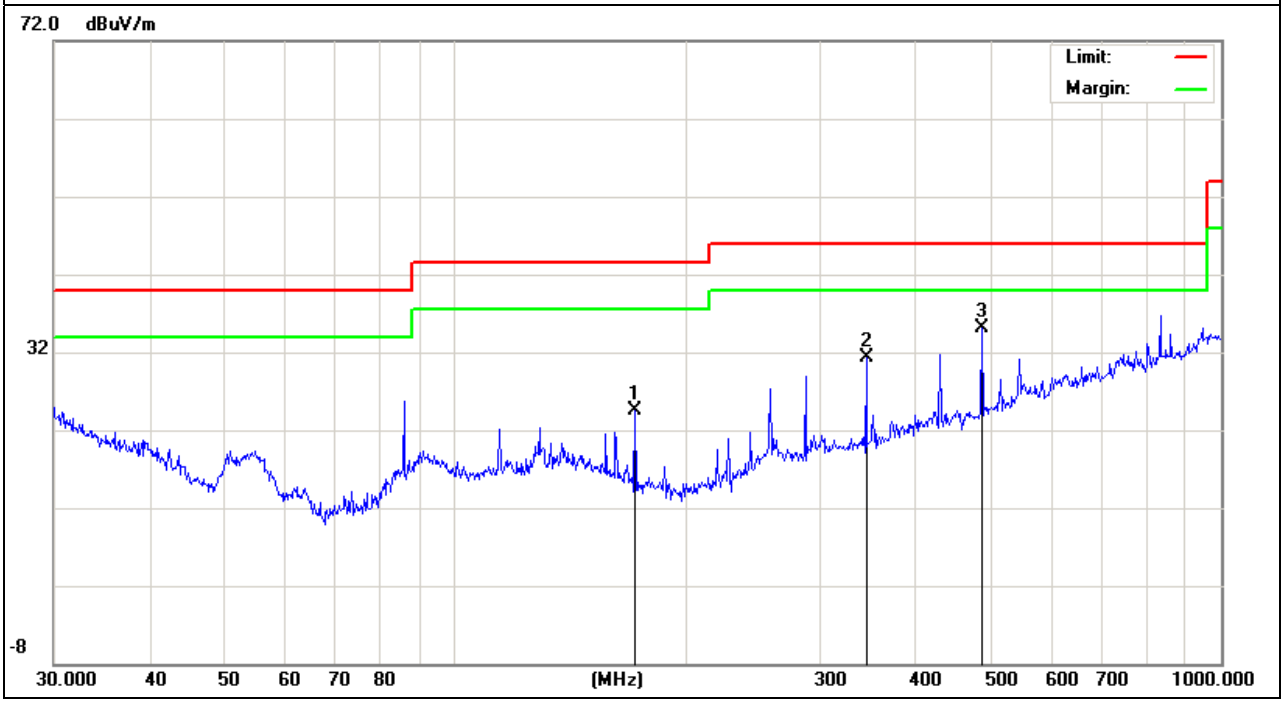
3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
171.9945	14.6	9.89	24.49	43.5	-19.01	peak
344.3854	16.17	15.22	31.39	46	-14.61	peak
487.315	16.08	19.01	35.09	46	-10.91	peak

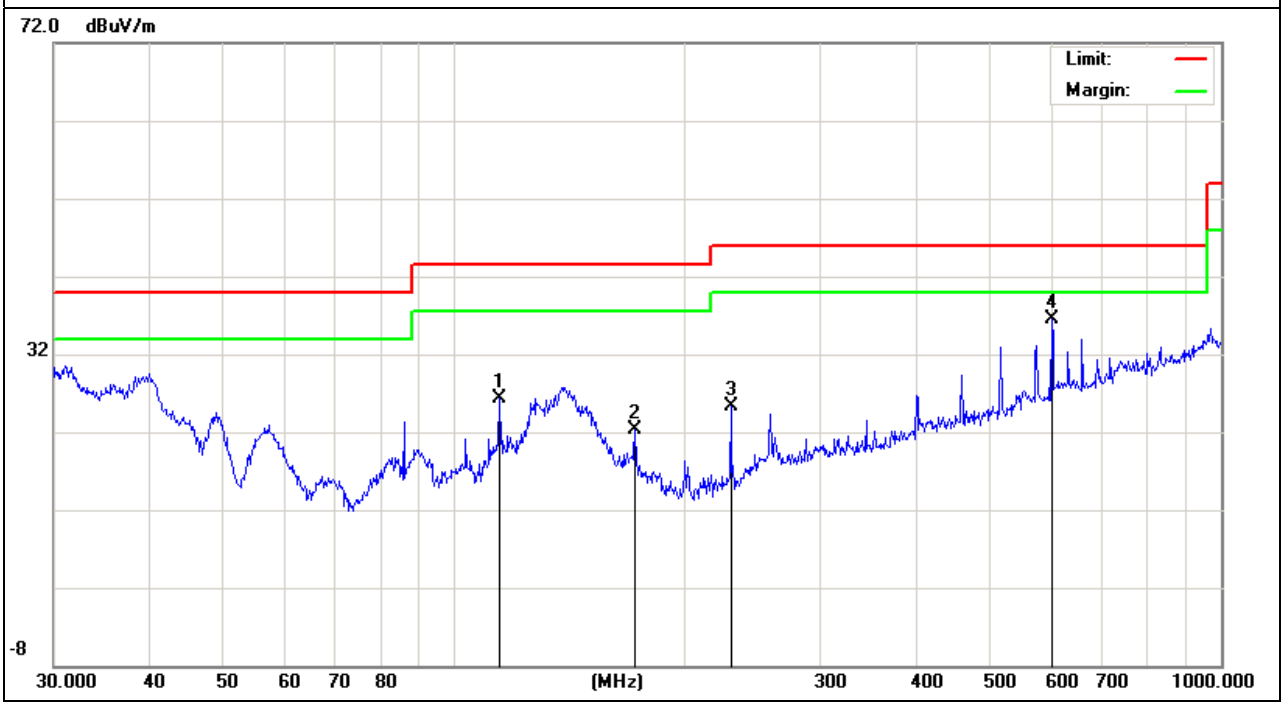
Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
114.5146	14.58	11.66	26.24	43.5	-17.26	peak
171.9945	12.46	9.89	22.35	43.5	-21.15	peak
229.2931	14.95	10.39	25.34	46	-20.66	peak
601.4265	15.29	21.15	36.44	46	-9.56	peak

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

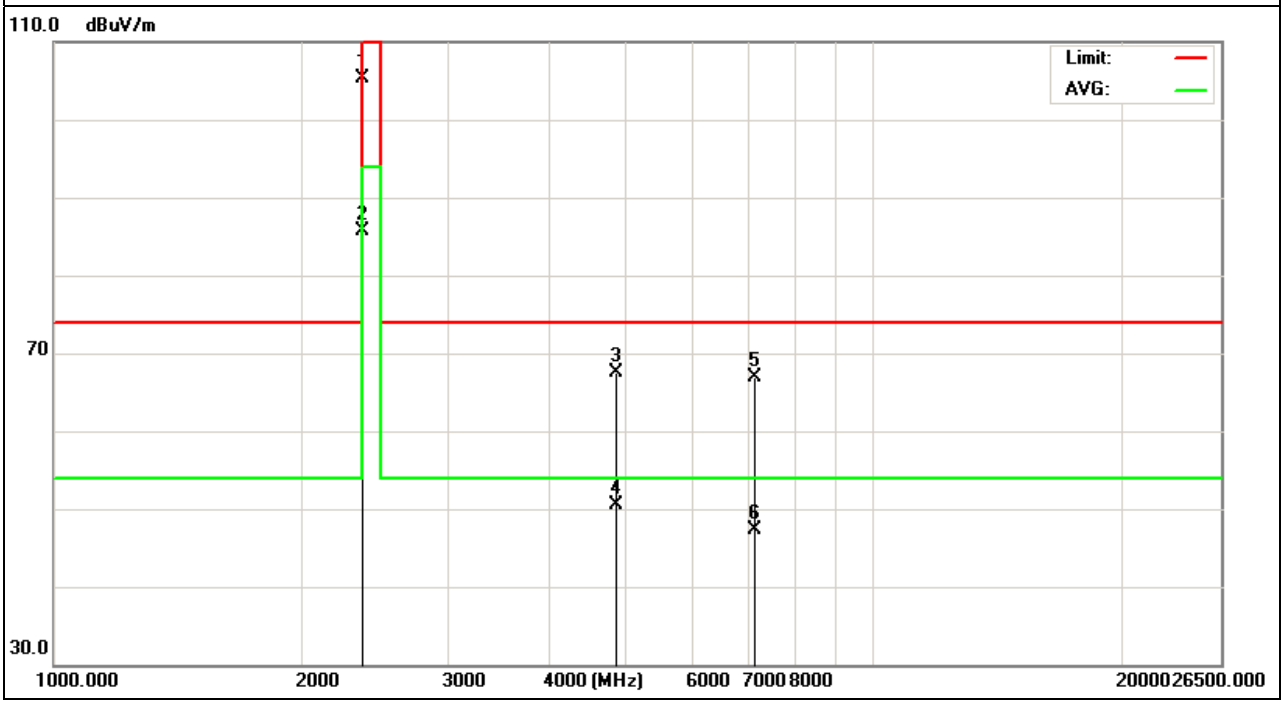


3.3.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2402MHz	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2402.0	118.38	-12.99	105.39	114.0 0	-8.61	peak
2402.0	98.72	-12.99	85.73	94	-8.27	AVG
4810.75	71.31	-3.71	67.6	74	-6.4	peak
4810.75	54.22	-3.71	50.51	54	-3.49	AVG
7215.75	67.54	-0.6	66.94	74	-7.06	peak
7215.75	47.9	-0.6	47.3	54	-6.7	AVG

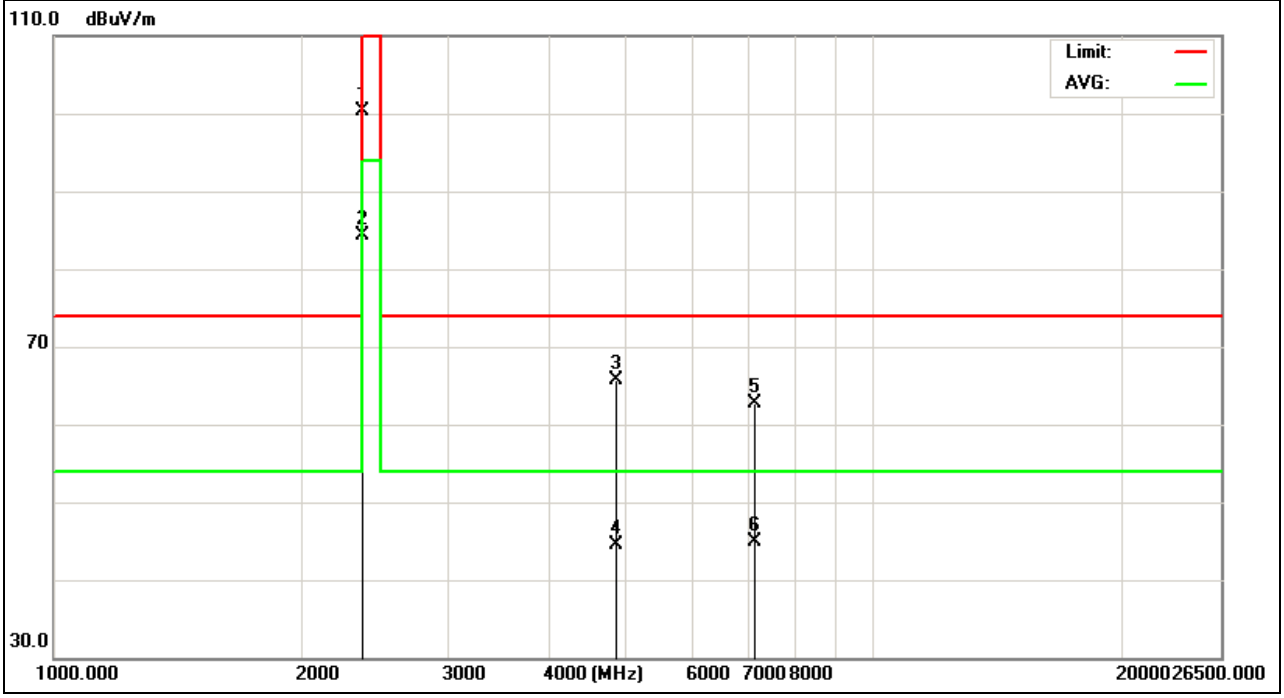
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2405MHz	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2402.0	113.25	-12.99	100.26	114.0 0	-13.74	peak
2402.0	97.35	-12.99	84.36	94	-9.64	AVG
4810.75	69.34	-3.71	65.63	74	-8.37	peak
4810.75	48.28	-3.71	44.57	54	-9.43	AVG
7215.75	63.26	-0.6	62.66	74	-11.34	peak
7215.75	45.55	-0.6	44.95	54	-9.05	AVG

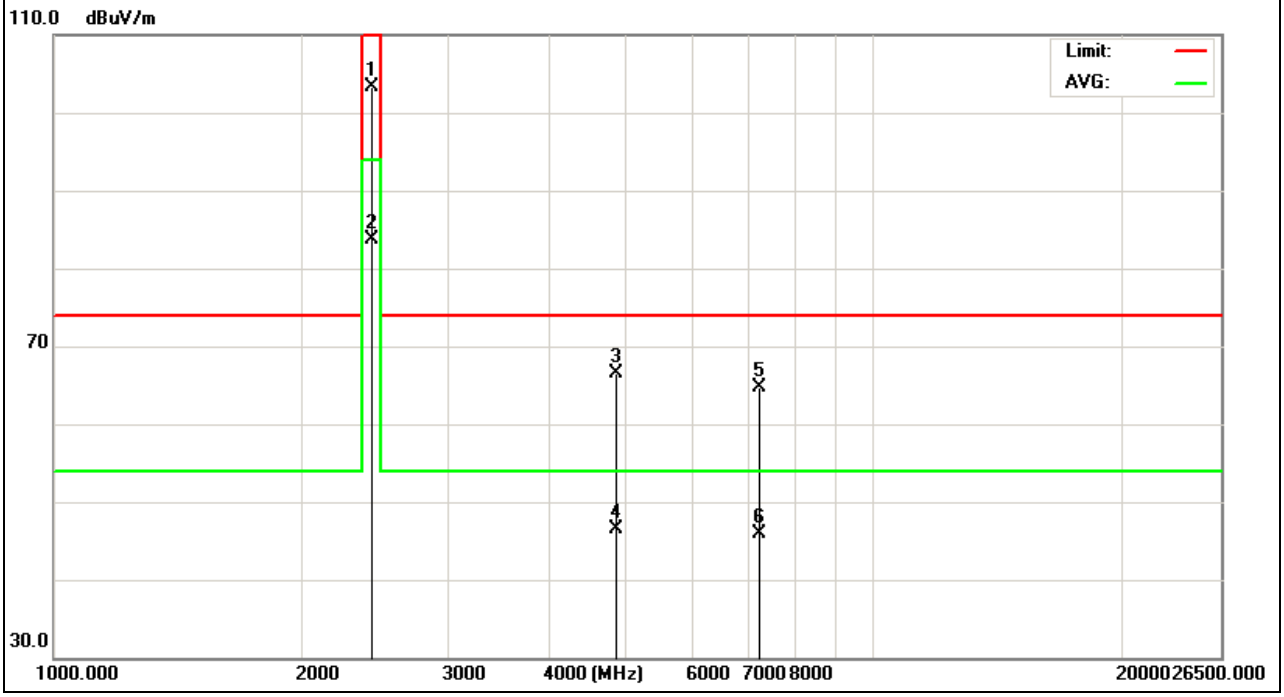
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2447MHz	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2447.0	116.28	-12.94	103.34	114.0 0	-10.66	peak
2447.0	96.57	-12.94	83.63	94	-10.37	AVG
4860.75	70.13	-3.58	66.55	74	-7.45	peak
4860.75	50.09	-3.58	46.51	54	-7.49	AVG
7290.75	65.51	-0.85	64.66	74	-9.34	peak
7290.75	46.8	-0.85	45.95	54	-8.05	AVG

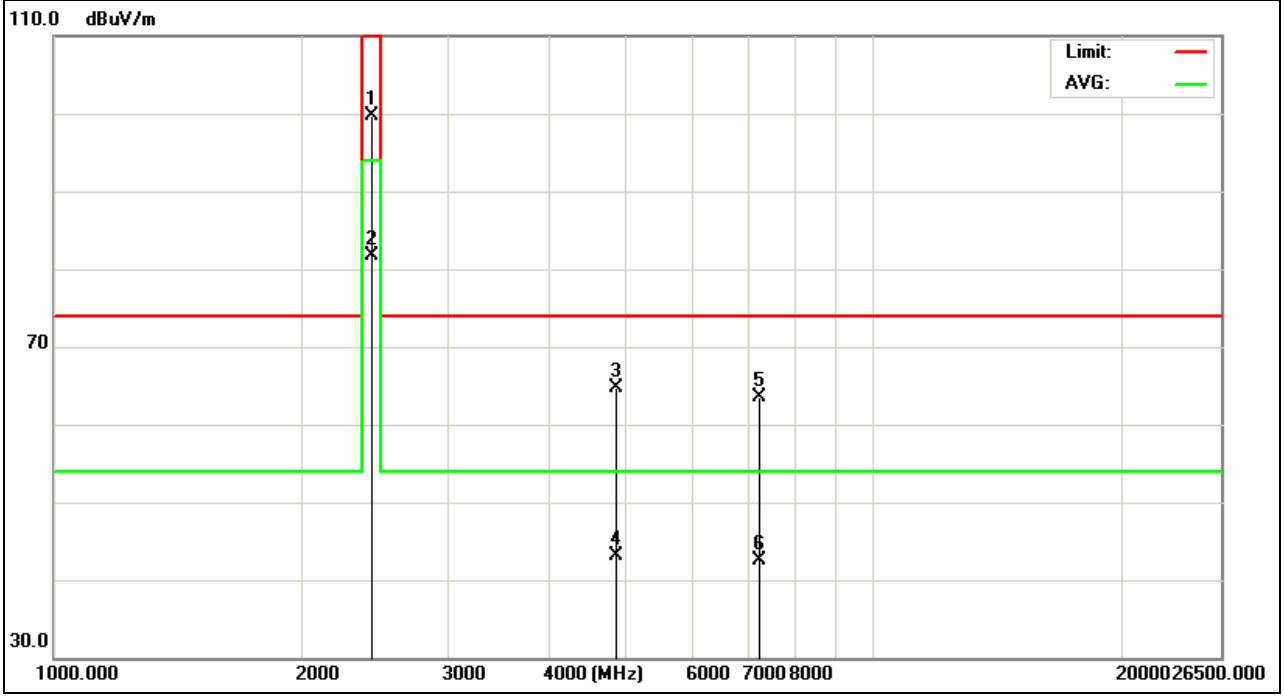
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2447MHz	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2447.0	112.57	-12.94	99.63	114.0 0	-14.37	peak
2447.0	94.69	-12.94	81.75	94	-12.25	AVG
4860.75	68.25	-3.58	64.67	74	-9.33	peak
4860.75	46.67	-3.58	43.09	54	-10.91	AVG
7290.75	64.45	-0.85	63.6	74	-10.4	peak
7290.75	43.31	-0.85	42.46	54	-11.54	AVG

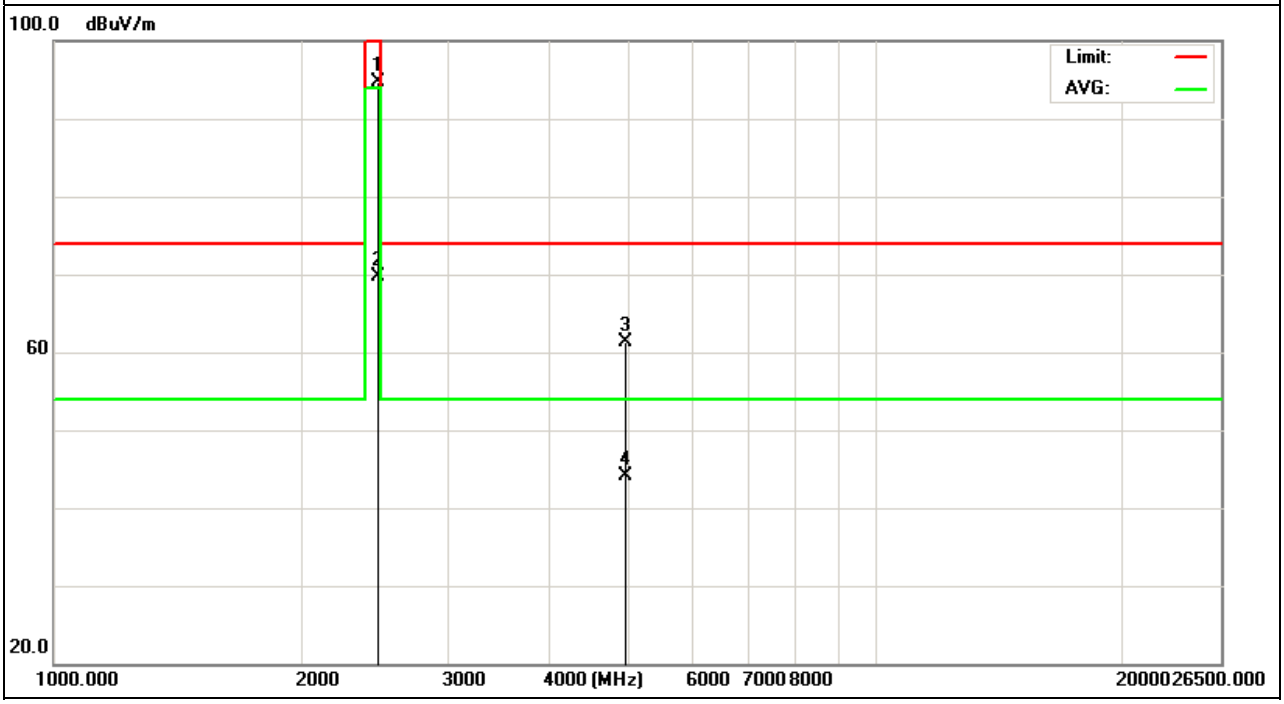
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2479MHz	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2479	112.08	-17.36	94.72	114.0 0	-19.28	peak
2479	87.12	-17.36	69.76	94	-24.24	AVG
4960	69.45	-8.13	61.32	74	-12.68	peak
4960	52.21	-8.13	44.08	54	-9.92	AVG

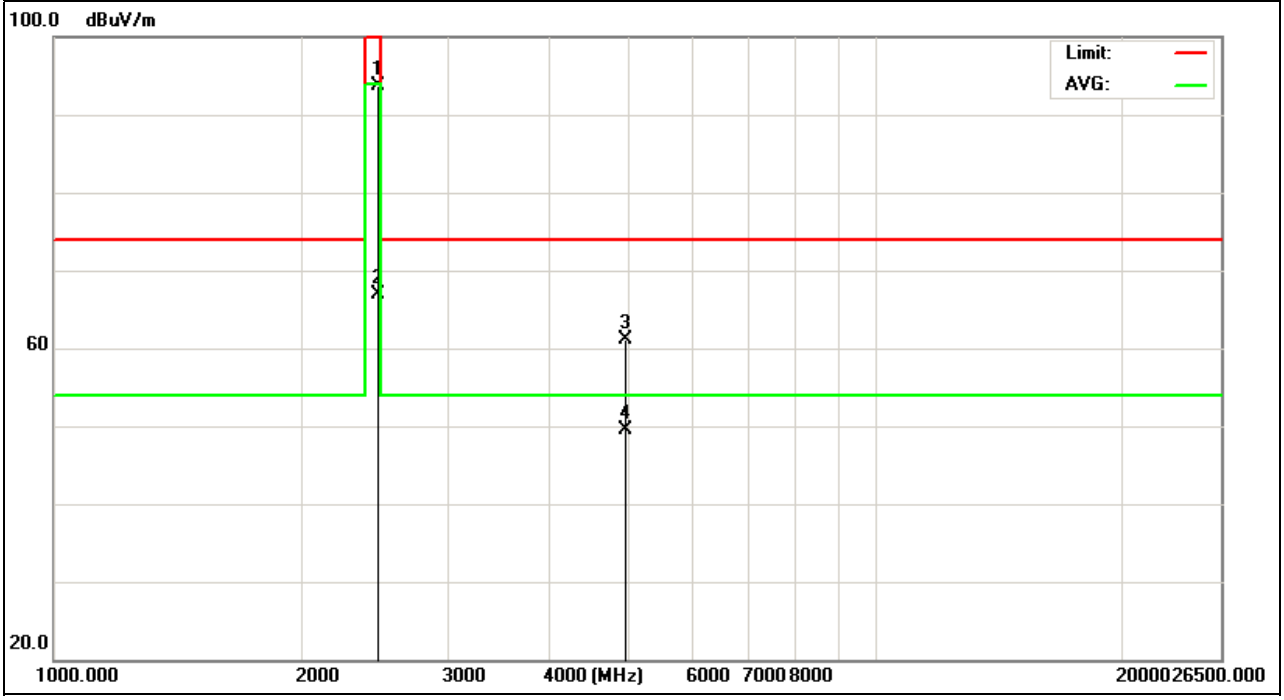
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2479MHz	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2479	107.09	-17.36	97.73	114	-16.27	peak
2479	84.23	-17.36	66.87	94	-27.13	AVG
4960	69.24	-8.13	61.11	74	-12.89	peak
4960	57.67	-8.13	49.54	54	-4.46	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

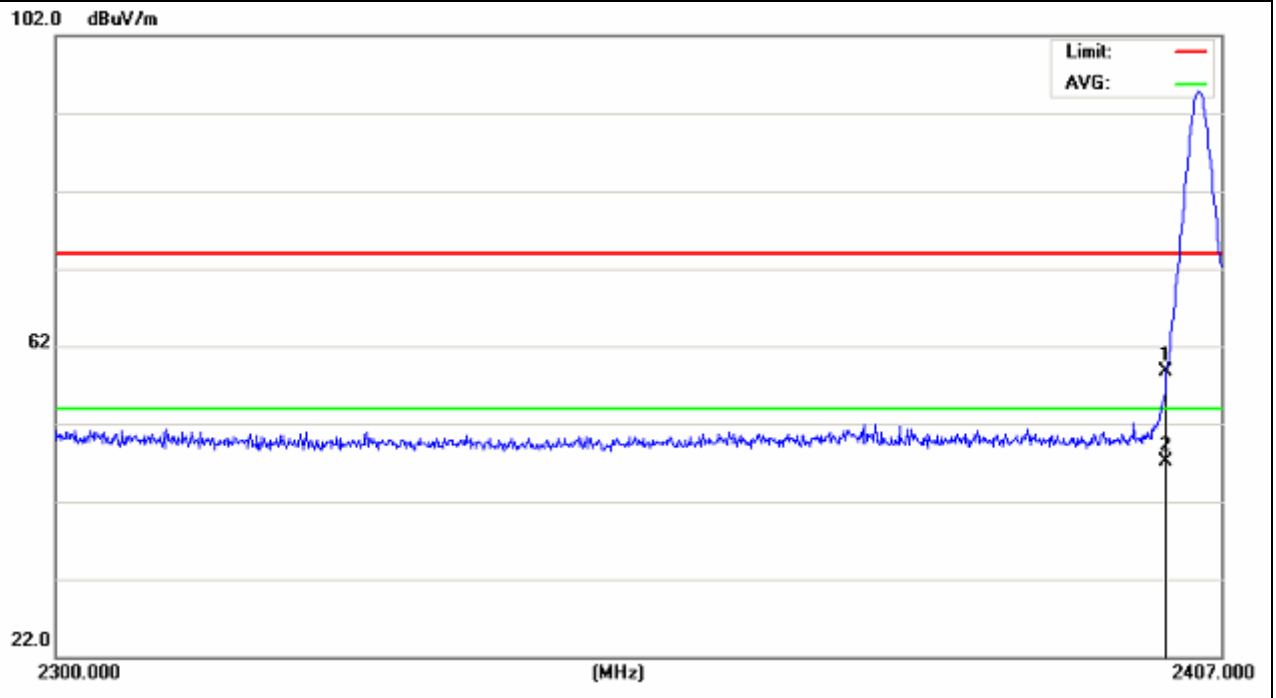


Band Edge Emission:

EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2402MHz	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2400	23.7	35	58.7	74	-15.3	peak
2400	12.18	35	47.18	54	-6.82	AVG

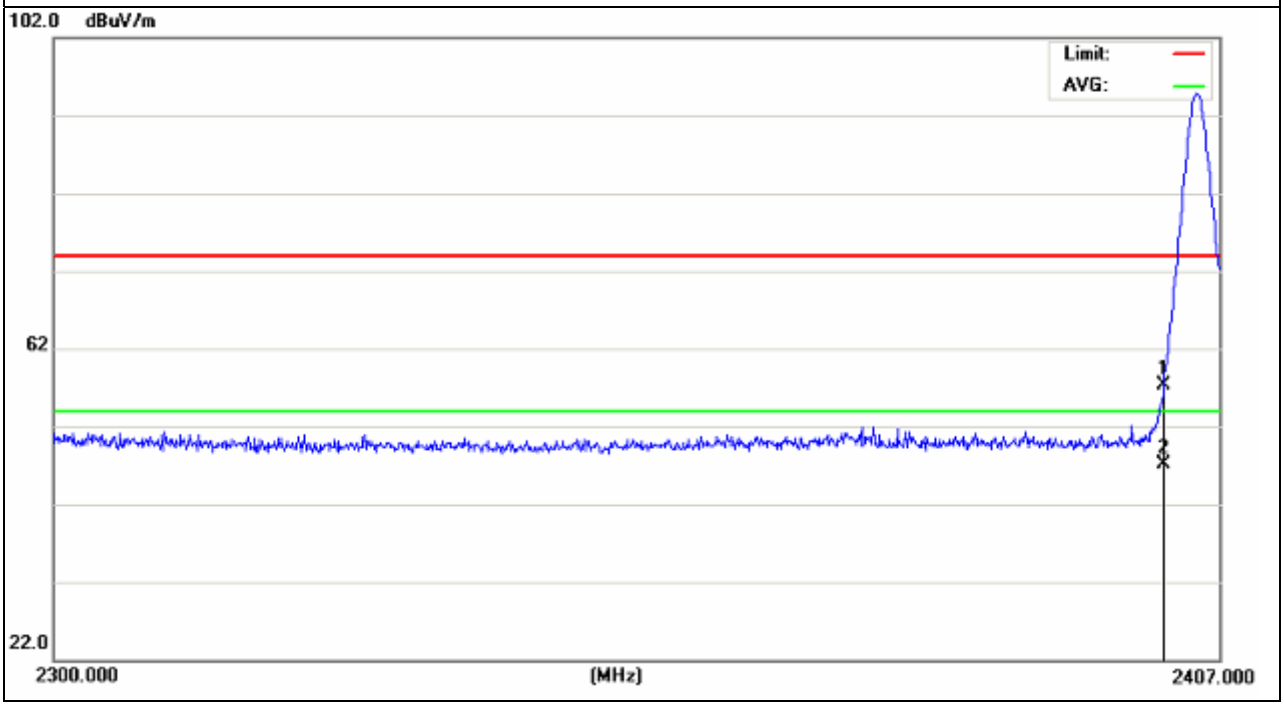
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2402MHz	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2400	22.35	35	57.35	74	-16.65	peak
2400	12.09	35	47.09	54	-6.91	AVG

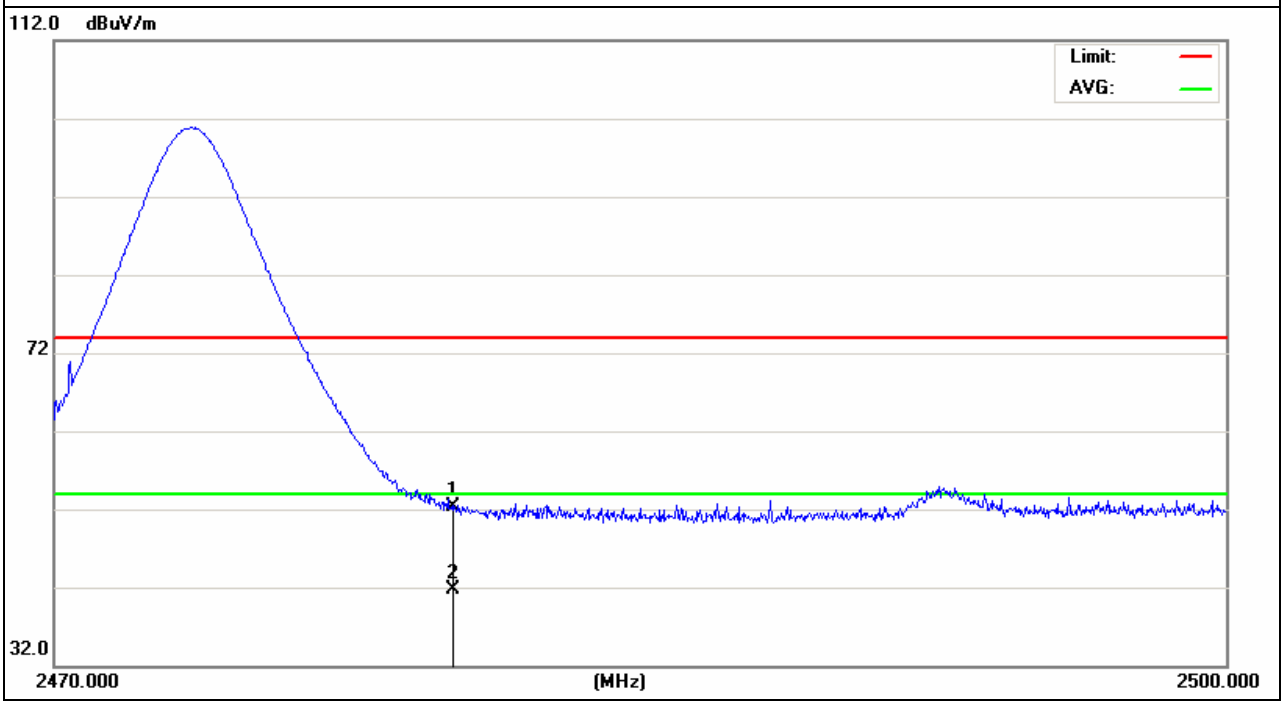
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2479MHz	Polarization：	Vertical
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	17.09	35.25	52.34	74	-21.66	peak
2483.5	6.48	35.25	41.73	54	-12.27	AVG

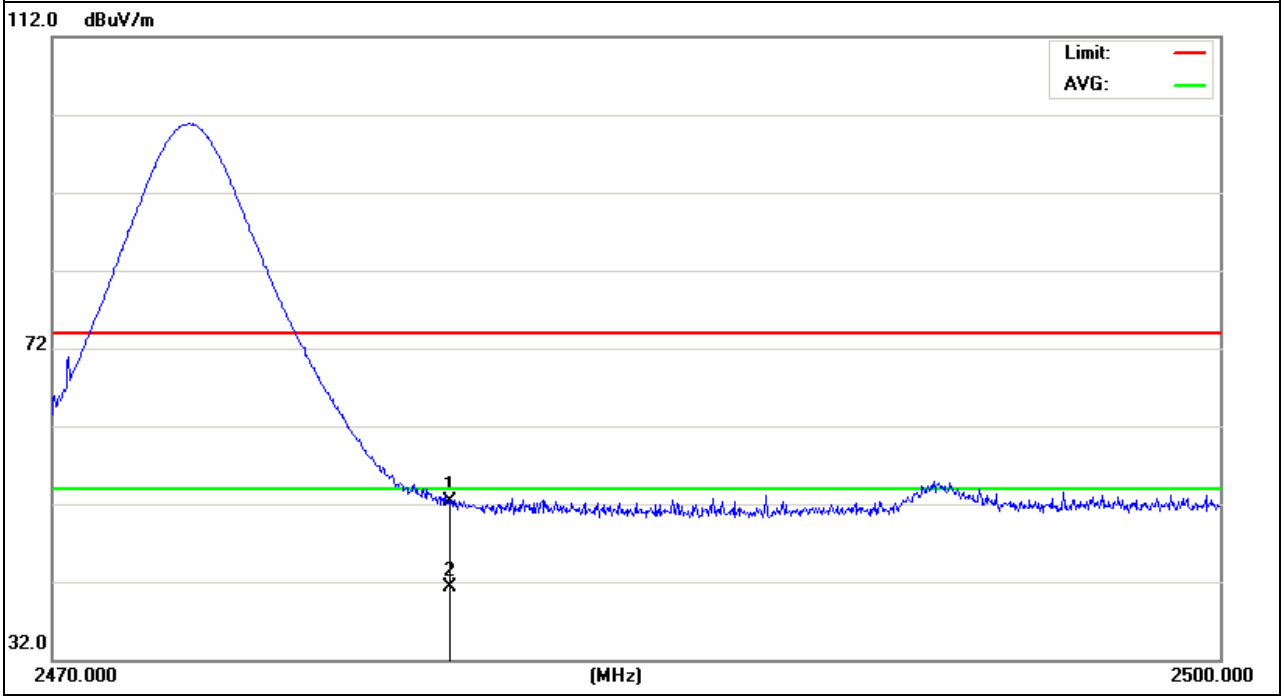
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2012-11-8
Test Mode ：	TX 2479MHz	Polarization：	Horizontal
Test Power ：	DC 3.7V		

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	17.15	35.25	52.4	74	-21.6	peak
2483.5	5.98	35.25	41.23	54	-12.77	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



4. BANDWIDTH TEST

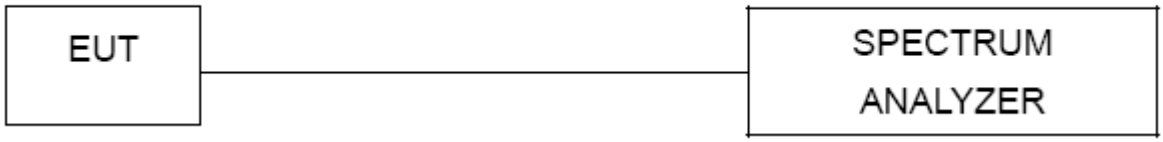
4.1 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW≧RBW, Sweep time = Auto.

4.2 DEVIATION FROM STANDARD

No deviation.

4.3 TEST SETUP



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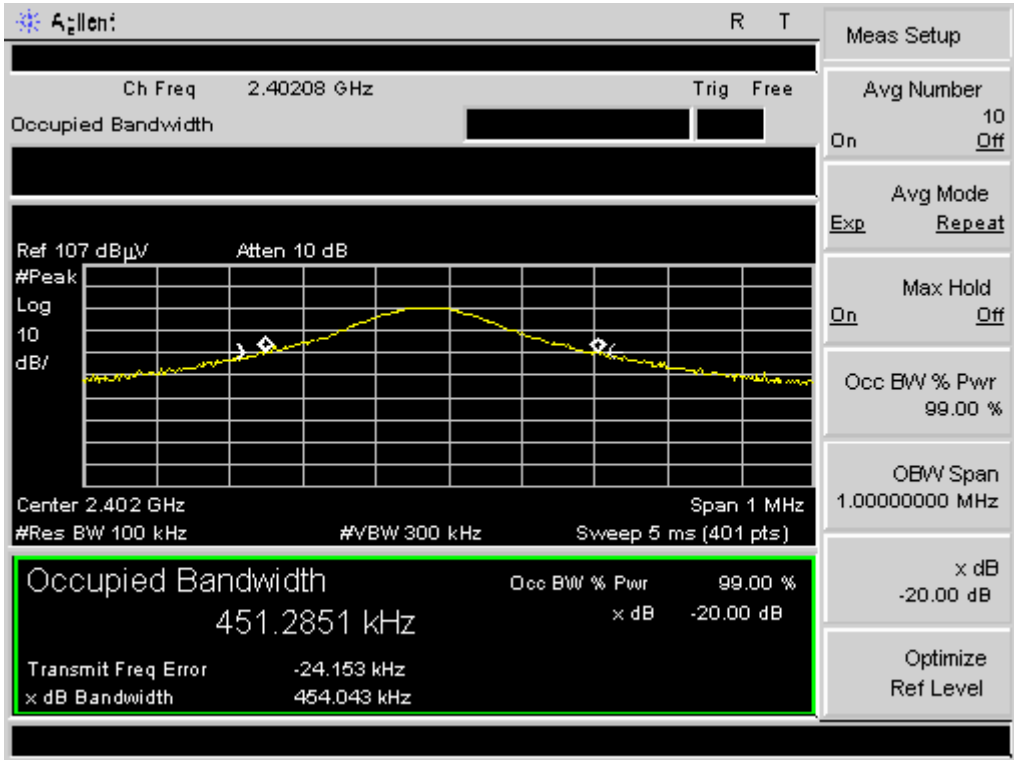
4.4 TEST RESULTS

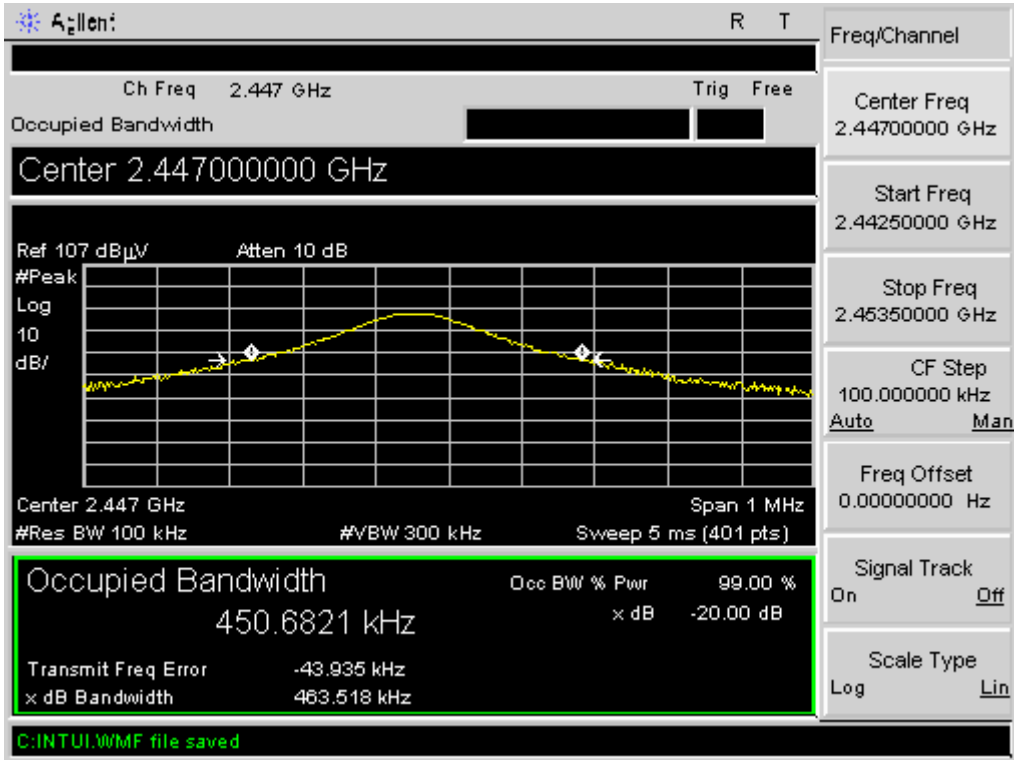
EUT：	HEmouse Wireless Mouse	Model Name ：	HE-RF001
Temperature：	26 ℃	Relative Humidity：	53%
Pressure：	1020 hPa	Test Power ：	DC 3.7V
Test Mode ：	TX (L/M/H)		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (MHz)	99% Bandwidth (MHz)
Low	2403	0.454	0.451
Middle	2447	0.463	0.450
High	2479	0.478	0.471

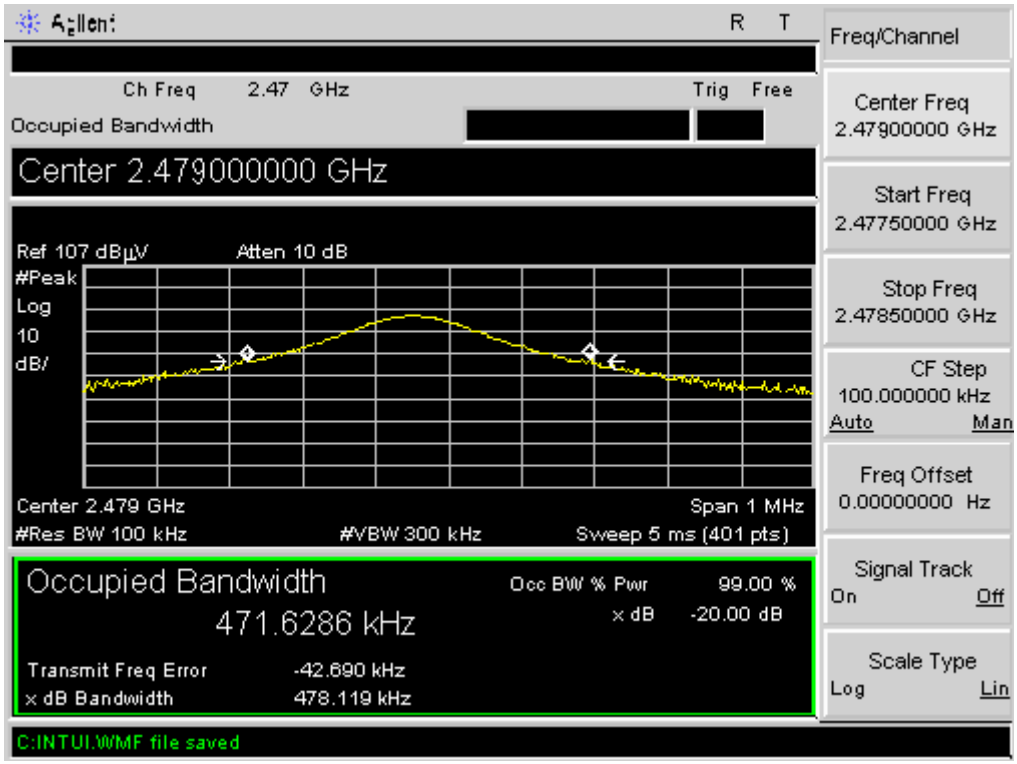
The Lowest Channel:2402MHz



The Middle Channel:2447MHz

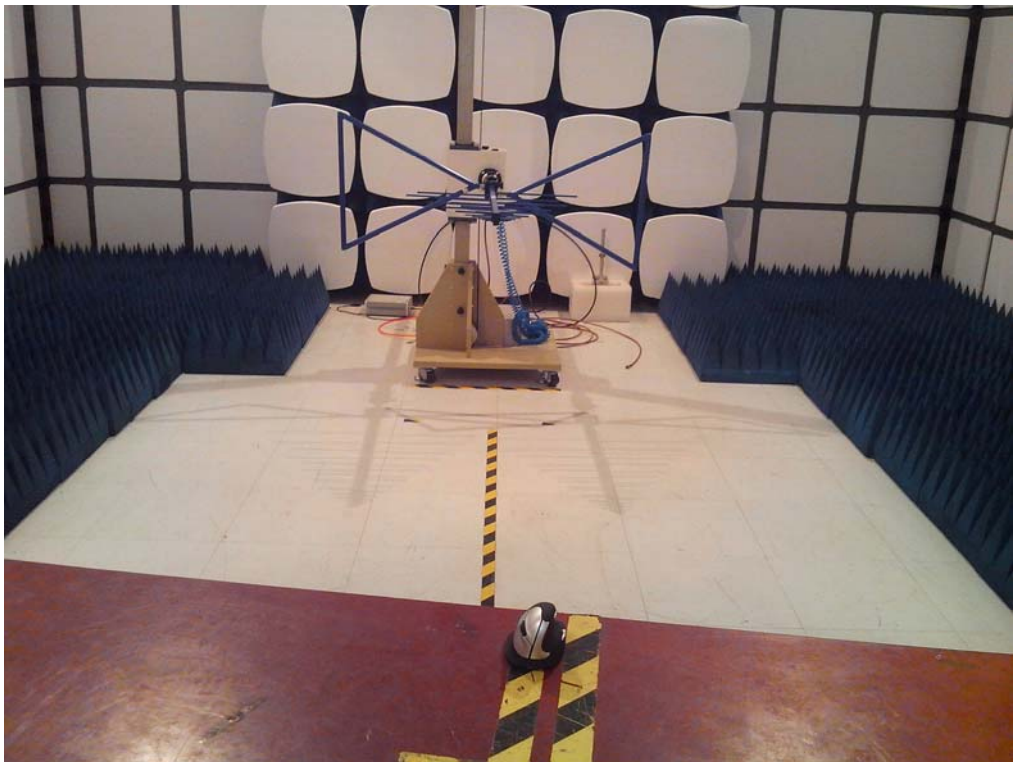


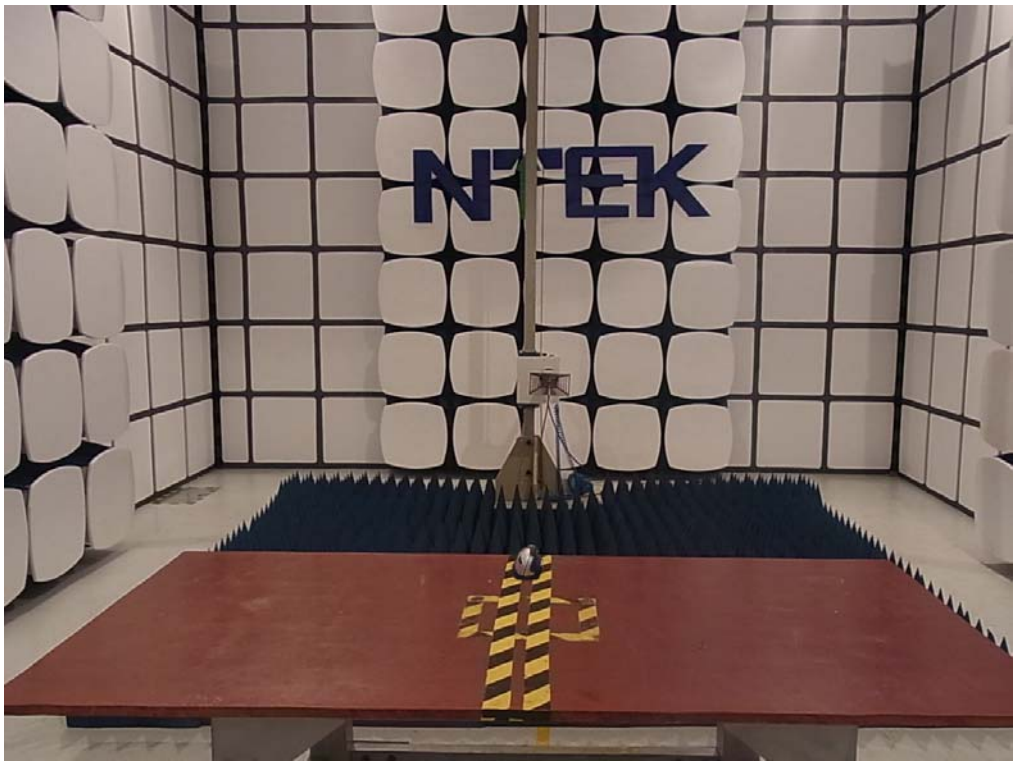
The Middle Channel:2479MHz



5. EUT TEST PHOTO

Radiated Measurement Photos





Conducted Measurement Photos

APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS

Photo 1

Photo 2

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Photo 3

Photo 4

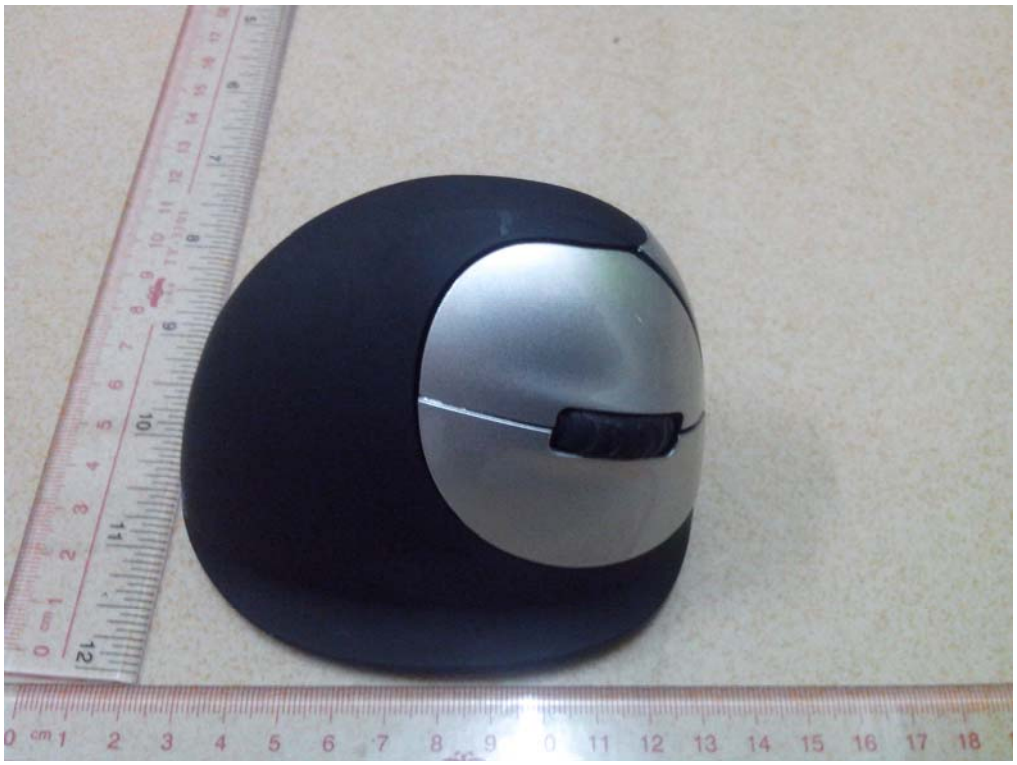

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

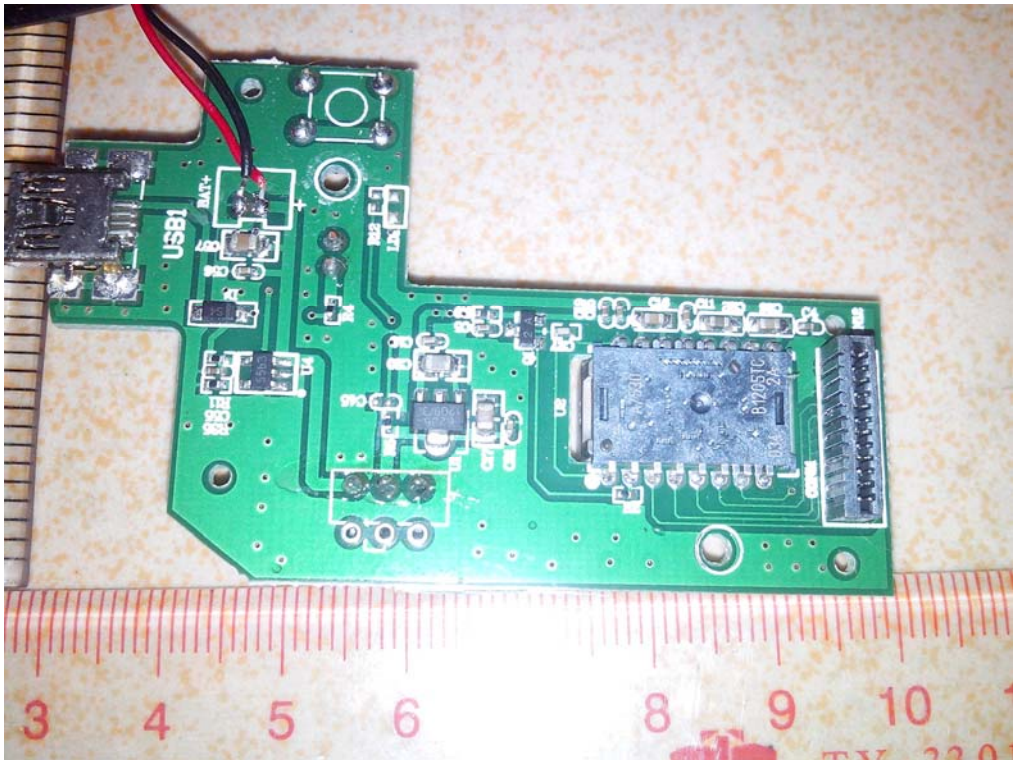

Photo 10

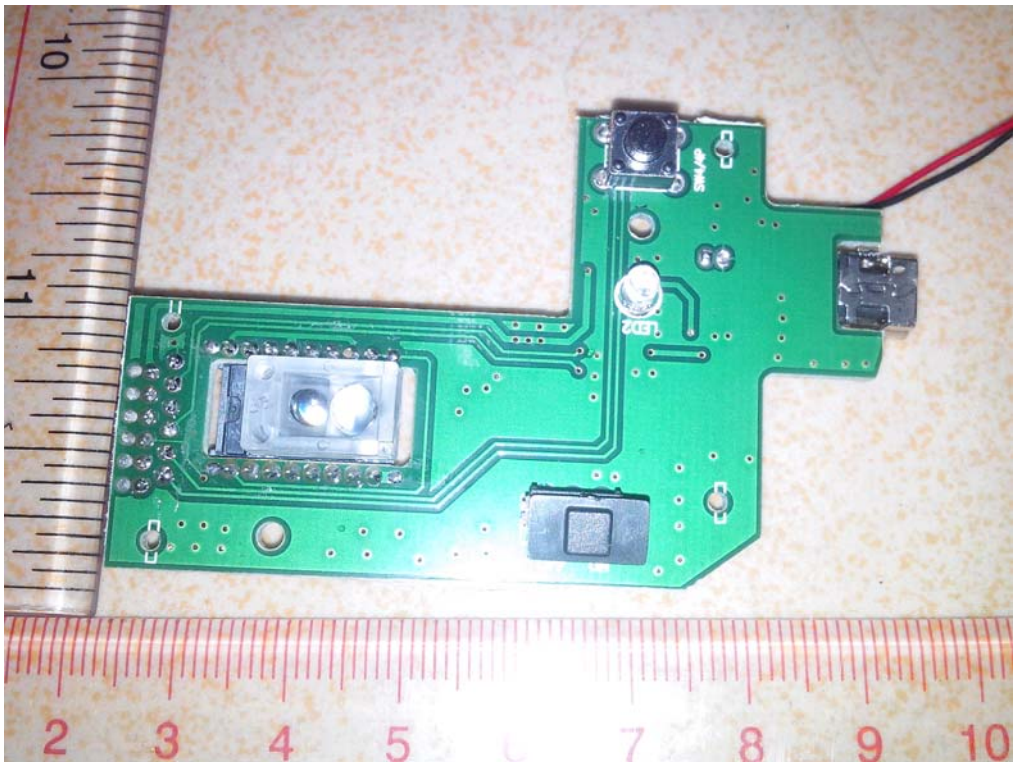

Photo 11

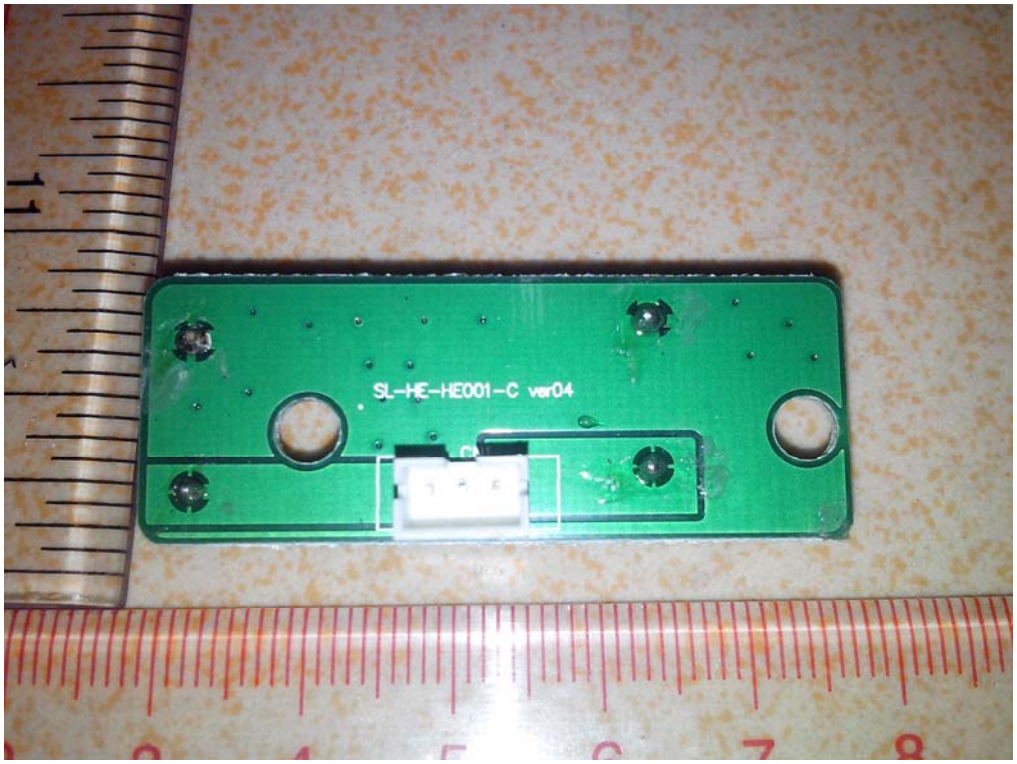

Photo 12

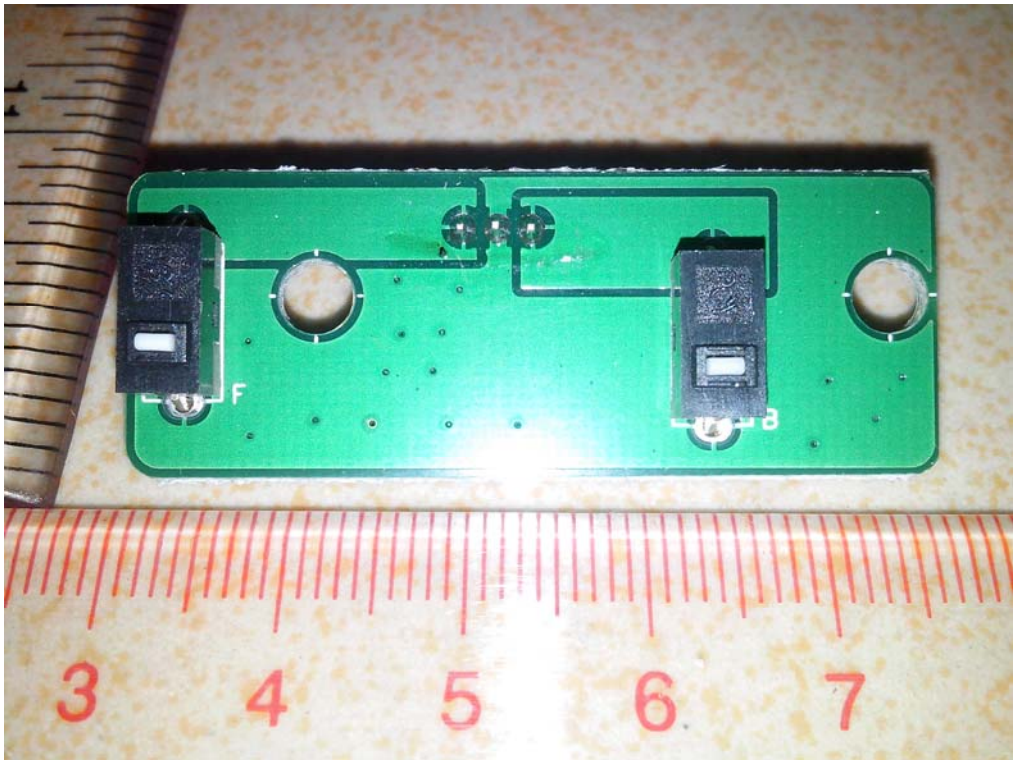

Photo 13

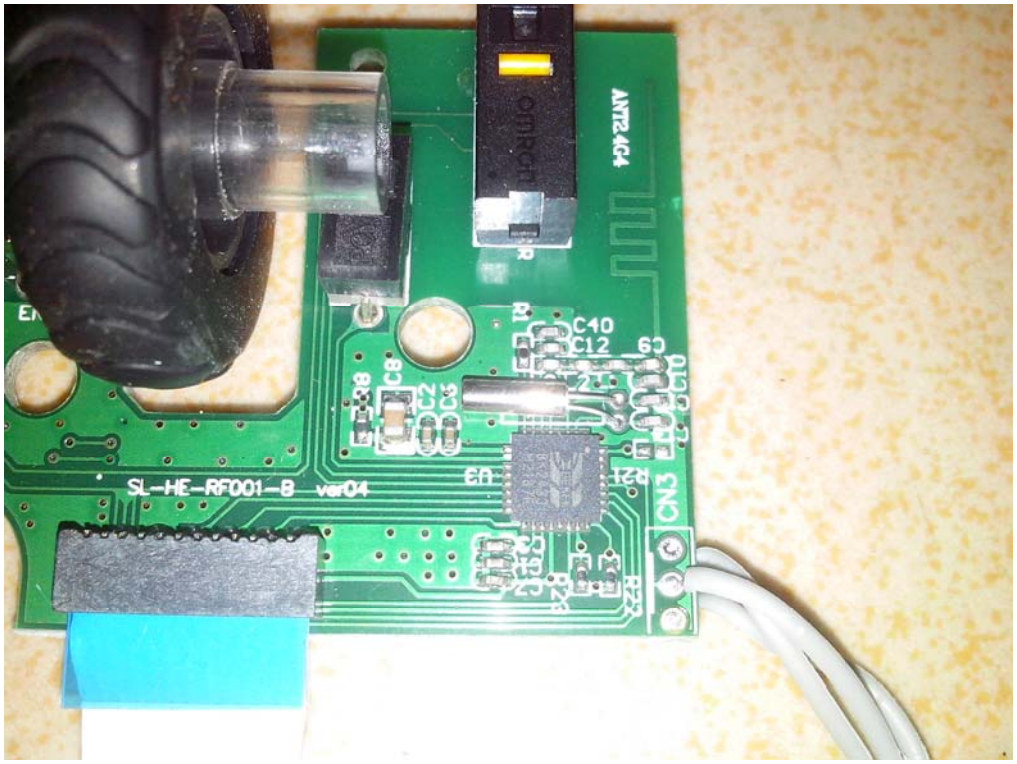

Photo 14