# FCC CERTIFICATION On Behalf of HONG KONG PC-PEN CO., LIMITED

Wireless Mouse Pen Model No.: NV-306

FCC ID: YFWNV306TX

Prepared for : HONG KONG PC-PEN CO., LIMITED

Address : 1B, Phase IV Shiji Chuncheng, Minzhi Street, Meilong

Road, Baoan District, Shenzhen, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD

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Report Number : ATE20101086
Date of Test : May 26, 2010
Date of Report : May 27, 2010

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# **Test Report Certification**

Applicant : HONG KONG PC-PEN CO., LIMITED

Manufacturer : HONG KONG PC-PEN CO., LIMITED

EUT Description : Wireless Mouse Pen

(A) MODEL NO.: NV-306

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: 3.7V DC (Li-ion battery 1×)

Measurement Procedure Used:

#### FCC Rules and Regulations Part 15 Subpart C Section 15.249 ANSI C63.4: 2003

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test:	May 26, 2010
Prepared by :	Joe
	(Engineer)
Approved & Authorized Signer :	Seant
	(Manager)

#### 1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : Wireless Mouse Pen

Model Number : NV-306

Power Supply : 3.7V DC (Li-ion battery  $1\times$ )

Operate Frequency : 2402-2478MHz

Applicant : HONG KONG PC-PEN CO., LIMITED

Address : 1B, Phase IV Shiji Chuncheng, Minzhi Street, Meilong

Road, Baoan District, Shenzhen, China

Manufacturer : HONG KONG PC-PEN CO., LIMITED

Address : 1B, Phase IV Shiji Chuncheng, Minzhi Street, Meilong

Road, Baoan District, Shenzhen, China

Date of sample received: May 20, 2010

Date of Test : May 26, 2010

1.2.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

# 1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2 (9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2 (30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2 (Above 1GHz)

# 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment** 

Kind of equipment	Manufacturer	Туре	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 9, 2011
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 9, 2011
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 9, 2011
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 9, 2011
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 9, 2011
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 9, 2011
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 9, 2011
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 9, 2011
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 9, 2011
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 9, 2011

# 3. SUMMARY OF TEST RESULTS

FCC Rules	<b>Description of Test</b>	Result
Section 15.207	Conducted Emission	N/A
Section 15.249(a)	Fundamental and Harmonics Radiated Emission	Compliant
Section 15.249(d)	Spurious Radiated Emission	Compliant
Section 15.249(d)	Band Edge	Compliant
Section 15.203	Antenna Requirement	Compliant

Remark: "N/A" means "Not applicable".

# 4. FUNDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249(A)

# 4.1.Block Diagram of Test Setup

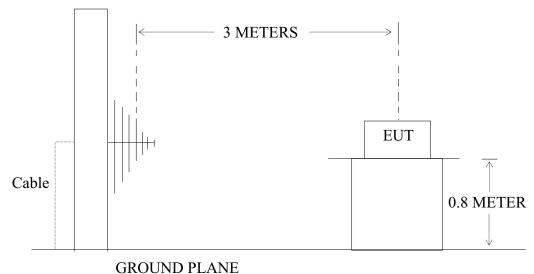
4.1.1.Block diagram of connection between the EUT and simulators



(EUT: Wireless Mouse Pen)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram

#### ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



(EUT: Wireless Mouse Pen)

#### 4.2. The Emission Limit

4.2.1.For intentional radiators, According to section 15.249(a), Operation within the frequency band of 2.4 to 2.4835GHz, The fundamental field strength shall not exceed 94 dB $\mu$ V/m and the harmonics shall not exceed 54 dB $\mu$ V/m.

Fundamental	Field Strength of Fundamental	Field Strength of harmonics
Frequency	(millivolts/meter)	(microvolts/meter)
902-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

4.2.2.According to section 15.249(e), as shown in section 15.35(b), the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

#### 4.3. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.3.1. Wireless Mouse Pen (EUT)

Model Number : NV-306 Serial Number : N/A

Manufacturer : HONG KONG PC-PEN CO., LIMITED

# 4.4. Operating Condition of EUT

- 4.4.1. Setup the EUT and simulator as shown as Section 4.1.
- 4.4.2. Turn on the power of all equipment.
- 4.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2478MHz. We are select 2402MHz, 2440MHz, 2478MHz TX frequency to transmit.

#### 4.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 1MHz.

# 4.6. The Field Strength of Radiation Emission Measurement Results **PASS.**

Date of Test:May 26, 2010Temperature:25°CEUT:Wireless Laser MouseHumidity:50%Model No.:NV-306Power Supply:3.7V DC (Li-ion battery 1×)Test Mode:TX 2402MHzTest Engineer:Joe

#### **Fundamental Radiated Emissions**

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(c	lBμV/m)	Limit(dF	BμV/m)	Marg	in(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2402.526	95.24	99.50	-7.45	87.79	92.05	94	114	-6.21	-21.95	Vertical
2402.526	97.76	102.03	-7.45	90.31	94.58	94	114	-3.69	-19.42	Horizontal

#### **Harmonics Radiated Emissions**

Frequency	Reading(	dBμV/m)	Factor(dB)	Result(c	lBμV/m)	Limit(dI	BμV/m)	Marg	in(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
4805.058	50.54	54.83	-0.29	50.25	54.54	54	74	-3.75	-19.46	Vertical
4805.058	50.83	55.12	-0.29	50.54	54.83	54	74	-3.46	-19.17	Horizontal
7207.575	42.71	46.99	2.98	45.69	49.97	54	74	-8.31	-24.03	Vertical
7207.575	43.86	48.13	2.98	46.84	51.11	54	74	-7.16	-22.89	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:May 26, 2010Temperature:25°CEUT:Wireless Mouse PenHumidity:50%Model No.:NV-306Power Supply:3.7V DC (Li-ion battery 1×)Test Mode:TX 2440MHzTest Engineer:Joe

#### **Fundamental Radiated Emissions**

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(c	lBμV/m)	Limit(dF	BμV/m)	Margi	n(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2440.530	95.34	99.64	-7.35	87.99	92.29	94	114	-6.01	-21.71	Vertical
2440.530	97.37	101.63	-7.35	90.02	94.28	94	114	-3.98	-19.72	Horizontal

#### **Harmonics Radiated Emissions**

Frequency	Reading(	dBμV/m)	Factor(dB)	Result(dBμV/m) Limit(dBμV/m)		Margin(dB)		Polarization		
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
4881.055	49.78	54.08	0.14	49.92	54.22	54	74	-4.08	-19.78	Vertical
4881.055	47.62	53.66	0.14	47.75	53.79	54	74	-6.25	-20.21	Horizontal
7321.596	41.90	46.18	3.24	45.14	49.42	54	74	-8.86	-24.58	Vertical
7321.596	43.77	48.05	3.24	47.01	51.29	54	74	-6.99	-22.71	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:May 26, 2010Temperature:25°CEUT:Wireless Mouse PenHumidity:50%Model No.:NV-306Power Supply:3.7V DC (Li-ion battery 1×)Test Mode:TX 2478MHzTest Engineer:Joe

#### **Fundamental Radiated Emissions**

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(c	lBμV/m)	Limit(dI	BμV/m)	Margi	in(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2478.538	95.61	99.90	-7.37	88.24	92.53	94	114	-5.76	-21.47	Vertical
2478.538	97.63	101.92	-7.37	90.26	94.55	94	114	-3.74	-19.45	Horizontal

#### **Harmonics Radiated Emissions**

Frequency	Reading(	dBμV/m)	Factor(dB)	Result(dBμV/m) Limit(dBμV/m)		Margin(dB)		Polarization		
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
4957.082	49.60	53.92	0.51	50.11	54.43	54	74	-3.89	-19.57	Vertical
4957.082	50.35	54.65	0.51	50.86	55.16	54	74	-3.14	-18.84	Horizontal
7435.603	42.71	47.01	3.66	46.37	50.67	54	74	-7.63	-23.33	Vertical
7435.603	44.04	48.33	3.66	47.70	51.99	54	74	-6.30	-22.01	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

# 5. SPURIOUS RADIATED EMISSION FOR SECTION 15.249(D)

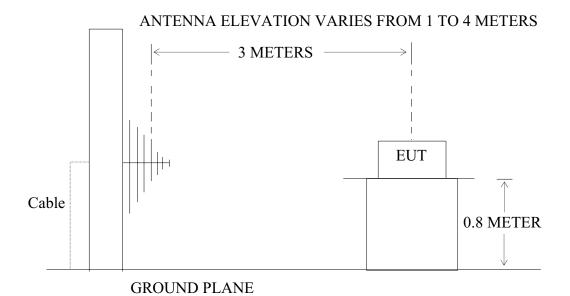
# 5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: Wireless Mouse Pen)

5.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: Wireless Mouse Pen)

#### 5.2. The Emission Limit For Section 15.249(d)

5.2.1.Emission radiated outside of the specified frequency bands, except for harmonics, shall be comply with the general radiated emission limits in Section 15.209.

Radiation Emission Measurement Limits According to Section 15.209

	Limit								
Frequency (MHz)	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBµV/m)	The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is						
30 - 88	100	40	performed with Average detector.						
88 - 216	150	43.5	Except those frequency bands mention above, the						
216 - 960	200	46	final measurement for frequencies below						
Above 960	500	54	1000MHz is performed with Quasi Peak detector.						

### 5.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. Wireless Mouse Pen (EUT)

Model Number : NV-306 Serial Number : N/A

Manufacturer : HONG KONG PC-PEN CO., LIMITED

### 5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2478MHz. We are select 2402MHz, 2440MHz, 2478MHz TX frequency to transmit.

#### 5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz, and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

#### 5.6. The Emission Measurement Result

#### PASS.

Date of Test:	May 26, 2010	Temperature:	25°C
EUT:	Wireless Mouse Pen	Humidity:	50%
Model No.:	NV-306	Power Supply:	3.7V DC (Li-ion battery $1\times$ )
Test Mode:	TX 2402MHz	Test Engineer:	Joe

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	Vertical
-	-	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

 $Result = Reading + Corrected \ Factor$ 

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	May 26, 2010	Temperature:	25°C
EUT:	Wireless Mouse Pen	Humidity:	50%
Model No.:	NV-306	Power Supply:	3.7V DC (Li-ion battery $1\times$ )
Test Mode:	TX 2440MHz	Test Engineer:	Joe

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
_	_	_	-	_	_	Vertical
-	-	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:	May 26, 2010	Temperature:	25°C
EUT:	Wireless Mouse Pen	Humidity:	50%
Model No.:	NV-306	Power Supply:	3.7V DC (Li-ion battery 1×)
Test Mode:	TX 2478MHz	Test Engineer:	Joe

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
_	_	_	-	_	_	Vertical
-	-	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

#### 6. BAND EDGES

#### 6.1. The Requirement

6.1.1.Band Edge from 2400MHz to 2483.5MHz. Emission 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.

#### 6.2.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.2.1. Wireless Mouse Pen (EUT)

Model Number : NV-306 Serial Number : N/A

Manufacturer : HONG KONG PC-PEN CO., LIMITED

#### 6.3. Operating Condition of EUT

- 6.3.1. Setup the EUT and simulator as shown as Section 4.1.
- 6.3.2. Turn on the power of all equipment.
- 6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2402-2478MHz. We are select 2402MHz, 2478MHz TX frequency to transmit.

#### 6.4. Test Procedure

- 1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

RBW=1MHz, VBW=1MHz

#### 6.5. The Measurement Result

#### Pass.

Date of Test:May 26, 2010Temperature:25°CEUT:Wireless Mouse PenHumidity:50%Model No.:NV-306Power Supply:3.7V DC (Li-ion battery 1×)Test Mode:TX 2402MHzTest Engineer:Joe

Frequency	Reading(dBµV/m)		Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2400.00	48.78	53.07	-7.46	41.32	45.61	54	74	-12.68	-28.39	Vertical
2400.00	52.95	57.22	-7.46	45.49	49.76	54	74	-8.51	-24.24	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

Date of Test:May 26, 2010Temperature:25°CEUT:Wireless Mouse PenHumidity:50%Model No.:NV-306Power Supply:3.7V DC (Li-ion battery 1×)Test Mode:TX 2478MHzTest Engineer:Joe

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2483.50	43.75	48.22	-7.37	36.38	40.85	54	74	-17.62	-33.15	Vertical
2483.5	43.74	48.02	-7.37	36.37	40.65	54	74	-17.63	-33.35	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

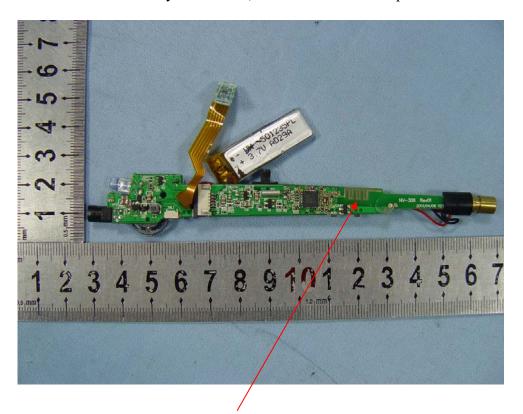
# 7. ANTENNA REQUIREMENT

# 7.1. The Requirement

7.1.1.According to Section 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.

#### 7.2. Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement.



Antenna

# APPENDIX I (Test Curves)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4994

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

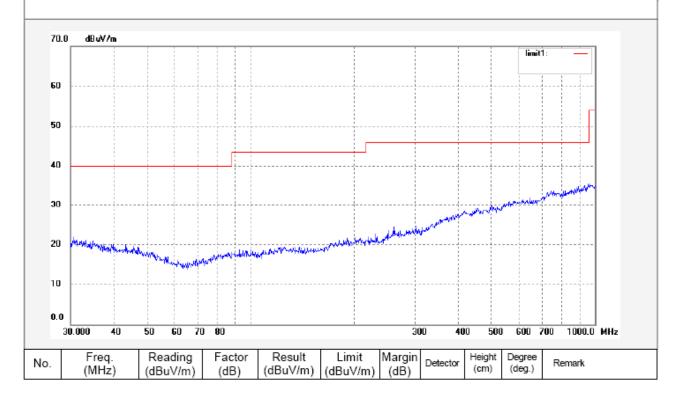
Manufacturer: Eastern Times Technology Co., Ltd.

Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Horizontal Power Source: DC 3.7V Date: 2010/05/26 Time: 8:40:11

Engineer Signature: Joe

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4995

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

dBuV/m

70.0

60

50

40

30

10

0.0

No.

30.000

40

Freq.

(MHz)

50

Reading

(dBuV/m)

60 70 80

Factor

(dB)

Result

(dBuV/m)

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

Power Source: DC 3.7V Date: 2010/05/26 Time: 8:43:37

Distance: 3m

Polarization: Vertical

Engineer Signature: Joe



600 700

Degree

(deg.)

400

Height

(cm)

Margin

(dB)

Limit

(dBuV/m)

1000.0 MHz

Remark



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5025

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

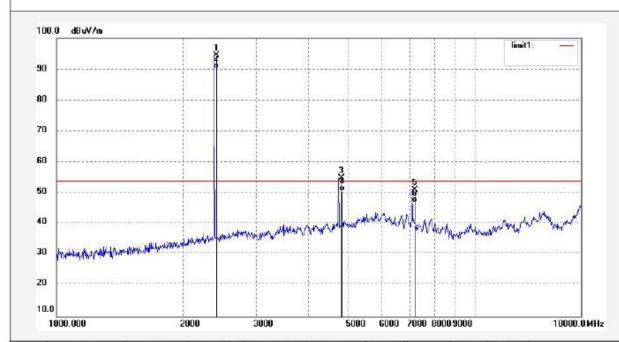
Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Horizontal Power Source: DC 3.7V

Date: 2010/05/26 Time: 11:06:32

Engineer Signature: Joe

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2402.526	102.03	-7.45	94.58	114.00	-19.42	peak	8	); );	8	
2	2402.526	97.76	-7.45	90.31	94.00	-3.69	AVG				
3	4805.058	55.12	-0.29	54.83	74.00	-19.17	peak	30	1		
4	4805.058	50.83	-0.29	50.54	54.00	-3.46	AVG	0	0		
5	7207.575	48.13	2.98	51.11	74.00	-22.89	peak				
6	7207.575	43.86	2.98	46.84	54.00	-7.16	AVG	8	8	S	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5024

Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %
EUT: Wireless Mouse Pen

Mode: TX 2402MHz

Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V

Date: 2010/05/26 Time: 11:02:21

Engineer Signature: Joe

Distance: 3m

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90							
80							
70	************************						
60				3			
50				ř	58		
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30	and from anyther flow that the societies and	philipse bear or in add a series	n Accordance				
20							
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No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2402.526	99.50	-7.45	92.05	114.00	-21.95	peak	8	); );	8	
2	2402.526	95.24	-7.45	87.79	94.00	-6.21	AVG				
3	4805.058	54.83	-0.29	54.54	74.00	-19.46	peak	30	1	5.5	
4	4805.058	50.54	-0.29	50.25	54.00	-3.75	AVG	0	0		
5	7207.575	46.99	2.98	49.97	74.00	-24.03	peak				
6	7207.575	42.71	2.98	45.69	54.00	-8.31	AVG	8	Ĉi X	8	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5036

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

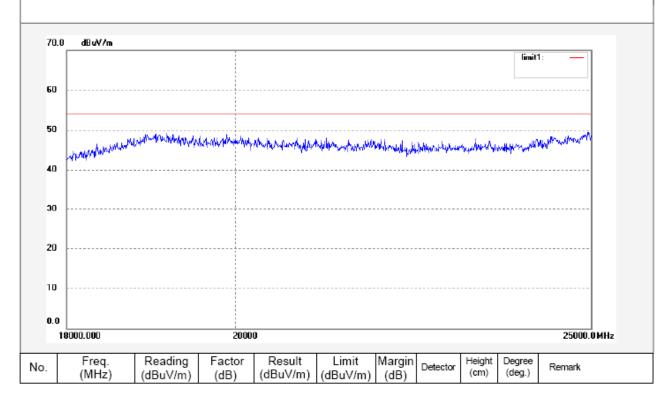
Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Horizontal
Power Source: DC 3.7V

Date: 2010/05/26 Time: 14:02:57







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5037

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

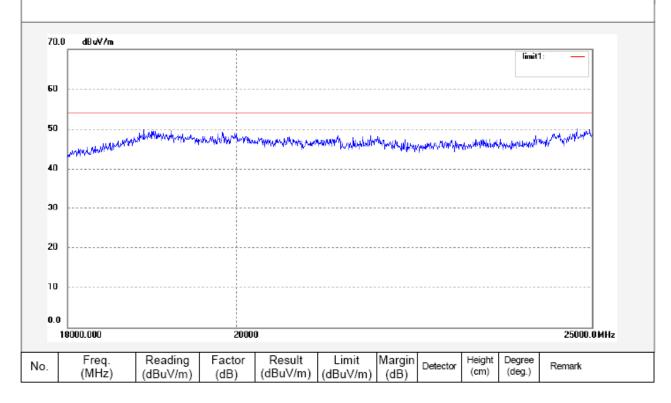
Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V

Date: 2010/05/26 Time: 14:06:30

Engineer Signature: Joe

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4997

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2440MHz Model: NV-306

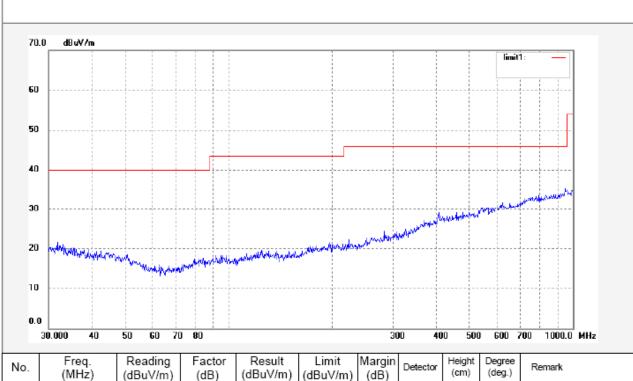
Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Horizontal Power Source: DC 3.7V Date: 2010/05/26

Time: 8:51:15

Engineer Signature: Joe Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4996

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: Wireless Mouse Pen

Mode: TX 2440MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

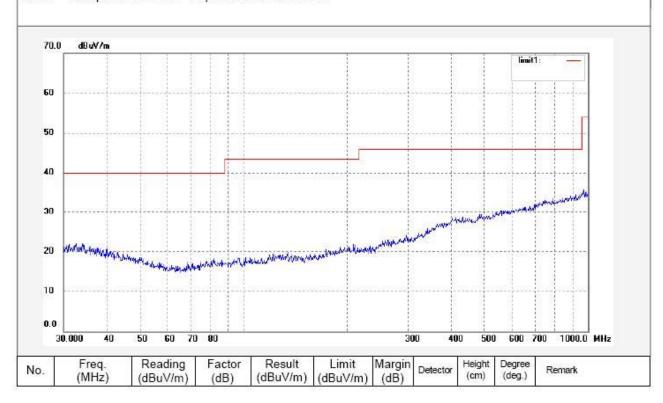
lote: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V

Date: 2010/05/26 Time: 8:47:40

Engineer Signature: Joe

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5026

Standard: FCC Class B 3M Radiated

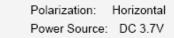
Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: Wireless Mouse Pen

Mode: TX 2440MHz Model: NV-306

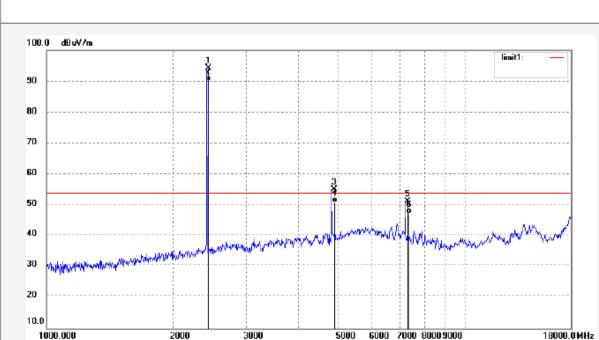
Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086



Date: 2010/05/26 Time: 11:11:26

Engineer Signature: Joe Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.530	101.63	-7.35	94.28	114.00	-19.72	peak			
2	2440.530	97.37	-7.35	90.02	94.00	-3.98	AVG			
3	4881.055	54.92	0.14	55.06	74.00	-18.94	peak			
4	4881.055	50.61	0.14	50.75	54.00	-3.25	AVG			
5	7321.596	48.05	3.24	51.29	74.00	-22.71	peak			
6	7321.596	43.77	3.24	47.01	54.00	-6.99	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5027

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2440MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

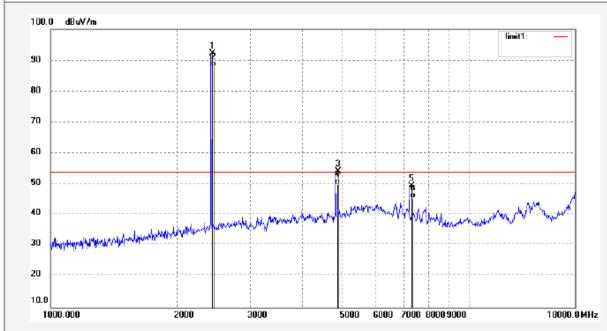
Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V

Date: 2010/05/26 Time: 11:15:38

Engineer Signature: Joe

Distance: 3m



	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
	1	2440.530	99.64	-7.35	92.29	114.00	-21.71	peak			
	2	2440.530	95.34	-7.35	87.99	94.00	-6.01	AVG			
	3	4881.055	54.08	0.14	54.22	74.00	-19.78	peak			
	4	4881.055	49.78	0.14	49.92	54.00	-4.08	AVG			
	5	7321.596	46.18	3.24	49.42	74.00	-24.58	peak			
	6	7321.596	41.90	3.24	45.14	54.00	-8.86	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5039

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2440MHz NV-306 Model:

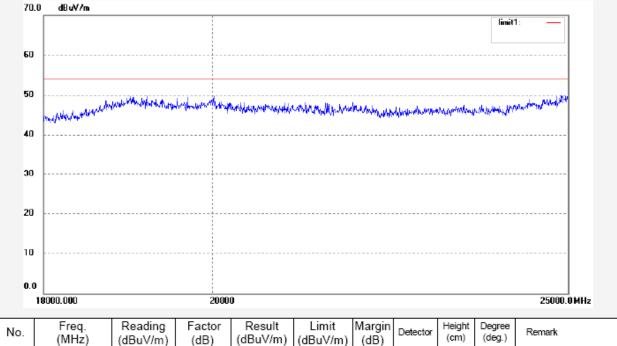
Manufacturer: HONG KONG PC-PEN CO., LIMITED

Sample No.:101142 Report No.:ATE20101086

Horizontal Polarization: Power Source: DC 3.7V Date: 2010/05/26 Time: 14:13:43

Distance: 3m







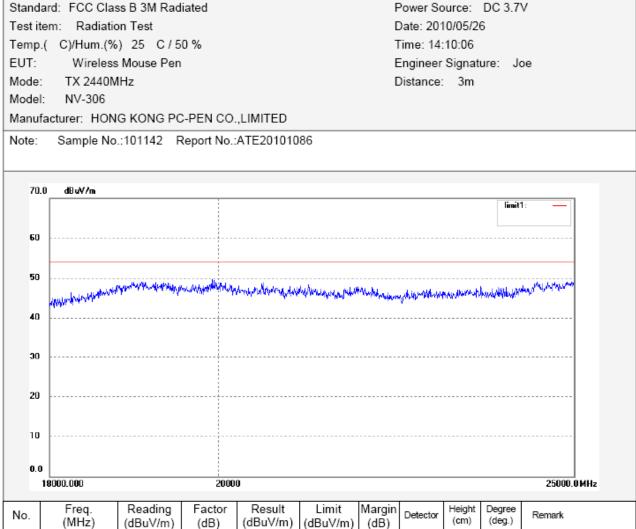
F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Polarization:

Vertical

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5038





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4998

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2478MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

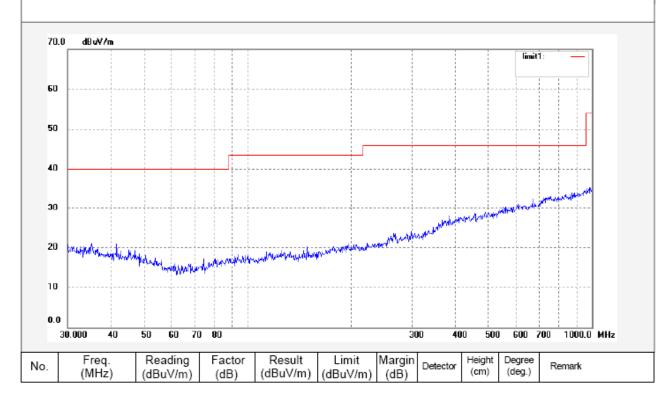
Note: Sample No.:101142 Report No.:ATE20101086

Power Source: DC 3.7V Date: 2010/05/26 Time: 8:55:21

Engineer Signature: Joe

Polarization: Horizontal

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #4999

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2478MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V Date: 2010/05/26

Time: 8:58:30

Engineer Signature: Joe Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

18000.0 MHz

Job No.: RTTE #5029

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2478MHz Model: NV-306

30

20

10.0

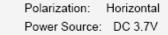
1000.000

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086

2000

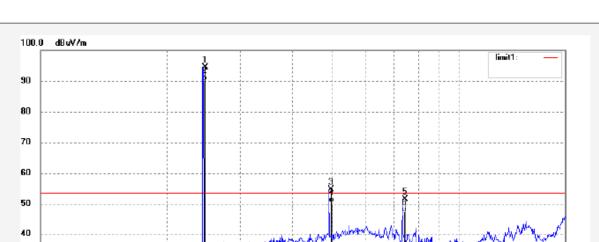
3000



Date: 2010/05/26 Time: 11:24:37

Distance: 3m

6000 7000 8000 9000



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2478.538	101.92	-7.37	94.55	114.00	-19.45	peak			
2	2478.538	97.63	-7.37	90.26	94.00	-3.74	AVG			
3	4957.082	54.65	0.51	55.16	74.00	-18.84	peak			
4	4957.082	50.35	0.51	50.86	54.00	-3.14	AVG			
5	7435.603	48.33	3.66	51.99	74.00	-22.01	peak			
6	7435.603	44.04	3.66	47.70	54.00	-6.30	AVG		·	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5028

Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %
EUT: Wireless Mouse Pen

Mode: TX 2478MHz

Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

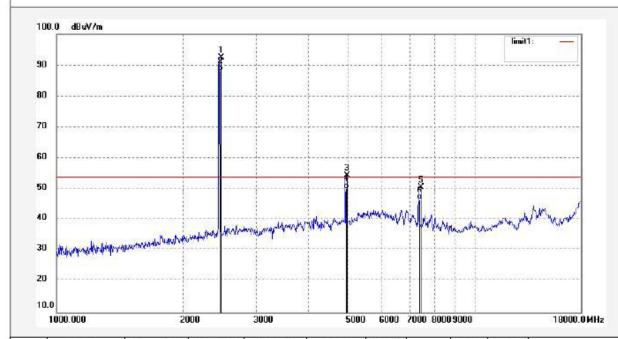
Note: Sample No.:101142 Report No.:ATE20101086

Polarization: Vertical Power Source: DC 3.7V

Date: 2010/05/26 Time: 11:20:29

Engineer Signature: Joe

Distance: 3m



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2478.538	99.90	-7.37	92.53	114.00	-21.47	peak	3	(C) (X)	8	
2	2478.538	95.61	-7.37	88.24	94.00	-5.76	AVG				
3	4957.082	53.92	0.51	54.43	74.00	-19.57	peak			5.5	
4	4957.082	49.60	0.51	50.11	54.00	-3.89	AVG		60		
5	7435.603	47.01	3.66	50.67	74.00	-23.33	peak				
6	7435.603	42.71	3.66	46.37	54.00	-7.63	AVG	8	8	8	



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Horizontal

Polarization:

Date: 2010/05/26

Time: 14:17:50

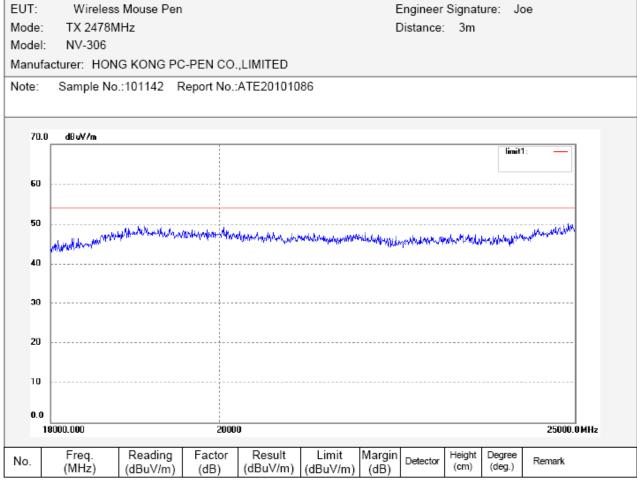
Power Source: DC 3.7V

Job No.: RTTE #5040

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Polarization: Vertical

Job No.: RTTE #5041

Standard: FCC Class B 3M Radiated

Power Source: DC 3.7V Test item: Radiation Test Date: 2010/05/26 Temp.( C)/Hum.(%) 25 C / 50 % Time: 14:21:28 EUT: Wireless Mouse Pen Engineer Signature: Joe Mode: TX 2478MHz Distance: 3m Model: NV-306 Manufacturer: HONG KONG PC-PEN CO.,LIMITED Sample No.:101142 Report No.:ATE20101086 70.0 dBuV/m 60 50 30

18000.000			20000					25000.0 MHz				
	No.	Freq.	Reading	Factor	Result	Limit	Margin	Detector	Height	Degree (den)	Remark	
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		(cm)	(deg.)		

10

0.0



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5032

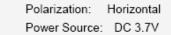
Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2402MHz Model: NV-306

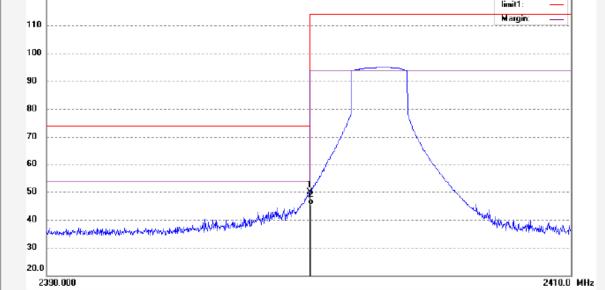
Manufacturer: HONG KONG PC-PEN CO.,LIMITED



Date: 2010/05/26 Time: 13:41:10

Distance: 3m





No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2400.000	57.22	-7.46	49.76	74.00	-24.24	peak			
2	2400.000	52.95	-7.46	45.49	54.00	-8.51	AVG			



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5033

Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 %

EUT: Wireless Mouse Pen Mode: TX 2402MHz

Mode: TX 2402N Model: NV-306

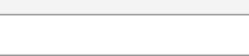
Manufacturer: HONG KONG PC-PEN CO.,LIMITED

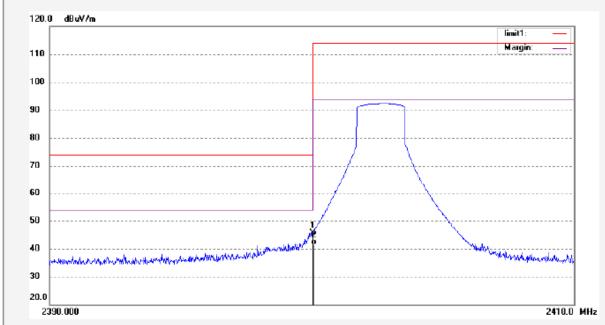
Note: Sample No.:101142 Report No.:ATE20101086



Date: 2010/05/26 Time: 13:45:17

Distance: 3m





No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2400.000	53.07	-7.46	45.61	74.00	-28.39	peak				
2	2400.000	48.78	-7.46	41.32	54.00	-12.68	AVG				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5035

Standard: FCC Part 15 PEAK 2.4G

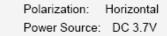
Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 % EUT: Wireless Mouse Pen

Mode: TX 2478MHz Model: NV-306

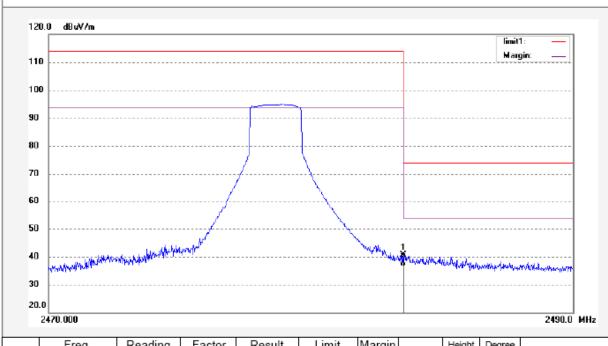
Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086



Date: 2010/05/26 Time: 13:55:26





No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2483.500	48.02	-7.37	40.65	74.00	-33.35	peak				
2	2483.500	43.74	-7.37	36.37	54.00	-17.63	AVG				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: RTTE #5034

Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

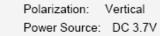
Temp.( C)/Hum.(%) 25 C / 50 %

EUT: Wireless Mouse Pen

Mode: TX 2478MHz Model: NV-306

Manufacturer: HONG KONG PC-PEN CO.,LIMITED

Note: Sample No.:101142 Report No.:ATE20101086



Date: 2010/05/26 Time: 13:51:04

Distance: 3m



