# FCC CERTIFICATION

On Behalf of

Shenzhen Kingree Electronic Co., Ltd.

2.4G Wireless Mouse

Model No.: KR-W9002, IH-M170, T137, IH-M330, T122, KR-W5407, KR-W9006, KR-W9005, KR-W9034, KR-W5015

FCC ID: ZV9W9002

Prepared for : Shenzhen Kingree Electronic Co., Ltd.

Address : 3-6F, 70 Building, Bohua Tech Park, Shangwei Industrial

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Prepared by : ACCURATE TECHNOLOGY CO. LTD

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Report Number : ATE20111691
Date of Test : August 17, 2011
Date of Report : August 17, 2011

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# **Test Report Certification**

ApplicantShenzhen Kingree Electronic Co., Ltd.ManufacturerShenzhen Kingree Electronic Co., Ltd.

EUT Description : 2.4G Wireless Mouse

(A) MODEL NO.: KR-W9002, IH-M170, T137, IH-M330, T122, KR-W5407, KR-W9006, KR-W9005, KR-W9034, KR-W5015

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 1.5V ("AA" batteries 1×)

Measurement Procedure Used:

# FCC Rules and Regulations Part 15 Subpart C Section 15.249: 2008 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 :	August 17, 2011
Prepared by:	Apple Lu
	(Engineer)
Approved & Authorized Signer :	(Manager)

# 1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : 2.4G Wireless Mouse

Model Number : KR-W9002, IH-M170, T137, IH-M330, T122,

KR-W5407, KR-W9006, KR-W9005, KR-W9034,

KR-W5015

(Note: These samples are identical except the appearance is different.

Therefore only model KR-W9002 is tested.)

Power Supply : DC 1.5V ("AA" batteries  $1 \times$ )

Operate Frequency : 2402.046-2480.047MHz

Applicant : Shenzhen Kingree Electronic Co., Ltd.

Address : 3-6F, 70 Building, Bohua Tech Park, Shangwei Industrial

Area, Zhangkengjing, Guanlan Street, Shenzhen, China

Manufacturer : Shenzhen Kingree Electronic Co., Ltd.

Address : 3-6F, 70 Building, Bohua Tech Park, Shangwei Industrial

Area, Zhangkengjing, Guanlan Street, Shenzhen, China

Date of sample received: August 17, 2011

Date of Test : August 17, 2011

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	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 15, 2012
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 15, 2012
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 15, 2012
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 15, 2012
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2012
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2012
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2012
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2012
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 15, 2012
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 15, 2012

# 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

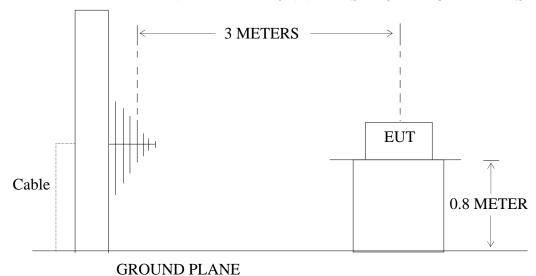
4.1.1.Block diagram of connection between the EUT and simulators

**EUT** 

(EUT: 2.4G Wireless Mouse)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram

# ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



(EUT: 2.4G Wireless Mouse)

#### 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. 2.4G Wireless Mouse (EUT)

Model Number : KR-W9002

Serial Number : N/A

Manufacturer : Shenzhen Kingree Electronic Co., Ltd.

# 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 2402.046 2480.047 MHz MHz. We are select 2402.046MHz, 2441.050MHz, 2480.047MHz 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 bi-log 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.

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

Date of Test:August 17, 2011Temperature:25°CEUT:2.4G Wireless MouseHumidity:50%Model No.:KR-W9002Power Supply:DC 1.5VTest Mode:TX 2402.046MHzTest Engineer:Pei

## **Fundamental Radiated Emissions**

Frequency	Frequency Reading(dB\(\mu\)V/m)		Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2402.046	85.44	89.95	-7.45	77.99	82.50	94	114	-16.01	-31.50	Vertical
2402.046	94.04	98.55	-7.45	86.59	91.10	94	114	-7.41	-22.90	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	
4804.092	43.59	48.19	-0.30	43.29	47.89	54	74	-10.71	-26.11	Vertical
4804.092	46.33	50.77	-0.30	46.03	50.47	54	74	-7.97	-23.53	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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2441.050MHz	Test Engineer:	Pei

## **Fundamental Radiated Emissions**

Frequency (MHz)	Reading(a	dBμV/m	Factor(dB) Corr.	Result( $dB\mu V/m$ )		Limit(dBµV/m)		Margin(dB)		Polarization
	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2441.050	86.12	90.63	-7.35	78.77	83.28	94	114	-15.23	-30.72	Vertical
2441.050	94.32	98.79	-7.35	86.97	91.44	94	114	-7.03	-22.56	Horizontal

## **Harmonics Radiated Emissions**

Frequency (MHz)	Reading(	dBμV/m	Factor(dB) Corr.	, , , , , , , , , , , , , , , , , , , ,		Limit(dBµV/m)		Margin(dB)		Polarization
(WITIZ)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
4882.098	43.50	47.96	0.14	43.64	48.10	54	74	-10.36	-25.90	Vertical
4882.098	45.71	50.13	0.14	45.85	50.27	54	74	-8.15	-23.73	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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2480.047MHz	Test Engineer:	Pei

# **Fundamental Radiated Emissions**

Frequency (MHz)	Reading(	dBμV/m	Factor(dB) Corr.	Result(dBµV/m)		$Limit(dB\mu V/m)$		Margin(dB)		Polarization
(WITIZ)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2480.047	86.29	90.81	-7.37	78.92	83.44	94	114	-15.08	-30.56	Vertical
2480.047	94.86	99.35	-7.37	87.49	91.98	94	114	-6.51	-22.02	Horizontal

## **Harmonics Radiated Emissions**

Frequency (MHz)	Reading(	dBμV/m	Factor(dB) Corr.	Result(d	BμV/m)	Limit(d)	BμV/m)	Margi	in(dB)	Polarization
(WHIZ)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
4960.096	43.24	47.72	0.52	43.76	48.24	54	74	-10.24	-25.76	Vertical
4960.096	45.04	49.55	0.52	45.56	50.07	54	74	-8.44	-23.93	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)

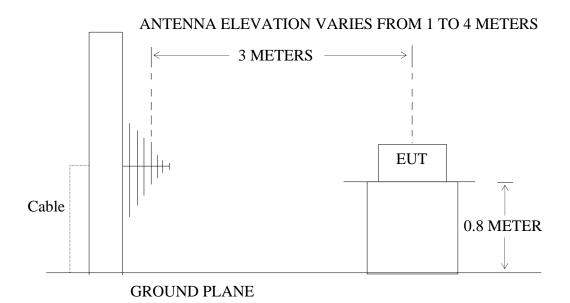
# 5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: 2.4G Wireless Mouse)

5.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: 2.4G Wireless Mouse)

# 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

<del></del>	1		
		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. 2.4G Wireless Mouse (EUT)

Model Number : KR-W9002

Serial Number : N/A

Manufacturer : Shenzhen Kingree Electronic Co., Ltd.

# 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 2402.046 2480.047 MHz MHz. We are select 2402.046MHz, 2441.050MHz, 2480.047MHz 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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2402.046MHz	Test Engineer:	Pei

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	$(dB\mu V/m)$	(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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2441.050MHz	Test Engineer:	Pei

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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2480.047MHz	Test Engineer:	Pei

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. 2.4G Wireless Mouse (EUT)

Model Number : KR-W9002

Serial Number : N/A

Manufacturer : Shenzhen Kingree Electronic Co., Ltd.

# 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 2402.046-2480.047MHz MHz. We are select 2402.046MHz, 2480.047MHz 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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2402.046MHz	Test Engineer:	Pei

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(dBµV/m)		BμV/m) Limit(dB		Limit(dBµV/m)		m) Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK			
2400.000	39.02	43.45	-7.46	31.56	35.99	54.00	74.00	-22.44	-38.01	Vertical		
2400.000	41.46	45.90	-7.46	34.00	38.44	54.00	74.00	-20.00	-35.56	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:	August 17, 2011	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	KR-W9002	Power Supply:	DC 1.5V
Test Mode:	TX 2480.047MHz	Test Engineer:	Pei

Frequency	Reading(	dBμV/m)	Factor(dB)	tor(dB) Result(dB\(\mu\)V/m)		Limit(dBµV/m)		) Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2483.500	38.05	42.52	-7.37	30.68	35.15	54.00	74.00	-23.32	-38.85	Vertical
2483.500	37.05	42.47	-7.37	29.68	35.10	54.00	74.00	-24.32	-38.90	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

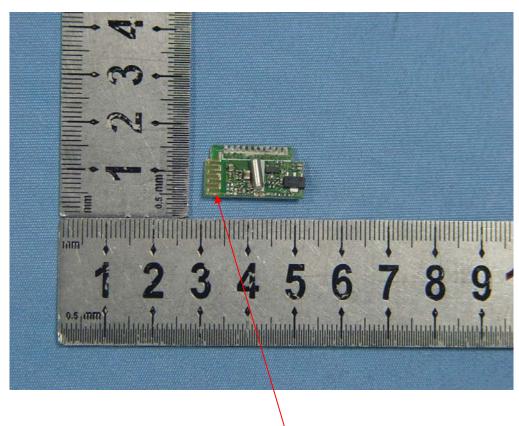
# 7. ANTENNA REQUIREMENT

# 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.



# APPENDIX I (Test Curves)

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

Fax:+86-0755-26503396



# ACCURATE TECHNOLOGY CO., LTD.

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

Job No.: PEI #1790 Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 51 %
EUT: 2.4G wireless mouse
Mode: TX 2402.046MHz

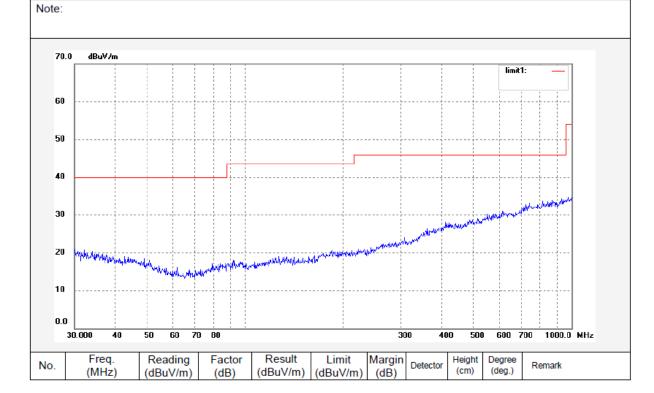
Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co.,Ltd

Polarization: Horizontal Power Source: DC 1.5V

Date: 2011/08/17 Time: 9:51:51

Engineer Signature: PEI





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

Date: 2011/08/17

Time: 9:55:18

Distance: 3m

Power Source: DC 1.5V

Engineer Signature: PEI

Job No.: PEI #1791

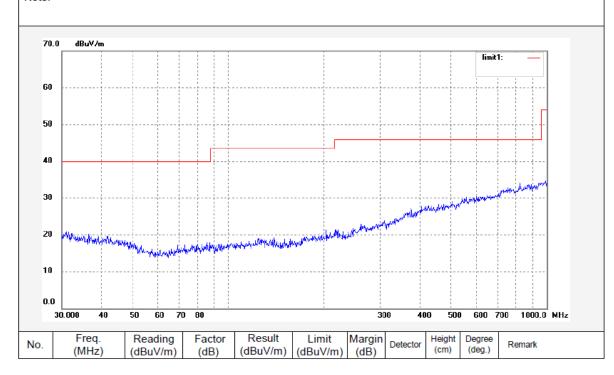
Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 51 %
EUT: 2.4G wireless mouse
Mode: TX 2402.046MHz

Mode: TX 2402.046l Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co.,Ltd

W9002





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.: PEI #1797 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2402.046MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co.,Ltd

Note:

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17 Time: 14:41:51

Engineer Signature: PEI

100	1.0 dBuV/m									
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30 20 10.0	0 1000.000 Freq.	200 Reading	Factor	3000 Result	5000 Limit	6000 Margin	7000 8000	9000 Height		
30 20 10.0	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	5000 Limit (dBuV/m)	Margin (dB)	7000 8000 Detector	9000 Height		
30 20 10.0	Freq. (MHz) 2402.046	Reading (dBuV/m) 98.55	Factor (dB)	Result (dBuV/m) 91.10	5000 Limit (dBuV/m) 114.00	6000 Margin (dB) -22.90	Detector	9000 Height		



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.: PEI #1796

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse TX 2402.046MHz Mode:

Model: KR-W9002

Note:

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

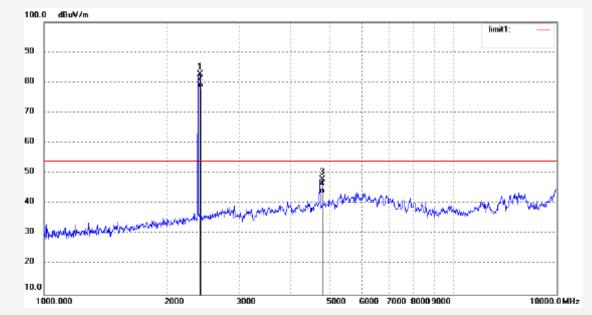
Time: 14:38:01

Engineer Signature: PEI

Polarization: Vertical

Power Source: DC 1.5V Date: 2011/08/17

100.0	dBuV/m	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2402.046	89.95	-7.45	82.50	114.00	-31.50	peak			
2	2402.046	85.44	-7.45	77.99	94.00	-16.01	AVG			
3	4804.092	48.19	-0.30	47.89	74.00	-26.11	peak			
4	4804.092	43.59	-0.30	43.29	54.00	-10.71	AVG			



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Polarization: Horizontal

Power Source: DC 1.5V

Engineer Signature: PEI

Date: 2011/08/17

Time: 19:11:23

Distance: 3m

Job No.: PEI #1802

Standard: FCC Class B 3M Radiated

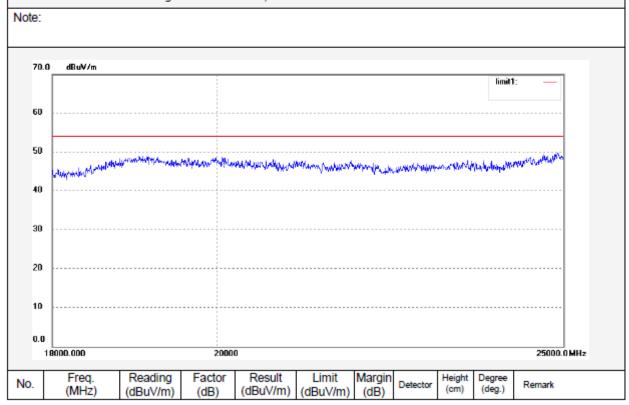
Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 %

EUT: 2.4G wireless mouse Mode: TX 2402.046MHz

Mode: TX 2402.046 Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd





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Polarization: Vertical

Date: 2011/08/17

Time: 19:14:56

Distance: 3m

Power Source: DC 1.5V

Engineer Signature: PEI

Job No.: PEI #1803

Standard: FCC Class B 3M Radiated

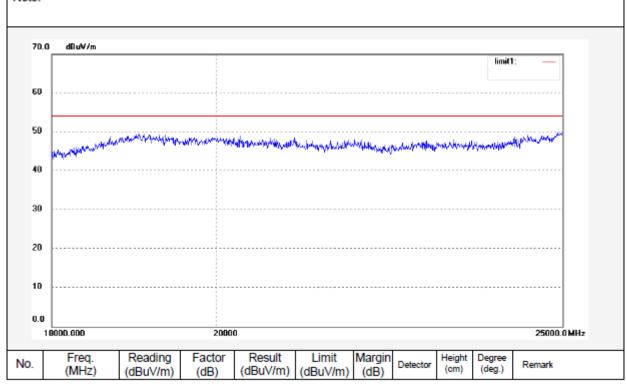
Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse

Mode: TX 2402.046MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd





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Job No.: PEI #1793 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2441.050MHz

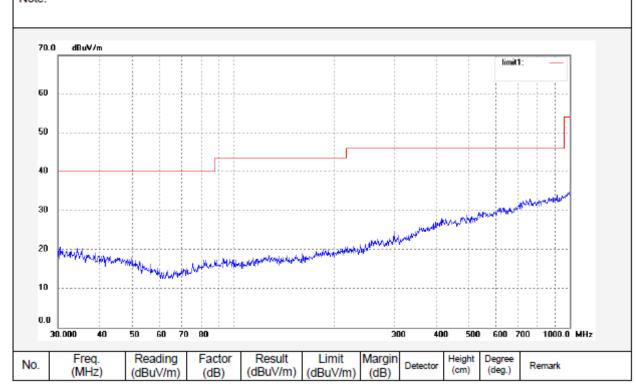
Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Note:

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17 Time: 10:03:15

Engineer Signature: PEI





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

Job No.: PEI #1792 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse TX 2441.050MHz Mode:

Model: KR-W9002

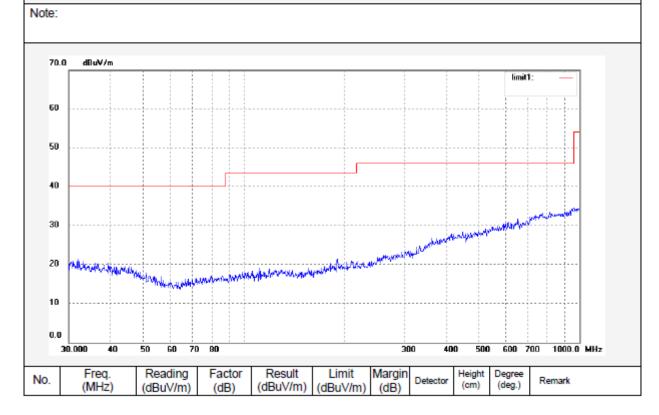
Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Power Source: DC 1.5V Date: 2011/08/17

Polarization: Vertical

Time: 9:59:46

Engineer Signature: PEI





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.: PEI #1798 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

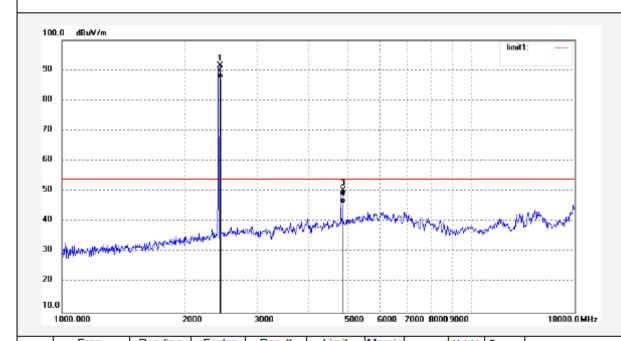
Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2441.050MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17 Time: 14:46:45 Engineer Signature: PEI

Distance: 3m



No.	Freq. (MHz)	(dBuV/m)	Factor (dB)	(dBuV/m)		Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2441.050	98.79	-7.35	91.44	114.00	-22.56	peak			
2	2441.050	94.32	-7.35	86.97	94.00	-7.03	AVG			
3	4882.098	50.13	0.14	50.27	74.00	-23.73	peak			
4	4882.098	45.71	0.14	45.85	54.00	-8.15	AVG			



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Polarization: Vertical

Date: 2011/08/17

Time: 14:50:39

Distance: 3m

Power Source: DC 1.5V

Engineer Signature: PEI

Job No.: PEI #1799

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

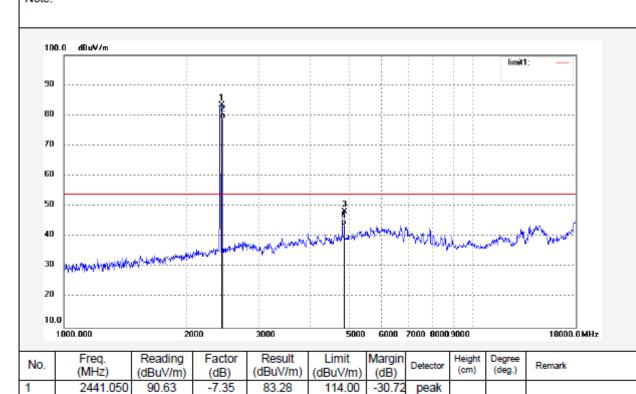
Temp.( C)/Hum.(%) 25 C / 51 %

EUT: 2.4G wireless mouse Mode: TX 2441.050MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Note:



2

3

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2441.050

4882.098

4882.098

86.12

47.96

43.50

-7.35

0.14

0.14

78.77

48.10

43.64

94.00

74.00

54.00

-15.23

-25.90

-10.36

AVG

peak

AVG



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

Job No.: PEI #1805

Standard: FCC Class B 3M Radiated Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 %

EUT: 2.4G wireless mouse TX 2441.050MHz Mode:

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

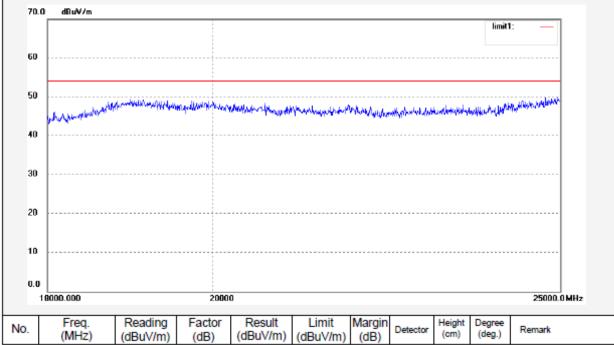
Engineer Signature: PEI Distance: 3m

Polarization: Horizontal Power Source: DC 1.5V

Date: 2011/08/17

Time: 19:22:43







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

Job No.: PEI #1804

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 %

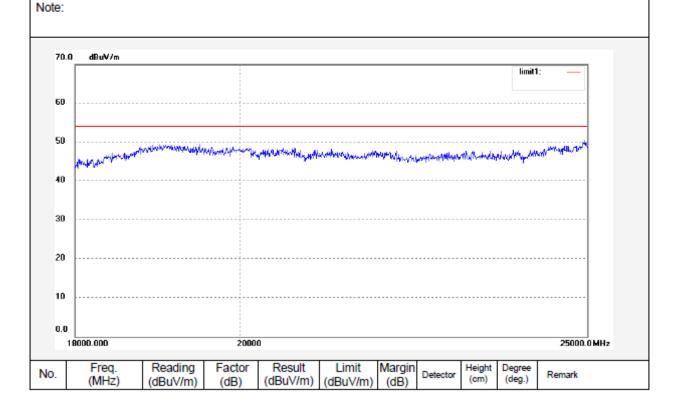
EUT: 2.4G wireless mouse Mode: TX 2441.050MHz Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Date: 2011/08/17 Time: 19:19:14 Engineer Signature: PEI

Polarization: Vertical

Power Source: DC 1.5V





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Site: 966 chamber

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2480.047MHz

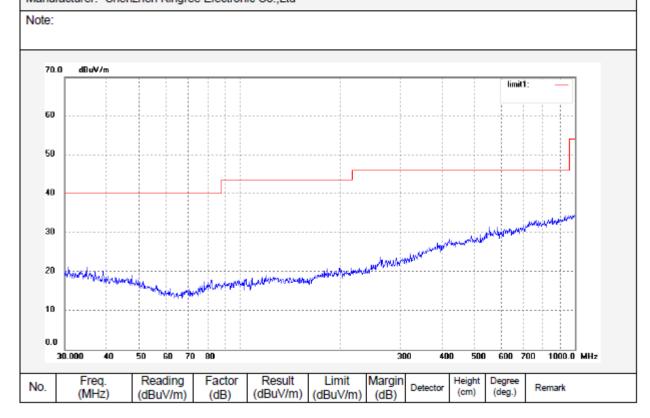
Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

NR-W9002

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17 Time: 10:08:28

Engineer Signature: PEI





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Polarization: Vertical

Date: 2011/08/17

Time: 10:11:52

Distance: 3m

Power Source: DC 1.5V

Engineer Signature: PEI

Job No.: PEI #1795

Standard: FCC Class B 3M Radiated

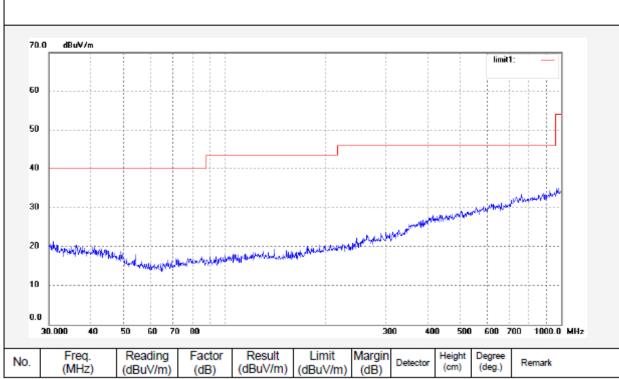
Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 %

EUT: 2.4G wireless mouse Mode: TX 2480.047MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd





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

Polarization: Horizontal

Power Source: DC 1.5V

Engineer Signature: PEI

Date: 2011/08/17

Time: 14:59:17

Distance: 3m

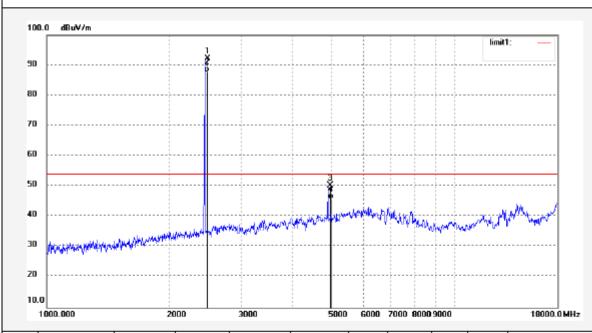
Job No.: PEI #1801 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse

Mode: TX 2480.047MHz Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.047	99.35	-7.37	91.98	114.00	-22.02	peak			
2	2480.047	94.86	-7.37	87.49	94.00	-6.51	AVG			
3	4960.096	49.55	0.52	50.07	74.00	-23.93	peak			
4	4960.096	45.04	0.52	45.56	54.00	-8.44	AVG			



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

Job No.: PEI #1800

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 %

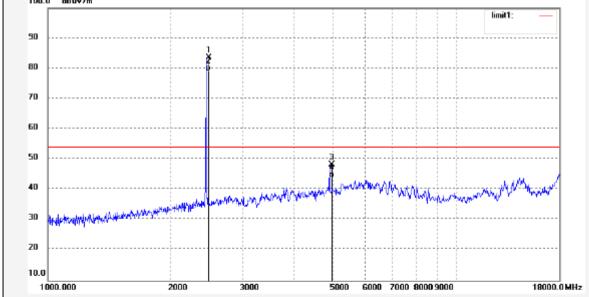
EUT: 2.4G wireless mouse TX 2480.047MHz Mode:

KR-W9002 Model:

Manufacturer: Shenzhen Kingree Electronic Co., Ltd







No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.047	90.81	-7.37	83.44	114.00	-30.56	peak			
2	2480.047	86.29	-7.37	78.92	94.00	-15.08	AVG			
3	4960.096	47.72	0.52	48.24	74.00	-25.76	peak			
4	4960.096	43.24	0.52	43.76	54.00	-10.24	AVG			



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Job No.: PEI #1806 Standard: FCC Class B 3M Radiated Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse

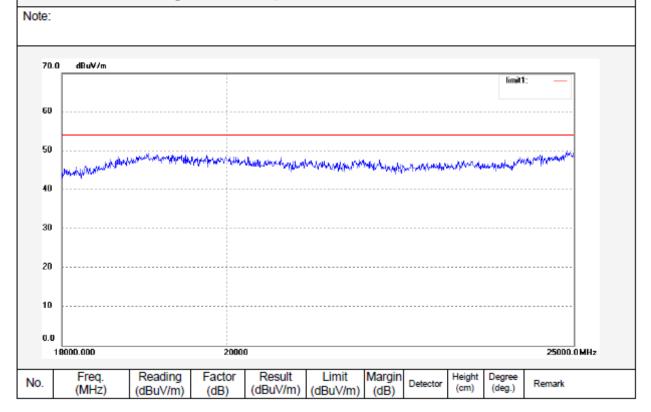
Mode: TX 2480.047MHz Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17

Date: 2011/08/17 Time: 19:26:57

Engineer Signature: PEI





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Polarization: Vertical

Time: 19:30:28

Power Source: DC 1.5V Date: 2011/08/17

Engineer Signature: PEI

Job No.: PEI #1807

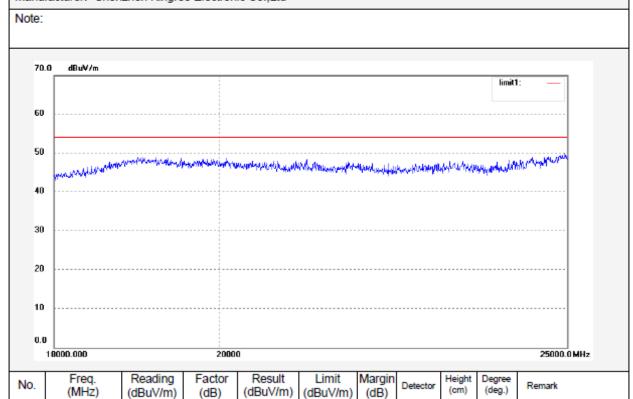
Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2480.047MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd





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Job No.: PEI #1808

Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2402.046MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

Made

Polarization: Horizontal Power Source: DC 1.5V Date: 2011/08/17 Time: 20:05:22

Engineer Signature: PEI

110	Margin: —
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20.0	
2390.000	2420.0 MHz
Freq. Reading Factor Result Limit Margin (MHz) (dBuV/m) (dB) (dBuV/m) (dBuV/m) (dB)	Detector Height Degree (cm) (deg.) 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.: PEI #1809 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2402.046MHz

KR-W9002 Model:

Note:

Manufacturer: Shenzhen Kingree Electronic Co.,Ltd

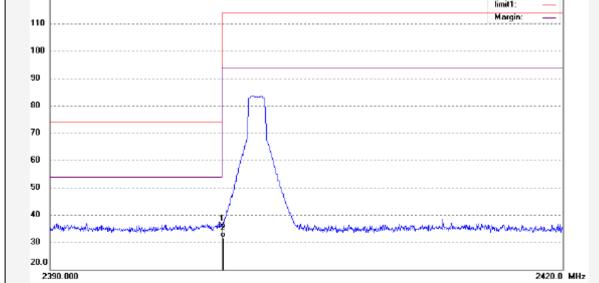
Polarization: Vertical Power Source: DC 1.5V Date: 2011/08/17

Time: 20:08:53

Engineer Signature: PEI

Distance: 3m

120.0 dBuV/m limit1: Margin: 110 100



No.	(MHz)	(dBuV/m)		(dBuV/m)	(dBuV/m)	(dB)	Detector	(cm)	(deg.)	Remark
1	2400.000	43.45	-7.46	35.99	74.00	-38.01	peak			
2	2400.000	39.02	-7.46	31.56	54.00	-22.44	AVG			



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Job No.: PEI #1801 Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 51 %

EUT: 2.4G wireless mouse Mode: TX 2480.047MHz Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd

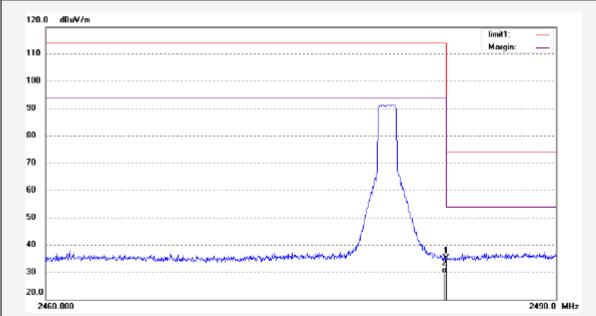
Polarization: Horizontal Power Source: DC 1.5V

Date: 2011/08/17 Time: 20:16:58

Engineer Signature: PEI

Distance: 3m

120.0	- In



No.	Freq. (MHz)	Reading (dBuV/m)		Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	42.47	-7.37	35.10	74.00	-38.90	peak			
2	2483.500	37.05	-7.37	29.68	54.00	-24.32	AVG			



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Polarization: Vertical

Date: 2011/08/17

Time: 20:13:29

Distance: 3m

Power Source: DC 1.5V

Engineer Signature: PEI

Job No.: PEI #1810

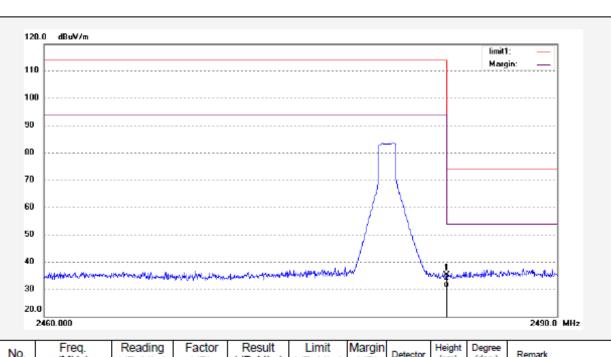
Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 51 % EUT: 2.4G wireless mouse Mode: TX 2480.047MHz

Model: KR-W9002

Manufacturer: Shenzhen Kingree Electronic Co., Ltd



No.	Freq. (MHz)	Reading (dBuV/m)		Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	42.52	-7.37	35.15	74.00	-38.85	peak			
2	2483.500	38.05	-7.37	30.68	54.00	-23.32	AVG			