#### FCC CERTIFICATION On Behalf of Comat Electronic (Shenzhen) Co., Ltd.

2.4G Wireless Mouse Model No.: T9G

#### FCC ID: RTX-T9G

Prepared for Address	:	Comat Electronic (Shenzhen) Co., Ltd. No.2 Lane 1, Xin'an 3 <sup>rd</sup> 28 District, Baoan, Shenzhen, China
Prepared by Address	:	ACCURATE TECHNOLOGY CO. LTD F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China
		Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number	:	ATE20121912
Date of Test	:	August 18-31, 2012
Date of Report	:	September 5, 2012

## TABLE OF CONTENTS

## Description

Page

1.	GE	NERAL INFORMATION	4
	1.1.	Description of Device (EUT)	4
	1.2.	Description of Test Facility	
	1.3.	Measurement Uncertainty	
2.	ME	ASURING DEVICE AND TEST EQUIPMENT	6
3.	SUI	MMARY OF TEST RESULTS	7
4.	FU	NDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249(A	<b>()</b> 8
	4.1.	Block Diagram of Test Setup	8
	4.2.	The Emission Limit	9
	4.3.	Configuration of EUT on Measurement	9
	4.4.	Operating Condition of EUT	9
	4.5.	Test Procedure	
	4.6.	The Field Strength of Radiation Emission Measurement Results	11
5.	SPU	JRIOUS RADIATED EMISSION FOR SECTION 15.249(D)	.14
	5.1.	Block Diagram of Test Setup	14
	5.2.	The Emission Limit For Section 15.249(d)	15
	5.3.	EUT Configuration on Measurement	15
	5.4.	Operating Condition of EUT	16
	5.5.	Test Procedure	16
	5.6.	The Emission Measurement Result	17
6.	BA	ND EDGES	.20
	6.1.	The Requirement	20
	6.2.	EUT Configuration on Measurement	20
	6.3.	Operating Condition of EUT	20
	6.4.	Test Procedure	20
	6.5.	The Measurement Result	21
7.	AN	TENNA REQUIREMENT	.23
	7.1.	The Requirement	
	7.2.	Antenna Construction	23

#### APPENDIX I (TEST CURVES) (28 pages)

#### **Test Report Certification**

Applicant	:	Comat Electronic (Shenzhen) Co., Ltd.
Manufacturer	:	Comat Electronic (Shenzhen) Co., Ltd.
EUT Description	:	2.4G Wireless Mouse
		(A) MODEL NO.: T9G
		(B) POWER SUPPLY: 3V DC ("AAA" batteries $2 \times$ )

Measurement Procedure Used:

#### FCC Rules and Regulations Part 15 Subpart C Section 15.249 ANSI C63.4: 2009

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 18-31, 2012

Prepared by :

Approved & Authorized Signer :

(Kitty Chen, Engineer)

hend

(Sean Liu, Manager)

## **1. GENERAL INFORMATION**

## 1.1.Description of Device (EUT)

EUT	:	2.4G Wireless Mouse
Model Number	:	T9G
Trade Name	:	COMAT
Power Supply	:	3V DC ("AAA" batteries $2 \times$ )
Operate Frequency	:	2408.000-2474.000MHz
Applicant Address	:	Comat Electronic (Shenzhen) Co., Ltd. No.2 Lane 1, Xin'an 3 <sup>rd</sup> 28 District, Baoan, Shenzhen, China
Manufacturer Address	:	Comat Electronic (Shenzhen) Co., Ltd. No.2 Lane 1, Xin'an 3 <sup>rd</sup> 28 District, Baoan, Shenzhen, China
Date of sample received	:	August 17, 2012
Date of Test	:	August 18-31, 2012

## 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 Site Location	:	ACCURATE TECHNOLOGY CO. LTD F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

## 2. MEASURING DEVICE AND TEST EQUIPMENT

Kind of equipment	Manufacturer	Туре	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 8, 2012	Jan. 7, 2013
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 8, 2012	Jan. 7, 2013
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 8, 2012	Jan. 7, 2013
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 8, 2012	Jan. 7, 2013
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 8, 2012	Jan. 7, 2013
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 8, 2012	Jan. 7, 2013
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 8, 2012	Jan. 7, 2013
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 8, 2012	Jan. 7, 2013

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

## 3. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	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)

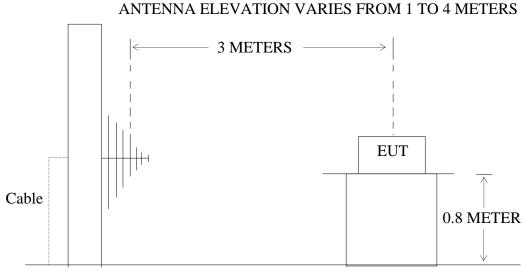
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators



(EUT: 2.4G Wireless Mouse)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram



GROUND PLANE

(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	:	T9G
Serial Number	:	N/A
Manufacturer	:	Comat Electronic (Shenzhen) 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 2408.000
   2474.000 MHz. We are select 2408.000MHz, 2440.000MHz, 2474.000MHz
  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: 2009 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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No .:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2408.000MHz	Test Engineer:	Star

#### **Fundamental 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	
2408.000	92.56	97.97	-7.44	85.12	90.53	94.00	114.00	-8.88	-23.47	Vertical
2408.000	98.63	103.79	-7.44	91.19	96.35	94.00	114.00	-8.81	-17.65	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	
-	-	-	-	-	_	-	_	-	-	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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2440.000MHz	Test Engineer:	Star

#### **Fundamental Radiated Emissions**

Frequency (MHz)	Reading(o	dBµV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(10112)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2440.000	95.08	101.79	-7.36	87.72	94.43	94.00	114.00	-6.28	-19.57	Vertical
2440.000	97.61	103.94	-7.36	90.25	96.58	94.00	114.00	-3.75	-17.42	Horizontal

#### **Harmonics Radiated Emissions**

Frequency (MHz)	Reading(o	dBµV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
_	-	_	_	-	-	-	-	-	-	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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2474.000MHz	Test Engineer:	Star

#### **Fundamental Radiated Emissions**

Frequency (MHz)	Reading(	dBµV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(10112)	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
2474.000	96.75	102.35	-7.37	89.38	94.98	94.00	114.00	-4.62	-19.02	Vertical
2474.000	95.04	100.72	-7.37	87.67	93.35	94.00	114.00	-6.33	-20.65	Horizontal

#### **Harmonics Radiated Emissions**

Frequency (MHz)	Reading(	dBµV/m	Factor(dB) Corr.	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
	AV	PEAK	Con.	AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	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

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

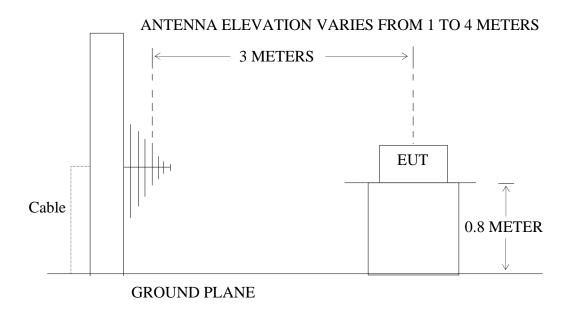
#### 5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators



(EUT: 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.

Limit Frequency Field Strength Measurement Distance (MHz) (microvolts/meter) (meters) The final measurement 300 0.009 - 0.4902400/F(kHz) in band 9-90kHz, 110-490kHz and above 1000MHz is 30 0.490 - 1.70524000/F(kHz) performed with Average detector. Except those 30 1.705 - 30.030 frequency bands mention above, the 3 30 - 88 100 final measurement for frequencies below 1000MHz is 3 88 - 216 150 performed with Quasi Peak detector. 216 - 960 200 3 Above 960 500 3

#### 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	:	T9G
Manufacturer	:	Comat Electronic (Shenzhen) 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 2408.000
   2474.000 MHz. We are select 2408.000MHz, 2440.000MHz, and 2474.000MHz 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: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9kHz in below 30MHz. and set at 120kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9kHz to 25GHz 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: EUT:	August 20, 2012 2.4G Wireless Mouse				1	25°C 50%		
Model No.:				Humidity:50%Power Supply:DC 3V				
Test Mode:	TX 2408.000MHz			Tes	t Engineer:			
Below 30MHz								
Frequency	Reading	Factor(dB)	Result		Limit	Margin	Polarization	
(MHz)	(dBµV/m)	Corr.	r. $(dB\mu V/m)$		(dBµV/m)	(dB)		
	QP		QP		QP	QP		

	Q1		Q1	<sup>1</sup> V	Q1	
-	-	-	-	-	-	Х
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

#### 30MHz-25GHz

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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2440.000MHz	Test Engineer:	Star

#### Below 30MHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	X
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

#### 30MHz-25GH

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization	
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	$(dB\mu V/m)$ $(dB\mu V/m)$			
	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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2474.000MHz	Test Engineer:	Star

#### Below 30MHz

Frequency	Reading	Factor(dB)	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP		QP	QP	QP	
-	-	-	-	-	-	X
-	-	-	-	-	-	Y
-	-	-	-	-	-	Z

#### 30MHz-25GH

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	:	T9G
Serial Number	:	N/A
Manufacturer	:	Comat Electronic (Shenzhen) 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 2408.000-2474.000MHz MHz. We are select 2408.000MHz, 2474.000MHz 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 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3V
Test Mode:	TX 2408.000MHz	Test Engineer:	Star

Frequency	Reading(c	dBμV/m)	Factor(dB)	Result(c	lBµV/m)	Limit(dI	BμV/m)	Margi	n(dB)	Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	36.04	44.64	-7.81	28.23	36.83	54.00	74.00	-25.77	-37.17	Vertical
2384.445	42.55	51.16	-7.56	34.99	43.60	54.00	74.00	-19.01	-30.40	Vertical
2390.000	37.48	45.64	-7.53	29.95	38.11	54.00	74.00	-24.05	-35.89	Vertical
2310.000	36.58	44.75	-7.81	28.77	36.94	54.00	74.00	-25.23	-37.06	Horizontal
2384.163	47.68	56.20	-7.62	40.12	48.64	54.00	74.00	-13.88	-25.36	Horizontal
2390.000	38.17	46.60	-7.53	30.64	39.07	54.00	74.00	-23.36	-34.93	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

Date of Test:	August 20, 2012	Temperature:	25°C
EUT:	2.4G Wireless Mouse	Humidity:	50%
Model No.:	T9G	Power Supply:	DC 3.0V
Test Mode:	TX 2474.000MHz	Test Engineer:	Star

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	
2483.500	49.28	57.92	-7.37	41.91	50.55	54.00	74.00	-12.09	-23.45	Vertical
2487.349	55.18	64.08	-7.38	47.80	56.70	54.00	74.00	-6.20	-17.30	Vertical
2500.000	39.47	47.64	-7.40	32.07	40.24	54.00	74.00	-21.93	-33.76	Vertical
2483.500	54.28	61.00	-7.37	46.91	53.63	54.00	74.00	-7.09	-20.37	Horizontal
2487.349	53.88	65.91	-7.38	46.50	58.53	54.00	74.00	-7.50	-15.47	Horizontal
2500.000	40.25	48.44	-7.40	32.85	41.04	54.00	74.00	-21.15	-32.96	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

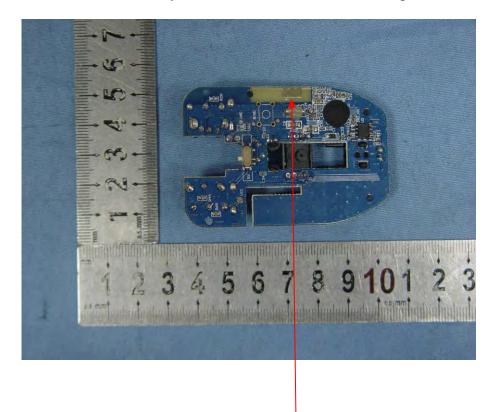
## 7. ANTENNA REQUIREMENT

#### 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.

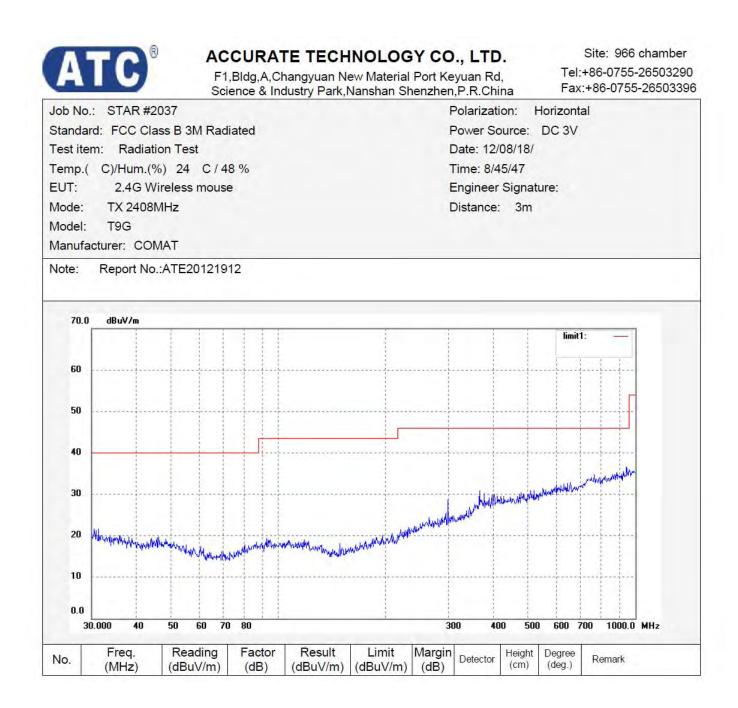
#### 7.2. Antenna Construction

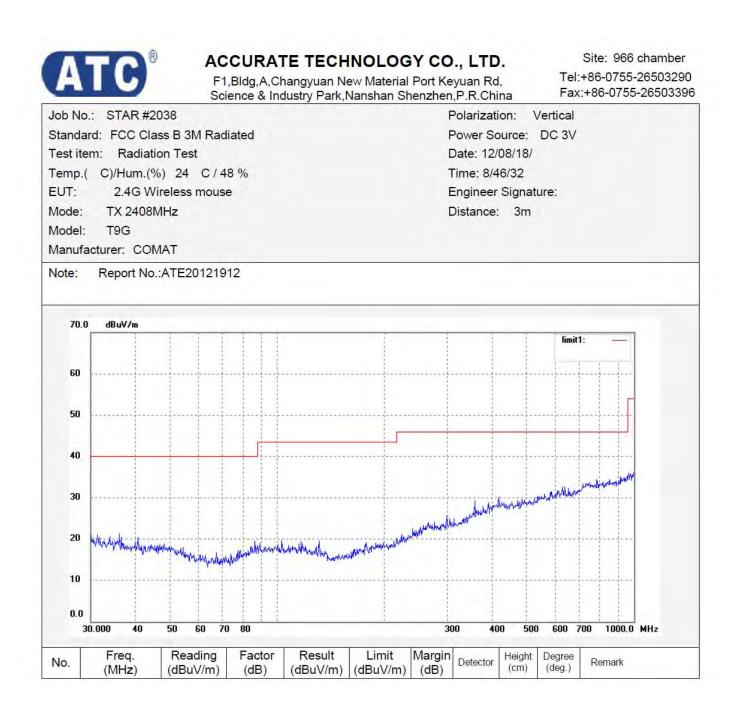
The antenna is PCB Layout antenna, no consideration of replacement.



Antenna

# APPENDIX I (Test Curves)







## ACCURATE TECHNOLOGY CO., LTD.

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

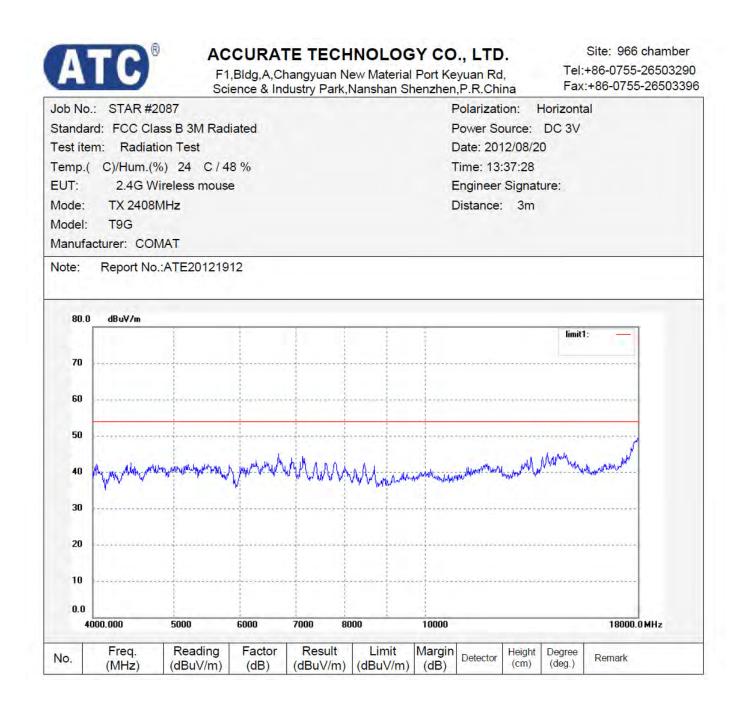
Job No	.: STAR #20	)82				F	Polarizati	ion: H	orizont	al				
Standa	ard: FCC Clas	s B 3M Rad	iated			F	Power Sc	ource:	DC 3V					
Test it	em: Radiatio	m: Radiation Test						Date: 12/08/20/						
Temp.	( C)/Hum.(%	) 24 C/4	8 %			7	Time: 11/	/24/29						
EUT:	2.4G Wi	reless mouse	e			E	Engineer	Signat	ure:					
Mode:	TX 2408M	IHz				C	Distance:	3m						
Model	T9G													
Manuf	acturer: COM	AT												
Note:	Report No.:	ATE201219	12											
100	0.0 dBu∀/m								P. 54					
					1	Ť			limit					
90									********					
80														
					1									
70						i en la com								
60														
50														
40			*********		a land to ad	Level And	William	ALAN	NA MA	Asturion Maria				
30	when not weather with the	when we wanted	Apply the with with	addition and the second s	imalmathantanan-nada.	Ald Ma. A.D.	an hele a costra	WW	a the se					
					}			1						
20														
10.	0													
	1000.000				1			3000	C	4000.0	MHz			
-	Freq.	Reading	Factor	Result	Limit	Margin		Height	Degree					
No.	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Detector	(cm)	(deg.)	Remark				
1	2408.000	103.79	-7.44	96.35	114.00	-17.65	peak							
1														

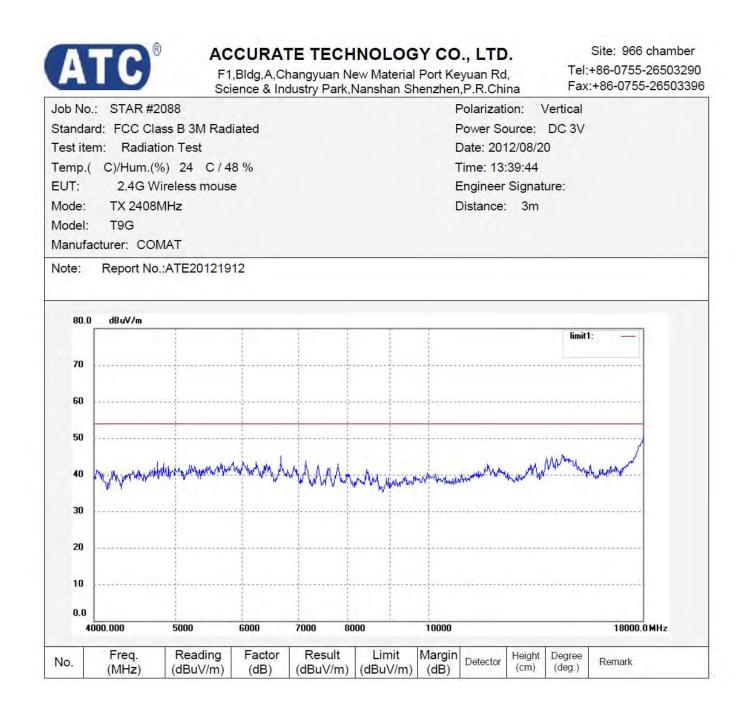


#### ACCURATE TECHNOLOGY CO., LTD.

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

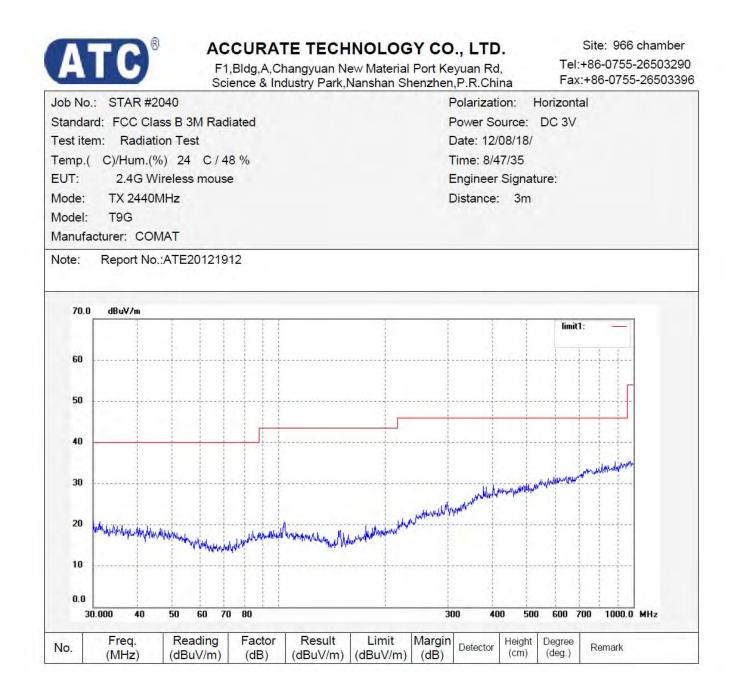
Job No	.: STAR #20	81				F	Polarizat	ion: \	/ertical		
Standa	rd: FCC Clas	s B 3M Rad	iated			F	Power So	ource:	DC 3V		
Test ite	em: Radiatio	n Test		Date: 12/08/20/							
Temp.	( C)/Hum.(%		Time: 11/22/51								
EUT:	2.4G Wir	eless mouse	e			E	Engineer	Signat	ure:		
Mode:	TX 2408M	Hz				C	Distance	3m			
Model:	T9G										
Manufa	acturer: COM	AT									
Note:	Report No.:	ATE201219	12								
100	.0 dBuV/m										
					1				limit	i: —	
90						1 X					
						4					
80									******	******	
70											
70			*******	*************	}				********	**********	
60											
								1			
50	0.650270070	ana ana ana			u in an						
40					1		Ê E	1		and the	
40				والمحاجب وروار	Martin where where	Margar Marth	Immuniterry	Muthing	ANA MAN	Weber with mile pro	
30	nunavahimtervation	no May subrawal the relation	Alekansteinekansteinek	historyality						******	
					1						
20										*******	
10.0											
	000.000							3000	)	4000.0	MHz
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2408.000	97.97	-7.44	90.53	114.00	-23.47	peak				
2	2408.000	92.56	-7.44	85.12	94.00	-8.88	AVG				



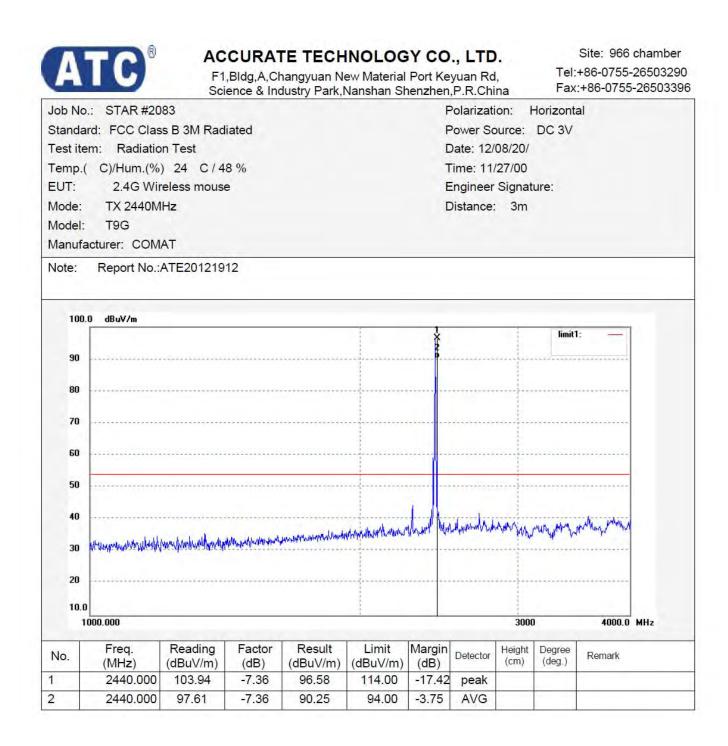


ATC	ACCURA F1,Bldg,A,Cl Science & Ind	hangyuan Ne	ew Material	Port Ke	yuan Rd	l,		Site: 966 chamber +86-0755-26503290 ::+86-0755-26503396			
Job No.: star #875				F	Polarizati	ion: H	lorizont	al			
Standard: FCC Class B	3M Radiated			F	Power Sc	ource:	DC 3V				
Test item: Radiation Te	est			Date: 2012/08/21							
Temp.( C)/Hum.(%) 2	5 C/51%			Time: 20:01:24							
EUT: 2.4G Wireles	s mouse			Engineer Signature: Star							
Mode: TX 2408MHz				Distance: 3m							
Model: T9G											
Manufacturer: COMAT											
70.0 dBu∀/m											
							limit	1:			
60						******					
50		******									
40 when har an who and the work when	networkers and the second states	low how and how when	anna an ann an ann ann ann ann ann ann	daularia Majularia	hannallkahan	uly handwalkel bee	n design the sharest	ad Marshart or a			
30											
20											
10											
0.0	2000	10						25000.0 MHz			
18000.000	2000	10						2000.0 MH2			
	eading Factor BuV/m) (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark			

ATC		TE TECH Changyuan Ne Idustry Park,I	ew Material	Port Ke	yuan Rd			Site: 966 chamber +86-0755-26503290 ::+86-0755-26503396		
Job No.: star #874				F	olarizati	on: \	/ertical			
Standard: FCC Class E	3M Radiated			Power Source: DC 3V						
Test item: Radiation T	est			Date: 2012/08/21						
Temp.( C)/Hum.(%) 2	25 C/51 %			Time: 19:57:01						
EUT: 2.4G Wirele	ss mouse			E	Ingineer	Signat	ure: S	tar		
Mode: TX 2408MHz				C	)istance:	3m				
Model: T9G										
Manufacturer: COMAT										
Note: Report No.:ATI										
							limit	1:		
60										
50 10	aimanan katalan katala	un manager and the second for	purubunan taata burb	fn Moneywerster	Walkerman	affithismussif	whentheret	and the second second second		
30										
20										
10										
0.0										
18000.000	200	00						25000.0 MHz		
	eading Factor BuV/m) (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark		









## ACCURATE TECHNOLOGY CO., LTD.

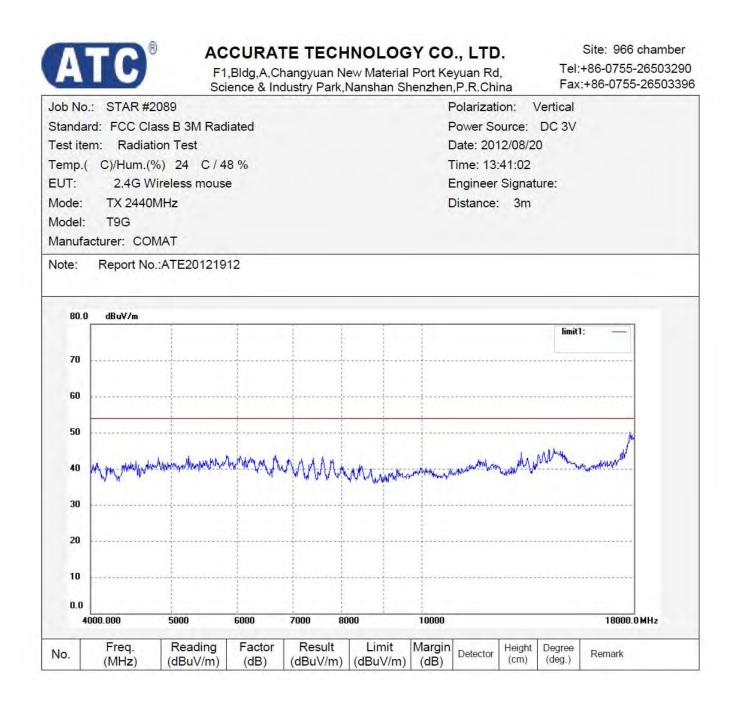
F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

ob No.	: STAR #20	84				F	Polarizati	on: \	/ertical		
tandar	rd: FCC Clas	s B 3M Rad	iated			F	Power So	urce:	DC 3V		
est ite	m: Radiation Test							08/20/			
emp.(	C)/Hum.(%	) 24 C/4	8 %			1	Time: 11/	28/07			
UT:	2.4G Wir	eless mouse	e			E	Engineer	Signat	ure:		
lode:	TX 2440M	Hz				C	Distance:	3m			
lodel:	T9G										
lanufa	cturer: COM	AT									
lote:	Report No.:	ATE201219	12								
100.0	0 dBuV/m					1		1	limit1	:	
90					1	1×		Ì			
30						•					
80								·			
70	**********	*******	*******							*********	
60											
50											
40			*********		a	almost his	whether	MANA MIL	Man maken	home which have	
		at the last is an	Level address of sure	when we have the service and	Methoday and the leaders	CO.		N. W	with the		
30	Manhamphon ( both an and	employment	Aufachine and an and an	Min Ma					*********		
30	vordmentodisticanost	enter and a second	NIN ALL ALL	An 14							
30 20	visadimenteralisetteeneeset	ante de la construcción de la const La construcción de la construcción d									
		enne (franseren									
20 10.0		2964(1936219999) 	and a second					3000		4000.0	MHz
20 10.0	000.000 Freq.	Reading	Factor	Result	Limit	Margin	Detector	3000 Height (cm)	Degree (deg.)	<b>4000.0</b> Remark	MHz
20 10.0 10	000.000						Detector	Height	Degree		MHz



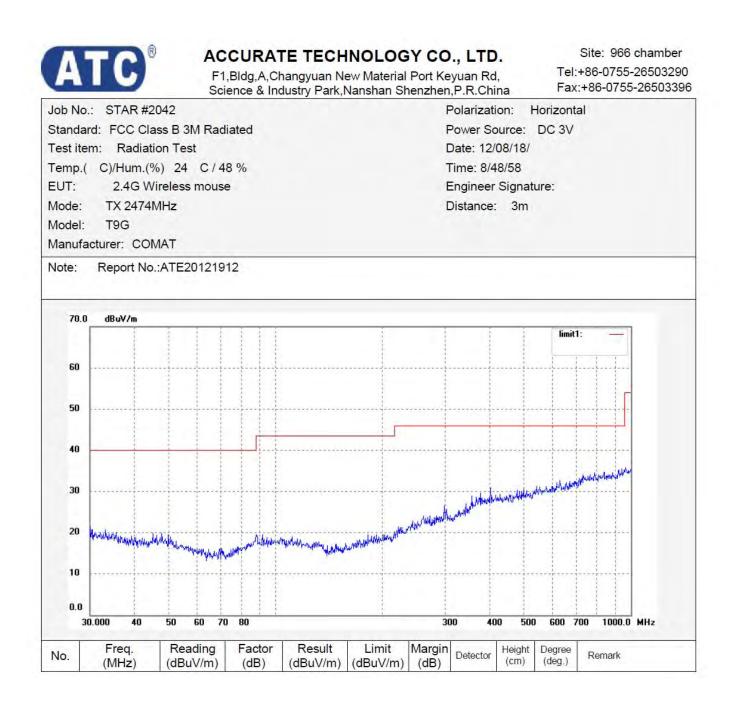
F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

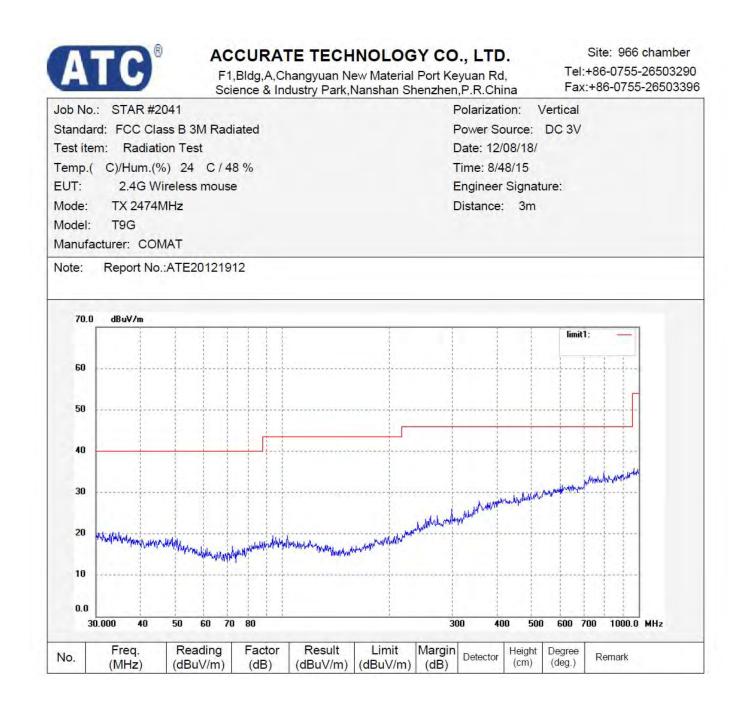
ote:	Report No.:A	TE2012191	2						
80.0	dBuV/m								
								limi	tl:
70		<u> </u>	+						
60									
50									
40	article company	and the second	howman	WAND	MAAM MANN	Whendering	warmen Martin	provide which which which	My market and
		1	1	1		1			
30			÷	·····					
30 20								******	
20									



ATC		hangyuan Ne	ew Material	Y CO., LT Port Keyuan F enzhen,P.R.C	Rd,		Site: 966 chamber +86-0755-2650329 :+86-0755-2650339
Job No.: star #876				Polariz		Horizonta	al
Standard: FCC Class B	3M Radiated			Power	Source:	DC 3V	
Test item: Radiation T	est			Date: 2	012/08/2	1	
Temp.( C)/Hum.(%) 2	5 C/51%			Time: 2	0:06:25		
EUT: 2.4G Wireles	ss mouse			Engine	er Signat	ure: St	tar
Mode: TX 2440MHz				Distanc	e: 3m		
Model: T9G							
Manufacturer: COMAT							
Note: Report No.:ATE							
70.0 06047m	1					limit1	1:
60							
50							
40 propulsion and and the	alline while all and the second	ninhandahananthanan	ill-sillentransilisissiller	the work of the second	Warnahidada	Hishidles Addresh	er harrin not be further
30							
20							
10							
0.0							
18000.000	2000	00					25000.0 MHz
NO.	eading Factor BuV/m) (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB) Detection	or Height (cm)	Degree (deg.)	Remark

ATC	ACCURA F1,Bldg,A,C Science & In	hangyuan Ne	ew Material	Port Ke	yuan Rd			Site: 966 chamber +86-0755-26503290 ::+86-0755-26503396
Job No.: star #877					Polarizati		/ertical	
Standard: FCC Class B	3M Radiated			F	ower Sc	urce:	DC 3V	
Test item: Radiation Te	est			E	Date: 201	2/08/2	1	
Temp.( C)/Hum.(%) 2	5 C/51%			đ	ime: 20:	09:40		
EUT: 2.4G Wireles	s mouse			E	Ingineer	Signat	ure: S	tar
Mode: TX 2440MHz				C	Distance:	3m		
Model: T9G								
Manufacturer: COMAT								
Note: Report No.:ATE	20121912							
70.0 dBu∀/m								
	- i						limit	1:
60								
50				i i i i i i i i i i i i i i i i i i i				
w. American margarity att	When we administration of which	nutter my second and second	Ad Awaren N. Harad	Water of L	a subject of		where where	Appelmenter
40	Adding of the second	and a thirt of authors	In 101 March 101 March	I WHEN WHEN AN	abdramateriality	Amathematikal	-WALKANYAN	
30		************						
	1							
20								
10				man				
	1							
0.0								
18000.000	2000	DO						25000.0 MHz
NO	eading Factor BuV/m) (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark







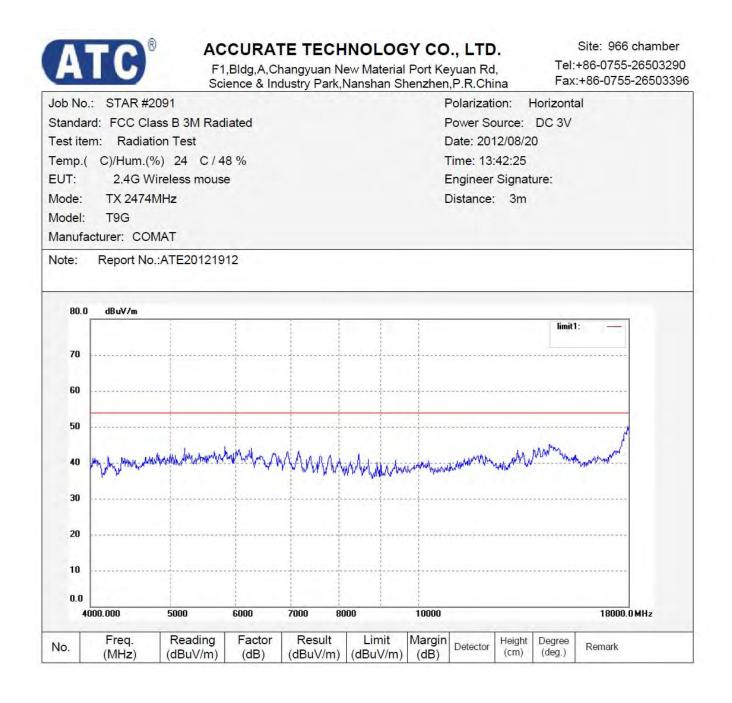
F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

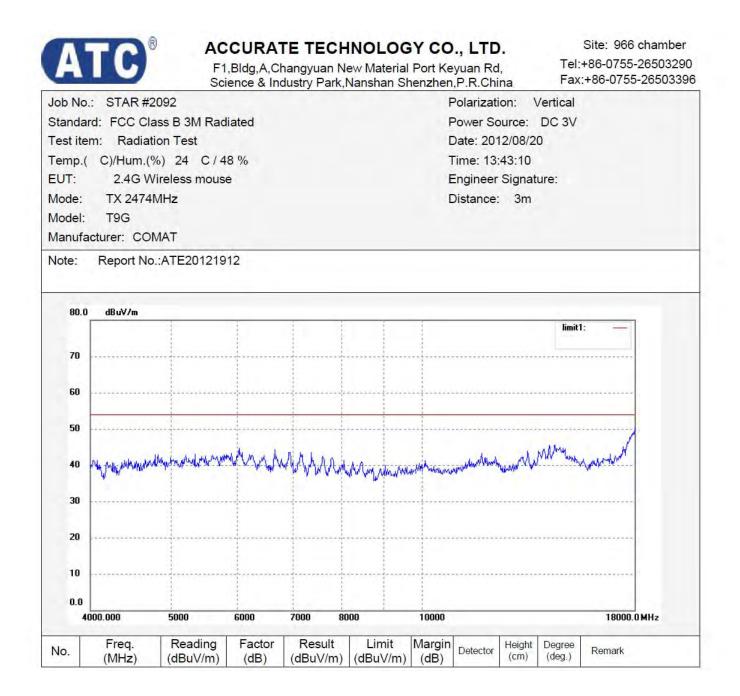
			chiec a m	dustry Park,	runonan or								
Job No	o.: STAR #20	86				F	olarizati	on: H	lorizonta	al			
Standa	ard: FCC Clas	s B 3M Rad	iated			F	Power Source: DC 3V						
Test ite	em: Radiatio	n Test				C	Date: 12/08/20/						
Temp.	( C)/Hum.(%	) 24 C/4	8 %			Т	Time: 11/31/00						
EUT:	2.4G Wir	eless mouse	e			E	Engineer Signature:						
Mode:	TX 2474M	Hz				C	istance:	3m					
Model:	T9G												
Manuf	acturer: COM	AT											
Note:	Report No.:	ATE201219	12										
100	.0 dBuV/m												
						1			limit1	:			
90													
80		************	**********	***********					******				
70													
60								····					
50			******										
						1							
40			*******		la.	at a la	in Monthing	munth	and the	Justime Withour			
30	and and proceeding and the day	when the when the later	derlyturistike was	physic was a second and a	henetically are supported in the	wallhaw. Las	a sangi se na san	an Weith	wand have stop	. much .			
30	the weeks action within one w	occherente concre			1								
20									********				
					1			1					
10.0	-				i.								
	000.000							3000		4000.0	MHZ		
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark			
	2474.000	100.72	-7.37	93.35	114.0	-20.65	peak						
1	2474.000	100.12	1.01	00.00	117.0	20.00	peak	distance in a					



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

Job No	.: STAR #20	85				F	olarizati	ion: \	/ertical					
Standa	rd: FCC Clas	s B 3M Rad	iated			F	ower Sc	ource:	DC 3V					
Test ite	em: Radiatio	n Test				C	ate: 12/							
Temp.(	( C)/Hum.(%	C)/Hum.(%) 24 C / 48 %							Time: 11/29/32					
EUT:		2.4G Wireless mouse							Engineer Signature:					
Mode:	TX 2474M	Hz					Distance: 3m							
Model:	T9G													
Manufa	acturer: COM	AT												
Note:	Report No.:	ATE201219	12											
100.	0 dBuV/m													
						1 X			limit	:				
90														
80														
80					1									
70														
					1	1								
60										*********				
50														
						1								
40						-1	trates	m. M. off.	n	Mr. May				
-	enterpreservationalises	here have a she when the state of the second s	An which the the	with the manufacture with the second	hother an equilibrium of the second	www.com	North Marine And	A.M. A. M.M.	way we	has made at				
30	a tashiha ani Tashola aka	eterne vikarikarin		*******		*******								
20														
10.0	000.000				1		_	3000	1	4000.0	MHz			
	and sectors			To the second	T	1								
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark				
S. 2 - 10	(101112)	(aba (/iii))	()	(										
1	2474.000	102.35	-7.37	94.98	114.00	-19.02	peak							



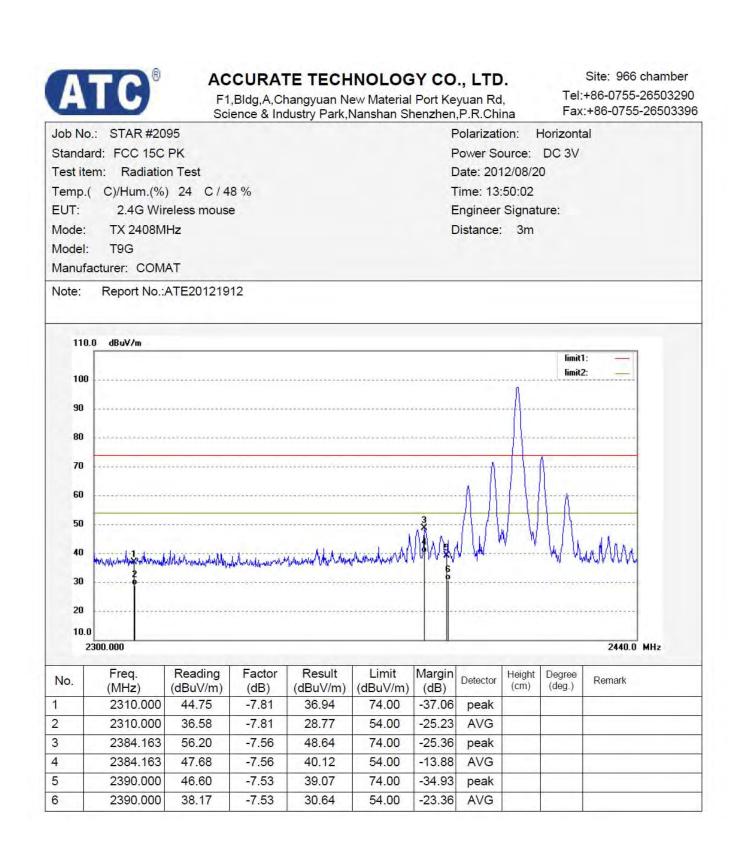


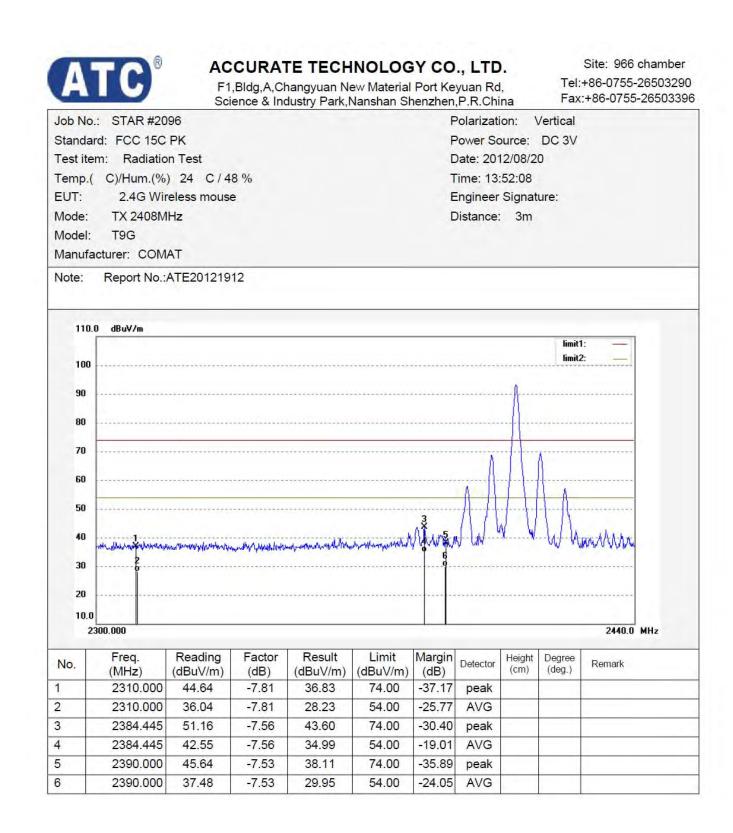
ATC	ACCURA F1,Bldg,A,Cl Science & Inc	hangyuan Ne	ew Material	Port Key	uan Rd,		Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-2650339
Job No.: star #879				Po	larization:	Horiz	ontal
Standard: FCC Class B 3	A Radiated			Po	wer Sourc	e: DC	3V
Test item: Radiation Tes	t			Da	te: 2012/0	8/21	
Temp.( C)/Hum.(%) 25	C / 51 %			Tir	me: 20:16:	19	
EUT: 2.4G Wireless	mouse			En	gineer Sig	nature:	Star
Mode: TX 2474MHz				Di	stance: 3r	n	
Model: T9G							
Manufacturer: COMAT							
Note: Report No.:ATE20							
70.0 0604710	E					-	limit1: —
60		*******					
-							
50	n manage that the mag	hanadanah di manajakaka	hanangah barahadha	Himpityituchanka	ur.MManshupershiper	morallowedu	where the second second second
30							
20							
10							
0.0 18000.000	2000	00					25000.0 MHz
No. Freq. Rea (MHz) (dBu		Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)		ight Deg m) (de	



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

b No.: star #878		Polarization: Vertical							
andard: FCC Class	B 3M Radiated	Power Source: DC 3V							
est item: Radiation	Test	Date: 2012/08/21							
emp.( C)/Hum.(%)	25 C/51%	Time: 20:12:06							
UT: 2.4G Wire	ess mouse	Engineer Signature: Star							
ode: TX 2474MH	z	Distance: 3m							
odel: T9G									
anufacturer: COMA	Т								
ote: Report No.:A	TE20121912								
70.0 dBuV/m	5	limit1:							
	1								
60		L							
50									
		1							
40 mayan henry may the	mentioned also be a statement of the Advantage	Munimenent water and water and an approved with the second and water and the							
30									
30									
		and the second se							
20									
10		*******							
0.0 18000.000	20000	25000.0 MHz							
		Limit Margin Detector Height Compare (dg.) Remark							
(MHz) (	dBuV/m) (dB) (dBuV/m) (d	BuV/m) (dB) Colocial (cm) (deg.) roman							







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

_		Sci	ence & Ind	dustry Park,	Nanshan Sl	nenzhen	,P.R.Chi	na	Fax	:+86-0755	-2000000
lob No	.: STAR #20	94				F	Polarizati	on: H	lorizonta	al	
Standa	ard: FCC 15C	PK				F	Power Sc	ource:	DC 3V		
est ite	em: Radiatio	n Test				C	Date: 201	2/08/2	D		
emp.	( C)/Hum.(%	) 24 C/4	8 %			Т	Time: 13:	47:38			
EUT:	2.4G Wir	eless mous	e			E	Engineer	Signat	ure:		
Mode:	TX 2474M	Hz				C	Distance:	3m			
Model:	T9G										
Manufa	acturer: COM	AT									
Note:	Report No.:	ATE201219	12								
110	0.0 dBuV/m										
									limit1 limit2		
100	•••••••	~								in manual	
90											
		1									
80			*********							*******	
70			A								
		. 11 1									
60		A-1V	113								
50		1	\$U.					ailaidi			
	work days	W	9 6	45							
40	Marite Ar www		West	N. Manhammany	anthen muther work	a Jadomanna	Andrewenne	What Marin M	the Martin	المرابط المرابط والمحاطر والمراجل	
	Concern Conce			ě.							
30											
30											
30 20			******							*******	
	0										
20 10.0	0									2600.0	MHz
20 10.0 2		Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	2600.0 Remark	MHz
20 10.0 2 No.	2440.000 Freq.										MHz
20 10.0 2 No.	2440.000 Freq. (MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)					MHz
20 10.0 2 No.	2440.000 Freq. (MHz) 2483.500	(dBuV/m) 61.00	(dB) -7.37	(dBuV/m) 53.63	(dBuV/m) 74.00	(dB) -20.37	peak AVG				MHz
20 10.0 2 No.	2440.000 Freq. (MHz) 2483.500 2483.500	(dBuV/m) 61.00 54.28	(dB) -7.37 -7.37	(dBuV/m) 53.63 46.91	(dBuV/m) 74.00 54.00	(dB) -20.37 -7.09	peak AVG				MHz
20 10.0	2440.000 Freq. (MHz) 2483.500 2483.500 2487.349	(dBuV/m) 61.00 54.28 65.91	(dB) -7.37 -7.37 -7.38	(dBuV/m) 53.63 46.91 58.53	(dBuV/m) 74.00 54.00 74.00	(dB) -20.37 -7.09 -15.47	peak AVG peak AVG				MHz

