# FCC CERTIFICATION On Behalf of Eastern Times Technology Co., Ltd.

2.4G Wireless Laser Mouse Model No.: DS-2285

FCC ID: TUV2285

Prepared for : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, China

Prepared by : ACCURATE TECHNOLOGY CO. LTD

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

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Report Number : ATE20091762

Date of Test : September 17-18, 2009 Date of Report : September 19, 2009

#### TABLE OF CONTENTS

Description Page

Test Report Certification

1. GENERAL INFORMATION \_\_\_\_\_\_\_4

	1.1.	Description of Device (EUT)	4
	1.2.	Description of Test Facility	4
	1.3.	Measurement Uncertainty	5
2.	MI	EASURING DEVICE AND TEST EQUIPMENT	6
3.	SU	MMARY OF TEST RESULTS	7
4.	FU	NDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249(A	.) 8
4	4.1.	Block Diagram of Test Setup	8
4	4.2.	The Emission Limit	
4	4.3.	Configuration of EUT on Measurement	9
4	4.4.	Operating Condition of EUT	9
4	4.5.	Test Procedure	.10
4	4.6.	The Field Strength of Radiation Emission Measurement Results	.11
5.	SP	URIOUS 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	
:	5.5.	Test Procedure	
:	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	.23
•	7.2.	Antenna Construction	.23

APPENDIX I (TEST CURVES) (22 pages)

# **Test Report Certification**

Applicant : Eastern Times Technology Co., Ltd.Manufacturer : Eastern Times Technology Co., Ltd.

EUT Description : 2.4G Wireless Laser Mouse

(A) MODEL NO.: DS-2285

(B) SERIAL NO.: N/A

(C) 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: 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 :	September 17-18, 2009	
Prepared by :	sky Long	
	(Engineer)	
Approved & Authorized Signer:	Searle)	
	(Manager)	

#### 1. GENERAL INFORMATION

1.1.Description of Device (EUT)

**EUT** : 2.4G Wireless Laser Mouse

Model Number : DS-2285

Power Supply : 3V DC ("AAA" batteries  $2 \times$ )

Operate Frequency : 2402-2478MHz

Channel Number : 64

Applicant : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, China

Manufacturer : Eastern Times Technology Co., Ltd.

Address : Building 5, Penghua Industry Park, Heping Rd.(W),

Longhua, Shenzhen, Guangdong, China

Date of sample received: September 10, 2009

Date of Test : September 17-18, 2009

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)

= 4.42ub, K-2

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	03.28.2010
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	03.28.2010
Spectrum Analyzer	Agilent	E7405A	MY45115511	03.28.2010
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	03.30.2010
Loop Antenna	Schwarzbeck	FMZB1516	1516131	03.28.2010
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	03.28.2010
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	12.19.2009
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	10.09.2009
LISN	Rohde&Schwarz	ESH3-Z5	100305	03.28.2010
LISN	Schwarzbeck	NSLK8126	8126431	03.28.2010

# 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

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

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

#### 4.1.Block Diagram of Test Setup

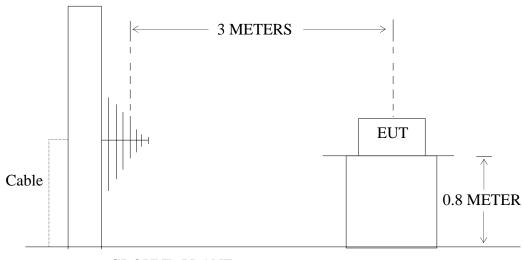
4.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: 2.4G Wireless Laser Mouse)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram

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



**GROUND PLANE** 

(EUT: 2.4G Wireless Laser 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 Laser Mouse (EUT)

Model Number : DS-2285 Serial Number : N/A

Manufacturer : Eastern Times Technology 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 2402-2478MHz. 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: September 17-18, 2009 Temperature: 25°C

EUT: 2.4G Wireless Laser Mouse Humidity: 50%

Model No.: DS-2285 Power Supply: 3V DC ("AAA" batteries 2×)

Test Mode: TX 2402MHz Test Engineer: Joe

#### **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	
2402.244	91.56	97.29	-7.45	84.11	89.84	114	94	-9.89	-24.16	Vertical
2402.244	96.06	101.77	-7.45	88.61	94.32	114	94	-5.39	-19.68	Horizontal

#### **Harmonics Radiated Emissions**

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	
4804.458	43.43	49.15	-0.30	43.13	48.85	54	74	-10.87	-25.15	Vertical
4804.458	49.50	55.21	-0.30	49.20	54.91	54	74	-4.80	-19.09	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:September 17-18, 2009Temperature:25°CEUT:2.4G Wireless Laser MouseHumidity:50%Model No.:DS-2285Power Supply:3V DC ("AAA" batteries 2×)

Test Mode: TX 2440MHz Test Engineer: Joe

#### **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	
2440.246	91.30	97.00	-7.36	83.94	89.64	94	114	-10.06	-24.36	Vertical
2440.246	96.61	102.38	-7.36	89.25	95.02	94	114	-4.75	-18.98	Horizontal

#### **Harmonics Radiated Emissions**

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	
4880.460	42.13	47.82	0.13	42.26	47.95	54	74	-11.74	-26.05	Vertical
4880.460	47.62	53.35	0.13	47.75	53.48	54	74	-6.25	-20.52	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: September 17-18, 2009 Temperature: 25°C

EUT: 2.4G Wireless Laser Mouse Humidity: 50%

Model No.: DS-2285 Power Supply: 3V DC ("AAA" batteries 2×)

Test Mode: TX 2478MHz Test Engineer: Joe

#### **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	
2478.243	91.74	97.50	-7.37	84.37	90.13	94	114	-9.63	-23.87	Vertical
2478.243	96.39	102.12	-7.37	89.02	94.75	94	114	-4.98	-19.25	Horizontal

#### **Harmonics Radiated Emissions**

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	
4956.457	41.56	47.24	0.51	42.07	47.75	54	74	-11.93	-26.25	Vertical
4956.457	48.06	53.80	0.51	48.57	54.31	54	74	-5.43	-19.69	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)

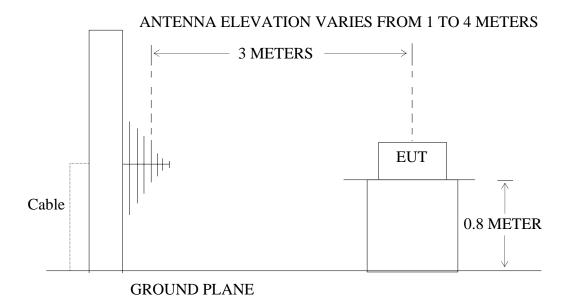
#### 5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

EUT

(EUT: 2.4G Wireless Laser Mouse)

5.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: 2.4G Wireless Laser 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>			
		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 Laser Mouse (EUT)

Model Number : DS-2285 Serial Number : N/A

Manufacturer : Eastern Times Technology 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 2402-2478MHz. 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:	September 17-18, 2009	Temperature:	25°C
EUT:	2.4G Wireless Laser Mouse	Humidity:	50%
Model No.:	DS-2285	Power Supply:	3V DC ("AAA" batteries 2×)
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:	September 17-18, 2009	Temperature:	25°C
EUT:	2.4G Wireless Laser Mouse	Humidity:	50%
Model No.:	DS-2285	Power Supply:	3V DC ("AAA" batteries 2×)
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	
-	-	-	1	-	-	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:	September 17-18, 2009	Temperature:	25°C
EUT:	2.4G Wireless Laser Mouse	Humidity:	50%
Model No.:	DS-2285	Power Supply:	3V DC ("AAA" batteries 2×)
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	
_	-	1	1	-	-	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 Laser Mouse (EUT)

Model Number : DS-2285 Serial Number : N/A

Manufacturer : Eastern Times Technology 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 2402-2478MHz. 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:September 18, 2009Temperature:25°CEUT:2.4G Wireless Laser MouseHumidity:50%Model No.:DS-2285Power Supply:3V DC ("AAA" batteries 2×)Test Mode:TX 2402MHzTest 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	
2400.000	53.21	59.06	-7.46	45.75	51.60	54	74	-8.25	-22.40	Vertical
2400.000	53.37	59.14	-7.46	45.91	51.68	54	74	-8.09	-22.32	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:September 18, 2009Temperature:25°CEUT:2.4G Wireless Laser MouseHumidity:50%Model No.:DS-2285Power Supply:3V DC ("AAA" batteries 2×)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	
2483.500	40.89	46.63	-7.37	33.52	39.26	54	74	-20.48	-34.74	Vertical
2483.500	42.23	48.00	-7.37	34.86	40.63	54	74	-19.14	-33.37	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

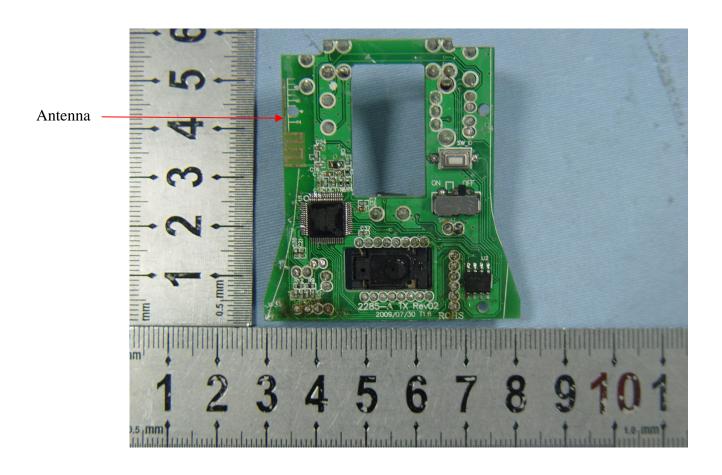
# 7. ANTENNA REQUIREMENT

#### 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)



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: Horizontal

Power Source: DC 3V

Date: 09/09/17/

Time: 20/40/03

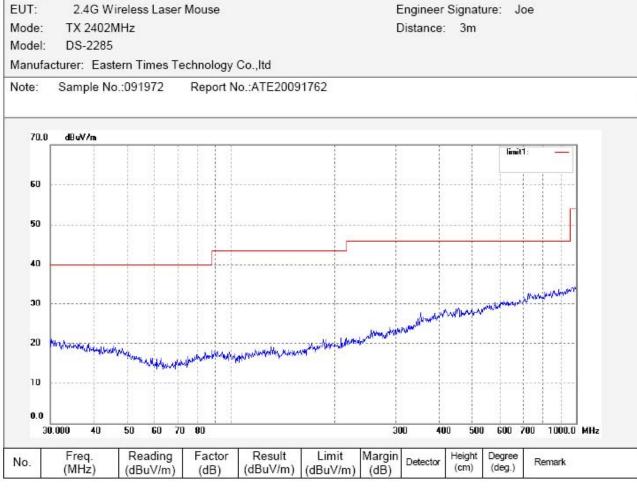
Job No.: RTTE #3087

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse





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

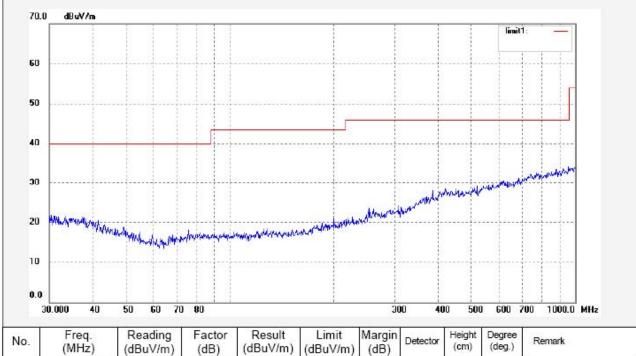
Power Source: DC 3V

Job No.: RTTE #3088

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Date: 09/09/17/ Temp.( C)/Hum.(%) 25 C / 50 % Time: 20/43/09 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2402MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note:





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 #3109

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2402MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

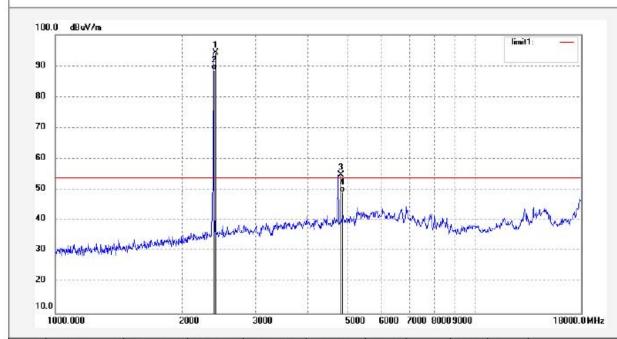
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Horizontal Power Source: DC 3V

Date: 09/09/18/ Time: 10/03/02

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	2402.244	101.77	-7.45	94.32	114.00	-19.68	peak			
2	2402.244	96.06	-7.45	88.61	94.00	-5.39	AVG			
3	4804.458	55.21	-0.30	54.91	74.00	-19.09	peak			
4	4804.458	49.50	-0.30	49.20	54.00	-4.80	AVG	3	22	3



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 #3110

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2402MHz

Model: DS-2285

Manufacturer: Eastern Times Technology Co., Itd

97.29

91.56

49.15

43.43

-7.45

-7.45

-0.30

-0.30

89.84

84.11

48.85

43.13

114.00

94.00

74.00

54.00

-24.16

-9.89

-25.15

-10.87

peak

AVG

peak

AVG

2402.244

2402.244

4804.458

4804.458

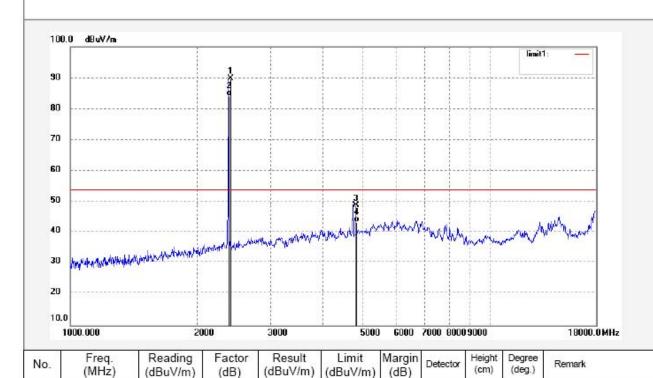
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Vertical Power Source: DC 3V

Date: 09/09/18/ Time: 10/06/11

Engineer Signature: Joe

Distance: 3m



1

2

3

4



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: Horizontal

Power Source: DC 3V

Job No.: RTTE #3120

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Date: 09/09/18/ Temp.( C)/Hum.(%) 25 C / 50 % Time: 10/53/11 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe TX 2402MHz Mode: Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Note: Sample No.:091972 Report No.:ATE20091762 70.0 dBuV/m limit1: 60 50 40 30 20 18000.000 20000 25000.0 MHz

	 	 				90.00	
No.	Reading (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

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

Polarization: Vertical

Power Source: DC 3V

Job No.: RTTE #3119

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Date: 09/09/18/ Temp.( C)/Hum.(%) 25 C / 50 % Time: 10/50/10 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2402MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note: 70.0 dBuV/m limit1 60 50 40 30 20 10 18000.000 20000 25000.0 MHz Reading Freq. Factor Result Limit Margin Height Degree Detector No. Remark



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

Polarization:

Power Source: DC 3V

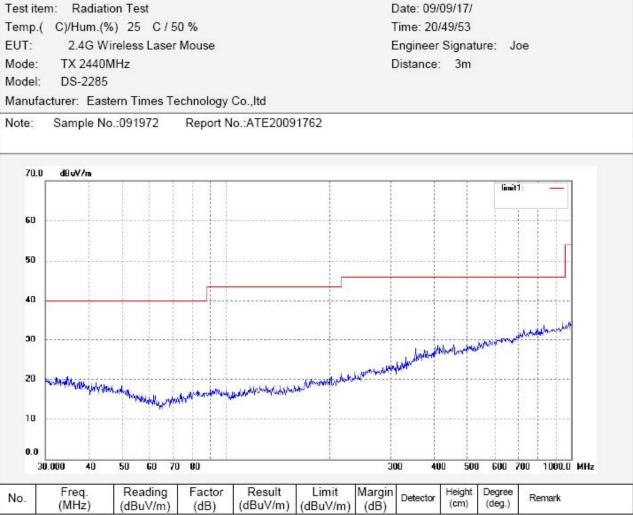
Horizontal

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

Job No.: RTTE #3090

Standard: FCC Class B 3M Radiated

Test item: Radiation Test





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

Power Source: DC 3V

Engineer Signature: Joe

Date: 09/09/17/

Time: 20/46/50

Distance: 3m

Job No.: RTTE #3089

Standard: FCC Class B 3M Radiated

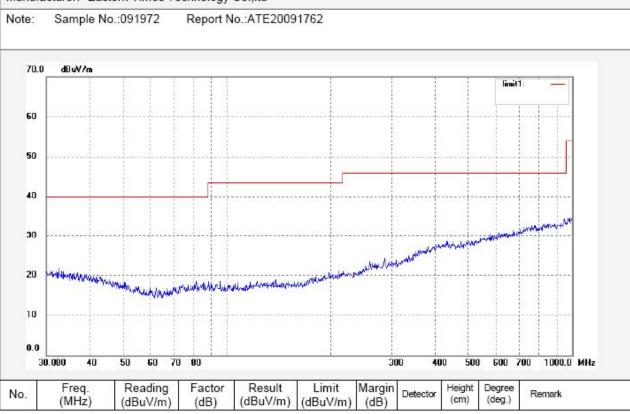
Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2440MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co., Itd





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 #3112

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2440MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

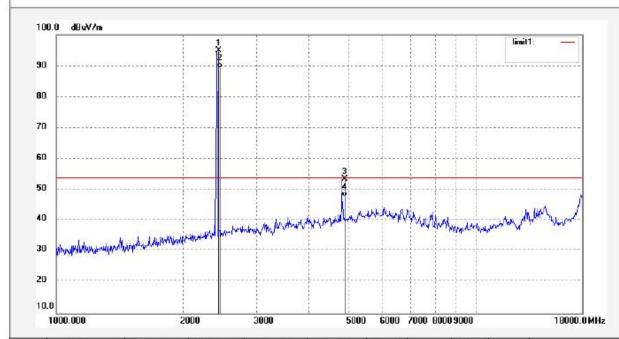
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Horizontal Power Source: DC 3V

> Date: 09/09/18/ Time: 10/13/18

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	2440.246	102.38	-7.36	95.02	114.00	-18.98	peak			
2	2440.246	96.61	-7.36	89.25	94.00	-4.75	AVG			
3	4880.460	53.35	0.13	53.48	74.00	-20.52	peak			
4	4880.460	47.62	0.13	47.75	54.00	-6.25	AVG	3	23	3



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 #3111 Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %
EUT: 2.4G Wireless Laser Mouse

Mode: TX 2440MHz

Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

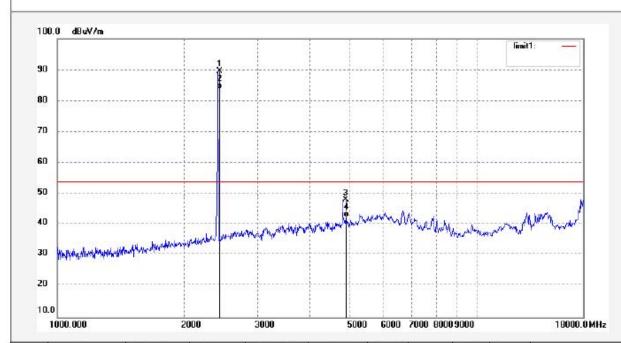
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Vertical Power Source: DC 3V

Date: 09/09/18/ Time: 10/10/09

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	2440.246	97.00	-7.36	89.64	114.00	-24.36	peak				
2	2440.246	91.30	-7.36	83.94	94.00	-10.06	AVG	5		55	
3	4880.460	47.82	0.13	47.95	74.00	-26.05	peak				
4	4880.460	42.13	0.13	42.26	54.00	-11.74	AVG		2.5	3	



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

Polarization:

Power Source: DC 3V

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

Horizontal

Job No.: RTTE #3121

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Date: 09/09/18/ Temp.( C)/Hum.(%) 25 C / 50 % Time: 10/57/15 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2440MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note: 70.0 dBuV/m limit1 60 50 40 30 20 10 18000.000 20000 25000.0 MHz Reading Freq. Factor Result Limit Margin Height Degree

Detector No. Remark (deg.) (MHz) (dBuV/m) (dBuV/m) (dB) (dBuV/m) (dB)



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

25000.0 MHz

Polarization: Vertical

Job No.: RTTE #3122

18000.000

Standard: FCC Class B 3M Radiated

Power Source: DC 3V Date: 09/09/18/ Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 % Time: 11/00/21 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2440MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note: 70.0 dBuV/m limit1 60 50 40 30 20 10

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

20000



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: Horizontal

Power Source: DC 3V

Date: 09/09/17/

Job No.: RTTE #3091

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

Time: 20/53/46 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2478MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note: 70.0 dBuV/m limit1: 60 50 40 30 20 10 30.000 40 60 70 80 300 400 500 600 700 1000.0 MHz



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

Power Source: DC 3V

Date: 09/09/17/

Job No.: RTTE #3092

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

Time: 20/56/48 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe Mode: TX 2478MHz Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Sample No.:091972 Report No.:ATE20091762 Note: 70.0 dBuV/m limit1: 60 50 40 30 20 10 30.000 40 60 70 80 300 400 500 600 700 1000.0 MHz Margin Detector Reading Freq. Factor Result Limit Height Degree No. Remark (MHz) (dBuV/m) (dBuV/m) (dB) (dBuV/m) (dB)



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 #3113

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2478MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co.,ltd

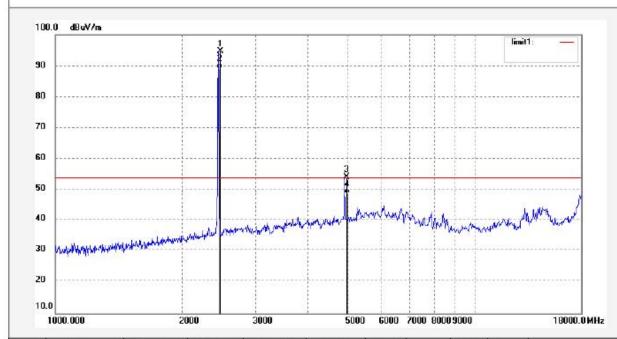
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Horizontal Power Source: DC 3V

Date: 09/09/18/ Time: 10/17/17

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	2478.243	102.12	-7.37	94.75	114.00	-19.25	peak			
2	2478.243	96.39	-7.37	89.02	94.00	-4.98	AVG			
3	4956.457	53.80	0.51	54.31	74.00	-19.69	peak			
4	4956.457	48.06	0.51	48.57	54.00	-5.43	AVG	3	(c)	3



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 #3114

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2478MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co.,ltd

Note: Sample No.:091972 Report No.:ATE20091762

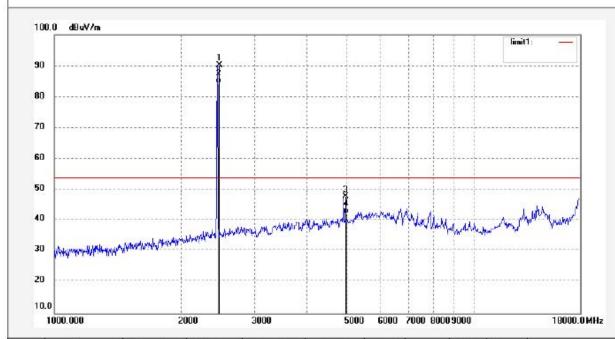
Polarization: Vertical

Power Source: DC 3V

Date: 09/09/18/ Time: 10/20/22

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	2478.243	97.50	-7.37	90.13	114.00	-23.87	peak			
2	2478.243	91.74	-7.37	84.37	94.00	-9.63	AVG			
3	4956.457	47.24	0.51	47.75	74.00	-26.25	peak			
4	4956.457	41.56	0.51	42.07	54.00	-11.93	AVG	3	22	3



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: Horizontal

Power Source: DC 3V

Job No.: RTTE #3124

Standard: FCC Class B 3M Radiated

Date: 09/09/18/ Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 % Time: 11/07/31 EUT: 2.4G Wireless Laser Mouse Engineer Signature: Joe TX 2478MHz Mode: Distance: 3m Model: DS-2285 Manufacturer: Eastern Times Technology Co., Itd Note: Sample No.:091972 Report No.:ATE20091762 70.0 dBuV/m limit1: 60 50 40 30 20 18000.000 20000 25000.0 MHz

No.	Freq.	Reading (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 Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Polarization: Vertical

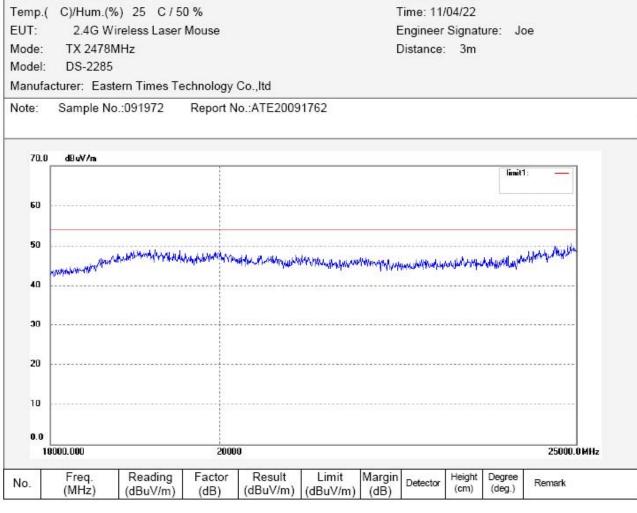
Power Source: DC 3V

Date: 09/09/18/

Job No.: RTTE #3123

Standard: FCC Class B 3M Radiated

Test item: Radiation Test





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 #3116 Standard: FCC Part 15 PEAK 2.4G

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

EUT: 2.4G Wireless Laser Mouse Mode: TX 2402MHz

Mode: 1X 2402MHz Model: DS-2285

2400.000

2400.000

59.14

53.37

-7.46

-7.46

51.68

45.91

Manufacturer: Eastern Times Technology Co., ltd

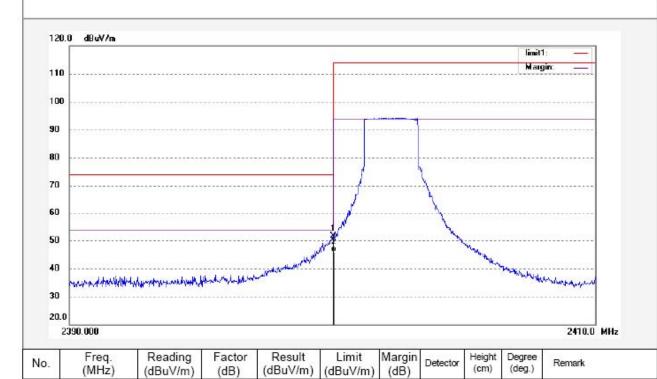
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Horizontal Power Source: DC 3V

> Date: 09/09/18/ Time: 10/33/13

Engineer Signature: Joe

Distance: 3m



74.00

54.00

-22.32

-8.09

peak

AVG

1

2



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 #3115 Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %
EUT: 2.4G Wireless Laser Mouse

Mode: TX 2402MHz

2400.000

2400.000

59.06

53.21

-7.46

-7.46

51.60

45.75

74.00

54.00

-22.40

-8.25

peak

AVG

Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

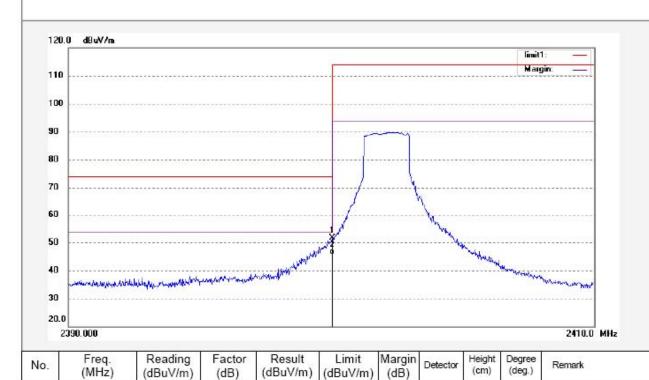
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Vertical Power Source: DC 3V

> Date: 09/09/18/ Time: 10/30/01

Engineer Signature: Joe

Distance: 3m



1

2



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 #3117 Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %
EUT: 2.4G Wireless Laser Mouse

Mode: TX 2478MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

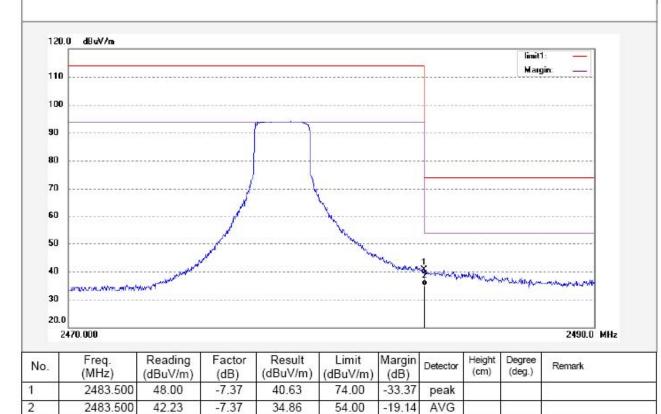
Note: Sample No.:091972 Report No.:ATE20091762

Polarization: Horizontal Power Source: DC 3V

> Date: 09/09/18/ Time: 10/37/25

Engineer Signature: Joe







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 #3118

Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test

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

EUT: 2.4G Wireless Laser Mouse

Mode: TX 2478MHz Model: DS-2285

Manufacturer: Eastern Times Technology Co., ltd

Note: Sample No.:091972 Report No.:ATE20091762

Date: 09/09/18/ Time: 10/40/31

Polarization: Vertical

Power Source: DC 3V

Engineer Signature: Joe

Distance: 3m

