

APPLICATION CERTIFICATION  
On Behalf of  
Eastern Times Technology Co., Ltd.

Bluetooth Optical Mouse  
Model No.: U400

FCC ID: TUVU400

Prepared for : Eastern Times Technology Co., Ltd.  
Address : Building 5, Penghua Industry Park, Heping Rd.(W),  
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Report Number : ATE20081574  
Date of Test : August 20-September 06, 2008  
Date of Report : September 08, 2008

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## Test Report Certification

Applicant : Eastern Times Technology Co., Ltd.  
Manufacturer : Eastern Times Technology Co., Ltd.  
EUT Description : Bluetooth Optical Mouse  
(A) MODEL NO.: U400  
(B) SERIAL NO.: N/A  
(C) POWER SUPPLY: 3.0V DC (“AAA” batteries 2×)

Measurement Procedure Used:

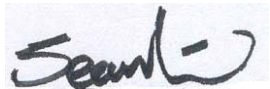
FCC Rules and Regulations Part 15 Subpart C Section 15.247:2007 & ANSI C63.4: 2003

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 Section 15.247 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 20-September 06, 2008

Prepared by :   
(Engineer)

Approved & Authorized Signer :   
(Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT	:	Bluetooth Optical Mouse
Model Number	:	U400
Frequency Band	:	2400MHz-2483.5MHz
Number of Channels	:	79
Antenna Gain	:	0dBi
Power Supply	:	3.0V DC (“AAA” batteries 2×)
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	:	August 18, 2008
Date of Test	:	August 20-September, 2008

### 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  
(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

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

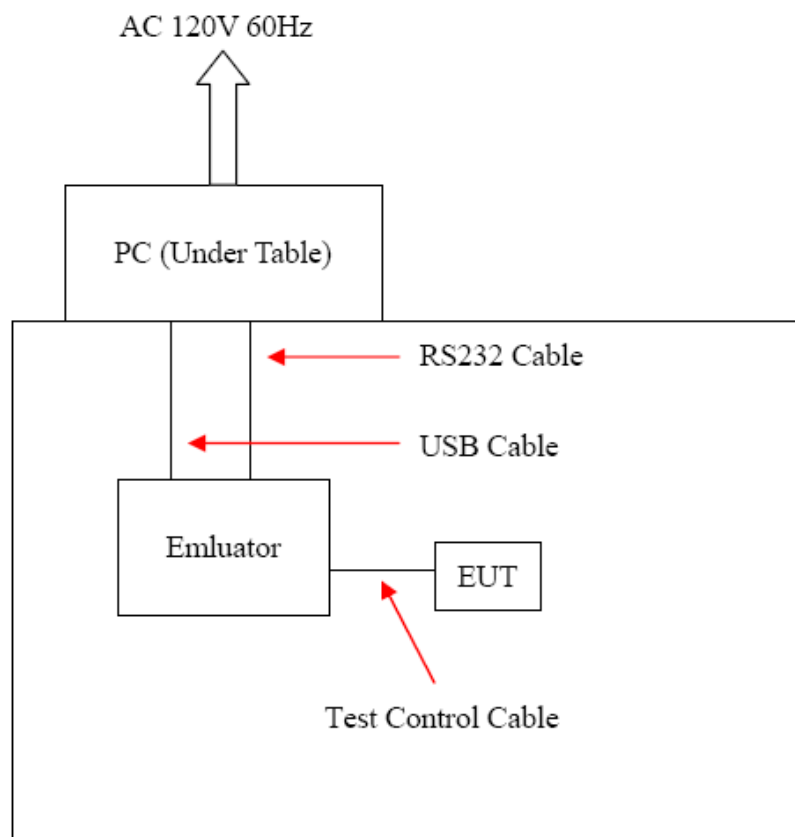
Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	03.29.2009
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	03.29.2009
Spectrum Analyzer	Agilent	E7405A	MY45115511	03.29.2009
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	03.31.2009
Loop Antenna	Schwarzbeck	FMZB1516	1516131	03.28.2009
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	03.29.2009
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	12.20.2008
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	10.10.2008
LISN	Rohde&Schwarz	ESH3-Z5	100305	03.29.2009
LISN	Schwarzbeck	NLSK8126	8126431	03.29.2009

### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

The mode is used: Transmitting mode  
Low Channel: 2402MHz  
Middle Channel: 2441MHz  
High Channel: 2480MHz  
Hopping

#### 3.2. Configuration and peripherals



(EUT: Bluetooth Optical Mouse)

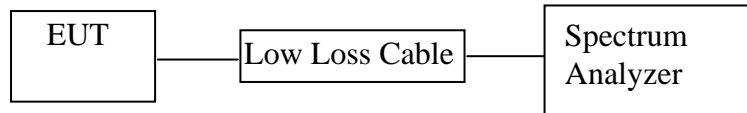


#### 4. TEST PROCEDURES AND RESULTS

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
Section 15.207	Conducted Emission Test	N/A
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant

## 5. 20DB BANDWIDTH TEST

### 5.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 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. Bluetooth Optical Mouse (EUT)

Model Number : U400  
 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 4.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX(Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

## 5.5. Test Procedure

5.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2. Set RBW of spectrum analyzer to 30kHz and VBW to 100kHz.

5.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

## 5.6. Test Result

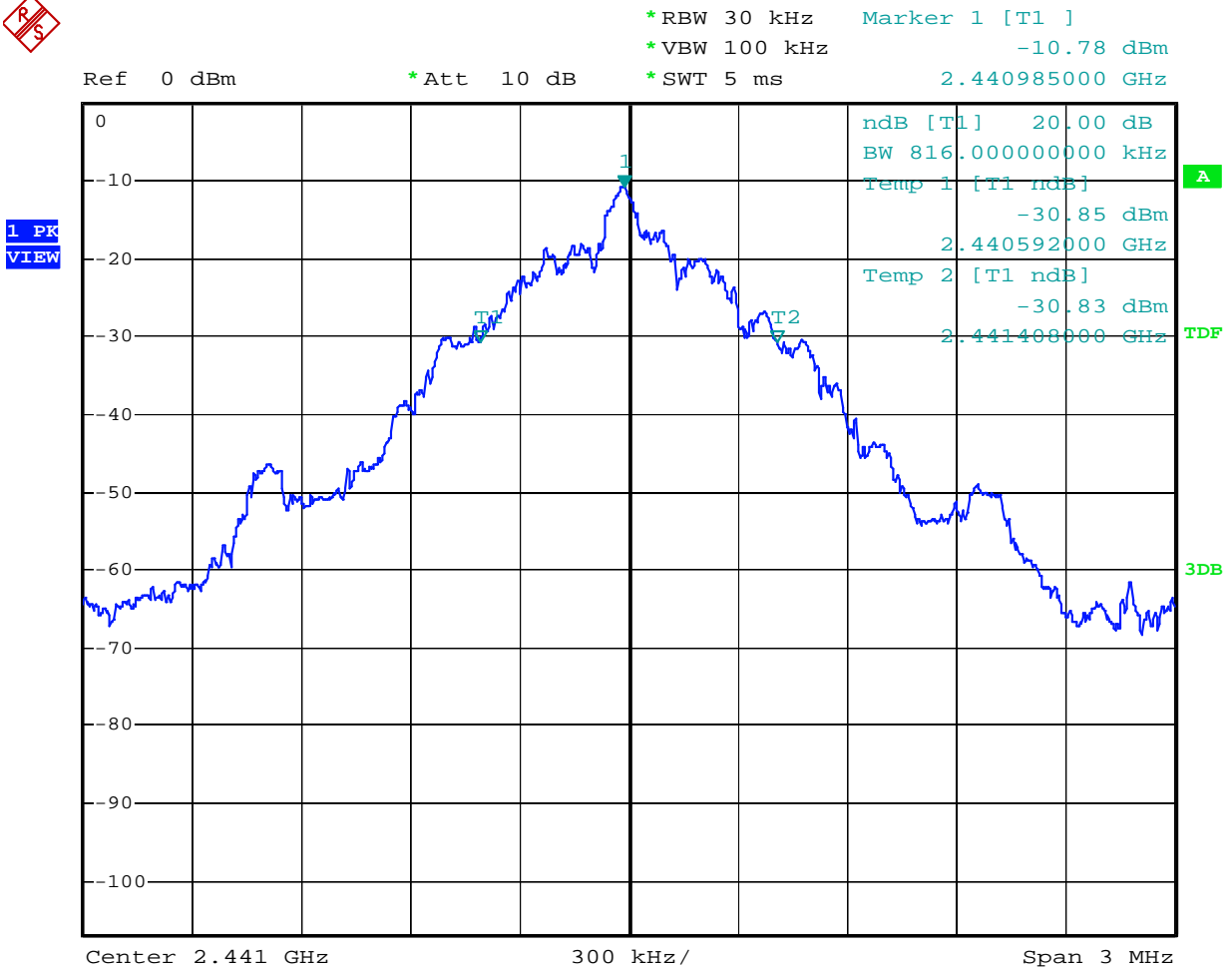
**PASS.**

Date of Test:	<u>September 06, 2008</u>	Temperature:	<u>25°C</u>
EUT:	<u>Bluetooth Optical Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>U400</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Feng</u>

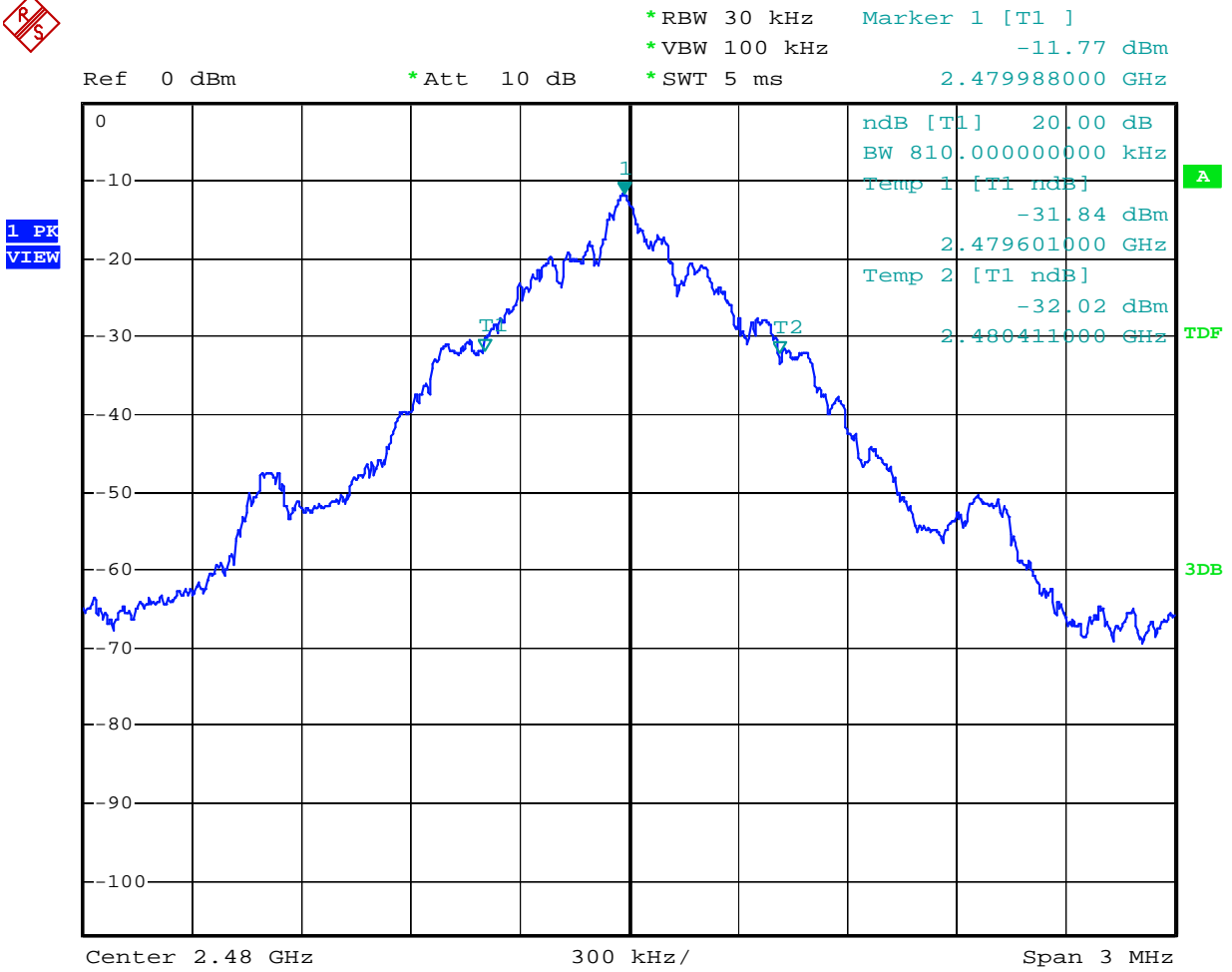
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)
Low	2402	0.810	---
Middle	2441	0.816	---
High	2480	0.810	---

The spectrum analyzer plots are attached as below.





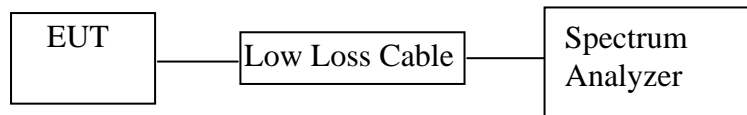
Date: 6.SEP.2008 11:27:05



Date: 6.SEP.2008 11:29:15

## 6. CARRIER FREQUENCY SEPARATION TEST

### 6.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

### 6.3. 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.

#### 6.3.1. Bluetooth Optical Mouse (EUT)

Model Number : U400  
 Serial Number : N/A  
 Manufacturer : Eastern Times Technology Co., Ltd.

### 6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 5.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

## 6.5. Test Procedure

6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz. Adjust Span to 3 MHz.

6.5.3. Set the adjacent channel of the EUT maxhold another trace.

6.5.4. Measurement the channel separation

## 6.6. Test Result

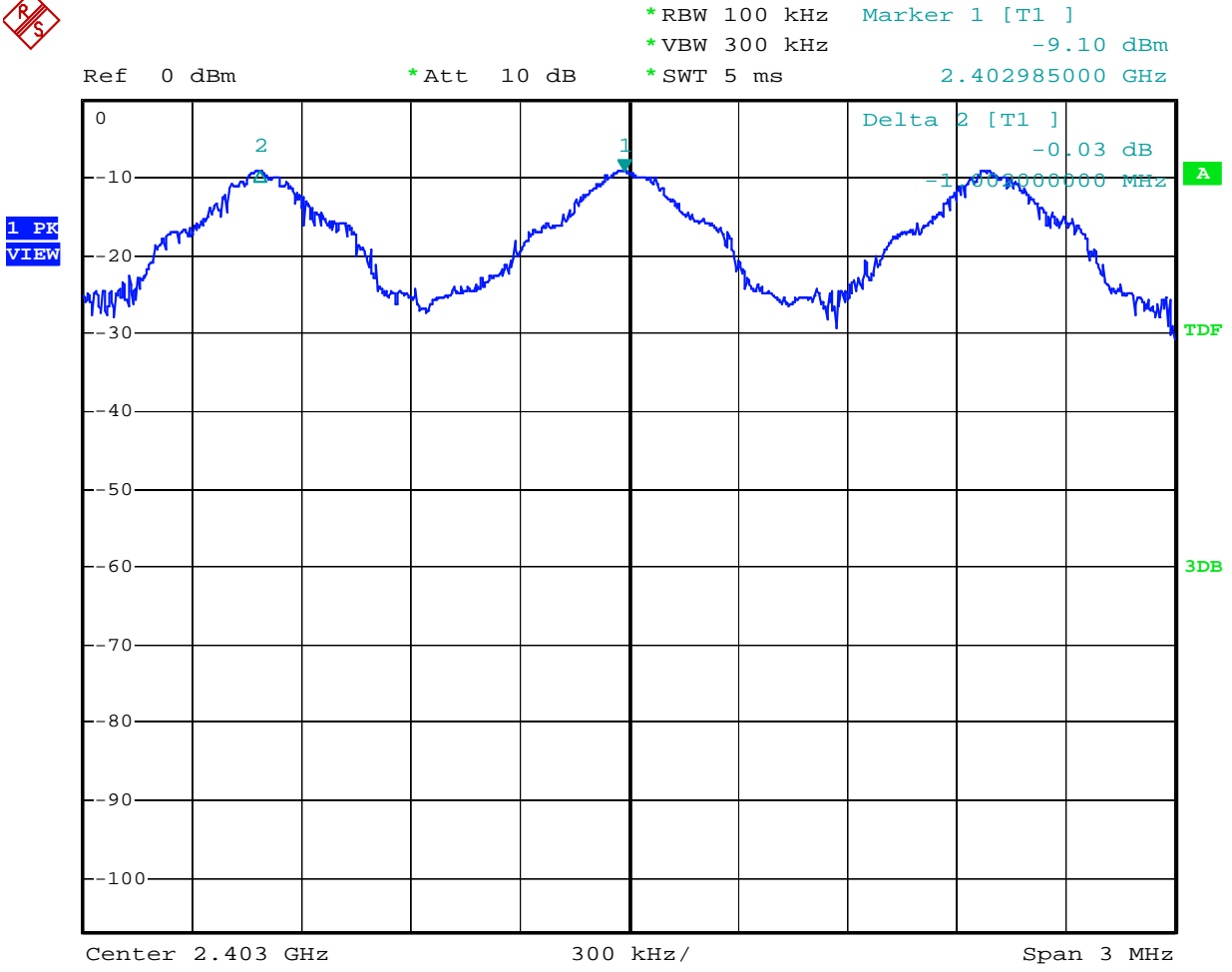
**PASS.**

Date of Test:	<u>September 06, 2008</u>	Temperature:	<u>25°C</u>
EUT:	<u>Bluetooth Optical Mouse</u>	Humidity:	<u>52%</u>
Model No.:	<u>U400</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Feng</u>

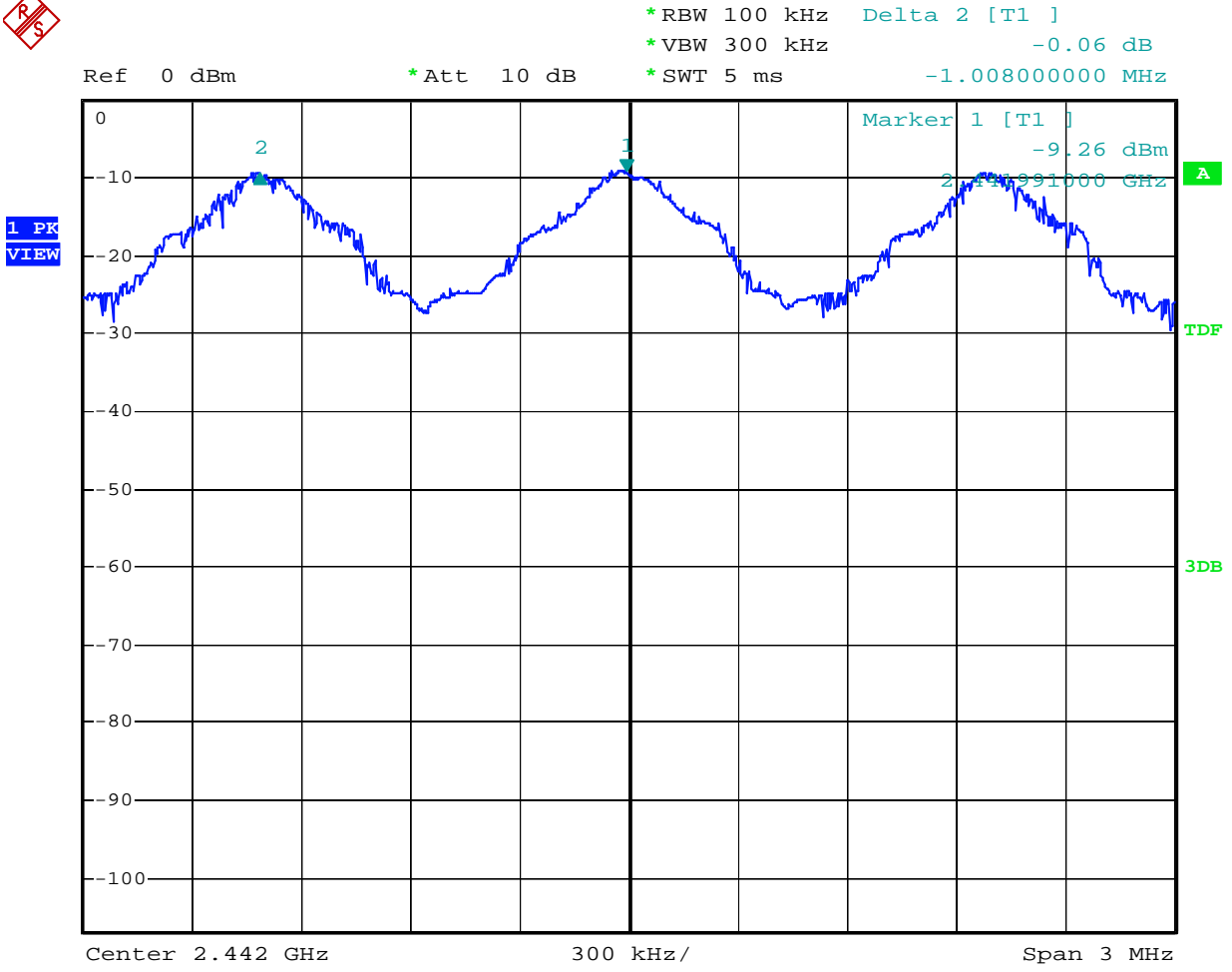
Channel	Channel Frequency (MHz)	Channel separation (MHz)	Limit
Low	2402	1.002	> the 20dB Bandwidth or 25kHz (whichever is greater)
Middle	2441	1.008	> the 20dB Bandwidth or 25kHz (whichever is greater)
High	2480	1.002	> the 20dB Bandwidth or 25kHz (whichever is greater)

The spectrum analyzer plots are attached as below.





Date: 6.SEP.2008 10:12:31



Date: 6.SEP.2008 10:20:01

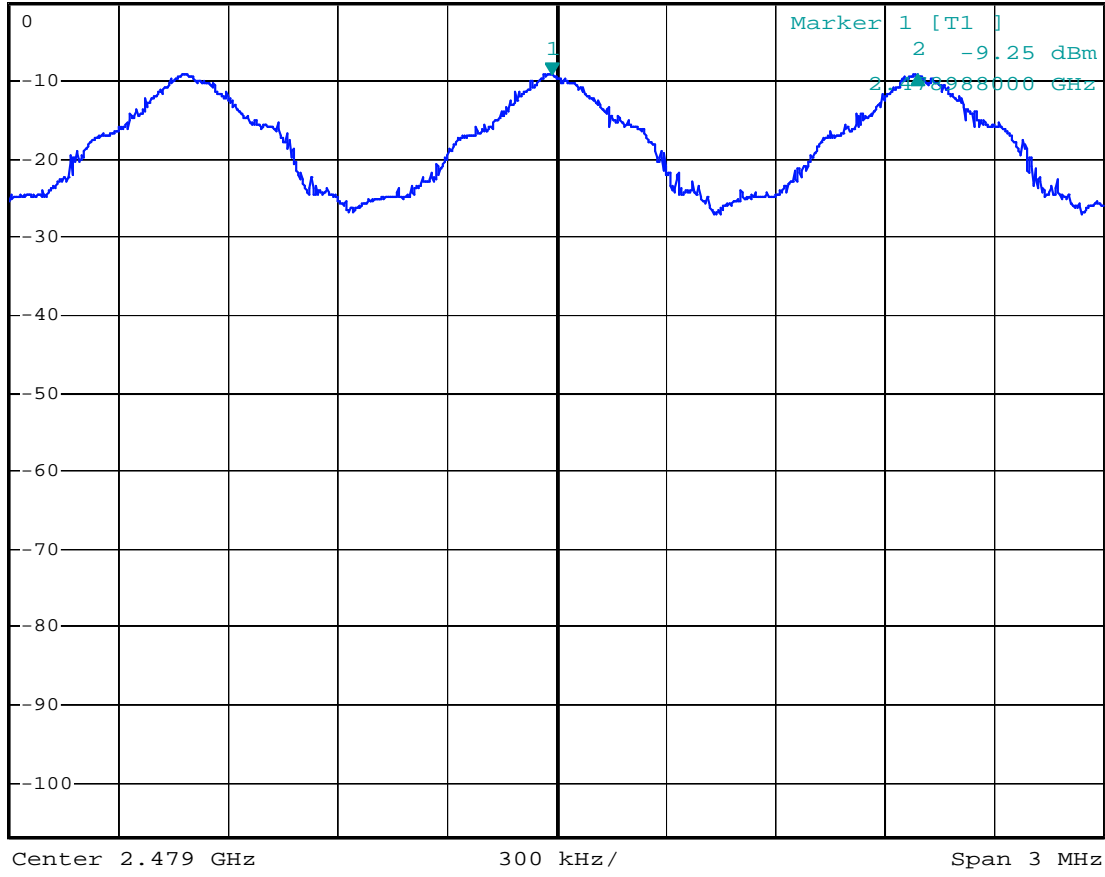


\*RBW 100 kHz Delta 2 [T1 ]  
\*VBW 300 kHz 0.02 dB  
\*SWT 5 ms 1.002000000 MHz

Ref 0 dBm

\*Att 10 dB

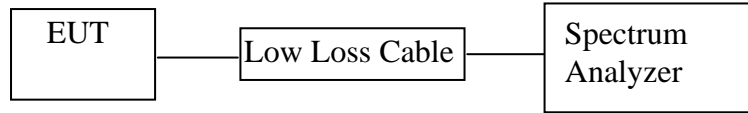
1 PK  
VIEW



Date: 6.SEP.2008 10:29:46

## 7. NUMBER OF HOPPING FREQUENCY TEST

### 7.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

### 7.3. 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.

#### 7.3.1. Bluetooth Optical Mouse (EUT)

Model Number	:	U400
Serial Number	:	N/A
Manufacturer	:	Eastern Times Technology Co., Ltd.

### 7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 6.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX (Hopping on) modes measure it.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set spectrum analyzer Start=2400MHz, Stop = 2483.5MHz.

7.5.3. Set the spectrum analyzer as RBW=100KHz, VBW=300KHz.

7.5.4. Max hold, view and count how many channel in the band.

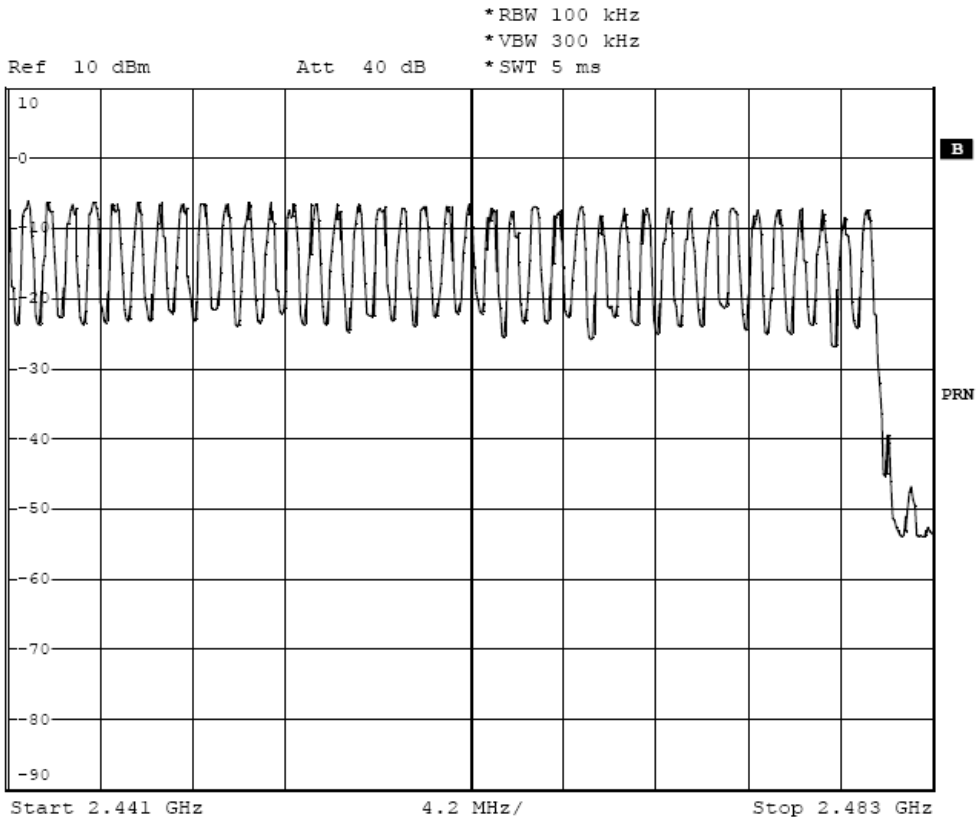
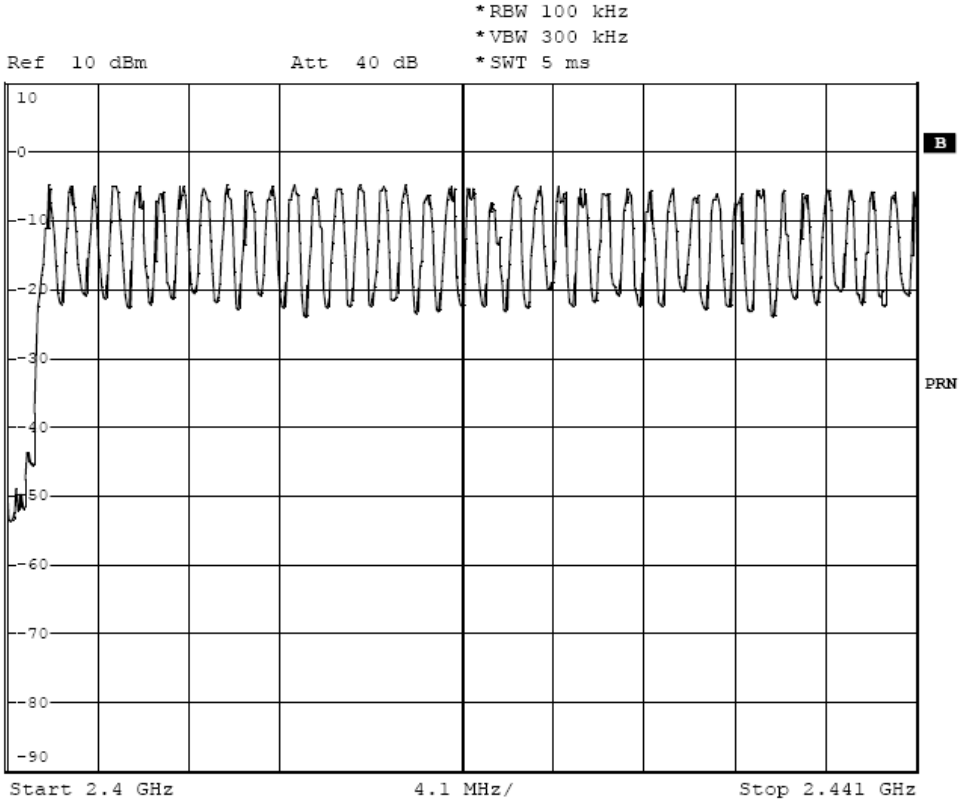
7.6. Test Result

**PASS.**

Date of Test:	<u>August 26, 2008</u>	Temperature:	<u>25°C</u>
EUT:	<u>Bluetooth Optical Mouse</u>	Humidity:	<u>52%</u>
Model No.:	<u>U400</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Feng</u>

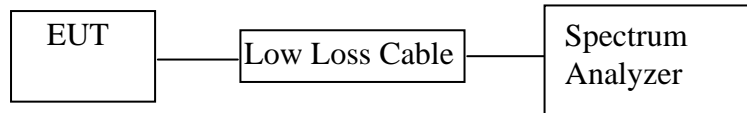
Total number of hopping channel	Measurement result (CH)	Limit (CH)
	79	>15

The spectrum analyzer plots are attached as below.



## 8. DWELL TIME TEST

### 8.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### 8.3. 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.

#### 8.3.1. Bluetooth Optical Mouse (EUT)

Model Number	:	U400
Serial Number	:	N/A
Manufacturer	:	Eastern Times Technology Co., Ltd.

### 8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 7.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

## 8.5. Test Procedure

- 8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 8.5.2. Set center frequency of spectrum analyzer = operating frequency.
- 8.5.3. Set the spectrum analyzer as RBW, VBW=100kHz, Span = 0Hz, Adjust Sweep = 1s. Get the burst (in 1 sec.).
- 8.5.4. Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span = 0Hz, Adjust Sweep = 2ms. Get the pulse time.
- 8.5.5. Repeat above procedures until all frequency measured were complete.

## 8.6. Test Result

**PASS.**

Date of Test:	<u>August 26, 2008</u>	Temperature:	<u>25°C</u>
EUT:	<u>Bluetooth Optical Mouse</u>	Humidity:	<u>52%</u>
Model No.:	<u>U400</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Feng</u>

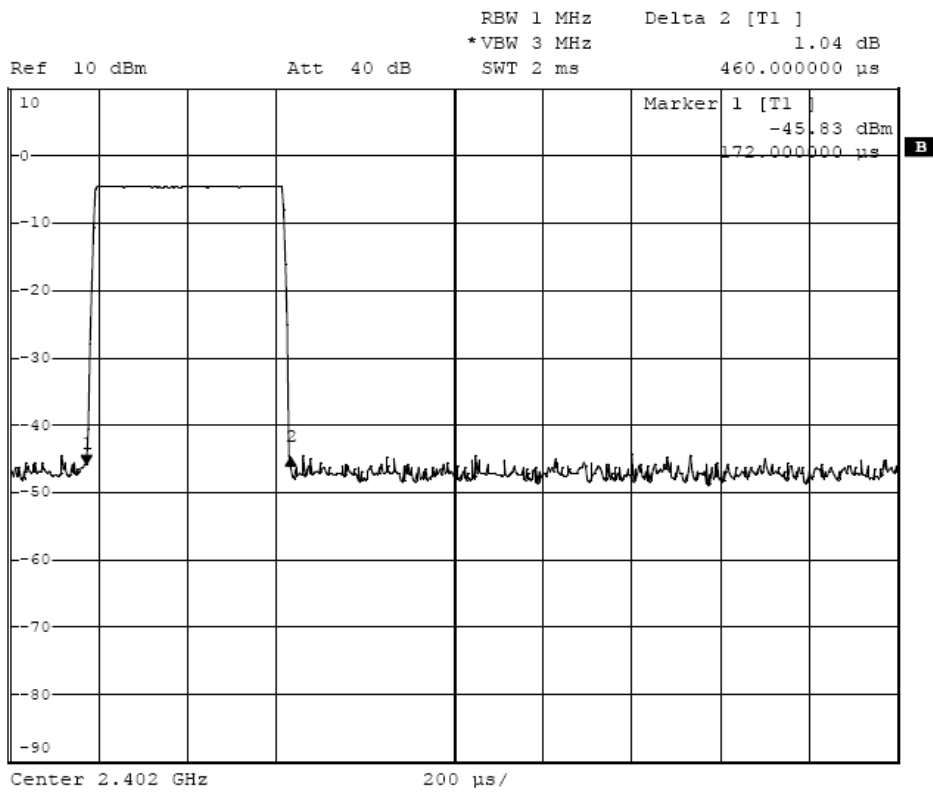
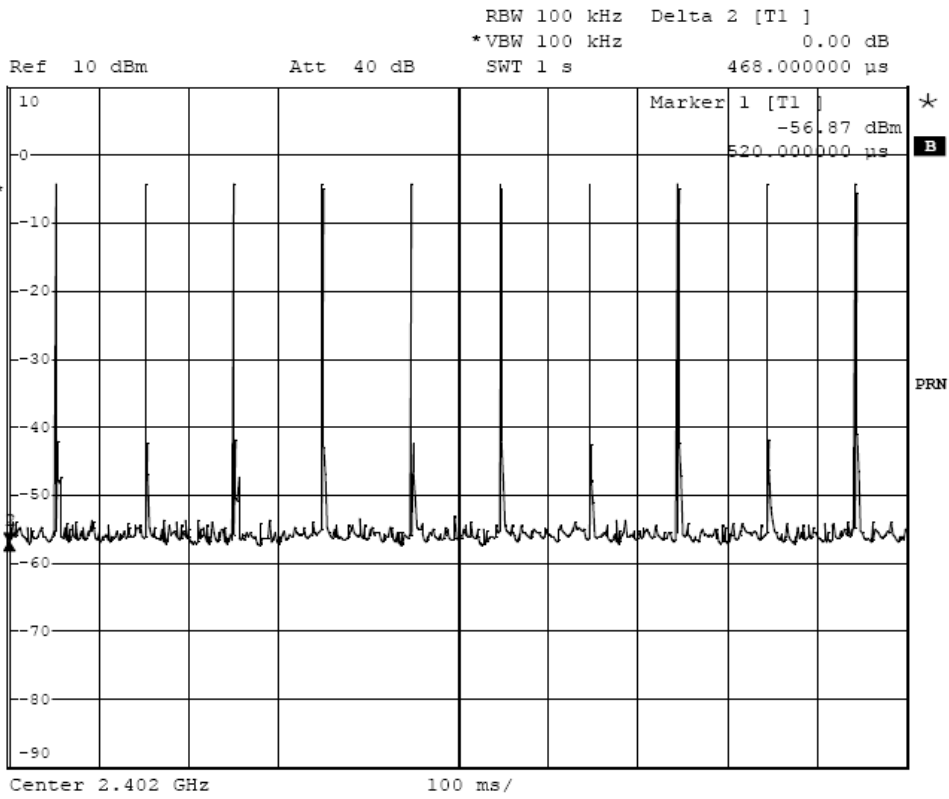
A period transmit time =  $0.4 \times 79 = 31.6$

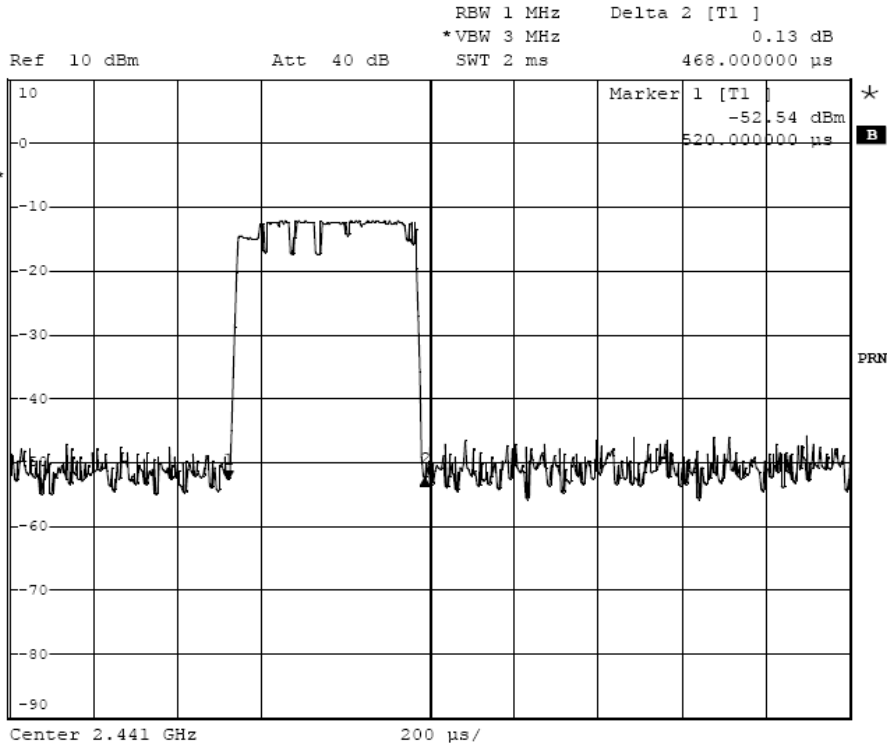
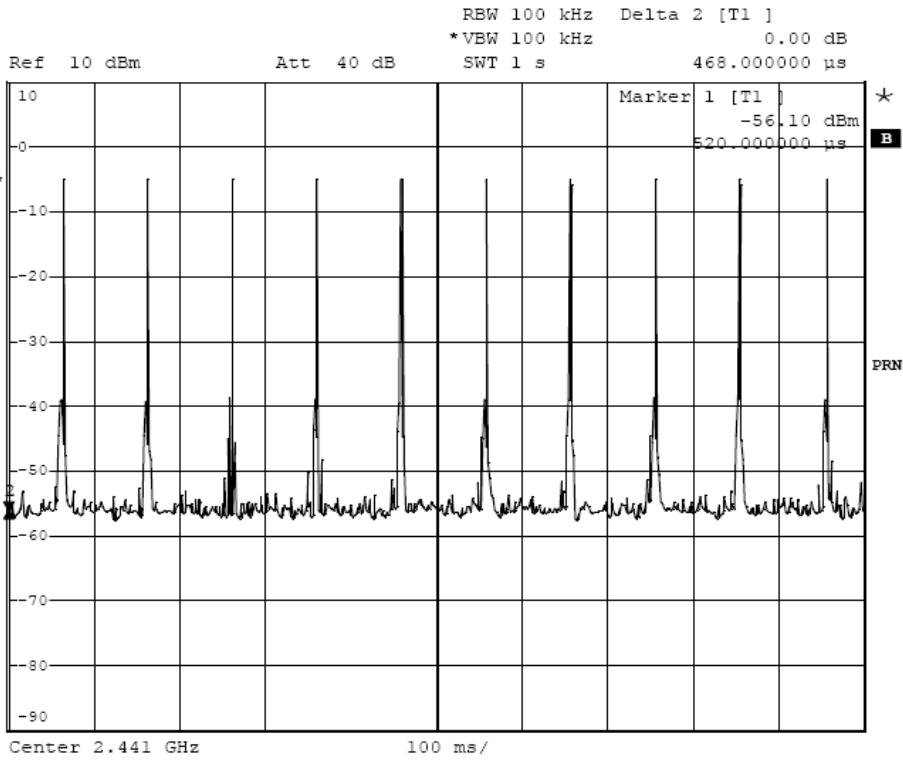
Dwell time = pulse time  $\times$  burst (in 1 sec.)  $\times 31.6$

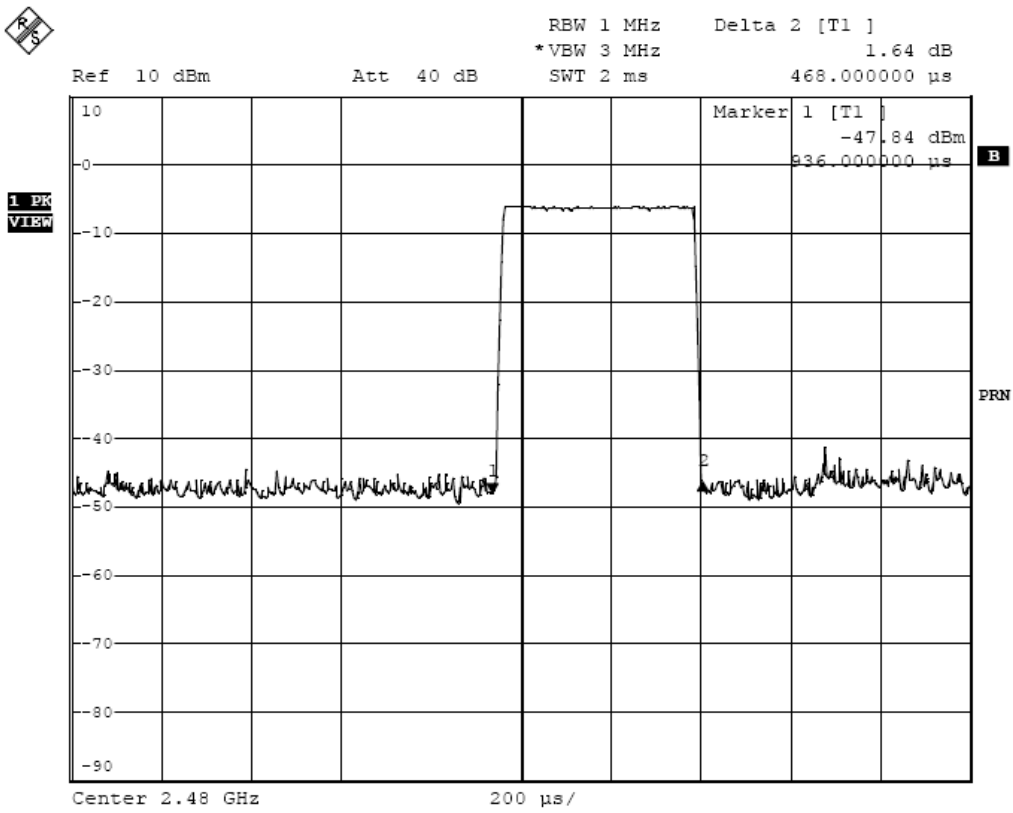
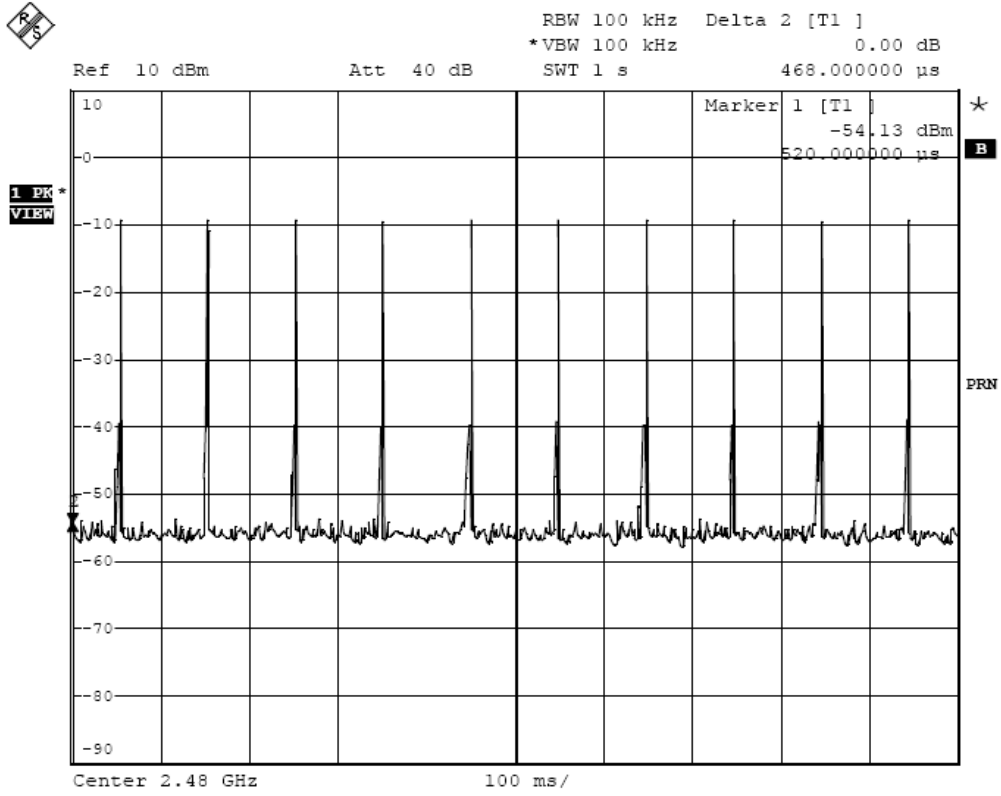
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Burst (in 1 sec.)	Dwell Time (ms)	Limit (ms)
Low	2402	0.460	10	145.36	400
Middle	2441	0.468	10	147.89	400
High	2480	0.468	10	147.89	400

The spectrum analyzer plots are attached as below.



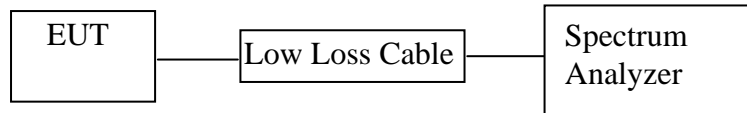






## 9. MAXIMUM PEAK OUTPUT POWER TEST

### 9.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 9.3. 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.

#### 9.3.1. Bluetooth Optical Mouse (EUT)

Model Number	:	U400
Serial Number	:	N/A
Manufacturer	:	Eastern Times Technology Co., Ltd.

### 9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 8.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, 2480MHz TX frequency to transmit.

## 9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz.

9.5.3. Measurement the maximum peak output power.

## 9.6. Test Result

**PASS.**

Date of Test:	<u>August 25, 2008</u>	Temperature:	<u>25°C</u>
EUT:	<u>Bluetooth Optical Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>U400</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Feng</u>

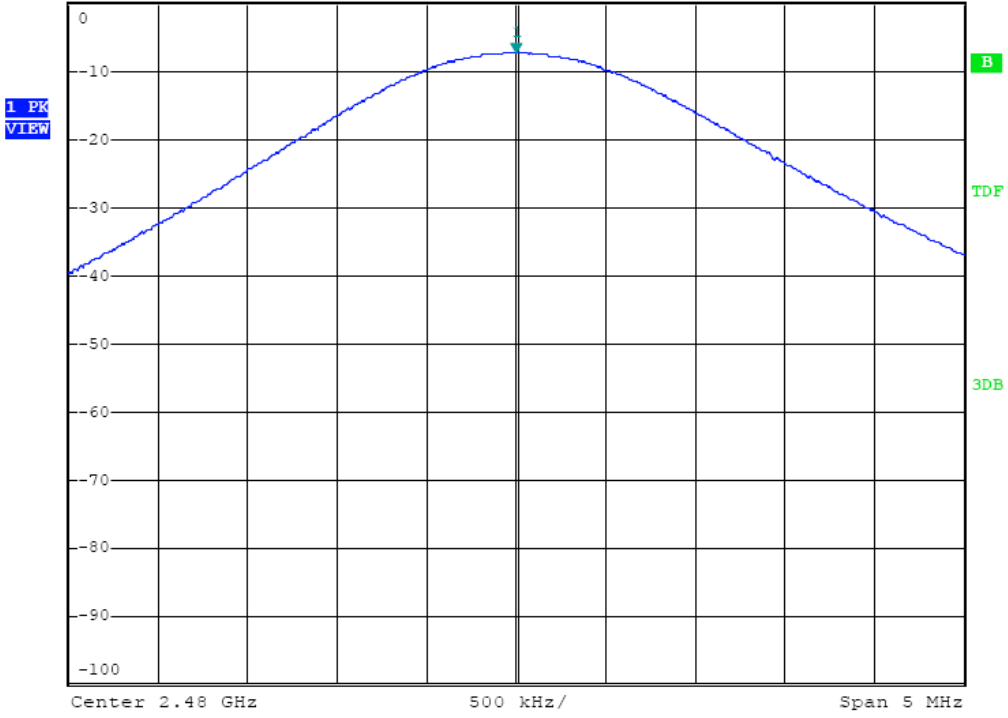
Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Limits dBm / W
Low	2402	-6.54	0.22	30 dBm / 1 W
Middle	2441	-6.48	0.22	30 dBm / 1 W
High	2480	-7.29	0.19	30 dBm / 1 W

The spectrum analyzer plots are attached as below.





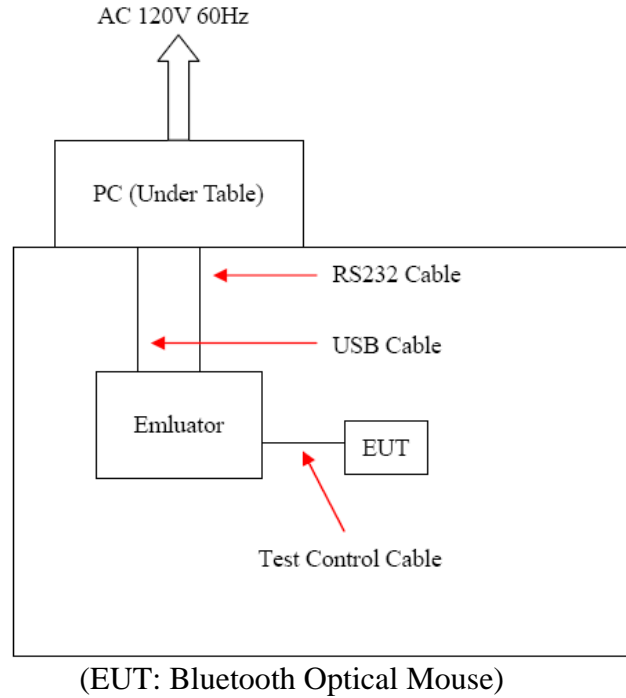
Ref 0 dBm      \*Att 10 dB      \*RBW 1 MHz      Marker 1 [T1]      -7.29 dBm  
\*VBW 3 MHz      \*SWT 5 ms      2.480000000 GHz



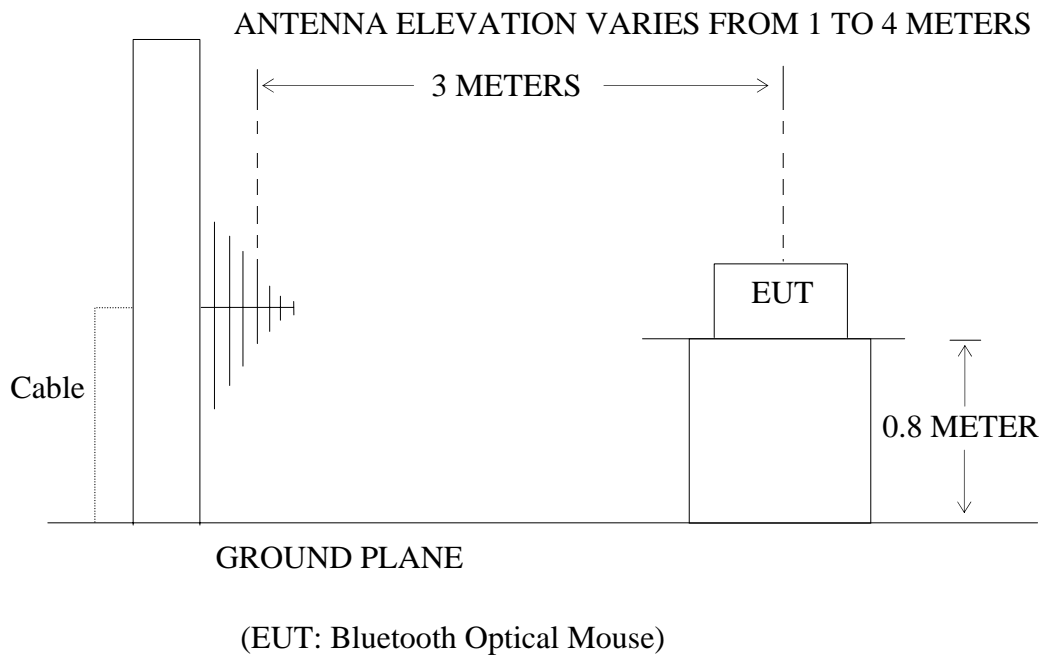
# 10. RADIATED EMISSION TEST

## 10.1. Block Diagram of Test Setup

### 10.1.1. Block diagram of connection between the EUT and simulators



### 10.1.2. Anechoic Chamber Test Setup Diagram





## 10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 10.3.Restricted bands of operation

### 10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 10.4. 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.

### 10.4.1. Bluetooth Optical Mouse (EUT)

Model Number : U400  
 Serial Number : N/A  
 Manufacturer : Eastern Times Technology Co., Ltd.

## 10.5. 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 bandwidth of test receiver (R&S ESI26) 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.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

## 10.6. The Field Strength of Radiation Emission Measurement Results

**PASS.**

Date of Test:	August 27-28, 2008	Temperature:	25°C
EUT:	Bluetooth Optical Mouse	Humidity:	53%
Model No.:	U400	Power Supply:	DC 3V
Test Mode:	TX (2402MHz)	Test Engineer:	Feng

### For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBμV/m)	Factor Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
	QP		QP	QP	QP	
143.7760	23.92	14.48	38.40	43.50	-5.10	Vertical
247.8593	25.76	17.34	43.10	46.00	-2.90	Vertical
259.4433	24.68	18.52	43.20	46.00	-2.80	Vertical
271.5686	23.67	18.23	41.90	46.00	-4.10	Vertical
354.6911	21.41	21.09	42.50	46.00	-3.50	Vertical
366.0865	21.22	21.48	42.70	46.00	-3.30	Vertical
202.8745	24.57	15.03	39.60	43.50	-3.90	Horizontal
247.8591	24.86	17.34	42.20	46.00	-3.80	Horizontal
259.4433	24.58	18.52	43.10	46.00	-2.90	Horizontal
271.5686	25.27	18.23	43.50	46.00	-2.50	Horizontal
285.2610	23.94	18.46	42.40	46.00	-3.60	Horizontal
366.0865	21.42	21.48	42.90	46.00	-3.10	Horizontal

### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBμV/m)		Factor Corr. (dB)	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2401.999	96.65	100.87	-7.45	89.20	93.42	-	-	-	-	Vertical
*4803.997	48.40	50.42	-0.30	48.10	50.12	54	74	-5.90	-23.88	Vertical
7205.996	43.23	45.55	2.97	46.20	48.52	54	74	-7.80	-25.48	Vertical
2401.999	99.45	104.01	-7.45	92.00	96.56	-	-	-	-	Horizontal
*4803.997	50.60	52.84	-0.30	50.30	52.54	54	74	-3.70	-21.46	Horizontal
7205.996	45.93	48.10	2.97	48.90	51.07	54	74	-5.10	-22.93	Horizontal

**Note: 1. The emission emitted by the EUT is too low to be measured except the emission listed above.**

**2. \*: Denotes restricted band of operation.**

Date of Test:	August 27-28, 2008	Temperature:	25°C
EUT:	Bluetooth Optical Mouse	Humidity:	53%
Model No.:	U400	Power Supply:	DC 3V
Test Mode:	TX (2441MHz)	Test Engineer:	Feng

**For 30MHz-1000MHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBμV/m)		Factor Corr. (dB)	Result (dBμV/m)		Limit (dBμV/m)	Margin (dB)		Polarization
	QP			QP	QP		QP	QP	
271.5686	23.87		18.23	42.10		46.00	-3.90		Vertical
285.2610	24.44		18.46	42.90		46.00	-3.10		Vertical
354.6911	22.11		21.09	43.20		46.00	-2.80		Vertical
366.0865	21.82		21.48	43.30		46.00	-2.70		Vertical
509.3559	18.78		24.12	42.90		46.00	-3.10		Vertical
520.2078	18.72		24.08	42.80		46.00	-3.20		Vertical
259.4433	24.88		18.52	43.40		46.00	-2.60		Horizontal
271.5686	24.67		18.23	42.90		46.00	-3.10		Horizontal
285.2610	23.84		18.46	42.30		46.00	-3.70		Horizontal
354.6911	21.41		21.09	42.50		46.00	-3.50		Horizontal
366.0865	21.22		21.48	42.70		46.00	-3.30		Horizontal
468.1650	19.35		23.55	42.90		46.00	-3.10		Horizontal

**For 1GHz-25GHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBμV/m)		Factor Corr. (dB)	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2441.001	97.15	100.78	-7.35	89.80	93.43	-	-	-	-	Vertical
*4882.003	47.96	50.25	0.14	48.10	50.39	54	74	-5.90	-23.61	Vertical
*7323.005	43.36	45.36	3.24	46.60	48.60	54	74	-7.40	-25.40	Vertical
2441.001	100.45	104.90	-7.35	93.10	97.55	-	-	-	-	Horizontal
*4882.003	49.86	52.08	0.14	50.00	52.22	54	74	-4.00	-21.78	Horizontal
*7323.005	44.36	46.61	3.24	47.60	49.85	54	74	-6.40	-24.15	Horizontal

**Note: 1.The emission emitted by the EUT is too low to be measured except the emission listed above.****2. \*: Denotes restricted band of operation.**

Date of Test:	August 27-28, 2008	Temperature:	25°C
EUT:	Bluetooth Optical Mouse	Humidity:	53%
Model No.:	U400	Power Supply:	DC 3V
Test Mode:	TX (2480MHz)	Test Engineer:	Feng

**For 30MHz-1000MHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBμV/m)		Factor Corr. (dB)	Result (dBμV/m)		Limit (dBμV/m)	Margin (dB)		Polarization
	QP			QP	QP		QP	QP	
259.4433	23.98		18.52	42.50		46.00	-3.50		Vertical
271.5686	24.87		18.23	43.10		46.00	-2.90		Vertical
285.2610	24.04		18.46	42.50		46.00	-3.50		Vertical
354.6911	21.81		21.09	42.90		46.00	-3.10		Vertical
366.0865	21.32		21.48	42.80		46.00	-3.20		Vertical
377.8480	21.56		21.54	43.10		46.00	-2.90		Vertical
259.4433	24.58		18.52	43.10		46.00	-2.90		Horizontal
271.5686	24.07		18.23	42.30		46.00	-3.70		Horizontal
354.6911	21.71		21.09	42.80		46.00	-3.20		Horizontal
366.0865	21.32		21.48	42.80		46.00	-3.20		Horizontal
377.8480	21.66		21.54	43.20		46.00	-2.80		Horizontal
389.9873	20.82		21.88	42.70		46.00	-3.30		Horizontal

**For 1GHz-25GHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBμV/m)		Factor Corr. (dB)	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2479.999	95.17	99.31	-7.37	87.80	91.94	-	-	-	-	Vertical
*4959.998	49.18	51.09	0.52	49.70	51.61	54	74	-4.30	-22.39	Vertical
*7439.996	42.41	44.75	3.69	46.10	48.44	54	74	-7.90	-25.56	Vertical
2479.999	98.67	102.98	-7.37	91.30	95.61	-	-	-	-	Horizontal
*4959.998	50.08	52.29	0.52	50.60	52.81	54	74	-3.40	-21.19	Horizontal
*7439.996	43.81	46.09	3.69	47.50	49.78	54	74	-6.50	-24.22	Horizontal

**Note: 1.The emission emitted by the EUT is too low to be measured except the emission listed above.****2. \*: Denotes restricted band of operation.**



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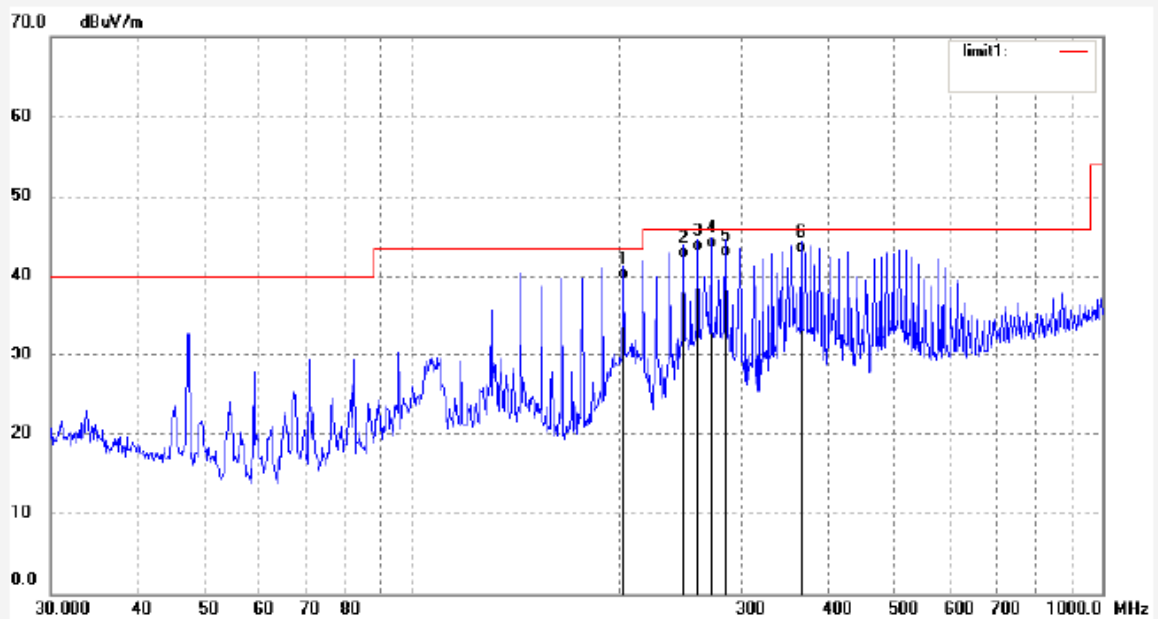
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #356  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2402MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/44/03  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	202.8745	24.57	15.03	39.60	43.50	-3.90	QP	
2	247.8591	24.86	17.34	42.20	46.00	-3.80	QP	
3	259.4433	24.58	18.52	43.10	46.00	-2.90	QP	
4	271.5686	25.27	18.23	43.50	46.00	-2.50	QP	
5	285.2610	23.94	18.46	42.40	46.00	-3.60	QP	
6	366.0865	21.42	21.48	42.90	46.00	-3.10	QP	



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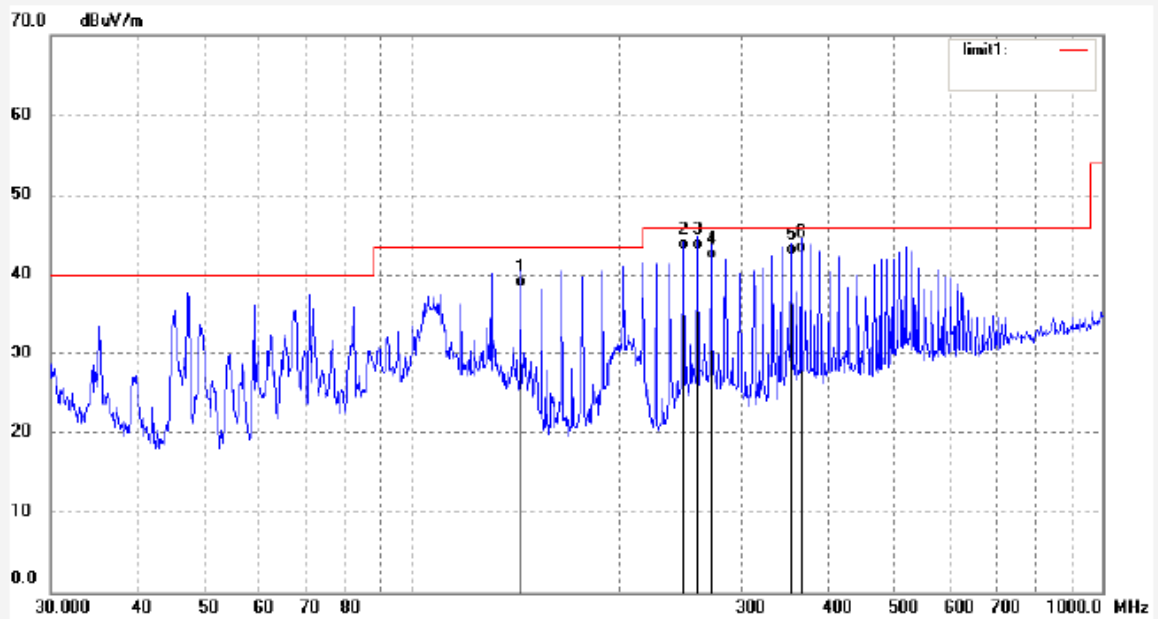
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #357  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2402MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/45/08  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	143.7760	23.92	14.48	38.40	43.50	-5.10	QP	
2	247.8593	25.76	17.34	43.10	46.00	-2.90	QP	
3	259.4433	24.68	18.52	43.20	46.00	-2.80	QP	
4	271.5686	23.67	18.23	41.90	46.00	-4.10	QP	
5	354.6911	21.41	21.09	42.50	46.00	-3.50	QP	
6	366.0865	21.22	21.48	42.70	46.00	-3.30	QP	



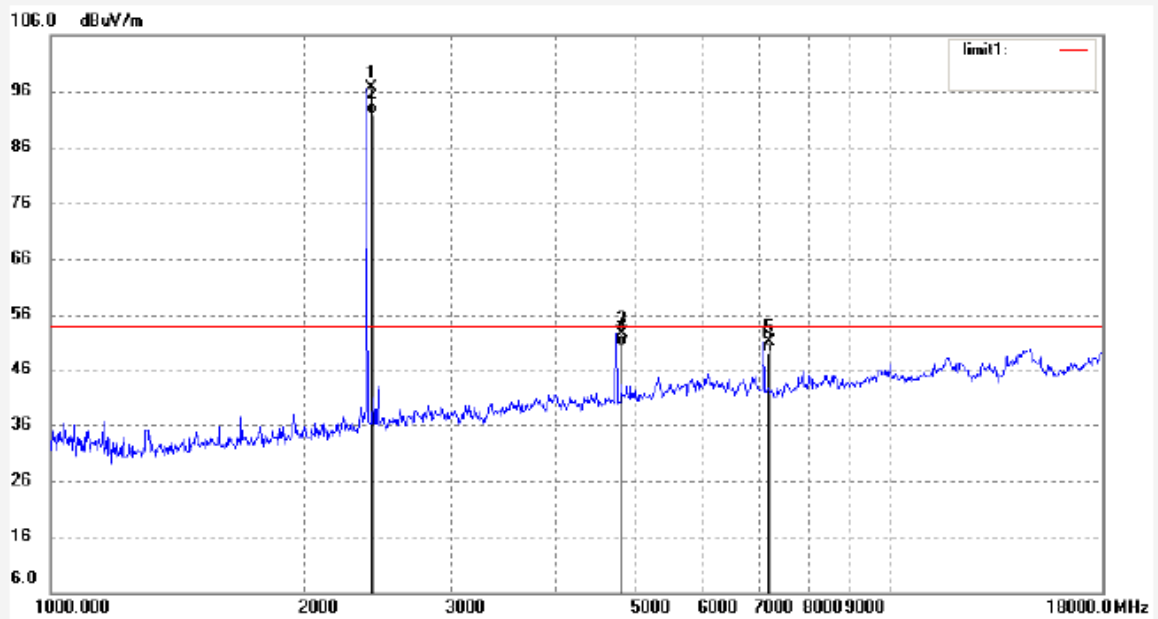
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Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #354	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 08/08/27/
Temp.( C)/Hum.(%) 25 C / 52 %	Time: 11/43/11
EUT: Bluetooth Optical Mouse	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: U400	
Manufacturer: Eastern Times	

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2401.999	104.01	-7.45	96.56	-	-	peak	
2	2401.999	99.45	-7.45	92.00	-	-	AVG	
3	4803.997	52.84	-0.30	52.54	74.00	-21.46	peak	
4	4803.997	50.60	-0.30	50.30	54.00	-3.70	AVG	
5	7205.996	48.10	2.97	51.07	74.00	-22.93	peak	
6	7205.996	45.93	2.97	48.90	54.00	-5.10	AVG	





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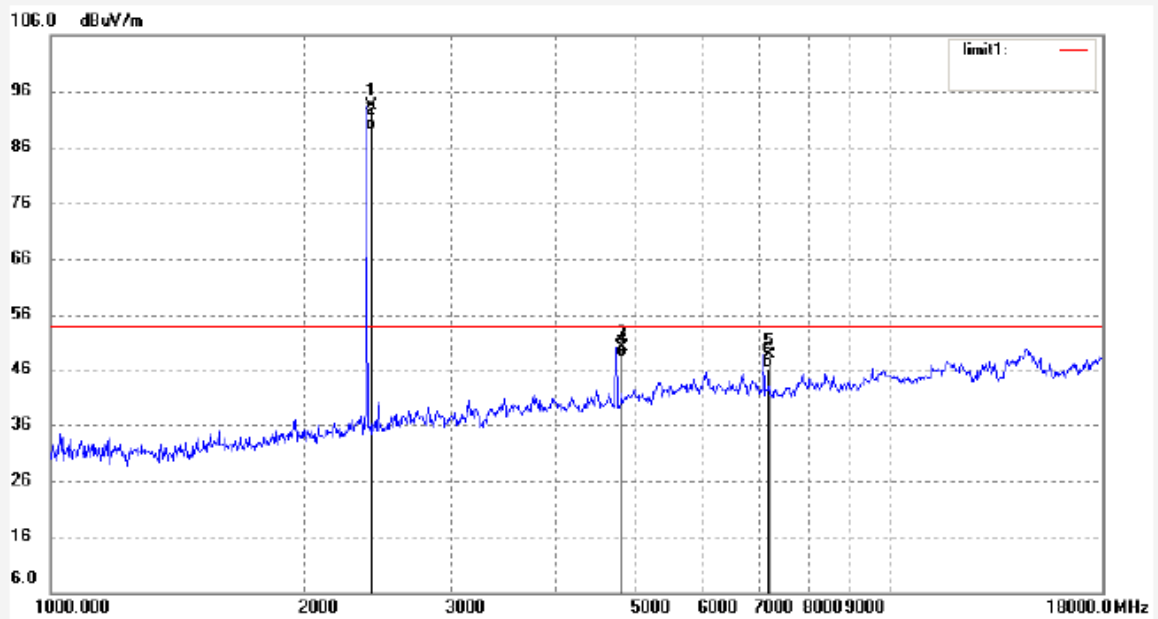
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #355  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 52 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2402MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 11/49/28  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2401.999	100.87	-7.45	93.42	-	-	peak	
2	2401.999	96.65	-7.45	89.20	-	-	AVG	
3	4803.997	50.42	-0.30	50.12	74.00	-23.88	peak	
4	4803.997	48.40	-0.30	48.10	54.00	-5.90	AVG	
5	7205.996	45.55	2.97	48.52	74.00	-25.48	peak	
6	7205.996	43.23	2.97	46.20	54.00	-7.80	AVG	



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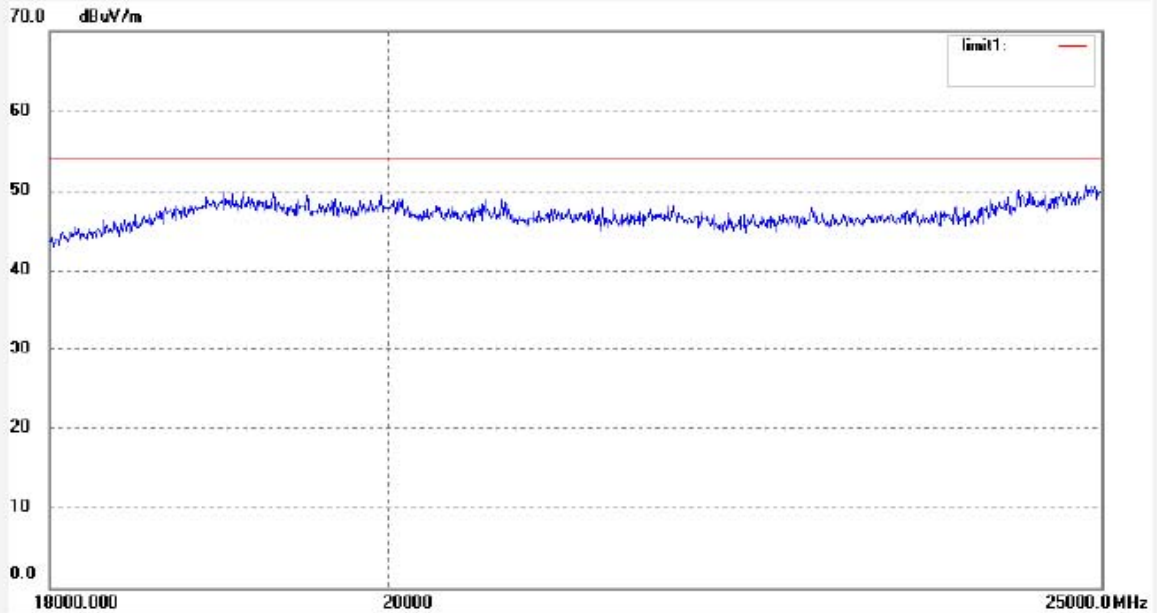
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #367  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2402MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/28/  
Time: 8/54/24  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
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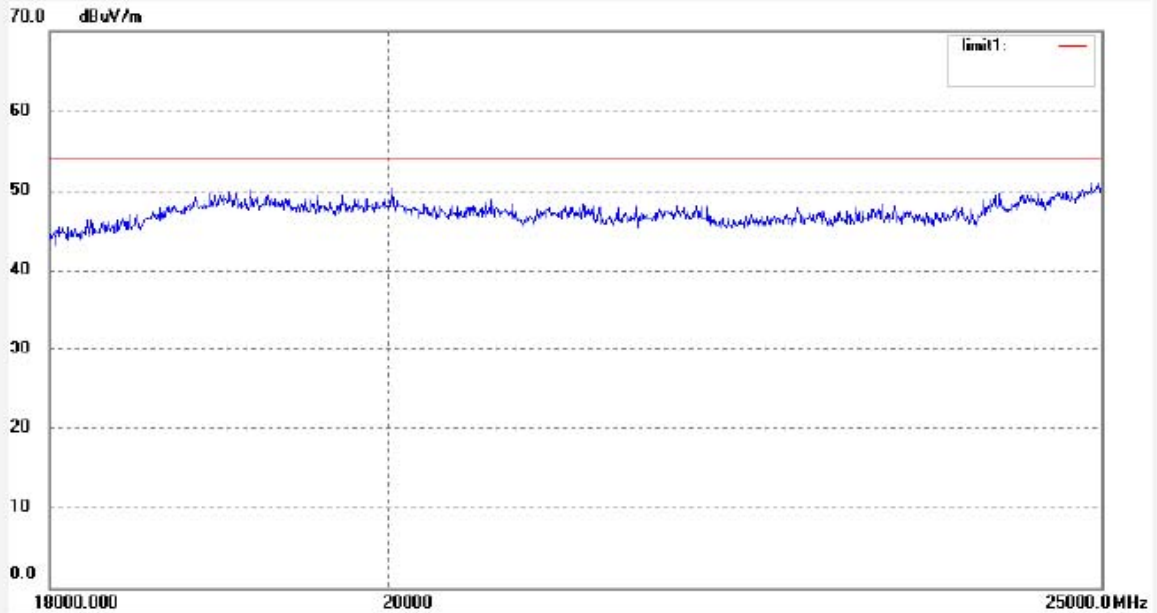
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #366  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2402MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/28/  
Time: 8/52/52  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
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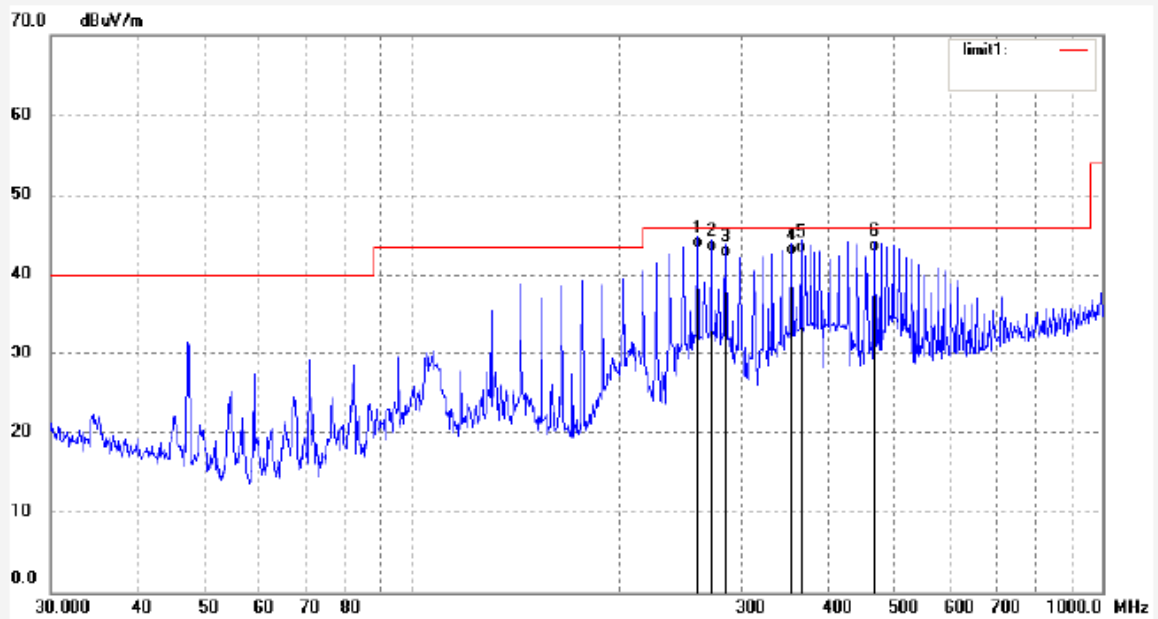
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #359  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/49/37  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	259.4433	24.88	18.52	43.40	46.00	-2.60	QP	
2	271.5686	24.67	18.23	42.90	46.00	-3.10	QP	
3	285.2610	23.84	18.46	42.30	46.00	-3.70	QP	
4	354.6911	21.41	21.09	42.50	46.00	-3.50	QP	
5	366.0865	21.22	21.48	42.70	46.00	-3.30	QP	
6	468.1650	19.35	23.55	42.90	46.00	-3.10	QP	



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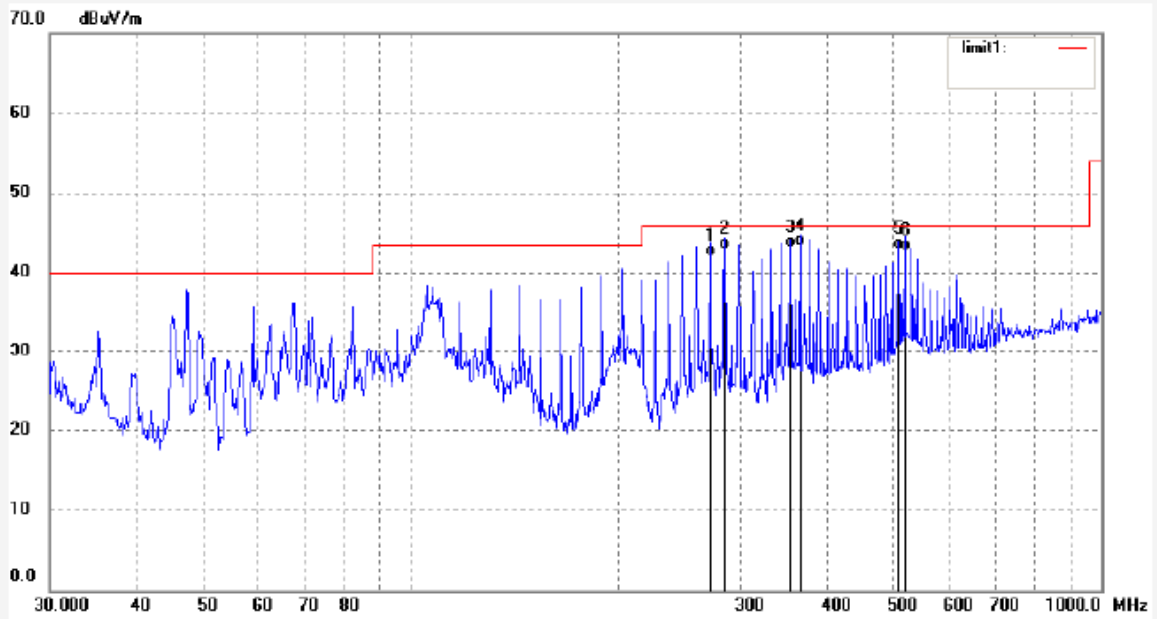
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #358  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/48/44  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	271.5686	23.87	18.23	42.10	46.00	-3.90	QP	
2	285.2610	24.44	18.46	42.90	46.00	-3.10	QP	
3	354.6911	22.11	21.09	43.20	46.00	-2.80	QP	
4	366.0865	21.82	21.48	43.30	46.00	-2.70	QP	
5	509.3559	18.78	24.12	42.90	46.00	-3.10	QP	
6	520.2078	18.72	24.08	42.80	46.00	-3.20	QP	



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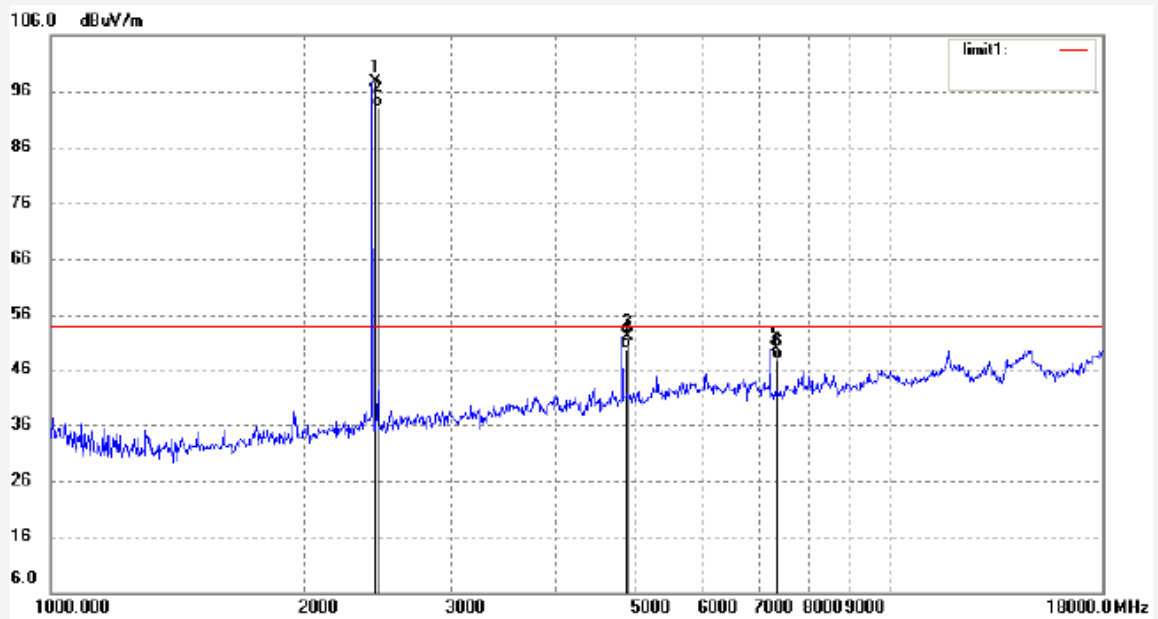
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #353  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 11/40/23  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2441.001	104.90	-7.35	97.55	-	-	peak	
2	2441.001	100.45	-7.35	93.10	-	-	AVG	
3	4882.003	52.08	0.14	52.22	74.00	-21.78	peak	
4	4882.003	49.86	0.14	50.00	54.00	-4.00	AVG	
5	7323.005	46.61	3.24	49.85	74.00	-24.15	peak	
6	7323.005	44.36	3.24	47.60	54.00	-6.40	AVG	



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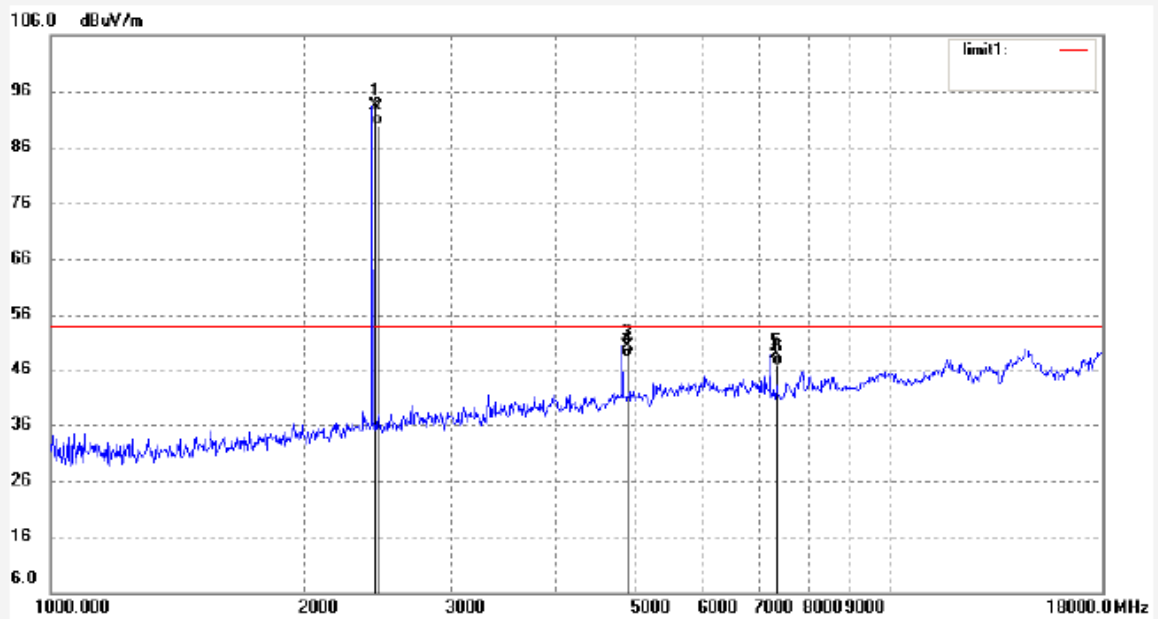
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #352  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 11/38/01  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2441.001	100.78	-7.35	93.43	-	-	peak	
2	2441.001	97.15	-7.35	89.80	-	-	AVG	
3	4882.003	50.25	0.14	50.39	74.00	-23.61	peak	
4	4882.003	47.96	0.14	48.10	54.00	-5.90	AVG	
5	7323.005	45.36	3.24	48.60	74.00	-25.40	peak	
6	7323.005	43.36	3.24	46.60	54.00	-7.40	AVG	





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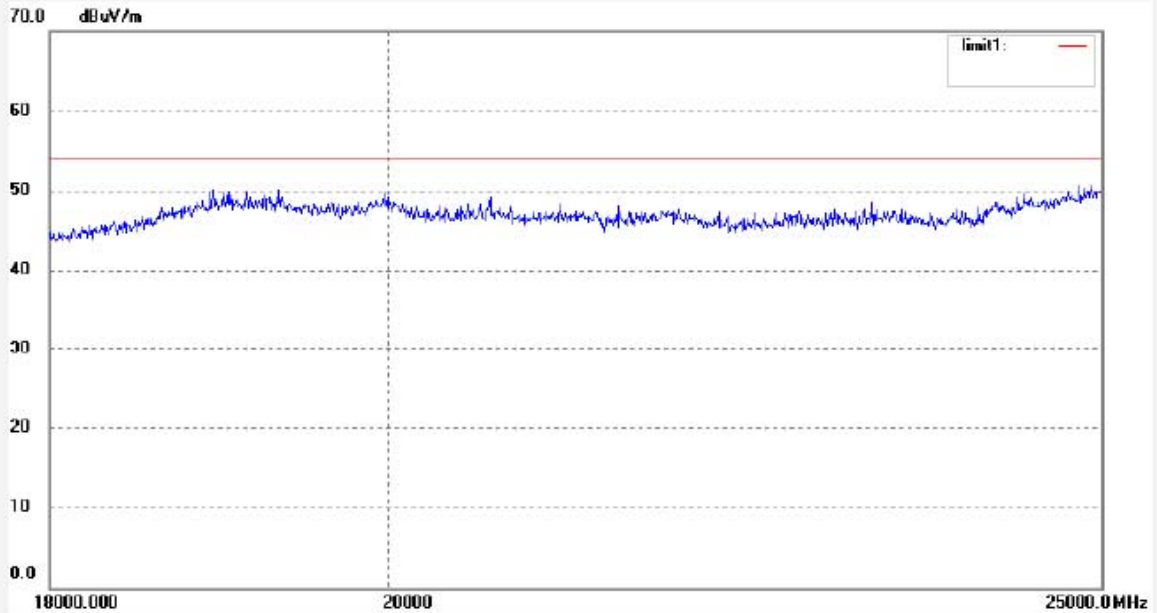
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #364  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/28/  
Time: 8/48/57  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
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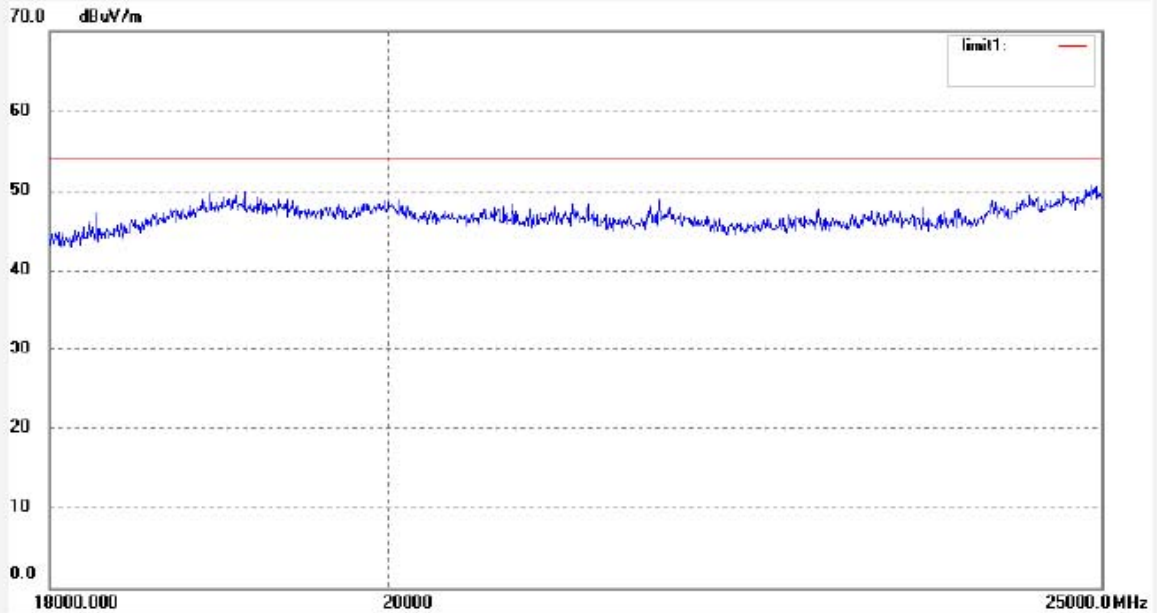
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #365  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2441MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/28/  
Time: 8/50/00  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
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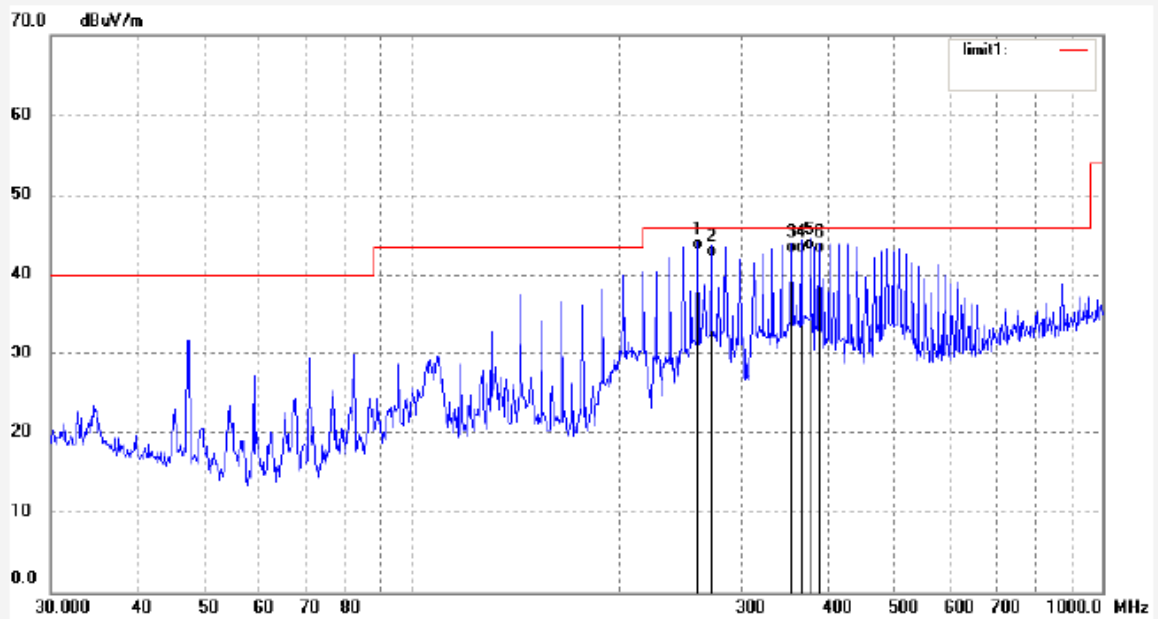
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #360  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2480MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/50/38  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	259.4433	24.58	18.52	43.10	46.00	-2.90	QP	
2	271.5686	24.07	18.23	42.30	46.00	-3.70	QP	
3	354.6911	21.71	21.09	42.80	46.00	-3.20	QP	
4	366.0865	21.32	21.48	42.80	46.00	-3.20	QP	
5	377.8480	21.66	21.54	43.20	46.00	-2.80	QP	
6	389.9873	20.82	21.88	42.70	46.00	-3.30	QP	



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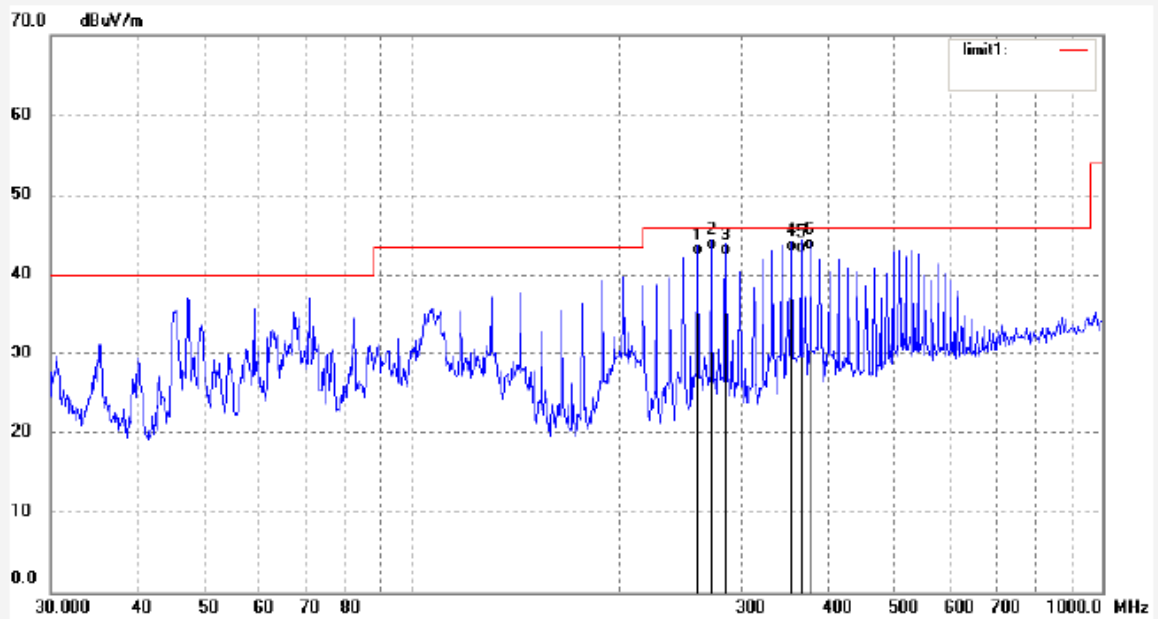
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #361  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2480MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 13/51/21  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	259.4433	23.98	18.52	42.50	46.00	-3.50	QP	
2	271.5686	24.87	18.23	43.10	46.00	-2.90	QP	
3	285.2610	24.04	18.46	42.50	46.00	-3.50	QP	
4	354.6911	21.81	21.09	42.90	46.00	-3.10	QP	
5	366.0865	21.32	21.48	42.80	46.00	-3.20	QP	
6	377.8480	21.56	21.54	43.10	46.00	-2.90	QP	



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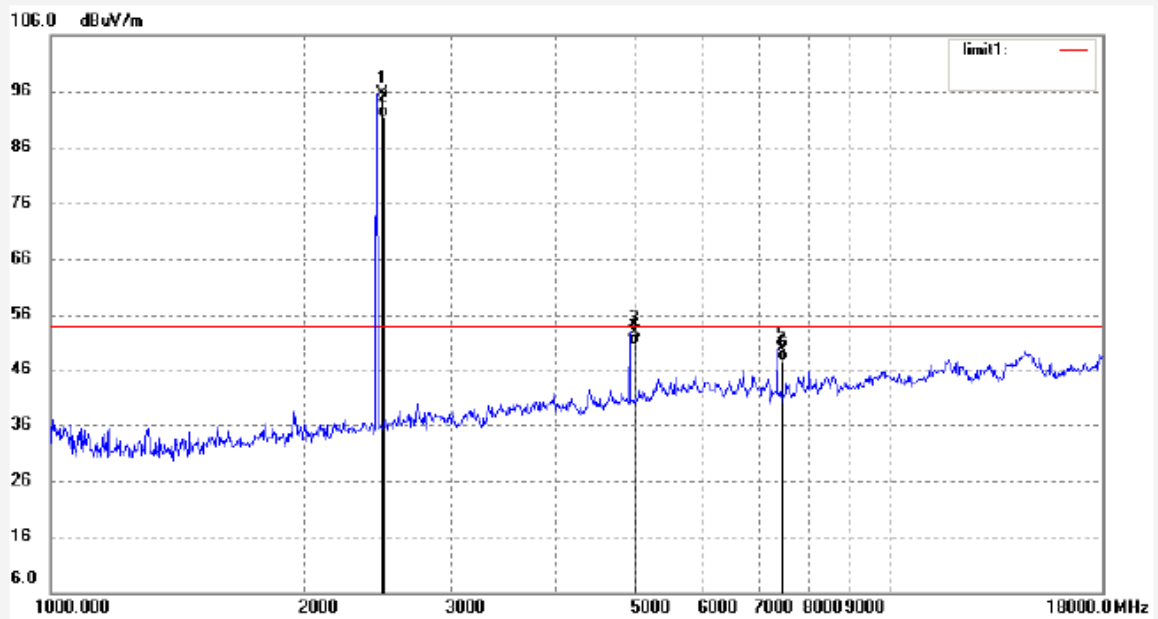
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #350  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2480MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Horizontal  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 11/18/38  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2479.999	102.98	-7.37	95.61	-	-	peak	
2	2479.999	98.67	-7.37	91.30	-	-	AVG	
3	4959.998	52.29	0.52	52.81	74.00	-21.19	peak	
4	4959.998	50.08	0.52	50.60	54.00	-3.40	AVG	
5	7439.996	46.09	3.69	49.78	74.00	-24.22	peak	
6	7439.996	43.81	3.69	47.50	54.00	-6.50	AVG	



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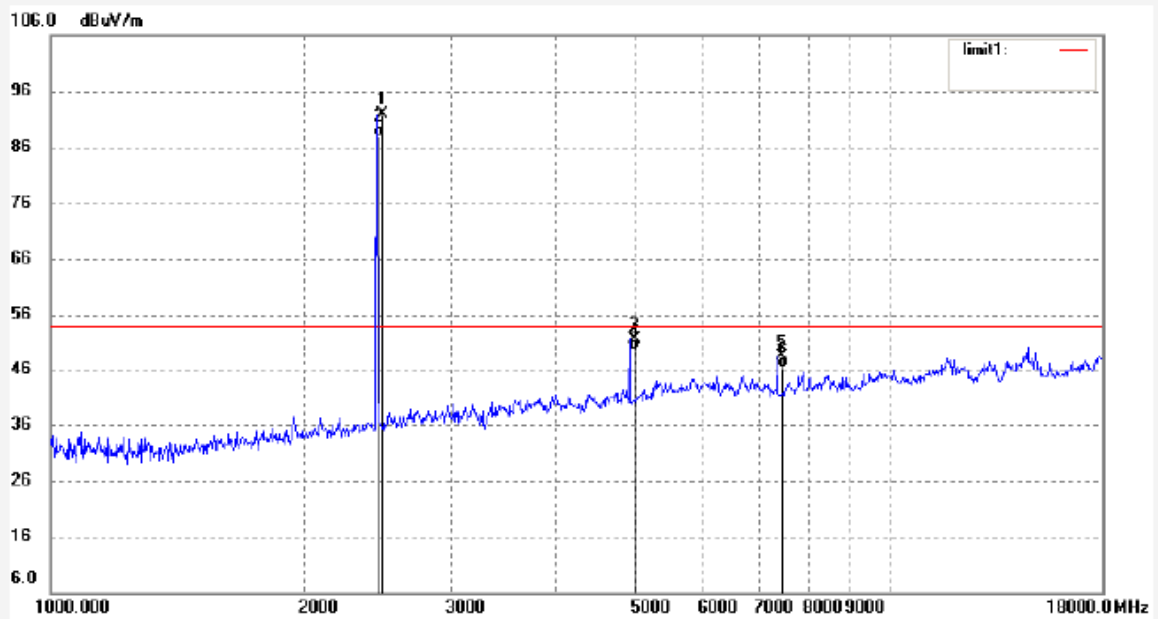
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #351  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 53 %  
EUT: Bluetooth Optical Mouse  
Mode: TX 2480MHz  
Model: U400  
Manufacturer: Eastern Times

Polarization: Vertical  
Power Source: DC 3V  
Date: 08/08/27/  
Time: 11/34/11  
Engineer Signature:  
Distance: 3m

Note: Sample No.:083203 Report No.:ATE20081574



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2479.999	99.31	-7.37	91.94	-	-	peak	
2	2479.999	95.17	-7.37	87.80	-	-	AVG	
3	4959.998	51.09	0.52	51.61	74.00	-22.39	peak	
4	4959.998	49.18	0.52	49.70	54.00	-4.30	AVG	
5	7439.996	44.75	3.69	48.44	74.00	-25.56	peak	
6	7439.996	42.41	3.69	46.10	54.00	-7.90	AVG	



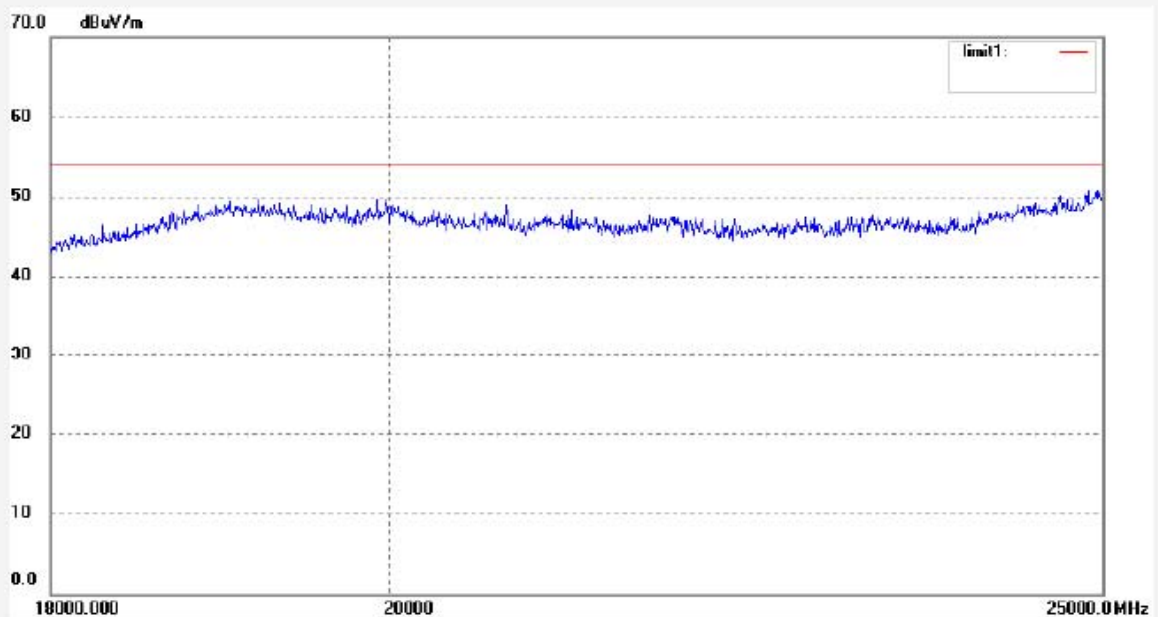
**ACCURATE TECHNOLOGY CO., LTD.**

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.: RTTE #363	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 08/08/28/
Temp.( C)/Hum.(%) 25 C / 53 %	Time: 8/47/29
EUT: Bluetooth Optical Mouse	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: U400	
Manufacturer: Eastern Times	

Note: Sample No.:083203 Report No.:ATE20081574



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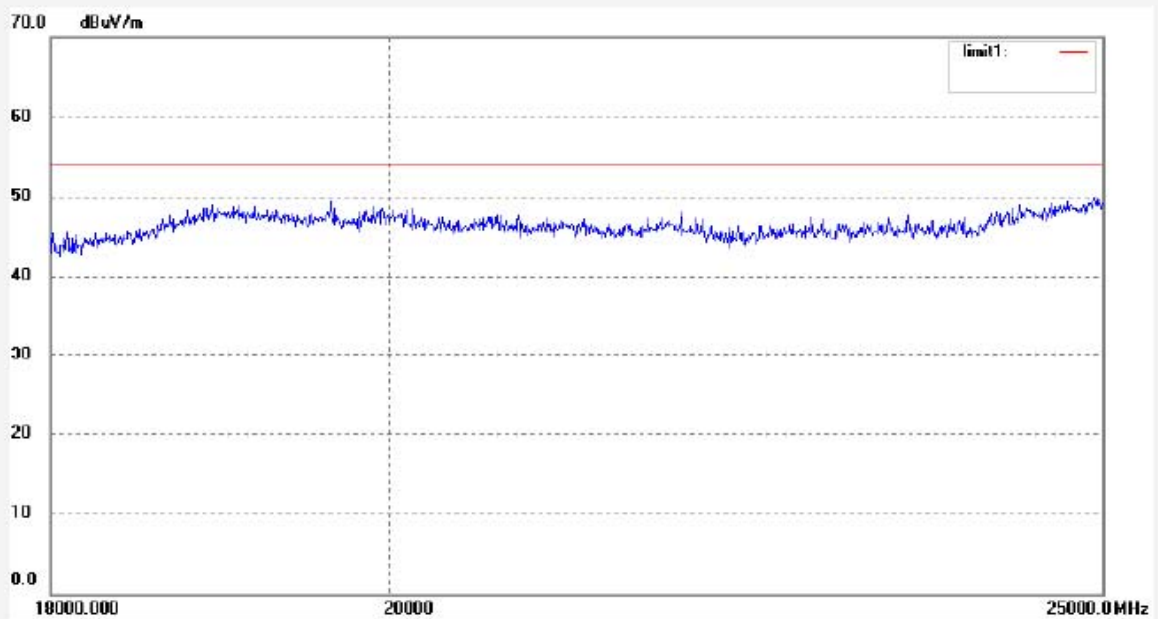


**ACCURATE TECHNOLOGY CO., LTD.**  
 F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
 Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: RTTE #362	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 08/08/28/
Temp.( C)/Hum.(%) 25 C / 53 %	Time: 8/46/28
EUT: Bluetooth Optical Mouse	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: U400	
Manufacturer: Eastern Times	

Note: Sample No.:083203 Report No.:ATE20081574

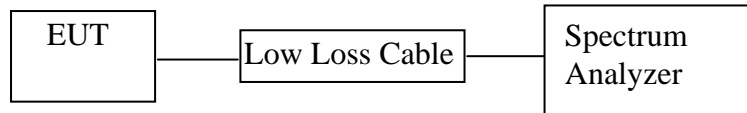


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
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## 11. BAND EDGE COMPLIANCE TEST

### 11.1. Block Diagram of Test Setup



(EUT: Bluetooth Optical Mouse)

### 11.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 11.3. 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.

#### 11.3.1. Bluetooth Optical Mouse (EUT)

Model Number	:	U400
Serial Number	:	N/A
Manufacturer	:	Eastern Times Technology Co., Ltd.



## 11.4. Operating Condition of EUT

11.4.1. Setup the EUT and simulator as shown as Section 10.1.

11.4.2. Turn on the power of all equipment.

11.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

## 11.5. Test Procedure

11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz with convenient frequency span including 100kHz bandwidth from band edge.

11.5.3. The band edges was measured and recorded.

## 11.6. Test Result

**Pass**

### 11.6.1. Conducted test

Frequency (MHz)	Peak Power Output (dBm)	Emission Read Value (dBm)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	-6.19	-66.52	60.33	> 20dBc
2480	-7.06	-68.93	61.87	> 20dBc

### 11.6.2. Radiated emission test

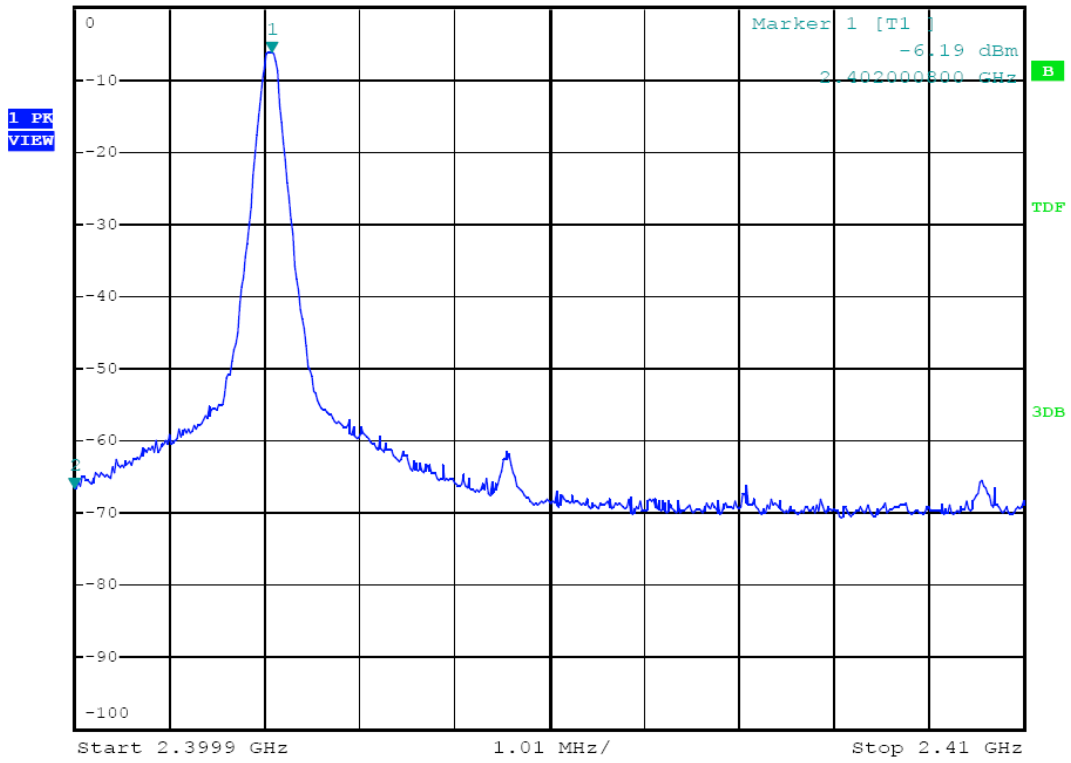
Lower band edge: Emission radiated outside of the lower band edge are 60.33 dB below the level of the fundamental.

Upper band edge: Emission radiated outside of the upper band edge are 61.87 dB below the level of the fundamental.

Frequency (MHz)	The emission of carrier power strength (dB $\mu$ V/m)		The maximum field strength at the band edge (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)		Margin (dB)	
	AV	PK	AV	PK	AV	PK	AV	PK
2402	92.00	96.56	31.67	36.23	54	74	-22.33	-37.77
2480	91.30	95.61	29.43	33.74	54	74	-24.57	-40.26



Ref 0 dBm \*Att 10 dB \*RBW 100 kHz Marker 2 [T1 ]  
\*VBW 300 kHz -66.52 dBm  
\*SWT 5 ms 2.399900000 GHz



Ref 0 dBm \*Att 10 dB \*RBW 100 kHz Marker 2 [T1 ]  
\*VBW 300 kHz -68.93 dBm  
\*SWT 5 ms 2.483600000 GHz

