

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

Wireless Bluetooth Mouse
Model No.: DS-2460

FCC ID:TUVDS-2460

Prepared for : Eastern Times Technology Co., Ltd.
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Report Number : ATE20140089
Date of Test : February 25-28, 2014
Date of Report : February 28, 2014

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Test Report Certification

Applicant : Eastern Times Technology Co., Ltd.
Manufacturer : Eastern Times Technology Co., Ltd.
EUT Description : Wireless Bluetooth Mouse
(A) MODEL NO.: DS-2460
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: DC 3V

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.4- 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C 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 : February 25-28, 2014

Prepared by : Bob Wang
(Engineer)

Approved & Authorized Signer : Ken
(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Wireless Bluetooth Mouse
Model Number	:	DS-2460
Frequency Band	:	2402MHz-2480MHz
Number of Channels	:	79
Modulation type	:	GFSK
Antenna Gain	:	0dBi
Power Supply	:	DC 3V
Applicant	:	Eastern Times Technology Co., Ltd.
Address	:	Building D, Nan An Industry Park, Youganpu Village Fenggang Town, Dongguan City, Guangdong, China
Manufacturer	:	Eastern Times Technology Co., Ltd.
Address	:	Building D, Nan An Industry Park, Youganpu Village Fenggang Town, Dongguan City, Guangdong, China
Date of sample received	:	February 22, 2014
Date of Test	:	February 25-28, 2014

1.2. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC
The Registration Number is 752051

Listed by Industry Canada
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee
for Laboratories
The Certificate Registration Number is L3193

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

1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

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

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

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

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2014	Jan. 10, 2015
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2014	Jan. 10, 2015
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2014	Jan. 10, 2015
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2014	Jan. 10, 2015
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2014	Jan. 14, 2015
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2014	Jan. 14, 2015
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2014	Jan. 10, 2015
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2014	Jan. 10, 2015

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

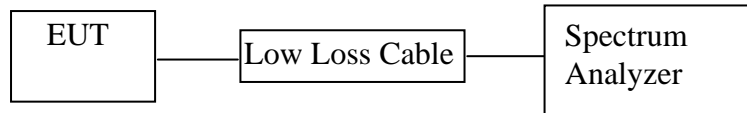
(EUT: Wireless Bluetooth Mouse)

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
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) Section 15.209	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: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number : DS-2460
 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 (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 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 30 kHz and VBW to 100 kHz.

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.

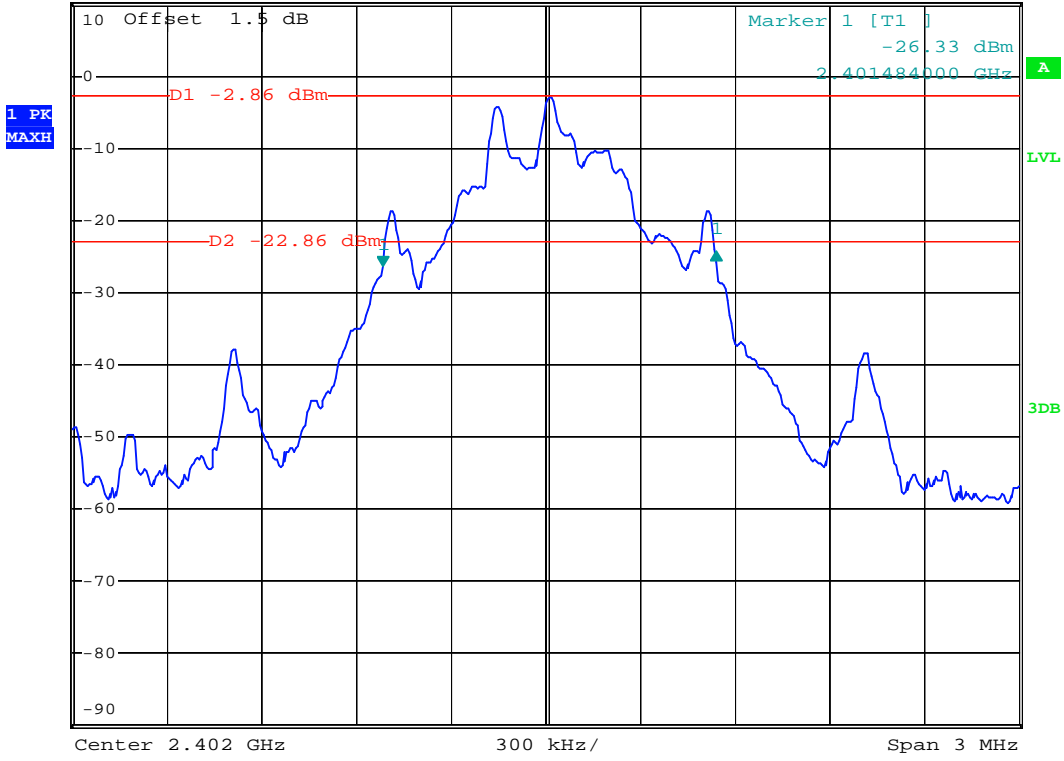
Date of Test:	<u>February 25, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Star</u>

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)
Low	2402	1.056	---
Middle	2441	1.050	---
High	2480	1.056	---

The spectrum analyzer plots are attached as below.

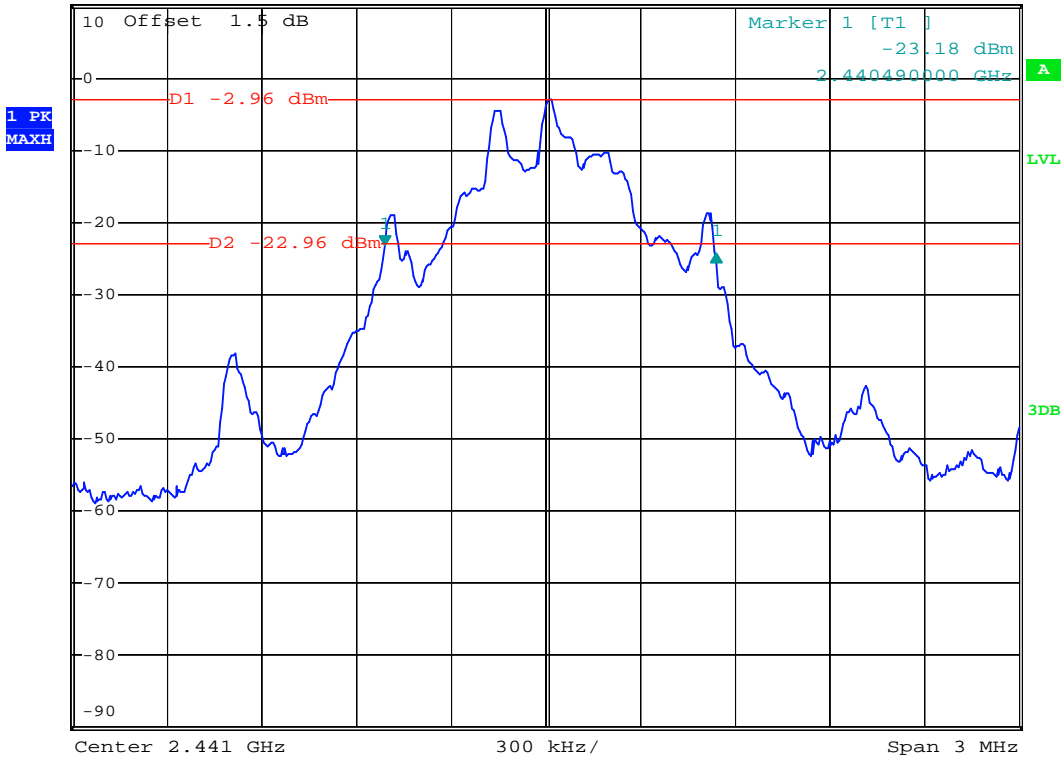


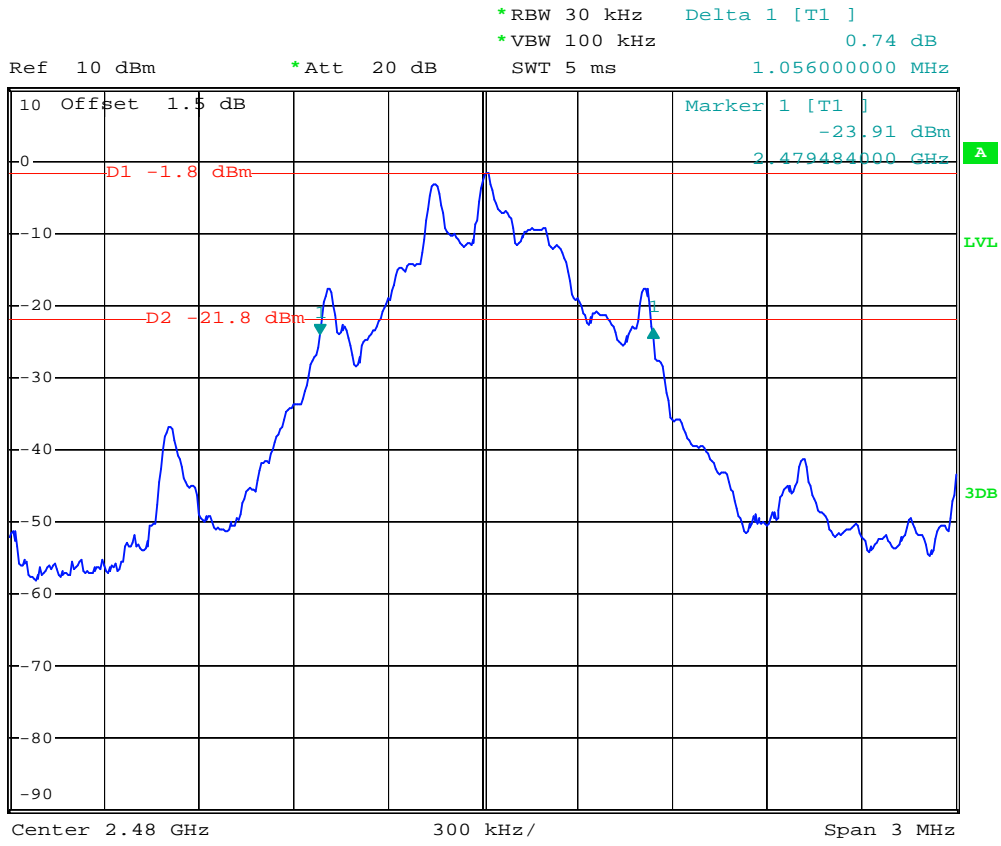
*RBW 30 kHz Delta 1 [T1]
*VBW 100 kHz 2.00 dB
Ref 10 dBm *Att 20 dB SWT 5 ms 1.056000000 MHz





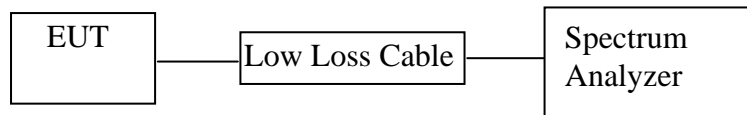
*RBW 30 kHz Delta 1 [T1]
*VBW 100 kHz -1.09 dB
Ref 10 dBm *Att 20 dB SWT 5 ms 1.050000000 MHz





6. CARRIER FREQUENCY SEPARATION TEST

6.1. Block Diagram of Test Setup



(EUT: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number : DS-2460
 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 6.1.

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, and 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 100 kHz and VBW to 300 kHz. 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.

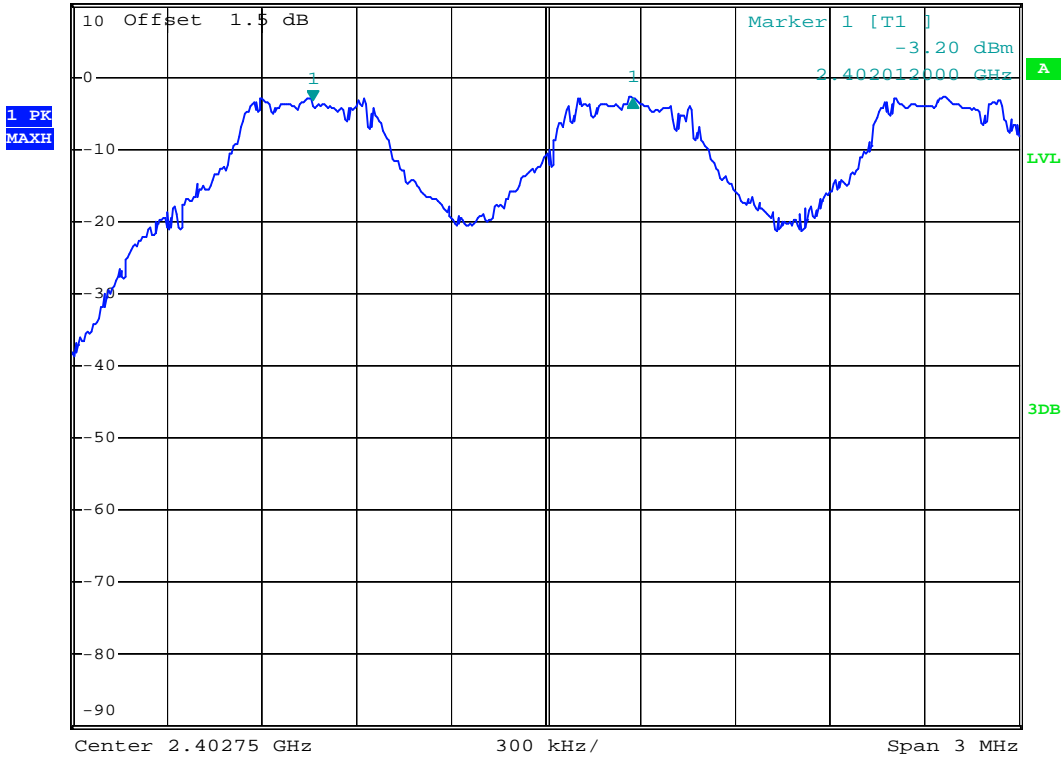
Date of Test:	February 25, 2014	Temperature:	25°C
EUT:	Wireless Bluetooth Mouse	Humidity:	50%
Model No.:	DS-2460	Power Supply:	DC 3V
Test Mode:	TX	Test Engineer:	Star

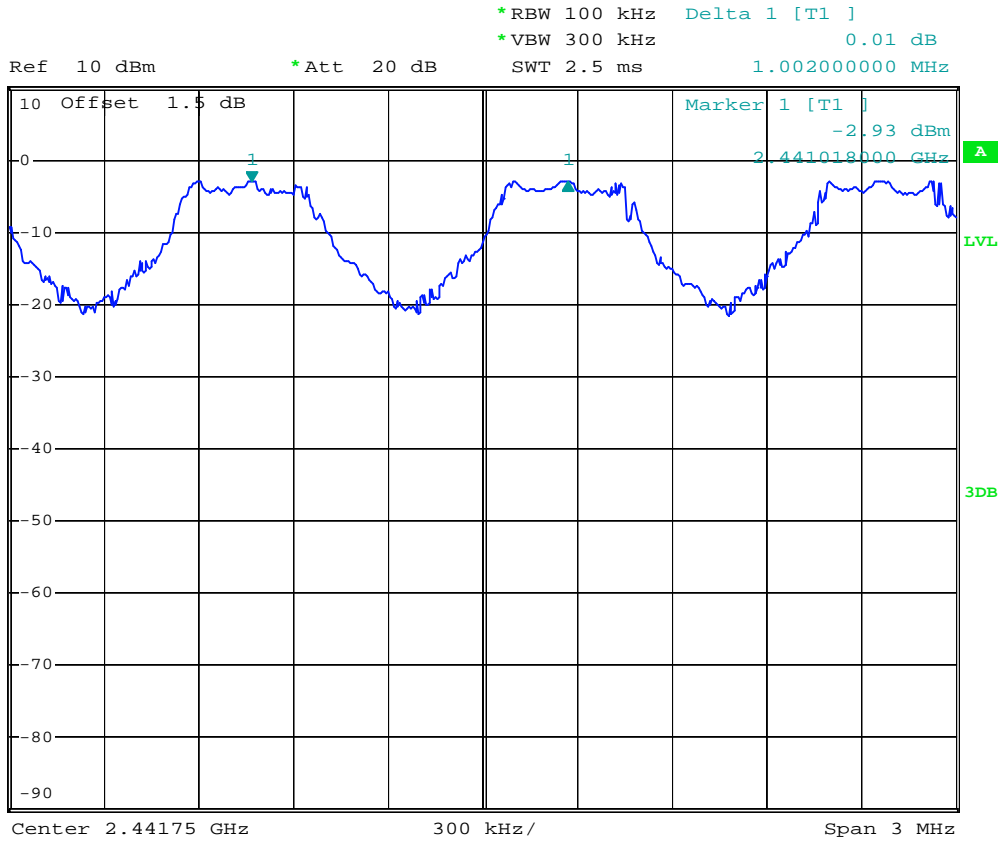
Channel	Channel Frequency (MHz)	Channel separation (MHz)	Limit (MHz)
Low	2402	1.014	0.704
Middle	2441	1.002	0.700
High	2480	1.008	0.704

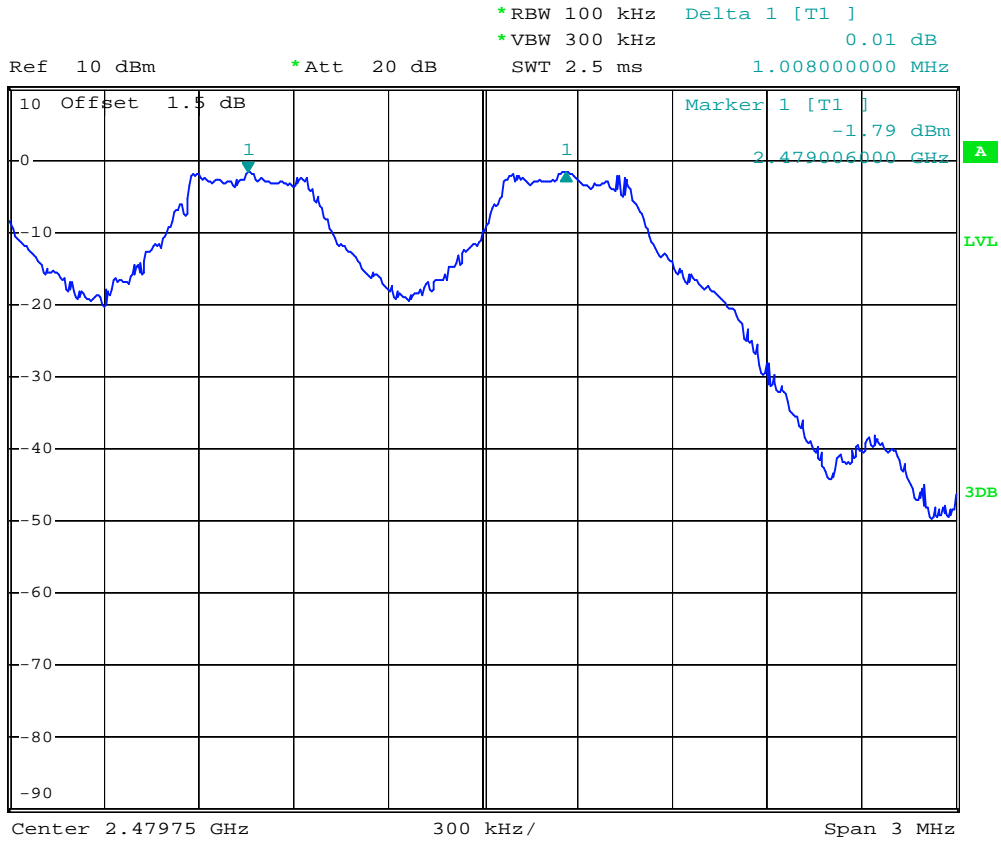
The spectrum analyzer plots are attached as below.



*RBW 100 kHz Delta 1 [T1]
*VBW 300 kHz 0.21 dB
Ref 10 dBm *Att 20 dB SWT 2.5 ms 1.014000000 MHz

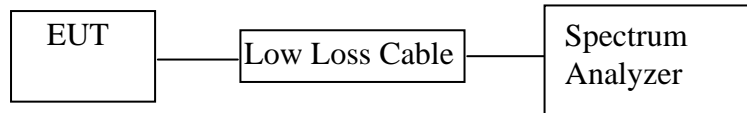






7. NUMBER OF HOPPING FREQUENCY TEST

7.1. Block Diagram of Test Setup



(EUT: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number : DS-2460
 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 7.1.

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 the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.

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

7.6. Test Result

PASS.

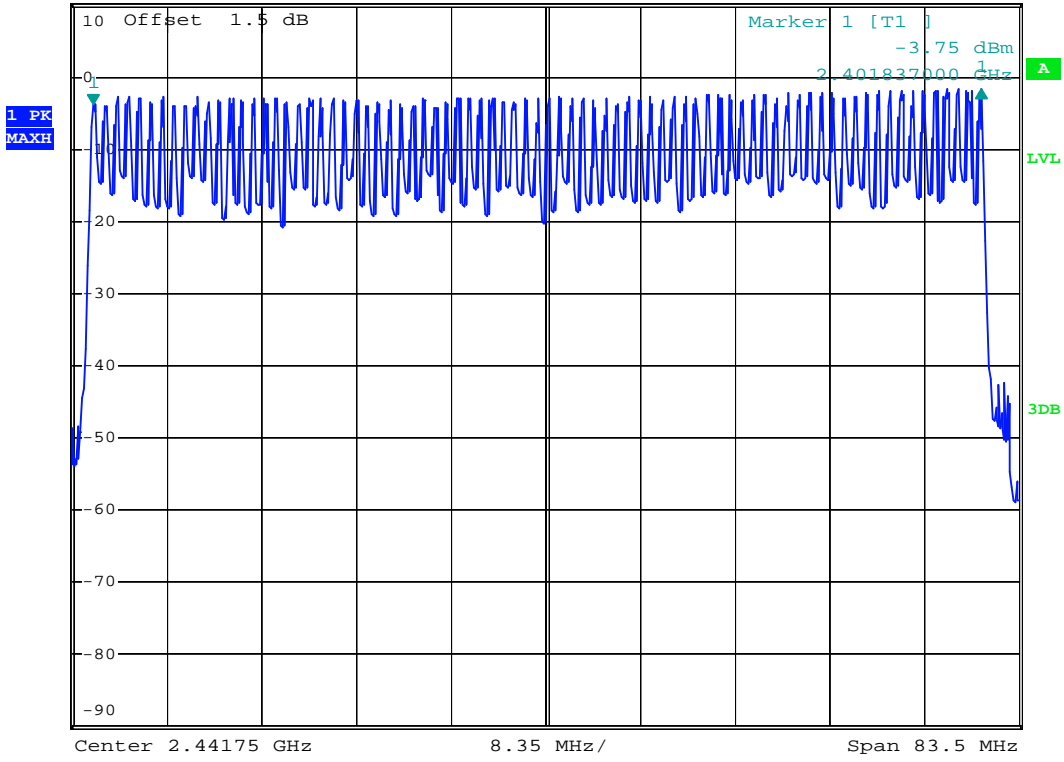
Date of Test:	<u>February 25, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Star</u>

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

The spectrum analyzer plots are attached as below.

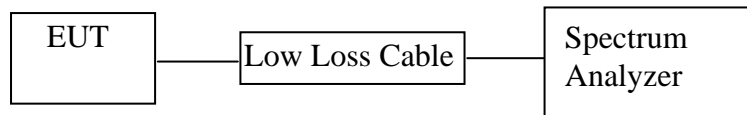


Ref 10 dBm *Att 20 dB SWT 10 ms 78.32300000 MHz
*RBW 100 kHz Delta 1 [T1]
*VBW 300 kHz 2.00 dB



8. DWELL TIME TEST

8.1. Block Diagram of Test Setup



(EUT: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number	:	DS-2460
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 8.1.

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, and 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=100 kHz, VBW=300 kHz, 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>February 25, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Star</u>

DH1:

A period transmit time = $0.4 \times 79 = 31.6$				
Dwell time = pulse time $\times (1600/(2*79)) \times 31.6$				
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	0.534	170.88	400
Middle	2441	0.540	172.80	400
High	2480	0.534	170.88	400

DH3:

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

Dwell time = pulse time $\times (1600/(4*79)) \times 31.6$

Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	1.797875	287.66	400
Middle	2441	1.815875	290.54	400
High	2480	1.815875	290.54	400

DH5:

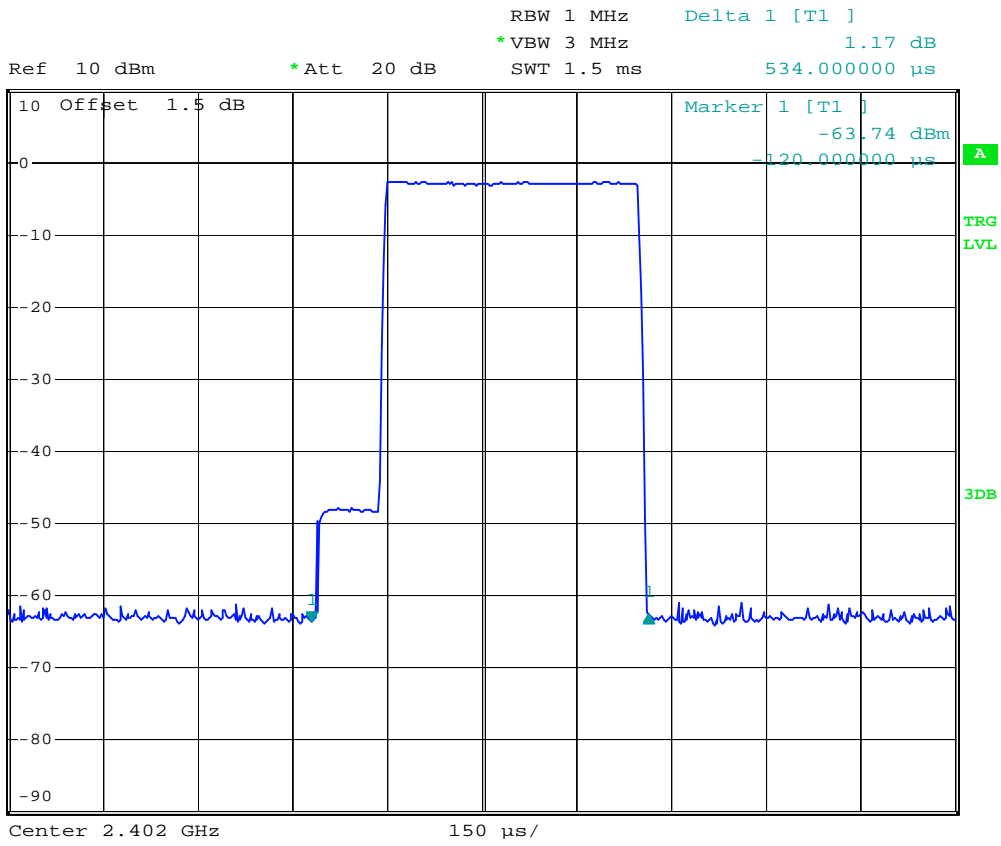
A period transmit time = $0.4 \times 79 = 31.6$

Dwell time = pulse time $\times (1600/(6*79)) \times 31.6$

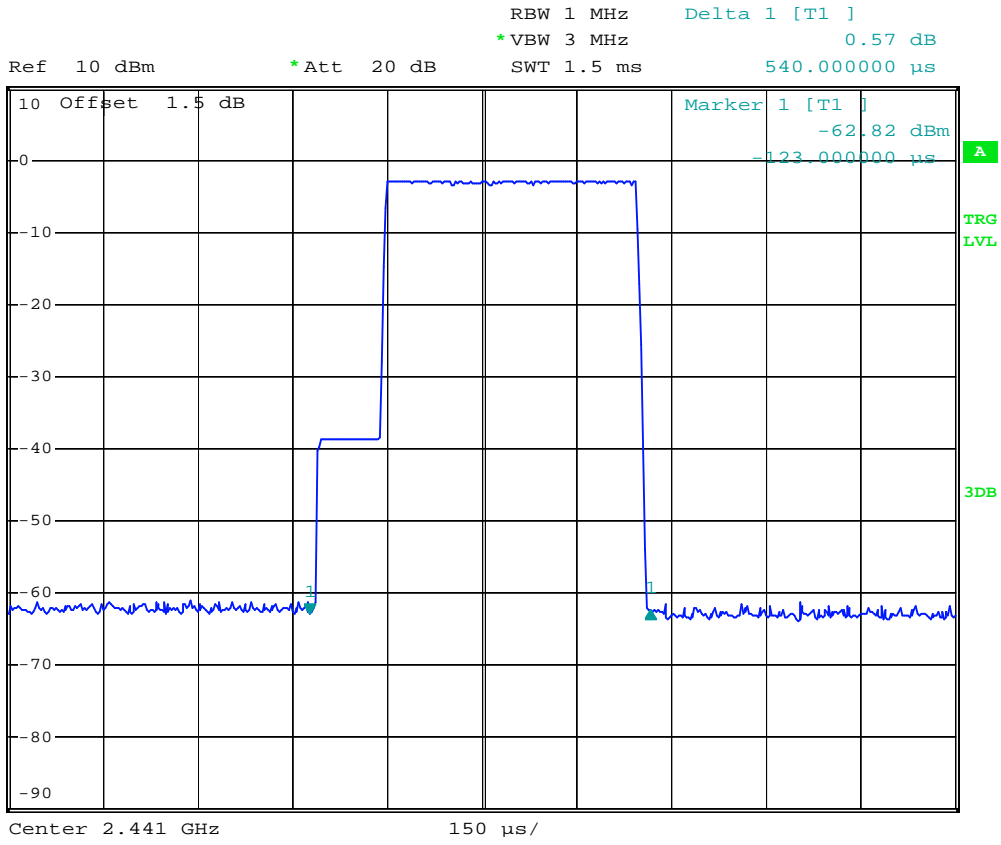
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	3.073	327.7867	400
Middle	2441	3.097	330.3467	400
High	2480	3.081	328.6400	400

The spectrum analyzer plots are attached as below.

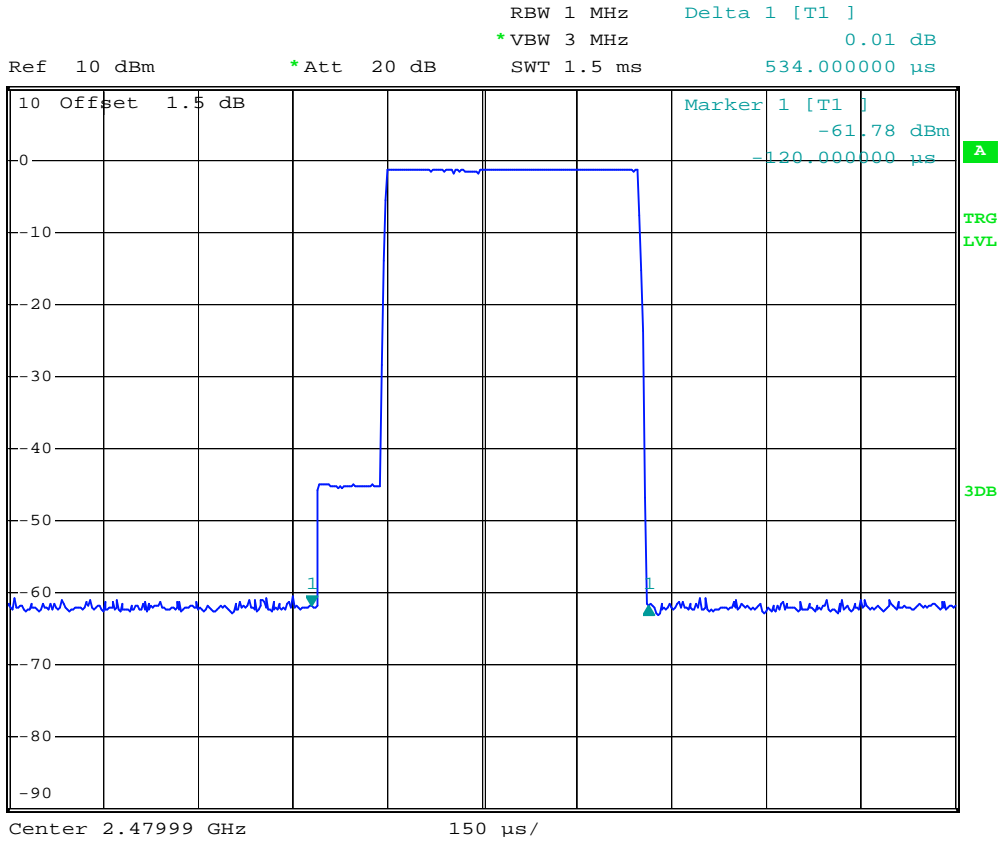
DH1:



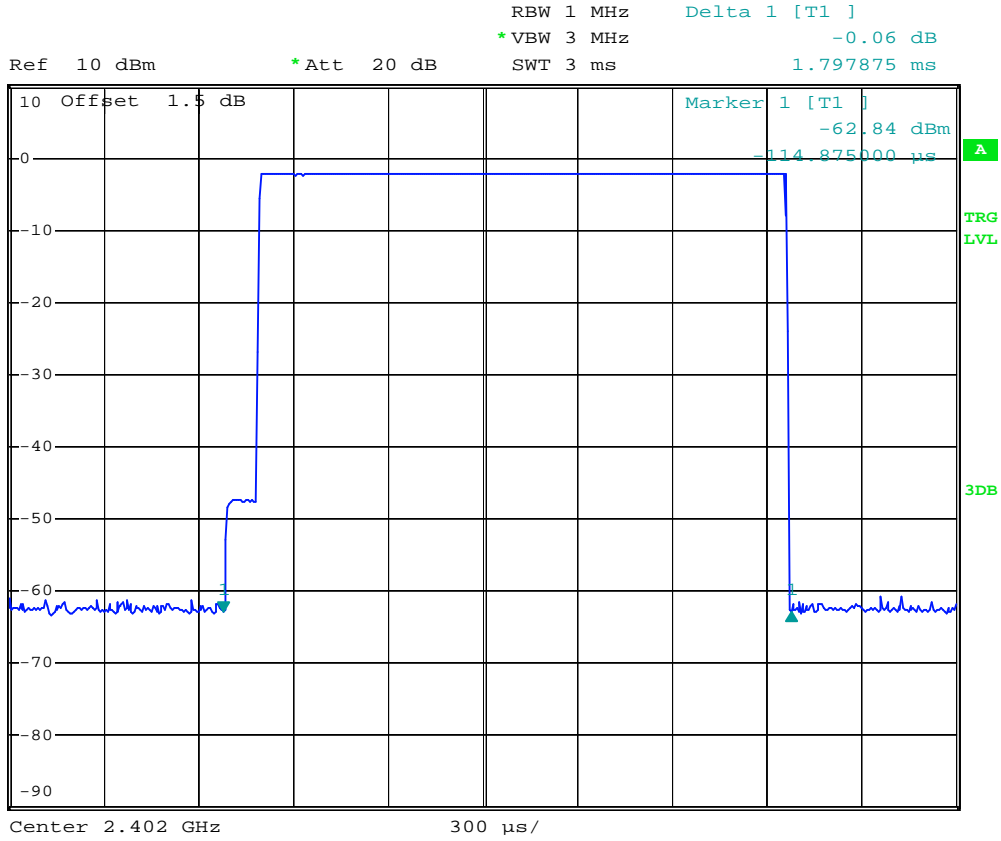
DH1:



DH1:



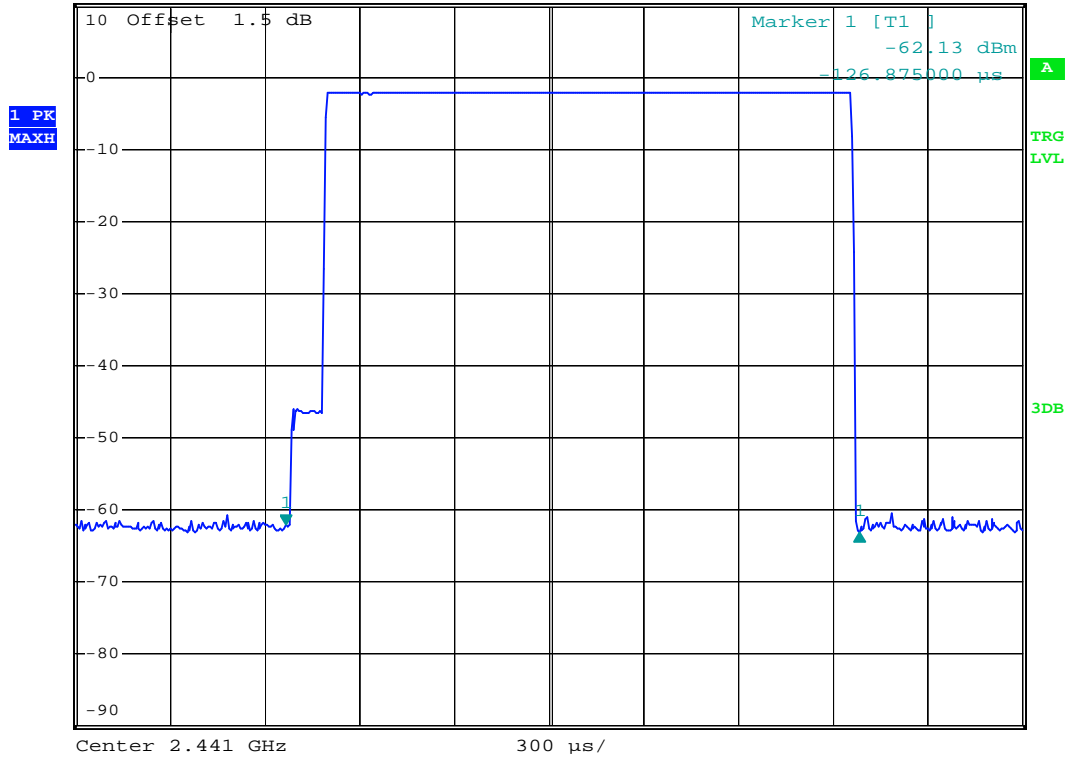
DH3:



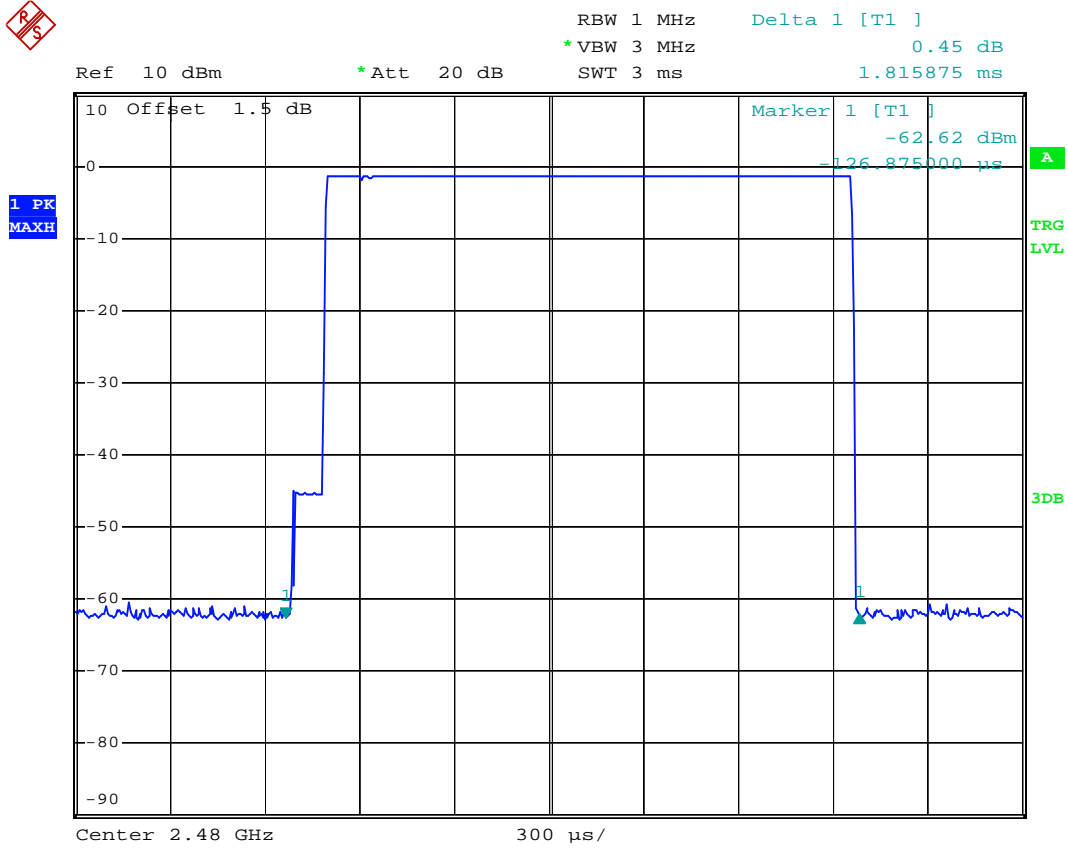
DH3:



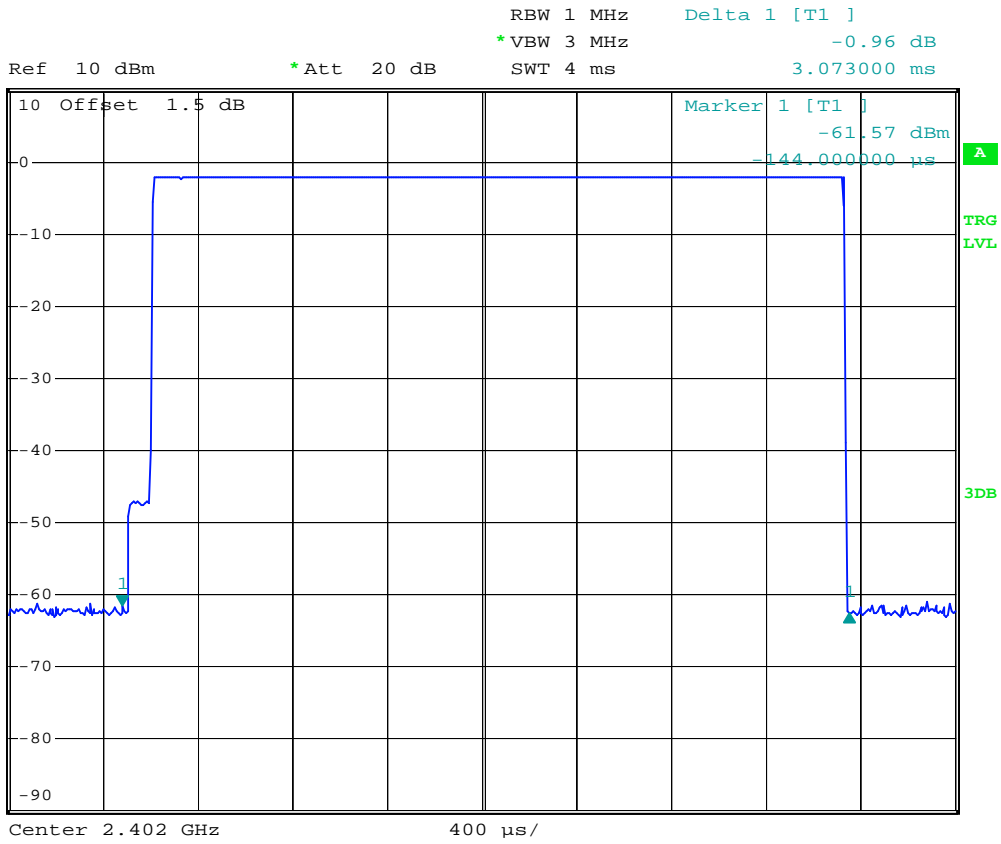
RBW 1 MHz Delta 1 [T1]
*VBW 3 MHz -0.90 dB
Ref 10 dBm *Att 20 dB SWT 3 ms 1.815875 ms



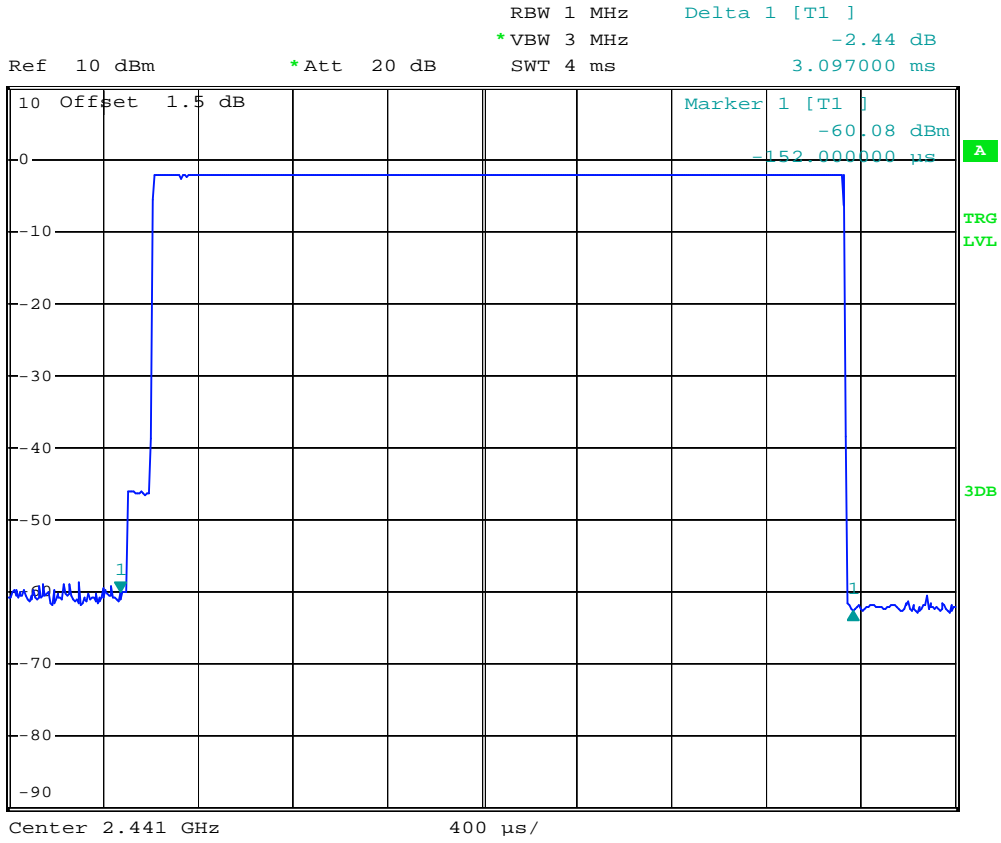
DH3:



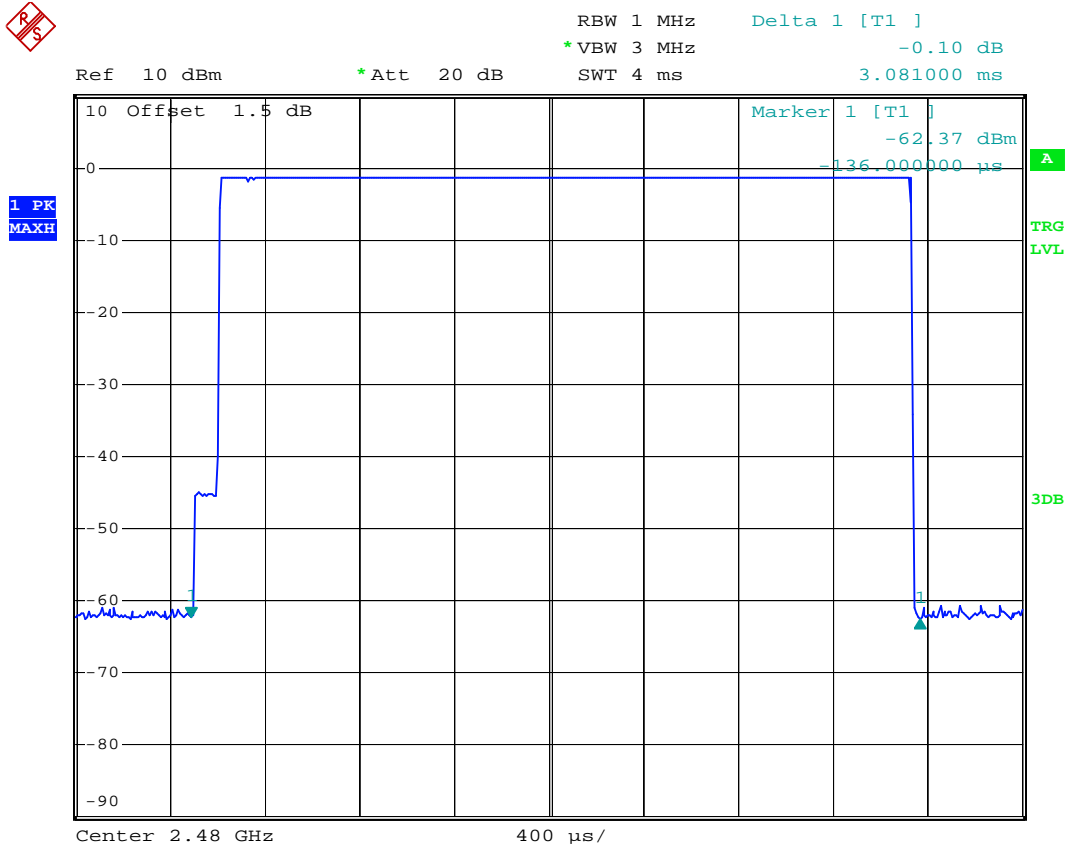
DH5:



DH5:

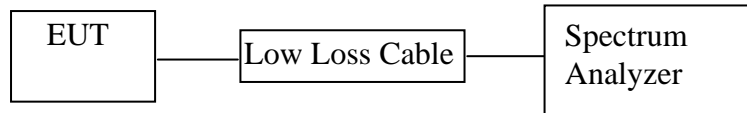


DH5:



9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Block Diagram of Test Setup



(EUT: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number	:	DS-2460
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 9.1.

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, and 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 3MHz and VBW to 3MHz.

9.5.3. Measurement the maximum peak output power.

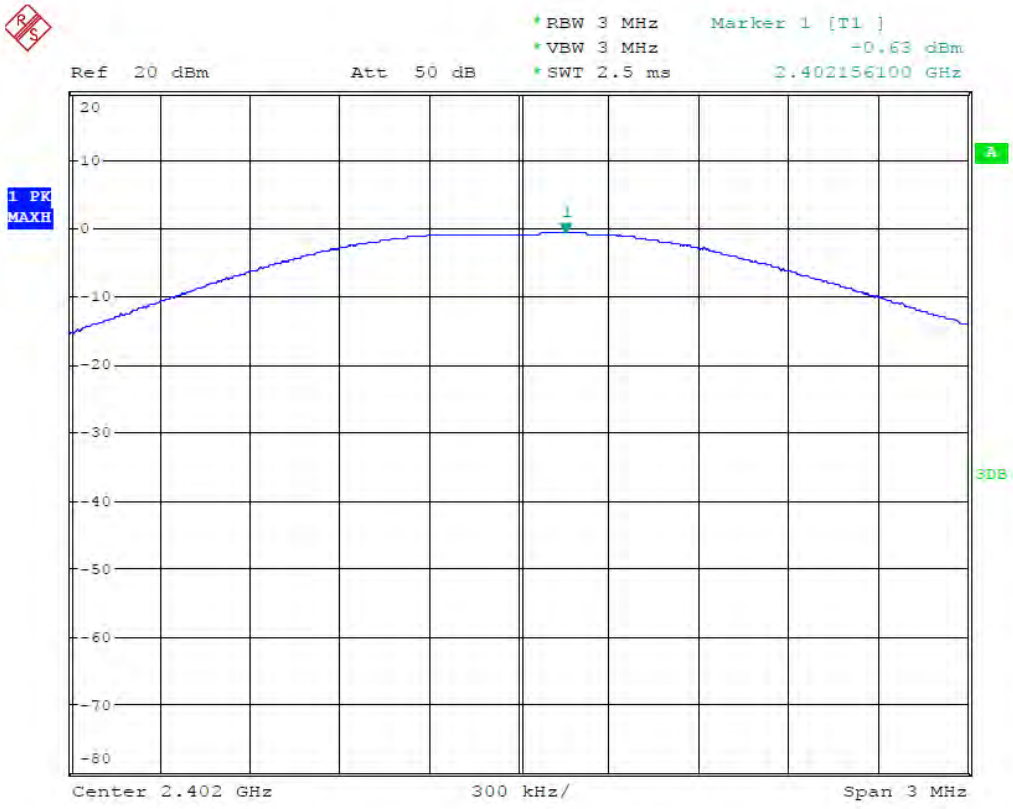
9.6. Test Result

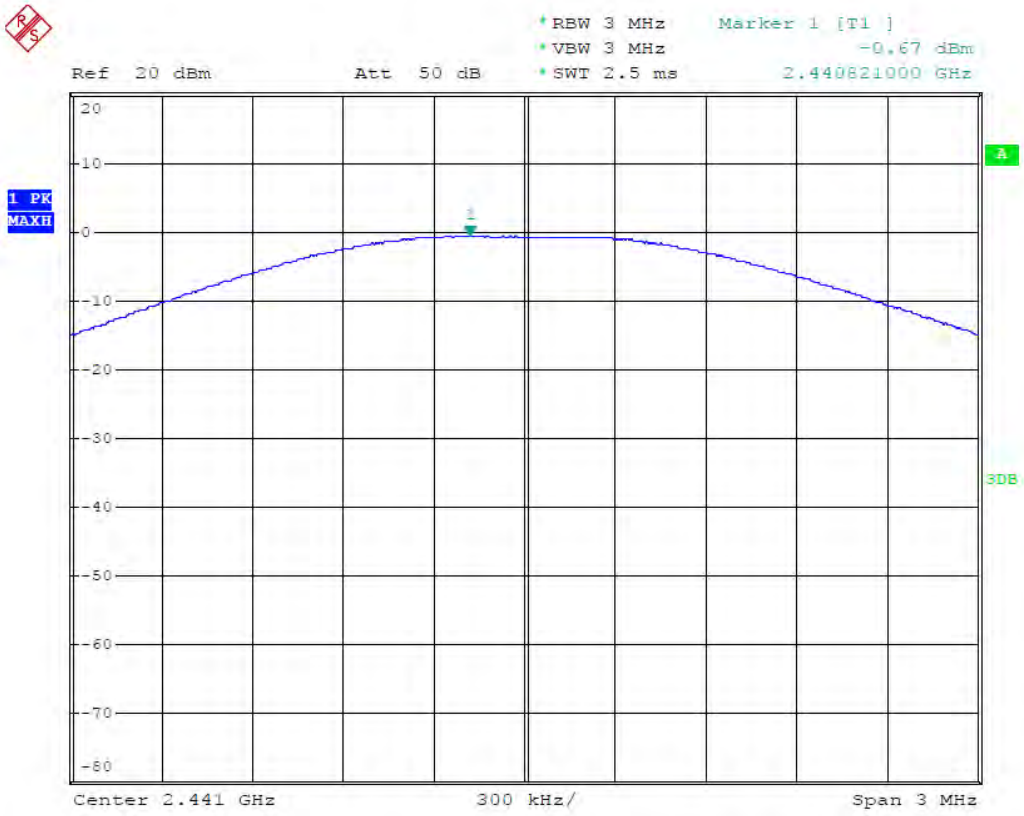
PASS.

Date of Test:	<u>February 25, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Star</u>

Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Limits dBm / mW
Low	2402	-0.63	0.86	21 dBm / 125 mW
Middle	2441	-0.67	0.85	21 dBm / 125 mW
High	2480	0.08	1.01	21 dBm / 125 mW

The spectrum analyzer plots are attached as below.





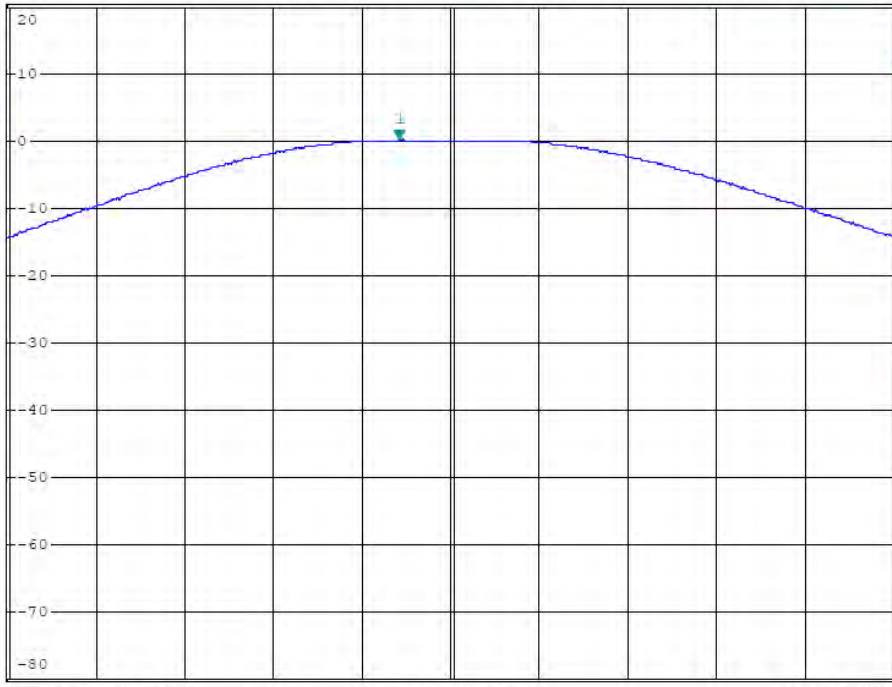


*RBW 3 MHz Marker 1 [T1] 0.08 dBm
*VBW 3 MHz
*SWT 2.5 ms 2.479826100 GHz

Ref 20 dBm

Att 50 dB

1 PK
MAXH



Center 2.48 GHz

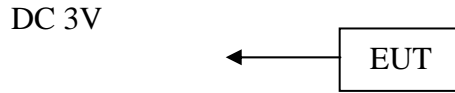
300 kHz/

Span 3 MHz

10. RADIATED EMISSION TEST

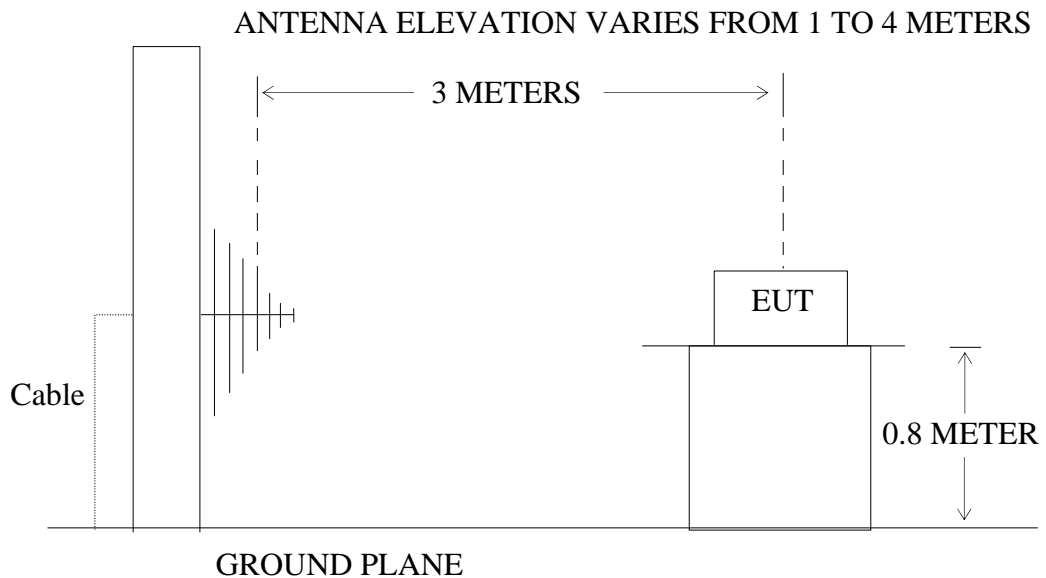
10.1. Block Diagram of Test Setup

10.1.1. Block diagram of connection between the EUT and simulators



(EUT: Wireless Bluetooth Mouse)

10.1.2. Anechoic Chamber Test Setup Diagram



(EUT: Wireless Bluetooth Mouse)

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
¹ 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	(²)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 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. Wireless Bluetooth Mouse (EUT)

Model Number : DS-2460
 Serial Number : N/A
 Manufacturer : Eastern Times Technology Co., Ltd.

10.5.est Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4- 2009 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 120 KHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

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

The final measurement in band 9-90 kHz, 110-490 kHz 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:	<u>February 25, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX (2402MHz)</u>	Test Engineer:	<u>Star</u>

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	
428.7960	28.34	-6.07	22.57	46.00	-23.73	Horizontal
600.8140	29.08	-2.96	26.12	46.00	-19.88	Horizontal
952.0001	28.09	2.21	30.30	46.00	-15.70	Horizontal
47.7028	27.60	-12.62	14.98	40.00	-25.02	Vertical
262.1926	27.56	-10.59	16.97	46.00	-29.03	Vertical
582.1122	29.25	-3.11	26.14	46.00	-19.86	Vertical

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	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	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.

3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.

Date of Test:	February 25, 2014	Temperature:	25°C
EUT:	Wireless Bluetooth Mouse	Humidity:	50%
Model No.:	DS-2460	Power Supply:	DC 3V
Test Mode:	TX (2441MHz)	Test Engineer:	Star

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	
115.6322	28.23		-13.15	15.08		43.50	-28.42		Horizontal
484.9068	29.15		-5.25	23.90		46.00	-22.10		Horizontal
90.3.1253	27.10		1.29	28.39		46.00	-17.61		Horizontal
45.4130	28.31		-12.64	15.67		40.00	-24.33		Vertical
205.0243	27.99		-12.28	15.71		43.50	-27.79		Vertical
578.0359	28.81		-3.14	25.67		46.00	-20.33		Vertical

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	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	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.****3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.**

Date of Test:	February 25, 2014	Temperature:	25°C
EUT:	Wireless Bluetooth Mouse	Humidity:	50%
Model No.:	DS-2460	Power Supply:	DC 3V
Test Mode:	TX (2480MHz)	Test Engineer:	Star

For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dB μ V/m)		Factor Corr. (dB)		Result (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Polarization
	QP				QP		QP		QP		
41.7406	28.11		-12.58		15.53		40.00		-24.47		Horizontal
481.5112	28.10		-5.33		22.77		46.00		-23.23		Horizontal
793.0281	27.59		-0.12		27.47		46.00		-18.53		Horizontal
99.4176	28.87		-13.32		15.55		43.50		-27.95		Vertical
412.5394	30.00		-6.48		23.52		46.00		-22.48		Vertical
658.2854	30.34		-2.28		28.06		46.00		-17.94		Vertical

For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dB μ V/m)		Factor Corr. (dB)	Result(dB μ V/m)		Limit(dB μ V/m)		Margin(dB μ V/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	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.****3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.**



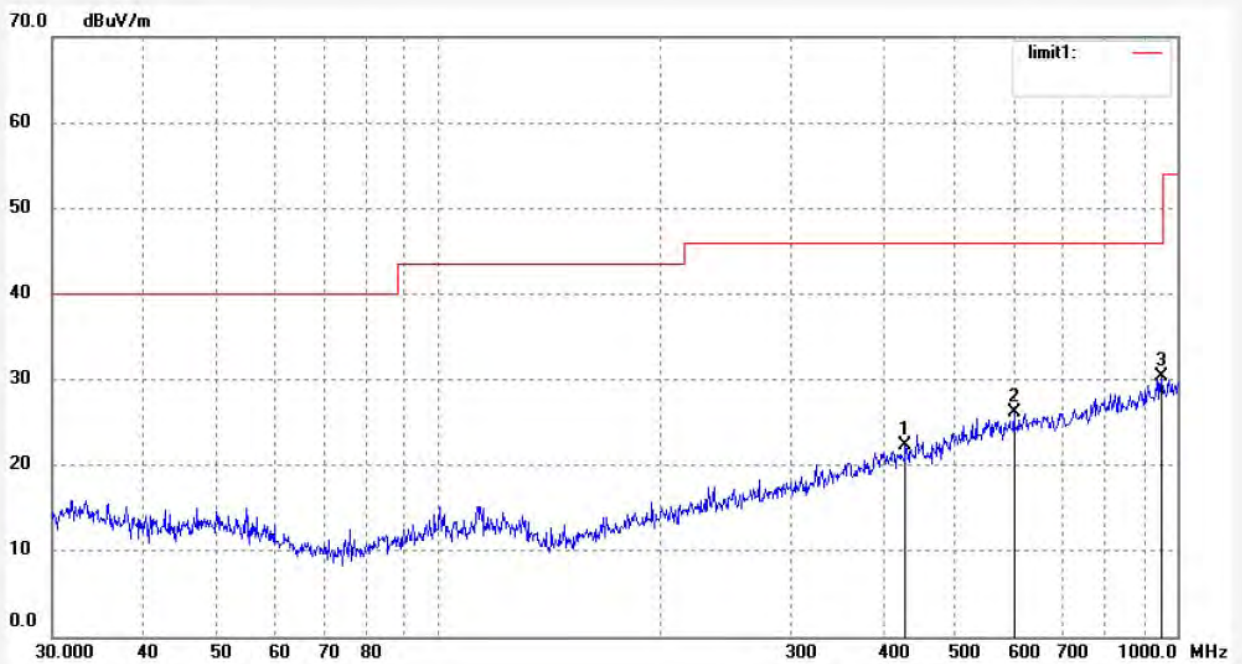
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5664	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 9/55/00
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	428.7960	28.34	-6.07	22.27	46.00	-23.73	peak			
2	600.8140	29.08	-2.96	26.12	46.00	-19.88	peak			
3	952.0001	28.09	2.21	30.30	46.00	-15.70	peak			



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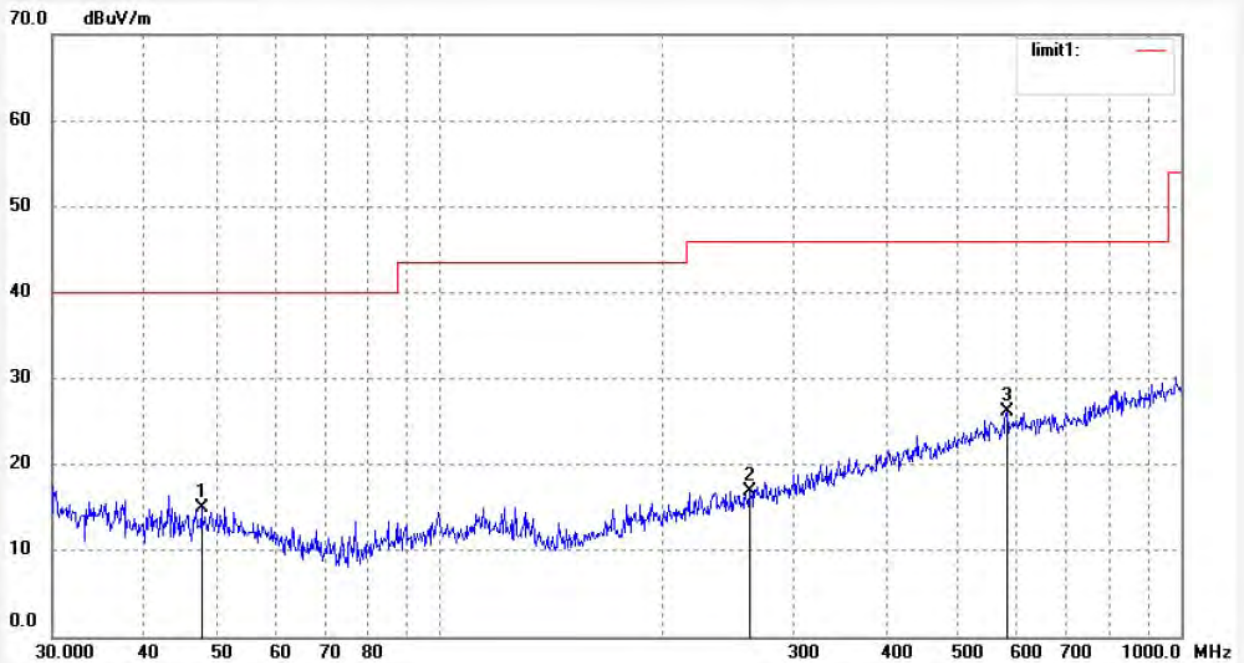
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5665
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2402MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/25/
Time: 9/59/35
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	47.7028	27.60	-12.62	14.98	40.00	-25.02	peak			
2	262.1926	27.56	-10.59	16.97	46.00	-29.03	peak			
3	582.1122	29.25	-3.11	26.14	46.00	-19.86	peak			



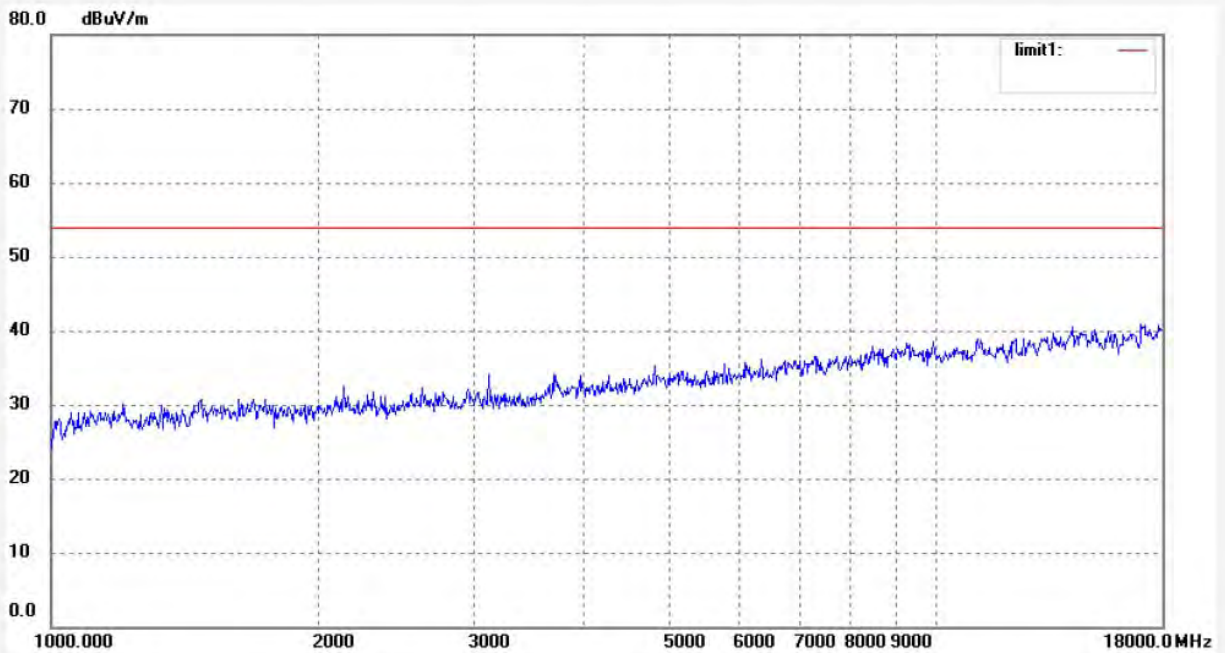
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4268	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 14/12/43
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE20140089



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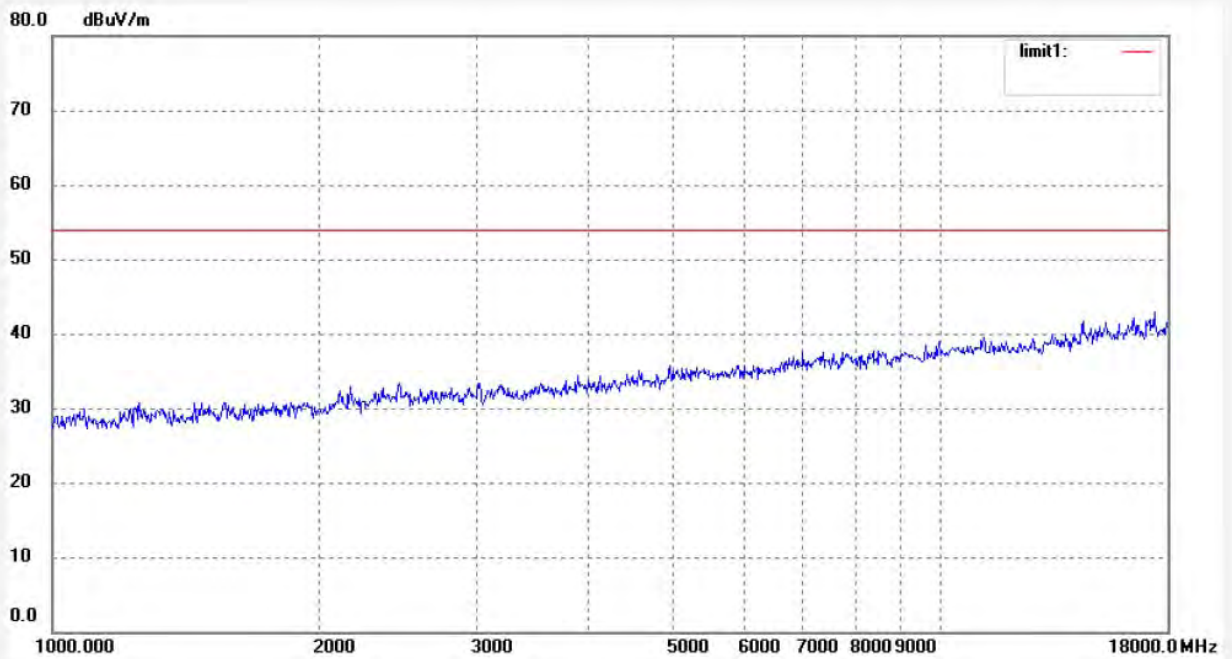
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4267
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2402MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/25/
Time: 14/11/47
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



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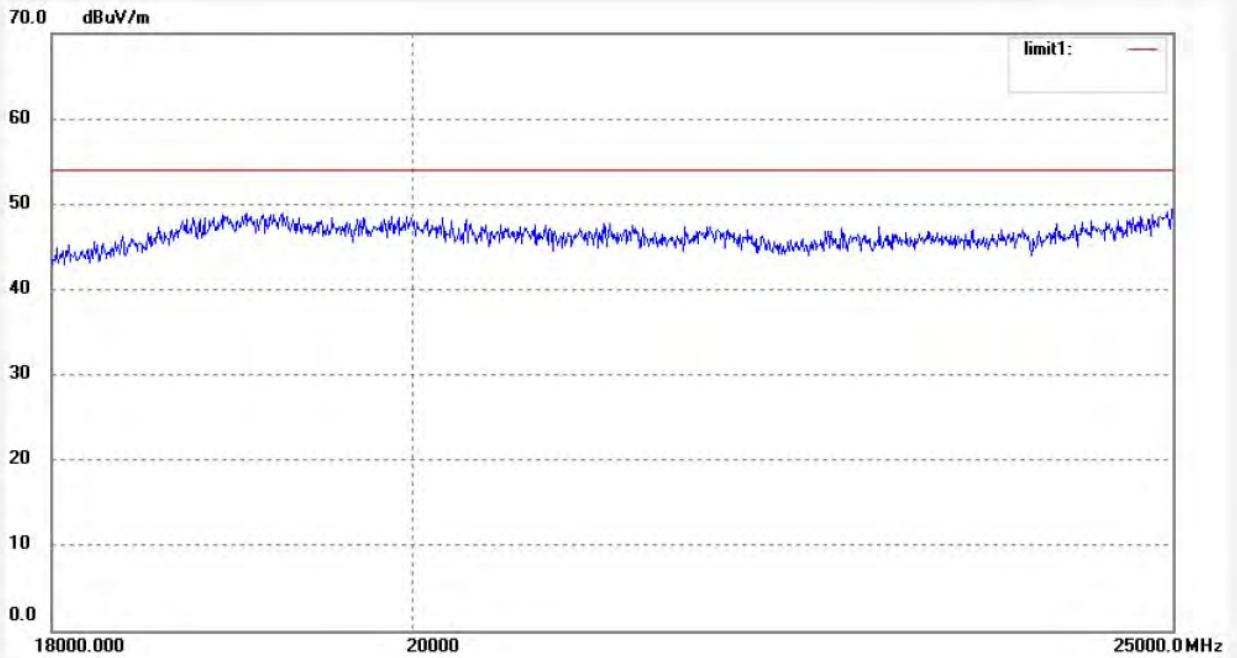
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

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

Job No.: Alen #651	Polarization: Vertical
Standard: FCC 15C	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 50 %	Time: 11:41:05
EUT: Wireless Bluetooth Mouse	Engineer Signature: Alen
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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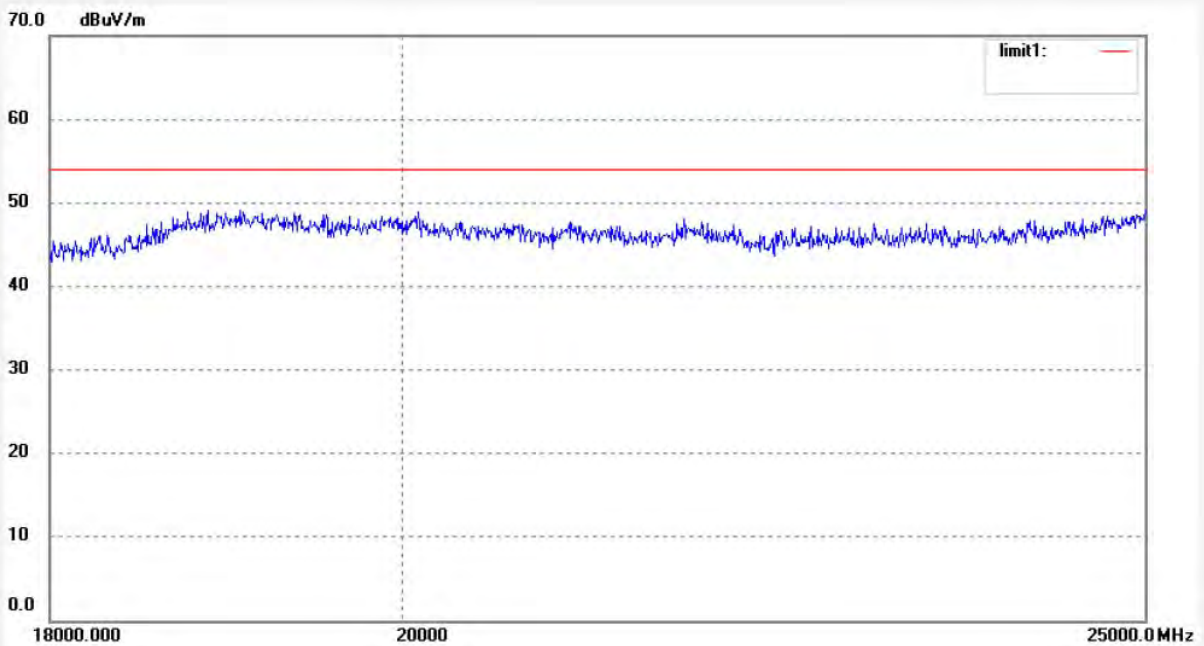
ACCURATE TECHNOLOGY CO., LTD.

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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.: Alen #652	Polarization: Horizontal
Standard: FCC 15C	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 50 %	Time: 11:42:56
EUT: Wireless Bluetooth Mouse	Engineer Signature: Alen
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No:ATE20140089



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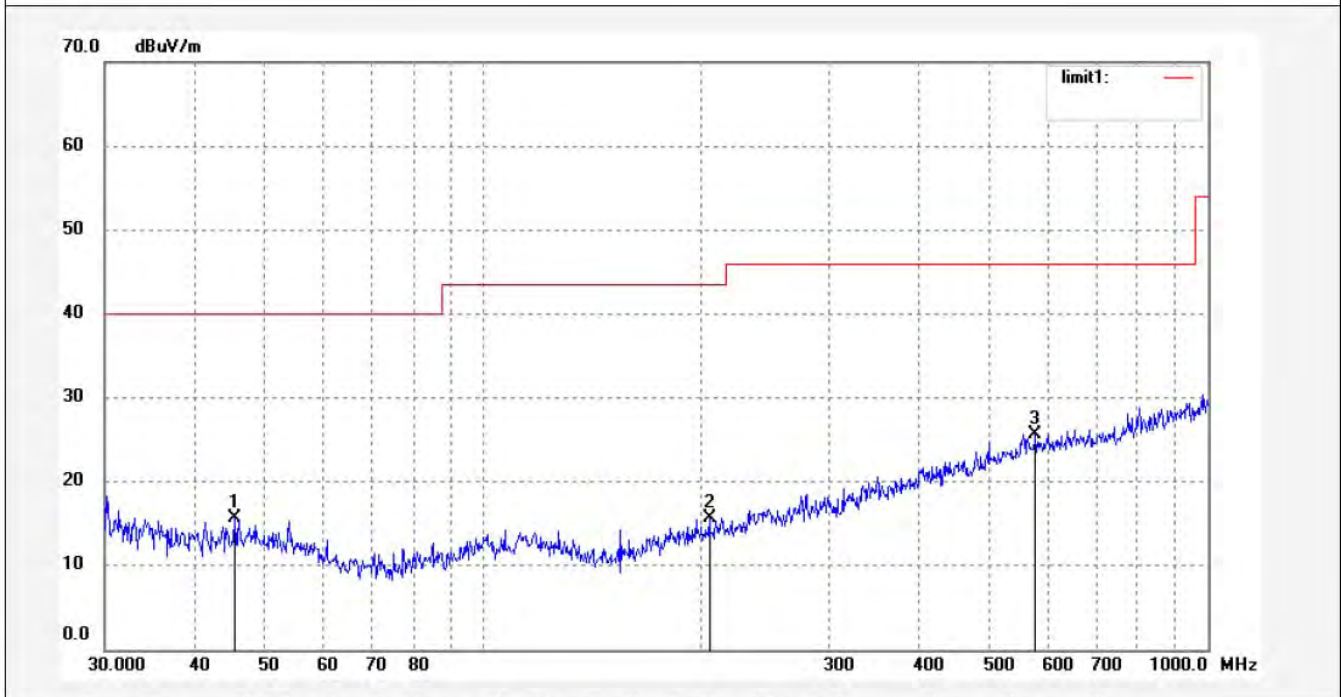
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5666	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 10/04/05
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2441MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	45.4130	28.31	-12.64	15.67	40.00	-24.33	peak			
2	205.0243	27.99	-12.28	15.71	43.50	-27.79	peak			
3	578.0359	28.81	-3.14	25.67	46.00	-20.33	peak			



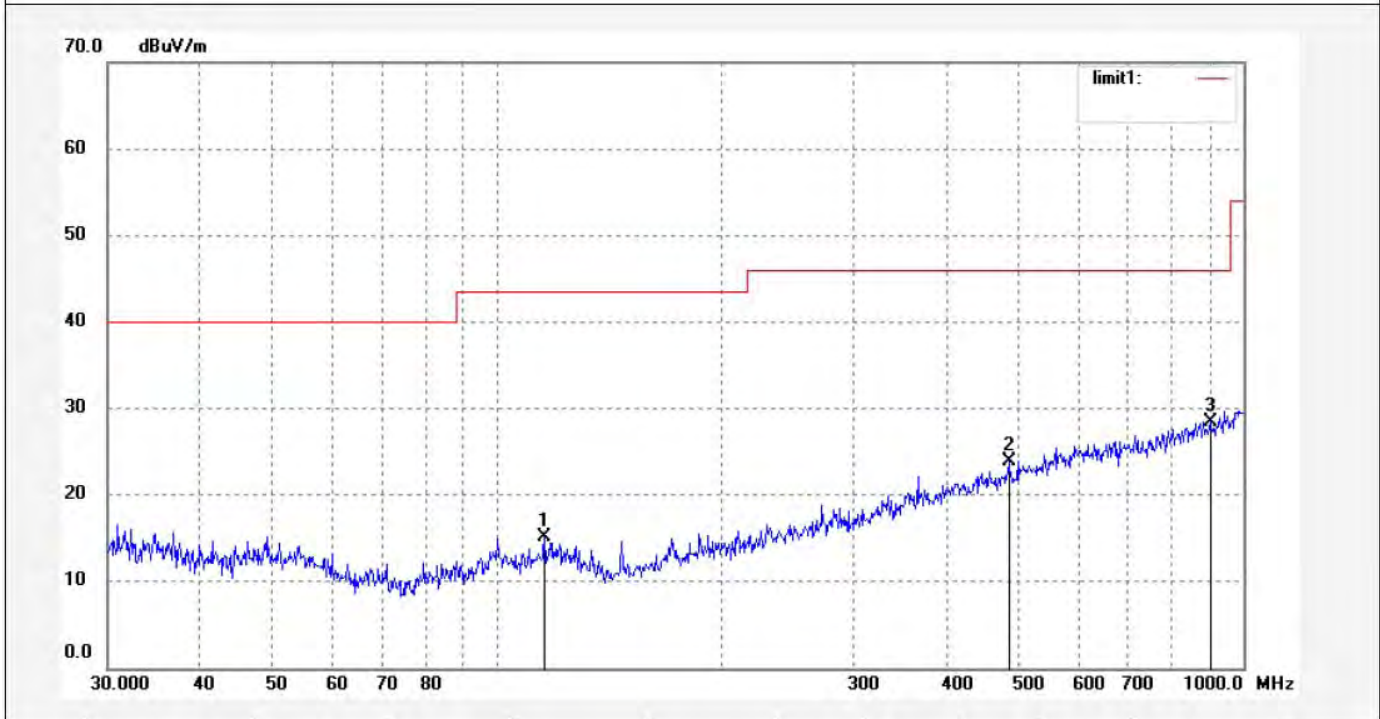
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5667	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 10/08/37
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2441MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	115.6322	28.23	-13.15	15.08	43.50	-28.42	peak			
2	484.9068	29.15	-5.25	23.90	46.00	-22.10	peak			
3	903.1253	27.10	1.29	28.39	46.00	-17.61	peak			



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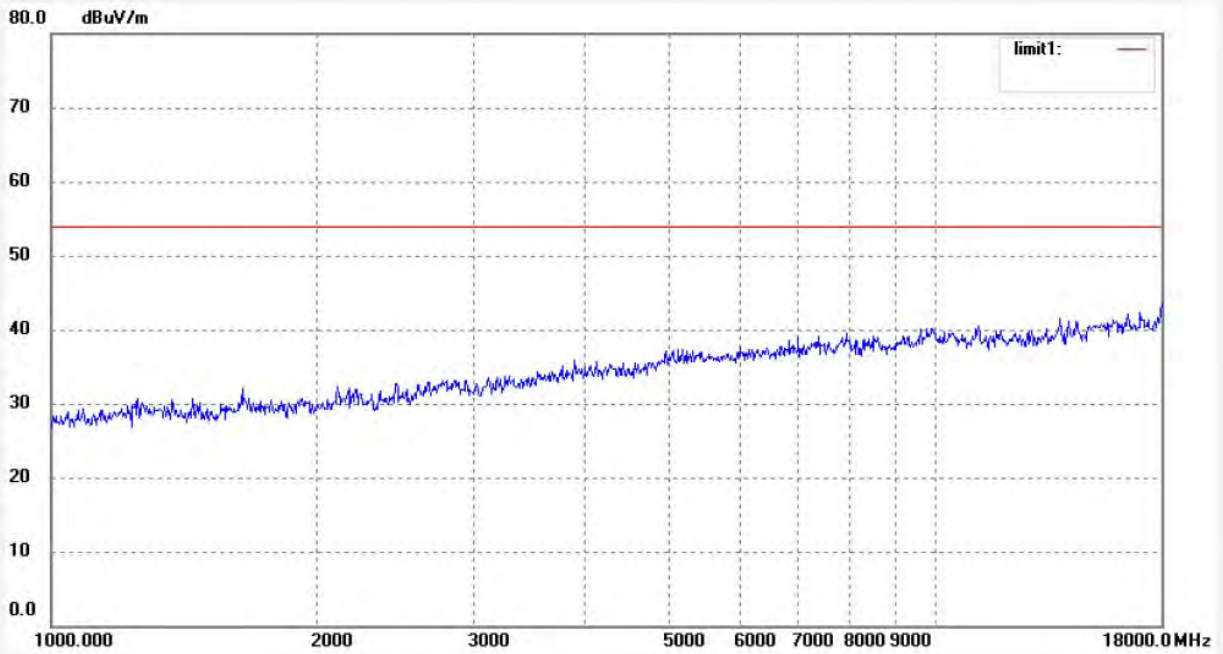
F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4266
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2441MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/25/
Time: 14/10/44
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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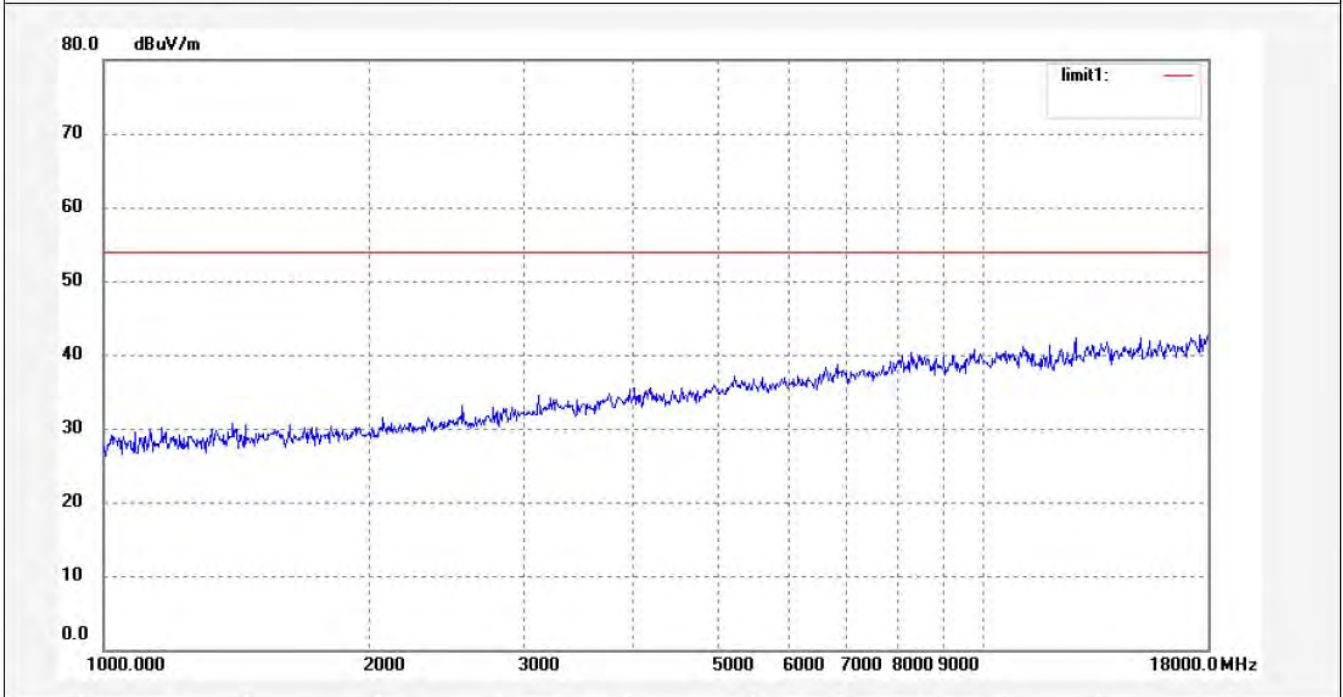
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4265	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 14/08/45
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2441MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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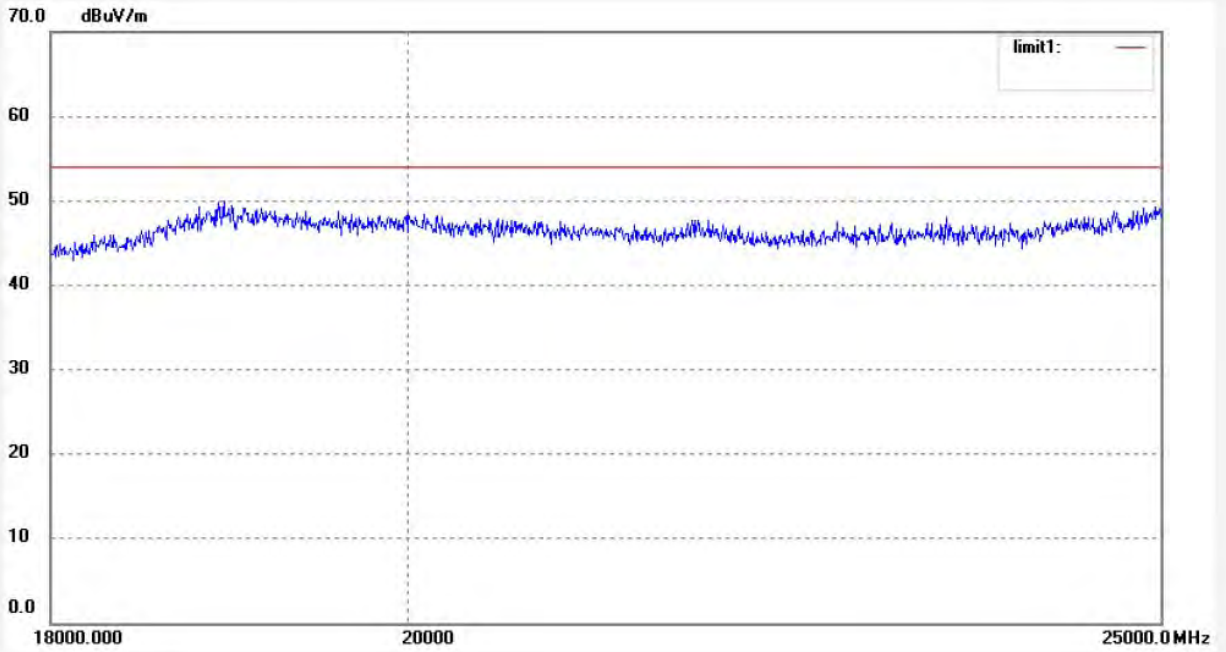
ACCURATE TECHNOLOGY CO., LTD.

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.: Alen #653	Polarization: Horizontal
Standard: FCC 15C	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 50 %	Time: 11:44:38
EUT: Wireless Bluetooth Mouse	Engineer Signature: Alen
Mode: TX 2441MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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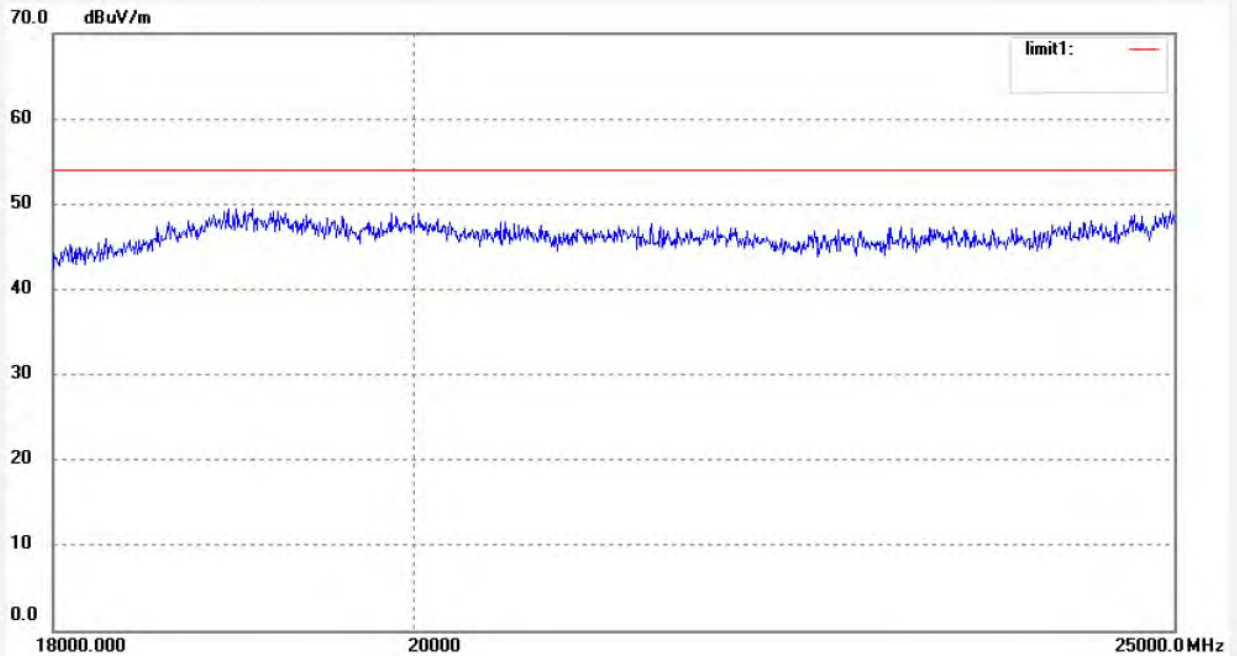
ACCURATE TECHNOLOGY CO., LTD.

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.: Alen #654 Standard: FCC 15C Test item: Radiation Test Temp.(C)/Hum.(%) 25 C / 50 % EUT: Wireless Bluetooth Mouse Mode: TX 2441MHz Model: DS-2460 Manufacturer: Eastern Times	Polarization: Vertical Power Source: DC 3V Date: 14/02/25/ Time: 11:45:42 Engineer Signature: Alen Distance: 3m
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Note: Report No:ATE20140089



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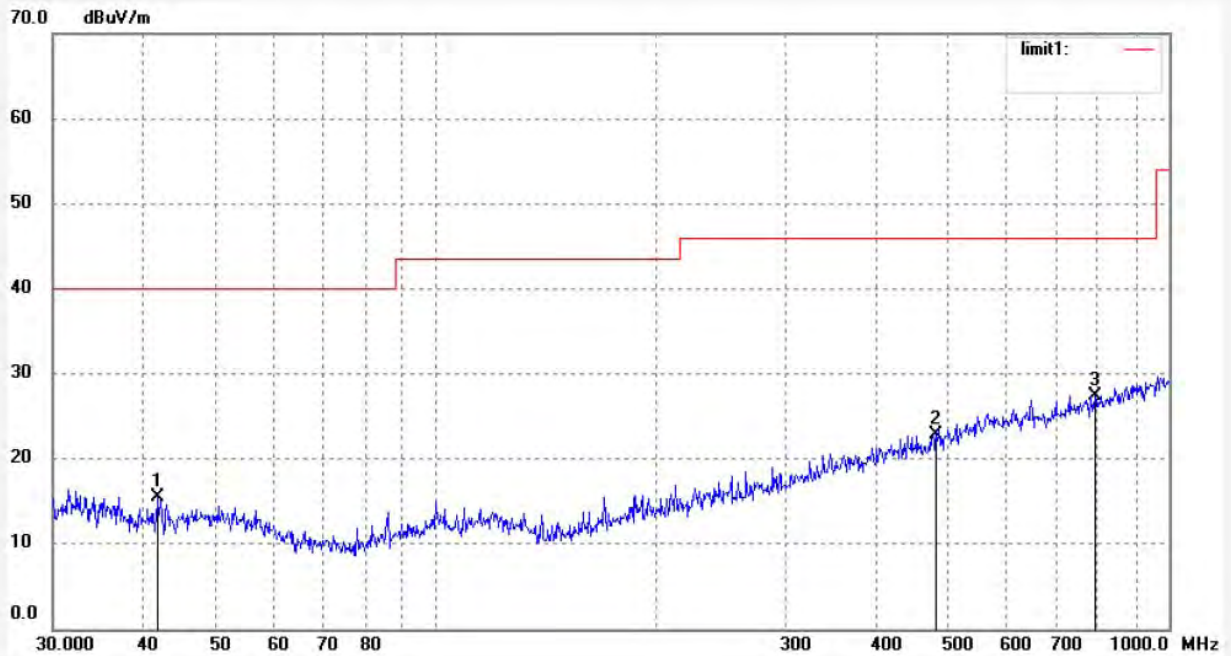
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5668
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2480MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Horizontal
Power Source: DC 3V
Date: 14/02/25/
Time: 10/12/13
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	41.7406	28.11	-12.58	15.53	40.00	-24.47	peak			
2	481.5112	28.10	-5.33	22.77	46.00	-23.23	peak			
3	793.0281	27.59	-0.12	27.47	46.00	-18.53	peak			



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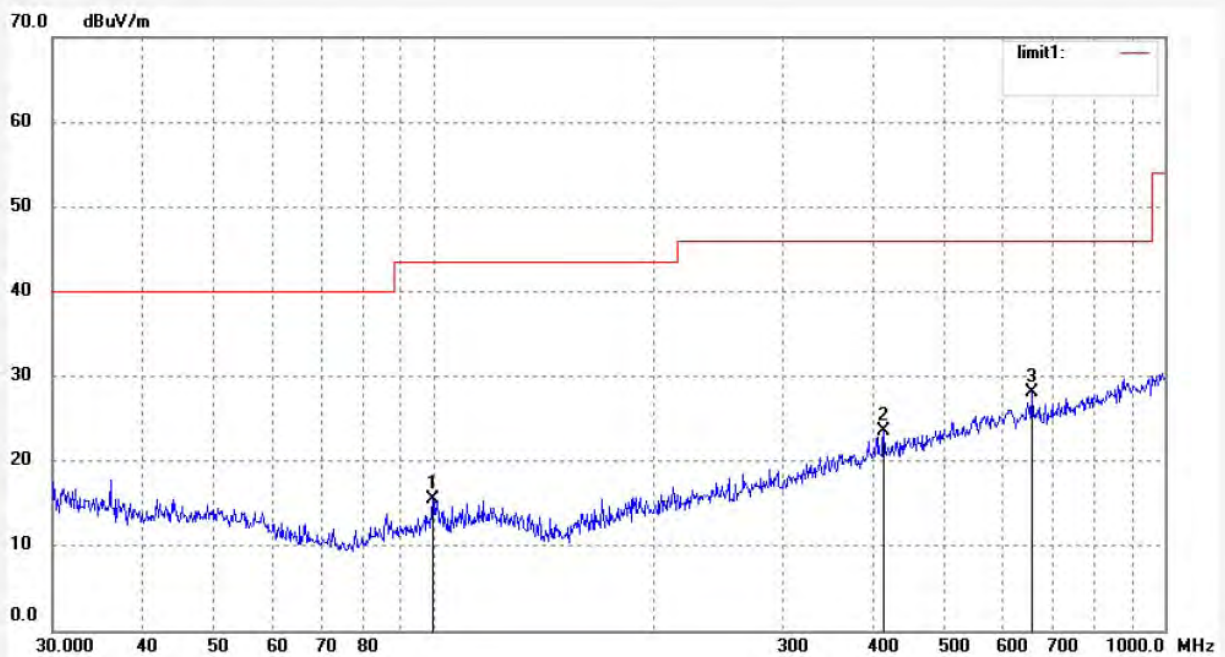
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #5669
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2480MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/25/
Time: 10/15/04
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	99.4176	28.87	-13.32	15.55	43.50	-27.95	peak			
2	412.5394	30.00	-6.48	23.52	46.00	-22.48	peak			
3	658.2854	30.34	-2.28	28.06	46.00	-17.94	peak			



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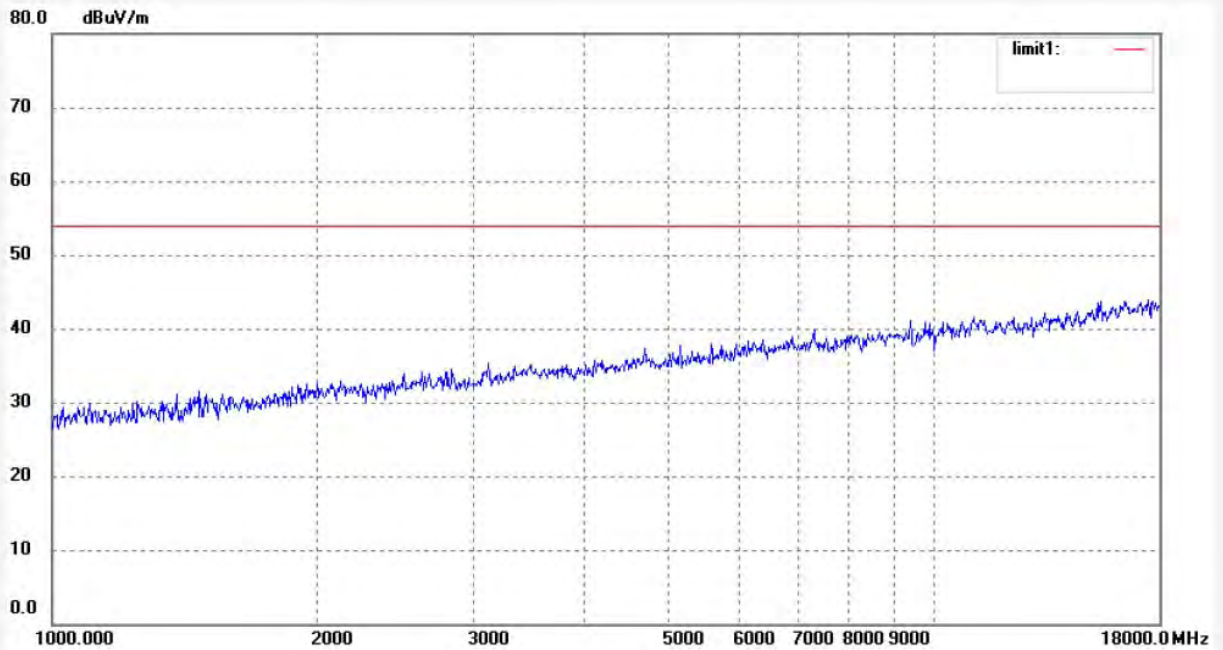
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4263
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2480MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/25/
Time: 14/05/08
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



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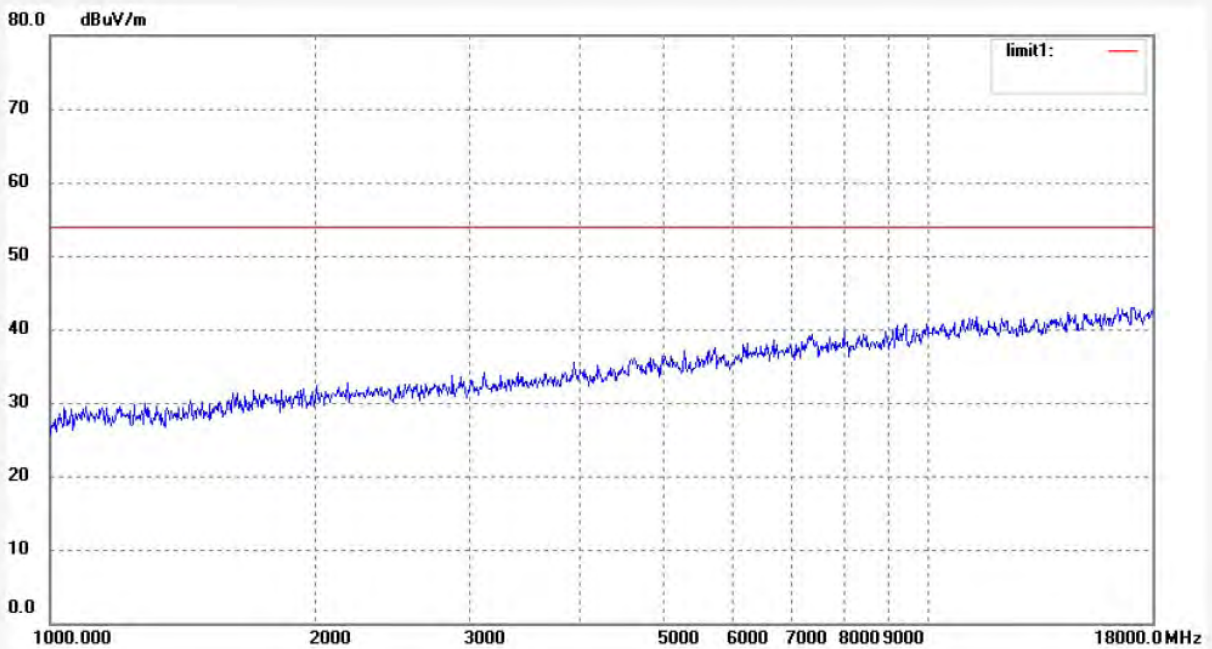
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4264
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2480MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Horizontal
Power Source: DC 3V
Date: 14/02/25/
Time: 14/06/04
Engineer Signature:
Distance: 3m

Note: Report No.:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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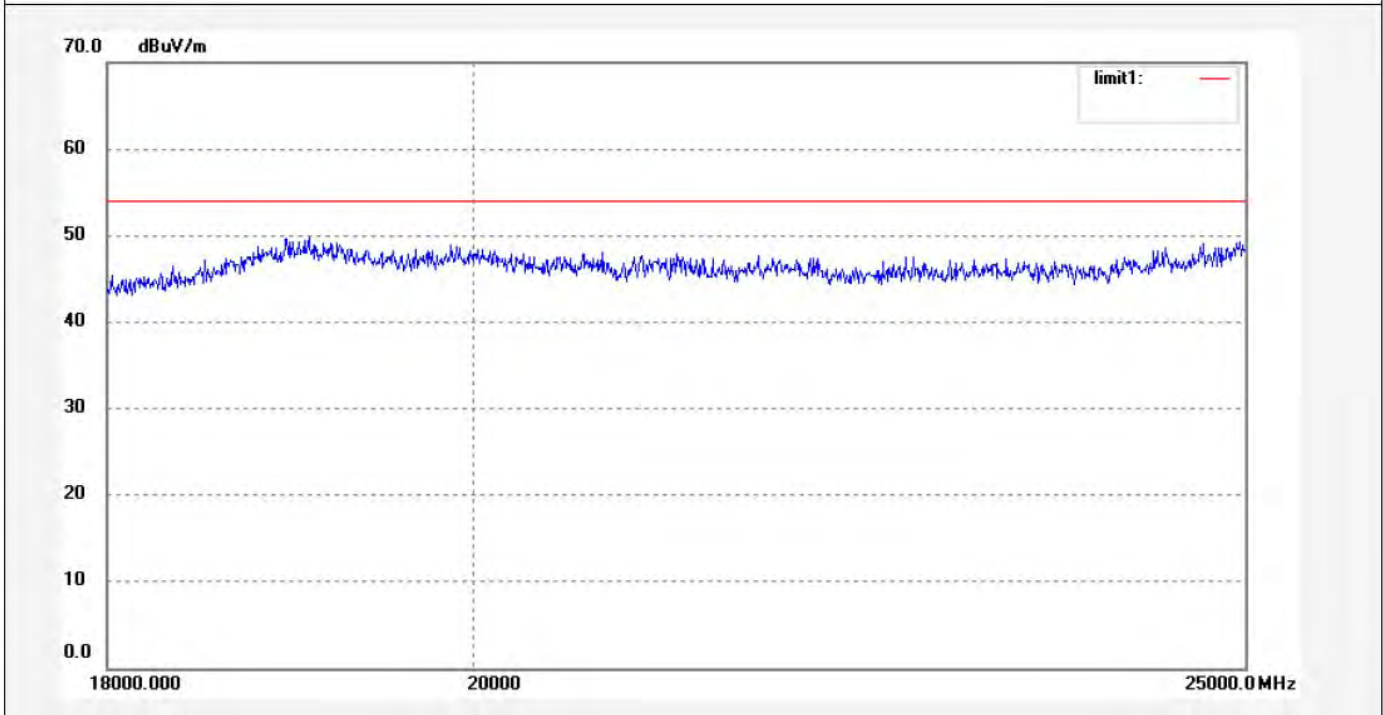
ACCURATE TECHNOLOGY CO., LTD.

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.: Alen #655	Polarization: Vertical
Standard: FCC 15C	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 50 %	Time: 11:48:59
EUT: Wireless Bluetooth Mouse	Engineer Signature: Alen
Mode: TX 2480MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No:ATE20140089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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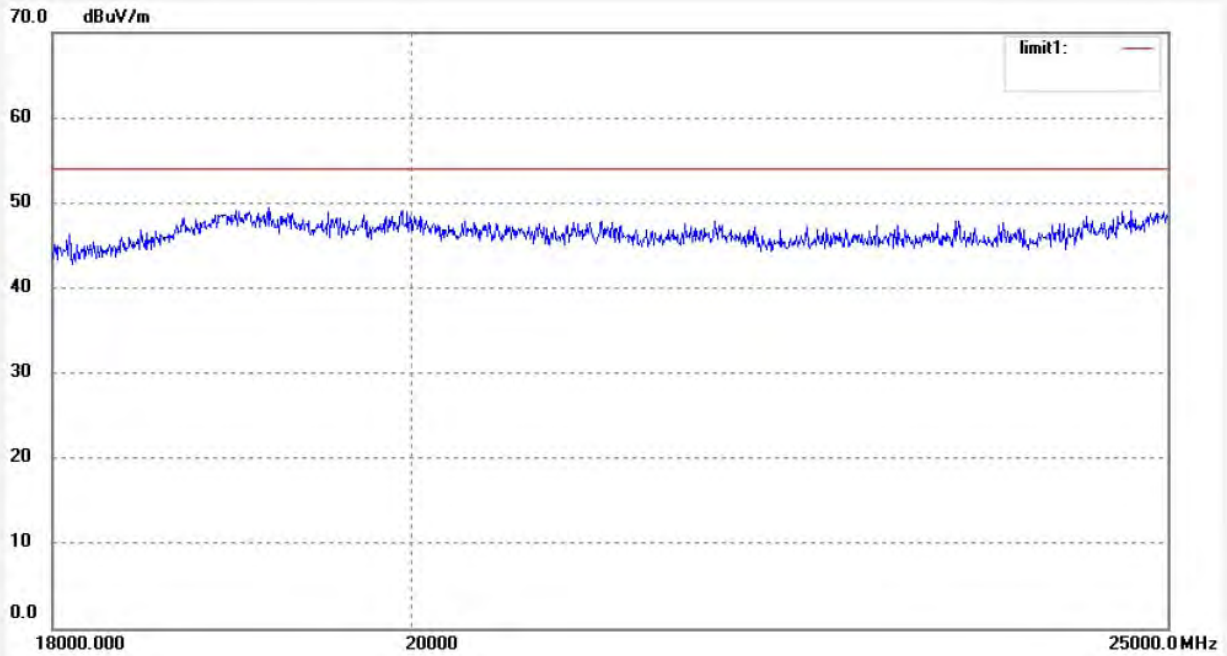
ACCURATE TECHNOLOGY CO., LTD.

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.: Alen #656	Polarization: Horizontal
Standard: FCC 15C	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/25/
Temp.(C)/Hum.(%) 25 C / 50 %	Time: 11:52:35
EUT: Wireless Bluetooth Mouse	Engineer Signature: Alen
Mode: TX 2480MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

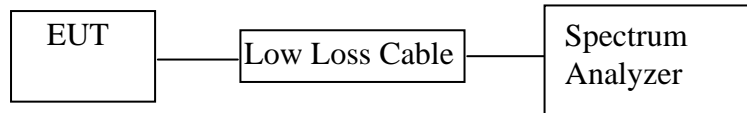
Note: Report No:ATE20140089



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

11. BAND EDGE COMPLIANCE TEST

11.1. Block Diagram of Test Setup



(EUT: Wireless Bluetooth 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. Wireless Bluetooth Mouse (EUT)

Model Number	:	DS-2460
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, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

11.5. Test Procedure

Conducted Band Edge:

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 300kHz and VBW to 1MHz.

Radiate Band Edge:

11.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

11.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

11.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

11.5.6. 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

11.5.7. The band edges was measured and recorded.

11.6. Test Result

Pass

Date of Test:	<u>February 28, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX (Hopping off)</u>	Test Engineer:	<u>Star</u>

Conducted test

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	37.74	> 20dBc
2480	38.25	> 20dBc

Date of Test:	<u>February 28, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX (Hopping on)</u>	Test Engineer:	<u>Star</u>

Conducted test

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	36.69	> 20dBc
2480	37.69	> 20dBc

"Spectrum analyzer" is R/S

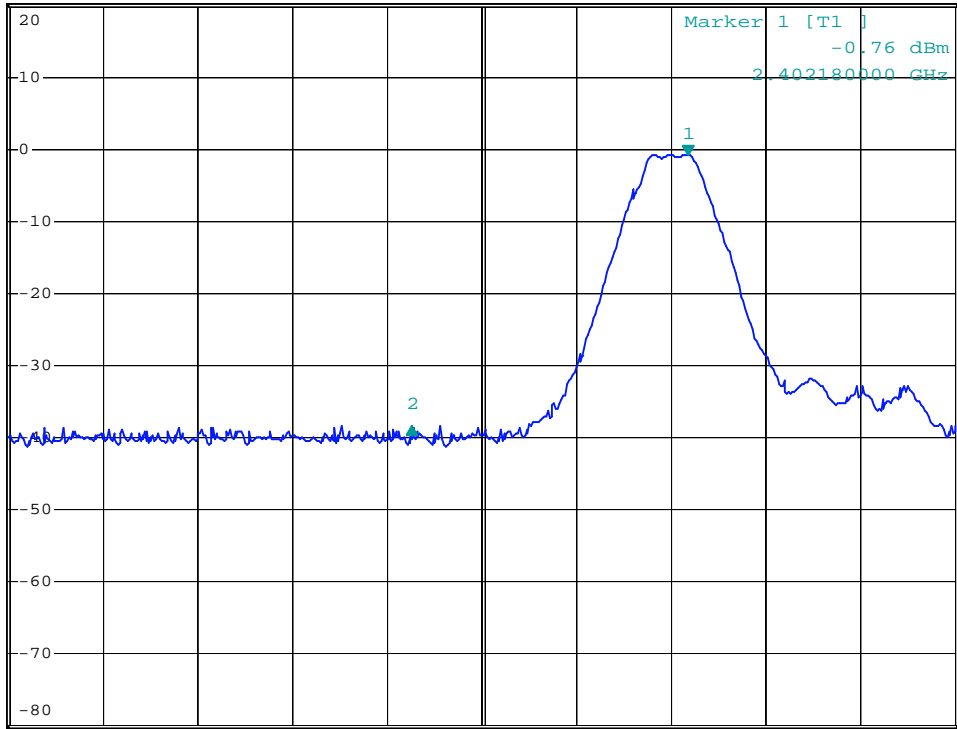


*RBW 300 kHz Delta 2 [T1]
*VBW 1 MHz -37.74 dB
*SWT 2.5 ms -2.920000000 MHz

Ref 20 dBm

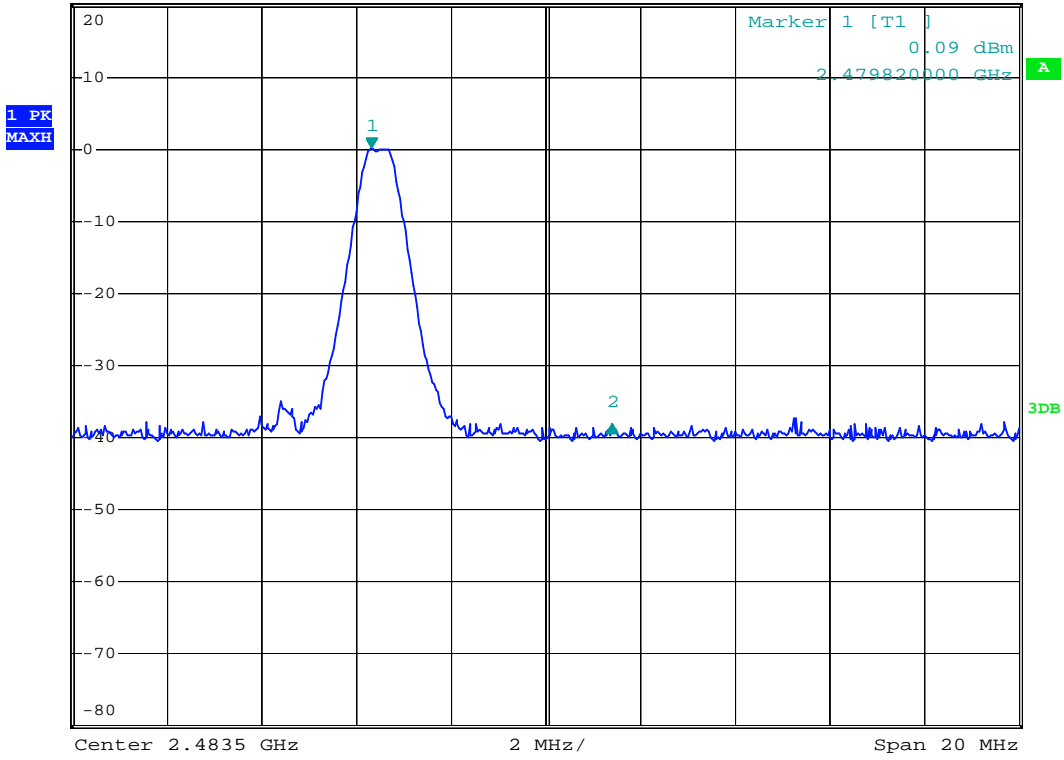
Att 50 dB

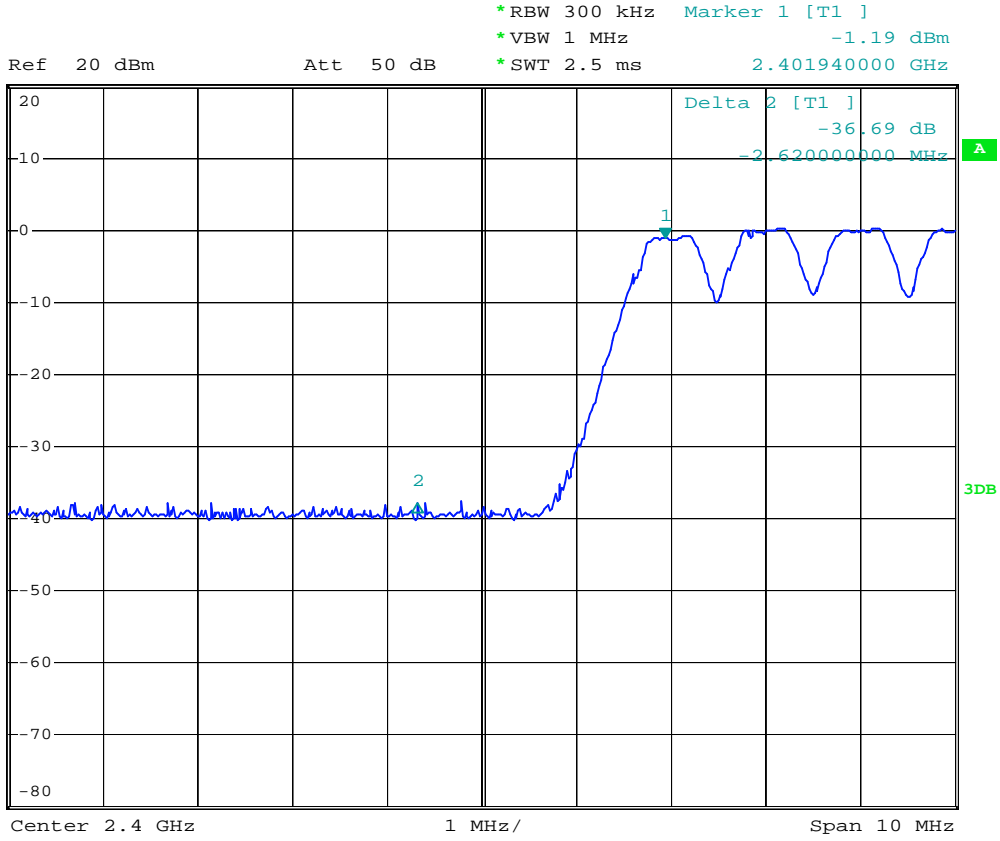
1 PK
MAXH





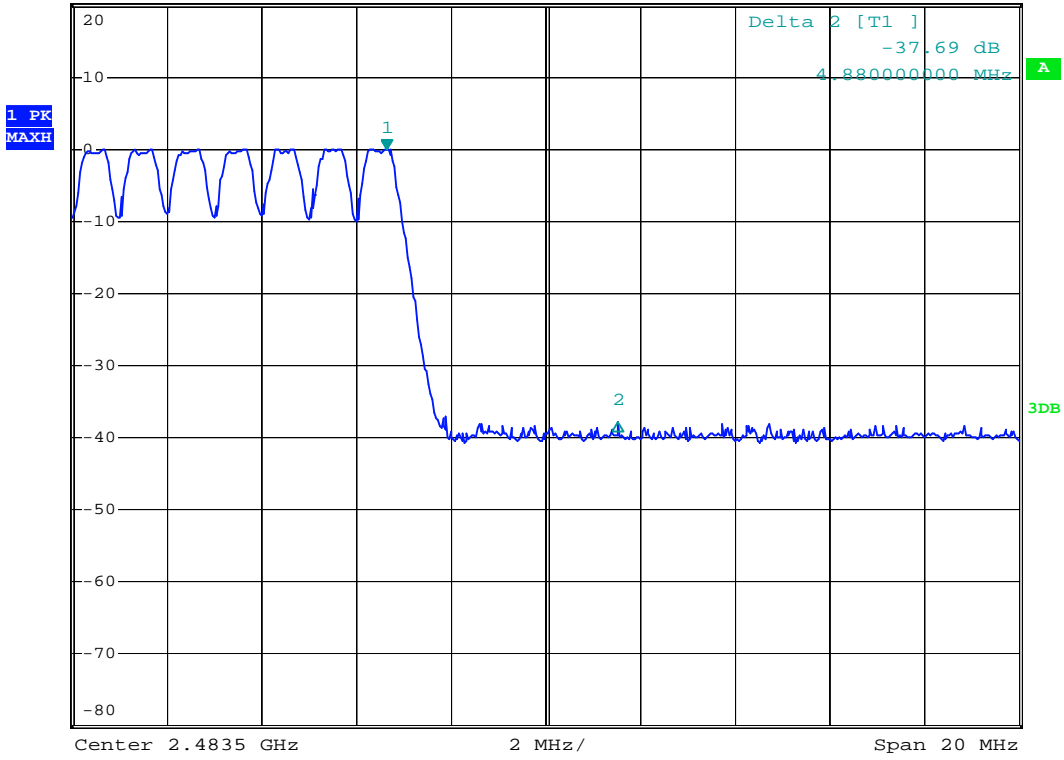
Ref 20 dBm Att 50 dB *RBW 300 kHz Delta 2 [T1]
*VBW 1 MHz -38.25 dB
*SWT 2.5 ms 5.060000000 MHz







Ref 20 dBm Att 50 dB *RBW 300 kHz Marker 1 [T1]
*VBW 1 MHz -0.06 dBm
*SWT 2.5 ms 2.480140000 GHz



Radiated Band Edge Result

Date of Test:	<u>February 28, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX 2402MHz(Hopping off)</u>	Test Engineer:	<u>Star</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	36.11	42.55	-6.99	29.12	35.56	54.00	74.00	-24.88	-38.44	Vertical
2367.200	39.50	46.28	-6.84	32.66	39.44	54.00	74.00	-21.34	-34.56	Vertical
2390.000	35.75	44.82	-6.78	28.97	38.04	54.00	74.00	-25.03	-35.96	Vertical
2310.000	39.40	46.38	-6.99	32.41	39.39	54.00	74.00	-21.59	-34.61	Horizontal
2337.520	41.25	49.72	-6.91	34.34	42.81	54.00	74.00	-19.66	-31.19	Horizontal
2390.000	36.99	43.86	-6.78	30.21	37.08	54.00	74.00	-23.79	-36.92	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:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

3. Display the measurement of peak values.

Date of Test:	<u>February 28, 2014</u>	Temperature:	<u>25°C</u>
EUT:	<u>Wireless Bluetooth Mouse</u>	Humidity:	<u>50%</u>
Model No.:	<u>DS-2460</u>	Power Supply:	<u>DC 3V</u>
Test Mode:	<u>TX 2480MHz (Hopping off)</u>	Test Engineer:	<u>Star</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2483.500	36.80	43.04	-6.54	30.26	36.50	54.00	74.00	-23.74	-37.50	Vertical
2490.720	39.00	46.82	-6.51	32.49	40.31	54.00	74.00	-21.51	-33.69	Vertical
2500.000	37.15	46.11	-6.50	30.65	39.61	54.00	74.00	-23.35	-34.39	Vertical
2483.500	37.80	43.41	-6.54	31.26	36.87	54.00	74.00	-22.74	-37.13	Horizontal
2493.440	37.20	43.89	-6.51	30.69	37.38	54.00	74.00	-23.31	-36.62	Horizontal
2500.000	38.14	43.12	-6.50	31.64	36.62	54.00	74.00	-22.36	-37.38	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
3. Display the measurement of peak values.

Date of Test:	February 28, 2014	Temperature:	25°C
EUT:	Wireless Bluetooth Mouse	Humidity:	50%
Model No.:	DS-2460	Power Supply:	DC 3V
Test Mode:	TX 2480MHz (Hopping on)	Test Engineer:	Star

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	38.14	46.89	-6.99	31.15	39.90	54.00	74.00	-22.85	-34.10	Horizontal
2390.000	35.28	43.80	-6.78	28.50	37.02	54.00	74.00	-25.50	-36.98	Horizontal
2483.500	36.77	44.32	-6.54	30.23	37.78	54.00	74.00	-23.77	-36.22	Horizontal
2500.000	37.02	44.37	-6.50	30.52	37.87	54.00	74.00	-23.48	-36.13	Horizontal
2310.000	43.78	50.49	-6.99	36.79	43.50	54.00	74.00	-17.21	-30.50	Vertical
2390.000	41.27	50.25	-6.78	34.49	48.51	54.00	74.00	-19.51	-25.49	Vertical
2483.500	39.65	46.75	-6.54	33.11	40.21	54.00	74.00	-20.89	-33.79	Vertical
2500.000	37.82	45.89	-6.50	31.32	39.39	54.00	74.00	-22.68	-34.61	Vertical

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
3. Display the measurement of peak values.

Non-hopping mode



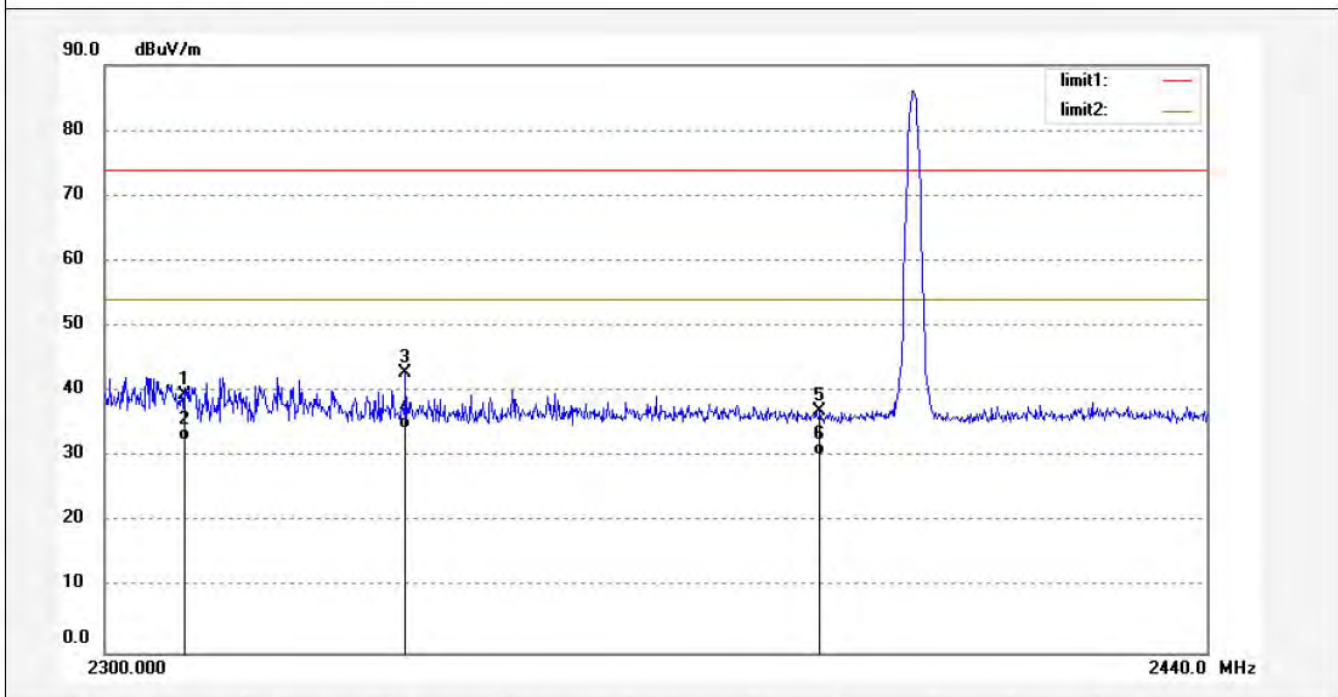
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4504	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/28/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 8/43/55
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	46.38	-6.99	39.39	74.00	-34.61	peak			
2	2310.000	39.40	-6.99	32.41	54.00	-21.59	AVG			
3	2337.520	49.72	-6.91	42.81	74.00	-31.19	peak			
4	2337.520	41.25	-6.91	34.34	54.00	-19.66	AVG			
5	2390.000	43.86	-6.78	37.08	74.00	-36.92	peak			
6	2390.000	36.99	-6.78	30.21	54.00	-23.79	AVG			



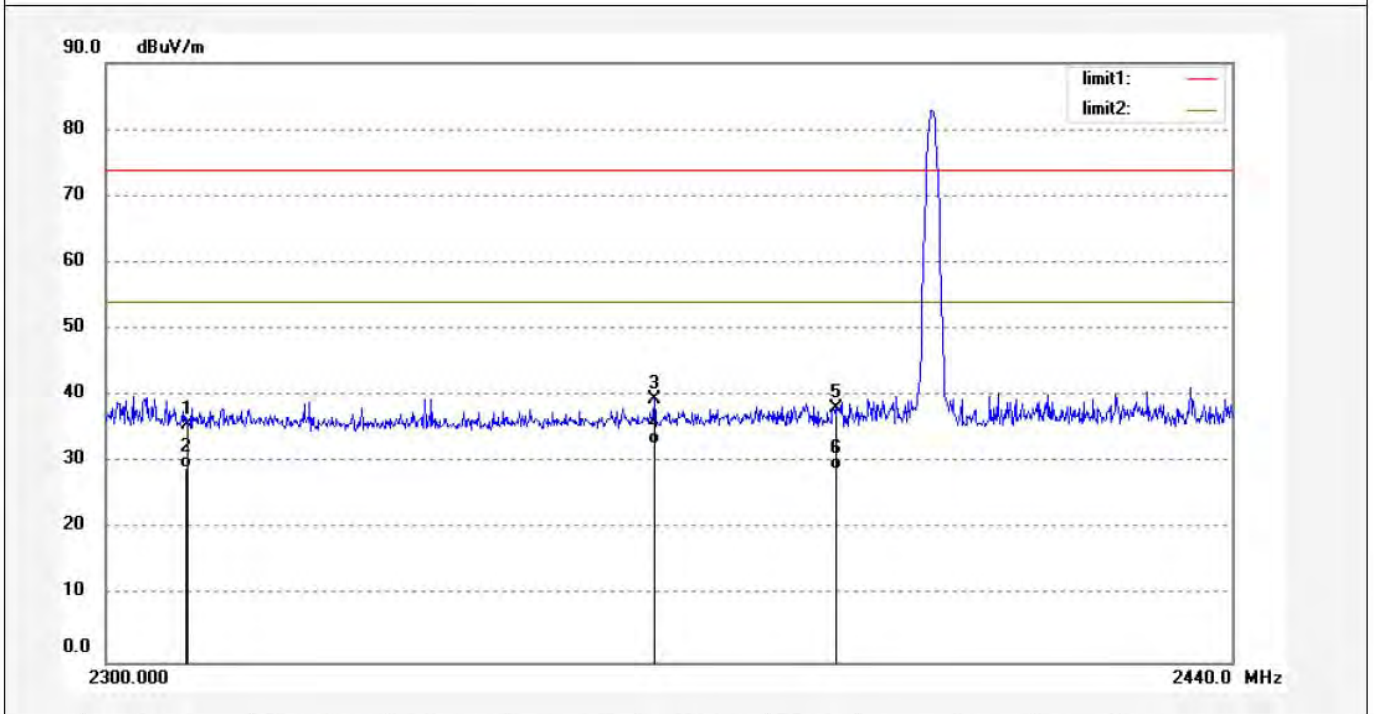
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4505	Polarization: Vertical
Standard: FCC PK	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/28/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 8/48/14
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	42.55	-6.99	35.56	74.00	-38.44	peak			
2	2310.000	36.11	-6.99	29.12	54.00	-24.88	AVG			
3	2367.200	46.28	-6.84	39.44	74.00	-34.56	peak			
4	2367.200	39.50	-6.84	32.66	54.00	-21.34	AVG			
5	2390.000	44.82	-6.78	38.04	74.00	-35.96	peak			
6	2390.000	35.75	-6.78	28.97	54.00	-25.03	AVG			



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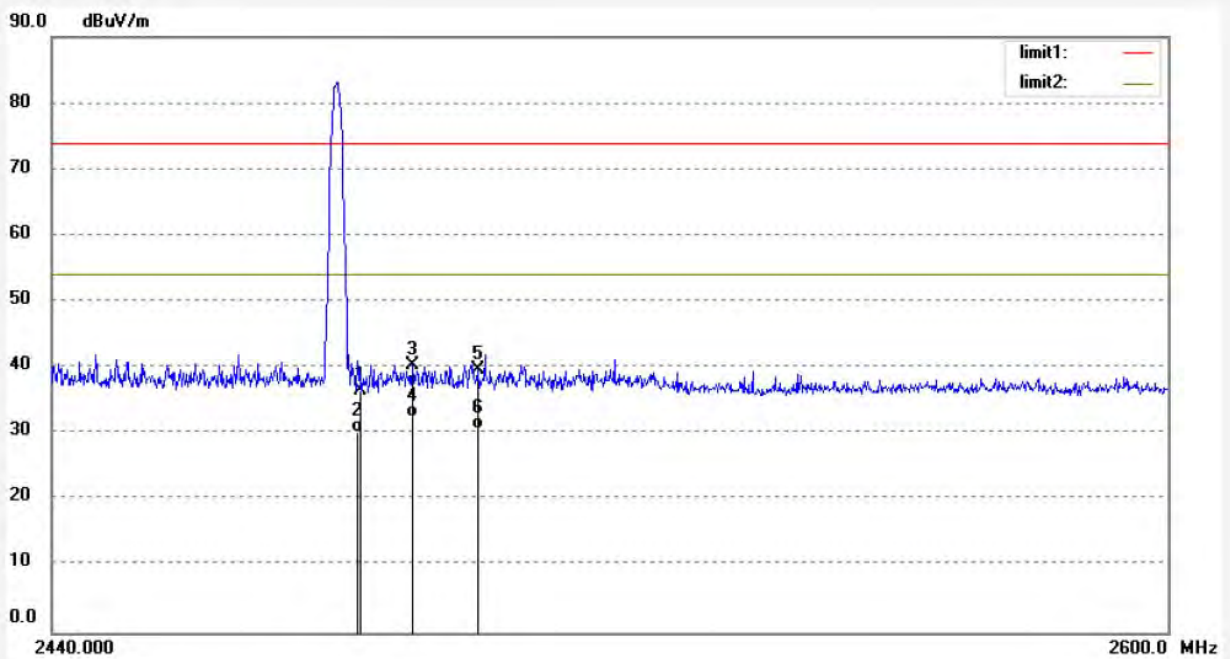
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4506
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless Bluetooth Mouse
Mode: TX 2480MHz
Model: DS-2460
Manufacturer: Eastern Times

Polarization: Vertical
Power Source: DC 3V
Date: 14/02/28/
Time: 8/52/32
Engineer Signature:
Distance: 3m

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	43.04	-6.54	36.50	74.00	-37.50	peak			
2	2483.500	36.80	-6.54	30.26	54.00	-23.74	AVG			
3	2490.720	46.82	-6.51	40.31	74.00	-33.69	peak			
4	2490.720	39.00	-6.51	32.49	54.00	-21.51	AVG			
5	2500.000	46.11	-6.50	39.61	74.00	-34.39	peak			
6	2500.000	37.15	-6.50	30.65	54.00	-23.35	AVG			



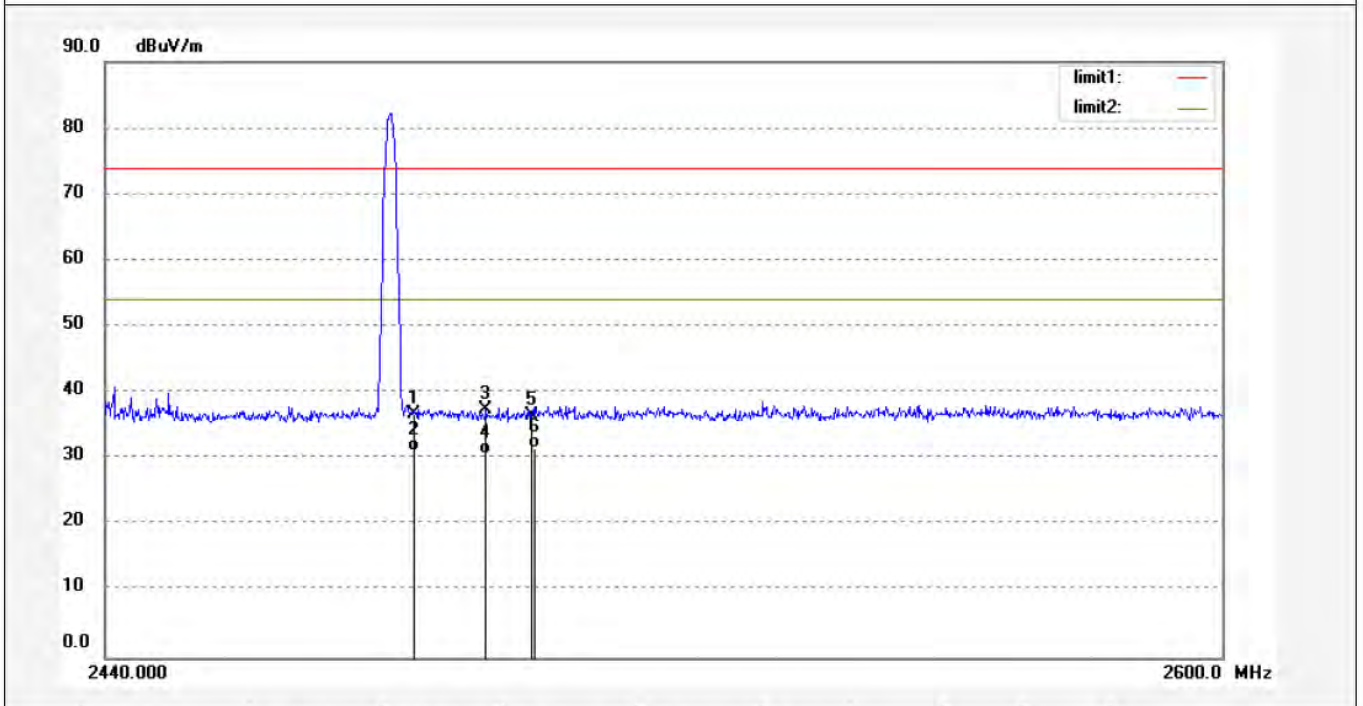
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4507	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/28/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 8/56/57
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	43.41	-6.54	36.87	74.00	-37.13	peak			
2	2483.500	37.80	-6.54	31.26	54.00	-22.74	AVG			
3	2493.440	43.89	-6.51	37.38	74.00	-36.62	peak			
4	2493.440	37.20	-6.51	30.69	54.00	-23.31	AVG			
5	2500.000	43.12	-6.50	36.62	74.00	-37.38	peak			
6	2500.000	38.14	-6.50	31.64	54.00	-22.36	AVG			

Hopping mode



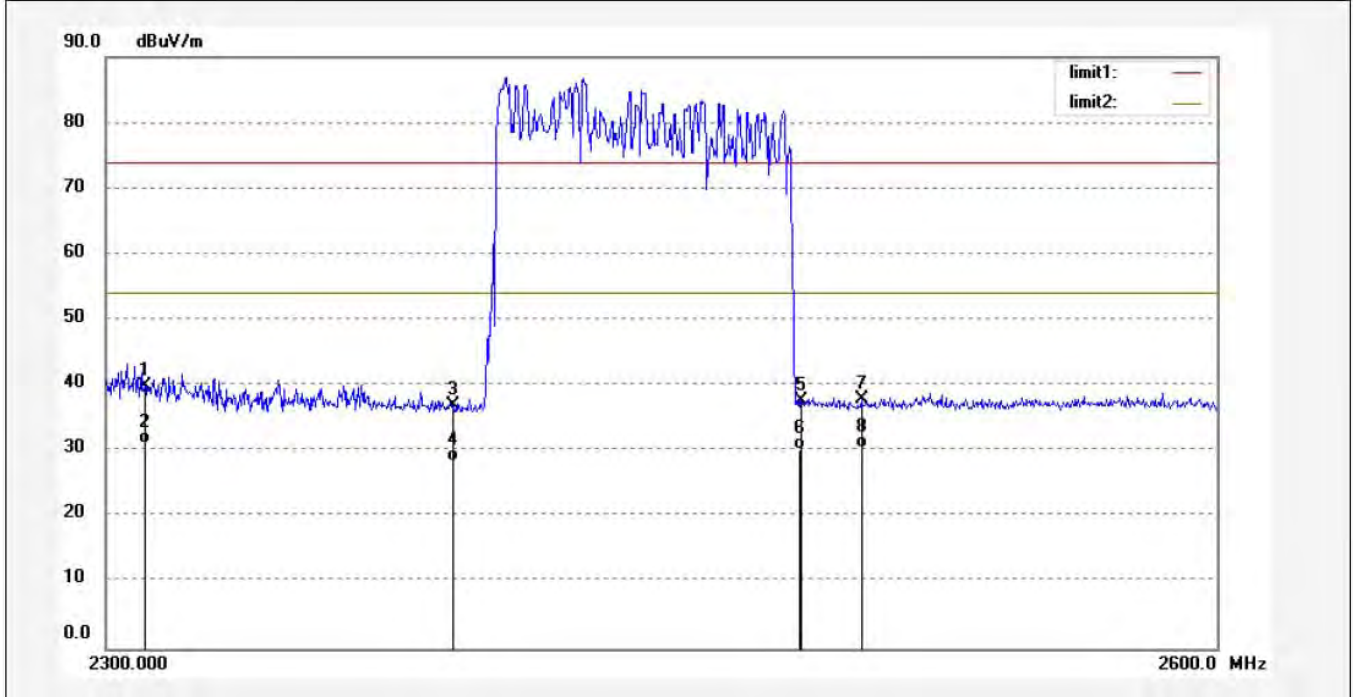
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4508	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/28/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/01/57
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: HOPPING	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	46.89	-6.99	39.90	74.00	-34.10	peak			
2	2310.000	38.14	-6.99	31.15	54.00	-22.85	AVG			
3	2390.000	43.80	-6.78	37.02	74.00	-36.98	peak			
4	2390.000	35.28	-6.78	28.50	54.00	-25.50	AVG			
5	2483.500	44.32	-6.54	37.78	74.00	-36.22	peak			
6	2483.500	36.77	-6.54	30.23	54.00	-23.77	AVG			
7	2500.000	44.37	-6.50	37.87	74.00	-36.13	peak			
8	2500.000	37.02	-6.50	30.52	54.00	-23.48	AVG			



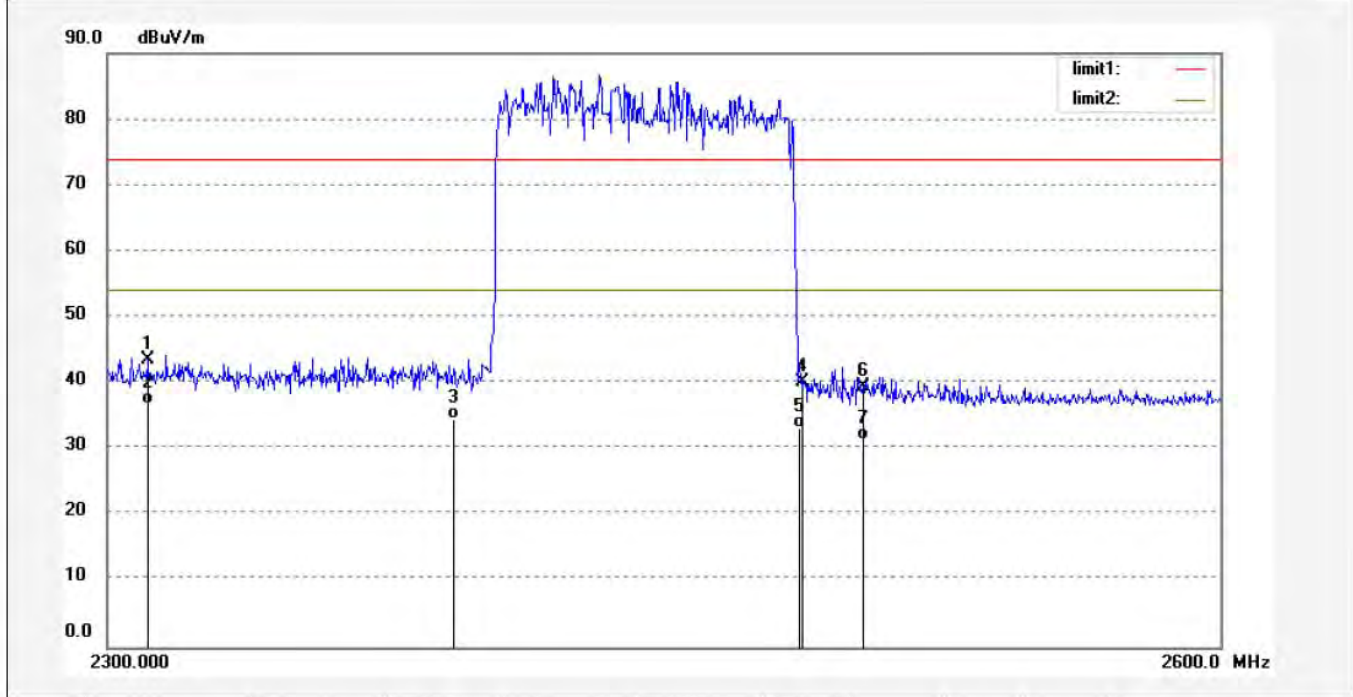
ACCURATE TECHNOLOGY CO., LTD.

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

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star #4509	Polarization: Vertical
Standard: FCC PK	Power Source: DC 3V
Test item: Radiation Test	Date: 14/02/28/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/06/36
EUT: Wireless Bluetooth Mouse	Engineer Signature:
Mode: HOPPING	Distance: 3m
Model: DS-2460	
Manufacturer: Eastern Times	

Note: Report No.:ATE2014010089



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	50.49	-6.99	43.50	74.00	-30.50	peak			
2	2310.000	43.78	-6.99	36.79	54.00	-17.21	AVG			
3	2390.000	41.27	-6.78	34.49	54.00	-19.51	AVG			
4	2483.500	46.75	-6.54	40.21	74.00	-33.79	peak			
5	2483.500	39.65	-6.54	33.11	54.00	-20.89	AVG			
6	2500.000	45.89	-6.50	39.39	74.00	-34.61	peak			
7	2500.000	37.82	-6.50	31.32	54.00	-22.68	AVG			

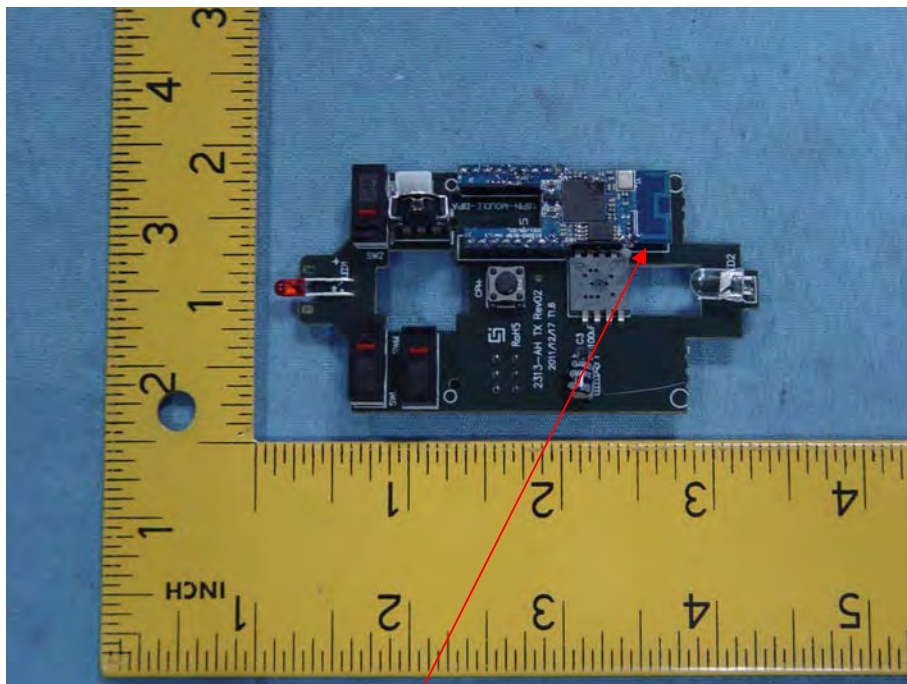
12.ANTENNA REQUIREMENT

12.1.The Requirement

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.

12.2.Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna