APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
TAIWAN TAI-HAO ENTERPRISE CO., LTD.

Wireless mouse
Model No.: RZL-MU100A, RF350, RF360, RF370, RF380, RF390

FCC ID: RZL-MU100A

Prepared for	:	TAIWAN TAI-HAO ENTERPRISE CO., LTD.
Address	:	6F-5, No.155, KEELUNG RD., SEC.1, Taipei, Taiwan
Prepared by	:	ACCURATE TECHNOLOGY CO., LTD
Address	:	F1, Bldg. A, Chan Yuan New Material Port, Keyuan Rd. Science & Industry Park, Nan Shan, Shenzhen, Guangdong P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number	:	ATE20132728
Date of Test	:	Dec 18-Dec 27, 2013
Date of Report	:	Dec 27, 2013

TABLE OF CONTENTS

Description Page

Test Report Certification

Applicant& address	:	TAIWAN TAI-HAO ENTERPRISE CO., LTD. 6F-5, No.155, KEELUNG RD., SEC.1, Taipei, Taiwan
Manufacturer& address	:	TAIWAN TAI-HAO ENTERPRISE CO., LTD. 6F-5, No.155, KEELUNG RD., SEC.1, Taipei, Taiwan
Product	:	Wireless mouse
Model No.	:	RZL-MU100A, RF350, RF360, RF370, RF380, RF390 (Note: These samples are same except for the model number is different for the marketing requirement. So we prepare the RZL-MU100A for test.)

Measurement Procedure Used:

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

The EUT was tested according to FCC 47CFR 15.249 for compliance to FCC 47CFR 15.249 requirements

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 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Dec 18-Dec 27, 2013

Prepared by : Tim Zhang
(Tim.zhang, Engineer)

Approved & Authorized Signer : Sean Liu
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

The submitted sample is a Wireless mouse.
The sample is powered by DC 1.5V (Powered by battery).

		2.4G Wireless mouse
Frequency Range	:	2.409-2.476GHz
Channel frequency	:	2409MHz，2417MHz，2426MHz，2440MHz，2445MHz，2455MHz，2465MHz，2476MHz
Number of Channels	:	8
Modulation Type	:	MSK
Type of Antenna	:	PCB Antenna
Max antenna gain	:	-1 dBi
Power Supply	:	DC 1.5V(Powered by battery)

1.2. Special Accessory and Auxiliary Equipment

N/A

1.3.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

1.4.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 dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 12, 2013	Jan. 11, 2014
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 12, 2013	Jan. 11, 2014
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 12, 2013	Jan. 11, 2014
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 12, 2013	Jan. 11, 2014
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Feb. 6, 2013	Feb. 5, 2014
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Feb. 6, 2013	Feb. 5, 2014
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Feb. 6, 2013	Feb. 5, 2014
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Feb. 6, 2013	Feb. 5, 2014
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 12, 2013	Jan. 11, 2014
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 12, 2013	Jan. 11, 2014
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 12, 2013	Jan. 11, 2014
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 12, 2013	Jan. 11, 2014

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 2409MHz
Middle Channel: 2440MHz
High Channel: 2476MHz

3.2.Configuration and peripherals

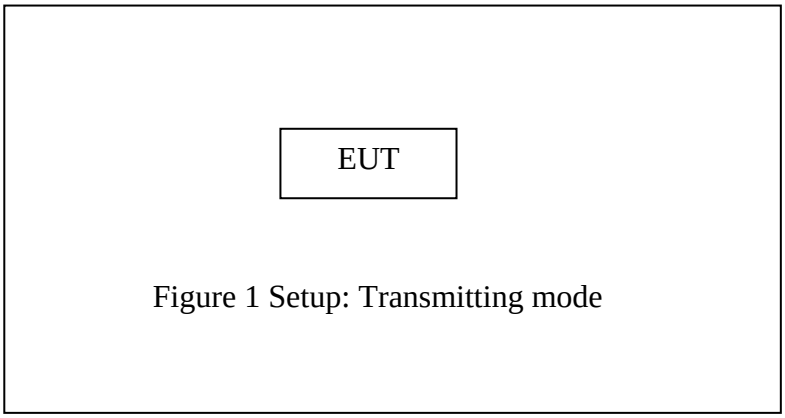


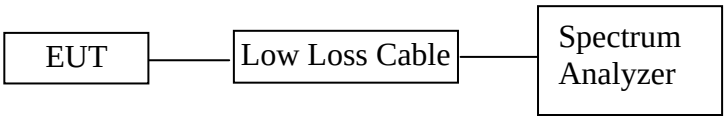
Figure 1 Setup: Transmitting mode

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.215(c)	20dB Bandwidth	Compliant
Section 15.249(d)	Band Edge Compliance Test	Compliant
Section 15.205(a), Section 15.209(a), Section 15.249, Section 15.35	Radiated Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	N/A
Section 15.203	Antenna Requirement	Compliant

5. 20DB BANDWIDTH MEASUREMENT

5.1.Block Diagram of Test Setup



5.2.The Requirement For Section 15.215(c)

The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

5.3.Operating Condition of EUT

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

5.3.2.Turn on the power of all equipment.

5.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2409-2476 MHz. We select 2409MHz, 2440MHz, and 2476MHz TX frequency to transmit.

5.4.Test Procedure

5.4.1.Place the EUT on the table and set it in transmitting mode.

5.4.2.Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

5.4.3.Set RBW of spectrum analyzer to 100 kHz and VBW to300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

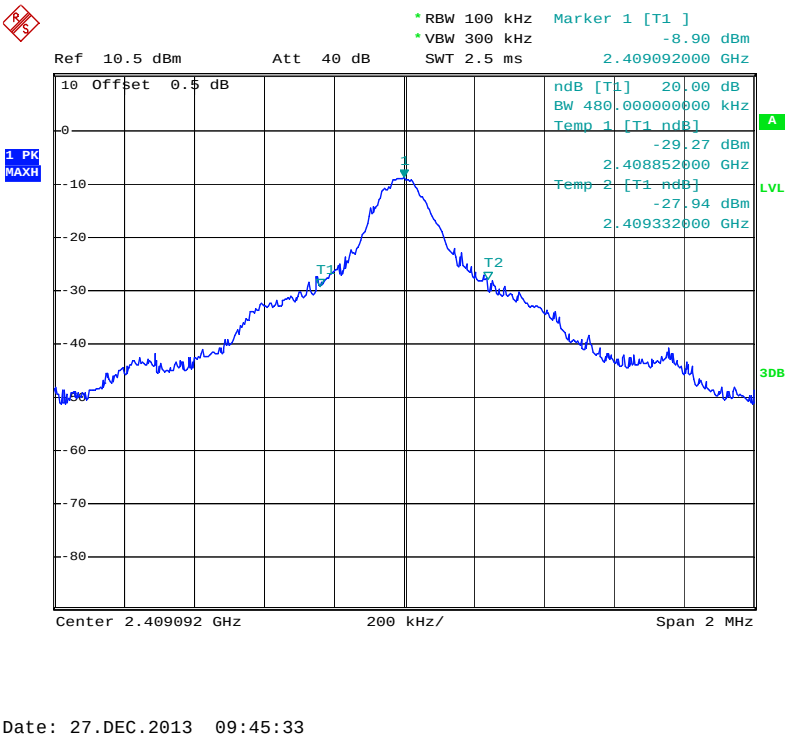
5.4.4.Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

5.5.Test Result

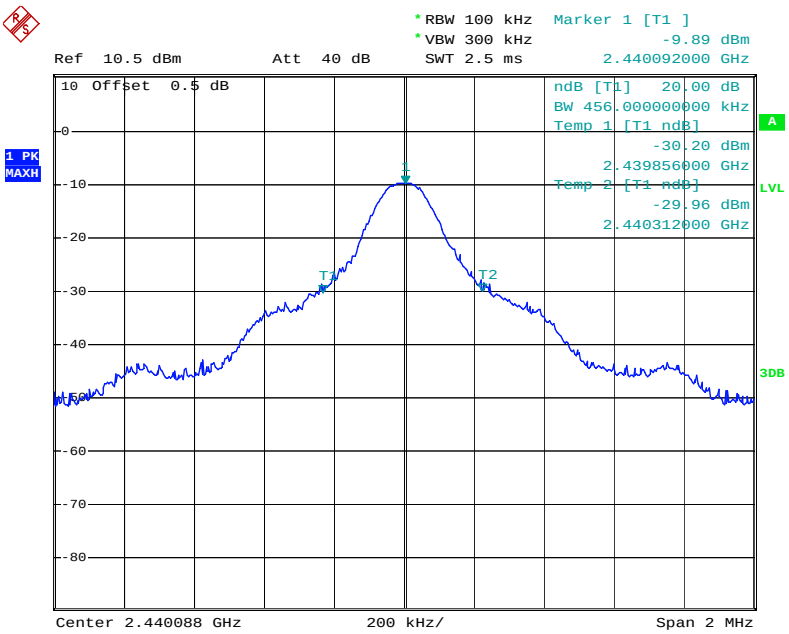
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
1	2409	0.480
4	2440	0.456
8	2476	0.588

The spectrum analyzer plots are attached as below.

Low channel

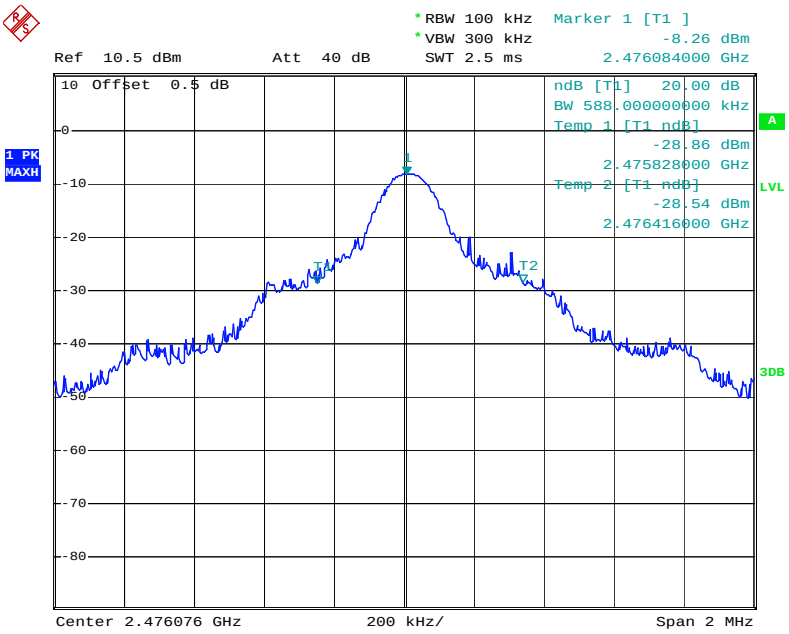


Middle channel



Date: 27.DEC.2013 09:34:59

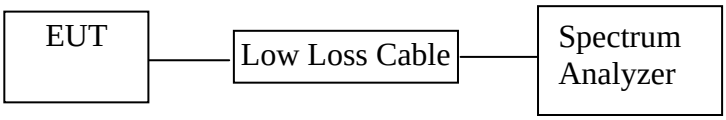
High channel



Date: 27.DEC.2013 09:40:17

6. BAND EDGE COMPLIANCE TEST

6.1.Block Diagram of Test Setup



(EUT: RZL-MU100A)

6.2.The Requirement For Section 15.249

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 A8.4(4), the attenuation required 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).

6.3.EUT Configuration on Measurement

The 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.

6.4.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 modes measure it. The transmit frequency are 2409-2476 MHz. We select 2409MHz, 2476MHz TX frequency to transmit.

6.5.Test Procedure

Conducted Band Edge:

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

6.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

Radiate Band Edge:

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

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

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

6.5.6. 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

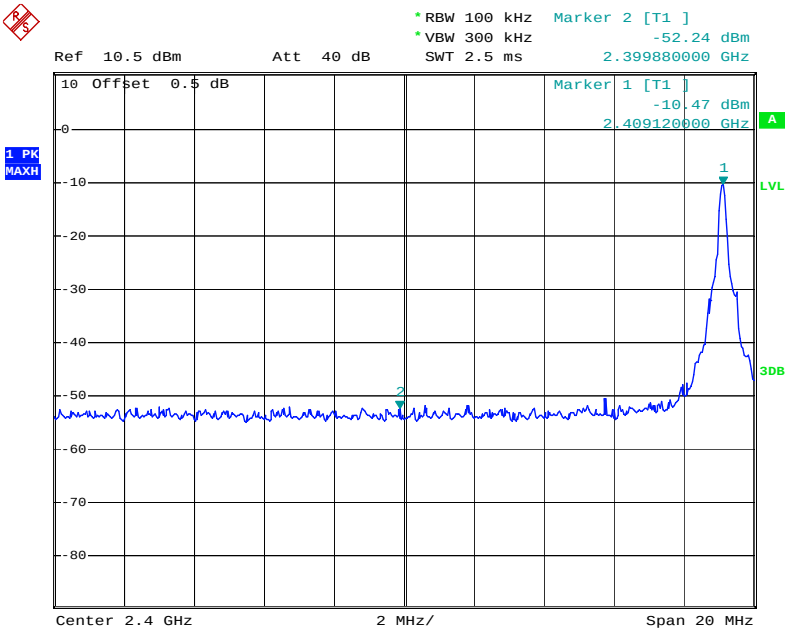
6.5.7.The band edges was measured and recorded.

6.6.Test Result

Pass

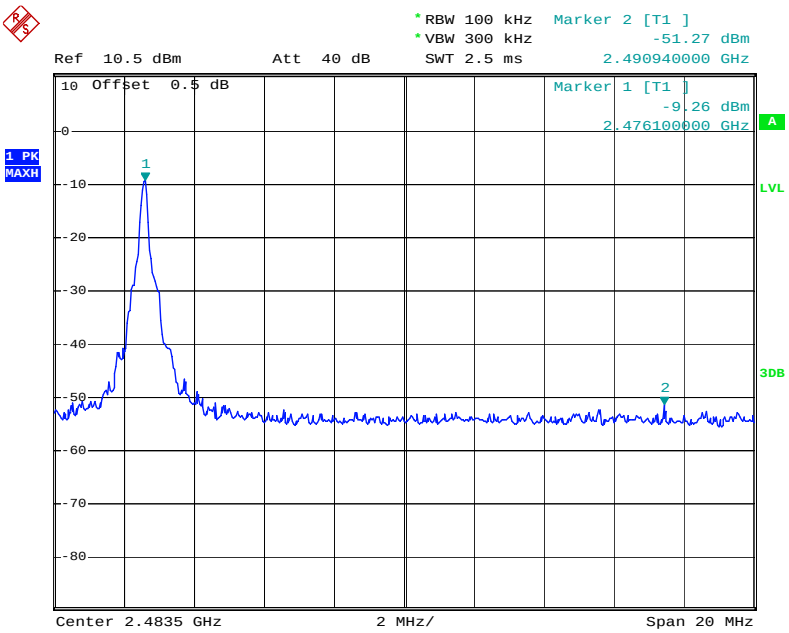
Channel	Frequency	Delta peak to band emission	Limit(dBc)
1	2399.88MHz	41.77	20
8	2490.94MHz	42.01	20

channel 1



Date: 27.DEC.2013 09:44:34

channel 8



Date: 27.DEC.2013 09:43:22

Radiated Band Edge Result

Date of Test:	Dec 19, 2013	Temperature:	25°C
EUT:	Wireless mouse	Humidity:	50%
Model No.:	RZL-MU100A	Power Supply:	DC 1.5V
Test Mode:	TX (2409MHz) GFSK	Test Engineer:	Alen

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	
2360.400	41.61	44.91	-6.86	34.75	38.05	54.00	74.00	19.25	35.95	Vertical
2400.360	40.37	43.67	-6.76	33.61	36.91	54.00	74.00	20.39	37.09	Vertical
2369.040	41.11	44.41	-6.83	34.28	37.58	54.00	74.00	19.72	36.42	Horizontal
2400.000	39.89	43.19	-6.76	33.13	36.43	54.00	74.00	20.87	37.57	Horizontal

Date of Test:	Dec 19, 2013	Temperature:	25°C
EUT:	Wireless mouse	Humidity:	50%
Model No.:	RZL-MU100A	Power Supply:	DC 1.5V
Test Mode:	TX (2476MHz) GFSK	Test Engineer:	Alen

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	
2483.650	41.73	45.03	-6.54	35.19	38.49	54.00	74.00	18.81	35.51	Vertical
2492.050	42.01	45.31	-6.54	35.50	38.80	54.00	74.00	18.20	35.20	Vertical
2483.450	41.49	44.79	-6.54	34.95	38.25	54.00	74.00	19.05	35.75	Horizontal
2483.950	43.44	46.74	-6.54	36.90	40.20	54.00	74.00	17.10	33.80	Horizontal

Note:

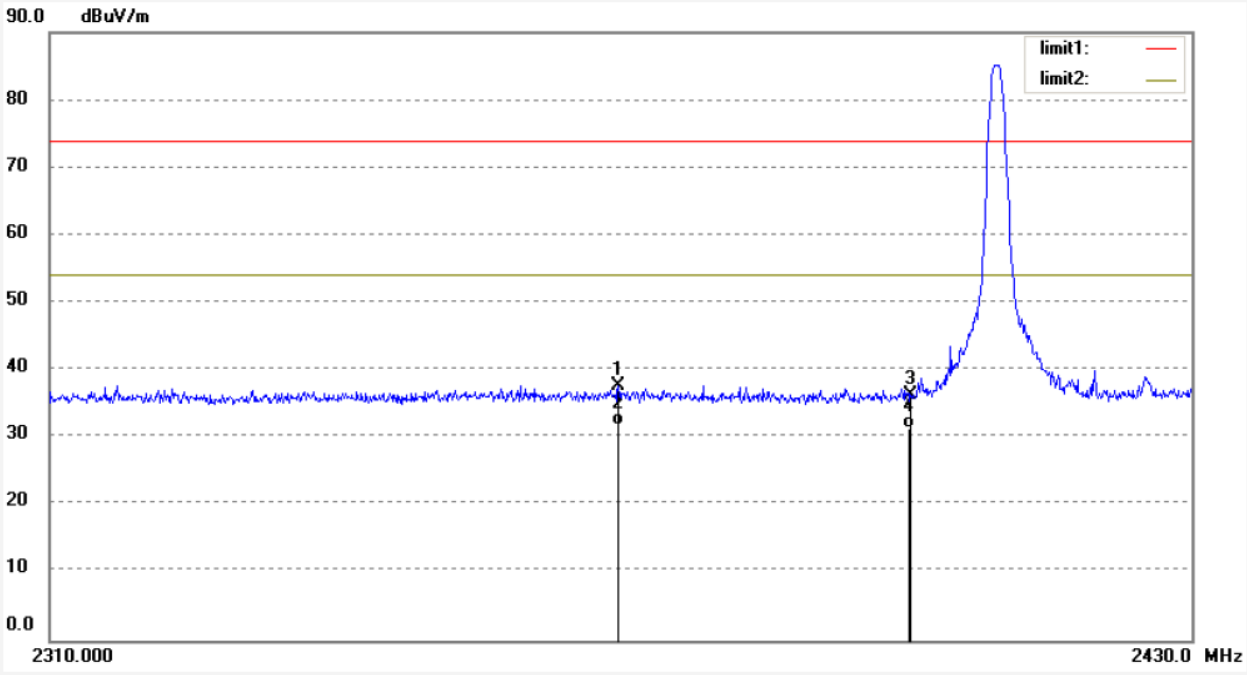
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
   Result = Reading + Corrected Factor
3. Display the measurement of peak values.

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.: alen #3134
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2409MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Horizontal
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/19/40
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



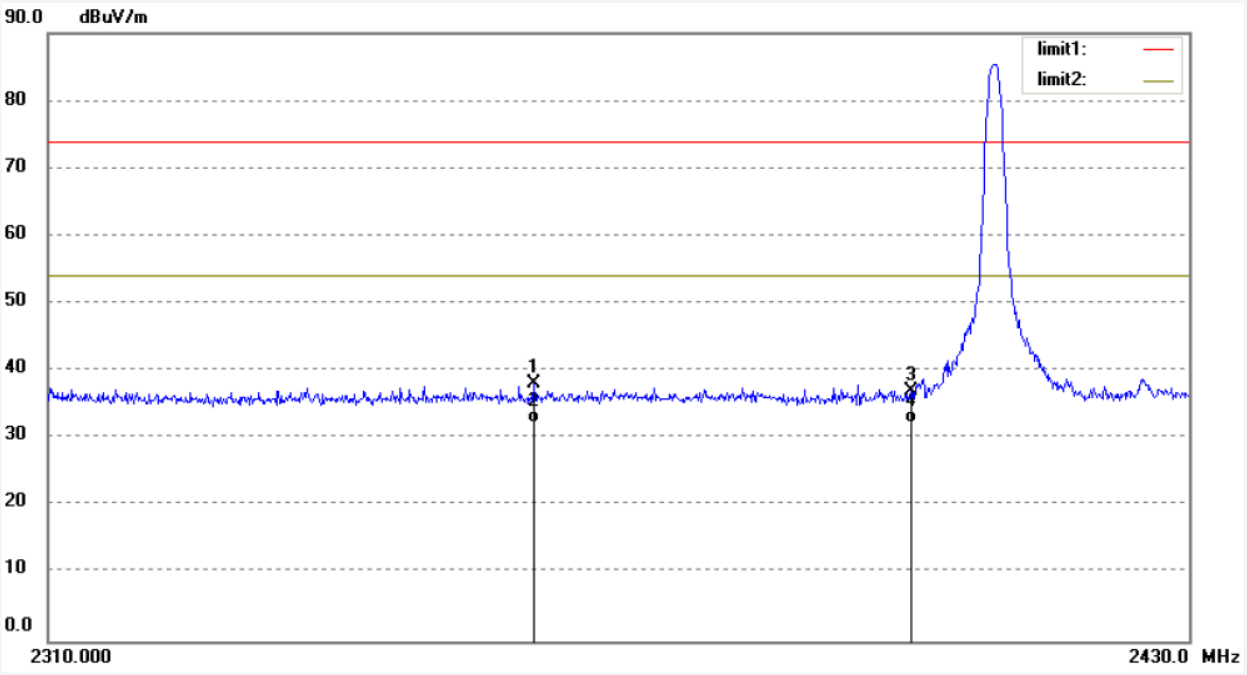
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2369.040	44.41	-6.83	37.58	74.00	36.42	peak			
2	2369.040	41.11	-6.83	34.28	54.00	19.72	AVG			
3	2400.000	43.19	-6.76	36.43	74.00	37.57	peak			
4	2400.000	39.89	-6.76	33.13	54.00	20.87	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.: alen #3133
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2409MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Vertical
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/19/00
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



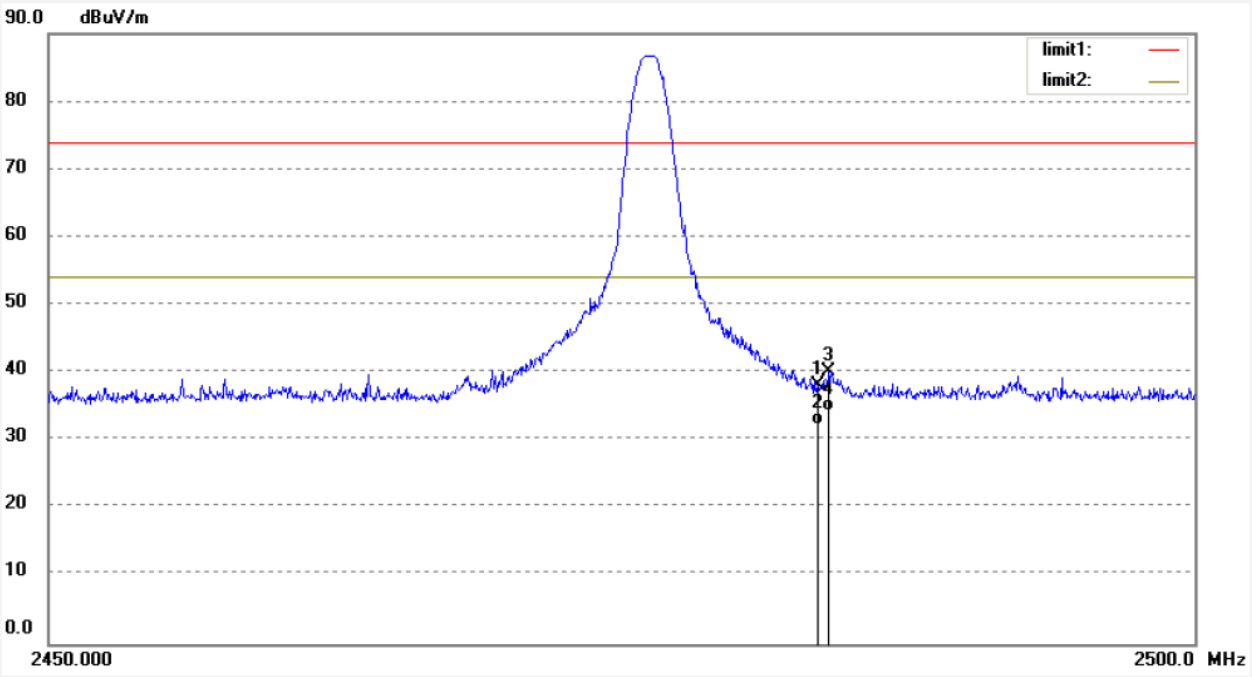
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2360.400	44.91	-6.86	38.05	74.00	35.95	peak			
2	2360.400	41.61	-6.86	34.75	54.00	19.25	AVG			
3	2400.360	43.67	-6.76	36.91	74.00	37.09	peak			
4	2400.360	40.37	-6.76	33.61	54.00	20.39	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.: alen #3138
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2476MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Horizontal
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/25/39
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728

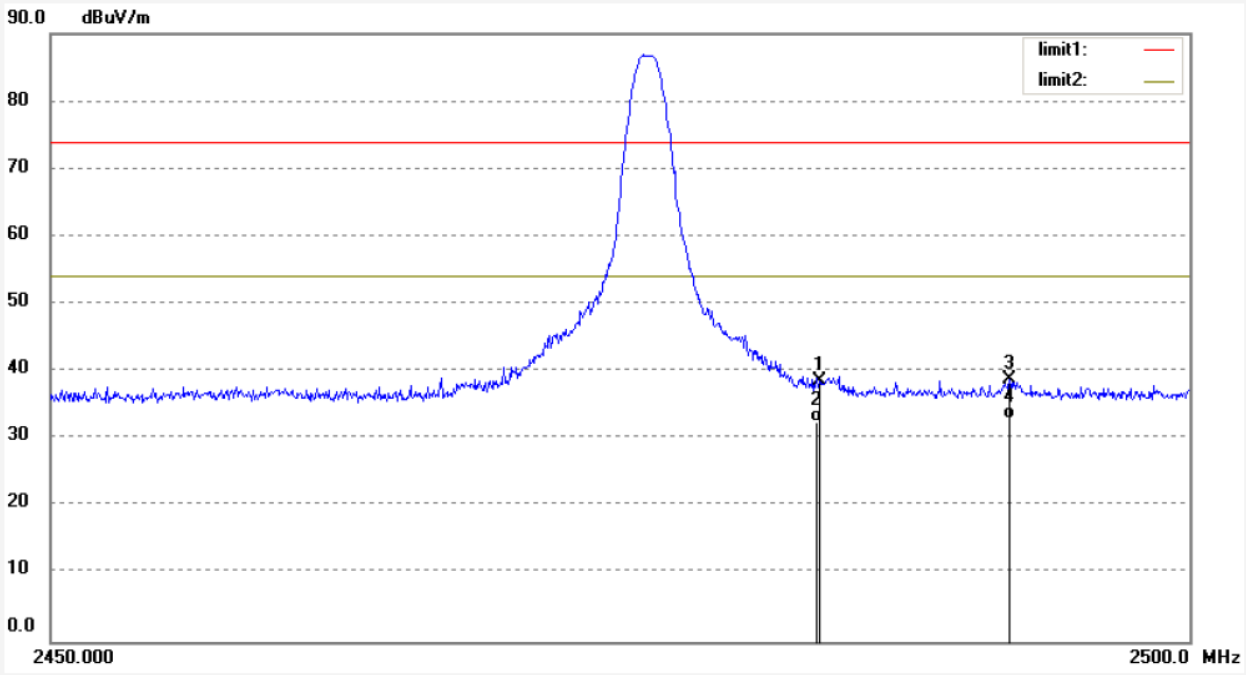


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.450	44.79	-6.54	38.25	74.00	35.75	peak			
2	2483.450	41.49	-6.54	34.95	54.00	19.05	AVG			
3	2483.950	46.74	-6.54	40.20	74.00	33.80	peak			
4	2483.950	43.44	-6.54	36.90	54.00	17.10	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.: alen #3137	Polarization: Vertical
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/19/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 9/24/52
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2476MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.650	45.03	-6.54	38.49	74.00	35.51	peak			
2	2483.650	41.73	-6.54	35.19	54.00	18.81	AVG			
3	2492.050	45.31	-6.51	38.80	74.00	35.20	peak			
4	2492.050	42.01	-6.51	35.50	54.00	18.50	AVG			

Note:

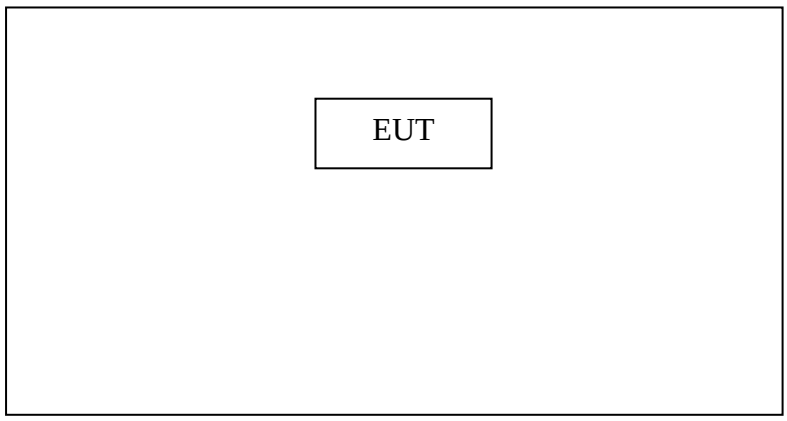
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor
3. Display the measurement of peak values.

7. RADIATED SPURIOUS EMISSION TEST

7.1.Block Diagram of Test Setup

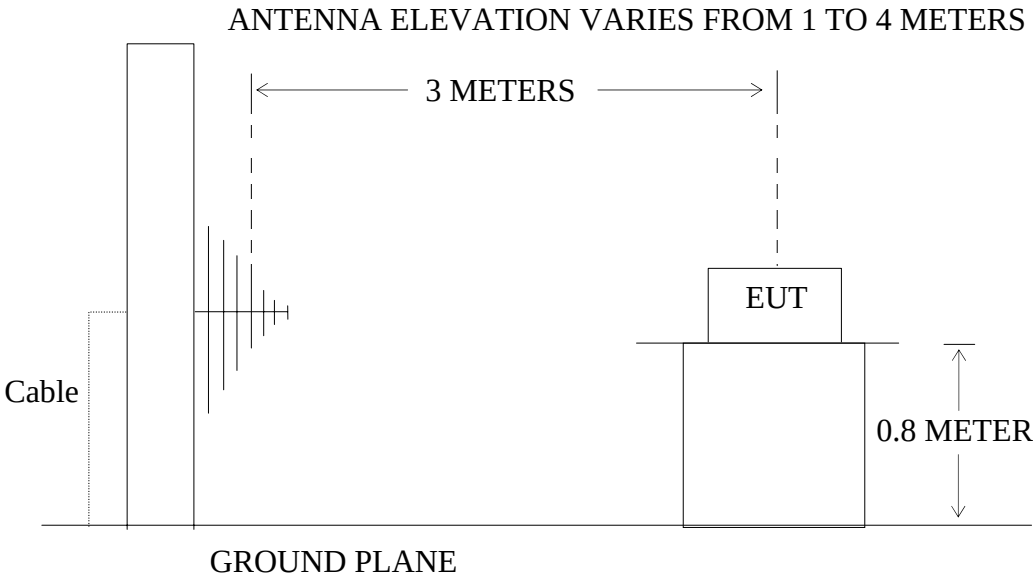
7.1.1.Block diagram of connection between the EUT and peripherals



Setup: Transmitting mode

(EUT: RZL-MU100A)

7.1.2.Semi-Anechoic Chamber Test Setup Diagram



7.2.The Limit For Section 15.249

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 A8.4(4), 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).

7.3.Restricted bands of operation

7.3.1.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			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]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 Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

7.4. Configuration of EUT on Measurement

The 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.

7.5. Operating Condition of EUT

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

7.5.2. Turn on the power of all equipment.

7.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2409-2476 MHz. We select 2409MHz, 2440MHz, and 2476MHz TX frequency to transmit.

7.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

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

The frequency range from 9 kHz to 25GHz 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

7.7.The Field Strength of Radiation Emission Measurement Results

PASS.

For Below 30MHz

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

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	
---	---	---	---	---	---	Vertical
---	---	---	---	---	---	Vertical
---	---	---	---	---	---	Vertical
---	---	---	---	---	---	Horizontal
---	---	---	---	---	---	Horizontal
---	---	---	---	---	---	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	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

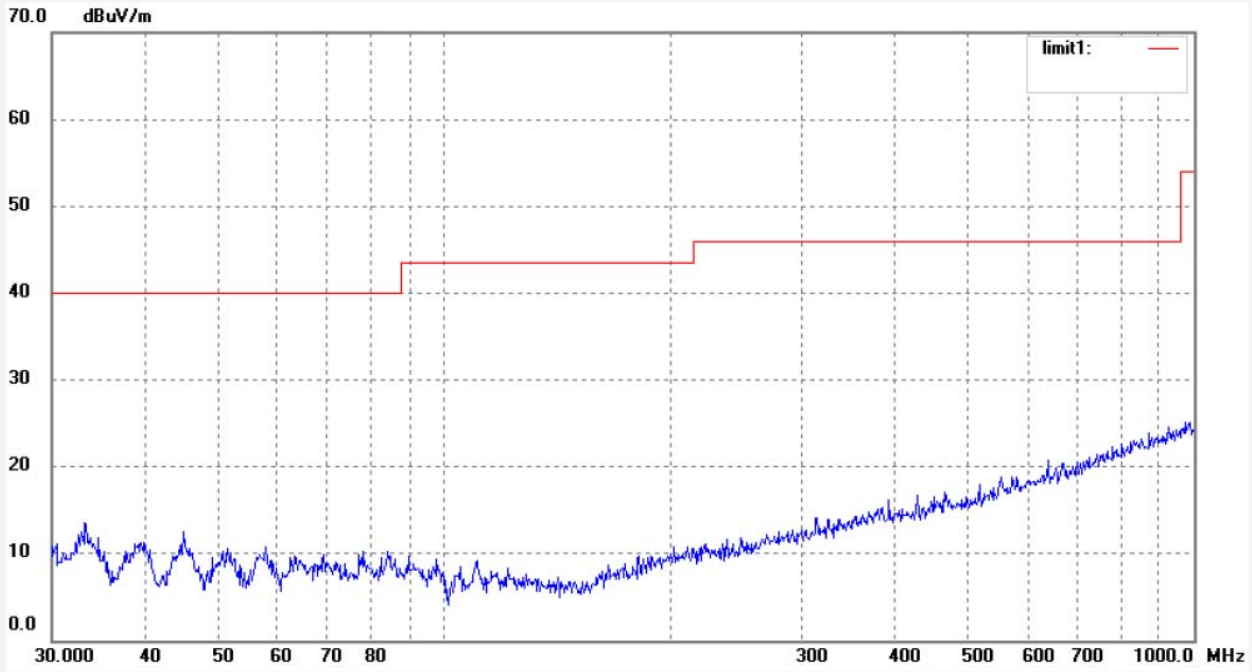
3. The EUT is tested radiation emission at Low, Middle, High channel in three axes. The worst emissions are reported in all channels.

4. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.

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.: alen #3165	Polarization: Horizontal
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/36/51
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2409MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728

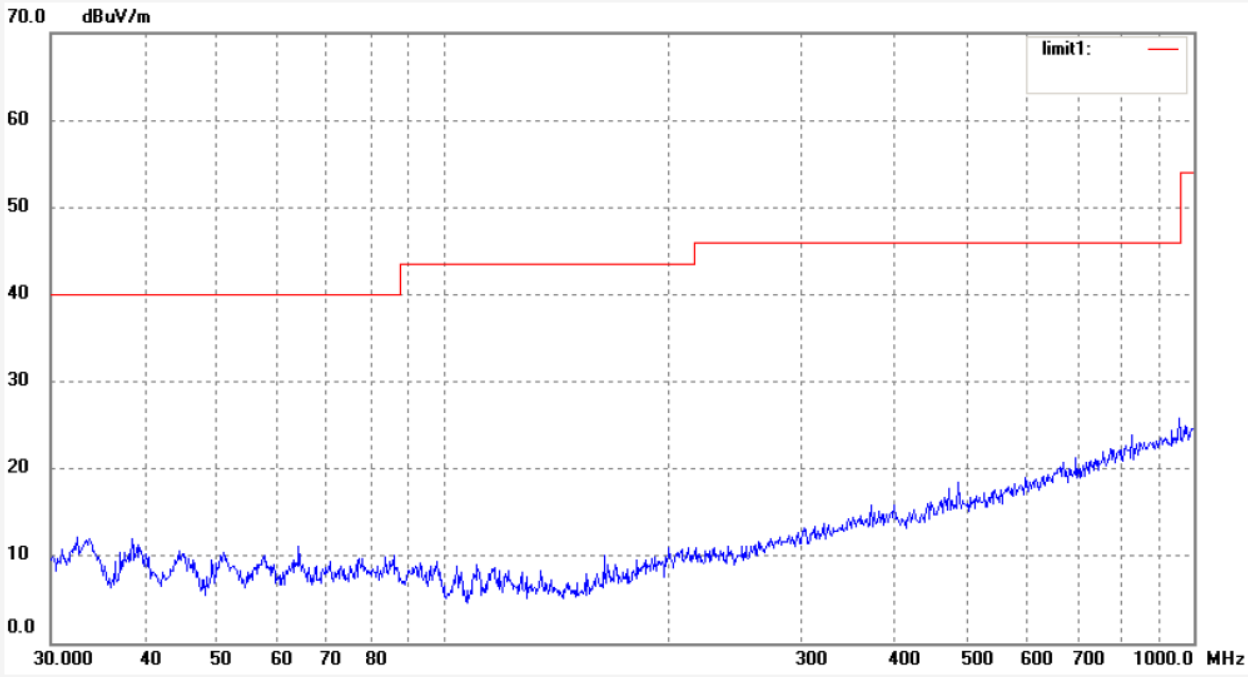


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3164	Polarization: Vertical
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/36/10
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2409MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728

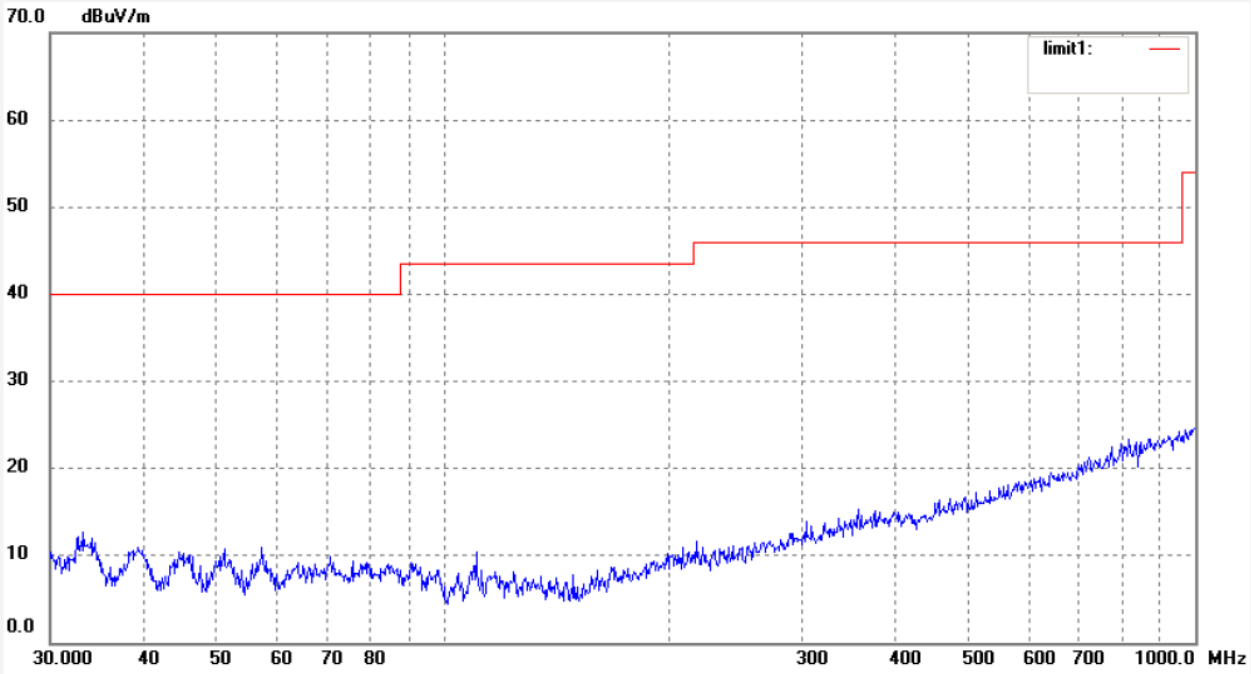


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3162	Polarization: Horizontal
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/35/10
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2440MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728

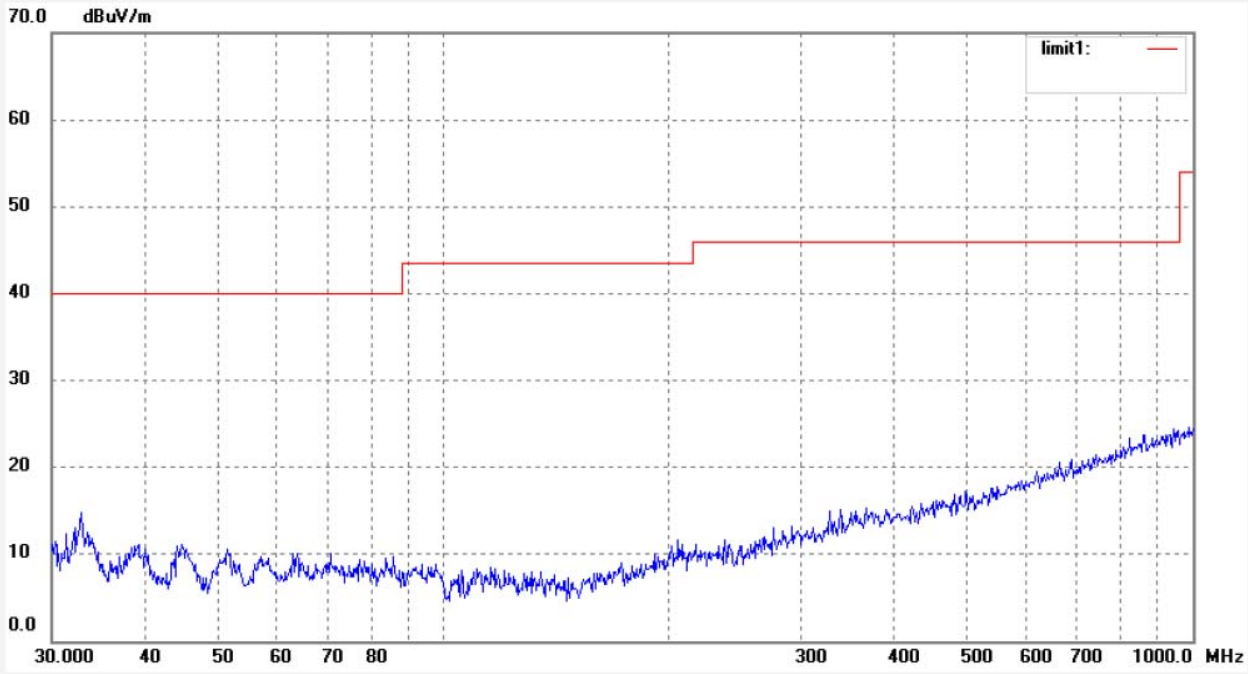


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3163	Polarization: Vertical
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/35/38
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2440MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728

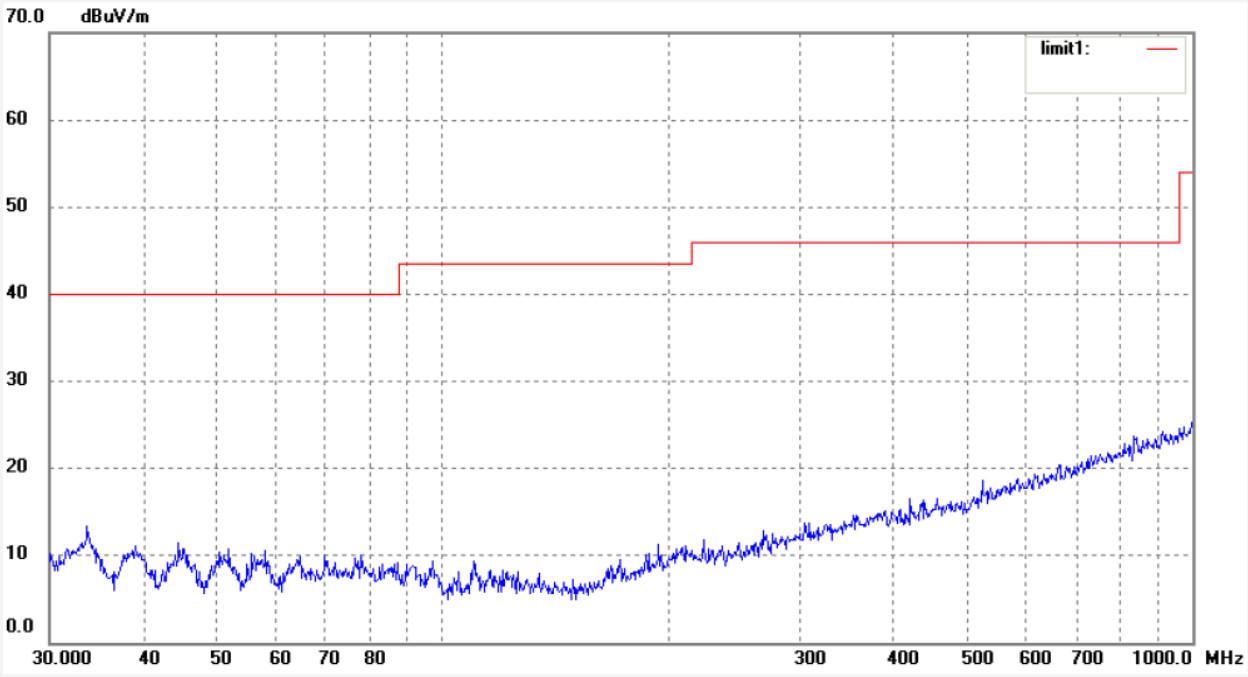


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3161	Polarization: Horizontal
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/34/43
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2476MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728

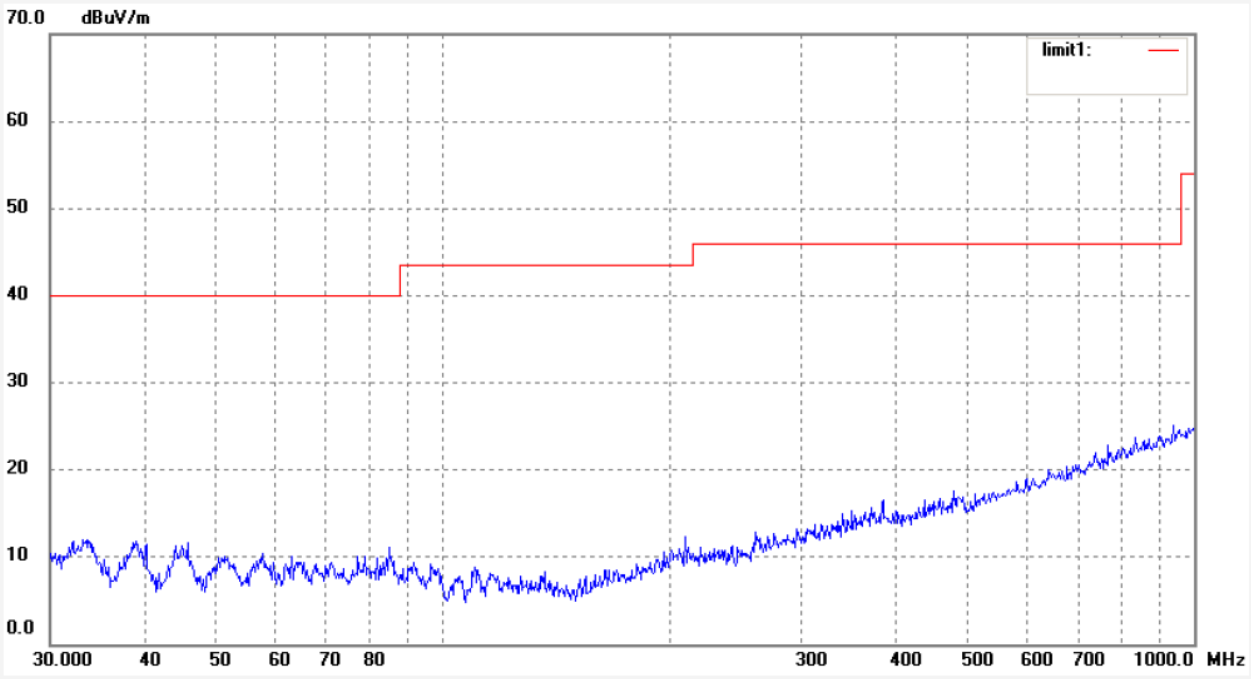


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3160	Polarization: Vertical
Standard: FCC 3M Radiated	Power Source: DC 1.5V
Test item: Radiation Test	Date: 13/12/20/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/34/07
EUT: Wireless mouse	Engineer Signature:
Mode: TX 2476MHz	Distance: 3m
Model: RZL-MU100A	
Manufacturer: TAI-HAO	

Note: Report No:ATE20132728



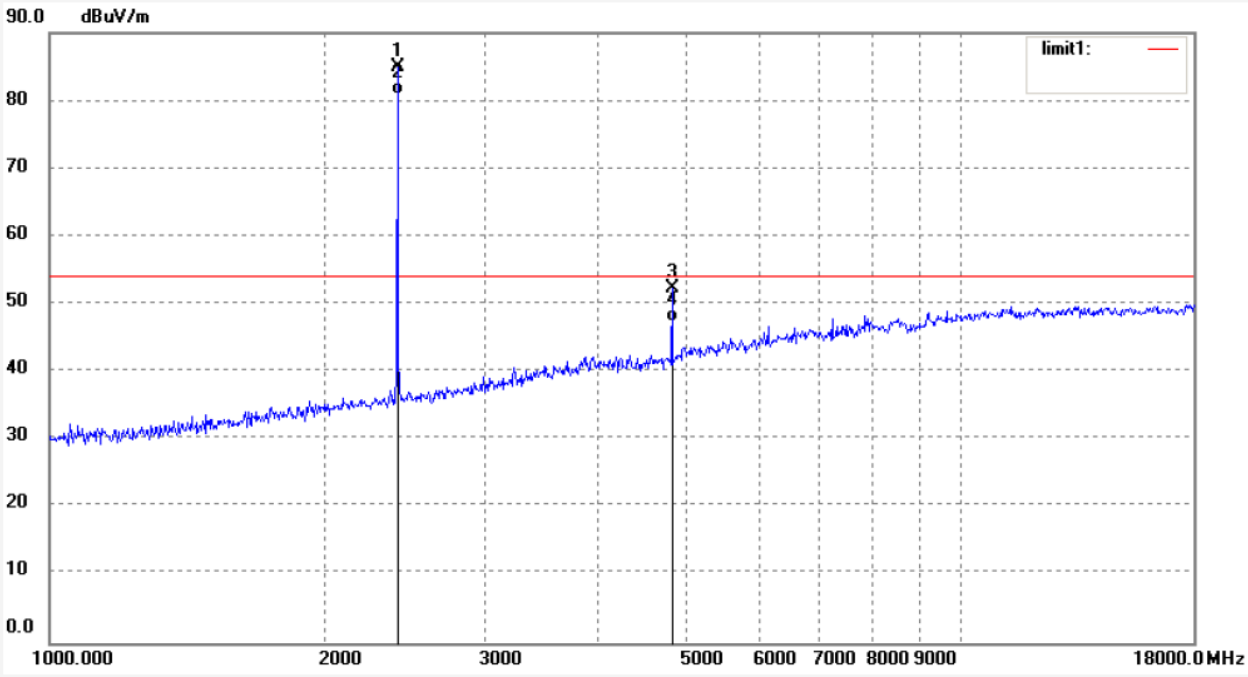
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: alen #3132
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2409MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Horizontal
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/17/40
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



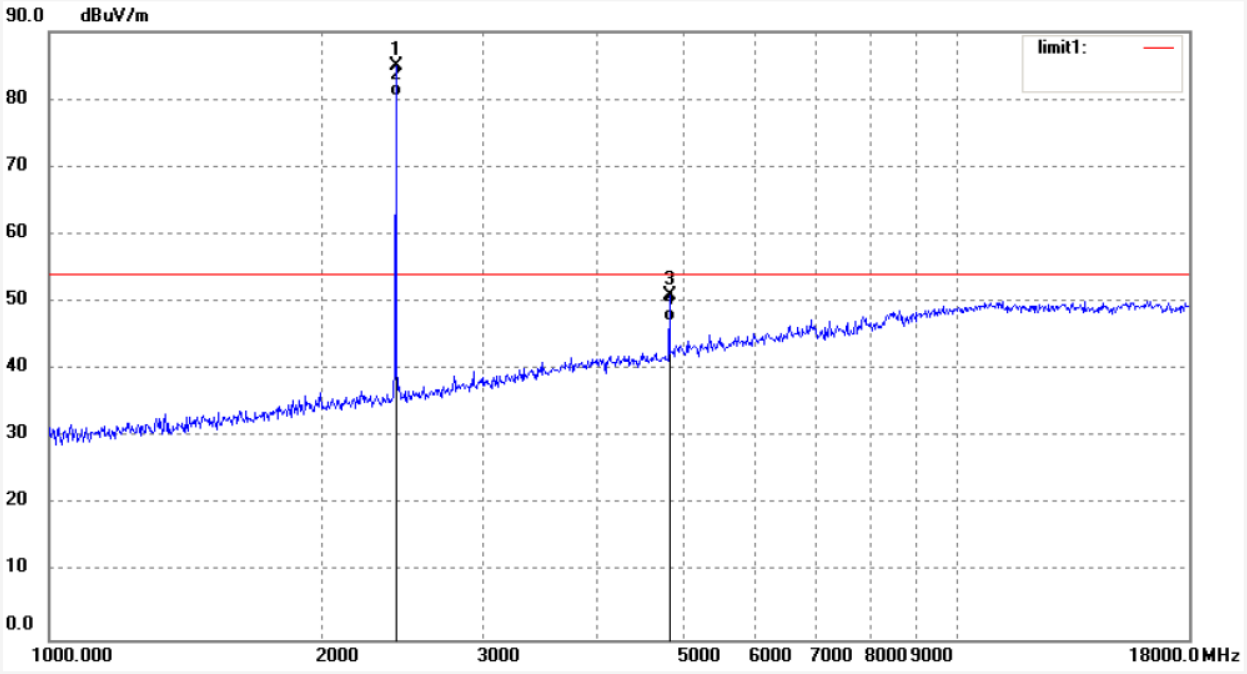
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2409.000	91.71	-6.74	84.97	114.00	29.03	peak			
2	2409.000	88.41	-6.74	81.67	94.00	12.33	AVG			
3	4818.016	53.80	-1.54	52.26	74.00	21.74	peak			
4	4818.016	50.50	-1.54	48.96	54.00	5.04	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.: alen #3131
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2409MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Vertical
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/16/41
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



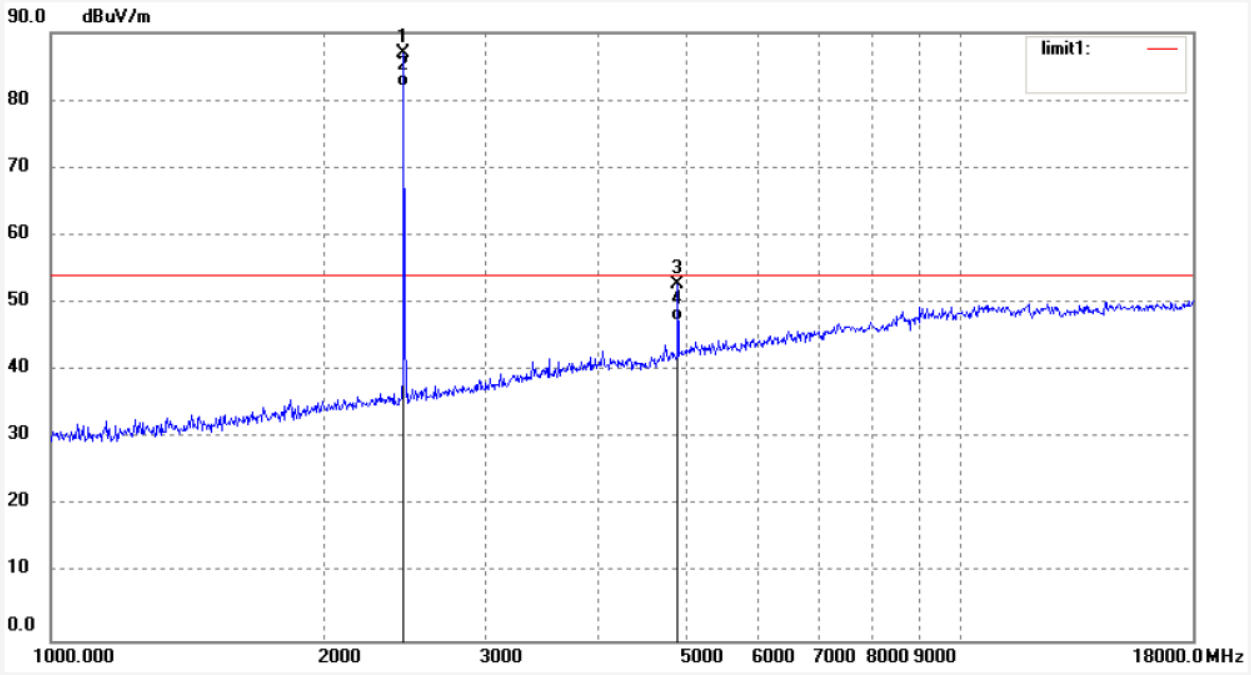
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2409.000	91.61	-6.74	84.87	114.00	29.13	peak			
2	2409.000	88.31	-6.74	81.57	94.00	12.43	AVG			
3	4818.016	52.61	-1.54	51.07	74.00	22.93	peak			
4	4818.016	49.31	-1.54	47.77	54.00	6.23	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.: alen #3135
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2440MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Horizontal
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/21/46
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



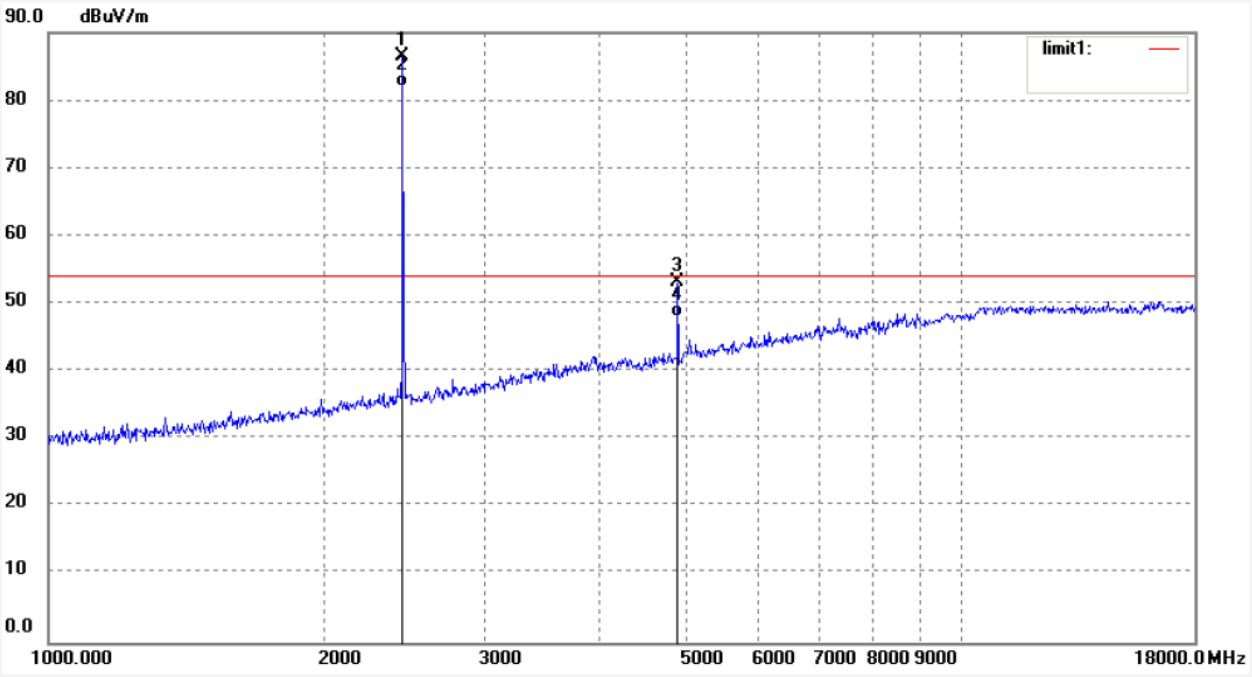
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	93.54	-6.64	86.90	114.00	27.10	peak			
2	2440.000	90.24	-6.64	83.60	94.00	10.40	AVG			
3	4880.151	54.04	-1.33	52.71	74.00	21.29	peak			
4	4880.151	50.74	-1.33	49.41	54.00	4.59	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.: alen #3136
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2440MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Vertical
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/22/25
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



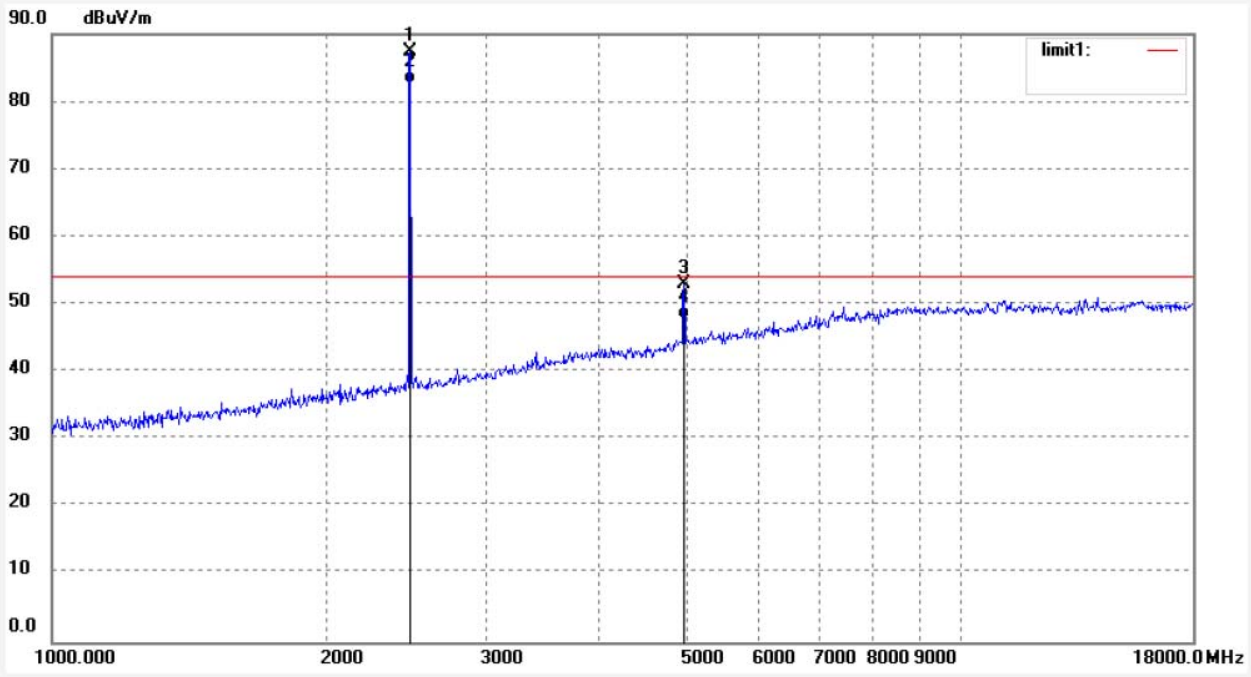
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	93.23	-6.64	86.59	114.00	27.41	peak			
2	2440.000	89.93	-6.64	83.29	94.00	10.71	AVG			
3	4880.151	54.43	-1.33	53.10	74.00	20.90	peak			
4	4880.151	51.13	-1.33	49.80	54.00	4.20	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.: alen #3129
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2476MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Horizontal
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/07/47
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



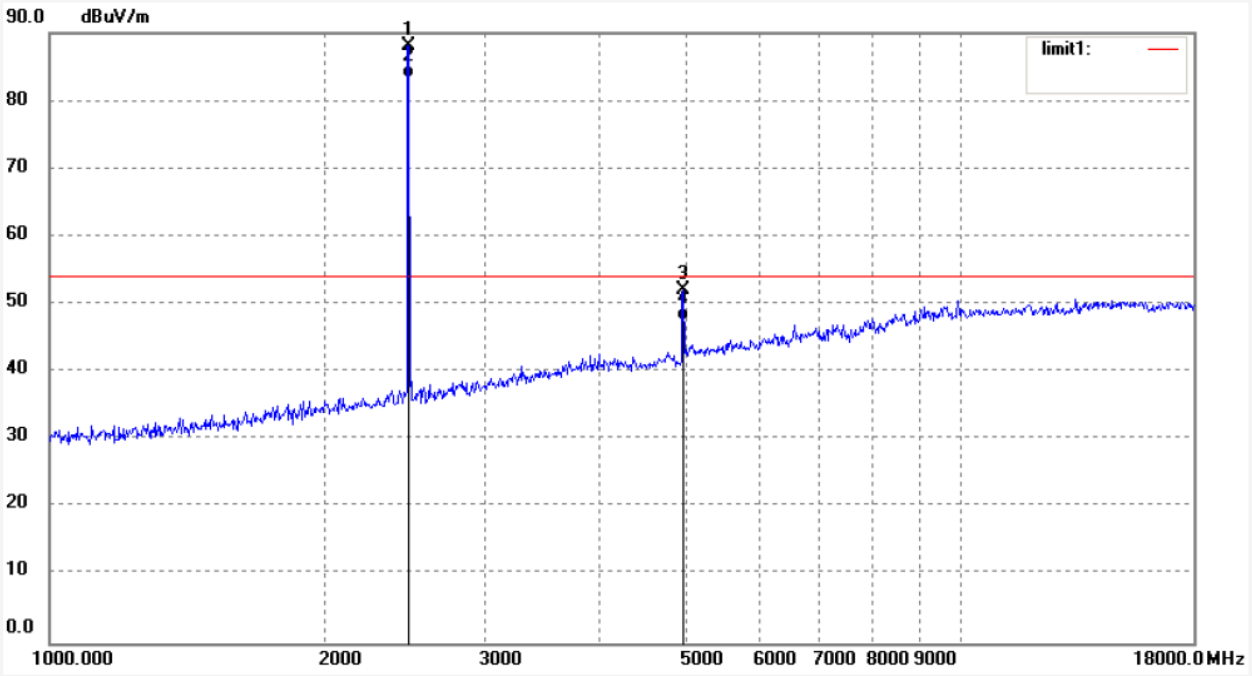
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2476.000	93.87	-6.56	87.31	114.00	26.69	peak			
2	2476.000	90.57	-6.56	84.01	94.00	9.99	AVG			
3	4952.307	54.17	-1.12	53.05	74.00	20.95	peak			
4	4952.307	50.87	-1.12	49.75	54.00	4.25	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.: alen #3130
Standard: FCC 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Wireless mouse
Mode: TX 2476MHz
Model: RZL-MU100A
Manufacturer: TAI-HAO

Polarization: Vertical
Power Source: DC 1.5V
Date: 13/12/19/
Time: 9/10/46
Engineer Signature:
Distance: 3m

Note: Report No:ATE20132728



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2476.000	94.62	-6.56	88.06	114.00	25.94	peak			
2	2476.000	91.32	-6.56	84.76	94.00	9.24	AVG			
3	4952.307	53.30	-1.12	52.18	74.00	21.82	peak			
4	4952.307	50.00	-1.12	48.88	54.00	5.12	AVG			

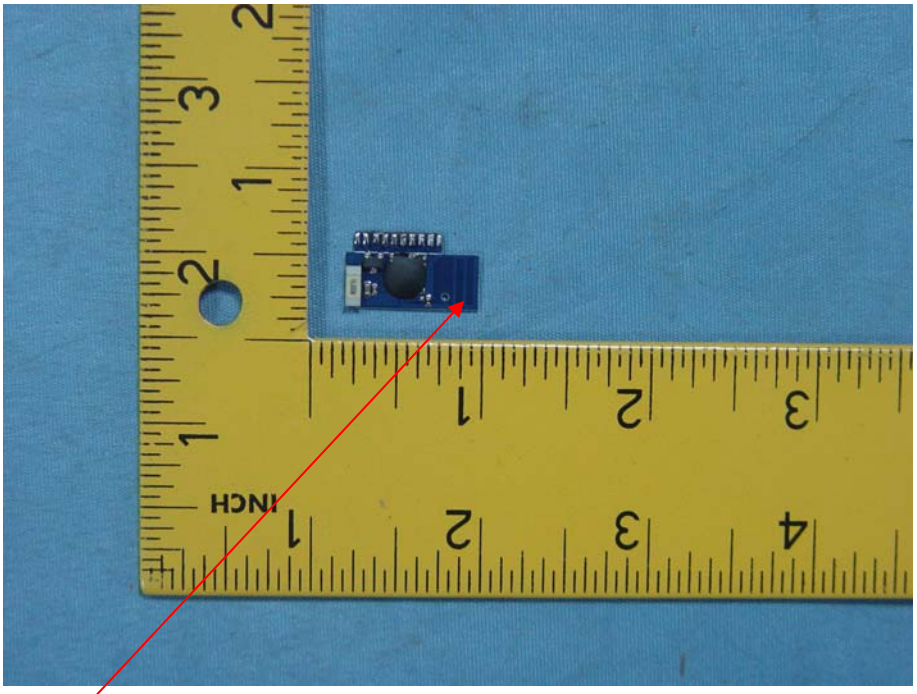
8. ANTENNA REQUIREMENT

8.1.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.

8.2.Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna