

# FCC TEST REPORT

**Product Name** : Wireless Mouse  
**Trade mark** : TeckNet or TECKNET  
**Model No.** : EWM01004  
**FCC ID** : 2AK8Q-EWM010041  
**Report Number** : BLA-EMC-202011-A10803  
**Date of sample receipt** : 2020/11/30  
**Date of Test** : 2020/11/30 to 2020/12/21  
**Date of Issue** : 2020/12/25  
**Test Standards** : FCC CFR Title 47 Part 15 Subpart C  
Section 15.249  
**Test result** : PASS

Prepared for:

**Shenzhen Unichain Technology Co., Ltd**

**201, 2nd Floor, Building C, Shanhai Commercial Plaza, Huangjunshan District,  
Bantian Street, Longgang District, Shenzhen, China**

Prepared by:

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Date:

2020/12/25



**Report Revise Record**

Version No.	Date	Description
00	2020/12/25	Original

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## 1 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	N/A
Field Strength of the Fundamental Signal	47 CFR Part 15 Subpart C Section 15.249 (a)	ANSI C63.10-2013	PASS
Spurious Emissions	47 CFR Part 15 Subpart C Section 15.249 (a)/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.249(a)/15.205	ANSI C63.10-2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.215 (c)	ANSI C63.10-2013	PASS

Pass: The EUT complies with the essential requirements in the standard.

N/A: Not Applicable

## 2 General Information

<b>Applicant</b>	Shenzhen Unichain Technology Co., Ltd
<b>Address</b>	201, 2nd Floor, Building C, Shanhai Commercial Plaza, Huangjunshan District, Bantian Street, Longgang District, Shenzhen, China
<b>Manufacturer</b>	Shenzhen Tianjie Electronic CO., Ltd
<b>Address</b>	No.5, Xifa Road, Lin Village, Tangxia Town, Dongguan City, Guangdong Province, P. R. China
<b>Factory</b>	N/A
<b>Address</b>	N/A
<b>Product Name</b>	Wireless Mouse
<b>Test Model No.</b>	EWM01004

## 3 General Description of E.U.T.

<b>Hardware version:</b>	V1.0
<b>Software version:</b>	V3.0
<b>Technical Parameter:</b>	
<b>Operating Frequency:</b>	2403 MHz ~ 2480MHz
<b>Device type:</b>	Non-specific short range devices
<b>Channel separation:</b>	≥2MHz
<b>Channel number:</b>	16
<b>Modulation:</b>	GFSK
<b>Antenna Type:</b>	Chip Antenna
<b>Antenna Gain</b>	2.0dBi(Provided by the customer)
<b>Power supply:</b>	DC3.0V

## 4 Description of test

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1CH	2403 MHz	5CH	2407 MHz	9CH	2414 MHz	13CH	2419 MHz
2CH	2426 MHz	6CH	2422 MHz	10CH	2436 MHz	14CH	2439 MHz
3CH	2441 MHz	7CH	2445 MHz	11CH	2459 MHz	15CH	2453 MHz
4CH	2463 MHz	8CH	2466 MHz	12CH	2473 MHz	16CH	2480 MHz
Remark:The EUT operation in above frequency list, and used test software to control the EUT for staying in continuous transmitting and receiving mode. Channel 1, 3 and 16 were chosen for testing.							

## 5 Description of Support Units

The EUT has been tested independently.
--

## 6 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation.(new battery is used)

## 7 Description of Support Units

The EUT has been tested independently and or

The EUT has been tested with associated equipment below.

1) support equipment

Description	Manufacturer	Model No.	Serial Number	Supplied by
Notebook computer	Lenovo	E470C	PF-10FB5C	/
/	/	/	/	/

2) cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

### 7.1 Test Location

All tests were performed at:

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

IOT Test Centre of BlueAsia

No. 448 Bulong Road, Bantian Street, Longgang District, Shenzhen, China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.

## 7.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

### **FCC — Designation No.: CN1252**

BlueAsia of Technical Services(Shenzhen) Co., Ltd has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Designation CN1252.

### **ISED — CAB identifier No.: CN0028**

BlueAsia of Technical Services(Shenzhen) Co., Ltd has been registered by Certification and Engineering Bureau of ISED for radio equipment testing with CAB identifier CN0028

## 7.3 Deviation from Standards

None.

## 7.4 Abnormalities from Standard Conditions

None.

## 7.5 Other Information Requested by the Customer

None.

**7.6 Measurement Uncertainty (95% confidence levels, k=2)**

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	$\pm 4.34\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 4.24\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 4.68\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45\text{dB}$	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.



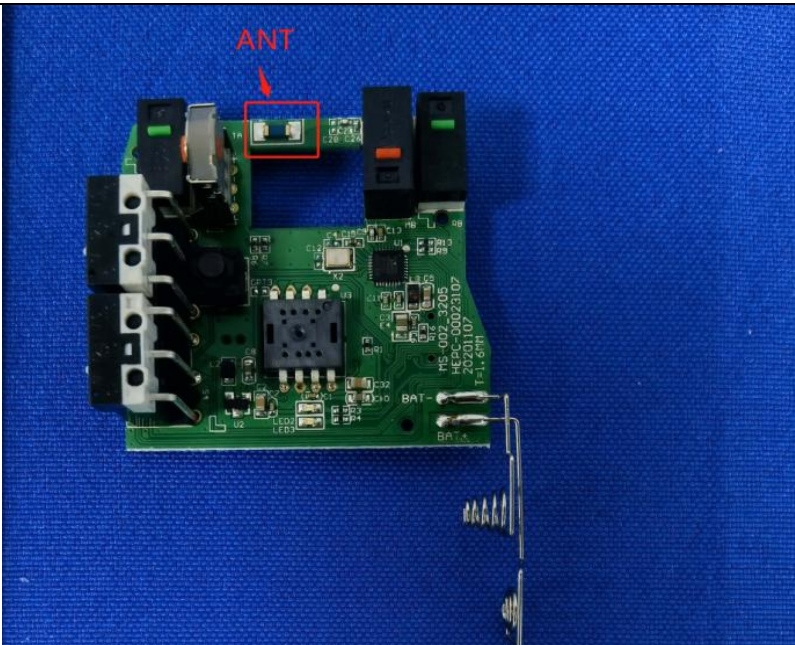
## 8 Equipment List

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m SAC	SKET	9m*6 m*6m	966	06-10-2018	06-09-2023
2	Broadband Antenna	SCHWARZBECK	VULB9168	00836 P:00227	07-14-2019	07-13-2021
3	Horn Antenna	SCHWARZBECK	9120D	01892 P:00331	07-14-2019	07-13-2021
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Pre-amplifier	SKET	N/A	N/A	07-19-2020	07-18-2021
6	Spectrum analyzer	Rohde & Schwarz	FSP40	100817	05-24-2020	05-23-2021
7	EMI Test Receiver	Rohde & Schwarz	ESR7	101199	03-21-2020	03-20-2021
8	Controller	SKET	N/A	N/A	N/A	N/A
9	Vector Signal Generator	Agilent	E4438C	MY45092582	05-24-2020	05-23-2021
10	Signal Generator	Agilent	E8257D	MY44320250	05-24-2020	05-23-2021
11	Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
12	Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
13	Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	EMI Test Receiver	Rohde & Schwarz	ESPI3	101082	06-10-2020	06-09-2021
2	LISN	CHASE	MN2050D	1447	12-18-2020	12-17-2021
3	LISN	Rohde & Schwarz	ENV216	3560.6550.15	07-19-2020	07-18-2021
4	EMI Test Software	EZ	EZ	N/A	N/A	N/A
5	Temperature Humidity Chamber	Mingle	TH101B	N/A	07-19-2020	07-18-2021
6	Coaxial Cable	BlueAsia	BLA-XC-05	N/A	N/A	N/A

## 9 Test results and Measurement Data

### 9.1 Antenna Requirement

<b>Standard requirement:</b>	47 CFR Part 15C Section 15.203
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
<b>EUT Antenna:</b>	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.0dBi.	

## 9.2 Conducted Emissions

**Test Requirement:** 47 CFR Part 15C Section 15.207  
**Test Method:** ANSI C63.10  
**Test Frequency Range:** 150KHz to 30MHz

**Limit:**

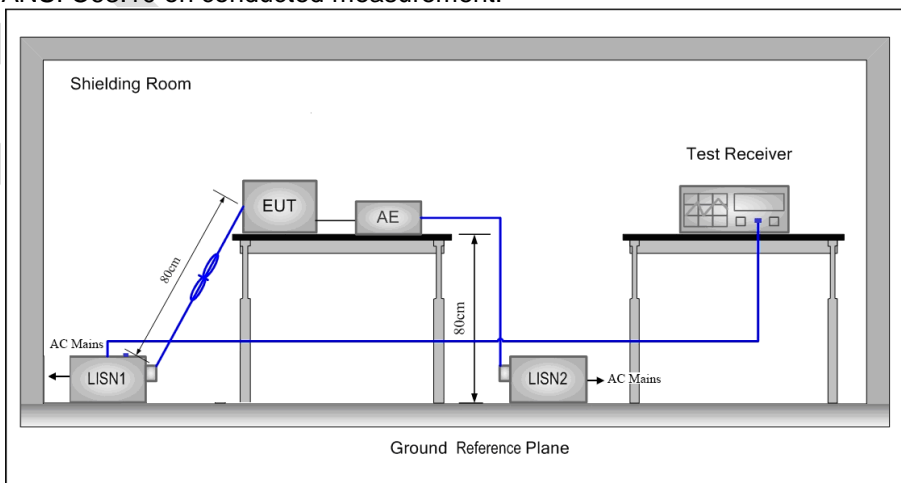
Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

**Test Procedure:**

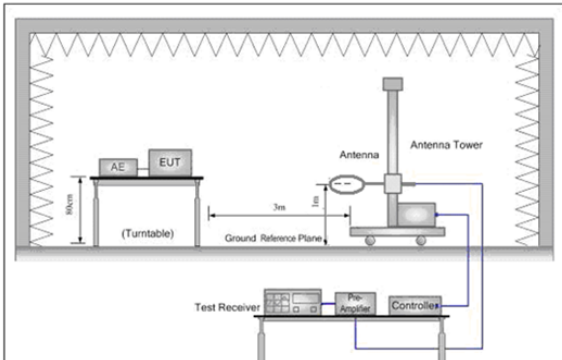
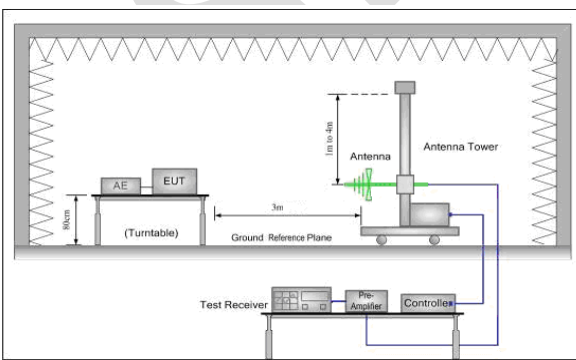
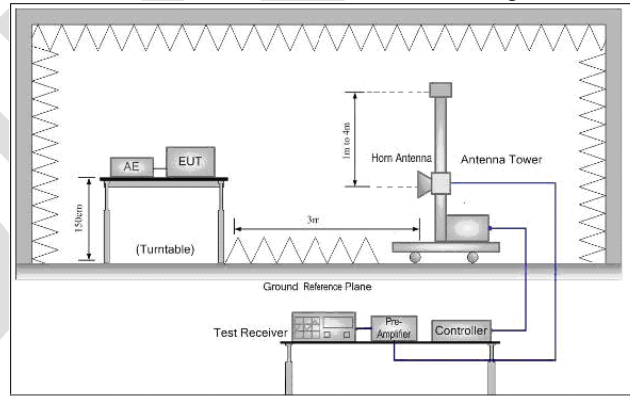
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a  $50\Omega/50\mu\text{H} + 5\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

**Test Setup:**



**Test Mode:** Keep the EUT in transmitting mode  
**Instruments Used:** Refer to section 5.11 for details  
**Test Results:** N/A

## 9.3 Radiated Emission

Test Requirement:	47 CFR Part 15C Section 15.249 and 15.209				
Test Method:	ANSI C63.10				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average	
Test Setup:					
<div><div></div><div></div><div></div><div><div>Figure 1. Below 30MHz</div><div>Figure 2. 30MHz to 1GHz</div><div>Figure 3. Above 1GHz</div></div></div>					
Test Procedure:	<p><b>Below 1GHz test procedure as below:</b></p> <p>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below</p>				

	<p>30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p><b>Above 1GHz test procedure as below:</b></p> <p>Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter).</p> <p>Test the EUT in the lowest channel ,middle channel, the Highest channel</p> <p>The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.</p> <p>Repeat above procedures until all frequencies measured was complete.</p>				
<b>Limit:</b> (Spurious Emissions)	Frequency	Field strength (microvolt/meter)	Limit (dBµV/m )	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F (kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F (kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.					
<b>Limit:</b> (Field strength of the fundamental signal)	Frequency	Limit (dBµV/m @3m)	Remark		
	2400MHz-2483.5MHz	94.0	Average Value		
		114.0	Peak Value		
<b>Instruments Used:</b>	Refer to section 5.11 for details				
<b>Exploratory Test Mode:</b>	Transmitting mode				
<b>Final Test Mode:</b>	Pretest the EUT at Transmitting mode				
<b>Test Results:</b>	Pass				

**Measurement Data**  
**Field Strength Of The Fundamental Signal**

Peak value:

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
2403	105.20	-15.14	90.06	114.00	-23.94	H
2403	96.10	-15.14	80.96	114.00	-33.04	V
2441	106.99	-14.97	92.02	114.00	-21.98	H
2441	96.04	-14.97	81.07	114.00	-32.98	V
2480	106.87	-14.81	92.06	114.00	-21.94	H
2480	97.35	-14.81	82.54	114.00	-31.46	V

Average value:

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
2403	104.50	-15.14	89.36	94.00	-4.64	H
2403	95.95	-15.14	80.81	94.00	-13.19	V
2441	106.83	-14.97	91.86	94.00	-2.14	H
2441	95.73	-14.97	80.78	94.00	-13.22	V
2480	106.73	-14.81	91.92	94.00	-2.08	H
2480	97.00	-14.81	82.19	94.00	-11.81	V

NOTE: RBW 3MHz VBW 10MHz , PK detector is for PK value ,RMS detector is for AV value.



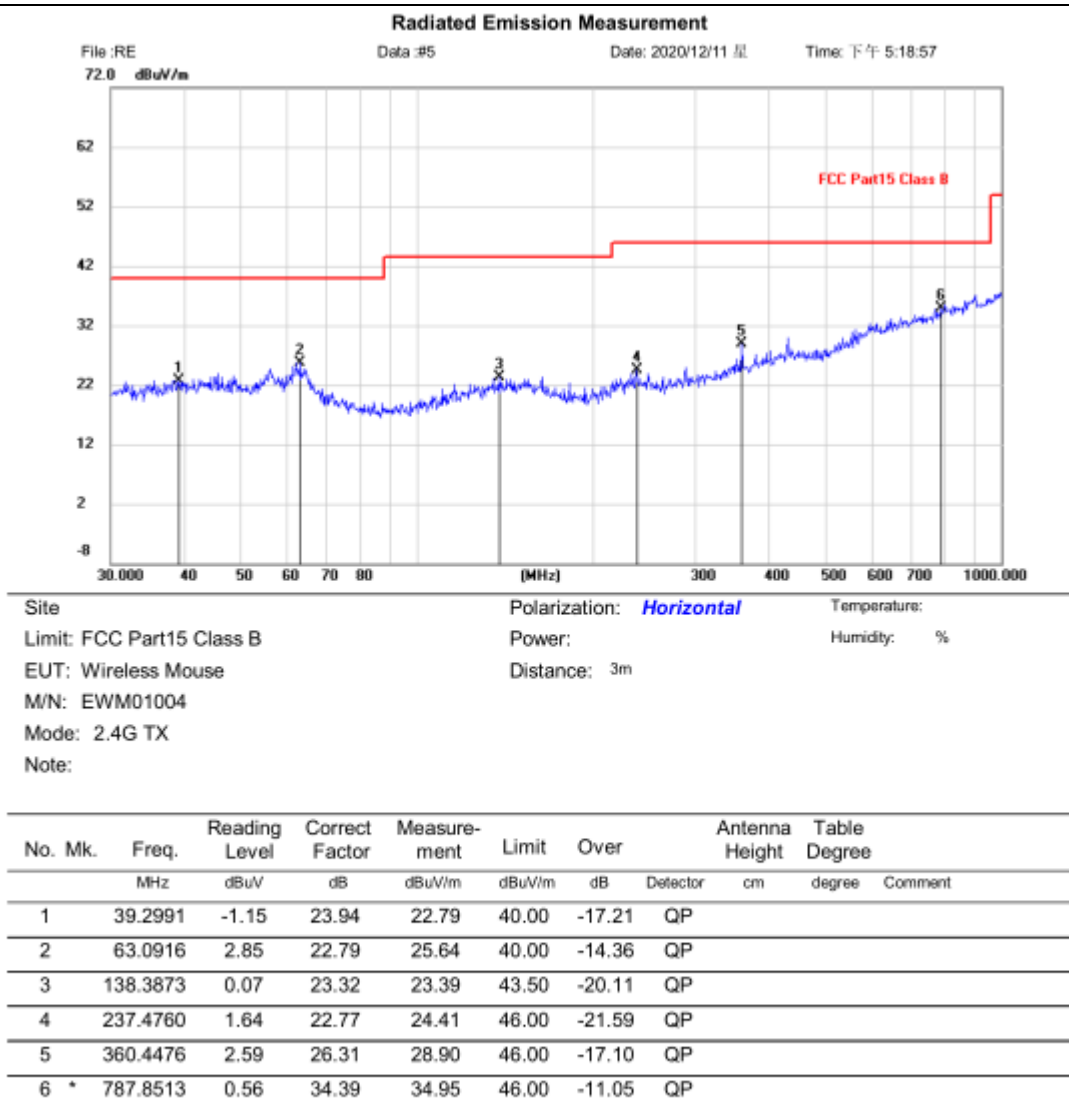
# Spurious Emissions

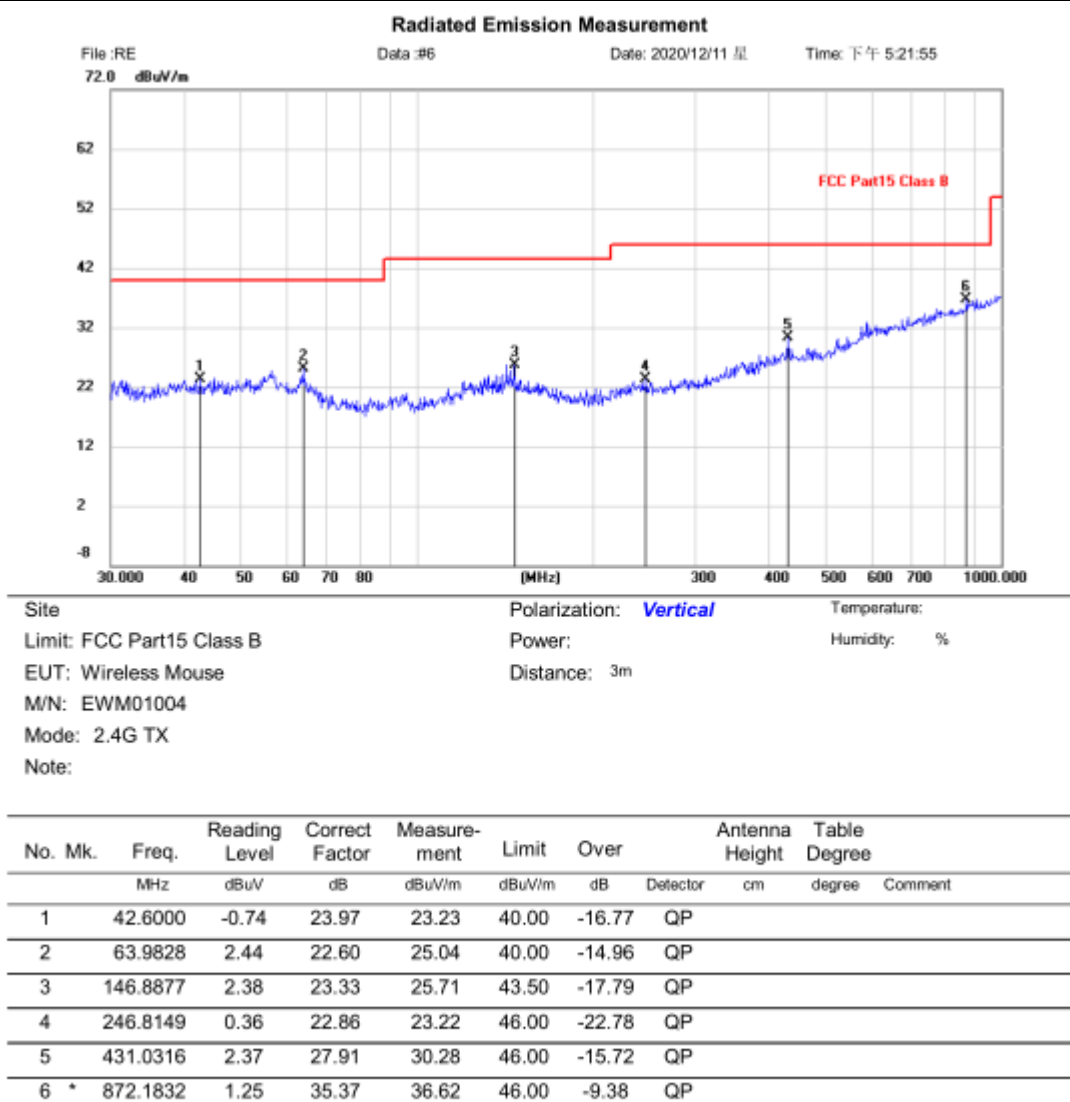
30MHz~1GHz (QP)

Test mode:

Transmitting

Horizontal:

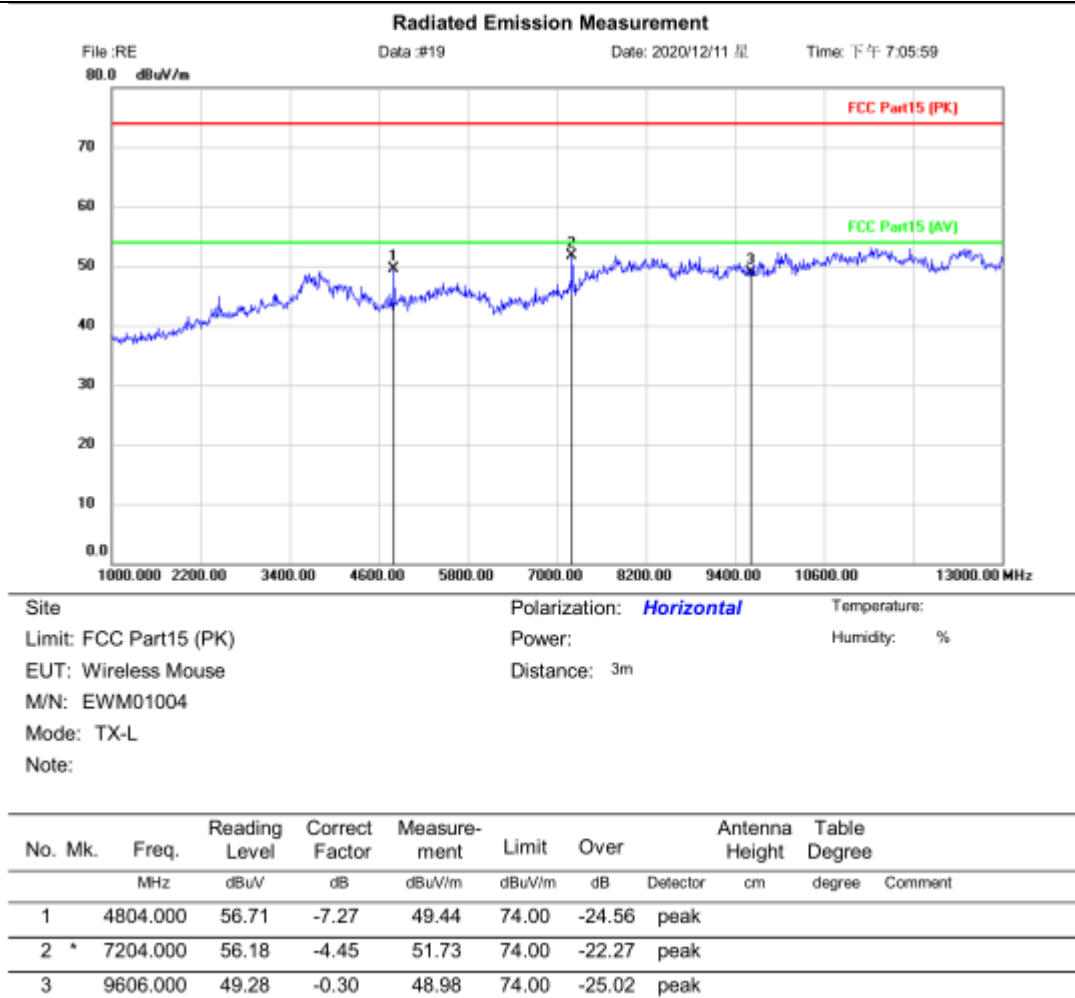


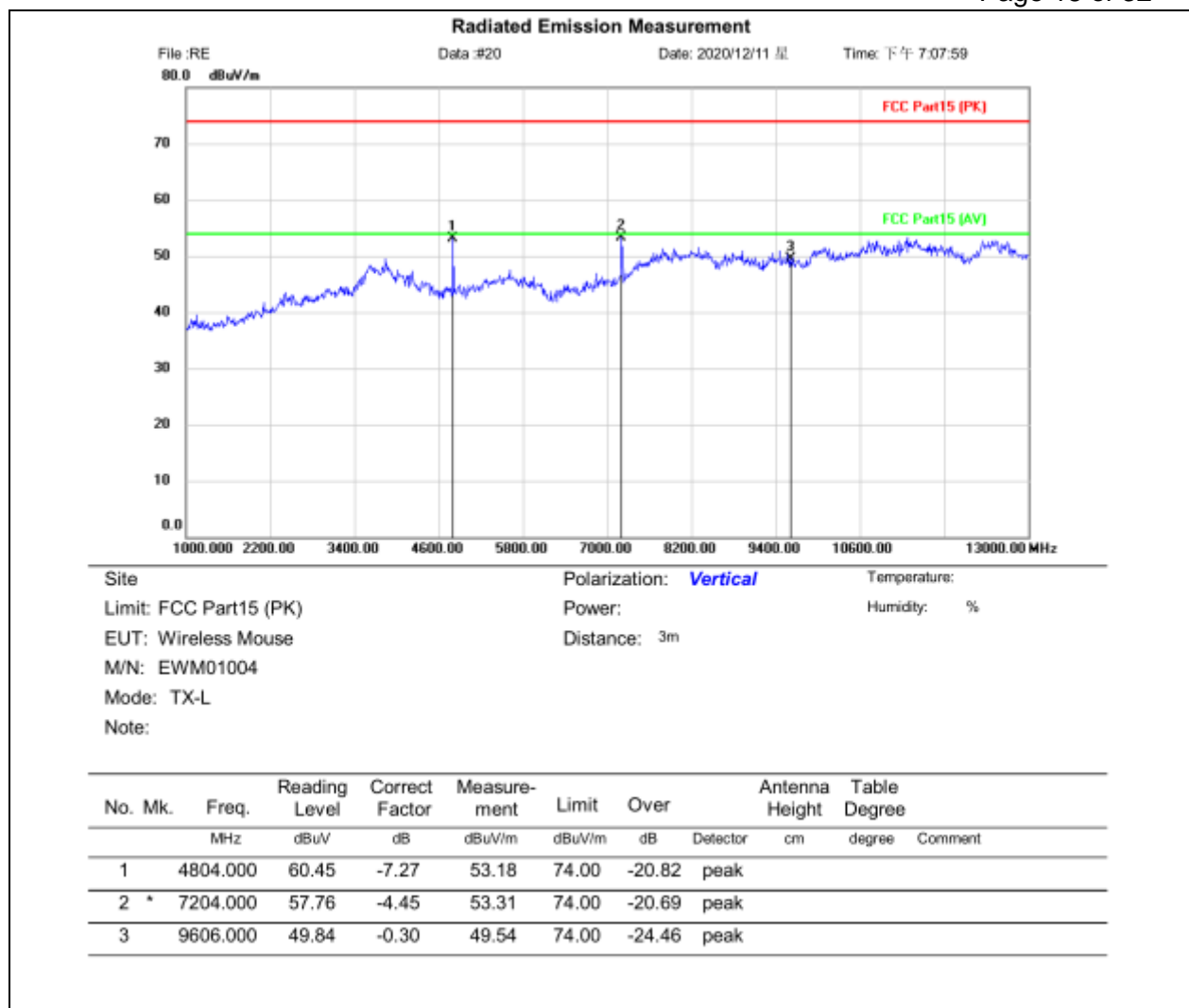
**Vertical:**




Above 1GHz:

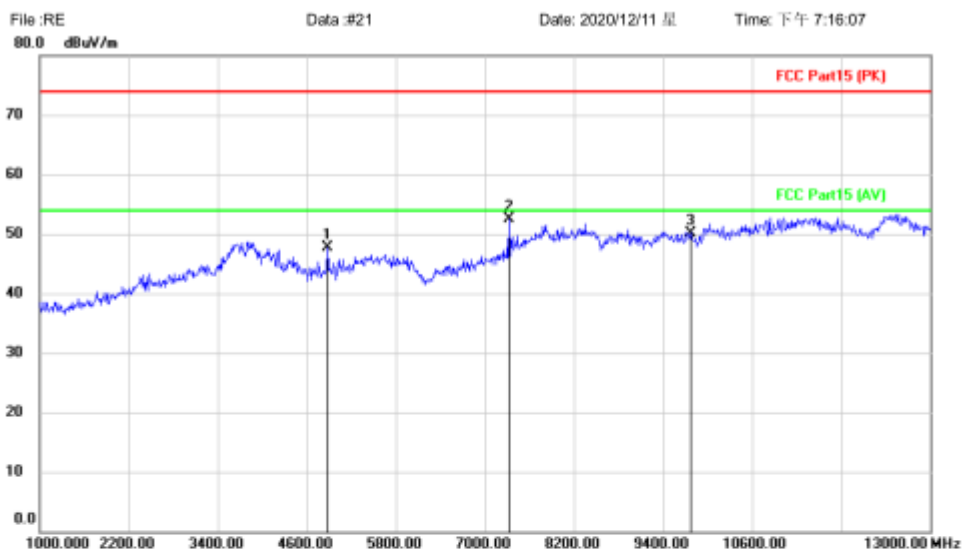
Test channel:lowest





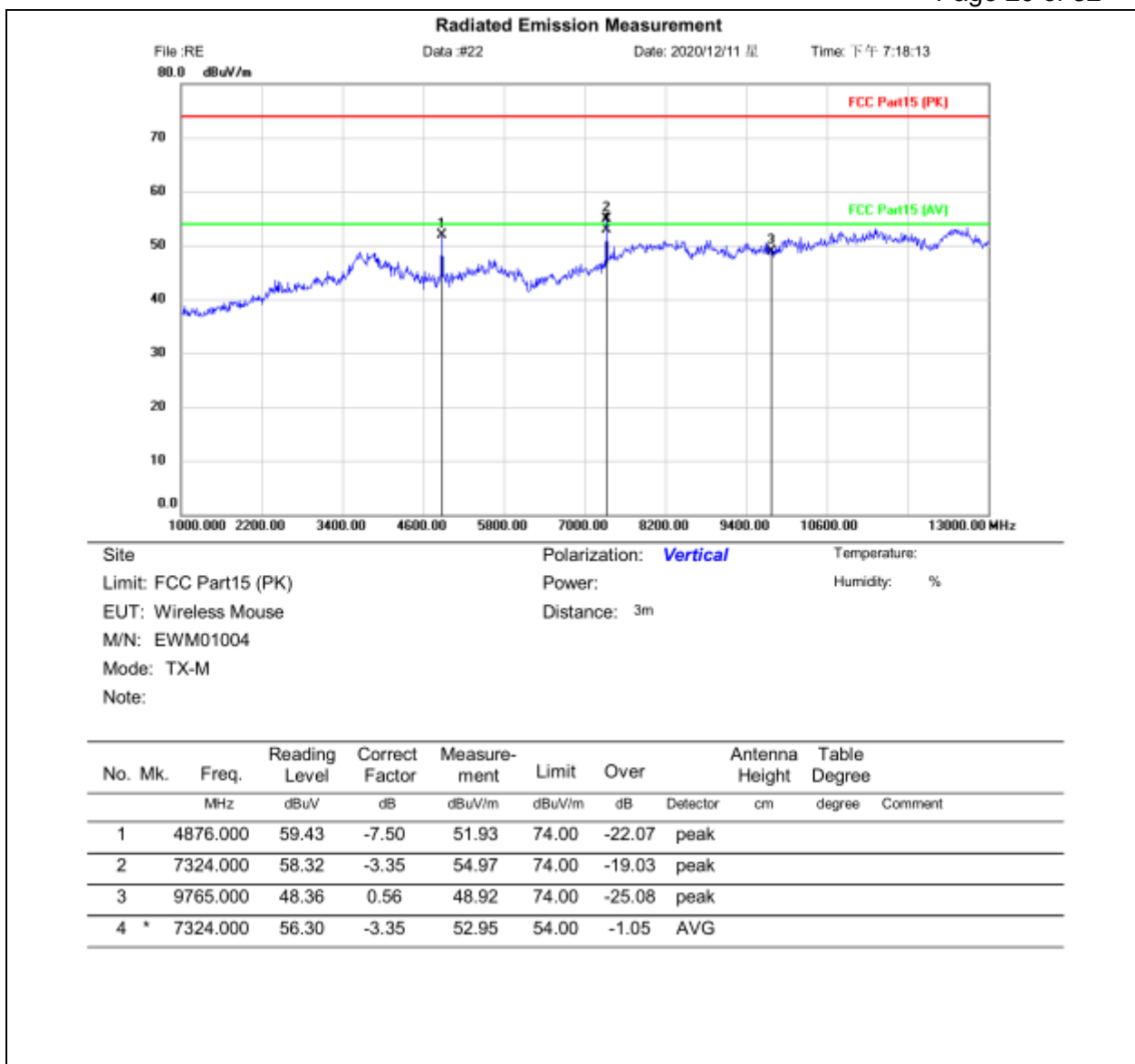
## Test channel: Middle

## Radiated Emission Measurement



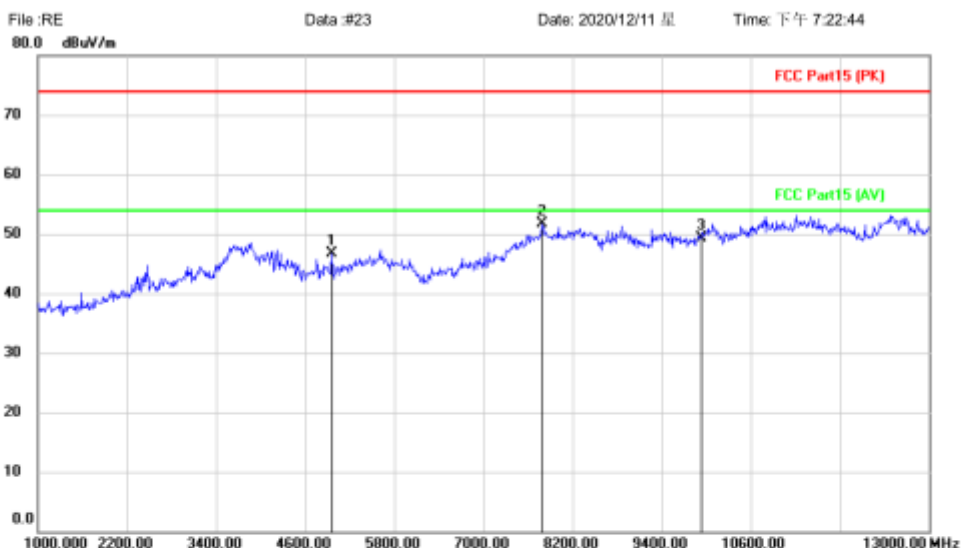
Site Polarization: **Horizontal** Temperature:  
Limit: FCC Part15 (PK) Power: Humidity: %  
EUT: Wireless Mouse Distance: 3m  
M/N: EWM01004  
Mode: TX-M  
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		4876.000	55.29	-7.50	47.79	74.00	-26.21	peak			
2	*	7324.000	55.83	-3.35	52.48	74.00	-21.52	peak			
3		9765.000	49.64	0.56	50.20	74.00	-23.80	peak			



## Test channel: Highest

## Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature:

Limit: FCC Part15 (PK) Power: Humidity: %

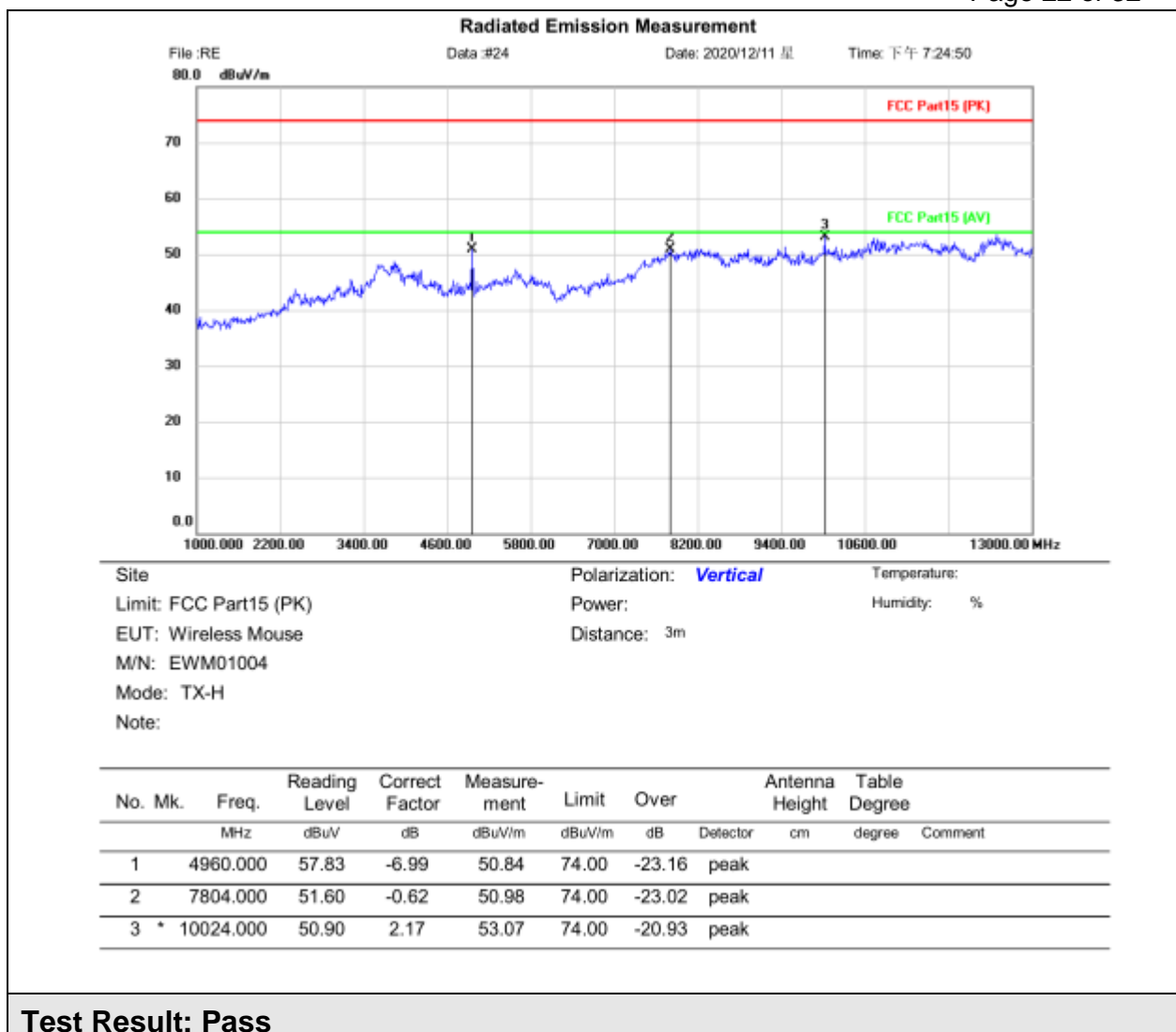
EUT: Wireless Mouse Distance: 3m

M/N: EWM01004

Mode: TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		4960.000	53.70	-6.99	46.71	74.00	-27.29	peak		
2	*	7792.000	52.41	-0.65	51.76	74.00	-22.24	peak		
3		9920.000	47.68	1.63	49.31	74.00	-24.69	peak		



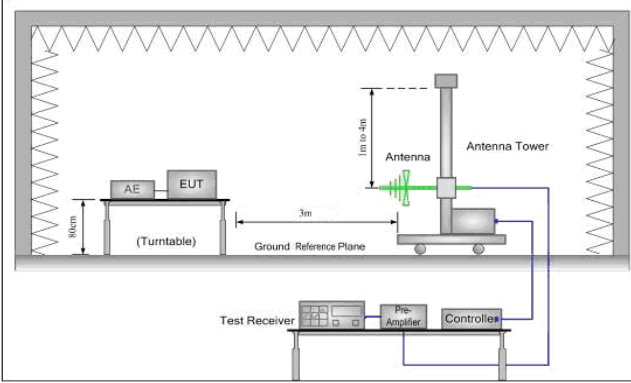
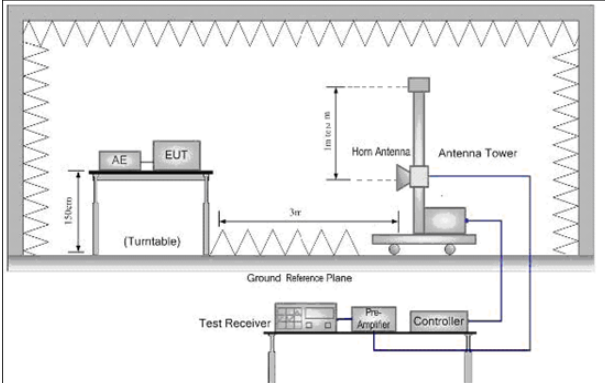
#### Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:  

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Correct Factor}$$

$$\text{Correct Factor} = \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$
- 2) Scan from 9kHz to 25GHz, The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .
- 3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
- 4) Fundamental frequency is blocked by filter to show only suprious emission.

## 9.4 Restricted bands around fundamental frequency

<b>Test Requirement:</b>	47 CFR Part 15C Section 15.209 and 15.205
<b>Test Method:</b>	ANSI C63.10
<b>Test Site:</b>	Measurement Distance: 3m (Semi-Anechoic Chamber)
<b>Test Setup:</b>	
<div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <p>Figure 1. 30MHz to 1GHz</p> <p>Figure 2. Above 1 GHz</p> </div>	
<b>Test Procedure:</b>	<p><b>Below 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol> <p><b>Above 1GHz test procedure as below:</b></p> <ol style="list-style-type: none"> <li>Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter).</li> <li>Test the EUT in the lowest channel,,the Highest channel</li> <li>The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.</li> <li>Repeat above procedures until all frequencies measured was complete.</li> </ol>

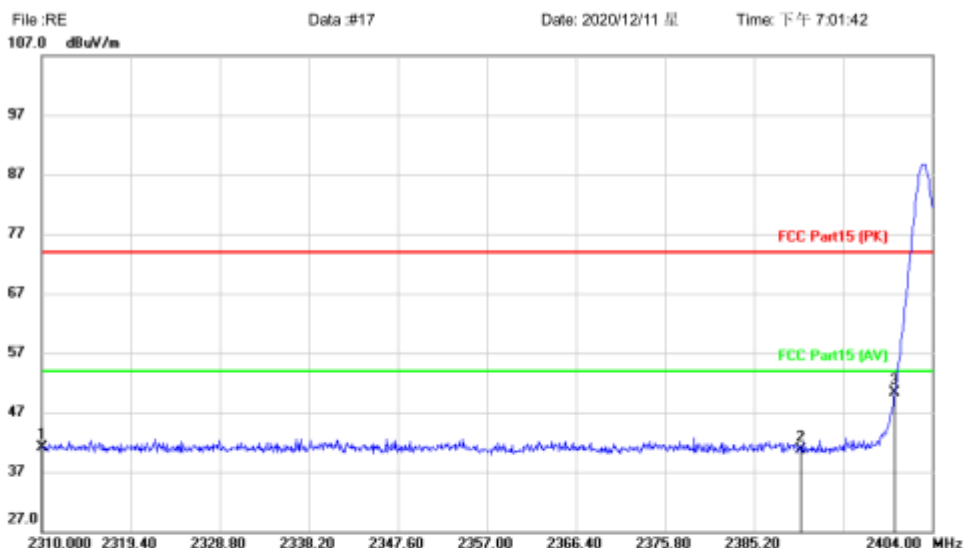
<b>Limit(band edge):</b>	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.		
	Frequency	Limit (dB $\mu$ V/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
<b>Instruments Used:</b>	Refer to section 5.11 for details		
<b>Exploratory Test Mode:</b>	Transmitting mode		
<b>Final Test Mode:</b>	Pretest the EUT at Transmitting mode		
<b>Test Results:</b>	Pass		



# Band edge test data (Radiated Emission)

## Lowest channel—Horizontal

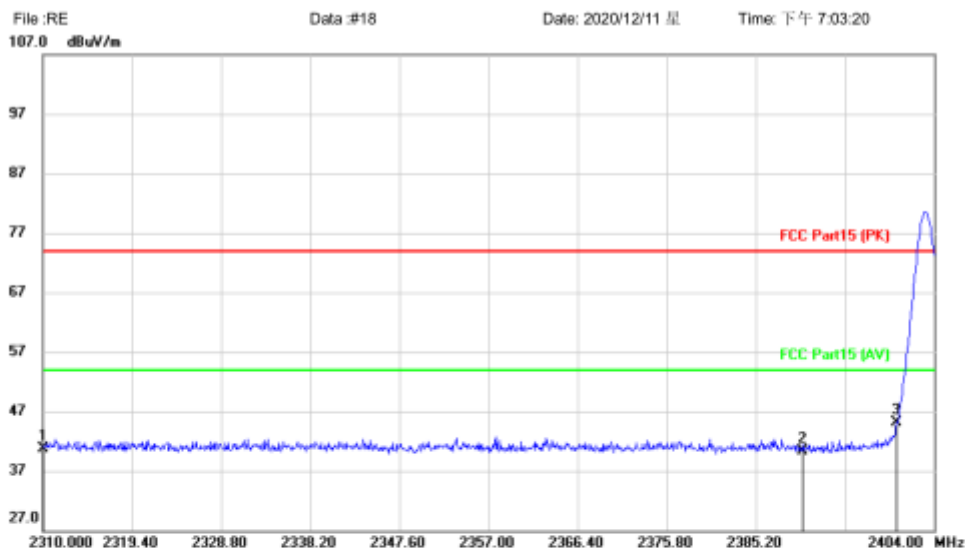
### Radiated Emission Measurement



Site Polarization: **Horizontal** Temperature:  
Limit: FCC Part15 (PK) Power: Humidity: %  
EUT: Wireless Mouse Distance: 3m  
M/N: EWM01004  
Mode: TX-L  
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		2310.000	55.90	-14.84	41.06	74.00	-32.94	peak		
2		2390.000	55.27	-14.60	40.67	74.00	-33.33	peak		
3	*	2400.000	64.89	-14.58	50.31	74.00	-23.69	peak		

### Lowest channel—Vertical Radiated Emission Measurement

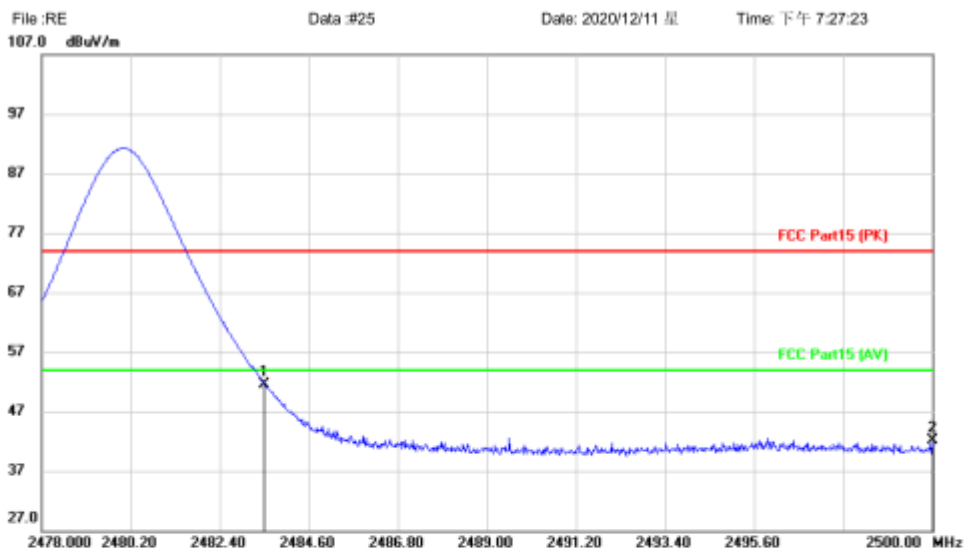


Site	Polarization: <b>Vertical</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Wireless Mouse	Distance: 3m	
M/N: EWM01004		
Mode: TX-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		2310.000	55.64	-14.84	40.80	74.00	-33.20	peak		
2		2390.000	54.82	-14.60	40.22	74.00	-33.78	peak		
3	*	2400.000	59.73	-14.58	45.15	74.00	-28.85	peak		

### Highest channel-- Horizontal

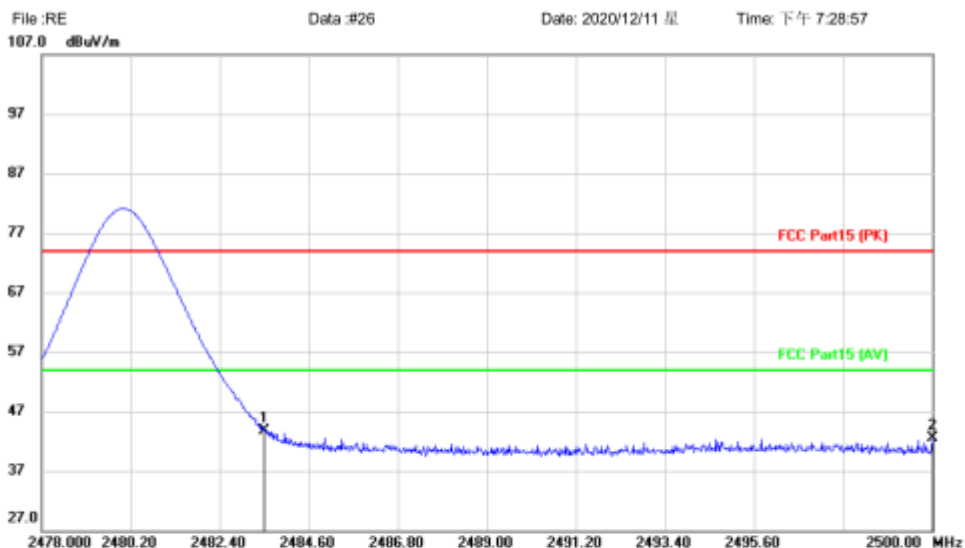
#### Radiated Emission Measurement



Site: Polarization: **Horizontal** Temperature:  
 Limit: FCC Part15 (PK) Power: Humidity: %  
 EUT: Wireless Mouse Distance: 3m  
 M/N: EWM01004  
 Mode: TX-H  
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree
1	*	2483.500	66.38	-14.79	51.59	74.00	-22.41	peak	
2		2500.000	56.74	-14.72	42.02	74.00	-31.98	peak	

### Highest channel-- Vertical Radiated Emission Measurement



Site	Polarization: <b>Vertical</b>	Temperature:
Limit: FCC Part15 (PK)	Power:	Humidity: %
EUT: Wireless Mouse	Distance: 3m	
M/N: EWM01004		
Mode: TX-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	2483.500	58.58	-14.79	43.79	74.00	-30.21	peak		
2		2500.000	57.24	-14.72	42.52	74.00	-31.48	peak		

#### Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

*Final Test Level = Receiver Reading + Correct Factor*

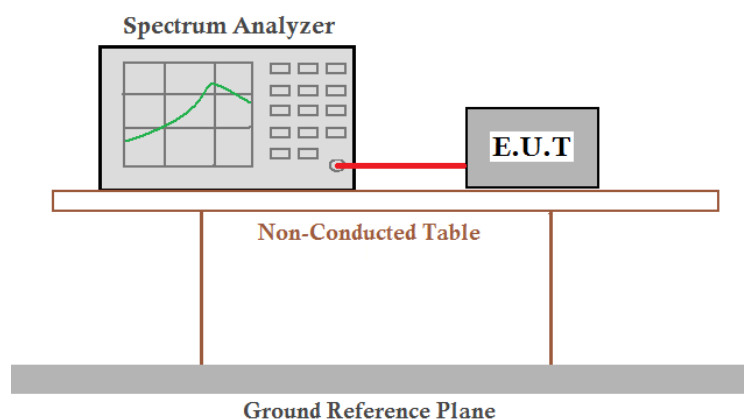
*Correct Factor = Antenna Factor + Cable Factor - Preamplifier Factor*

## 9.5 20dB Bandwidth

**Test Requirement:** 47 CFR Part 15C Section 15.215

**Test Method:** ANSI C63.10

**Test Setup:**



**Instruments Used:** Refer to section 5.11 for details

**Exploratory Test Mode:** Transmitting mode  
Pretest the EUT at Transmitting mode

**Final Test Mode:**

**Limit:** N/A  
**Test Results:** Pass

### Measurement Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	2.280	Pass
Middle	2.268	Pass
Highest	2.280	Pass

Test plot as follows:

Test channel: Lowest



Test channel: Middle

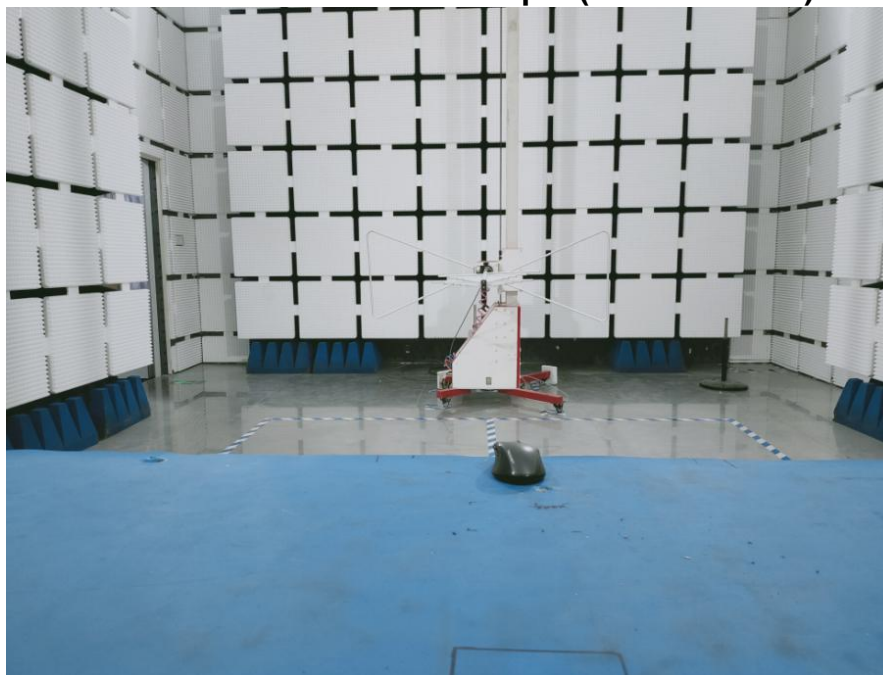


Test channel: Highest



## APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

**Radiated emission Test Setup-2 (30MHz~1GHz)**



**Radiated spurious emission Test Setup-3(Above 1GHz)**



## APPENDIX 2 PHOTOGRAPHS OF EUT

Reference to the test report No. BLA-EMC-202011-A10802

\*\*\* End of Report \*\*\*

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