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# TEST REPORT

Report No....:: KS2205S2202E

FCC ID-----: 2A7A5-PM08W

Applicant....: Shenzhen Aitmon Technology Co.,Ltd

Unit 4, QiShengHuo Al Park, YouSong Community, LongHua, Address....:

ShenZhen, CHN. 518109

Manufacturer....: Shenzhen Aitmon Technology Co., Ltd

Unit 4, QiShengHuo Al Park, YouSong Community, LongHua, Address.....

ShenZhen, CHN. 518109

Product Name.....: Mouse

Trade Mark.....:

Model/Type reference....: ATM-PM08W

Listed Model(s)..... ATM-PM06W,ATM-PM07W,ATM-PM09W,ATM-PM10W

Standard....:: FCC CFR Title 47 Part 15 Subpart C Section 15.249

Date of Receipt.....: May. 27, 2022

Date of Test Date....: May. 27, 2022- June. 06, 2022

Date of issue....: June. 06, 2022

Test result....:: **Pass** 

Prepared by: Sky Dong

( Printed name+ signature)

Approved by: Neil Wan

Neil Wan ( Printed name+signature)

KSIGN(Guangdong) Testing Co., Ltd. Testing Laboratory Name....:

West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen,

Guangdong, People's Republic of China

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TRF No. FCC Part 15.249\_R1

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## 1. TEST SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:

**FCC Rules Part 15.249:** Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

## 1.2. Report version

Revised No.	Date of issue	Description
01	June. 06, 2022 Origina	

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1.3. Test Description

FCC Rules Part 15.249				
Test Item	Section in CFR 47	Result	Test	
rest item	FCC	Result	Engineer	
Antenna requirement	15.203	Pass	Tom Chen	
AC Power Line Conducted Emissions	15.207	N/A	Tom Chen	
20dB Bandwidth	Section 15.215(c)	Pass	Tom Chen	
Band edge Emissions	Section 15.249(d)	Pass	Tom Chen	
Radiated Spurious Emissions	Section 15.205(a), Section 15.209(a), Section 15.249, Section 15.35	Pass	Tom Chen	

#### Note:

- 1. The measurement uncertainty is not included in the test result.
- 2. N/A is the device is powered by an internal battery, so this item is not available.

## 1.4. Table of Carrier Frequency

Frequency Band	Channel Number	Frequency	Channel Number	Frequency
	1	2408MHz	18	2442MHz
	2	2410MHz	19	2444MHz
	3	2412MHz	20	2446MHz
	4	2414MHz	21	2448MHz
	5	2416MHz	22	2450MHz
	6	2418MHz	23	2452MHz
	7	2420MHz	24	2454MHz
	8	2422MHz	25	2456MHz
2400~2483.5MHZ	9	2424MHz	26	2458MHz
	10	2426MHz	27	2460MHz
	11	2428MHz	28	2462MHz
	12	2430MHz	29	2464MHz
	13	2432MHz	30	2466MHz
	14	2434MHz	31	2468MHz
	15	2436MHz	32	2470MHz
	16	2438MHz	33	2472MHz
	17	2440MHz	34	2474MHz

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## 1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the KSIGN(Guangdong) Testing Co., Ltd. system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Below is the best measurement capability for KSIGN(Guangdong) Testing Co., Ltd.

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.42 dB	(1)
Transmitter power Radiated	2.14 dB	(1)
Conducted spurious emissions 9kHz~40GHz	1.60 dB	(1)
Radiated spurious emissions 9kHz~40GHz	2.20 dB	(1)
Conducted Emissions 9kHz~30MHz	3.20 dB	(1)
Radiated Emissions 30~1000MHz	4.70 dB	(1)
Radiated Emissions 1~18GHz	5.00 dB	(1)
Radiated Emissions 18~40GHz	5.54 dB	(1)
Occupied Bandwidth	2.80 dB	(1)

**Note (1):** This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

### 1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

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# 2. GENERAL INFORMATION

## 2.1. General Description of EUT

Test Sample Number:	1-1-1(Normal Sample),1-1-2(Engineering Sample)	
Product Name:	Mouse	
Trade Mark:	1	
Model/Type reference:	ATM-PM08W	
Listed Model(s):	ATM-PM06W,ATM-PM07W,ATM-PM09W,ATM-PM10W	
Model Different:	The rest of the product is the same except for the different appearance	
Power supply	N/A	
Power supply(Battery)	DC 1.5V	
Hardware version:	V1.0	
Software version:	V1.0.0	
Specification		
Modulation:	GFSK	
Operation frequency:	2408MHz-2474MHz	
Channel number:	34	
Antenna type:	PCB antenna	
Antenna gain:	-1dBi	

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## 2.2. Description of Test Modes

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Test Frequency: 2408MHz/2440MHz/2474MHz

#### **Test mode**

For RF test items:

The engineering test program was provided and enabled to make EUT continuous transmit.

For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

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2.3. Measurement Instruments List

	Tonscend JS0806-2 Test system				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
1	Spectrum Analyzer	R&S	FSV40-N	101798	03/04/2023
2	Vector Signal Generator	Agilent	N5182A	MY50142520	03/04/2023
3	Analog Signal Generator	HP	83752A	3344A00337	03/04/2023
4	Power Sensor	Agilent	E9304A	MY50390009	03/04/2023
5	Power Sensor	Agilent	E9300A	MY41498315	03/04/2023
6	Wideband Radio Communication Tester	R&S	CMW500	157282	03/04/2023
7	Climate Chamber	Angul	AGNH80L	1903042120	03/04/2023
8	Dual Output DC Power Supply	Agilent	E3646A	MY40009992	03/04/2023
9	RF Control Unit	Tonscend	JS0806-2	/	03/04/2023

	Transmitter spurious emissions & Receiver spurious emissions				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
1	EMI Test Receiver	R&S	ESR	102525	03/04/2023
2	High Pass Filter	Chengdu E-Microwave	OHF-3-18-S	0E01901038	03/04/2023
3	High Pass Filter	Chengdu E-Microwave	OHF-6.5-18-S	0E01901039	03/04/2023
4	Spectrum Analyzer	HP	8593E	3831U02087	03/04/2023
5	Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	01230	12/04/2023
6	Loop Antenna	Beijin ZHINAN	ZN30900C	18050	03/15/2023
7	Spectrum Analyzer	R&S	FSV40-N	101798	03/04/2023
8	Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	03/29/2023
9	Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	03/04/2023
10	Pre-Amplifier	EMCI	EMC051835SE	980662	03/04/2023
11	Pre-Amplifier	Schwarzbeck	BBV-9721	57	03/04/2023
12	Horn Antenna	Schwarzbeck	BBHA 9170	00939	03/04/2023

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
1	LISN	R&S	ENV432	1326.6105.02	03/04/2023
2	EMI Test Receiver	R&S	ESR	102524	03/04/2023
3	Manual RF Switch	JS TOYO	1	MSW-01/002	03/04/2023

#### Note:

- 1)The Cal. Interval was one year.
- 2)The cable loss has calculated in test result which connection between each test instruments.

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## 2.4. Test Software

Software name		Model	Version
Ì	Conducted emission Measurement Software	EZ-EMC	EMC-Con 3A1.1
Radiated emission Measurement Software		EZ-EMC	FA-03A.2.RE
Ī	Bluetooth and WIFI Test System	JS1120-3	2.5.77.0418

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## 3. TEST ITEM AND RESULTS

## 3.1. Antenna requirement

#### Requirement

#### FCC CFR Title 47 Part 15 Subpart C 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. 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.

### FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### **Test Result**

The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

Note: The antenna is permanently fixed to the EUT

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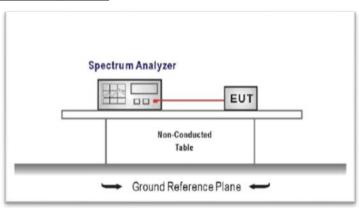


### 3.2. 20dB Bandwidth

#### Limit

Operation Frequency range 2400MHz-2483.5MHz.

### **Test Configuration**



#### **Test Procedure**

- 1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously
- 3. Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW

Sweep = auto, Detector function = peak, Trace = max hold

4. Measure and record the results in the test report.

### **Test Mode**

Please refer to the clause 2.2.

#### **Test Results**

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 Test Mode:
 GFSK

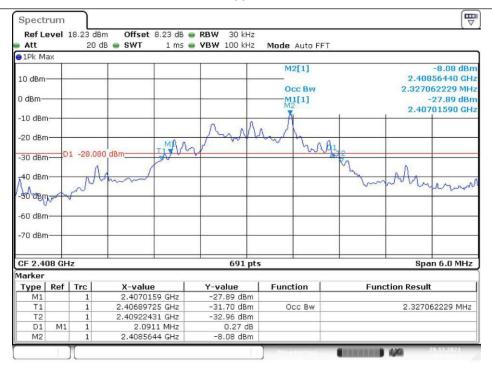
 Channel frequency (MHz)
 20dB Bandwidth [MHz]
 Verdict

 2408
 2.0911
 PASS

 2440
 2.0839
 PASS

 2474
 2.1013
 PASS

#### 2408MHz



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### 3.3. Conducted Emission

#### Limit

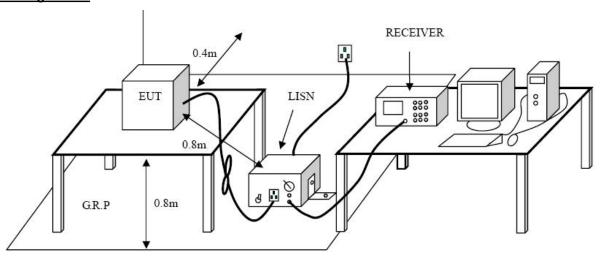
#### **Conducted Emission Test Limit**

Fraguency	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### **Test Configuration**



#### **Test Procedure**

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- 3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment.

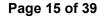
  The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
- 4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
- 5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- 6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 7. During the above scans, the emissions were maximized by cable manipulation.

#### **Test Results**

Note: The device is powered by an internal battery, so this item is not available.

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## 3.4. Radiated Spurious Emissions

## **LIMIT**

# FCC CFR Title 47 Part 15 Subpart C Section 15.209(a) and 15.205(a) Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental	Field Strength of Harmonics
	(millivolts/meter)	(microvolts/meter)
900-928MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
2400-2483.5MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
5725-5875MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
24.0-24.25GHz	250 (108dBuV/m @3m)	2500 (68dBuV/m @3m)

#### Standard FCC 15.209

Frequency	Distance	Field Strengths Limit			
(MHz)	Meters	μ <b>V/m</b>	dB(μV)/m		
0.009 ~ 0.490	300	2400/F(kHz)			
0.490 ~ 1.705	30	24000/F(kHz)			
1.705 ~ 30	30	30			
30 ~ 88	3	100	40.0		
88 ~ 216	3	150	43.5		
216 ~ 960	3	200	46.0		
960 ~ 1000	3	500	54.0		
Above 1000	3	Other:74.0dB(µV)/m(Peal	k) 54.0dB(μV)/m (Average)		

Remark:

- (1) Emission level dB  $\mu$  V = 20 log Emission level  $\mu$  V/m
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

#### FREQUENCY RANGE OF RADIATED MEASUREMENT

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
	1GHz~26.5GHz
Start ~Stop Frequency	RBW 1MHz/ VBW 1MHz for Peak,
	RBW 1MHz/ VBW 10Hz for Average

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

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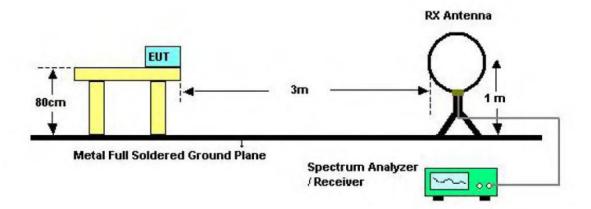
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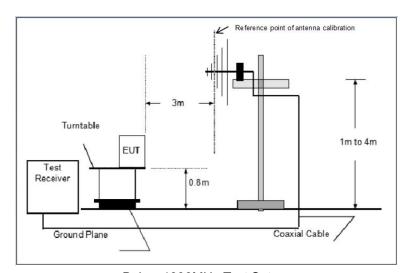
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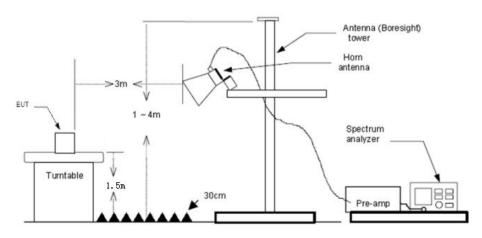
### **Test Configuration**



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

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**Test Procedure** 

- 1. The EUT was setup and tested according to ANSI C63.10:2013
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Below 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;

If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(3) From 1 GHz to 10<sup>th</sup> harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW=10HzPeak detector for Average value.

#### **TEST MODE:**

Please refer to the clause 2.2

#### **TEST RESULTS**

$\boxtimes$	Passed	Not Ap	plicable

#### 9 KHz~30 MHz and 18GHz~25GHz

From 9 KHz~30 MHz and 18GHz~25GHz: Conclusion: PASS

#### Note:

- 1) Final level = Reading level + Correct Factor
  - Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
- 2) The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3) The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 4) 18GHz ~ 25GHz

The EUT was pre-scanned the frequency band (18GHz~25GHz), found the radiated level(Background noise) lower than the limit, so don't show on the report.

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Radiated field strength of the fundamental signal

Frequency (MHz)	Read Level (dBuV)	Correct Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dBuV/m)	Polarization	Test value
2408	91.84	-10.88	80.96	114	-33.04	Horizontal	Peak
2440	94.41	-10.88	83.53	114	-30.47	Horizontal	Peak
2474	93.76	-10.88	82.88	114	-31.12	Horizontal	Peak
2408	72.16	-10.88	61.28	94	-32.72	Horizontal	AVG
2440	73.41	-10.88	62.53	94	-31.47	Horizontal	AVG
2474	79.26	-10.88	68.38	94	-25.62	Horizontal	AVG

Frequency (MHz)	Read Level (dBuV)	Correct Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dBuV/m)	Polarization	Test value
2408	92.18	-10.88	81.3	114	-32.70	Vertical	Peak
2440	93.84	-10.88	82.96	114	-31.04	Vertical	Peak
2474	93.09	-10.88	82.21	114	-31.79	Vertical	Peak
2408	73.11	-10.88	62.23	94	-31.77	Vertical	AVG
2440	72.80	-10.88	61.92	94	-32.08	Vertical	AVG
2474	77.66	-10.88	66.78	94	-27.22	Vertical	AVG

#### Note:

Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

### **RADIATED EMISSION BELOW 30MHZ**

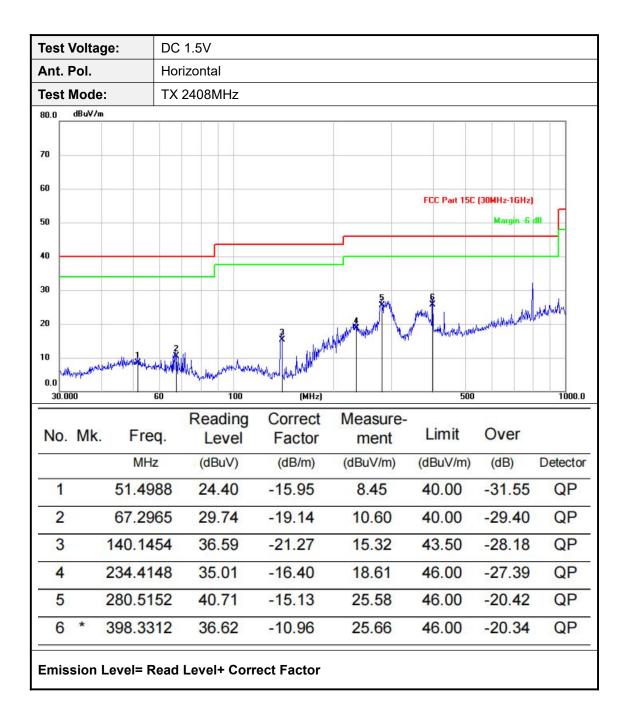
No emission found between lowest internal used/generated frequencies to 30MHz.

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#### 30MHz-1GHz





Test Voltage: DC 1.5V Ant. Pol. Vertical Test Mode: TX 2408MHz dBuV/m 80.0 70 60 FCC Part 15C (30MHz-1GHz) 50 40 30 20 10 0.0 30.000 100 500 1000.0 Reading Correct Measure-No. Mk. Limit Over Freq. Factor Level ment MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 50.3559 31.47 -15.7115.76 40.00 -24.24 QP 1 2 71.6308 36.69 -19.8816.81 40.00 -23.19QP 3 139.0196 39.49 -21.2918.20 43.50 -25.30QP 33.14 -27.52QP 4 300.0514 -14.6618.48 46.00 5 383.6627 32.40 -11.45 20.95 46.00 -25.05QP

**Emission Level= Read Level+ Correct Factor** 

28.80

-8.24

20.56

46.00

-25.44

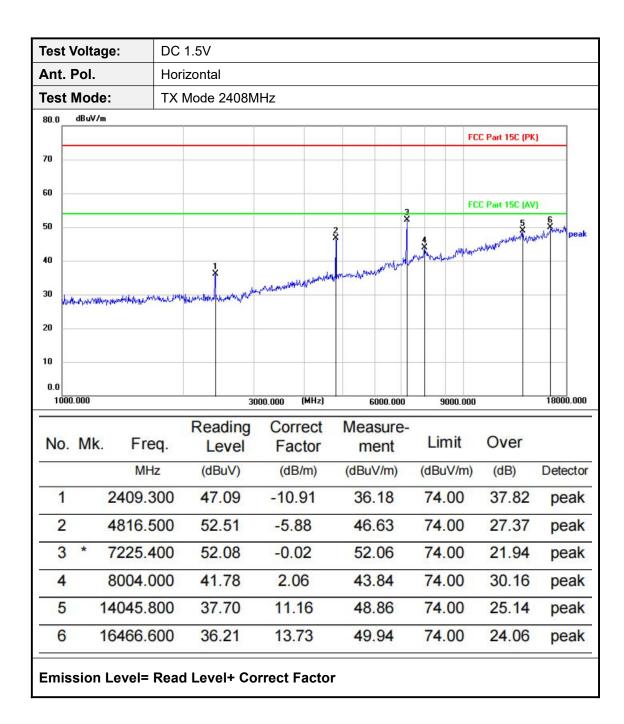
QP

577.0489

6



#### **Above 1GHz**



TRF No. FCC Part 15.249\_R1

Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China



Test Voltage: DC 1.5V Ant. Pol. Vertical **Test Mode:** TX Mode 2408MHz dBuV/m FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 1000.000 18000.000 (MHz) 3000.000 6000.000 9000.000 Reading Measure-Correct Limit Over No. Mk. Freq. Level Factor ment MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 1 2407.600 47.88 -10.9136.97 74.00 37.03 peak 2 4816.500 58.46 -5.8852.58 74.00 21.42 peak 3 7225.400 52.24 -0.0252.22 74.00 21.78 peak 4 8141.700 41.73 2.04 43.77 74.00 30.23 peak 5 13964.200 37.83 11.18 49.01 74.00 24.99 peak 6 16755,600 37.45 13.41 50.86 74.00 23.14 peak

**Emission Level= Read Level+ Correct Factor** 



Test Voltage: DC 1.5V Ant. Pol. Horizontal **Test Mode:** TX Mode 2440MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 1000.000 (MHz) 18000.000 3000.000 6000.000 9000.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz (dBuV) (dBuV/m) (dBuV/m) Detector (dB/m) (dB) 1 47.27 36.37 2439.900 -10.9074.00 37.63 peak 2 4881.100 58.27 -5.7152.56 74.00 21.44 peak 47.78 3 7318.900 0.27 48.05 74.00 25.95 peak 9884.200 39.98 3.82 43.80 74.00 30.20 4 peak

47.73

50.72

74.00

74.00

26.27

23.28

peak

peak

**Emission Level= Read Level+ Correct Factor** 

37.83

37.53

9.90

13.19

12988.400

17221.400

5

6



Test Voltage: DC 1.5V Ant. Pol. Vertical **Test Mode:** TX Mode 2440MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 20 10 0.01000.000 18000.000 3000.000 6000.000 9000.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz (dBuV) (dBuV/m) (dB/m) (dBuV/m) (dB) Detector 1 3500.700 43.10 -9.6833.42 74.00 40.58 peak 2 4881.100 59.09 -5.7153.38 74.00 20.62 peak 3 7320.600 52.24 0.27 52.51 74.00 21.49 peak

**Emission Level= Read Level+ Correct Factor** 

39.31

37.65

36.75

6.09

11.12

13.63

45.40

48.77

50.38

74.00

74.00

74.00

28.60

25.23

23.62

peak

peak

peak

11171.100

13908.100

16612.800

4

5

6



Test Voltage: DC 1.5V Ant. Pol. Horizontal **Test Mode:** TX Mode 2474MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 20 10 0.0 1000.000 3000.000 (MHz) 18000.000 6000.000 9000.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 1 2473.900 48.39 -10.8937.50 74.00 36.50 peak 2 3827.100 43.61 -8.8734.74 74.00 39.26 peak 3 74.00 21.35 4947.400 58.18 -5.5352.65 peak 4 7424.300 50.83 0.59 51.42 74.00 22.58 peak 5 14113.800 37.90 11.08 48.98 74.00 25.02 peak 6 17588.600 37.21 13.43 50.64 74.00 23.36 peak



Test Voltage: DC 1.5V Ant. Pol. Vertical **Test Mode:** TX Mode 2474MHz dBuV/m FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 1000.000 3000.000 (MHz) 6000.000 9000.000 18000.000 Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 42.25 -11.14 1 1904.400 31.11 74.00 42.89 peak 2 3221.900 42.44 -10.1932.25 74.00 41.75 peak 3 4947.400 57.82 -5.5321.71 52.29 74.00 peak 7420.900 49.01 0.58 74.00 24.41 4 49.59 peak 5 12281.200 38.30 8.50 46.80 74.00 27.20 peak 6 16708.000 37.28 13.49 50.77 74.00 23.23 peak

#### **Emission Level= Read Level+ Correct Factor**

#### Note

1.18GHz-26.5GHz is the background of the site, there is no radiated spurious.

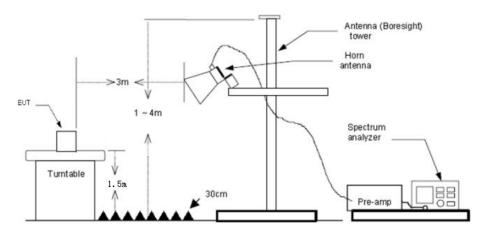
Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

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## 3.5. Band Edge Emissions(Radiated)

## **Test Configuration**



#### **Test Procedure**

- 1. The EUT was setup and tested according to ANSI C63.10:2013
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;

RBW=1MHz, VBW=3MHz PEAK detector for Peak value.

RBW=1MHz, VBW=10Hz with PEAK Detector for Average Value.

#### **Test Mode**

Please refer to the clause 2.2.

#### **Test Results**

## $oxed{igwedge}$ Passed $oxed{igwedge}$ Not Applicable

### Note:

- 1) Final level= Read level + Antenna Factor + Cable Loss Preamp Factor
- 2) Correction Factor = Antenna factor + cable loss
- 3 ) The peak level is lower than average limit(54dBuV/m), this data is the too weak instrument of signal is unable to test.
- 4) The emission levels of other frequencies are very lower than the limit and not show in test report.

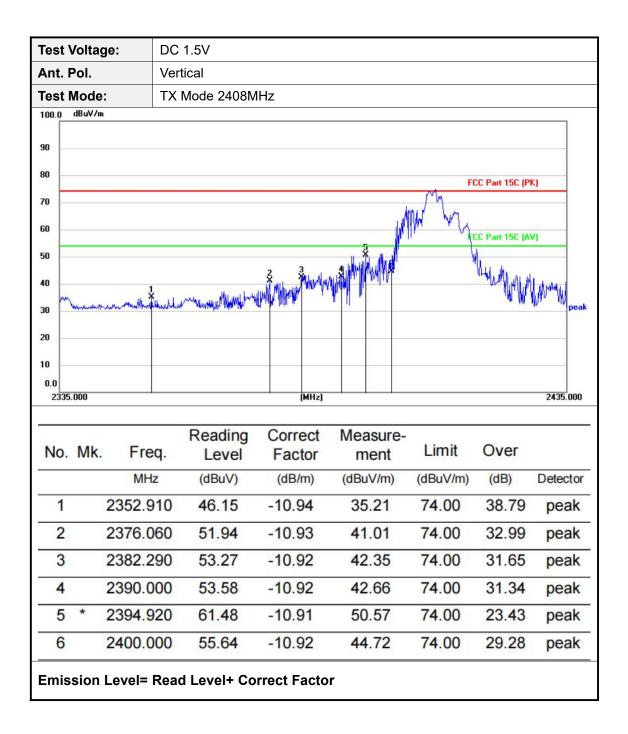
TRF No. FCC Part 15.249 R1

Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

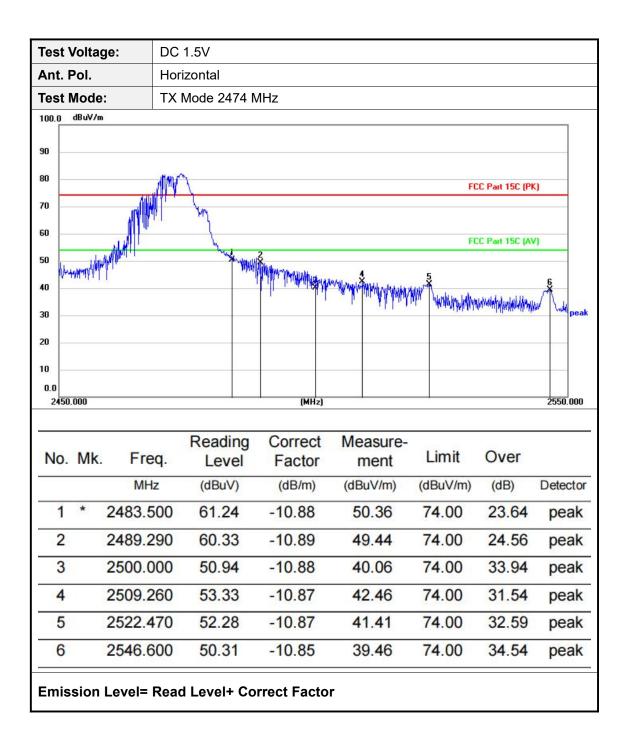


Test Voltage:	DC	1.5V					
Ant. Pol.:	Hor	izontal					
Test Mode:	TX	Mode 2408M	Hz				
100.0 dBuV/m							
90							
80					√\ Ff	CC Part 15C (P)	0
70				N <sup>1</sup> /	W 10	or all 13C (i i	<u>, , , , , , , , , , , , , , , , , , , </u>
60					1 Y W		
50		_ 3, ,	1 1, 4,	1 \$ He de 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	FC	Part 15C (A)	4
40	المحالية المالية			Walle Children		"MUNICAL	MM peak
AND THE PARTY OF T	Maladadad						
20							
10							
2335.000			(MHz)				2435.000
No Mic E		Reading	Correct	Measure-	Limit	Over	
N	req.	Level	Factor	ment			
	MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1 2348	3.430	55.16	-10.93	44.23	74.00	29.77	peak
2 2360	0.660	56.42	-10.93	45.49	74.00	28.51	peak
3 2366	5.780	58.83	-10.93	47.90	74.00	26.10	peak
4 * 2377	7.620	63.44	-10.93	52.51	74.00	21.49	peak
5 2390	0.000	59.81	-10.92	48.89	74.00	25.11	peak
6 2400	0.000	60.57	-10.92	49.65	74.00	24.35	peak
Emission Leve	I= Rose	d Level+ Co	rract Facto	r			
				-			











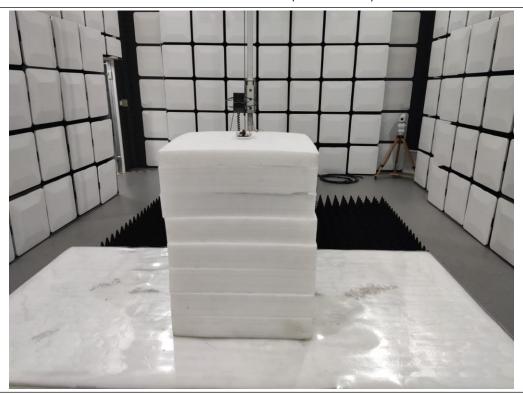
Ant. Po	_1						
	DI.	Vertical					
Test M	ode:	TX Mode 2474	MHz				
100.0 dE	BuV/m						
90							
80		na Med Asc.			FC	CC Part 15C (P	K)
70	n M	MIN THE					
60		" \ <sub>1</sub>			FC	CC Part 15C (A	vı l
50		*					
40	Pary Manager	****	2 3 X X				
30	יוין דו דויין			- March prediction and down order	- Andrews	& Marian	orthy of the house
V2.120							peak
20							
10							
0.0 2450.00	00		(MHz)				2550.000
	*****						
No. N	Иk. Fre	Reading eq. Level	Correct Factor	Measure- ment	Limit	Over	
	MH		(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1 '	(LEGENS)	Manual /		44.13	74.00		CHAIR CONTRACTOR
1	2400.0		-10.88	11.00		29.87	peak
2	2489.2	230 51.33	-10.89	40.44	74.00	33.56	peak
3	2492.6	500 51.14	-10.89	40.25	74.00	33.75	peak
4	2500.0	000 43.93	-10.88	33.05	74.00	40.95	peak
5	2522.4	46.36	-10.87	35.49	74.00	38.51	peak
6	2536.7	760 42.96	-10.86	32.10	74.00	41.90	peak
		Read Level+ C					

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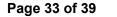
## **4.EUT TEST PHOTOS**



Radiated Measurement (Above 1GHz)



Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China





## 5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

## **External Photographs**



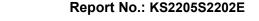
Photo 2



TRF No. FCC Part 15.249\_R1

Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China











Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China





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## Internal Photographs



Photo 2



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China





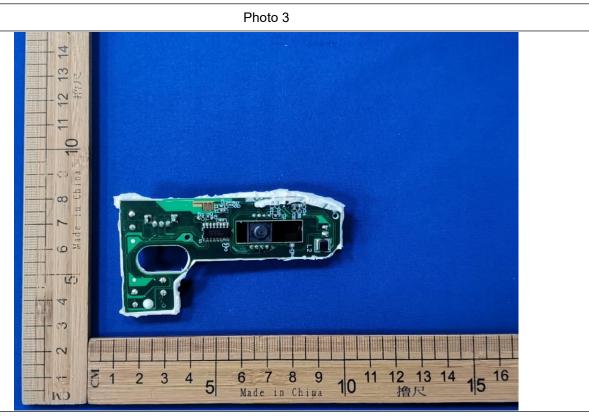


Photo 4



Add: West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

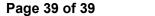




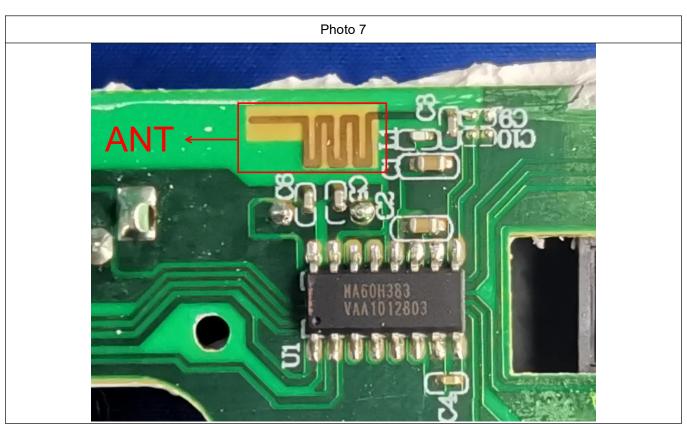


Photo 6









--THE END--