

# **FCC Test Report**

Test Report
On Behalf of
Intracom Asia Co., Ltd.
For
Wireless mouse
Model No.: M7153

FCC ID: 2ADQY-180788MS

Prepared For: Intracom Asia Co., Ltd.

4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan

Prepared By: Shenzhen HUAK Testing Technology Co., Ltd.

1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping,

Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Date of Test: Aug. 19, 2024 ~ Aug. 26, 2024

Date of Report: Aug. 26, 2024

Report Number: HK2408194740-E

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### **Test Result Certification**

Applicant's Name .....: Intracom Asia Co., Ltd.

4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221,

Taiwan

Manufacturer's Name.....: Guangzhou Maipai Electronics Co., Ltd.

Qiaonan Street, Panyu District of Guangzhou, China

**Product Description** 

Trade Mark.....: N/A

Product Name .....: Wireless mouse

Model and/or Type Reference..: M7153

FCC Rules and Regulations Part 15 Subpart C Section 15.249

Report No.: HK2408194740-E

Standards ...... ANSI C63.10: 2013

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Date of Test.....

Date (s) of Performance of Tests...... Aug. 19, 2024~ Aug. 26, 2024

Date of Issue...... Aug. 26, 2024

Test Result ..... Pass

Testing Engineer

Len lian

Len Liao

**Technical Manager** 

NON

Vian

Sliver Wan

Authorized

Signatory

Jason Whou

Jason Zhou

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\*\* Modified History \*\*

- HOLL	TO HOME PICE	The HOME	TOP HOME			
Revision	Description	Issued Data	Remark			
Revision 1.0	Initial Test Report Release	Aug. 26, 2024	Jason Zhou			
80.0						
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## 1. Test Summary

### 1.1 Test Procedures and Results

DESCRIPTION OF TEST	SECTION NUMBER	RESULT
CONDUCTED EMISSIONS TEST	15.207	N/A
RADIATED EMISSION TEST	15.249(a)/15.209	COMPLIANT
BAND EDGE	15.249(d)/15.205	COMPLIANT
OCCUPIED BANDWIDTH MEASUREMENT	15.215(c)	COMPLIANT
ANTENNA REQUIREMENT	15.203	COMPLIANT

### 1.2 Information of the Test Laboratory

Shenzhen HUAK Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

**Testing Laboratory Authorization:** 

A2LA Accreditation Code is 4781.01. FCC Designation Number is CN1229. Canada IC CAB identifier is CN0045. CNAS Registration Number is L9589.

### 1.3 Measurement Uncertainty

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.71dB, k=2 Radiated emission expanded uncertainty(9kHz-30MHz) = 3.90dB, k=2 Radiated emission expanded uncertainty(30MHz-1000MHz) = 3.90dB, k=2 Radiated emission expanded uncertainty(Above 1GHz) = 4.28dB, k=2

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# 2. General Information

# 2.1 General Description of EUT

Equipment:	Wireless mouse	TOG.	-nVG
Model Name:	M7153	HUAKTESI	HUAKTES
Series Model:	N/A		
Model Difference:	N/A	AKTESTING	e)G
FCC ID:	2ADQY-180788MS	HO.	- HUAKTESTII
Antenna Type:	PCB Antenna	TING	0
Antenna Gain:	-4.62dBi		ang any
Operation Frequency:	2402-2480MHz	"IAK TEST	HUAKTEST
Number of Channels:	40CH	0	<b>(3)</b>
Modulation Type:	GFSK		
Power Source:	DC1.5V from Battery	W TESTING	V TESTING
Power Rating:	DC1.5V from Battery	O HUM	(a) HUAL

### Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2. Antenna gain Refer to the antenna specifications.
- 3. The cable loss data is obtained from the supplier.
- 4. The test results in the report only apply to the tested sample.



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2.2 Carrier Frequency of Channels

Description of Channel										
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)					
JAK TESTING O	2402	14	2430	28	2458					
1	2404	15	2432	29	2460					
estinis 2	2406	Test <sup>100</sup> 16	2434	30	2462					
3	2408	17	2436	31	2464					
4	2410	18	2438	32	2466					
5	2412	19	2440	33	2468					
6 G	2414	20	2442	34	2470					
7 0 H	2416	21	2444	35	2472					
8	2418	22	2446	36	2474					
9	2420	23	2448	37	2476					
JAK TE 10	2422	24	2450	38	2478					
11	2424	25	2452	39	2480					
12	2426	26	2454	THE THE						
13	2428	27	2456		TESTA -					

# 2.3 Operation of EUT during Testing

**Operating Mode** 

The mode is used: Transmitting mode

Low Channel: 2402MHz Middle Channel: 2440MHz High Channel: 2480Hz

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2.4 Description of Test Setup

Operation of E	UT during Radiat	tion testing:		
JAK TESTING	NA CETTING	MAKTESTING		
ESTING IAN	EUT	AK TESTING		
O HO				

The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. The worst case is X position.

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2.5 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Trade Mark	Model/Type No.	Specification	Note EUT	
STING	Wireless mouse	N/A	M7153	N/A		
	MAKTESIN	O HO.	MAKTESTI	Mora		
	0	DVIII.	0,	We O		
		HUAK TEST		HUAN TES	.0	
NK TES	INVE I AK TESTING	.04	ESTING	W.T.STING	WAK TESTING	

### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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2.5 Measurement Instruments List

2.5	weasurement mistru	IIIEIIIS LISI				
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N.	R&S	ENV216	HKE-002	2024/02/20	1 Year
2	L.I.S.N.	R&S	ENV216	HKE-059	2024/02/20	1 Year
JA 3	EMI Test Receiver	R&S	ESR	HKE-005	2024/02/20	1 Year
4	Spectrum analyzer	Agilent	N9020A	HKE-025	2024/02/20	1 Year
5	Spectrum analyzer	R&S	FSV3044	HKE-126	2024/02/20	1 Year
6	Preamplifier	EMCI	EMC051845S	HKE-006	2024/02/20	1 Year
7	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	2024/02/20	1 Year
8	Preamplifier	A.H. Systems	SAS-574	HKE-182	2024/02/20	1 Year
9	6dB Attenuator	Pasternack	6db	HKE-184	2024/02/20	1 Year
10	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	2024/02/20	1 Year
11	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	2024/02/21	2 Year
12	Loop Antenna	COM-POWER	AL-130R	HKE-014	2024/02/21	2 Year
13	Horn Antenna	Schwarzbeck	9120D	HKE-013	2024/02/21	2 Year
14	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	I STIM	/
15	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	MAK	1
16	RF Automatic control unit	Tonscend	JS0806-2	HKE-060	2024/02/20	1 Year
17	High pass filter unit	Tonscend	JS0806-F	HKE-055	2024/02/20	1 Year
18	Wireless Communication Test Set	R&S	CMU200	HKE-026	2024/02/20	1 Year
19	Wireless Communication Test Set	R&S	CMW500	HKE-027	2024/02/20	1 Year
20	High-low temperature chamber	Guangke	HT-80L	HKE-118	2024/06/10	1 Year
21	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2024/06/10	1 Year
22	RF Test Software	Tonscend	JS1120-3 Version 3.3.23	HKE-083	O Julian	1
23	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	2024/02/20	1 Year
24	RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	KTESTING / TAKT	STILL I

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### 3. Conducted Emissions Test

#### 3.1 Conducted Power Line Emission Limit

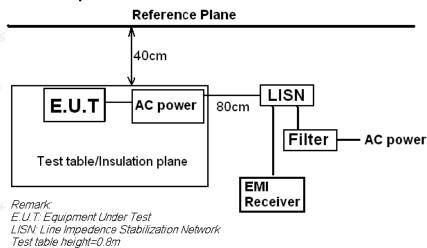
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following.

Гианилана.	Maximum RF Line Voltage (dBμV)					
Frequency (MHz)	CLAS	SS A	CLASS B			
(11112)	Q.P.	Ave.	Q.P.	Ave.		
0.15 - 0.50	79	66	66-56*	56-46*		
0.50 - 5.00	73	60	56	46		
5.00 - 30.0	73	60	60	50		

<sup>\*</sup> Decreasing linearly with the logarithm of the frequency.

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

### 3.2 Test Setup



#### 3.3 Test Procedure

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5. All support equipments received AC power from a second LISN, if any.
- 6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

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3.4 Test Result

Not applicable.

Note: EUT Power Supply by Battery Powered, so this test item not applicable.

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### 4. Radiated Emission Test

### 4.1 Radiation Limit

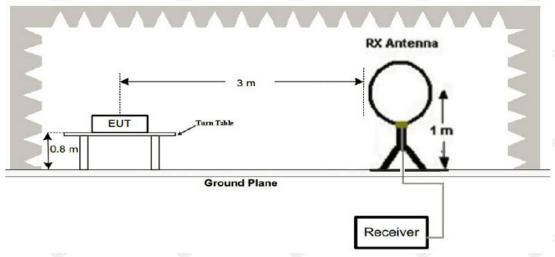
For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

All and a second			
Frequency (MHz)	Frequency Distance Radia (MHz) (Meters) (dBµ)		Radiated (µV/m)
0.009-0.490	300	20log 2400/F (kHz)	2400/F (kHz)
0.490-1.705	30	20log 24000/F (kHz)	24000/F (kHz)
1.705-30	30	20log 30	30
30-88	3	40	100
88-216	3	43.5	150
216-960	TESTING 3	46	200
Above 960	HUPA 3	54	500

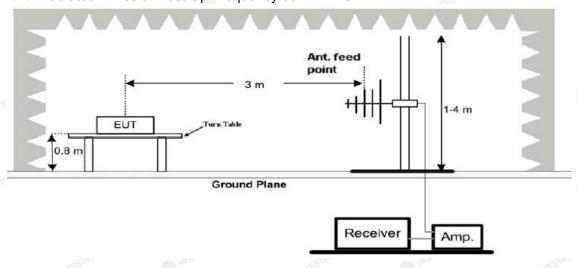
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

### 4.2 Test Setup

### (1) Radiated Emission Test-Up Frequency Below 30MHz

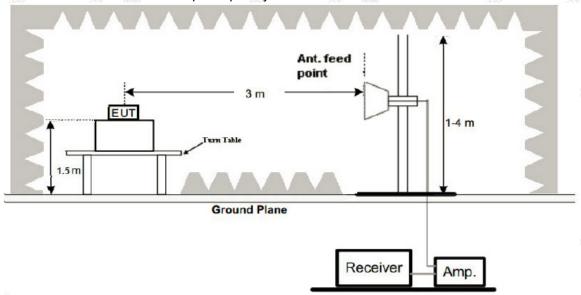


#### (2) Radiated Emission Test-Up Frequency 30MHz~1GHz



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### (3) Radiated Emission Test-Up Frequency Above 1GHz



### 4.3 Test Procedure

- 1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.
- 7. The test frequency range from 9KHz to 25GHz per FCC PART 15.33(a).

### Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

### 4.4 Test Result

#### **PASS**

All the test modes completed for test. The worst case of Radiated Emission is CH 01; the test data of this mode was reported.

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Below 1GHz Test Results:

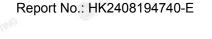
### Antenna polarity: H

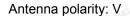


Suspe	Suspected List									
	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle		
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
1	119.32932	-15.94	31.93	15.99	43.50	27.51	100	282	Horizontal	
2	181.47147	-16.13	35.06	18.93	43.50	24.57	100	93	Horizontal	
3	215.45545	-14.72	40.44	25.72	43.50	17.78	100	153	Horizontal	
4	264.00400	-13.15	37.70	24.55	46.00	21.45	100	170	Horizontal	
5	323.23323	-11.07	32.96	21.89	46.00	24.11	100	82	Horizontal	
6	461.11111	-8.91	34.11	25.20	46.00	20.80	100	264	Horizontal	

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level;

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Susp	Suspected List									
	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle		
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
1	79.51952	-18.01	30.52	12.51	40.00	27.49	100	210	Vertical	
2	119.32932	-15.94	35.80	19.86	43.50	23.64	100	144	Vertical	
3	130.98098	-17.44	37.37	19.93	43.50	23.57	100	140	Vertical	
4	215.45545	-14.72	30.77	16.05	43.50	27.45	100	357	Vertical	
5	364.01401	-9.62	31.09	21.47	46.00	24.53	100	140	Vertical	
6	460.14014	-8.95	33.45	24.50	46.00	21.50	100	203	Vertical	

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level;

### **Harmonics and Spurious Emissions**

### Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)
<u></u>	3 <u> </u>	THE O
of HUANTED	ag m/l	KTE - 16
ALTESTING WAY TESTING	JAK TESTING - MAK TESTING	WANTESTING - WANTESTING
<u> </u>	(a) 110 (b) 110 (c) 11	

Note: 1. Emission Level=Reading+ Cable loss+ Antenna factor-Amp factor.

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

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### Above 1 GHz Test Results:

Report No.: HK2408194740-E

### CH Low (2402MHz)

### Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Type
2402	103.12	-5.84	97.28	114	-16.72	peak
2402	86.07	-5.84	80.23	94	-13.77	AVG
4804	54.95	-3.64	51.31	74 HUAK	-22.69	peak
4804	41.18	-3.64	37.54	54	-16.46	AVG
7206	52.54	-0.95	51.59	74	-22.41	peak
7206	40.96	-0.95	40.01	54	-13.99	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

### Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits 💍 🗥	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2402	105.02	-5.84	99.18	114	-14.82	peak
2402	83.51	-5.84	77.67	94	-16.33	AVG
4804	54.79	-3.64	51.15	74	-22.85	peak
4804	42.18	-3.64	38.54	54	-15.46	AVG
7206	52.32	-0.95	51.37	74	-22.63	peak
7206	41.66	-0.95	40.71	54	-13.29	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

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Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China



### CH Middle (2440MHz)

### Horizontal:

		104877		100		
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2440	106.31	-5.71	100.6	114	-13.4	peak
2440	76.05	-5.71	70.34	94	-23.66	AVG
4880	53.54	-3.51	50.03	74	-23.97	peak
4880	43.08	-3.51	39.57	54	-14.43	AVG
7320	50.31	-0.82	49.49	74 TESTING	-24.51	peak
7320	43.29	-0.82	42.47	54	-11.53	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

#### Vertical:

ortioui.						
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2440	104.46	-5.71	98.75	114	-15.25	peak
2440	82.05	-5.71	76.34	94	-17.66	AVG
4880	56.37	-3.51	52.86	74 <sub>57m</sub> 6	-21.14	peak
4880	44.83	-3.51	41.32	54	-12.68	AVG
7320	53.29	-0.82	52.47	74	-21.53	peak
7320	42.51	-0.82	41.69	54	-12.31	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.



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### CH High (2480MHz)

#### Horizontal:

Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBμV/m)	(dBµV/m)	(dB)	Туре
106.77	-5.65	101.12	114	-12.88	peak
81.89	-5.65	76.24	94	-17.76	AVG
55.06	-3.43	51.63	74	-22.37	peak
43.24	-3.43	39.81	54	-14.19	AVG
52.16	-0.75	51.41	74	-22.59	peak
43.89	-0.75	43.14	54	-10.86	AVG
	Reading (dBµV) 106.77 81.89 55.06 43.24 52.16	Reading     Factor       (dBμV)     (dB)       106.77     -5.65       81.89     -5.65       55.06     -3.43       43.24     -3.43       52.16     -0.75	Reading     Factor     Emission Level       (dBμV)     (dB)     (dBμV/m)       106.77     -5.65     101.12       81.89     -5.65     76.24       55.06     -3.43     51.63       43.24     -3.43     39.81       52.16     -0.75     51.41	Reading       Factor       Emission Level       Limits         (dBμV)       (dB)       (dBμV/m)       (dBμV/m)         106.77       -5.65       101.12       114         81.89       -5.65       76.24       94         55.06       -3.43       51.63       74         43.24       -3.43       39.81       54         52.16       -0.75       51.41       74	Reading         Factor         Emission Level         Limits         Margin           (dBμV)         (dB)         (dBμV/m)         (dBμV/m)         (dB)           106.77         -5.65         101.12         114         -12.88           81.89         -5.65         76.24         94         -17.76           55.06         -3.43         51.63         74         -22.37           43.24         -3.43         39.81         54         -14.19           52.16         -0.75         51.41         74         -22.59

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

#### Vertical:

vertical.	-a1G		alG	nIG.	-nIG	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2480	106.71	-5.65	101.06	114	-12.94	peak
2480	81.42	-5.65	75.77	94	-18.23	AVG
4960	53.06	-3.43	49.63	74	-24.37	peak
4960	46.79	-3.43	43.36	54	-10.64	AVG
7440	51.38	-0.75	50.63	74	-23.37	peak
7440	43.23	-0.75	42.48	54	-11.52	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

#### Remark :

- (1) Measuring frequencies from 1 GHz to the 25 GHz.
- (2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency
- (3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (4)The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
- (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- (6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
- (7) All modes of operation were investigated and the worst-case emissions are reported.

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5. Band Edge

### 5.1 Limits

FCC PART 15.249(d) 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 §15.209, whichever is the lesser attenuation.

### 5.2 Test Procedure

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 1MHz and VBM to 3MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength. The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW to 1MHz and VBW to 3MHz, to measure the conducted peak band edge.

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# 5.3 Test Result

### **PASS**

Radiated Band Edge Test:

Operation Mode: TX CH Low (2402MHz)

Horizontal (Worst case):

Meter	Will Ho.	-6711	an NO.		~7 W
Reading	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
56.29	-5.81	50.48	74	-23.52	peak
HUPA	-5.81	N HOW	54	HUAK /	AVG
55.08	-5.84	49.24	74	-24.76	peak
TESTING	-5.84	STAG /	<sup>66</sup> 54	TESTING	AVG
51.16	-5.84	45.32	74	-28.68	peak
1	-5.84	/	54	ESTING /	AVG
	(dBµV) 56.29 / 55.08	Reading       (dBμV)     (dB)       56.29     -5.81       /     -5.81       55.08     -5.84       /     -5.84       51.16     -5.84	Reading       (dBμV)       (dB)       (dBμV/m)         56.29       -5.81       50.48         /       -5.81       /         55.08       -5.84       49.24         /       -5.84       /         51.16       -5.84       45.32	Reading       (dBμV)       (dB)       (dBμV/m)       (dBμV/m)         56.29       -5.81       50.48       74         /       -5.81       /       54         55.08       -5.84       49.24       74         /       -5.84       /       54         51.16       -5.84       45.32       74	Reading       Galler (dBμV)       (dB)       (dBμV/m)       (dBμV/m)       (dBμV/m)         56.29       -5.81       50.48       74       -23.52         /       -5.81       /       54       /         55.08       -5.84       49.24       74       -24.76         /       -5.84       /       54       /         51.16       -5.84       45.32       74       -28.68

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

#### Vertical:

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Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Type
2310	57.94	-5.81	52.13	74	-21.87	peak
2310	MHUAK I	-5.81	MAK I	54	1	AVG
2390	55.16	-5.84	49.32	74	-24.68	peak
2390	TESTING /	-5.84	AK TESTING	54	1	AVG
2400	53.22	-5.84	47.38	74	-26.62	peak
2400	1	-5.84	1	54	1	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

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Operation Mode: TX CH High (2480MHz)

#### Horizontal (Worst case):

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Time
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2483.50	54.59	-5.65	48.94	74	-25.06	peak
2483.50	TESTING /	-5.65	/ TESTING	54	JKTE 1	AVG
2500.00	50.18	-5.65	44.53	74	-29.47	peak
2500.00	1	-5.65	1	54	1	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit.

#### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Data at My TESTIN
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2483.50	53.41	-5.65	47.76	74	-26.24	peak
2483.50	1	-5.65	O HARK	54	1	AVG
2500.00	53.57	-5.65	47.92	74	-26.08	peak
2500.00	" LAK TESTING	-5.65	STING / HANTES	54	N TESTING	AVG

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Level-Limit

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

### Remark:

- 1. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.
- 2. In restricted bands of operation, the spurious emissions below the permissible value more than 20dB.
- 3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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# 6. Occupied Bandwidth Measurement

### 6.1 Test Setup

Same as Radiated Emission Measurement

#### 6.2 Test Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Set EUT as normal operation.
- 3. Based on ANSI C63.10 section 6.9.2: RBW= 20KHz. VBW= 62KHz, Span= 5MHz.
- 4. The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector.

### 6.3 Measurement Equipment Used

Same as Radiated Emission Measurement

#### 6.4 Test Result

#### **PASS**

Frequency	20dB Bandwidth (MHz)	Result
2402 MHz	2.012	PASS
2440 MHz	2.023	PASS
2480 MHz	2.032	PASS

CH: 2402MHz



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CH: 2440MHz



CH: 2480MHz



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### 7. Antenna Requirement

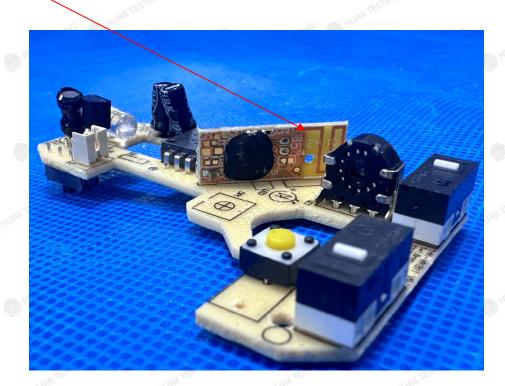
### **Standard Applicable**

For intentional device, according to FCC 47 CFR 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.

#### **Antenna Connected Construction**

The antenna used in this product is a PCB Antenna, is a permanently attached antenna on the PCB. It conforms to the standard requirements. The directional gains of antenna used for transmitting is -4.62dBi.

### **Antenna**

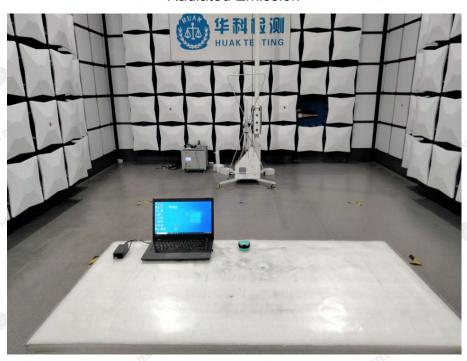


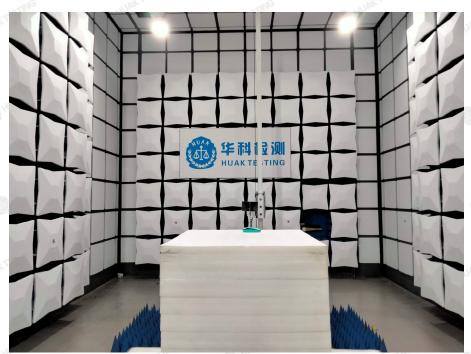
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# 8. Photographs of Test

# **Radiated Emission**





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9. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.



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