

# **FCC TEST REPORT**

Test report
On Behalf of
Huzhoushi Dingchen Trading Co., Ltd.
For

Car driving recorder Model No.: i07, i09, i05, i03, i13, i17, i19, i27, i29, i37

FCC ID: 2A6WF-I07

Prepared For: Huzhoushi Dingchen Trading Co., Ltd.

wuxingqu huanzhugongyeyuuanqu jinsuolu 188hao 9zhuang 215shi huzhoushi,

Zhejiangsheng, China

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: Apr. 08, 2022 ~ May. 11, 2022

Date of Report: May. 11, 2022

Report Number: HK2204081441-E



TEST RESULT CERTIFICATION

Applicant's name .....: Huzhoushi Dingchen Trading Co., Ltd.

wuxingqu huanzhugongyeyuuanqu jinsuolu 188hao 9zhuang 215shi

huzhoushi, Zhejiangsheng, China

Manufacture's Name.....: Huzhoushi Dingchen Trading Co., Ltd.

. wuxingqu huanzhugongyeyuuanqu jinsuolu 188hao 9zhuang 215shi

huzhoushi, Zhejiangsheng, China

**Product description** 

Trade Mark: WOLFBOX

Product name ...... Car driving recorder

Model and/or type reference : i07, i09, i05, i03, i13, i17, i19, i27, i29, i37

FCC Rules and Regulations Part 15 Subpart C Section 15.247

ANSI C63.10: 2013

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Date of Test

Date of Issue ...... May. 11, 2022

Test Result ..... : Pass

Testing Engineer :

(Gary Qian)

Technical Manager

(Eden Hu)

Authorized Signatory:

(Jason Zhou)



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\*\* Modified History \*\*

Revision	Description	Issued Data	Remark	
Revision 1.0	Initial Test Report Release	May. 11, 2022	Jason Zhou	
OKTEST	AN TEST	OK TESTIN	(TES)	
No.	O No.	A Pro-	AD HO	

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# 1. TEST RESULT SUMMARY

#### 1.1. TEST PROCEDURES AND RESULTS

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247(b)(4)	PASS
AC Power Line Conducted Emission	§15.207	N/A
Conducted Peak Output Power	§15.247(b)(3)	PASS
6dB Emission Bandwidth	§15.247(a)(2)	PASS
Power Spectral Density	§15.247(e)	PASS
Band Edge	§15.247(d)	PASS
Spurious Emission	§15.205/§15.209	PASS

#### Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.

#### 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.

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### 1.3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	
1	Conducted Emission	±2.71dB
2	RF power, conducted	±0.37dB
3 HUAKTE	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.90dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%





# 2. EUT DESCRIPTION

# 2.1. GENERAL DESCRIPTION OF EUT

Equipment:	Car driving recorder
Model Name:	i07
Series Model:	i09, i05, i03, i13, i17, i19, i27, i29, i37
Model Difference:	All model's the function, software and electric circuit are the same, only with a product color, appearance and model named different. Test sample model: i07.
FCC ID:	2A6WF-I07
Antenna Type:	Internal Antenna
Antenna Gain:	1dBi huakti
Operation frequency:	802.11b/g/n 20: 2412~2462 MHz
Number of Channels:	802.11b/g/n20: 11CH
Modulation Type:	CCK/OFDM/DBPSK/DAPSK
Power Source:	DC 12V from Car Charger
Power Rating:	DC 12V from Car Charger

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2.2. CARRIER FREQUENCY OF CHANNELS

Channel List For 802.11b/802.11g/802.11n (HT20)								
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
01	2412	04	2427	07	2442	10	2457	
02	2417	05	2432	08	2447	11	2462	
03	2422	06	2437	09	2452	ESTING		

#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

### 2.3. OPERATION OF EUT DURING TESTING

**Operating Mode** 

The mode is used: Transmitting mode for 802.11b/802.11g/802.11n (HT20)

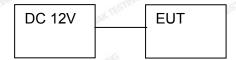
Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

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### 2.4. DESCRIPTION OF TEST SETUP

Operation of EUT during testing:



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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3. GENERA INFORMATION

#### 3.1. TEST ENVIRONMENT AND MODE

Operating Environment:  Temperature:	25.0 °C	JAKTES!
Humidity:	56 % RH	Mr.
Atmospheric Pressure:	1010 mbar	TESTIVE
Test Mode:		
Engineering mode:	Keep the EUT in continuous by select channel and modu value of duty cycle is 98.46°	ulations (The

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. For the full battery state and The output power to the maximum state.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
Final Test Meda.	

#### Final Test Mode:

Operation mode:	Keep the EUT in continuous transmitting
Operation mode:	with modulation

- 1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.
- 2.According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 98.5% with maximum power setting for all modulations.





3.2. 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.

2)	Equipment Model No.		Serial No.	FCC ID	Trade Name	
7	1	IG I HUANTESTI	1	I HUNY TESTIN	I STING	

#### 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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# TEST RESULTS AND MEASUREMENT DATA

### 4.1. CONDUCTED EMISSION

#### **Test Specification**

-110-		4100	-1000			
Test Requirement:	FCC Part15 C Section	FCC Part15 C Section 15.207				
Test Method:	ANSI C63.10:2013	ANSI C63.10:2013				
Frequency Range:	150 kHz to 30 MHz	150 kHz to 30 MHz  RBW=9 kHz, VBW=30 kHz, Sweep time=auto				
Receiver setup:	RBW=9 kHz, VBW=3					
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit ( Quasi-peak 66 to 56* 56 60	dBuV) Average 56 to 46* 46 50			
Test Setup:	Reference Plane  40cm 80cm Filter AC power  E.U.T Ac power  EMI Receiver  Remark: E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m					
Test Mode:	Charging + transmitting	ng with modulation	on			
Test Procedure:	<ol> <li>The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. 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: 2013 on conducted measurement.</li> </ol>					
Test Result:	N/A		ing.			
/6-	-CS/1826	-c5\\				





#### **Test Instruments**

ARTIN YOU		ACCOUNT OF THE PARTY OF THE PAR	Diction	ATTAL ATTAL	200790	
Conducted Emission Shielding Room Test Site (843)						
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
Receiver	R&S	ESCI 7	HKE-010	Feb. 18, 2022	Feb. 17, 2023	
L.I.S.N. Artificial Mains Network	R&S	ENV216	HKE-002	Feb. 18, 2022	Feb. 17, 2023	
LISN	R&S	ENV216	HKE-059	Feb. 18, 2022	Feb. 17, 2023	
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A	N/A	

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



4.2. TEST RESULT

Not applicable.

Note: EUT power supply by DC Power, so this test item not applicable.

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### 4.3. MAXIMUM CONDUCTED OUTPUT POWER

### **Test Specification**

Test Requirement:	FCC Part15 C Section 15	5.247 (b)(3)	W TESTIN
Test Method:	KDB 558074	Muy Hope	MON.
Limit:	30dBm	JAY TESTING	.olo
Test Setup:	Power meter	EUT	MAKTES ING
Test Mode:	Transmitting mode with n	nodulation	
Test Procedure:	1. The testing follows the FCC KDB 558074 D0 v05r02. 2. The RF output of EUT meter by RF cable an compensated to the result of the maximum position.	was connected to d attenuator. The esults for each me ower setting and e	uidance the power path loss was easurement. enable the
Test Result:	PASS	O HUN	

#### **Test Instruments**

- GV	J (G) 1	- Call	- C. V	- G. Y.	261				
	RF Test Room								
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 18, 2022	Feb. 17, 2023				
Power meter	Agilent	E4419B	HKE-085	Feb. 18, 2022	Feb. 17, 2023				
Power Sensor	Agilent	E9300A	HKE-086	Feb. 18, 2022	Feb. 17, 2023				
RF cable	Times	1-40G	HKE-034	Feb. 18, 2022	Feb. 17, 2023				
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 18, 2022	Feb. 17, 2023				

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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### **Test Data**

TESTING	NK TESTING	TX 802.11b Mode	KTESTING WESTING
Test	Frequency	Maximum Peak Conducted Output Power	LIMIT
Channel	(MHz)	(dBm)	dBm
CH01	2412	14.93	30
CH06	2437	17.55	30
CH11	2462	16.38	30 TESTING
UAK	O HUAN	TX 802.11g Mode	THURK IN THURK
CH01	2412	14.75	30
CH06	2437	16.67	TESTING 30 TESTING
CH11	2462	16.84	30
N <sup>G</sup>		TX 802.11n20 Mode	TESTING.
CH01	2412	15.84	30
CH06	2437	16.28	30
CH11	2462	16.20	30

## 4.4. EMISSION BANDWIDTH

### **Test Specification**

Test Requirement:	FCC Part15 C Section 1	FCC Part15 C Section 15.247 (a)(2)					
Test Method:	KDB 558074	(a) Hora	MON.				
Limit:	>500kHz	OK TESTING	nIG.				
Test Setup:	Spectrum Analyzer	EUT	MINATES IN				
Test Mode:	Transmitting mode with I	modulation					
Test Procedure:	1. The testing follows FC Meas Guidance v05r 2. Set to the maximum p EUT transmit continu 3. Make the measureme resolution bandwidth Video bandwidth (VB an accurate measure be greater than 500 k 4. Measure and record the	02. bower setting and clously. int with the spectru (RBW) = 100 kHz W) = 300 kHz. In ement. The 6dB backHz.	enable the um analyzer's z. Set the order to make andwidth must				
Test Result:	PASS	O HUA	<b>6</b> m				

### **Test Instruments**

RF Test Room							
Equipment Manufacturer Model Serial Calibration Calibrati Number Date Due							
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 18, 2022	Feb. 17, 2023		
RF cable	Times	1-40G	HKE-034	Feb. 18, 2022	Feb. 17, 2023		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 18, 2022	Feb. 17, 2023		

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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### Test data

Toot shannel	6dB Emission Bandwidth (MHz)					
Test channel	802.11b	802.11g	802.11n(H20)			
Lowest	8.52	16.36	17.56			
Middle	9.04	16.44	16.24			
Highest	9.00	16.48	16.64			
Limit:	JG HUAKTES	>500KHz	NA MARIA			
Test Result:	- UNAN TESTINA	PASS	- MAKTESTING HUAKTESTING			

Test plots as follows:

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#### 802.11b Modulation

#### Lowest channel



#### Middle channel



#### Highest channel



#### 802.11g Modulation

#### Lowest channel



#### Middle channel

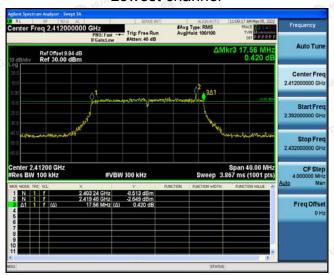


#### Highest channel

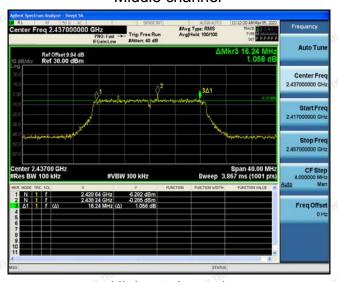


#### 802.11n (HT20) Modulation

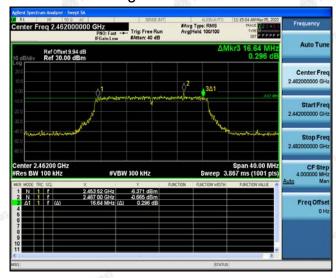
#### Lowest channel



#### Middle channel



#### Highest channel







4.5. POWER SPECTRAL DENSITY

# **Test Specification**

Test Requirement:	FCC Part15 C Section 15.247 (e)						
Test Method:	KDB 558074						
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.						
Test Setup:	Spectrum Analyzer EUI						
Test Mode:	Transmitting mode with modulation						
Test Procedure:	<ol> <li>The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB 558074 D01 15.247 Meas Guidance v05r02.</li> <li>The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW.</li> <li>Detector = Peak, Sweep time = auto couple.</li> <li>Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level.</li> <li>Measure and record the results in the test report.</li> </ol>						
Test Result:	PASS (Market Community Com						

#### **Test Instruments**

RF Test Room								
Equipment Manufacturer Model Serial Calibration Calibrat Number Date Due								
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 18, 2022	Feb. 17, 2023			
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 18, 2022	Feb. 17, 2023			
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 18, 2022	Feb. 17, 2023			
RF test software	Tonscend	JS1120-B Version 2.6	HKE-083	N/A	N/A			

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

#### **Test data**

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)				
	Lowest	-0.48	-10.48				
802.11b	Middle	-0.63	-10.63				
	Highest	0.02	-9.98				
	Lowest	-6.82	-16.82				
802.11g	Middle	-6.29	-16.29				
	Highest	-6.09	-16.09				
	Lowest	-6.55	-16.55				
802.11n(H20)	Middle	-6.17	-16.17				
	Highest	-5.95	-15.95				
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10							
Limit: 8dBm/3kHz							
Test Result:	st Result: PASS						

#### Test plots as follows:

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#### 802.11b Modulation

#### Lowest channel



#### Middle channel



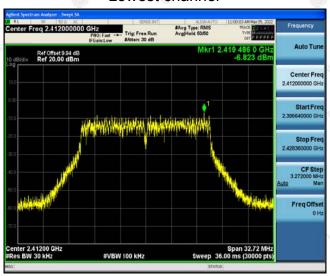
#### Highest channel



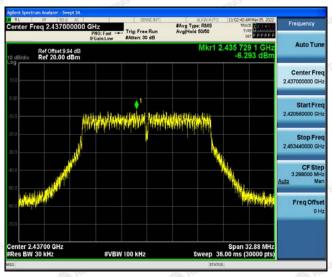
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#### 802.11g Modulation

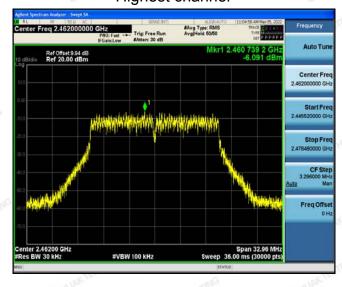
#### Lowest channel



#### Middle channel

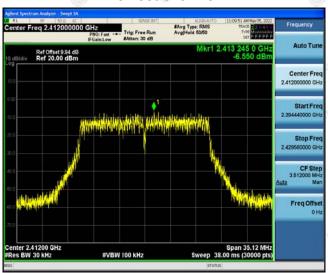


#### Highest channel



#### 802.11n (HT20) Modulation

#### Lowest channel



#### Middle channel



#### Highest channel





# 4.6. CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT

#### **Test Specification**

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and 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).
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol> <li>The testing follows FCC KDB 558074 D01 15.247         Meas Guidance v05r02.</li> <li>The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>Measure and record the results in the test report.</li> <li>The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>
Test Result:	PASS

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#### **Test Instruments**

RF Test Room							
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due		
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 18, 2022	Feb. 17, 2023		
High pass filter unit	Tonscend	JS0806-F	HKE-055	Feb. 18, 2022	Feb. 17, 2023		
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 18, 2022	Feb. 17, 2023		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 18, 2022	Feb. 17, 2023		
RF test software	Tonscend	JS1120-B Version 2.6	HKE-083	N/A	N/A		

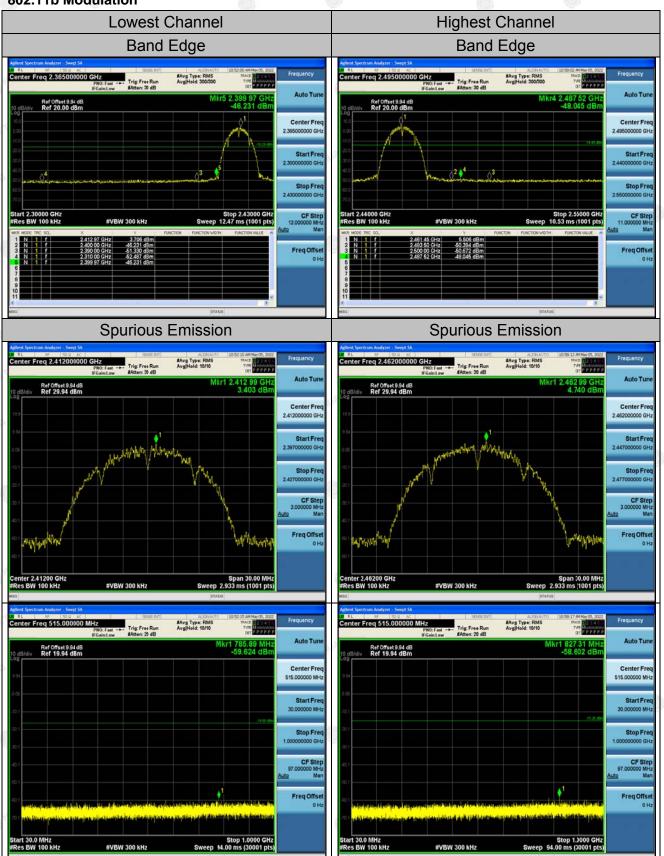
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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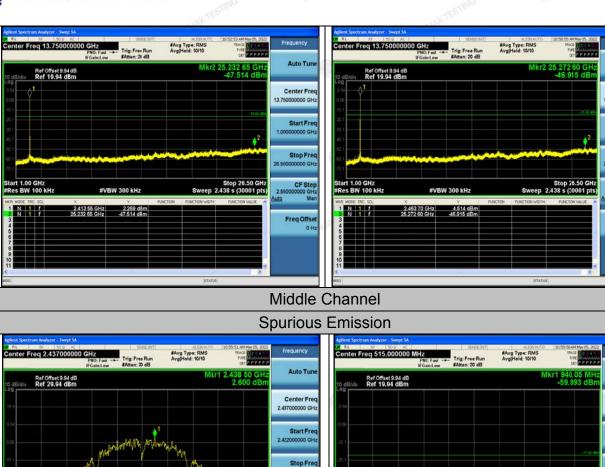


#### **Test Data**

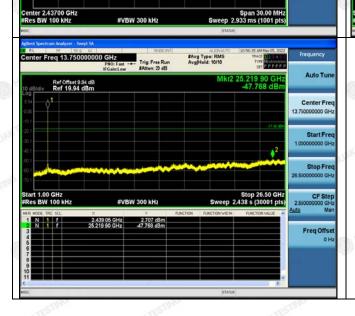
#### 802.11b Modulation



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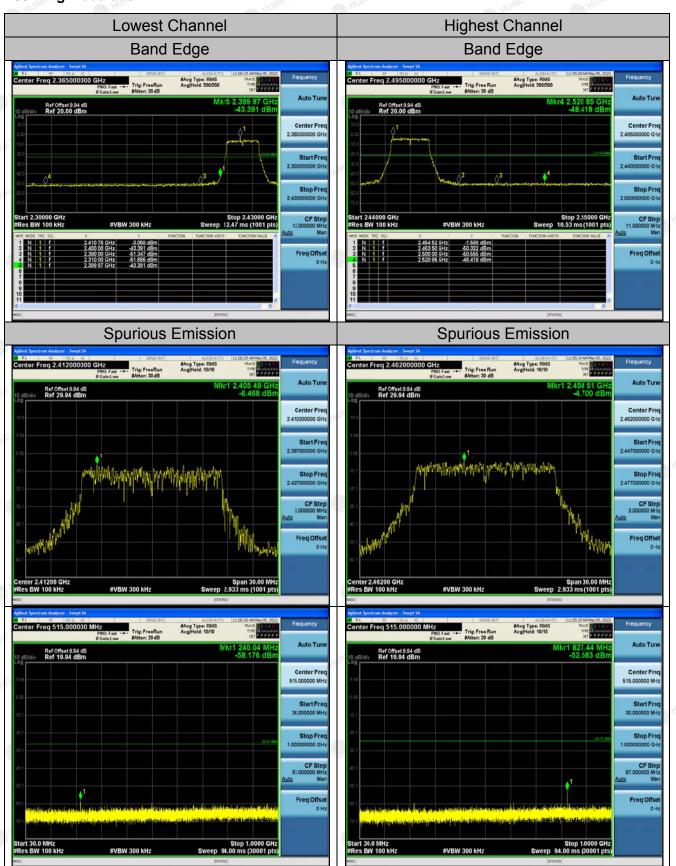


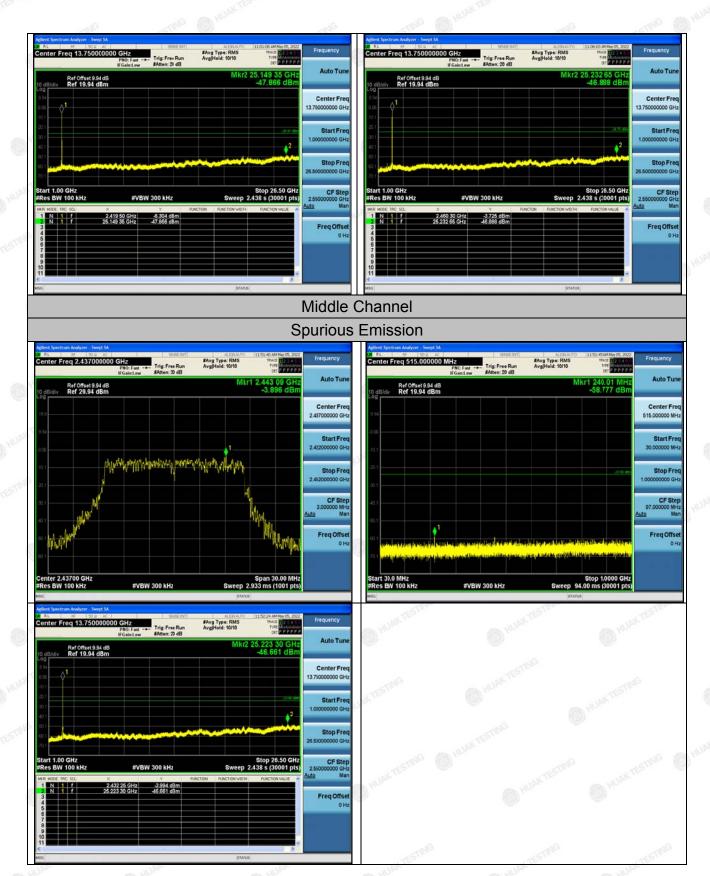


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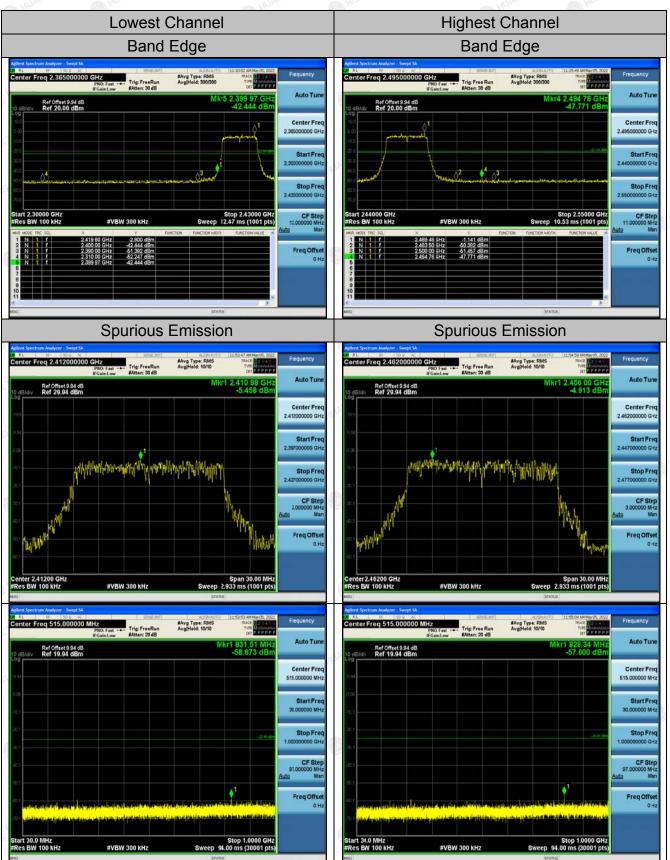
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#### 802.11g Modulation

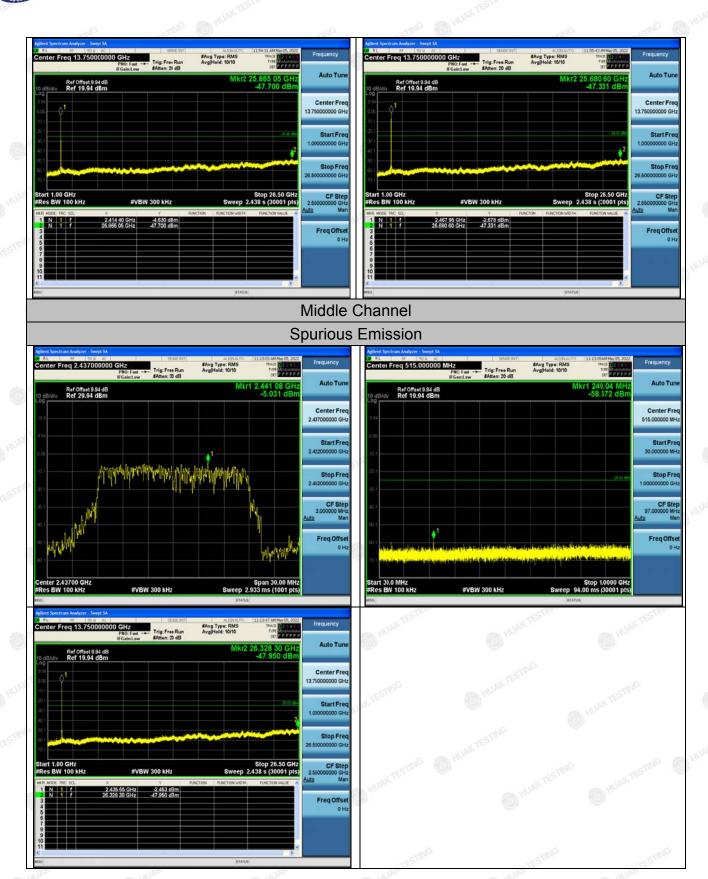




#### 802.11n (HT20) Modulation









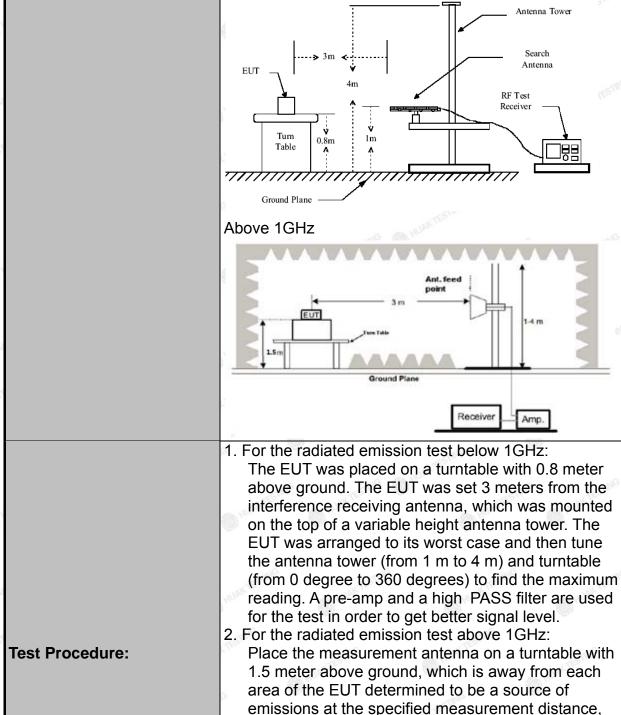
### 4.7. RADIATED SPURIOUS EMISSION MEASUREMENT

### **Test Specification**

Test Requirement:	FCC Part15	C Sectio	n 1	5.209	-TIN	G	- TIN
Test Method:	ANSI C63.10	. OKTE		6	HUARTES		HUAKTES
Frequency Range:	9 kHz to 25 (	GHz			, NG		
Measurement Distance:	3 m			W HU	AK TESTI		ESTING
Antenna Polarization:	Horizontal & Vertical			(60)	(m)	6	HOWKIE
Operation mode:	Transmitting		ith r	nodulati	ion		
	Frequency	Detecto	0 6	RBW	VBW	TINE	Remark
	9kHz- 150kHz	Quasi-pe		200Hz	1kHz		si-peak Value
Receiver Setup:	150kHz- 30MHz	Quasi-pe	ak	9kHz	30kHz	Qua	si-peak Value
	30MHz-1GHz	Quasi-pe	ak	120KHz	300KHz		si-peak Value
	Above 1GHz	Peak	TIME	1MHz	3MHz		eak Value
	ALI PAR	Peak		1MHz	10Hz	Av	erage Value
	Frequency		1)	Field Strength (microvolts/meter)			easurement ance (meters)
	0.009-0.490			2400/F(k	(Hz)	300	
	0.490-1.705			24000/F(KHz)		30	
	1.705-30			30		30	
	30-88 88-216			100 150		3	
	216-960		6	200		-mG	3 571119
Limit:	Above 960			500		91	3 144
	Frequency Above 1GHz	(mic	Field Strength (microvolts/meter)		Measurement t Distance (meters)		Detector  Average
	-STANG		500		3		Peak
Test setup:	For radiated  Output  Does m  30MHz to 10	Turn G(	— 3 m		RX Ante		AND AND STREET

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Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com



Test Procedure:	The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.  3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.  4. For measurement below 1GHz, 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.  5. Use the following spectrum analyzer settings:  (1) Span shall wide enough to fully capture the emission being measured;  (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold;  (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement.  6. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent.VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS



# **Test Instruments**

	Radi	ated Emission	Test Site (9	66)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Receiver	R&S	ESCI-7	HKE-010	Feb. 18, 2022	Feb. 17, 2023
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 18, 2022	Feb. 17, 2023
Spectrum analyzer	R&S	FSP40	HKE-025	Feb. 18, 2022	Feb. 17, 2023
High gain antenna	Schwarzbeck	LB-180400K F	HKE-054	Feb. 18, 2022	Feb. 17, 2023
Preamplifier	Schwarzbeck	BBV 9743	HKE-006	Feb. 18, 2022	Feb. 17, 2023
Preamplifier	EMCI	EMC051845 SE	HKE-015	Feb. 18, 2022	Feb. 17, 2023
Preamplifier	Agilent	83051A	HKE-016	Feb. 18, 2022	Feb. 17, 2023
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Feb. 18, 2022	Feb. 17, 2023
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Feb. 18, 2022	Feb. 17, 2023
Horn antenna	Schwarzbeck	9120D	HKE-013	Feb. 18, 2022	Feb. 17, 2023
High pass filter unit	Tonscend	JS0806-F	HKE-055	Feb. 18, 2022	Feb. 17, 2023
Antenna Mast	Keleto	CC-A-4M	N/A	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Feb. 18, 2022	Feb. 17, 2023
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A	N/A
RF cable	Times	9kHz-1GHz	HKE-117	Feb. 18, 2022	Feb. 17, 2023
RF cable	Times	1-40G	HKE-034	Feb. 18, 2022	Feb. 17, 2023
Horn Antenna	Schewarzbeck	BBHA 9170	HKE-017	Feb. 18, 2022	Feb. 17, 2023

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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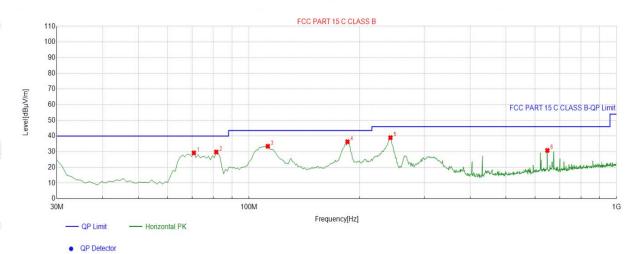
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# **Test Data**

All the test modes completed for test. only the worst result of (802.11b at 2412MHz) was reported as below:

#### **Below 1GHz**

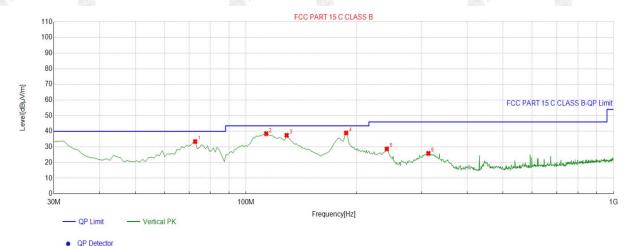
### Horizontal



Suspe	cted List								
NO	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	Delevity
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	70.7808	-17.81	47.06	29.25	40.00	10.75	100	327	Horizontal
2	81.4615	-19.12	48.92	29.80	40.00	10.20	100	347	Horizontal
3	112.5325	-15.85	49.32	33.47	43.50	10.03	100	125	Horizontal
4	185.3554	-16.40	52.75	36.35	43.50	7.15	100	351	Horizontal
5	242.6426	-13.73	52.70	38.97	46.00	7.03	100	320	Horizontal
6	648.5085	-5.79	36.62	30.83	46.00	15.17	100	173	Horizontal

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

# Vertical



Suspe	cted List								
NO.	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	Delevity
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	72.7227	-18.16	51.59	33.43	40.00	6.57	100	68	Vertical
2	113.5035	-16.02	54.49	38.47	43.50	5.03	100	199	Vertical
3	129.0390	-18.43	55.85	37.42	43.50	6.08	100	242	Vertical
4	187.2973	-16.24	55.17	38.93	43.50	4.57	100	234	Vertical
5	241.6717	-13.78	42.52	28.74	46.00	17.26	100	127	Vertical
6	313.5235	-12.43	38.33	25.90	46.00	20.10	100	44	Vertical

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

# Harmonics and Spurious Emissions Frequency Range (9kHz-30MHz)

	Frequency (MHz)	Leve	el@3m (dBµV/m)	Limit(	@3m (d	dBµV/m)
11.	HALAK I	HUAK I		HUAK !		HUAK
UNG.		STING		STIM		
	CSTOLG	HUAK	CSTNG	HUAKI		TSTING

**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.

# **Above 1GHz**

# RADIATED EMISSION TEST

LOW CH1 (802.11b Mode)/2412

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	57.9	-3.64	54.26	74	-19.74	peak
4824	46.16	-3.64	42.52	54	-11.48	AVG
7236	51.24	-0.95	50.29	74	-23.71	peak
7236	42.18	-0.95	41.23	54	-12.77	AVG

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	52.98	-3.64	49.34	74	-24.66	peak
4824	43.27	-3.64	39.63	54	-14.37	AVG
7236	50.05	-0.95	49.1	74	-24.9	peak
7236	41.88	-0.95	40.93	54	-13.07	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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# MID CH6 (802.11b Mode)/2437

### Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	53.13	-3.51	49.62	74	-24.38	peak
4874	43.19	-3.51	39.68	54	-14.32	AVG
7311	51.13	-0.82	50.31	74	-23.69	peak
7311	37.83	-0.82	37.01	54	-16.99	AVG

### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	54.2	-3.51	50.69	74	-23.31	peak
4874	43.47	-3.51	39.96	54	-14.04	AVG
7311	50.1	-0.82	49.28	74	-24.72	peak
7311	40.16	-0.82	39.34	54	-14.66	AVG
his way	Home	- U/A	May Hope		- Mhi	ASSET PION

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

AFICATION.

### HIGH CH11 (802.11b Mode)/2462

#### Horizontal:

Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
53.56	-3.43	50.13	74	-23.87	peak
41.93	-3.43	38.5	54	-15.5	AVG
51.01	-0.75	50.26	74	-23.74	peak
40.74	-0.75	39.99	54	-14.01	AVG
	(dBµV) 53.56 41.93 51.01	(dBμV) (dB) 53.56 -3.43 41.93 -3.43 51.01 -0.75	(dBμV)     (dB)     (dBμV/m)       53.56     -3.43     50.13       41.93     -3.43     38.5       51.01     -0.75     50.26	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)       53.56     -3.43     50.13     74       41.93     -3.43     38.5     54       51.01     -0.75     50.26     74	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV/m)       53.56     -3.43     50.13     74     -23.87       41.93     -3.43     38.5     54     -15.5       51.01     -0.75     50.26     74     -23.74

#### Vertical:

Reading Result	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
54.1	-3.43	50.67	74	-23.33	peak
38.82	-3.43	35.39	54 MAN	-18.61	AVG
50.2	-0.75	49.45	74	-24.55	peak
38.68	-0.75	37.93	54	-16.07	AVG
	(dBµV) 54.1 38.82 50.2	(dBµV) (dB) 54.1 -3.43 38.82 -3.43 50.2 -0.75	(dBμV)     (dB)     (dBμV/m)       54.1     -3.43     50.67       38.82     -3.43     35.39       50.2     -0.75     49.45	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)       54.1     -3.43     50.67     74       38.82     -3.43     35.39     54       50.2     -0.75     49.45     74	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV/m)       54.1     -3.43     50.67     74     -23.33       38.82     -3.43     35.39     54     -18.61       50.2     -0.75     49.45     74     -24.55

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

#### 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.
- (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 Fundamental73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54dBuV/m(AV Limit), the Average Detected not need to completed.

# LOW CH1 (802.11g Mode)/2412

# Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
4824	53.38	-3.64	49.74	74	-24.26	peak
4824	43.32	-3.64	39.68	54	-14.32	AVG
7236	51.34	-0.95	50.39	74	-23.61	peak
7236	37.68	-0.95	36.73	54	-17.27	AVG

### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	55.09	-3.64	51.45	74 HUAN	-22.55	peak
4824	46.69	-3.64	43.05	54	-10.95	AVG
7236	52.51	-0.95	51.56	74	-22.44	peak
7236	40.21	-0.95	39.26	54	-14.74	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



# MID CH6 (802.11g Mode)/2437

### Horizontal:

y Reading Result	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
53.60	-3.51	50.09	74	-23.91	peak
40.78	-3.51	37.27	54	-16.73	AVG
49.30	-0.82	48.48	74	-25.52	peak
40.43	-0.82	39.61	54	-14.39	AVG
	(dBµV) 53.60 40.78 49.30	(dBµV) (dB) 53.60 -3.51 40.78 -3.51 49.30 -0.82	(dBμV)     (dB)     (dBμV/m)       53.60     -3.51     50.09       40.78     -3.51     37.27       49.30     -0.82     48.48	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)       53.60     -3.51     50.09     74       40.78     -3.51     37.27     54       49.30     -0.82     48.48     74	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV/m)       53.60     -3.51     50.09     74     -23.91       40.78     -3.51     37.27     54     -16.73       49.30     -0.82     48.48     74     -25.52

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	54.11	-3.51	50.6	74	-23.4	peak
4874	41.22	-3.51	37.71	54	-16.29	AVG
7311	52.73	-0.82	51.91	74	-22.09	peak
7311	40.34	-0.82	39.52	54	-14.48	AVG



HIGH CH11 (802.11g Mode)/2462

#### Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	54.58	-3.43	51.15	74	-22.85	peak
4924	46.88	-3.43	43.45	54	-10.55	AVG
7386	51.85	-0.75	51.1	74	-22.9	peak
7386	38.94	-0.75	38.19	54	-15.81	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

#### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	53.17	-3.43	49.74	74	-24.26	peak
4924	41.5	-3.43	38.07	54	-15.93	AVG
7386	50.95	-0.75	50.2	74	-23.8	peak
7386	40.18	-0.75	39.43	54	-14.57	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

#### 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.
- (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 Fundamental73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54dBuV/m(AV Limit), the Average Detected not need to completed.

# LOW CH1 (802.11n/H20 Mode)/2412

### Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	54.99	-3.64	51.35	74	-22.65	peak
4824	40.88	-3.64	37.24	54	-16.76	AVG
7236	51.11	-0.95	50.16	74 ESTING	-23.84	peak
7236	38.73	-0.95	37.78	54	-16.22	AVG

#### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	54.12	-3.64	50.48	74	-23.52	peak
4824	40.07	-3.64	36.43	54	-17.57	AVG
7236	48.28	-0.95	47.33	74	-26.67	peak
7236	38.02	-0.95	37.07	54	-16.93	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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# MID CH6 (802.11n/H20 Mode)/2437

### Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	55.74	-3.51	52.23	74.00	-21.77	peak
4874	45.71	-3.51	42.20	54.00	-11.80	AVG
7311	53.46	-0.82	52.64	74.00	-21.36	peak
7311	40.78	-0.82	39.96	54.00	-14.04	AVG

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	53.82	-3.51	50.31	74.00	-23.69	peak
4874	40.30	-3.51	36.79	54.00	-17.21	AVG
7311	50.09	-0.82	49.27	74.00	-24.73	peak
7311	38.03	-0.82	37.21	54.00	-16.79	AVG
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Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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# HIGH CH11 (802.11n/H20 Mode)/2462

### Horizontal:

Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
52.10	-3.43	48.67	74	-25.33	peak
40.97	-3.43	37.54	54	-16.46	AVG
50.14	-0.75	49.39	74	-24.61	peak
38.23	-0.75	37.48	54	-16.52	AVG
	(dBµV) 52.10 40.97 50.14	(dBμV) (dB) 52.10 -3.43 40.97 -3.43 50.14 -0.75	(dBμV)     (dB)     (dBμV/m)       52.10     -3.43     48.67       40.97     -3.43     37.54       50.14     -0.75     49.39	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)       52.10     -3.43     48.67     74       40.97     -3.43     37.54     54       50.14     -0.75     49.39     74	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV/m)       52.10     -3.43     48.67     74     -25.33       40.97     -3.43     37.54     54     -16.46       50.14     -0.75     49.39     74     -24.61

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Time
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
<sub>5</sub> 4924	54.77	-3.43	51.34	74	-22.66	peak
4924	41.42	-3.43	37.99	54	-16.01	AVG
7386	50.09	-0.75	49.34	74	-24.66	peak
7386	42.35	-0.75	41.6	54 UM	-12.4	AVG
Remark: Factor	r = Antenna Factor -	Cable Loss	– Pre-amplifier.		- WAKTESTIN	HUAKTES.

# Test Result of Radiated Spurious at Band edges

# Operation Mode:

802.11b Mode TX CH Low (2412MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Tune
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	53.56	-5.81	47.75	74	-26.25	peak
2310.00	44.45	-5.81	38.64	54	-15.36	AVG
2390.00	50.68	-5.84	44.84	74	-29.16	peak
2390.00	39.99	-5.84	34.15	54	-19.85	AVG

### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Tune
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	57.24	-5.81	51.43	74	-22.57	peak
2310.00	45.55	-5.81	39.74	54	-14.26	AVG
2390.00	50.79	-5.84	44.95	74	-29.05	peak
2390.00	41.57	-5.84	35.73	54	-18.27	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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Operation Mode: TX CH High (2462MHz)

### Horizontal

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Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	— Detector Type
2483.50	55.47	-5.81	49.66	74	-24.34	peak
2483.50	40.89	-5.81	35.08	54	-18.92	AVG
2500.00	52.58	-6.06	46.52	74	-27.48	peak
2500.00	39.04	-6.06	32.98	54	-21.02	AVG
(0.00)	*	100 HO	9839		Will Ho	(I)(SS))

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2483.50	54.63	-5.81	48.82	74	-25.18	peak
2483.50	43.11	-5.81	37.3	54	-16.7	AVG
2500.00	52.51	-6.06	46.45	74	-27.55	peak
2500.00	41.11	-6.06	35.05	54	-18.95	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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

Operation Mode: 802.11g Mode TX CH Low (2412MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	54.42	-5.81	48.61	74	-25.39	peak
2310.00	43.79	-5.81	37.98	54	-16.02	AVG
2390.00	50.86	-5.84	45.02	74 TESTING	-28.98	peak
2390.00	42.32	-5.84	36.48	54	-17.52°	AVG

### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	HUAKTES
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	54.77	-5.81	48.96	74	-25.04	peak
2310.00	43.97	-5.81	38.16	54	-15.84	AVG
2390.00	51.18	-5.84	45.34	74	-28.66	peak
2390.00	41.08	-5.84	35.24	54	-18.76	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Operation Mode: TX CH High (2462MHz)

### Horizontal

Reading Result	Factor	Emission Level	Limits	Margin	Data star Tuna
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
53.35	-5.65	47.7	74	-26.3	peak
48.29	-5.65	42.64	54	-11.36	AVG
50.19	-5.65	44.54	74	-29.46	peak
46.05	-5.65	40.4	54	-13.6	AVG
	(dBµV) 53.35 48.29 50.19	(dBµV) (dB) 53.35 -5.65 48.29 -5.65 50.19 -5.65	(dBμV)     (dB)     (dBμV/m)       53.35     -5.65     47.7       48.29     -5.65     42.64       50.19     -5.65     44.54	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)       53.35     -5.65     47.7     74       48.29     -5.65     42.64     54       50.19     -5.65     44.54     74	(dBμV)     (dB)     (dBμV/m)     (dBμV/m)     (dBμV/m)       53.35     -5.65     47.7     74     -26.3       48.29     -5.65     42.64     54     -11.36       50.19     -5.65     44.54     74     -29.46

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2483.50	53.42	-5.65	47.77	74	-26.23	peak
2483.50	42.66	-5.65	37.01	54	-16.99	AVG
2500.00	49.75	-5.65	44.1	74	-29.9	peak
2500.00	39.94	-5.65	34.29	54	-19.71	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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





# Operation Mode: 802.11n/H20 Mode TX CH Low (2412MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	55.21	-5.81	49.4	74	-24.6	peak
2310.00	43.62	-5.81	37.81	54	-16.19	AVG
2390.00	51.81	-5.84	45.97	74	-28.03	peak
2390.00	41.9	-5.84	36.06	54	-17.94°	AVG

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	- MAKTESI
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310.00	53.66	-5.81	47.85	74 HURY	-26.15	peak
2310.00	41.72	-5.81	35.91	54	-18.09	AVG
2390.00	50.98	-5.84	45.14	74	-28.86	peak
2390.00	38.83	-5.84	32.99	54	-21.01	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Operation Mode: TX CH High (2462MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	AUAK TEST
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Detector Type
2483.50	53.67	-5.65	48.02	74	-25.98	peak
2483.50	44.89	-5.65	39.24	54	-14.76	AVG
2500.00	49.15	-5.65	43.5	74	-30.5	peak
2500.00	39.79	-5.65	34.14	54	-19.86	AVG

# Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2483.50	54.15	-5.65	48.5	74	-25.5	peak
2483.50	42.39	-5.65	36.74	54	-17.26	AVG
2500.00	46.78	-5.65	41.13	74	-32.87	peak
2500.00	39.85	-5.65	34.2	54	-19.8	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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

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# 5. 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. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

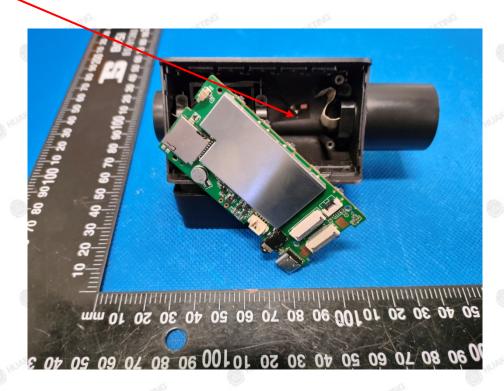
#### Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

#### **Antenna Connected Construction**

The antenna used in this product is a Internal Antenna, need professional installation. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 1dBi.

### WIFI ANTENNA

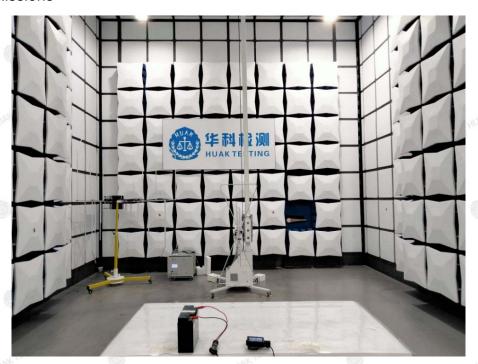


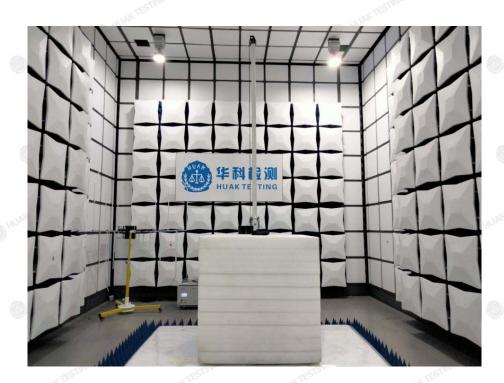
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# 6. PHOTOGRAPH OF TEST

# Radiated Emissions





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7. PHOTOS OF THE EUT

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

-----End of test report-----

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