

**FCC TEST REPORT** 

Test report
On Behalf of
Shenzhen Fowke Innovation Technology Co., Ltd
For
5K High Definition Video Camera

Model No.: FE12W

FCC ID: 2AQKA-FE12W

Prepared For: Shenzhen Fowke Innovation Technology Co., Ltd

4F, Building15, Shuangxiang Factory, Shaopai Industry Area, Wulian Community, Longgang Street, Longgang District, Shenzhen, China

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

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

Date of Test: Dec. 21, 2023 ~ Jan. 09, 2024

Date of Report: Jan. 09, 2024

Report Number: HK2312216247-E



#### TEST RESULT CERTIFICATION

Applicant's name:	Shenzhen	Fowke	Innovation	Technology	Co.,	Ltd

4F, Building15, Shuangxiang Factory, Shaopai Industry Area, Wulian

Community, Longgang Street, Longgang District, Shenzhen, China

Report No.: HK2312216247-E

Manufacture's Name .....: Shenzhen Fowke Innovation Technology Co., Ltd

4F, Building15, Shuangxiang Factory, Shaopai Industry Area, Wulian

Community, Longgang Street, Longgang District, Shenzhen, China

**Product description** 

Trade Mark.....: N/A

Product name ...... 5K High Definition Video Camera

Model and/or type reference .. : FE12W

FCC Rules and Regulations Part 15 Subpart C Section 15.247 Standards .....

ANSI C63.10: 2013

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Date of Test .....:

Date (s) of performance of tests.....: Dec. 21, 2023 ~ Jan. 09, 2024

Jan. 09, 2024 Date of Issue .....

Test Result..... **Pass** 

Testing Engineer

(Len Liao)

Technical Manager

(Sliver Wan)

Authorized Signatory

(Jason Zhou)



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\*\* Modified History \*\*

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	Jan. 09, 2024	Jason Zhou
<sub>m</sub> G	m/G	-m/G	G MG

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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	PASS
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	MU
1	Conducted Emission	±2.71dB
2	RF power, conducted	±0.37dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.90dB
5 7710	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%

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2. EUT DESCRIPTION

## 2.1. GENERAL DESCRIPTION OF EUT

Equipment:	5K High Definition Video Camera
Model Name:	FE12W
Series Model:	N/A
Model Difference:	N/A HUMETES OF THE HUMETES
FCC ID:	2AQKA-FE12W
Antenna Type:	FPC Antenna
Antenna Gain:	1.5dBi
Operation frequency:	802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz
Number of Channels:	802.11b/g/n20: 11CH 802.11n 40: 7CH
Modulation Type:	CCK/OFDM/DBPSK/DAPSK
Power Source:	DC 5V from Type-C or DC 3.7 from battery
Power Rating:	DC 5V from Type-C or DC 3.7 from battery
Hardware Version:	V2.0
Software Version:	V2.0

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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	-STING	

Channel List For 802.11n (HT40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
TING_	XTESTING (	04	2427	07	2442	- TESTIN	WTE
@ H		05	2432	08	2447	HILAK	Monage Home
03	2422	06	2437	09	2452		

#### 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

The mode is used: Transmitting mode for 802.11n (HT40)

Low Channel: 2422MHz Middle Channel: 2437MHz High Channel: 2452MHz

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#### 2.4. DESCRIPTION OF TEST SETUP

Operation of EUT during below 1GHz radiation testing and conducted testing:



Operation of EUT during above 1GHz radiation 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. For the full battery state and the output power to the maximum state.

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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	Mfr/Brand	Model/Type No.	Specification	Note
in <sup>iG</sup> 1	5K High Definition Video Camera	N/A	FE12W	N/A	EUT
2	Adapter	N/A	HW-100225C00	Input: AC100-240V, 50/60Hz, 0.75A Output: 5V 2A	Peripheral
3	Microphone	N/A	N/A	DC5V	Peripheral

#### 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 connect to the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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3. ENERA INFORMATION

#### 3.1. TEST ENVIRONMENT AND MODE

Operating Environment:			
Temperature:	25.0 °C	HUAKTESIN	HUAKTES
Humidity:	56 % RH		(1)
Atmospheric Pressure:	1010 mbar	LAKTESTING	,nJG

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.

Willow it was worst sass.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.5Mbps

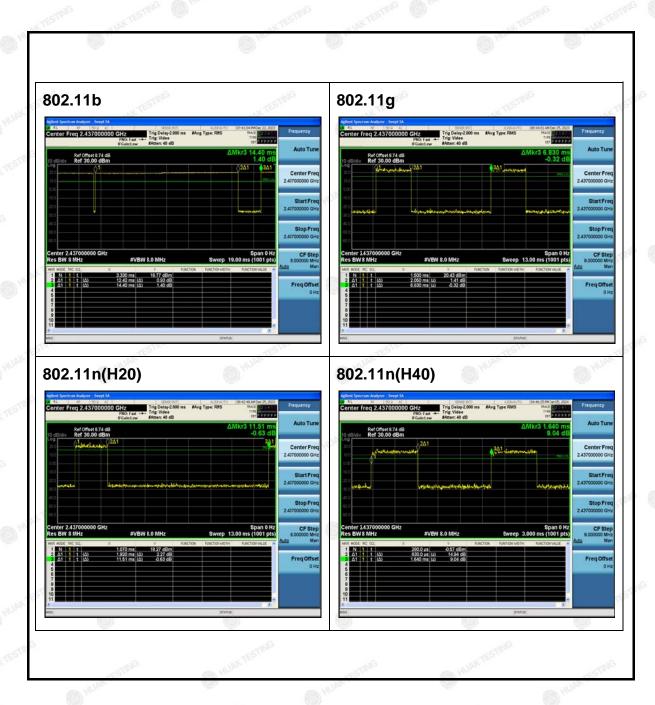
#### **Final Test Mode:**

Operation mode:	Keep the EUT in continuous transmitting
	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), 13.5Mbps for 802.11(H40).
- 3.Mode Test Duty Cycle

Mode Mode	Duty Cycle	Duty Cycle Factor (dB)
802.11b	0.863	-0.642
802.11g	0.300	-5.227
802.11n(H20)	0.167	-7.778
802.11n(H40)	0.384	-4.155

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## 4. TEST RESULTS AND MEASUREMENT DATA

## 4.1. CONDUCTED EMISSION

#### **Test Specification**

-41/2	- Alberta	-1100	-100	-711			
Test Requirement:	FCC Part15 C Secti	on 15.207	AKTE	HUAKTED			
Test Method:	ANSI C63.10:2013	ANSI C63.10:2013					
Frequency Range:	150 kHz to 30 MHz	150 kHz to 30 MHz					
Receiver setup:	RBW=9 kHz, VBW=	30 kHz, Sweep	time=auto				
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit (c Quasi-peak 66 to 56* 56 60	Average 56 to 46* 46 50	AKTESTINE			
Test Setup:	40c	power 80cm LISN Filt	er — AC power	es Esting			
Test Mode:	Charging + transmit	ting with modula	tion	TESTIN			
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:	PASS	25	TING				
G	all "	. 44.		100			

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#### **Test Instruments**

	Conducted Emission Shielding Room Test Site (843)								
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Receiver	R&S	ESR-7	HKE-010	Feb. 17, 2023	Feb. 16, 2024				
LISN	R&S	ENV216	HKE-002	Feb. 17, 2023	Feb. 16, 2024				
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Feb. 17, 2023	Feb. 16, 2024				
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	<sub>MTIS</sub> TIIS N/A	N/A				
10dB Attenuator	SCHWARZBE CK	VTSD9561F	HKE-153	Feb. 17, 2023	Feb. 16, 2024				

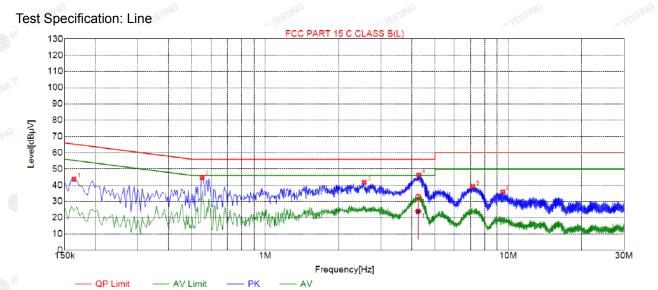
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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#### 4.2. TEST RESULT

Remark: All the test modes completed for test. Only the worst result of 802.11n40 Mode was reported as below:



Sus	Suspected List											
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре				
1	0.1635	43.64	19.98	65.28	21.64	23.66	PK	L				
2	0.5505	44.74	20.06	56.00	11.26	24.68	PK	L				
3	2.5530	41.72	20.20	56.00	14.28	21.52	PK	L				
4	4.2900	46.26	20.25	56.00	9.74	26.01	PK	L				
5	7.1295	39.20	20.19	60.00	20.80	19.01	PK	L				
6	9.4920	35.93	20.09	60.00	24.07	15.84	PK	L				

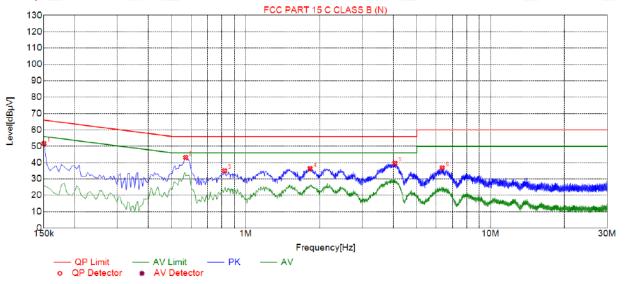
Final	Data	List									
NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBµV]	QP Limit [dΒμV]	QP Margin [dB]	QP Reading [dBμV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	AV Reading [dBμV]	Туре
1	4.2603	20.25	32.97	56.00	23.03	12.72	23.91	46.00	22.09	3.66	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss Level=Test receiver reading + correction factor

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Sus	Suspected List											
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре				
1	0.1500	51.70	20.03	66.00	14.30	31.67	PK	N				
2	0.5685	43.13	20.05	56.00	12.87	23.08	PK	N				
3	0.8205	34.98	20.06	56.00	21.02	14.92	PK	N				
4	1.8330	36.33	20.14	56.00	19.67	16.19	PK	N				
5	4.0740	39.62	20.25	56.00	16.38	19.37	PK	N				
6	6.3510	36.81	20.22	60.00	23.19	16.59	PK	N				

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss Level=Test receiver reading + correction factor



## 4.3. MAXIMUM CONDUCTED OUTPUT POWER

## **Test Specification**

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)					
Test Method:	KDB 558074	O HOME	(1) HOME			
Limit:	30dBm	OK TESTING	فانه			
Test Setup:	Power meter	EUT	MAY TESTA			
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.  3. Set to the maximum por EUT transmit continued.  4. Measure the Peak output in the test report.	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 HOM	<b>6</b>			

#### **Test Instruments**

HOW A	HOL	* HOM	HUM	HOM HOM	HUM					
	RF Test Room									
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due					
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 17, 2023	Feb. 16, 2024					
Power meter	Agilent	E4419B	HKE-085	Feb. 17, 2023	Feb. 16, 2024					
Power Sensor	Agilent	E9300A	HKE-086	Feb. 17, 2023	Feb. 16, 2024					
RF cable	Times	1-40G	HKE-034	Feb. 17, 2023	Feb. 16, 2024					
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 17, 2023	Feb. 16, 2024					

**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**

Test Channel	Frequency	Maximum Peak Conducted Output Power	LIMIT
Chamile	(MHz)	(dBm)	(dBm)
60	HUARL	TX 802.11b Mode	Mak.
CH01	2412	4.56	30
CH06	2437	4.44	30
CH11	2462	4.50	30
		TX 802.11g Mode	
CH01	2412	3.55	30 MAK
CH06	2437	3.79	30
CH11	2462	3.10	30
	HIVAKTES	TX 802.11n20 Mode	HINKIE
CH01	2412	3.49	30
CH06	2437	3.28	30
CH11	2462	3.16	30
		TX 802.11n40 Mode	
CH03	2422	3.18	30
CH06	2437	3.55	30
CH09	2452	3.48	30

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### 4.4. EMISSION BANDWIDTH

## **Test Specification**

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)					
Test Method:	KDB 558074	● HOPE	MONTH OF THE PARTY			
Limit:	>500kHz	AK TESTING	(G			
Test Setup:	Spectrum Analyzer	EUT	MILANTES INC			
Test Mode:	Transmitting mode with	modulation				
Test Procedure:	1. The testing follows FO 15.247 Meas Guidan 2. Set to the maximum part on tinu 3. Make the measurement resolution bandwidth Video bandwidth (VE) an accurate measure be greater than 500 Measure and record to 15.247 Mea	nce v05r02. bower setting and olously. ent with the spectro (RBW) = 100 kHz BW) = 300 kHz. In ement. The 6dB ba	enable the um analyzer's z. Set the order to make andwidth must			
Test Result:	PASS	O HUND				

#### **Test Instruments**

are HV.	NO.	or Mr.	ALL HO.	ATTENDED TO	ALL HOUSE				
RF Test Room									
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 17, 2023	Feb. 16, 2024				
RF cable	Times	1-40G	HKE-034	Feb. 17, 2023	Feb. 16, 2024				
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 17, 2023	Feb. 16, 2024				

**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

Took abanyal	6dB Emission Bandwidth (MHz)						
Test channel	802.11b	802.11g	802.11n(H20)	802.11n(H40)			
Lowest	8.000	16.320	17.280	35.440			
Middle	8.560	16.320	17.680	34.960			
Highest	8.560	16.440	17.680	35.360			
Limit:	HUAKTES		>500k	-6.0			
Test Result:	TOW'S	ESTING - YUAKTESTI	PASS	TIME WANTESTING			

## Test plots as follows: 802.11b Modulation

#### Lowest channel



#### Middle channel



#### Highest channel



#### 802.11g Modulation

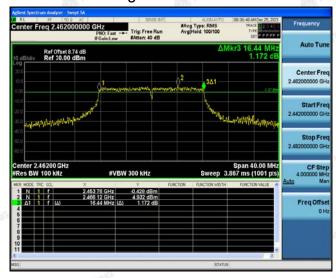
#### Lowest channel



#### Middle channel



#### Highest channel



#### 802.11n (HT20) Modulation

#### Lowest channel



#### Middle channel



#### Highest channel



TEICATION.

#### 802.11n (HT40) Modulation

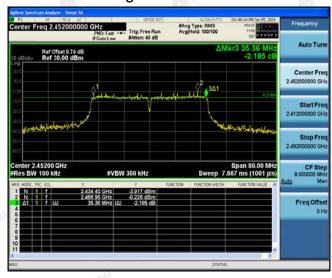
#### Lowest channel



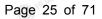
#### Middle channel



#### Highest channel



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## 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 greate than 8dBm in any 3kHz band at any time interval o continuous transmission.			
Test Setup:	Spectrum Analyzer EUI			
Test Mode:	Transmitting mode with modulation			
Test Procedure:	<ol> <li>Transmitting mode with modulation</li> <li>The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication 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			

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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. 17, 2023	Feb. 16, 2024
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 17, 2023	Feb. 16, 2024
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 17, 2023	Feb. 16, 2024
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

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)
	Lowest	3.16	-6.84
802.11b	Middle	3.33	-6.67
	Highest	3.11	-6.89
802.11g	Lowest	0.22	-9.78
	Middle	3.37	-6.63
	Highest	2.88	-7.12
	Lowest	-1.21	-11.21
802.11n(H20)	Middle	-0.14	-10.14
	Highest	0.38	-9.62
802.11n(H40)	Lowest	-3.05	-13.05
	Middle	-1.69	-11.69
	Highest	-3.75	-13.75
PSD test result (	dBm/3kHz)= PS	SD test result (dBm/	/30kHz)-10
Limit: 8dBm/3kH	Z		
Test Result:	HUM	PASS	HUM



## Test plots as follows: 802.11b Modulation

#### Lowest channel



#### Middle channel



#### **Highest channel**

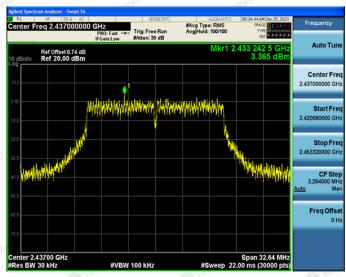


#### 802.11g Modulation

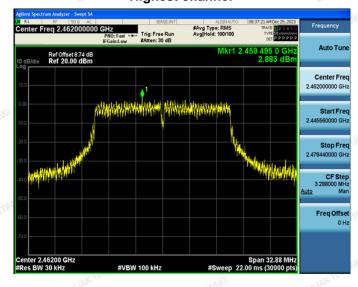
#### Lowest channel



#### Middle channel



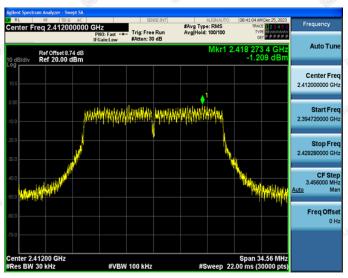
#### **Highest channel**



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#### 802.11n (HT20) Modulation

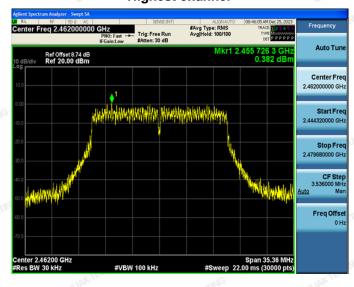
#### Lowest channel



#### Middle channel



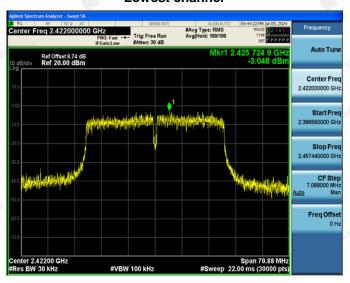
#### **Highest channel**



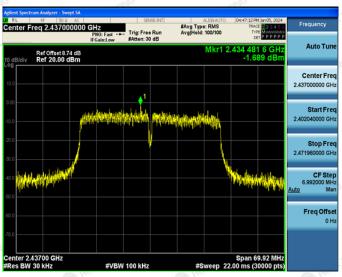
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#### 802.11n (HT40) Modulation

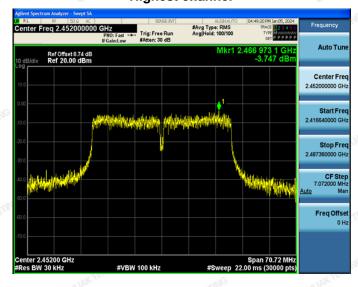
#### Lowest channel



#### Middle channel



#### **Highest channel**





# 4.6. CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT

#### **Test Specification**

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 in 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 Mode:  Transmitting mode with modulation  1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	Tool Dominon only	EOO Destate O Continue AE 047 (4)			
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 relative to the maximum PSD level in 100 kHz or 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 Mode:  Transmitting mode with modulation  1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	Test Requirement:	FCC Part15 C Section 15.247 (d)			
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:  Transmitting mode with modulation  1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	Test Method:	KDB558074			
Test Mode:  Transmitting mode with modulation  1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	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).			
1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	Test Setup:				
15.247 Meas Guidance v05r02.  2. 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.  3. Set to the maximum power setting and enable the EUT transmit continuously.  4. 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).  5. Measure and record the results in the test report.  6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.	Test Mode:	Transmitting mode with modulation			
Test Result: PASS	Test Procedure:	<ol> <li>The testing follows FCC KDB Publication 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</li> </ol>			
	Test Result:				

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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. 17, 2023	Feb. 16, 2024
High pass filter unit	Tonscend	JS0806-F	HKE-055	Feb. 17, 2023	Feb. 16, 2024
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 17, 2023	Feb. 16, 2024
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 17, 2023	Feb. 16, 2024
RF test software	Tonscend	JS1120-B Version 2.6	HKE-083	N/A	N/A

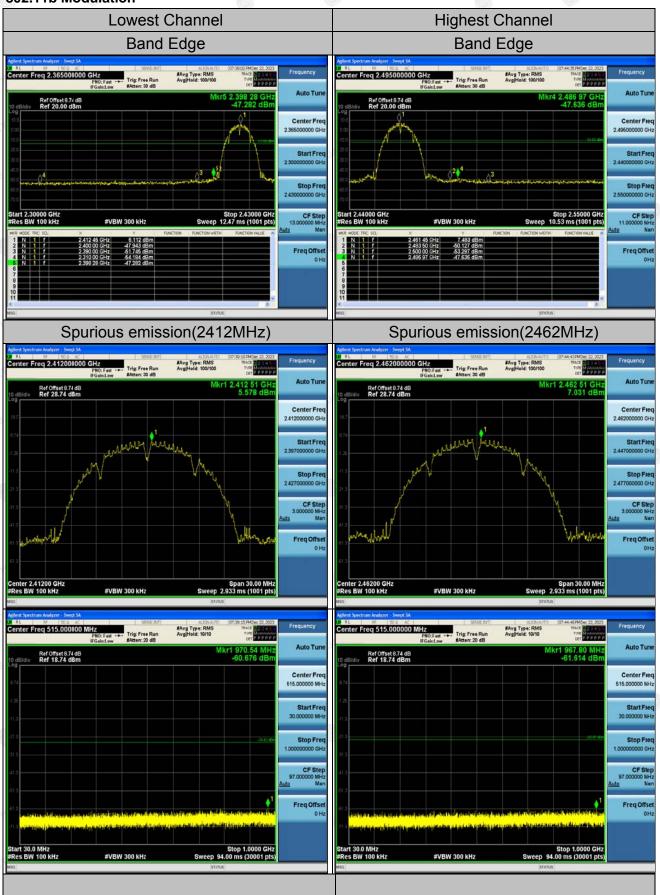
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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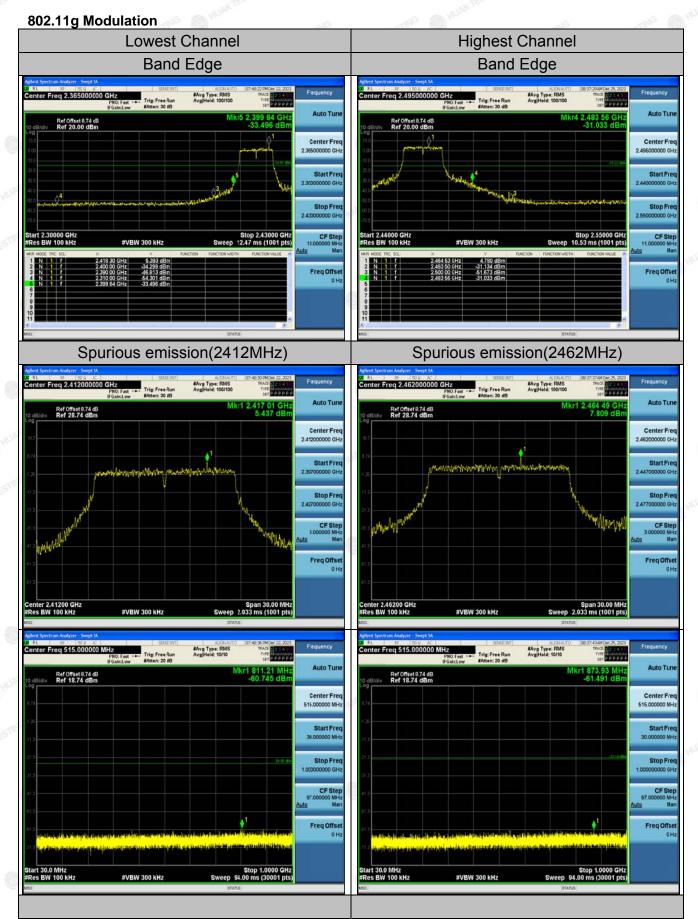


#### **Test Data**

#### 802.11b Modulation







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