Page 1 of 79 Report No.: KS2209S4157E01

TEST REPORT

Report No. KS2209S4157E01

FCC ID·······: 2A8QF-DV034KP

Applicant·····: Shenzhen Hong Xiang Rui Technology co.,Ltd.

Address Room 910, Baoyunda R&D Complex Building, Qianjin 2nd Road,

Xixiang Street, Baoan District, Shenzhen

Manufacturer Shenzhen Hong Xiang Rui Technology co.,Ltd.

Room 910, Baoyunda R&D Complex Building, Qianjin 2nd Road,

Xixiang Street, Baoan District, Shenzhen

Product Name······: Digital camcorder

Model/Type reference·······: DV03-4KP,DV03-4KS

Standard FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of receipt of test sample...: September 15, 2022

Date of testing...... September 15, 2022~December 12, 2022

Date of issue...... December 12, 2022

Result..... PASS

Prepared by:

(Printed name+ signature)

Pai Zheng

Sky Dong

Approved by:

Testing Laboratory Name·····:

(Printed Name + Signature)

KSIGN(Guangdong) Testing Co., Ltd.

Address West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu

Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen,

Guangdong, People's Republic of China

This test report may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by KSIGN. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to KSIGN within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. The test report merely corresponds to the test sample.



	TABLE OF CONTENTS	Page
1.TEST SUMMARY		3
1.1. Test Standards		3
· · · · · · · · · · · · · · · · · · ·		
•		
1.6. Environmental Conditions		6
2. GENERAL INFORMATION		7
2.1. General Description Of Eut		7
2.3. Measurement Instruments Lis	t	9
2.4. Test Software		10
3. TEST ITEM AND RESULTS		11
3.1. Antenna Requirement		11
	MISSION (CONDUCTED)	
	ATED)	
·	ED)	
4. EUT TEST PHOTOS		66
E DUOTOCDADUS OF FUT COM	ICTDLICTION AT	co



1.TEST SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.247: Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

ANSI C63.10-2020: American National Standard for Testing Unlicensed Wireless Devices.

558074 D01 15.247 Meas Guidance v05r02: The measurement guidance provided herein is applicable only to Digital Transmission System (DTS) devices operating in the 902-928 MHz. 2400-2483.5 MHz and/or 5725-5850 MHz bands under §15.247 of the FCC rules (Title 47 of the Code of Federal Regulations).

1.2. REPORT VERSION

Revised No.	Date of issue	Description
01	December 12, 2022	Original

TRF No. FCC Part 15.247_R1

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



1.3. TEST DESCRIPTION

Took House	Standard Section	Deculé
Test Item	FCC	Result
Antenna Requirement	15.203	Pass
Conducted Emission	15.207	Pass
6dB&99% Bandwidth	15.247(a)(2)	Pass
Peak Output Power	15.247(b)	Pass
Power Spectral Density	15.247(e)	Pass
Restricted Band	15.247(d)/15.205	Pass
Band Edge and Spurious Emission(Conducted)	15.247(d)	Pass
Spurious Emission(Radiated)	15.247(d)&15.209	Pass

Note:

Pass: The EUT complies with the essential requirements in the standard
 Fail: The EUT does not comply with the essential requirements in the standard

All indications of Pass/Fail in this report are opinions expressed by KSIGN(Guangdong) Testing Co., Ltd. based on interpretations and/or observations of test results Measurement Uncertainties were not taken into account and are published for informational purposes only.

2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.

TRF No. FCC Part 15.247_R1

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



1.4. TEST FACILITY

Address of the report laboratory

KSIGN(Guangdong) Testing Co., Ltd.

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

Laboratory accreditation

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

CNAS-Lab Code: L13261

KSIGN(Guangdong) Testing Co., Ltd. has been assessed and proved to be in Compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5457.01

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED#: 25693 CAB identifier.: CN0096

KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

TRF No. FCC Part 15.247_R1

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



1.5. MEASUREMENT UNCERTAINTY

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

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

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

1.6. ENVIRONMENTAL CONDITIONS

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

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

TRF No. FCC Part 15.247_R1

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





2. GENERAL INFORMATION

2.1. GENERAL DESCRIPTION OF EUT

Product Name:	Digital camcorder	
Model/Type reference:	DV03-4KP,DV03-4KS	
Model Different:	The difference between product models only depends on the appearance color,screen size and the model naming is different. Other power supply methods, safety structure and key components are the same, which do not affect the safety and electromagnetic compatibility performance.	
Power supply(Adapter):	DC 5V	
Power supply(Battery):	DC 3.8V	
Hardware version:	V1.0	
Software version: V1.0.0		
2.4GHz WIFI		
Modulation:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM,64QAM)	
Operation frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz	
Max Peak Output Power:	3.48dBm	
Channel number:	802.11b/g/n(HT20):11 channels 802.11n(HT40):7 channels	
Test frequency:	CH01/03: 2412MHz/2422MHz; CH06: 2437MHz; CH09/11: 2452MHz/2462MHz	
Channel separation:	5MHz	
Antenna type:	Internal Antenna	
Antenna gain: 1.9dBi		

Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual
- 2. The antenna gain refer to antenna report.

TRF No. FCC Part 15.247_R1

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



2.2. OPERATION STATE

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

Operation Frequency List:

Channel	Frequency (MHz)
01	2412
02	2417
03	2422
04	2427
05	2432
06	2437
07	2442
08	2447
09	2452
10	2457
11	2462

Note:

- 1.CH 01~CH 11 for 802.11b/g/n(HT20), CH03~CH09 for 802.11n(HT40).
- 2. The display in grey were the channel selected for testing.

Test mode

For RF test items

The engineering test program was provided and enabled to make EUT continuous transmit (duty cycle>98%).

For AC power line conducted emissions:

The EUT was set to connect with the WLAN AP under large package sizes transmission.

For Radiated spurious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit(duty cycle>98%). The EUT in each of three orthogonal axis emissions had been tested ,but only the worst case (X axis) data Recorded in the report.

TRF No. FCC Part 15.247_R1

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



2.3. MEASUREMENT INSTRUMENTS LIST

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

	Transmitter spurious emissions & Receiver spurious emissions					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Until	
1	EMI Test Receiver	R&S	ESR	102525	03/04/2023	
2	High Pass Filter	Chengdu E-Microwave	OHF-3-18-S	0E01901038	03/04/2023	
3	High Pass Filter	Chengdu E-Microwave	OHF-6.5-18- S	0E01901039	03/04/2023	
4	Spectrum Analyzer	HP	8593E	3831U02087	03/04/2023	
5	Ultra-Broadband logarithmic period Antenna	Schwarzbeck	VULB 9163	01230	12/04/2023	
6	Loop Antenna	Beijin ZHINAN	ZN30900C	18050	03/04/2023	
7	Spectrum Analyzer	R&S	FSV40-N	101798	03/04/2023	
8	Horn Antenna	Schwarzbeck	BBHA 9120 D	2023	03/29/2023	
9	Pre-Amplifier	Schwarzbeck	BBV 9745	9745#129	03/04/2023	
10	Pre-Amplifier	EMCI	EMC051835 SE	980662	03/04/2023	
11	Pre-Amplifier	Schwarzbeck	BBV-9721	57	03/04/2023	
12	Horn Antenna	Schwarzbeck	BBHA 9170	00939	03/04/2023	

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

Note:

TRF No. FCC Part 15.247_R1

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

¹⁾The Cal. Interval was one year.

²⁾The cable loss has calculated in test result which connection between each test instruments.





2.4. TEST SOFTWARE

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



3. TEST ITEM AND RESULTS

3.1. ANTENNA REQUIREMENT

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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

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

Test Result

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

Note: The antenna is permanently fixed to the EUT

TRF No. FCC Part 15.247_R1

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

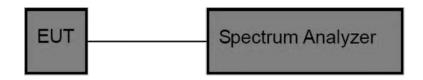


3.2. PEAK OUTPUT POWER

Limit

Test Item	Limit	Frequency Range(MHz)
Peak Output Power	1 Watt or 30 dBm	2400~2483.5

Test Configuration



Test Procedure

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator.
- 2. The measurement is according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.
- 3. Spectrum Setting:

Set analyser center frequency to DTS channel center frequency.

Set the RBW to: 1MHz Set the VBW to: 3MHz

Detector: peak Sweep time: auto

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

Test Mode

Please refer to the clause 2.2



Test Result

Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
	2412	3.08	
802.11b	2437	3.40	
	2462	2.36	
	2412	3.15	
802.11g	2437	3.48	
	2462	3.01	20
802.11n (HT20)	2412	3.23	30
	2437	3.42	
	2462	3.05	
802.11n (HT40)	2422	3.39	
	2437	3.34	
	2452	3.41	
	Result:	PASS	<u>- </u>

Page 14 of 79

Report No.: KS2209S4157E01

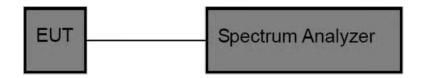


3.3. POWER SPECTRAL DENSITY

Limit

	FCC Part 15 Subpart C(15.247	")
Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator.
- The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to ANSI C63.10 (2013) for compliance to FCC 47CFR 15.247 requirements.
- 3. Spectrum Setting:

Set analyser center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz Set the VBW to: 10 kHz

Detector: peak
Sweep time: auto

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

Please refer to the clause 2.2

TRF No. FCC Part 15.247_R1

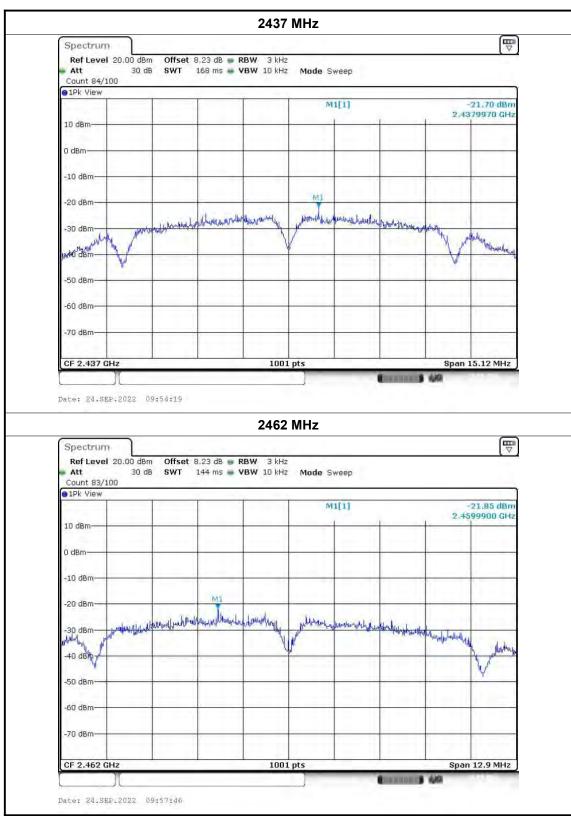
Add:West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China



Test Result

Test Mode:	802.11b Mode			
hannel Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)		
2412	-18.66			
2437	-21.70	8dBm/3kHz		
2462	-21.85			
	2412 MHz			
Spectrum				
Ref Level 20.00 dBm Off Att 30 dB SW Count 82/100	set 8,23 dB • RBW 3 kHz T 151 ms • VBW 10 kHz Mode Sweep			
●1Pk View				
	M1[1]	-19,66 dBm 2,4180010 GHz		
10 dBm-				
0 dBm				
-10 dBm-				
-20 dBm-		WT		
and property	harring the million of the form of the second of the secon	the 18th may be proposed the contraction as well as the contraction as the c		
-30 dBm		My Market Contraction of the Con		
-40 dBm		MA		
-50 dBm-				
-60 dBm-				
20.40				
-70 dBm-				
CF 2.412 GHz	1001 pts	Span 13.56 MHz		
		CE 1111111 4/9		







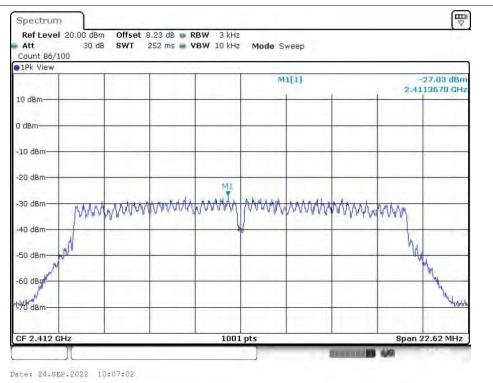
 Test Mode:
 802.11g Mode

 Channel Frequency (MHz)
 Power Density (dBm/3 kHz)
 Limit(dBm)

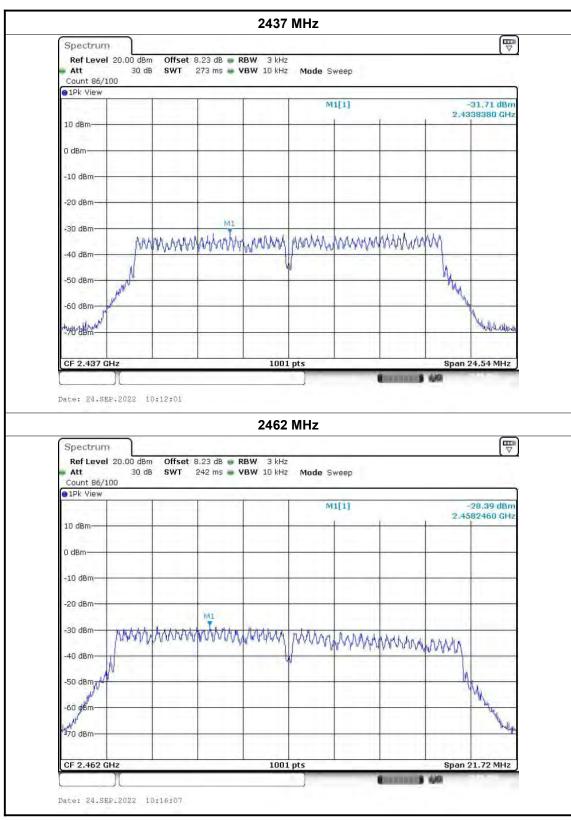
 2412
 -27.03
 8dBm/3kHz

 2437
 -31.71
 8dBm/3kHz

 2462
 -28.39
 2412 MHz









 Test Mode:
 802.11n(HT20) Mode

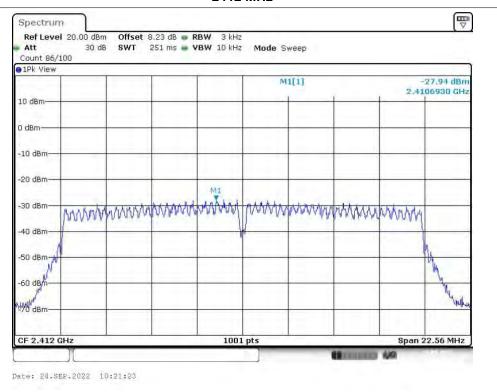
 Channel Frequency (MHz)
 Power Density (dBm/3 kHz)
 Limit (dBm)

 2412
 -27.94
 8dBm/3kHz

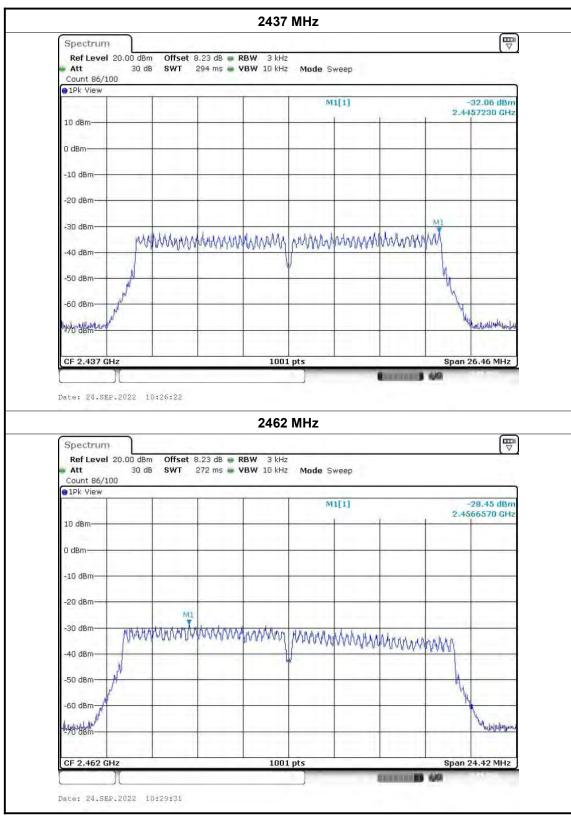
 2437
 -32.06
 8dBm/3kHz

 2462
 -28.45











 Test Mode:
 802.11n(HT40) Mode

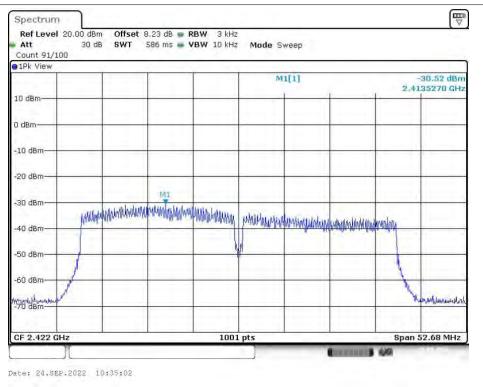
 Channel Frequency (MHz)
 Power Density (dBm/3 kHz)
 Limit (dBm)

 2422
 -30.52
 8dBm/3kHz

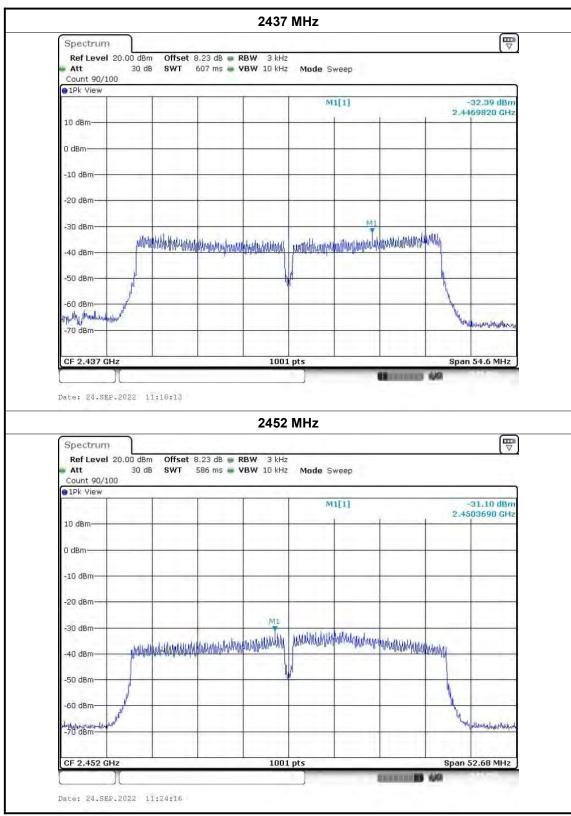
 2437
 -32.39
 8dBm/3kHz

 2452
 -31.10
 8dBm/3kHz









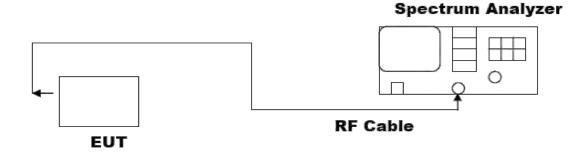


3.4. BANDWIDTH

Limit

Test Item	Limit	Frequency Range(MHz)
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

- Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator: 6db Bandwidth
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

Please refer to the clause 2.2.

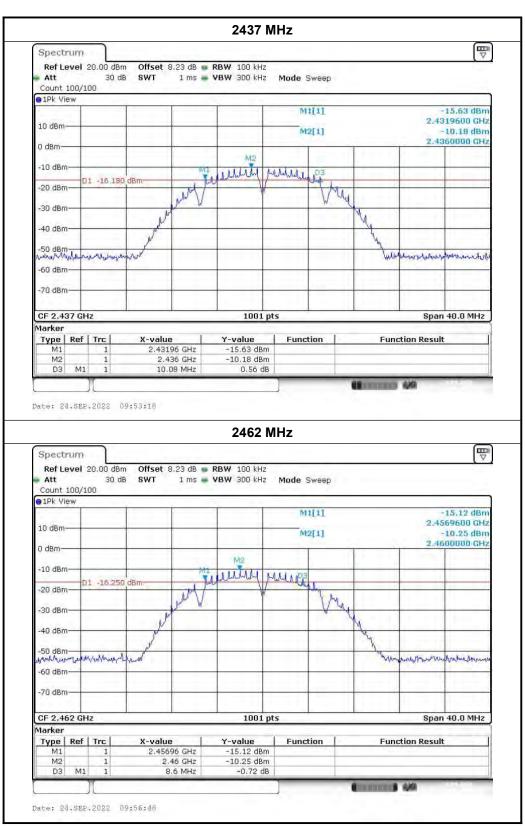
TRF No. FCC Part 15.247_R1

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



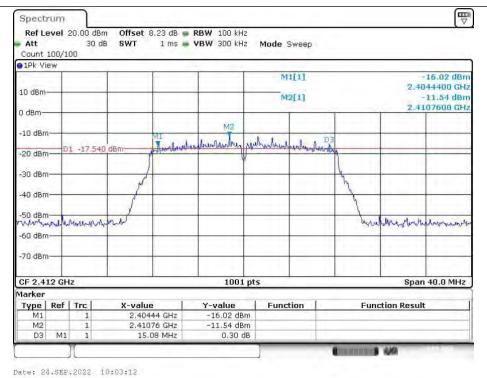
Test Mode:		802.11b Mode					
Channel frequency (MHz)			6dB Bandwidth (MHz)		Limit (MH		
2412		9.04					
2437		10.08		>=0.5			
2462		8.60					
				2412 M	Hz		
Spectrum	\neg						
Count 100/10	30 dB	SWT	1 ms	VBW 300 kHz	Mode Sweep		
10 dBm-					M1[1] M2[1]		-13.17 dBm 2.4074800 GHz -8.77 dBm 2.4105200 GHz
0 dBm				M2			2.4103200 GHZ
-10 dBm-		18 in		WI MUNIM M	MM, 03		
-20 dBm	-14,770	asm.	M	al. V	1	١.	
-30 dBm		u u	July V		V	N. Committee	
-40 dBm		No.				N _q	
-50 dBm	lungary	and N		1		Marian	hand and a private or the standing
-60 dBm-							
-70 dBm				+ +			
CF 2.412 GHz	z			1001 pts			Span 40.0 MHz
Marker Type Ref	Tec	X-value		Y-value	Function	Ermot	ion Result
M1 M1	1	2.40748 GHz		-13.17 dBm	Function	runct	ion Result
M2	1		52 GHz	-8,77 dBm			
D3 M1	1	9.0	04 MHz	-1.11 dB		-	
	4					Construction of	Q/SI

KEIEN®

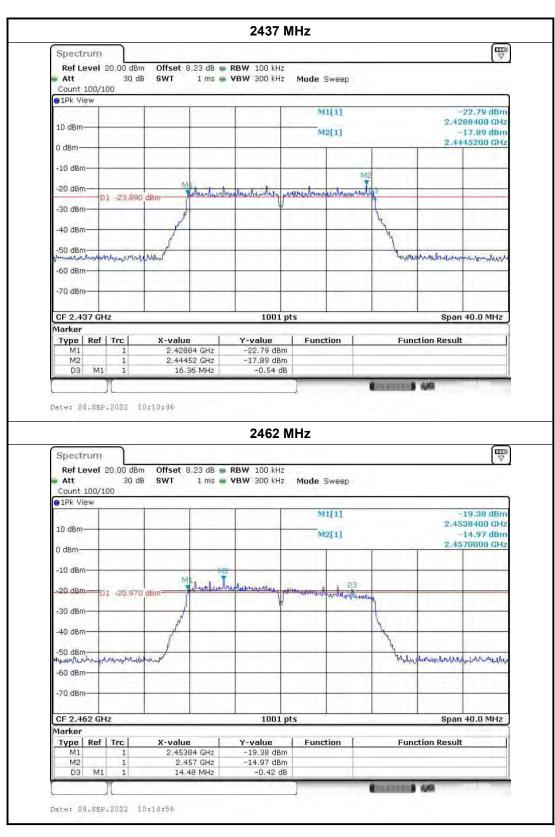




Test Mode: 802.11g Mode Channel frequency (MHz) 6dB Bandwidth (MHz) Limit (MHz) 2412 15.08 2437 16.36 >=0.5 2462 14.48 2412 MHz Spectrum Ref Level 20.00 dBm Offset 8.23 dB - RBW 100 kHz 30 dB 1 ms - VBW 300 kHz SWT Mode Sweep



KSIGN®





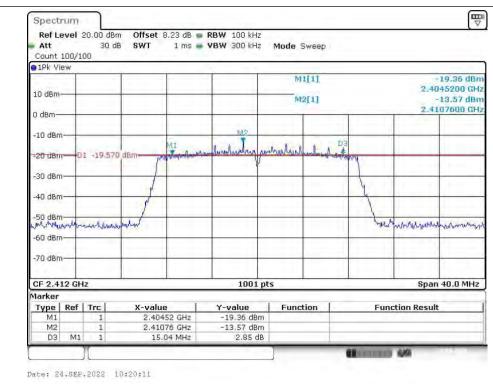
 Test Mode:
 802.11n(HT20) Mode

 Channel frequency (MHz)
 6dB Bandwidth (MHz)
 Limit (MHz)

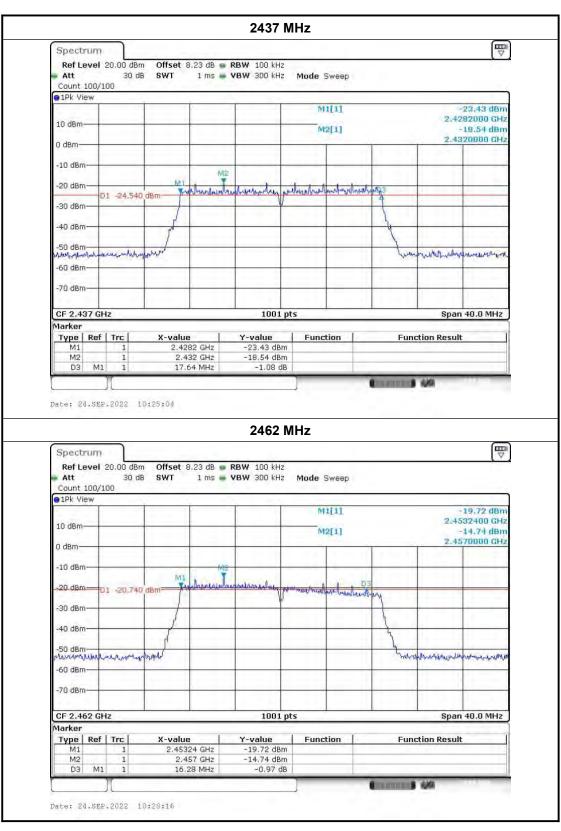
 2412
 15.04
 >=0.5

 2437
 17.64
 >=0.5

 2462
 16.28
 2412 MHz

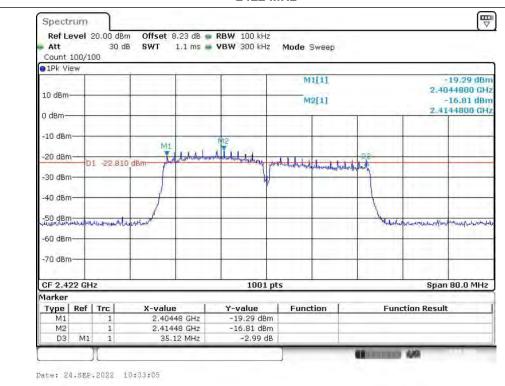




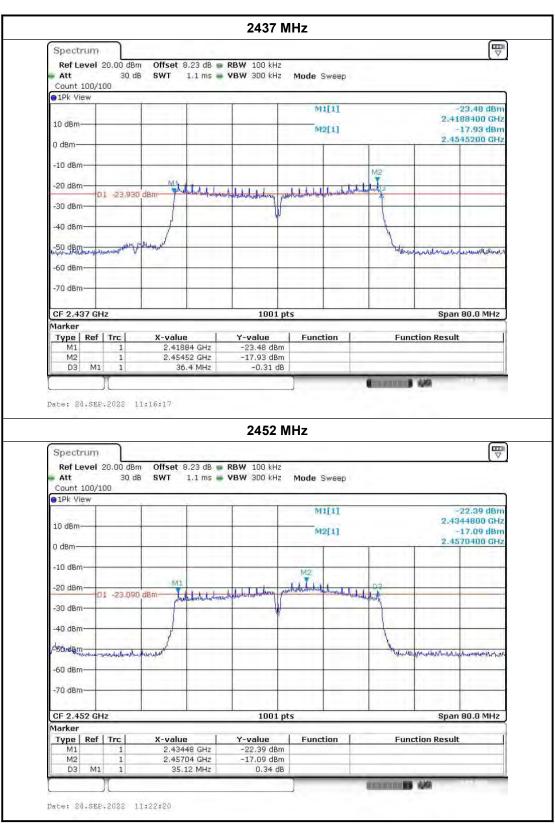




Test Mode: 802.11n(HT40) Mode Channel frequency (MHz) 6dB Bandwidth (MHz) Limit (MHz) 2422 35.12 2437 36.40 >=0.5 2452 35.12 2422 MHz Spectrum Ref Level 20.00 dBm Offset 8,23 dB - RBW 100 kHz SWT 1.1 ms - VBW 300 kHz Mode Sweep



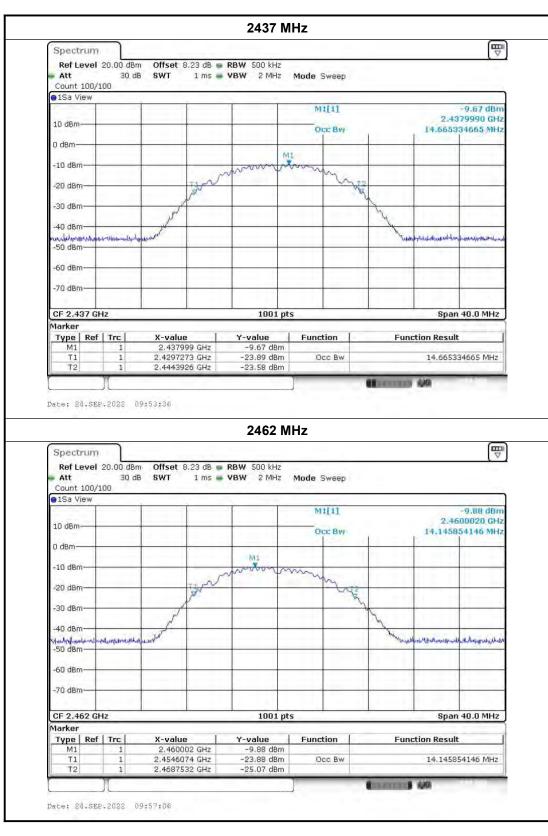






Test Mode: 802.11b Mode 99% Bandwidth (MHz) **Channel frequency (MHz)** 2412 13.946 2437 14.665 2462 14.146 2412 MHz Spectrum Ref Level 20.00 dBm Offset 8.23 dB RBW 500 kHz 1 ms - VBW Mode Sweep Count 100/100 M1[1] 8,27 dBn 2.4110010 GHz 10 dBm 13.946053946 MHz Occ Bw 0 dBm-10 dBm -20 dBm -30 dBm 40 dBm hater water when the state were Mary Market Agree - the Market Michigan Mark -50 dBm -60 dBm 70 dBm Span 40.0 MHz CF 2.412 GHz 1001 pts Type | Ref | Trc | X-value Y-value Function **Function Result** 2.411001 GHz 2.405007 GHz M1 T1 -8.27 dBm -21.78 dBm 13.946053946 MHz Occ Bw Date: 24.5EP.2022 09:47:23







Test Mode: 802.11g Mode Channel frequency (MHz) 99% Bandwidth (MHz) 2412 17.063 2437 17.622 2462 17.183 2412 MHz Spectrum Ref Level 20.00 dBm Offset 8.23 dB B RBW 500 kHz 1 ms - VBW 2 MHz Mode Sweep Count 100/100 1Sa View M1[1] 6.18 dBn 2.4128790 GHz 10 dBm 17.062937063 MHz Occ Bw 0 dBm -20 dBm-40 dBm ويسروا بمأس الهيالي actional the rule and the property of the same of the same -50 dBm -60 dBm-70 dBm Span 40.0 MHz CF 2.412 GHz 1001 pts Type | Ref | Trc | Y-value Function **Function Result** X-value 2.412879 GHz 2.4034885 GHz -6.18 dBm -14.17 dBm 17.062937063 MHz Occ Bw 2,4205514 GHz -17.04 dBm

Date: 24.5EP.2022 10:03:31



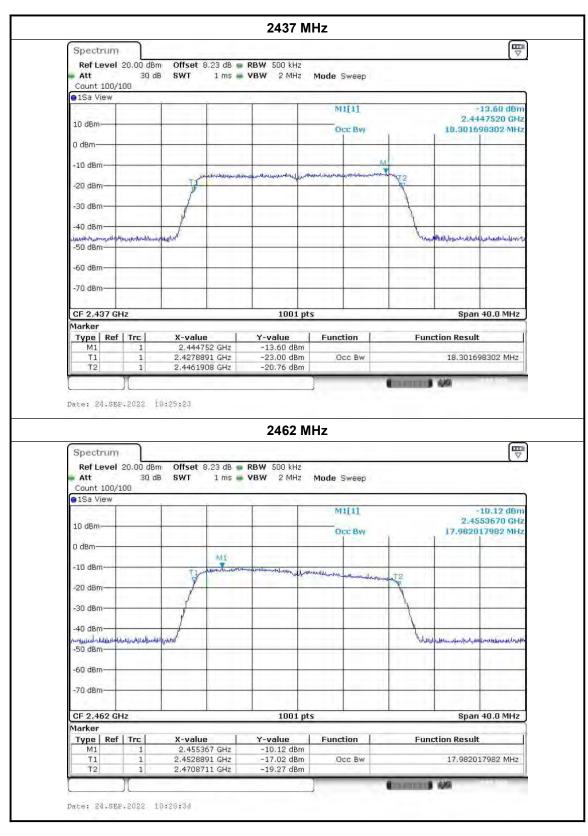




Test Mode: 802.11n(HT20) Mode 99% Bandwidth (MHz) Channel frequency (MHz) 2412 17.902 2437 18.302 2462 17.982 2412 MHz Spectrum Ref Level 20.00 dBm Offset 8,23 dB - RBW 500 kHz SWT 1 ms - VBW 2 MHz Mode Sweep Count 100/100 1Sa View M1[1] 2.4106010 GHz 10 dBm Occ Bw 17.902097902 MHz 0 dBm -10 dBm -20 dBm -30 dBm 40 dBm landressed three secretaries as writing -50 dBm--60 dBm -70 dBm 1001 pts CF 2.412 GHz Span 40.0 MHz Marker Type | Ref | Trc X-value Y-value Function **Function Result** 2.410601 GHz 2.403049 GHz -8.88 dBm -16,41 dBm Occ Bw 17.902097902 MHz 2.420951 GHz -16,68 dBm

Date: 24.5EP.2022 10:20:29



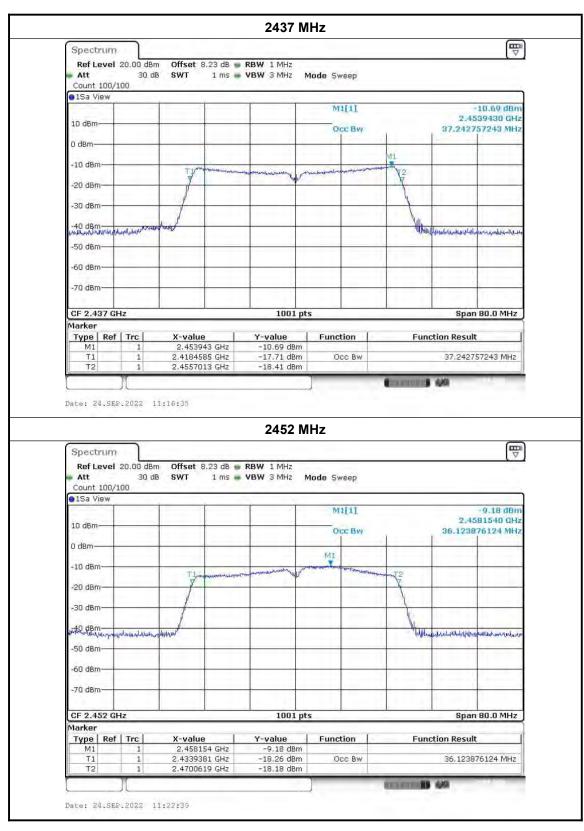




Test Mode: 802.11n(HT40) Mode Channel frequency (MHz) 99% Bandwidth (MHz) 2422 36.284 2437 37.243 2452 36.124 2422 MHz Spectrum Ref Level 20.00 dBm Offset 8.23 dB - RBW 1 MHz 1 ms - VBW 3 MHz 30 dB SWT Mode Sweep Count 100/100 1Sa View M1[1] 2.4129690 GHz 10 dBm 36.283716284 MHz Occ Bw 0 dBm -20 dBm-A like to where the second war is the work of the work -60 dBm 70 dBm CF 2.422 GHz 1001 pts Span 80.0 MHz Type | Ref | Trc | X-value Y-value Function **Function Result** -8.69 dBm -16.47 dBm 2.412969 GHz 2,4036983 GHz 2,439982 GHz 36.283716284 MHz Occ Bw -17.51 dBm

Date: 24.SEP.2022 10:33:25







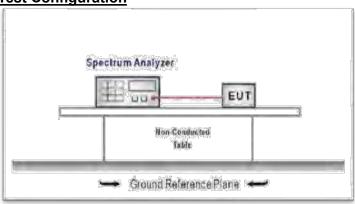
3.5. BAND EDGE AND SPURIOUS EMISSION (CONDUCTED)

Limit

FCC CFR Title 47 Part 15 Subpart C Section15.247 (d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Test Configuration



Test Procedure

- 1. Connect EUT RF Output port to the Spectrum Analyzer through an RF attenuator.
- 2. Spectrum Setting:

RBW=100KHz

VBW=300KHz.

Detector function: Peak.

Trace: Max hold. Sweep = Auto couple.

Allow the trace to stabilize.

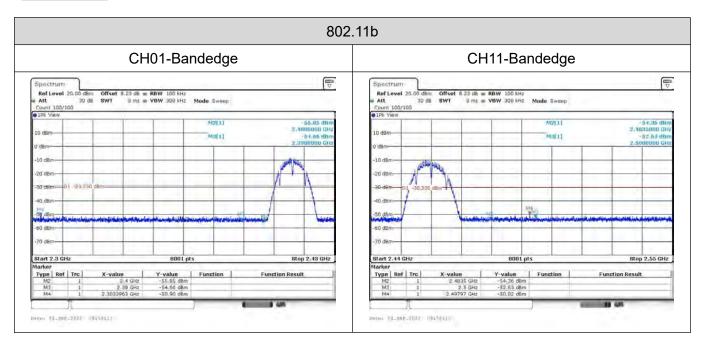
Test Mode

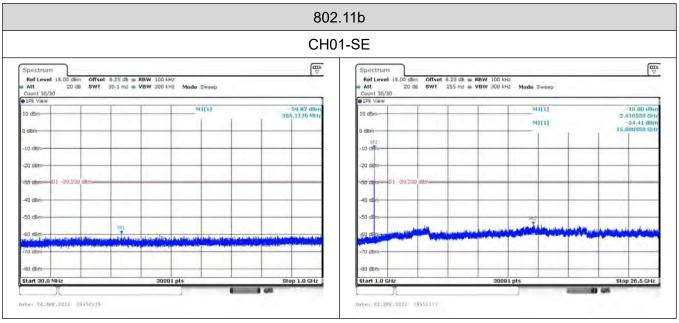
Please refer to the clause 2.2.



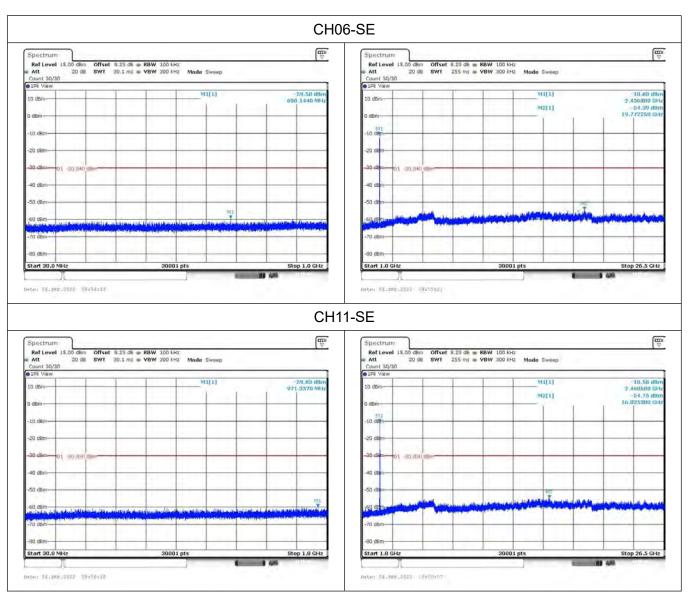


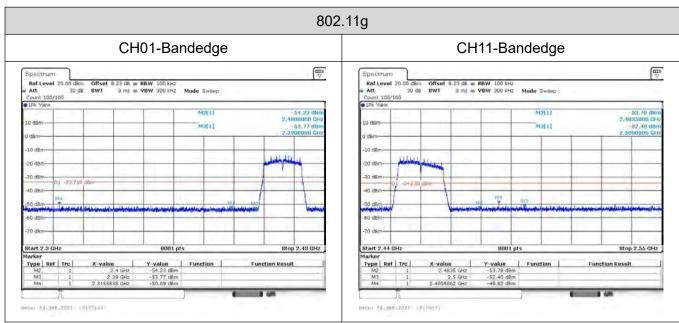
Test Results







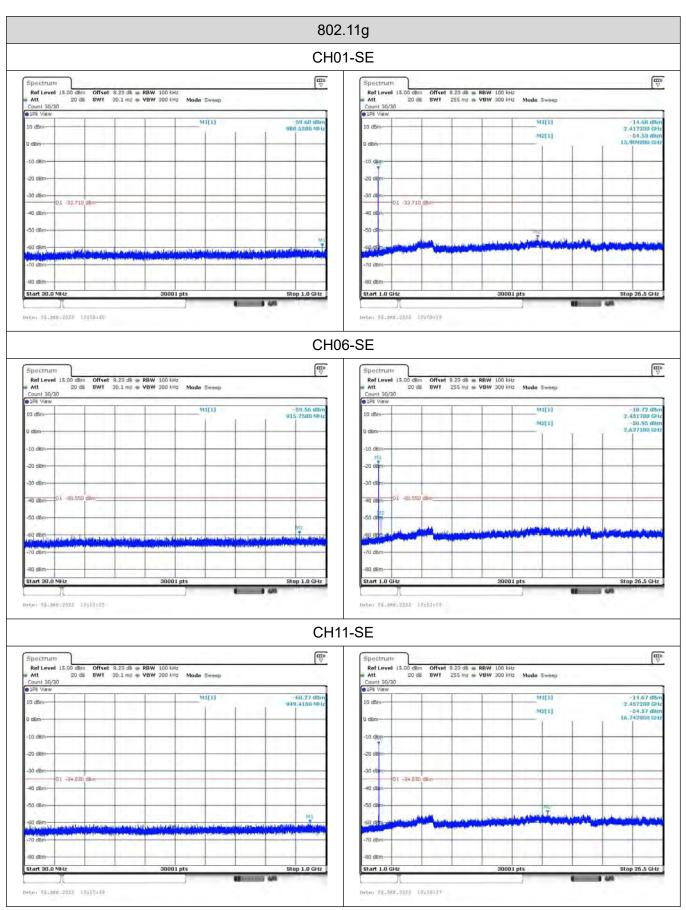




TRF No. FCC Part 15.247_R1

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

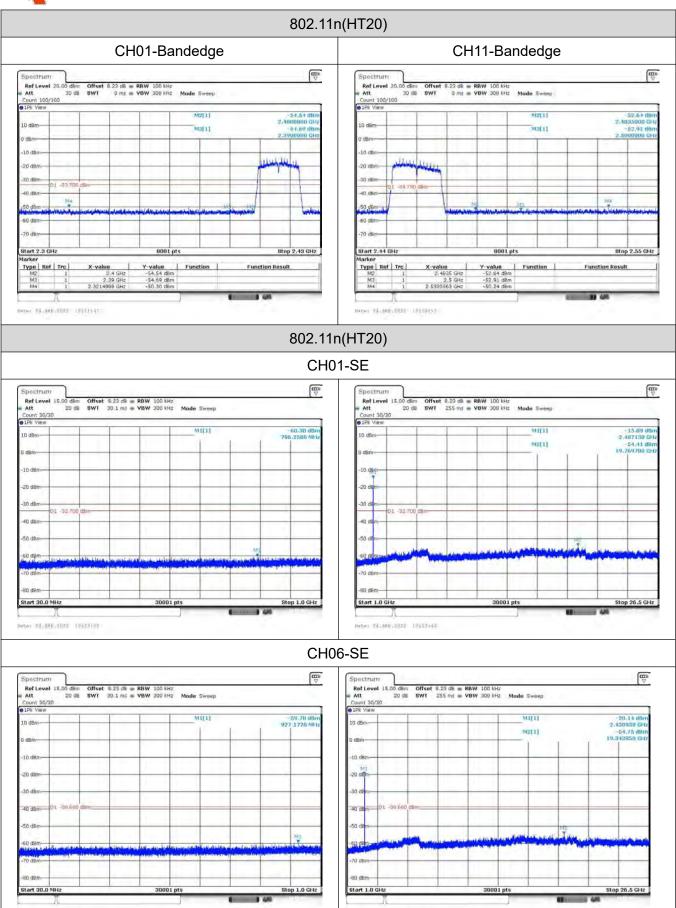




TRF No. FCC Part 15.247_R1

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





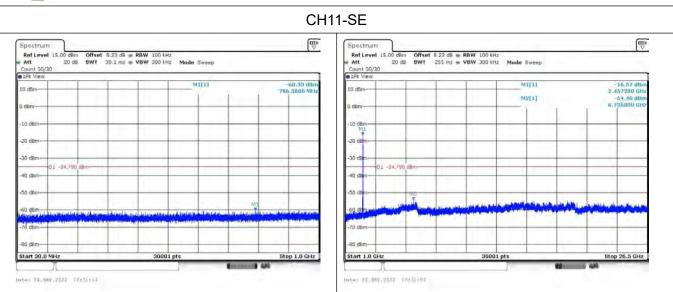
TRF No. FCC Part 15.247_R1

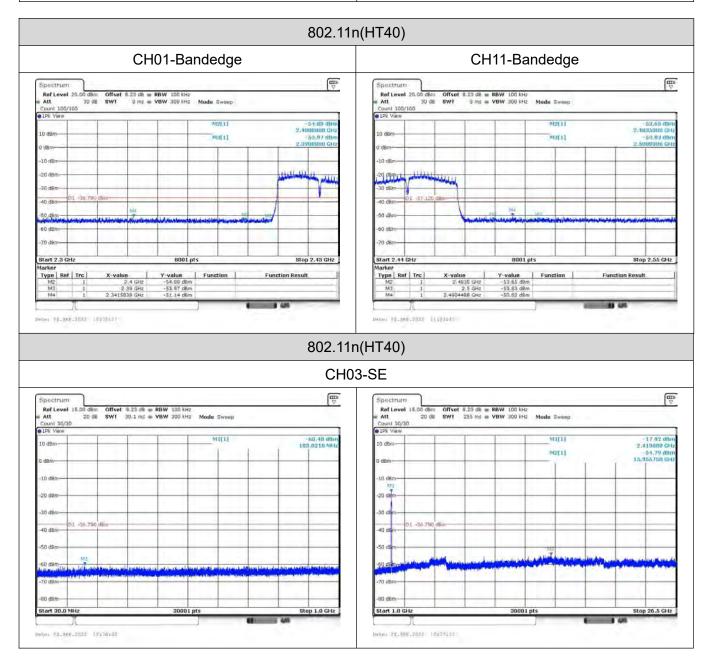
DWCw: 74.388.2022 15:26:46

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

Date: 24.388.2022 15:27:24



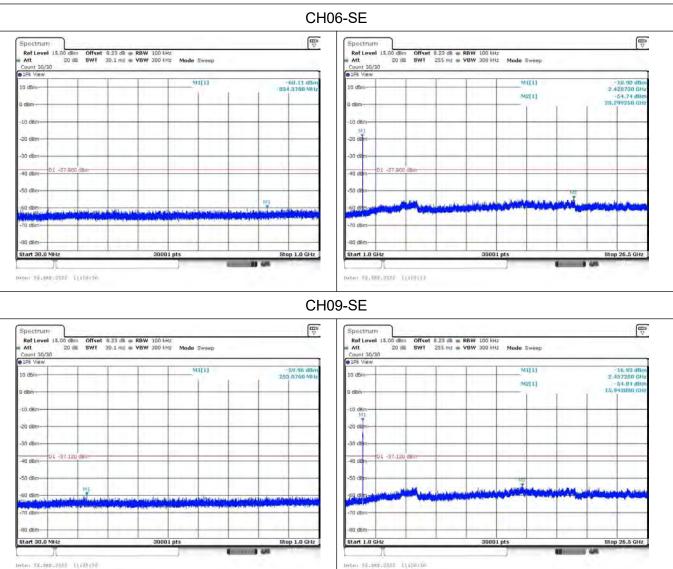




TRF No. FCC Part 15.247_R1

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





Page 47 of 79 Report No.: KS2209S4157E01

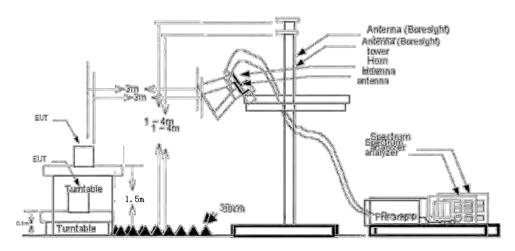


3.6. BAND EDGE EMISSIONS(RADIATED)

Limit

Restricted Frequency Band	(dBuV/m)(at 3m)			
(MHz)	Peak	Average		
2310 ~2390	74	54		
2483.5 ~2500	74	54		
Note: All restriction bands have been tested, only the worst case is reported.				

Test Configuration



Test Procedure

- 1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
- 2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
- 4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
- 5. The receiver set as follow:

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

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

Test Mode

Please refer to the clause 2.2.

Test Results

Note:

1.Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

2.Pre-scan 802.11b, 802.11g, 802.11n(HT20) and 802.11n (HT40) mode, and found the 802.11b mode which it is worse case, so only show the test data for worse case.

TRF No. FCC Part 15.247_R1

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

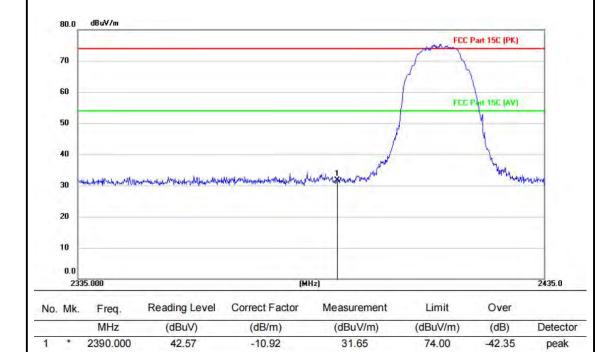


Test Voltage: AC 120V/60Hz Ant. Pol. Horizontal Test Mode: TX 802.11b Mode 2412MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC P IN 15C (AVI 50 40 who have mentioned by the comment 30 20 10 (MHz) 2435.0 Limit No. Mk. Freq. Reading Level Correct Factor Measurement Over MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 2390.000 46.75 -10.92 35.83 74.00 -38.17 1 peak



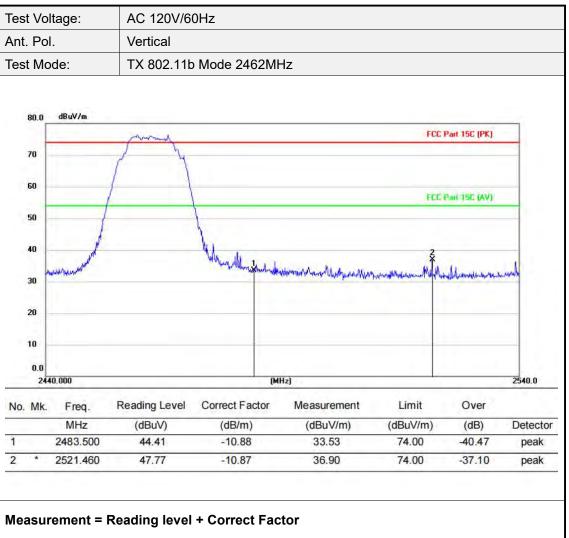
Test Voltage: AC 120V/60Hz
Ant. Pol. Vertical
Test Mode: TX 802.11b Mode 2412 MHz

Report No.: KS2209S4157E01



Test Voltage: AC 120V/60Hz Ant. Pol. Horizontal TX 802.11b Mode 2462MHz Test Mode: dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 2440.000 (MHz) 2540.0 Reading Level Correct Factor Measurement Limit Over No. Mk. Freq. MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 74.00 1 2483.500 46.68 -10.88 35.80 -38.20 peak





Note:

1. Since the peak value is less than the limit of the AVG value, there is no AVG data.

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

Page 52 of 79

Report No.: KS2209S4157E01



3.7. SPURIOUS EMISSION (RADIATED)

Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz)	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

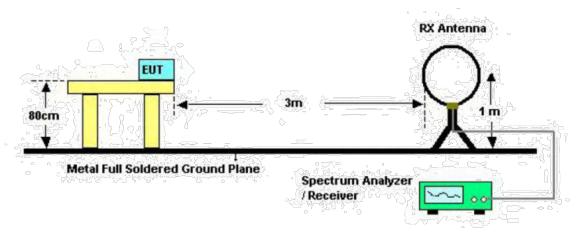
Radiated Emission Limit (Above 1000MHz)

Frequency	Distance Meters(at 3m)	
(MHz)	Peak	Average
Above 1000	74	54

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

Test Configuration

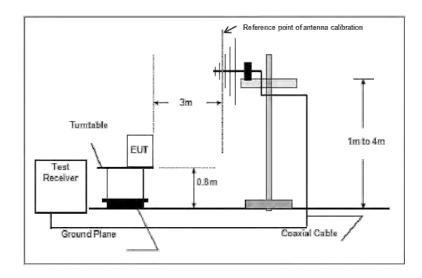


Below 30MHz Test Setup

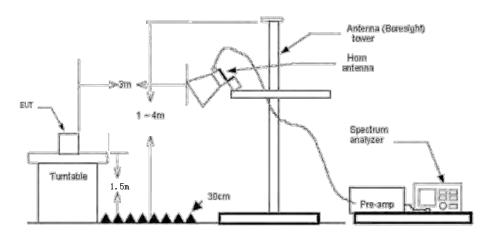
TRF No. FCC Part 15.247_R1

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





Below 1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

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

TRF No. FCC Part 15.247_R1

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



(2) Below 1 GHz:

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

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

Report No.: KS2209S4157E01

(3) From 1 GHz to 10th harmonic:

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

RBW=1MHz, VBW=10Hz Peak detector for Peak value.

Test Mode

Please refer to the clause 2.2.

Test Result

Pass

Note:

- Measurement = Reading level + Correct Factor
 Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
- 2) From 9 KHz~30 MHz and 18GHz~25GHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
- 3) Pre-scan 802.11b/g/n(HT20,HT40) modulation, and found the 802.11b modulation which it is worse case for above 1GHz, 2412MHz channel which it is worse case for below 1GHz, so only show the test data for worse case.

BELOW 30MHz

the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

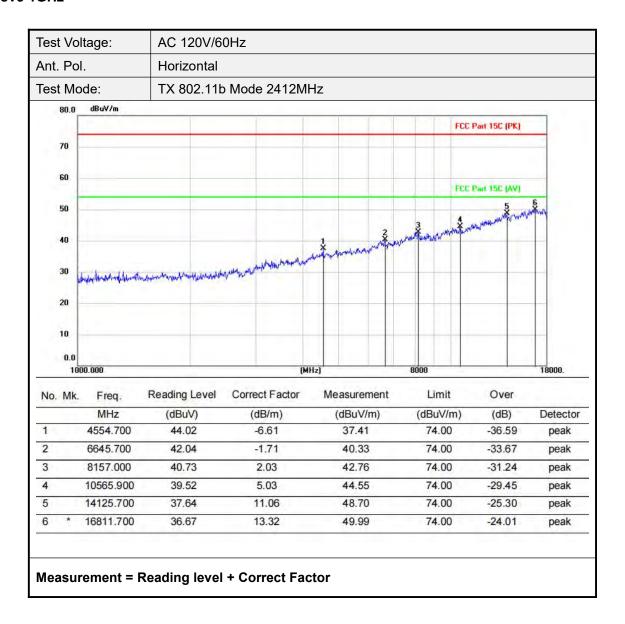
TRF No. FCC Part 15.247_R1

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

Test Voltage:		Itage:	AC 120V/60	0Hz				
Ant. Pol.		I.	Horizontal					
Test Mode:			TX 802.11b	TX 802.11b Mode 2412MHz				
	80.0	dBuV/m						
	70							
	60					FCC Part 15C (3	OMHz-16Hz1	
1	50						Margin 6 dB	-[
	40		<u> </u>		4	,	Š.	
					a distribution	"T" III Make a T		The state of the s
	30			3	Transportation of the second	THE WAY	polyllat had parapart	Mary N
	20			AMMMM AND		THE PART OF THE PA	profile the second profile	MA.
	20 10 0.0	1000 Jan 100 J	1 1 1 1 1 1 1 1 1 1		Hz)	500	polytik di singganida di	1000.0
	20 10 0.0	000	60 Reading Level	100 (M	Hz) Measurement	500	Over	1000.0
	20 10 0.0 30.	000		7 5			Over (dB)	
	20 10 0.0 30.	ooo Freq.	Reading Level	Correct Factor	Measurement	Limit	37.57	
No.	20 10 0.0 30.	Freq.	Reading Level (dBuV)	Correct Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	(dB)	Detecto
No. 1 2	20 10 0.0 30.	Freq. MHz 46.7154	Reading Level (dBuV) 31.60	Correct Factor (dB/m) -15.92	Measurement (dBuV/m) 15.68	Limit (dBuV/m) 40.00	(dB) -24.32	Detecto
No.	20 10 0.0 30.	MHz 46.7154 69.3811	Reading Level (dBuV) 31.60 46.56	Correct Factor (dB/m) -15.92 -19.59	Measurement (dBuV/m) 15.68 26.97	Limit (dBuV/m) 40.00 40.00	(dB) -24.32 -13.03	Detector QP QP
No. 1 2 3	20 10 0.0 30. Mk.	Freq. MHz 46.7154 69.3811 162.8959	Reading Level (dBuV) 31.60 46.56 41.35	Correct Factor (dB/m) -15.92 -19.59 -21.07	Measurement (dBuV/m) 15.68 26.97 20.28	Limit (dBuV/m) 40.00 40.00 43.50	(dB) -24.32 -13.03 -23.22	Detector QP QP QP



Test Voltage: AC 120V/60Hz Ant. Pol. Vertical Test Mode: TX 802.11b Mode 2412MHz dBuV/m an n 70 60 FCC Part 15C (30MHz-16Hz) 50 40 20 10 30.000 60 (MHz) 500 1000.0 No. Mk. Freq. Reading Level Correct Factor Measurement Limit Over MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 1 46.7483 46.35 -15.92 30.43 40.00 -9.57 QP 2 40.00 QP 69.3812 53.40 -19.59 33.81 -6.19 57.22 40.00 3 73.8496 -20.09 37.13 -2.87 QP 4 346.2017 46.30 -12.70 33.60 46.00 -12.40 QP 5 486.1202 43.98 -10.05 33.93 46.00 -12.07QP 6 640.1618 41.38 -7.42 33.96 46.00 -12.04 QP Measurement = Reading Level+ Correct Factor





Test Voltage: AC 120V/60Hz Ant. Pol. Vertical Test Mode: TX 802.11b Mode 2412MHz dBuV/m FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 20 10 0.0

No. Mk.	Freq.	Freq. Reading Level	Correct Factor	Measurement	Limit	Over	
	MHz	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector
1	4921.900	44.87	-5.60	39.27	74.00	-34.73	peak
2	5989.500	46.36	-3.82	42.54	74.00	-31.46	peak
3	8485.100	42.65	1.94	44.59	74.00	-29.41	peak
4	9481.300	42.23	2.92	45.15	74.00	-28.85	peak
5	12180.900	39.24	8.28	47.52	74.00	-26.48	peak
6 *	14999.500	37.31	11.55	48.86	74.00	-25.14	peak



Test Voltage: AC 120V/60Hz Ant. Pol. Horizontal TX 802.11b Mode 2437MHz Test Mode: dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 1000.000 (MHz) 8000 18000. Limit Over Reading Level Correct Factor Measurement No. Mk. Freq. MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 1 4818.200 44.74 -5.88 38.86 74.00 -35.14 peak 2 5994.600 44.22 -3.81 40.41 74.00 -33.59 peak 8029.500 42.17 2.06 44.23 74.00 -29.77 3 peak 4 10683.200 41.60 5.20 46.80 74.00 -27.20 peak 5 15030.100 37.99 11.58 49.57 74.00 -24.43 peak

Measurement = Reading level + Correct Factor

39.03

13.30

52.33

74.00

-21.67

peak

6

17365.900



Test Voltage: AC 120V/60Hz Ant. Pol. Vertical Test Mode: TX 802.11b Mode 2437MHz dBuV/m FCC Part 15C (PK) 70 50 40 20 10 1000.000 (MHz) 8000 18000. No. Mk. Freq. Reading Level Correct Factor Measurement Limit Over MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 5982.700 46.49 -3.84 42.65 74.00 -31.35 1 peak 2 8061.800 42.89 2.06 44.95 74.00 -29.05 peak 3 9491.500 42.67 2.95 45.62 74.00 -28.38 peak 4 10173.200 42.59 4.36 46.95 74.00 -27.05 peak 5 12872.800 38.38 9.68 48.06 74.00 -25.94peak 16446.200 36.06 13.68 49.74 74.00 -24.26 6 peak



AC 120V/60Hz Test Voltage: Horizontal Ant. Pol. Test Mode: TX 802.11b Mode 2462MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 50 40 30 20 10 0.0 1000.000 (MHz) 18000 Correct Factor Measurement Limit Over No. Mk. Freq. Reading Level MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 1 5141.200 43.30 -5.26 38.04 74.00 -35.96 peak 2 6472.300 42.33 -2.2040.13 74.00 -33.87 peak 3 8087.300 41.13 2.05 43.18 74.00 -30.82 peak 4 9712.500 41.89 3.44 45.33 74.00 -28.67 peak 13867.300 74.00 5 37.88 11.06 48.94 -25.06 peak 6 16784.500 38.36 13.37 51.73 74.00 -22.27 peak



Test Voltage: AC 120V/60Hz Ant. Pol. Vertical Test Mode: TX 802.11b Mode 2462MHz dBuV/m 80.0 FCC Part 15C (PK) 70 60 FCC Pail 15C (AV) 50 40 mile a copy with what 30 20 10 1000.000 (MHz) 18000. No. Mk. Reading Level Correct Factor Measurement Limit Over Freq. MHz (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) Detector 3731.900 47.07 1 -9.09 37.98 74.00 -36.02 peak 2 5989.500 46.30 -3.82 42.48 74.00 -31.52 peak 3 8048.200 41.95 2.06 44.01 74.00 -29.99 peak 4 9221.200 42.26 2.33 44.59 74.00 -29.41 peak 5 12775.900 38.18 9.49 47.67 74.00 -26.33 peak 16674.000 74.00 36.04 13.54 49.58 -24.42 6 peak Measurement = Reading level + Correct Factor

Note

- 1. Since the peak value is less than the limit of the AVG value, there is no AVG data.
- 2. From 18GHz to 26.5GHz,the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Page 63 of 79 Report No.: KS2209S4157E01



3.8. CONDUCTED EMISSION

Limit

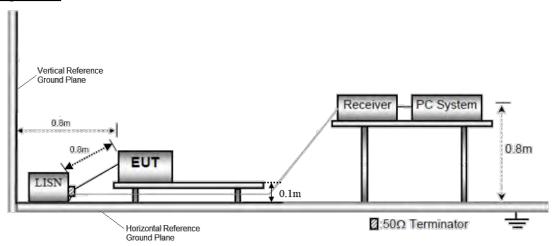
Conducted Emission Test Limit

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

Notes:

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

Test Configuration



Test Procedure

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 0.1m above the conducting ground plane. The vertical conducting plane was located 80 cm to the rear of the EUT. All other surfaces of EUT were at least 0.8m from any other grounded conducting surface.
- 3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment.

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

Test Mode:

Please refer to the clause 2.2.

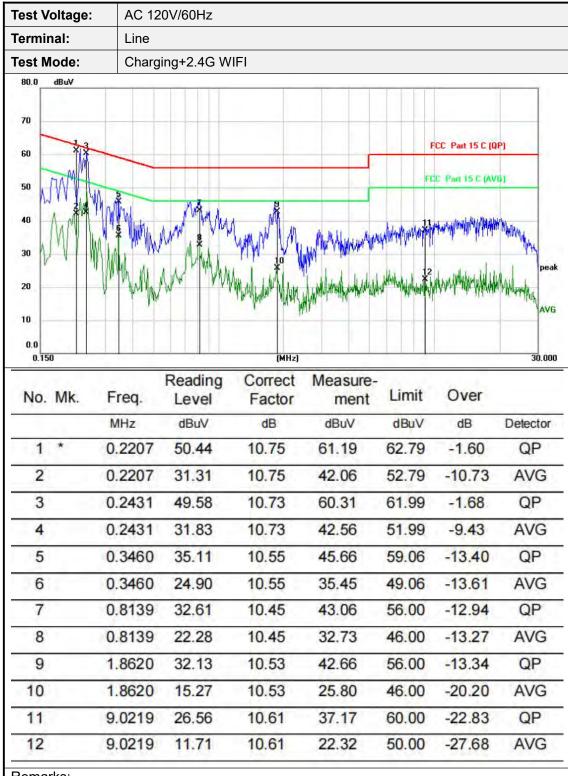
TRF No. FCC Part 15.247 R1

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



Test Results

Pre-scan 802.11b/g/n(HT20,HT40) modulation, and found the 802.11b modulation 2412MHz which it is worse case, so only show the test data for worse case.



Remarks:

TRF No. FCC Part 15.247_R1

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

^{1.}Measurement = Reading Level+ Correct Factor

^{2.}Over = Measurement -Limit



Test Voltage: AC 120V/60Hz Terminal: Neutral Charging+WIFI Test Mode: 80.0 dBuV 70 FCC Part 15 C (QP) 60 FCC Part 15 C [AVG] 50 40 30 20 10 0.0 0.150 (MHz) 30.000 Reading Correct Measure-Over No. Mk. Freq. Limit Level Factor ment MHz dBuV dB dBuV dBuV dB Detector 1 0.2220 50.67 10.73 61.40 62.74 -1.34QP 0.2220 32.23 10.73 42.96 52.74 2 -9.78AVG 3 0.2447 49.15 10.71 QP 59.86 61.94 -2.0810.71 AVG 4 0.2447 32.25 42.96 51.94 -8.985 0.3339 35.66 10.52 -13.17QP 46.18 59.35 0.3339 25.76 10.52 -13.07AVG 6 36.28 49.35 7 0.8139 34.98 10.43 45.41 56.00 -10.59QP 8 0.8139 22.94 10.43 33.37 -12.63AVG 46.00 9 1.8620 31.69 10.54 42.23 56.00 -13.77QP 1.8620 14.42 10.54 -21.04AVG 10 24.96 46.00 11 QP 9.8779 22.86 10.59 33.45 60.00 -26.5512 9.8779 11.31 10.59 21.90 50.00 -28.10AVG

Remarks:

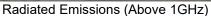
^{1.}Measurement = Reading Level+ Correct Factor

^{2.}Over = Measurement -Limit



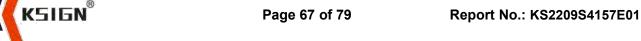
4.EUT TEST PHOTOS

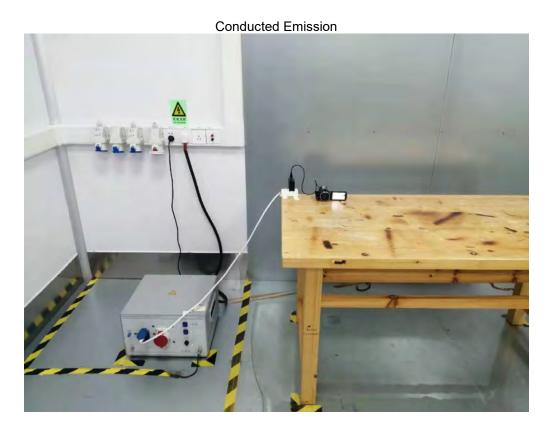
















5.PHOTOGRAPHS OF EUT CONSTRUCTIONAL







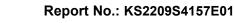














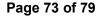
















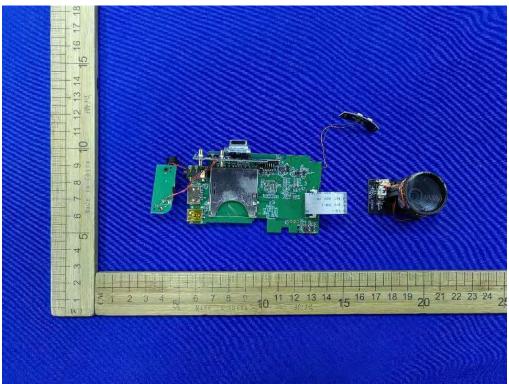






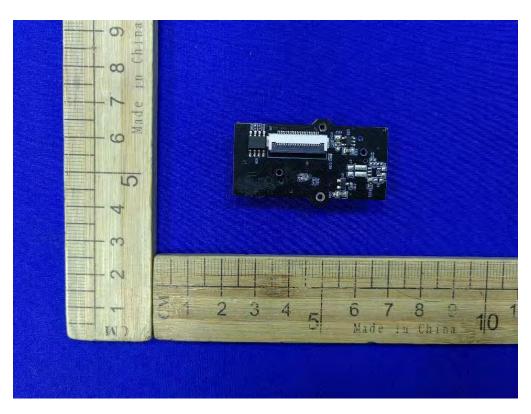


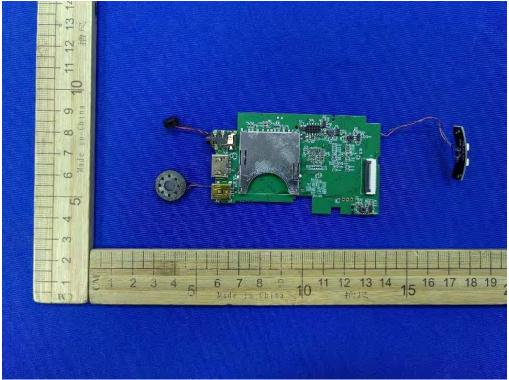




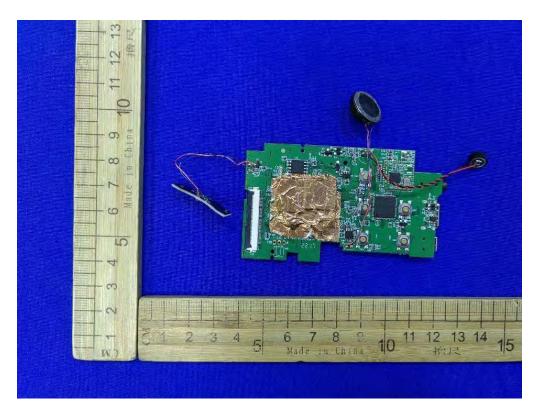


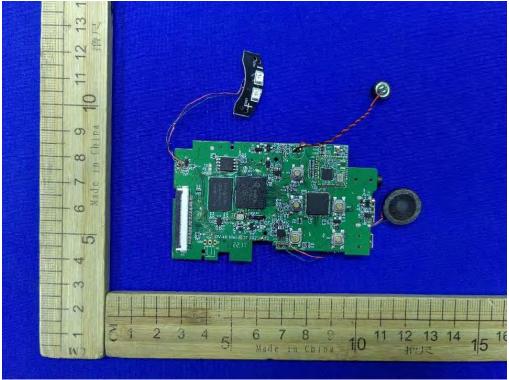






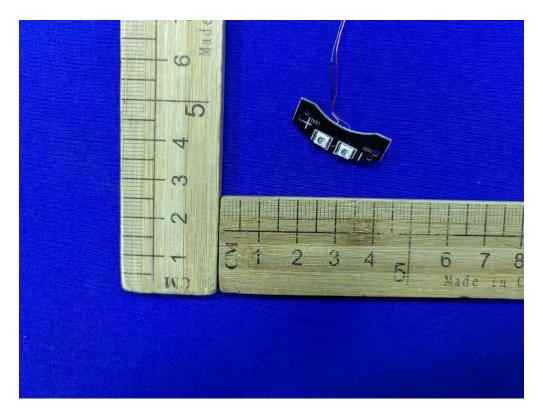


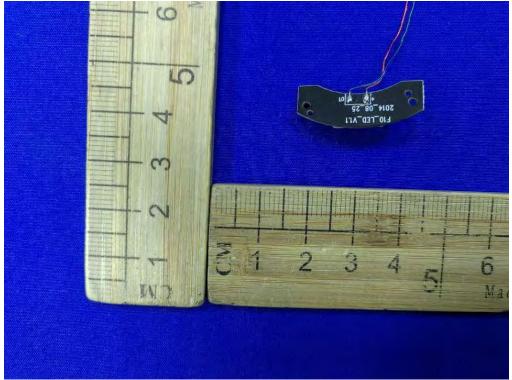






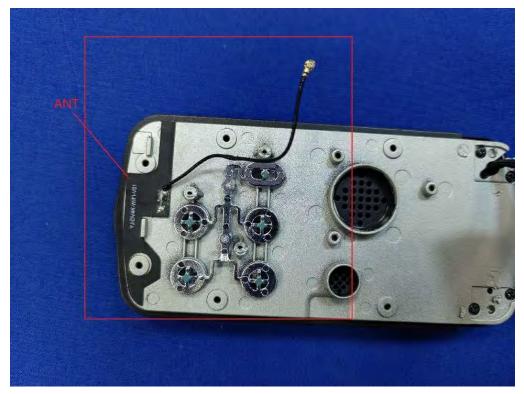












--THE END--