



FCC TEST REPORT

Test report On Behalf of International Communications Corporation For 11ac Wave2 Tri-band AP Model No.: ARC50-6WAP

FCC ID: 2ABFZ-ARC50-6WAP

Prepared for :	International Communications Corporation
	11801 Pierce St., 2nd FL Riverside, CA 92505, United States

Prepared By : Shenzhen HUAK Testing Technology Co., Ltd. 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China

 Date of Test:
 Oct. 09, 2020 ~Oct. 16, 2020

 Date of Report:
 Oct. 16, 2020

 Report Number:
 HK2010102815-1E



TEST RESULT CERTIFICATION

Applicant's name	International Communications Corporation		
Address	11801 Pierce St., 2nd FL Riverside, CA 92505, United States		
Manufacture's Name	Shenzhen Yunlink Technology Co., Ltd.		
Address	B3 Building, Anle Industrial Zone, Hangcheng Road, Gushu, Xixiang, Bao'an, Shenzhen, China		
Product description			
Trade Mark:	activeARC® Wireless		
Product name:	11ac Wave2 Tri-band AP		
Model and/or type reference .:	ARC50-6WAP		
Standards	FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10: 2013		

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Date of Test	
Date (s) of performance of tests:	Oct. 09, 2020 ~Oct. 16, 2020
Date of Issue	Oct. 16, 2020
Test Result	Pass

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Testing Engineer

Goog Dian) (Gary Qian) Edan Mu (Eden Hu)

Technical Manager

Authorized Signatory:

Jason Zhou

(Jason Zhou)



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** Modifited History **

Revison	Description	Issued Data	Remark
Revsion 1.0	Initial Test Report Release	Oct. 16, 2020	Jason Zhou



1. Test Result Summary

1.1. TEST PROCEDURES AND RESULTS

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	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	1§5.247(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. TEST FACILITY

Test Firm : Shenzhen HUAK Testing Technology Co., Ltd.

Address 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China



1.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, 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	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	11ac Wave2 Tri-band AP
Model Name	ARC50-6WAP
Serial Model	N/A
Model Difference	N/A
Trade Mark	activeARC® Wireless
FCC ID	2ABFZ-ARC50-6WAP
Antenna Type	Internal Antenna
Antenna Gain	Antenna 1:3dBi Antenna 2:3dBi MIMO: 6.01dBi
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	POE IN 48V DC IN 12V 2A
Power Rating	POE IN 48V DC IN 12V 2A

Note:

The EUT incorporates a MIMO function. Physically, it provides two completed transmitte rs and receivers(2T2R), two transmit signals are completely correlated, then, Direction g ain=GANT+10*log(2)dBi.



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		

	Channel List For 802.11n (HT40)						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
		04	2427	07	2442		
		05	2432	08	2447		
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

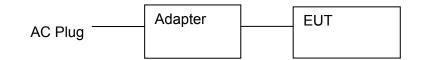


2.4. DESCRIPTION OF TEST SETUP

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

Adapter EUT Laptop

Operation of EUT during radiation above 1GHz testing:



Adapter information
 Model: GRT-POE15-480050
 Input: AC100-240V, 50-60Hz, 0.8A
 Output: 48V, 500mA

Laptop information
 Model: SE2417HG
 Input: 100-240V, 50/60Hz, 1.6A

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



3. Genera Information

3.1. Test environment and mode

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

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

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.



4. Test Results and Measurement Data

4.1. Conducted Emission

4.1.1. Test Specification

Test Requirement:	FCC Part15 C Section	15.207		
Test Method:	ANSI C63.10:2013			
Frequency Range:	150 kHz to 30 MHz			
Receiver setup:	RBW=9 kHz, VBW=30	kHz, Sweep time	=auto	
Limits:	Frequency range (MHz) Limit (dBuV) 0.15-0.5 66 to 56* 56 to 46* 0.5-5 56 46 5-30 60 50			
Test Setup:	Reference Plane 40cm 80cm LISN Filter AC power E.U.T AC power Filter 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 with modulation			
Test Procedure:	 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. 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). 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. 			
Test Result:	PASS			



4.1.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)						
Equipment	Equipment Manufacturer Model Serial Number Calibration D					
Receiver	R&S	ESCI 7	HKE-010	Dec. 25, 2020		
LISN	R&S	ENV216	HKE-002	Dec. 25, 2020		
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A		

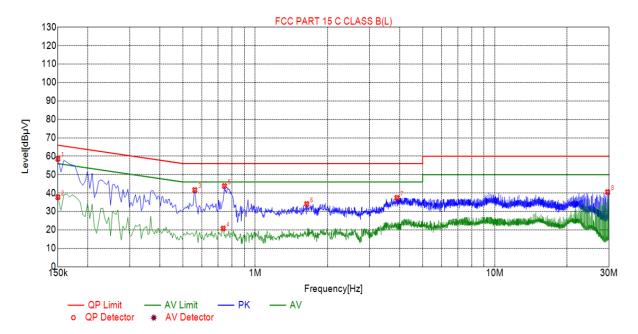
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



4.1.3. Test data

All the test modes completed for test. only the worst result was reported as below:

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



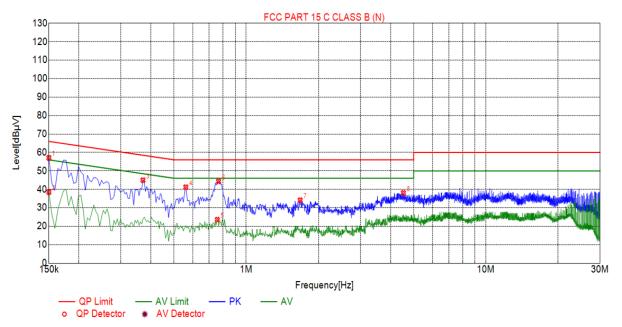
Sus	Suspected List							
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре
1	0.1500	58.59	20.03	66.00	7.41	38.56	PK	L
2	0.1500	37.77	20.03	56.00	18.23	17.74	AV	L
3	0.5595	41.65	20.06	56.00	14.35	21.59	PK	L
4	0.7350	20.80	20.06	46.00	25.20	0.74	AV	L
5	0.7440	43.85	20.06	56.00	12.15	23.79	PK	L
6	1.6395	34.07	20.12	56.00	21.93	13.95	PK	L
7	3.9030	37.43	20.25	56.00	18.57	17.18	PK	L
8	29.5845	40.54	20.26	60.00	19.46	20.28	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor





Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)

Sus	Suspected List							
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре
1	0.1500	57.07	20.03	66.00	8.93	37.04	PK	N
2	0.1500	38.54	20.03	56.00	17.46	18.51	AV	N
3	0.3705	44.98	20.05	58.49	13.51	24.93	PK	N
4	0.5595	41.17	20.06	56.00	14.83	21.11	PK	N
5	0.7575	23.57	20.06	46.00	22.43	3.51	AV	N
6	0.7665	44.33	20.05	56.00	11.67	24.28	PK	N
7	1.6800	34.12	20.13	56.00	21.88	13.99	РК	N
8	4.5285	38.09	20.25	56.00	17.91	17.84	PK	N

Remark: Margin = Limit – Level Correction factor = Cable lose + LISN insertion loss Level=Test receiver reading + correction factor



4.2. Maximum Conducted Output Power

4.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074
Limit:	30dBm
Test Setup:	Power meter EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v05r02. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Measure the Peak output power and record the results in the test report.
Test Result:	PASS

4.2.2. Test Instruments

RF Test Room						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Power meter	Agilent	E4419B	HKE-085	Dec. 25, 2020		
Power Sensor	Agilent	E9300A	HKE-086	Dec. 25, 2020		
RF cable	Times	1-40G	HKE-034	Dec. 25, 2020		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 25, 2020		

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



4.2.3. Test Data

Frequency	Maximum Peal	it Power (dBm)	LIMIT				
(MHz)	Antenna port 1	Antenna port 2	MIMO	dBm			
TX 802.11b Mode							
2412	14.75	14.67	/	30			
2437	14.86	14.96	/	30			
2462	15.02	15	/	30			
	٦	TX 802.11g Mode					
2412	13.98	13.81	/	30			
2437	14.15	14.09	/	30			
2462	14.22	14.09	/	30			
	T	(802.11n20 Mode					
2412	14.2	13.97	17.10	30			
2437	14.32	14.2	17.27	30			
2462	14.39	14.31	17.36	30			
TX 802.11n40 Mode							
2422	14.35	14.44	17.41	30			
2437	14.23	14.5	17.38	30			
2452	14.27	14.54	17.42	30			
	(MHz) 2412 2437 2462 2412 2437 2462 2412 2437 2462 2412 2437 2462 2437 2462 2437 2462	(MHz) Antenna port 1 2412 14.75 2437 14.86 2462 15.02 2412 13.98 2437 14.15 2462 14.22 2412 14.22 2412 14.32 2462 14.32 2412 14.32 2412 14.32 2442 14.39 2442 14.39 2442 14.35 2437 14.23 2437 14.23 2437 14.23	(MHz) Antenna port 1 Antenna port 2 2412 14.75 14.67 2437 14.86 14.96 2462 15.02 15 2412 13.98 13.81 2437 14.15 14.09 2412 13.98 13.81 2437 14.15 14.09 2462 14.22 14.09 2462 14.22 14.09 2462 14.22 14.09 2462 14.23 14.09 2462 14.23 14.09 2462 14.23 14.24 2437 14.32 14.2 2462 14.39 14.31 2462 14.35 14.44 2437 14.23 14.44 2437 14.23 14.5 2422 14.35 14.44 2437 14.23 14.5 2452 14.27 14.54	(MHz) Antenna port 1 Antenna port 2 MIMO TX 802.11b Mode 2412 14.75 14.67 / 2437 14.86 14.96 / 2462 15.02 15 / TX 802.11g Mode Z412 13.98 13.81 / Z412 13.98 13.81 / Z412 13.98 13.81 / 2437 14.15 14.09 / / 2462 14.22 14.09 / / 2437 14.15 14.09 / / 2462 14.22 13.97 17.10 2437 14.32 14.2 17.27 2462 14.39 14.31 17.36 TX 802.11n40 Mode Z422 14.35 14.44 17.41 2437 14.23 14.5 17.38			

Note: This product supports antenna 1 and antenna 2 launch, but only support 802.11 n for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.



4.3. Emission Bandwidth

4.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074
Limit:	>500kHz
Test Setup:	
	Spectrum Analyzer
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v05r02. Set to the maximum power setting and enable the EUT transmit continuously. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. Measure and record the results in the test report.
Test Result:	PASS

4.3.2. Test Instruments

RF Test Room						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 25, 2020		
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 25, 2020		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 25, 2020		

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



4.3.3. Test data

For antenna port 1						
Test channel	(6dB Emission Bandwidth (MHz)				
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	8.111	16.35	17.62	35.21		
Middle	8.111	16.37	17.60	35.16		
Highest	8.108	16.36	17.57	33.98		
Limit:	>500k					
Test Result:		P/	ASS			

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel







802.11g Modulation

Lowest channel

Center Freq 2.412000	000 GHz Cente	er Freg: 2.412000000 GHz Free Run Avg Hol h: 20 dB	4>1/1	Radio Std		Frequency
Ref Offset 8.6			Mkr		96 GHz 77 dBm	
1 36 11.4	alandar and a star	1 may perturbar have been been	4			Center Fre 2.412000000 GH
21.4 31.4 41.4 mgmuchartun/Magachartu			- Torrior	Mr. Marcha	vheed motoria	
Center 2.412 GHz Res BW 100 kHz	#	VBW 300 kHz			n 40 MHz 3.867 ms	CF Ste 4.000000 MH
Occupied Bandw	^{idth} 16.395 MHz	Total Power 13.2 dBm HZ		dBm	Auto	Auto Ma
Transmit Freq Error x dB Bandwidth	-29.266 kHz 16.35 MHz	OBW Power x dB		0.00 % 00 dB		OH
110			STATU	L I		

Middle channel

Center Freq 2.437000000	GHz Cente Trig: F	r Freq: 2.437000000 GHz ree Run Avg Hole : 20 dB	4. 1/1	Radio Std	North Market	Frequency	
Ref Offset 8.64 dB			Mkr1 2.4382 GHz -4.8248 dBm				
	gradeline hashadrad	n marine the los	h			Center Freq 2.437000000 GHz	
21.4 21.4 41.4 61.4 61.4			- New	-vre(^{vi} ntely)	mon		
Center 2.437 GHz Res BW 100 kHz	#	VBW 300 kHz		Spa Sweep	n 40 MHz 3.867 ms	CF Step 4.000000 MHz Auto Mar	
Occupied Bandwidth 16	386 MHz	Total Power	13.2	2 dBm		Auto Mar Freg Offse	
Transmit Freq Error x dB Bandwidth	-40.462 kHz 16.37 MHz	OBW Power x dB		9.00 % 00 dB		OH	
10			STATU				

RL Center Free	q 2.46200000	-b- Trig:	rFreq: 2.462000000 GHz Free Run Avg Ho h: 20 dB	ALICHAUTO	Radio Std: None Radio Device: BT	Frequency
10 dB/div	Ref Offset 8.64 d Ref 18.64 dBn	B n		Mkr	1 2.46696 G -4.7370 de	
.0g 864 1.36		mohadaplada	1 hy performation frances			Center Freq 2.462000000 GHz
1.4 1.4 1.4 1.4	and the second second second			J. J	Munalahanna	~
Center 2.46		*	VBW 300 kHz		Span 40 N Sweep 3.867	ms 4.000000 MH
Occupied Bandwidth		հ 5.384 MHz	Total Power	Total Power 13.2 dBm		Auto Mar Freg Offse
Transmit x dB Bar	Freq Error	-34.547 kHz 16.36 MHz	OBW Power x dB		9.00 % 00 dB	0 Hz
10				STATU	8	



802.11n (HT20) Modulation

enter Freq 2.41200000	Trig: F	r Freq: 2.412000000 GHz Free Run Avg[Hold 1: 20 dB	ALIGNAUTO 07:34:21 PM Radio Std: 1 : 1/1 Radio Devic	None Frequenc
Ref Offset 8.64 d 0 dBJdiv Ref 18.64 dBr	B n		Mkr1 2.4069 -5.371	96 GHz 7 dBm
og 164 136 1.4	andreas and a services	rie antrictorrightend	~	Center 2.412000000
1.4 1.4 1.4 1.4				Administration of the second
Center 2.412 GHz Res BW 100 kHz		VBW 300 kHz	Span Sweep 3	40 MHz CF :
Occupied Bandwidt	^h 7.621 MHz	Total Power	12.8 dBm	Auto Freg O
Transmit Freq Error x dB Bandwidth	-29.537 kHz 17.62 MHz	OBW Power x dB	99.00 % -6.00 dB	

Lowest channel

Middle channel

RL IF 50.9 AC Center Freq 2.437000000	GHz Cente	r Freq: 2,437000000 GHz ree Run Avg Hold :: 20 dB	£ 1/1	07-27-00 PM Oct 13, 2020 tadio Std: None tadio Device: BTS	Frequency	
Ref Offset 8.64 di Ref 18.64 dBn	B		Mkr1 2.4382 GHz -4.8033 dBm			
• 9 64 8 64 1 36 31.4	Junterstandierstandier	ay parlamentaring			Center Free 2.437000000 GH;	
17.2 17.4 17.4 17.4 17.4 17.4			A BANK MAN	wint the sector of the sector		
Center 2.437 GHz Res BW 100 kHz	#	VBW 300 kHz	5	Span 40 MHz Sweep 3.867 ms	CF Step 4.000000 MH	
Occupied Bandwidt 17	^h 7.607 MHz	Total Power	12.9 d	IBm	Auto Mar Freg Offse	
Transmit Freq Error x dB Bandwidth	-36.711 kHz 17.60 MHz	OBW Power x dB	99.0 -6.00		OH	
10			STATUS			

Center Freq 2.4620000	-a- Trig: F	r Freq: 2.462000000 GHz Free Run Avg Hold 1: 20 dB	4.1/1	Radio Sto		Frequency
Ref Offset 8.6 0 dB/div Ref 18.64 d	tdB Bm		Mkr		324 GHz 15 dBm	
-og 8.64 1.36	الم المركب المركب المركب	1 at when whether had a should be				Center Freq 2.462000000 GHz
1.4 1.4			Į			
11.4 pm-rql/WWWWydayWdwrtile# 51.4				nhwwynw	New York	
51.4						
Center 2.462 GHz Res BW 100 kHz	#	VBW 300 kHz			Span 40 MHz Sweep 3.867 ms	
Occupied Bandwi		Total Power	13.0	dBm		<u>Auto</u> Mar
	17.591 MHz					Freq Offse
Transmit Freq Error	-29.306 kHz	OBW Power		.00 %		0 H
x dB Bandwidth	17.57 MHz	x dB	-6.0	00 dB		
10			STATUS			



802.11n (HT40) Modulation

07-35-51 PM Oct 13, 20 Radio Std: None Frequency enter Freq 2.422000000 GHz Center Freq: 2.4220 Trig: Free Run #Atten: 20 dB 000 GHz Avg|Hold: 10/10 Radio Device: BTS 2.42568 GH -7.2197 dB Ref Offset 8.64 dB Ref 18.64 dBm Center Fred 2.422000000 GHz •¹ و الدار الدار Span 80 MHz Sweep 7.667 ms Center 2.422 GHz #Res BW 100 kHz CF Ste. #VBW 300 kHz Occupied Bandwidth 35.963 MHz Total Power 13.6 dBm Freq Offse 14.683 kHz Transmit Freq Error **OBW Power** 99.00 % OH x dB Bandwidth 35.21 MHz x dB -6.00 dB

Lowest channel

Middle channel

enter Fre	q 2.437000000 G	FGain:Low	Center Fr Trig: Free #Atten: 20	req: 2.43700 Run 0 dB	Avg Hold: 1	и	Radio Std: Radio Dev		Fre	quency			
0 dB/div	Ref Offset 8.64 dB Ref 18.64 dBm					Mkr	1 2.440	68 GHz 67 dBm					
164 135 1.4		املىلىدلىل	- L hol - hory	-	ماللاسه	4				enter Free 000000 GH			
1.4 1.4 1.4	and the second second					And when	New Yorke wynewy	and the first of the second					
enter 2.43 Res BW 1			#VB	W 300 k	Hz			n 80 MHz 7.667 ms	8.0	CF Ste			
Occupi	Occupied Bandwidth 35.966 MHz		z	Total Power 13.7		7 dBm		Auto Ma					
Transmit	Freq Error	3.164 k	Hz	OBW P	ower	99	.00 %			OH			
x dB Bar	ndwidth	35.16 M	Hz	x dB		-6.	00 dB						





	F	or antenna por	t 2				
Test channel	(6dB Emission I	Bandwidth (MHz))			
Test channer	802.11b	802.11g	802.11n(H20)	802.11n(H40)			
Lowest	8.112	16.34	17.60	33.96			
Middle	8.113	16.35	17.62	35.12			
Highest	8.111	16.34	17.61	35.23			
Limit:	≥500 (kHz)						
Test Result:		P/	ASS				

For antonna port 2

Test plots as follows:



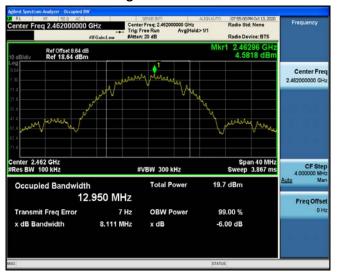
802.11b Modulation

Lowest channel



Middle channel







802.11g Modulation

Lowest channel

RL IF 50.8 AC Center Freq 2.412000001	GHz Cente	r Freq: 2.412000000 GHz Free Run Avg Hol h: 20 dB	Radio Si d: 1/1	td: None evice: BTS	Frequency
Ref Offset 8.64 d			Mkr1 2.41 -4.7	696 GHz 276 dBm	
1 36		n put min hicksto	4		Center Fre 2.412000000 GH
21.4 31.4 41.4 ppphysilsperson of the production			and the second	NHM MANANA	
Center 2.412 GHz #Res BW 100 kHz	#	VBW 300 kHz		an 40 MHz 3.867 ms	CF Ste 4.000000 MH
Occupied Bandwid	th 6.413 MHz	Total Power 12.9 dBm MHz			Auto Me Freg Offs
Transmit Freq Error x dB Bandwidth	-28.721 kHz 16.34 MHz	OBW Power x dB	99.00 % -6.00 dB		OH
#6			STATUS		

Middle channel

Center Freq 2.437000000	GHz Cente	r Freq: 2.437000000 GHz ree Run Avg Hol :: 20 dB	4.1/1	Radio Std	North Market	Frequency	
Ref Offset 8.54 dl 10 dB/div Ref 18.64 dBn			Mkr1 2.4382 GHz -4.6034 dBm				
8 64 1 36 		ny polance hadronton	4			Center Freq 2.437000000 GHz	
21.4 31.4 41.4 61.4			tween	~~/hein	instantinations		
Center 2,437 GHz #Res BW 100 kHz	#	VBW 300 kHz		Spa Sweep	n 40 MHz 3.867 ms	CF Step 4.000000 MHz Auto Mar	
Occupied Bandwidt	^h 5.410 MHz	Total Power	13.2	dBm		Freq Offse	
Transmit Freq Error x dB Bandwidth	-40.872 kHz 16.35 MHz	OBW Power x dB		00 % 00 dB		OHa	
50			STATUS				

Center Freq 2.46200000	- Trig: F	r Freq: 2.462000000 GHz Free Run Avg Hold 1: 20 dB	ALIGHAUTO £ 1/1	Radio Std: None Radio Device: BTS	Frequency
Ref Offset 8.64 0 dB/div Ref 18.64 dB	iB m		Mkr	1 2.46696 GHz -4.5855 dBm	
og 1364 136	policeritres localizations)	ny palenter her her her			Center Free 2.462000000 GH:
11.4 11.4 11.4 11.4 11.4 11.4			mar	Northwest of the second supplying	
Center 2,462 GHz Res BW 100 kHz	#	VBW 300 kHz		Span 40 MHz Sweep 3.867 ms	CF Step 4.000000 MH Auto Mar
Occupied Bandwid	th 6.396 MHz	Total Power	13.2	dBm	
Transmit Freq Error x dB Bandwidth	-35.247 kHz 16.34 MHz	OBW Power x dB		0.00 % 00 dB	Freq Offse 0 Hi
o.			STATU		



802.11n (HT20) Modulation

enter Freq 2.41200000	GHz Cente	r Freq: 2.412000000 GHz Free Run Avg Hold 1: 20 dB	ALIONAUTO E 1/1	Radio Std Radio Dev		Frequency
Ref Offset 8.64 d 0 dBidiv Ref 18.64 dBr			Mkr		324 GHz 53 dBm	
og 164 36	-	1 sin pictural manipulanticard				Center Fre 2.412000000 GH
1.4 1.4 1.4 1.4 1.4				Namahwa	Wittermet	
enter 2.412 GHz Res BW 100 kHz	#	VBW 300 kHz			n 40 MHz 3.867 ms	CF Ste 4.00000 MH
Occupied Bandwidt	^h 7.639 MHz	Total Power	12.6 dBm		Auto Ma Freq Offse	
Transmit Freq Error x dB Bandwidth	-30.401 kHz 17.60 MHz	OBW Power x dB		0.00 % 00 dB		OH

Lowest channel

Middle channel

Center Freq 2.437000000 C	Hz Cente	r Freq: 2.437000000 GHz	Radio St	PM Cet 13, 2020 d: None evice: BTS	Frequency
Ref Offset 8.64 dB 10 dB/div Ref 18.64 dBm			Mkr1 2.43 -5.3	068 GHz 204 dBm	
1 36	1	niy personani perlomana dan			Center Freq 2.437000000 GHz
21.4 31.4 41.4 61.4 61.4			Mary Mary Mary Mary	10httantrywy	
Center 2.437 GHz Res BW 100 kHz	#	VBW 300 kHz	Sp Sweep	an 40 MHz 3.867 ms	CF Step 4.000000 MHz
Occupied Bandwidth 17.	637 MHz	Total Power	12.8 dBm		Auto Mar Freg Offse
Transmit Freq Error x dB Bandwidth	-39.234 kHz 17.62 MHz	OBW Power x dB	99.00 % -6.00 dB		OHa
50			STATUS		

RL IF 50.9 AC Center Freq 2.462000000	- Trig: f	rFreq: 2.462000000 GHz Free Run Avg Hol- h: 20 dB	413914070 4: 1/1	Radio Std: None Radio Device: B1	Frequency
Ref Offset 8.64 dl	B		Mkr	2.46068 C -5.1324 d	
Log 8.64 1.36	and and a strategies	1 Na statemary subjecting	bin		Center Freq 2.462000000 GHz
21 4 21 4				dy-seefinewidghered	
Center 2.462 GHz Res BW 100 kHz		VBW 300 kHz		Span 40 Sweep 3.867	
Occupied Bandwidt 17	^h 7.620 MHz	Total Power	12.9	dBm	FreqOffse
Transmit Freq Error x dB Bandwidth	-35.161 kHz 17.61 MHz	OBW Power x dB		.00 % 00 dB	0 H3
10			STATUS		



802.11n (HT40) Modulation

Center Fre	eq 2.422000000	Trig:	Freq: 2.422000000 GHz Free Run Avg Hold n: 20 dB	ALIGHAUTO 08:1554PM Oct 13,3 Radio Std: None 1: 1/1 Radio Device: 815	Frequency
10 dB/div	Ref Offset 8.64 dB Ref 18.64 dBm			Mkr1 2.4132 G -7.3531 dE	
1 36		and and a second	hay part and the added	A-L	Center Fre 2.422000000 GH
21.4 31.4 41.4 2014 1994 61.4 61.4	nontrationstanting			Annal mark barran and the same	
Center 2.4 #Res BW			VBW 300 kHz	Span 80 N Sweep 7.667	1Hz CF Ste ms 8.00000 MH
Occup	ied Bandwidth 36	025 MHz	Total Power	13.8 dBm	Auto Ma
	it Freq Error andwidth	5.343 kHz 33.96 MHz	OBW Power x dB	99.00 % -6.00 dB	OH

Middle channel

Center Freq 2.437000000 GF	Z Cente Trig: F	r Freq: 2.437000000 GHz Free Run Avg Hold 1: 20 dB	1/1 Ri	e 19:32 PM Oct 13, 2020 Idio Std: None Idio Device: BTS	Frequency
Ref Offset 8.64 dB				2.44068 GHz -6.8139 dBm	
1 36	لللمعبدلول	1 Ing method the second	4		Center Free 2.437000000 GH
21.4 31.4 41.4 61.4			harrow	nandelikerskom styleter	
Center 2.437 GHz #Res BW 100 kHz		VBW 300 kHz	SI	Span 80 MHz weep 7.667 ms	CF Step 8.000000 MH
Occupied Bandwidth 36.0	63 MHz	Total Power	13.8 d	Bm	Auto Mar Freg Offse
Transmit Freq Error x dB Bandwidth	3.776 kHz 35.12 MHz	OBW Power x dB	99.00 -6.00		OH
10			STATUS		

-ten Trig: F	r Freq: 2.452000000 GHz Free Run Avg Hold h: 20 dB	: 1/1	td: None	Frequency
dB 3m				
hander	ny milled blocked	~		Center Free 2.452000000 GH
		- London jorenne	infrancisco de la constancia de la constanc	
	VBW 300 kHz			CF Step 8.000000 MH
	Total Power	13.8 dBm		Auto Mar Freg Offse
124 Hz 35.23 MHz	OBW Power x dB	99.00 % -6.00 dB		OH
	trian france fra	Tright Free Run Avg Held #Gain: Avg Held #Gain: Avg Held #VBW 300 kHz #VBW 300 kHz #VBW 300 kHz #th Total Power 86.070 MHz 124 Hz OBW Power	Itig Free Run Anten: 20 dB AvgHeld: 11 Radio D IdGan: Low Trig Free Run Anten: 20 dB Mrt 1 2,45 dB Mrt 1 2,45 -6,9 dB 1 -6,9 dF -6,9 -6,9 dF -7,9 -7,9 <	Trig: Free Run Argittel: '11 Radio Device: BTS #EGain:Lew Frig: Free Run Argittel: '11 Radio Device: BTS #EGain:Lew Article: 2.45568 GHz -8.9836 dBm -6.9836 dBm -8.9836 dBm ##UBULL 1 -8.9836 dBm ##UBULL 1 -8.9836 dBm ##VBW 300 kHz Span 80 MHz #VBW 300 kHz Sweep 7.667 ms #th Total Power 13.8 dBm 86.070 MHz 124 Hz OBW Power 99.00 %



4.4. Power Spectral Density

4.4.1. 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 EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication No.558074 D01 15.247 Meas Guidance v05r02 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. Set to the maximum power setting and enable the EUT transmit continuously. 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. Detector = Peak, Sweep time = auto couple. Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. Measure and record the results in the test report.
Test Result:	PASS

4.4.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Due	
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 25, 2020	
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 25, 2020	
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 25, 2020	

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



4.4.3. Test data

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)		
	Lowest	4.19	-5.81		
802.11b	Middle	4.38	-5.62		
	Highest	3.4	-6.6		
	Lowest	-10.04	-20.04		
802.11g	Middle	-9.69	-19.69		
	Highest	-9.53	-19.53		
	Lowest	-9.2	-19.2		
802.11n(H20)	Middle	-9.49	-19.49		
	Highest	-10.06	-20.06		
	Lowest	-12.84	-22.84		
802.11n(H40)	Middle	-13.09	-23.09		
	Highest	-12.98	-22.98		
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10					
Limit: 8dBm/3kHz					
Test Result:		PASS			

For antenna port 1

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel





Start Fre

Stop Fre

CF St

Freq Offse OH

3.270000 uto



802.11g Modulation

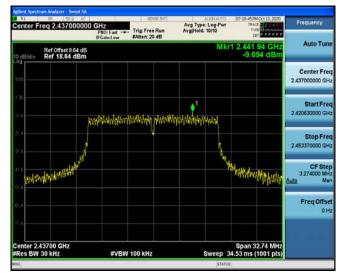
Lowest channel Frequency enter Freq 2.412000000 GHz Avg Type: Log-Pwr Avg[Hold: 10/10 Trig: Free Run WE MANAGE Auto Tur 2.414 419 8 GH -10.036 dB Ref Offset 8.64 dB Ref 18.64 dBm Center Free 2.412000000 GH nandradationforminty descenting and 2 428 AN THE PARTY PARTY PARTY

Span 32.70 MHz Sweep 34.53 ms (1001 pts) #VBW 100 kHz

all all a

enter 2.41200 GHz Res BW 30 kHz

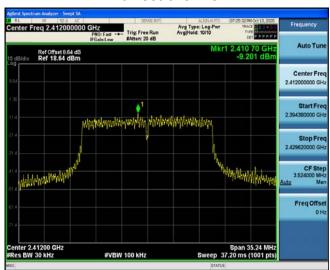
Middle channel



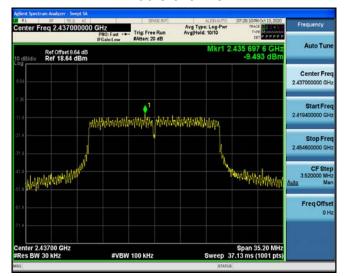




802.11n (HT20) Modulation



Middle channel



Highest channel



Lowest channel



802.11n (HT40) Modulation

Frequency nter Freq 2.422000000 GHz Avg Type: Log-Pwr Avg[Hold: 10/10 Trig: Free Run TYPE DOLLAR Auto Tur 2.436 93 GH -12.842 dB Ref Offset 8.64 dB Ref 18.64 dBm Center Free 2.422000000 GH Start Fre 96790000 Gi and the trailed white distantistict Stop Fre 2.457210000 GH CF Ste ubyhlantistajantyp drewswith. 7.04200 uto Freq Offse OH Span 70.42 MHz Sweep 74.27 ms (1001 pts) enter 2.42200 GHz Res BW 30 kHz #VBW 100 kHz

Lowest channel

Middle channel







For antenna port 2

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)		
	Lowest	4.12	-5.88		
802.11b	Middle	4.49	-5.51		
	Highest	-2.1	-12.1		
	Lowest	-10.26	-20.26		
802.11g	Middle	-9.99	-19.99		
	Highest	-9.47	-19.47		
	Lowest	-10.29	-20.29		
802.11n(H20)	Middle	-9.56	-19.56		
	Highest	-9.7	-19.7		
	Lowest	-11.42	-21.42		
802.11n(H40)	Middle	-11.59	-21.59		
	Highest	-11.87	-21.87		
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10					
Limit: 8dBm/3kHz					
Test Result:	PASS				

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel

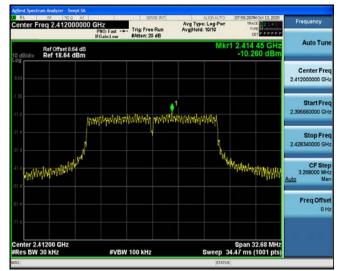






802.11g Modulation

Lowest channel



Middle channel

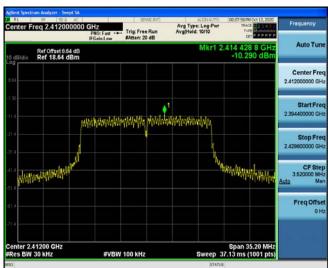


Highest channel



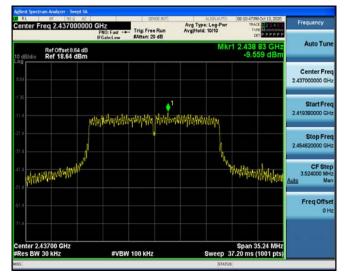


802.11n (HT20) Modulation



Lowest channel

Middle channel



Highest channel





802.11n (HT40) Modulation

Frequency enter Freq 2.422000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run VPE MULTING Auto Tur 2.430 69 GH -11.422 dB Ref Offset 8.64 dB Ref 18.64 dBm Center Free 2.422000000 GH Canto A Start Fre 040000 G waleship hireficien actually desired in Stop Fre 2 40 CF Ste Aller Marsh Land 6.792000 Freq Offse OH Span 67.92 MHz Sweep 71.67 ms (1001 pts) Center 2.42200 GHz Res BW 30 kHz #VBW 100 kHz

Middle channel



Highest channel



Lowest channel



Frequency	Power Density (dBm)	Limit (dBm)	Result
	TX 802.11n/HT20 Mode	9	
2412 MHz	-6.70	7.99	PASS
2437 MHz	-6.51	7.99	PASS
2462 MHz	-6.87	7.99	PASS
	TX 802.11n/HT40 Mode	9	
2422 MHz	-9.06	7.99	PASS
2437 MHz	-9.27	7.99	PASS
2452 MHz	-9.38	7.99	PASS
	662911, Result power = 10log end result is converted to un		

For MIMO antenna port 1+antenna port 2

Note: This product supports antenna 1 and antenna 2 launch, but only support 802.11 n for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.



4.5. Conducted Band Edge and Spurious Emission Measurement

4.5.1. 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:	
Test Mode:	Spectrum Analyzer EUT Transmitting mode with modulation Image: Content of the second
Test Procedure:	 The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v05r02. 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. Set to the maximum power setting and enable the EUT transmit continuously. 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). Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS



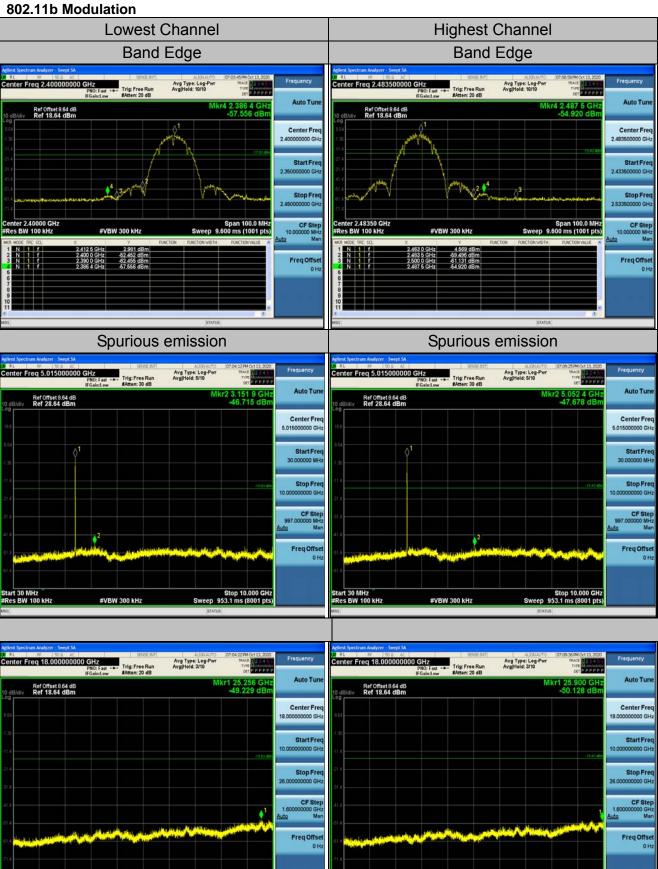
4.5.2. Test Instruments

RF Test Room										
Equipment	Manufacturer	Model	Serial Number	Calibration Due						
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 25, 2020						
Signal generator	Agilent	N5183A	HKE-071	Dec. 25, 2020						
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 25, 2020						
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 25, 2020						

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



4.5.3. Test Data Chain 1



Start 10.000 GHz #Res BW 100 kHz

#VBW 300 kHz

Stop 26.000 GHz Sweep 1.530 s (8001 pts)

tart 10.000 GHz Res BW 100 kHz

#VBW 300 kHz

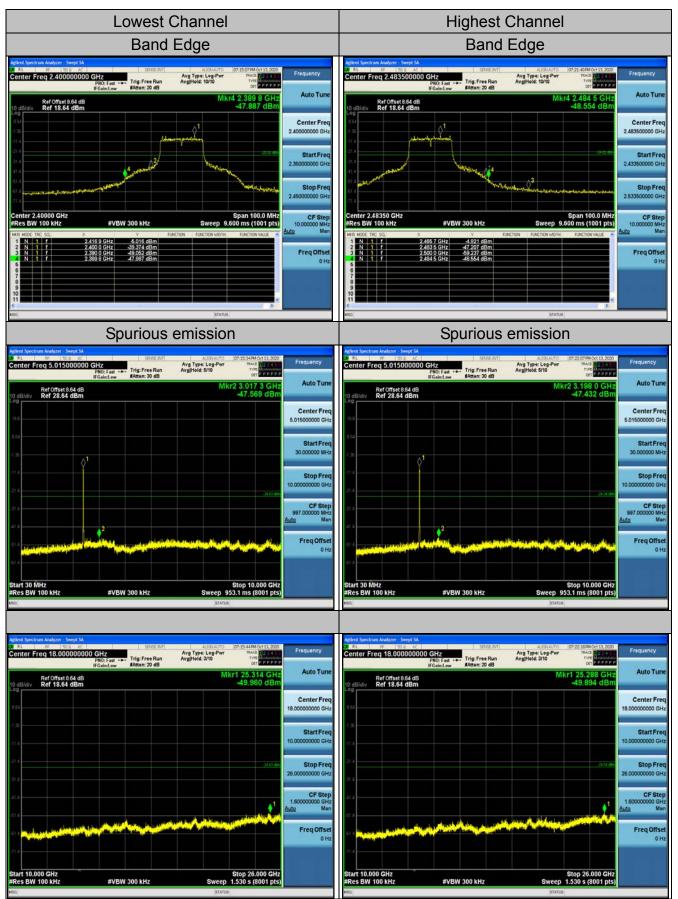
Stop 26.000 GHz Sweep 1.530 s (8001 pts



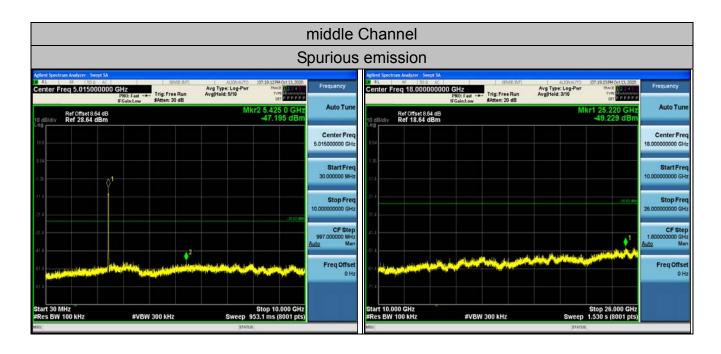
middle (Channel	
Spurious	emission	
A13/LALITO 07:06-45 M Oct 13, 2000 pre: Log-Per 19402 Parts	Aglinet Spectrum Analyzer - Swyst SA 24 RL 500 CC - State - St	AUXIMITO 070656FM0413.000 Type: Log Pur Thus: RES A
-46.476 dBm	Ref Offset 8.64 dB 10 dB/div Ref 18.64 dBm	Mkr1 24,722 GHz -50.265 dBm
Center Freq 5.015000000 GHz	8.64	Center Fre 18.00000000 GH
Start Freq 30.000000 MHz	335	Start Fre 10.00000000 G
Stop Freq 10.00000000 GHz	27.4	Stop Fre 26.00000000 GH
CF Step 997.000000 MHz <u>Auto</u> Man	81.4	CF Ste 1,5000000 G Auto Ma
Freq Offset 0 Hz		FreqOffs 01
Stop 10.000 GHz Sweep 953.1 ms (8001 pts)	Start 10.000 GHz #VBW 300 kHz	Stop 26.000 GHz Sweep 1.530 s (8001 pts)
	Spurious	AUX/UNTO



802.11g Modulation

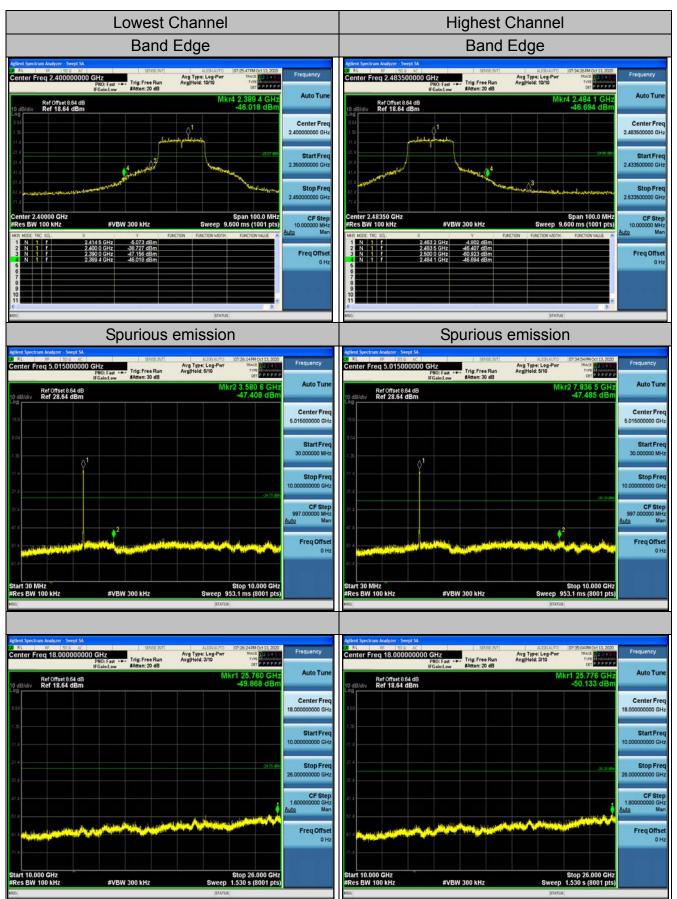








802.11n (HT20) Modulation

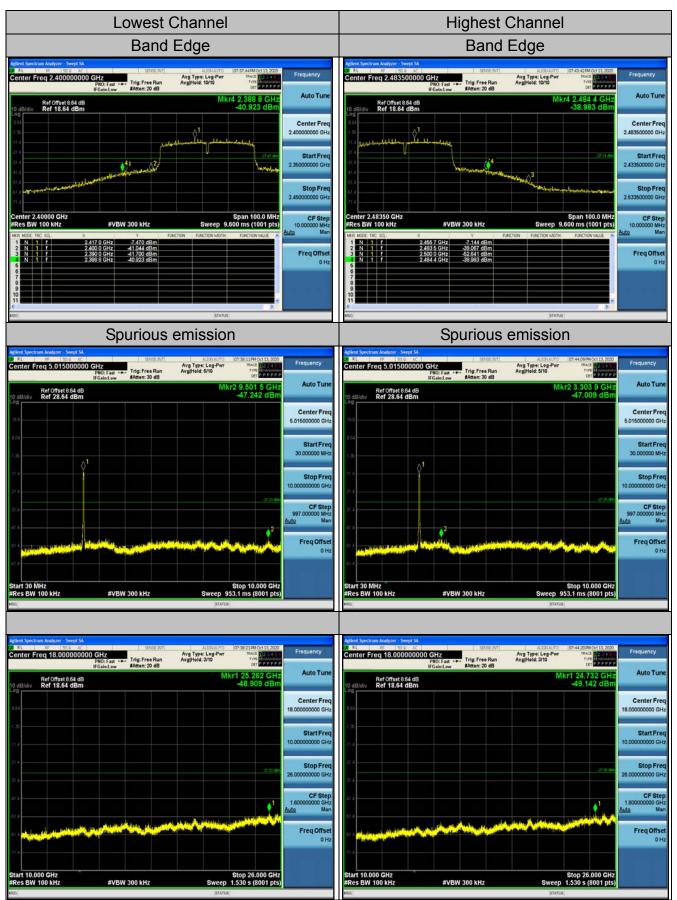




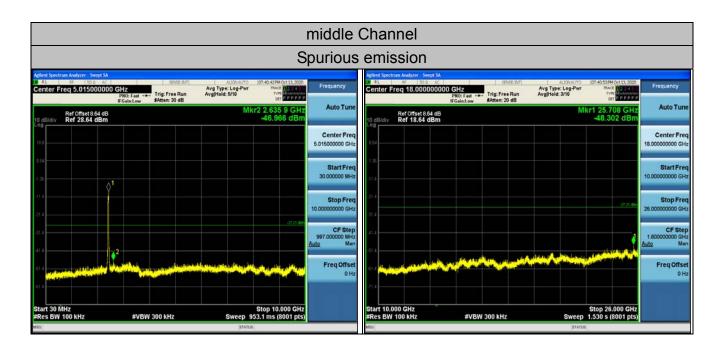
			nnel	middle (
			ssion	purious	S						
Frequency	ALSHAUTO 07:29:47PM Oct 13, 2020 Avg Type: Log-Pwr TRACE 02:20 Avg/Hold: 3/10 TVVE	PNO: Fast Trig: Free Run	trum Analyzer - Swept SA RF 50 0 AC Freq 18.000000000	Frequency	07-29-37 PM Oct 13, 2020 TRACE RES 4 5 TYPE CONTRACT 10 P P P P P	ALXYADTO Avg Type: Log-Pwr AvgjHold: 5/10	server avri ree Run	Fast Trig.F	00 GHz PNO: Fa	m Analyzer - Swey IF 50 e req 5.015000	RL
	Mkr1 24.674 GHz -50.269 dBm	IFGaincLow #Atten: 20 dB	Ref Offset 8.64 dB Ref 18.64 dBm	Auto Tune	2 5.649 3 GHz -47.575 dBm	Mkr	30 BB	Low Priter	IFGaincl.	Ref Offset 8.64 Ref 28.64 dl	dB/div
Center Fre 18.00000000 G				Center Freq 5.015000000 GHz							6
Start Fro 10.000000000 G				Start Freq 30.000000 MHz					A1		4 0
Stop Fr 26.000000000 G	-24 60 after			Stop Freq 10.00000000 GHz					Ŷ		۰ ۰
CF St 1.600000000 G <u>Auto</u> M				CF Step 997.000000 MHz <u>Auto</u> Man	-3.00 dbs						4
Freq Offs 01		المعلمين المعالم المتعملاتين	بهجيم المصفحة المستطعية	Freq Offset 0 Hz	وللمناجع والمع	ne richier		White White	, at in the second	a ta	
	Stop 26.000 GHz Sweep 1.530 s (8001 pts)	#VBW 300 kHz	000 GHz / 100 kHz		Stop 10.000 GHz 3.1 ms (8001 pts)		17	#VBW 300 ki		Hz 100 kHz	art 30 M
	Sweep 1.550 S (8001 pts)	WOW 300 KHZ	100 102		or this (abor pis)	Sweep 95		WEDTE SOU KI		100 KH2	



802.11n (HT40) Modulation

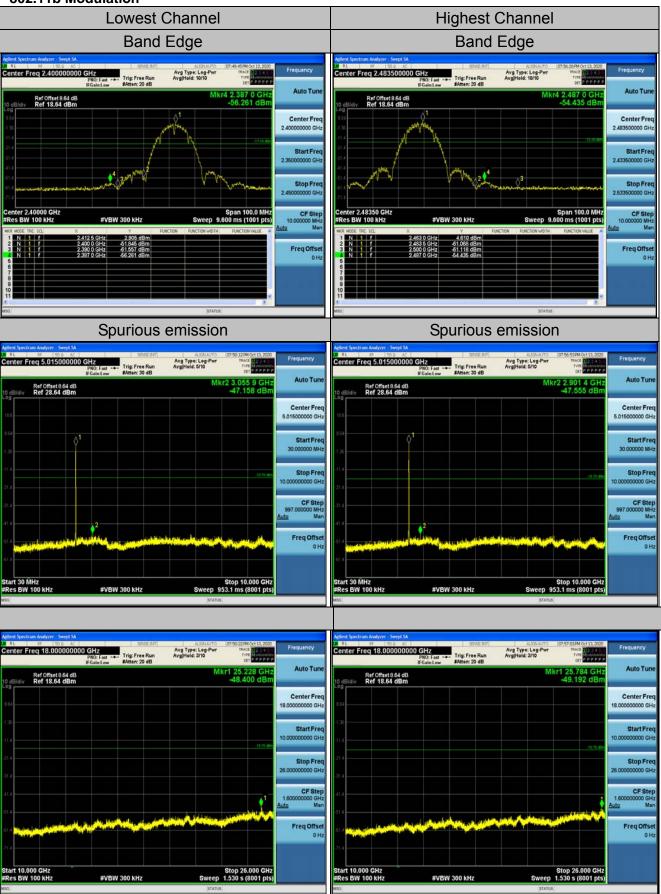








Chain 2 802.11b Modulation

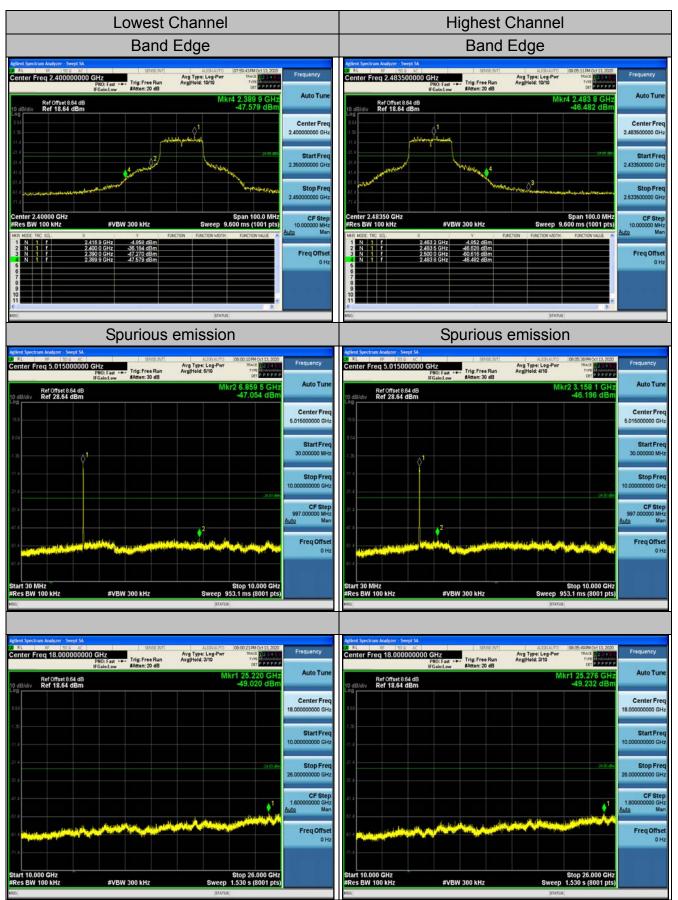




					middle (Char	nnel					
				S	purious	emis	ssion					
Aglient Spectrum Analyzer - Swept SA RL NF 50.0 AC Center Freq 5.015000000		Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr Avg[Hold: 5/10	07 52-36 PM Oct 13, 2020 TRACE 11 2 2 4 5 TYPE MUMMUN CET P P P P P	Frequency	COD RL	rum Analyzer - Swept SA NF 500 AC Freq 18.00000000	00 GH2 PN0: Fast ↔↔	Trig: Free Run #Atten: 20 dB	Avg Type: Log-Pwr Avg Hold: 3/10		Frequency
Ref Offset 8.64 dB			M	46.849 dBm	Auto Tune	10 dB/div	Ref Offset 8.64 dB Ref 18.64 dBm			N	Akr1 25.268 GHz -49.432 dBm	Auto Tun
18.6					Center Freq 5.015000000 GHz	Log 8.64						Center Fre 18.00000000 GH
1.35	1				Start Freq 30.000000 MHz	-11.4					-15 52 dbs	Start Fre 10.00000000 GH
21.4				-15.52 albe	Stop Freq 10.000000000 GHz	-21.4 -31.4						Stop Fre 26.000000000 GH
81.4 41.4					CF Step 997.000000 MHz Auto Man	-41.4						CF Step 1.600000000 GH <u>Auto</u> Mar
61.4 Systemusically in the standard	YN PAN W <mark>WE</mark>	and the second design of the second		lahigininger ali	Freq Offset 0 Hz	-61.4 -71.4		الإيلام خالي	titi get and the			Freq Offse 0 H
start 30 MHz Res BW 100 kHz	#VBW	300 kHz	Sweep 9	Stop 10.000 GHz 53.1 ms (8001 pts)		Start 10.0 #Res BW		#VBW	300 kHz	Swee	Stop 26.000 GHz 1.530 s (8001 pts)	



802.11g Modulation

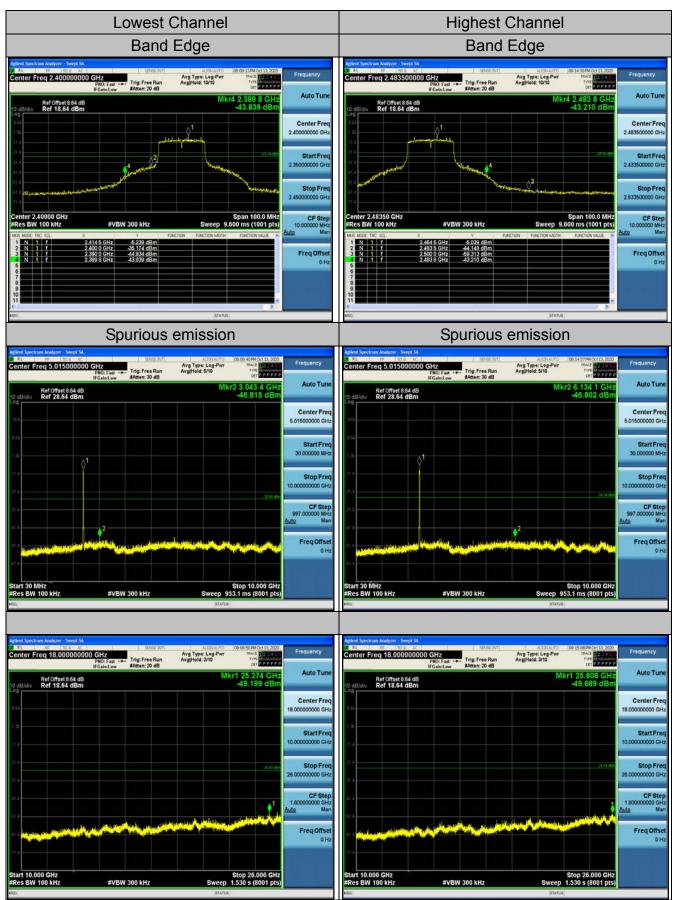




						middle	Char	nnel					
					S	purious	emi	ssion					
UN RL	rum Analyzer - Swept SA IIF 500 AC Treq 5.015000000		Trig: Free Run #Atten: 30 dB	Aug Type: Log-f Avg Type: Log-f Avg Hold: 5/10		Frequency	LOD RL	trum Analyzer - Sweg IIF 500 Freq 18.00001	AC	Trig: Free Run #Atten: 20 dB	Avg Type: Log-Pwr Avg Hold: 3/10	08-02-46 PM Oct 13, 2000 TRACE 23 4 4 Type CET P P P P P P	Frequency
10 dB/div	Ref Offset 8.64 dB Ref 28.64 dBm	FORILLEW	Printing of all		Mkr2 7.806 6 GHz -46.437 dBm	Auto Tune	10 dB/div	Ref Offset 8.64 Ref 18.64 di	d dB	Printer and and	N	lkr1 25.270 GHz -50.098 dBm	Auto Tune
18.6						Center Freq 5.015000000 GHz	8.64						Center Free 18.00000000 GH
8 64		,				Start Freq 30.000000 MHz	-1.35						Start Fre 10.000000000 GH
.11.4						Stop Freq 10.00000000 GHz	-21.4					-2676.08%	Stop Fre 26.00000000 GH
31.4					-3478 dbs	CF Step 997.000000 MHz <u>Auto</u> Man	-41.4					• ¹	CF Ste 1.60000000 GH <u>Auto</u> Ma
61.4		, interest	and the second secon	A A MARINE A MARINE AND A	and the second second	Freq Offset 0 Hz	61.4	ni di setta di di	والمتاج والمحادث العجاد	المنب والمنالم	n dia ang ang ang ang ang ang ang ang ang an	A Charleston and the second	Freq Offse 0 H
Start 30 N					Stop 10.000 GHz		371.4 Start 10.	000 CH2				Stop 26.000 GHz	
#Res BW		#VBW	/ 300 kHz		p 953.1 ms (8001 pts)			100 GH2	#VB	W 300 kHz	Sweep	1.530 s (8001 pts)	



802.11n (HT20) Modulation

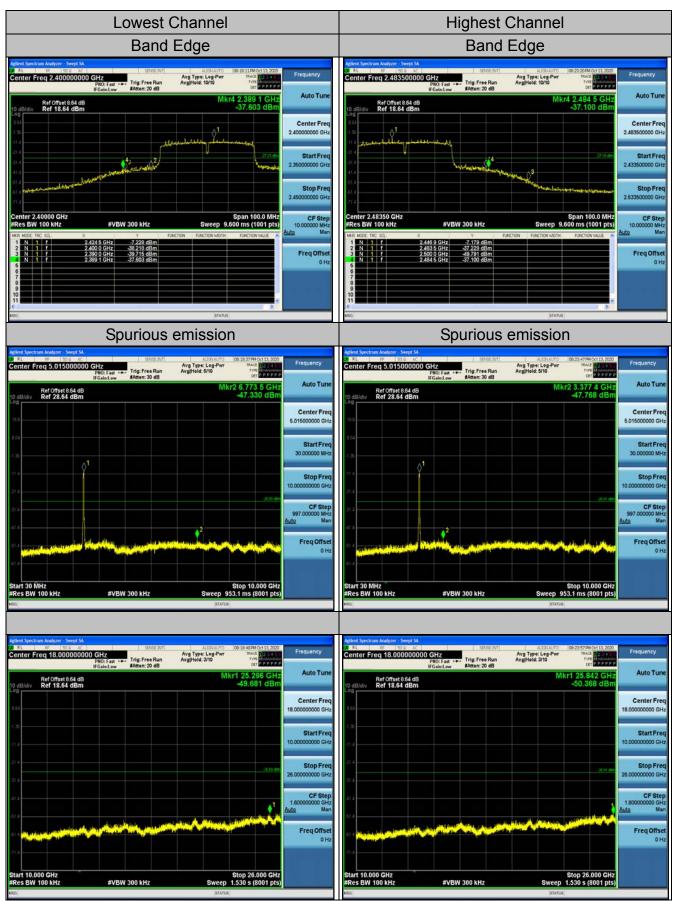




						middle	Char	nnel						
					S	purious	emi	ssion	I					
RL	trum Analyzer - Swept SA IF 50 0 AC Freq 5.01500000	0 GHz PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log- Avg Hold: 5/10		Frequency	LOO RL		© AC 0000000 GH2 PNO:	Fast Trig: Fre		Avg Type: Log-Pwr Avg Hold: 3/10		Frequency
0 dB/div	Ref Offset 8.64 dB Ref 28.64 dBm	IFGain:Low	BAtten: 30 ab		Mkr2 2.670 8 GHz -47.414 dBm	Auto Tune	10 dB/div	Ref Offset 8. Ref 18.64	IFGair 1,64 dB dBm	clew Priter.	20 65	P	Akr1 25.744 GH2 -50.074 dBm	Auto Tun
0g						Center Freq 5.015000000 GHz	8.64							Center Free 18.000000000 GH
364						Start Freq 30.000000 MHz	-11.4							Start Fre 10.00000000 GH
21.4					-25.23.054	Stop Freq 10.00000000 GHz	-21.4						-25.33 dB	Stop Fre 26.00000000 GH
1.4						CF Step 997.000000 MHz Auto Man	41.4							CF Ste 1.60000000 GH Auto Ma
51.4 241 8	a di sa si sa di sa		a a a a a a a a a a a a a a a a a a a	adolati a su patembratin	يدينه وراب المراجع	Freq Offset 0 Hz	61.4	استناب البيابين	الجنانية	wind	and the second	inin ^A n ^a ittain	فالمسلبلينين	Freq Offse 0 H
tart 30					Stop 10.000 GHz		Start 10.						Stop 26.000 GHz	
Res BV	/ 100 kHz	#VE	W 300 kHz		ep 953.1 ms (8001 pts) status		#Res BW	V 100 kHz		#VBW 300 kH	z	Swee	p 1.530 s (8001 pts	



802.11n (HT40) Modulation





			nnel	middle (I				
			ssion	purious	S				
Frequency	ALX91AUTO 00:21:19PM Oct 13, 2020 Avg Type: Log-Pwr Avg[Hold: 3/10 trie Get DPPPPP	PNO: Fast Trig: Free Run	ctrum Analyzer - Swept SA	Frequency	00:21:09PM Oct 13, 2020 TRACE DESIGN 0 TYPE	Aug Type: Log-Pwr Avg Type: Log-Pwr Avg Hold: 5/10		R AC 000000 GHz PNO: Fast	nt Spectrum Analyzer L IF Inter Freq 5.01
Auto Tun	Mkr1 25.822 GHz -48.616 dBm	IFGaincLow #Atten: 20 dB	Ref Offset 8.64 dB Ref 18.64 dBm	Auto Tune	r2 5.962 2 GHz -47.040 dBm	Mki	BAtten: JU dB	IFGain:Lew (64 dB dBm	Ref Offse Bidiy Ref 28.
Center Fre 18.00000000 GH				Center Freq 5.015000000 GHz					
Start Fre 10.000000000 Gi				Start Freq 30.000000 MHz					
Stop Fr 26.00000000 G	-27.10 dBs			Stop Freq 10.00000000 GHz				\$' 	
CF Str 1.60000000 G <u>Auto</u> M				CF Step 997.000000 MHz <u>Auto</u> Man					
Freq Offs 01		المفتوعينا فالمفاقي	ببالمسترقة والفافية والمعادية	Freq Offset 0 Hz	and the second secon	entropid a distributive interpreter		يعجانهم أتتبيه	a de la constante de la constan
	Stop 26.000 GHz		.000 GHz		Stop 10.000 GHz				1 30 MHz
	Sweep 1.530 s (8001 pts)	#VBW 300 kHz	V 100 kHz		53.1 ms (8001 pts)		BW 300 kHz	#V	s BW 100 kHz

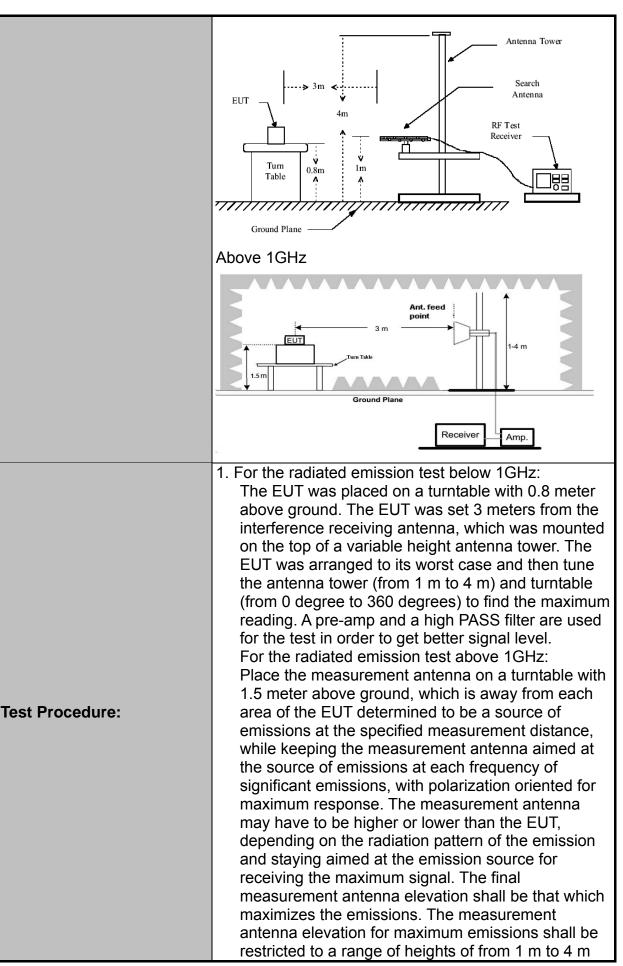


4.6. Radiated Spurious Emission Measurement

4.6.1. Test Specification

Test Requirement:	FCC Part15	C Sect	ion	n 15.209			
Test Method:	ANSI C63.10): 2013					
Frequency Range:	9 kHz to 25 (GHz					
Measurement Distance:	3 m						
Antenna Polarization:	Horizontal &	Vertica	al				
Operation mode:	Transmitting	mode	wit	h modulati	on		
	Frequency 9kHz- 150kHz	Detec Quasi-r		RBW k 200Hz	VBW 1kHz	Qua	Remark si-peak Value
Receiver Setup:	150kHz- 30MHz	Quasi-			30kHz		si-peak Value
	30MHz-1GHz	Quasi-µ Pea		k 120KHz 1MHz	300KHz 3MHz		si-peak Value eak Value
	Above 1GHz	Pea		1MHz	10Hz		erage Value
	Field Strength						asurement ince (meters)
	0.009-0.4			2400/F(K			300
	0.490-1.7			24000/F(I 30	KHZ)	30 30	
	30-88	0		100		3	
	88-216			150		3	
Limit:	216-96 Above 9			200 500			3
		00		500			5
	Frequency			d Strength ovolts/meter)	Measure Distan (meter	се	Detector
	Above 1GHz			500	3		Average
				5000	3		Peak
Test setup:	For radiated	_	urn Table	3 m)↑ 1m	
	30MHz to 10	GHz					







Test results:	 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. 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.
rest results:	radd



4.6.2. Test Instruments

	Radiated Em	nission Test Si	ite (966)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Receiver	R&S	ESCI-7	HKE-010	Dec. 25, 2020
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 25, 2020
Preamplifier	EMCI	EMC051845 SE	HKE-015	Dec. 25, 2020
Preamplifier	Agilent	83051A	HKE-016	Dec. 25, 2020
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 25, 2020
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Dec. 25, 2020
Horn antenna	Schwarzbeck	9120D	HKE-013	Dec. 25, 2020
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Dec. 25, 2020
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A
RF cable (9KHz-1GHz)	Times	381806-001	N/A	N/A
RF cable	Times	1-40G	HKE-034	Dec. 25, 2020

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



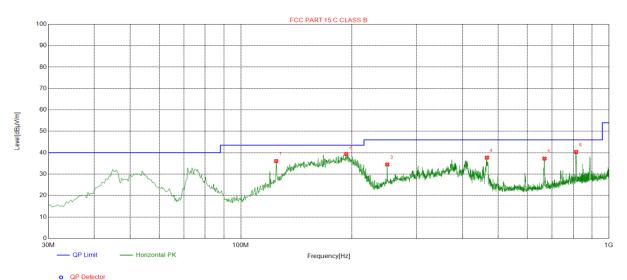
4.6.3. Test Data

Please refer to following diagram for individual Below 1GHz

test mode: TX 802.11b 2412MHz

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

Horizontal

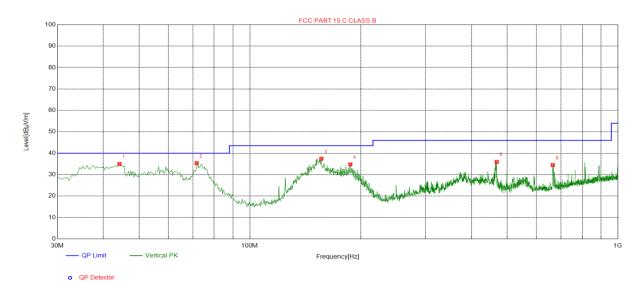


Suspe	Suspected List									
NO.	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	Delerity	
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
1	124.7683	-17.80	53.91	36.11	43.50	7.39	100	351	Horizontal	
2	193.3378	-15.69	55.08	39.39	43.50	4.11	100	360	Horizontal	
3	249.9400	-13.39	47.91	34.52	46.00	11.48	100	12	Horizontal	
4	466.3221	-8.46	46.17	37.71	46.00	8.29	100	128	Horizontal	
5	668.4728	-4.66	41.93	37.27	46.00	8.73	100	266	Horizontal	
6	814.3448	-2.85	43.19	40.34	46.00	<mark>5.6</mark> 6	100	266	Horizontal	

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



Vertical



Suspected List Freq. Factor Reading Level Limit Margin Height Angle NO. Polarity [MHz] [dB] [dBµV/m] [dBµV/m] [dBµV/m] [dB] [cm] [°] 44.2314 48.74 34.95 40.00 5.05 100 300 1 -13.79 Vertical 2 71.7239 -17.98 53.36 35.38 40.00 4.62 100 0 Vertical 43.50 6.05 100 3 156.4655 -18.47 55.92 37.45 303 Vertical 4 187.5158 -16.22 51.00 34.78 43.50 8.72 100 225 Vertical 5 468.5862 -8.39 44.35 35.96 46.00 10.04 100 266 Vertical 665.5619 -4.84 39.33 34.49 46.00 11.51 100 218 Vertical 6

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

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)

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	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	61.33	-3.64	57.69	74	-16.31	peak
4824	46.55	-3.64	42.91	54	-11.09	AVG
7236	56.3	-0.95	55.35	74	-18.65	peak
7236	42.48	-0.95	41.53	54	-12.47	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	61.55	-3.64	57.91	74	-16.09	peak
4824	46.65	-3.64	43.01	54	-10.99	AVG
7236	56.3	-0.95	55.35	74	-18.65	peak
7236	43.27	-0.95	42.32	54	-11.68	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			



MID CH6 (802.11b Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	65.02	-3.51	61.51	74	-12.49	peak
4874	45.51	-3.51	42	54	-12	AVG
7311	56.32	-0.82	55.5	74	-18.5	peak
7311	37.19	-0.82	36.37	54	-17.63	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре				
4874	61.73	-3.51	58.22	74	-15.78	peak				
4874	43.34	-3.51	39.83	54	-14.17	AVG				
7311	55.33	-0.82	54.51	74	-19.49	peak				
7311	41.39	-0.82	40.57	54	-13.43	AVG				
Remark: Factor	= Antenna Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.								



HIGH CH11 (802.11b Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	61.08	-3.43	57.65	74	-16.35	peak
4924	42.18	-3.43	38.75	54	-15.25	AVG
7386	53.98	-0.75	53.23	74	-20.77	peak
7386	39.5	-0.75	38.75	54	-15.25	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.		-	-

Vertical:

Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
62.22	-3.43	58.79	74	-15.21	peak
44.24	-3.43	40.81	54	-13.19	AVG
52.34	-0.75	51.59	74	-22.41	peak
37.24	-0.75	36.49	54	-17.51	AVG
	(dBµV) 62.22 44.24 52.34	(dBµV) (dB) 62.22 -3.43 44.24 -3.43 52.34 -0.75	(dBµV) (dB) (dBµV/m) 62.22 -3.43 58.79 44.24 -3.43 40.81 52.34 -0.75 51.59	(dBµV) (dB) (dBµV/m) (dBµV/m) 62.22 -3.43 58.79 74 44.24 -3.43 40.81 54 52.34 -0.75 51.59 74	(dBµV) (dB) (dBµV/m) (dBµV/m) (dBµV/m) 62.22 -3.43 58.79 74 -15.21 44.24 -3.43 40.81 54 -13.19 52.34 -0.75 51.59 74 -22.41

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 recorded 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 Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH1 (802.11g Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	63.01	-3.64	59.37	74	-14.63	peak
4824	42	-3.64	38.36	54	-15.64	AVG
7236	53.23	-0.95	52.28	74	-21.72	peak
7236	43.08	-0.95	42.13	54	-11.87	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	61.07	-3.64	57.43	74	-16.57	peak
4824	43.63	-3.64	39.99	54	-14.01	AVG
7236	56.66	-0.95	55.71	74	-18.29	peak
7236	41.66	-0.95	40.71	54	-13.29	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			



MID CH6 (802.11g Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	61.49	-3.51	57.98	74	-16.02	peak
4874	48.47	-3.51	44.96	54	-9.04	AVG
7311	53.58	-0.82	52.76	74	-21.24	peak
7311	43.32	-0.82	42.5	54	-11.5	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	63.14	-3.51	59.63	74	-14.37	peak
4874	43.87	-3.51	40.36	54	-13.64	AVG
7311	50.68	-0.82	49.86	74	-24.14	peak
7311	41.83	-0.82	41.01	54	-12.99	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			



HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
4924	59.14	-3.43	55.71	74	-18.29	peak	
4924	44.08	-3.43	40.65	54	-13.35	AVG	
7386	53.94	-0.75	53.19	74	-20.81	peak	
7386	38.96	-0.75	38.21	54	-15.79	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
4924	60.17	-3.43	56.74	74	-17.26	peak	
4924	44.95	-3.43	41.52	54	-12.48	AVG	
7386	51.96	-0.75	51.21	74	-22.79	peak	
7386	40.35	-0.75	39.6	54	-14.4	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 recorded 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 Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	60.24	-3.64	56.6	74	-17.4	peak
4824	46.83	-3.64	43.19	54	-10.81	AVG
7236	57.17	-0.95	56.22	74	-17.78	peak
7236	42.18	-0.95	41.23	54	-12.77	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
4824	62.5	-3.64	58.86	74	-15.14	peak	
4824	46.96	-3.64	43.32	54	-10.68	AVG	
7236	56.61	-0.95	55.66	74	-18.34	peak	
7236	40.54	-0.95	39.59	54	-14.41	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
4874.00	63.98	-3.51	60.47	74.00	-13.53	peak	
4874.00	41.97	-3.51	38.46	54.00	-15.54	AVG	
7311.00	54.06	-0.82	53.24	74.00	-20.76	peak	
7311.00	44.08	-0.82	43.26	54.00	-10.74	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
4874.00	60.49	-3.51	56.98	74.00	-17.02	peak	
4874.00	46.06	-3.51	42.55	54.00	-11.45	AVG	
7311.00	54.58	-0.82	53.76	74.00	-20.24	peak	
7311.00	42.25	-0.82	41.43	54.00	-12.57	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



HIGH CH11 (802.11n/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4924	57.31	-3.43	53.88	74	-20.12	peak		
4924	44.02	-3.43	40.59	54	-13.41	AVG		
7386	53.50	-0.75	52.75	74	-21.25	peak		
7386	42.72	-0.75	41.97	54	-12.03	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4924	64.1	-3.43	60.67	74	-13.33	peak		
4924	43.18	-3.43	39.75	54	-14.25	AVG		
7386	53.41	-0.75	52.66	74	-21.34	peak		
7386	38.74	-0.75	37.99	54	-16.01	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



LOW CH3 (802.11n/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4844	58.78	-3.63	55.15	74	-18.85	peak		
4844	45.39	-3.63	41.76	54	-12.24	AVG		
7266	55.12	-0.94	54.18	74	-19.82	peak		
7266	44.92	-0.94	43.98	54	-10.02	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4844	61.39	-3.63	57.76	74	-16.24	peak		
4844	46.51	-3.63	42.88	54	-11.12	AVG		
7266	51.92	-0.94	50.98	74	-23.02	peak		
7266	40.91	-0.94	39.97	54	-14.03	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4874	60.86	-3.51	57.35	74	-16.65	peak		
4874	46.68	-3.51	43.17	54	-10.83	AVG		
7311	53.15	-0.82	52.33	74	-21.67	peak		
7311	43.86	-0.82	43.04	54	-10.96	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4874	60.9	-3.51	57.39	74	-16.61	peak		
4874	43.54	-3.51	40.03	54	-13.97	AVG		
7311	55.15	-0.82	54.33	74	-19.67	peak		
7311	38.67	-0.82	37.85	54	-16.15	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



HIGH CH9 (802.11n/H40 Mode)/2452 Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4904	61.95	-3.43	58.52	74	-15.48	peak
4904	43.69	-3.43	40.26	54	-13.74	AVG
7356	53.39	-0.75	52.64	74	-21.36	peak
7356	43.27	-0.75	42.52	54	-11.48	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			-

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4904	60.98	-3.43	57.55	74	-16.45	peak		
4904	47.67	-3.43	44.24	54	-9.76	AVG		
7356	53.88	-0.75	53.13	74	-20.87	peak		
7356	41.62	-0.75	40.87	54	-13.13	AVG		
Remark: Factor	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 recorded 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 Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



MIMO:

LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4824	59.25	-3.64	55.61	74	-18.39	peak		
4824	46.32	-3.64	42.68	54	-11.32	AVG		
7236	57.51	-0.95	56.56	74	-17.44	peak		
7236	42.05	-0.95	41.1	54	-12.9	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4824	61.13	-3.64	57.49	74	-16.51	peak		
4824	46.57	-3.64	42.93	54	-11.07	AVG		
7236	56.54	-0.95	55.59	74	-18.41	peak		
7236	40.97	-0.95	40.02	54	-13.98	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4874.00	62.85	-3.51	59.34	74.00	-14.66	peak		
4874.00	41.36	-3.51	37.85	54.00	-16.15	AVG		
7311.00	52.90	-0.82	52.08	74.00	-21.92	peak		
7311.00	42.91	-0.82	42.09	54.00	-11.91	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4874.00	60.02	-3.51	56.51	74.00	-17.49	peak		
4874.00	45.75	-3.51	42.24	54.00	-11.76	AVG		
7311.00	53.20	-0.82	52.38	74.00	-21.62	peak		
7311.00	41.02	-0.82	40.20	54.00	-13.80	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



HIGH CH11 (802.11n/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4924	55.94	-3.43	52.51	74	-21.49	peak		
4924	43.14	-3.43	39.71	54	-14.29	AVG		
7386	52.29	-0.75	51.54	74	-22.46	peak		
7386	42.11	-0.75	41.36	54	-12.64	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4924	64.41	-3.43	60.98	74	-13.02	peak		
4924	43.24	-3.43	39.81	54	-14.19	AVG		
7386	52.1	-0.75	51.35	74	-22.65	peak		
7386	38.69	-0.75	37.94	54	-16.06	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



LOW CH3 (802.11n/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4844	58.63	-3.63	55	74	-19	peak		
4844	45.68	-3.63	42.05	54	-11.95	AVG		
7266	53.70	-0.94	52.76	74	-21.24	peak		
7266	45.15	-0.94	44.21	54	-9.79	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4844	61.06	-3.63	57.43	74	-16.57	peak		
4844	45.80	-3.63	42.17	54	-11.83	AVG		
7266	52.21	-0.94	51.27	74	-22.73	peak		
7266	40.94	-0.94	40	54	-14	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4874	59.97	-3.51	56.46	74	-17.54	peak		
4874	46.45	-3.51	42.94	54	-11.06	AVG		
7311	53.48	-0.82	52.66	74	-21.34	peak		
7311	43.75	-0.82	42.93	54	-11.07	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
4874	60.65	-3.51	57.14	74	-16.86	peak		
4874	44.03	-3.51	40.52	54	-13.48	AVG		
7311	55.39	-0.82	54.57	74	-19.43	peak		
7311	38.28	-0.82	37.46	54	-16.54	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



HIGH CH9 (802.11n/H40 Mode)/2452 Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4904	60.66	-3.43	57.23	74	-16.77	peak
4904	42.59	-3.43	39.16	54	-14.84	AVG
7356	51.98	-0.75	51.23	74	-22.77	peak
7356	41.79	-0.75	41.04	54	-12.96	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss –	Pre-amplifier.			

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delecior Type
4904	61.32	-3.43	57.89	74	-16.11	peak
4904	47.76	-3.43	44.33	54	-9.67	AVG
7356	54.21	-0.75	53.46	74	-20.54	peak
7356	42.08	-0.75	41.33	54	-12.67	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 recorded 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 Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



Test Result of Radiated Spurious at Band edges

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

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type		
2310	62.72	-5.81	56.91	74	-17.09	peak		
2310	1	-5.81	/	54	1	AVG		
2390	62.29	-5.84	56.45	74	-17.55	peak		
2390	52.87	-5.84	47.03	54	-6.97	AVG		
2400	62.33	-5.84	56.49	74	-17.51	peak		
2400	48.29	-5.84	42.45	54	-11.55	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	55.86	-5.81	50.05	74	-23.95	peak		
2310	1	-5.81	1	54	1	AVG		
2390	61.44	-5.84	55.6	74	-18.4	peak		
2390	48.31	-5.84	42.47	54	-11.53	AVG		
2400	62.57	-5.84	56.73	74	-17.27	peak		
2400	45.66	-5.84	39.82	54	-14.18	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	58.47	-5.65	52.82	74	-21.18	peak		
2483.50	1	-5.65	1	54	1	AVG		
2500.00	53.79	-5.65	48.14	74	-25.86	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	56.39	-5.65	50.74	74	-23.26	peak		
2483.50	/	-5.65	1	54	/	AVG		
2500.00	55.22	-5.65	49.57	74	-24.43	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.								
Remark: All the	other emissions n	ot reported were	e too low to read a	nd deemed to c	omply with FCC	; limit.		



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

Emission Level Frequency Meter Reading Limits Factor Margin Detector Type (MHz) (dBµV) (dB) (dBµV/m) (dBµV/m) (dB) 2310 56.29 -5.81 50.48 74 -23.52 peak 2310 / -5.81 / / AVG 54 2390 61.48 -5.84 55.64 74 -18.36 peak 2390 46.74 -5.84 40.9 54 -13.1 AVG 2400 62.11 -5.84 56.27 74 -17.73 peak 2400 49.59 -5.84 43.75 54 -10.25 AVG Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	56.67	-5.81	50.86	74	-23.14	peak		
2310	1	-5.81	1	54	1	AVG		
2390	62.55	-5.84	56.71	74	-17.29	peak		
2390	48.17	-5.84	42.33	54	-11.67	AVG		
2400	61.38	-5.84	55.54	74	-18.46	peak		
2400	47.45	-5.84	41.61	54	-12.39	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	59.66	-5.65	54.01	74	-19.99	peak		
2483.50	1	-5.65	1	54	1	AVG		
2500.00	53.37	-5.65	47.72	74	-26.28	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	51.79	-5.65	46.14	74	-27.86	peak		
2483.50	1	-5.65	/	54	1	AVG		
2500.00	52.44	-5.65	46.79	74	-27.21	peak		
2500.00	1	-5.65	/	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							
Remark: All the	other emissions n	ot reported were	e too low to read a	nd deemed to c	omply with FCC	; limit.		



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

Meter Reading **Emission Level** Frequency Factor Limits Margin Detector Type (MHz) (dBµV) (dB) (dBµV/m) (dBµV/m) (dB) 2310 56.29 -5.81 50.48 74 -23.52 peak / / 2310 -5.81 54 / AVG 2390 61.22 -5.84 55.38 74 -18.62 peak 2390 48.37 -5.84 42.53 54 -11.47 AVG 2400 60.44 -5.84 54.6 74 -19.4 peak -5.84 2400 48.68 42.84 54 -11.16 AVG Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	54.76	-5.81	48.95	74	-25.05	peak		
2310	/	-5.81	/	54	/	AVG		
2390	63.49	-5.84	57.65	74	-16.35	peak		
2390	47.84	-5.84	42	54	-12	AVG		
2400	64.69	-5.84	58.85	74	-15.15	peak		
2400	48.77	-5.84	42.93	54	-11.07	AVG		
Remark: Factor	emark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	55.76	-5.65	50.11	74	-23.89	peak		
2483.50	1	-5.65	1	54	1	AVG		
2500.00	54.44	-5.65	48.79	74	-25.21	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type	
2483.50	56.63	-5.65	50.98	74	-23.02	peak	
2483.50	1	-5.65	/	54	1	AVG	
2500.00	54.74	-5.65	49.09	74	-24.91	peak	
2500.00	1	-5.65	/	54	1	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							
Remark: All the	other emissions n	ot reported were	e too low to read a	nd deemed to c	omply with FCC	; limit.	



Operation Mode: 802.11n/H40 Mode TX CH Low (2422MHz)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	60.21	-5.81	54.4	74	-19.6	peak		
2310	1	-5.81	/	54	1	AVG		
2390	62.54	-5.84	56.7	74	-17.3	peak		
2390	45.87	-5.84	40.03	54	-13.97	AVG		
2400	62.67	-5.84	56.83	74	-17.17	peak		
2400	45.66	-5.84	39.82	54	-14.18	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	58.47	-5.81	52.66	74	-21.34	peak		
2310	1	-5.81	1	54	1	AVG		
2390	61.45	-5.84	55.61	74	-18.39	peak		
2390	45.77	-5.84	39.93	54	-14.07	AVG		
2400	61.39	-5.84	55.55	74	-18.45	peak		
2400	47.11	-5.84	41.27	54	-12.73	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Operation Mode: TX CH High (2452MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	56.25	-5.65	50.6	74	-23.4	peak		
2483.50	1	-5.65	1	54	1	AVG		
2500.00	53.31	-5.65	47.66	74	-26.34	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	54.76	-5.65	49.11	74	-24.89	peak		
2483.50	1	-5.65	/	54	1	AVG		
2500.00	53.24	-5.65	47.59	74	-26.41	peak		
2500.00	1	-5.65	1	54	1	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							
Remark: All the	other emissions n	ot reported were	e too low to read a	nd deemed to c	omply with FCC	; limit.		



MIMO:

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

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	56.37	-5.81	50.56	74	-23.44	peak		
2310	1	-5.81	1	54	1	AVG		
2390	61.56	-5.84	55.72	74	-18.28	peak		
2390	47.44	-5.84	41.6	54	-12.4	AVG		
2400	60.53	-5.84	54.69	74	-19.31	peak		
2400	48.77	-5.84	42.93	54	-11.07	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	53.82	-5.81	48.01	74	-25.99	peak		
2310	1	-5.81	/	54	/	AVG		
2390	63.52	-5.84	57.68	74	-16.32	peak		
2390	47.66	-5.84	41.82	54	-12.18	AVG		
2400	64.71	-5.84	58.87	74	-15.13	peak		
2400	48.59	-5.84	42.75	54	-11.25	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type	
2483.50	54.66	-5.65	49.01	74	-24.99	peak	
2483.50	1	-5.65	1	54	1	AVG	
2500.00	54.72	-5.65	49.07	74	-24.93	peak	
2500.00	1	-5.65	1	54	1	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type	
2483.50	56.72	-5.65	51.07	74	-22.93	peak	
2483.50	1	-5.65	/	54	1	AVG	
2500.00	54.69	-5.65	49.04	74	-24.96	peak	
2500.00	1	-5.65	/	54	1	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/H40 Mode TX CH Low (2422MHz)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type
2310	60.37	-5.81	54.56	74	-19.44	peak
2310	1	-5.81	/	54	/	AVG
2390	61.49	-5.84	55.65	74	-18.35	peak
2390	44.66	-5.84	38.82	54	-15.18	AVG
2400	61.75	-5.84	55.91	74	-18.09	peak
2400	45.77	-5.84	39.93	54	-14.07	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type
2310	58.52	-5.81	52.71	74	-21.29	peak
2310	1	-5.81	1	54	1	AVG
2390	61.39	-5.84	55.55	74	-18.45	peak
2390	47.67	-5.84	41.83	54	-12.17	AVG
2400	61.44	-5.84	55.6	74	-18.4	peak
2400	47.21	-5.84	41.37	54	-12.63	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						



Operation Mode: TX CH High (2452MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type	
2483.50	56.38	-5.65	50.73	74	-23.27	peak	
2483.50	1	-5.65	1	54	1	AVG	
2500.00	53.42	-5.65	47.77	74	-26.23	peak	
2500.00	1	-5.65	1	54	1	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type	
2483.50	54.69	-5.65	49.04	74	-24.96	peak	
2483.50	/	-5.65	1	54	1	AVG	
2500.00	53.43	-5.65	47.78	74	-26.22	peak	
2500.00	1	-5.65	1	54	1	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.							



4.7. ANTENNA REQUIREMENT

Standard Applicable

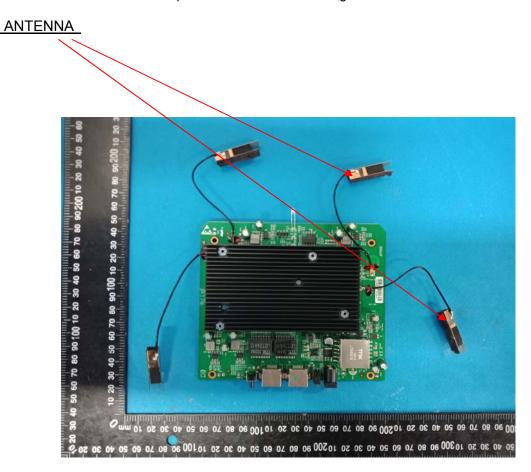
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain 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

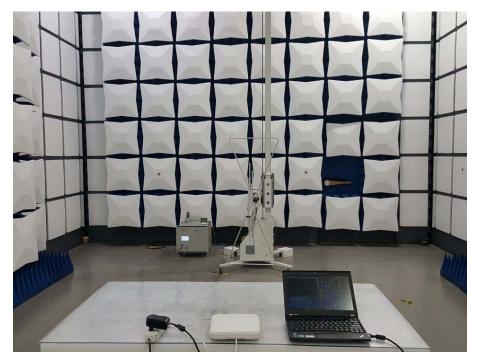
The antenna used in this product is a Internal Antenna need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 3dBi





PHOTOGRAPH OF TEST

Radiated Emission







Conducted Emission





4.8. PHOTOS OF THE EUT

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

*****End of Report*****