

FCC TEST REPORT

Test report On Behalf of GROUPSFIT For 14.1 INCH NEO Notebook Model No.: WWX14C4BL64-P, WWX14C4PK64-P, WWX14C4BK64-P, WWX14C4SL64-P, WWX14C4T64-P, WWX14C4GO64-P

FCC ID: 2AQOO-X14C464P

Prepared for : GROUPSFIT 80/84 route de la Liberation, PONTAULT COMBAULT, 77340 France

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:
 Nov. 12, 2020 ~ Nov. 19, 2020

 Date of Report:
 Nov. 19, 2020

 Report Number:
 HK2011123482-1E



TEST RESULT CERTIFICATION

Applicant's name:	
Address:	80/84 route de la Liberation, PONTAULT COMBAULT, 77340 France
	Shenzhen Orango Technology Co.,Ltd
Address:	5th-6th floor, Building B6, Hengfeng Industrial Park, Hezhou, Bao'an, Shenzhen, China
Product description	
Trade Mark:	THOMSON
Product name:	14.1 INCH NEO Notebook
Model and/or type reference :	WWX14C4BL64-P, WWX14C4PK64-P, WWX14C4BK64-P, WWX14C4WH64-P, WWX14C4SL64-P, WWX14C4T64-P, WWX14C4GO64-P
Standards	FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.10: 2013

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Date of lest	
Date (s) of performance of tests:	Nov. 12, 2020 ~ Nov. 19, 2020
Date of Issue	Nov. 19, 2020
Test Result	Pass

5

:

Testing Engineer

Google Bian (Gary Qian) Edan Mu (Eden Hu) Jason Zhou

Technical Manager

Authorized Signatory:

(Jason Zhou)



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** Modifited History **

Revison	Description	Issued Data	Remark
Revsion 1.0	Initial Test Report Release	2020/11/19	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	±0.37dB
2	RF power, conducted	±3.35dB
3	Spurious emissions, conducted	±2.20dB
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	14.1 INCH NEO Notebook
Model Name	WWX14C4BL64-P
Serial Model	WWX14C4PK64-P, WWX14C4BK64-P, WWX14C4WH64-P, WWX14C4SL64-P, WWX14C4T64-P, WWX14C4GO64-P
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: WWX14C4BL64-P.
Trade Mark	THOMSON
FCC ID	2AQOO-X14C464P
Antenna Type	Internal Antenna
Antenna Gain	Antenna 1:1.64dBi Antenna 2:1.64dBi MIMO: 4.650dBi
Operation frequency	802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz
Number of Channels	802.11b/g/n20: 11CH 802.11n 40: 7CH
Modulation Type	CCK/OFDM/DBPSK/DAPSK
Power Source	DC 7.6V from Battery or DC 12V 2A from Adapter with AC 110~240V, 50/60Hz, 0.55A
Power Rating	DC 7.6V from Battery or DC 12V 2A from Adapter with AC 110~240V, 50/60Hz, 0.55A
	MO function. Physically, it provides two completed transmitte o transmit signals are completely correlated, then, Direction g



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

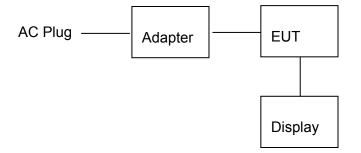
The mode is used: Transmitting mode for 802.11n (HT40)

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



2.4. DESCRIPTION OF TEST SETUP

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



Operation of EUT during Above1GHz Radiation testing:



Adapter information: Model: JHD-AP024U-120200BA-A Input: 100-240V, 50/60Hz, 0.55A Output: 12V, 2A

Display information: Model:24PFF3661/T3 Input: AC120V/60Hz

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) 0.15-0.5 0.5-5 5-30	dBuV) Average 56 to 46* 46 50			
Test Setup:	Reference Plane 40cm 80cm Filter AC power E.U.T AC power Filter AC power EMI Receiver Remark: E.U.T. Equipment Under Test LISN E.U.T. Equipment Under Test E.U.T. Equipment Under Test E.U.T. Equipment E.U.T. E.U.T. Equipment E.U.T. Equipment E.U.T. Equipment E.U.T. Equipment E.U.T. Equipment E.U.T. Equipment E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.E.				
Test Mode:	Charging + transmitting	g with modulation			
Test Procedure:	 Charging + transmitting with modulation 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 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

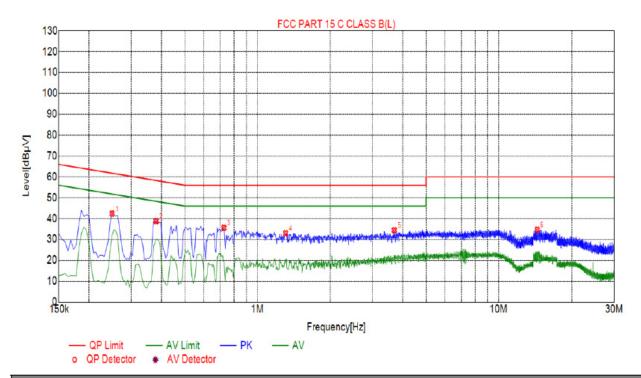
Conducted Emission Shielding Room Test Site (843)									
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Receiver	R&S	ESCI 7	HKE-010	Dec. 26, 2019	Dec. 25, 2020				
LISN	R&S	ENV216	HKE-002	Dec. 26, 2019	Dec. 25, 2020				
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A	N/A				

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



4.1.3 Test data

Test Specification: Line

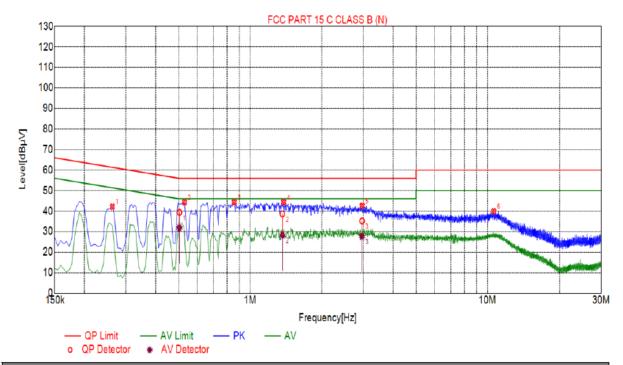


Sus	Suspected List											
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре				
1	0.2490	42.39	20.04	61.79	19.40	22.35	PK	L				
2	0.3795	38.80	20.05	58.29	19.49	18.75	PK	L				
3	0.7260	35.58	20.06	56.00	20.42	15.52	PK	L				
4	1.3065	32.99	20.10	56.00	23.01	12.89	PK	L				
5	3.6915	34.40	20.25	56.00	21.60	14.15	PK	L				
6	14.3655	34.69	19.95	60.00	25.31	14.74	PK	L				

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



Test Specification: Neutral



Sus	Suspected List										
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Туре			
1	0.2625	42.14	20.03	61.35	19.21	22.11	PK	N			
2	0.5280	44.34	20.04	56.00	11.66	24.30	PK	N			
3	0.8565	44.36	20.06	56.00	11.64	24.30	PK	N			
4	1.3830	44.40	20.11	56.00	11.60	24.29	PK	N			
5	2.9670	42.55	20.21	56.00	13.45	22.34	PK	N			
6	10.6260	39.87	20.03	60.00	20.13	19.84	PK	N			

Final Data List

NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	QP Reading [dBµV]	AV Value [dBµV]	AV Limit [dBμV]	A∨ Margin [dB]	AV Reading [dBµV]	Туре
1	0.5030	20.04	39.37	56.00	16.63	19.33	31.76	46.00	14.24	11.72	N
2	1.3658	20.11	38.59	56.00	17.41	18.48	28.26	46.00	17.74	8.15	N
3	2.9628	20.21	35.18	56.00	20.82	14.97	27.65	46.00	18.35	7.44	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 FIT					
Test Mode:	Transmitting mode with modulation					
Test Procedure:	 The testing follows the Measurement Procedure of FCC KDB 558074 D01 15.247 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 Date	Calibration Due				
Power meter	Agilent	E4419B	HKE-085	Dec. 26, 2019	Dec. 25, 2020				
Power Sensor	Agilent	E9300A	HKE-086	Dec. 26, 2019	Dec. 25, 2020				
RF cable	Times	1-40G	HKE-034	Dec. 26, 2019	Dec. 25, 2020				
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2019	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	Conducted Output	LIMIT							
(MHz)	Antenna port 1	Antenna port 2	MIMO	dBm						
TX 802.11b Mode										
2412	8.23	8.12	/	30						
2437	8.19	8.05	/	30						
2462	7.29	8.03	/	30						
	٦	TX 802.11g Mode								
2412	7.10	7.06	/	30						
2437	6.99	7.97	/	30						
2462	6.82	6.70	/	30						
	ť	(802.11n20 Mode								
2412	4.92	5.78	8.38	30						
2437	5.47	5.00	8.25	30						
2462	4.63	4.52	7.59	30						
TX 802.11n40 Mode										
2422	4.45	4.35	7.41	30						
2437	4.20	5.12	7.69	30						
2452	4.85	4.33	7.61	30						
	(MHz) 2412 2437 2462 2412 2437 2462 2412 2437 2462 2412 2437 2462 2437 2462 2437 2462	(MHz) Antenna port 1 2412 8.23 2437 8.19 2462 7.29 2412 7.10 2437 6.99 2462 6.82 2412 4.92 2412 4.92 2442 4.63 2437 5.47 2462 4.63 2442 4.63 24437 5.47 2462 4.63 24437 5.47 2462 4.63 2452 4.45 2437 4.20 2437 4.85	(MHz)Antenna port 1Antenna port 2(MHz)Antenna port 1Antenna port 224128.238.1224378.198.0524627.298.0324627.298.0324127.107.0624376.997.9724626.826.7024124.925.7824375.475.0024624.634.5224375.475.0024624.634.5224375.475.0024624.634.5224375.475.0024624.634.5224374.205.1224374.205.1224524.854.33	(MHz) Antenna port 1 Antenna port 2 MIMO TX 802.11b Mode 2412 8.23 8.12 / 2437 8.19 8.05 / 2462 7.29 8.03 / TX 802.11g Mode 2412 7.10 7.06 / 2412 7.10 7.06 / 2412 7.10 7.06 / 2437 6.99 7.97 / / 2462 6.82 6.70 / / 2462 4.92 5.78 8.38 2437 5.47 5.00 8.25 2462 4.63 4.52 7.59 TX 802.11n40 Mode 2422 4.45 4.35 7.41 2437 4.20 5.12 7.69						

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:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows FCC KDB Publication No. 558074 D01 15.247 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 Date	Calibration Due				
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	Dec. 25, 2020				
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2019	Dec. 25, 2020				
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2019	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									
		6dB Emission Bandwidth (MHz)							
Test channel	802.11b	802.11g	802.11n(H20)	802.11n(H40)					
Lowest	9.025	16.38	17.61	36.37					
Middle	8.604	16.40	17.62	36.39					
Highest	9.092	16.37	17.62	36.38					
Limit:	>500k								
Test Result:		P	ASS						

Test plots as follows:



802.11b Modulation Lowest channel



Middle channel







802.11g Modulation

Lowest channel



Middle channel

RL RF 50 Q AV Center Freq 2.4370000	00 GHz Cente	SENSE:INT er Freq: 2.437000000 GHz			Frequency
	Trig: I	FreeRun Avg Ho n:20 dB	id>1/1 Radio Devi	ce: BTS	
Ref Offset 8.6 0 dB/div Ref 18.64 d			Mkr1 2.430 -7.230	76 GHz 9 dBm	
3.64 1.36 1.4					Center Fre 2.437000000 GH
1.4		Y			
11.4	л ^и		- North Contraction of the second sec		
1.4 Mouthermonderwork Mar			Mulanesta	water and	
1.4					
enter 2.437 GHz Res BW 100 kHz	#	VBW 300 kHz	Span Sweep (40 MHz 3.867 ms	CF Ste 4.000000 MH
Occupied Bandwi	dth	Total Power	11.2 dBm	A	<u>Auto</u> Ma
	16.555 MHz				Freq Offs
Transmit Freq Error	-15.044 kHz	OBW Power	99.00 %		0 H
x dB Bandwidth	16.40 MHz	x dB	-6.00 dB		
			074710		





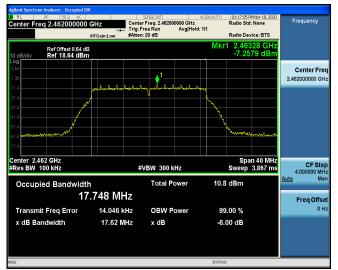
802.11n (HT20) Modulation

01:11:29 PMNov 18, 202 Radio Std: None Frequency Center Freq 2.412000000 GHz Center Freq: 2.41200000 GHz Trig: Free Run Avg|Hold>1/1 #Atten: 20 dB Radio Device: BTS 2.41328 GHz -7.0601 dBm Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.412000000 GHz ø CF Step 4.000000 MH Ma Center 2.412 GHz #Res BW 100 kHz Span 40 MHz Sweep 3.867 ms #VBW 300 kHz Occupied Bandwidth Total Power 11.0 dBm 17.739 MHz Freq Offsel 0 Hz 17.680 kHz OBW Power 99.00 % Transmit Freq Error x dB Bandwidth 17.61 MHz x dB -6.00 dB

Lowest channel

Middle channel



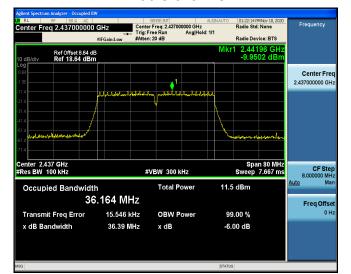




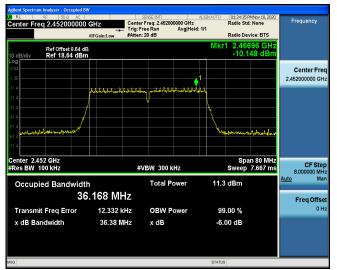
802.11n (HT40) Modulation

SENSE:INT ALIG Center Freq: 2.422000000 GHz Trig: Free Run Avg|Hold: 1/1 #Atten: 20 dB 01:19:40 PMNov 18, 202 Radio Std: None Frequency Center Freq 2.422000000 GHz Radio Device: BTS 2.43328 GHz -9.5462 dBm Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.422000000 GHz **♦**¹ CF Step 8.000000 MH Ma Center 2.422 GHz #Res BW 100 kHz Span 80 MHz Sweep 7.667 ms #VBW 300 kHz Occupied Bandwidth Total Power 11.7 dBm 36.157 MHz Freq Offsel 0 Hz 22.257 kHz OBW Power 99.00 % Transmit Freq Error x dB Bandwidth 36.37 MHz x dB -6.00 dB

Middle channel



Highest channel



Lowest channel



For antenna port 2	
--------------------	--

Test channel	6dB Emission Bandwidth (MHz)				
rest channel	802.11b	802.11g	802.11n(H20)	802.11n(H40)	
Lowest	8.578	16.39	17.61	35.97	
Middle	8.611	16.40	17.63	36.39	
Highest	9.025	16.38	17.60	36.39	
Limit:	≥500 (kHz)				
Test Result:	PASS				

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel





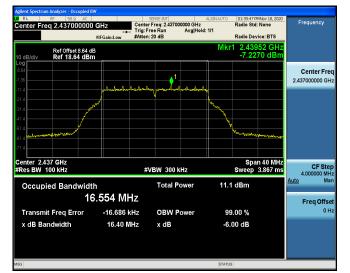


802.11g Modulation

Lowest channel



Middle channel







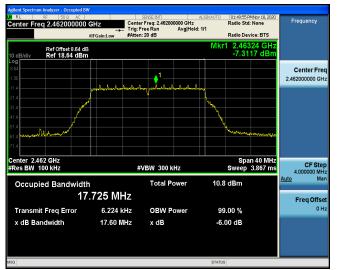
802.11n (HT20) Modulation

Center Freq: 2.412000000 GHz Trig: Free Run Avg|Hold: 1/1 #Atten: 20 dB 01:44:57 PMNov 18, 2020 Radio Std: None Frequency Center Freq 2.412000000 GHz Radio Device: BTS 2.41324 GHz -6.9420 dBm Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.412000000 GHz CF Step 4.000000 MH Ma Center 2.412 GHz #Res BW 100 kHz Span 40 MHz Sweep 3.867 ms #VBW 300 kHz Occupied Bandwidth Total Power 11.1 dBm 17.760 MHz Freq Offsel 0 Hz Transmit Freq Error 9.918 kHz OBW Power 99.00 % x dB Bandwidth 17.61 MHz x dB -6.00 dB

Lowest channel

Middle channel

enter Freq 2.4370	AC 00000 GHz	Center Freq: 2.43		Radio 5	28 PMNov 18, 2020 Std: None	Frequency
	#IFGain:Low	#Atten: 20 dB		Radio I	Device: BTS	
Ref Offse 0 dB/div Ref 18.0				Mkr1 2.4 -7.3	3824 GHz 3033 dBm	
og 1.64 .36						Center Fre 2.437000000 GH
1.4	and the second s			Luck -		
1.4 1.4 1.4				have a second	Montheast	
1.4 enter 2.437 GHz						
Res BW 100 kHz		#VBW 30	10 kHz	Swee	pan 40 MHz p 3.867 ms	CF Ste 4.000000 MH
Occupied Band			l Power	11.1 dBm		<u>Auto</u> Ma
	17.753	ИHz				Freq Offs
Transmit Freq Er	ror -21.44	6 kHz OBW	Power	99.00 %		01
x dB Bandwidth	17.6	3 MHz x dB		-6.00 dB		

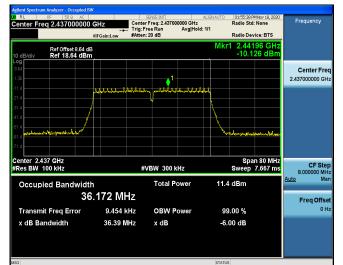


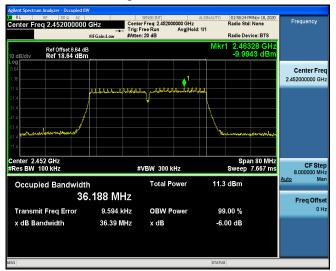


802.11n (HT40) Modulation

Lowest channel Center Freq: 2.422000000 GHz Trig: Free Run Avg|Hold: 1/1 #Atten: 20 dB 01:52:59 PMNov 18, 20 Radio Std: None Frequency Center Freq 2.422000000 GHz Radio Device: BTS 2.42696 GH -9.5755 dBr Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.422000000 GHz **** LLL A JAAA CF Step 8.000000 MH Ma Center 2.422 GHz #Res BW 100 kHz Span 80 MHz Sweep 7.667 ms #VBW 300 kHz Occupied Bandwidth Total Power 11.6 dBm 36.138 MHz Freq Offse 0 H 24.157 kHz 99.00 % Transmit Freq Error **OBW Power** -6.00 dB 35.97 MHz x dB Bandwidth x dB

Middle channel







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 or continuous transmission.		
Test Setup:	Spectrum Analyzer		
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 Date	Calibration Due	
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	Dec. 25, 2020	
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2019	Dec. 25, 2020	
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2019	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	-0.78	-10.78		
802.11b	Middle	-3.28	-13.28		
	Highest	-3.49	-13.49		
	Lowest	-11.61	-21.61		
802.11g	Middle	-12.2	-22.2		
	Highest	-12.1	-22.1		
	Lowest	-11.93	-21.93		
802.11n(H20)	Middle	-11.8	-21.8		
	Highest	-11.98	-21.98		
	Lowest	-14.54	-24.54		
802.11n(H40)	Middle	-15.21	-25.21		
	Highest	-15.23	-25.23		
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







802.11g Modulation

Lowest channel



Middle channel







802.11n (HT20) Modulation



Lowest channel

Middle channel







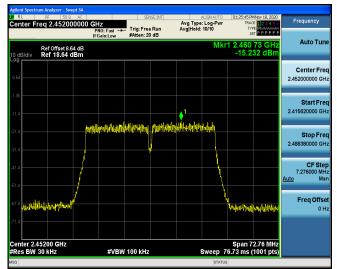
802.11n (HT40) Modulation

Lowest channel



Middle channel







For antenna port 2

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)		
	Lowest	-3.8	-13.8		
802.11b	Middle	-2.58	-12.58		
	Highest	-3.64	-13.64		
	Lowest	-11.73	-21.73		
802.11g	Middle	-12.33	-22.33		
	Highest	-12.34	-22.34		
	Lowest	-12.08	-22.08		
802.11n(H20)	Middle	-11.92	-21.92		
	Highest	-11.98	-21.98		
	Lowest	-15.26	-25.26		
802.11n(H40)	Middle	-15.06	-25.06		
	Highest	-14.38	-24.38		
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

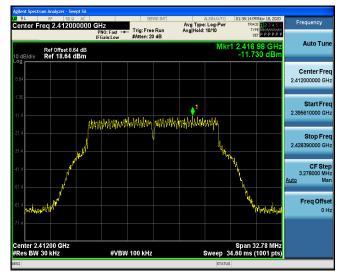






802.11g Modulation

Lowest channel



Middle channel



Highest channel



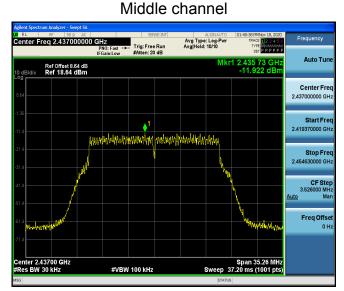


802.11n (HT20) Modulation

Frequency enter Freq 2.412000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run TYPE MWWWWWW DET PPPPP Auto Tun 2.419 47 -12.075 (Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.412000000 GHz Start Free 2.394390000 GH **♦**¹ Warman and a second particular and a second Stop Fred 2.429610000 GHz CF Step 3.522000 MH Ma Auto Freq Offsel 0 Hz Span 35.22 MHz Sweep 37.20 ms (1001 pts) enter 2.41200 GHz Res BW 30 kHz #VBW 100 kHz

Lowest channel

STA



Highest channel





802.11n (HT40) Modulation

Frequency enter Freq 2.422000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 Trig: Free Run TYPE MWWWWWW DET PPPPP Auto Tun 2.430 70 C -15.264 d Ref Offset 8.64 dB Ref 18.64 dBm Center Freq 2.422000000 GHz Start Free 2.386030000 GH Artenislanovalastelevalland analyterinationstationetalevalue Stop Fred 2.457970000 GHz CF Step 7.194000 MH Ma Auto Freq Offsel 0 Hz Span 71.94 MHz Sweep 75.87 ms (1001 pts) enter 2.42200 GHz Res BW 30 kHz #VBW 100 kHz

Middle channel



Highest channel



Lowest channel



Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	/	8	1
2437 MHz	1	8	1
2462 MHz	1	8	1
	TX 802.11g Mode		
2412 MHz	1	8	1
2437 MHz	1	8	1
2462 MHz	1	8	1
	TX 802.11n/HT20 Mod	le	
2412 MHz	-8.99	8	PASS
2437 MHz	-8.85	8	PASS
2462 MHz	-8.97	8	PASS
	TX 802.11n/HT40 Mod	le	
2422 MHz	-11.87	8	PASS
2437 MHz	-12.12	8	PASS
2452 MHz	-11.77	8	PASS

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:	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows 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. 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



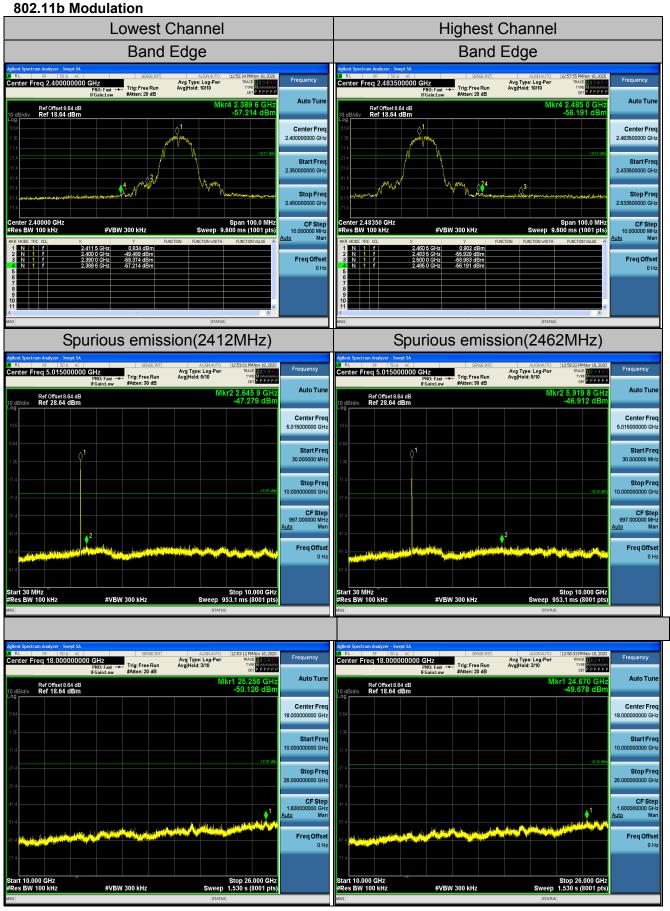
4.5.2. Test Instruments

	RF Test Room											
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due							
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	Dec. 25, 2020							
Signal generator	Agilent	N5183A	HKE-071	Dec. 26, 2019	Dec. 25, 2020							
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2019	Dec. 25, 2020							
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2019	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

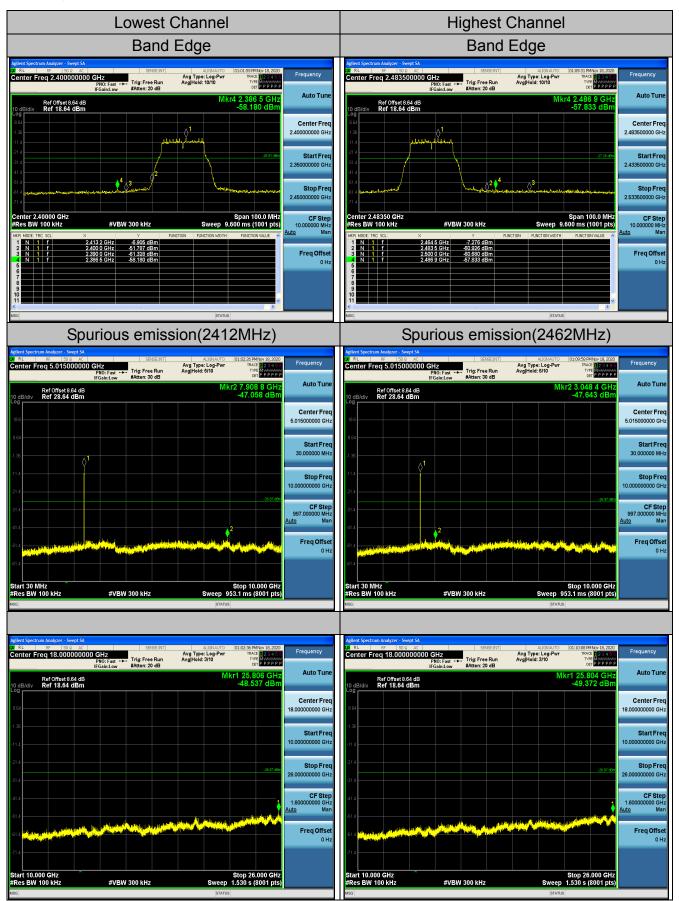




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dB/div	Ref Offset 8 Ref 28.64	.64 dB dBm	PNO: Fast IFGain:Low	#Atten: 3	10 dB			r2 3.05	8 4 GHz 28 dBm	Auto Tune
, g										Center Freq 5.015000000 GHz
64										Start Freq 30.000000 MHz
36										Stop Freq
.4									-19.05 dBm	10.00000000 GHz
.4			2							CF Step 997.000000 MHz <u>Auto</u> Man
.4		ppini ^{an}			a abdatabl	en disk kardelig	in an the		-	Freq Offset 0 Hz
1.4										
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Res BW	VIHz 100 kHz rum Analyzer - So RF 50 Freq 18.000	Q AC	GHz PN0: Fast	SE Trig: Fre	NGE:INT		STATUS	53.1 ms (8001 pts)	Frequency
Res BW	100 kHz rum Analyzer - So RF 50	Q AC	GHz	SE	NGE:INT	Αμτ	GNAUTO og-Pwr 10	12:56:00 PF TRAC TY D Kr1 25.2	8001 pts)	
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Ilent Spectr RL RL Iddition Iddition Iddition Iddition	100 kHz rum Analyzer - Si RF 50 Freq 18.000	Q AC	GHz PNO:Fast IFGain:Low	SE Trig:Fre #Atten: 2	NGE:INT	Autoria Autori	STATUS (3/AUTO 00 00 MH	12:56:00 PF TRAC TY D Kr1 25.2	ANAV 19,2020 ANAV 19,2020 TE 112 2,2020 TE 112 2	Auto Tune Center Freq 18.00000000 GHz Start Freq 26.00000000 GHz 26.00000000 GHz CF Step 1.50000000 GHz Auto Man
s ilent Spectr R L	100 kHz rum Analyzer - Si RF 50 Freq 18.000	Q AC	GHz PN0: Fast	SE Trig:Fre #Atten: 2	NSE:INT e Run 0 dB	Αμτ	STATUS (3/AUTO 00 00 MH	53.1 ms (125000 pm Team Team Team Team Team Team Team Tea	ANAV 19,2020 ANAV 19,2020 TE 112 2,2020 TE 112 2	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz 25.000000000 GHz CF Step 1.50000000 GHz
Ilent Spectre RL Block Spectre RL RL Block Spectre RL RL Block Spectre RL Block Spectre Block Spectre	100 kHz rum Analyzer - Si RF 50 Freq 18.000	Q AC	GHz PNO:Fast IFGain:Low	SE Trig:Fre #Atten: 2	NSE:INT e Run 0 dB	Autoria Autori	STATUS (3/AUTO 00 00 MH	12:5000 P	ANAV 19,2020 ANAV 19,2020 TE 112 2,2020 TE 112 2	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.00000000 GHz 1.500000000 GHz Auto Man Freq Offset



802.11g Modulation

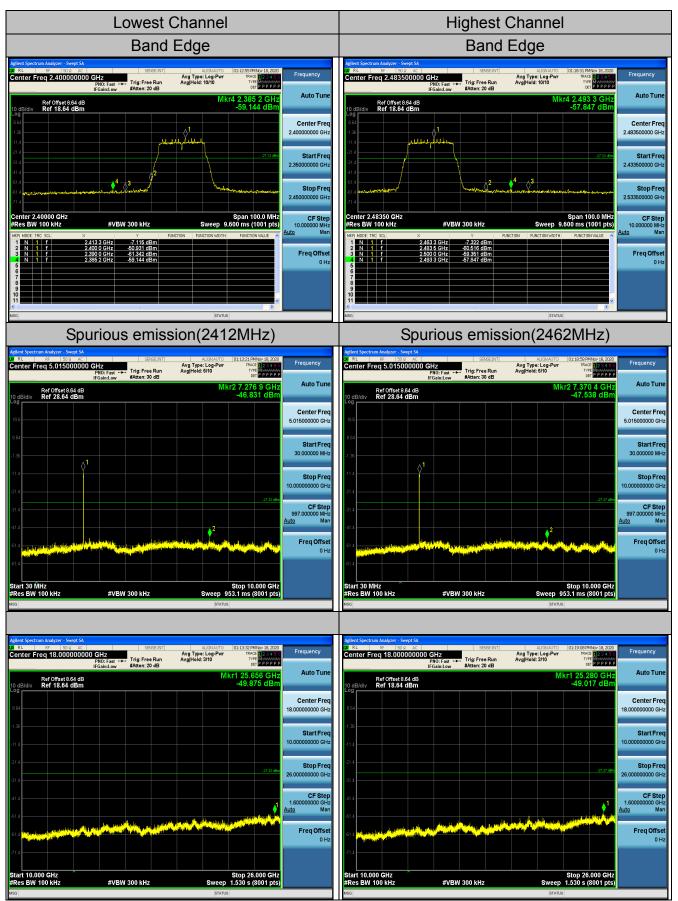




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#Res BW 100 kHz #VBW 300 kHz Sweep 1.530 s (8001 pts)	to Tune ter Freq 0000 GHz art Freq 0000 GHz 0000 GHz CF Step 0000 GHz	223450 SPPPPP GHZ ABA 18.0 22350 22350 26.0 1.6 Auto	17446 17476 (11 25.76 -49.267	M · · · · · · · · · · · · · · · · · · ·	Avg T Avg He	Trig: Free Ru KAtten: 20 dB	40: Fast →-	Q AC 0000000 (F IF	RF 50	N RL Center I Center I 0 dB/div -0 g 8.64



802.11n (HT20) Modulation





Start 10.000 GHz #Res BW 100 kHz

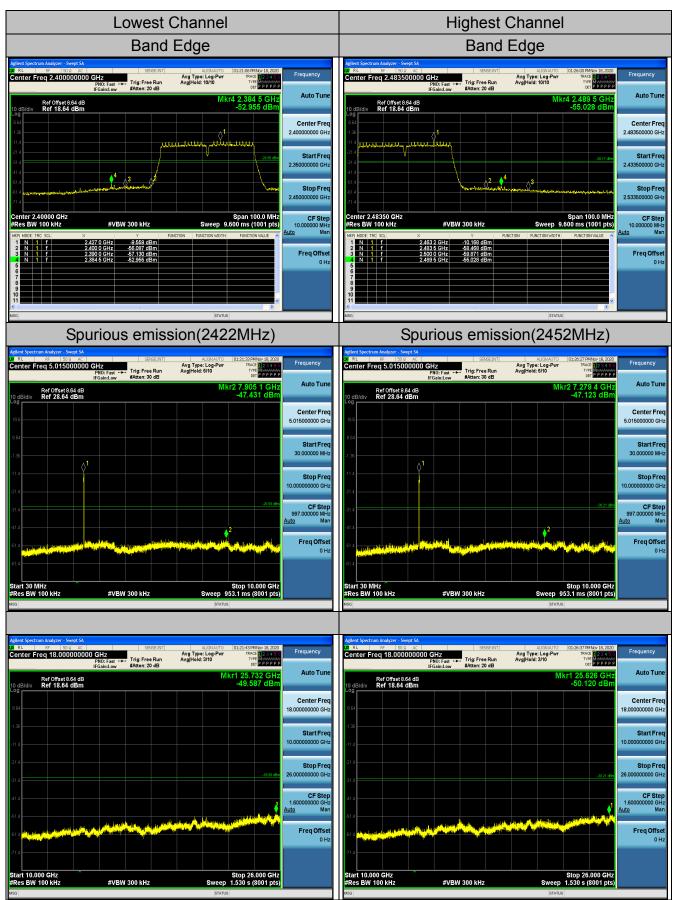
#VBW 300 kHz

	5	Spur	iou	s en	niss	ion(243	7MI	Hz)		
RL	rum Analyzer - Sw RF 50 ຂ Teg 5.01500	AC	Hz	SE	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	01:16:26 P	MNov 18, 2020 15 11 2 3 4 5 6	Free	uency
Sentern		F	NO: Fast Gain:Low	Trig: Fre #Atten: 3		Avg Hold:	5/10	TY D	12 3 4 5 6 PE M 0000000 ET P P P P P F		
10 dB/div	Ref Offset 8.6 Ref 28.64 (64 dB					Mk	(r2 3.13 -47.0	8 1 GHz 83 dBm		uto Tune
- ^{og}										Ce	nter Freg
18.6											00000 GHz
8.64											Start Freq
1.36											00000 MHz
11.4		^ ¹									
21.4											Stop Freq 00000 GHz
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Start 30 I	MHz							Stop 10	000 GHz		
#Res BW	MHz 100 kHz		#VB	W 300 kHz				53.1 ms	.000 GHz 8001 pts)		
#Res BW			#VB	W 300 kHz			Sweep 9	53.1 ms			
#Res BW			#VB	W 300 kHz				53.1 ms			_
#Res BW			#VB					53.1 ms (8001 pts)		
FRes BW	100 kHz rrum Analyzer - Sw	AC 000000	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT		STATUS	53.1 ms (8001 pts)		quency
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gilent Spect	1 100 kHz rum Analyzer - Sw RF 50 Q Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	ALIGNAUTO 2: Log-Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) 8001 pts 9001 pts 9000 pts 90	Fre	
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#Res BW Isa Agilent Spect X RL Center F 10 dB/div	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	ALIGNAUTO 2: Log-Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) 8001 pts 9001 pts 9000 pts 90	Fre	Auto Tune enter Freq 100000 GHz
Kglient Spect	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) MNov 18,2020 CC 12 3 4 5 PP PP P F 736 GH2	Fre 2 18.0000	Auto Tune enter Freq
Agilent Spect	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) MNov 18,2020 CC 12 3 4 5 PP PP P F 736 GH2	Free 2 18.0000	Auto Tune enter Freq 000000 GHz Start Freq 000000 GHz
Agilent Spect X RL Center F 0 dB/div 0 g 1.36 -1.36 -1.36 -2.1.4	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) MNov 18,2020 CC 12 3 4 5 PP PP P F 736 GH2	Fre	Auto Tune enter Freq 000000 GHz Start Freq
#Res BW test	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) MNov 19, 2000 CE 12 3 4 5 FF M Stars 736 GH2 57 dBm	Fre	Auto Tune enter Freq xxxxxxxxxxxxxxxxxxxxxxx Start Freq xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
*Res BW *glent Spect * *glent Spect * * R L Center F * Center F * * 0 dB/div * * 0 dB/div * * 0 dB/div * * 1.36 * * 11.4 * * 21.4 *	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	GHz PNO: Fast	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01:16:36 F TRA TRA TRA TRA TRA TRA TRA TRA TRA TRA	8001 pts) MNov 19, 2000 CE 12 3 4 5 FF M Stars 736 GH2 57 dBm	Fre 2 18,0000 26,0000 1,6000	Auto Tune enter Freq 1000000 GHz Start Freq 1000000 GHz Stop Freq
Keles BW	rum Analyzer - Sw RF 500 Freq 18.0000	AC 000000 (IF IF	3Hz SHz Gaintow	S≣ ⊷ Trig:Fre	NSE:INT	Avg Type Avg Hold:	STATUS ALIGNAUTO 2: Log:Pwr 3/10	01.16.36 1 ms 1 01.16.36 1 ms 1 ms 1 ms 1 ms 1 ms 1 ms 1 ms 1 ms	8001 pts MNov 19, 2020 CE 11 23 4 5 FT MINIMUM CF P P P P 736 GH2 57 GH3 57 GH3	Fre 10.0000 1.6000 1.6000	Auto Tune enter Freq 000000 GHz Start Freq 000000 GHz Stop Freq 000000 GHz

Stop 26.000 GHz Sweep 1.530 s (8001 pts)



802.11n (HT40) Modulation





art 10.000 GHz tes BW 100 kHz

#VBW 300 kHz

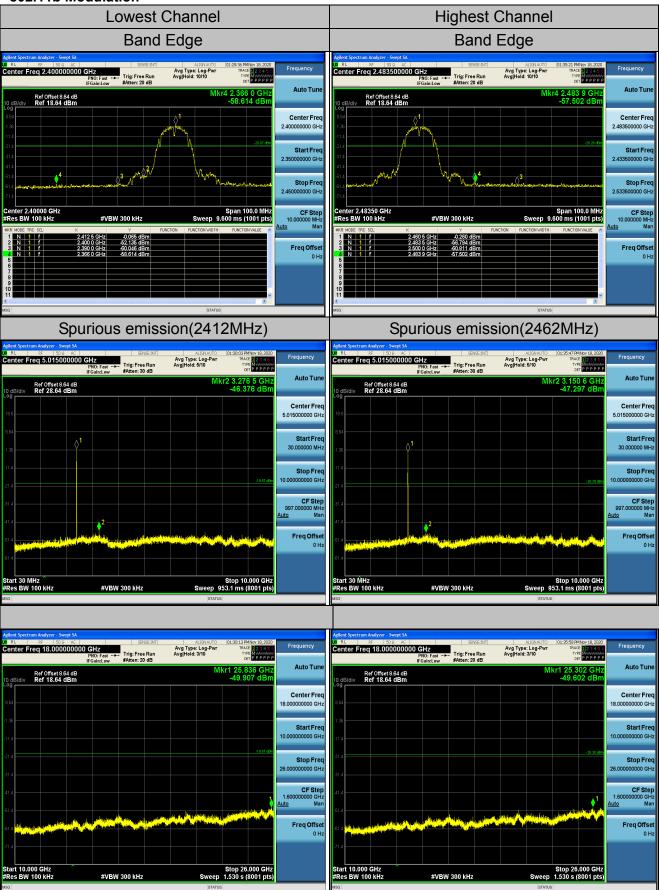
	Spurio	us emiss	sion(243 [°]	7MHz)	
igilent Spectrum Anal	yzer - Swept SA				
Center Freq 5	50 9 AC .015000000 GHz PNO: Fa	sevse:INT ast Trig: Free Run aw #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 5/10	01:23:51 PM Nov 18, 2020 TRACE 2 3 4 5 6 TYPE MMMMMMM DET P P P P P P	Frequency
Ref C 0 dB/div Ref	IFGain:L Offset 8.64 dB 28.64 dBm	ow #Atten. 30 dB	Mk	r2 7.876 4 GHz -47.170 dBm	Auto Tune
18.6					Center Freq 5.015000000 GHz
1.36					Start Freq 30.000000 MHz
21,4	Q.				Stop Freq 10.000000000 GHz
31.4				-30.02 dBn	CF Step 997.000000 MHz <u>Auto</u> Man
51.4	na kana di kalipa di di		flerikeriseriserikeri	: An difference and the large staff of the large	Freq Offset 0 Hz
Start 30 MHz Res BW 100 k	Hz #	¢VBW 300 kHz	Sweep 95	Stop 10.000 GHz 3.1 ms (8001 pts)	
	yzer - Swept SA SD:0 AC 8.00000000 GHz	SENSEINT	ALIGNAUTO Avg Type: Log-Pwr	01:24:01 PMNov 18, 2020	Frequency
	PNO: Fa IFGain:L	ast Trig: Free Run .ow #Atten: 20 dB	Avg Hold: 3/10	TYPE MUMANNAN DET PPPPPP	Auto Tune
0 dB/div Ref	18.64 dBm			-49.944 dBm	
0 dB/div Ref	18.64 dBm			-49.944 dBm	
Ref C 0 dB/div Ref 0 g 8.64 1.36	18.64 dBm			-49.944 dBm	Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz
0 dB/div Ref 8.64	18.64 dBm			-49.944 dBm	18.00000000 GHz Start Fred

Freq Offset 0 Hz

Stop 26.000 GHz Sweep 1.530 s (8001 pts)



Chain 2 802.11b Modulation

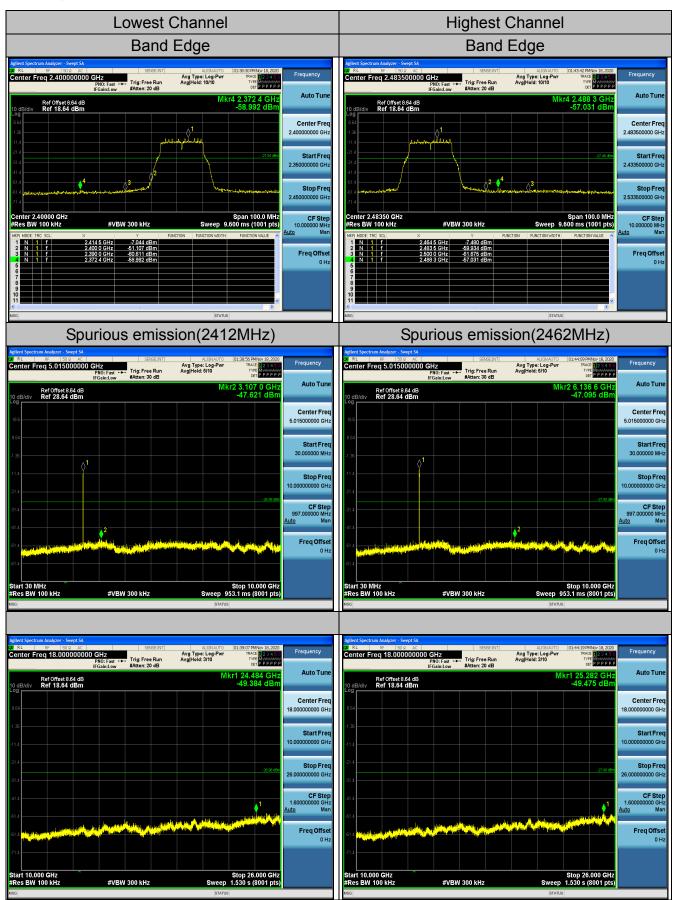




	urious	emiss	sion(243	7MHz)	
Agilent Spectrum Analyzer - Swept SA RL RF 50 Q AC Center Freq 5.01500000	PNO: Fast -	SENGE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 5/10	01:33:16 PMNov 18,2020 TRACE 123456 TYPE WWWWWW Det PPPPP	Frequency
Ref Offset 8.64 dB 10 dB/div Ref 28.64 dBm	IFGain:Low	#Atten: 30 dB	Mk	r2 3.004 8 GHz -47.486 dBm	Auto Tune
18.6					Center Freq 5.015000000 GHz
1.36) ¹				Start Freq 30.000000 MHz
-11.4				-19.88 dBn	Stop Freq 10.00000000 GHz
31.4					CF Step 997.000000 MHz Auto Man
-41.4	2 Lega denting Antiperation			والمتحاجب والمتحرب المحاجل	Freq Offset 0 Hz
61.4					
Start 30 MHz Res BW 100 kHz	#VBW	300 kHz	Sweep 95	Stop 10.000 GHz 53.1 ms (8001 pts)	
Res BW 100 kHz	#VBW	300 kHz			
#Res BW 100 kHz ISG ISG ISG ISG ISG ISG ISG ISG		300 kHz	STATUS	53.1 ms (8001 pts)	Englishov
#Res BW 100 kHz ISG ISG Iglient Spectrum Analyzer - Swept SA IRL RF ISG RL	00 GHz PN0: Fast →		STATUS	53.1 ms (8001 pts)	Frequency
Res BW 100 kHz	00 GHz	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg[Hoid: 3/10	53.1 ms (8001 pts)	Frequency Auto Tune
Res BW 100 kHz	00 GHz PN0: Fast →	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg[Hoid: 3/10	01:33:26 PMNov 18, 2020 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 5 7 16 GHz	
Res BW 100 kHz so so so so editert Spectrum Analyzer - Swept SA so so center Freq 18.0000000 Ref Offset 8.64 dBm og so so so so so so so so so so	00 GHz PN0: Fast →	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg[Hoid: 3/10	01:33:26 PMNov 18, 2020 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 5 7 16 GHz	Auto Tune Center Freq
Image: Several Analyzer - Swept SA Several Analyzer - Swept SA Image: Several Analyzer - Swept SA	00 GHz PN0: Fast →	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg[Hoid: 3/10	01:33:26 PMNov 18, 2020 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 3 4 15 6 TRACE 12 5 7 16 GHz	Auto Tune Center Freq 18.0000000 GHz Start Freq
Res BW 100 kHz sdient Spectrum Analyzer - Swept SA R.L RF 5000 AC Center Freq 18.00000000 Bildidiy Ref Offset 8.64 dB 0 88 138 138 134 134 134 134 134 134	00 GHz PN0: Fast →	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg[Hoid: 3/10	01:33:26 PMIver 18, 2020 TRAC 18, 24 Sec TRAC 18, 25 Se	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq
Res BW 100 kHz 50 scient Spectrum Analyzer - Swept SA RL RF SOO AC Center Freq 18.0000000 Ref Offset 8.64 dB 00 Ref 18.64 dB 01 14 02 13 11.4 14 21.4 14	00 GHz PN0: Fast →	SPACE INT	ALIGNAUTO Avg Type: Log-Pur Avg Hold: 3/10 MI	01:33:26 PMIver 18, 2020 TRAC 18, 24 Sec TRAC 18, 25 Se	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz Stop Freq 25.00000000 GHz CF Step 1.80000000 GHz
Res BW 100 kHz 50 51 10 dB/dt 10 dB/dt 10 dB/dt 10 dB/dt 10 dB/dt 11 d	00 GHz PR0:Fest +> IFGaintew	SRAE INT	ALIGNAUTO Avg Type: Log-Pur Avg Hold: 3/10 MI	01:33:26 PMNor 89, 2000 THAT 23:26 PMNor 89, 2000 THAT 23:26 PMNor 89, 2000 THAT 23:27:16 GHz -49.558 dBm -13:01 db	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.00000000 GHz Auto Man Freq Offset



802.11g Modulation

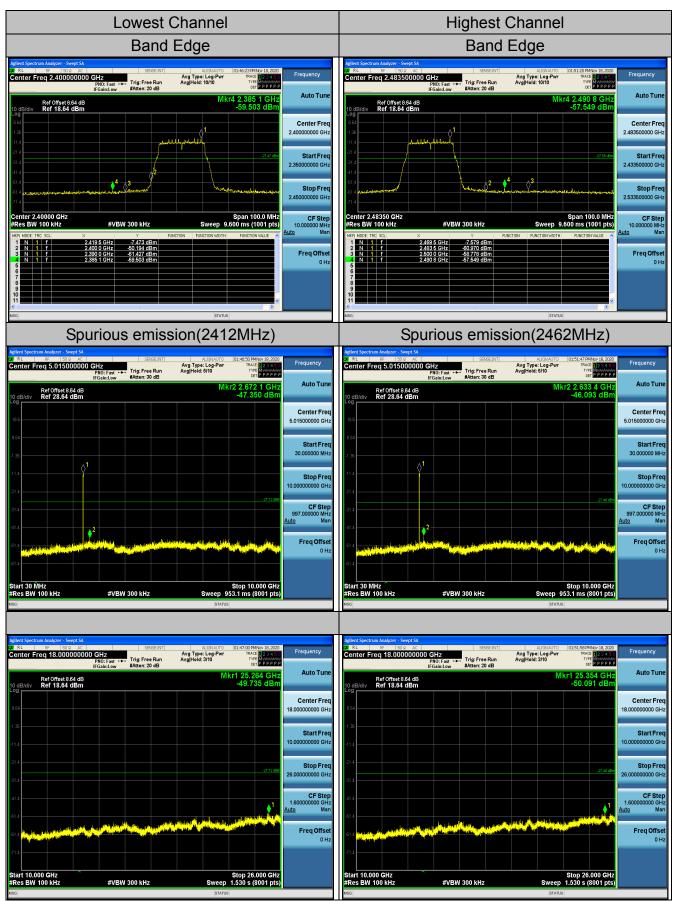




Ű	Spuri	ious	s en	niss	ion(243	7Mł	Hz)	
Agilent Spectrum Analyzer - Sv XI RL RF 500 Center Freq 5.0150	Q AC 100000 GH	Z I0: Fast ↔	. Trig: Free	NGE:INT	Avg Type Avg Hold:	ALIGNAUTO : Log-Pwr :5/10	01:41:24 P TRA/ TY	MNov 18, 2020 25 1 2 3 4 5 6 PE Montanto ET P P P P P P	Frequency
Ref Offset 8 10 dB/div Ref 28.64	IFG	ain:Low	#Atten: 30	0 dB		MI	(r2 6.06	8 1 GHz 77 dBm	Auto Tune
18.6									Center Freq 5.015000000 GHz
8.64									Start Freq 30.000000 MHz
-11.36	\1								Stop Freq
21.4								-27.21 dBm	10.00000000 GHz
-41.4					2				CF Step 997.000000 MHz <u>Auto</u> Man
-51.4	and the second						yit yit	بهالمنجا	Freq Offset 0 Hz
.61.4									
							Stop 10	.000 GHz	
Start 30 MHz ^ #Res BW 100 kHz ^{Isg}	_	#VBW	300 kHz	_		Sweep 9 Status	53.1 ms ((8001 pts)	
#Res BW 100 kHz rsg Agilent Spectrum Analyzer - St RL RF 50	Q AC 1000000 GI PN	Hz 0: Fast ↔	SEP	VGE:INT		STATUS	53.1 ms ((8001 pts)	Frequency
#Res BW 100 kHz Agilent Spectrum Analyzer - S R RL RF 150 Center Freq 18.000 Ref Offent 8	Q AC 10000000 Gi PN IFG	Hz	SB	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	(8001 pts)	Frequency Auto Tune
#Res BW 100 kHz Isci Is	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	(8001 pts) (8001 pts)	
Aglient Spectrum Analyzer 5 Aglient Spectrum Analyzer 5 Rt 27 Center Freq 18,000 Ref Offset 8 Ref Offset 8 Ref 18,04	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	(8001 pts) (8001 pts)	Auto Tune Center Freq
Addient Spectrum Analyzer - 5 Addient Spectrum Analyzer - 5 R L RF 300 Center Freq 18.000 Center Red Offset 8 10 dB/dl/ Ref 0ffset 8 0 dB/dl/ Ref 18.64	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	(8001 pts) (8001 pts)	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq
Addient Spectrum Analyser - S Addient Spectrum Analyser - S Batter Freq 18.000 Center Freq 18.00 Batter Ref 0ffset 8 6.64 -1.36	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	8001 pts)	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.00000000 GHz CF Step
Res BW 100 kHz Addient Spectrum Analyzer 50 RL RF 50 Center Freq 18.000 10 GB/dti Ref Offset 8 10 1.36 1.36 11.4 1.36 1.36 13.4 1.34 1.34	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VEE.INT	Avg Type Avg Hold:	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:41:34 P TRAI TY b kr1 25.7	8001 pts)	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq 28.00000000 GHz 1.50000000 GHz Auto Man
Res BW 100 kHz Addlent Spectrum Analyzer - S RL RF Center Freq 18:000 Center Kreq 18:000 Ref Offset 8 134 134 214 214	Q AC 10000000 Gi PN IFG	Hz 0: Fast ↔	SEP	VGE:INT	Avg Type Avg Hold:	ALIGNAUTO E: Log-Pwr 3/10 M	01:41:54 P	8001 pts)	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.000000000 GHz CF Step 1.600000000 GHz
Res BW 100 kHz Addient Spectrum Analyzer 50 R L 8F 90 Center Freq 18.000 Ref Offset 8 10 GE/div Ref Offset 8 11.4	Q AC 10000000 Gi PN IFG	12 12 ain:Low	Se S	VS: DT	Avg Type Avg Hold:	STATUS STATUS	01-11-29 M TRANSPORT	8001 pts)	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz 25.00000000 GHz 25.00000000 GHz Auto Man Freq Offset



802.11n (HT20) Modulation

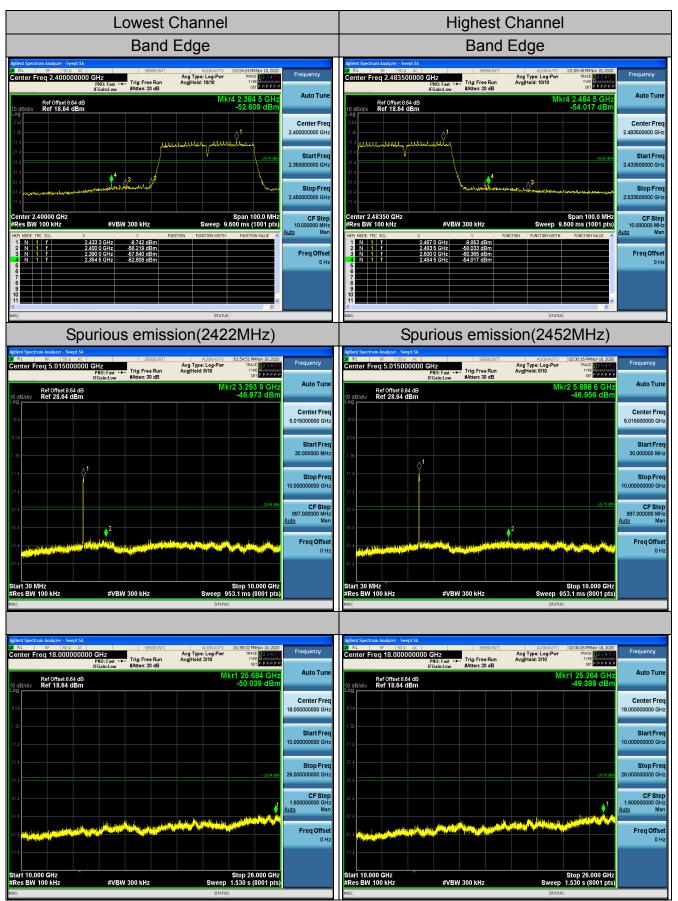




	Sp									
L F	Analyzer - Swept RF 50 Q / 5.0150000	ে 000 GH	Z NO: Fast →	_ Trig: Free	NSE:INT		ALIGNAUTO : Log-Pwr :5/10	01:49:05 P TRA TY	MNov 18, 2020 CE 1 2 3 4 5 6 PE M WWWWWW ET P P P P P P	Frequency
Re	ef Offset 8.64 d ef 28.64 dB	IFC	Gain:Low	#Atten: 30	0 dB			(r2 9.49	5 3 GHz 86 dBm	Auto Tur
B/div Re	er 28.64 aB	m								Center Fre
										5.015000000 GH
i 										Start Fre 30.000000 MH
		Ŷ								
										Stop Fre 10.000000000 GH
									-27.15 dBm	CF Ste
									2	997.000000 MH <u>Auto</u> Ma
l ann bh	antesta da la			and a till and the	ut, pilos al		del internet	in the sta		Freq Offs
	a and a second secon			11.2					Ned all Previous	0 H
	~							0 4	000 011-	
			#VBW	/ 300 kHz			Sweep 9	53.1 ms	0.000 GHz (8001 pts)	
nt Spectrum A		≪ 0000 G PI	iHz N0:Fast →	_ Trig: Free	VGE:INT		STATUS	53.1 ms	(8001 pts)	Frequency
nter Freq	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz	SEP	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts)	
nt Spectrum A RL F Inter Freq B/div Re	0 KHz Analyzer - Swept RF 50 Q 3	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts) (8001 pts)	Auto Tur Center Fre
nt Spectrum A RL F nter Freq B/div Re	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts) (8001 pts)	Auto Tur
nt Spectrum A Rt Freq Inter Freq	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts) (8001 pts)	Auto Tur Center Fre
nt Spectrum A http://www.spectrum.org/ http://wwww.spectrum.org/ http://www.spectrum.org/ http:/	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts) (8001 pts)	Auto Tur Center Fre 18.00000000 GH Start Fre 10.00000000 GH
nt Spectrum A Rt Freq Inter Freq	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts) (8001 pts)	Auto Tur Center Fre 18.00000000 GH Start Fre
nt Spectrum A Ther Freq B/div Re	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P TRA TY c kr1 25.3	(8001 pts)	Auto Tur Center Fre 18.00000000 GH Start Fre 10.000000000 GH Stop Fre 26.00000000 GH
nt Spectrum A	0 kHz Inalyzer - Swept S0 0 / 18.000000	ac 0000 G Pi IFC	iHz N0:Fast →	_ Trig: Free	VGE:INT	Avg Type Avg Hold:	ALIGNAUTO E: Log-Pwr 3/10 M	01:49:15P	(8001 pts)	Auto Tur Center Fre 18.00000000 GH 10.00000000 GH Stop Fre 26.00000000 GH
ni Spectrum A The Freq B/div Ref	Analyzer - Swept.	ac DOOO G IFC	Hz N0: Fast ↔	SET Trig: Fre #Atten: 20	VGE:INT	Avg Type Avg Hold:	STATUS ALIGNAUTO :: Log:Pwr 3/10	01:49:15P	(8001 pts)	Auto Tur Center Fre 18.00000000 Gł Start Fre 10.00000000 Gł Stop Fre 26.00000000 Gł CF Ste 1.600000000 Gł Auto Ma Freq Offs
InterFreq	Analyzer - Swept.	ac DODO C PIE IFO IFO M	Hz N0: Fast ↔	SET Trig: Fre #Atten: 20	vs∈.iNT ■ Run 0 dB	Avg Type Avg Hold:	ALIONANTO : Log-Pwr 3/10 M	01:49:15P	(8001 pts)	Auto Tur Center Fre 18.00000000 GH Start Fre 10.000000000 GH Stop Fre 26.00000000 GH 1.60000000 GH Auto Ma
nt Spectrum A	Analyzer - Swept Se 500 - J 18.000000 ef Offset 8.64 dB ef 18.64	ac DODO C PIE IFO IFO M	Hz N0: Fast ↔	SET Trig: Fre #Atten: 20	vs∈.iNT ■ Run 0 dB	Avg Type Avg Hold:	ALIONANTO : Log-Pwr 3/10 M	01-92 157 101-92 157 102-92 157 102-92 102	(8001 pts)	Auto Tur Center Fre 18.00000000 Gł Start Fre 10.00000000 Gł Stop Fre 26.00000000 Gł CF Ste 1.600000000 Gł Auto Ma Freq Offs



802.11n (HT40) Modulation





Sp	urious	s emiss	sion(2437	7MHz)	
ilent Spectrum Analyzer - Swept SA RL RF 50 Q AC enter Freq 5.01500000	PNO: East +	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 5/10	01:57:15 PMNov 18, 2020 TRACE 1 2 3 4 5 6 TYPE MWWWWWW DET P P P P P	Frequency
Ref Offset 8.64 dB dB/div Ref 28.64 dBm	IFGain:Low	#Atten: 30 dB		2 9.497 8 GHz -47.398 dBm	Auto Tune
99 86					Center Freq 5.015000000 GHz
36					Start Freq 30.000000 MHz
.4) ¹				Stop Freq 10.000000000 GHz
A A				-30.13 dBm	CF Step 997.000000 MHz
.4	ada alkalara		dia harman dan baha sarahin		<u>Auto</u> Man Freq Offset
			an a		0 Hz
es BW 100 kHz	#VBW	300 kHz	Sweep 95 Status	Stop 10.000 GHz 3.1 ms (8001 pts)	
es BW 100 kHz		SENSE:INT	Sweep 95 STATUS ALIGNAUTO Avg Type: Log-Pwr	3.1 ms (8001 pts)	Frequency
len Spetrum Analyzer Swept SA RE Spetrum Analyzer Swept SA RE SPETRE SPECIAL			Sweep 95 status Alionauto Avg Type: Log-Pwr Avg[Heid: 3/10	3.1 ms (8001 pts) 01:57:26 PMNov 19, 2020 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 5 7 9 2 GHz	
les BW 100 kHz	00 GHz PN0: Fast →	SENSE:INT	Sweep 95 status Alionauto Avg Type: Log-Pwr Avg[Heid: 3/10	3.1 ms (8001 pts) 	Auto Tune Center Freq
Les BW 100 kHz Image: Spectrum Analyzer - Swept SA RL 8F BF SD0 AC Image: Spectrum Analyzer - Swept SA RL 8F BF SD0 AC Image: Spectrum Analyzer - Swept SA RL 8F BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA BF SD0 AC Image: Spectrum Analyzer - Swept SA Image: Spectrum Analyz	00 GHz PN0: Fast →	SENSE:INT	Sweep 95 status Alionauto Avg Type: Log-Pwr Avg[Heid: 3/10	3.1 ms (8001 pts) 01:57:26 PMNov 19, 2020 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 5 7 9 2 GHz	Auto Tune Center Freq 18.00000000 GHz Start Freq
Less BW 100 kHz Init Spectrum Atalyzer Swept SA RL FR PR 1000 eC Center Freq 18.00000000 Clicklav Ref Offset 8.64 dB Clicklav Ref 18.64 dB Clicklav Ref 18.64 dB Clicklav Ref 18.64 dB Clicklav Ref 18.64 dB	00 GHz PN0: Fast →	SENSE:INT	Sweep 95 status Alionauto Avg Type: Log-Pwr Avg[Heid: 3/10	015726 MMw 19,200 1015726 MMw 19,200 1000 1000 1000 1000 1000 1000 1000	Auto Tune Center Freq 18.00000000 GHz Start Freq 10.00000000 GHz Stop Freq
Res BW 100 kHz Imit Spectrum Analyzer _ Swept SA Rt EF B SD0 4C Senter Freq 18,0000000 CB/dily Ref Offset 8.64 dB CB/dily Ref 18.64 dB CB/dily	00 GHz PN0: Fast →	SENSE:INT	Sweep 95 status Alionauto Avg Type: Log-Pwr Avg[Heid: 3/10	3.1 ms (8001 pts) 01:57:26 PMNov 19, 2020 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 4 5 6 TRACE 12 2 5 7 9 2 GHz	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz 26.000000000 GHz CF Step 1.00000000 GHz
ant 30 MHz Res BW 100 kHz Ind Spetrum Analyzer Smet 51 Rut Spetrum Analyzer Smet 52 Ind Spet	00 GHz PN0: Fast →	SENSE INTI Trig: Free Run #Atten: 20 dB	Altonation	015726 MMw 19,200 1015726 MMw 19,200 1000 1000 1000 1000 1000 1000 1000	Auto Tune Center Freq 18.0000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.00000000 GHz Auto Man Freq Offset
Res BW 100 kHz Initi Spectrum Aubyrer Swept SA RL 88 RE 900 AC anter Freq 18.00000000 Bild day Ref Offset 8.64 dB A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9 A 9	00 CHZ PR0:Fsst + IFGaind.ew	SENSE INTI Trig: Free Run #Atten: 20 dB	Stratus	015726 PMNer 19, 2000 Recg 1923 4 19, 2000 Recg 1923 4 19, 2000 PM 2017 2017 2017 2017 2017 2017 2017 2017	Auto Tune Center Freq 18.00000000 GHz Start Freq 26.00000000 GHz 26.0000000 GHz CF Step 1.50000000 GHz Auto Man

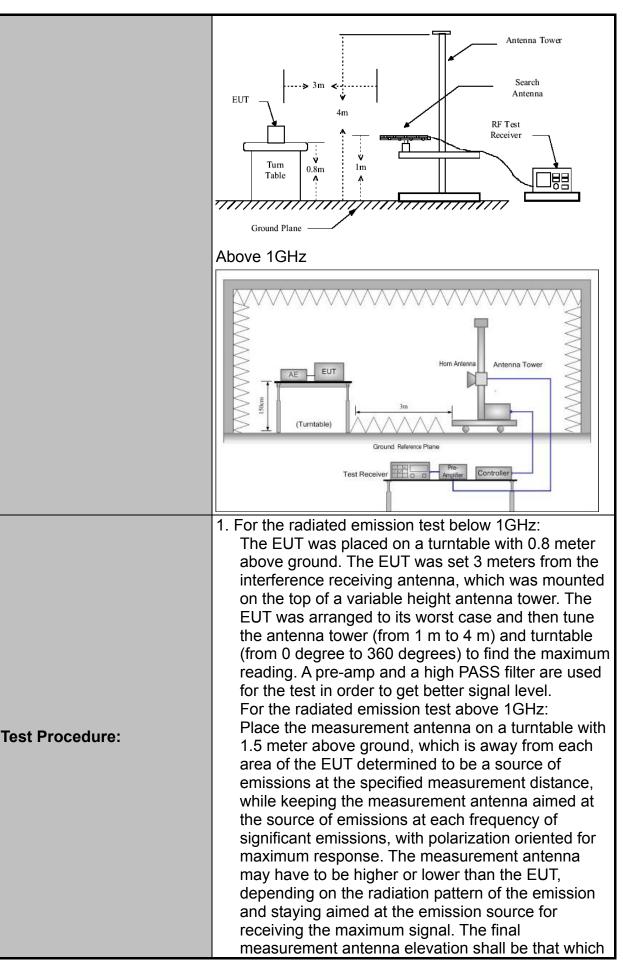


4.6. Radiated Spurious Emission Measurement

4.6.1. Test Specification

Test Requirement:	FCC Part15	C Sectio	on 15	.209						
Test Method:	ANSI C63.10: 2013 9 kHz to 25 GHz									
Frequency Range:	9 kHz to 25 (GHz								
Measurement Distance:	3 m									
Antenna Polarization:	Horizontal &	Vertical								
Operation mode:	Transmitting	mode w	vith m	nodulati	on					
	Frequency 9kHz- 150kHz 150kHz-	Detecto Quasi-pe Quasi-pe	ak	RBW 200Hz 9kHz	VBW 1kHz 30kHz		Remark si-peak Value si-peak Value			
Receiver Setup:	30MHz 30MHz-1GHz Above 1GHz	Quasi-pe Peak Peak	ak 1	I20KHz 1MHz 1MHz	300KHz 3MHz 10Hz	Qua: P	si-peak Value eak Value erage Value			
Limit:	Frequen 0.009-0.4 0.490-1.7 1.705-3 30-88 88-216 216-96 Above 9 Frequency Above 1GHz	190 705 0 60 Fi (mic	eld Str	s/meter)	(meter) (Hz)	ment	easurement ance (meters) 300 30 30 30 3 3 3 3 3 3 Detector Average Peak			
Test setup:	EUT	tance = 3m	Ins be	elow 30	Pre -A	Comput	er			







4	 maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 8. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 8. 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 level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 6. 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 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:	7400



4.6.2. Test Instruments

	Rad	iated Emissio	n Test Site (96	6)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Receiver	R&S	ESCI-7	HKE-010	Dec. 26, 2019	Dec. 25, 2020
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	Dec. 25, 2020
Preamplifier	EMCI	EMC051845 SE	HKE-015	Dec. 26, 2019	Dec. 25, 2020
Preamplifier	Agilent	83051A	HKE-016	Dec. 26, 2019	Dec. 25, 2020
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 26, 2019	Dec. 25, 2020
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Dec. 26, 2019	Dec. 25, 2020
Horn antenna	Schwarzbeck	9120D	HKE-013	Dec. 26, 2019	Dec. 25, 2020
Antenna Mast	Keleto	CC-A-4M	N/A	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Dec. 26, 2019	Dec. 25, 2020
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A	N/A
RF cable (9KHz-1GHz)	Times	381806-001	N/A	N/A	N/A
RF cable	Times	1-40G	HKE-034	Dec. 26, 2019	Dec. 25, 2020
Horn Antenna	Schewarzbeck	BBHA 9170	HKE-017	Dec. 26, 2019	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).

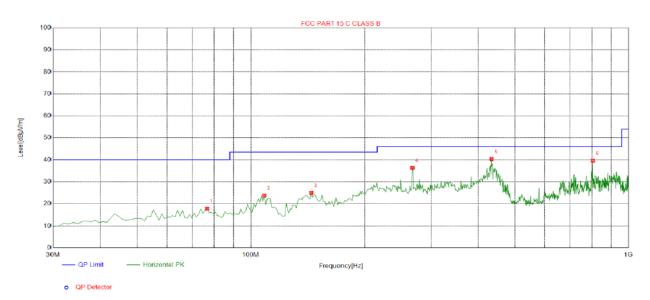


4.6.3. Test Data

Please refer to following diagram for individual Below 1GHz

All the test modes completed for test. only the worst result of AC240V/60Hz(802.11b at 2412MHz) was reported as below:

Horizontal

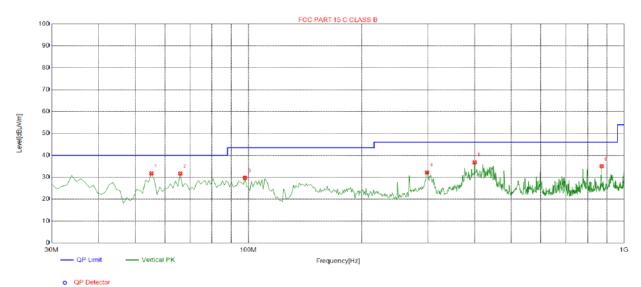


Suspe	Suspected List									
NO	Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	Delevity	
NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity	
1	76.6066	-18.86	36.63	17.77	40.00	22.23	100	332	Horizontal	
2	108.6486	-15.43	39.19	23.76	43.50	19.74	100	180	Horizontal	
3	144.5746	-19.07	44.02	24.95	43.50	18.55	100	306	Horizontal	
4	267.8879	-13.63	49.95	36.32	46.00	9.68	100	306	Horizontal	
5	433.9239	-9.68	50.06	40.38	46.00	5.62	100	102	Horizontal	
6	804.8348	-3.04	42.60	39.56	46.00	6.44	100	292	Horizontal	

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



Vertical



Suspe	Suspected List										
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity		
1	55.2452	-14.44	46.19	31.75	40.00	8.25	100	119	Vertical		
2	65.9259	-16.65	48.34	31.69	40.00	8.31	100	242	Vertical		
3	97.9680	-15.74	45.47	29.73	43.50	13.77	100	32	Vertical		
4	298.9590	-12.75	44.92	32.17	46.00	13.83	100	6	Vertical		
5	399.9399	-10.41	47.23	36.82	46.00	9.18	100	338	Vertical		
6	870.8609	-2.23	37.27	35.04	46.00	10.96	100	81	Vertical		

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

Remark:

(1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.

(2) * 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.

(3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz

for measuring above 1 GHz, below 30MHz was 10KHz.



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	58.19	-3.64	54.55	74	-19.45	peak			
4824	47.35	-3.64	43.71	54	-10.29	AVG			
7236	57.63	-0.95	56.68	74	-17.32	peak			
7236	43.66	-0.95	42.71	54	-11.29	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	59.37	-3.64	55.73	74	-18.27	peak			
4824	47.15	-3.64	43.51	54	-10.49	AVG			
7236	58.32	-0.95	57.37	74	-16.63	peak			
7236	44.25	-0.95	43.3	54	-10.7	AVG			
Remark: Factor :	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	59.82	-3.51	56.31	74	-17.69	peak			
4874	46.17	-3.51	42.66	54	-11.34	AVG			
7311	55.32	-0.82	54.5	74	-19.5	peak			
7311	42.15	-0.82	41.33	54	-12.67	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	60.57	-3.51	57.06	74	-16.94	peak
4874	44.19	-3.51	40.68	54	-13.32	AVG
7311	56.30	-0.82	55.48	74	-18.52	peak
7311	41.82	-0.82	41	54	-13	AVG
Remark: Factor -	= Antenna Factor	+ Cable Loss – I	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	58.67	-3.43	55.24	74	-18.76	peak			
4924	42.15	-3.43	38.72	54	-15.28	AVG			
7386	55.38	-0.75	54.63	74	-19.37	peak			
7386	41.88	-0.75	41.13	54	-12.87	AVG			
Remark: Factor	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	60.38	-3.43	56.95	74	-17.05	peak
4924	44.93	-3.43	41.5	54	-12.5	AVG
7386	55.69	-0.75	54.94	74	-19.06	peak
7386	40.16	-0.75	39.41	54	-14.59	AVG
Remark: Factor	= Antenna Factor	+ Cable Loss – I	Pre-amplifier.			

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz $_{\circ}$

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4)The emissions are attenuated more than 20dB below the permissible limits are not record in the report.
(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

(7)All modes of operation were investigated and the worst-case emissions of ANT.1 are reported.



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	59.37	-3.64	55.73	74	-18.27	peak			
4824	42.98	-3.64	39.34	54	-14.66	AVG			
7236	55.31	-0.95	54.36	74	-19.64	peak			
7236	42.19	-0.95	41.24	54	-12.76	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	61.37	-3.64	57.73	74	-16.27	peak			
4824	44.76	-3.64	41.12	54	-12.88	AVG			
7236	58.15	-0.95	57.2	74	-16.8	peak			
7236	44.02	-0.95	43.07	54	-10.93	AVG			
Remark: Factor	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	58.17	-3.51	54.66	74	-19.34	peak		
4874	46.32	-3.51	42.81	54	-11.19	AVG		
7311	58.77	-0.82	57.95	74	-16.05	peak		
7311	42.19	-0.82	41.37	54	-12.63	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	60.35	-3.51	56.84	74	-17.16	peak		
4874	46.33	-3.51	42.82	54	-11.18	AVG		
7311	55.82	-0.82	55	74	-19	peak		
7311	41.02	-0.82	40.2	54	-13.8	AVG		
Remark: Factor	Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							



HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4924	60.37	-3.43	56.94	74	-17.06	peak		
4924	44.82	-3.43	41.39	54	-12.61	AVG		
7386	55.39	-0.75	54.64	74	-19.36	peak		
7386	41.42	-0.75	40.67	54	-13.33	AVG		
Remark: Factor :	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	58.64	-3.43	55.21	74	-18.79	peak
4924	46.37	-3.43	42.94	54	-11.06	AVG
7386	55.81	-0.75	55.06	74	-18.94	peak
7386	41.39	-0.75	40.64	54	-13.36	AVG

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

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4)The emissions are attenuated more than 20dB below the permissible limits are not record in the report (5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

(7)All modes of operation were investigated and the worst-case emissions of ANT.1 are reported.



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	60.34	-3.64	56.7	74	-17.3	peak	
4824	47.15	-3.64	43.51	54	-10.49	AVG	
7236	58.22	-0.95	57.27	74	-16.73	peak	
7236	42.03	-0.95	41.08	54	-12.92	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	59.76	-3.64	56.12	74	-17.88	peak	
4824	47.32	-3.64	43.68	54	-10.32	AVG	
7236	57.32	-0.95	56.37	74	-17.63	peak	
7236	41.28	-0.95	40.33	54	-13.67	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	60.37	-3.51	56.86	74.00	-17.14	peak	
4874.00	45.33	-3.51	41.82	54.00	-12.18	AVG	
7311.00	56.19	-0.82	55.37	74.00	-18.63	peak	
7311.00	44.38	-0.82	43.56	54.00	-10.44	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	58.31	-3.51	54.80	74.00	-19.20	peak	
4874.00	45.00	-3.51	41.49	54.00	-12.51	AVG	
7311.00	55.32	-0.82	54.50	74.00	-19.50	peak	
7311.00	42.89	-0.82	42.07	54.00	-11.93	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	Dotootor Typo
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4924	58.16	-3.43	54.73	74	-19.27	peak
4924	45.32	-3.43	41.89	54	-12.11	AVG
7386	55.17	-0.75	54.42	74	-19.58	peak
7386	42.69	-0.75	41.94	54	-12.06	AVG

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
4924	60.35	-3.43	56.92	74	-17.08	peak		
4924	45.92	-3.43	42.49	54	-11.51	AVG		
7386	56.32	-0.75	55.57	74	-18.43	peak		
7386	40.88	-0.75	40.13	54	-13.87	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	58.34	-3.63	54.71	74	-19.29	peak		
4844	45.15	-3.63	41.52	54	-12.48	AVG		
7266	56.82	-0.94	55.88	74	-18.12	peak		
7266	44.37	-0.94	43.43	54	-10.57	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	59.67	-3.63	56.04	74	-17.96	peak		
4844	46.02	-3.63	42.39	54	-11.61	AVG		
7266	55.32	-0.94	54.38	74	-19.62	peak		
7266	41.98	-0.94	41.04	54	-12.96	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)	Detector Type		
4874	59.74	-3.51	56.23	74	-17.77	peak		
4874	45.32	-3.51	41.81	54	-12.19	AVG		
7311	56.91	-0.82	56.09	74	-17.91	peak		
7311	43.16	-0.82	42.34	54	-11.66	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	59.67	-3.51	56.16	74	-17.84	peak		
4874	43.25	-3.51	39.74	54	-14.26	AVG		
7311	55.64	-0.82	54.82	74	-19.18	peak		
7311	42.02	-0.82	41.2	54	-12.8	AVG		
Remark: Factor	emark: 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	58.97	-3.43	55.54	74	-18.46	peak		
4904	43.25	-3.43	39.82	54	-14.18	AVG		
7356	56.34	-0.75	55.59	74	-18.41	peak		
7356	42.19	-0.75	41.44	54	-12.56	AVG		
Remark: Factor	emark: 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	59.67	-3.43	56.24	74	-17.76	peak		
4904	48.25	-3.43	44.82	54	-9.18	AVG		
7356	54.06	-0.75	53.31	74	-20.69	peak		
7356	42.61	-0.75	41.86	54	-12.14	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 record in the report.(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring

above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed. (7)All modes of operation were investigated and the worst-case emissions of MIMO are reported.

Test Result of Radiated Spurious at Band edges

Operation Mode: 802.11b Mode TX CH Low (2412MHz) All modes of operation were investigated and the worst-case of ANT.1 are reported.

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	57.88	-5.81	52.07	74	-21.93	peak		
2310	/	-5.81	1	54	/	AVG		
2390	60.35	-5.84	54.51	74	-19.49	peak		
2390	48.72	-5.84	42.88	54	-11.12	AVG		
2400	61.33	-5.84	55.49	74	-18.51	peak		
2400	48.36	-5.84	42.52	54	-11.48	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		
2310	58.67	-5.81	52.86	74	-21.14	peak		
2310	1	-5.81	/	54	1	AVG		
2390	61.32	-5.84	55.48	74	-18.52	peak		
2390	48.35	-5.84	42.51	54	-11.49	AVG		
2400	61.08	-5.84	55.24	74	-18.76	peak		
2400	45.72	-5.84	39.88	54	-14.12	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	58.97	-5.65	53.32	74	-20.68	peak		
2483.50	1	-5.65	1	54	1	AVG		
2500.00	54.36	-5.65	48.71	74	-25.29	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	56.38	-5.65	50.73	74	-23.27	peak	
2483.50	1	-5.65	/	54	1	AVG	
2500.00	56.71	-5.65	51.06	74	-22.94	peak	
2500.00	/	-5.65	1	54	1	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							
Remark: All the	other emissions no	ot reported were	too low to read and	d deemed to con	nply with FCC li	mit.	



Operation Mode: 802.11g Mode TX CH Low (2412MHz) All modes of operation were investigated and the worst-case of ANT.1 are reported.

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	56.34	-5.81	50.53	74	-23.47	peak		
2310	/	-5.81	1	54	1	AVG		
2390	61.88	-5.84	56.04	74	-17.96	peak		
2390	46.03	-5.84	40.19	54	-13.81	AVG		
2400	60.77	-5.84	54.93	74	-19.07	peak		
2400	49.62	-5.84	43.78	54	-10.22	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	56.70	-5.81	50.89	74	-23.11	peak		
2310	/	-5.81	/	54	1	AVG		
2390	61.38	-5.84	55.54	74	-18.46	peak		
2390	48.25	-5.84	42.41	54	-11.59	AVG		
2400	60.25	-5.84	54.41	74	-19.59	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 (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2483.50	57.64	-5.65	51.99	74	-22.01	peak		
2483.50	/	-5.65	/	54	1	AVG		
2500.00	55.82	-5.65	50.17	74	-23.83	peak		
2500.00	/	-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	57.93	-5.65	52.28	74	-21.72	peak	
2483.50	/	-5.65	/	54	1	AVG	
2500.00	53.16	-5.65	47.51	74	-26.49	peak	
2500.00	1	-5.65	/	54	1	AVG	
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.							
Remark: All the	other emissions no	ot reported were	too low to read and	d deemed to con	nply with FCC li	mit.	



Operation Mode: 802.11n/H20 Mode TX CH Low (2412MHz) All modes of operation were investigated and the worst-case of MIMO are reported.

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Delector Type		
2310	58.12	-5.81	52.31	74	-21.69	peak		
2310	/	-5.81	1	54	1	AVG		
2390	61.34	-5.84	55.5	74	-18.5	peak		
2390	48.58	-5.84	42.74	54	-11.26	AVG		
2400	60.37	-5.84	54.53	74	-19.47	peak		
2400	48.25	-5.84	42.41	54	-11.59	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	56.37	-5.81	50.56	74	-23.44	peak		
2310	1	-5.81	1	54	1	AVG		
2390	62.35	-5.84	56.51	74	-17.49	peak		
2390	47.15	-5.84	41.31	54	-12.69	AVG		
2400	61.22	-5.84	55.38	74	-18.62	peak		
2400	48.25	-5.84	42.41	54	-11.59	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	57.64	-5.65	51.99	74	-22.01	peak		
2483.50	1	-5.65	/	54	1	AVG		
2500.00	54.12	-5.65	48.47	74	-25.53	peak		
2500.00	1	-5.65	/	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	57.61	-5.65	51.96	74	-22.04	peak		
2483.50	/	-5.65	/	54	1	AVG		
2500.00	55.32	-5.65	49.67	74	-24.33	peak		
2500.00	1	-5.65	/	54	1	AVG		
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.								
Remark: All the o	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) All modes of operation were investigated and the worst-case of MIMO are reported.

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Tupo
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
2310	60.32	-5.81	54.51	74	-19.49	peak
2310	42.58	-5.81	36.77	54	-17.23	AVG
2390	62.28	-5.84	56.44	74	-17.56	peak
2390	45.18	-5.84	39.34	54	-14.66	AVG
2400	62.32	-5.84	56.48	74	-17.52	peak
2400	45.33	-5.84	39.49	54	-14.51	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	58.32	-5.81	52.51	74	-21.49	peak		
2310	/	-5.81	/	54	1	AVG		
2390	61.32	-5.84	55.48	74	-18.52	peak		
2390	45.96	-5.84	40.12	54	-13.88	AVG		
2400	62.32	-5.84	56.48	74	-17.52	peak		
2400	48.02	-5.84	42.18	54	-11.82	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	58.32	-5.65	52.67	74	-21.33	peak		
2483.50	/	-5.65	1	54	1	AVG		
2500.00	54.18	-5.65	48.53	74	-25.47	peak		
2500.00	/	-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	56.37	-5.65	50.72	74	-23.28	peak		
2483.50	1	-5.65	/	54	1	AVG		
2500.00	54.12	-5.65	48.47	74	-25.53	peak		
2500.00	1	-5.65	/	54	1	AVG		
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.								
Remark: All the	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

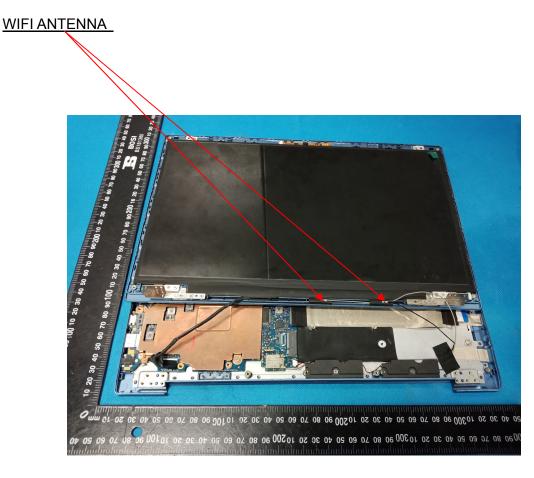
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain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

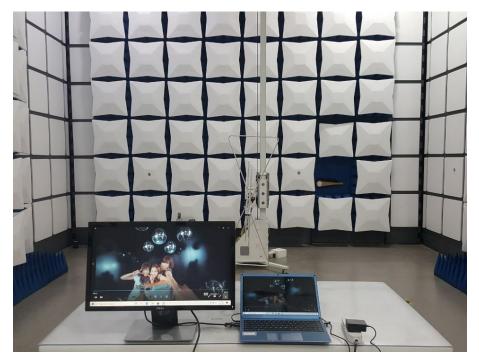
The antenna used in this product is a Internal Antenna, which use a special interface and cannot easily replace, and the best case gain of the antenna is Antenna port 1:1.64dBi and Antenna port 2:1.64dBi.

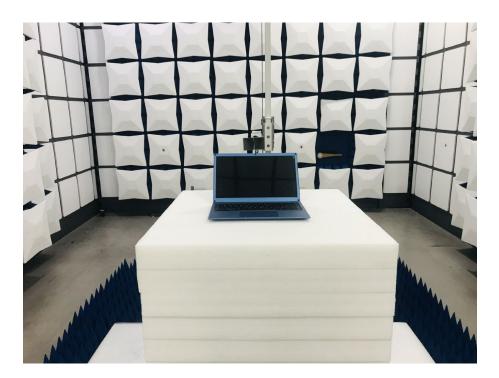




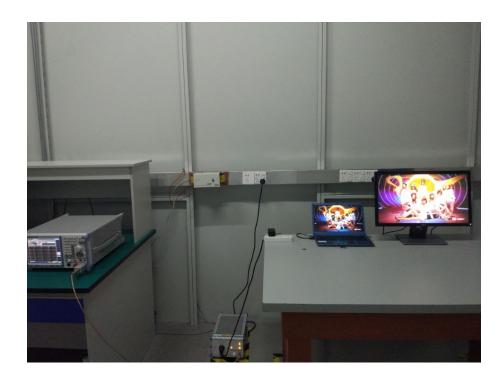
PHOTOGRAPH OF TEST

Radiated 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*****