



FCC Test Report

Test report
On Behalf of
Shenzhen Tianzhishan Technology Co., Ltd.
For
Repeater
Model No.: ZJQ-2, ZJQ-3, ZJQ-4, ZJQ-5, ZJQ-6, ZJQ-7, ZJQ-8,
ZJQ-9, ZJQ-10

FCC ID: 2BF20-ZJQ-2

Prepared For : Shenzhen Tianzhishan Technology Co., Ltd.
Room 109, Building 1, 1970 Science and Technology Town, Minzhi Street,
Longhua District, Shenzhen City, China

Prepared By : Shenzhen DL Testing Technology Co., Ltd.
101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial
Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Date of Test: Apr. 15, 2024 ~ May 11, 2024
Date of Report: May 11, 2024
Report Number: DL-240605003ER



Test Result Certification

Applicant's name : Shenzhen Tianzhishan Technology Co., Ltd.
Address : Room 109, Building 1, 1970 Science and Technology Town, Minzhi Street, Longhua District, Shenzhen City, China

Manufacturer's Name : Shenzhen Tianzhishan Technology Co., Ltd.
Address : Room 109, Building 1, 1970 Science and Technology Town, Minzhi Street, Longhua District, Shenzhen City, China

Product description

Trade Mark: N/A
Product name..... : Repeater
Model and/or type reference : ZJQ-2, ZJQ-3, ZJQ-4, ZJQ-5, ZJQ-6, ZJQ-7, ZJQ-8, ZJQ-9, ZJQ-10
Standards..... : FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen DL Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen DL Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Date of Test..... :
Date (s) of performance of tests..... : **Apr. 15, 2024 ~ May 11, 2024**
Date of Issue..... : **May 11, 2024**
Test Result : **Pass**

Testing Engineer : *Randy Xie*

Randy Xie

Technical Manager : *Jack Bu*

Jack Bu

Authorized Signatory : *Jade Yang*

Jade Yang





Table of Contents

1. Test Result Summary	5
1.1. Test Procedures and Results	5
1.2. Information of the Test Laboratory	5
1.3. Measurement Uncertainty	6
2. EUT Description.....	7
2.1. General Description of EUT	7
2.2. Carrier Frequency of Channels.....	8
2.3. Operation of EUT During Testing	8
2.4. Description of Test Setup.....	9
2.5. Description of Support Units	10
2.6. Equipments List for All Test Items	11
3. Genera Information.....	12
3.1. Test Environment and Mode	12
4. Test Results and Measurement Data	16
4.1. Conducted Emission.....	16
4.2. Maximum Conducted Output Power	19
4.3. Emission Bandwidth	21
4.4. Power Spectral Density	32
4.5. Conducted Band Edge and Spurious Emission Measurement	44
4.6. Radiated Spurious Emission Measurement	69
4.7. Antenna Requirement	94
5. Photograph of Test.....	95
6. Photos of the EUT.....	97



**** Modified History ****

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	May 11, 2024	



1. Test Result Summary

1.1. Test Procedures and Results

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247(b)(4)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247(b)(3)	PASS
6dB Emission Bandwidth	§15.247(a)(2)	PASS
Power Spectral Density	§15.247(e)	PASS
Band Edge	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. Information of the Test Laboratory

Shenzhen DL Testing Technology Co., Ltd.
Add.: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Testing Laboratory Authorization:

FCC Test Firm Registration Number: 854456
Designation Number: CN1307
IC Registered No.: 27485
CAB ID.: CN0118



1.3. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded 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	$\pm 0.37\text{dB}$
2	RF power, conducted	$\pm 3.35\text{dB}$
3	Spurious emissions, conducted	$\pm 2.20\text{dB}$
4	All emissions, radiated(<1G)	$\pm 3.90\text{dB}$
5	All emissions, radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^\circ\text{C}$
7	Humidity	$\pm 1.0\%$



2. EUT Description

2.1. General Description of EUT

Equipment:	Repeater
Model Name:	ZJQ-2
Serial Model:	ZJQ-3, ZJQ-4, ZJQ-5, ZJQ-6, ZJQ-7, ZJQ-8, ZJQ-9, ZJQ-10
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 mode: ZJQ-2.
Trade Mark:	N/A
FCC ID:	2BF20-ZJQ-2
Antenna Type:	PCB Antenna
Antenna Gain:	Antenna 1:1.44dBi Antenna 2:1.44dBi MIMO: 4.45dBi
Operation frequency:	802.11b/g/n(HT20): 2412~2462MHz 802.11n(HT40): 2422~2452MHz
Number of Channels:	802.11b/g/n(HT20): 11CH 802.11n(HT40): 7CH
Modulation Type:	DSSS, OFDM
Power Source:	AC 100-240V, 50/60Hz 0.5A
Power Rating:	AC 100-240V, 50/60Hz 0.5A
Hardware Version	V2.0
Software Version:	V2.0
Note: The EUT incorporates a MIMO function. Physically, it provides two completed transmitters and receivers(2T2R), two transmit signals are completely correlated, then, Direction gain=GANT + Array Gain(Array Gain=10 log(2) dB for power spectral density; Array Gain=0 for power measurement)	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Antenna gain Refer to the antenna specifications.
3. The cable loss data is obtained from the supplier.
4. The test results in the report only apply to the tested sample.



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

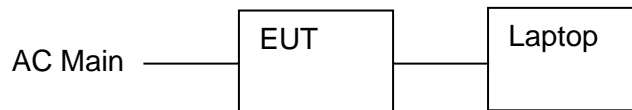
Middle Channel: 2437MHz

High Channel: 2452MHz



2.4. Description of Test Setup

Operation of EUT during testing:



The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. The worst case is X position.



2.5. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Trade Mark	Model/Type No.	Specification	Remark
1	Repeater	N/A	ZJQ-2	N/A	EUT
2	Network cable	N/A	N/A	Length:1.04m	Peripheral
3	Laptop	N/A	TP00096A	Input: DC 20V, 2.25A/3.25A	Peripheral

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.



2.6. Equipments List for All Test Items

Radiation test, Band-edge test and 20db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 04, 2023	Nov. 03, 2024
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 04, 2023	Nov. 03, 2024
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 04, 2023	Nov. 03, 2024
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 04, 2023	Nov. 03, 2024
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 04, 2023	Nov. 03, 2024
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 04, 2023	Nov. 03, 2024
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 04, 2023	Nov. 03, 2024
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 04, 2023	Nov. 03, 2024
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 04, 2023	Nov. 03, 2024
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 04, 2023	Nov. 03, 2024
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 04, 2023	Nov. 03, 2024
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 04, 2023	Nov. 03, 2024
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 04, 2023	Nov. 03, 2024
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 04, 2023	Nov. 03, 2024
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 04, 2023	Nov. 03, 2024
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 04, 2023	Nov. 03, 2024

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	ChengYu	843 Room	843	Sep. 20, 2022	Sep. 19, 2025
2	EMI Receiver	R&S	ESR	101421	Nov. 04, 2023	Nov. 03, 2024
3	LISN	R&S	ENV216	102417	Nov. 04, 2023	Nov. 03, 2024
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 04, 2023	Nov. 03, 2024
5	10dB Attenuator	Schwarzbeck	VTSD9561F	00154	Nov. 04, 2023	Nov. 03, 2024

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMCC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMCC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0



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 sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.



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

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

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13.5Mbps

Final Test Mode:

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

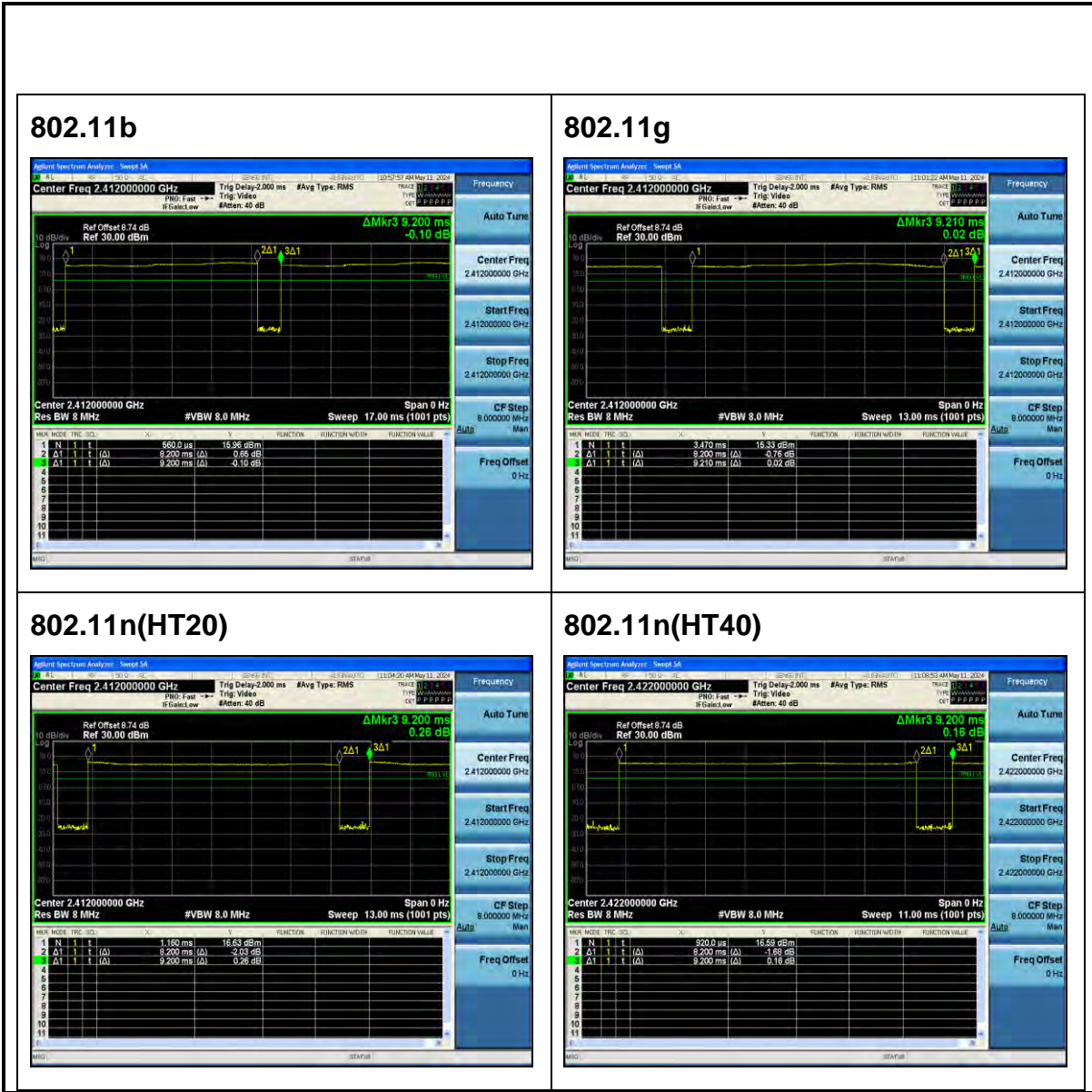
1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.
2. According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(HT20), 13.5Mbps for 802.11n(HT40).

3. Mode Test Duty Cycle

ANT.1:

Mode	Duty Cycle	Duty Cycle Factor (dB)
802.11b	0.89	-0.51
802.11g	0.89	-0.51
802.11n(HT20)	0.89	-0.51
802.11n(HT40)	0.89	-0.51

Test plots as follows:





ANT.2:

Mode	Duty Cycle	Duty Cycle Factor (dB)
802.11b	0.89	-0.51
802.11g	0.89	-0.51
802.11n(HT20)	0.89	-0.51
802.11n(HT40)	0.89	-0.51

Test plots as follows:





4. Test Results and Measurement Data

4.1. Conducted Emission

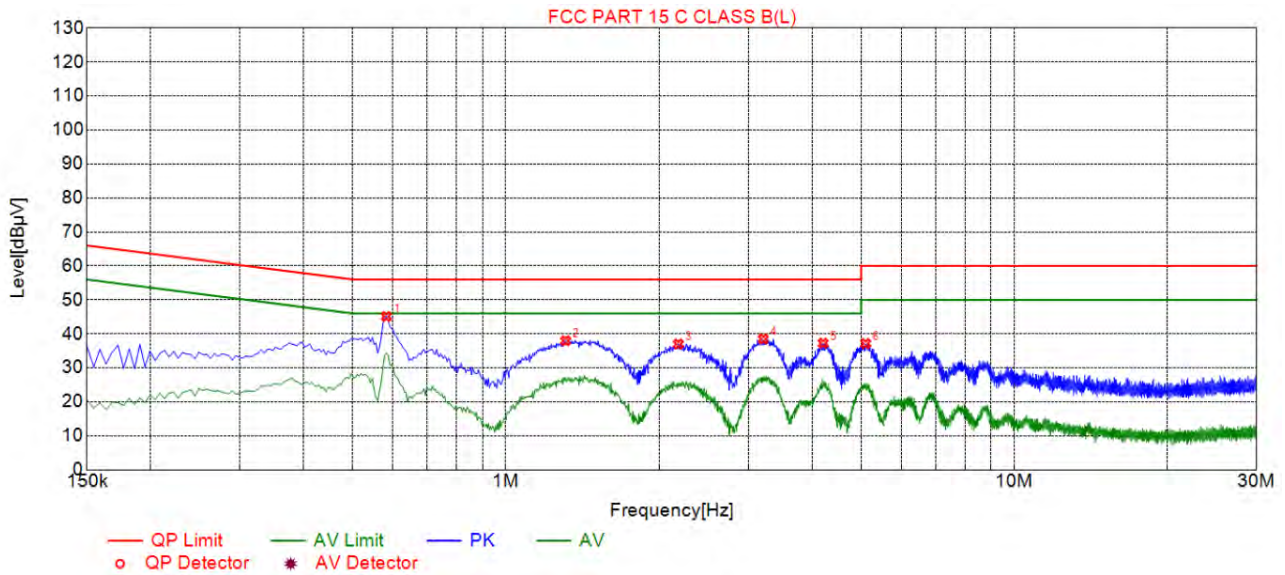
4.1.1. Test Specification

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)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
Test Setup:	<p style="font-size: small;"> <i>Remark</i> <i>E.U.T: Equipment Under Test</i> <i>LISN: Line Impedance Stabilization Network</i> <i>Test table height=0.8m</i> </p>		
Test Mode:	Charging + transmitting with modulation		
Test Procedure:	<ol style="list-style-type: none"> 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		



4.1.3 Test data

Test Specification: Line

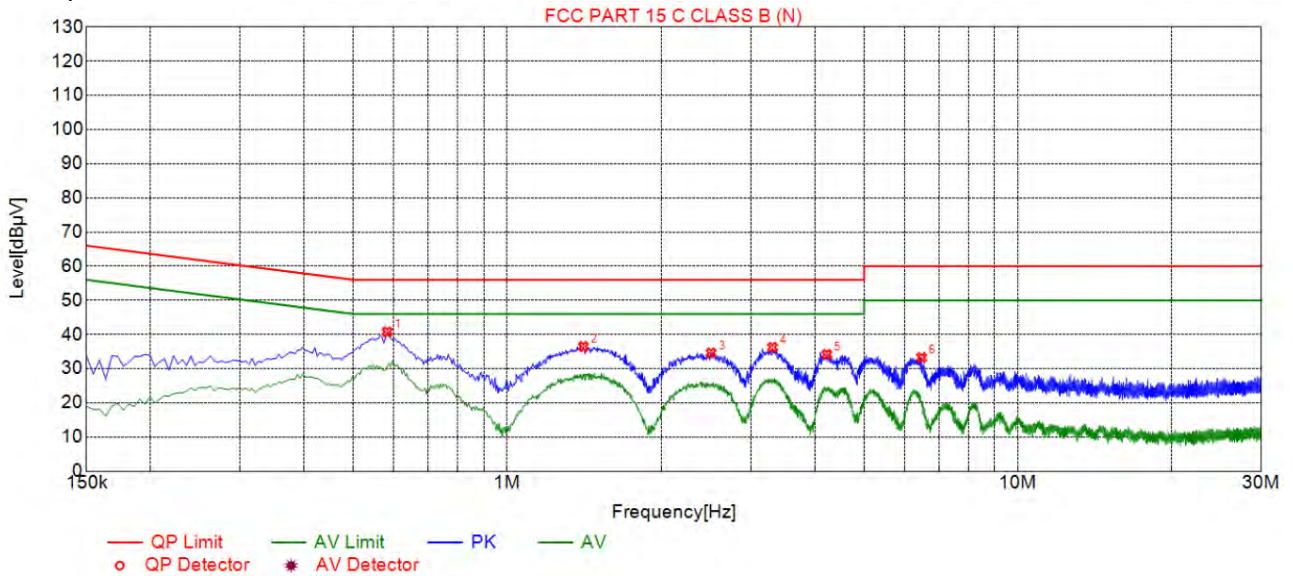


Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5820	45.12	20.05	56.00	10.88	25.07	PK	L
2	1.3110	37.99	20.10	56.00	18.01	17.89	PK	L
3	2.1840	37.02	20.16	56.00	18.98	16.86	PK	L
4	3.2100	38.49	20.23	56.00	17.51	18.26	PK	L
5	4.2090	37.25	20.25	56.00	18.75	17.00	PK	L
6	5.1045	37.15	20.26	60.00	22.85	16.89	PK	L

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



Test Specification: Neutral



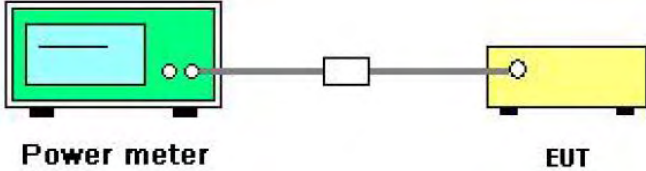
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5820	40.79	20.05	56.00	15.21	20.74	PK	N
2	1.4100	36.49	20.11	56.00	19.51	16.38	PK	N
3	2.5080	34.63	20.19	56.00	21.37	14.44	PK	N
4	3.3090	36.24	20.24	56.00	19.76	16.00	PK	N
5	4.2270	34.21	20.25	56.00	21.79	13.96	PK	N
6	6.4815	33.27	20.22	60.00	26.73	13.05	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 D01 15.247 Meas Guidance v05r02
Limit:	30dBm
Test Setup:	 <p>The diagram illustrates the test setup. On the left is a green rectangular device labeled 'Power meter'. A grey line representing an RF cable connects the power meter to a small white square labeled 'attenuator'. Another grey line connects the attenuator to a yellow rectangular device labeled 'EUT' (Equipment Under Test).</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none">1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 15.247 Meas Guidance v05r02.2. 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.3. Set to the maximum power setting and enable the EUT transmit continuously.4. Measure the Peak output power and record the results in the test report.
Test Result:	PASS



4.2.2. Test Data

Mode	Test channel	Frequency (MHz)	Reading Conducted Output Power (dBm)			Limit (dBm)	Result
			Antenna port 1	Antenna port 2	MIMO		
802.11b	CH01	2412	12.68	12.26		30	PASS
802.11b	CH06	2437	12.73	12.46		30	PASS
802.11b	CH11	2462	12.48	12.39		30	PASS
802.11g	CH01	2412	11.67	12.05		30	PASS
802.11g	CH06	2437	11.68	12.15		30	PASS
802.11g	CH11	2462	11.44	12.20		30	PASS
802.11n(HT20)	CH01	2412	11.60	12.00	14.81	30	PASS
802.11n(HT20)	CH06	2437	11.57	12.12	14.86	30	PASS
802.11n(HT20)	CH11	2462	11.34	12.14	14.77	30	PASS
802.11n(HT40)	CH03	2422	11.87	12.38	15.14	30	PASS
802.11n(HT40)	CH06	2437	11.75	12.30	15.04	30	PASS
802.11n(HT40)	CH09	2452	11.63	12.27	14.97	30	PASS

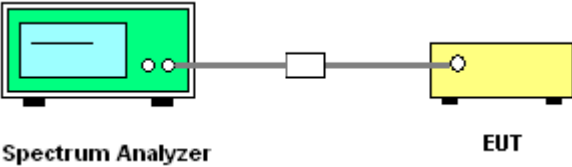
Note: 1. The test results including the cable lose.

2. 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 D01 15.247 Meas Guidance v05r02
Limit:	>500kHz
Test Setup:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. 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. 4. Measure and record the results in the test report.
Test Result:	PASS



4.3.2. Test data

For antenna port 1

Test channel	6dB Emission Bandwidth (MHz)			
	802.11b	802.11g	802.11n (HT20)	802.11n (HT40)
Lowest	10.12	16.56	17.76	36.56
Middle	10.08	16.44	17.76	36.56
Highest	9.60	16.52	17.72	36.56
Limit:	>500KHz			
Test Result:	PASS			

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel



Highest channel





802.11g Modulation

Lowest channel



Middle channel



Highest channel





802.11n (HT20) Modulation

Lowest channel



Middle channel



Highest channel





802.11n (HT40) Modulation

Lowest channel



Middle channel



Highest channel



**For antenna port 2**

Test channel	6dB Emission Bandwidth (MHz)			
	802.11b	802.11g	802.11n (HT20)	802.11n (HT40)
Lowest	9.76	16.48	17.72	36.56
Middle	10.04	16.48	17.68	36.56
Highest	10.08	16.48	17.76	36.56
Limit:	>500KHz			
Test Result:	PASS			

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel



Highest channel





802.11g Modulation

Lowest channel



Middle channel



Highest channel





802.11n (HT20) Modulation

Lowest channel



Middle channel



Highest channel





802.11n (HT40) Modulation

Lowest channel



Middle channel



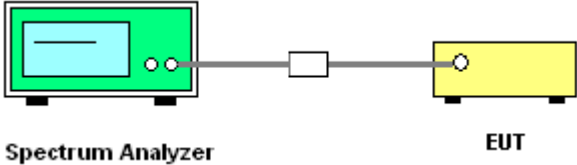
Highest channel





4.4. Power Spectral Density

4.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
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:	 <p style="text-align: center;">Spectrum Analyzer EUT</p>
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$. Video bandwidth $\text{VBW} \geq 3 \times \text{RBW}$. Set the span to at least 1.5 times the OBW. 5. Detector = Peak, Sweep time = auto couple. 6. Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 7. Measure and record the results in the test report.
Test Result:	PASS



4.4.2. Test data

For antenna port 1

EUT Set Mode	Channel	Test Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	-1.15	-11.15
	Middle	-0.31	-10.31
	Highest	-0.64	-10.64
802.11g	Lowest	-4.48	-14.48
	Middle	-4.44	-14.44
	Highest	-4.28	-14.28
802.11n(HT20)	Lowest	-4.16	-14.16
	Middle	-4.62	-14.62
	Highest	-4.60	-14.60
802.11n(HT40)	Lowest	-5.94	-15.94
	Middle	-5.91	-15.91
	Highest	-6.33	-16.33
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



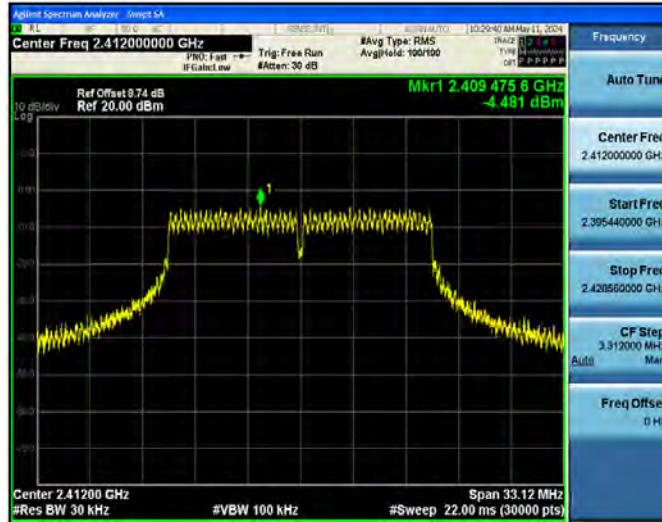
Highest channel



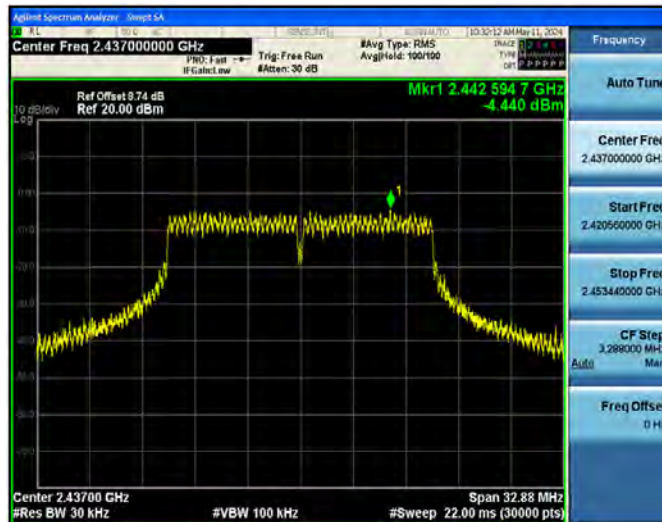


802.11g Modulation

Lowest channel



Middle channel



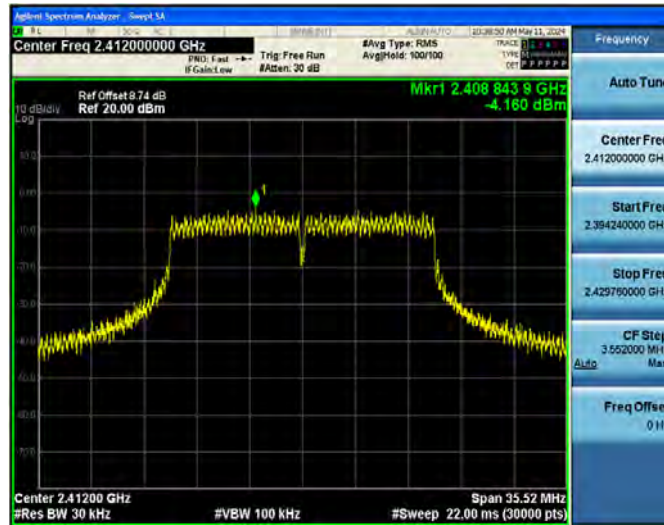
Highest channel



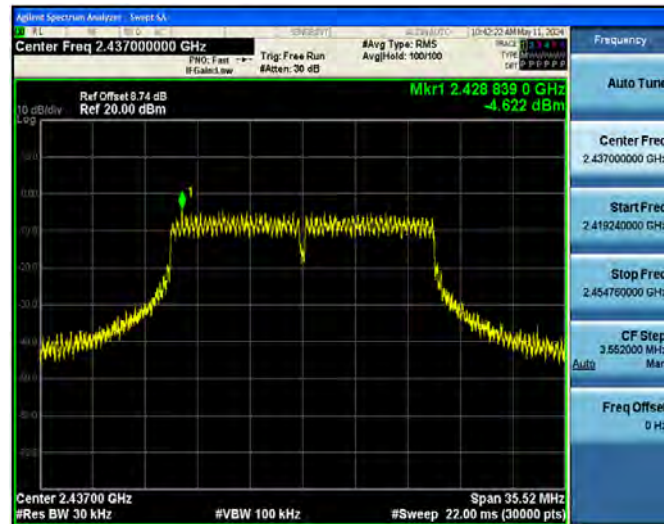


802.11n (HT20) Modulation

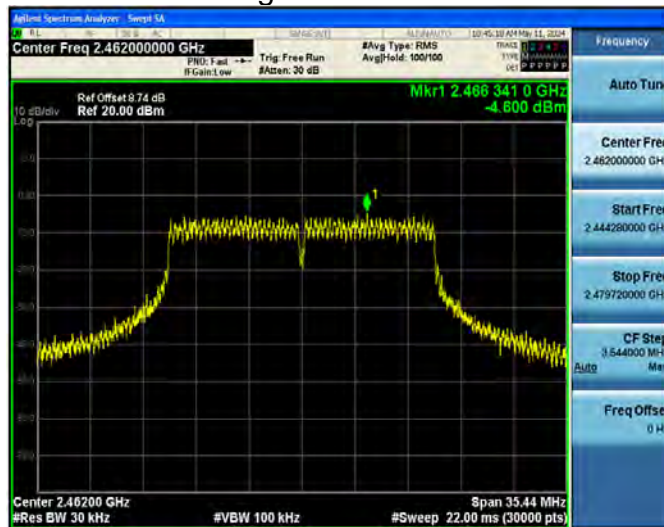
Lowest channel



Middle channel



Highest channel



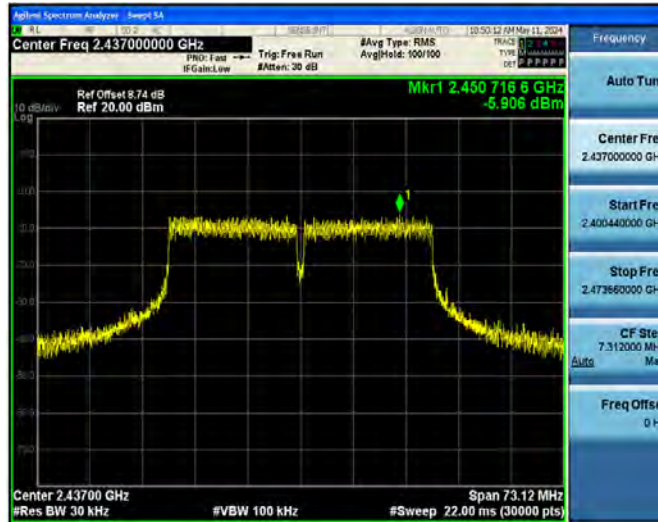


802.11n (HT40) Modulation

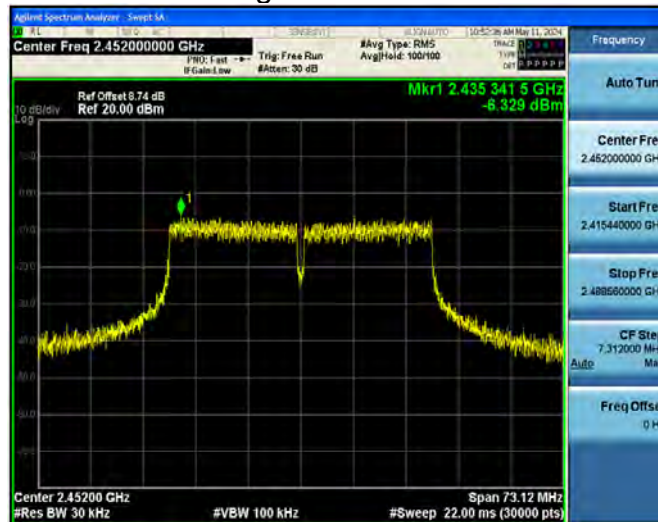
Lowest channel



Middle channel



Highest channel



**For antenna port 2**

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	-0.81	-10.81
	Middle	-0.42	-10.42
	Highest	-0.06	-10.06
802.11g	Lowest	-3.58	-13.58
	Middle	-3.50	-13.50
	Highest	-3.35	-13.35
802.11n(HT20)	Lowest	-3.86	-13.86
	Middle	-3.86	-13.86
	Highest	-3.84	-13.84
802.11n(HT40)	Lowest	-5.78	-15.78
	Middle	-6.13	-16.13
	Highest	-5.80	-15.80
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



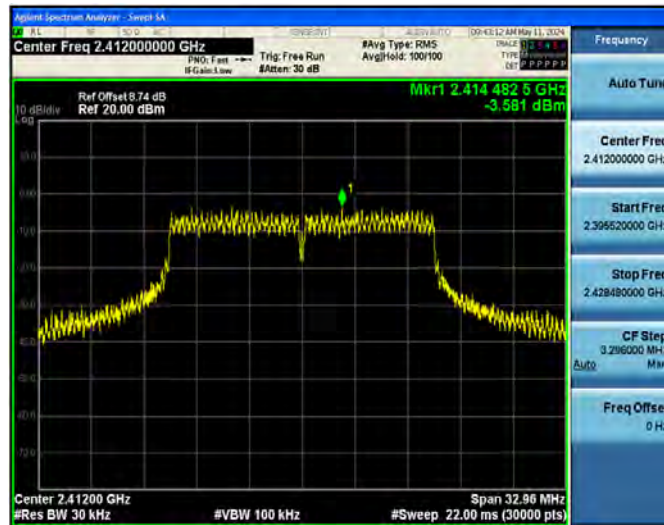
Highest channel



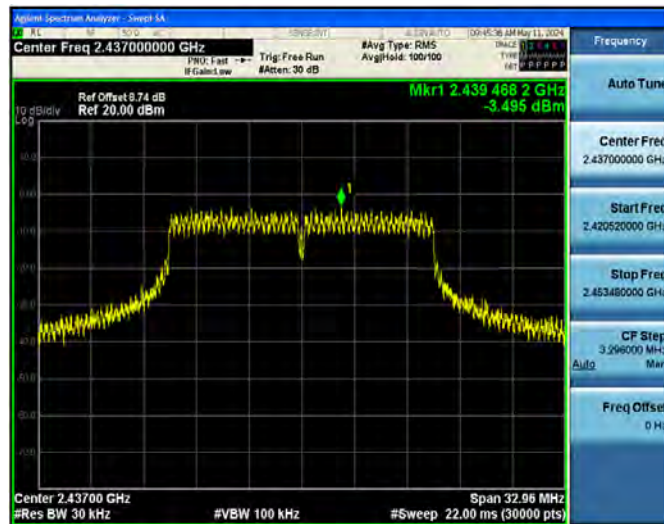


802.11g Modulation

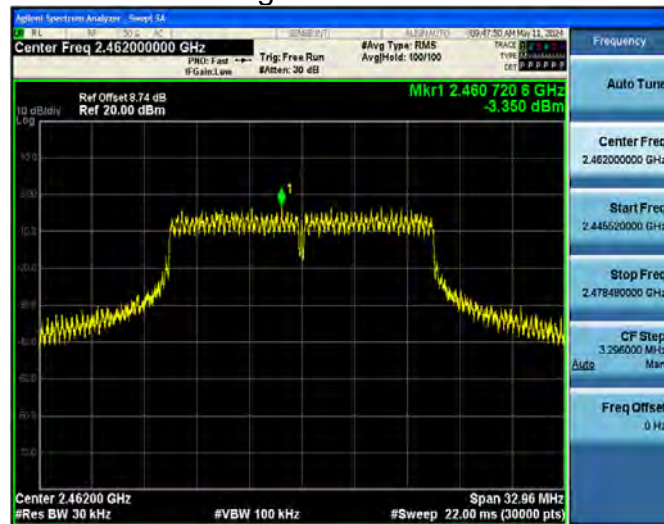
Lowest channel



Middle channel



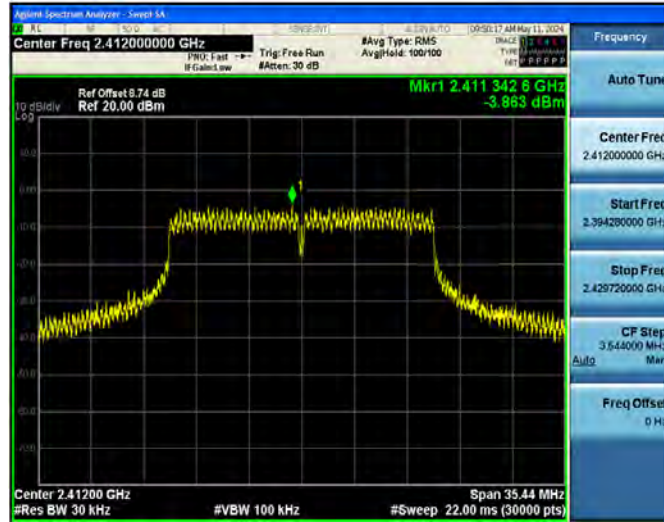
Highest channel



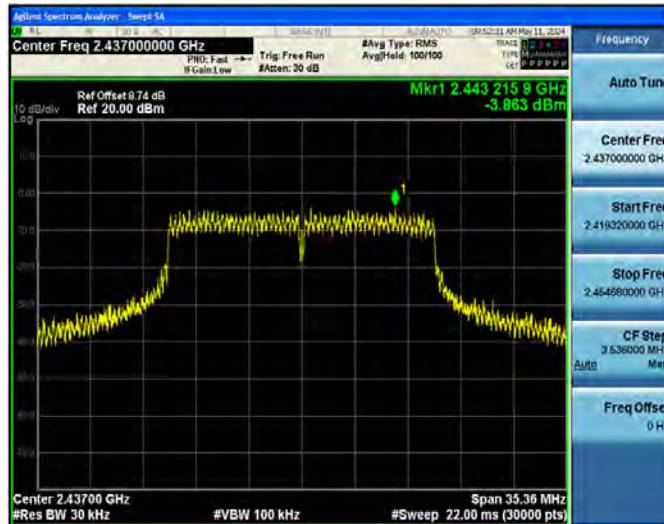


802.11n (HT20) Modulation

Lowest channel



Middle channel



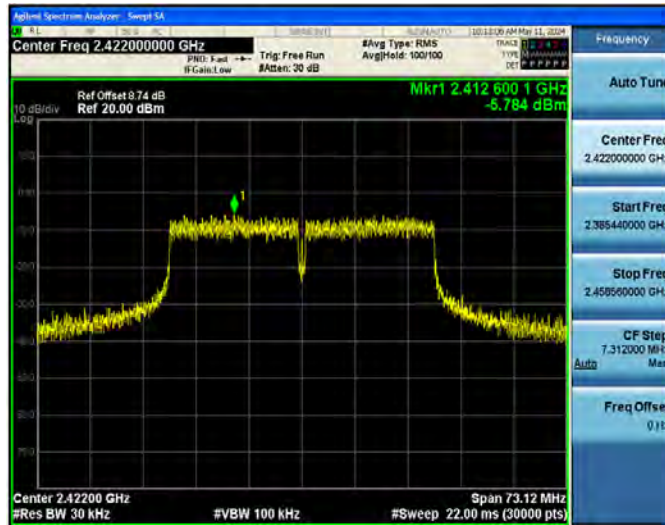
Highest channel



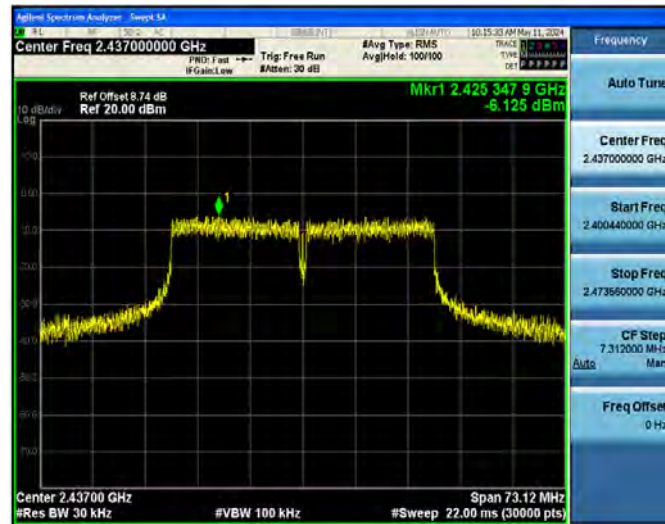


802.11n (HT40) Modulation

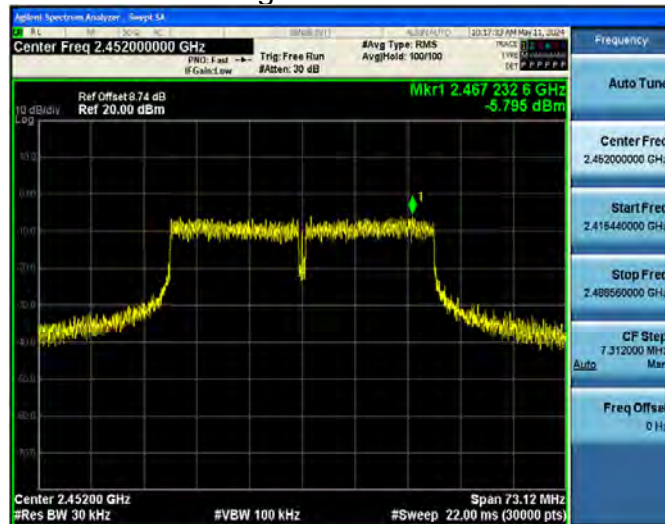
Lowest channel



Middle channel



Highest channel





For MIMO antenna port 1+antenna port 2			
Frequency	Power Density (dBm)	Limit (dBm)	Result
TX 802.11n/HT20 Mode			
2412 MHz	-11.00	8	PASS
2437 MHz	-11.21	8	PASS
2462 MHz	-11.19	8	PASS
TX 802.11n/HT40 Mode			
2422 MHz	-12.85	8	PASS
2437 MHz	-13.01	8	PASS
2452 MHz	-13.05	8	PASS
Note: 1 According to KDB 662911, Result power = $10\log(10^{(\text{ant1}/10)}+10^{(\text{ant2}/10)})$. 2 Result unit: W, The end result is converted to units of dBm. limit=8dBm-(direction gain-6dBi)=8dBm			

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.