

TEST REPORT

Applicant: Dals Lighting Inc.

Address of Applicant: 80 boul. De La Seigneurie Est, Blainville, QC, J7C 4N1, Canada

Manufacturer/Factory: Shenzhen Jiaomao Technology Co., Ltd.

Address of Manufacturer/Factory: 502, Building 6, No. 72, Xikeng Road, Xikeng Community, Fucheng Street, Longhua District, Shenzhen, Guangdong, China

Equipment Under Test (EUT)

Product Name: Smart Hub

Model No.: DCP-HUB

Trade Mark: DALIS, ILLUME

FCC ID: 2AQSN-DCPHUB

IC: 10733A-DCPHUB

HVIN: DCP-HUB

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10:2013
RSS-Gen Issue 5
RSS-247 Issue 2

Date of sample receipt: December 22, 2021

Date of Test: December 23, 2021- January 11, 2022

Date of report issued: January 12, 2022

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Luo

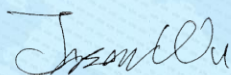
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	2022-1-12	Original

Prepared By:



Project Engineer

Date:

2022-1-12

Check By:



Reviewer

Date:

2022-1-12

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4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203/15.247 (b)(4) RSS-Gen Section 6.8	Pass
AC Power Line Conducted Emission	FCC part 15.207 RSS-Gen Section 8.8	Pass
Conducted Max Average Output Power	FCC part 15.247 (b)(3) RSS-247 Section 5.4(d)	Pass
Channel Bandwidth & 99% OCB	FCC part 15.247 (a)(2) RSS-Gen Section 6.7	Pass
Power Spectral Density	FCC part 15.247 (e) RSS-247 Section 5.2(b)	Pass
Band Edge	FCC part 15.247(d) RSS-247 Section 5.5	Pass
Spurious Emission	FCC part 15.205/15.209 RSS-Gen Section 3.3 & 8.9 & 8.10	Pass
Frequency stability	RSS-Gen Section 6.11& Section 8.11	PASS

Remark: Test according to ANSI C63.10:2013 and RSS-Gen

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	1×10^{-7}
2	Duty cycle	0.37%
3	Occupied Bandwidth	2.8dB
4	RF conducted power	0.75dB
5	RF power density	3dB
6	Conducted Spurious emissions	2.58dB
7	AC Power Line Conducted Emission	3.44dB (0.15MHz ~ 30MHz)
8	Radiated Spurious emission test	3.1dB (9kHz-30MHz)
		3.8039dB (30MHz-200MHz)
		3.9679dB (200MHz-1GHz)
		4.29dB (1GHz-18GHz)
		3.30dB (18GHz-40GHz)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	Smart Hub
Model No.:	DCP-HUB
Serial No.:	N/A
Hardware version:	V1.0
Software version:	V0.0.13
Test sample(s) ID:	GTSL202201000021-1
Sample(s) Status	Engineer sample
Operation Frequency:	802.11b/802.11g/802.11n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11 802.11n(HT40):7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(HT20)/802.11n(HT40): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	IPEX Antenna
Antenna gain:	ANTA:4.0dBi ANTB:4.0dBi MIMO technology: (PSD directional gain=7.01dBi, Power directional gain=4dBi)
Power Supply:	DC 5V 1A(Powered by adaptor)
Adaptor information:	Model:TPA-147C050100UU01 Input:AC 100-240V 50/60Hz Output:DC 5V,1A

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

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:

Test channel	Frequency (MHz)	
	802.11b/802.11g/802.11n(HT20)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

Test Item	Software	Description
Conducted RF Testing and Radiated testing	AmebaD_mptool_2V1	Set the EUT to different modulation and channel

Output power setting table:

Test Mode	Set Tx Output Power	Data Rate
802.11b	17dBm	1Mbps
802.11g	13 dBm	54Mbps
802.11n(HT20)	13 dBm	MCS7
802.11n(HT40)	13 dBm	MCS7

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. New battery is used during all test.</i>	

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:

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

Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	54Mbps	MCS7	MCS7

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

- **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17 2021	Oct. 16 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17 2021	Oct. 16 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17 2021	Oct. 16 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 24 2021	June. 23 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(b) (4)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b)(4) requirement: (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
Standard requirement:	RSS-Gen Section 6.8
A transmitter can only be sold or operated with antennas with which it was approved. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power	
EUT Antenna:	
<i>The antenna is Internal Antenna, the best case gain of the antenna is 4.0dBi, reference to the appendix II for details</i>	

7.2 Conducted Emissions

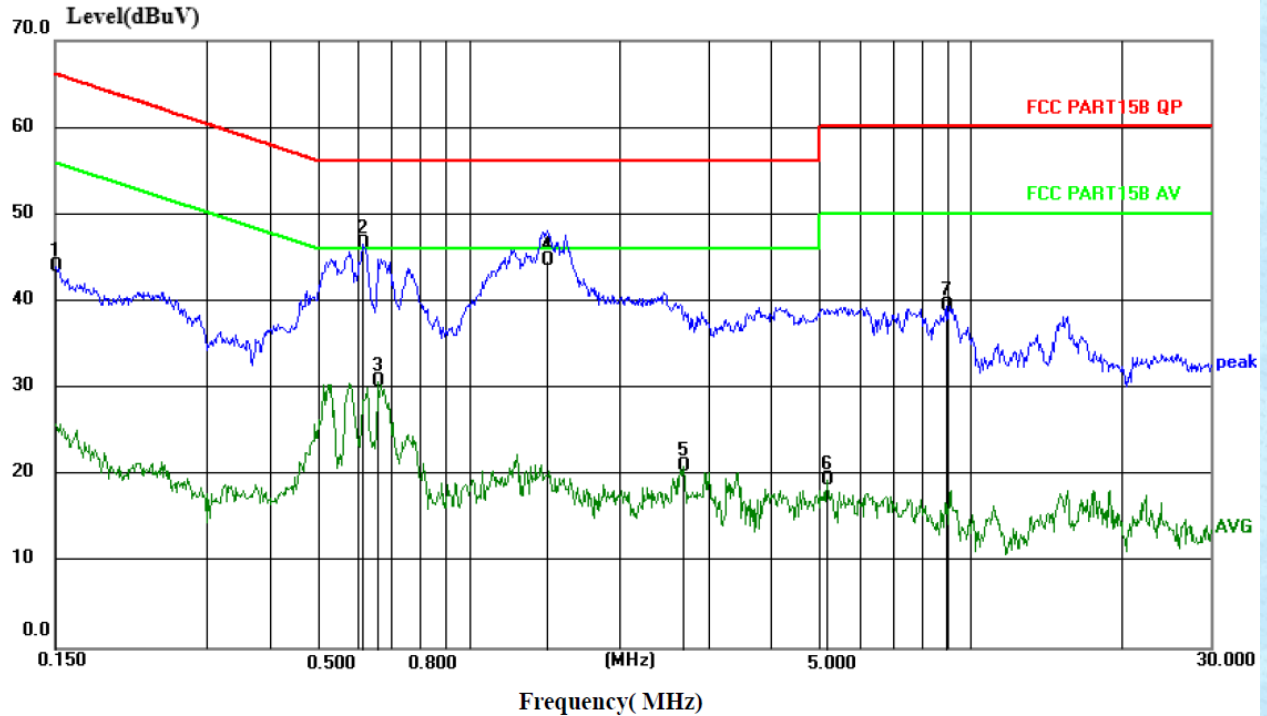
Test Requirement:	FCC Part15 C Section 15.207 RSS-Gen Section 8.8					
Test Method:	ANSI C63.10:2013 and RSS-Gen					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak		Average	
	0.15-0.5		66 to 56*		56 to 46*	
	0.5-5		56		46	
	5-30		60		50	
* Decreases with the logarithm of the frequency.						
Test setup:	Reference Plane LISN AUX Equipment E.U.T Test table/Insulation plane LISN Filter EMI Receiver 40cm 80cm AC power Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m					
Test procedure:	1. The E.U.T and simulators are 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. 2. 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). 3. 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 C63.10:2009 on conducted measurement.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz;AC 240V,50Hz					
Test results:	Pass					

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

Measurement data

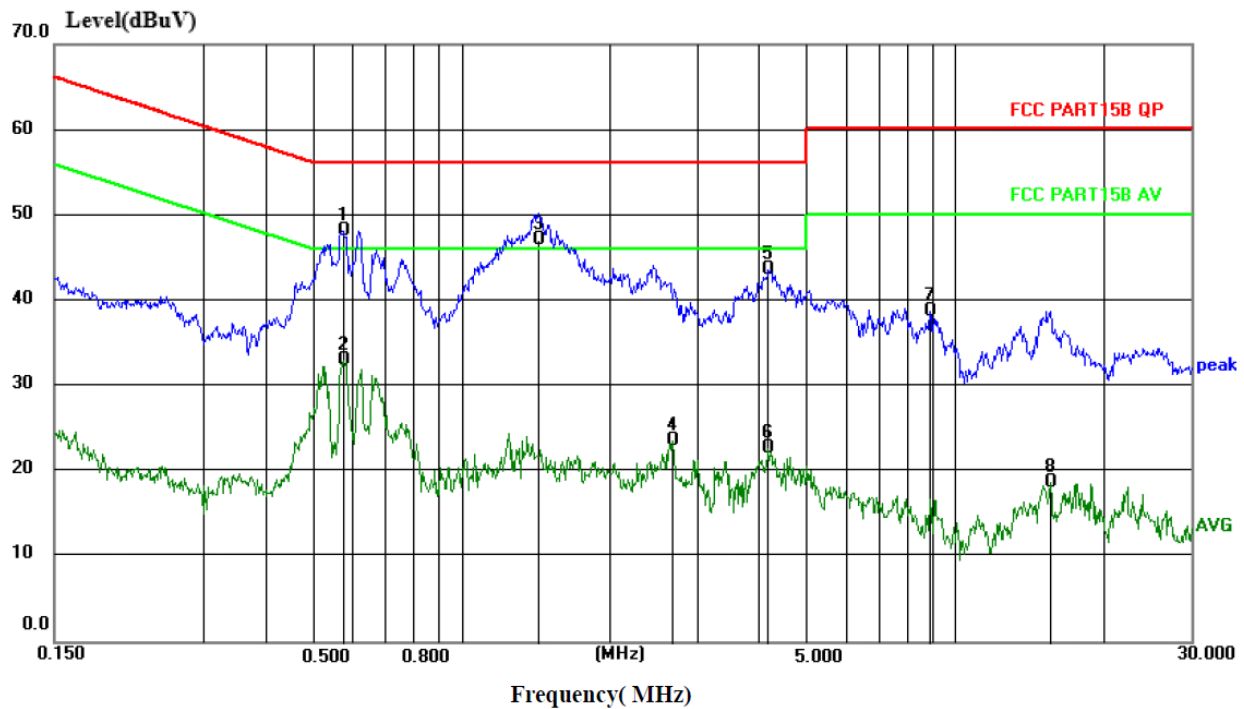
Pre-scan all test modes, found worst case at 802.11b 2462MHz, and so only show the test result of 802.11b 2462MHz

Line:



.Freq	Reading	LISN	Cable	Limit	Over	Remark
MHz	level	factor	loss	level	limit	
	dBuV	dB	dB	dBuV	dBuV	
0.1507	34.00	10.00	0.01	44.01	65.96	QP
0.6139	36.44	10.05	0.01	46.50	56.00	QP
0.6611	20.70	10.06	0.01	30.77	46.00	Average
1.4332	34.50	10.13	0.02	44.65	56.00	QP
2.6781	10.74	10.26	0.03	21.03	46.00	Average
5.1660	8.81	10.52	0.03	19.36	50.00	Average
8.9161	28.51	10.90	0.05	39.46	60.00	QP

Neutral:

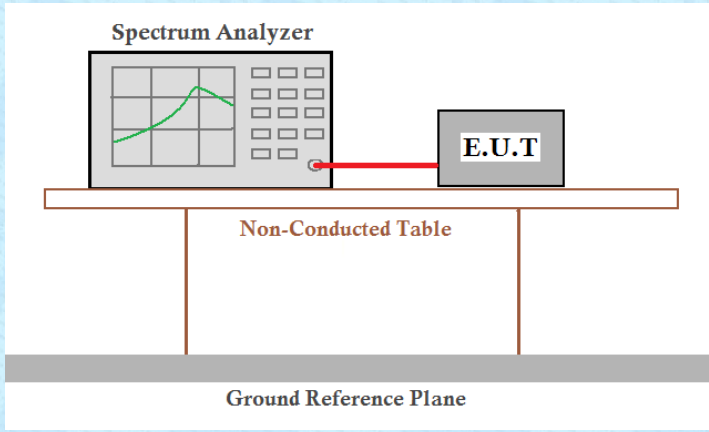


.Freq	Reading	LISN	Cable	Limit	Over	Remark
MHz	level	factor	loss	level	limit	
	dBuV	dB	dB	dBuV	dBuV	dB
0.5756	38.10	10.05	0.01	48.16	56.00	-7.84
0.5756	22.98	10.05	0.01	33.04	46.00	-12.96
1.4332	37.00	10.13	0.02	47.15	56.00	-8.85
2.6781	13.24	10.27	0.02	23.53	46.00	-22.47
4.1794	33.18	10.42	0.03	43.63	56.00	-12.37
4.1794	12.30	10.42	0.03	22.75	46.00	-23.25
8.8688	27.86	10.90	0.05	38.81	60.00	-21.19
15.5518	7.58	11.05	0.10	18.73	50.00	-31.27

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Conducted Max Average Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3) RSS-247 Section 5.4(d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Duty Cycle:

Modulation	Frequency (MHz)	Duty cycle(%)		Duty Factor	
		Antenna-A	Antenna-B	Antenna-A	Antenna-B
802.11b	2412	99.11	99.58	0.04	0.02
	2437	99.11	99.59	0.04	0.02
	2462	99.11	99.6	0.04	0.02
802.11g	2412	99.7	100	0.01	0
	2437	99.71	100	0.01	0
	2462	99.72	100	0.01	0
802.11 n(HT20)	2412	99.74	99.72	0.01	0.01
	2437	99.74	99.72	0.01	0.01
	2462	99.73	99.73	0.01	0.01
802.11 n(HT40)	2422	100	100	0	0
	2437	100	100	0	0
	2452	100	100	0	0

Output Power:

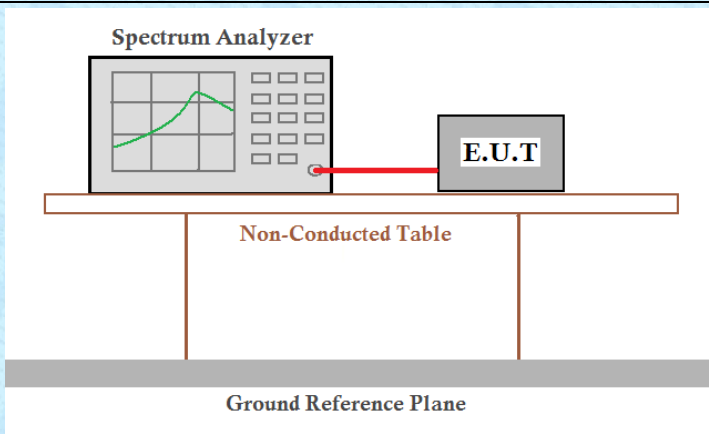
802.11b mode											
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor		Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B	ANT A	ANT B	ANT A	ANT B	ANT A+B		
01	2412	16.288	16.833	--	0.04	0.02	16.328	16.853	--	30	Pass
06	2437	15.683	15.597	--	0.04	0.02	15.723	15.617	--		
11	2462	15.193	15.309	--	0.04	0.02	15.233	15.329	--		
802.11g mode											
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor		Output Power (dBm)			Limit (dBm)	Result
		ANT A	ANT B	ANT A+B	ANT A	ANT B	ANT A	ANT B	ANT A+B		
01	2412	12.34	12.831	--	0.01	0	12.36	12.831	--	30	Pass
06	2437	11.361	11.736	--	0.01	0	11.381	11.736	--		
11	2462	11.157	11.542	--	0.01	0	11.177	11.542	--		
802.11 n(HT20) mode											
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result	
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B			
01	2412	12.273	12.285	15.289	0.01	12.283	12.295	15.299	30	Pass	
06	2437	11.218	11.099	14.169	0.01	11.228	11.109	14.179			
11	2462	11.077	10.881	13.989	0.01	11.087	10.891	13.999			
802.11 n(HT40) mode											
CH No.	Frequency (MHz)	Measured Power (dBm)			Duty Factor	Output Power (dBm)			Limit (dBm)	Result	
		ANT A	ANT B	ANT A+B		ANT A	ANT B	ANT A+B			
03	2422	11.206	11.514	14.37	0	11.206	11.514	14.37	30	Pass	
06	2437	9.997	10.204	13.111	0	9.997	10.204	13.111			
09	2452	9.653	9.756	12.715	0	9.653	9.756	12.715			

EIRP:

Test Channel	e.i.r.p (dBm)				Limit(dBm)	Result
	802.11b		802.11g			
	ANT A	ANT B	ANT A	ANT B		
Lowest	20.328	20.853	16.36	16.831	36	Pass
Middle	19.723	19.617	15.381	15.736		
Highest	19.233	19.329	15.177	15.542		

Test Channel	e.i.r.p (dBm)						Limit(dBm)	Result
	802.11n(HT20)			802.11n(HT40)				
	ANT A	ANT B	ANT(A+B)	ANT A	ANT B	ANT(A+B)		
Lowest	16.283	16.295	19.299	15.206	15.514	18.37	36	Pass
Middle	15.228	15.109	18.179	13.997	14.204	17.111		
Highest	15.087	14.891	17.999	13.653	13.756	16.715		

7.4 Channel Bandwidth & 99% Occupancy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2) RSS-Gen Section 6.7 & RSS-247 Section 5.2(a)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

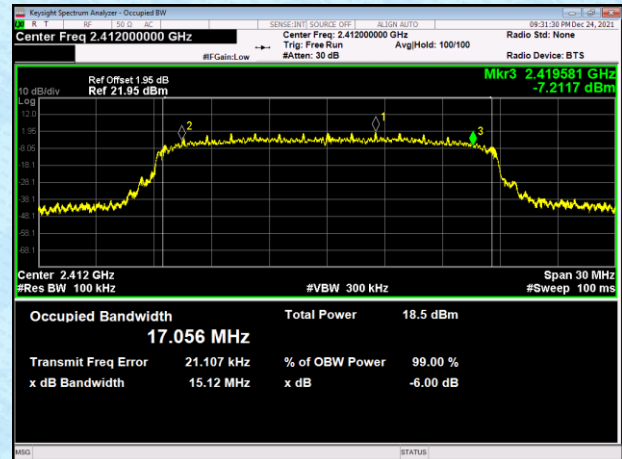
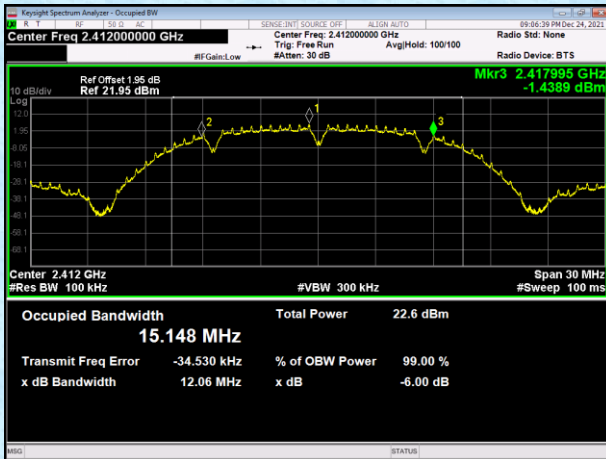
Test Channel	Channel Bandwidth (MHz)								Limit(KHz)	Result
	802.11b		802.11g		802.11n(HT20)		802.11n(HT40)			
	ANT A	ANT B	ANT A	ANT B	ANT A	ANT B	ANT B	ANT B		
Lowest	12.058	11.605	15.119	16.417	11.313	11.315	35.064	35.043	>500	Pass
Middle	12.052	11.59	15.124	16.426	11.309	11.322	35.062	35.077		
Highest	11.09	11.456	15.104	16.412	11.313	11.309	35.074	35.056		

Test Channel	99% Occupy Bandwidth (MHz)								Result
	802.11b		802.11g		802.11n(HT20)		802.11n(HT40)		
	ANT A	ANT B	ANT A	ANT B	ANT A	ANT B	ANT B	ANT B	
Lowest	15.152	14.917	17.213	17.269	18.174	18.160	35.611	35.605	Pass
Middle	15.157	14.933	17.221	17.273	18.163	18.175	35.673	35.697	
Highest	15.140	14.876	17.209	17.258	18.160	18.159	35.667	35.649	

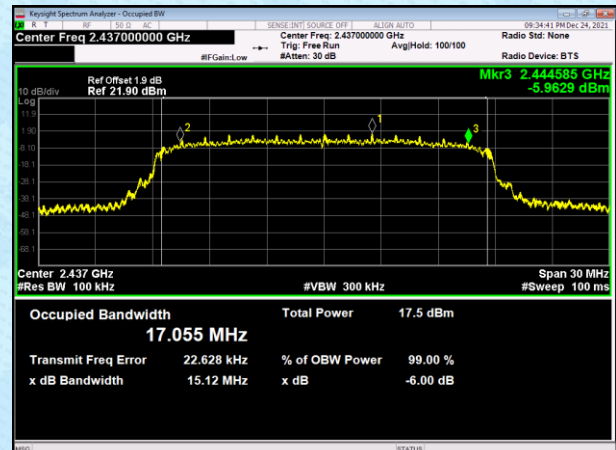
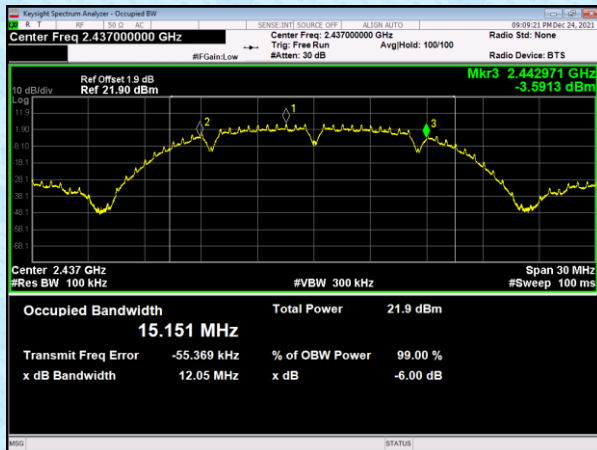
Test plot as follows:

-6dB BW(ANT A):

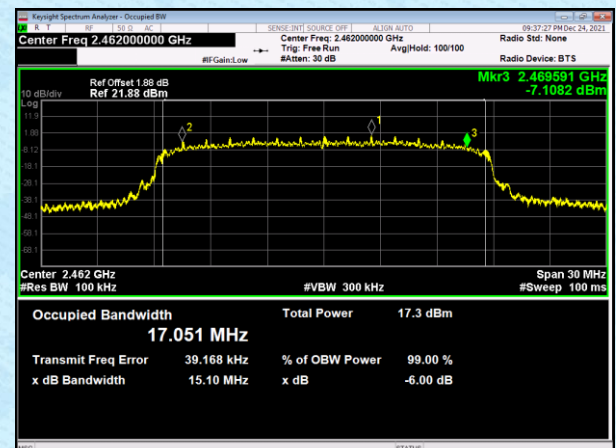
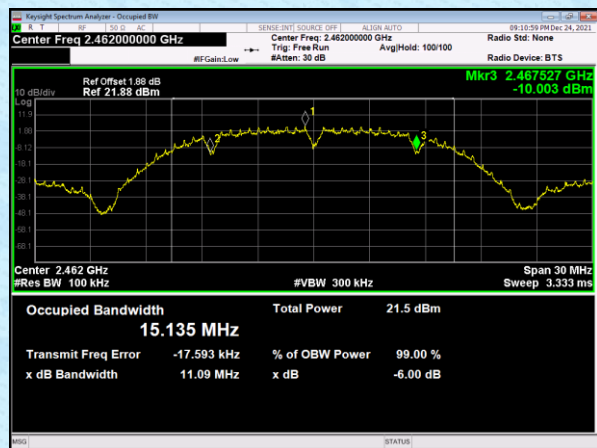
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

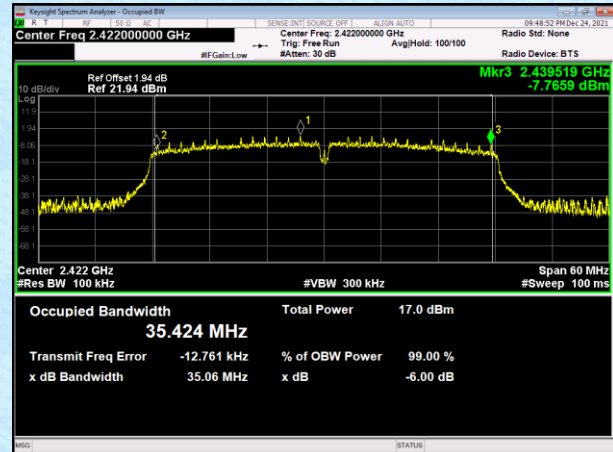
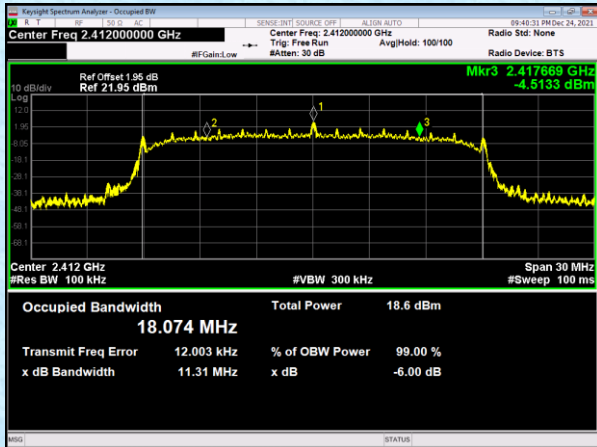


Middle channel

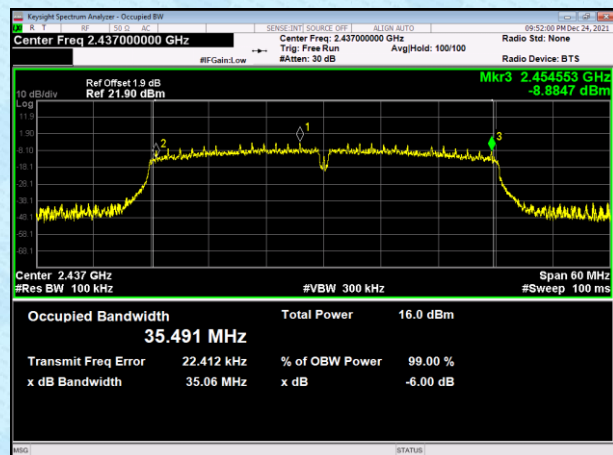
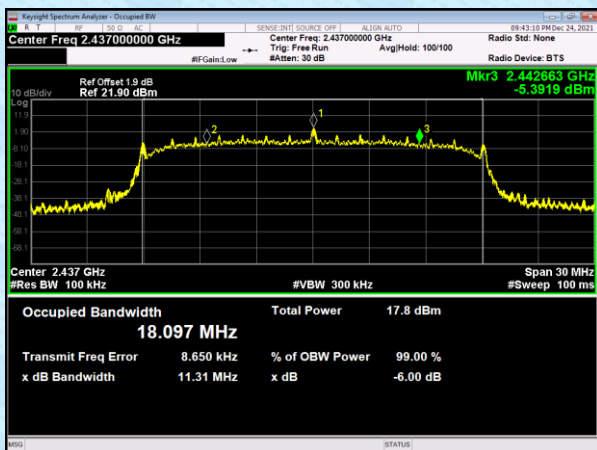


Highest channel

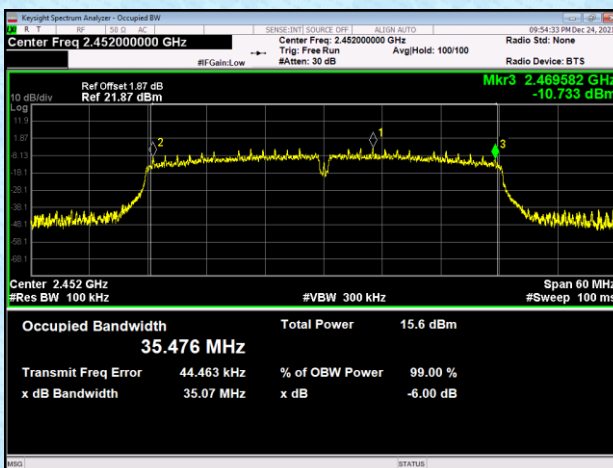
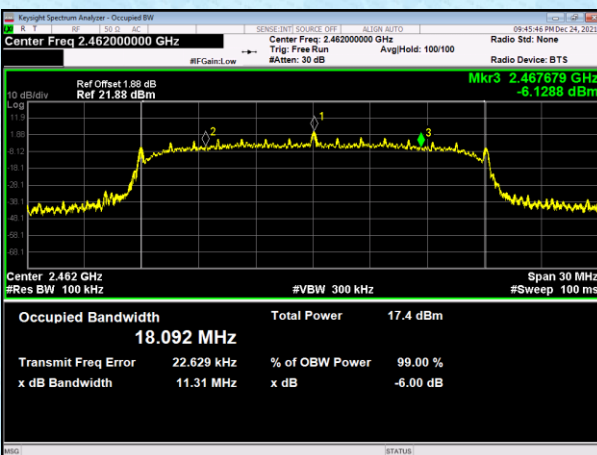
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel



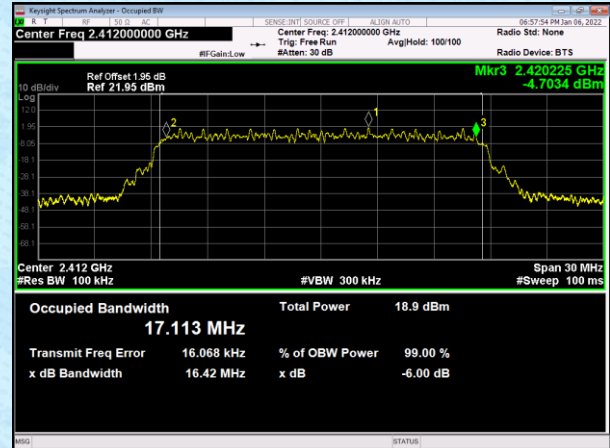
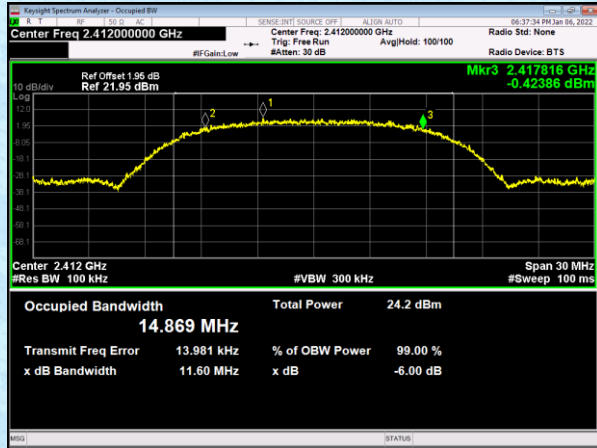
Middle channel



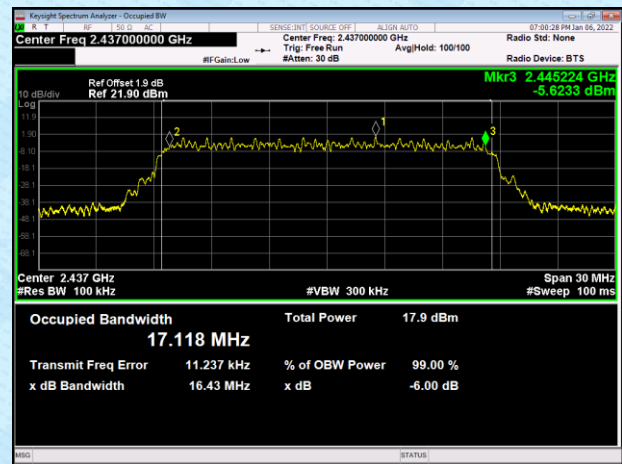
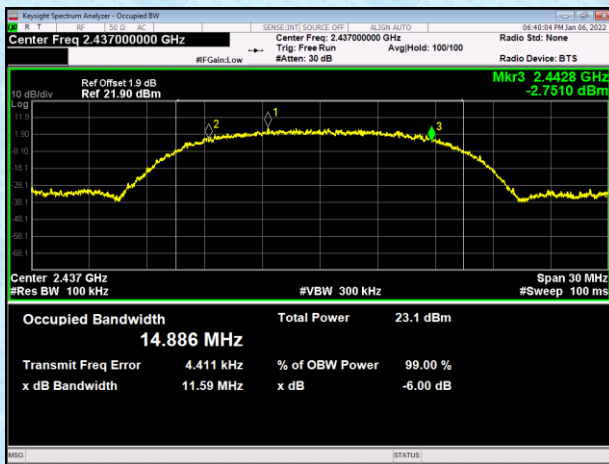
Highest channel

-6dB BW (ANT B):

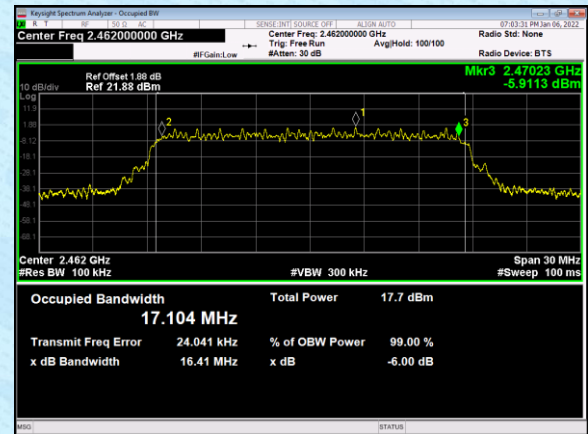
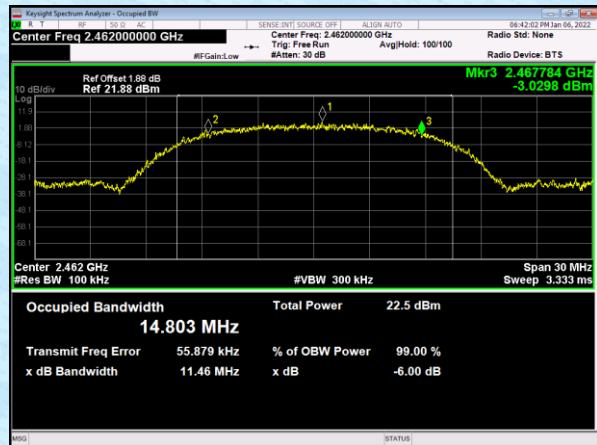
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

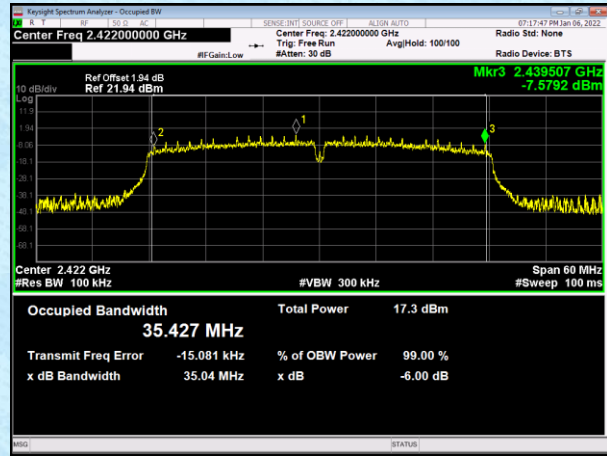
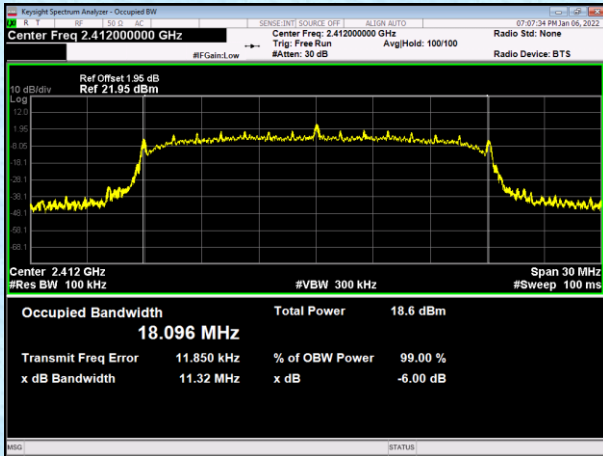


Middle channel

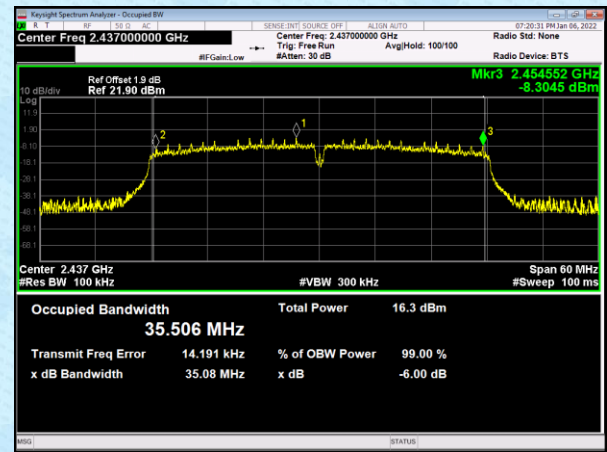
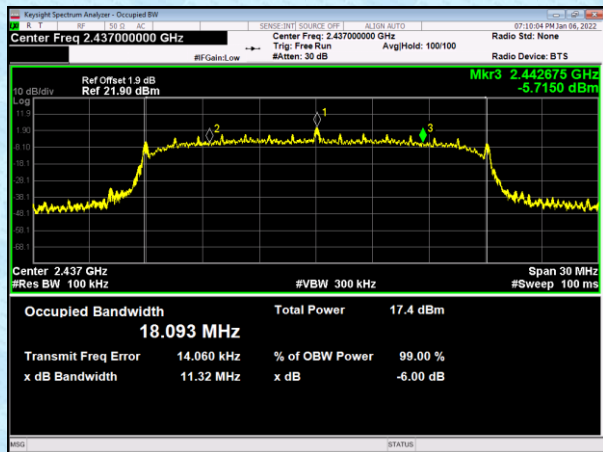


Highest channel

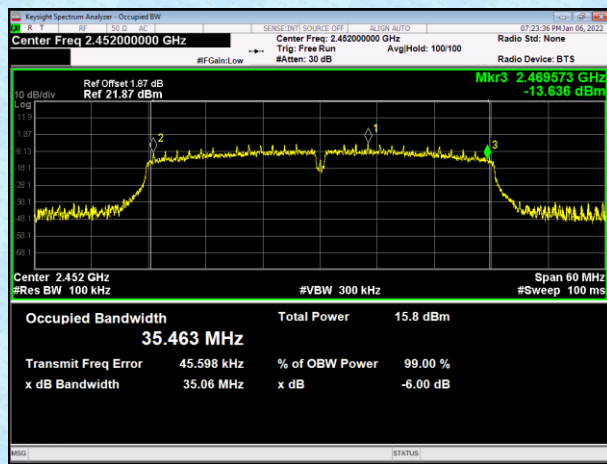
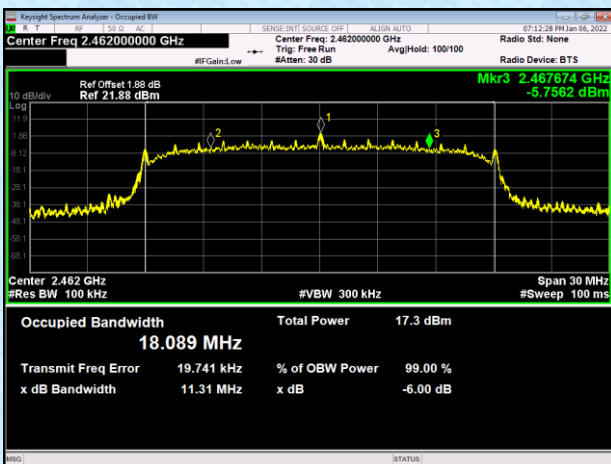
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel



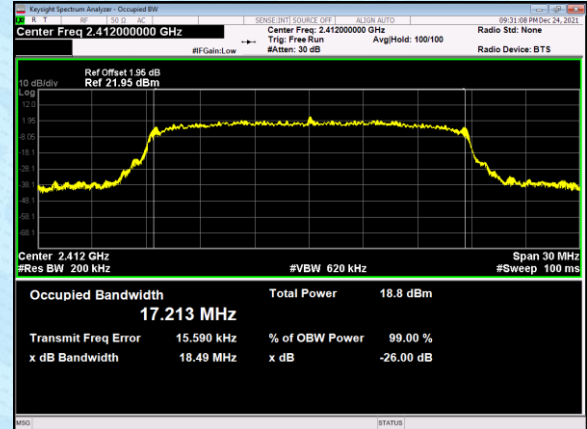
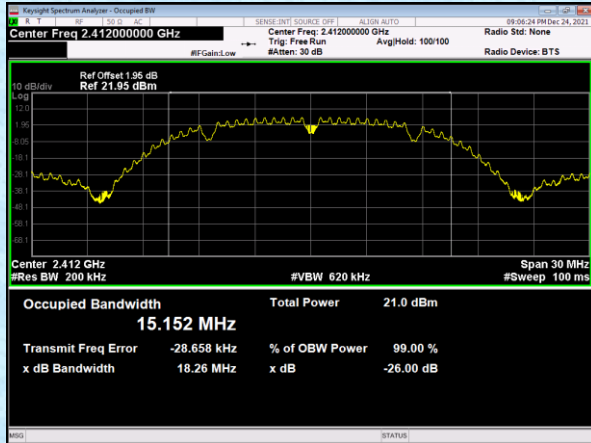
Middle channel



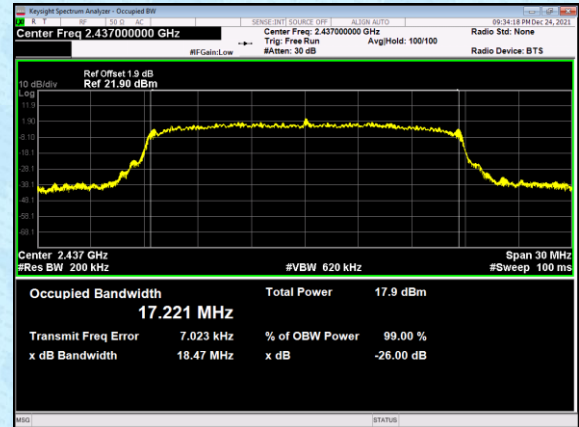
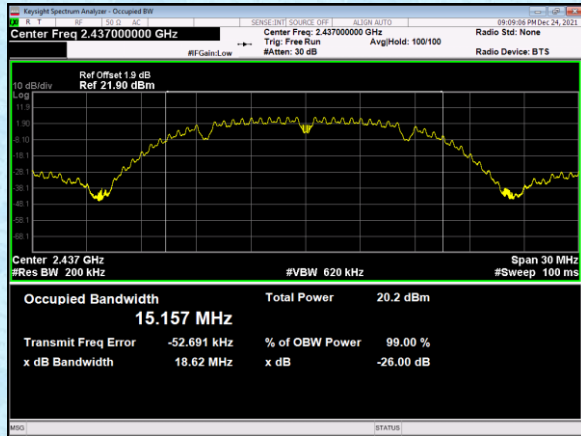
Highest channel

99% BW (ANT A):

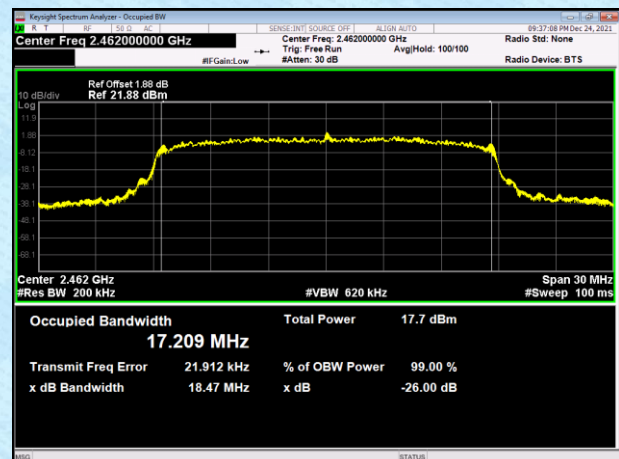
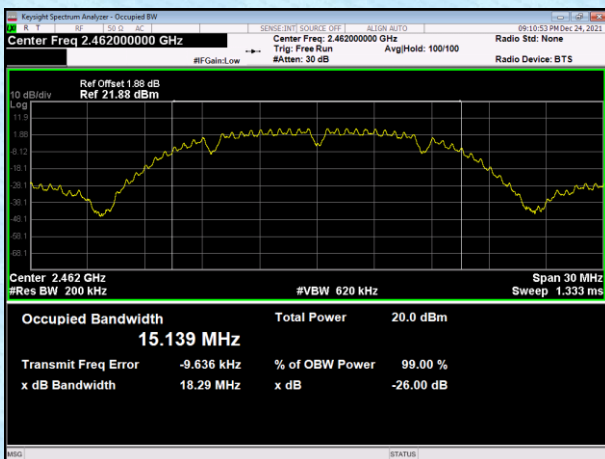
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

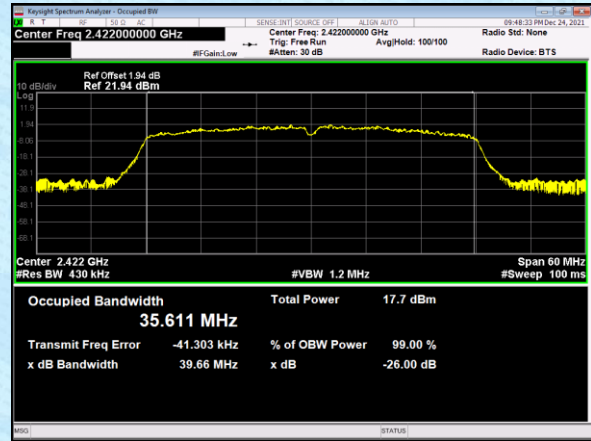
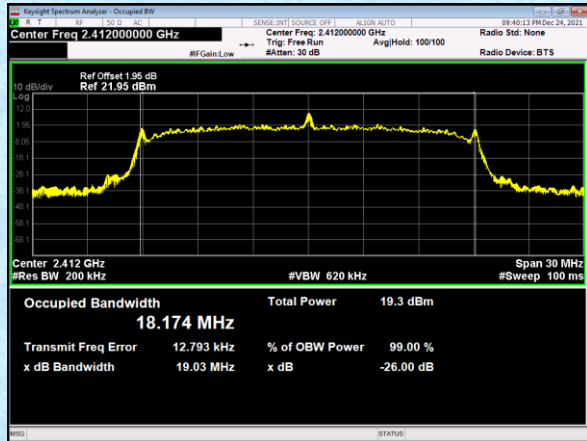


Middle channel

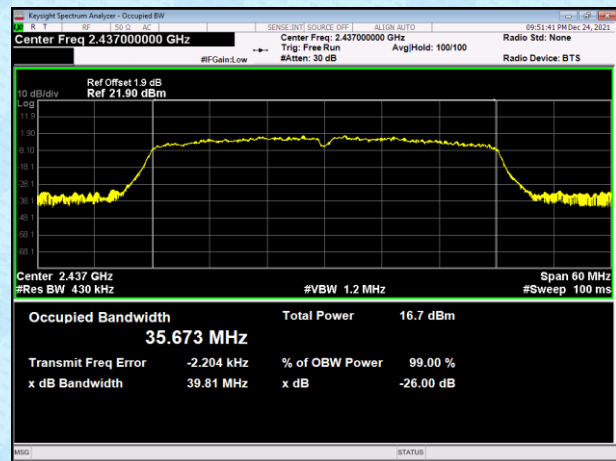
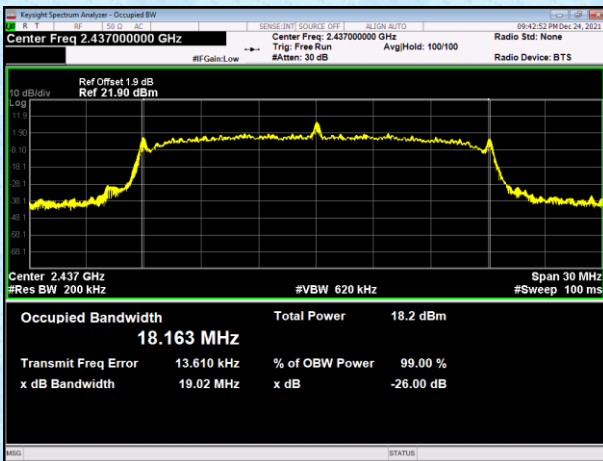


Highest channel

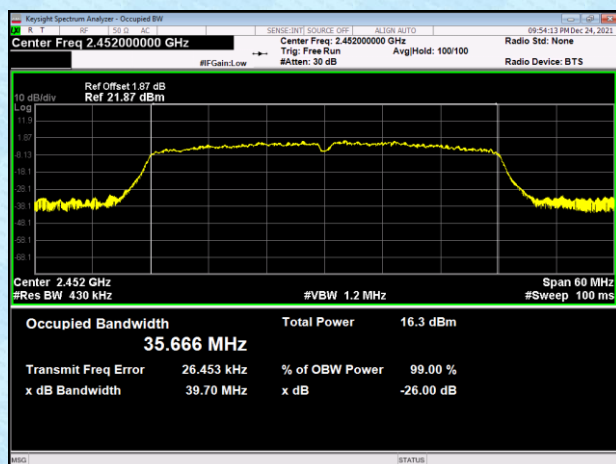
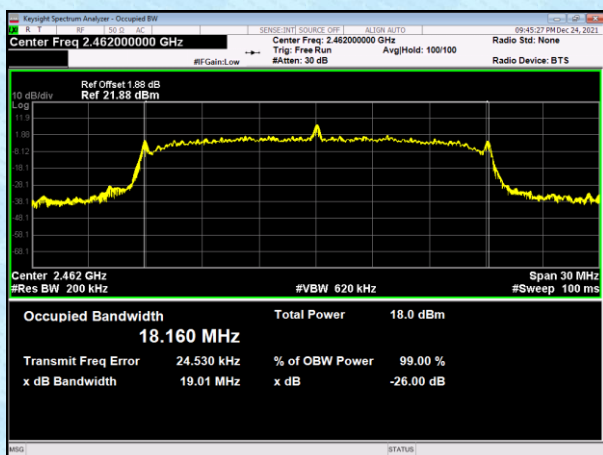
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel



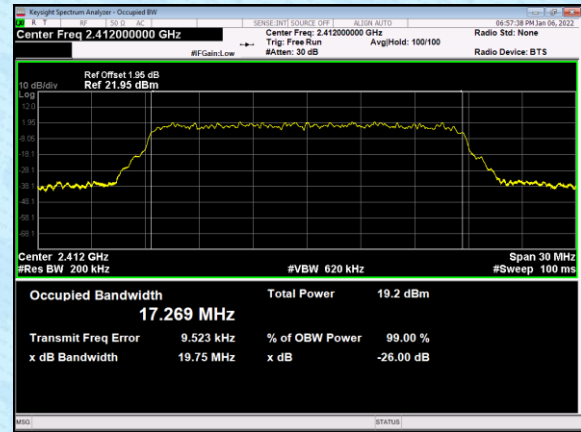
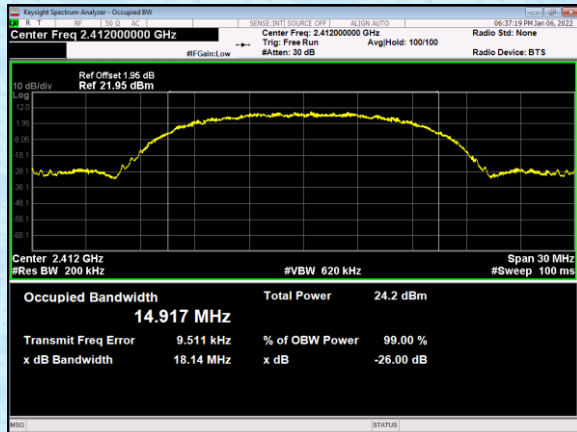
Middle channel



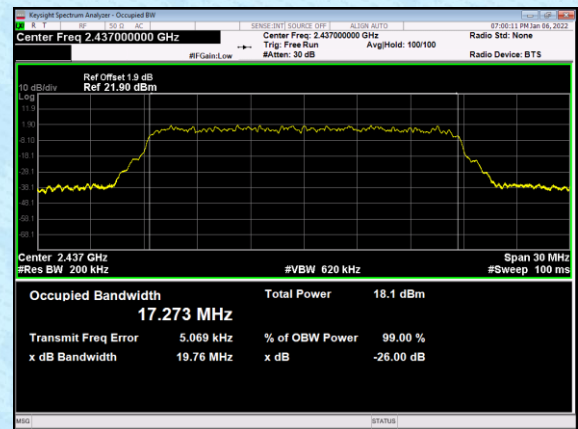
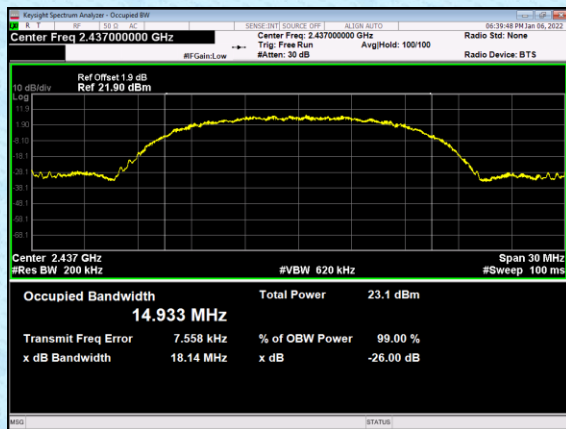
Highest channel

99% BW (ANT B):

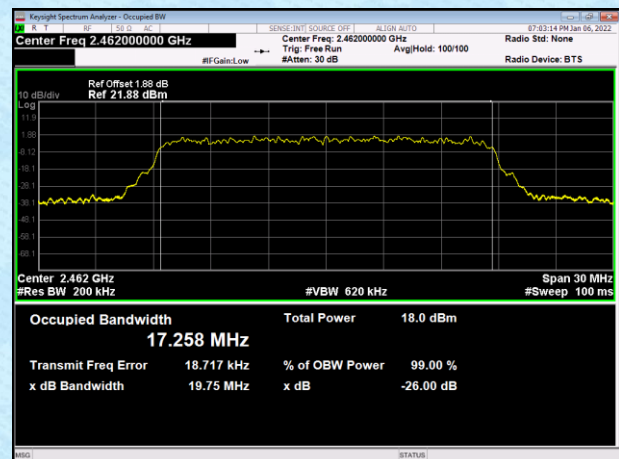
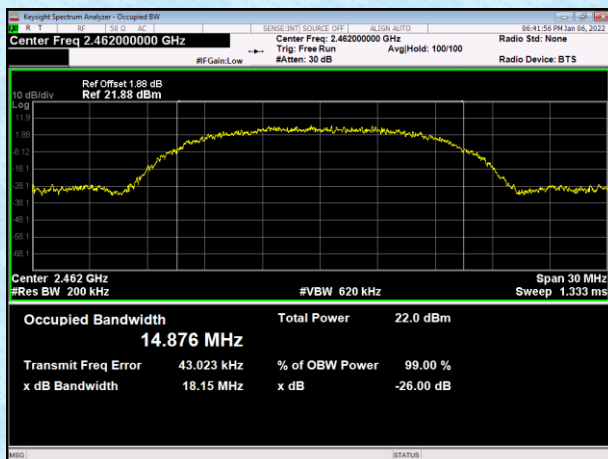
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

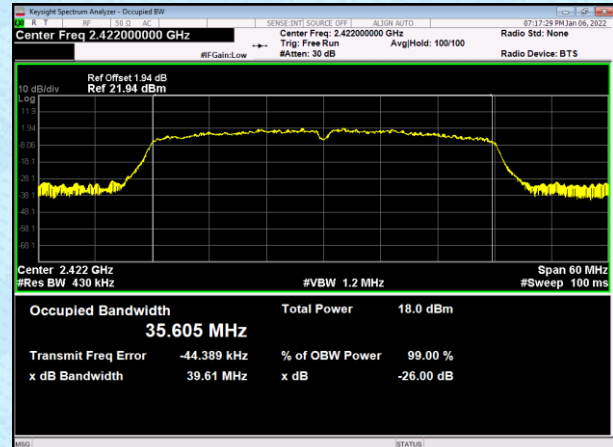
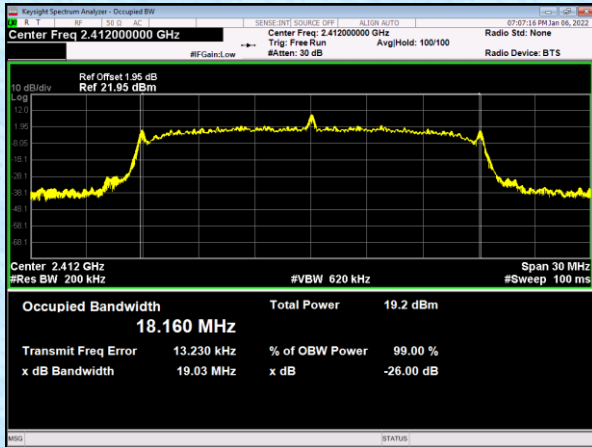


Middle channel

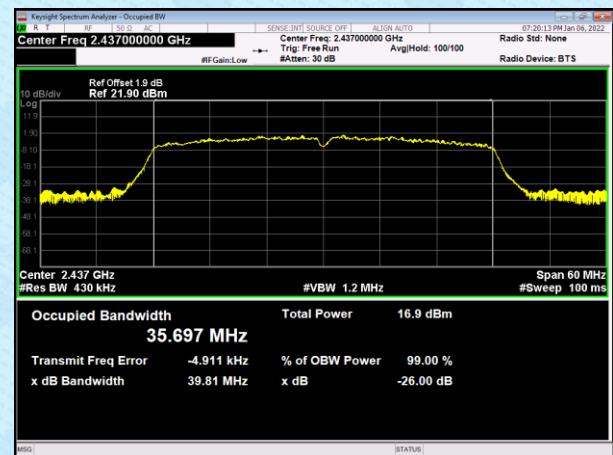
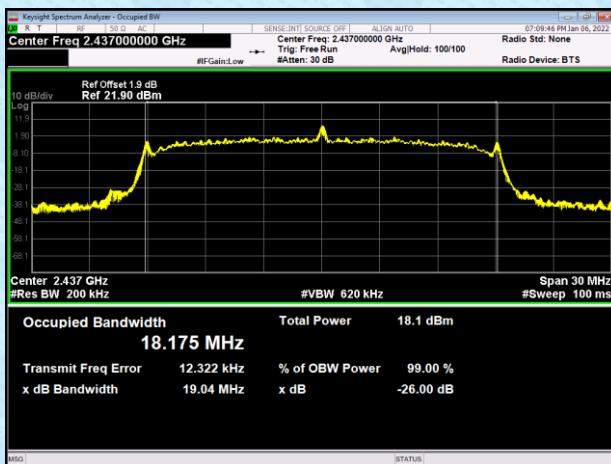


Highest channel

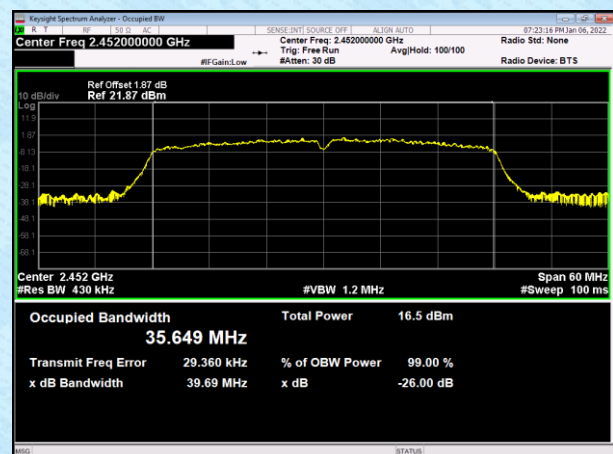
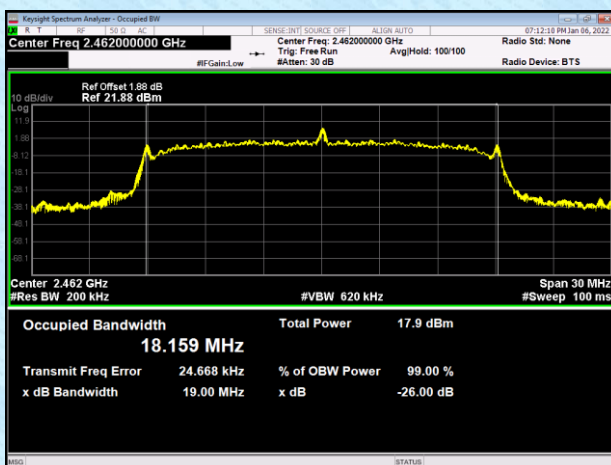
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel

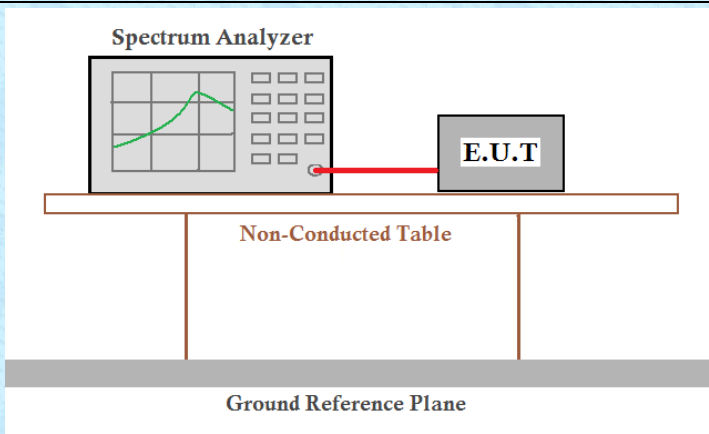


Middle channel



Highest channel

7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e) RSS-247 Section 5.2(b)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

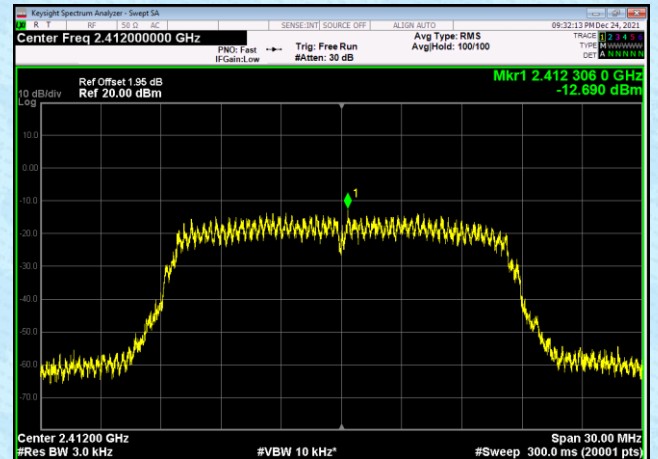
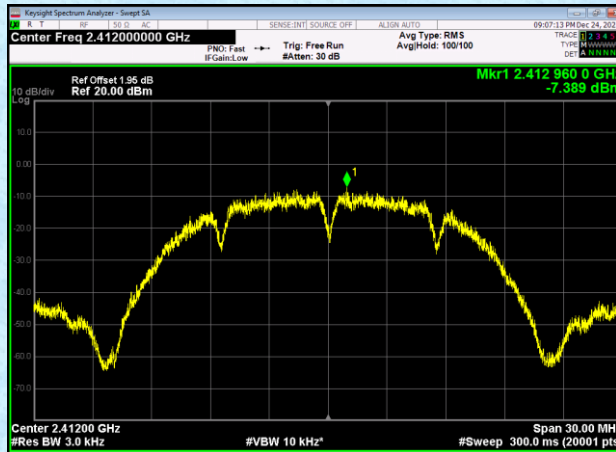
Test CH	Power Spectral Density (dBm/3kHz)						Limit (dBm/3kHz)	Result
	802.11b			802.11g				
	ANT A	ANT B	ANT A+B	ANT A	ANT B	ANT A+B		
01	-7.389	-8.525	--	-12.69	-13.186	--	8.00	Pass
06	-8.484	-9.658	--	-13.393	-14.186	--		
11	-8.422	-10.006	--	-13.823	-14.499	--		

Test CH	Power Spectral Density (dBm/3kHz)						Limit (dBm/3kHz)	Result
	802.11n(HT20)			802.11n(HT40)				
	ANT A	ANT B	ANT A+B	ANT A	ANT B	ANT A+B		
01	-13.348	-13.226	-10.267	-17.34	-16.796	-14.018	6.99	Pass
06	-14.245	-14.611	-11.398	-17.918	-18.105	-14.962		
11	-14.201	-14.725	-11.443	-18.461	-18.072	-15.226		

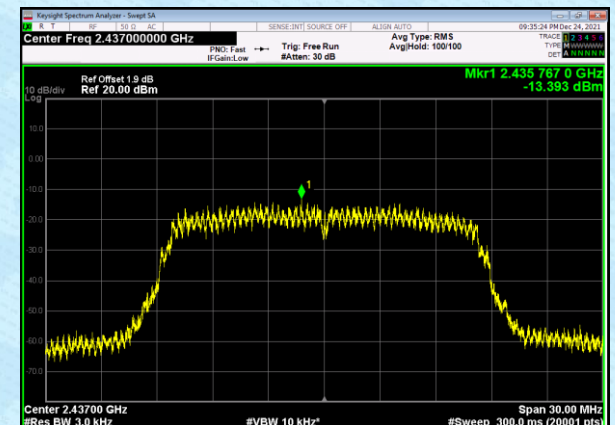
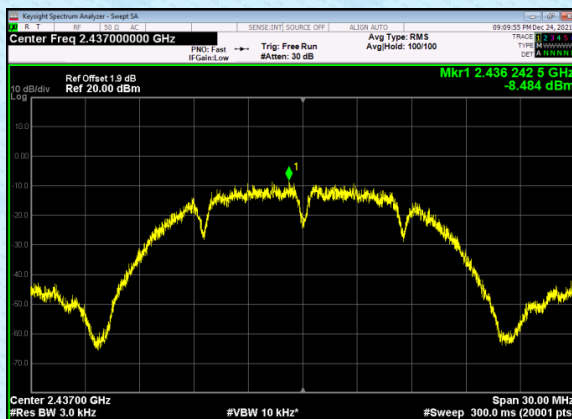
Note:For MIMO mode , PSD Limit = 8 - 1.01 = 6.99 dBm/3KHz

Test plot as follows (ANT A):

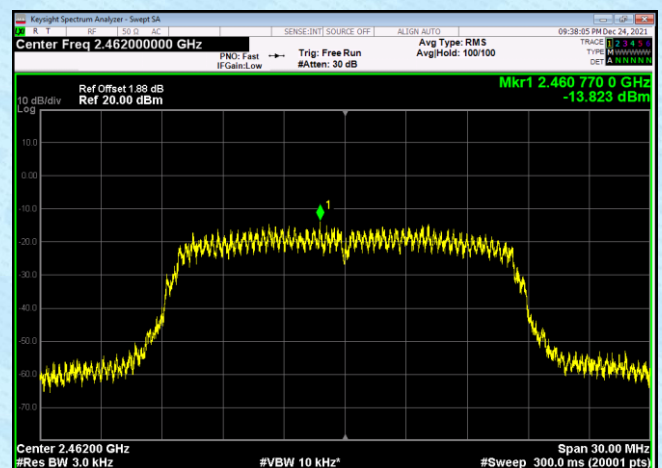
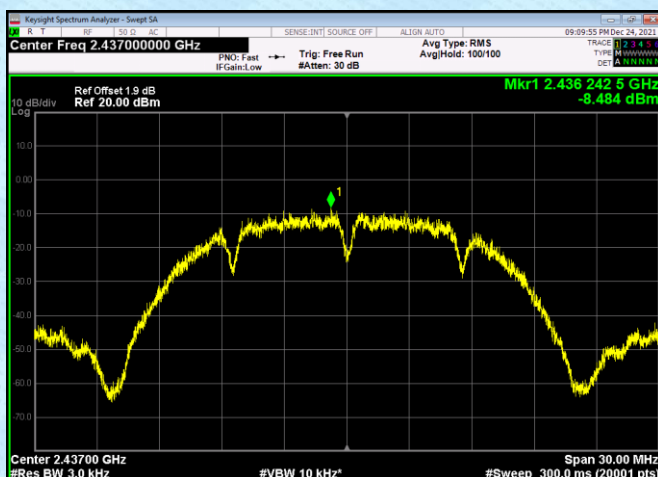
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

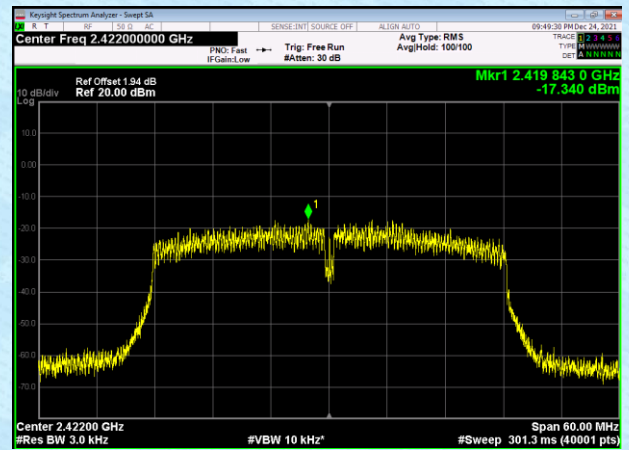
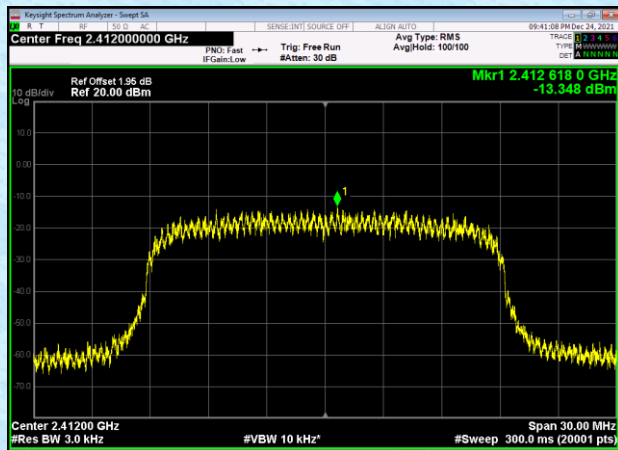


Middle channel

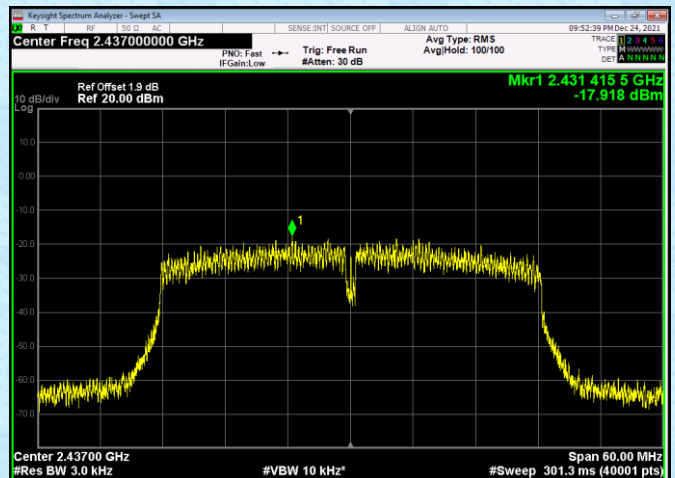
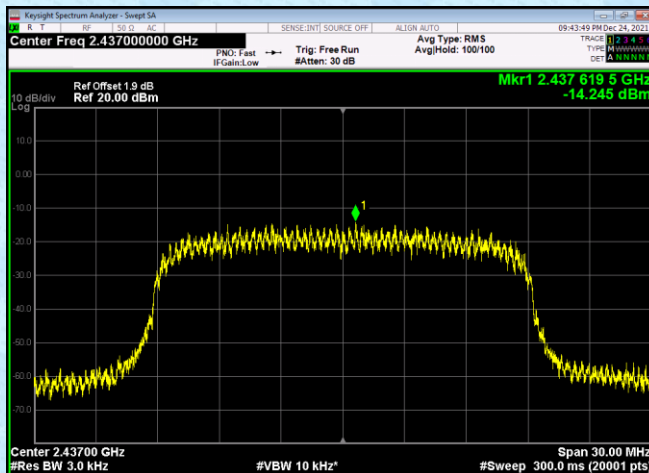


Highest channel

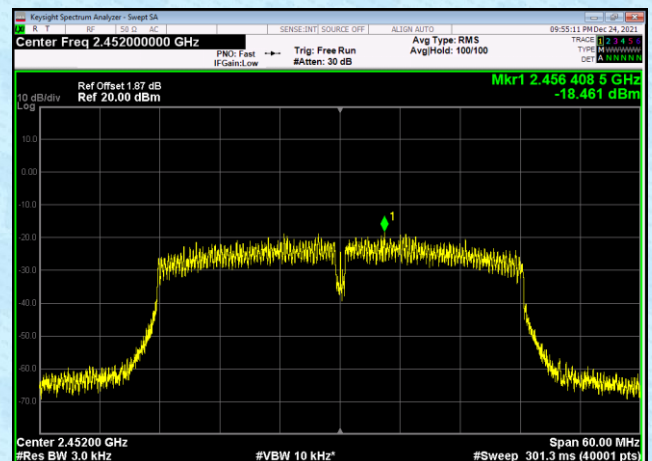
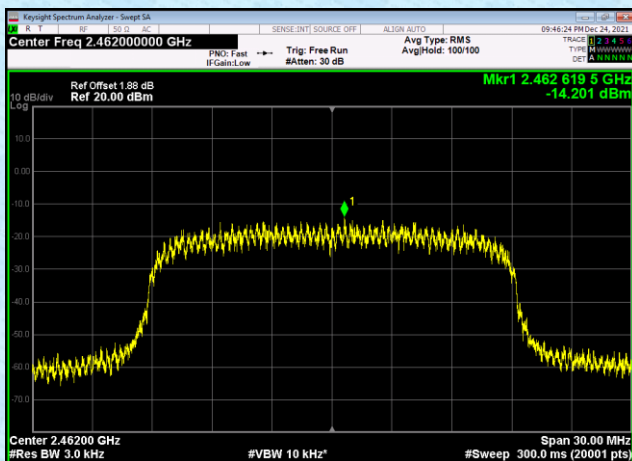
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel



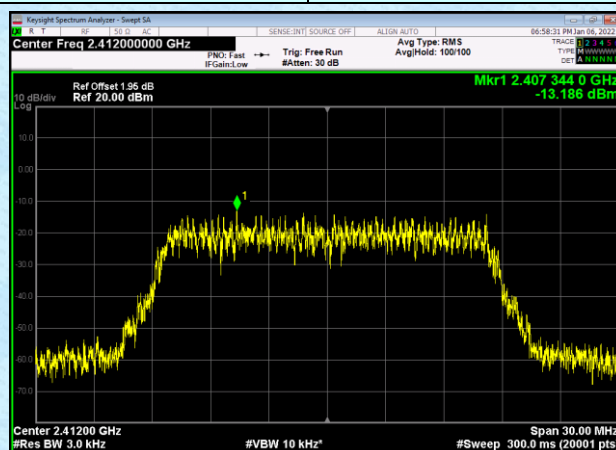
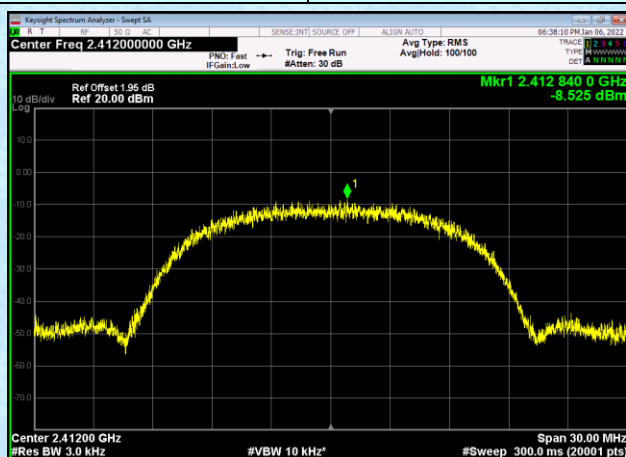
Middle channel



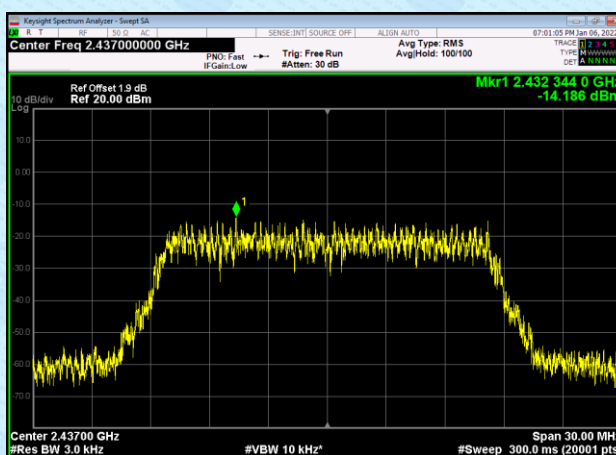
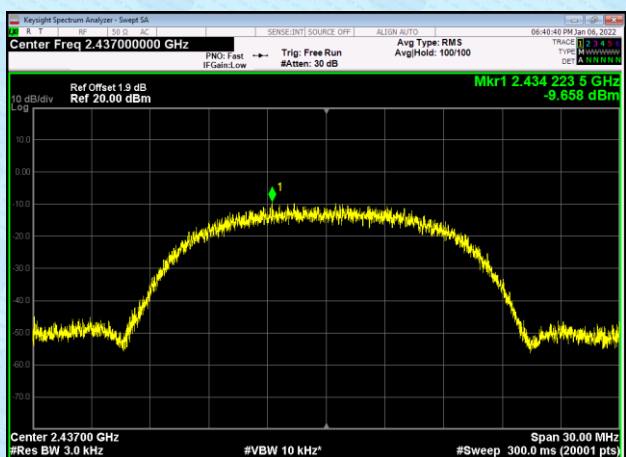
Highest channel

Test plot as follows (ANT B):

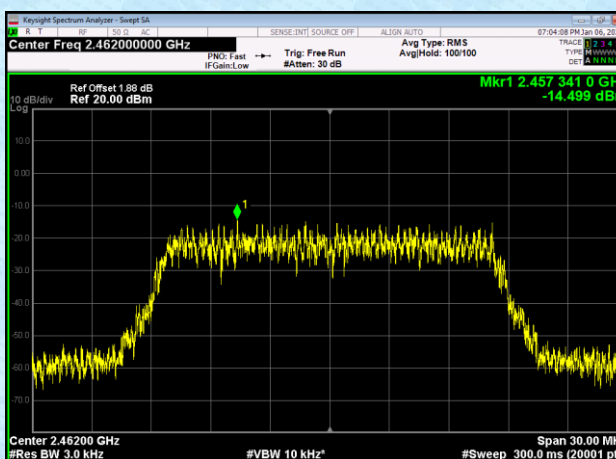
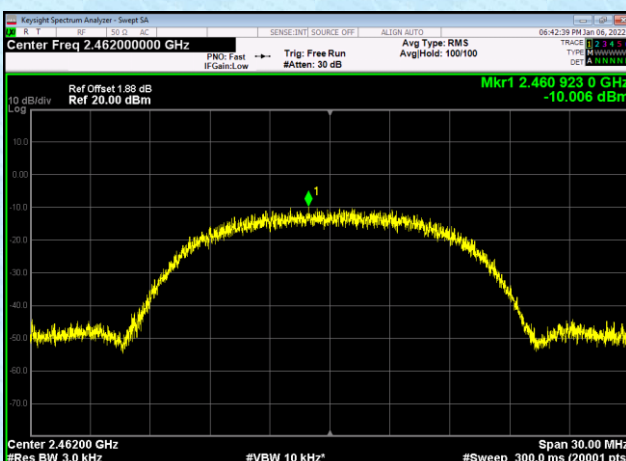
Test mode:	802.11b	Test mode:	802.11g
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Lowest channel

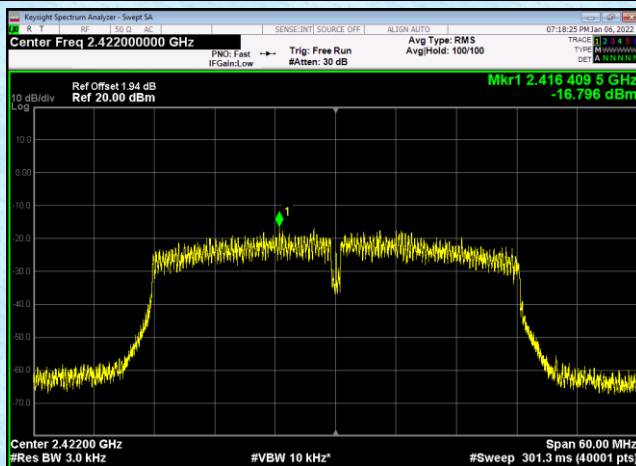
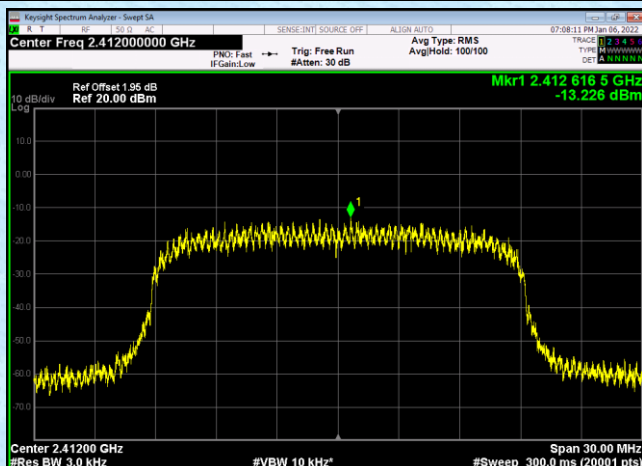


Middle channel

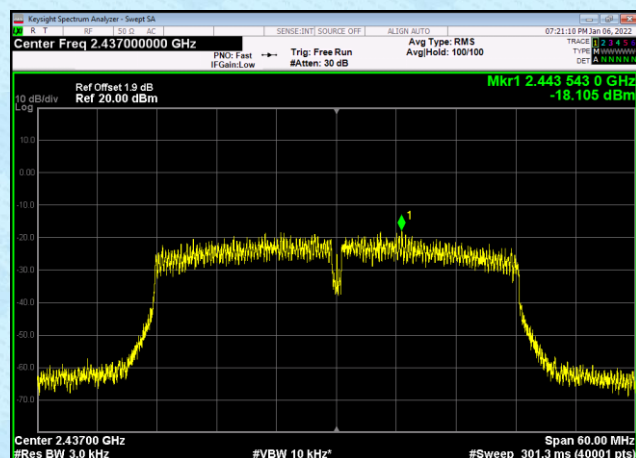
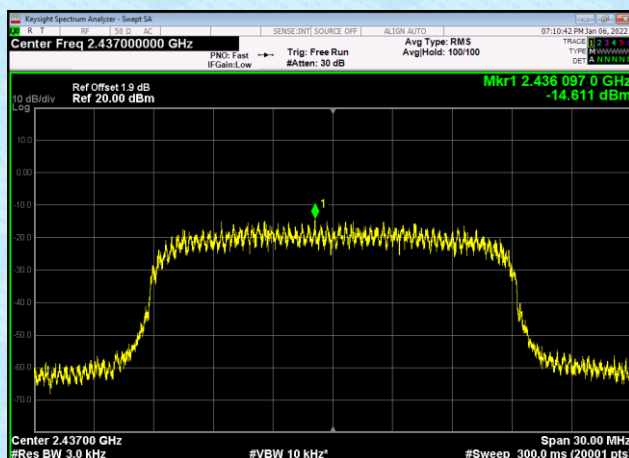


Highest channel

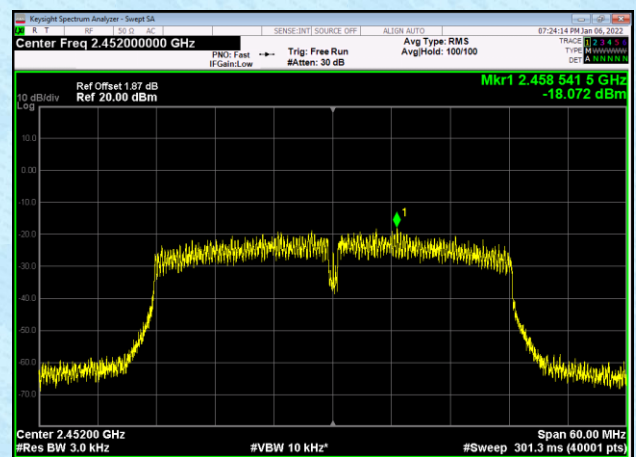
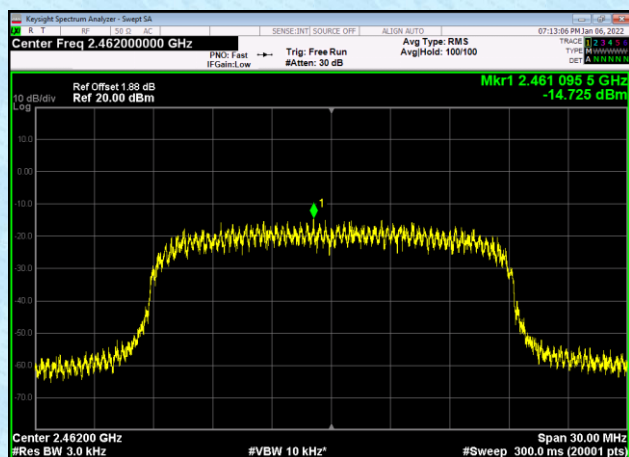
Test mode:	802.11n(HT20)	Test mode:	802.11n(HT40)
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Lowest channel



Middle channel



Highest channel