TEST REPORT

Applicant:	Shenzhen Hongmi Technology Co., Ltd
Address of Applicant:	Building 28, Building 106, Yintian Industrial Zone, Yantian Community, Xixiang Street, Bao'an District, Shenzhen
Manufacturer/Factory:	Shenzhen Hongmi Technology Co., Ltd
Address of Manufacturer	Building 28, Building 106, Yintian Industrial Zone, Yantian Community, Xixiang Street, Bao'an District, Shenzhen
Product Name:	Intelligent Projector
Model No.:	X1,Q1,HM10,S30,H50,H60,A1,A6,B1,C1,D1,M1,V1,P1,Z1,X6,X8,Q3,Q8
Trade Mark:	N/A
FCC ID:	2BF37-X1
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of Test:	Apr.13, 2024- May.14, 2024
Date of report issued:	May.15, 2024

Remark:

The 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

Prepared By

Shenzhen ETR Standard Technology Co., Ltd.

Address: No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Compiled by:	Reviewed by:	Approved by:
Carr Kang	Smith chen	Smith chen
Project Engineer	Project Manager	Authorized Signature

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1. Test Summary

Test Item	Section	Result	Test by
Antenna requirement	FCC part 15.203/15.247 (c)	Pass	/
AC Power Line Conducted Emission	FCC part 15.207	Pass	Carr Kang
Conducted Peak Output Power	FCC part 15.247 (b)(3)	Pass	Yvan Fan
6dB Bandwidth	FCC part 15.247 (a)(2)	Pass	Yvan Fan
Power Spectral Density	FCC part 15.247 (e)	Pass	Yvan Fan
Band Edge	FCC part 15.247(d)	Pass	Yvan Fan
Spurious Emission	FCC part 15.205/15.209	Pass	Carr Kang

Remarks:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *Test according to ANSI C63.10:2013*
3. *Note: Compliance determination rules*

1).The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacturer. If measurement uncertainty is taken into account, the applicant/manufacturer will bear all possible risks of non-compliance.

2).The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"

Measurement Uncertainty

Test Item	Uncertainty Criterion	Measurement Uncertainty	Notes
Occupied Channel Bandwidth	±5%	±0.55%	(1)
RF output power, conducted	±1.5dB	±0.99dB	(1)
Power Spectral Density, conducted	±3dB	±0.61dB	(1)
Unwanted Emissions, conducted	±3dB	±0.64dB	(1)
AC Power Line Conducted Emission	±6dB	± 2.64 dB	(1)
Radiated emissions Below 1GHz	±6dB	±4.32 dB	(1)
Radiated emissions Above 1GHz	±6dB	±4.56dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

2. General Information

2.1 General Description of EUT

Product Name:	Intelligent Projector
Model No.:	X1,Q1,HM10,S30,H50,H60,A1,A6,B1,C1,D1,M1,V1,P1,Z1,X6,X8,Q3, Q8
Test Model:	X1
Difference of model(s)	All the model are the same circuit and RF module, except the model names
Hardware version:	N/A
Software version:	N/A
Sample(s) Status	Engineer sample
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(H20)/802.11n(HT40): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	FPC Antenna
Antenna gain:	3.03 dBi (Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information.)
Battery:	N/A
Power supply:	AC 120V 60Hz
Adapter Model:	N/A

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

2.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
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.	

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	6Mbps	6.5Mbps	13Mbps

2.3 Description of Support Units

No.	Description	Manufacturer	Model	Serial Number
/	/	/	/	/

2.4 Deviation from Standards

None.

2.5 Abnormalities from Standard Conditions

None.

2.6 Test Facility

Test laboratory:	Shenzhen ETR Standard Technology Co., Ltd.
CNAS Registration Number:	L11864
A2LA Certificate Number:	6640.01
FCC Designation Number:	CN1326
FCC Test Firm Registration:	183064

2.7 Test Location

All tests were performed at:

Laboratory location:	No.103, No.10, Phase I, Zone 3, Xinxing Industrial Park, Xinhe, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	+86 755 85259392
Fax:	+86 755 27219460

2.8 Additional Instructions

Test Software	Manufacturer's special ADB serial port command
Power level setup	Default

3. Test Instruments list

Item	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	EMI Test Receiver	Rohde&schwarz	ESCI7	100605	2024.3.012	2025.3.11
2	EMI Test Receiver	Rohde&schwarz	ESCI3	102696	2024.3.012	2025.3.11
3	Loop Antenna	schwarabeck	FMZB 1519 B	FMZB 1519 B	2024.3.19	2026.3.18
4	Broadband antenna	schwarabeck	VULB9168	1064	2024.3.19	2026.3.18
5	Horn antenna	schwarabeck	BBHA9120D	9120D-1145	2024.3.19	2026.3.18
6	amplifier	EMtrace	RP01A	50117	2024.3.012	2025.3.11
7	Artificial power network	schwarabeck	NSLK8127	8127483	2024.3.012	2025.3.11
8	Artificial power network	ETS	3186/2NM	1132	2024.3.012	2025.3.11
9	10dB attenuator	HUBER+SUHNER	10dB	/	2024.3.012	2025.3.11
10	amplifier	Space-Dtronics	EWLAN0118 G-P40	19113001	2024.3.012	2025.3.11
11	Filter	Xingbo	XBLBQ-GTA19	210410-3-1	2024.3.012	2025.3.11
12	Spectrum analyzer	KEYSIGHT	N9020A	MY55370280	2024.3.012	2025.3.11
13	Power detector box	MWRFtest	MW100-PSB	MW201020JYT	2024.3.012	2025.3.11
14	Power meter	Rohde&Schwarz	NRP-Z11	1138.3004.02-117725-vh	2024.3.012	2025.3.11

Note: the calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

Software Name	Manufacturer	Model	Version
RF test software	MWRFtest	MTS 8310	V2.0.0.0
Conducted test software	EZ-EMC	Farad	Ver.EMC-CON 3A1.1
Radiated test software	EZ-EMC	Farad	Ver.FA-03A2 RE

4. Test results and Measurement Data

4.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
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(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
The antenna is FPC Antenna, the best case gain of the antenna is 3.03 dBi, reference to the appendix II for details.	

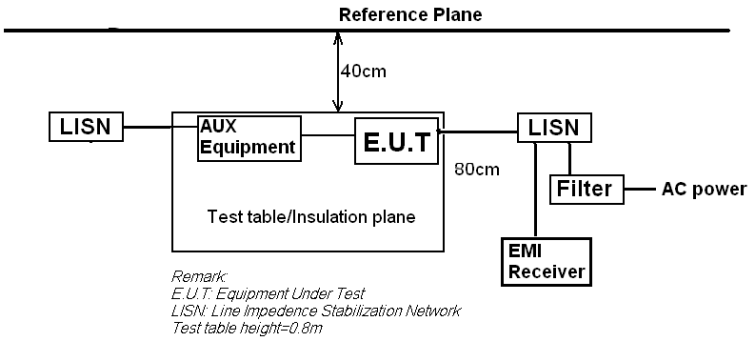
4.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
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:



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 C63.10:2013 on conducted measurement.

Test Instruments:	Refer to section 3.0 for details					
Test mode:	Refer to section 2.2 for details					
Test environment:	Temp.:	21.0°C	Humid.:	34%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

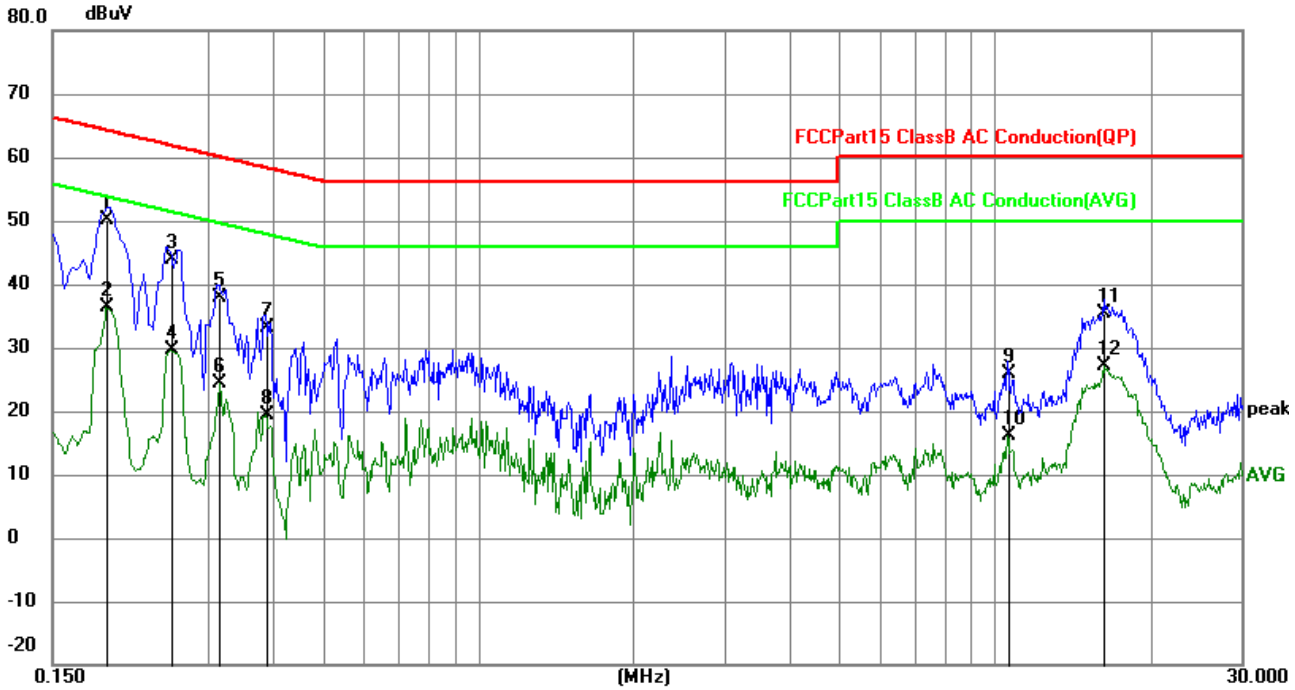
Remark:

1. Both high voltage and low voltage have been tested, and the report only shows the worst case data with AC 120V/60Hz.

2. All mode have been tested, the report only shows the worst（802.11b 2412MHz） mode data.

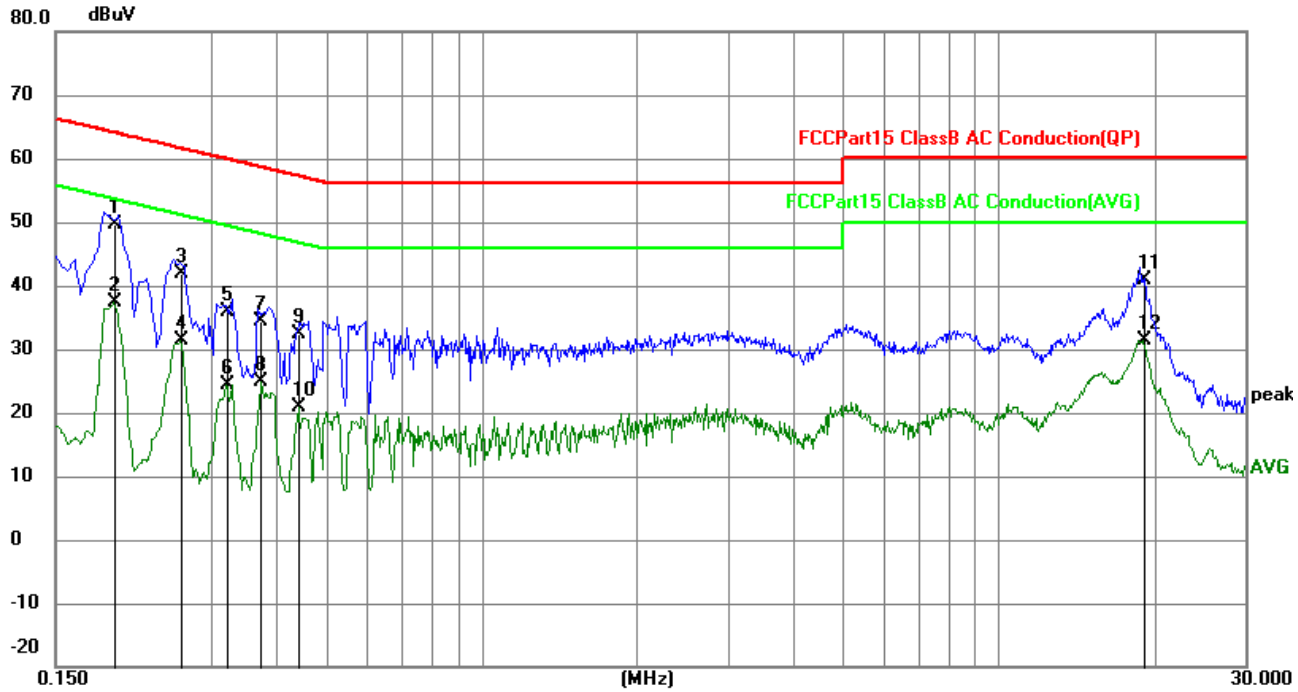
Measurement data

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1905	40.29	9.81	50.10	64.01	-13.91	QP
2	0.1905	26.50	9.81	36.31	54.01	-17.70	AVG
3	0.2535	34.07	9.83	43.90	61.64	-17.74	QP
4	0.2535	19.75	9.83	29.58	51.64	-22.06	AVG
5	0.3165	28.13	9.87	38.00	59.80	-21.80	QP
6	0.3165	14.47	9.87	24.34	49.80	-25.46	AVG
7	0.3885	23.21	9.89	33.10	58.10	-25.00	QP
8	0.3885	9.37	9.89	19.26	48.10	-28.84	AVG
9	10.5675	15.97	9.83	25.80	60.00	-34.20	QP
10	10.5675	6.24	9.83	16.07	50.00	-33.93	AVG
11	16.2420	25.76	9.74	35.50	60.00	-24.50	QP
12	16.2420	17.48	9.74	27.22	50.00	-22.78	AVG

Neutral:



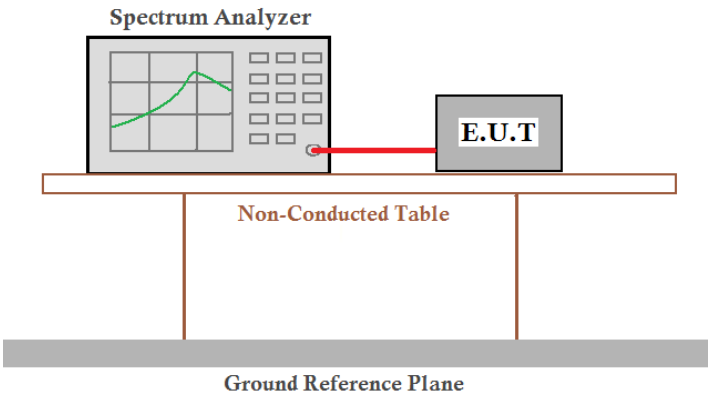
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1949	39.79	9.81	49.60	63.83	-14.23	QP
2	0.1949	27.57	9.81	37.38	53.83	-16.45	AVG
3	0.2625	32.17	9.83	42.00	61.35	-19.35	QP
4	0.2625	21.58	9.83	31.41	51.35	-19.94	AVG
5	0.3209	25.93	9.87	35.80	59.68	-23.88	QP
6	0.3209	14.58	9.87	24.45	49.68	-25.23	AVG
7	0.3750	24.61	9.89	34.50	58.39	-23.89	QP
8	0.3750	15.09	9.89	24.98	48.39	-23.41	AVG
9	0.4425	22.38	9.92	32.30	57.01	-24.71	QP
10	0.4425	10.94	9.92	20.86	47.01	-26.15	AVG
11	19.0725	31.21	9.69	40.90	60.00	-19.10	QP
12	19.0725	21.77	9.69	31.46	50.00	-18.54	AVG

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. Level =Receiver Read level + Factor (Factor= LISN Factor + Cable Loss+ Attenuator Factor)

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

4.3 Duty cycle

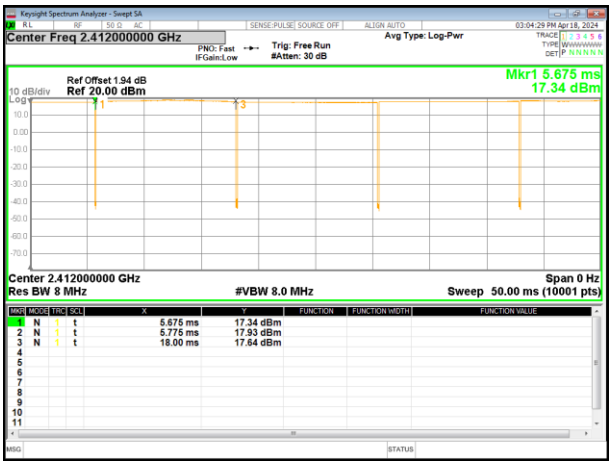
Test Method :	ANSI C63.10:2013	
Limit:	/	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

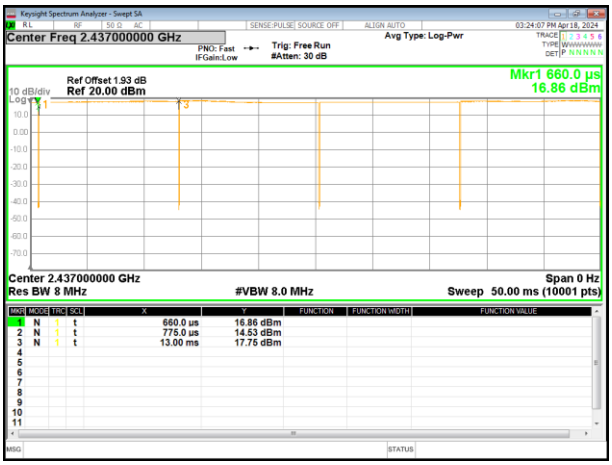
Measurement Result

Test CH	Duty cycle (%)	Correction Factor (dB)	Duty cycle (%)	Correction Factor (dB)	Duty cycle (%)	Correction Factor (dB)	Duty cycle (%)	Correction Factor (dB)
	802.11b		802.11g		802.11n(HT20)		802.11n(HT40)	
Lowest	99.19	0.04	92.27	0.35	91.99	0.36	82.30	0.85
Middle	99.07	0.04	97.60	0.11	97.93	0.09	84.55	0.73
Highest	99.63	0.02	95.53	0.2	95.21	0.21	93.97	0.27

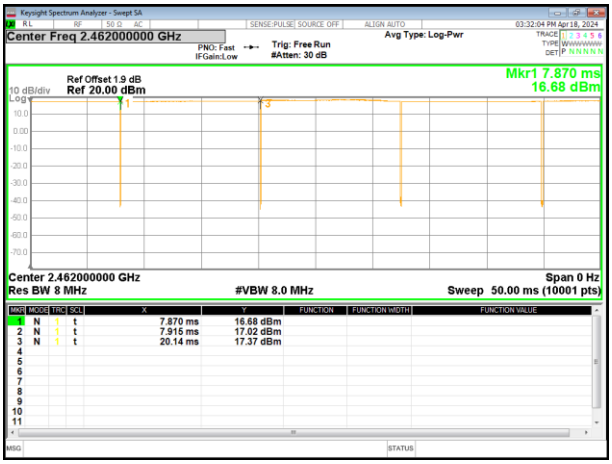
Test plot as follows:

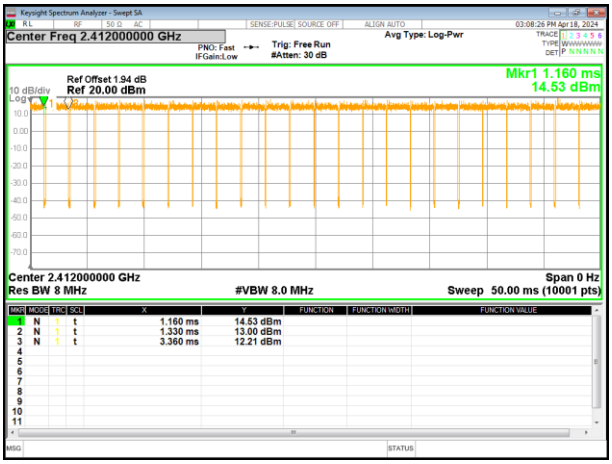
802.11b	Lowest channel	802.11b	Middle channel



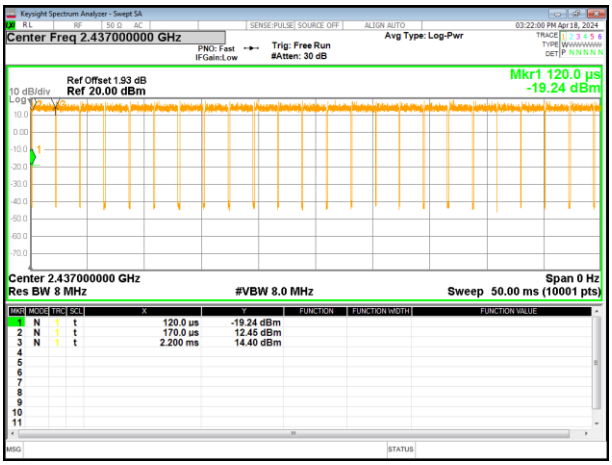


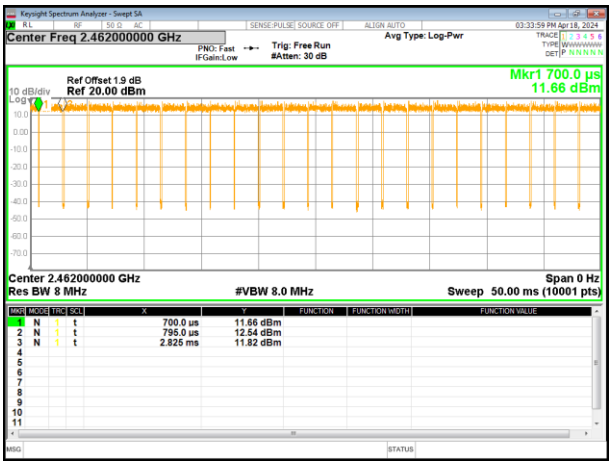
802.11b	Highest channel	802.11g	Lowest channel



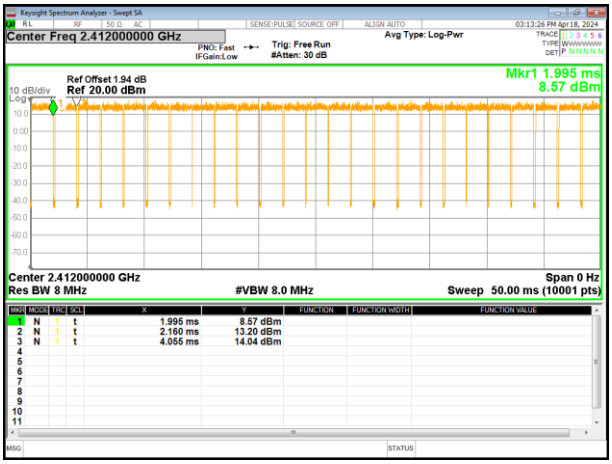


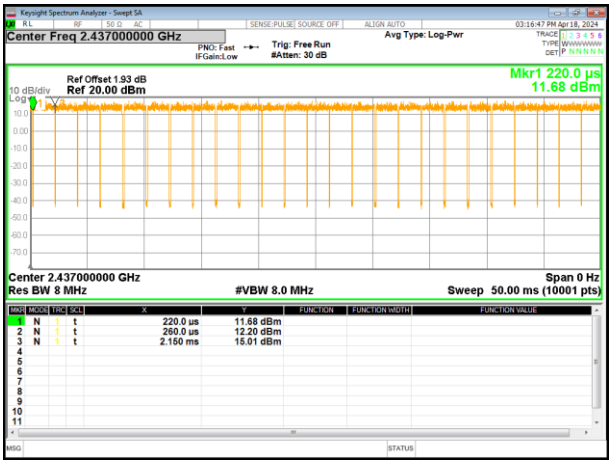
802.11g	Middle channel	802.11g	Highest channel



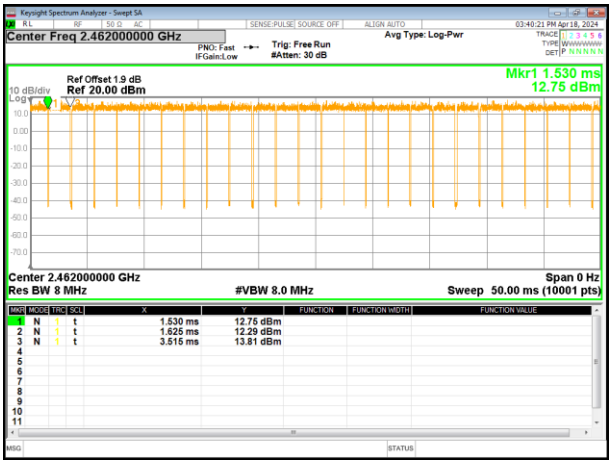


802.11n20	Lowest channel	802.11n20	Middle channel

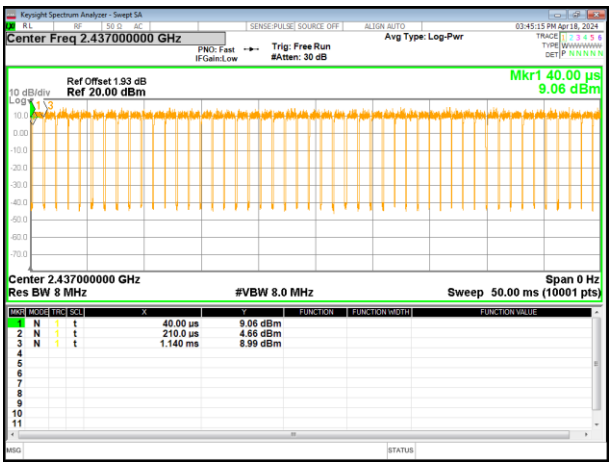


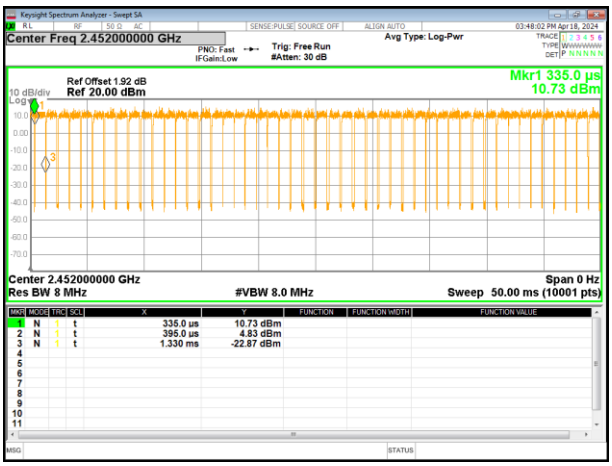


802.11n20	Highest channel	802.11n40	Lowest channel

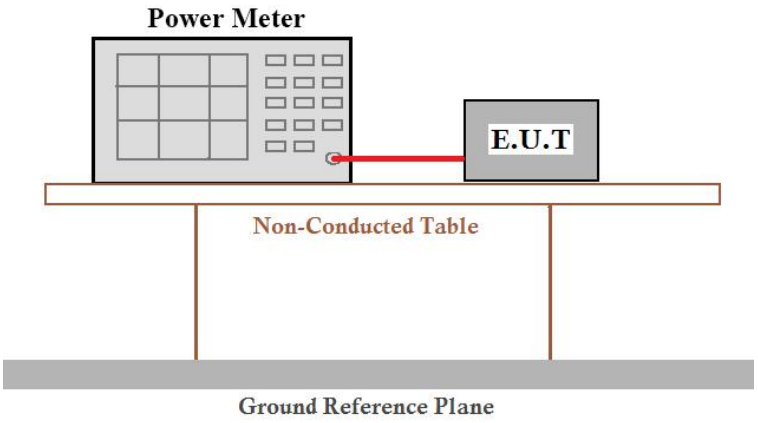


802.11n40	Middle channel	802.11n40	Highest channel





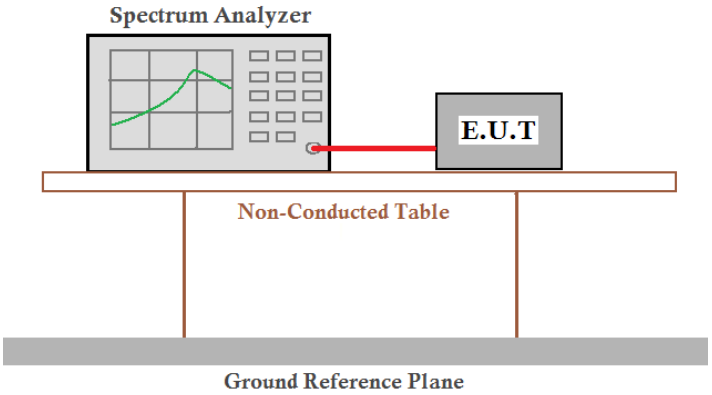
4.4 Conducted Output Power

Test Requirement :	FCC Part15 C Section 15.247 (b)(3)	
Test Method :	KDB 558074 D01 15.247 Meas Guidance v05r02	
Limit:	30dBm	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

Measurement Result

Test CH	Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	15.01	13.73	13.73	13.54	30.00	Pass
Middle	14.82	13.61	13.63	13.39		
Highest	14.84	13.56	13.49	13.51		

4.5 6dB Bandwidth & 99% Channel Bandwidth

Test Requirement :	FCC Part15 C Section 15.247 (a)(2)	
Test Method :	KDB 558074 D01 15.247 Meas Guidance v05r02	
Limit:	>500KHz	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

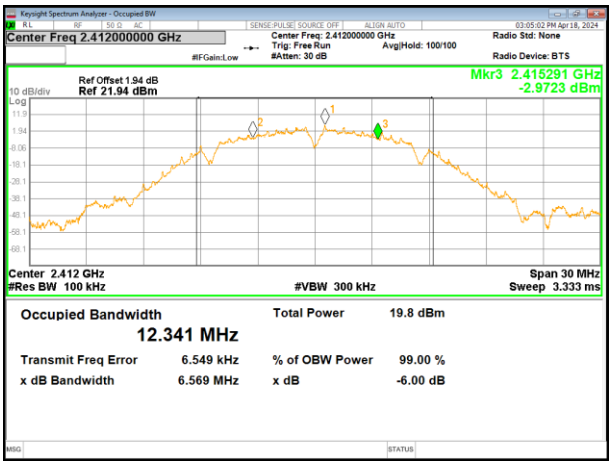
Measurement Result

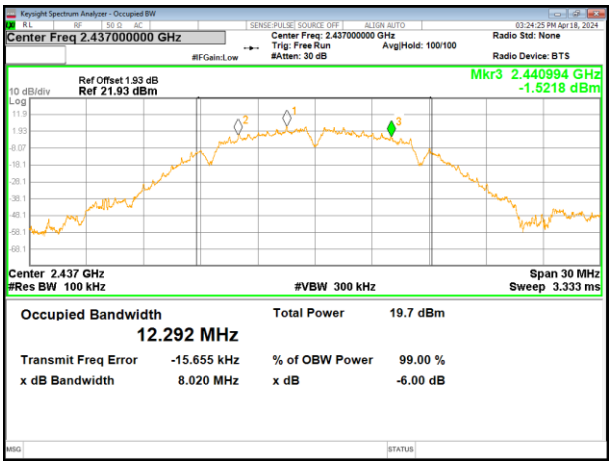
Test CH	6dB Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	6.569	16.32	17.60	36.32	>500	Pass
Middle	8.020	16.34	17.60	36.34		
Highest	7.523	16.32	17.60	36.34		

Test CH	99% Bandwidth (MHz)				Limit	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	12.289	16.790	17.974	36.603	/	Pass
Middle	12.248	16.727	17.962	36.518		
Highest	12.245	16.751	17.929	36.554		

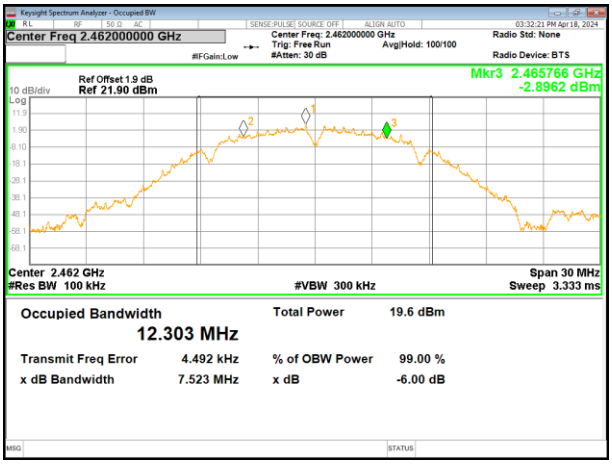
Test plot as follows: -6 Bandwidth dB Test plot as follows

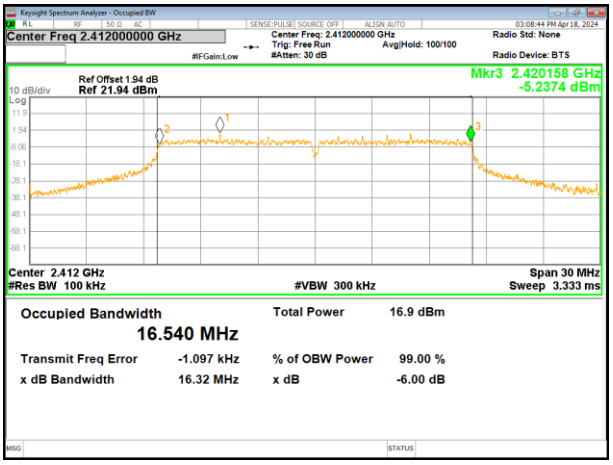
802.11b	Lowest channel	802.11b	Middle channel



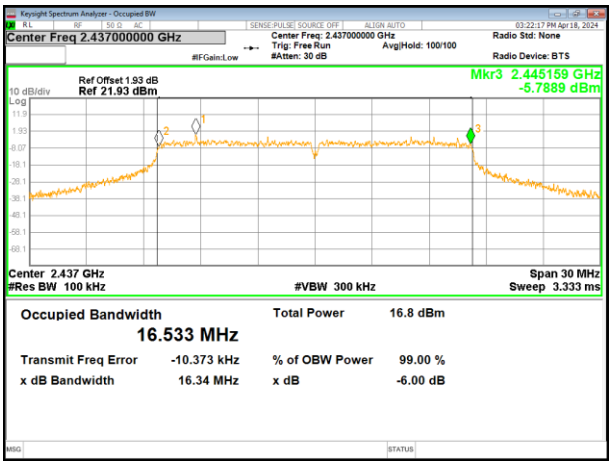


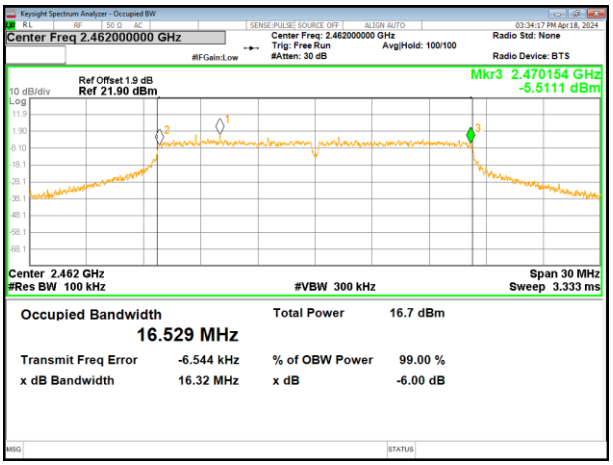
802.11b	Highest channel	802.11g	Lowest channel



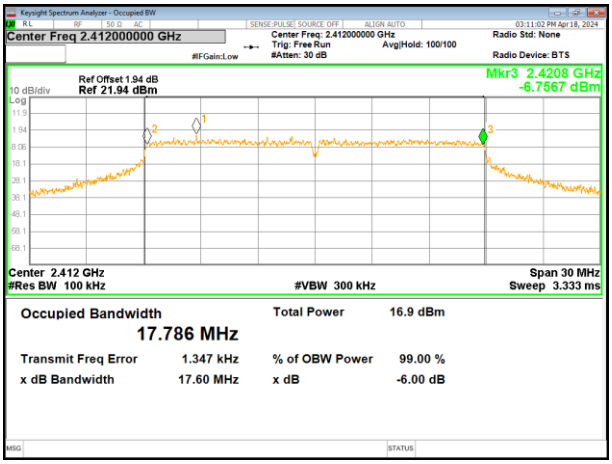


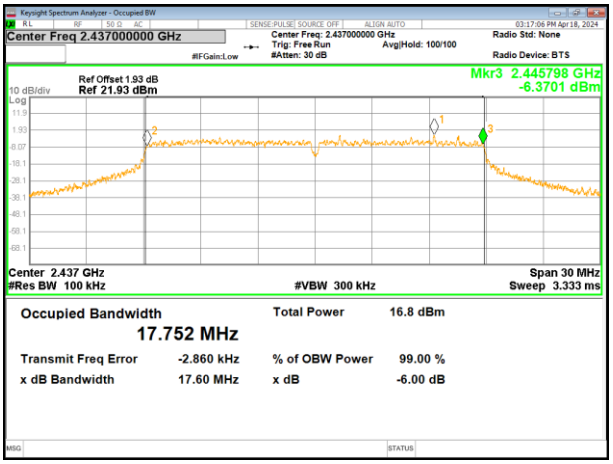
802.11g	Middle channel	802.11g	Highest channel



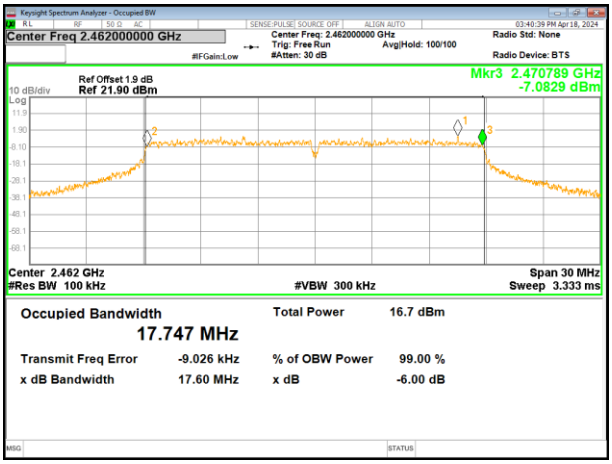


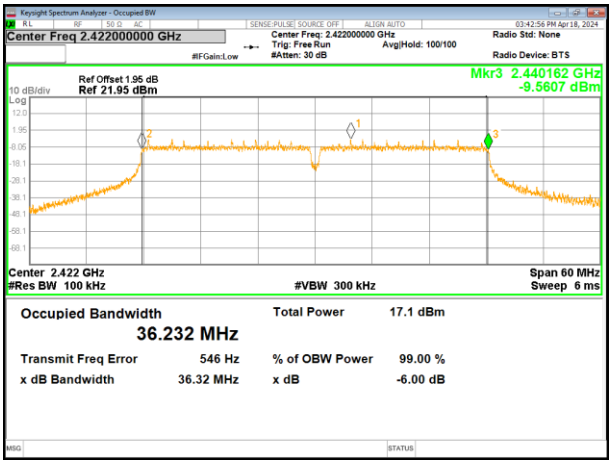
802.11n20	Lowest channel	802.1120	Middle channel



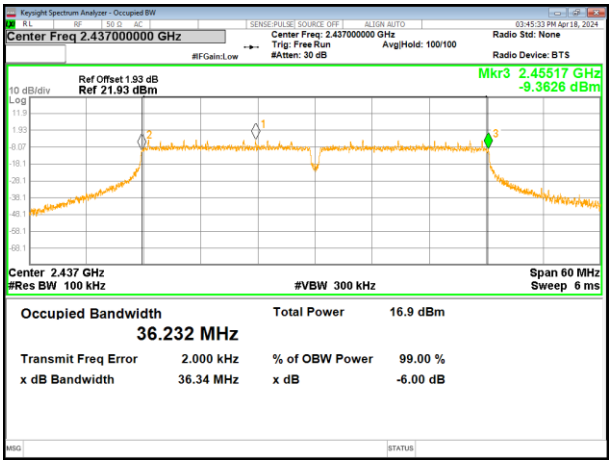


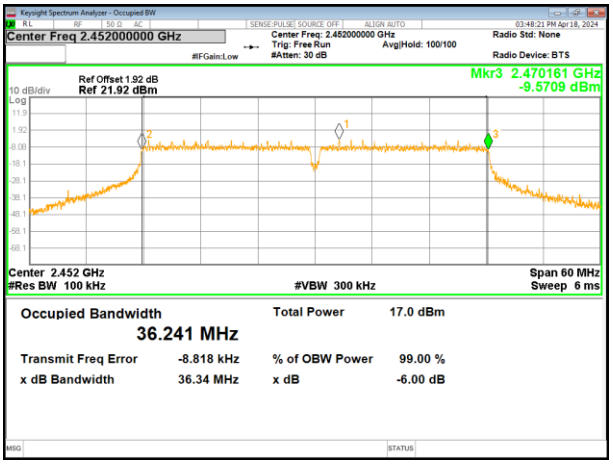
802.11n20	Highest channel	802.11n40	Lowest channel





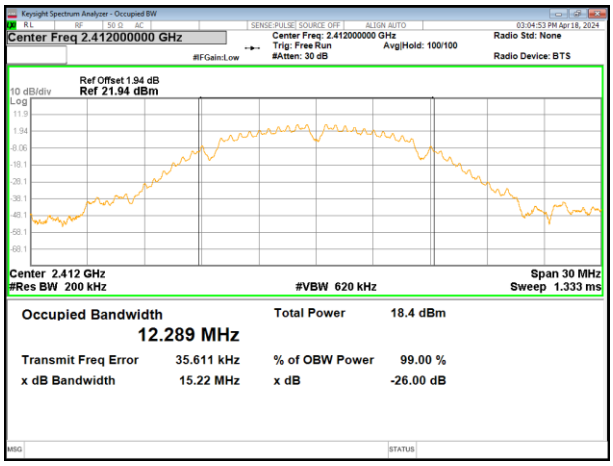
802.11n40	Middle channel	802.11n40	Highest channel

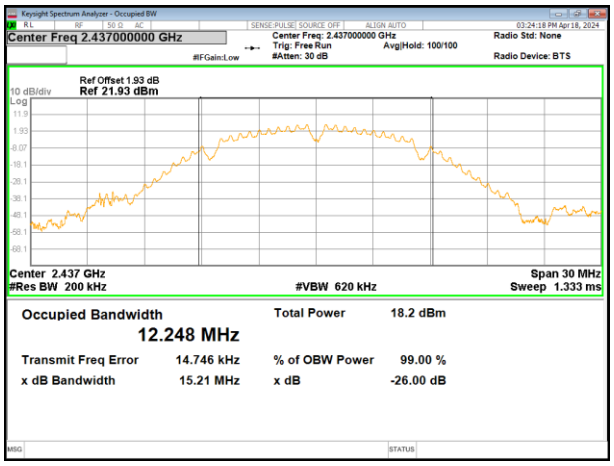




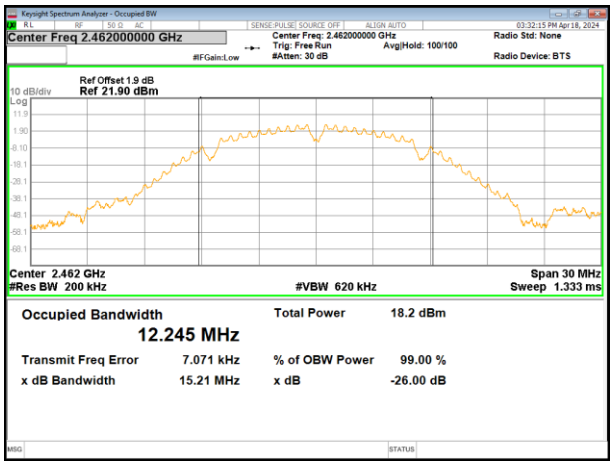
Test plot as follows: 99% Bandwidth Test plot as follows

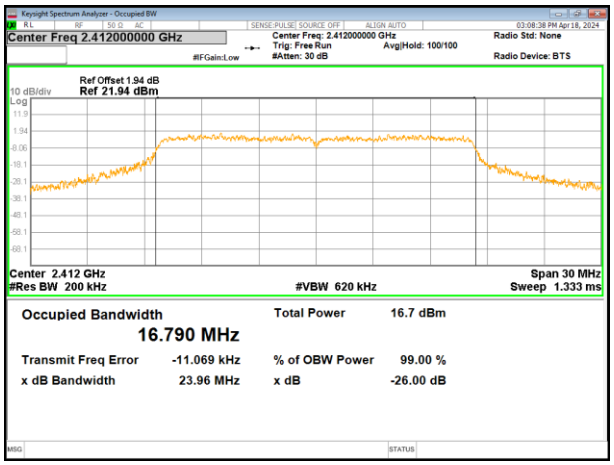
802.11b	Lowest channel	802.11b	Middle channel



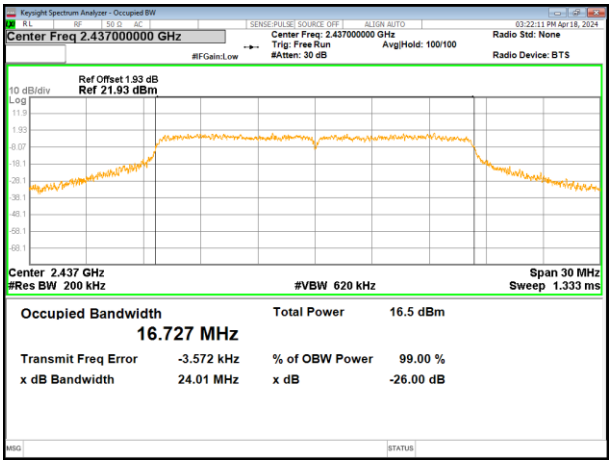


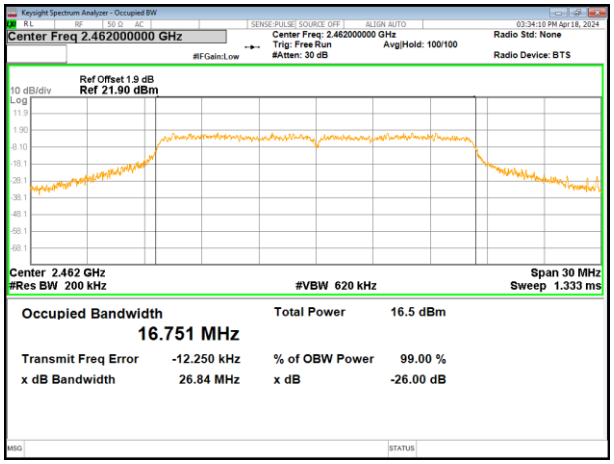
802.11b	Highest channel	802.11g	Lowest channel



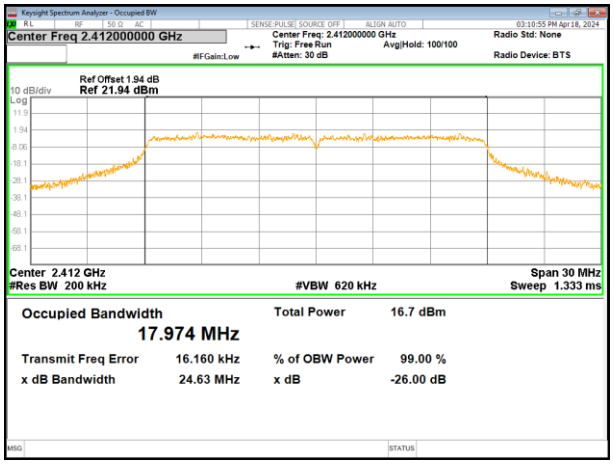


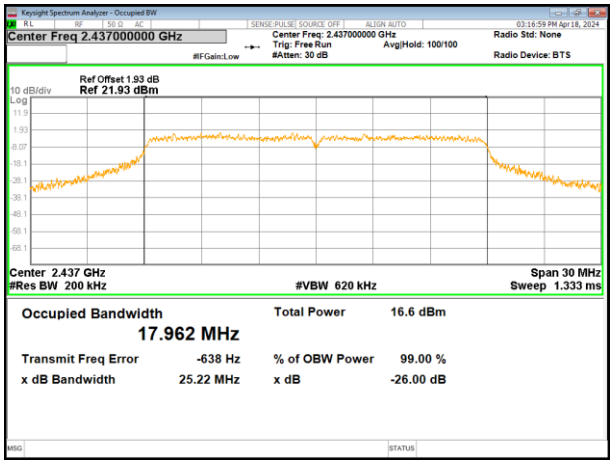
802.11g	Middle channel	802.11g	Highest channel



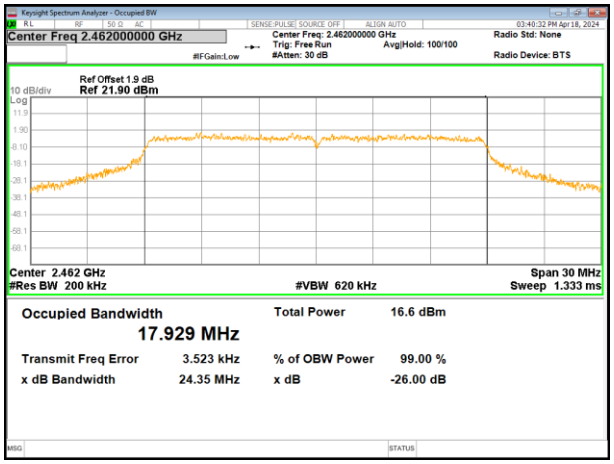


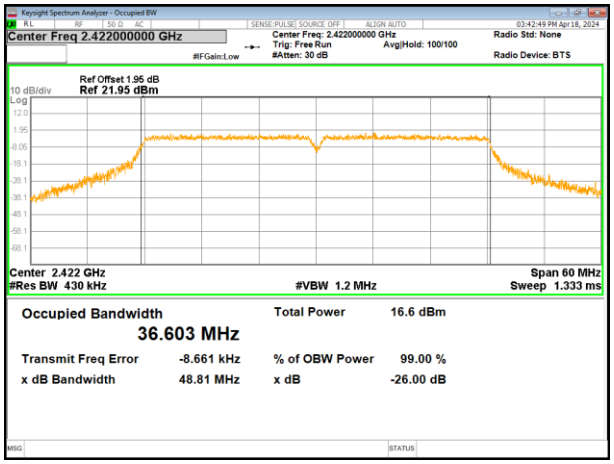
802.11n20	Lowest channel	802.1120	Middle channel



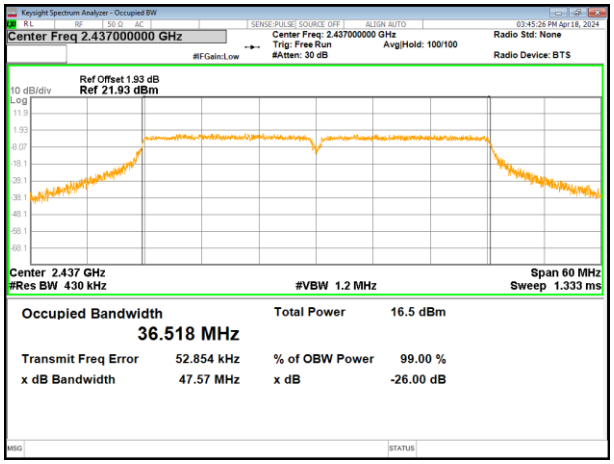


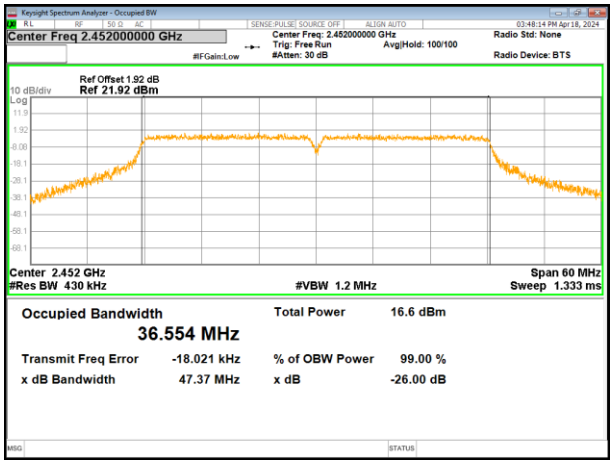
802.11n20	Highest channel	802.11n40	Lowest channel



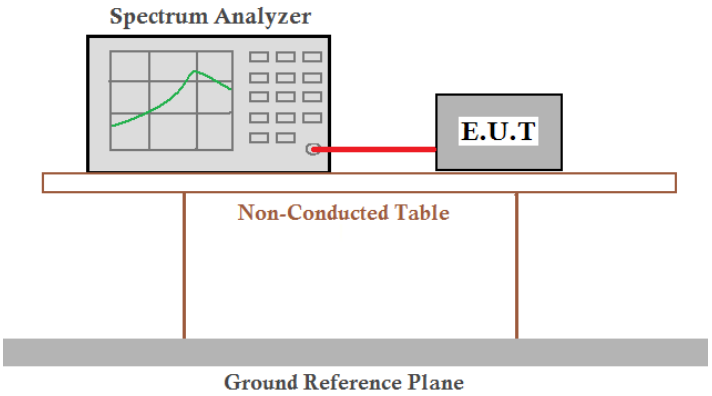


802.11n40	Middle channel	802.11n40	Highest channel





4.6 Power Spectral Density

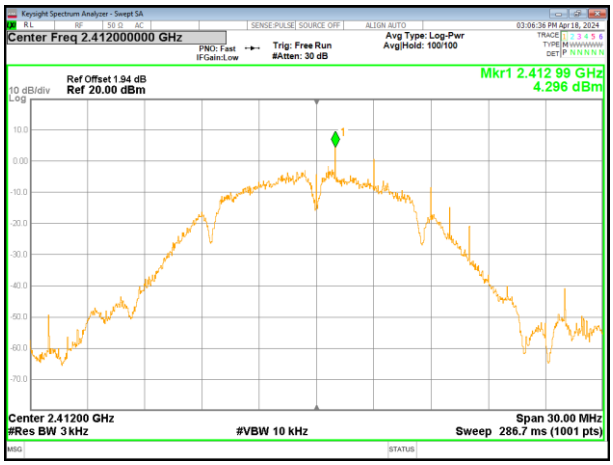
Test Requirement:	FCC Part15 C Section 15.247 (e)	
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02	
Limit:	8dBm/3kHz	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

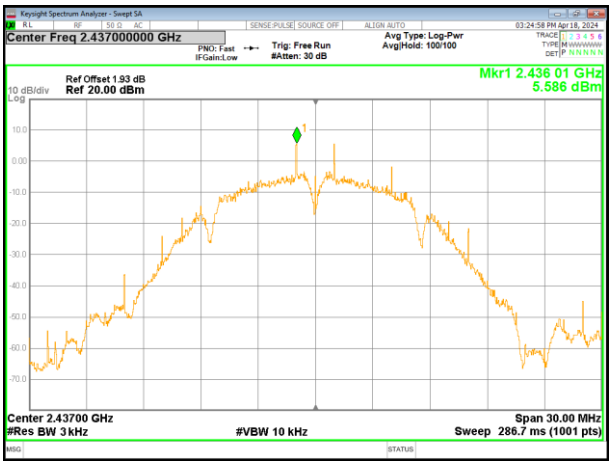
Measurement Result

Test CH	Power Spectral Density (dBm/3kHz)				Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	4.296	-8.46	-7.984	-11.735	8.00	Pass
Middle	5.586	-8.038	-8.614	-11.398		
Highest	0.140	-8.031	-8.506	-11.546		

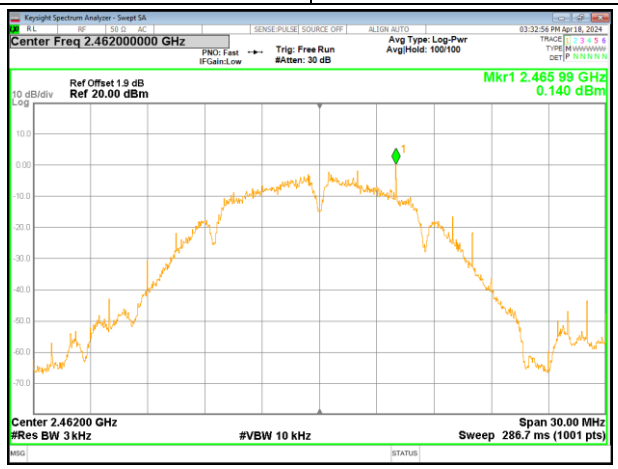
Test plot as follows:

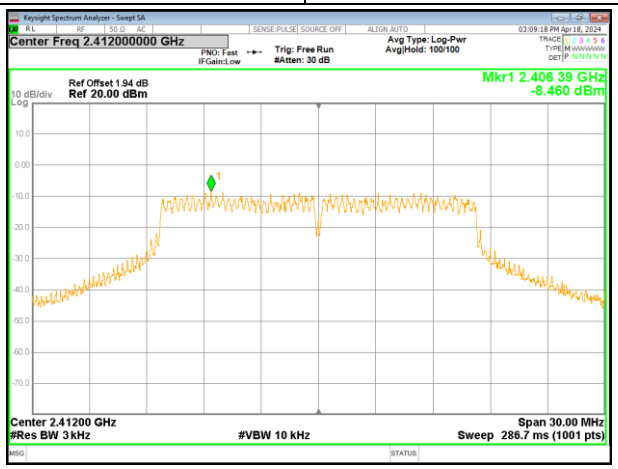
802.11b	Lowest channel	802.11b	Middle channel



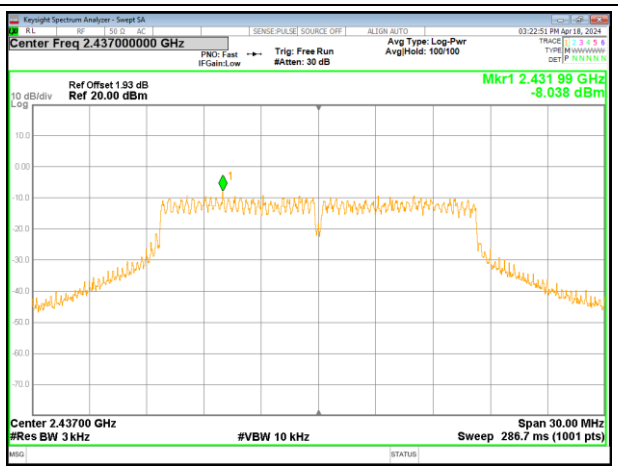


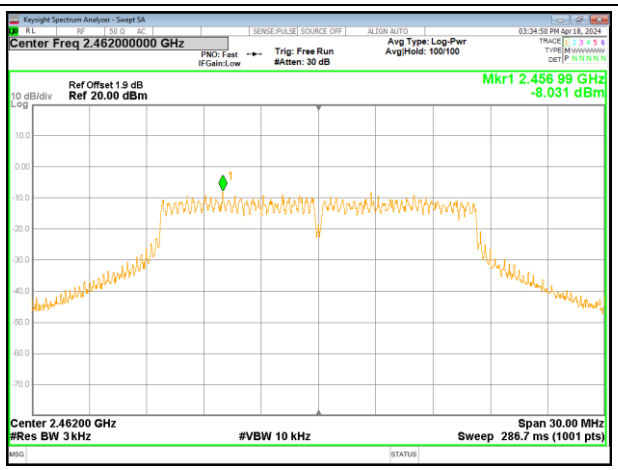
802.11b	Highest channel	802.11g	Lowest channel



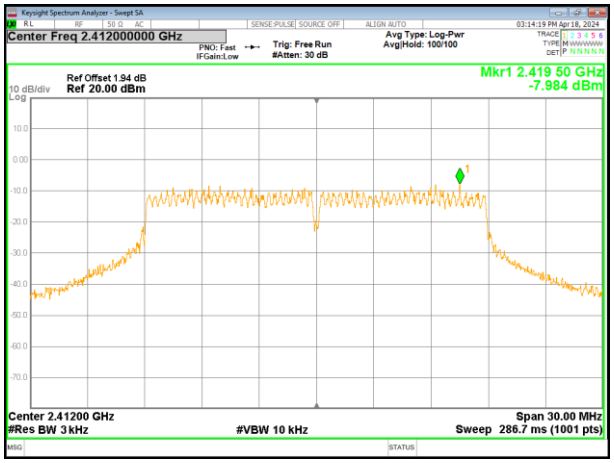


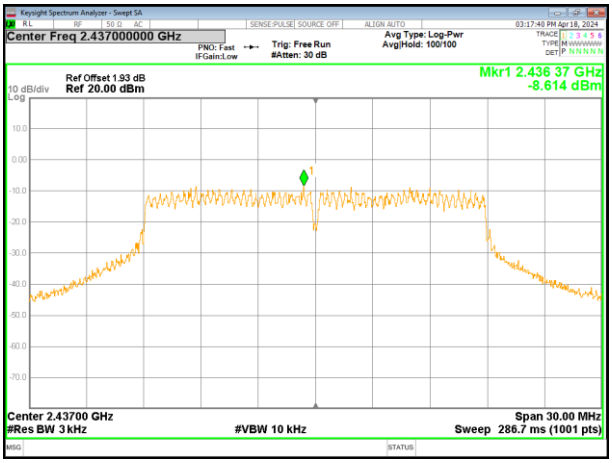
802.11g	Middle channel	802.11g	Highest channel



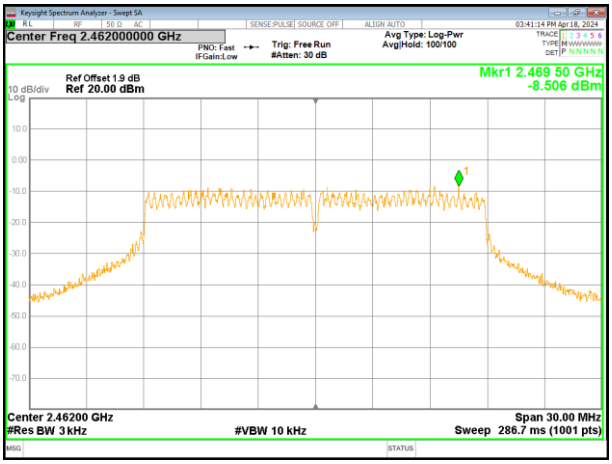


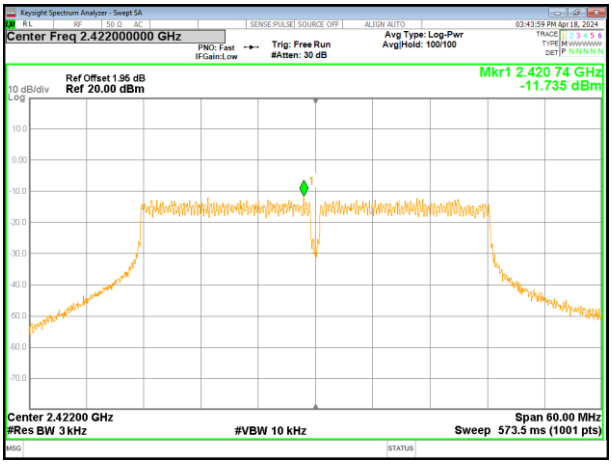
802.11n20	Lowest channel	802.11n20	Middle channel



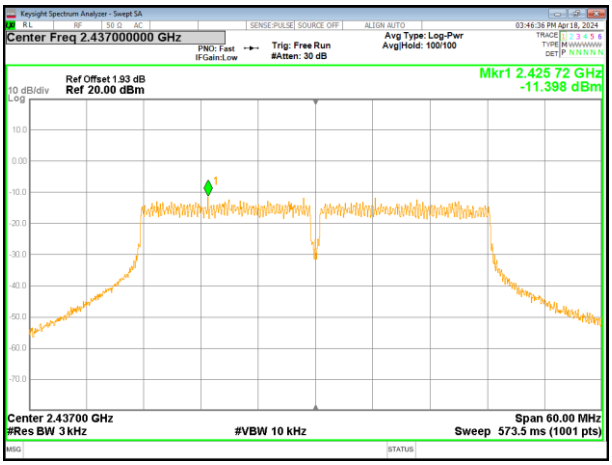


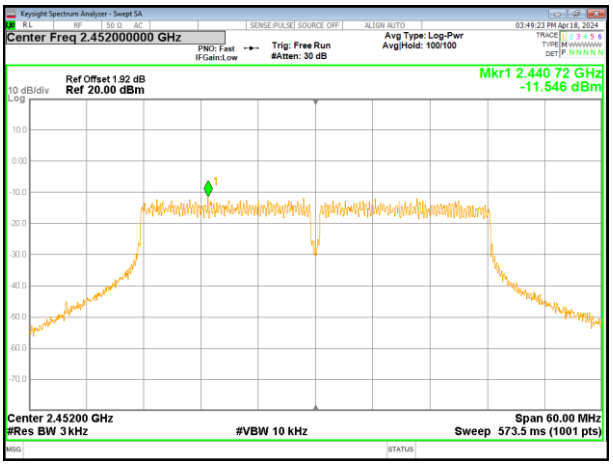
802.11n20	Highest channel	802.11n40	Lowest channel





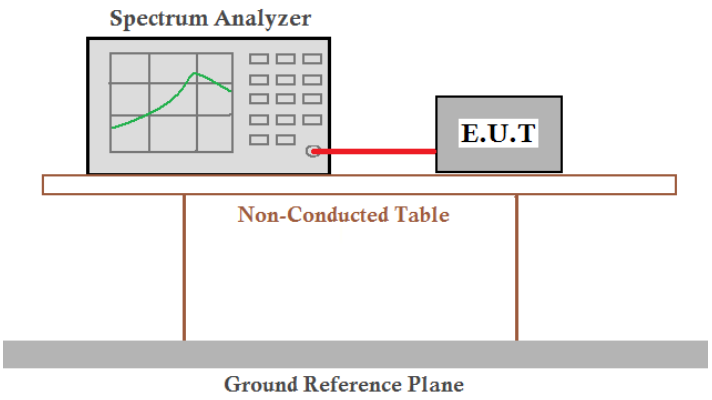
802.11n40	Middle channel	802.11n40	Highest channel





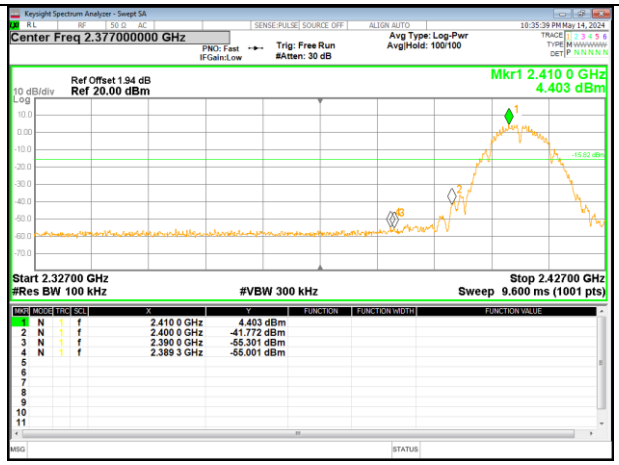
4.7 Band edges

Conducted Emission Method

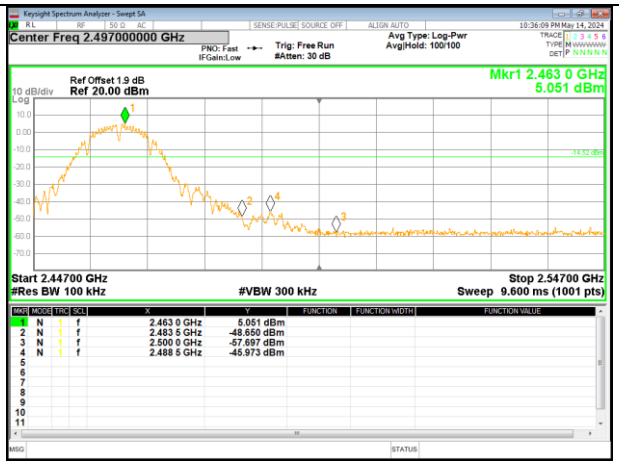
Test Requirement:	FCC Part15 C Section 15.247 (d), RSS-247 §5.2.b	
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02	
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.	
Test setup:		
Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

Test plot as follows:

Test mode:	802.11b

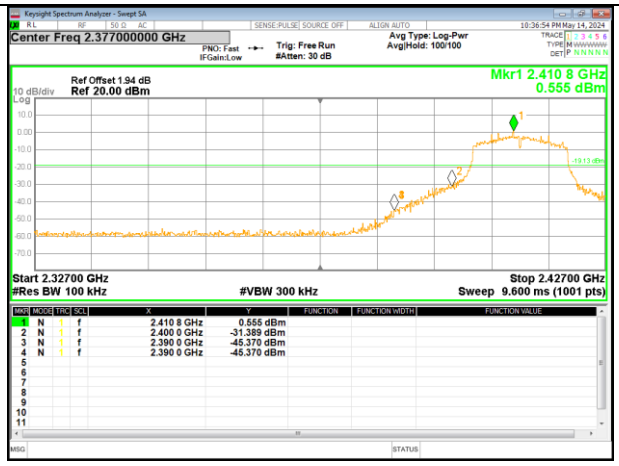


Lowest channel

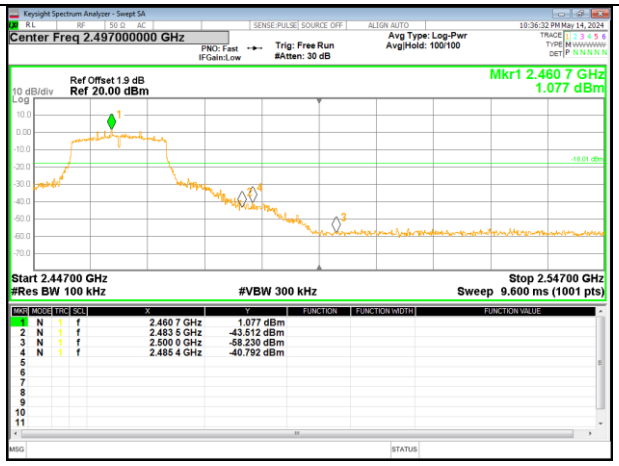


Highest channel

Test mode:	802.11g

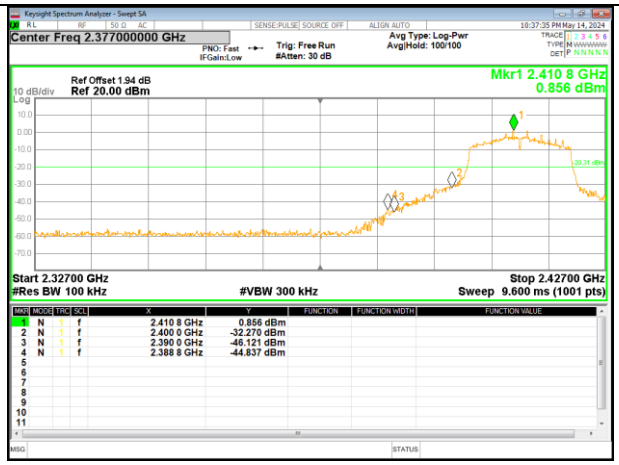


Lowest channel

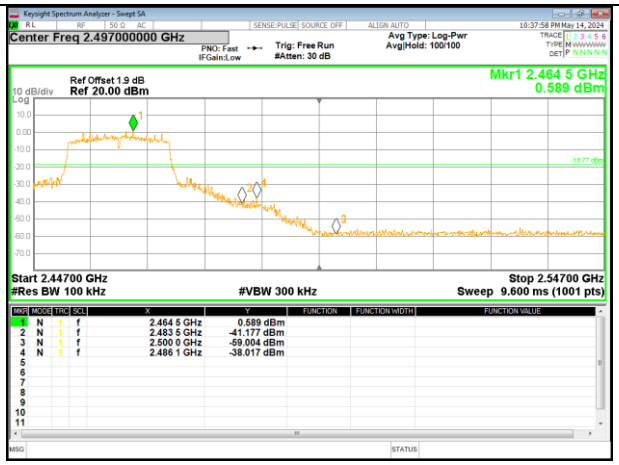


Highest channel

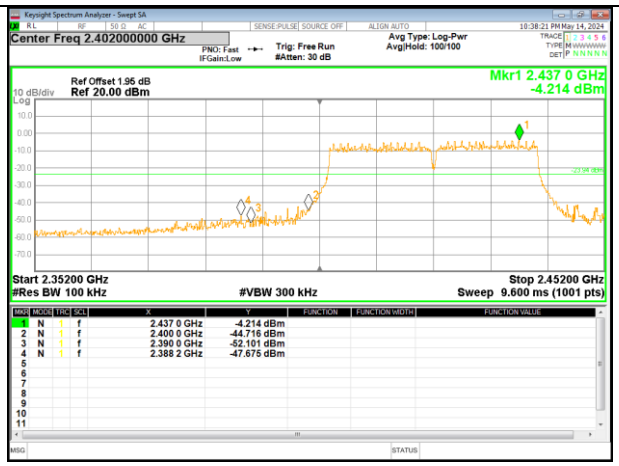
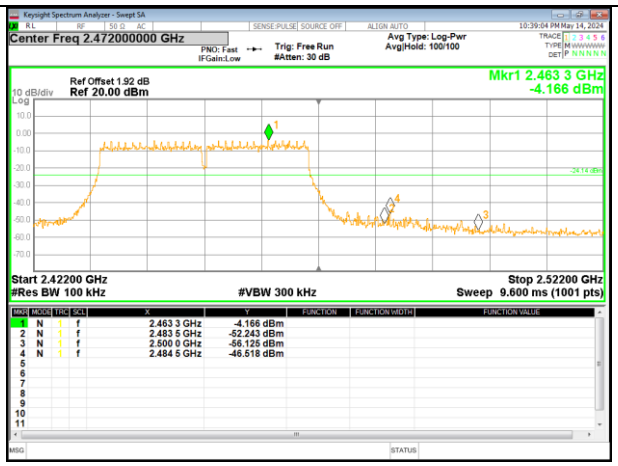
Test mode:	802.11n20



Lowest channel



Highest channel

Test mode:	802.11n40
	
Lowest channel	Highest channel

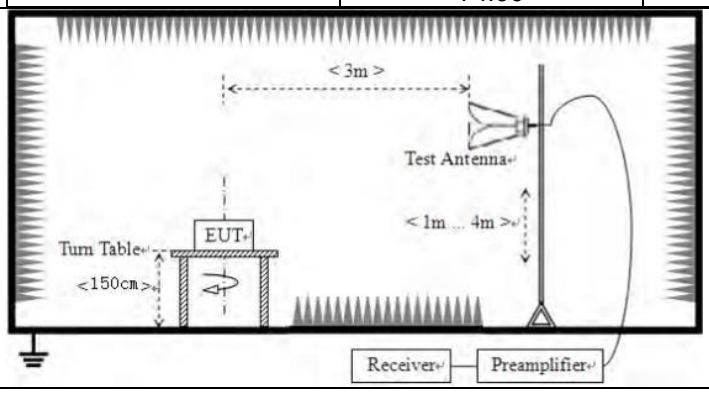
Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
Above 1GHz	Peak	1MHz	3MHz	Peak
	Average	1MHz	3MHz	Average

Limit:	Frequency	Limit (dBuV/m @3m)	Value
	Above 1GHz	54.00	Average
		74.00	Peak

Test setup:



Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Test Instruments:	Refer to section 3.0 for details	
Test mode:	Refer to section 2.2 for details	
Test environment:	Temp.: 24.3°C	Humid.:51%RH
Test voltage:	AC 120V	
Test results:	Pass	

Measurement data:

Test mode:	802.11b	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	61.23	27.40	3.43	45.40	46.66	74.00	-27.34	Horizontal
2390.00	64.79	27.10	3.43	45.40	49.92	74.00	-24.08	Horizontal
2310.00	60.62	27.40	3.43	45.40	46.05	74.00	-27.95	Vertical
2390.00	63.66	27.10	3.43	45.40	48.79	74.00	-25.21	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	51.23	27.40	3.43	45.40	36.66	54.00	-17.34	Horizontal
2390.00	53.67	27.10	3.43	45.40	38.80	54.00	-15.20	Horizontal
2310.00	50.94	27.40	3.43	45.40	36.37	54.00	-17.63	Vertical
2390.00	53.94	27.10	3.43	45.40	39.07	54.00	-14.93	Vertical

Test mode:	802.11b	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	63.49	27.80	3.56	45.40	49.45	74.00	-24.55	Horizontal
2500.00	60.22	27.80	3.56	45.40	46.18	74.00	-27.82	Horizontal
2483.50	63.73	27.80	3.56	45.40	49.69	74.00	-24.31	Vertical
2500.00	60.49	27.80	3.56	45.40	46.45	74.00	-27.55	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	54.53	27.80	3.56	45.40	40.49	54.00	-13.51	Horizontal
2500.00	50.62	27.80	3.56	45.40	36.58	54.00	-17.42	Horizontal
2483.50	53.27	27.80	3.56	45.40	39.23	54.00	-14.77	Vertical
2500.00	49.78	27.80	3.56	45.40	35.74	54.00	-18.26	Vertical

Remarks:

1. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *Emissions more than 20 dB below the limit do not need to be reported.*

Test mode:	802.11g	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	62.26	27.40	3.43	45.40	47.69	74.00	-26.31	Horizontal
2390.00	66.07	27.10	3.43	45.40	51.20	74.00	-22.80	Horizontal
2310.00	63.04	27.40	3.43	45.40	48.47	74.00	-25.53	Vertical
2390.00	66.94	27.10	3.43	45.40	52.07	74.00	-21.93	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	51.42	27.40	3.43	45.40	36.85	54.00	-17.15	Horizontal
2390.00	55.01	27.10	3.43	45.40	40.14	54.00	-13.86	Horizontal
2310.00	50.21	27.40	3.43	45.40	35.64	54.00	-18.36	Vertical
2390.00	55.20	27.10	3.43	45.40	40.33	54.00	-13.67	Vertical

Test mode:	802.11g	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	71.26	27.80	3.56	45.40	57.22	74.00	-16.78	Horizontal
2500.00	67.29	27.80	3.56	45.40	53.25	74.00	-20.75	Horizontal
2483.50	71.40	27.80	3.56	45.40	57.36	74.00	-16.64	Vertical
2500.00	64.88	27.80	3.56	45.40	50.84	74.00	-23.16	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	54.02	27.80	3.56	45.40	39.98	54.00	-14.02	Horizontal
2500.00	52.19	27.80	3.56	45.40	38.15	54.00	-15.85	Horizontal
2483.50	53.81	27.80	3.56	45.40	39.77	54.00	-14.23	Vertical
2500.00	52.46	27.80	3.56	45.40	38.42	54.00	-15.58	Vertical

Remarks:

1. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *Emissions more than 20 dB below the limit do not need to be reported.*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	63.23	27.40	3.43	45.40	48.66	74.00	-25.34	Horizontal
2390.00	67.07	27.10	3.43	45.40	52.20	74.00	-21.80	Horizontal
2310.00	62.61	27.40	3.43	45.40	48.04	74.00	-25.96	Vertical
2390.00	67.97	27.10	3.43	45.40	53.10	74.00	-20.90	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	52.19	27.40	3.43	45.40	37.62	54.00	-16.38	Horizontal
2390.00	55.40	27.10	3.43	45.40	40.53	54.00	-13.47	Horizontal
2310.00	51.27	27.40	3.43	45.40	36.70	54.00	-17.30	Vertical
2390.00	55.03	27.10	3.43	45.40	40.16	54.00	-13.84	Vertical

Test mode:	802.11n(HT20)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	70.61	27.80	3.56	45.40	56.57	74.00	-17.43	Horizontal
2500.00	66.05	27.80	3.56	45.40	52.01	74.00	-21.99	Horizontal
2483.50	71.52	27.80	3.56	45.40	57.48	74.00	-16.52	Vertical
2500.00	64.56	27.80	3.56	45.40	50.52	74.00	-23.48	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	54.80	27.80	3.56	45.40	40.76	54.00	-13.24	Horizontal
2500.00	52.04	27.80	3.56	45.40	38.00	54.00	-16.00	Horizontal
2483.50	53.43	27.80	3.56	45.40	39.39	54.00	-14.61	Vertical
2500.00	51.41	27.80	3.56	45.40	37.37	54.00	-16.63	Vertical

Remarks:

1. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *Emissions more than 20 dB below the limit do not need to be reported.*

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

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	63.23	27.40	3.43	45.40	48.66	74.00	-25.34	Horizontal
2390.00	67.07	27.10	3.43	45.40	52.20	74.00	-21.80	Horizontal
2310.00	62.61	27.40	3.43	45.40	48.04	74.00	-25.96	Vertical
2390.00	67.97	27.10	3.43	45.40	53.10	74.00	-20.90	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	52.19	27.40	3.43	45.40	37.62	54.00	-16.38	Horizontal
2390.00	55.40	27.10	3.43	45.40	40.53	54.00	-13.47	Horizontal
2310.00	51.27	27.40	3.43	45.40	36.70	54.00	-17.30	Vertical
2390.00	55.03	27.10	3.43	45.40	40.16	54.00	-13.84	Vertical

Test mode:	802.11n(HT40)	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	70.61	27.80	3.56	45.40	56.57	74.00	-17.43	Horizontal
2500.00	66.05	27.80	3.56	45.40	52.01	74.00	-21.99	Horizontal
2483.50	71.52	27.80	3.56	45.40	57.48	74.00	-16.52	Vertical
2500.00	64.56	27.80	3.56	45.40	50.52	74.00	-23.48	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	54.80	27.80	3.56	45.40	40.76	54.00	-13.24	Horizontal
2500.00	52.04	27.80	3.56	45.40	38.00	54.00	-16.00	Horizontal
2483.50	53.43	27.80	3.56	45.40	39.39	54.00	-14.61	Vertical
2500.00	51.41	27.80	3.56	45.40	37.37	54.00	-16.63	Vertical

Remarks:

1. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
2. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
3. *Emissions more than 20 dB below the limit do not need to be reported.*