

TEST REPORT

Applicant : SPRING SUNSHINE TECHNOLOGY CO., LIMITED
Address : Room 2401-2404, 24/F., Fu Fai Commercial Centre 27 Hillier Street,
Sheung Wan, Hong Kong
Manufacturer : SPRING SUNSHINE TECHNOLOGY CO., LIMITED
Address : Room 2401-2404, 24/F., Fu Fai Commercial Centre 27 Hillier Street,
Sheung Wan, Hong Kong
Product Name : Smart String Lights
Model Number : LKHT4S01
Trademark : Linkind
FCC ID : 2AW95LKHT4S01
Test Date : Jul. 23, 2026 to Sep. 09, 2026
Date of Report : Sep. 09, 2026
Test Result : This device described above has been tested by BKC, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.

Test Procedure Used:

Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

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1. General Information

1.1. Description of Device (EUT)

EUT Name	:	Smart String Lights
Model No.	:	LKHT4S01
Model Difference	:	N/A
Power supply	:	Input:120V~50/60Hz 0.5A Output:29V 517mA 15W
Operation frequency	:	2412-2462MHz for 802.11b/g/n20; 2422-2452MHz for 802.11n40
Modulation	:	802.11b:(DQPSK, DBPSK, CCK) DSSS 802.11g/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM
Antenna Type	:	PCB antenna, Maximum Gain is 3.86dBi
Intend use environment	:	Residential, commercial and light industrial environment

1.2. Channel List

Frequency and Channel list for 802.11 b/g/n(HT20/HT40):

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462		

Test Frequency and Channel for 802.11 b/g/n(HT20/HT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	6	2437	11	2462
3	2422	6	2437	9	2452

1.3. Test configuration

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, 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.	
Test Software	EspRFTTestTool
Power level setup	default

1.4.Summary of test result

RF PART		
Test Items	Test Requirement	Result
Antenna requirement	FCC part 15.203/15.247 (b)	PASS
Duty cycle	/	PASS
AC Power Line Conducted Emission	FCC part 15.207	PASS
Conducted Peak Output Power	FCC part 15.247 (b)(3)	PASS
Channel Bandwidth& 99% OCB	FCC part 15.247 (a)(2)	PASS
Power Spectral Density	FCC part 15.247 (e)	PASS
Band Edge	FCC part 15.247(d)	PASS
Spurious Emission	FCC part 15.205/15.209	PASS
Remark: N/A is an abbreviation for Not Applicable. Measurement Uncertainty is not taken into account for conformity statement		

1.5.Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.	Hardware Version	Software Version
Adapter	/	/	/	/
Laptop	DELL	Vostro 5490	/	/
cable	/	/	/	/

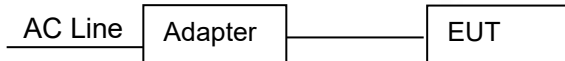
1.6.Test mode

The special RF test software was used to control EUT work in Continuous WIFI TX mode, and select test channel, wireless mode.

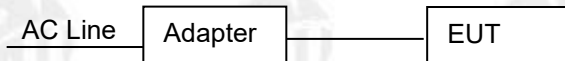
Test mode	Low channel	Middle channel	High channel
802.11b	2412MHz	2437MHz	2462MHz
802.11g	2412MHz	2437MHz	2462MHz
802.11n20	2412MHz	2437MHz	2462MHz
802.11n40	2422MHz	2437MHz	2452MHz
Note: All modes have been tested., Only the worst Data Record in the report			

1.7.Block Diagram

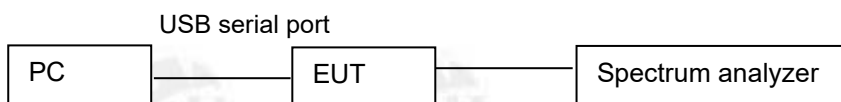
Radiated Emission



Conducted Spurious



RF Conducted Test



1.8.Test Conditions

Category	Normal Conditions	Extreme Conditions
Temperature range	15-35℃	N/A
Humidity range	20-75%	N/A
Pressure range	86-106kPa	N/A
Power supply	DC 29V	N/A

Note: N/A is an abbreviation for Not Applicable.

1.9.Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for radio frequency	$\pm 7 \times 10^{-8}$	
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$	
Radiated Emission(9KHz~30MHz)	$\pm 4.51\text{dB}$	
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$	
Radiated Emission(1GHz~6GHz)	$\pm 3.92\text{dB}$	
Radiated Emission(6GHz~18GHz)	$\pm 4.33\text{dB}$	
Radiated Emission(18GHz~40GHz)	$\pm 3.38\text{dB}$	
Uncertainty for conducted RF Power	$\pm 0.20\text{dB}$	
Conducted spurious emissions	$\pm 0.24\text{dB}$	
Uncertainty for temperature	0.6℃	
Uncertainty for humidity	1%	
Bandwidth	$\pm 1.5 \times 10^{-6}$	
Time	$\pm 2\%$	
Duty Cycle	$\pm 2\%$	

Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%

1.10.Test Facility

Site Description		
Name of Firm	:	Shenzhen NTT Testing Technology Co.,Ltd.
Site Location	:	1B, Building 2, Factory Building & 103, Building 3, Factory Building, Dayang Industrial Park No.4, Industrial Avenue, Tangwei Community, Fuhai Sub-district, Bao 'an District, Shenzhen City, China
FCC Designation Number	:	CN3446
FCC Test Firm Registration Number	:	129414

1.11.Test Equipment

Conducted Test Site

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
944 Shielded Room	HSRCE944	/	HTEC	2025/4/30	2028/4/29
EMI Test Receiver	ESPI	/	RS	2025/9/8	2026/9/7
LISN	NNLK 8129	00603	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00694	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00680	Schwarzbeck	2025/9/8	2026/9/7
Cable	RG223-1500MM	NA	RG	2025/9/8	2026/9/7

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
944 Shielded Room	HSRCE944	/	HTEC	2025/04/30	2028/04/29
EMI Test Receiver	ESCI	100881/003	ROHDE&SCHWARZ	2026/09/04	2027/09/03
LISN	AMN6500	101185	ROHDE&SCHWARZ	2026/09/04	2027/09/03
LISN	NNLK 8129	00603	SCHWARZBECK	2026/09/04	2027/09/03
Cable	RG223-2M	/	RG	2026/09/04	2027/09/03

Radiated Test Site(Below 1G and Above 1G)&RF Test Site

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
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966 Shielded Room	966 Room	/	EMToni	2025/7/24	2028/7/23
EMI Test Receiver	ESCI	101018	RS	2025/9/8	2026/9/7
Amplifi (30MHz-1GHz)	BBV 9718D	00042	SCHWARZBECK	2025/9/8	2026/9/7
Bilog Antenna (30MHz-1GHz)	VULB9168	1858	SCHWARZBECK	2025/9/9	2026/9/8
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02622	SCHWARZBECK	2025/9/9	2026/9/8
Pream plifier (1GHz-18GHz)	BBV 9718D	0024	SCHWARZBECK	2025/9/8	2026/9/7
Spectrum Analyze (10Hz-40GHz)	FSV 40	100952	Rohde & Schwarz	2025/9/8	2026/9/7
Pream plifier (18GHz-40GHz)	BBV 9721	0056	SCHWARZBECK	2025/9/8	2026/9/7
Double Ridge Guide Horn Antenna (18GHz-40GHz)	SAS-574	588	A.H.System	2025/9/8	2026/9/7
Loop Antenna (9KHz-30MHz)	FMZB1519B	014	SCHWARZBECK	2025/9/8	2026/9/7
Amplifier (9KHz-30MHz)	CVP 9222 C	00109	SCHWARZBECK	2025/9/8	2026/9/7
MXG Signal Analyzer	N9020A	MY50510202	Agilent	2025/9/8	2026/9/7
MXG Vector Signal Generator	N5182A	MY50140020	Agilent	2025/9/8	2026/9/7
MXG Analog Signal Generator	N5181A	MY47420919	Agilent	2025/9/8	2026/9/7
Power Sensor	TR1029-2	512364	Techoy	2025/9/8	2026/9/7
RF Swith	TR1029-1	512364	Techoy	2025/9/8	2026/9/7
Cable	DA800- 4000MM	NA	DA	2025/9/8	2026/9/7
Cable	DA800- 11000MM	NA	DA	2025/9/8	2026/9/7

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
966 Shielded Room	966 Room	/	EMToni	2025/07/24	2028/07/23
EMI Test Receiver	ESPI	101018	ROHDE&SCHWA RZ	2026/09/04	2027/09/03
Amplifi (30MHz-1GHz)	BBV 9745	00431	SCHWARZBECK	2026/09/04	2027/09/03

Bilog Antenna (30MHz-1GHz)	VULB9168	1858	SCHWARZBECK	2026/09/05	2027/09/04
Horn antenna (1GHz-18GHz)	BBHA 9120 D	02622	SCHWARZBECK	2026/09/05	2027/09/04
Pream plifier (1GHz-18GHz)	BBV 9718D	0024	SCHWARZBECK	2026/09/04	2027/09/03
Spectrum Analyze (10Hz-40GHz)	FSV 40	100952	ROHDE&SCHWA RZ	2026/09/04	2027/09/03
Pream plifier (18GHz-40GHz)	BBV 9721	0056	SCHWARZBECK	2026/09/04	2027/09/03
Double Ridge Guide Horn Antenna (18GHz-40GHz)	SAS-574	588	A.H.System	2026/09/05	2027/09/04
Loop Antenna (9KHz-30MHz)	FMZB 1513-60	00115	SCHWARZBECK	2026/09/04	2027/09/03
MXG Signal Analyzer	N9020A	MY49100730	Agilent	2026/09/04	2027/09/03
MXG Vector Signal Generator	N5182A	MY50144920	Agilent	2026/09/04	2027/09/03
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	/	ROHDE&SCHWA RZ	2026/09/07	2027/09/06
Power Sensor	MW100-RFC B-2	MW260105N TT-64	MWRFTtest	2026/09/04	2027/09/03
RF Swith	MW100-RFC B-1	MW260105N TT-64	MWRFTtest	2026/09/04	2027/09/03
Cable	RG223-3M	/	DA	2026/09/04	2027/09/03
Cable	RG223-12M	/	DA	2026/09/04	2027/09/03
Cable	SFT205-NM NMSW-2.5M	/	DA	2026/09/04	2027/09/03
Cable	SFT205-NM NM-12M	/	DA	2026/09/04	2027/09/03
Cable	UCA500-NJ WSM-1.5M	017	MWRFTtest	2026/09/04	2027/09/03

Test software

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ-EMC	Ver.EMC-CON 3A1.1+
2	EMC radiation test system	FALA	EZ-EMC	Ver.FA-03A2 RE+
3	RF test system	TACHOY	RFTest	V1.0.0
4	RF communication test system	TACHOY	RFTest	V1.0.0

2. Conducted emission at the mains terminals test

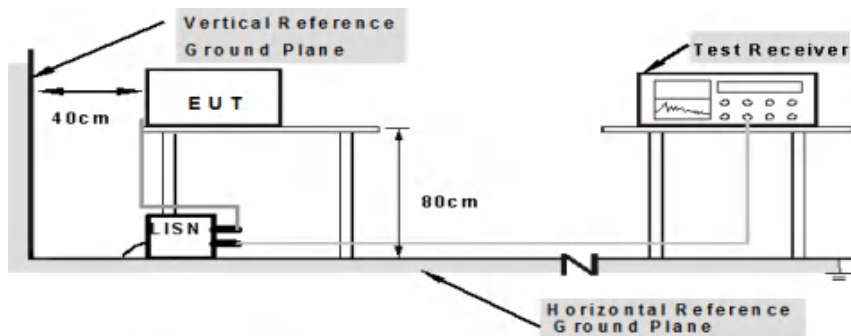
2.1.Limit

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.2.Test Setup



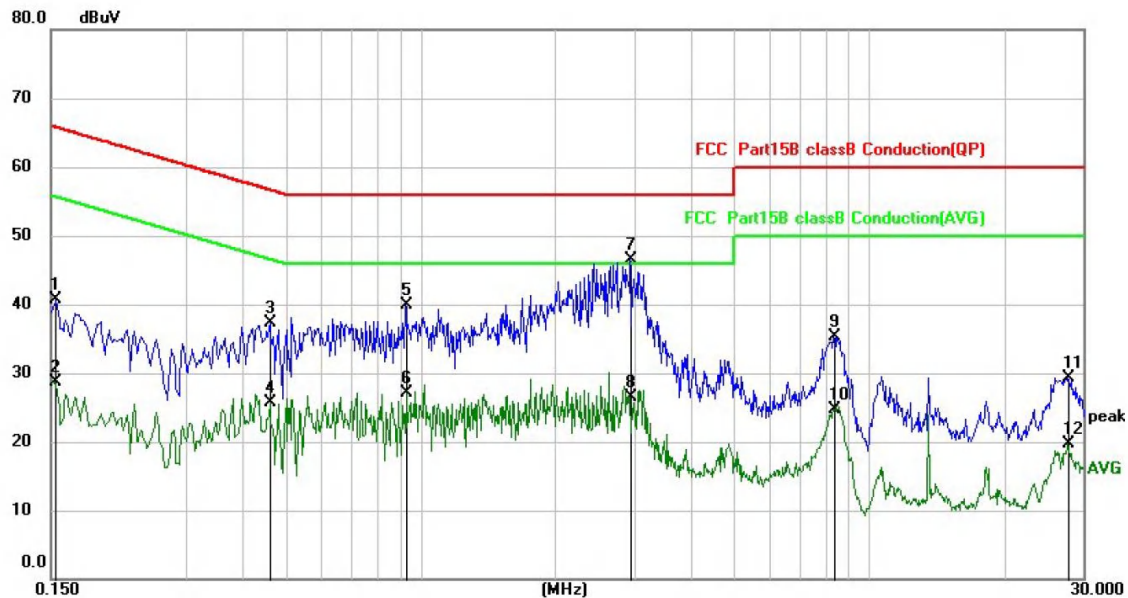
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

2.3.Test Procedure

1. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. LISN at least 80 cm from nearest part of EUT chassis.
- 5.For the actual test configuration, please refer to the related Item - EUT Test Photos.

2.4.Test Result

Conducted Emission At The Mains Terminals Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	802.11b(CH00)



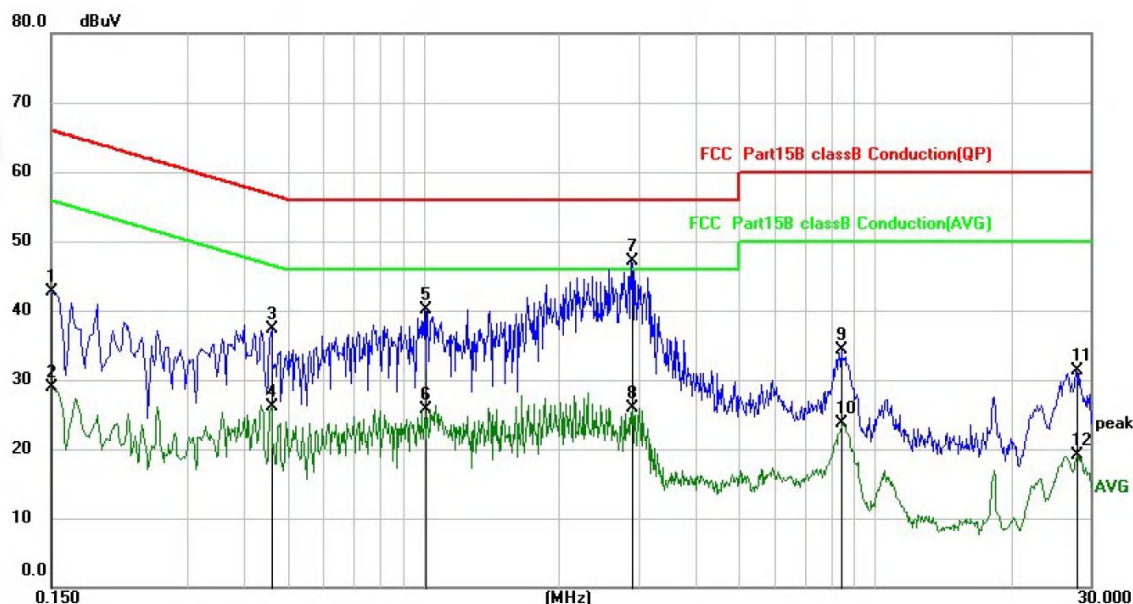
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV	dBuV	dB	
1		0.1539	29.90	10.87	40.77	65.79	-25.02	QP
2		0.1539	17.89	10.87	28.76	55.79	-27.03	AVG
3		0.4620	26.82	10.51	37.33	56.66	-19.33	QP
4		0.4620	15.22	10.51	25.73	46.66	-20.93	AVG
5		0.9260	29.36	10.46	39.82	56.00	-16.18	QP
6		0.9260	16.56	10.46	27.02	46.00	-18.98	AVG
7	*	2.9460	36.05	10.48	46.53	56.00	-9.47	QP
8		2.9460	16.10	10.48	26.58	46.00	-19.42	AVG
9		8.3459	24.78	10.54	35.32	60.00	-24.68	QP
10		8.3459	14.25	10.54	24.79	50.00	-25.21	AVG
11		27.7420	17.84	11.40	29.24	60.00	-30.76	QP
12		27.7420	8.27	11.40	19.67	50.00	-30.33	AVG

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(802.11b) in the report

Conducted Emission At The Mains Terminals Test Data

Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	802.11b(CH00)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	31.77	10.88	42.65	66.00	-23.35	QP
2		0.1500	18.10	10.88	28.98	56.00	-27.02	AVG
3		0.4620	26.73	10.51	37.24	56.66	-19.42	QP
4		0.4620	15.68	10.51	26.19	46.66	-20.47	AVG
5		1.0060	29.60	10.46	40.06	56.00	-15.94	QP
6		1.0060	15.33	10.46	25.79	46.00	-20.21	AVG
7	*	2.8900	36.56	10.48	47.04	56.00	-8.96	QP
8		2.8900	15.41	10.48	25.89	46.00	-20.11	AVG
9		8.4419	23.73	10.54	34.27	60.00	-25.73	QP
10		8.4419	13.20	10.54	23.74	50.00	-26.26	AVG
11		27.9900	19.87	11.41	31.28	60.00	-28.72	QP
12		27.9900	7.64	11.41	19.05	50.00	-30.95	AVG

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(802.11b) in the report

3. Radiated Spurious Emissions

3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247
 Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;
 ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
 Test Result: PASS
 Measurement Distance: 3m

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	360KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

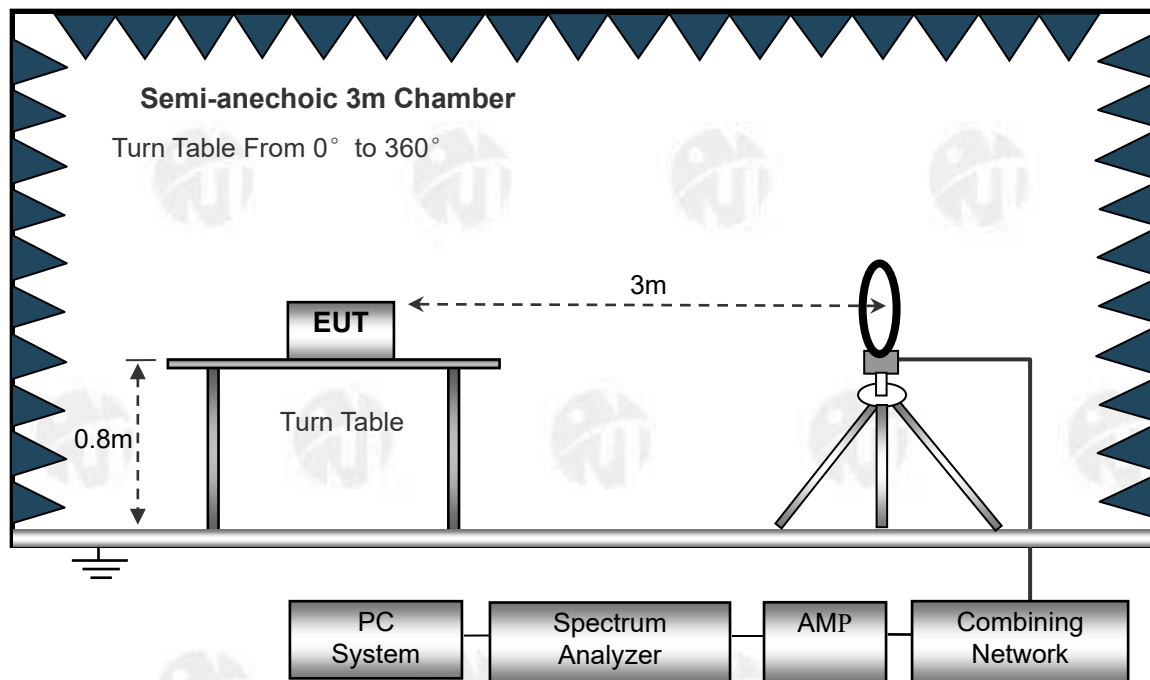
Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log(2400/F(\text{kHz})) + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log(24000/F(\text{kHz})) + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log(30) + 40$
30 ~ 88	100	3	100	$20\log(100)$
88 ~ 216	150	3	150	$20\log(150)$
216 ~ 960	200	3	200	$20\log(200)$
Above 960	500	3	500	$20\log(500)$

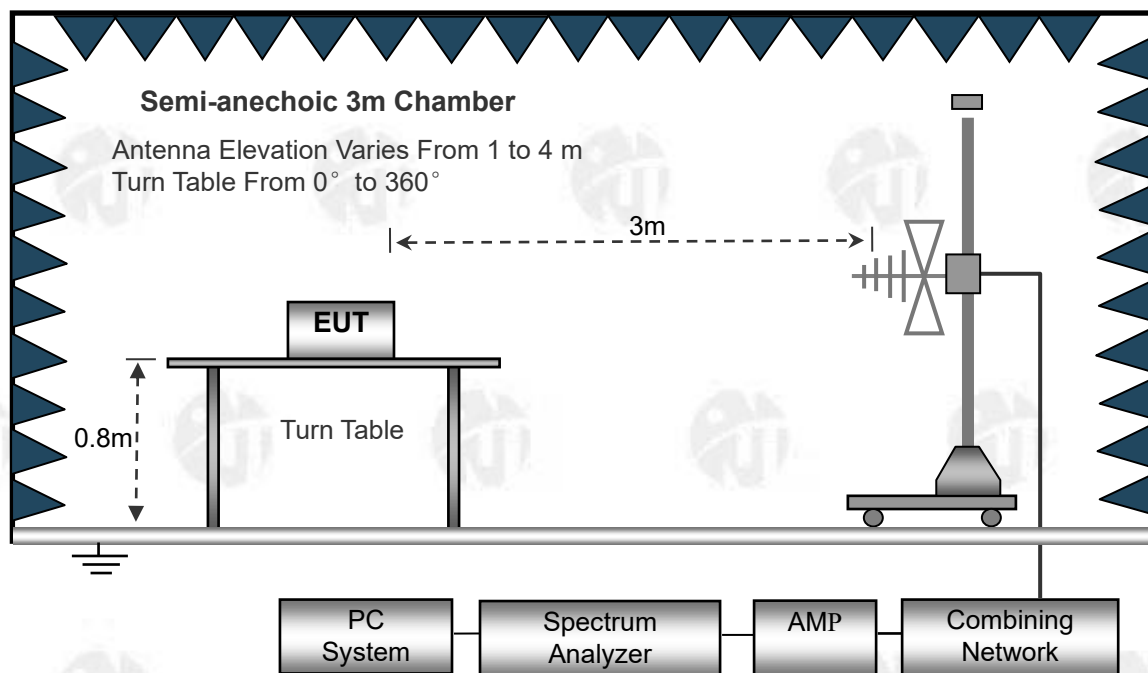
3.2.Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.

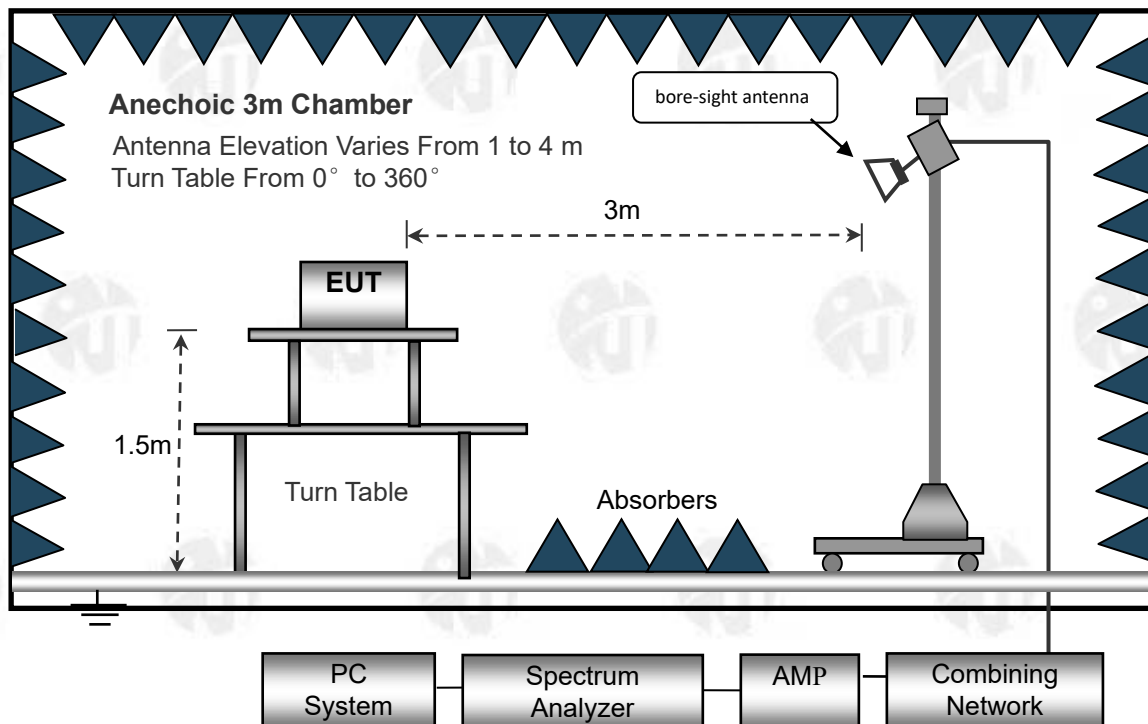
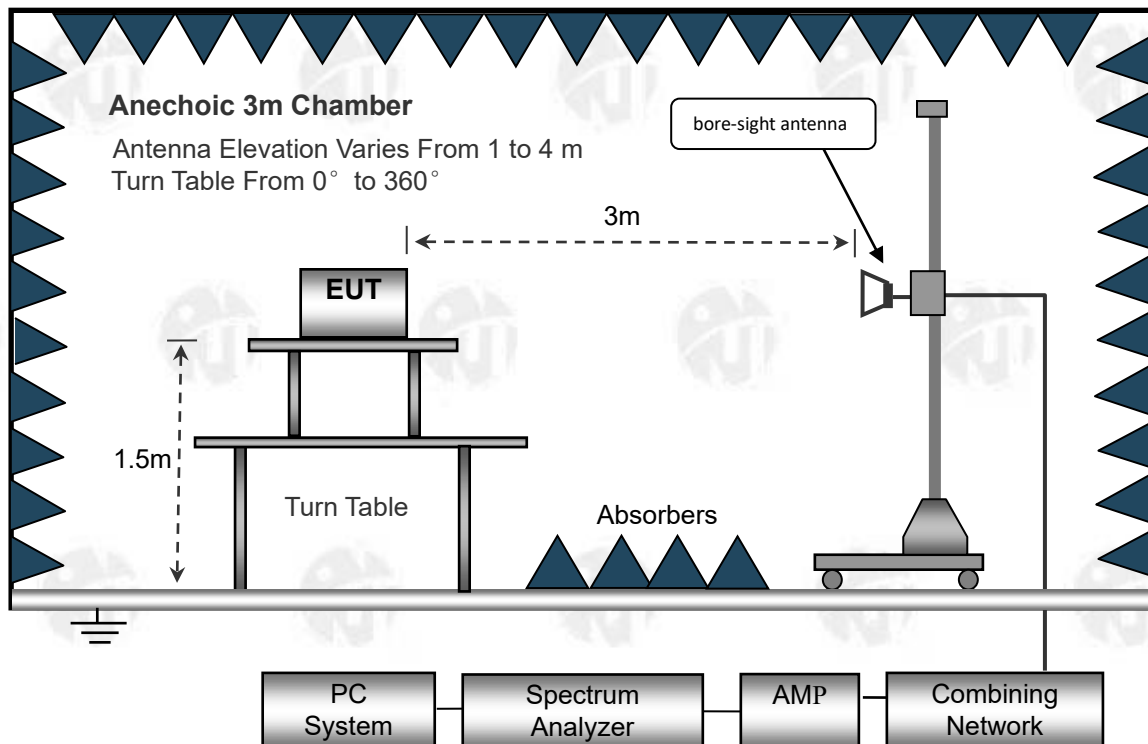
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



3.3.Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in Z axis,so the worst data were shown as follow.
8. A 2.4GHz high - pass filter is used during radiated emissions above 1GHz measurement.

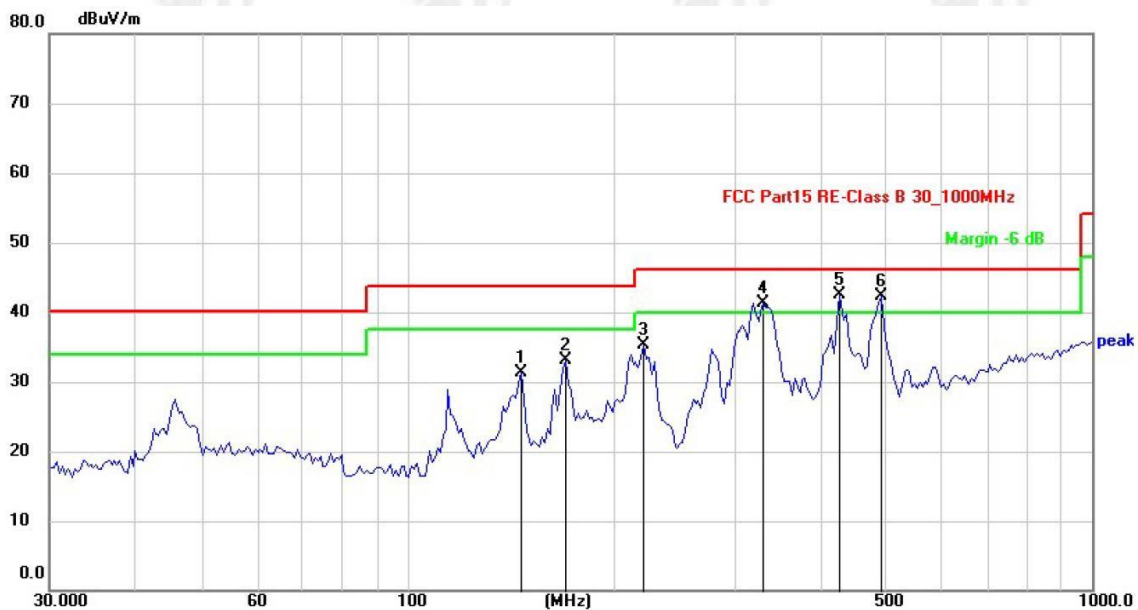
3.4.Test Result

Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

Test Frequency : 30MHz ~ 1GHz

Radiation Emission Test Data			
Temperature:	25.1℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode :	802.11b(2462.00MHz)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		146.6303	36.10	-4.77	31.33	43.50	-12.17	QP
2		170.1947	38.10	-4.97	33.13	43.50	-10.37	QP
3		221.3920	42.41	-7.17	35.24	46.00	-10.76	QP
4	!	331.3546	44.09	-2.84	41.25	46.00	-4.75	QP
5	*	427.2694	44.07	-1.61	42.46	46.00	-3.54	QP
6	!	491.6057	43.41	-1.08	42.33	46.00	-3.67	QP

Note:

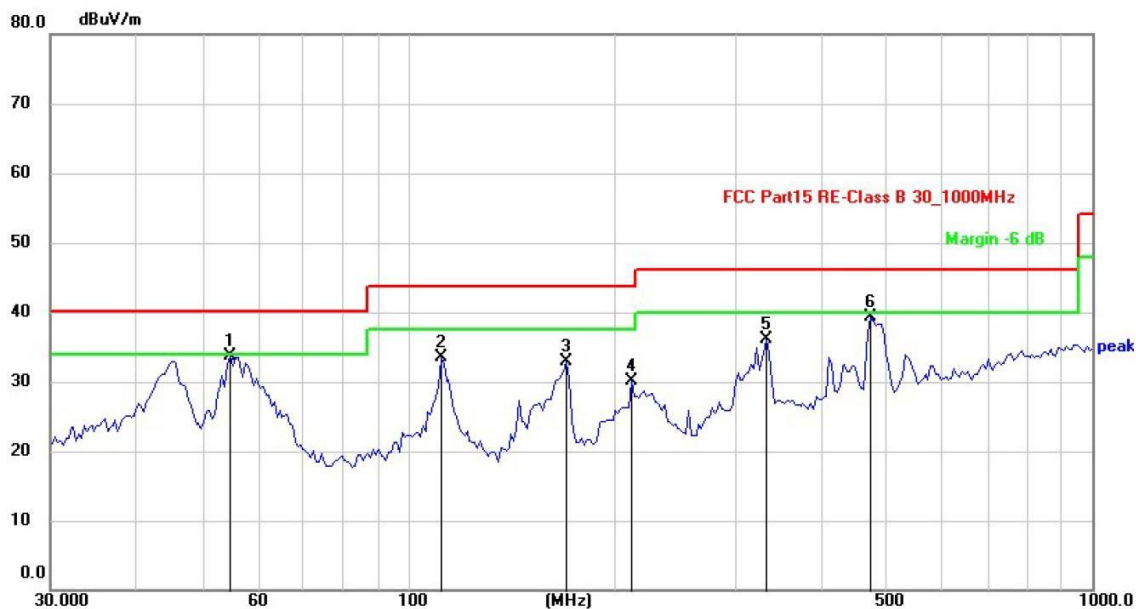
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst mode(802.11b) in the report

Radiation Emission Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	AC 120V/60Hz	Test Mode :	802.11b(2462.00MHz)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	*	54.9309	38.60	-4.95	33.65	40.00	-6.35	QP
2		111.7377	43.07	-9.56	33.51	43.50	-9.99	QP
3		170.1947	37.89	-4.97	32.92	43.50	-10.58	QP
4		211.8976	37.66	-7.47	30.19	43.50	-13.31	QP
5		334.2721	38.85	-2.80	36.05	46.00	-9.95	QP
6		474.6659	40.52	-1.22	39.30	46.00	-6.70	QP

Note:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst mode(802.11b) in the report

Test Frequency 1GHz-25GHz

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel:2412MHz									
V	4824.00	44.89	34.12	5.03	32.39	48.19	74	-25.81	Pk
V	4824.00	35.63	34.12	5.03	32.39	38.93	54	-15.07	AV
V	7236.00	45.81	32.54	6.29	35.86	55.42	74	-18.58	Pk
V	7236.00	31.52	32.54	6.29	35.86	41.13	54	-12.87	AV
V	9648.00	35.96	32.98	7.55	38.4	48.93	74	-25.07	Pk
V	9648.00	27.11	32.98	7.55	38.4	40.08	54	-13.92	AV
V	12060.00	37.33	32.09	8.93	39	53.17	74	-20.83	Pk
V	12060.00	26.38	32.09	8.93	39	42.22	54	-11.78	AV
H	4824.00	45.00	34.12	5.03	32.39	48.30	74	-25.70	Pk
H	4824.00	34.94	34.12	5.03	32.39	38.24	54	-15.76	AV
H	7236.00	42.86	32.54	6.29	35.86	52.47	74	-21.53	Pk
H	7236.00	26.83	32.54	6.29	35.86	36.44	54	-17.56	AV
H	9648.00	36.11	32.98	7.55	38.4	49.08	74	-24.92	Pk
H	9648.00	23.79	32.98	7.55	38.4	36.76	54	-17.24	AV
H	12060.00	37.41	32.09	8.93	39	53.25	74	-20.75	Pk
H	12060.00	25.54	32.09	8.93	39	41.38	54	-12.62	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Middle Channel:2437MHz									
V	4874.00	52.03	34.07	5.09	32.59	55.64	74	-18.36	Pk
V	4874.00	36.54	34.07	5.09	32.59	40.15	54	-13.85	AV
V	7311.00	45.09	32.63	6.34	35.96	54.76	74	-19.24	Pk
V	7311.00	32.55	32.63	6.34	35.96	42.22	54	-11.78	AV
V	9748.00	42.65	32.92	7.59	38.4	55.72	74	-18.28	Pk
V	9748.00	32.24	32.92	7.59	38.4	45.31	54	-8.69	AV
V	12815.00	44.62	31.96	8.88	39.04	60.58	74	-13.42	Pk
V	12815.00	29.00	31.96	8.88	39.04	44.96	54	-9.04	AV
H	4874.00	48.22	34.07	5.09	32.59	51.83	74	-22.17	Pk
H	4874.00	33.26	34.07	5.09	32.59	36.87	54	-17.13	AV
H	7311.00	39.41	32.63	6.34	35.96	49.08	74	-24.92	Pk
H	7311.00	33.83	32.63	6.34	35.96	43.50	54	-10.50	AV
H	9748.00	44.50	32.92	7.59	38.4	57.57	74	-16.43	Pk
H	9748.00	29.05	32.92	7.59	38.4	42.12	54	-11.88	AV
H	12815.00	35.74	31.96	8.88	39.04	51.70	74	-22.30	Pk
H	12815.00	27.09	31.96	8.88	39.04	43.05	54	-10.95	AV

Polar (H/V)	Frequency	Meter Reading	Pre-ampli fier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
High Channel:2462MHz									
V	4924.00	48.41	34.02	5.15	32.8	52.34	74	-21.66	Pk
V	4924.00	32.05	34.02	5.15	32.8	35.98	54	-18.02	AV
V	7386.00	38.73	32.71	6.4	36.05	48.47	74	-25.53	Pk
V	7386.00	31.81	32.71	6.4	36.05	41.55	54	-12.45	AV
V	9848.00	40.16	32.86	7.62	38.4	53.32	74	-20.68	Pk
V	9848.00	26.15	32.86	7.62	38.4	39.31	54	-14.69	AV
V	12310.00	38.72	31.82	8.84	39.08	54.82	74	-19.18	Pk
V	12310.00	27.35	31.82	8.84	39.08	43.45	54	-10.55	AV
H	4924.00	46.03	34.02	5.15	32.8	49.96	74	-24.04	Pk
H	4924.00	34.78	34.02	5.15	32.8	38.71	54	-15.29	AV
H	7386.00	45.15	32.71	6.4	36.05	54.89	74	-19.11	Pk
H	7386.00	29.27	32.71	6.4	36.05	39.01	54	-14.99	AV
H	9848.00	40.03	32.86	7.62	38.4	53.19	74	-20.81	Pk
H	9848.00	28.91	32.86	7.62	38.4	42.07	54	-11.93	AV
H	12310.00	38.71	31.82	8.84	39.08	54.81	74	-19.19	Pk
H	12310.00	26.54	31.82	8.84	39.08	42.64	54	-11.36	AV

Note: 1. The testing has been conformed to 10*2480MHz=24800MHz.

2. All other emissions more than 30dB below the limit.

3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

All the modes have tested and recorded the worst mode(802.11b) in the report.

The 1-25GHz range has been tested, and the report only records the worst performance of the 1-18G range.

Radiated Band Emission Measurement:

	Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre- amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector Type
802.11b	Low Channel: 2412MHz									
	H	2390	60.44	35.17	3.48	27.49	56.24	74	-17.76	PK
	H	2390	52.16	35.17	3.48	27.49	47.96	54	-6.04	AV
	H	2400	59.94	35.16	3.49	27.52	55.79	74	-18.21	PK
	H	2400	51.51	35.16	3.49	27.52	47.36	54	-6.64	AV
	V	2390	58.08	35.17	3.48	27.49	53.88	74	-20.12	PK
	V	2390	52.79	35.17	3.48	27.49	48.59	54	-5.41	AV
	V	2400	59.96	35.16	3.49	27.52	55.81	74	-18.19	PK
	V	2400	51.54	35.16	3.49	27.52	47.39	54	-6.61	AV
	High Channel: 2462MHz									
	H	2483.5	57.37	35.11	3.56	27.75	53.57	74	-20.43	PK
	H	2483.5	49.93	35.11	3.56	27.75	46.13	54	-7.87	AV
	H	2500	59.84	35.1	3.57	27.8	56.11	74	-17.89	PK
	H	2500	52.38	35.1	3.57	27.8	48.65	54	-5.35	AV
	V	2483.5	60.08	35.11	3.56	27.75	56.28	74	-17.72	PK
	V	2483.5	50.84	35.11	3.56	27.75	47.04	54	-6.96	AV
	V	2500	60.99	35.1	3.57	27.8	57.26	74	-16.74	PK
	V	2500	49.94	35.1	3.57	27.8	46.21	54	-7.79	AV
802.11g	Low Channel: 2412MHz									
	H	2390	58.47	35.17	3.48	27.49	54.27	74	-19.73	PK
	H	2390	50.12	35.17	3.48	27.49	45.92	54	-8.08	AV
	H	2400	60.57	35.16	3.49	27.52	56.42	74	-17.58	PK
	H	2400	52.03	35.16	3.49	27.52	47.88	54	-6.12	AV
	V	2390	57.95	35.17	3.48	27.49	53.75	74	-20.25	PK
	V	2390	50.81	35.17	3.48	27.49	46.61	54	-7.39	AV
	V	2400	59.36	35.16	3.49	27.52	55.21	74	-18.79	PK
	V	2400	51.28	35.16	3.49	27.52	47.13	54	-6.87	AV
	High Channel: 2462MHz									
	H	2483.5	57.63	35.11	3.56	27.75	53.83	74	-20.17	PK
	H	2483.5	51.38	35.11	3.56	27.75	47.58	54	-6.42	AV
	H	2500	59.59	35.1	3.57	27.8	55.86	74	-18.14	PK
	H	2500	49.87	35.1	3.57	27.8	46.14	54	-7.86	AV
	V	2483.5	59.91	35.11	3.56	27.75	56.11	74	-17.89	PK
	V	2483.5	51.94	35.11	3.56	27.75	48.14	54	-5.86	AV
	V	2500	60.61	35.1	3.57	27.8	56.88	74	-17.12	PK
	V	2500	50.88	35.1	3.57	27.8	47.15	54	-6.85	AV
802.11 n20	Low Channel: 2412MHz									
	H	2390	60.53	35.17	3.48	27.49	56.33	74	-17.67	PK
	H	2390	50.79	35.17	3.48	27.49	46.59	54	-7.41	AV
	H	2400	60.19	35.16	3.49	27.52	56.04	74	-17.96	PK
	H	2400	50.37	35.16	3.49	27.52	46.22	54	-7.78	AV
	V	2390	60.06	35.17	3.48	27.49	55.86	74	-18.14	PK
	V	2390	51.21	35.17	3.48	27.49	47.01	54	-6.99	AV
	V	2400	61.92	35.16	3.49	27.52	57.77	74	-16.23	PK
	V	2400	51.11	35.16	3.49	27.52	46.96	54	-7.04	AV
	High Channel: 2462MHz									
	H	2483.5	58.44	35.11	3.56	27.75	54.64	74	-19.36	PK
	H	2483.5	49.25	35.11	3.56	27.75	45.45	54	-8.55	AV
	H	2500	59.88	35.1	3.57	27.8	56.15	74	-17.85	PK

802.11 n40	H	2500	49.69	35.1	3.57	27.8	45.96	54	-8.04	AV
	V	2483.5	58.35	35.11	3.56	27.75	54.55	74	-19.45	PK
	V	2483.5	50.27	35.11	3.56	27.75	46.47	54	-7.53	AV
	V	2500	59.65	35.1	3.57	27.8	55.92	74	-18.08	PK
	V	2500	53.06	35.1	3.57	27.8	49.33	54	-4.67	AV
	Low Channel 2422MHz									
	H	2390.00	58.52	35.17	3.48	27.49	54.32	74	-19.68	PK
	H	2390.00	51.13	35.17	3.48	27.49	46.93	54	-7.07	AV
	H	2400.00	61.43	35.16	3.49	27.52	57.28	74	-16.72	PK
	H	2400.00	50.51	35.16	3.49	27.52	46.36	54	-7.64	AV
	V	2390.00	59.91	35.17	3.48	27.49	55.71	74	-18.29	PK
	V	2390.00	49.99	35.17	3.48	27.49	45.79	54	-8.21	AV
	V	2400.00	60.60	35.16	3.49	27.52	56.45	74	-17.55	PK
	V	2400.00	50.22	35.16	3.49	27.52	46.07	54	-7.93	AV
	H	2390.00	59.26	35.17	3.48	27.49	55.06	74	-18.94	PK
	High Channel 2452MHz									
	H	2483.50	59.15	35.11	3.56	27.75	55.35	74	-18.65	PK
	H	2483.50	49.62	35.11	3.56	27.75	45.82	54	-8.18	AV
	H	2500.00	61.28	35.1	3.57	27.8	57.55	74	-16.45	PK
	H	2500.00	50.19	35.1	3.57	27.8	46.46	54	-7.54	AV
	V	2483.50	60.67	35.11	3.56	27.75	56.87	74	-17.13	PK
	V	2483.50	51.96	35.11	3.56	27.75	48.16	54	-5.84	AV
	V	2500.00	60.64	35.1	3.57	27.8	56.91	74	-17.09	PK
	V	2500.00	51.75	35.1	3.57	27.8	48.02	54	-5.98	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss - Pre-amplifier,

Margin= Emission Level - Limit

2. If peak below the average limit, the average emission was no test.

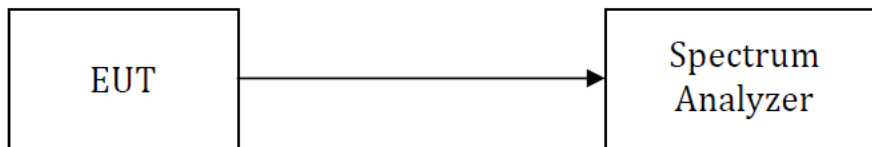
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

4. Duty cycle

4.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247
 Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2,2019;
 ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
 Test Result: PASS

4.2.Test Setup



4.3.Test Procedure

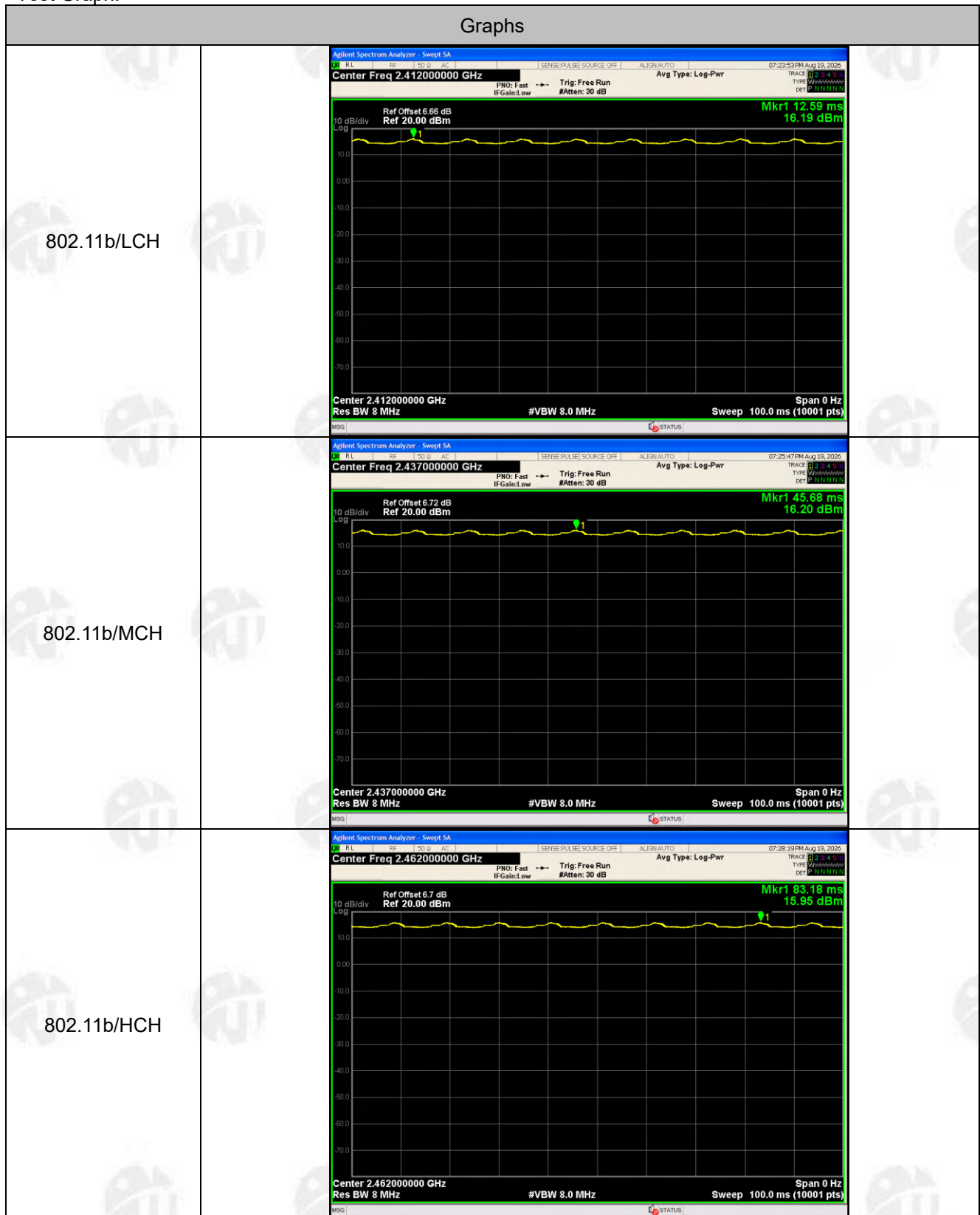
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
 - a) Set the center frequency of the instrument to the center frequency of the transmission.
 - b) Set RBW $\geq$ OBW if possible; otherwise, set RBW to the largest available value.
 - c) Set VBW $\geq$ RBW. Detector = peak or average.
 - d) Sweep time = auto couple.
 - e) Trace mode = max hold.
 - f) Allow trace to fully stabilize.

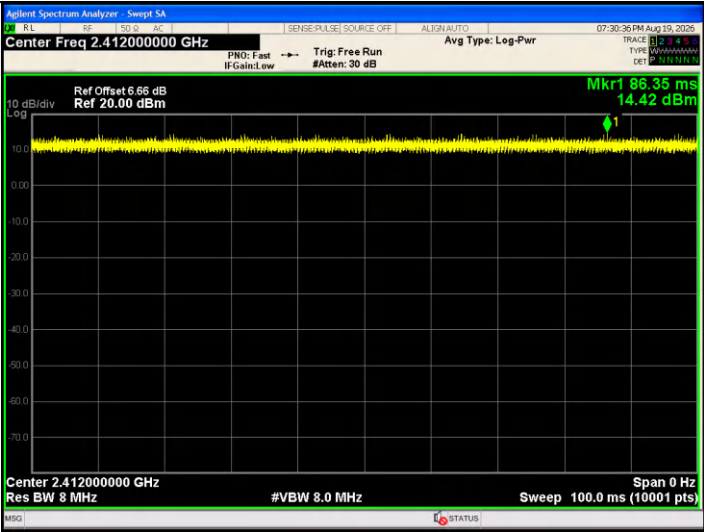
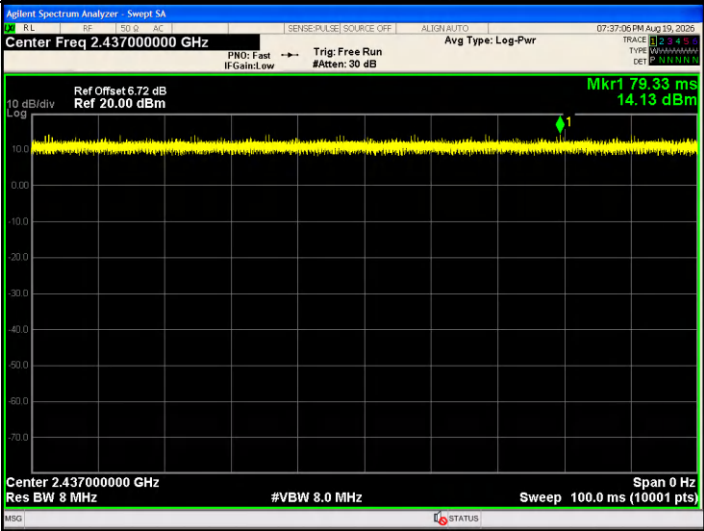
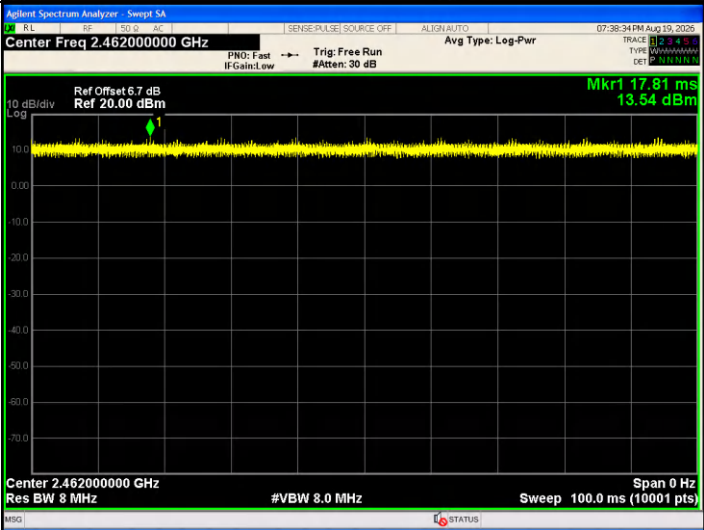
4.4.Test Result

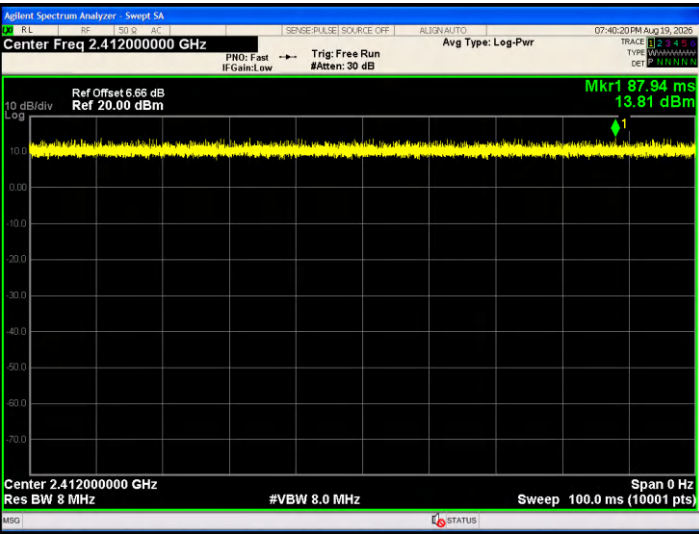
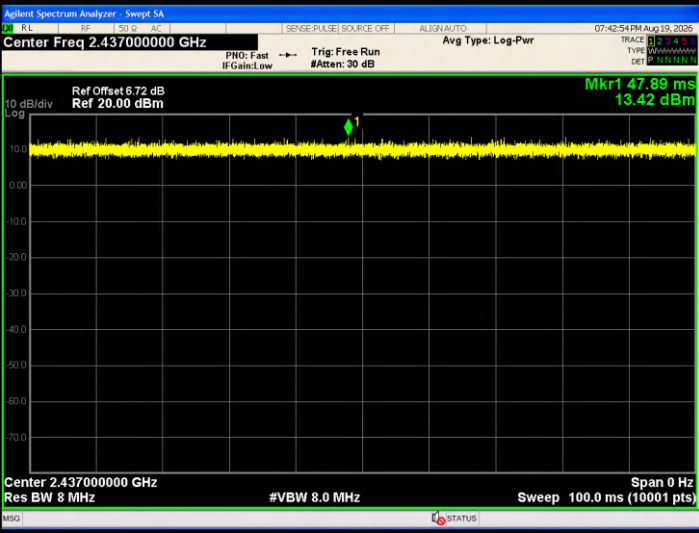
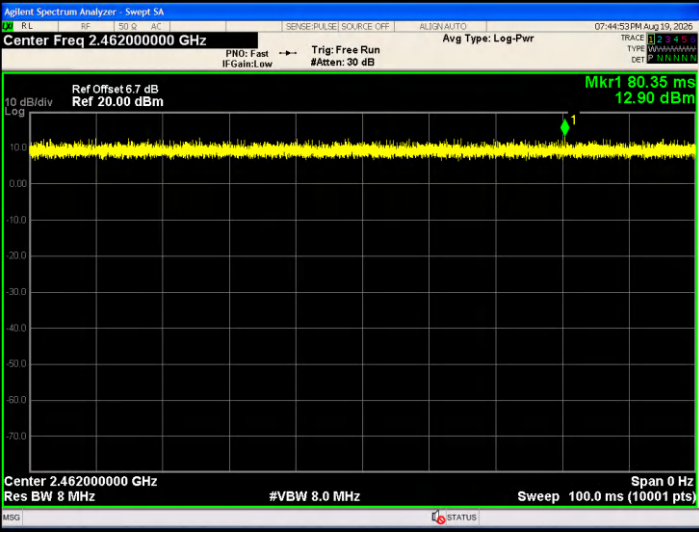
Duty Cycle

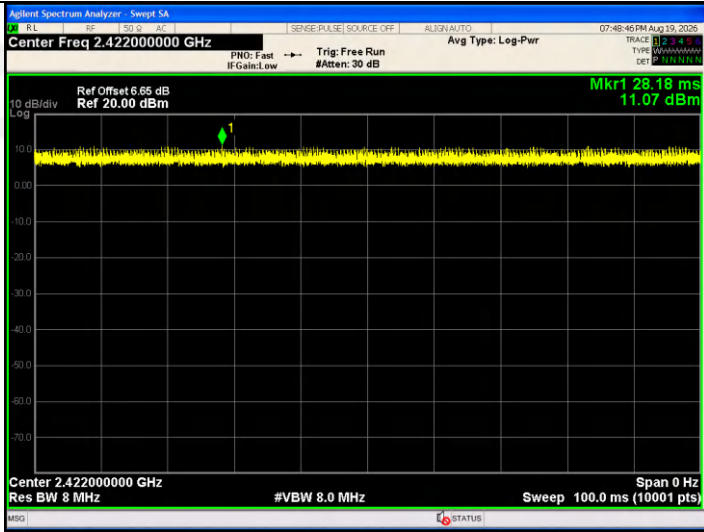
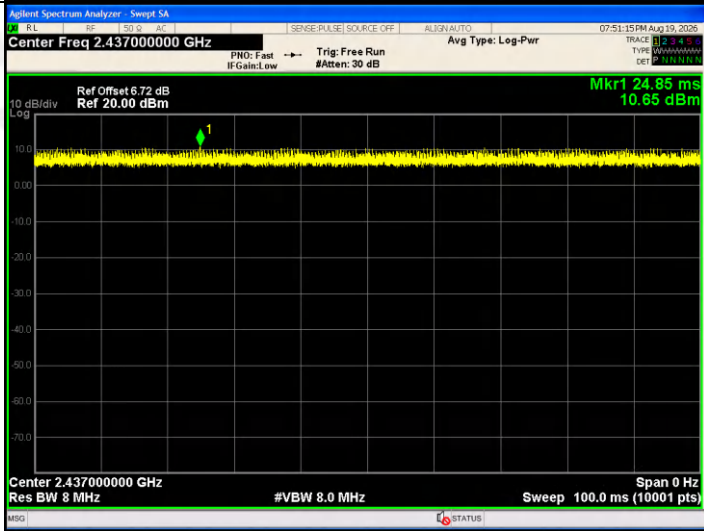
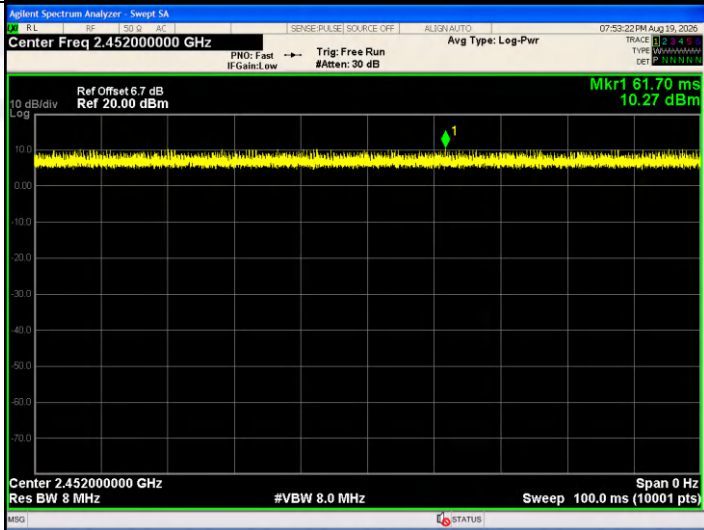
Mode	Channel.	Duty Cycle(%)	Correction Factor (dB)
802.11b	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11g	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT20)	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT40)	LCH	100	0
	MCH	100	0
	HCH	100	0

Test Graph:



802.11g/LCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.412000000 GHz Ref Offset 6.66 dB Ref 20.00 dBm Mkr1 86.35 ms 14.42 dBm Center 2.412000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)	
802.11g/MCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.437000000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 79.33 ms 14.13 dBm Center 2.437000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)	
802.11g/HCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.462000000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 17.81 ms 13.54 dBm Center 2.462000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)	

802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.412000000 GHz Ref Offset 6.66 dB Ref 20.00 dBm Mkr1 87.94 ms 13.81 dBm Center 2.412000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.437000000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 47.89 ms 13.42 dBm Center 2.437000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.462000000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 80.35 ms 12.90 dBm Center 2.462000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)

802.11n(HT40)/LCH	
802.11n(HT40)/MCH	
802.11n(HT40)/HCH	

5. Conducted Spurious Emissions

5.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247
Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;
ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024
Test Result: PASS

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.2.Test Setup



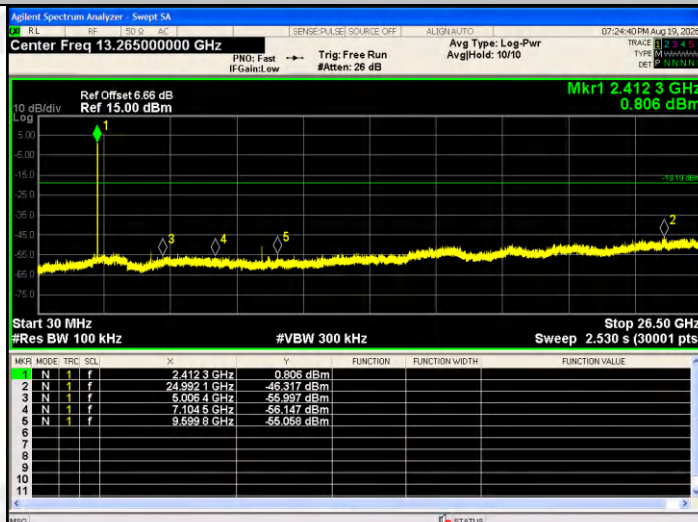
5.3.Test Procedure

- Set instrument center frequency to DTS channel center frequency.
 - Set the span to ≥ 1.5 times the DTS bandwidth.
 - Set the RBW = 100 kHz.
 - Set the VBW $\geq [3 \times \text{RBW}]$.
 - Detector = peak.
 - Sweep time = No faster than coupled (auto) time.
 - Trace mode = max-hold.
 - Allow trace to fully stabilize.
 - Use the peak marker function to determine the maximum PSD level.
- Note that the channel found to contain the maximum PSD level can be used to establish the reference level
Establish an emission level by using the following procedure:
- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
- NOTE—the number of points can also be increased for large spans to retain frequency resolution
- Set the RBW = 100 kHz.
 - Set the VBW $\geq [3 \times \text{RBW}]$.
 - Detector = peak.
 - Sweep time = No faster than coupled (auto) time.
 - Trace mode = max-hold.
 - Allow trace to fully stabilize.
 - Use the peak marker function to determine the maximum amplitude level.

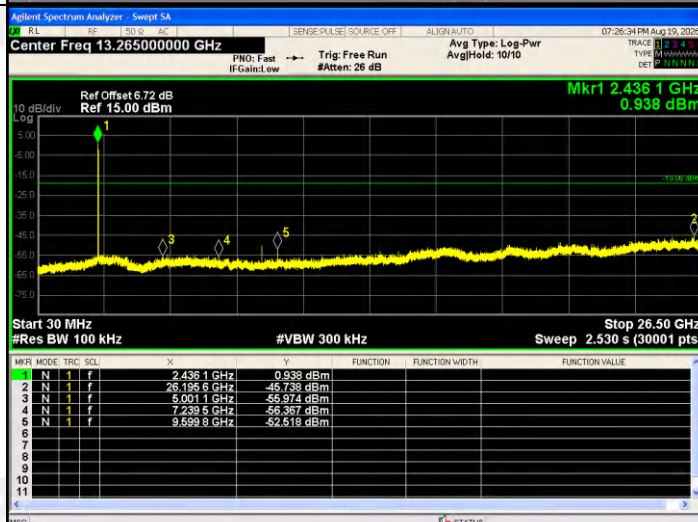
5.4. Test Result

RF Conducted Spurious Emissions Graphs

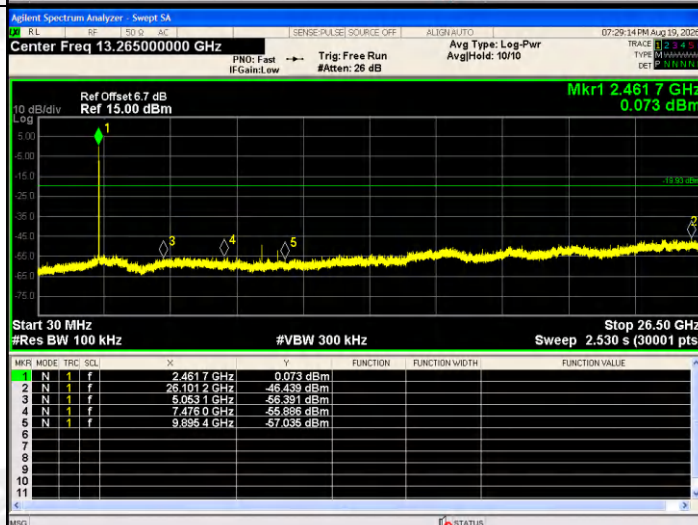
802.11b/LCH



802.11b/MCH

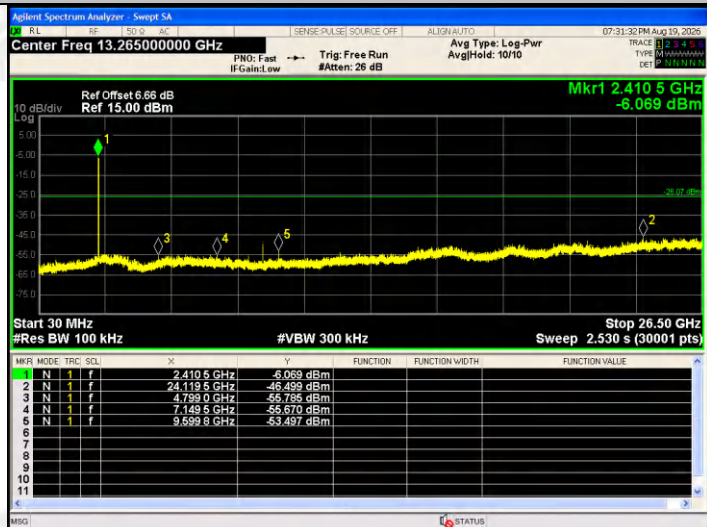


802.11b/HCH

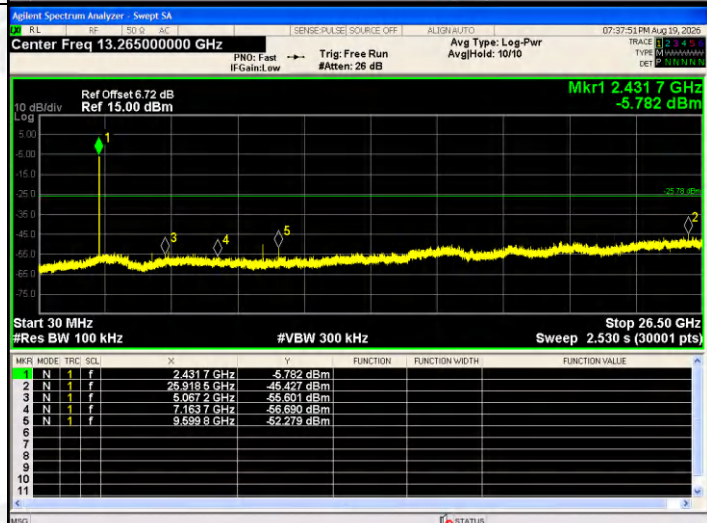


RF Conducted Spurious Emissions Graphs

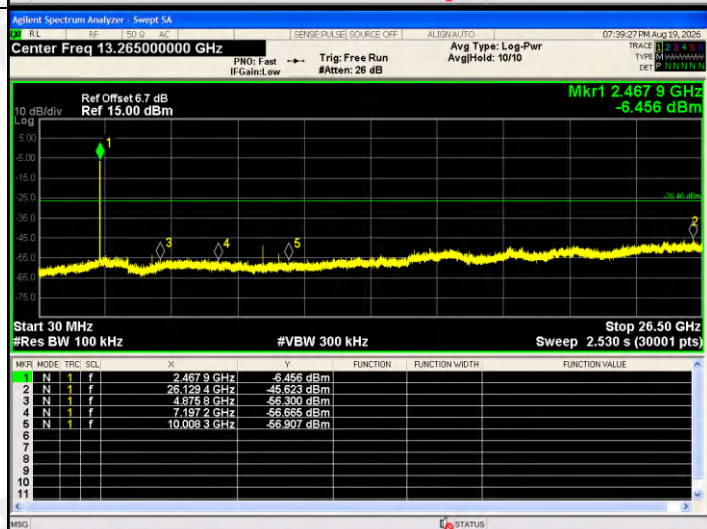
802.11g/LCH



802.11g/MCH

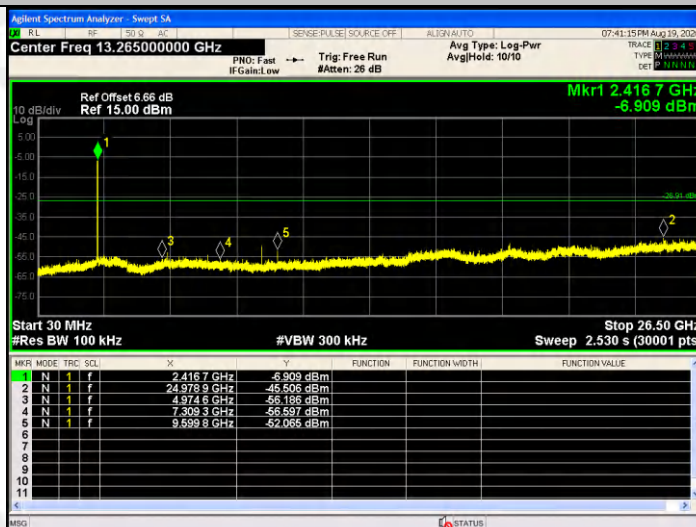


802.11g/HCH

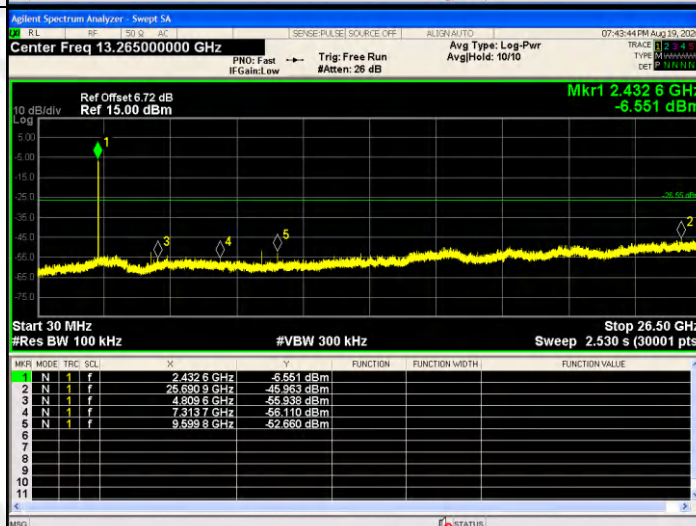


RF Conducted Spurious Emissions Graphs

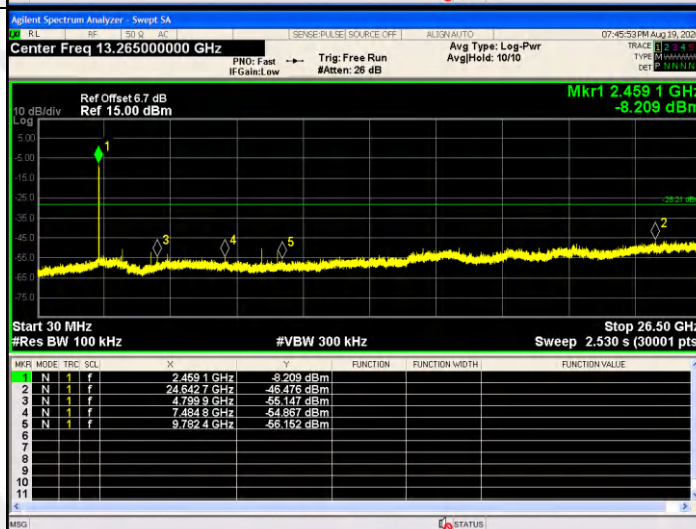
802.11n(HT20)/LCH



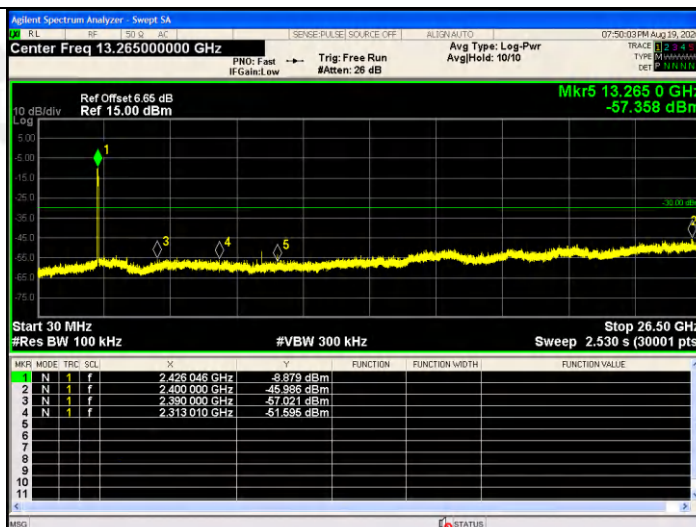
802.11n(HT20)/MCH



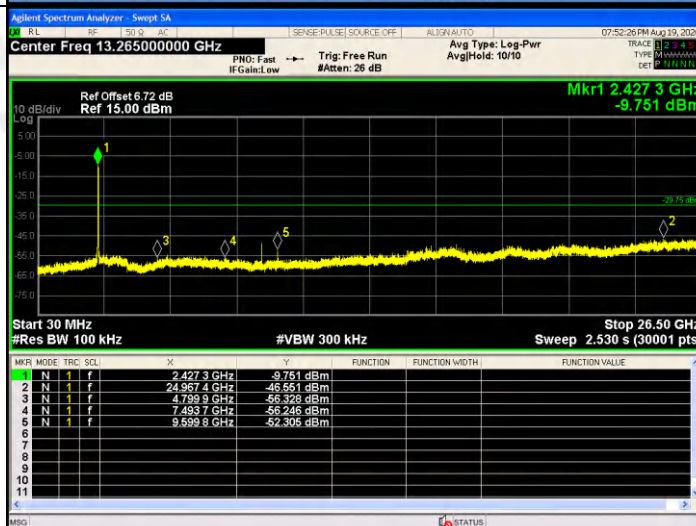
802.11n(HT20)/HCH



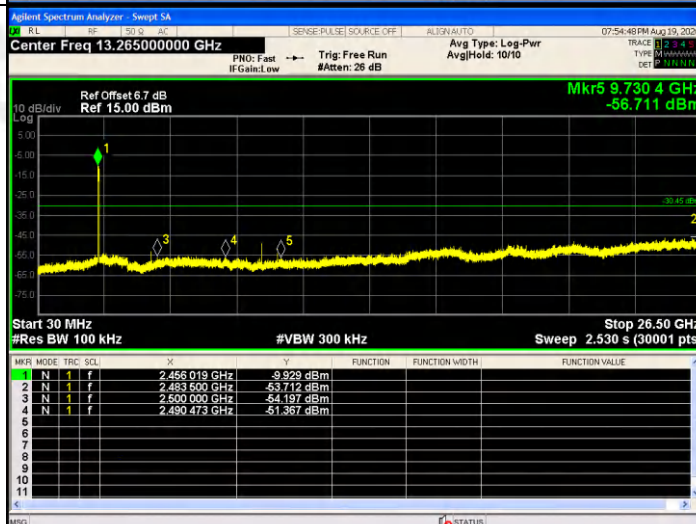
802.11n(HT40)/LCH



802.11n(HT40)/MCH



802.11n(HT40)/HCH



6. Band Edge Measurement

6.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

Test Limit: Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Mode: Transmitting

6.2.Test setup



6.3.Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
3. Establish a reference level by using the following procedure
 - a) Set instrument center frequency to DTS channel center frequency.
 - b) Set the span to ≈ 1.5 times the DTS bandwidth.
 - c) Set the RBW = 100 kHz.
 - d) Set the VBW $\geq [3 \times \text{RBW}]$.
 - e) Detector = peak.
 - f) Sweep time = No faster than coupled (auto) time.
 - g) Trace mode = max hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

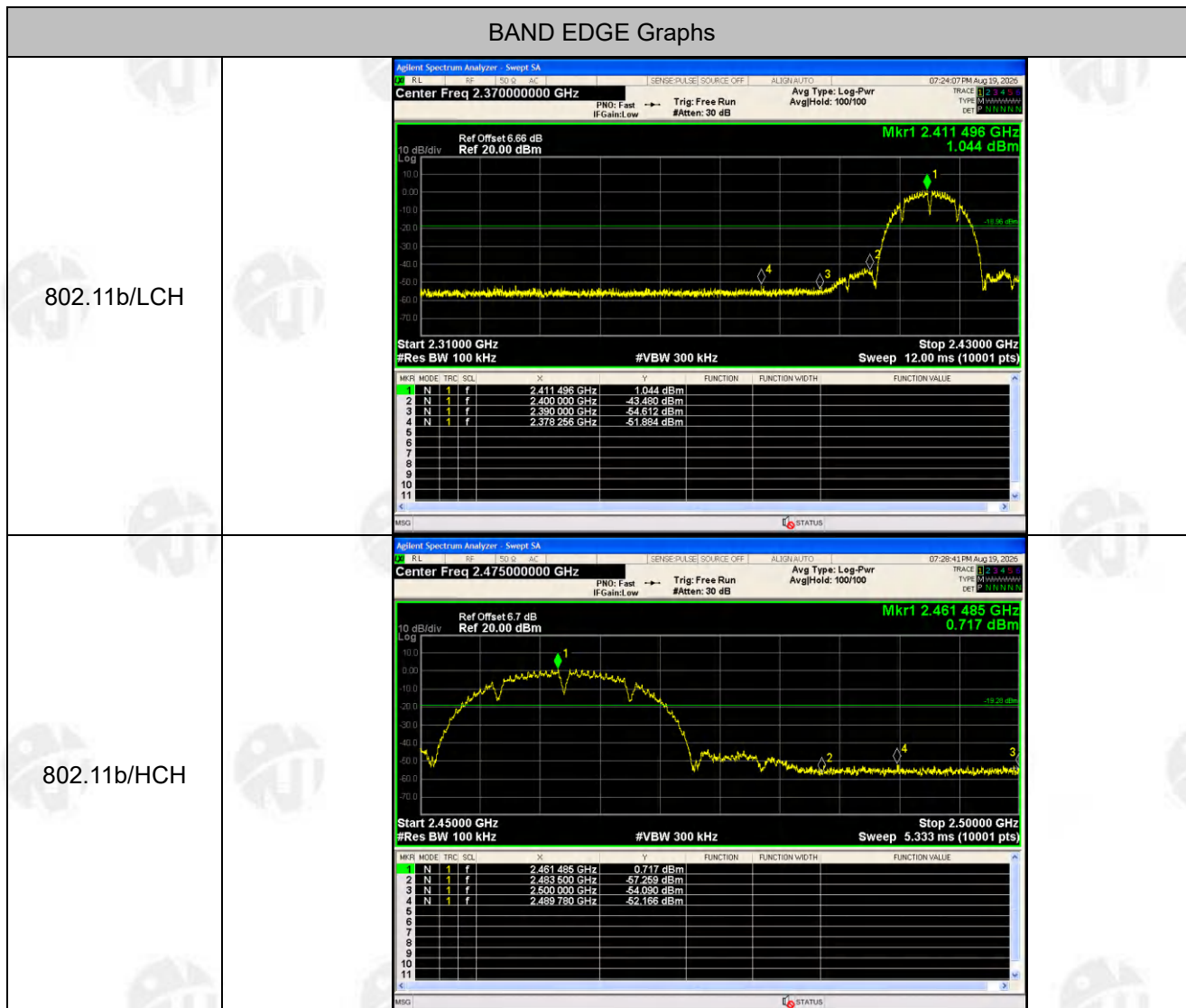
4. Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

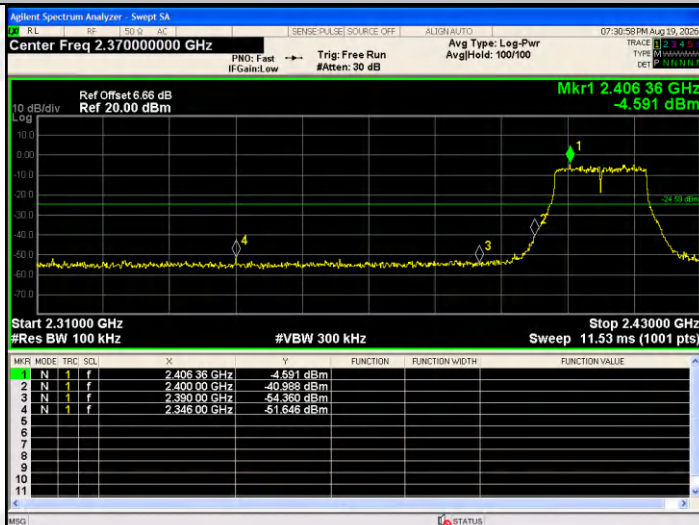
- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Sweep time = No faster than coupled (auto) time.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

6.4.Test Result

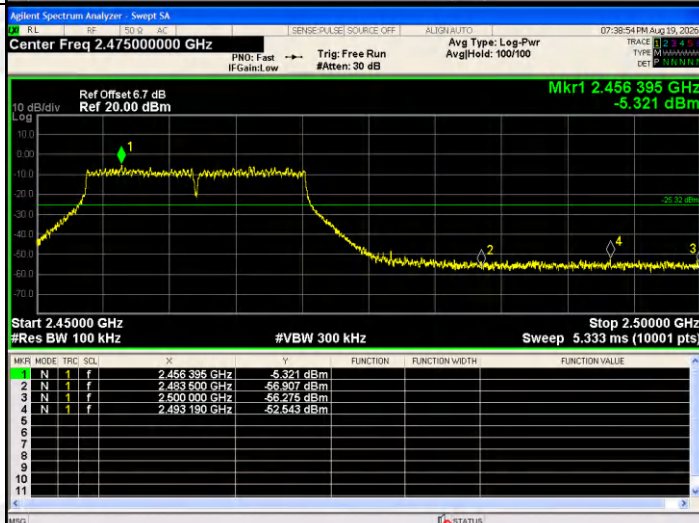


BAND EDGE Graphs

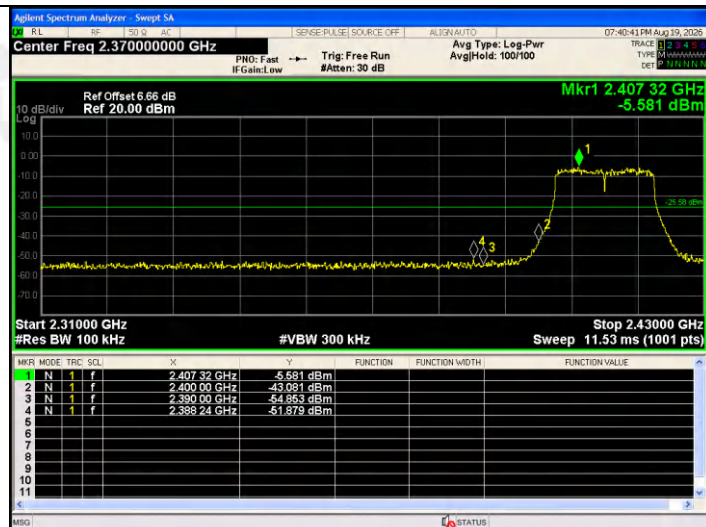
802.11g/LCH



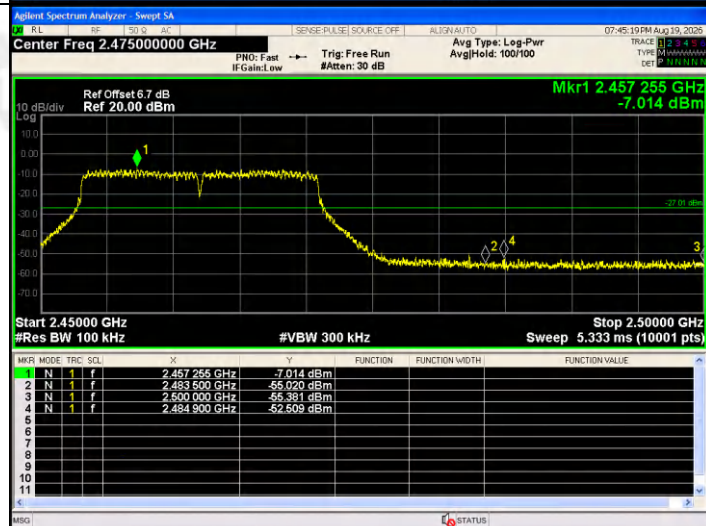
802.11g/HCH



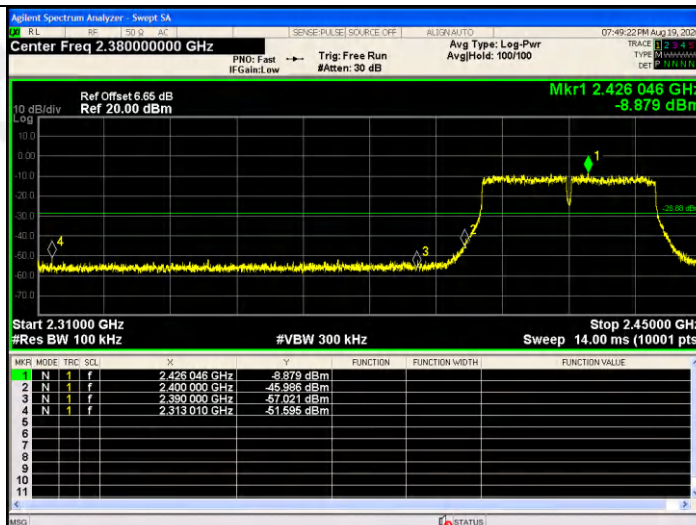
802.11n(HT20)/LCH



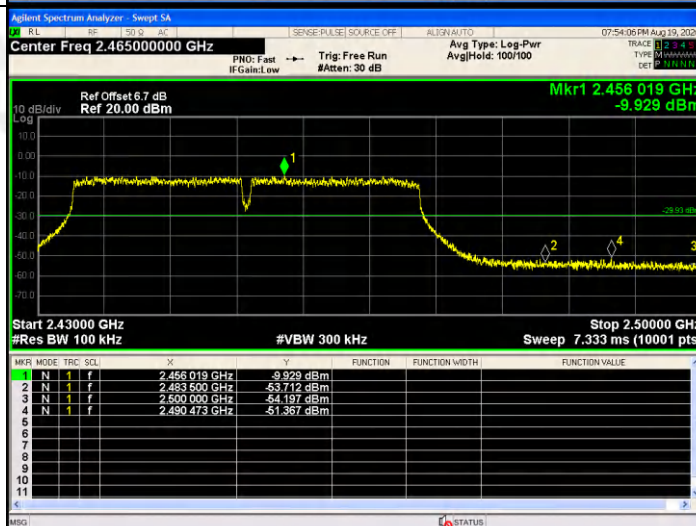
802.11n(HT20)/HCH



802.11n(HT40)/LCH



802.11n(HT40)/HCH



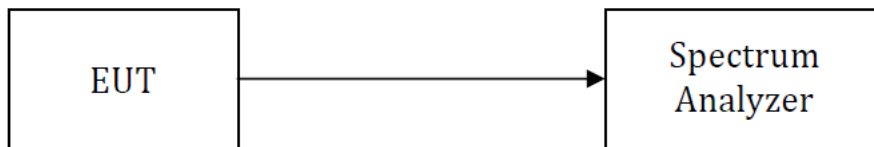
7. -6 dB Bandwidth and 99% Bandwidth Measurement

7.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02April 2,2019; ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

7.2.Test Setup



7.3.Test Procedure

DTS Bandwidth

- a) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- b) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Trace mode = max-hold.
- f) Sweep = No faster than coupled (auto) time.
- g) Allow the trace to stabilize.

99% Bandwidth

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.

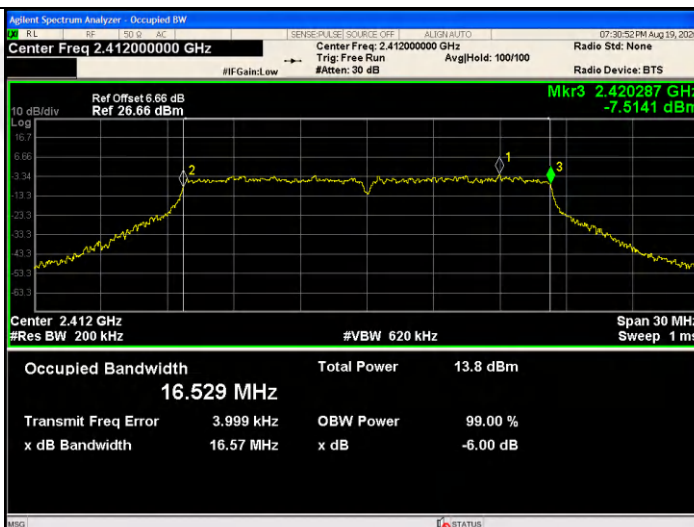
7.4.Test Result

Test Mode	Frequency	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.179	14.9851	500	PASS
	MCH	10.189	14.9863	500	PASS
	HCH	10.182	15.0124	500	PASS
802.11g	LCH	16.565	16.5238	500	PASS
	MCH	16.537	16.5233	500	PASS
	HCH	16.584	16.4812	500	PASS
802.11n(HT20)	LCH	17.614	17.6754	500	PASS
	MCH	17.759	17.6391	500	PASS
	HCH	17.721	17.6207	500	PASS
802.11n(HT40)	LCH	36.386	36.1788	500	PASS
	MCH	36.365	36.2099	500	PASS
	HCH	36.285	36.1781	500	PASS

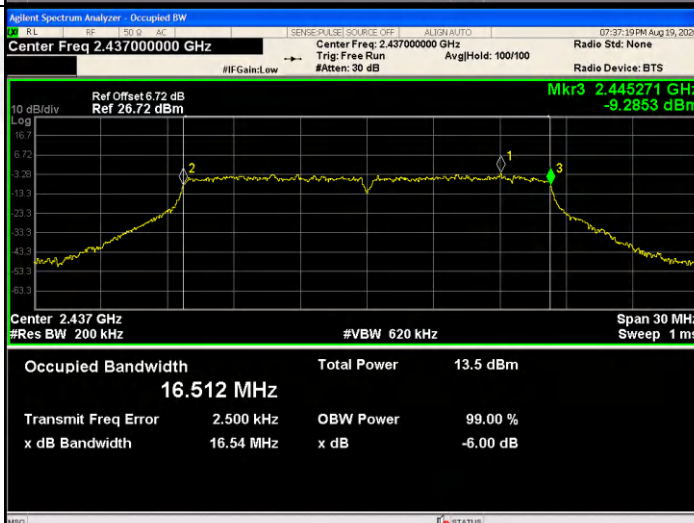
Test Graph:
6dB Bandwidth

Graphs	
802.11b/LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Center Freq: 2.41200000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.66 dB Ref 26.66 dBm Mkr3 2.417074 GHz -2.7135 dBm 10 dB/div Log 16.7 6.66 3.34 23.3 33.3 43.3 53.3 63.3 Center 2.412 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 14.982 MHz Total Power 16.4 dBm Transmit Freq Error -15.913 kHz OBW Power 99.00 % x dB Bandwidth 10.18 MHz x dB -6.00 dB MSG STATUS
802.11b/MCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.72 dB Ref 26.72 dBm Mkr3 2.442075 GHz -2.6252 dBm 10 dB/div Log 16.7 6.72 3.36 23.3 33.3 43.3 53.3 63.3 Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 14.987 MHz Total Power 16.3 dBm Transmit Freq Error -19.989 kHz OBW Power 99.00 % x dB Bandwidth 10.19 MHz x dB -6.00 dB MSG STATUS
802.11b/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Center Freq: 2.46200000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.7 dB Ref 26.70 dBm Mkr3 2.467061 GHz -3.2413 dBm 10 dB/div Log 16.7 6.70 3.35 23.3 33.3 43.3 53.3 63.3 Center 2.462 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 15.001 MHz Total Power 16.1 dBm Transmit Freq Error -30.531 kHz OBW Power 99.00 % x dB Bandwidth 10.18 MHz x dB -6.00 dB MSG STATUS

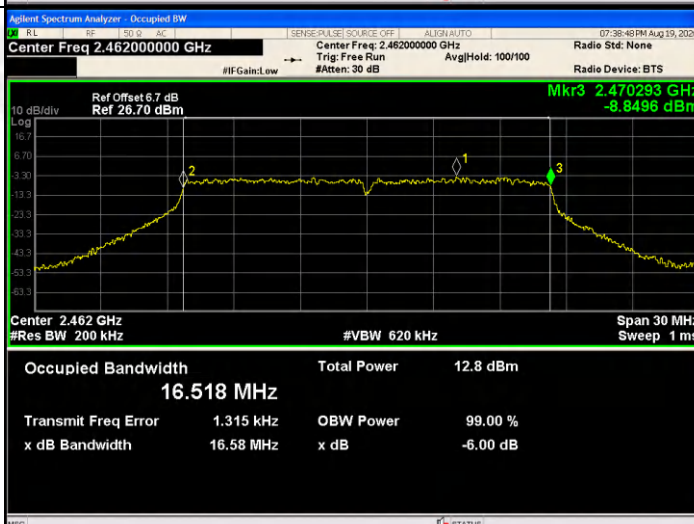
802.11g/LCH



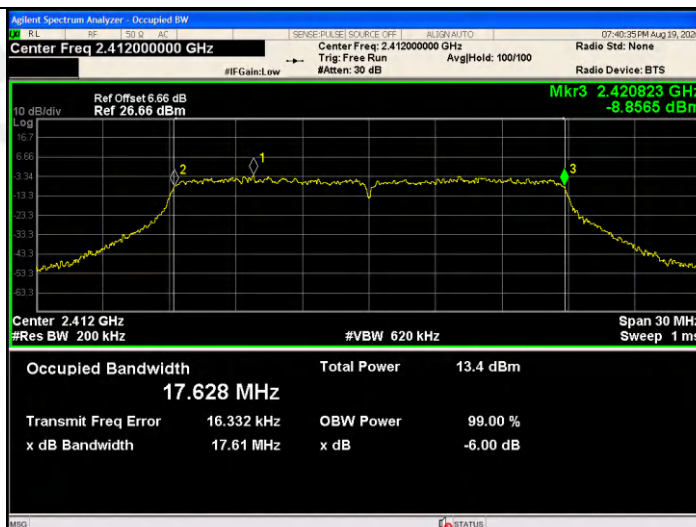
802.11g/MCH



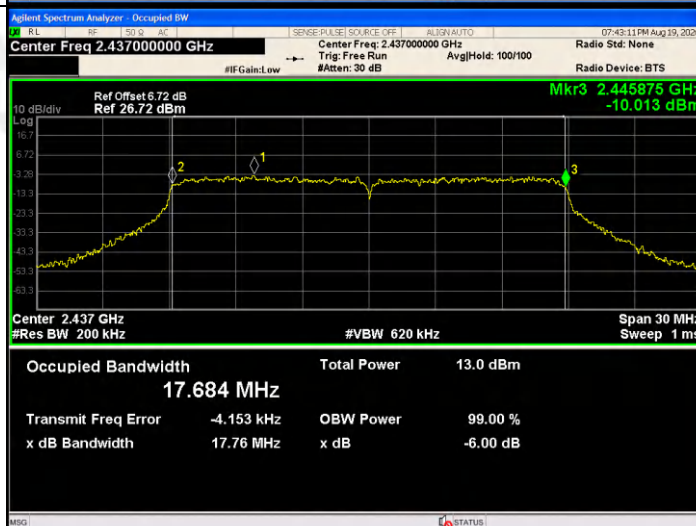
802.11g/HCH



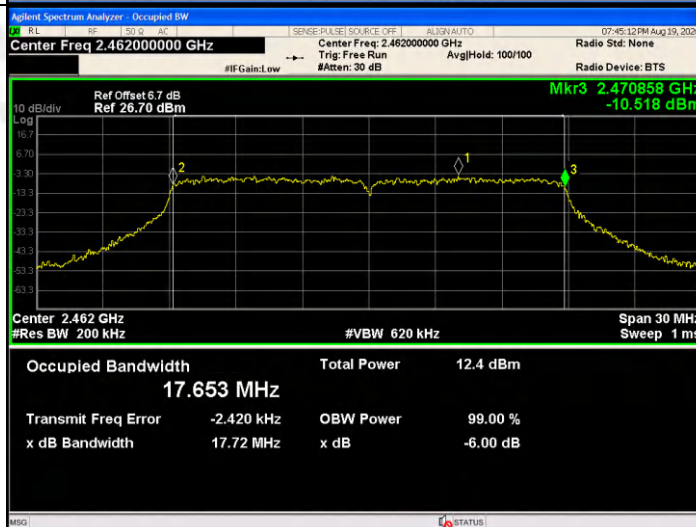
802.11n(HT20)/LCH



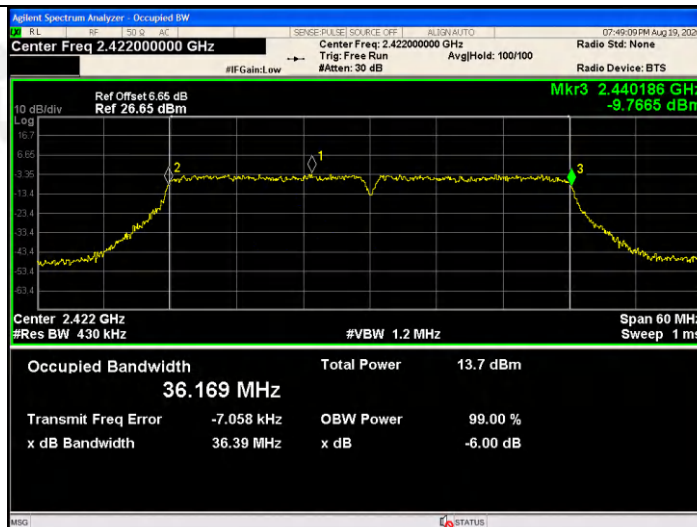
802.11n(HT20)/MCH



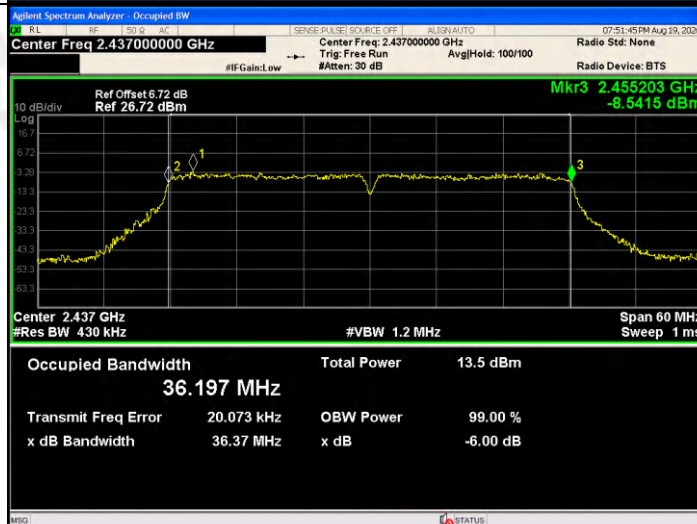
802.11n(HT20)/HCH



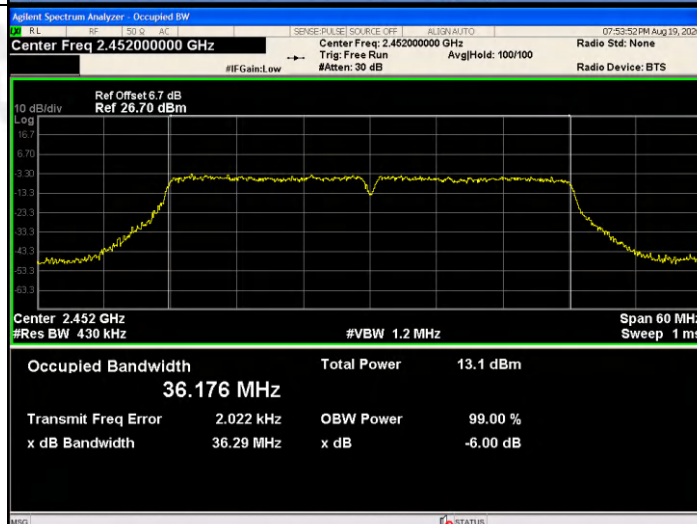
802.11n(HT40)/LCH



802.11n(HT40)/MCH



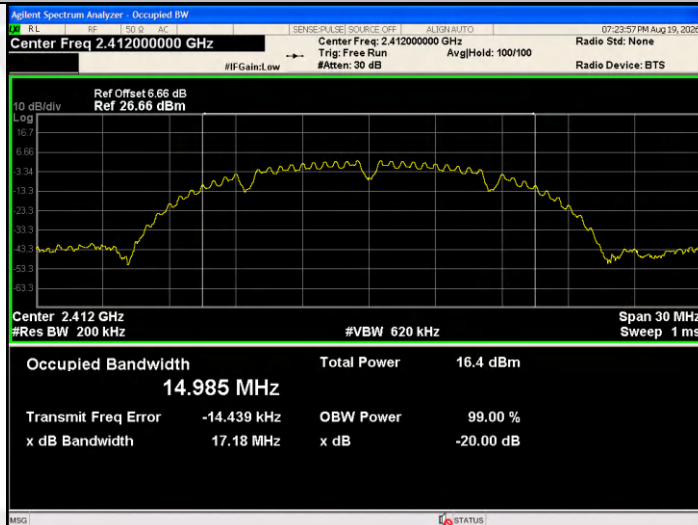
802.11n(HT40)/HCH



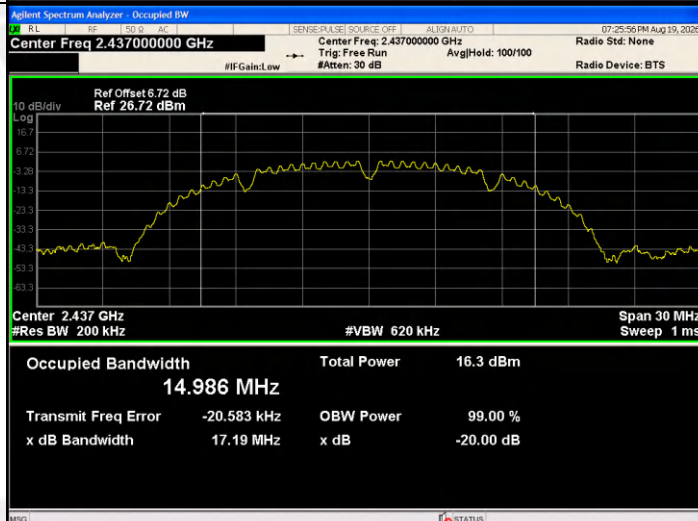
99% Bandwidth

Graphs

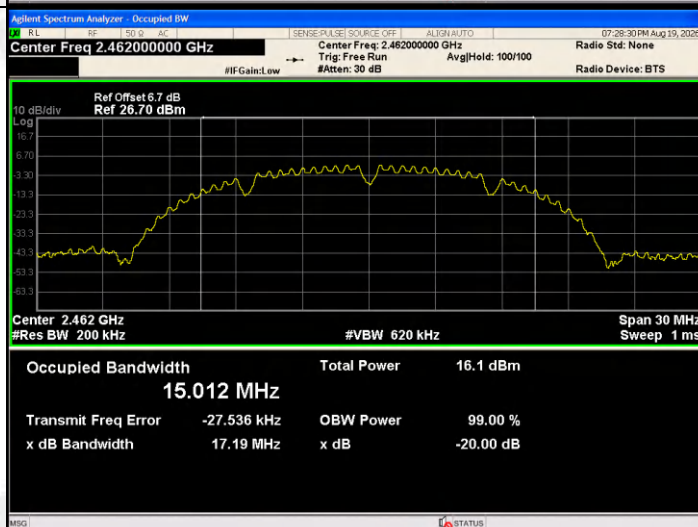
802.11b/LCH



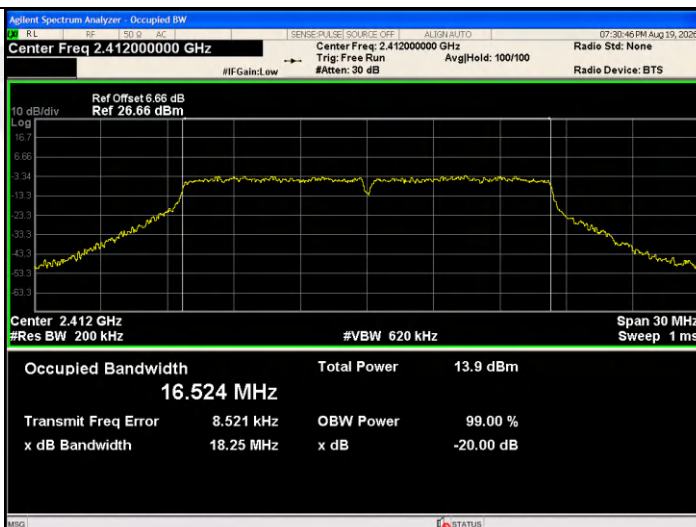
802.11b/MCH



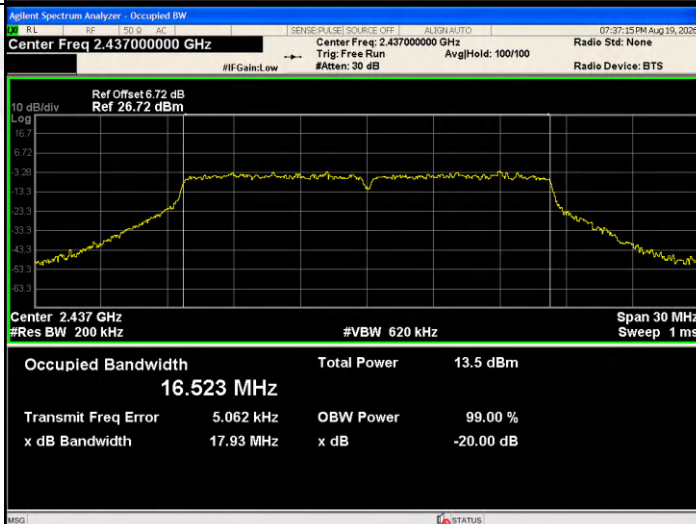
802.11b/HCH



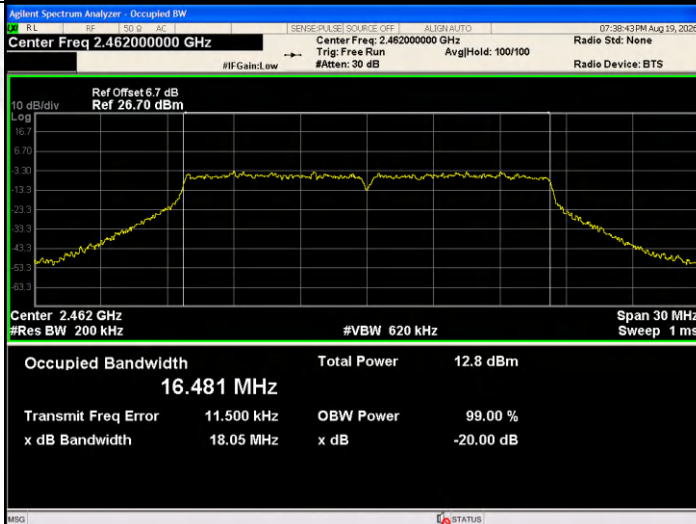
802.11g/LCH

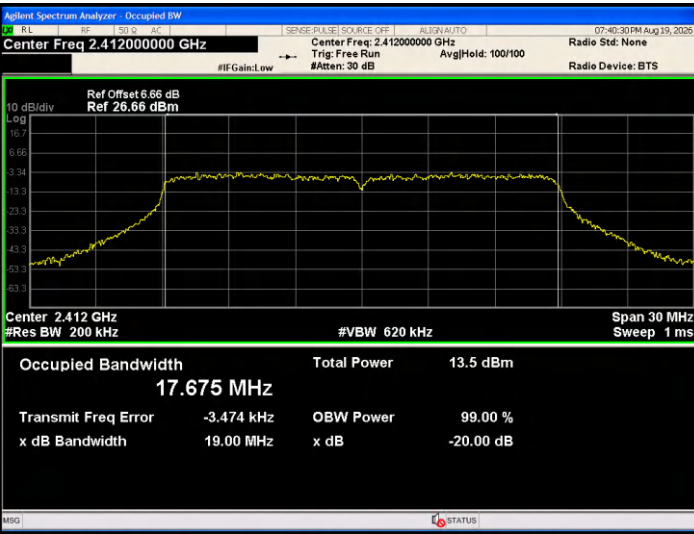
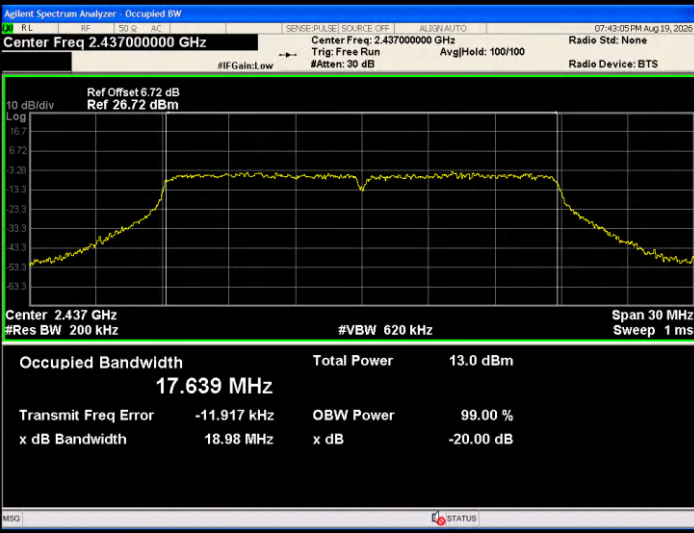
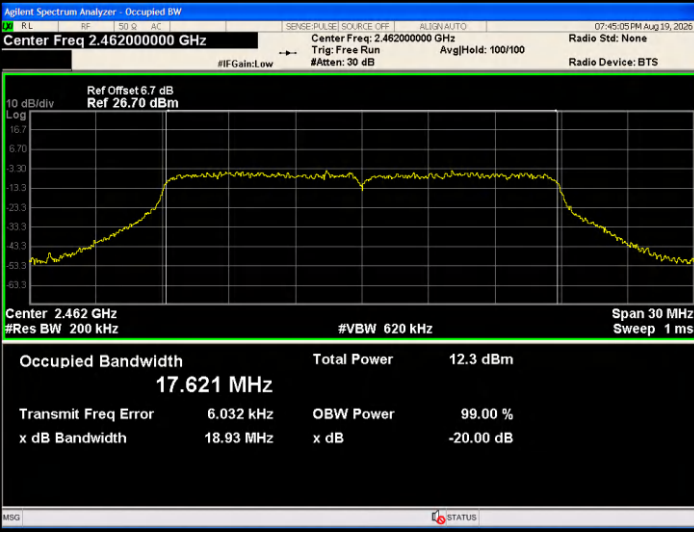


802.11g/MCH

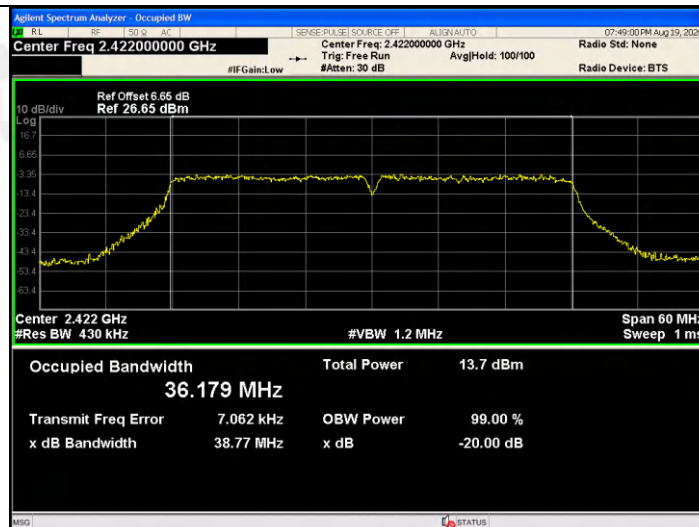


802.11g/HCH

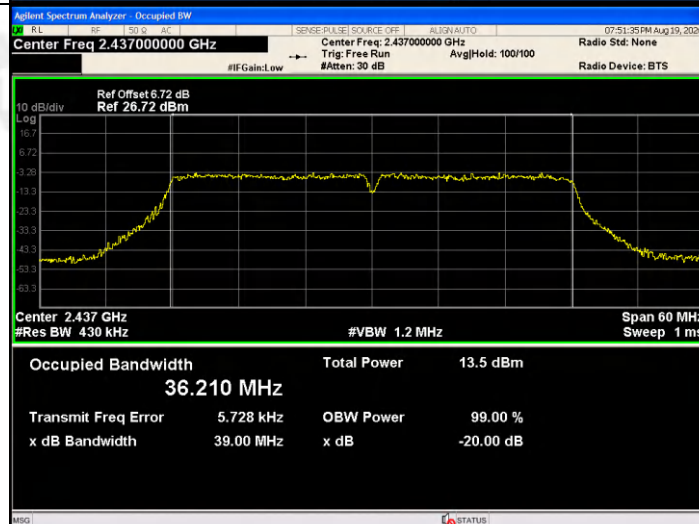


802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 6.66 dB Ref 26.66 dBm Center 2.412 GHz #Res BW 200 kHz Occupied Bandwidth 17.675 MHz Total Power 13.5 dBm Transmit Freq Error -3.474 kHz OBW Power 99.00 % x dB Bandwidth 19.00 MHz x dB -20.00 dB
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Center 2.437 GHz #Res BW 200 kHz Occupied Bandwidth 17.639 MHz Total Power 13.0 dBm Transmit Freq Error -11.917 kHz OBW Power 99.00 % x dB Bandwidth 18.98 MHz x dB -20.00 dB
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Center 2.462 GHz #Res BW 200 kHz Occupied Bandwidth 17.621 MHz Total Power 12.3 dBm Transmit Freq Error 6.032 kHz OBW Power 99.00 % x dB Bandwidth 18.93 MHz x dB -20.00 dB

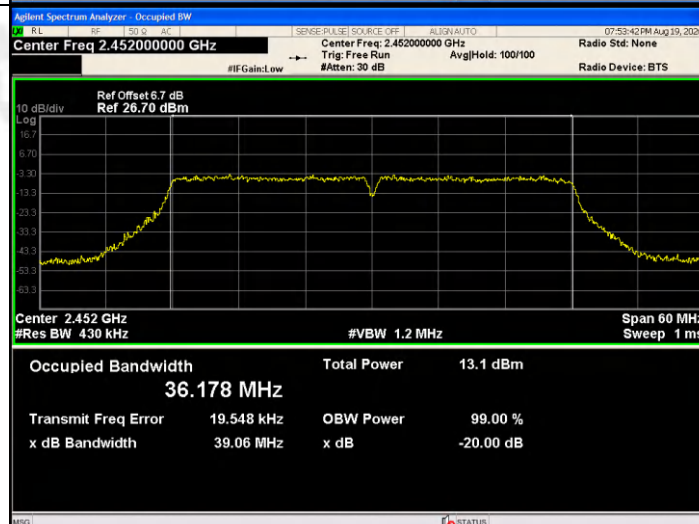
802.11n(HT40)/LCH



802.11n(HT40)/MCH



802.11n(HT40)/HCH



8. Maximum Output Power

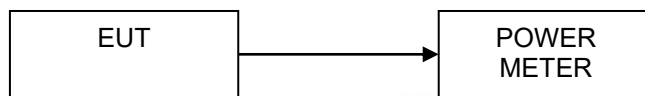
8.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02April 2,2019;ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2.Test Setup



8.3.Test Procedure

ANSI C63.10-2020 section 11.9.2.2.5

Method AVGSA-2A uses rms detection with slow sweep with spectrum bin averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

- Measure the duty cycle D of the transmitter output signal as described in 11.6.
- Set span to >1.5 times the OBW.
- Set RBW = 1% to 5% of the OBW, but do not exceed 1 MHz.
- Set VBW $\geq [3 \times \text{RBW}]$.
- Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Manually set sweep time $\geq [10 \times (\text{number of points in sweep}) \times (\text{total ON/OFF period of the transmitted signal})]$.
- Set detector = Power averaging (rms).
- Perform a single sweep.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band-power measurement function with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW.
- Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

8.4.Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
802.11b	LCH	14.749	30	PASS
	MCH	14.271	30	PASS
	HCH	14.048	30	PASS
802.11g	LCH	15.301	30	PASS
	MCH	14.974	30	PASS
	HCH	14.269	30	PASS
802.11n(HT20)	LCH	14.61	30	PASS
	MCH	14.028	30	PASS
	HCH	13.435	30	PASS
802.11n(HT40)	LCH	14.562	30	PASS
	MCH	14.293	30	PASS
	HCH	13.888	30	PASS

9. Power Spectral density

9.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019; ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8dBm/3kHz	2400-2483.5	PASS

9.2.Test Setup



9.3.Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02;

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set instrument center frequency to DTS channel center frequency
3. Set span to > 1.5 times the OBW.
4. Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
5. Set VBW $\geq [3 \times \text{RBW}]$
6. Detector = power averaging (rms) or sample detector (when rms not available).
7. Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
8. Sweep time = auto couple.
9. Employ trace averaging (rms) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level.
11. If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat(note that this might require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).
12. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

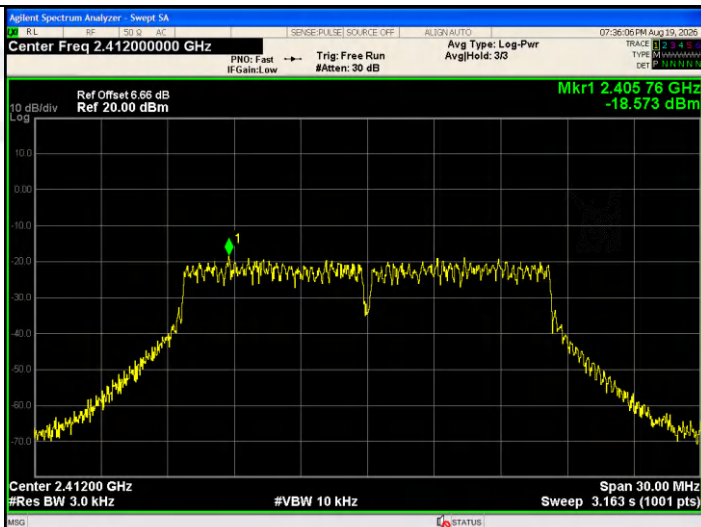
9.4.Test Result

Mode	Channel.	Power Spectral Density [dBm /3kHz]	Limit(8 dBm (in any 3kHz))	Verdict
802.11b	LCH	-18.85	8	PASS
	MCH	-19.119	8	PASS
	HCH	-19.319	8	PASS
802.11g	LCH	-18.573	8	PASS
	MCH	-19.328	8	PASS
	HCH	-19.673	8	PASS
802.11n(HT20)	LCH	-19.804	8	PASS
	MCH	-20.373	8	PASS
	HCH	-21.041	8	PASS
802.11n(HT40)	LCH	-22.01	8	PASS
	MCH	-21.599	8	PASS
	HCH	-22.329	8	PASS

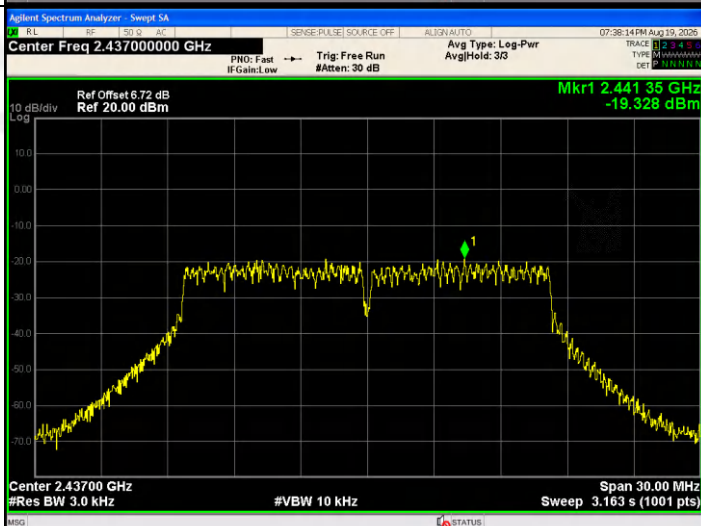
Test Graph

Graphs	
802.11b/LCH	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.41200000 GHz Ref Offset 6.66 dB Ref 20.00 dBm Mkr1 2.412 72 GHz -18.850 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11b/MCH	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 2.436 28 GHz -19.119 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11b/HCH	Agilent Spectrum Analyzer - Sweep SA Center Freq 2.46200000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 2.461 28 GHz -19.319 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

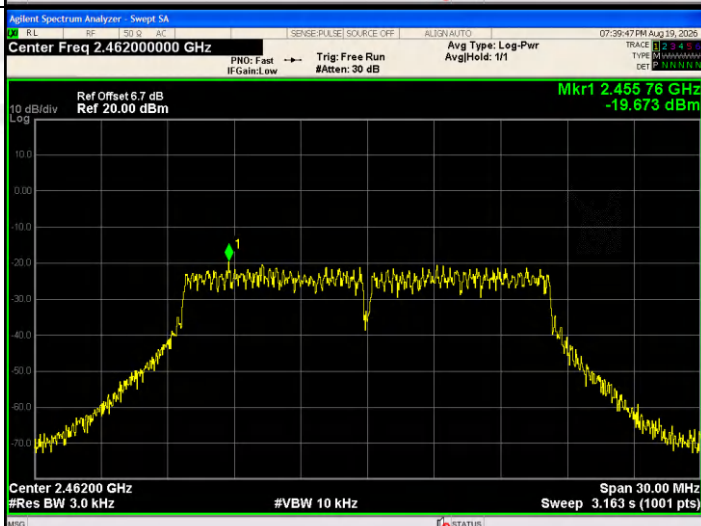
802.11g/LCH

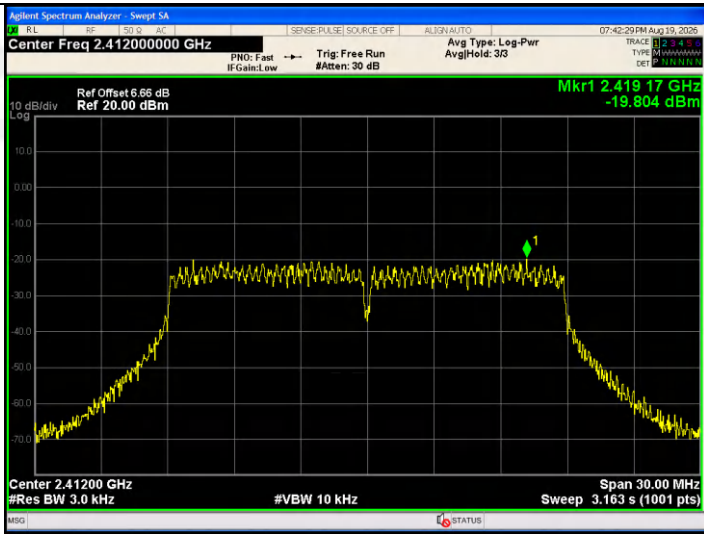
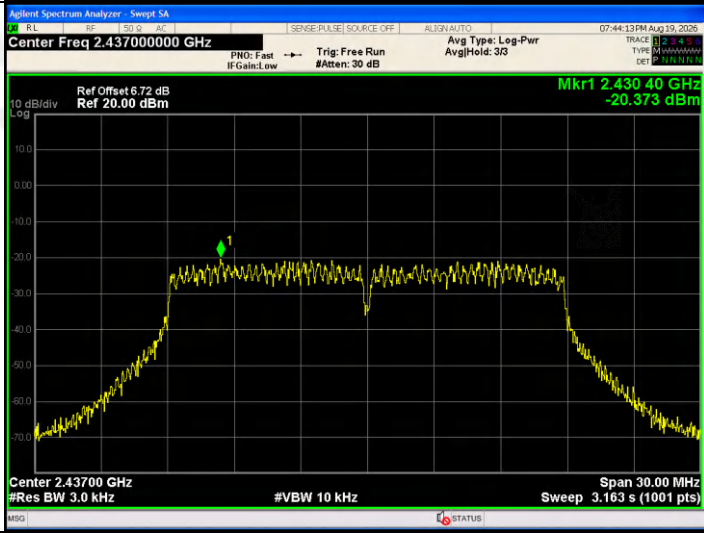
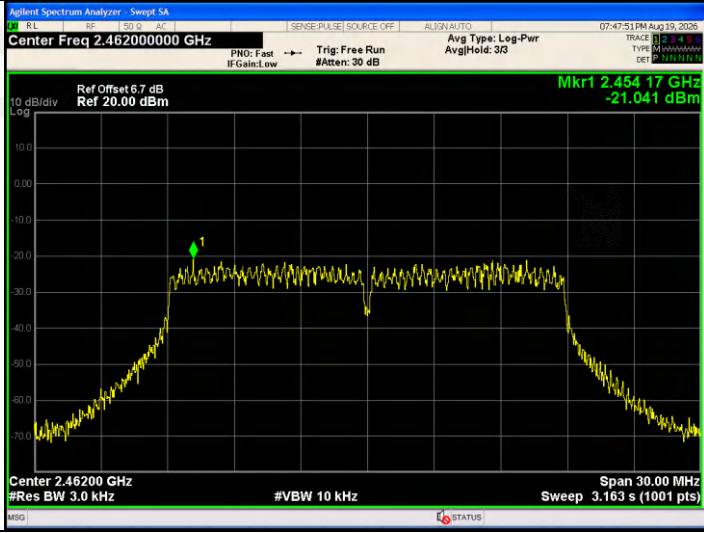


802.11g/MCH



802.11g/HCH



802.11n(HT20)/LCH	
802.11n(HT20)/MCH	
802.11n(HT20)/HCH	

802.11n(HT40)/LCH	
802.11n(HT40)/MCH	
802.11n(HT40)/HCH	

10. Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. This product has an integrated antenna fulfill the requirement of this section.

This product has an PCB antenna, and the maximum antenna gain is 3.86dBi, fulfill the requirement of this section.

11. TEST SETUP & EUT PHOTOGRAPH

Reference to EUT photo attachment for details.

----- End of Report -----