

TEST REPORT

Applicant : GZ GRACE IT CO.,LTD
Address : ROOM 102, NO. 3 CUILAN STREET, HUANGGE TOWN, NANSHA DISTRICT, GUANGZHOU CHINA 510000
Manufacturer : GZ GRACE IT CO.,LTD
Address : ROOM 102, NO. 3 CUILAN STREET, HUANGGE TOWN, NANSHA DISTRICT, GUANGZHOU CHINA 510000
Product Name : MINI PC
Model Number : GII70, GII71, GII72, GII73, GII74, GII75, GI76, GII77, GII78, GII79, GII7X, GII7V, GII7P, GII7H, GII7J, GII7U, MQ
Trademark : N/A
FCC ID : 2BXP5-GII70
Test Date : Jun. 23, 2026 to Jul. 08, 2026
Date of Report : Jul. 08, 2026
Test Result : This device described above has been tested by NTT, 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

Prepared by(Test Engineer):
Cindy Qin

Cindy Qin

Reviewer(Supervisor):
Ken Wu

Ken Wu

Approved(Manager):
Abel Yu

Abel Yu



TABLE OF CONTENT

1. General Information.....	5
1.1. Description of Device (EUT).....	5
1.2. Channel List	5
1.3. Test configuration	5
1.4. Summary of test result	6
1.5. Special Accessories and Auxiliary Equipment.....	6
1.6. Test mode	6
1.7. Block Diagram.....	7
1.8. Test Conditions	7
1.9. Measurement Uncertainty (95% confidence levels, k=2).....	7
1.10. Test Facility.....	8
1.11. Test Equipment.....	8
4. Conducted emission at the mains terminals test	10
4.1. Limit	10
4.2. Test Setup	10
4.3. Test Procedure.....	10
4.4. Test Result.....	11
5. Radiated Spurious Emissions	13
5.1. Limit	13
5.2. Test Setup	14
5.3. Test Procedure.....	15
5.4. Test Result.....	17
6. Duty cycle	24
6.1. Limit	24
6.2. Test Setup	24
6.3. Test Procedure.....	24
6.4. Test Result.....	25
7. Conducted Spurious Emissions.....	34
7.1. Limit	34
7.2. Test Setup	34
7.3. Test Procedure.....	34
7.4. Test Result.....	35
8. Band Edge Measurement	43
8.1. Limit	43
8.2. Test setup	43
8.3. Test Procedure.....	43
8.4. Test Result.....	44
9. -6 dB Bandwidth and 99% Bandwidth Measurement.....	52
9.1. Limit	52
9.2. Test Setup	52
9.3. Test Procedure.....	52
9.4. Test Result.....	53
10. Maximum Output Power	71
10.1. Limit	71
10.2. Test Setup	71
10.3. Test Procedure.....	71
10.4. Test Result.....	72
11. Power Spectral density	73
11.1. Limit	73
11.2. Test Setup	73
11.3. Test Procedure.....	73
11.4. Test Result.....	74

12. Antenna Requirement.....	83
13. TEST SETUP & EUT PHOTOGRAPH	84

Revision History of This Test Report

[illegible]

1. General Information

1.1. Description of Device (EUT)

EUT Name	:	MINI PC
Model No.	:	GII70, GII71, GII72, GII73, GII74, GII75, GI76, GII77, GII78, GII79, GII7X, GII7V, GII7P, GII7H, GII7J, GII7U, MQ
Model Difference	:	All the model are the same circuit and RF module, only the name and appearance are different. Test sample model: GII70
Power supply	:	DC 19V 3.42A
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	:	FPC antenna, Maximum Gain is Ant1: 2.74dBi; Ant2: 2.2dBi
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	Wifi_Test_Tool_V1.7.9
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
Laptop	DELL	Vostro 5490	/	/
Adapter	/	/	/	/
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

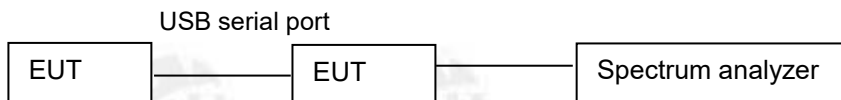
Radiated Emission



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 19V	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, Guangdong, China
FCC Designation Number	:	CN3446
FCC Test Firm Registration Number	:	129414

1.11.Test Equipment

2. Conducted Test Site

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

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

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&SCHWARZ	2026/09/04	2027/09/03
Amplifier (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
Preamplifier (1GHz-18GHz)	BBV 9718D	0024	SCHWARZBECK	2026/09/04	2027/09/03
Spectrum Analyzer (10Hz-40GHz)	FSV 40	100952	ROHDE&SCHWARZ	2026/09/04	2027/09/03
Preamplifier (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	MWRFtest	2026/09/04	2027/09/03
RF Swith	MW100-RFC B-1	MW260105N TT-64	MWRFtest	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	MWRFtest	2026/09/04	2027/09/03

4. Conducted emission at the mains terminals test

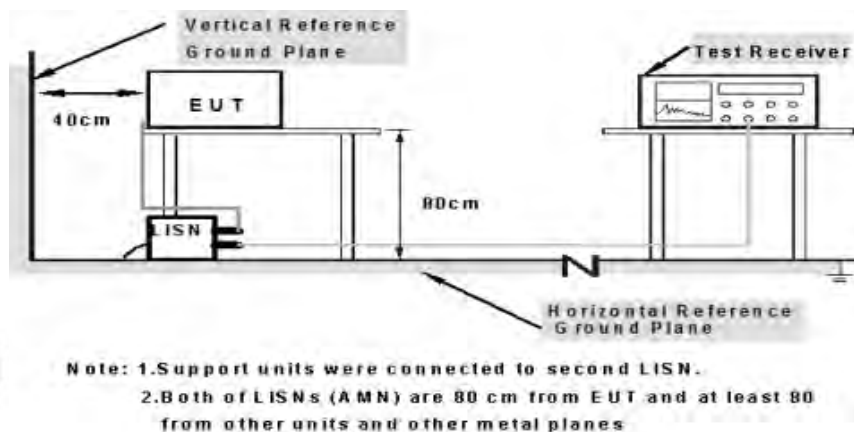
4.1.Limit

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(μV)	
	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.

4.2. Test Setup

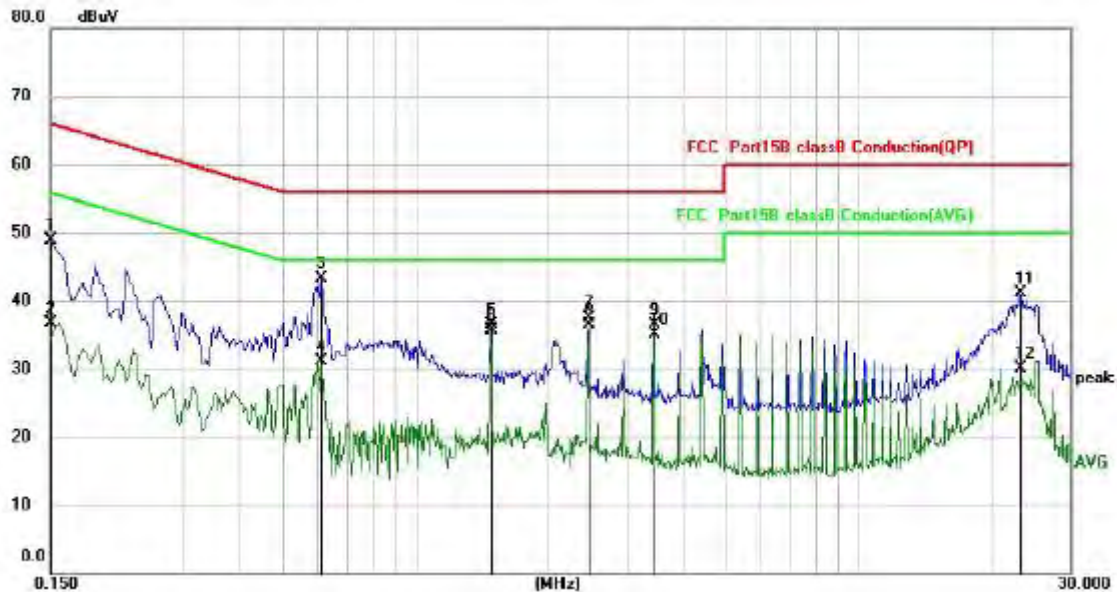


4.3. Test Procedure

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.

4.4. Test Result

Conducted Emission At The Mains Terminals Test Data			
Temperature:	25.1°C	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Line
Test Voltage :	DC 19V 3.42A	Test Mode:	802.11b(CH00)

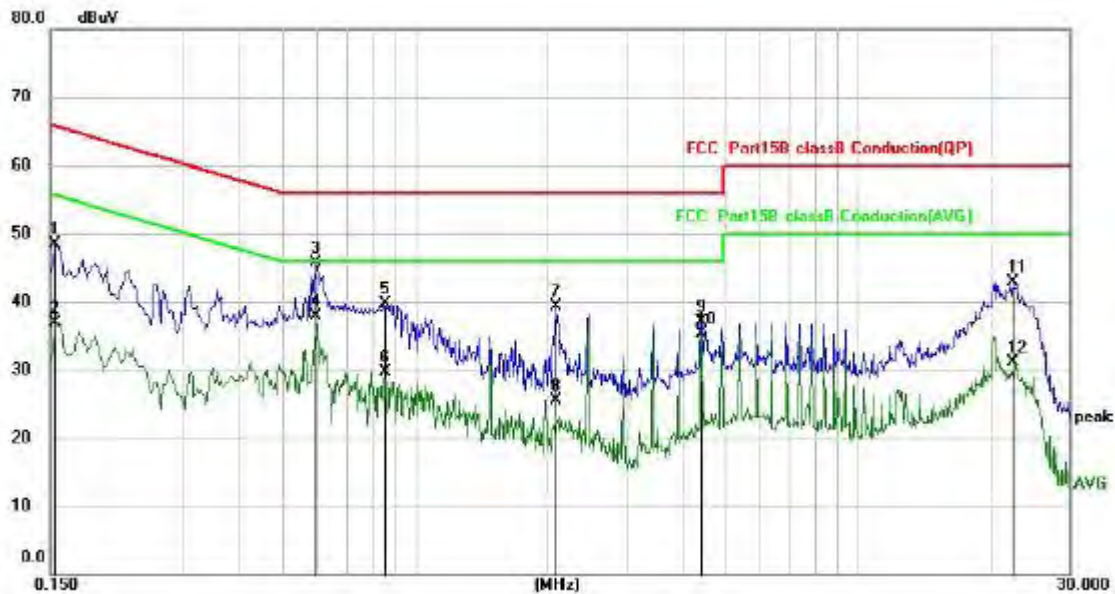


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	38.92	10.07	48.99	66.00	-17.01	QP
2		0.1500	26.58	10.07	36.65	56.00	-19.35	AVG
3		0.6139	33.13	10.10	43.23	56.00	-12.77	QP
4		0.6139	21.10	10.10	31.20	46.00	-14.80	AVG
5		1.4778	26.31	10.15	36.46	56.00	-19.54	QP
6		1.4778	25.64	10.15	35.79	46.00	-10.21	AVG
7		2.4620	27.24	10.19	37.43	56.00	-18.57	QP
8 *		2.4620	26.23	10.19	36.42	46.00	-9.58	AVG
9		3.4460	26.22	10.22	36.44	56.00	-19.56	QP
10		3.4460	24.82	10.22	35.04	46.00	-10.96	AVG
11		23.1259	29.93	11.11	41.04	60.00	-18.96	QP
12		23.1259	19.07	11.11	30.18	50.00	-19.82	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℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Neutral
Test Voltage :	DC 19V 3.42A	Test Mode:	802.11b(CH00)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1539	38.39	10.07	48.46	65.79	-17.33	QP
2		0.1539	26.91	10.07	36.98	55.79	-18.81	AVG
3		0.5977	35.64	10.10	45.74	56.00	-10.26	QP
4	*	0.5977	27.75	10.10	37.85	46.00	-8.15	AVG
5		0.8500	29.54	10.12	39.66	56.00	-16.34	QP
6		0.8500	19.56	10.12	29.68	46.00	-16.32	AVG
7		2.0819	29.11	10.17	39.28	56.00	-16.72	QP
8		2.0819	15.31	10.17	25.48	46.00	-20.52	AVG
9		4.4300	26.80	10.26	37.06	56.00	-18.94	QP
10		4.4300	25.01	10.26	35.27	46.00	-10.73	AVG
11		22.3856	31.90	11.07	42.97	60.00	-17.03	QP
12		22.3856	20.13	11.07	31.20	50.00	-18.80	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

5. Radiated Spurious Emissions

5.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 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
 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

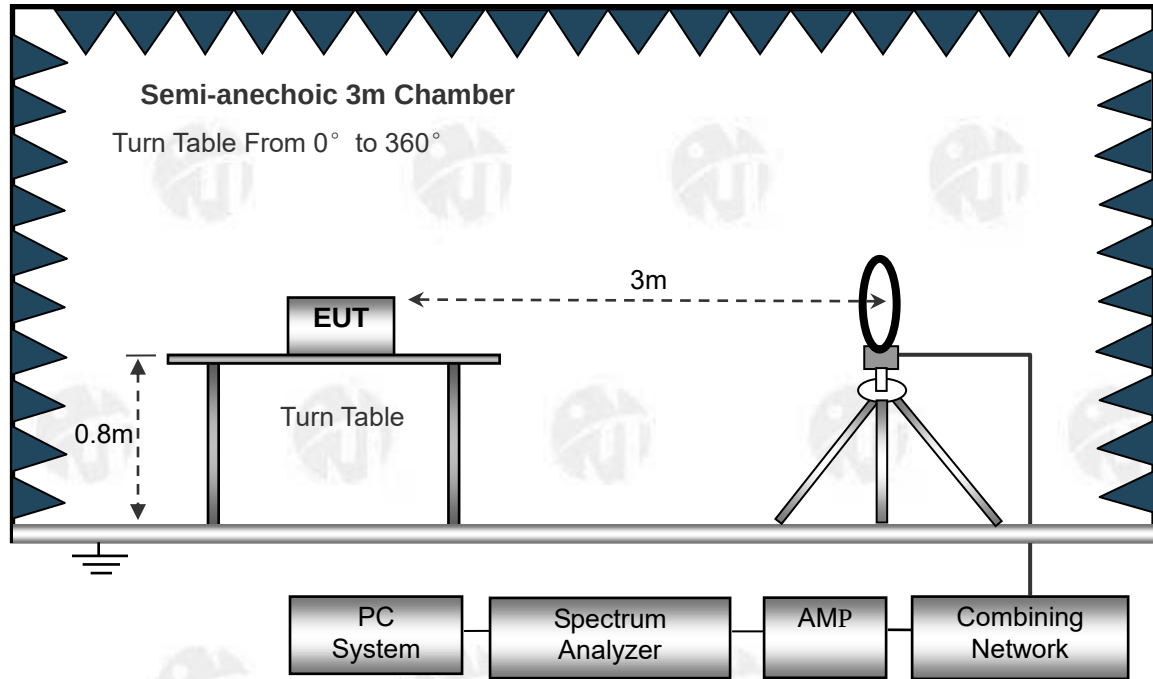
Limit:

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(kHz)	300	$10000 * 2400/F(kHz)$	$20\log(2400/F(kHz)) + 80$
0.490 ~ 1.705	24000/F(kHz)	30	$100 * 24000/F(kHz)$	$20\log(24000/F(kHz)) + 40$
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	$20\log(500)$

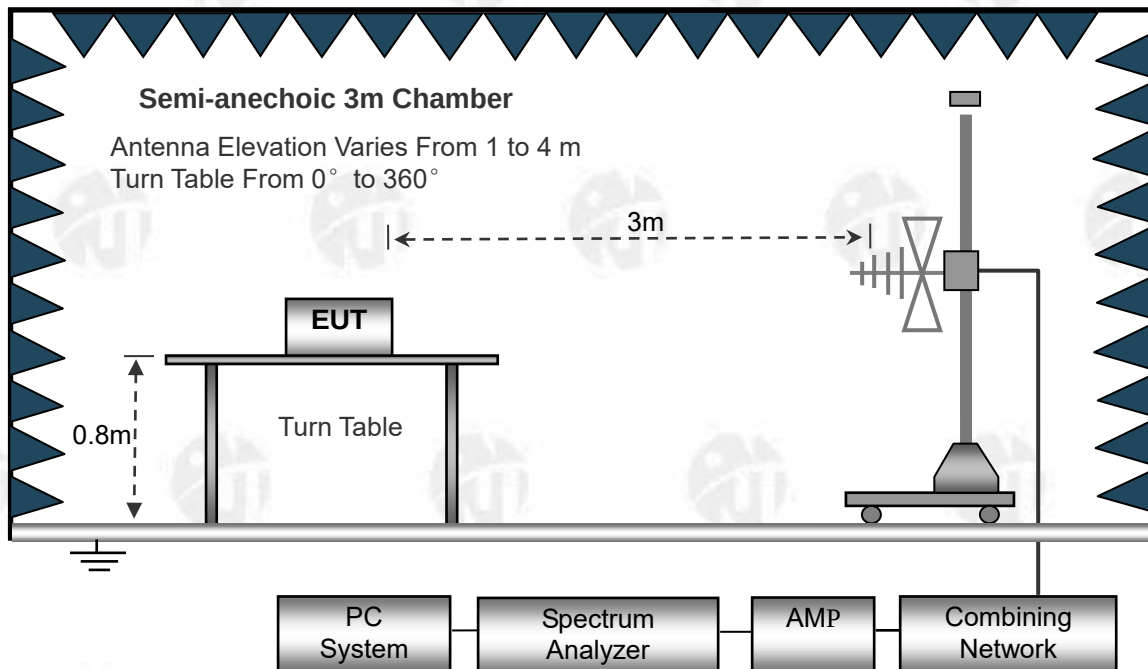
5.2.Test Setup

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

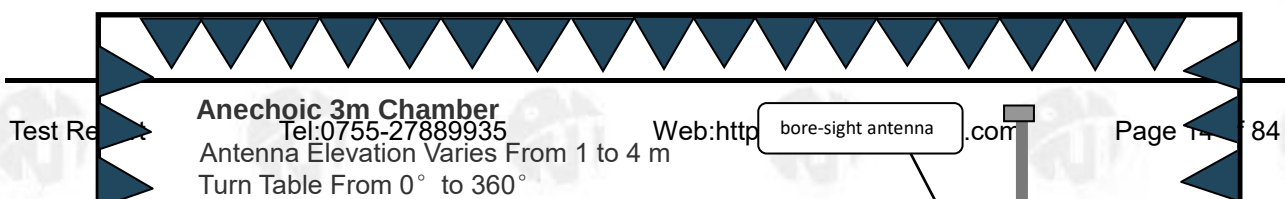
The test setup for emission measurement below 30MHz.

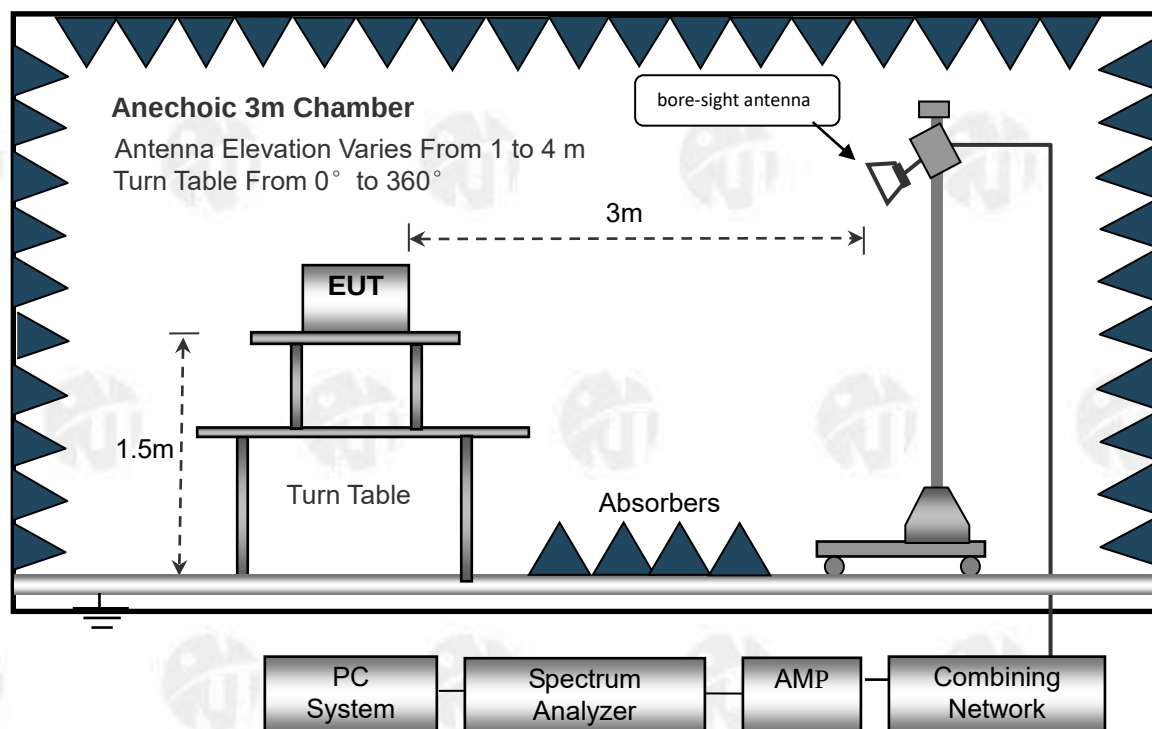


The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.





5.3.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.

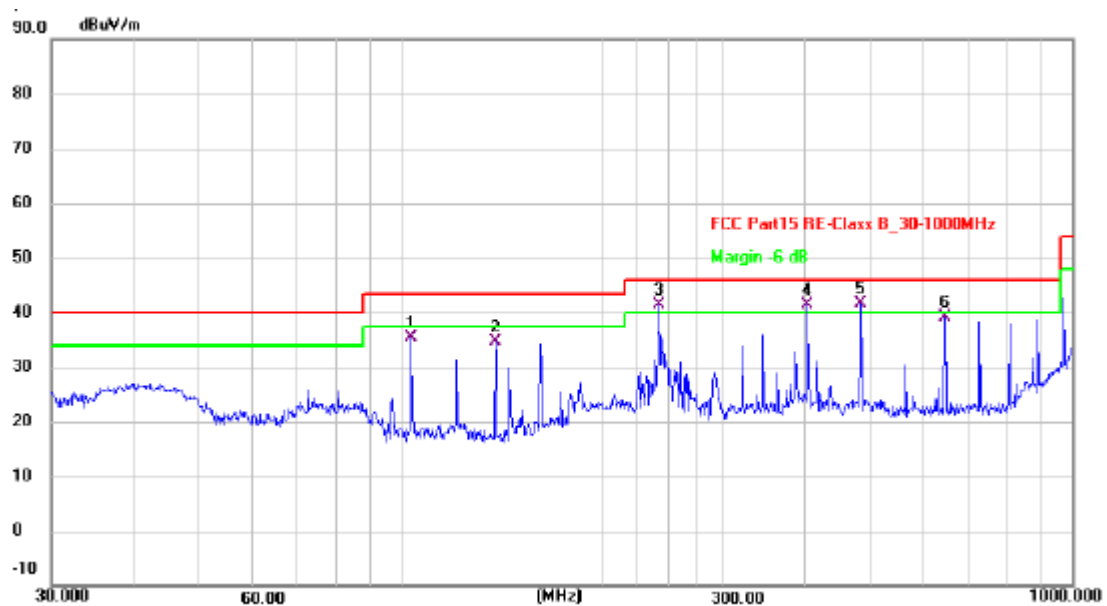
5.4. Test Result

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 :	DC 19V 3.42A	Test Mode :	802.11b(2462.00MHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	103.4419	53.00	-17.60	35.40	43.50	-8.10	QP
2	137.9030	48.27	-13.59	34.68	43.50	-8.82	QP
3 !	241.6760	55.65	-14.26	41.39	46.00	-4.61	QP
4 !	403.2500	51.58	-10.25	41.33	46.00	-4.67	QP
5 *	483.9094	50.08	-8.33	41.75	46.00	-4.25	QP
6	645.1194	43.75	-4.62	39.13	46.00	-6.87	QP

Note:

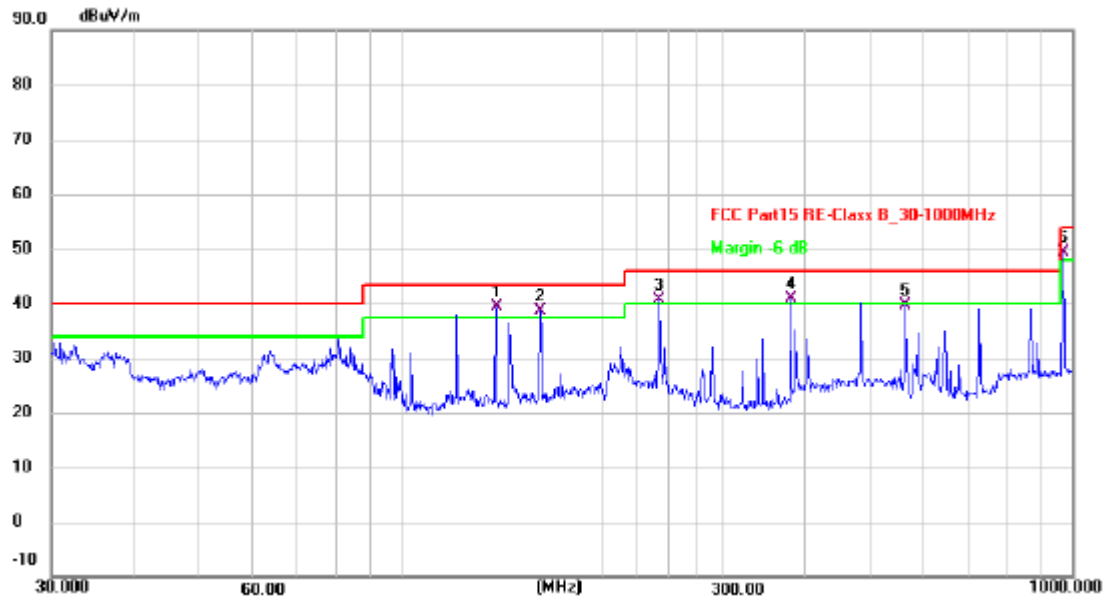
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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℃	Relative Humidity:	56%
Pressure:	1008hPa	Phase :	Vertical
Test Voltage :	DC 19V 3.42A	Test Mode :	802.11b(2462.00MHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	138.3873	52.89	-13.53	39.36	43.50	-4.14	QP
2 !	160.9090	50.84	-12.25	38.59	43.50	-4.91	QP
3 !	241.6760	54.80	-14.26	40.54	46.00	-5.46	QP
4 !	379.9141	51.62	-10.69	40.93	46.00	-5.07	QP
5	564.6385	46.06	-6.35	39.71	46.00	-6.29	QP
6 !	968.9337	49.21	0.28	49.49	54.00	-4.51	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 (MHz)	Meter Reading (dBuV)	Pre-ampli fier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:2412MHz									
V	4824.00	52.83	34.12	5.03	32.39	56.13	74	-17.87	Pk
V	4824.00	39.20	34.12	5.03	32.39	42.50	54	-11.50	AV
V	7236.00	48.83	32.54	6.29	35.86	58.44	74	-15.56	Pk
V	7236.00	35.59	32.54	6.29	35.86	45.20	54	-8.80	AV
V	9648.00	48.96	32.98	7.55	38.4	61.93	74	-12.07	Pk
V	9648.00	34.51	32.98	7.55	38.4	47.48	54	-6.52	AV
V	12060.00	44.84	32.09	8.93	39	60.68	74	-13.32	Pk
V	12060.00	28.54	32.09	8.93	39	44.38	54	-9.62	AV
H	4824.00	49.87	34.12	5.03	32.39	53.17	74	-20.83	Pk
H	4824.00	40.88	34.12	5.03	32.39	44.18	54	-9.82	AV
H	7236.00	47.32	32.54	6.29	35.86	56.93	74	-17.07	Pk
H	7236.00	32.50	32.54	6.29	35.86	42.11	54	-11.89	AV
H	9648.00	48.39	32.98	7.55	38.4	61.36	74	-12.64	Pk
H	9648.00	30.16	32.98	7.55	38.4	43.13	54	-10.87	AV
H	12060.00	38.61	32.09	8.93	39	54.45	74	-19.55	Pk
H	12060.00	25.37	32.09	8.93	39	41.21	54	-12.79	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	49.17	34.07	5.09	32.59	52.78	74	-21.22	Pk
V	4874.00	38.51	34.07	5.09	32.59	42.12	54	-11.88	AV
V	7311.00	45.81	32.63	6.34	35.96	55.48	74	-18.52	Pk
V	7311.00	37.15	32.63	6.34	35.96	46.82	54	-7.18	AV
V	9748.00	44.06	32.92	7.59	38.4	57.13	74	-16.87	Pk
V	9748.00	31.94	32.92	7.59	38.4	45.01	54	-8.99	AV
V	12815.00	41.66	31.96	8.88	39.04	57.62	74	-16.38	Pk
V	12815.00	30.41	31.96	8.88	39.04	46.37	54	-7.63	AV
H	4874.00	48.79	34.07	5.09	32.59	52.40	74	-21.60	Pk
H	4874.00	39.35	34.07	5.09	32.59	42.96	54	-11.04	AV
H	7311.00	47.16	32.63	6.34	35.96	56.83	74	-17.17	Pk
H	7311.00	34.65	32.63	6.34	35.96	44.32	54	-9.68	AV
H	9748.00	43.30	32.92	7.59	38.4	56.37	74	-17.63	Pk
H	9748.00	31.08	32.92	7.59	38.4	44.15	54	-9.85	AV
H	12815.00	40.31	31.96	8.88	39.04	56.27	74	-17.73	Pk
H	12815.00	29.54	31.96	8.88	39.04	45.50	54	-8.50	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-ampli fier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:2462MHz									
V	4924.00	48.95	34.02	5.15	32.8	52.88	74	-21.12	Pk
V	4924.00	35.57	34.02	5.15	32.8	39.50	54	-14.50	AV
V	7386.00	44.67	32.71	6.4	36.05	54.41	74	-19.59	Pk
V	7386.00	35.92	32.71	6.4	36.05	45.66	54	-8.34	AV
V	9848.00	41.91	32.86	7.62	38.4	55.07	74	-18.93	Pk
V	9848.00	30.69	32.86	7.62	38.4	43.85	54	-10.15	AV
V	12310.00	39.12	31.82	8.84	39.08	55.22	74	-18.78	Pk
V	12310.00	27.07	31.82	8.84	39.08	43.17	54	-10.83	AV
H	4924.00	47.86	34.02	5.15	32.8	51.79	74	-22.21	Pk
H	4924.00	38.35	34.02	5.15	32.8	42.28	54	-11.72	AV
H	7386.00	45.49	32.71	6.4	36.05	55.23	74	-18.77	Pk
H	7386.00	31.16	32.71	6.4	36.05	40.90	54	-13.10	AV
H	9848.00	41.99	32.86	7.62	38.4	55.15	74	-18.85	Pk
H	9848.00	27.62	32.86	7.62	38.4	40.78	54	-13.22	AV
H	12310.00	41.11	31.82	8.84	39.08	57.21	74	-16.79	Pk
H	12310.00	29.96	31.82	8.84	39.08	46.06	54	-7.94	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	57.81	35.17	3.48	27.49	53.61	74	-20.39	PK
	H	2390	51.61	35.17	3.48	27.49	47.41	54	-6.59	AV
	H	2400	59.22	35.16	3.49	27.52	55.07	74	-18.93	PK
	H	2400	51.40	35.16	3.49	27.52	47.25	54	-6.75	AV
	V	2390	59.86	35.17	3.48	27.49	55.66	74	-18.34	PK
	V	2390	50.21	35.17	3.48	27.49	46.01	54	-7.99	AV
	V	2400	61.63	35.16	3.49	27.52	57.48	74	-16.52	PK
	V	2400	48.79	35.16	3.49	27.52	44.64	54	-9.36	AV
	High Channel: 2462MHz									
	H	2483.5	59.14	35.11	3.56	27.75	55.34	74	-18.66	PK
	H	2483.5	48.74	35.11	3.56	27.75	44.94	54	-9.06	AV
	H	2500	59.33	35.1	3.57	27.8	55.60	74	-18.40	PK
	H	2500	49.28	35.1	3.57	27.8	45.55	54	-8.45	AV
	V	2483.5	60.25	35.11	3.56	27.75	56.45	74	-17.55	PK
	V	2483.5	51.54	35.11	3.56	27.75	47.74	54	-6.26	AV
	V	2500	59.34	35.1	3.57	27.8	55.61	74	-18.39	PK
	V	2500	50.78	35.1	3.57	27.8	47.05	54	-6.95	AV
802.11g	Low Channel: 2412MHz									
	H	2390	59.39	35.17	3.48	27.49	55.19	74	-18.81	PK
	H	2390	49.04	35.17	3.48	27.49	44.84	54	-9.16	AV
	H	2400	59.95	35.16	3.49	27.52	55.80	74	-18.20	PK
	H	2400	50.84	35.16	3.49	27.52	46.69	54	-7.31	AV
	V	2390	59.39	35.17	3.48	27.49	55.19	74	-18.81	PK
	V	2390	51.18	35.17	3.48	27.49	46.98	54	-7.02	AV
	V	2400	59.29	35.16	3.49	27.52	55.14	74	-18.86	PK
	V	2400	51.53	35.16	3.49	27.52	47.38	54	-6.62	AV
	High Channel: 2462MHz									
	H	2483.5	57.81	35.11	3.56	27.75	54.01	74	-19.99	PK
	H	2483.5	50.72	35.11	3.56	27.75	46.92	54	-7.08	AV
	H	2500	59.30	35.1	3.57	27.8	55.57	74	-18.43	PK
	H	2500	49.22	35.1	3.57	27.8	45.49	54	-8.51	AV
	V	2483.5	58.92	35.11	3.56	27.75	55.12	74	-18.88	PK
	V	2483.5	50.10	35.11	3.56	27.75	46.30	54	-7.70	AV
	V	2500	58.42	35.1	3.57	27.8	54.69	74	-19.31	PK
	V	2500	49.50	35.1	3.57	27.8	45.77	54	-8.23	AV
802.11 n20	Low Channel: 2412MHz									
	H	2390	57.15	35.17	3.48	27.49	52.95	74	-21.05	PK
	H	2390	49.90	35.17	3.48	27.49	45.70	54	-8.30	AV
	H	2400	59.45	35.16	3.49	27.52	55.30	74	-18.70	PK
	H	2400	51.50	35.16	3.49	27.52	47.35	54	-6.65	AV
	V	2390	59.76	35.17	3.48	27.49	55.56	74	-18.44	PK
	V	2390	50.11	35.17	3.48	27.49	45.91	54	-8.09	AV
	V	2400	60.23	35.16	3.49	27.52	56.08	74	-17.92	PK
	V	2400	50.61	35.16	3.49	27.52	46.46	54	-7.54	AV
	High Channel: 2462MHz									
	H	2483.5	59.95	35.11	3.56	27.75	56.15	74	-17.85	PK
	H	2483.5	49.63	35.11	3.56	27.75	45.83	54	-8.17	AV
	H	2500	60.44	35.1	3.57	27.8	56.71	74	-17.29	PK

	H	2500	50.75	35.1	3.57	27.8	47.02	54	-6.98	AV
	V	2483.5	58.68	35.11	3.56	27.75	54.88	74	-19.12	PK
	V	2483.5	51.71	35.11	3.56	27.75	47.91	54	-6.09	AV
	V	2500	59.44	35.1	3.57	27.8	55.71	74	-18.29	PK
	V	2500	50.51	35.1	3.57	27.8	46.78	54	-7.22	AV
802.11 n40	Low Channel 2422MHz									
	H	2390.00	59.29	35.17	3.48	27.49	55.09	74	-18.91	PK
	H	2390.00	50.21	35.17	3.48	27.49	46.01	54	-7.99	AV
	H	2400.00	59.30	35.16	3.49	27.52	55.15	74	-18.85	PK
	H	2400.00	51.32	35.16	3.49	27.52	47.17	54	-6.83	AV
	V	2390.00	60.19	35.17	3.48	27.49	55.99	74	-18.01	PK
	V	2390.00	51.41	35.17	3.48	27.49	47.21	54	-6.79	AV
	V	2400.00	59.64	35.16	3.49	27.52	55.49	74	-18.51	PK
	V	2400.00	50.31	35.16	3.49	27.52	46.16	54	-7.84	AV
	H	2390.00	59.29	35.17	3.48	27.49	55.09	74	-18.91	PK
	High Channel 2452MHz									
	H	2483.50	57.11	35.11	3.56	27.75	53.31	74	-20.69	PK
	H	2483.50	49.01	35.11	3.56	27.75	45.21	54	-8.79	AV
	H	2500.00	60.62	35.1	3.57	27.8	56.89	74	-17.11	PK
	H	2500.00	51.61	35.1	3.57	27.8	47.88	54	-6.12	AV
	V	2483.50	58.48	35.11	3.56	27.75	54.68	74	-19.32	PK
	V	2483.50	52.44	35.11	3.56	27.75	48.64	54	-5.36	AV
	V	2500.00	58.81	35.1	3.57	27.8	55.08	74	-18.92	PK
	V	2500.00	51.50	35.1	3.57	27.8	47.77	54	-6.23	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.

6. Duty cycle

6.1.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
Test Result:	PASS

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:
 - 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.

6.4. Test Result

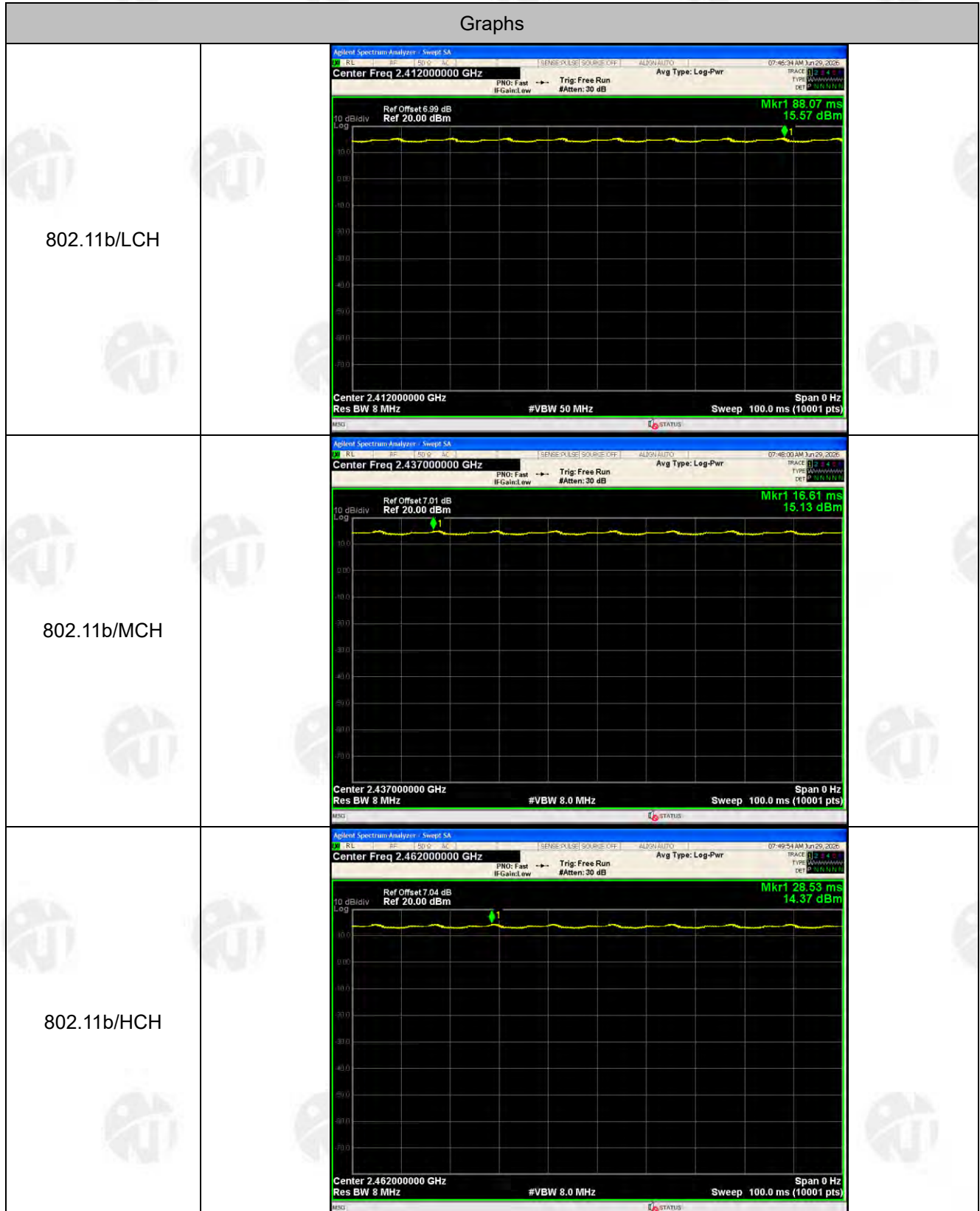
ANT1:
Duty Cycle

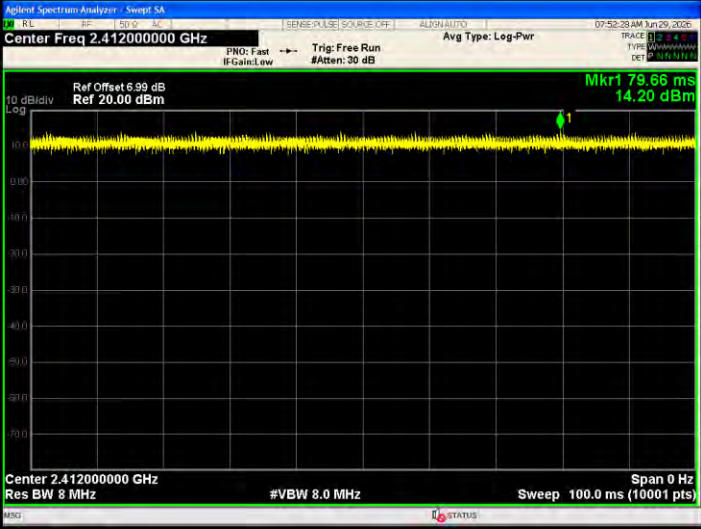
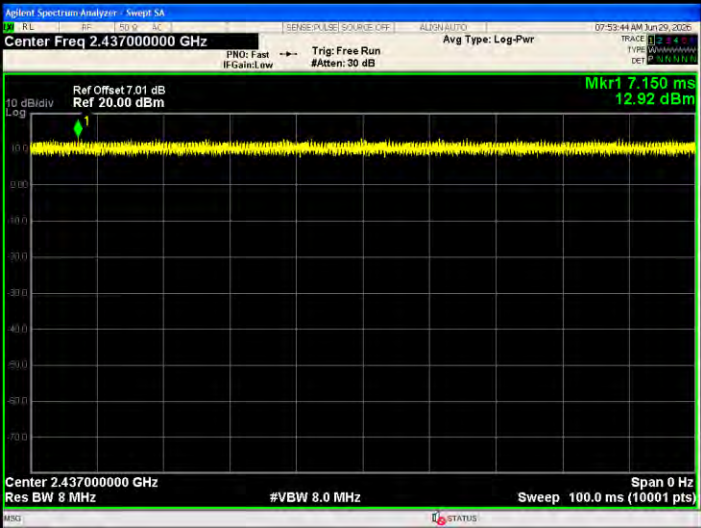
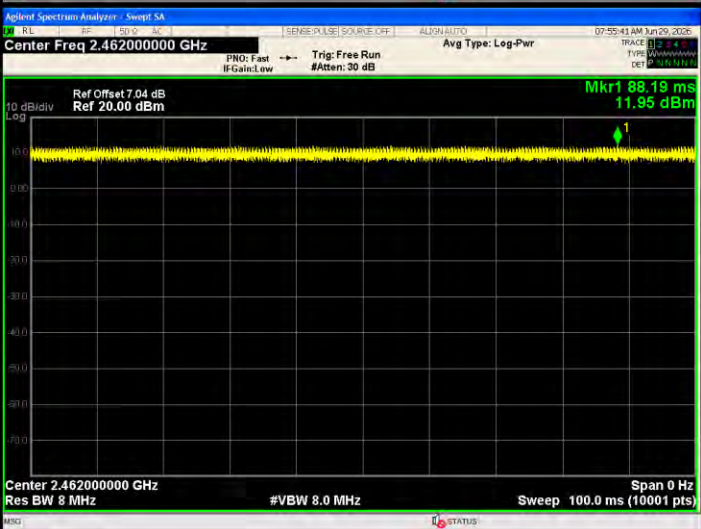
Mode	Channel.	Duty Cycle (%)	Correction Factor (dB)
802.11b	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11g	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT20)	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT40)	LCH	100	0
	MCH	100	0
	HCH	100	0

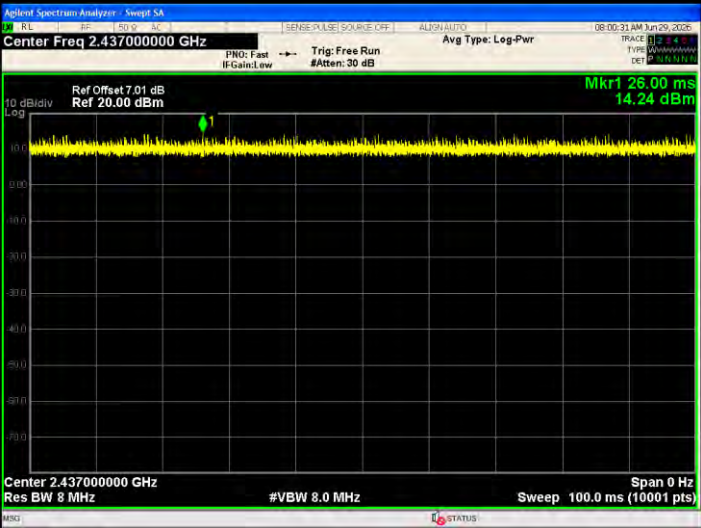
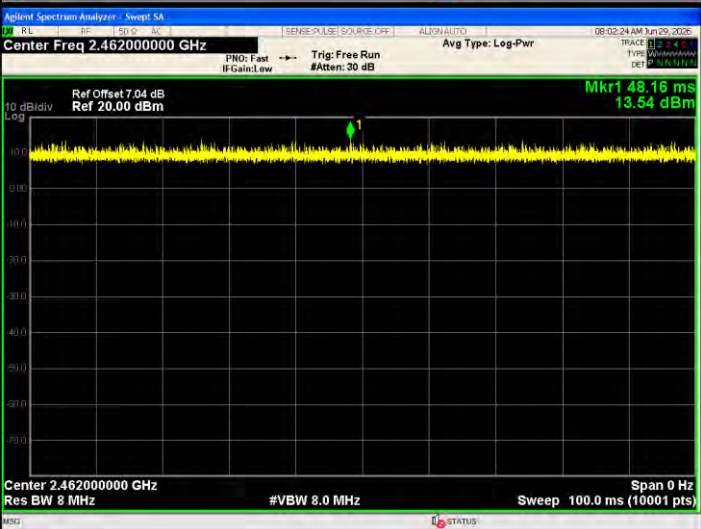
ANT2:
Duty Cycle

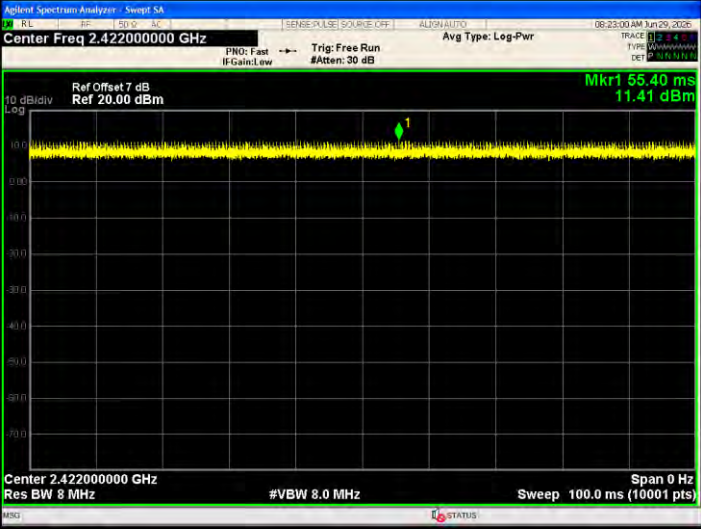
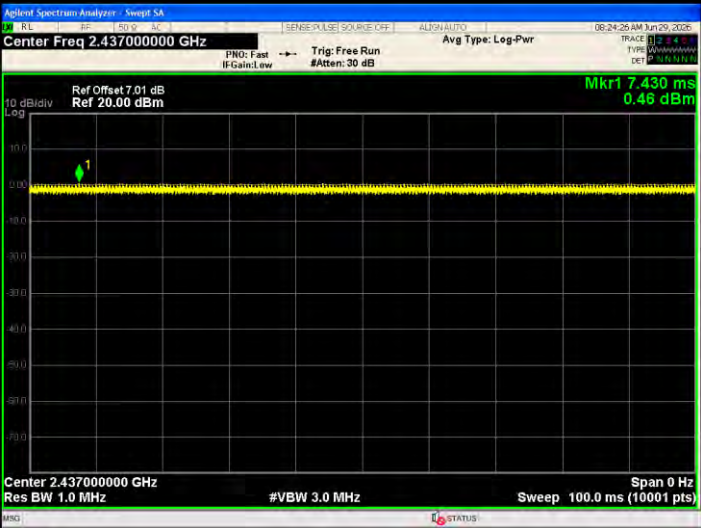
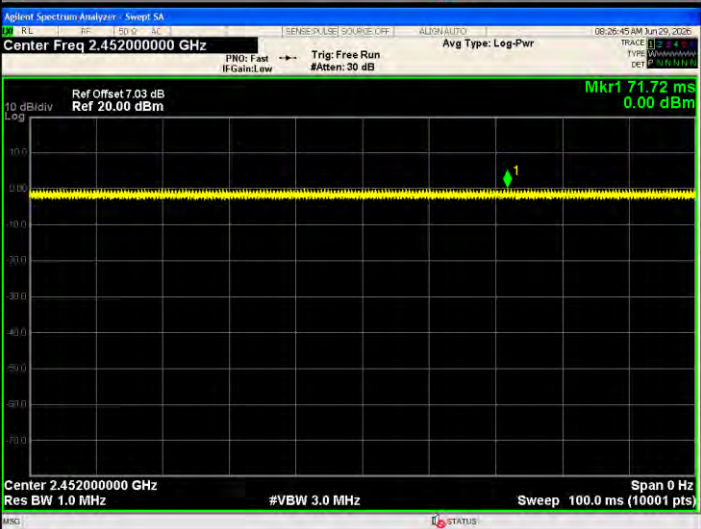
Mode	Channel.	Duty Cycle (%)	Correction Factor (dB)
802.11b	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11g	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT20)	LCH	100	0
	MCH	100	0
	HCH	100	0
802.11n(HT40)	LCH	100	0
	MCH	100	0
	HCH	100	0

ANT1:
Test Graph:

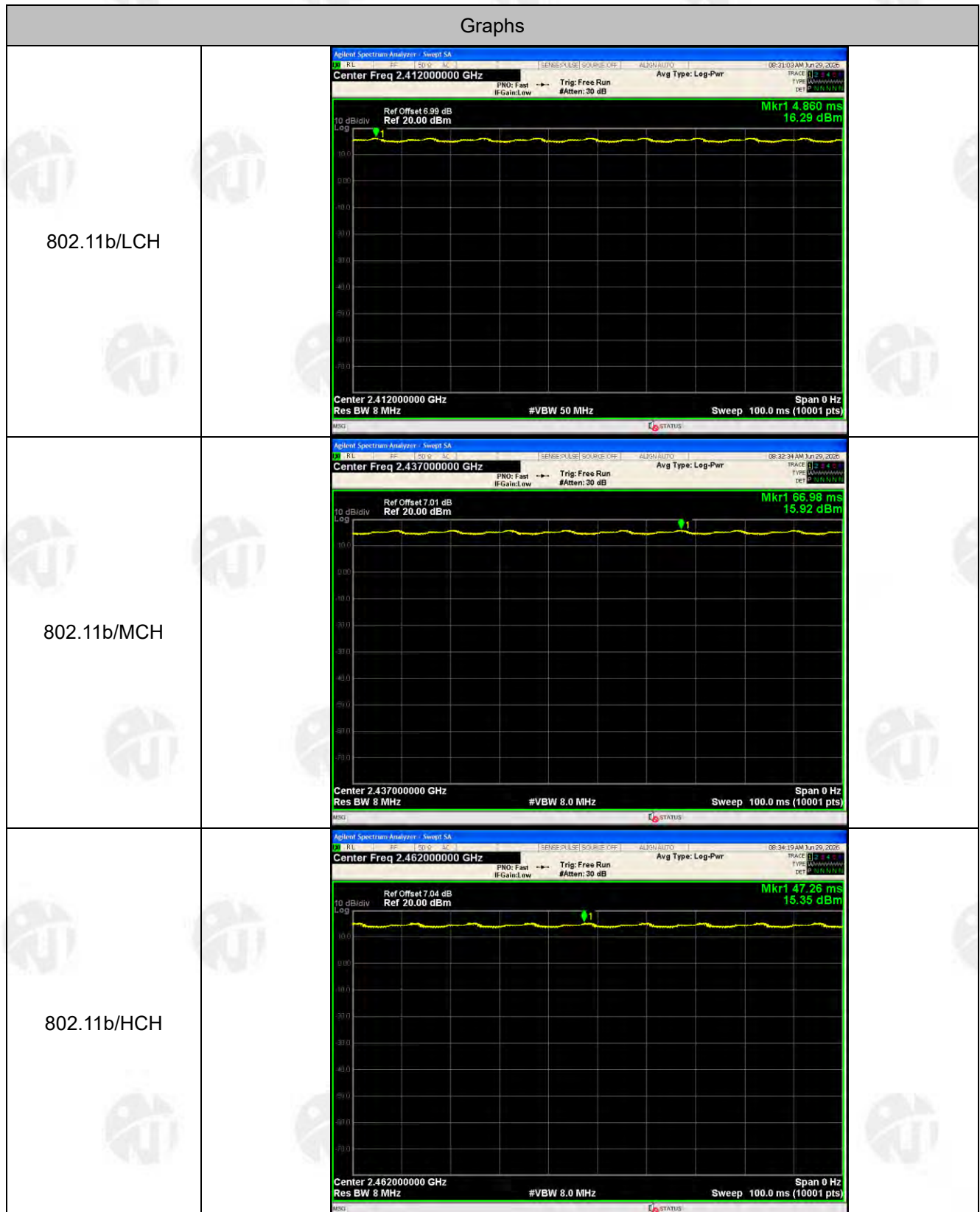


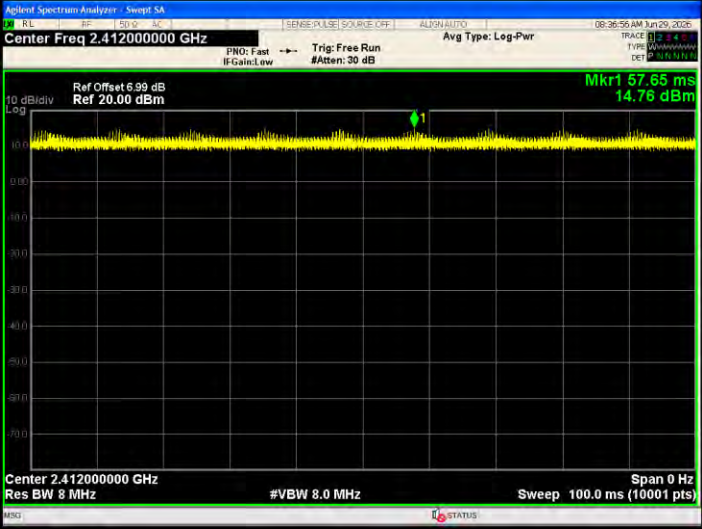
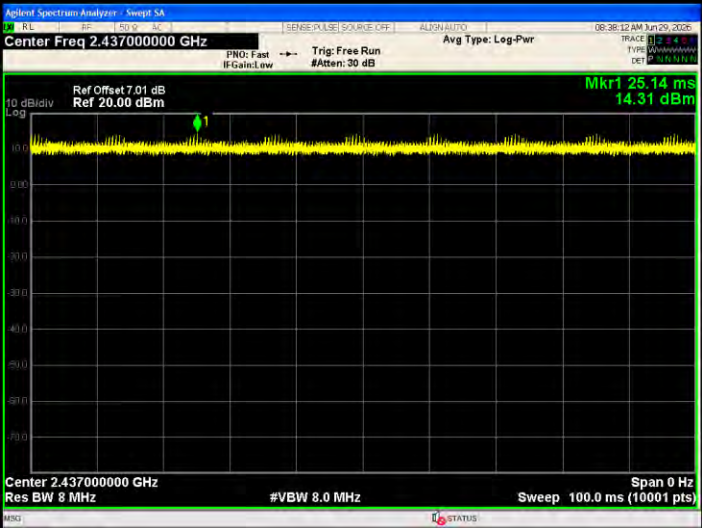
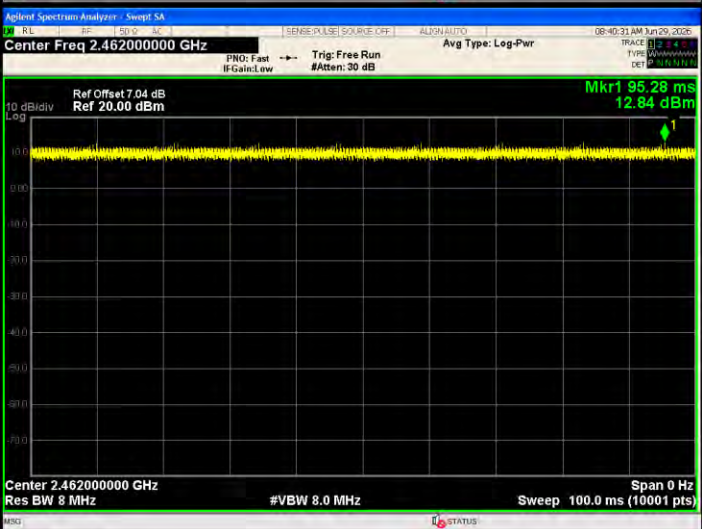
802.11g/LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.412000000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 79.66 ms 14.20 dBm Center 2.412000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)
802.11g/MCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 7.150 ms 12.92 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 - Sweep SA Center Freq 2.462000000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 88.19 ms 11.95 dBm Center 2.462000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)

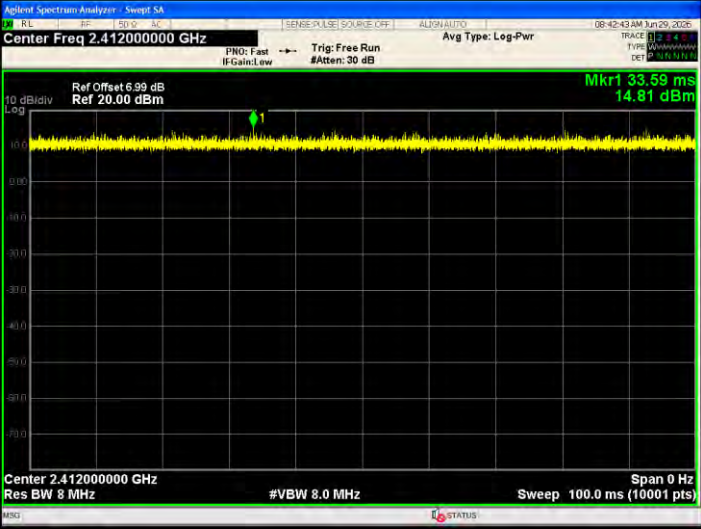
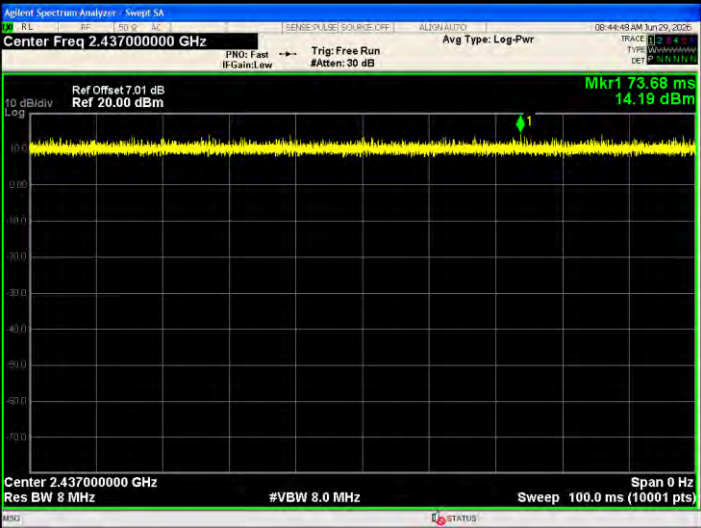
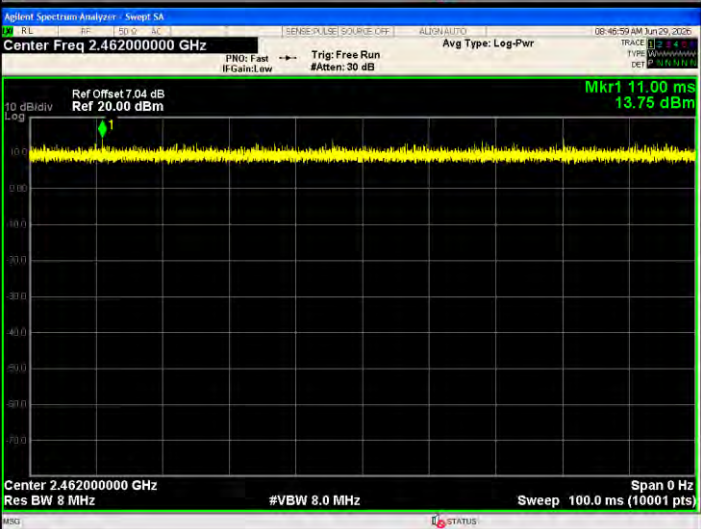
802.11n(HT20)/LCH		
802.11n(HT20)/MCH		
802.11n(HT20)/HCH		

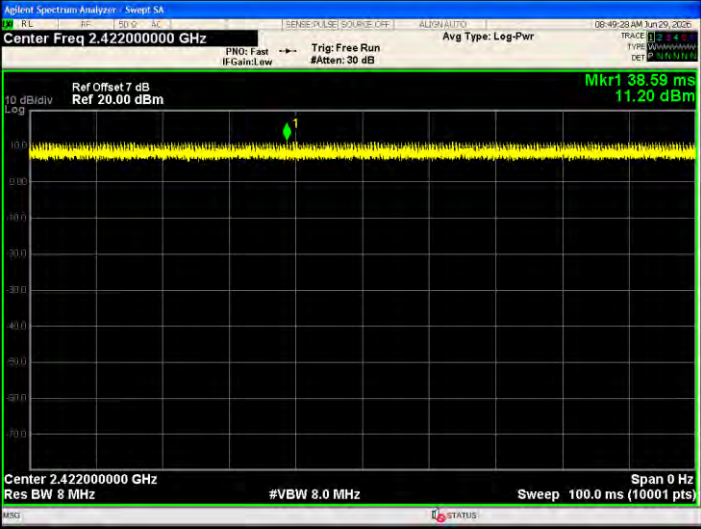
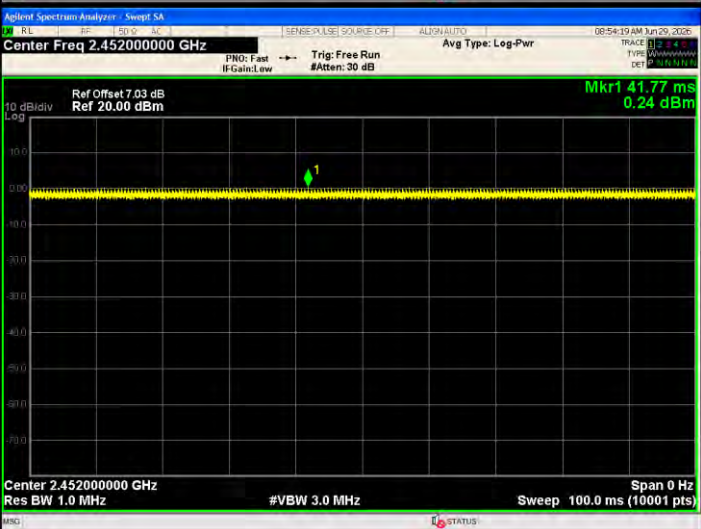
802.11n(HT40)/LCH		
802.11n(HT40)/MCH		
802.11n(HT40)/HCH		

ANT2:
Test Graph:



802.11g/LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.412000000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 67.65 ms 14.76 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 - Sweep SA Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 25.14 ms 14.31 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 - Sweep SA Center Freq 2.462000000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 95.28 ms 12.84 dBm Center 2.462000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)

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

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.422000000 GHz Ref Offset 7 dB Ref 20.00 dBm Mkr1 38.59 ms 11.20 dBm Center 2.422000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 100.0 ms (10001 pts)
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 13.10 ms 0.50 dBm Center 2.437000000 GHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 100.0 ms (10001 pts)
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.452000000 GHz Ref Offset 7.03 dB Ref 20.00 dBm Mkr1 41.77 ms 0.24 dBm Center 2.452000000 GHz Res BW 1.0 MHz #VBW 3.0 MHz Sweep 100.0 ms (10001 pts)

7. Conducted Spurious Emissions

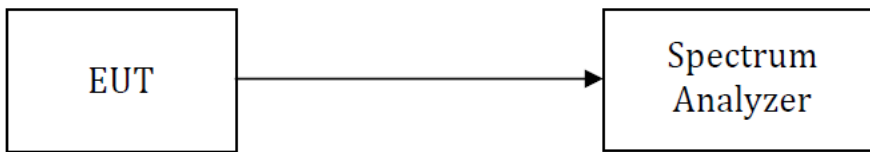
7.1.Limit

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)).

7.2.Test Setup



7.3.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

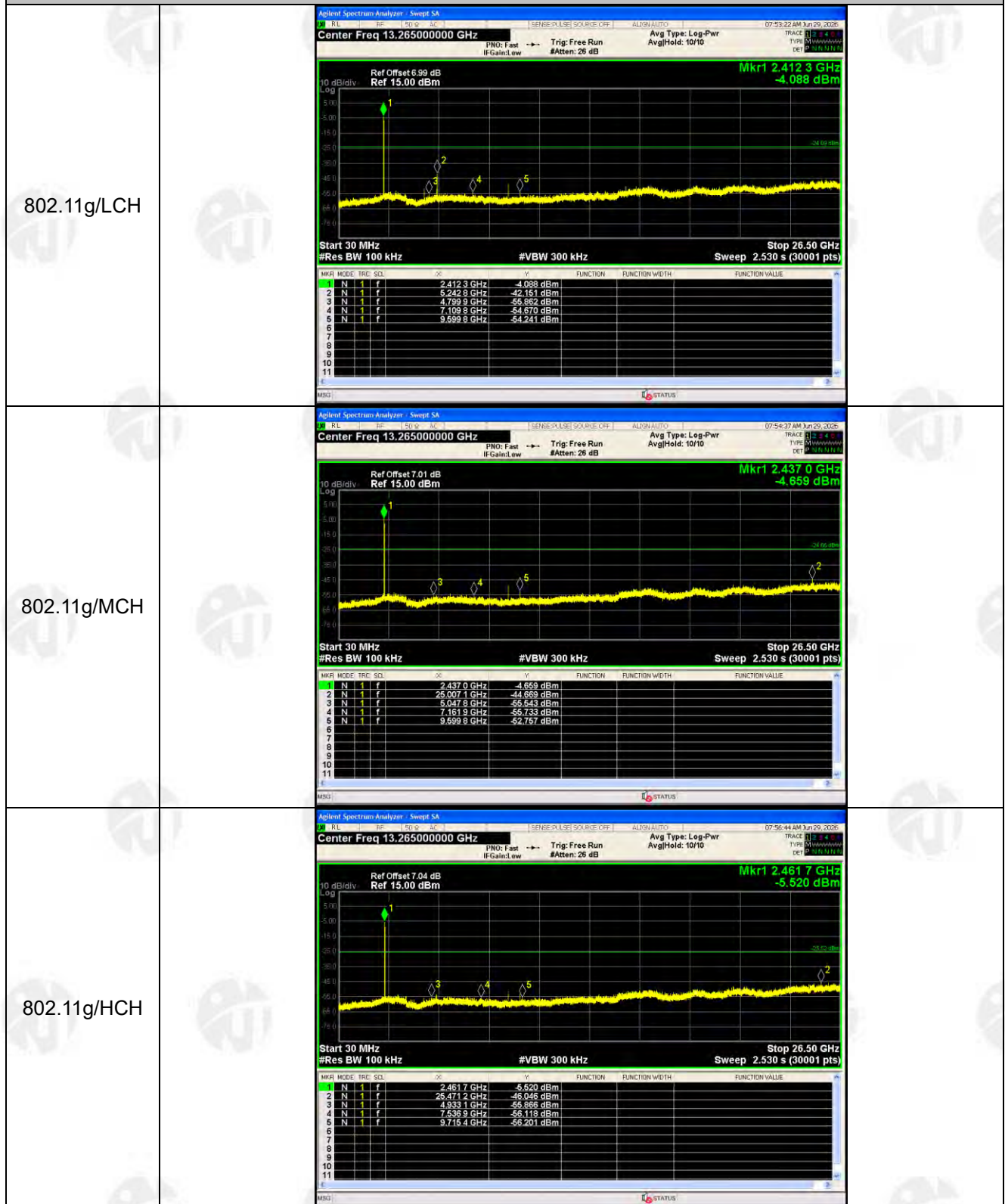
- Set the RBW = 100 kHz.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max-hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

7.4. Test Result

ANT1:

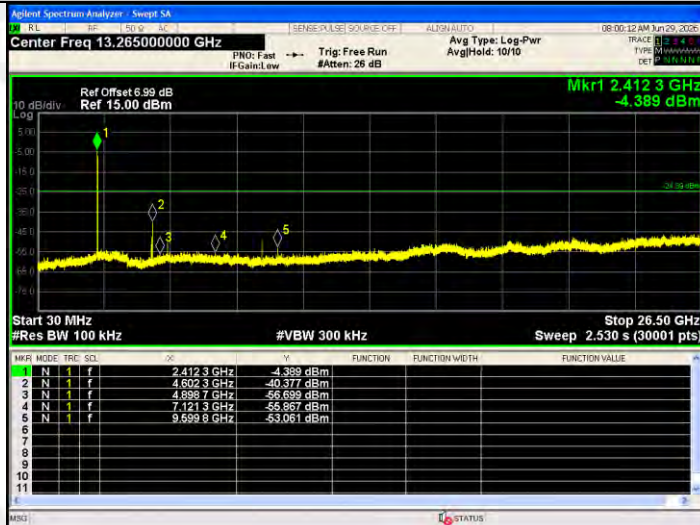
RF Conducted Spurious Emissions Graphs																																												
802.11b/LCH		Agilent Spectrum Analyzer - Swept SA Center Freq 13.265000000 GHz Ref Offset 8.99 dB Ref 15.00 dBm Mkr1 2.413 2 GHz -0.041 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>FREQ</th><th>POWER</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>2.413 2 GHz</td><td>-0.041 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>25.381 2 GHz</td><td>-46.185 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>4.847 5 GHz</td><td>-56.107 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>7.173 4 GHz</td><td>-55.990 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>9.699 9 GHz</td><td>-54.691 dBm</td><td></td><td></td><td></td></tr></tbody></table>	MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	2.413 2 GHz	-0.041 dBm				2	N	25.381 2 GHz	-46.185 dBm				3	N	4.847 5 GHz	-56.107 dBm				4	N	7.173 4 GHz	-55.990 dBm				5	N	9.699 9 GHz	-54.691 dBm			
MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																						
1	N	2.413 2 GHz	-0.041 dBm																																									
2	N	25.381 2 GHz	-46.185 dBm																																									
3	N	4.847 5 GHz	-56.107 dBm																																									
4	N	7.173 4 GHz	-55.990 dBm																																									
5	N	9.699 9 GHz	-54.691 dBm																																									
802.11b/MCH		Agilent Spectrum Analyzer - Swept SA Center Freq 13.265000000 GHz Ref Offset 7.01 dB Ref 15.00 dBm Mkr1 2.438 8 GHz -0.790 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>FREQ</th><th>POWER</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>2.438 8 GHz</td><td>-0.790 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>25.109 1 GHz</td><td>-46.009 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>4.916 4 GHz</td><td>-56.030 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>7.459 0 GHz</td><td>-55.856 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>9.699 9 GHz</td><td>-50.915 dBm</td><td></td><td></td><td></td></tr></tbody></table>	MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	2.438 8 GHz	-0.790 dBm				2	N	25.109 1 GHz	-46.009 dBm				3	N	4.916 4 GHz	-56.030 dBm				4	N	7.459 0 GHz	-55.856 dBm				5	N	9.699 9 GHz	-50.915 dBm			
MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																						
1	N	2.438 8 GHz	-0.790 dBm																																									
2	N	25.109 1 GHz	-46.009 dBm																																									
3	N	4.916 4 GHz	-56.030 dBm																																									
4	N	7.459 0 GHz	-55.856 dBm																																									
5	N	9.699 9 GHz	-50.915 dBm																																									
802.11b/HCH		Agilent Spectrum Analyzer - Swept SA Center Freq 13.265000000 GHz Ref Offset 7.04 dB Ref 15.00 dBm Mkr1 2.462 6 GHz -1.184 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>MKR</th><th>MODE</th><th>FREQ</th><th>POWER</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>2.462 6 GHz</td><td>-1.184 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>24.999 2 GHz</td><td>-46.047 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>4.799 9 GHz</td><td>-55.361 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>7.238 7 GHz</td><td>-55.861 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>9.747 1 GHz</td><td>-55.399 dBm</td><td></td><td></td><td></td></tr></tbody></table>	MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	2.462 6 GHz	-1.184 dBm				2	N	24.999 2 GHz	-46.047 dBm				3	N	4.799 9 GHz	-55.361 dBm				4	N	7.238 7 GHz	-55.861 dBm				5	N	9.747 1 GHz	-55.399 dBm			
MKR	MODE	FREQ	POWER	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																						
1	N	2.462 6 GHz	-1.184 dBm																																									
2	N	24.999 2 GHz	-46.047 dBm																																									
3	N	4.799 9 GHz	-55.361 dBm																																									
4	N	7.238 7 GHz	-55.861 dBm																																									
5	N	9.747 1 GHz	-55.399 dBm																																									

RF Conducted Spurious Emissions Graphs

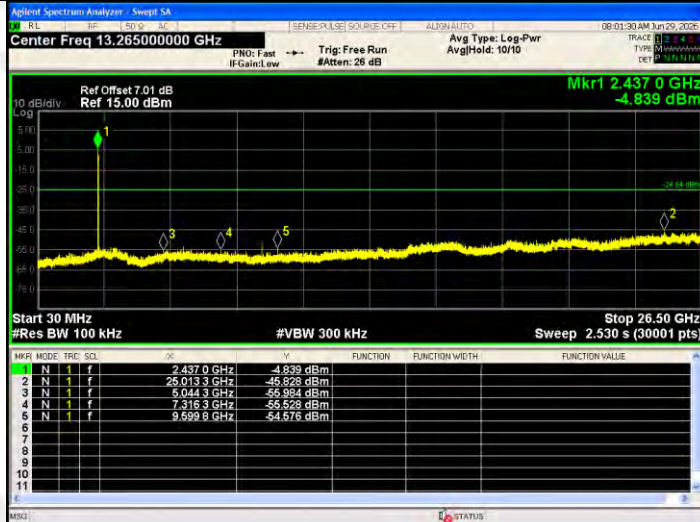


RF Conducted Spurious Emissions Graphs

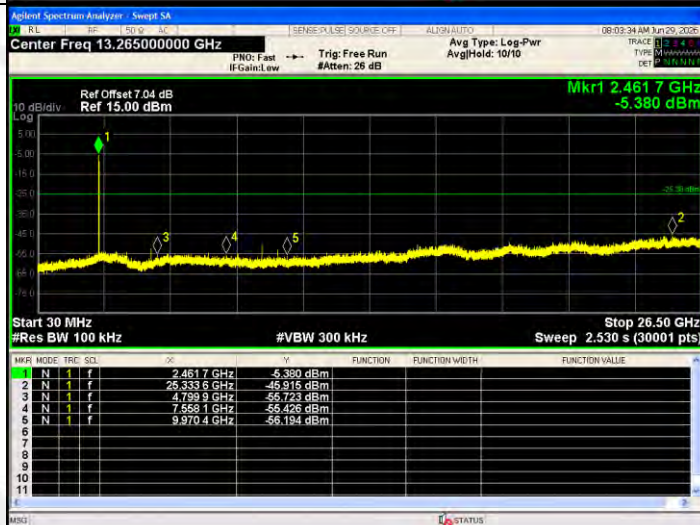
802.11n(HT20)/LCH

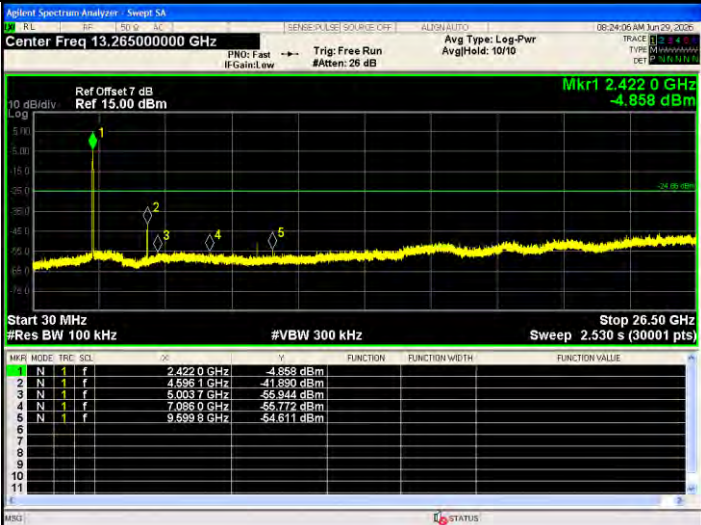
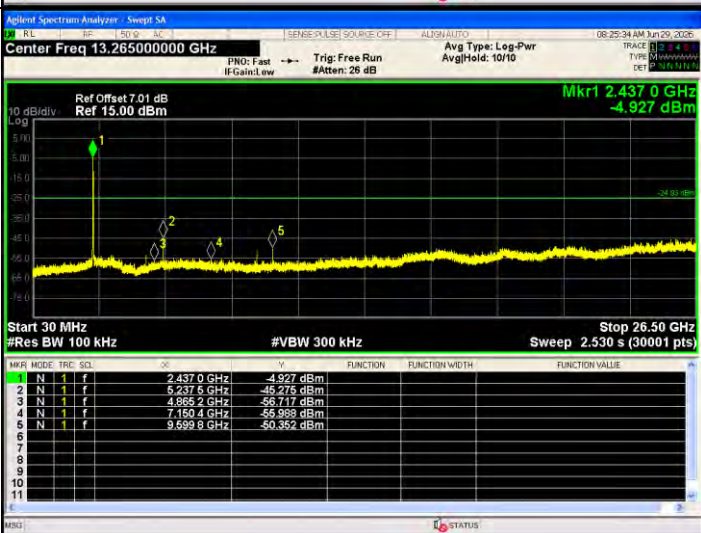
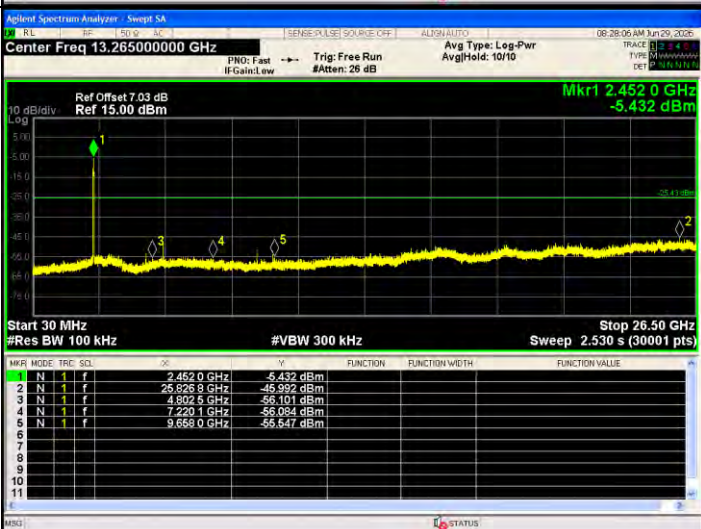


802.11n(HT20)/MCH



802.11n(HT20)/HCH

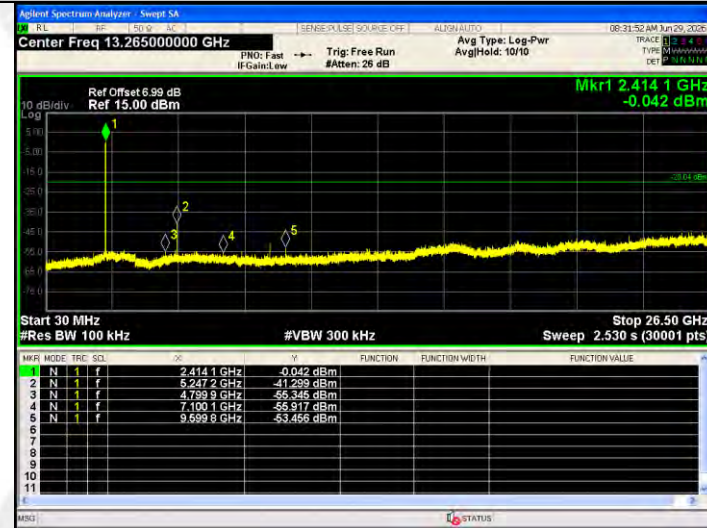


802.11n(HT40)/LCH	 <table><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>F</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.422 0 GHz</td><td>-4.858 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>4.696 1 GHz</td><td>-41.890 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>5.003 7 GHz</td><td>-56.944 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.086 0 GHz</td><td>-55.172 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>9.699 8 GHz</td><td>-54.611 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.422 0 GHz	-4.858 dBm				2	N	1	f	4.696 1 GHz	-41.890 dBm				3	N	1	f	5.003 7 GHz	-56.944 dBm				4	N	1	f	7.086 0 GHz	-55.172 dBm				5	N	1	f	9.699 8 GHz	-54.611 dBm			
MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.422 0 GHz	-4.858 dBm																																																		
2	N	1	f	4.696 1 GHz	-41.890 dBm																																																		
3	N	1	f	5.003 7 GHz	-56.944 dBm																																																		
4	N	1	f	7.086 0 GHz	-55.172 dBm																																																		
5	N	1	f	9.699 8 GHz	-54.611 dBm																																																		
802.11n(HT40)/MCH	 <table><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>F</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.437 0 GHz</td><td>-4.927 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>5.237 5 GHz</td><td>-45.275 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>4.855 2 GHz</td><td>-56.717 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.150 4 GHz</td><td>-55.985 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>9.599 8 GHz</td><td>-50.352 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.437 0 GHz	-4.927 dBm				2	N	1	f	5.237 5 GHz	-45.275 dBm				3	N	1	f	4.855 2 GHz	-56.717 dBm				4	N	1	f	7.150 4 GHz	-55.985 dBm				5	N	1	f	9.599 8 GHz	-50.352 dBm			
MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.437 0 GHz	-4.927 dBm																																																		
2	N	1	f	5.237 5 GHz	-45.275 dBm																																																		
3	N	1	f	4.855 2 GHz	-56.717 dBm																																																		
4	N	1	f	7.150 4 GHz	-55.985 dBm																																																		
5	N	1	f	9.599 8 GHz	-50.352 dBm																																																		
802.11n(HT40)/HCH	 <table><tr><th>MNR</th><th>MODE</th><th>TRC</th><th>SOL</th><th>F</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.452 0 GHz</td><td>-5.432 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>25.826 8 GHz</td><td>-45.992 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>4.802 5 GHz</td><td>-56.101 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.220 1 GHz</td><td>-56.084 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>9.656 0 GHz</td><td>-55.547 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.452 0 GHz	-5.432 dBm				2	N	1	f	25.826 8 GHz	-45.992 dBm				3	N	1	f	4.802 5 GHz	-56.101 dBm				4	N	1	f	7.220 1 GHz	-56.084 dBm				5	N	1	f	9.656 0 GHz	-55.547 dBm			
MNR	MODE	TRC	SOL	F	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.452 0 GHz	-5.432 dBm																																																		
2	N	1	f	25.826 8 GHz	-45.992 dBm																																																		
3	N	1	f	4.802 5 GHz	-56.101 dBm																																																		
4	N	1	f	7.220 1 GHz	-56.084 dBm																																																		
5	N	1	f	9.656 0 GHz	-55.547 dBm																																																		

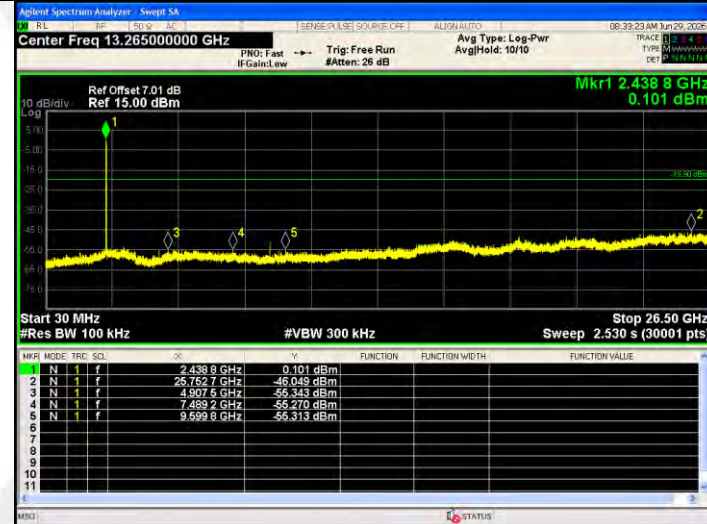
ANT2:

RF Conducted Spurious Emissions Graphs

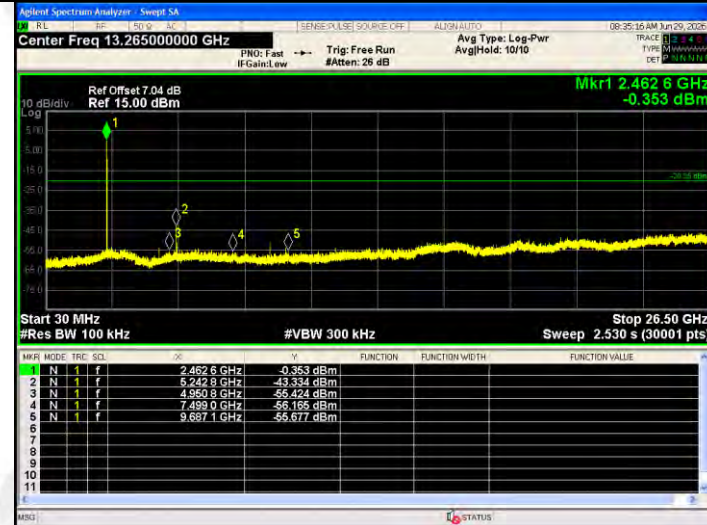
802.11b/LCH



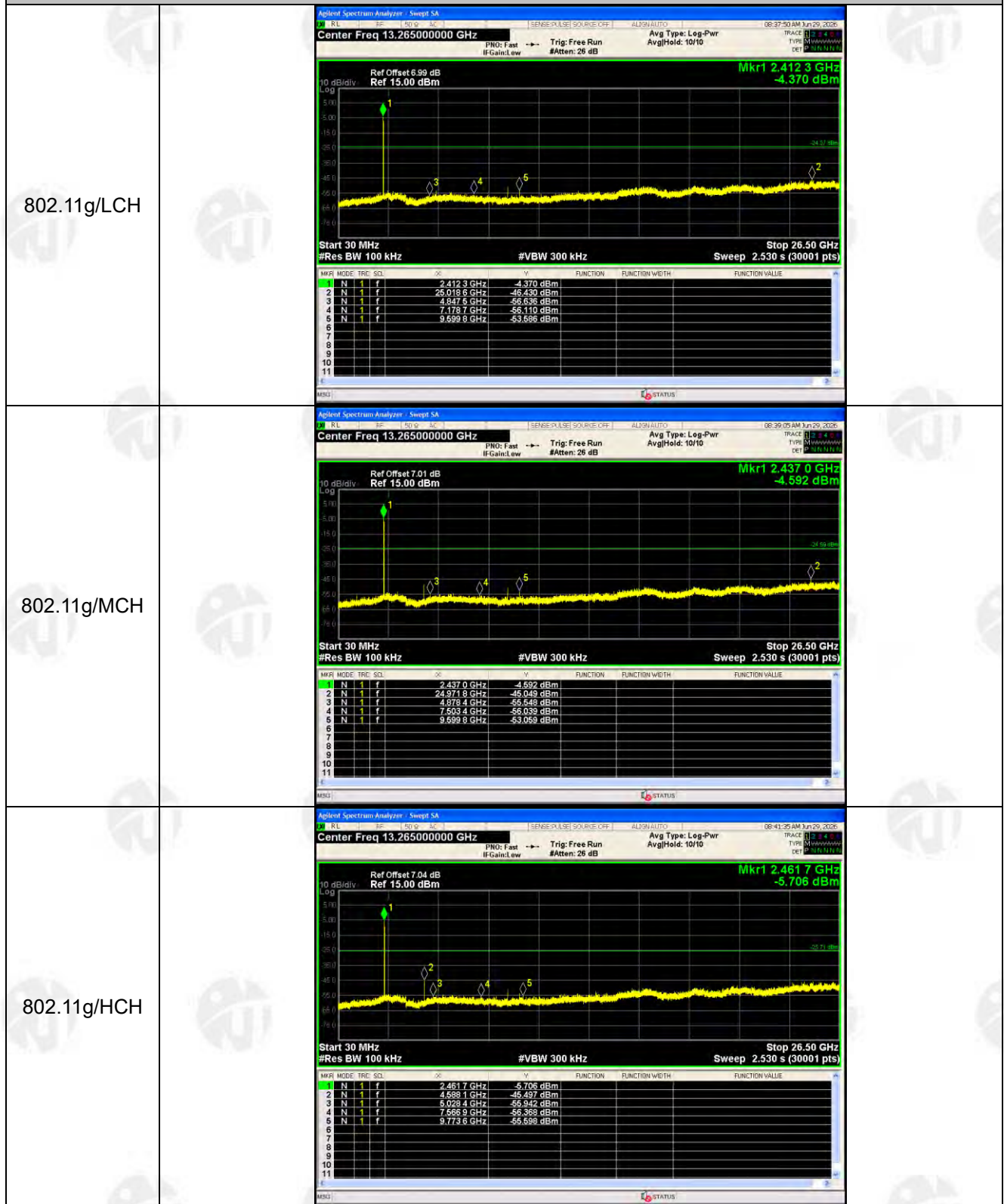
802.11b/MCH



802.11b/HCH

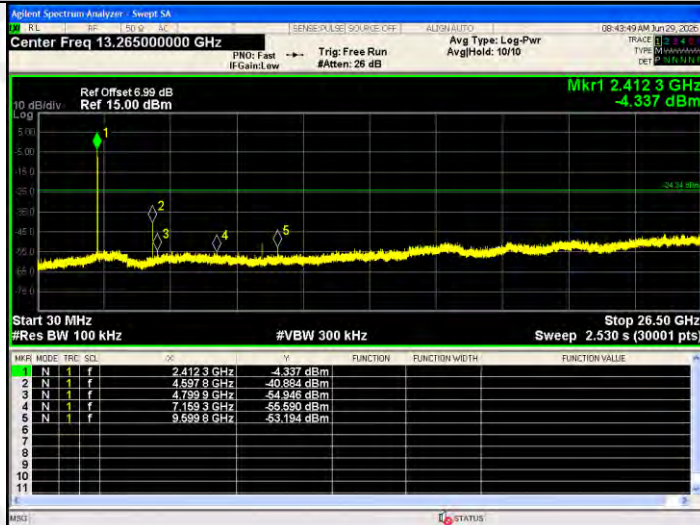


RF Conducted Spurious Emissions Graphs

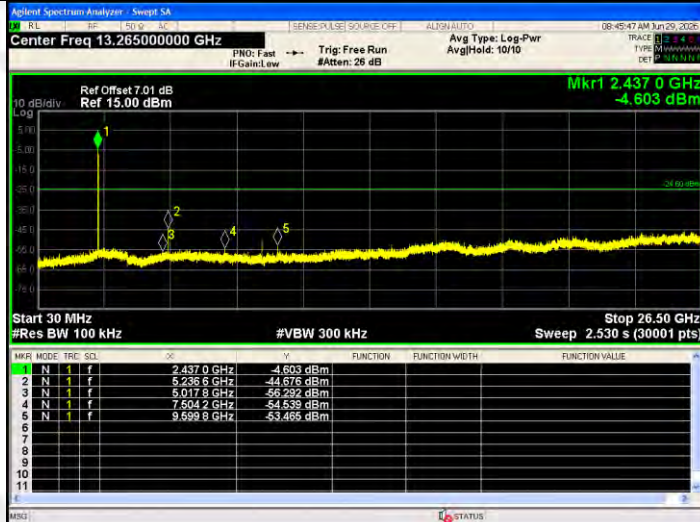


RF Conducted Spurious Emissions Graphs

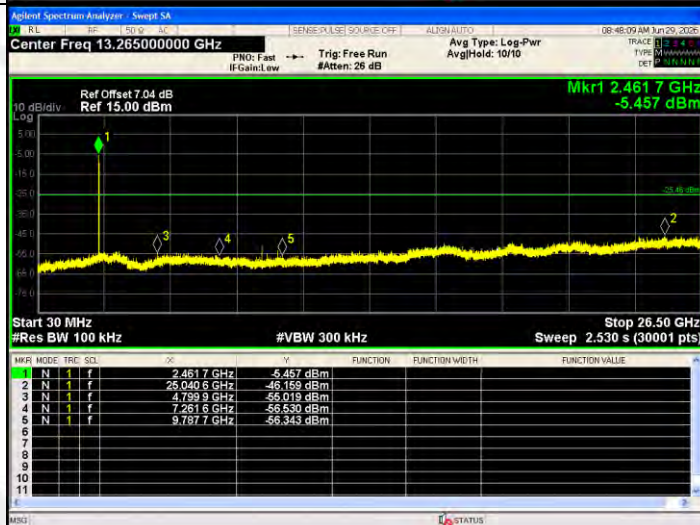
802.11n(HT20)/LCH



802.11n(HT20)/MCH

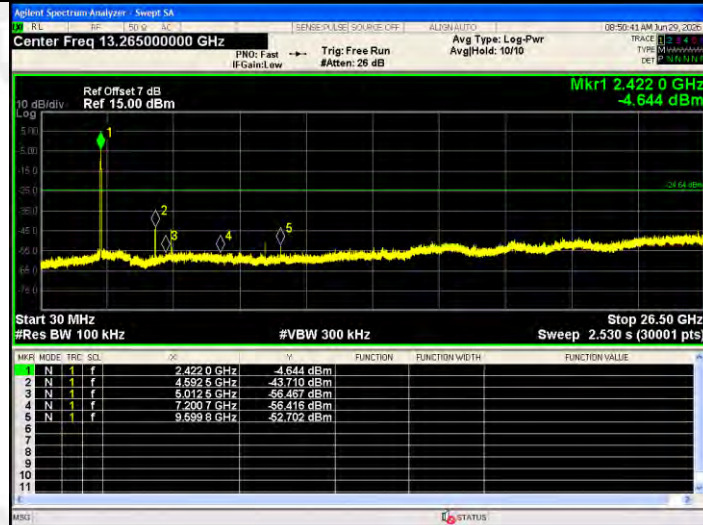


802.11n(HT20)/HCH

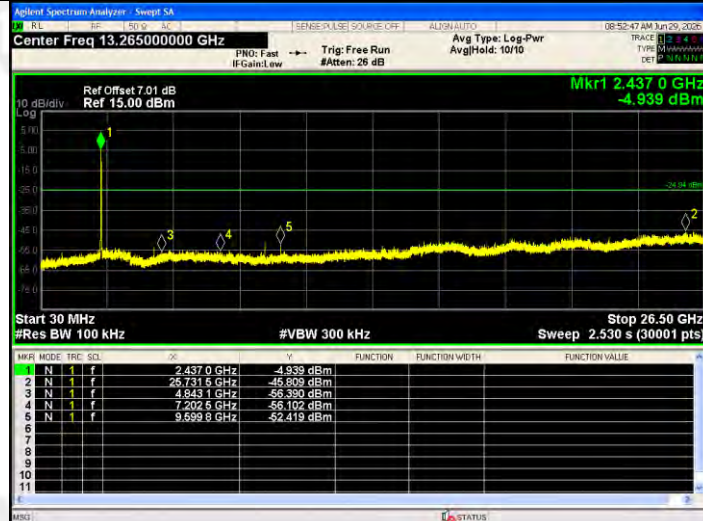


RF Conducted Spurious Emissions Graphs

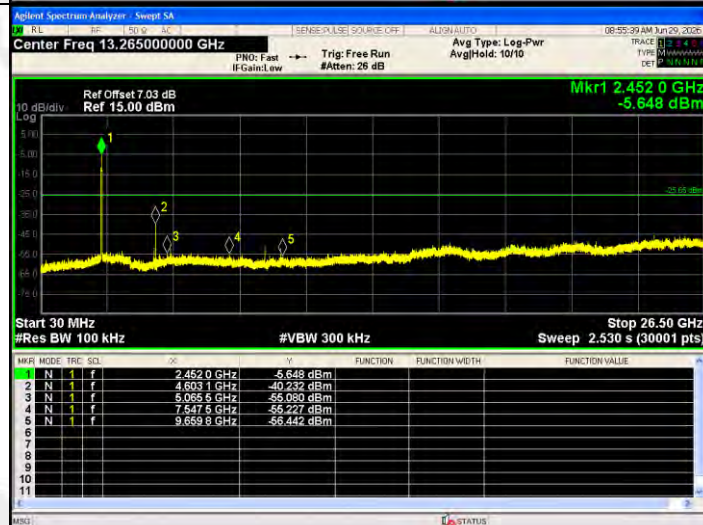
802.11n(HT40)/LCH



802.11n(HT40)/MCH



802.11n(HT40)/HCH



8. Band Edge Measurement

8.1. 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

8.2. Test setup



8.3. 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:

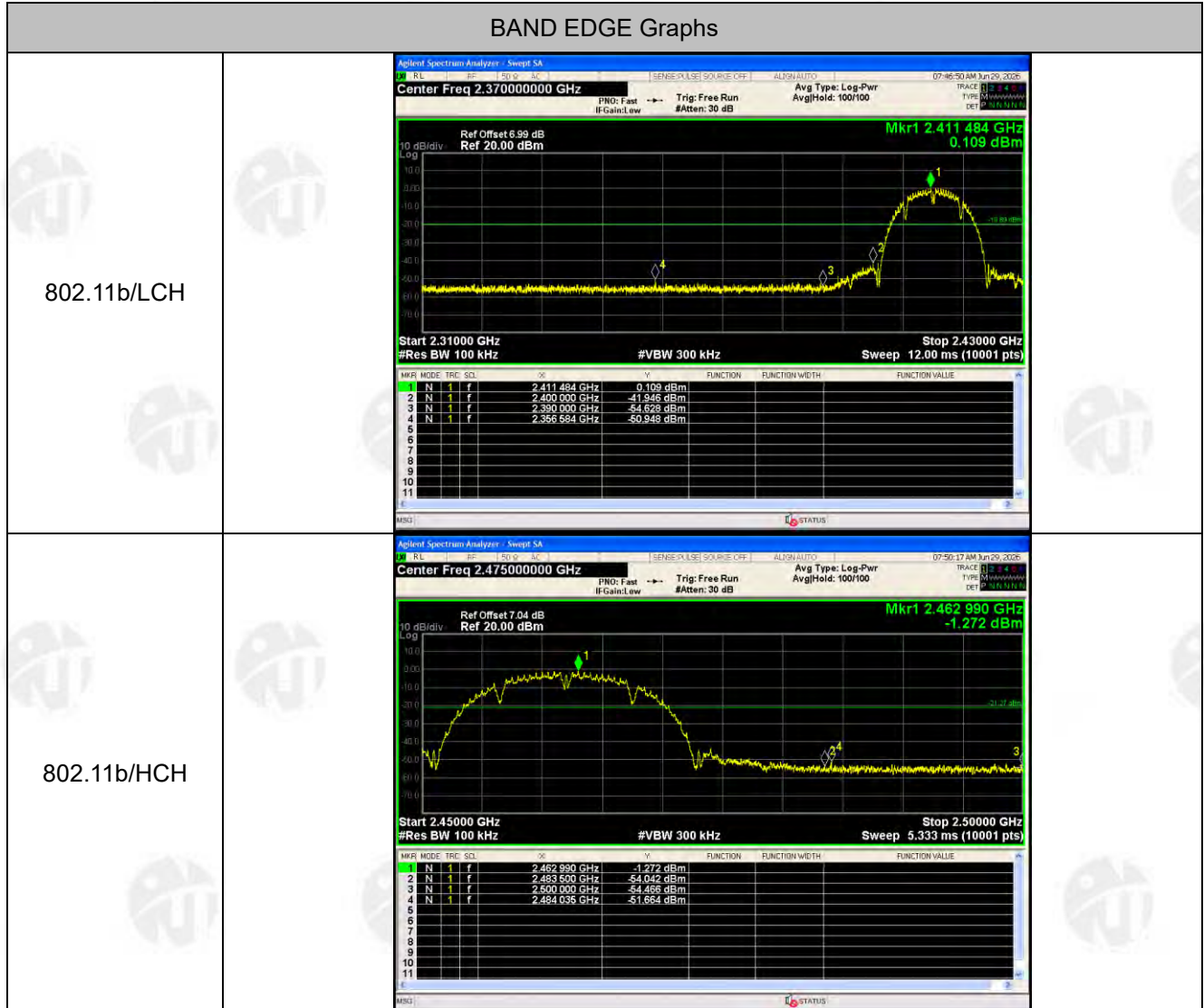
- a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

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.

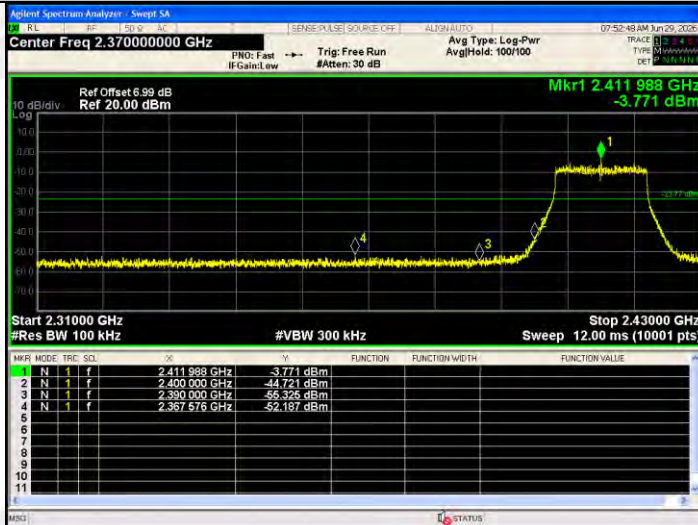
8.4. Test Result

ANT1:

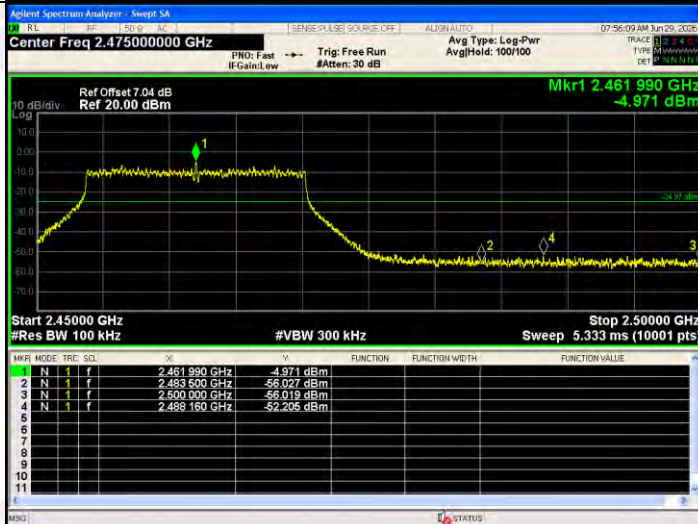


BAND EDGE Graphs

802.11g/LCH

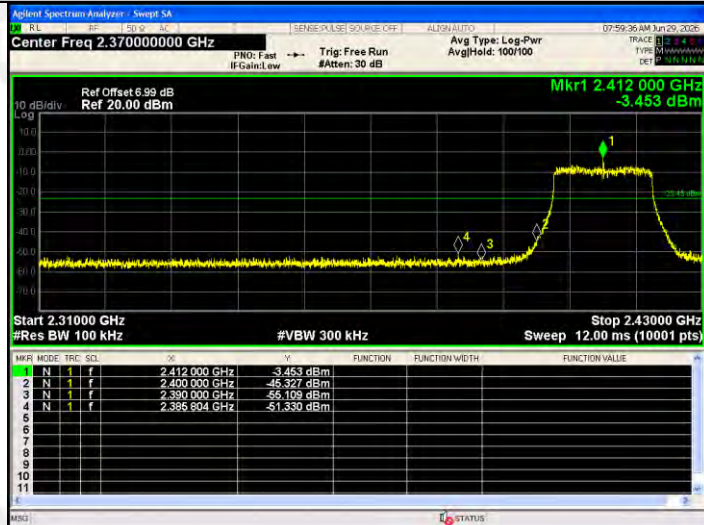


802.11g/HCH

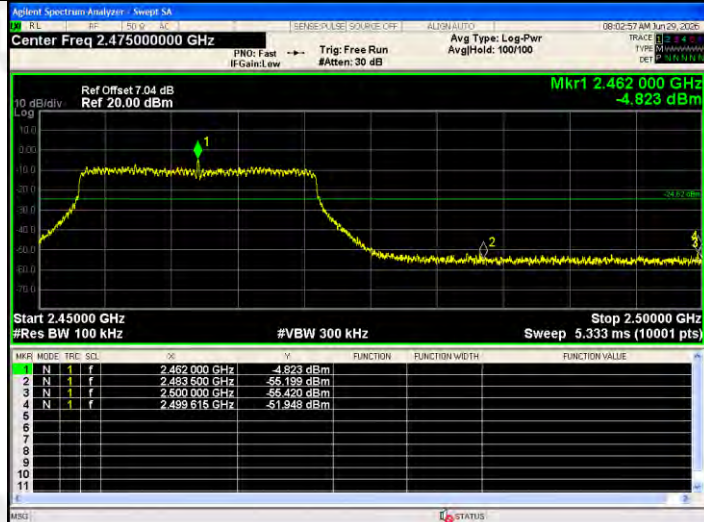


BAND EDGE Graphs

802.11n(HT20)/LCH

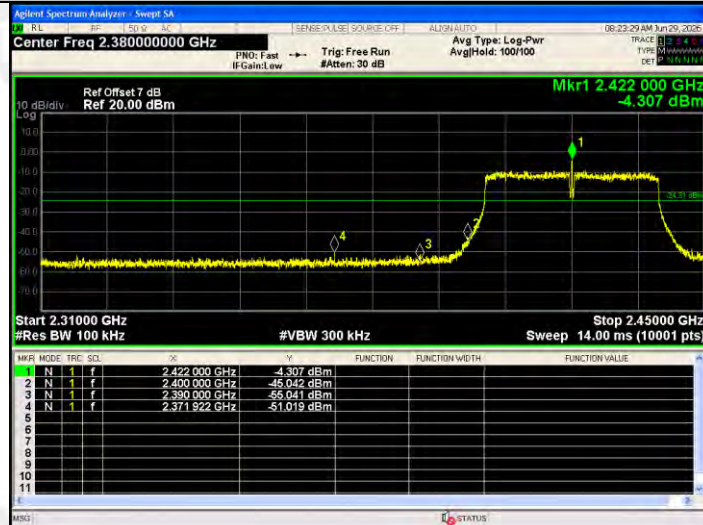


802.11n(HT20)/HCH

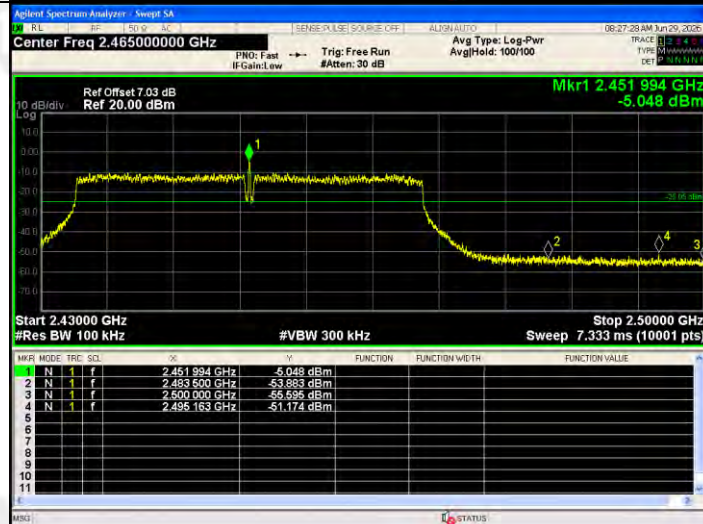


BAND EDGE Graphs

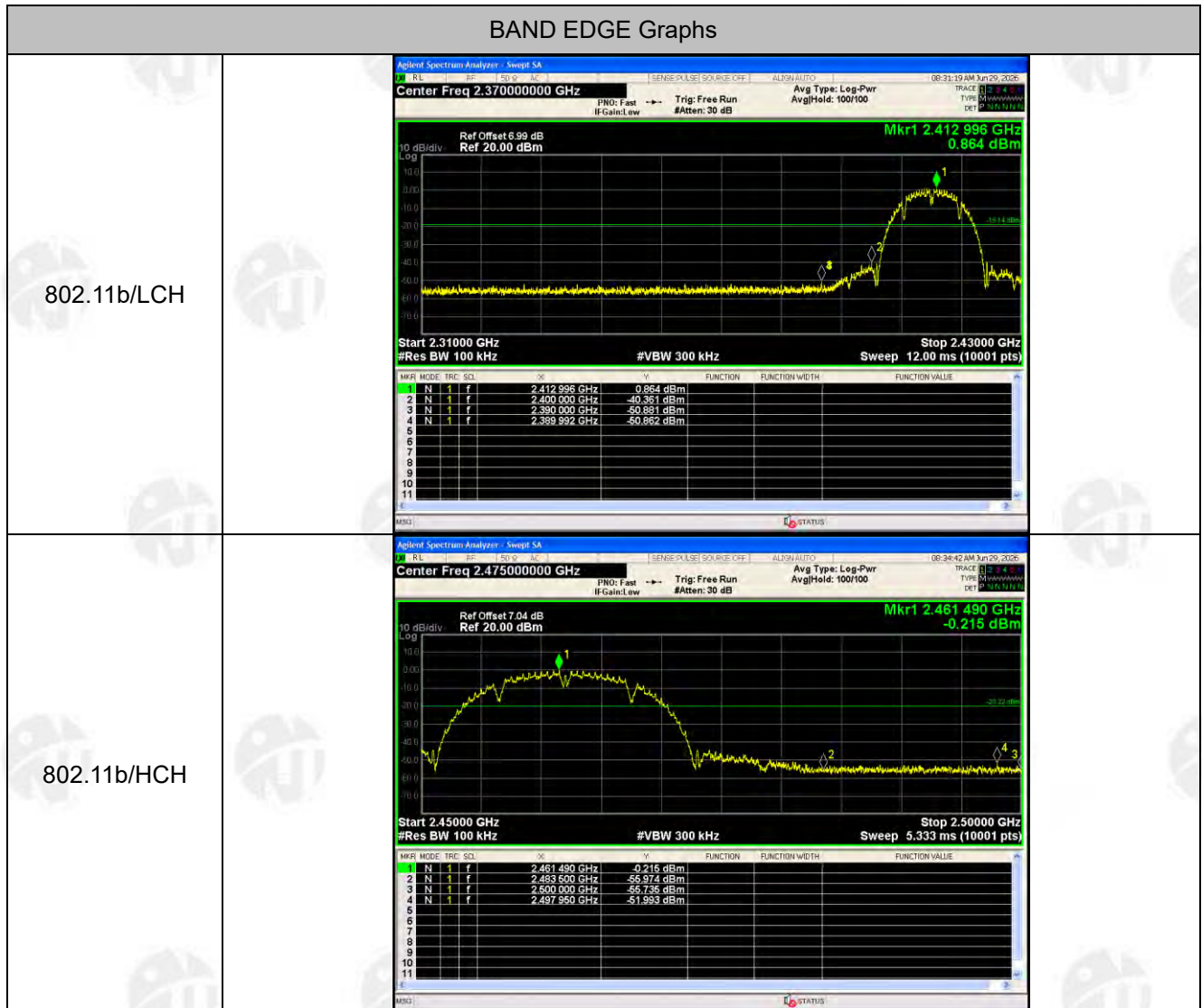
802.11n(HT40)/LCH



802.11n(HT40)/HCH

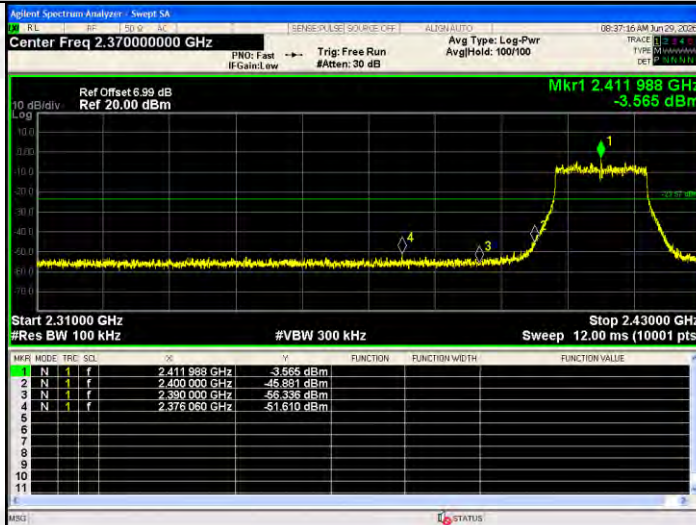


ANT2:

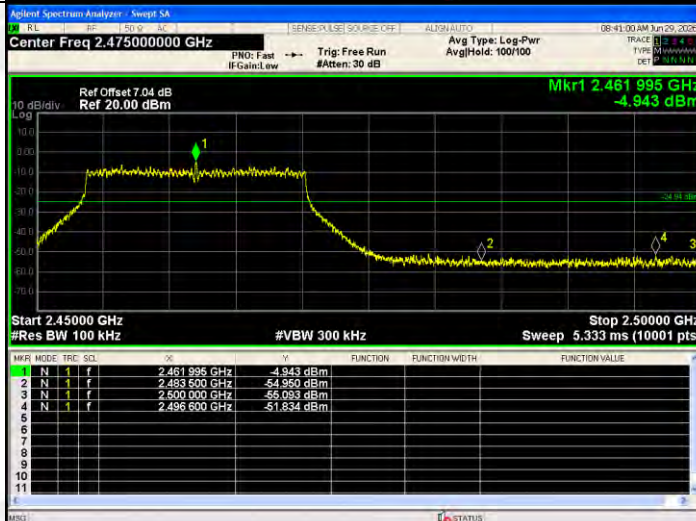


BAND EDGE Graphs

802.11g/LCH

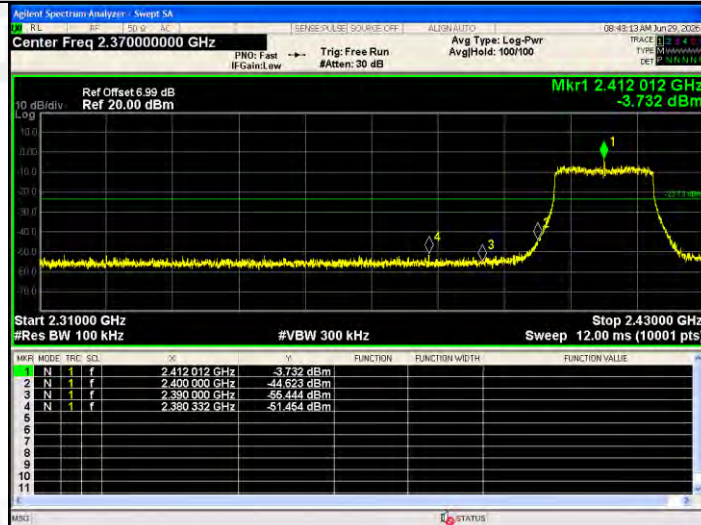


802.11g/HCH

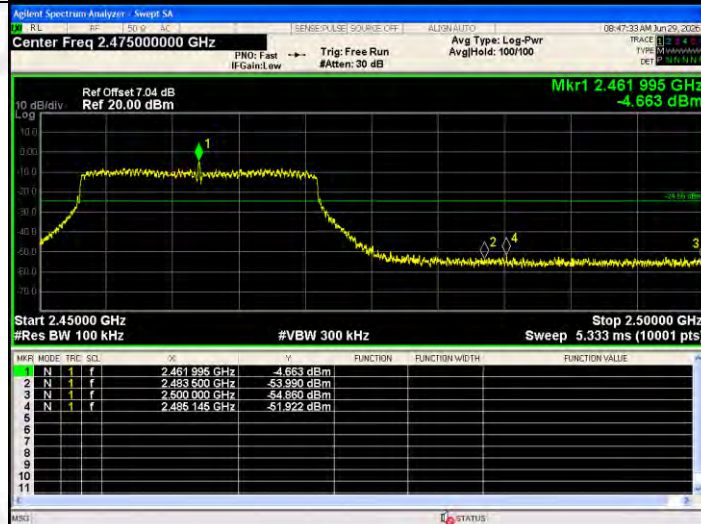


BAND EDGE Graphs

802.11n(HT20)/LCH

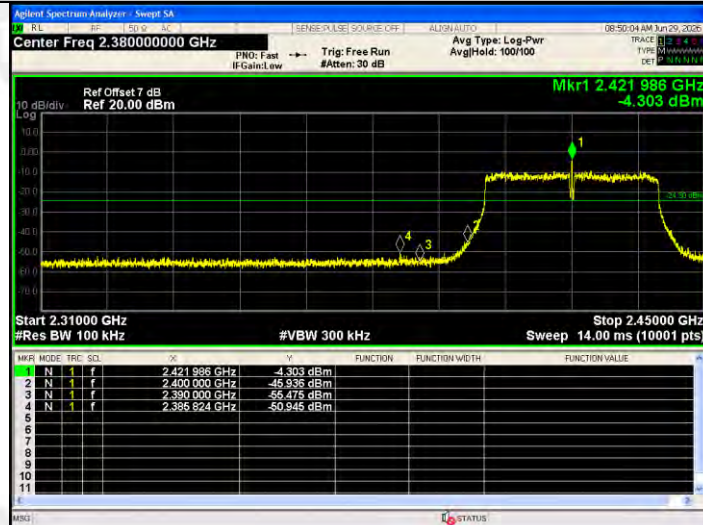


802.11n(HT20)/HCH

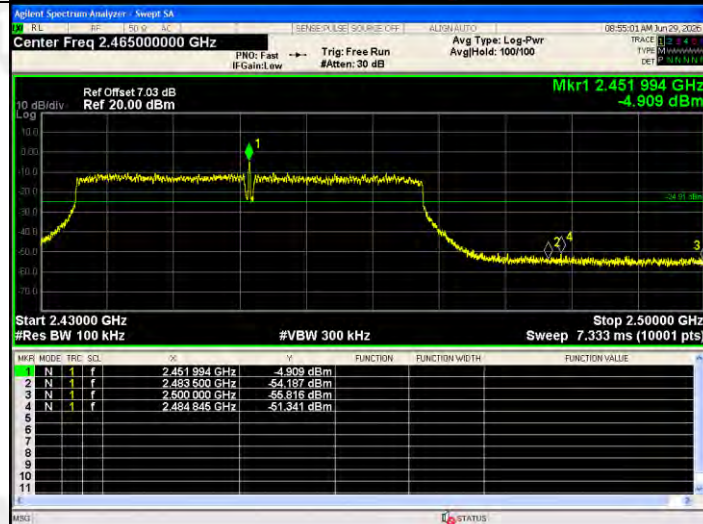


BAND EDGE Graphs

802.11n(HT40)/LCH



802.11n(HT40)/HCH



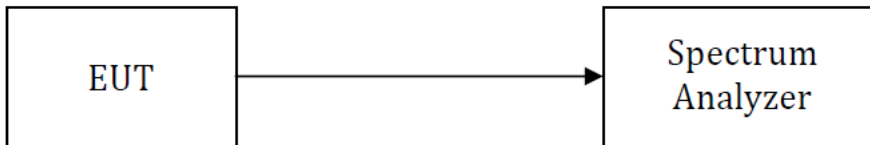
9. -6 dB Bandwidth and 99% Bandwidth Measurement

9.1.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

9.2.Test Setup



9.3.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.

9.4. Test Result

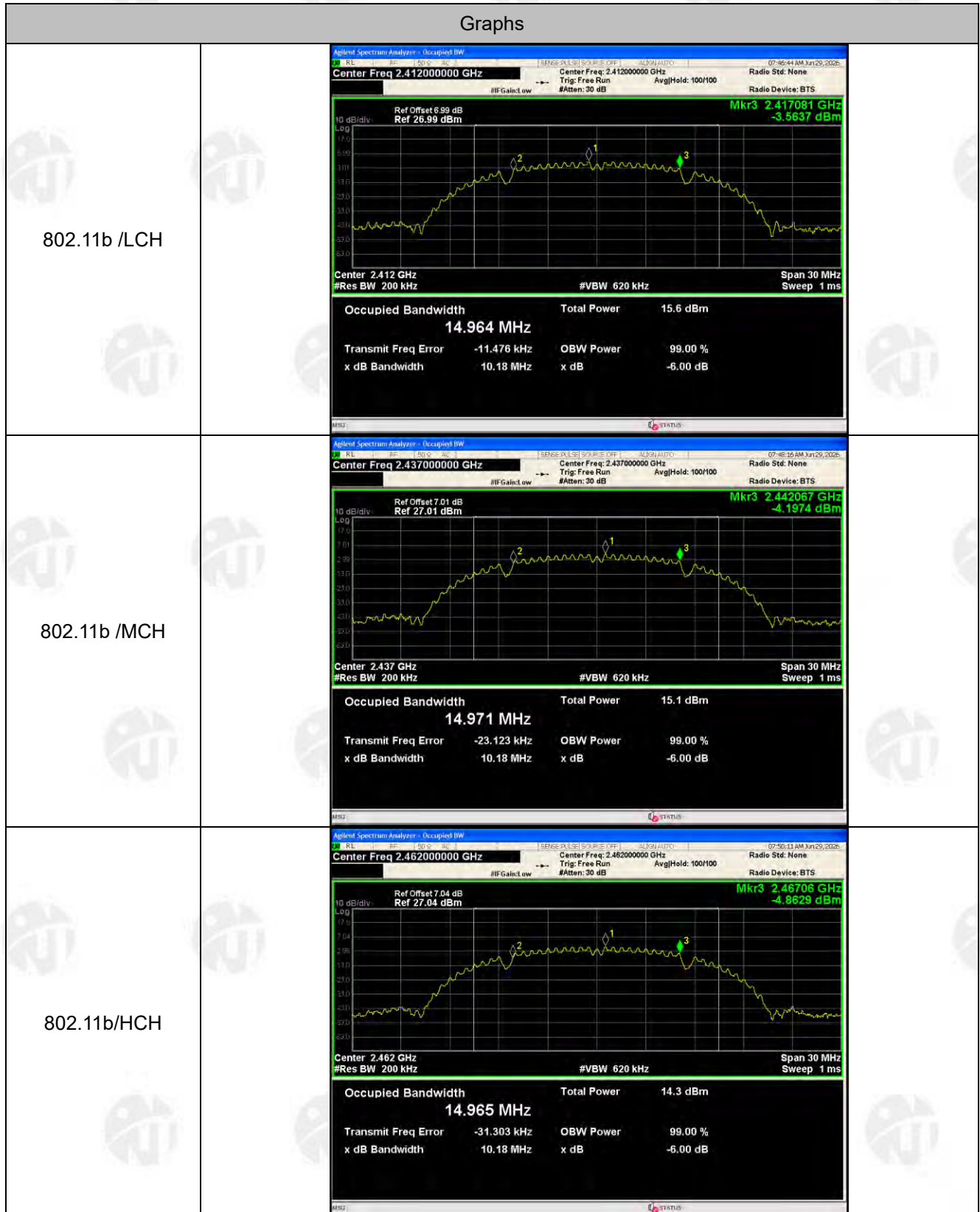
ANT1:

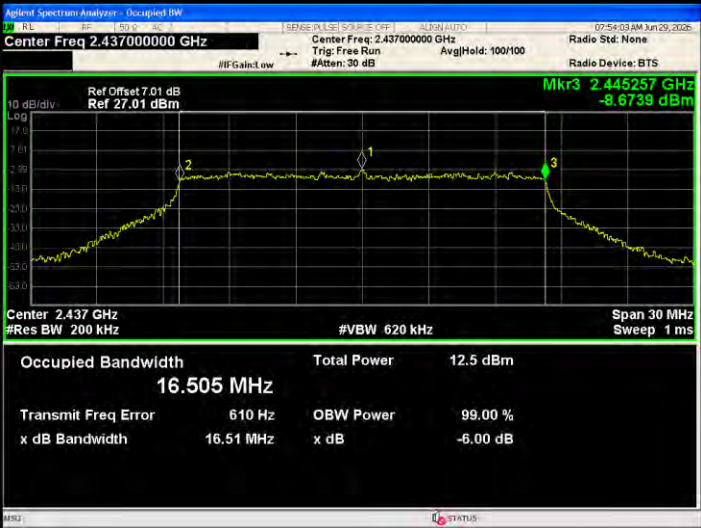
Test Mode	Frequency	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Result
802.11b	LCH	10.184	14.9798	PASS
	MCH	10.181	14.9907	PASS
	HCH	10.183	14.9594	PASS
802.11g	LCH	16.486	16.4930	PASS
	MCH	16.512	16.5060	PASS
	HCH	16.454	16.5022	PASS
802.11n(HT20)	LCH	17.291	17.6481	PASS
	MCH	17.416	17.6345	PASS
	HCH	17.39	17.6275	PASS
802.11n(HT40)	LCH	36.224	36.1694	PASS
	MCH	36.234	36.2170	PASS
	HCH	36.146	36.1951	PASS

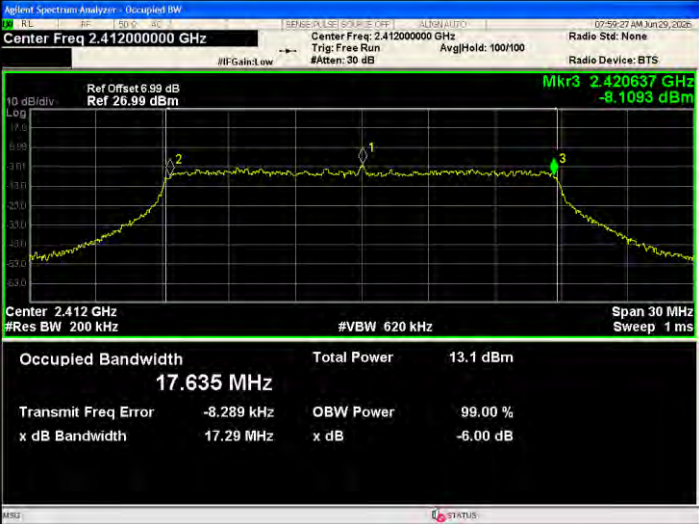
ANT2:

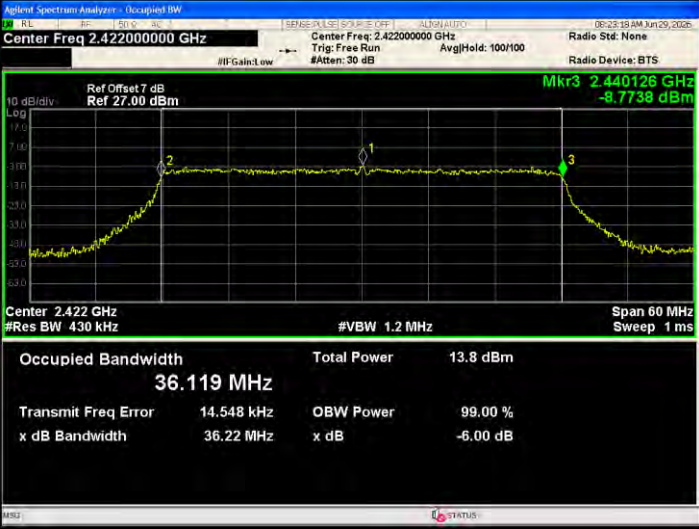
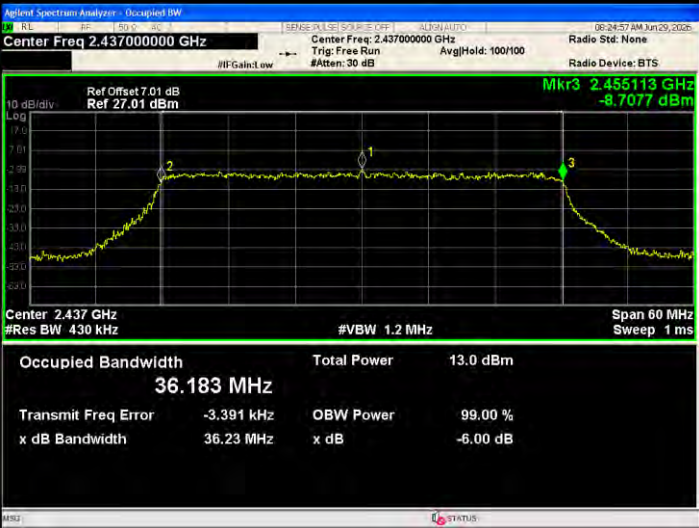
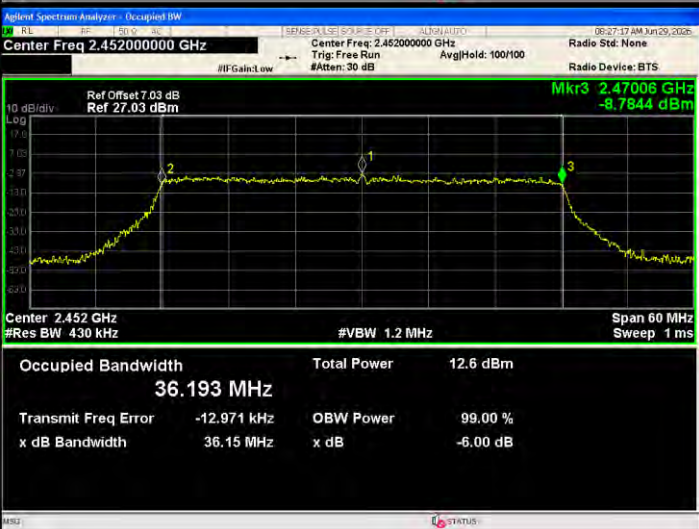
Test Mode	Frequency	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Result
802.11b	LCH	10.184	14.9749	PASS
	MCH	10.188	14.9690	PASS
	HCH	10.182	14.9920	PASS
802.11g	LCH	16.425	16.4921	PASS
	MCH	16.492	16.4850	PASS
	HCH	16.494	16.4954	PASS
802.11n(HT20)	LCH	17.297	17.6427	PASS
	MCH	17.329	17.6384	PASS
	HCH	17.566	17.6171	PASS
802.11n(HT40)	LCH	36.122	36.1386	PASS
	MCH	36.261	36.2063	PASS
	HCH	36.256	36.1995	PASS

ANT1:
Test Graph:

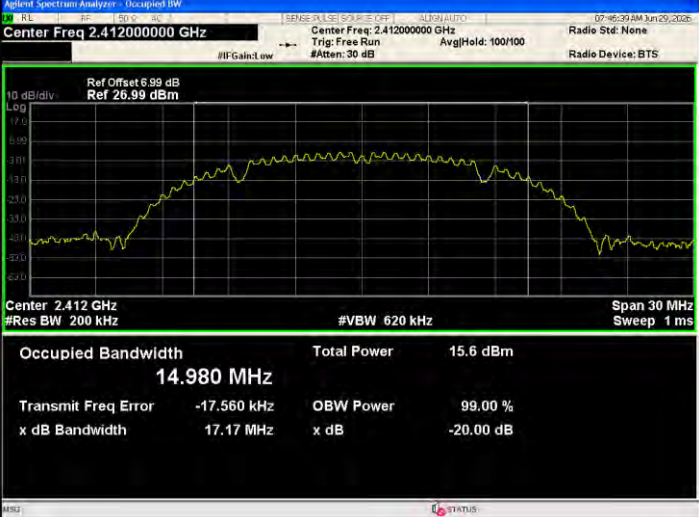
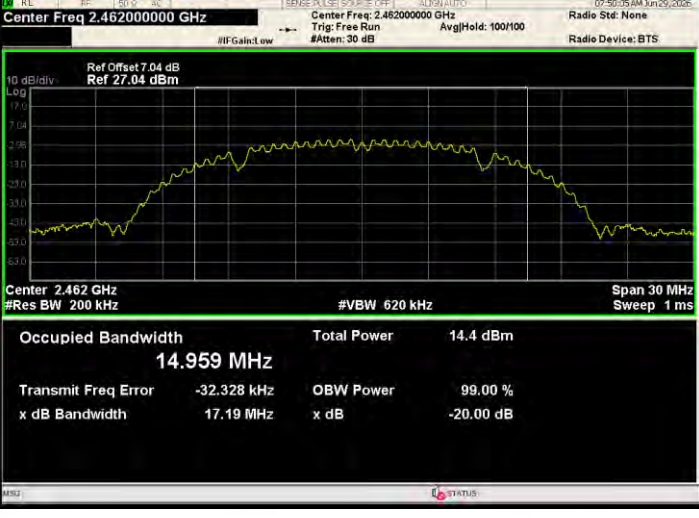


802.11g/LCH	
802.11g/MCH	
802.11g/HCH	

802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run AvgHold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.99 dB Ref 26.99 dBm Mkr3 2.420637 GHz -8.1093 dBm Center 2.412 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.635 MHz Total Power 13.1 dBm Transmit Freq Error -8.289 kHz OBW Power 99.00 % x dB Bandwidth 17.29 MHz x dB -6.00 dB
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run AvgHold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.445718 GHz -9.5281 dBm Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.602 MHz Total Power 12.6 dBm Transmit Freq Error 10.243 kHz OBW Power 99.00 % x dB Bandwidth 17.42 MHz x dB -6.00 dB
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run AvgHold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.470685 GHz -9.4607 dBm Center 2.462 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.639 MHz Total Power 12.0 dBm Transmit Freq Error -10.179 kHz OBW Power 99.00 % x dB Bandwidth 17.39 MHz x dB -6.00 dB

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7 dB Ref 27.00 dBm Mkr3 2.440126 GHz -8.7738 dBm Center 2.422 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.119 MHz Total Power 13.8 dBm Transmit Freq Error 14.548 kHz OBW Power 99.00 % x dB Bandwidth 36.22 MHz x dB -6.00 dB
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.455113 GHz -8.7077 dBm Center 2.437 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.183 MHz Total Power 13.0 dBm Transmit Freq Error -3.391 kHz OBW Power 99.00 % x dB Bandwidth 36.23 MHz x dB -6.00 dB
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Center Freq: 2.452000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.03 dB Ref 27.03 dBm Mkr3 2.47008 GHz -8.7844 dBm Center 2.452 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.193 MHz Total Power 12.6 dBm Transmit Freq Error -12.971 kHz OBW Power 99.00 % x dB Bandwidth 36.15 MHz x dB -6.00 dB

99%

Graphs	
802.11b /LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.412000000 GHz Ref Offset: 6.99 dB Ref: 26.99 dBm Center Freq: 2.412000000 GHz Trig: Free Run #Att: 30 dB Radio Std: None Radio Device: BTS Center 2.412 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth: 14.980 MHz Total Power: 15.6 dBm Transmit Freq Error: -17.560 kHz OBW Power: 99.00 % x dB Bandwidth: 17.17 MHz x dB: -20.00 dB
802.11b /MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset: 7.01 dB Ref: 27.01 dBm Center Freq: 2.437000000 GHz Trig: Free Run #Att: 30 dB Radio Std: None Radio Device: BTS Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth: 14.991 MHz Total Power: 15.1 dBm Transmit Freq Error: -22.535 kHz OBW Power: 99.00 % x dB Bandwidth: 17.19 MHz x dB: -20.00 dB
802.11b/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.462000000 GHz Ref Offset: 7.04 dB Ref: 27.04 dBm Center Freq: 2.462000000 GHz Trig: Free Run #Att: 30 dB Radio Std: None Radio Device: BTS Center 2.462 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth: 14.959 MHz Total Power: 14.4 dBm Transmit Freq Error: -32.328 kHz OBW Power: 99.00 % x dB Bandwidth: 17.19 MHz x dB: -20.00 dB

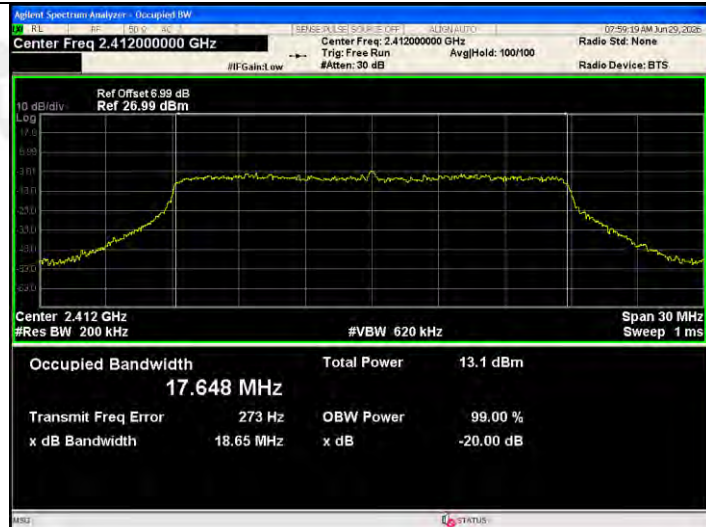
The figure displays three screenshots of an Agilent Spectrum Analyzer, each showing the occupied bandwidth and power measurements for a specific 802.11g channel. The screenshots are arranged vertically, corresponding to the 802.11g/LCH, 802.11g/MCH, and 802.11g/HCH channels.

802.11g/LCH: The screenshot shows a spectrum plot with a center frequency of 2.412 GHz. The occupied bandwidth is 16.493 MHz, and the total power is 13.0 dBm. The transmit frequency error is -9.252 kHz, and the OBW power is 99.00 %.

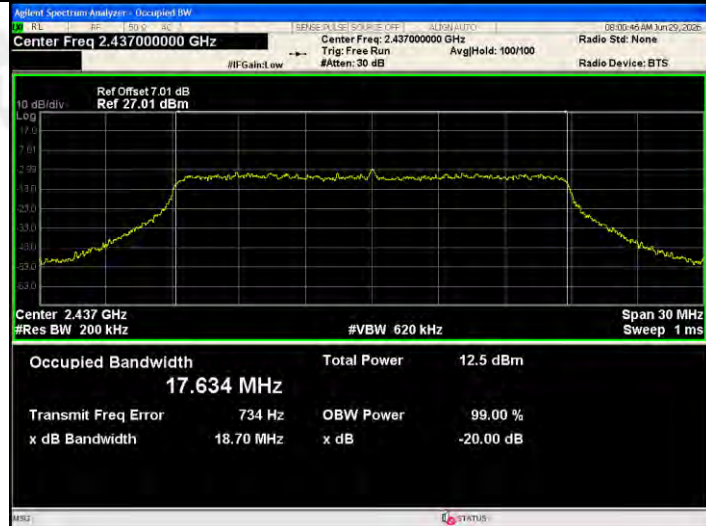
802.11g/MCH: The screenshot shows a spectrum plot with a center frequency of 2.437 GHz. The occupied bandwidth is 16.506 MHz, and the total power is 12.6 dBm. The transmit frequency error is -6.554 kHz, and the OBW power is 99.00 %.

802.11g/HCH: The screenshot shows a spectrum plot with a center frequency of 2.462 GHz. The occupied bandwidth is 16.502 MHz, and the total power is 11.9 dBm. The transmit frequency error is -6.805 kHz, and the OBW power is 99.00 %.

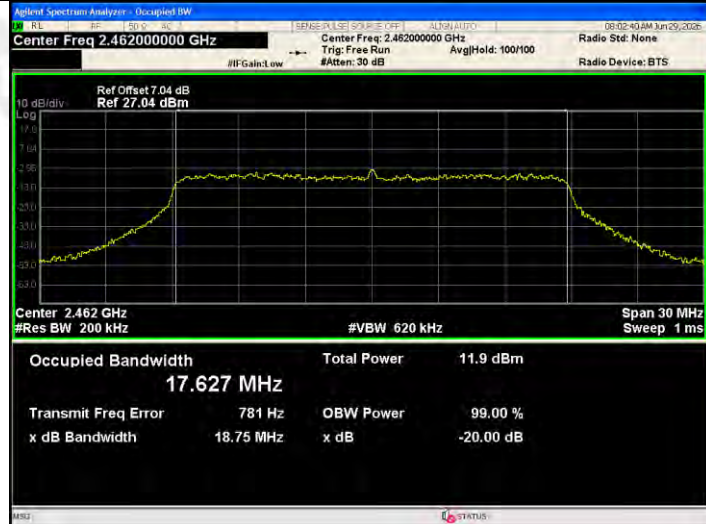
802.11n(HT20)/
LCH

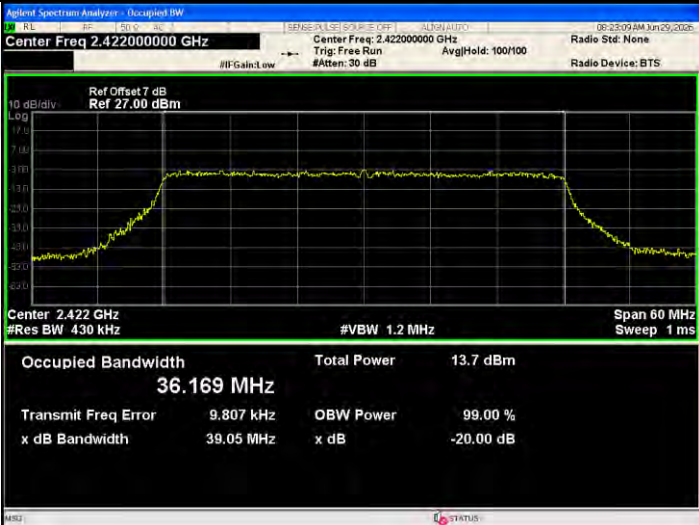
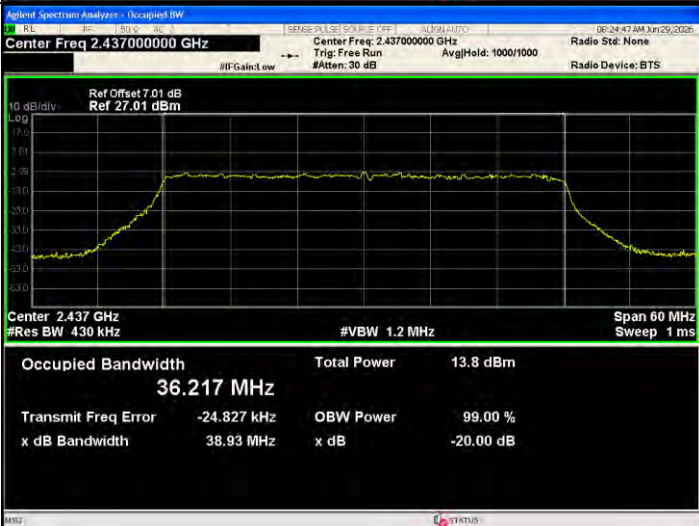
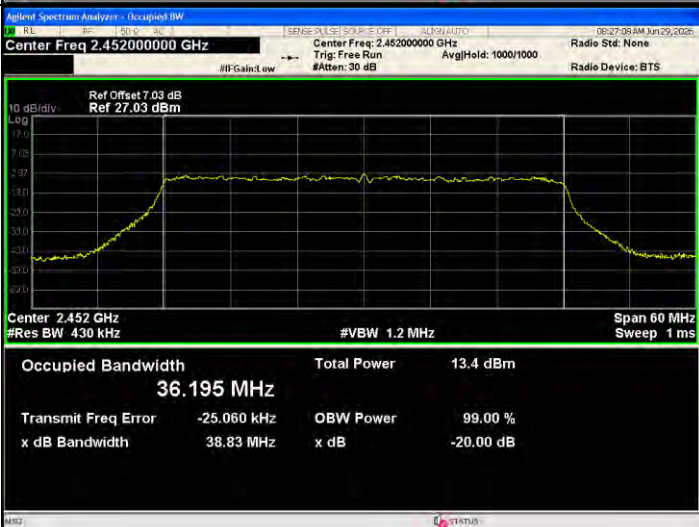


802.11n(HT20)/
MCH

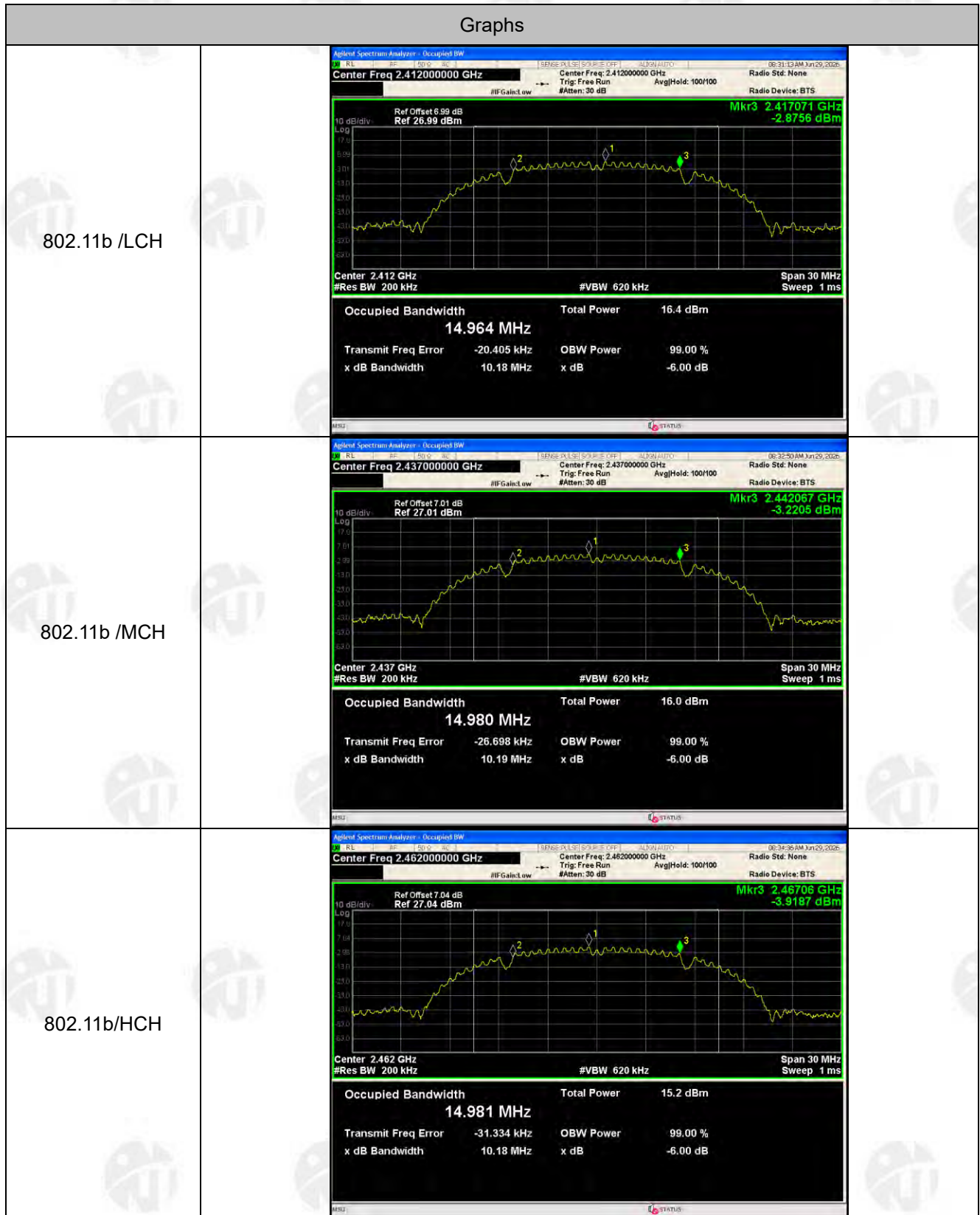


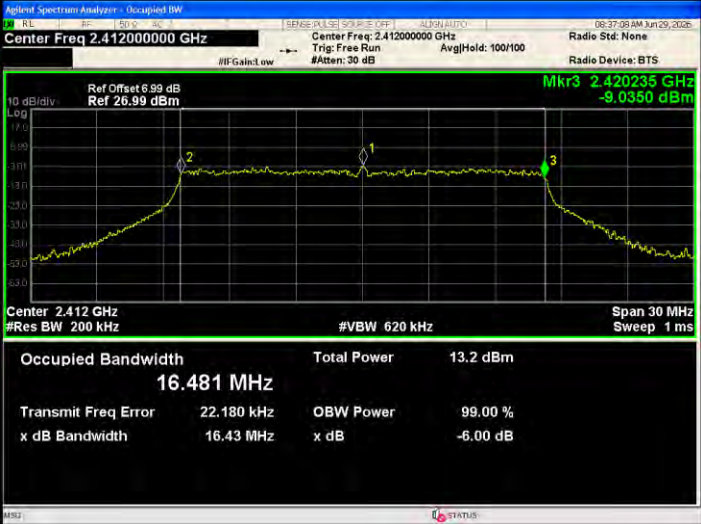
802.11n(HT20)/
HCH

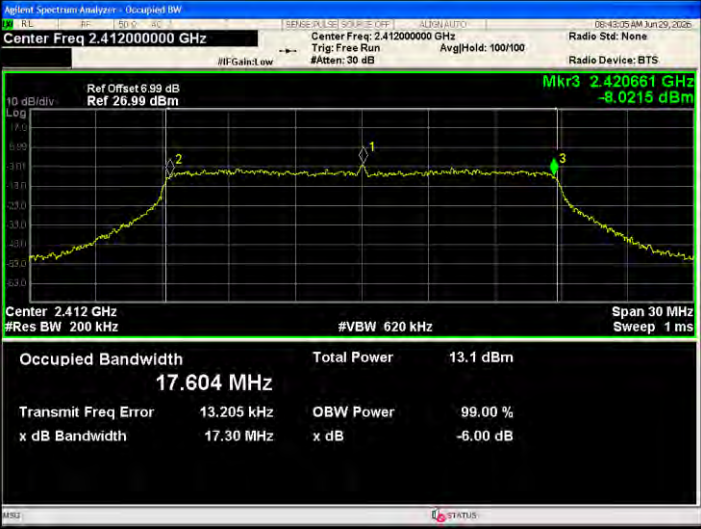
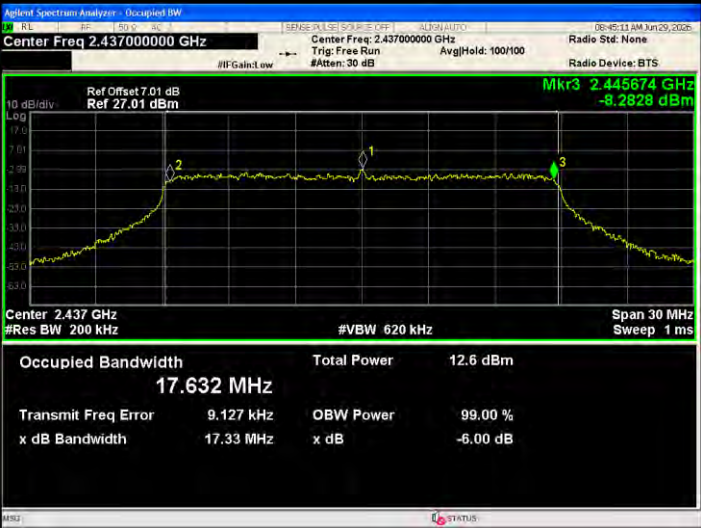
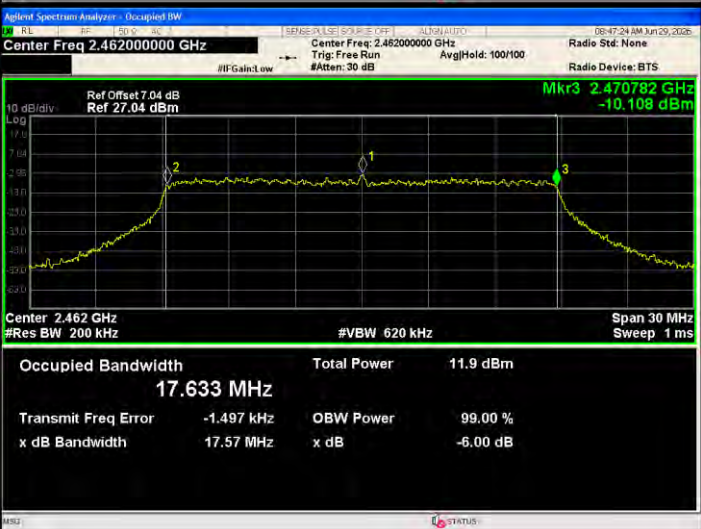


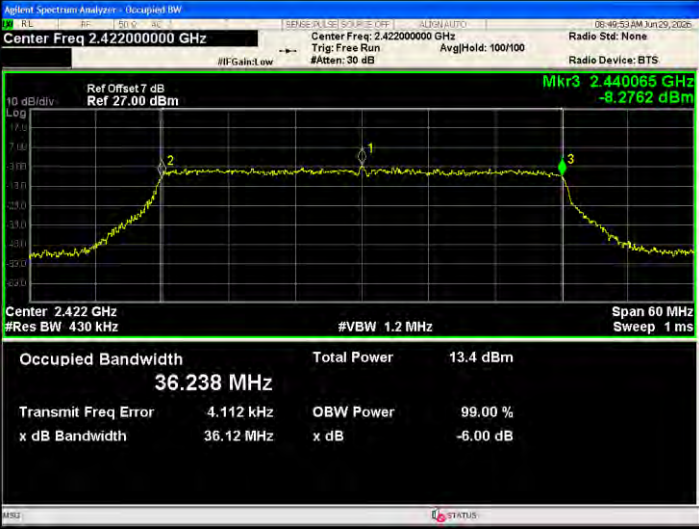
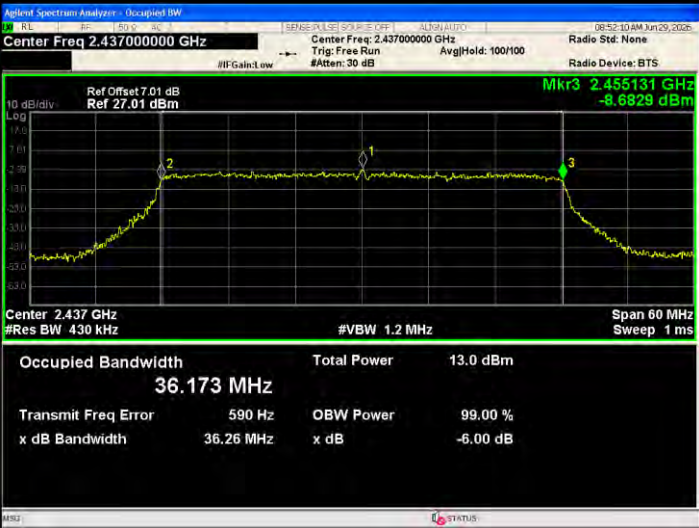
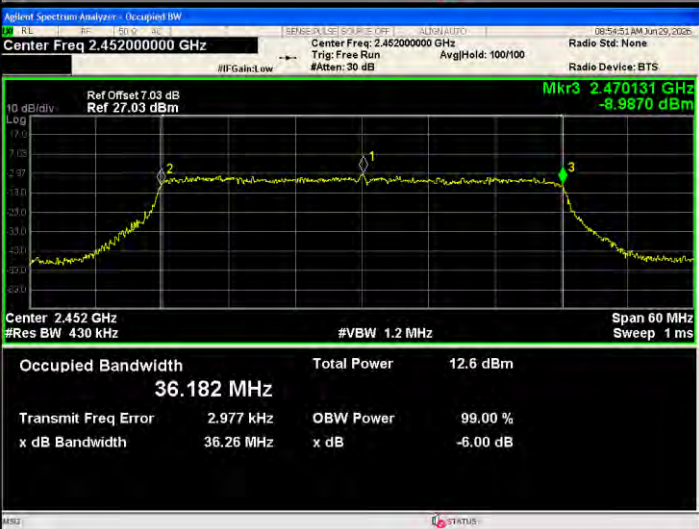
802.11n(HT40)/ LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Ref Offset 7 dB Ref 27.00 dBm Center 2.422 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>13.7 dBm</td></tr><tr><td>36.169 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>9.807 kHz</td><td>OBW Power</td></tr><tr><td>x dB Bandwidth</td><td>39.05 MHz</td><td>x dB</td></tr><tr><td></td><td></td><td>-20.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	13.7 dBm	36.169 MHz			Transmit Freq Error	9.807 kHz	OBW Power	x dB Bandwidth	39.05 MHz	x dB			-20.00 dB
Occupied Bandwidth	Total Power	13.7 dBm														
36.169 MHz																
Transmit Freq Error	9.807 kHz	OBW Power														
x dB Bandwidth	39.05 MHz	x dB														
		-20.00 dB														
802.11n(HT40)/ MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Center 2.437 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>13.8 dBm</td></tr><tr><td>36.217 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>-24.827 kHz</td><td>OBW Power</td></tr><tr><td>x dB Bandwidth</td><td>38.93 MHz</td><td>x dB</td></tr><tr><td></td><td></td><td>-20.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	13.8 dBm	36.217 MHz			Transmit Freq Error	-24.827 kHz	OBW Power	x dB Bandwidth	38.93 MHz	x dB			-20.00 dB
Occupied Bandwidth	Total Power	13.8 dBm														
36.217 MHz																
Transmit Freq Error	-24.827 kHz	OBW Power														
x dB Bandwidth	38.93 MHz	x dB														
		-20.00 dB														
802.11n(HT40)/ HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Ref Offset 7.03 dB Ref 27.03 dBm Center 2.452 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>13.4 dBm</td></tr><tr><td>36.195 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>-25.060 kHz</td><td>OBW Power</td></tr><tr><td>x dB Bandwidth</td><td>38.83 MHz</td><td>x dB</td></tr><tr><td></td><td></td><td>-20.00 dB</td></tr></table>	Occupied Bandwidth	Total Power	13.4 dBm	36.195 MHz			Transmit Freq Error	-25.060 kHz	OBW Power	x dB Bandwidth	38.83 MHz	x dB			-20.00 dB
Occupied Bandwidth	Total Power	13.4 dBm														
36.195 MHz																
Transmit Freq Error	-25.060 kHz	OBW Power														
x dB Bandwidth	38.83 MHz	x dB														
		-20.00 dB														

ANT2:
Test Graph:



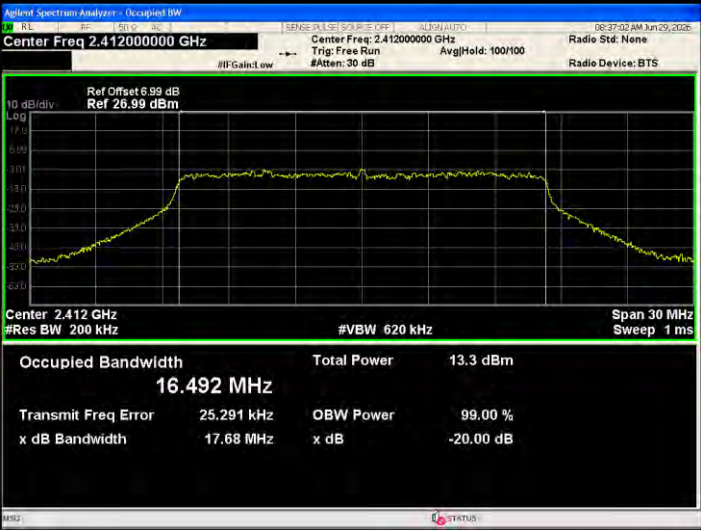
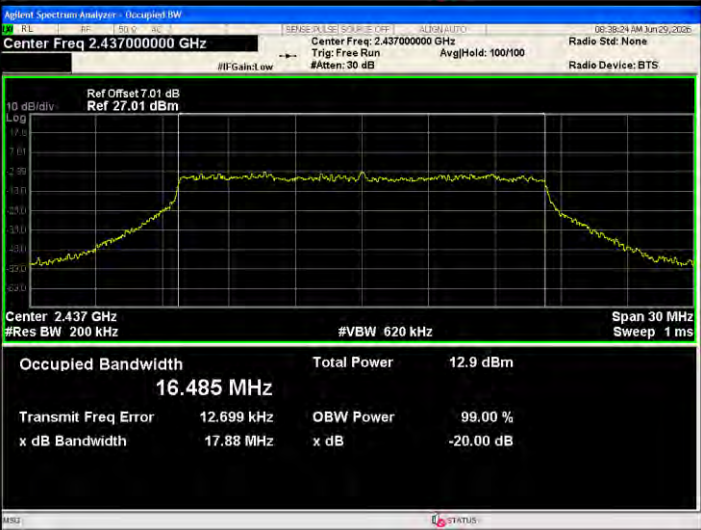
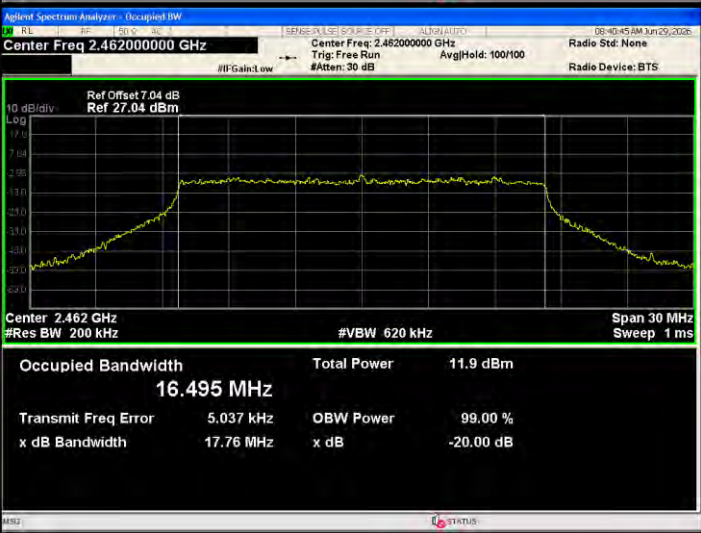
802.11g/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 6.99 dB Ref 26.99 dBm Mkr3 2.420235 GHz -9.0350 dBm Center 2.412 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.481 MHz Total Power 13.2 dBm Transmit Freq Error 22.180 kHz OBW Power 99.00 % x dB Bandwidth 16.43 MHz x dB -6.00 dB
802.11g/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.44526 GHz -8.4510 dBm Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.496 MHz Total Power 12.7 dBm Transmit Freq Error 14.183 kHz OBW Power 99.00 % x dB Bandwidth 16.49 MHz x dB -6.00 dB
802.11g/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.470245 GHz -9.2655 dBm Center 2.462 GHz #Res BW 200 kHz #VBW 620 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.502 MHz Total Power 11.9 dBm Transmit Freq Error -2.361 kHz OBW Power 99.00 % x dB Bandwidth 16.49 MHz x dB -6.00 dB

802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.99 dB Ref 26.99 dBm Mkr3 2.420661 GHz -8.0215 dBm Center 2.412 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.604 MHz Total Power 13.1 dBm Transmit Freq Error 13.205 kHz OBW Power 99.00 % x dB Bandwidth 17.30 MHz x dB -6.00 dB
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.445674 GHz -8.2828 dBm Center 2.437 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.632 MHz Total Power 12.6 dBm Transmit Freq Error 9.127 kHz OBW Power 99.00 % x dB Bandwidth 17.33 MHz x dB -6.00 dB
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.470782 GHz -10.108 dBm Center 2.462 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 17.633 MHz Total Power 11.9 dBm Transmit Freq Error -1.497 kHz OBW Power 99.00 % x dB Bandwidth 17.57 MHz x dB -6.00 dB

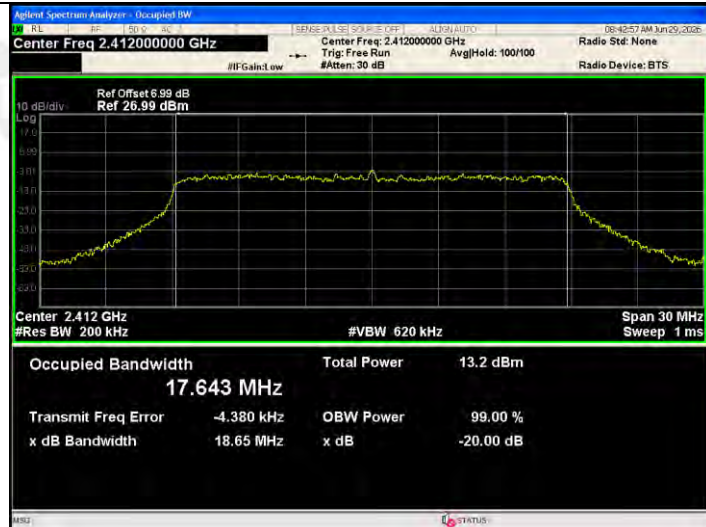
802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7 dB Ref 27.00 dBm Mkr3 2.440065 GHz -8.2762 dBm Center 2.422 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.238 MHz Total Power 13.4 dBm Transmit Freq Error 4.112 kHz OBW Power 99.00 % x dB Bandwidth 36.12 MHz x dB -6.00 dB
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.455131 GHz -8.5829 dBm Center 2.437 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.173 MHz Total Power 13.0 dBm Transmit Freq Error 590 Hz OBW Power 99.00 % x dB Bandwidth 36.26 MHz x dB -6.00 dB
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Center Freq: 2.452000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.03 dB Ref 27.03 dBm Mkr3 2.470131 GHz -8.9870 dBm Center 2.452 GHz #Res BW 430 kHz #VBW 1.2 MHz Span 60 MHz Sweep 1 ms Occupied Bandwidth 36.182 MHz Total Power 12.6 dBm Transmit Freq Error 2.977 kHz OBW Power 99.00 % x dB Bandwidth 36.26 MHz x dB -6.00 dB

99%

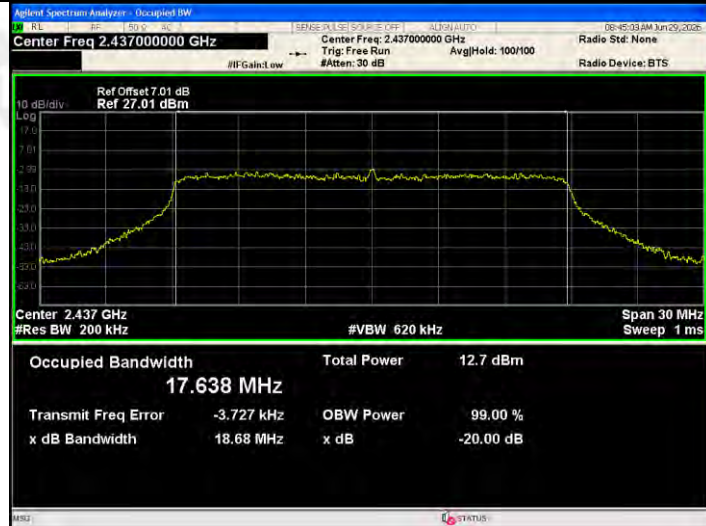
Graphs	
802.11b /LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.412000000 GHz Ref Offset 6.99 dB Ref 26.99 dBm Occupied Bandwidth: 14.975 MHz Total Power: 16.4 dBm Transmit Freq Error: -16.380 kHz OBW Power: 99.00 % x dB Bandwidth: 17.19 MHz x dB: -20.00 dB
802.11b /MCH	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Occupied Bandwidth: 14.969 MHz Total Power: 16.0 dBm Transmit Freq Error: -20.108 kHz OBW Power: 99.00 % x dB Bandwidth: 17.19 MHz x dB: -20.00 dB
802.11b/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.462000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Occupied Bandwidth: 14.992 MHz Total Power: 15.3 dBm Transmit Freq Error: -26.806 kHz OBW Power: 99.00 % x dB Bandwidth: 17.19 MHz x dB: -20.00 dB

802.11g/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.99 dB Ref 26.99 dBm Center 2.412 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.492 MHz Total Power 13.3 dBm Transmit Freq Error 25.291 kHz OBW Power 99.00 % x dB Bandwidth 17.68 MHz x dB -20.00 dB
802.11g/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Center 2.437 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.485 MHz Total Power 12.9 dBm Transmit Freq Error 12.699 kHz OBW Power 99.00 % x dB Bandwidth 17.88 MHz x dB -20.00 dB
802.11g/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Center 2.462 GHz #Res BW 200 kHz Span 30 MHz Sweep 1 ms Occupied Bandwidth 16.495 MHz Total Power 11.9 dBm Transmit Freq Error 5.037 kHz OBW Power 99.00 % x dB Bandwidth 17.76 MHz x dB -20.00 dB

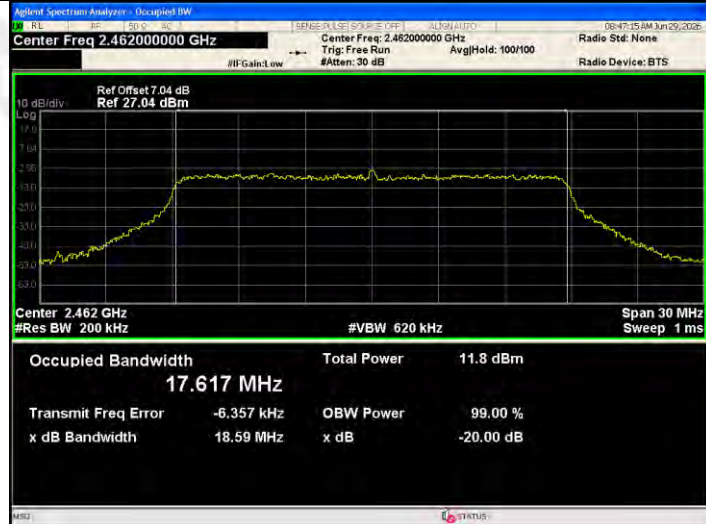
802.11n(HT20)/
LCH



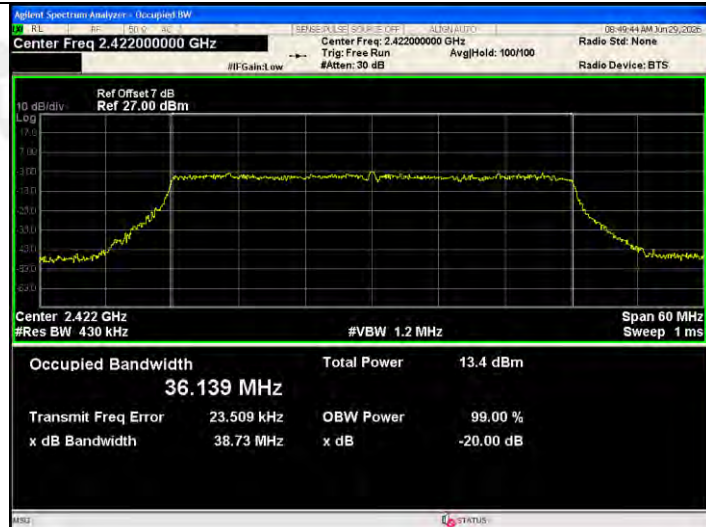
802.11n(HT20)/
MCH



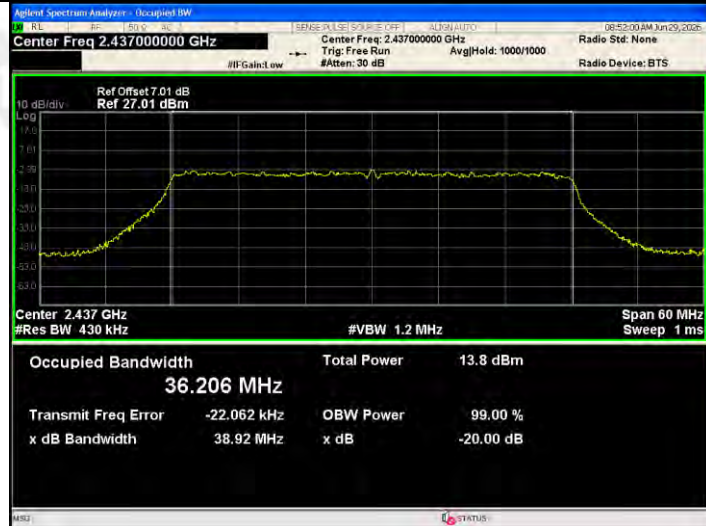
802.11n(HT20)/
HCH



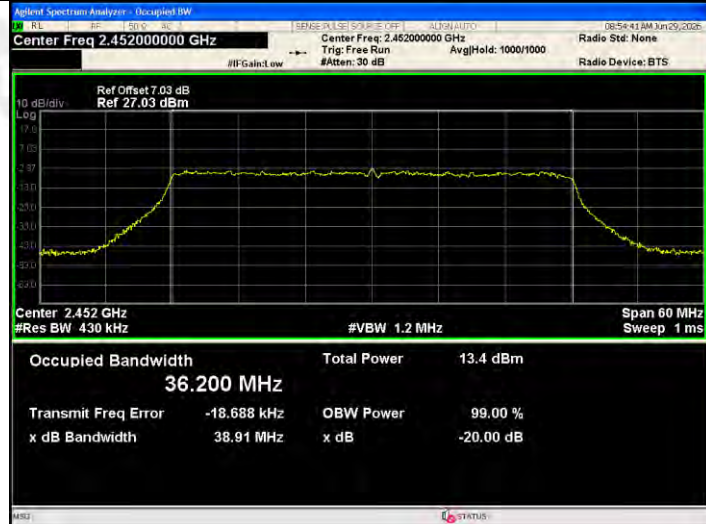
802.11n(HT40)/
LCH



802.11n(HT40)/
MCH



802.11n(HT40)/
HCH



10. Maximum Output Power

10.1.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

10.2.Test Setup



10.3.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 Peak
- 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.

10.4.Test Result

Mode	Channel.	Maximum Peak Power [dBm] ant 1	Maximum Peak Power [dBm] ant 2	Total Power Peak Output Power(dBm)	Limit[dBm]
802.11b	LCH	14.174	14.797	/	30
	MCH	13.345	14.223	/	30
	HCH	12.659	13.533	/	30
802.11g	LCH	14.798	14.489	/	30
	MCH	14.019	13.926	/	30
	HCH	13.404	13.422	/	30
802.11n(HT20)	LCH	14.21	14.265	17.248	30
	MCH	13.699	13.616	16.668	30
	HCH	12.95	12.953	15.962	30
802.11n(HT40)	LCH	14.782	14.288	17.552	30
	MCH	13.906	13.989	16.958	30
	HCH	13.519	13.513	16.526	30

11. Power Spectral density

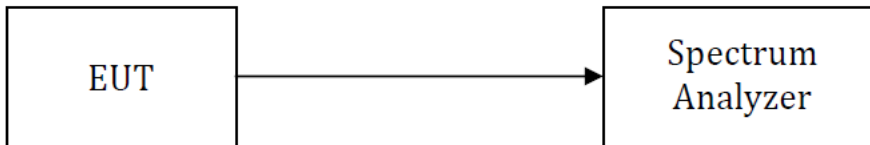
11.1.Limit

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

11.2.Test Setup



11.3.Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02;

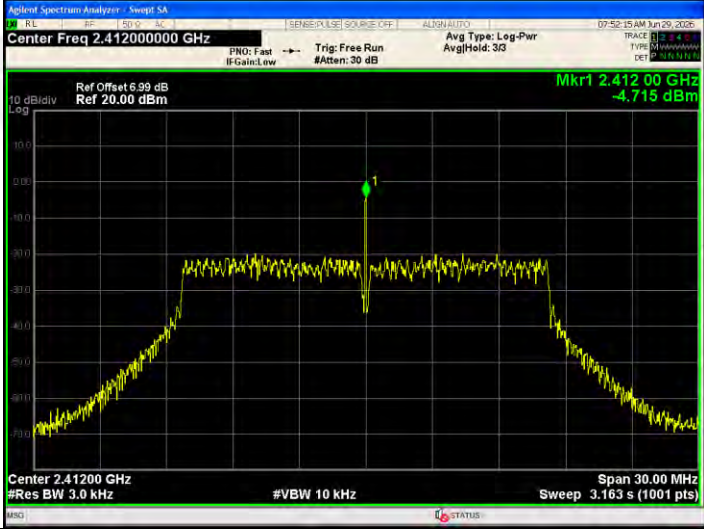
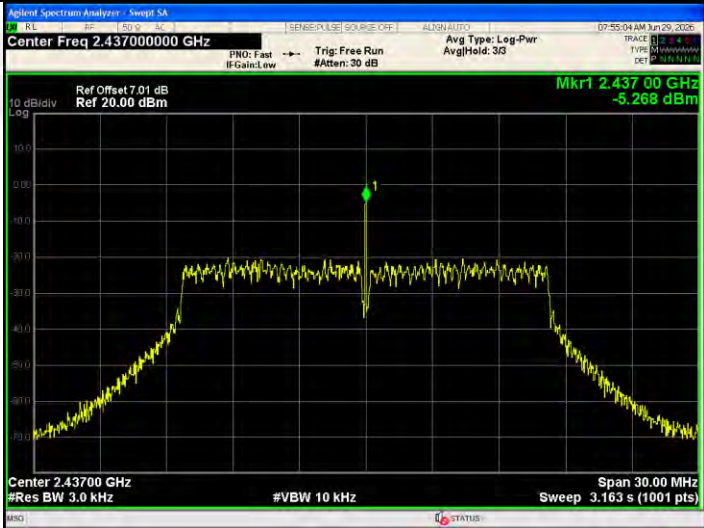
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set instrument center frequency to DTS channel center frequency
3. Set span to > 1.5 times the OBW.
4. Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
5. Set VBW $\geq [3 \times \text{RBW}]$
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.

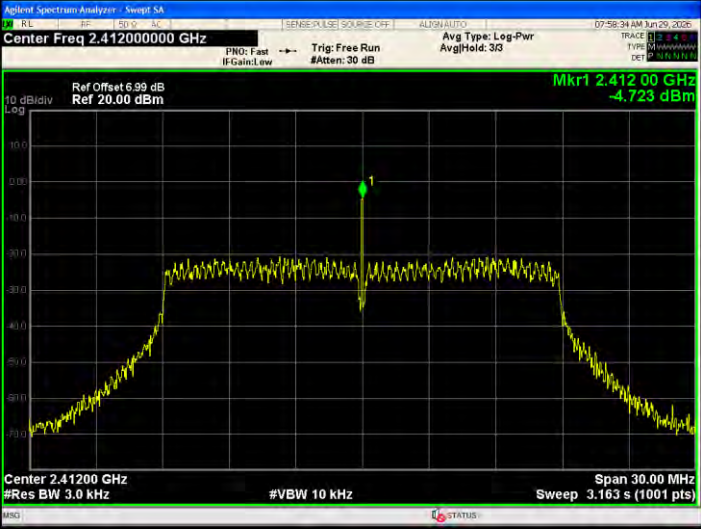
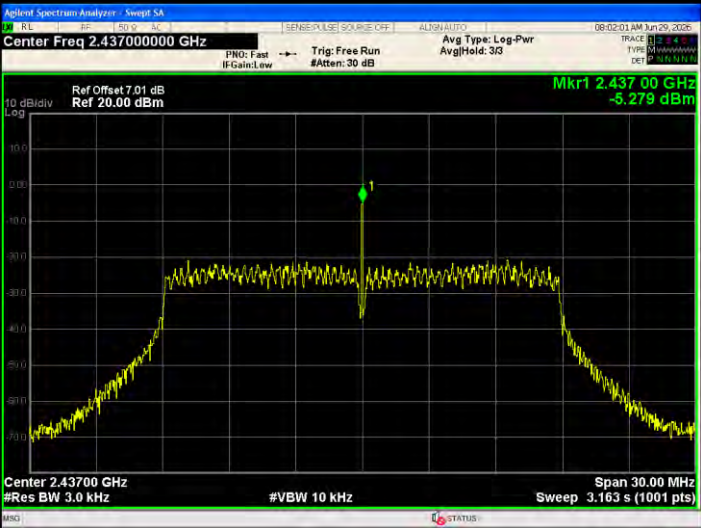
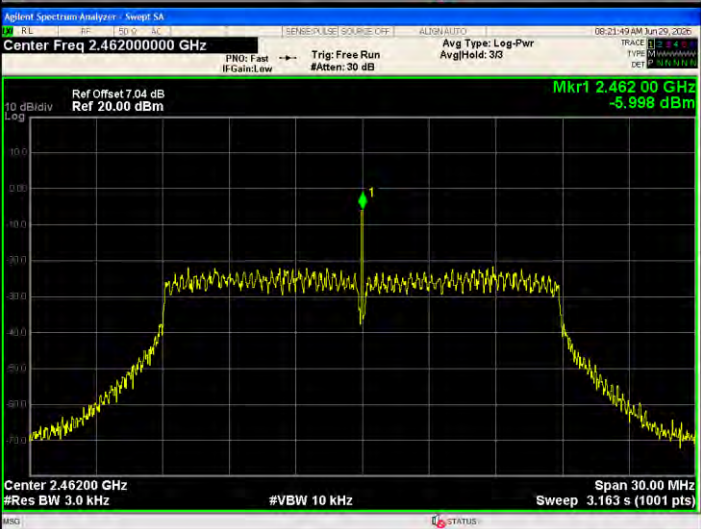
11.4.Test Result

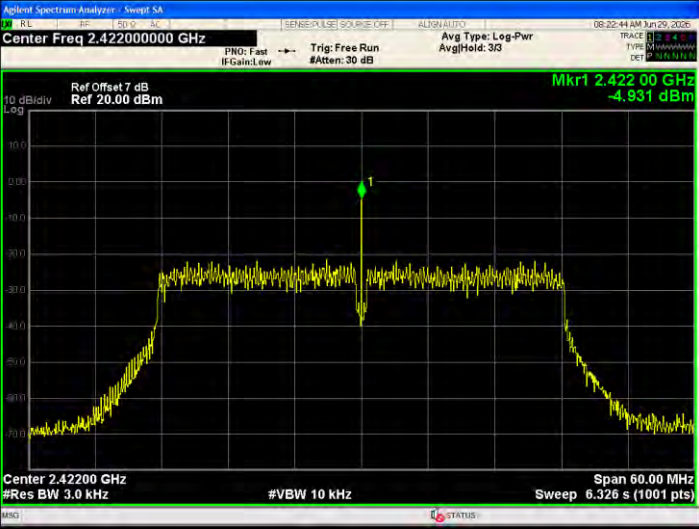
Mode	Channel.	Power Spectral Density [dBm /3kHz] ANT 1	Power Spectral Density [dBm /3kHz] ANT 2	Power Spectral Density [dBm /3kHz]Total	Limit(dBm)
802.11b	LCH	-4.856	-5.031	/	8
	MCH	-5.449	-5.539	/	8
	HCH	-6.184	-6.251	/	8
802.11g	LCH	-4.715	-4.691	/	8
	MCH	-5.268	-5.267	/	8
	HCH	-6	-5.991	/	8
802.11n(HT20)	LCH	-4.723	-4.738	-1.720	8
	MCH	-5.279	-5.28	-2.269	8
	HCH	-5.998	-5.986	-2.982	8
802.11n(HT40)	LCH	-4.931	-4.968	-1.939	8
	MCH	-5.31	-5.291	-2.290	8
	HCH	-5.709	-5.698	-2.693	8

ANT1:
Test Graph

Graphs	
802.11b/LCH	Agilent Spectrum Analyzer - Swept SA Center Freq 2.41200000 GHz Ref Offset: 6.99 dB Ref 20.00 dBm Mkr1 2.412 00 GHz -4.856 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 - Swept SA Center Freq 2.43700000 GHz Ref Offset: 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.449 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 - Swept SA Center Freq 2.46200000 GHz Ref Offset: 7.04 dB Ref 20.00 dBm Mkr1 2.461 97 GHz -6.184 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	

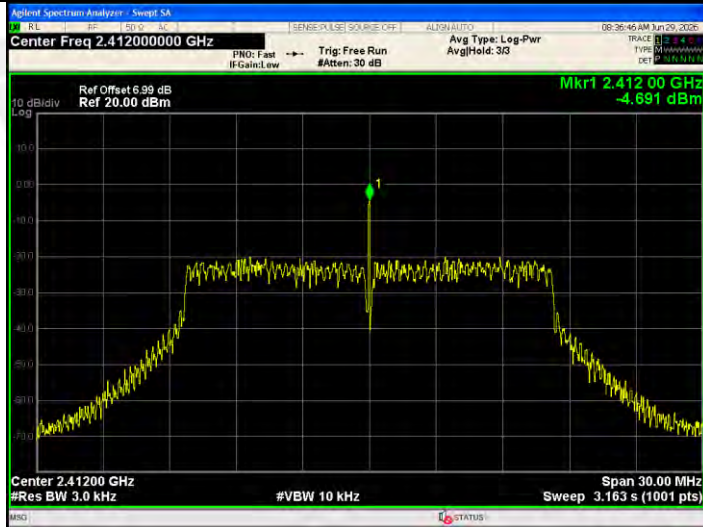
802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.41200000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 2.412 00 GHz -4.723 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.279 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.46200000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.462 00 GHz -5.998 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.42200000 GHz Ref Offset 7 dB Ref 20.00 dBm Mkr1 2.422 00 GHz -4.931 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.43700000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.310 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.45200000 GHz Ref Offset 7.03 dB Ref 20.00 dBm Mkr1 2.452 00 GHz -5.709 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)

ANT 2:
Test Graph

Graphs	
802.11b/LCH	Agilent Spectrum Analyzer - Sweep SA RL 50.000 MHz Center Freq 2.41200000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 30 08:20:55 AM Jun 29, 2020 TRACE 1 1 4 1 TYPE: Power Spectral Density DEF: 0.000000 10 dB/div Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 2.412 00 GHz -5.031 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 RL 50.000 MHz Center Freq 2.43700000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 30 08:21:52 AM Jun 29, 2020 TRACE 1 1 4 1 TYPE: Power Spectral Density DEF: 0.000000 10 dB/div Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.539 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 RL 50.000 MHz Center Freq 2.46200000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold: 30 08:26:02 AM Jun 29, 2020 TRACE 1 1 4 1 TYPE: Power Spectral Density DEF: 0.000000 10 dB/div Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.461 97 GHz -6.251 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

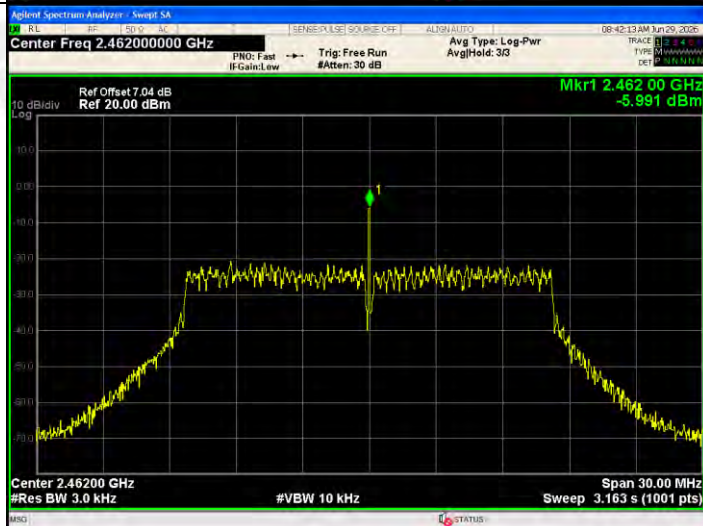
802.11g/LCH

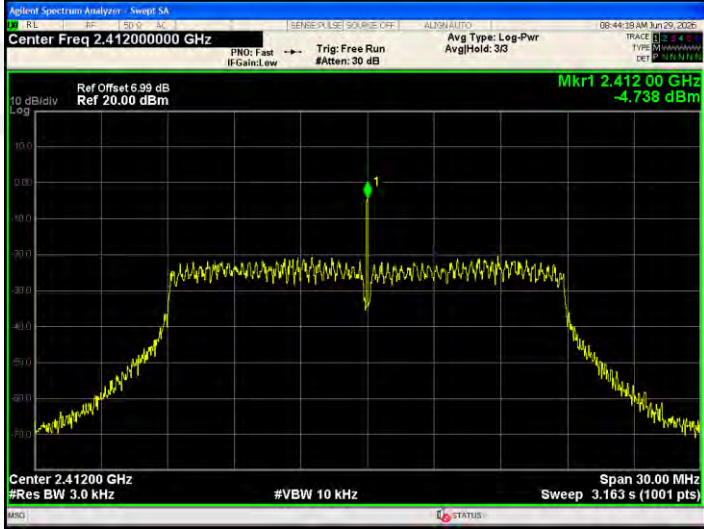
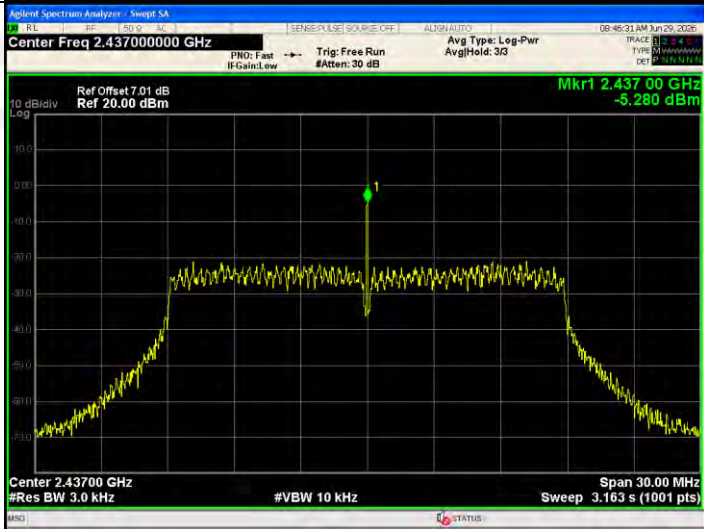


802.11g/MCH



802.11g/HCH



802.11n(HT20)/LCH	 Agilent Spectrum Analyzer / Sweep SA Center Freq 2.41200000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 2.412 00 GHz -4.738 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer / Sweep SA Center Freq 2.43700000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.280 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer / Sweep SA Center Freq 2.46200000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.462 00 GHz -5.986 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.422000000 GHz Ref Offset 7 dB Ref 20.00 dBm Mkr1 2.422 00 GHz -4.968 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.437000000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.437 00 GHz -5.291 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.452000000 GHz Ref Offset 7.03 dB Ref 20.00 dBm Mkr1 2.452 00 GHz -5.698 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)

12. 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 FPC antenna, and the maximum antenna gain is Ant1: 2.74dBi; Ant2: 2.2dBi, fulfill the requirement of this section.

13. TEST SETUP & EUT PHOTOGRAPH

Reference to EUT photo attachment for details.

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