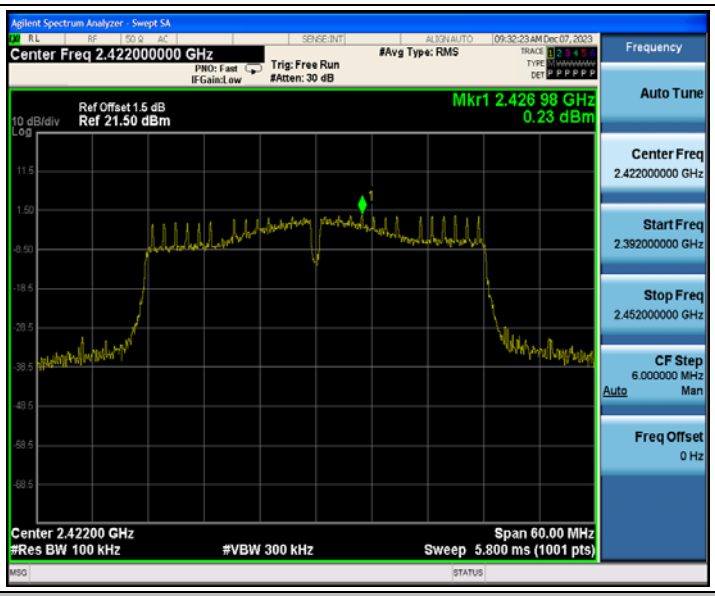
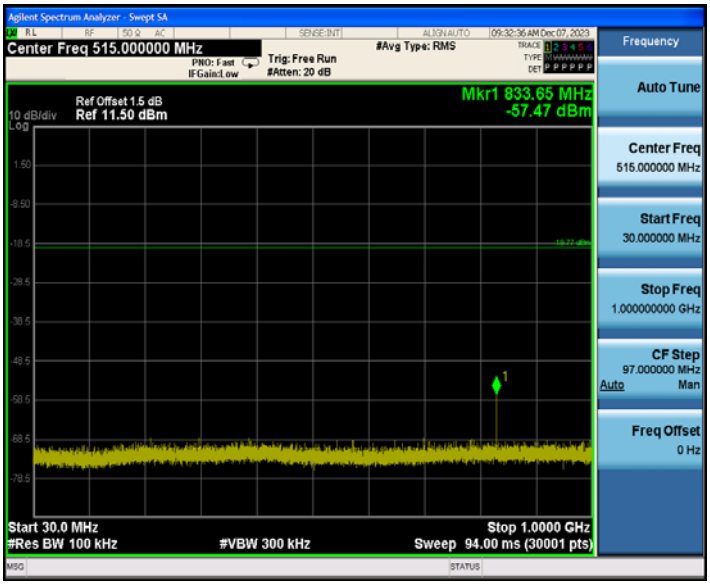
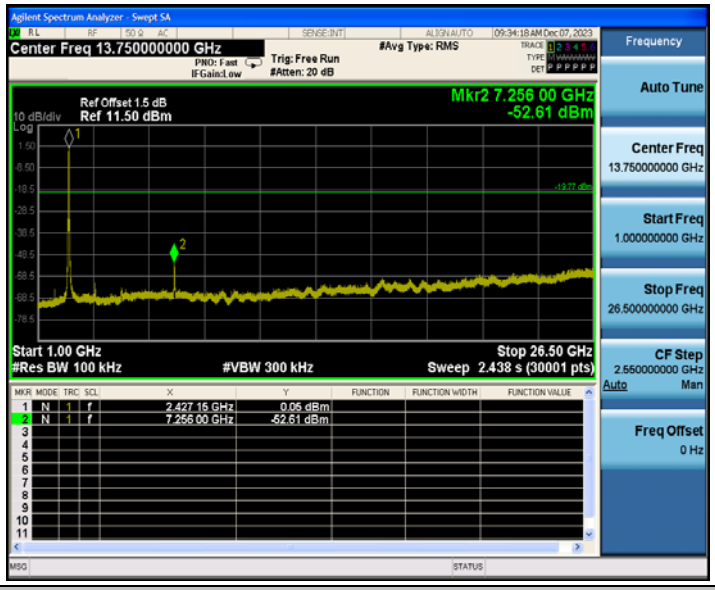


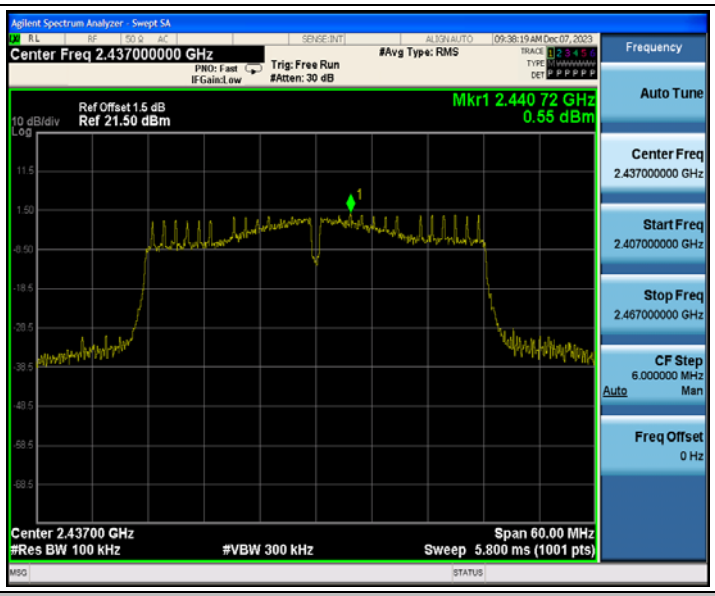
802.11n(HT40)_2422_30~1000



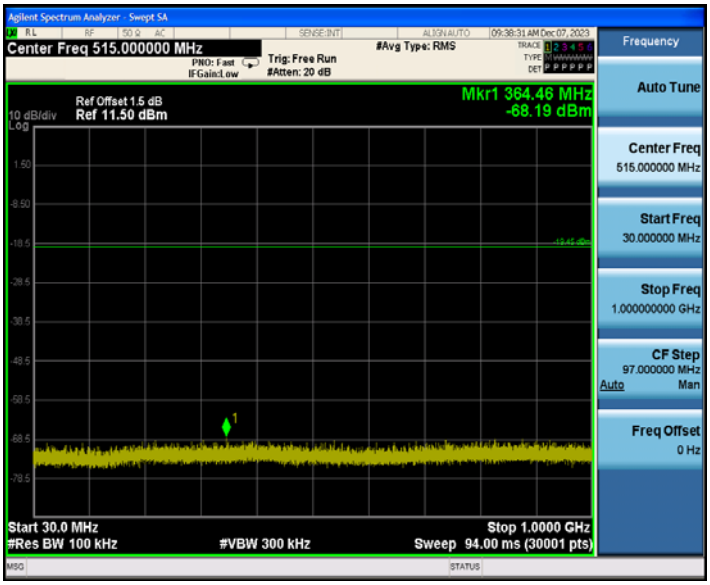
802.11n(HT40)_2422_1000~26500



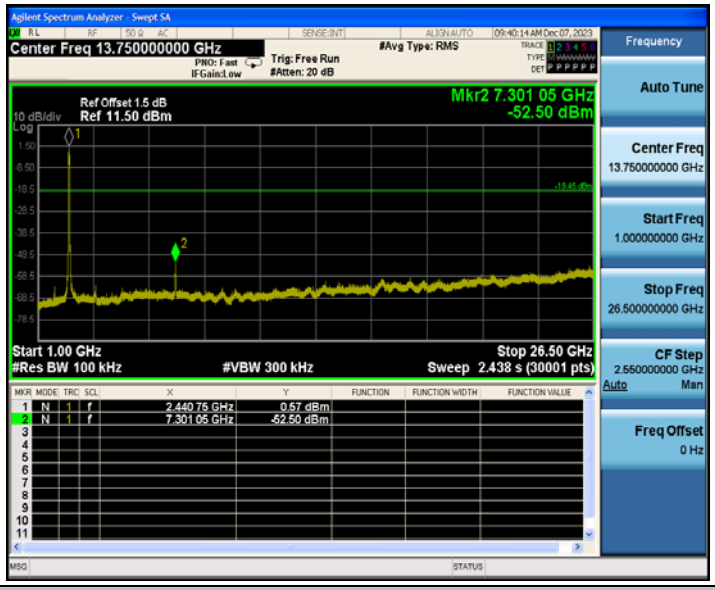
802.11n(HT40)_2437_0~Reference



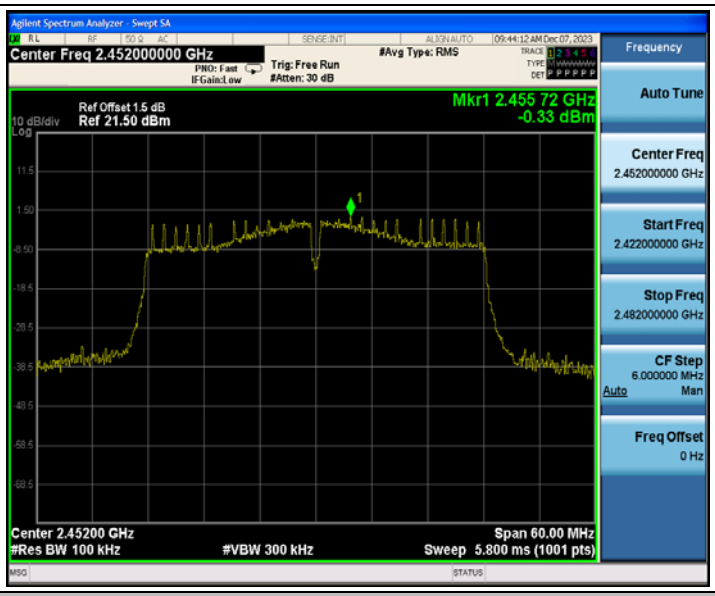
802.11n(HT40)_2437_30~1000



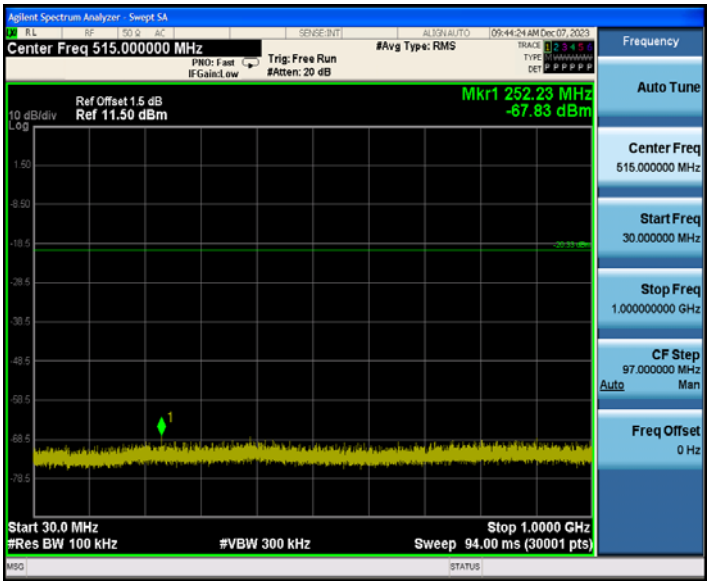
802.11n(HT40)_2437_1000~26500



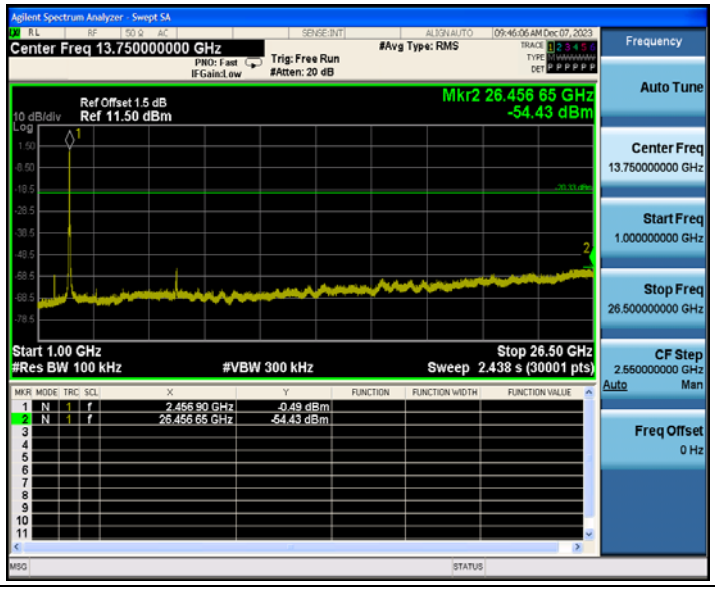
802.11n(HT40)_2452_0~Reference



802.11n(HT40)_2452_30~1000



802.11n(HT40)_2452_1000~26500



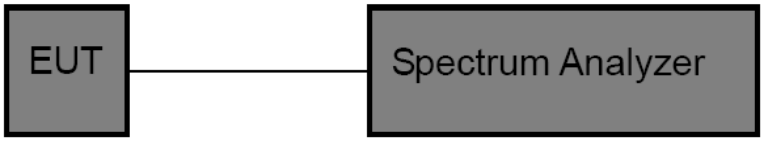
3.5. DTS Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)/ RSS-247 5.2 a:

Test Item	Limit	Frequency Range(MHz)
DTS Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

5. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
6. DTS Spectrum Setting:
   (1) Set RBW = 100 kHz.
   (2) Set the video bandwidth (VBW) ≥ 3 RBW.
   (3) Detector = Peak.
   (4) Trace mode = Max hold.
   (5) Sweep = Auto couple.
   OCB Spectrum Setting:
   (1) Set RBW = 1% ~ 5% occupied bandwidth.
   (2) Set the video bandwidth (VBW) ≥ 3 RBW.
   (3) Detector = Peak.
   (4) Trace mode = Max hold.
   (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

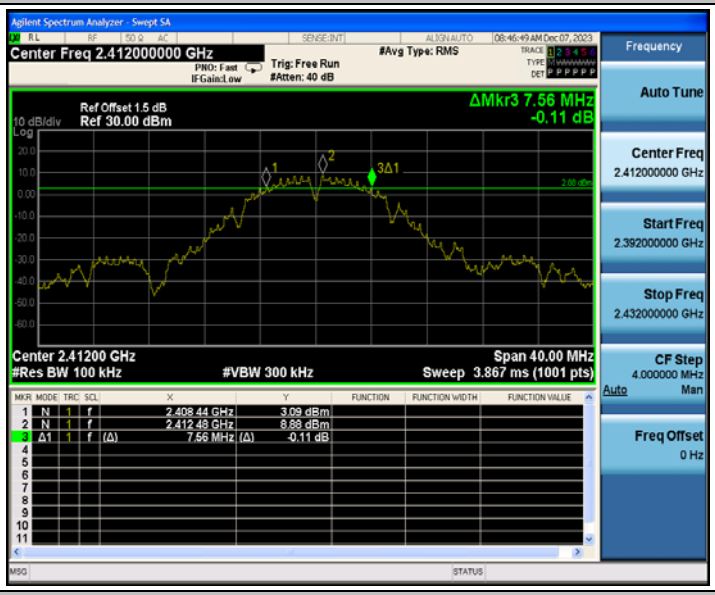
Test Mode

Please refer to the clause 2.4.

Test Results

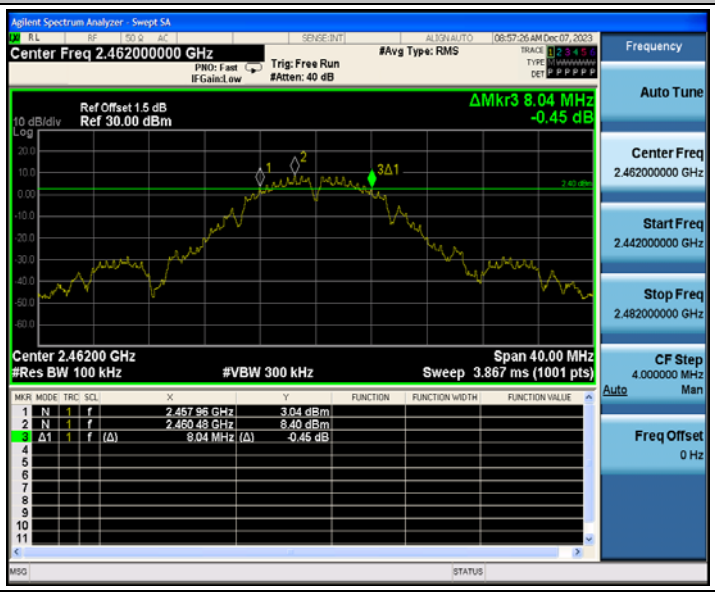
Test Mode	Channel	DTS BW [MHz]	Limit [MHz]	Verdict
802.11b	2412	7.560	>=0.5	PASS
	2437	8.040	>=0.5	PASS
	2462	8.040	>=0.5	PASS
802.11g	2412	15.480	>=0.5	PASS
	2437	15.080	>=0.5	PASS
	2462	15.120	>=0.5	PASS
802.11n(HT20)	2412	15.120	>=0.5	PASS
	2437	15.160	>=0.5	PASS
	2462	15.080	>=0.5	PASS
802.11n(HT40)	2422	35.200	>=0.5	PASS
	2437	35.200	>=0.5	PASS
	2452	35.200	>=0.5	PASS

802.11b_2412



802.11b_2437

802.11b_2462

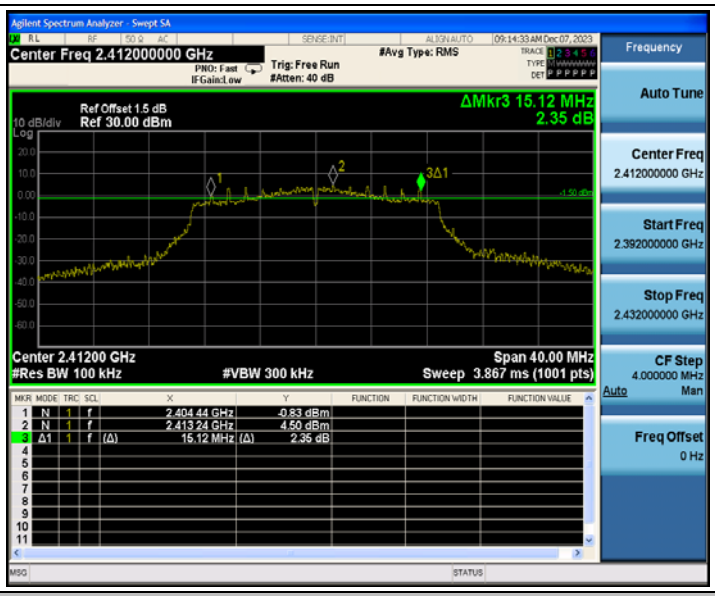


802.11g_2412

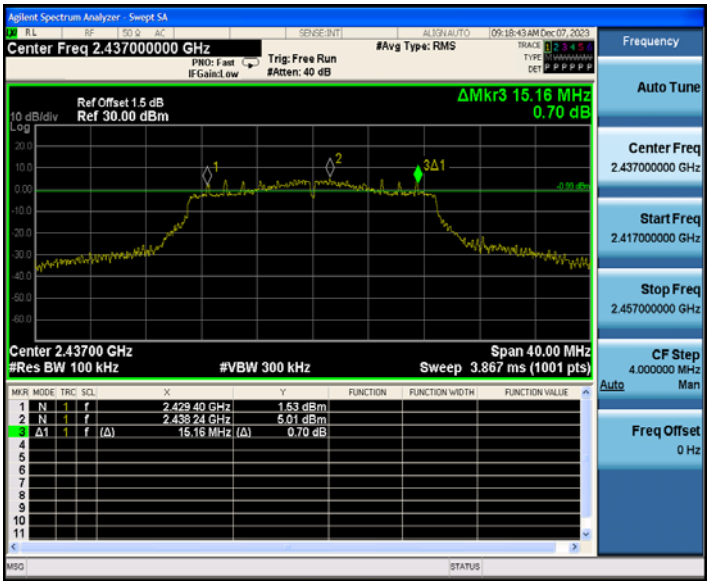
802.11g_2437

802.11g_2462

802.11n(HT20)_2412

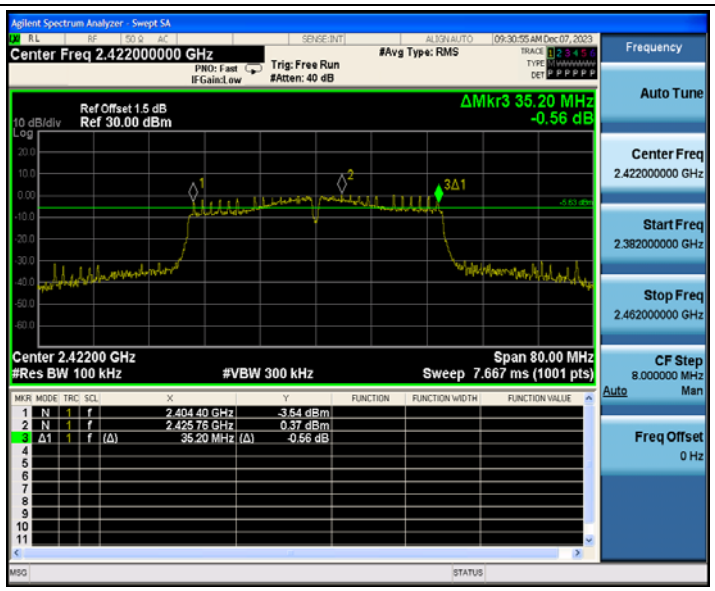


802.11n(HT20)_2437

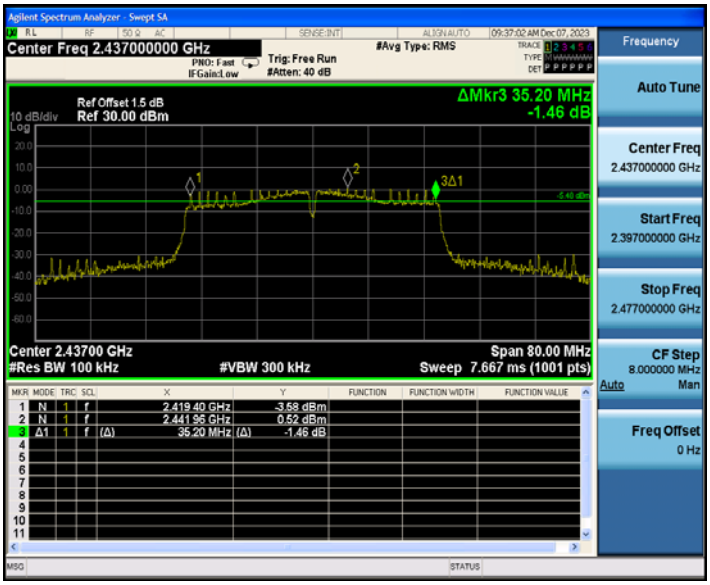


802.11n(HT20)_2462

802.11n(HT40)_2422



802.11n(HT40)_2437



802.11n(HT40)_2452

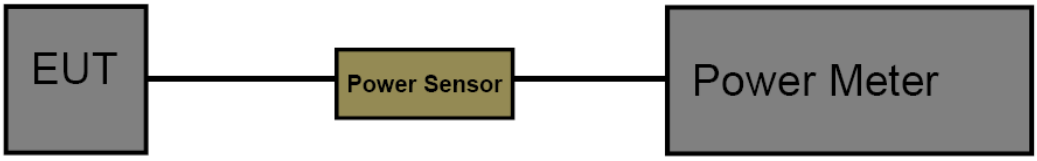
3.6. Maximum Conducted Output Power

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)/ RSS-247 5.4:

Section	Test Item	Limit	Frequency Range(MHz)
CFR 47 FCC 15.247(b)(3)	Maximum conducted output power	1 Watt or 30dBm	2400~2483.5
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5

Test Configuration



Test Procedure

1. The maximum conducted output power may be measured using a broadband RF power meter.
2. Power measurements were performed only when the EUT was transmitting at its AVG power control level using a broadband power meter with a pulse sensor.
3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
4. Record the measurement data.

Test Mode

Please refer to the clause 2.4.

Test Result

Test Mode	Channel	Result Avg [dBm]	Limit [dBm]	Verdict
802.11b	2412	16.68	<=30	PASS
	2437	17.01	<=30	PASS
	2462	17.07	<=30	PASS
802.11g	2412	16.08	<=30	PASS
	2437	16.49	<=30	PASS
	2462	16.58	<=30	PASS
802.11n(HT20)	2412	15.52	<=30	PASS
	2437	16.23	<=30	PASS
	2462	16.10	<=30	PASS
802.11n(HT40)	2422	14.22	<=30	PASS
	2437	14.42	<=30	PASS
	2452	13.45	<=30	PASS

Note: Test results increased RF cable loss by 1.5dB and Duty Cycle Factor.

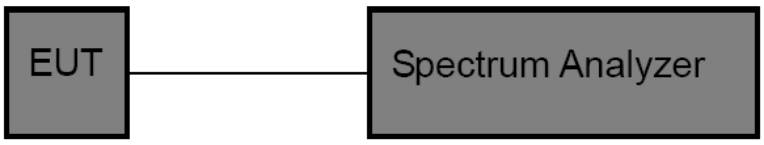
3.7. Power Spectral Density

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e)/ RSS-247 5.2 b:

Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.
Set the span to 1.5 times the DTS bandwidth.
Set the RBW to: 3 kHz
Set the VBW to: 10 kHz
Detector: PK
Sweep time: Auto
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

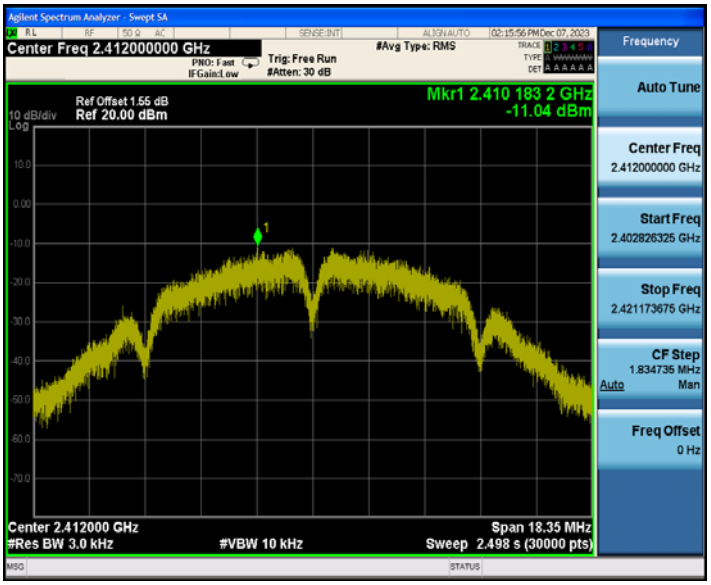
Please refer to the clause 2.4.

Test Result

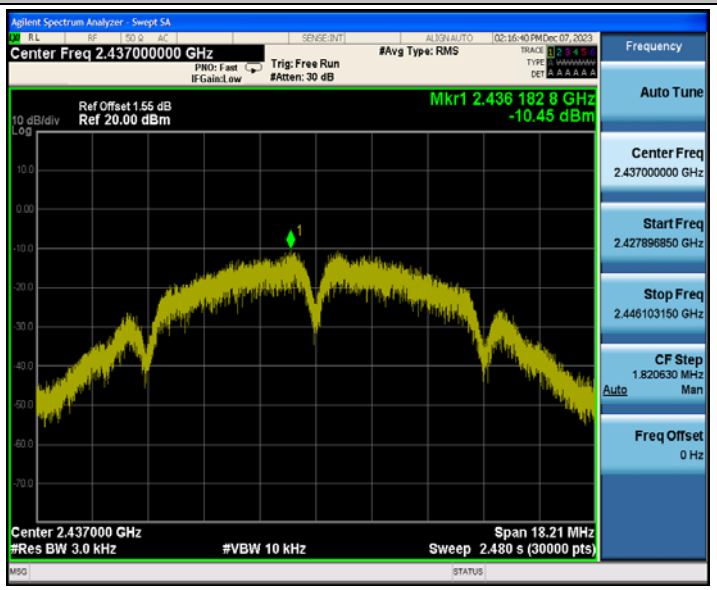
Test Mode	Channel	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
802.11b	2412	-11.05	<=8	PASS
	2437	-10.45	<=8	PASS
	2462	-10.44	<=8	PASS
802.11g	2412	-10.68	<=8	PASS
	2437	-9.78	<=8	PASS
	2462	-10.53	<=8	PASS
802.11n(HT20)	2412	-13.64	<=8	PASS
	2437	-12.43	<=8	PASS
	2462	-11.63	<=8	PASS
802.11n(HT40)	2422	-18.24	<=8	PASS
	2437	-17.00	<=8	PASS
	2452	-18.33	<=8	PASS

Note: Test results increased Duty Cycle Factor.

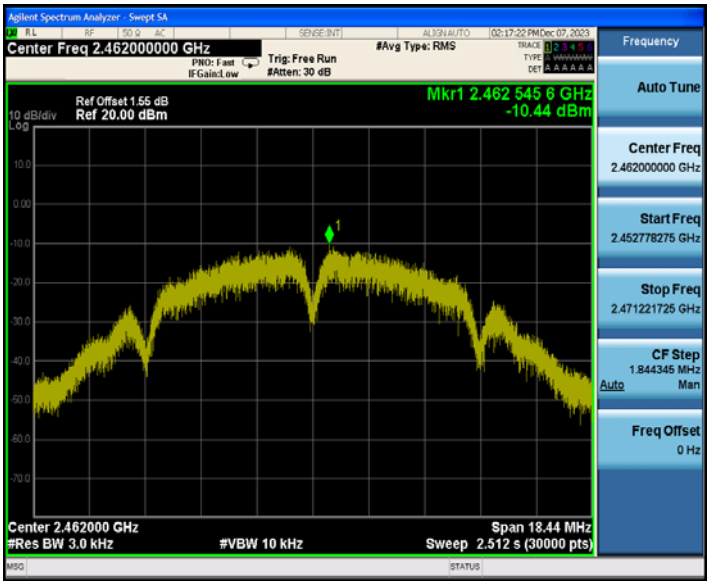
802.11b_2412



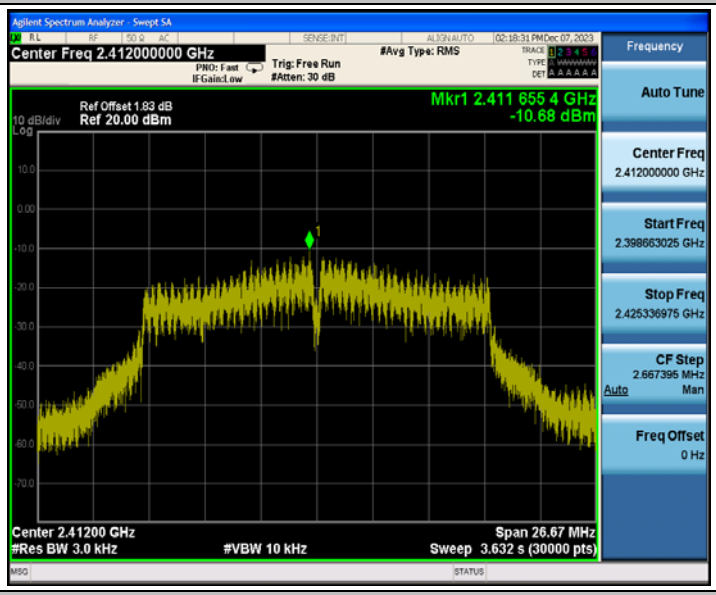
802.11b_2437



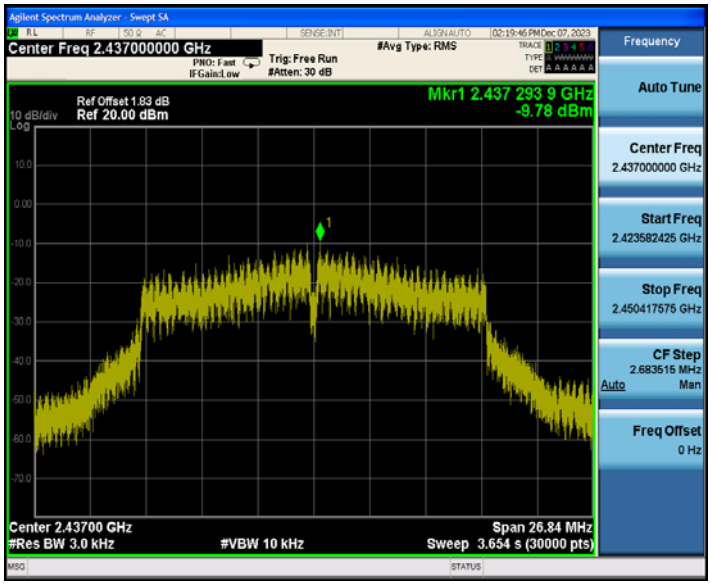
802.11b_2462



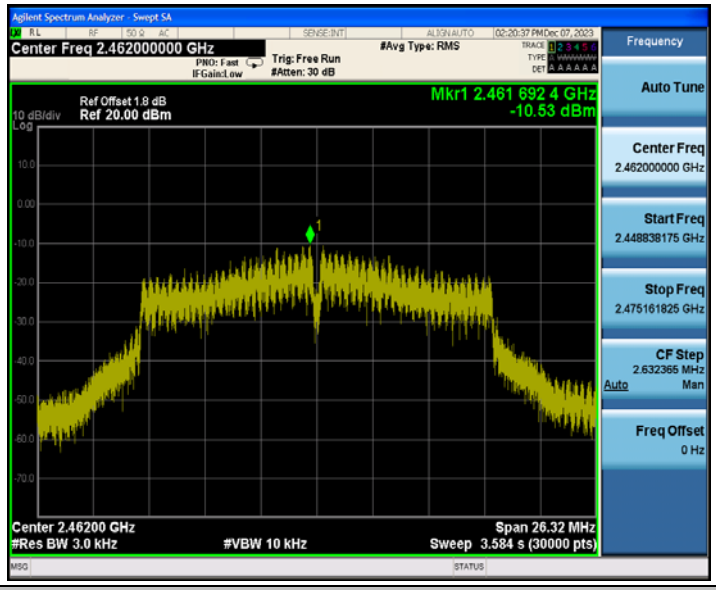
802.11g_2412



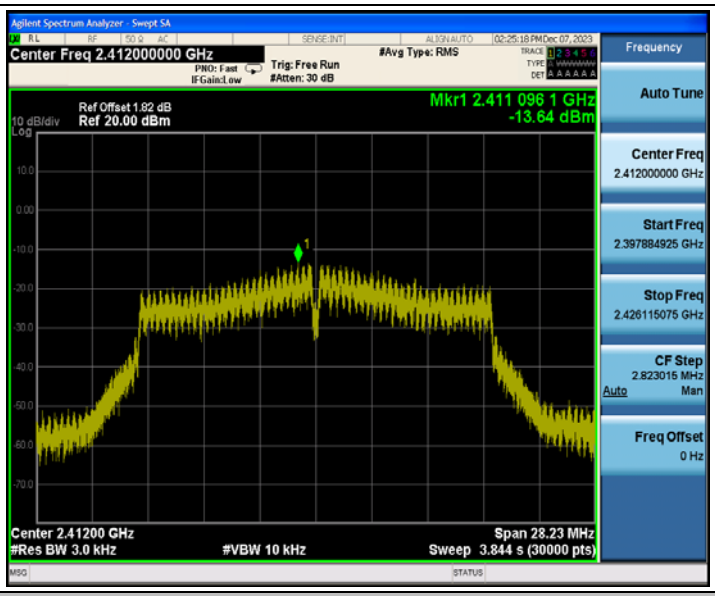
802.11g_2437



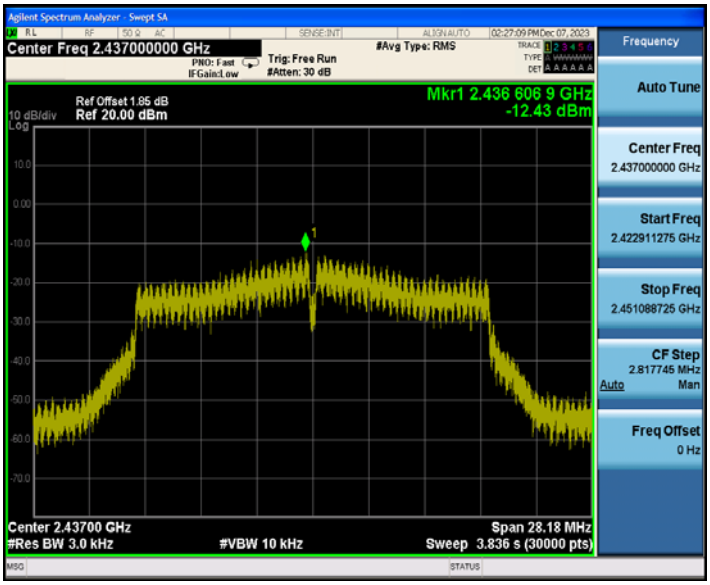
802.11g_2462



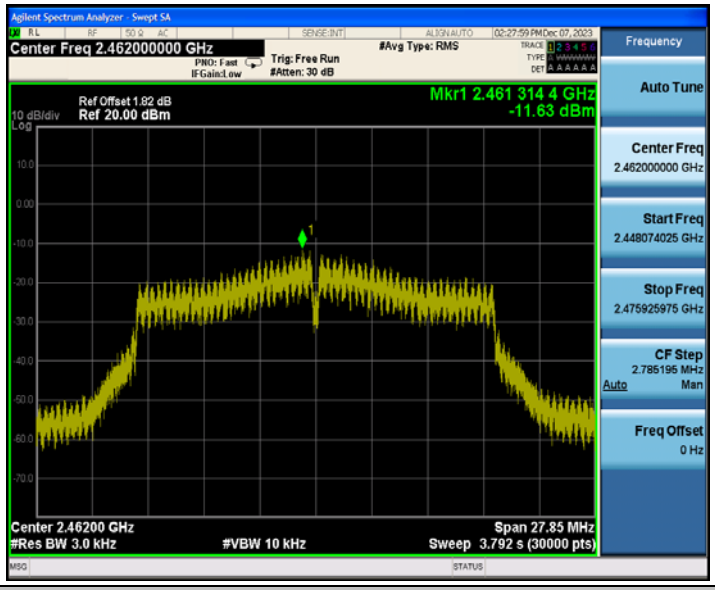
802.11n(HT20)_2412



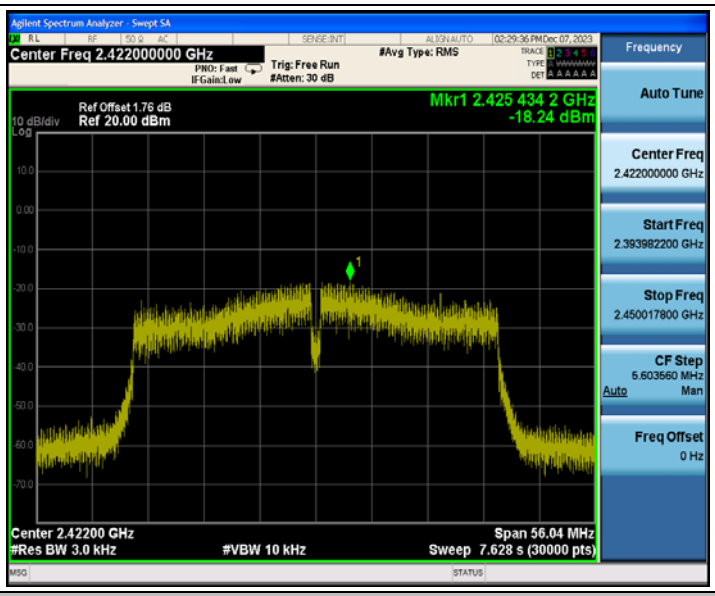
802.11n(HT20)_2437



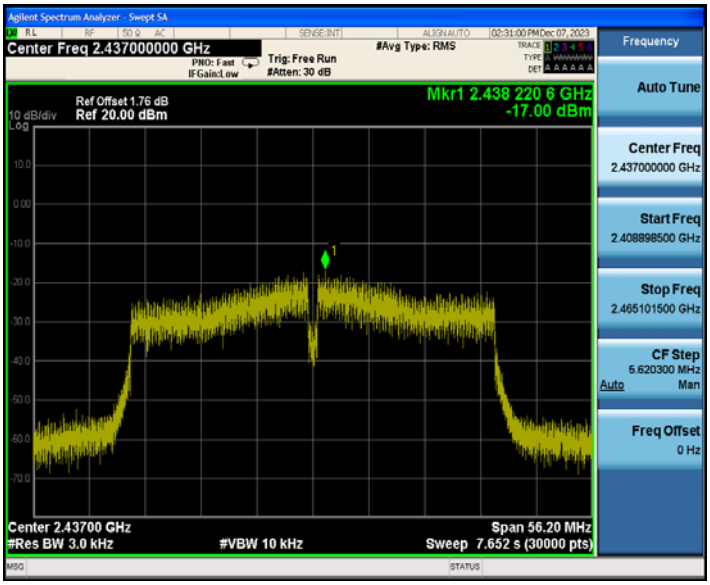
802.11n(HT20)_2462



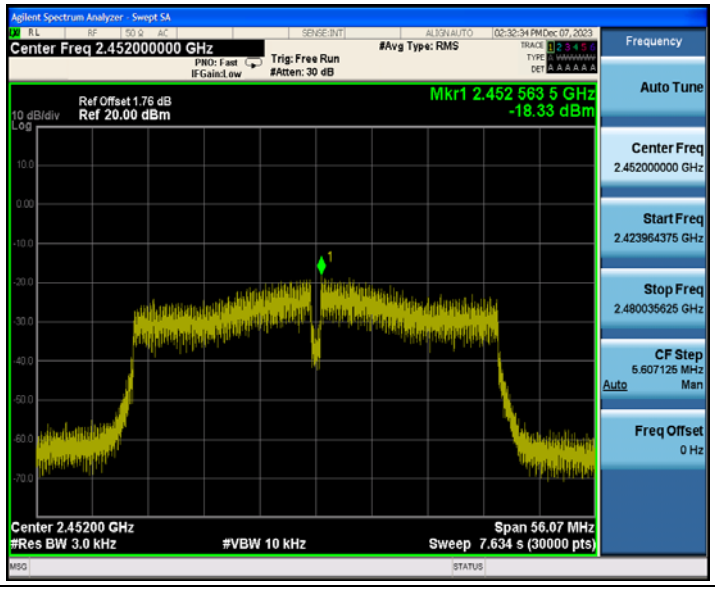
802.11n(HT40)_2422



802.11n(HT40)_2437



802.11n(HT40)_2452

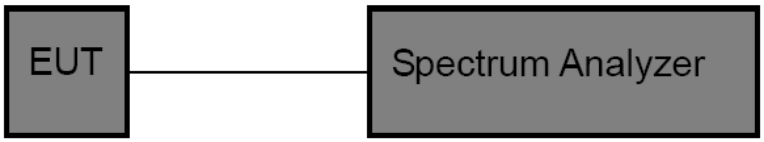


3.8. Duty Cycle

Limit

None, for report purposes only.

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.
3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.
Set the span to 0Hz
Set the RBW to 8MHz
Set the VBW to 8MHz
Detector: peak
Sweep time: auto
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

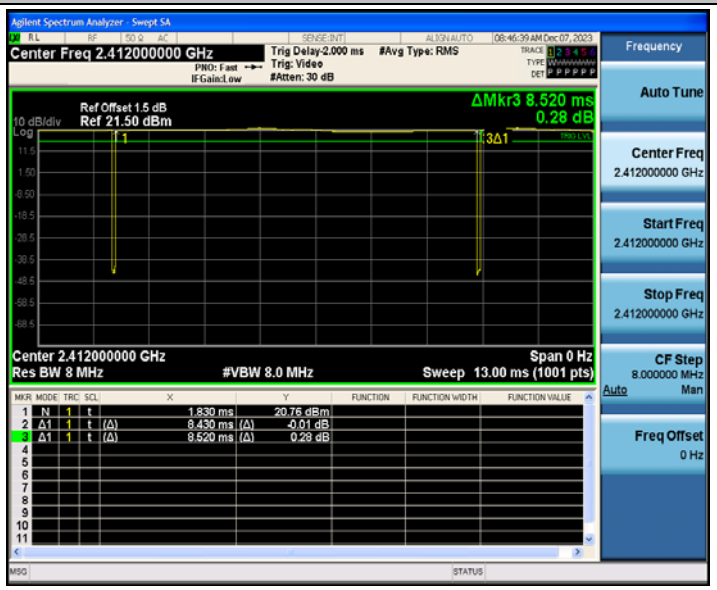
Please refer to the clause 2.4.

Test Result

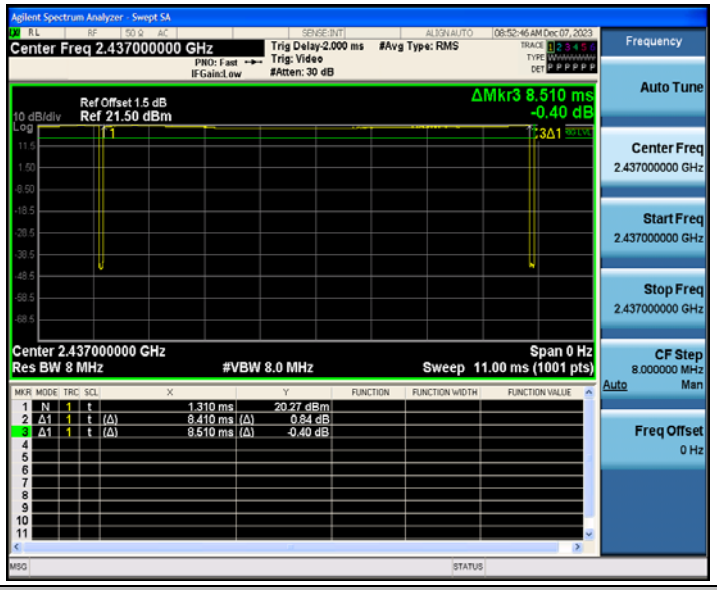
Test Mode	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Duty Cycle Factor	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
802.11b	2412	8.43	8.52	98.94	0.05	0.119	1
	2437	8.41	8.51	98.82	0.05	0.119	1
	2462	8.42	8.51	98.94	0.05	0.119	1
802.11g	2412	1.39	1.50	92.67	0.33	0.719	1
	2437	1.39	1.50	92.67	0.33	0.719	1
	2462	1.40	1.50	93.33	0.30	0.714	1
802.11n(HT20)	2412	1.31	1.41	92.91	0.32	0.763	1
	2437	1.30	1.41	92.20	0.35	0.769	1
	2462	1.31	1.41	92.91	0.32	0.763	1
802.11n(HT40)	2422	0.65	0.69	94.20	0.26	1.538	2
	2437	0.65	0.69	94.20	0.26	1.538	2
	2452	0.65	0.69	94.20	0.26	1.538	2

Note: Duty Cycle Factor = 10*Log10(1/ Duty Cycle)

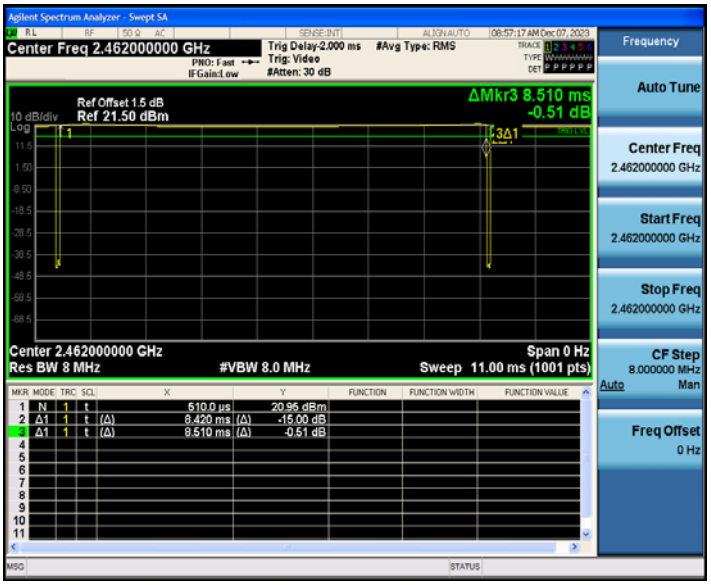
802.11b_2412



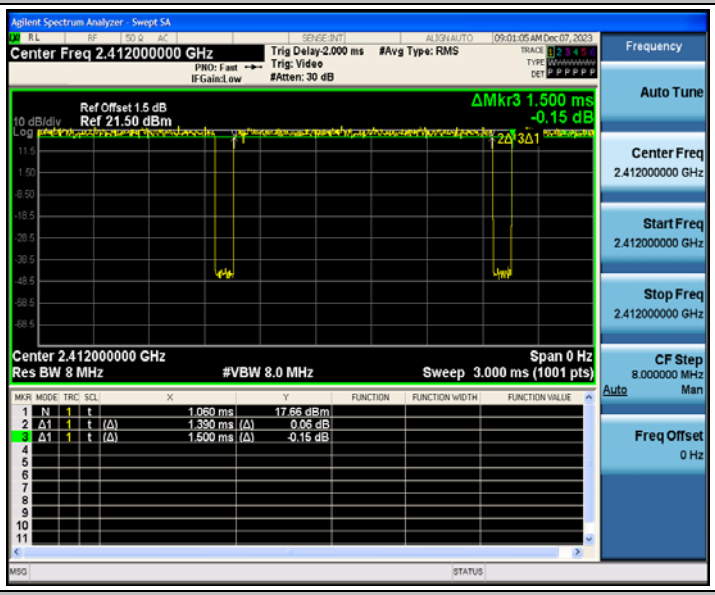
802.11b_2437



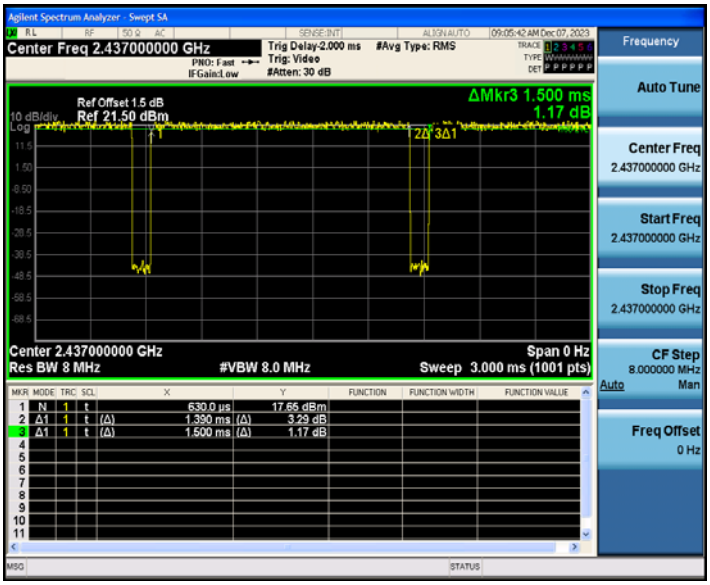
802.11b_2462



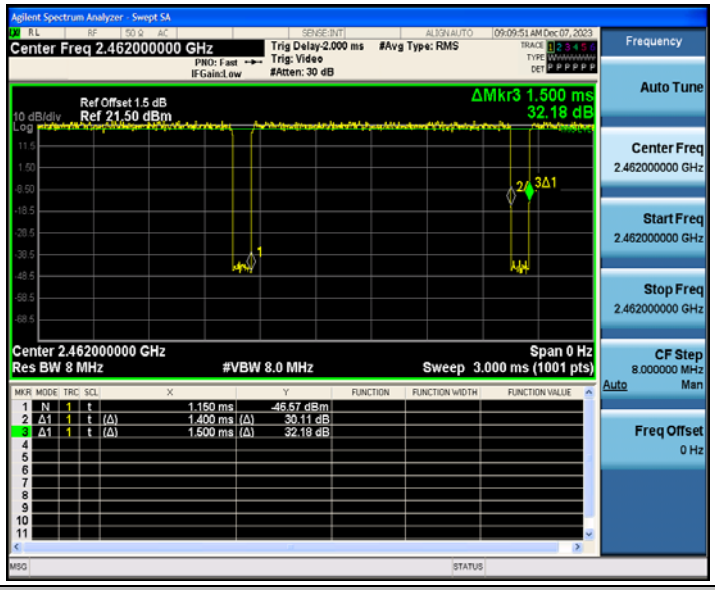
802.11g_2412



802.11g_2437



802.11g_2462



802.11n(HT20)_2412

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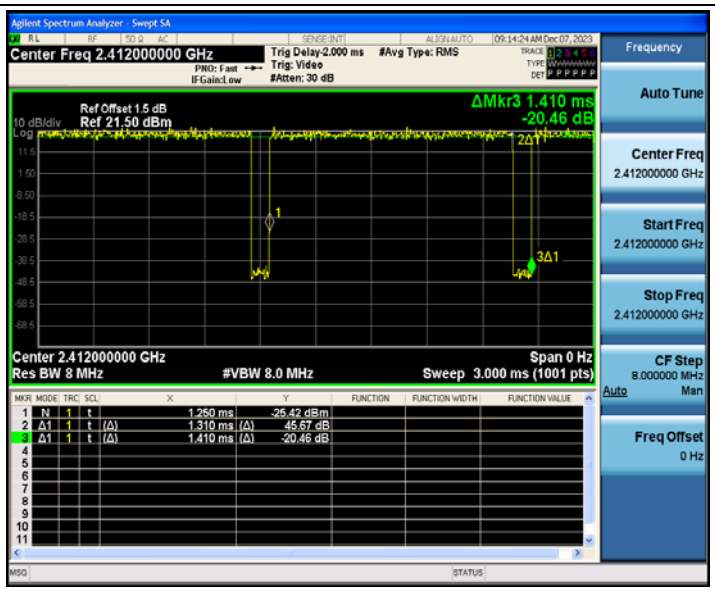
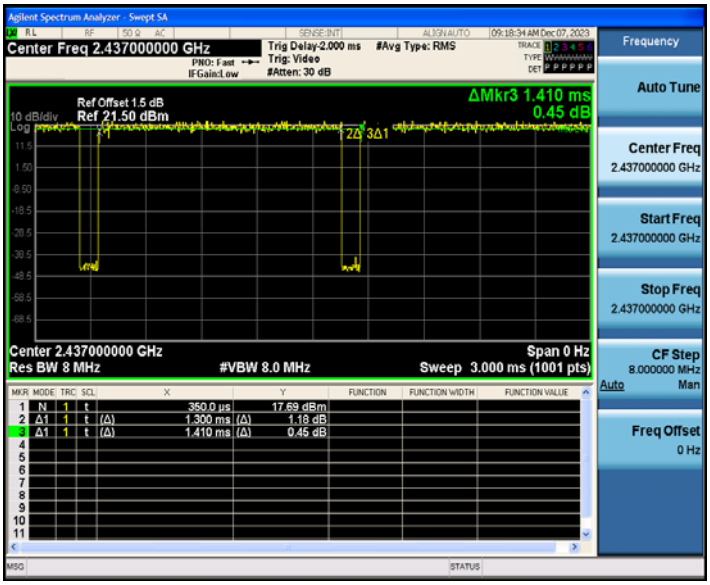


802.11n(HT20)_2437



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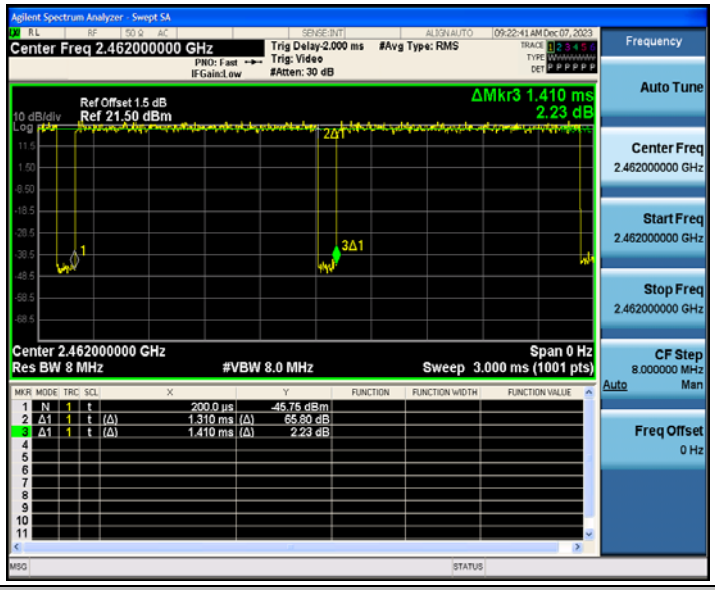

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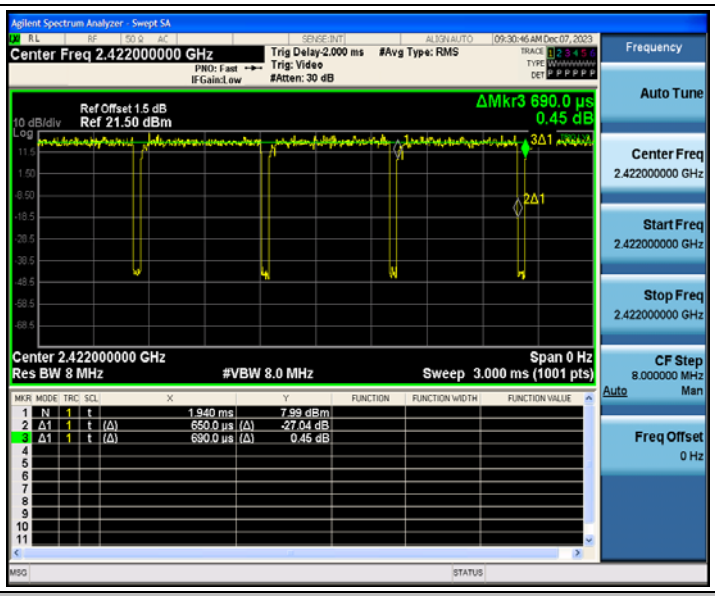

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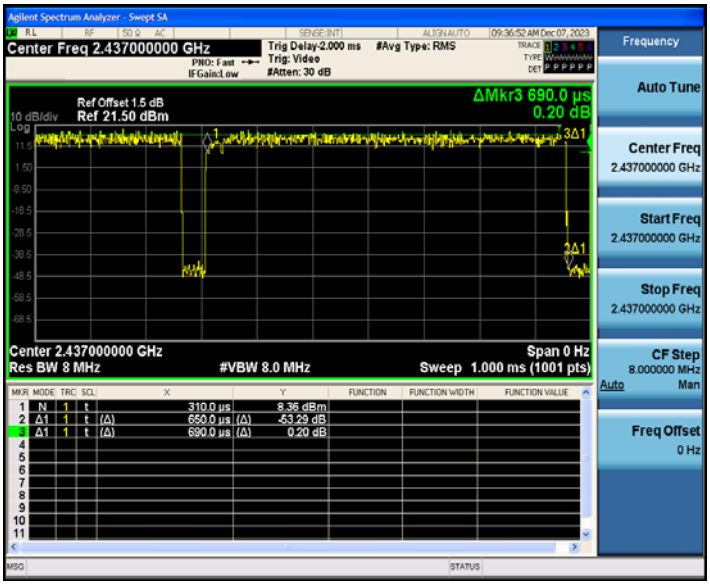

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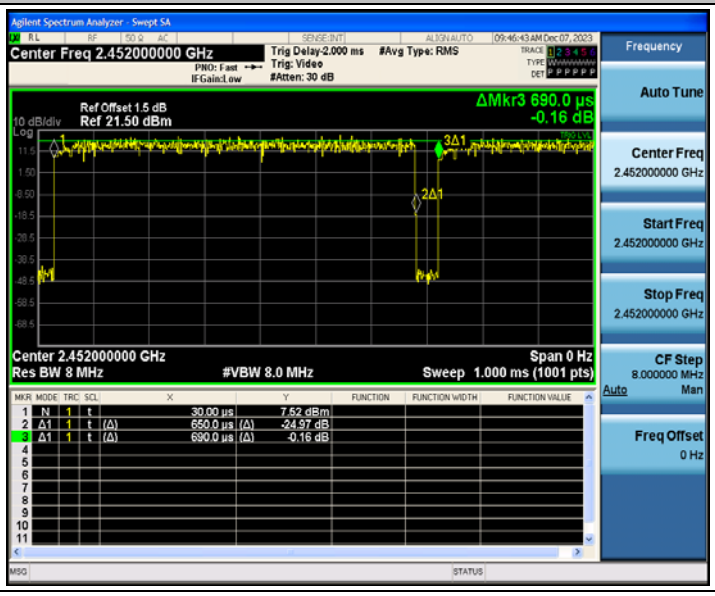

3.9. Antenna requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 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. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):
(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

Test Result

The directional gain of the antenna less than 6dBi, please refer to the EUT internal photographs antenna photo.

**********THE END**********