

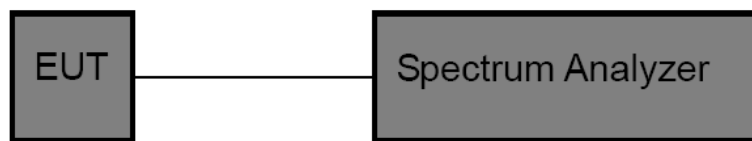
3.5. DTS Bandwidth

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

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. 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 Result**

Mode	Channel	Ant.	Center Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
IEEE 802.11b	1	0	2412	8.551	0.5	PASS
	6		2437	8.092		PASS
	11		2462	8.549		PASS
IEEE 802.11g	1		2412	16.34		PASS
	6		2437	16.36		PASS
	11		2462	16.33		PASS
IEEE 802.11n_20	1		2412	17.57		PASS
	6		2437	17.56		PASS
	11		2462	17.34		PASS
IEEE 802.11n_40	3		2422	35.46		PASS
	6		2437	35.47		PASS
	9		2452	35.72		PASS

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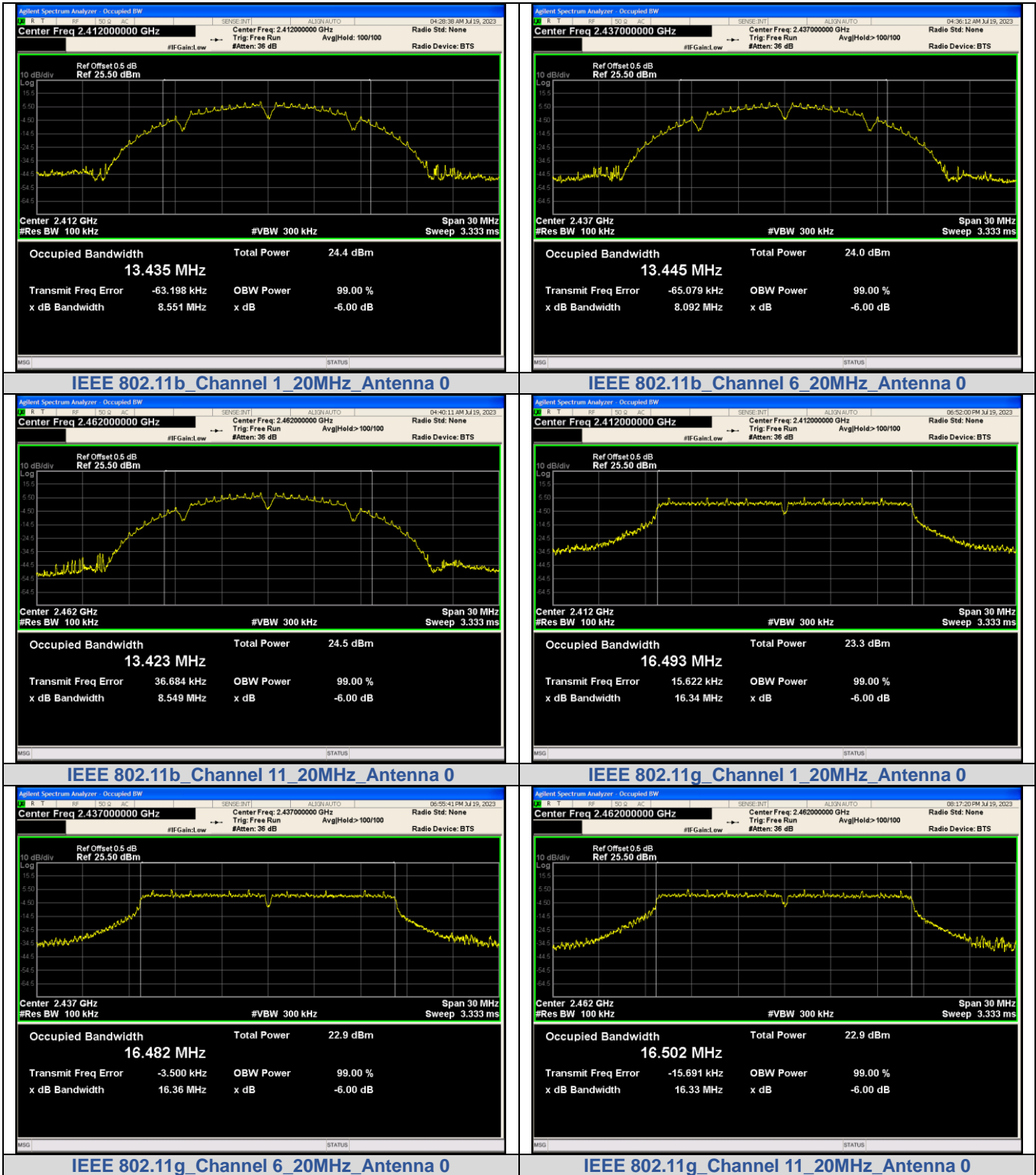
2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059

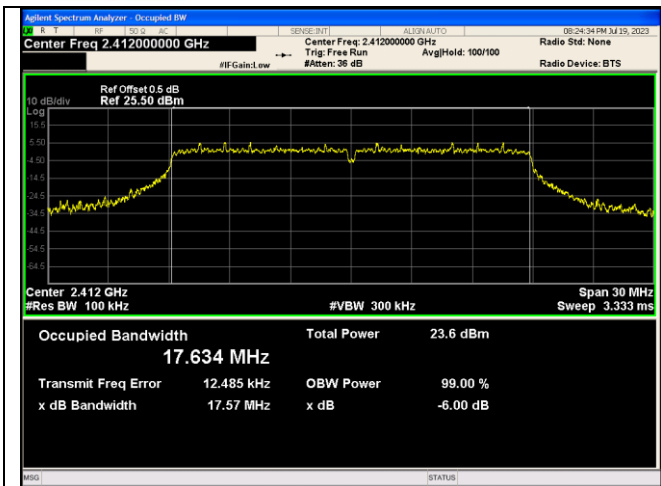
Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

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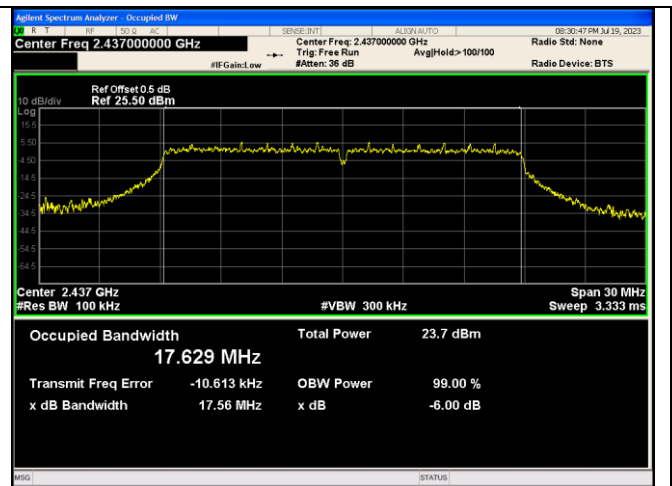


6dB Bandwidth:

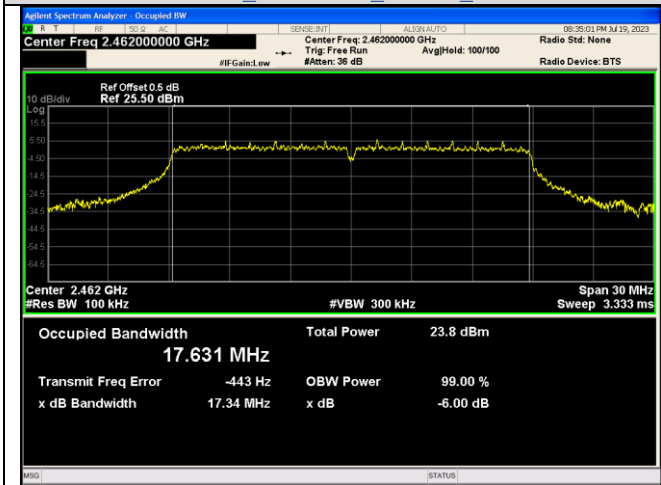




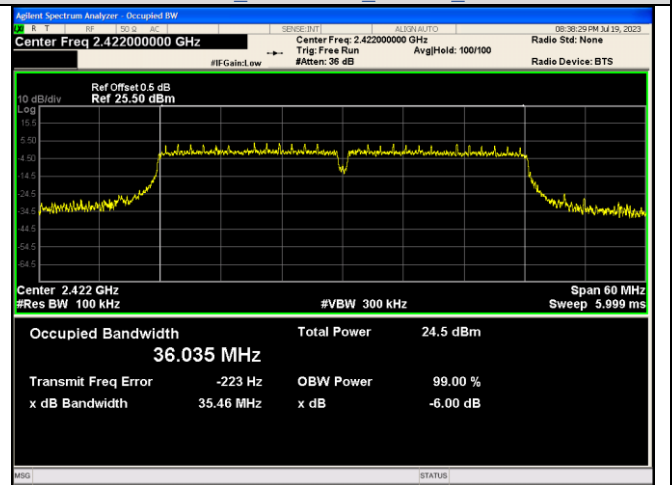
IEEE 802.11n Channel 1 20MHz Antenna 0



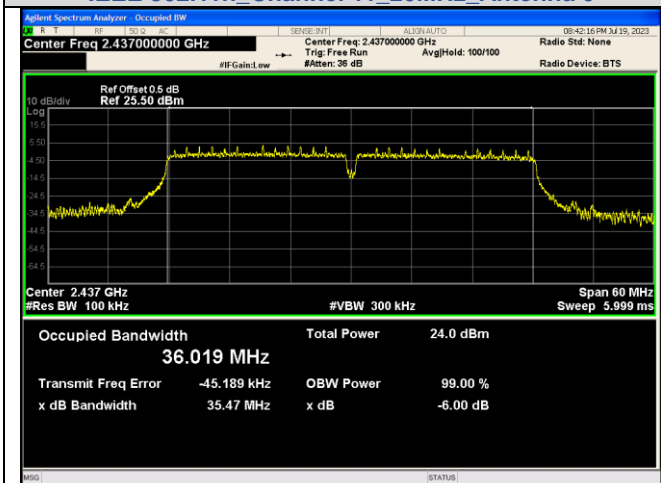
IEEE 802.11n Channel 6 20MHz Antenna 0



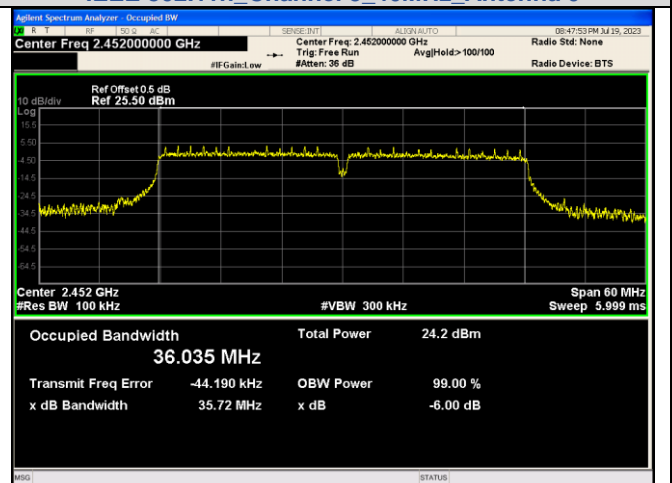
IEEE 802.11n Channel 11 20MHz Antenna 0



IEEE 802.11n Channel 6 40MHz Antenna 0



IEEE 802.11n Channel 11 40MHz Antenna 0



IEEE 802.11n Channel 9 40MHz Antenna 0

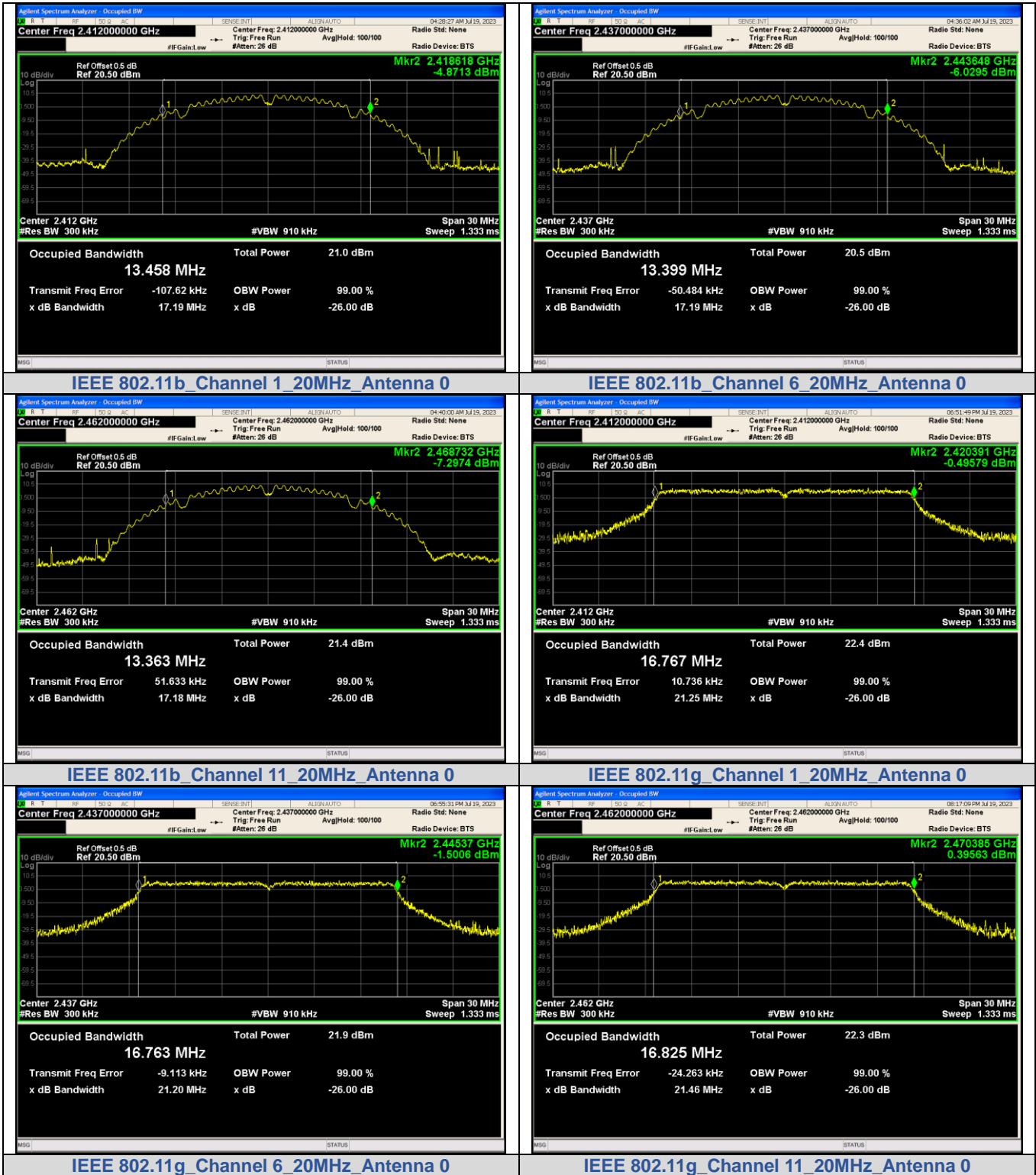




Mode	Channel	Ant.	99% BW (MHz)
IEEE 802.11b	1	0	13.458
	6		13.399
	11		13.363
IEEE 802.11g	1		16.767
	6		16.763
	11		16.825
IEEE 802.11n_20	1		17.914
	6		17.855
	11		17.839
IEEE 802.11n_40	3		36.246
	6		36.272
	9		36.274



99% Bandwidth:

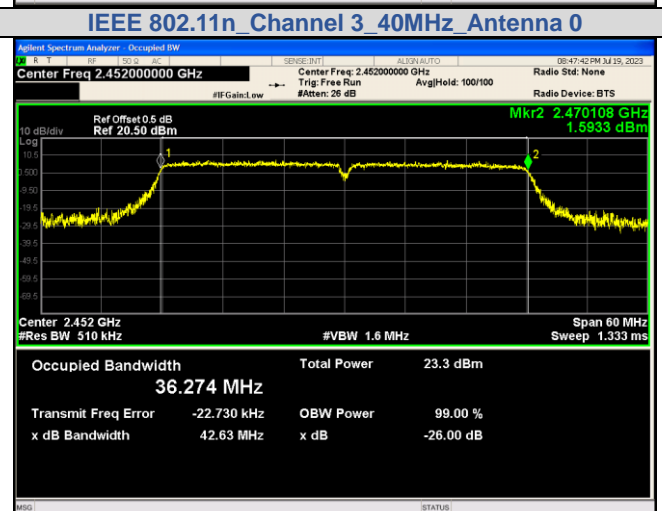
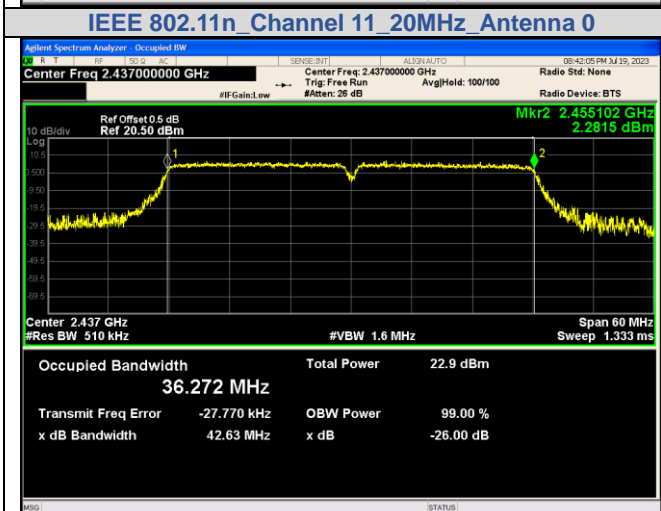
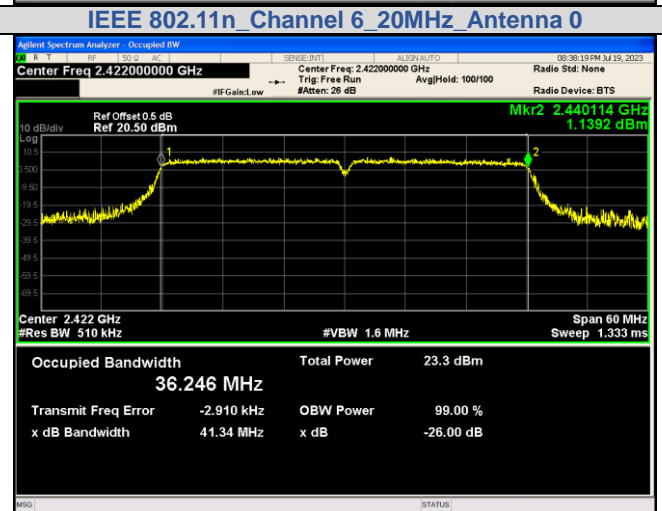
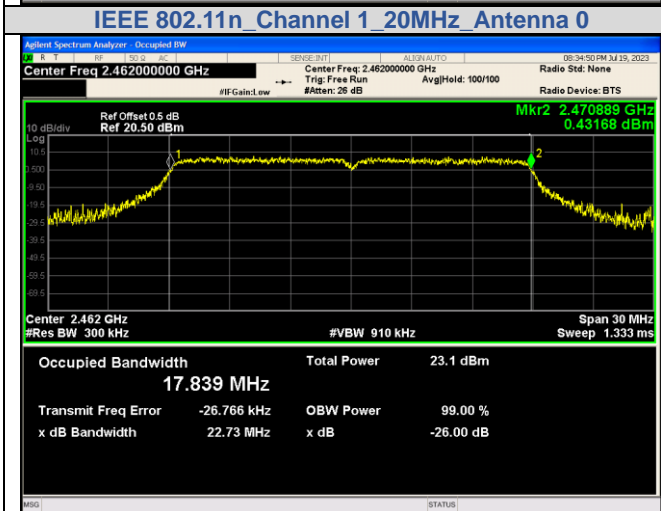
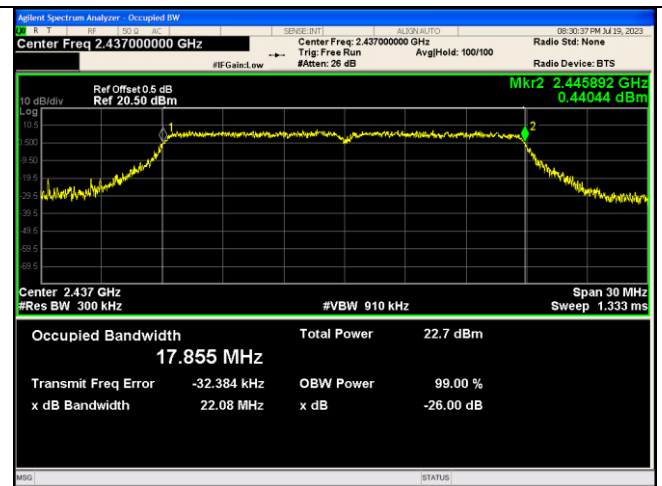
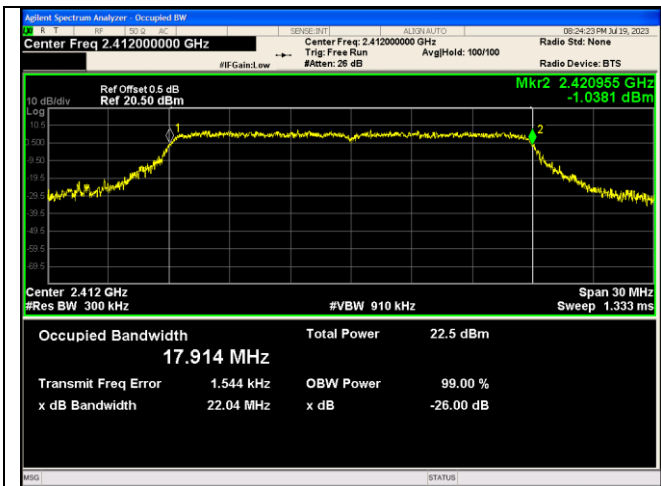


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IEEE 802.11n Channel 6 40MHz Antenna 0

IEEE 802.11n Channel 9 40MHz Antenna 0





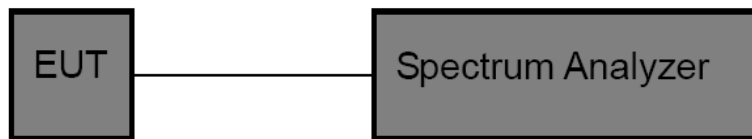
3.6. Peak Output Power

Limit

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

Section	Test Item	Limit	Frequency Range (MHz)
FCC CFR 47 Part15.247 (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 EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. Spectrum Setting:
 - (1) Set RBW \geq DTS Bandwidth.
 - (2) Set VBW \geq 3*RBW.
 - (3) Set Span \geq 3*RBW.
 - (4) Sweep time = Auto couple.
 - (5) Detector = Peak.
 - (6) Trace mode = Max hold.
 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.

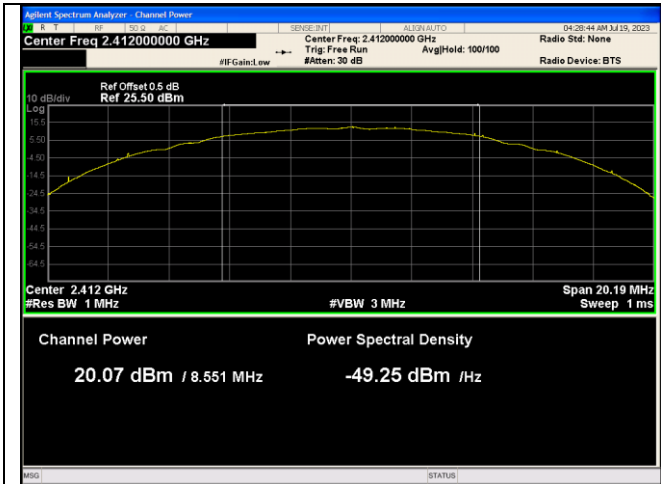
**Test Result**

Conducted peak output power

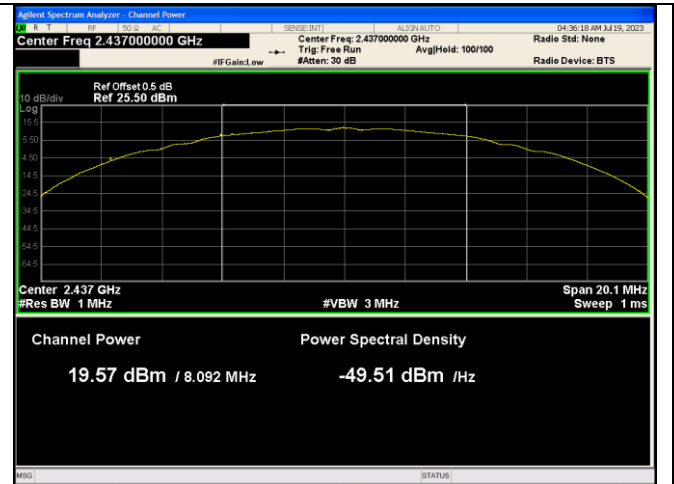
Mode	Channel	Ant. 0 (dBm)	Limit (dBm)	Result
IEEE 802.11b	1	20.07	30	PASS
	6	19.57	30	PASS
	11	20.18	30	PASS
IEEE 802.11g	1	24.11	30	PASS
	6	23.74	30	PASS
	11	23.72	30	PASS
IEEE 802.11n_20	1	24.38	30	PASS
	6	24.47	30	PASS
	11	24.49	30	PASS
IEEE 802.11n_40	3	25.12	30	PASS
	6	24.58	30	PASS
	9	24.84	30	PASS



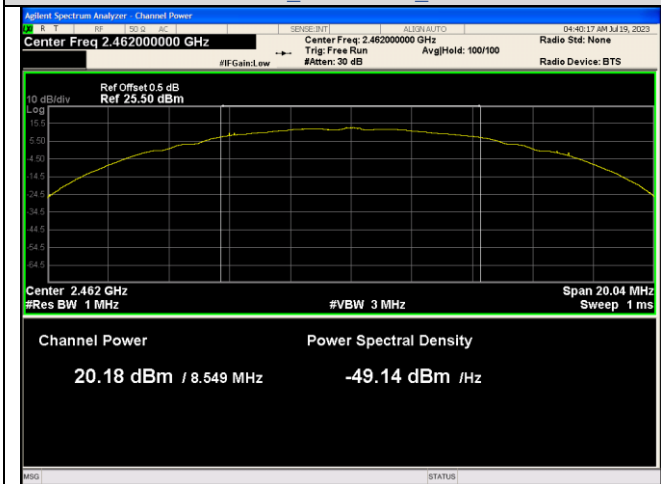
Test Graphs:



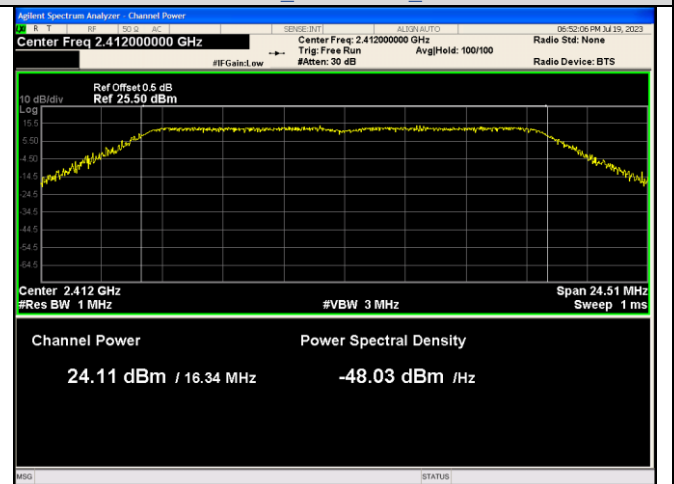
Conducted peak output power IEEE 802.11b_Channel 1_Antenna 0



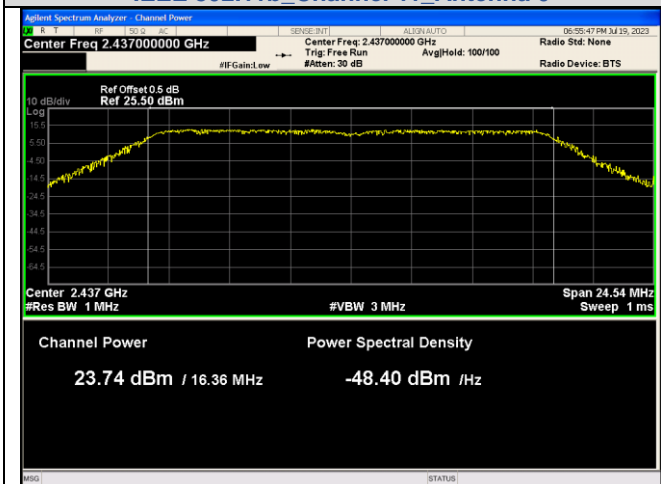
Conducted peak output power IEEE 802.11b_Channel 6_Antenna 0



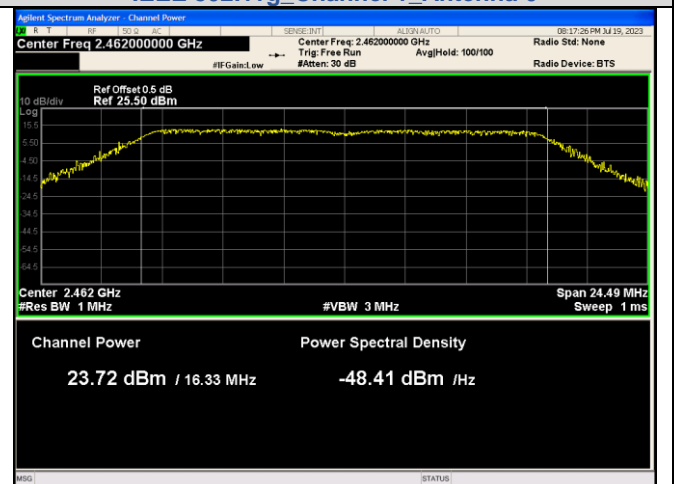
Conducted peak output power IEEE 802.11b_Channel 11_Antenna 0



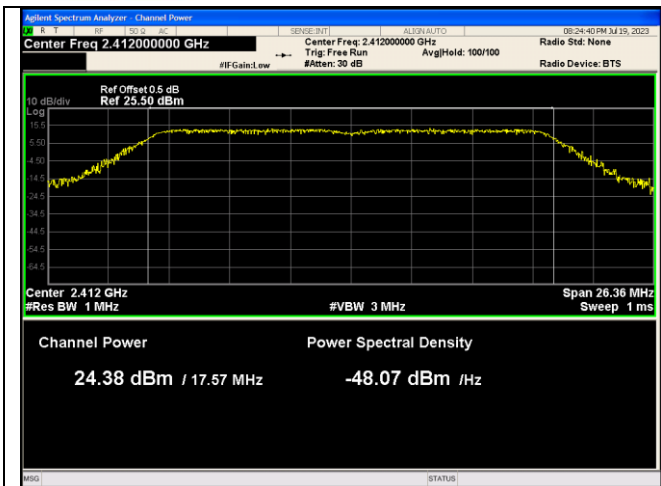
Conducted peak output power IEEE 802.11g_Channel 1_Antenna 0



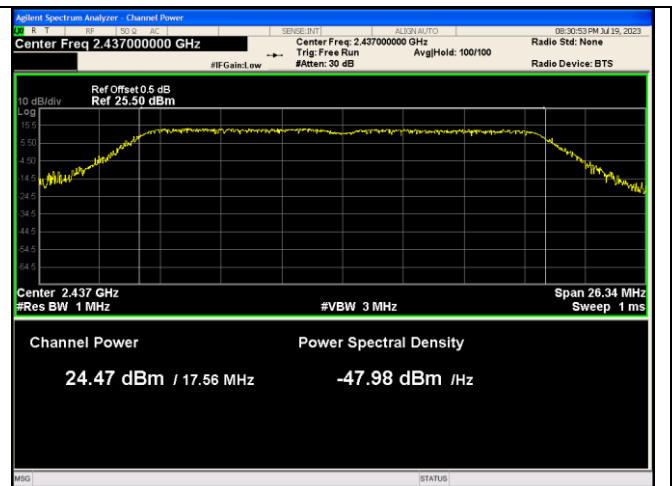
Conducted peak output power IEEE 802.11g_Channel 6_Antenna 0



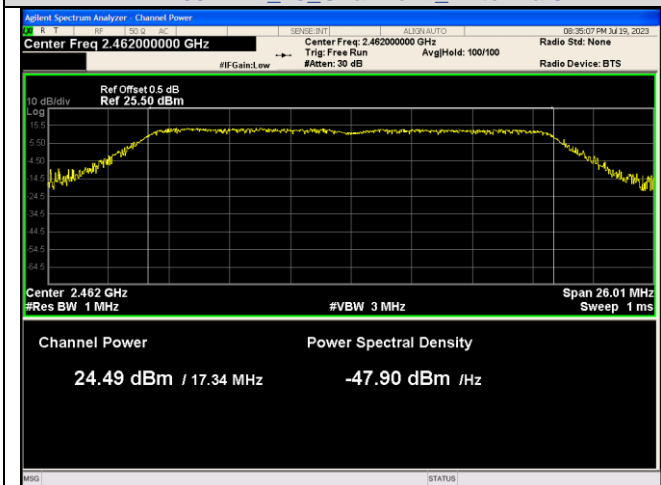
Conducted peak output power IEEE 802.11g_Channel 11_Antenna 0



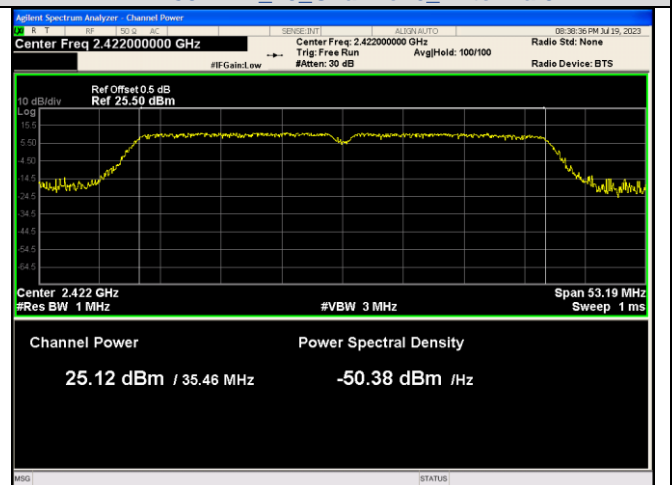
Conducted peak output power IEEE 802.11n_20_Channel 1_Antenna 0



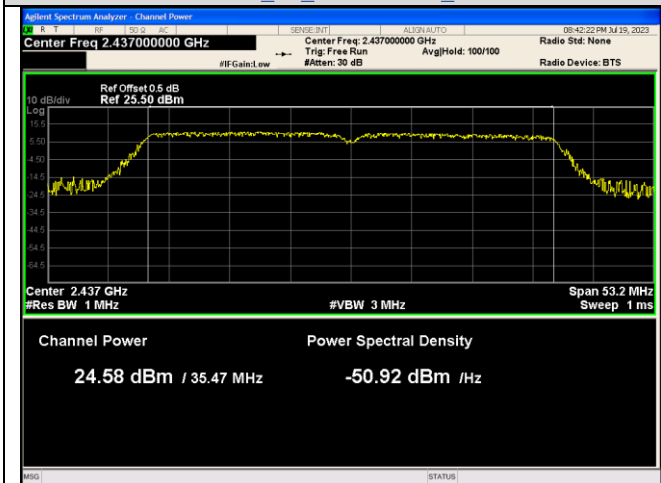
Conducted peak output power IEEE 802.11n_20_Channel 6_Antenna 0



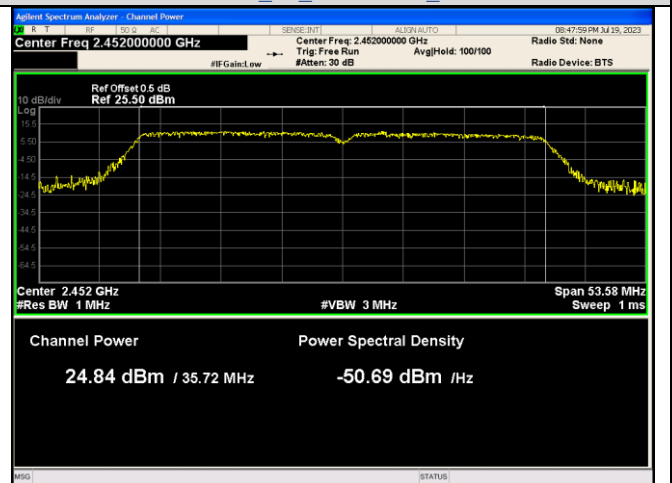
Conducted peak output power IEEE 802.11n_20_Channel 11_Antenna 0



Conducted peak output power IEEE 802.11n_40_Channel 3_Antenna 0



Conducted peak output power IEEE 802.11n_40_Channel 6_Antenna 0



Conducted peak output power IEEE 802.11n_40_Channel 9_Antenna 0





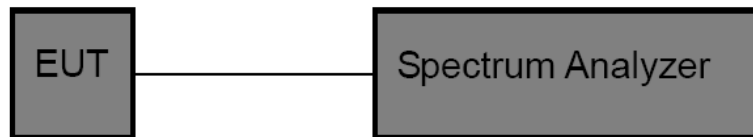
3.7. Power Spectral Density

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	8 dBm (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: 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.

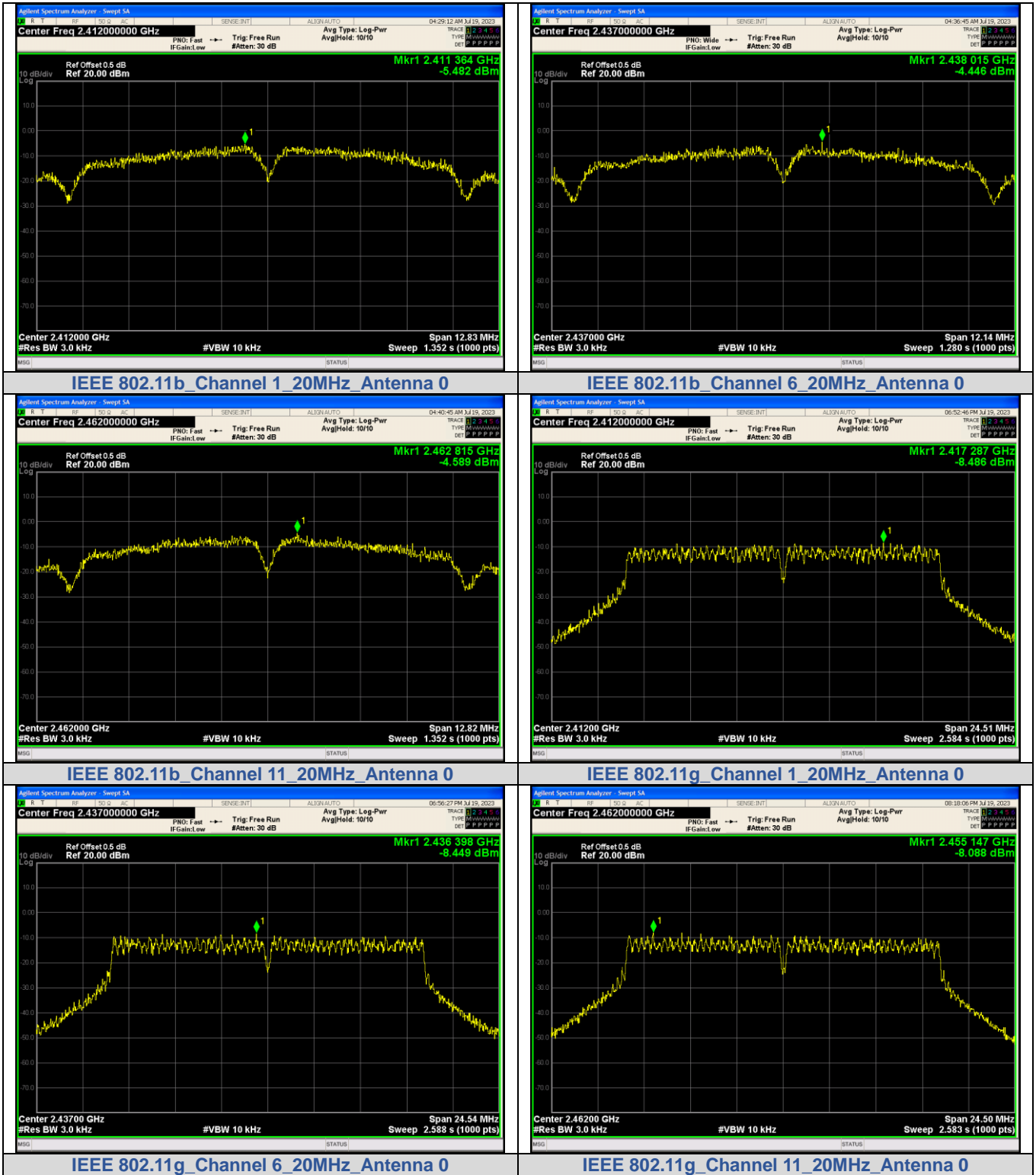


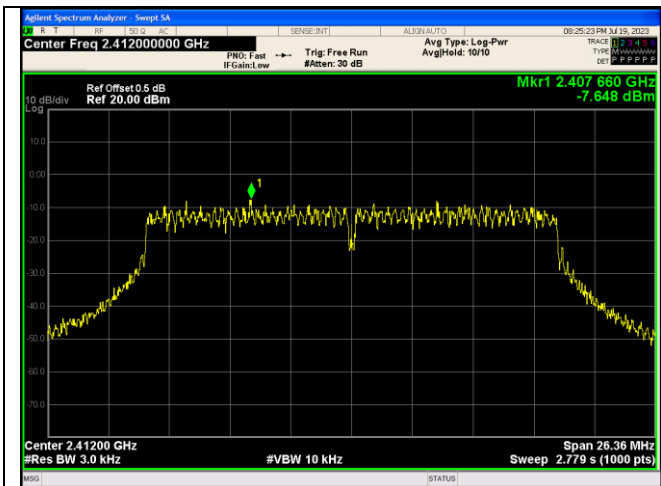
Test Result

Mode	Channel	PSD (dBm/3kHz) Ant. 0	Limit (dBm/3kHz)	Result
IEEE 802.11b	1	-5.482	8	PASS
	6	-4.446		PASS
	11	-4.589		PASS
IEEE 802.11g	1	-8.486		PASS
	6	-8.449		PASS
	11	-8.088		PASS
IEEE 802.11n_20	1	-7.648		PASS
	6	-7.792		PASS
	11	-6.964		PASS
IEEE 802.11n_40	3	-9.808		PASS
	6	-10.444		PASS
	9	-9.227		PASS

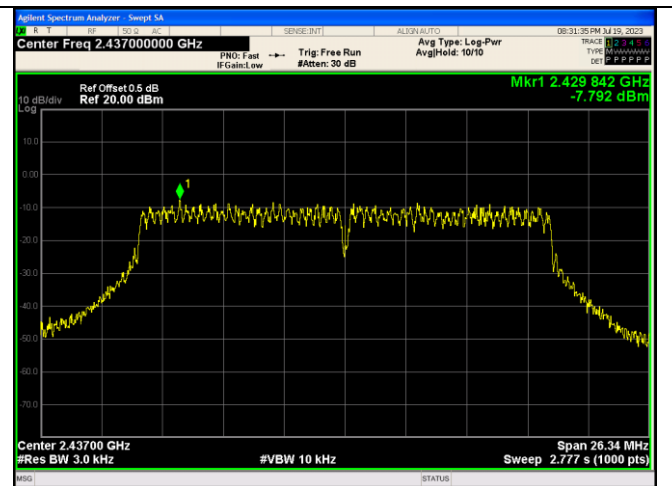


Test plot as follows:

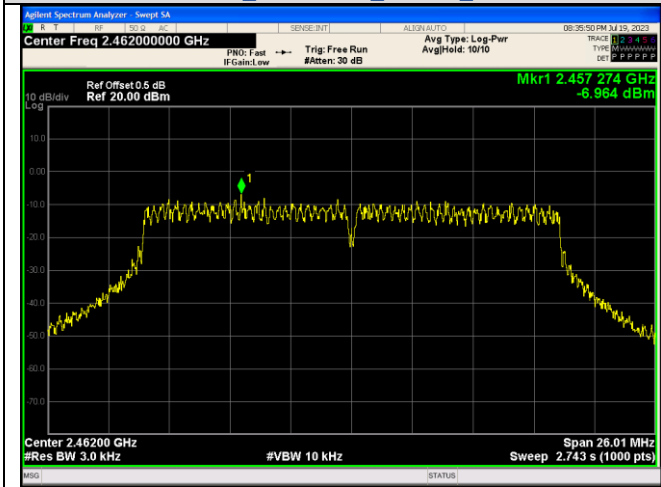




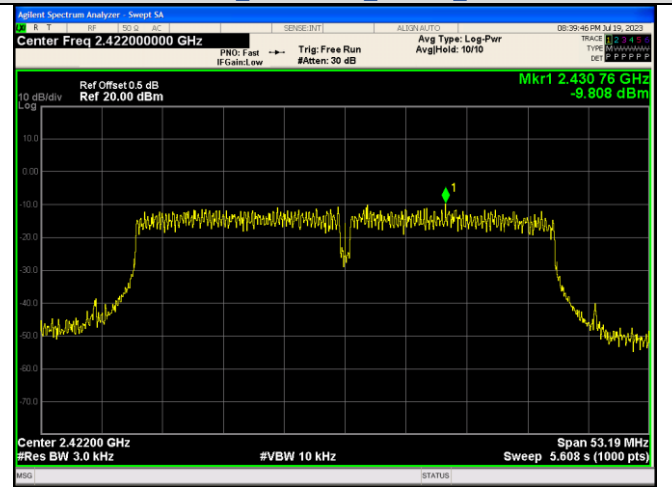
IEEE 802.11n Channel 1 20MHz Antenna 0



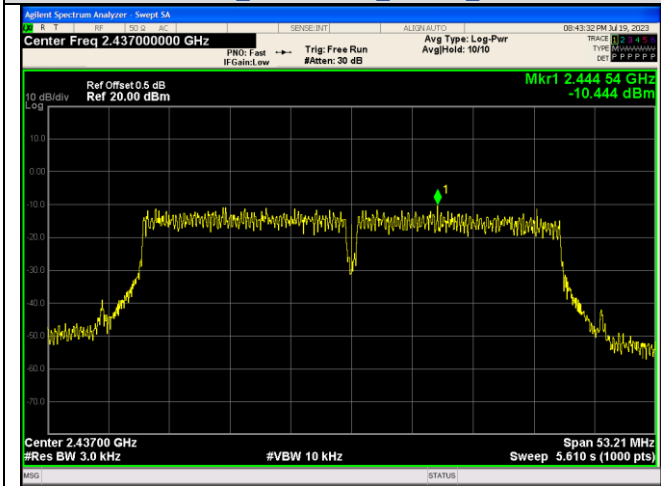
IEEE 802.11n Channel 6 20MHz Antenna 0



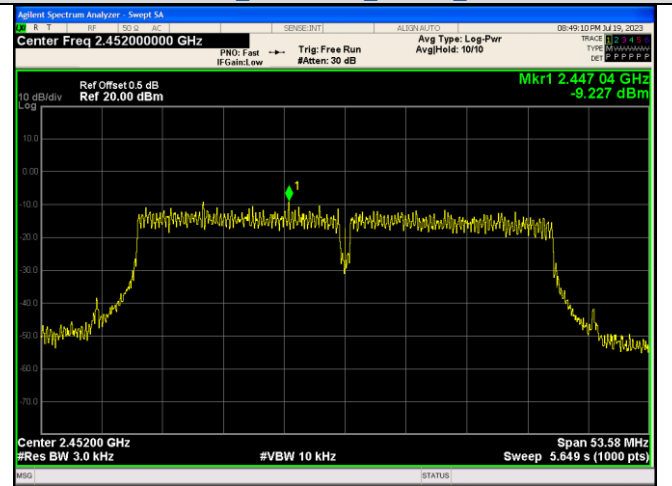
IEEE 802.11n Channel 11 20MHz Antenna 0



IEEE 802.11n Channel 3 40MHz Antenna 0



IEEE 802.11n Channel 6 40MHz Antenna 0



IEEE 802.11n Channel 9 40MHz Antenna 0

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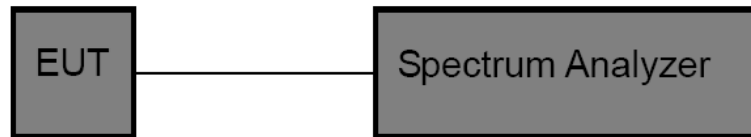


3.8. Duty Cycle

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 test channel center frequency.
Set the span to 0Hz.
Set the RBW to 10MHz.
Set the VBW to 10MHz.
Detector: Peak.
Sweep time: Auto.
Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

Test Mode

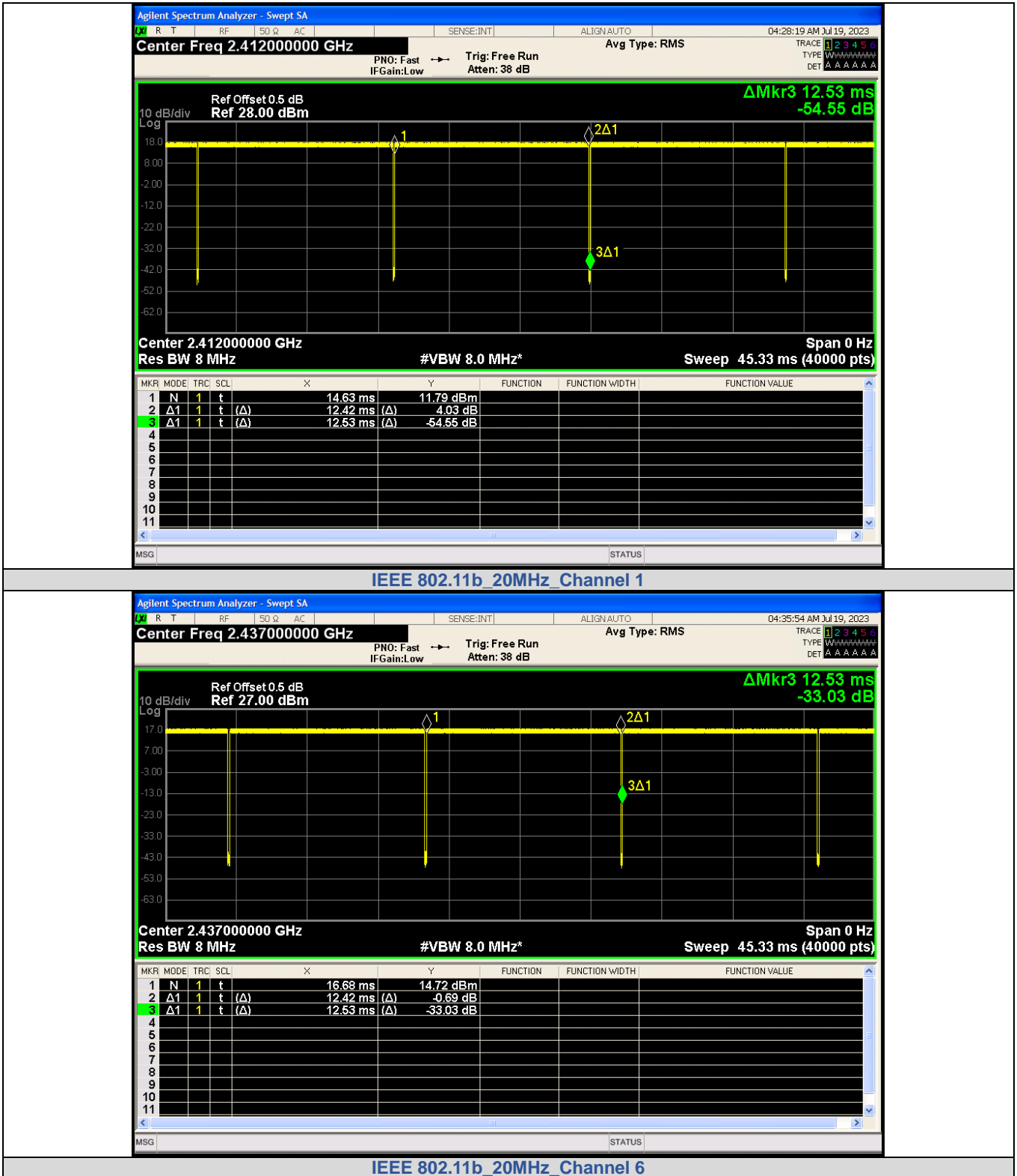
Please refer to the clause 2.4.

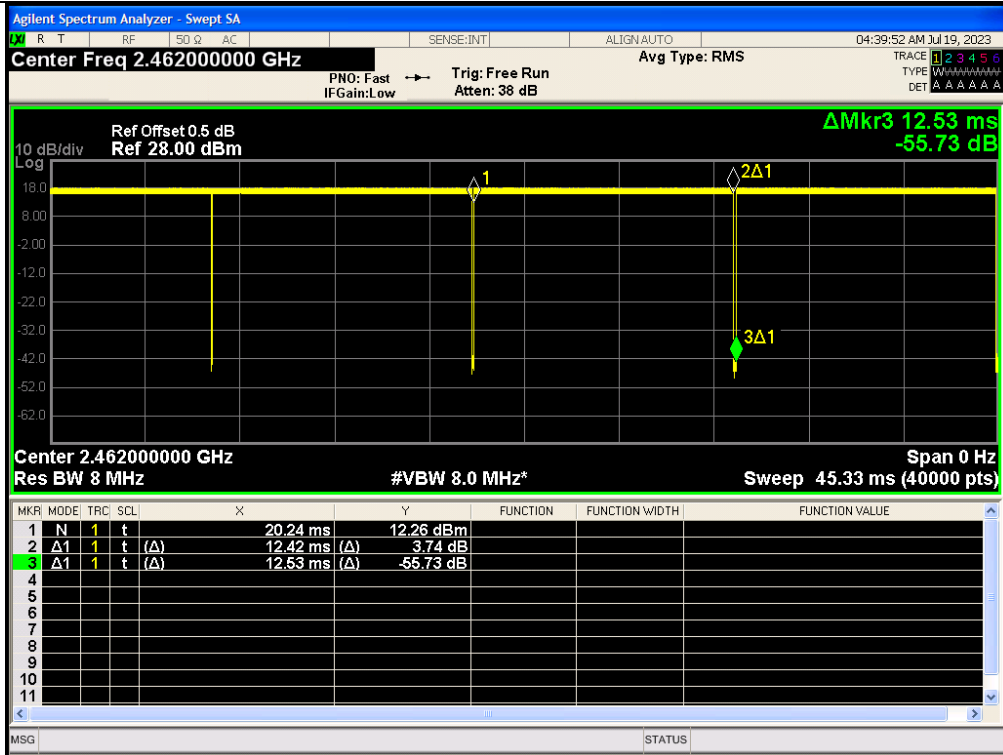
**Test Result**

Mode	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	1/T Minimum VBW (kHz)	Final Setting for VBW (kHz)
IEEE 802.11b	1	12.418	12.534	99.08	0.08	1
	6	12.418	12.534	99.08	0.08	1
	11	12.418	12.534	99.08	0.08	1
IEEE 802.11g	1	2.066	2.199	93.93	0.48	1
	6	2.066	2.217	93.17	0.48	1
	11	2.066	2.136	96.70	0.48	1
IEEE 802.11n_20	1	1.922	2.055	93.50	0.52	1
	6	1.922	2.019	95.17	0.52	1
	11	1.922	2.073	92.69	0.52	1
IEEE 802.11n_40	3	0.946	1.025	92.23	1.06	3
	6	0.946	0.989	95.60	1.06	3
	9	0.946	1.079	87.61	1.06	3

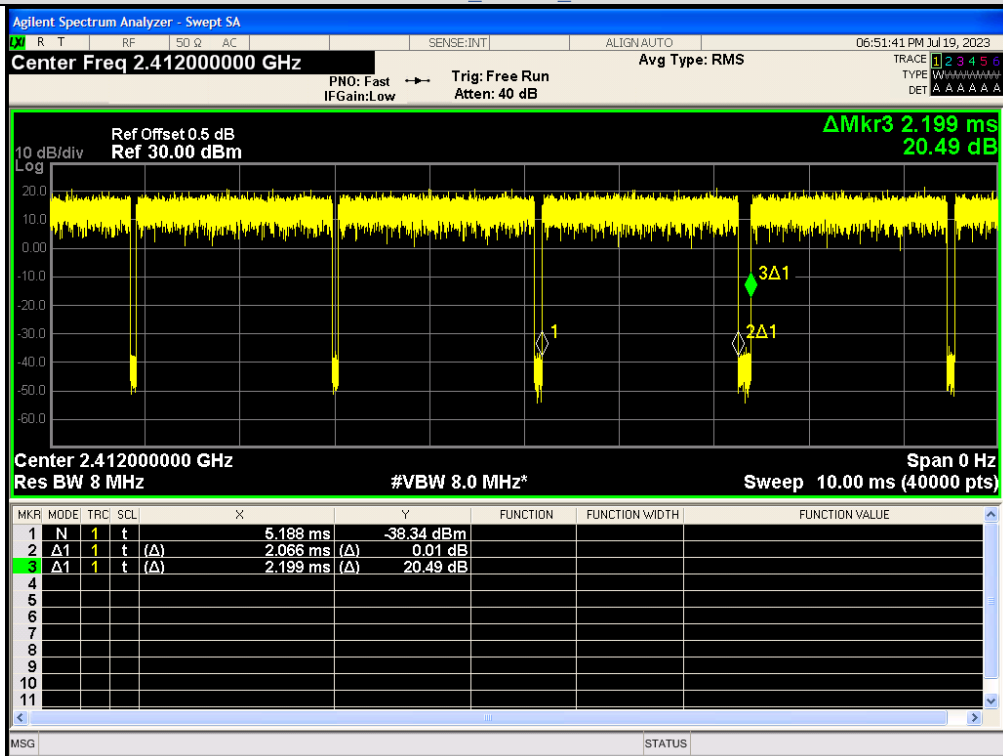


Test plot as follows:

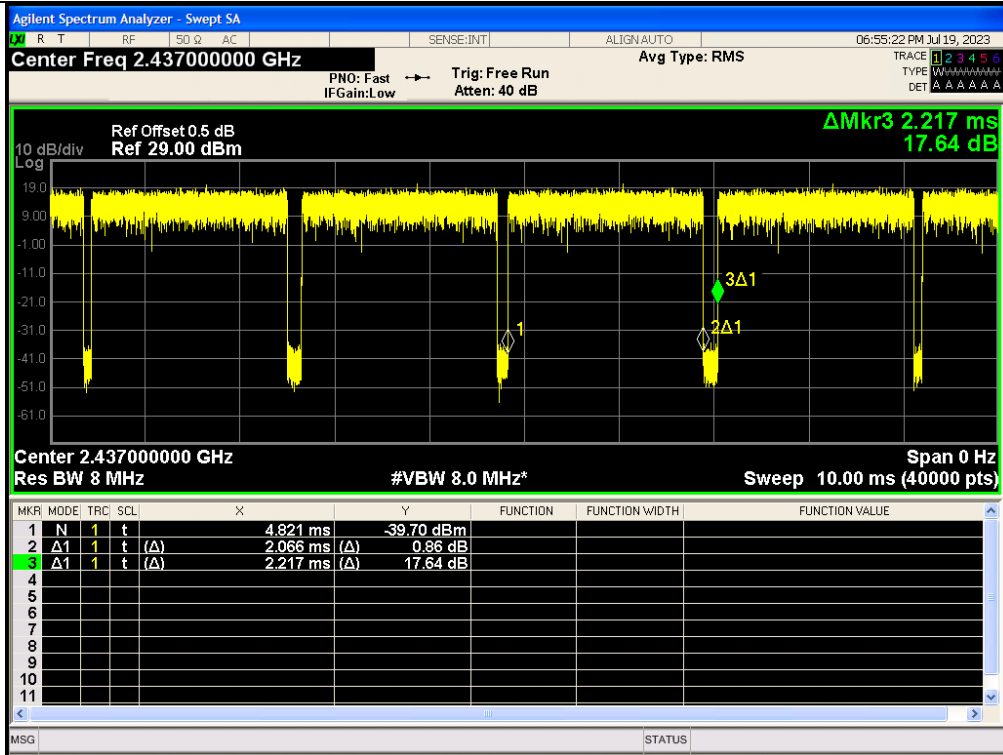




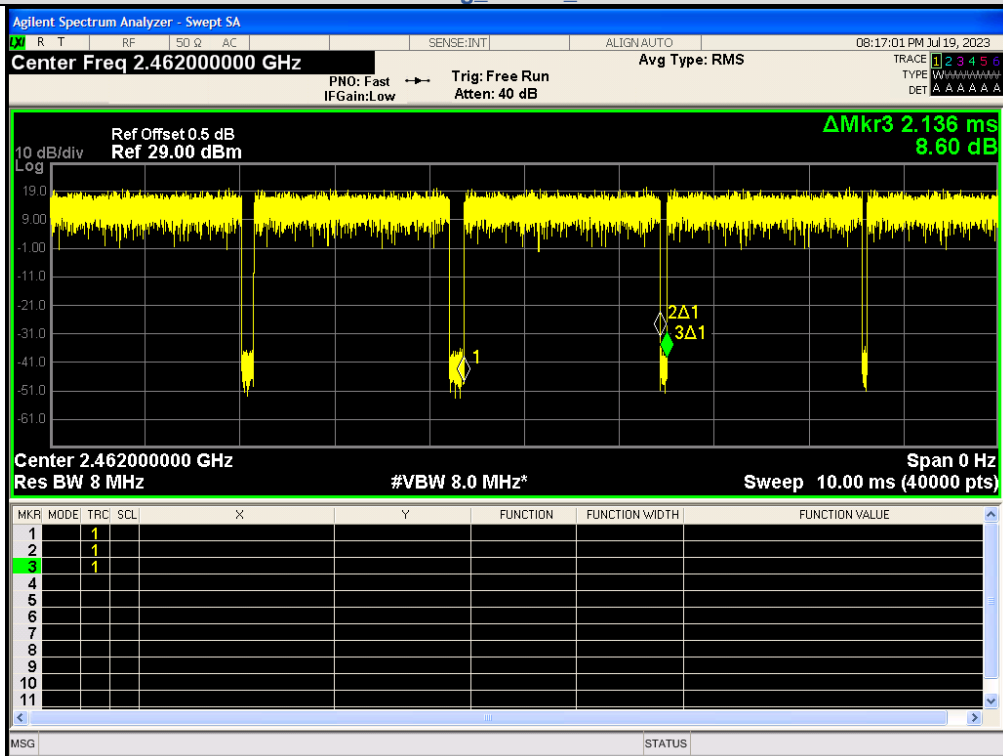
IEEE 802.11b_20MHz_Channel 11



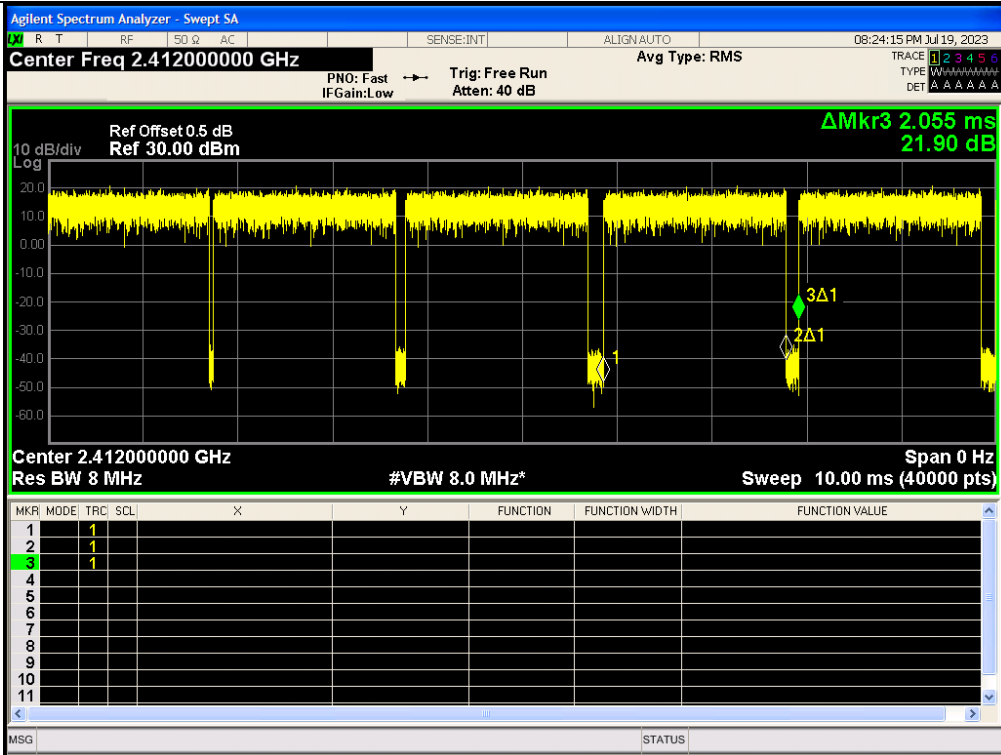
IEEE 802.11g_20MHz_Channel 1



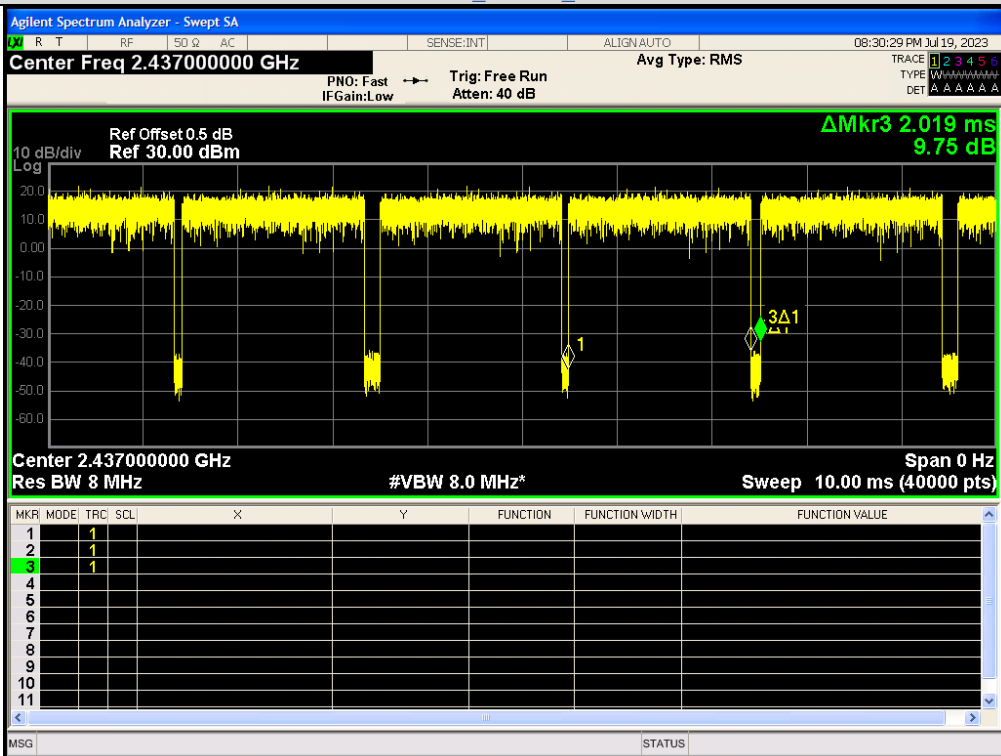
IEEE 802.11g_20MHz_Channel 6



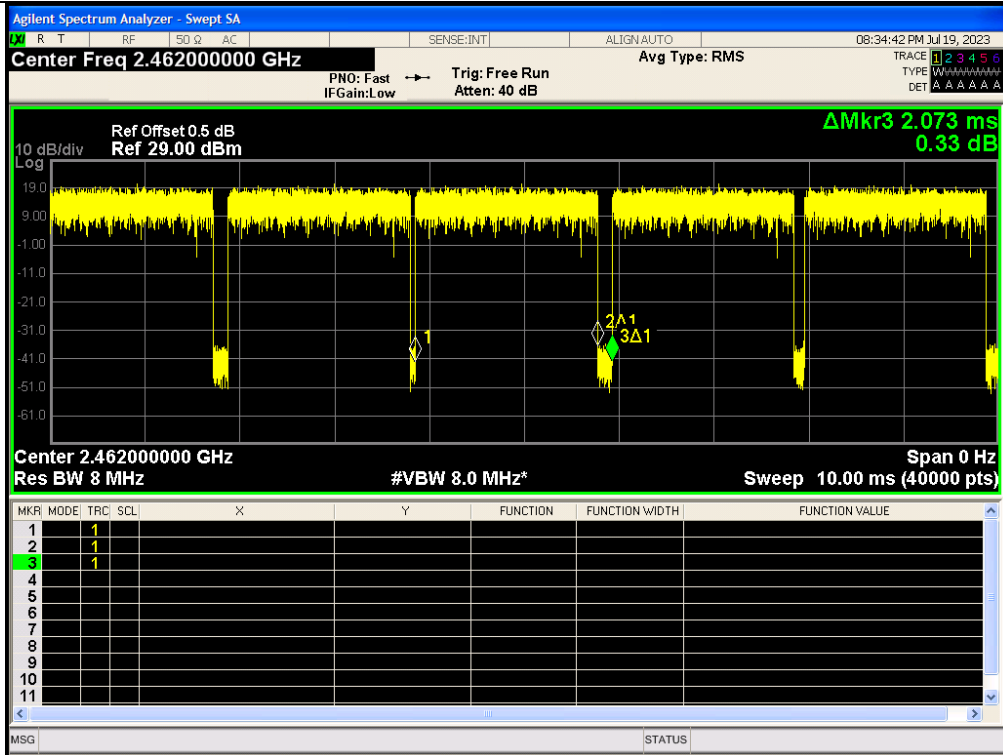
IEEE 802.11g_20MHz_Channel 11



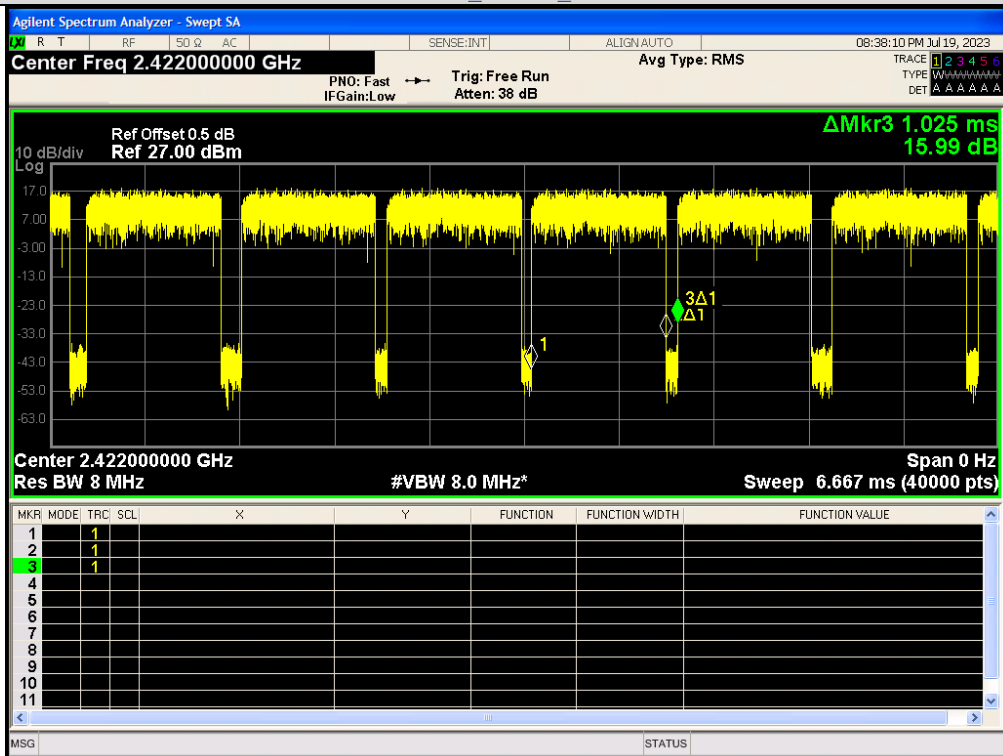
IEEE 802.11n_20MHz_Channel 1



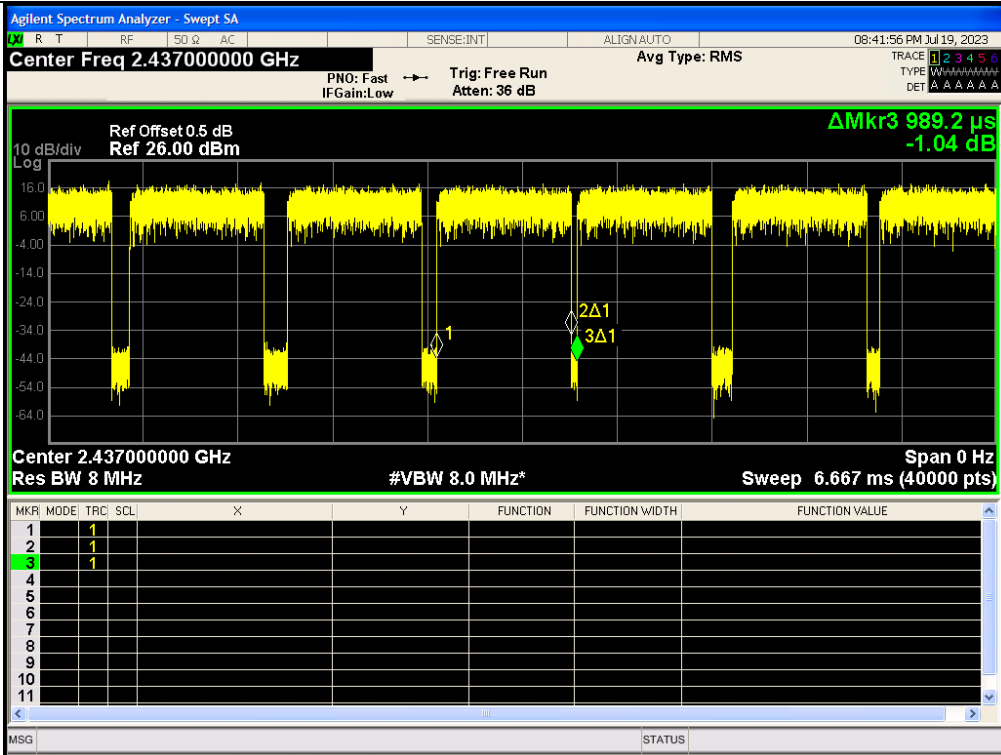
IEEE 802.11n_20MHz_Channel 6



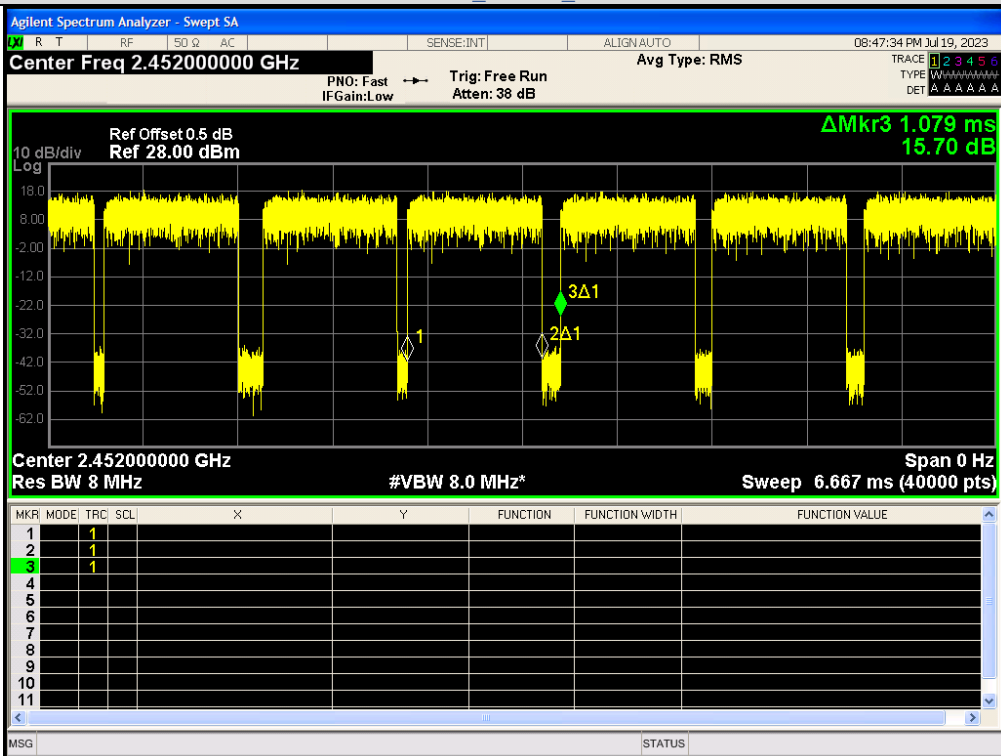
IEEE 802.11n_20MHz_Channel 11



IEEE 802.11n_40MHz_Channel 3



IEEE 802.11n_40MHz_Channel 6



IEEE 802.11n_40MHz_Channel 9



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 is less than 6dBi, please refer to the EUT internal photographs antenna photo.

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