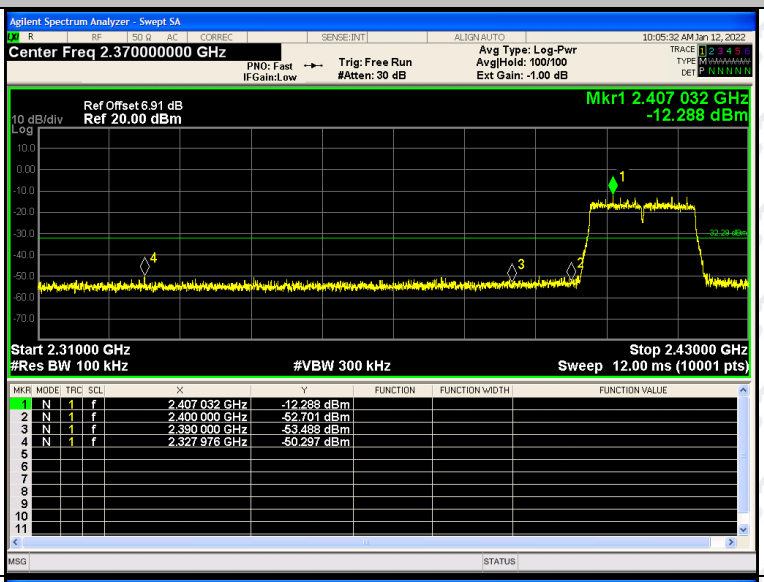
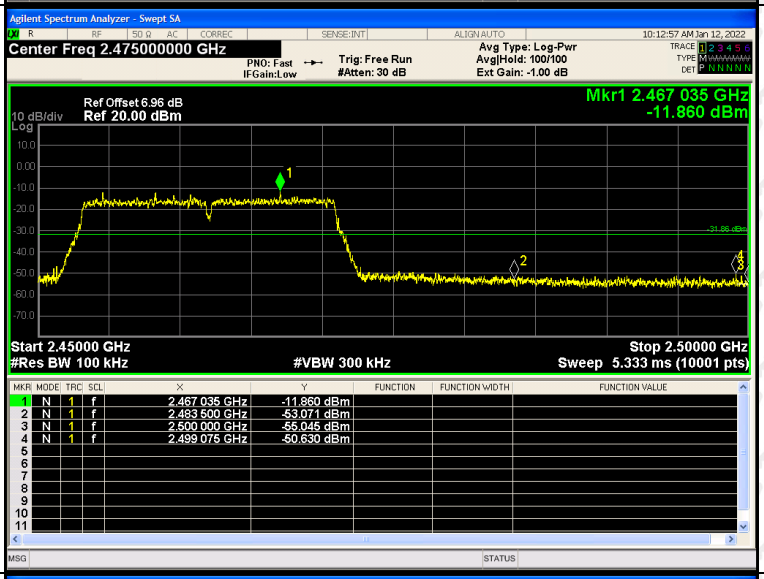
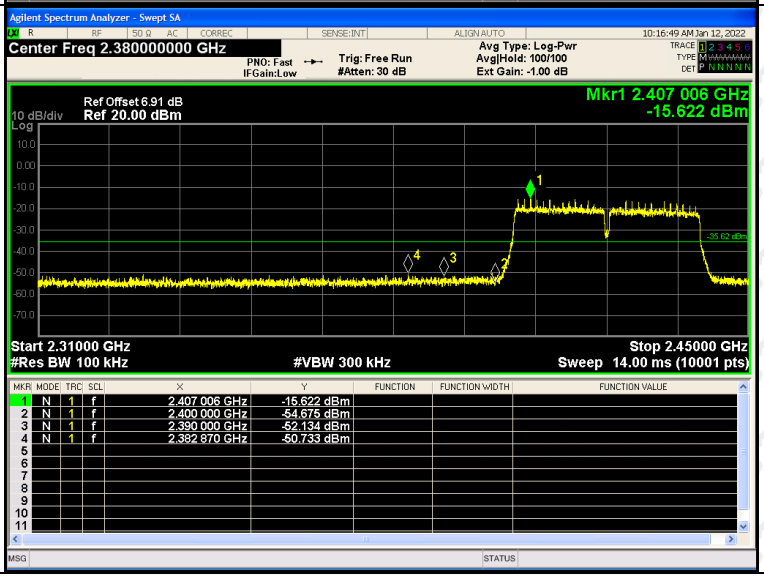
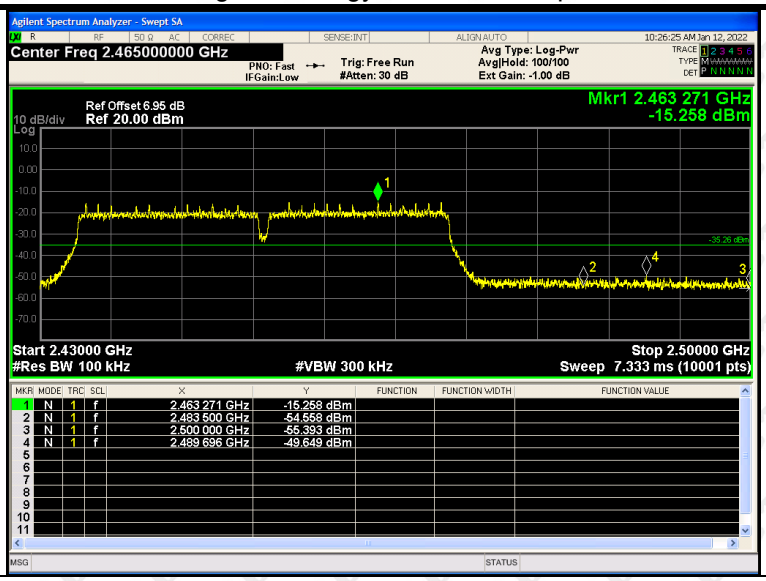
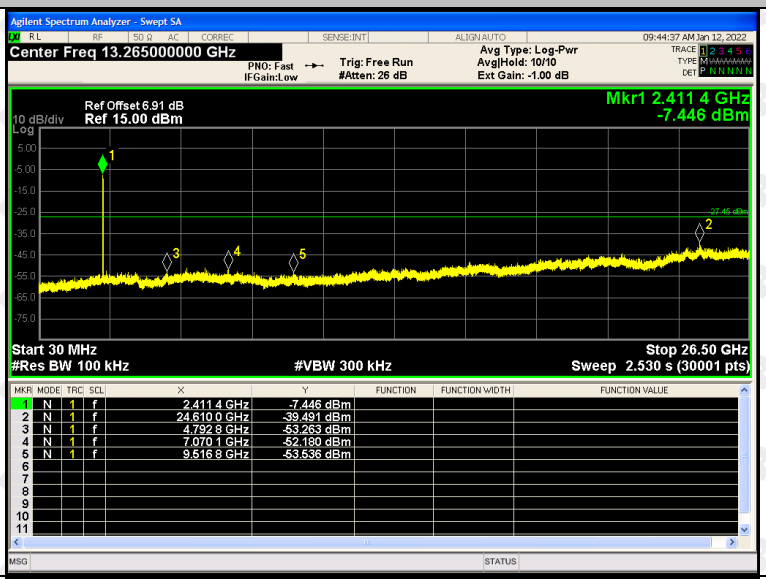
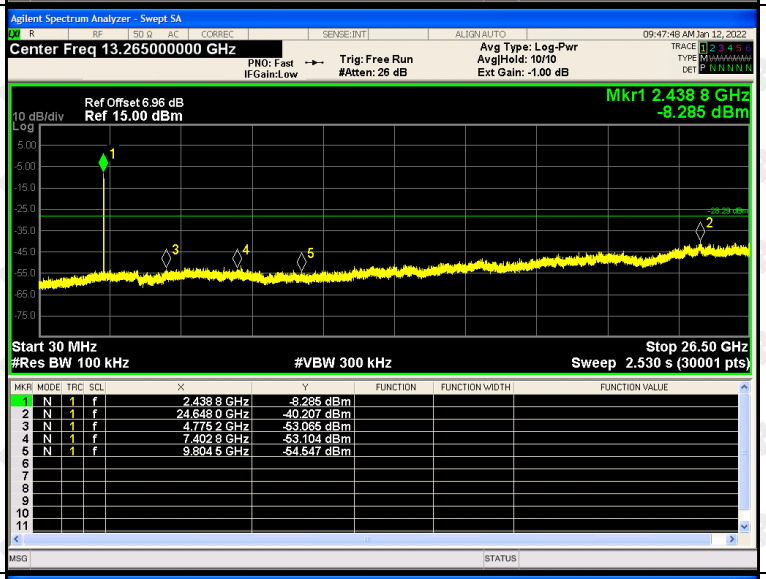
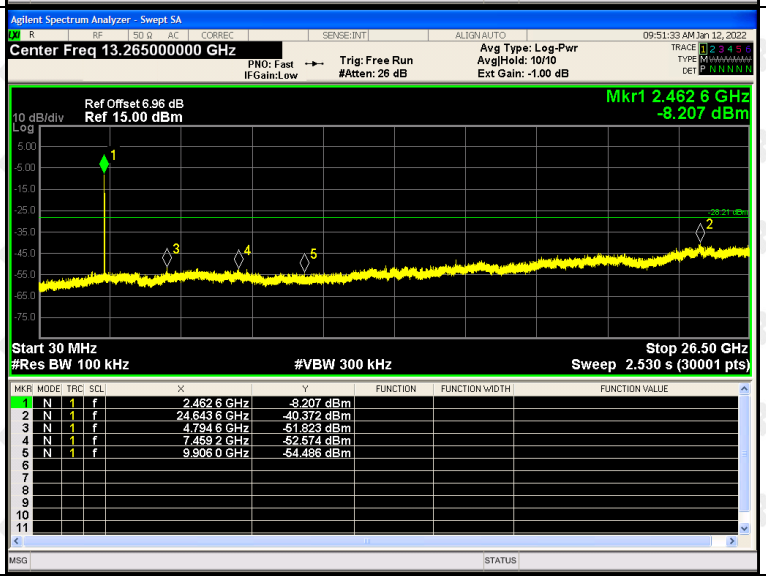
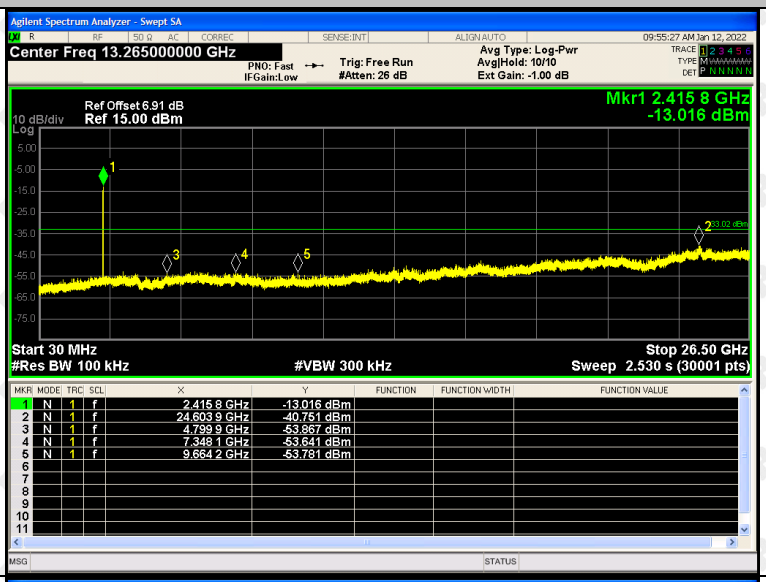
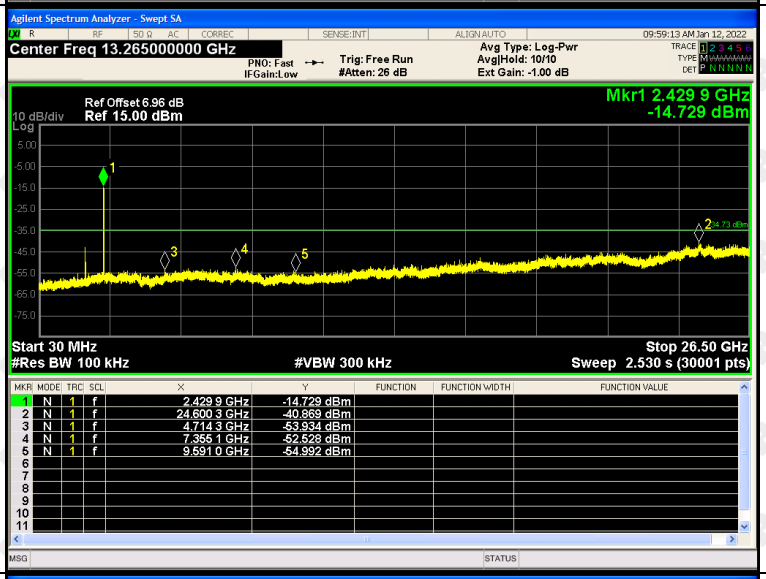
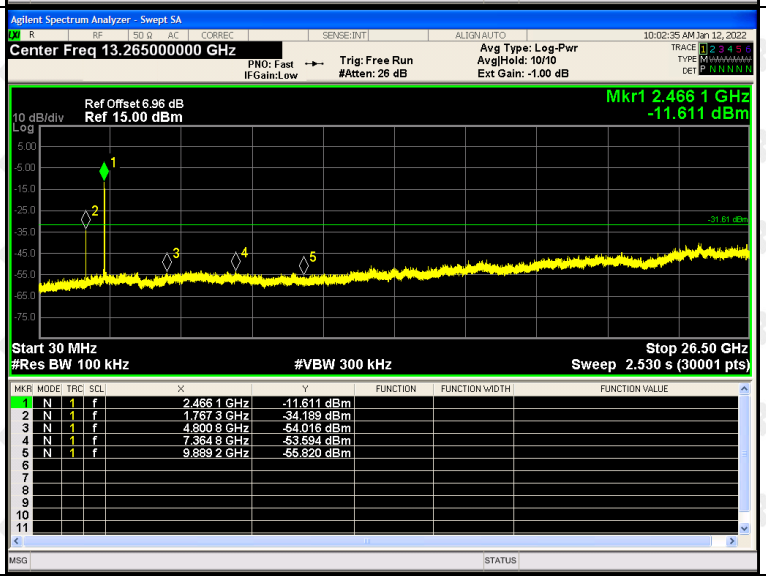
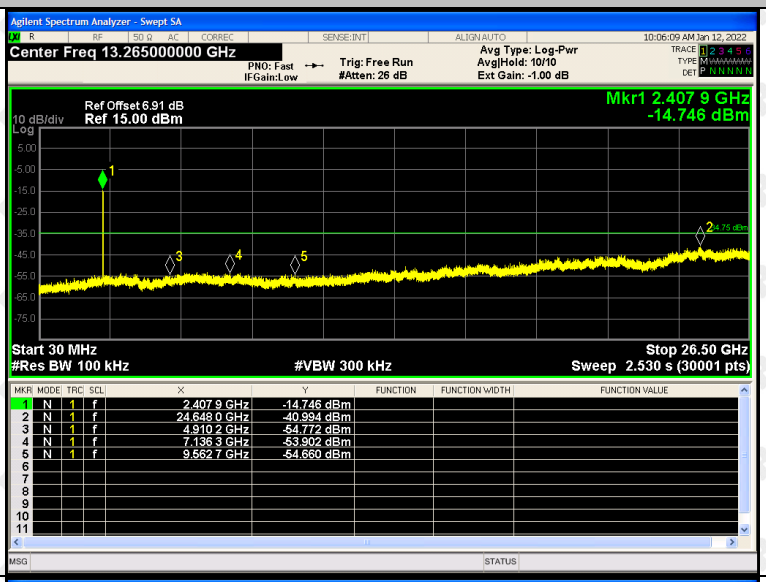
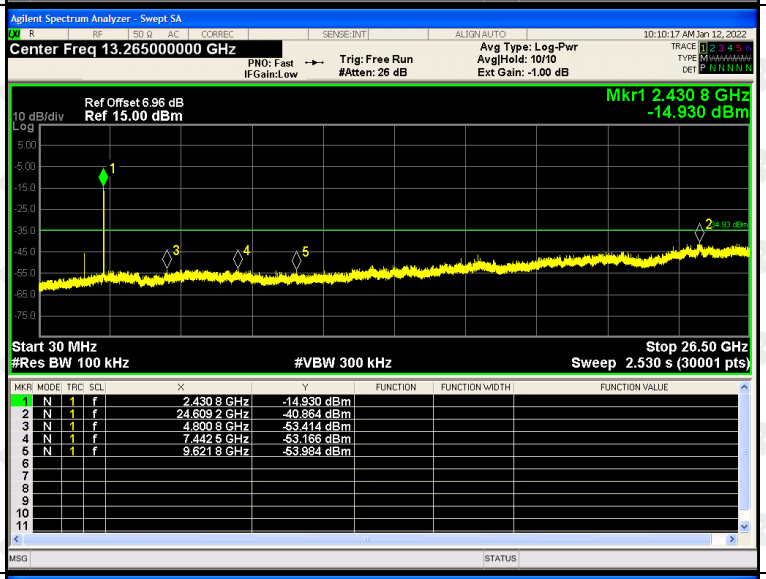
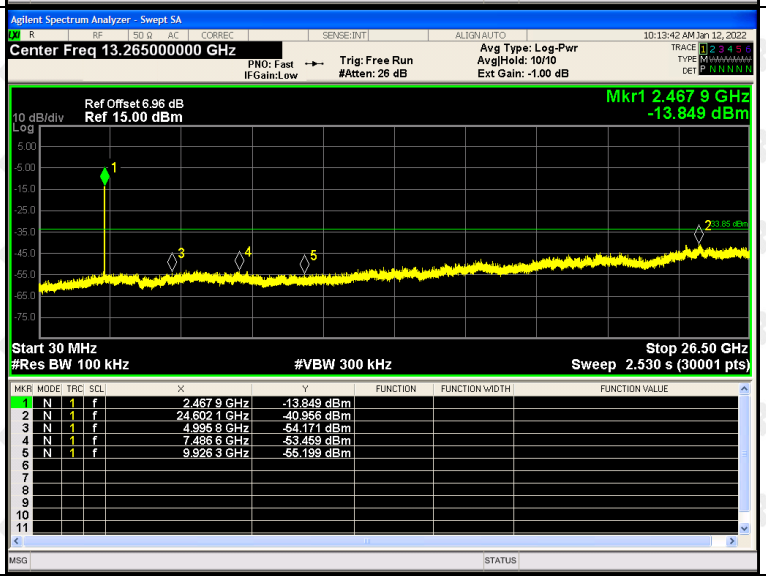
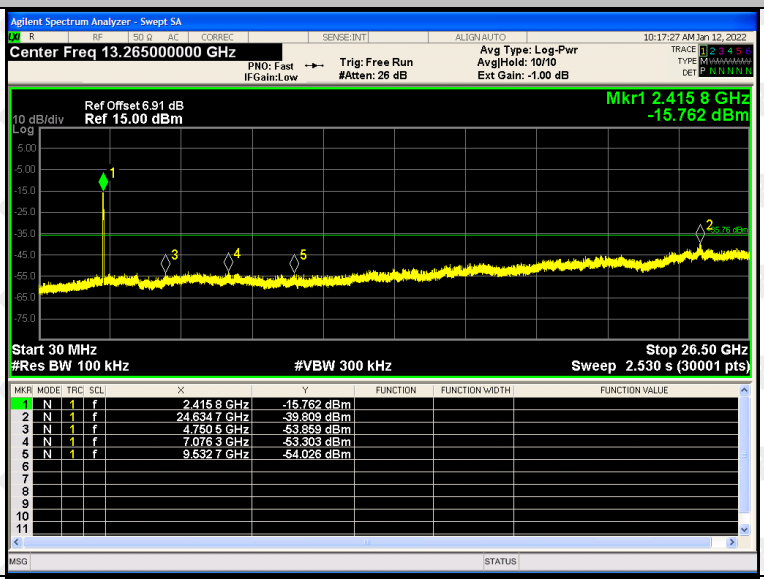
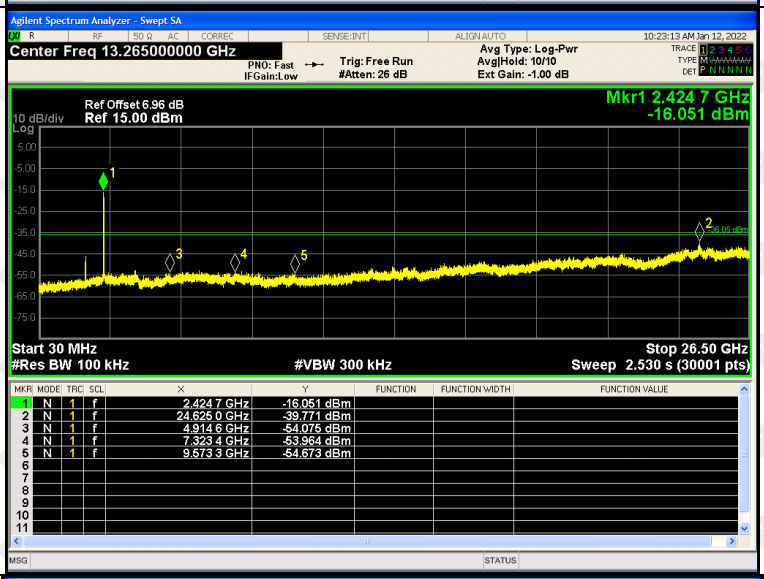
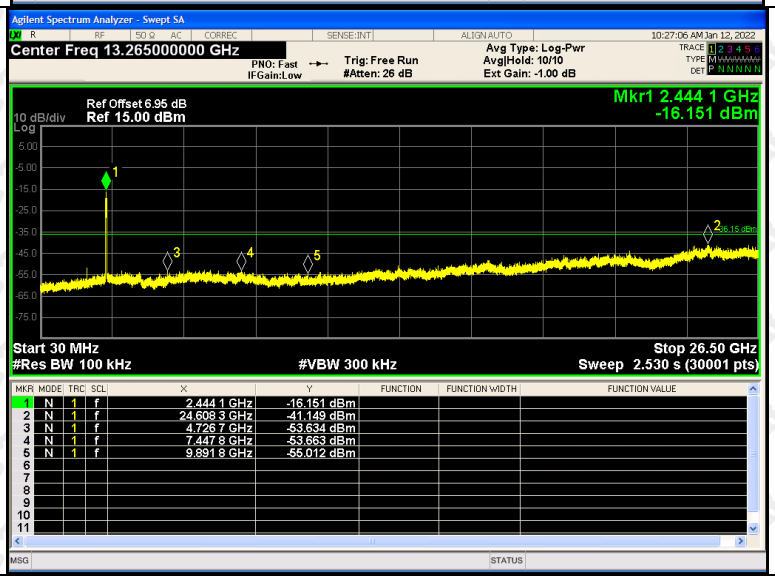
BAND EDGE Graphs		
802.11n(HT20)/LCH		
802.11n(HT20)/HCH		
802.11n(HT40)/LCH		

802.11n(HT40)/HCH		

RF Conducted Spurious Emissions Graphs			
802.11b /LCH			
802.11b /MCH			
802.11b /HCH			

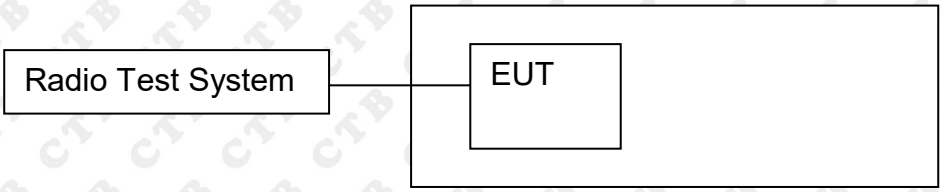
RF Conducted Spurious Emissions Graphs			
802.11g /LCH			
802.11g /MCH			
802.11g /HCH			

RF Conducted Spurious Emissions Graphs			
802.11n (HT20)/ LCH			
802.11 n(HT20) /MCH			
802.11 n(HT20) /HCH			

RF Conducted Spurious Emissions Graphs			
802.11 n(HT40) /LCH			
802.11 n(HT40) /MCH			
802.11 n(HT40) /HCH			

9. COUDUCTED OUTPUT POWER

9.1 Block Diagram Of Test Setup



9.2 Limit

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

9.3 Test procedure

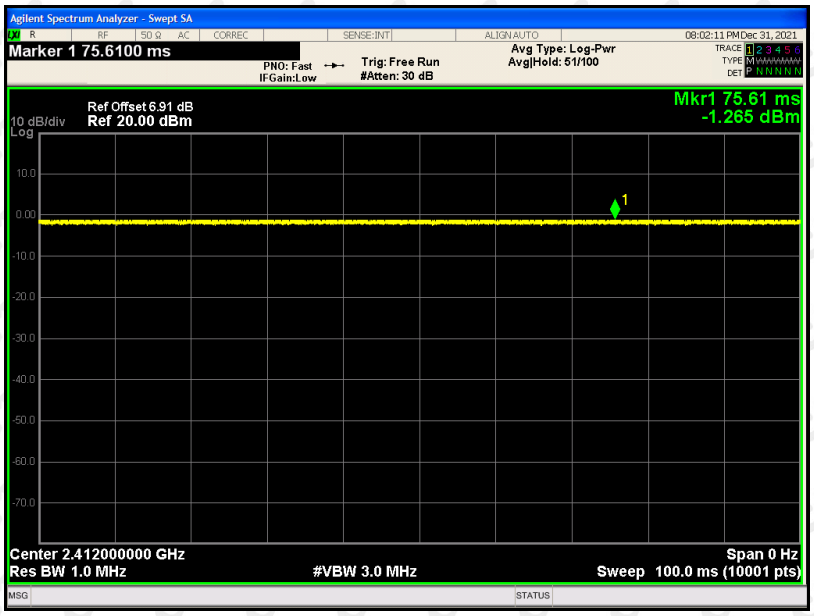
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak. Channel power function is used
3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

9.4 Test Result

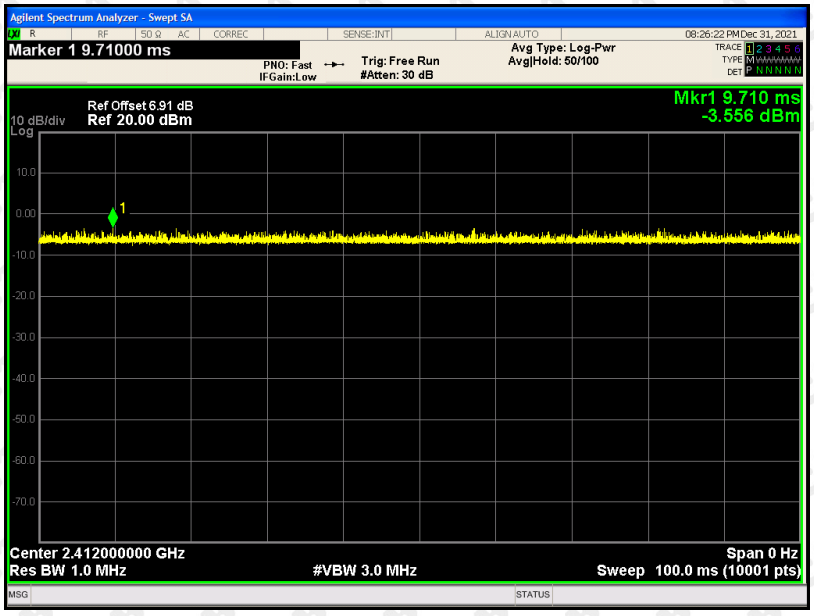
Mode	Channel.	Maximum Output Power [dBm] ant 1	Maximum Output Power [dBm] ant 2	Total Power Conducted Output Power(PK)	Limit[dBm]
802.11b	LCH	7.09	7.55	/	30
	MCH	7.36	7.60	/	30
	HCH	7.13	7.42	/	30
802.11g	LCH	6.39	6.30	/	30
	MCH	6.29	6.89	/	30
	HCH	6.80	6.93	/	30
802.11n(HT20)	LCH	6.49	6.61	9.561	30
	MCH	6.33	6.43	9.391	30
	HCH	6.30	6.95	9.647	30
802.11n(HT40)	LCH	5.26	5.39	8.336	30
	MCH	5.11	5.85	8.506	30
	HCH	5.84	5.93	8.896	30

ANT 1:

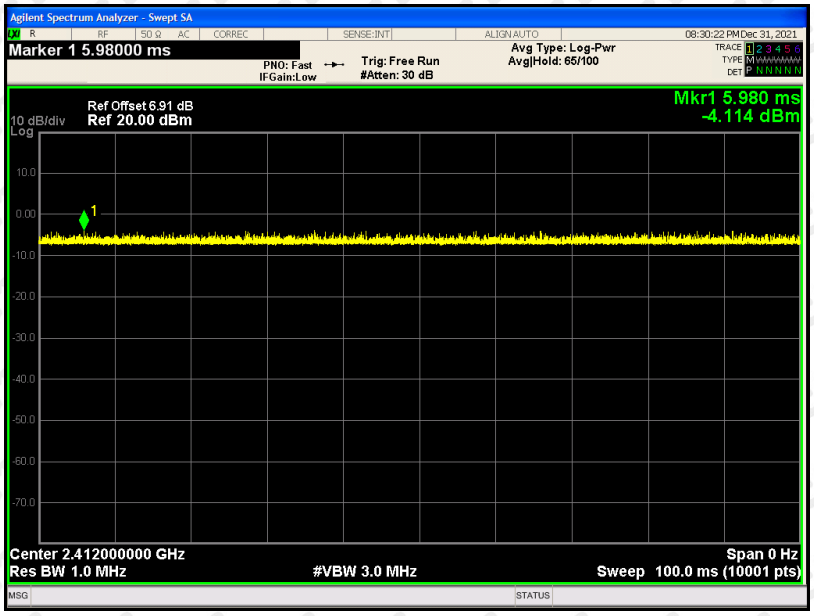
B:


Agilent Spectrum Analyzer - Swept SA
Marker 1 75.6100 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 51/100
08:02:11 PM Dec 31, 2021
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 75.61 ms
-1.265 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

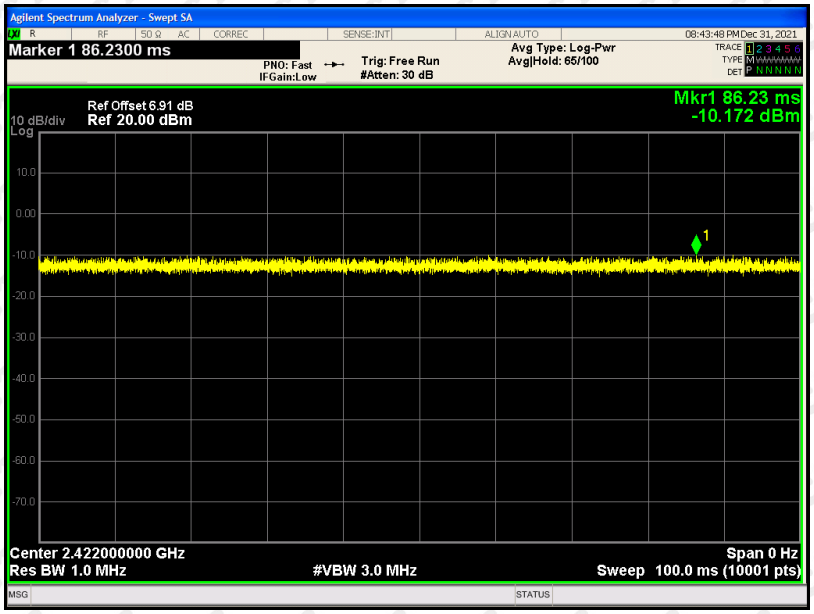
G:

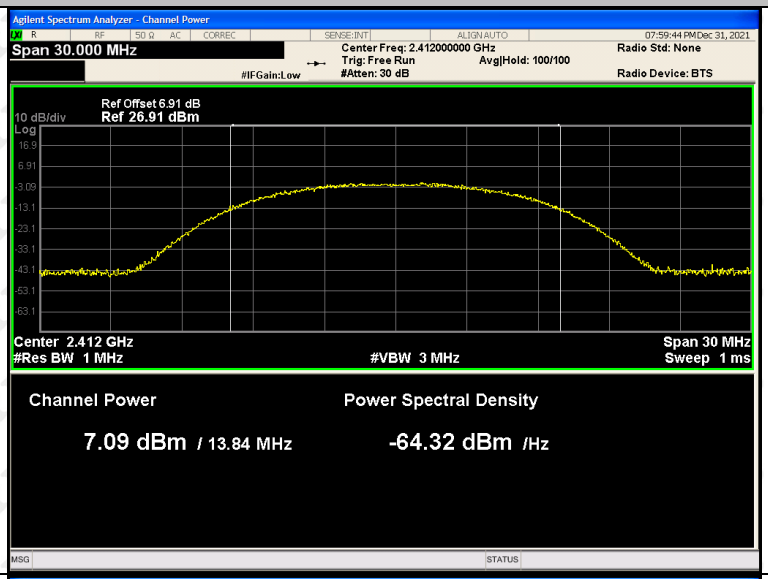
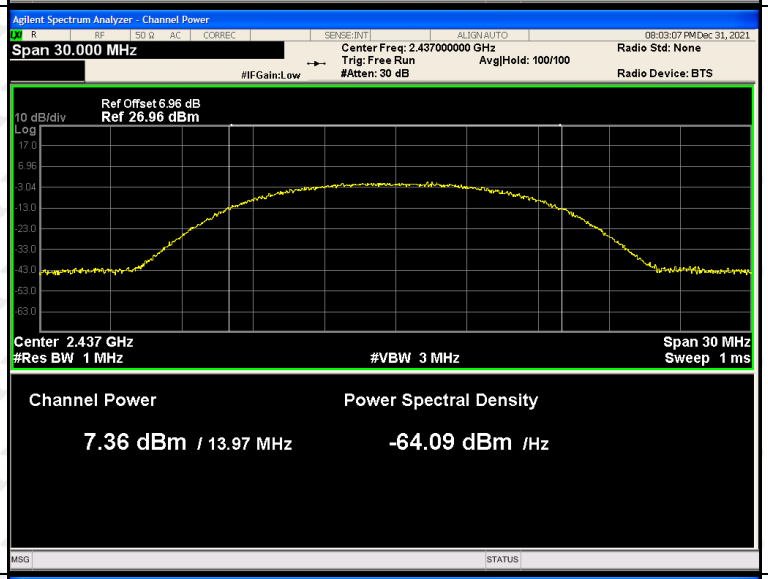
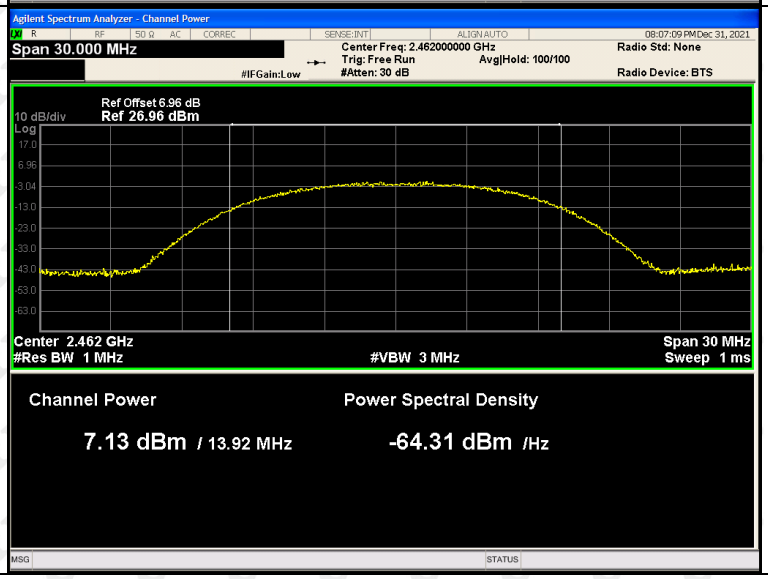

Agilent Spectrum Analyzer - Swept SA
Marker 1 9.71000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 50/100
08:26:22 PM Dec 31, 2021
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 9.710 ms
-3.556 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

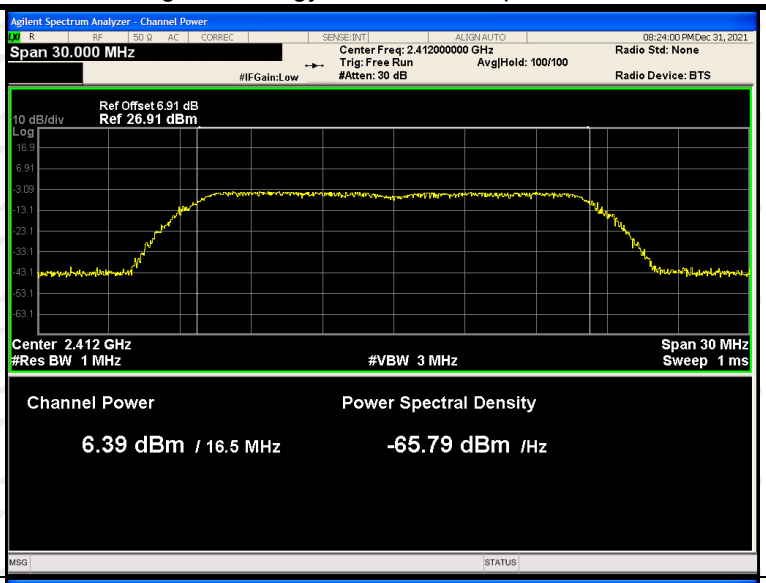
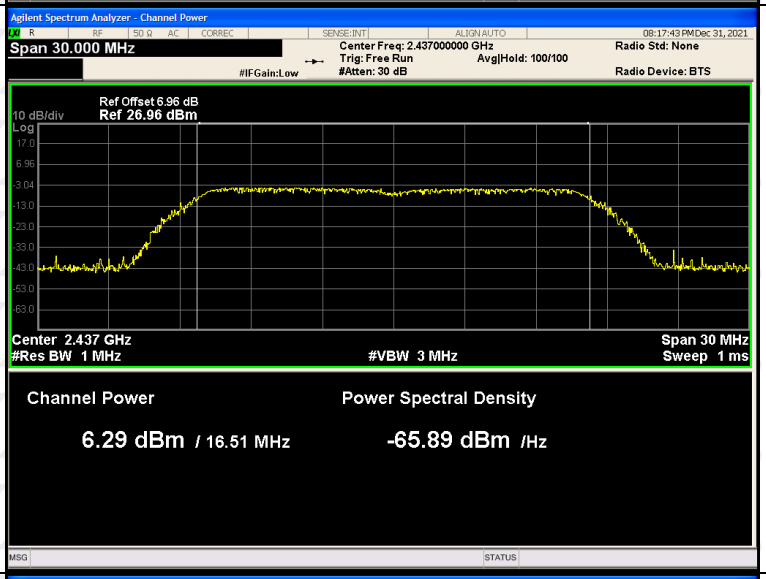
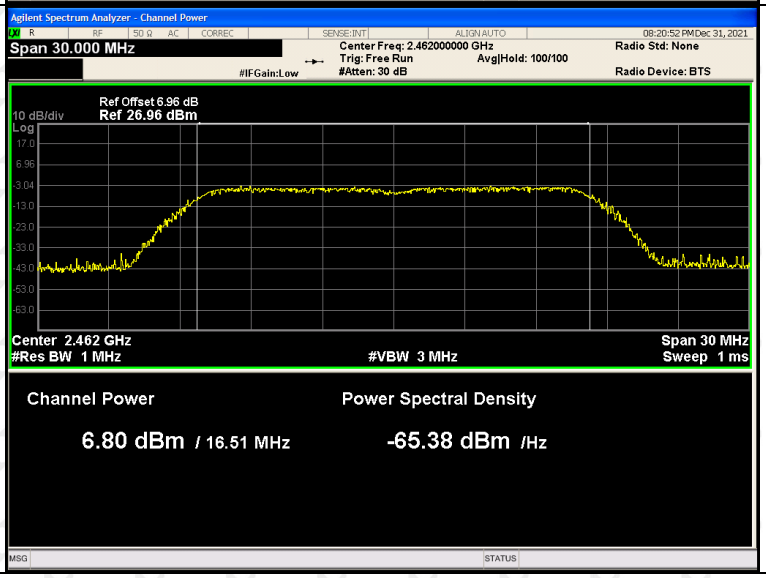
N20:

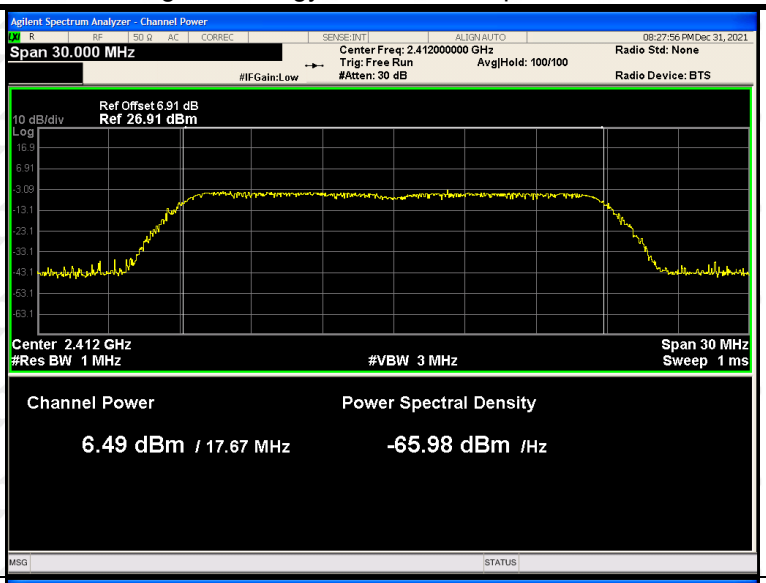
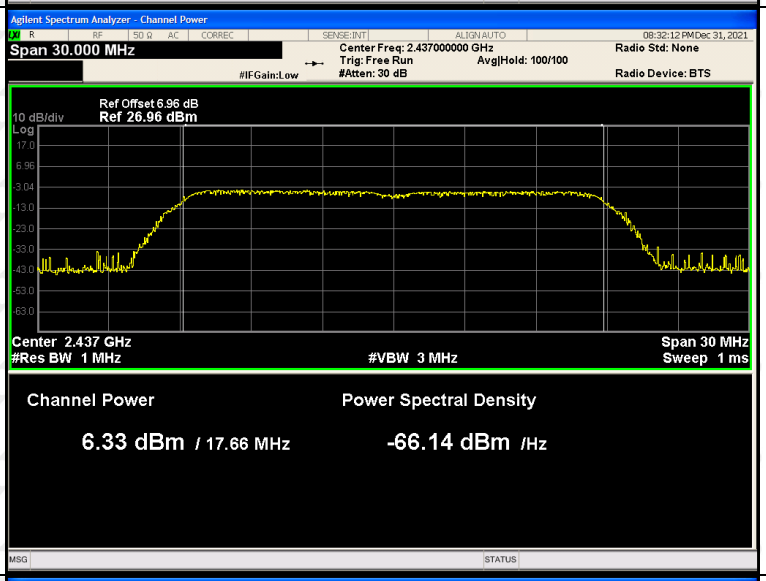
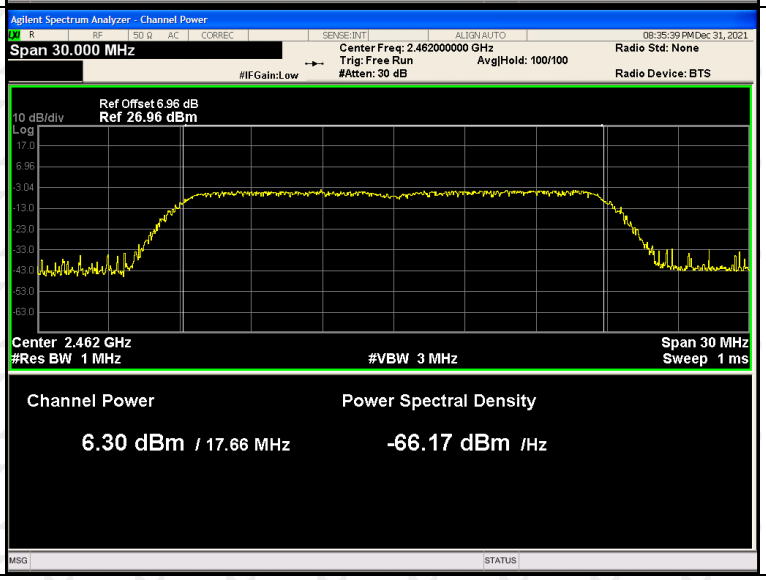

Agilent Spectrum Analyzer - Swept SA
Marker 1 5.98000 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 65/100
08:30:22 PM Dec 31, 2021
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 5.980 ms
-4.114 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

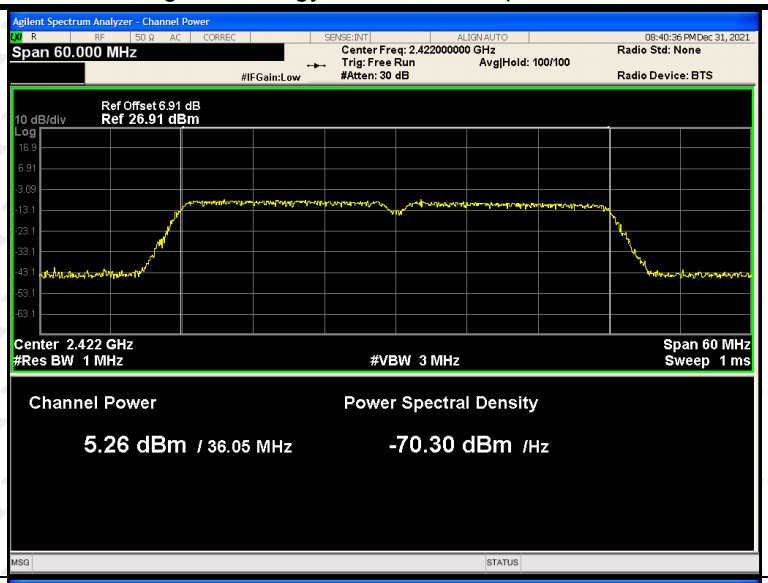
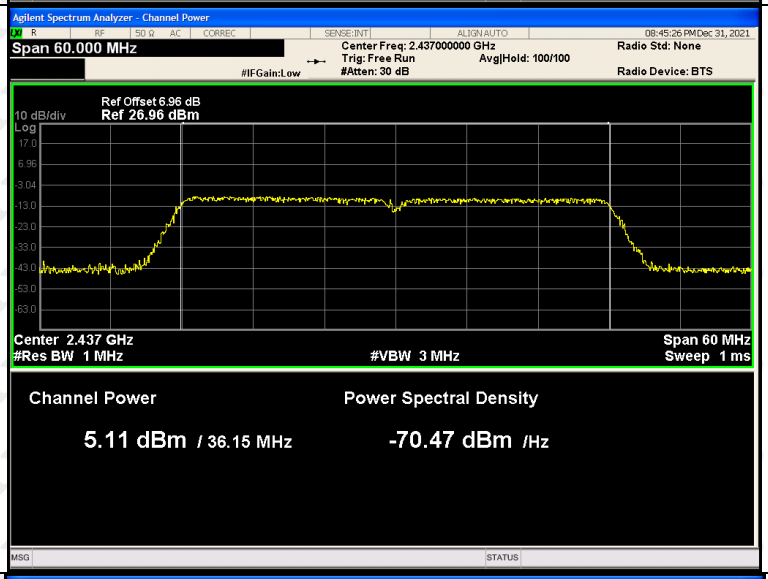
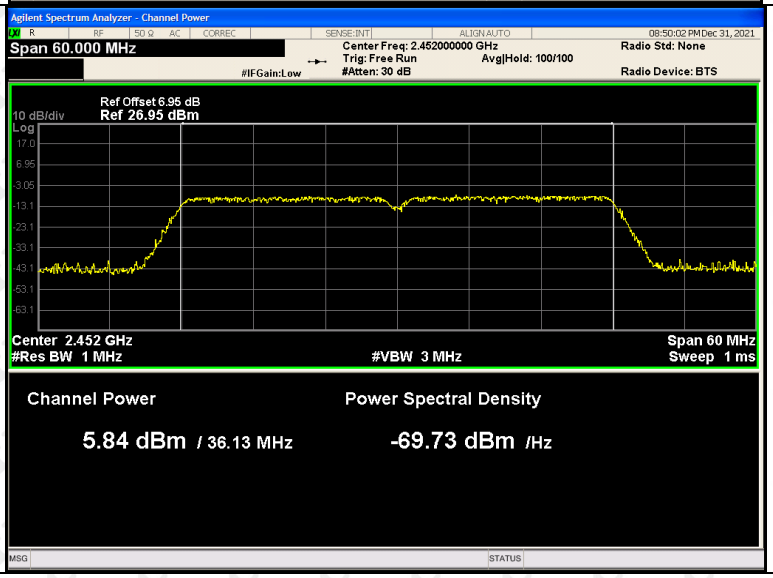
N40:


Agilent Spectrum Analyzer - Swept SA
Marker 1 86.2300 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 65/100
08:43:48 PM Dec 31, 2021
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 86.23 ms
-10.172 dBm
Center 2.422000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

Mode	Channel.	Maximum Output Power [dBm]
802.11b	LCH	
	MCH	
	HCH	

802.11g	LCH		
	MCH		
	HCH		

802.11n(HT20)	LCH		
	MCH		
	HCH		

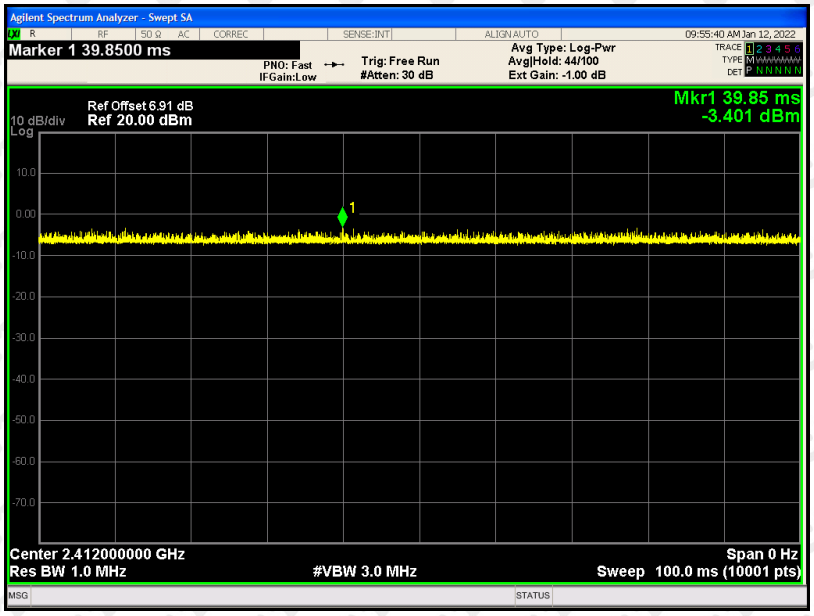
802.11n(HT40)	LCH		
	MCH		
	HCH		

ANT 2:

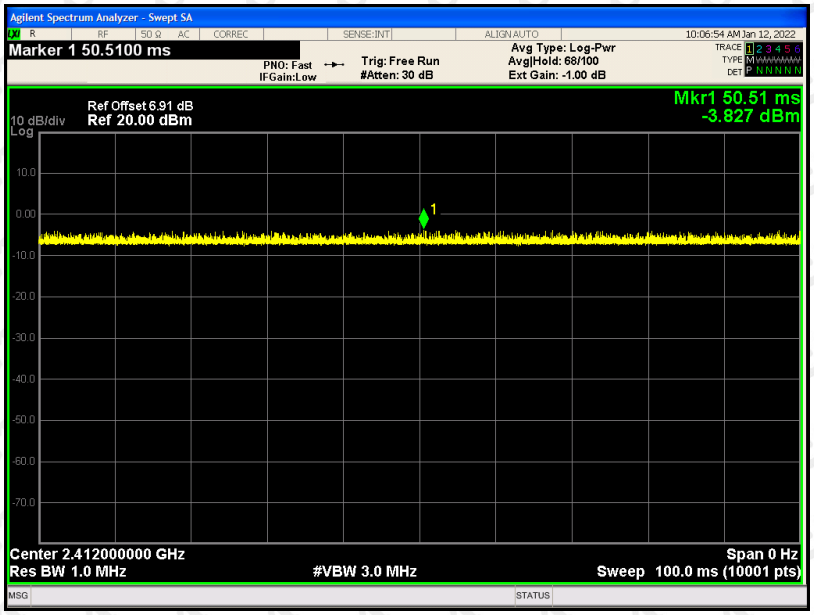
B:


Agilent Spectrum Analyzer - Swept SA
Marker 1 12.9200 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
Ext Gain: -1.00 dB
09:44:56 AM Jan 12, 2022
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 12.92 ms
-0.309 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

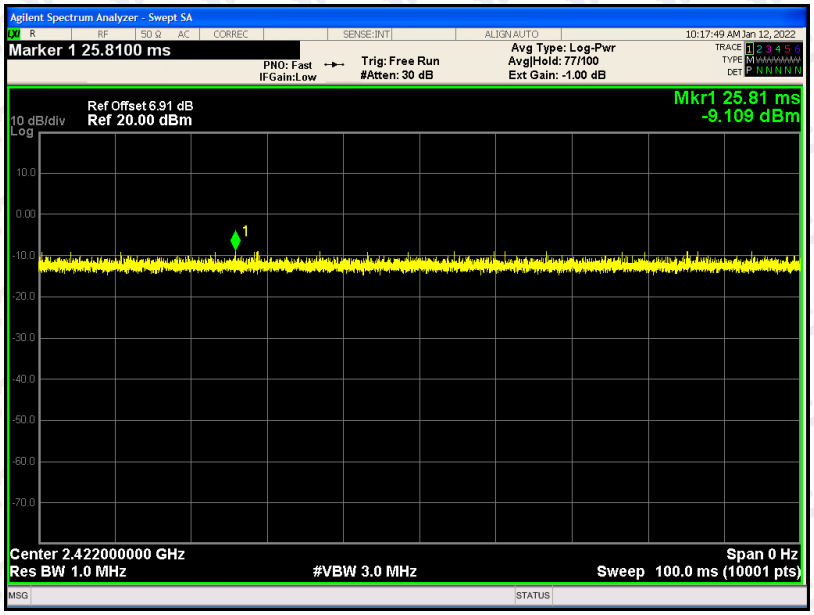
G:

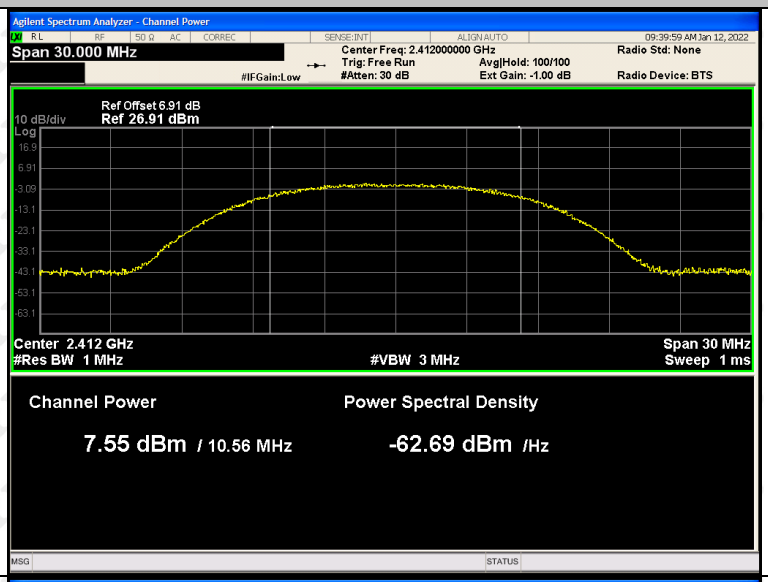
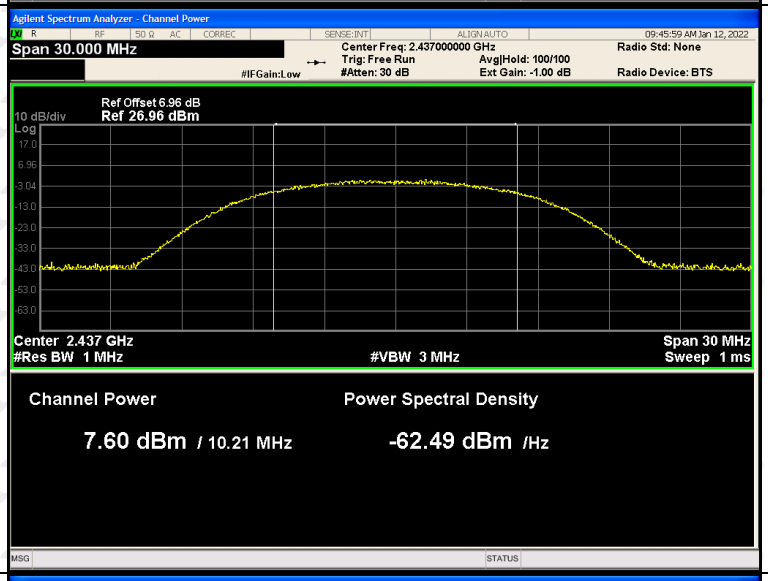
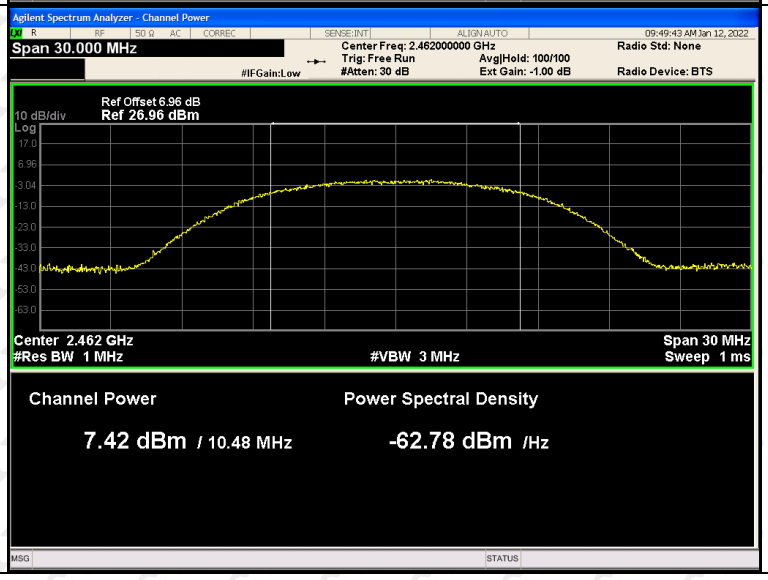

Agilent Spectrum Analyzer - Swept SA
Marker 1 39.8500 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
Ext Gain: -1.00 dB
09:55:40 AM Jan 12, 2022
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 39.85 ms
-3.401 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

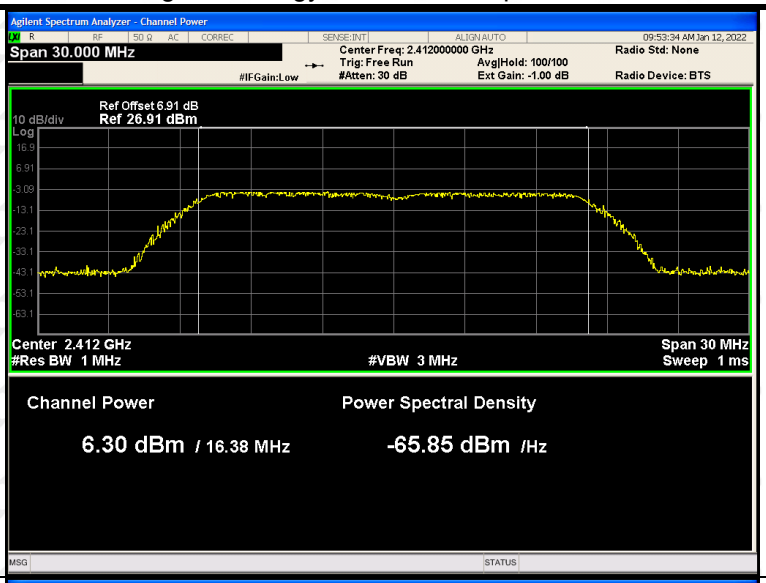
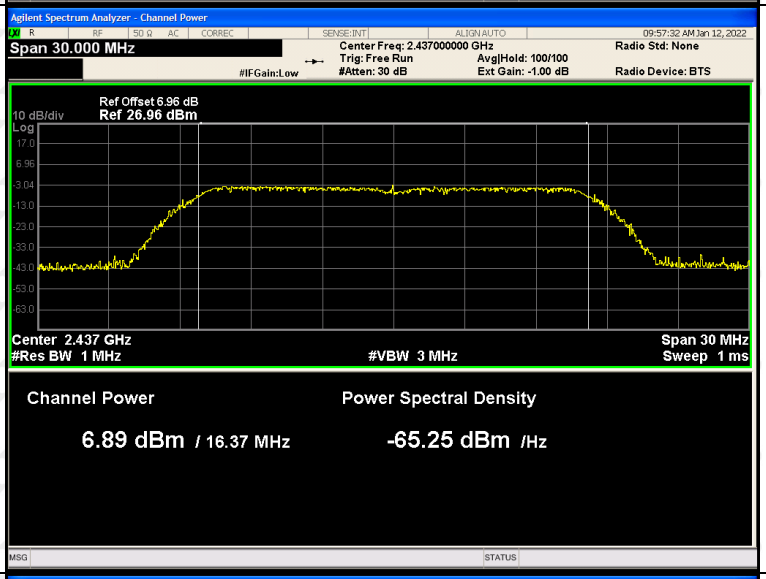
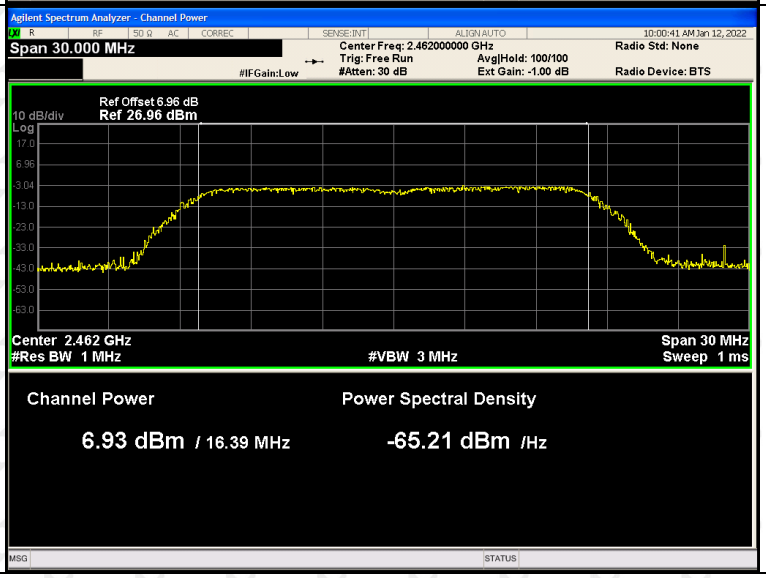
N20:

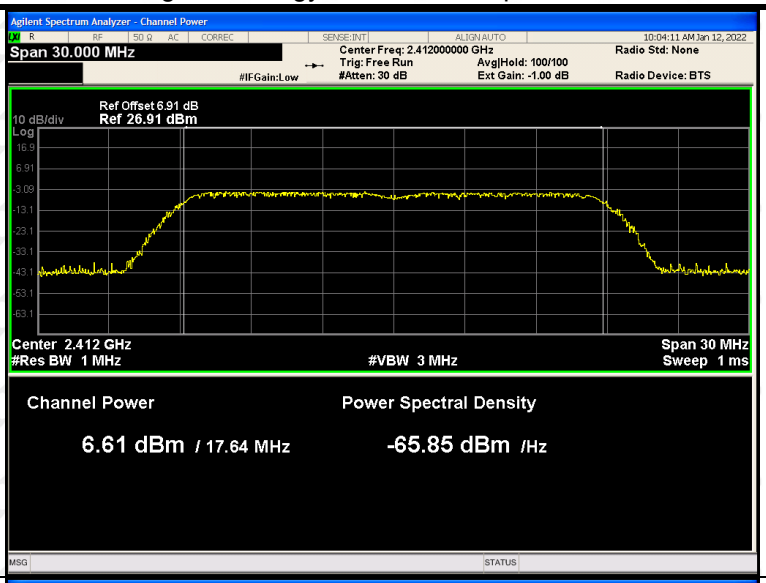
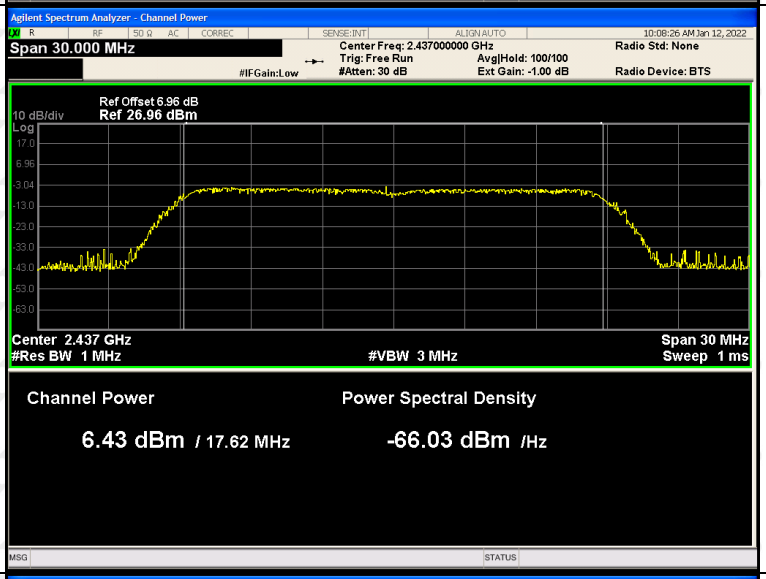
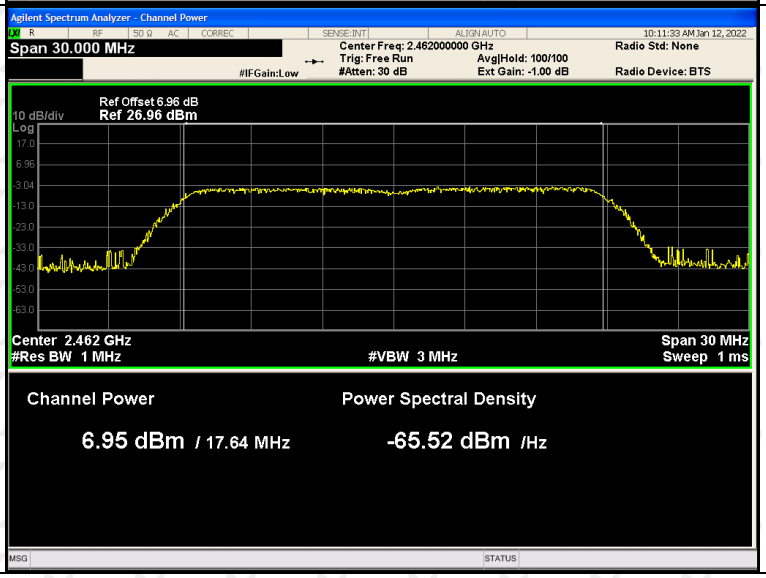

Agilent Spectrum Analyzer - Swept SA
Marker 1 50.5100 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
Ext Gain: -1.00 dB
10:06:54 AM Jan 12, 2022
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 50.51 ms
-3.827 dBm
Center 2.412000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

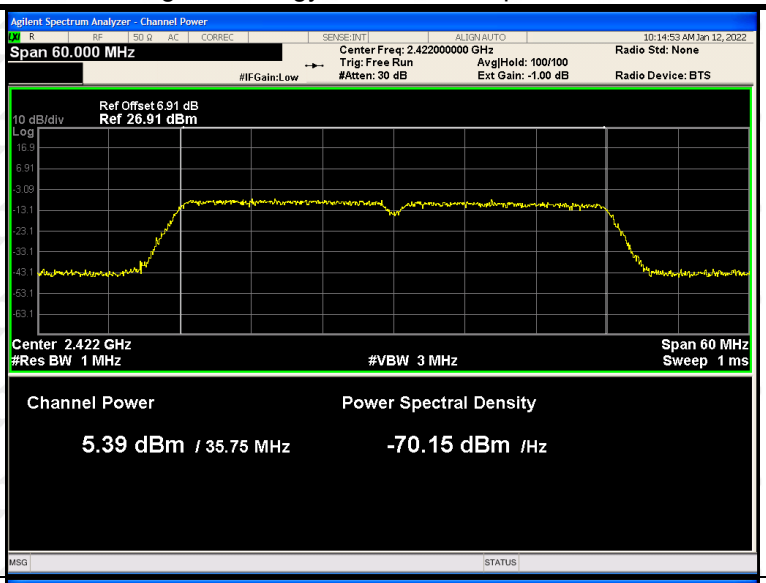
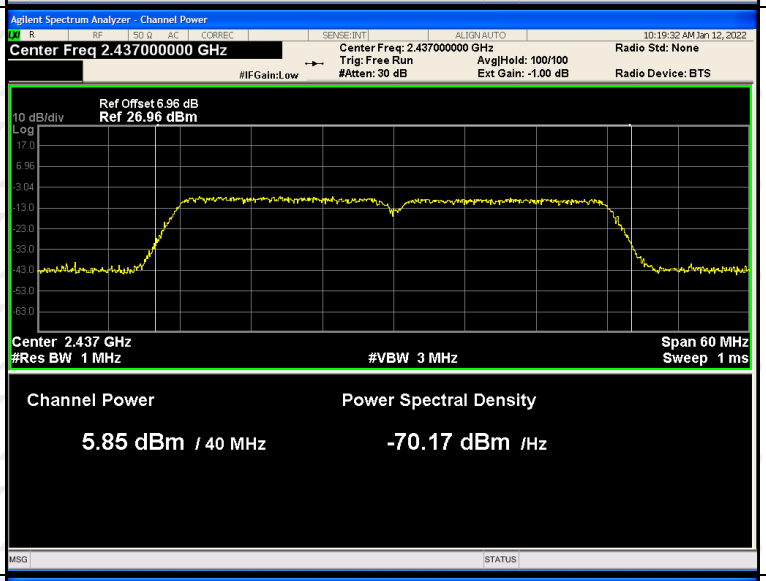
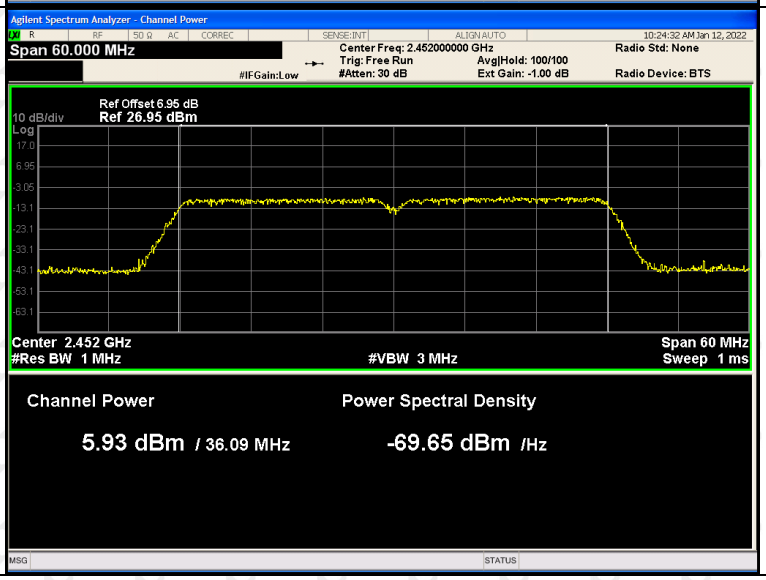
N40:


Agilent Spectrum Analyzer - Swept SA
Marker 1 25.8100 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 77/100
Ext Gain: -1.00 dB
10:17:49 AM Jan 12, 2022
Ref Offset 6.91 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 25.81 ms
-9.109 dBm
Center 2.422000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 100.0 ms (10001 pts)

Mode	Channel.	Maximum Output Power [dBm]
802.11b	LCH	
	MCH	
	HCH	

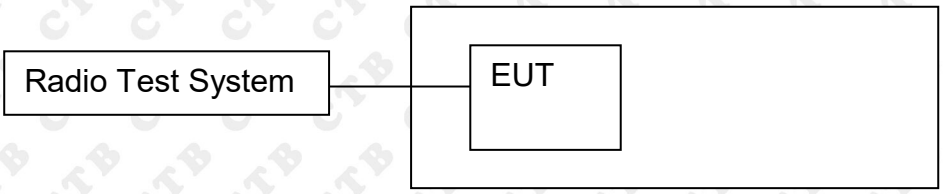
802.11g	LCH		
	MCH		
	HCH		

802.11n(HT20)	LCH		
	MCH		
	HCH		

802.11n(HT40)	LCH		
	MCH		
	HCH		

10. 6DB OCCUPIED BANDWIDTH

10.1 Block Diagram Of Test Setup



10.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

10.3 Test procedure

1. Rem1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

10.4 Test Result

ANT 1:

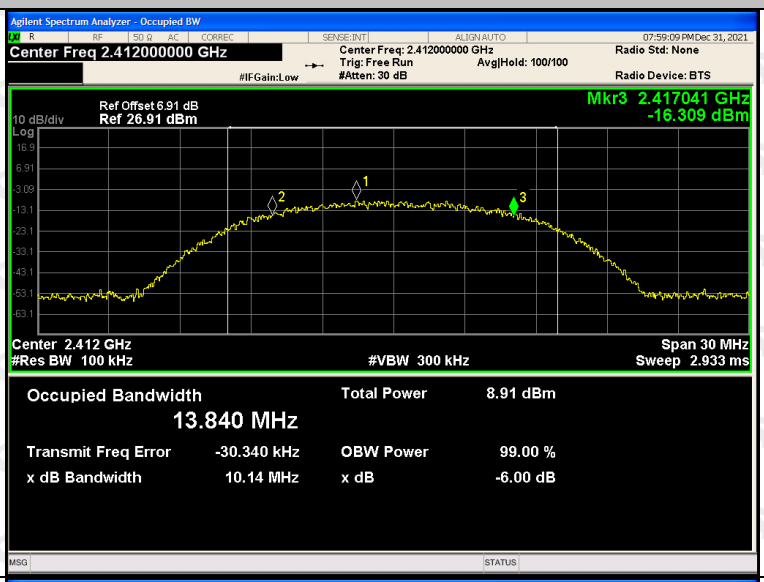
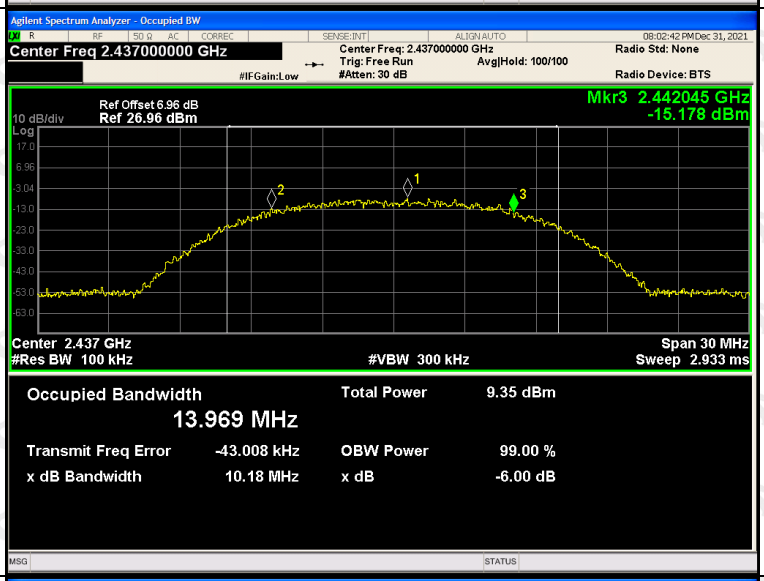
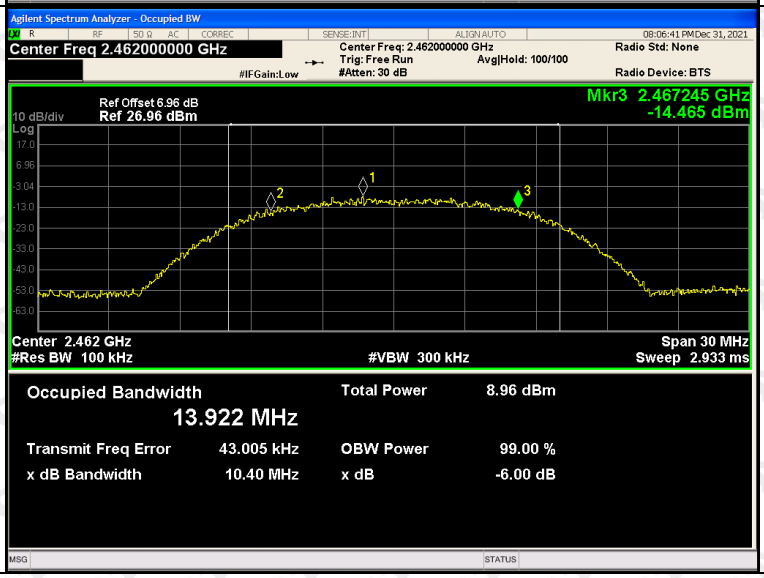
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.142	500	PASS
	MCH	10.176	500	PASS
	HCH	10.404	500	PASS
802.11g	LCH	16.42	500	PASS
	MCH	16.451	500	PASS
	HCH	16.374	500	PASS
802.11n(HT20)	LCH	17.621	500	PASS
	MCH	17.627	500	PASS
	HCH	17.632	500	PASS

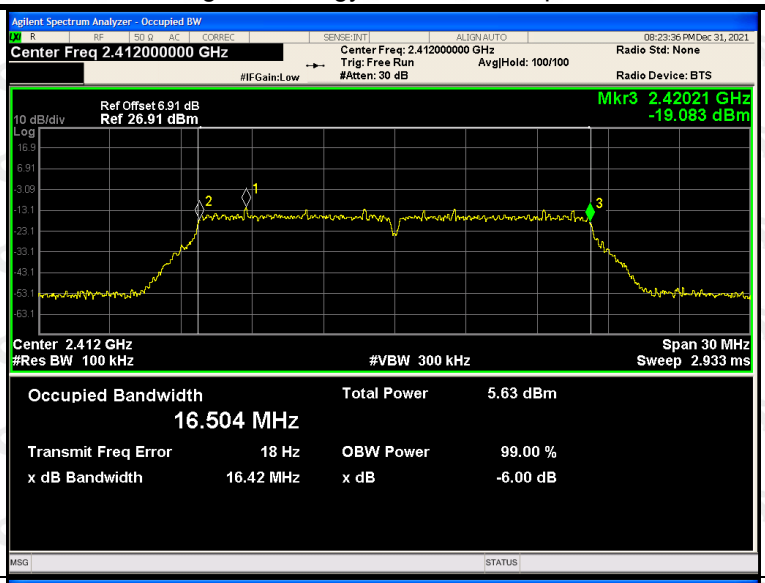
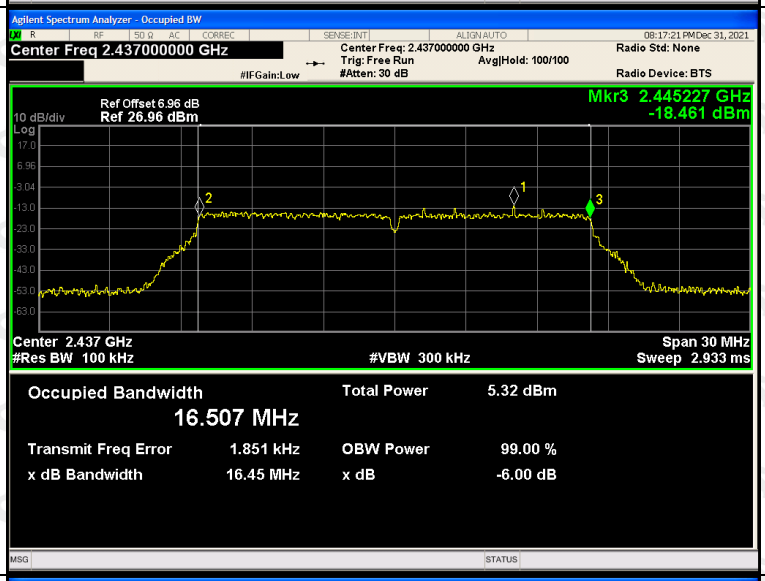
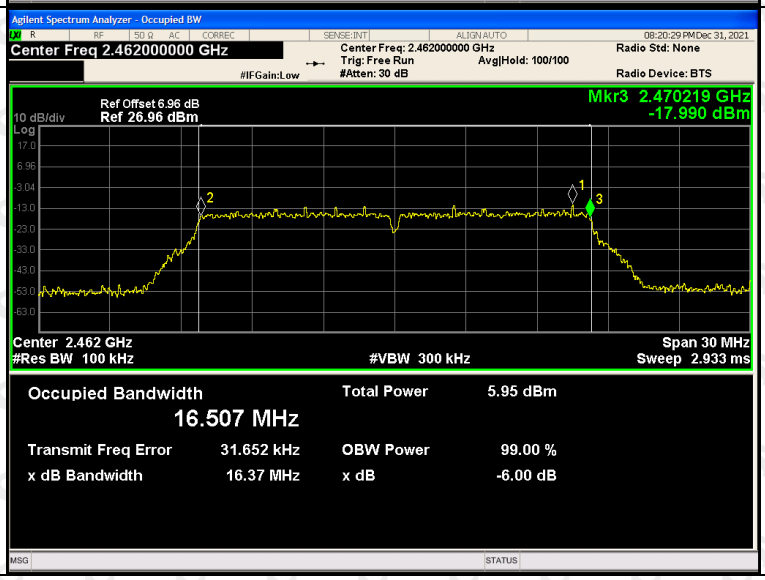
802.11n(HT40)	LCH	35.73	500	PASS
	MCH	36.063	500	PASS
	HCH	36.334	500	PASS

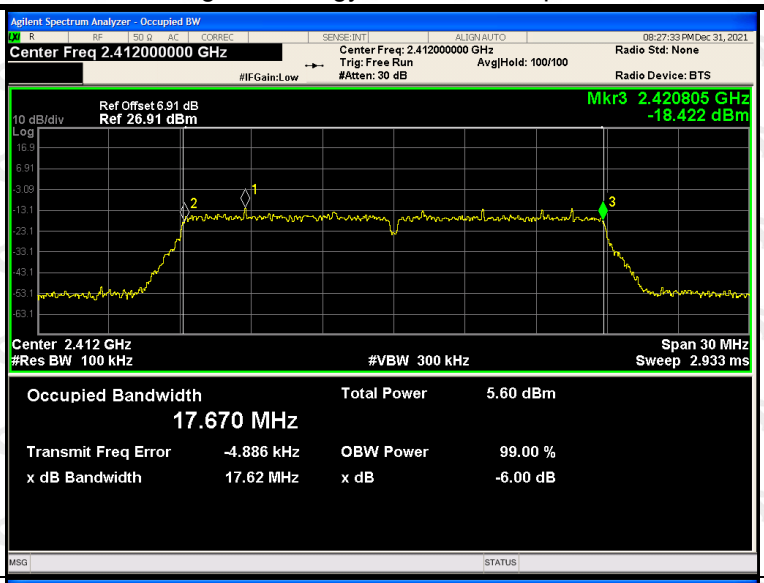
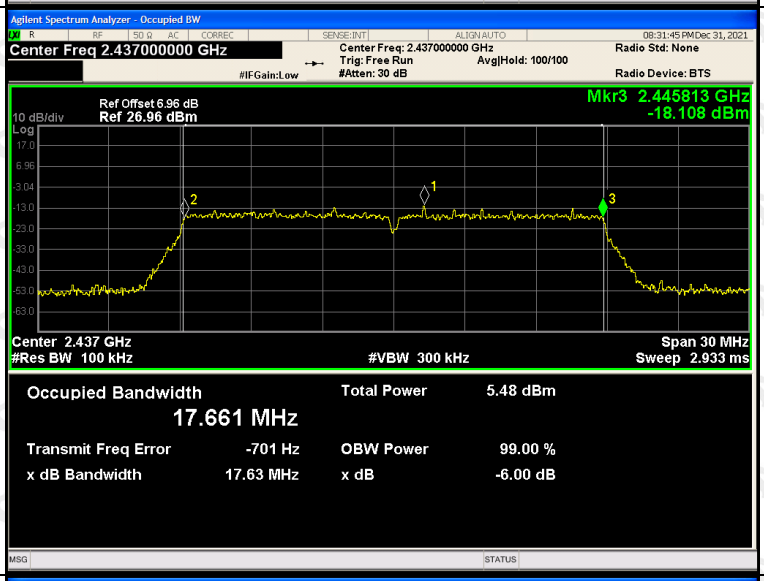
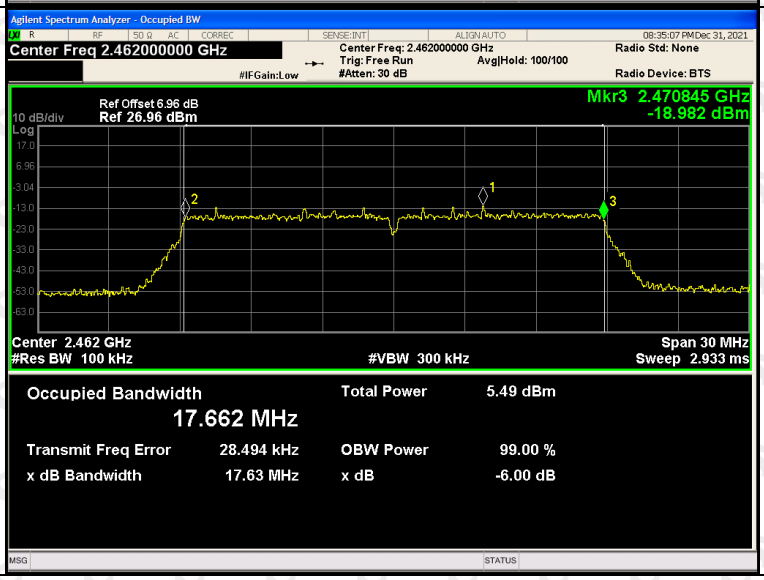
ANT 2:

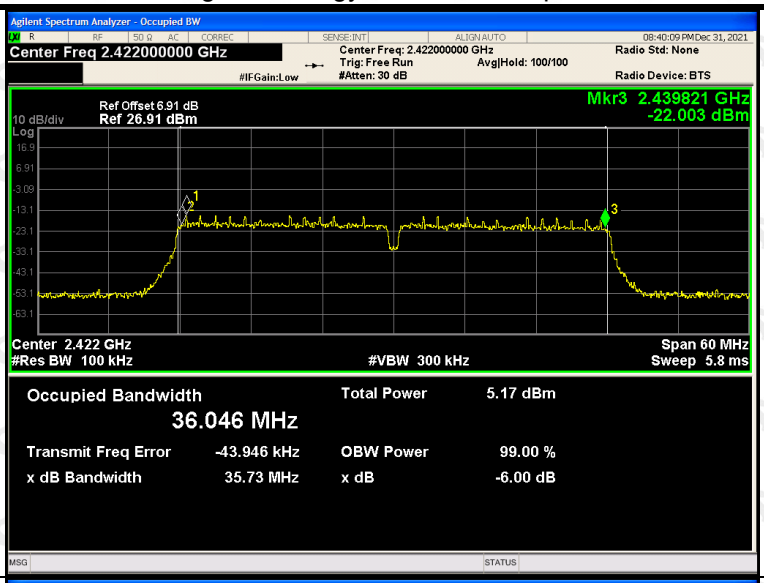
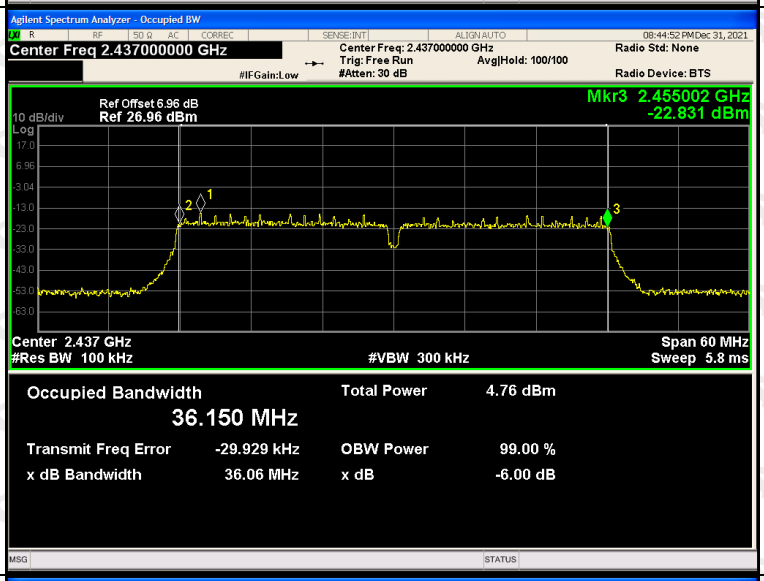
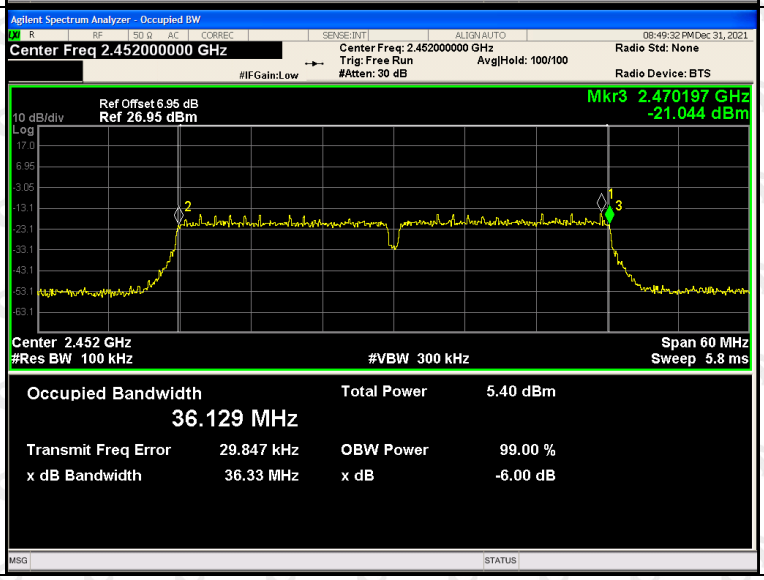
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.56	500	PASS
	MCH	10.207	500	PASS
	HCH	10.479	500	PASS
802.11g	LCH	16.375	500	PASS
	MCH	16.374	500	PASS
	HCH	16.389	500	PASS
802.11n(HT20)	LCH	17.636	500	PASS
	MCH	17.625	500	PASS
	HCH	17.642	500	PASS
802.11n(HT40)	LCH	35.754	500	PASS
	MCH	35.921	500	PASS
	HCH	36.09	500	PASS

ANT1:
Test Graph:

Graphs		
802.11b /LCH		
802.11b /MCH		
802.11b/HCH		

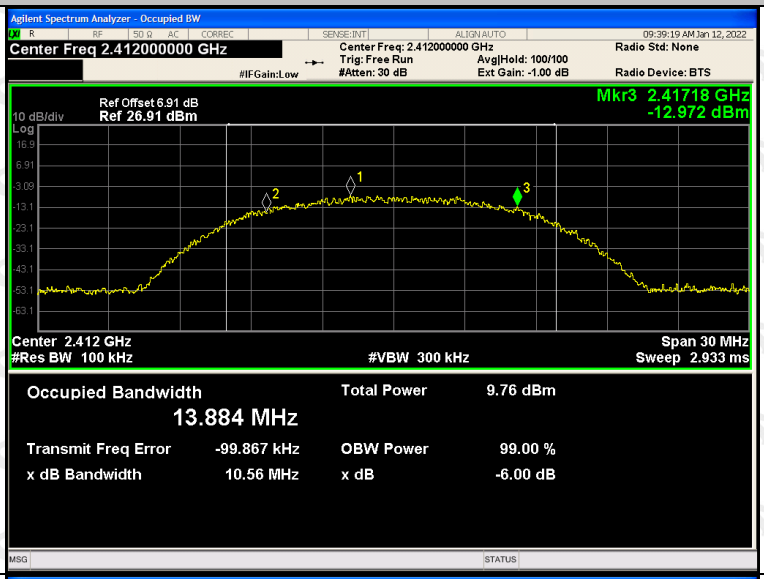
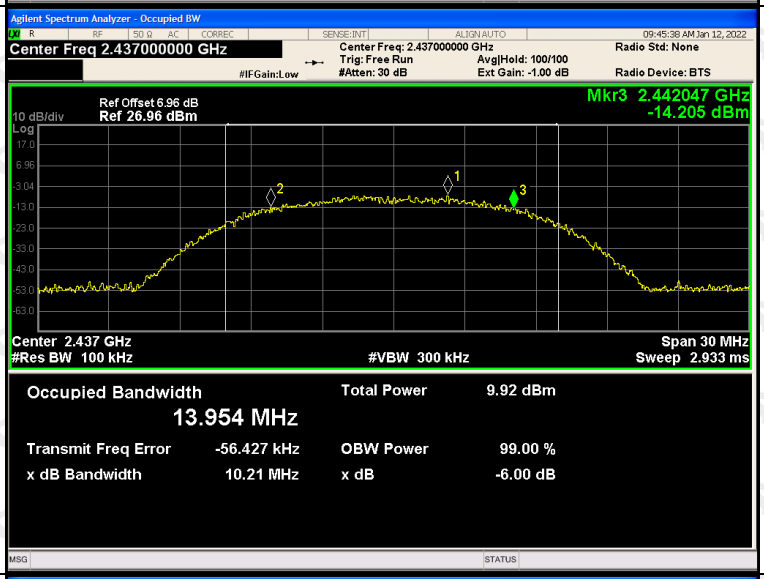
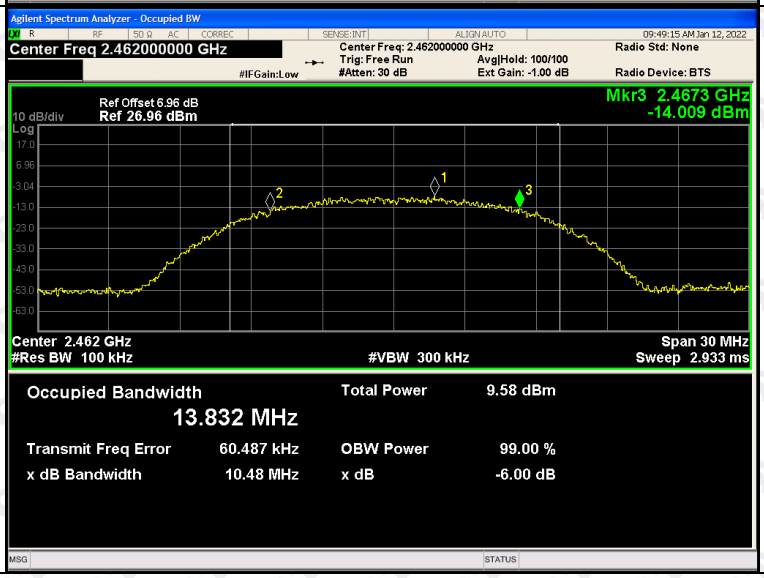
802.11g/LCH		
802.11g/MCH		
802.11g/HCH		

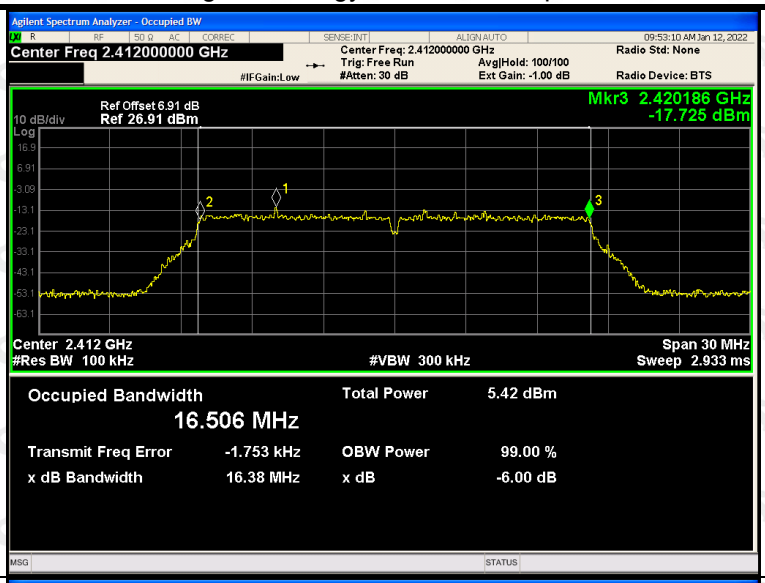
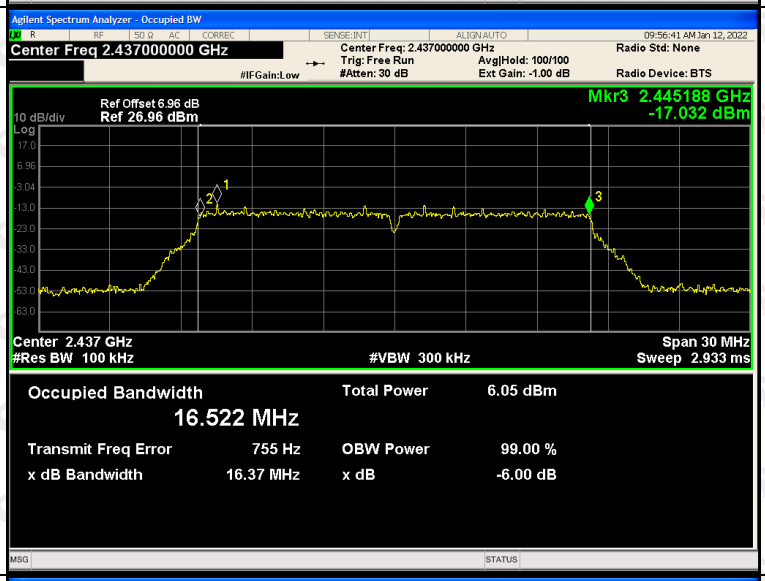
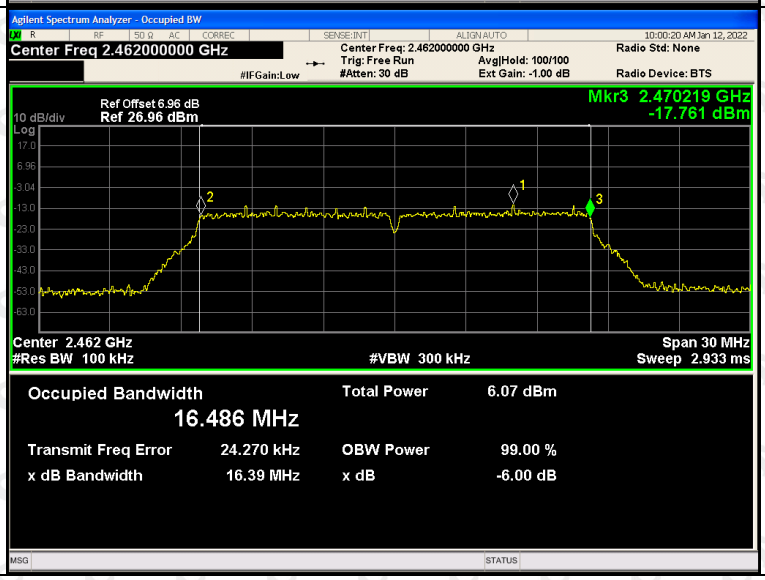
802.11n(HT20)/LCH		
802.11n(HT20)/MCH		
802.11n(HT20)/HCH		

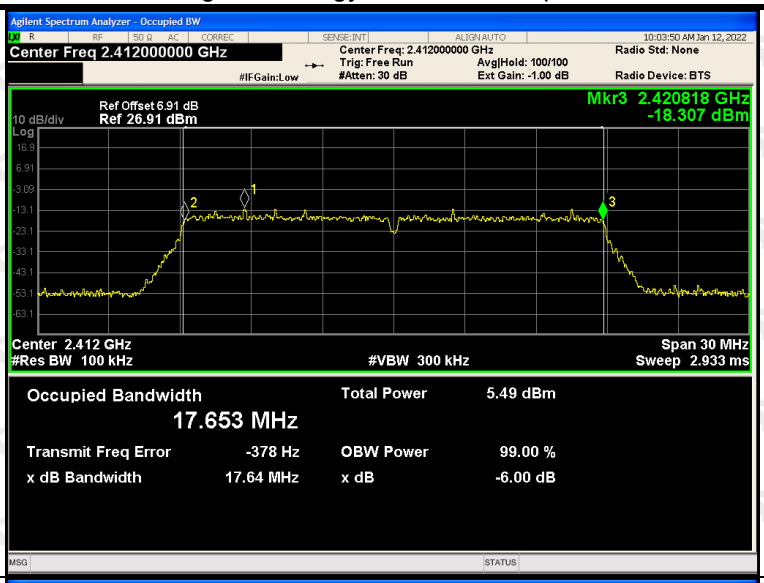
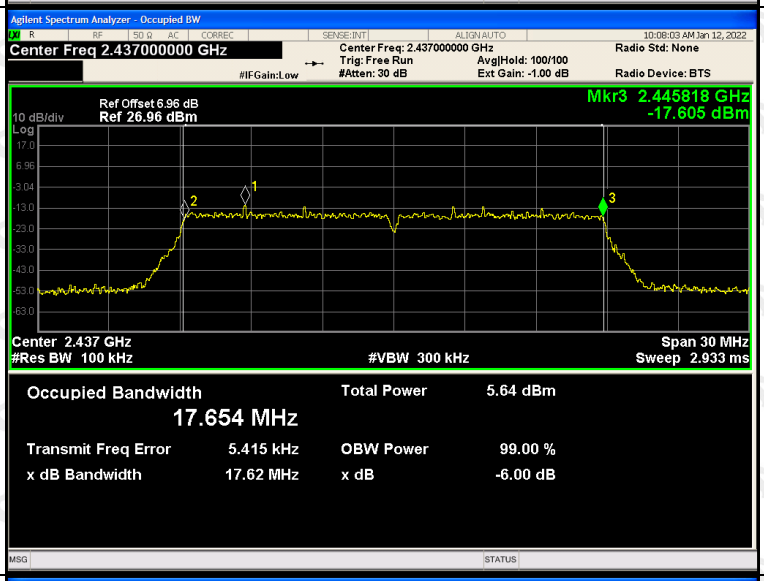
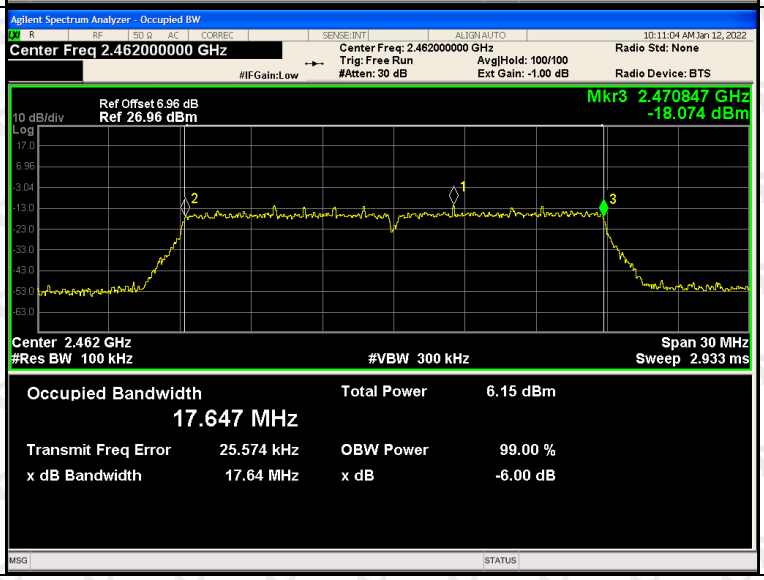
802.11n(HT40)/LCH		
802.11n(HT40)/MCH		
802.11n(HT40)/HCH		

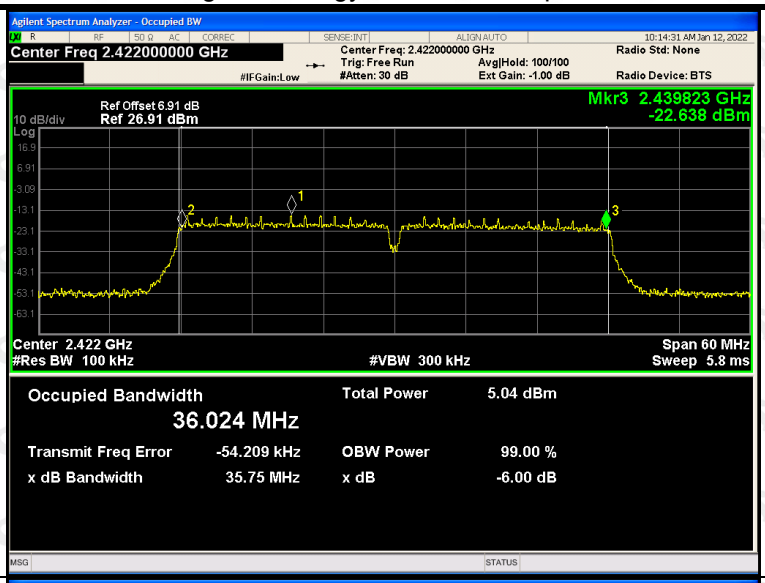
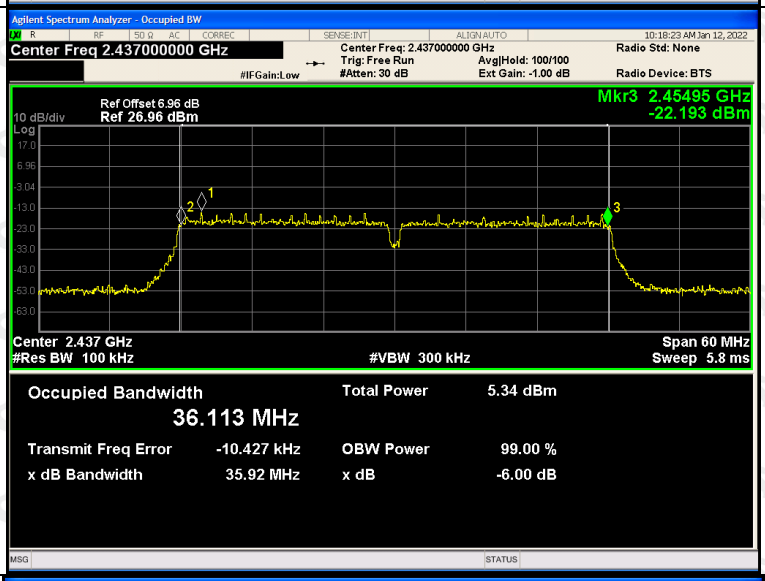
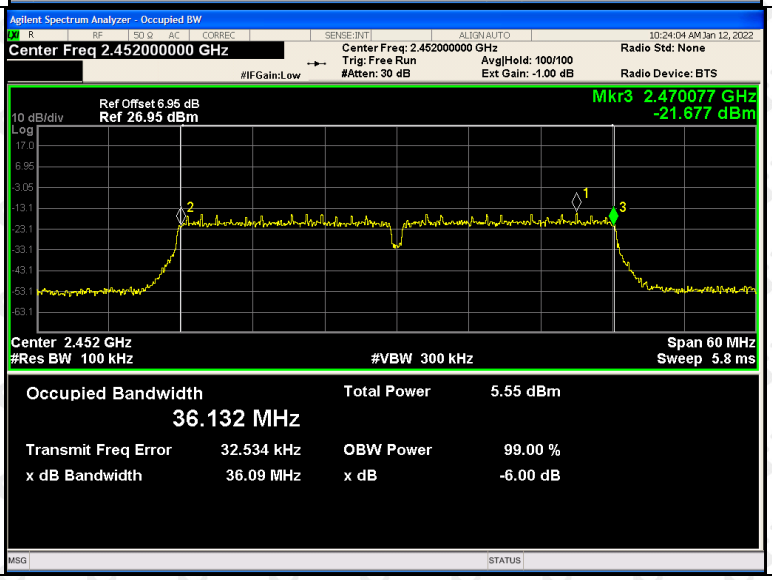
ANT2:

Test Graph:

Graphs		
802.11b /LCH		
802.11b /MCH		
802.11b/HCH		

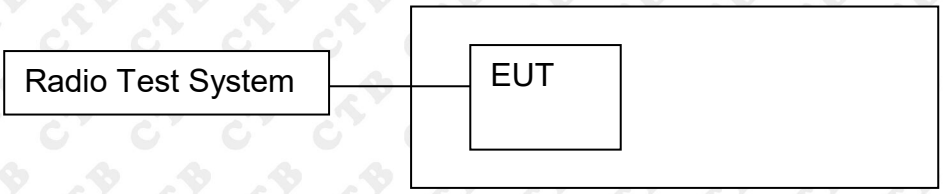
802.11g/LCH		
802.11g/MCH		
802.11g/HCH		

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

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

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

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

11.3 Test procedure

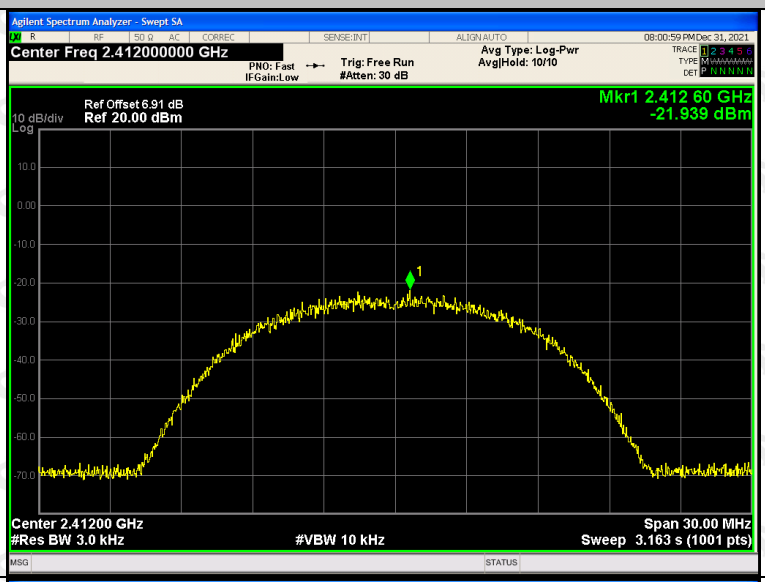
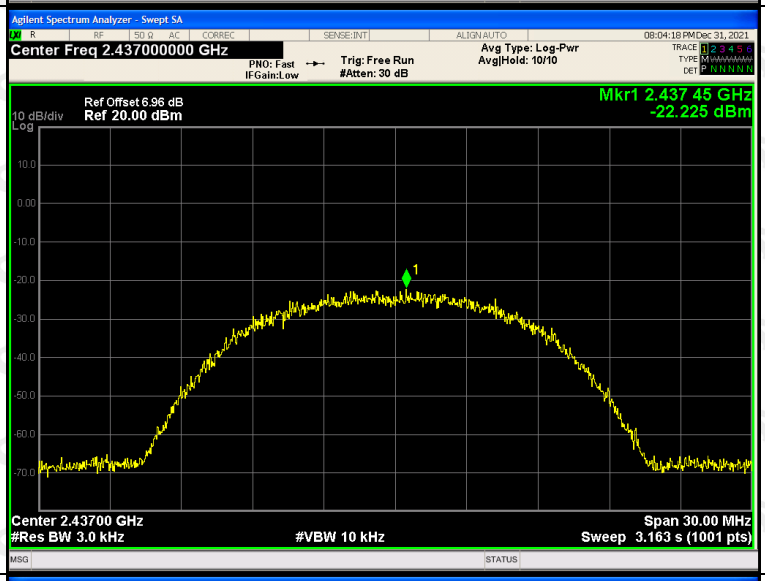
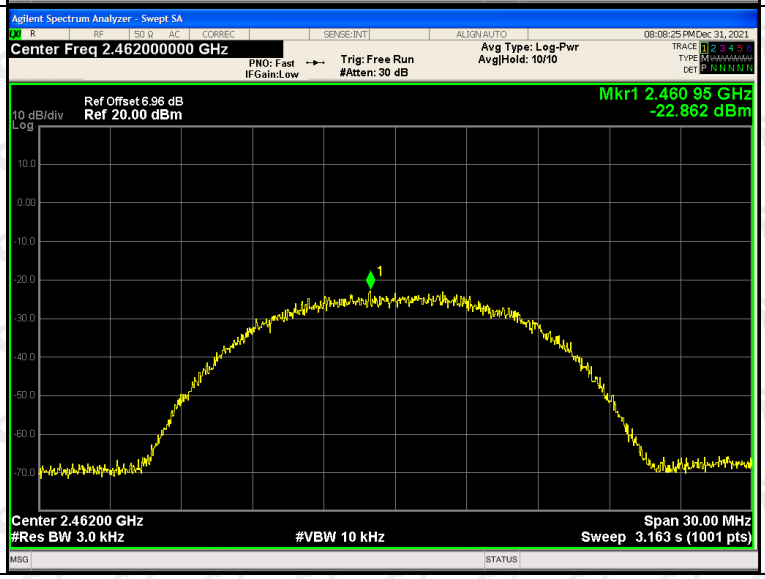
1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = PEAK.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

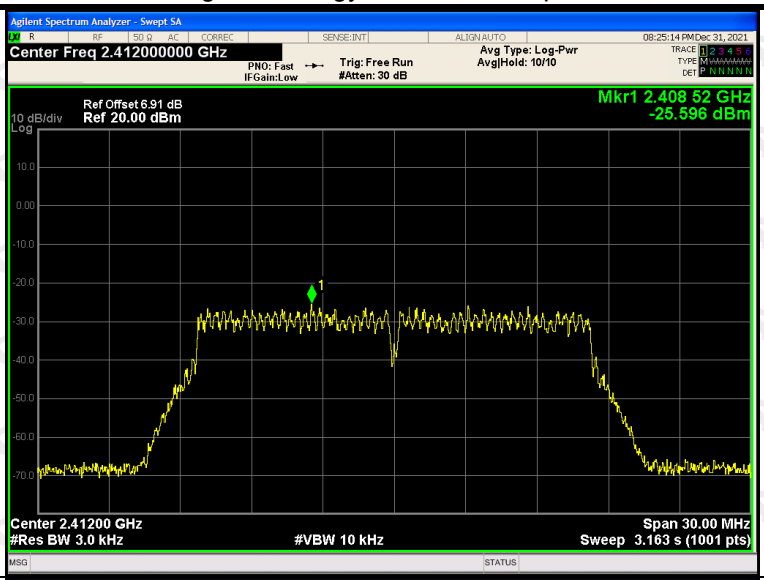
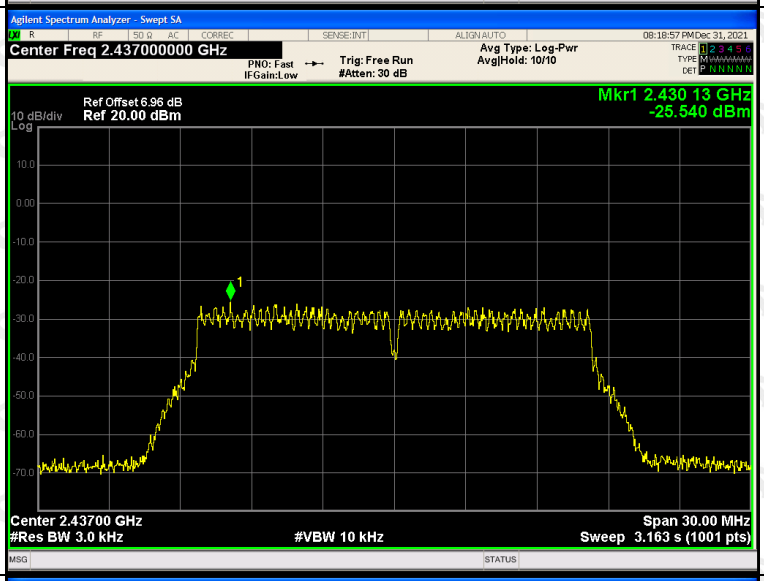
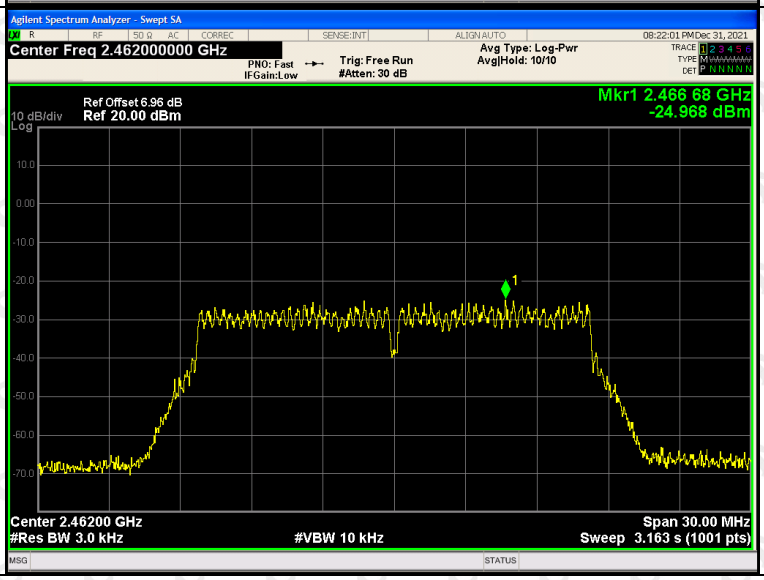
11.4 Test Result

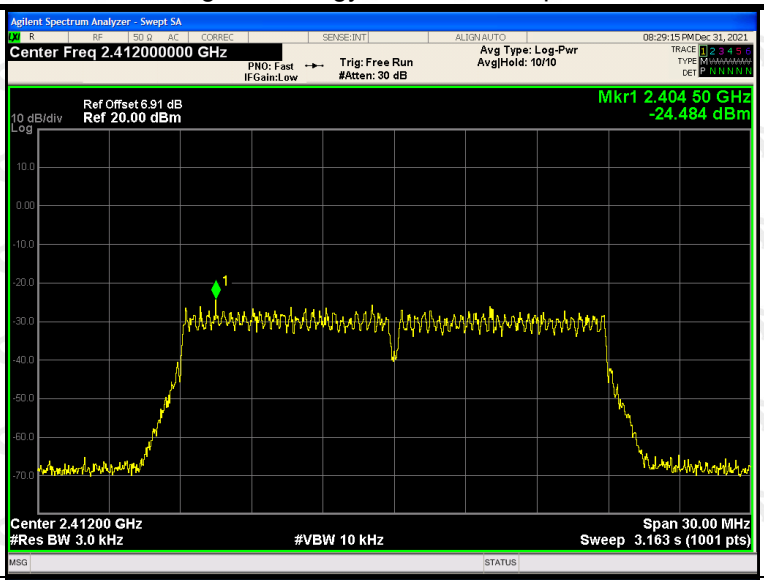
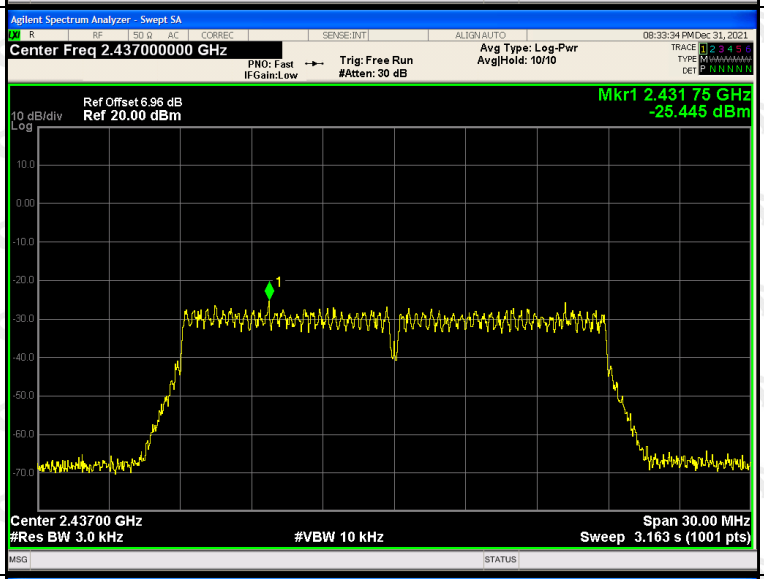
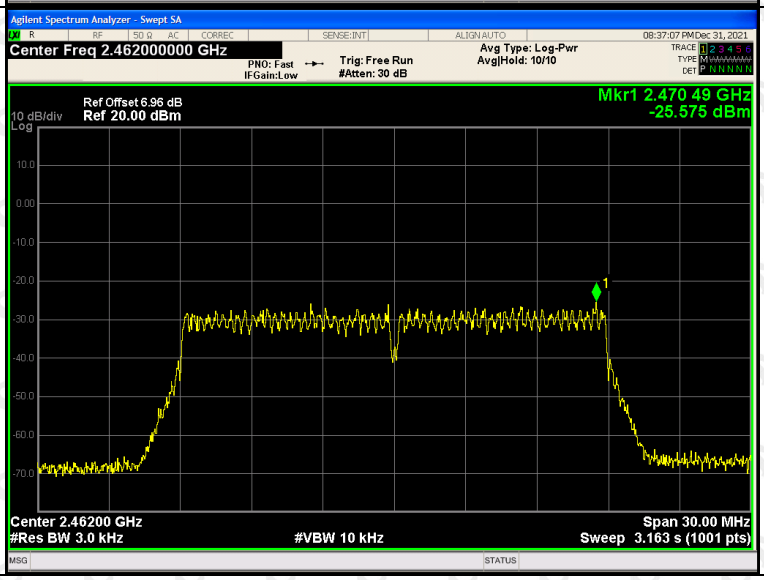
Mode	Channel.	Power Spectral Density [dBm /3KHz] ANT 1	Power Spectral Density [dBm /3KHz]] ANT 2	Power Spectral Density [dBm /3KHz]Total	Limit(dBm)
802.11b	LCH	-21.939	-21.78	/	8
	MCH	-22.225	-20.566	/	8
	HCH	-22.862	-21.762	/	8
802.11g	LCH	-25.596	-24.019	/	8
	MCH	-25.54	-24.56	/	8
	HCH	-24.968	-24.685	/	8
802.11n(HT20)	LCH	-24.484	-25.414	-21.914	6.99
	MCH	-25.445	-25.184	-22.302	6.99
	HCH	-25.575	-25.038	-22.288	6.99
802.11n(HT40)	LCH	-30.022	-29.657	-26.825	6.99
	MCH	-29.467	-29.769	-26.605	6.99
	HCH	-29.388	-28.661	-25.999	6.99

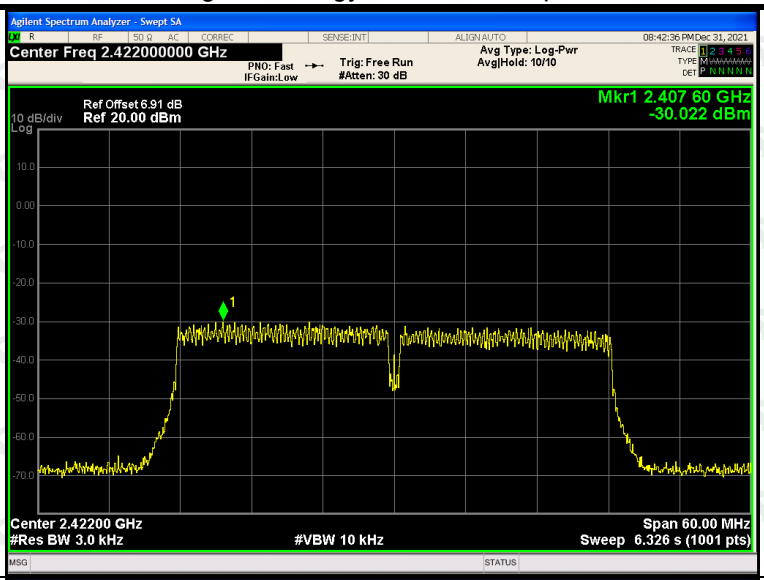
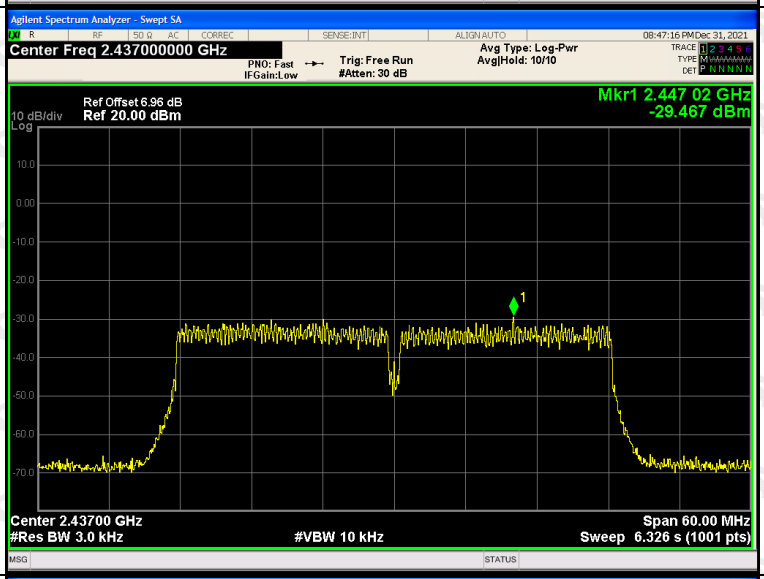
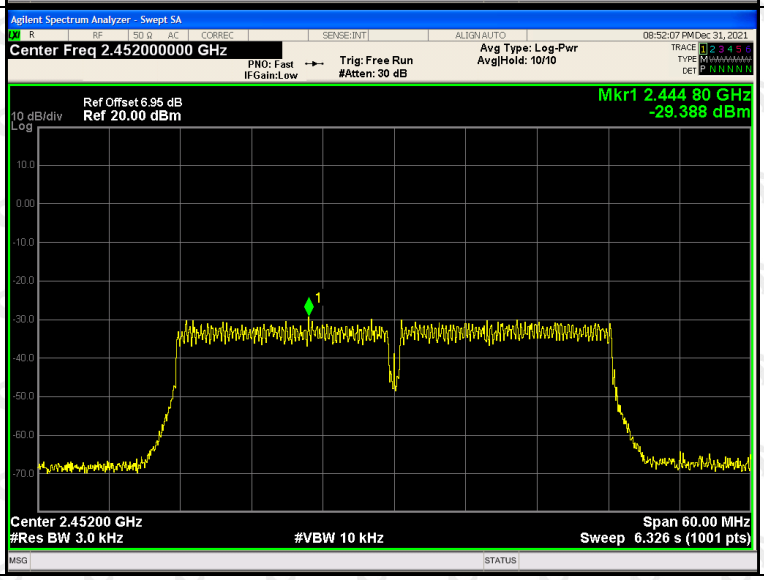
Test Graph

ANT1:

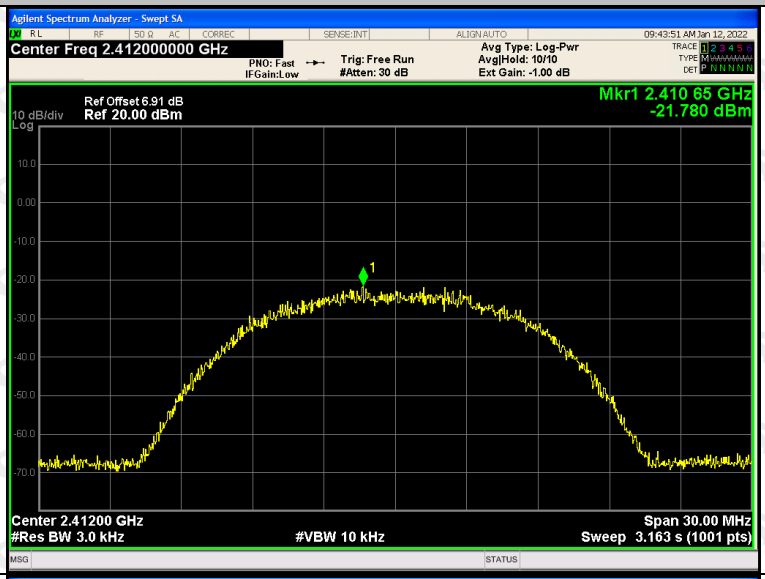
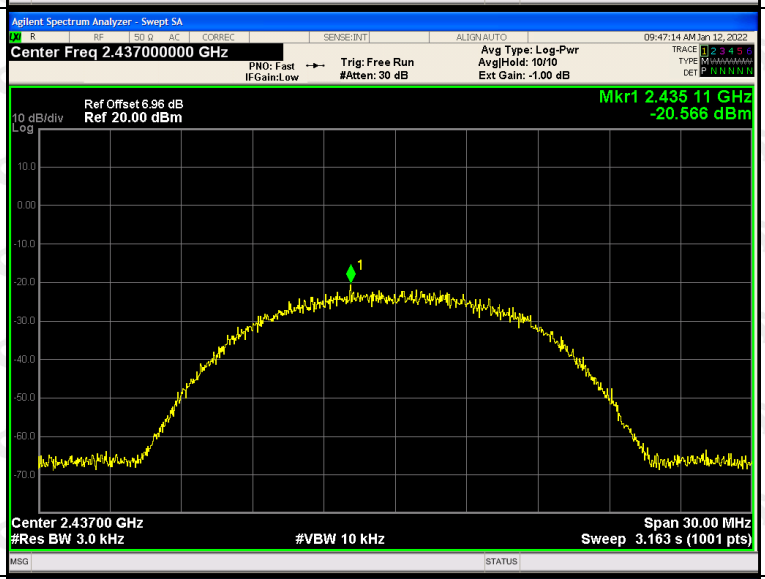
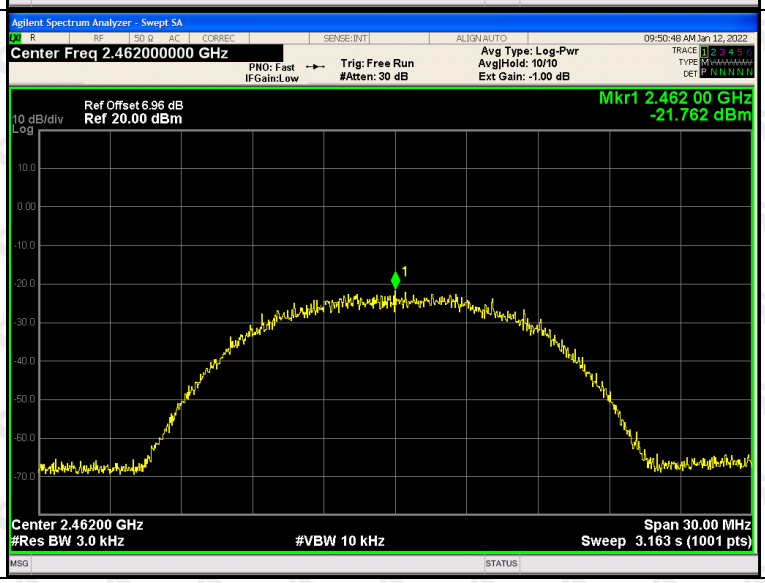
Graphs		
802.11b /LCH		
802.11b /MCH		
802.11b/HCH		

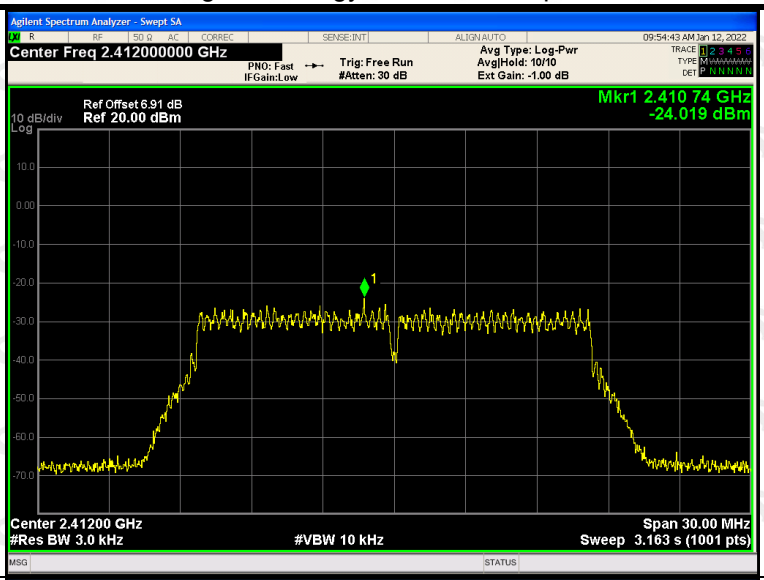
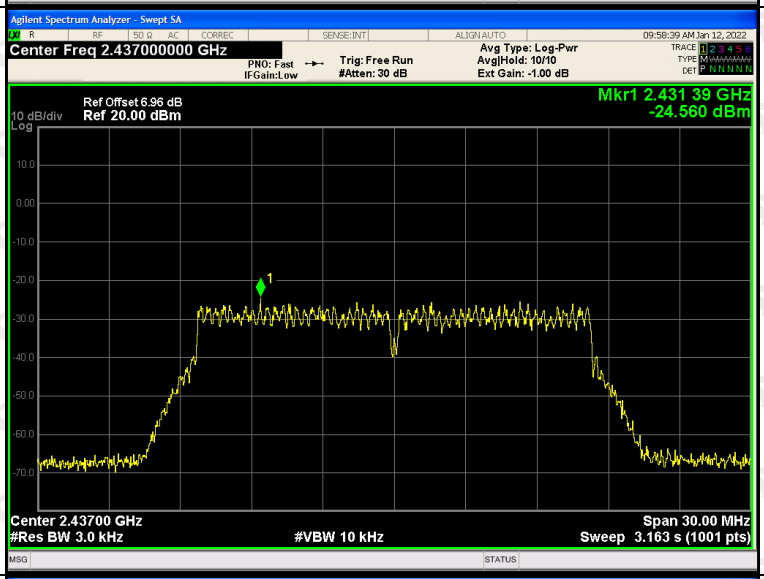
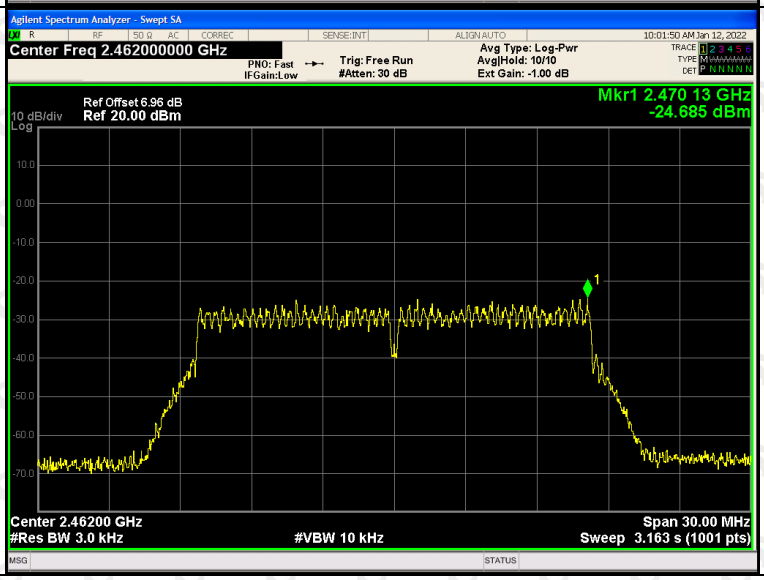
802.11g/LCH		
802.11g/MCH		
802.11g/HCH		

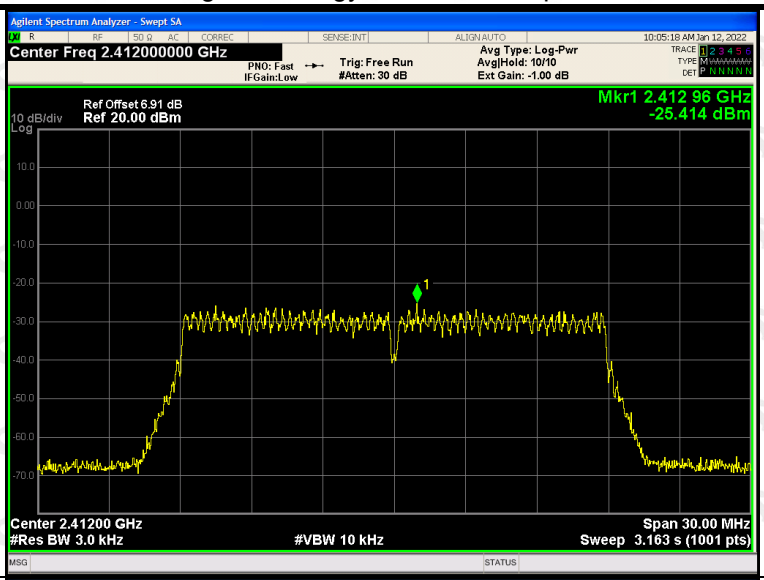
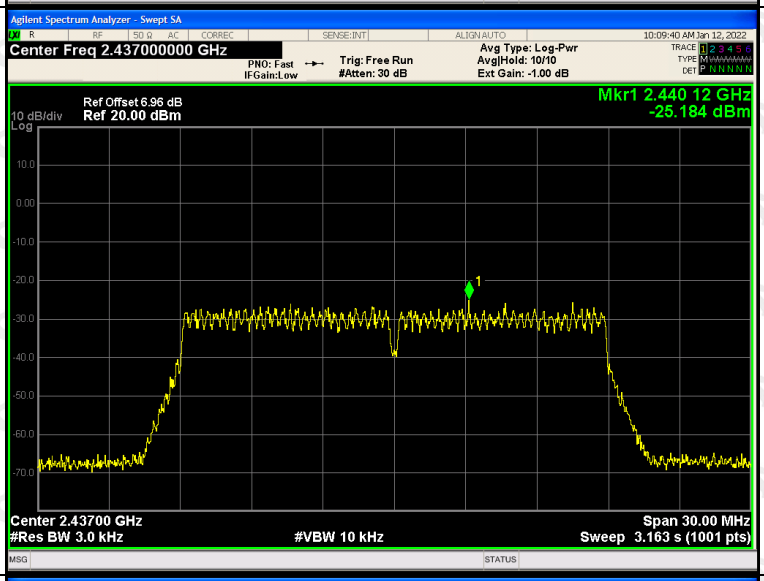
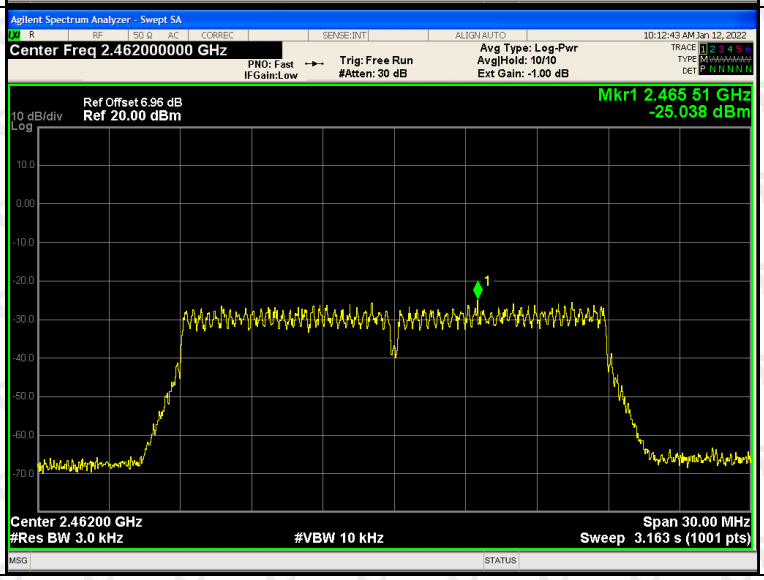
802.11n(HT20)/LCH		
802.11n(HT20)/MCH		
802.11n(HT20)/HCH		

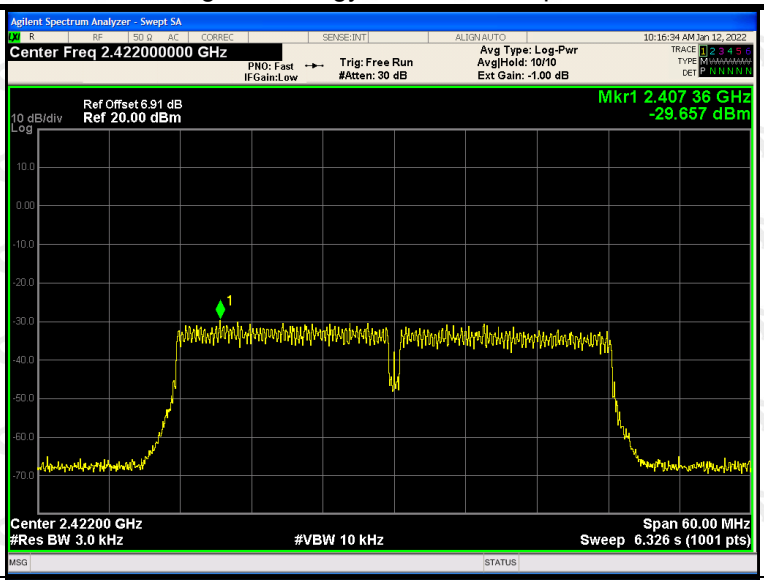
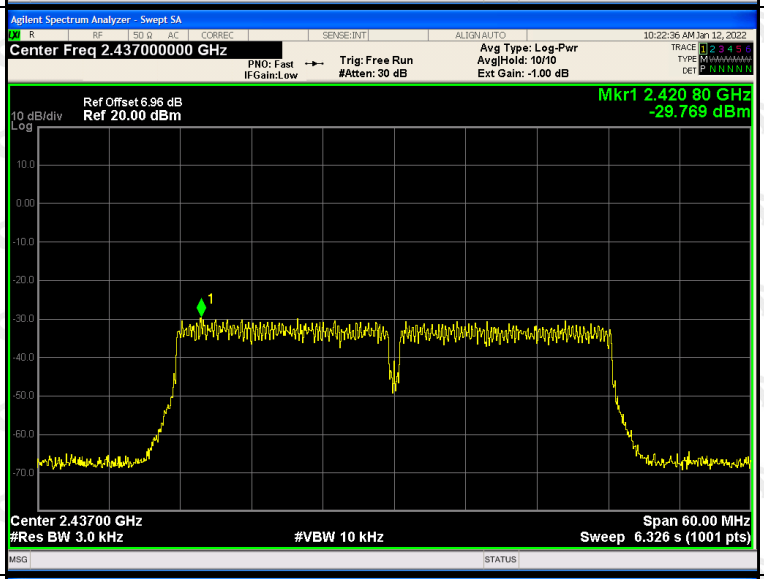
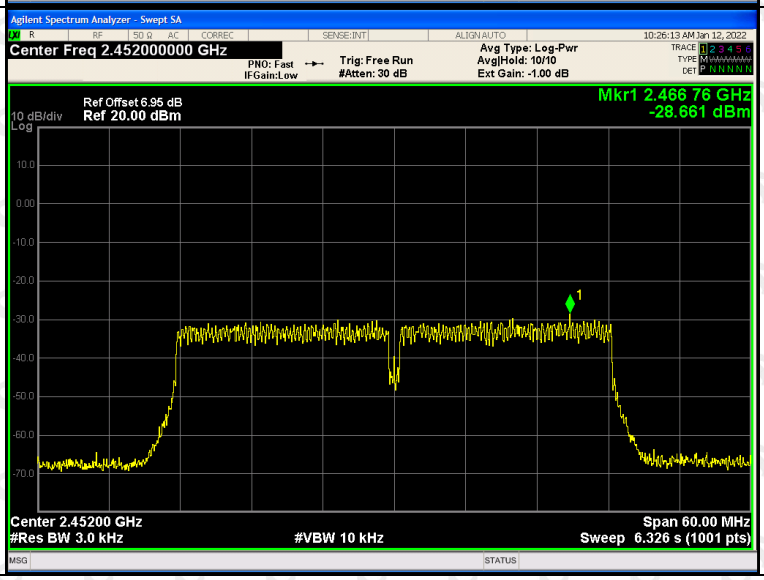
802.11n(HT40)/LCH		
802.11n(HT40)/MCH		
802.11n(HT40)/HCH		

ANT2:

Graphs		
802.11b /LCH		
802.11b /MCH		
802.11b/HCH		

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

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

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

12. ANTENNA REQUIREMENT

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is Internal Antenna and no consideration of replacement. The best case gain of the antenna is 1.0dBi.

13. EUT PHOTOGRAPHS

EUT Photo 1

EUT Photo 2

14. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G

Above 1G

Conducted emission

※※※※※ END OF REPORT ※※※※※