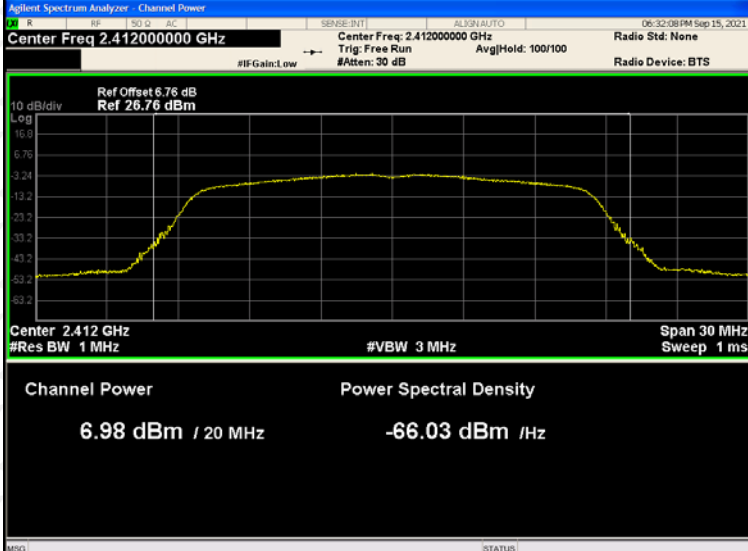
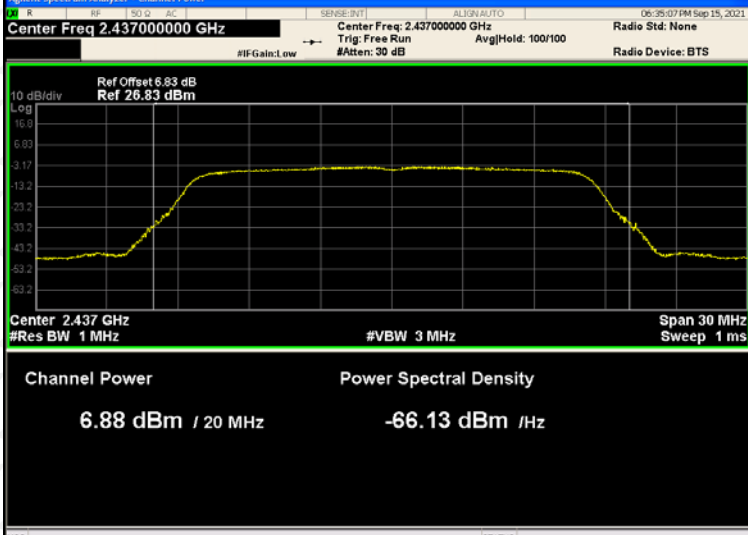
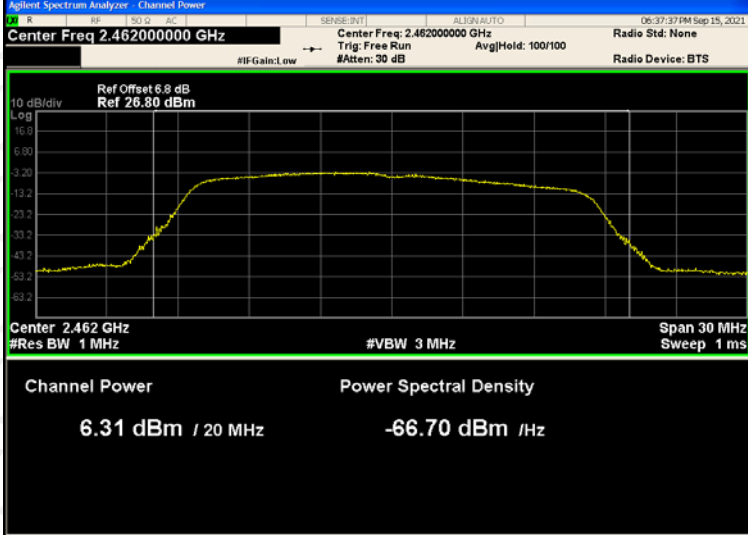
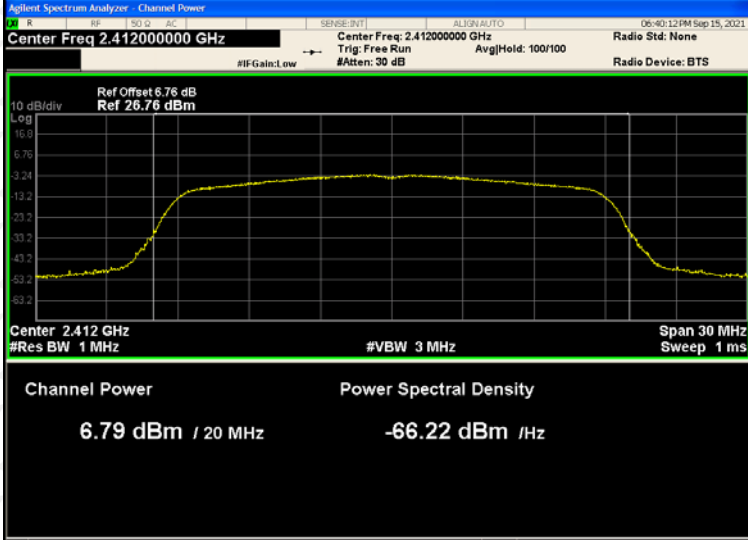
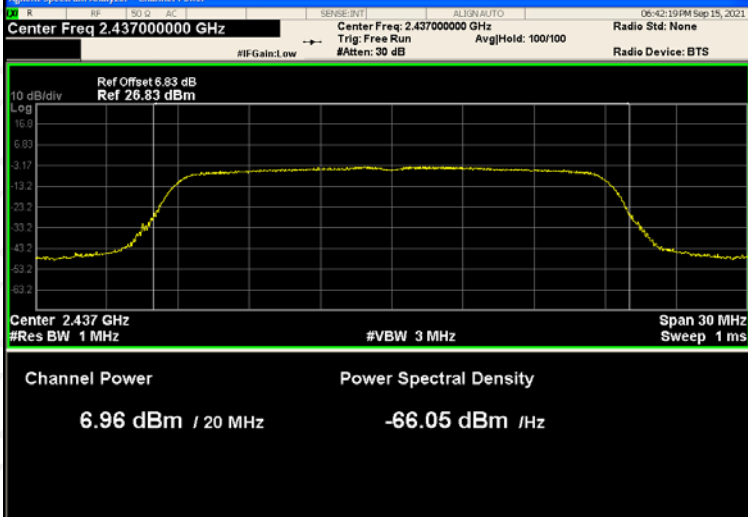
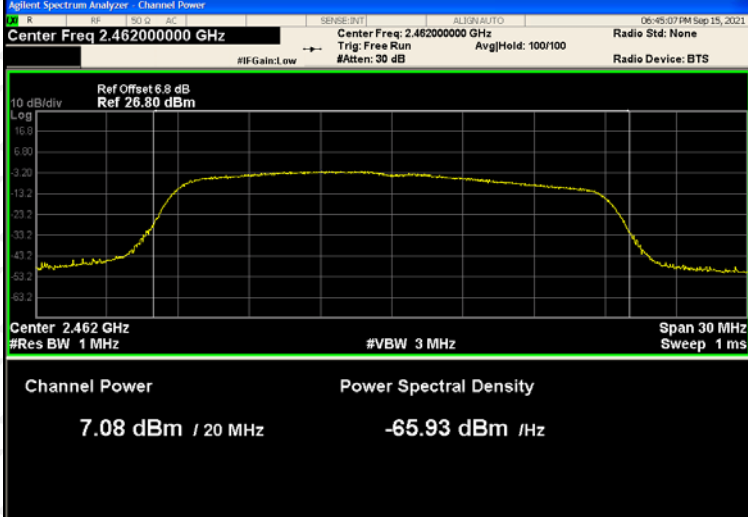
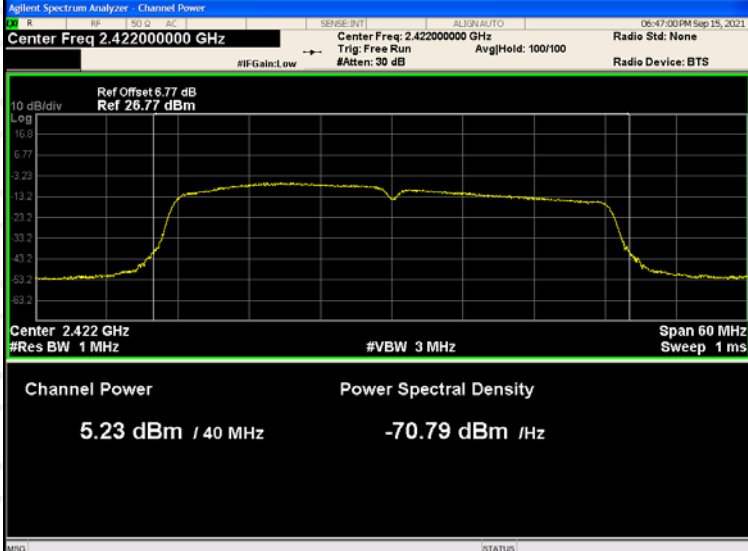
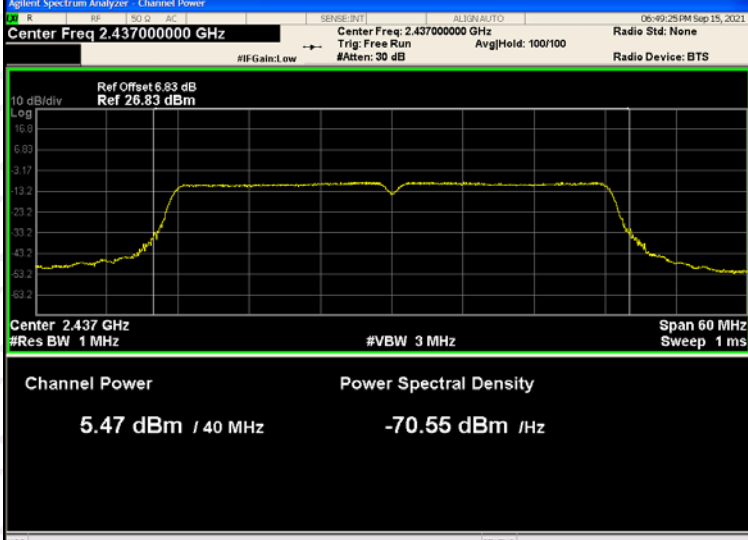
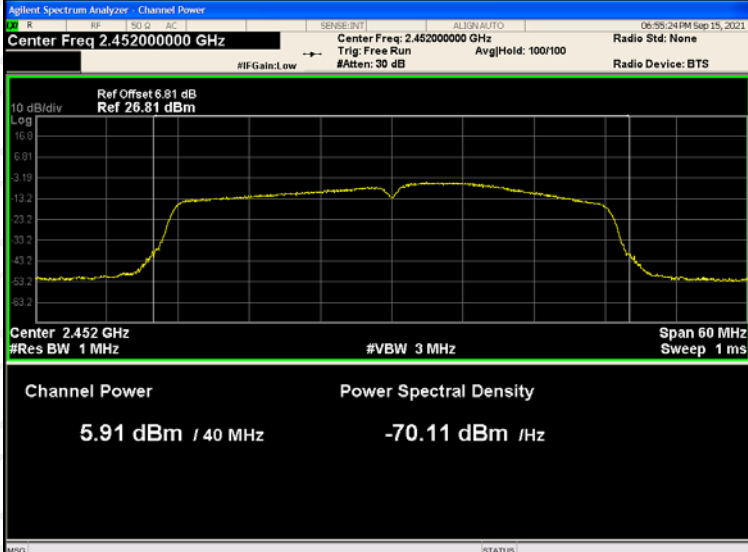


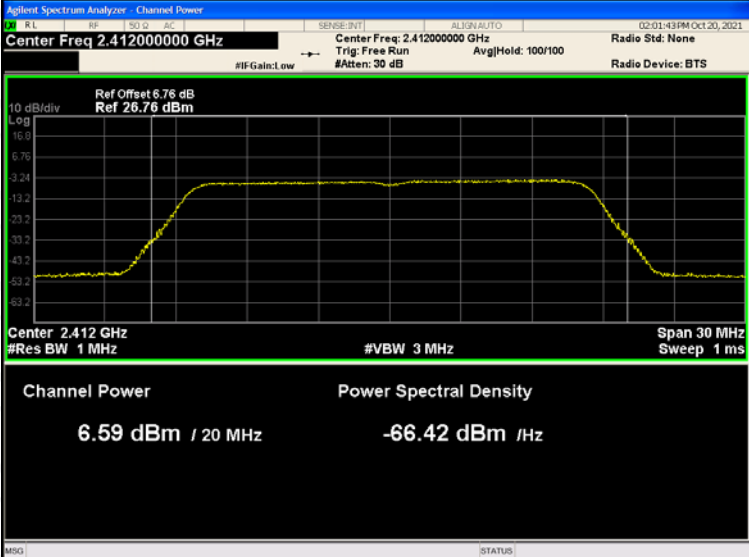
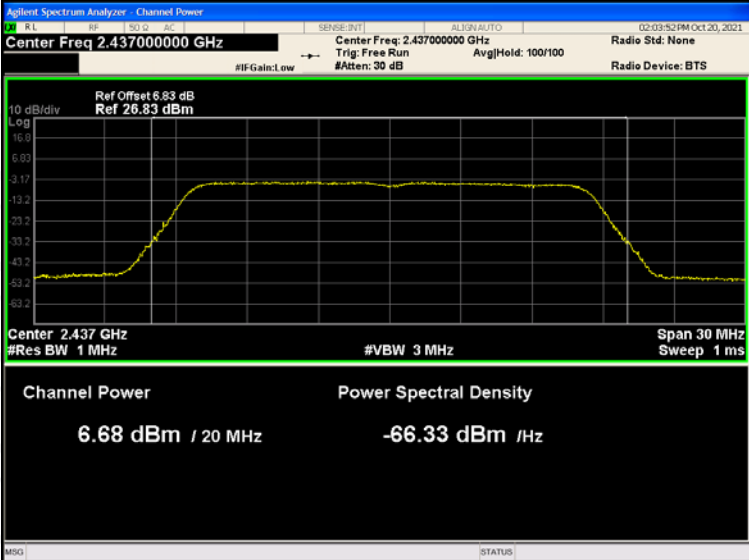
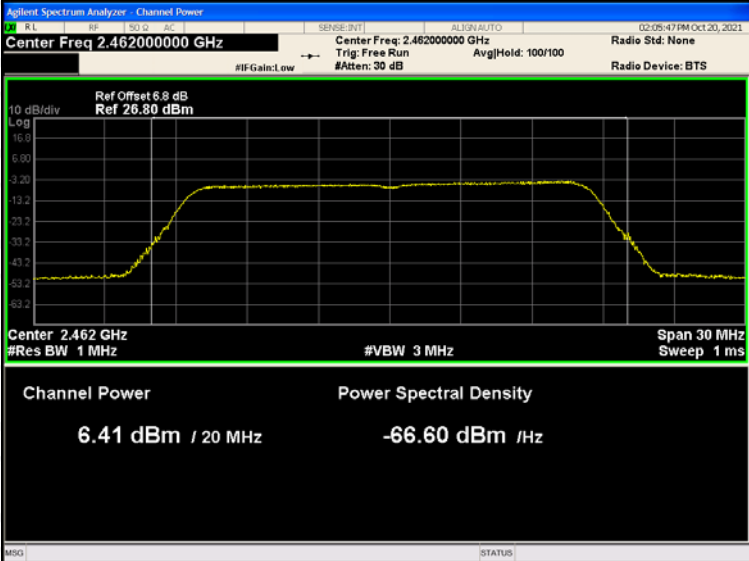
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802.11g	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Channel Power: 6.88 dBm / 20 MHz Power Spectral Density: -66.13 dBm / Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.462000000 GHz Channel Power: 6.31 dBm / 20 MHz Power Spectral Density: -66.70 dBm / Hz	

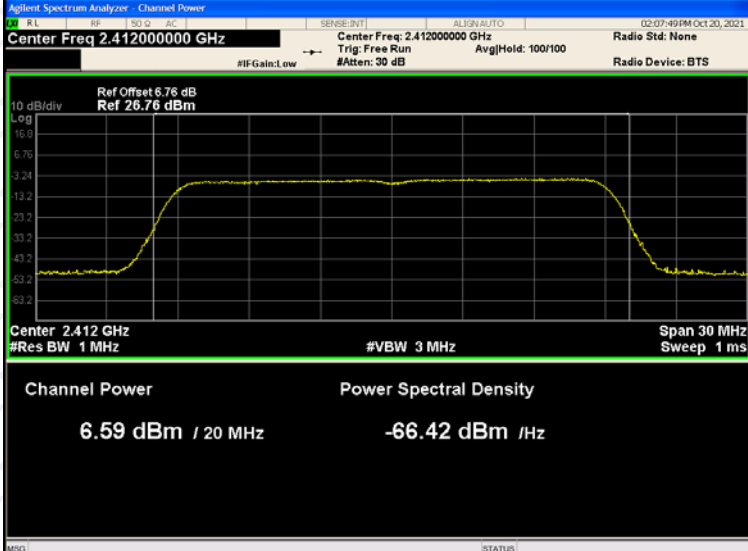
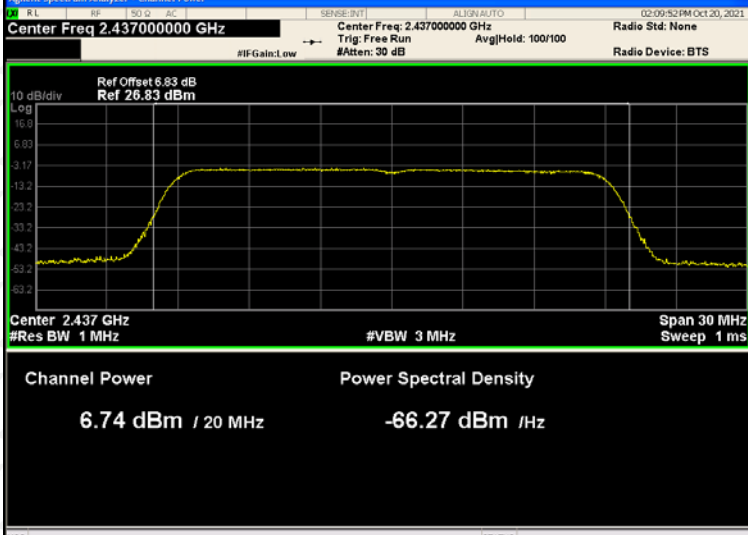
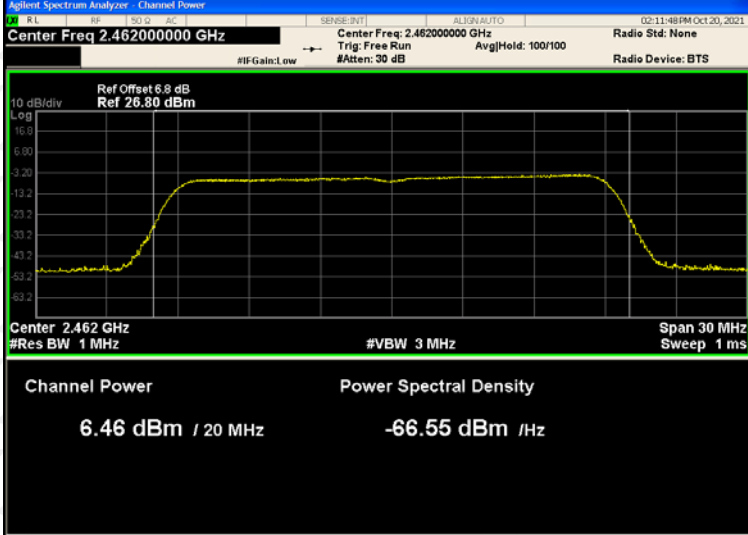
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802.11n(HT20)	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Ref Offset: 6.93 dB, Ref: 26.83 dBm Channel Power: 6.96 dBm / 20 MHz Power Spectral Density: -66.05 dBm /Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.462000000 GHz Ref Offset: 6.8 dB, Ref: 26.80 dBm Channel Power: 7.08 dBm / 20 MHz Power Spectral Density: -65.93 dBm /Hz	

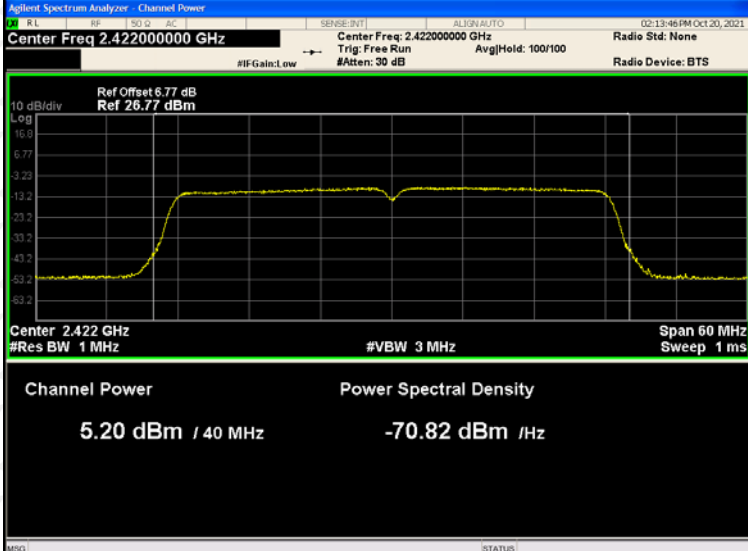
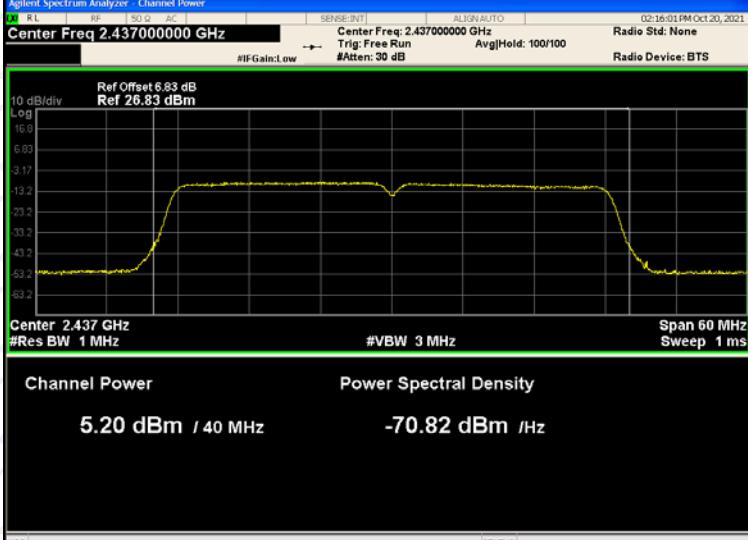
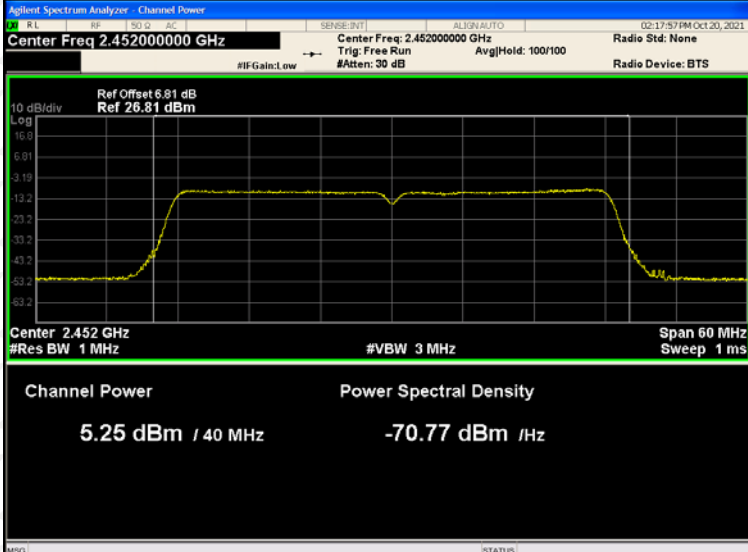
	LCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.422000000 GHz Ref Offset: 6.77 dB Ref: 26.77 dBm Channel Power: 5.23 dBm / 40 MHz Power Spectral Density: -70.79 dBm / Hz	
802.11n(HT40)	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Ref Offset: 6.83 dB Ref: 26.83 dBm Channel Power: 5.47 dBm / 40 MHz Power Spectral Density: -70.55 dBm / Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.452000000 GHz Ref Offset: 6.81 dB Ref: 26.81 dBm Channel Power: 5.91 dBm / 40 MHz Power Spectral Density: -70.11 dBm / Hz	

ANT2

Mode	Channel.	Maximum Output Power [dBm]
802.11b	LCH	Agilent Spectrum Analyzer - Channel Power Center Freq: 2.412000000 GHz Ref Offset: 6.76 dB Ref: 26.76 dBm Channel Power: 7.82 dBm / 20 MHz Power Spectral Density: -65.19 dBm / Hz
	MCH	Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Ref Offset: 6.83 dB Ref: 26.83 dBm Channel Power: 7.93 dBm / 20 MHz Power Spectral Density: -65.08 dBm / Hz
	HCH	Agilent Spectrum Analyzer - Channel Power Center Freq: 2.462000000 GHz Ref Offset: 6.8 dB Ref: 26.80 dBm Channel Power: 7.37 dBm / 20 MHz Power Spectral Density: -65.64 dBm / Hz

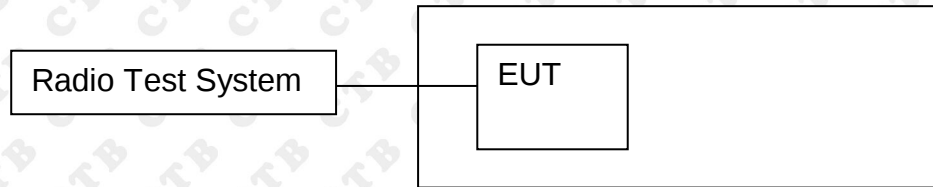
	LCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.412000000 GHz Channel Power: 6.59 dBm / 20 MHz Power Spectral Density: -66.42 dBm / Hz	
802.11g	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Channel Power: 6.68 dBm / 20 MHz Power Spectral Density: -66.33 dBm / Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.462000000 GHz Channel Power: 6.41 dBm / 20 MHz Power Spectral Density: -66.60 dBm / Hz	

	LCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.412000000 GHz Channel Power: 6.59 dBm / 20 MHz Power Spectral Density: -66.42 dBm / Hz	
802.11n(HT20)	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Channel Power: 6.74 dBm / 20 MHz Power Spectral Density: -66.27 dBm / Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.462000000 GHz Channel Power: 6.46 dBm / 20 MHz Power Spectral Density: -66.55 dBm / Hz	

	LCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.422000000 GHz Channel Power: 5.20 dBm / 40 MHz Power Spectral Density: -70.82 dBm / Hz	
802.11n(HT40)	MCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.437000000 GHz Channel Power: 5.20 dBm / 40 MHz Power Spectral Density: -70.82 dBm / Hz	
	HCH	 Agilent Spectrum Analyzer - Channel Power Center Freq: 2.452000000 GHz Channel Power: 5.25 dBm / 40 MHz Power Spectral Density: -70.77 dBm / Hz	

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	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

10.3 Test procedure

1. Rem1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
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

ANT1

Test Mode	Frequency	-6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	7.224	500	PASS
	MCH	8.089	500	PASS
	HCH	7.293	500	PASS
802.11g	LCH	13.784	500	PASS
	MCH	15.305	500	PASS
	HCH	12.946	500	PASS
802.11n(HT20)	LCH	15.044	500	PASS
	MCH	16.263	500	PASS
	HCH	10.16	500	PASS
802.11n(HT40)	LCH	21.353	500	PASS
	MCH	36.094	500	PASS
	HCH	21.317	500	PASS

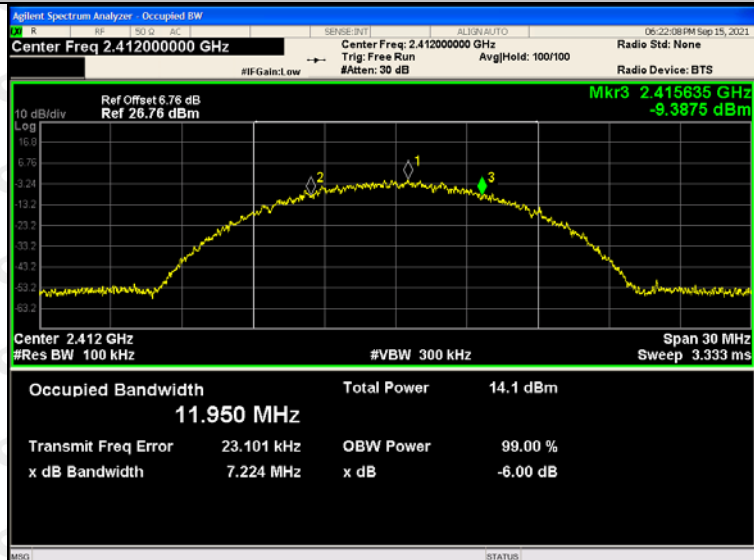
ANT2

Test Mode	Frequency	-6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	9.736	500	PASS
	MCH	9.737	500	PASS
	HCH	9.592	500	PASS
802.11g	LCH	16.367	500	PASS
	MCH	16.35	500	PASS
	HCH	16.396	500	PASS
802.11n(HT20)	LCH	17.617	500	PASS
	MCH	17.572	500	PASS
	HCH	17.346	500	PASS
802.11n(HT40)	LCH	35.344	500	PASS
	MCH	35.456	500	PASS
	HCH	36.037	500	PASS

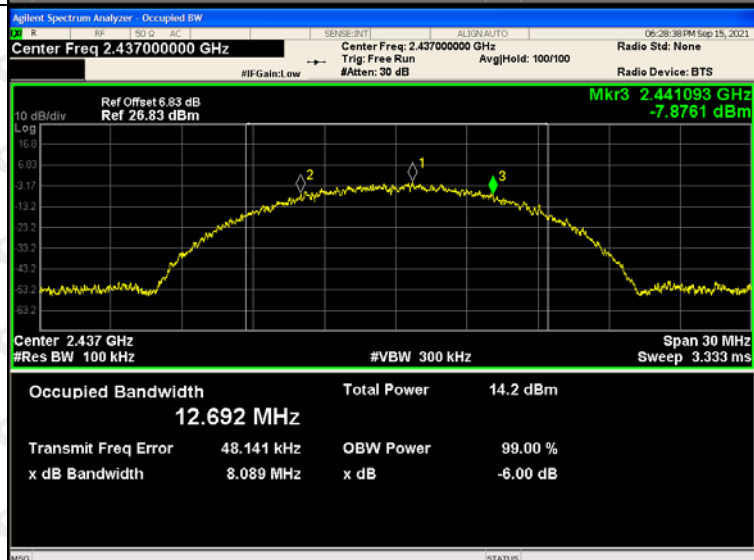
Test Graph: ANT1

Graphs

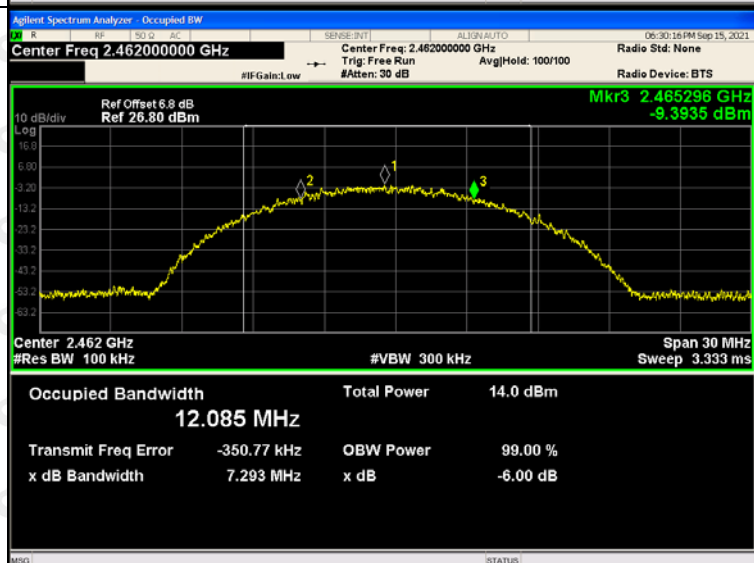
802.11b /LCH



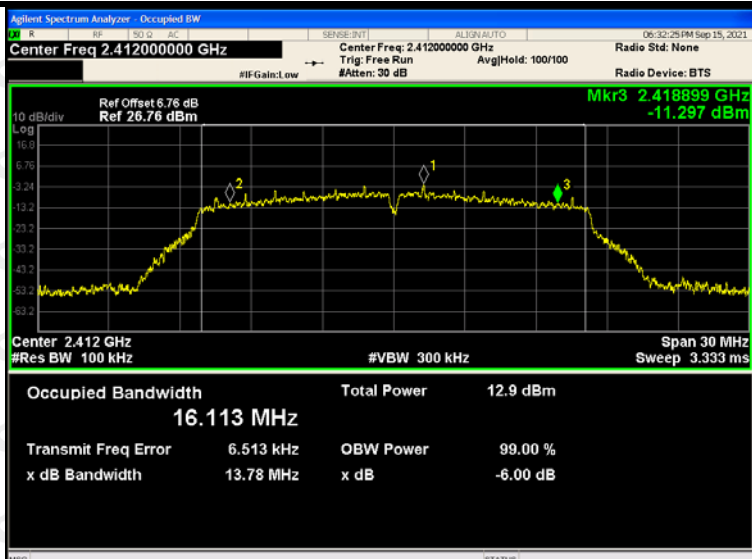
802.11b /MCH



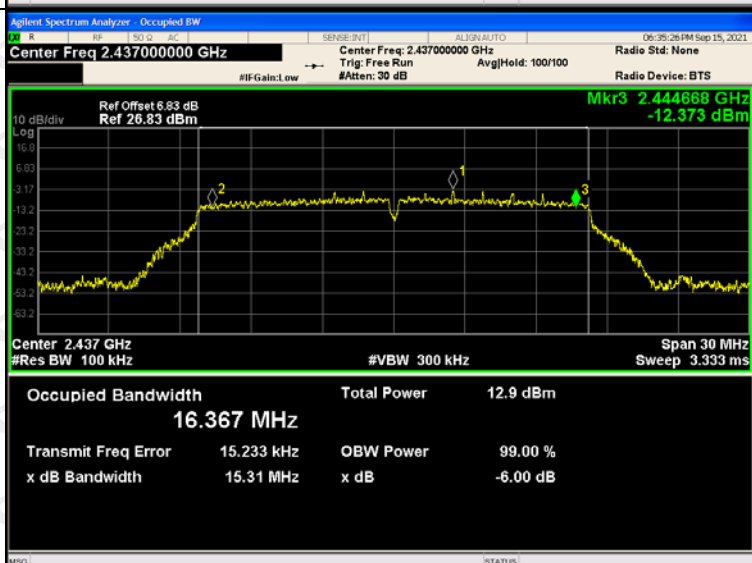
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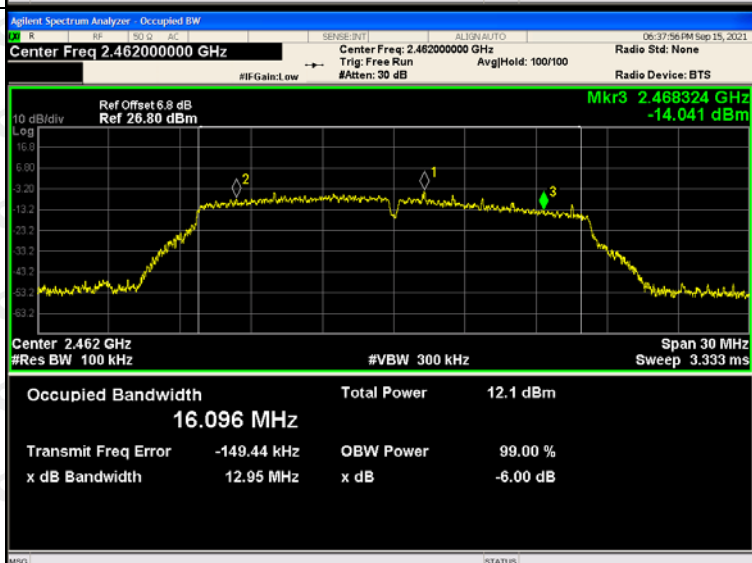
802.11g/LCH

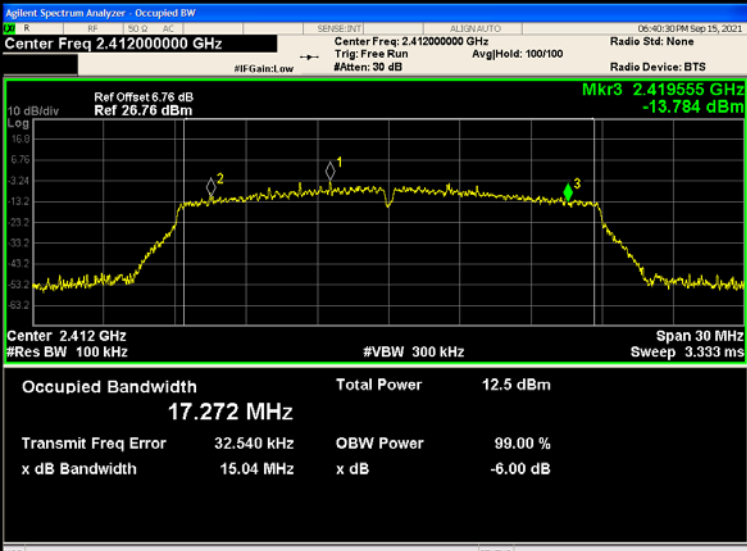
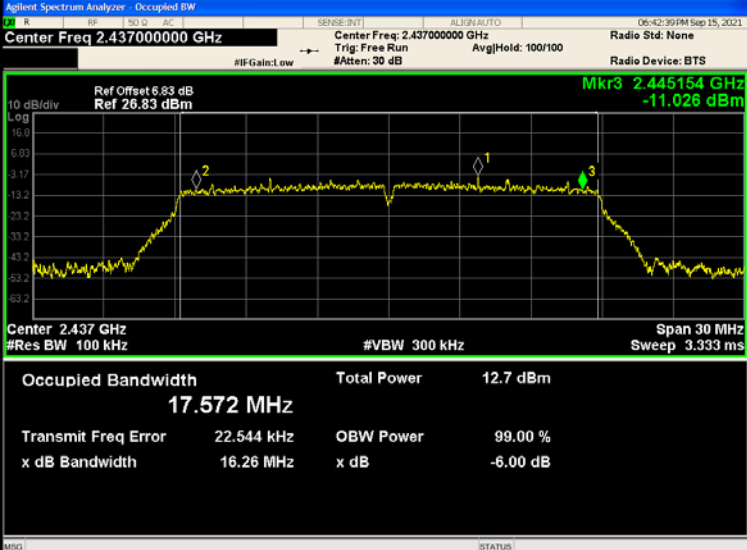
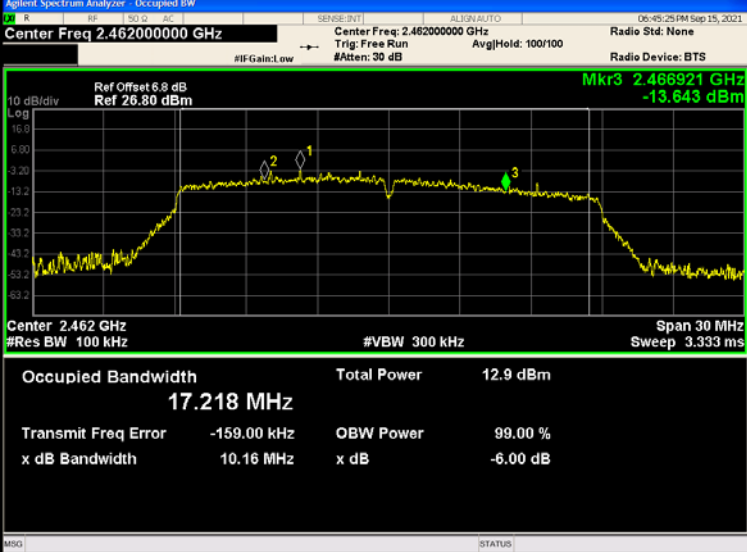


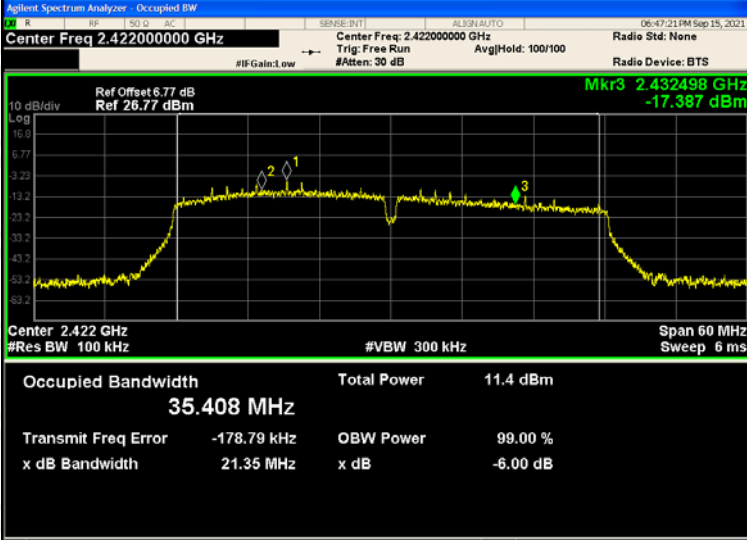
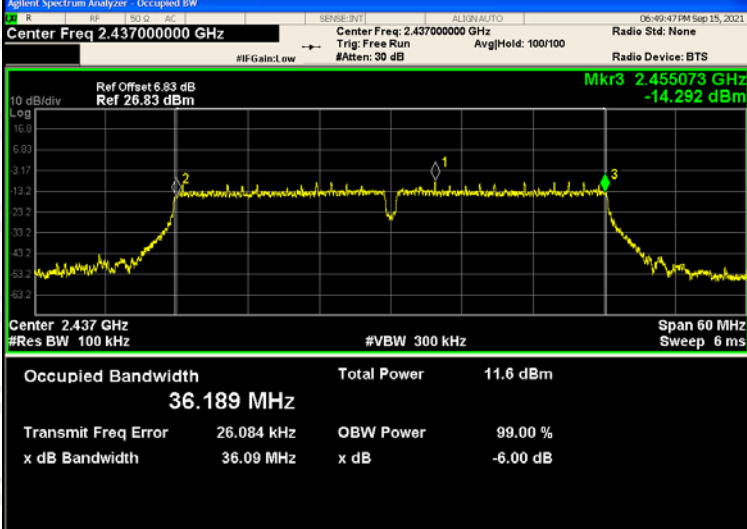
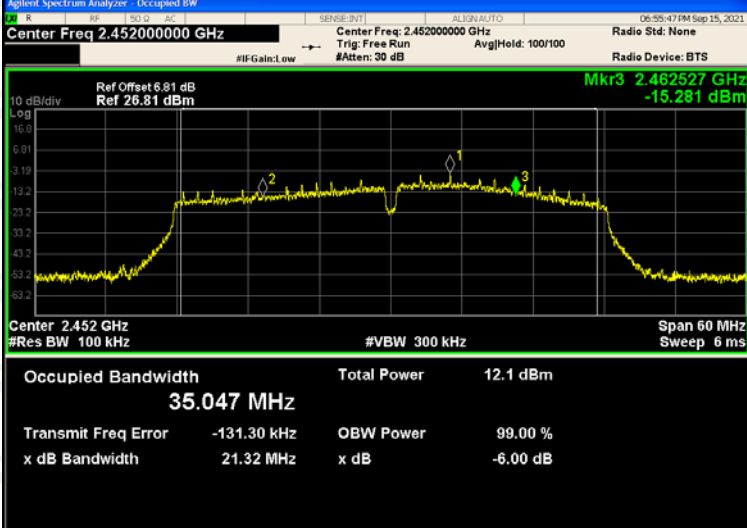
802.11g/MCH



802.11g/HCH



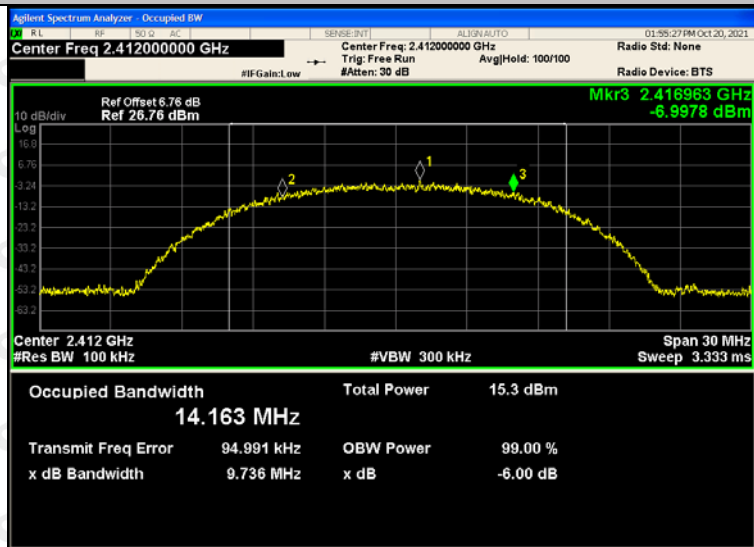
802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.76 dB Ref 26.76 dBm Mkr3 2.419555 GHz -13.784 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 3.333 ms Occupied Bandwidth 17.272 MHz Total Power 12.5 dBm Transmit Freq Error 32.540 kHz OBW Power 99.00 % x dB Bandwidth 15.04 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.83 dB Ref 26.83 dBm Mkr3 2.445154 GHz -11.026 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 3.333 ms Occupied Bandwidth 17.572 MHz Total Power 12.7 dBm Transmit Freq Error 22.544 kHz OBW Power 99.00 % x dB Bandwidth 16.26 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 6.8 dB Ref 26.80 dBm Mkr3 2.468921 GHz -13.643 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 3.333 ms Occupied Bandwidth 17.218 MHz Total Power 12.9 dBm Transmit Freq Error -159.00 kHz OBW Power 99.00 % x dB Bandwidth 10.16 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Ref Offset 6.77 dB Ref 26.77 dBm Mkr3 2.432498 GHz -17.387 dBm Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms Occupied Bandwidth 35.408 MHz Total Power 11.4 dBm Transmit Freq Error -178.79 kHz OBW Power 99.00 % x dB Bandwidth 21.35 MHz x dB -6.00 dB
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.83 dB Ref 26.83 dBm Mkr3 2.455073 GHz -14.292 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms Occupied Bandwidth 36.189 MHz Total Power 11.6 dBm Transmit Freq Error 26.084 kHz OBW Power 99.00 % x dB Bandwidth 36.09 MHz x dB -6.00 dB
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Ref Offset 6.81 dB Ref 26.81 dBm Mkr3 2.462527 GHz -15.281 dBm Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms Occupied Bandwidth 35.047 MHz Total Power 12.1 dBm Transmit Freq Error -131.30 kHz OBW Power 99.00 % x dB Bandwidth 21.32 MHz x dB -6.00 dB

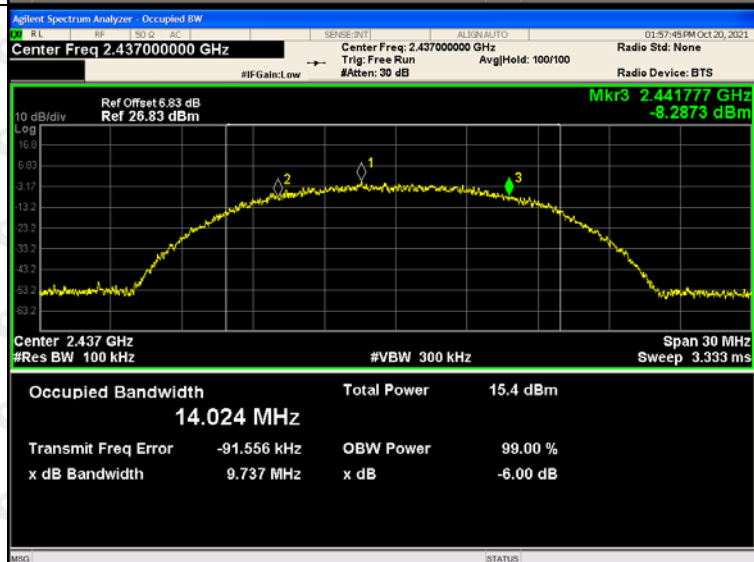
ANT2

Graphs

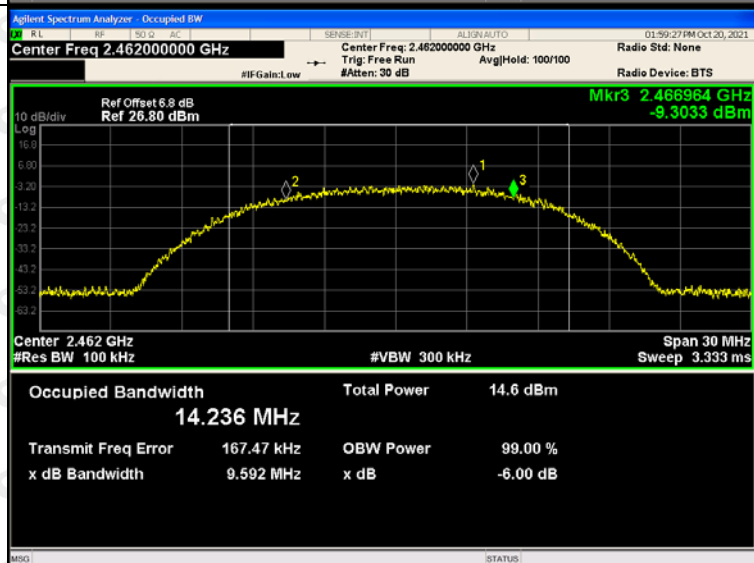
802.11b /LCH



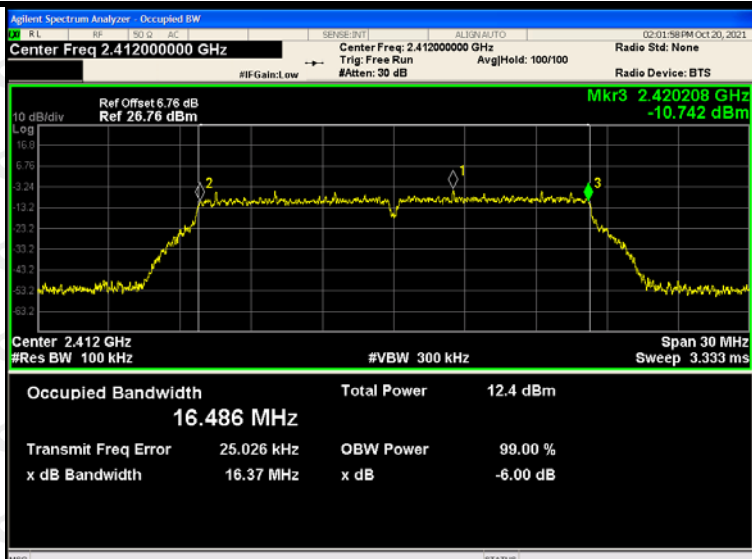
802.11b /MCH



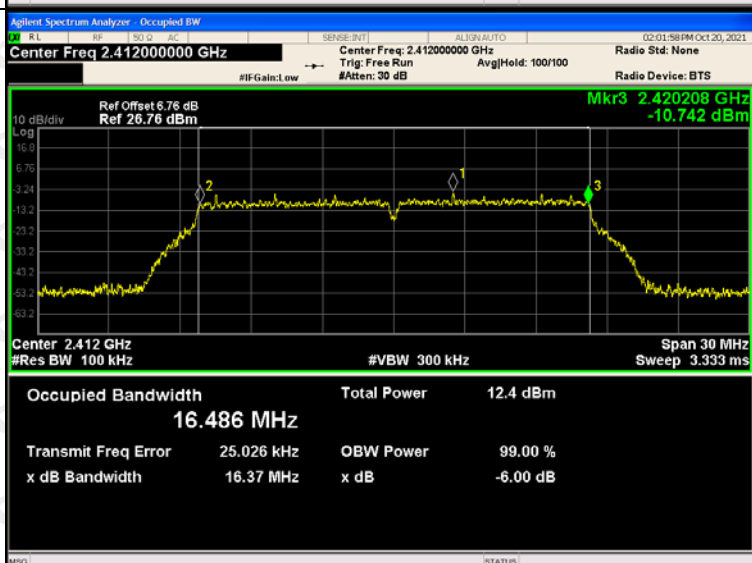
802.11b/HCH



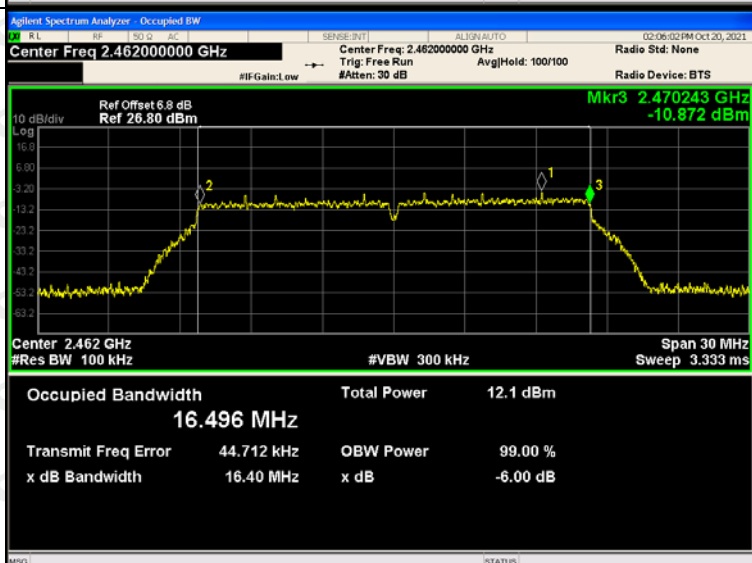
802.11g/LCH

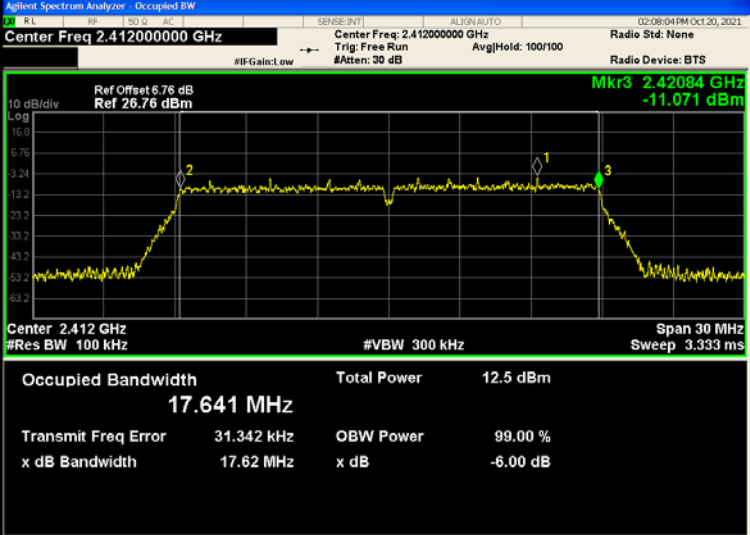
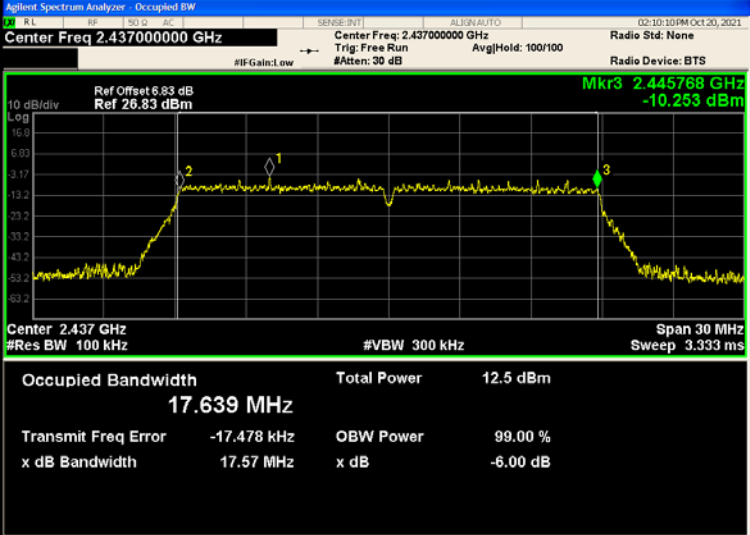
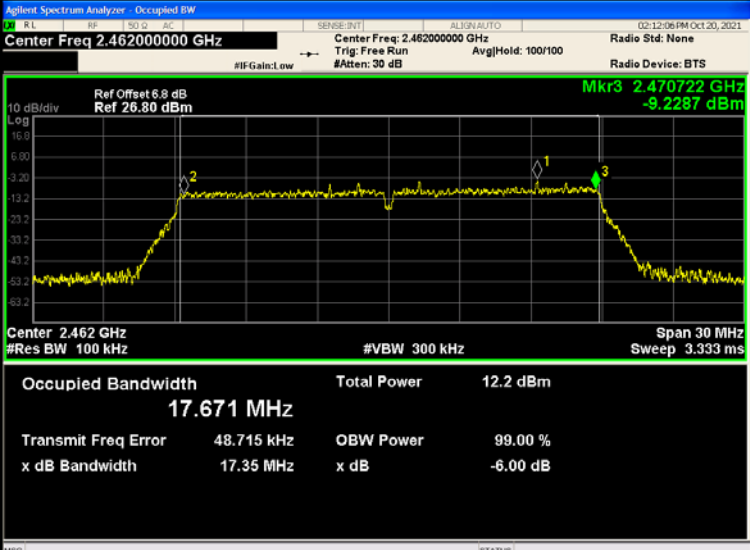


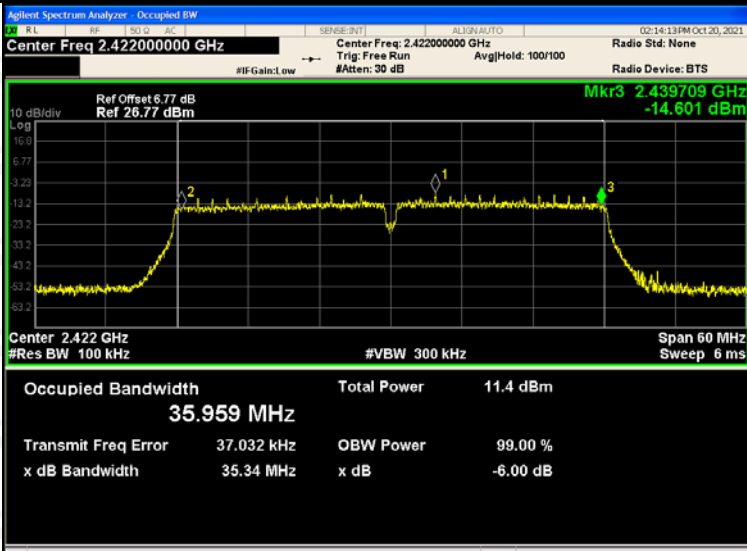
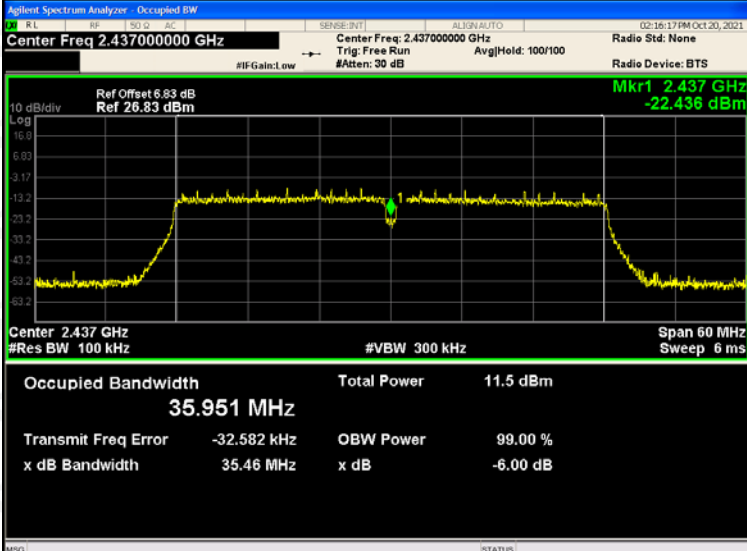
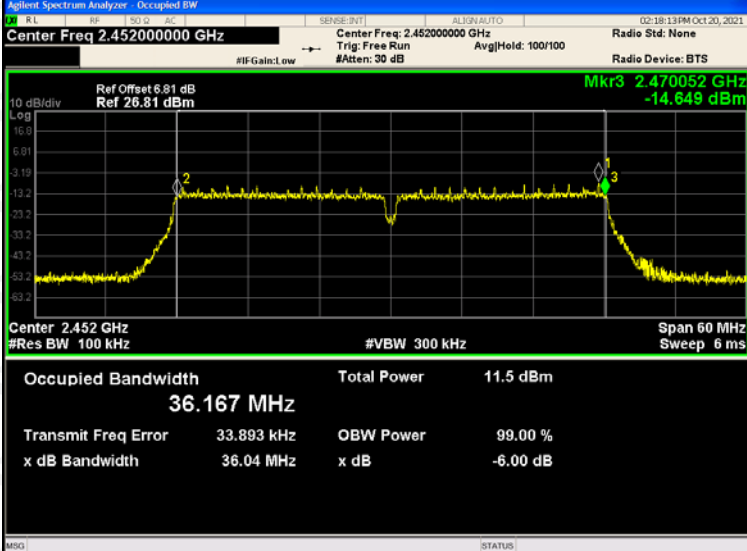
802.11g/MCH



802.11g/HCH

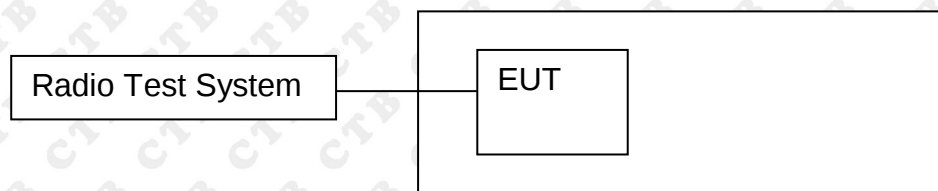


802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.76 dB Ref 26.76 dBm Occupied Bandwidth 17.641 MHz Total Power 12.5 dBm Transmit Freq Error 31.342 kHz OBW Power 99.00 % x dB Bandwidth 17.62 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.83 dB Ref 26.83 dBm Occupied Bandwidth 17.639 MHz Total Power 12.5 dBm Transmit Freq Error -17.478 kHz OBW Power 99.00 % x dB Bandwidth 17.57 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 6.8 dB Ref 26.80 dBm Occupied Bandwidth 17.671 MHz Total Power 12.2 dBm Transmit Freq Error 48.715 kHz OBW Power 99.00 % x dB Bandwidth 17.35 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Center Freq: 2.439709 GHz Ref Offset 6.77 dB Ref 26.77 dBm Mkr3 2.439709 GHz -14.601 dBm Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.4 dBm</td></tr><tr><td>35.959 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>37.032 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>35.34 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.4 dBm	35.959 MHz			Transmit Freq Error	OBW Power	99.00 %	37.032 kHz			x dB Bandwidth	x dB	-6.00 dB	35.34 MHz		
Occupied Bandwidth	Total Power	11.4 dBm																	
35.959 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
37.032 kHz																			
x dB Bandwidth	x dB	-6.00 dB																	
35.34 MHz																			
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Ref Offset 6.83 dB Ref 26.83 dBm Mkr1 2.437 GHz -22.436 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.5 dBm</td></tr><tr><td>35.951 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-32.582 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>35.46 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.5 dBm	35.951 MHz			Transmit Freq Error	OBW Power	99.00 %	-32.582 kHz			x dB Bandwidth	x dB	-6.00 dB	35.46 MHz		
Occupied Bandwidth	Total Power	11.5 dBm																	
35.951 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-32.582 kHz																			
x dB Bandwidth	x dB	-6.00 dB																	
35.46 MHz																			
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Center Freq: 2.470052 GHz Ref Offset 6.81 dB Ref 26.81 dBm Mkr3 2.470052 GHz -14.649 dBm Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 6 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.5 dBm</td></tr><tr><td>36.167 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>33.893 kHz</td><td></td><td></td></tr><tr><td>x dB Bandwidth</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>36.04 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.5 dBm	36.167 MHz			Transmit Freq Error	OBW Power	99.00 %	33.893 kHz			x dB Bandwidth	x dB	-6.00 dB	36.04 MHz		
Occupied Bandwidth	Total Power	11.5 dBm																	
36.167 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
33.893 kHz																			
x dB Bandwidth	x dB	-6.00 dB																	
36.04 MHz																			

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: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
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

ANT 1+ ANT 2

Mode	Channel	Power Spectral Density (dBm/3KHz) ANT 1	Power Spectral Density (dBm/3KHz)ANT 2	Carrier Frequency Separation [MHz] Total	Limit(dBm)
802.11b	LCH	-9.387	-10.104	/	8
	MCH	-10.939	-9.535	/	8
	HCH	-9.211	-10.925	/	8
802.11g	LCH	-11.227	-13.192	/	8
	MCH	-12.176	-12.797	/	8
	HCH	-11.569	-12.463	/	8
802.11n(HT20)	LCH	-11.485	-13.707	-9.445	8
	MCH	-12.368	-13.667	-9.959	8
	HCH	-11.549	-13.13	-9.258	8
802.11n(HT40)	LCH	-15.147	-17.262	-13.067	8
	MCH	-17.896	-17.661	-14.767	8
	HCH	-14.594	-17.74	-12.878	8

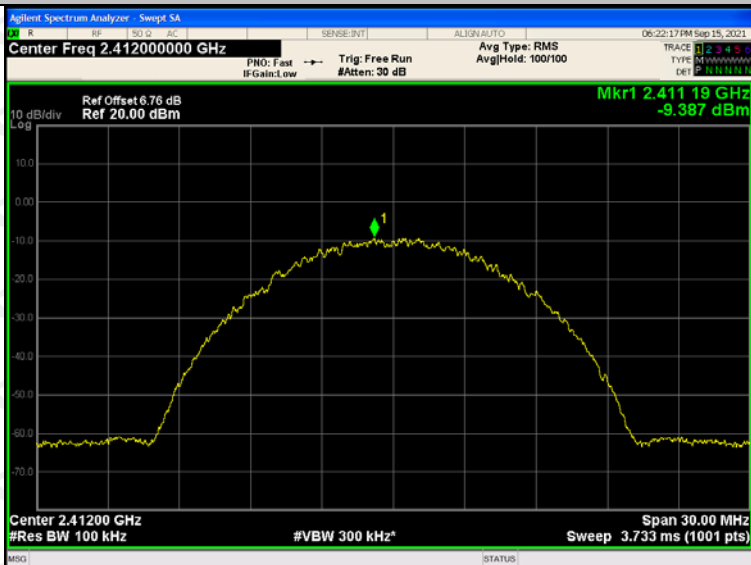
Note: Directional gain=1dBi+10xlog(2/1)=4.01dBi<6dBi. So the Power Spectral Density limit no need to reduce.

Test Graph

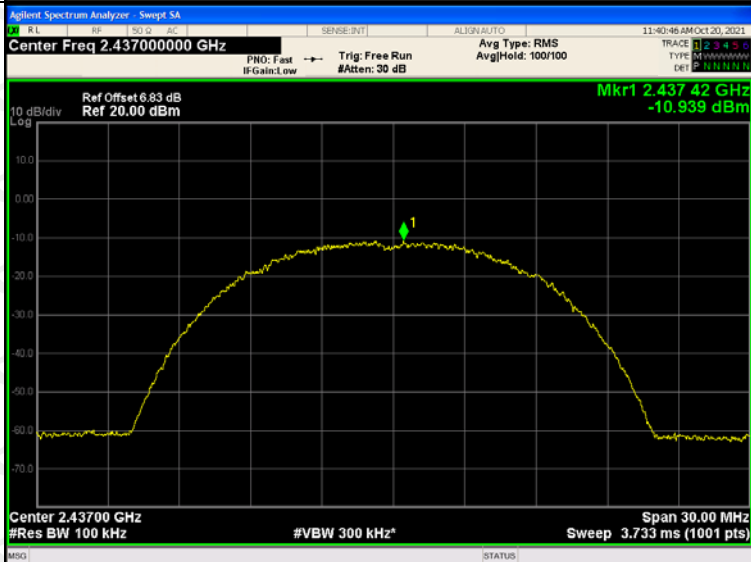
ANT1

Graphs

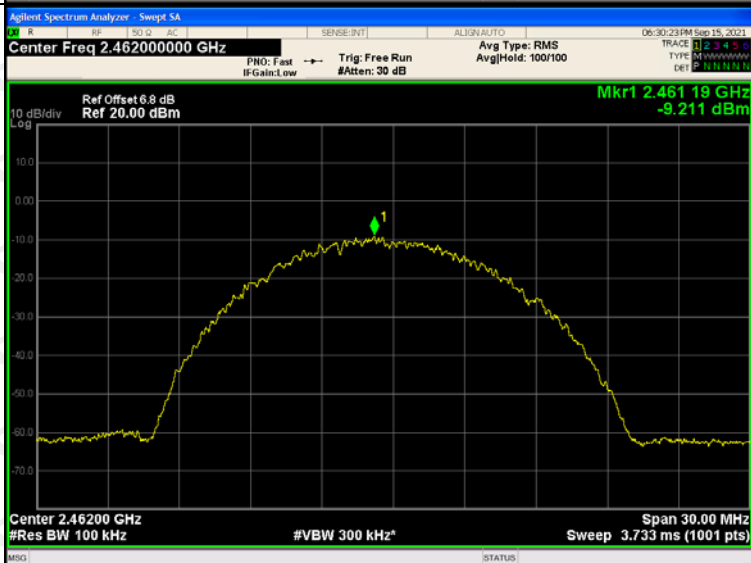
802.11b /LCH



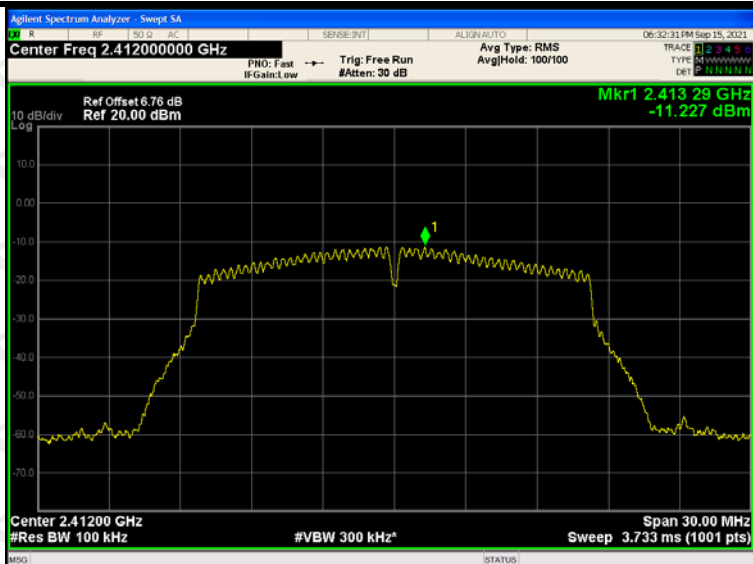
802.11b /MCH



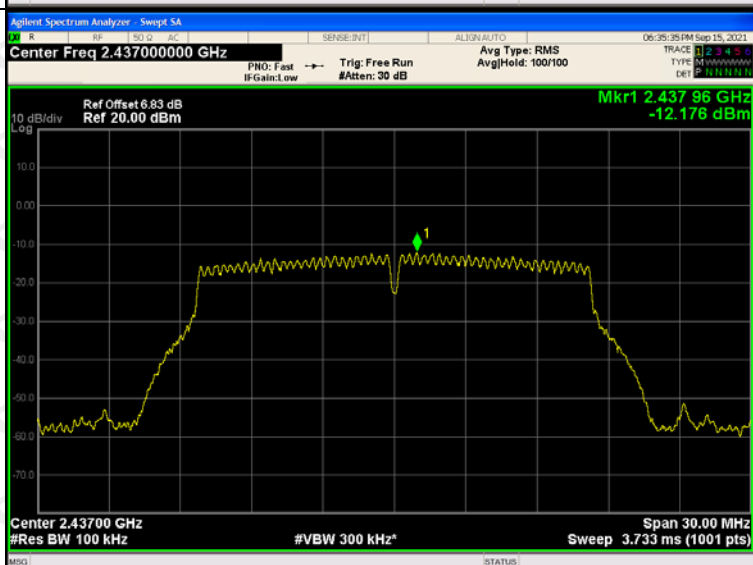
802.11b/HCH



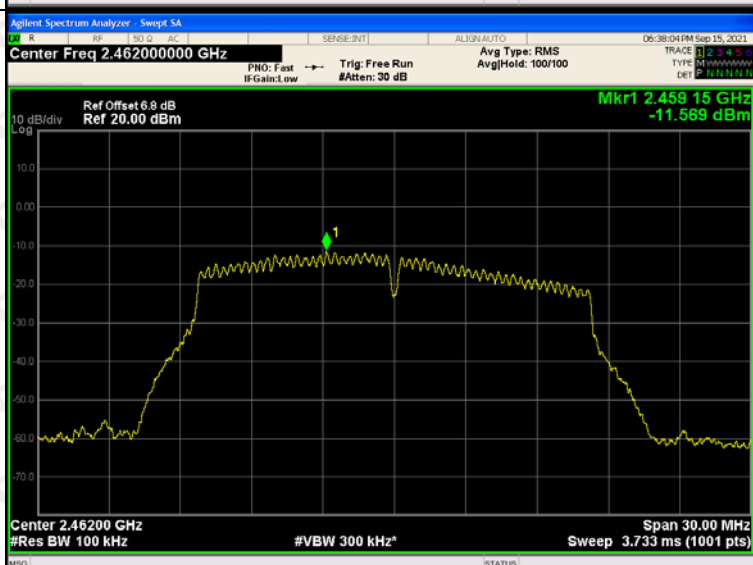
802.11g/LCH

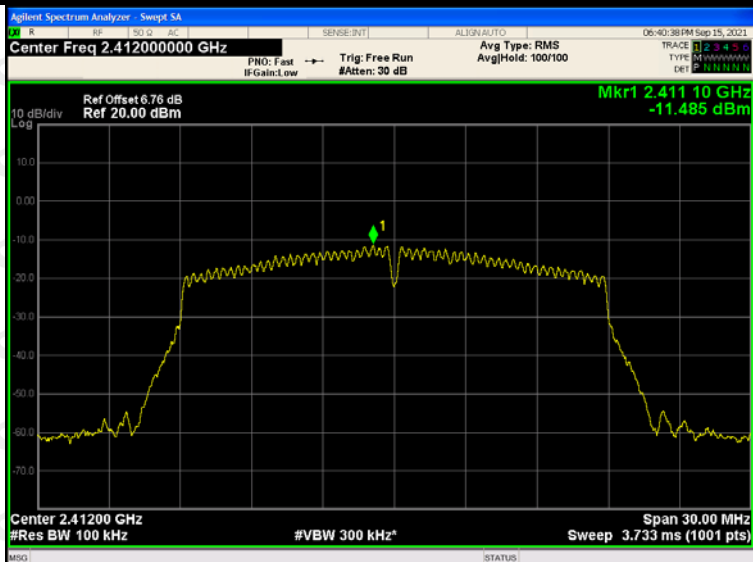
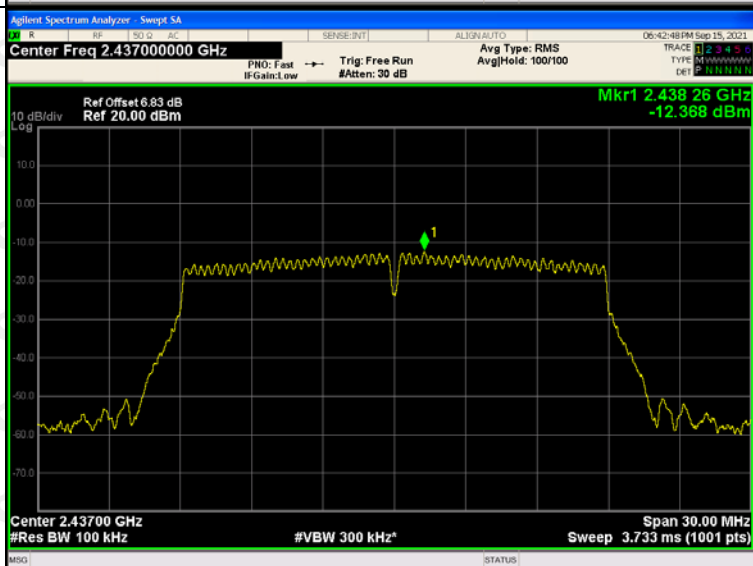
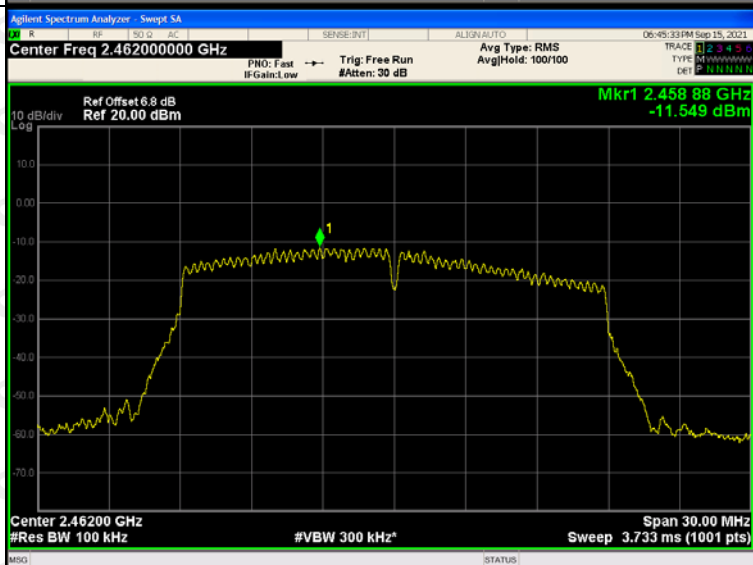


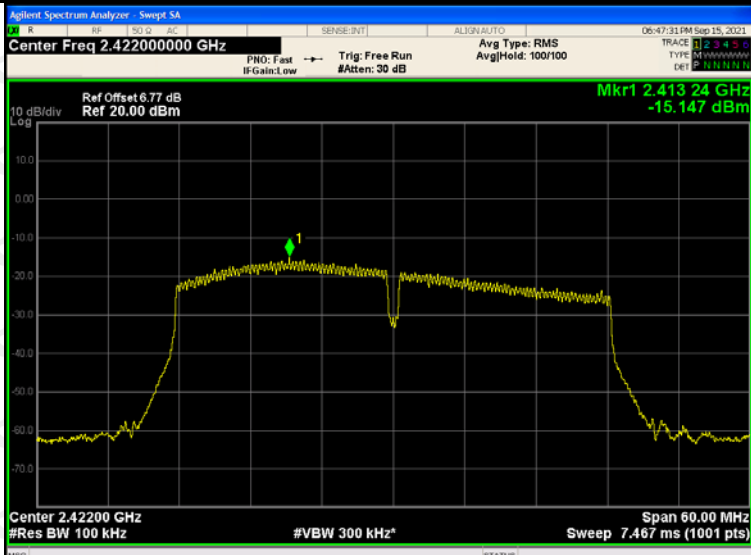
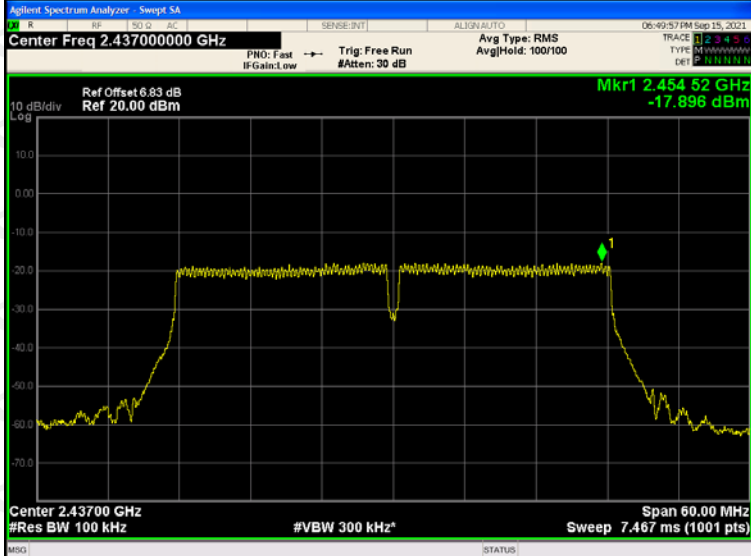
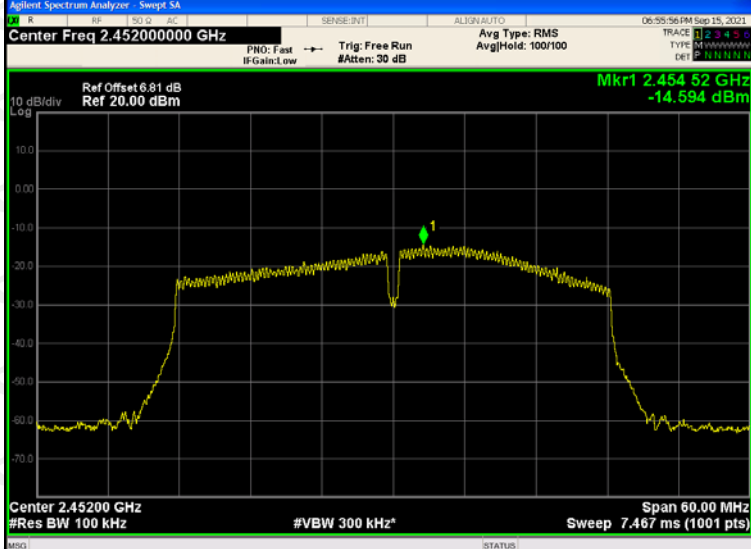
802.11g/MCH



802.11g/HCH



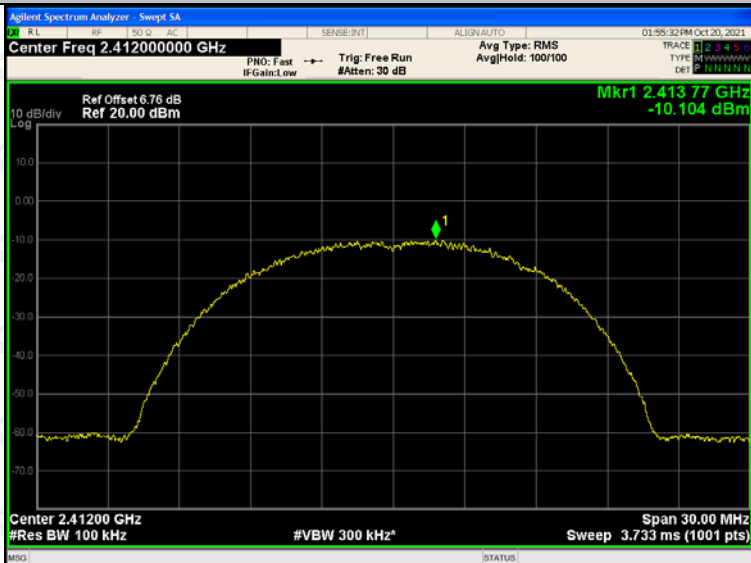
802.11n(HT20)/LC
H

802.11n(HT20)/MC
H

802.11n(HT20)/HC
H


802.11n(HT40)/LC H	
802.11n(HT40)/MC H	
802.11n(HT40)/HC H	

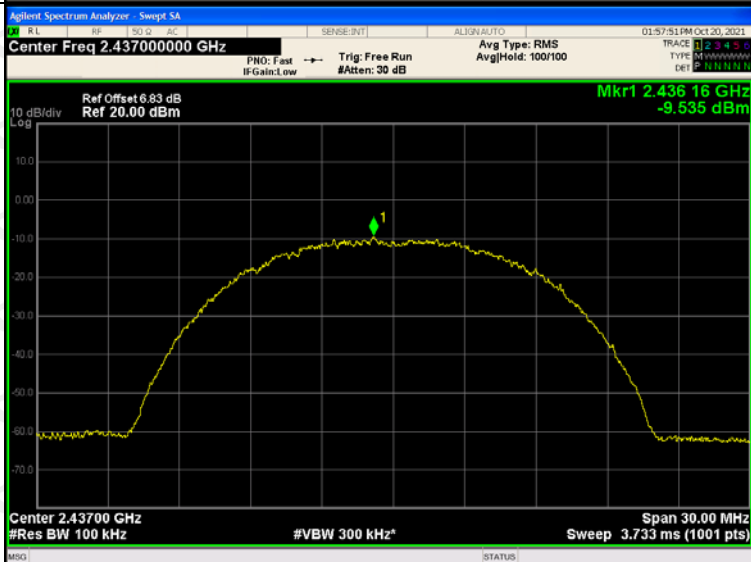
ANT2

Graphs

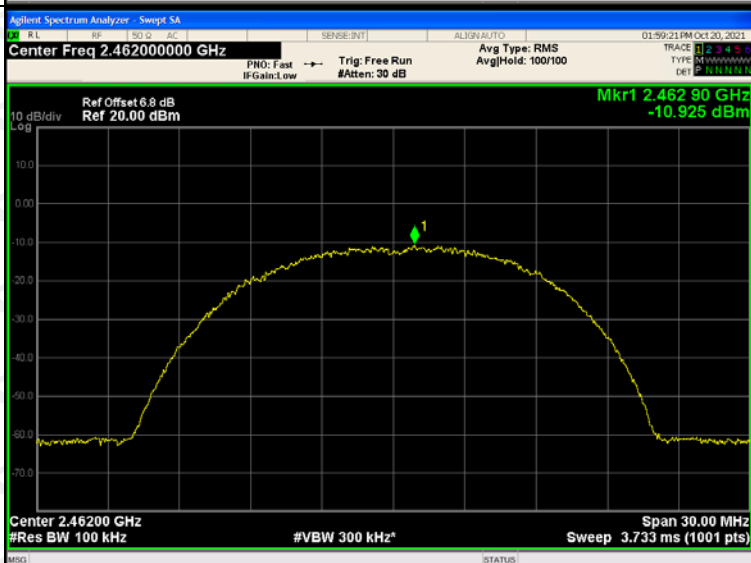
802.11b /LCH



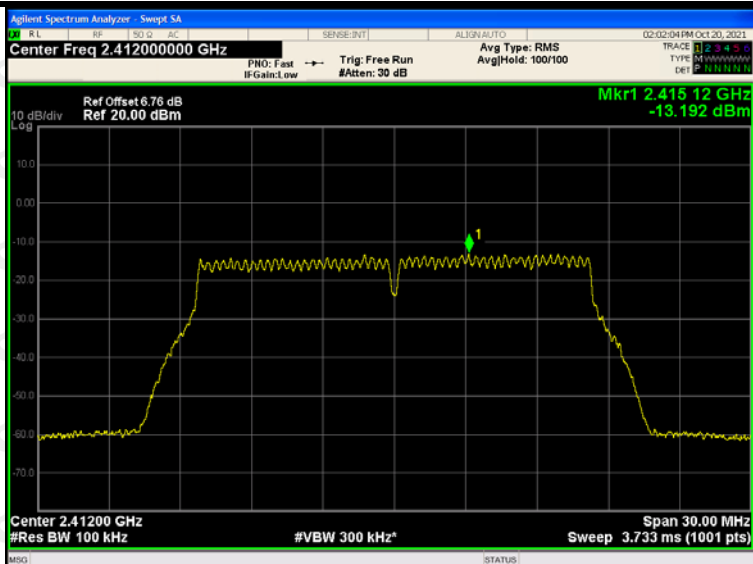
802.11b /MCH



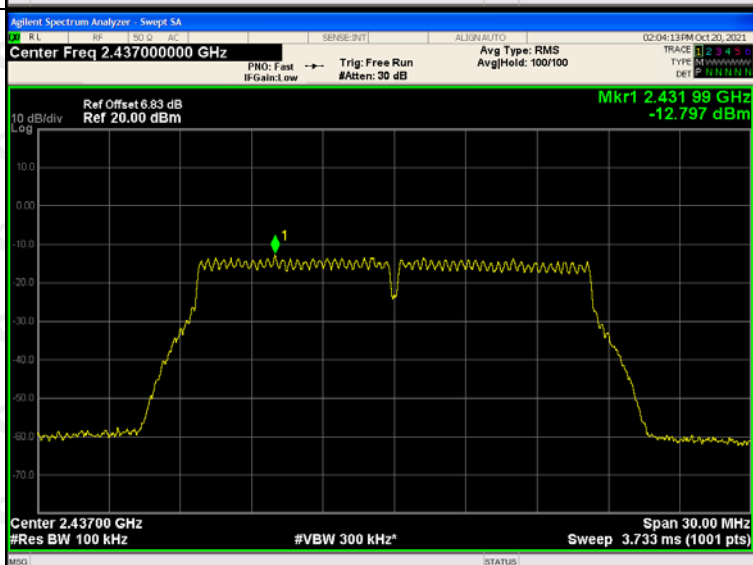
802.11b/HCH



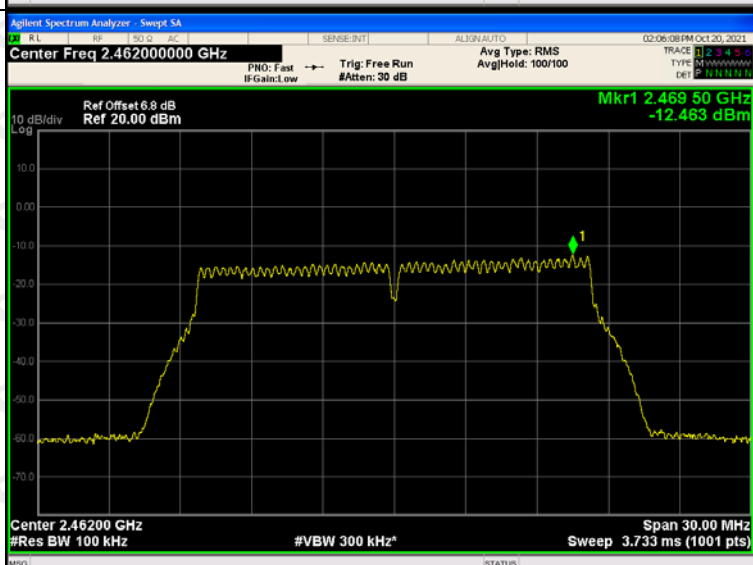
802.11g/LCH



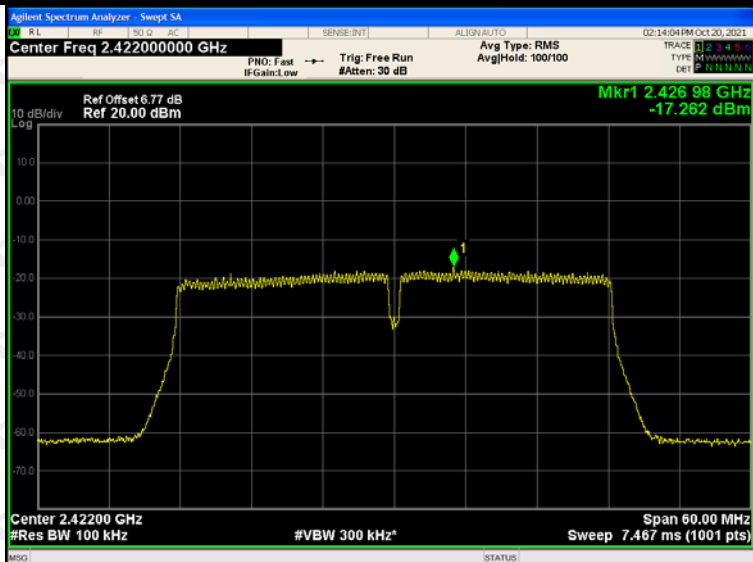
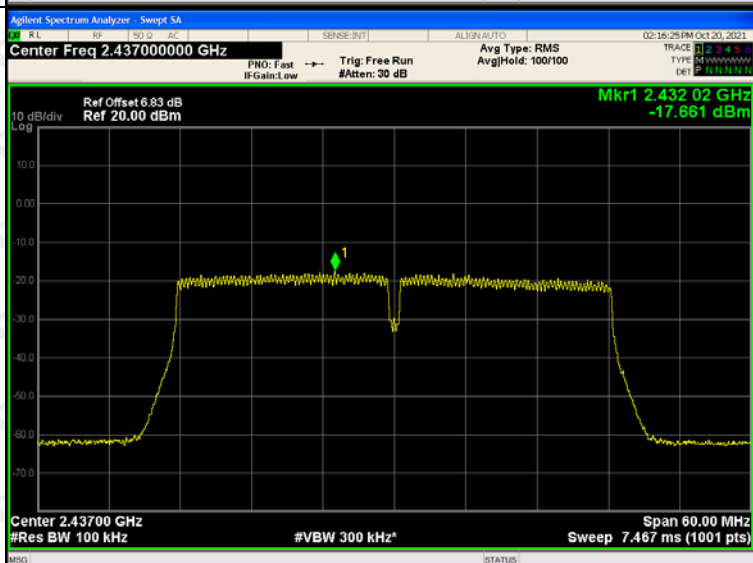
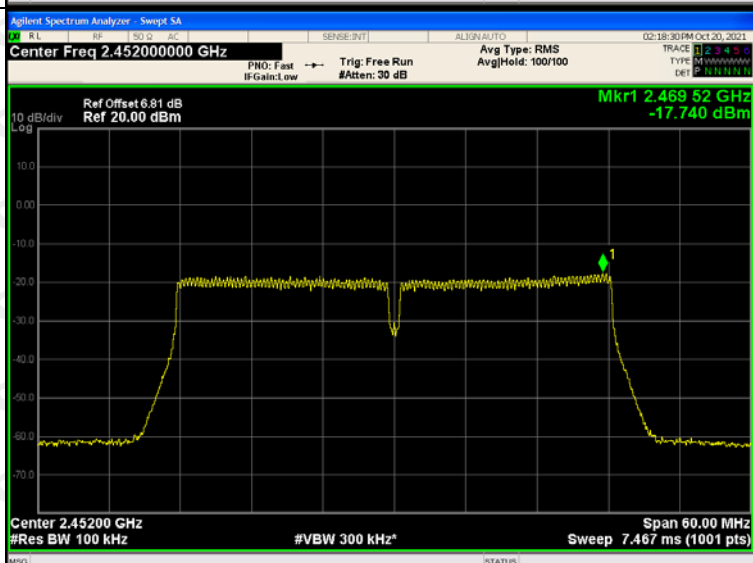
802.11g/MCH



802.11g/HCH





802.11n(HT40)/LC
H

802.11n(HT40)/MC
H

802.11n(HT40)/HC
H


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 *****