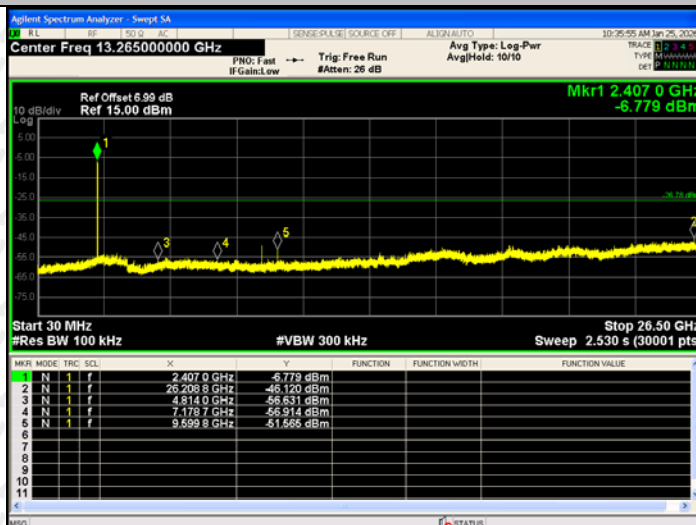
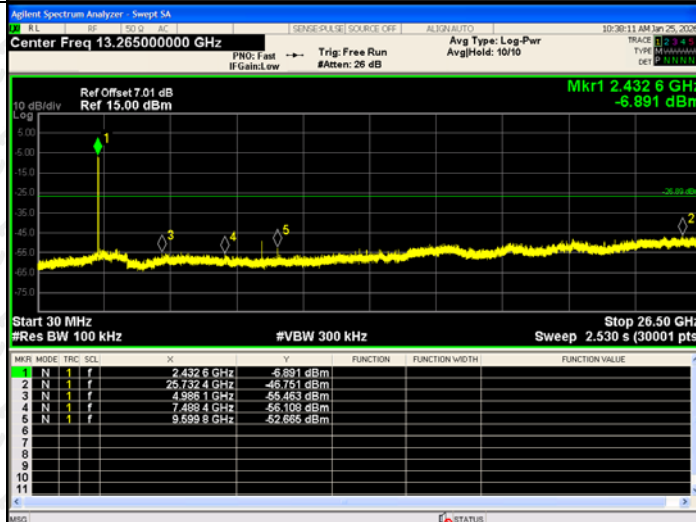


RF Conducted Spurious Emissions Graphs

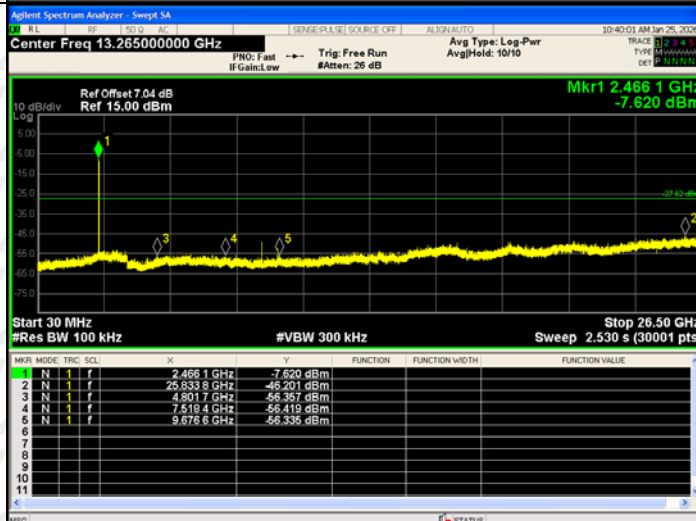
802.11n(HT20)/LCH



802.11n(HT20)/MCH

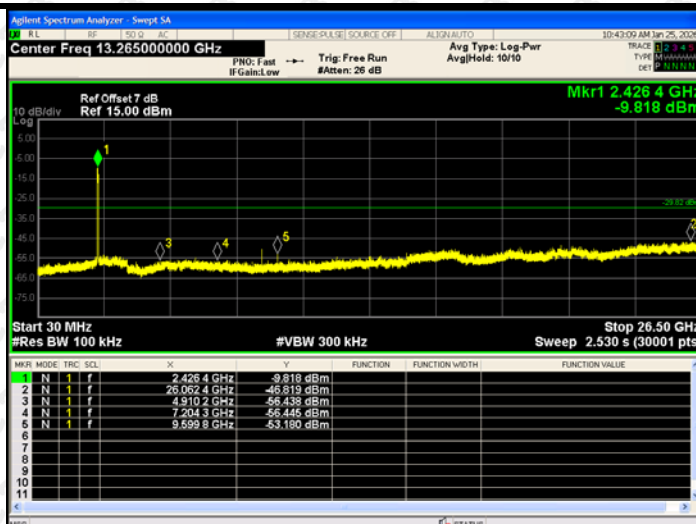


802.11n(HT20)/HCH

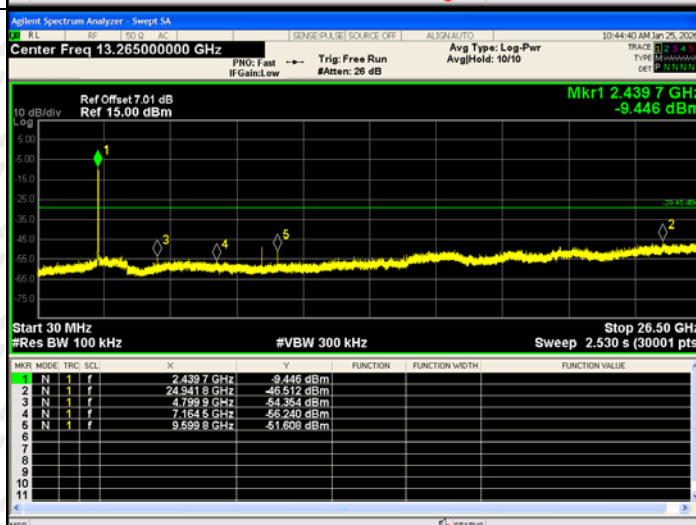


RF Conducted Spurious Emissions Graphs

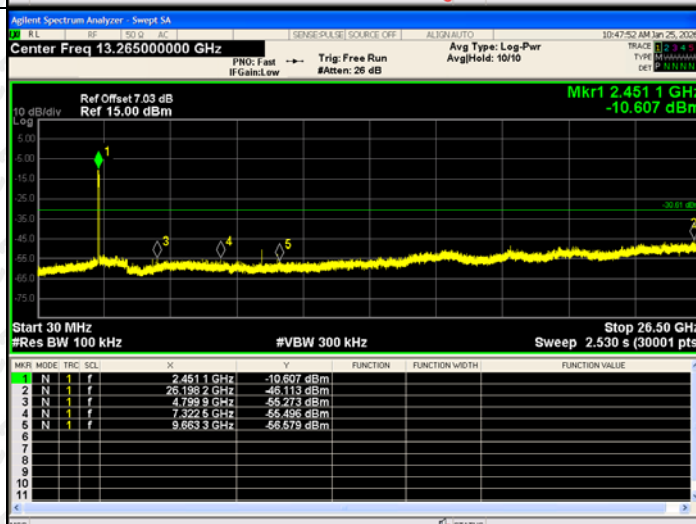
802.11n(HT40)/LCH



802.11n(HT40)/MCH



802.11n(HT40)/HCH



9. CONDUCTED 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)	Maximum Conducted Output Power	1 watt or 30dBm	2400-2483.5	PASS

9.3 Test procedure

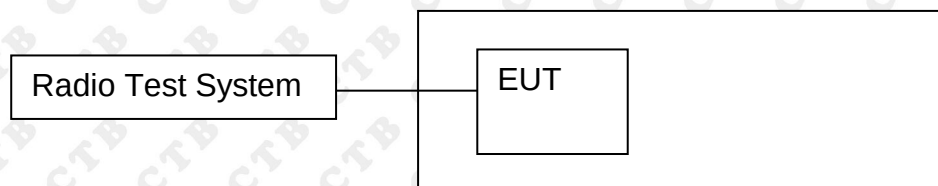
1. The EUT was directly connected to the Power meter

9.4 Test Result

Mode	Channel.	Maximum Peak Power [dBm] ant 1	Maximum Peak Power [dBm] ant 2	Total Power Peak Output Power(dBm)	Limit[dBm]
802.11b	LCH	14.344	14.008	/	30
	MCH	13.105	14.144	/	30
	HCH	12.433	13.274	/	30
802.11g	LCH	13.593	14.668	/	30
	MCH	13.149	14.174	/	30
	HCH	12.411	13.444	/	30
802.11n(HT20)	LCH	13.157	13.645	16.418	30
	MCH	13.016	14.168	16.640	30
	HCH	12.349	13.039	15.718	30
802.11n(HT40)	LCH	14.644	14.412	17.540	30
	MCH	14.044	14.697	17.393	30
	HCH	13.622	14.305	16.987	30

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	10.132	500	PASS
	MCH	10.092	500	PASS
	HCH	10.119	500	PASS
802.11g	LCH	16.51	500	PASS
	MCH	16.52	500	PASS
	HCH	16.521	500	PASS
802.11n(HT20)	LCH	17.758	500	PASS
	MCH	17.787	500	PASS
	HCH	17.704	500	PASS
802.11n(HT40)	LCH	36.415	500	PASS
	MCH	36.468	500	PASS
	HCH	36.425	500	PASS

ANT2:

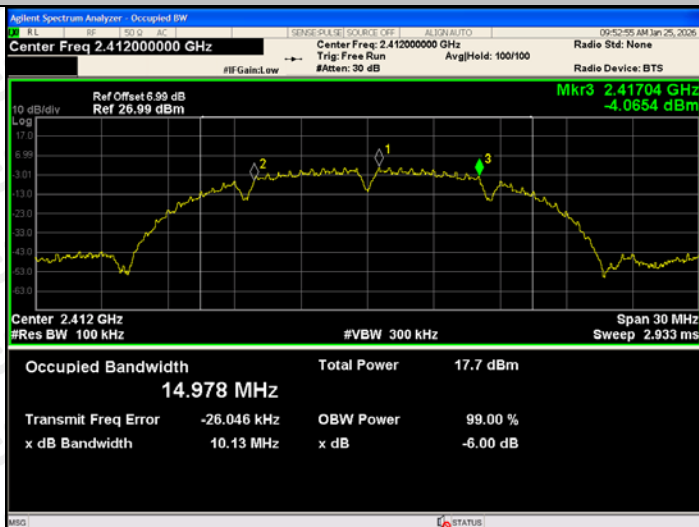
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.121	500	PASS
	MCH	10.113	500	PASS
	HCH	10.122	500	PASS
802.11g	LCH	16.493	500	PASS
	MCH	16.531	500	PASS
	HCH	16.503	500	PASS
802.11n(HT20)	LCH	17.785	500	PASS
	MCH	17.731	500	PASS
	HCH	17.708	500	PASS
802.11n(HT40)	LCH	36.425	500	PASS
	MCH	36.521	500	PASS
	HCH	36.432	500	PASS

ANT1:

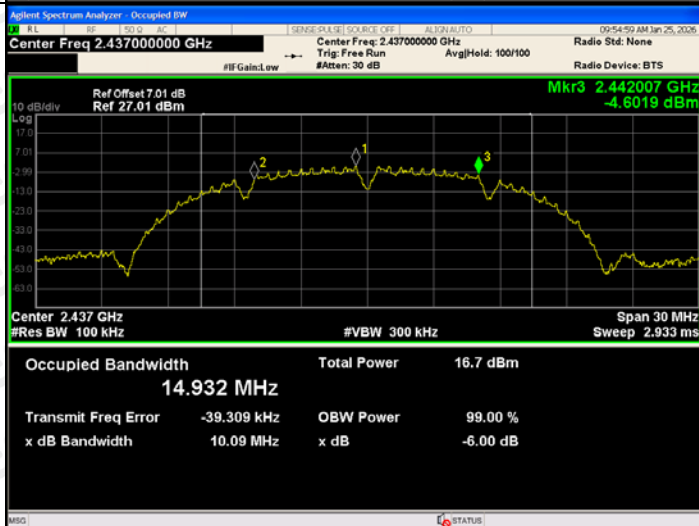
Test Graph:

Graphs

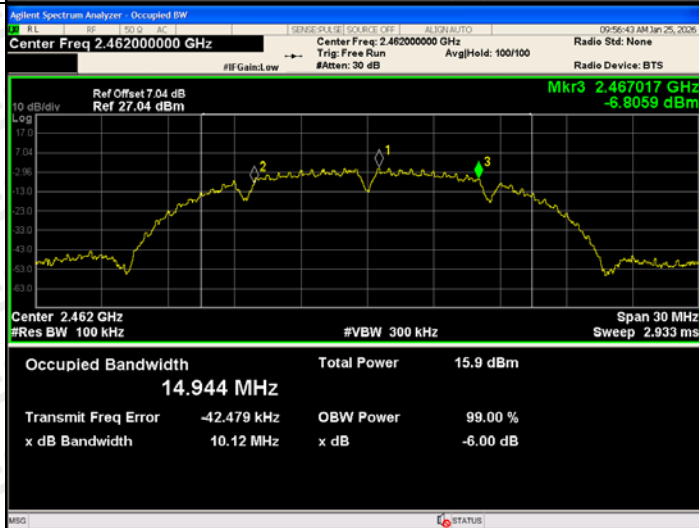
802.11b /LCH



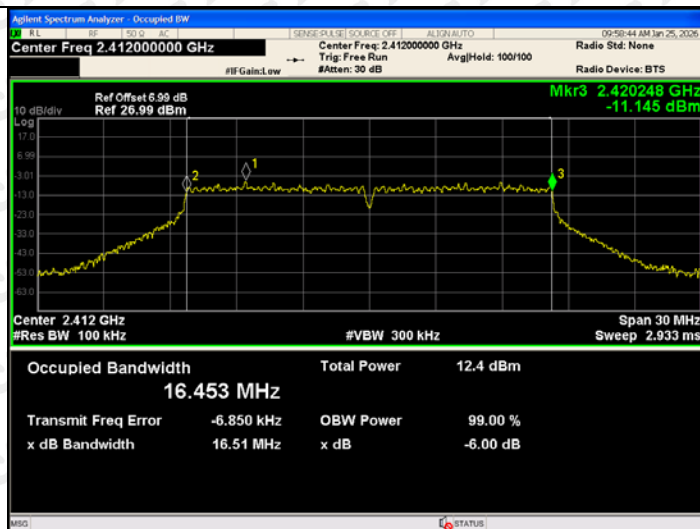
802.11b /MCH



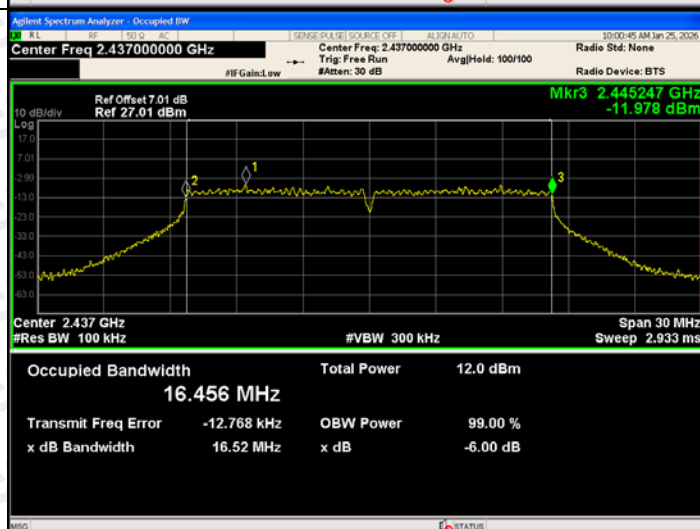
802.11b/HCH



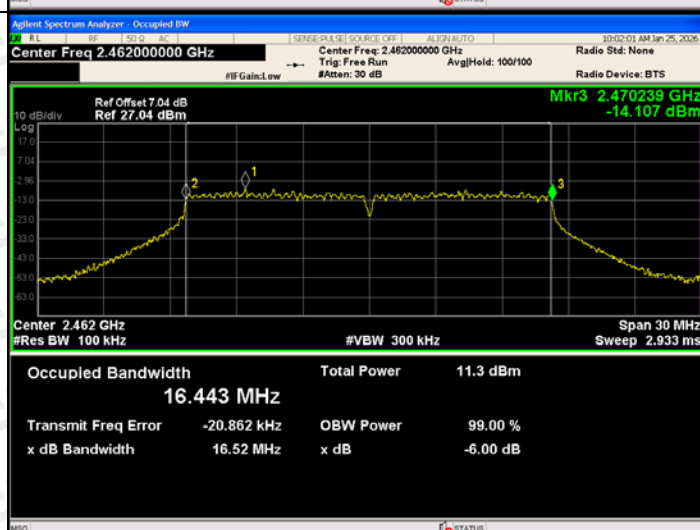
802.11g/LCH

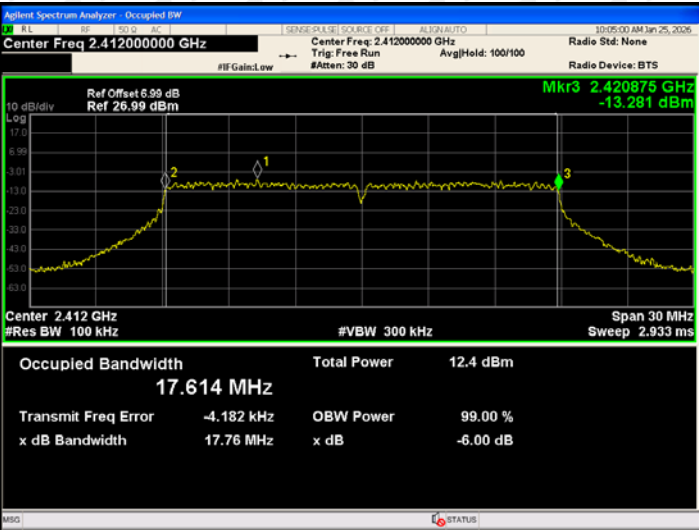
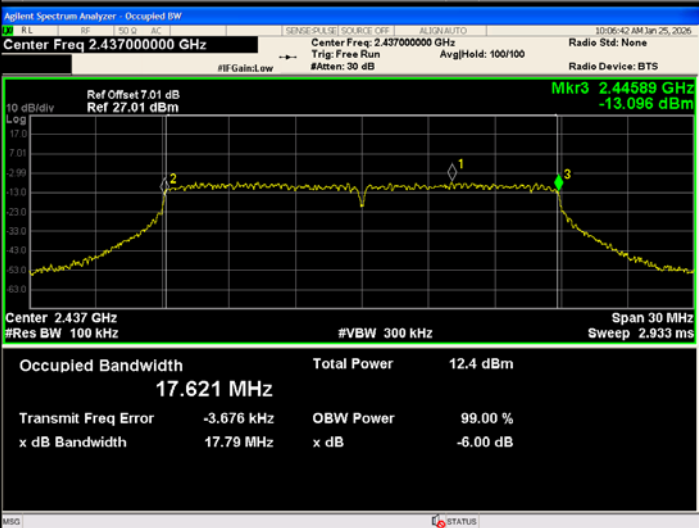
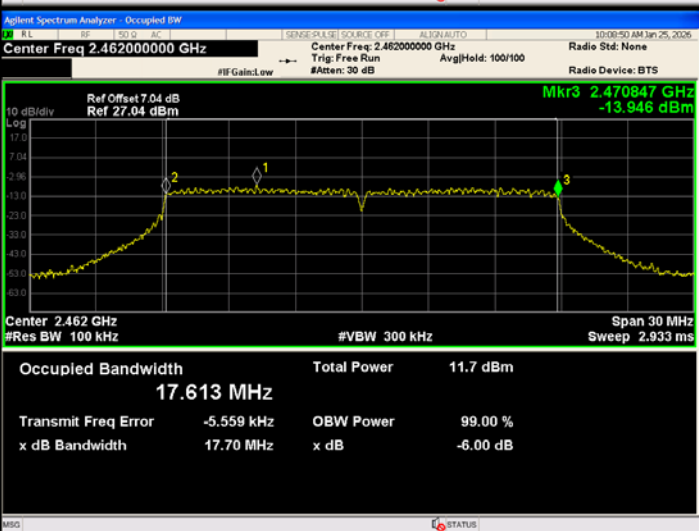


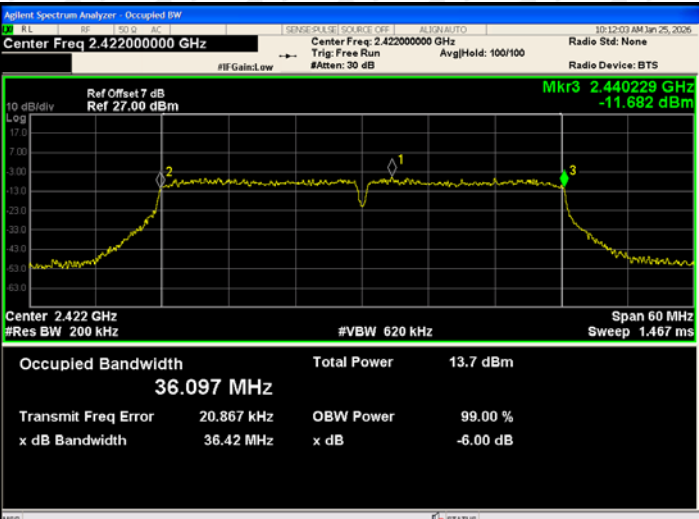
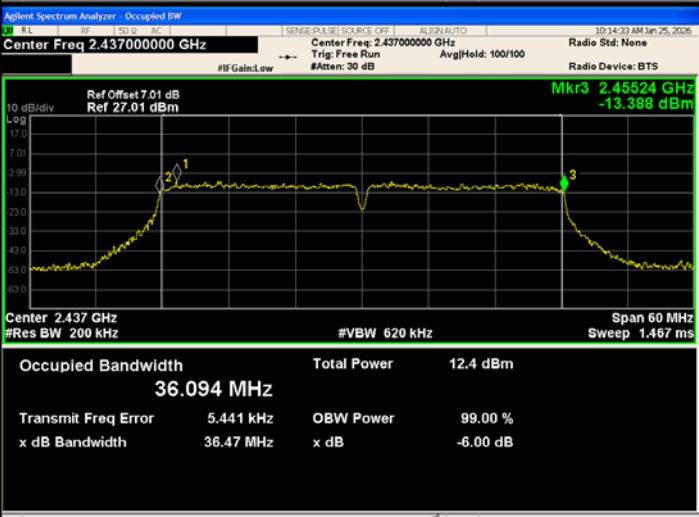
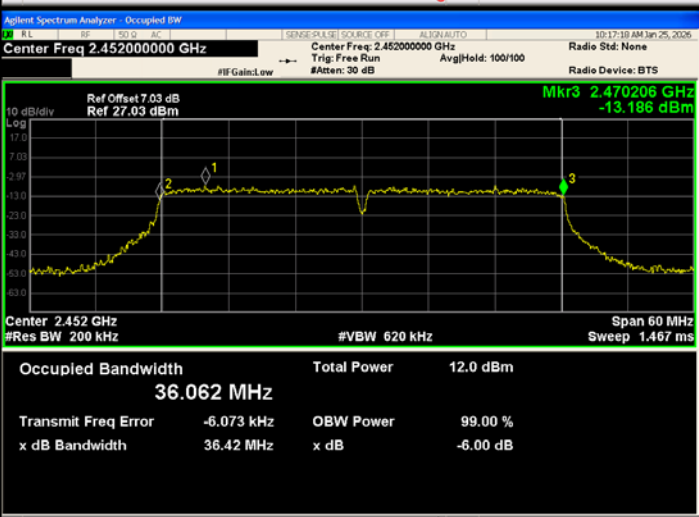
802.11g/MCH



802.11g/HCH



802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.99 dB Ref 26.99 dBm Mkr3 2.420875 GHz -13.281 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.614 MHz Total Power 12.4 dBm Transmit Freq Error -4.182 kHz OBW Power 99.00 % x dB Bandwidth 17.76 MHz x dB -6.00 dB
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.44589 GHz -13.096 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.621 MHz Total Power 12.4 dBm Transmit Freq Error -3.676 kHz OBW Power 99.00 % x dB Bandwidth 17.79 MHz x dB -6.00 dB
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.470847 GHz -13.946 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.613 MHz Total Power 11.7 dBm Transmit Freq Error -5.559 kHz OBW Power 99.00 % x dB Bandwidth 17.70 MHz x dB -6.00 dB

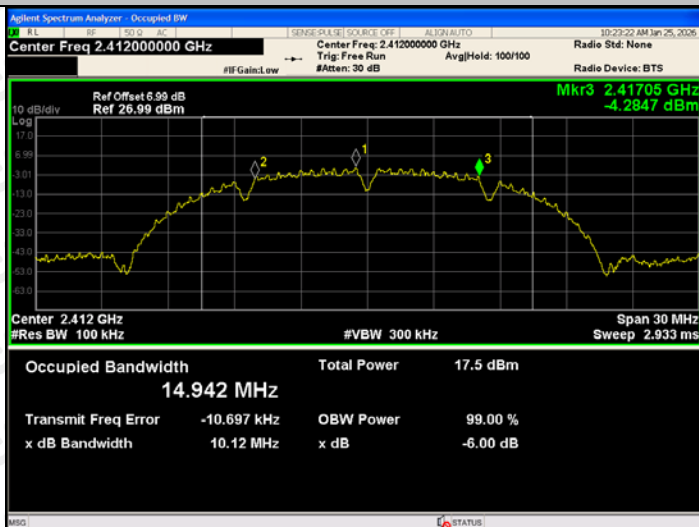
802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.0 dB Ref 27.00 dBm Mkr3 2.440229 GHz -11.682 dBm Center 2.422 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.097 MHz Total Power 13.7 dBm Transmit Freq Error 20.867 kHz OBW Power 99.00 % x dB Bandwidth 36.42 MHz x dB -6.00 dB
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.45524 GHz -13.388 dBm Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.094 MHz Total Power 12.4 dBm Transmit Freq Error 5.441 kHz OBW Power 99.00 % x dB Bandwidth 36.47 MHz x dB -6.00 dB
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Center Freq: 2.452000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.03 dB Ref 27.03 dBm Mkr3 2.470206 GHz -13.186 dBm Center 2.452 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.062 MHz Total Power 12.0 dBm Transmit Freq Error -6.073 kHz OBW Power 99.00 % x dB Bandwidth 36.42 MHz x dB -6.00 dB

ANT2:

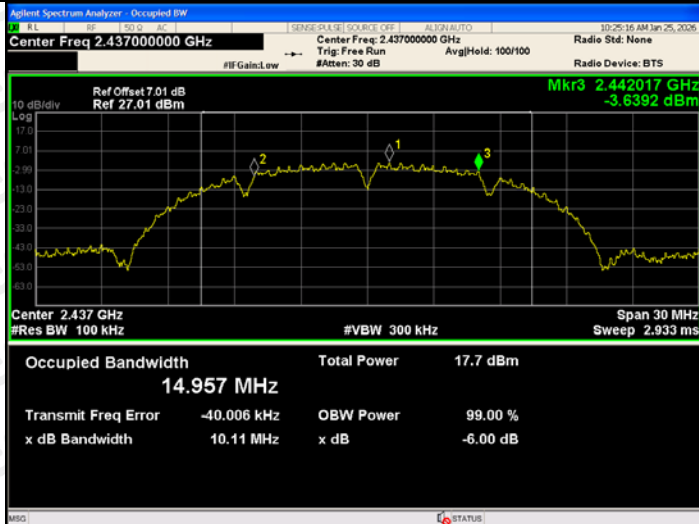
Test Graph:

Graphs

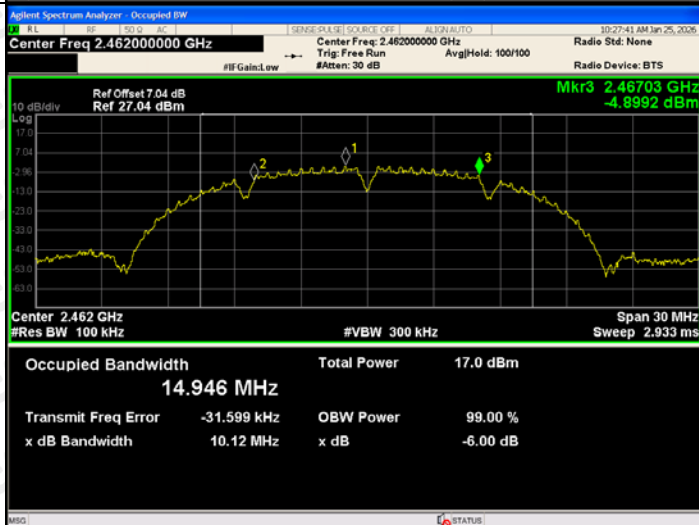
802.11b /LCH



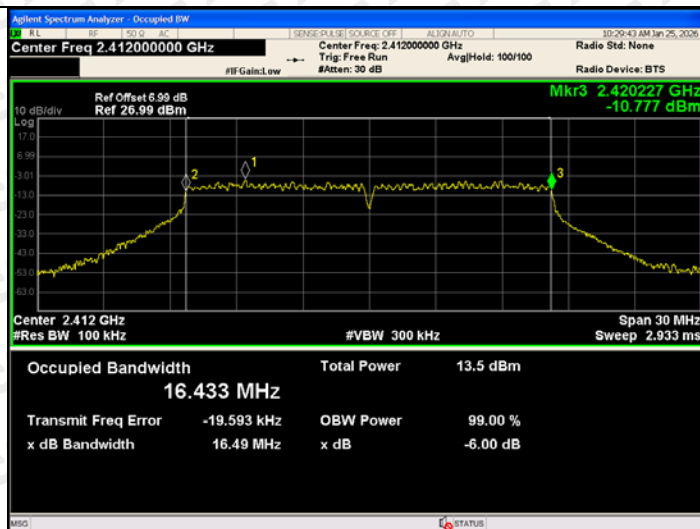
802.11b /MCH



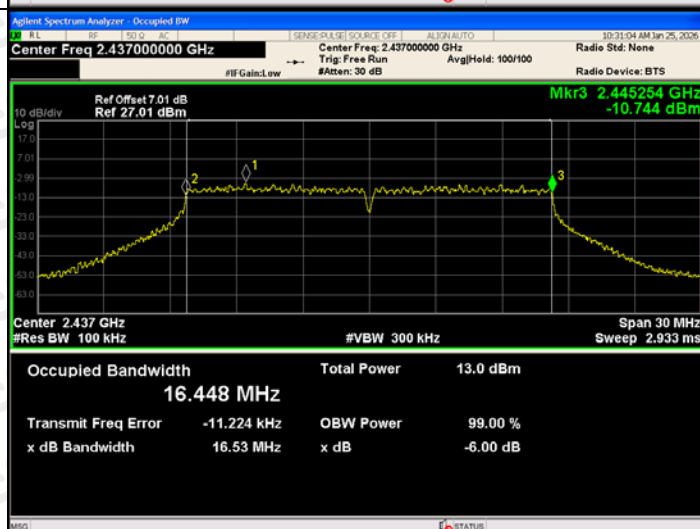
802.11b/HCH



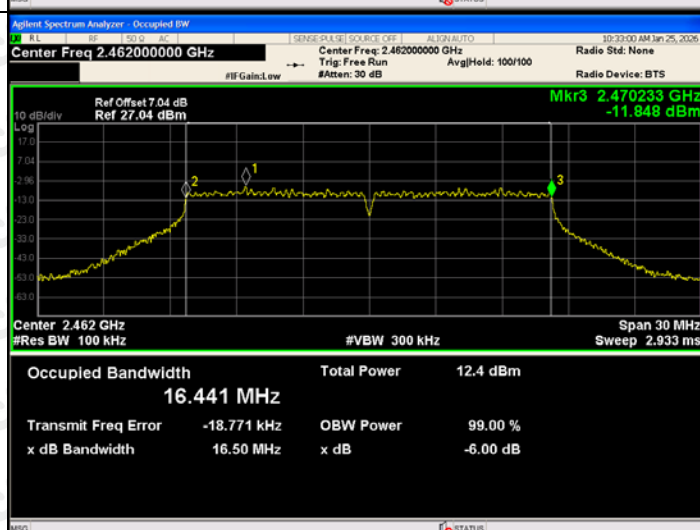
802.11g/LCH

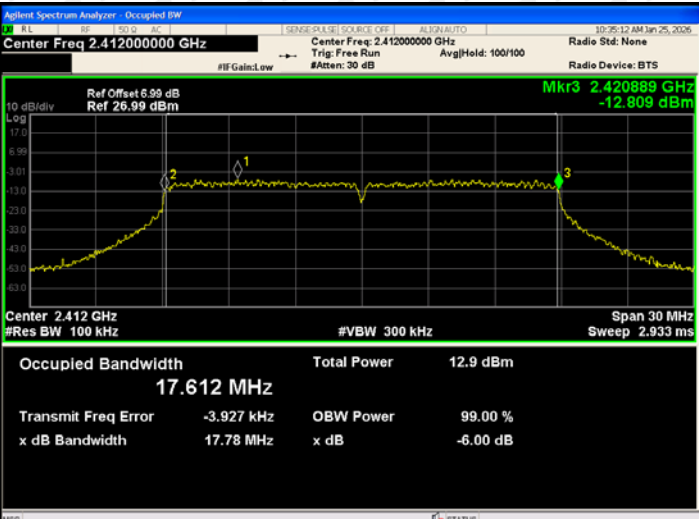
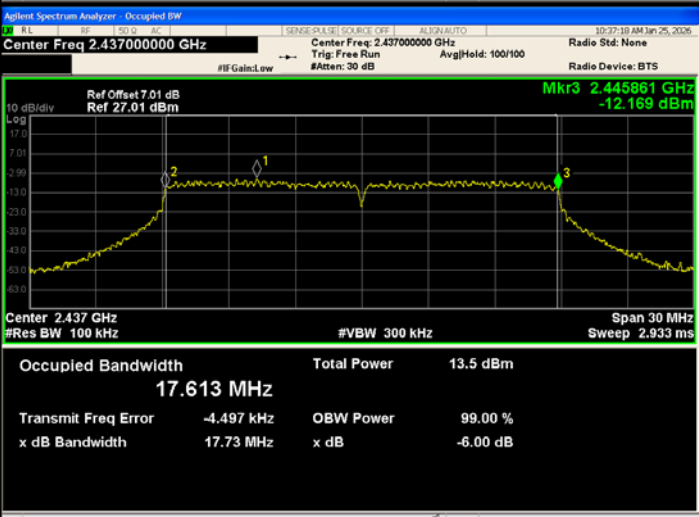
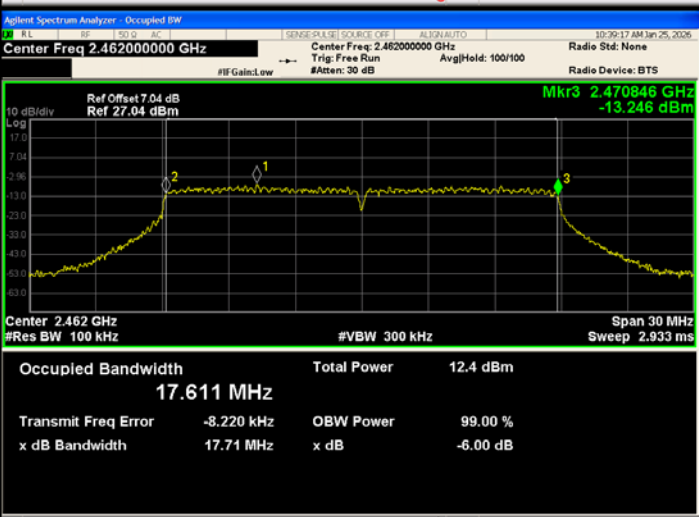


802.11g/MCH



802.11g/HCH

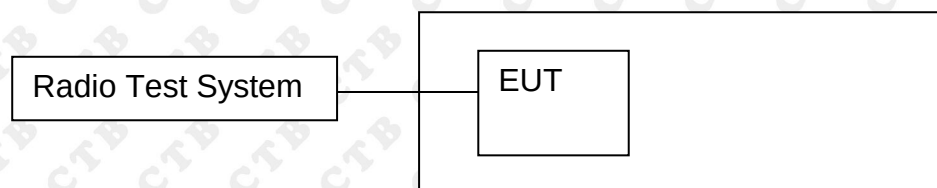


802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.99 dB Ref 26.99 dBm Mkr3 2.420889 GHz -12.809 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.612 MHz Total Power 12.9 dBm Transmit Freq Error -3.927 kHz OBW Power 99.00 % x dB Bandwidth 17.78 MHz x dB -6.00 dB
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.445861 GHz -12.169 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.613 MHz Total Power 13.5 dBm Transmit Freq Error -4.497 kHz OBW Power 99.00 % x dB Bandwidth 17.73 MHz x dB -6.00 dB
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.470846 GHz -13.246 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.611 MHz Total Power 12.4 dBm Transmit Freq Error -8.220 kHz OBW Power 99.00 % x dB Bandwidth 17.71 MHz x dB -6.00 dB

802.11n(HT40)/LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.422000000 GHz Center Freq: 2.422000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.0 dB Ref 27.00 dBm Mkr3 2.440224 GHz -12.233 dBm Center 2.422 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.089 MHz Total Power 13.4 dBm Transmit Freq Error 11.875 kHz OBW Power 99.00 % x dB Bandwidth 36.42 MHz x dB -6.00 dB
802.11n(HT40)/MCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.455261 GHz -12.737 dBm Center 2.437 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.108 MHz Total Power 13.0 dBm Transmit Freq Error -76 Hz OBW Power 99.00 % x dB Bandwidth 36.52 MHz x dB -6.00 dB
802.11n(HT40)/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.452000000 GHz Center Freq: 2.452000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 7.03 dB Ref 27.03 dBm Mkr3 2.470229 GHz -12.819 dBm Center 2.452 GHz #Res BW 200 kHz #VBW 620 kHz Span 60 MHz Sweep 1.467 ms Occupied Bandwidth 36.102 MHz Total Power 12.6 dBm Transmit Freq Error 13.142 kHz OBW Power 99.00 % x dB Bandwidth 36.43 MHz x dB -6.00 dB

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

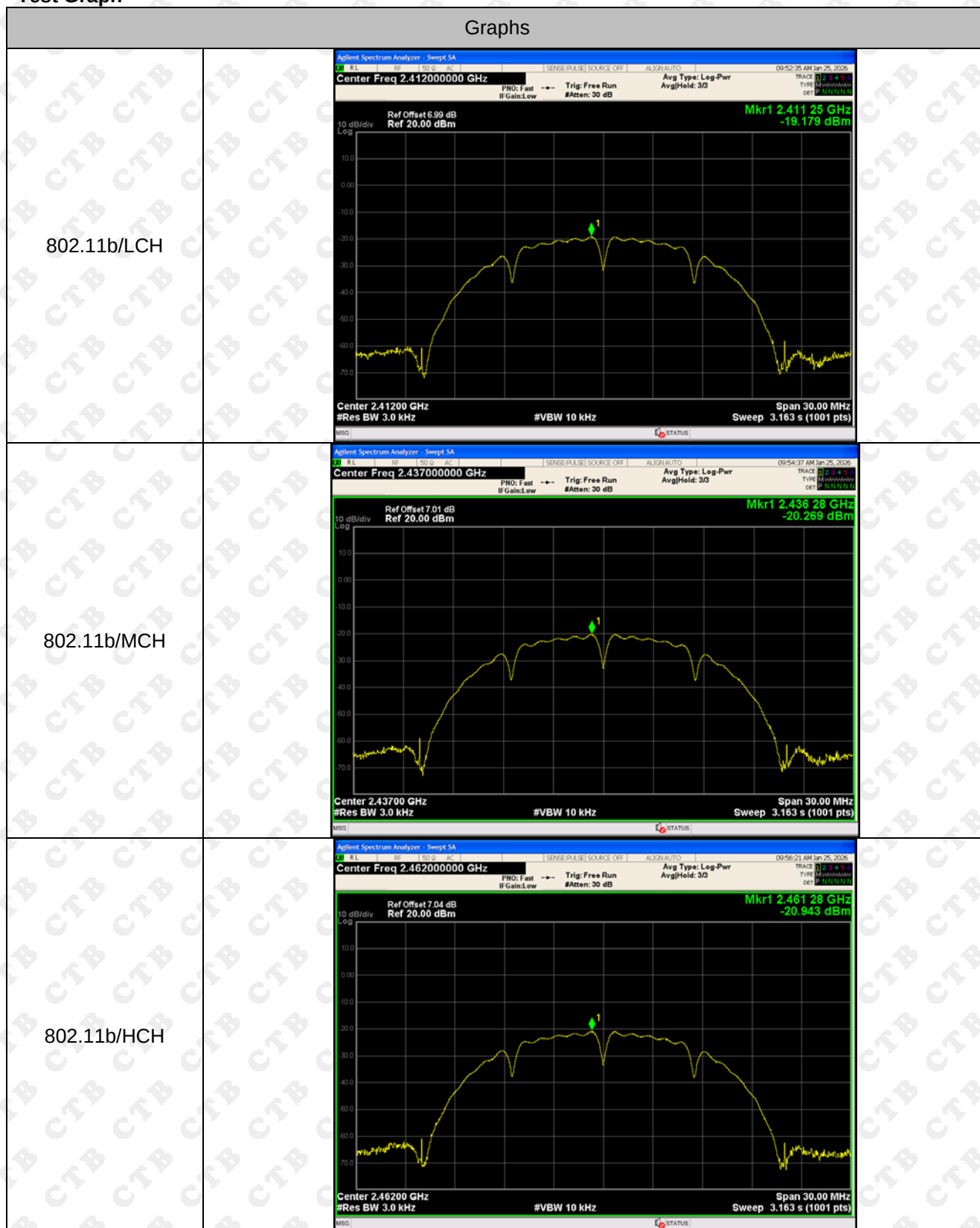
11.3 Test procedure

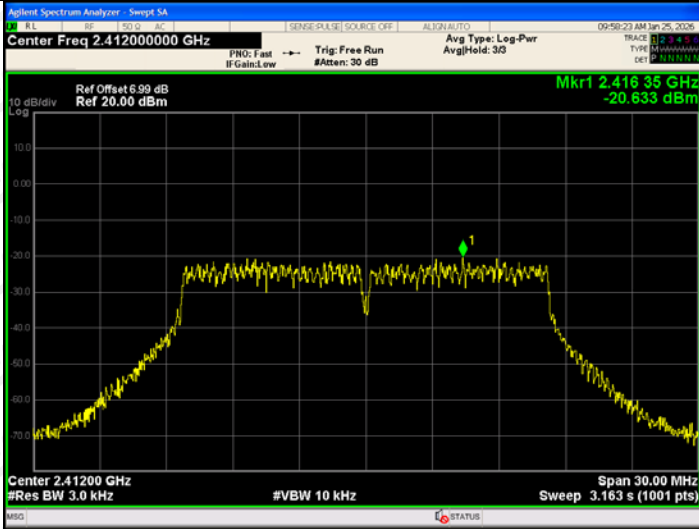
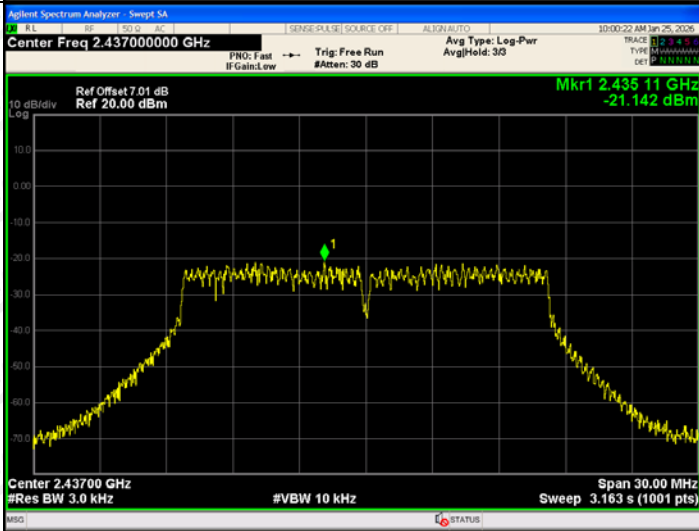
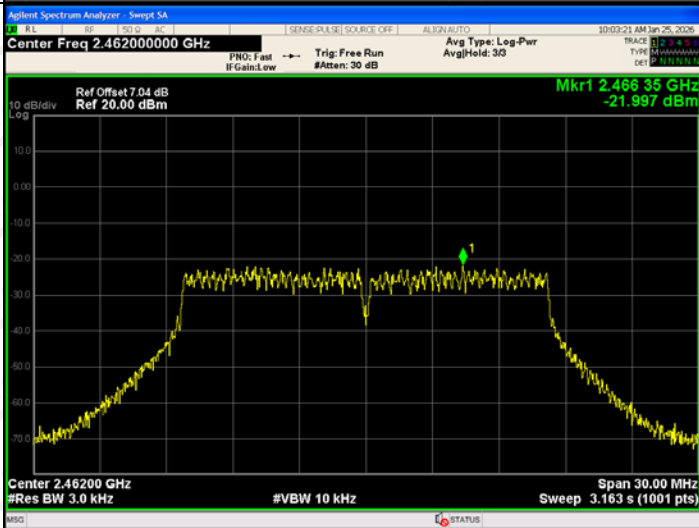
1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = Peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
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

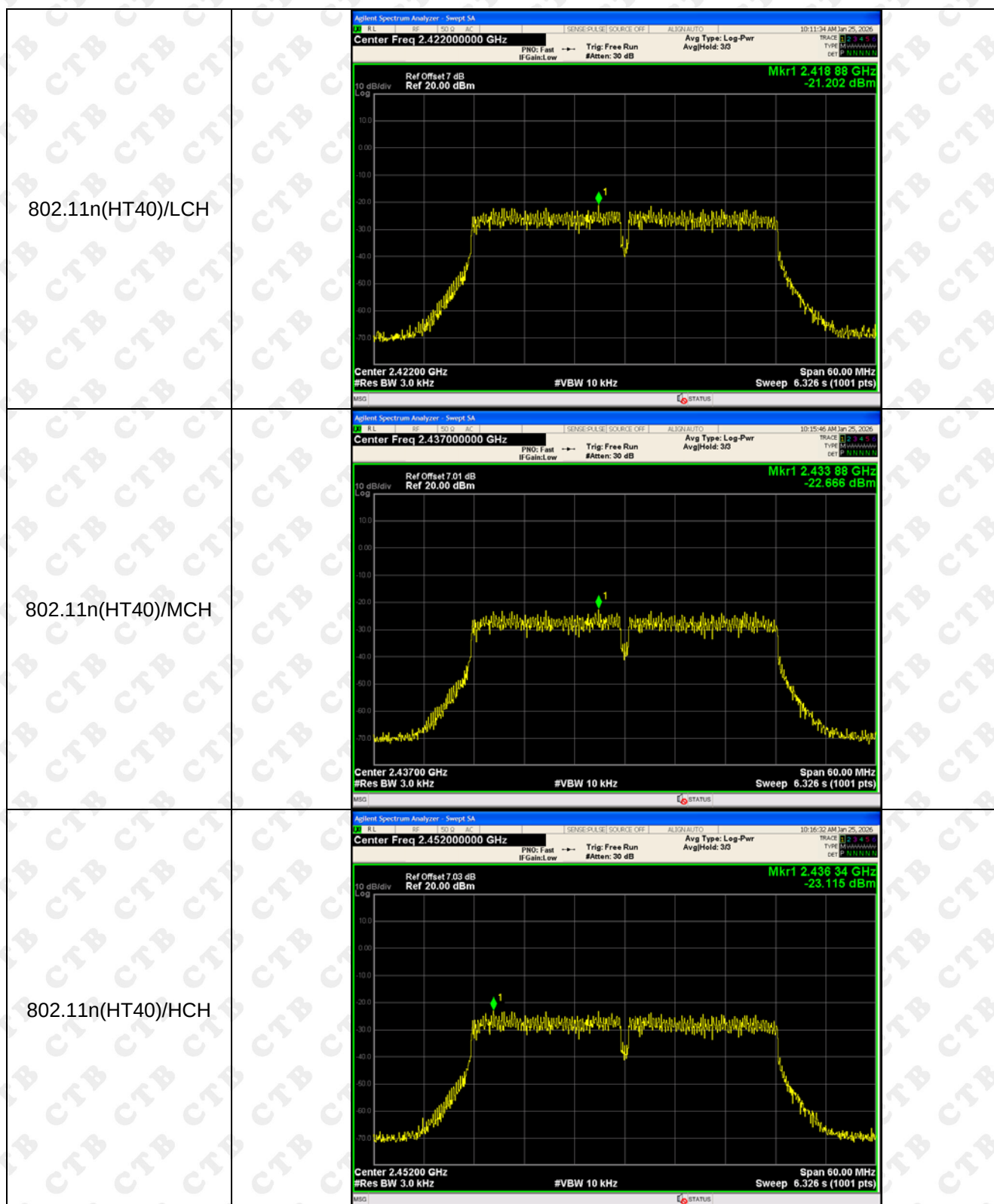
Mode	Channel.	Power Spectral Density [dBm /3kHz] ANT 1	Power Spectral Density [dBm /3kHz] ANT 2	Power Spectral Density [dBm /3kHz]Total	Limit(dBm)
802.11b	LCH	-19.179	-19.378	/	8
	MCH	-20.269	-19.44	/	8
	HCH	-20.943	-19.945	/	8
802.11g	LCH	-20.633	-19.481	/	8
	MCH	-21.142	-19.882	/	8
	HCH	-21.997	-20.351	/	8
802.11n(HT20)	LCH	-21.17	-20.712	-17.925	8
	MCH	-21.244	-20.416	-17.800	8
	HCH	-22.2	-21.374	-18.757	8
802.11n(HT40)	LCH	-21.202	-21.532	-18.354	8
	MCH	-22.666	-22.383	-19.512	8
	HCH	-23.115	-22.256	-19.654	8

ANT1:
Test Graph

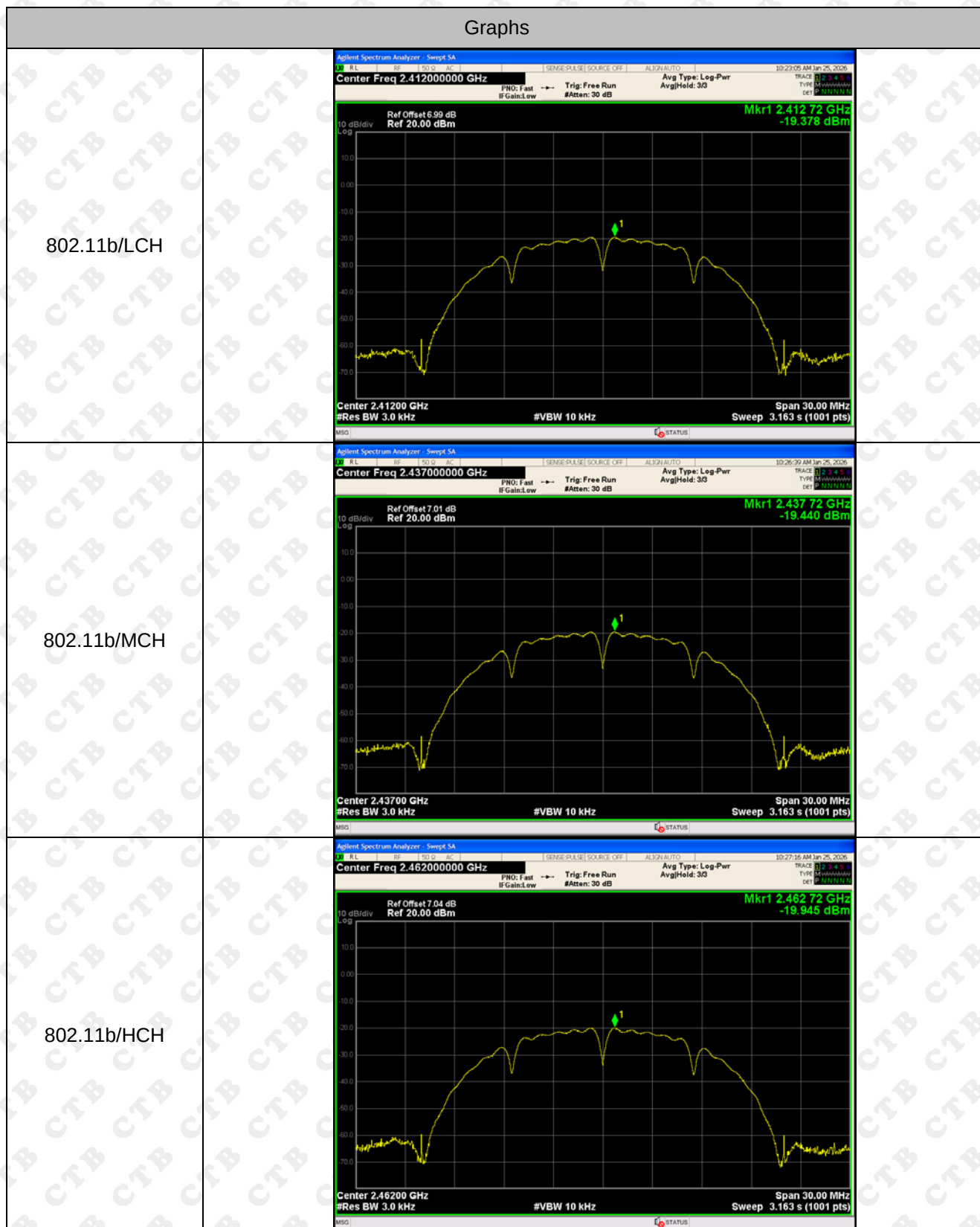


802.11g/LCH	
802.11g/MCH	
802.11g/HCH	

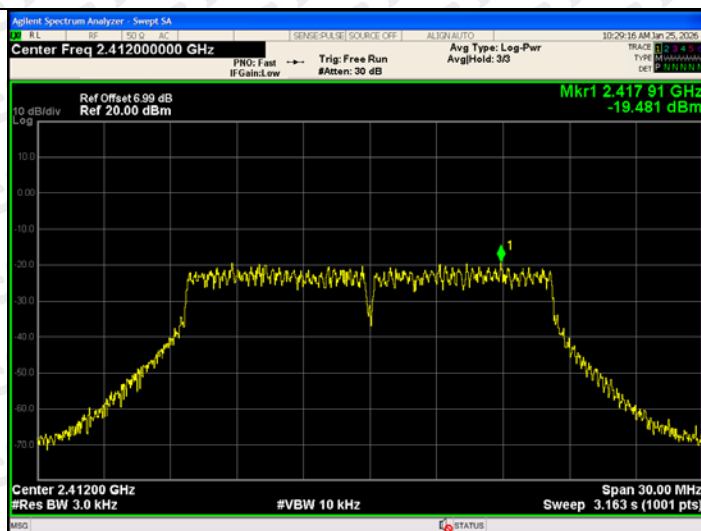
802.11n(HT20)/LCH	Agilent Spectrum Analyzer - Sweep 54 Center Freq 2.41200000 GHz Ref Offset 6.99 dB Ref 20.00 dBm Mkr1 2.417 88 GHz -21.170 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/MCH	Agilent Spectrum Analyzer - Sweep 54 Center Freq 2.43700000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.430 40 GHz -21.244 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/HCH	Agilent Spectrum Analyzer - Sweep 54 Center Freq 2.46200000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.454 17 GHz -22.200 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)



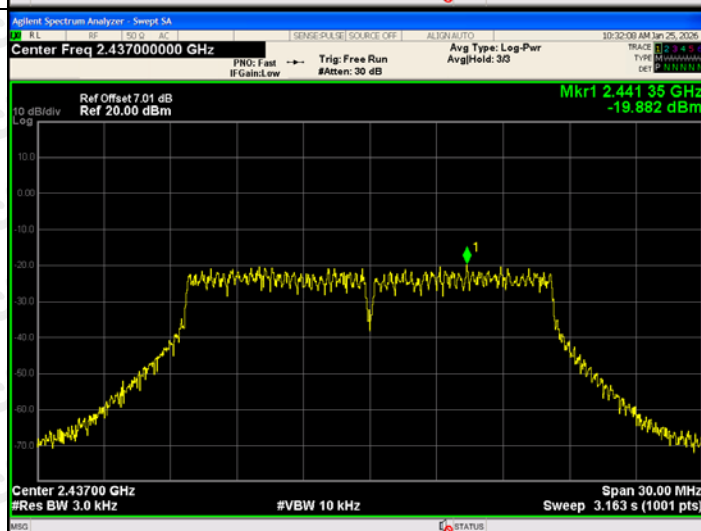
ANT 2: Test Graph



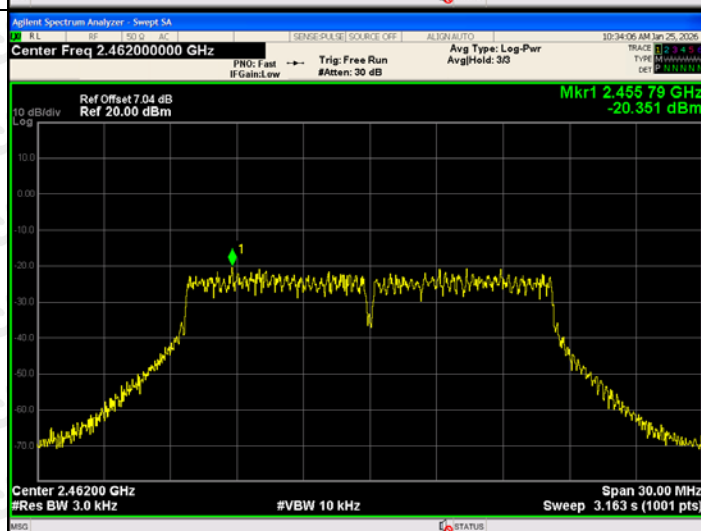
802.11g/LCH

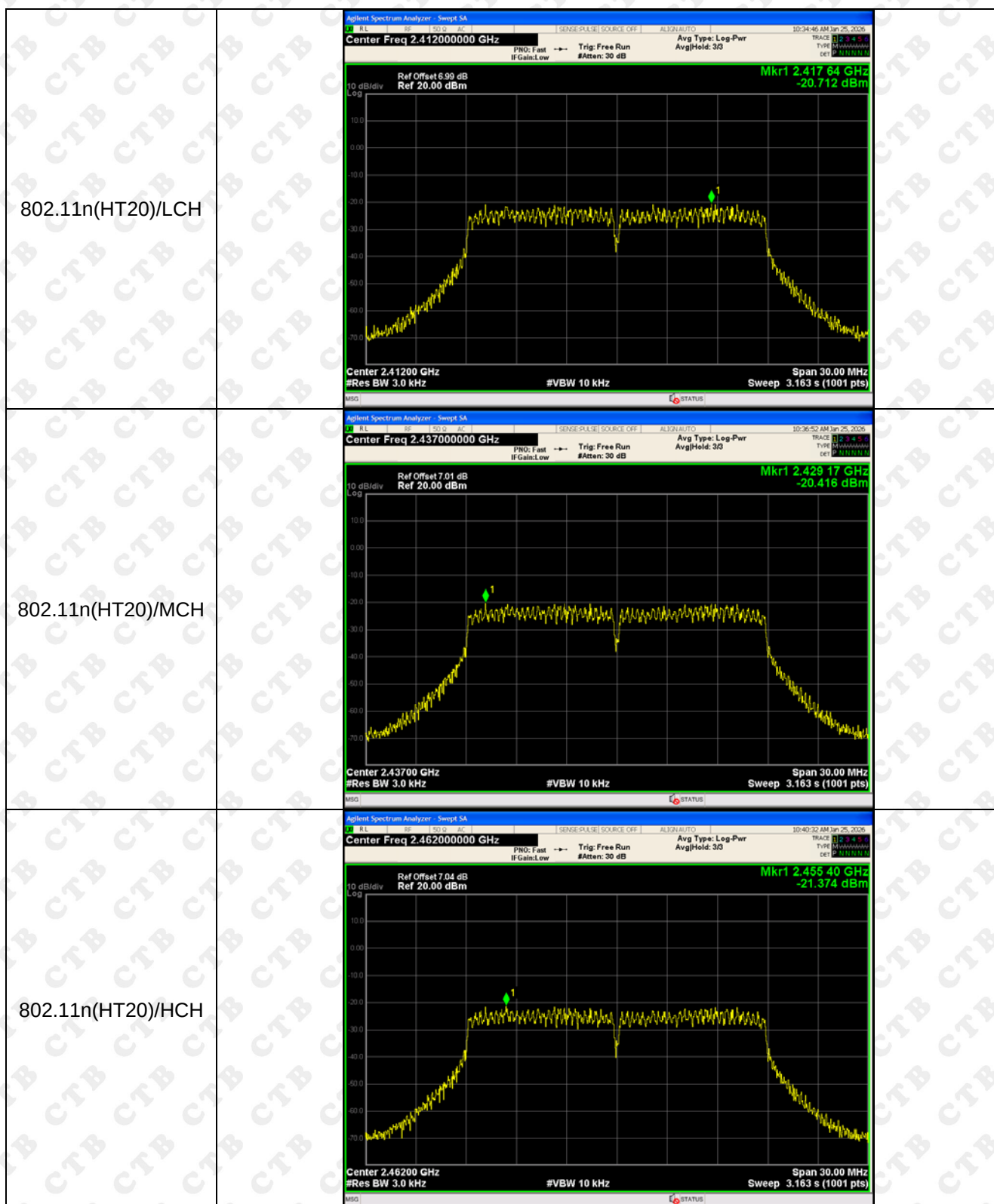


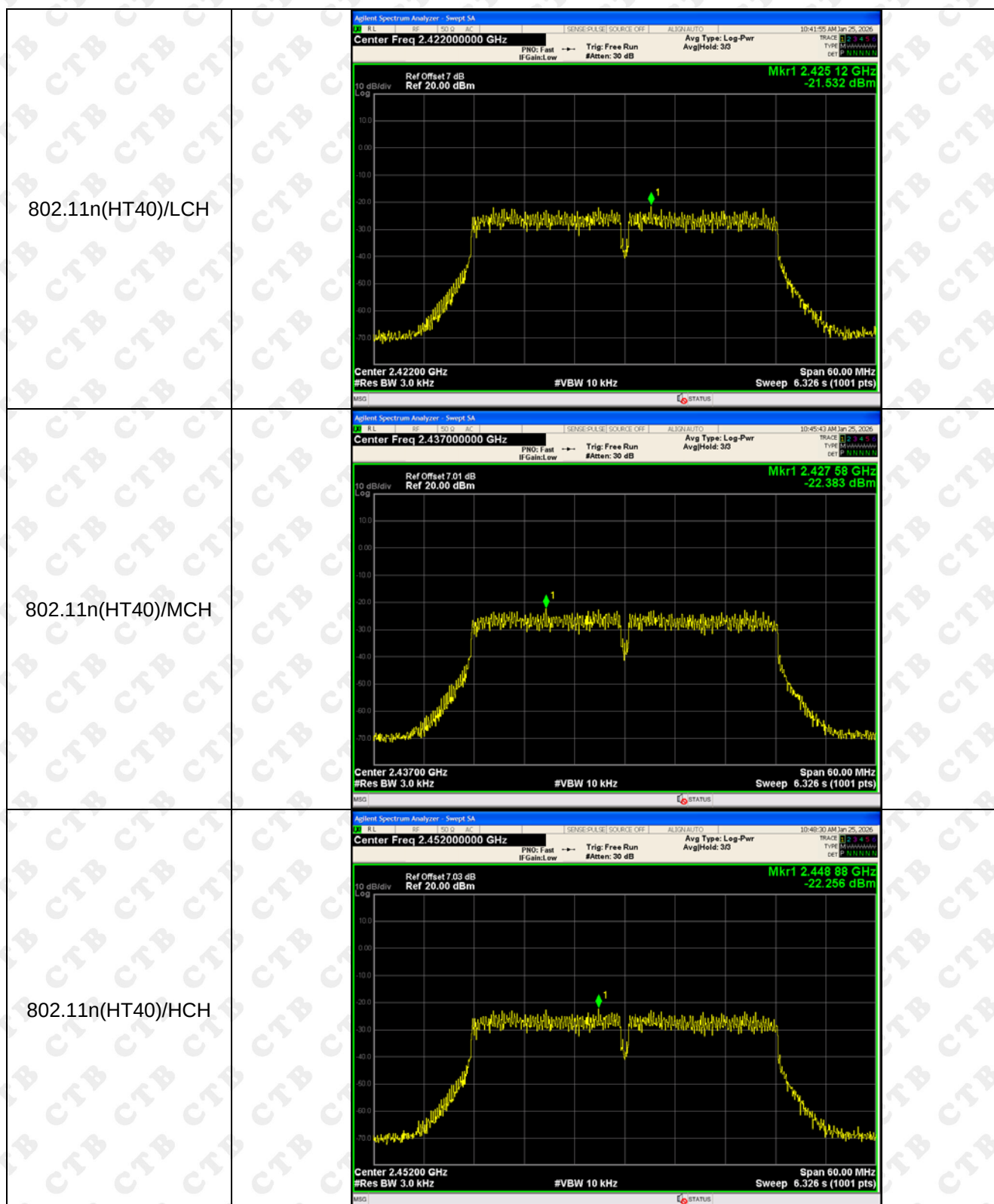
802.11g/MCH



802.11g/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 External antenna and no consideration of replacement. The best case gain of the antenna is

Ant1: 1.17dBi, Ant2: 1.17dBi.

13. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

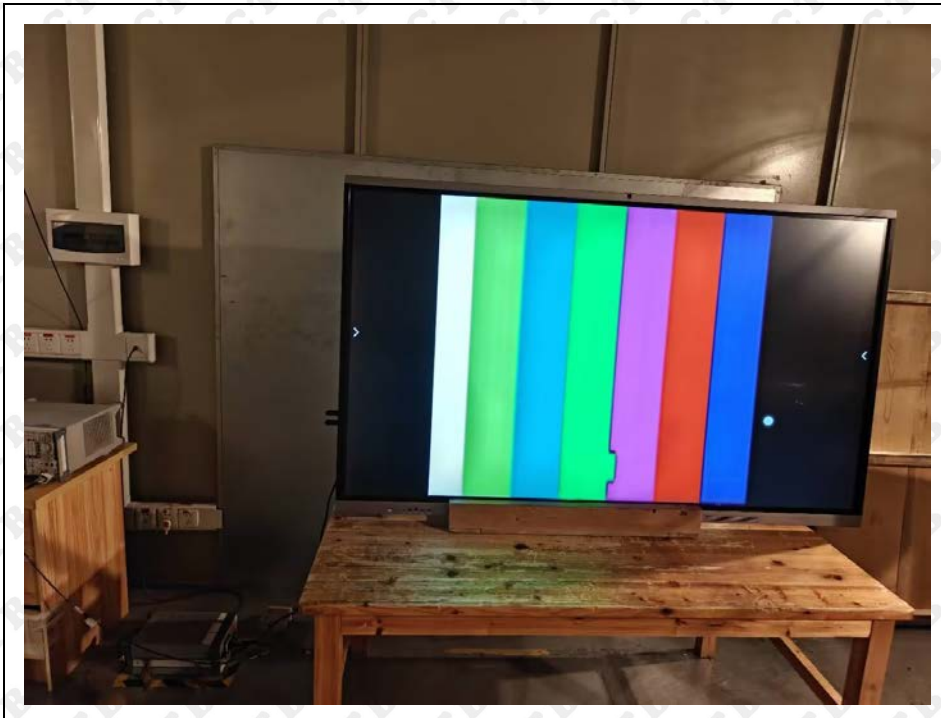
Below 1G



Above 1G



Conducted Emission



***** END OF REPORT *****