

7.3.5. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (yellow marker) for final test of each channel.

N _{TX}	Data Rate (Mbps)	
	802.11b	802.11g
1	1	6
1	2	9
1	5.5	12
1	11	18
1	--	24
1	--	36
1	--	48
1	--	54

N _{TX}	MCS Index for 802.11n	Data Rate (Mbps)			
		20MHz Bandwidth		40MHz Bandwidth	
		800ns GI	400ns GI	800ns GI	400ns GI
1	0	6.5	7.2	13.5	15.0
1	1	13.0	14.4	27.0	30.0
1	2	19.5	21.7	40.5	45.0
1	3	26.0	28.9	54.0	60.0
1	4	39.0	43.3	81.0	90.0
1	5	52.0	57.8	108.0	120.0
1	6	58.5	65.0	121.5	135.0
1	7	65.0	72.2	135.0	150.0

Note: Power output test was verified over all data rates of each mode shown as above, and then choose the maximum power output (yellow marker) for final test of each channel.

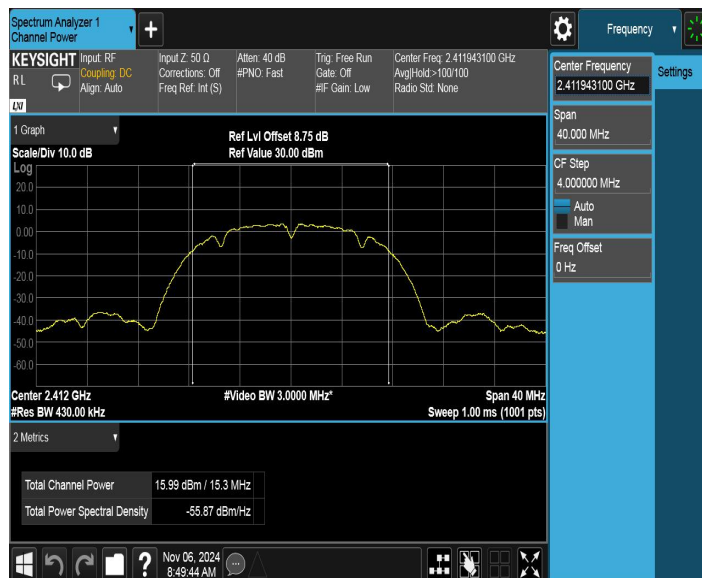
Test Result of Maximum conducted output power

Test Mode	Antenna	Frequency[MHz]	Average power [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	15.92	15.99	≤30.00	PASS
		2437	15.76	15.79	≤30.00	PASS
		2462	16.50	16.57	≤30.00	PASS
11G	Ant1	2412	11.97	12.01	≤30.00	PASS
		2437	12.37	12.45	≤30.00	PASS
		2462	13.34	13.41	≤30.00	PASS
11N20SISO	Ant1	2412	10.81	10.87	≤30.00	PASS
		2437	11.60	11.71	≤30.00	PASS
		2462	11.74	11.83	≤30.00	PASS
11N40SISO	Ant1	2422	9.88	9.95	≤30.00	PASS
		2437	9.99	10.07	≤30.00	PASS
		2452	10.20	10.27	≤30.00	PASS

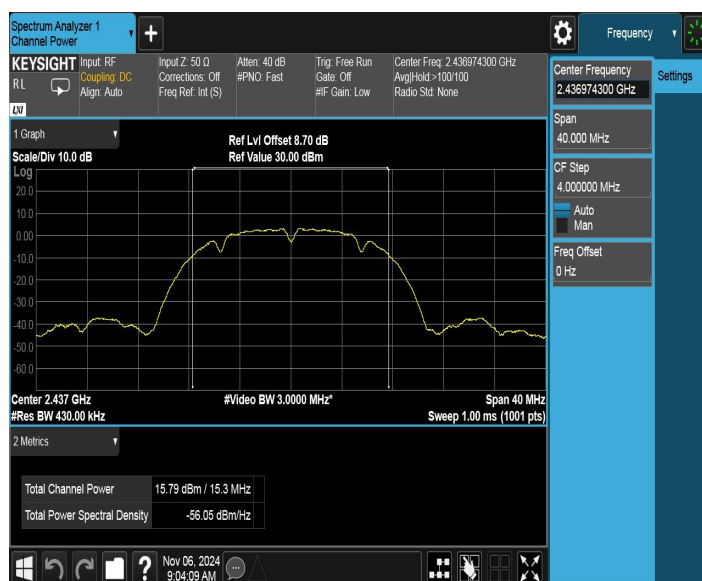
The Duty Cycle Factor is compensated in the Offset of graph.

Test Graphs

11B_Ant1_2412



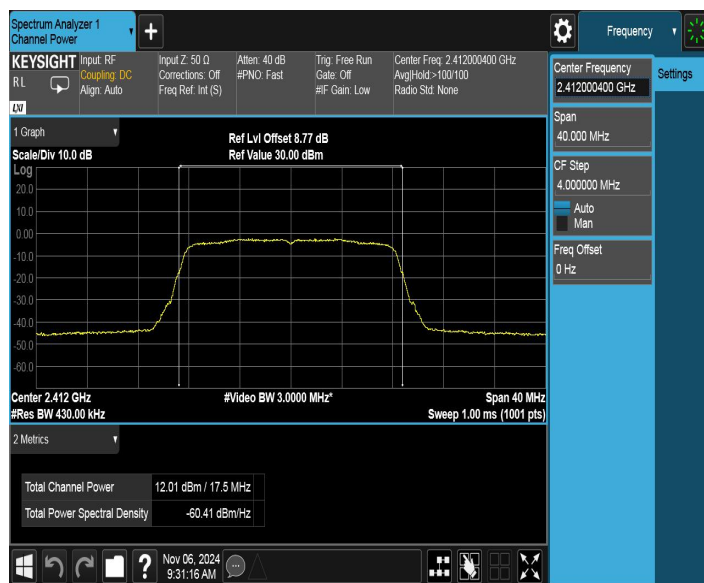
11B_Ant1_2437



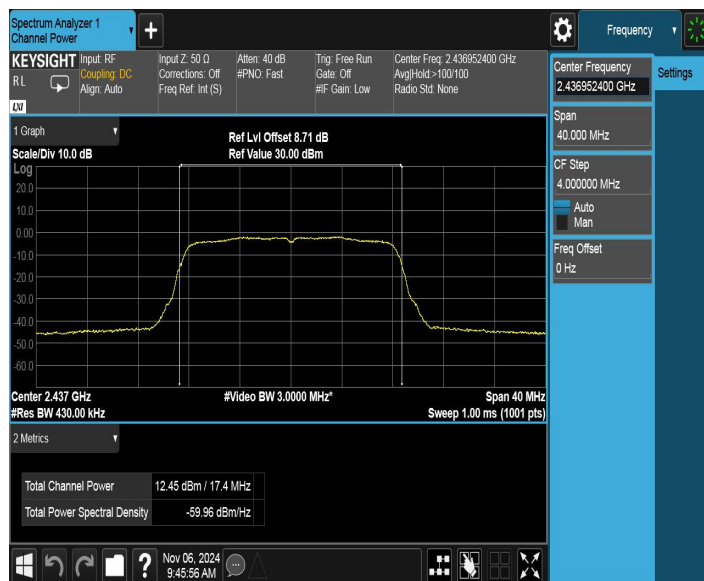
11B_Ant1_2462



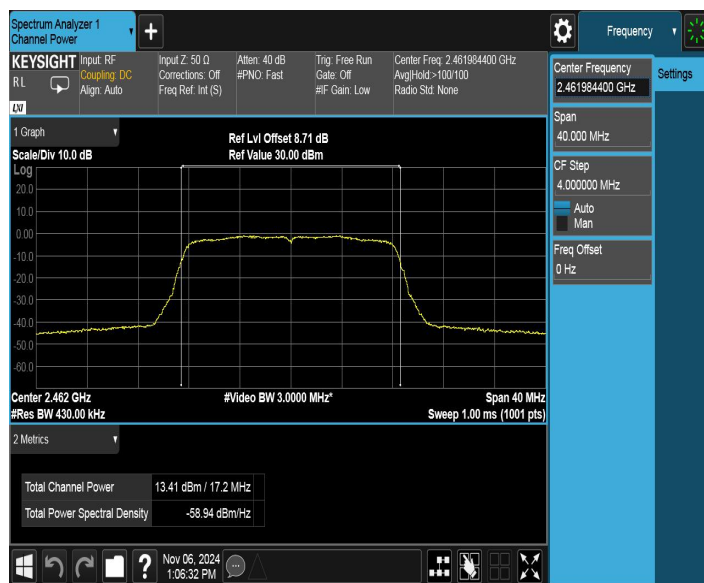
11G_Ant1_2412



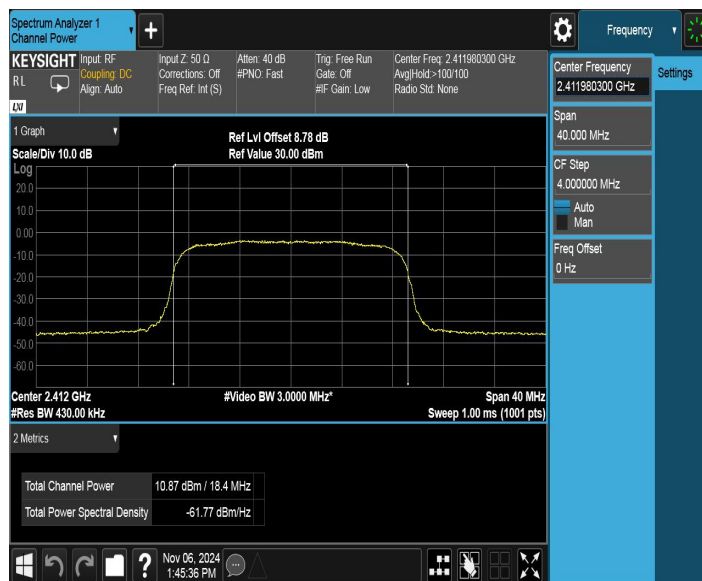
11G_Ant1_2437



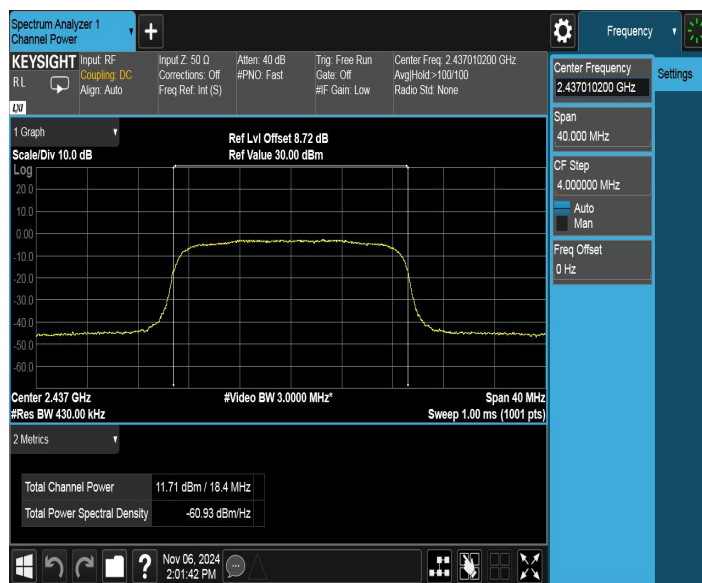
11G_Ant1_2462



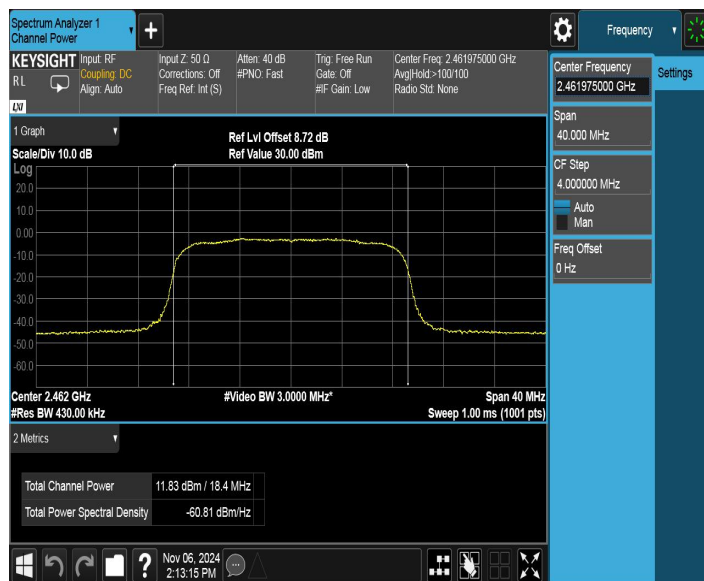
11N20SISO_Ant1_2412



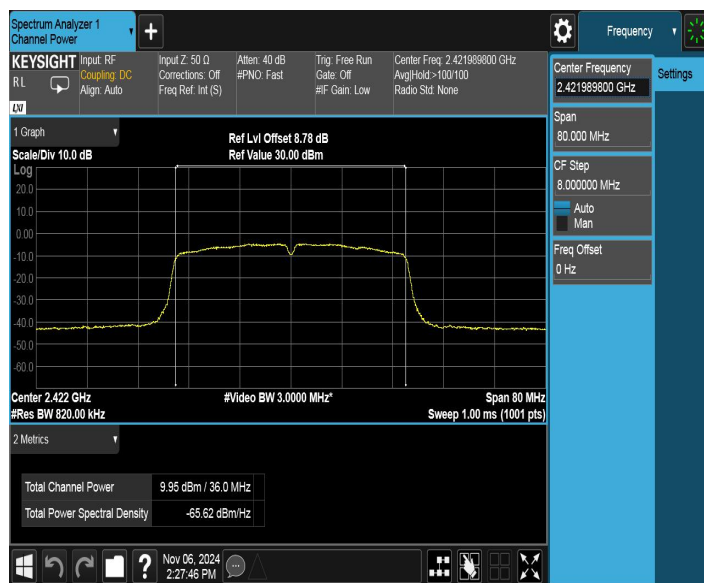
11N20SISO_Ant1_2437



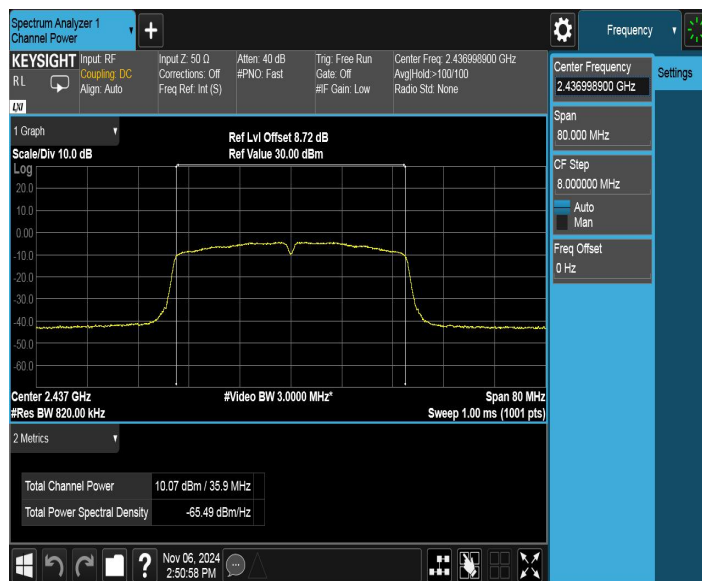
11N20SISO_Ant1_2462



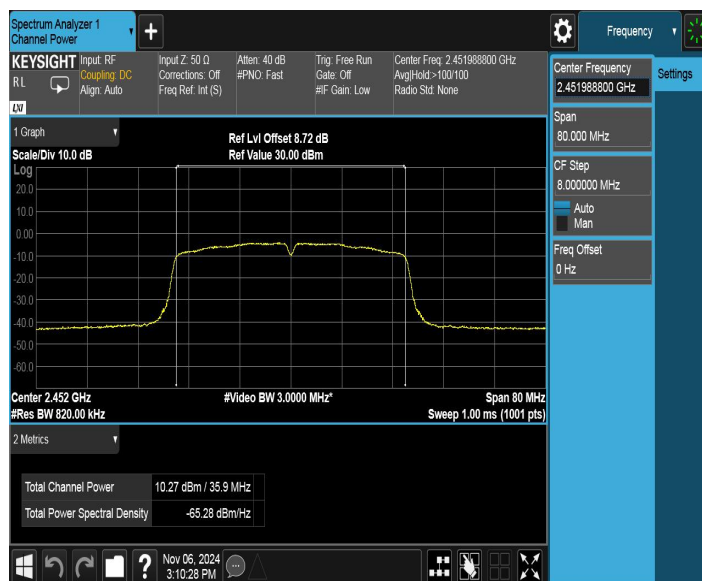
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



7.4. Power Spectral Density Measurement

7.4.1. Test Limit

The maximum permissible power spectral density is 8dBm in any 3 kHz band. And for antenna gain greater than 6dBi the limit shall reduce by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.4.2. Test Procedure Used

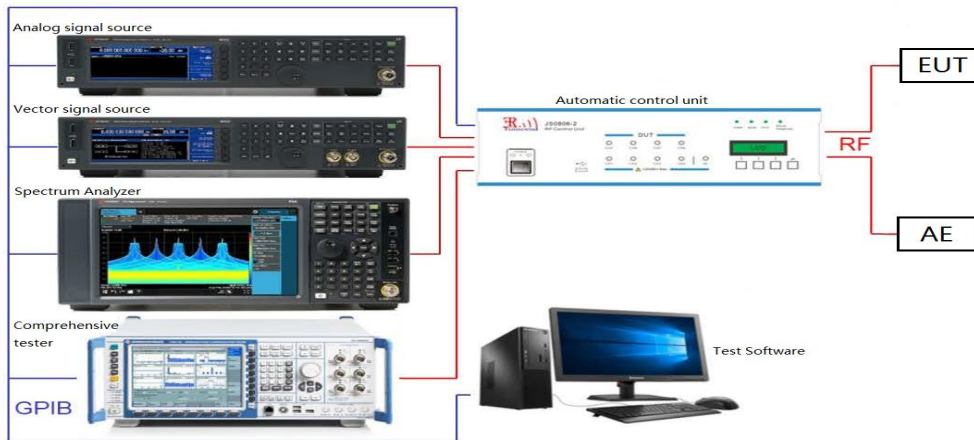
KDB 558074 D01 v05r02 - Section 8.4

ANSI C63.10 – Section 11.10.5

7.4.3. Test Setting

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the OBW.
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 = power averaging (rms) or sample detector (when rms not available).
6. Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / \text{RBW}]$.
7. Sweep time = auto couple.
8. Do not use sweep triggering; allow sweep to “free run.”
9. Employ trace averaging (rms) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level.
11. Add $[10 \log (1 / D)]$, where D is the duty cycle measured in step a), to the measured PSD to
12. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)..

7.4.4. Test Setup



7.4.5. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.80	≤8.00	PASS
		2437	-11.21	≤8.00	PASS
		2462	-11.15	≤8.00	PASS
11G	Ant1	2412	-12.48	≤8.00	PASS
		2437	-13.13	≤8.00	PASS
		2462	-13.88	≤8.00	PASS
11N20SISO	Ant1	2412	-13.05	≤8.00	PASS
		2437	-14.20	≤8.00	PASS
		2462	-15.07	≤8.00	PASS
11N40SISO	Ant1	2422	-15.83	≤8.00	PASS
		2437	-15.78	≤8.00	PASS
		2452	-16.06	≤8.00	PASS

Test Graphs

11B_Ant1_2412



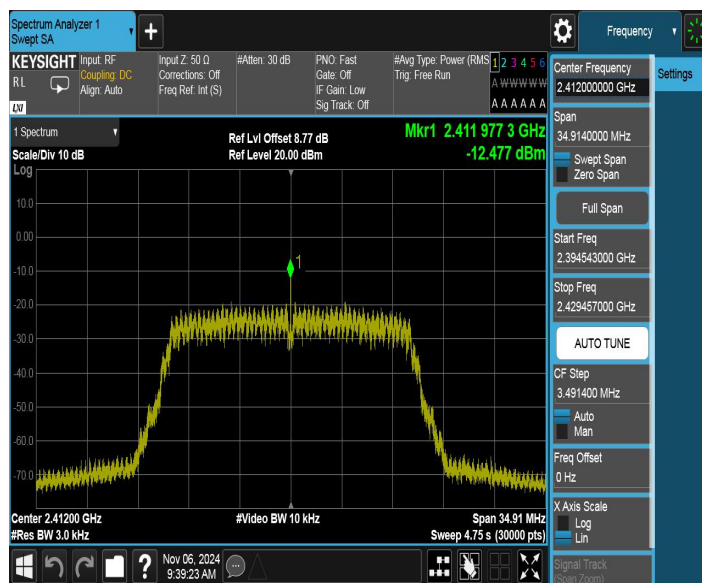
11B_Ant1_2437



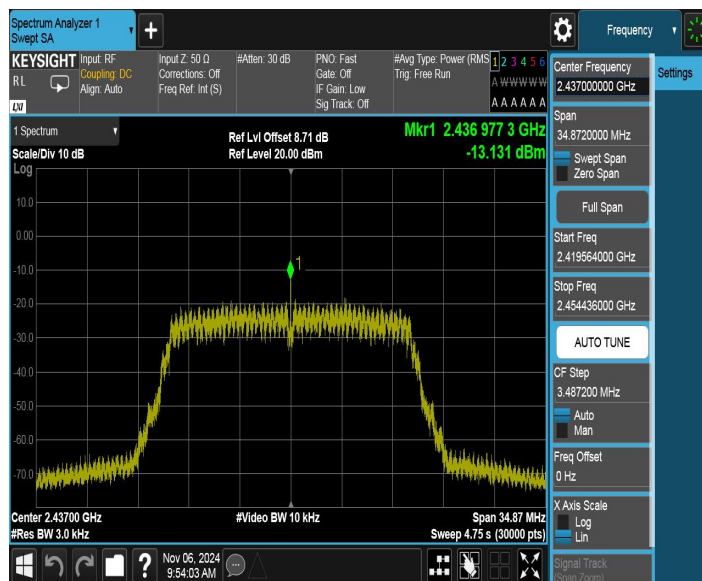
11B_Ant1_2462



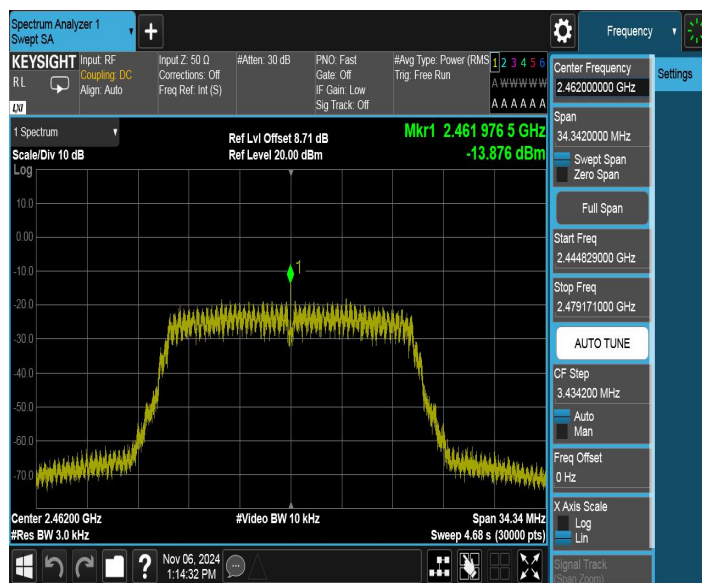
11G_Ant1_2412



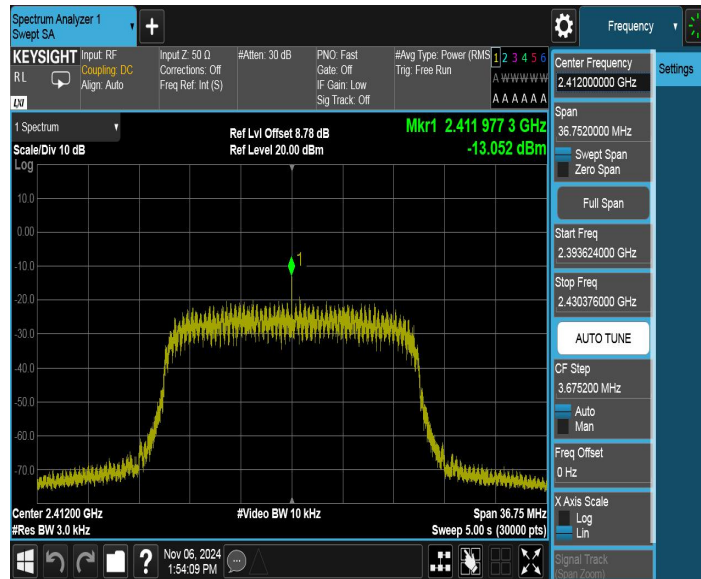
11G_Ant1_2437



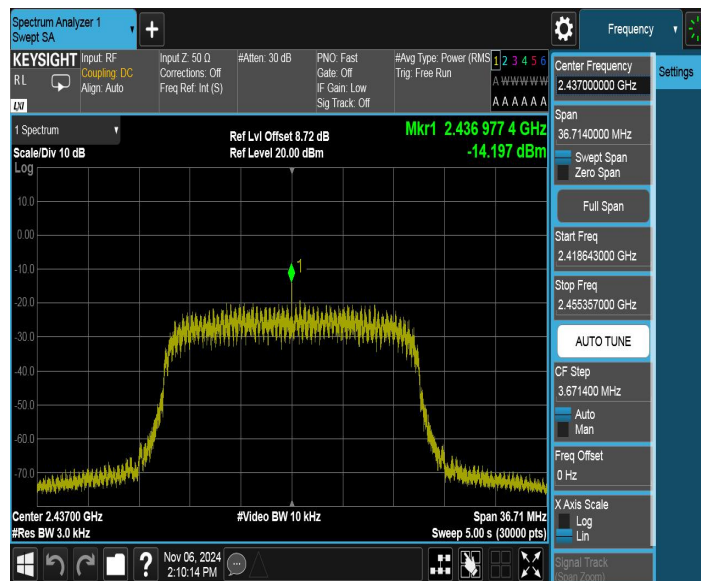
11G_Ant1_2462



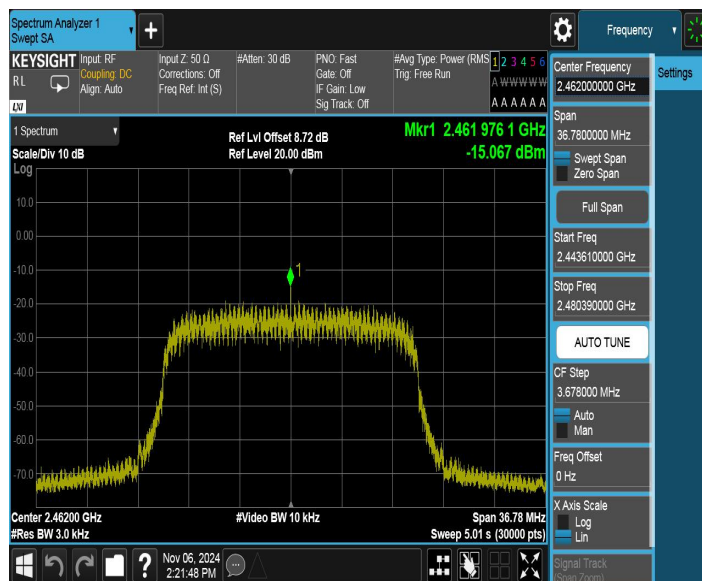
11N20SISO_Ant1_2412



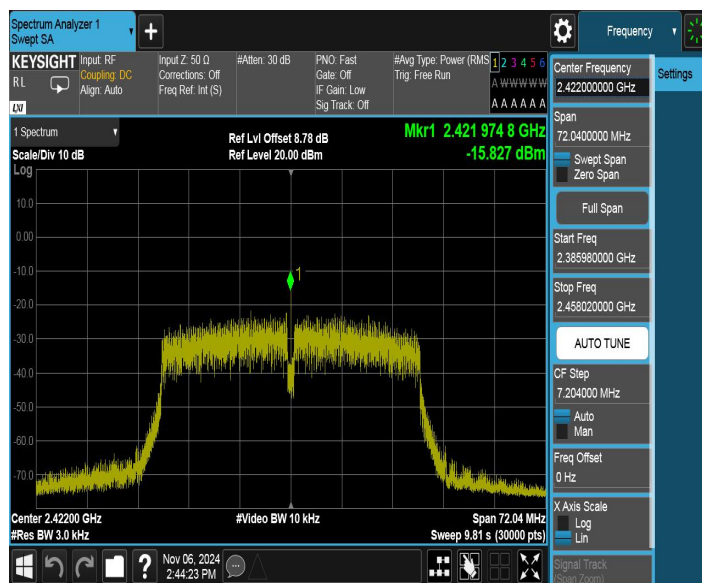
11N20SISO_Ant1_2437



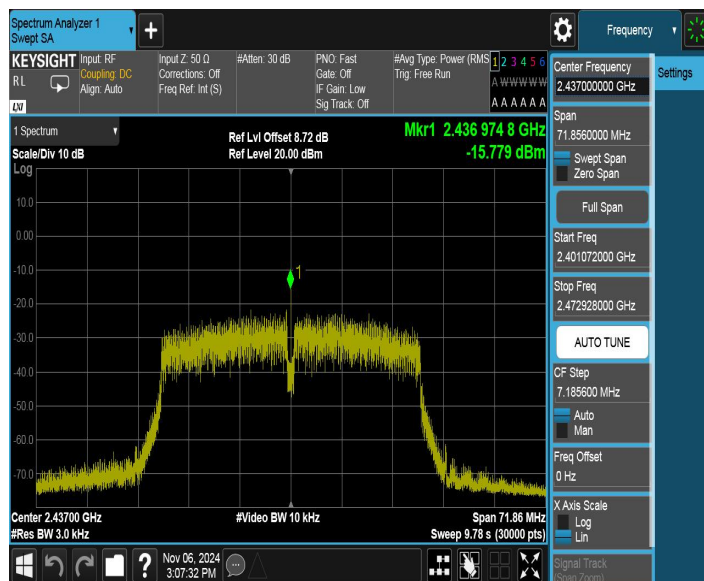
11N20SISO_Ant1_2462



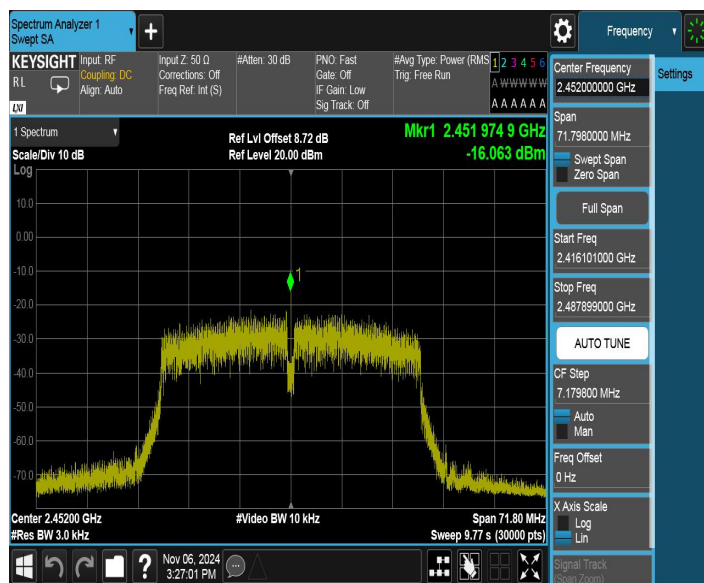
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



7.5. Conducted Band Edge and Out-of-Band Emissions

7.5.1. Test Limit

The limit for out-of-band spurious emissions at the band edge is 30dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100 kHz bandwidth per the PSD procedure.

7.5.2. Test Procedure Used

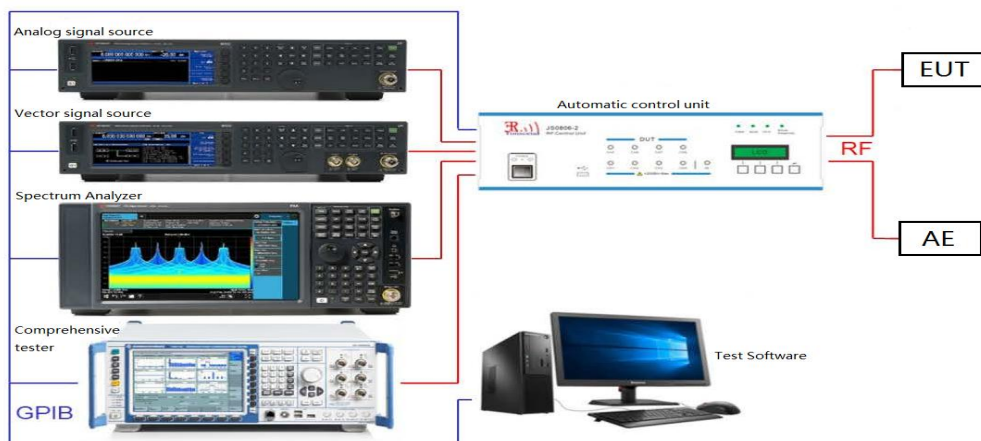
KDB 558074 D01 v05r02 - Section 8.5 & Section 8.6

ANSI C63.10 – Section 11.11&11.12

7.5.3. Test Settintng

- (a) Set the center frequency and span to encompass frequency range to be measured
- (b) RBW = 100kHz
- (c) VBW = 300kHz
- (d) Detector = RMS
- (e) Trace mode = max hold
- (f) Sweep time = auto couple
- (g) The trace was allowed to stabilize

7.5.4. Test Setup



7.5.5. Test Result

Test Mode	Antenna	Channel[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	8.96	8.96	---	PASS
			30~1000	8.96	-62.08	≤-21.04	PASS
			1000~26500	8.96	-31.63	≤-21.04	PASS
		2437	Reference	8.11	8.11	---	PASS
			30~1000	8.11	-61.72	≤-21.89	PASS
			1000~26500	8.11	-32.04	≤-21.89	PASS
		2462	Reference	9.22	9.22	---	PASS
			30~1000	9.22	-61.82	≤-20.78	PASS
			1000~26500	9.22	-31.51	≤-20.78	PASS
11G	Ant1	2412	Reference	0.53	0.53	---	PASS
			30~1000	0.53	-61.24	≤-29.47	PASS
			1000~26500	0.53	-50.47	≤-29.47	PASS
		2437	Reference	0.52	0.52	---	PASS
			30~1000	0.52	-61.19	≤-29.48	PASS
			1000~26500	0.52	-50.12	≤-29.48	PASS
		2462	Reference	1.45	1.45	---	PASS
			30~1000	1.45	-60.98	≤-28.55	PASS
			1000~26500	1.45	-48.86	≤-28.55	PASS
11N20SISO	Ant1	2412	Reference	3.26	3.26	---	PASS
			30~1000	3.26	-61.76	≤-26.74	PASS
			1000~26500	3.26	-50.86	≤-26.74	PASS
		2437	Reference	2.73	2.73	---	PASS
			30~1000	2.73	-61.33	≤-27.27	PASS
			1000~26500	2.73	-49.65	≤-27.27	PASS
		2462	Reference	3.55	3.55	---	PASS
			30~1000	3.55	-61	≤-26.45	PASS
			1000~26500	3.55	-50.15	≤-26.45	PASS
11N40SISO	Ant1	2422	Reference	-3.53	-3.53	---	PASS
			30~1000	-3.53	-61.36	≤-33.53	PASS
			1000~26500	-3.53	-52.62	≤-33.53	PASS
		2437	Reference	-3.40	-3.40	---	PASS
			30~1000	-3.40	-61.11	≤-33.4	PASS
			1000~26500	-3.40	-52.52	≤-33.4	PASS

		2452	Reference	-3.53	-3.53	---	PASS
			30~1000	-3.53	-61.71	≤ -33.53	PASS
			1000~26500	-3.53	-51.71	≤ -33.53	PASS

Test Graphs of Band Edge

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412



11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

