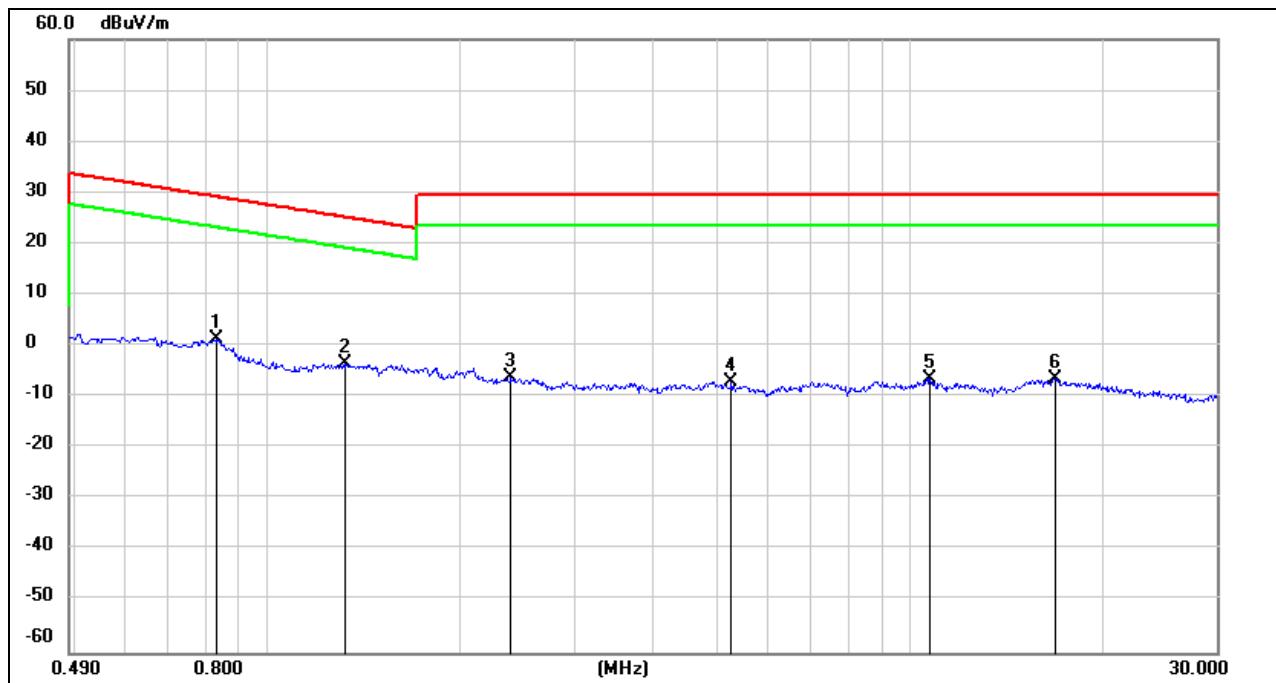


490 kHz ~ 30 MHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	ISED Result (dBuA/m)	ISED Limit (dBuA/m)	Margin (dB)	Remark
1	0.8296	63.44	-62.17	1.27	29.23	-50.23	-22.27	-27.96	peak
2	1.3204	58.59	-62.12	-3.53	25.19	-55.03	-26.31	-28.72	peak
3	2.3887	55.65	-61.72	-6.07	29.54	-57.57	-21.96	-35.61	peak
4	5.2705	54.54	-61.45	-6.91	29.54	-58.41	-21.96	-36.45	peak
5	10.7299	54.48	-60.83	-6.35	29.54	-57.85	-21.96	-35.89	peak
6	16.8090	54.45	-60.95	-6.5	29.54	-58.00	-21.96	-36.04	peak

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All modes, channels and antenna have been tested, only the worst data was recorded in the report.

9. AC POWER LINE CONDUCTED EMISSIONS

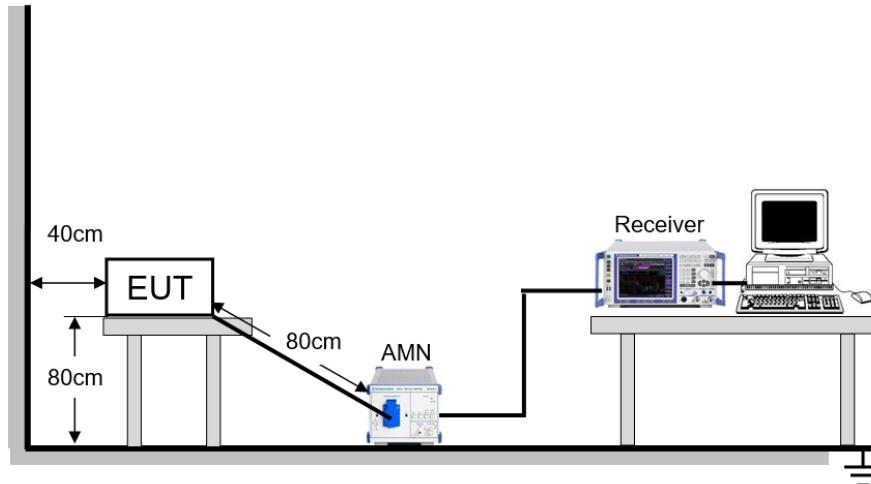
LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.

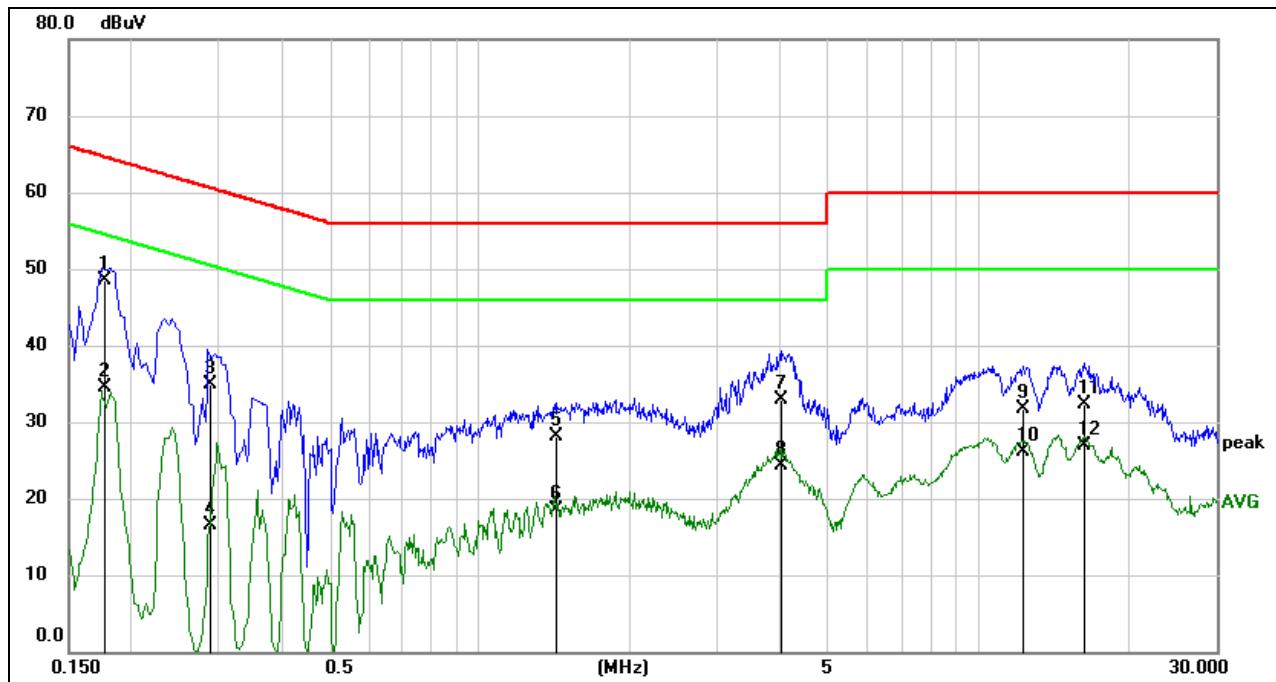


The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

Temperature	27.6 °C	Relative Humidity	64.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

RESULTS**9.1.1. 802.11n HT20 MIMO MODE PCB ANTENNA****LINE L RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)**

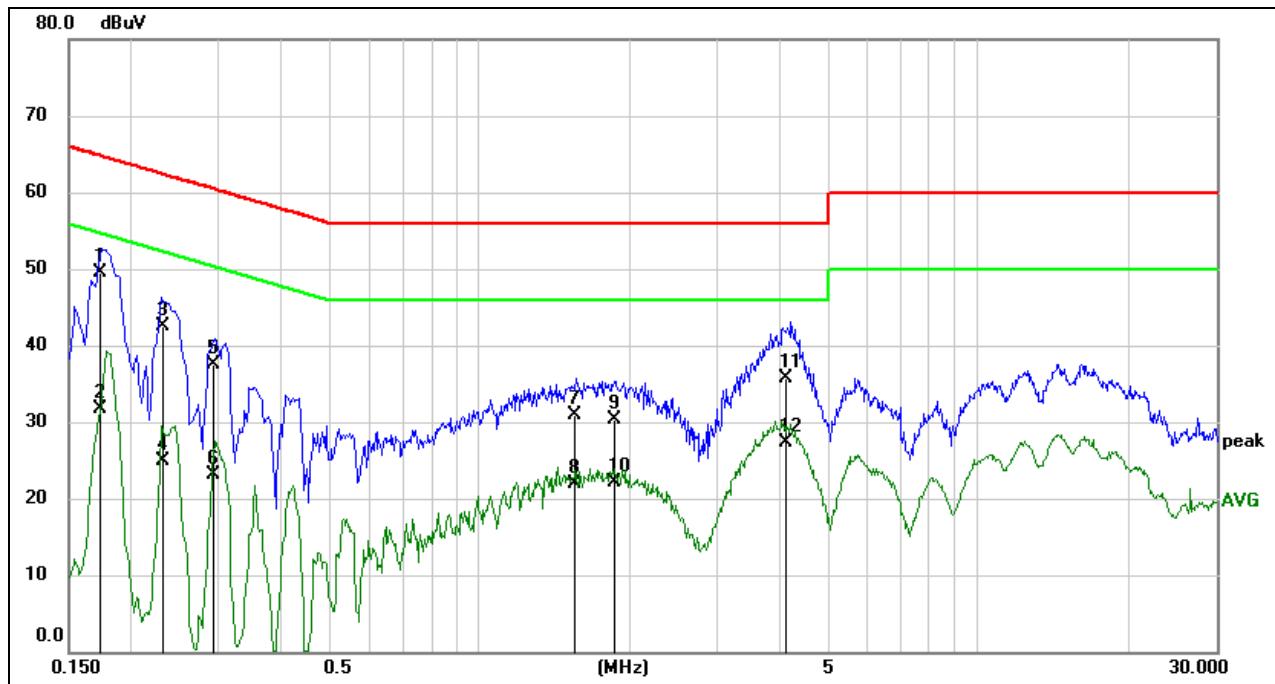
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1777	49.05	-0.50	48.55	64.59	-16.04	QP
2	0.1777	34.93	-0.50	34.43	54.59	-20.16	AVG
3	0.2890	35.39	-0.50	34.89	60.55	-25.66	QP
4	0.2890	17.07	-0.50	16.57	50.55	-33.98	AVG
5	1.4282	28.46	-0.40	28.06	56.00	-27.94	QP
6	1.4282	18.81	-0.40	18.41	46.00	-27.59	AVG
7	4.0204	33.16	-0.30	32.86	56.00	-23.14	QP
8	4.0204	24.54	-0.30	24.24	46.00	-21.76	AVG
9	12.3209	32.25	-0.53	31.72	60.00	-28.28	QP
10	12.3209	26.64	-0.53	26.11	50.00	-23.89	AVG
11	16.2855	33.14	-0.85	32.29	60.00	-27.71	QP
12	16.2855	27.68	-0.85	26.83	50.00	-23.17	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

LINE N RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1729	49.93	-0.50	49.43	64.82	-15.39	QP
2	0.1729	32.12	-0.50	31.62	54.82	-23.20	AVG
3	0.2322	42.97	-0.50	42.47	62.37	-19.90	QP
4	0.2322	25.46	-0.50	24.96	52.37	-27.41	AVG
5	0.2917	38.01	-0.50	37.51	60.48	-22.97	QP
6	0.2917	23.56	-0.50	23.06	50.48	-27.42	AVG
7	1.5487	31.39	-0.40	30.99	56.00	-25.01	QP
8	1.5487	22.39	-0.40	21.99	46.00	-24.01	AVG
9	1.8666	30.72	-0.40	30.32	56.00	-25.68	QP
10	1.8666	22.52	-0.40	22.12	46.00	-23.88	AVG
11	4.1207	36.02	-0.30	35.72	56.00	-20.28	QP
12	4.1207	27.61	-0.30	27.31	46.00	-18.69	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All modes, channels and antenna have been tested, only the worst data was recorded in the report.

10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §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 an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Please refer to FCC §15.247(b)(4)

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.

RESULTS

Complies

11. Appendix

11.1. Appendix A: DTS Bandwidth

11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.080	2408.000	2416.080	0.5	PASS
	Ant2	2412	8.600	2407.960	2416.560	0.5	PASS
	Ant1	2437	7.520	2433.000	2440.520	0.5	PASS
	Ant2	2437	8.080	2432.960	2441.040	0.5	PASS
	Ant1	2462	8.080	2458.000	2466.080	0.5	PASS
	Ant2	2462	8.040	2458.480	2466.520	0.5	PASS
11G	Ant1	2412	15.800	2404.120	2419.920	0.5	PASS
	Ant2	2412	15.680	2404.120	2419.800	0.5	PASS
	Ant1	2437	16.320	2428.880	2445.200	0.5	PASS
	Ant2	2437	16.280	2428.880	2445.160	0.5	PASS
	Ant1	2462	16.320	2453.880	2470.200	0.5	PASS
	Ant2	2462	16.040	2454.120	2470.160	0.5	PASS
11N20MIMO	Ant1	2412	16.520	2404.280	2420.800	0.5	PASS
	Ant2	2412	16.240	2403.920	2420.160	0.5	PASS
	Ant1	2437	16.040	2429.160	2445.200	0.5	PASS
	Ant2	2437	16.920	2428.280	2445.200	0.5	PASS
	Ant1	2462	17.160	2453.400	2470.560	0.5	PASS
	Ant2	2462	16.920	2453.280	2470.200	0.5	PASS
11N40MIMO	Ant1	2422	35.120	2404.480	2439.600	0.5	PASS
	Ant2	2422	35.120	2404.480	2439.600	0.5	PASS
	Ant1	2437	35.120	2419.480	2454.600	0.5	PASS
	Ant2	2437	35.040	2419.480	2454.520	0.5	PASS
	Ant1	2452	35.120	2434.480	2469.600	0.5	PASS
	Ant2	2452	35.040	2434.480	2469.520	0.5	PASS

11.1.2. Test Graphs





11B_Ant2_2437



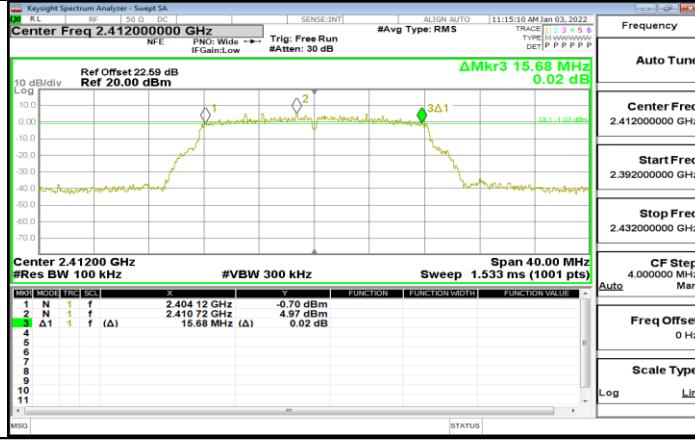
11B_Ant1_2462



11B_Ant2_2462



11G_Ant1_2412



11G_Ant2_2412



11G_Ant1_2437



11G_Ant2_2437

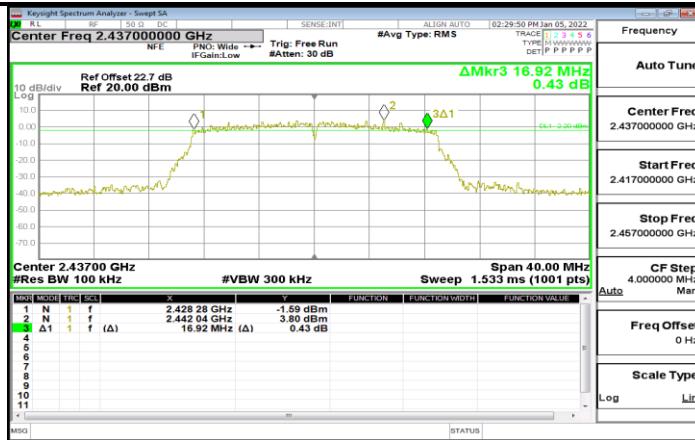


11G_Ant1_2462



11G_Ant2_2462





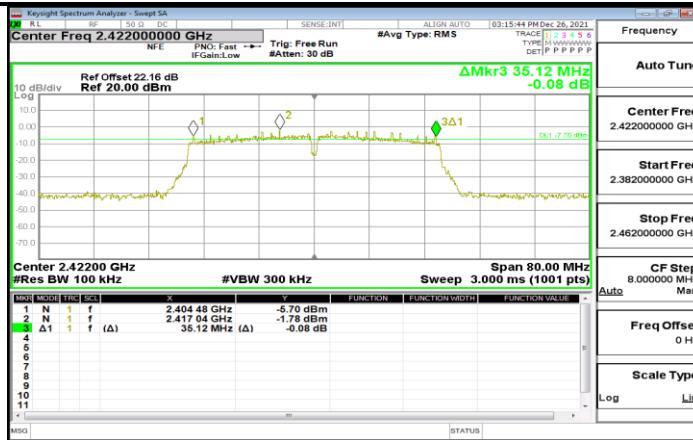
11N20MIMO_Ant2_2437



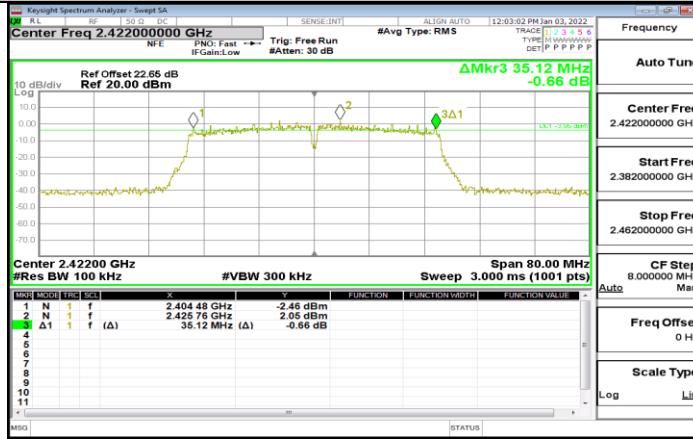
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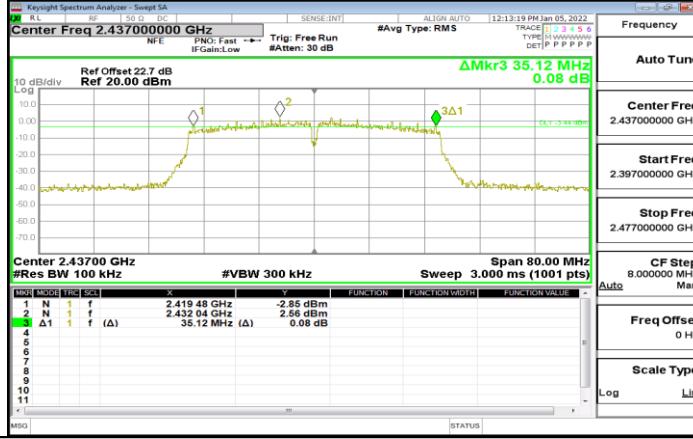
11N20MIMO_Ant1_2462



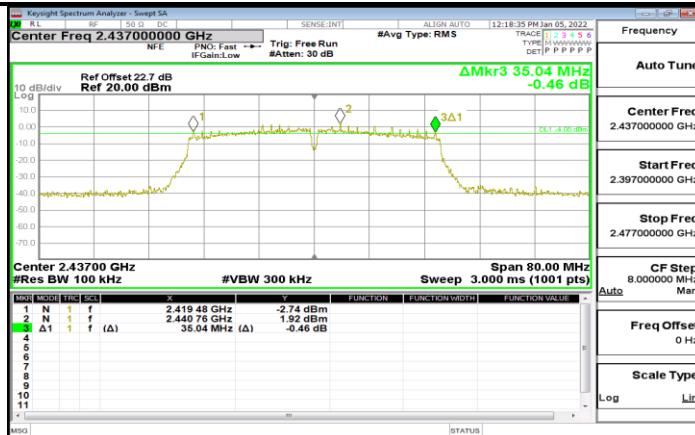
11N40MIMO_Ant1_2422



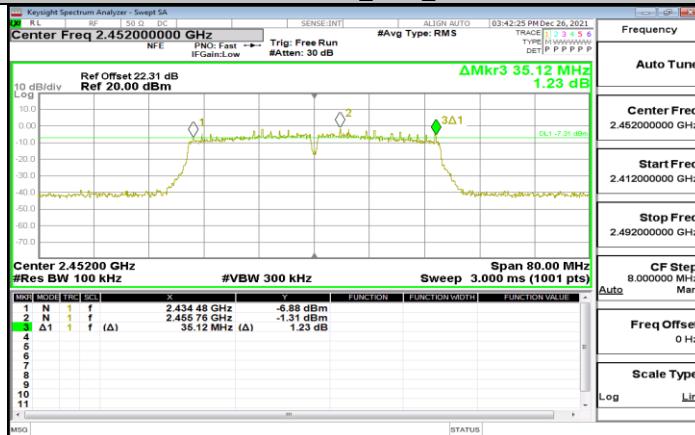
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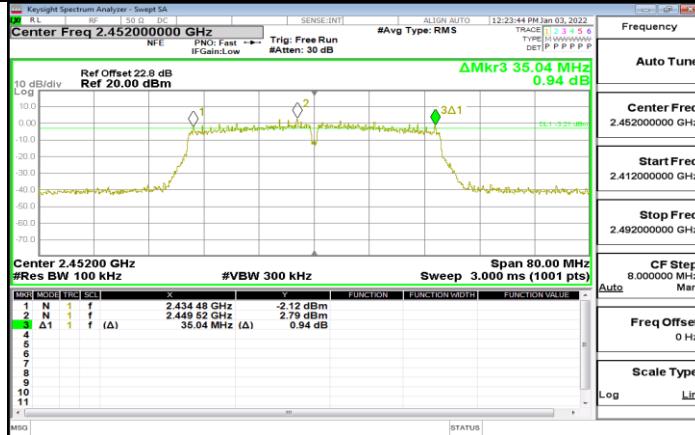
11N40MIMO_Ant1_2437



11N40MIMO Ant2 2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452

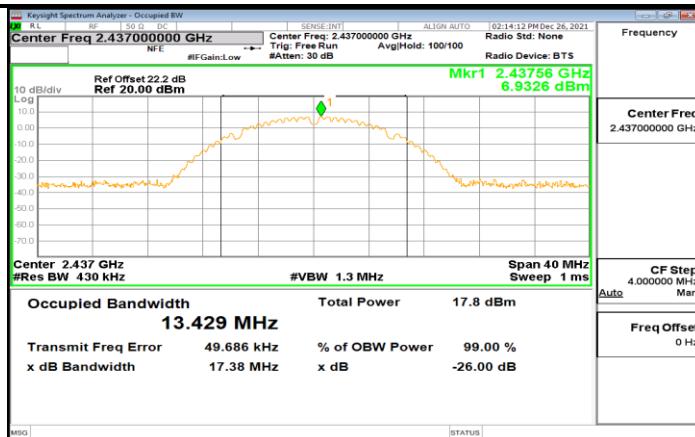
11.2. Appendix B: Occupied Channel Bandwidth

11.2.1. Test Result

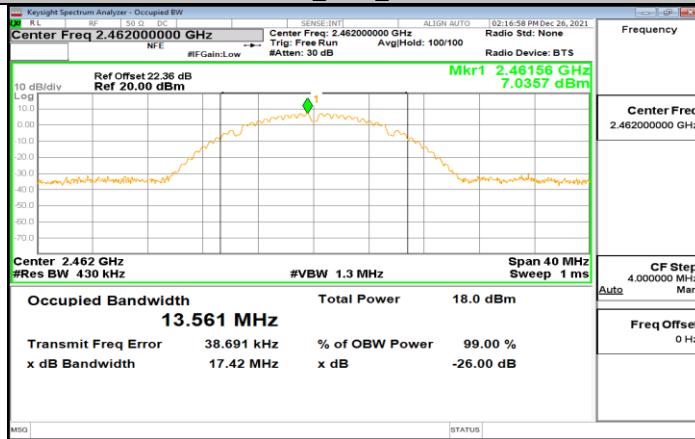
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
11B	Ant1	2412	13.523	2405.310	2418.833	PASS
	Ant2	2412	13.436	2405.337	2418.773	PASS
	Ant1	2437	13.542	2430.253	2443.795	PASS
	Ant2	2437	13.429	2430.335	2443.764	PASS
	Ant1	2462	13.561	2455.258	2468.819	PASS
	Ant2	2462	13.437	2455.329	2468.766	PASS
11G	Ant1	2412	16.817	2403.670	2420.487	PASS
	Ant2	2412	16.705	2403.689	2420.394	PASS
	Ant1	2437	16.861	2428.602	2445.463	PASS
	Ant2	2437	16.693	2428.696	2445.389	PASS
	Ant1	2462	16.816	2453.639	2470.455	PASS
	Ant2	2462	16.648	2453.747	2470.395	PASS
11N20MIMO	Ant1	2412	17.790	2403.177	2420.967	PASS
	Ant2	2412	17.733	2403.177	2420.910	PASS
	Ant1	2437	17.756	2428.133	2445.889	PASS
	Ant2	2437	17.693	2428.219	2445.912	PASS
	Ant1	2462	17.791	2453.152	2470.943	PASS
	Ant2	2462	17.704	2453.192	2470.896	PASS
11N40MIMO	Ant1	2422	36.089	2404.047	2440.136	PASS
	Ant2	2422	36.102	2404.079	2440.181	PASS
	Ant1	2437	36.012	2419.076	2455.088	PASS
	Ant2	2437	36.117	2418.984	2455.101	PASS
	Ant1	2452	36.124	2433.976	2470.100	PASS
	Ant2	2452	36.014	2434.063	2470.077	PASS

11.2.2. Test Graphs

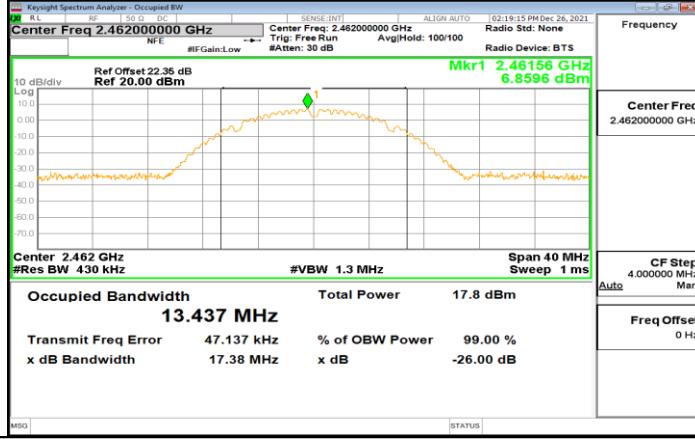




11B_Ant2_2437



11B_Ant1_2462

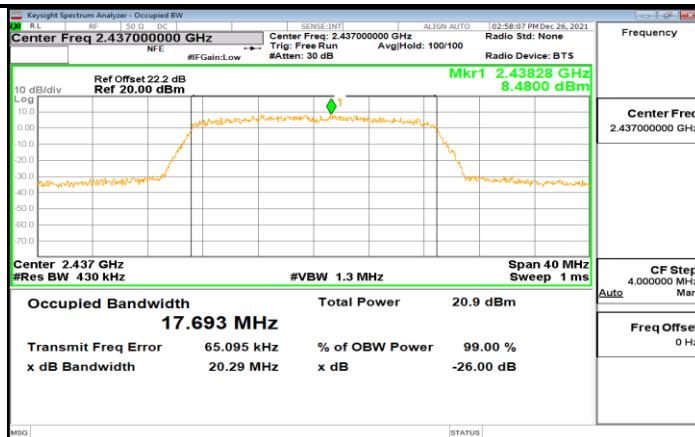


11B_Ant2_2462

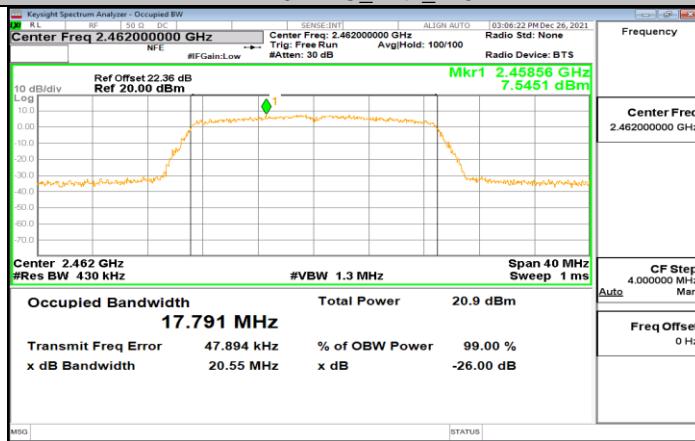




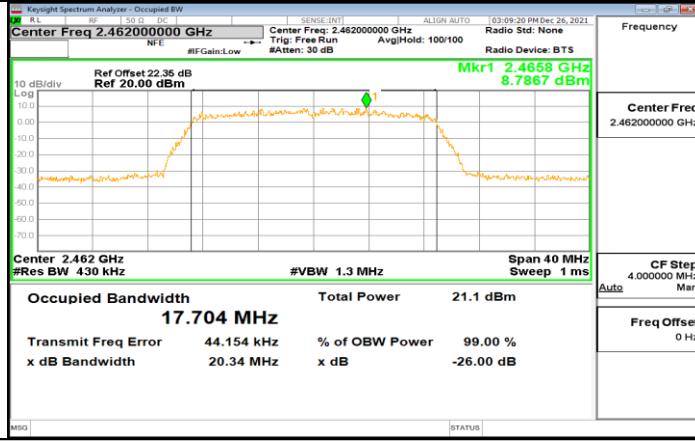




11N20MIMO_Ant2_2437



11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462





11.3. Appendix C: Maximum conducted output power

11.3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	16.32	≤30.00	PASS
	Ant2	2412	16.26	≤30.00	PASS
	Ant1	2437	16.77	≤30.00	PASS
	Ant2	2437	16.67	≤30.00	PASS
	Ant1	2462	16.76	≤30.00	PASS
	Ant2	2462	16.76	≤30.00	PASS
11G	Ant1	2412	16.74	≤30.00	PASS
	Ant2	2412	16.82	≤30.00	PASS
	Ant1	2437	16.90	≤30.00	PASS
	Ant2	2437	16.88	≤30.00	PASS
	Ant1	2462	17.08	≤30.00	PASS
	Ant2	2462	17.07	≤30.00	PASS
11N20MIMO	Ant1	2412	16.19	≤30.00	PASS
	Ant2	2412	16.13	≤30.00	PASS
	total	2412	19.17	≤30.00	PASS
	Ant1	2437	16.12	≤30.00	PASS
	Ant2	2437	16.20	≤30.00	PASS
	total	2437	19.17	≤30.00	PASS
	Ant1	2462	16.38	≤30.00	PASS
	Ant2	2462	16.45	≤30.00	PASS
	total	2462	19.43	≤30.00	PASS
11N40MIMO	Ant1	2422	15.30	≤30.00	PASS
	Ant2	2422	15.35	≤30.00	PASS
	total	2422	18.34	≤30.00	PASS
	Ant1	2437	15.47	≤30.00	PASS
	Ant2	2437	15.55	≤30.00	PASS
	total	2437	18.52	≤30.00	PASS
	Ant1	2452	15.51	≤30.00	PASS
	Ant2	2452	15.56	≤30.00	PASS
	total	2452	18.55	≤30.00	PASS

Note: 1. Conducted Power=Meas. Level+ Correction Factor

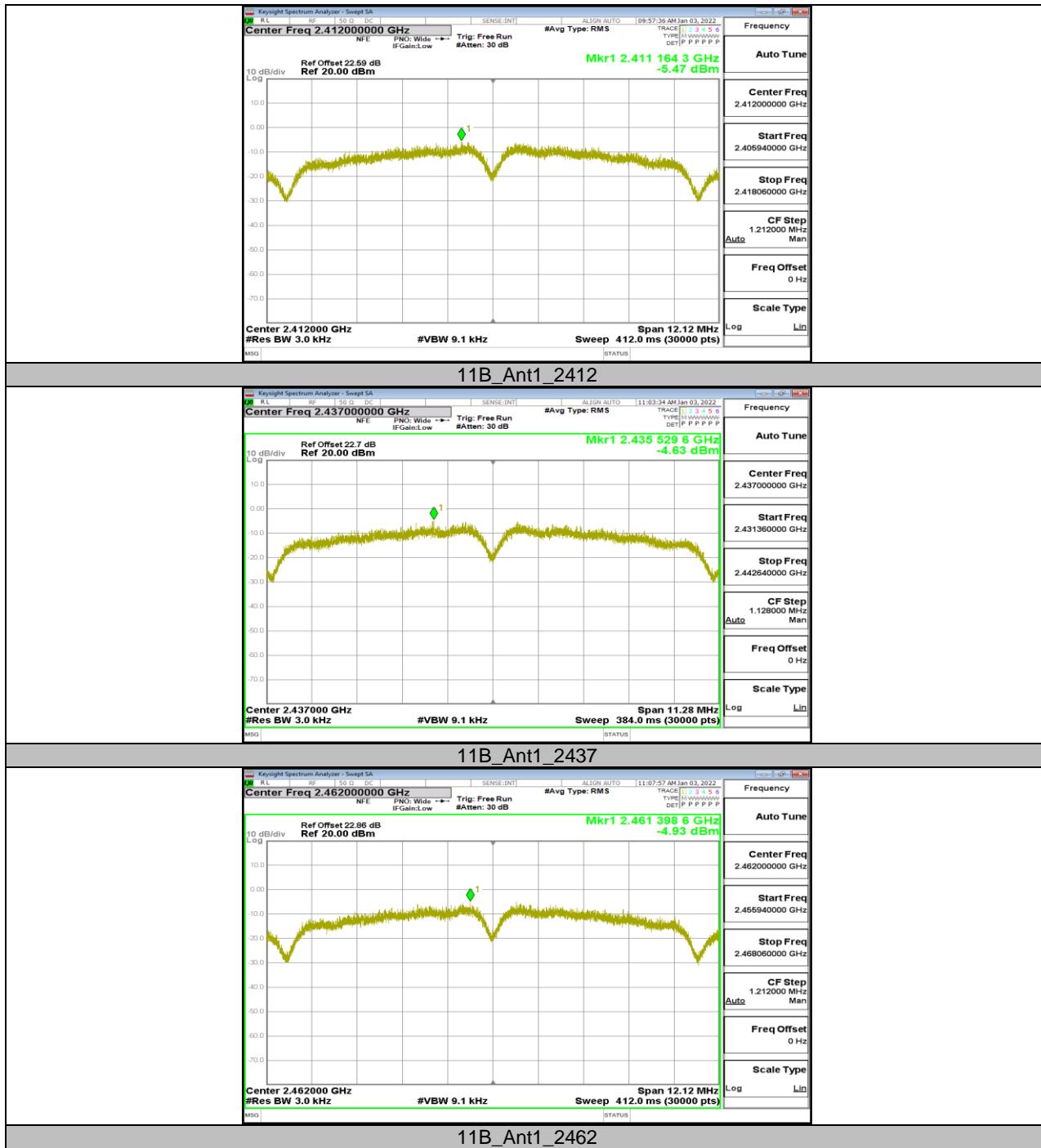
2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

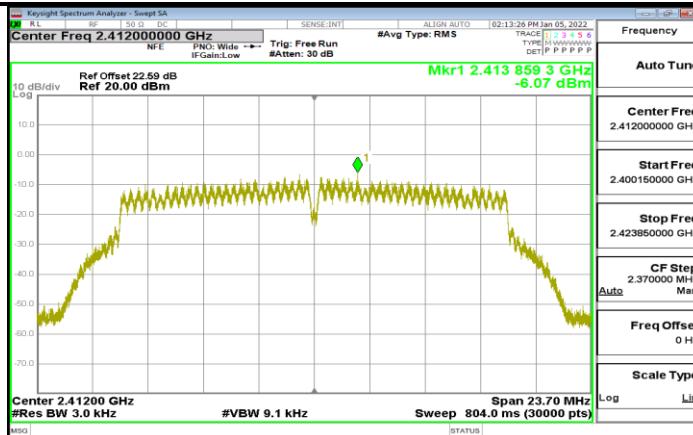
11.4. Appendix D: Maximum power spectral density

11.4.1. Test Result

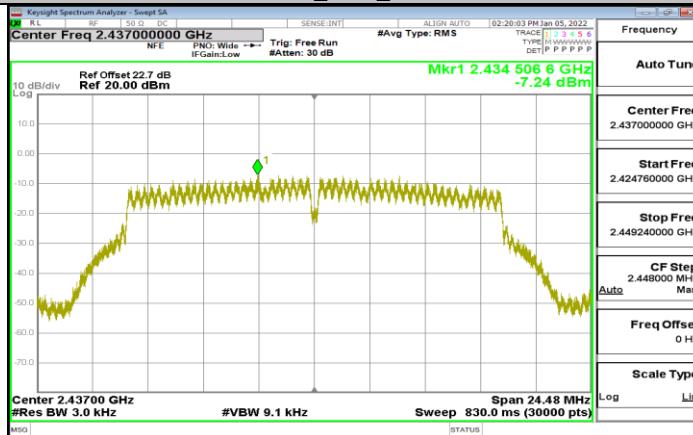
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.47	≤8.00	PASS
		2437	-4.63	≤8.00	PASS
		2462	-4.93	≤8.00	PASS
11G	Ant1	2412	-6.07	≤8.00	PASS
		2437	-7.24	≤8.00	PASS
		2462	-6.94	≤8.00	PASS
11N20MIMO	Ant1	2412	-7.68	≤8.00	PASS
	Ant2	2412	-8.37	≤8.00	PASS
	total	2412	-5.00	≤8.00	PASS
	Ant1	2437	-6.66	≤8.00	PASS
	Ant2	2437	-7.1	≤8.00	PASS
	total	2437	-3.86	≤8.00	PASS
	Ant1	2462	-7.1	≤8.00	PASS
	Ant2	2462	-7.98	≤8.00	PASS
	total	2462	-4.51	≤8.00	PASS
11N40MIMO	Ant1	2422	-11.27	≤8.00	PASS
	Ant2	2422	-10.21	≤8.00	PASS
	total	2422	-7.70	≤8.00	PASS
	Ant1	2437	-10.48	≤8.00	PASS
	Ant2	2437	-9.76	≤8.00	PASS
	total	2437	-7.09	≤8.00	PASS
	Ant1	2452	-9.66	≤8.00	PASS
	Ant2	2452	-10.09	≤8.00	PASS
	total	2452	-6.86	≤8.00	PASS

11.4.2. Test Graphs

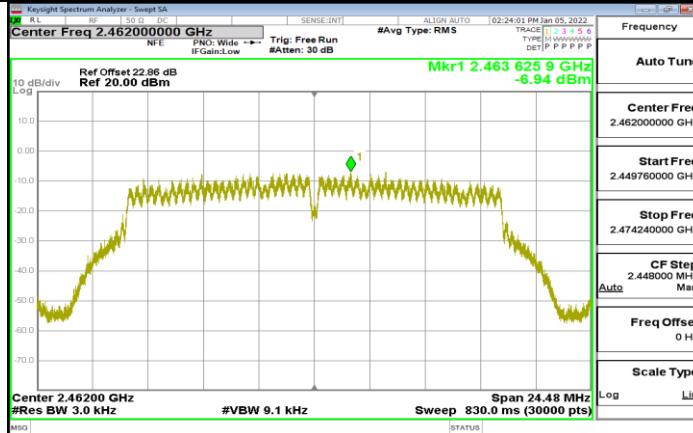




11G_Ant1_2412

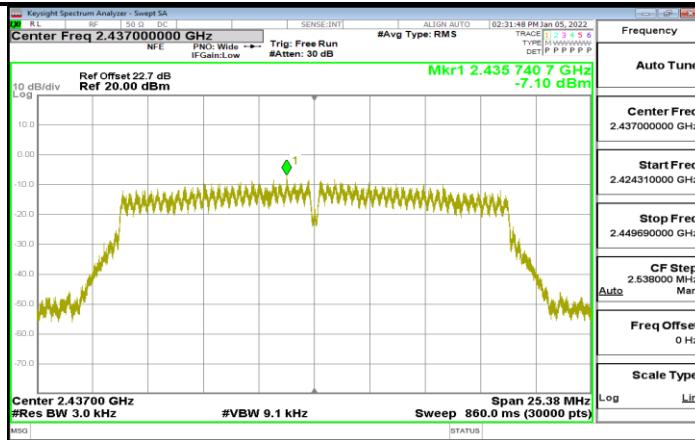


11G_Ant1_2437



11G_Ant1_2462

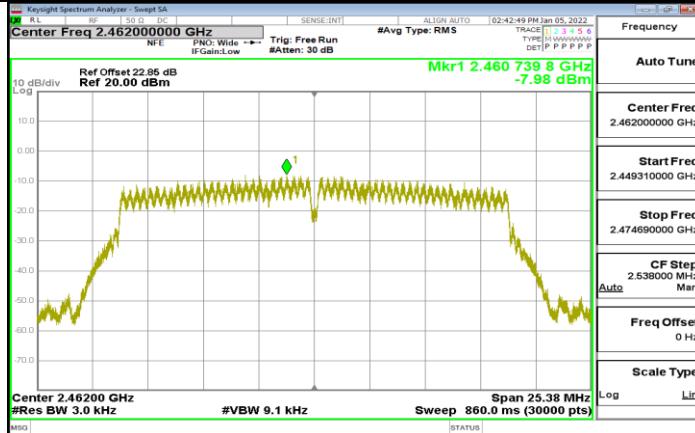




11N20MIMO_Ant2_2437



11N20MIMO_Ant2_2461



11N20MIMO_Ant2_2460