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. 11.Appendix

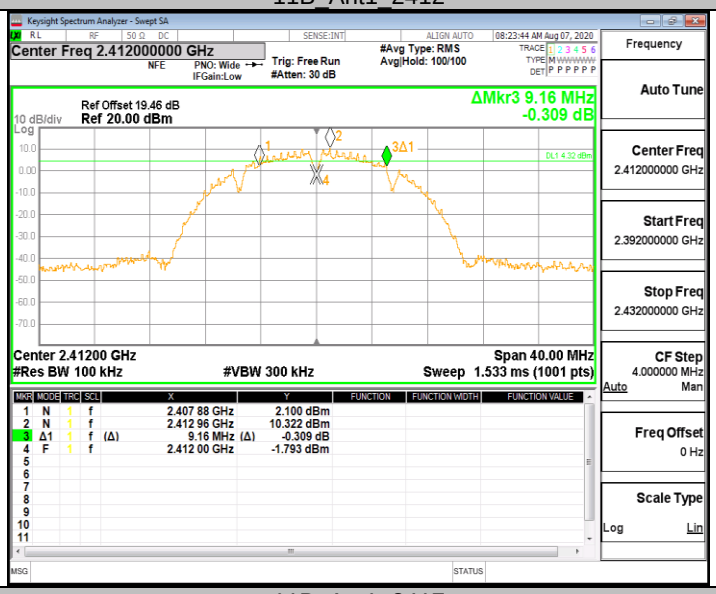
11.1. Appendix A: DTS Bandwidth

11.1.1. Test Result

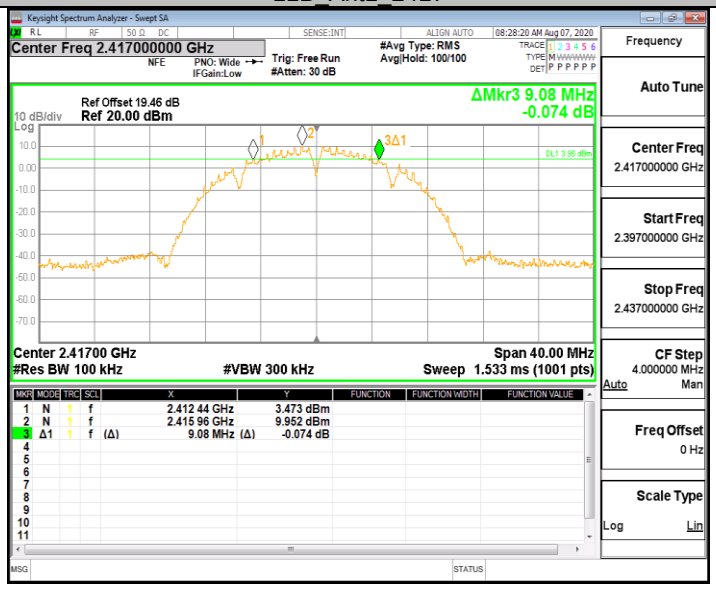
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.160	2407.880	2417.040	0.5	PASS
		2417	9.080	2412.440	2421.520	0.5	PASS
		2437	8.640	2432.880	2441.520	0.5	PASS
		2457	8.680	2452.880	2461.560	0.5	PASS
		2462	8.680	2457.880	2466.560	0.5	PASS
11G	Ant1	2412	16.400	2403.760	2420.160	0.5	PASS
		2417	16.400	2408.760	2425.160	0.5	PASS
		2437	16.400	2428.760	2445.160	0.5	PASS
		2457	16.360	2448.800	2465.160	0.5	PASS
		2462	16.400	2453.760	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.160	2420.800	0.5	PASS
		2417	17.640	2408.160	2425.800	0.5	PASS
		2437	17.640	2428.160	2445.800	0.5	PASS
		2457	17.640	2448.160	2465.800	0.5	PASS
		2462	17.640	2453.160	2470.800	0.5	PASS

11.1.2. Test Graphs

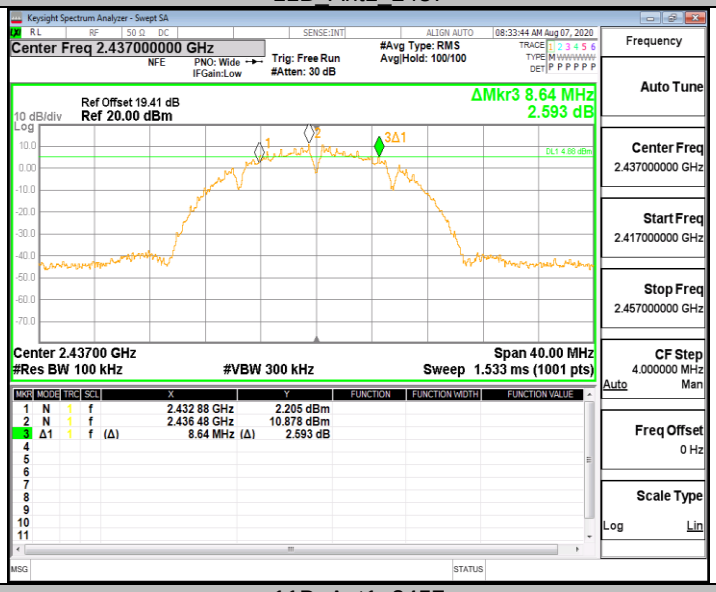
11B_Ant1_2412



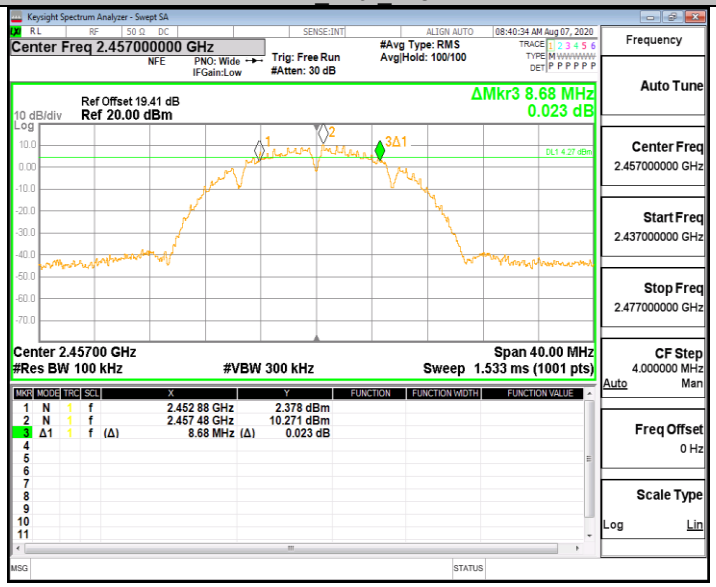
11B_Ant1_2417



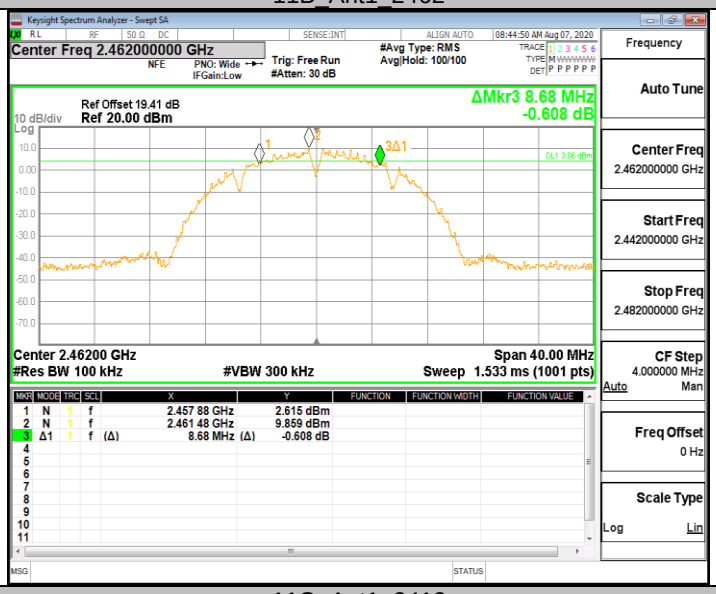
11B_Ant1_2437



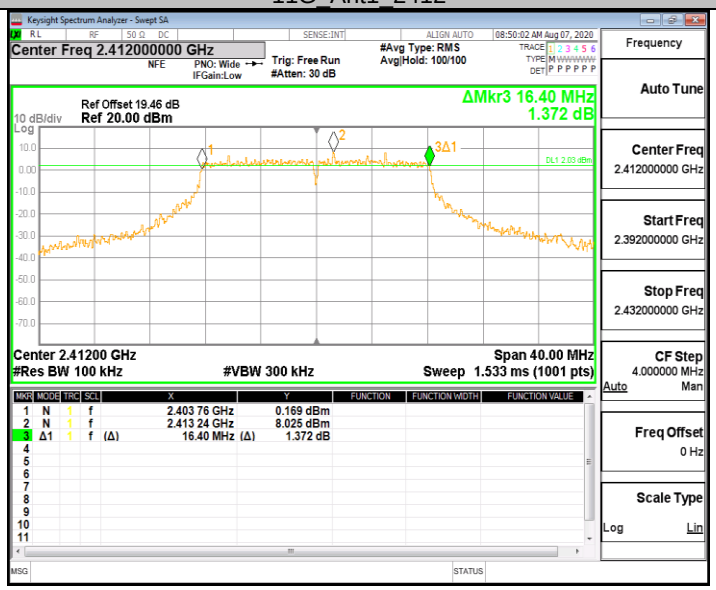
11B_Ant1_2457



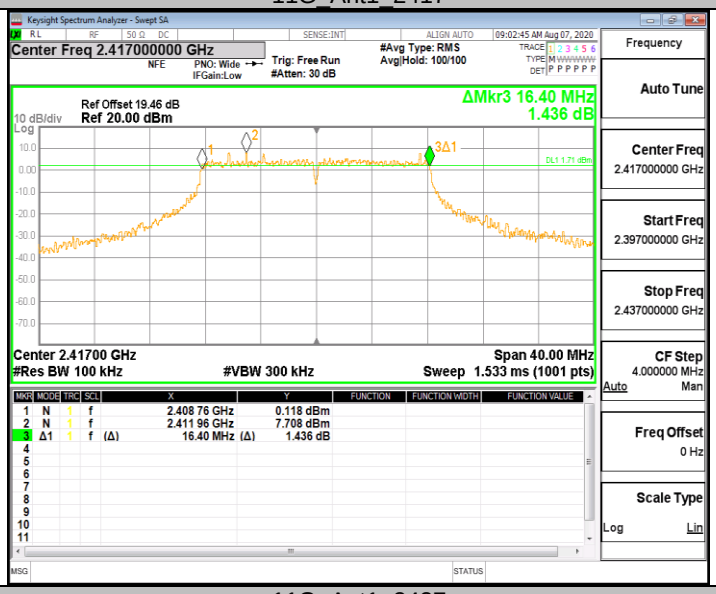
11B_Ant1_2462



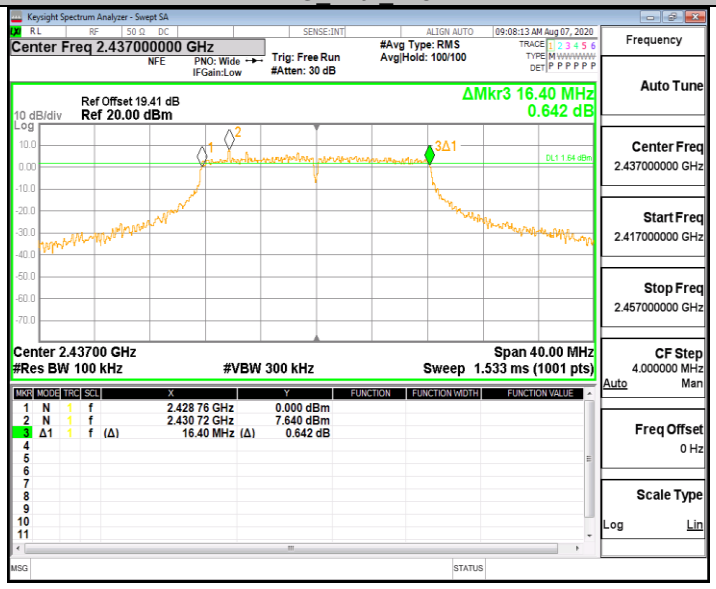
11G_Ant1_2412



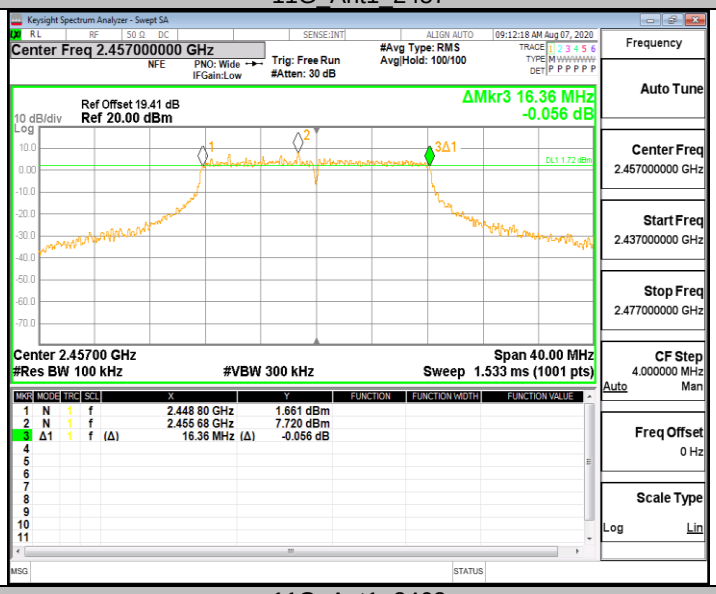
11G_Ant1_2417



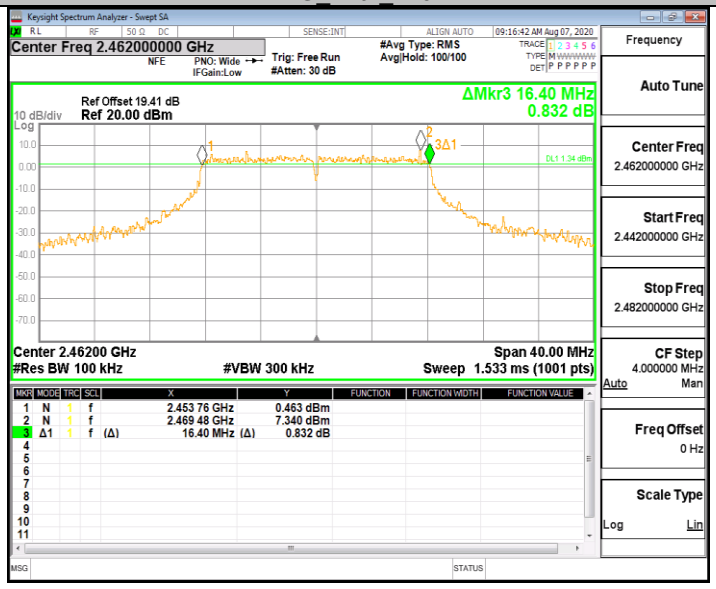
11G_Ant1_2437



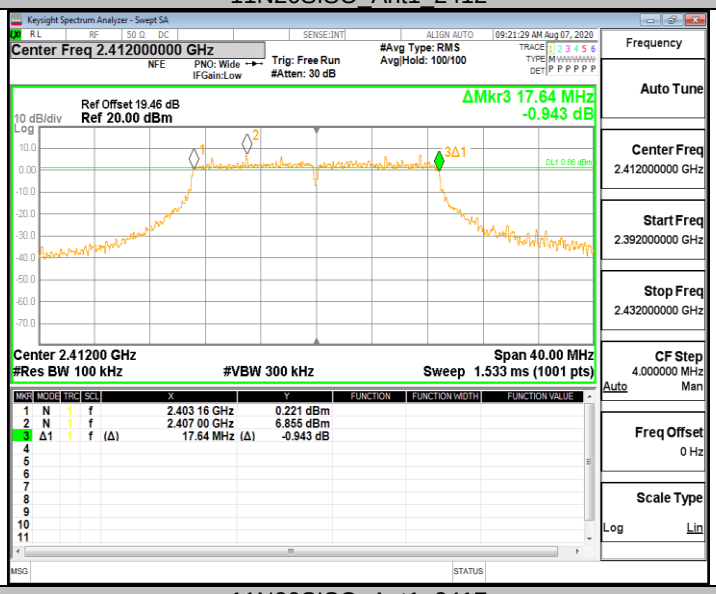
11G_Ant1_2457



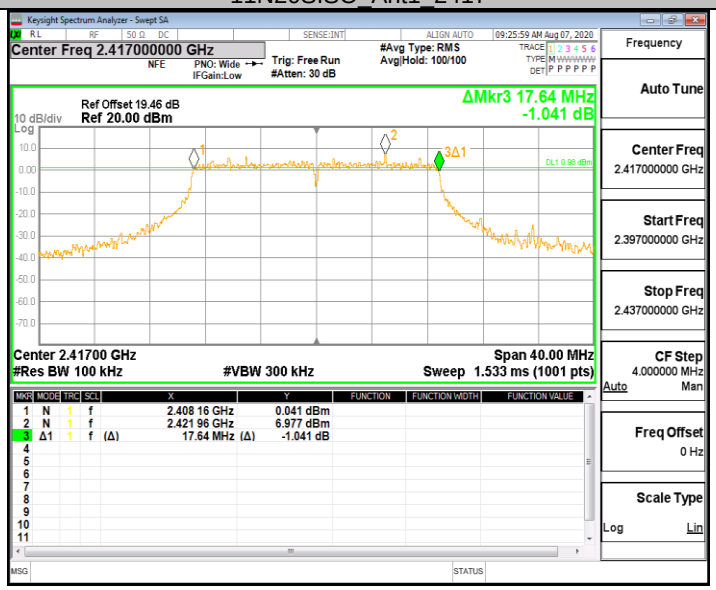
11G_Ant1_2462



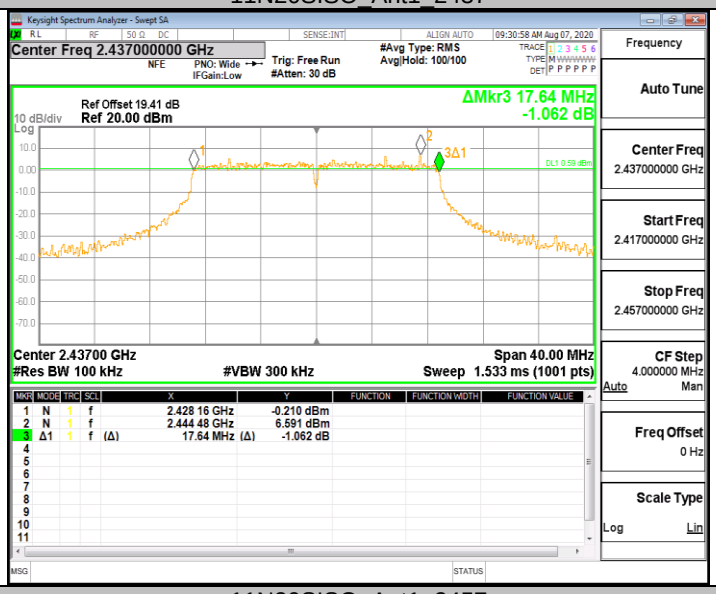
11N20SISO_Ant1_2412



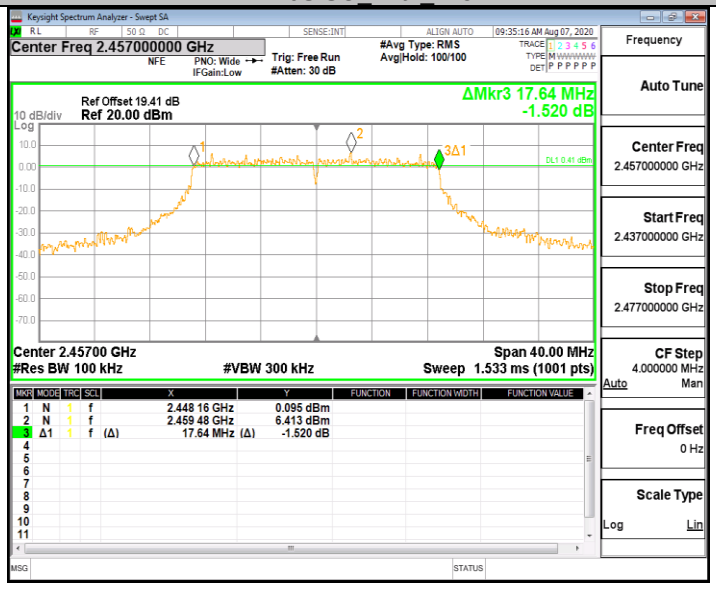
11N20SISO_Ant1_2417

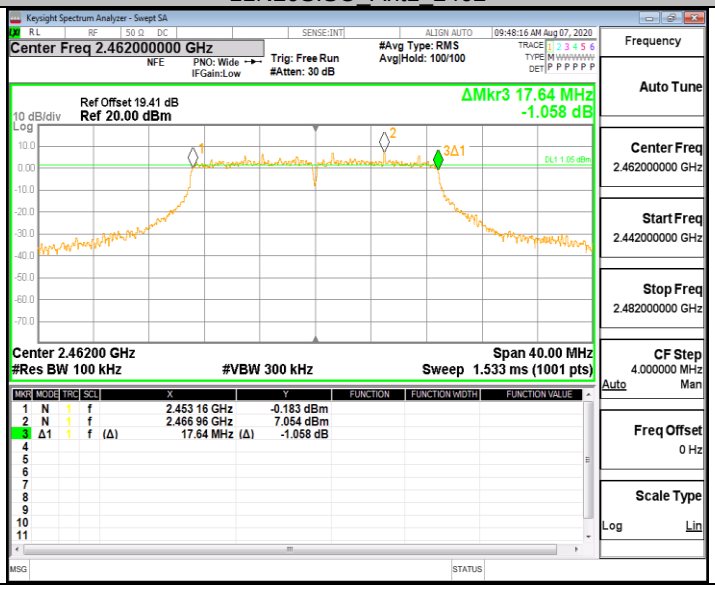


11N20SISO_Ant1_2437



11N20SISO_Ant1_2457



11N20SISO_Ant1_2462


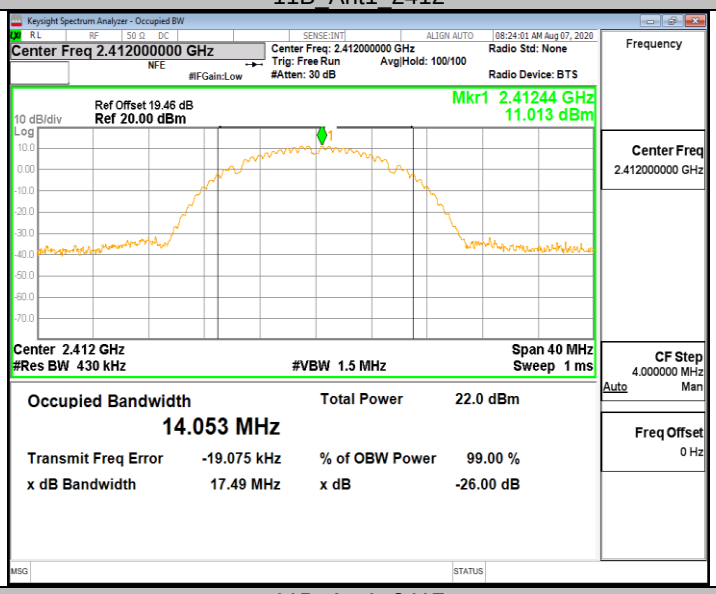
11.2. Appendix B: Occupied Channel Bandwidth

11.2.1. Test Result

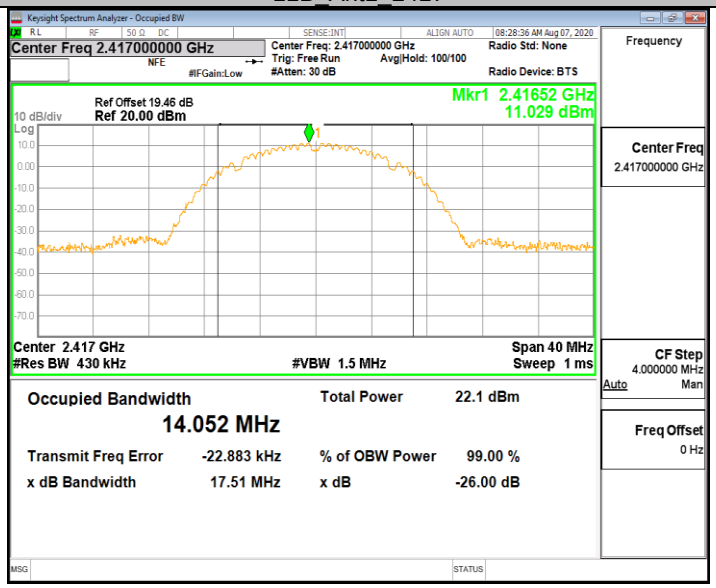
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.053	2404.954	2419.007	---	PASS
		2417	14.052	2409.951	2424.003	---	PASS
		2437	14.059	2429.956	2444.015	---	PASS
		2457	14.057	2449.948	2464.005	---	PASS
		2462	14.065	2454.946	2469.011	---	PASS
11G	Ant1	2412	17.252	2403.366	2420.618	---	PASS
		2417	17.296	2408.329	2425.625	---	PASS
		2437	17.203	2428.406	2445.609	---	PASS
		2457	17.168	2448.357	2465.525	---	PASS
		2462	17.277	2453.334	2470.611	---	PASS
11N20SISO	Ant1	2412	18.219	2402.835	2421.054	---	PASS
		2417	18.176	2407.875	2426.051	---	PASS
		2437	18.147	2427.852	2445.999	---	PASS
		2457	18.357	2447.786	2466.143	---	PASS
		2462	18.222	2452.876	2471.098	---	PASS

11.2.2. Test Graphs

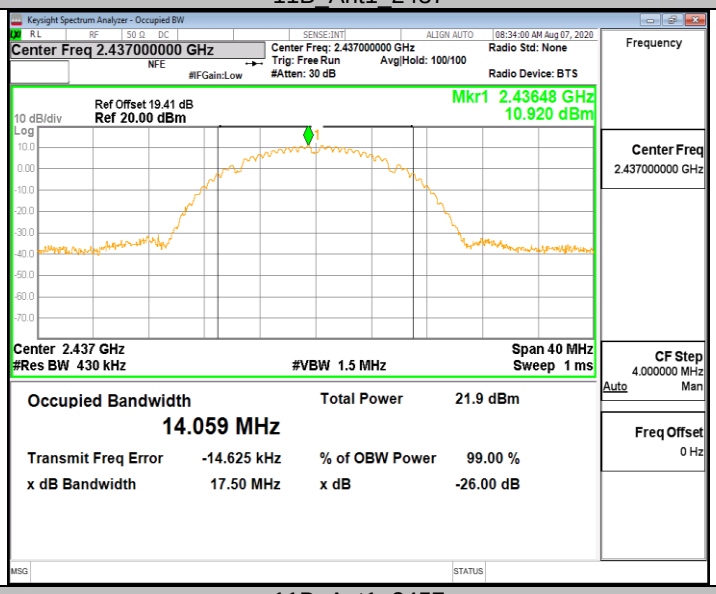
11B_Ant1_2412



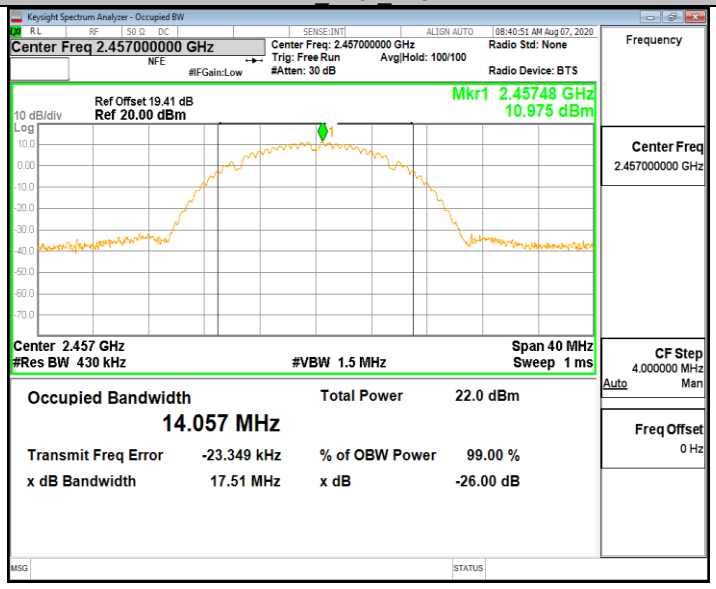
11B_Ant1_2417



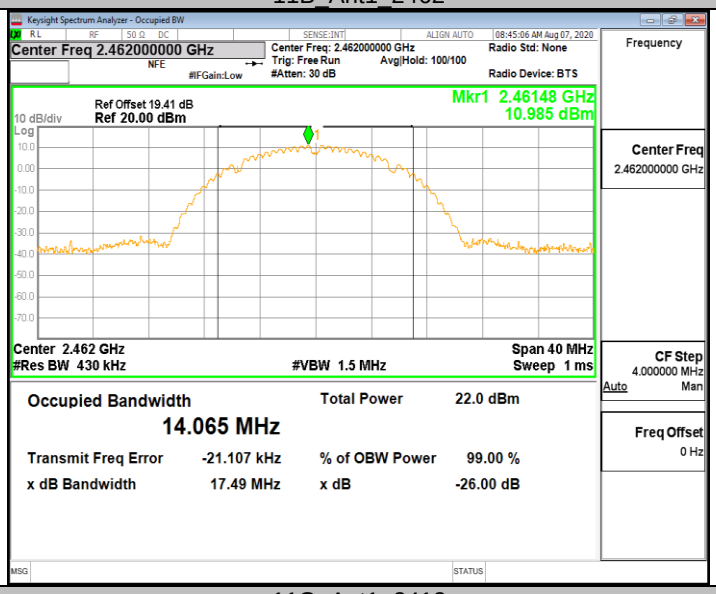
11B_Ant1_2437



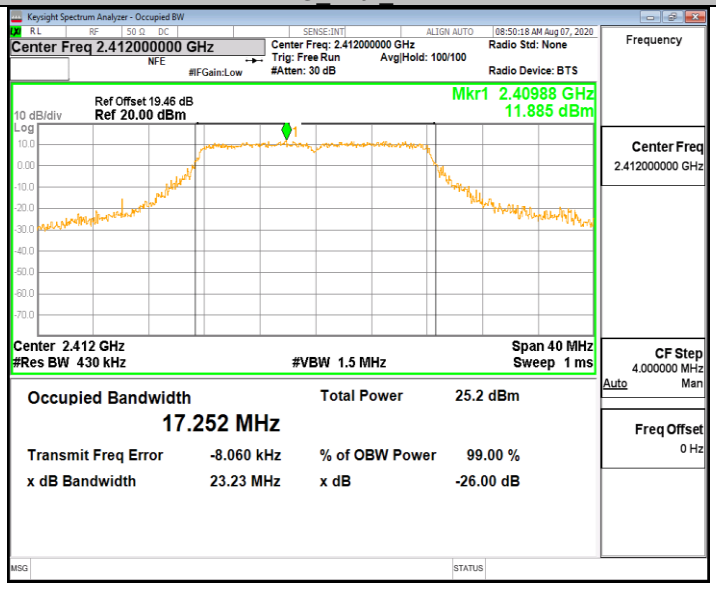
11B_Ant1_2457



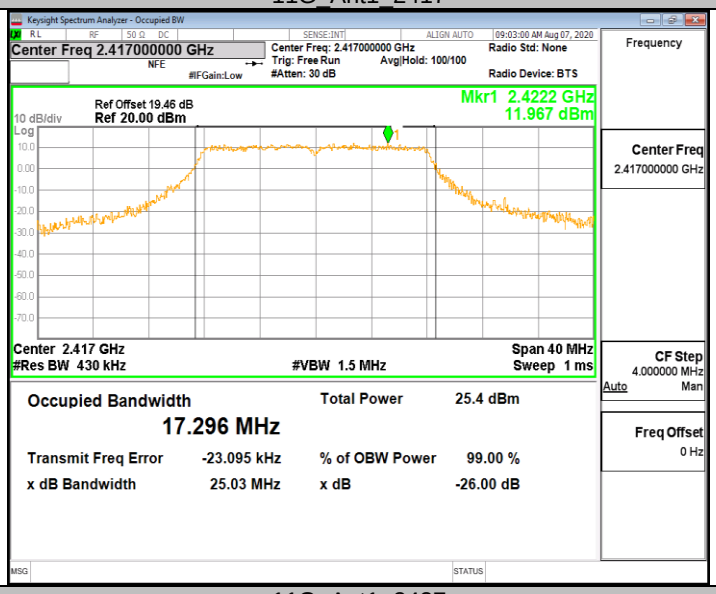
11B_Ant1_2462



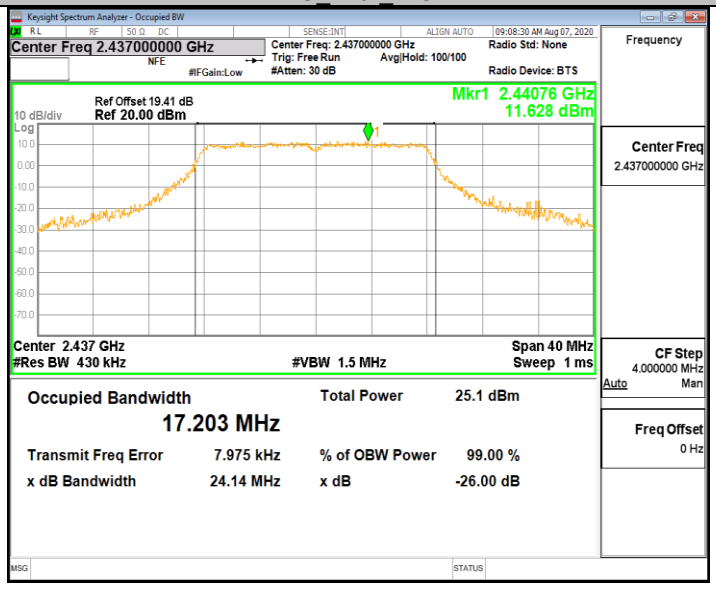
11G_Ant1_2412



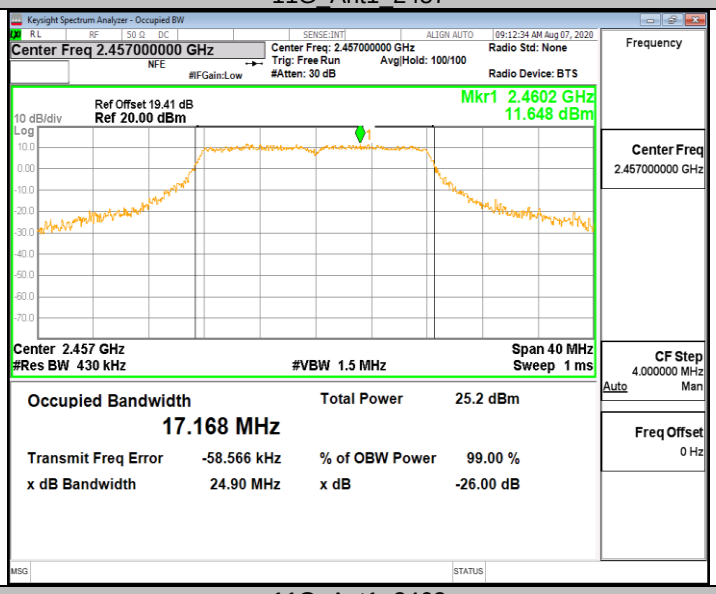
11G_Ant1_2417



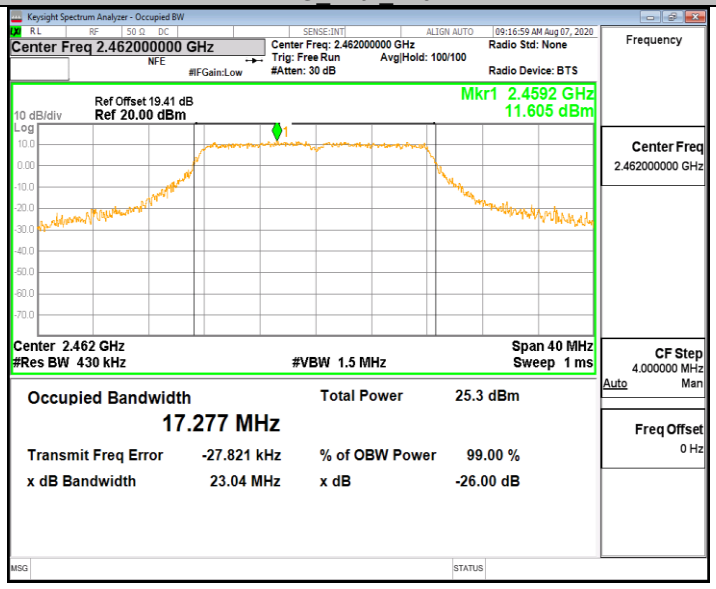
11G_Ant1_2437



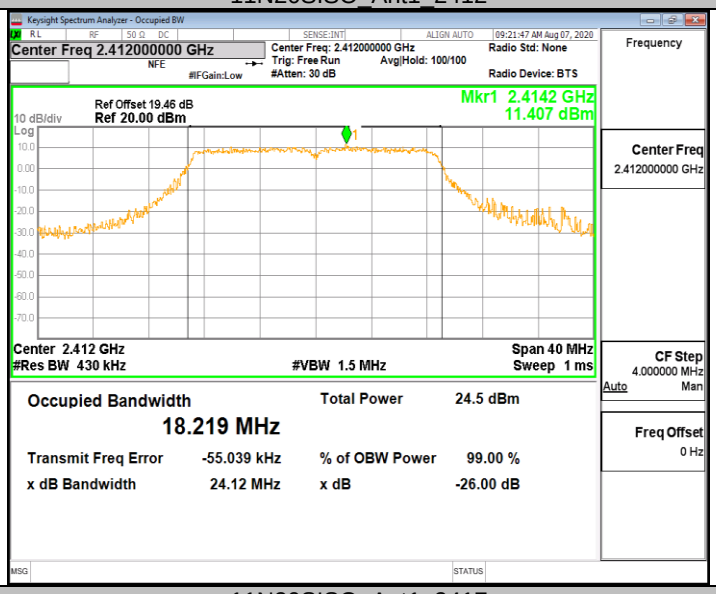
11G_Ant1_2457



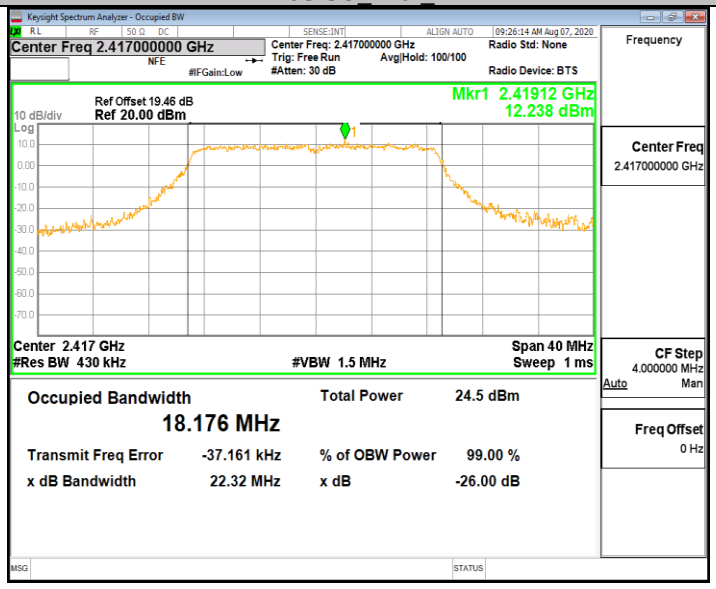
11G_Ant1_2462



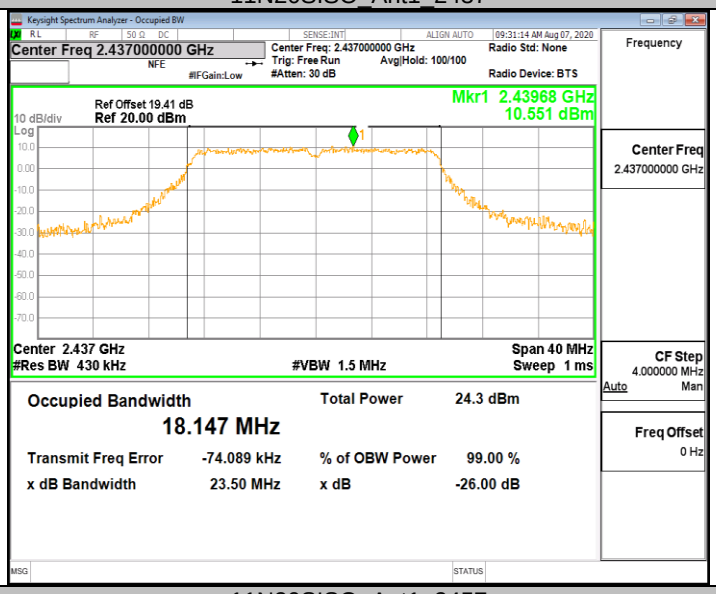
11N20SISO_Ant1_2412



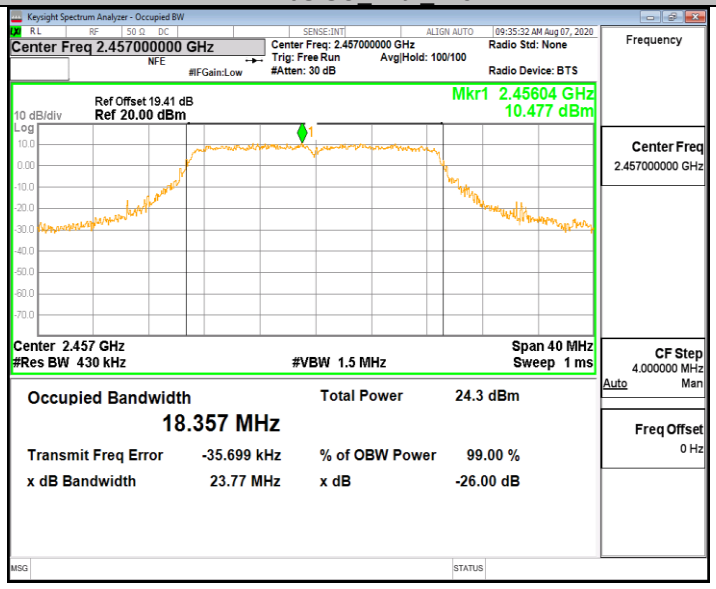
11N20SISO_Ant1_2417

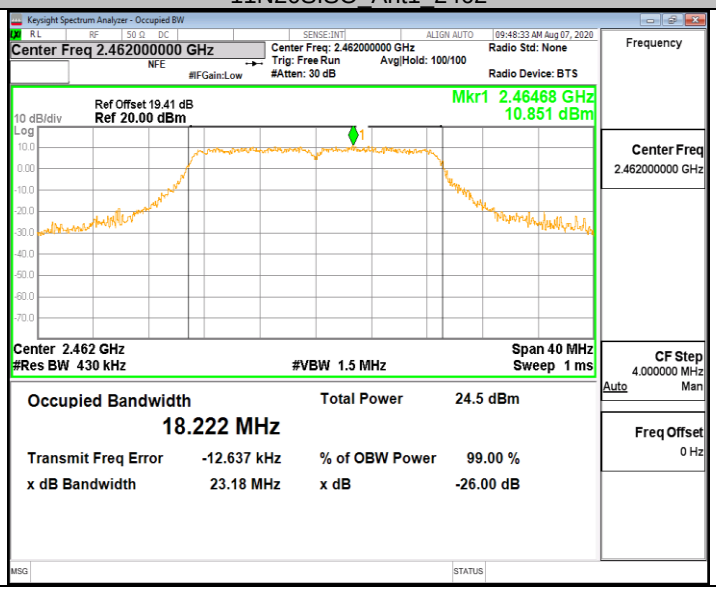


11N20SISO_Ant1_2437



11N20SISO_Ant1_2457



11N20SISO_Ant1_2462


11.3. Appendix C: Maximum AVG conducted output power

11.3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	19.09	<=30	PASS
		2417	19.17	<=30	PASS
		2437	19.09	<=30	PASS
		2457	19.19	<=30	PASS
		2462	19.13	<=30	PASS
11G	Ant1	2412	19.05	<=30	PASS
		2417	19.15	<=30	PASS
		2437	19.16	<=30	PASS
		2457	19.06	<=30	PASS
		2462	19.20	<=30	PASS
11N20SISO	Ant1	2412	18.06	<=30	PASS
		2417	18.17	<=30	PASS
		2437	18.15	<=30	PASS
		2457	18.09	<=30	PASS
		2462	18.19	<=30	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.

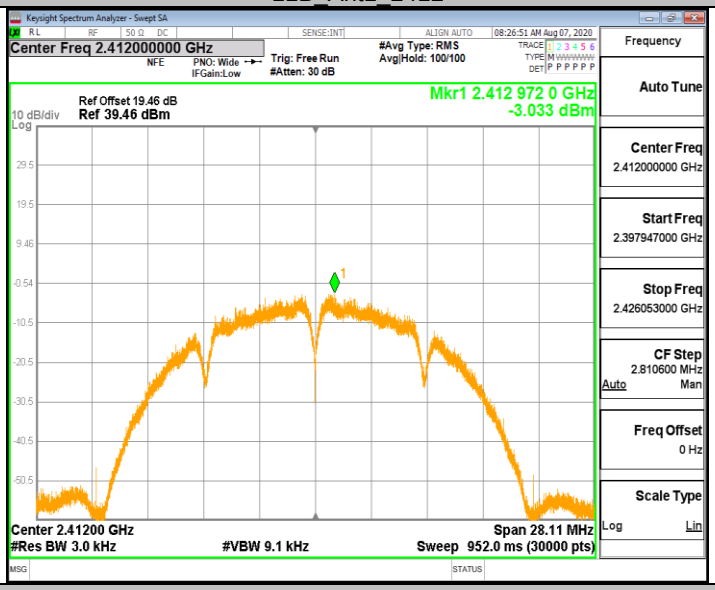
11.4. Appendix D: Maximum power spectral density

11.4.1. Test Result

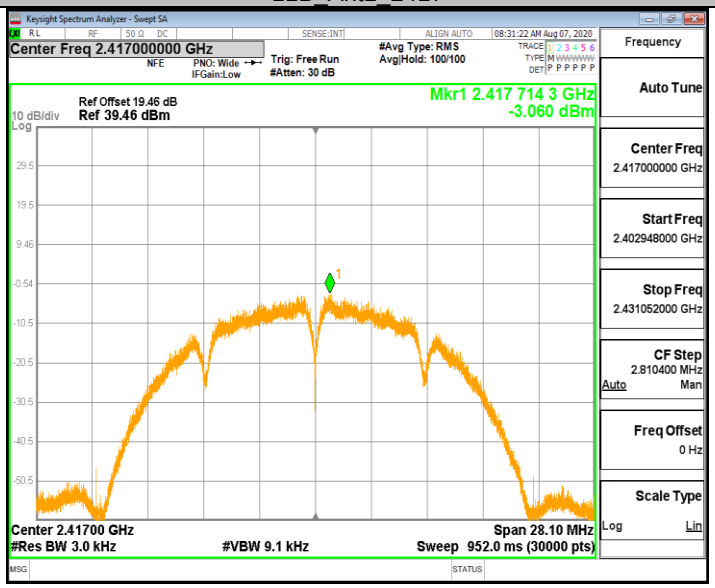
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-3.03	<=8	PASS
		2417	-3.06	<=8	PASS
		2437	-3.3	<=8	PASS
		2457	-2.45	<=8	PASS
		2462	-2.91	<=8	PASS
11G	Ant1	2412	-5.88	<=8	PASS
		2417	-5.5	<=8	PASS
		2437	-6.53	<=8	PASS
		2457	-5.61	<=8	PASS
		2462	-6.3	<=8	PASS
11N20SISO	Ant1	2412	-6.00	<=8	PASS
		2417	-7.15	<=8	PASS
		2437	-7.00	<=8	PASS
		2457	-7.66	<=8	PASS
		2462	-7.33	<=8	PASS

11.4.2. Test Graphs

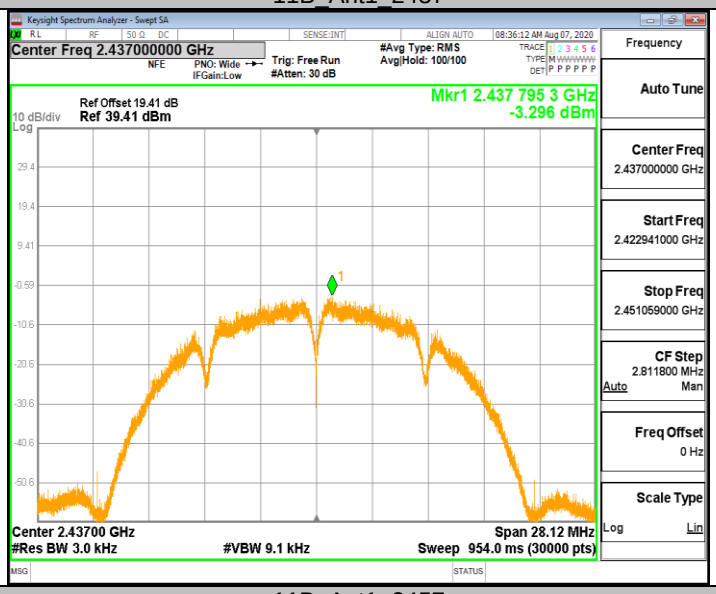
11B_Ant1_2412



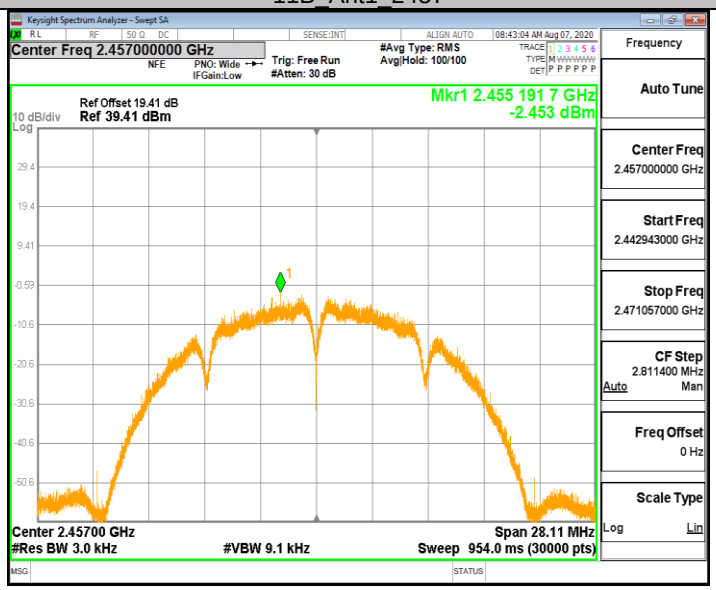
11B_Ant1_2417



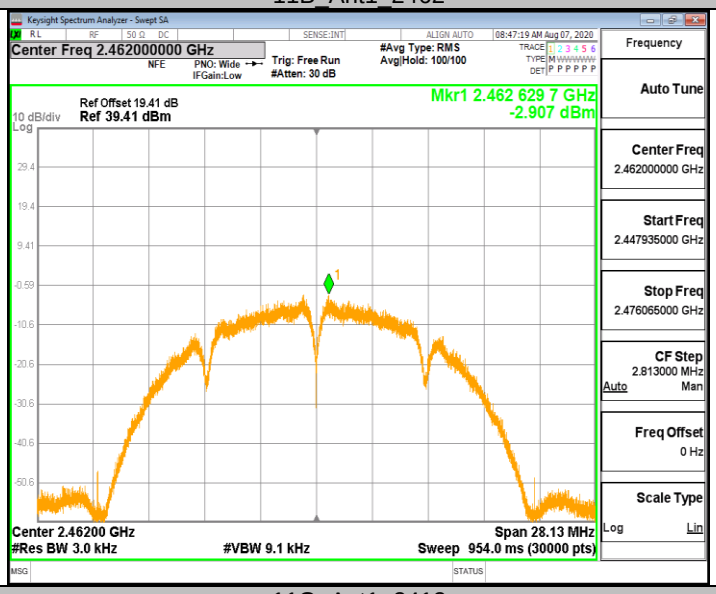
11B_Ant1_2437



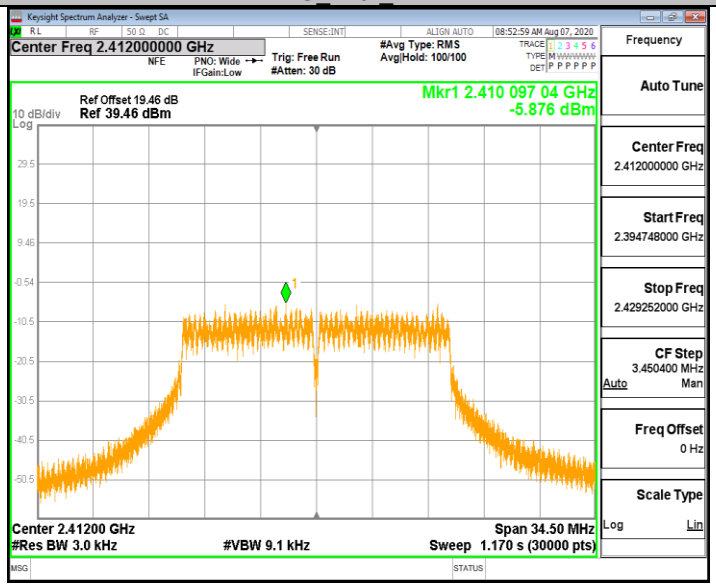
11B_Ant1_2457



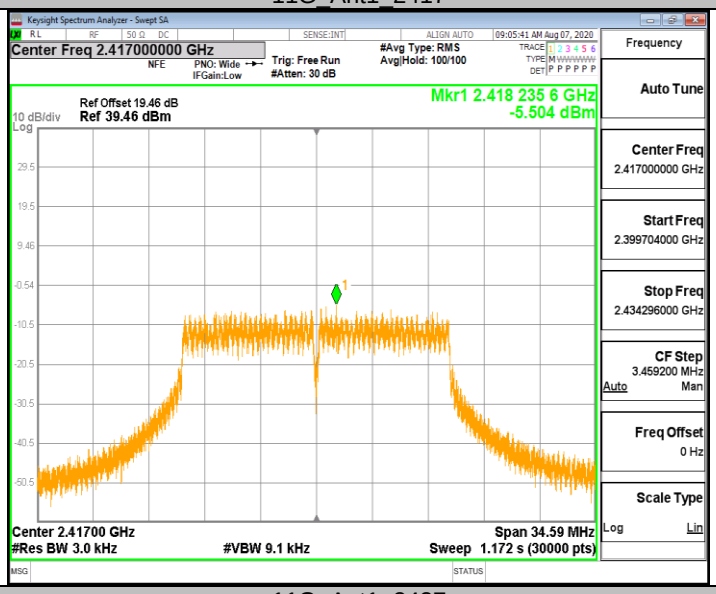
11B_Ant1_2462



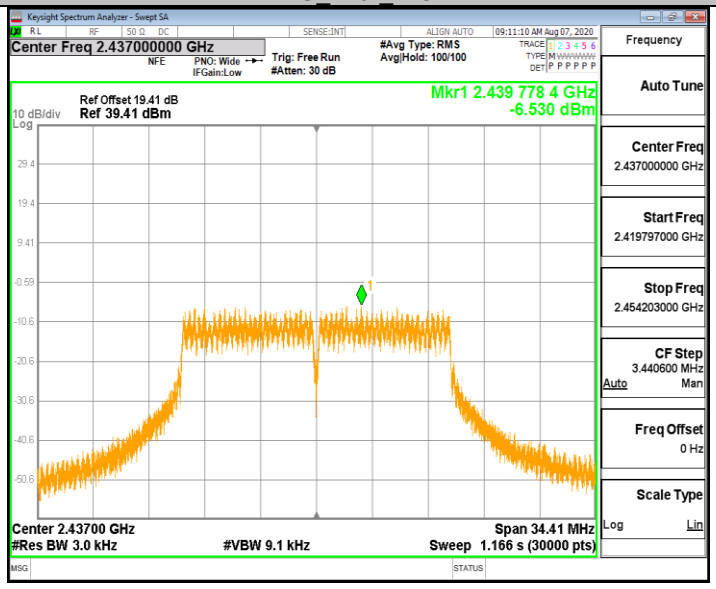
11G_Ant1_2412



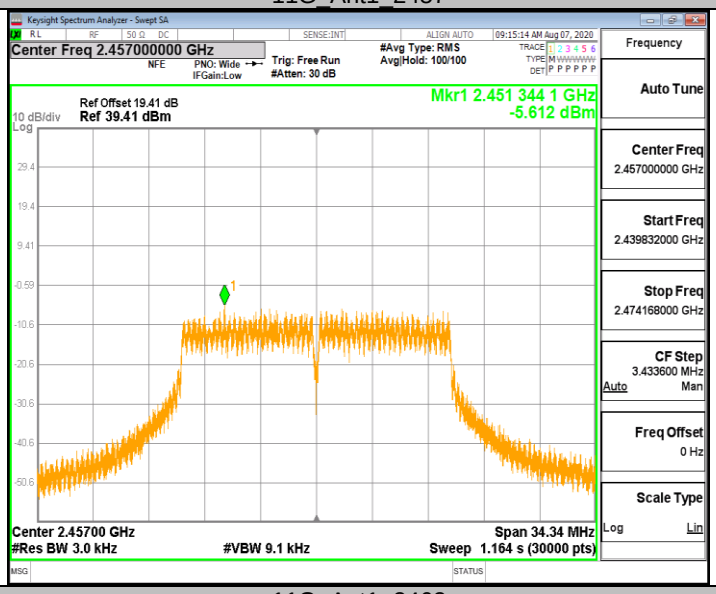
11G_Ant1_2417



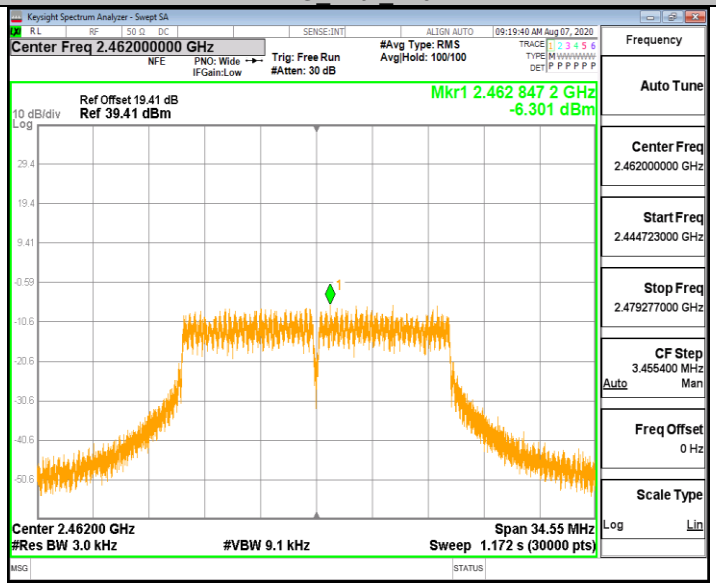
11G_Ant1_2437



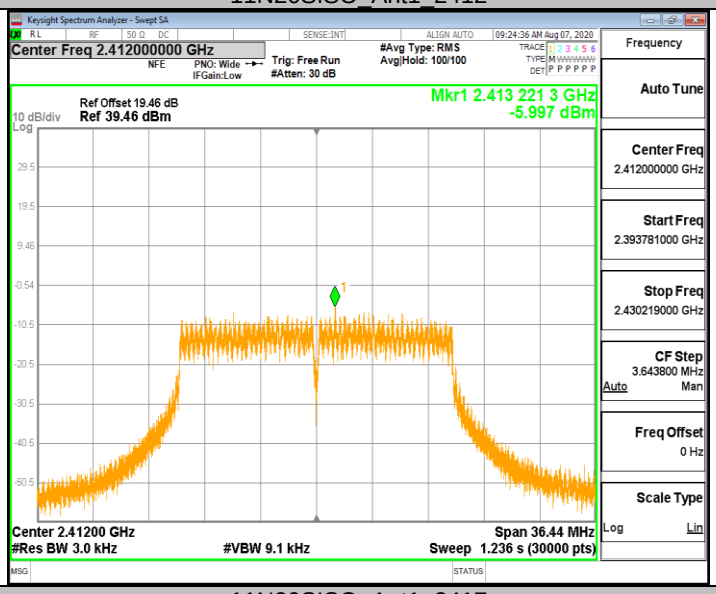
11G_Ant1_2457



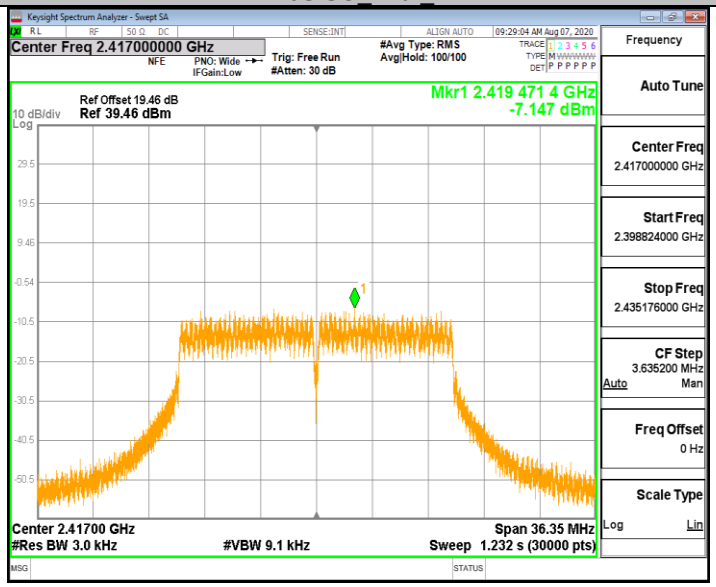
11G_Ant1_2462



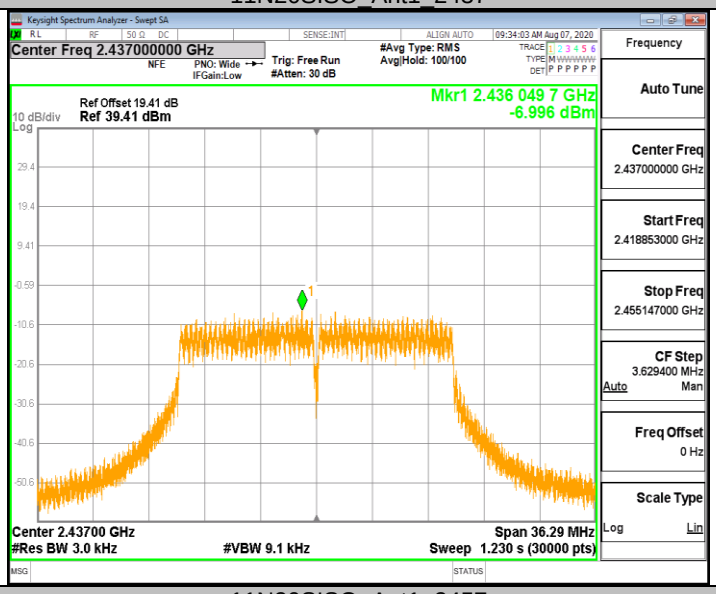
11N20SISO_Ant1_2412



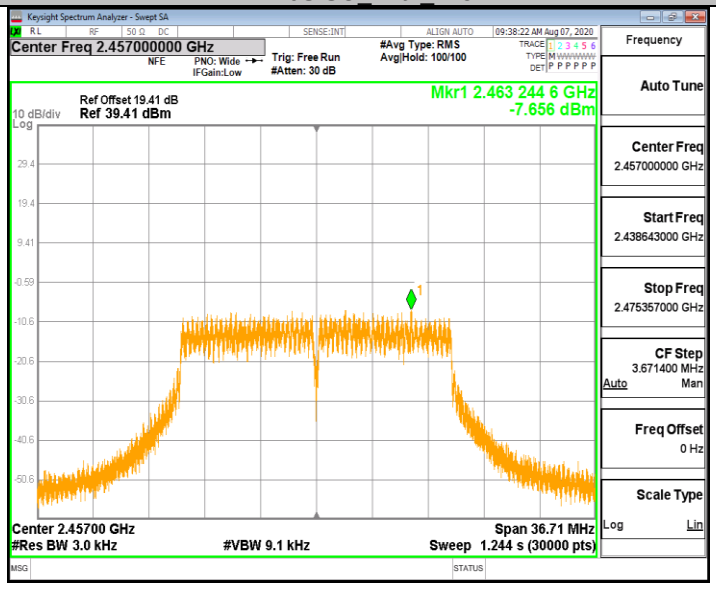
11N20SISO_Ant1_2417

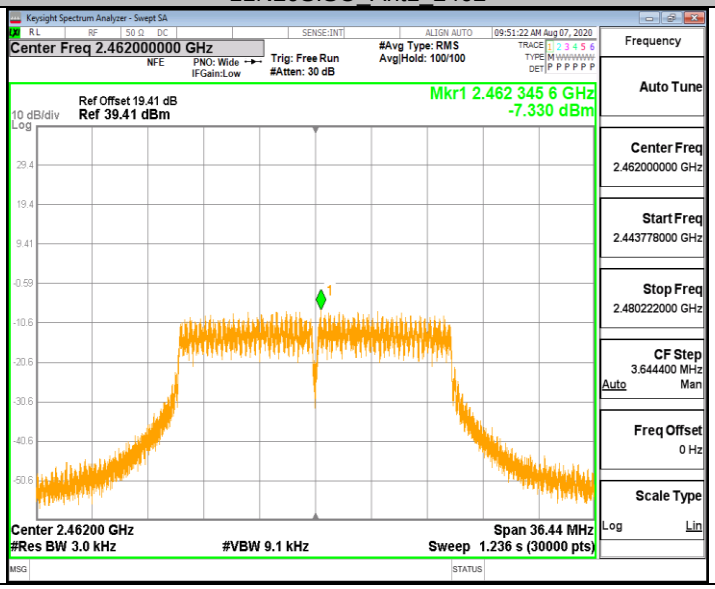


11N20SISO_Ant1_2437



11N20SISO_Ant1_2457



11N20SISO_Ant1_2462


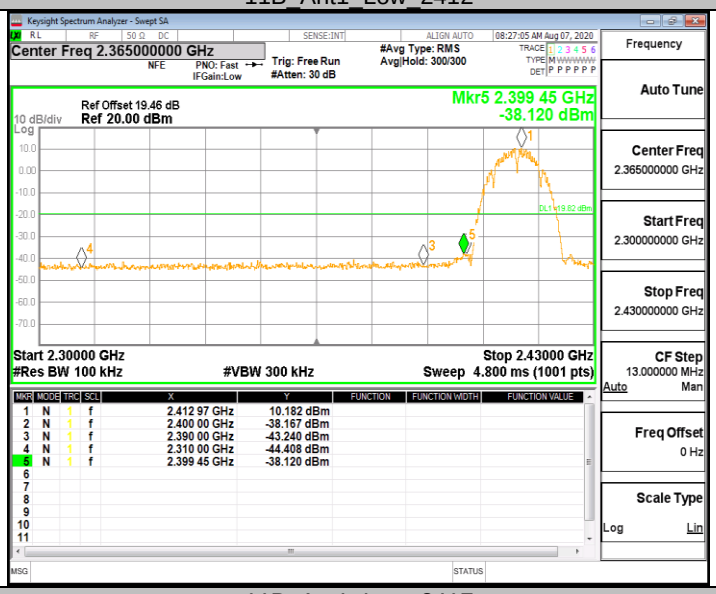
11.5. Appendix E: Band edge measurements

11.5.1. Test Result

Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	10.18	-38.12	<=-19.82	PASS
			2417	10.55	-41.06	<=-19.45	PASS
		High	2457	10.47	-40.34	<=-19.53	PASS
			2462	10.66	-40.55	<=-19.34	PASS
11G	Ant1	Low	2412	7.63	-23.53	<=-22.37	PASS
			2417	7.87	-29.6	<=-22.13	PASS
		High	2457	7.94	-40.31	<=-22.06	PASS
			2462	7.72	-35.66	<=-22.28	PASS
11N20SISO	Ant1	Low	2412	6.95	-25.7	<=-23.05	PASS
			2417	7.06	-33.59	<=-22.94	PASS
		High	2457	6.81	-39.7	<=-23.19	PASS
			2462	6.99	-35.59	<=-23.01	PASS

11.5.2. Test Graphs

11B_Ant1_Low_2412



11B_Ant1_Low_2417