



Appendix D

RF Test Data for 5.2G WIFI (Conducted Measurement)

Product Name: HyTabPlus

Trade Mark: HYUNDAI

Test Model: HT10LB3MBKWW

Environmental Conditions

Temperature:	21.5 ° C
Relative Humidity:	52.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan



Appendix D.1: Emission Bandwidth

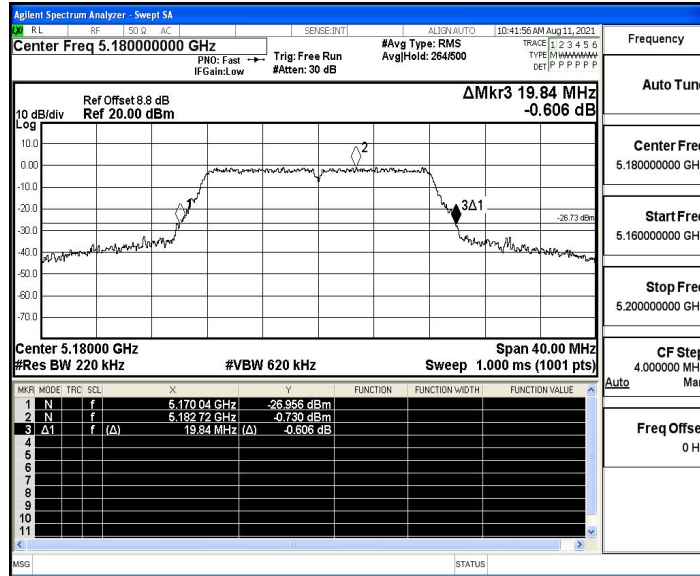
Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.840	5170.040	5189.880	---	PASS
		5200	19.640	5190.240	5209.880	---	PASS
		5240	19.720	5230.160	5249.880	---	PASS
11N20SISO	Ant1	5180	19.920	5170.040	5189.960	---	PASS
		5200	19.920	5190.040	5209.960	---	PASS
		5240	19.960	5230.000	5249.960	---	PASS
11N40SISO	Ant1	5190	39.840	5170.080	5209.920	---	PASS
		5230	39.760	5210.160	5249.920	---	PASS

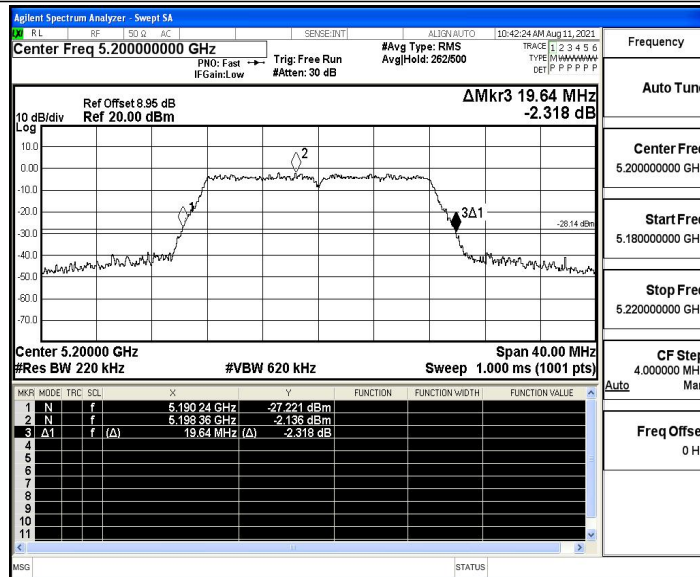


Test Graphs

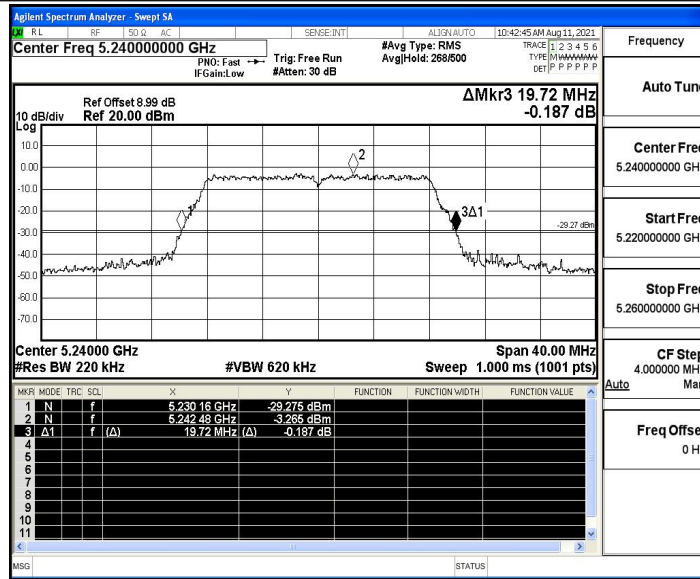
11A_Ant1_5180



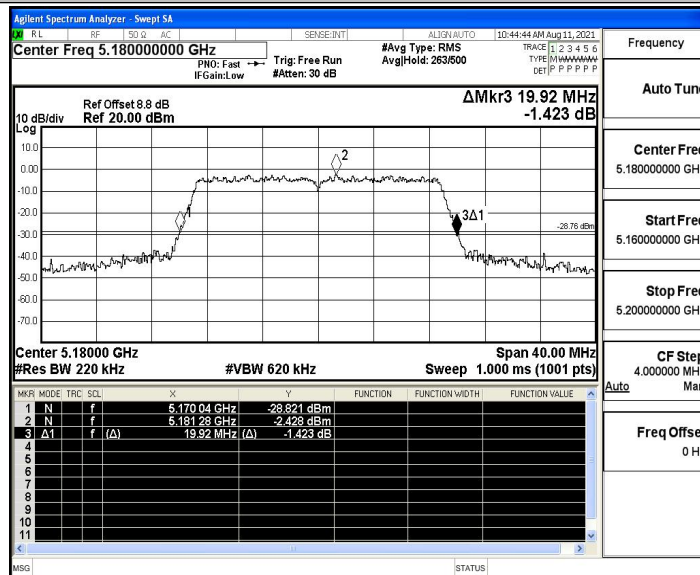
11A_Ant1_5200



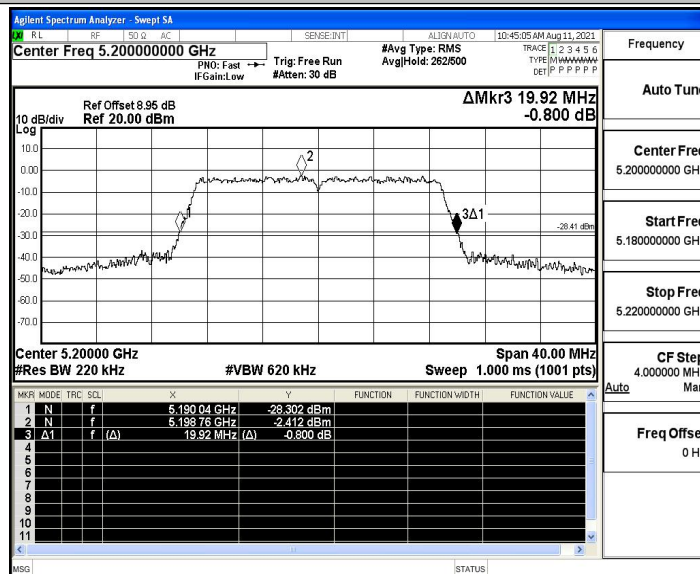
11A_Ant1_5240



11N20SISO_Ant1_5180

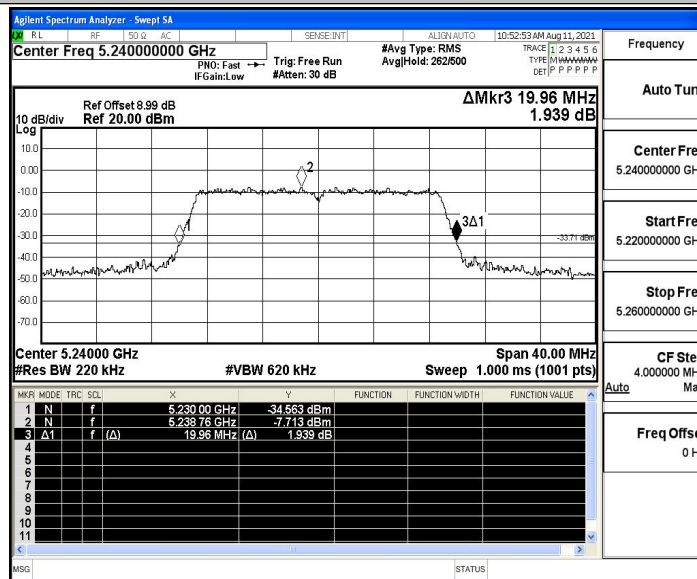


11N20SISO_Ant1_5200

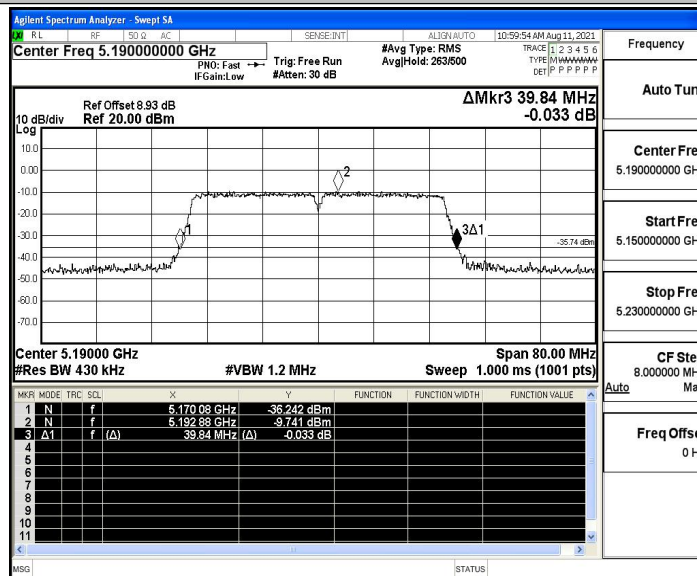




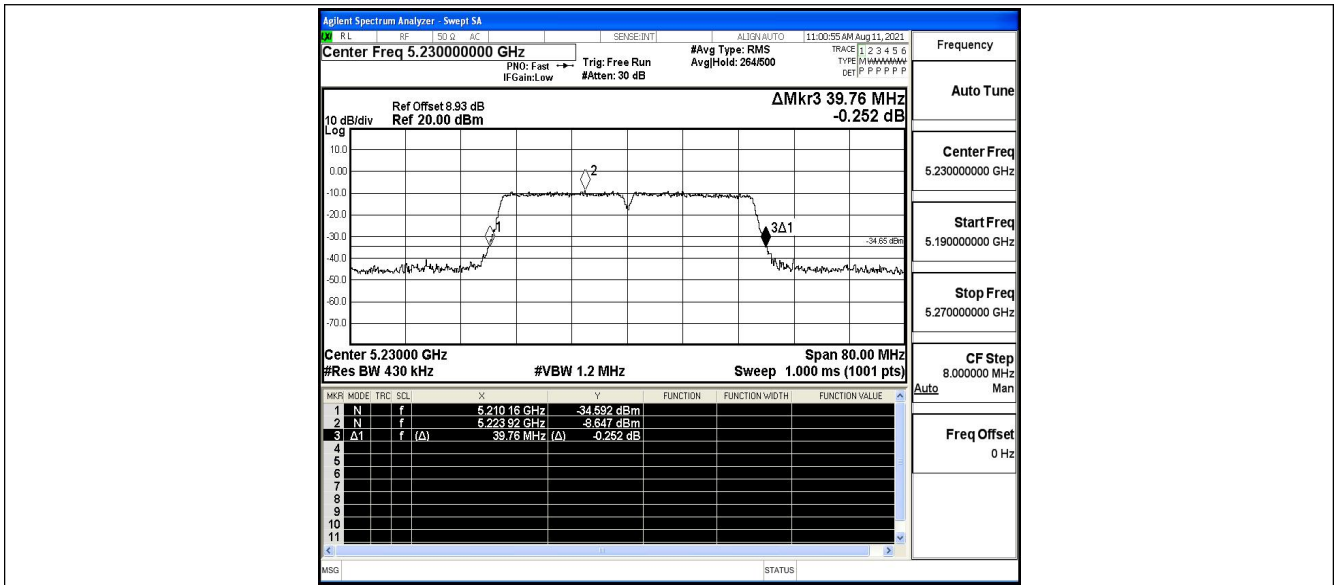
11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230





Appendix D.2: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	11.14	≤23.98	PASS
		5200	11.51	≤23.98	PASS
		5240	11.67	≤23.98	PASS
11N20SISO	Ant1	5180	10.88	≤23.98	PASS
		5200	11.27	≤23.98	PASS
		5240	11.29	≤23.98	PASS
11N40SISO	Ant1	5190	10.81	≤23.98	PASS
		5230	11.11	≤23.98	PASS

Note: The Duty Cycle Factor is compensated in the graph.



Appendix D.3: Maximum power spectral density

Test Result

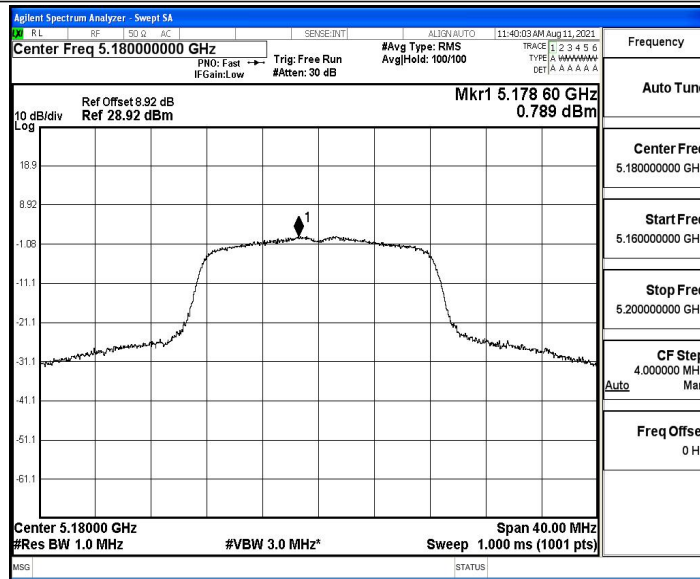
TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	0.79	≤ 11	PASS
		5200	1.08	≤ 11	PASS
		5240	1.49	≤ 11	PASS
11N20SISO	Ant1	5180	0.41	≤ 11	PASS
		5200	0.99	≤ 11	PASS
		5240	1.01	≤ 11	PASS
11N40SISO	Ant1	5190	-2.38	≤ 11	PASS
		5230	-2.23	≤ 11	PASS

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

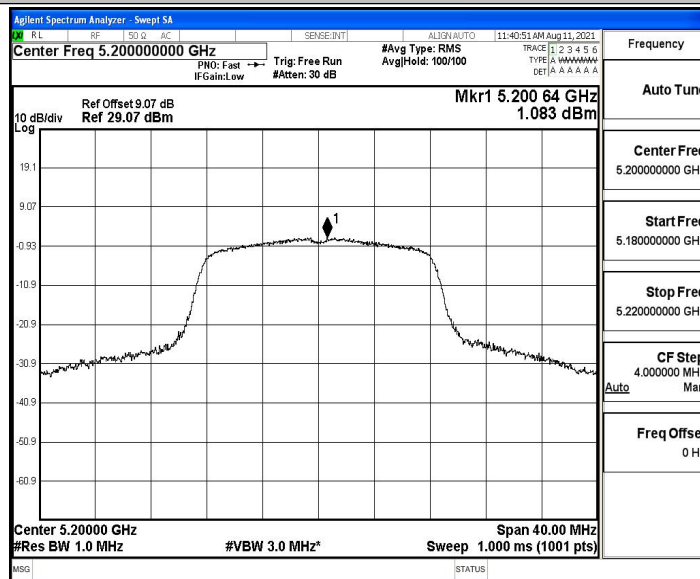


Test Graphs

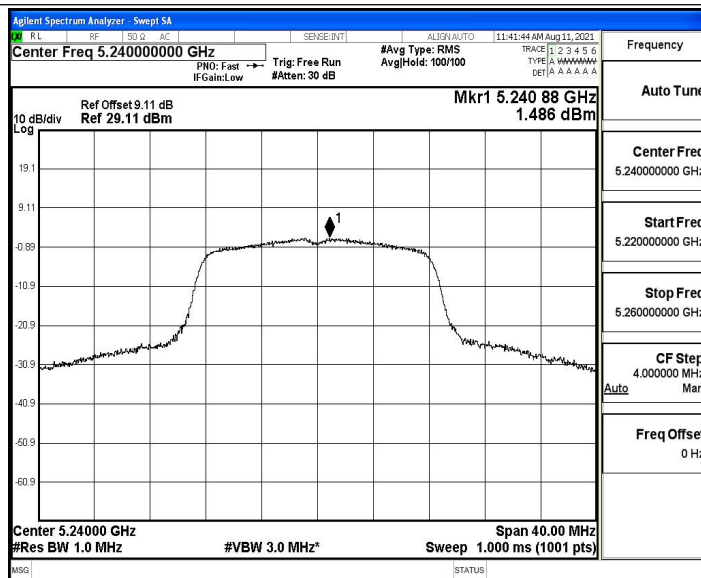
11A_Ant1_5180



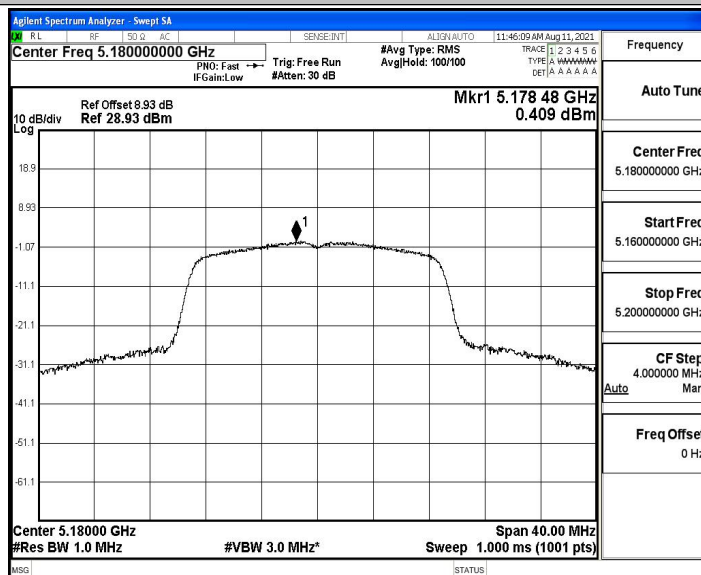
11A_Ant1_5200



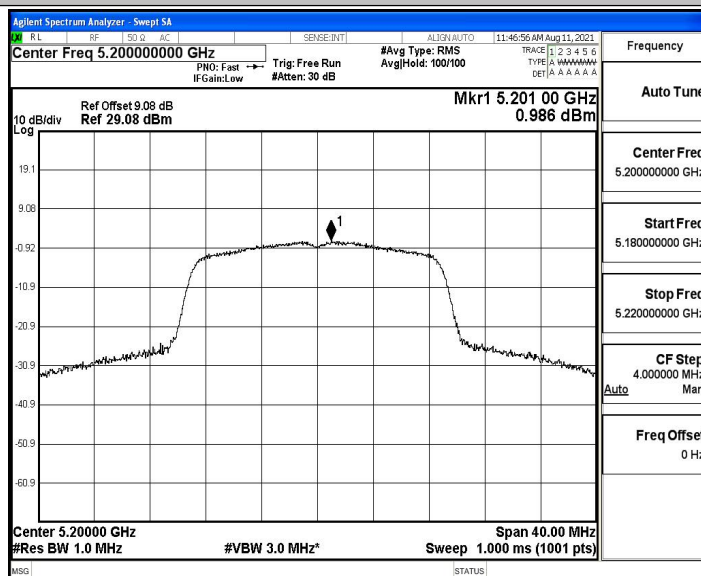
11A_Ant1_5240



11N20SISO_Ant1_5180

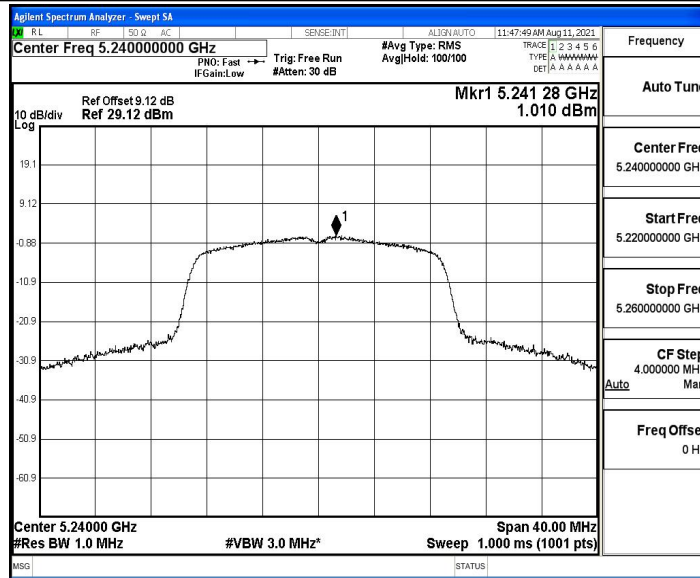


11N20SISO_Ant1_5200

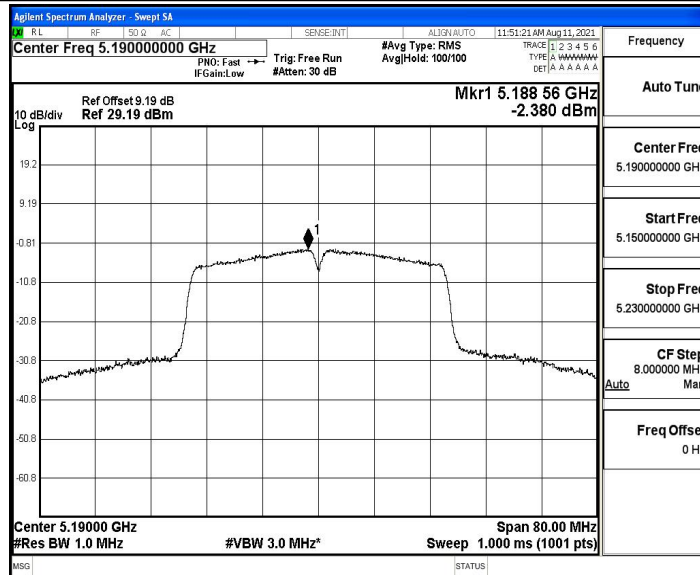




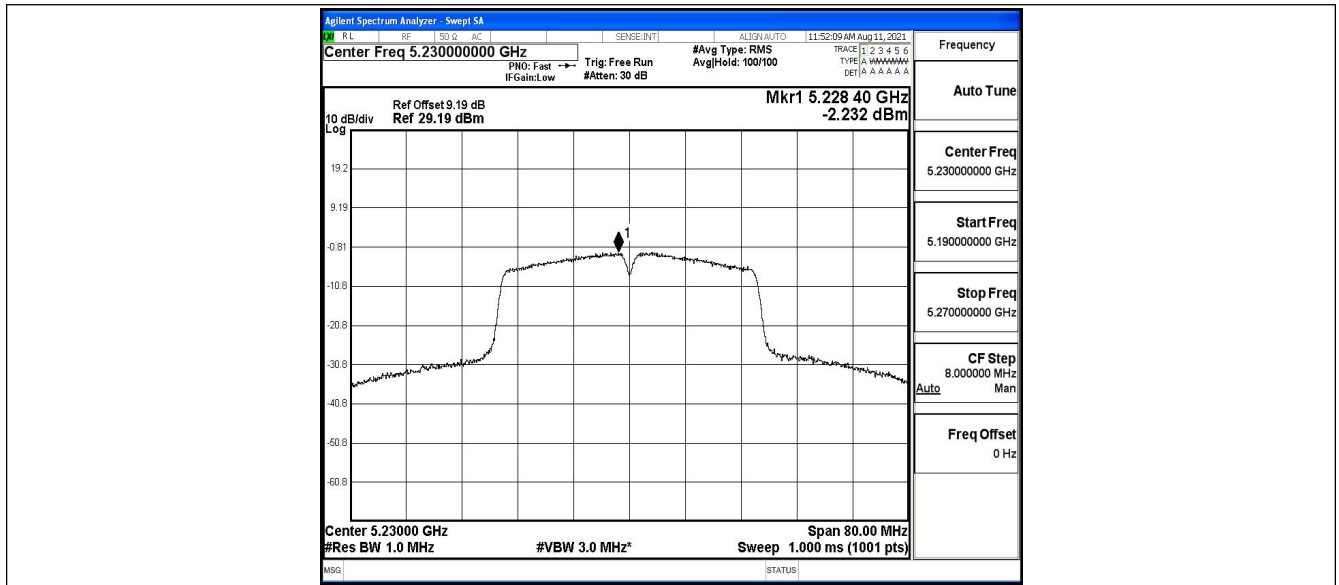
11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230





Appendix D.4 Emissions in Restricted Bands

Test Result

TestMod e	Antenn a	ChNam e	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/ m]	Limit [dBuV/m]	Verdict
11A	Ant1	Low	5180	AV	4500.000	-49.46	≤-41.20	45.74	≤54	PASS
				AV	5102.000	-46.87	≤-41.20	48.33	≤54	PASS
				AV	5150.000	-47.15	≤-41.20	48.05	≤54	PASS
				Peak	4500.000	-42.41	≤-21.20	52.79	≤74	PASS
				Peak	4822.000	-37.63	≤-21.20	57.57	≤74	PASS
				Peak	5150.000	-38.72	≤-21.20	56.48	≤74	PASS
		High	5240	AV	5350.000	-47.6	≤-41.20	47.60	≤54	PASS
				AV	5364.960	-47.29	≤-41.20	47.91	≤54	PASS
				AV	5460.000	-47.56	≤-41.20	47.64	≤54	PASS
				Peak	5350.000	-41.4	≤-21.20	53.80	≤74	PASS
				Peak	5351.520	-37.88	≤-21.20	57.32	≤74	PASS
				Peak	5460.000	-40.5	≤-21.20	54.70	≤74	PASS
11N20SI SO	Ant1	Low	5180	AV	4500.000	-49.34	≤-41.20	45.86	≤54	PASS
				AV	5149.600	-47.09	≤-41.20	48.11	≤54	PASS
				AV	5150.000	-47.25	≤-41.20	47.95	≤54	PASS
				Peak	4500.000	-42.77	≤-21.20	52.43	≤74	PASS
				Peak	5111.800	-37.78	≤-21.20	57.42	≤74	PASS
				Peak	5150.000	-40.4	≤-21.20	54.80	≤74	PASS
		High	5240	AV	5350.000	-47.6	≤-41.20	47.60	≤54	PASS
				AV	5370.240	-47.31	≤-41.20	47.89	≤54	PASS
				AV	5460.000	-47.73	≤-41.20	47.47	≤54	PASS
				Peak	5350.000	-40.72	≤-21.20	54.48	≤74	PASS
				Peak	5430.960	-37.56	≤-21.20	57.64	≤74	PASS
				Peak	5460.000	-41.18	≤-21.20	54.02	≤74	PASS
11N40SI SO	Ant1	Low	5190	AV	4500.000	-49.05	≤-41.20	46.15	≤54	PASS
				AV	5149.600	-42.63	≤-41.20	52.57	≤54	PASS
				AV	5150.000	-42.26	≤-41.20	52.94	≤54	PASS
				Peak	4500.000	-41.83	≤-21.20	53.37	≤74	PASS
				Peak	5149.600	-33.96	≤-21.20	61.24	≤74	PASS
				Peak	5150.000	-34.29	≤-21.20	60.91	≤74	PASS
		High	5230	AV	5350.000	-47.36	≤-41.20	47.84	≤54	PASS
				AV	5375.240	-46.94	≤-41.20	48.26	≤54	PASS
				AV	5460.000	-47.54	≤-41.20	47.66	≤54	PASS
				Peak	5350.000	-40.64	≤-21.20	54.56	≤74	PASS



				Peak	5358.600	-37.91	≤-21.20	57.29	≤74	PASS
				Peak	5460.000	-39.79	≤-21.20	55.41	≤74	PASS

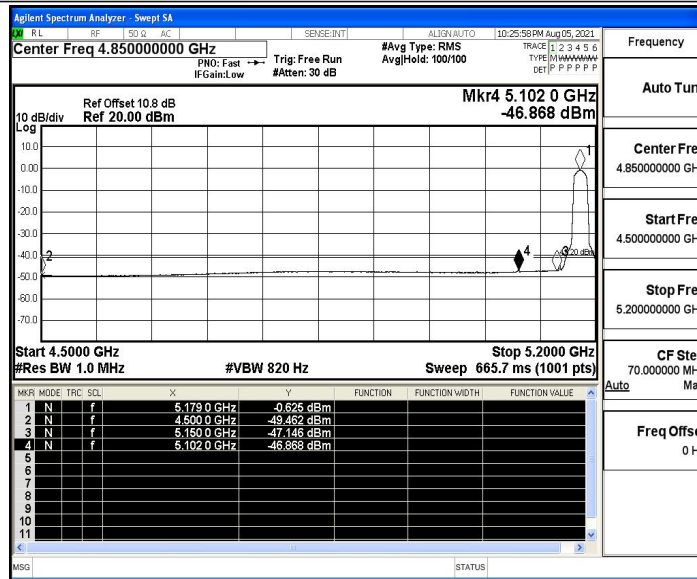
Note:

1. The Antenna Gain is compensated in the graph.
2. For transmitters operating in 5150-5350 GHz band and 5470-5725 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

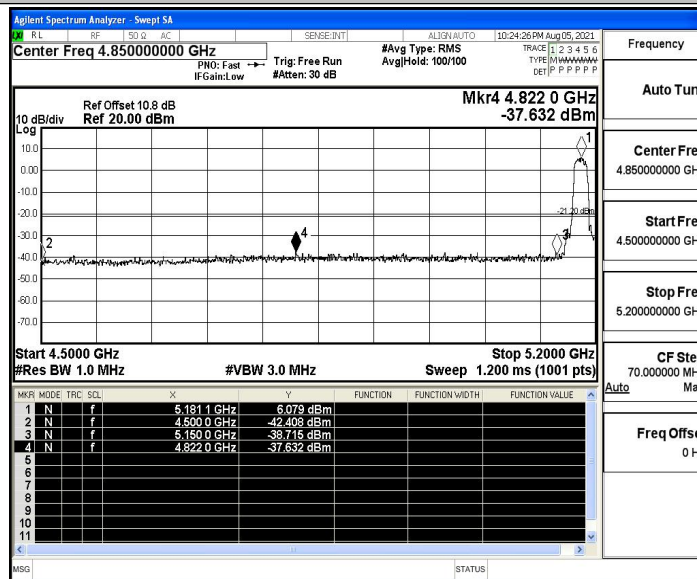


Test Graphs

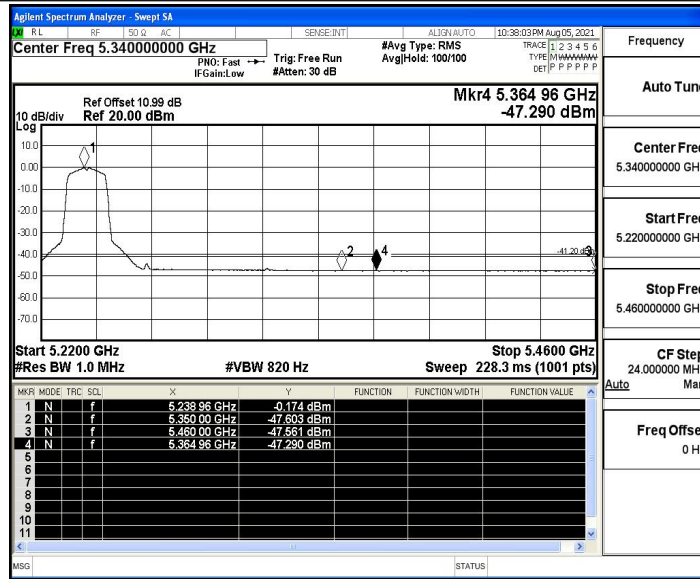
11A_Ant1_Low_5180_AV



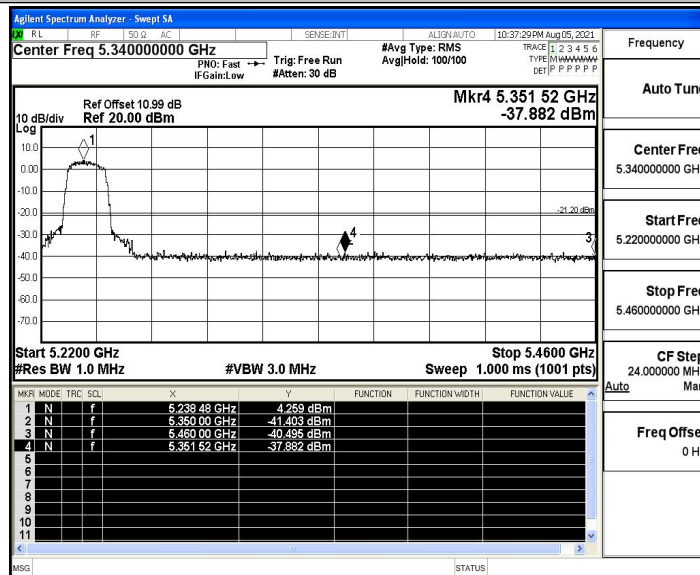
11A_Ant1_Low_5180_Peak



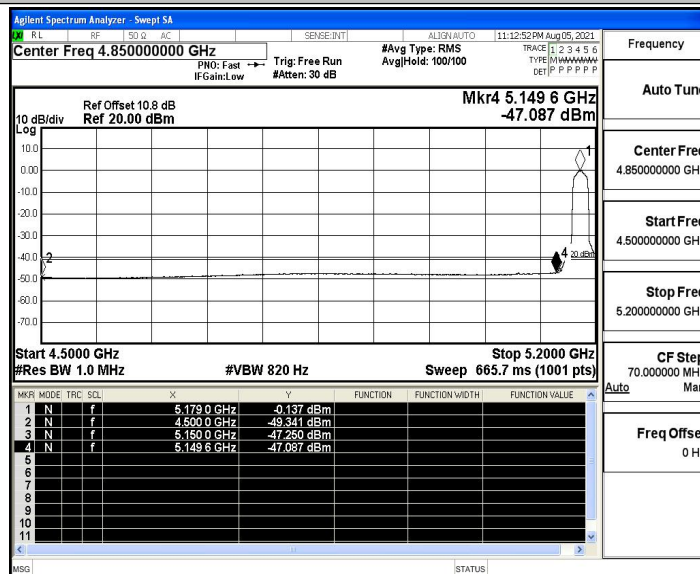
11A_Ant1_High_5240_AV



11A_Ant1_High_5240_Peak

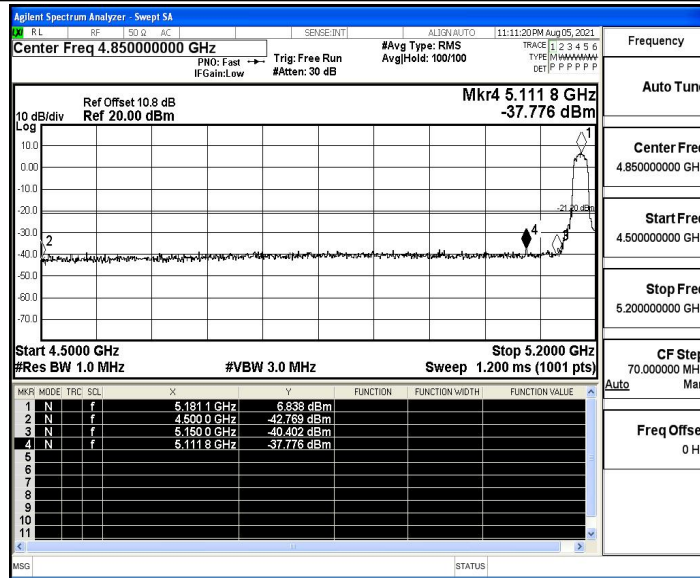


11N20SISO_Ant1_Low_5180_AV

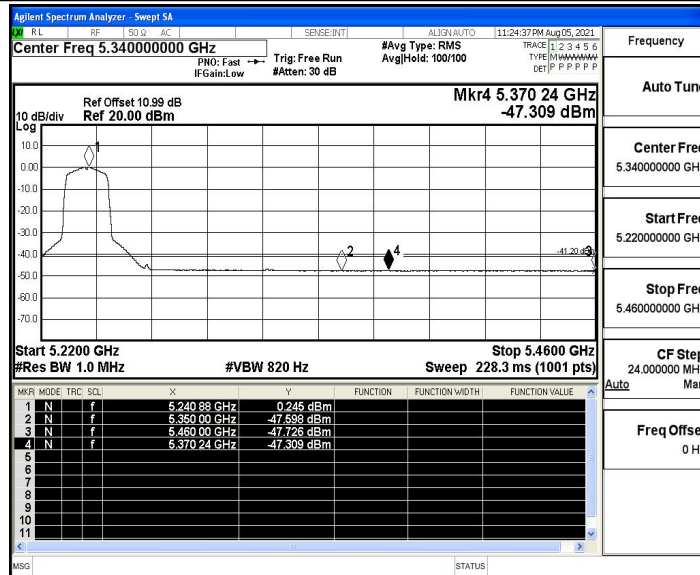




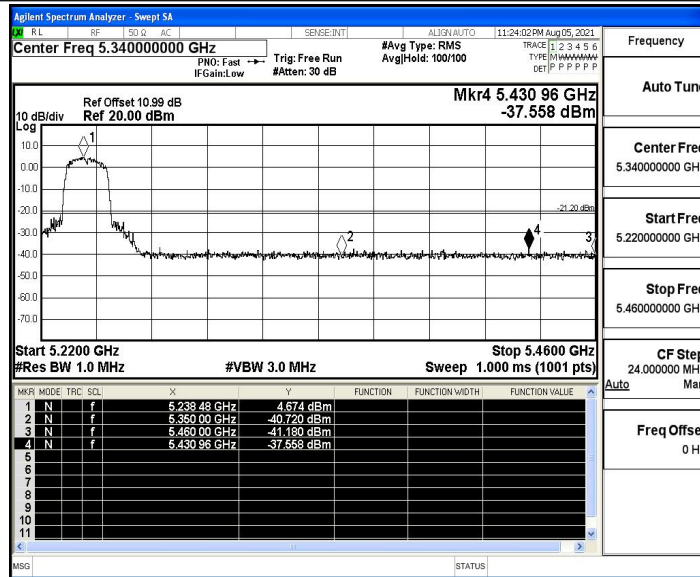
11N20SISO_Ant1_Low_5180_Peak



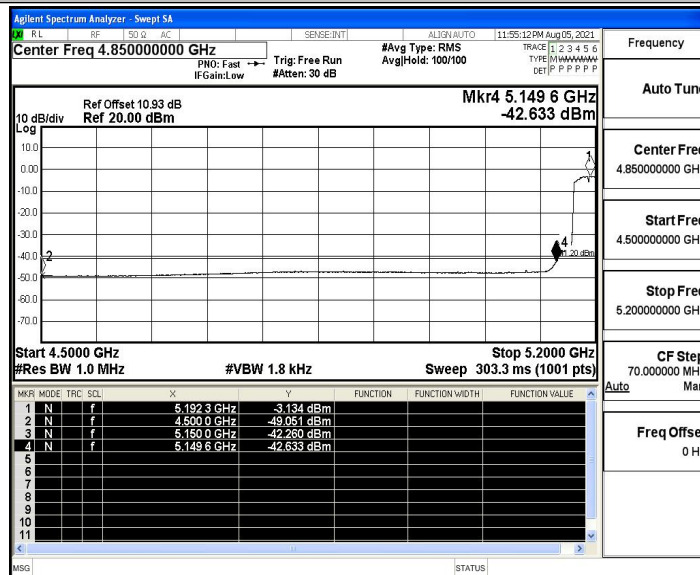
11N20SISO_Ant1_High_5240_AV



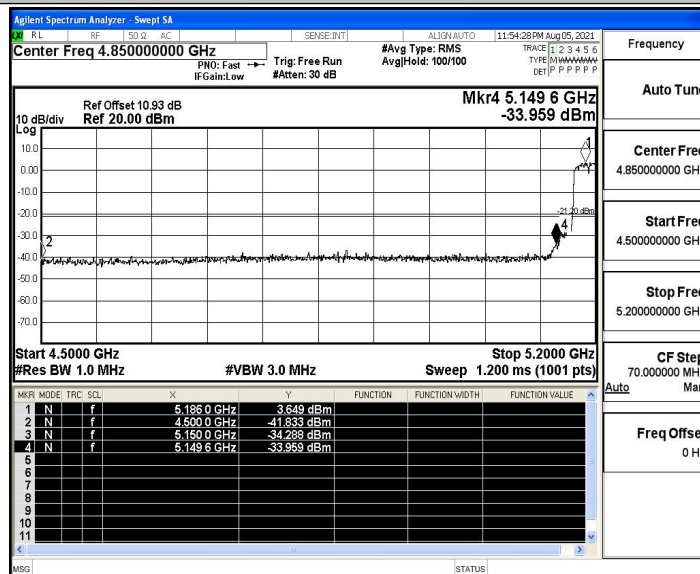
11N20SISO_Ant1_High_5240_Peak



11N40SISO_Ant1_Low_5190_AV

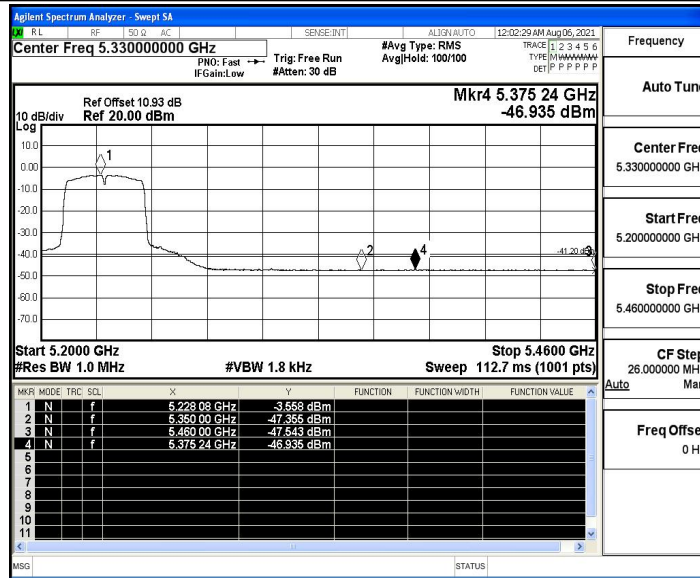


11N40SISO_Ant1_Low_5190_Peak

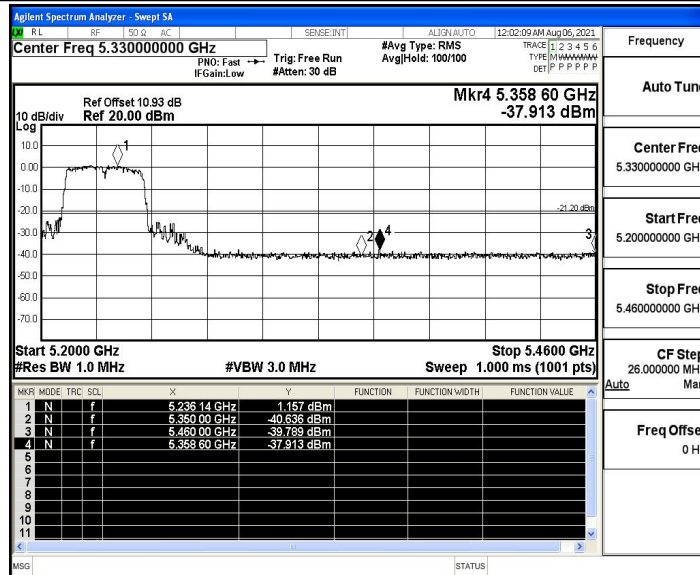




11N40SISO_Ant1_High_5230_AV



11N40SISO_Ant1_High_5230_Peak





Appendix D.5: Frequency Stability

Test Result

Voltage								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	NT	-4000	-0.772201	20	PASS
			LV	NT	-4000	-0.772201	20	PASS
			HV	NT	-4000	-0.772201	20	PASS
		5200	NV	NT	-6000	-1.153846	20	PASS
			LV	NT	-6000	-1.153846	20	PASS
			HV	NT	-6000	-1.153846	20	PASS
		5240	NV	NT	-7000	-1.335878	20	PASS
			LV	NT	-7000	-1.335878	20	PASS
			HV	NT	-7000	-1.335878	20	PASS
11N20SISO	Ant1	5180	NV	NT	-8000	-1.544402	20	PASS
			LV	NT	-9000	-1.737452	20	PASS
			HV	NT	-9000	-1.737452	20	PASS
		5200	NV	NT	-8000	-1.538462	20	PASS
			LV	NT	-8000	-1.538462	20	PASS
			HV	NT	-8000	-1.538462	20	PASS
		5240	NV	NT	-8000	-1.526718	20	PASS
			LV	NT	-8000	-1.526718	20	PASS
			HV	NT	-8000	-1.526718	20	PASS
11N40SISO	Ant1	5190	NV	NT	-9000	-1.734104	20	PASS
			LV	NT	-9000	-1.734104	20	PASS
			HV	NT	-9000	-1.734104	20	PASS
		5230	NV	NT	-9000	-1.720841	20	PASS
			LV	NT	-9000	-1.720841	20	PASS
			HV	NT	-9000	-1.720841	20	PASS

Temperature								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	-30	-4000	-0.772201	20	PASS
			NV	-20	-4000	-0.772201	20	PASS
			NV	-10	-4000	-0.772201	20	PASS
			NV	0	-4000	-0.772201	20	PASS
			NV	10	-5000	-0.965251	20	PASS
			NV	20	-4000	-0.772201	20	PASS
			NV	30	-4000	-0.772201	20	PASS
			NV	40	-5000	-0.965251	20	PASS



			NV	50	-5000	-0.965251	20	PASS
		5200	NV	-30	-6000	-1.153846	20	PASS
			NV	-20	-6000	-1.153846	20	PASS
			NV	-10	-5000	-0.961538	20	PASS
			NV	0	-5000	-0.961538	20	PASS
			NV	10	-6000	-1.153846	20	PASS
			NV	20	-6000	-1.153846	20	PASS
			NV	30	-6000	-1.153846	20	PASS
			NV	40	-6000	-1.153846	20	PASS
			NV	50	-6000	-1.153846	20	PASS
		5240	NV	-30	-7000	-1.335878	20	PASS
			NV	-20	-7000	-1.335878	20	PASS
			NV	-10	-7000	-1.335878	20	PASS
			NV	0	-7000	-1.335878	20	PASS
			NV	10	-7000	-1.335878	20	PASS
			NV	20	-7000	-1.335878	20	PASS
			NV	30	-7000	-1.335878	20	PASS
			NV	40	-7000	-1.335878	20	PASS
11N20SISO	Ant1	5180	NV	-30	-9000	-1.737452	20	PASS
			NV	-20	-9000	-1.737452	20	PASS
			NV	-10	-9000	-1.737452	20	PASS
			NV	0	-9000	-1.737452	20	PASS
			NV	10	-8000	-1.544402	20	PASS
			NV	20	-9000	-1.737452	20	PASS
			NV	30	-9000	-1.737452	20	PASS
			NV	40	-9000	-1.737452	20	PASS
		5200	NV	50	-9000	-1.737452	20	PASS
			NV	-30	-8000	-1.538462	20	PASS
			NV	-20	-8000	-1.538462	20	PASS
			NV	-10	-8000	-1.538462	20	PASS
			NV	0	-8000	-1.538462	20	PASS
			NV	10	-8000	-1.538462	20	PASS
			NV	20	-8000	-1.538462	20	PASS
			NV	30	-8000	-1.538462	20	PASS
		5240	NV	40	-8000	-1.538462	20	PASS
			NV	50	-8000	-1.538462	20	PASS
			NV	-30	-8000	-1.526718	20	PASS
			NV	-20	-8000	-1.526718	20	PASS
			NV	-10	-8000	-1.526718	20	PASS
			NV	0	-8000	-1.526718	20	PASS
			NV	10	-8000	-1.526718	20	PASS
			NV	20	-8000	-1.526718	20	PASS



11N40SISO	Ant1		NV	30	-8000	-1.526718	20	PASS
			NV	40	-8000	-1.526718	20	PASS
			NV	50	-8000	-1.526718	20	PASS
		5190	NV	-30	-9000	-1.734104	20	PASS
			NV	-20	-9000	-1.734104	20	PASS
			NV	-10	-9000	-1.734104	20	PASS
			NV	0	-9000	-1.734104	20	PASS
			NV	10	-9000	-1.734104	20	PASS
			NV	20	-9000	-1.734104	20	PASS
			NV	30	-9000	-1.734104	20	PASS
			NV	40	-9000	-1.734104	20	PASS
			NV	50	-8000	-1.541426	20	PASS
		5230	NV	-30	-8000	-1.529637	20	PASS
			NV	-20	-9000	-1.720841	20	PASS
			NV	-10	-8000	-1.529637	20	PASS
			NV	0	-8000	-1.529637	20	PASS
			NV	10	-8000	-1.529637	20	PASS
			NV	20	-8000	-1.529637	20	PASS
			NV	30	-8000	-1.529637	20	PASS
			NV	40	-8000	-1.529637	20	PASS
			NV	50	-8000	-1.529637	20	PASS
			NV	-10	-11000	-2.10325	20	PASS
			NV	0	-11000	-2.10325	20	PASS
			NV	10	-11000	-2.10325	20	PASS
			NV	20	-11000	-2.10325	20	PASS
			NV	30	-11000	-2.10325	20	PASS
			NV	40	-11000	-2.10325	20	PASS
			NV	50	-11000	-2.10325	20	PASS



Appendix D.6: Duty Cycle

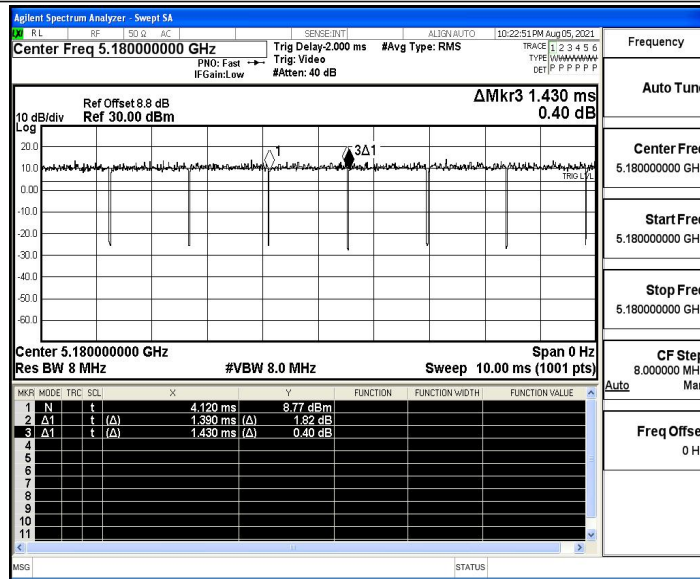
Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11A	Ant1	5180	1.39	1.43	97.20	---	PASS
		5200	1.39	1.43	97.20	---	PASS
		5240	1.39	1.43	97.20	---	PASS
11N20SISO	Ant1	5180	1.30	1.34	97.01	---	PASS
		5200	1.30	1.34	97.01	---	PASS
		5240	1.30	1.34	97.01	---	PASS
11N40SISO	Ant1	5190	0.64	0.68	94.12	---	PASS
		5230	0.64	0.68	94.12	---	PASS

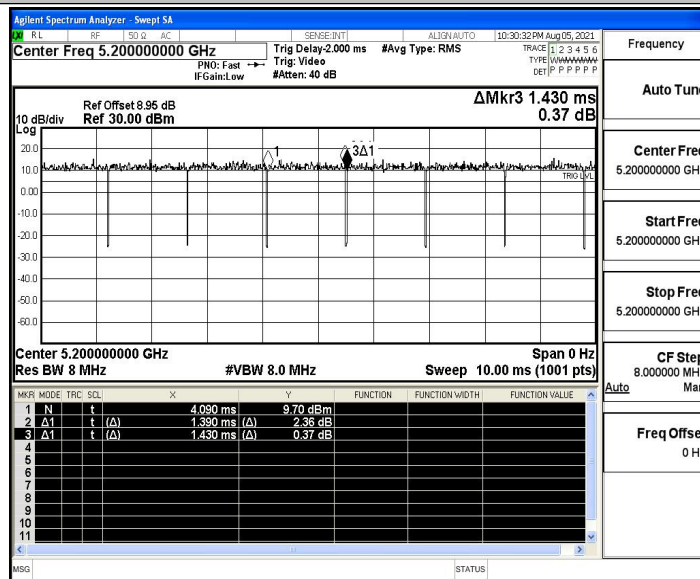


Test Graphs

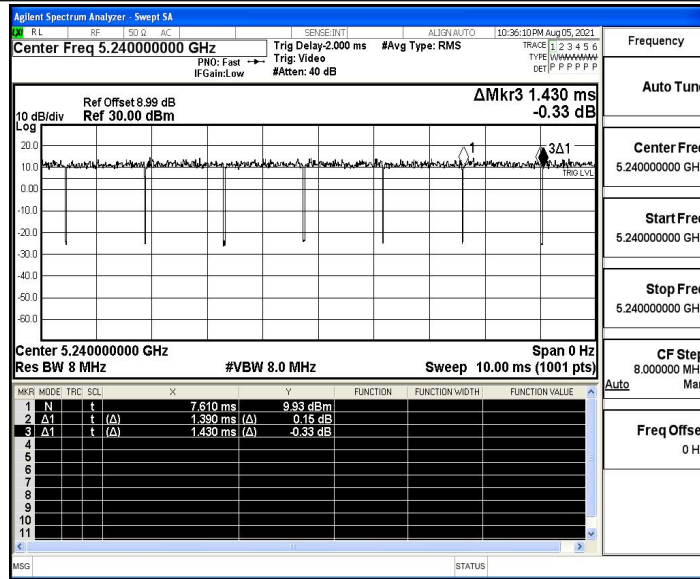
11A_Ant1_5180



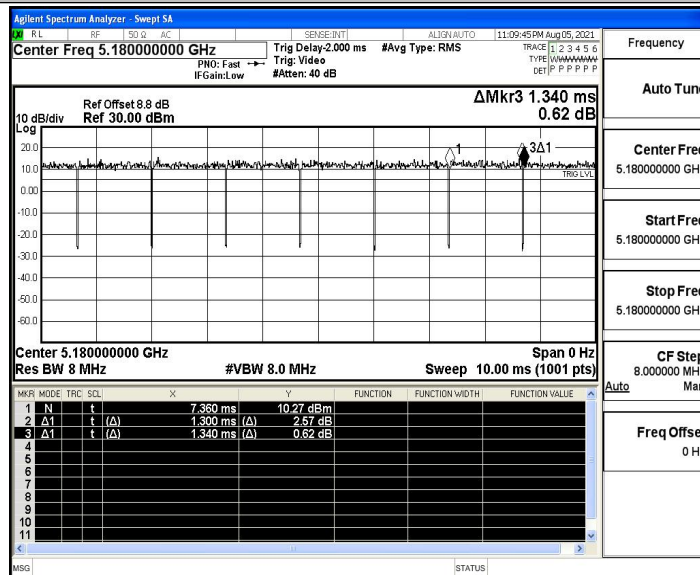
11A_Ant1_5200



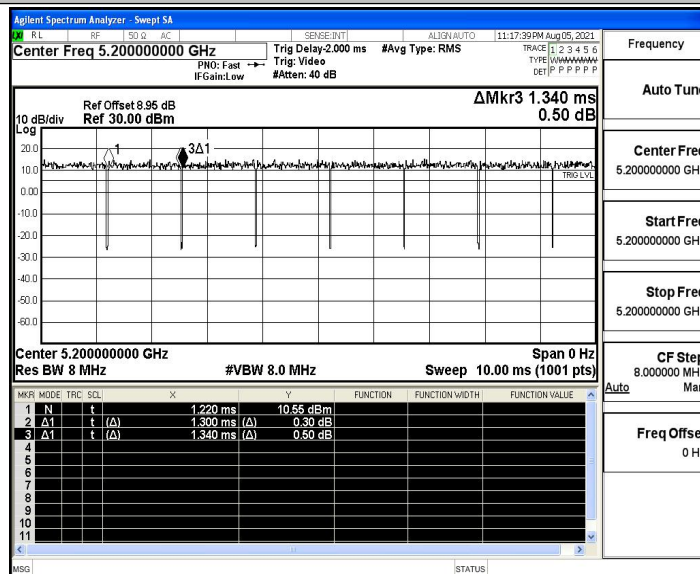
11A_Ant1_5240



11N20SISO_Ant1_5180

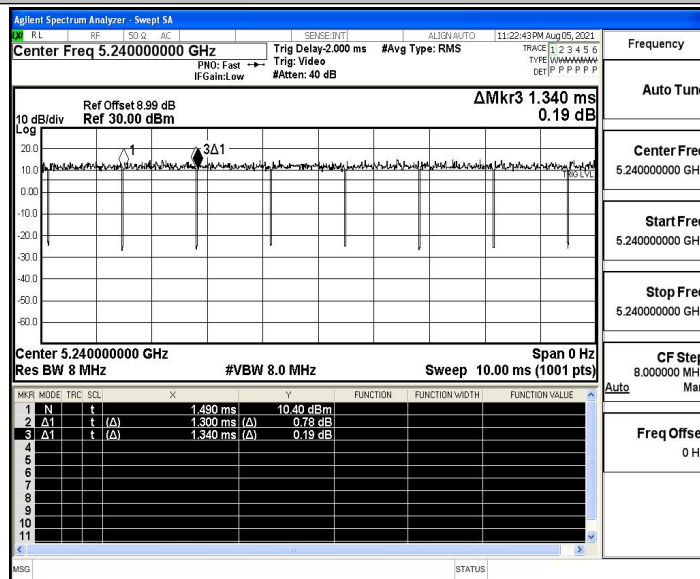


11N20SISO_Ant1_5200

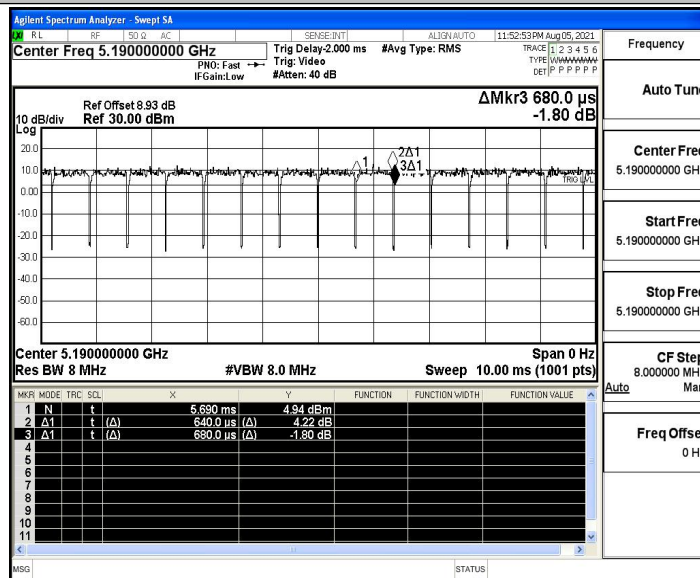




11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230

