



Appendix E

RF Test Data for 5G WIFI (Conducted Measurement)

Product Name: Rugged Handheld Computer

Test Model: EA520

Environmental Conditions

Temperature:	21.2° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan



E.1 6dB Bandwidth

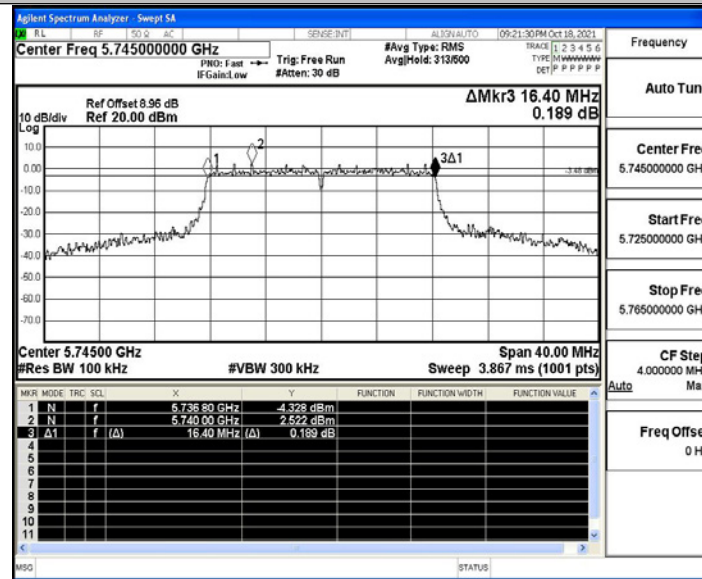
Test Result

TestMode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.400	5736.800	5753.200	0.5	PASS
		5785	16.400	5776.800	5793.200	0.5	PASS
		5825	16.400	5816.800	5833.200	0.5	PASS
11N20SISO	Ant1	5745	17.360	5736.440	5753.800	0.5	PASS
		5785	17.400	5776.400	5793.800	0.5	PASS
		5825	17.600	5816.200	5833.800	0.5	PASS
11N40SISO	Ant1	5755	35.280	5737.400	5772.680	0.5	PASS
		5795	35.280	5777.400	5812.680	0.5	PASS
11AC20SISO	Ant1	5745	17.360	5736.440	5753.800	0.5	PASS
		5785	17.360	5776.440	5793.800	0.5	PASS
		5825	17.600	5816.200	5833.800	0.5	PASS
11AC40SISO	Ant1	5755	35.200	5737.400	5772.600	0.5	PASS
		5795	35.200	5777.400	5812.600	0.5	PASS
11AC80SISO	Ant1	5775	74.240	5738.520	5812.760	0.5	PASS

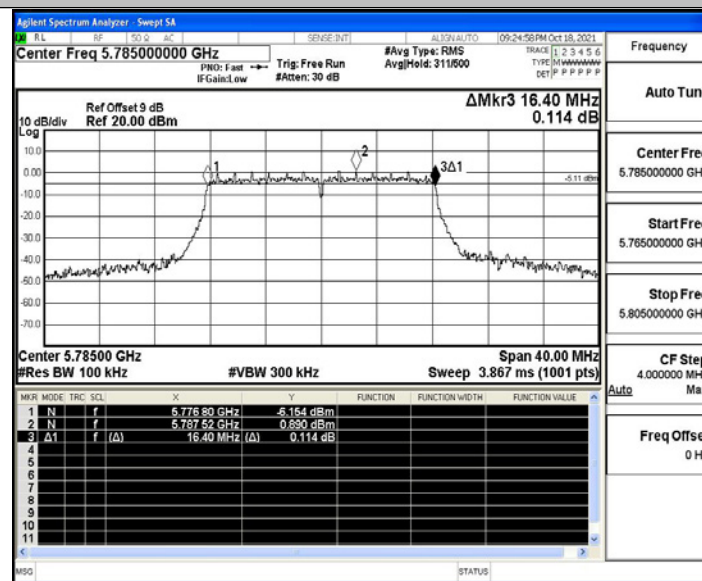


Test Graphs

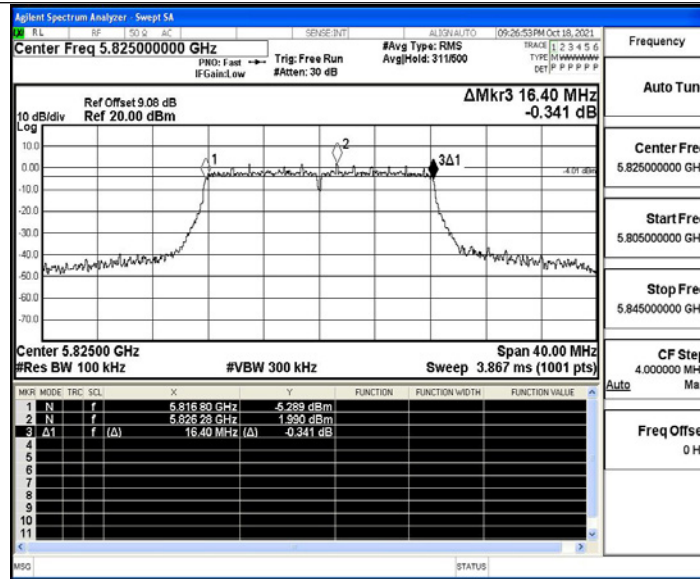
11A_Ant1_5745



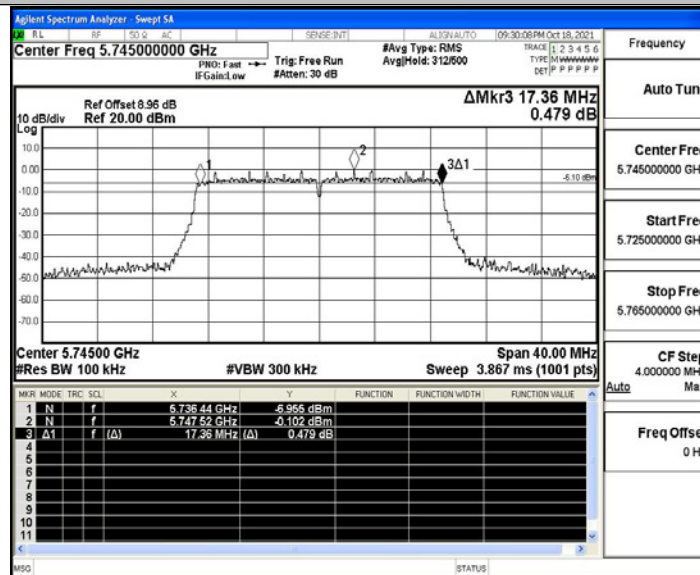
11A_Ant1_5785



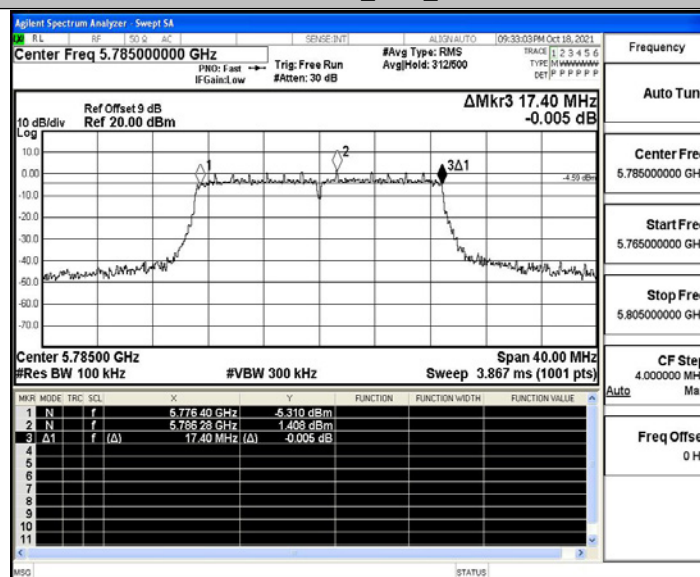
11A_Ant1_5825



11N20SISO_Ant1_5745

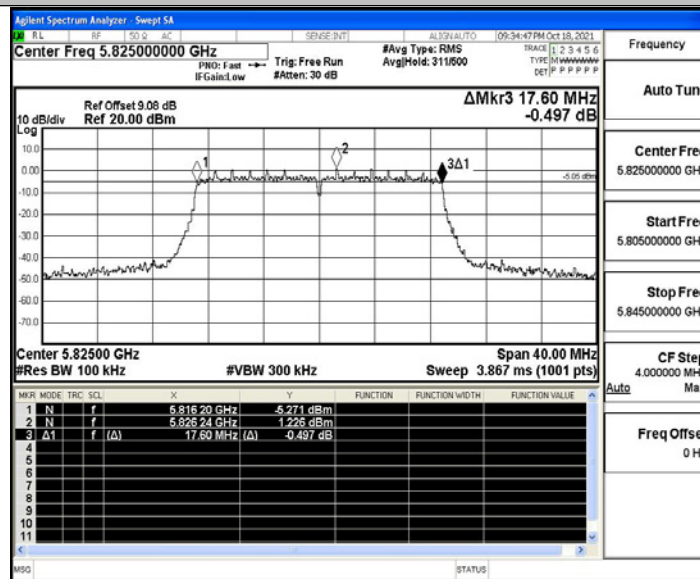


11N20SISO_Ant1_5785

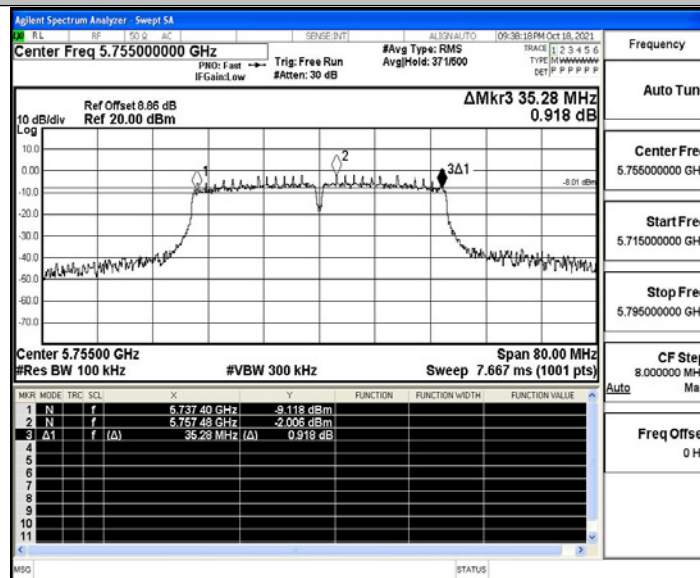




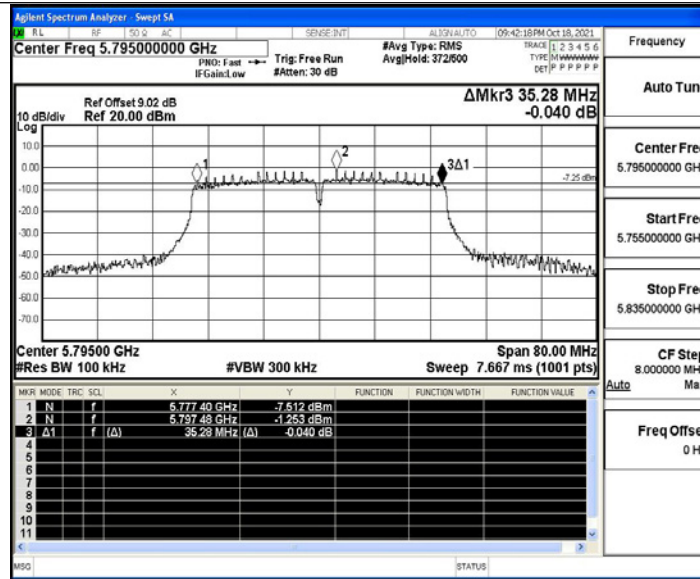
11N20SISO_Ant1_5825



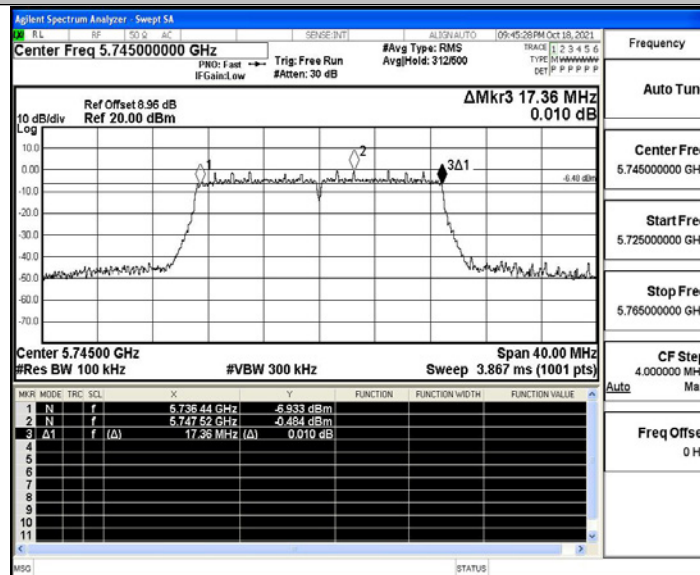
11N40SISO_Ant1_5755



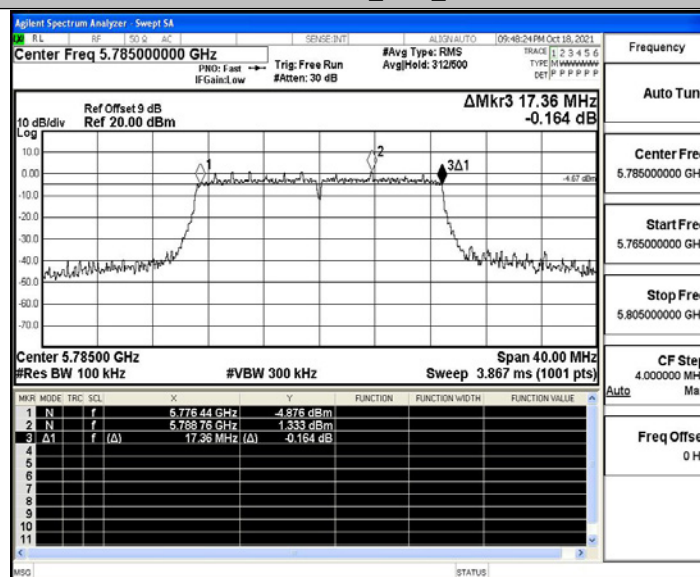
11N40SISO_Ant1_5795



11AC20SISO_Ant1_5745

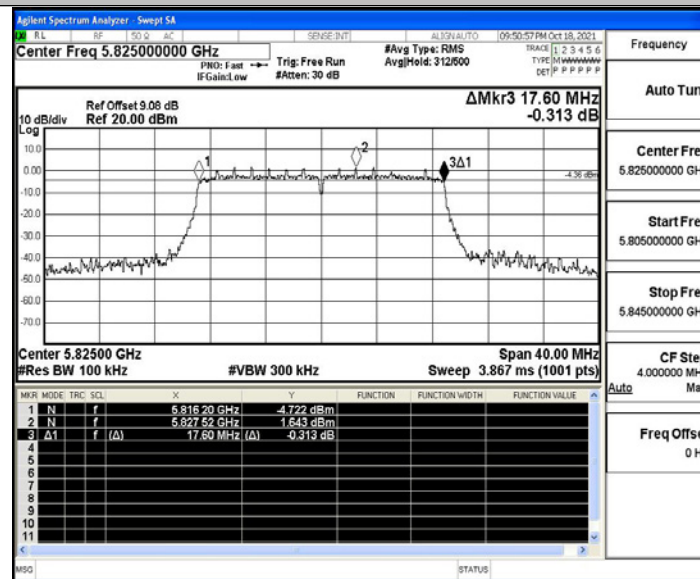


11AC20SISO_Ant1_5785

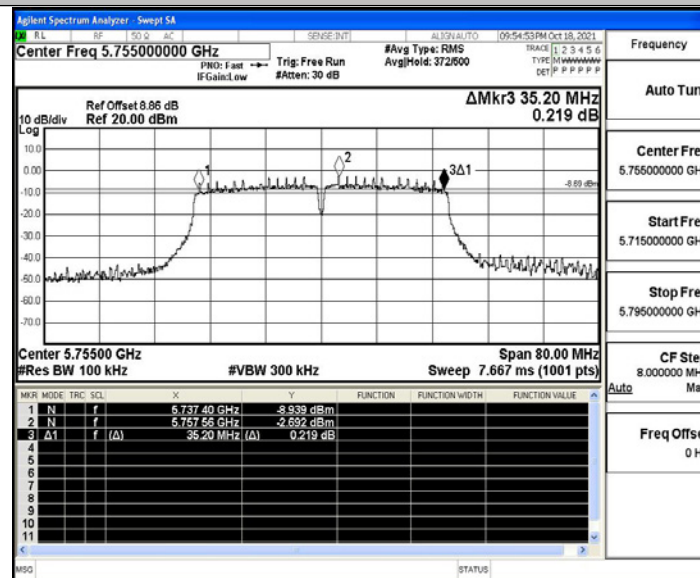




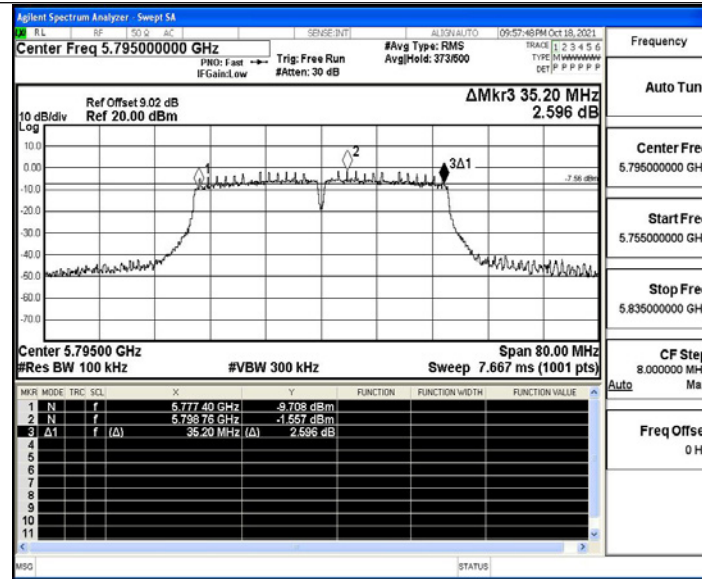
11AC20SISO_Ant1_5825



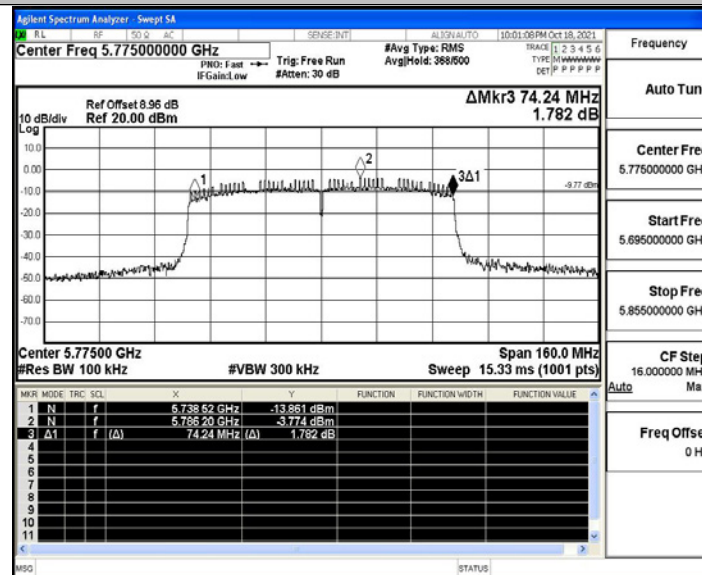
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775





E.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5745	11.60	≤30	PASS
		5785	11.46	≤30	PASS
		5825	11.02	≤30	PASS
11N20SISO	Ant1	5745	11.06	≤30	PASS
		5785	10.39	≤30	PASS
		5825	10.22	≤30	PASS
11N40SISO	Ant1	5755	11.56	≤30	PASS
		5795	12.23	≤30	PASS
11AC20SISO	Ant1	5745	10.85	≤30	PASS
		5785	11.71	≤30	PASS
		5825	11.12	≤30	PASS
11AC40SISO	Ant1	5755	11.12	≤30	PASS
		5795	11.55	≤30	PASS
11AC80SISO	Ant1	5775	11.62	≤30	PASS

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



E.3 Maximum power spectral density

Test Result

TestMode	Antenna	Channel	Result [dBm/500 kHz]	Limit[dBm/500 kHz]	Verdict
11A	Ant1	5745	-2.1	≤30	PASS
		5785	-0.85	≤30	PASS
		5825	-0.95	≤30	PASS
11N20SISO	Ant1	5745	-3.06	≤30	PASS
		5785	-1.59	≤30	PASS
		5825	-2.05	≤30	PASS
11N40SISO	Ant1	5755	-4.75	≤30	PASS
		5795	-3.76	≤30	PASS
11AC20SISO	Ant1	5745	-3.45	≤30	PASS
		5785	-1.59	≤30	PASS
		5825	-0.91	≤30	PASS
11AC40SISO	Ant1	5755	-5.36	≤30	PASS
		5795	-3.76	≤30	PASS
11AC80SISO	Ant1	5775	-6.84	≤30	PASS

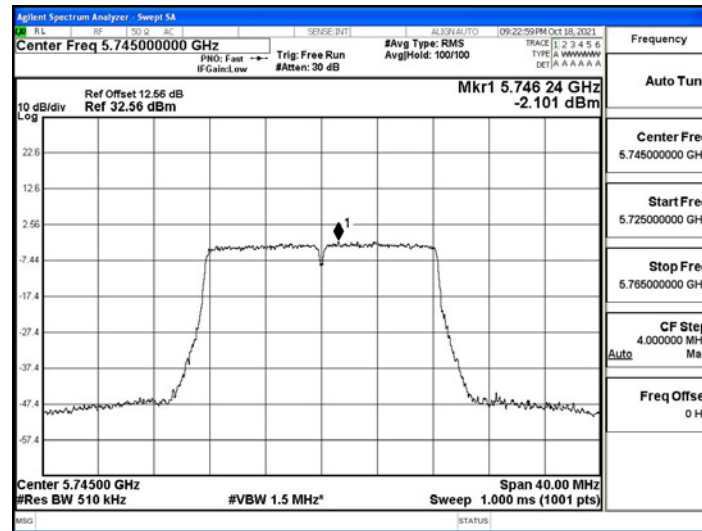
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2.The Duty Cycle Factor and RBW Factor is compensated in the graph.

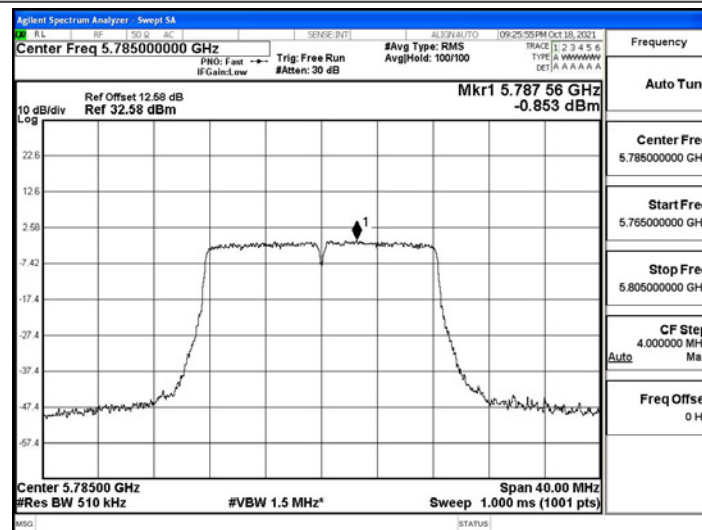


Test Graphs

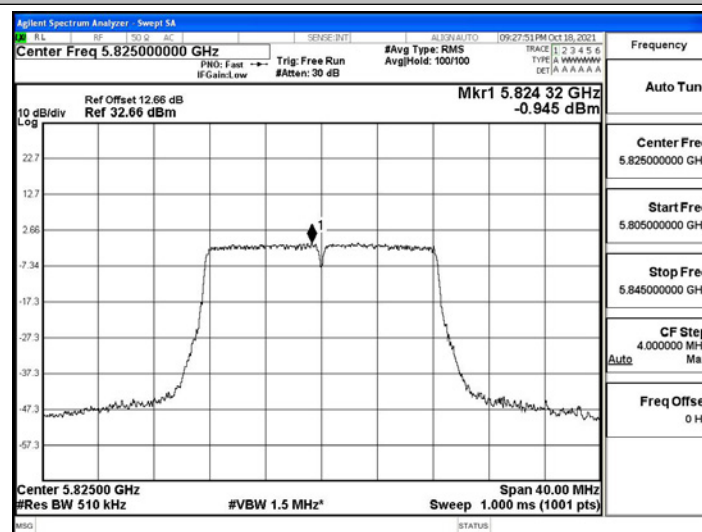
11A_Ant1_5745



11A_Ant1_5785

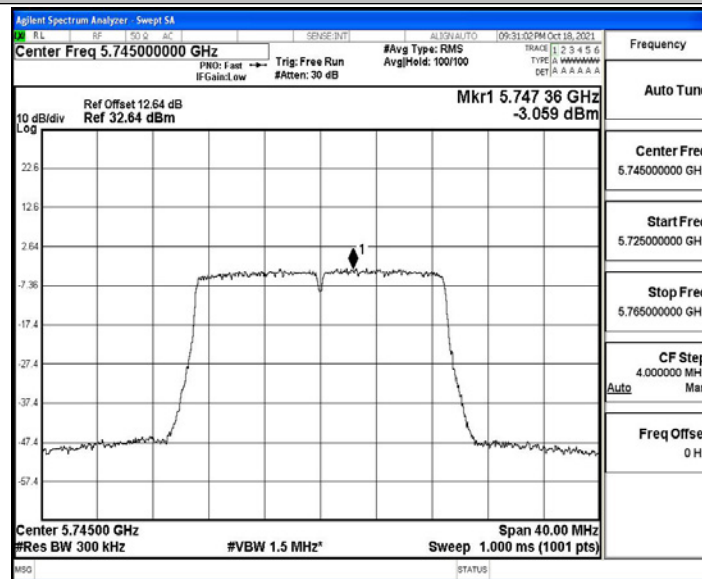


11A_Ant1_5825

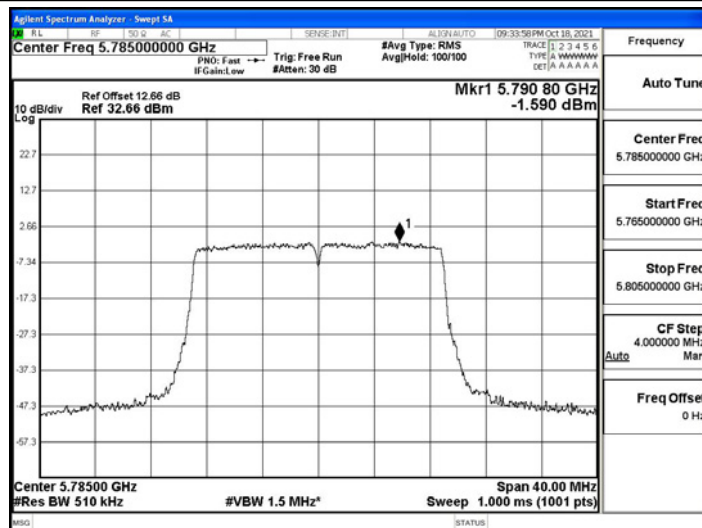




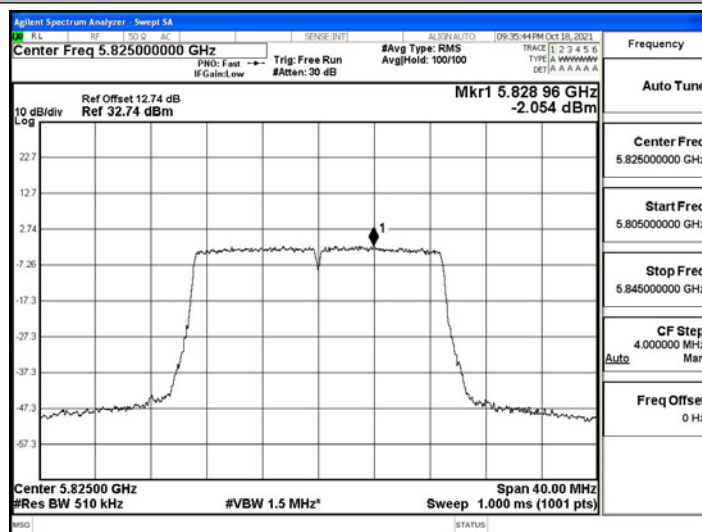
11N20SISO_Ant1_5745



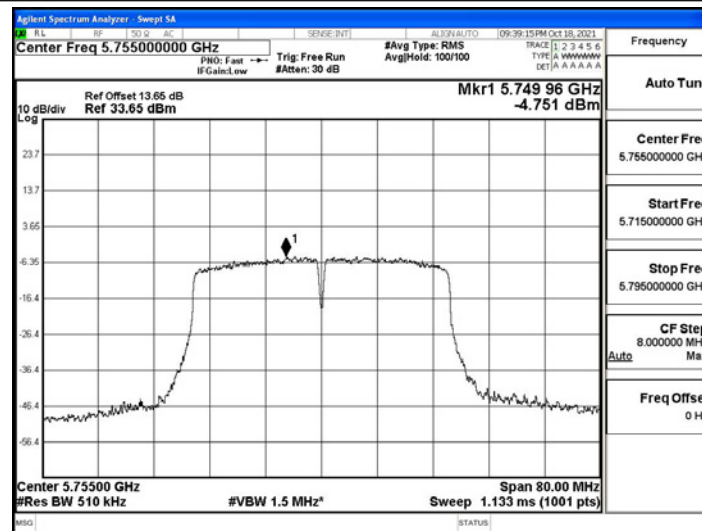
11N20SISO_Ant1_5785



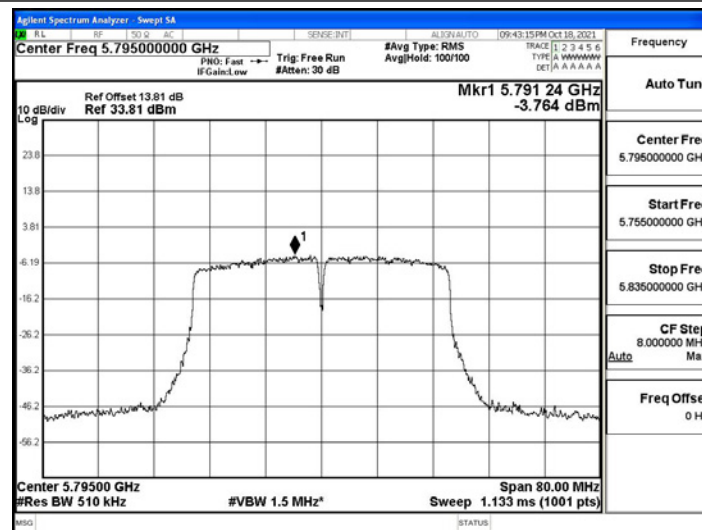
11N20SISO_Ant1_5825



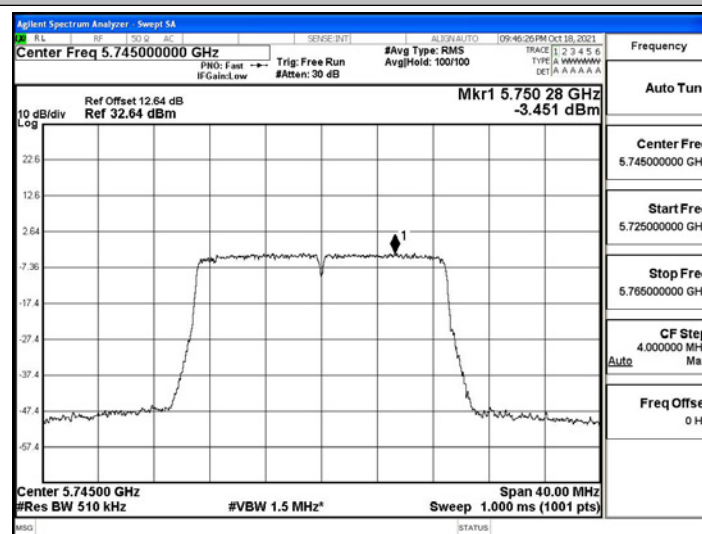
11N40SISO_Ant1_5755



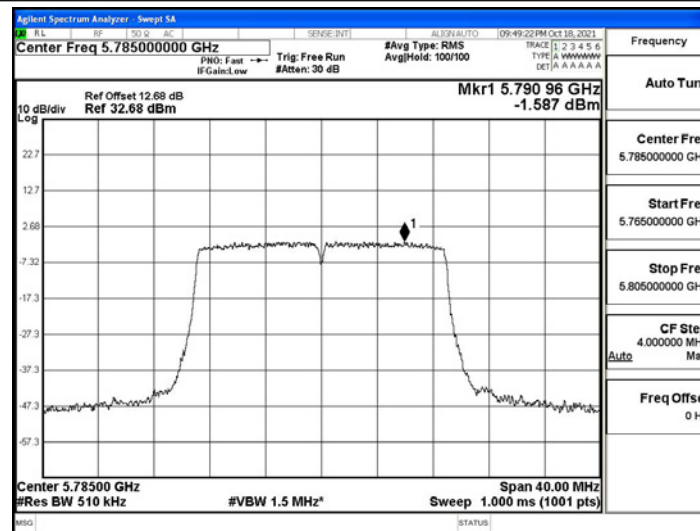
11N40SISO_Ant1_5795



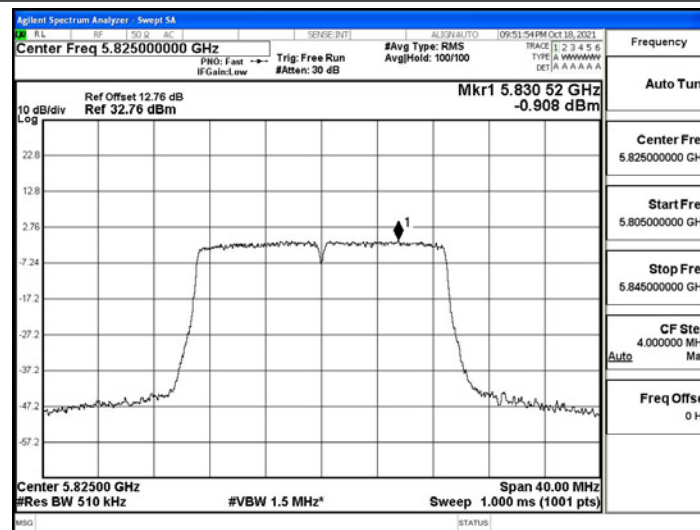
11AC20SISO_Ant1_5745



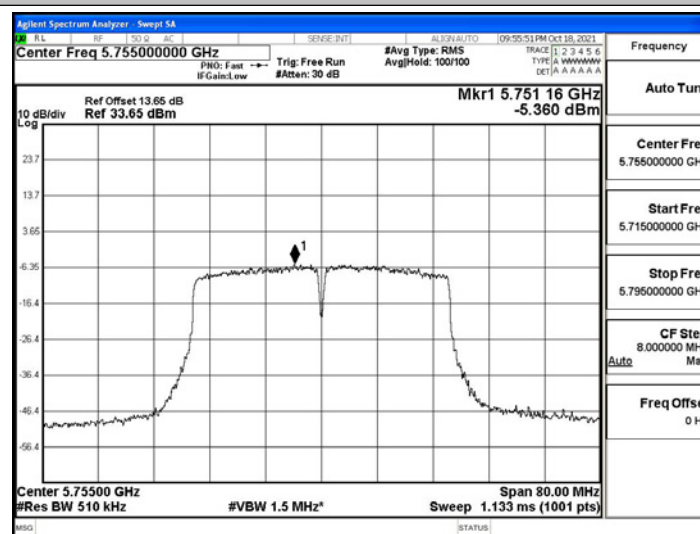
11AC20SISO_Ant1_5785



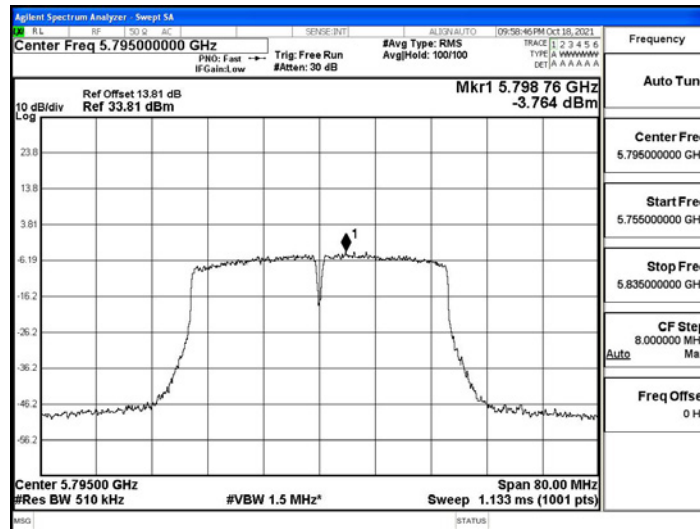
11AC20SISO_Ant1_5825



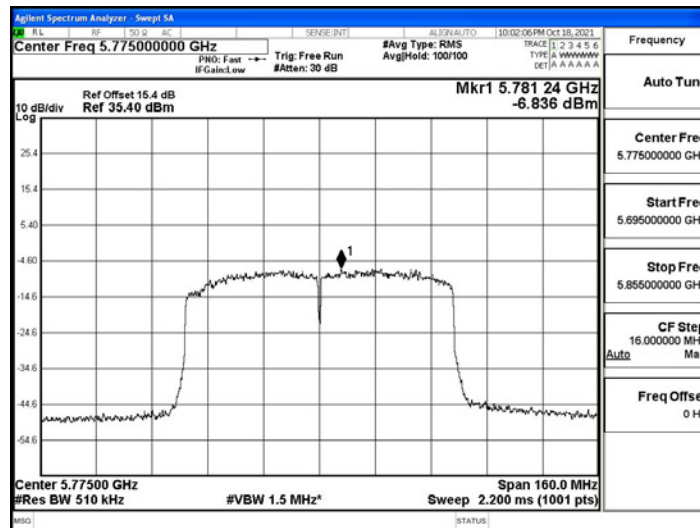
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775





E.4 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11A	Ant1	Low	5745	Peak	5650.000	-41.087	≤-27.00	---	---	PASS
				Peak	5700.000	-41.84	≤10.00	---	---	PASS
				Peak	5720.000	-38.48	≤15.60	---	---	PASS
				Peak	5725.000	-38.05	≤27.00	---	---	PASS
		High	5825	Peak	5850.000	-36.878	≤15.60	---	---	PASS
				Peak	5855.000	-39.3	≤27.00	---	---	PASS
				Peak	5875.000	-40.59	≤15.60	---	---	PASS
				Peak	5925.000	-38.75	≤10.00	---	---	PASS
11N20SISO	Ant1	Low	5745	Peak	5650.000	-41.055	≤-27.00	---	---	PASS
				Peak	5700.000	-40.2	≤10.00	---	---	PASS
				Peak	5720.000	-37.36	≤15.60	---	---	PASS
				Peak	5725.000	-37.83	≤27.00	---	---	PASS
		High	5825	Peak	5850.000	-35.91	≤15.60	---	---	PASS
				Peak	5855.000	-39.18	≤27.00	---	---	PASS
				Peak	5875.000	-40.51	≤15.60	---	---	PASS
				Peak	5925.000	-41.33	≤10.00	---	---	PASS
11N40SISO	Ant1	Low	5755	Peak	5650.000	-42.034	≤-27.00	---	---	PASS
				Peak	5700.000	-40.73	≤10.00	---	---	PASS
				Peak	5720.000	-35.08	≤15.60	---	---	PASS
				Peak	5725.000	-32.41	≤27.00	---	---	PASS
		High	5795	Peak	5850.000	-39.072	≤15.60	---	---	PASS
				Peak	5855.000	-40.54	≤27.00	---	---	PASS
				Peak	5875.000	-40.61	≤15.60	---	---	PASS
				Peak	5925.000	-40.6	≤10.00	---	---	PASS
11AC20SISO	Ant1	Low	5745	Peak	5650.000	-41.046	≤-27.00	---	---	PASS
				Peak	5700.000	-40.88	≤10.00	---	---	PASS
				Peak	5720.000	-38.69	≤15.60	---	---	PASS
				Peak	5725.000	-35.52	≤27.00	---	---	PASS
		High	5825	Peak	5850.000	-39.44	≤15.60	---	---	PASS
				Peak	5855.000	-39.89	≤27.00	---	---	PASS
				Peak	5875.000	-40.21	≤15.60	---	---	PASS
				Peak	5925.000	-40.32	≤10.00	---	---	PASS
11AC40SISO	Ant1	Low	5755	Peak	5650.000	-41.032	≤-27.00	---	---	PASS
				Peak	5700.000	-40.87	≤10.00	---	---	PASS
				Peak	5720.000	-35.56	≤15.60	---	---	PASS
				Peak	5725.000	-37.4	≤27.00	---	---	PASS
		High	5795	Peak	5850.000	-39.328	≤15.60	---	---	PASS



11AC80SI SO	Ant1			Peak	5855.000	-39.88	≤27.00	---	---	PASS
				Peak	5875.000	-39.27	≤15.60	---	---	PASS
				Peak	5925.000	-39.83	≤10.00	- - -	- - -	PASS
		Low	5775	Peak	5650.000	-40.789	≤27.00	---	---	PASS
				Peak	5700.000	-39.66	≤10.00	---	---	PASS
				Peak	5720.000	-28.13	≤15.60	---	---	PASS
				Peak	5725.000	-36.49	≤27.00	- - -	- - -	PASS
		High	5775	Peak	5850.000	-37.621	≤15.60	---	---	PASS
				Peak	5855.000	-34.9	≤27.00	---	---	PASS
				Peak	5875.000	-38.67	≤15.60	---	---	PASS
				Peak	5925.000	-40.87	≤10.00	- - -	- - -	PASS

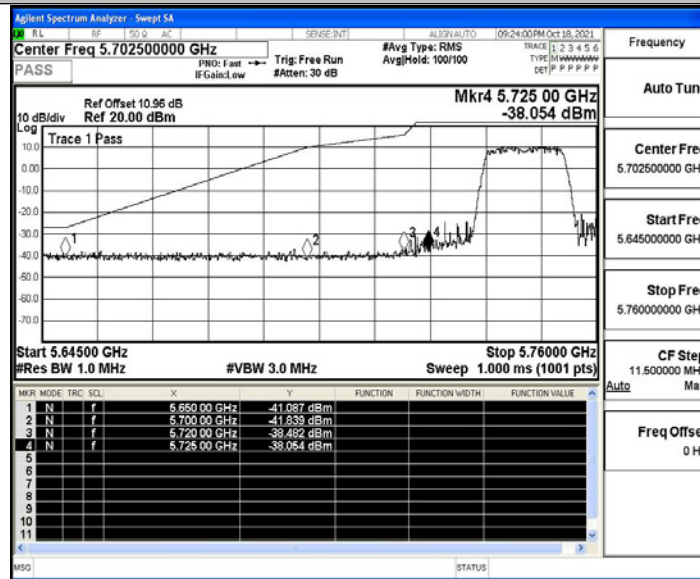
Note:

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.

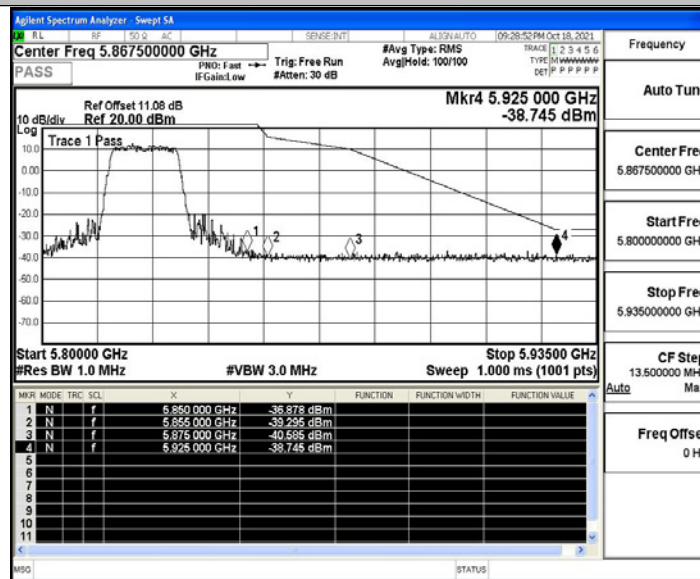


Test Graphs

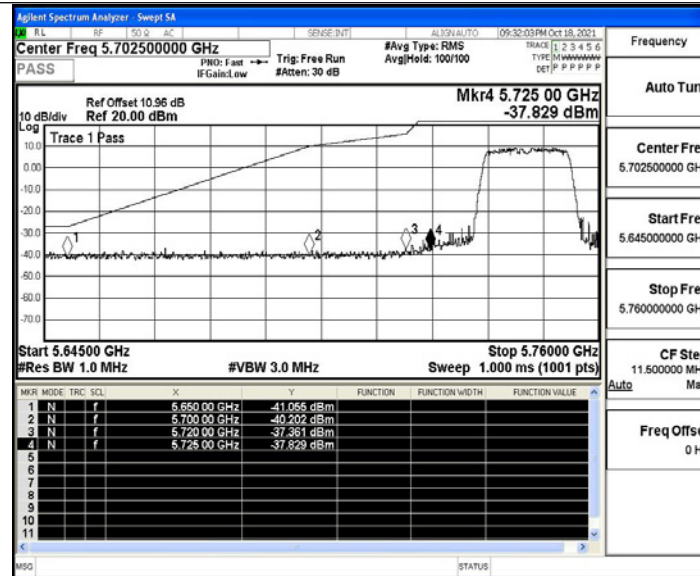
11A_Ant1_Low_5745_Peak



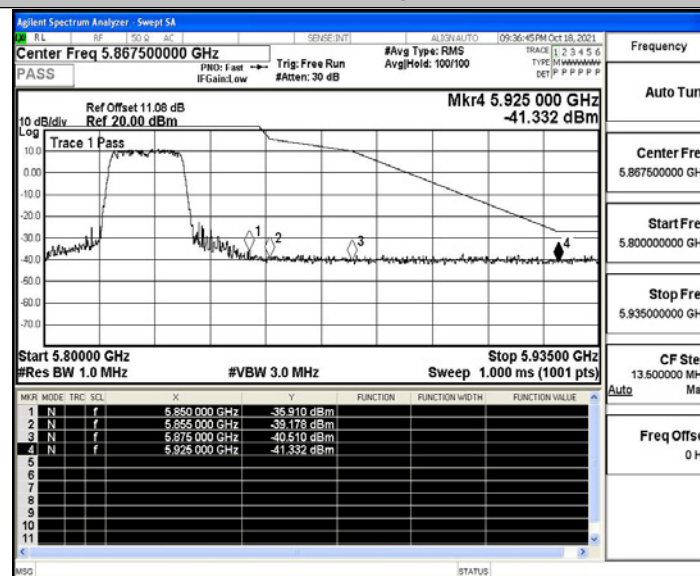
11A_Ant1_High_5825_Peak



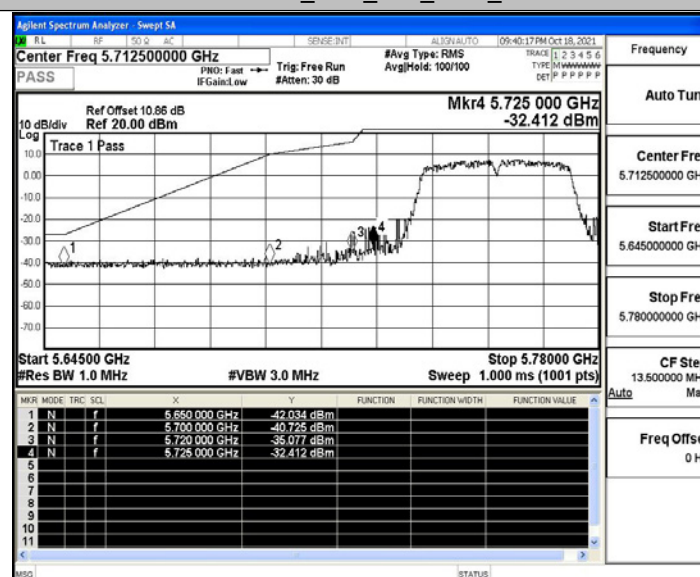
11N20SISO_Ant1_Low_5745_Peak



11N20SISO_Ant1_High_5825_Peak

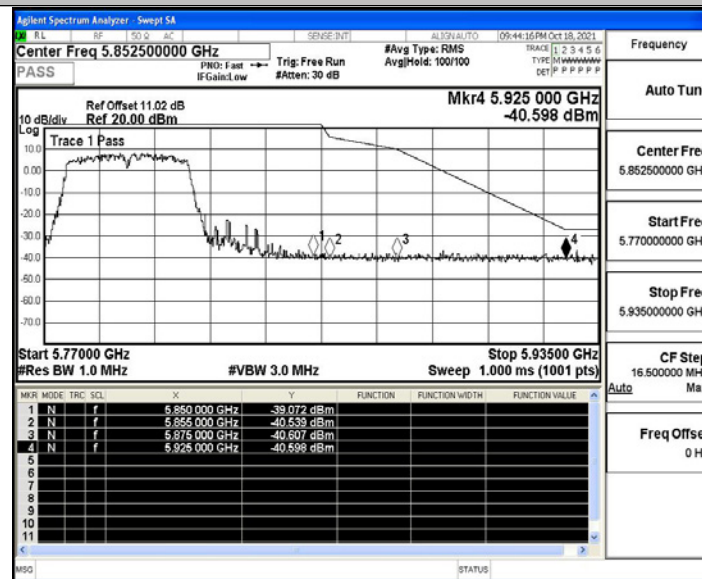


11N40SISO_Ant1_Low_5755_Peak

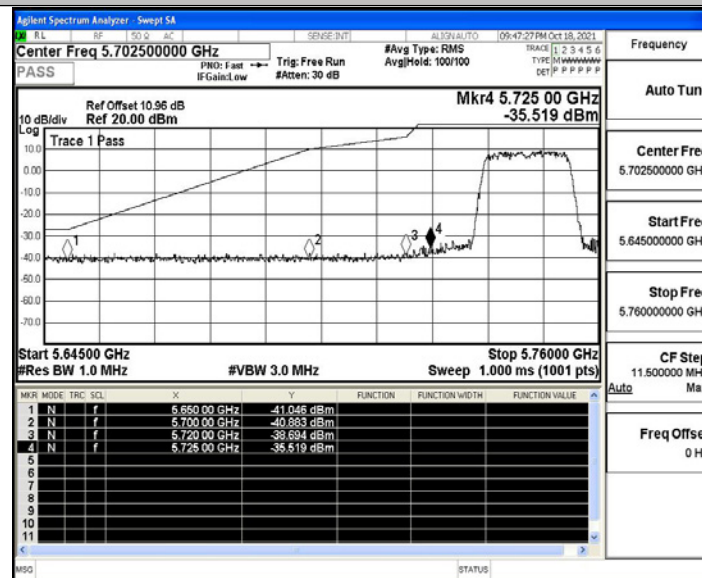




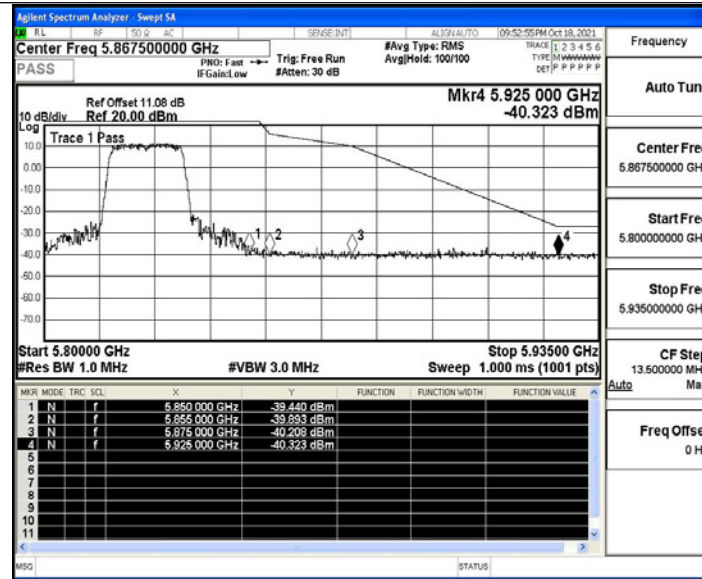
11N40SISO_Ant1_High_5795_Peak



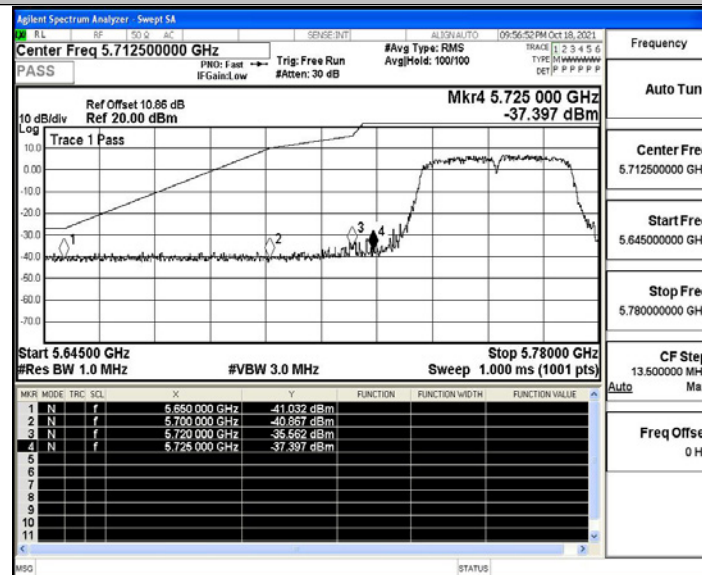
11AC20SISO_Ant1_Low_5745_Peak



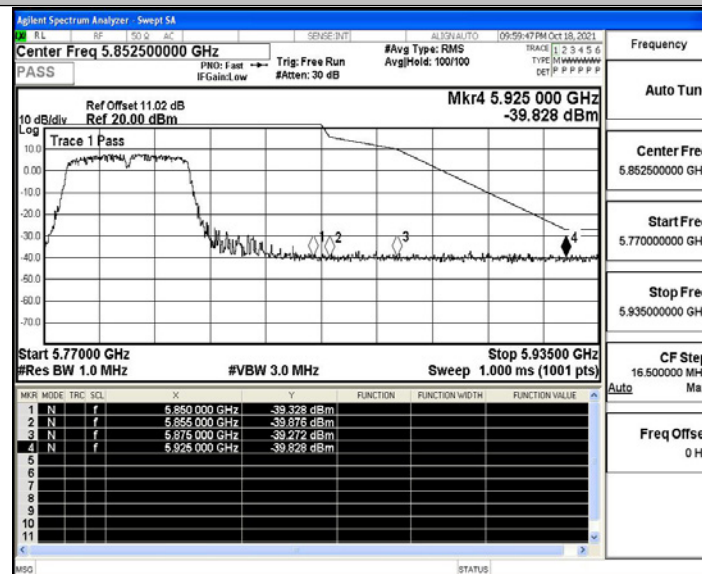
11AC20SISO_Ant1_High_5825_Peak



11AC40SISO_Ant1_Low_5755_Peak

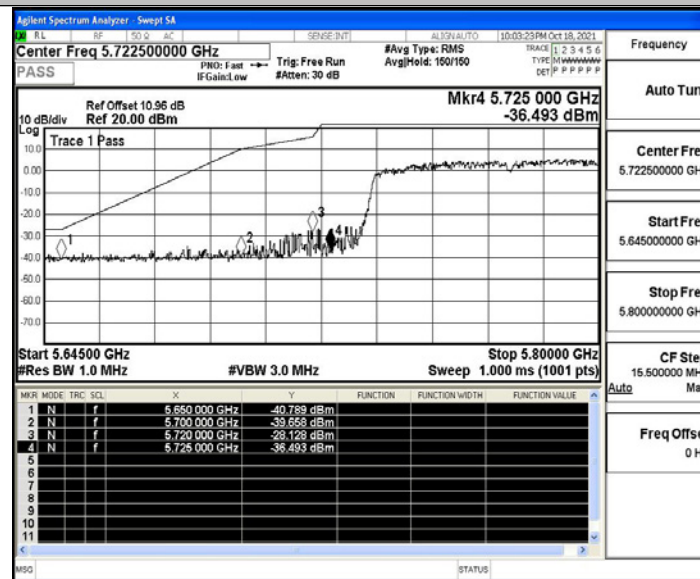


11AC40SISO_Ant1_High_5795_Peak

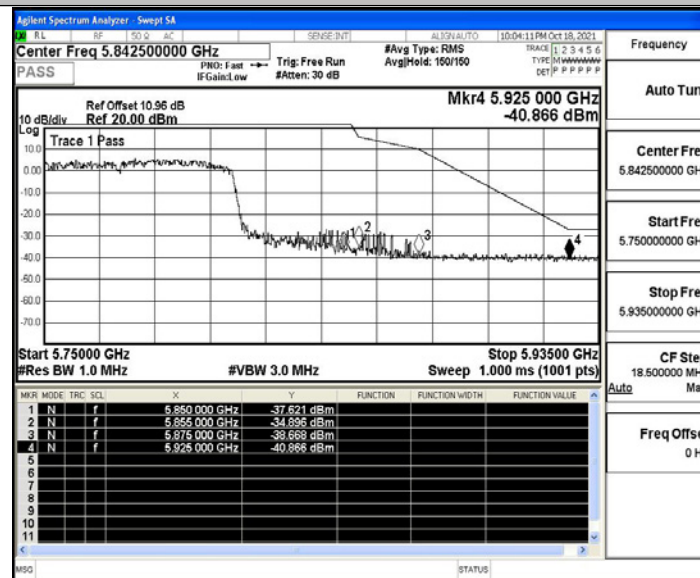




11AC80SISO_Ant1_Low_5775_Peak



11AC80SISO_Ant1_High_5775_Peak





E.5 Frequency Stability

Test Result

TestMode	Antenna	Channel	Voltage					Verdict
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	
11A	Ant1	5745	NV	NT	-32000	-5.570061	20	PASS
			LV	NT	-32000	-5.570061	20	PASS
			HV	NT	-32000	-5.570061	20	PASS
		5785	NV	NT	1000	0.172861	20	PASS
			LV	NT	0	0	20	PASS
			HV	NT	0	0	20	PASS
		5825	NV	NT	-5000	-0.858369	20	PASS
			LV	NT	-5000	-0.858369	20	PASS
			HV	NT	-6000	-1.030043	20	PASS
11N20SI SO	Ant1	5745	NV	NT	-5000	-0.870322	20	PASS
			LV	NT	-6000	-1.044386	20	PASS
			HV	NT	-6000	-1.044386	20	PASS
		5785	NV	NT	-10000	-1.728608	20	PASS
			LV	NT	-10000	-1.728608	20	PASS
			HV	NT	-10000	-1.728608	20	PASS
		5825	NV	NT	-10000	-1.716738	20	PASS
			LV	NT	-10000	-1.716738	20	PASS
			HV	NT	-11000	-1.888412	20	PASS
11N40SI SO	Ant1	5755	NV	NT	-10000	-1.737619	20	PASS
			LV	NT	-10000	-1.737619	20	PASS
			HV	NT	-10000	-1.737619	20	PASS
		5795	NV	NT	-11000	-1.898188	20	PASS
			LV	NT	-11000	-1.898188	20	PASS
			HV	NT	-11000	-1.898188	20	PASS
11AC20S ISO	Ant1	5745	NV	NT	-9000	-1.56658	20	PASS
			LV	NT	-10000	-1.740644	20	PASS
			HV	NT	-10000	-1.740644	20	PASS
		5785	NV	NT	-11000	-1.901469	20	PASS
			LV	NT	-11000	-1.901469	20	PASS
			HV	NT	-11000	-1.901469	20	PASS
		5825	NV	NT	-11000	-1.888412	20	PASS
			LV	NT	-11000	-1.888412	20	PASS
			HV	NT	-12000	-2.060086	20	PASS
11AC40S ISO	Ant1	5755	NV	NT	-10000	-1.737619	20	PASS
			LV	NT	-10000	-1.737619	20	PASS



		5795	HV	NT	-11000	-1.911381	20	PASS
			NV	NT	-11000	-1.898188	20	PASS
			LV	NT	-11000	-1.898188	20	PASS
			HV	NT	-12000	-2.070751	20	PASS
11AC80S ISO	Ant1	5775	NV	NT	-23000	-3.982684	20	PASS
			LV	NT	-23000	-3.982684	20	PASS
			HV	NT	-25000	-4.329004	20	PASS

Temperature								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5745	NV	-30	-32000	-5.570061	20	PASS
			NV	-20	-32000	-5.570061	20	PASS
			NV	-10	-32000	-5.570061	20	PASS
			NV	0	-32000	-5.570061	20	PASS
			NV	10	-32000	-5.570061	20	PASS
			NV	20	-32000	-5.570061	20	PASS
			NV	30	-31000	-5.395997	20	PASS
			NV	40	-31000	-5.395997	20	PASS
			NV	50	-31000	-5.395997	20	PASS
		5785	NV	-30	-1000	-0.172861	20	PASS
			NV	-20	-2000	-0.345722	20	PASS
			NV	-10	-2000	-0.345722	20	PASS
			NV	0	-3000	-0.518583	20	PASS
			NV	10	-3000	-0.518583	20	PASS
			NV	20	-3000	-0.518583	20	PASS
			NV	30	-4000	-0.691443	20	PASS
			NV	40	-4000	-0.691443	20	PASS
			NV	50	-4000	-0.691443	20	PASS
		5825	NV	-30	-6000	-1.030043	20	PASS
			NV	-20	-6000	-1.030043	20	PASS
			NV	-10	-6000	-1.030043	20	PASS
			NV	0	-6000	-1.030043	20	PASS
			NV	10	-6000	-1.030043	20	PASS
			NV	20	-6000	-1.030043	20	PASS
			NV	30	-7000	-1.201717	20	PASS
			NV	40	-7000	-1.201717	20	PASS
			NV	50	-7000	-1.201717	20	PASS
11N20SI SO	Ant1	5745	NV	-30	-7000	-1.218451	20	PASS
			NV	-20	-7000	-1.218451	20	PASS
			NV	-10	-7000	-1.218451	20	PASS
			NV	0	-7000	-1.218451	20	PASS
			NV	10	-8000	-1.392515	20	PASS



			NV	20	-8000	-1.392515	20	PASS
			NV	30	-8000	-1.392515	20	PASS
			NV	40	-8000	-1.392515	20	PASS
			NV	50	-8000	-1.392515	20	PASS
		5785	NV	-30	-10000	-1.728608	20	PASS
			NV	-20	-10000	-1.728608	20	PASS
			NV	-10	-10000	-1.728608	20	PASS
			NV	0	-10000	-1.728608	20	PASS
			NV	10	-10000	-1.728608	20	PASS
			NV	20	-10000	-1.728608	20	PASS
			NV	30	-10000	-1.728608	20	PASS
			NV	40	-10000	-1.728608	20	PASS
			NV	50	-10000	-1.728608	20	PASS
		5825	NV	-30	-10000	-1.716738	20	PASS
			NV	-20	-11000	-1.888412	20	PASS
			NV	-10	-11000	-1.888412	20	PASS
			NV	0	-11000	-1.888412	20	PASS
			NV	10	-11000	-1.888412	20	PASS
			NV	20	-11000	-1.888412	20	PASS
			NV	30	-11000	-1.888412	20	PASS
			NV	40	-11000	-1.888412	20	PASS
11N40SI SO	Ant1	5755	NV	-30	-11000	-1.911381	20	PASS
			NV	-20	-11000	-1.911381	20	PASS
			NV	-10	-10000	-1.737619	20	PASS
			NV	0	-11000	-1.911381	20	PASS
			NV	10	-11000	-1.911381	20	PASS
			NV	20	-11000	-1.911381	20	PASS
			NV	30	-11000	-1.911381	20	PASS
			NV	40	-11000	-1.911381	20	PASS
		5795	NV	50	-11000	-1.911381	20	PASS
			NV	-30	-11000	-1.898188	20	PASS
			NV	-20	-11000	-1.898188	20	PASS
			NV	-10	-11000	-1.898188	20	PASS
			NV	0	-11000	-1.898188	20	PASS
			NV	10	-11000	-1.898188	20	PASS
			NV	20	-11000	-1.898188	20	PASS
			NV	30	-11000	-1.898188	20	PASS
11AC20S ISO	Ant1	5745	NV	-30	-10000	-1.740644	20	PASS
			NV	-20	-11000	-1.914708	20	PASS
			NV	-10	-11000	-1.914708	20	PASS



			NV	0	-11000	-1.914708	20	PASS
			NV	10	-11000	-1.914708	20	PASS
			NV	20	-11000	-1.914708	20	PASS
			NV	30	-11000	-1.914708	20	PASS
			NV	40	-11000	-1.914708	20	PASS
			NV	50	-11000	-1.914708	20	PASS
		5785	NV	-30	-11000	-1.901469	20	PASS
			NV	-20	-11000	-1.901469	20	PASS
			NV	-10	-11000	-1.901469	20	PASS
			NV	0	-11000	-1.901469	20	PASS
			NV	10	-11000	-1.901469	20	PASS
			NV	20	-11000	-1.901469	20	PASS
			NV	30	-11000	-1.901469	20	PASS
			NV	40	-11000	-1.901469	20	PASS
			NV	50	-11000	-1.901469	20	PASS
		5825	NV	-30	-11000	-1.888412	20	PASS
			NV	-20	-12000	-2.060086	20	PASS
			NV	-10	-11000	-1.888412	20	PASS
			NV	0	-11000	-1.888412	20	PASS
			NV	10	-12000	-2.060086	20	PASS
			NV	20	-11000	-1.888412	20	PASS
			NV	30	-12000	-2.060086	20	PASS
			NV	40	-11000	-1.888412	20	PASS
			NV	50	-12000	-2.060086	20	PASS
11AC40S ISO	Ant1	5755	NV	-30	-11000	-1.911381	20	PASS
			NV	-20	-11000	-1.911381	20	PASS
			NV	-10	-11000	-1.911381	20	PASS
			NV	0	-11000	-1.911381	20	PASS
			NV	10	-11000	-1.911381	20	PASS
			NV	20	-11000	-1.911381	20	PASS
			NV	30	-11000	-1.911381	20	PASS
			NV	40	-11000	-1.911381	20	PASS
			NV	50	-11000	-1.911381	20	PASS
		5795	NV	-30	-11000	-1.898188	20	PASS
			NV	-20	-12000	-2.070751	20	PASS
			NV	-10	-12000	-2.070751	20	PASS
			NV	0	-12000	-2.070751	20	PASS
			NV	10	-11000	-1.898188	20	PASS
			NV	20	-12000	-2.070751	20	PASS
			NV	30	-12000	-2.070751	20	PASS
			NV	40	-12000	-2.070751	20	PASS
			NV	50	-12000	-2.070751	20	PASS
11AC80S	Ant1	5775	NV	-30	-27000	-4.675325	20	PASS



ISO			NV	-20	-28000	-4.848485	20	PASS
			NV	-10	-29000	-5.021645	20	PASS
			NV	0	-30000	-5.194805	20	PASS
			NV	10	-30000	-5.194805	20	PASS
			NV	20	-31000	-5.367965	20	PASS
			NV	30	-31000	-5.367965	20	PASS
			NV	40	-31000	-5.367965	20	PASS
			NV	50	-32000	-5.541126	20	PASS



E.6 Duty Cycle

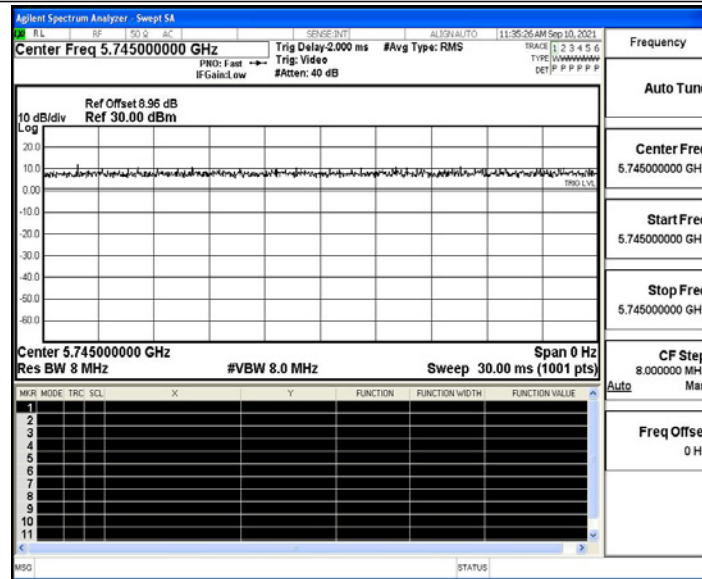
Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11A	Ant1	5745	30.00	30.00	100.00	---	PASS
		5785	30.00	30.00	100.00	---	PASS
		5825	30.00	30.00	100.00	---	PASS
11N20SISO	Ant1	5745	30.00	30.00	100.00	---	PASS
		5785	30.00	30.00	100.00	---	PASS
		5825	30.00	30.00	100.00	---	PASS
11N40SISO	Ant1	5755	30.00	30.00	100.00	---	PASS
		5795	30.00	30.00	100.00	---	PASS
11AC20SISO	Ant1	5745	30.00	30.00	100.00	---	PASS
		5785	30.00	30.00	100.00	---	PASS
		5825	30.00	30.00	100.00	---	PASS
11AC40SISO	Ant1	5755	30.00	30.00	100.00	---	PASS
		5795	30.00	30.00	100.00	---	PASS
11AC80SISO	Ant1	5775	30.00	30.00	100.00	---	PASS

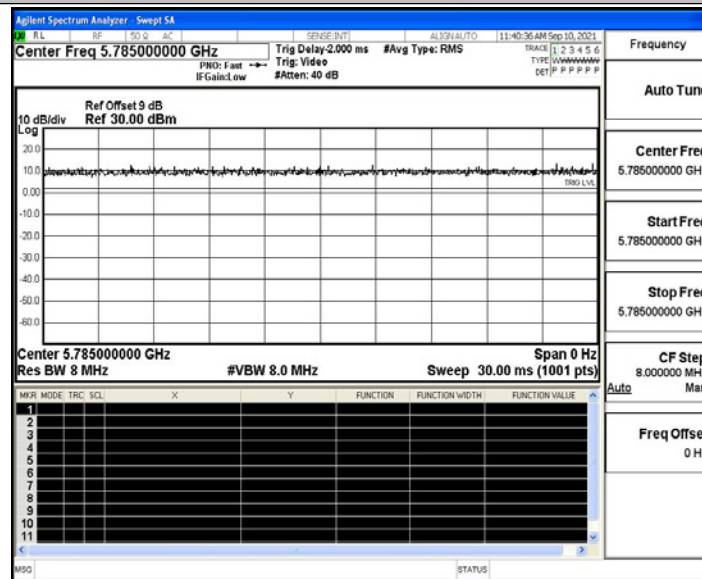


Test Graphs

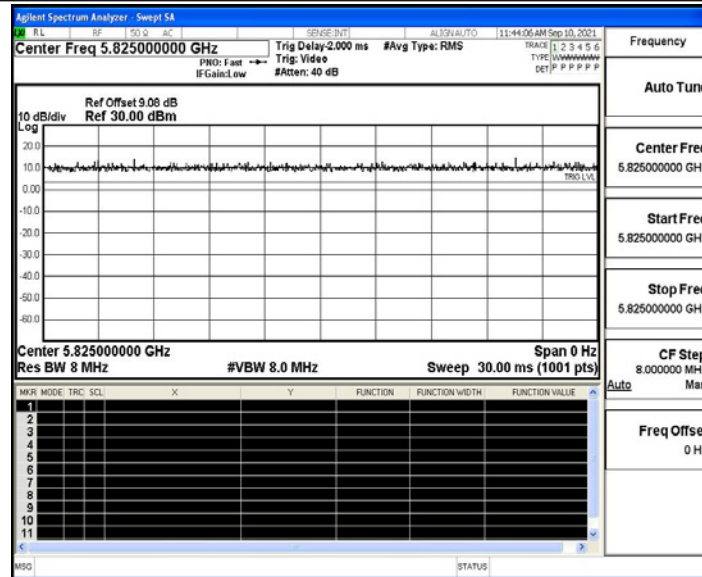
11A_Ant1_5745



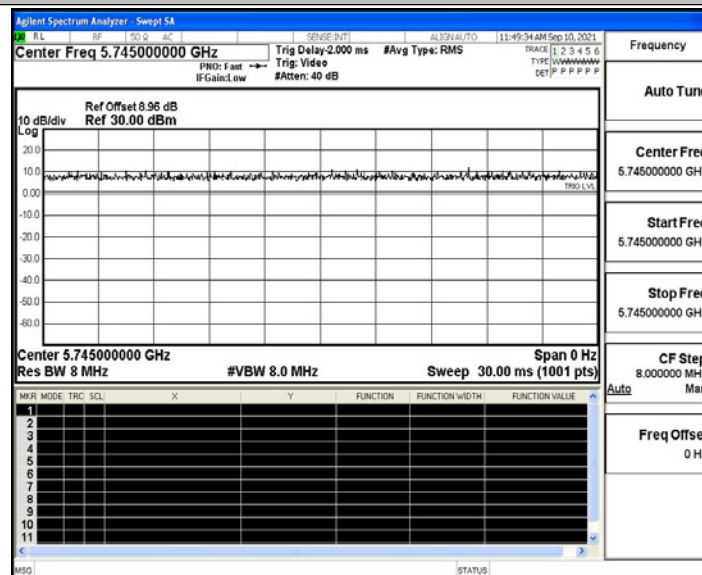
11A_Ant1_5785



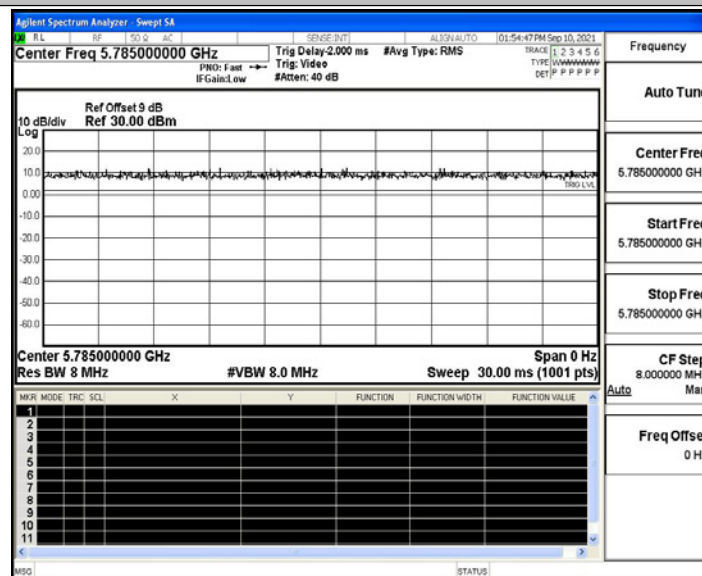
11A_Ant1_5825



11N20SISO_Ant1_5745

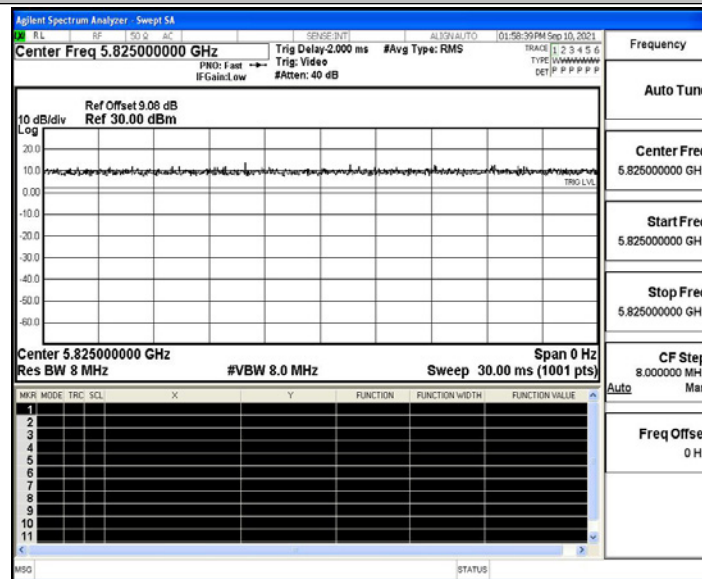


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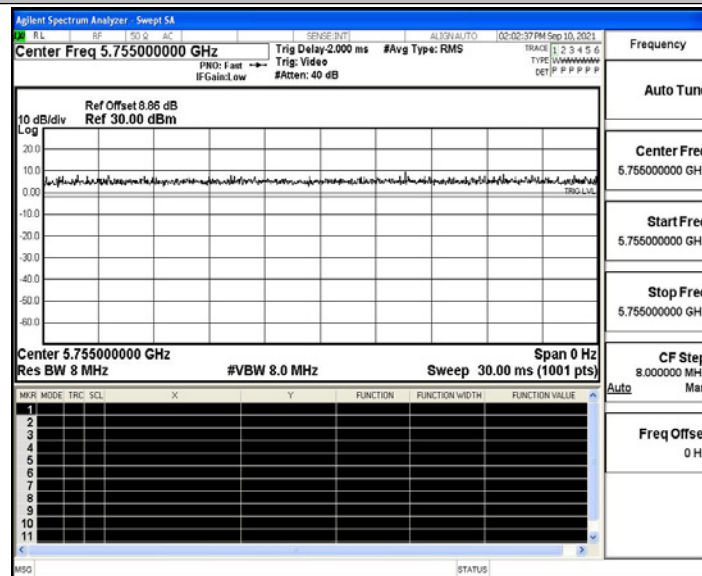




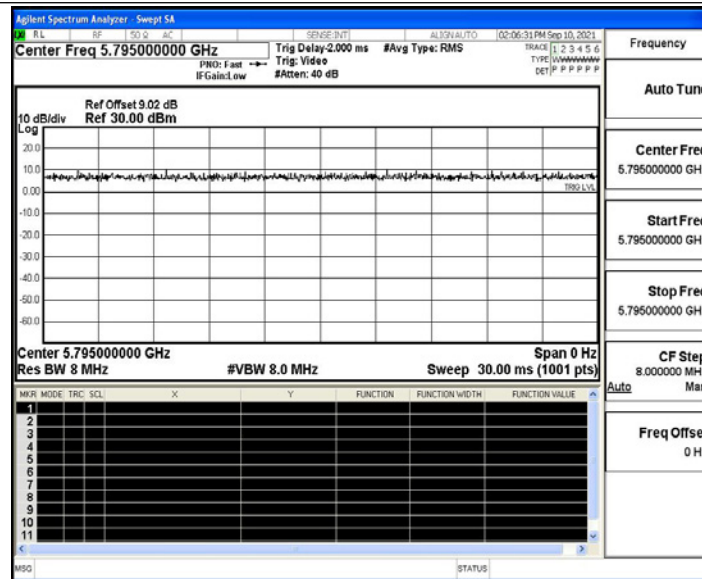
11N20SISO_Ant1_5825



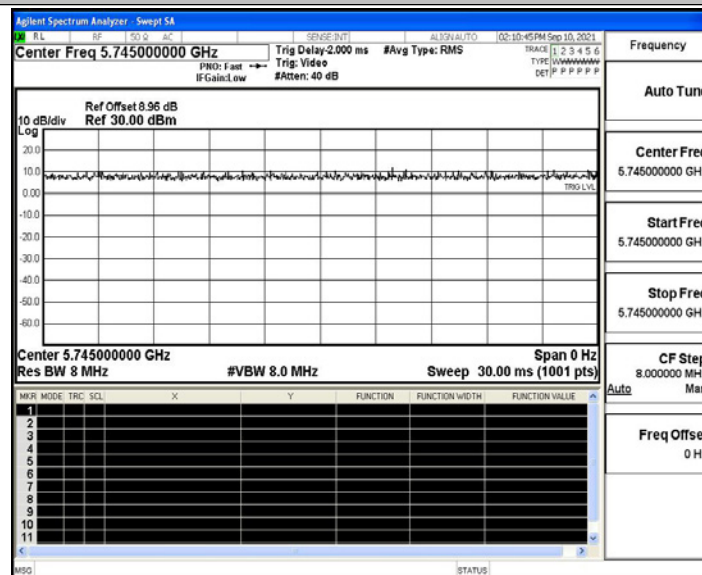
11N40SISO_Ant1_5755



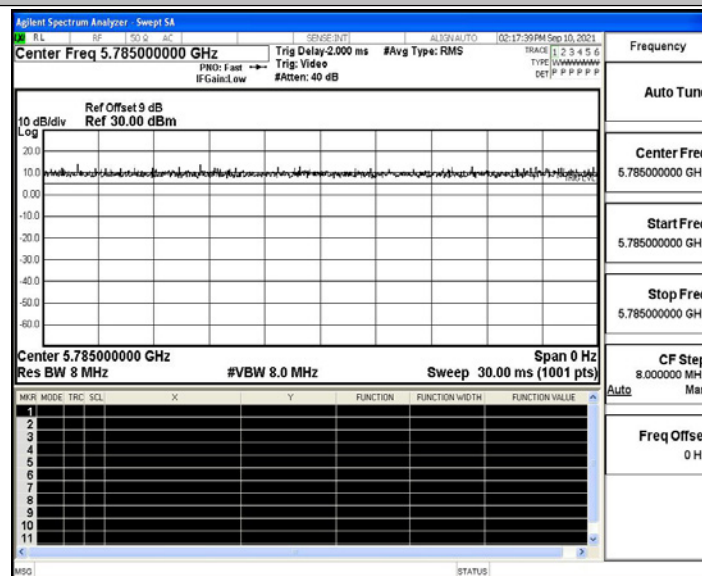
11N40SISO_Ant1_5795



11AC20SISO_Ant1_5745

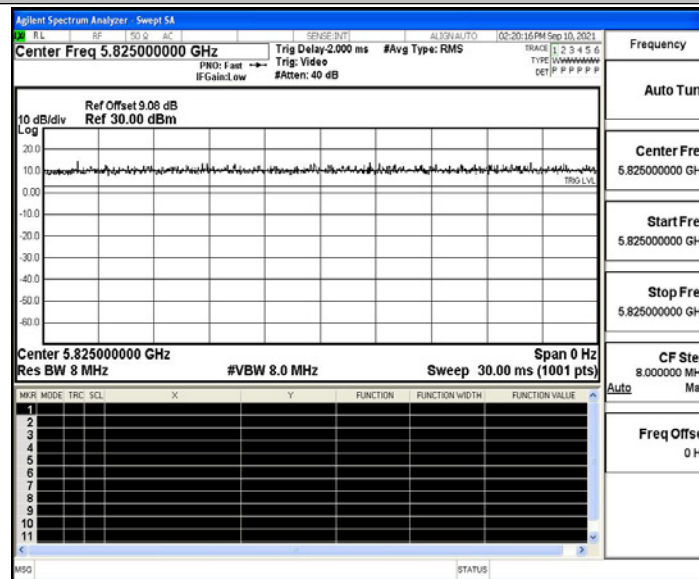


11AC20SISO_Ant1_5785

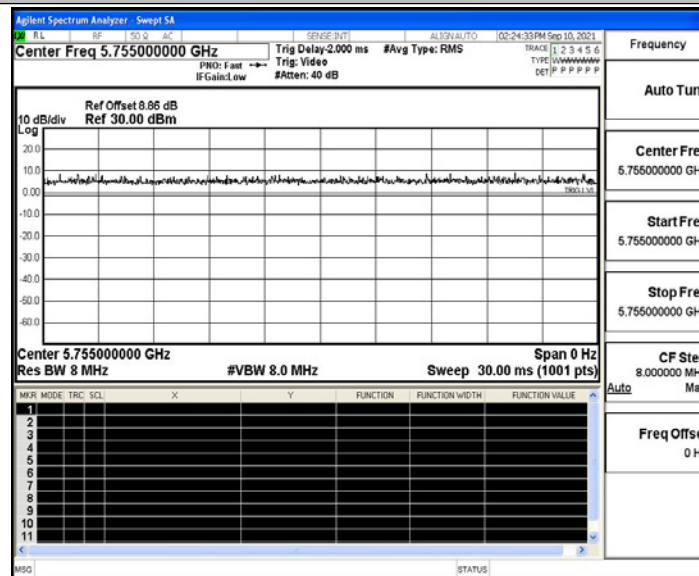




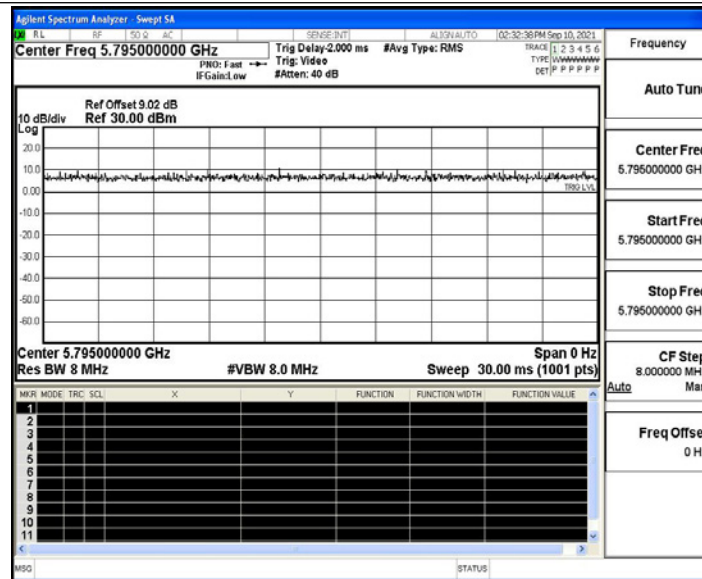
11AC20SISO_Ant1_5825



11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5775

