

Appendix E

RF Test Data for 5.8GWIFI (Conducted Measurement)

Product Name: laptop

Test Model: MLSE001

Environmental Conditions

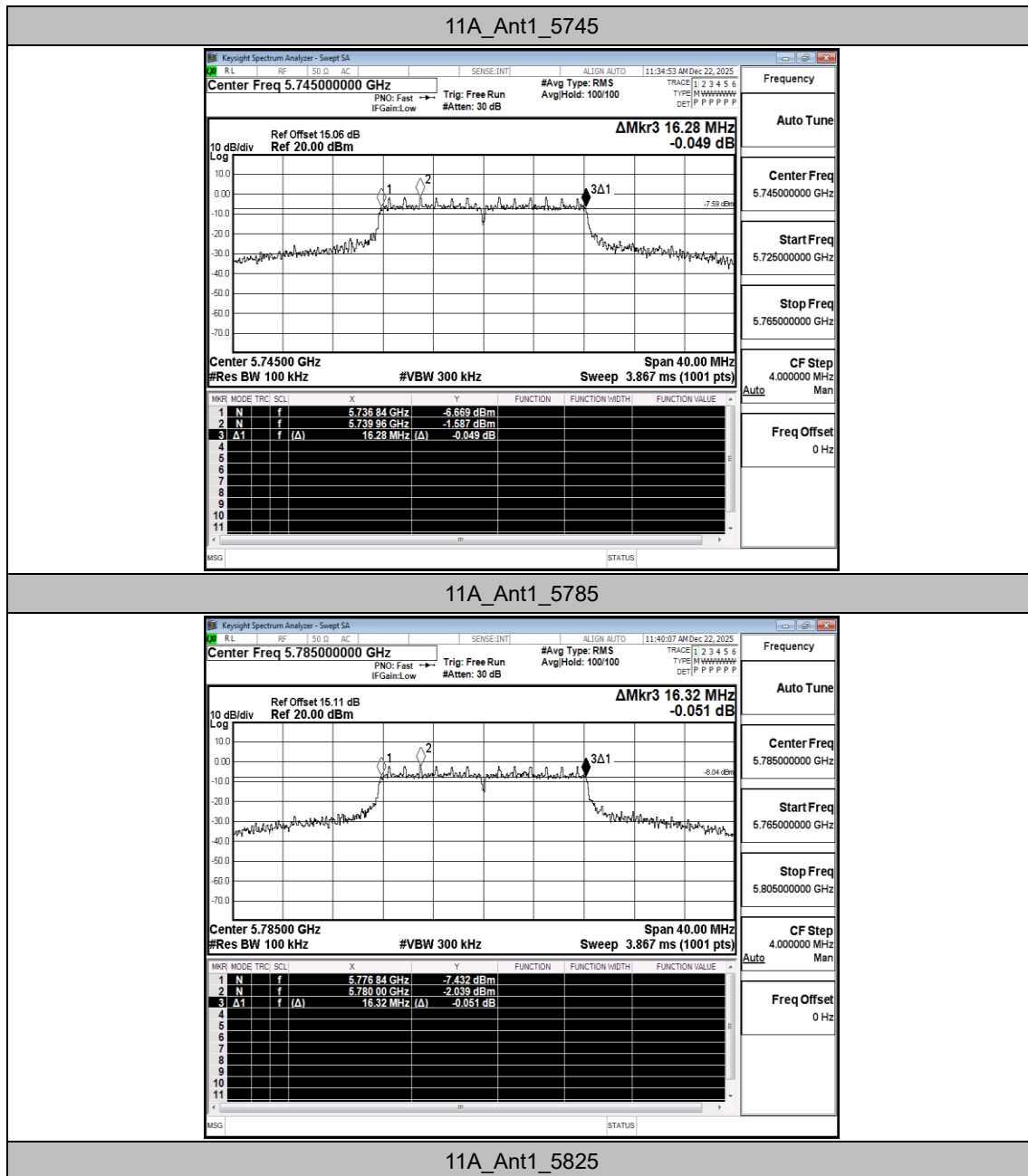
Temperature:	23.2°C
Relative Humidity:	54.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

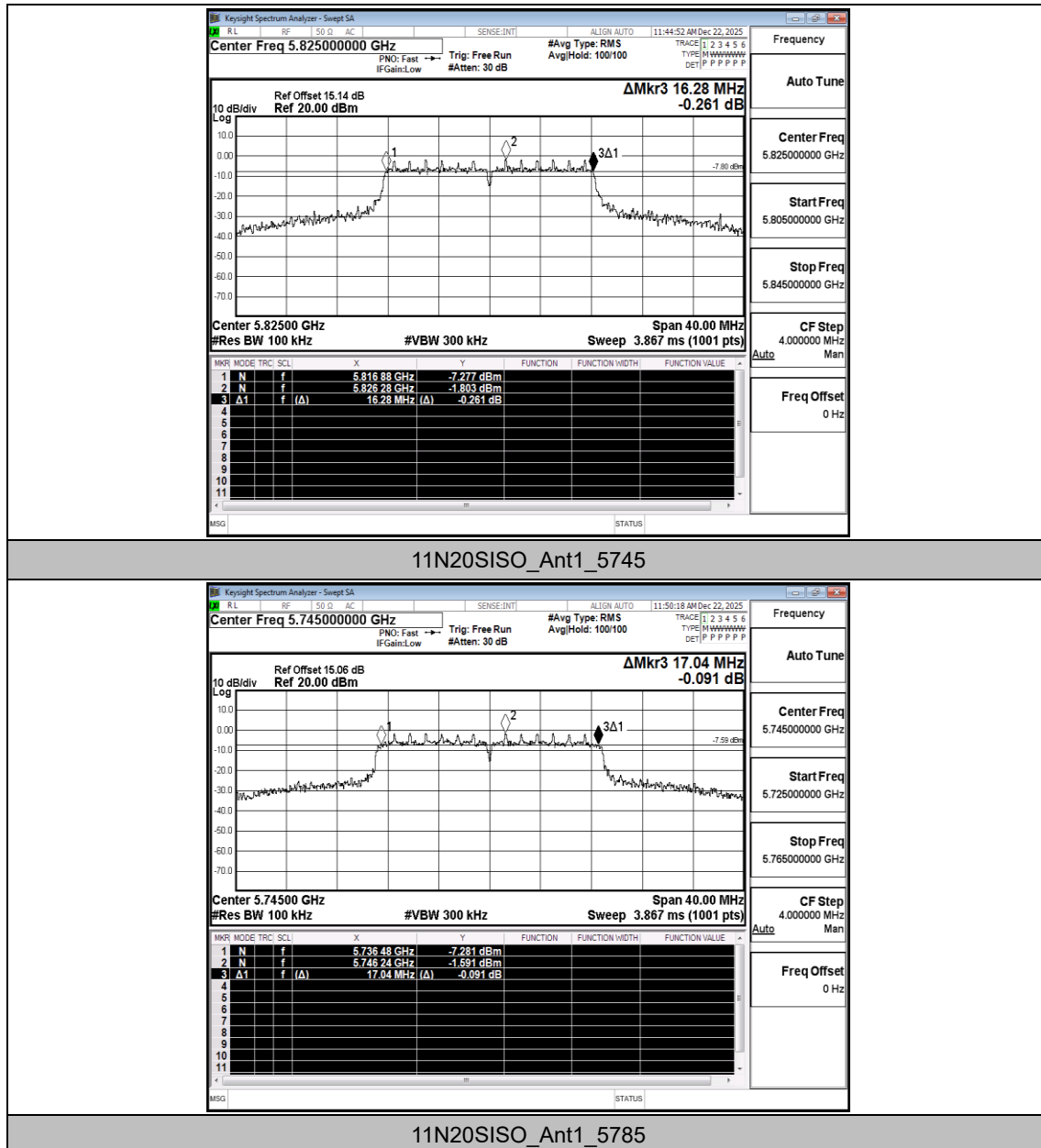
E.1 Emission Bandwidth

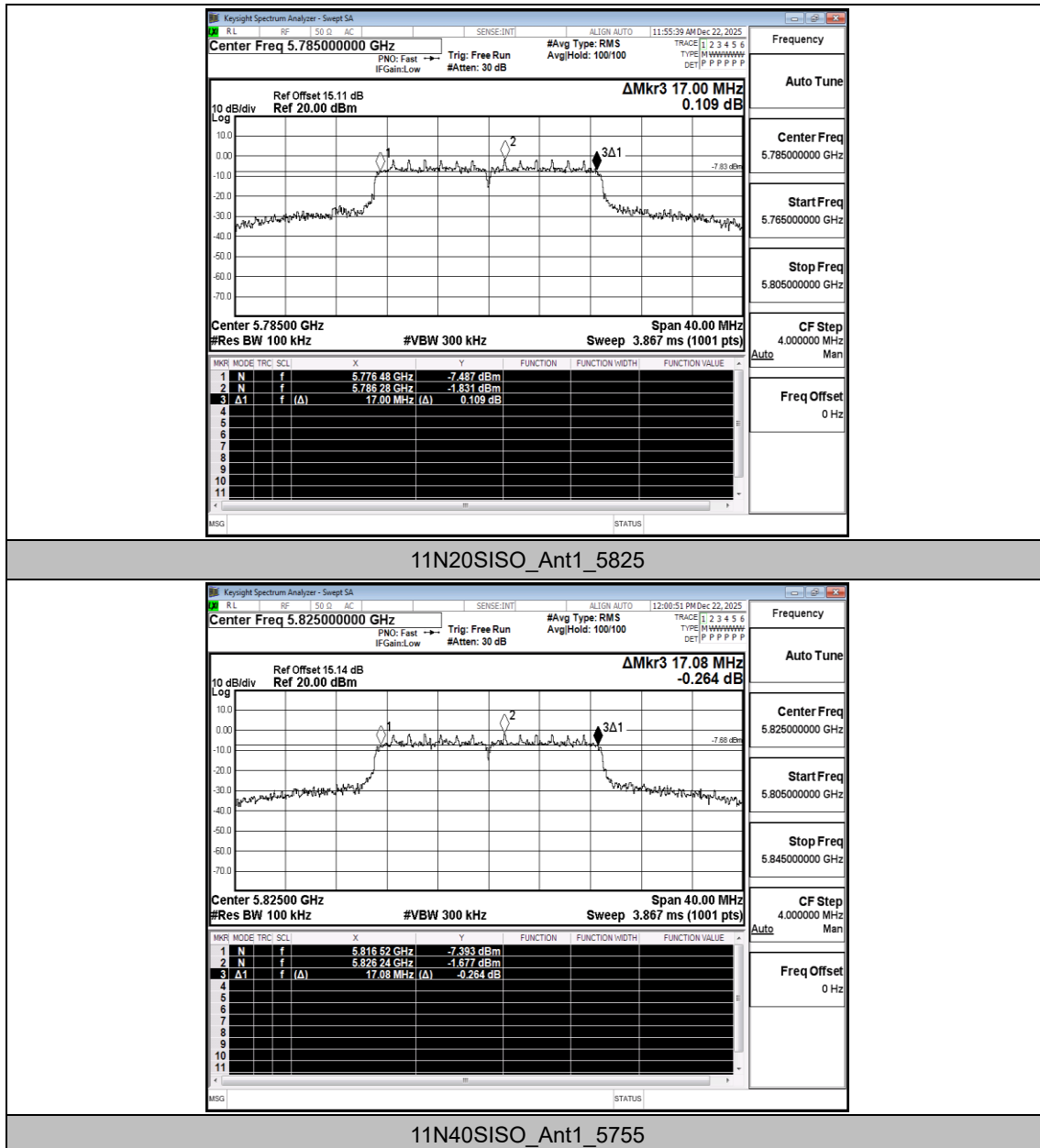
Test Result

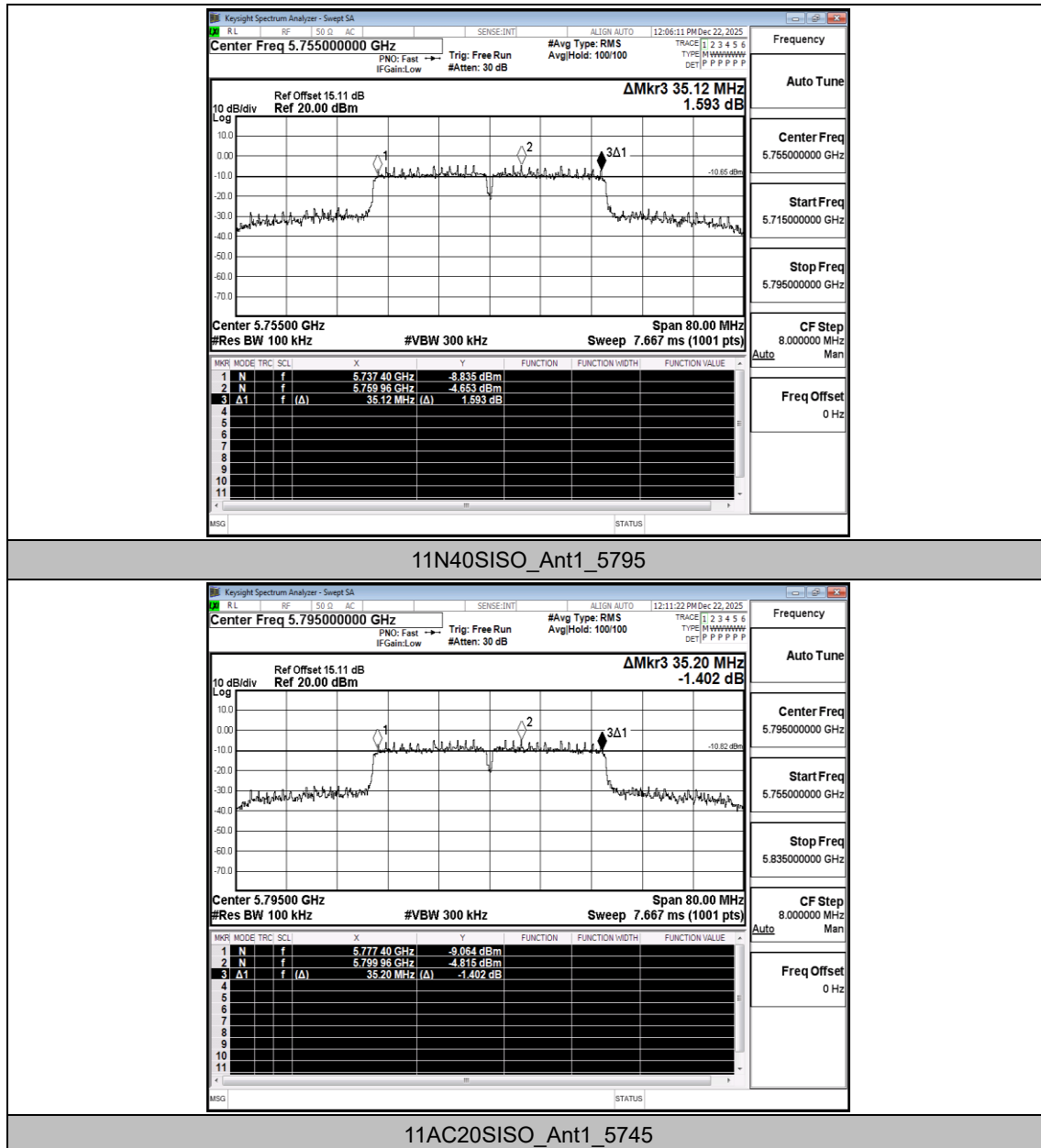
TestMode	Antenna	Freq (MHz)	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.280	5736.840	5753.120	0.5	PASS
		5785	16.320	5776.840	5793.160	0.5	PASS
		5825	16.280	5816.880	5833.160	0.5	PASS
11N20SISO	Ant1	5745	17.040	5736.480	5753.520	0.5	PASS
		5785	17.000	5776.480	5793.480	0.5	PASS
		5825	17.080	5816.520	5833.600	0.5	PASS
11N40SISO	Ant1	5755	35.120	5737.400	5772.520	0.5	PASS
		5795	35.200	5777.400	5812.600	0.5	PASS
11AC20SISO	Ant1	5745	16.840	5736.520	5753.360	0.5	PASS
		5785	17.000	5776.480	5793.480	0.5	PASS
		5825	17.120	5816.400	5833.520	0.5	PASS
11AC40SISO	Ant1	5755	35.440	5737.080	5772.520	0.5	PASS
		5795	35.200	5777.400	5812.600	0.5	PASS
11AC80SISO	Ant1	5775	75.200	5737.400	5812.600	0.5	PASS

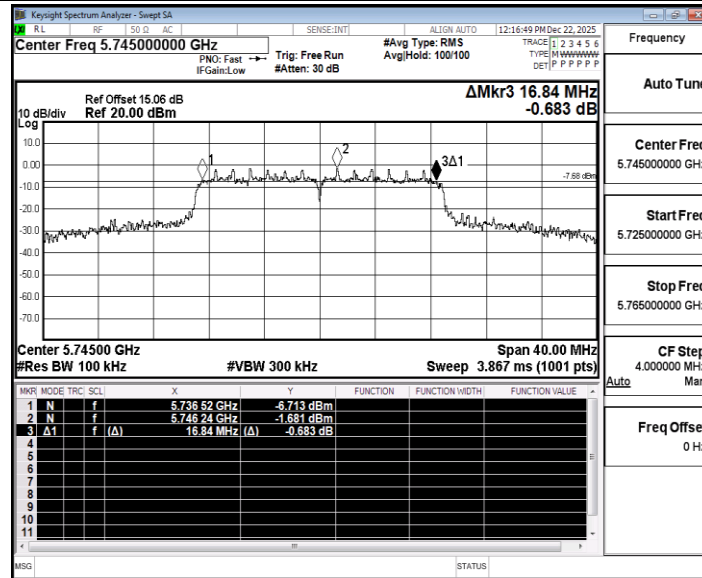
Test Graphs B4



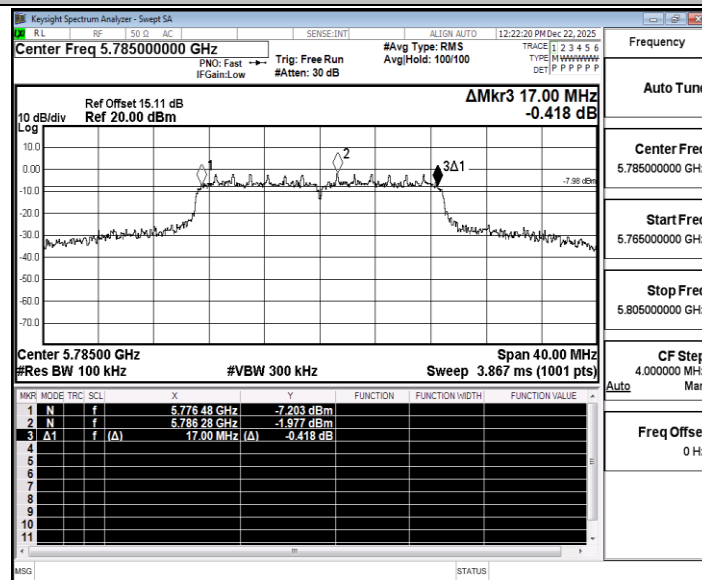




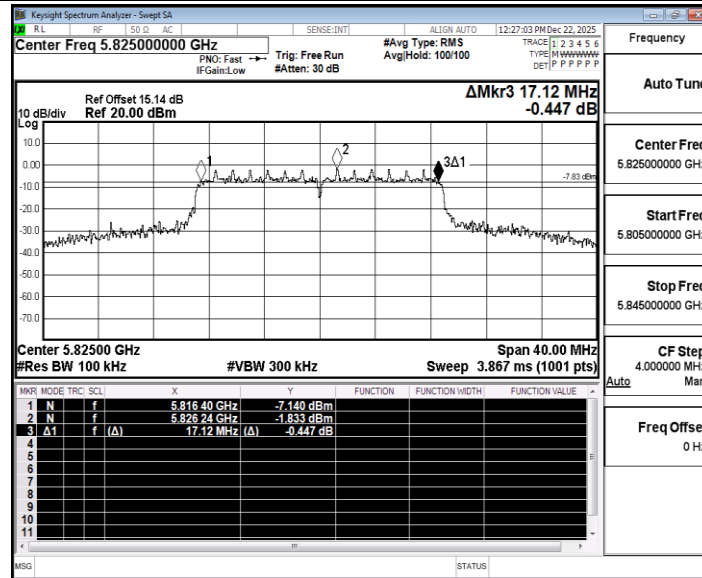




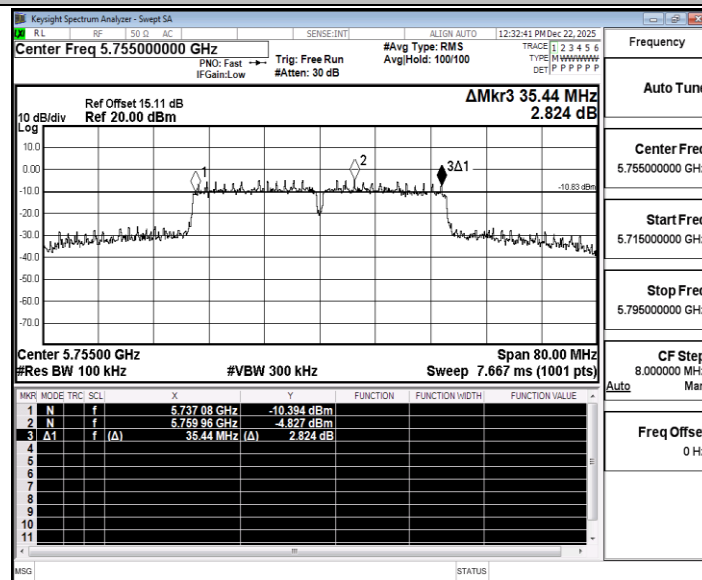
11AC20SISO_Ant1_5785



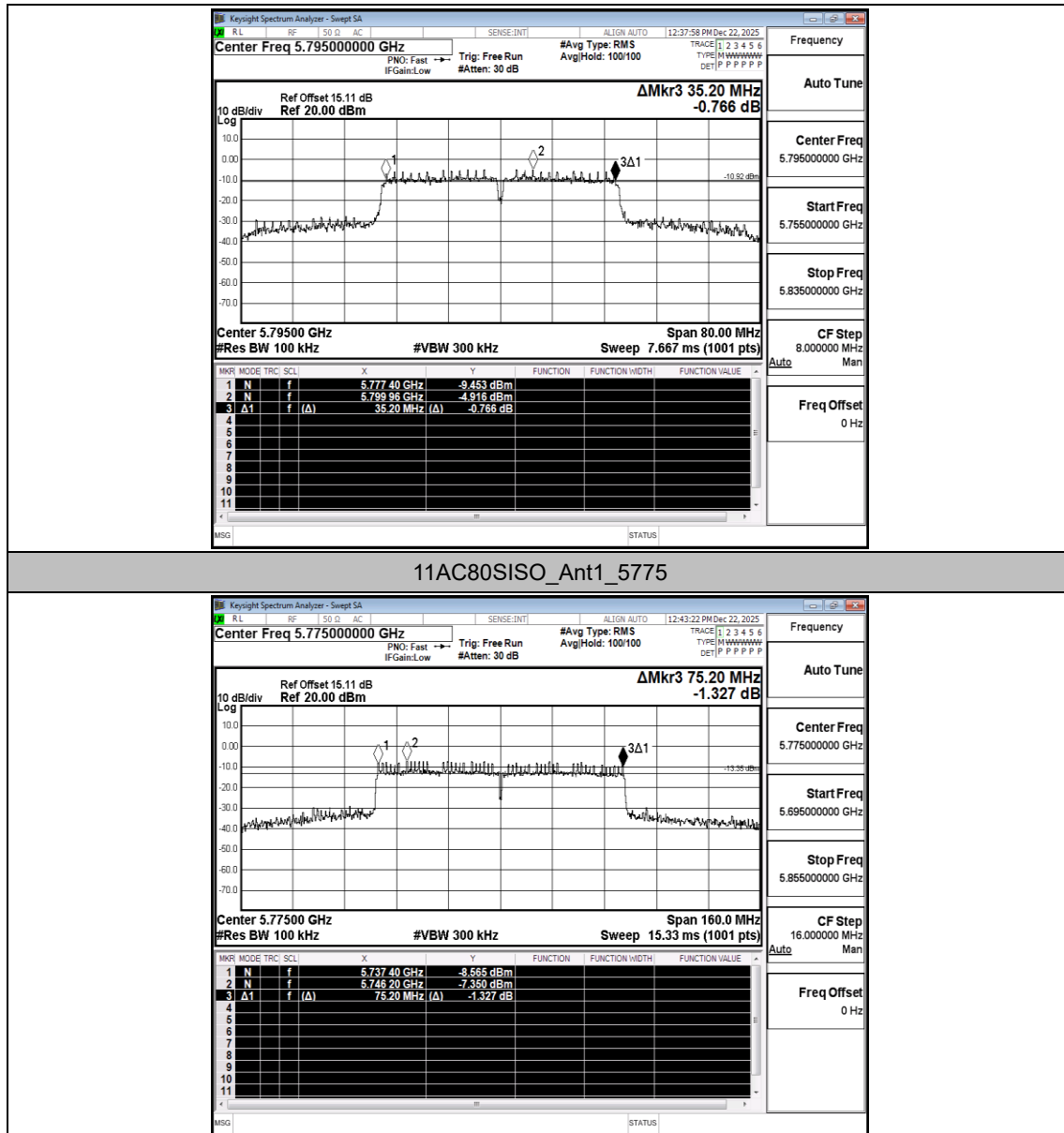
11AC20SISO_Ant1_5825



11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



E.2 Maximum conducted output power

Test Result Channel Power

Test Mode	Antenna	Freq (MHz)	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dB]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant2	5745	14.38	66.67	1.76	16.14	≤30.00	PASS
		5785	14.12	66.67	1.76	15.88	≤30.00	PASS
		5825	14.27	66.67	1.76	16.03	≤30.00	PASS
11N20SISO	Ant2	5745	14.56	61.11	2.14	16.70	≤30.00	PASS
		5785	14.31	66.67	1.76	16.07	≤30.00	PASS
		5825	14.47	66.67	1.76	16.23	≤30.00	PASS
11N40SISO	Ant2	5755	15.65	53.85	2.69	18.34	≤30.00	PASS
		5795	14.39	53.85	2.69	17.08	≤30.00	PASS
11AC20SISO	Ant2	5745	14.43	63.16	2.00	16.43	≤30.00	PASS
		5785	14.31	63.16	2.00	16.31	≤30.00	PASS
		5825	14.42	63.16	2.00	16.42	≤30.00	PASS
11AC40SISO	Ant2	5755	13.66	53.33	2.73	16.39	≤30.00	PASS
		5795	13.63	60.00	2.22	15.85	≤30.00	PASS
11AC80SISO	Ant2	5775	14.80	50.00	3.01	17.81	≤30.00	PASS

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

E.3 Maximum power spectral density

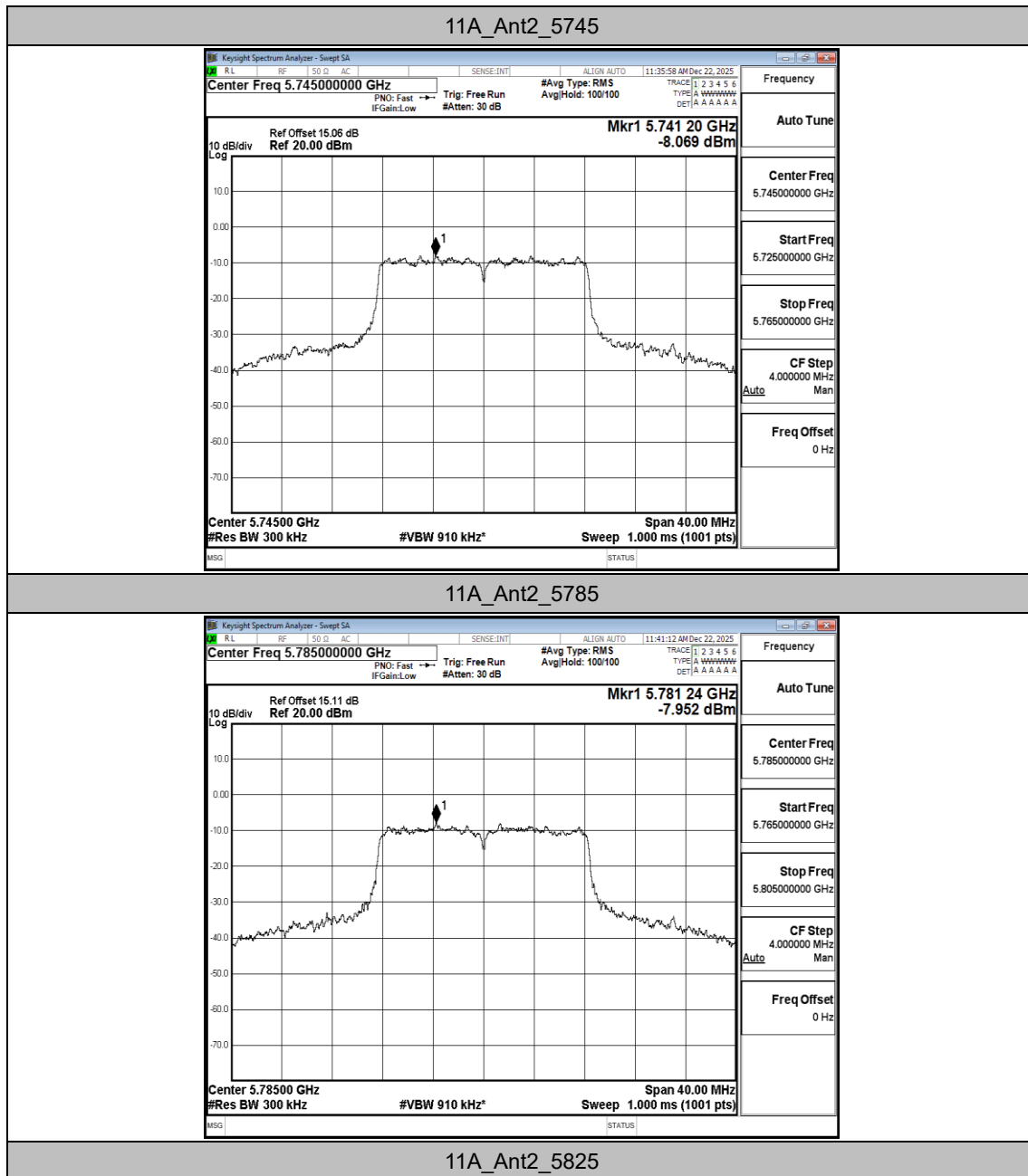
Test Result

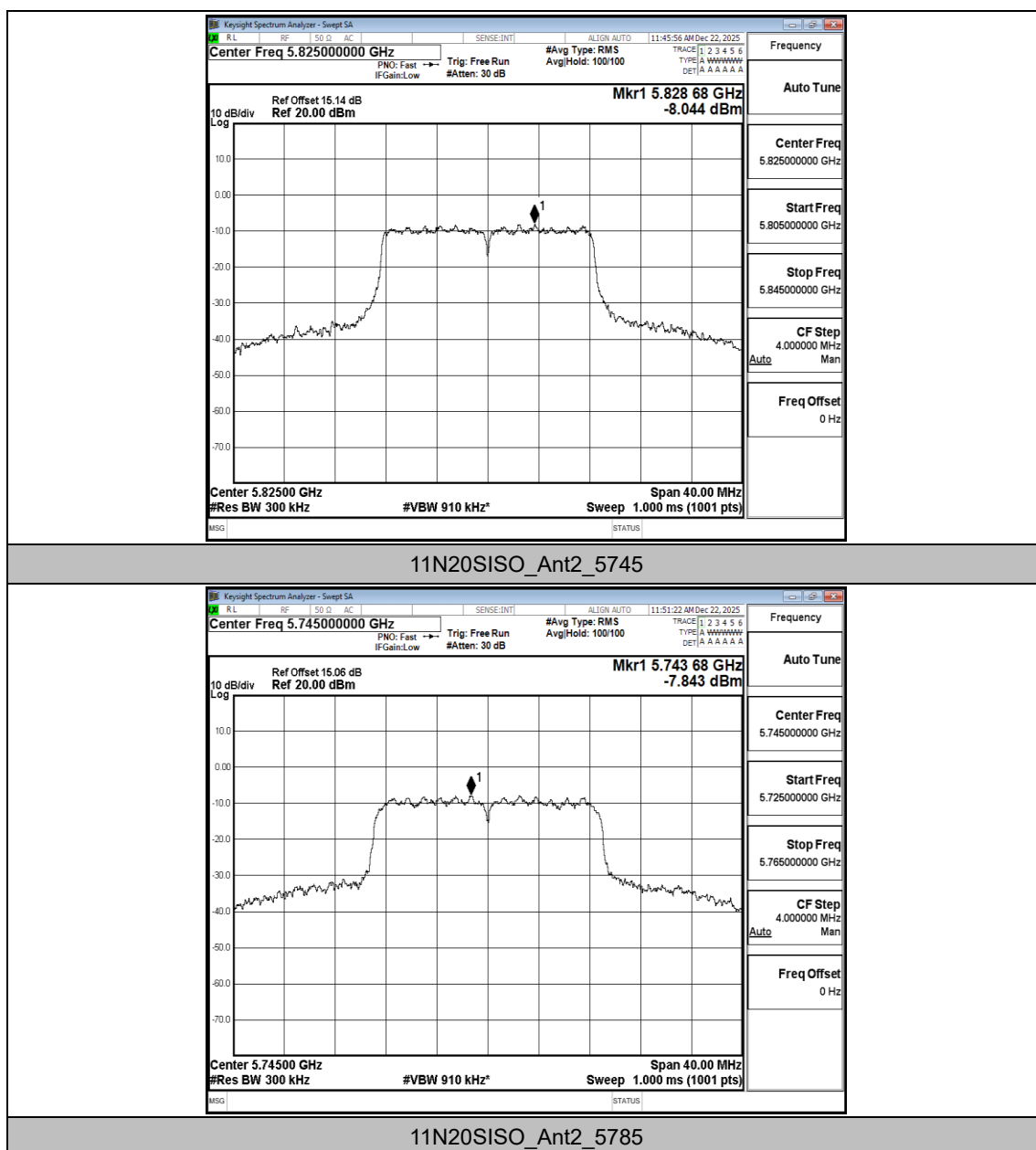
TestMode	Antenna	Freq (MHz)	Raw Data [dBm/500KHz]	DC Factor	RBW Factor	Result [dBm/500KHz]	Limit [dBm/500KHz]	Verdict
11A	Ant2	5745	-8.07	1.76	2.22	-4.09	≤30.00	PASS
		5785	-7.95	1.76	2.22	-3.97	≤30.00	PASS
		5825	-8.04	1.76	2.22	-4.06	≤30.00	PASS
11N20SISO	Ant2	5745	-7.84	2.14	2.22	-3.48	≤30.00	PASS
		5785	-7.53	1.76	2.22	-3.55	≤30.00	PASS
		5825	-7.76	1.76	2.22	-3.78	≤30.00	PASS
11N40SISO	Ant2	5755	-10.97	2.69	2.22	-6.06	≤30.00	PASS
		5795	-11.46	2.69	2.22	-6.55	≤30.00	PASS
11AC20SISO	Ant2	5745	-7.63	2.00	2.22	-3.41	≤30.00	PASS
		5785	-7.85	2.00	2.22	-3.63	≤30.00	PASS
		5825	-7.87	2.00	2.22	-3.65	≤30.00	PASS
11AC40SISO	Ant2	5755	-11	2.73	2.22	-6.05	≤30.00	PASS
		5795	-10.96	2.22	2.22	-6.52	≤30.00	PASS
11AC80SISO	Ant2	5775	-13.98	3.01	2.22	-8.75	≤30.00	PASS

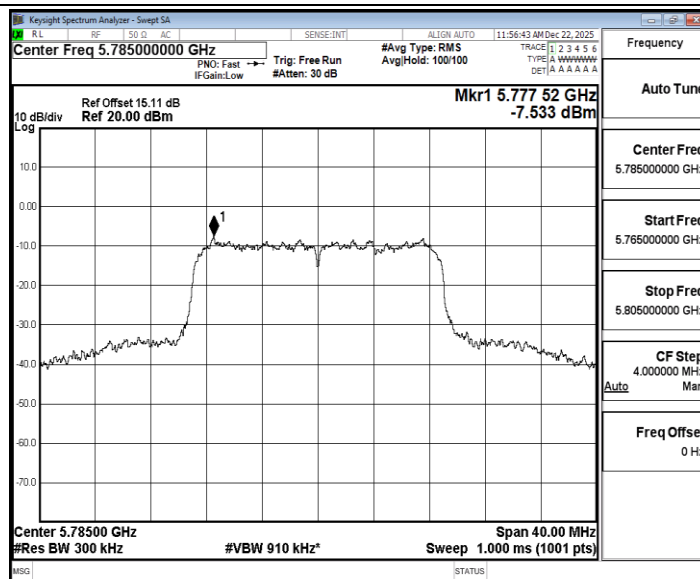
Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

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

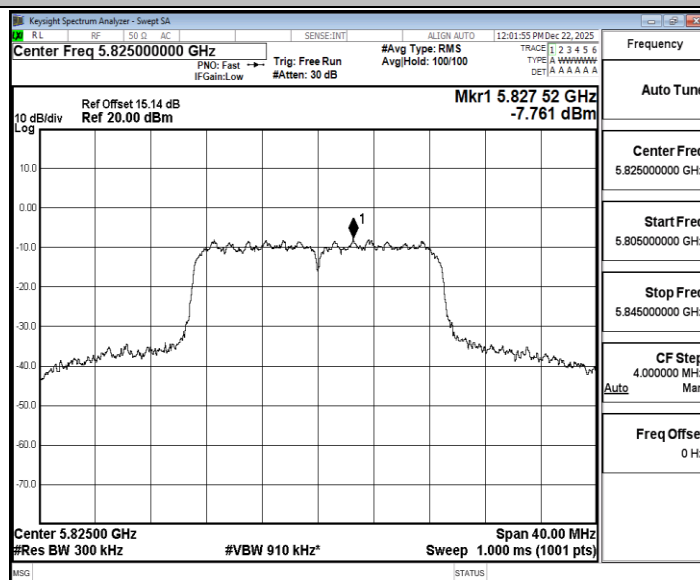
Test Graphs



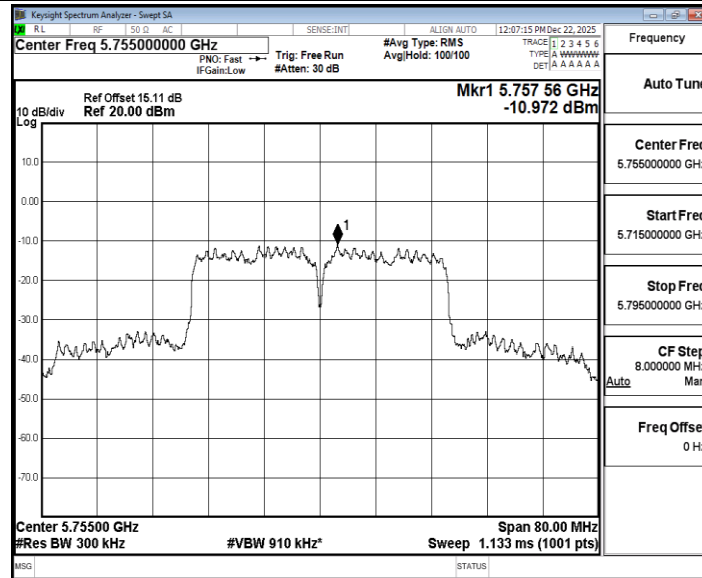




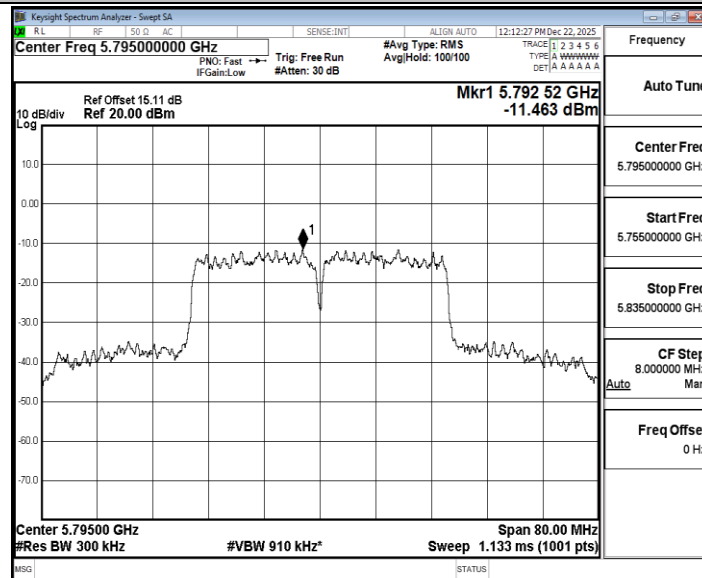
11N20SISO_Ant2_5825



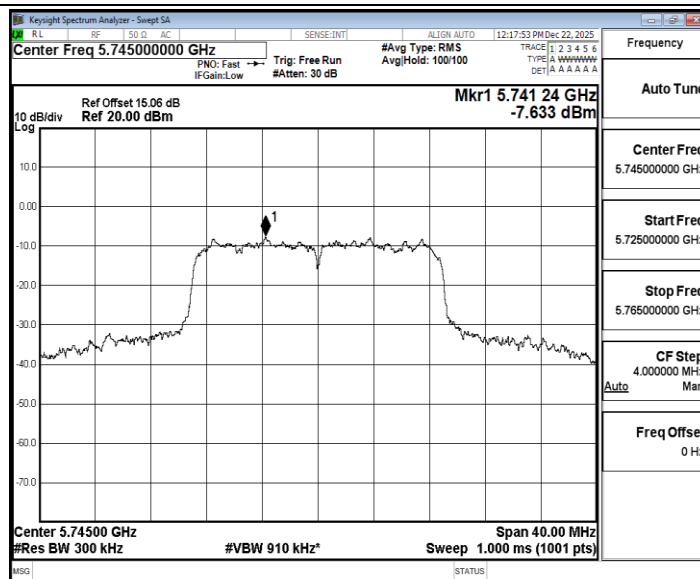
11N40SISO_Ant2_5755



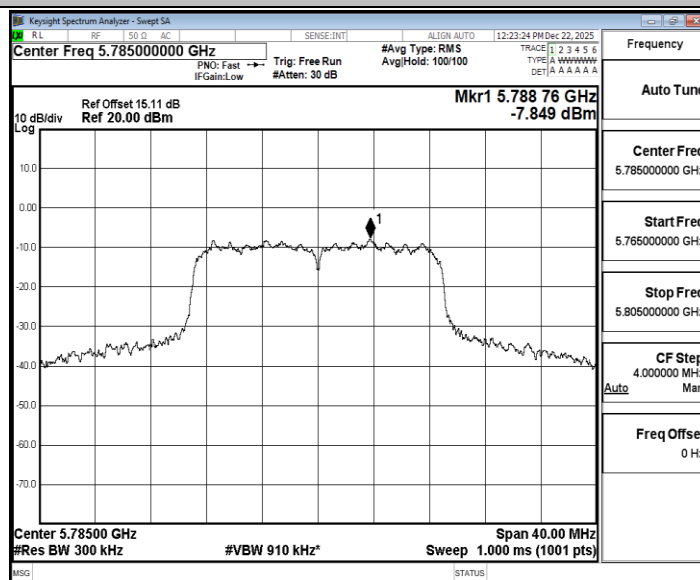
11N40SISO_Ant2_5795



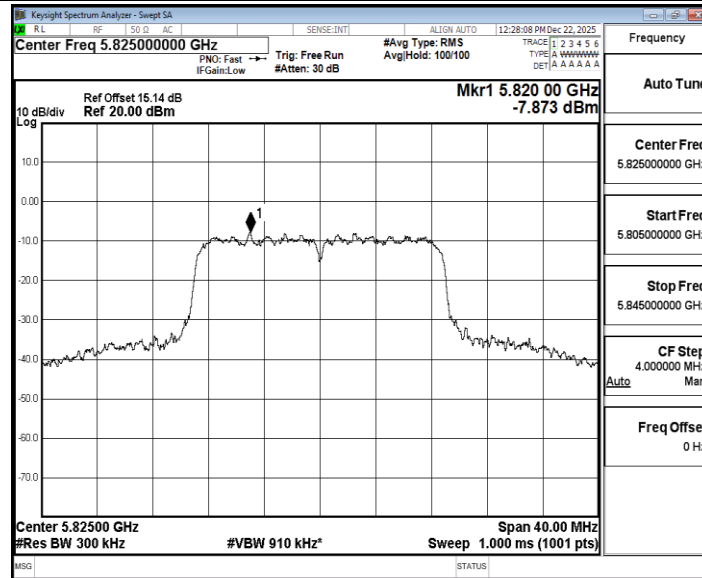
11AC20SISO_Ant2_5745



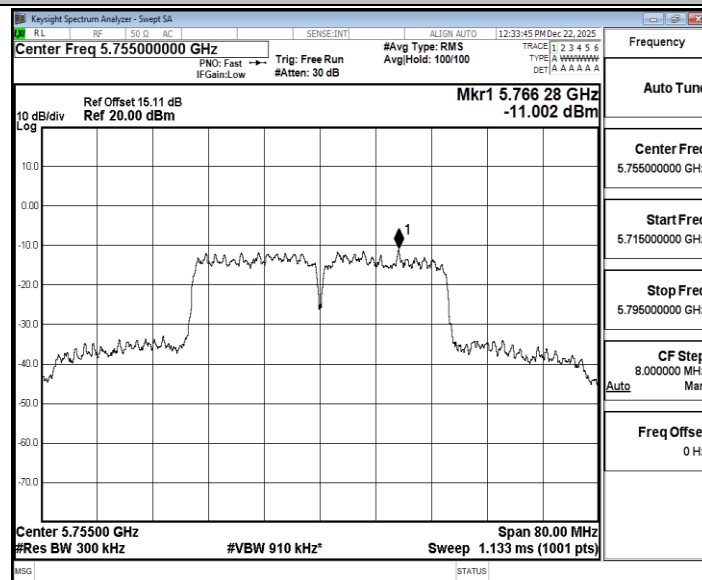
11AC20SISO_Ant2_5785



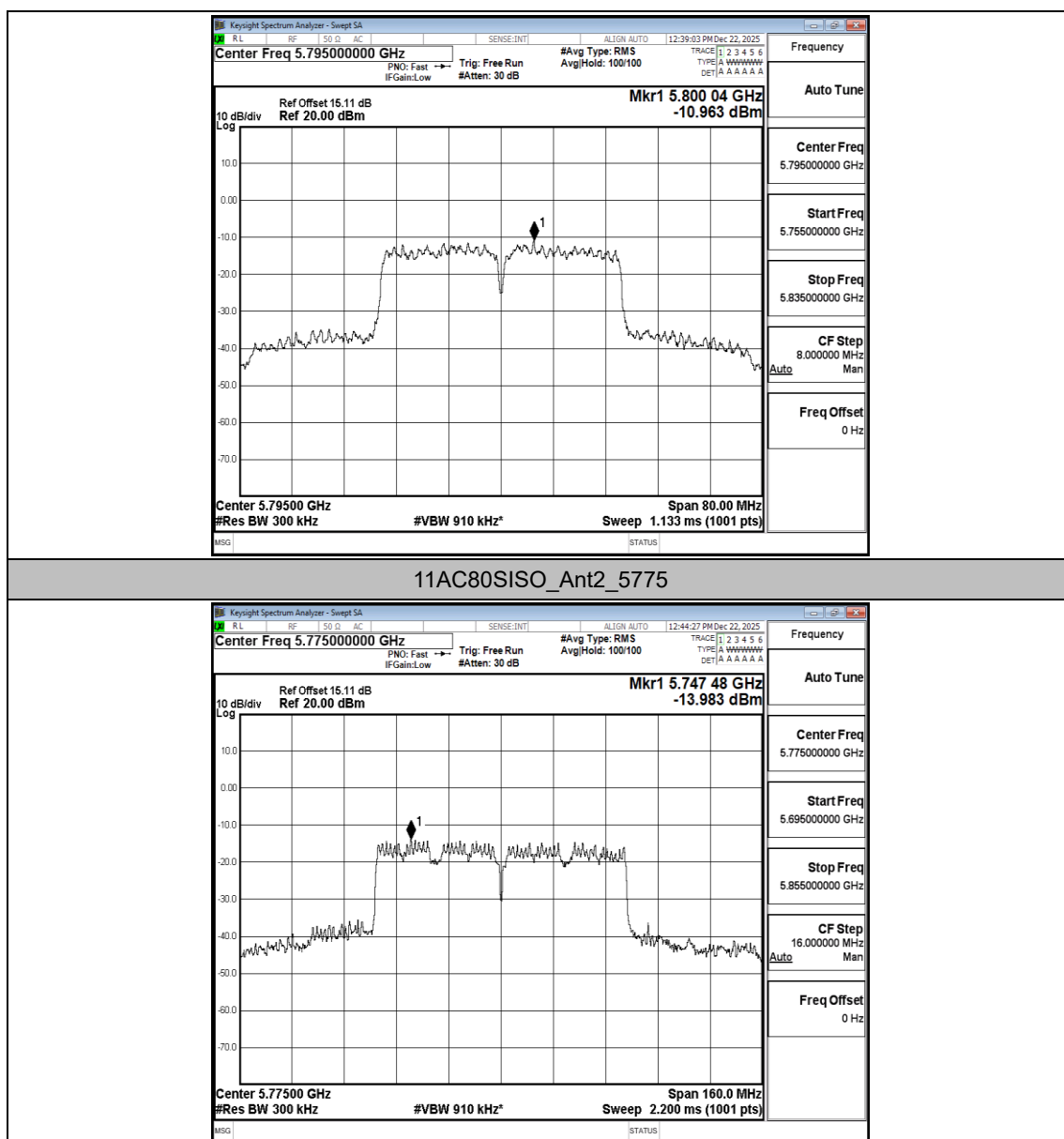
11AC20SISO_Ant2_5825



11AC40SISO_Ant2_5755



11AC40SISO_Ant2_5795



E.4 Emissions in Restricted Bands

Test Result

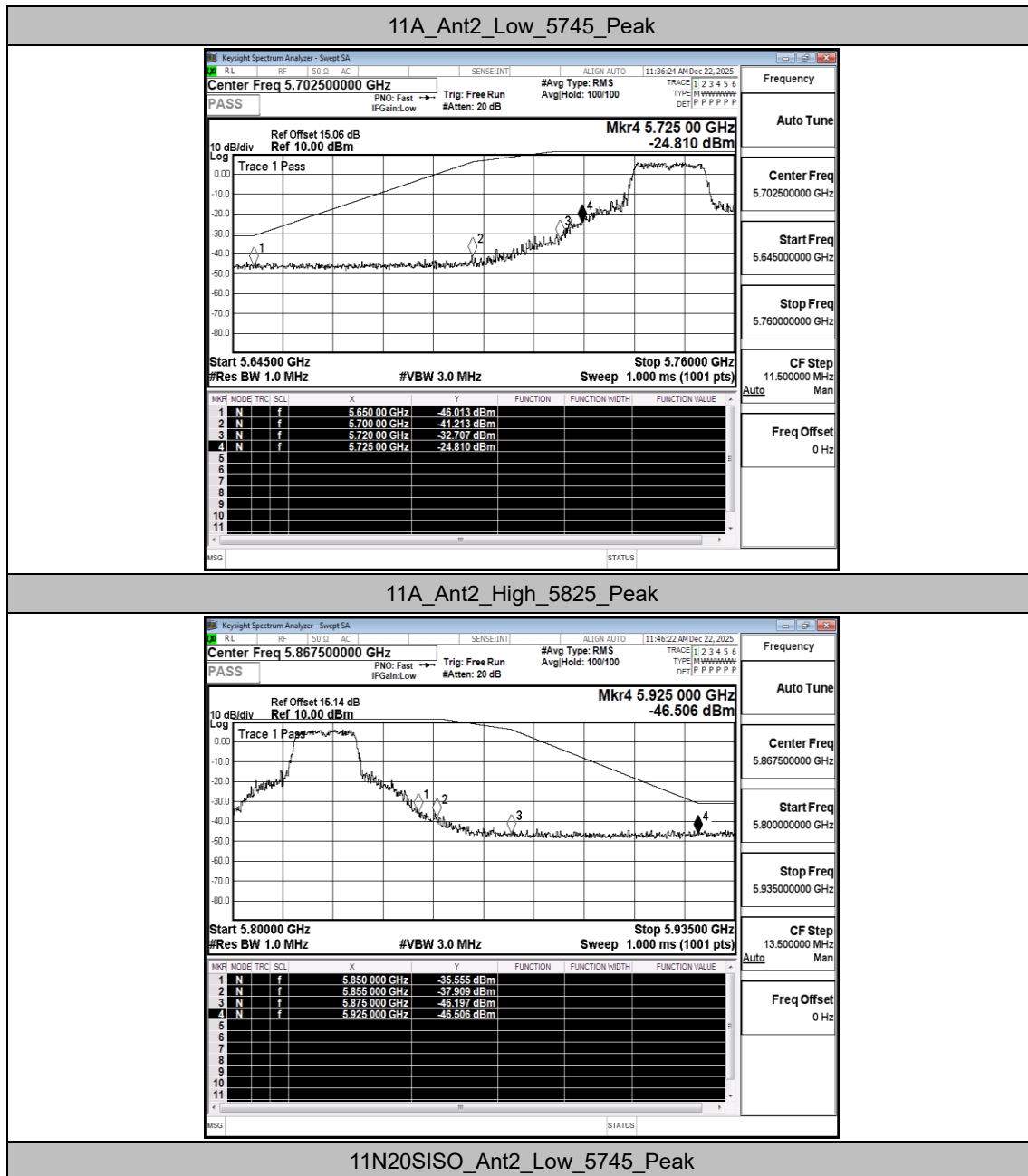
Test Mode	Antenna	Ch Name	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11A	Ant2	Low	5745	Peak	5650.000	-46.013	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-41.21	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-32.71	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-24.81	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5825	Peak	5850.000	-35.555	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-37.91	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-46.2	≤6.12	3.88	0.00	---	---	PASS
				Peak	5925.000	-46.51	≤-27.00	3.88	0.00	- - -	- - -	PASS
11N20 SISO	Ant2	Low	5745	Peak	5650.000	-47.014	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-43.77	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-28.85	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-22.62	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5825	Peak	5850.000	-34.22	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-35.41	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-46.29	≤6.12	3.88	0.00	---	---	PASS
				Peak	5925.000	-46.06	≤-27.00	3.88	0.00	- - -	- - -	PASS
11N40 SISO	Ant2	Low	5755	Peak	5650.000	-46.345	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-36.14	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-23.72	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-20.85	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5795	Peak	5850.000	-37.061	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-35.33	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-44.47	≤6.12	3.88	0.00	---	---	PASS
				Peak	5925.000	-46.49	≤-27.00	3.88	0.00	- - -	- - -	PASS
11AC20 SISO	Ant2	Low	5745	Peak	5650.000	-47.152	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-44.26	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-30.62	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-23.51	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5825	Peak	5850.000	-30.013	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-38.82	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-45.87	≤6.12	3.88	0.00	---	---	PASS

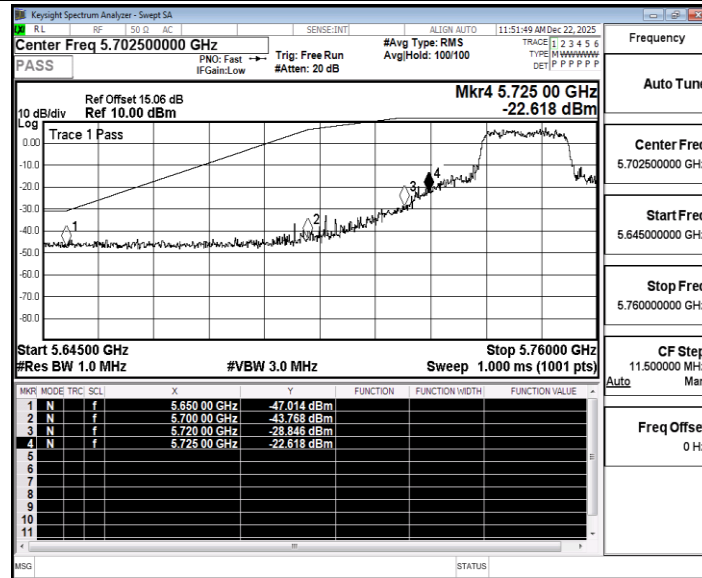
				Peak	5925.000	-47.55	≤-27.00	3.88	0.00	- - -	- - -	PASS
11AC40SISO	Ant2	Low	5755	Peak	5650.000	-46.945	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-33.92	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-23.18	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-20.57	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5795	Peak	5850.000	-34.626	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-40.28	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-47.54	≤6.12	3.88	0.00	---	---	PASS
				Peak	5925.000	-47.91	≤-27.00	3.88	0.00	- - -	- - -	PASS
11AC80SISO	Ant2	Low	5775	Peak	5650.000	-39.982	≤-30.88	3.88	0.00	---	---	PASS
				Peak	5700.000	-28.38	≤6.12	3.88	0.00	---	---	PASS
				Peak	5720.000	-22.91	≤11.72	3.88	0.00	---	---	PASS
				Peak	5725.000	-22.41	≤23.12	3.88	0.00	- - -	- - -	PASS
		High	5775	Peak	5850.000	-26.163	≤23.12	3.88	0.00	---	---	PASS
				Peak	5855.000	-31.61	≤11.72	3.88	0.00	---	---	PASS
				Peak	5875.000	-36.96	≤6.12	3.88	0.00	---	---	PASS
				Peak	5925.000	-43.55	≤-27.00	3.88	0.00	- - -	- - -	PASS

Note:

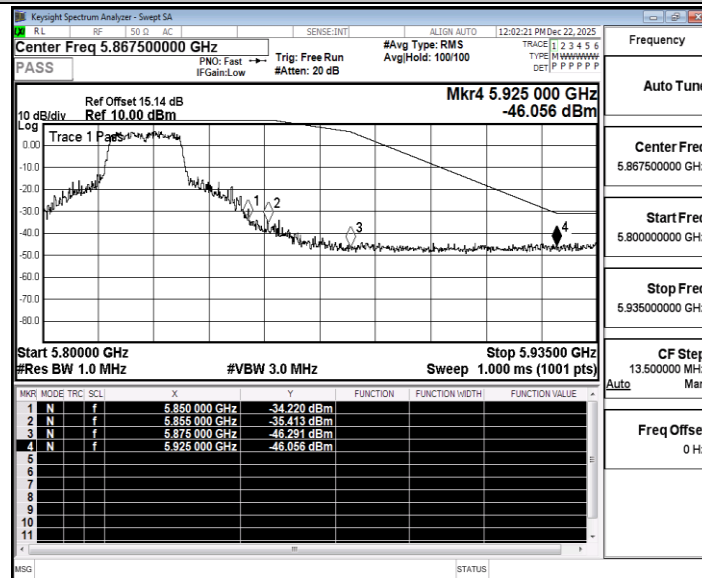
1. The Antenna Gain is compensated in the graph.
2. For transmitters operating in 5150-5350 GHz band and 5470-5725 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

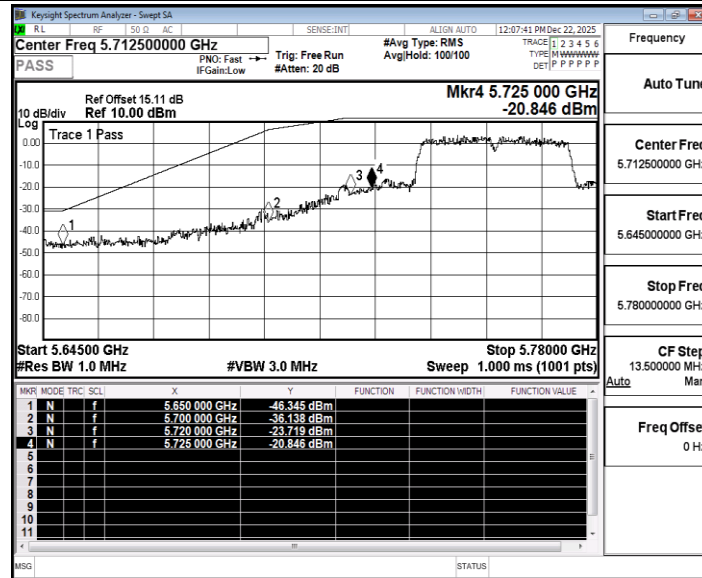




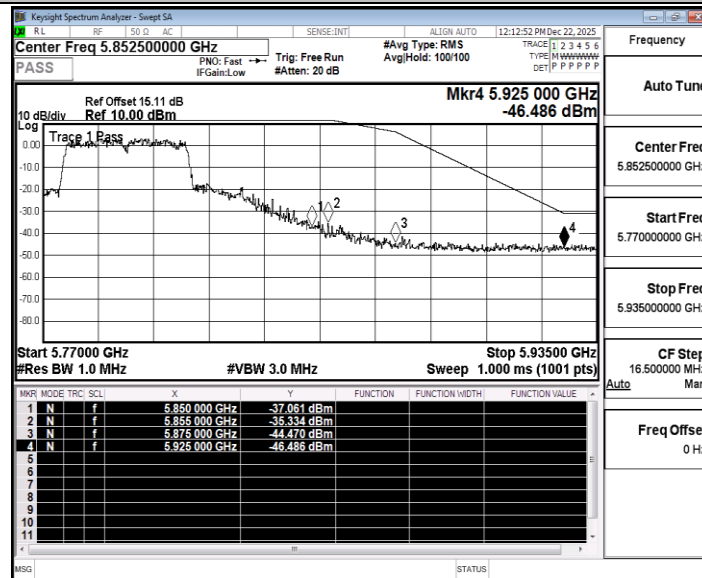
11N20SISO_Ant2_High_5825_Peak



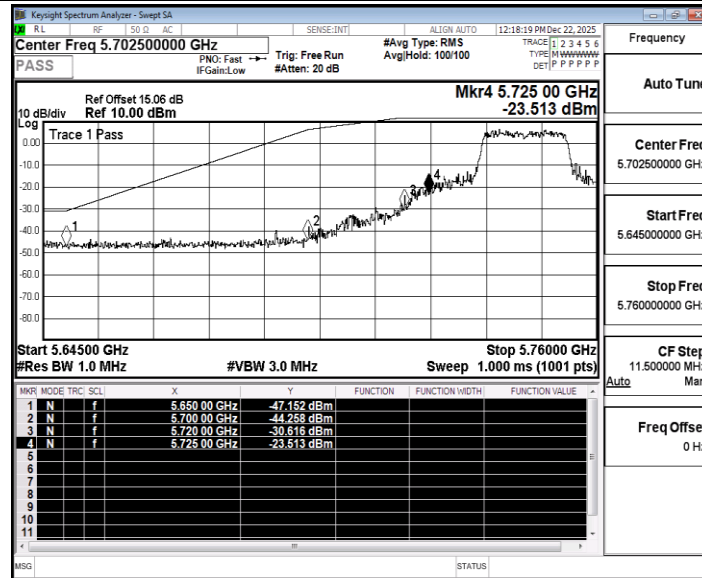
11N40SISO_Ant2_Low_5755_Peak



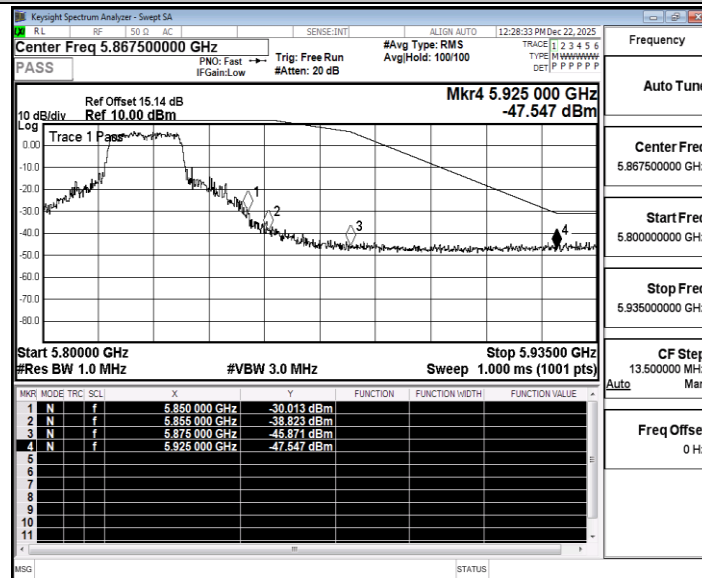
11N40SISO_Ant2_High_5795_Peak



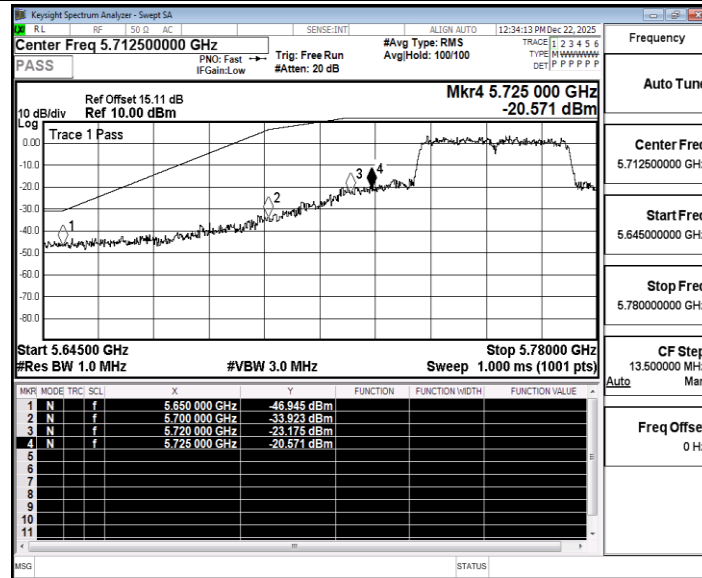
11AC20SISO_Ant2_Low_5745_Peak



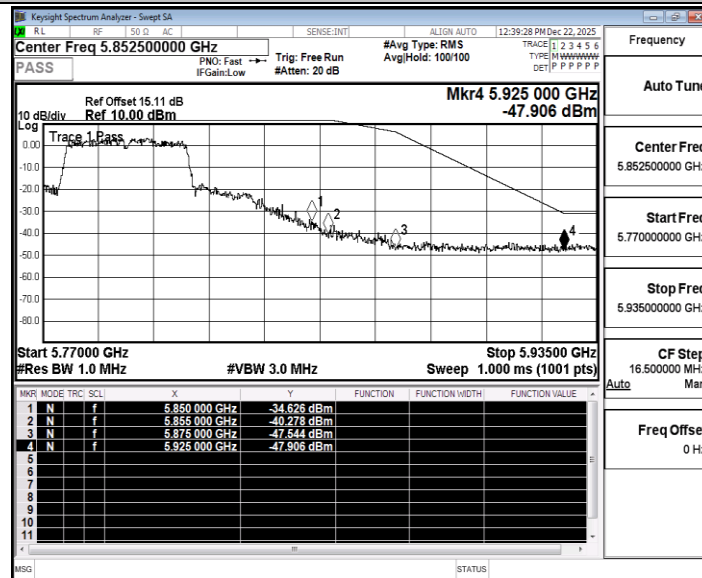
11AC20SISO_Ant2_High_5825_Peak



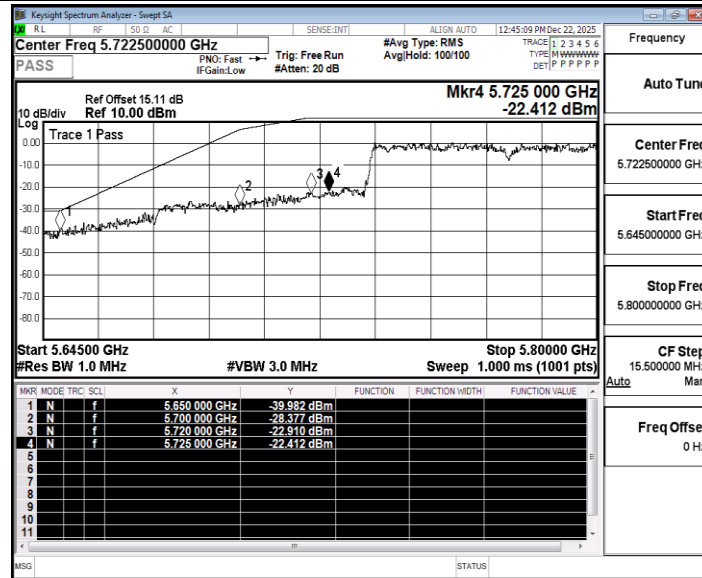
11AC40SISO_Ant2_Low_5755_Peak



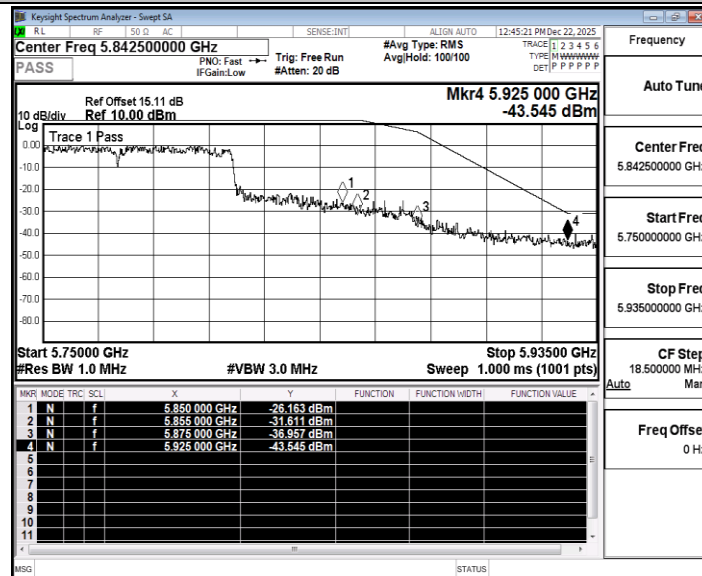
11AC40SISO_Ant2_High_5795_Peak



11AC80SISO_Ant2_Low_5775_Peak



11AC80SISO_Ant2_High_5775_Peak



E.5 Frequency Stability

Test Result

Voltage								
TestMode	Antenna	Freq (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant2	5745	NV	NT	-20000.00	-3.481288	20	PASS
			LV	NT	-40000.00	-6.962576	20	PASS
			HV	NT	-20000.00	-3.481288	20	PASS
		5785	NV	NT	-20000.00	-3.457217	20	PASS
			LV	NT	-20000.00	-3.457217	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5825	NV	NT	0.00	0.000000	20	PASS
			LV	NT	-20000.00	-3.433476	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11N20SI SO	Ant2	5745	NV	NT	-20000.00	-3.481288	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-20000.00	-3.481288	20	PASS
		5785	NV	NT	-20000.00	-3.457217	20	PASS
			LV	NT	-20000.00	-3.457217	20	PASS
			HV	NT	-40000.00	-6.914434	20	PASS
		5825	NV	NT	-20000.00	-3.433476	20	PASS
			LV	NT	-20000.00	-3.433476	20	PASS
			HV	NT	-40000.00	-6.866953	20	PASS
11N40SI SO	Ant2	5755	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5795	NV	NT	-40000.00	-6.902502	20	PASS
			LV	NT	-40000.00	-6.902502	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11AC20S ISO	Ant2	5745	NV	NT	0.00	0.000000	20	PASS
			LV	NT	-20000.00	-3.481288	20	PASS
			HV	NT	-20000.00	-3.481288	20	PASS
		5785	NV	NT	0.00	0.000000	20	PASS
			LV	NT	-20000.00	-3.457217	20	PASS
			HV	NT	-40000.00	-6.914434	20	PASS
		5825	NV	NT	-20000.00	-3.433476	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-20000.00	-3.433476	20	PASS
11AC40S	Ant2	5755	NV	NT	0.00	0.000000	20	PASS

ISO			LV	NT	-40000.00	-6.950478	20	PASS
			HV	NT	-40000.00	-6.950478	20	PASS
		5795	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11AC80S ISO	Ant2	5775	NV	NT	-80000.00	-13.852814	20	PASS
			LV	NT	-80000.00	-13.852814	20	PASS
			HV	NT	-80000.00	-13.852814	20	PASS

Temperature								
TestMode	Antenna	Freq (MHz)	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant2	5745	NV	-30	-20000.00	-3.481288	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.481288	20	PASS
			NV	0	-20000.00	-3.481288	20	PASS
			NV	10	-20000.00	-3.481288	20	PASS
			NV	20	-20000.00	-3.481288	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-40000.00	-6.962576	20	PASS
		5785	NV	-30	-20000.00	-3.457217	20	PASS
			NV	-20	-20000.00	-3.457217	20	PASS
			NV	-10	-20000.00	-3.457217	20	PASS
			NV	0	-20000.00	-3.457217	20	PASS
			NV	10	-20000.00	-3.457217	20	PASS
			NV	20	-20000.00	-3.457217	20	PASS
			NV	30	-20000.00	-3.457217	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.457217	20	PASS
		5825	NV	-30	-20000.00	-3.433476	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.433476	20	PASS
			NV	0	-20000.00	-3.433476	20	PASS
			NV	10	-20000.00	-3.433476	20	PASS
			NV	20	-20000.00	-3.433476	20	PASS
			NV	30	-20000.00	-3.433476	20	PASS
			NV	40	-20000.00	-3.433476	20	PASS
			NV	50	0.00	0.000000	20	PASS
11N20SI SO	Ant2	5745	NV	-30	-20000.00	-3.481288	20	PASS
			NV	-20	-20000.00	-3.481288	20	PASS

			NV	-10	-20000.00	-3.481288	20	PASS
			NV	0	-20000.00	-3.481288	20	PASS
			NV	10	-20000.00	-3.481288	20	PASS
			NV	20	-20000.00	-3.481288	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.481288	20	PASS
		5785	NV	-30	-40000.00	-6.914434	20	PASS
			NV	-20	-20000.00	-3.457217	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.457217	20	PASS
			NV	10	-20000.00	-3.457217	20	PASS
			NV	20	-20000.00	-3.457217	20	PASS
			NV	30	20000.00	3.457217	20	PASS
		5825	NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.457217	20	PASS
			NV	-30	-20000.00	-3.433476	20	PASS
			NV	-20	-20000.00	-3.433476	20	PASS
			NV	-10	-40000.00	-6.866953	20	PASS
			NV	0	-20000.00	-3.433476	20	PASS
			NV	10	0.00	0.000000	20	PASS
		5755	NV	20	-20000.00	-3.433476	20	PASS
			NV	30	-20000.00	-3.433476	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.433476	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-40000.00	-6.950478	20	PASS
		5795	NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-40000.00	-6.950478	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-40000.00	-6.950478	20	PASS
			NV	-30	0.00	0.000000	20	PASS
		5785	NV	-20	0.00	0.000000	20	PASS
			NV	-10	-40000.00	-6.902502	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-40000.00	-6.902502	20	PASS
			NV	20	-40000.00	-6.902502	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS

11N40SI
SO

Ant2

			NV	40	-40000.00	-6.902502	20	PASS
			NV	50	0.00	0.000000	20	PASS
11AC20S ISO	Ant2	5745	NV	-30	0.00	0.000000	20	PASS
			NV	-20	-20000.00	-3.481288	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.481288	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-20000.00	-3.481288	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	-20000.00	-3.481288	20	PASS
			NV	50	-20000.00	-3.481288	20	PASS
		5785	NV	-30	-20000.00	-3.457217	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.457217	20	PASS
			NV	0	-20000.00	-3.457217	20	PASS
			NV	10	-20000.00	-3.457217	20	PASS
			NV	20	-20000.00	-3.457217	20	PASS
			NV	30	-40000.00	-6.914434	20	PASS
			NV	40	-20000.00	-3.457217	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5825	NV	-30	-40000.00	-6.866953	20	PASS
			NV	-20	-20000.00	-3.433476	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-40000.00	-6.866953	20	PASS
			NV	30	-20000.00	-3.433476	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.433476	20	PASS
11AC40S ISO	Ant2	5755	NV	-30	-40000.00	-6.950478	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-40000.00	-6.950478	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-40000.00	-6.950478	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5795	NV	-30	-40000.00	-6.902502	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS

			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
11AC80S ISO	Ant2	5775	NV	-30	0.00	0.000000	20	PASS
			NV	-20	-80000.00	-13.852814	20	PASS
			NV	-10	-80000.00	-13.852814	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	80000.00	13.852814	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-80000.00	-13.852814	20	PASS
			NV	40	-80000.00	-13.852814	20	PASS
			NV	50	80000.00	13.852814	20	PASS

E.6 Duty Cycle

Test Result

TestMode	Antenna	Freq (MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
11A	Ant2	5745	0.12	0.18	66.67	---	---
		5785	0.12	0.18	66.67	---	---
		5825	0.12	0.18	66.67	---	---
11N20SISO	Ant2	5745	0.11	0.18	61.11	---	---
		5785	0.12	0.18	66.67	---	---
		5825	0.12	0.18	66.67	---	---
11N40SISO	Ant2	5755	0.07	0.13	53.85	---	---
		5795	0.07	0.13	53.85	---	---
11AC20SISO	Ant2	5745	0.12	0.19	63.16	---	---
		5785	0.12	0.19	63.16	---	---
		5825	0.12	0.19	63.16	---	---
11AC40SISO	Ant2	5755	0.08	0.15	53.33	---	---
		5795	0.09	0.15	60.00	---	---
11AC80SISO	Ant2	5775	0.06	0.12	50.00	---	---

Test Graphs

