

RF Test Data for RLAN(5 .8G) (Conducted Measurement)

Product Name: WIFI KARAOKE SYSTEM

Trade Mark: singing machine

Test Model: ISM9025

FCC ID: 2AAXO-ISM9025

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

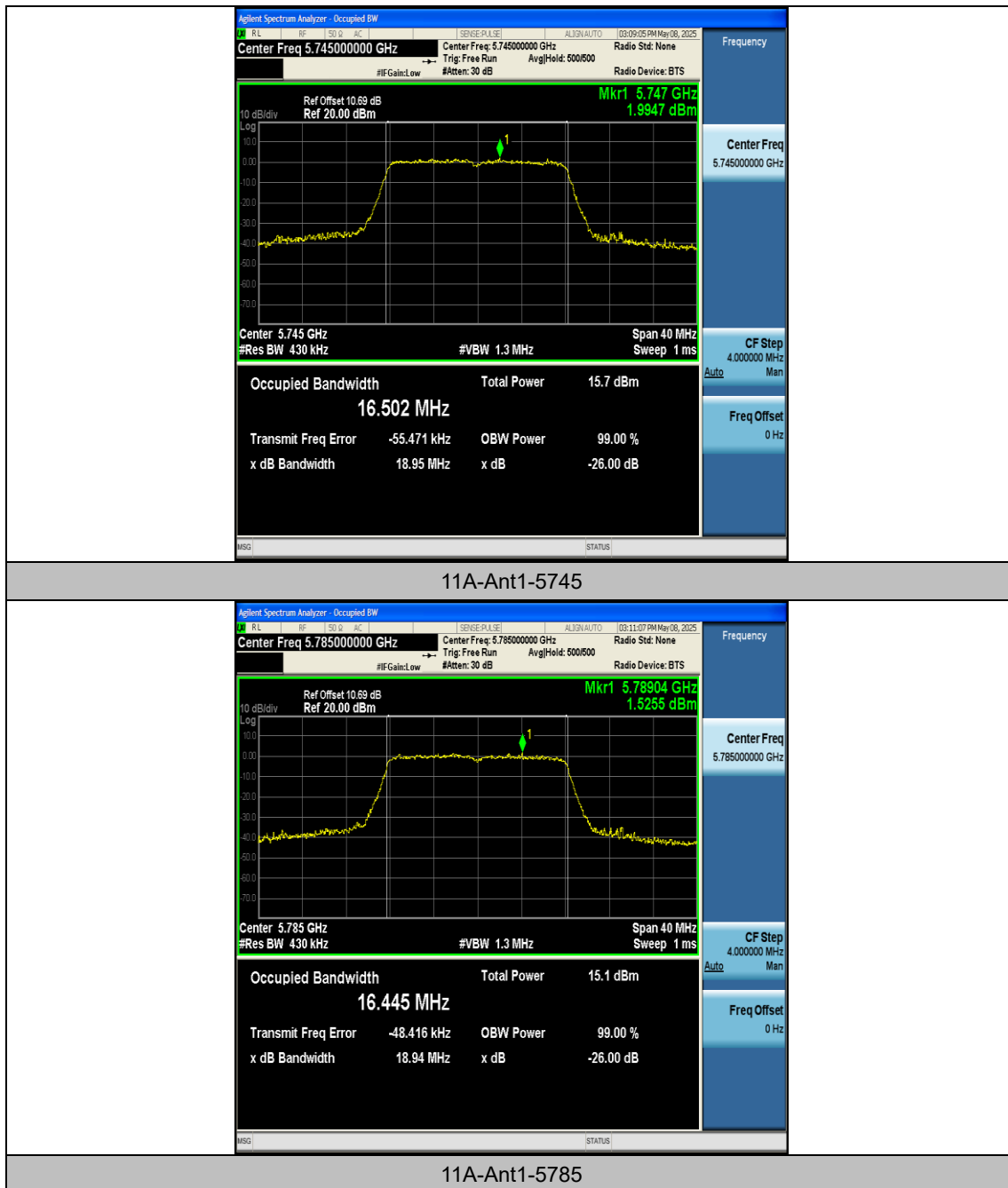
Appendix A2: Occupied channel bandwidth

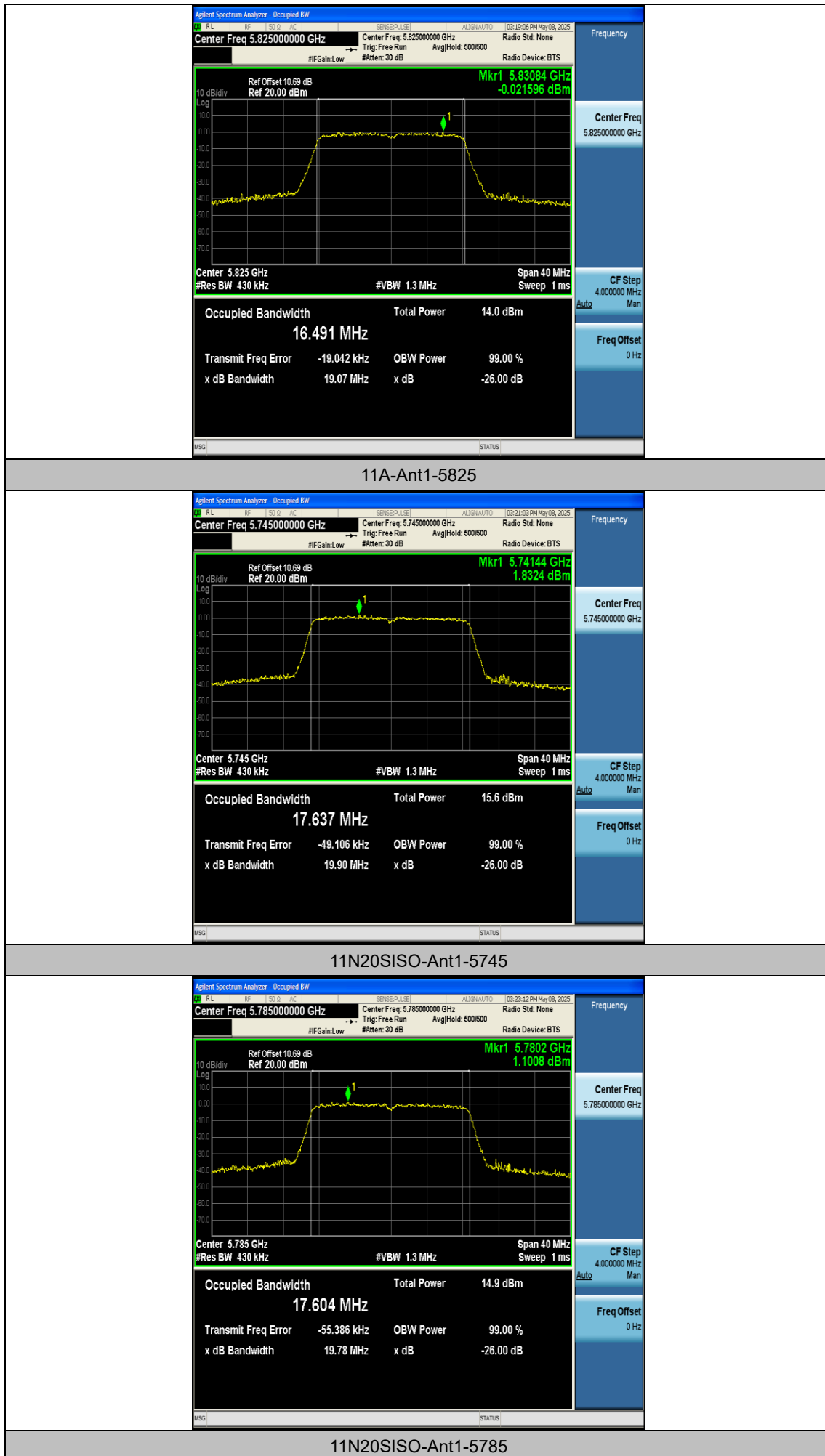
Test Result

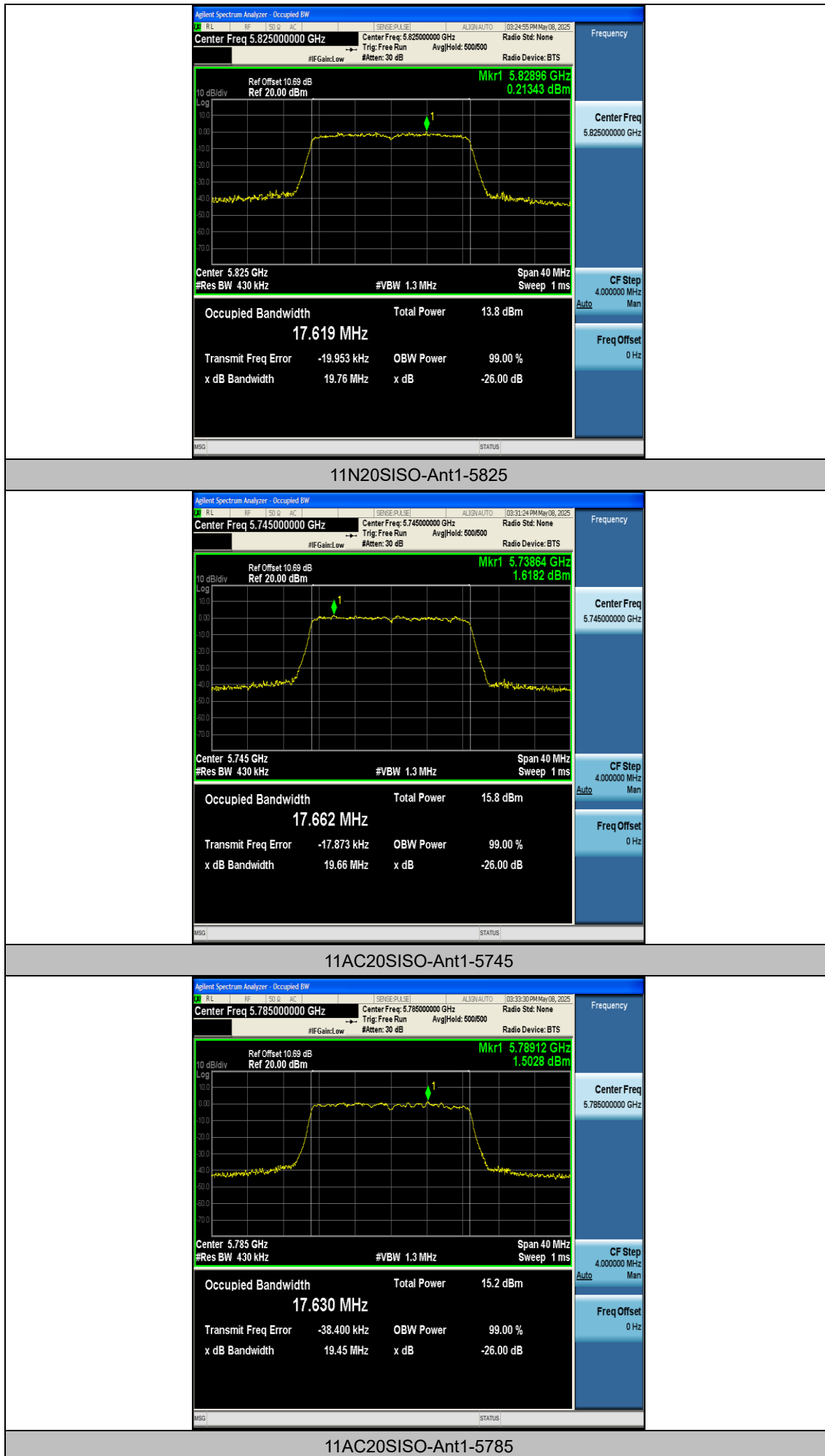
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.502	5736.6935	5753.1955	---	---
11A	Ant1	5785	16.445	5776.7291	5793.1741	---	---
11A	Ant1	5825	16.491	5816.7355	5833.2265	---	---
11N20SISO	Ant1	5745	17.637	5736.1324	5753.7694	---	---
11N20SISO	Ant1	5785	17.604	5776.1426	5793.7466	---	---
11N20SISO	Ant1	5825	17.619	5816.1706	5833.7896	---	---
11AC20SISO	Ant1	5745	17.662	5736.1511	5753.8131	---	---
11AC20SISO	Ant1	5785	17.630	5776.1466	5793.7766	---	---
11AC20SISO	Ant1	5825	17.706	5816.1079	5833.8139	---	---

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs









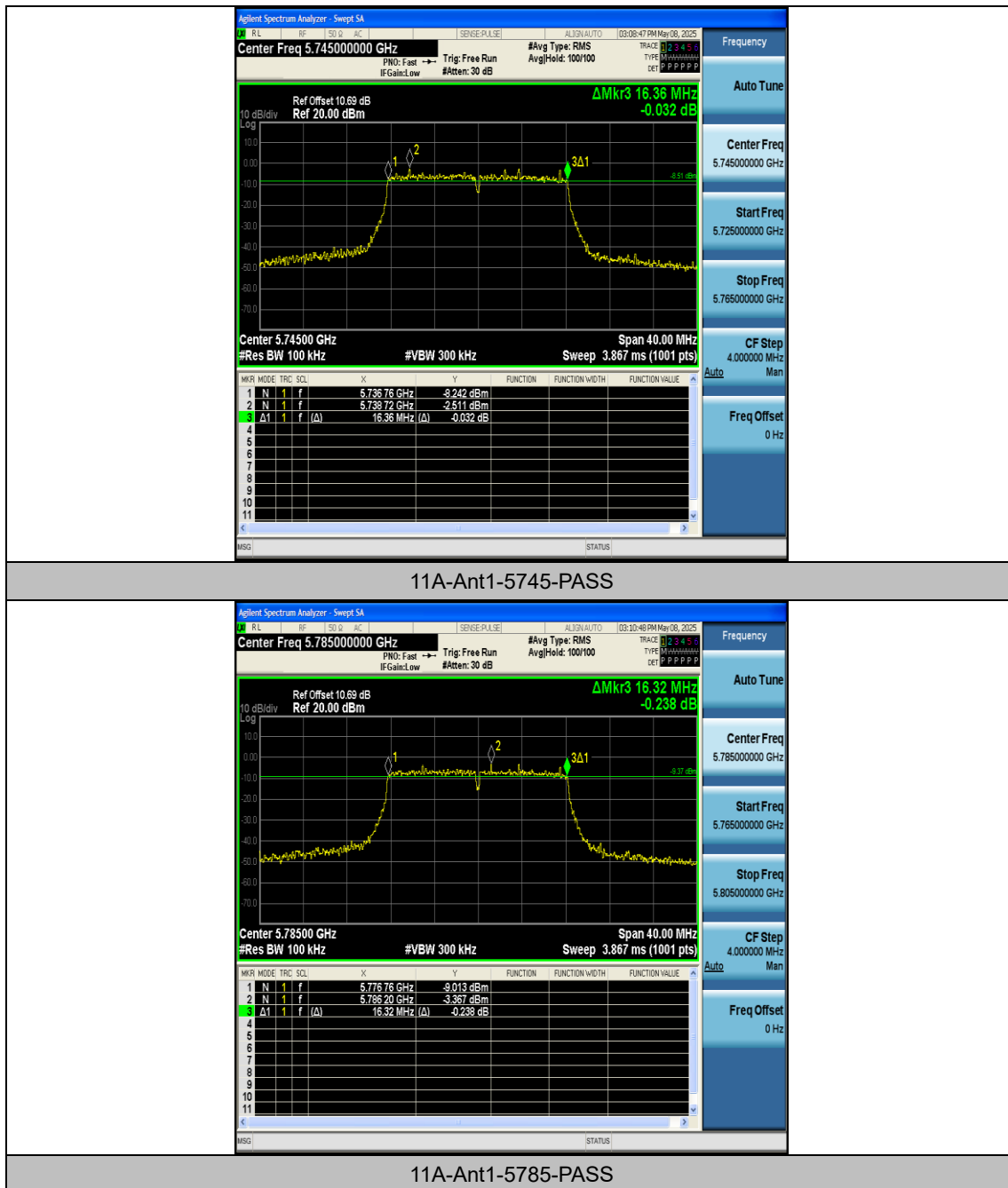
Appendix A: Min emission bandwidth

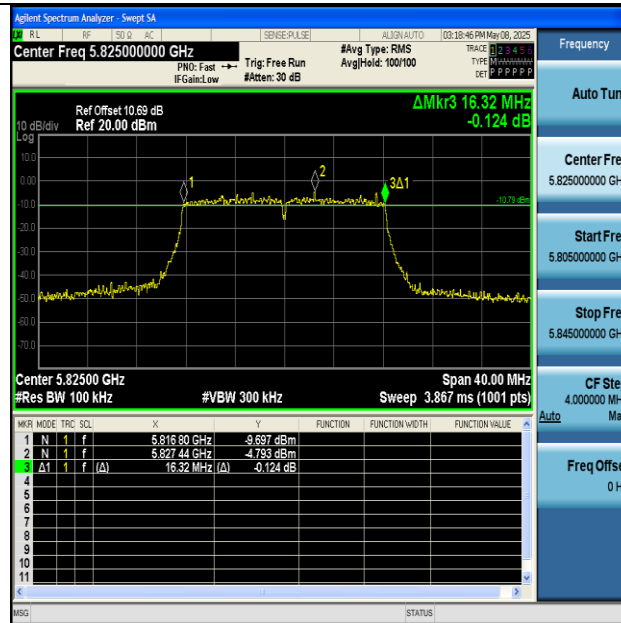
Test Result

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.360	5736.760	5753.120	0.5	PASS
11A	Ant1	5785	16.320	5776.760	5793.080	0.5	PASS
11A	Ant1	5825	16.320	5816.800	5833.120	0.5	PASS
11N20SISO	Ant1	5745	17.160	5736.160	5753.320	0.5	PASS
11N20SISO	Ant1	5785	17.200	5776.160	5793.360	0.5	PASS
11N20SISO	Ant1	5825	17.560	5816.160	5833.720	0.5	PASS
11AC20SISO	Ant1	5745	17.280	5736.200	5753.480	0.5	PASS
11AC20SISO	Ant1	5785	17.440	5776.200	5793.640	0.5	PASS
11AC20SISO	Ant1	5825	17.160	5816.240	5833.400	0.5	PASS

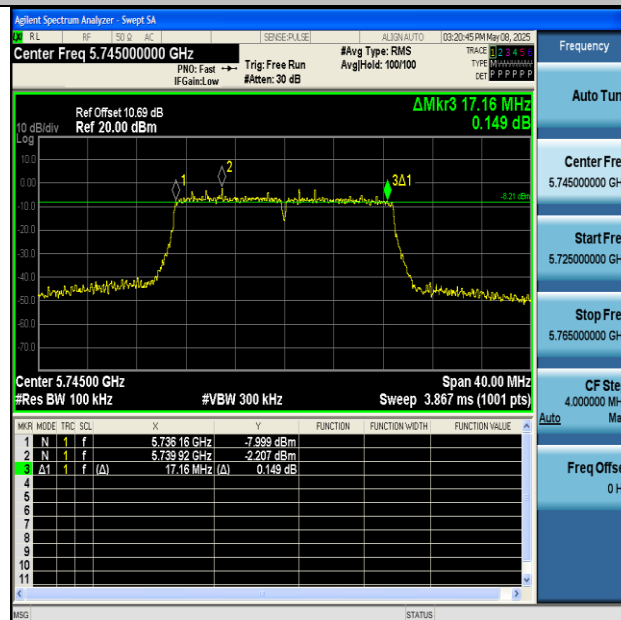
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs





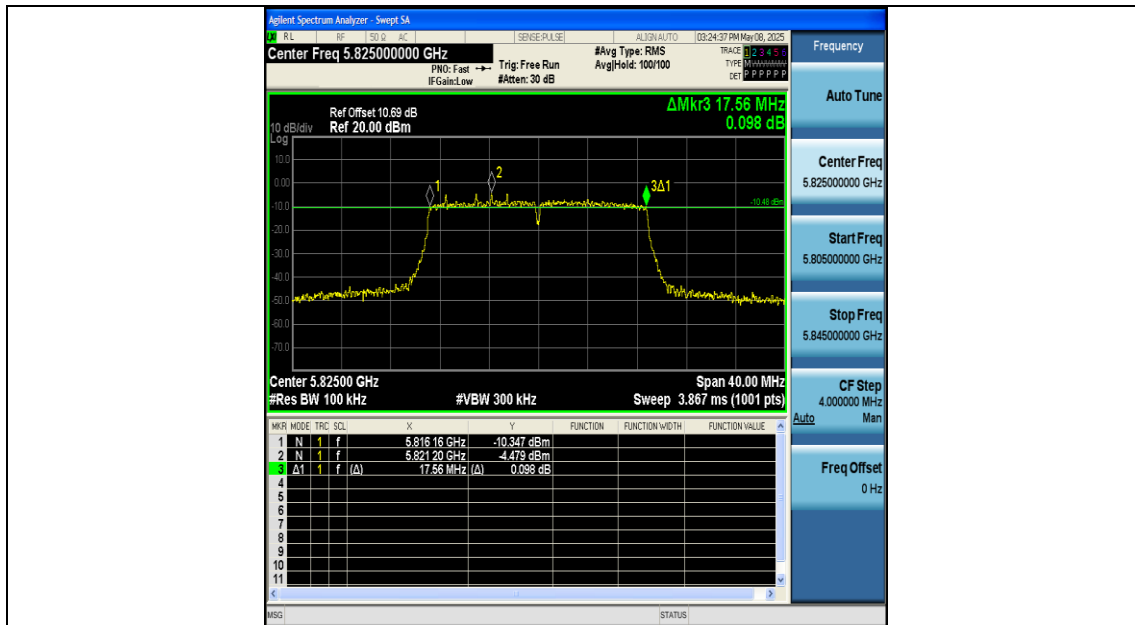
11A-Ant1-5825-PASS



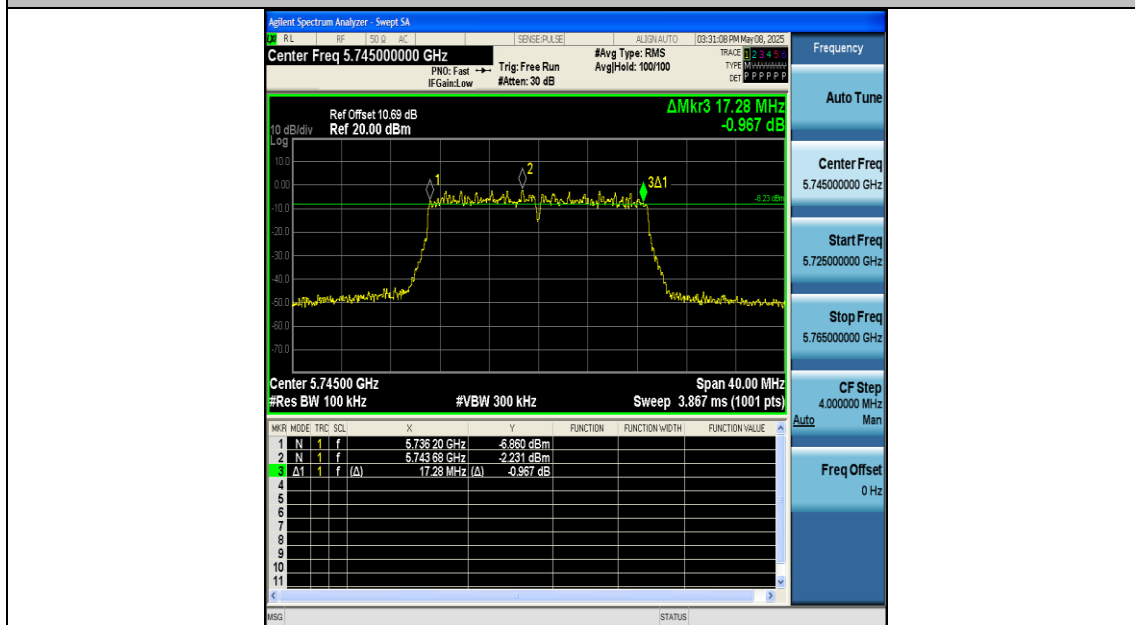
11N20SISO-Ant1-5745-PASS



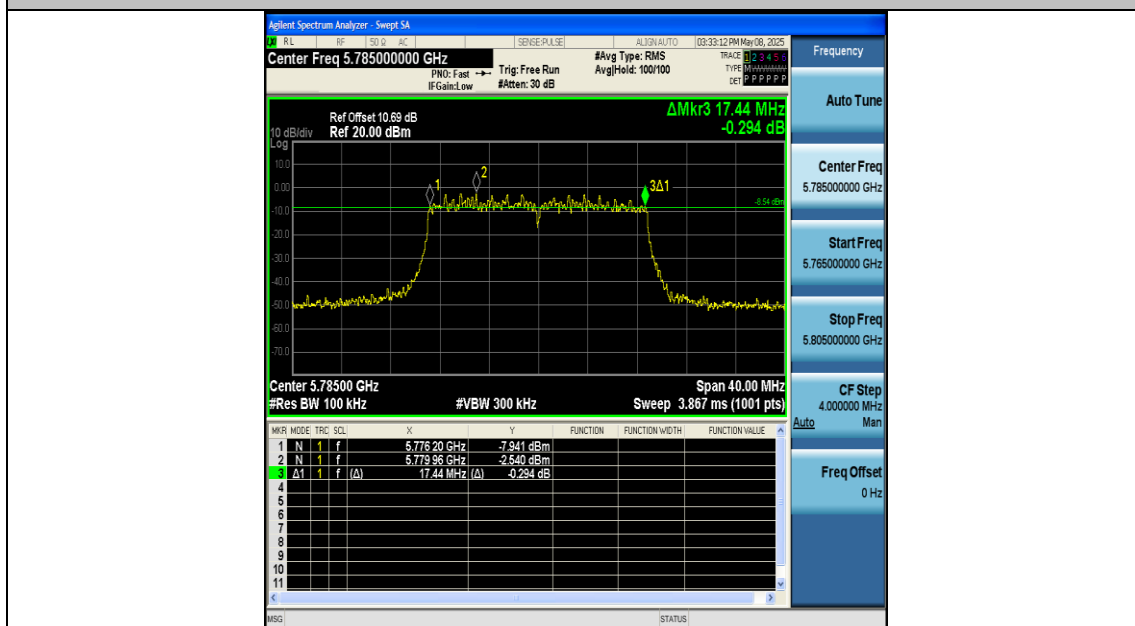
11N20SISO-Ant1-5785-PASS



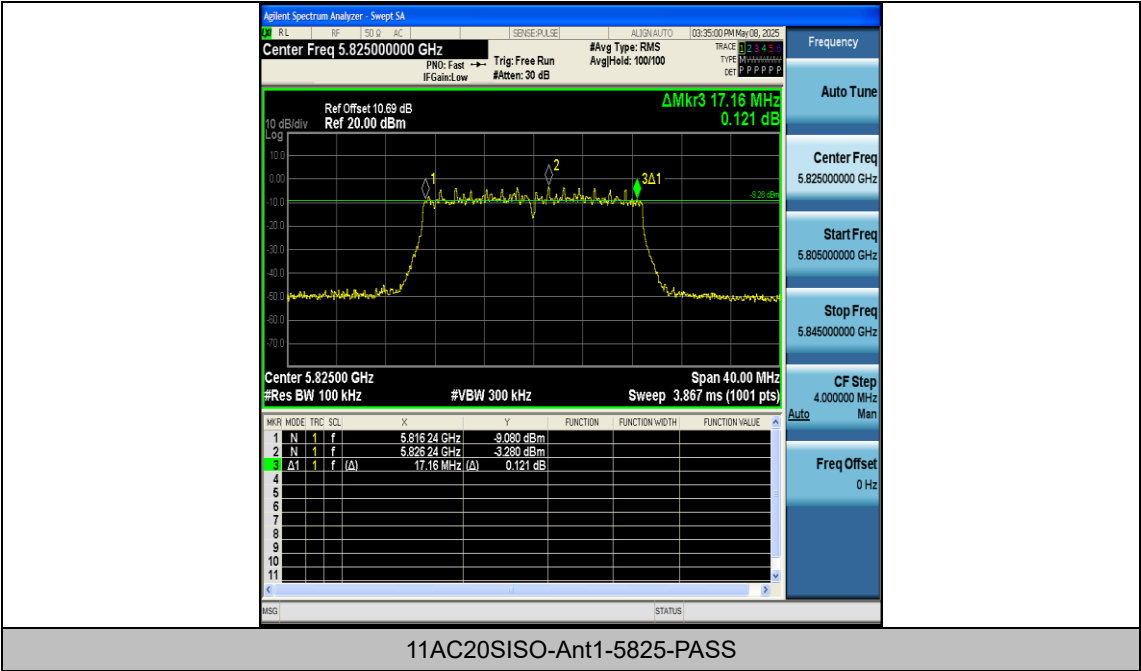
11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5785-PASS



Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5745	9.06	≤30.00	PASS
11A	Ant1	5785	8.48	≤30.00	PASS
11A	Ant1	5825	7.39	≤30.00	PASS
11N20SISO	Ant1	5745	8.75	≤30.00	PASS
11N20SISO	Ant1	5785	8.32	≤30.00	PASS
11N20SISO	Ant1	5825	7.26	≤30.00	PASS
11AC20SISO	Ant1	5745	9.84	≤30.00	PASS
11AC20SISO	Ant1	5785	8.97	≤30.00	PASS
11AC20SISO	Ant1	5825	8.16	≤30.00	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)

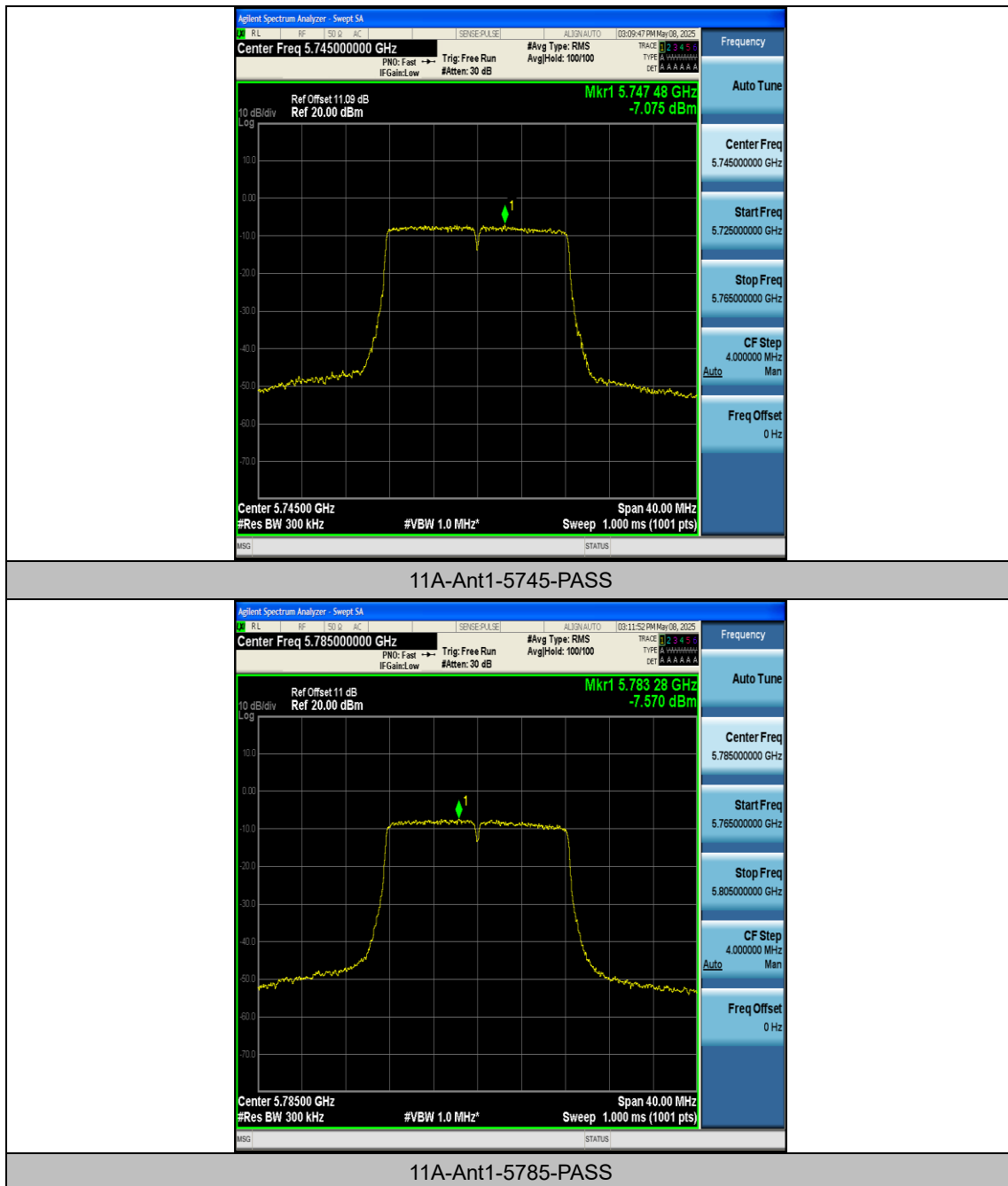
Appendix C: Maximum power spectral density

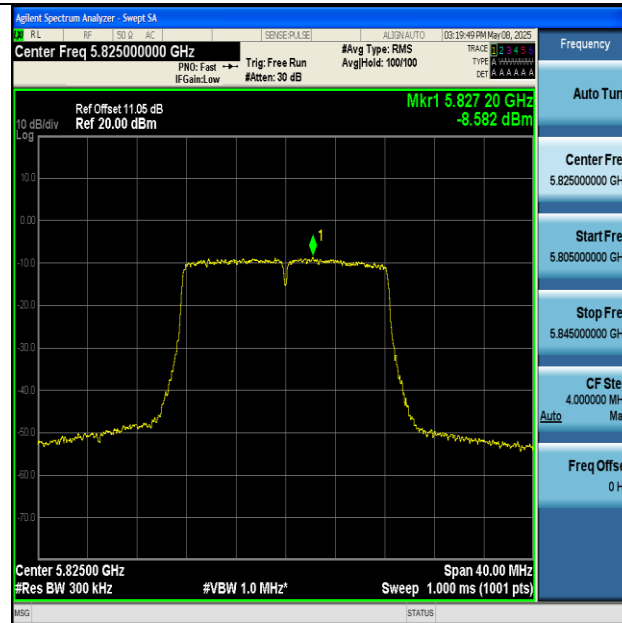
Test Result

TestMode	Antenna	Frequency[MHz]	Result [dBm/500kHz]	DC Factor [dB]	Limit [dBm/500kHz]	Verdict
11A	Ant1	5745	-7.08	0.40	≤30.00	PASS
11A	Ant1	5785	-7.57	0.31	≤30.00	PASS
11A	Ant1	5825	-8.58	0.36	≤30.00	PASS
11N20SISO	Ant1	5745	-7.73	0.30	≤30.00	PASS
11N20SISO	Ant1	5785	-7.93	0.41	≤30.00	PASS
11N20SISO	Ant1	5825	-9.04	0.37	≤30.00	PASS
11AC20SISO	Ant1	5745	-4.58	3.52	≤30.00	PASS
11AC20SISO	Ant1	5785	-6.19	3.32	≤30.00	PASS
11AC20SISO	Ant1	5825	-7.25	3.42	≤30.00	PASS

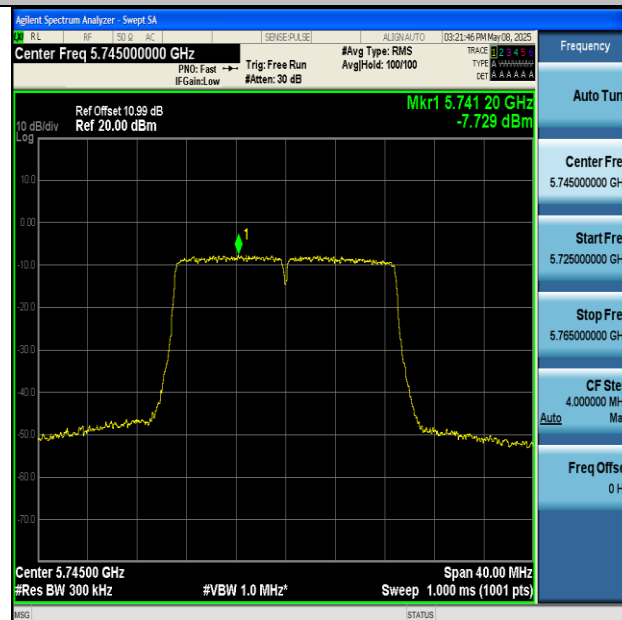
Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB) + RB Factor(dB)

Test Graphs





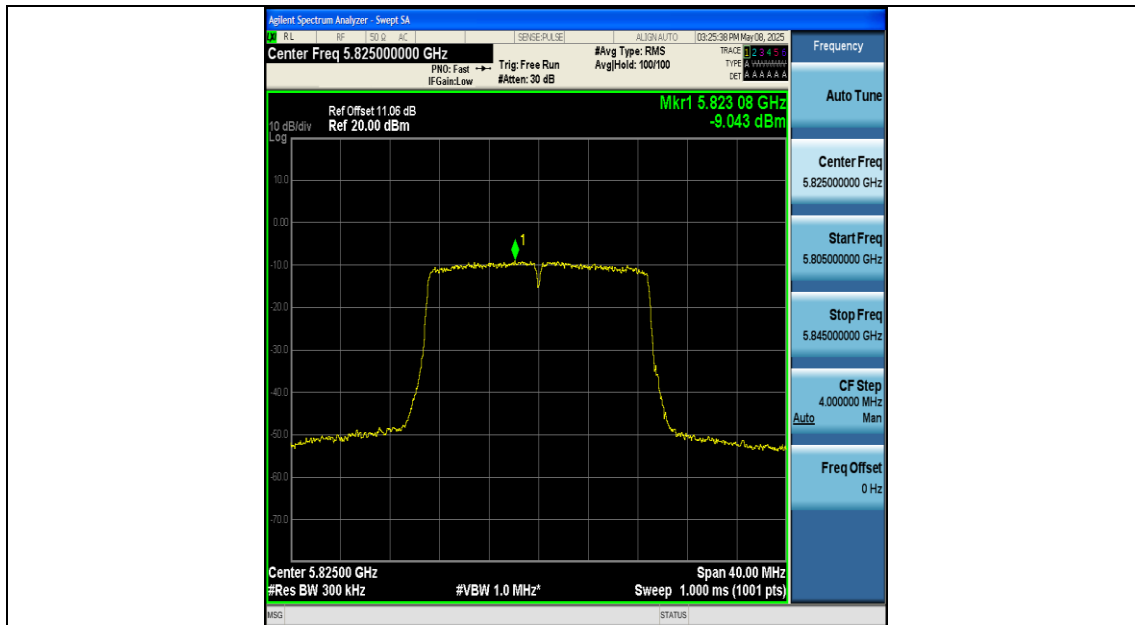
11A-Ant1-5825-PASS



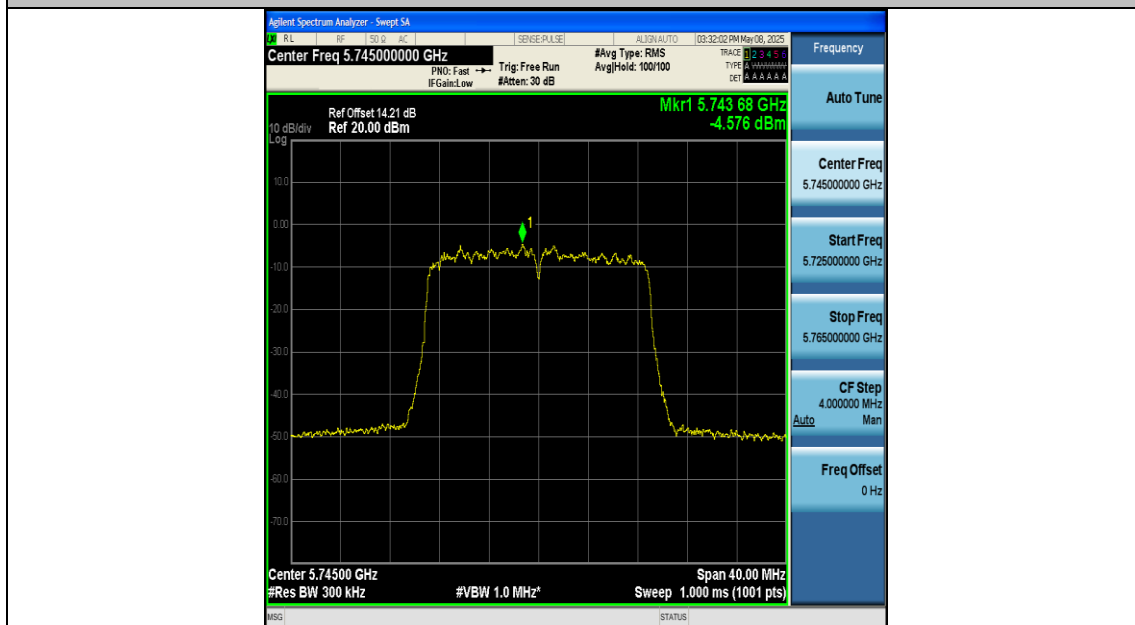
11N20SISO-Ant1-5745-PASS



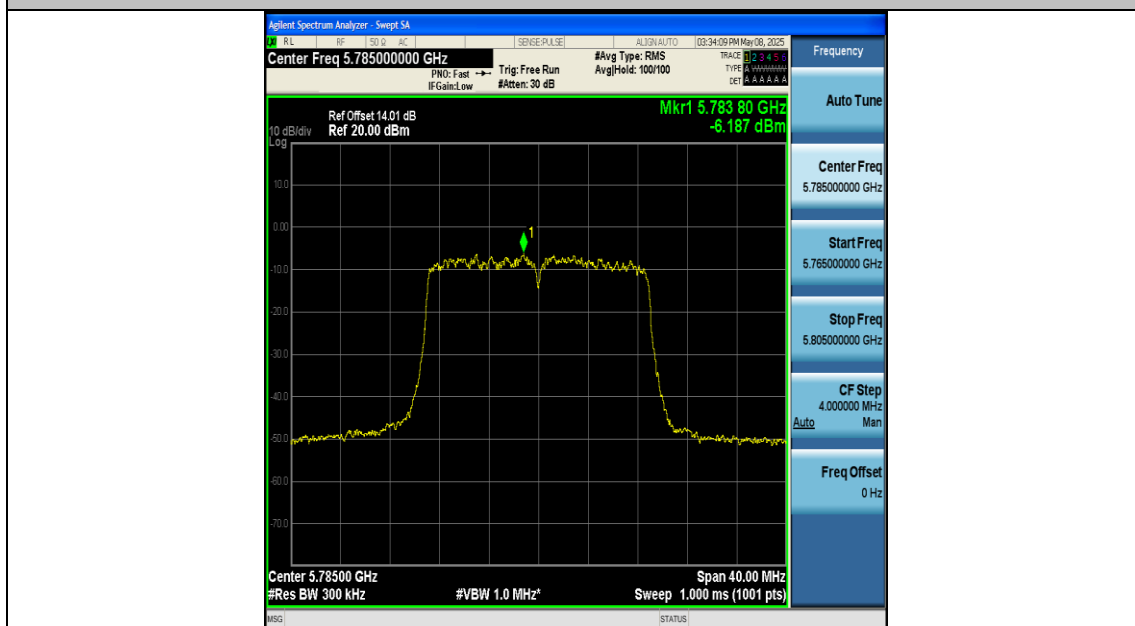
11N20SISO-Ant1-5785-PASS



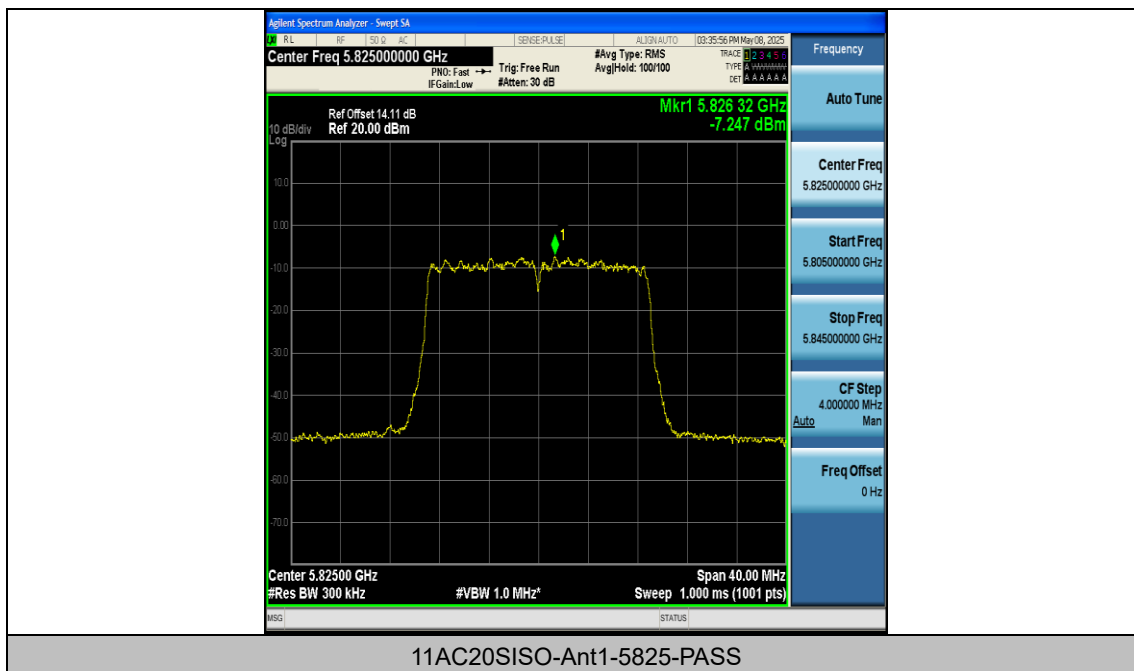
11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5785-PASS



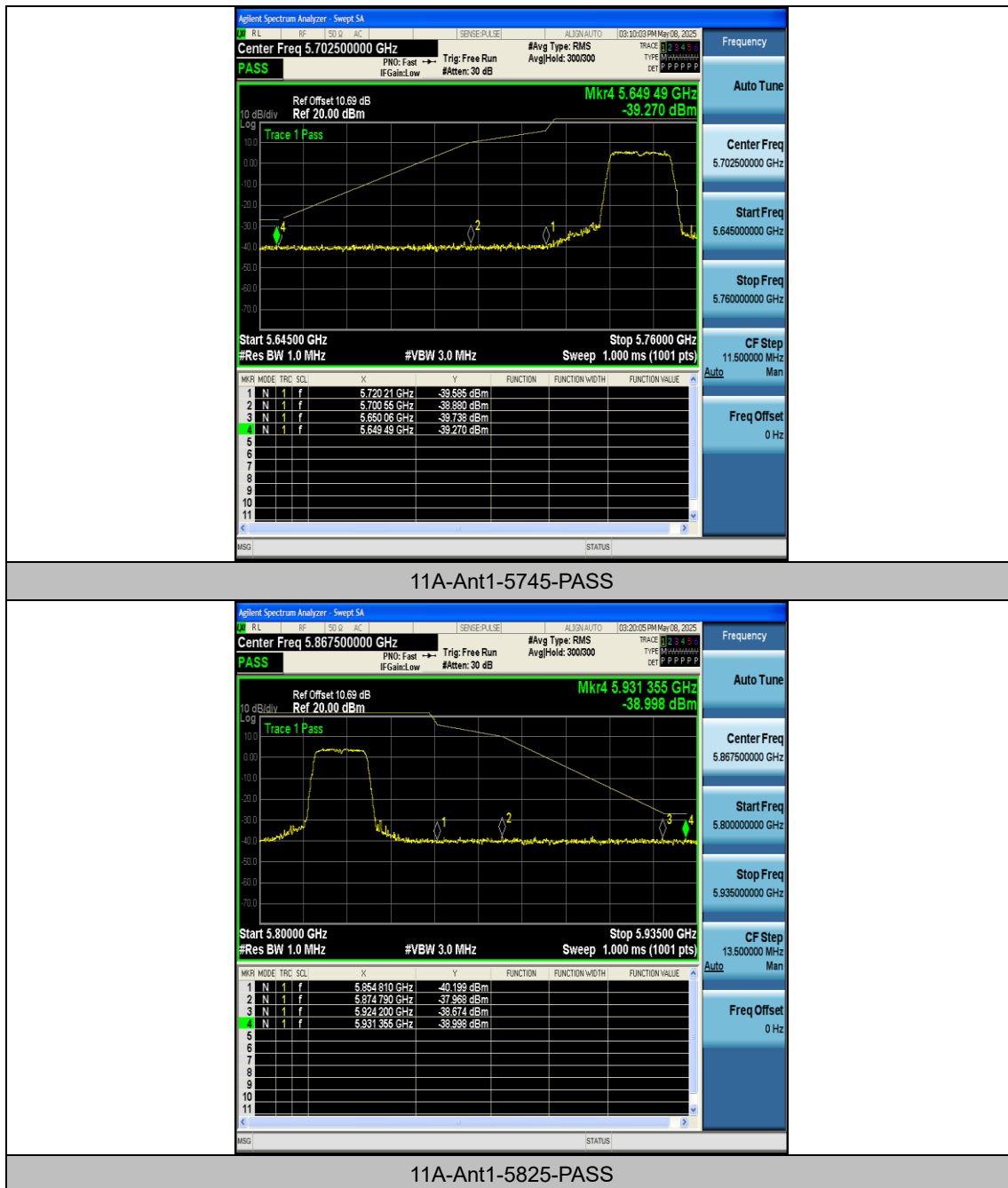
Appendix D: Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5720~5725	-39.59	≤16.08	PASS
11A	Ant1	Low	5745	5700~5720	-38.88	≤10.15	PASS
11A	Ant1	Low	5745	5650~5700	-39.74	≤-26.96	PASS
11A	Ant1	Low	5745	5760~5650	-39.27	≤-27	PASS
11A	Ant1	High	5825	5850~5855	-40.2	≤16.03	PASS
11A	Ant1	High	5825	5855~5875	-37.97	≤10.06	PASS
11A	Ant1	High	5825	5875~5925	-38.67	≤-26.41	PASS
11A	Ant1	High	5825	5925~5935	-39	≤-27	PASS
11N20SI SO	Ant1	Low	5745	5720~5725	-37.81	≤15.82	PASS
11N20SI SO	Ant1	Low	5745	5700~5720	-38.69	≤10.35	PASS
11N20SI SO	Ant1	Low	5745	5650~5700	-40.1	≤-26.96	PASS
11N20SI SO	Ant1	Low	5745	5760~5650	-38.52	≤-27	PASS
11N20SI SO	Ant1	High	5825	5850~5855	-38.45	≤15.73	PASS
11N20SI SO	Ant1	High	5825	5855~5875	-39.06	≤10.17	PASS
11N20SI SO	Ant1	High	5825	5875~5925	-38.53	≤-26.61	PASS
11N20SI SO	Ant1	High	5825	5925~5935	-38.26	≤-27	PASS
11AC20S ISO	Ant1	Low	5745	5720~5725	-39.5	≤16.60	PASS
11AC20S ISO	Ant1	Low	5745	5700~5720	-38.26	≤10.60	PASS
11AC20S ISO	Ant1	Low	5745	5650~5700	-39.68	≤-26.70	PASS
11AC20S ISO	Ant1	Low	5745	5760~5650	-38.8	≤-27	PASS
11AC20S ISO	Ant1	High	5825	5850~5855	-39.42	≤16.03	PASS
11AC20S ISO	Ant1	High	5825	5855~5875	-38.36	≤11.00	PASS
11AC20S ISO	Ant1	High	5825	5875~5925	-40.02	≤-26.81	PASS
11AC20S ISO	Ant1	High	5825	5925~5935	-38.97	≤-27	PASS

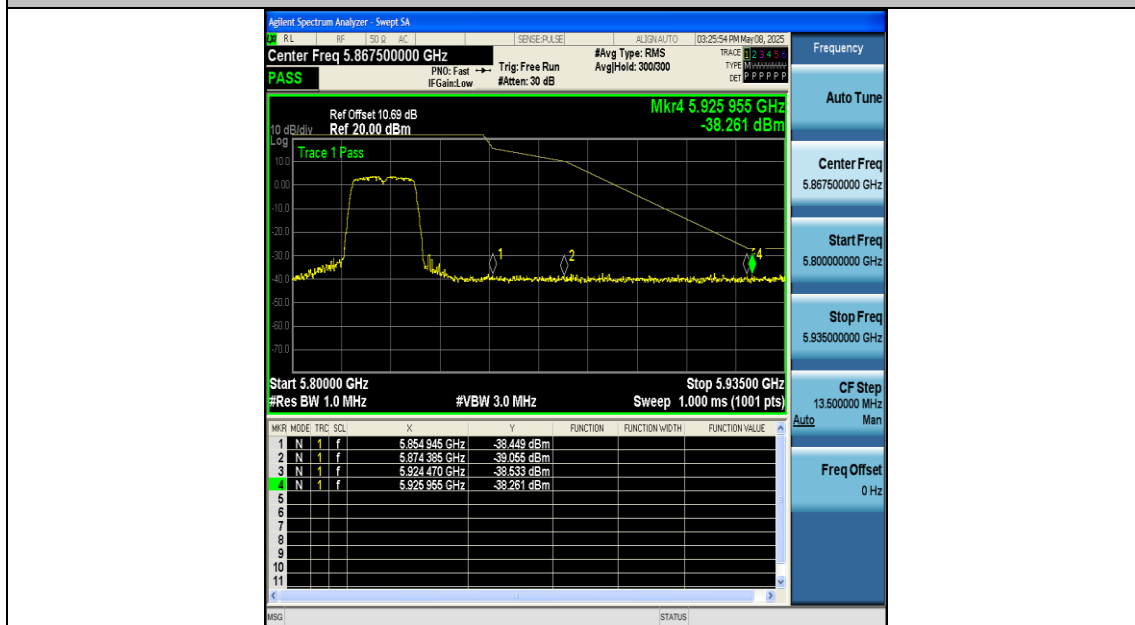
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

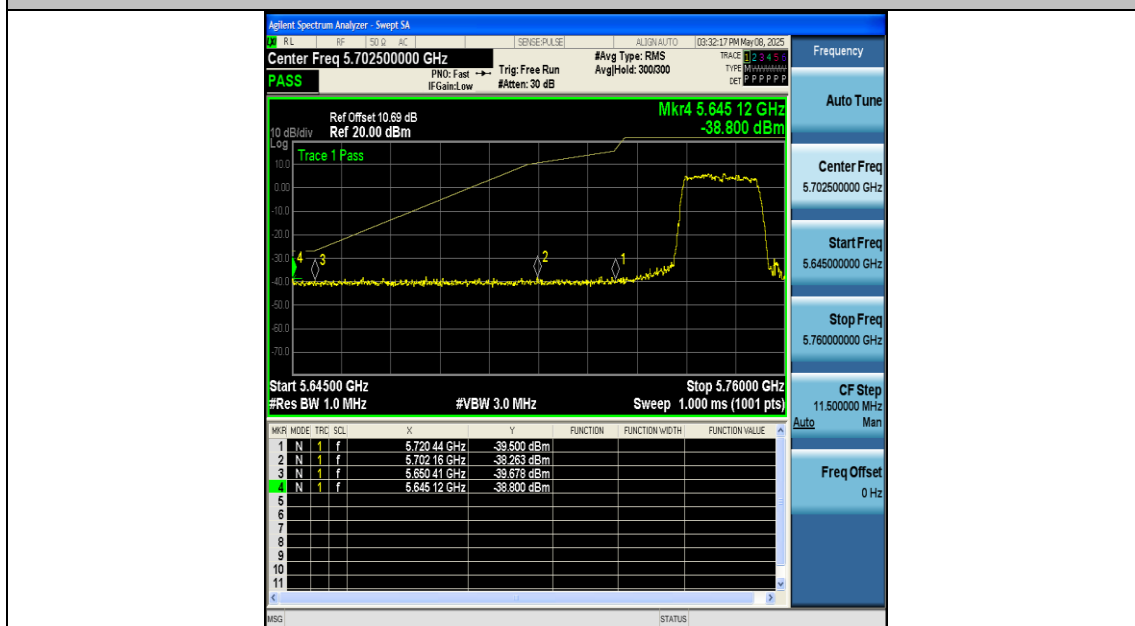




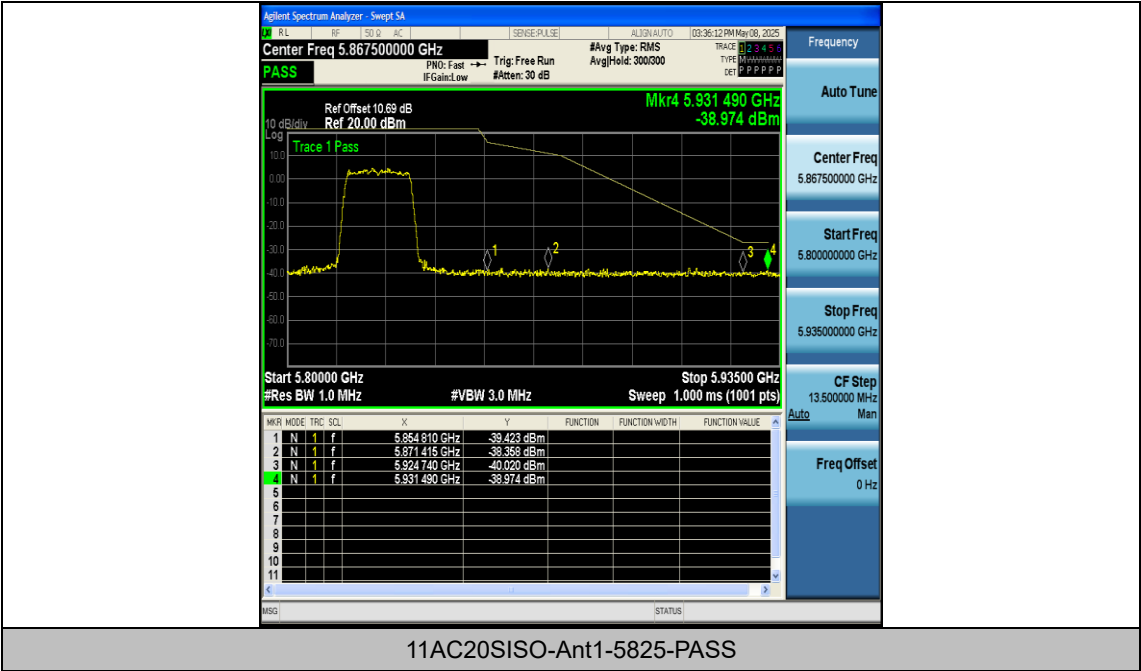
11N20SISO-Ant1-5745-PASS



11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5825-PASS

Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5745	20	132	5744.900978	5745 – 5825	PASS
5745	20	108	5745.041039	5745 – 5825	PASS
5745	50	120	5744.933548	5745 – 5825	PASS
5745	40	120	5745.050945	5745 – 5825	PASS
5745	30	120	5745.009926	5745 – 5825	PASS
5745	20	120	5744.907202	5745 – 5825	PASS
5745	10	120	5745.076732	5745 – 5825	PASS
5745	0	120	5745.084333	5745 – 5825	PASS
5745	-10	120	5744.903159	5745 – 5825	PASS
5745	-20	120	5745.033055	5745 – 5825	PASS
5745	-30	120	5745.059729	5745 – 5825	PASS

Ant2

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5745	20	132	5744.940474	5745 – 5825	PASS
5745	20	108	5744.916013	5745 – 5825	PASS
5745	50	120	5745.005464	5745 – 5825	PASS
5745	40	120	5744.999666	5745 – 5825	PASS
5745	30	120	5744.912172	5745 – 5825	PASS
5745	20	120	5745.005382	5745 – 5825	PASS
5745	10	120	5745.021796	5745 – 5825	PASS
5745	0	120	5744.910254	5745 – 5825	PASS
5745	-10	120	5745.072852	5745 – 5825	PASS
5745	-20	120	5744.909069	5745 – 5825	PASS
5745	-30	120	5744.965065	5745 – 5825	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5785	20	132	5784.918658	5745 – 5825	PASS
5785	20	108	5784.976167	5745 – 5825	PASS
5785	50	120	5785.027551	5745 – 5825	PASS
5785	40	120	5784.962090	5745 – 5825	PASS
5785	30	120	5784.990629	5745 – 5825	PASS
5785	20	120	5784.998354	5745 – 5825	PASS
5785	10	120	5785.012681	5745 – 5825	PASS
5785	0	120	5785.059765	5745 – 5825	PASS
5785	-10	120	5784.912339	5745 – 5825	PASS
5785	-20	120	5785.074352	5745 – 5825	PASS
5785	-30	120	5784.912952	5745 – 5825	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5785	20	132	5785.055904	5745 – 5825	PASS
5785	20	108	5785.023417	5745 – 5825	PASS
5785	50	120	5784.982052	5745 – 5825	PASS
5785	40	120	5785.092825	5745 – 5825	PASS
5785	30	120	5785.091799	5745 – 5825	PASS
5785	20	120	5785.069784	5745 – 5825	PASS
5785	10	120	5784.950614	5745 – 5825	PASS
5785	0	120	5785.077447	5745 – 5825	PASS
5785	-10	120	5785.042768	5745 – 5825	PASS
5785	-20	120	5784.974367	5745 – 5825	PASS
5785	-30	120	5785.003993	5745 – 5825	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5825	20	132	5824.902968	5745 – 5825	PASS
5825	20	108	5824.910994	5745 – 5825	PASS
5825	50	120	5824.955446	5745 – 5825	PASS
5825	40	120	5824.950636	5745 – 5825	PASS
5825	30	120	5824.982370	5745 – 5825	PASS
5825	20	120	5825.085909	5745 – 5825	PASS
5825	10	120	5824.906989	5745 – 5825	PASS
5825	0	120	5825.008848	5745 – 5825	PASS
5825	-10	120	5824.975844	5745 – 5825	PASS
5825	-20	120	5824.953194	5745 – 5825	PASS
5825	-30	120	5825.032182	5745 – 5825	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5825	20	132	5824.940325	5745 – 5825	PASS
5825	20	108	5825.074161	5745 – 5825	PASS
5825	50	120	5825.026472	5745 – 5825	PASS
5825	40	120	5824.983524	5745 – 5825	PASS
5825	30	120	5824.918209	5745 – 5825	PASS
5825	20	120	5825.060073	5745 – 5825	PASS
5825	10	120	5825.005428	5745 – 5825	PASS
5825	0	120	5824.983522	5745 – 5825	PASS
5825	-10	120	5825.083726	5745 – 5825	PASS
5825	-20	120	5824.988826	5745 – 5825	PASS
5825	-30	120	5825.095740	5745 – 5825	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5755	20	132	5755.085781	5745 – 5825	PASS
5755	20	108	5755.018576	5745 – 5825	PASS
5755	50	120	5754.997551	5745 – 5825	PASS
5755	40	120	5755.045244	5745 – 5825	PASS
5755	30	120	5755.005085	5745 – 5825	PASS
5755	20	120	5754.993754	5745 – 5825	PASS
5755	10	120	5755.045784	5745 – 5825	PASS
5755	0	120	5754.938192	5745 – 5825	PASS
5755	-10	120	5755.050014	5745 – 5825	PASS
5755	-20	120	5754.939851	5745 – 5825	PASS
5755	-30	120	5755.084397	5745 – 5825	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5755	20	132	5755.014028	5745 – 5825	PASS
5755	20	108	5755.015417	5745 – 5825	PASS
5755	50	120	5755.008464	5745 – 5825	PASS
5755	40	120	5755.065361	5745 – 5825	PASS
5755	30	120	5754.946955	5745 – 5825	PASS
5755	20	120	5755.040249	5745 – 5825	PASS
5755	10	120	5754.952173	5745 – 5825	PASS
5755	0	120	5754.908350	5745 – 5825	PASS
5755	-10	120	5754.970679	5745 – 5825	PASS
5755	-20	120	5754.976887	5745 – 5825	PASS
5755	-30	120	5755.079372	5745 – 5825	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5795	20	132	5794.976560	5745 – 5825	PASS
5795	20	108	5794.980464	5745 – 5825	PASS
5795	50	120	5795.053547	5745 – 5825	PASS
5795	40	120	5795.071755	5745 – 5825	PASS
5795	30	120	5794.989789	5745 – 5825	PASS
5795	20	120	5794.909062	5745 – 5825	PASS
5795	10	120	5795.070606	5745 – 5825	PASS
5795	0	120	5794.943231	5745 – 5825	PASS
5795	-10	120	5794.943866	5745 – 5825	PASS
5795	-20	120	5795.024793	5745 – 5825	PASS
5795	-30	120	5795.006434	5745 – 5825	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5795	20	132	5794.904908	5745 – 5825	PASS
5795	20	108	5794.998064	5745 – 5825	PASS
5795	50	120	5795.073749	5745 – 5825	PASS
5795	40	120	5794.964862	5745 – 5825	PASS
5795	30	120	5795.096738	5745 – 5825	PASS
5795	20	120	5794.966031	5745 – 5825	PASS
5795	10	120	5794.973044	5745 – 5825	PASS
5795	0	120	5795.007922	5745 – 5825	PASS
5795	-10	120	5795.091900	5745 – 5825	PASS
5795	-20	120	5795.050427	5745 – 5825	PASS
5795	-30	120	5795.051496	5745 – 5825	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5775	20	132	5775.069852	5745 – 5825	PASS
5775	20	108	5774.910218	5745 – 5825	PASS
5775	50	120	5775.038829	5745 – 5825	PASS
5775	40	120	5774.992270	5745 – 5825	PASS
5775	30	120	5774.948452	5745 – 5825	PASS
5775	20	120	5774.953492	5745 – 5825	PASS
5775	10	120	5774.903603	5745 – 5825	PASS
5775	0	120	5774.973904	5745 – 5825	PASS
5775	-10	120	5775.010758	5745 – 5825	PASS
5775	-20	120	5774.908281	5745 – 5825	PASS
5775	-30	120	5775.090681	5745 – 5825	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5775	20	132	5774.943664	5745 – 5825	PASS
5775	20	108	5775.070948	5745 – 5825	PASS
5775	50	120	5774.948059	5745 – 5825	PASS
5775	40	120	5774.960877	5745 – 5825	PASS
5775	30	120	5774.996562	5745 – 5825	PASS
5775	20	120	5774.907191	5745 – 5825	PASS
5775	10	120	5774.979900	5745 – 5825	PASS
5775	0	120	5775.013251	5745 – 5825	PASS
5775	-10	120	5775.066229	5745 – 5825	PASS
5775	-20	120	5774.993625	5745 – 5825	PASS
5775	-30	120	5775.062617	5745 – 5825	PASS

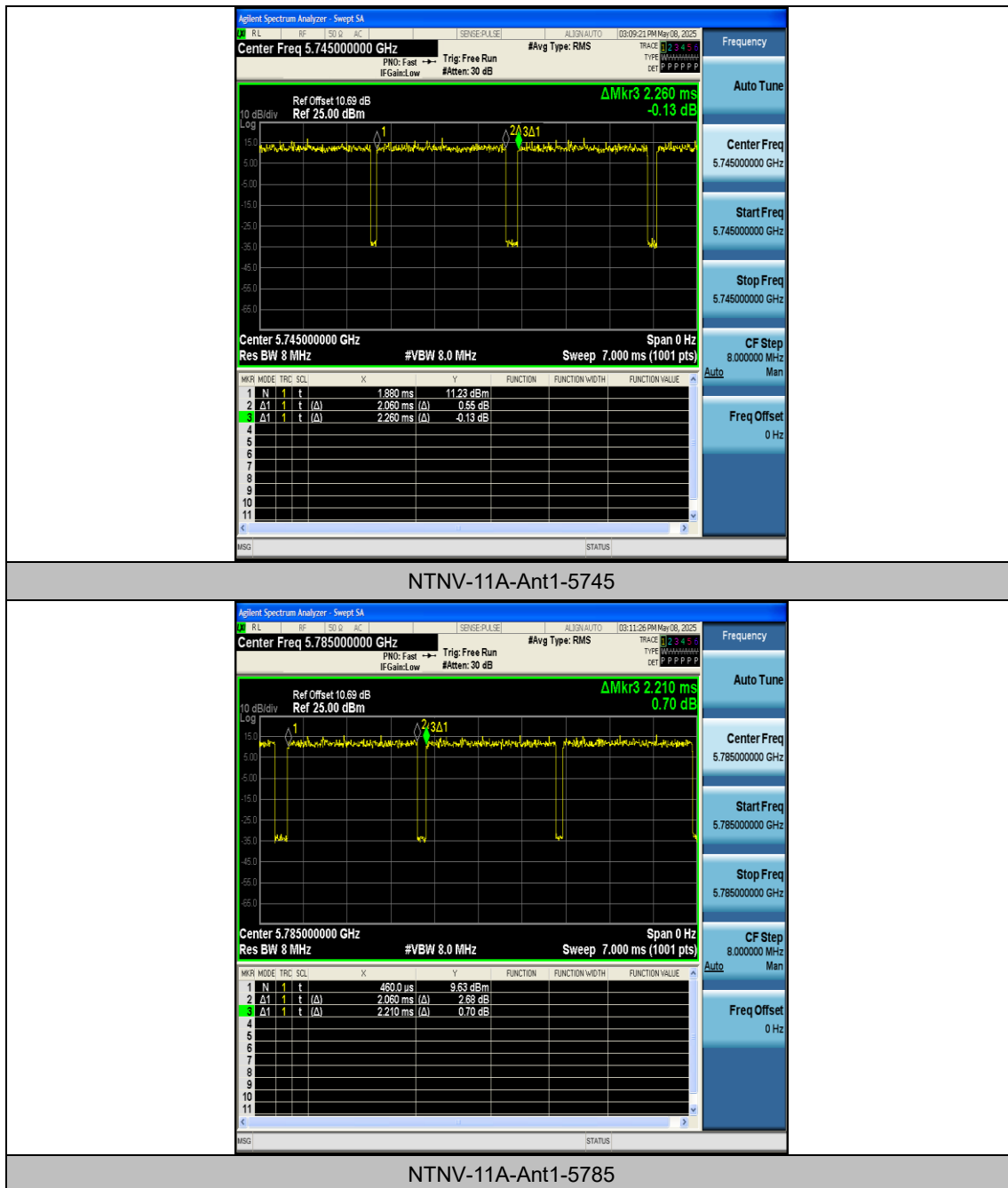
Appendix F: Duty Cycle

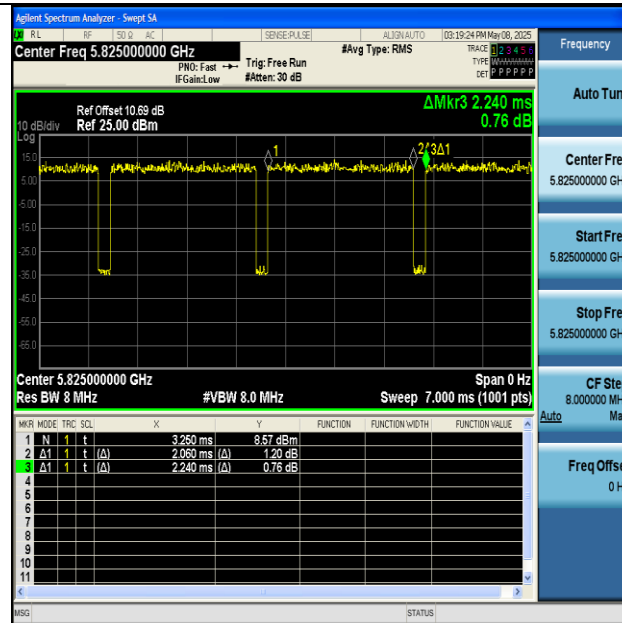
Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc Factor [%]	1/T
11A	Ant1	5745	2.06	2.26	91.15	0.40	0.49
11A	Ant1	5785	2.06	2.21	93.21	0.31	0.49
11A	Ant1	5825	2.06	2.24	91.96	0.36	0.49
11N20SISO	Ant1	5745	1.93	2.07	93.24	0.30	0.52
11N20SISO	Ant1	5785	1.92	2.11	91.00	0.41	0.52
11N20SISO	Ant1	5825	1.92	2.09	91.87	0.37	0.52
11AC20SISO	Ant1	5745	0.20	0.45	44.44	3.52	5.00
11AC20SISO	Ant1	5785	0.20	0.43	46.51	3.32	5.00
11AC20SISO	Ant1	5825	0.20	0.44	45.45	3.42	5.00

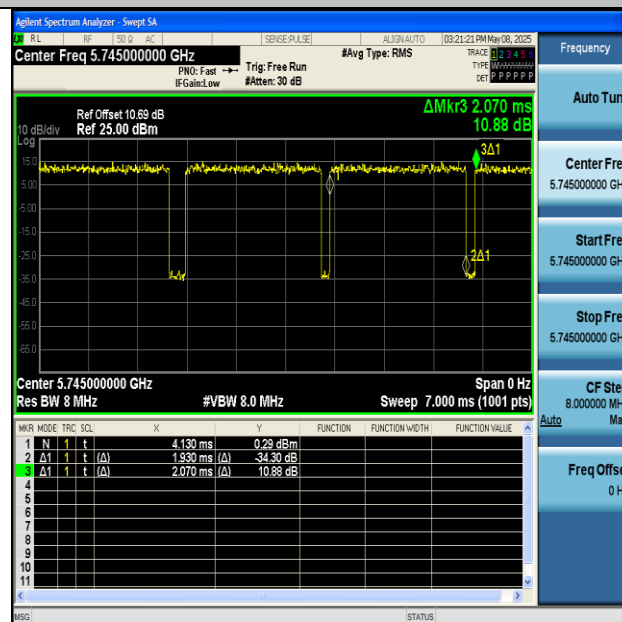
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

Test Graphs

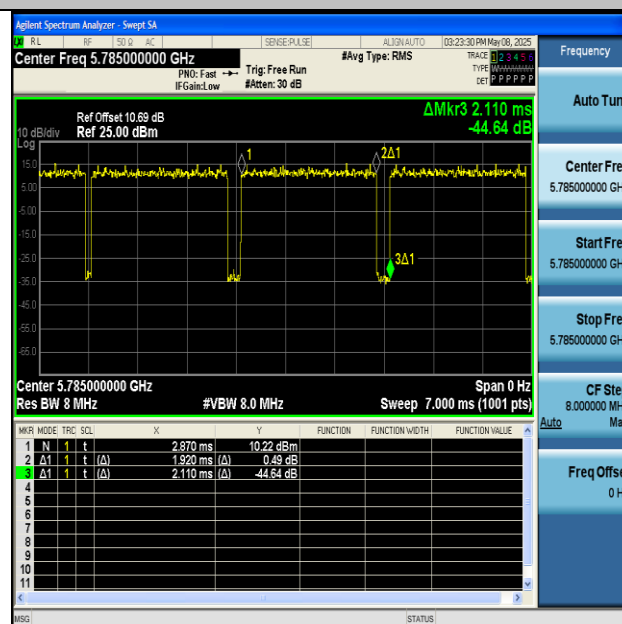




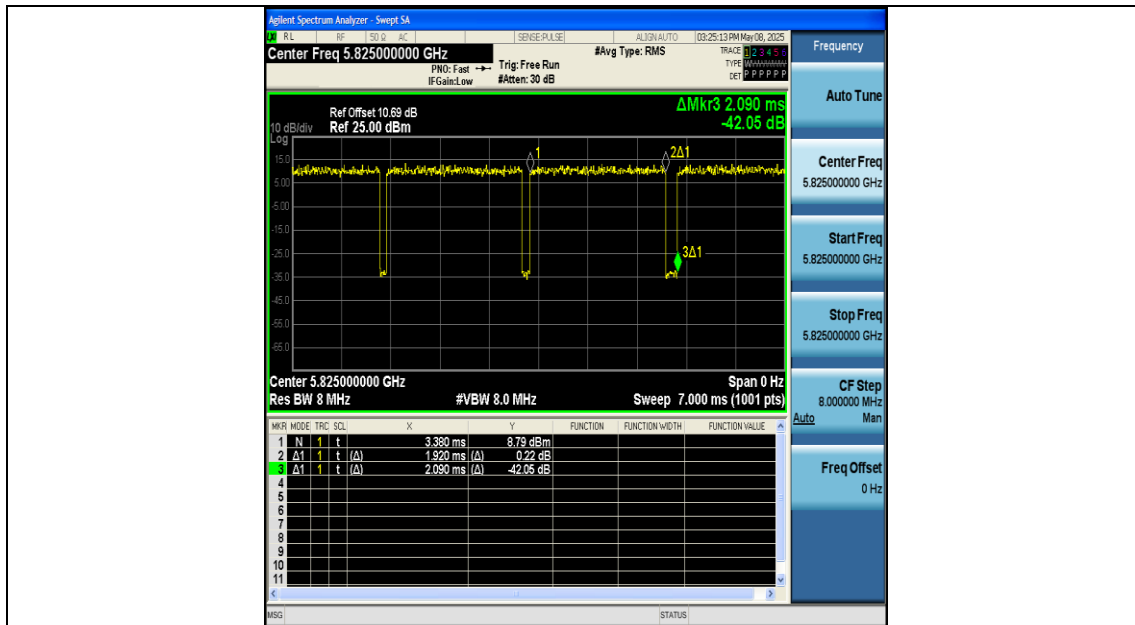
NTNV-11A-Ant1-5825



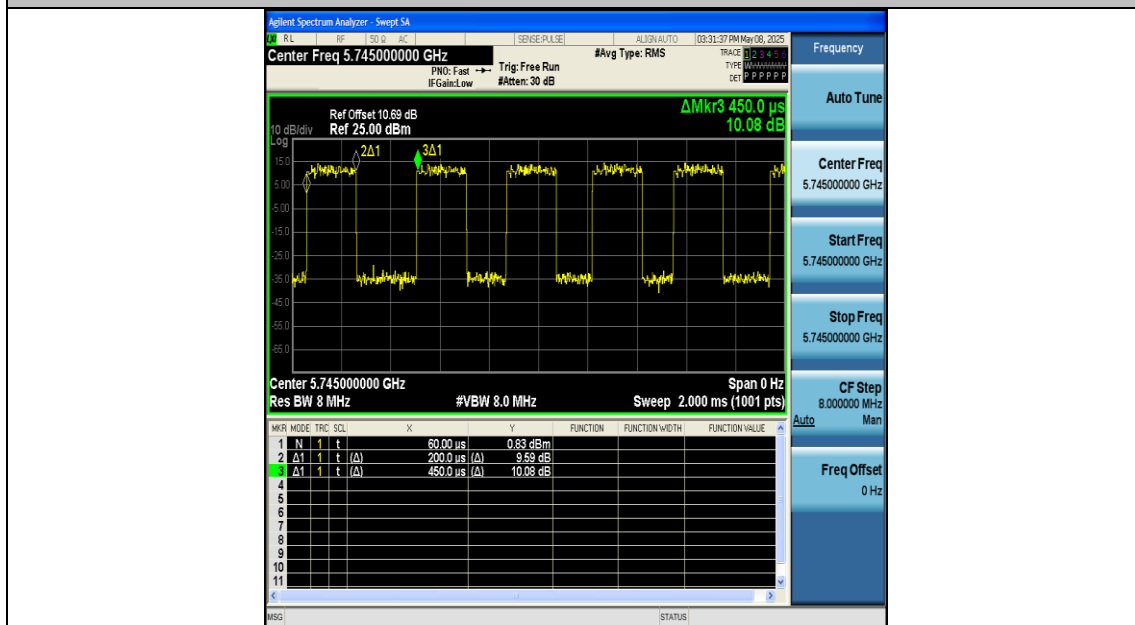
NTNV-11N20SISO-Ant1-5745



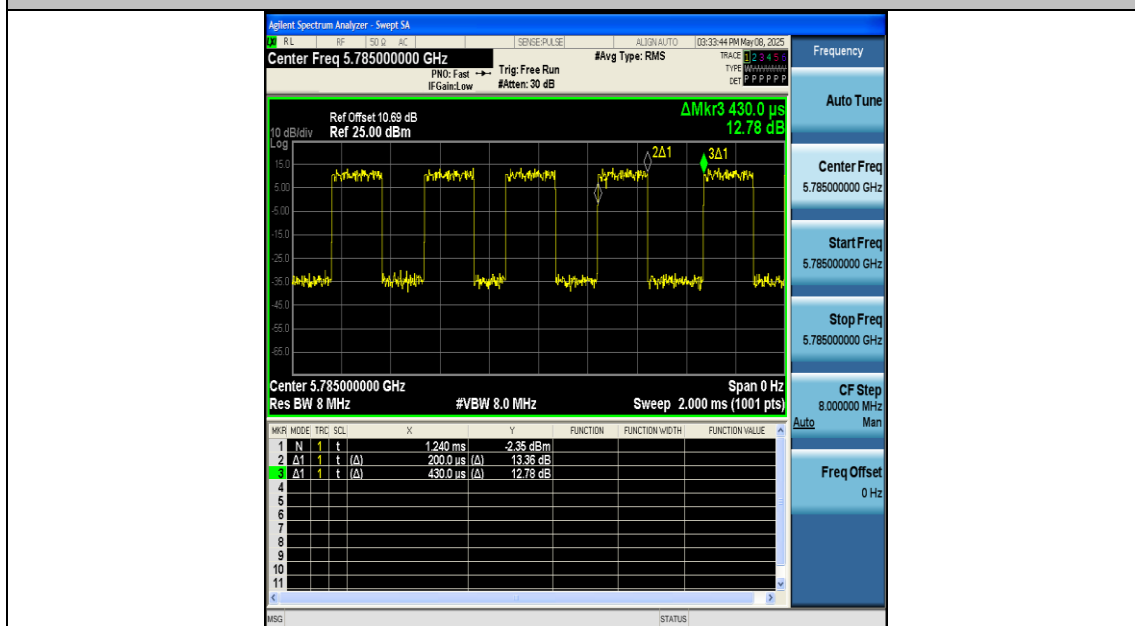
NTNV-11N20SISO-Ant1-5785



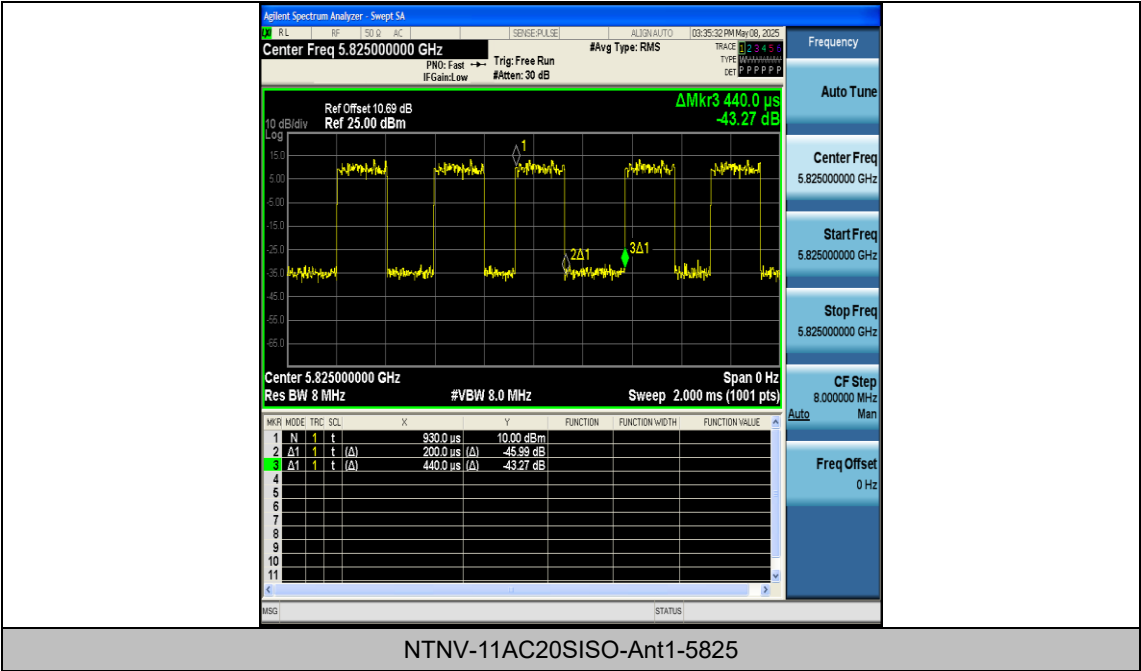
NTNV-11N20SISO-Ant1-5825



NTNV-11AC20SISO-Ant1-5745



NTNV-11AC20SISO-Ant1-5785



NTNV-11AC20SISO-Ant1-5825