



RF Test Data for RLAN(UNII-2A) (Conducted Measurement)

Product Name: ROLLING

Trade Mark: SYLVOX, ZINVAX, MISTAAD, GOTHOT, VUESTATION, KONTECH

Test Model: RL32K1A3GA

FCC ID: 2AZTZ-RL32K1A3GA

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 A1: Emission Bandwidth

Test Result

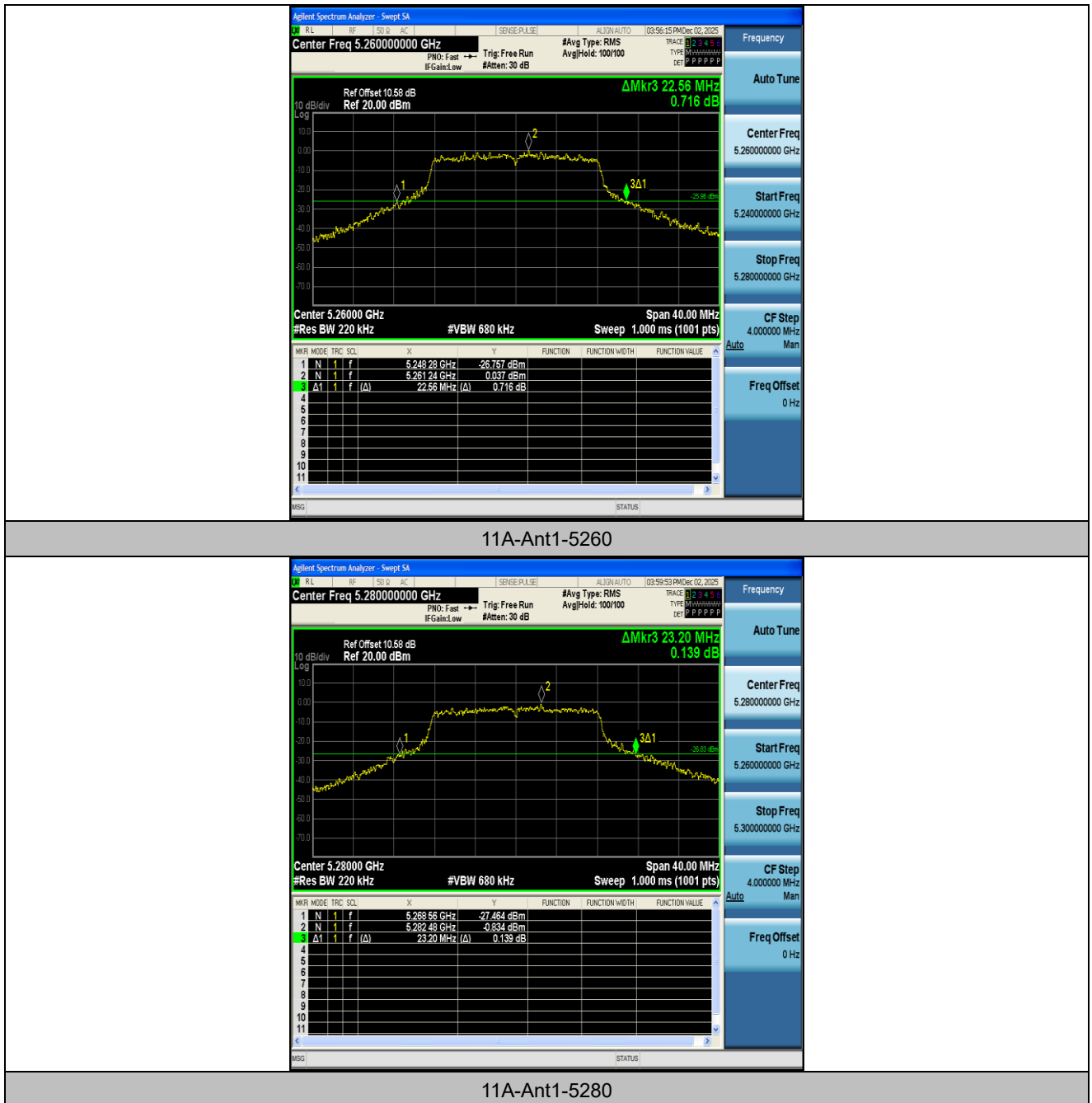
Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5260	22.560	5248.280	5270.840	---	---
11A	Ant1	5280	23.200	5268.560	5291.760	---	---
11A	Ant1	5320	24.600	5307.960	5332.560	---	---
11N20SISO	Ant1	5260	22.760	5248.320	5271.080	---	---
11N20SISO	Ant1	5280	23.240	5268.720	5291.960	---	---
11N20SISO	Ant1	5320	23.320	5308.920	5332.240	---	---
11N40SISO	Ant1	5270	40.880	5249.520	5290.400	---	---
11N40SISO	Ant1	5310	41.360	5289.280	5330.640	---	---
11AC20SISO	Ant1	5260	24.040	5248.000	5272.040	---	---
11AC20SISO	Ant1	5280	23.920	5268.320	5292.240	---	---
11AC20SISO	Ant1	5320	25.120	5308.360	5333.480	---	---
11AC40SISO	Ant1	5270	41.120	5249.360	5290.480	---	---
11AC40SISO	Ant1	5310	41.040	5289.600	5330.640	---	---
11AC80SISO	Ant1	5290	91.520	5242.480	5334.000	---	---

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





Test Graphs





11A-Ant1-5320



11N20SISO-Ant1-5260





11N20SISO-Ant1-5280



11N20SISO-Ant1-5320





11N40SISO-Ant1-5270



11N40SISO-Ant1-5310





11AC20SISO-Ant1-5260



11AC20SISO-Ant1-5280





11AC20SISO-Ant1-5320



11AC40SISO-Ant1-5270





11AC40SISO-Ant1-5310



11AC80SISO-Ant1-5290





Appendix A2: Occupied channel bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5260	17.027	5251.4686	5268.4956	---	---
11A	Ant1	5280	17.249	5271.4973	5288.7463	---	---
11A	Ant1	5320	17.297	5311.4420	5328.7390	---	---
11N20SISO	Ant1	5260	18.138	5250.8990	5269.0370	---	---
11N20SISO	Ant1	5280	18.277	5270.9379	5289.2149	---	---
11N20SISO	Ant1	5320	18.353	5310.8799	5329.2329	---	---
11N40SISO	Ant1	5270	36.702	5251.7629	5288.4649	---	---
11N40SISO	Ant1	5310	36.521	5291.9108	5328.4318	---	---
11AC20SISO	Ant1	5260	18.172	5250.9428	5269.1148	---	---
11AC20SISO	Ant1	5280	18.194	5270.9401	5289.1341	---	---
11AC20SISO	Ant1	5320	18.203	5310.9710	5329.1740	---	---
11AC40SISO	Ant1	5270	36.562	5251.8632	5288.4252	---	---
11AC40SISO	Ant1	5310	36.396	5291.9608	5328.3568	---	---
11AC80SISO	Ant1	5290	76.430	5252.2292	5328.6592	---	---

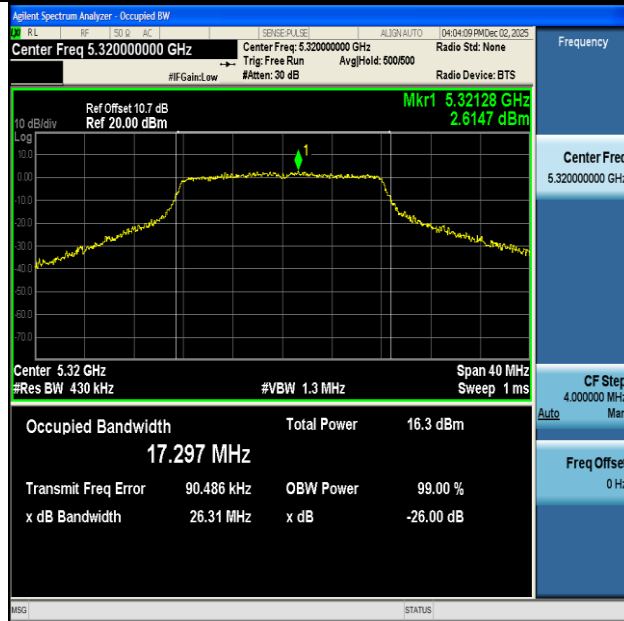
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



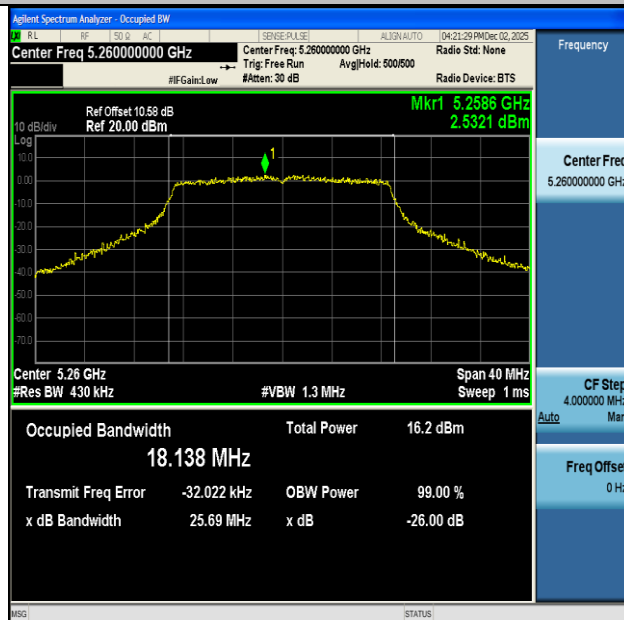


Test Graphs



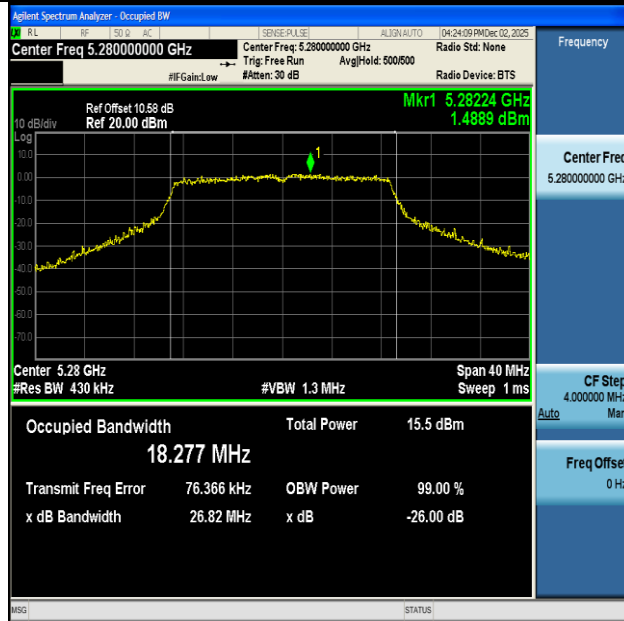


11A-Ant1-5320

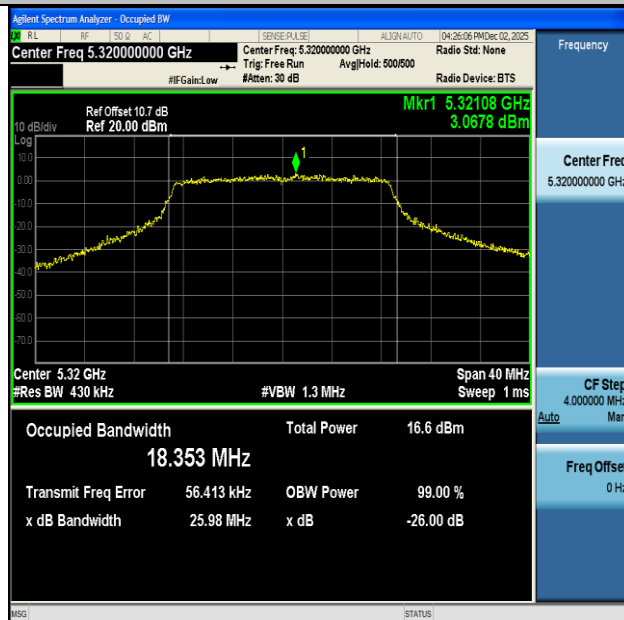


11N20SISO-Ant1-5260



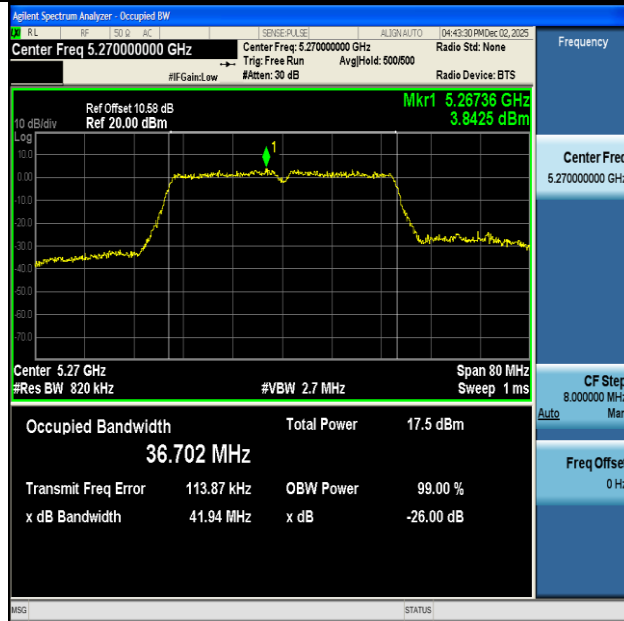


11N20SISO-Ant1-5280

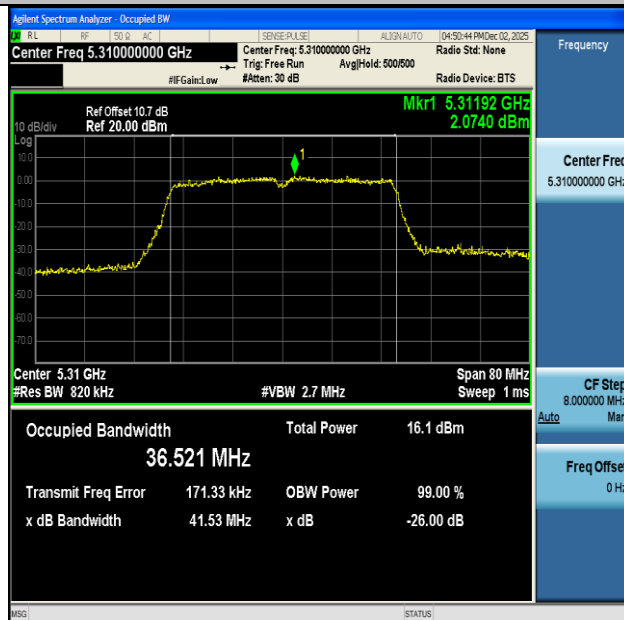


11N20SISO-Ant1-5320



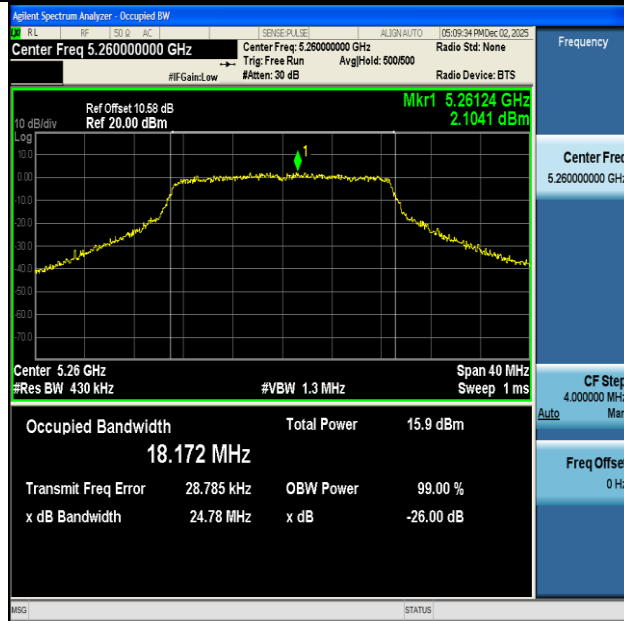


11N40SISO-Ant1-5270

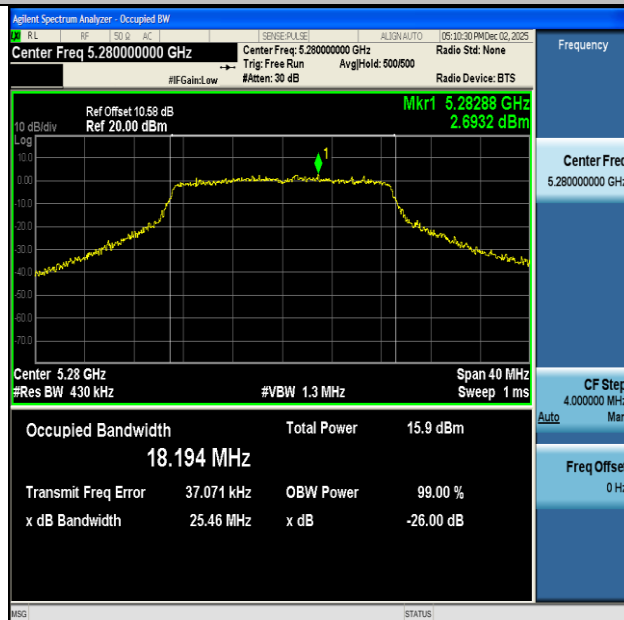


11N40SISO-Ant1-5310



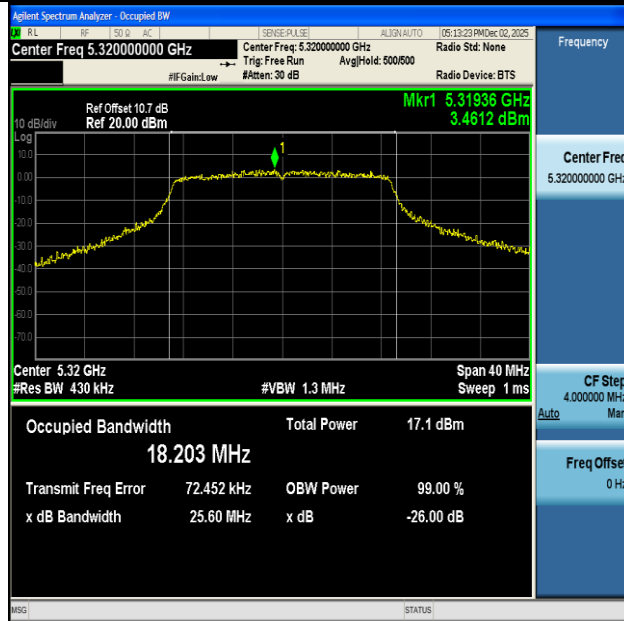


11AC20SISO-Ant1-5260



11AC20SISO-Ant1-5280



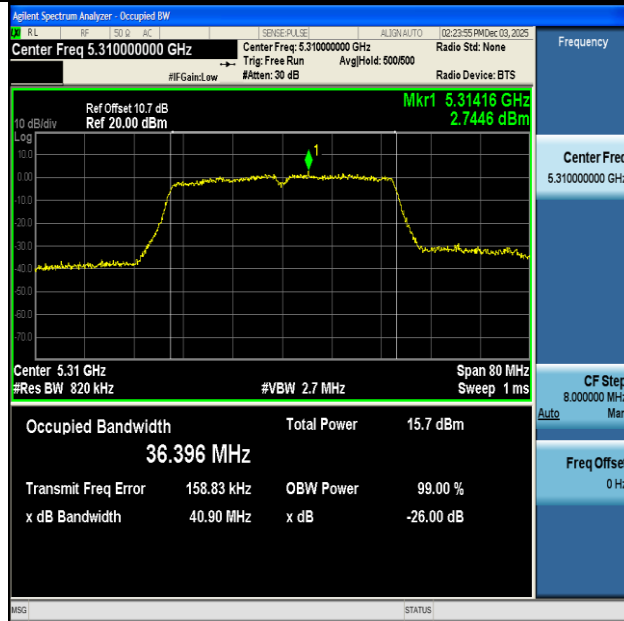


11AC20SISO-Ant1-5320



11AC40SISO-Ant1-5270





11AC40SISO-Ant1-5310



11AC80SISO-Ant1-5290





Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11A	Ant1	5260	9.03	≤23.98	PASS
11A	Ant1	5280	8.44	≤23.98	PASS
11A	Ant1	5320	9.39	≤23.98	PASS
11N20SISO	Ant1	5260	8.84	≤23.98	PASS
11N20SISO	Ant1	5280	8.30	≤23.98	PASS
11N20SISO	Ant1	5320	9.29	≤23.98	PASS
11N40SISO	Ant1	5270	9.46	≤23.98	PASS
11N40SISO	Ant1	5310	8.08	≤23.98	PASS
11AC20SISO	Ant1	5260	8.60	≤23.98	PASS
11AC20SISO	Ant1	5280	8.67	≤23.98	PASS
11AC20SISO	Ant1	5320	9.72	≤23.98	PASS
11AC40SISO	Ant1	5270	9.22	≤23.98	PASS
11AC40SISO	Ant1	5310	7.68	≤23.98	PASS
11AC80SISO	Ant1	5290	6.77	≤23.98	PASS

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

The offset (dB) is already compensated in the result.





Appendix C: Maximum power spectral density

Test Result

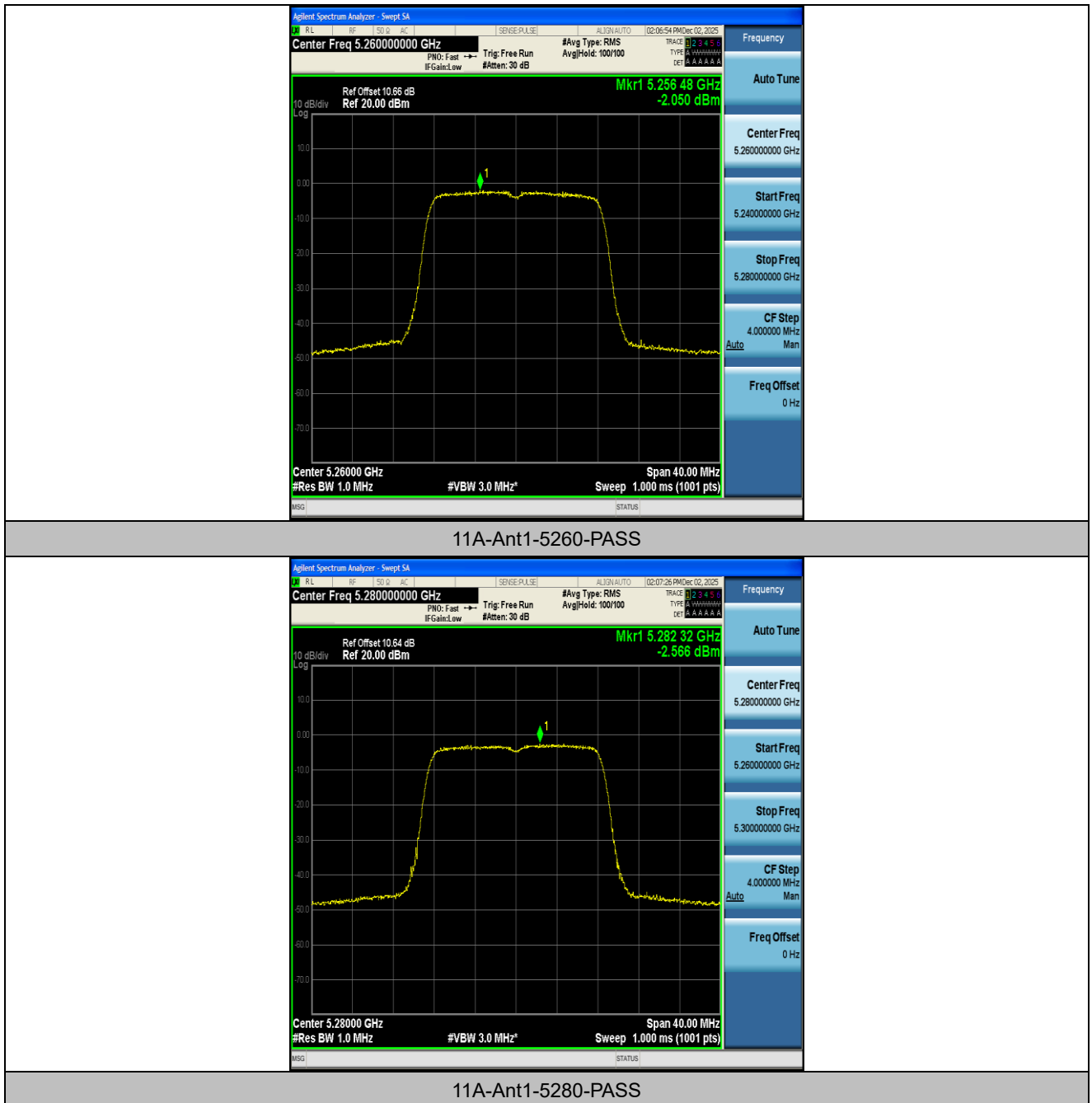
Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5260	-2.05	≤11.00	PASS
11A	Ant1	5280	-2.57	≤11.00	PASS
11A	Ant1	5320	-2.56	≤11.00	PASS
11N20SISO	Ant1	5260	-2.89	≤11.00	PASS
11N20SISO	Ant1	5280	-2.93	≤11.00	PASS
11N20SISO	Ant1	5320	-2.68	≤11.00	PASS
11N40SISO	Ant1	5270	-6.45	≤11.00	PASS
11N40SISO	Ant1	5310	-5.28	≤11.00	PASS
11AC20SISO	Ant1	5260	-2.55	≤11.00	PASS
11AC20SISO	Ant1	5280	-2.77	≤11.00	PASS
11AC20SISO	Ant1	5320	-2.89	≤11.00	PASS
11AC40SISO	Ant1	5270	-6.10	≤11.00	PASS
11AC40SISO	Ant1	5310	-5.21	≤11.00	PASS
11AC80SISO	Ant1	5290	-6.95	≤11.00	PASS

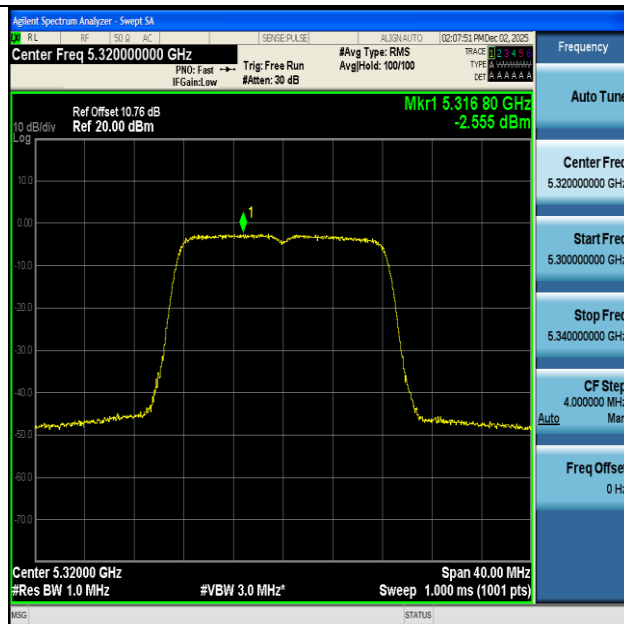
Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)



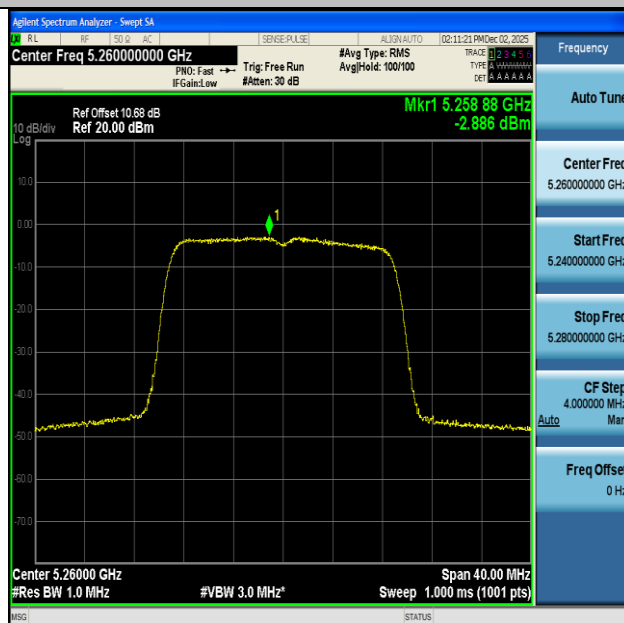


Test Graphs



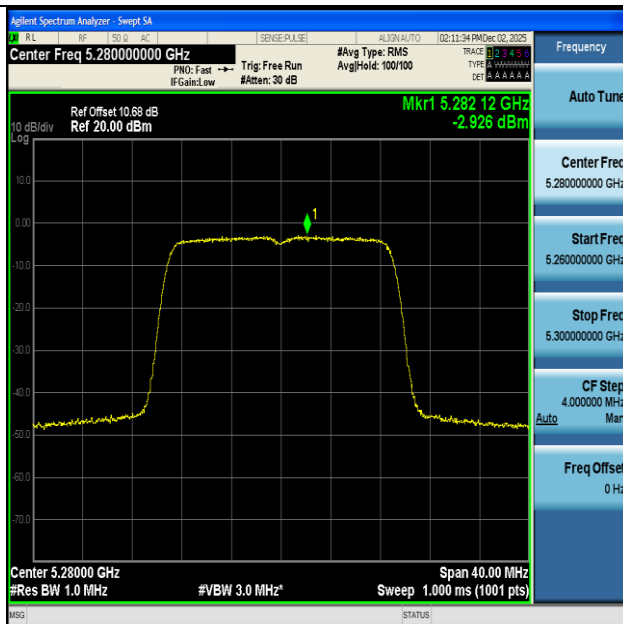


11A-Ant1-5320-PASS

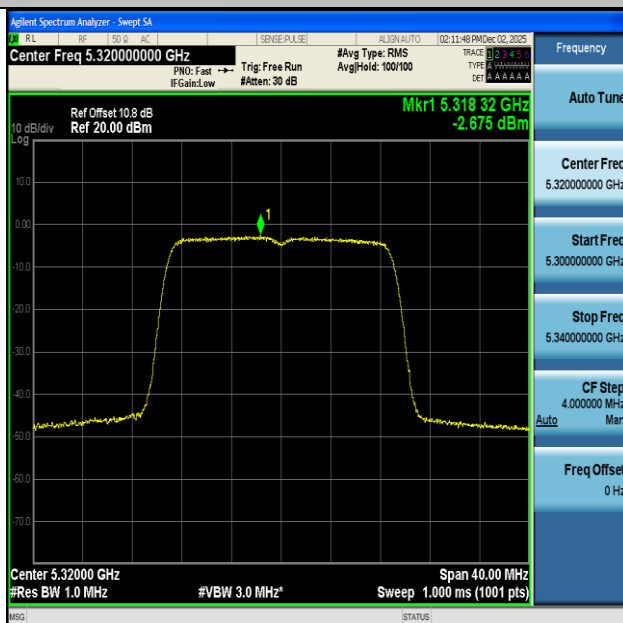


11N20SISO-Ant1-5260-PASS



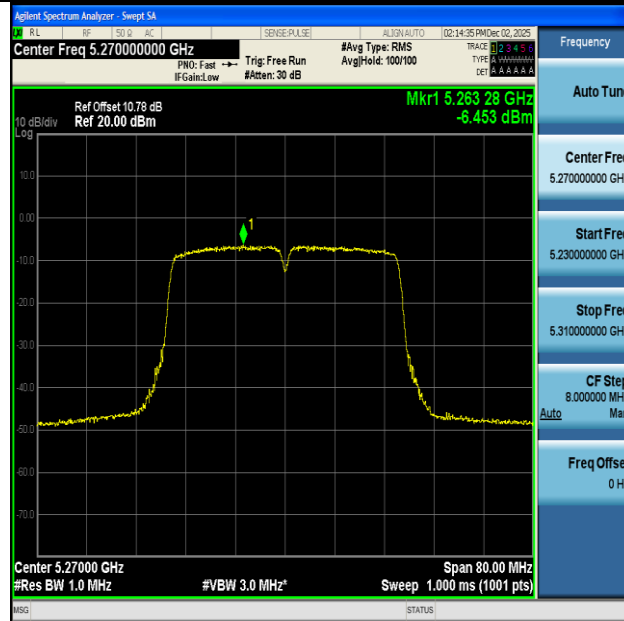


11N20SISO-Ant1-5280-PASS

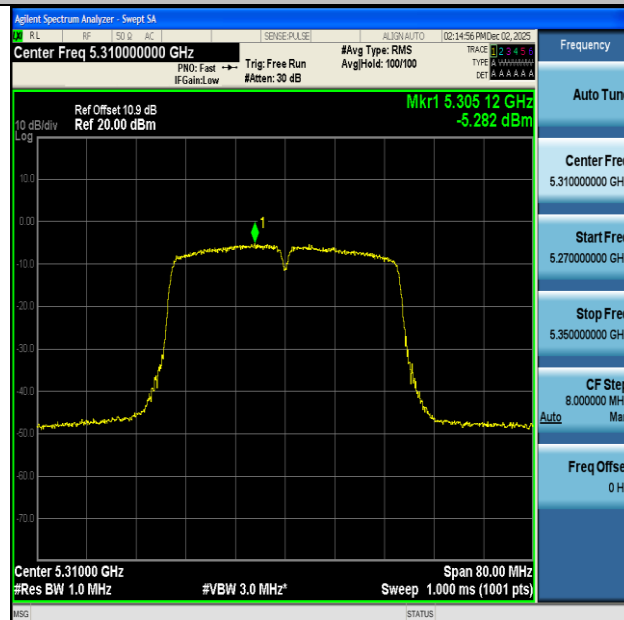


11N20SISO-Ant1-5320-PASS



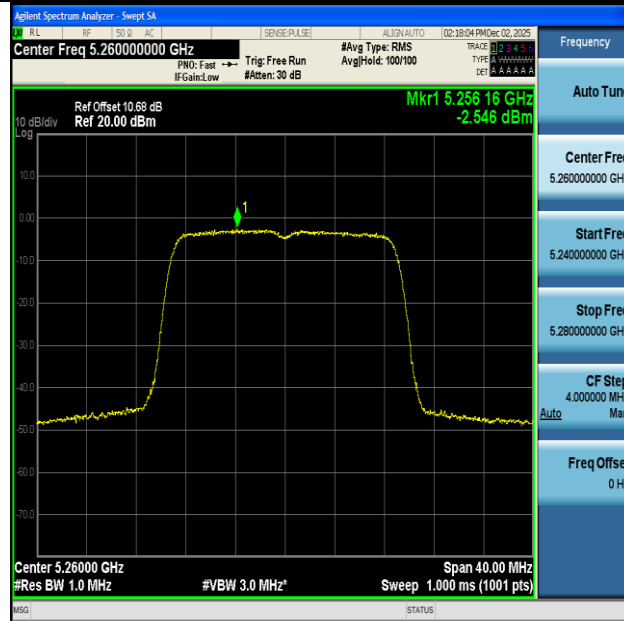


11N40SISO-Ant1-5270-PASS

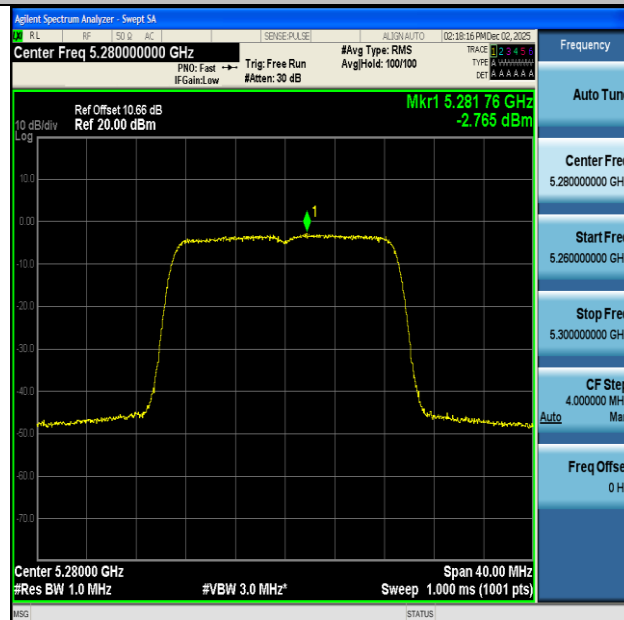


11N40SISO-Ant1-5310-PASS



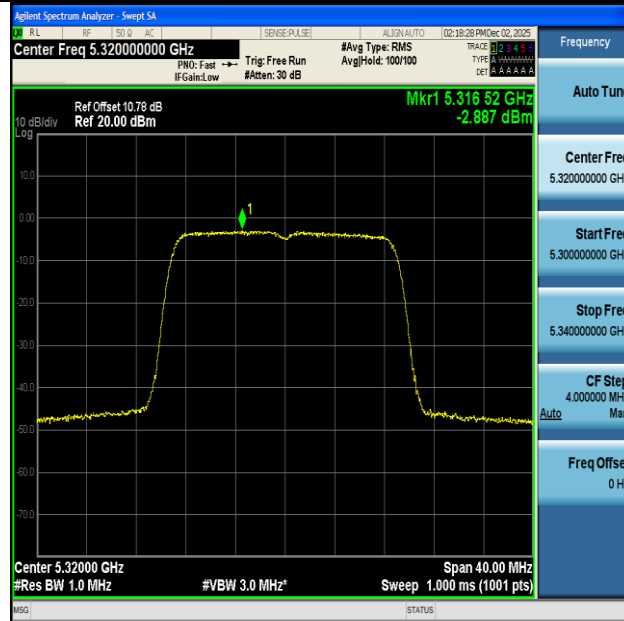


11AC20SISO-Ant1-5260-PASS

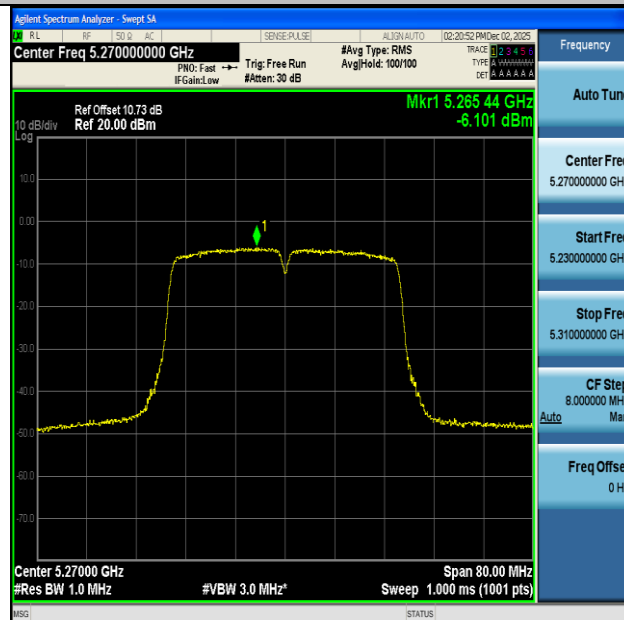


11AC20SISO-Ant1-5280-PASS



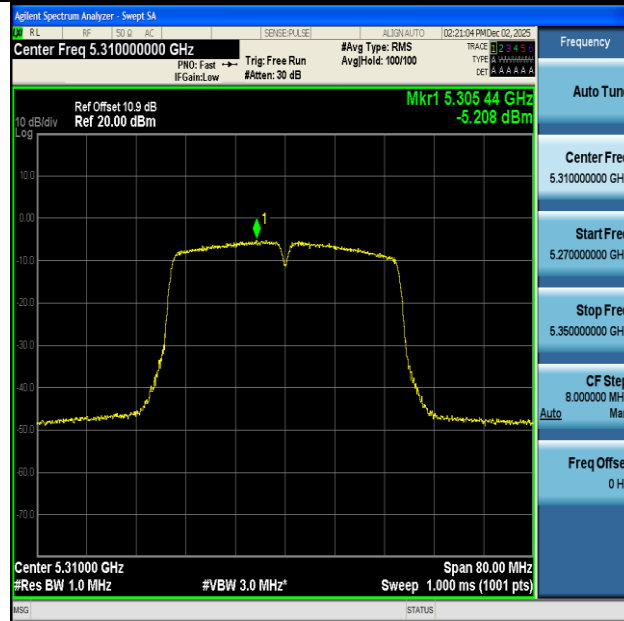


11AC20SISO-Ant1-5320-PASS



11AC40SISO-Ant1-5270-PASS





11AC40SISO-Ant1-5310-PASS



11AC80SISO-Ant1-5290-PASS





Appendix D: Band edge measurements

Test Result

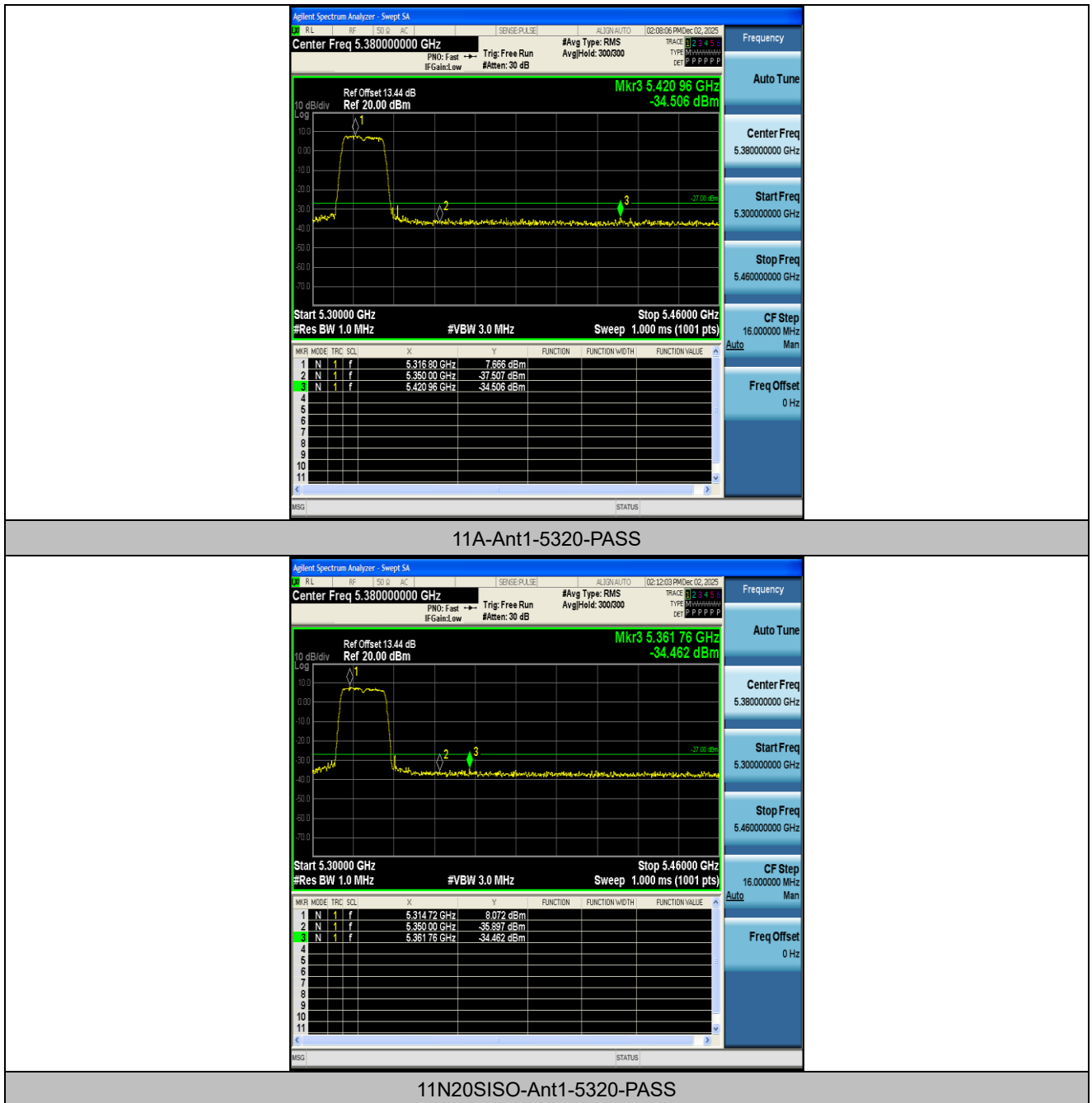
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	High	5320	-34.51	≤-27	PASS
11N20SISO	Ant1	High	5320	-34.46	≤-27	PASS
11N40SISO	Ant1	High	5310	-34.83	≤-27	PASS
11AC20SISO	Ant1	High	5320	-34.81	≤-27	PASS
11AC40SISO	Ant1	High	5310	-34.7	≤-27	PASS
11AC80SISO	Ant1	High	5290	-34.47	≤-27	PASS

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



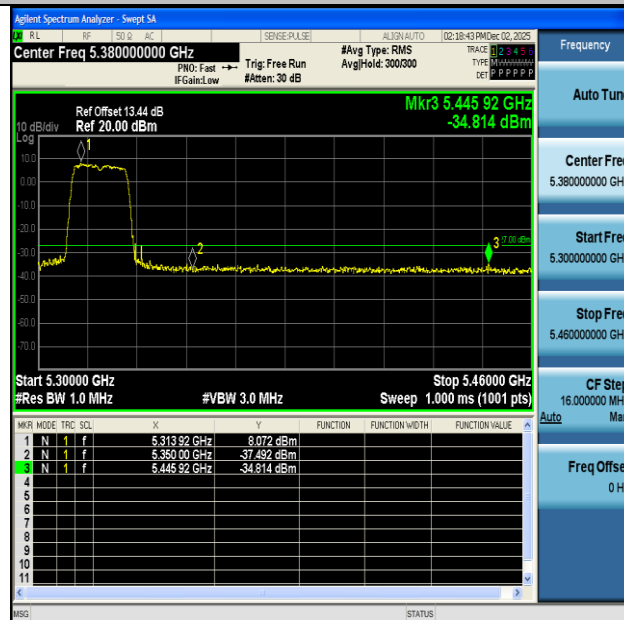


Test Graphs





11N40SISO-Ant1-5310-PASS

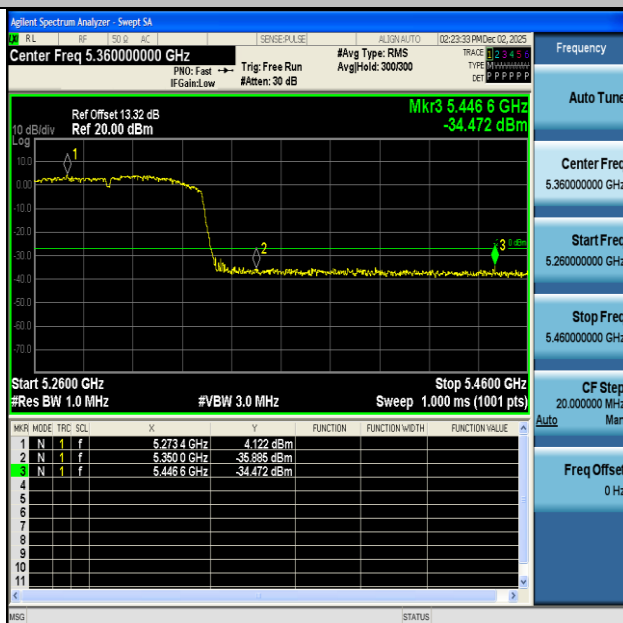


11AC20SISO-Ant1-5320-PASS





11AC40SISO-Ant1-5310-PASS



11AC80SISO-Ant1-5290-PASS





Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5260	20	132	5259.946412	5250 – 5350	PASS
5260	20	108	5260.094176	5250 – 5350	PASS
5260	50	120	5260.039637	5250 – 5350	PASS
5260	40	120	5259.934464	5250 – 5350	PASS
5260	30	120	5260.037124	5250 – 5350	PASS
5260	20	120	5260.046432	5250 – 5350	PASS
5260	10	120	5259.944760	5250 – 5350	PASS
5260	0	120	5259.947695	5250 – 5350	PASS
5260	-10	120	5259.921535	5250 – 5350	PASS
5260	-20	120	5260.068697	5250 – 5350	PASS
5260	-30	120	5260.019136	5250 – 5350	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5280	20	132	5280.022422	5250 – 5350	PASS
5280	20	108	5279.979973	5250 – 5350	PASS
5280	50	120	5279.911140	5250 – 5350	PASS
5280	40	120	5280.011221	5250 – 5350	PASS
5280	30	120	5280.076001	5250 – 5350	PASS
5280	20	120	5280.097196	5250 – 5350	PASS
5280	10	120	5279.964981	5250 – 5350	PASS
5280	0	120	5279.934266	5250 – 5350	PASS
5280	-10	120	5279.964559	5250 – 5350	PASS
5280	-20	120	5280.005501	5250 – 5350	PASS
5280	-30	120	5279.949387	5250 – 5350	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5320	20	132	5320.087750	5250 – 5350	PASS
5320	20	108	5319.930950	5250 – 5350	PASS
5320	50	120	5319.928768	5250 – 5350	PASS
5320	40	120	5319.971984	5250 – 5350	PASS
5320	30	120	5319.981768	5250 – 5350	PASS
5320	20	120	5320.087799	5250 – 5350	PASS
5320	10	120	5320.093155	5250 – 5350	PASS
5320	0	120	5320.012565	5250 – 5350	PASS
5320	-10	120	5320.021701	5250 – 5350	PASS
5320	-20	120	5319.987662	5250 – 5350	PASS
5320	-30	120	5320.027504	5250 – 5350	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5270	20	132	5269.942115	5250 – 5350	PASS
5270	20	108	5269.909968	5250 – 5350	PASS
5270	50	120	5270.079754	5250 – 5350	PASS
5270	40	120	5270.049069	5250 – 5350	PASS
5270	30	120	5270.053682	5250 – 5350	PASS
5270	20	120	5269.996703	5250 – 5350	PASS
5270	10	120	5270.037926	5250 – 5350	PASS
5270	0	120	5270.058278	5250 – 5350	PASS
5270	-10	120	5270.070241	5250 – 5350	PASS
5270	-20	120	5269.960882	5250 – 5350	PASS
5270	-30	120	5269.926624	5250 – 5350	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5290	20	132	5290.091640	5250 – 5350	PASS
5290	20	108	5290.043473	5250 – 5350	PASS
5290	50	120	5290.032886	5250 – 5350	PASS
5290	40	120	5290.027515	5250 – 5350	PASS
5290	30	120	5290.042971	5250 – 5350	PASS
5290	20	120	5289.971419	5250 – 5350	PASS
5290	10	120	5290.047780	5250 – 5350	PASS
5290	0	120	5289.997254	5250 – 5350	PASS
5290	-10	120	5289.970826	5250 – 5350	PASS
5290	-20	120	5289.927968	5250 – 5350	PASS
5290	-30	120	5290.061009	5250 – 5350	PASS





Appendix F: Duty Cycle

Test Result

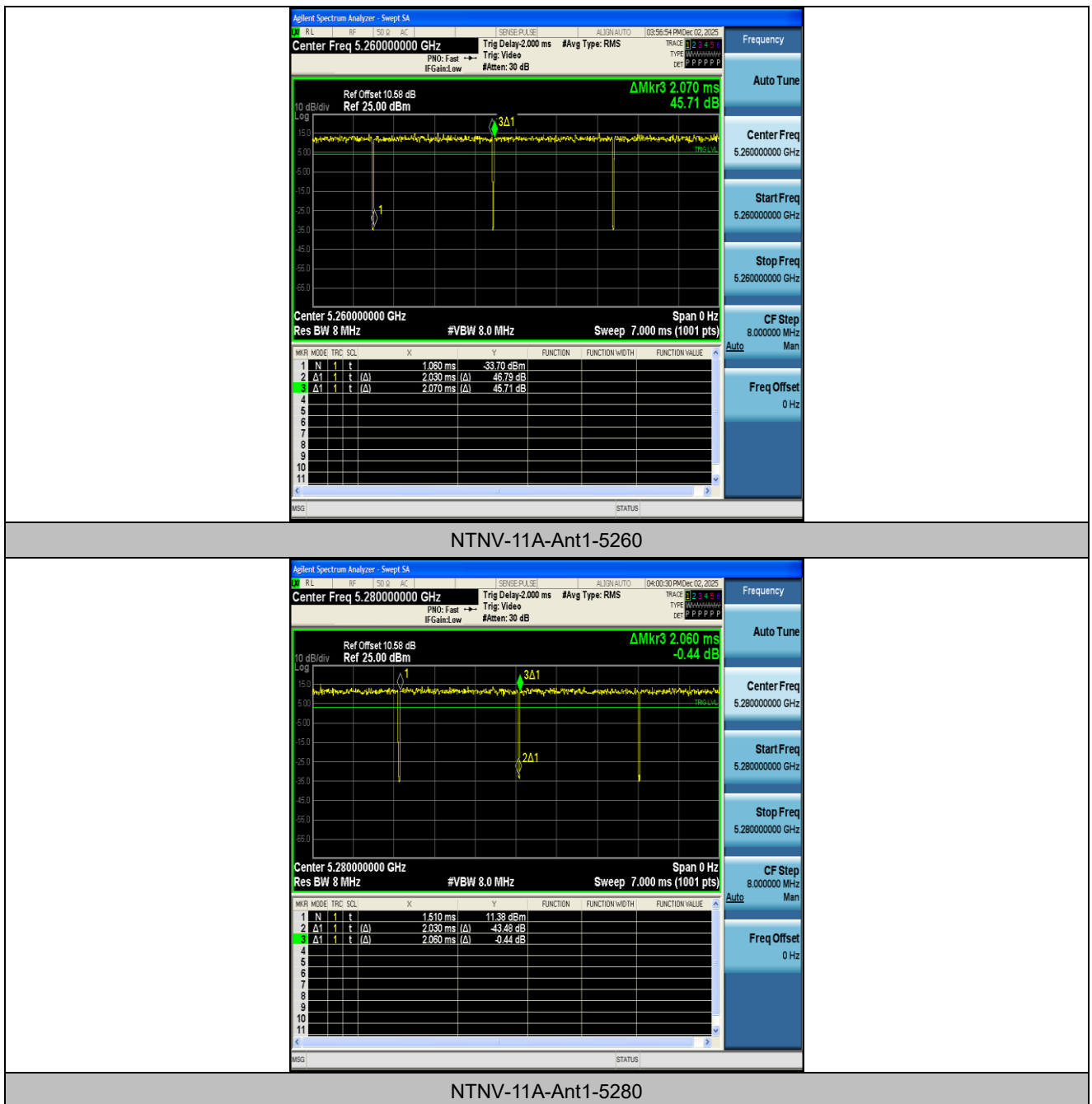
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc. Factor [%]	1/T [kHz]
11A	Ant1	5260	2.03	2.07	98.07	0.08	0.49
11A	Ant1	5280	2.03	2.06	98.54	0.06	0.49
11A	Ant1	5320	2.03	2.06	98.54	0.06	0.49
11N20SISO	Ant1	5260	1.70	1.74	97.70	0.10	0.59
11N20SISO	Ant1	5280	1.70	1.74	97.70	0.10	0.59
11N20SISO	Ant1	5320	1.70	1.74	97.70	0.10	0.59
11N40SISO	Ant1	5270	0.84	0.88	95.45	0.20	1.19
11N40SISO	Ant1	5310	0.84	0.88	95.45	0.20	1.19
11AC20SISO	Ant1	5260	1.70	1.74	97.70	0.10	0.59
11AC20SISO	Ant1	5280	1.70	1.73	98.27	0.08	0.59
11AC20SISO	Ant1	5320	1.71	1.74	98.28	0.08	0.58
11AC40SISO	Ant1	5270	0.84	0.87	96.55	0.15	1.19
11AC40SISO	Ant1	5310	0.84	0.88	95.45	0.20	1.19
11AC80SISO	Ant1	5290	0.41	0.45	91.11	0.40	2.44

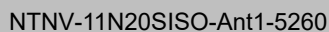
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)

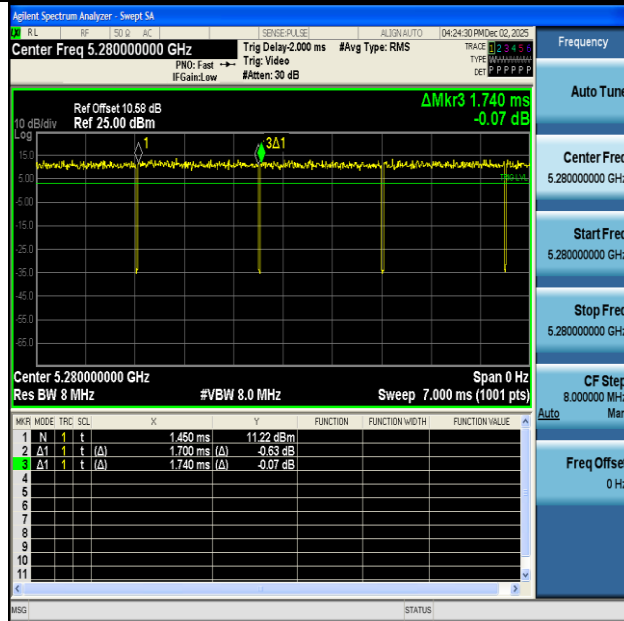




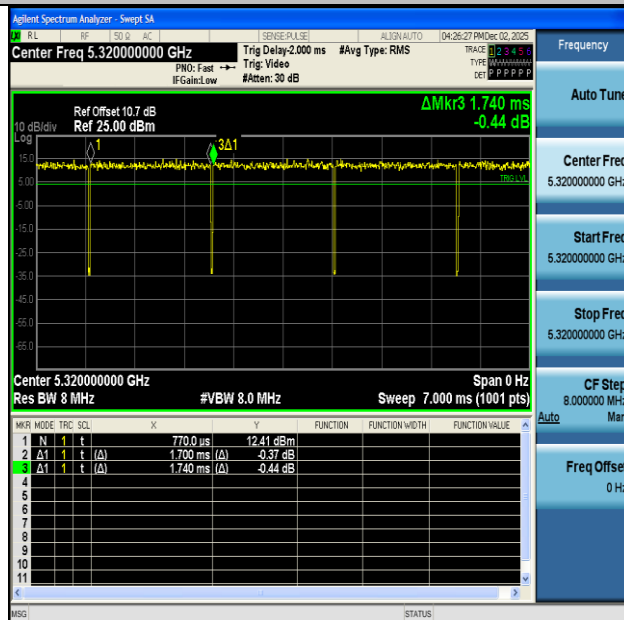
Test Graphs





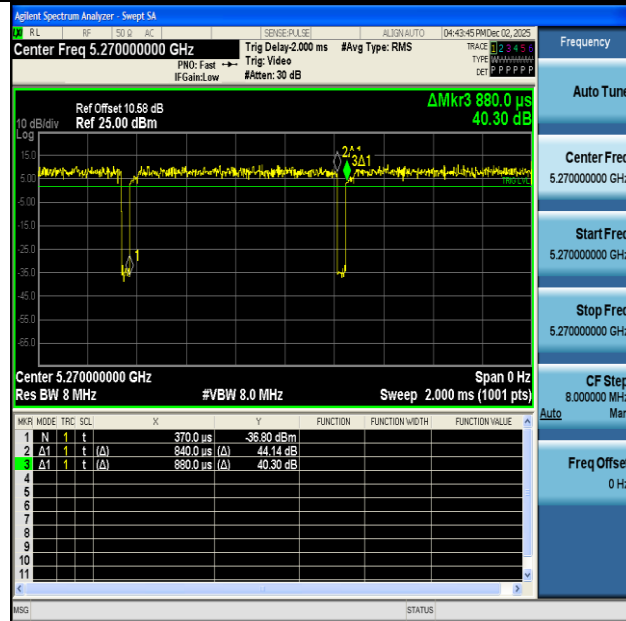


NTNV-11N20SISO-Ant1-5280

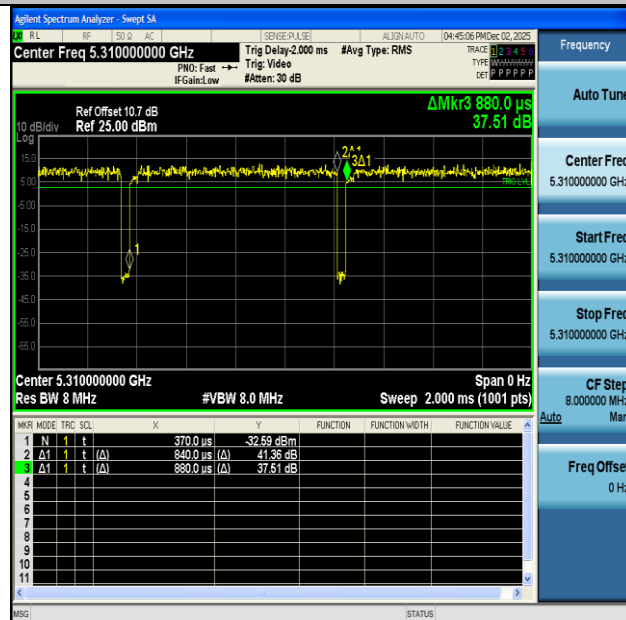


NTNV-11N20SISO-Ant1-5320



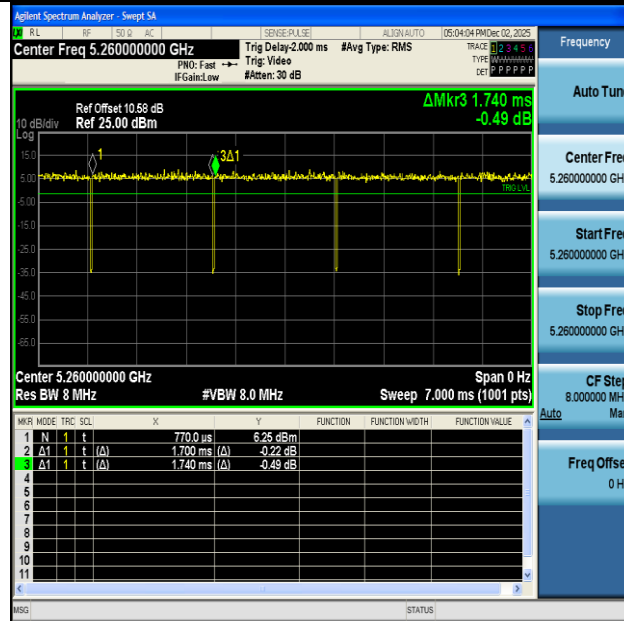


NTNV-11N40SISO-Ant1-5270

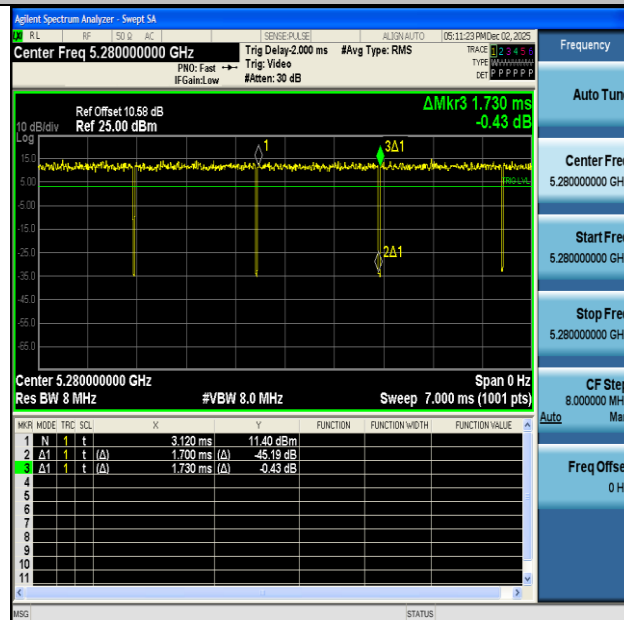


NTNV-11N40SISO-Ant1-5310



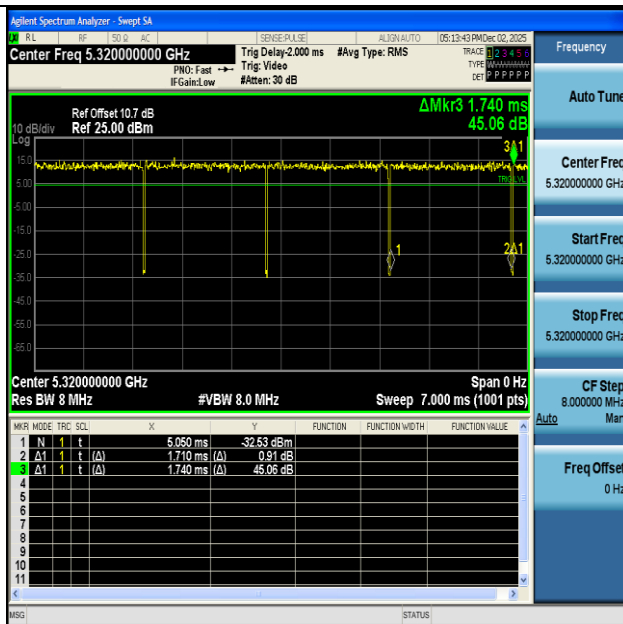


NTNV-11AC20SISO-Ant1-5260

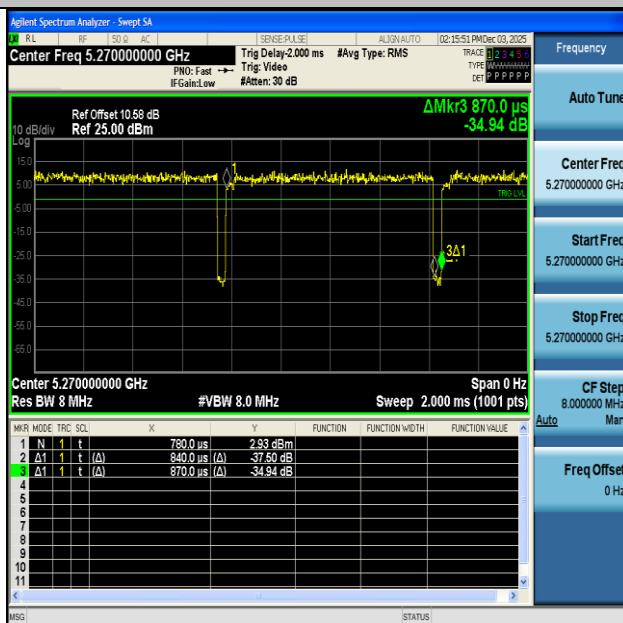


NTNV-11AC20SISO-Ant1-5280



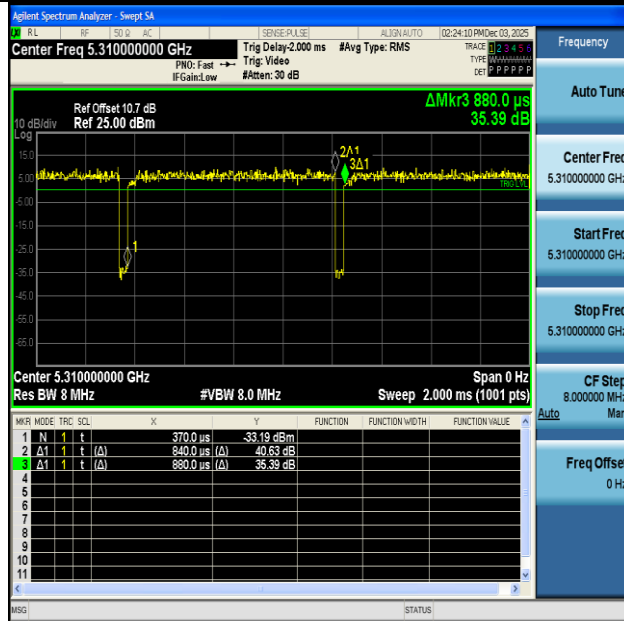


NTNV-11AC20SISO-Ant1-5320

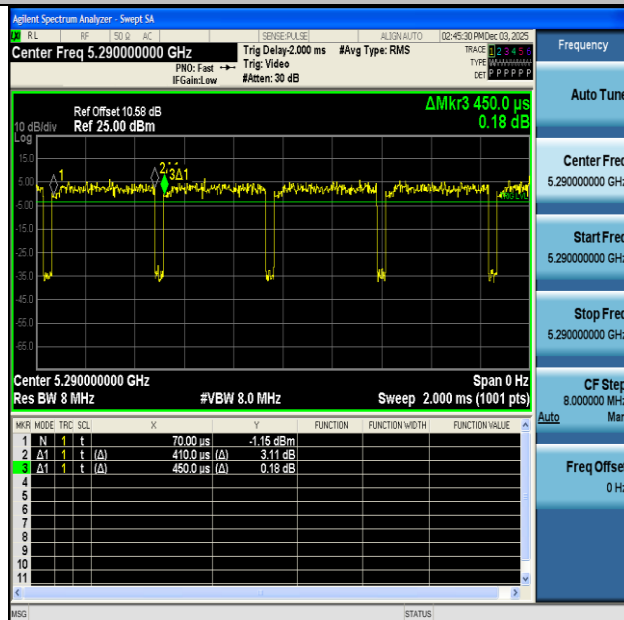


NTNV-11AC40SISO-Ant1-5270





NTNV-11AC40SISO-Ant1-5310



NTNV-11AC80SISO-Ant1-5290

