



RF Test Data for RLAN(UNII-3) (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: Occupied channel bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5745	17.057	5736.3727	5753.4297	---	---
11A	Ant1	5785	17.115	5776.3905	5793.5055	---	---
11A	Ant1	5825	17.086	5816.4411	5833.5271	---	---
11N20SISO	Ant1	5745	18.161	5735.8270	5753.9880	---	---
11N20SISO	Ant1	5785	18.190	5775.8399	5794.0299	---	---
11N20SISO	Ant1	5825	18.159	5815.9045	5834.0635	---	---
11N40SISO	Ant1	5755	36.547	5736.6598	5773.2068	---	---
11N40SISO	Ant1	5795	36.635	5776.6508	5813.2858	---	---
11AC20SISO	Ant1	5745	18.133	5735.8446	5753.9776	---	---
11AC20SISO	Ant1	5785	18.163	5775.8436	5794.0066	---	---
11AC20SISO	Ant1	5825	18.106	5815.9375	5834.0435	---	---
11AC40SISO	Ant1	5755	36.460	5736.6879	5773.1479	---	---
11AC40SISO	Ant1	5795	36.568	5776.7319	5813.2999	---	---
11AC80SISO	Ant1	5775	76.550	5736.4227	5812.9727	---	---

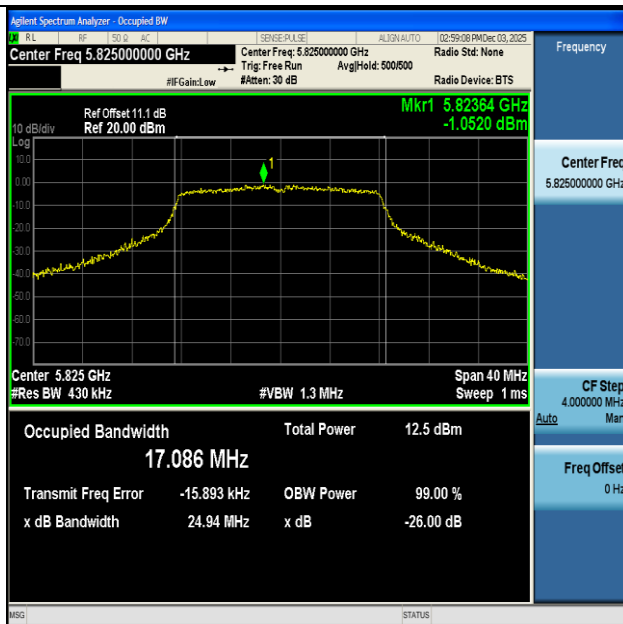
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



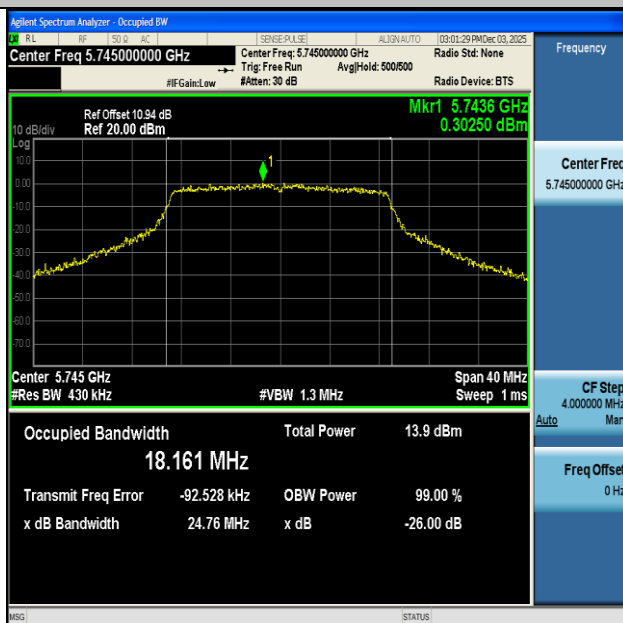


Test Graphs





11A-Ant1-5825

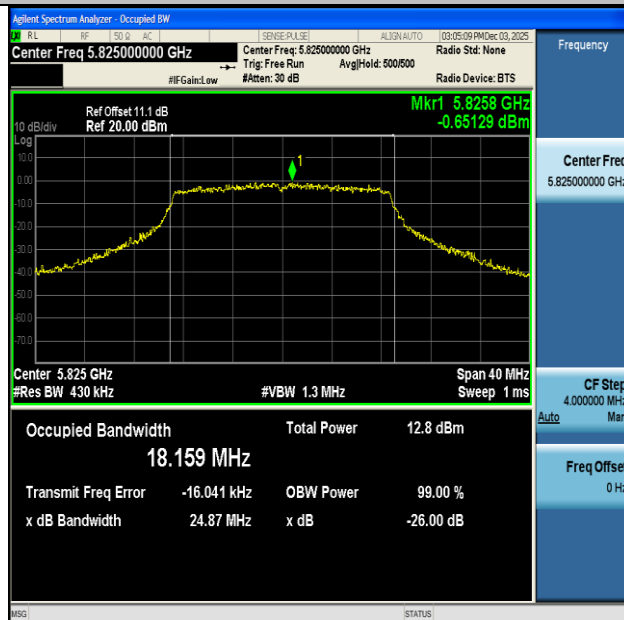


11N20SISO-Ant1-5745



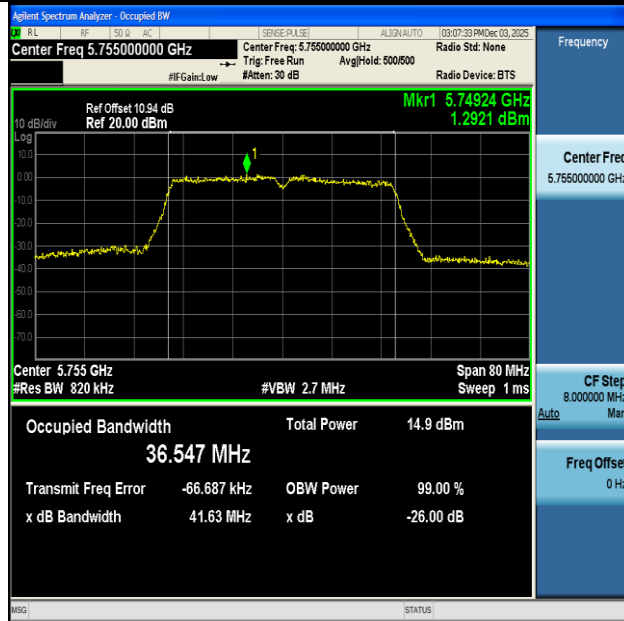


11N20SISO-Ant1-5785



11N20SISO-Ant1-5825



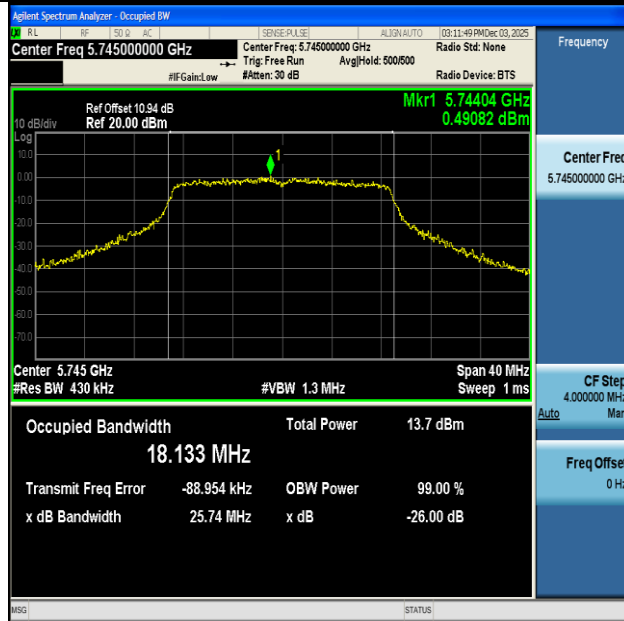


11N40SISO-Ant1-5755

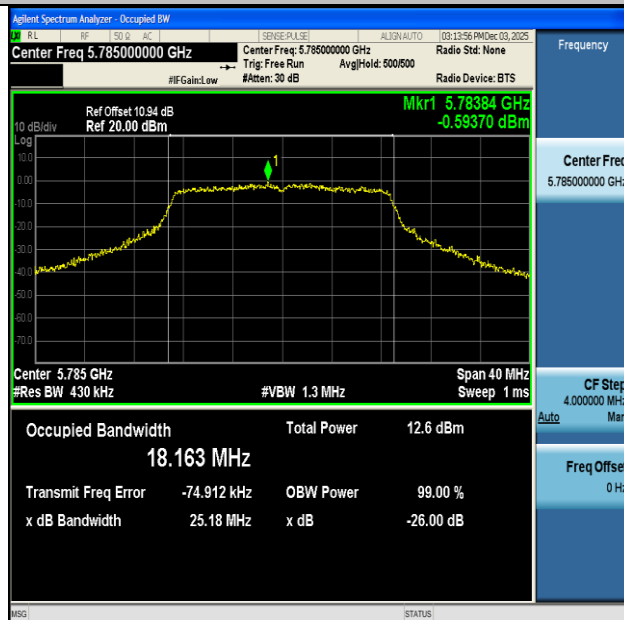


11N40SISO-Ant1-5795



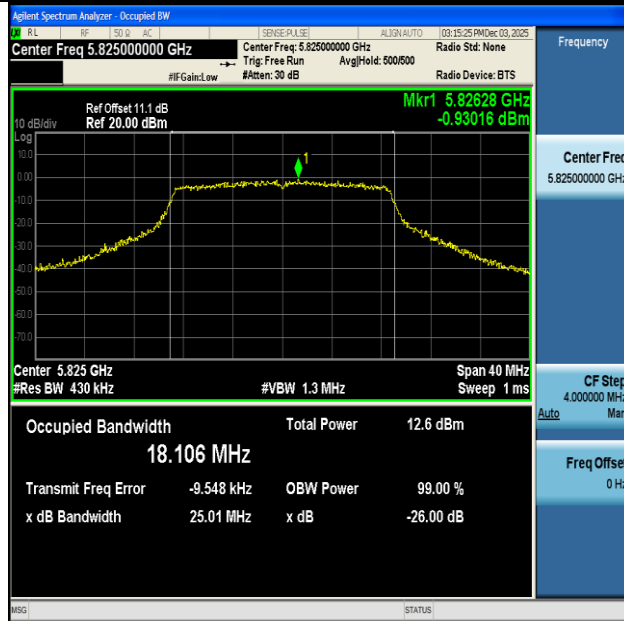


11AC20SISO-Ant1-5745

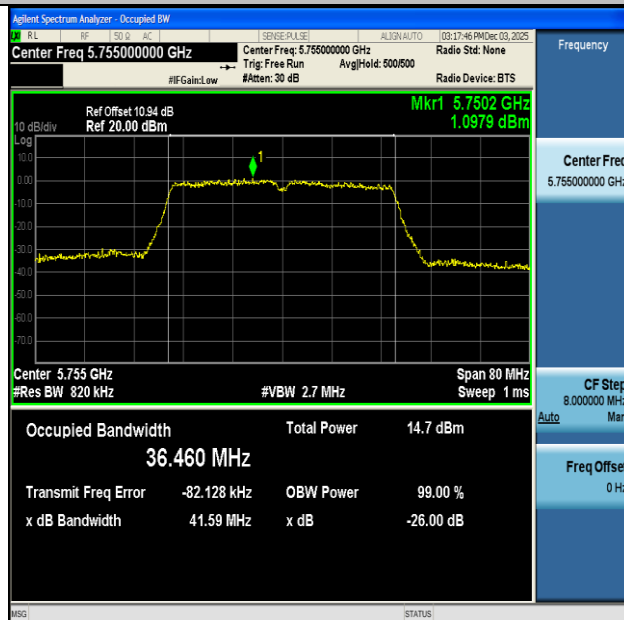


11AC20SISO-Ant1-5785



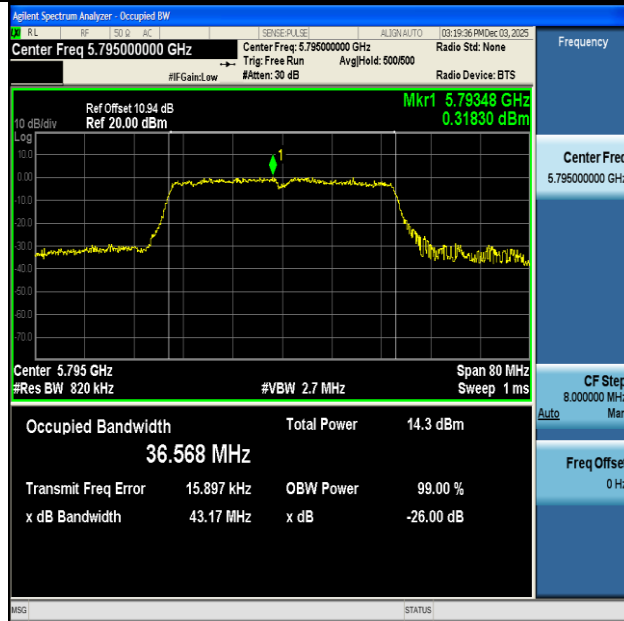


11AC20SISO-Ant1-5825



11AC40SISO-Ant1-5755





11AC40SISO-Ant1-5795



11AC80SISO-Ant1-5775





Appendix A2: Min emission bandwidth

Test Result

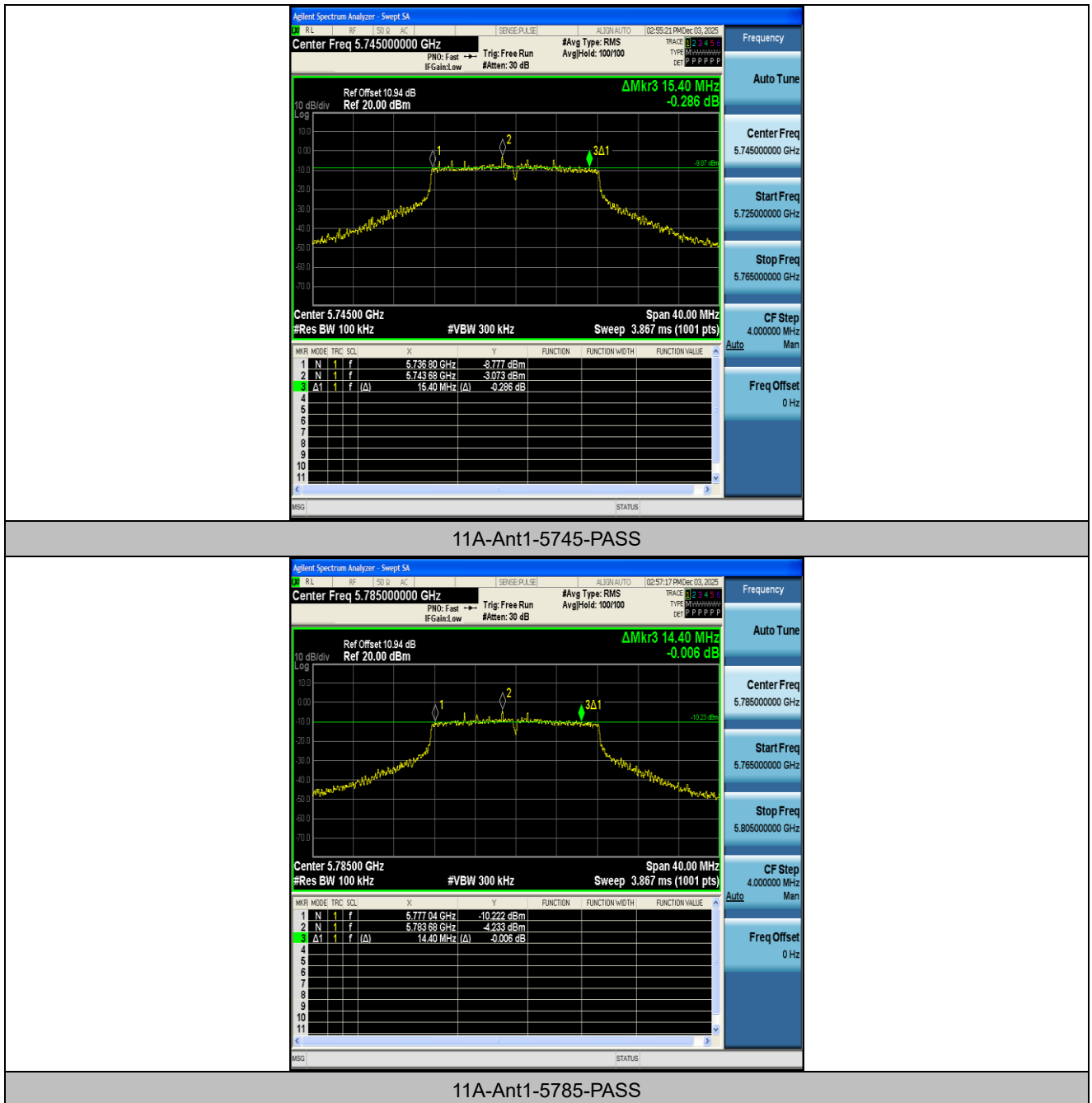
Test Mode	Antenna	Frequency [MHz]	6db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5745	15.400	5736.800	5752.200	0.5	PASS
11A	Ant1	5785	14.400	5777.040	5791.440	0.5	PASS
11A	Ant1	5825	15.360	5817.360	5832.720	0.5	PASS
11N20SISO	Ant1	5745	15.600	5736.840	5752.440	0.5	PASS
11N20SISO	Ant1	5785	13.200	5778.720	5791.920	0.5	PASS
11N20SISO	Ant1	5825	16.000	5816.720	5832.720	0.5	PASS
11N40SISO	Ant1	5755	36.000	5736.840	5772.840	0.5	PASS
11N40SISO	Ant1	5795	35.920	5777.000	5812.920	0.5	PASS
11AC20SISO	Ant1	5745	16.280	5736.440	5752.720	0.5	PASS
11AC20SISO	Ant1	5785	15.520	5777.360	5792.880	0.5	PASS
11AC20SISO	Ant1	5825	15.200	5817.400	5832.600	0.5	PASS
11AC40SISO	Ant1	5755	35.520	5737.000	5772.520	0.5	PASS
11AC40SISO	Ant1	5795	35.680	5777.000	5812.680	0.5	PASS
11AC80SISO	Ant1	5775	75.680	5736.760	5812.440	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

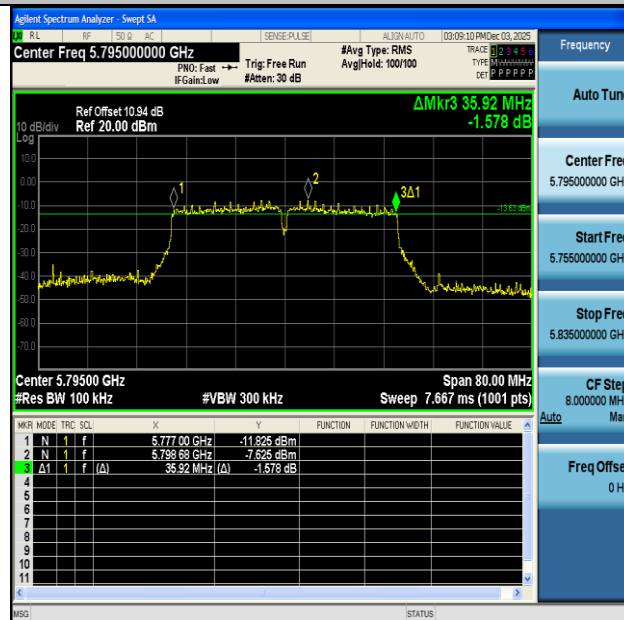


11N20SISO-Ant1-5825-PASS





11N40SISO-Ant1-5755-PASS



11N40SISO-Ant1-5795-PASS





11AC20SISO-Ant1-5745-PASS

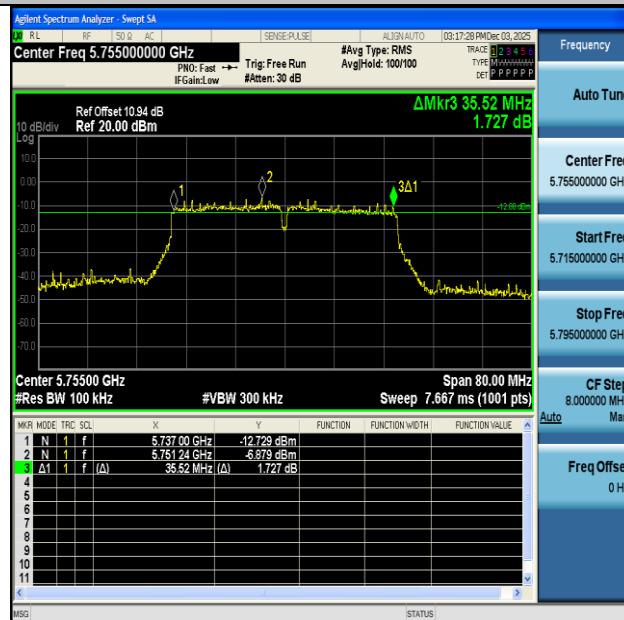


11AC20SISO-Ant1-5785-PASS



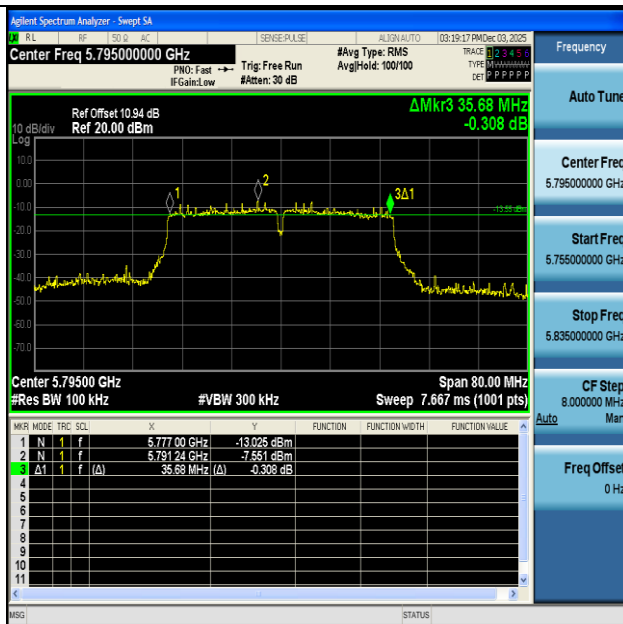


11AC20SISO-Ant1-5825-PASS

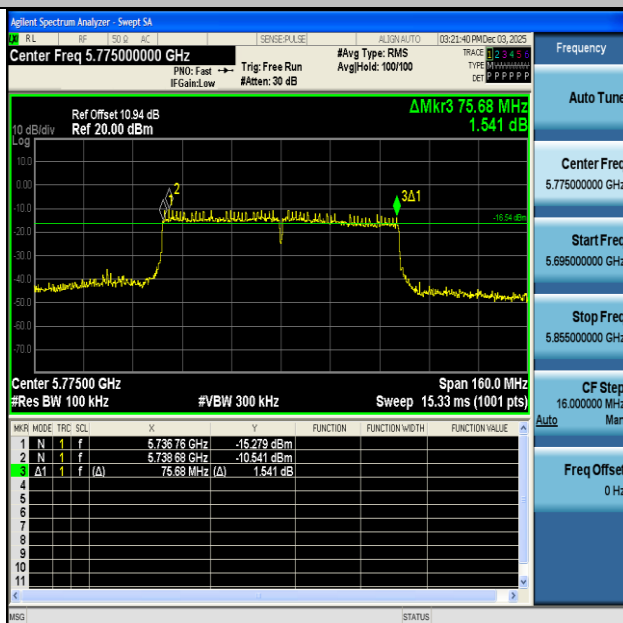


11AC40SISO-Ant1-5755-PASS





11AC40SISO-Ant1-5795-PASS



11AC80SISO-Ant1-5775-PASS





Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11A	Ant1	5745	6.66	≤30.00	PASS
11A	Ant1	5785	5.54	≤30.00	PASS
11A	Ant1	5825	5.66	≤30.00	PASS
11N20SISO	Ant1	5745	6.53	≤30.00	PASS
11N20SISO	Ant1	5785	5.35	≤30.00	PASS
11N20SISO	Ant1	5825	5.51	≤30.00	PASS
11N40SISO	Ant1	5755	6.81	≤30.00	PASS
11N40SISO	Ant1	5795	6.33	≤30.00	PASS
11AC20SISO	Ant1	5745	6.47	≤30.00	PASS
11AC20SISO	Ant1	5785	5.29	≤30.00	PASS
11AC20SISO	Ant1	5825	5.42	≤30.00	PASS
11AC40SISO	Ant1	5755	6.69	≤30.00	PASS
11AC40SISO	Ant1	5795	6.25	≤30.00	PASS
11AC80SISO	Ant1	5775	6.30	≤30.00	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

Frequency [MHz]	Test Mode	Antenna	Result [dBm/300KHz]	RBW Factor [dB]	Result [dBm/500KHz]	Limit [dBm/500KHz]	Verdict
5745	11A	Ant1	-5.64	2.22	-3.42	≤30.00	PASS
5785	11A	Ant1	-6.27	2.22	-4.05	≤30.00	PASS
5825	11A	Ant1	-6.70	2.22	-4.48	≤30.00	PASS
5745	11N20SISO	Ant1	-6.10	2.22	-3.88	≤30.00	PASS
5785	11N20SISO	Ant1	-6.95	2.22	-4.73	≤30.00	PASS
5825	11N20SISO	Ant1	-7.21	2.22	-4.99	≤30.00	PASS
5755	11N40SISO	Ant1	-9.91	2.22	-7.69	≤30.00	PASS
5795	11N40SISO	Ant1	-10.41	2.22	-8.19	≤30.00	PASS
5745	11AC20SISO	Ant1	-9.20	2.22	-6.98	≤30.00	PASS
5785	11AC20SISO	Ant1	-9.98	2.22	-7.76	≤30.00	PASS
5825	11AC20SISO	Ant1	-9.69	2.22	-7.47	≤30.00	PASS
5755	11AC40SISO	Ant1	-12.92	2.22	-10.70	≤30.00	PASS
5795	11AC40SISO	Ant1	-13.44	2.22	-11.22	≤30.00	PASS
5775	11AC80SISO	Ant1	-15.42	2.22	-13.20	≤30.00	PASS

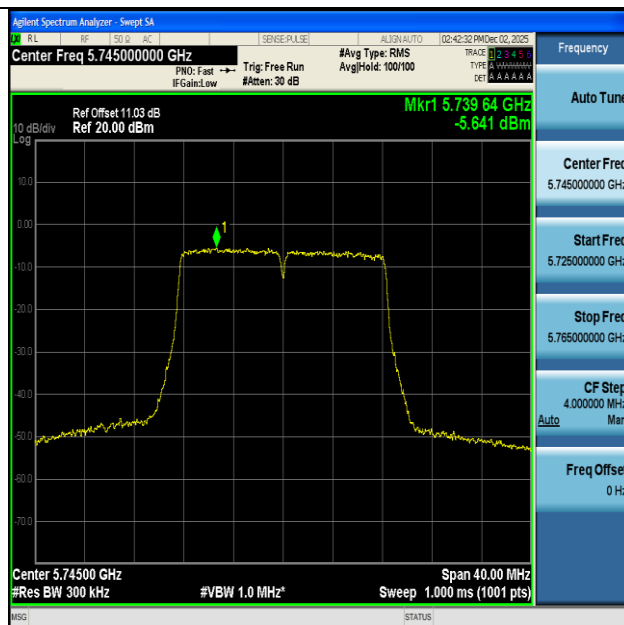
Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)

Result[dBm/500KHz] = Result[dBm/300KHz] + RB Factor(dB)

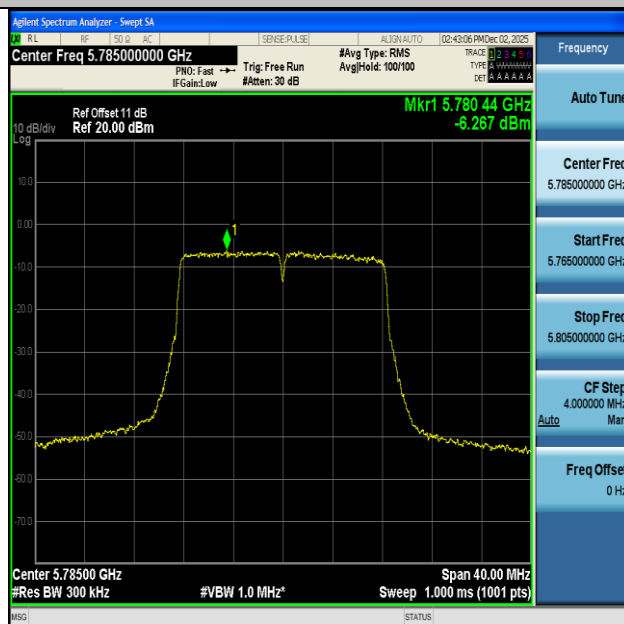




Test Graphs



11A-Ant1-5745-PASS



11A-Ant1-5785-PASS



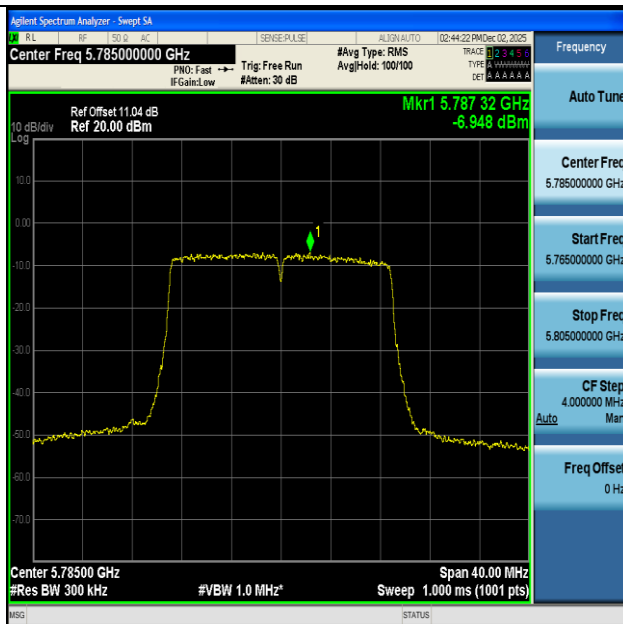


11A-Ant1-5825-PASS

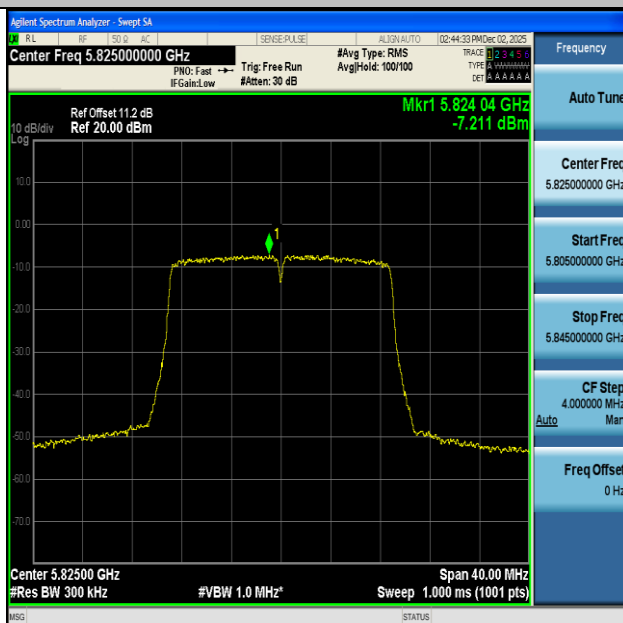


11N20SISO-Ant1-5745-PASS



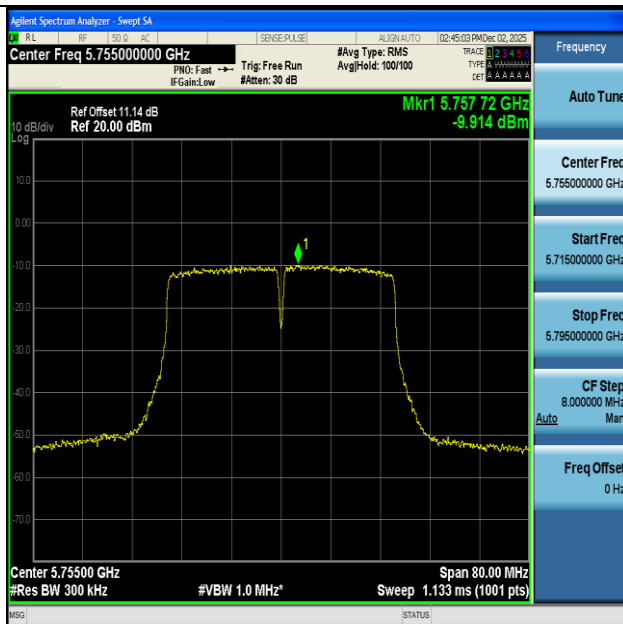


11N20SISO-Ant1-5785-PASS

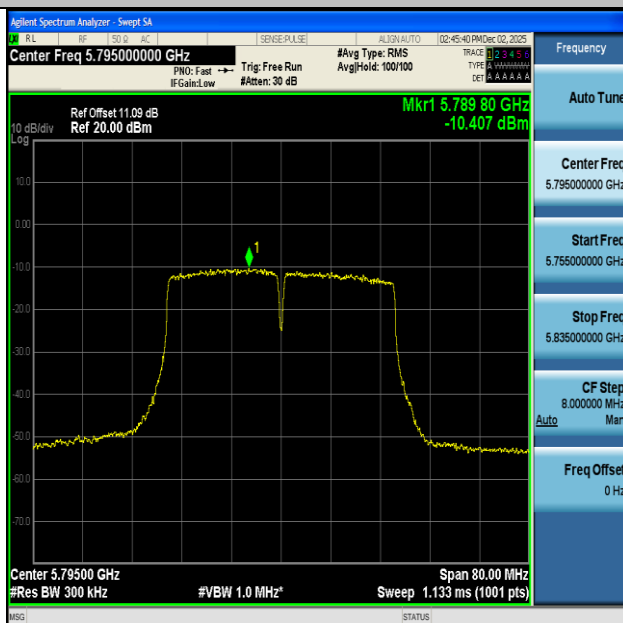


11N20SISO-Ant1-5825-PASS





11N40SISO-Ant1-5755-PASS



11N40SISO-Ant1-5795-PASS



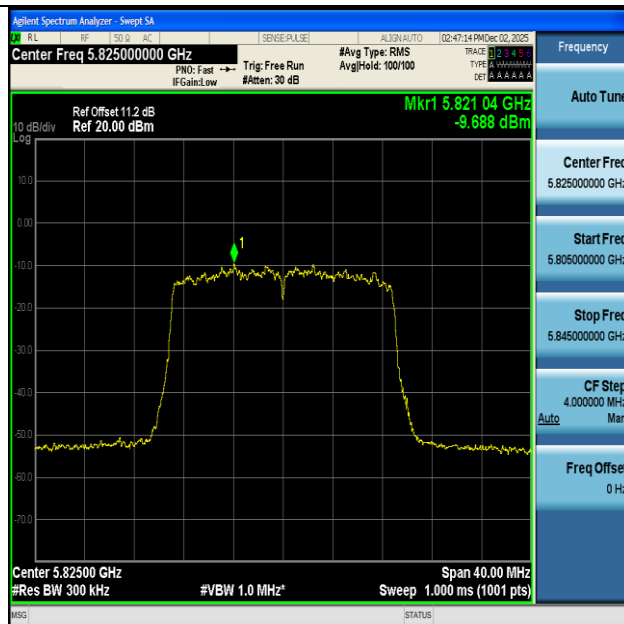


11AC20SISO-Ant1-5745-PASS

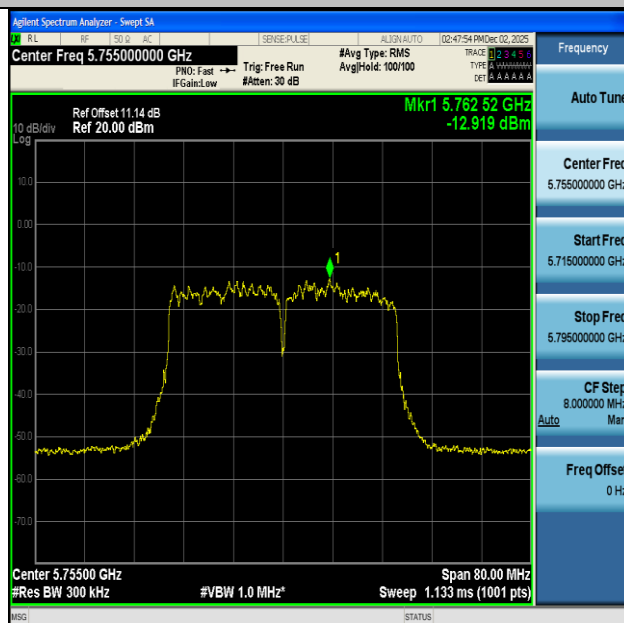


11AC20SISO-Ant1-5785-PASS



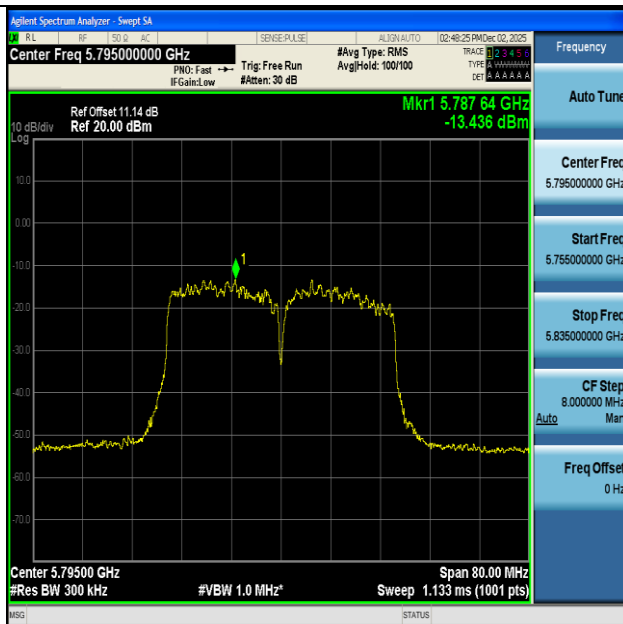


11AC20SISO-Ant1-5825-PASS

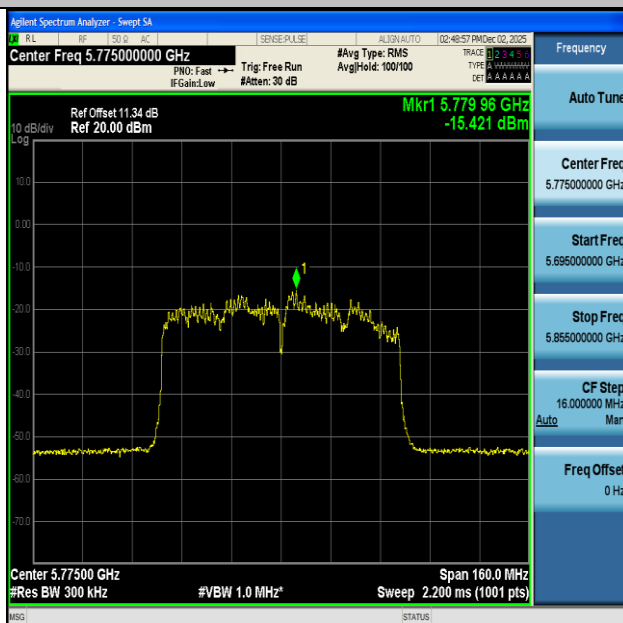


11AC40SISO-Ant1-5755-PASS





11AC40SISO-Ant1-5795-PASS



11AC80SISO-Ant1-5775-PASS





Appendix D: Band edge measurements

Test Result

Test Mode	Antenna	Ch. Name	Frequency [MHz]	Freq. Range [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5720~5725	-35.72	≤16.60	PASS
11A	Ant1	Low	5745	5700~5720	-36.52	≤10.25	PASS
11A	Ant1	Low	5745	5650~5700	-36.96	≤-26.96	PASS
11A	Ant1	Low	5745	5760~5650	-35.78	≤-27	PASS
11A	Ant1	High	5825	5850~5855	-36.26	≤15.73	PASS
11A	Ant1	High	5825	5855~5875	-35.43	≤10.81	PASS
11A	Ant1	High	5825	5875~5925	-35.83	≤-26.81	PASS
11A	Ant1	High	5825	5925~5935	-34.93	≤-27	PASS
11N20SISO	Ant1	Low	5745	5720~5725	-36.66	≤16.60	PASS
11N20SISO	Ant1	Low	5745	5700~5720	-35.76	≤10.35	PASS
11N20SISO	Ant1	Low	5745	5650~5700	-35.44	≤-25.42	PASS
11N20SISO	Ant1	Low	5745	5760~5650	-35.55	≤-27	PASS
11N20SISO	Ant1	High	5825	5850~5855	-34.45	≤16.34	PASS
11N20SISO	Ant1	High	5825	5855~5875	-35.35	≤10.78	PASS
11N20SISO	Ant1	High	5825	5875~5925	-34.51	≤-26.81	PASS
11N20SISO	Ant1	High	5825	5925~5935	-34.59	≤-27	PASS
11N40SISO	Ant1	Low	5755	5720~5725	-34.3	≤15.74	PASS
11N40SISO	Ant1	Low	5755	5700~5720	-34.41	≤11.72	PASS
11N40SISO	Ant1	Low	5755	5650~5700	-37.21	≤-26.70	PASS
11N40SISO	Ant1	Low	5755	5780~5650	-35.54	≤-27	PASS
11N40SISO	Ant1	High	5795	5850~5855	-36	≤17.16	PASS
11N40SISO	Ant1	High	5795	5855~5875	-35.02	≤10.20	PASS
11N40SISO	Ant1	High	5795	5875~5925	-35.71	≤-26.10	PASS
11N40SISO	Ant1	High	5795	5925~5935	-35.46	≤-27	PASS
11AC20SISO	Ant1	Low	5745	5720~5725	-34.12	≤16.87	PASS
11AC20SISO	Ant1	Low	5745	5700~5720	-35.61	≤10.02	PASS
11AC20SISO	Ant1	Low	5745	5650~5700	-37.31	≤-26.79	PASS
11AC20SISO	Ant1	Low	5745	5760~5650	-36.34	≤-27	PASS
11AC20SISO	Ant1	High	5825	5850~5855	-37.37	≤15.73	PASS
11AC20SISO	Ant1	High	5825	5855~5875	-35.72	≤10.13	PASS
11AC20SISO	Ant1	High	5825	5875~5925	-36.49	≤-26.61	PASS





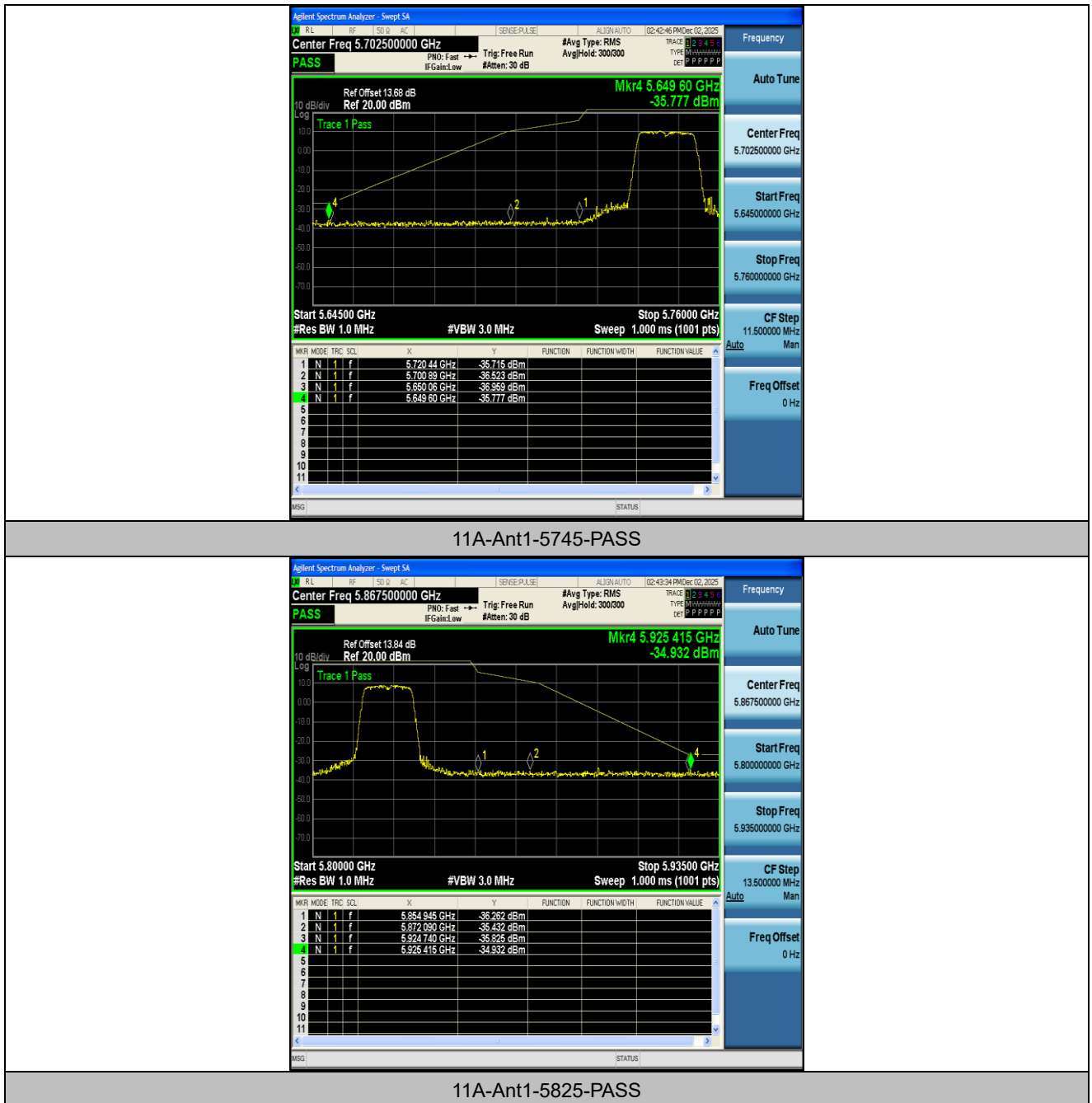
11AC20SIS O	Ant1	High	5825	5925~5935	-35.42	≤ -27	PASS
11AC40SIS O	Ant1	Low	5755	5720~5725	-34.74	≤ 16.97	PASS
11AC40SIS O	Ant1	Low	5755	5700~5720	-35.66	≤ 10.55	PASS
11AC40SIS O	Ant1	Low	5755	5650~5700	-36.97	≤ -26.90	PASS
11AC40SIS O	Ant1	Low	5755	5780~5650	-35.73	≤ -27	PASS
11AC40SIS O	Ant1	High	5795	5925~5935	-35.85	≤ -27	PASS
11AC40SIS O	Ant1	High	5795	5850~5855	-36.25	≤ 15.66	PASS
11AC40SIS O	Ant1	High	5795	5855~5875	-35.14	≤ 10.34	PASS
11AC40SIS O	Ant1	High	5795	5875~5925	-36.02	≤ -26.95	PASS
11AC80SIS O	Ant1	Low	5775	5720~5725	-35.7	≤ 16.00	PASS
11AC80SIS O	Ant1	Low	5775	5700~5720	-36.24	≤ 10.09	PASS
11AC80SIS O	Ant1	Low	5775	5650~5700	-36.67	≤ -26.80	PASS
11AC80SIS O	Ant1	Low	5775	5800~5650	-36.48	≤ -27	PASS
11AC80SIS O	Ant1	High	5775	5850~5855	-37.24	≤ 15.84	PASS
11AC80SIS O	Ant1	High	5775	5855~5875	-37.37	≤ 11.02	PASS
11AC80SIS O	Ant1	High	5775	5875~5925	-40.02	≤ -26.73	PASS
11AC80SIS O	Ant1	High	5775	5925~5935	-38.21	≤ -27	PASS

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





Test Graphs





11N20SISO-Ant1-5745-PASS

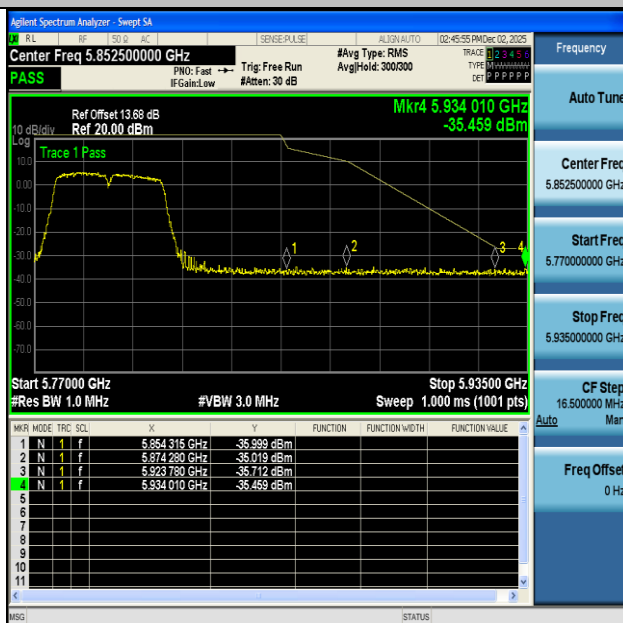


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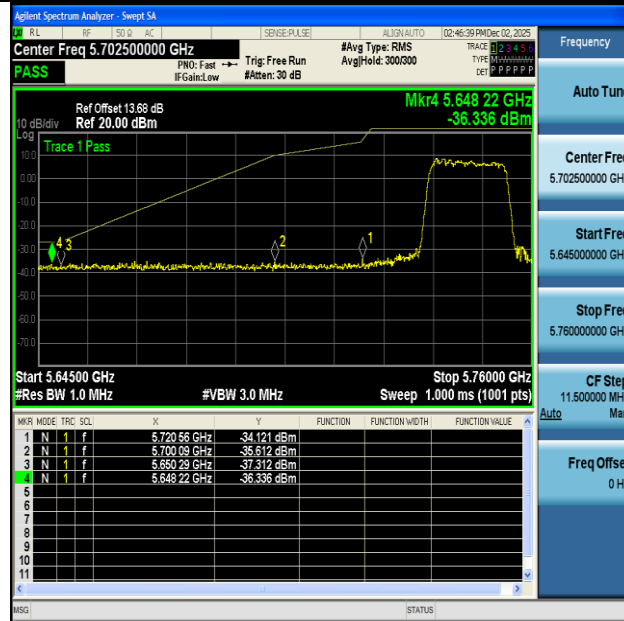


11N40SISO-Ant1-5755-PASS



11N40SISO-Ant1-5795-PASS





11AC20SISO-Ant1-5745-PASS

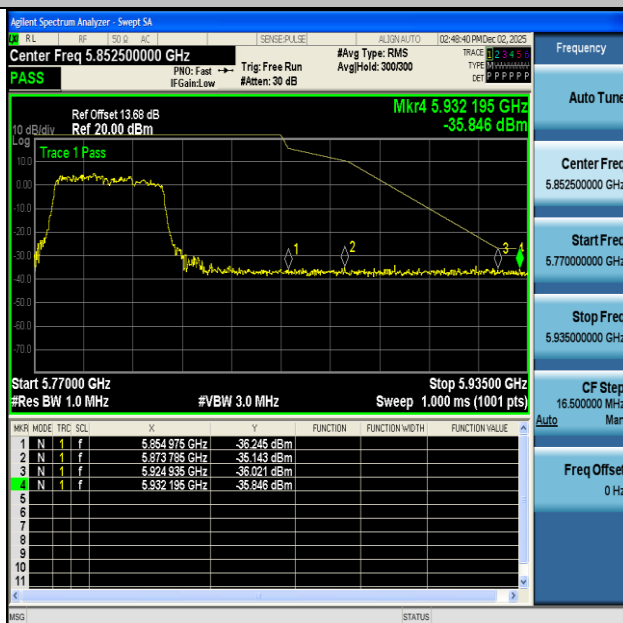


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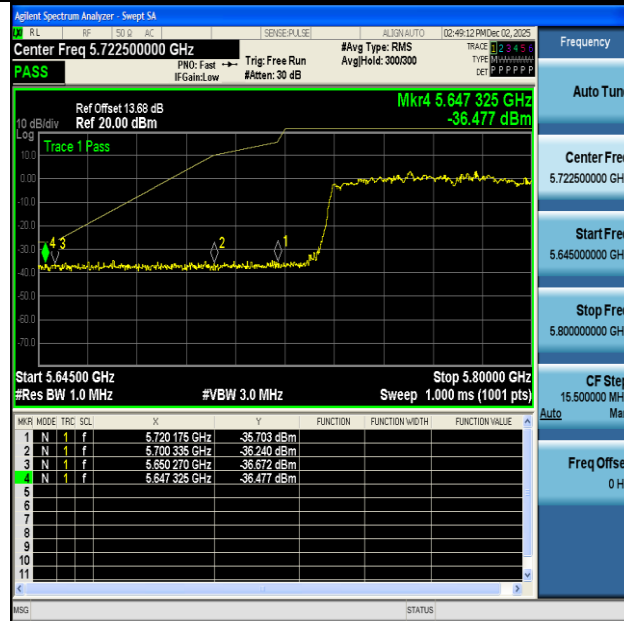


11AC40SISO-Ant1-5755-PASS



11AC40SISO-Ant1-5795-PASS





11AC80SISO-Ant1-5775-PASS



11AC80SISO-Ant1-5775-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	5725 – 5850	PASS
5745	20	108	5745.041039	5725 – 5850	PASS
5745	50	120	5744.933548	5725 – 5850	PASS
5745	40	120	5745.050945	5725 – 5850	PASS
5745	30	120	5745.009926	5725 – 5850	PASS
5745	20	120	5744.907202	5725 – 5850	PASS
5745	10	120	5745.076732	5725 – 5850	PASS
5745	0	120	5745.084333	5725 – 5850	PASS
5745	-10	120	5744.903159	5725 – 5850	PASS
5745	-20	120	5745.033055	5725 – 5850	PASS
5745	-30	120	5745.059729	5725 – 5850	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5785	20	132	5784.918658	5725 – 5850	PASS
5785	20	108	5784.976167	5725 – 5850	PASS
5785	50	120	5785.027551	5725 – 5850	PASS
5785	40	120	5784.962090	5725 – 5850	PASS
5785	30	120	5784.990629	5725 – 5850	PASS
5785	20	120	5784.998354	5725 – 5850	PASS
5785	10	120	5785.012681	5725 – 5850	PASS
5785	0	120	5785.059765	5725 – 5850	PASS
5785	-10	120	5784.912339	5725 – 5850	PASS
5785	-20	120	5785.074352	5725 – 5850	PASS
5785	-30	120	5784.912952	5725 – 5850	PASS





Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5825	20	132	5824.902968	5725 – 5850	PASS
5825	20	108	5824.910994	5725 – 5850	PASS
5825	50	120	5824.955446	5725 – 5850	PASS
5825	40	120	5824.950636	5725 – 5850	PASS
5825	30	120	5824.982370	5725 – 5850	PASS
5825	20	120	5825.085909	5725 – 5850	PASS
5825	10	120	5824.906989	5725 – 5850	PASS
5825	0	120	5825.008848	5725 – 5850	PASS
5825	-10	120	5824.975844	5725 – 5850	PASS
5825	-20	120	5824.953194	5725 – 5850	PASS
5825	-30	120	5825.032182	5725 – 5850	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5755	20	132	5755.085781	5725 – 5850	PASS
5755	20	108	5755.018576	5725 – 5850	PASS
5755	50	120	5754.997551	5725 – 5850	PASS
5755	40	120	5755.045244	5725 – 5850	PASS
5755	30	120	5755.005085	5725 – 5850	PASS
5755	20	120	5754.993754	5725 – 5850	PASS
5755	10	120	5755.045784	5725 – 5850	PASS
5755	0	120	5754.938192	5725 – 5850	PASS
5755	-10	120	5755.050014	5725 – 5850	PASS
5755	-20	120	5754.939851	5725 – 5850	PASS
5755	-30	120	5755.084397	5725 – 5850	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5795	20	132	5794.976560	5725 – 5850	PASS
5795	20	108	5794.980464	5725 – 5850	PASS
5795	50	120	5795.053547	5725 – 5850	PASS
5795	40	120	5795.071755	5725 – 5850	PASS
5795	30	120	5794.989789	5725 – 5850	PASS
5795	20	120	5794.909062	5725 – 5850	PASS
5795	10	120	5795.070606	5725 – 5850	PASS
5795	0	120	5794.943231	5725 – 5850	PASS
5795	-10	120	5794.943866	5725 – 5850	PASS
5795	-20	120	5795.024793	5725 – 5850	PASS
5795	-30	120	5795.006434	5725 – 5850	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5775	20	132	5775.069852	5725 – 5850	PASS
5775	20	108	5774.910218	5725 – 5850	PASS
5775	50	120	5775.038829	5725 – 5850	PASS
5775	40	120	5774.992270	5725 – 5850	PASS
5775	30	120	5774.948452	5725 – 5850	PASS
5775	20	120	5774.953492	5725 – 5850	PASS
5775	10	120	5774.903603	5725 – 5850	PASS
5775	0	120	5774.973904	5725 – 5850	PASS
5775	-10	120	5775.010758	5725 – 5850	PASS
5775	-20	120	5774.908281	5725 – 5850	PASS
5775	-30	120	5775.090681	5725 – 5850	PASS





Appendix F: Duty Cycle

Test Result

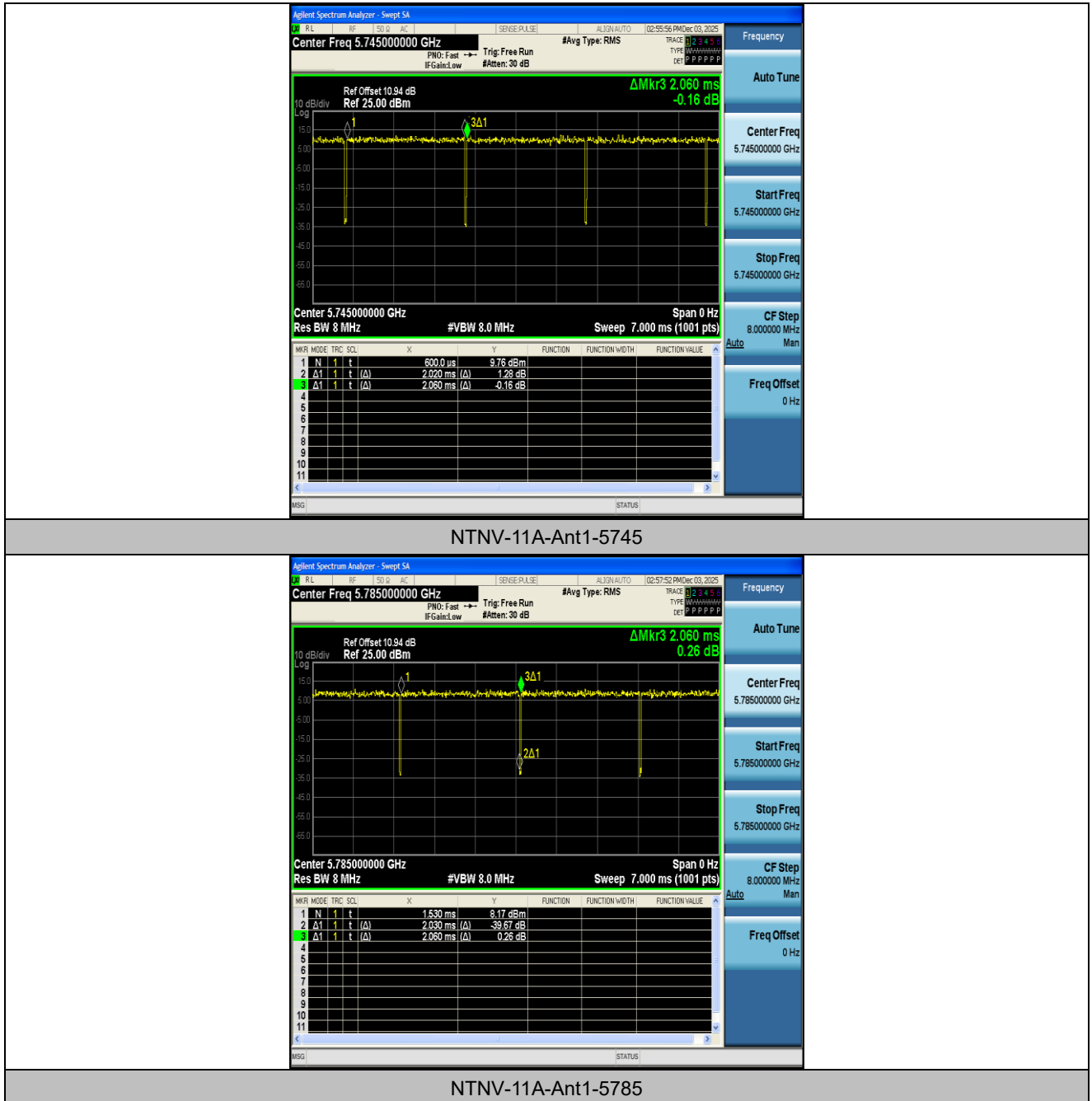
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc. Factor [%]	1/T
11A	Ant1	5745	2.02	2.06	98.06	0.09	0.50
11A	Ant1	5785	2.03	2.06	98.54	0.06	0.49
11A	Ant1	5825	2.03	2.07	98.07	0.08	0.49
11N20SISO	Ant1	5745	1.70	1.74	97.70	0.10	0.59
11N20SISO	Ant1	5785	1.70	1.74	97.70	0.10	0.59
11N20SISO	Ant1	5825	1.70	1.74	97.70	0.10	0.59
11N40SISO	Ant1	5755	0.84	0.88	95.45	0.20	1.19
11N40SISO	Ant1	5795	0.84	0.87	96.55	0.15	1.19
11AC20SISO	Ant1	5745	1.71	1.75	97.71	0.10	0.58
11AC20SISO	Ant1	5785	1.70	1.73	98.27	0.08	0.59
11AC20SISO	Ant1	5825	1.70	1.74	97.70	0.10	0.59
11AC40SISO	Ant1	5755	0.84	0.88	95.45	0.20	1.19
11AC40SISO	Ant1	5795	0.84	0.88	95.45	0.20	1.19
11AC80SISO	Ant1	5775	0.42	0.46	91.30	0.40	2.38

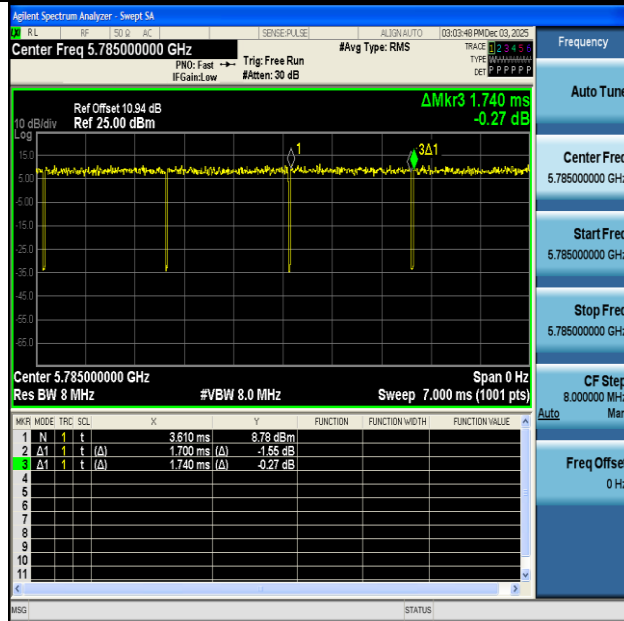
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



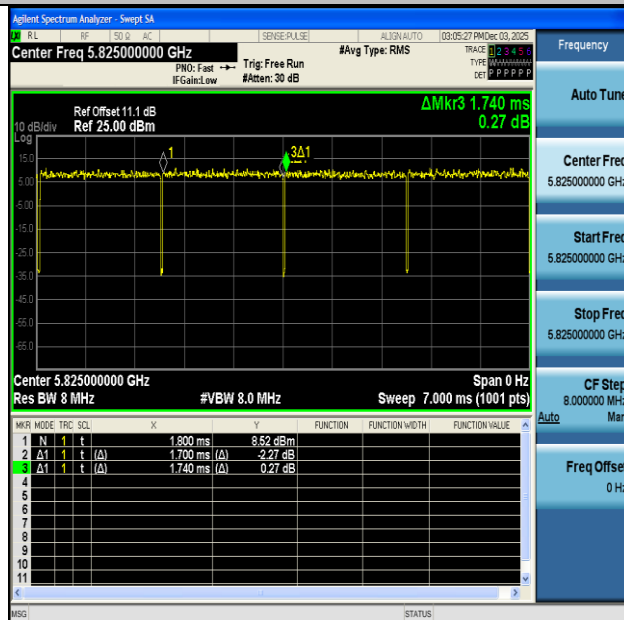


Test Graphs



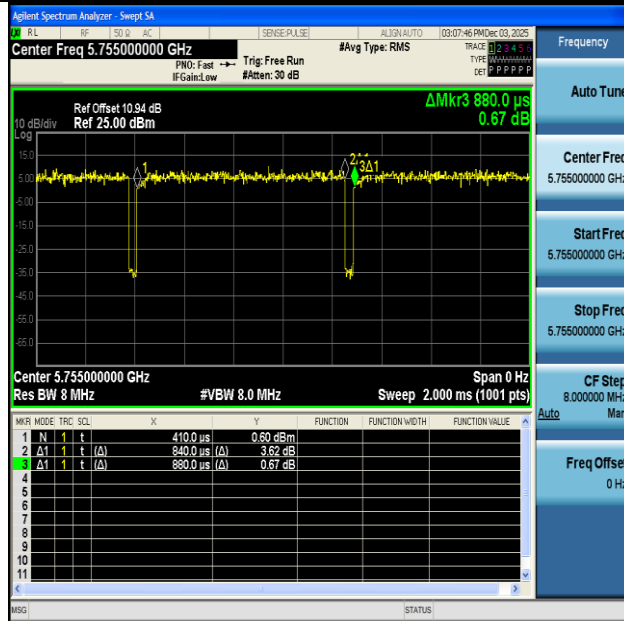


NTVN-11N20SISO-Ant1-5785

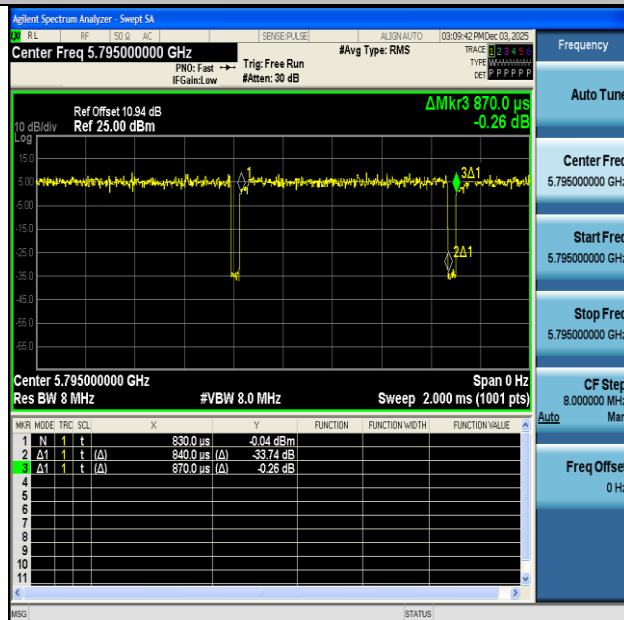


NTVN-11N20SISO-Ant1-5825



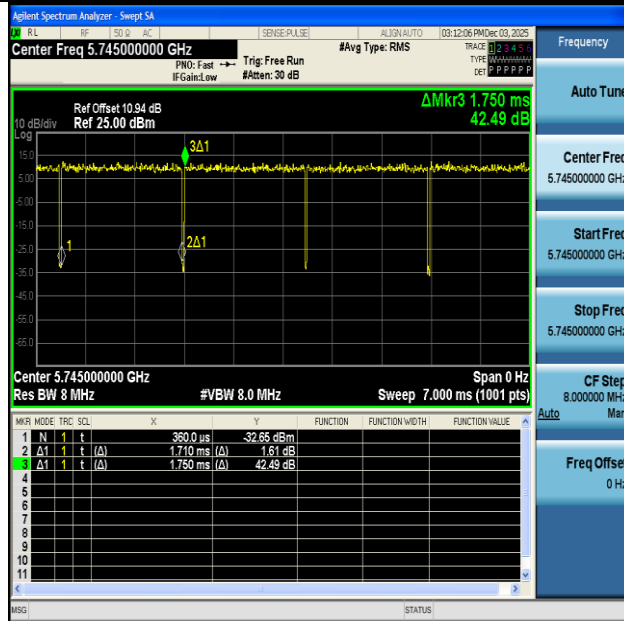


NTNV-11N40SISO-Ant1-5755

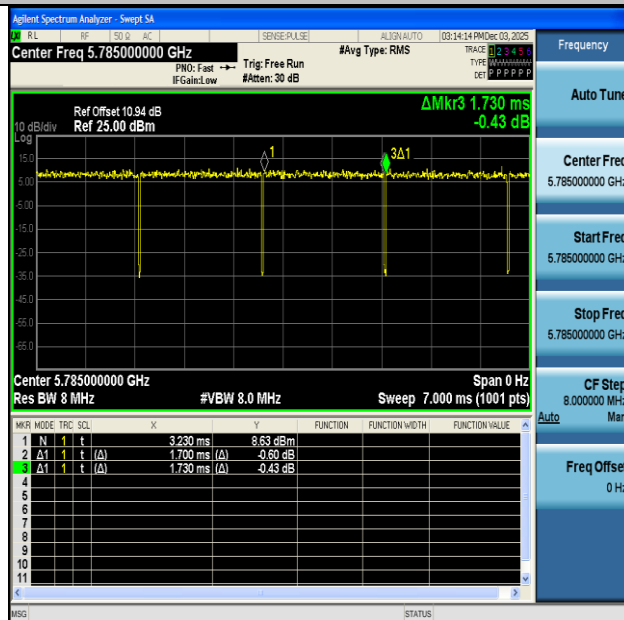


NTNV-11N40SISO-Ant1-5795



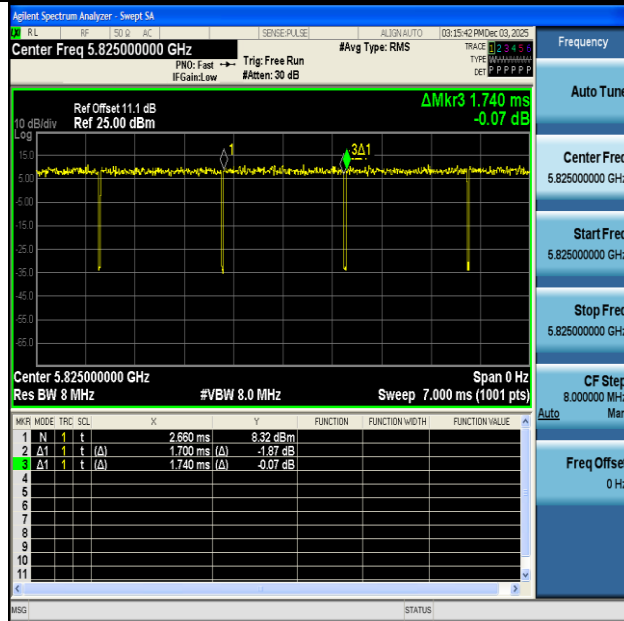


NTNV-11AC20SISO-Ant1-5745

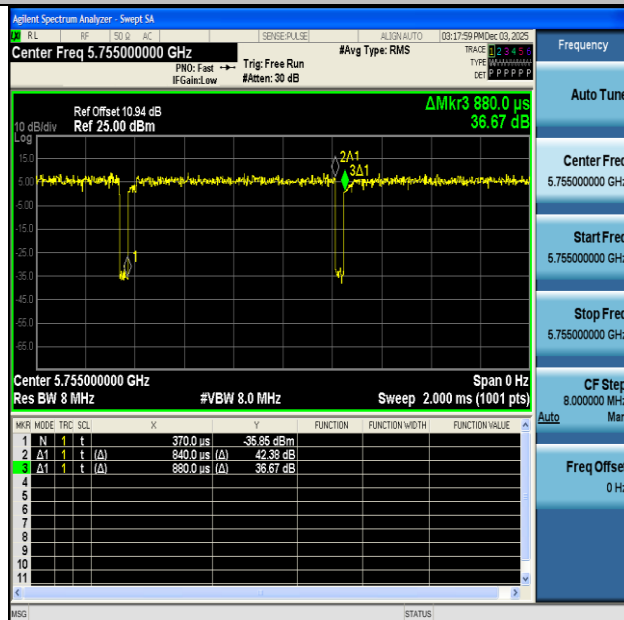


NTNV-11AC20SISO-Ant1-5785



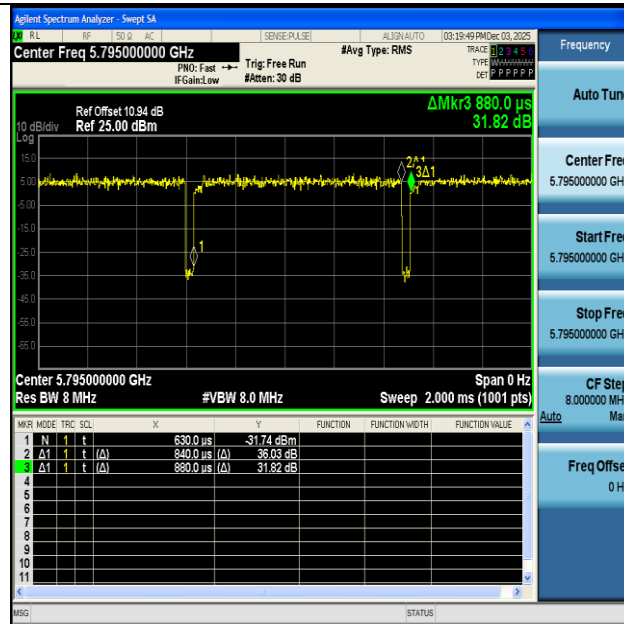


NTNV-11AC20SISO-Ant1-5825

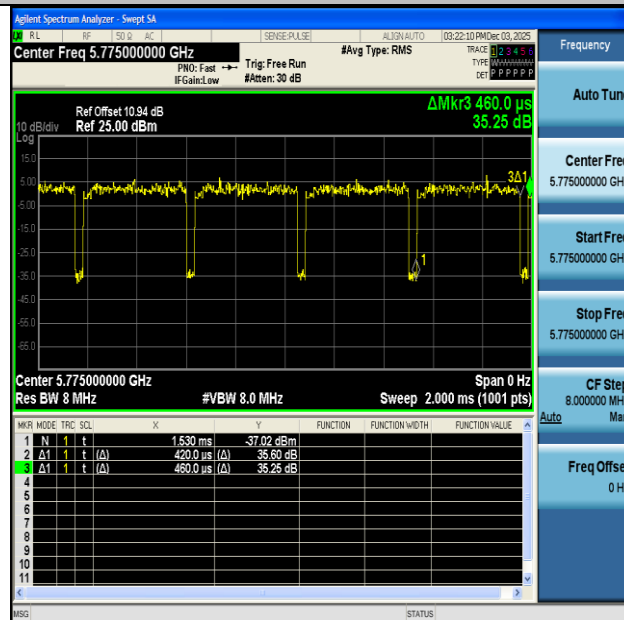


NTNV-11AC40SISO-Ant1-5755





NTNV-11AC40SISO-Ant1-5795



NTNV-11AC80SISO-Ant1-5775

