



RF Test Data for RLAN(5.2G) (Conducted Measurement)

Product Name: Wireless Car Adapter

Trade Mark: *acer*

Test Model: TC02A

FCC ID: 2A2P5-TC02A

Environmental Conditions

Temperature:	23.5°C
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

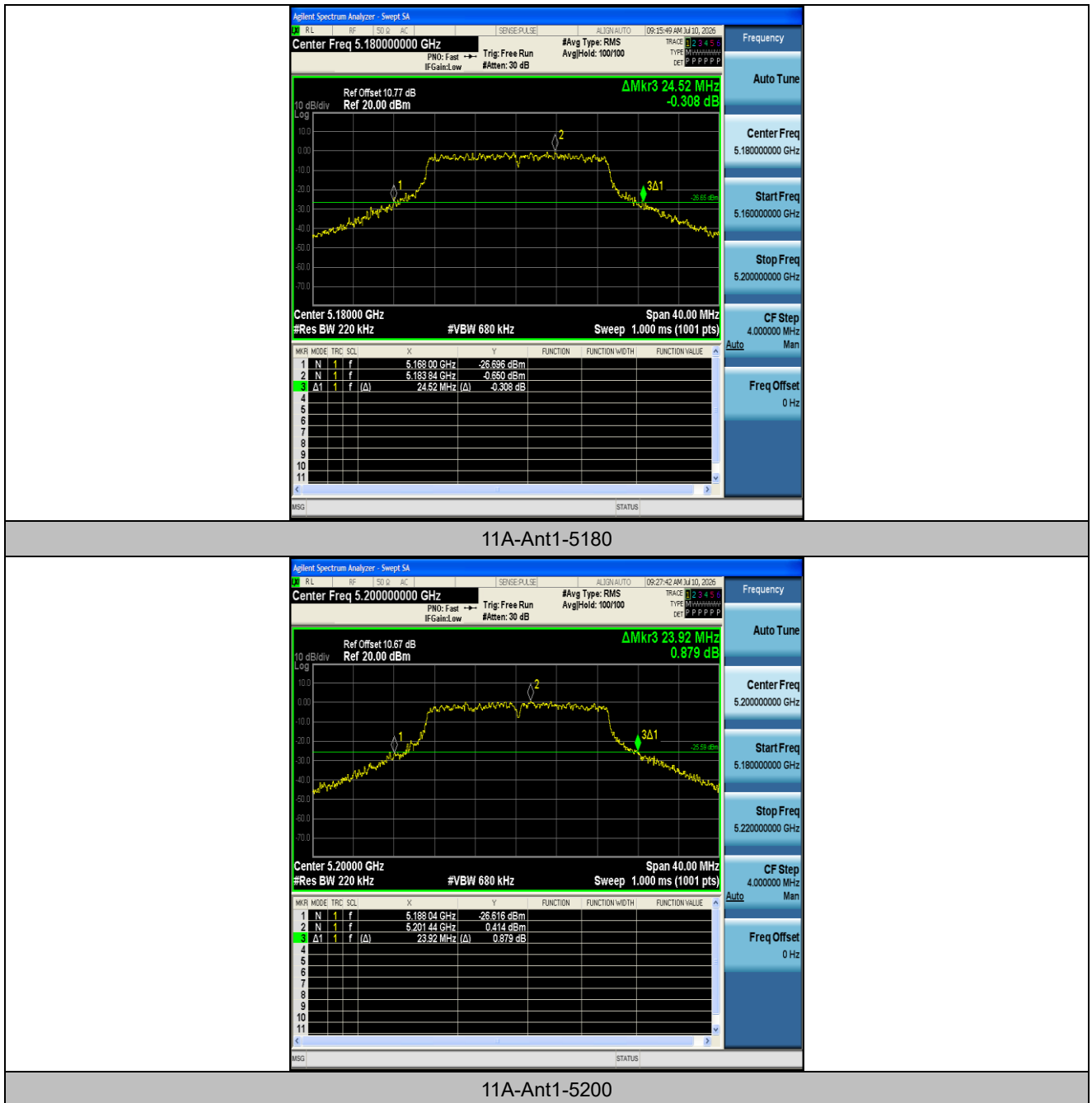
Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	24.520	5168.000	5192.520	---	---
11A	Ant1	5200	23.920	5188.040	5211.960	---	---
11A	Ant1	5240	23.440	5228.320	5251.760	---	---
11N20SISO	Ant1	5180	23.920	5167.880	5191.800	---	---
11N20SISO	Ant1	5200	23.720	5188.600	5212.320	---	---
11N20SISO	Ant1	5240	24.600	5228.360	5252.960	---	---
11N40SISO	Ant1	5190	43.600	5168.720	5212.320	---	---
11N40SISO	Ant1	5230	43.840	5208.400	5252.240	---	---
11AC20SISO	Ant1	5180	26.680	5166.520	5193.200	---	---
11AC20SISO	Ant1	5200	23.000	5188.480	5211.480	---	---
11AC20SISO	Ant1	5240	23.960	5228.440	5252.400	---	---
11AC40SISO	Ant1	5190	43.040	5168.560	5211.600	---	---
11AC40SISO	Ant1	5230	44.320	5208.080	5252.400	---	---

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





Test Graphs





11A-Ant1-5240



11N20SISO-Ant1-5180





11N20SISO-Ant1-5200



11N20SISO-Ant1-5240





11N40SISO-Ant1-5190



11N40SISO-Ant1-5230





11AC20SISO-Ant1-5180



11AC20SISO-Ant1-5200





11AC20SISO-Ant1-5240



11AC40SISO-Ant1-5190





11AC40SISO-Ant1-5230





Appendix A2: Occupied channel bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	18.472	5170.8959	5189.3679	---	---
11A	Ant1	5200	18.282	5191.0933	5209.3753	---	---
11A	Ant1	5240	18.335	5231.0909	5249.4259	---	---
11N20SISO	Ant1	5180	18.536	5170.8897	5189.4257	---	---
11N20SISO	Ant1	5200	18.345	5191.0646	5209.4096	---	---
11N20SISO	Ant1	5240	18.370	5231.0697	5249.4397	---	---
11N40SISO	Ant1	5190	37.024	5171.7715	5208.7955	---	---
11N40SISO	Ant1	5230	37.104	5211.6872	5248.7912	---	---
11AC20SISO	Ant1	5180	18.494	5170.8767	5189.3707	---	---
11AC20SISO	Ant1	5200	18.298	5191.0587	5209.3567	---	---
11AC20SISO	Ant1	5240	18.417	5231.0279	5249.4449	---	---
11AC40SISO	Ant1	5190	37.026	5171.7660	5208.7920	---	---
11AC40SISO	Ant1	5230	37.190	5211.5938	5248.7838	---	---

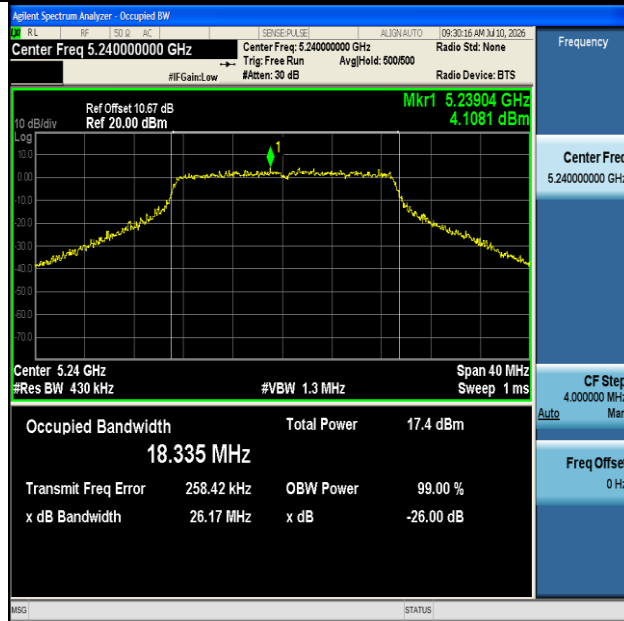
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs





11A-Ant1-5240

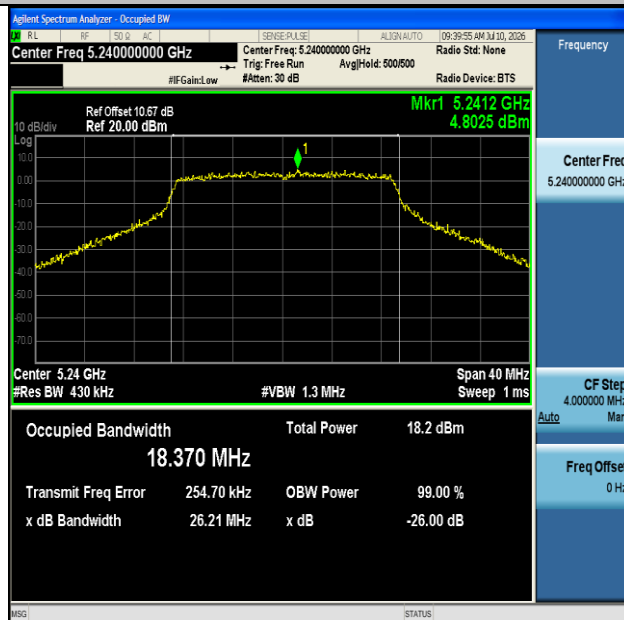


11N20SISO-Ant1-5180



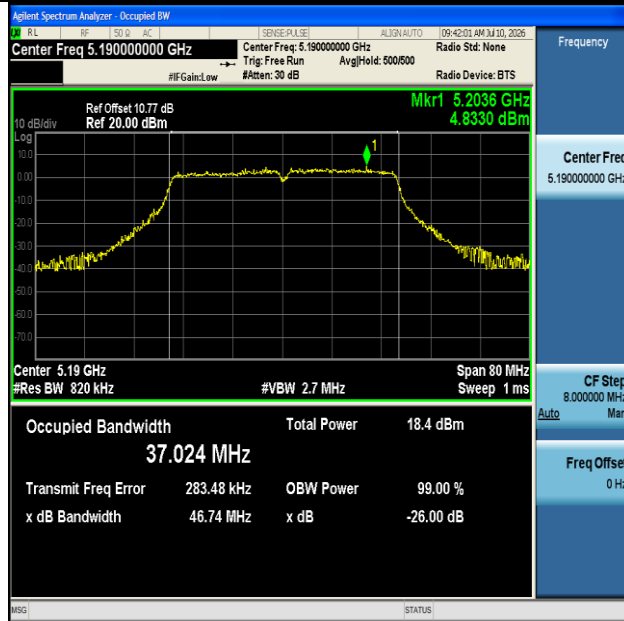


11N20SISO-Ant1-5200

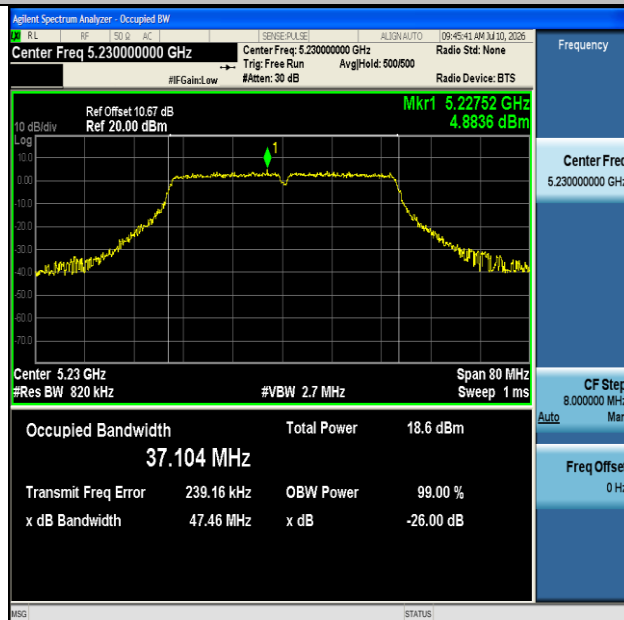


11N20SISO-Ant1-5240





11N40SISO-Ant1-5190

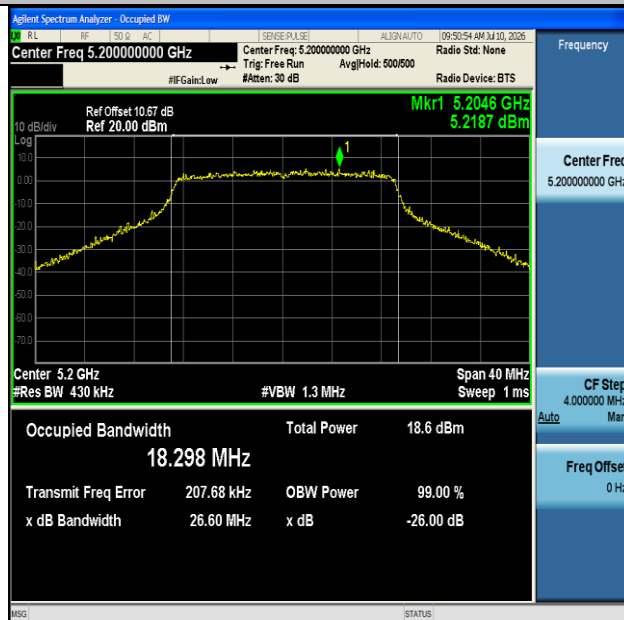


11N40SISO-Ant1-5230



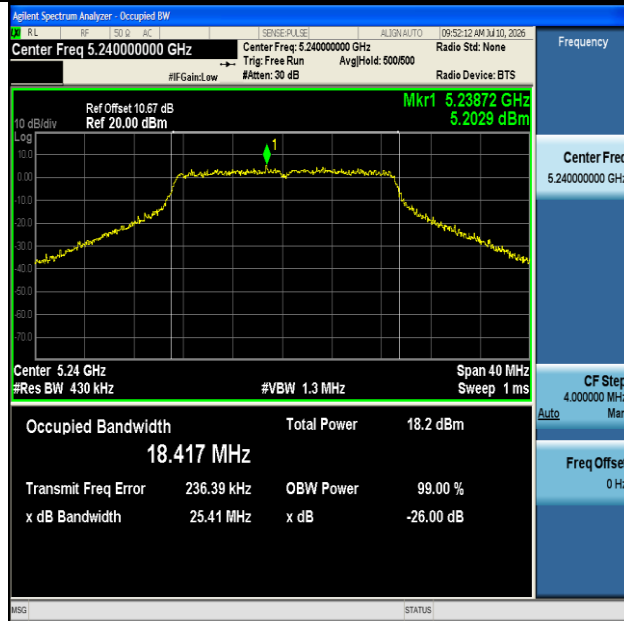


11AC20SISO-Ant1-5180



11AC20SISO-Ant1-5200



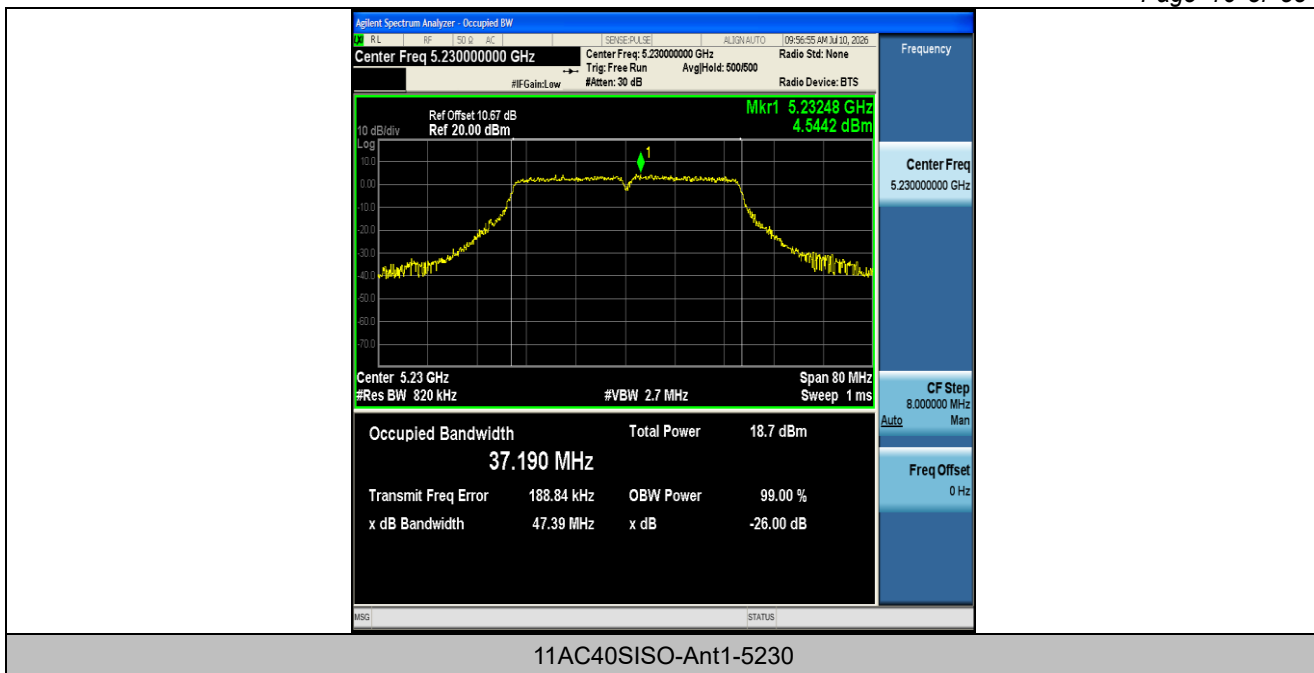


11AC20SISO-Ant1-5240



11AC40SISO-Ant1-5190







Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11A	Ant1	5180	9.75	≤23.98	PASS
11A	Ant1	5200	10.86	≤23.98	PASS
11A	Ant1	5240	11.00	≤23.98	PASS
11N20SISO	Ant1	5180	11.18	≤23.98	PASS
11N20SISO	Ant1	5200	10.91	≤23.98	PASS
11N20SISO	Ant1	5240	10.94	≤23.98	PASS
11N40SISO	Ant1	5190	9.99	≤23.98	PASS
11N40SISO	Ant1	5230	10.81	≤23.98	PASS
11AC20SISO	Ant1	5180	10.69	≤23.98	PASS
11AC20SISO	Ant1	5200	11.14	≤23.98	PASS
11AC20SISO	Ant1	5240	10.80	≤23.98	PASS
11AC40SISO	Ant1	5190	10.65	≤23.98	PASS
11AC40SISO	Ant1	5230	10.55	≤23.98	PASS

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





Appendix C: Maximum power spectral density

Test Result

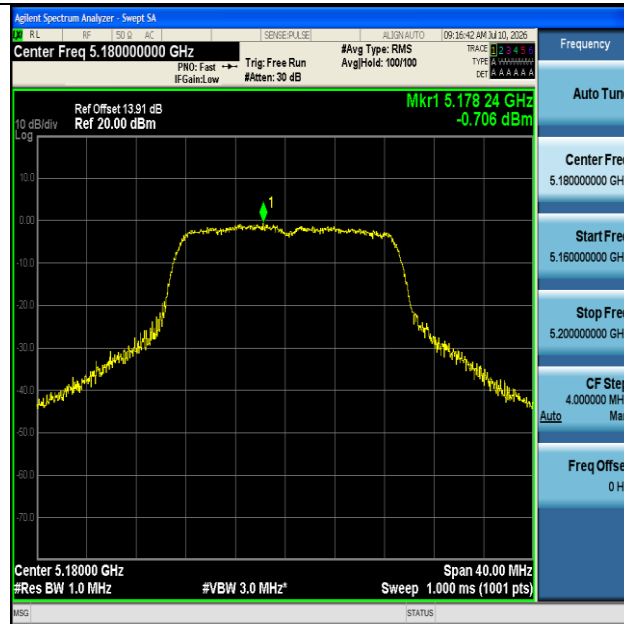
Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	-0.71	≤11.00	PASS
11A	Ant1	5200	0.60	≤11.00	PASS
11A	Ant1	5240	1.00	≤11.00	PASS
11N20SISO	Ant1	5180	0.36	≤11.00	PASS
11N20SISO	Ant1	5200	0.02	≤11.00	PASS
11N20SISO	Ant1	5240	0.37	≤11.00	PASS
11N40SISO	Ant1	5190	-3.75	≤11.00	PASS
11N40SISO	Ant1	5230	-3.26	≤11.00	PASS
11AC20SISO	Ant1	5180	-0.05	≤11.00	PASS
11AC20SISO	Ant1	5200	0.61	≤11.00	PASS
11AC20SISO	Ant1	5240	0.13	≤11.00	PASS
11AC40SISO	Ant1	5190	-3.44	≤11.00	PASS
11AC40SISO	Ant1	5230	-3.58	≤11.00	PASS

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

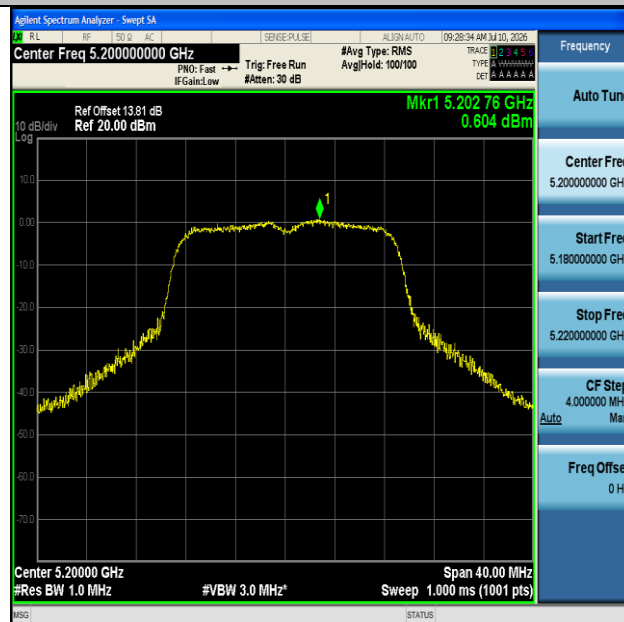




Test Graphs

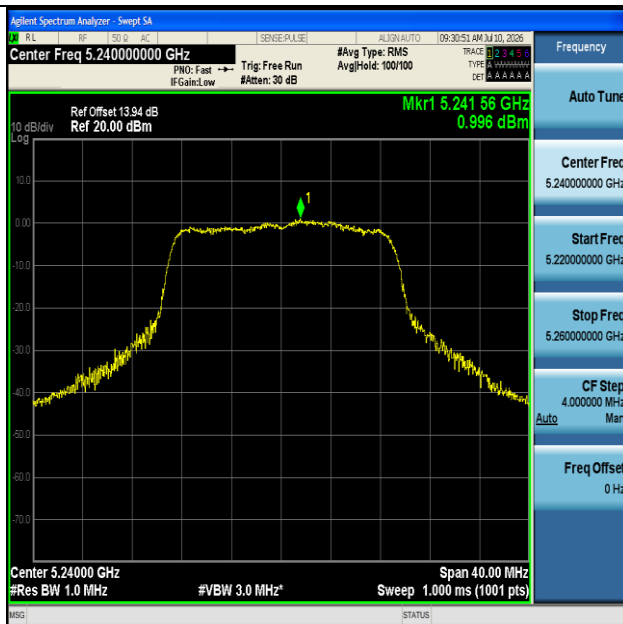


11A-Ant1-5180-PASS

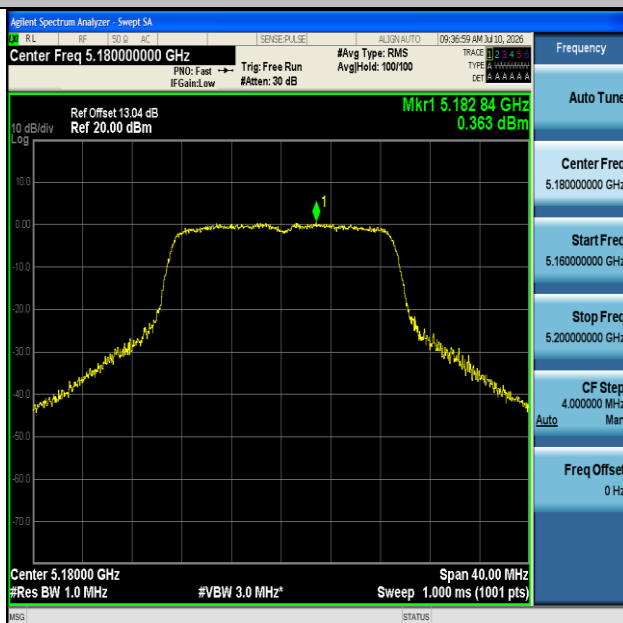


11A-Ant1-5200-PASS



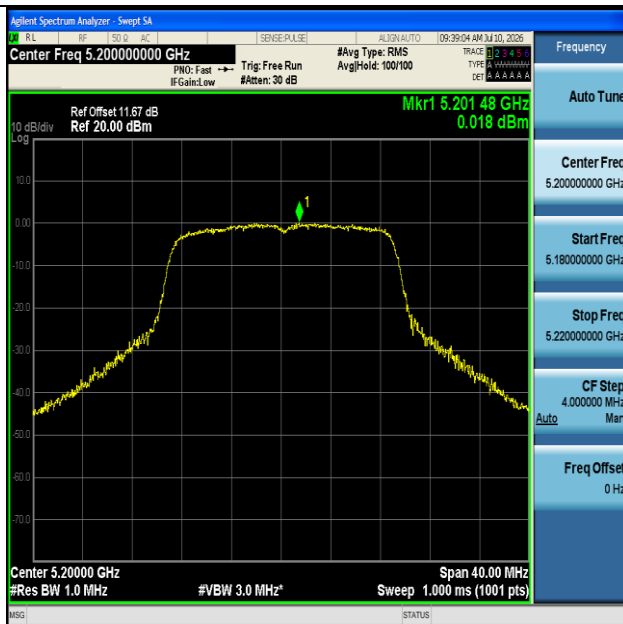


11A-Ant1-5240-PASS

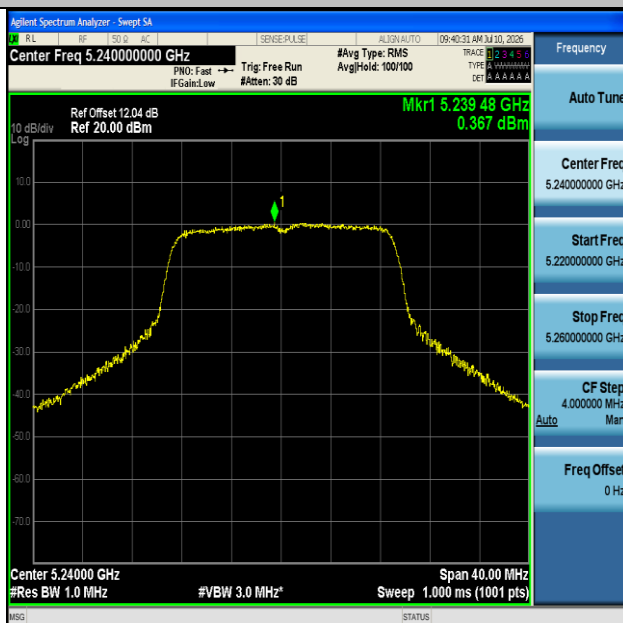


11N20SISO-Ant1-5180-PASS



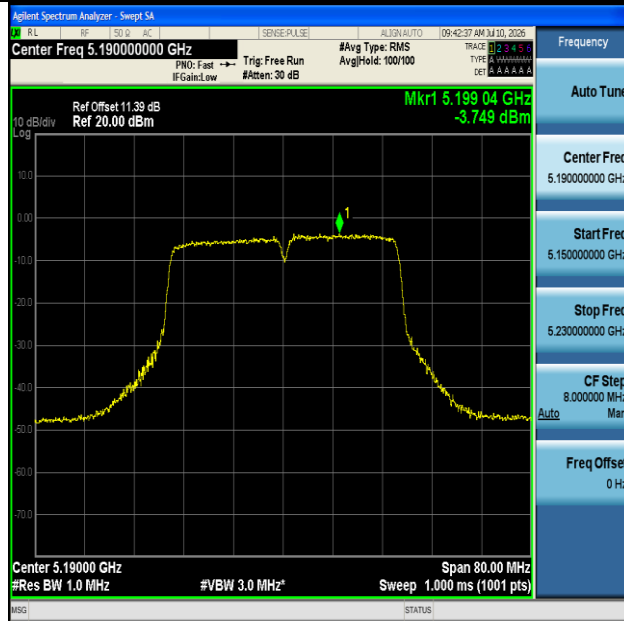


11N20SISO-Ant1-5200-PASS



11N20SISO-Ant1-5240-PASS



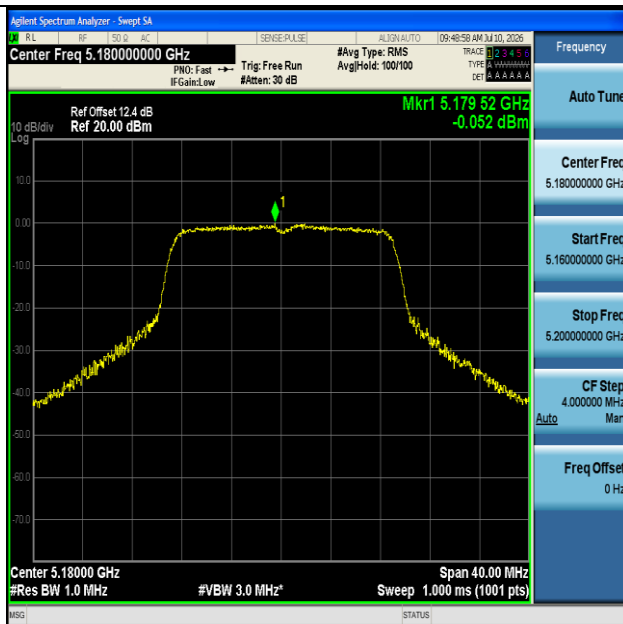


11N40SISO-Ant1-5190-PASS

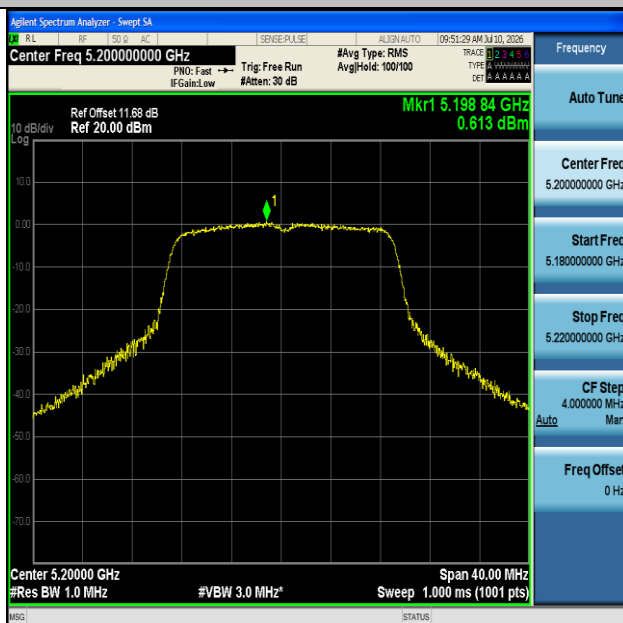


11N40SISO-Ant1-5230-PASS



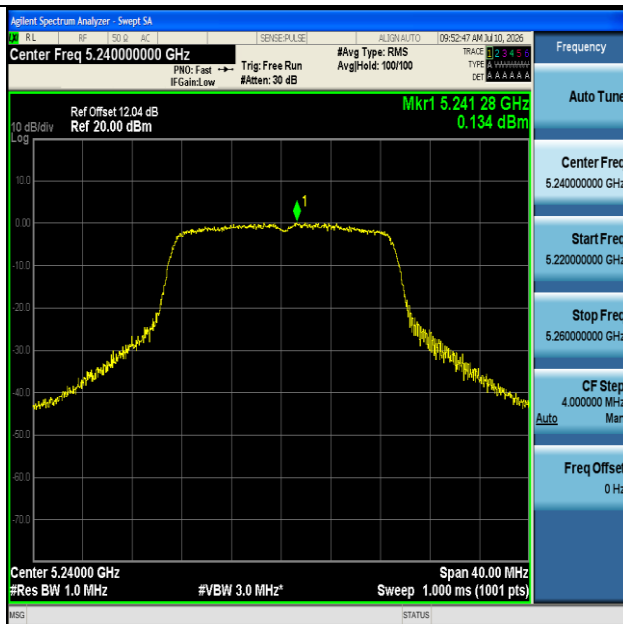


11AC20SISO-Ant1-5180-PASS

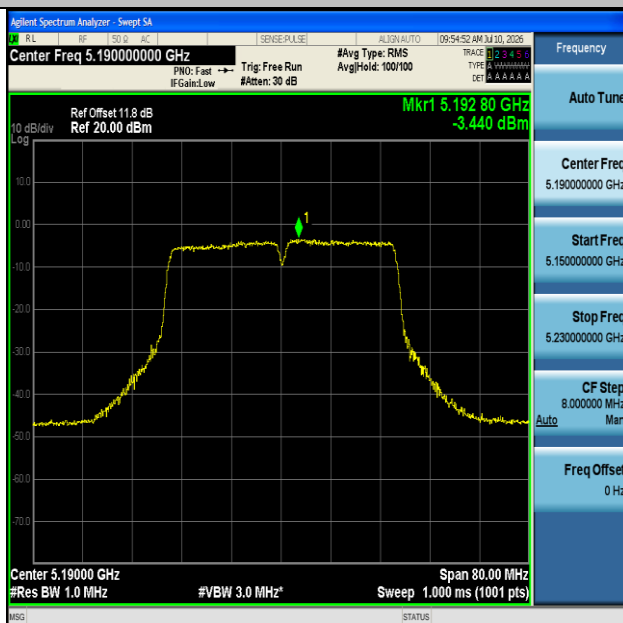


11AC20SISO-Ant1-5200-PASS



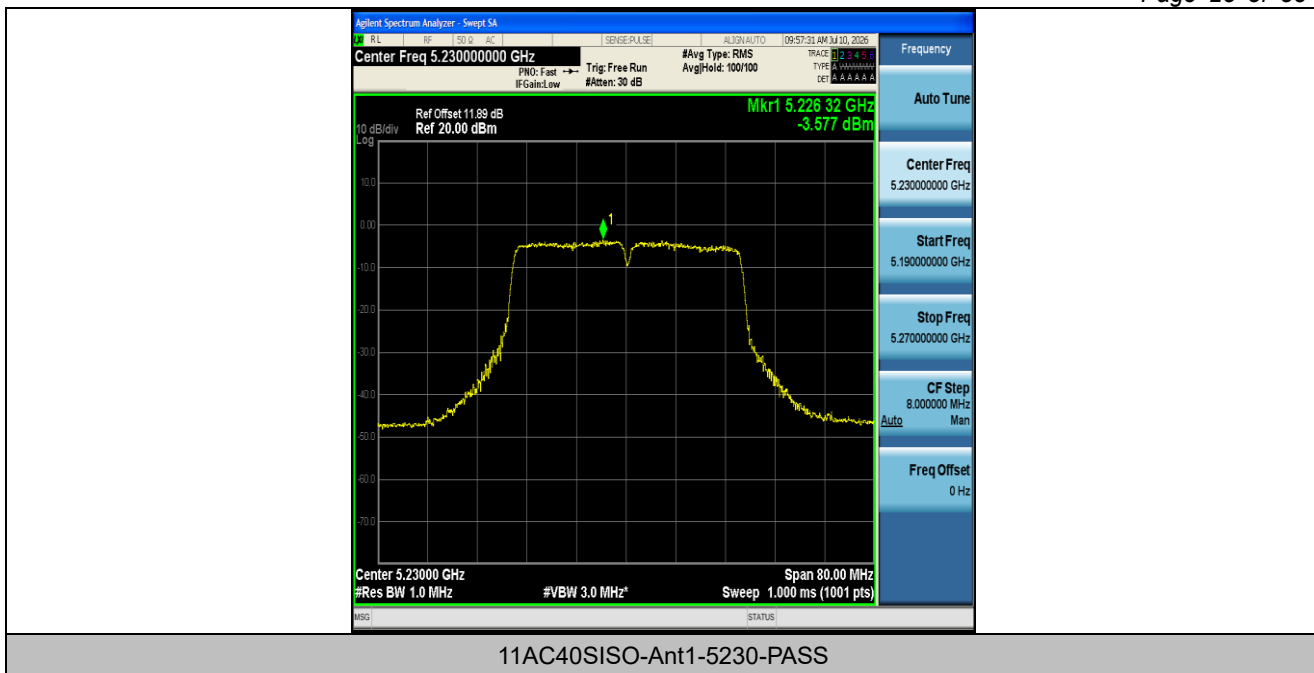


11AC20SISO-Ant1-5240-PASS



11AC40SISO-Ant1-5190-PASS







Appendix D: Band edge measurements

Test Result

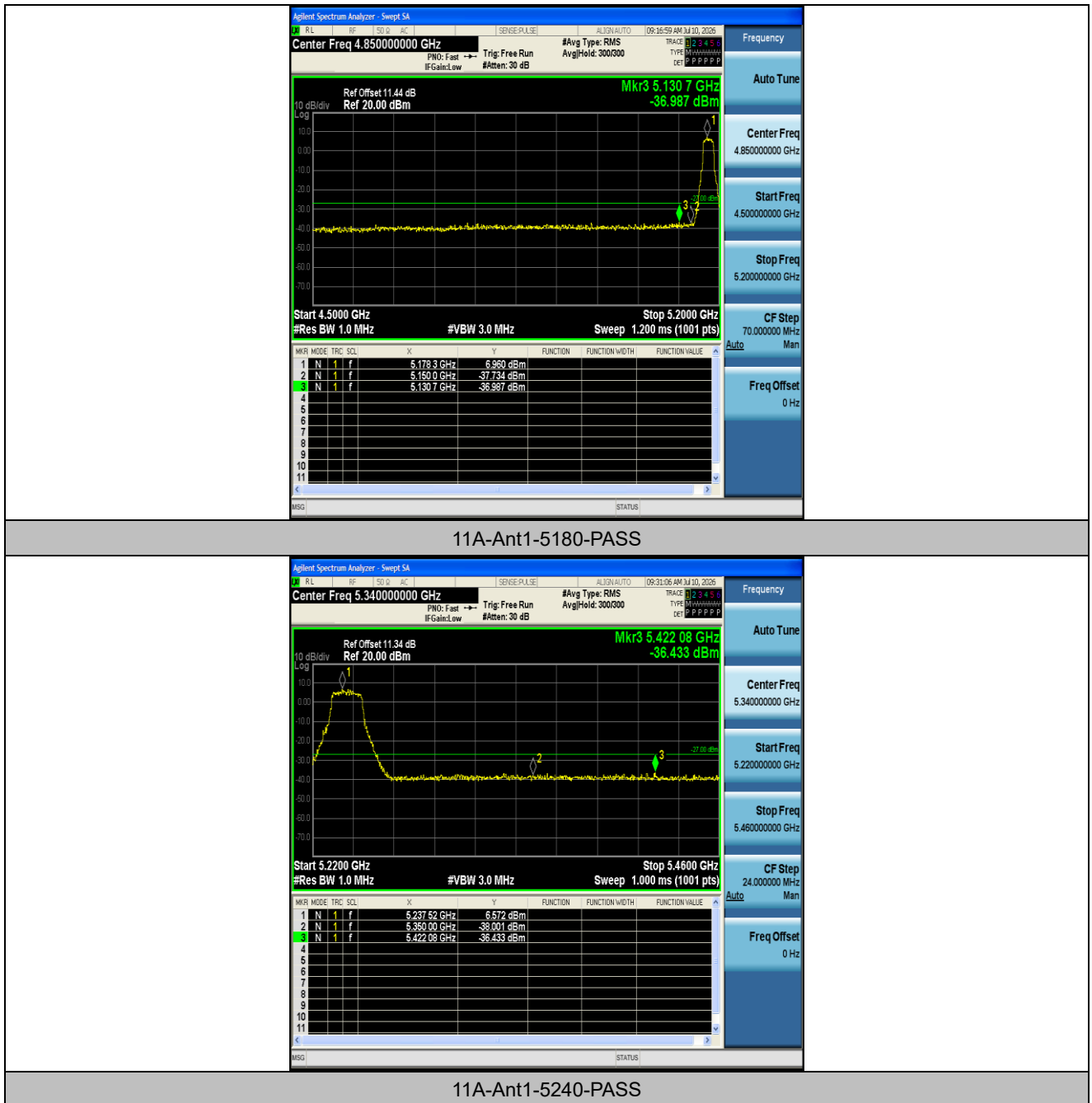
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5180	-36.99	≤ -27	PASS
11A	Ant1	High	5240	-36.43	≤ -27	PASS
11N20SISO	Ant1	Low	5180	-36.66	≤ -27	PASS
11N20SISO	Ant1	High	5240	-36.9	≤ -27	PASS
11N40SISO	Ant1	Low	5190	-35.46	≤ -27	PASS
11N40SISO	Ant1	High	5230	-36.86	≤ -27	PASS
11AC20SISO	Ant1	Low	5180	-35.39	≤ -27	PASS
11AC20SISO	Ant1	High	5240	-36.51	≤ -27	PASS
11AC40SISO	Ant1	Low	5190	-33.93	≤ -27	PASS
11AC40SISO	Ant1	High	5230	-37.06	≤ -27	PASS

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



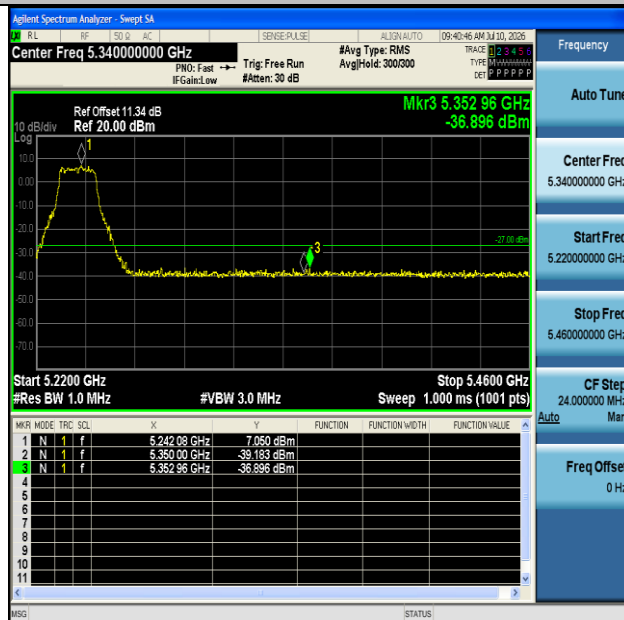


Test Graphs



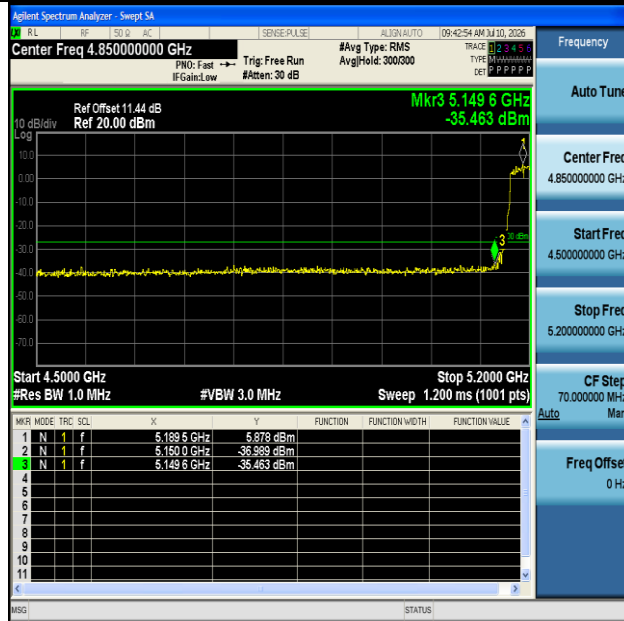


11N20SISO-Ant1-5180-PASS

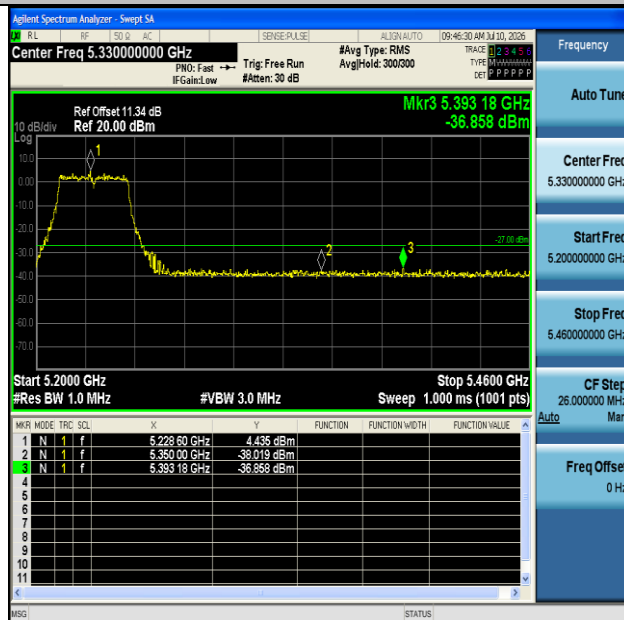


11N20SISO-Ant1-5240-PASS



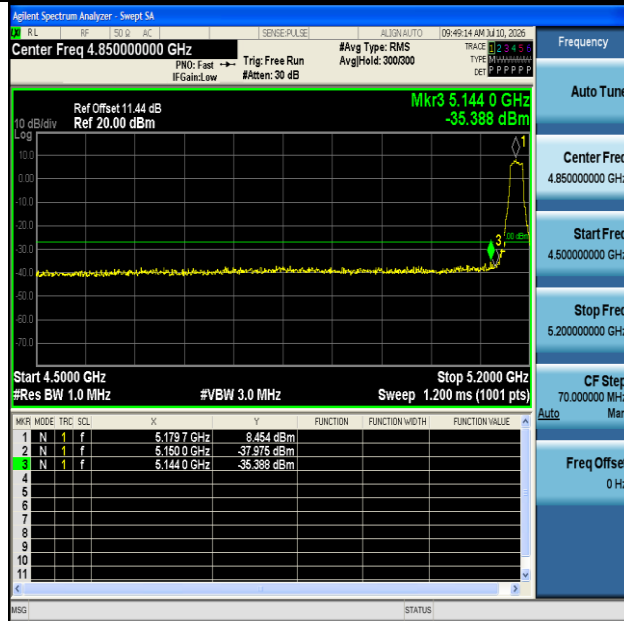


11N40SISO-Ant1-5190-PASS

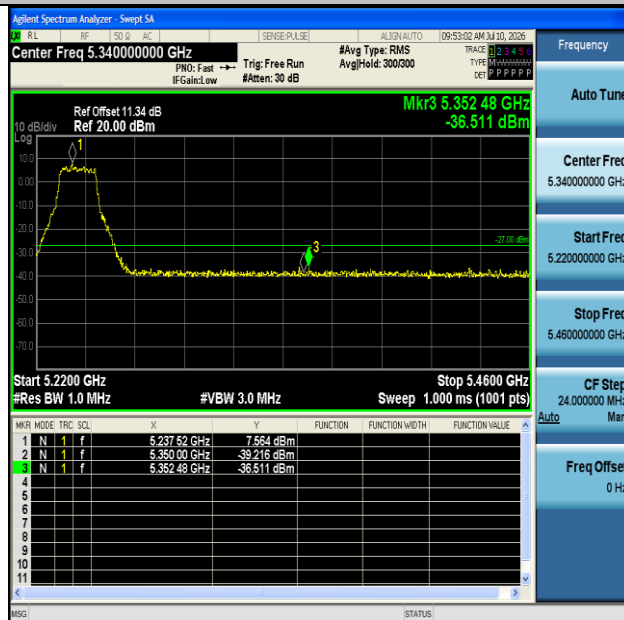


11N40SISO-Ant1-5230-PASS



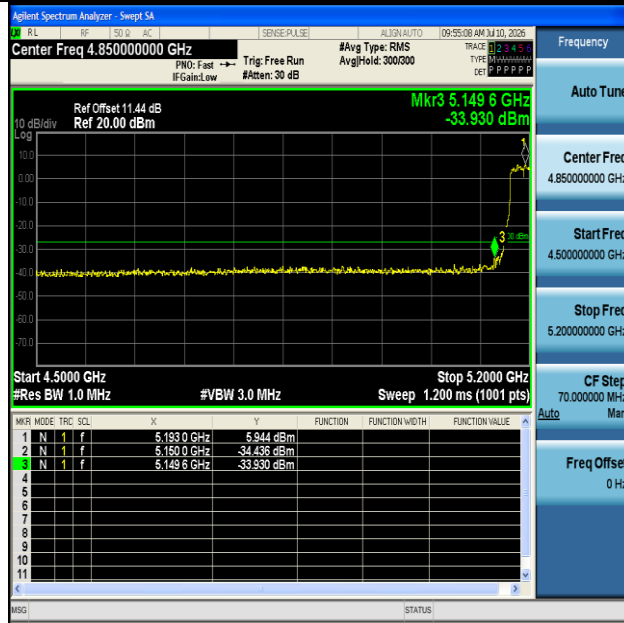


11AC20SISO-Ant1-5180-PASS

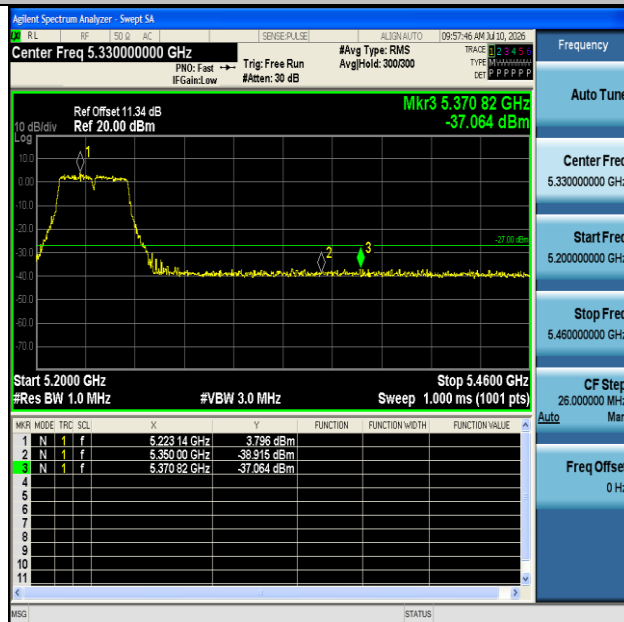


11AC20SISO-Ant1-5240-PASS





11AC40SISO-Ant1-5190-PASS



11AC40SISO-Ant1-5230-PASS





Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	4.5	5180.005129	5150 – 5250	PASS
5180	20	5.5	5179.969335	5150 – 5250	PASS
5180	50	5.0	5180.034933	5150 – 5250	PASS
5180	40	5.0	5179.961207	5150 – 5250	PASS
5180	30	5.0	5179.944016	5150 – 5250	PASS
5180	20	5.0	5179.953366	5150 – 5250	PASS
5180	10	5.0	5179.926704	5150 – 5250	PASS
5180	0	5.0	5179.968161	5150 – 5250	PASS
5180	-10	5.0	5180.093015	5150 – 5250	PASS
5180	-20	5.0	5179.977630	5150 – 5250	PASS
5180	-30	5.0	5179.939434	5150 – 5250	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	4.5	5199.946412	5150 – 5250	PASS
5200	20	5.5	5200.094176	5150 – 5250	PASS
5200	50	5.0	5200.039637	5150 – 5250	PASS
5200	40	5.0	5199.934464	5150 – 5250	PASS
5200	30	5.0	5200.037124	5150 – 5250	PASS
5200	20	5.0	5200.046432	5150 – 5250	PASS
5200	10	5.0	5199.944760	5150 – 5250	PASS
5200	0	5.0	5199.947695	5150 – 5250	PASS
5200	-10	5.0	5199.921535	5150 – 5250	PASS
5200	-20	5.0	5200.068697	5150 – 5250	PASS
5200	-30	5.0	5200.019136	5150 – 5250	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	4.5	5240.022422	5150 – 5250	PASS
5240	20	5.5	5239.979973	5150 – 5250	PASS
5240	50	5.0	5239.911140	5150 – 5250	PASS
5240	40	5.0	5240.011221	5150 – 5250	PASS
5240	30	5.0	5240.076001	5150 – 5250	PASS
5240	20	5.0	5240.097196	5150 – 5250	PASS
5240	10	5.0	5239.964981	5150 – 5250	PASS
5240	0	5.0	5239.934266	5150 – 5250	PASS
5240	-10	5.0	5239.964559	5150 – 5250	PASS
5240	-20	5.0	5240.005501	5150 – 5250	PASS
5240	-30	5.0	5239.949387	5150 – 5250	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5190	20	4.5	5190.087750	5150 – 5250	PASS
5190	20	5.5	5189.930950	5150 – 5250	PASS
5190	50	5.0	5189.928768	5150 – 5250	PASS
5190	40	5.0	5189.971984	5150 – 5250	PASS
5190	30	5.0	5189.981768	5150 – 5250	PASS
5190	20	5.0	5190.087799	5150 – 5250	PASS
5190	10	5.0	5190.093155	5150 – 5250	PASS
5190	0	5.0	5190.012565	5150 – 5250	PASS
5190	-10	5.0	5190.021701	5150 – 5250	PASS
5190	-20	5.0	5189.987662	5150 – 5250	PASS
5190	-30	5.0	5190.027504	5150 – 5250	PASS





Ant1

Frequency (MHz)	Enviroment Temperature (Degree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5230	20	4.5	5229.942115	5150 – 5250	PASS
5230	20	5.5	5229.909968	5150 – 5250	PASS
5230	50	5.0	5230.079754	5150 – 5250	PASS
5230	40	5.0	5230.049069	5150 – 5250	PASS
5230	30	5.0	5230.053682	5150 – 5250	PASS
5230	20	5.0	5229.996703	5150 – 5250	PASS
5230	10	5.0	5230.037926	5150 – 5250	PASS
5230	0	5.0	5230.058278	5150 – 5250	PASS
5230	-10	5.0	5230.070241	5150 – 5250	PASS
5230	-20	5.0	5229.960882	5150 – 5250	PASS
5230	-30	5.0	5229.926624	5150 – 5250	PASS





Appendix F: Conducted Spurious Emission

Test Result

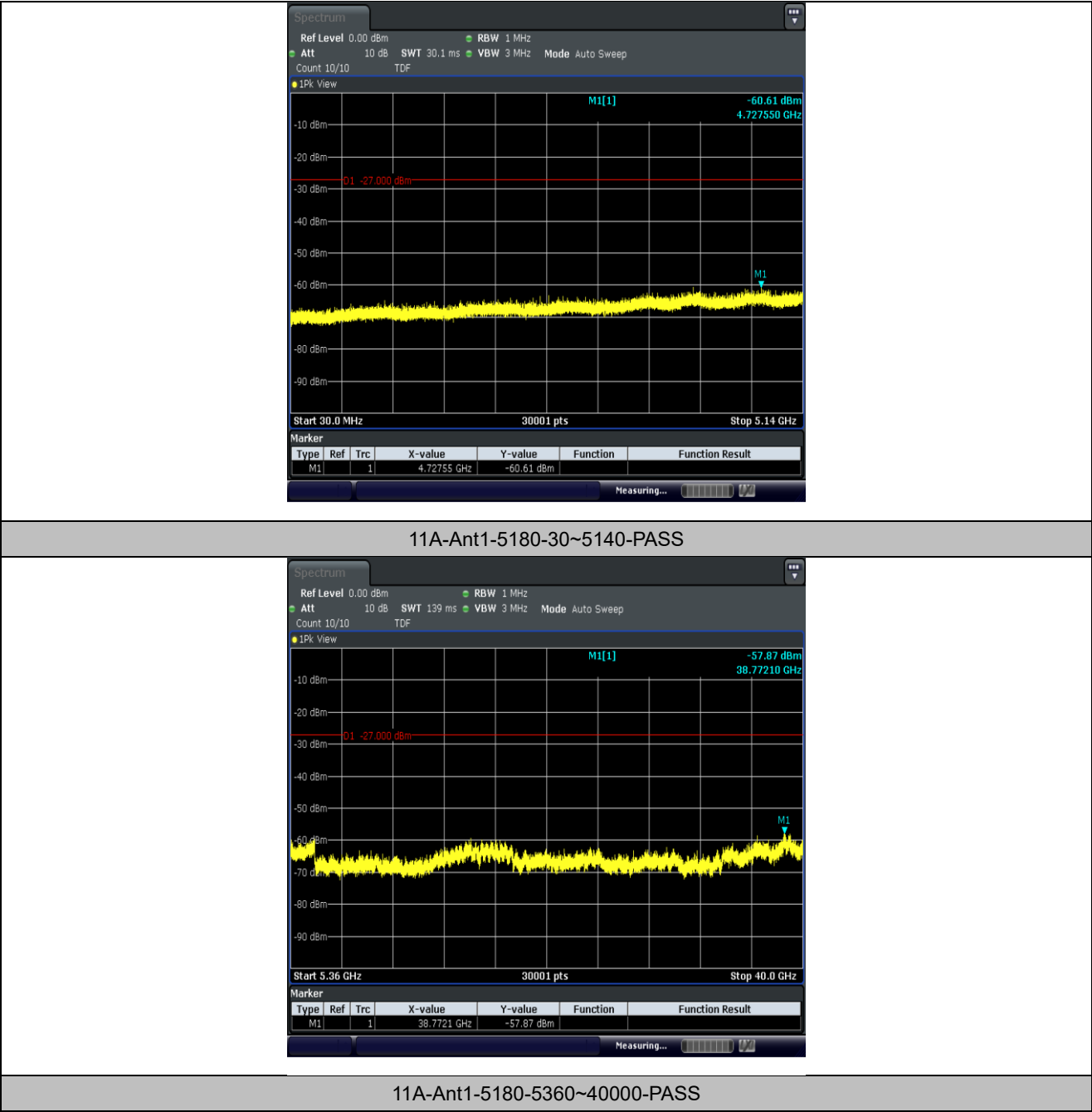
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	4727.55	-60.61	≤-27	PASS
11A	Ant1	5180	5360~40000	38772.1	-57.87	≤-27	PASS
11A	Ant1	5200	30~5140	4808.12	-60.95	≤-27	PASS
11A	Ant1	5200	5360~40000	39000.7	-57.83	≤-27	PASS
11A	Ant1	5240	30~5140	4697.4	-60.82	≤-27	PASS
11A	Ant1	5240	5360~40000	38773.2	-57.84	≤-27	PASS
11N20SISO	Ant1	5180	30~5140	3955.46	-60.71	≤-27	PASS
11N20SISO	Ant1	5180	5360~40000	39136.9	-58.29	≤-27	PASS
11N20SISO	Ant1	5200	30~5140	4604.75	-61.03	≤-27	PASS
11N20SISO	Ant1	5200	5360~40000	19567.1	-58.47	≤-27	PASS
11N20SISO	Ant1	5240	30~5140	4580.73	-61	≤-27	PASS
11N20SISO	Ant1	5240	5360~40000	38772.1	-57.5	≤-27	PASS
11N40SISO	Ant1	5190	30~5140	4945.57	-60.74	≤-27	PASS
11N40SISO	Ant1	5190	5360~40000	38785.9	-57.28	≤-27	PASS
11N40SISO	Ant1	5230	30~5140	4619.22	-61.1	≤-27	PASS
11N40SISO	Ant1	5230	5360~40000	39006.4	-57.64	≤-27	PASS
11AC20SISO	Ant1	5180	30~5140	4579.88	-61.03	≤-27	PASS
11AC20SISO	Ant1	5180	5360~40000	39102.3	-57.41	≤-27	PASS
11AC20SISO	Ant1	5200	30~5140	4610.37	-61.13	≤-27	PASS
11AC20SISO	Ant1	5200	5360~40000	38791.7	-57.07	≤-27	PASS
11AC20SISO	Ant1	5240	30~5140	4712.73	-60.56	≤-27	PASS
11AC20SISO	Ant1	5240	5360~40000	38797.5	-57.41	≤-27	PASS
11AC40SISO	Ant1	5190	30~5140	5060.2	-60.75	≤-27	PASS
11AC40SISO	Ant1	5190	5360~40000	39086.1	-57.71	≤-27	PASS
11AC40SISO	Ant1	5230	30~5140	5114.54	-61.02	≤-27	PASS
11AC40SISO	Ant1	5230	5360~40000	38807.8	-57.79	≤-27	PASS

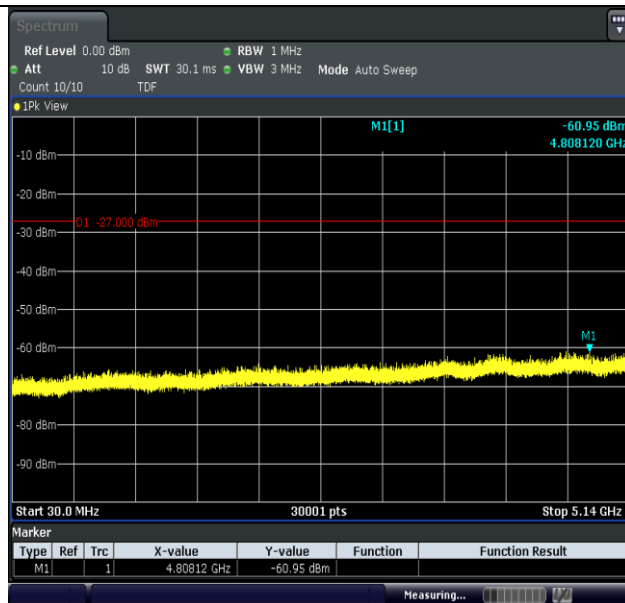
Note: For spurious emissions plots from 30MHz to 40 GHz, the cable loss, antenna gain and attenuator factors have been set in the 'TDF' of the Spectrum Analyzer during the test.



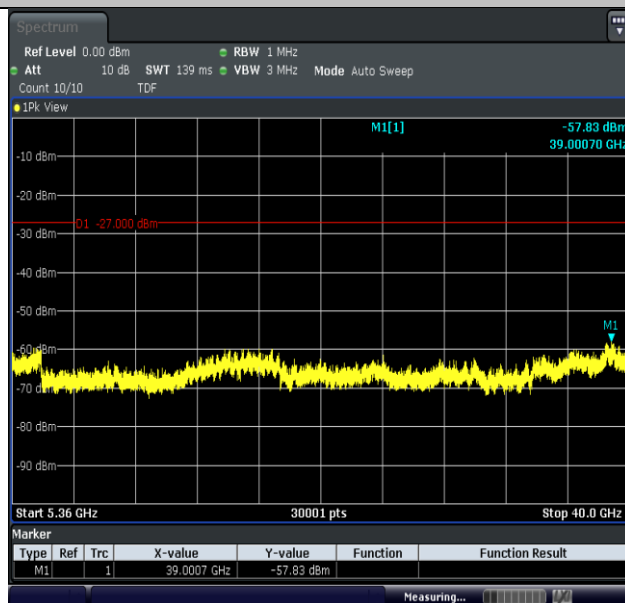


Test Graphs



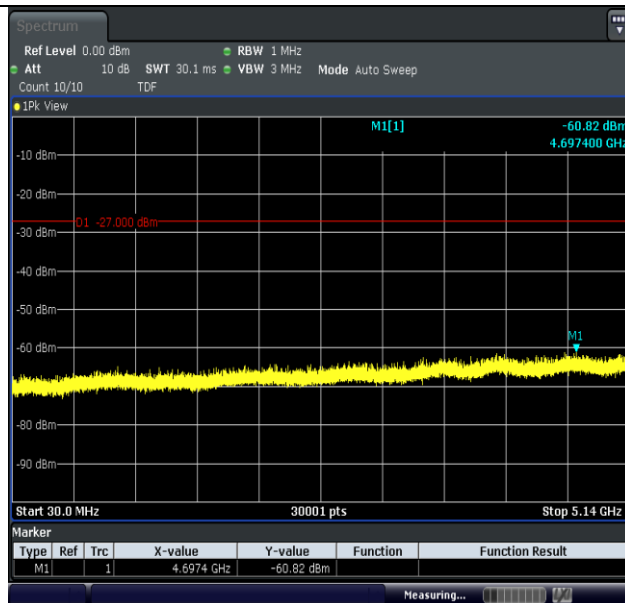


11A-Ant1-5200-30~5140-PASS

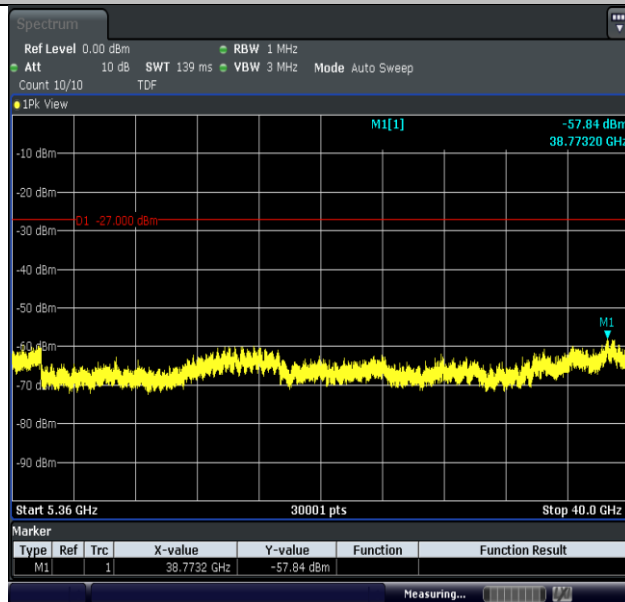


11A-Ant1-5200-5360~40000-PASS



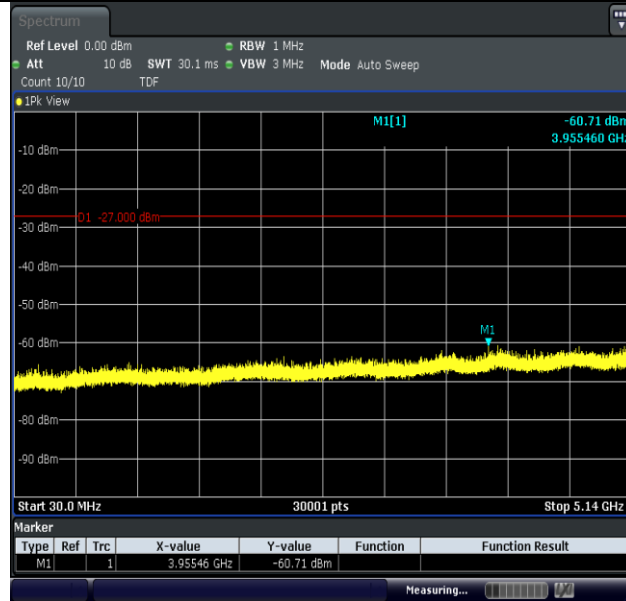


11A-Ant1-5240-30~5140-PASS

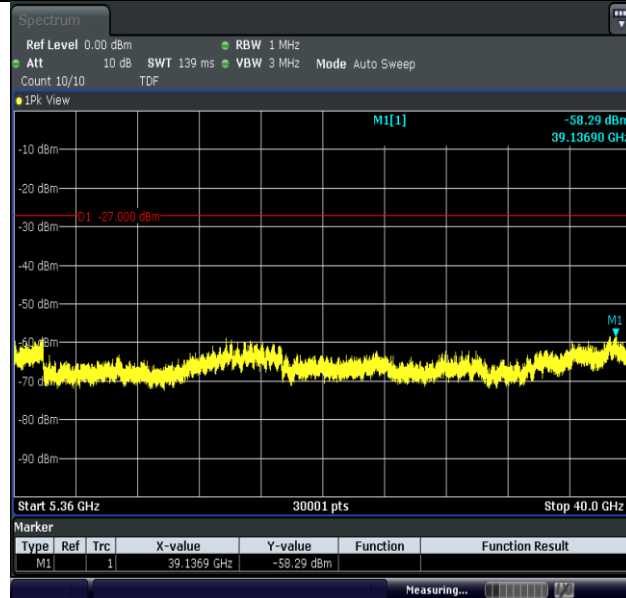


11A-Ant1-5240-5360~40000-PASS



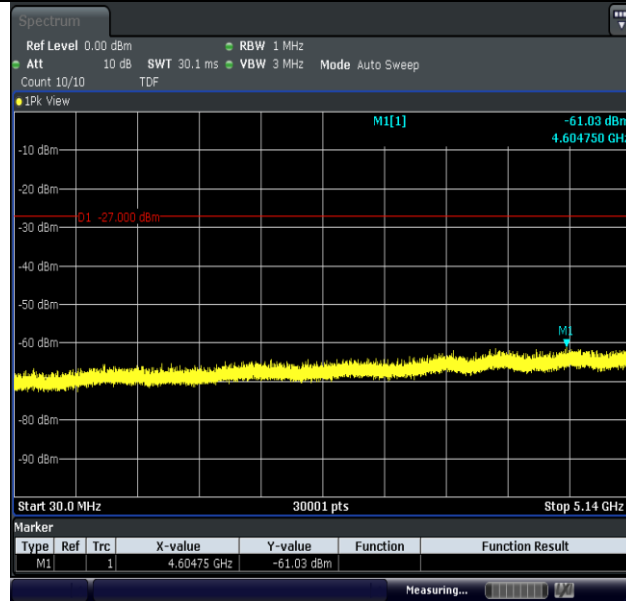


11N20SISO-Ant1-5180-30~5140-PASS

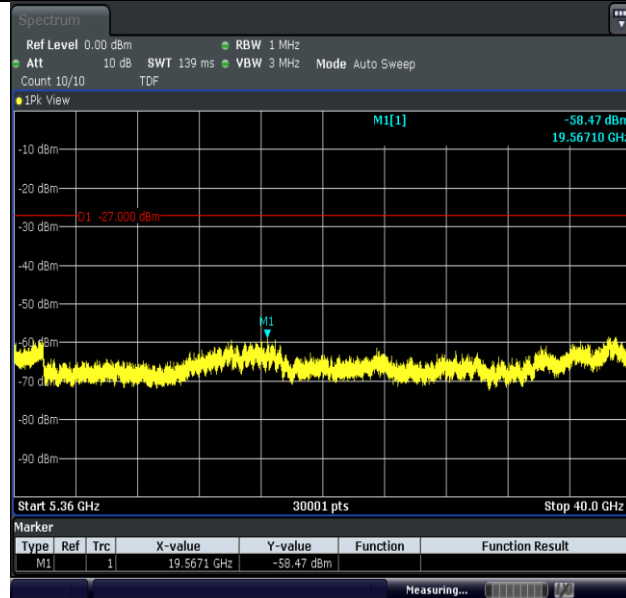


11N20SISO-Ant1-5180-5360~40000-PASS



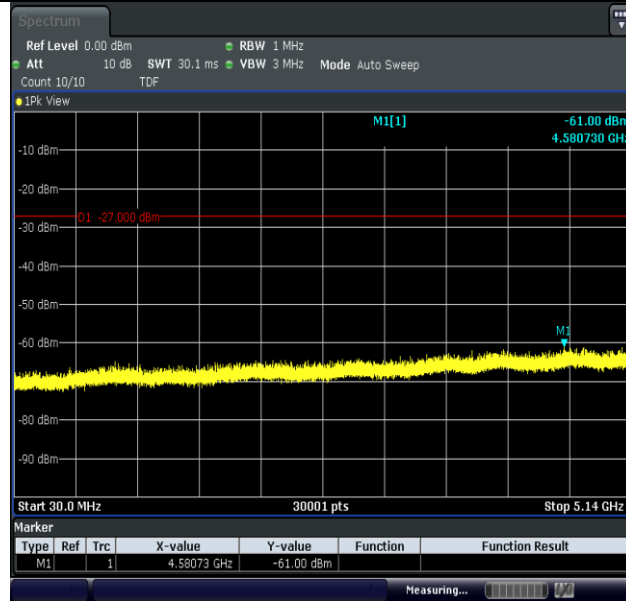


11N20SISO-Ant1-5200-30~5140-PASS

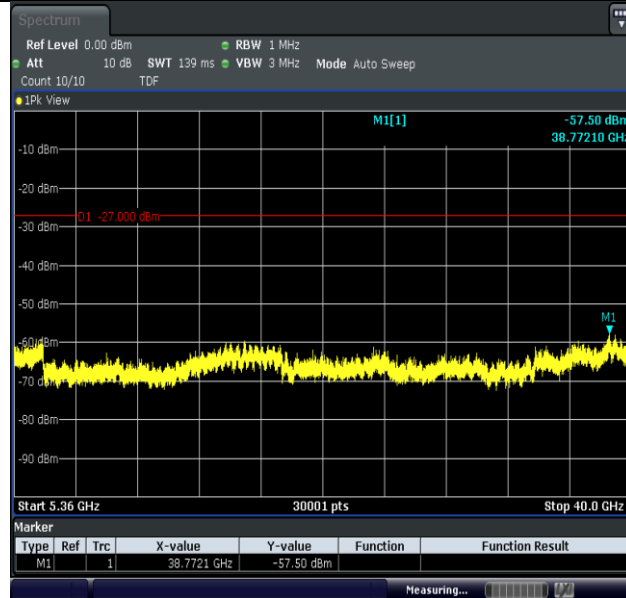


11N20SISO-Ant1-5200-5360~40000-PASS



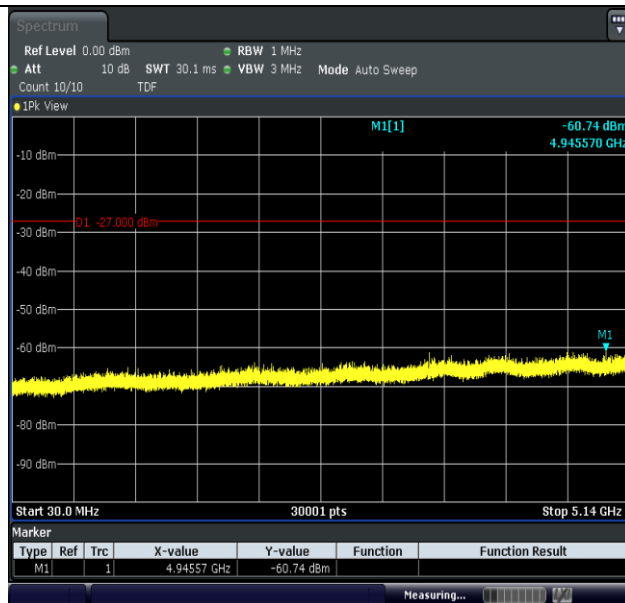


11N20SISO-Ant1-5240-30~5140-PASS

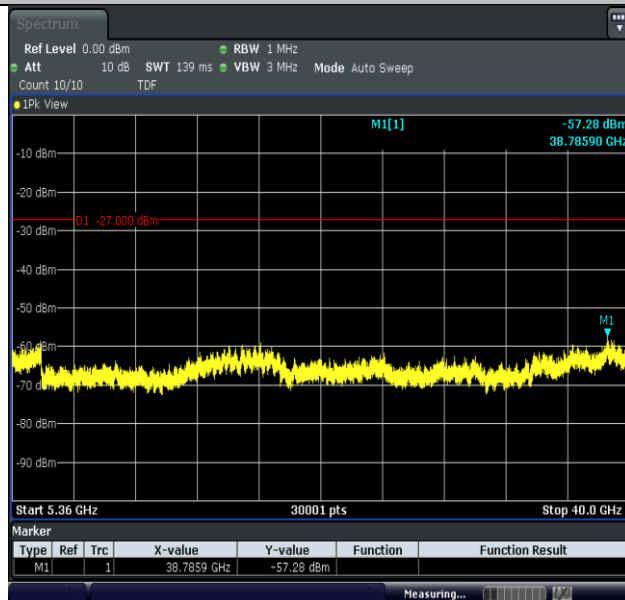


11N20SISO-Ant1-5240-5360~40000-PASS



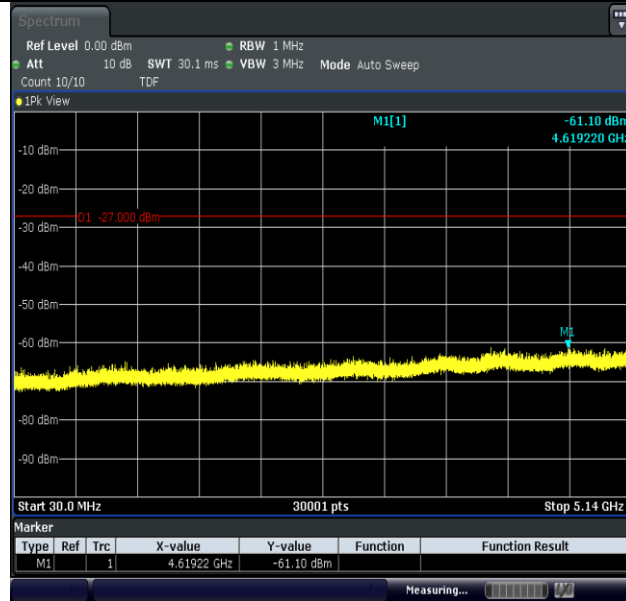


11N40SISO-Ant1-5190-30~5140-PASS

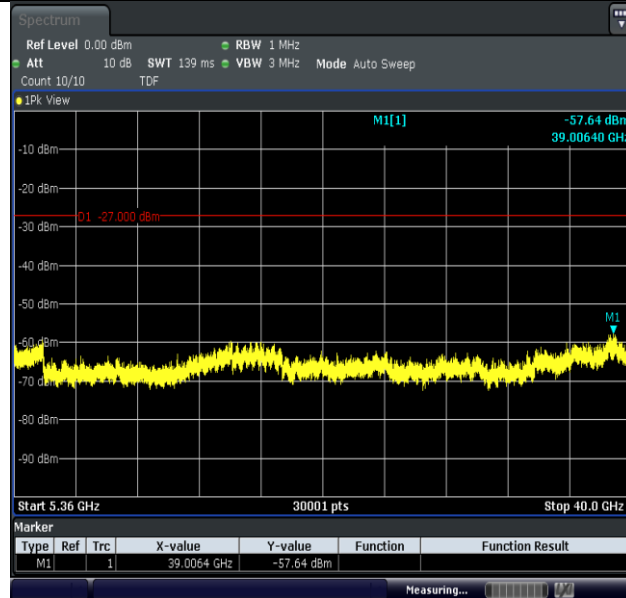


11N40SISO-Ant1-5190-5360~40000-PASS



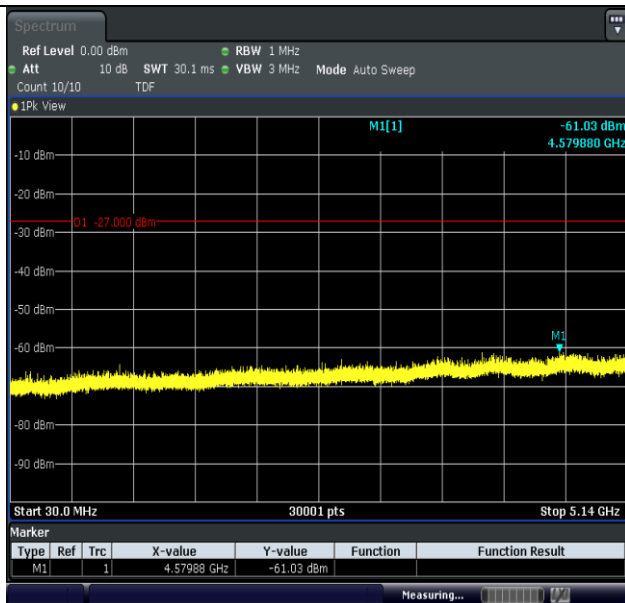


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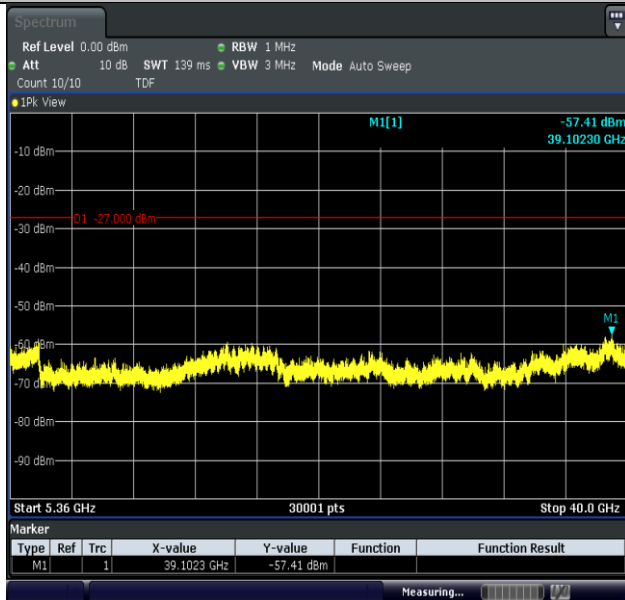


11N40SISO-Ant1-5230-5360~40000-PASS



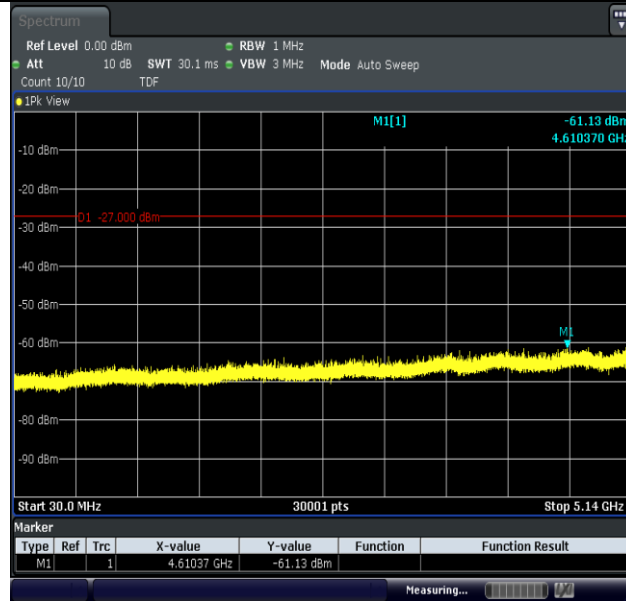


11AC20SISO-Ant1-5180-30~5140-PASS

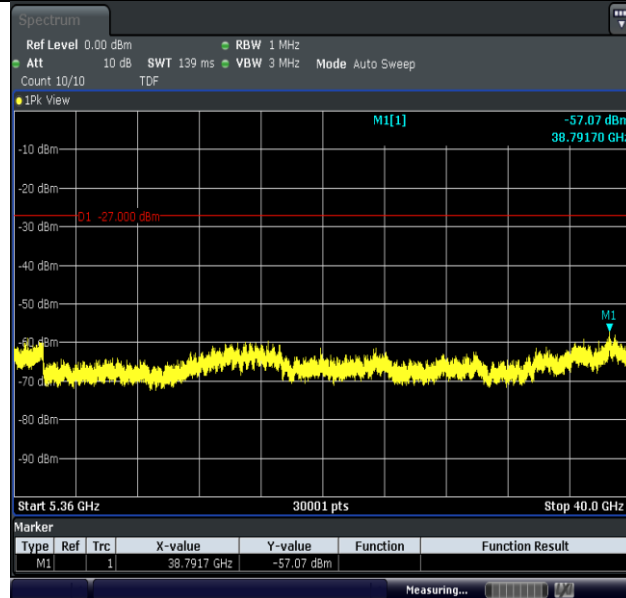


11AC20SISO-Ant1-5180-5360~40000-PASS



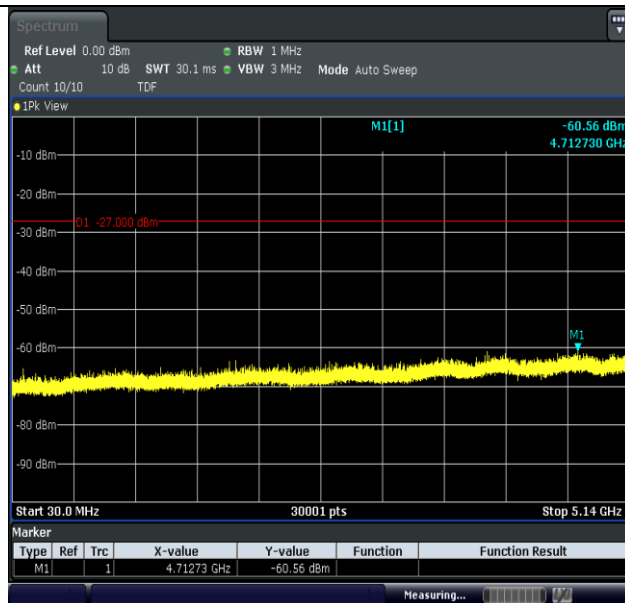


11AC20SISO-Ant1-5200-30~5140-PASS

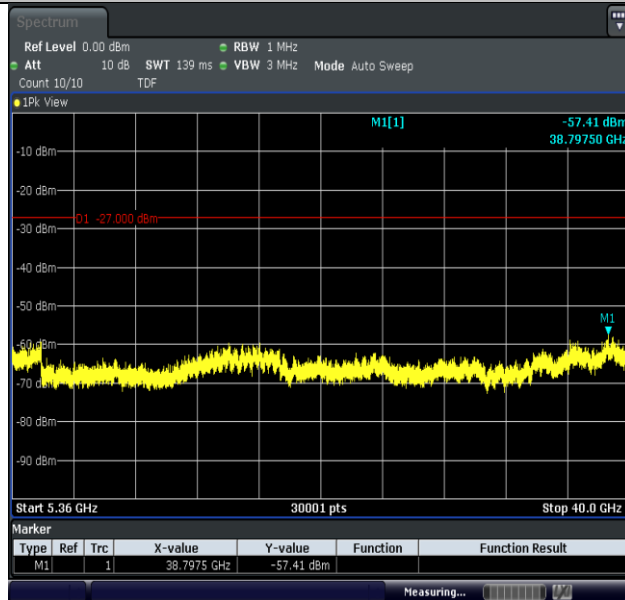


11AC20SISO-Ant1-5200-5360~40000-PASS



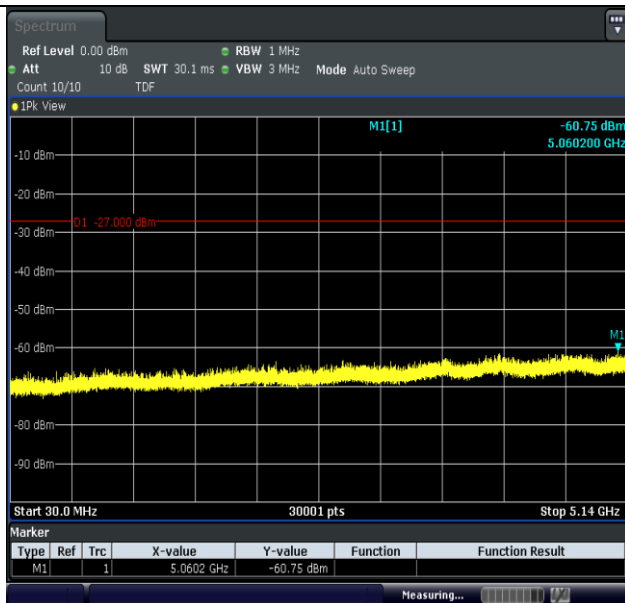


11AC20SISO-Ant1-5240-30~5140-PASS

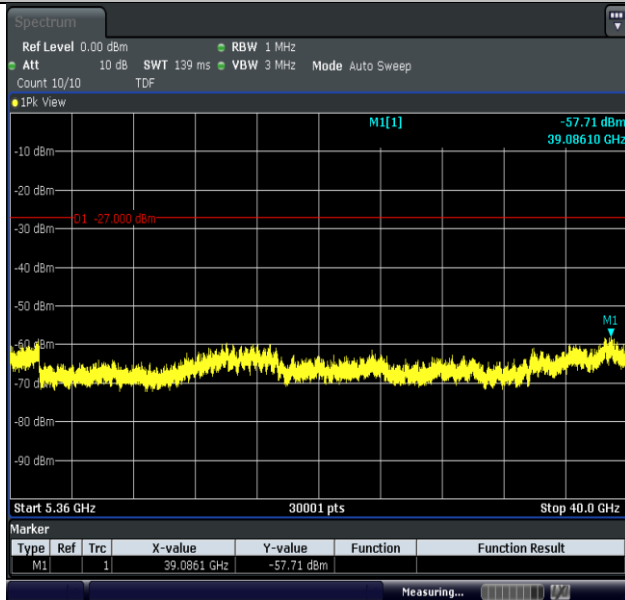


11AC20SISO-Ant1-5240-5360~40000-PASS



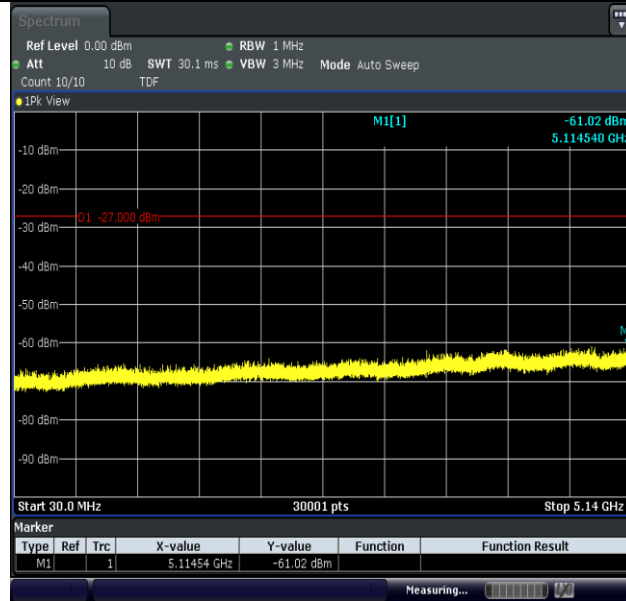


11AC40SISO-Ant1-5190-30~5140-PASS

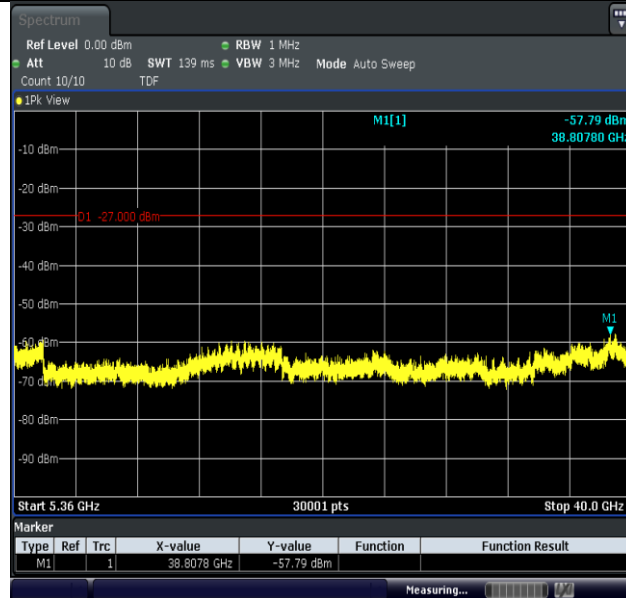


11AC40SISO-Ant1-5190-5360~40000-PASS





11AC40SISO-Ant1-5230-30~5140-PASS



11AC40SISO-Ant1-5230-5360~40000-PASS





Appendix G: Duty Cycle

Test Result

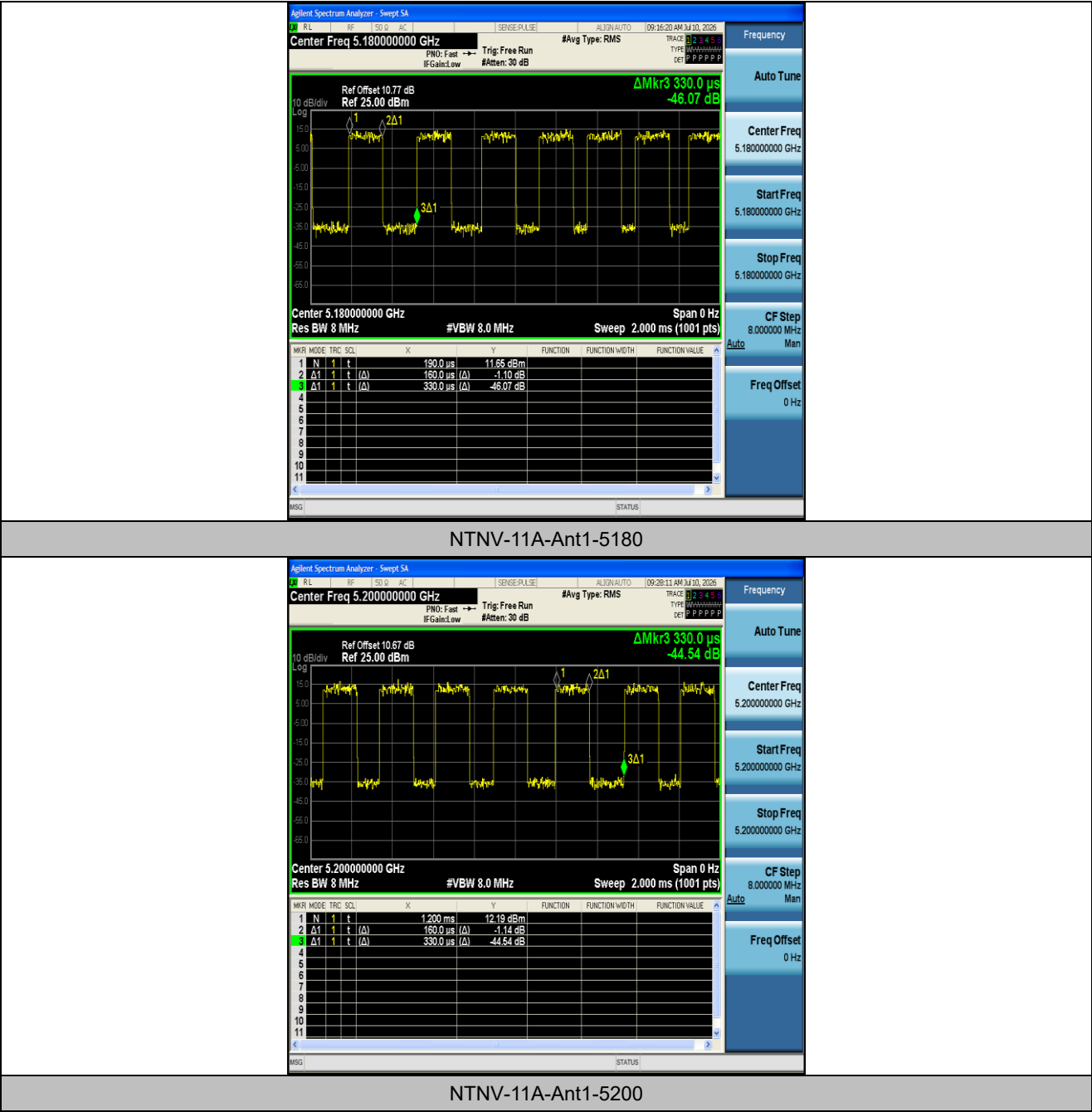
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc. Factor [%]	1/T [kHz]
11A	Ant1	5180	0.16	0.33	48.48	3.14	6.25
11A	Ant1	5200	0.16	0.33	48.48	3.14	6.25
11A	Ant1	5240	0.16	0.34	47.06	3.27	6.25
11N20SISO	Ant1	5180	0.54	0.91	59.34	2.27	1.85
11N20SISO	Ant1	5200	0.54	0.68	79.41	1.00	1.85
11N20SISO	Ant1	5240	0.54	0.74	72.97	1.37	1.85
11N40SISO	Ant1	5190	0.52	0.60	86.67	0.62	1.92
11N40SISO	Ant1	5230	0.52	0.70	74.29	1.29	1.92
11AC20SISO	Ant1	5180	0.46	0.67	68.66	1.63	2.17
11AC20SISO	Ant1	5200	0.46	0.58	79.31	1.01	2.17
11AC20SISO	Ant1	5240	0.46	0.63	73.02	1.37	2.17
11AC40SISO	Ant1	5190	0.41	0.52	78.85	1.03	2.44
11AC40SISO	Ant1	5230	0.40	0.53	75.47	1.22	2.50

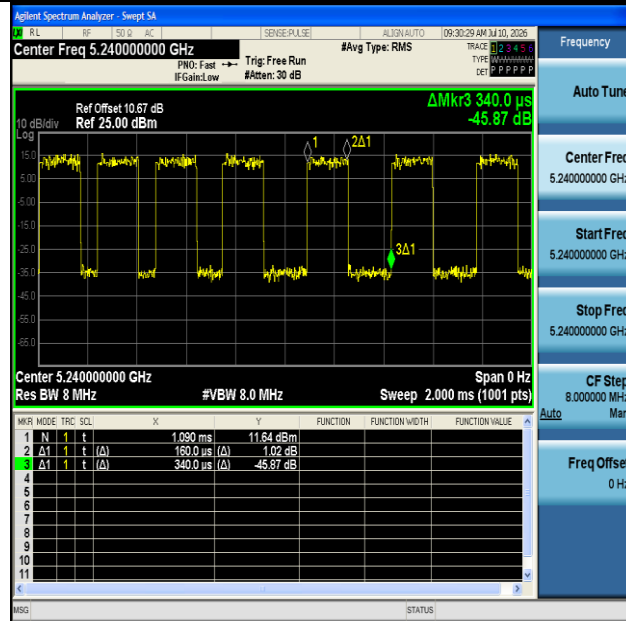
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



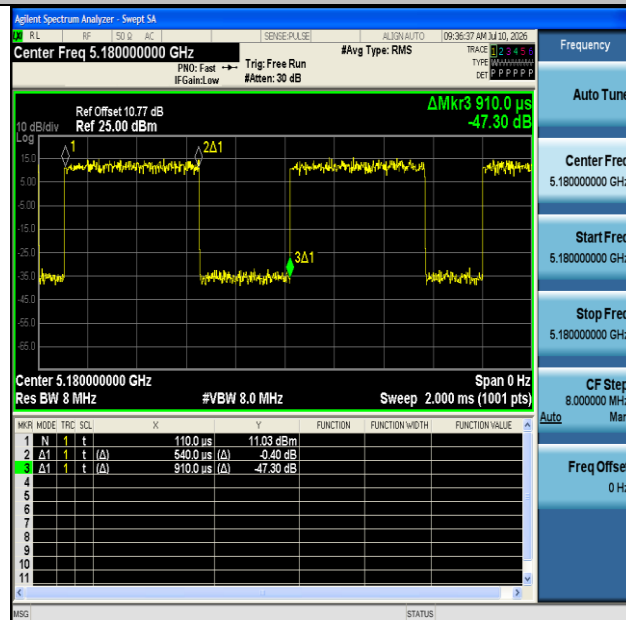


Test Graphs



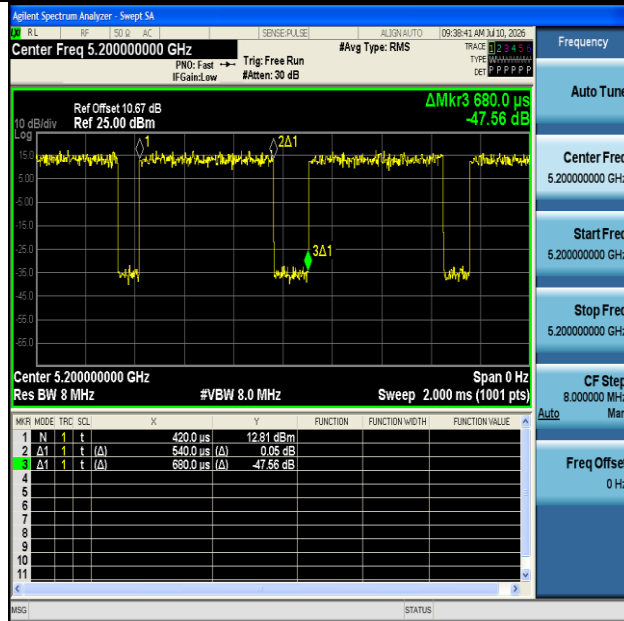


NTNV-11A-Ant1-5240

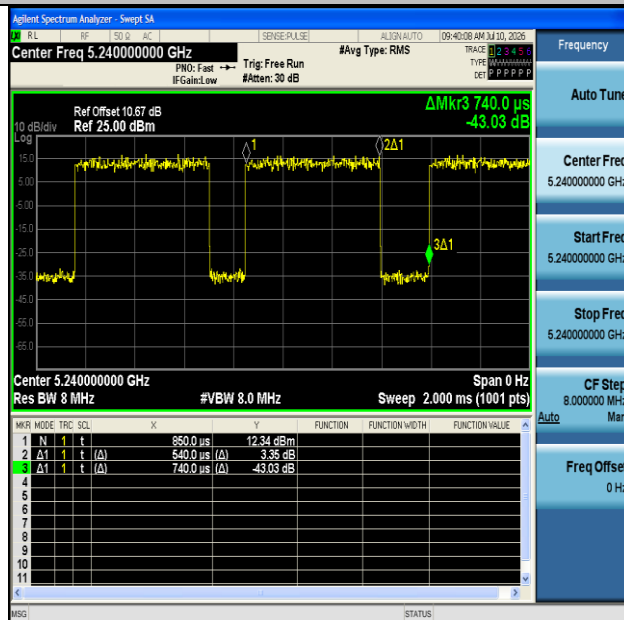


NTNV-11N20SISO-Ant1-5180



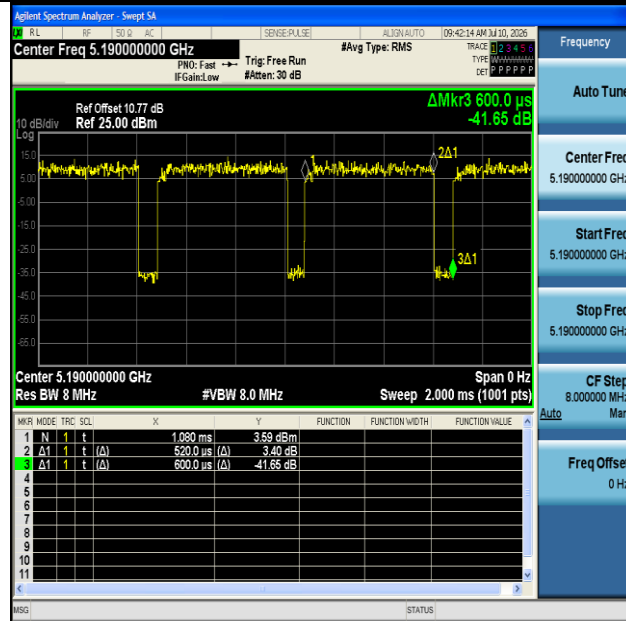


NTNV-11N20SISO-Ant1-5200

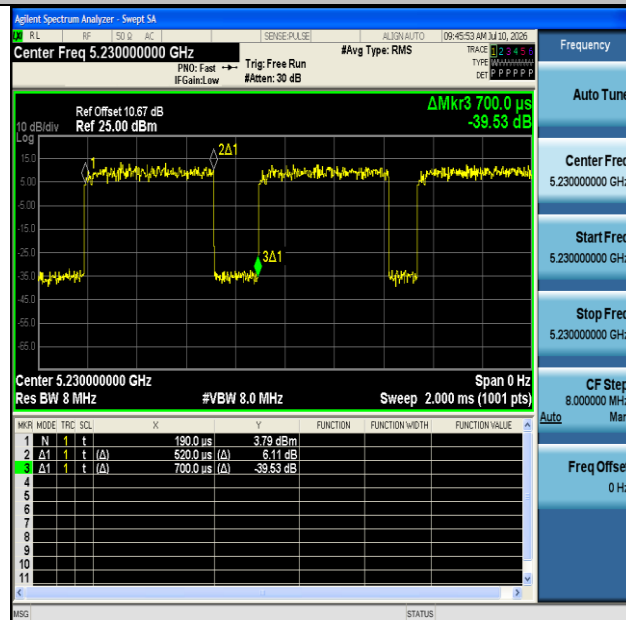


NTNV-11N20SISO-Ant1-5240





NTNV-11N40SISO-Ant1-5190

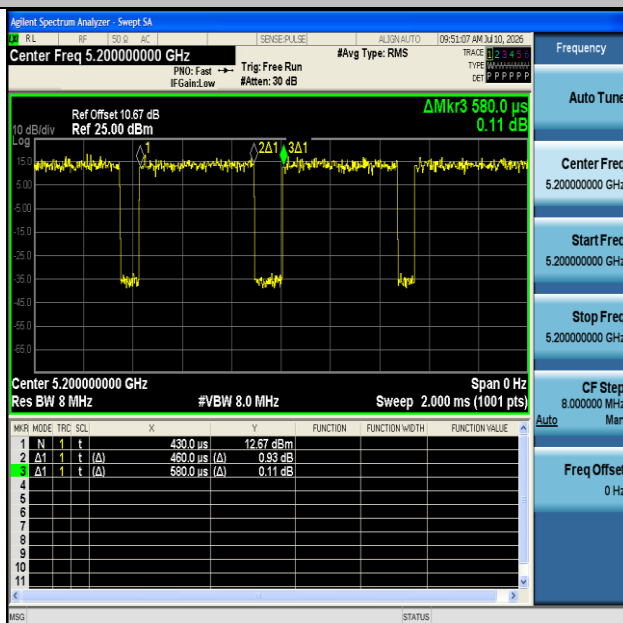


NTNV-11N40SISO-Ant1-5230



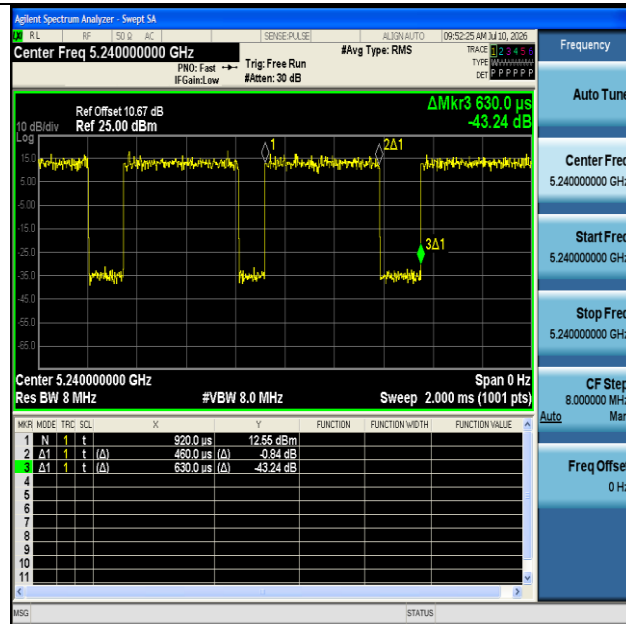


NTNV-11AC20SISO-Ant1-5180

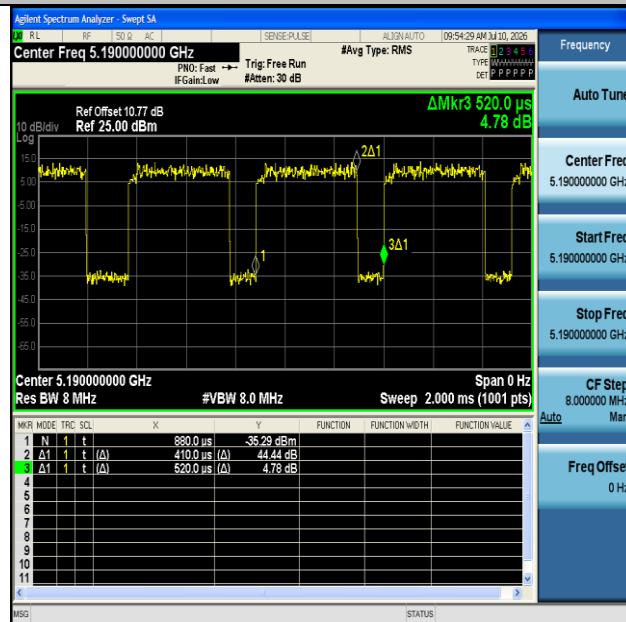


NTNV-11AC20SISO-Ant1-5200



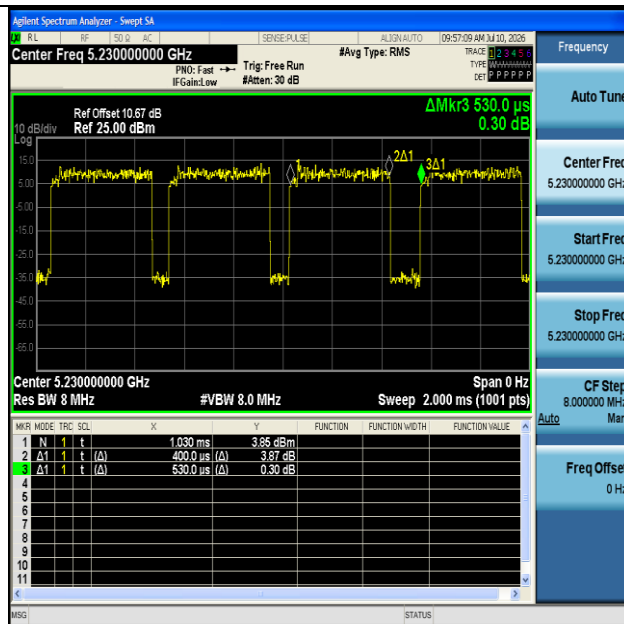


NTNV-11AC20SISO-Ant1-5240



NTNV-11AC40SISO-Ant1-5190





NTNV-11AC40SISO-Ant1-5230

