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

Product Name: Drone

Trade Mark: /

Test Model: F7MINI 4K

FCC ID: 2A5GP-F7MINI4KYK

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	5180	18.760	5170.640	5189.400	---	---
11A	Ant2	5180	18.480	5170.800	5189.280	---	---
11A	Ant1	5200	18.320	5190.880	5209.200	---	---
11A	Ant2	5200	18.240	5190.840	5209.080	---	---
11A	Ant1	5240	18.360	5230.840	5249.200	---	---
11A	Ant2	5240	18.520	5230.800	5249.320	---	---

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

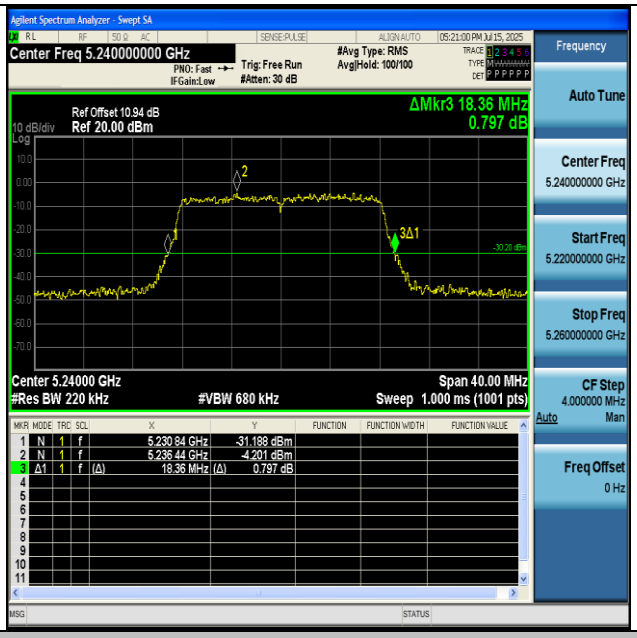
Test Graphs

11A-Ant1-5180

11A-Ant2-5180

11A-Ant1-5200

11A-Ant2-5200



11A-Ant1-5240

11A-Ant2-5240

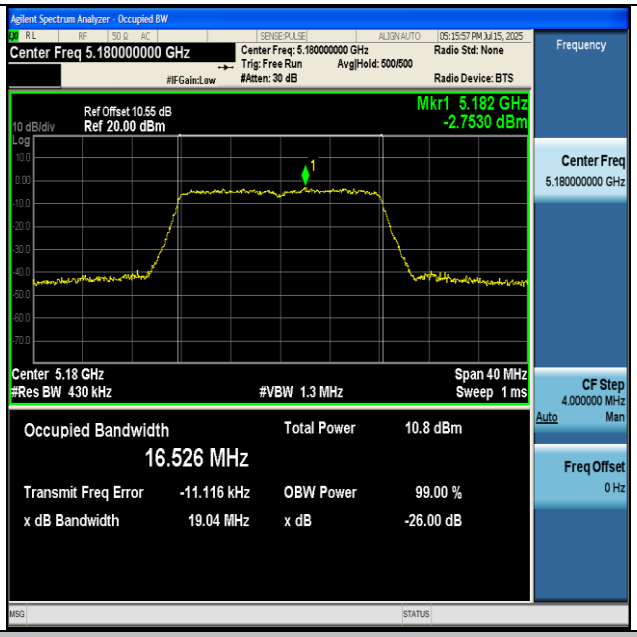
Appendix A2: Occupied channel bandwidth

Test Result

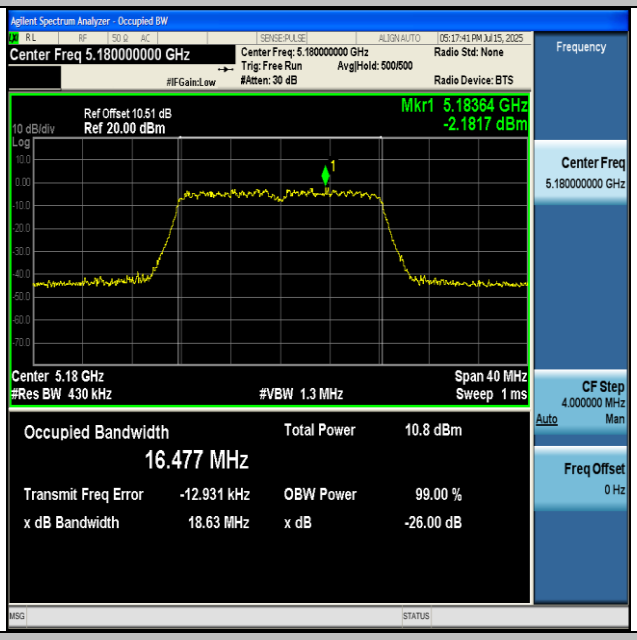
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11A	Ant1	5180	16.526	5171.7259	5188.2519	---	---
11A	Ant2	5180	16.477	5171.7486	5188.2256	---	---
11A	Ant1	5200	16.440	5191.7836	5208.2236	---	---
11A	Ant2	5200	16.449	5191.7818	5208.2308	---	---
11A	Ant1	5240	16.497	5231.7574	5248.2544	---	---
11A	Ant2	5240	16.461	5231.7832	5248.2442	---	---

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

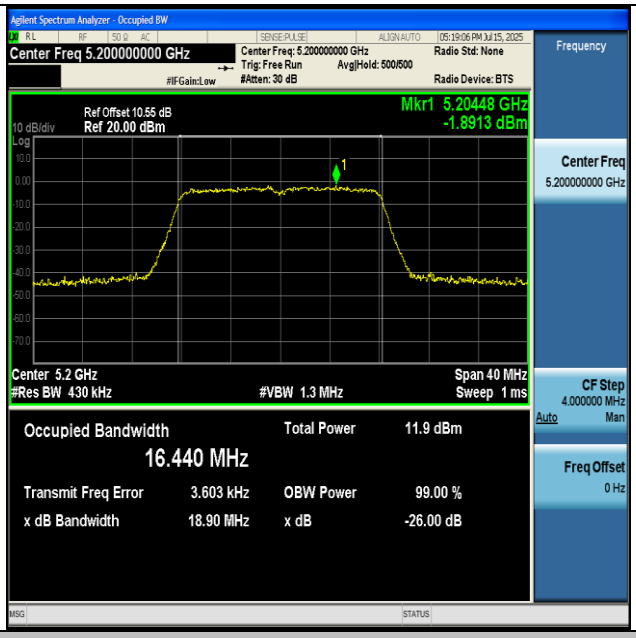
Test Graphs



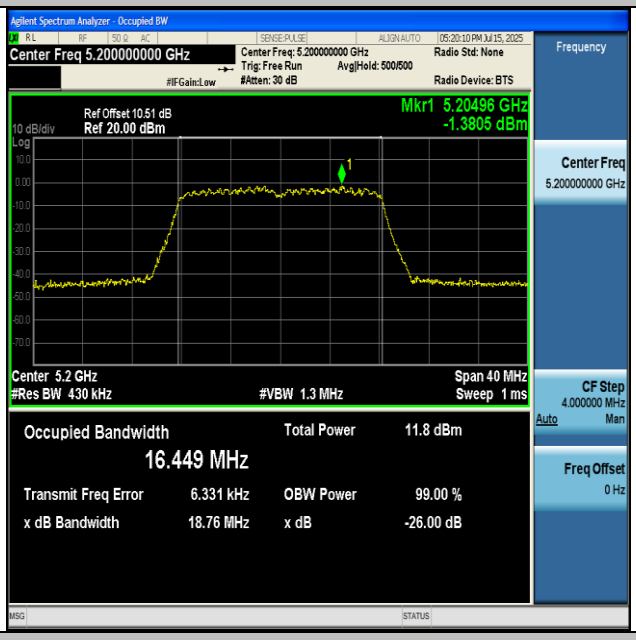
11A-Ant1-5180



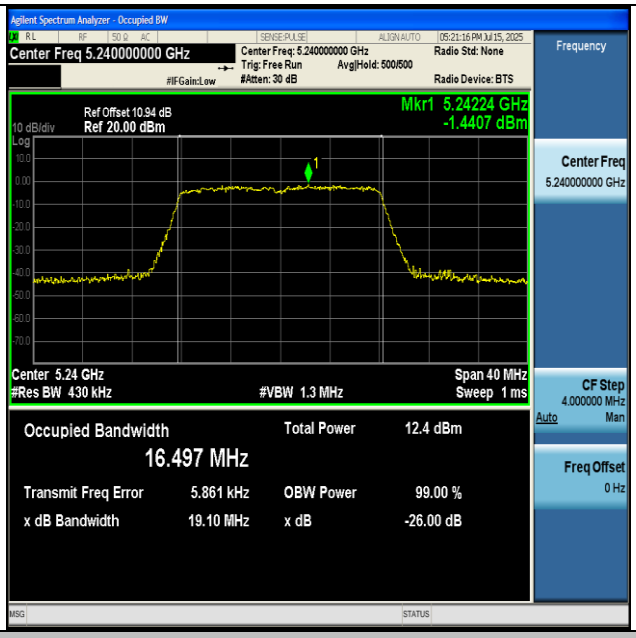
11A-Ant2-5180



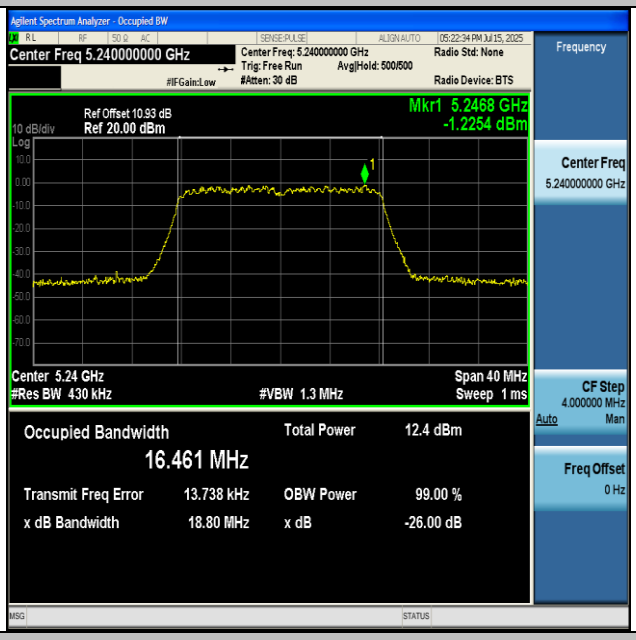
11A-Ant1-5200



11A-Ant2-5200



11A-Ant1-5240



11A-Ant2-5240

Appendix B: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11A	Ant1	5180	4.22	≤23.98	PASS
11A	Ant2	5180	3.61	≤23.98	PASS
11A	Ant1	5200	5.31	≤23.98	PASS
11A	Ant2	5200	4.75	≤23.98	PASS
11A	Ant1	5240	5.86	≤23.98	PASS
11A	Ant2	5240	5.35	≤23.98	PASS

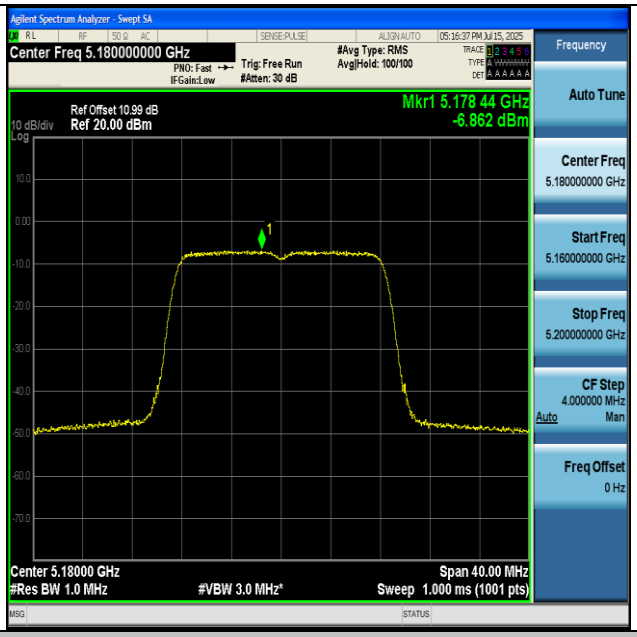
Appendix C: Maximum power spectral density

Test Result

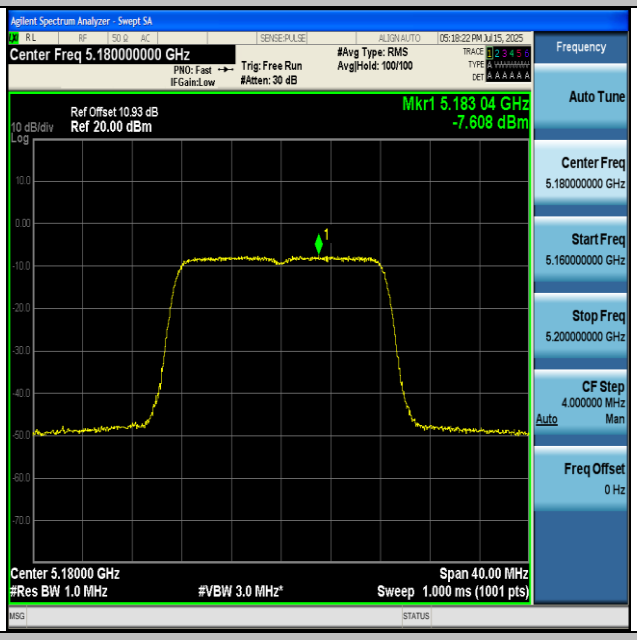
Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	-6.86	≤11.00	PASS
11A	Ant2	5180	-7.61	≤11.00	PASS
11A	Ant1	5200	-5.43	≤11.00	PASS
11A	Ant2	5200	-6.28	≤11.00	PASS
11A	Ant1	5240	-5.24	≤11.00	PASS
11A	Ant2	5240	-5.54	≤11.00	PASS

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

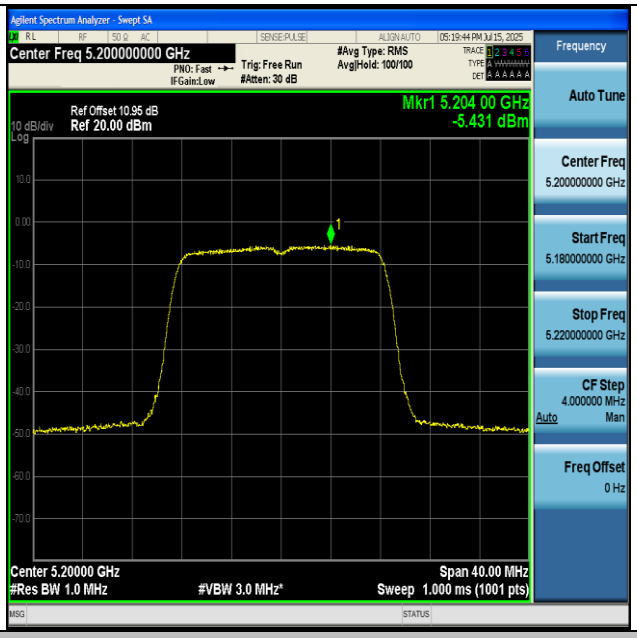
Test Graphs



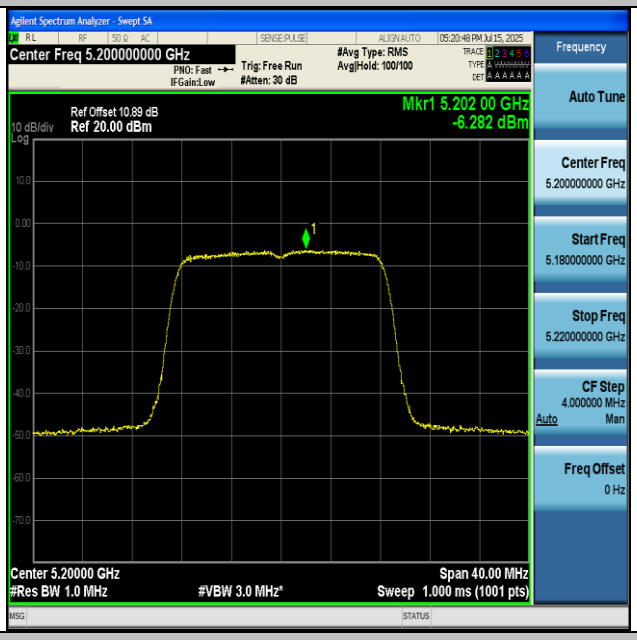
11A-Ant1-5180-PASS



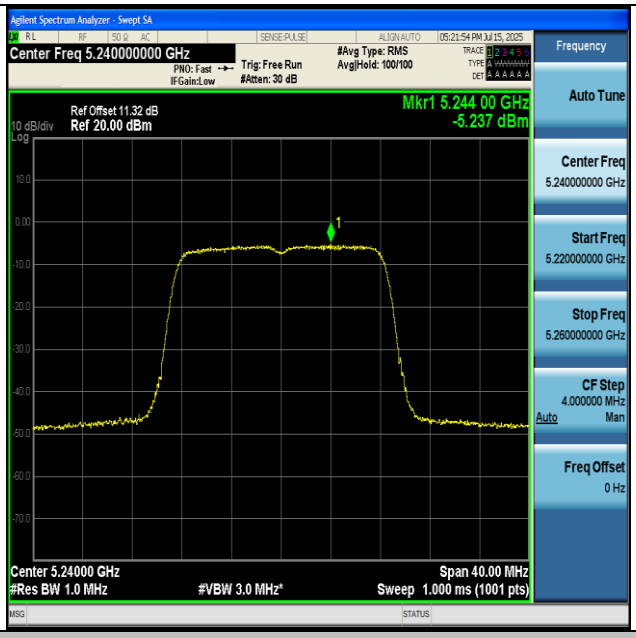
11A-Ant2-5180-PASS



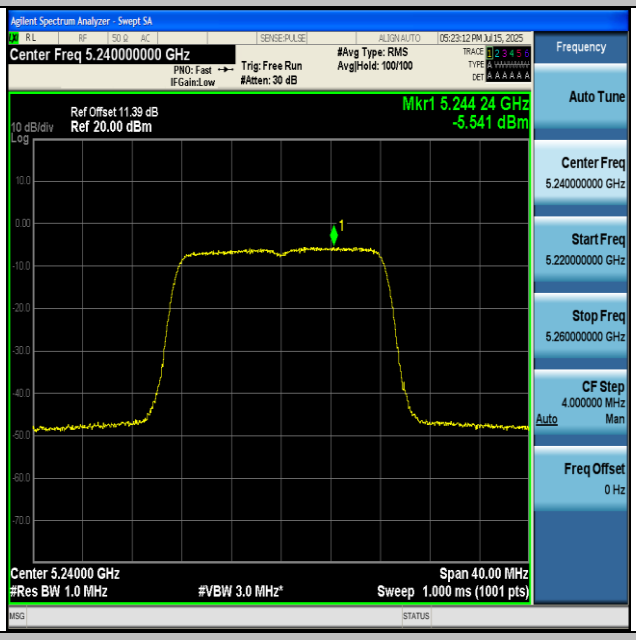
11A-Ant1-5200-PASS



11A-Ant2-5200-PASS



11A-Ant1-5240-PASS



11A-Ant2-5240-PASS

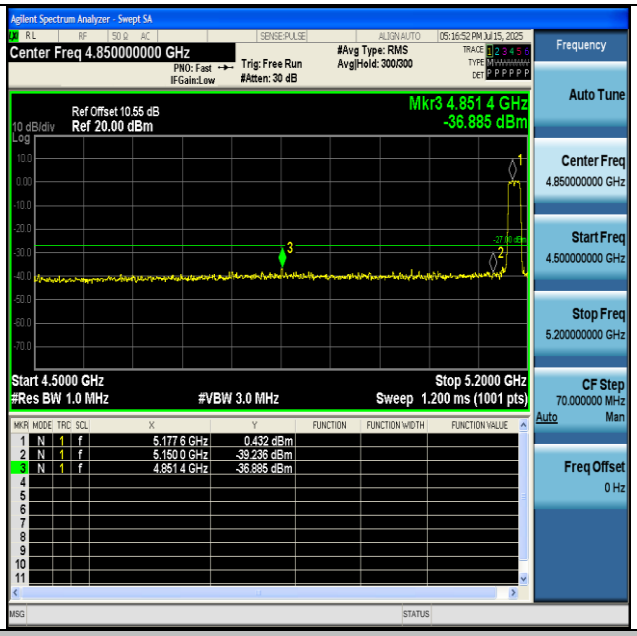
Appendix D: Band edge measurements

Test Result

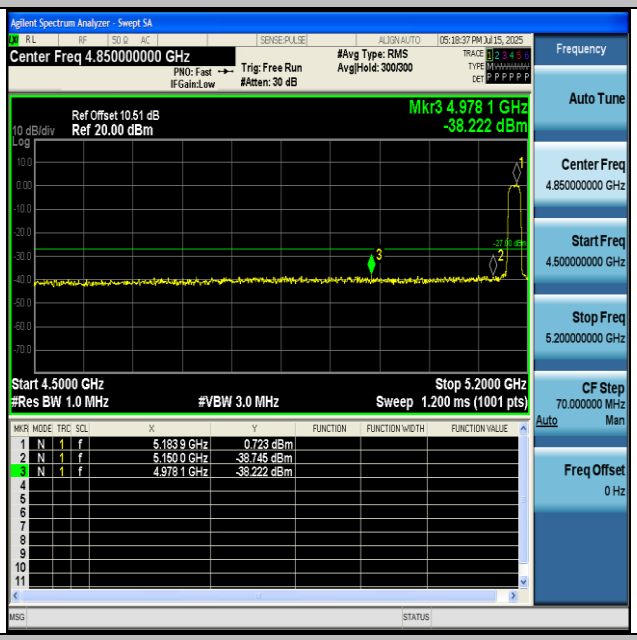
Test Mode	Antenna	Ch. Name	Frequency [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5180	-36.89	≤-27	PASS
11A	Ant2	Low	5180	-38.22	≤-27	PASS
11A	Ant1	High	5240	-37.24	≤-27	PASS
11A	Ant2	High	5240	-37.15	≤-27	PASS

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

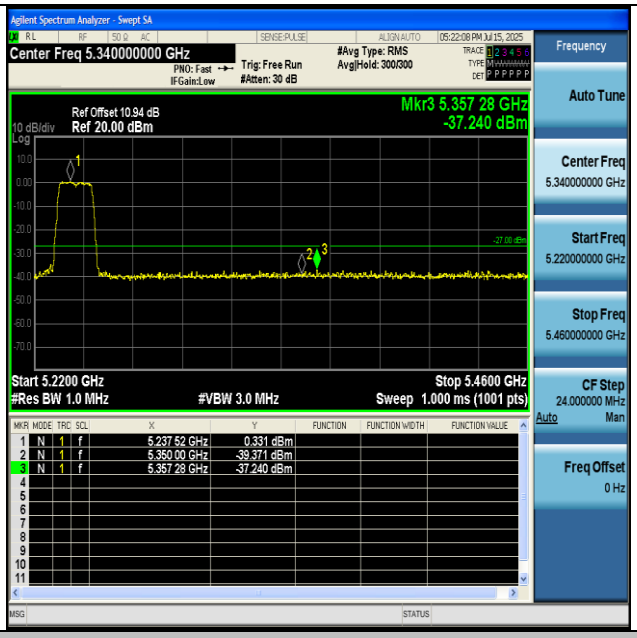
Test Graphs



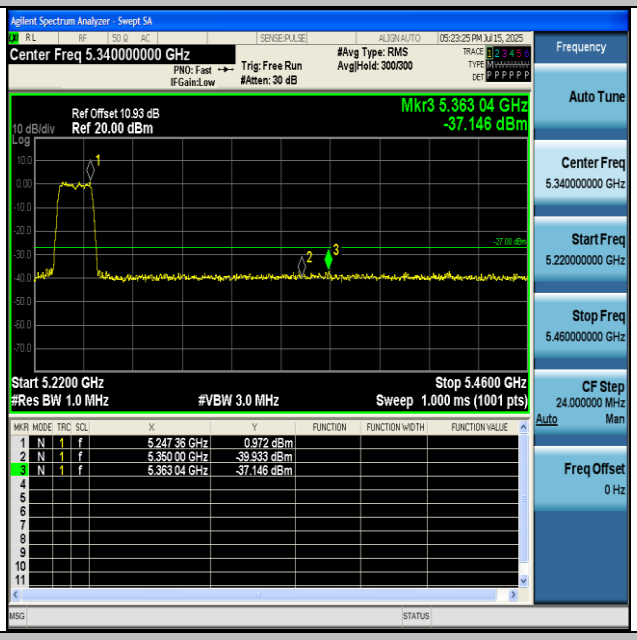
11A-Ant1-5180-PASS



11A-Ant2-5180-PASS



11A-Ant1-5240-PASS



11A-Ant2-5240-PASS

Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	8.14	5180.005129	5150 – 5250	PASS
5180	20	6.66	5179.969335	5150 – 5250	PASS
5180	50	7.40	5180.034933	5150 – 5250	PASS
5180	40	7.40	5179.961207	5150 – 5250	PASS
5180	30	7.40	5179.944016	5150 – 5250	PASS
5180	20	7.40	5179.953366	5150 – 5250	PASS
5180	10	7.40	5179.926704	5150 – 5250	PASS
5180	0	7.40	5179.968161	5150 – 5250	PASS
5180	-10	7.40	5180.093015	5150 – 5250	PASS
5180	-20	7.40	5179.977630	5150 – 5250	PASS
5180	-30	7.40	5179.939434	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	8.14	5179.943117	5150 – 5250	PASS
5180	20	6.66	5180.089708	5150 – 5250	PASS
5180	50	7.40	5179.927032	5150 – 5250	PASS
5180	40	7.40	5180.079981	5150 – 5250	PASS
5180	30	7.40	5179.955466	5150 – 5250	PASS
5180	20	7.40	5180.093140	5150 – 5250	PASS
5180	10	7.40	5180.076612	5150 – 5250	PASS
5180	0	7.40	5179.939233	5150 – 5250	PASS
5180	-10	7.40	5180.015180	5150 – 5250	PASS
5180	-20	7.40	5179.904034	5150 – 5250	PASS
5180	-30	7.40	5179.974530	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	8.14	5199.946412	5150 – 5250	PASS
5200	20	6.66	5200.094176	5150 – 5250	PASS
5200	50	7.40	5200.039637	5150 – 5250	PASS
5200	40	7.40	5199.934464	5150 – 5250	PASS
5200	30	7.40	5200.037124	5150 – 5250	PASS
5200	20	7.40	5200.046432	5150 – 5250	PASS
5200	10	7.40	5199.944760	5150 – 5250	PASS
5200	0	7.40	5199.947695	5150 – 5250	PASS
5200	-10	7.40	5199.921535	5150 – 5250	PASS
5200	-20	7.40	5200.068697	5150 – 5250	PASS
5200	-30	7.40	5200.019136	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	8.14	5200.015771	5150 – 5250	PASS
5200	20	6.66	5200.084972	5150 – 5250	PASS
5200	50	7.40	5199.970996	5150 – 5250	PASS
5200	40	7.40	5200.057669	5150 – 5250	PASS
5200	30	7.40	5199.983715	5150 – 5250	PASS
5200	20	7.40	5200.020240	5150 – 5250	PASS
5200	10	7.40	5200.055100	5150 – 5250	PASS
5200	0	7.40	5199.999311	5150 – 5250	PASS
5200	-10	7.40	5199.942525	5150 – 5250	PASS
5200	-20	7.40	5200.051667	5150 – 5250	PASS
5200	-30	7.40	5199.901170	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	8.14	5240.022422	5150 – 5250	PASS
5240	20	6.66	5239.979973	5150 – 5250	PASS
5240	50	7.40	5239.911140	5150 – 5250	PASS
5240	40	7.40	5240.011221	5150 – 5250	PASS
5240	30	7.40	5240.076001	5150 – 5250	PASS
5240	20	7.40	5240.097196	5150 – 5250	PASS
5240	10	7.40	5239.964981	5150 – 5250	PASS
5240	0	7.40	5239.934266	5150 – 5250	PASS
5240	-10	7.40	5239.964559	5150 – 5250	PASS
5240	-20	7.40	5240.005501	5150 – 5250	PASS
5240	-30	7.40	5239.949387	5150 – 5250	PASS

Ant2

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VDC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	8.14	5240.092594	5150 – 5250	PASS
5240	20	6.66	5240.034917	5150 – 5250	PASS
5240	50	7.40	5239.995319	5150 – 5250	PASS
5240	40	7.40	5239.907488	5150 – 5250	PASS
5240	30	7.40	5240.094972	5150 – 5250	PASS
5240	20	7.40	5239.992698	5150 – 5250	PASS
5240	10	7.40	5240.010046	5150 – 5250	PASS
5240	0	7.40	5239.900120	5150 – 5250	PASS
5240	-10	7.40	5239.941660	5150 – 5250	PASS
5240	-20	7.40	5239.973675	5150 – 5250	PASS
5240	-30	7.40	5240.081840	5150 – 5250	PASS

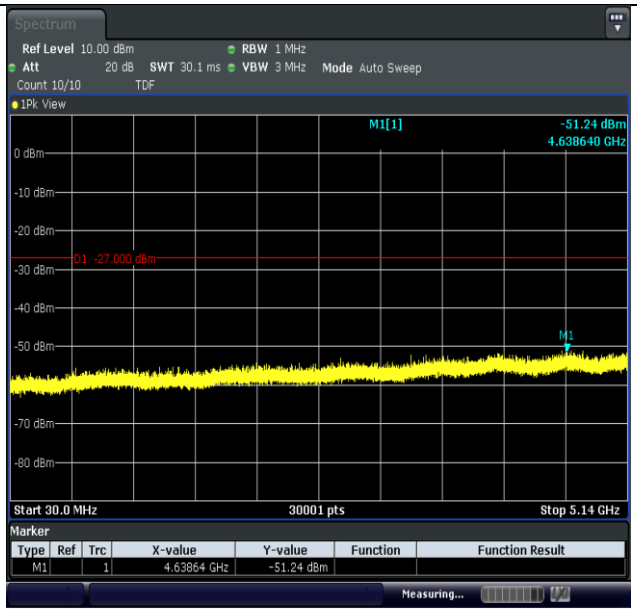
Appendix F: Conducted Spurious Emission

Test Result

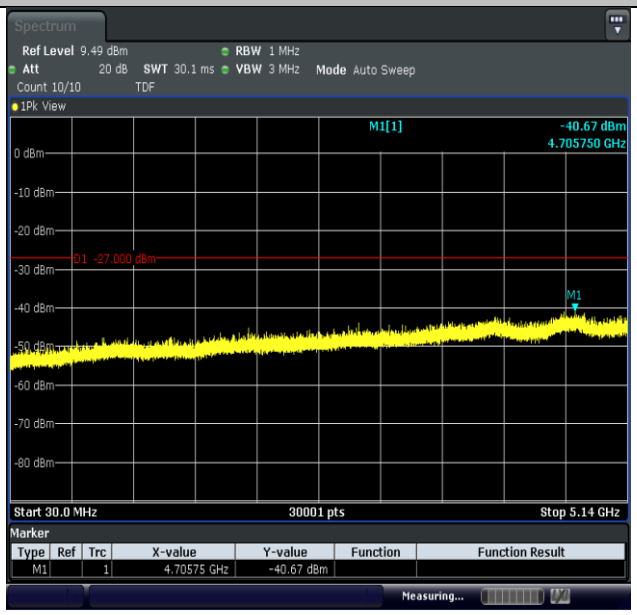
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	4638.64	-51.24	≤-27	PASS
11A	Ant2	5180	30~5140	4705.75	-40.67	≤-27	PASS
11A	Ant1	5180	5360~40000	6888.2	-52.88	≤-27	PASS
11A	Ant2	5180	5360~40000	5926.3	-44.55	≤-27	PASS
11A	Ant1	5200	30~5140	4649.88	-50.85	≤-27	PASS
11A	Ant2	5200	30~5140	4659.42	-40.96	≤-27	PASS
11A	Ant1	5200	5360~40000	6995.5	-52.11	≤-27	PASS
11A	Ant2	5200	5360~40000	5442.6	-44.27	≤-27	PASS
11A	Ant1	5240	30~5140	4632.51	-50.41	≤-27	PASS
11A	Ant2	5240	30~5140	4649.54	-41.13	≤-27	PASS
11A	Ant1	5240	5360~40000	6988.6	-51.78	≤-27	PASS
11A	Ant2	5240	5360~40000	5476	-44.41	≤-27	PASS

Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 40 GHz, the cable loss and attenuator factors have been set in the 'TDF' of the Spectrum Analyzer during the test.

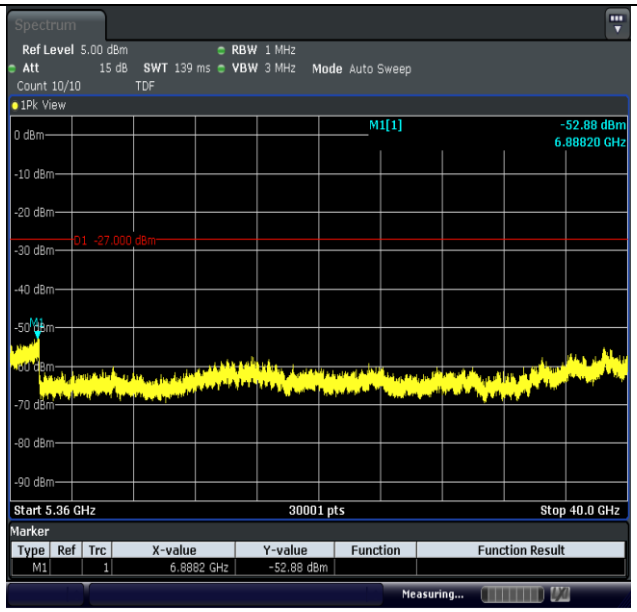
Test Graphs



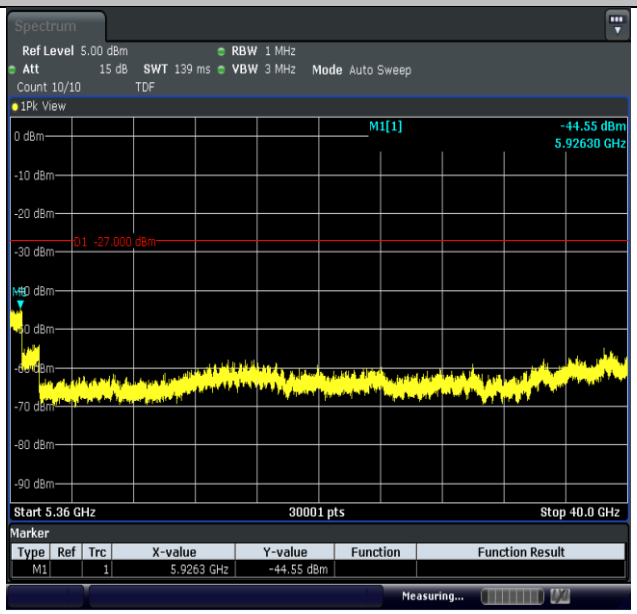
11A-Ant1-5180-30~5140-PASS



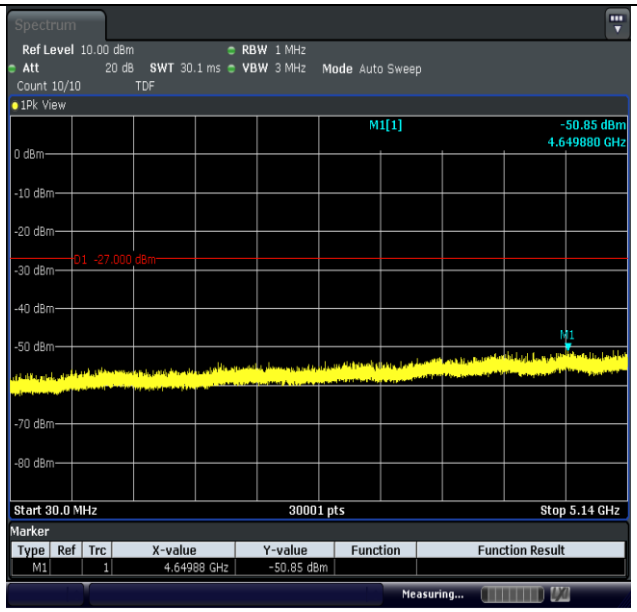
11A-Ant2-5180-30~5140-PASS



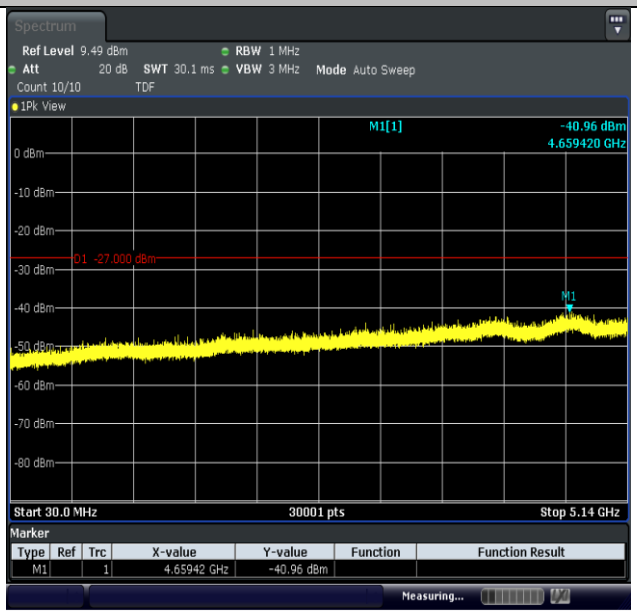
11A-Ant1-5180-5360~40000-PASS



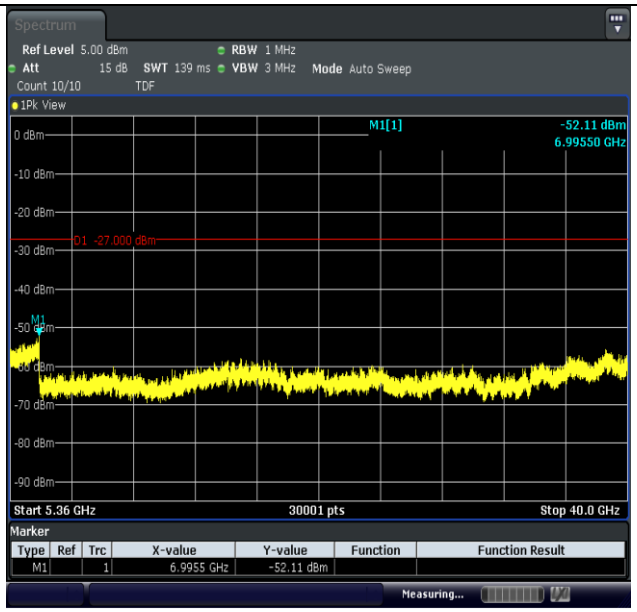
11A-Ant2-5180-5360~40000-PASS



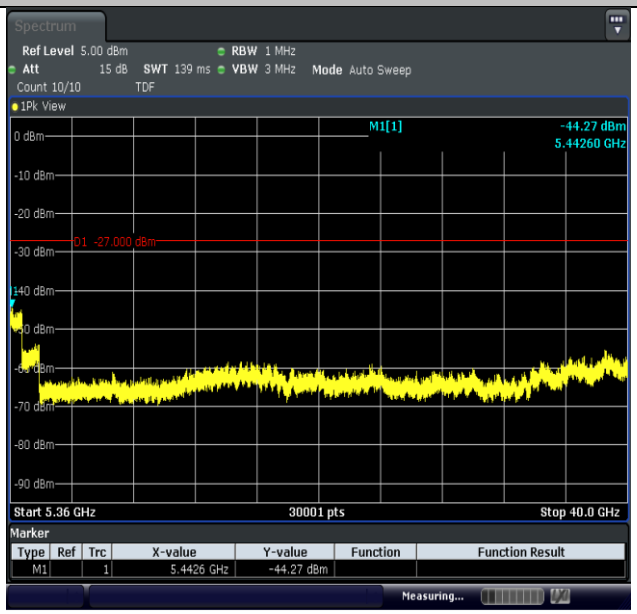
11A-Ant1-5200-30~5140-PASS



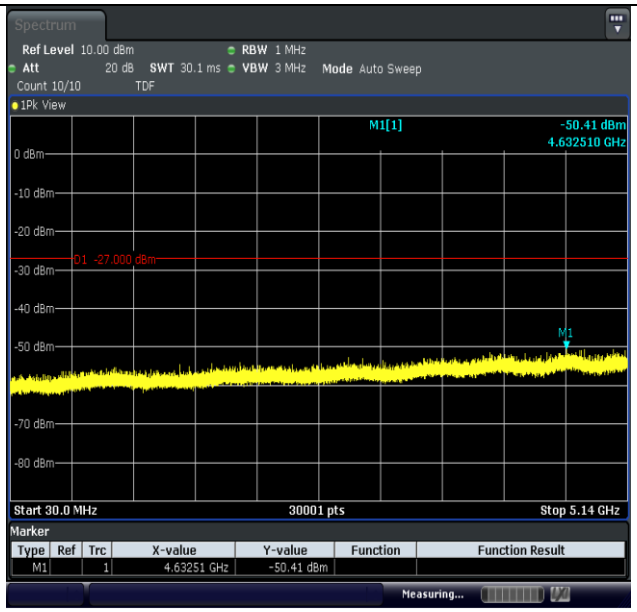
11A-Ant2-5200-30~5140-PASS



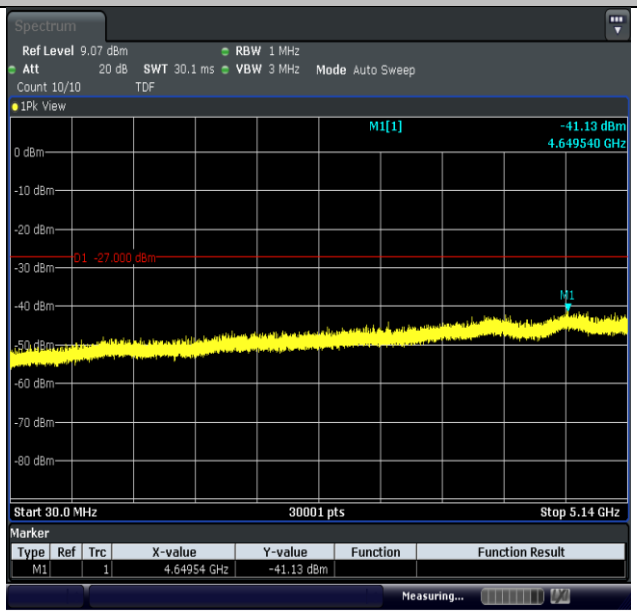
11A-Ant1-5200-5360~40000-PASS



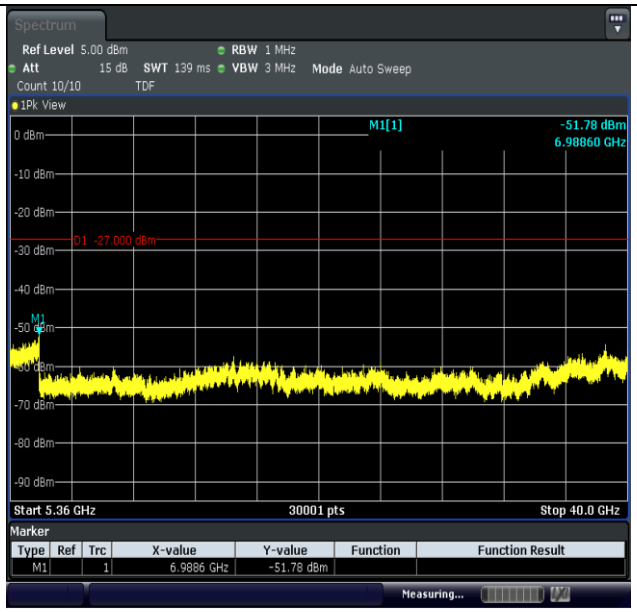
11A-Ant2-5200-5360~40000-PASS



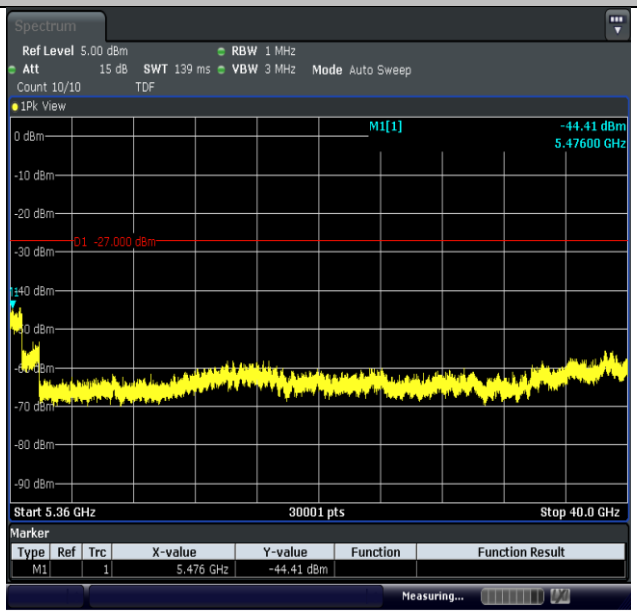
11A-Ant1-5240-30~5140-PASS



11A-Ant2-5240-30~5140-PASS



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



11A-Ant2-5240-5360~40000-PASS

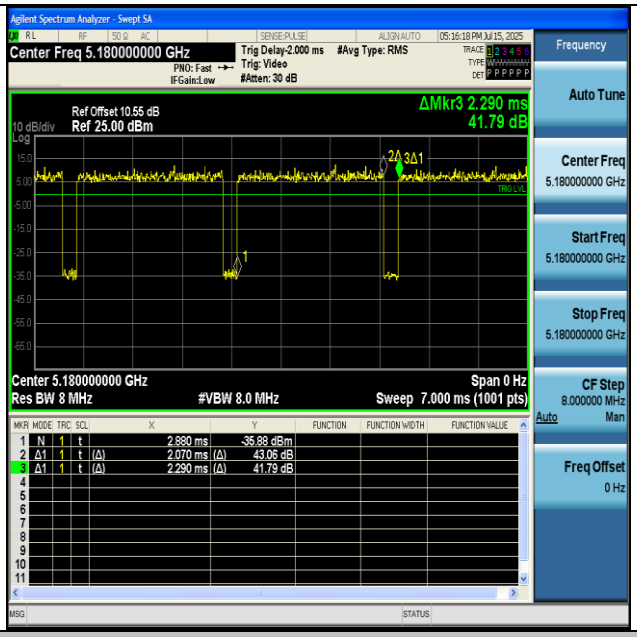
Appendix G: Duty Cycle

Test Result

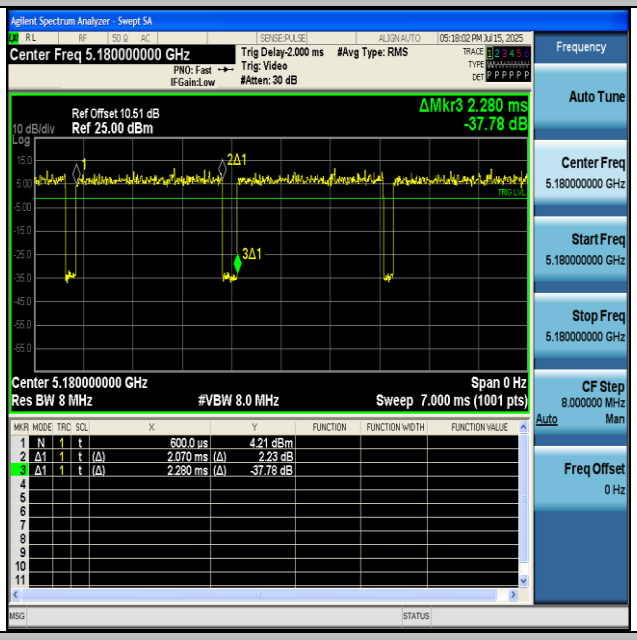
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc. Factor [%]	1/T [kHz]
11A	Ant1	5180	2.07	2.29	90.39	0.44	0.48
11A	Ant2	5180	2.07	2.28	90.79	0.42	0.48
11A	Ant1	5200	2.07	2.27	91.19	0.40	0.48
11A	Ant2	5200	2.07	2.26	91.59	0.38	0.48
11A	Ant1	5240	2.06	2.25	91.56	0.38	0.49
11A	Ant2	5240	2.06	2.29	89.96	0.46	0.49

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

Test Graphs



NTNV-11A-Ant1-5180



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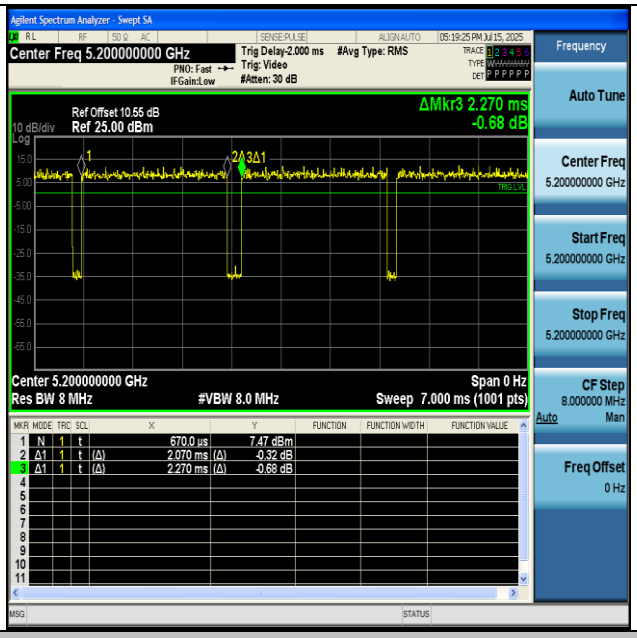

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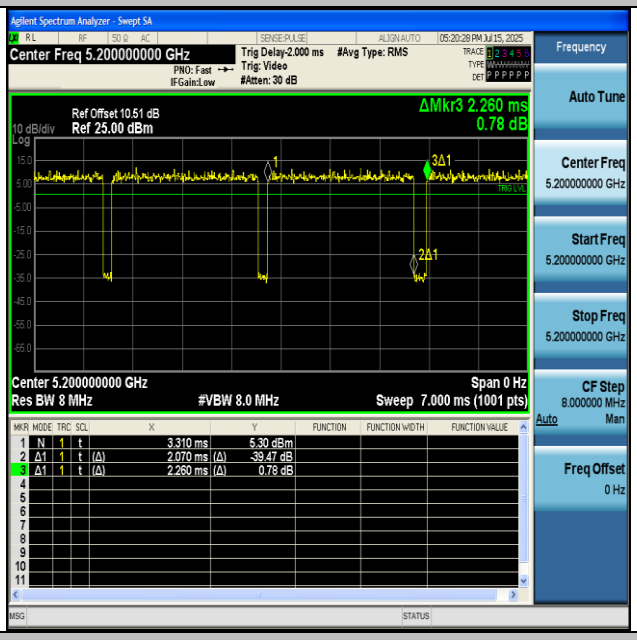

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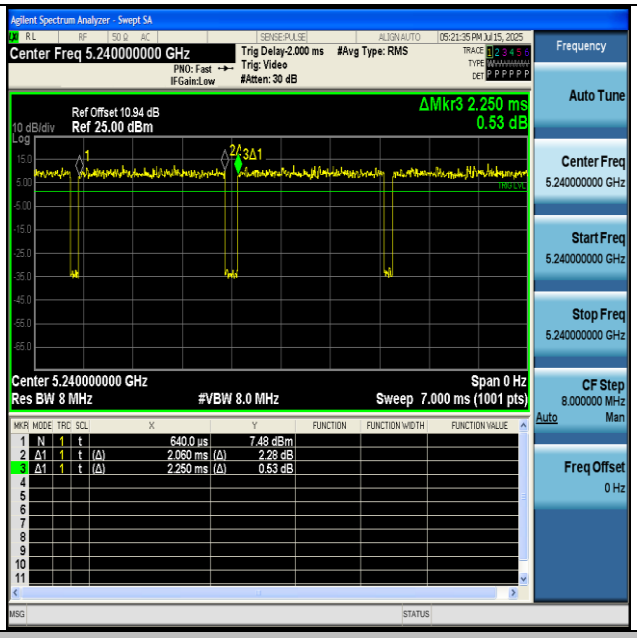
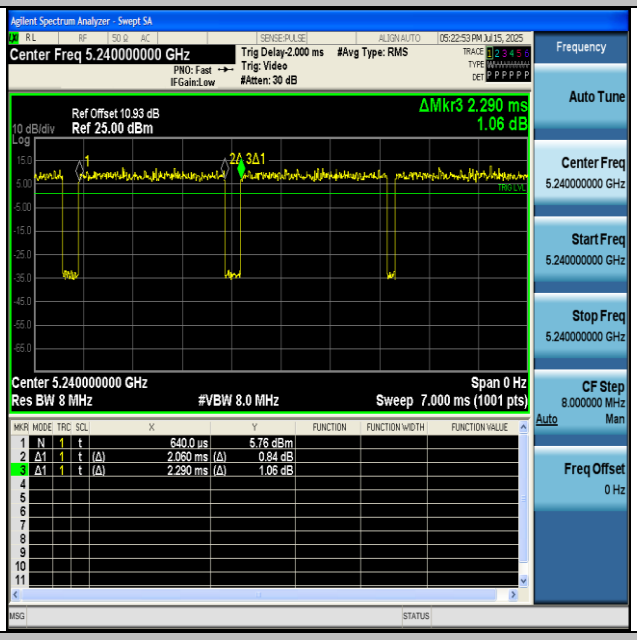


NTNV-11A-Ant1-5240



NTNV-11A-Ant2-5240