RF Test Data for RLAN(5.8G) (Conducted Measurement)

Product Name: WIFI TOUCH SCREEN KARAOKE SYSTEM

Trade Mark: Singing Machine

Test Model: ISM9011

FCC ID: 2AAXO-ISM9011

Environmental Conditions

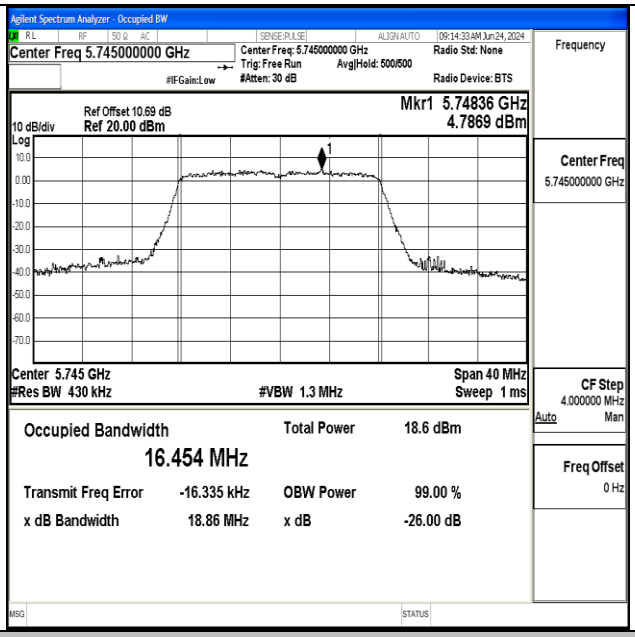
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A2: Occupied channel bandwidth

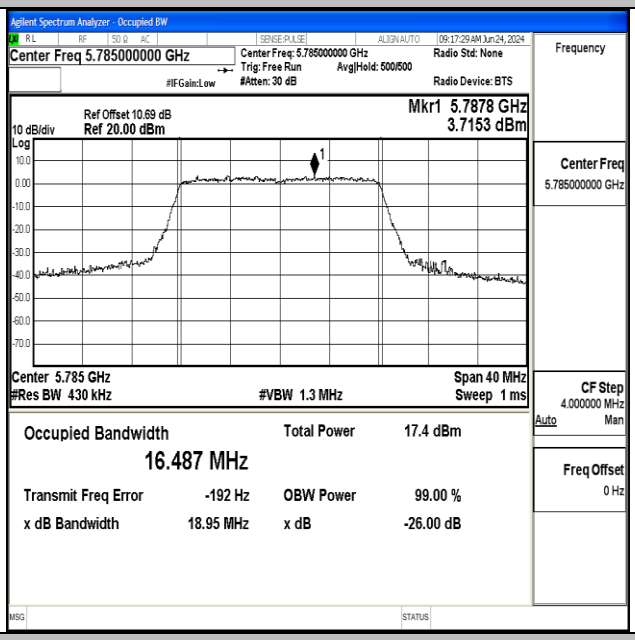
Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.454	5736.7567	5753.2107	---	---
11A	Ant1	5785	16.487	5776.7563	5793.2433	---	---
11A	Ant1	5825	16.518	5816.7812	5833.2992	---	---
11N20SISO	Ant1	5745	17.605	5736.1895	5753.7945	---	---
11N20SISO	Ant1	5785	17.627	5776.1949	5793.8219	---	---
11N20SISO	Ant1	5825	17.633	5816.1953	5833.8283	---	---
11AC20SISO	Ant1	5745	17.711	5736.1222	5753.8332	---	---
11AC20SISO	Ant1	5785	17.742	5776.1541	5793.8961	---	---
11AC20SISO	Ant1	5825	17.745	5816.1410	5833.8860	---	---

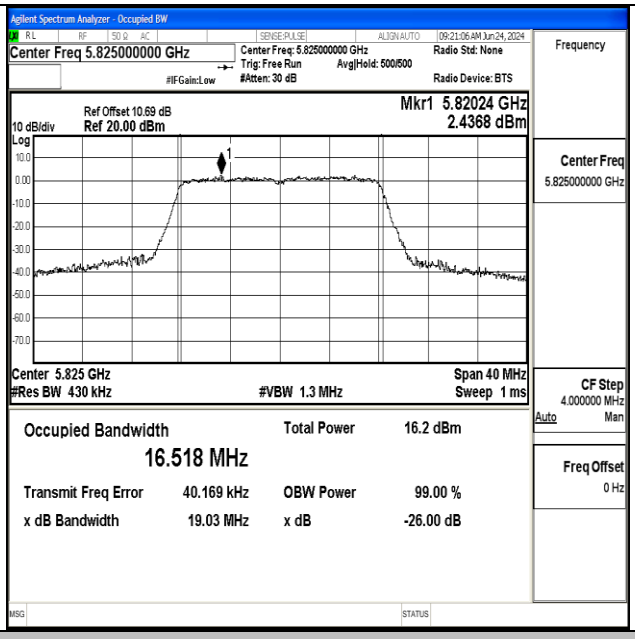
Test Graphs



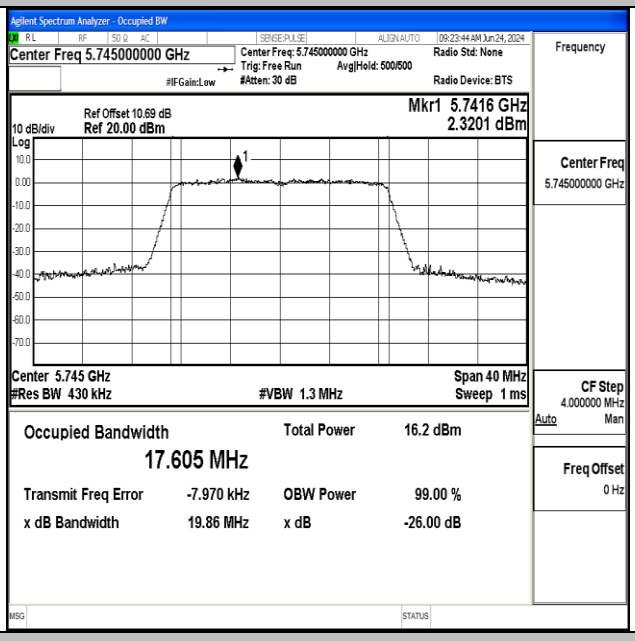
11A-Ant1-5745



11A-Ant1-5785



11A-Ant1-5825



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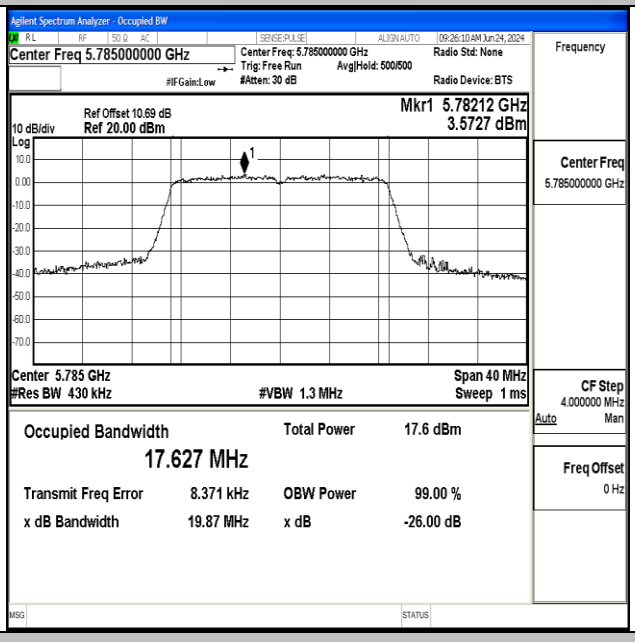

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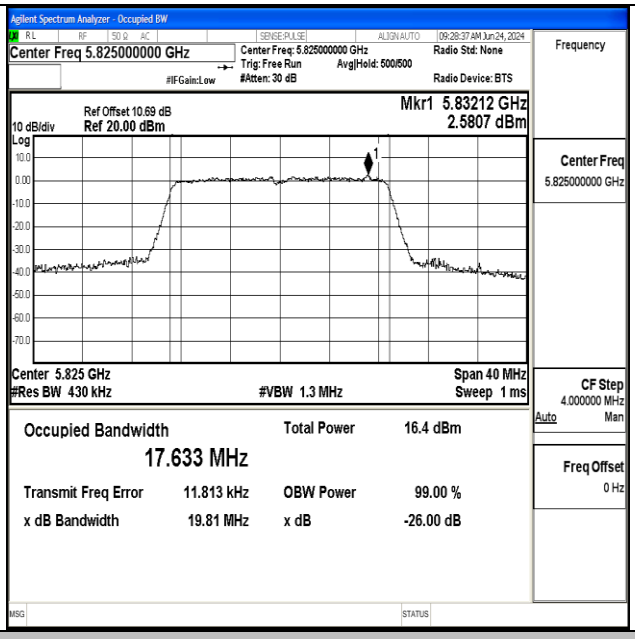

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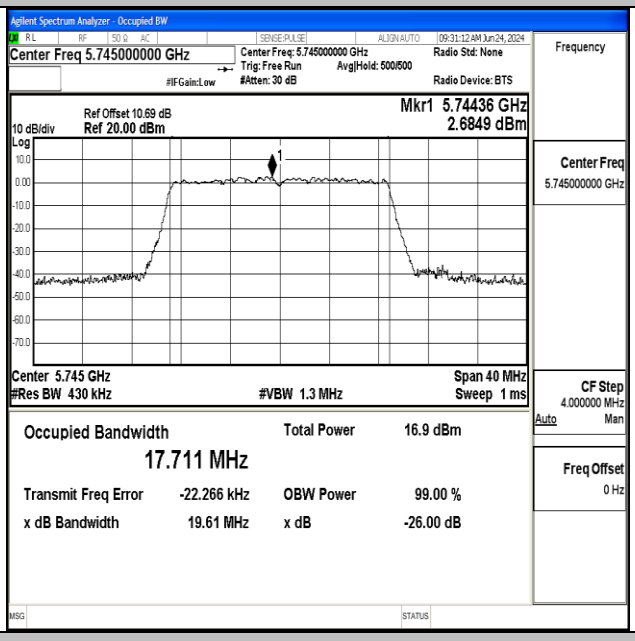

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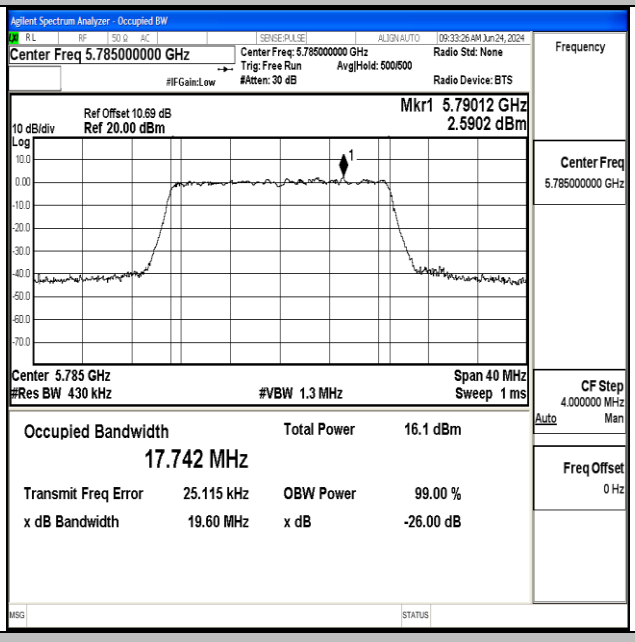
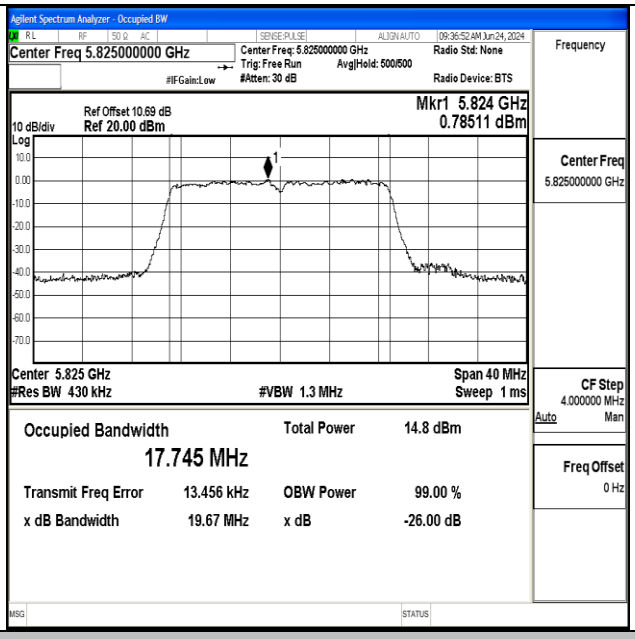


11AC20SISO-Ant1-5785



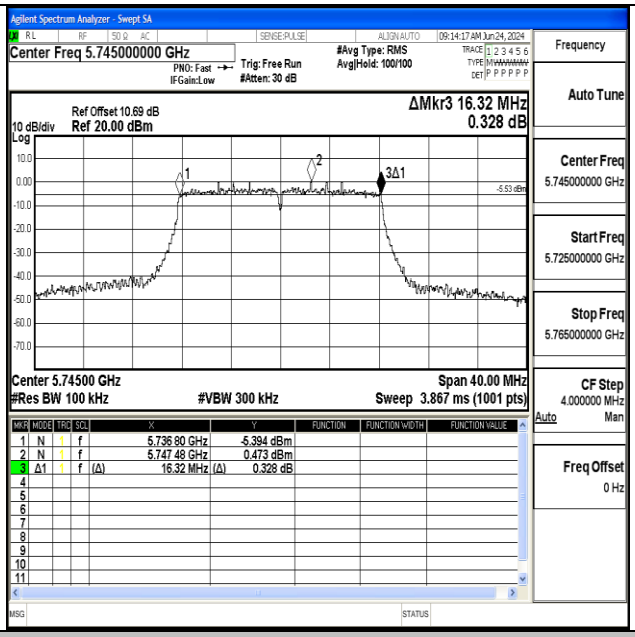
11AC20SISO-Ant1-5825

Appendix A: Min emission bandwidth

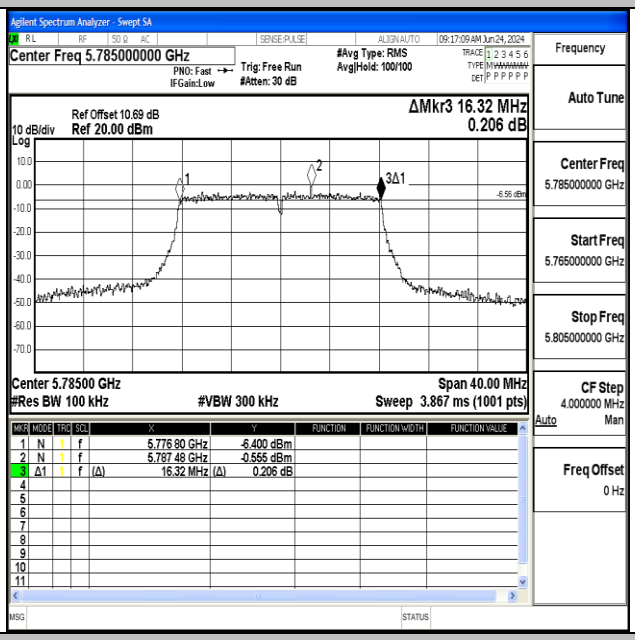
Test Result

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.320	5736.800	5753.120	0.5	PASS
11A	Ant1	5785	16.320	5776.800	5793.120	0.5	PASS
11A	Ant1	5825	16.320	5816.800	5833.120	0.5	PASS
11N20SISO	Ant1	5745	17.520	5736.200	5753.720	0.5	PASS
11N20SISO	Ant1	5785	17.600	5776.160	5793.760	0.5	PASS
11N20SISO	Ant1	5825	17.280	5816.480	5833.760	0.5	PASS
11AC20SISO	Ant1	5745	17.560	5736.160	5753.720	0.5	PASS
11AC20SISO	Ant1	5785	17.640	5776.160	5793.800	0.5	PASS
11AC20SISO	Ant1	5825	17.640	5816.160	5833.800	0.5	PASS

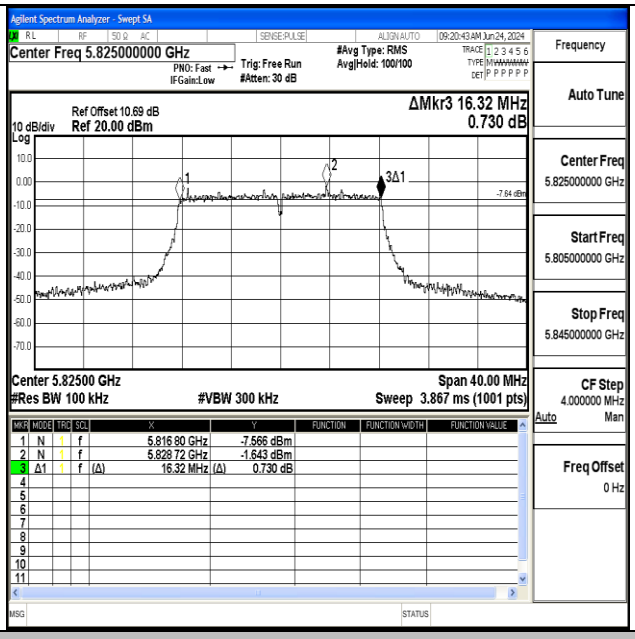
Test Graphs



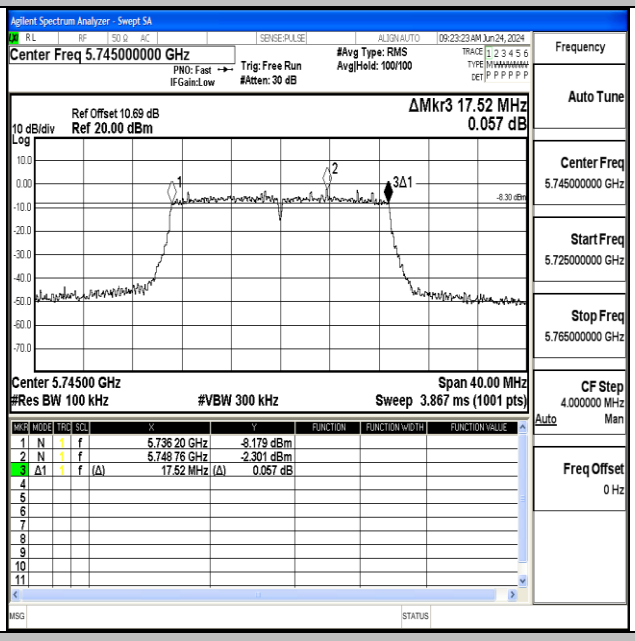
11A-Ant1-5745-PASS



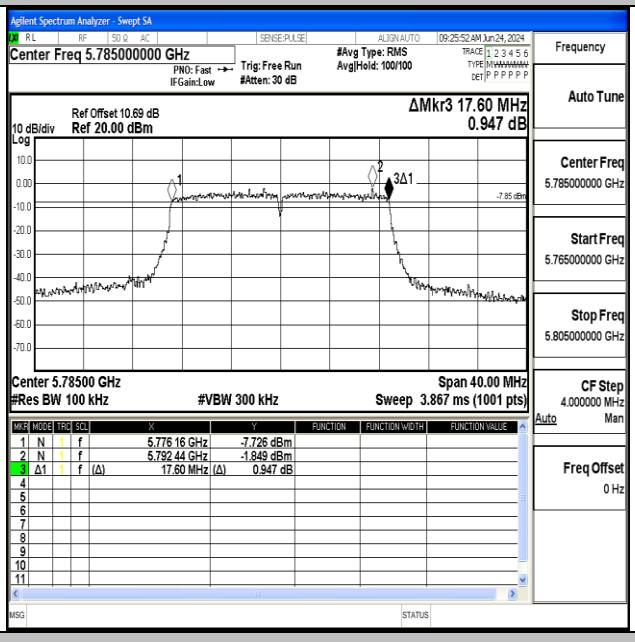
11A-Ant1-5785-PASS



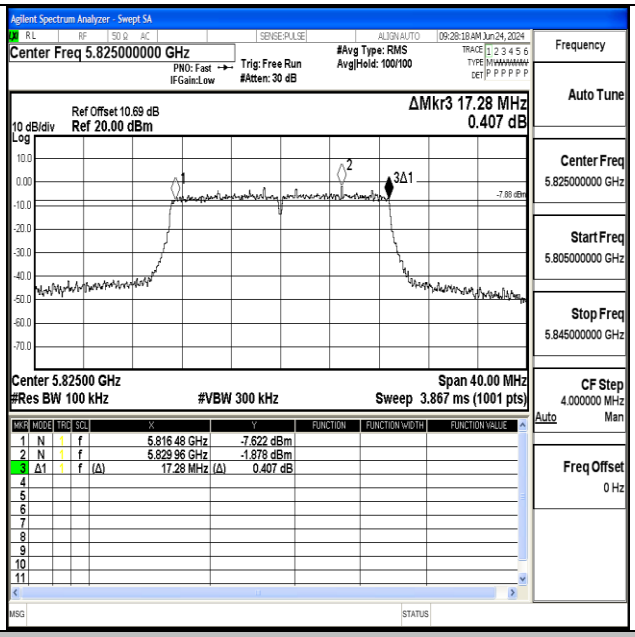
11A-Ant1-5825-PASS



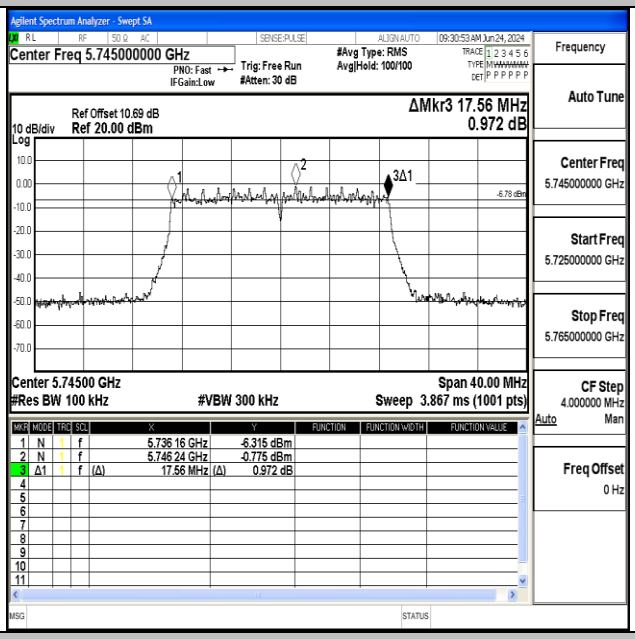
11N20SISO-Ant1-5745-PASS



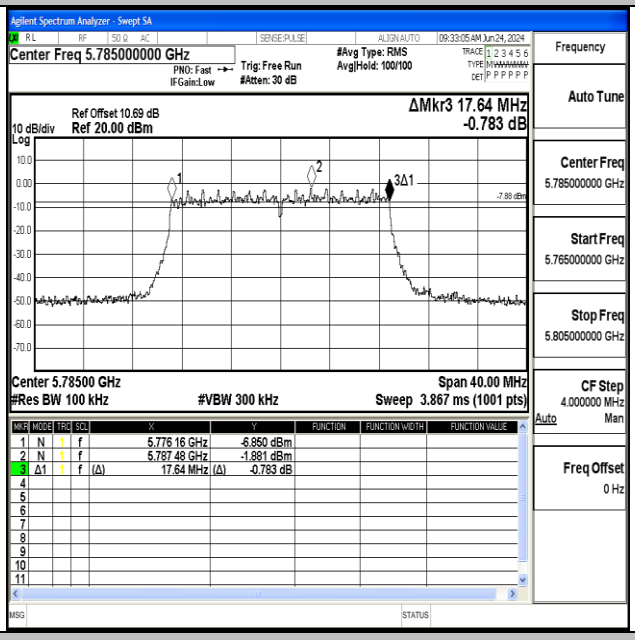
11N20SISO-Ant1-5785-PASS



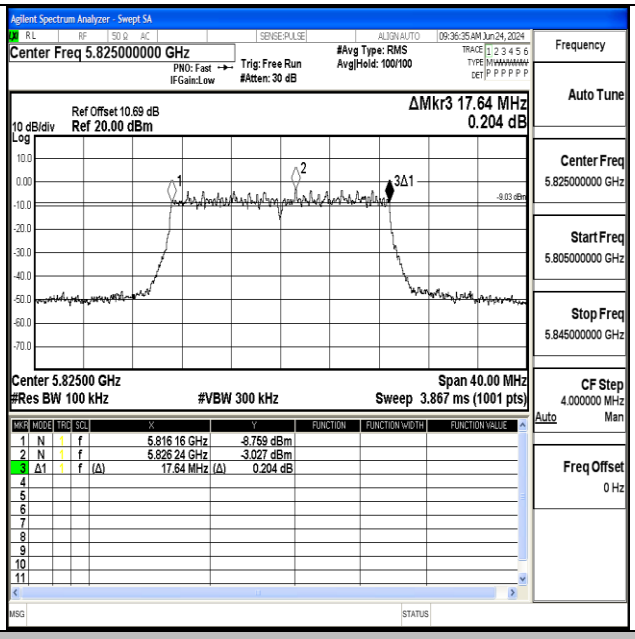
11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5785-PASS



11AC20SISO-Ant1-5825-PASS

Appendix B: Maximum conducted output power

Test Result

TestMode	Antenna	Frequency[MHz]	Conducted Power[dBm]	Conducted Limit[dBm]	Verdict
11A	Ant1	5745	12.57	≤30.00	PASS
11A	Ant1	5785	11.30	≤30.00	PASS
11A	Ant1	5825	10.14	≤30.00	PASS
11N20SISO	Ant1	5745	9.78	≤30.00	PASS
11N20SISO	Ant1	5785	11.14	≤30.00	PASS
11N20SISO	Ant1	5825	9.90	≤30.00	PASS
11AC20SISO	Ant1	5745	10.24	≤30.00	PASS
11AC20SISO	Ant1	5785	9.30	≤30.00	PASS
11AC20SISO	Ant1	5825	8.64	≤30.00	PASS

Note：The Duty Cycle Factor is compensated in the result.

Appendix C: Maximum power spectral density

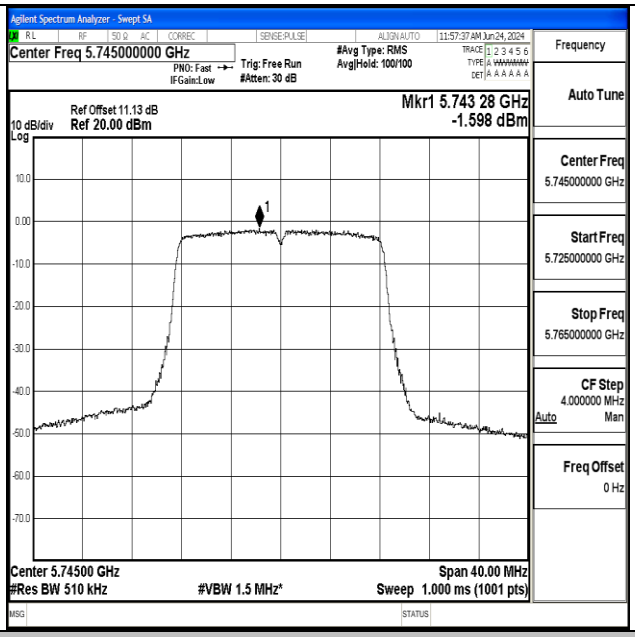
Test Result

TestMode	Antenna	Frequency[MHz]	Reading [dBm/MHz]	RBW Factor[dB]	Result[dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5745	-1.60	-0.086	-1.686	≤30.00	PASS
11A	Ant1	5785	-2.92	-0.086	-3.006	≤30.00	PASS
11A	Ant1	5825	-3.73	-0.086	-3.816	≤30.00	PASS
11N20SISO	Ant1	5745	-4.61	-0.086	-4.696	≤30.00	PASS
11N20SISO	Ant1	5785	-5.08	-0.086	-5.166	≤30.00	PASS
11N20SISO	Ant1	5825	-4.20	-0.086	-4.286	≤30.00	PASS
11AC20SISO	Ant1	5745	-2.58	-0.086	-2.666	≤30.00	PASS
11AC20SISO	Ant1	5785	-3.85	-0.086	-3.936	≤30.00	PASS
11AC20SISO	Ant1	5825	-4.41	-0.086	-4.496	≤30.00	PASS

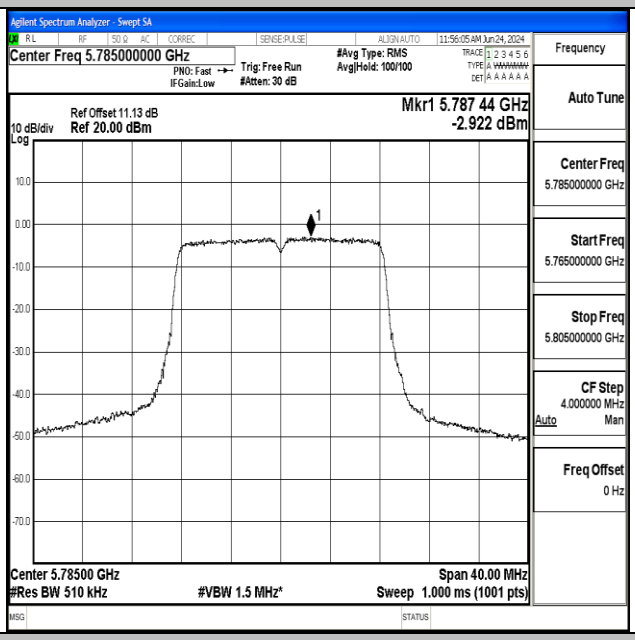
Note：1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2.The Duty Cycle Factor is compensated in the graph.

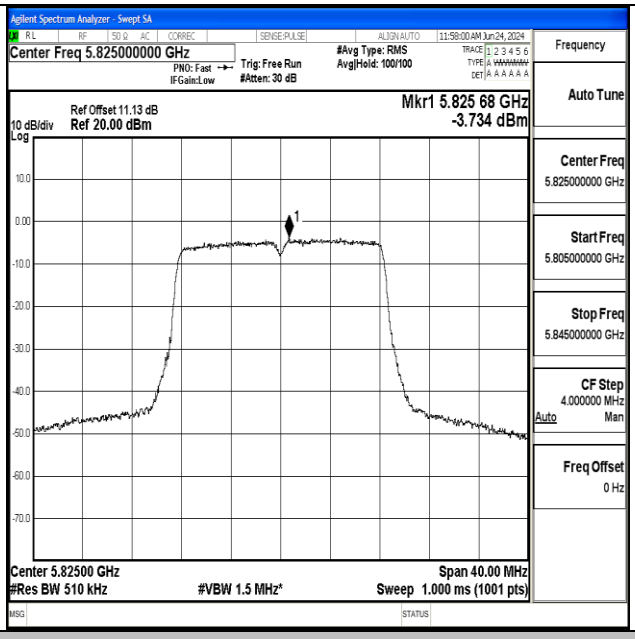
Test Graphs



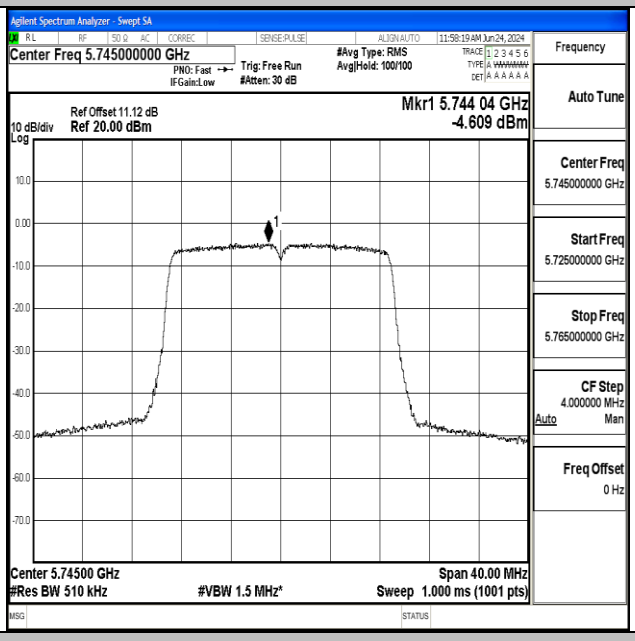
11A-Ant1-5745-PASS



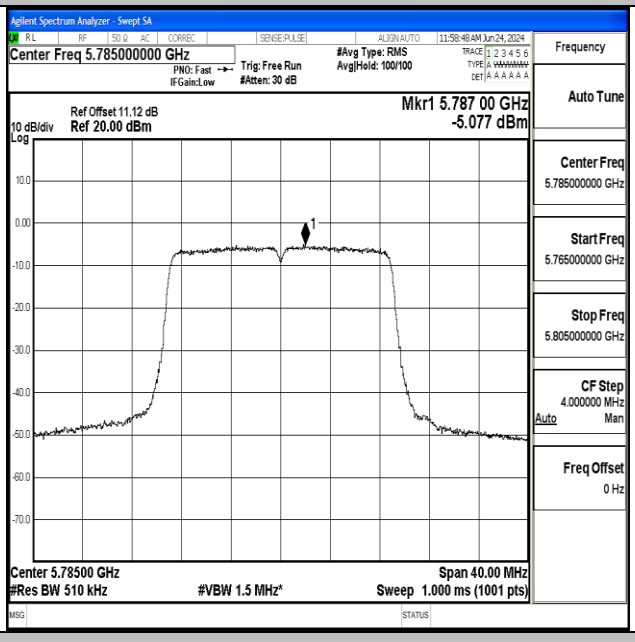
11A-Ant1-5785-PASS



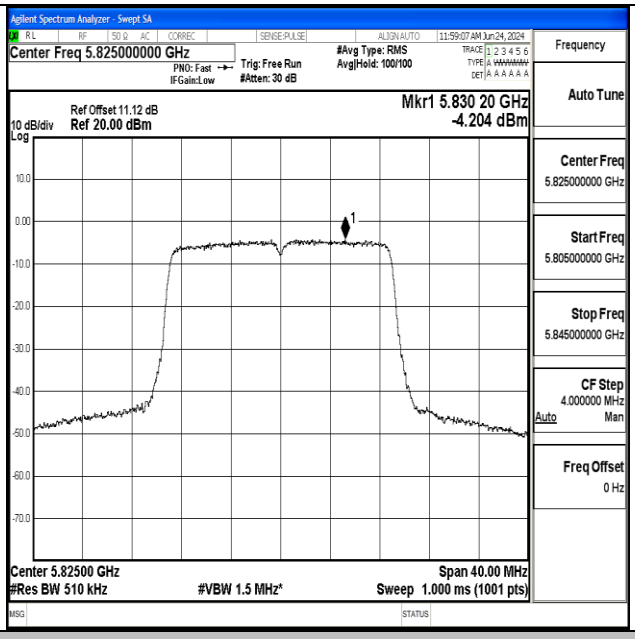
11A-Ant1-5825-PASS



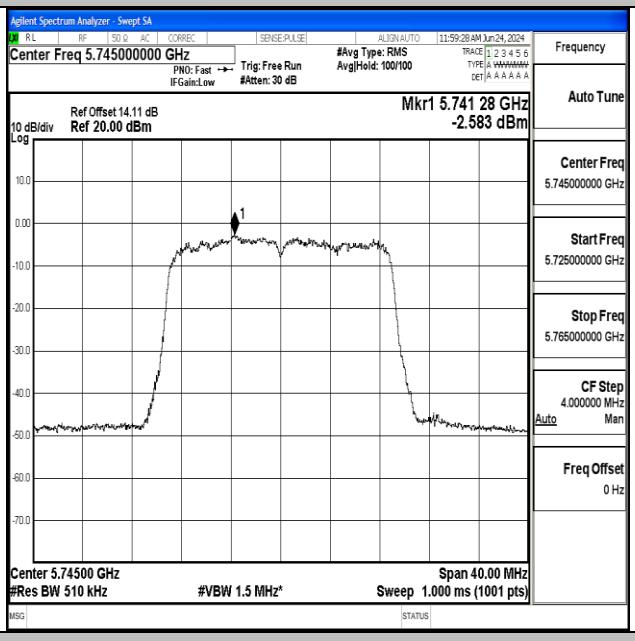
11N20SISO-Ant1-5745-PASS



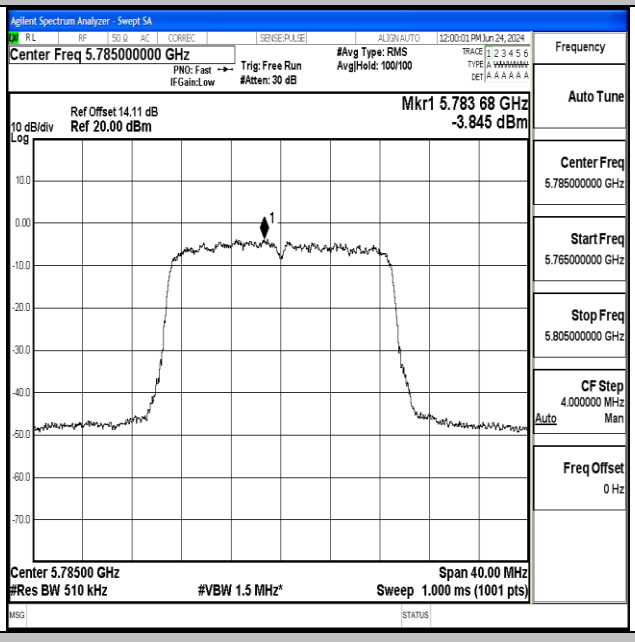
11N20SISO-Ant1-5785-PASS



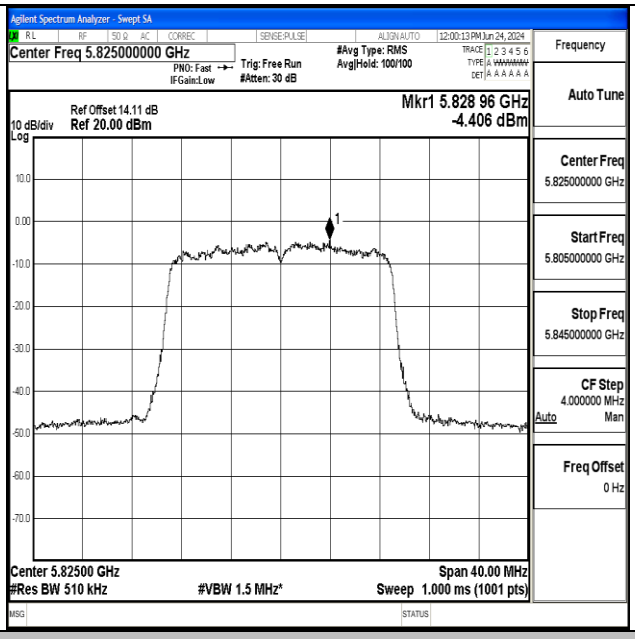
11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5785-PASS



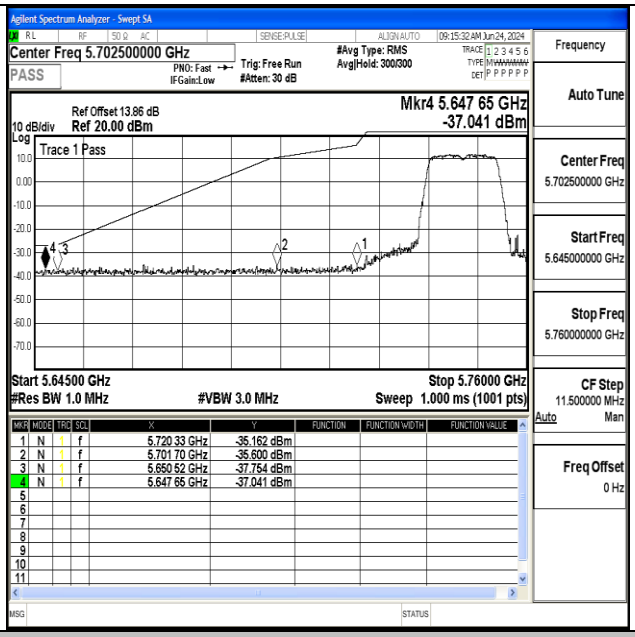
11AC20SISO-Ant1-5825-PASS

Appendix D: Band edge measurements

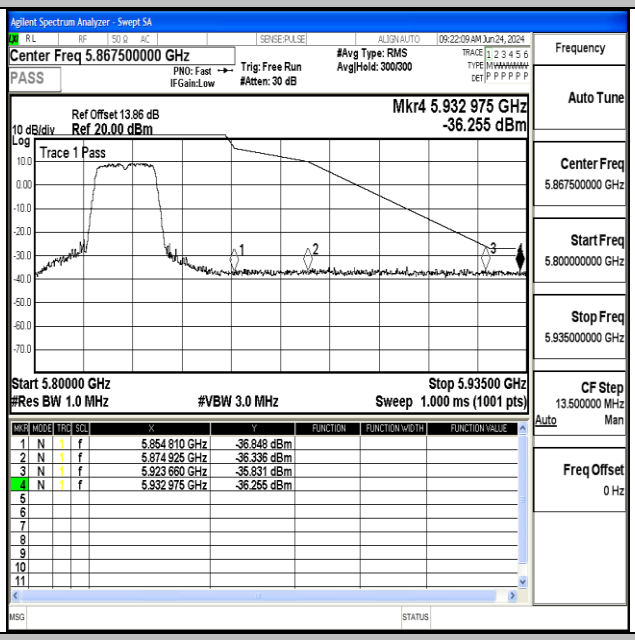
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5720~5725	-35.16	≤16.34	PASS
11A	Ant1	Low	5745	5700~5720	-35.6	≤10.47	PASS
11A	Ant1	Low	5745	5650~5700	-37.75	≤-26.62	PASS
11A	Ant1	Low	5745	5760~5650	-37.04	≤-27	PASS
11A	Ant1	High	5825	5850~5855	-36.85	≤16.03	PASS
11A	Ant1	High	5825	5855~5875	-36.34	≤10.02	PASS
11A	Ant1	High	5825	5875~5925	-35.83	≤-26.01	PASS
11A	Ant1	High	5825	5925~5935	-36.26	≤-27	PASS
11N20SISO	Ant1	Low	5745	5720~5725	-36.26	≤16.60	PASS
11N20SISO	Ant1	Low	5745	5700~5720	-36.35	≤10.41	PASS
11N20SISO	Ant1	Low	5745	5650~5700	-37.17	≤-26.70	PASS
11N20SISO	Ant1	Low	5745	5760~5650	-36.65	≤-27	PASS
11N20SISO	Ant1	High	5825	5850~5855	-36.32	≤16.03	PASS
11N20SISO	Ant1	High	5825	5855~5875	-35.55	≤10.63	PASS
11N20SISO	Ant1	High	5825	5875~5925	-34.58	≤-26.11	PASS
11N20SISO	Ant1	High	5825	5925~5935	-35.82	≤-27	PASS
11AC20SISO	Ant1	Low	5745	5720~5725	-36.75	≤15.82	PASS
11AC20SISO	Ant1	Low	5745	5700~5720	-36.45	≤10.02	PASS
11AC20SISO	Ant1	Low	5745	5650~5700	-36.23	≤-25.59	PASS
11AC20SISO	Ant1	Low	5745	5760~5650	-36.71	≤-27	PASS
11AC20SISO	Ant1	High	5825	5850~5855	-36.68	≤15.73	PASS
11AC20SISO	Ant1	High	5825	5855~5875	-34.79	≤10.66	PASS
11AC20SISO	Ant1	High	5825	5875~5925	-36.16	≤-26.81	PASS
11AC20SISO	Ant1	High	5825	5925~5935	-35.12	≤-27	PASS

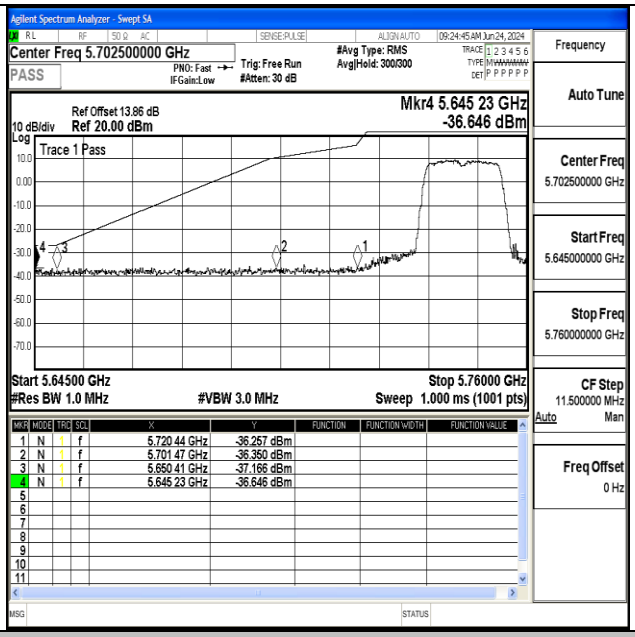
Test Graphs



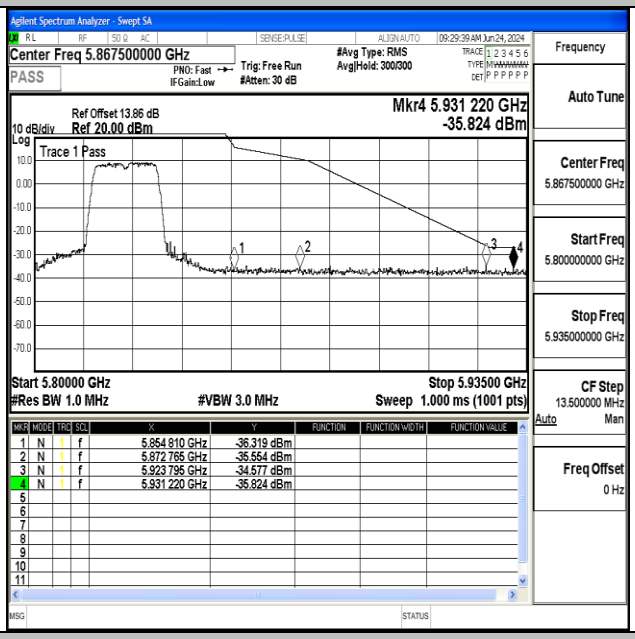
11A-Ant1-5745-PASS



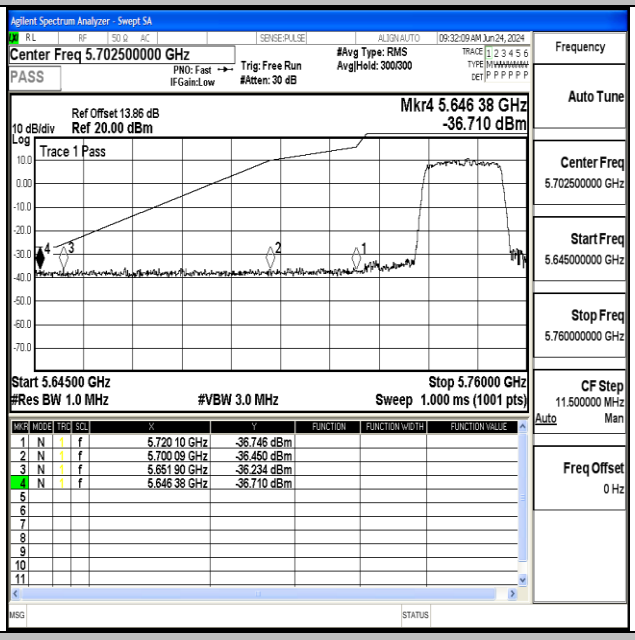
11A-Ant1-5825-PASS



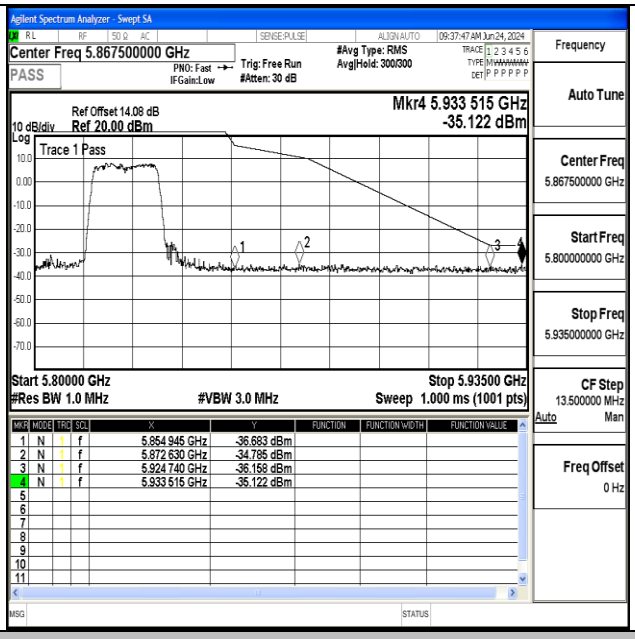
11N20SISO-Ant1-5745-PASS



11N20SISO-Ant1-5825-PASS



11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5825-PASS

Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Enviroment 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

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	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

Ant1

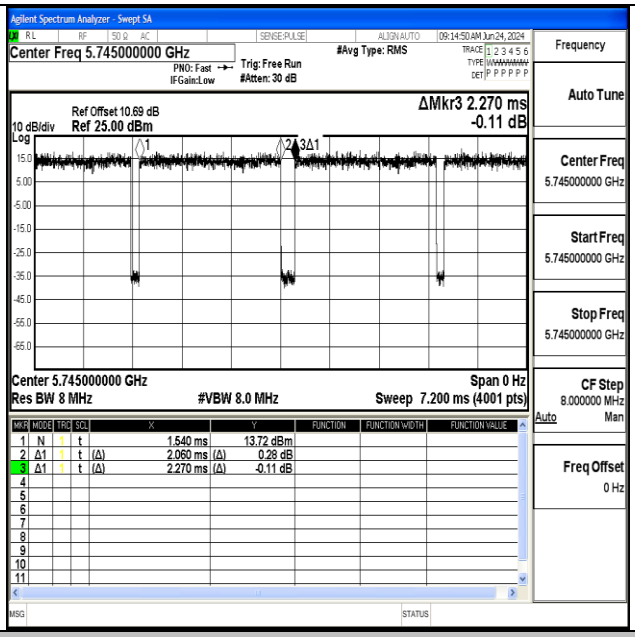
Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5825	20	132	5824.902968	5745 – 5825	PASS
5825	20	108	5824.910994	5745 – 5825	PASS
5825	50	120	5824.955446	5745 – 5825	PASS
5825	40	120	5824.950636	5745 – 5825	PASS
5825	30	120	5824.982370	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

Appendix F: Duty Cycle

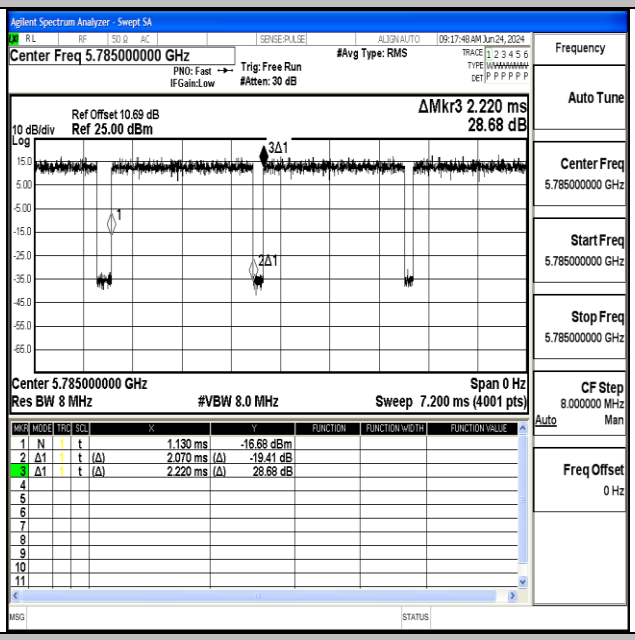
Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc Factor [%]	1/T
11A	Ant1	5745	2.06	2.27	90.75	0.42	0.49
11A	Ant1	5785	2.07	2.22	93.24	0.30	0.48
11A	Ant1	5825	2.06	2.28	90.35	0.44	0.49
11N20SISO	Ant1	5745	1.92	2.09	91.87	0.37	0.52
11N20SISO	Ant1	5785	1.92	2.07	92.75	0.33	0.52
11N20SISO	Ant1	5825	1.92	2.12	90.57	0.43	0.52
11AC20SISO	Ant1	5745	0.20	0.40	50.00	3.01	5.00
11AC20SISO	Ant1	5785	0.21	0.41	51.22	2.91	4.76
11AC20SISO	Ant1	5825	0.20	0.44	45.45	3.42	5.00

Test Graphs



NTNV-11A-Ant1-5745



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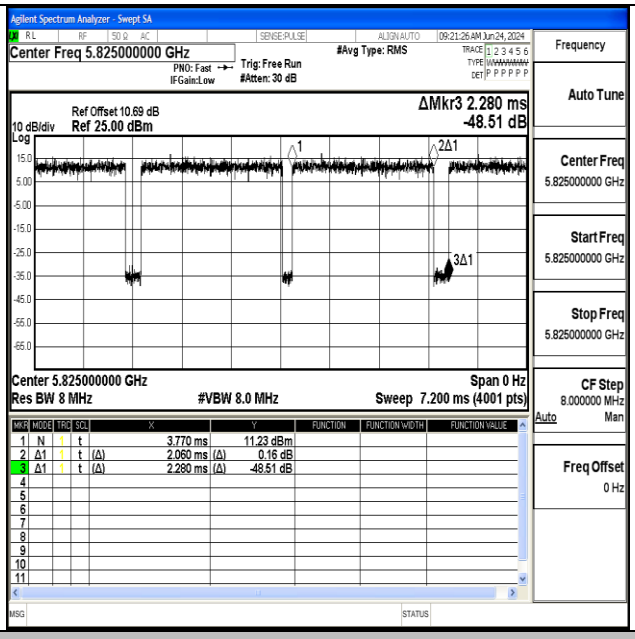

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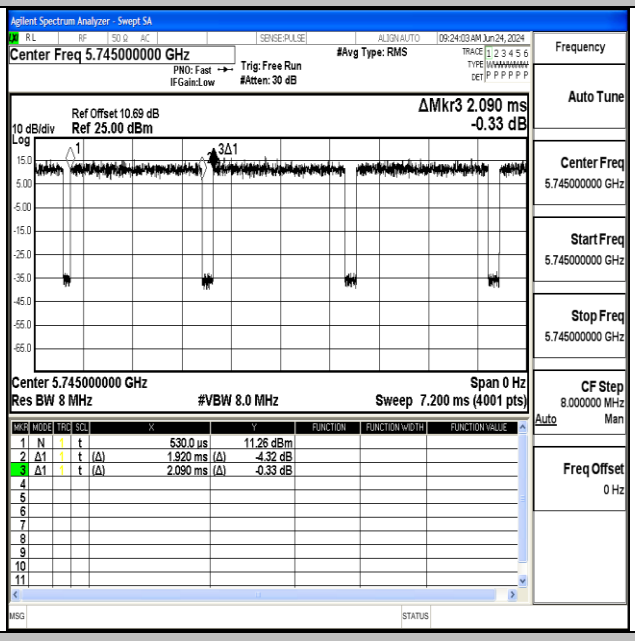

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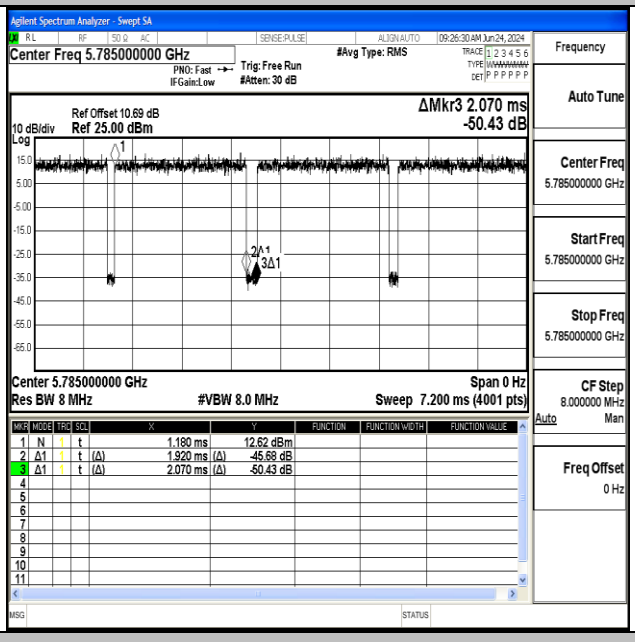

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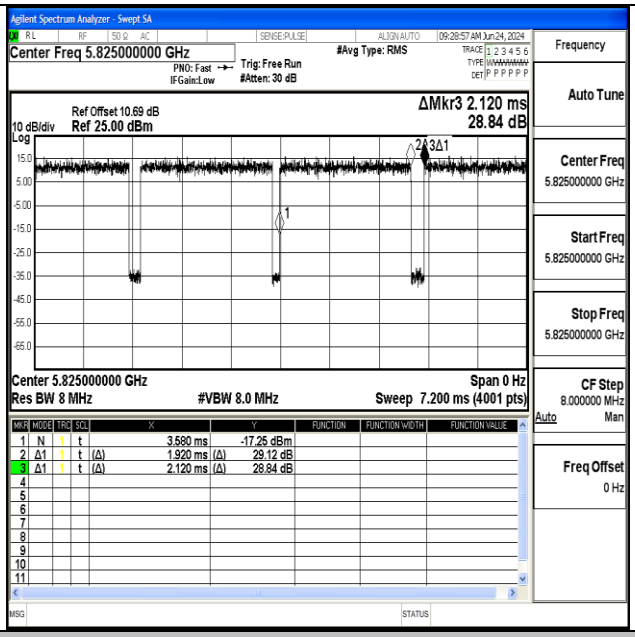

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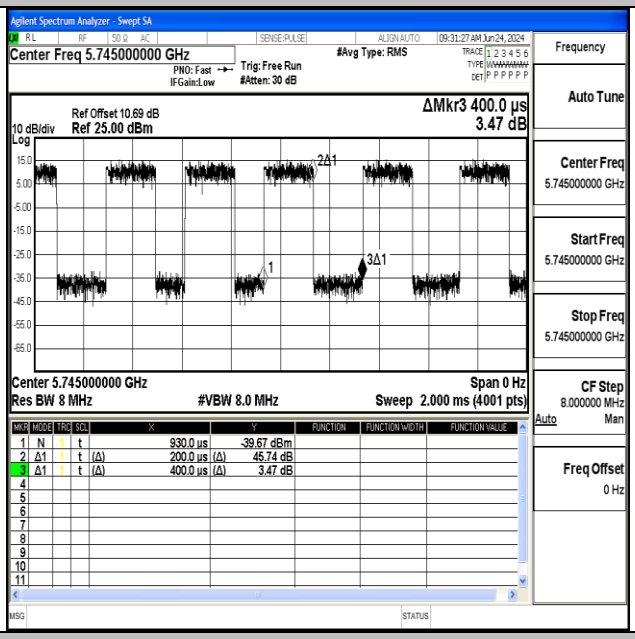

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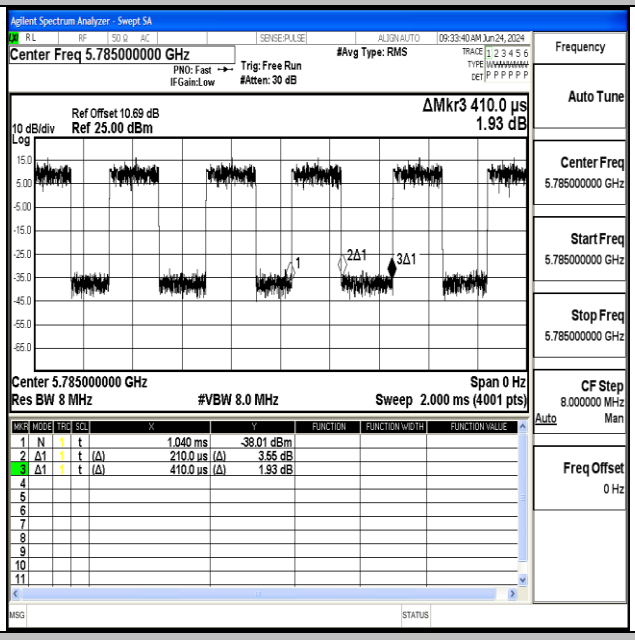

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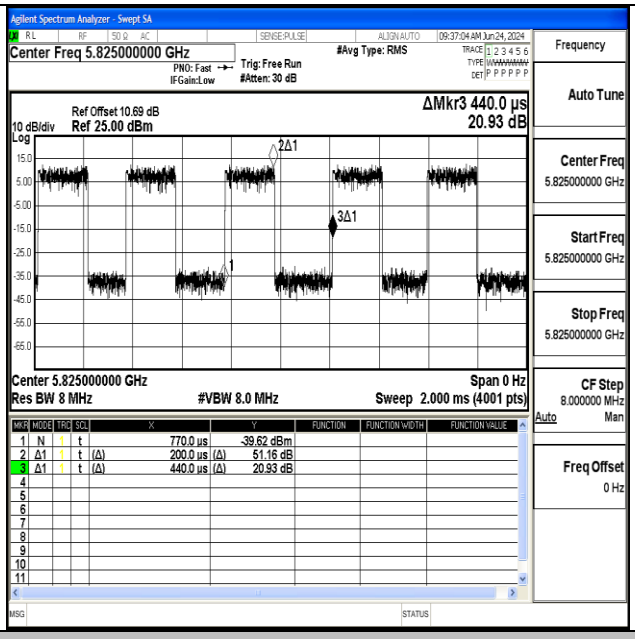

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