

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

Product Name: WIFI TOUCH SCREEN KARAOKE SYSTEM

Trade Mark: Singing Machine

Test Model: ISM9011

FCC ID: 2AAXO-ISM9011

Environmental Conditions

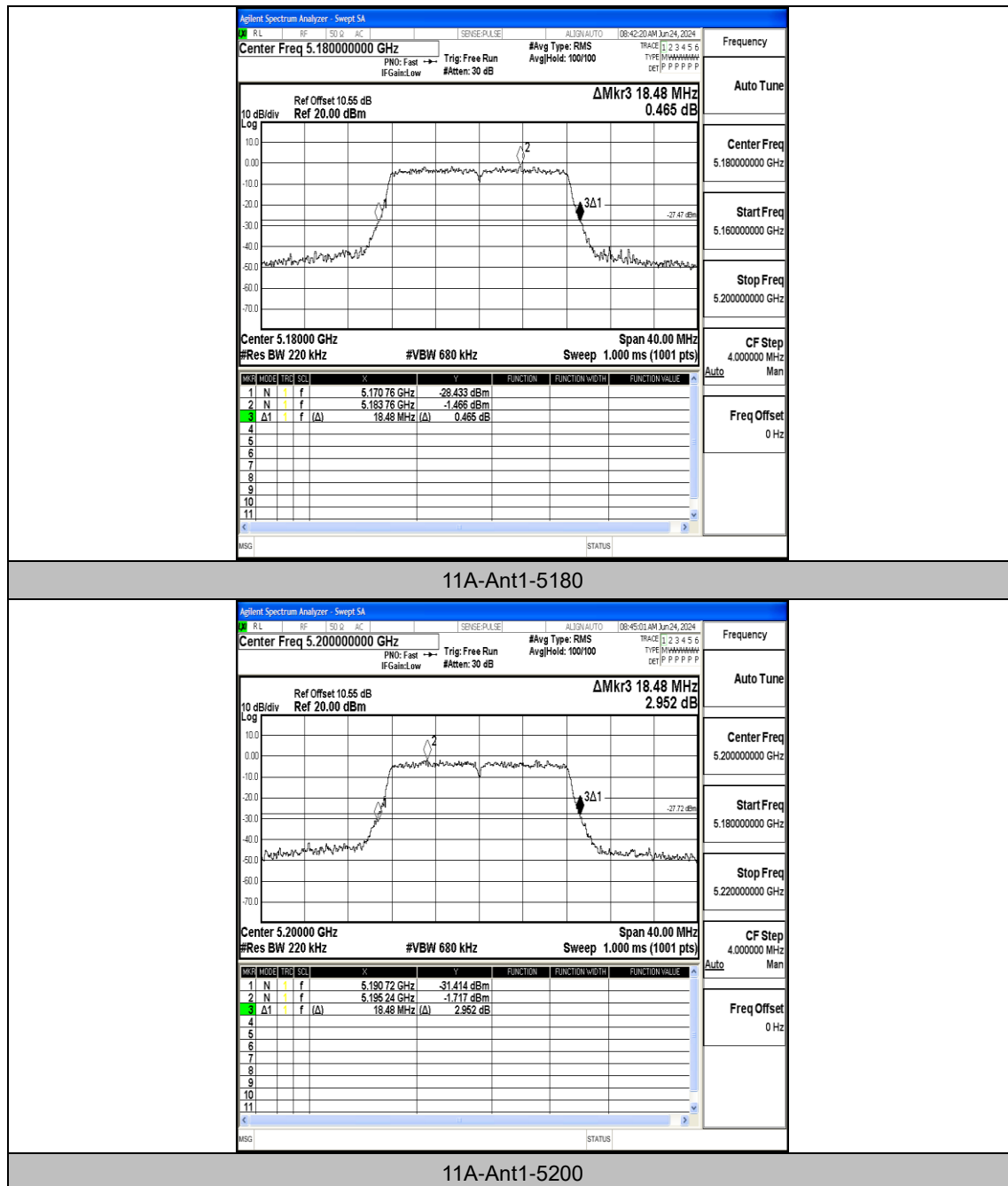
Temperature:	23.8℃
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A1: Emission Bandwidth

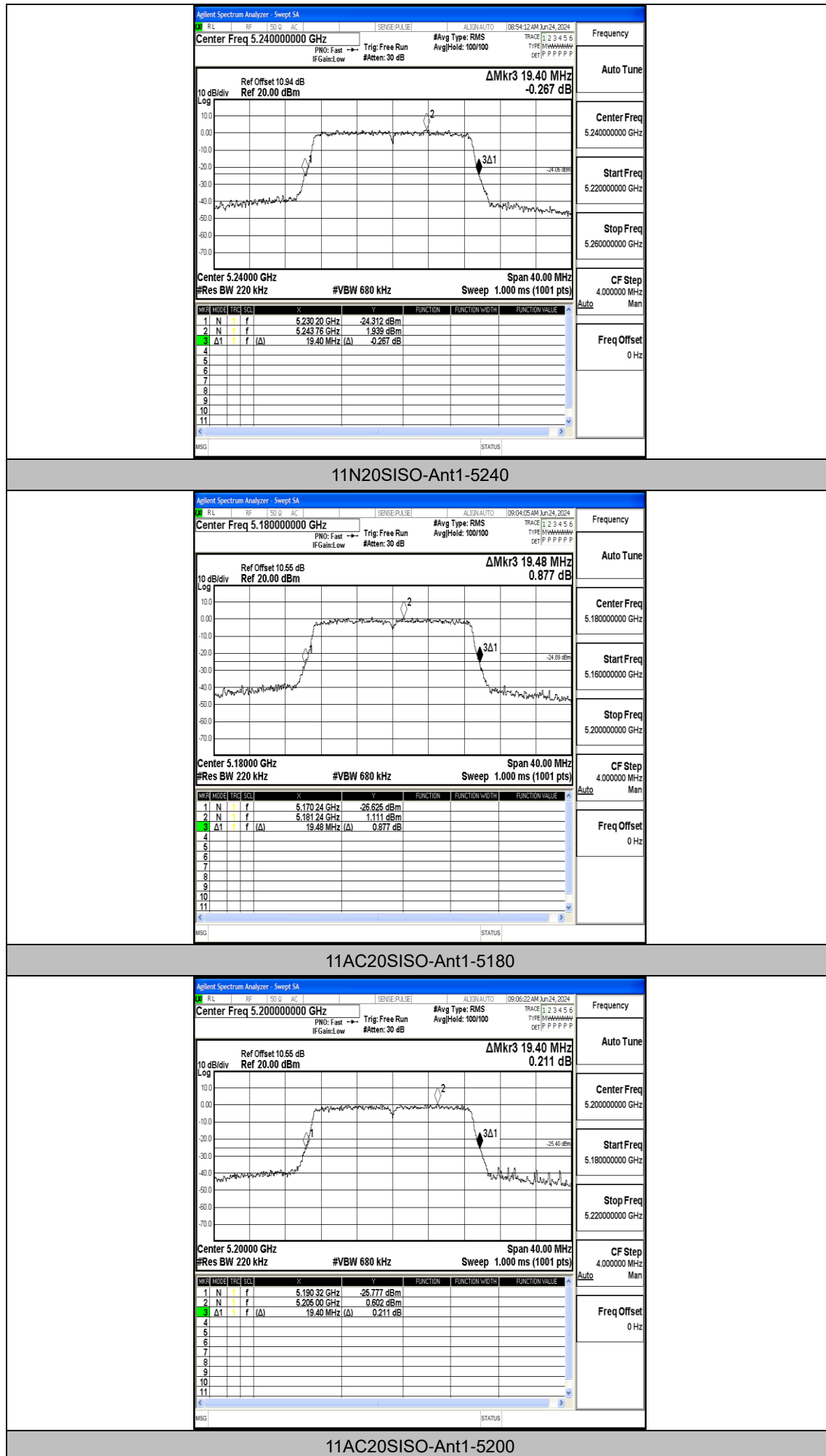
Test Result

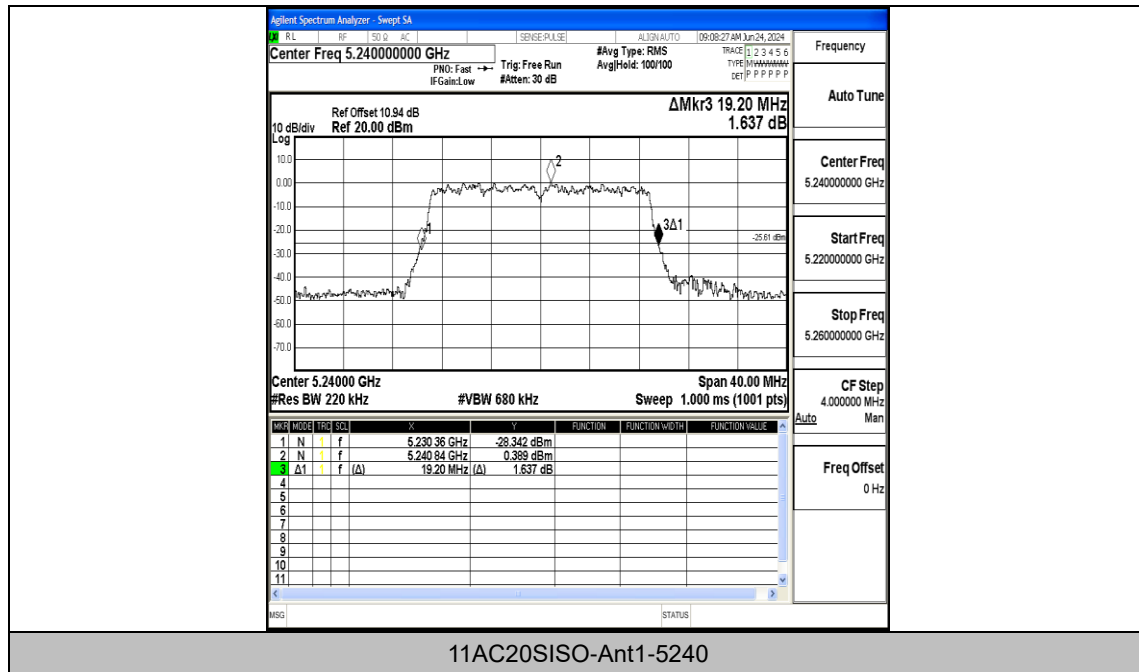
TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	18.480	5170.760	5189.240	---	---
11A	Ant1	5200	18.480	5190.720	5209.200	---	---
11A	Ant1	5240	18.440	5230.720	5249.160	---	---
11N20SISO	Ant1	5180	19.400	5170.320	5189.720	---	---
11N20SISO	Ant1	5200	19.480	5190.280	5209.760	---	---
11N20SISO	Ant1	5240	19.400	5230.200	5249.600	---	---
11AC20SISO	Ant1	5180	19.480	5170.240	5189.720	---	---
11AC20SISO	Ant1	5200	19.400	5190.320	5209.720	---	---
11AC20SISO	Ant1	5240	19.200	5230.360	5249.560	---	---

Test Graphs







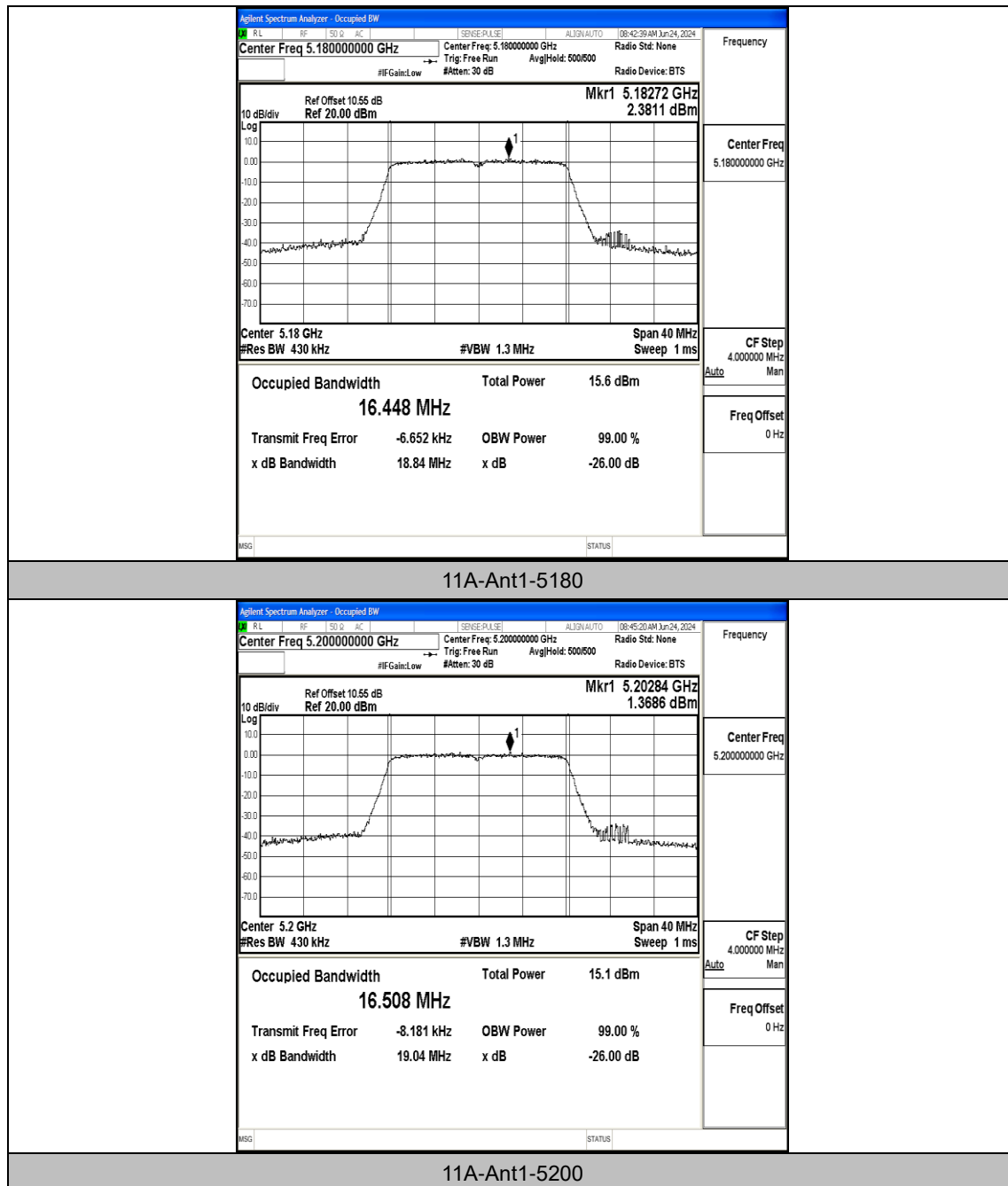


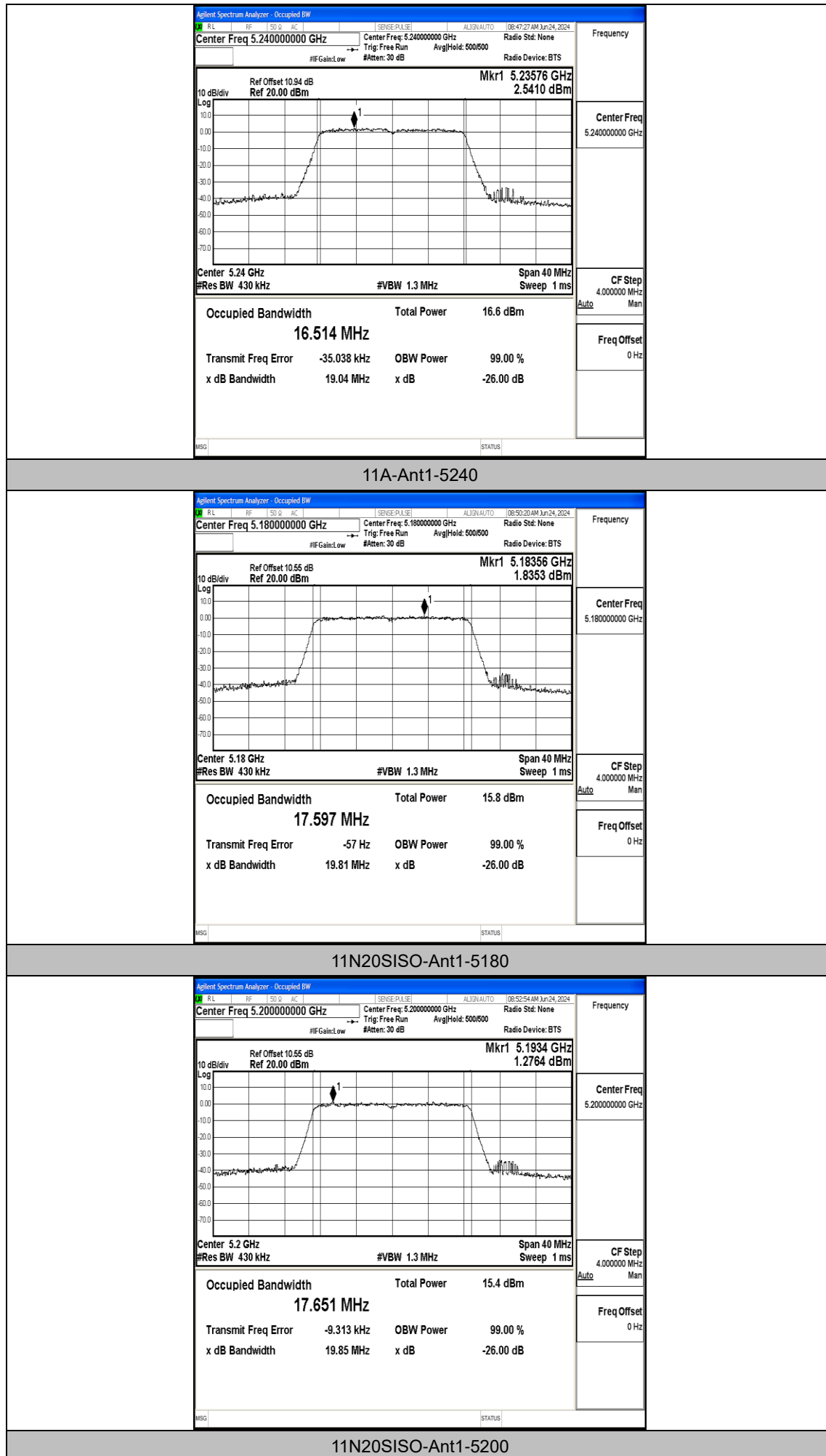
Appendix A2: Occupied channel bandwidth

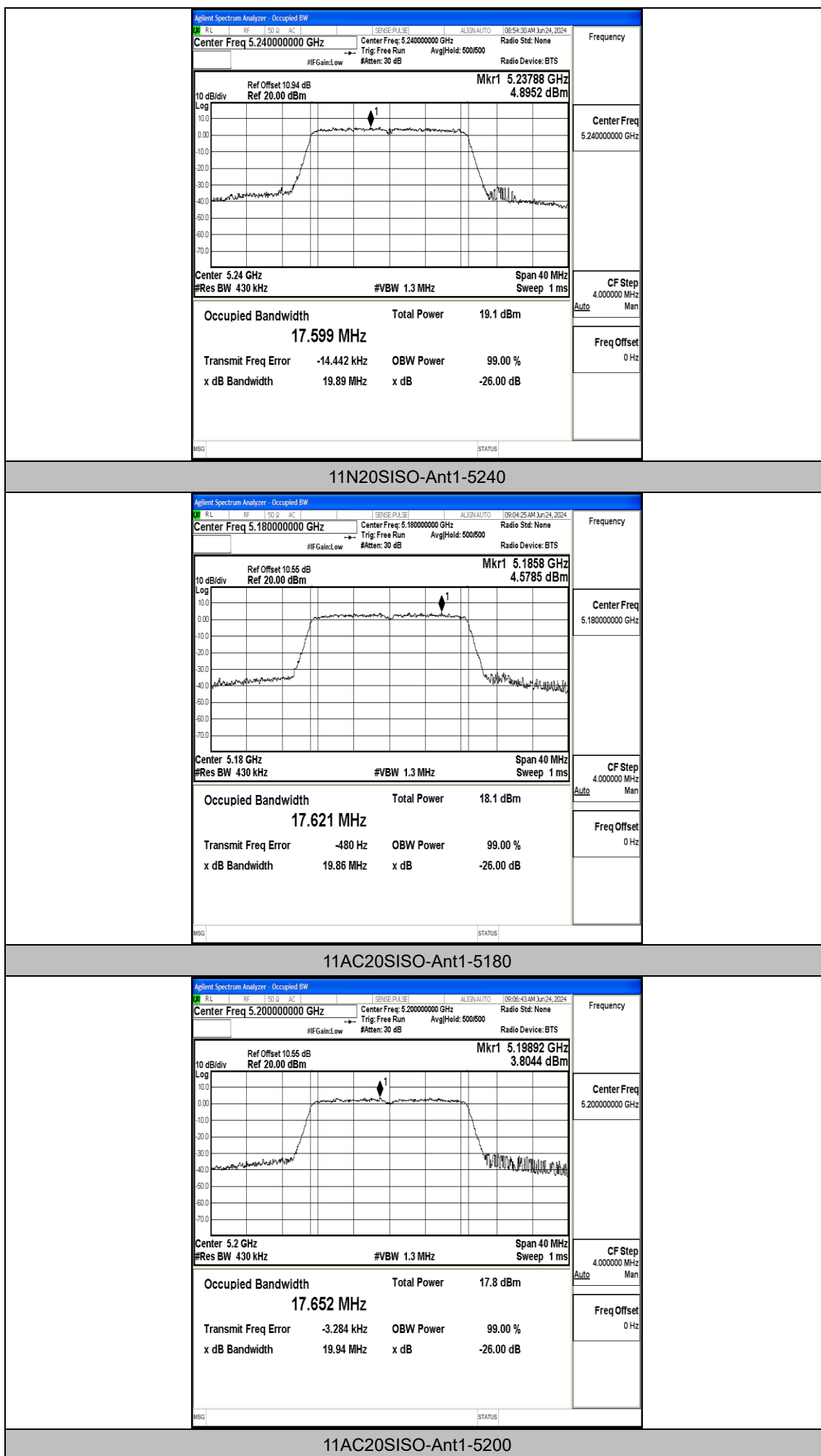
Test Result

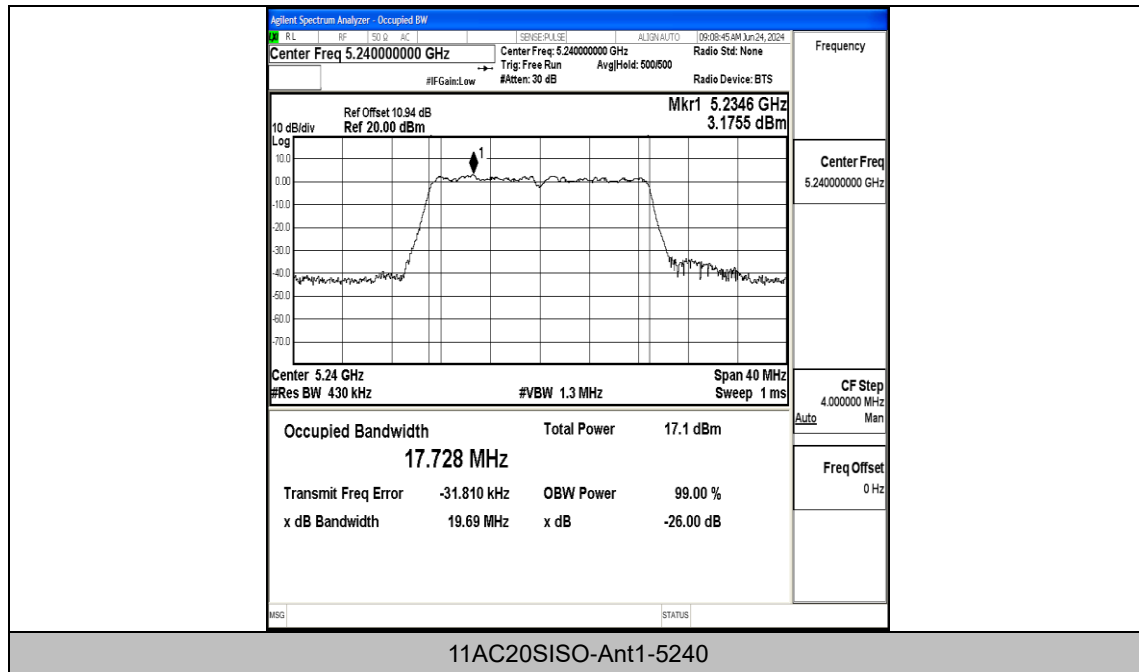
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.448	5171.7694	5188.2174	---	---
11A	Ant1	5200	16.508	5191.7378	5208.2458	---	---
11A	Ant1	5240	16.514	5231.7080	5248.2220	---	---
11N20SISO	Ant1	5180	17.597	5171.2014	5188.7984	---	---
11N20SISO	Ant1	5200	17.651	5191.1652	5208.8162	---	---
11N20SISO	Ant1	5240	17.599	5231.1861	5248.7851	---	---
11AC20SISO	Ant1	5180	17.621	5171.1890	5188.8100	---	---
11AC20SISO	Ant1	5200	17.652	5191.1707	5208.8227	---	---
11AC20SISO	Ant1	5240	17.728	5231.1042	5248.8322	---	---

Test Graphs









Appendix B: Maximum conducted output power

Test Result

TestMode	Antenna	Frequency[MHz]	Conducted Power[dBm]	Conducted Limit[dBm]	Verdict
11A	Ant1	5180	9.02	≤23.98	PASS
11A	Ant1	5200	8.84	≤23.98	PASS
11A	Ant1	5240	10.16	≤23.98	PASS
11N20SISO	Ant1	5180	8.99	≤23.98	PASS
11N20SISO	Ant1	5200	8.78	≤23.98	PASS
11N20SISO	Ant1	5240	12.51	≤23.98	PASS
11AC20SISO	Ant1	5180	11.57	≤23.98	PASS
11AC20SISO	Ant1	5200	11.07	≤23.98	PASS
11AC20SISO	Ant1	5240	11.18	≤23.98	PASS

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

Appendix C: Maximum power spectral density

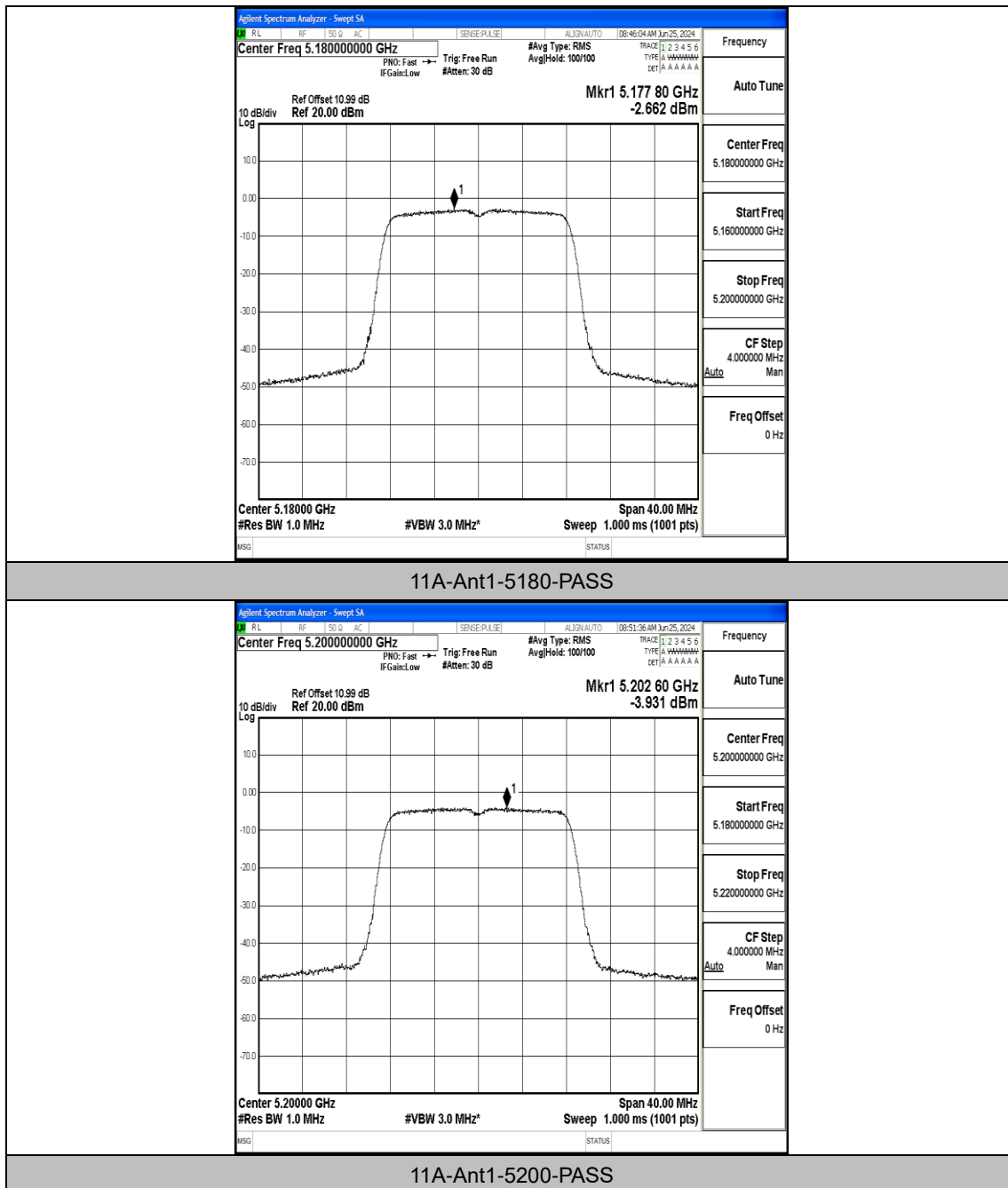
Test Result

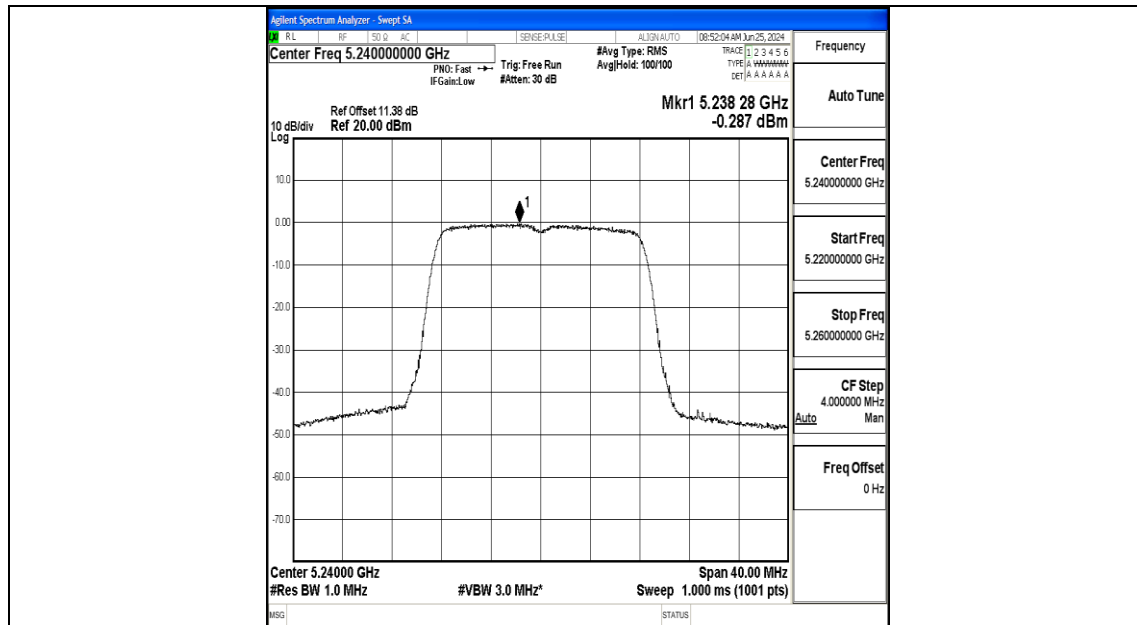
TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-2.66	≤11.00	PASS
11A	Ant1	5200	-3.93	≤11.00	PASS
11A	Ant1	5240	-0.29	≤11.00	PASS
11N20SISO	Ant1	5180	-1.69	≤11.00	PASS
11N20SISO	Ant1	5200	-2.42	≤11.00	PASS
11N20SISO	Ant1	5240	1.73	≤11.00	PASS
11AC20SISO	Ant1	5180	1.26	≤11.00	PASS
11AC20SISO	Ant1	5200	0.71	≤11.00	PASS
11AC20SISO	Ant1	5240	-2.16	≤11.00	PASS

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

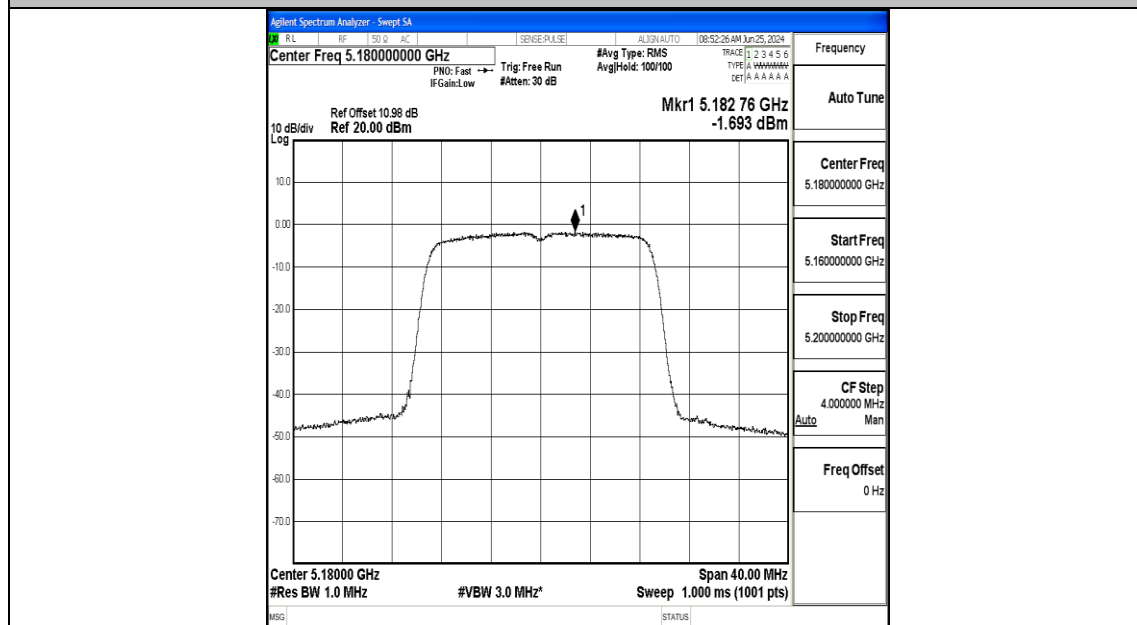
2.The Duty Cycle Factor is compensated in the result.

Test Graphs

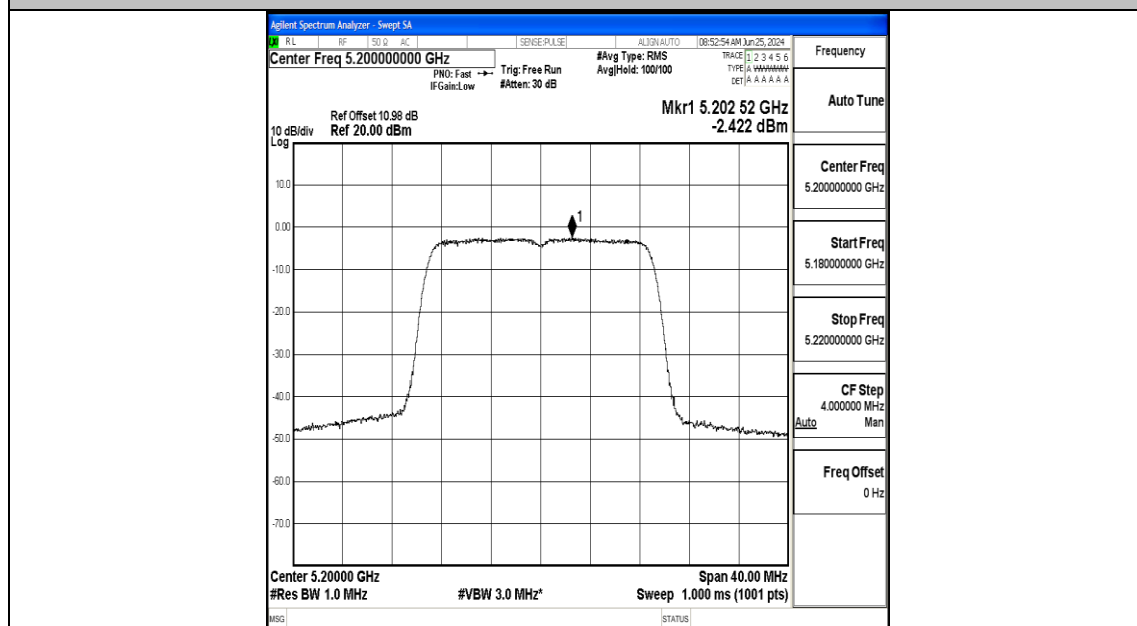




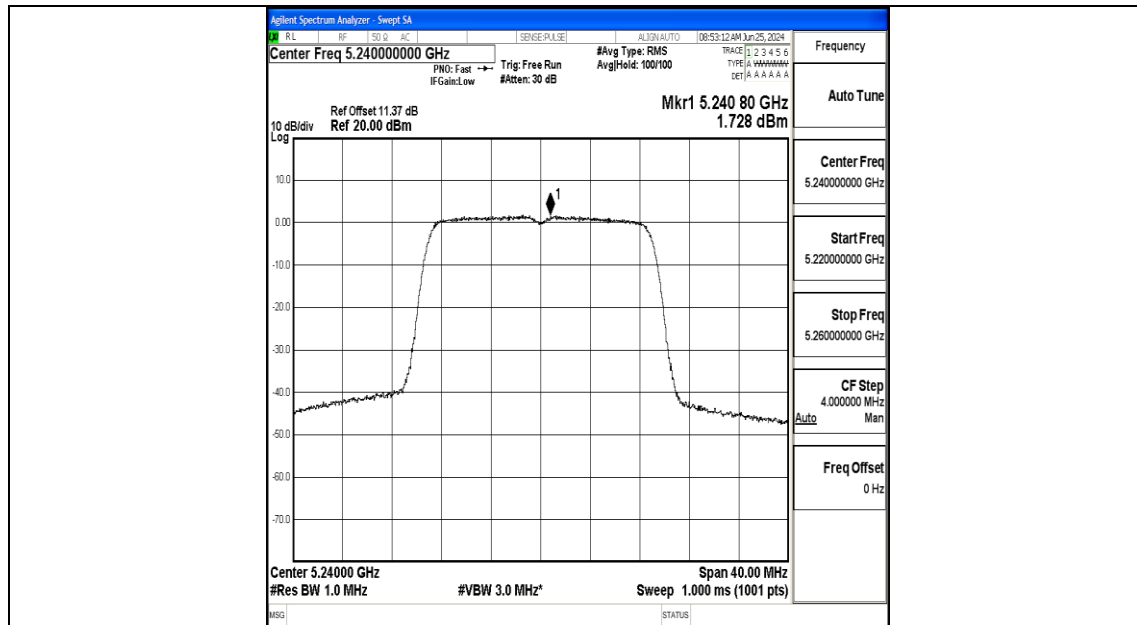
11A-Ant1-5240-PASS



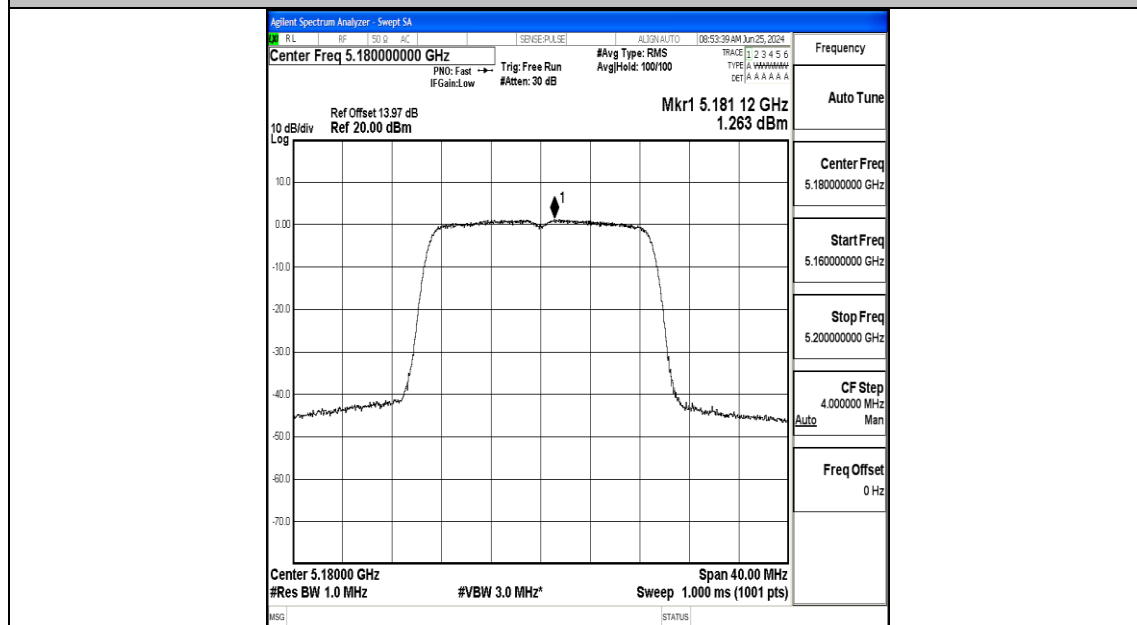
11N20SISO-Ant1-5180-PASS



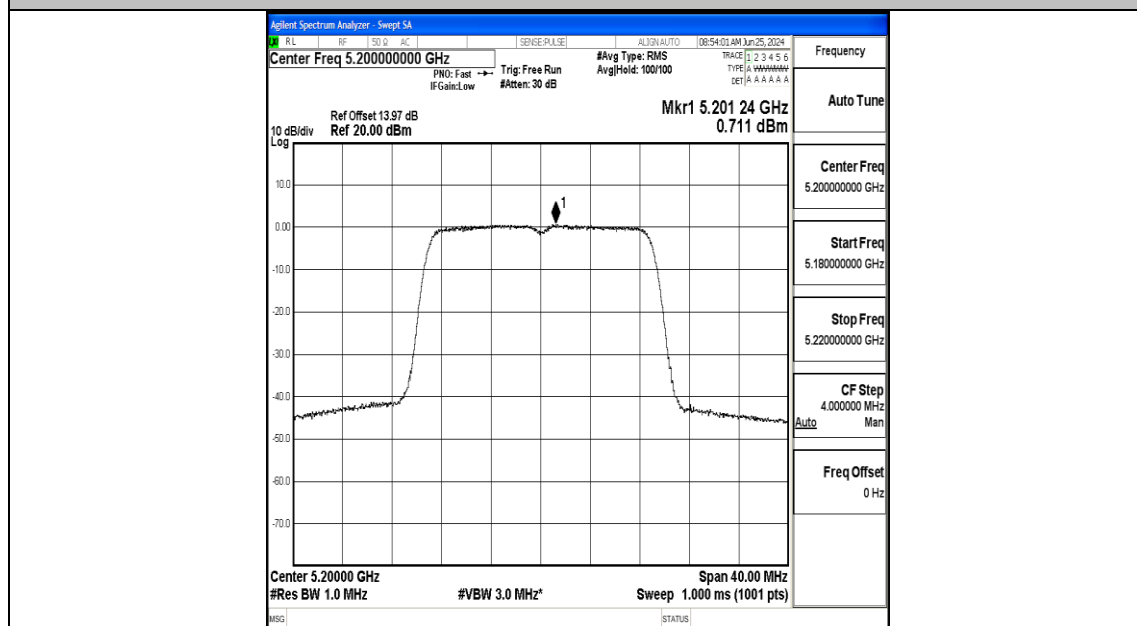
11N20SISO-Ant1-5200-PASS



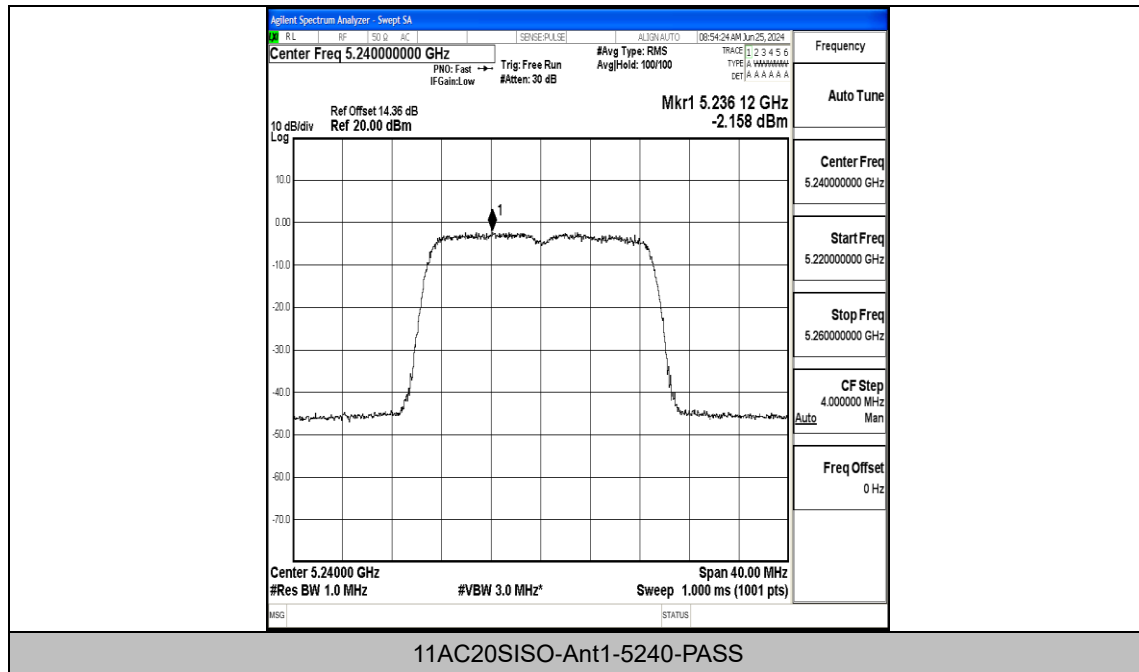
11N20SISO-Ant1-5240-PASS



11AC20SISO-Ant1-5180-PASS



11AC20SISO-Ant1-5200-PASS

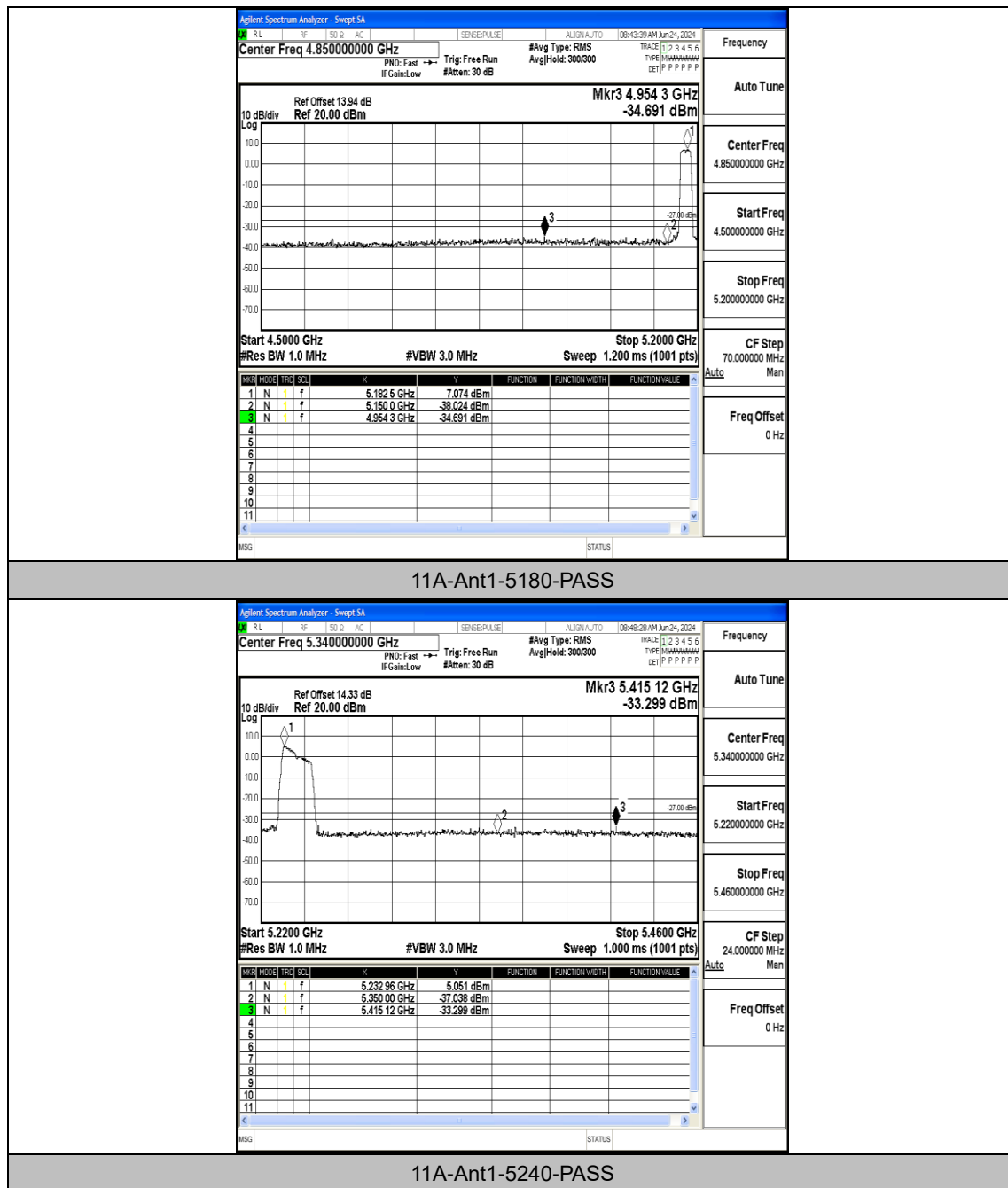


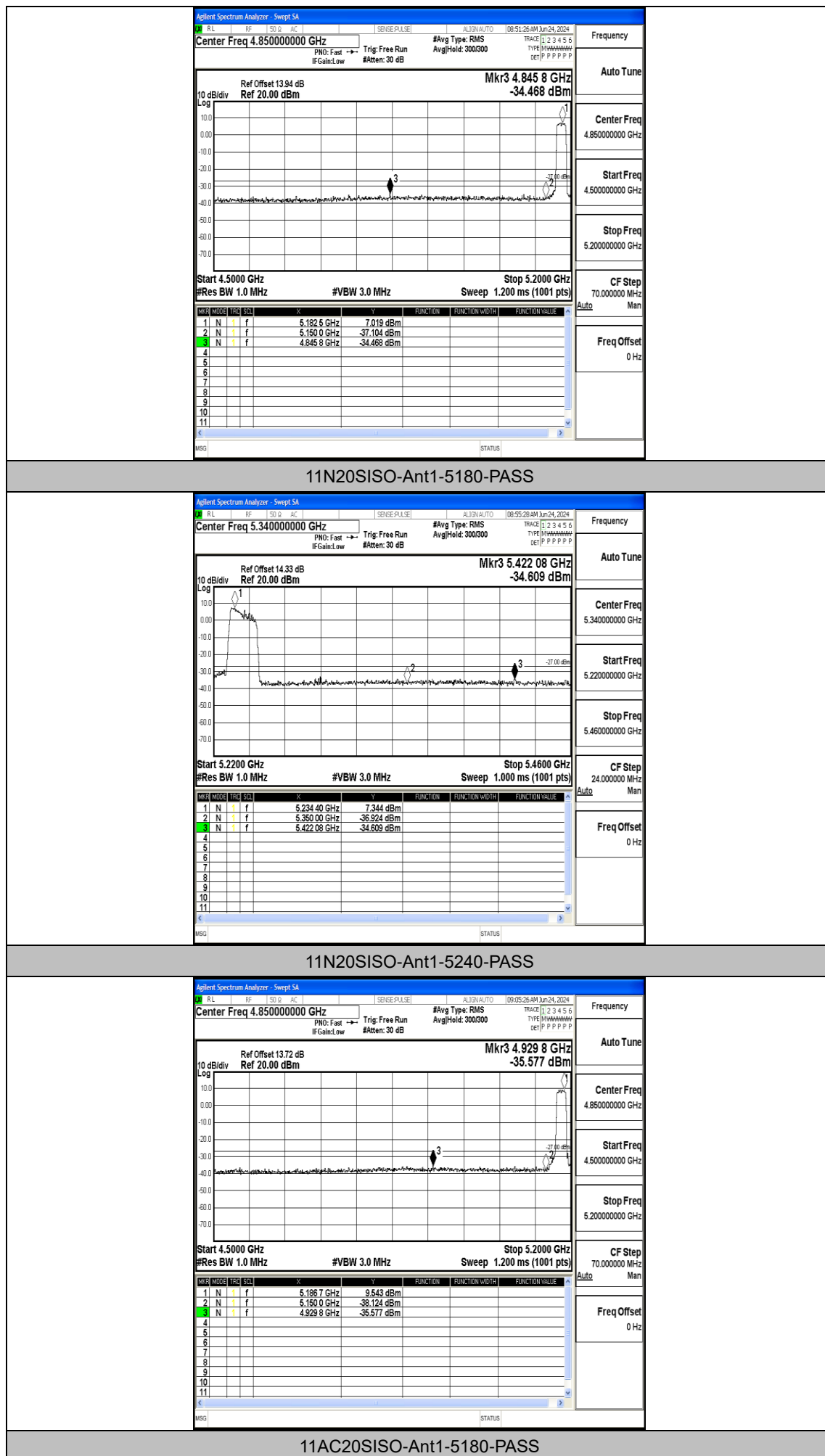
Appendix D: Band edge measurements

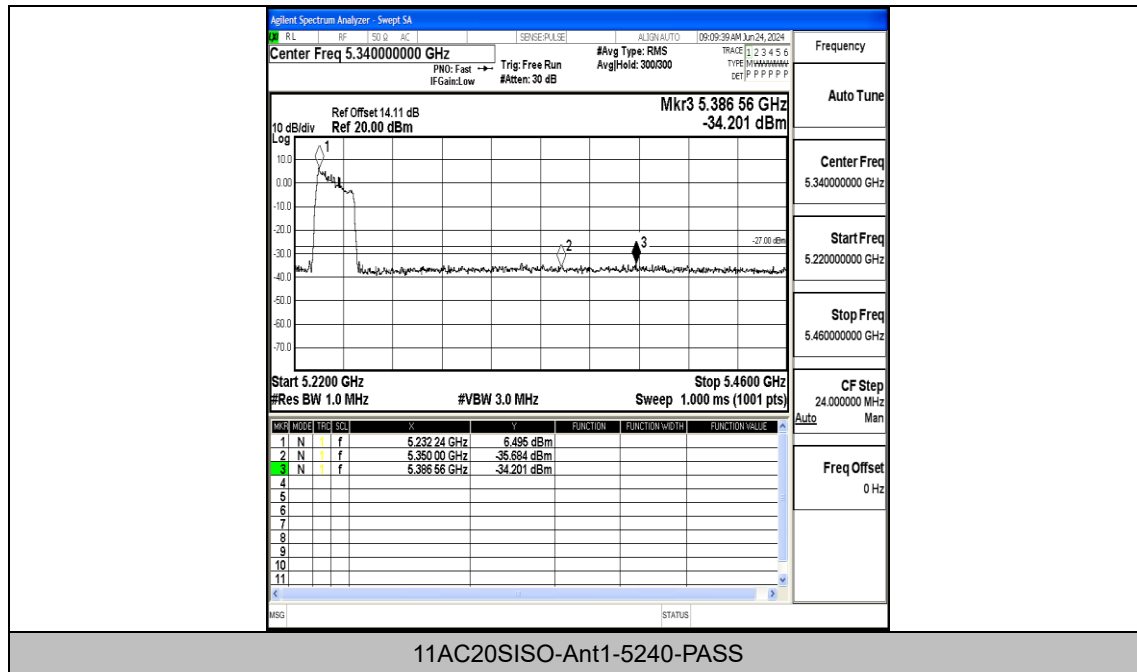
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-34.69	≤-27	PASS
11A	Ant1	High	5240	-33.3	≤-27	PASS
11N20SISO	Ant1	Low	5180	-34.47	≤-27	PASS
11N20SISO	Ant1	High	5240	-34.61	≤-27	PASS
11AC20SISO	Ant1	Low	5180	-35.58	≤-27	PASS
11AC20SISO	Ant1	High	5240	-34.2	≤-27	PASS

Test Graphs







Appendix E: Frequency Stability

Test Result

Ant1

Frequency (MHz)	Environment Temperature (Degree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5180	20	132	5180.005129	5150 – 5250	PASS
5180	20	108	5179.969335	5150 – 5250	PASS
5180	50	120	5180.034933	5150 – 5250	PASS
5180	40	120	5179.961207	5150 – 5250	PASS
5180	30	120	5179.944016	5150 – 5250	PASS
5180	20	120	5179.953366	5150 – 5250	PASS
5180	10	120	5179.926704	5150 – 5250	PASS
5180	0	120	5179.968161	5150 – 5250	PASS
5180	-10	120	5180.093015	5150 – 5250	PASS
5180	-20	120	5179.977630	5150 – 5250	PASS
5180	-30	120	5179.939434	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5200	20	132	5199.946412	5150 – 5250	PASS
5200	20	108	5200.094176	5150 – 5250	PASS
5200	50	120	5200.039637	5150 – 5250	PASS
5200	40	120	5199.934464	5150 – 5250	PASS
5200	30	120	5200.037124	5150 – 5250	PASS
5200	20	120	5200.046432	5150 – 5250	PASS
5200	10	120	5199.944760	5150 – 5250	PASS
5200	0	120	5199.947695	5150 – 5250	PASS
5200	-10	120	5199.921535	5150 – 5250	PASS
5200	-20	120	5200.068697	5150 – 5250	PASS
5200	-30	120	5200.019136	5150 – 5250	PASS

Ant1

Frequency (MHz)	Enviroment Temperature (Dregree)	Voltage (VAC)	Measured Frequency (MHz)	Limit Range (MHz)	Test Results
5240	20	132	5240.022422	5150 – 5250	PASS
5240	20	108	5239.979973	5150 – 5250	PASS
5240	50	120	5239.911140	5150 – 5250	PASS
5240	40	120	5240.011221	5150 – 5250	PASS
5240	30	120	5240.076001	5150 – 5250	PASS
5240	20	120	5240.097196	5150 – 5250	PASS
5240	10	120	5239.964981	5150 – 5250	PASS
5240	0	120	5239.934266	5150 – 5250	PASS
5240	-10	120	5239.964559	5150 – 5250	PASS
5240	-20	120	5240.005501	5150 – 5250	PASS
5240	-30	120	5239.949387	5150 – 5250	PASS

Appendix F: Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Dc Factor [%]	1/T [kHz]
11A	Ant1	5180	2.07	2.23	92.83	0.32	0.48
11A	Ant1	5200	2.07	2.28	90.79	0.42	0.48
11A	Ant1	5240	2.06	2.28	90.35	0.44	0.49
11N20SISO	Ant1	5180	1.92	2.04	94.12	0.26	0.52
11N20SISO	Ant1	5200	1.92	2.07	92.75	0.33	0.52
11N20SISO	Ant1	5240	1.92	2.15	89.30	0.49	0.52
11AC20SISO	Ant1	5180	1.93	2.17	88.94	0.51	0.52
11AC20SISO	Ant1	5200	1.94	2.12	91.51	0.39	0.52
11AC20SISO	Ant1	5240	0.20	0.45	44.44	3.52	5.00

Test Graphs

