



Appendix D

RF Test Data for 5.2G WIFI (Conducted Measurement)

Product Name: Smart TV Box

Test Model: T95MAX

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu Taylor Hu
Supervised by:	Li Huan Li Huan





D.1 Emission Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant	5180	19.840	5170.120	5189.960	---	---
		5220	19.920	5210.080	5230.000	---	---
		5240	19.880	5230.000	5249.880	---	---
11N20SISO	Ant	5180	20.240	5169.920	5190.160	---	---
		5220	20.320	5209.880	5230.200	---	---
		5240	22.360	5227.880	5250.240	---	---
11N40SISO	Ant	5190	40.640	5169.760	5210.400	---	---
		5230	40.400	5209.840	5250.240	---	---
11AC20SISO	Ant	5180	20.360	5169.760	5190.120	---	---
		5220	20.160	5209.880	5230.040	---	---
		5240	20.280	5229.800	5250.080	---	---
11AC40SISO	Ant	5190	40.800	5169.600	5210.400	---	---
		5230	40.800	5209.680	5250.480	---	---
11AC80SISO	Ant	5210	80.800	5169.840	5250.640	---	---

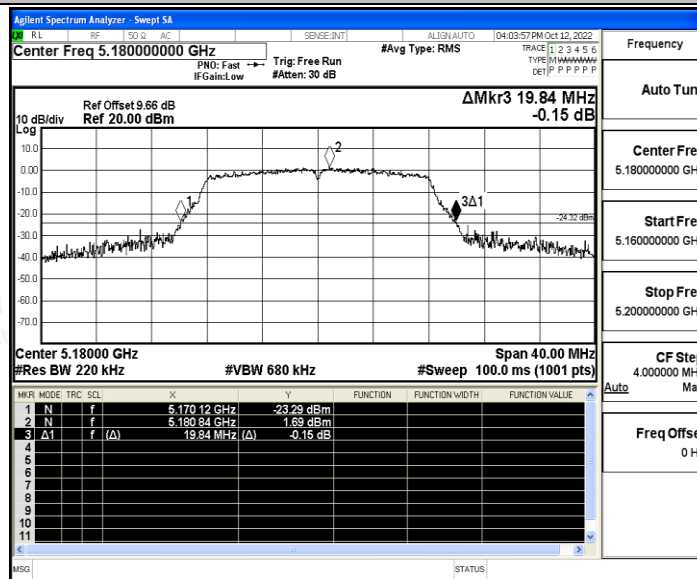


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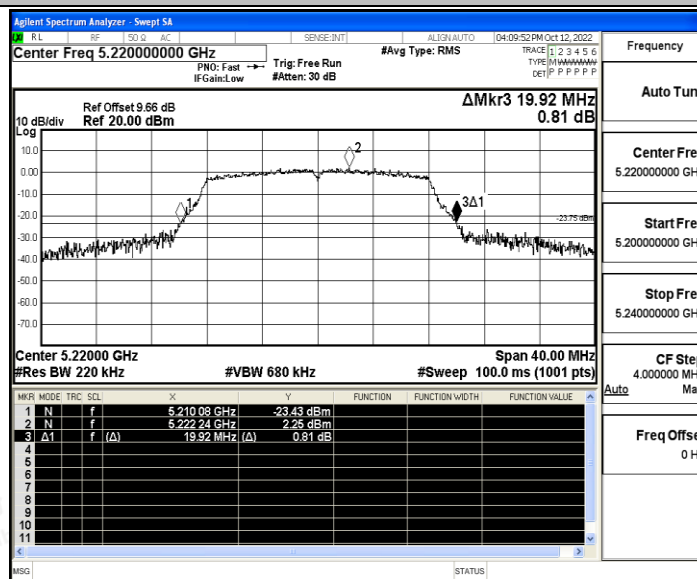


Test Graphs

11A_Ant_5180

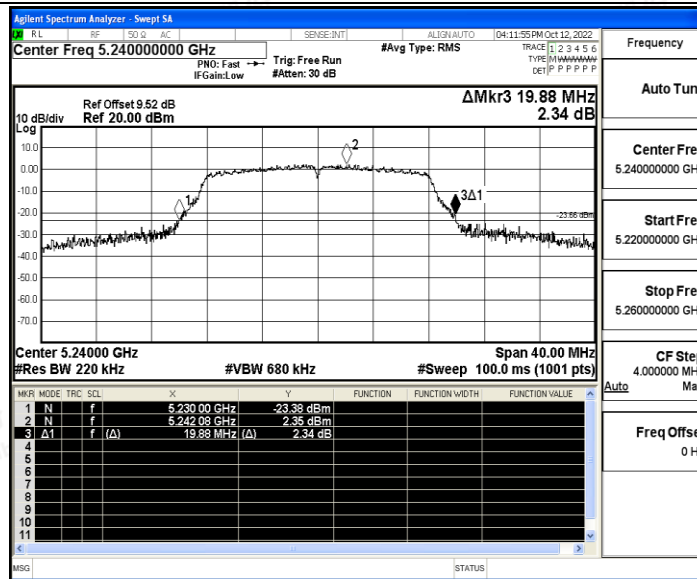


11A_Ant_5220

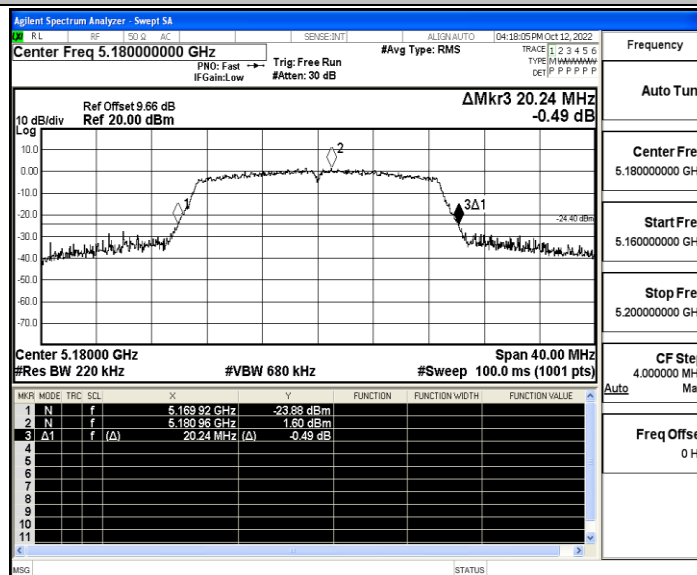


11A_Ant_5240



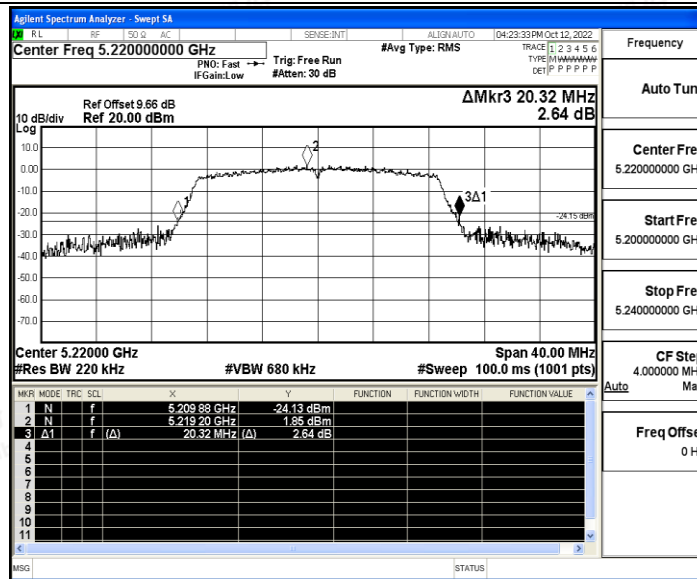


11N20SISO_Ant_5180

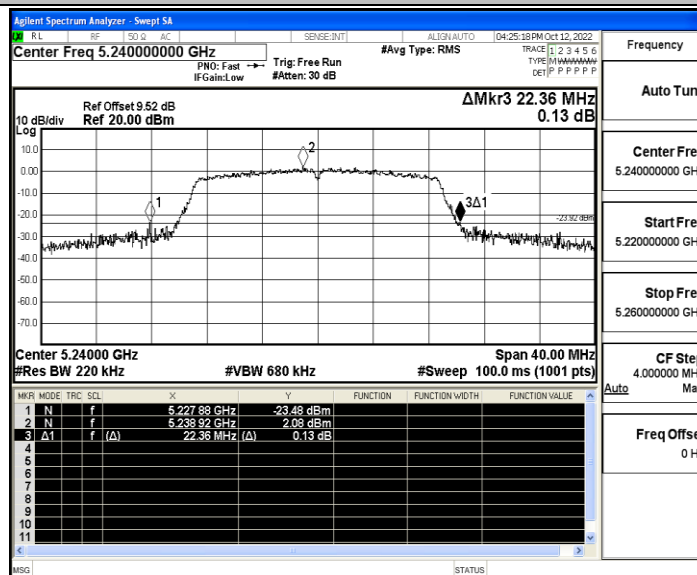


11N20SISO_Ant_5220



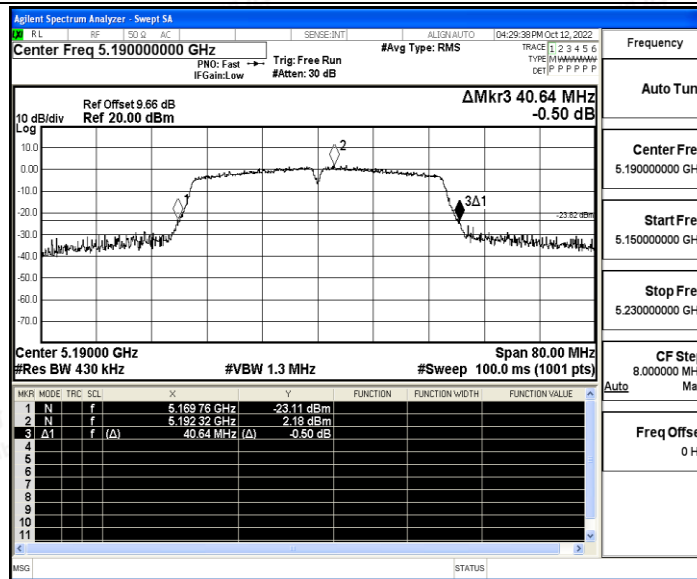


11N20SISO_Ant_5240

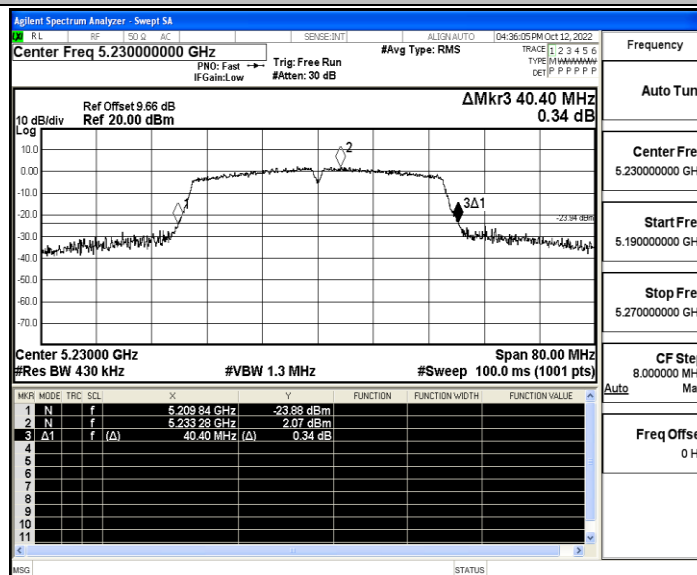


11N40SISO_Ant_5190



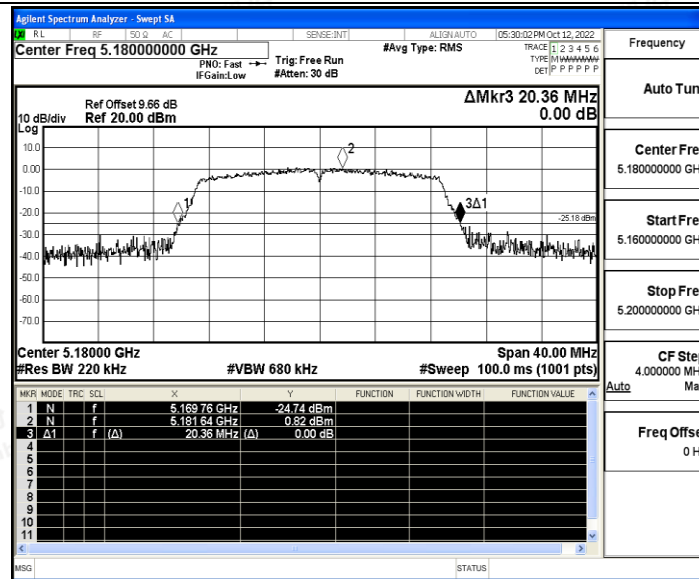


11N40SISO_Ant_5230

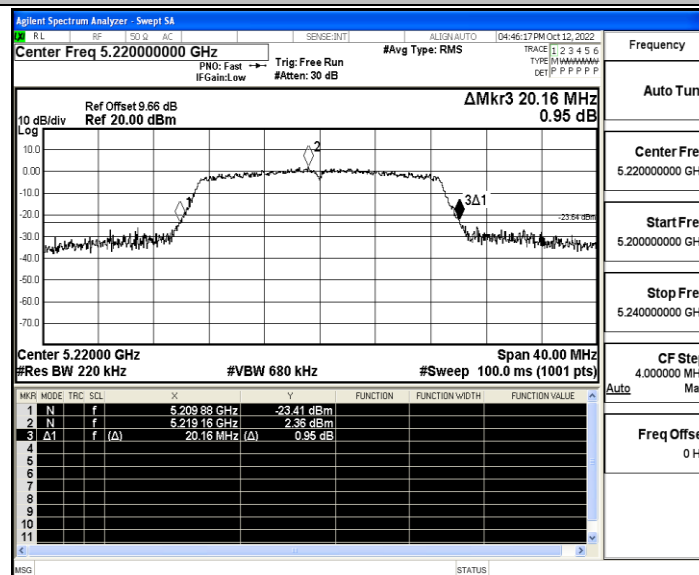


11AC20SISO_Ant_5180



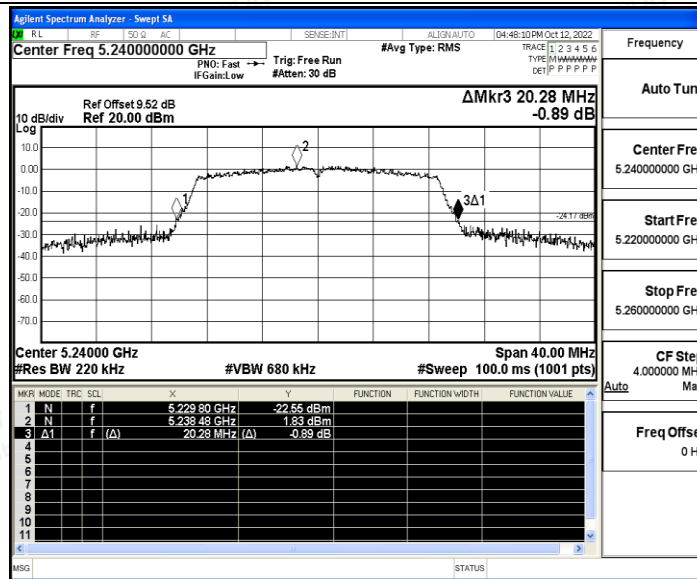


11AC20SISO_Ant_5220

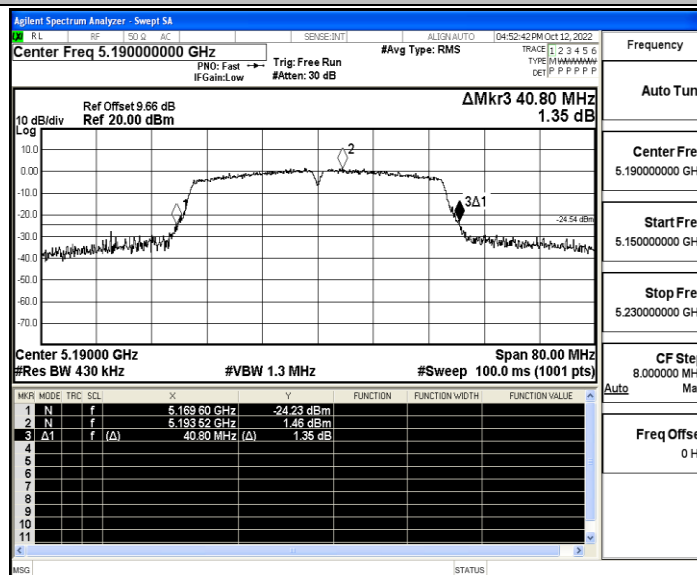


11AC20SISO_Ant_5240



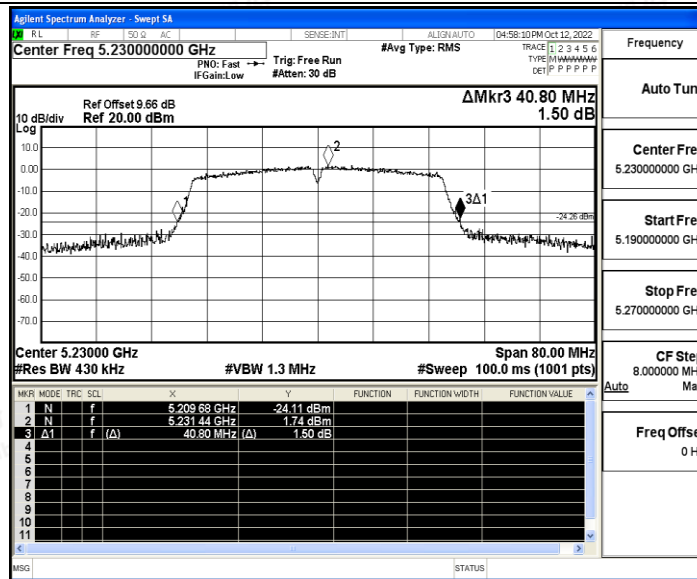


11AC40SISO_Ant_5190

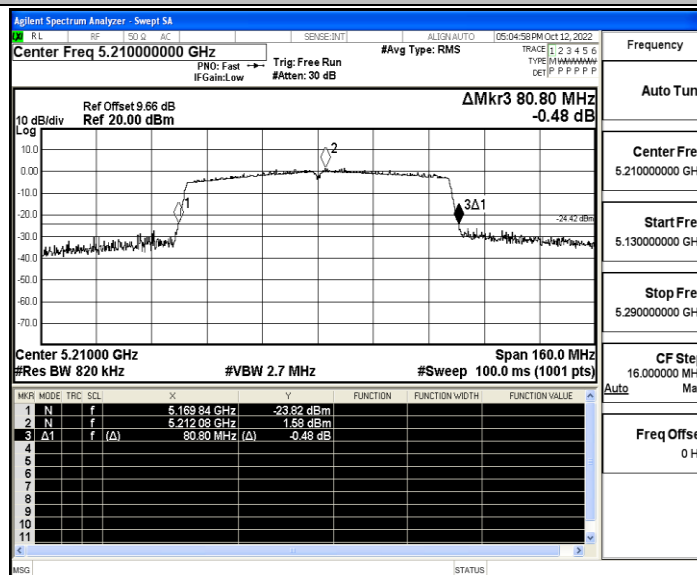


11AC40SISO_Ant_5230





11AC80SISO_Ant_5210





D.2 Occupied channel bandwidth

Test Result

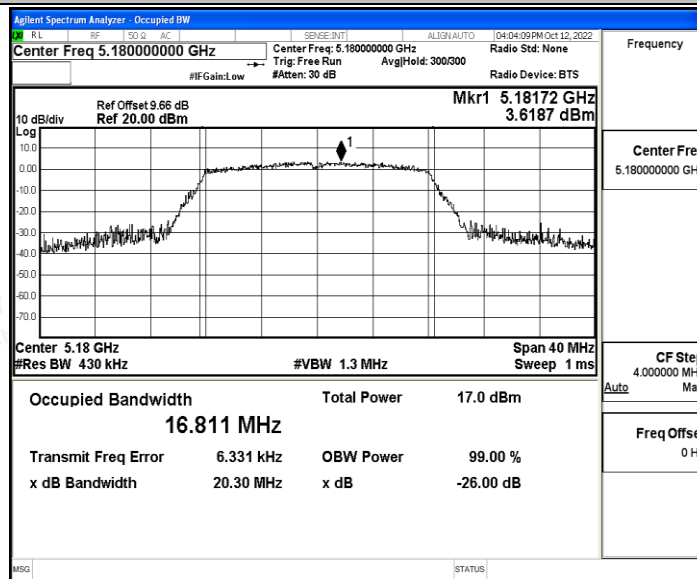
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant	5180	16.811	5171.6008	5188.4118	---	---
		5220	16.836	5211.6146	5228.4506	---	---
		5240	16.865	5231.5866	5248.4516	---	---
11N20SISO	Ant	5180	17.793	5171.1301	5188.9231	---	---
		5220	17.771	5211.1376	5228.9086	---	---
		5240	17.809	5231.1288	5248.9378	---	---
11N40SISO	Ant	5190	36.194	5172.0202	5208.2142	---	---
		5230	36.143	5212.0095	5248.1525	---	---
11AC20SISO	Ant	5180	17.792	5171.1235	5188.9155	---	---
		5220	17.820	5211.1192	5228.9392	---	---
		5240	17.813	5231.1220	5248.9350	---	---
11AC40SISO	Ant	5190	36.068	5172.0380	5208.1060	---	---
		5230	36.161	5212.0465	5248.2075	---	---
11AC80SISO	Ant	5210	75.491	5172.4563	5247.9473	---	---



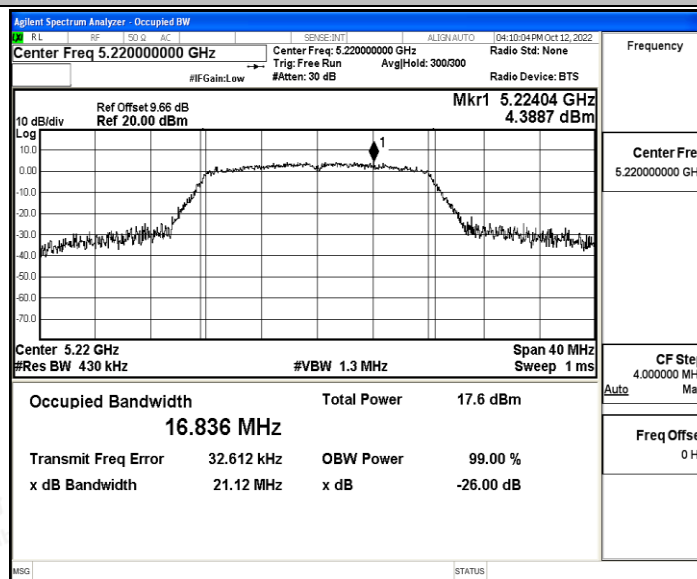


Test Graphs

11A_Ant_5180

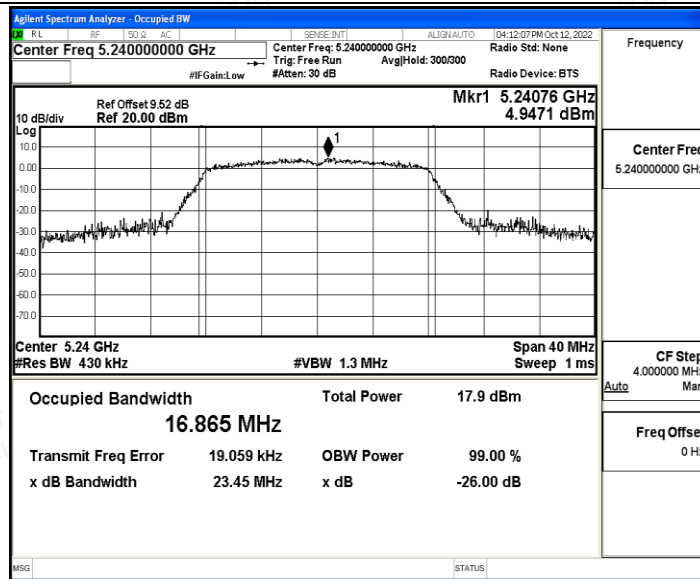


11A_Ant_5220

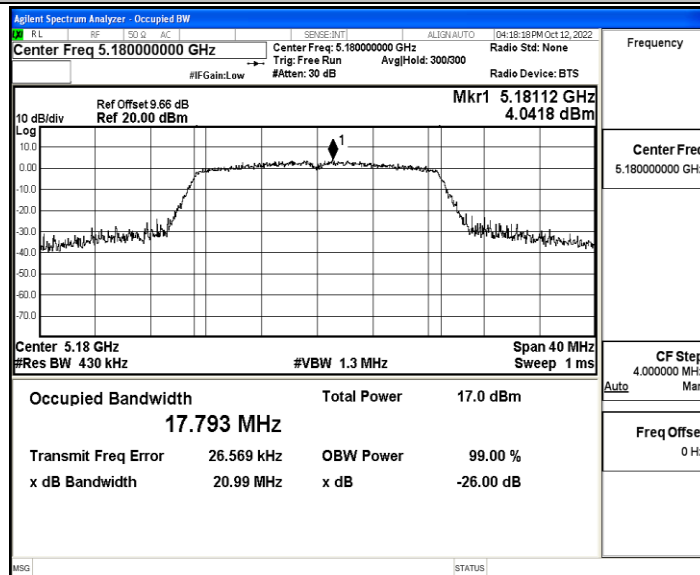


11A_Ant_5240



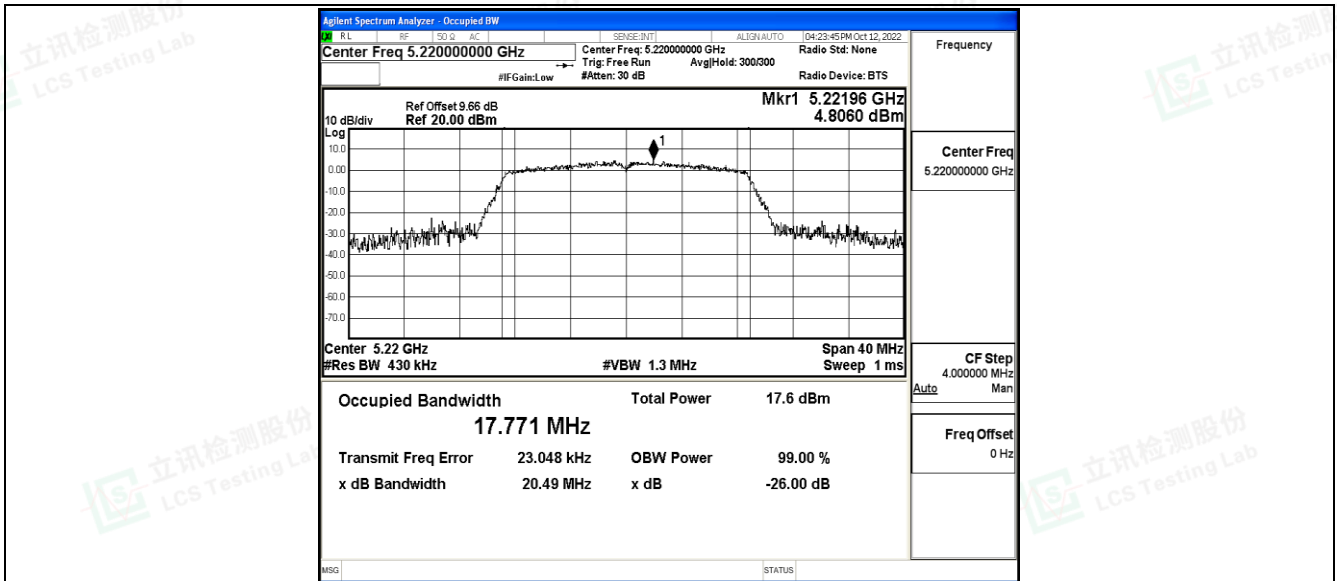


11N20SISO_Ant_5180

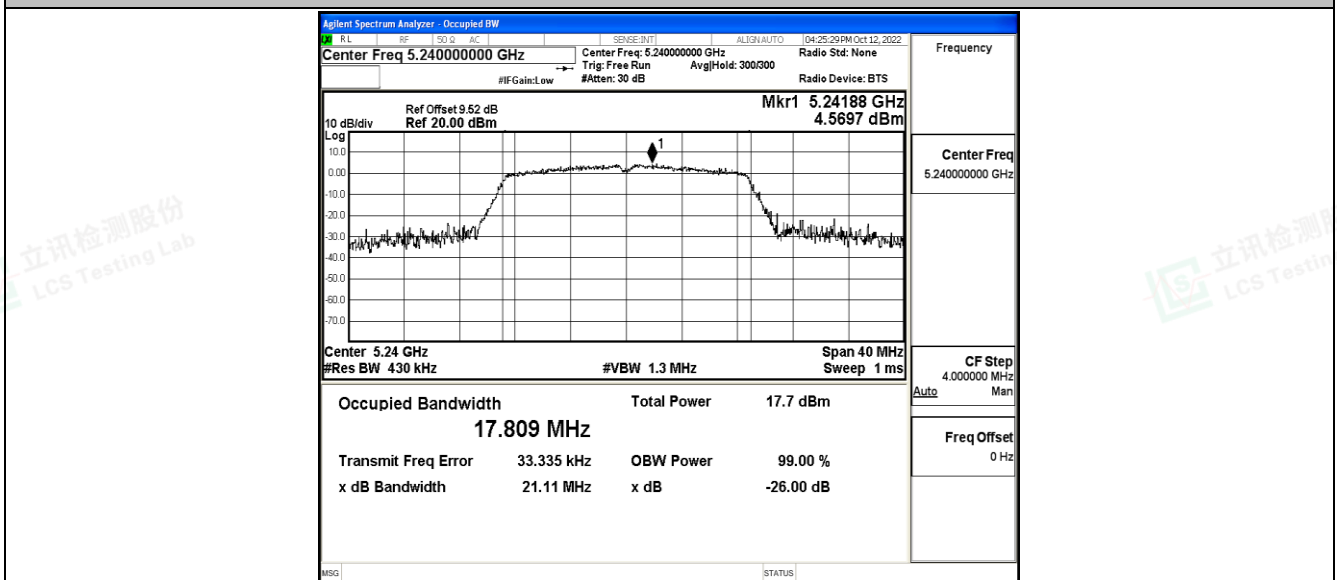


11N20SISO_Ant_5220



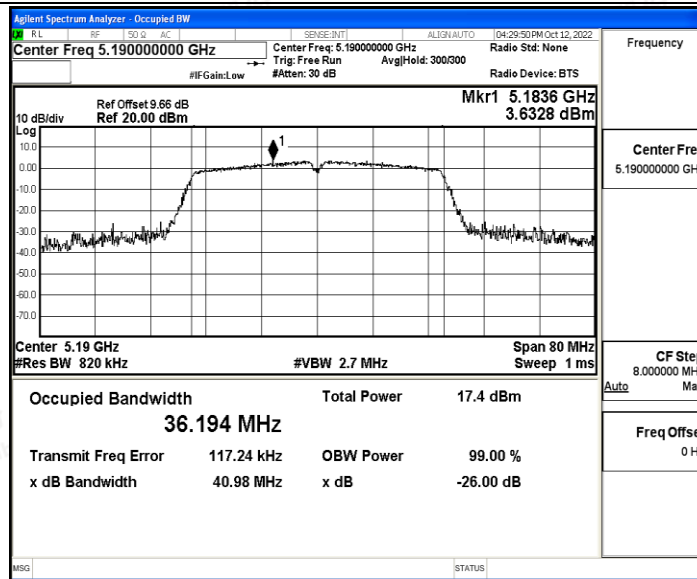


11N20SISO_Ant_5240

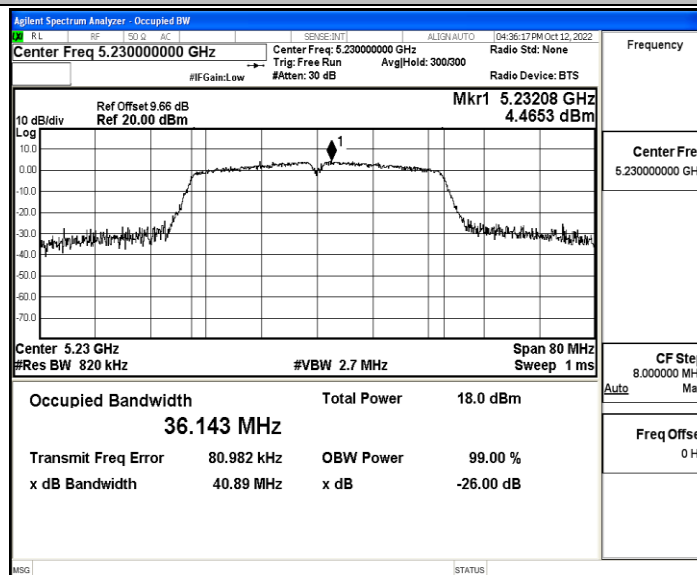


11N40SISO_Ant_5190



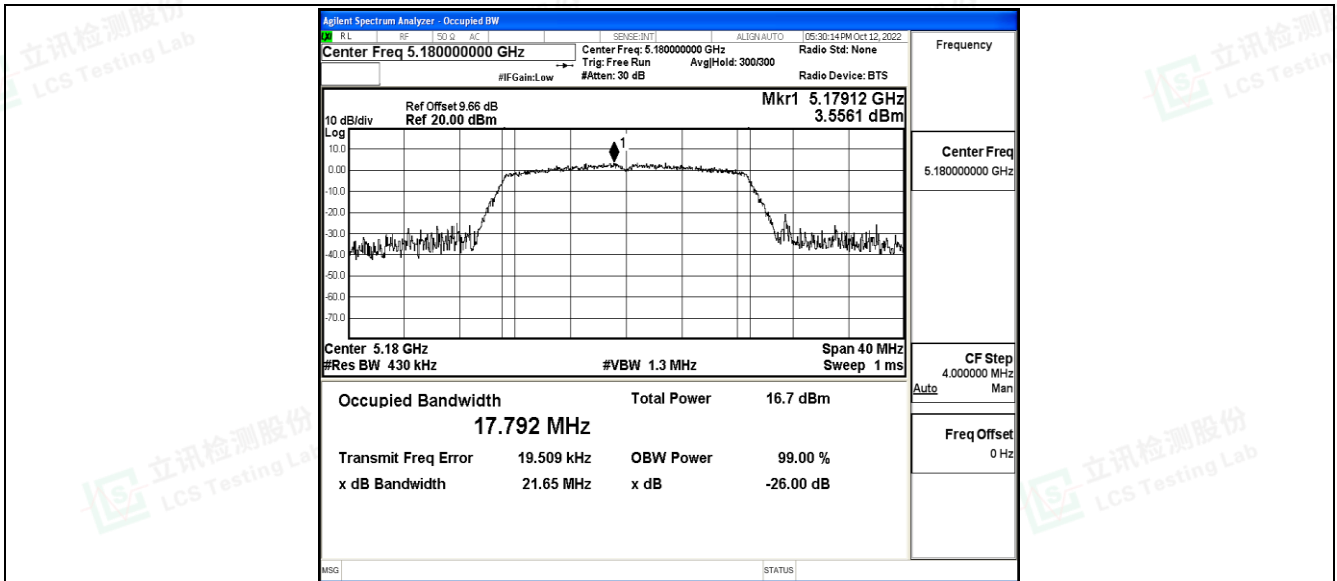


11N40SISO_Ant_5230

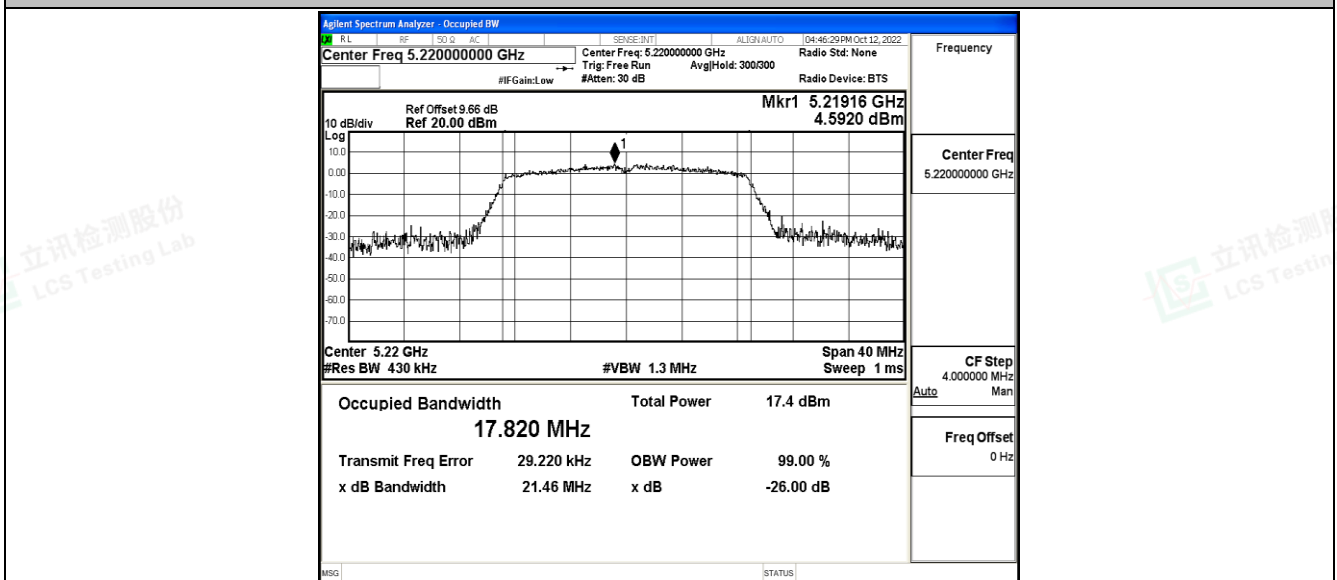


11AC20SISO_Ant_5180



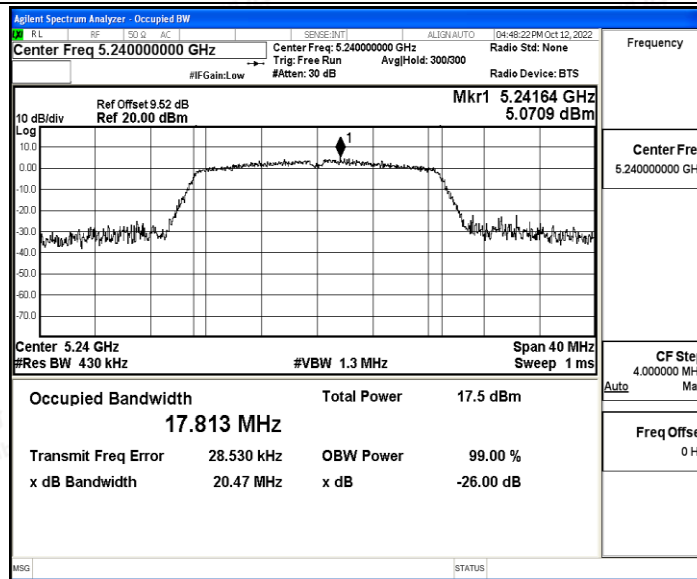


11AC20SISO_Ant_5220

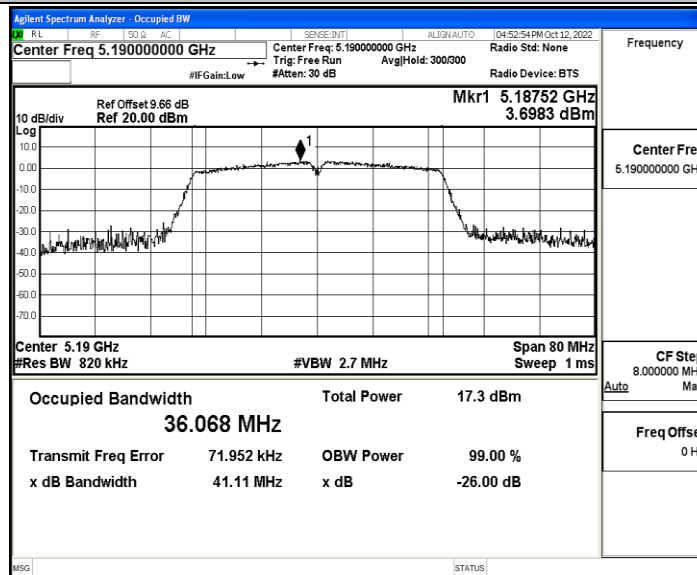


11AC20SISO_Ant_5240



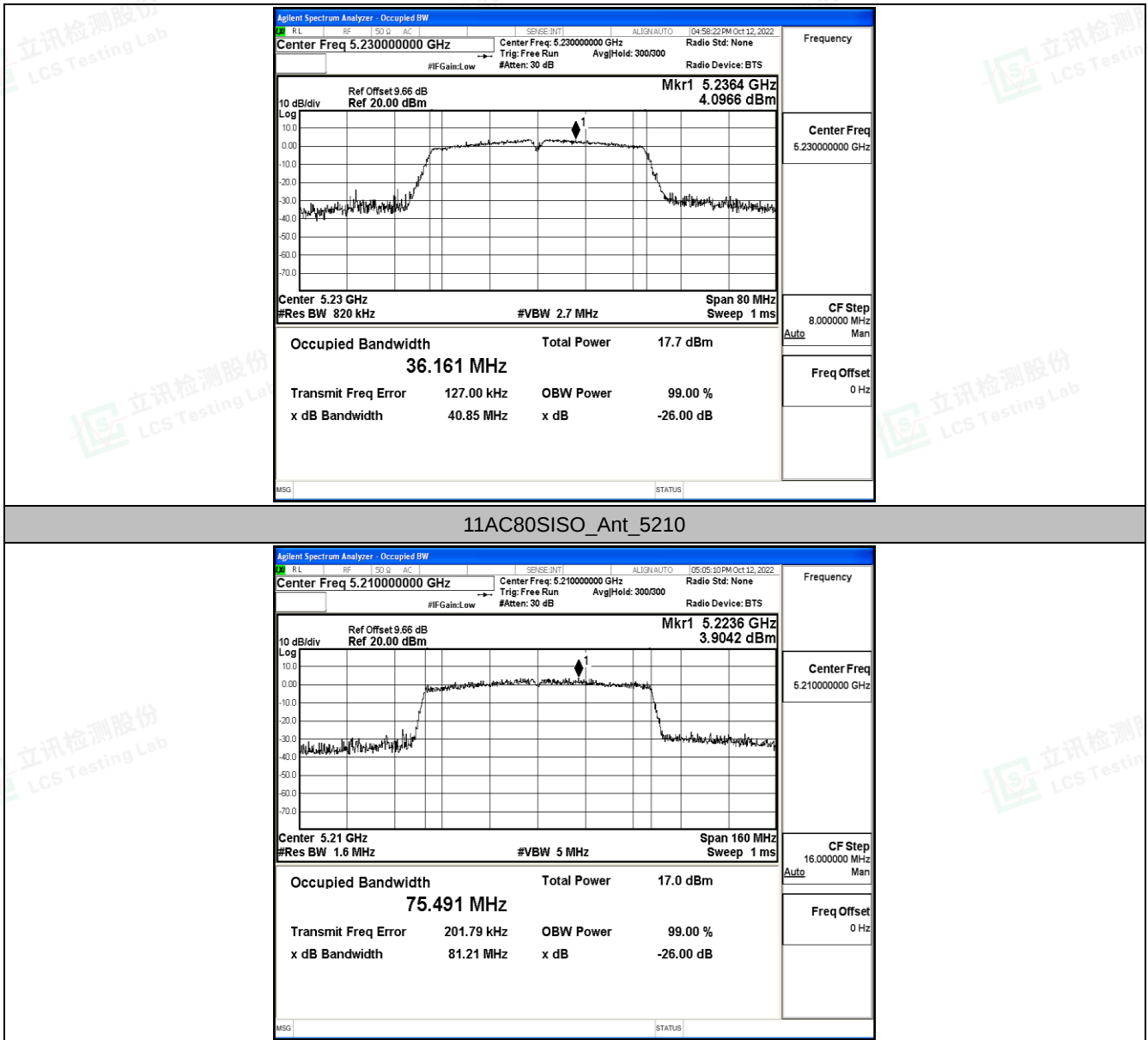


11AC40SISO_Ant_5190



11AC40SISO_Ant_5230







D.3 Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant	5180	10.92	≤23.98	PASS
		5220	11.59	≤23.98	PASS
		5240	11.87	≤23.98	PASS
11N20SISO	Ant	5180	10.98	≤23.98	PASS
		5220	11.54	≤23.98	PASS
		5240	11.73	≤23.98	PASS
11N40SISO	Ant	5190	10.98	≤23.98	PASS
		5230	11.69	≤23.98	PASS
11AC20SISO	Ant	5180	10.60	≤23.98	PASS
		5220	11.41	≤23.98	PASS
		5240	11.47	≤23.98	PASS
11AC40SISO	Ant	5190	10.81	≤23.98	PASS
		5230	11.27	≤23.98	PASS
11AC80SISO	Ant	5210	10.83	≤23.98	PASS

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



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
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D.4 Maximum power spectral density

Test Result

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant	5180	0.45	≤11.00	PASS
		5220	1.14	≤11.00	PASS
		5240	1.44	≤11.00	PASS
11N20SISO	Ant	5180	0.21	≤11.00	PASS
		5220	0.72	≤11.00	PASS
		5240	0.85	≤11.00	PASS
11N40SISO	Ant	5190	-2.58	≤11.00	PASS
		5230	-1.93	≤11.00	PASS
11AC20SISO	Ant	5180	-0.19	≤11.00	PASS
		5220	0.56	≤11.00	PASS
		5240	0.59	≤11.00	PASS
11AC40SISO	Ant	5190	-2.78	≤11.00	PASS
		5230	-2.33	≤11.00	PASS
11AC80SISO	Ant	5210	-6.15	≤11.00	PASS

Note: 1.The Duty Cycle Factor and RBW Factor is compensated in the graph.

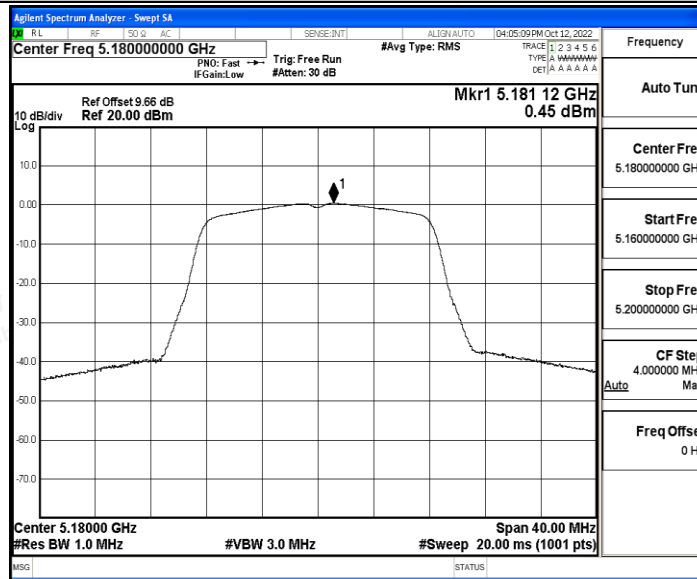


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
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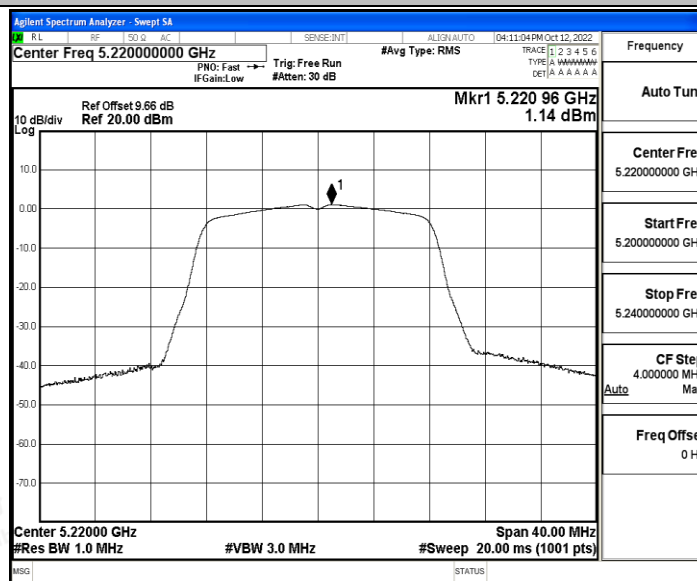


Test Graphs

11A_Ant_5180

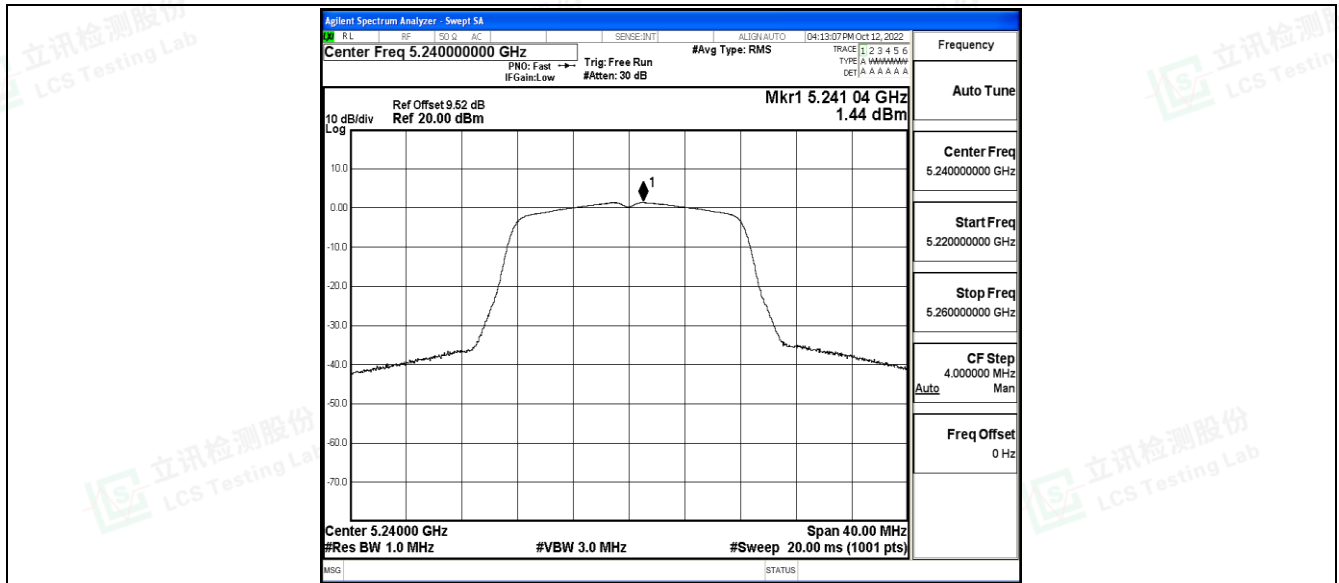


11A_Ant_5220

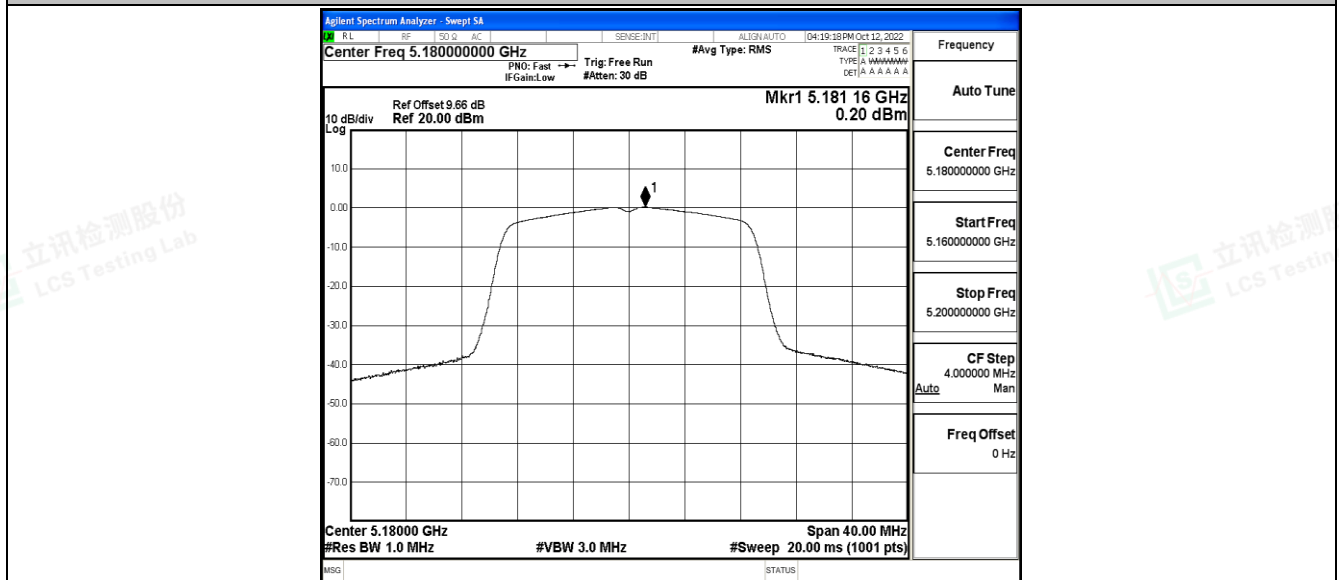


11A_Ant_5240



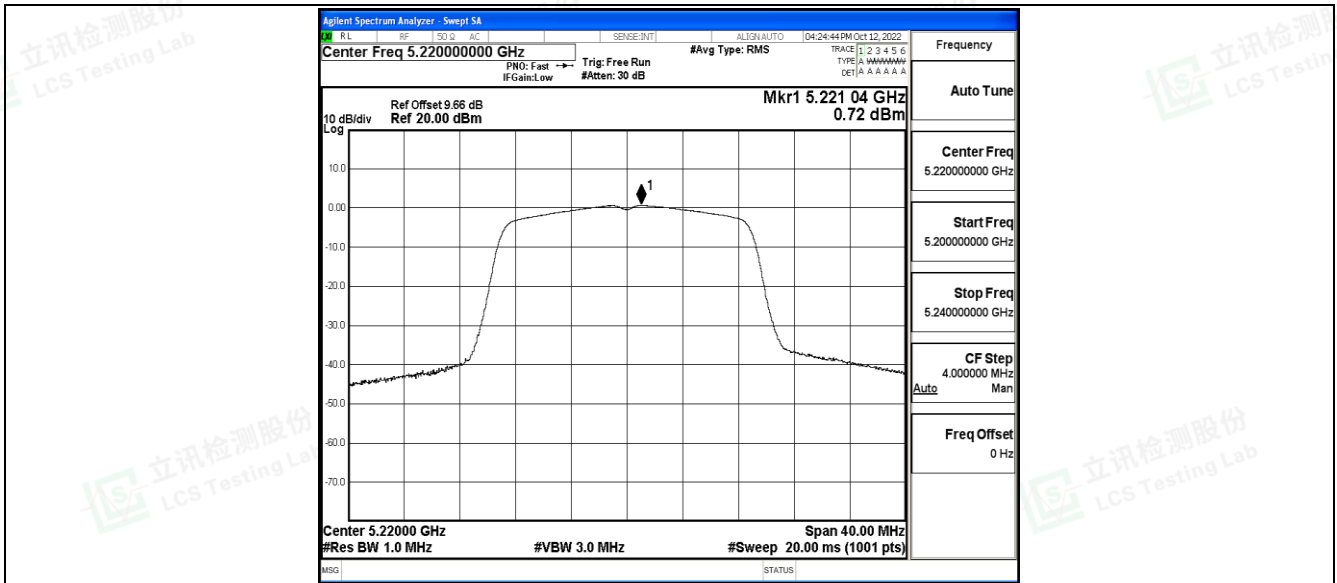


11N20SISO_Ant_5180

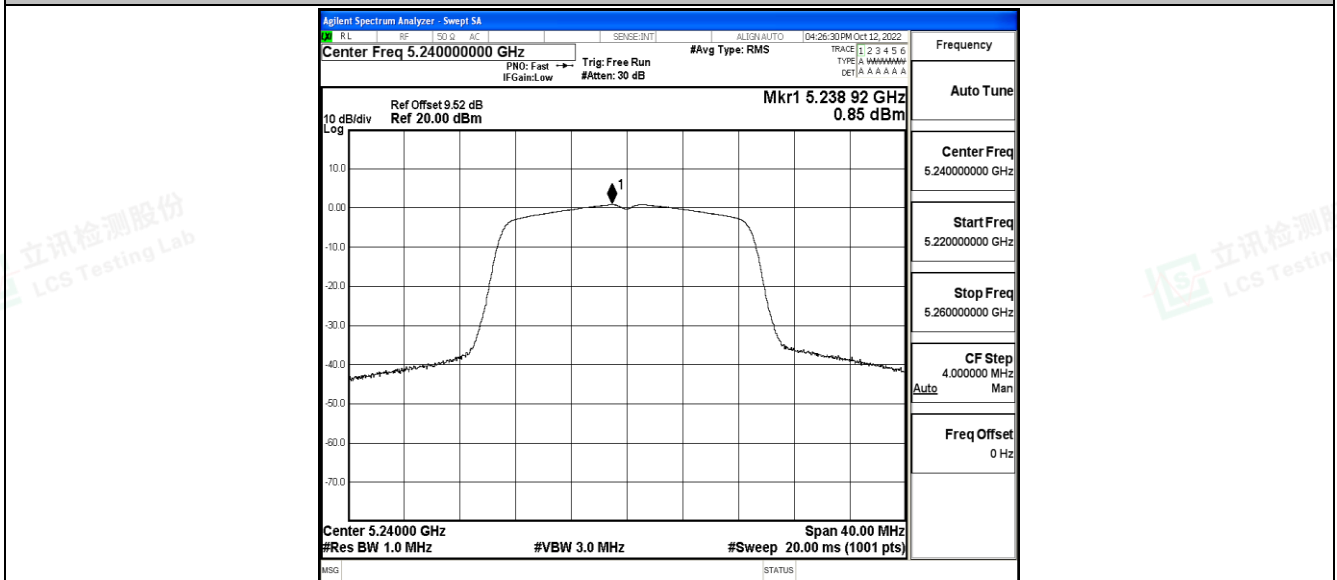


11N20SISO_Ant_5220



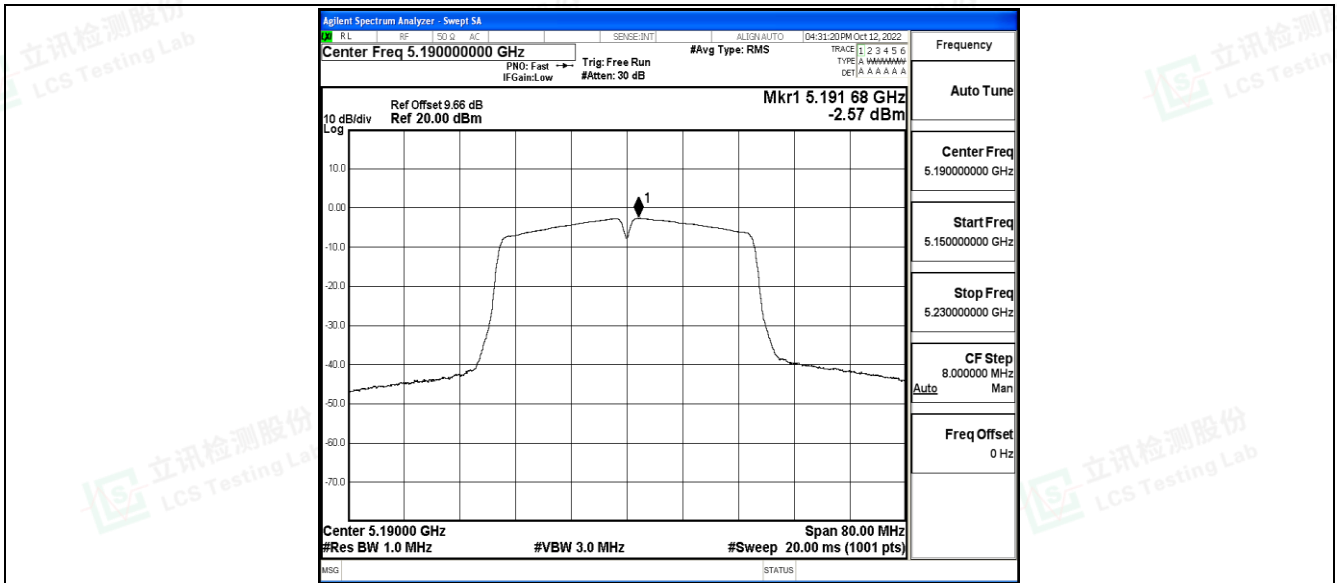


11N20SISO_Ant_5240

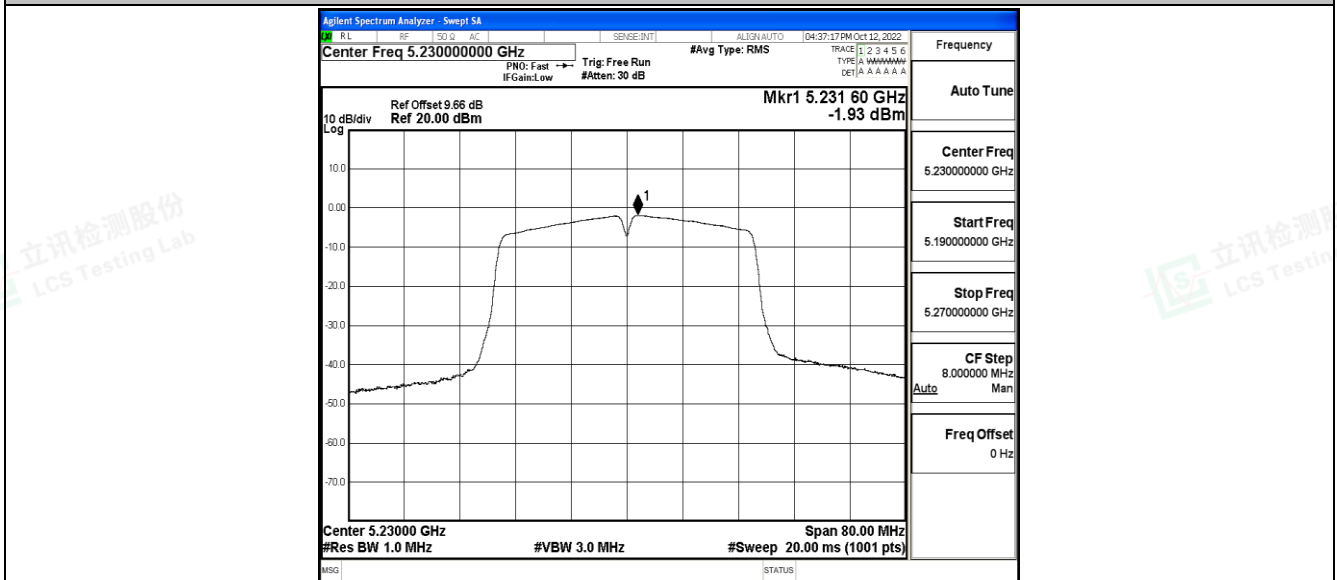


11N40SISO_Ant_5190



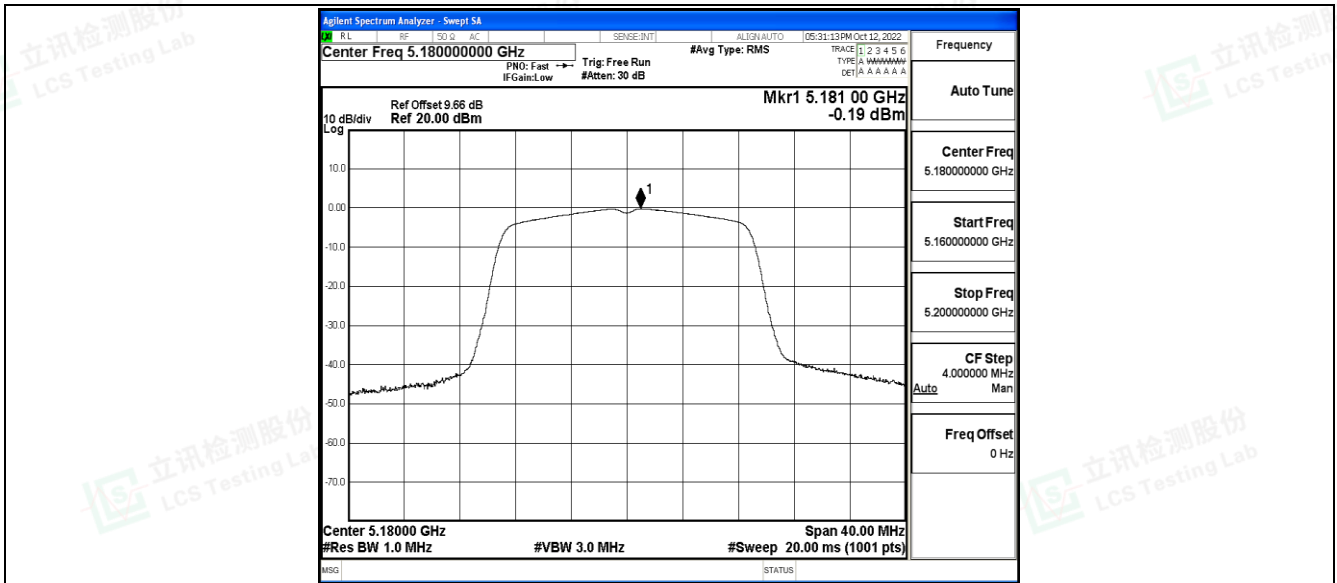


11N40SISO_Ant_5230

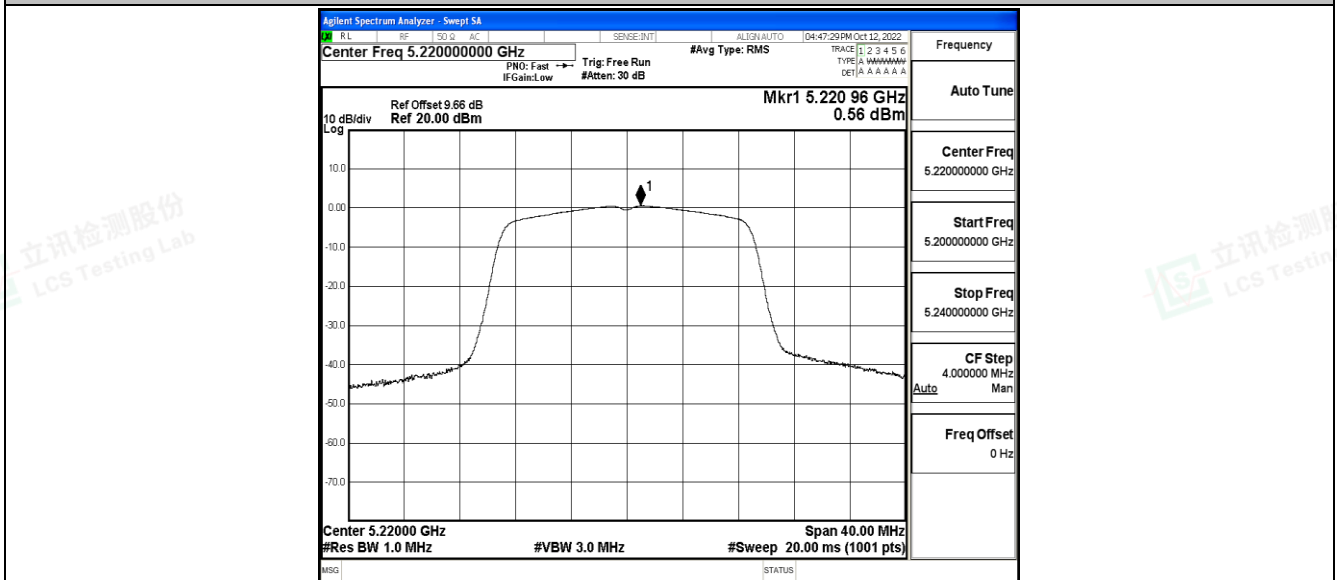


11AC20SISO_Ant_5180



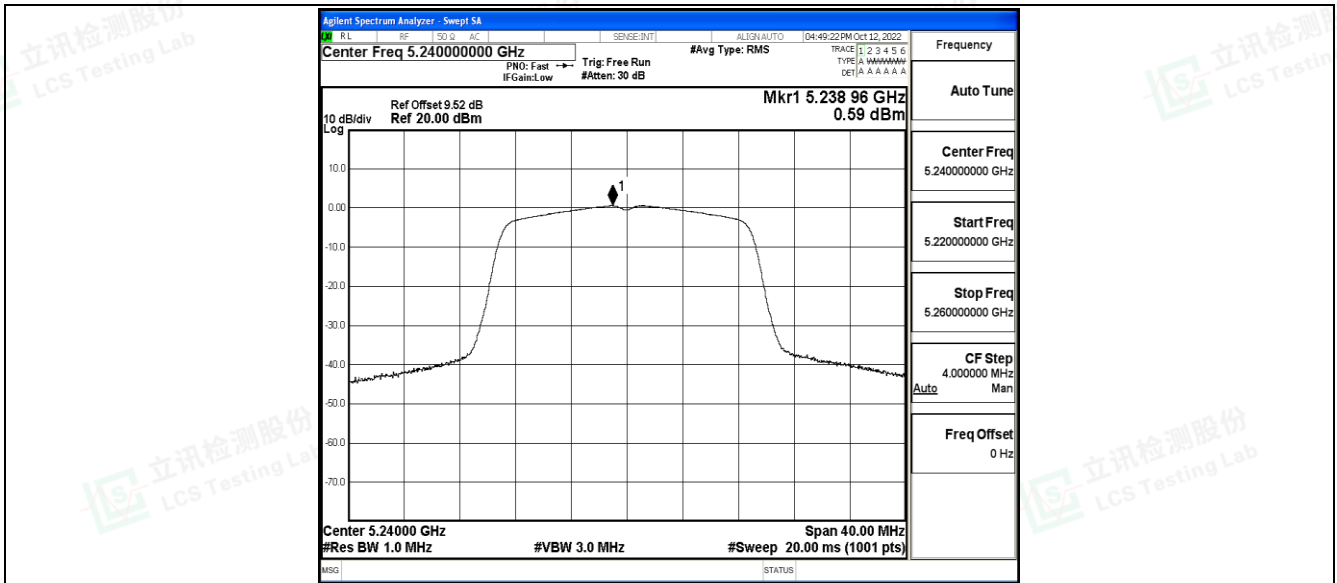


11AC20SISO_Ant_5220

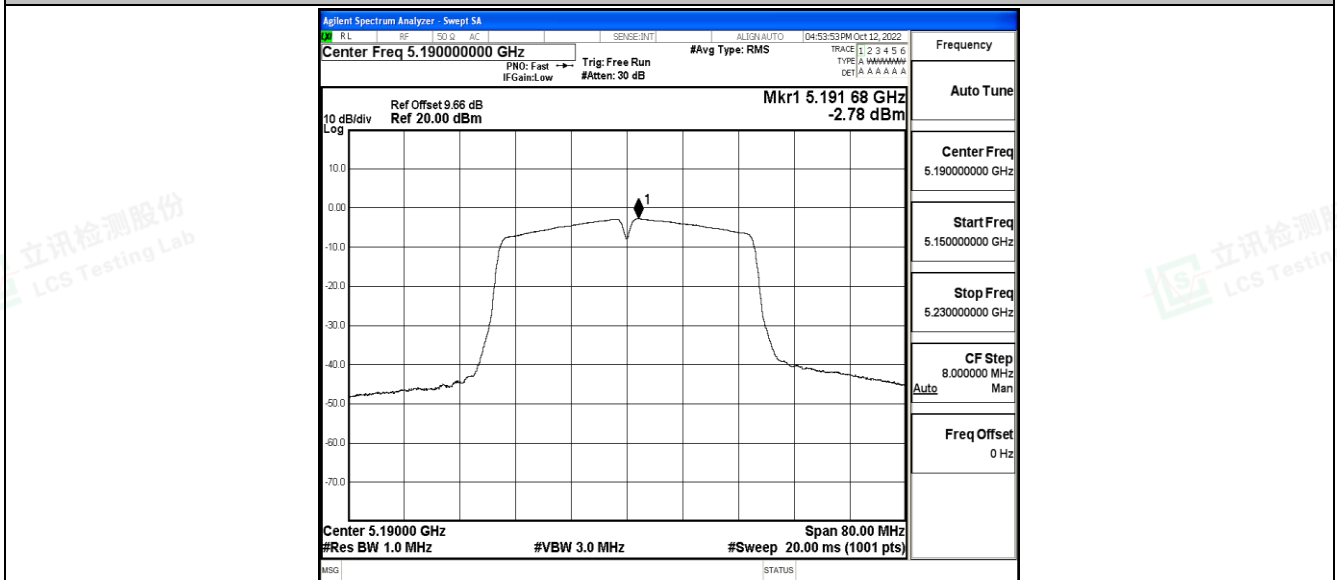


11AC20SISO_Ant_5240



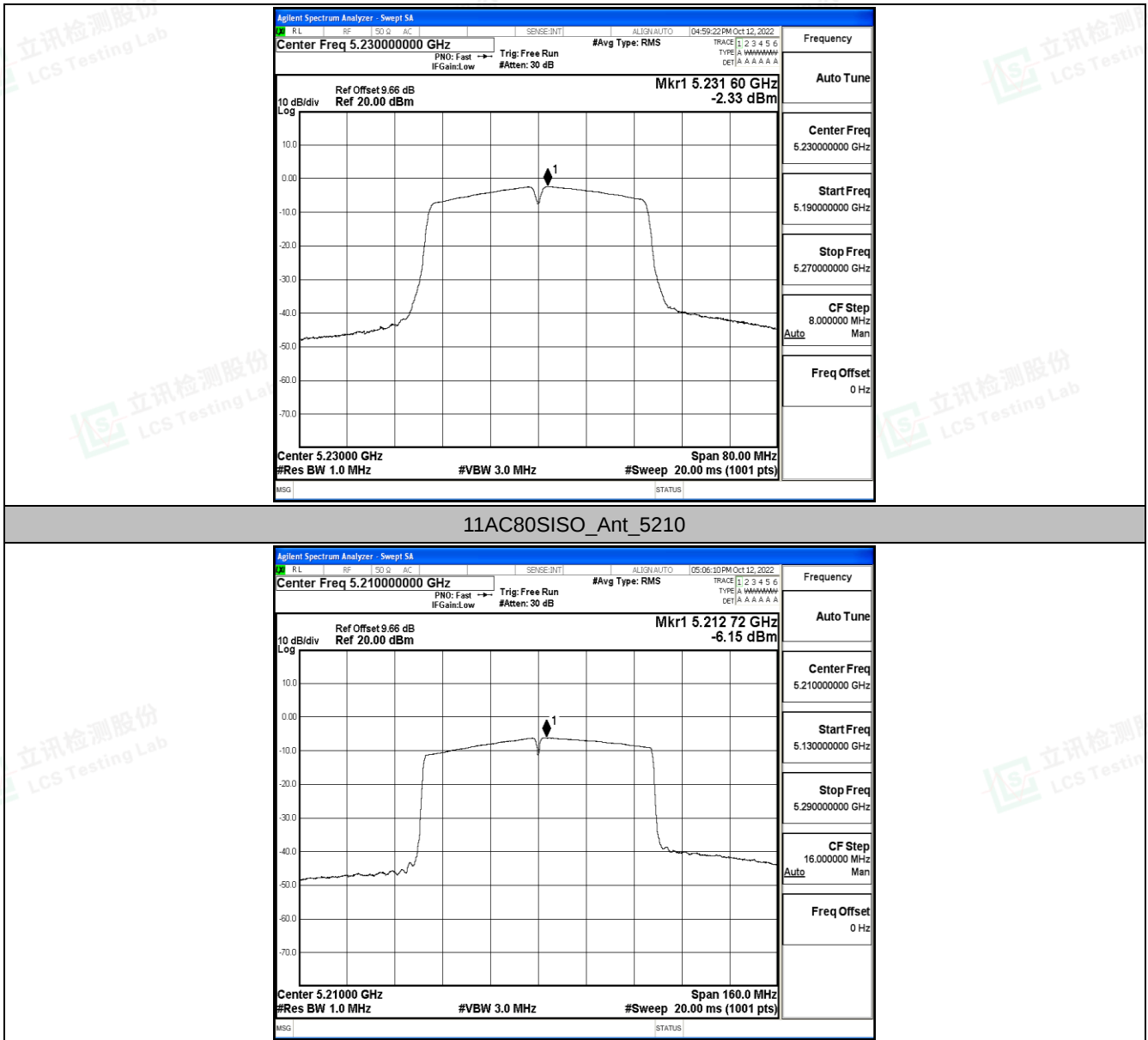


11AC40SISO_Ant_5190



11AC40SISO_Ant_5230







D.5 Emissions in Restricted Bands

Test Result

TestMod e	Antenn a	ChNam e	Frequenc y[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11A	Ant	Low	5180	AV	4500.000	-49.09	≤-41.20	46.11	≤54	PASS
				AV	5149.600	-45.37	≤-41.20	49.83	≤54	PASS
				AV	5150.000	-45.28	≤-41.20	49.92	≤54	PASS
				Peak	4500.000	-43.1	≤-21.20	52.10	≤74	PASS
				Peak	5132.100	-38.41	≤-21.20	56.79	≤74	PASS
				Peak	5150.000	-43.77	≤-21.20	51.43	≤74	PASS
		High	5240	AV	5350.000	-47.61	≤-41.20	47.59	≤54	PASS
				AV	5350.800	-47.61	≤-41.20	47.59	≤54	PASS
				AV	5460.000	-47.96	≤-41.20	47.24	≤54	PASS
				Peak	5350.000	-44.36	≤-21.20	50.84	≤74	PASS
				Peak	5381.760	-38.54	≤-21.20	56.66	≤74	PASS
				Peak	5460.000	-40.82	≤-21.20	54.38	≤74	PASS
11N20SI SO	Ant	Low	5180	AV	4500.000	-49.18	≤-41.20	46.02	≤54	PASS
				AV	5149.600	-45.91	≤-41.20	49.29	≤54	PASS
				AV	5150.000	-45.77	≤-41.20	49.43	≤54	PASS
				Peak	4500.000	-45.67	≤-21.20	49.53	≤74	PASS
				Peak	4926.300	-38.48	≤-21.20	56.72	≤74	PASS
				Peak	5150.000	-47.97	≤-21.20	47.23	≤74	PASS
		High	5240	AV	5350.000	-47.67	≤-41.20	47.53	≤54	PASS
				AV	5350.320	-47.67	≤-41.20	47.53	≤54	PASS
				AV	5460.000	-47.96	≤-41.20	47.24	≤54	PASS
				Peak	5350.000	-42.52	≤-21.20	52.68	≤74	PASS
				Peak	5421.120	-38.26	≤-21.20	56.94	≤74	PASS
				Peak	5460.000	-43.5	≤-21.20	51.70	≤74	PASS
11N40SI SO	Ant	Low	5190	AV	4500.000	-49.2	≤-41.20	46.00	≤54	PASS
				AV	5149.600	-44.08	≤-41.20	51.12	≤54	PASS
				AV	5150.000	-43.89	≤-41.20	51.31	≤54	PASS
				Peak	4500.000	-44.55	≤-21.20	50.65	≤74	PASS
				Peak	4910.900	-38.08	≤-21.20	57.12	≤74	PASS
				Peak	5150.000	-45.05	≤-21.20	50.15	≤74	PASS
		High	5230	AV	5350.000	-47.57	≤-41.20	47.63	≤54	PASS
				AV	5350.800	-47.53	≤-41.20	47.67	≤54	PASS
				AV	5460.000	-47.82	≤-41.20	47.38	≤54	PASS
				Peak	5350.000	-47.29	≤-21.20	47.91	≤74	PASS
				Peak	5401.760	-38.01	≤-21.20	57.19	≤74	PASS





11AC20S ISO	Ant	Low	5180	Peak	5460.000	-44.86	≤-21.20	50.34	≤74	PASS
				AV	4500.000	-49.18	≤-41.20	46.02	≤54	PASS
				AV	5149.600	-46.44	≤-41.20	48.76	≤54	PASS
				AV	5150.000	-46.42	≤-41.20	48.78	≤54	PASS
				Peak	4500.000	-44.61	≤-21.20	50.59	≤74	PASS
				Peak	4900.400	-37.86	≤-21.20	57.34	≤74	PASS
				Peak	5150.000	-43.7	≤-21.20	51.50	≤74	PASS
		High	5240	AV	5350.000	-47.69	≤-41.20	47.51	≤54	PASS
				AV	5351.040	-47.67	≤-41.20	47.53	≤54	PASS
				AV	5460.000	-47.97	≤-41.20	47.23	≤54	PASS
				Peak	5350.000	-43.3	≤-21.20	51.90	≤74	PASS
				Peak	5442.000	-39.37	≤-21.20	55.83	≤74	PASS
				Peak	5460.000	-44.47	≤-21.20	50.73	≤74	PASS
11AC40S ISO	Ant	Low	5190	AV	4500.000	-49.19	≤-41.20	46.01	≤54	PASS
				AV	5149.600	-45.29	≤-41.20	49.91	≤54	PASS
				AV	5150.000	-45.21	≤-41.20	49.99	≤54	PASS
				Peak	4500.000	-39.11	≤-21.20	56.09	≤74	PASS
				Peak	4955.700	-38.56	≤-21.20	56.64	≤74	PASS
				Peak	5150.000	-41.48	≤-21.20	53.72	≤74	PASS
		High	5230	AV	5350.000	-47.53	≤-41.20	47.67	≤54	PASS
				AV	5351.840	-47.52	≤-41.20	47.68	≤54	PASS
				AV	5460.000	-47.79	≤-41.20	47.41	≤54	PASS
				Peak	5350.000	-45.4	≤-21.20	49.80	≤74	PASS
				Peak	5453.500	-38.52	≤-21.20	56.68	≤74	PASS
				Peak	5460.000	-43.24	≤-21.20	51.96	≤74	PASS
11AC80S ISO	Ant	Low	5210	AV	4500.000	-49.2	≤-41.20	46.00	≤54	PASS
				AV	5149.500	-43.85	≤-41.20	51.35	≤54	PASS
				AV	5150.000	-43.84	≤-41.20	51.36	≤54	PASS
				Peak	4500.000	-46.5	≤-21.20	48.70	≤74	PASS
				Peak	5143.500	-37.93	≤-21.20	57.27	≤74	PASS
				Peak	5150.000	-39.92	≤-21.20	55.28	≤74	PASS
		High	5210	AV	5350.000	-47.28	≤-41.20	47.92	≤54	PASS
				AV	5350.240	-47.29	≤-41.20	47.91	≤54	PASS
				AV	5460.000	-47.8	≤-41.20	47.40	≤54	PASS
				Peak	5350.000	-44.22	≤-21.20	50.98	≤74	PASS
				Peak	5396.720	-38.7	≤-21.20	56.50	≤74	PASS
				Peak	5460.000	-43.61	≤-21.20	51.59	≤74	PASS





Note:

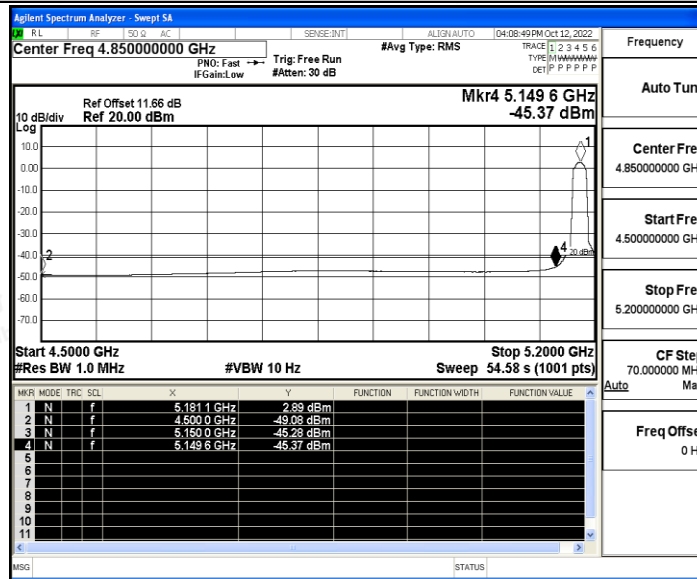
1. The Antenna Gain is compensated in the graph.
2. For transmitters operating in 5150-5250 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



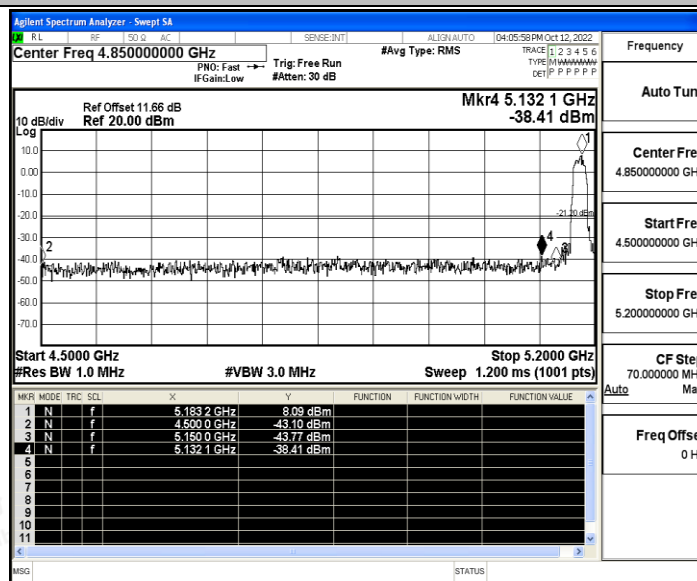


Test Graphs

11A_Ant_Low_5180_AV

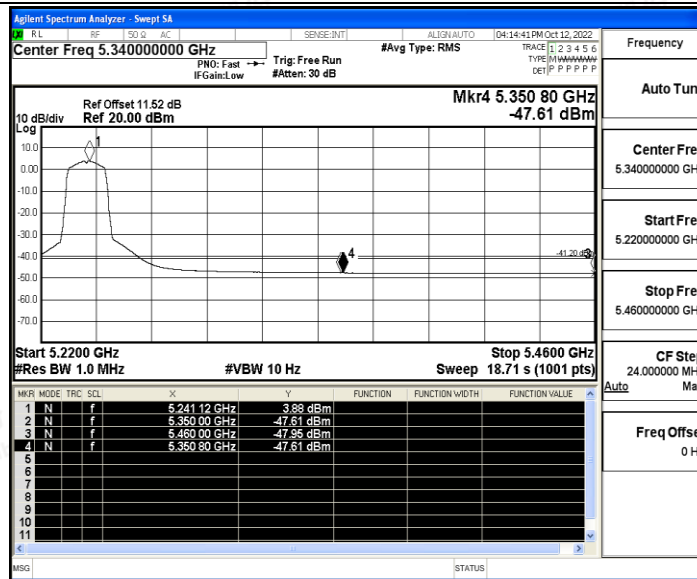


11A_Ant_Low_5180_Peak

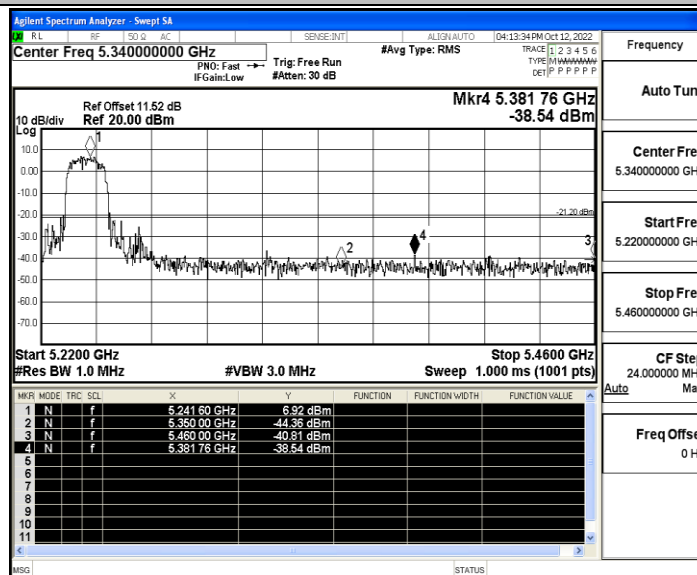


11A_Ant_High_5240_AV



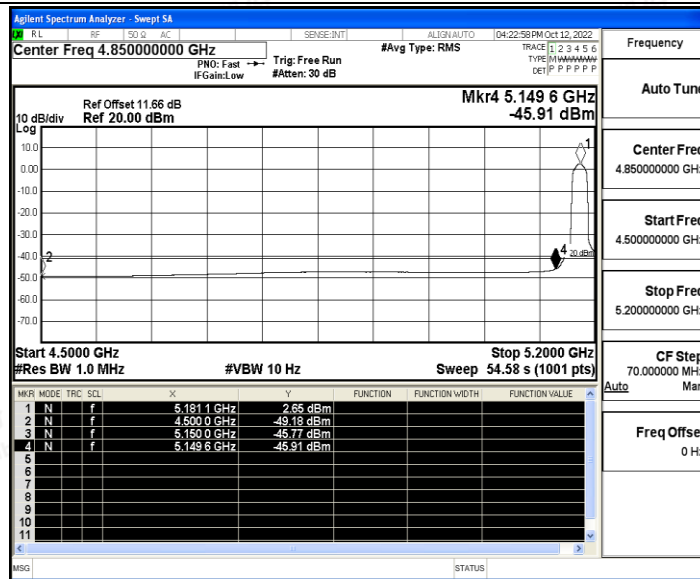


11A_Ant_High_5240_Peak

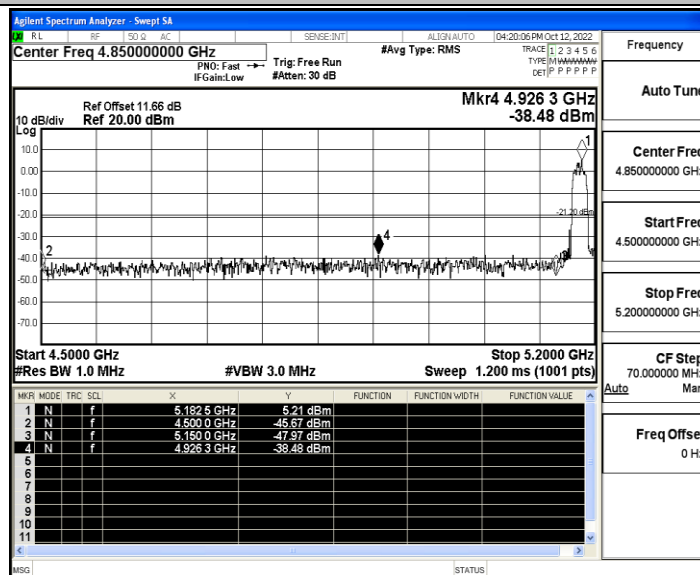


11N20SISO_Ant_Low_5180_AV



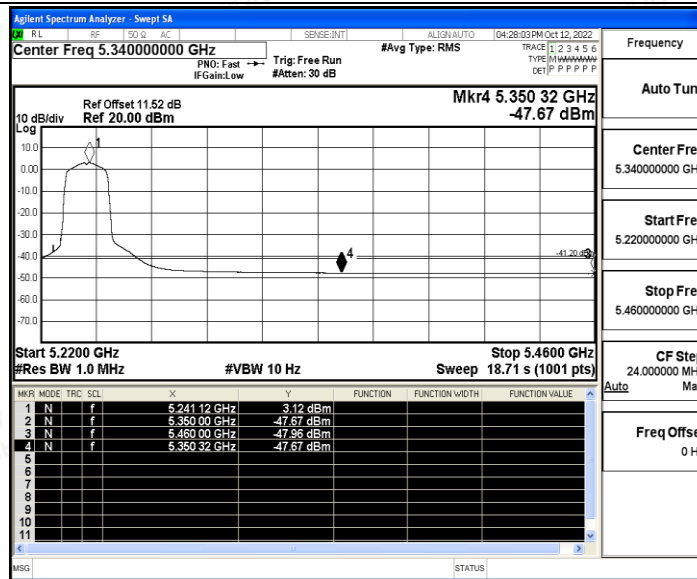


11N20SISO_Ant_Low_5180_Peak

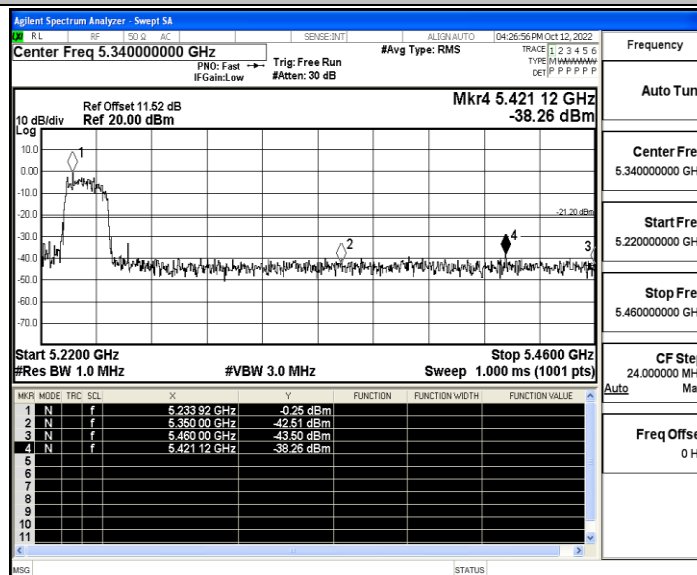


11N20SISO_Ant_High_5240_AV



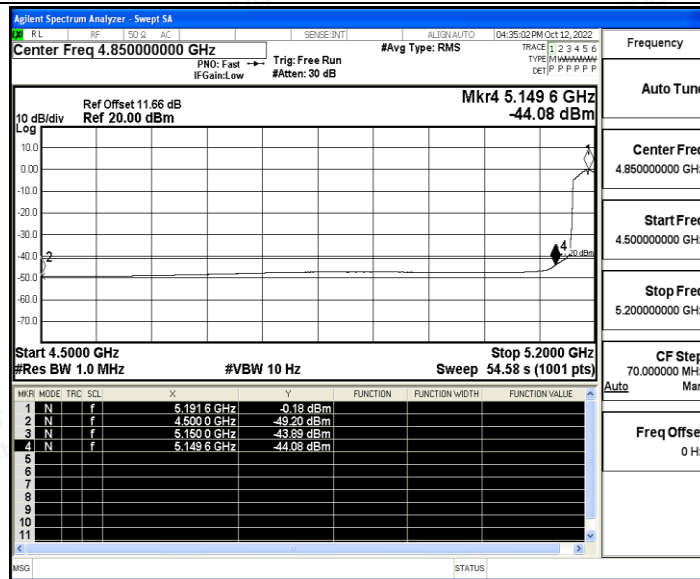


11N20SISO_Ant_High_5240_Peak

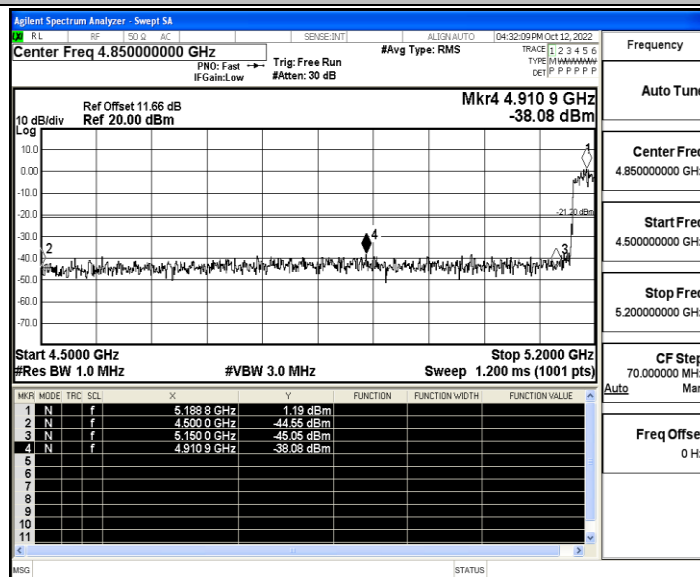


11N40SISO_Ant_Low_5190_AV



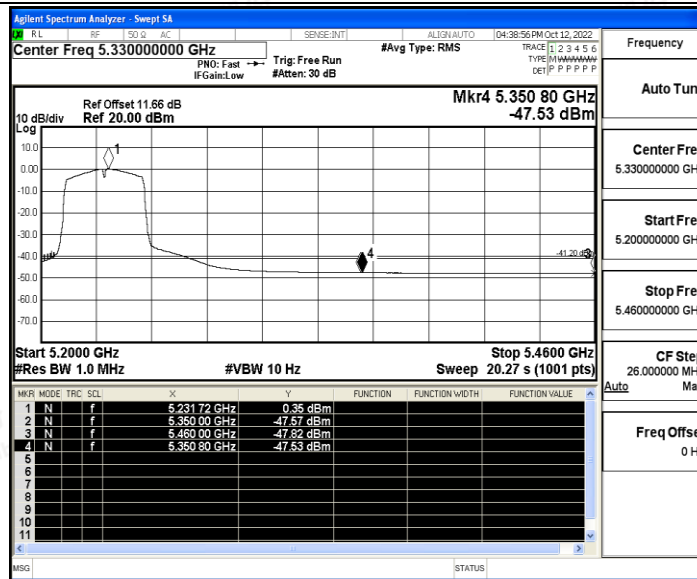


11N40SISO_Ant_Low_5190_Peak

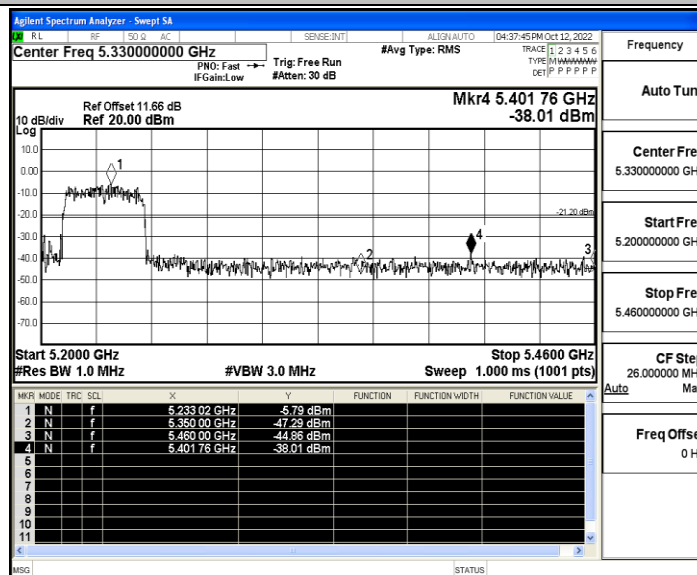


11N40SISO_Ant_High_5230_AV



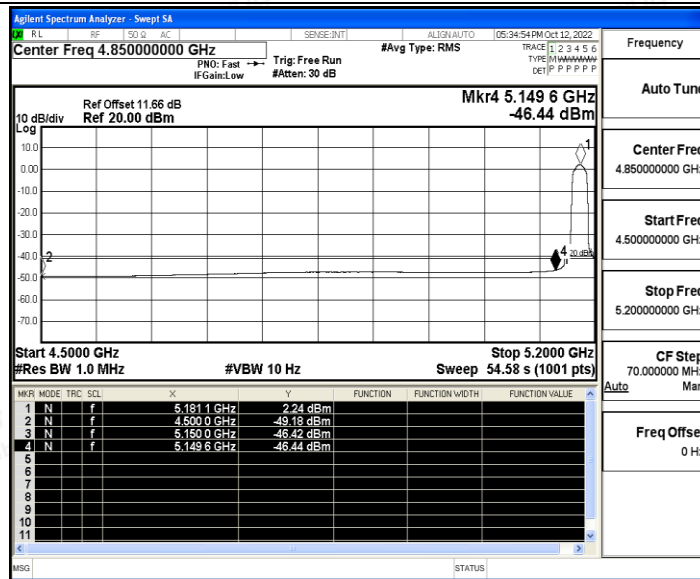


11N40SISO_Ant_High_5230_Peak

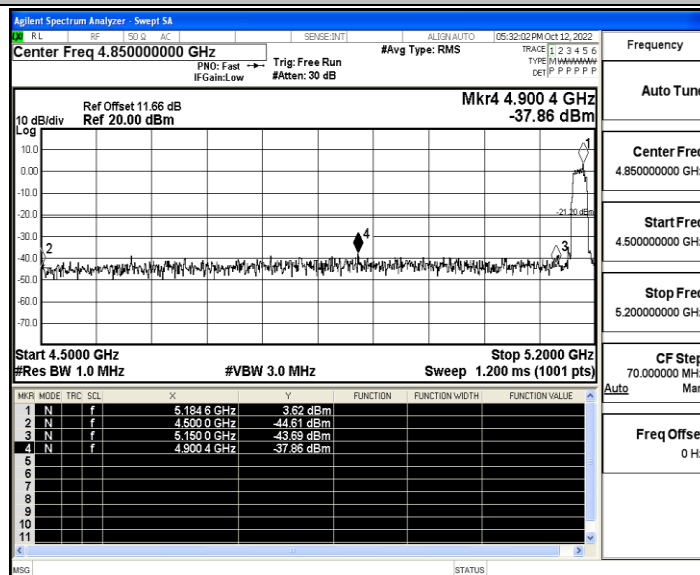


11AC20SISO_Ant_Low_5180_AV



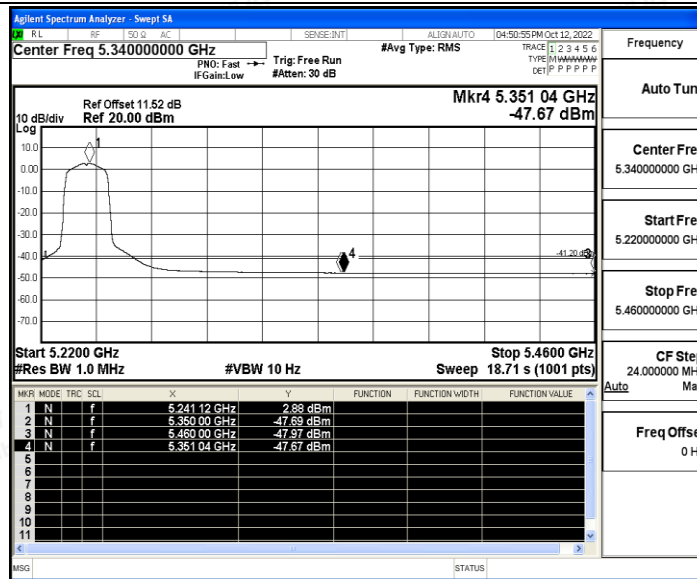


11AC20SISO_Ant_Low_5180_Peak

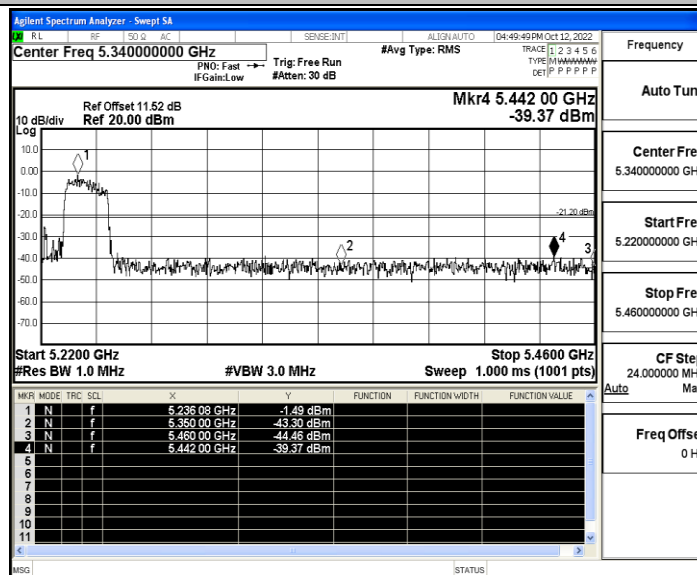


11AC20SISO_Ant_High_5240_AV



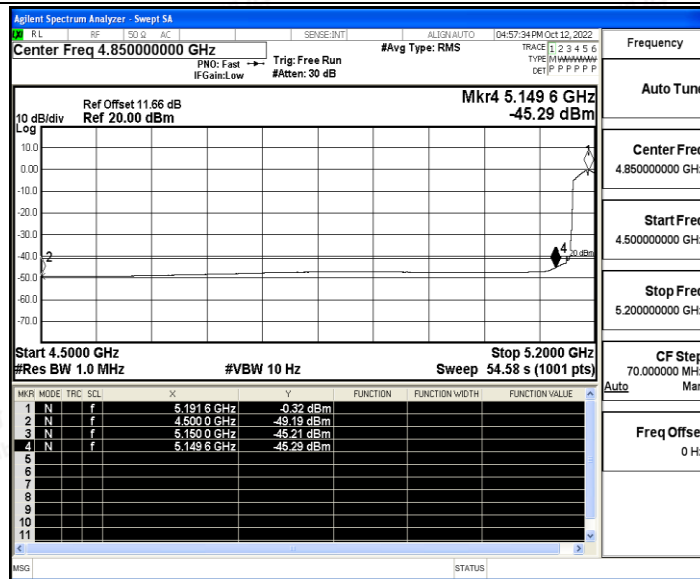


11AC20SISO_Ant_High_5240_Peak

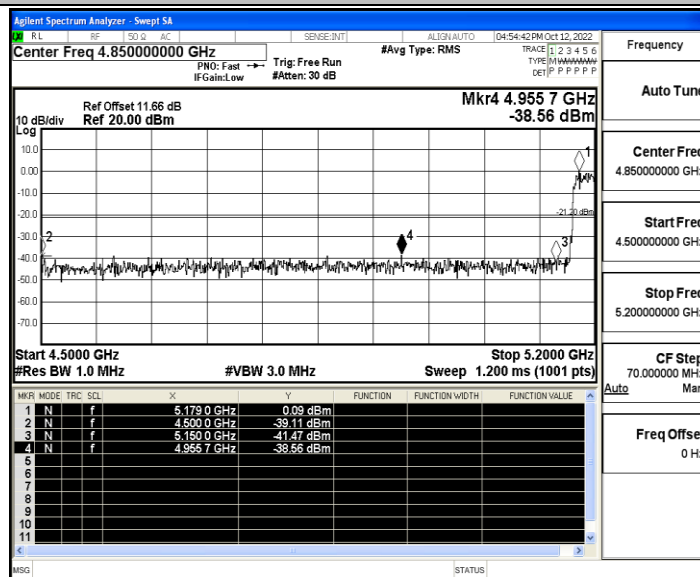


11AC40SISO_Ant_Low_5190_AV



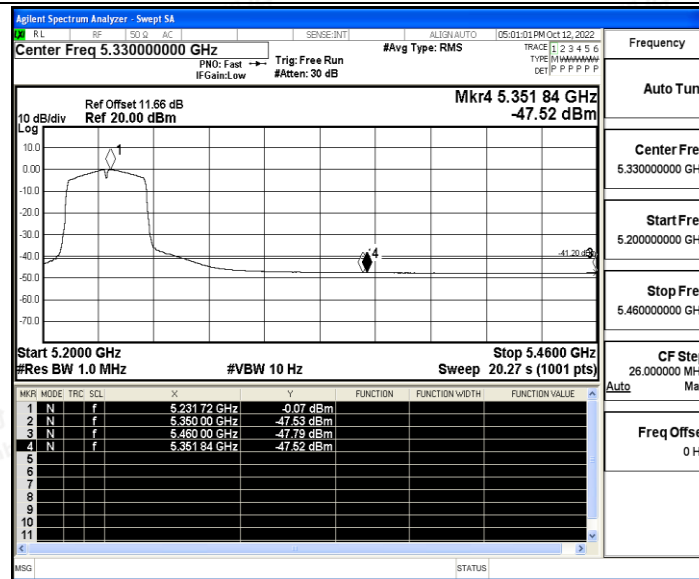


11AC40SISO_Ant_Low_5190_Peak

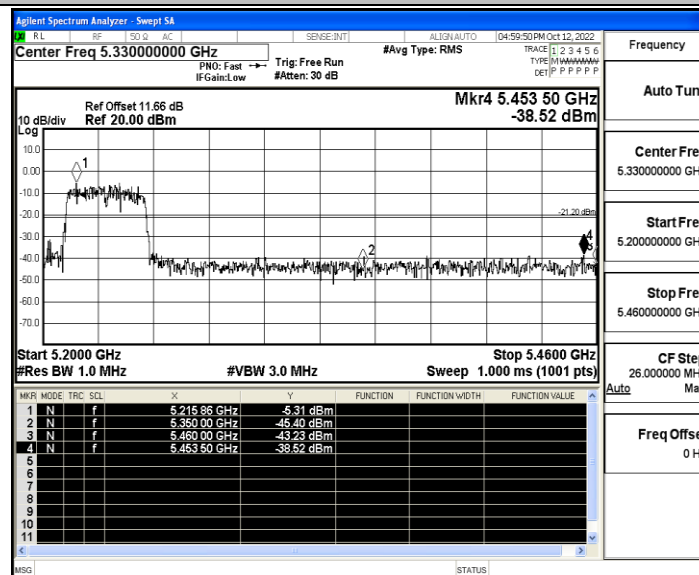


11AC40SISO_Ant_High_5230_AV



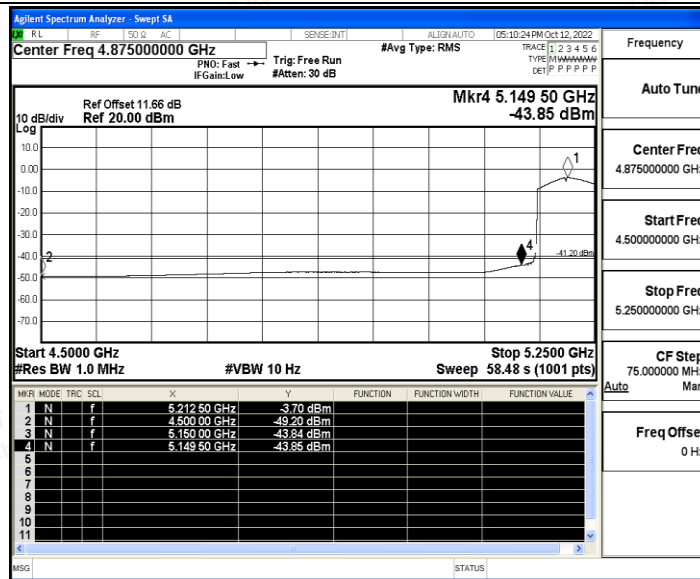


11AC40SISO_Ant_High_5230_Peak

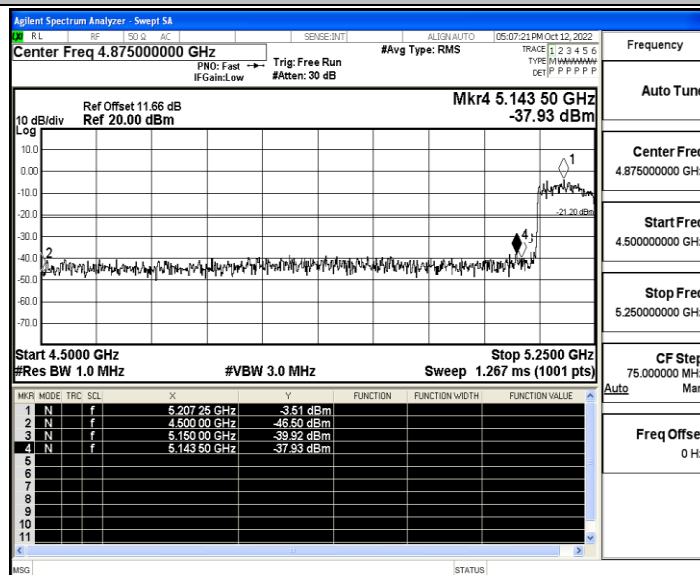


11AC80SISO_Ant_Low_5210_AV



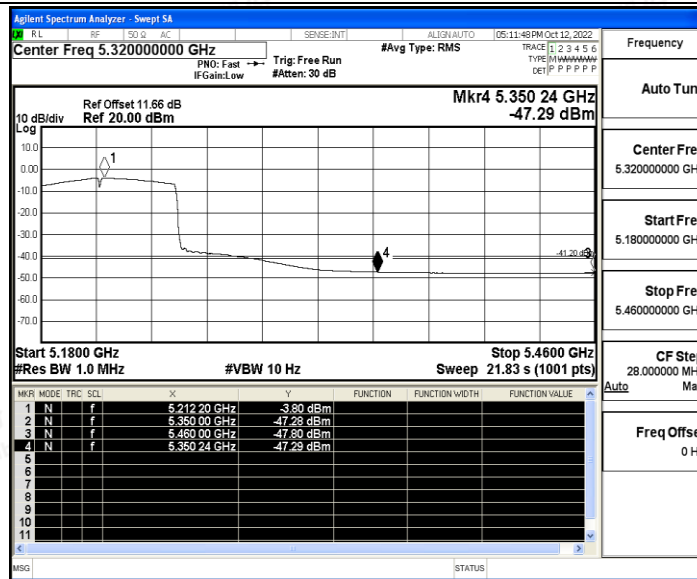


11AC80SISO_Ant_Low_5210_Peak

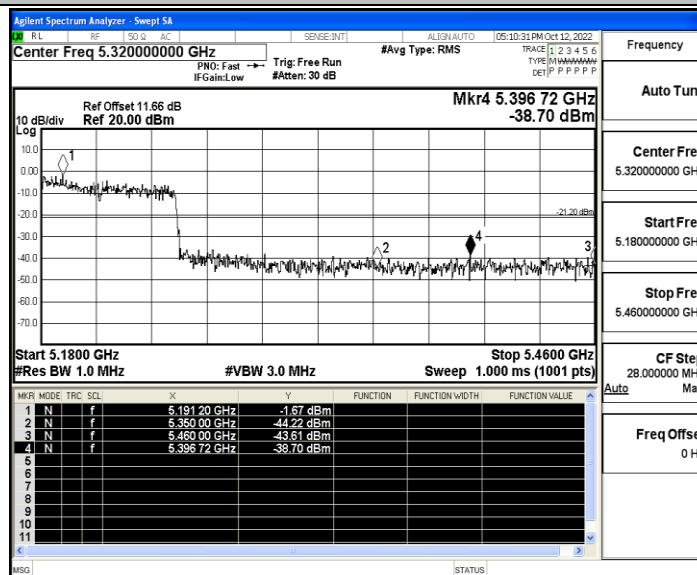


11AC80SISO_Ant_High_5210_AV





11AC80SISO_Ant_High_5210_Peak





D.6 Frequency Stability

Test Result

Voltage								
TestMode	Antenna	Frequenc y[MHz]	Voltage [Vdc]	Temperat ure (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20SIS O	Ant	5180	NV	NT	-20000.00	-3.861004	20	PASS
			LV	NT	-40000.00	-7.722008	20	PASS
			HV	NT	-20000.00	-3.861004	20	PASS
		5220	NV	NT	20000.00	3.831418	20	PASS
			LV	NT	20000.00	3.831418	20	PASS
			HV	NT	-40000.00	-7.662835	20	PASS
		5240	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11AC40SIS O	Ant	5190	NV	NT	-40000.00	-7.707129	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5230	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-40000.00	-7.648184	20	PASS
11AC80SIS O	Ant	5210	NV	NT	-80000.00	-15.355086	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	80000.00	15.355086	20	PASS

Temperature								
TestMode	Antenna	Frequenc y[MHz]	Voltage [Vdc]	Temperat ure (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20SIS O	Ant	5180	NV	-30	-20000.00	-3.861004	20	PASS
			NV	-20	-20000.00	-3.861004	20	PASS
			NV	-10	-20000.00	-3.861004	20	PASS
			NV	0	-20000.00	-3.861004	20	PASS
			NV	10	-20000.00	-3.861004	20	PASS
			NV	20	-40000.00	-7.722008	20	PASS
			NV	30	-20000.00	-3.861004	20	PASS
			NV	40	20000.00	3.861004	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5220	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.831418	20	PASS





			NV	0	-20000.00	-3.831418	20	PASS
			NV	10	-20000.00	-3.831418	20	PASS
			NV	20	-20000.00	-3.831418	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	-20000.00	-3.831418	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5240	NV	-30	20000.00	3.816794	20	PASS
			NV	-20	20000.00	3.816794	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-20000.00	-3.816794	20	PASS
			NV	20	20000.00	3.816794	20	PASS
			NV	30	-20000.00	-3.816794	20	PASS
			NV	40	-20000.00	-3.816794	20	PASS
			NV	50	-20000.00	-3.816794	20	PASS
11AC40SIS O	Ant	5190	NV	-30	0.00	0.000000	20	PASS
			NV	-20	40000.00	7.707129	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-40000.00	-7.707129	20	PASS
			NV	20	40000.00	7.707129	20	PASS
			NV	30	-40000.00	-7.707129	20	PASS
			NV	40	40000.00	7.707129	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5230	NV	-30	-40000.00	-7.648184	20	PASS
			NV	-20	-40000.00	-7.648184	20	PASS
			NV	-10	-80000.00	-15.296367	20	PASS
			NV	0	40000.00	7.648184	20	PASS
			NV	10	-40000.00	-7.648184	20	PASS
			NV	20	-40000.00	-7.648184	20	PASS
			NV	30	-40000.00	-7.648184	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	40000.00	7.648184	20	PASS
11AC80SIS O	Ant	5210	NV	-30	0.00	0.000000	20	PASS
			NV	-20	80000.00	15.355086	20	PASS
			NV	-10	80000.00	15.355086	20	PASS
			NV	0	80000.00	15.355086	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS





			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



D.7 Duty Cycle

Test Result

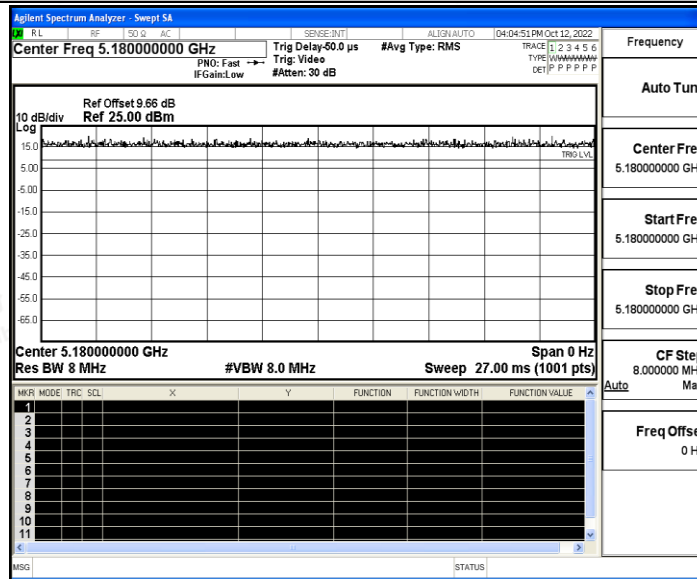
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T(kHz)
11A	Ant	5180	27.00	27.00	100.00	0.04
		5220	27.00	27.00	100.00	0.04
		5240	27.00	27.00	100.00	0.04
11N20SISO	Ant	5180	27.00	27.00	100.00	0.04
		5220	27.00	27.00	100.00	0.04
		5240	27.00	27.00	100.00	0.04
11N40SISO	Ant	5190	27.00	27.00	100.00	0.04
		5230	27.00	27.00	100.00	0.04
11AC20SISO	Ant	5180	27.00	27.00	100.00	0.04
		5220	27.00	27.00	100.00	0.04
		5240	27.00	27.00	100.00	0.04
11AC40SISO	Ant	5190	27.00	27.00	100.00	0.04
		5230	27.00	27.00	100.00	0.04
11AC80SISO	Ant	5210	27.00	27.00	100.00	0.04



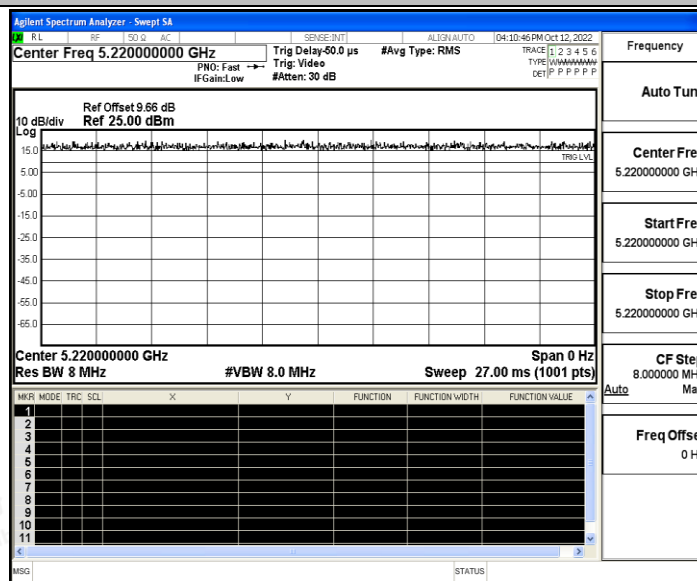


Test Graphs

11A_Ant_5180

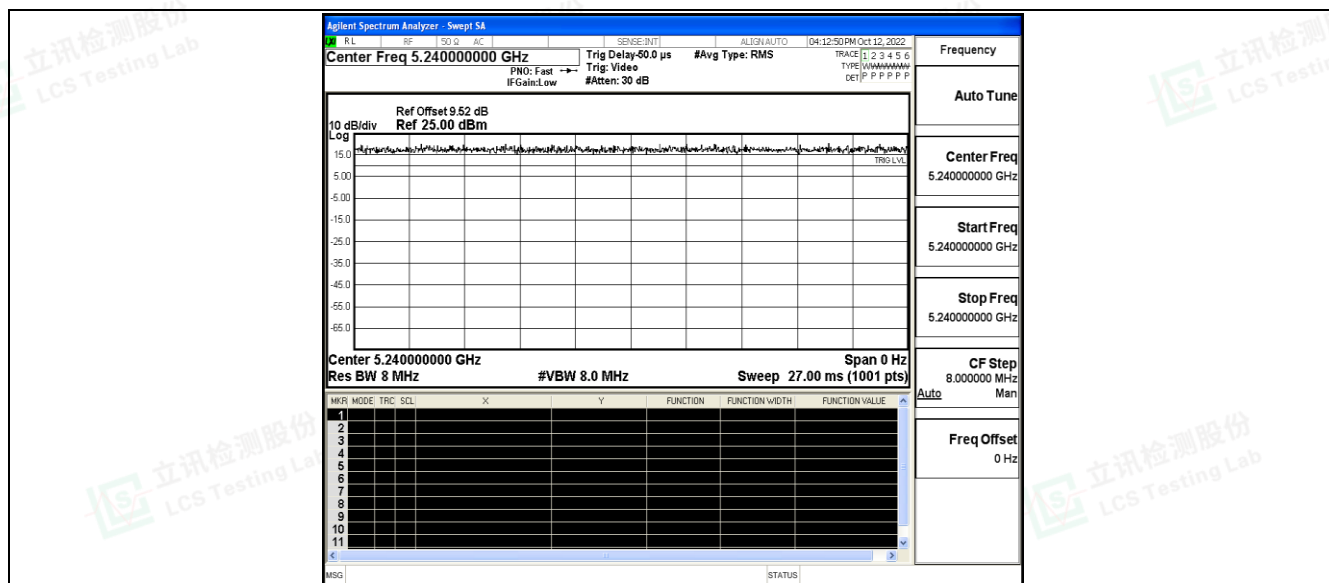


11A_Ant_5220

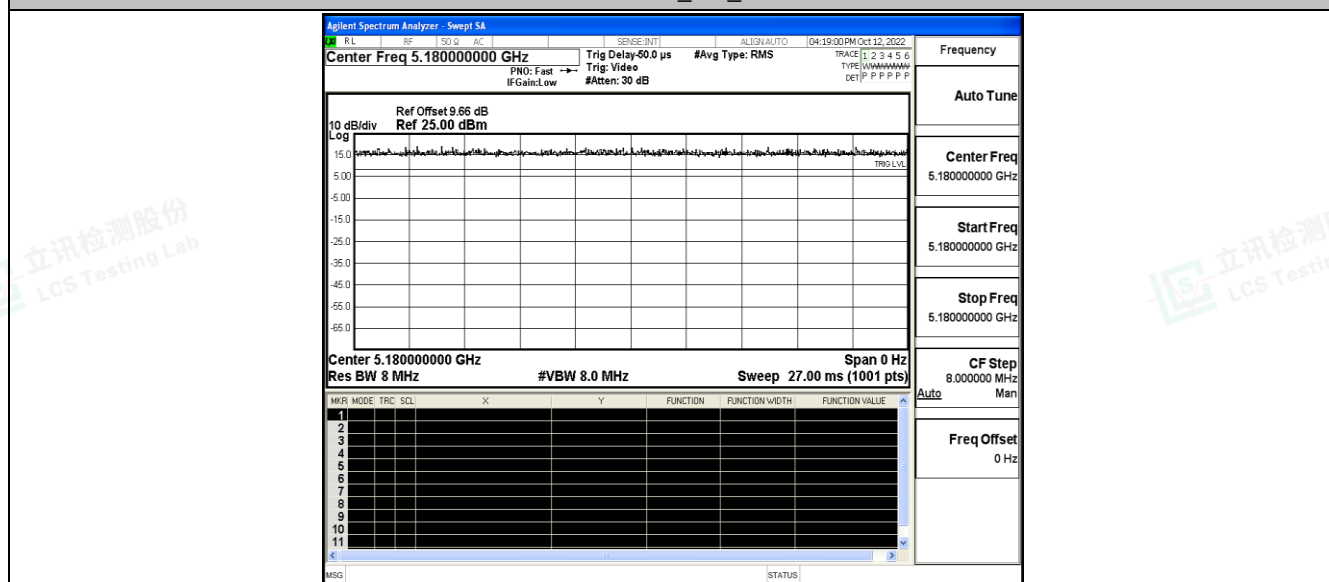


11A_Ant_5240



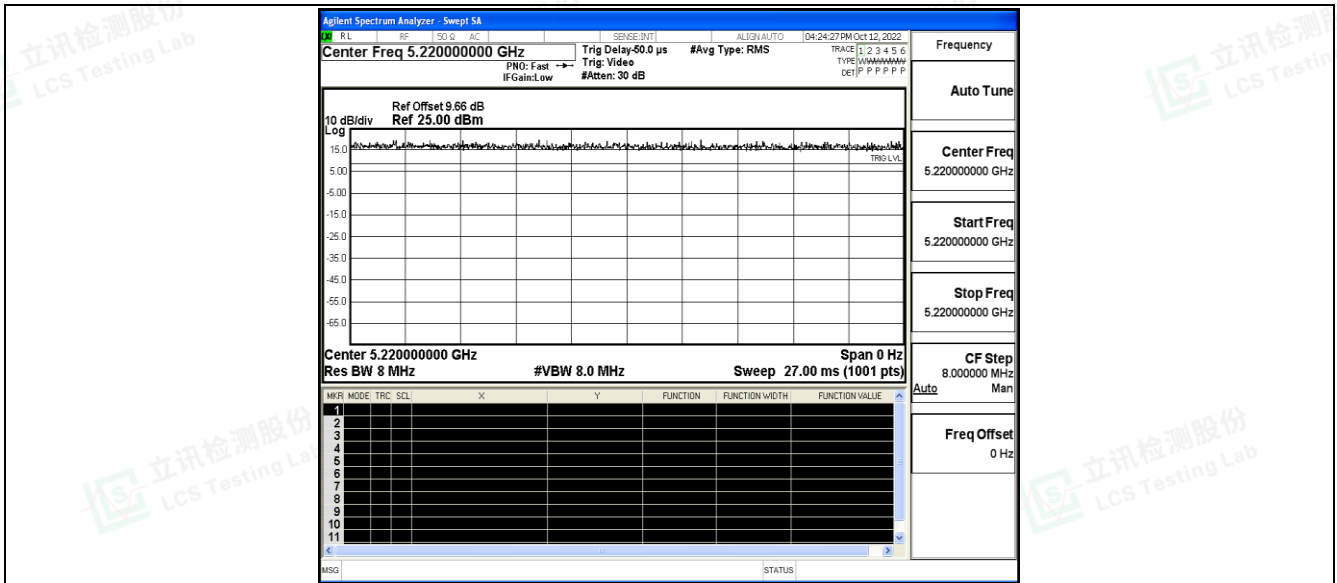


11N20SISO Ant 5180

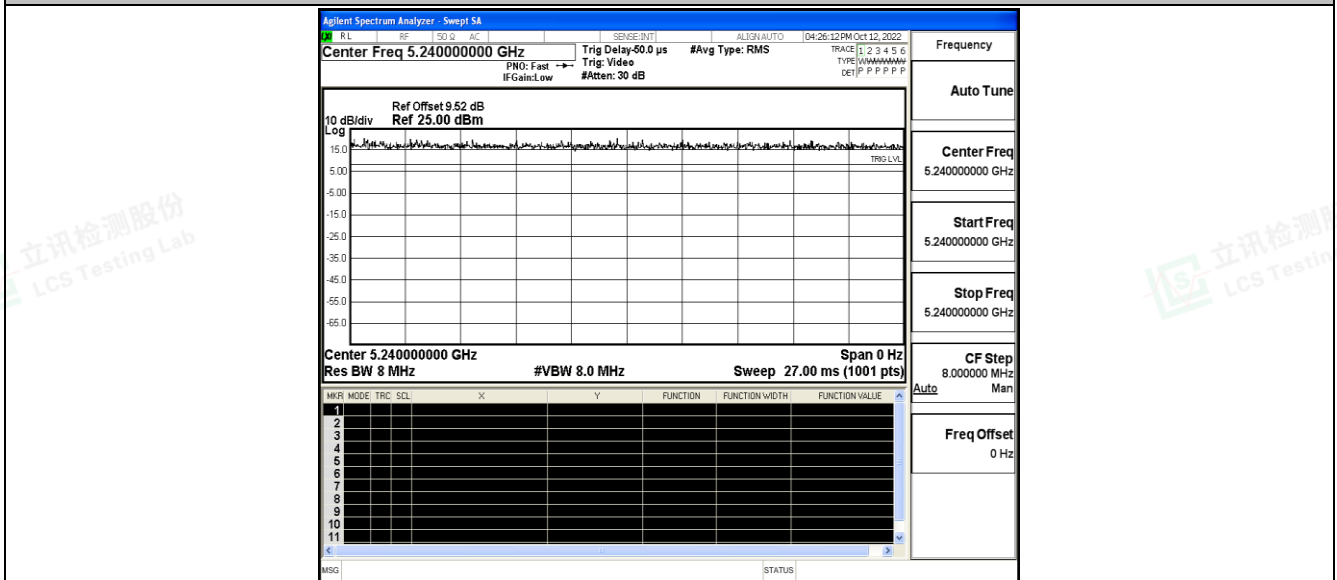


11N20SISO Ant 5220



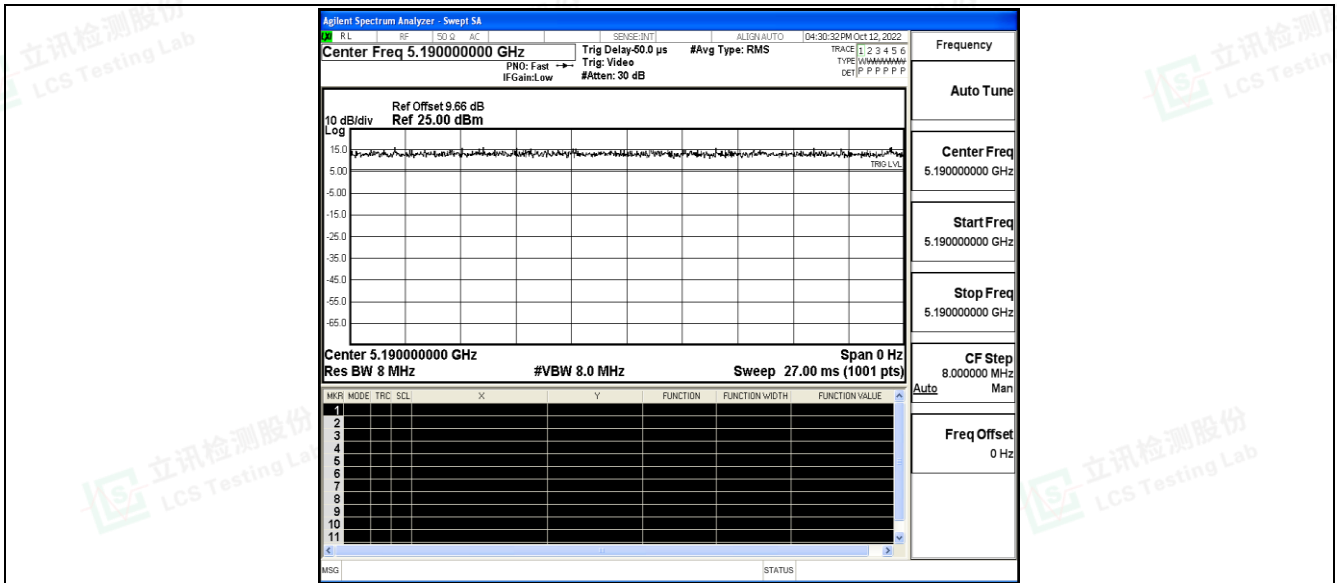


11N20SISO_Ant_5240

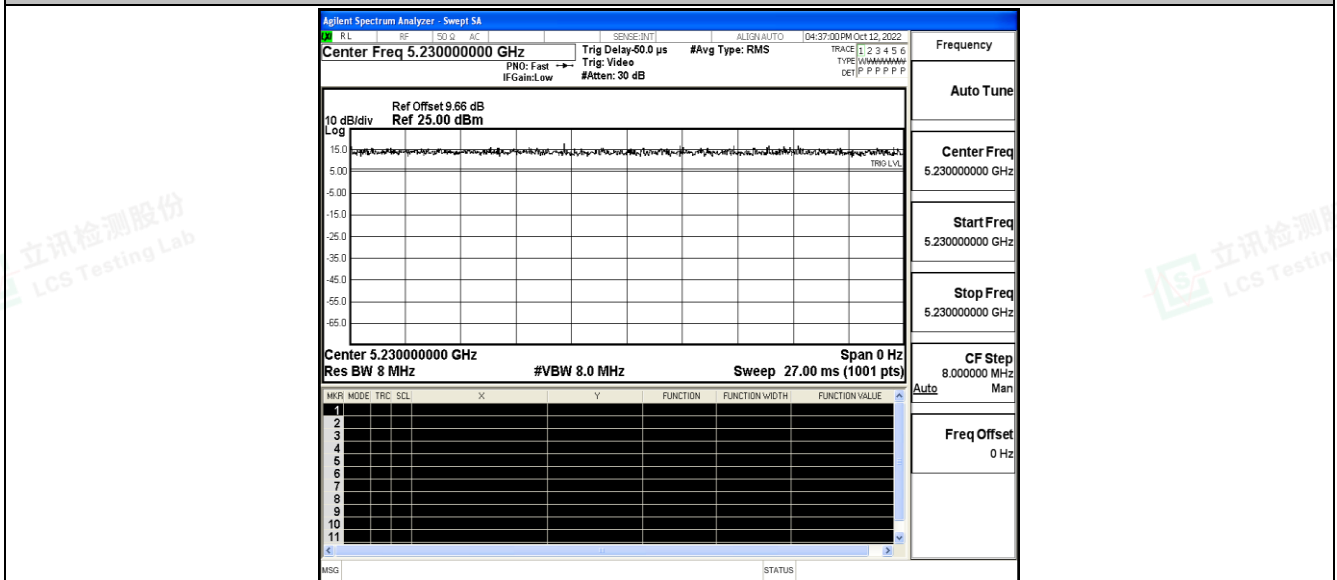


11N40SISO_Ant_5190



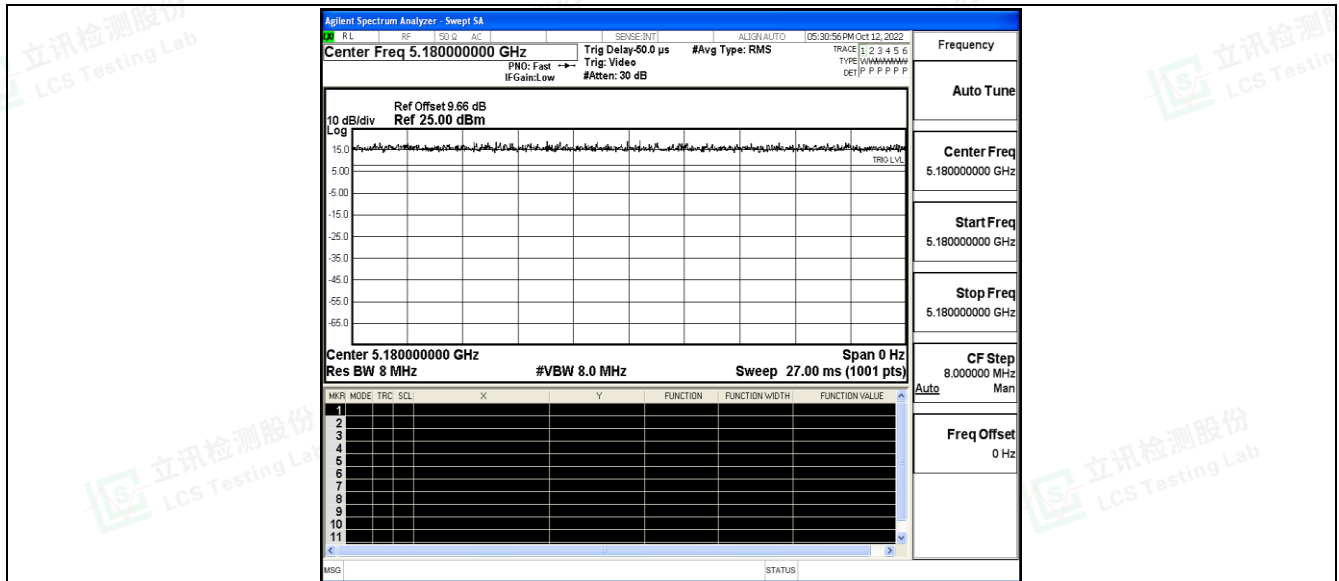


11N40SISO_Ant_5230

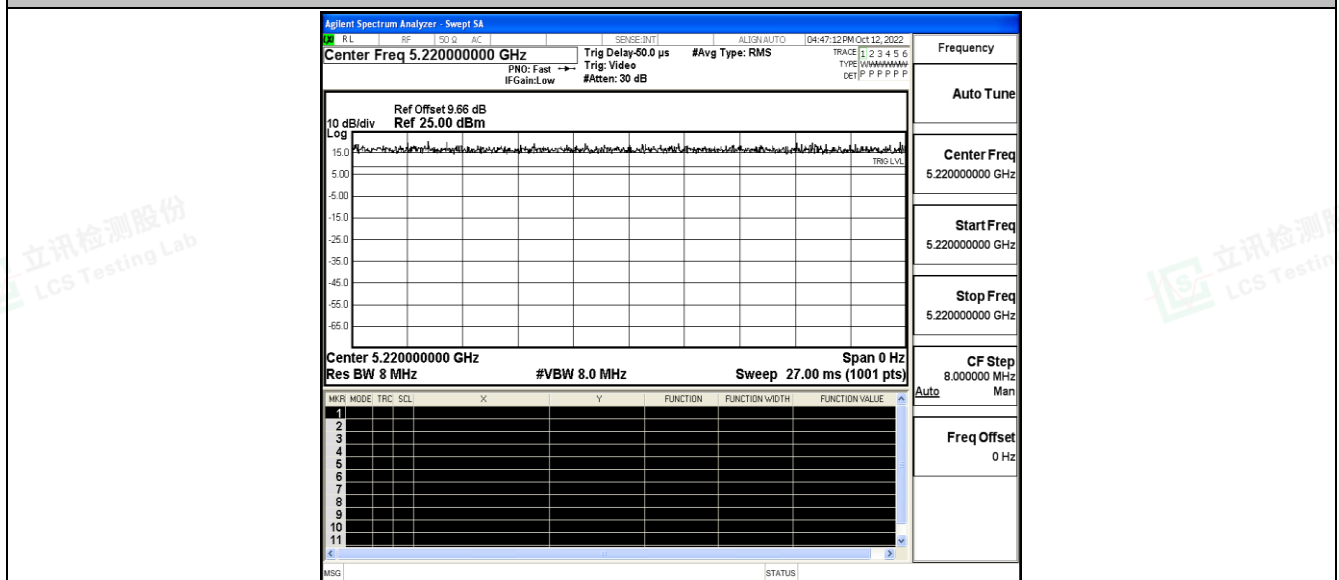


11AC20SISO_Ant_5180



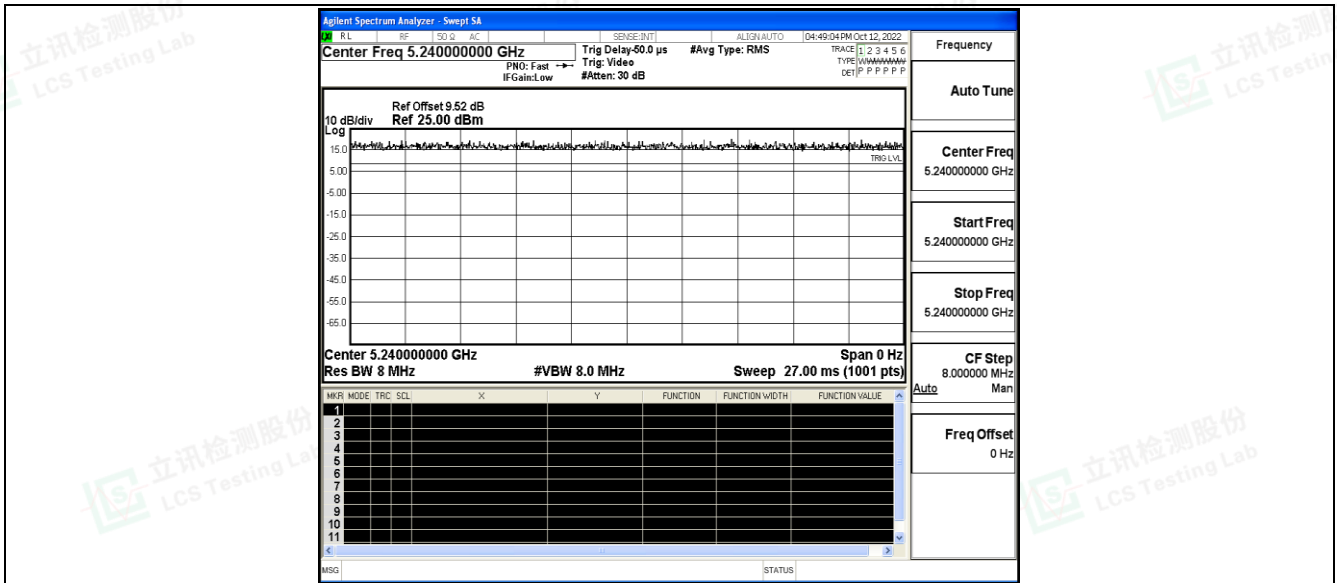


11AC20SISO_Ant_5220

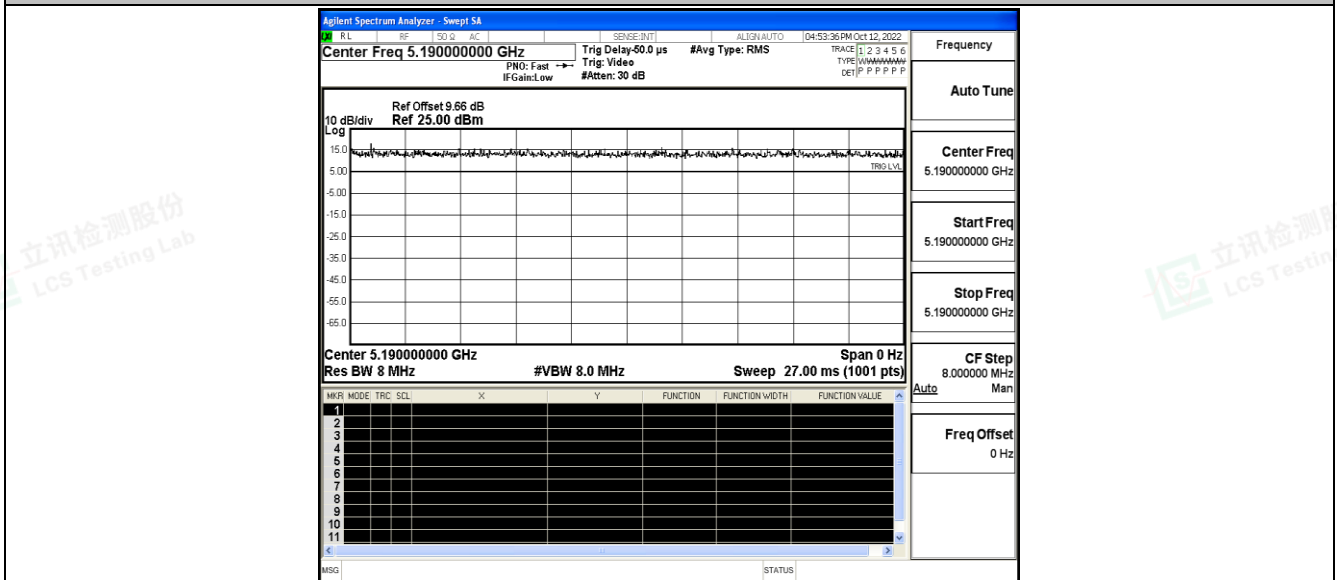


11AC20SISO_Ant_5240





11AC40SISO_Ant_5190



11AC40SISO_Ant_5230



