



## Appendix B

### RF Test Data for 5.2GWIFI (Conducted Measurement)

**Product Name: Multi-function projector**

**Test Model: NeoPix 122**

#### Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu





### B.1 Emission Bandwidth

#### Test Result

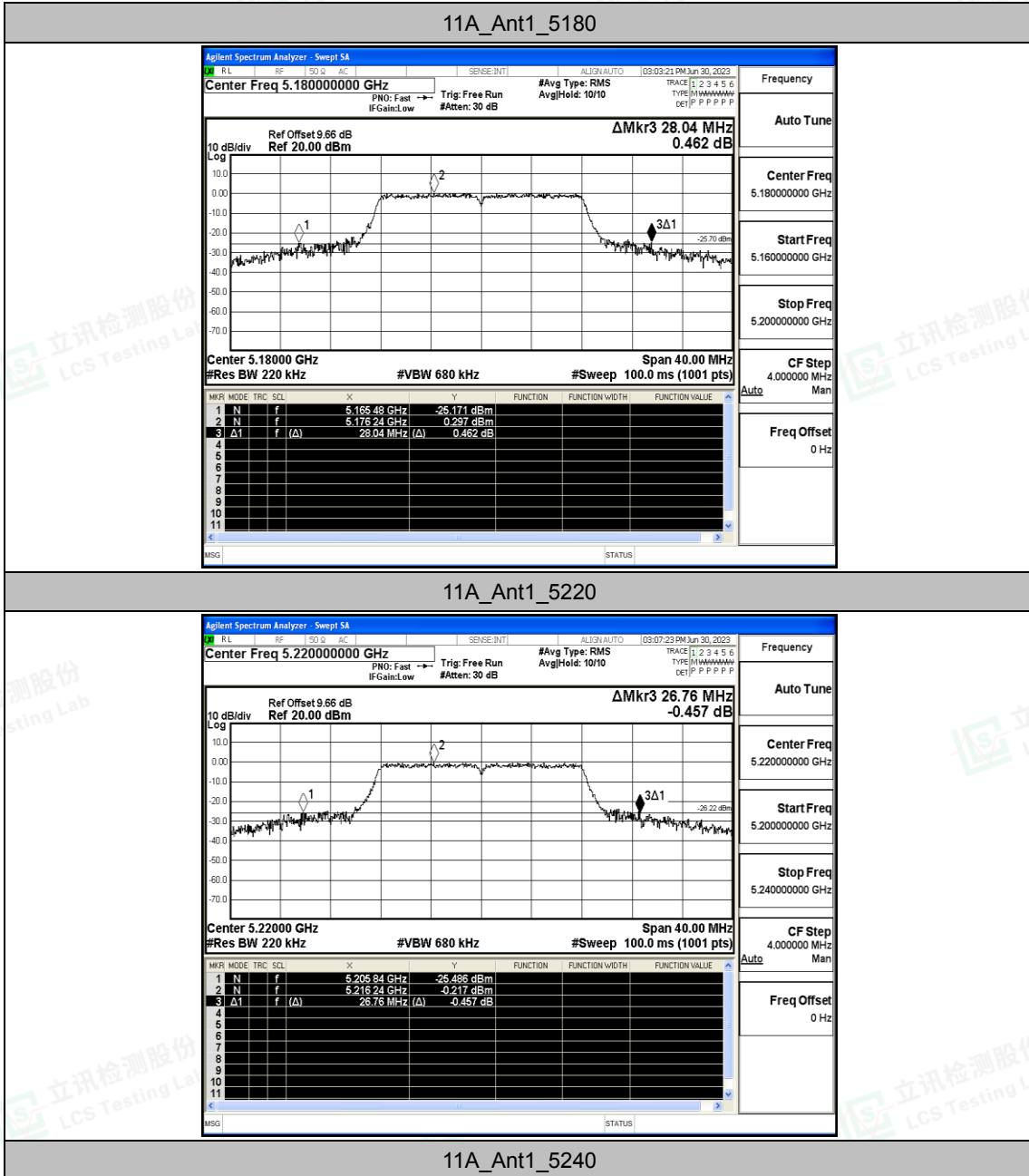
TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	28.040	5165.480	5193.520	---	PASS
		5220	26.760	5205.840	5232.600	---	PASS
		5240	27.000	5225.800	5252.800	---	PASS
11N20SISO	Ant1	5180	28.360	5166.120	5194.480	---	PASS
		5220	28.840	5205.880	5234.720	---	PASS
		5240	28.040	5225.400	5253.440	---	PASS
11N40SISO	Ant1	5190	47.200	5167.600	5214.800	---	PASS
		5230	51.120	5205.440	5256.560	---	PASS
11AC20SISO	Ant1	5180	29.920	5164.400	5194.320	---	PASS
		5220	29.240	5205.520	5234.760	---	PASS
		5240	31.080	5224.360	5255.440	---	PASS

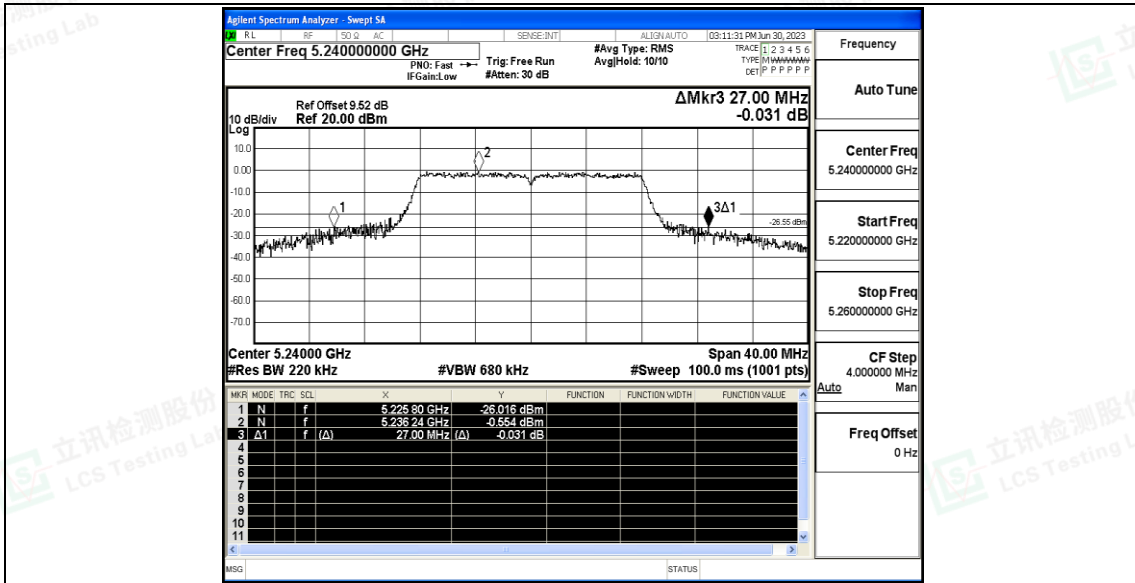


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 Shenzhen, 518000, China  
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
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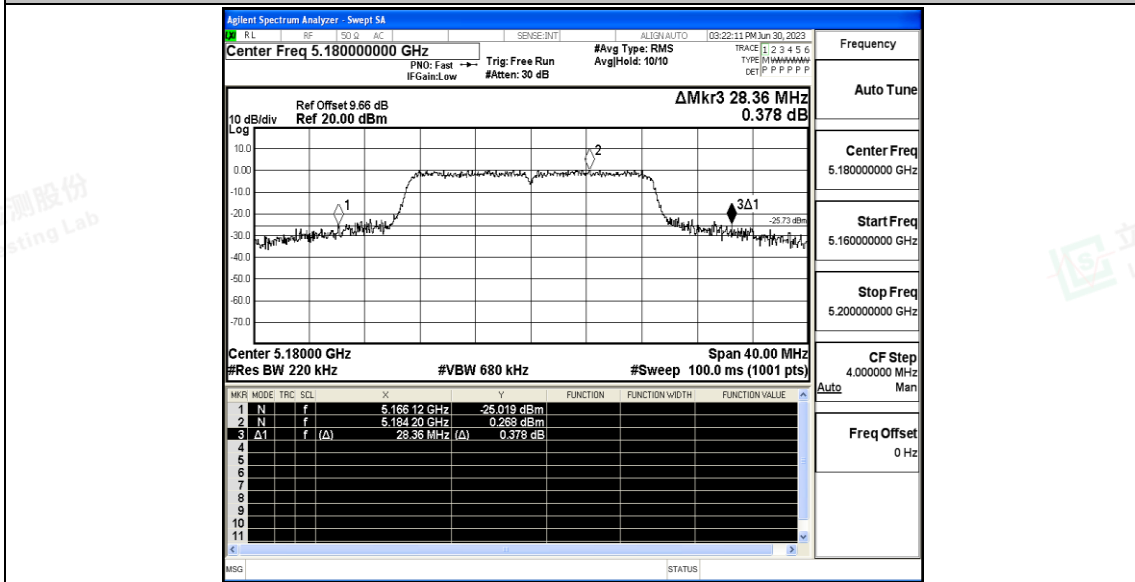


### Test Graphs



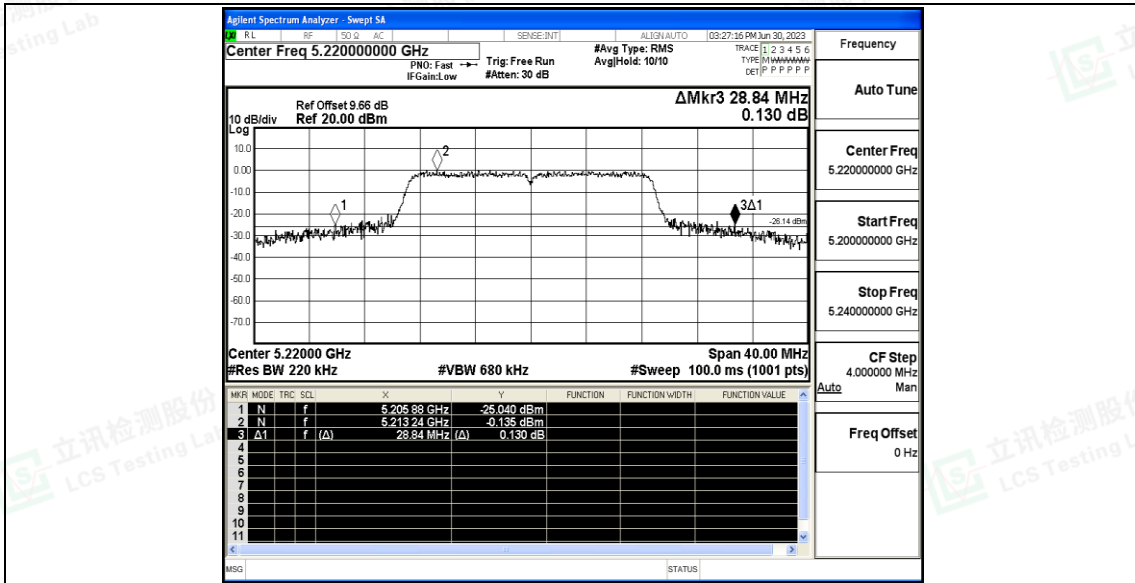


11N20SISO\_Ant1\_5180

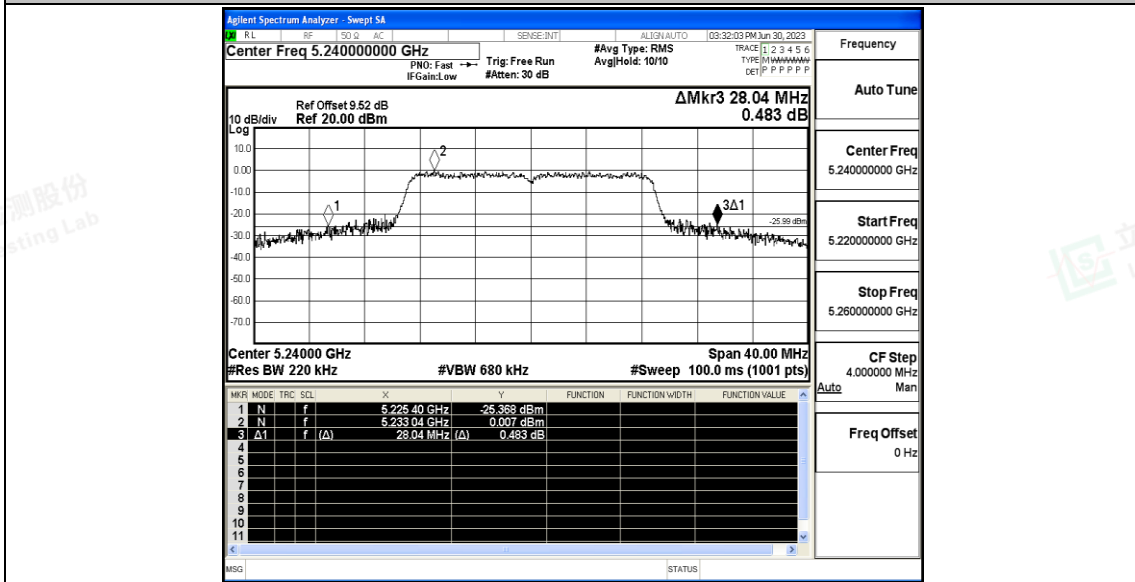


11N20SISO\_Ant1\_5220



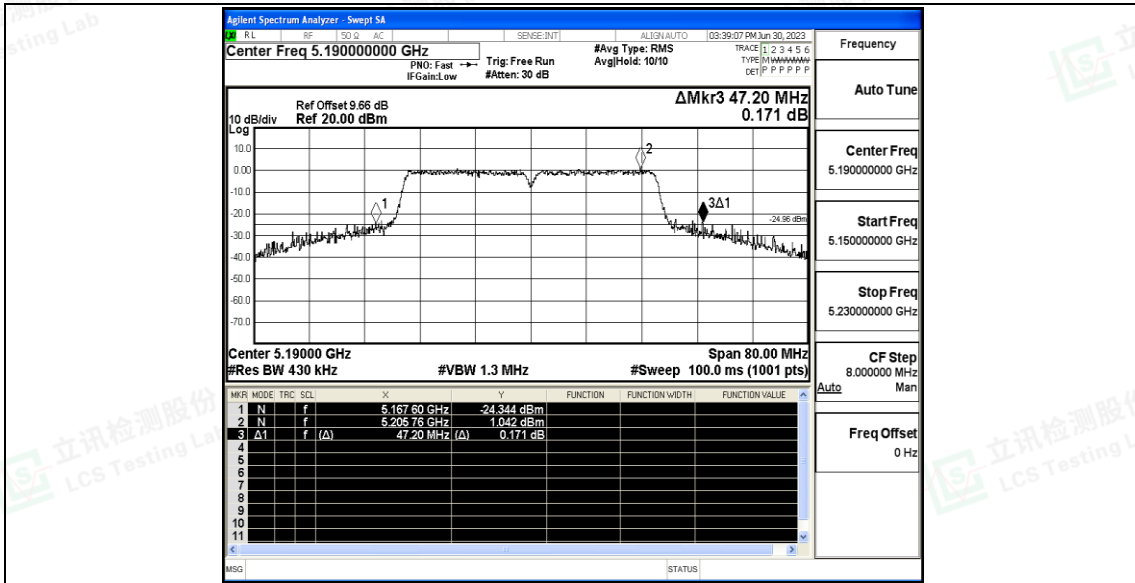


11N20SISO\_Ant1\_5240

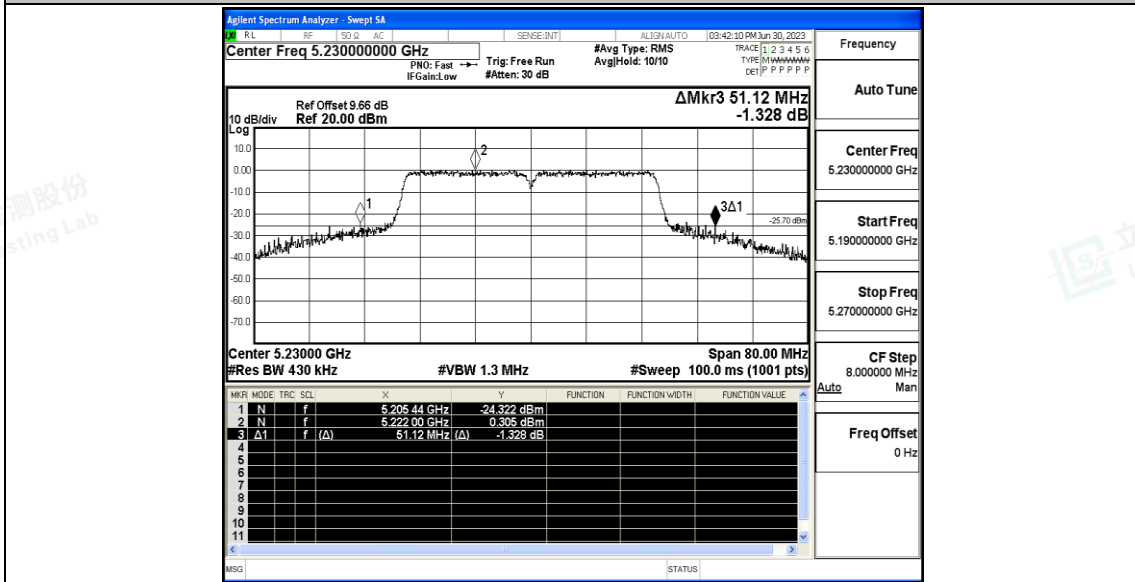


11N40SISO\_Ant1\_5190



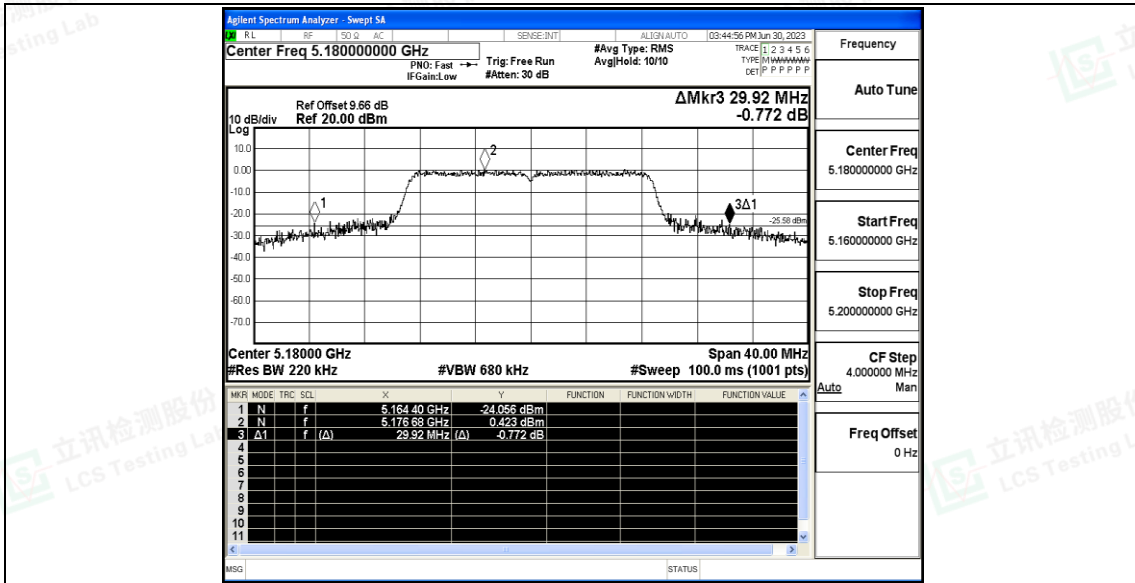


11N40SISO\_Ant1\_5230

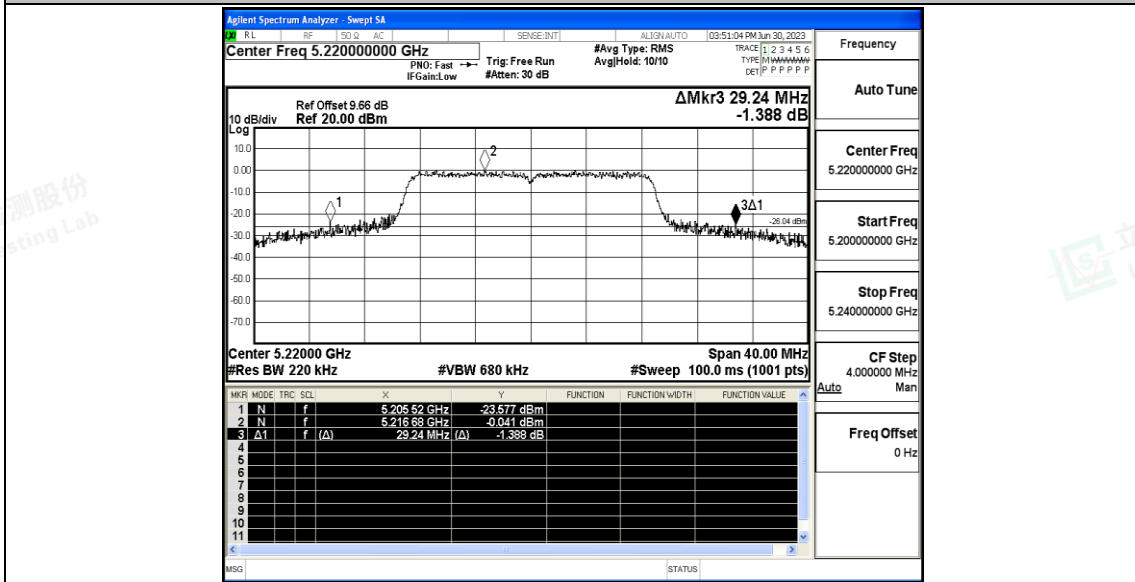


11A20SISO\_Ant1\_5180



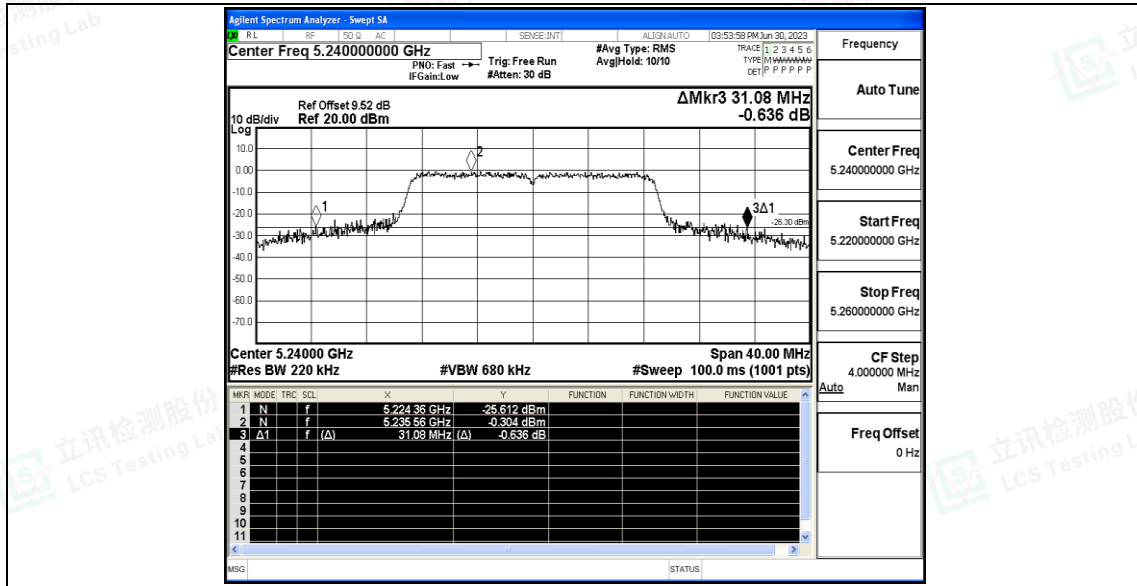


11AC20SISO\_Ant1\_5220



11AC20SISO\_Ant1\_5240





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## B.2 Maximum conducted output power

### Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	10.56	≤23.98	PASS
		5220	10.11	≤23.98	PASS
		5240	9.70	≤23.98	PASS
11N20SISO	Ant1	5180	10.63	≤23.98	PASS
		5220	10.43	≤23.98	PASS
		5240	10.10	≤23.98	PASS
11N40SISO	Ant1	5190	10.59	≤23.98	PASS
		5230	10.11	≤23.98	PASS
11AC20SISO	Ant1	5180	10.82	≤23.98	PASS
		5220	10.38	≤23.98	PASS
		5240	10.05	≤23.98	PASS

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





### B.3 Maximum power spectral density

#### Test Result

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-0.9	≤11.00	PASS
		5220	-1.34	≤11.00	PASS
		5240	-1.56	≤11.00	PASS
11N20SISO	Ant1	5180	-0.99	≤11.00	PASS
		5220	-1.27	≤11.00	PASS
		5240	-1.55	≤11.00	PASS
11N40SISO	Ant1	5190	-3.99	≤11.00	PASS
		5230	-4.44	≤11.00	PASS
11AC20SISO	Ant1	5180	-0.73	≤11.00	PASS
		5220	-1.39	≤11.00	PASS
		5240	-1.34	≤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 and RBW Factor is compensated in the graph.



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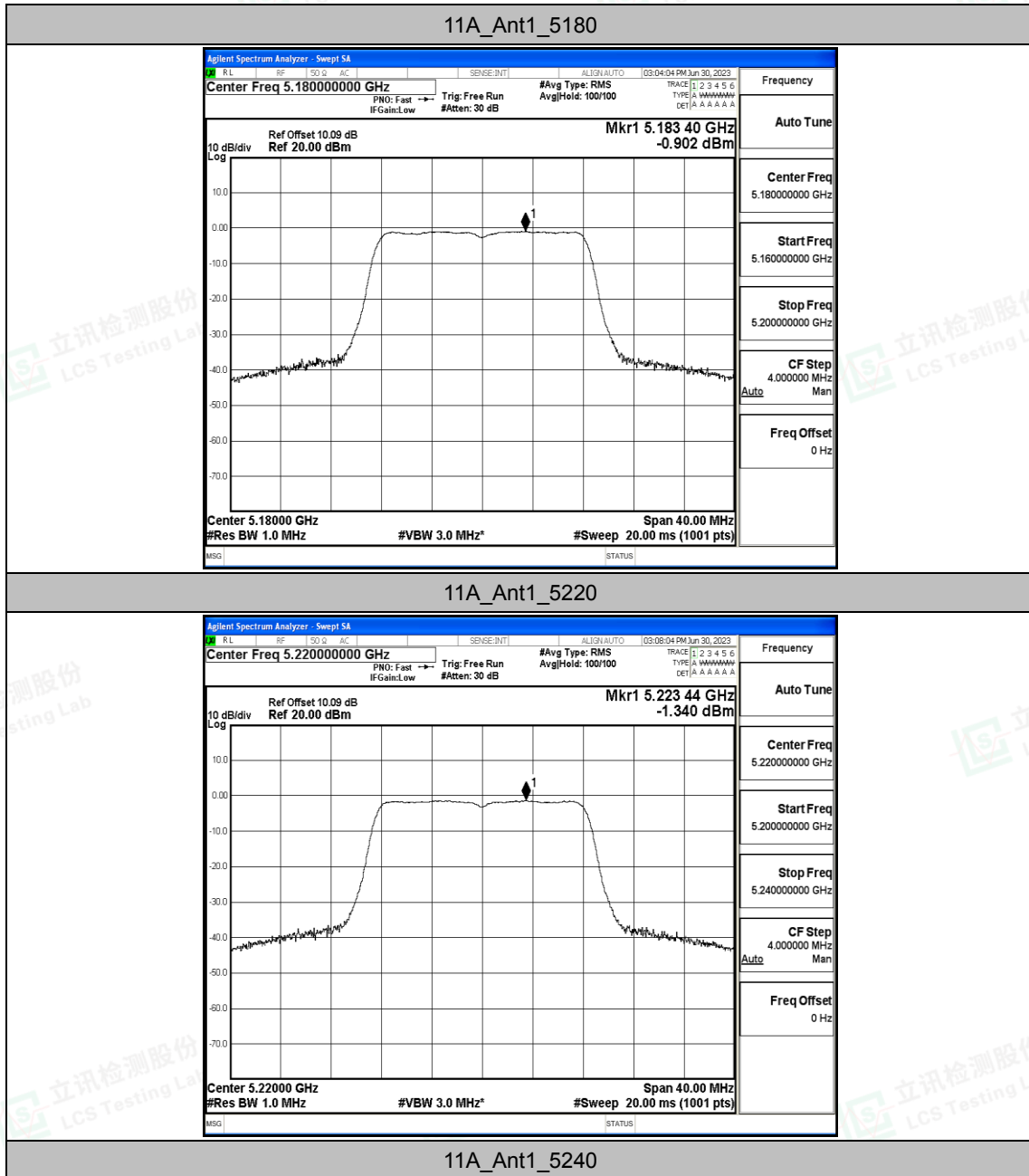
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

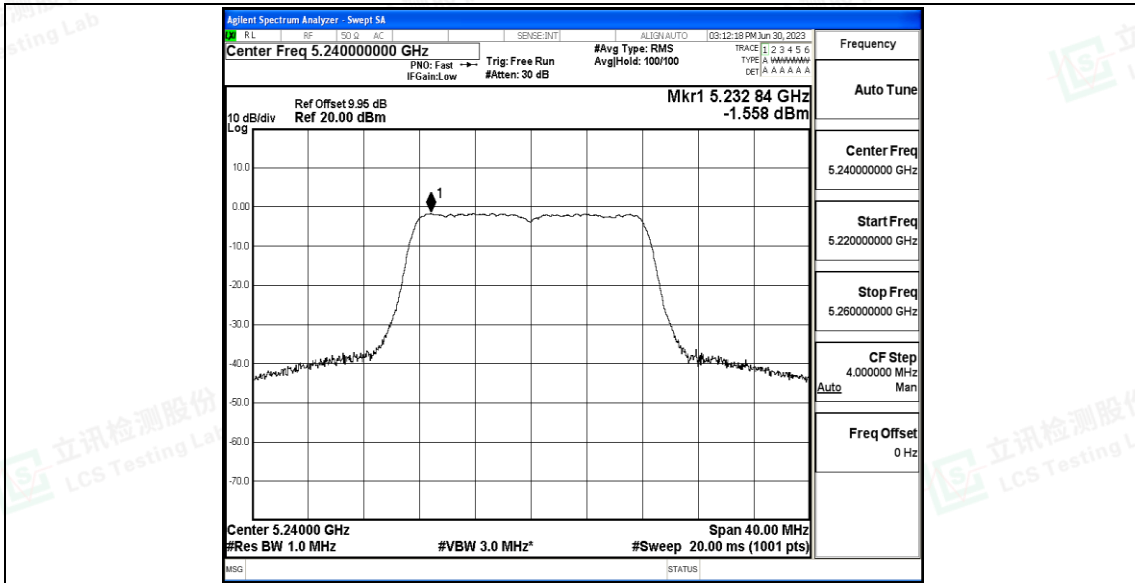
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

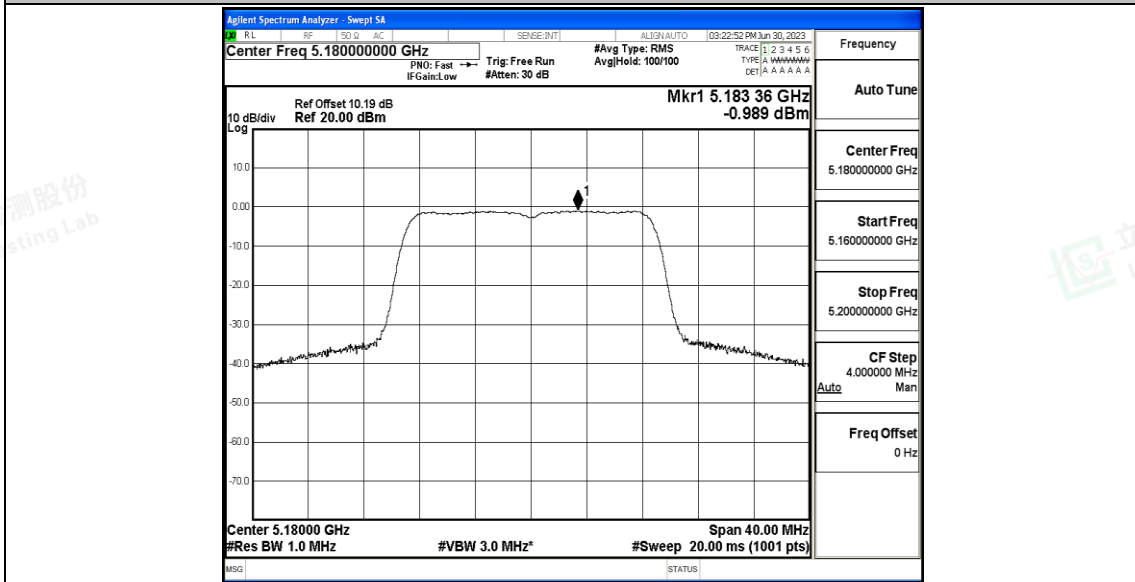


### Test Graphs



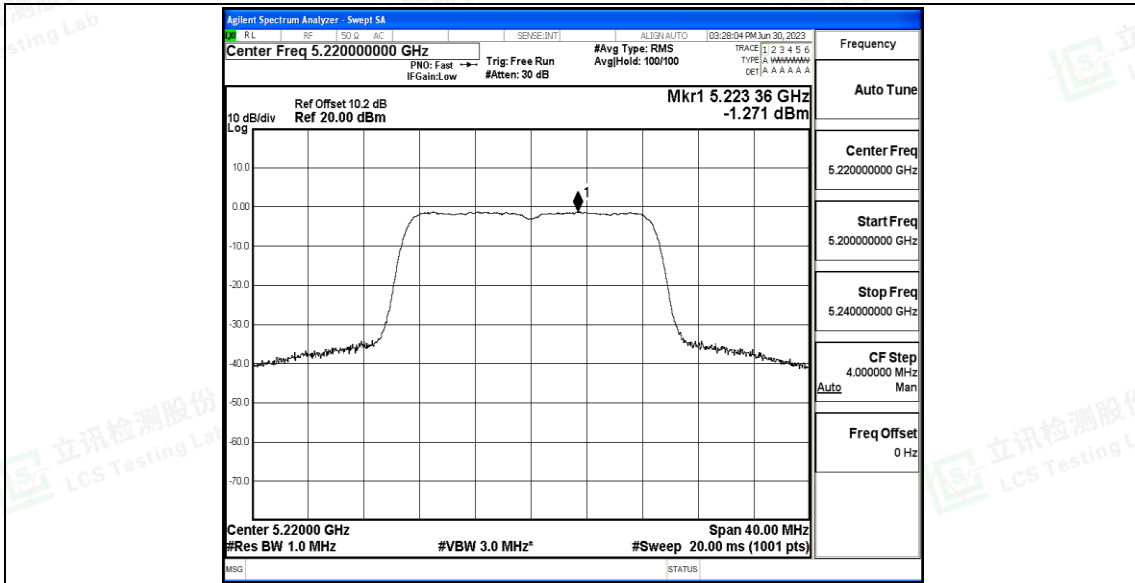


11N20SISO\_Ant1\_5180

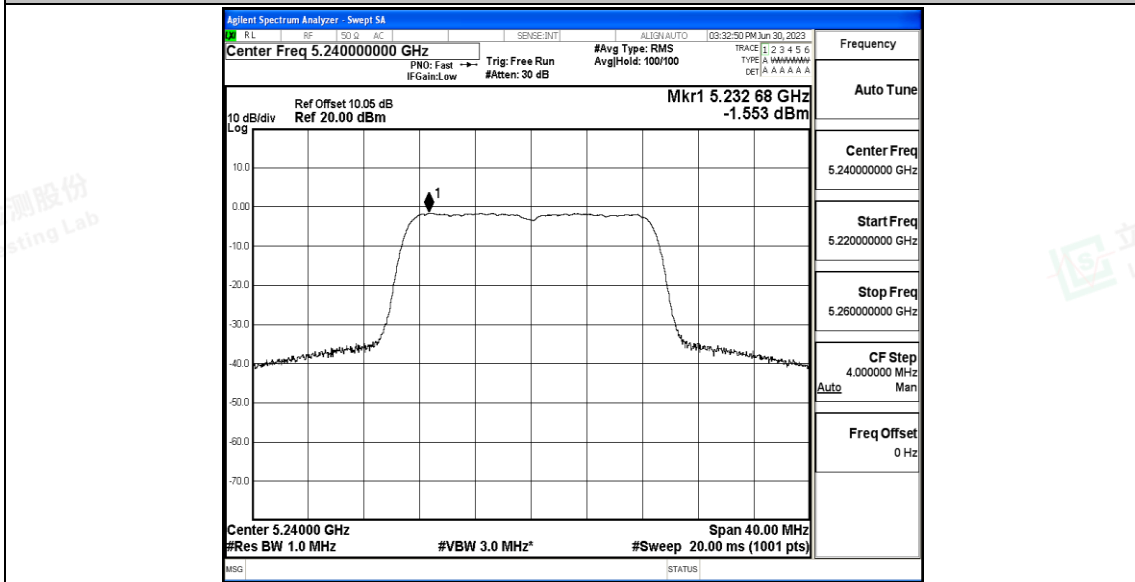


11N20SISO\_Ant1\_5220



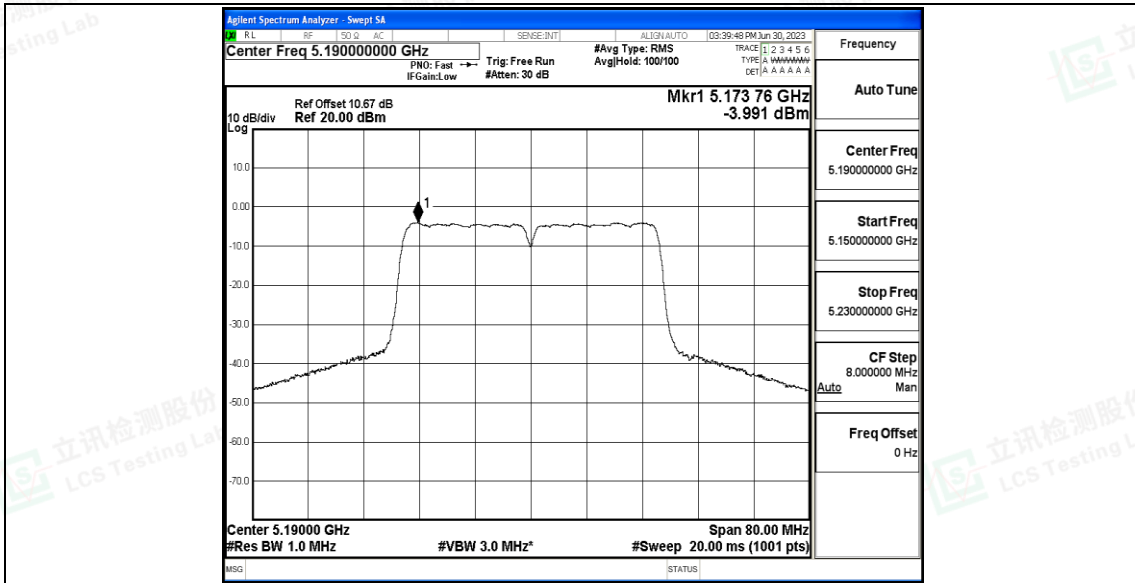


11N20SISO\_Ant1\_5240

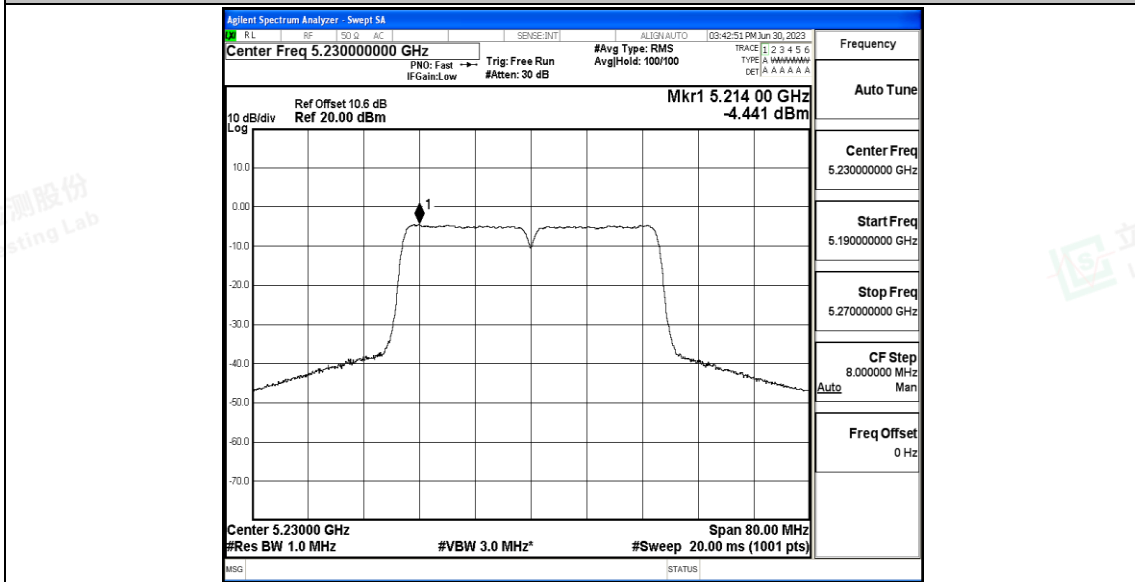


11N40SISO\_Ant1\_5190



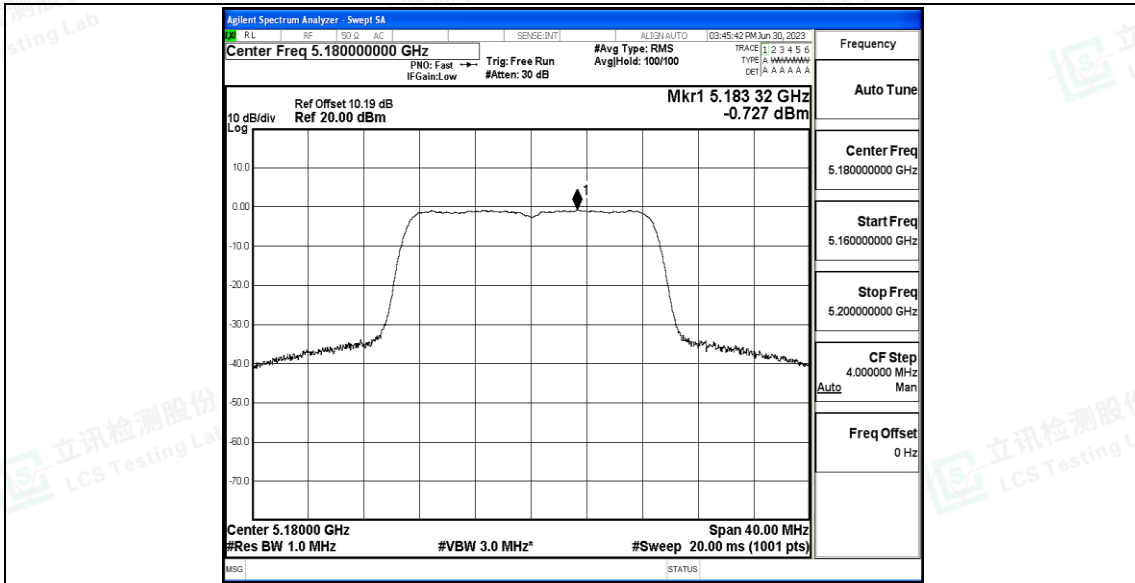


11N40SISO\_Ant1\_5230

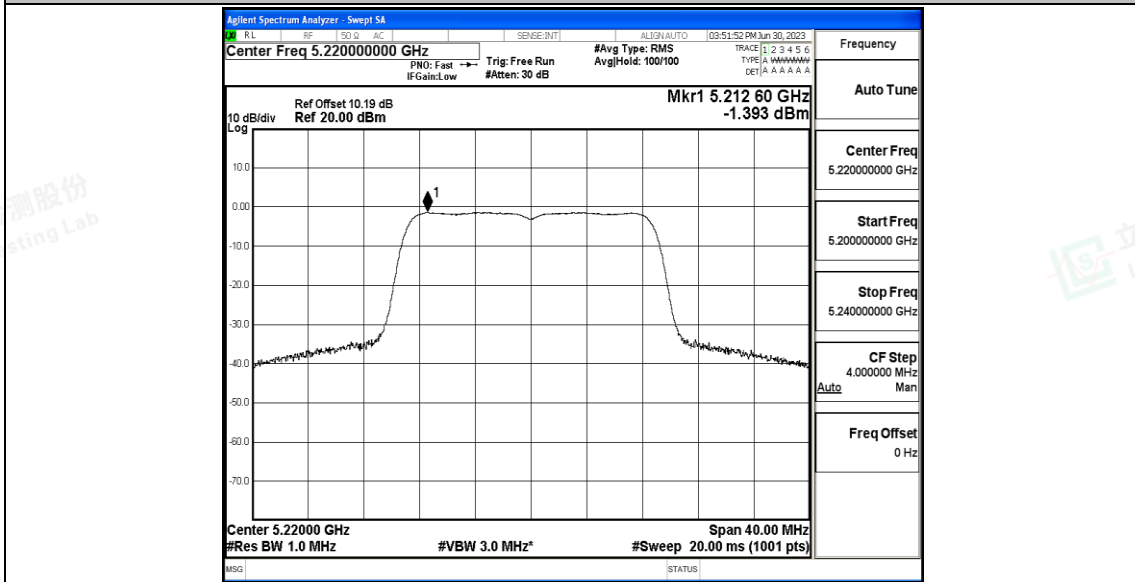


11A20SISO\_Ant1\_5180



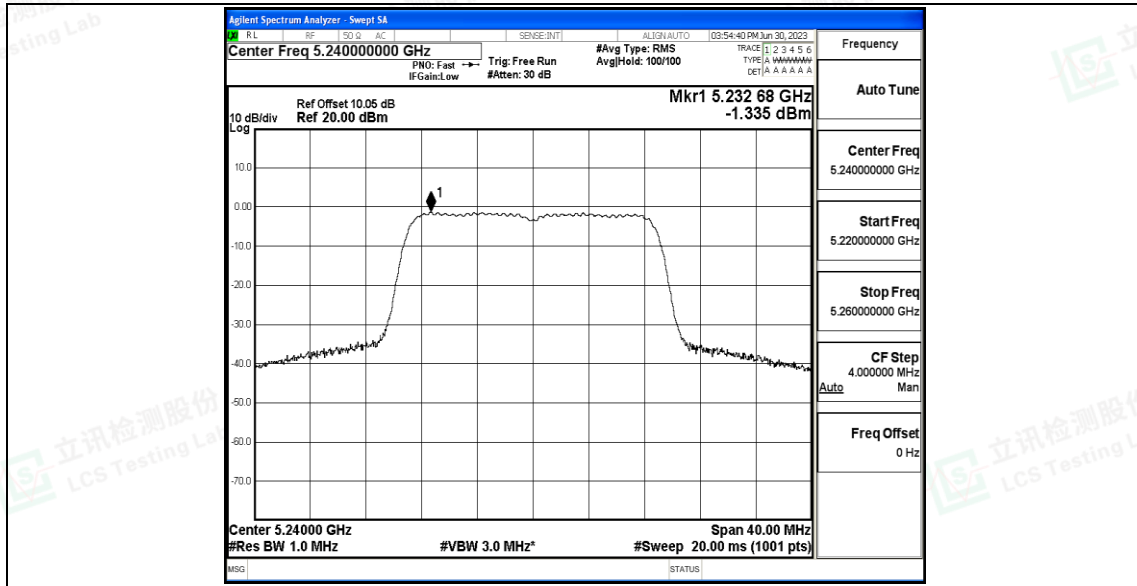


11AC20SISO\_Ant1\_5220



11AC20SISO\_Ant1\_5240







**B.4 Emissions in Restricted Bands****Test Result**

TestMode	Antenna	ChName	Frequenc y[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBUV/m]	Limit [dBUV/m]	Verdict
11A	Ant1	Low	5180	AV	4500.000	-58	≤-41.20	37.20	≤54	PASS
				AV	5149.600	-47.84	≤-41.20	47.36	≤54	PASS
				AV	5150.000	-47.34	≤-41.20	47.86	≤54	PASS
				Peak	4500.000	-52.71	≤-21.20	42.49	≤74	PASS
				Peak	5147.500	-39.87	≤-21.20	55.33	≤74	PASS
				Peak	5150.000	-44.22	≤-21.20	50.98	≤74	PASS
		High	5240	AV	5350.000	-56.64	≤-41.20	38.56	≤54	PASS
				AV	5351.760	-56.52	≤-41.20	38.68	≤54	PASS
				AV	5460.000	-57.13	≤-41.20	38.07	≤54	PASS
				Peak	5350.000	-52.74	≤-21.20	42.46	≤74	PASS
				Peak	5437.920	-47.71	≤-21.20	47.49	≤74	PASS
				Peak	5460.000	-53.18	≤-21.20	42.02	≤74	PASS
11N20SIS O	Ant1	Low	5180	AV	4500.000	-57.86	≤-41.20	37.34	≤54	PASS
				AV	5149.600	-46.03	≤-41.20	49.17	≤54	PASS
				AV	5150.000	-45.8	≤-41.20	49.40	≤54	PASS
				Peak	4500.000	-53.49	≤-21.20	41.71	≤74	PASS
				Peak	5149.600	-40.24	≤-21.20	54.96	≤74	PASS
				Peak	5150.000	-39.94	≤-21.20	55.26	≤74	PASS
		High	5240	AV	5350.000	-56.52	≤-41.20	38.68	≤54	PASS
				AV	5351.520	-56.41	≤-41.20	38.79	≤54	PASS
				AV	5460.000	-57.01	≤-41.20	38.19	≤54	PASS
				Peak	5350.000	-51.01	≤-21.20	44.19	≤74	PASS
				Peak	5429.280	-47.92	≤-21.20	47.28	≤74	PASS
				Peak	5460.000	-53.12	≤-21.20	42.08	≤74	PASS
11N40SIS O	Ant1	Low	5190	AV	4500.000	-57.67	≤-41.20	37.53	≤54	PASS
				AV	5149.600	-45.07	≤-41.20	50.13	≤54	PASS
				AV	5150.000	-43.17	≤-41.20	52.03	≤54	PASS
				Peak	4500.000	-53.42	≤-21.20	41.78	≤74	PASS
				Peak	5149.600	-36.16	≤-21.20	59.04	≤74	PASS
				Peak	5150.000	-41.61	≤-21.20	53.59	≤74	PASS
		High	5230	AV	5350.000	-56.4	≤-41.20	38.80	≤54	PASS
				AV	5364.580	-56.08	≤-41.20	39.12	≤54	PASS
				AV	5460.000	-56.89	≤-41.20	38.31	≤54	PASS
				Peak	5350.000	-52.44	≤-21.20	42.76	≤74	PASS



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11AC20SI SO	Ant1	Low	5180	Peak	5414.500	-46.38	$\leq -21.20$	48.82	$\leq 74$	PASS
				Peak	5460.000	-51.1	$\leq -21.20$	44.10	$\leq 74$	PASS
				AV	4500.000	-57.97	$\leq -41.20$	37.23	$\leq 54$	PASS
				AV	5149.600	-47.06	$\leq -41.20$	48.14	$\leq 54$	PASS
				AV	5150.000	-46.31	$\leq -41.20$	48.89	$\leq 54$	PASS
				Peak	4500.000	-53.49	$\leq -21.20$	41.71	$\leq 74$	PASS
				Peak	5148.900	-39.76	$\leq -21.20$	55.44	$\leq 74$	PASS
		High	5240	Peak	5150.000	-42.58	$\leq -21.20$	52.62	$\leq 74$	PASS
				AV	5350.000	-56.46	$\leq -41.20$	38.74	$\leq 54$	PASS
				AV	5350.080	-56.46	$\leq -41.20$	38.74	$\leq 54$	PASS
				AV	5460.000	-57.11	$\leq -41.20$	38.09	$\leq 54$	PASS
				Peak	5350.000	-51.9	$\leq -21.20$	43.30	$\leq 74$	PASS
				Peak	5426.880	-47.2	$\leq -21.20$	48.00	$\leq 74$	PASS
				Peak	5460.000	-50.99	$\leq -21.20$	44.21	$\leq 74$	PASS

## Note:

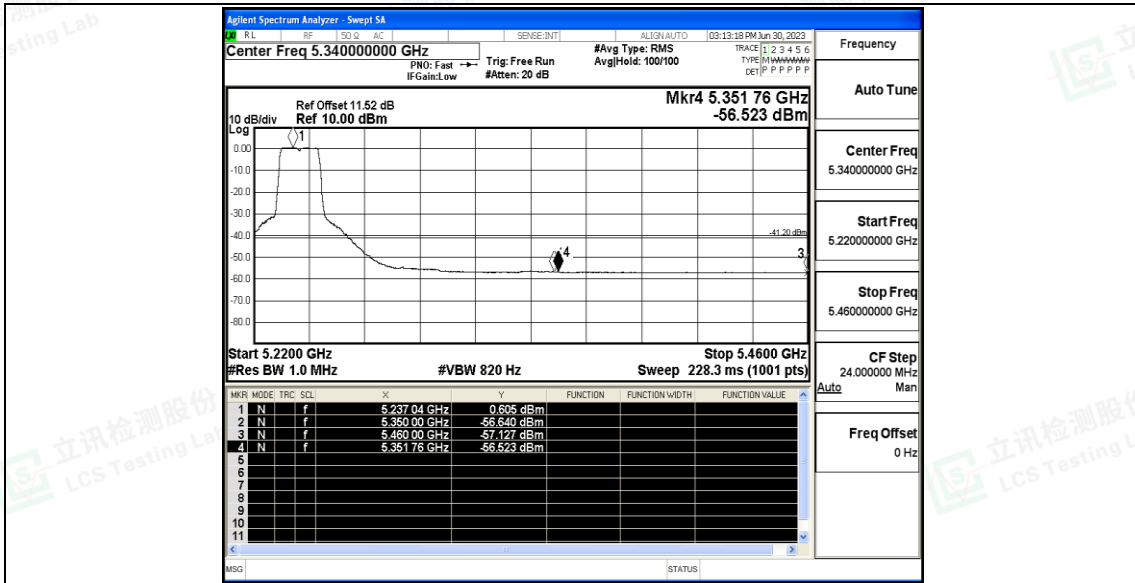
1. The Antenna Gain is compensated in the graph.
2. For transmitters operating in 5150-5350 GHz band and 5470-5725 GHz band: The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



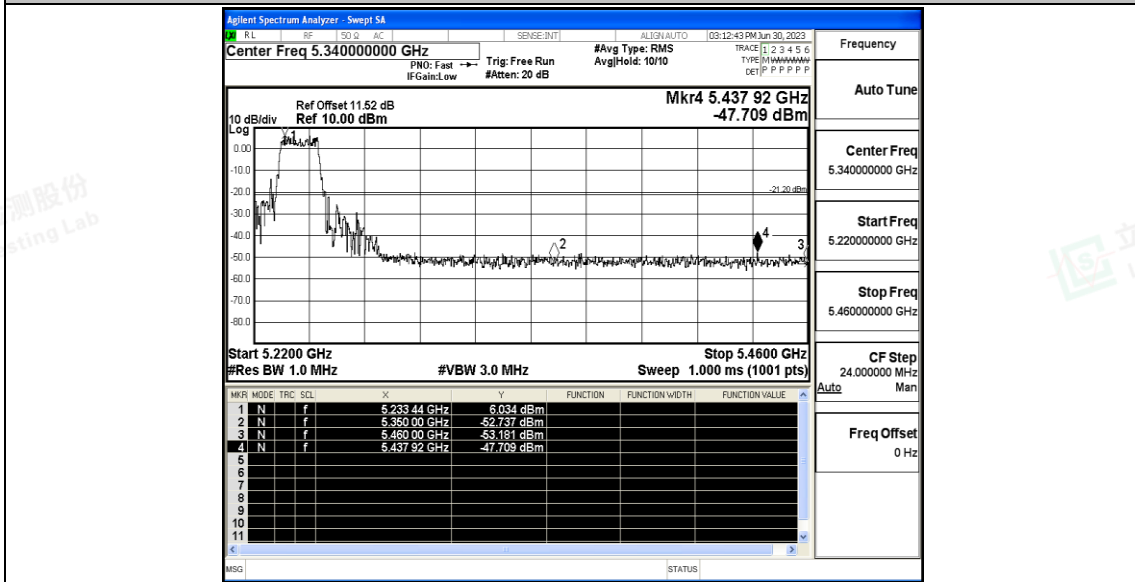


### Test Graphs



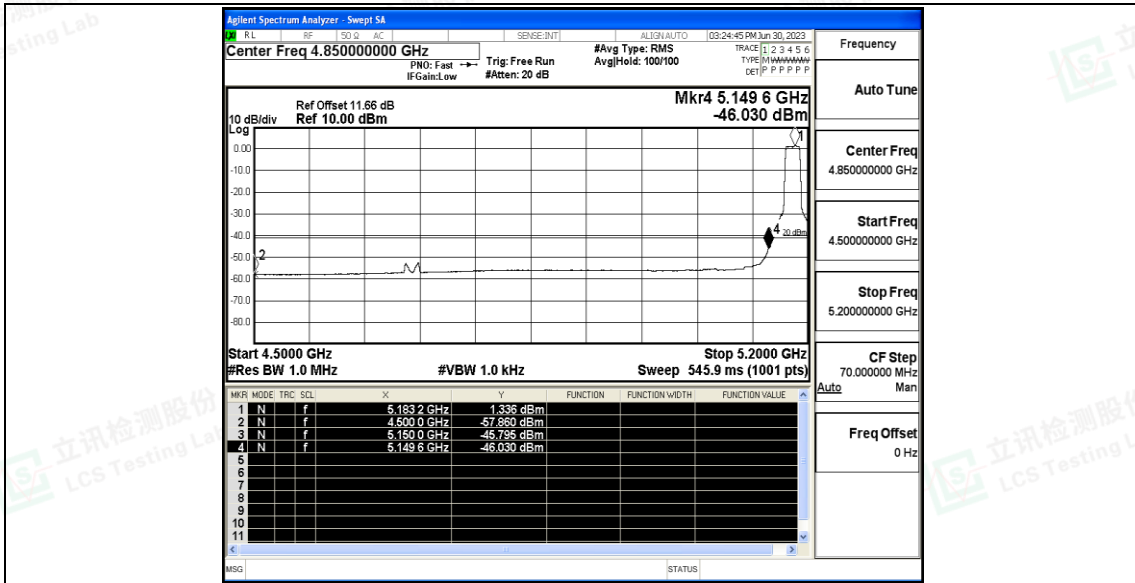


11A\_Ant1\_High\_5240\_Peak

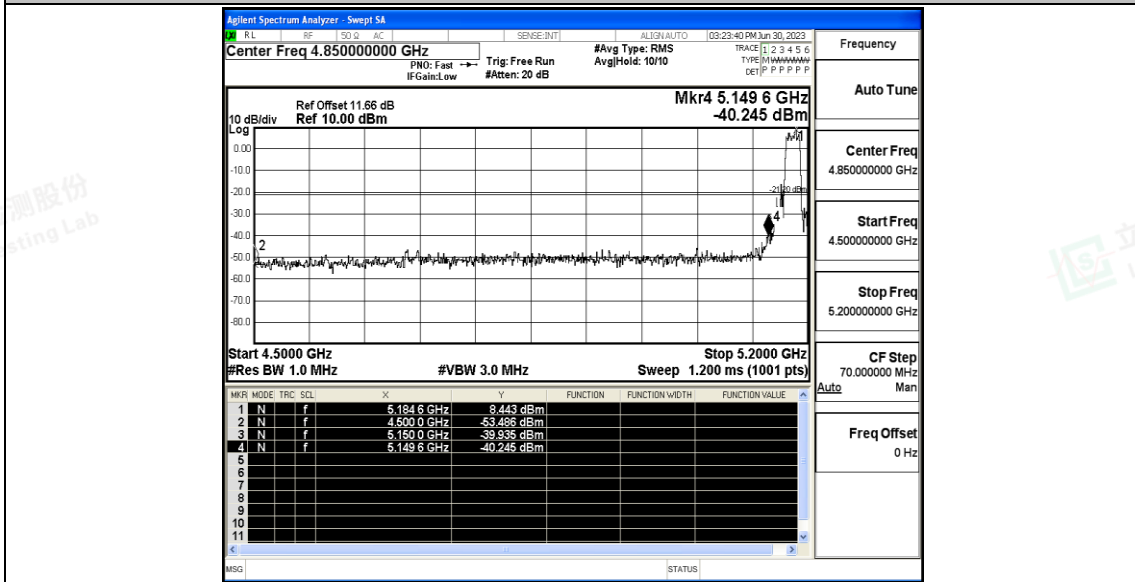


11N20SISO\_Ant1\_Low\_5180\_AV



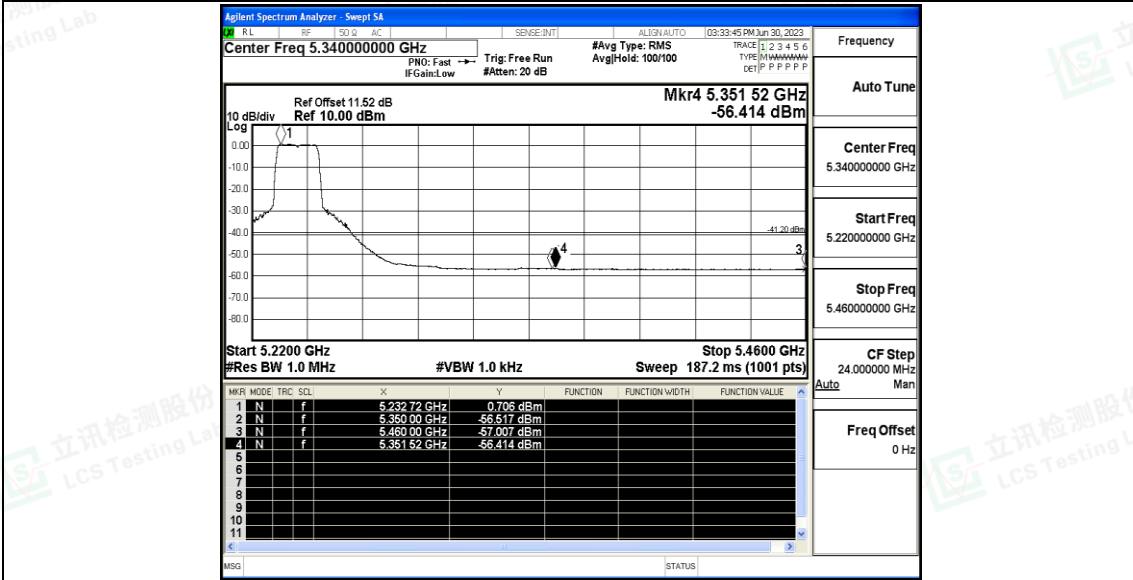


11N20SISO\_Ant1\_Low\_5180\_Peak

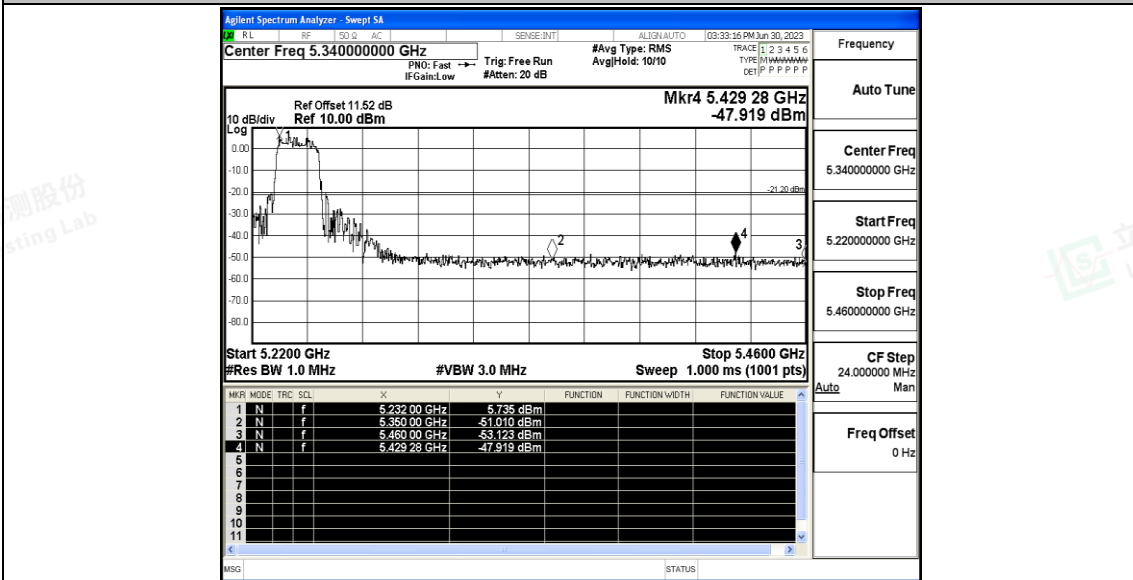


11N20SISO\_Ant1\_High\_5240\_AV



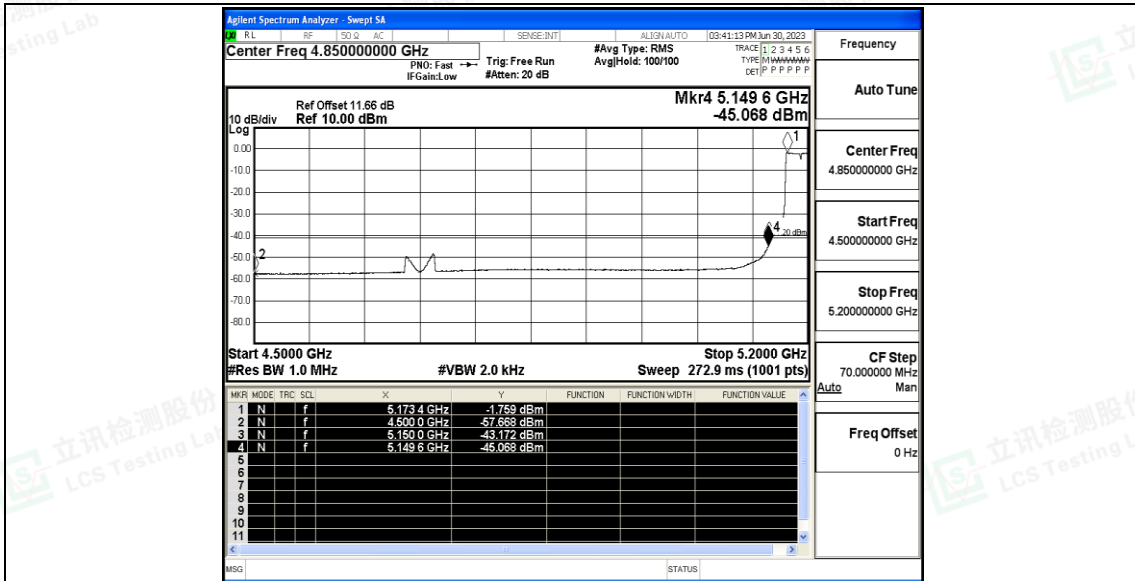


11N20SISO\_Ant1\_High\_5240\_Peak

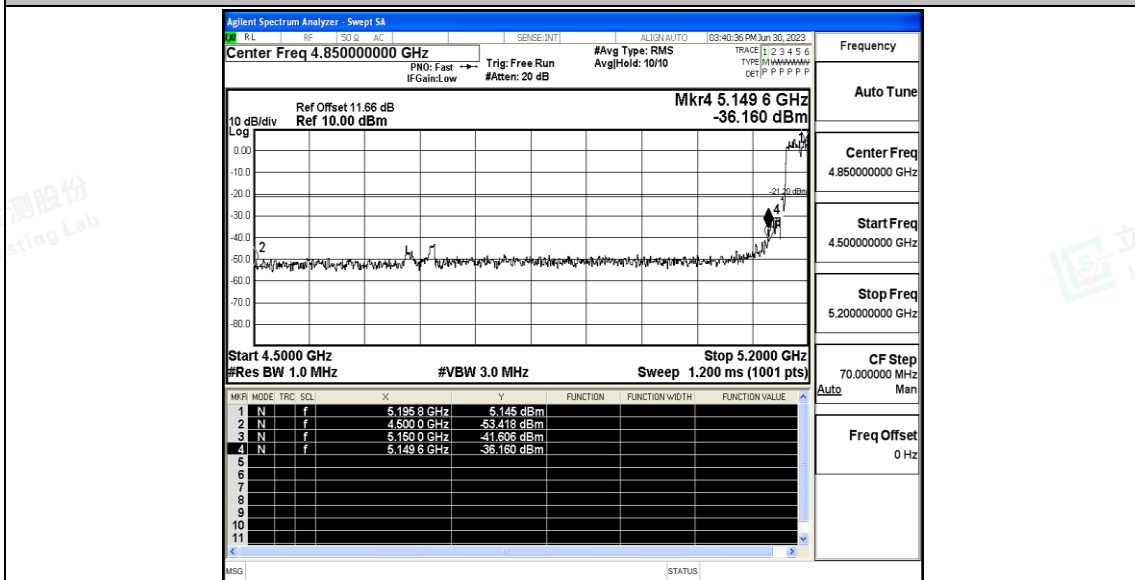


11N40SISO\_Ant1\_Low\_5190\_AV



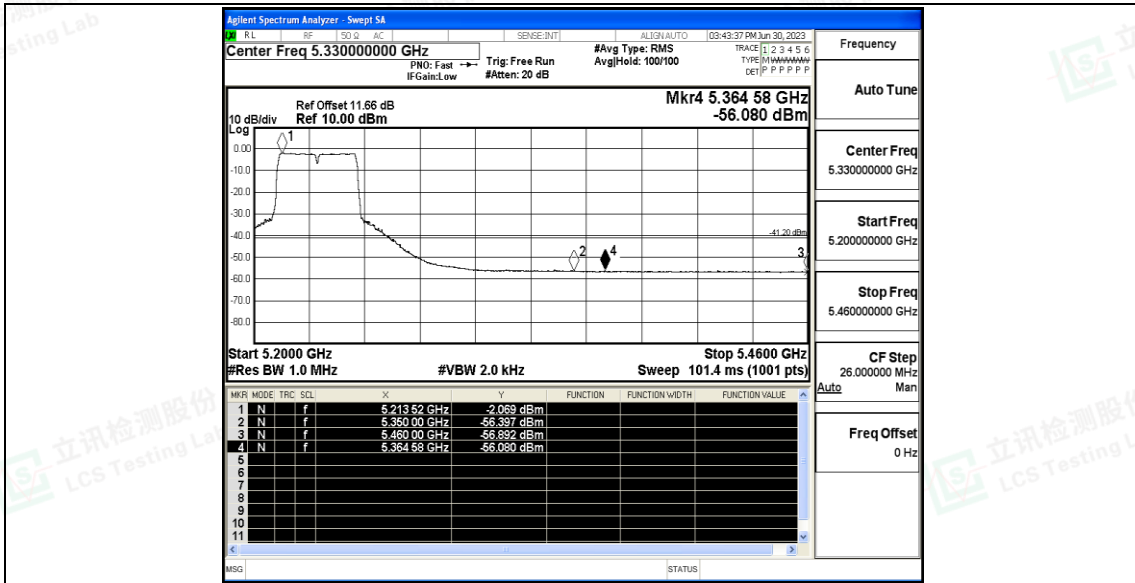


11N40SISO\_Ant1\_Low\_5190\_Peak

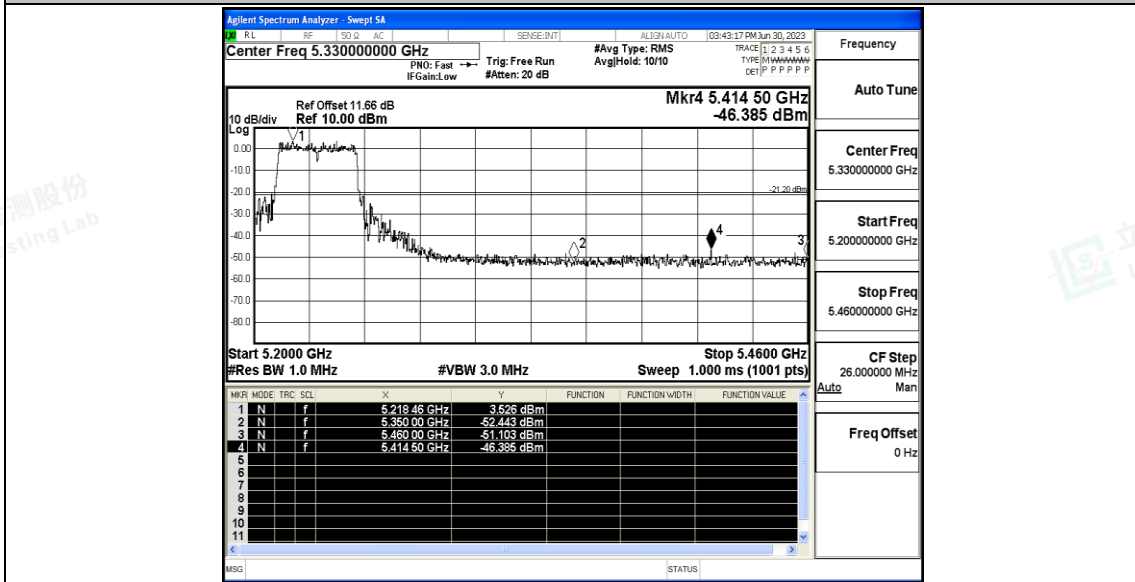


11N40SISO\_Ant1\_High\_5230\_AV





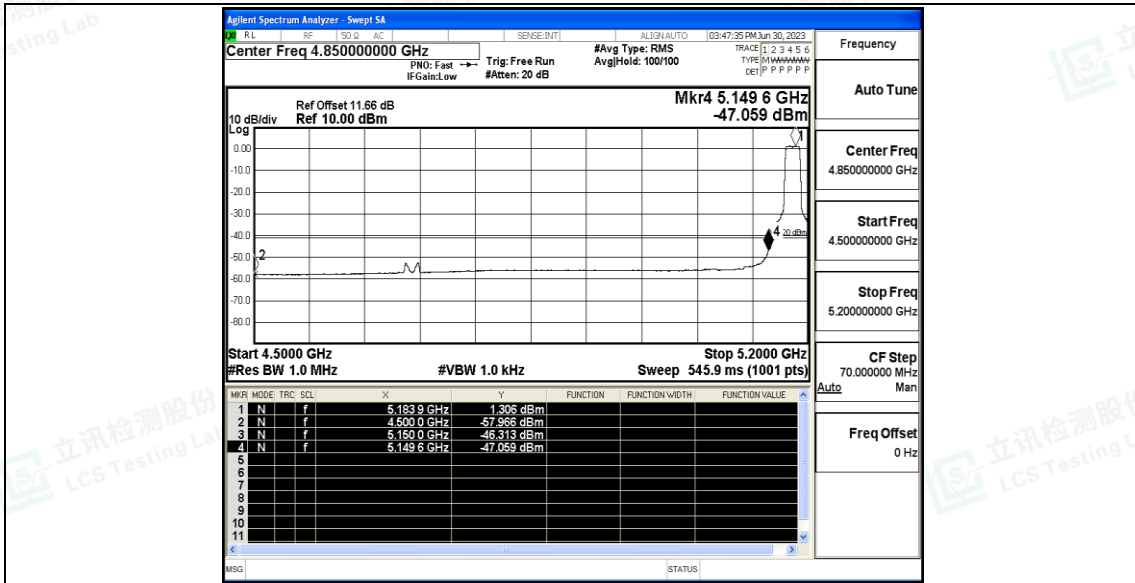
11N40SISO\_Ant1\_High\_5230\_Peak



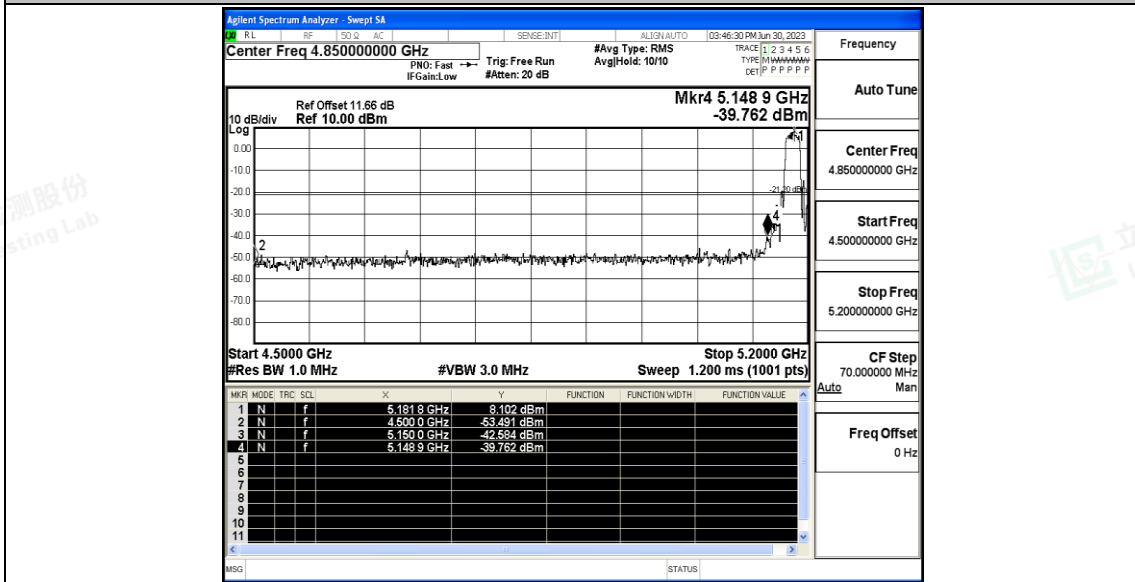
11AC20SISO\_Ant1\_Low\_5180\_AV





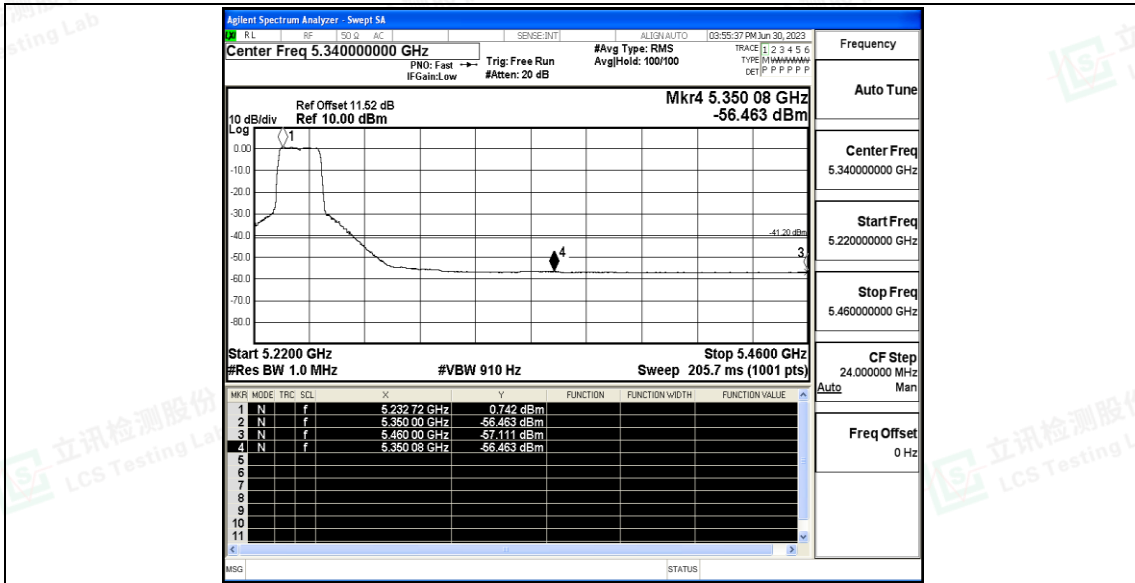


11AC20SISO\_Ant1\_Low\_5180\_Peak

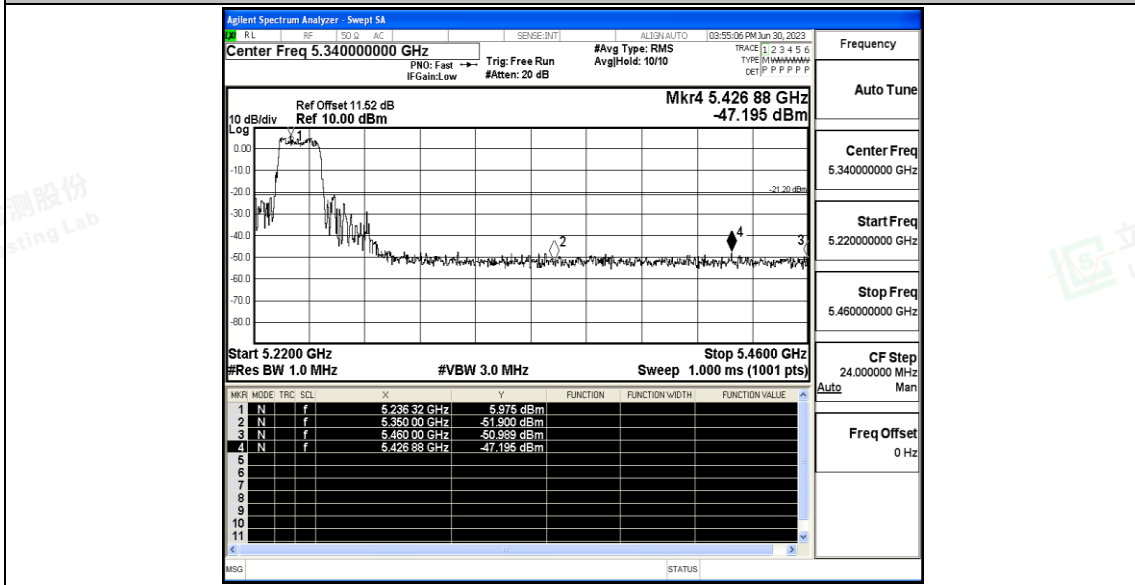


11AC20SISO\_Ant1\_High\_5240\_AV





11AC20SISO\_Ant1\_High\_5240\_Peak





### B.5 Frequency Stability

#### Test Result

Voltage								
TestMode	Antenna	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20S ISO	Ant1	5180	NV	NT	-20000.00	-3.861004	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-40000.00	-7.722008	20	PASS
		5220	NV	NT	-20000.00	-3.831418	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-40000.00	-7.662835	20	PASS
		5240	NV	NT	-20000.00	-3.816794	20	PASS
			LV	NT	-20000.00	-3.816794	20	PASS
			HV	NT	-20000.00	-3.816794	20	PASS
11AC40S ISO	Ant1	5190	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5230	NV	NT	-40000.00	-7.648184	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS

Temperature								
TestMode	Antenna	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20S ISO	Ant1	5180	NV	-30	-20000.00	-3.861004	20	PASS
			NV	-20	0.00	0.000000	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	0.00	0.000000	20	PASS
			NV	40	-20000.00	-3.861004	20	PASS
			NV	50	-20000.00	-3.861004	20	PASS
		5220	NV	-30	-20000.00	-3.831418	20	PASS
			NV	-20	-40000.00	-7.662835	20	PASS
			NV	-10	-20000.00	-3.831418	20	PASS
			NV	0	-20000.00	-3.831418	20	PASS
			NV	10	0.00	0.000000	20	PASS





			NV	20	-20000.00	-3.831418	20	PASS
			NV	30	-20000.00	-3.831418	20	PASS
			NV	40	-40000.00	-7.662835	20	PASS
			NV	50	-20000.00	-3.831418	20	PASS
		5240	NV	-30	-20000.00	-3.816794	20	PASS
			NV	-20	-20000.00	-3.816794	20	PASS
			NV	-10	-20000.00	-3.816794	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-40000.00	-7.633588	20	PASS
			NV	20	-20000.00	-3.816794	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	-20000.00	-3.816794	20	PASS
			11AC40S ISO	Ant1	5190	NV	-30	-40000.00
NV	-20	0.00				0.000000	20	PASS
NV	-10	-40000.00				-7.707129	20	PASS
NV	0	0.00				0.000000	20	PASS
NV	10	-40000.00				-7.707129	20	PASS
NV	20	0.00				0.000000	20	PASS
NV	30	0.00				0.000000	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			0.00	0.000000	20	PASS
	NV	0			-40000.00	-7.648184	20	PASS
	NV	10			-40000.00	-7.648184	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	-80000.00	-15.296367	20	PASS			





### B.6 Duty Cycle

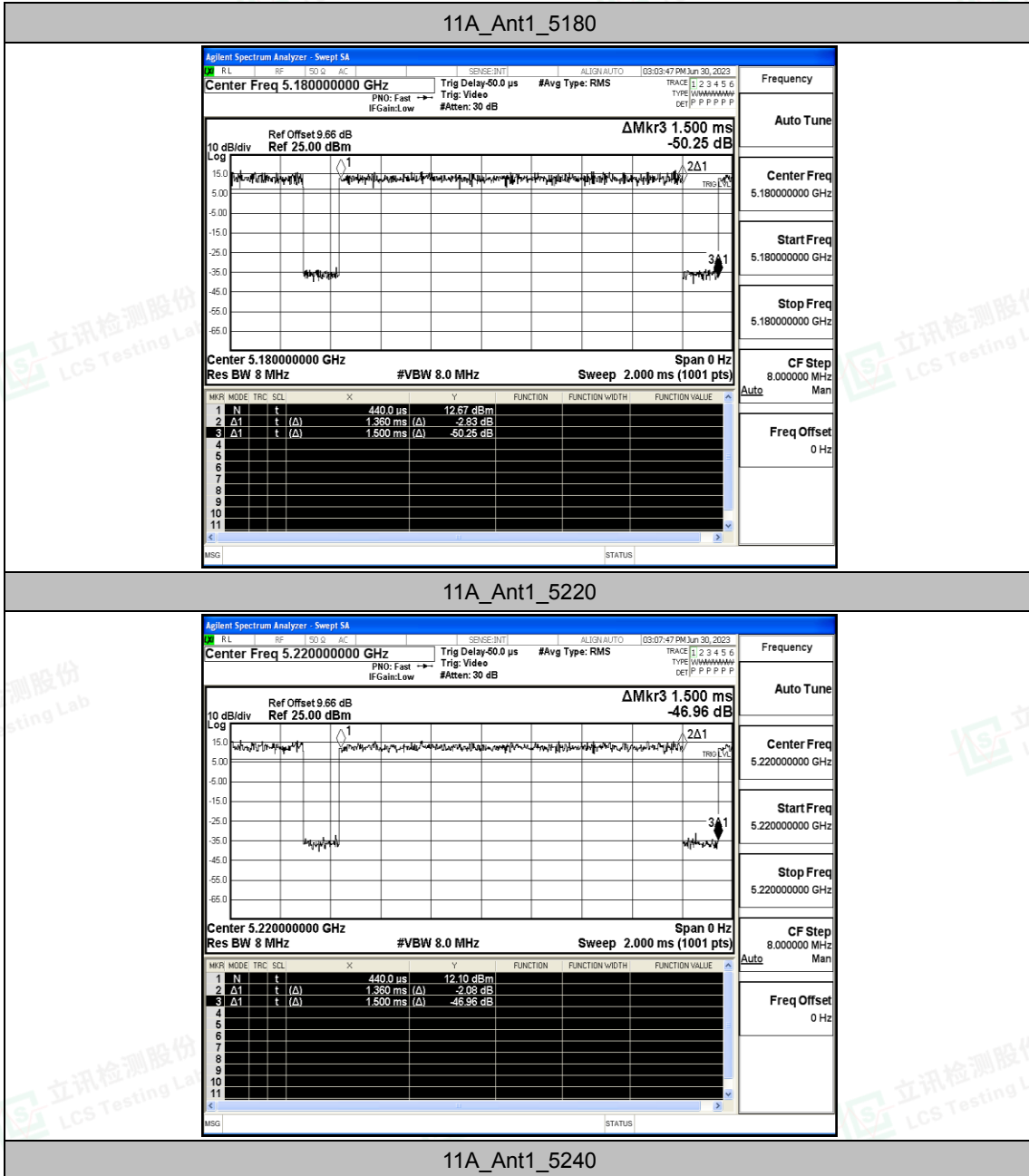
#### Test Result

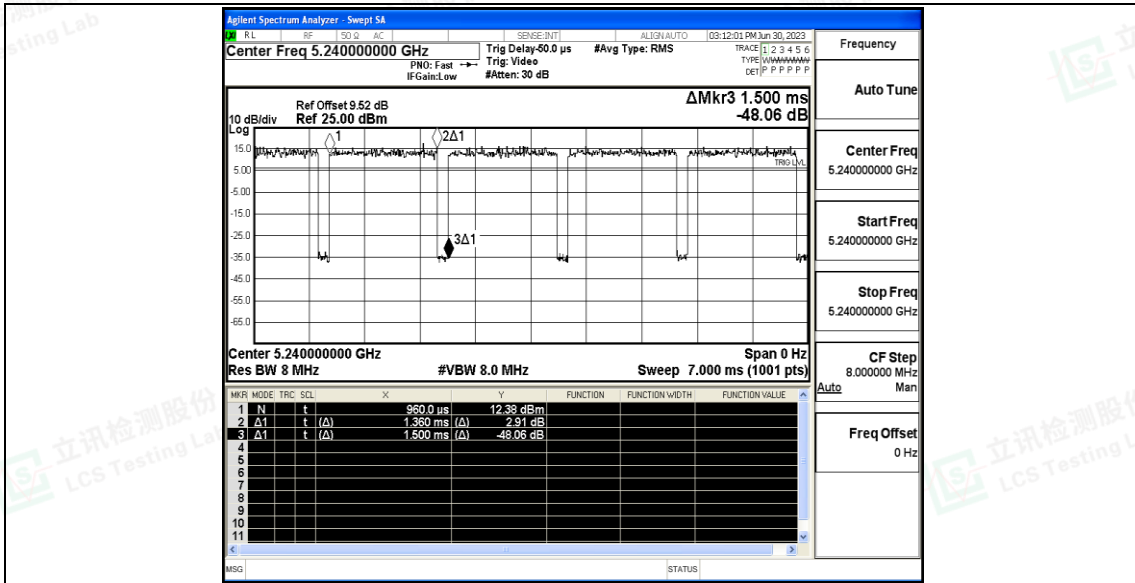
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	1.36	1.50	90.67
		5220	1.36	1.50	90.67
		5240	1.36	1.50	90.67
11N20SISO	Ant1	5180	1.15	1.30	88.46
		5220	1.14	1.29	88.37
		5240	1.15	1.30	88.46
11N40SISO	Ant1	5190	0.57	0.72	79.17
		5230	0.58	0.72	80.56
11AC20SISO	Ant1	5180	1.15	1.30	88.46
		5220	1.15	1.30	88.46
		5240	1.16	1.31	88.55



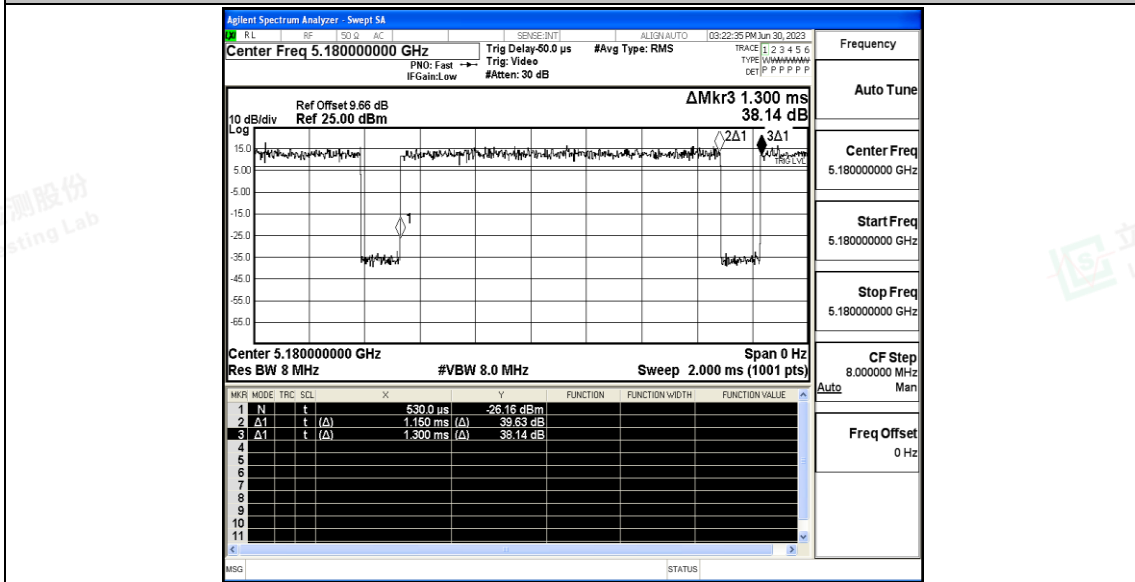


### Test Graphs



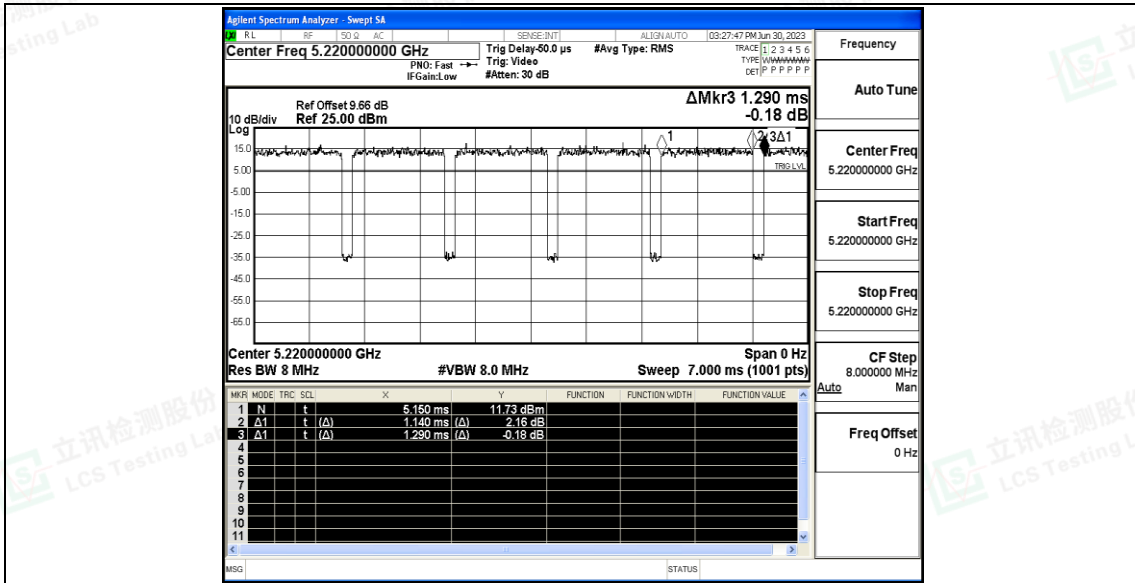


11N20SISO\_Ant1\_5180

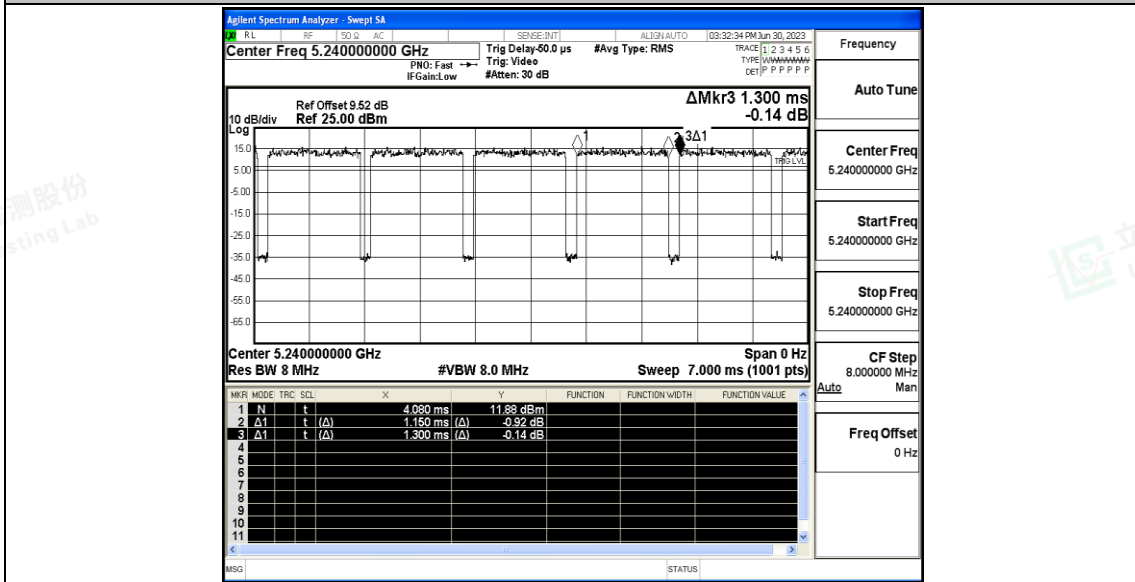


11N20SISO\_Ant1\_5220





11N20SISO\_Ant1\_5240

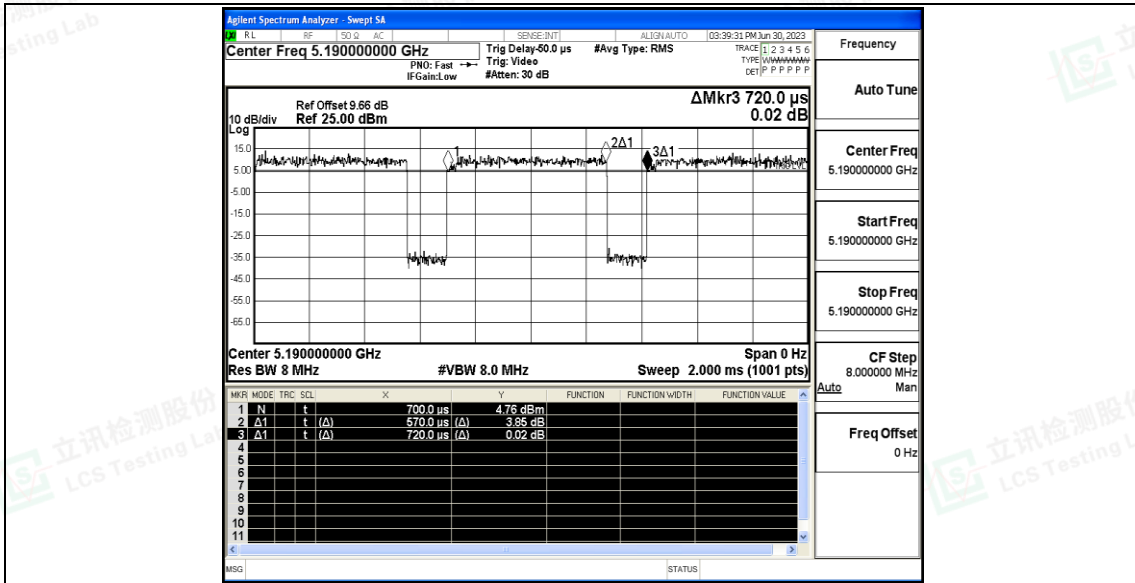


11N40SISO\_Ant1\_5190

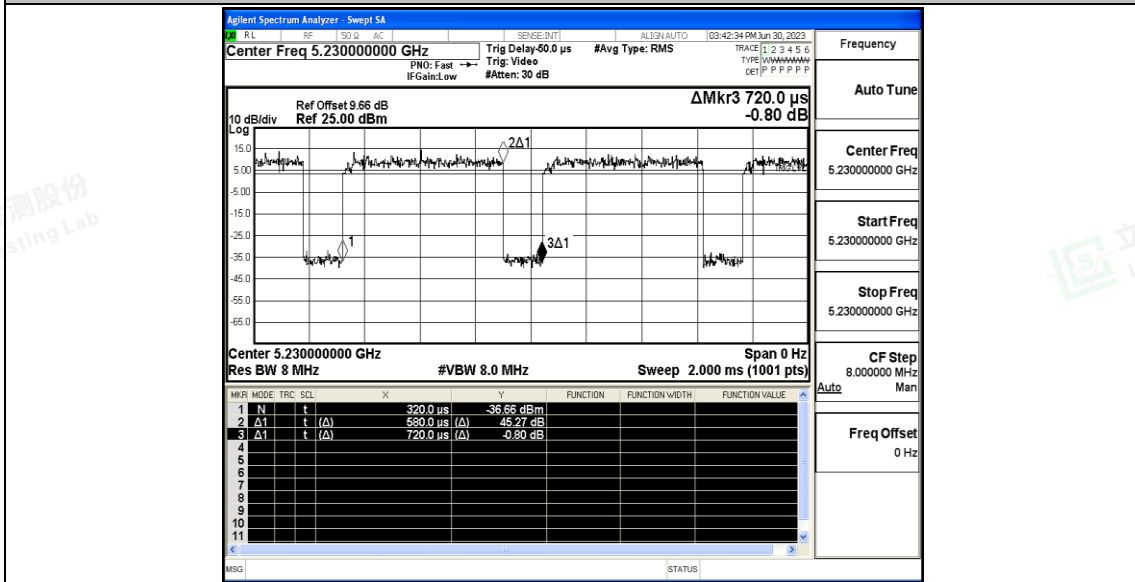


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 Scan code to check authenticity



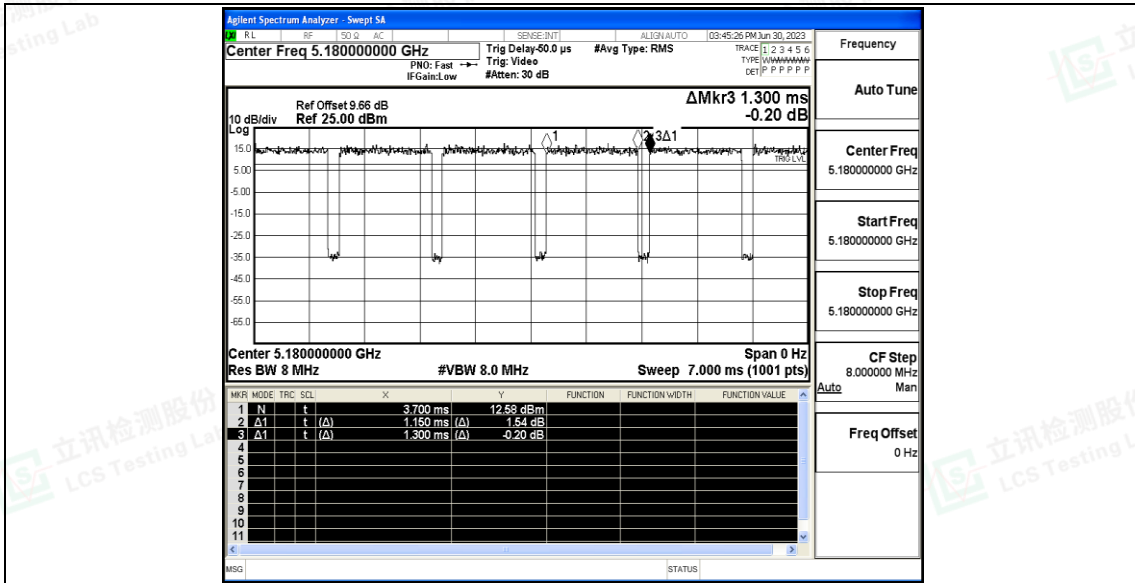


11N40SISO\_Ant1\_5230

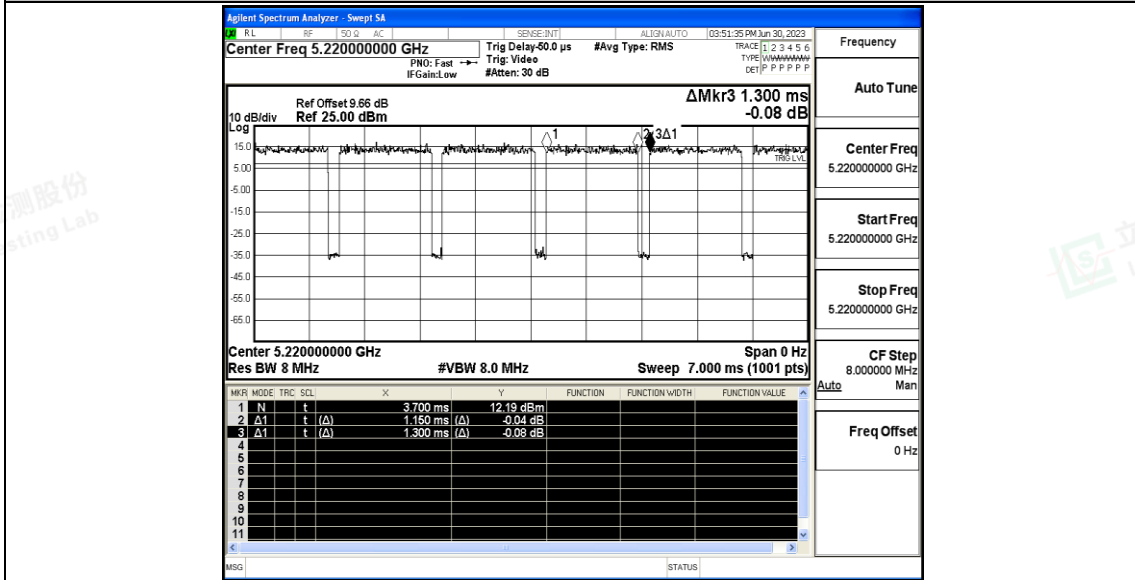


11A20SISO\_Ant1\_5180



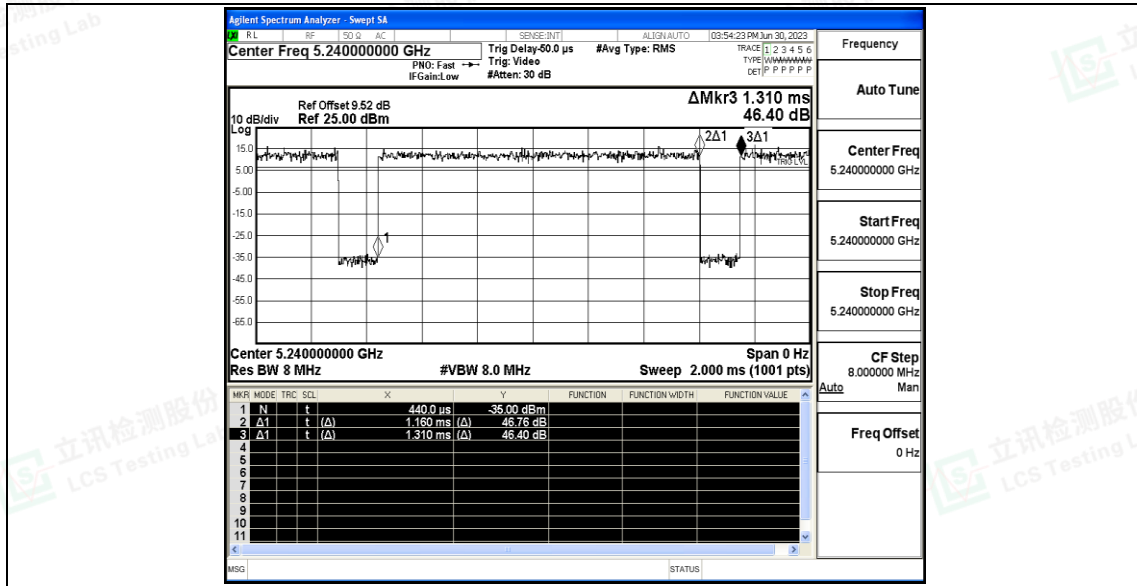


11AC20SISO\_Ant1\_5220



11AC20SISO\_Ant1\_5240





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