



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Game Controller

Test Model: P48

Environmental Conditions

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





A.1 20dB Emission Bandwidth

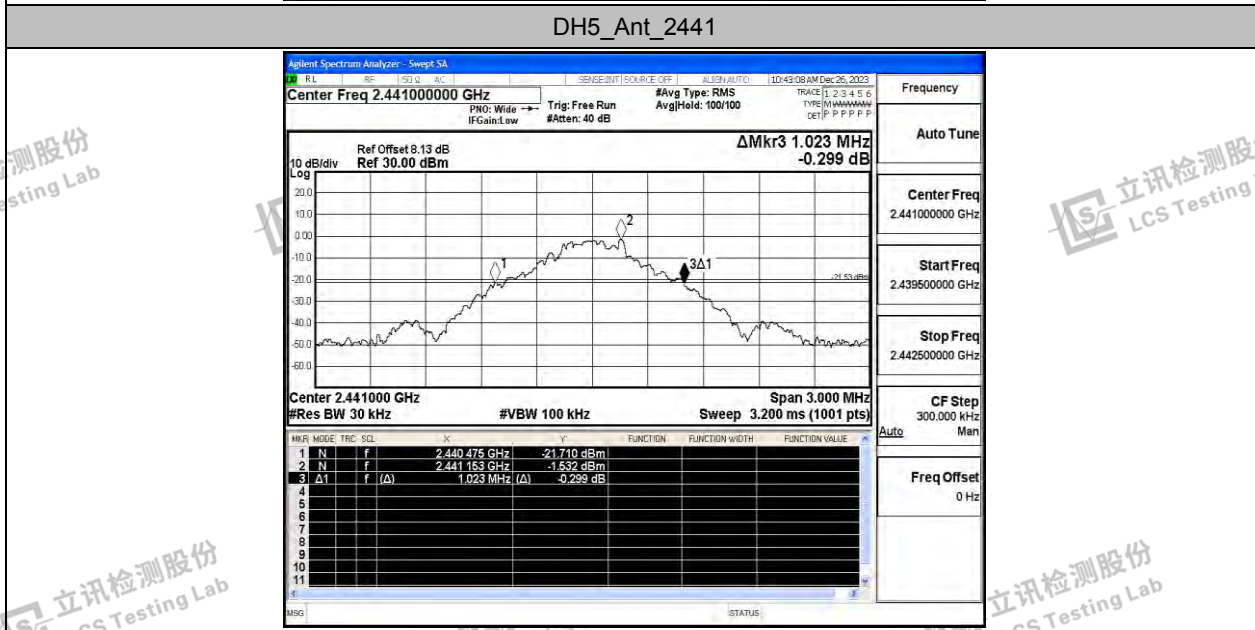
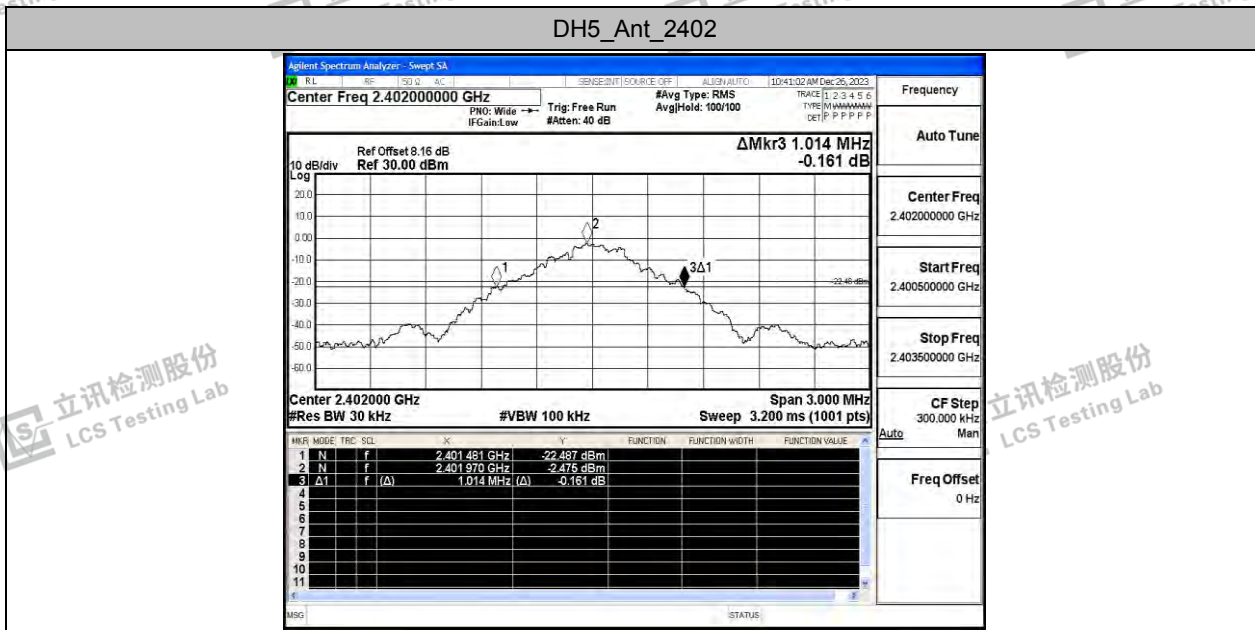
Test Result

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant	2402	1.014	2401.481	2402.495	---	---
		2441	1.023	2440.475	2441.498	---	---
		2480	1.041	2479.460	2480.501	---	---
2DH5	Ant	2402	1.287	2401.358	2402.645	---	---
		2441	1.299	2440.352	2441.651	---	---
		2480	1.320	2479.331	2480.651	---	---
3DH5	Ant	2402	1.302	2401.340	2402.642	---	---
		2441	1.311	2440.340	2441.651	---	---
		2480	1.305	2479.340	2480.645	---	---



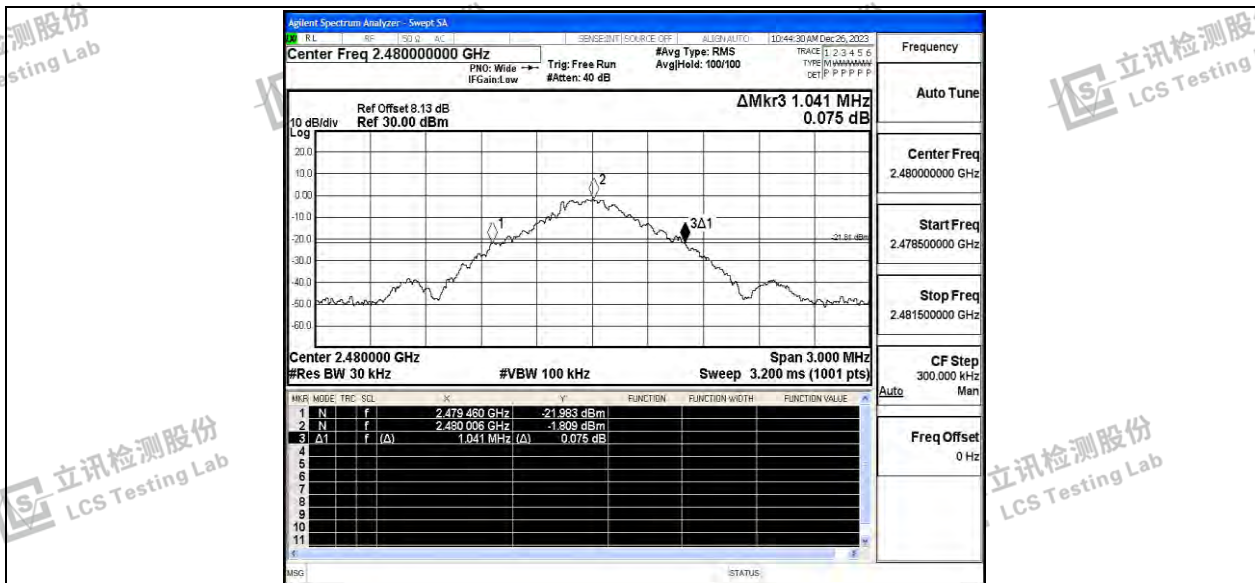


Test Graphs

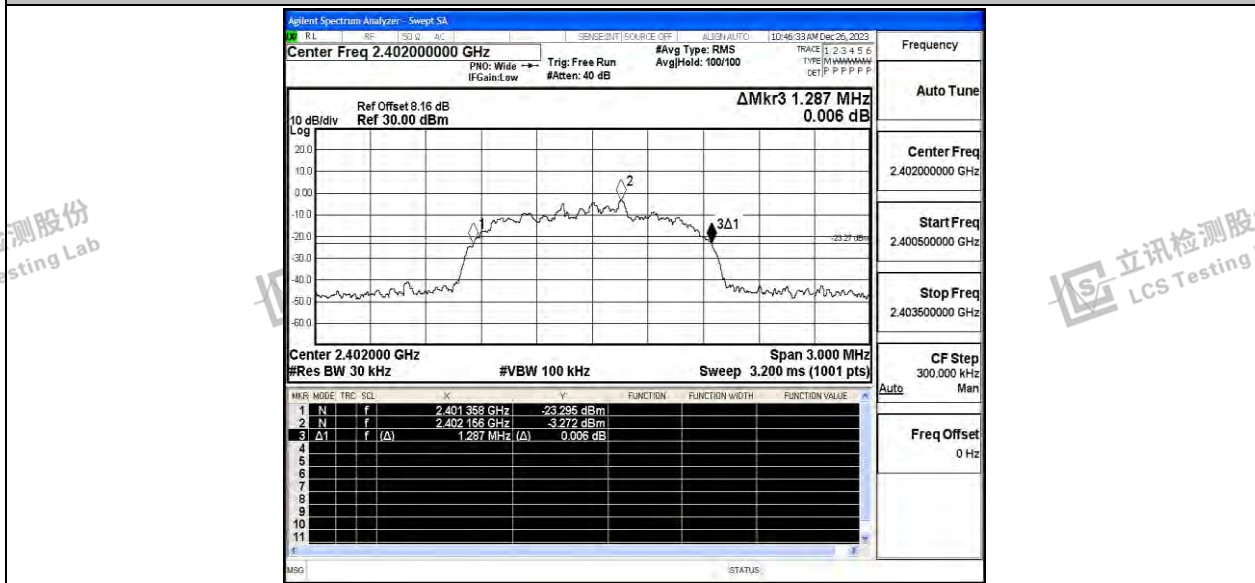


DH5_Ant_2480



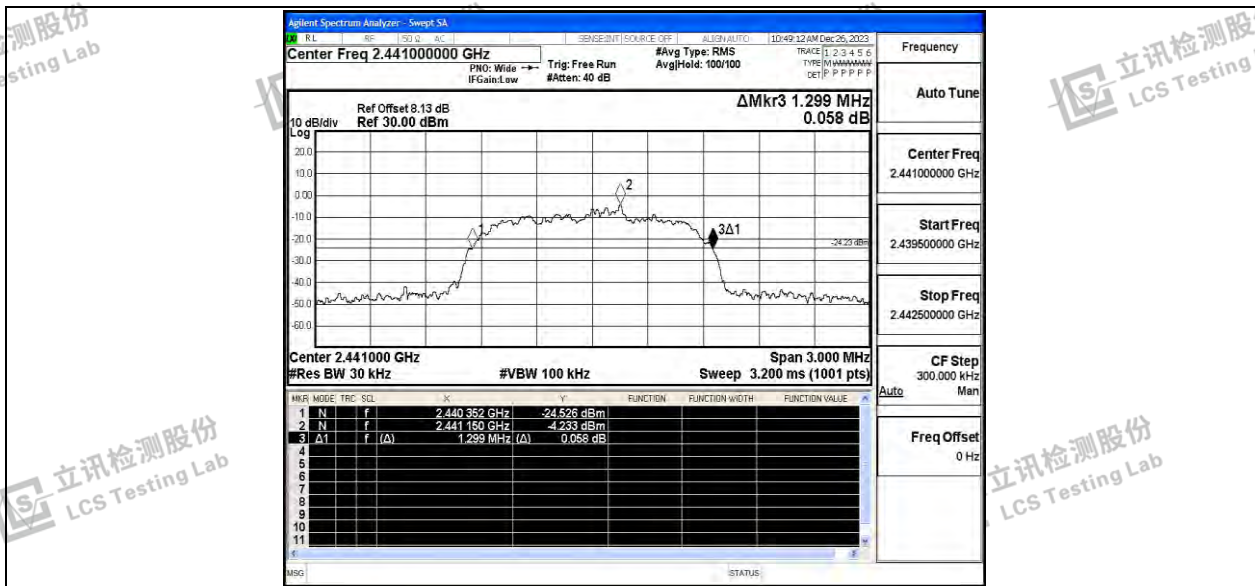


2DH5_Ant_2402

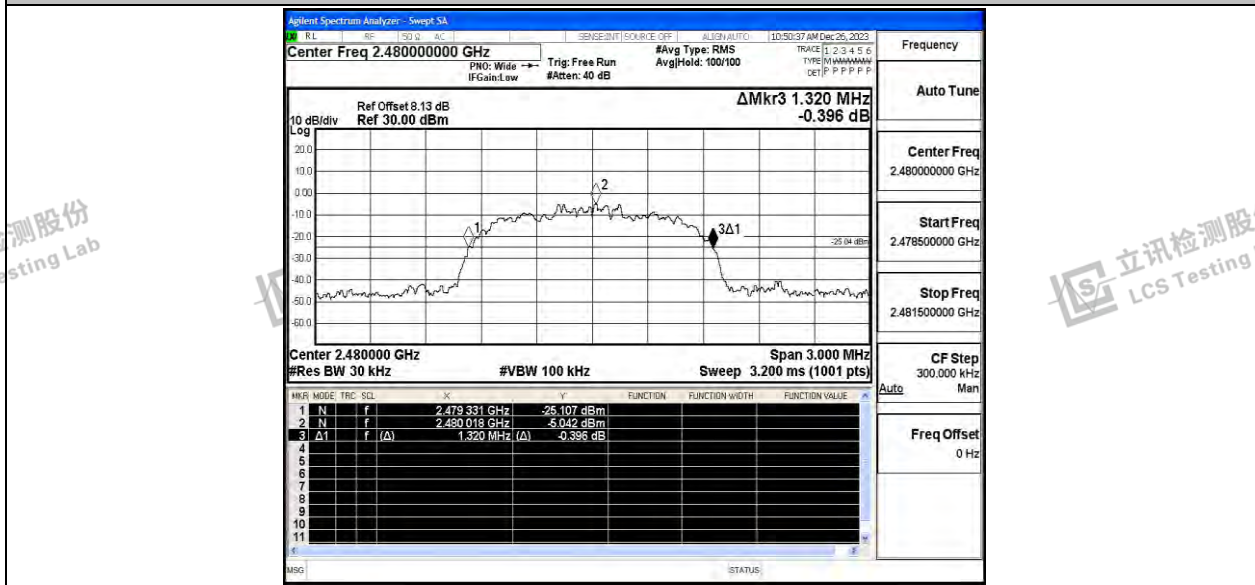


2DH5_Ant_2441



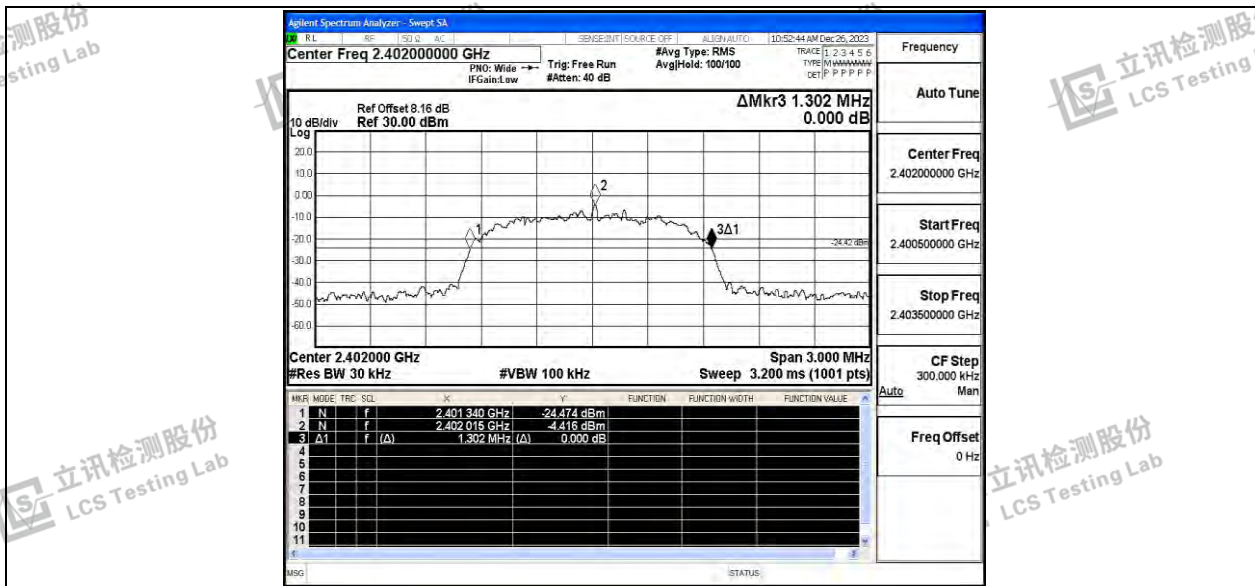


2Dh5_Ant_2480

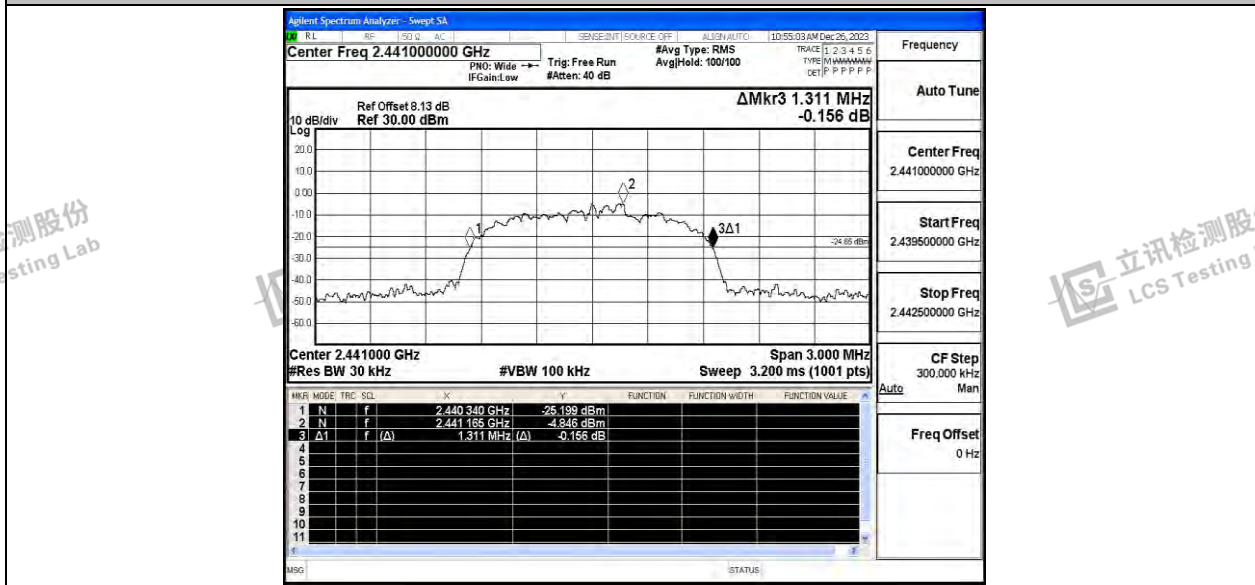


3Dh5_Ant_2402



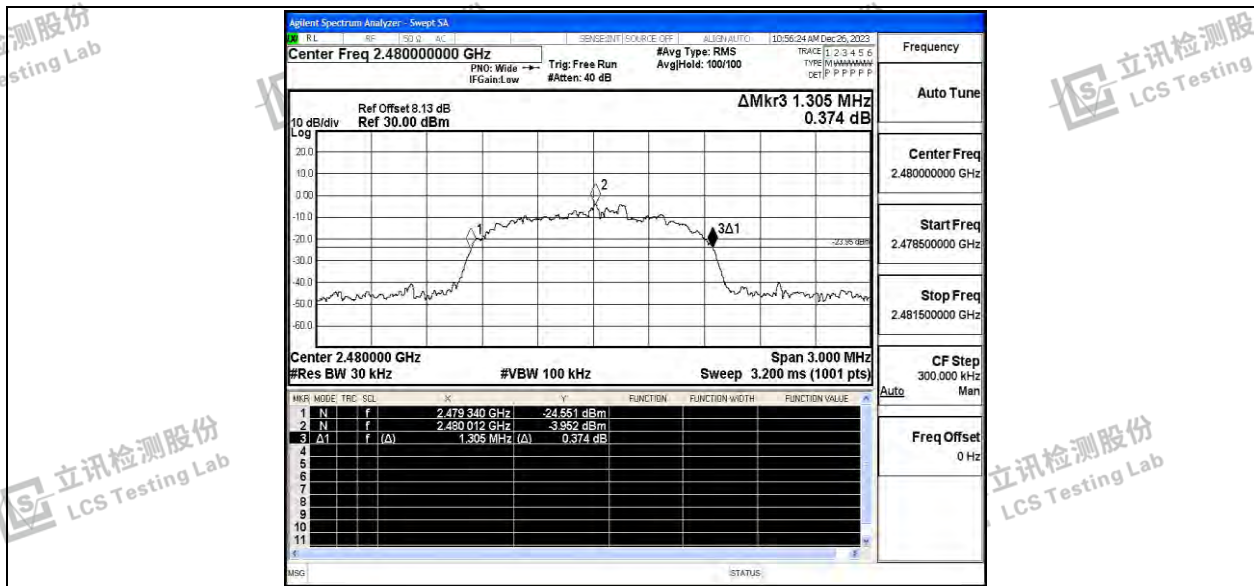


3DH5_Ant_2441



3DH5_Ant_2480







A.2 Maximum conducted output power

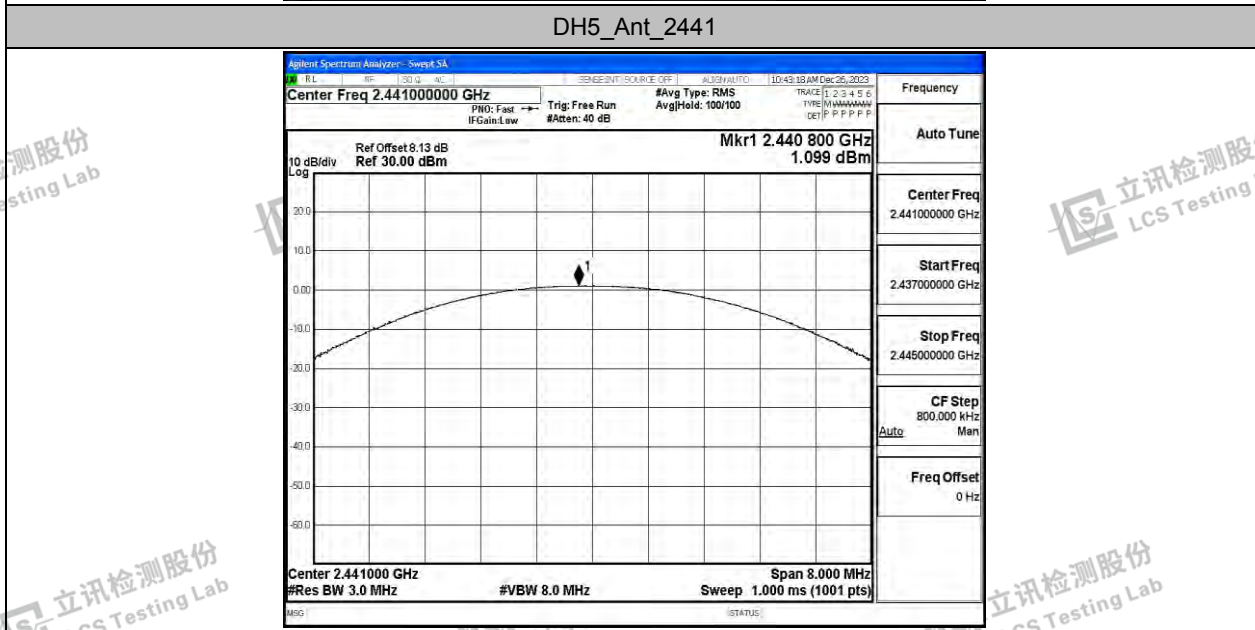
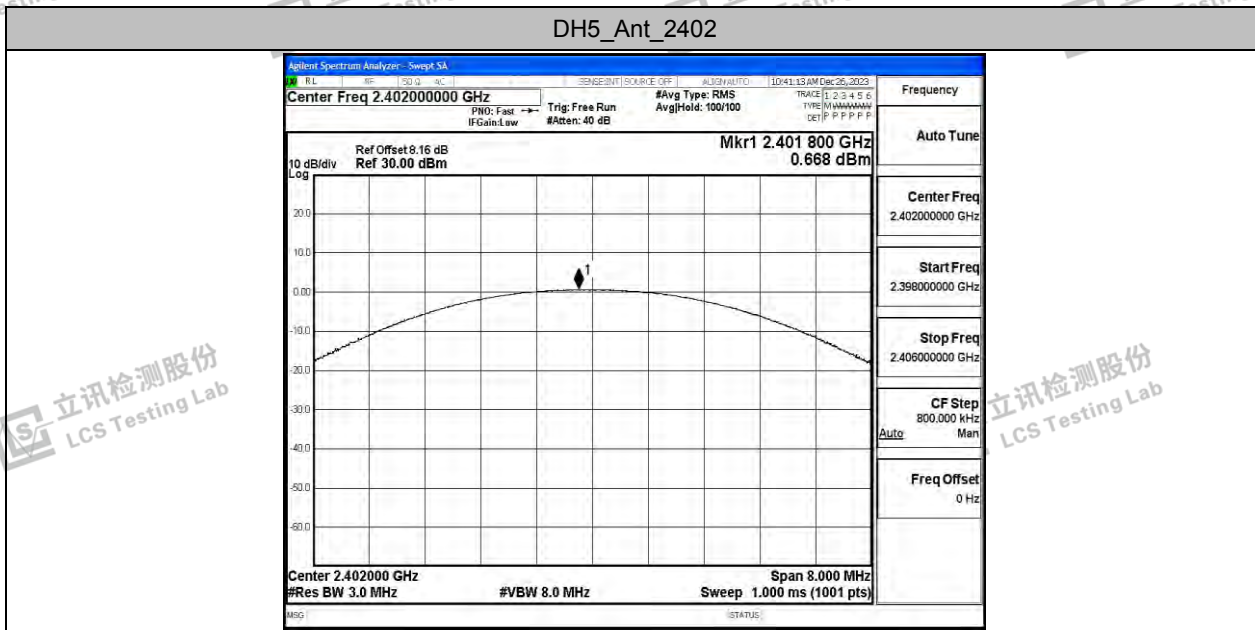
Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant	2402	0.67	≤20.97	PASS
		2441	1.1	≤20.97	PASS
		2480	1.2	≤20.97	PASS
2DH5	Ant	2402	0.62	≤20.97	PASS
		2441	0.85	≤20.97	PASS
		2480	1.01	≤20.97	PASS
3DH5	Ant	2402	0.72	≤20.97	PASS
		2441	0.93	≤20.97	PASS
		2480	1.09	≤20.97	PASS



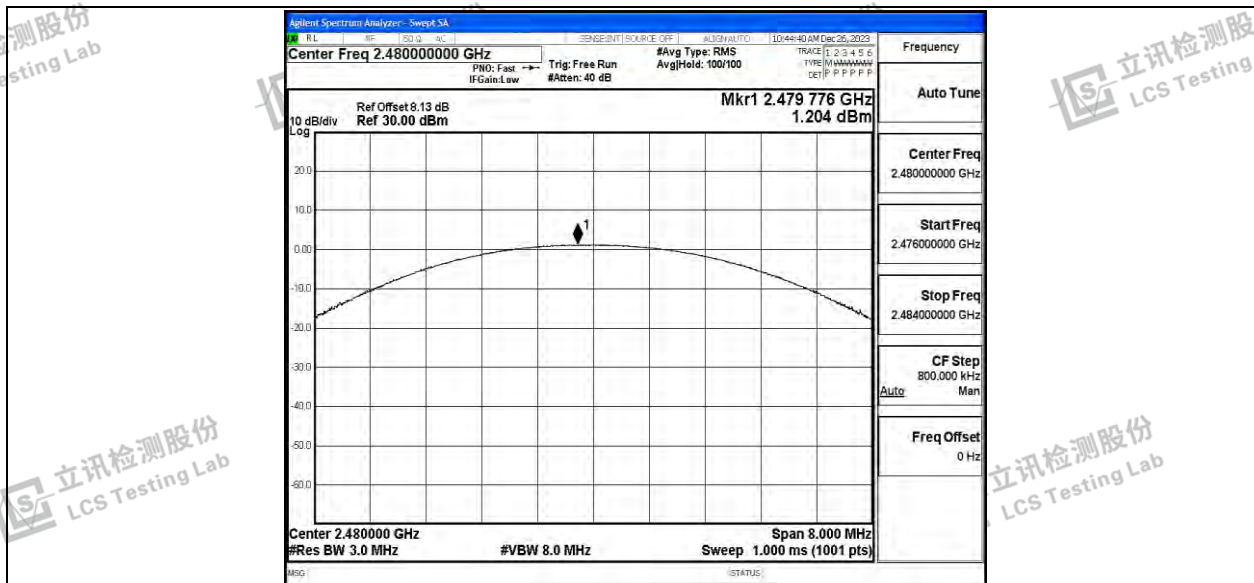


Test Graphs

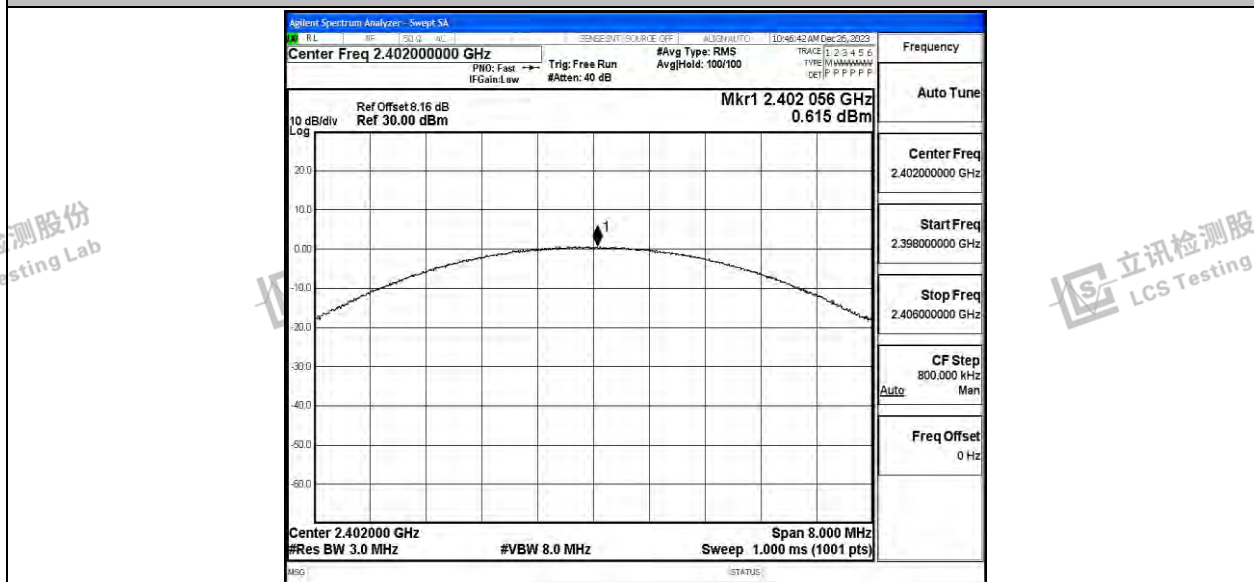


DH5_Ant_2480



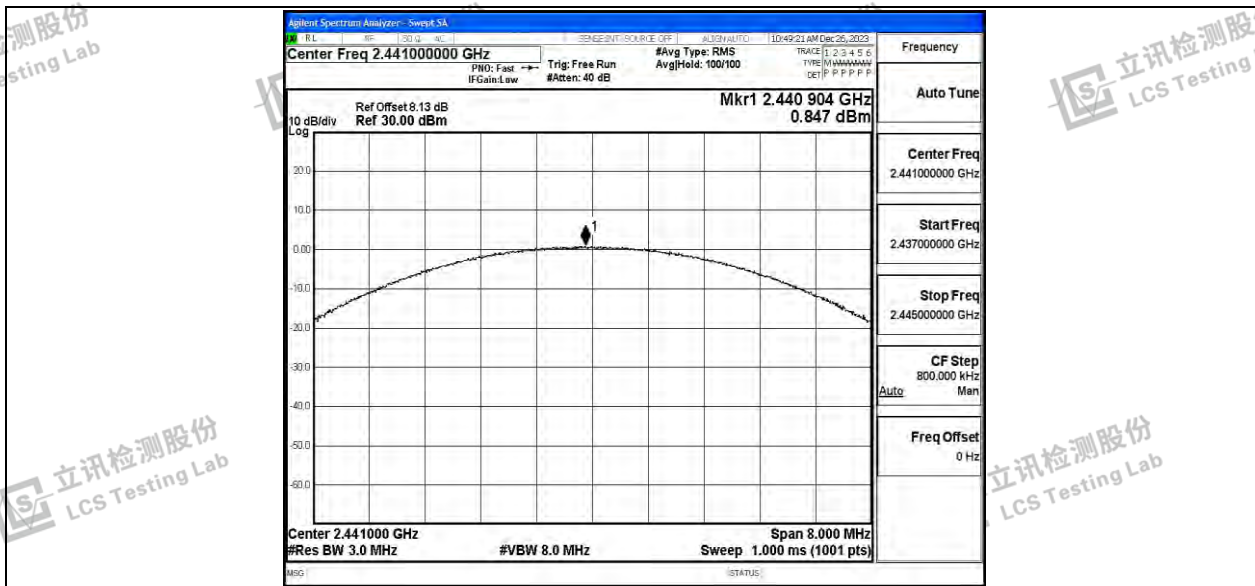


2DH5_Ant_2402

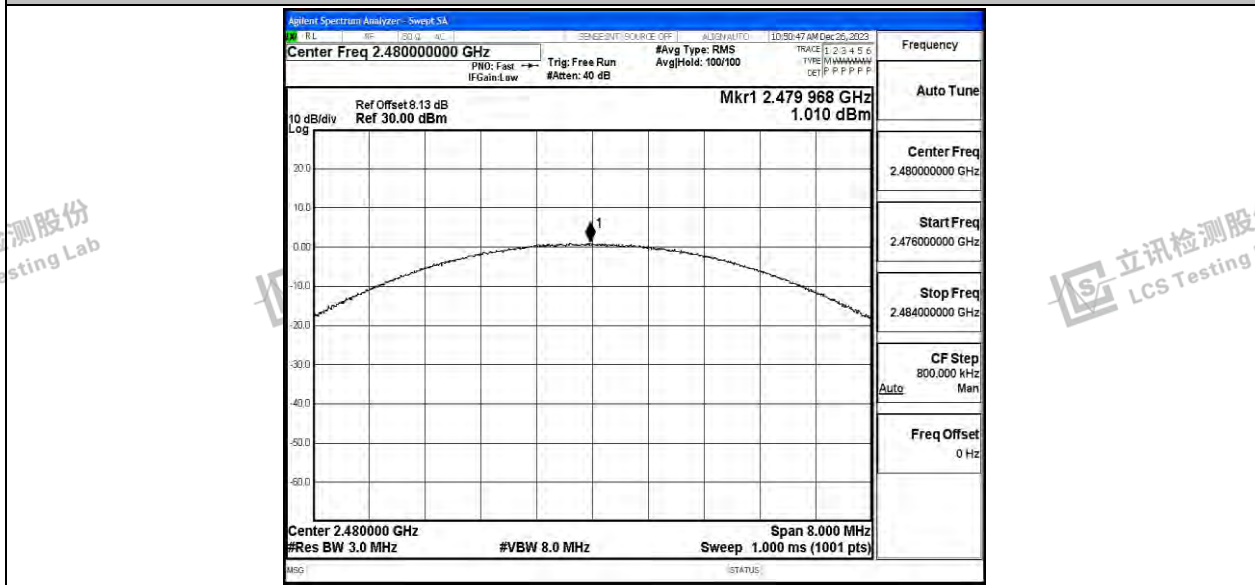


2DH5_Ant_2441



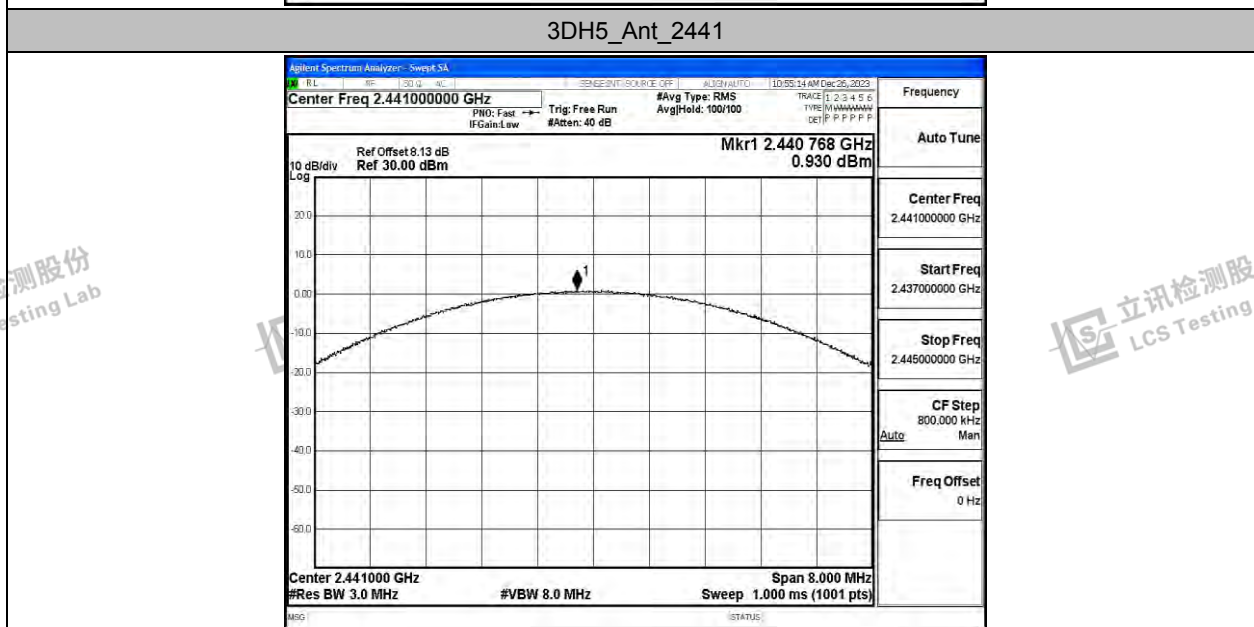
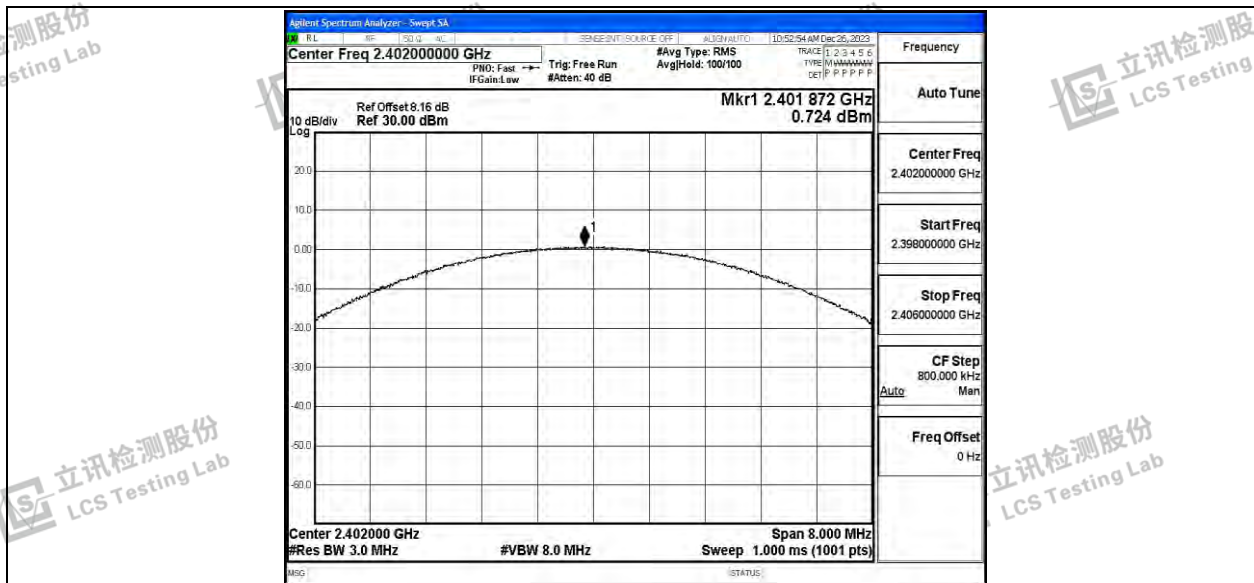


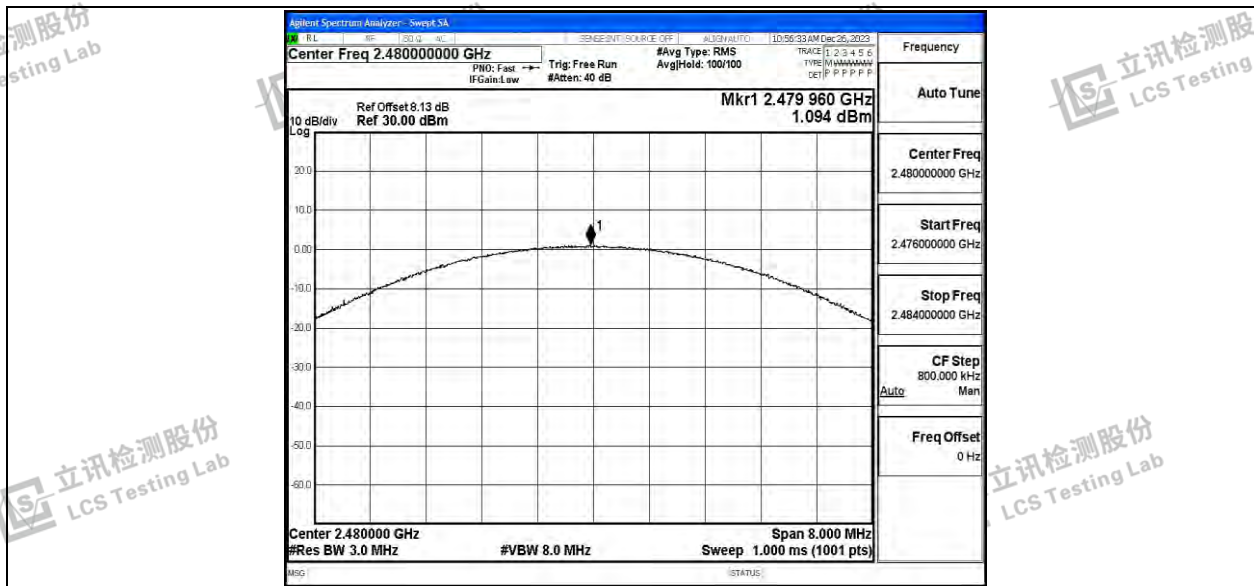
2Dh5_Ant_2480



3Dh5_Ant_2402









A.3 Carrier frequency separation

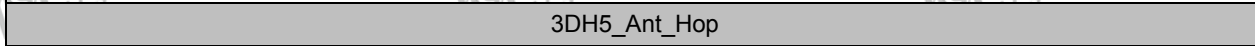
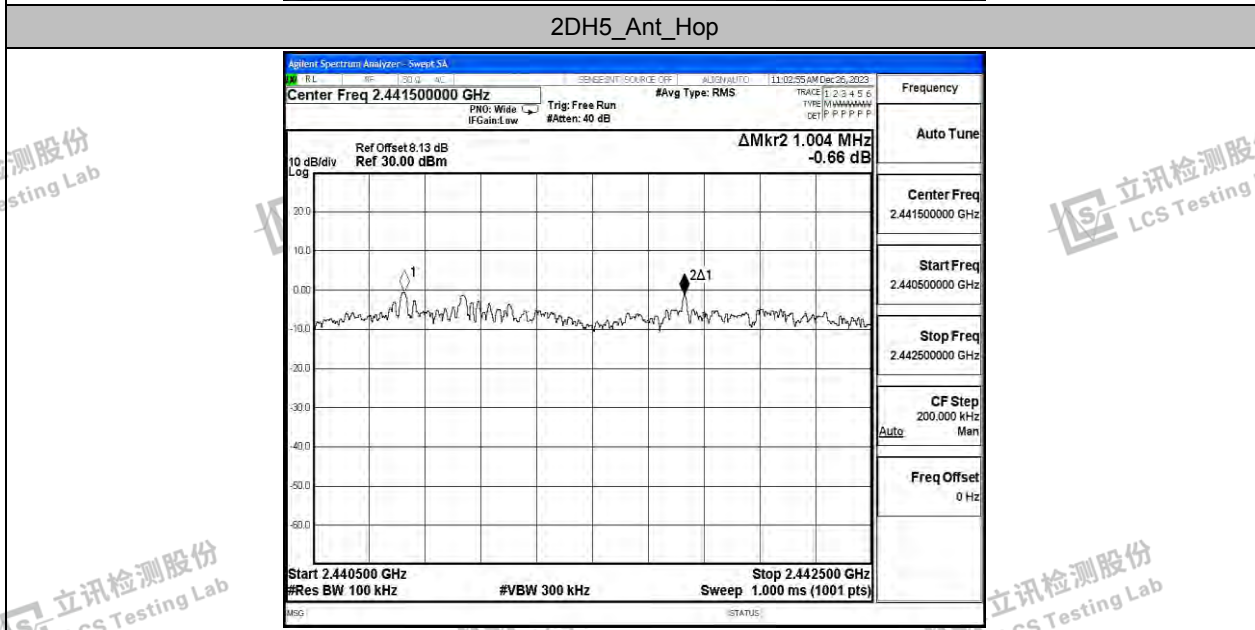
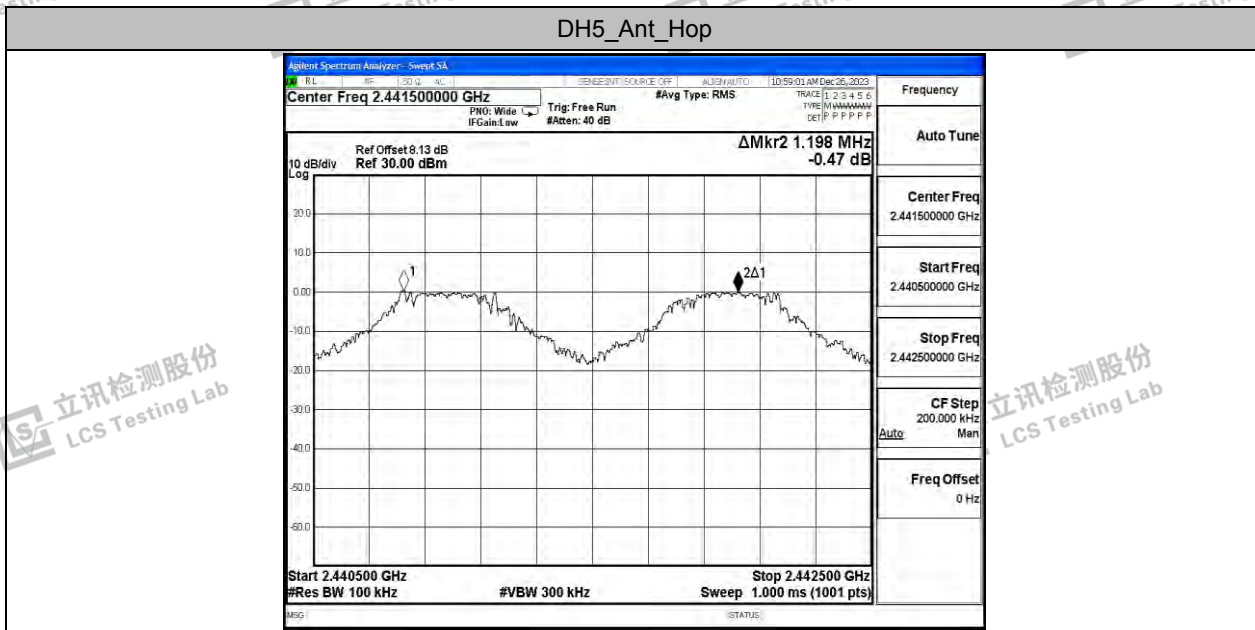
Test Result

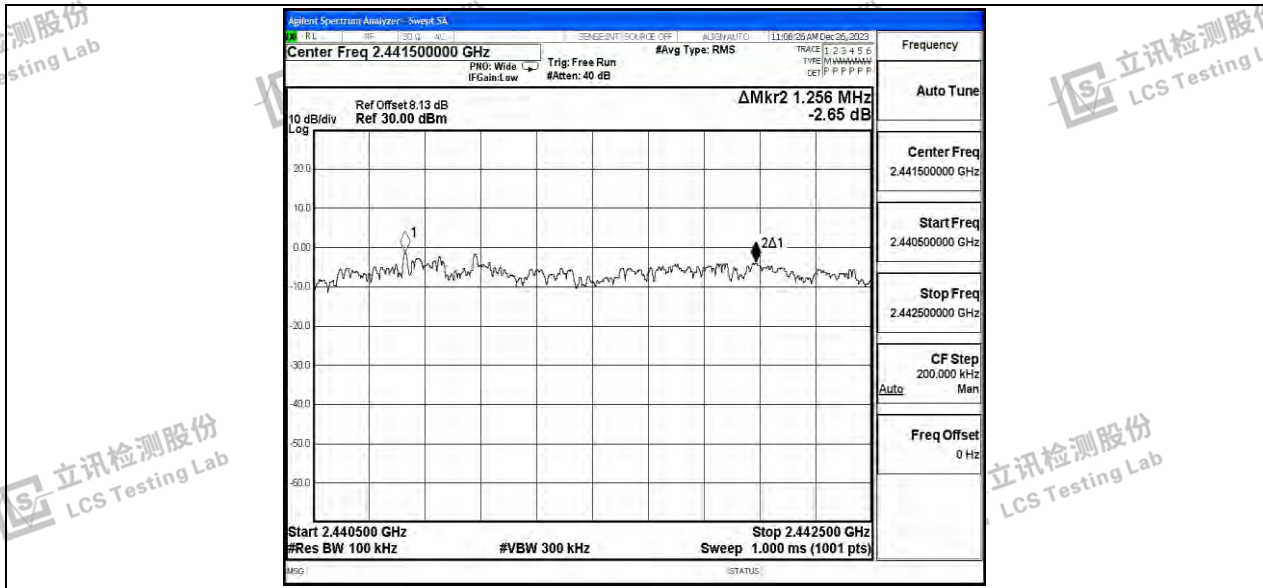
TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant	Hop	1.198	≥0.694	PASS
2DH5	Ant	Hop	1.004	≥0.880	PASS
3DH5	Ant	Hop	1.256	≥0.874	PASS





Test Graphs







A.4 Time of occupancy

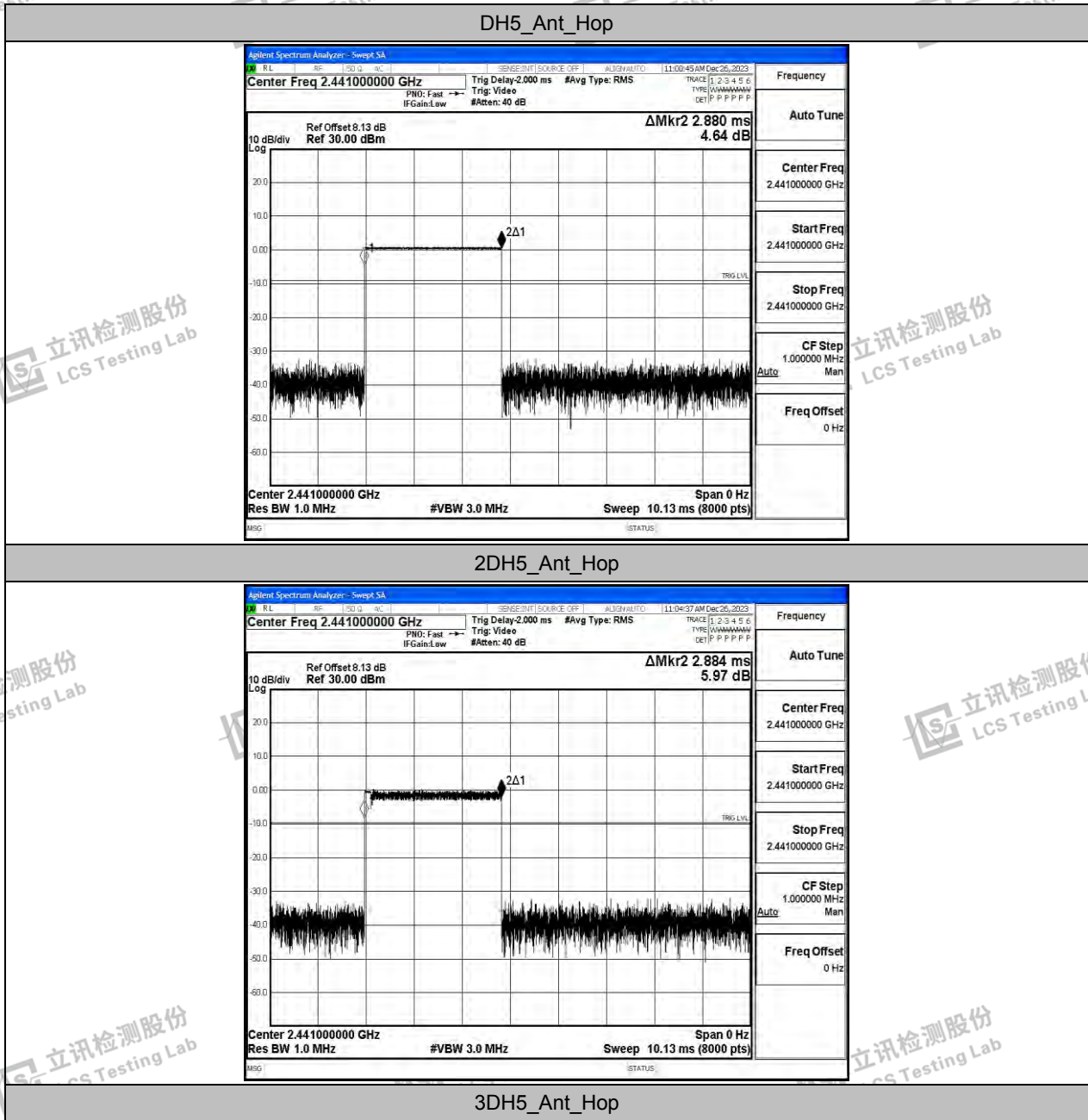
Test Result

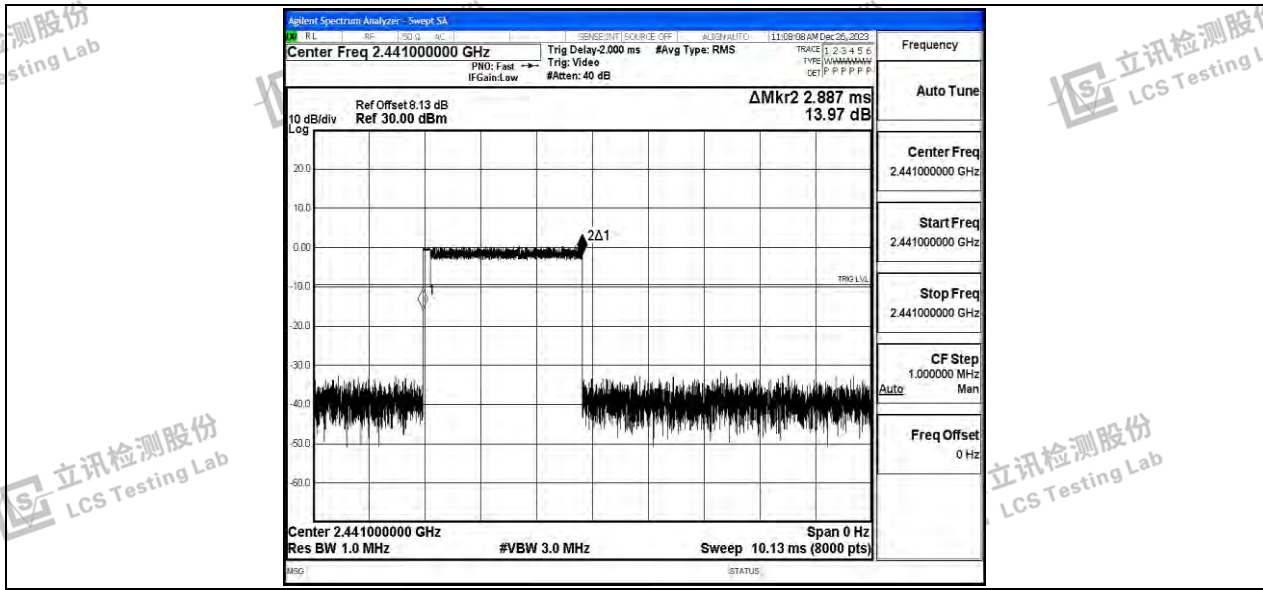
TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant	Hop	2.880	106.67	0.307	≤0.4	PASS
2DH5	Ant	Hop	2.884	106.67	0.308	≤0.4	PASS
3DH5	Ant	Hop	2.887	106.67	0.308	≤0.4	PASS





Test Graphs







A.5 Number of hopping channels

Test Result

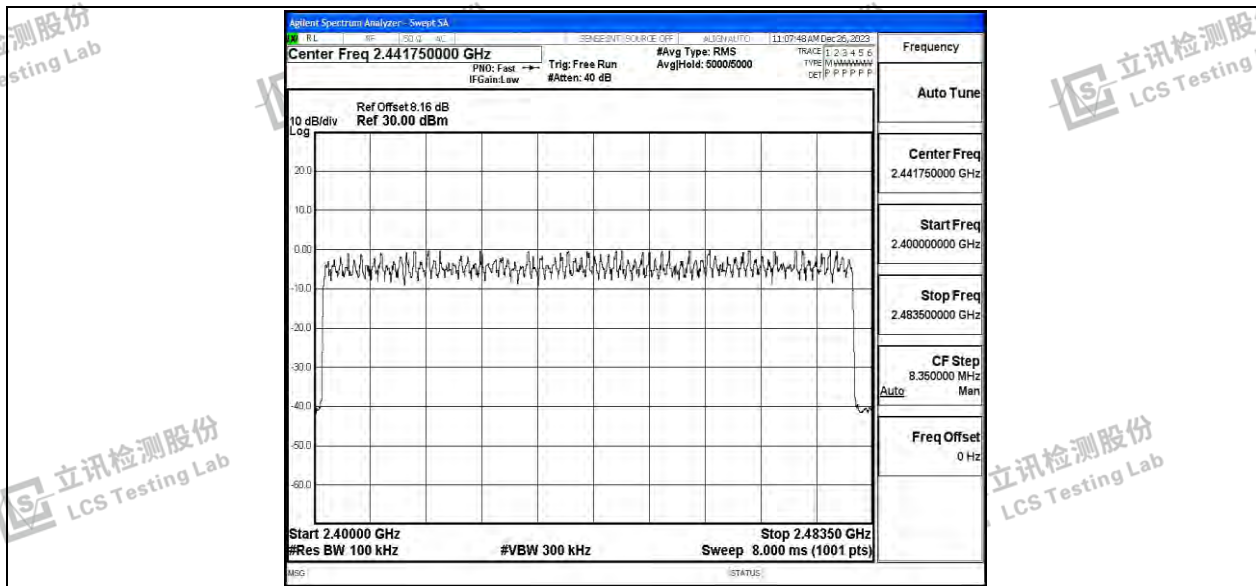
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant	Hop	79	≥15	PASS
2DH5	Ant	Hop	79	≥15	PASS
3DH5	Ant	Hop	79	≥15	PASS





Test Graphs







A.6 Band edge measurements

Test Result

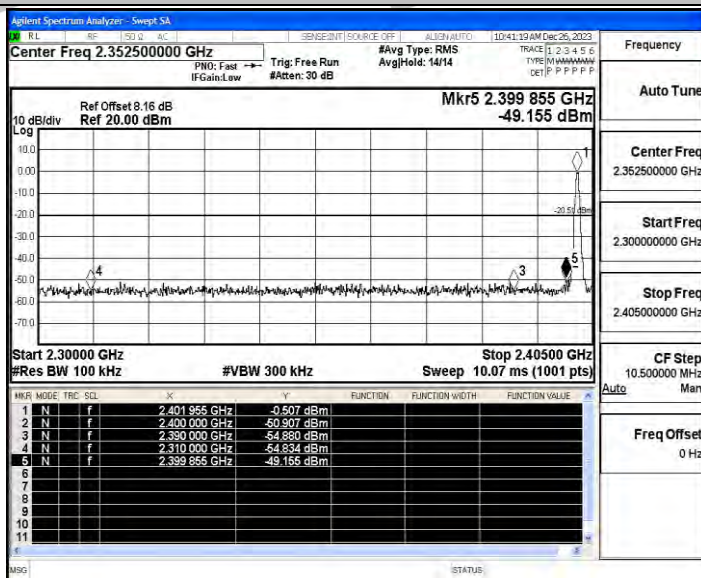
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	Low	2402	-0.51	-49.16	≤-20.51	PASS
		High	2480	0.40	-50.96	≤-19.6	PASS
		Low	Hop_2402	-0.27	-49.24	≤-20.27	PASS
		High	Hop_2480	0.67	-42.93	≤-19.34	PASS
2DH5	Ant	Low	2402	-3.92	-50.99	≤-23.92	PASS
		High	2480	-4.94	-51.15	≤-24.94	PASS
		Low	Hop_2402	-4.76	-50.28	≤-24.76	PASS
		High	Hop_2480	-2.39	-48.69	≤-22.39	PASS
3DH5	Ant	Low	2402	-5.46	-50.86	≤-25.46	PASS
		High	2480	-2.82	-49.96	≤-22.82	PASS
		Low	Hop_2402	-4.13	-49.78	≤-24.13	PASS
		High	Hop_2480	-0.73	-49.41	≤-20.73	PASS



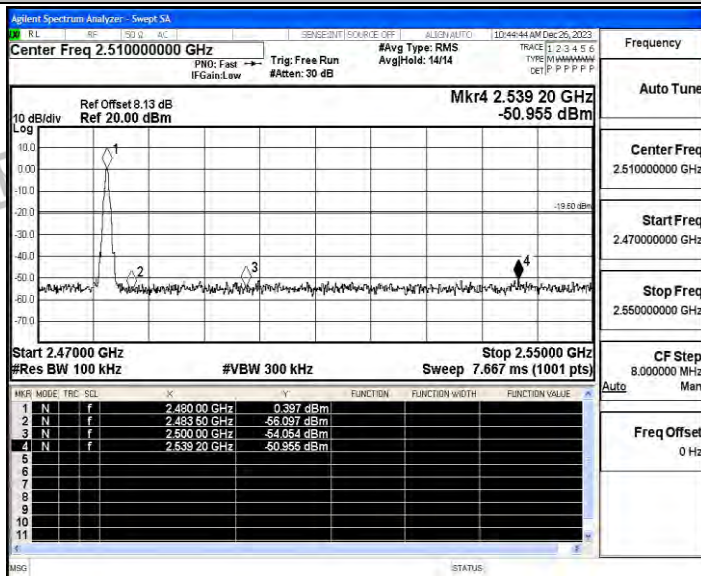


Test Graphs

DH5_Ant_Low_2402

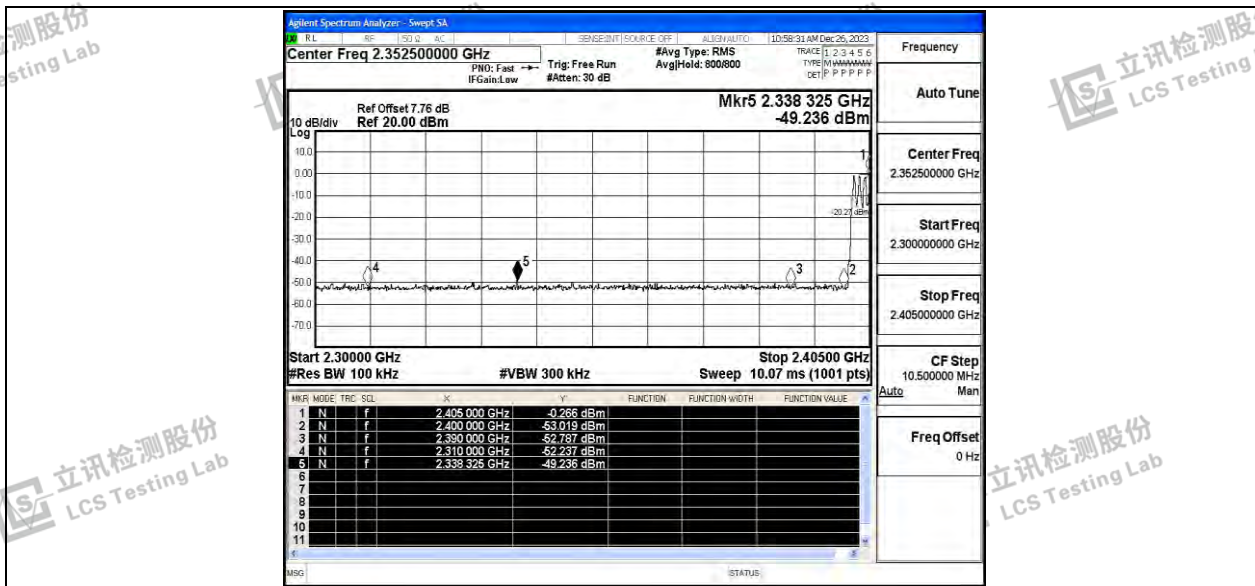


DH5_Ant_High_2480

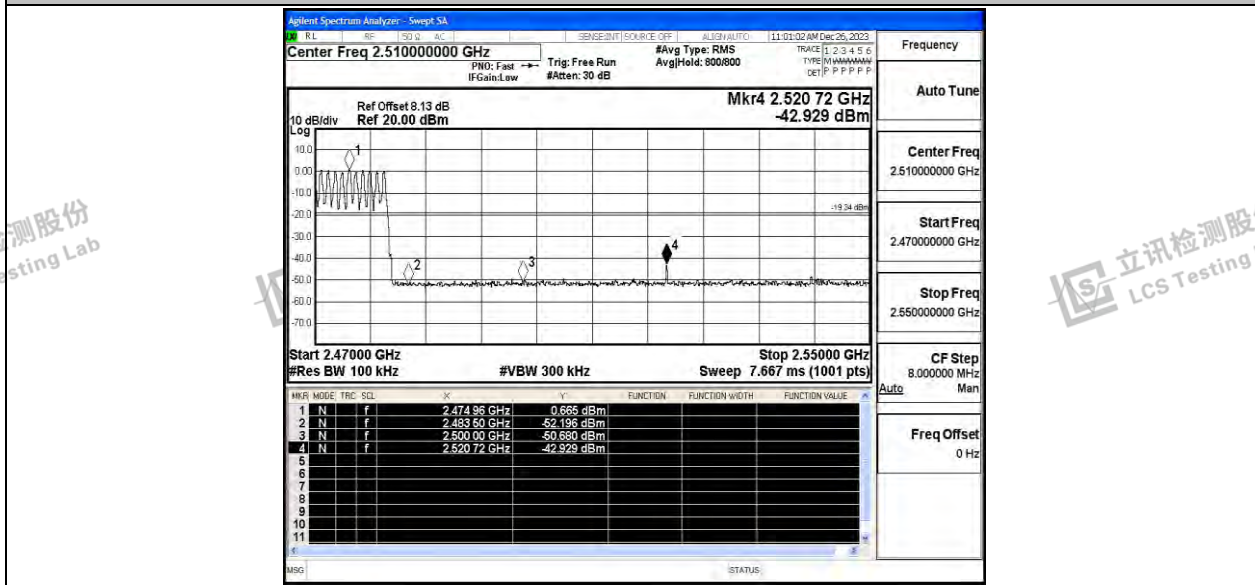


DH5_Ant_Low_Hop_2402



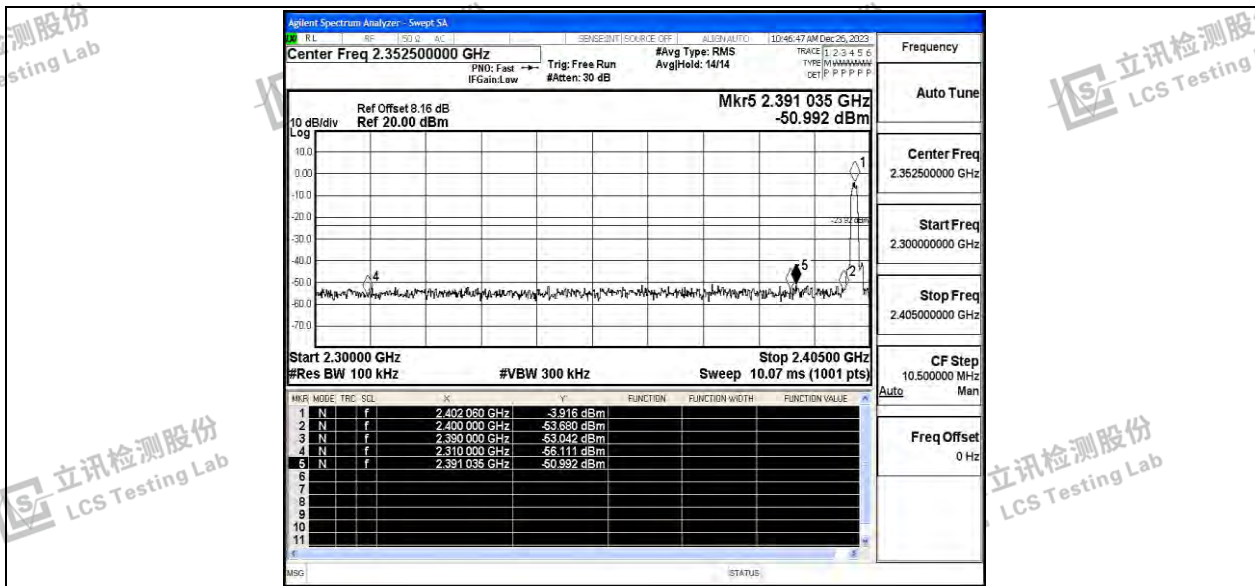


DH5_Ant_High_Hop_2480

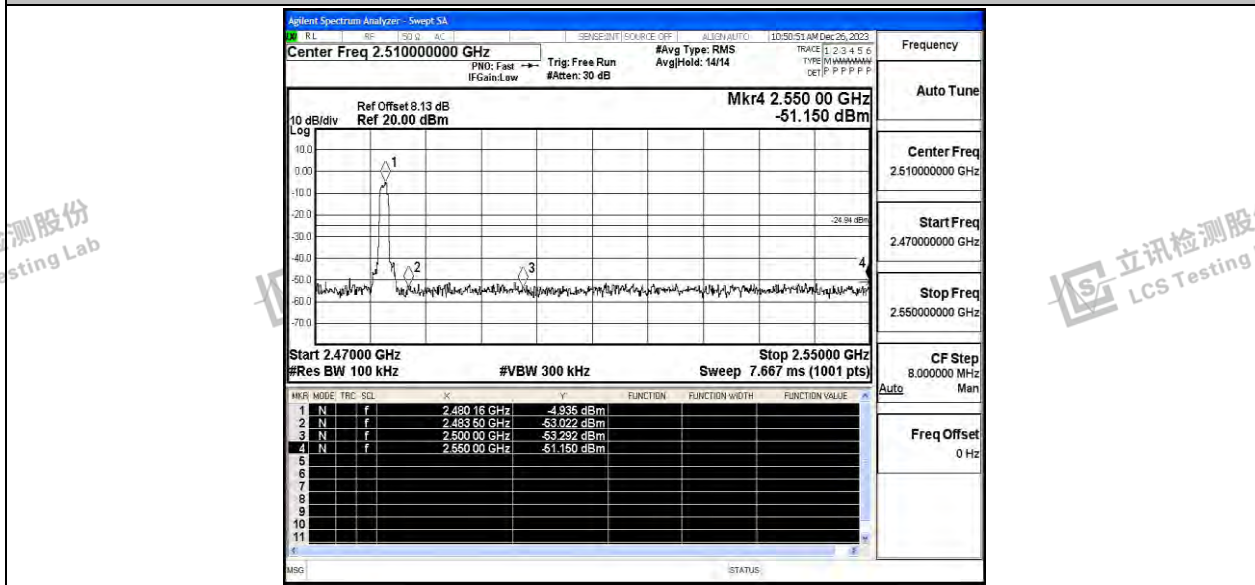


2DH5_Ant_Low_2402



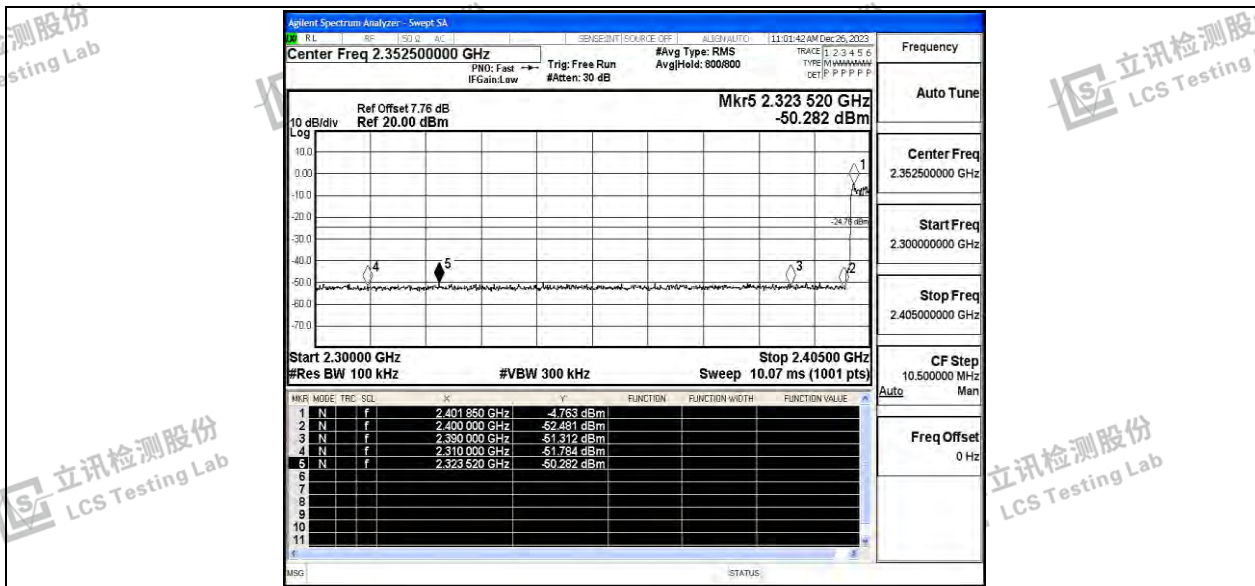


2D5_Ant_High_2480

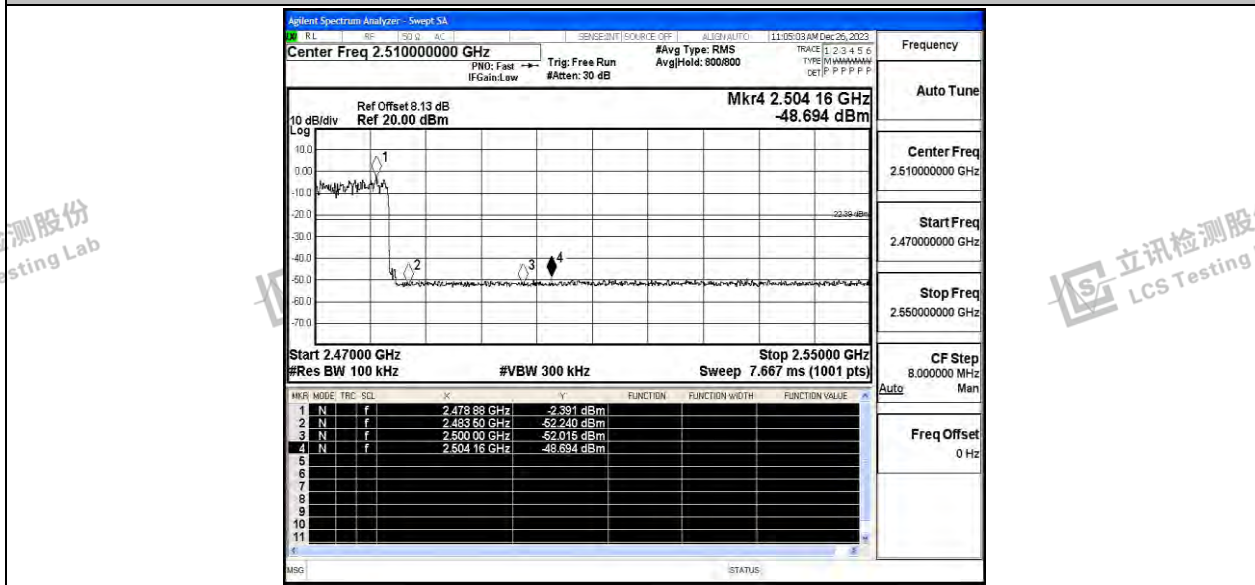


2D5_Ant_Low_Hop_2402



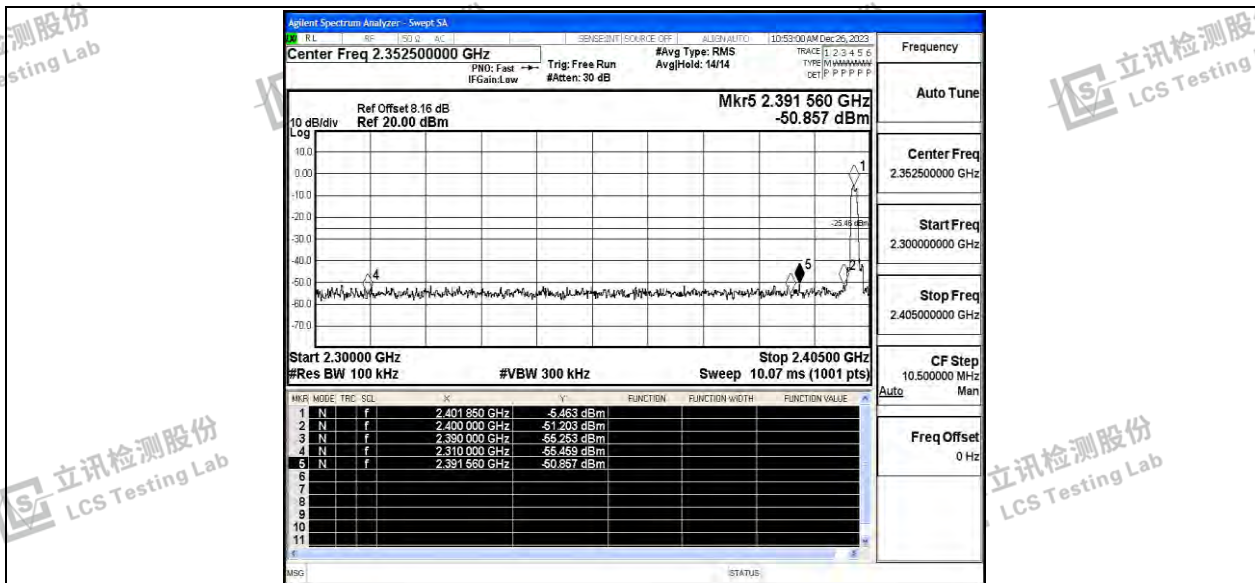


2DH5_Ant_High_Hop_2480

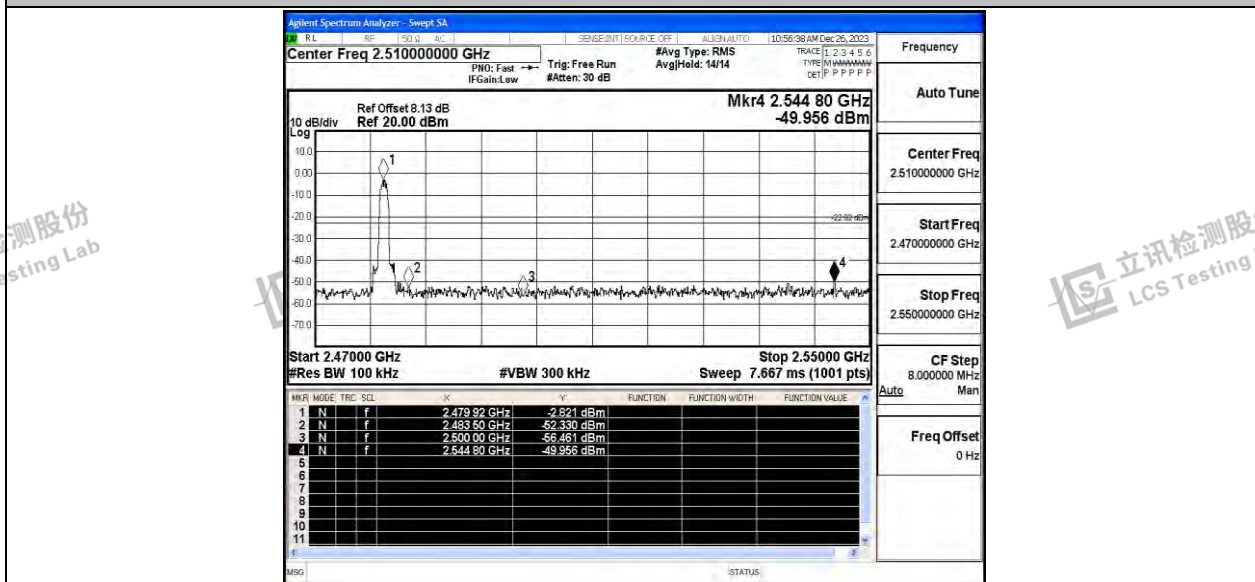


3DH5_Ant_Low_2402



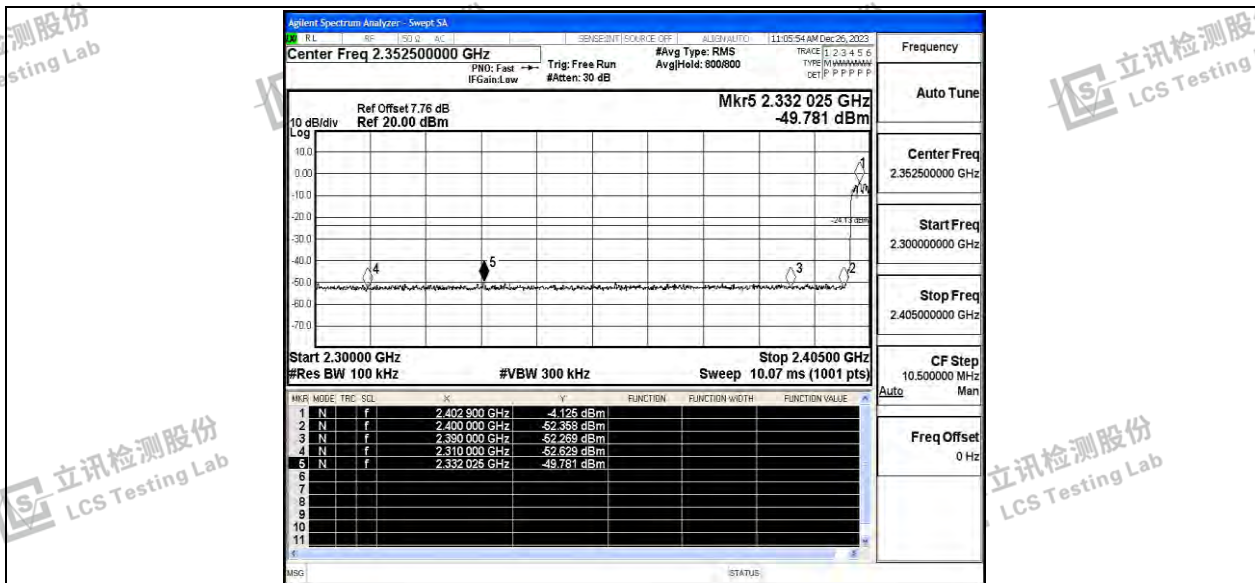


3DH5_Ant_High_2480

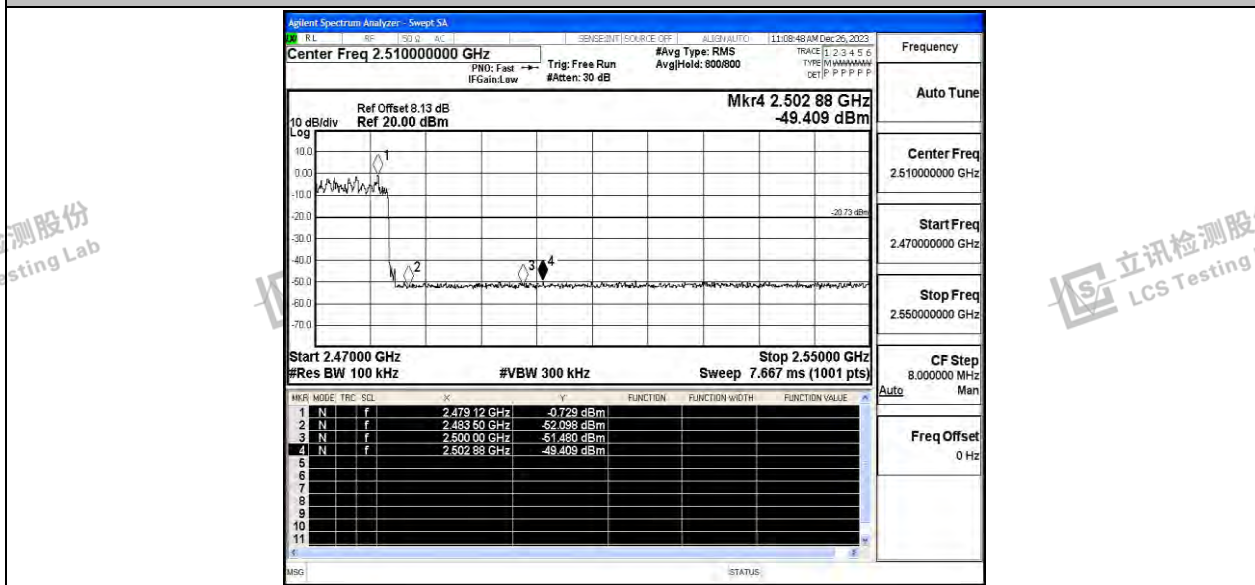


3DH5_Ant_Low_Hop_2402





3DH5_Ant_High_Hop_2480





A.7 Conducted Spurious Emission

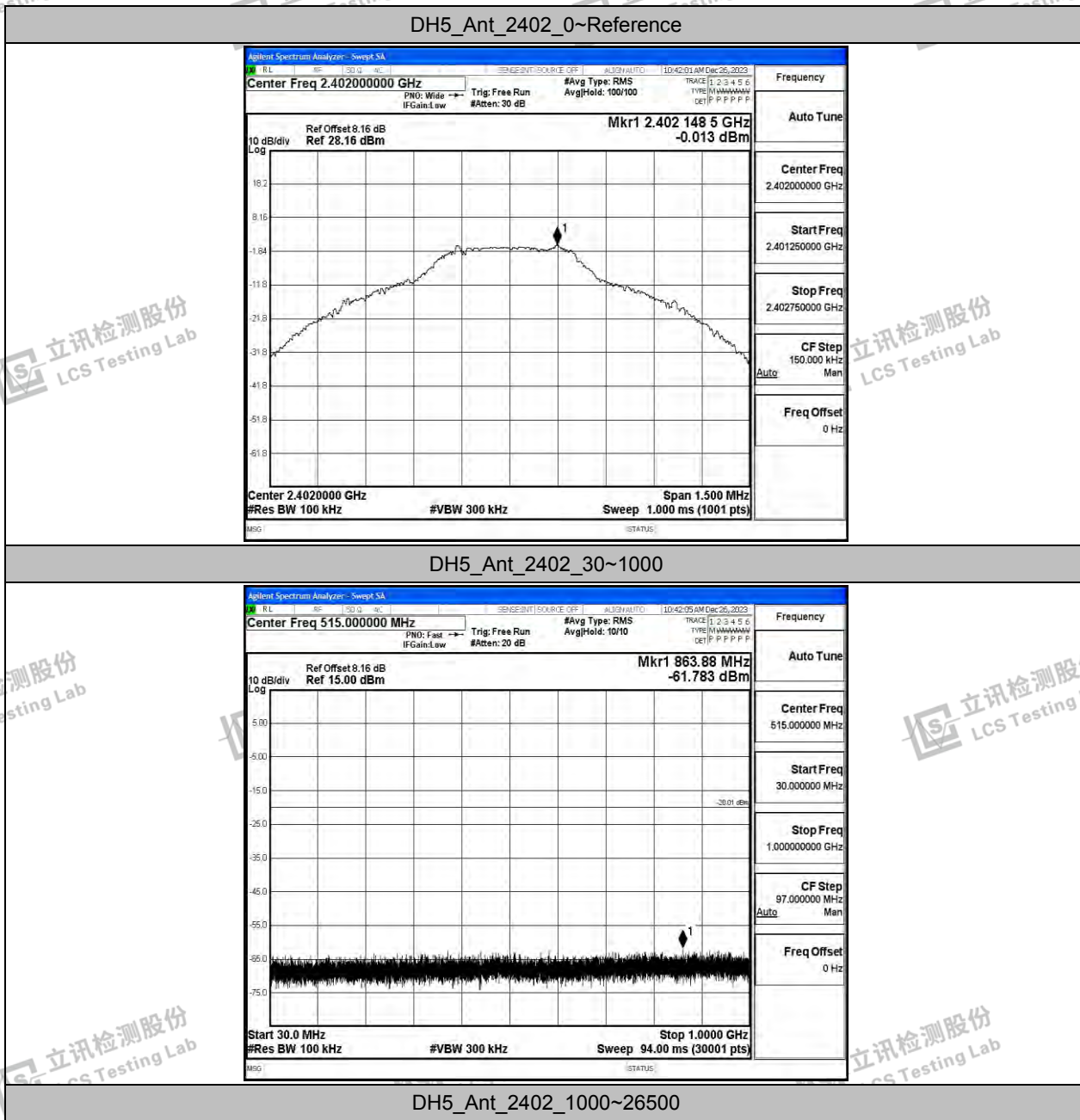
Test Result

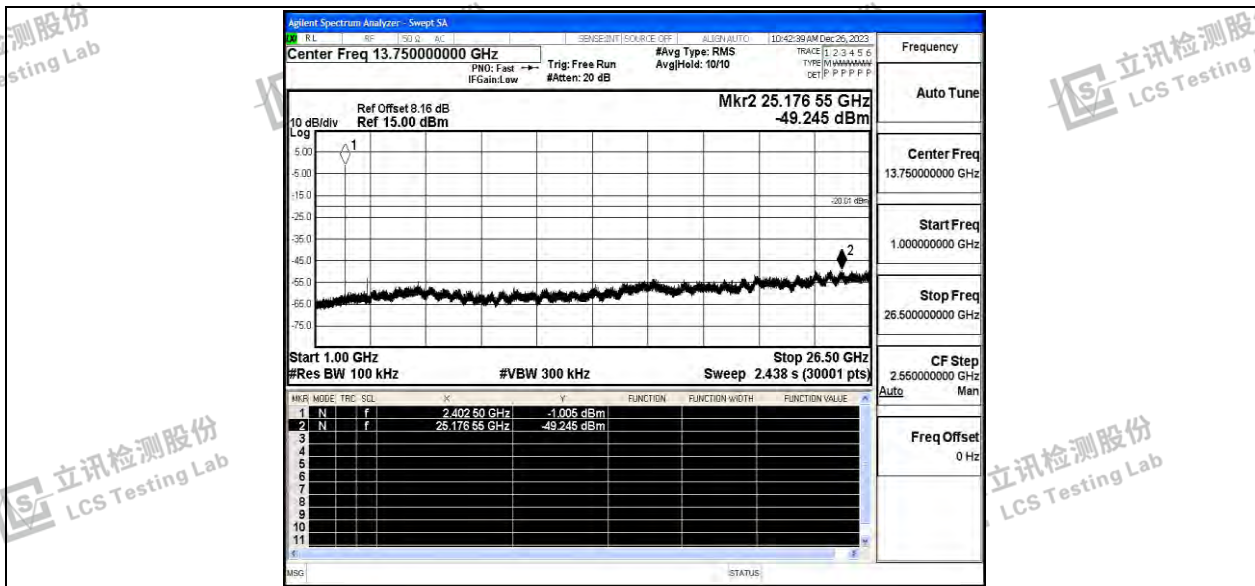
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	2402	Reference	-0.01	-0.01	---	PASS
			30~1000	-0.01	-61.78	≤-20.01	PASS
			1000~26500	-0.01	-49.25	≤-20.01	PASS
		2441	Reference	-0.02	-0.02	---	PASS
			30~1000	-0.02	-61.08	≤-20.02	PASS
			1000~26500	-0.02	-48.96	≤-20.02	PASS
		2480	Reference	0.16	0.16	---	PASS
			30~1000	0.16	-61.5	≤-19.84	PASS
			1000~26500	0.16	-49.18	≤-19.84	PASS
2DH5	Ant	2402	Reference	-0.62	-0.62	---	PASS
			30~1000	-0.62	-61.49	≤-20.62	PASS
			1000~26500	-0.62	-49.47	≤-20.62	PASS
		2441	Reference	-1.88	-1.88	---	PASS
			30~1000	-1.88	-61.76	≤-21.88	PASS
			1000~26500	-1.88	-48.07	≤-21.88	PASS
		2480	Reference	-0.46	-0.46	---	PASS
			30~1000	-0.46	-61.57	≤-20.46	PASS
			1000~26500	-0.46	-48.71	≤-20.46	PASS
3DH5	Ant	2402	Reference	-1.13	-1.13	---	PASS
			30~1000	-1.13	-61.38	≤-21.13	PASS
			1000~26500	-1.13	-49.13	≤-21.13	PASS
		2441	Reference	-0.57	-0.57	---	PASS
			30~1000	-0.57	-60.74	≤-20.57	PASS
			1000~26500	-0.57	-48.92	≤-20.57	PASS
		2480	Reference	-1.28	-1.28	---	PASS
			30~1000	-1.28	-61.07	≤-21.28	PASS
			1000~26500	-1.28	-49.26	≤-21.28	PASS



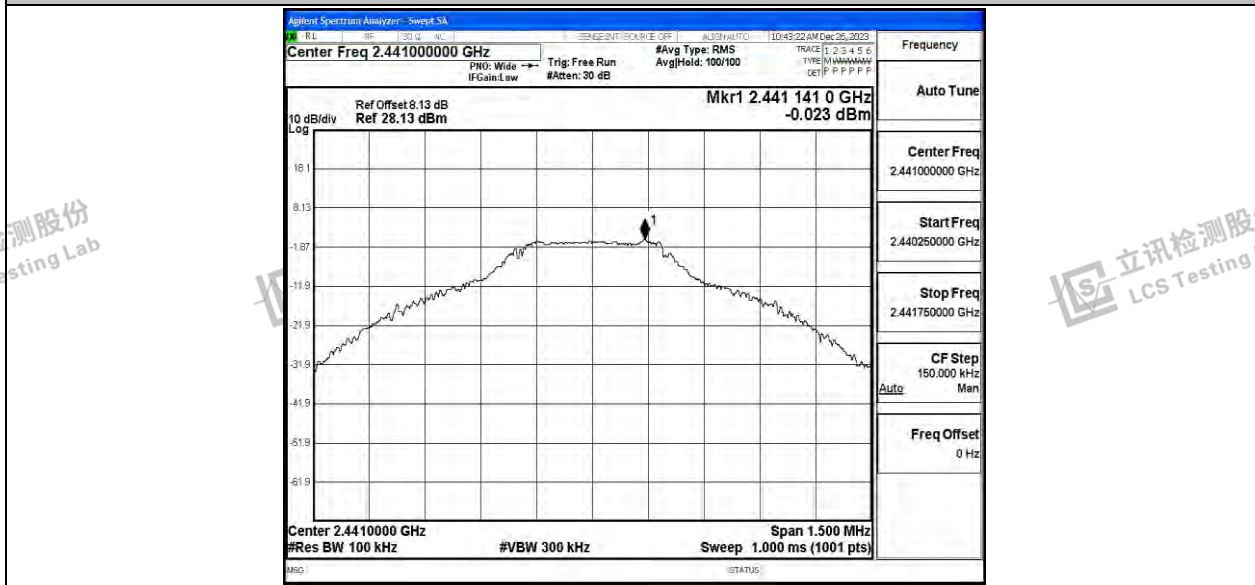


Test Graphs



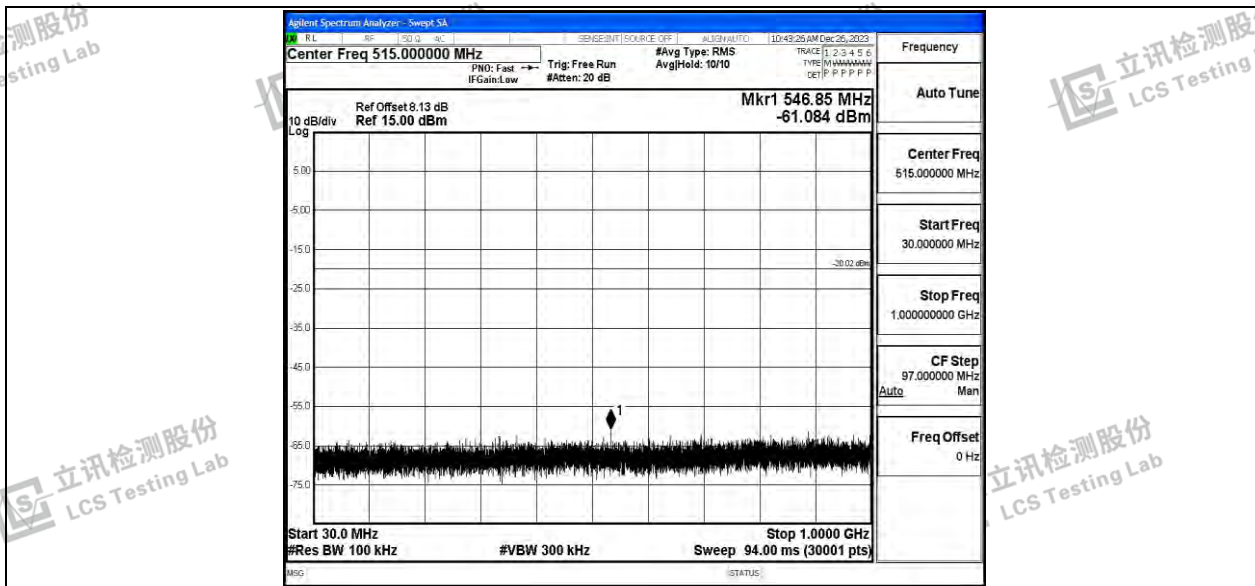


DH5_Ant_2441_0~Reference

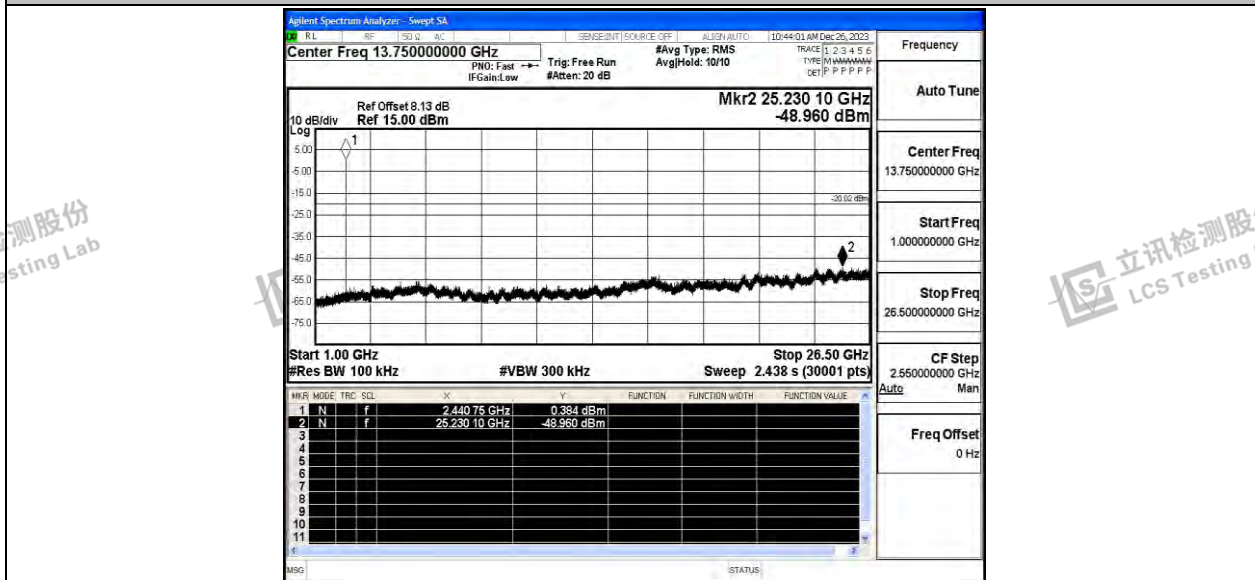


DH5_Ant_2441_30~1000



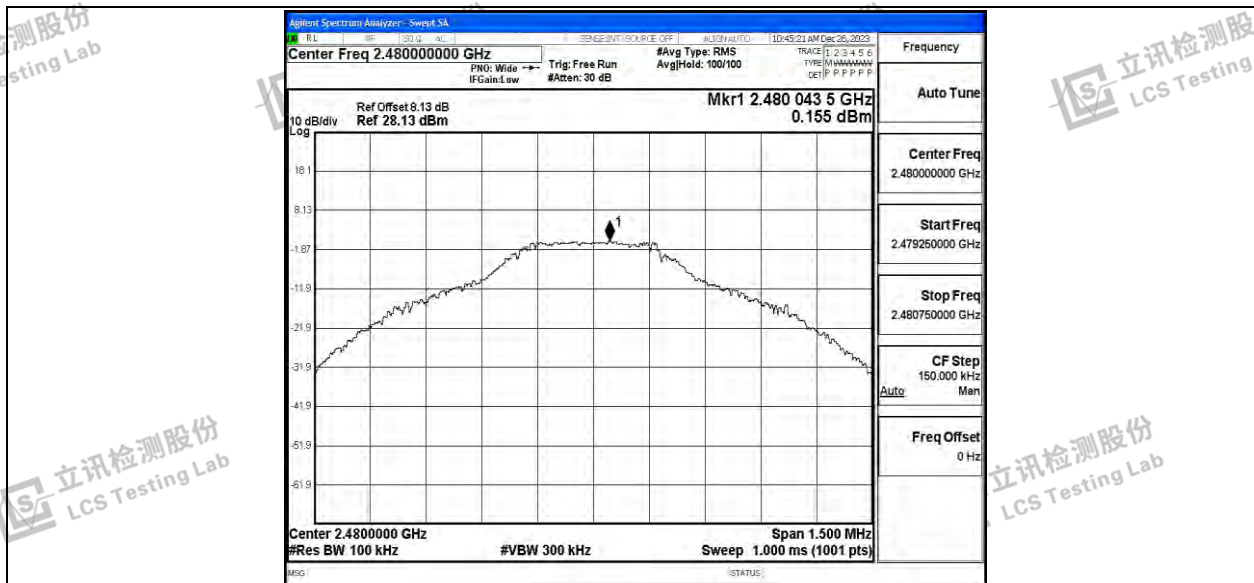


DH5_Ant_2441_1000~26500

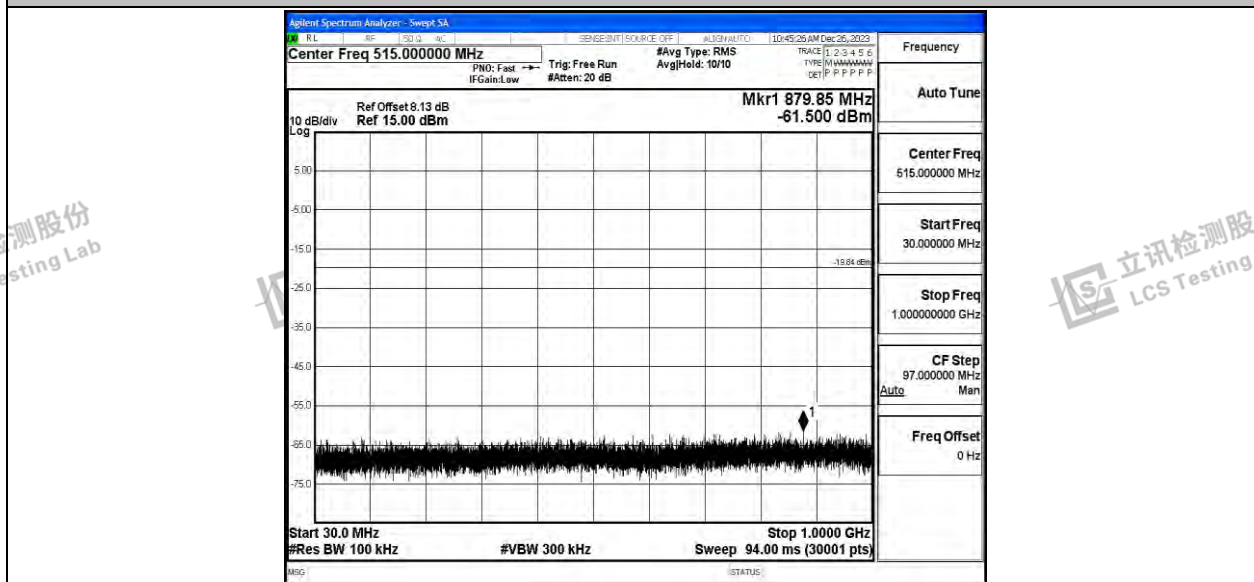


DH5_Ant_2480_0~Reference



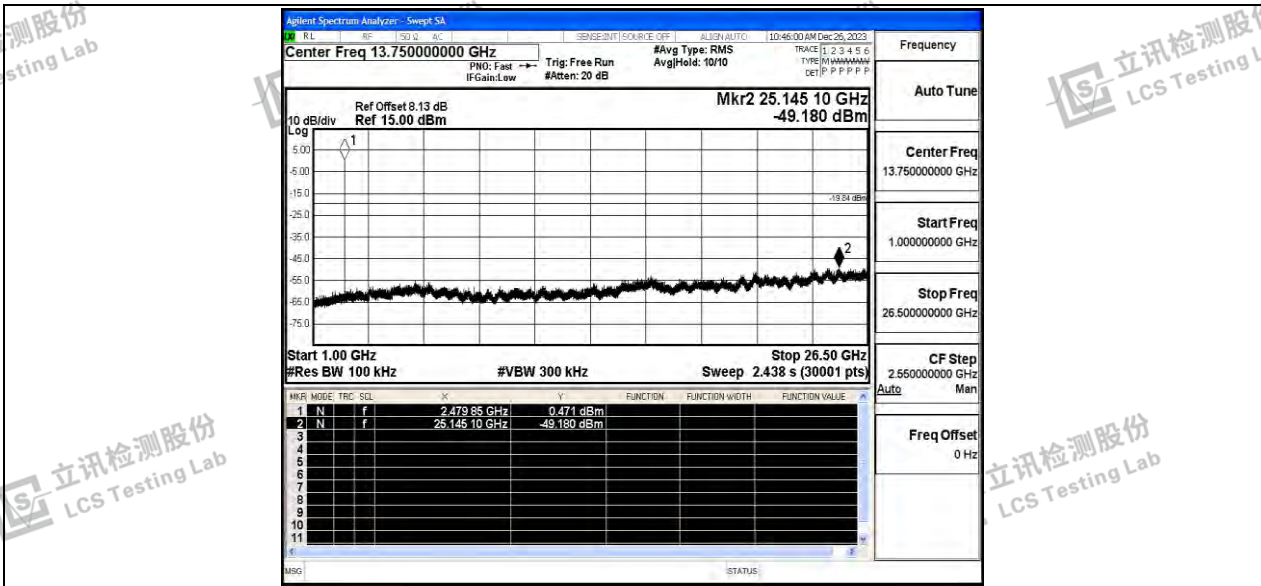


DH5_Ant_2480_30~1000

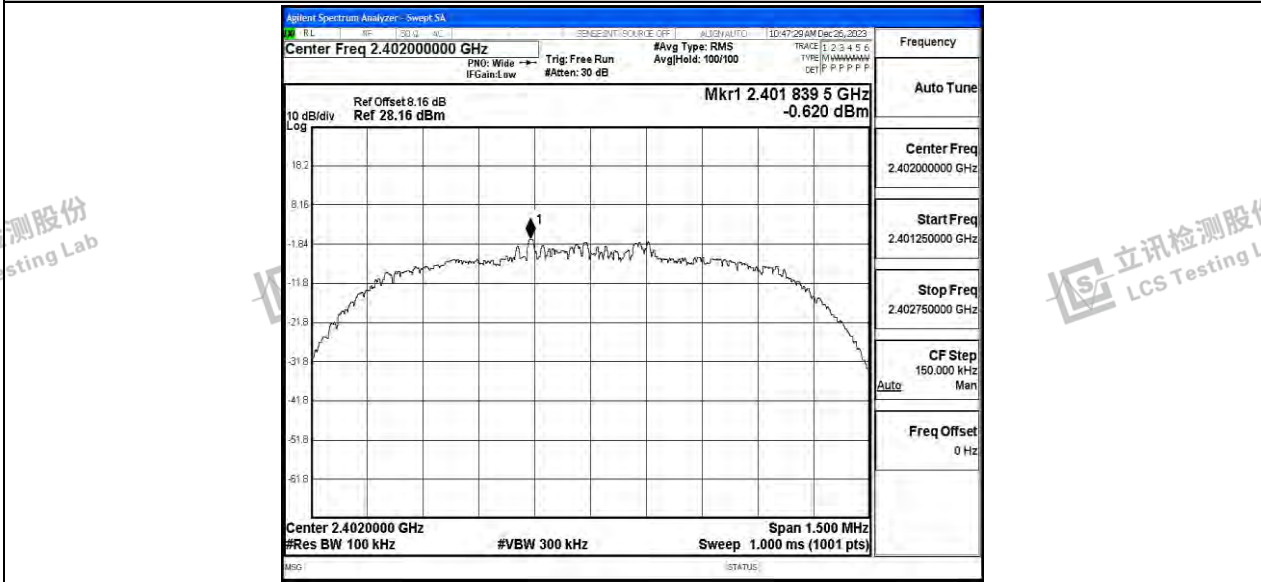


DH5_Ant_2480_1000~26500



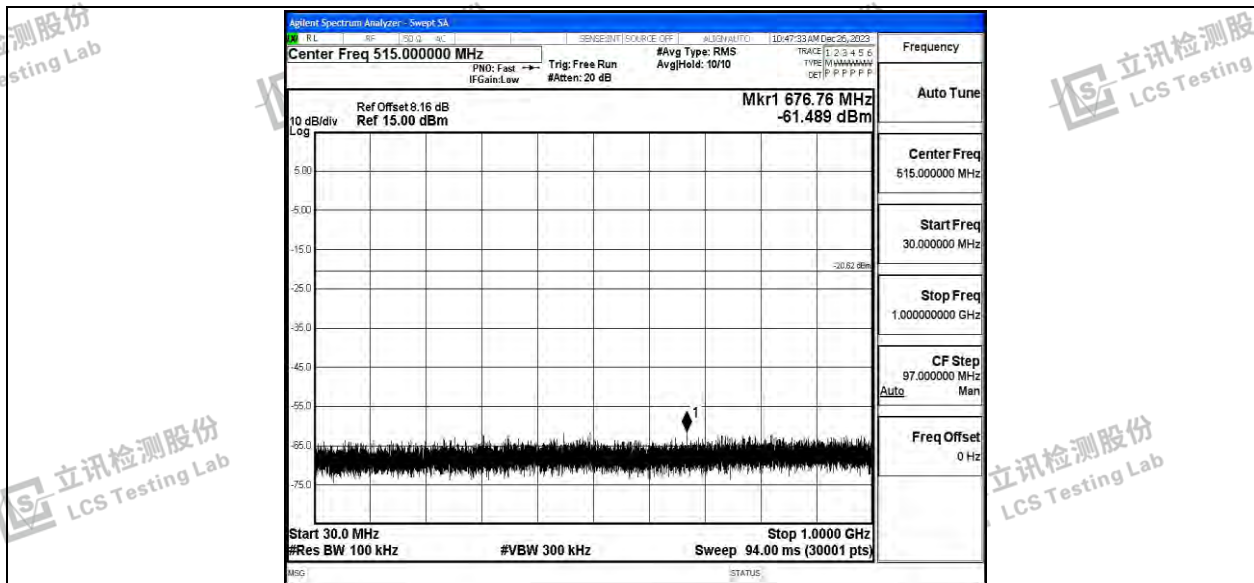


2DH5_Ant_2402_0~Reference

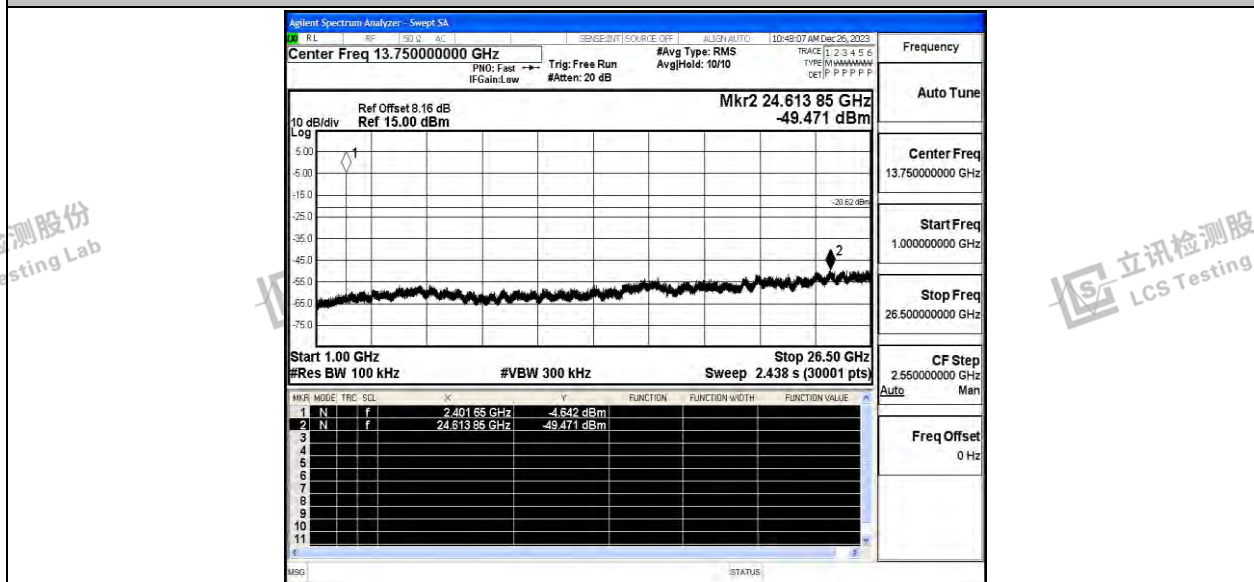


2DH5_Ant_2402_30~1000



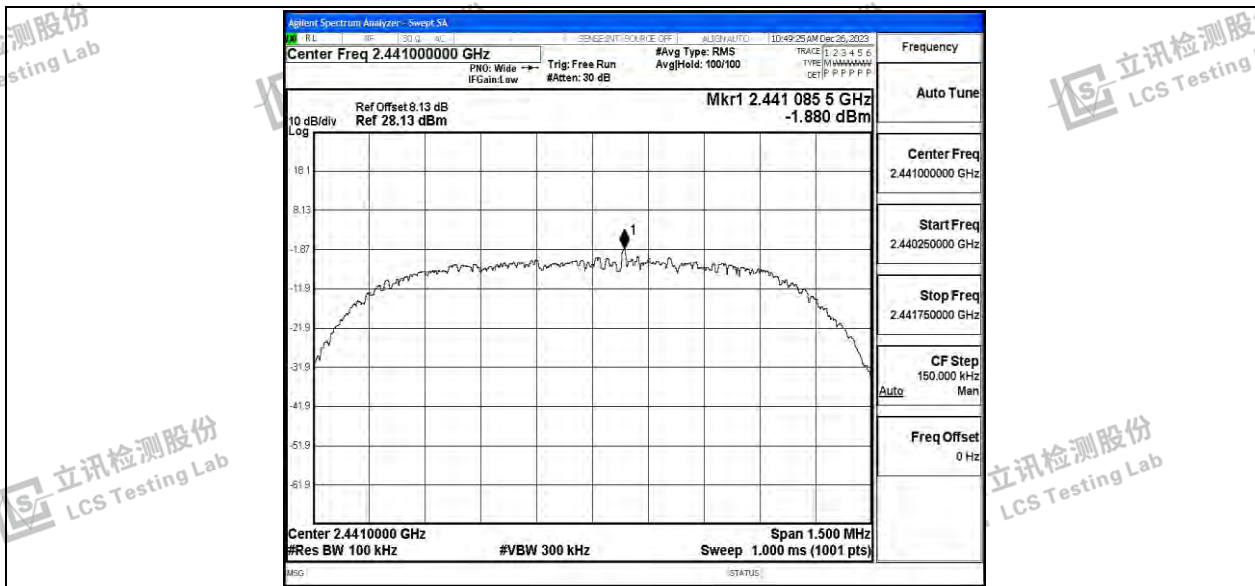


2DH5_Ant_2402_1000~26500

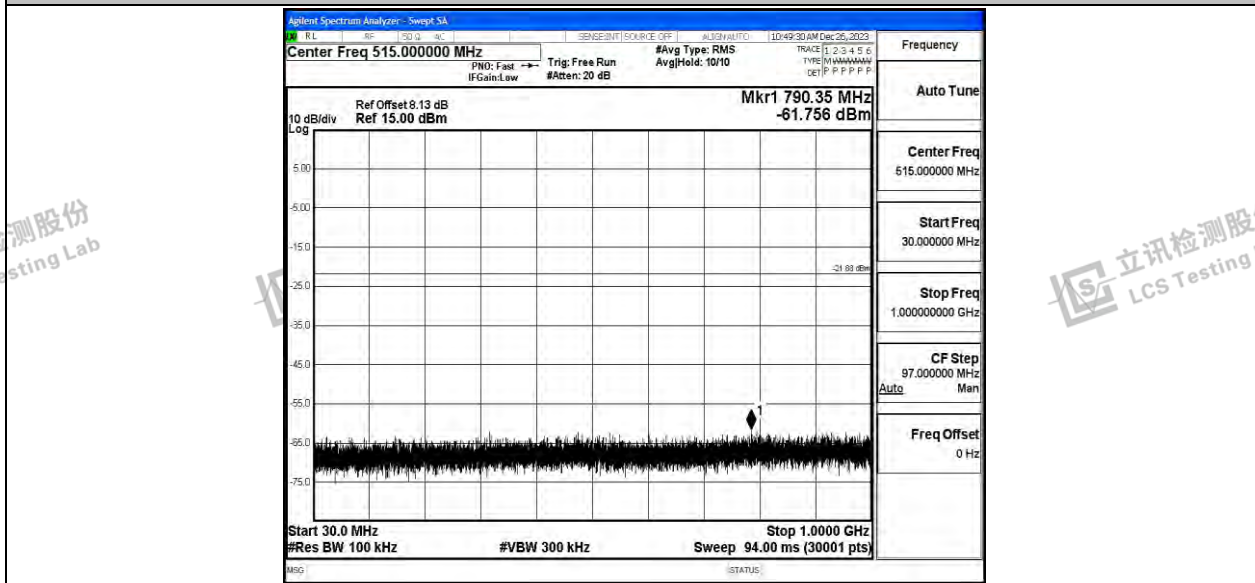


2DH5_Ant_2441_0~Reference



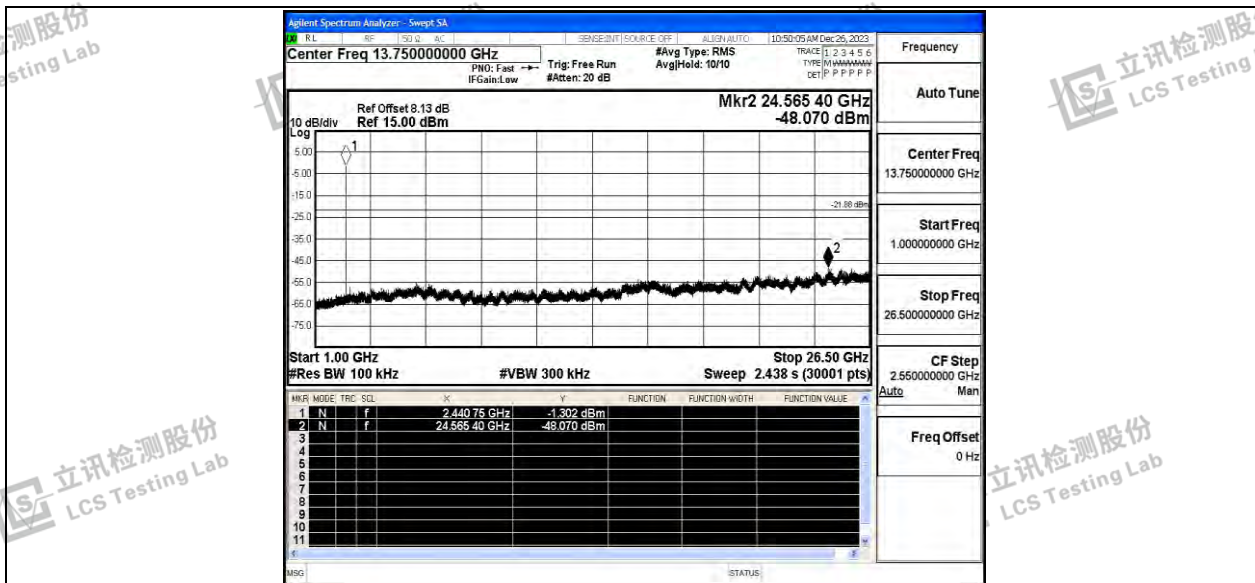


2DH5_Ant_2441_30~1000

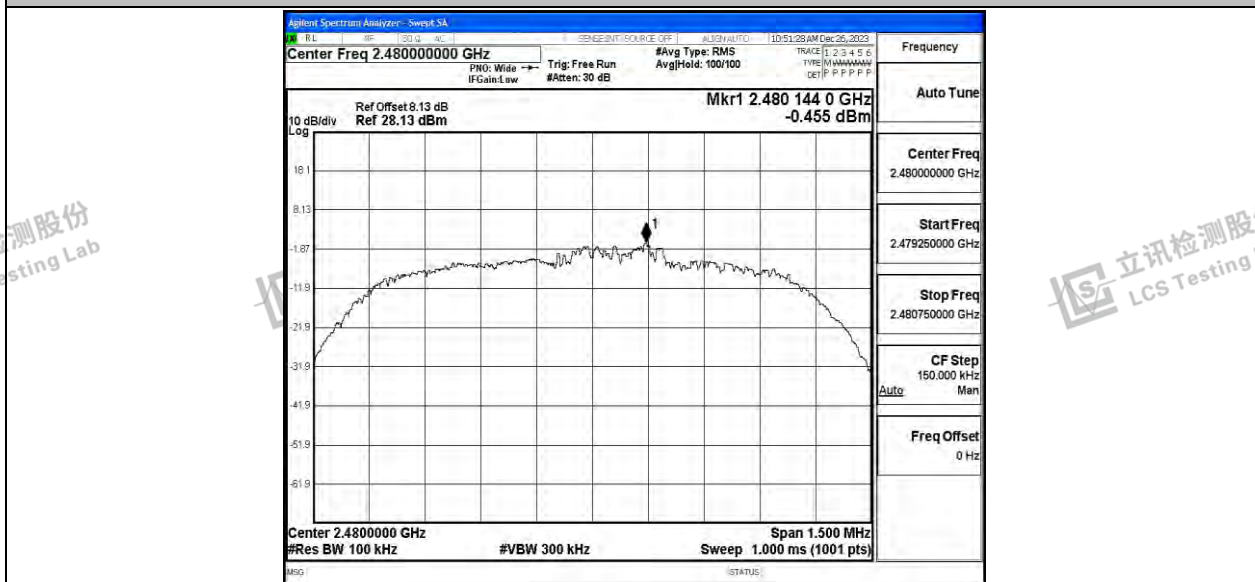


2DH5_Ant_2441_1000~26500



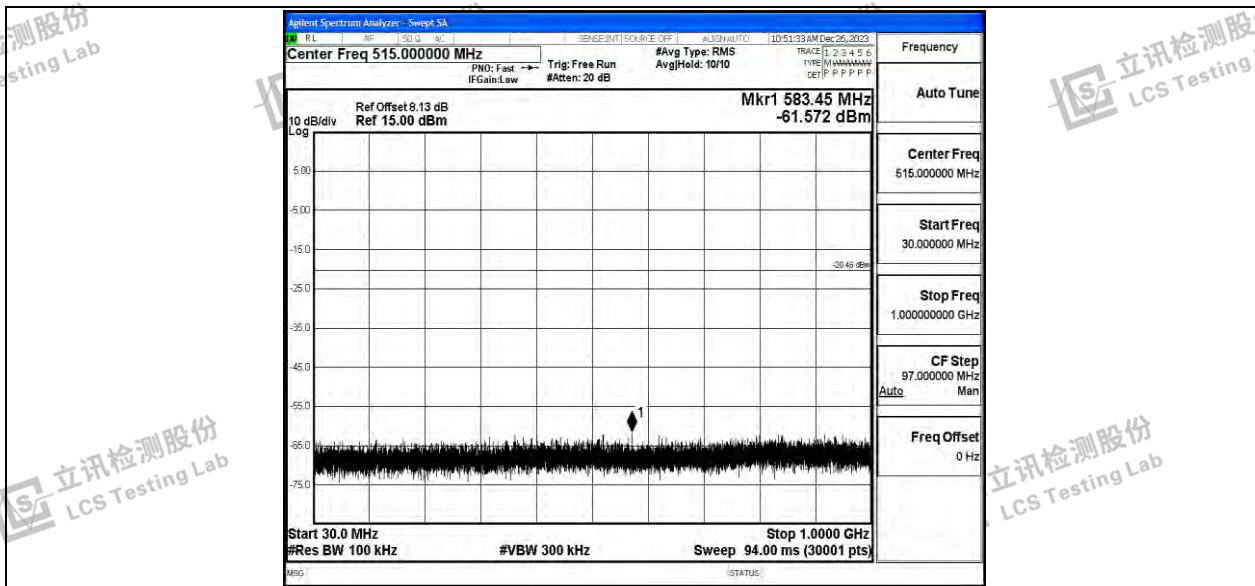


2DH5_Ant_2480_0~Reference

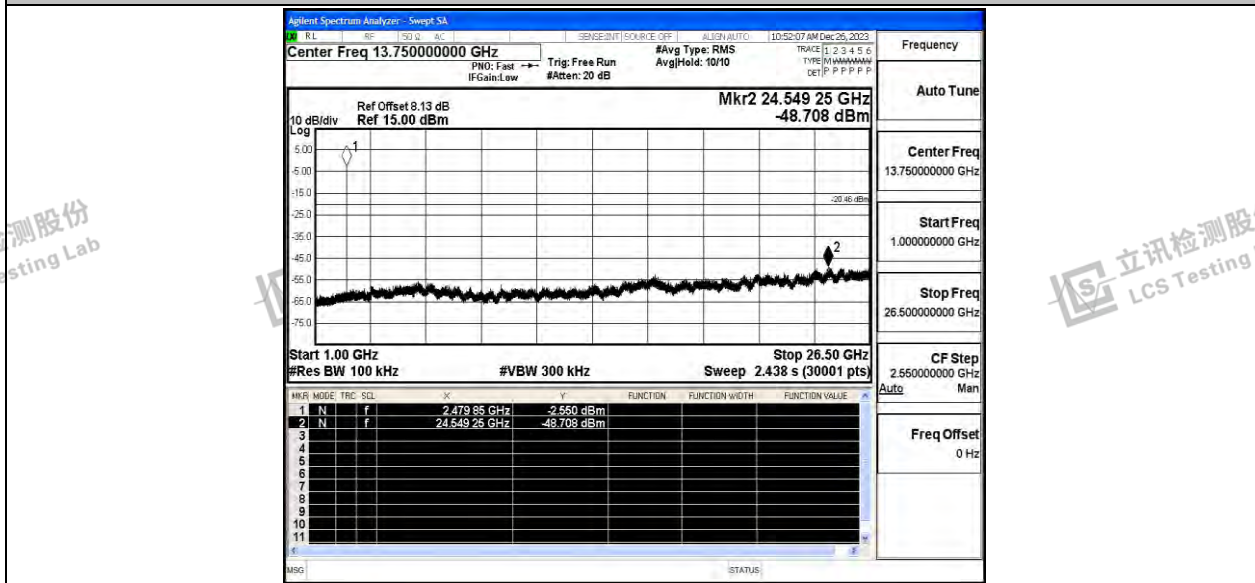


2DH5_Ant_2480_30~1000



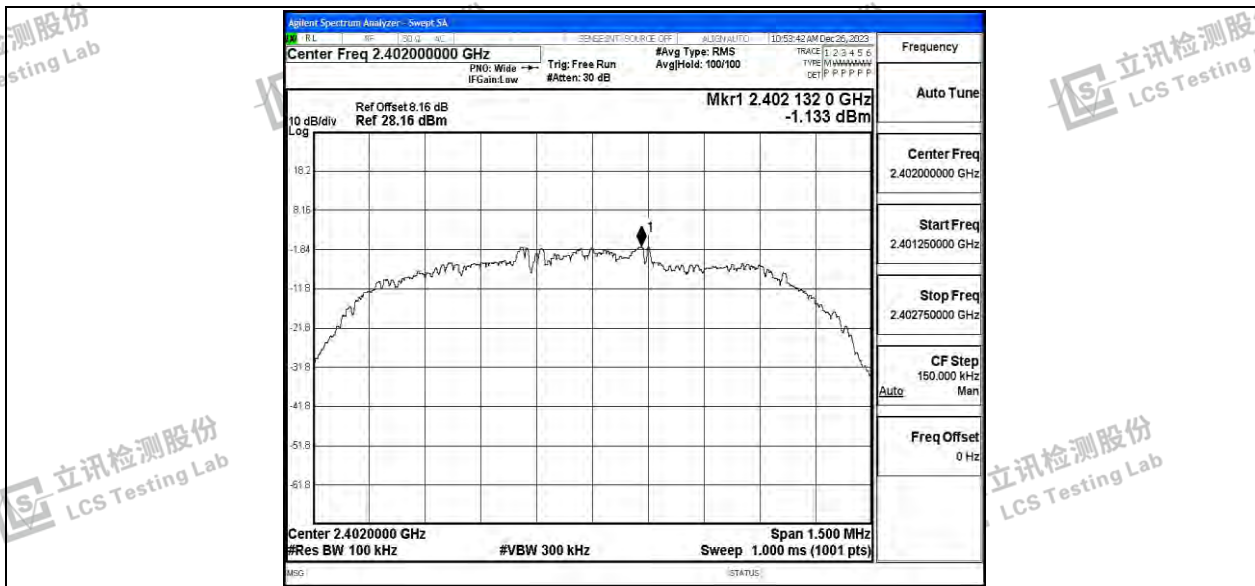


2DH5_Ant_2480_1000~26500

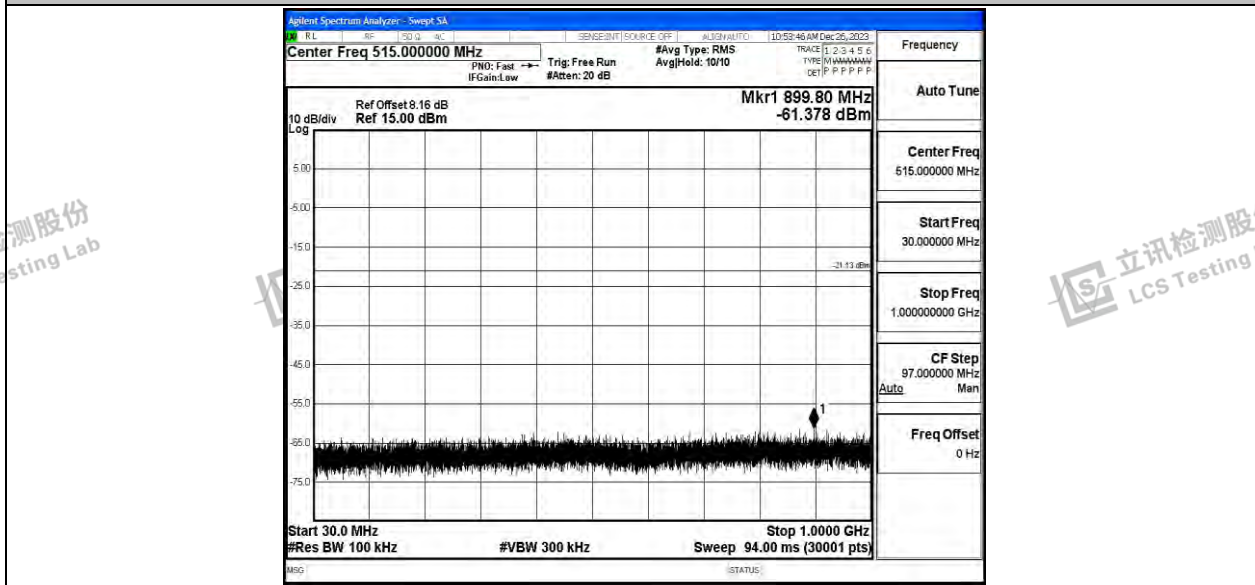


3DH5_Ant_2402_0~Reference



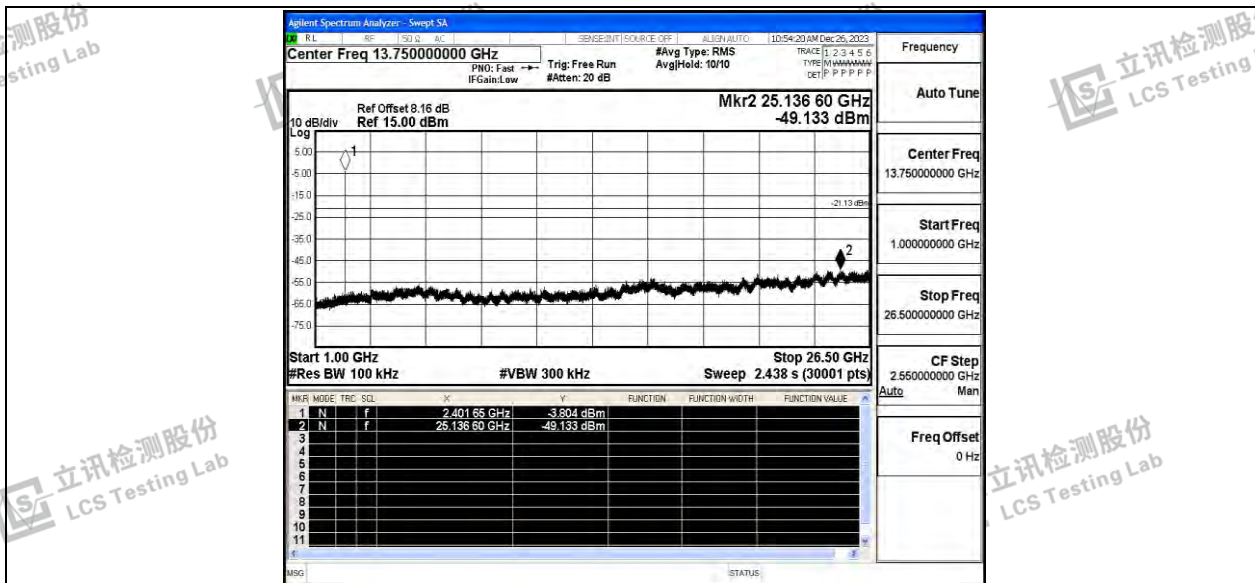


3DH5_Ant_2402_30~1000

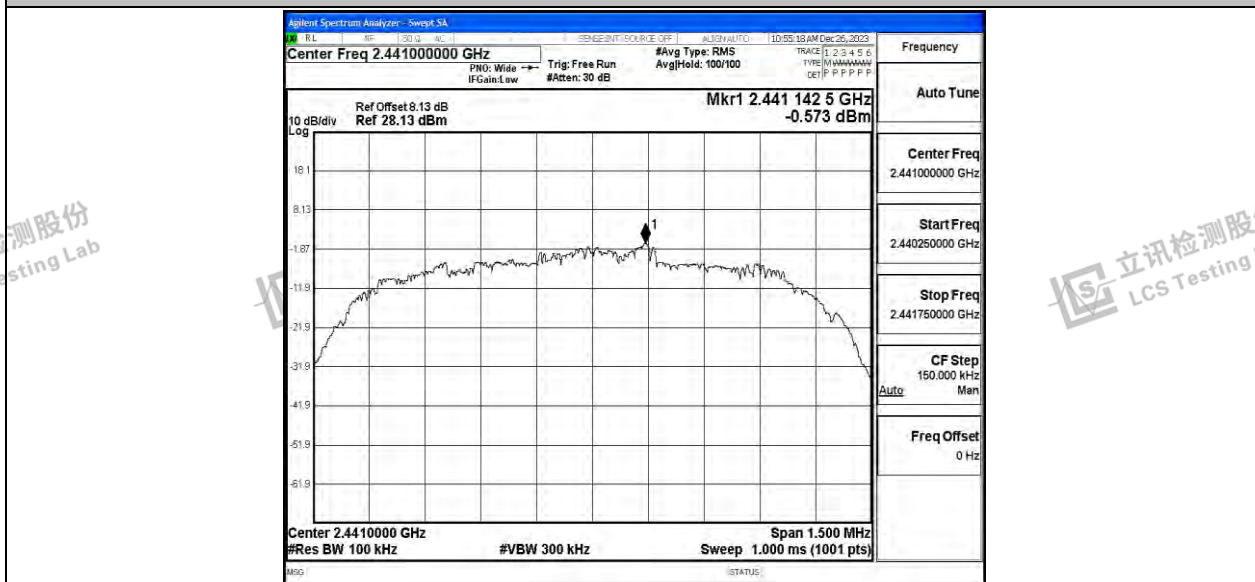


3DH5_Ant_2402_1000~26500



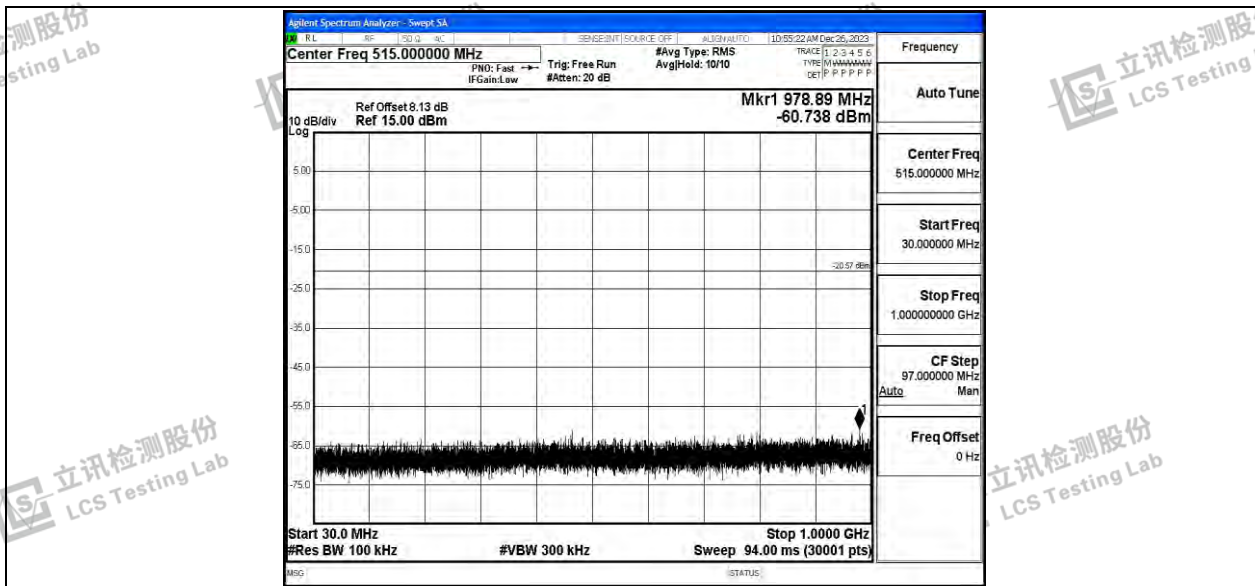


3DH5_Ant_2441_0~Reference

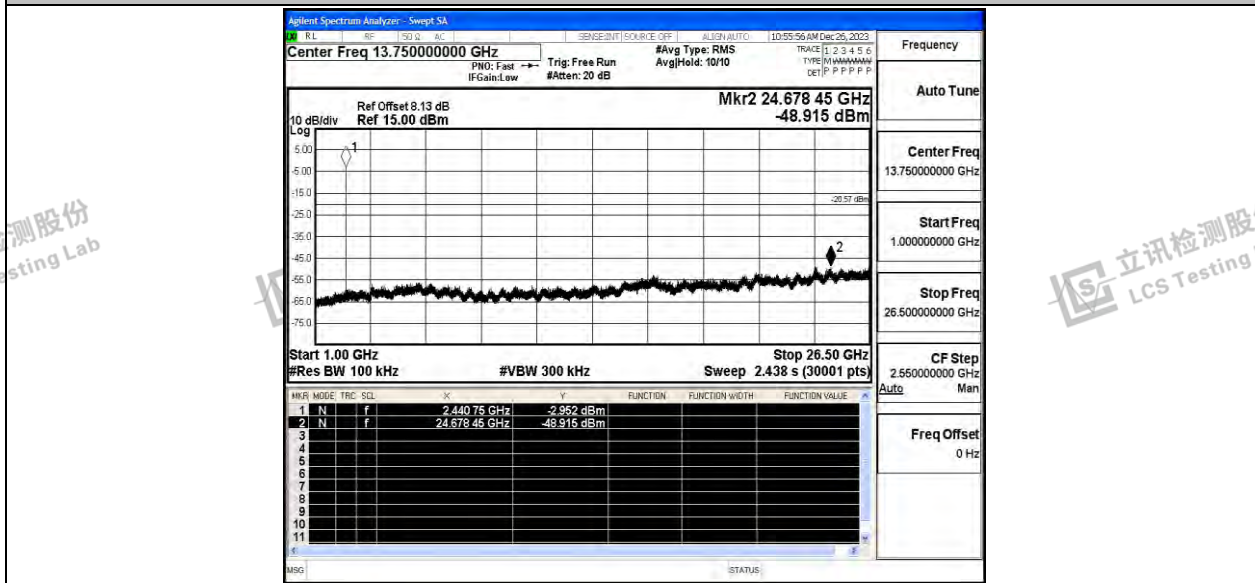


3DH5_Ant_2441_30~1000



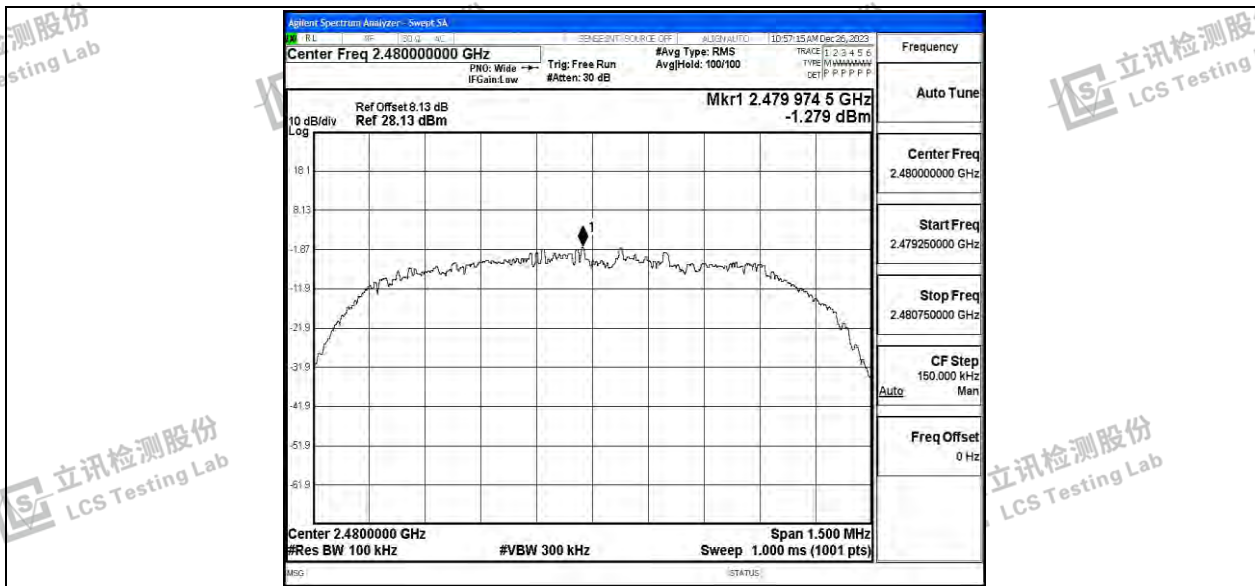


3DH5_Ant_2441_1000~26500

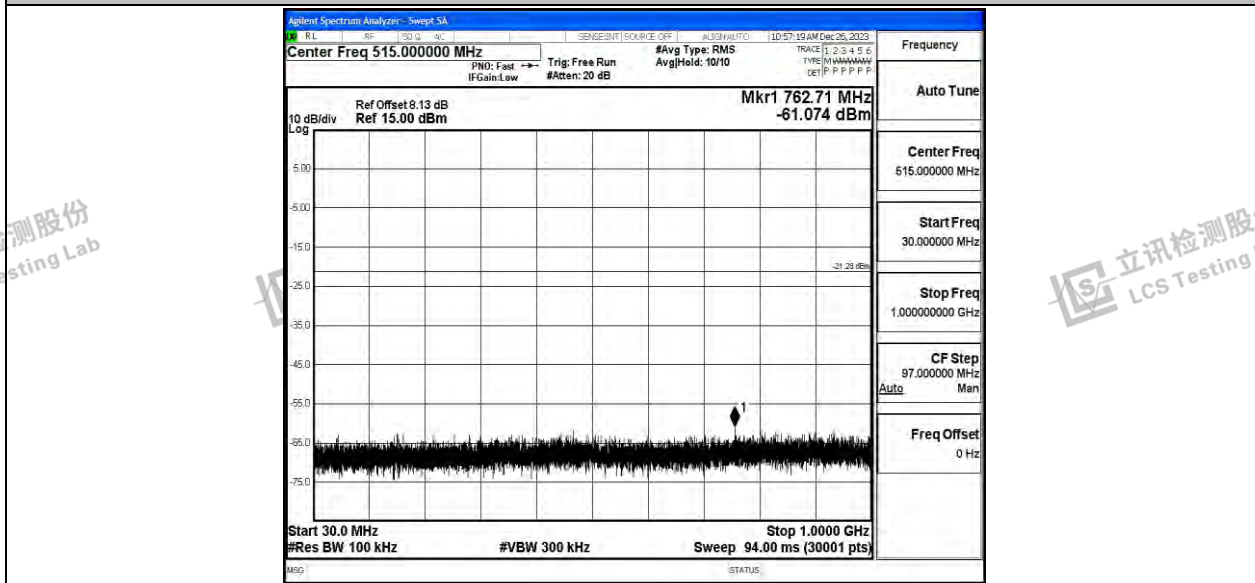


3DH5_Ant_2480_0~Reference



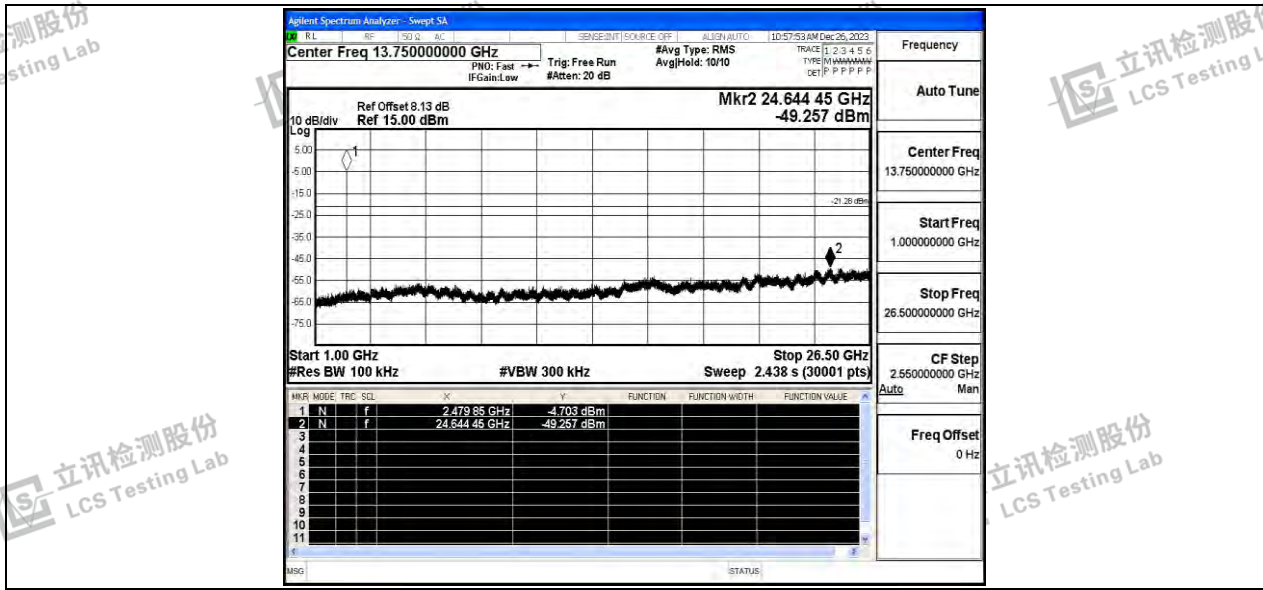


3DH5_Ant_2480_30~1000



3DH5_Ant_2480_1000~26500







A.8 Duty Cycle

Test Result

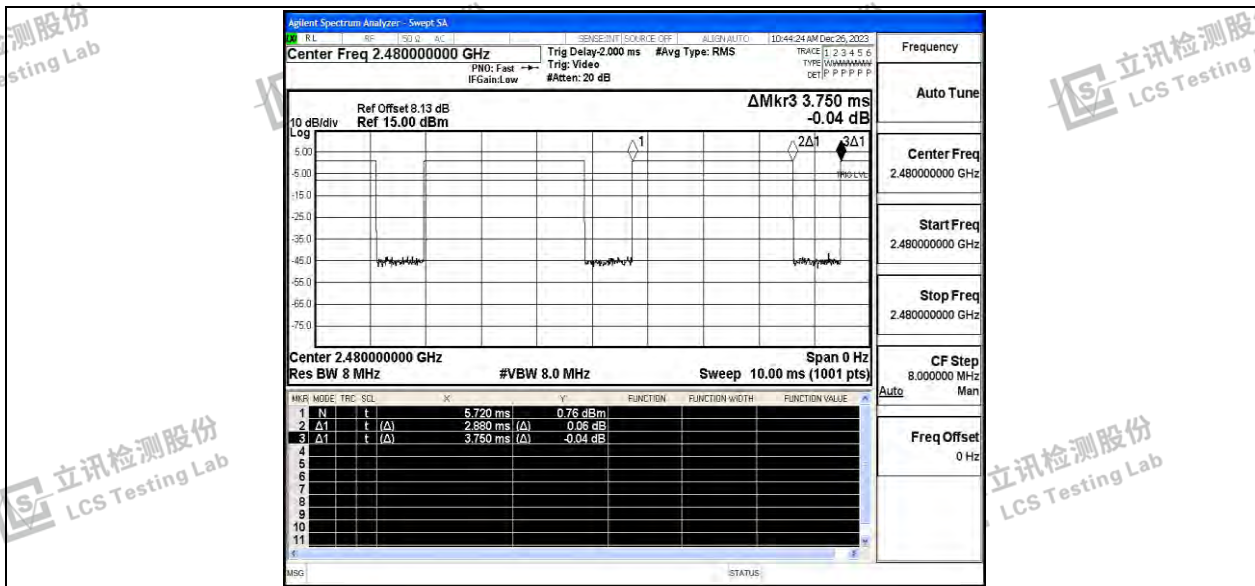
TestMode	Antenna	Frequency[M Hz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Factor[kHz]
DH5	Ant	2402	2.88	3.75	76.80	1.15	0.35
		2441	2.88	3.75	76.80	1.15	0.35
		2480	2.88	3.75	76.80	1.15	0.35
2DH5	Ant	2402	2.88	3.75	76.80	1.15	0.35
		2441	2.88	3.75	76.80	1.15	0.35
		2480	2.89	3.75	77.07	1.13	0.35
3DH5	Ant	2402	2.89	3.75	77.07	1.13	0.35
		2441	2.89	3.75	77.07	1.13	0.35
		2480	2.89	3.75	77.07	1.13	0.35



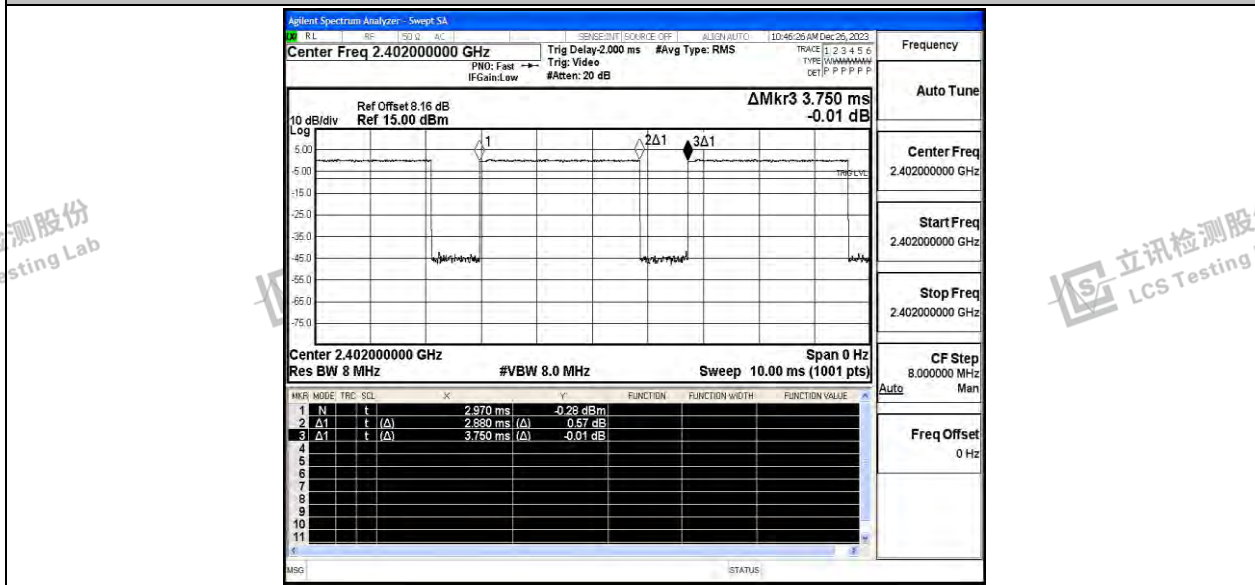


Test Graphs



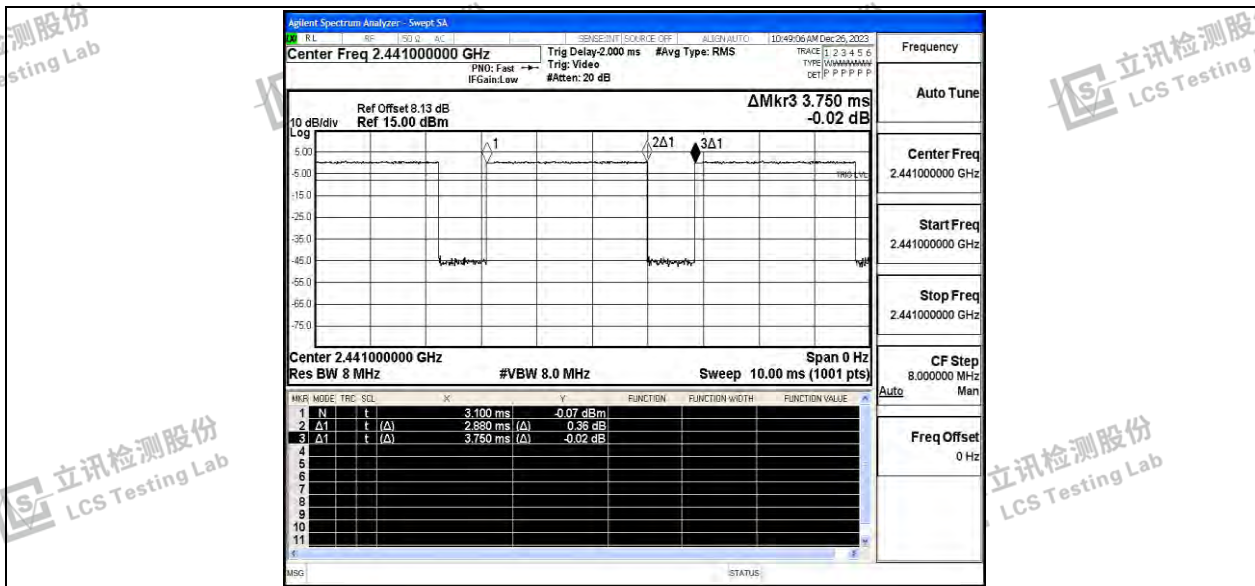


2DH5_Ant_2402

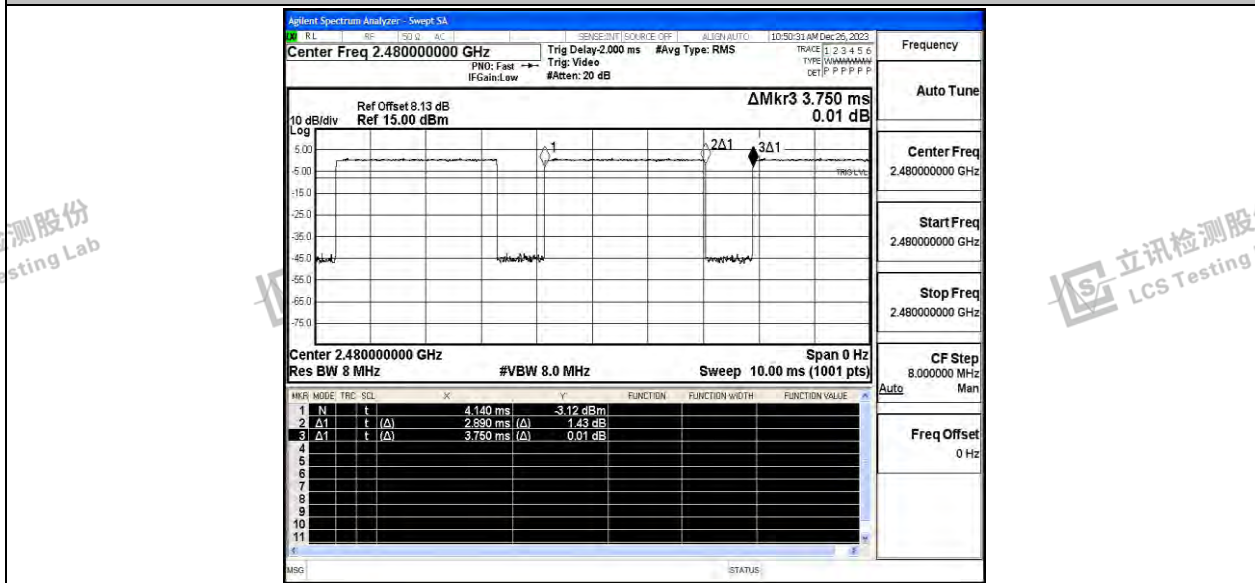


2DH5_Ant_2441



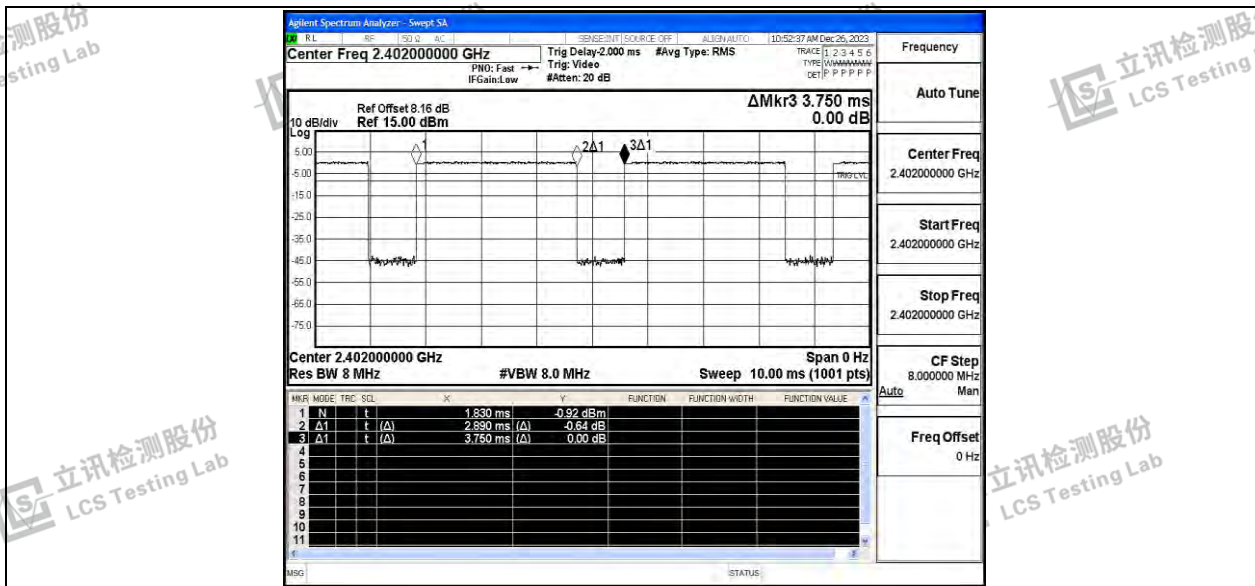


2DH5_Ant_2480

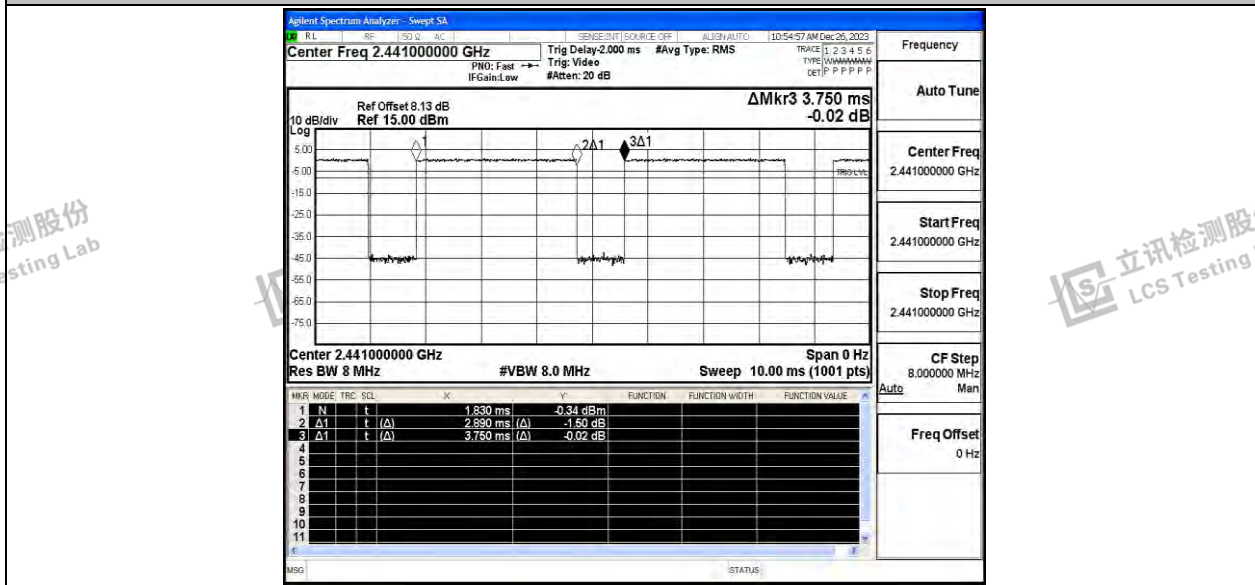


3DH5_Ant_2402



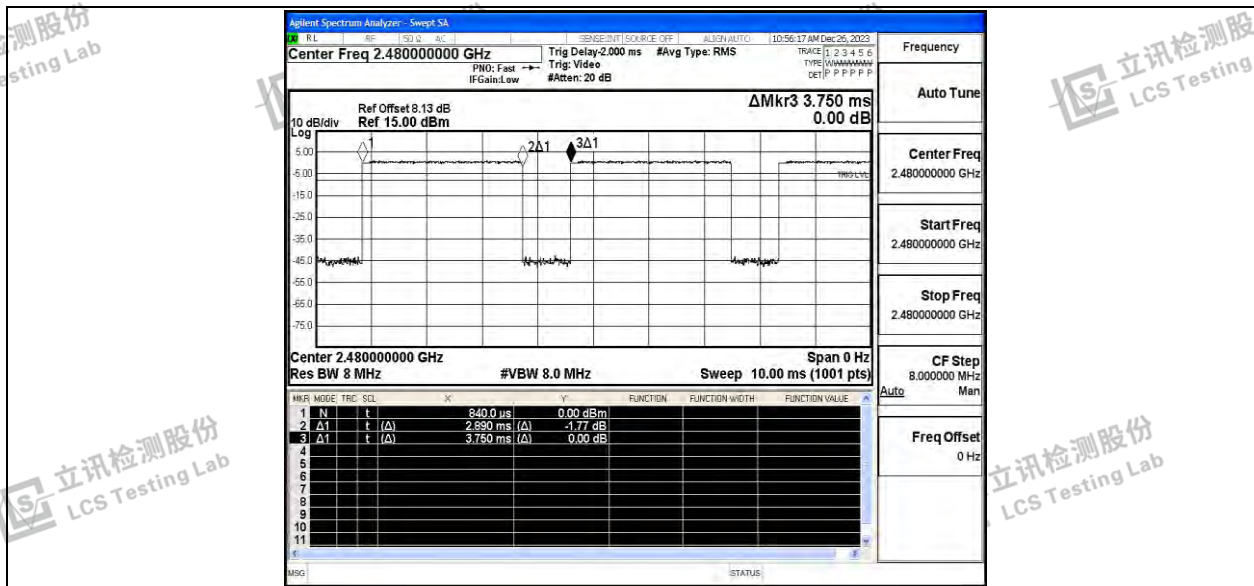


3DH5_Ant_2441



3DH5_Ant_2480







A.9 Emissions in Restricted Bands

Test Result

TestMode	Antenna	Channel	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict		
DH5	Ant	Low	2402	AV	2310.000	-49.12	≤-41.20	46.08	≤54	PASS		
				AV	2385.785	-48.59	≤-41.20	46.61	≤54	PASS		
				AV	2390.000	-48.7	≤-41.20	46.50	≤54	PASS		
				Peak	2310.000	-42.71	≤-21.20	52.49	≤74	PASS		
				Peak	2350.610	-40.14	≤-21.20	55.06	≤74	PASS		
				Peak	2390.000	-44.23	≤-21.20	50.97	≤74	PASS		
		High	2480	AV	2483.500	-48.27	≤-41.20	46.93	≤54	PASS		
				AV	2483.520	-48.27	≤-41.20	46.93	≤54	PASS		
				AV	2500.000	-48.63	≤-41.20	46.57	≤54	PASS		
				Peak	2483.500	-44.88	≤-21.20	50.32	≤74	PASS		
				Peak	2493.760	-40	≤-21.20	55.20	≤74	PASS		
				Peak	2500.000	-44.09	≤-21.20	51.11	≤74	PASS		
		Low	Hop_2402	Peak	2310.000	-41.02	≤-21.20	54.18	≤74	PASS		
				Peak	2311.655	-38.74	≤-21.20	56.46	≤74	PASS		
				Peak	2390.000	-41.71	≤-21.20	53.49	≤74	PASS		
		High	Hop_2480	Peak	2483.500	-40.39	≤-21.20	54.81	≤74	PASS		
				Peak	2495.440	-37.07	≤-21.20	58.13	≤74	PASS		
				Peak	2500.000	-40.08	≤-21.20	55.12	≤74	PASS		
		2DH5	Ant	Low	2402	AV	2310.000	-49.06	≤-41.20	46.14	≤54	PASS
						AV	2376.020	-48.56	≤-41.20	46.64	≤54	PASS
						AV	2390.000	-48.66	≤-41.20	46.54	≤54	PASS
Peak	2310.000					-43.73	≤-21.20	51.47	≤74	PASS		
Peak	2364.050					-39.42	≤-21.20	55.78	≤74	PASS		
Peak	2390.000					-42.91	≤-21.20	52.29	≤74	PASS		
High	2480			AV	2483.500	-48.32	≤-41.20	46.88	≤54	PASS		
				AV	2483.520	-48.32	≤-41.20	46.88	≤54	PASS		
				AV	2500.000	-48.65	≤-41.20	46.55	≤54	PASS		
				Peak	2483.500	-41.82	≤-21.20	53.38	≤74	PASS		
				Peak	2496.800	-39.43	≤-21.20	55.77	≤74	PASS		
				Peak	2500.000	-45.04	≤-21.20	50.16	≤74	PASS		
Low	Hop_2402			Peak	2310.000	-40.36	≤-21.20	54.84	≤74	PASS		
				Peak	2381.585	-37.48	≤-21.20	57.72	≤74	PASS		
				Peak	2390.000	-40.44	≤-21.20	54.76	≤74	PASS		
High	Hop_2480			Peak	2483.500	-40.02	≤-21.20	55.18	≤74	PASS		



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Scan code to check authenticity



3DH5 Ant		0	Peak	2489.440	-38.31	≤-21.20	56.89	≤74	PASS	
			Peak	2500.000	-40.34	≤-21.20	54.86	≤74	PASS	
		Low	2402	AV	2310.000	-49.16	≤-41.20	46.04	≤54	PASS
				AV	2372.975	-48.54	≤-41.20	46.66	≤54	PASS
				AV	2390.000	-48.71	≤-41.20	46.49	≤54	PASS
				Peak	2310.000	-41.94	≤-21.20	53.26	≤74	PASS
				Peak	2373.920	-39.16	≤-21.20	56.04	≤74	PASS
				Peak	2390.000	-45.12	≤-21.20	50.08	≤74	PASS
		High	2480	AV	2483.500	-48.28	≤-41.20	46.92	≤54	PASS
				AV	2483.520	-48.28	≤-41.20	46.92	≤54	PASS
				AV	2500.000	-48.6	≤-41.20	46.60	≤54	PASS
				Peak	2483.500	-42.56	≤-21.20	52.64	≤74	PASS
				Peak	2497.600	-40.11	≤-21.20	55.09	≤74	PASS
				Peak	2500.000	-43.53	≤-21.20	51.67	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-41.57	≤-21.20	53.63	≤74	PASS
				Peak	2368.145	-38.08	≤-21.20	57.12	≤74	PASS
				Peak	2390.000	-40.13	≤-21.20	55.07	≤74	PASS
		High	Hop_2480	Peak	2483.500	-40.12	≤-21.20	55.08	≤74	PASS
				Peak	2497.760	-38.55	≤-21.20	56.65	≤74	PASS
				Peak	2500.000	-41.02	≤-21.20	54.18	≤74	PASS

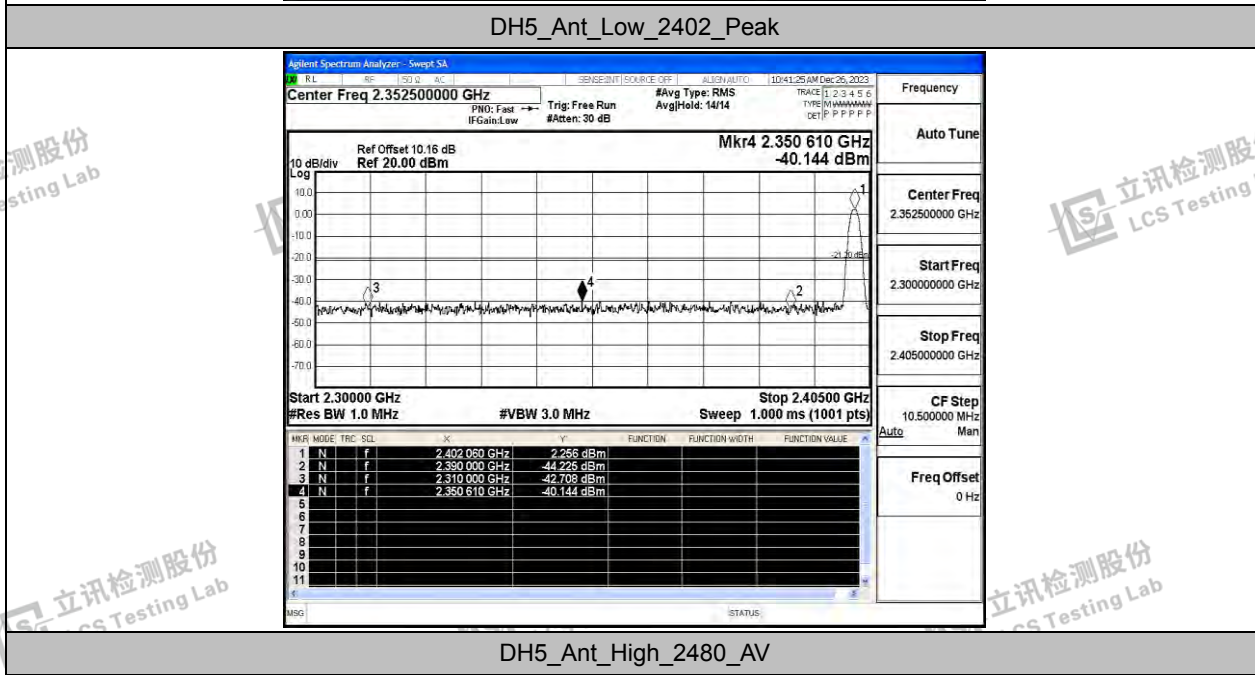
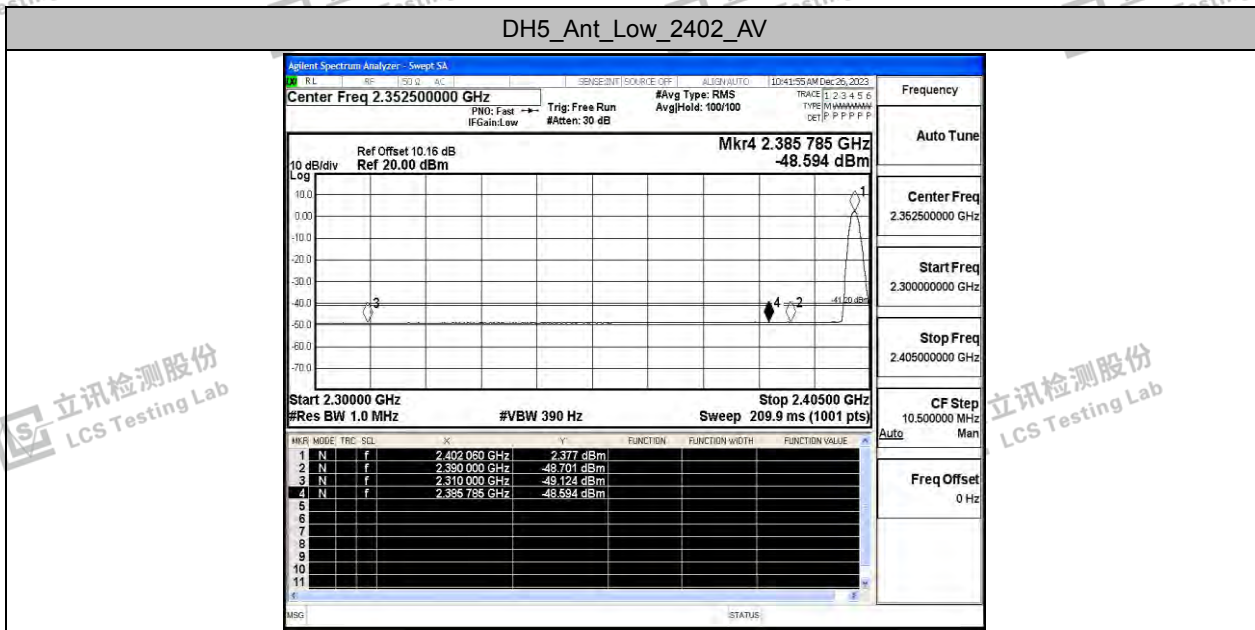
Note:

1. The Antenna Gain is compensated in the graph. The Correction Factor is compensated in the graph.
2. 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.



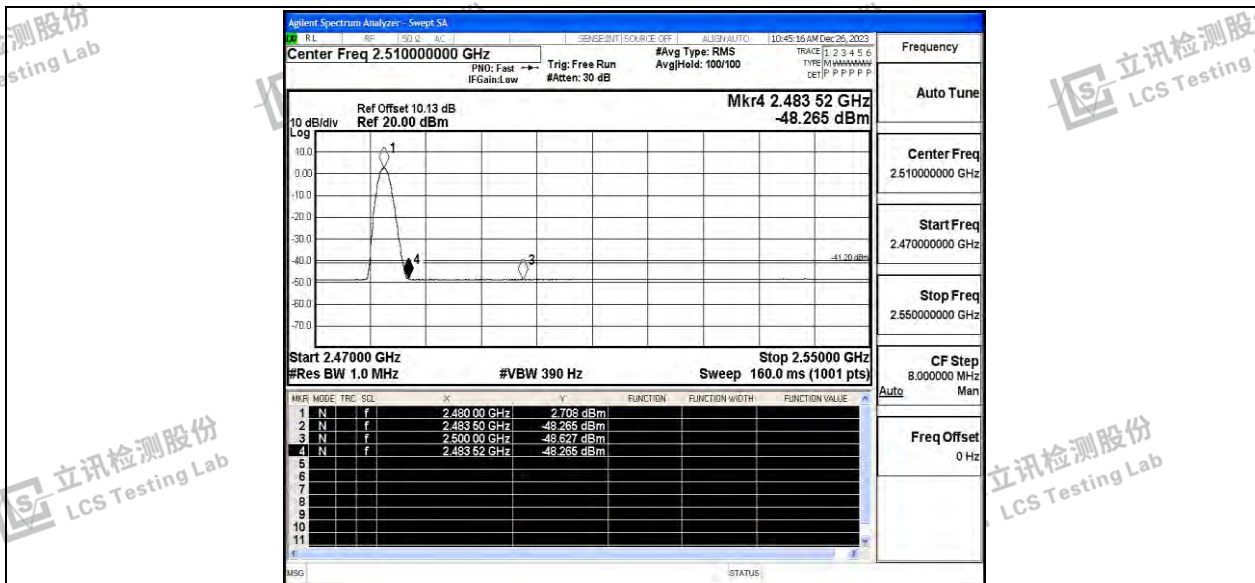


Test Graphs

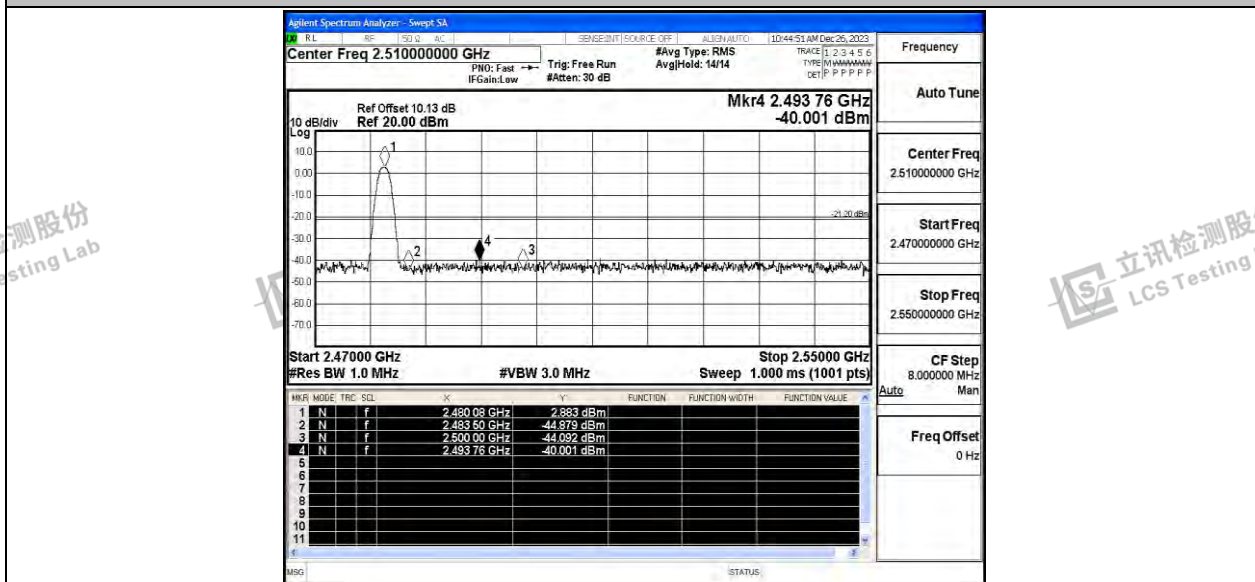


DH5_Ant_High_2480_AV



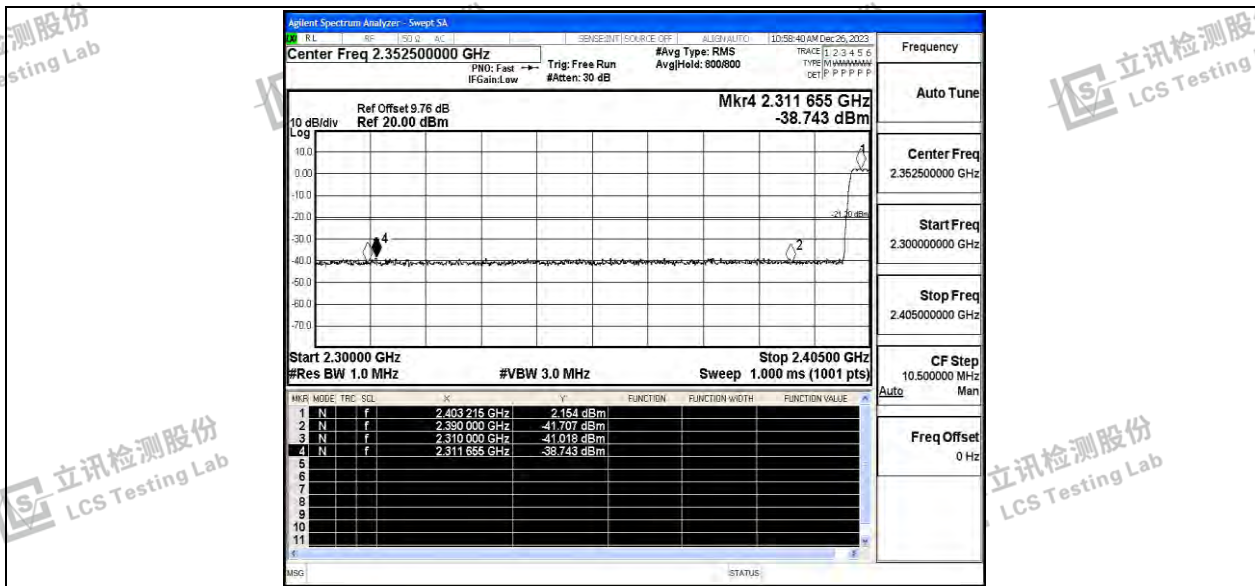


DH5_Ant_High_2480_Peak

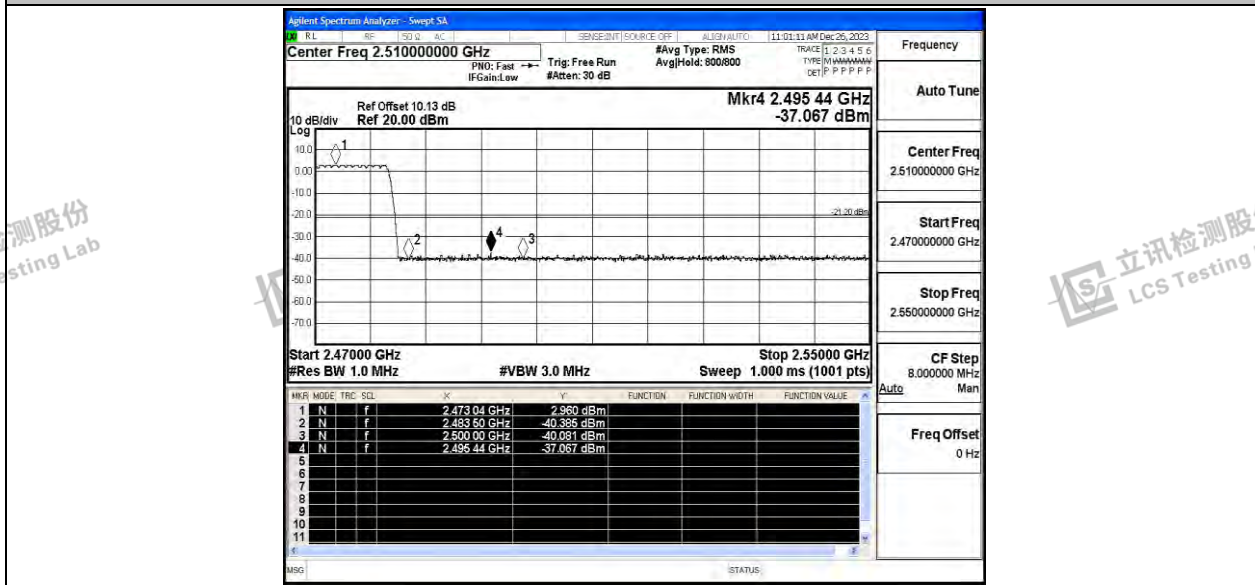


DH5_Ant_Low_Hop_2402_Peak



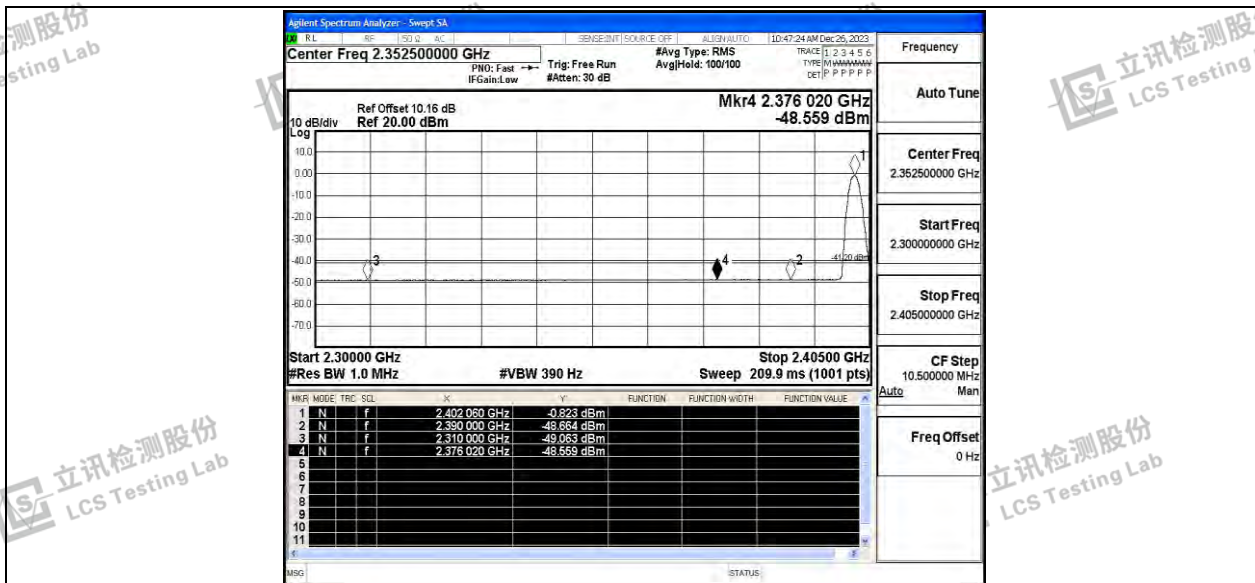


DH5_Ant_High_Hop_2480_Peak

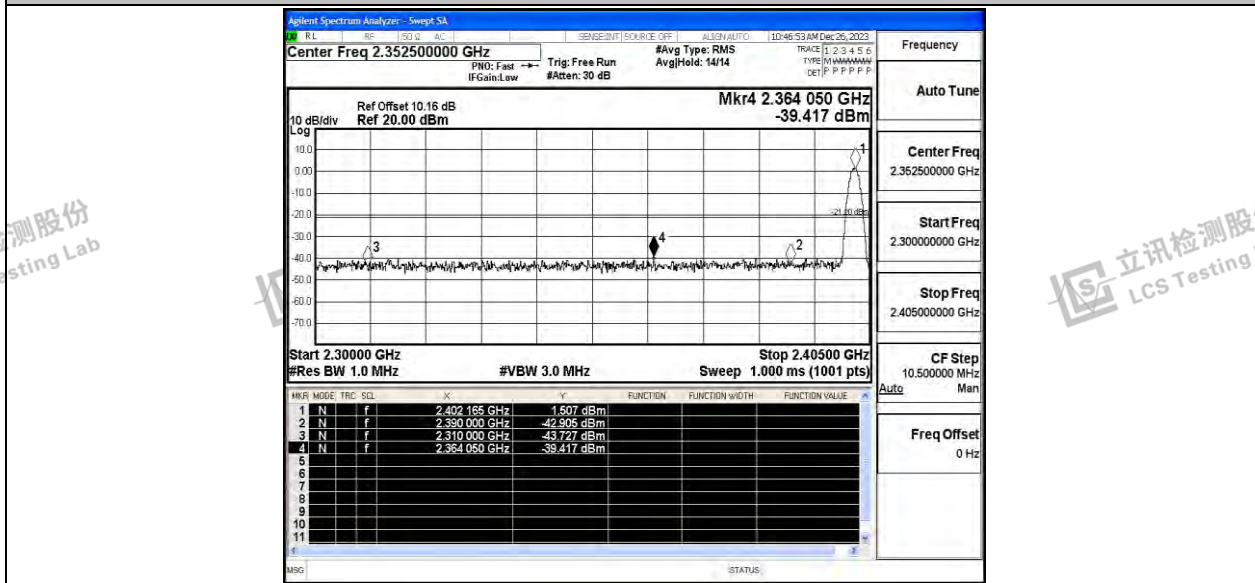


2DH5_Ant_Low_2402_AV



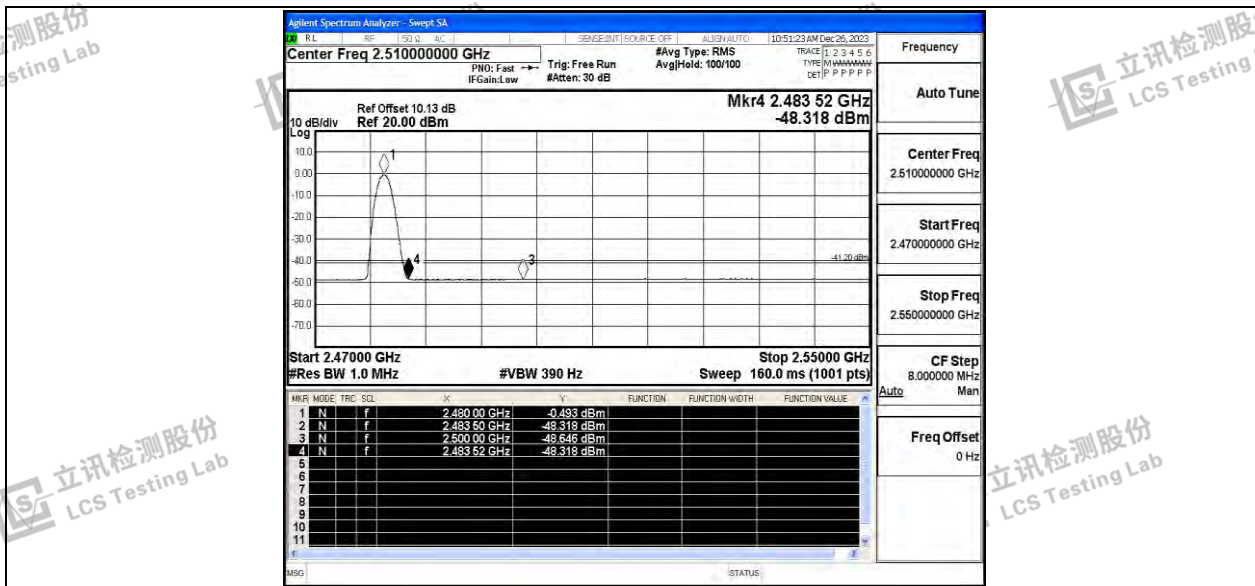


2DH5_Ant_Low_2402_Peak

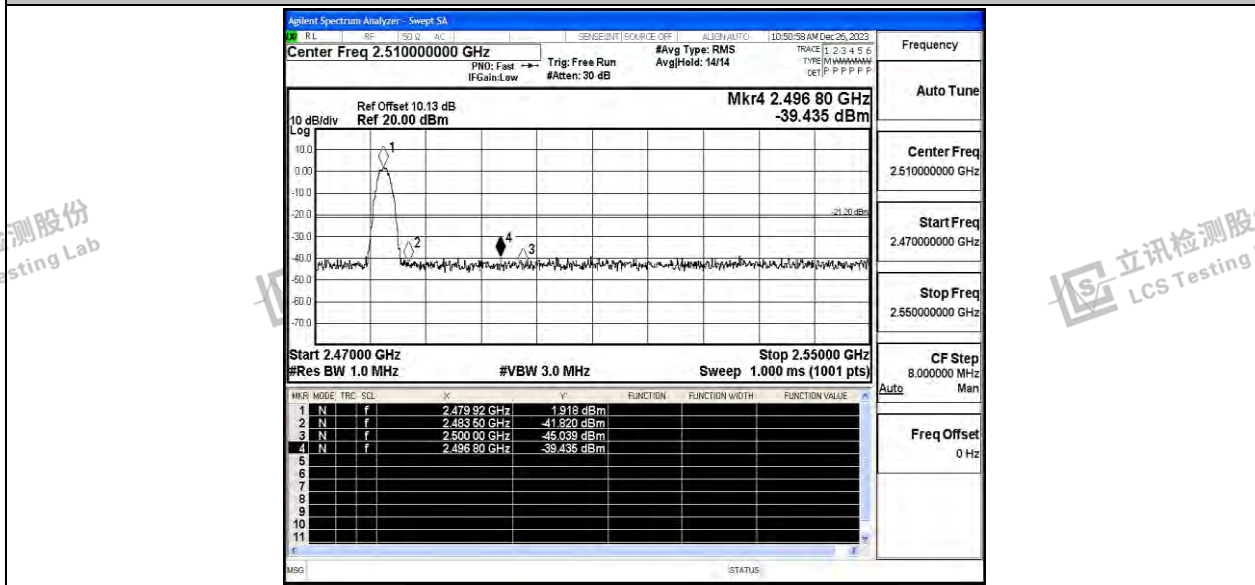


2DH5_Ant_High_2480_AV



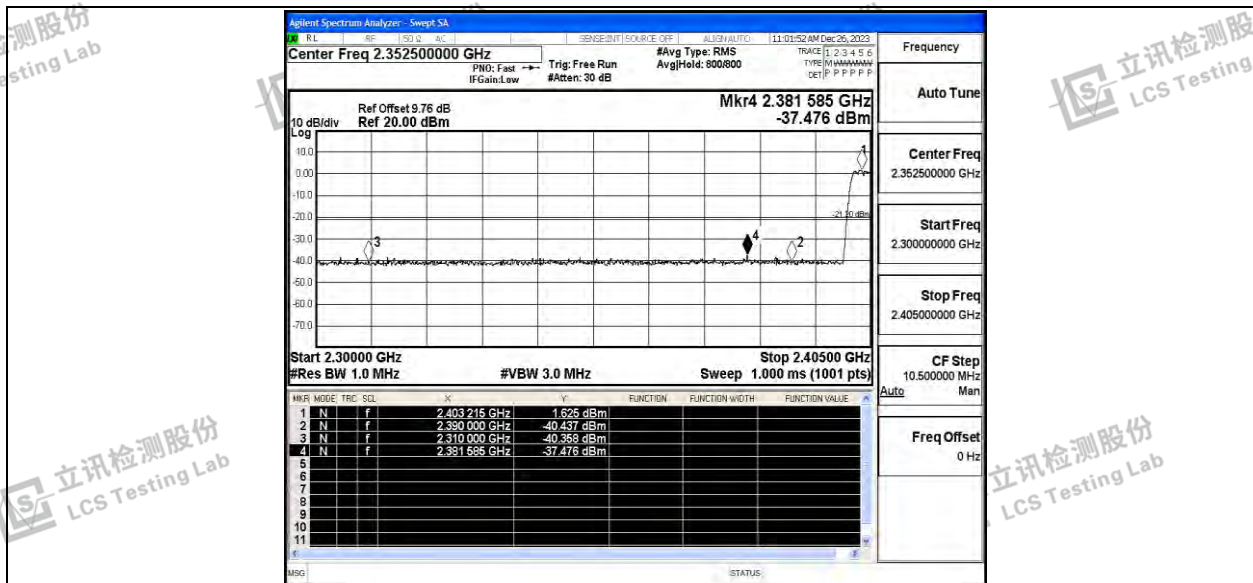


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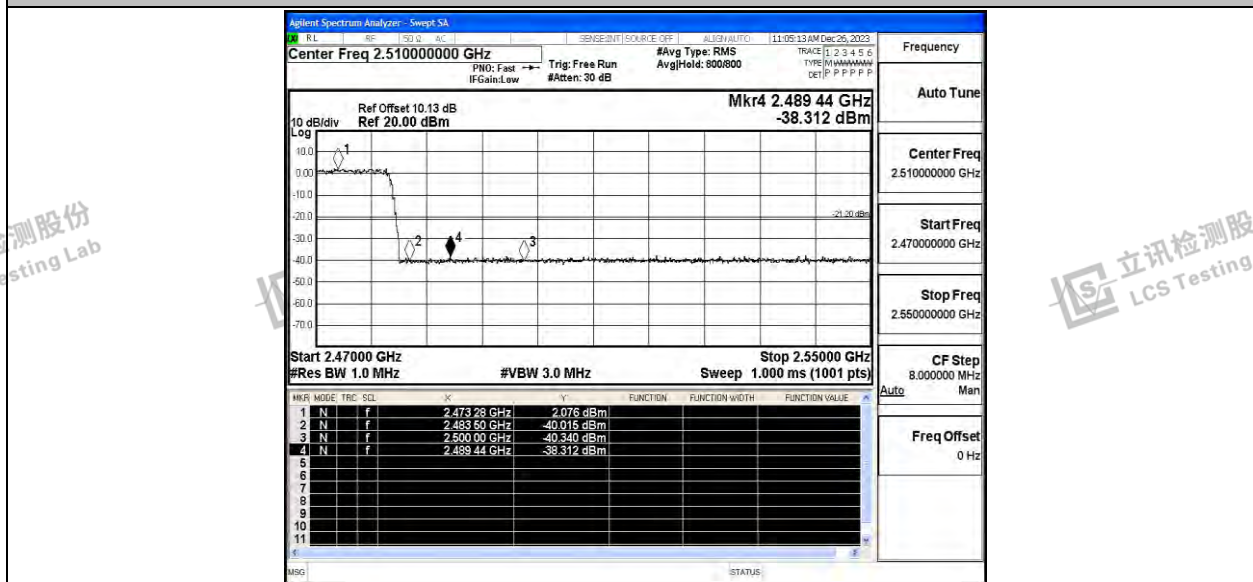


2DH5_Ant_Low_Hop_2402_Peak



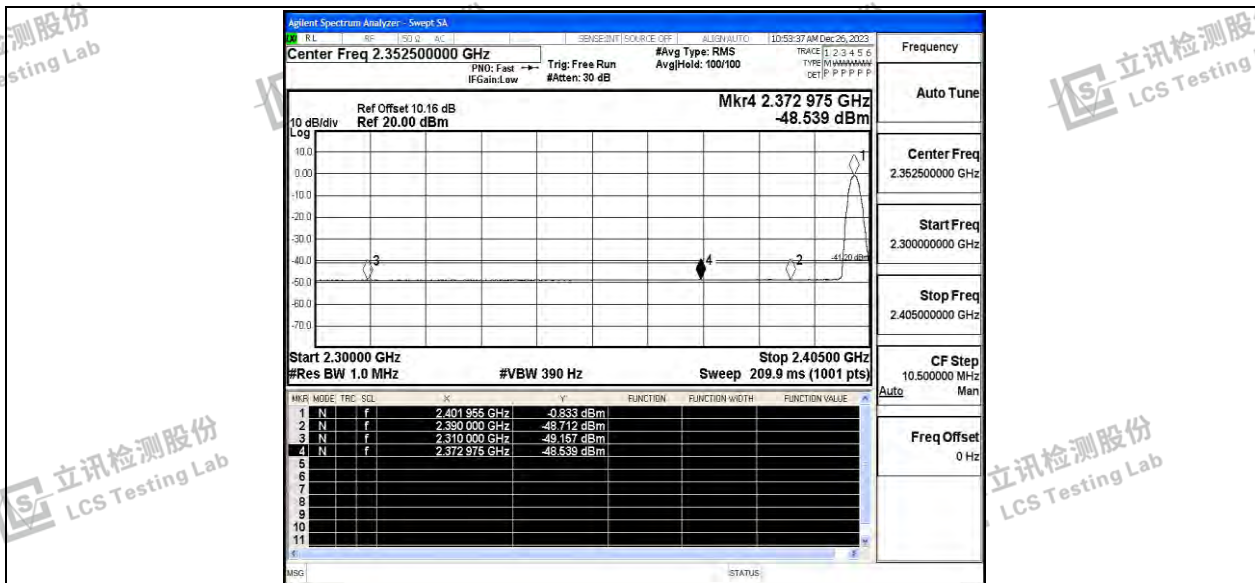


2Dh5_Ant_High_Hop_2480_Peak

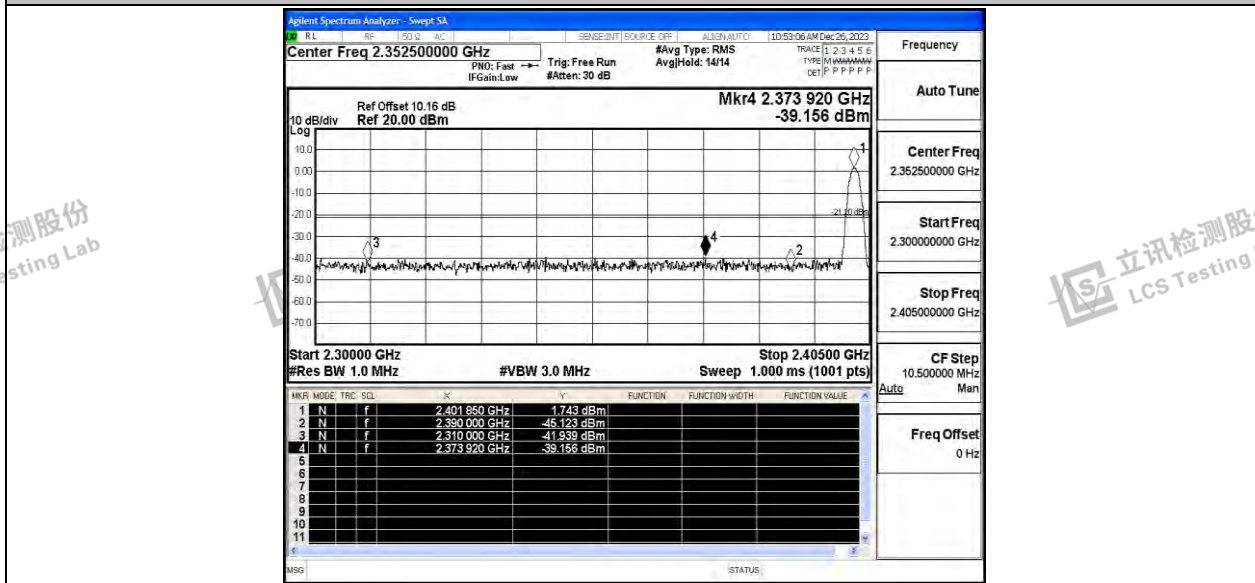


3Dh5_Ant_Low_2402_AV



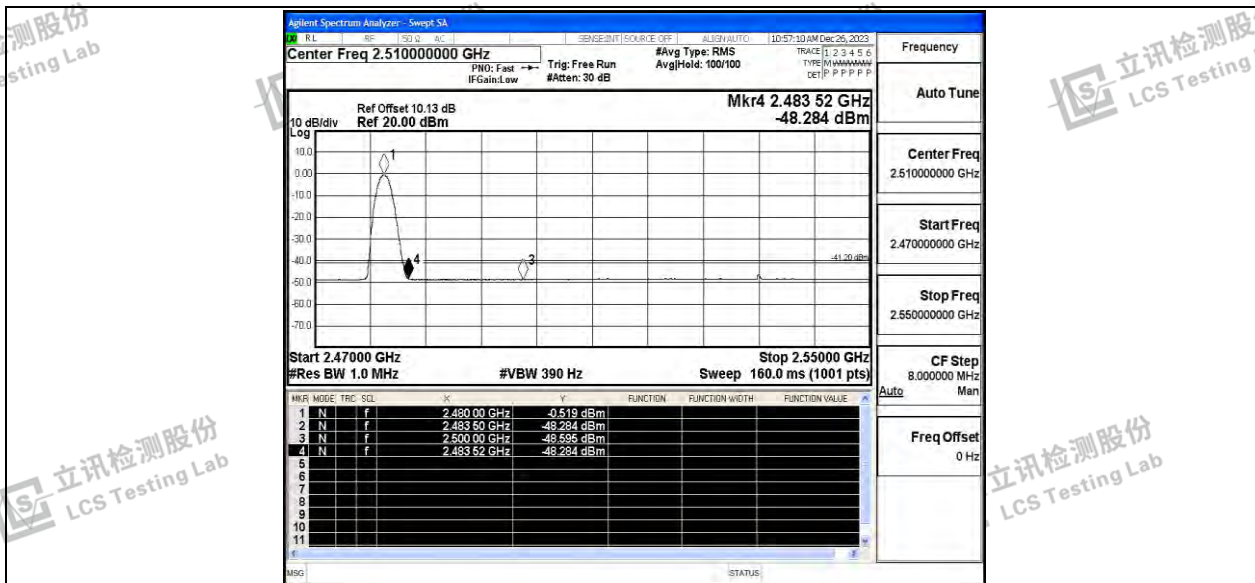


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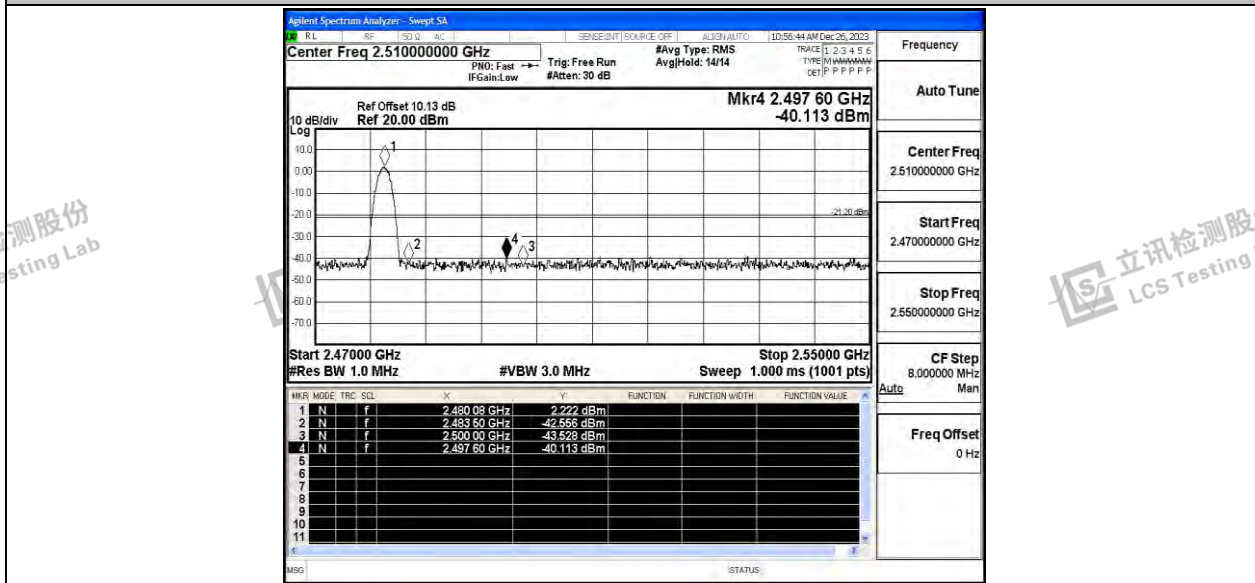


3DH5_Ant_High_2480_AV



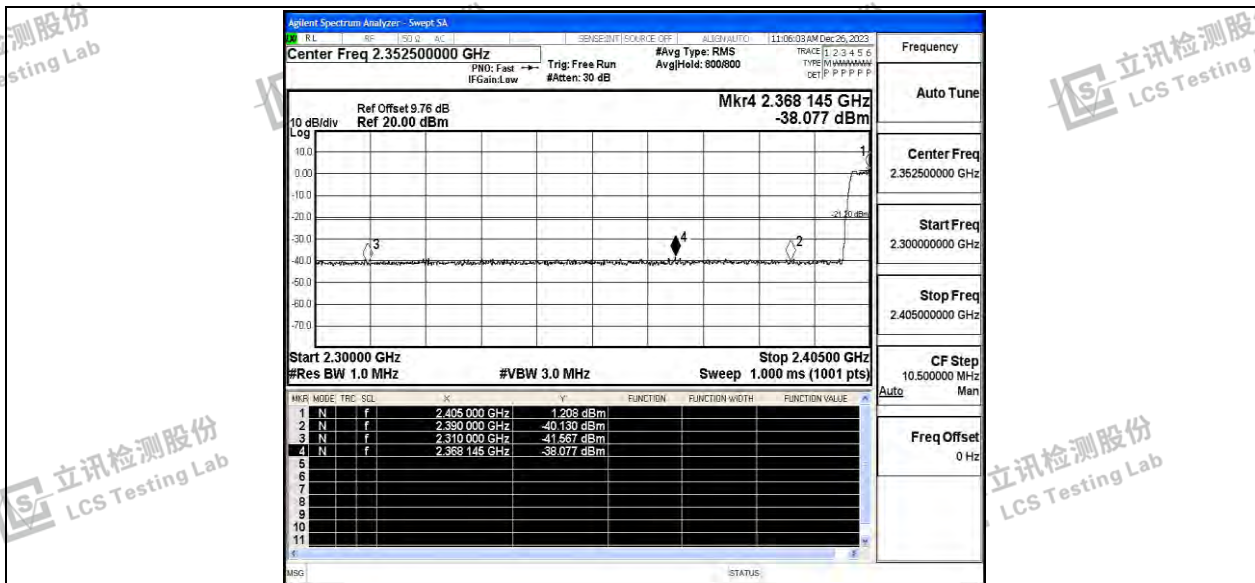


3DH5_Ant_High_2480_Peak



3DH5_Ant_Low_Hop_2402_Peak





3DH5_Ant_High_Hop_2480_Peak

