



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth headset

Test Model: SEB004

Environmental Conditions

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





A.1 20dB Emission Bandwidth

Test Result

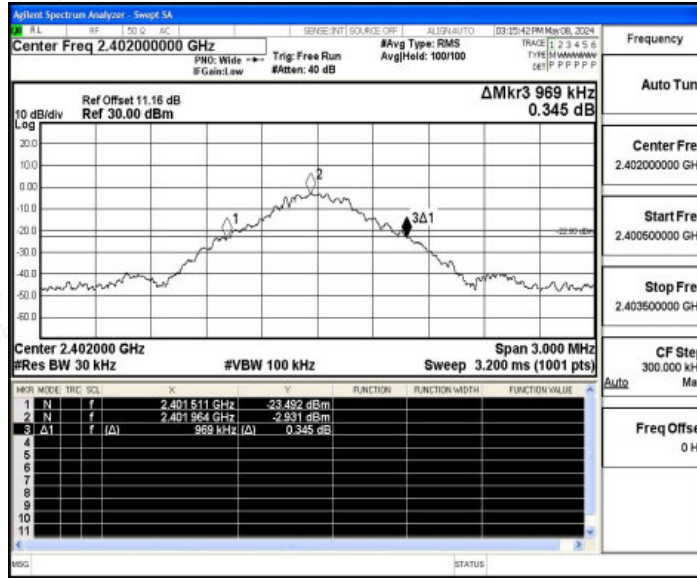
TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.969	2401.511	2402.480	---	---
		2441	1.026	2440.460	2441.486	---	---
		2480	1.026	2479.460	2480.486	---	---
2DH5	Ant1	2402	1.335	2401.319	2402.654	---	---
		2441	1.320	2440.331	2441.651	---	---
		2480	1.290	2479.355	2480.645	---	---
3DH5	Ant1	2402	1.302	2401.337	2402.639	---	---
		2441	1.323	2440.331	2441.654	---	---
		2480	1.293	2479.343	2480.636	---	---



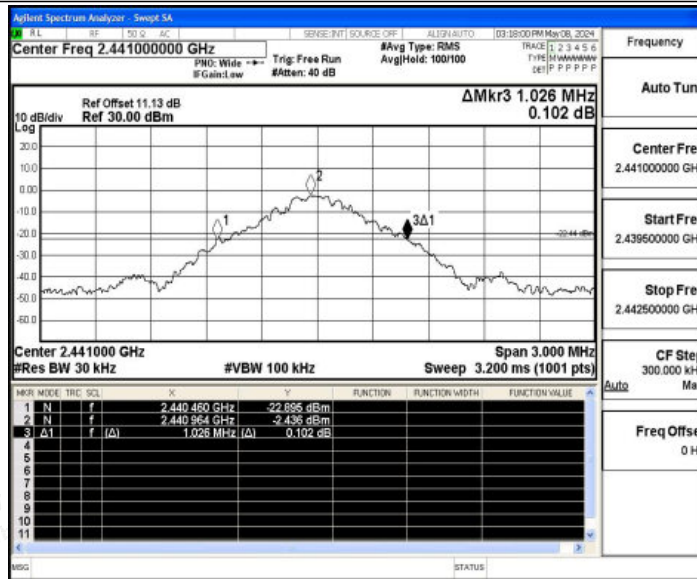


Test Graphs

DH5_Ant1_2402

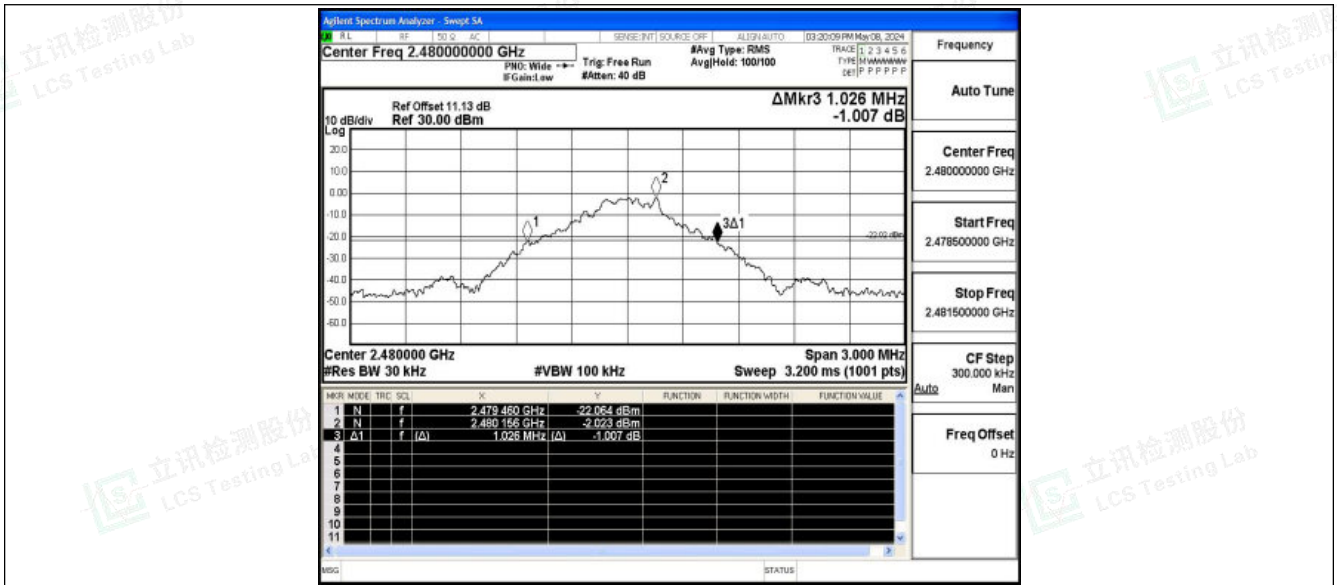


DH5_Ant1_2441

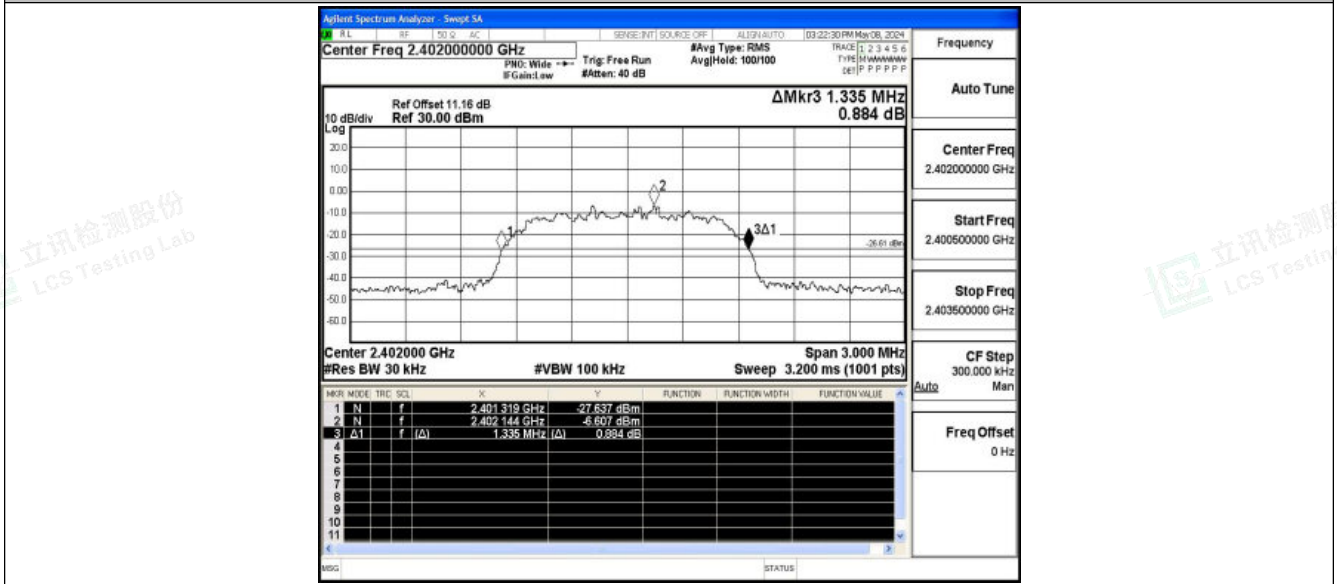


DH5_Ant1_2480



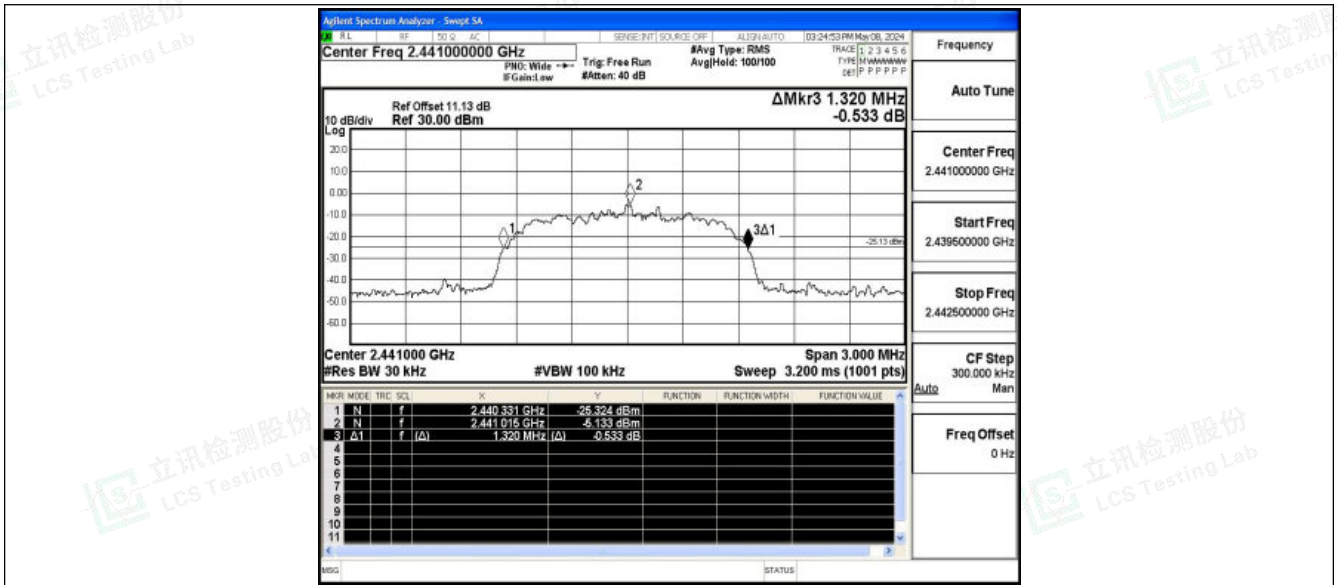


2Dh5_Ant1_2402

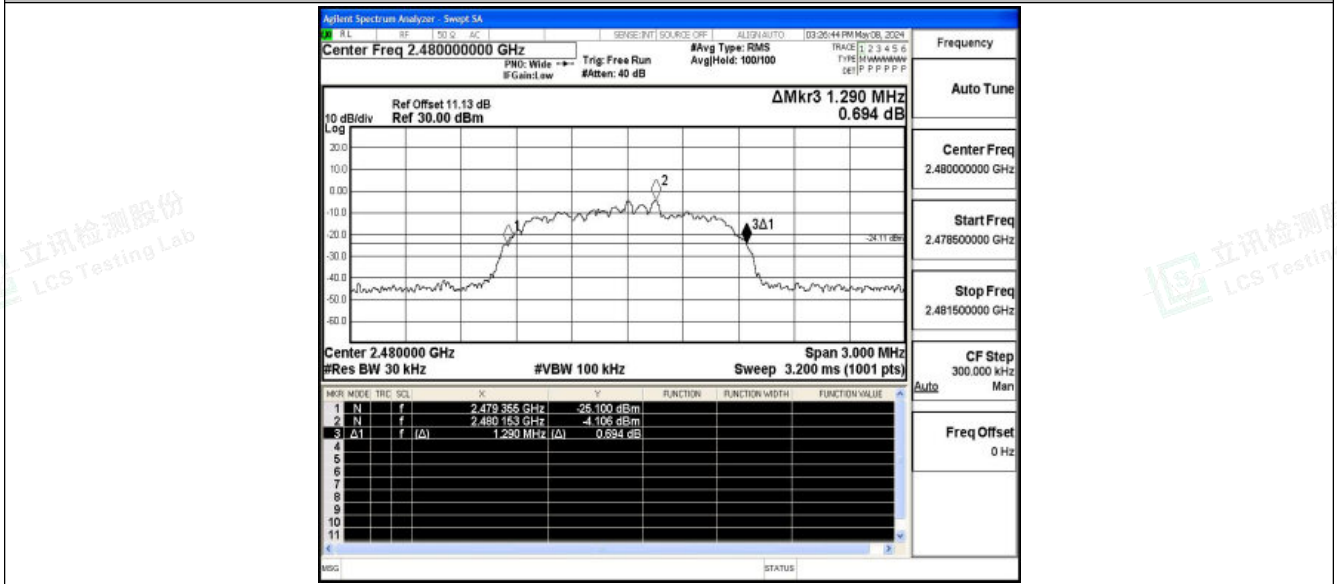


2Dh5_Ant1_2441



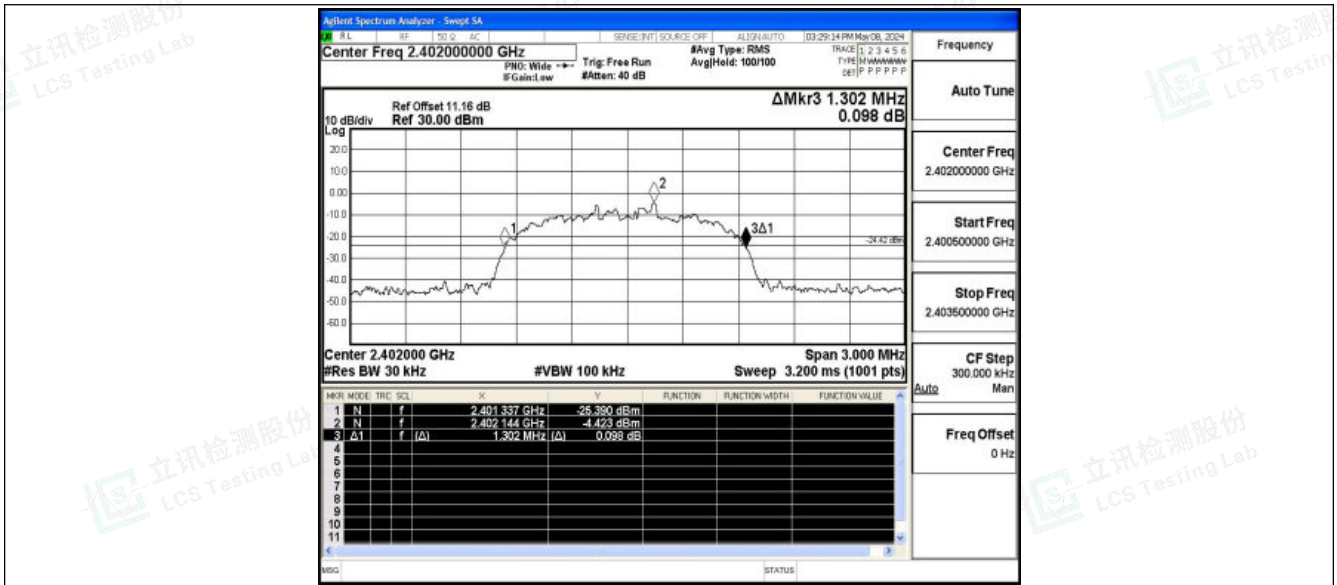


2DH5_Ant1_2480

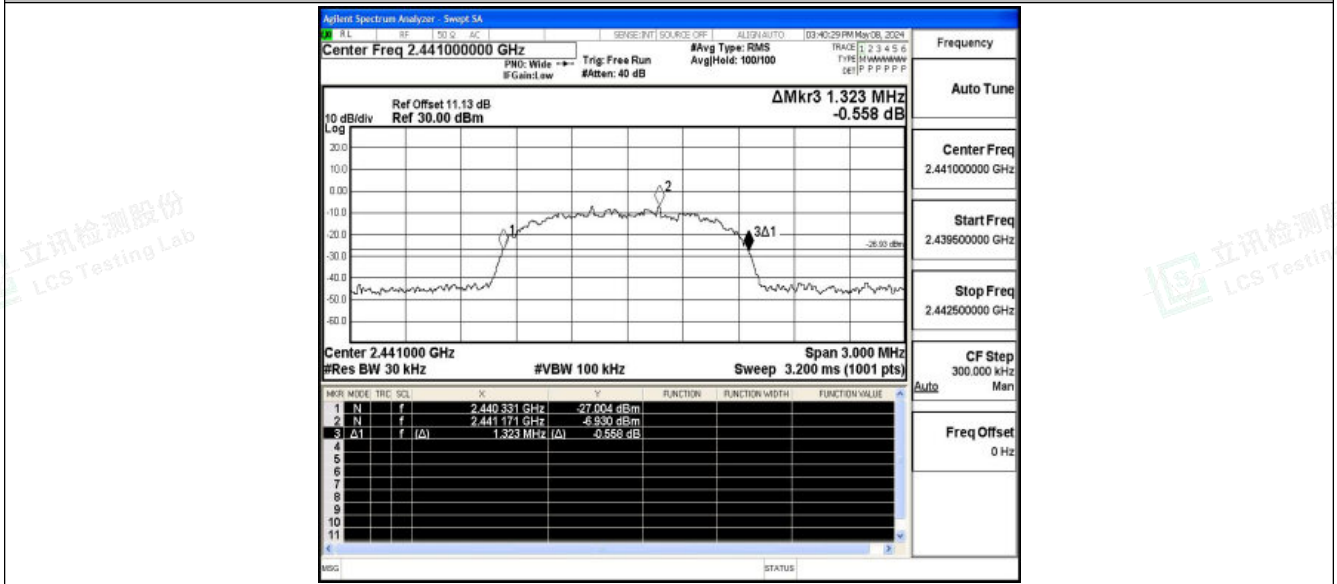


3DH5_Ant1_2402



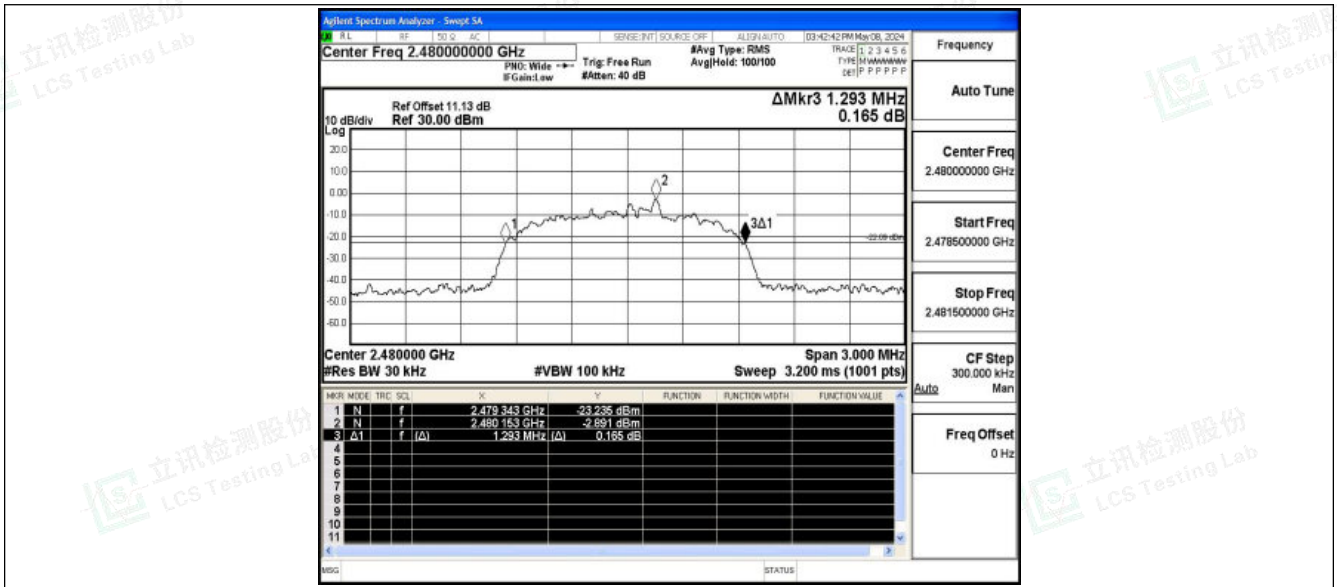


3D15_Ant1_2441



3D15_Ant1_2480







A.2 Maximum peak conducted output power

Test Result

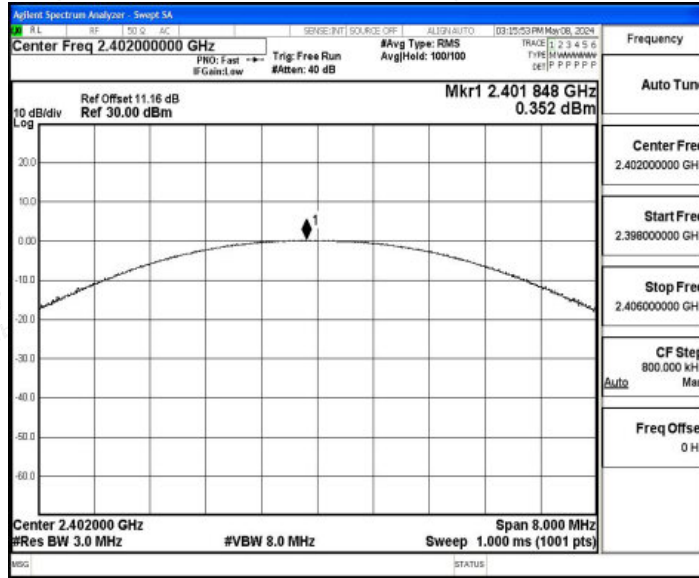
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	0.35	≤20.97	PASS
		2441	0.76	≤20.97	PASS
		2480	0.85	≤20.97	PASS
2DH5	Ant1	2402	0.22	≤20.97	PASS
		2441	0.39	≤20.97	PASS
		2480	0.47	≤20.97	PASS
3DH5	Ant1	2402	0.24	≤20.97	PASS
		2441	0.52	≤20.97	PASS
		2480	0.58	≤20.97	PASS



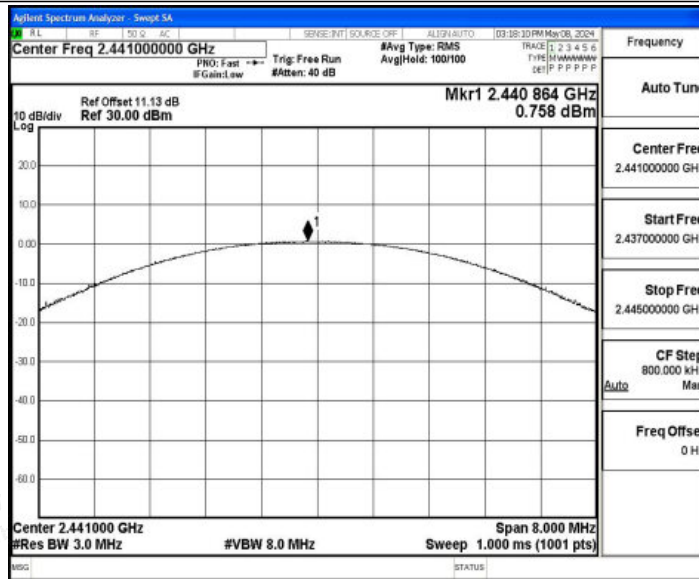


Test Graphs

DH5_Ant1_2402

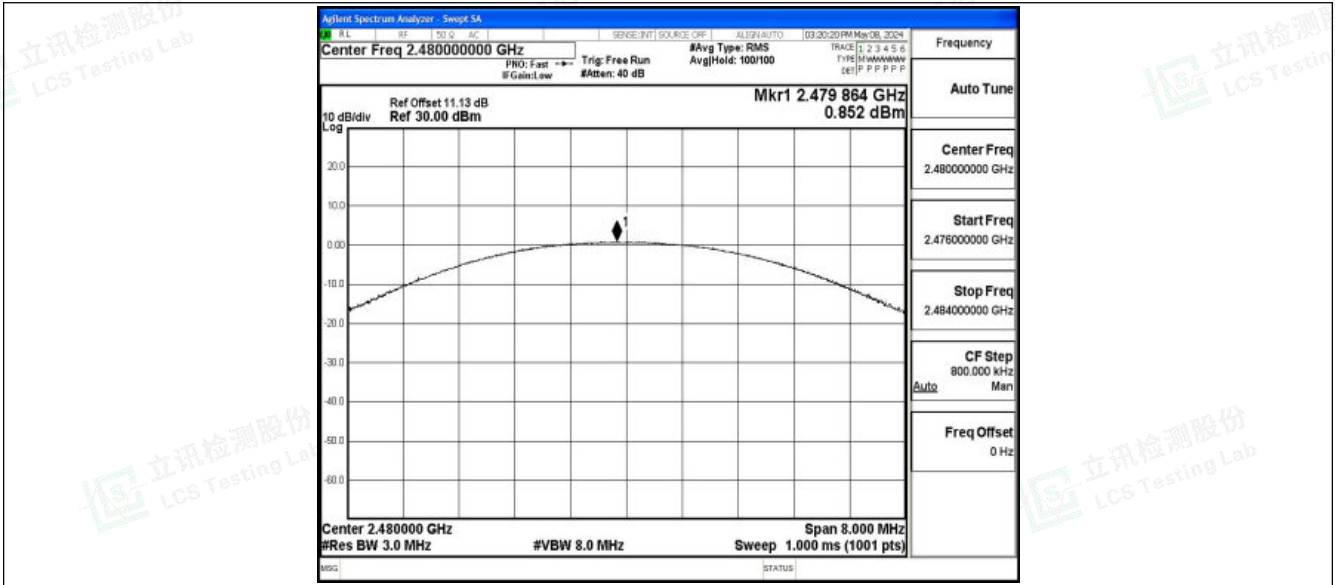


DH5_Ant1_2441

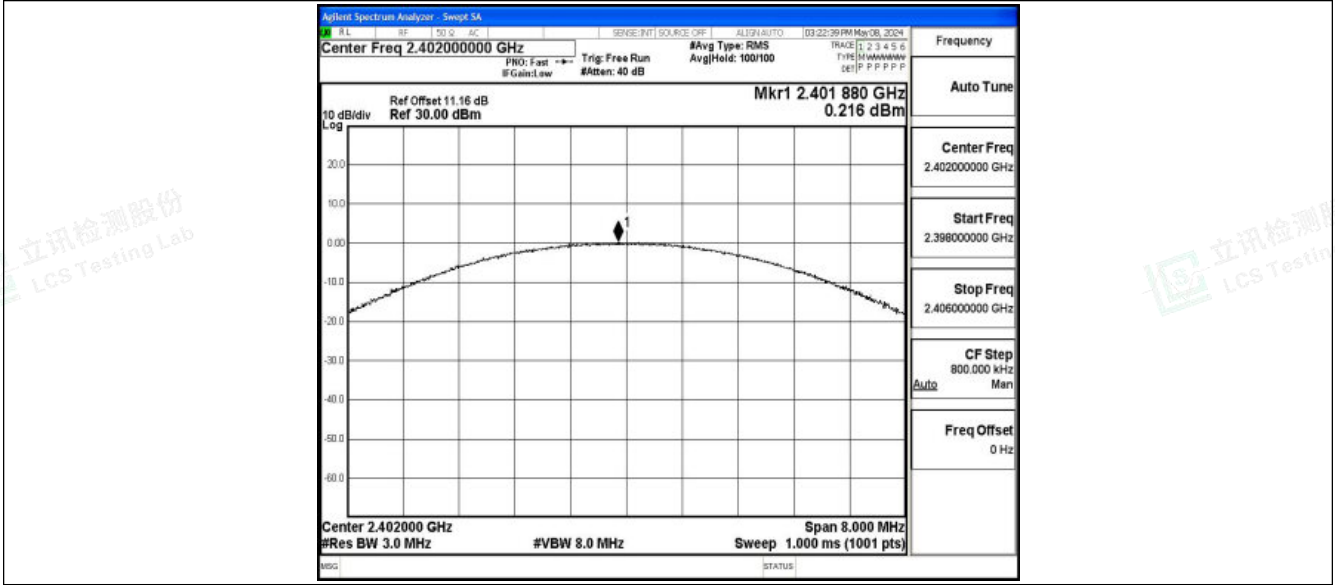


DH5_Ant1_2480



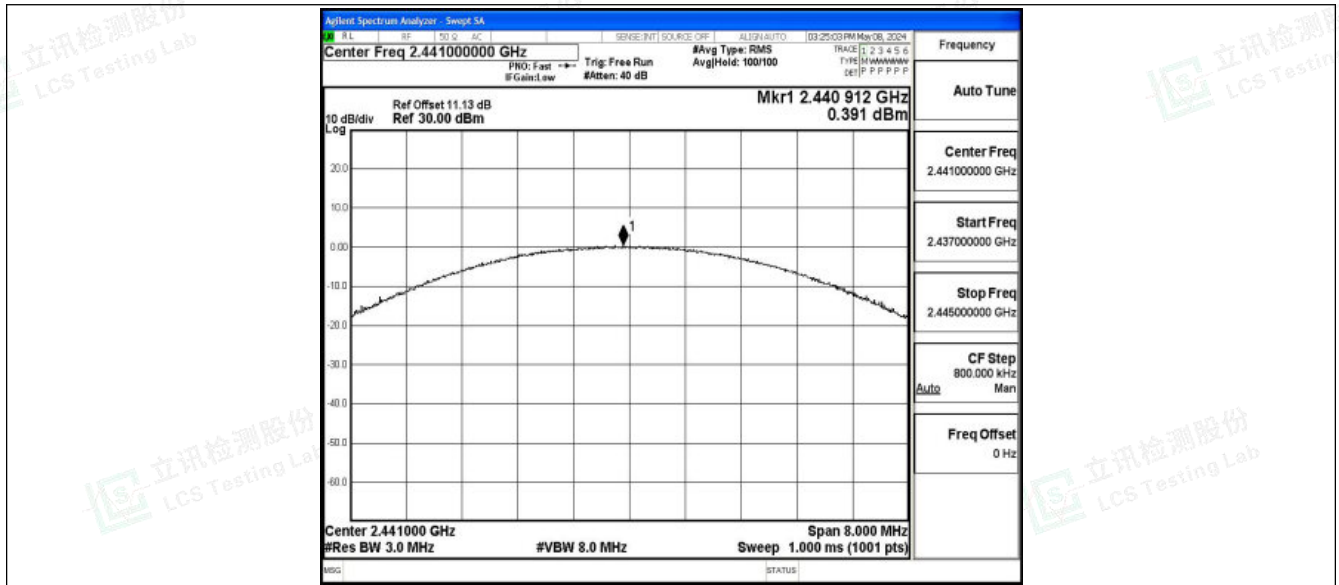


2DH5_Ant1_2402

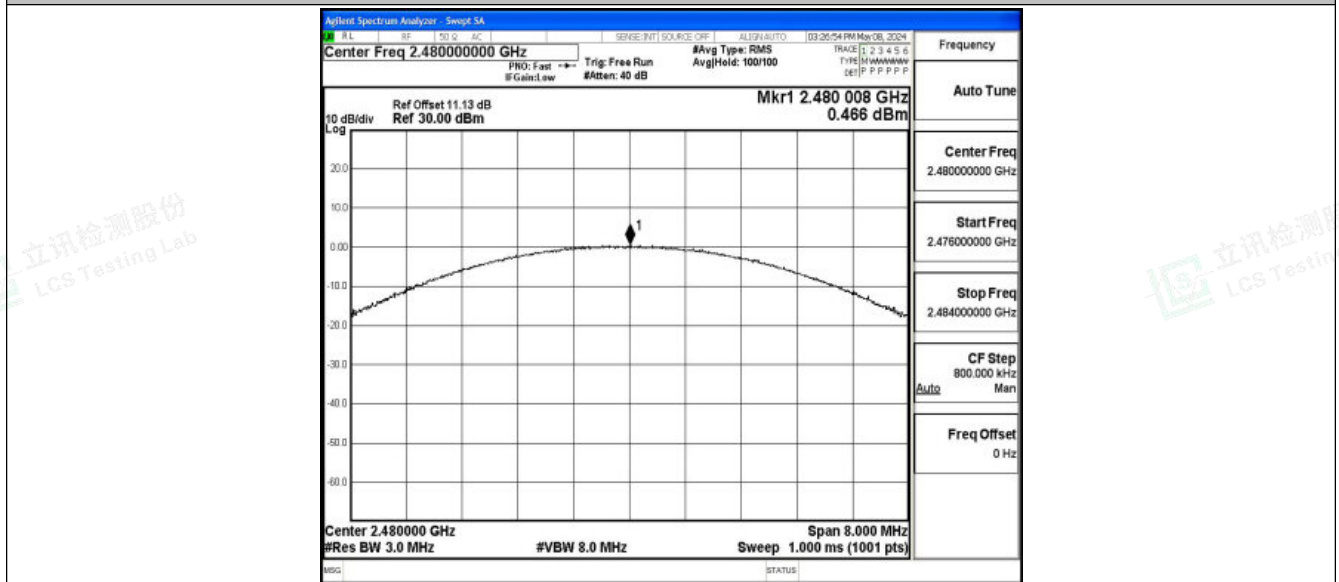


2DH5_Ant1_2441



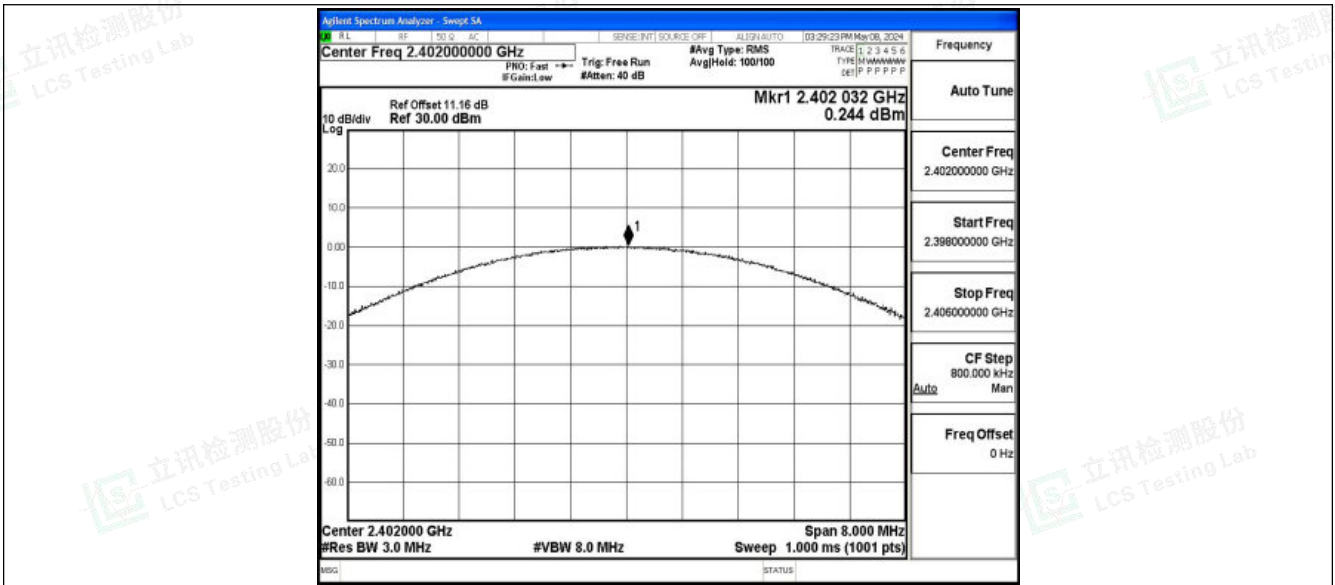


2DH5_Ant1_2480

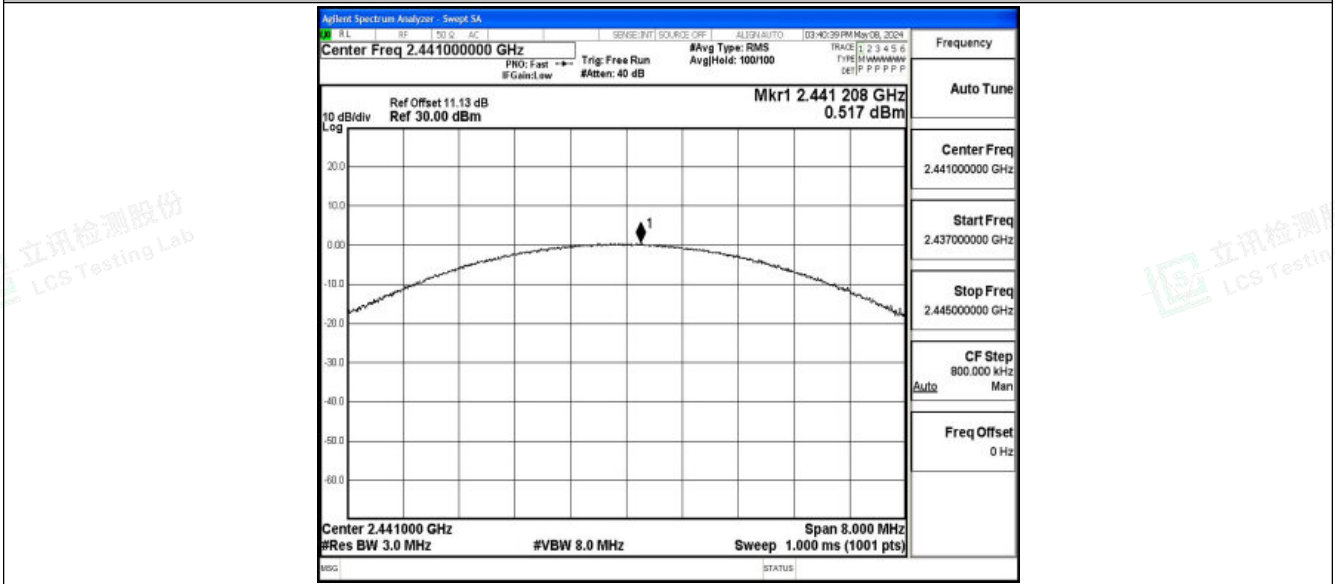


3DH5_Ant1_2402



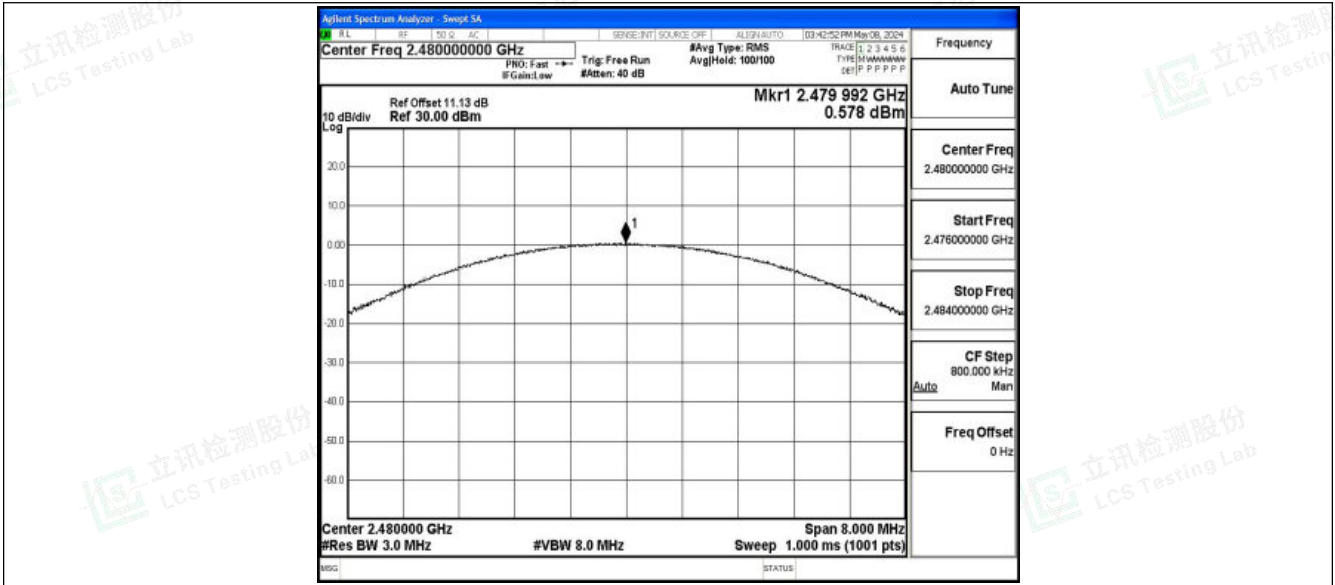


3DH5_Ant1_2441



3DH5_Ant1_2480







A.3 Carrier frequency separation

Test Result

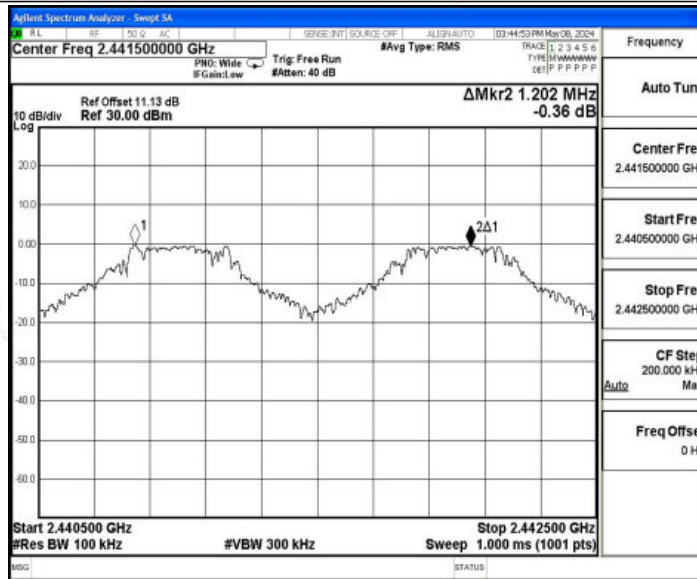
TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.202	≥1.026	PASS
2DH5	Ant1	Hop	0.986	≥0.890	PASS
3DH5	Ant1	Hop	1.234	≥0.882	PASS



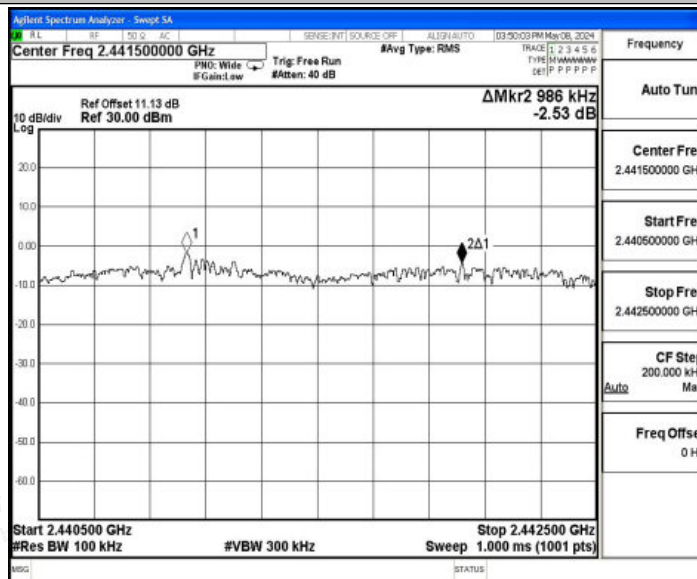


Test Graphs

DH5_Ant1_Hop

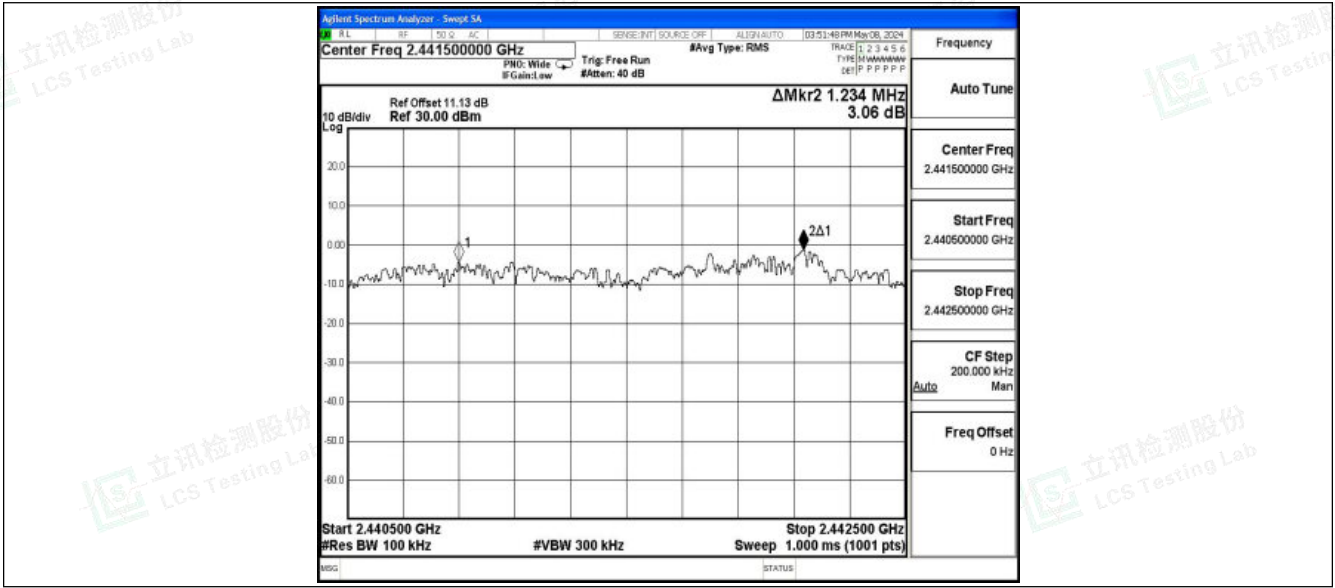


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.4 Time of occupancy

Test Result

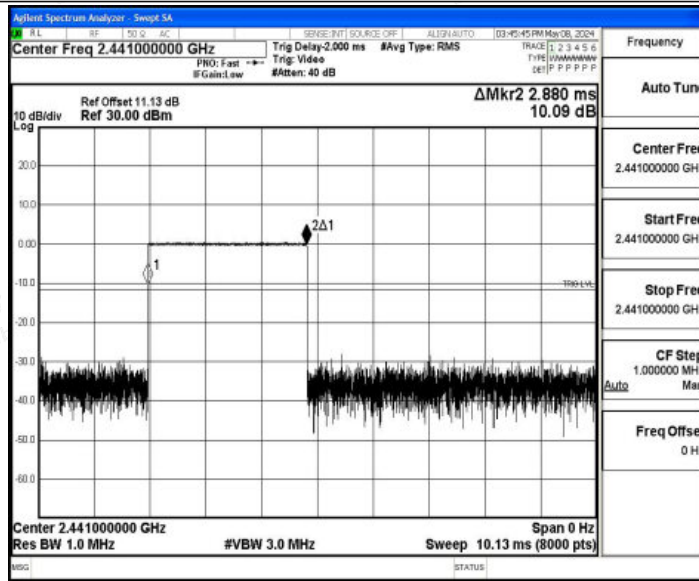
TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.880	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.884	106.67	0.308	≤0.4	PASS
3DH5	Ant1	Hop	2.885	106.67	0.308	≤0.4	PASS



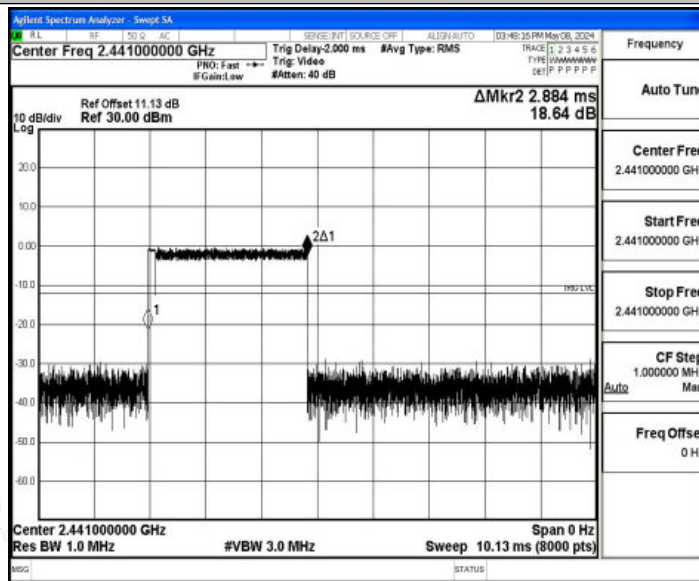


Test Graphs

DH5_Ant1_Hop

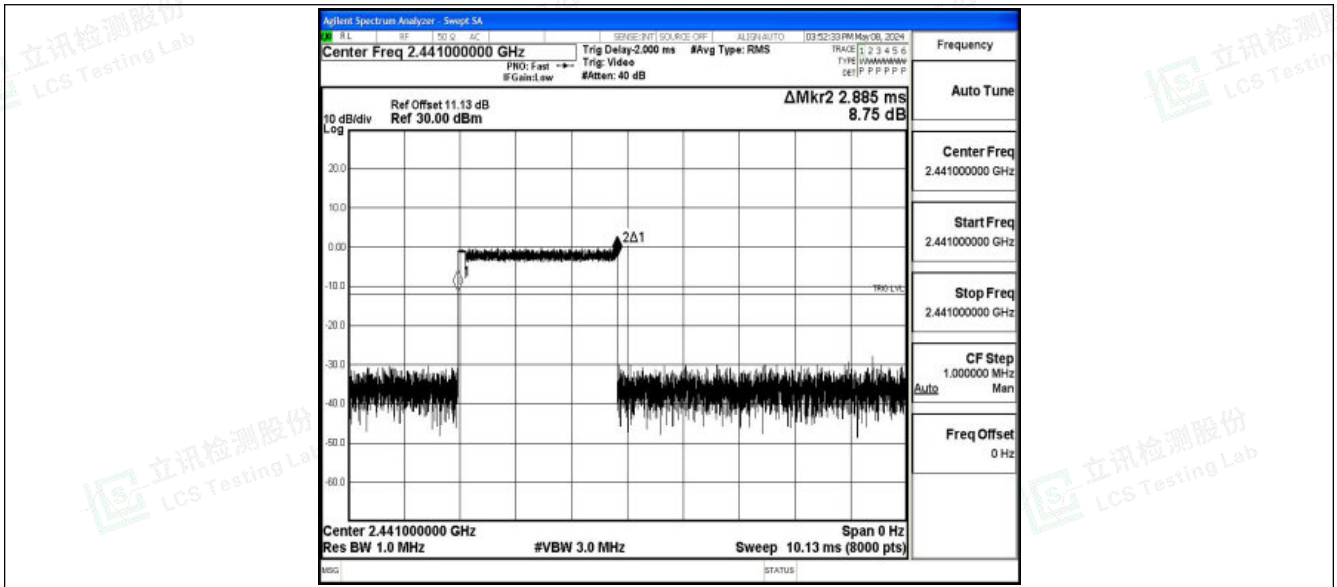


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.5 Number of hopping channels

Test Result

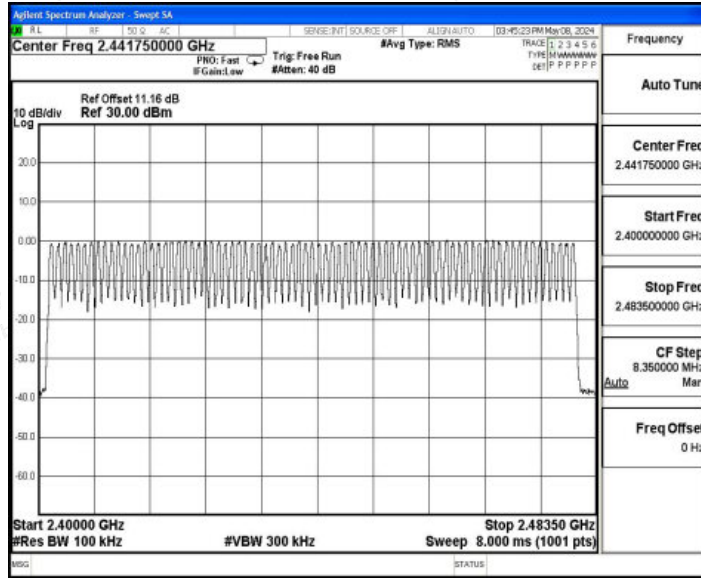
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS



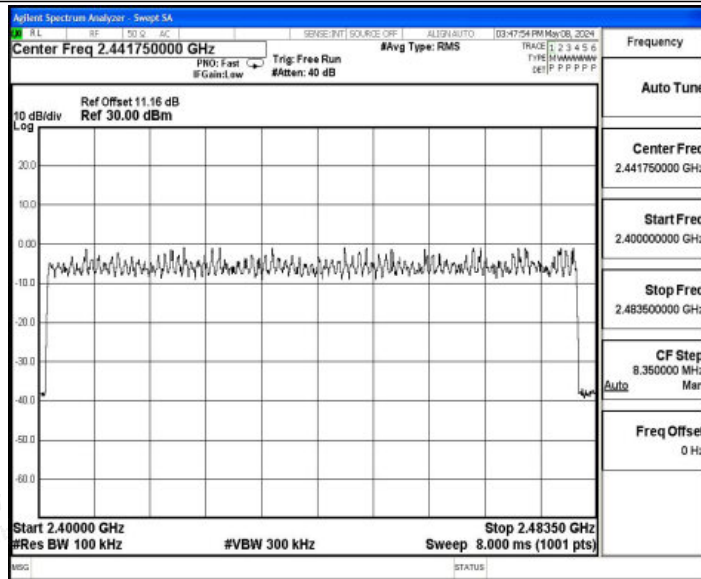


Test Graphs

DH5_Ant1_Hop

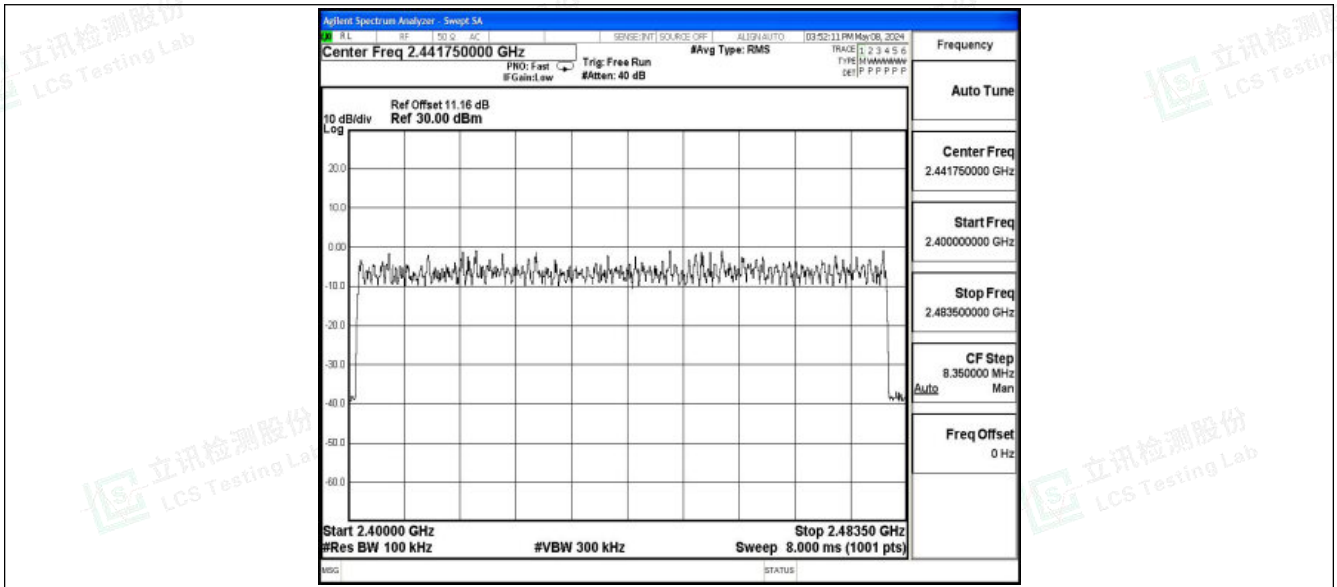


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.6 Band edge measurements

Test Result

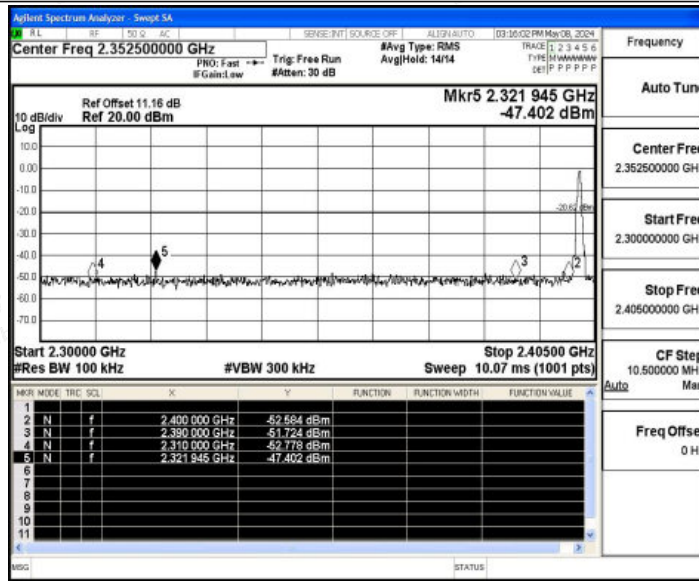
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.62	-47.4	≤-20.62	PASS
		High	2480	-0.08	-47.28	≤-20.08	PASS
		Low	Hop_2402	-1.45	-46.68	≤-21.45	PASS
		High	Hop_2480	0.06	-46.02	≤-19.94	PASS
2DH5	Ant1	Low	2402	-1.58	-47.83	≤-21.58	PASS
		High	2480	-1.58	-47.88	≤-21.58	PASS
		Low	Hop_2402	-2.07	-46.21	≤-22.07	PASS
		High	Hop_2480	-1.11	-46.19	≤-21.11	PASS
3DH5	Ant1	Low	2402	-1.24	-48.26	≤-21.24	PASS
		High	2480	-1.55	-46.17	≤-21.55	PASS
		Low	Hop_2402	-4.10	-46.93	≤-24.1	PASS
		High	Hop_2480	-1.03	-46.29	≤-21.03	PASS



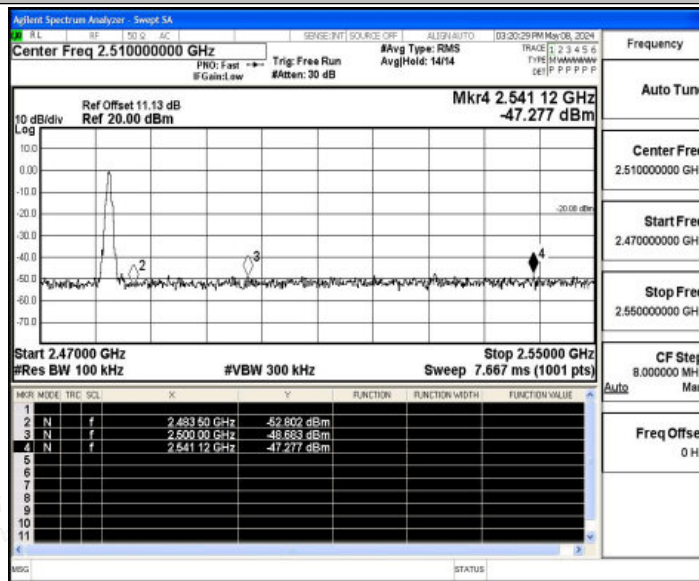


Test Graphs

DH5_Ant1_Low_2402

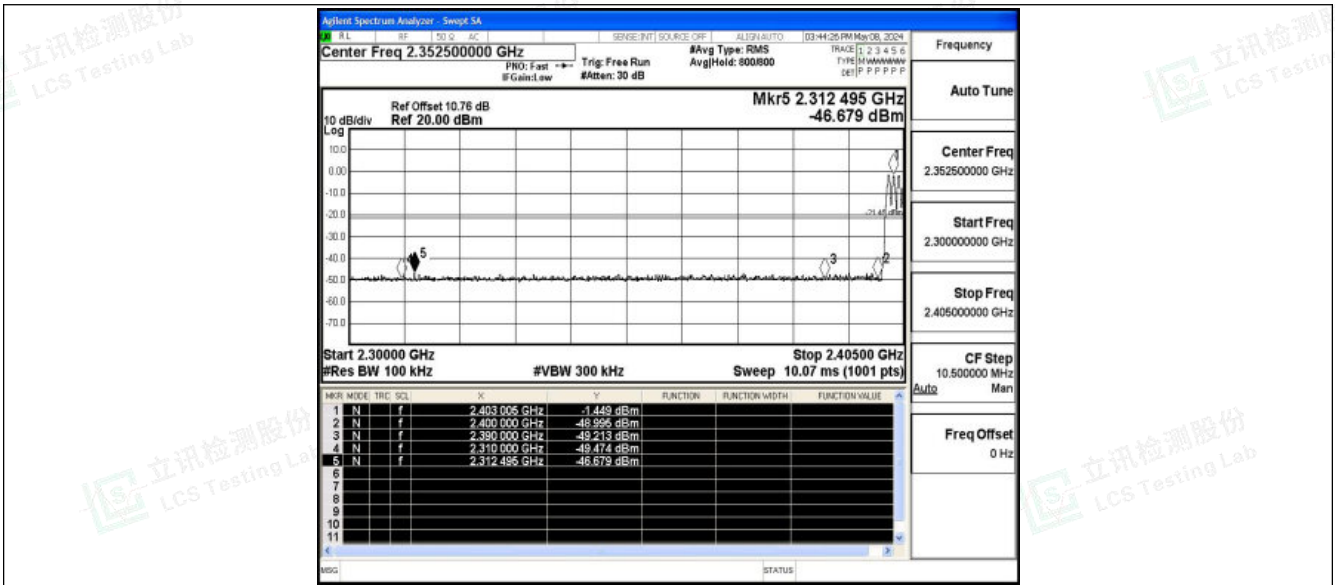


DH5_Ant1_High_2480

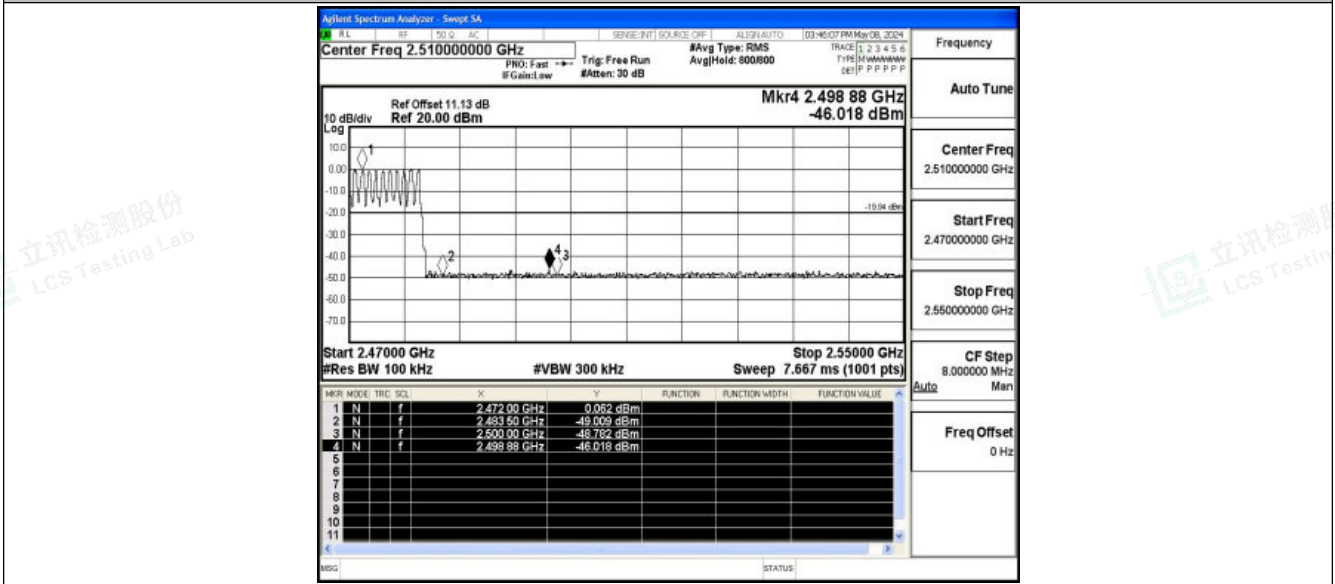


DH5_Ant1_Low_Hop_2402



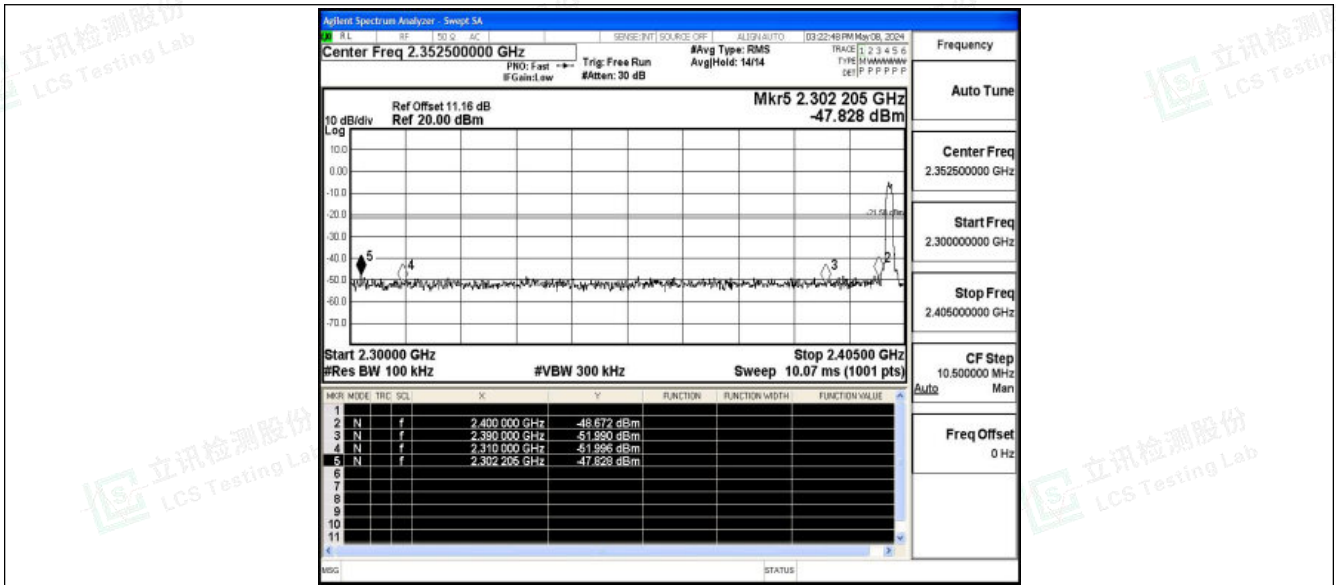


DH5_Ant1_High_Hop_2480

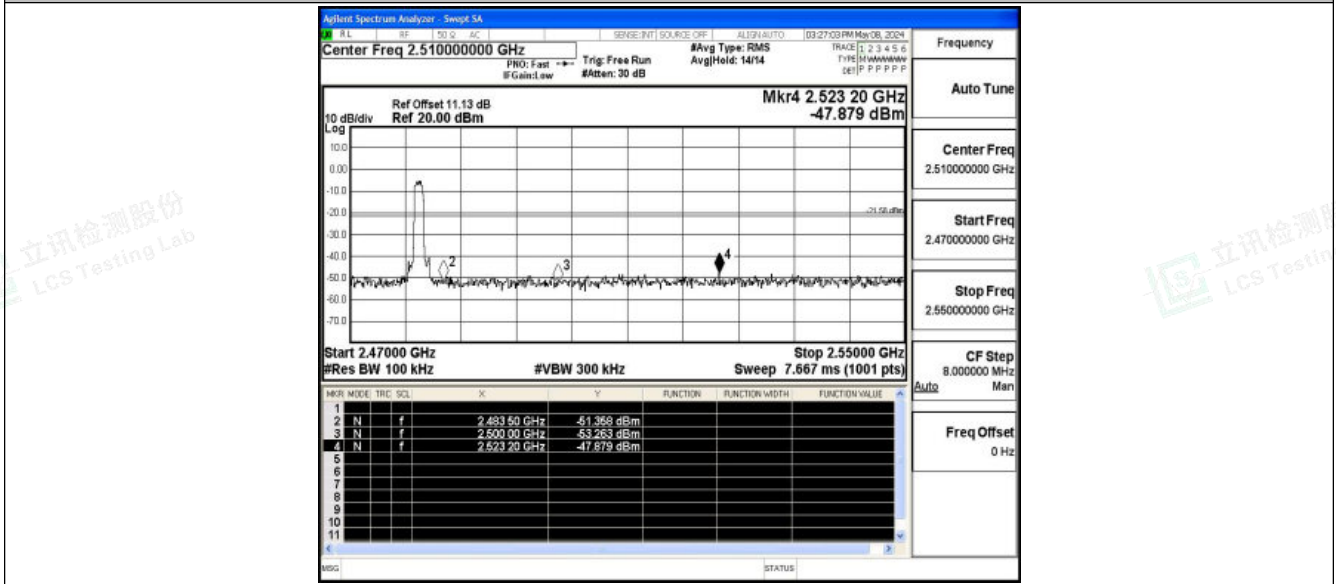


2DH5_Ant1_Low_2402



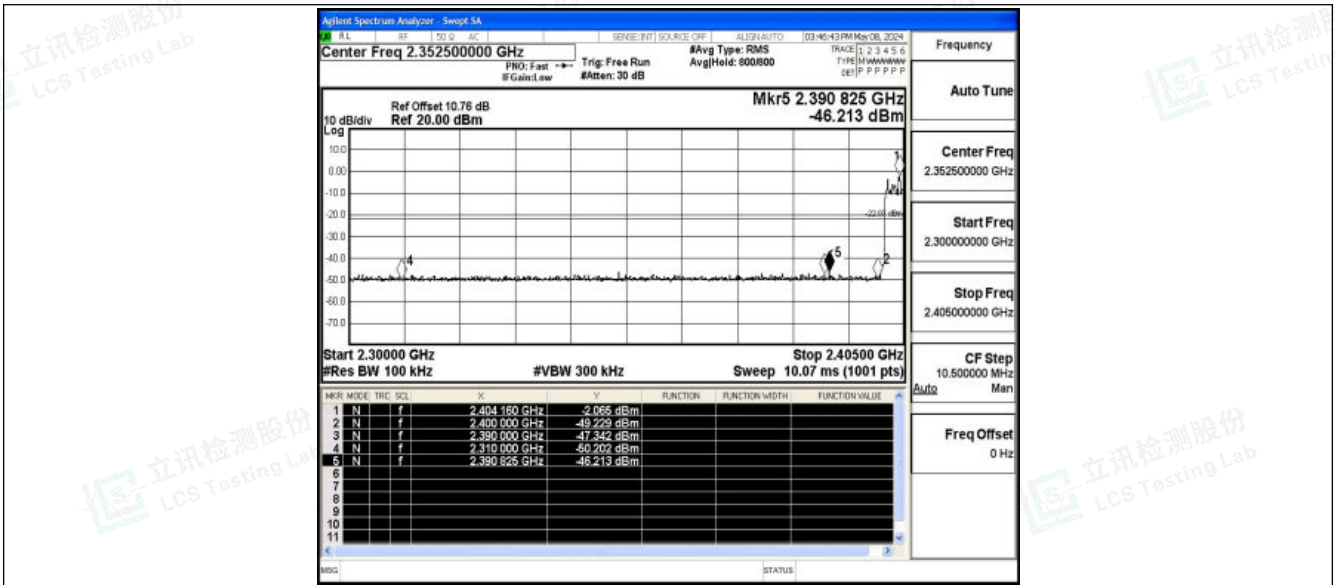


2DH5_Ant1_High_2480

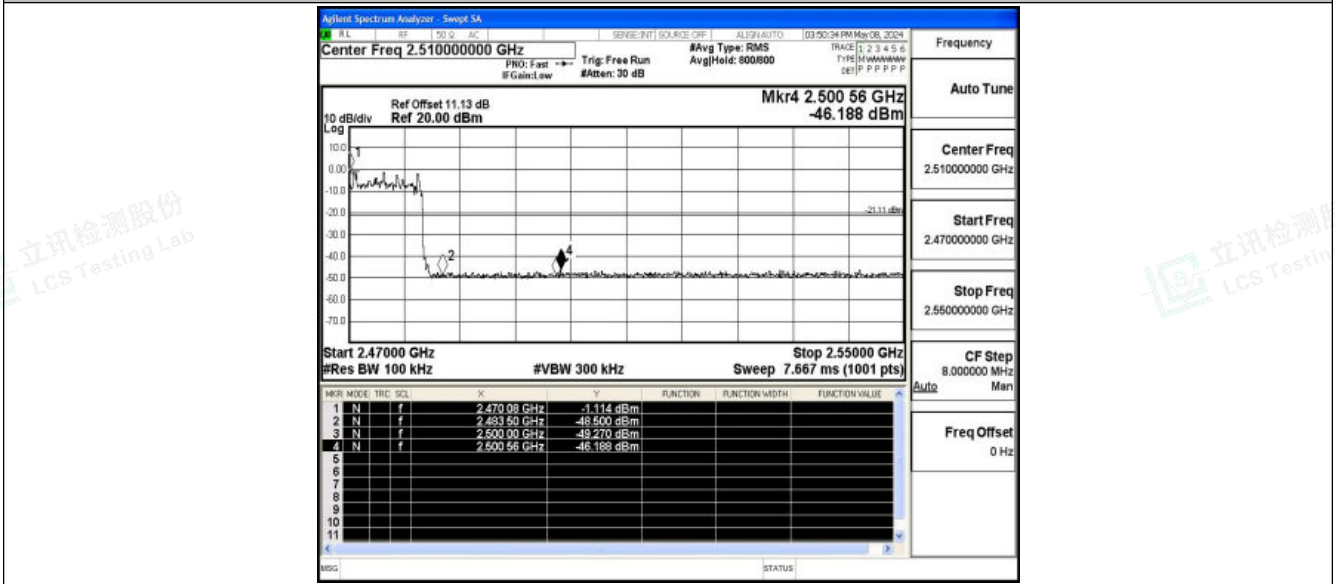


2DH5_Ant1_Low_Hop_2402



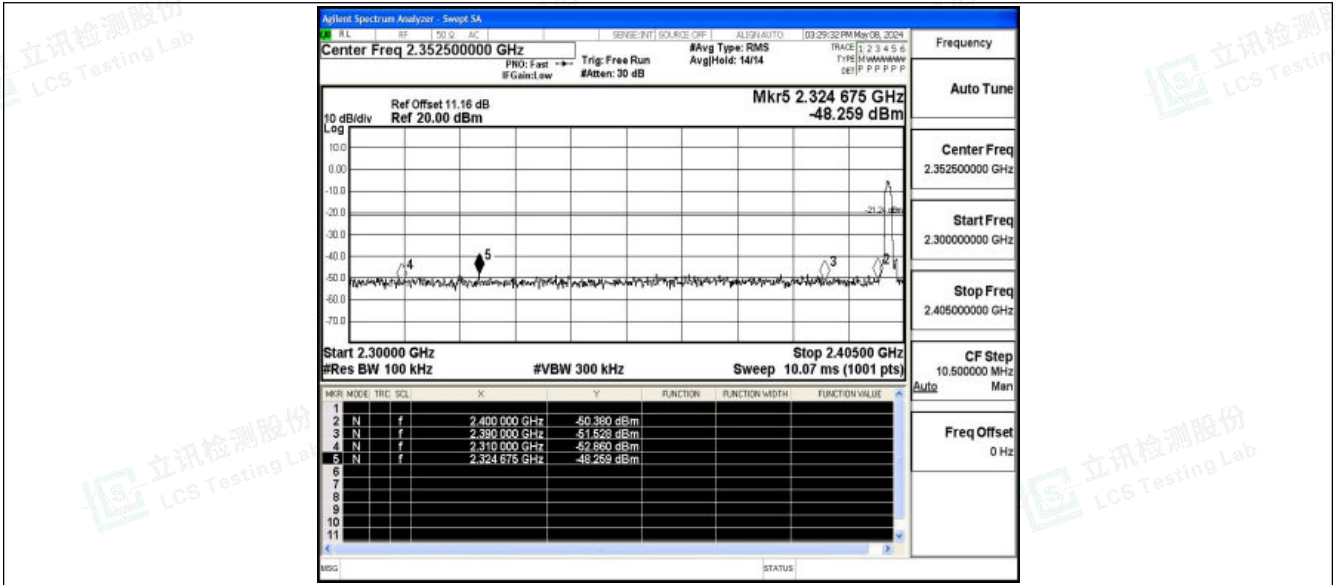


2DH5_Ant1_High_Hop_2480

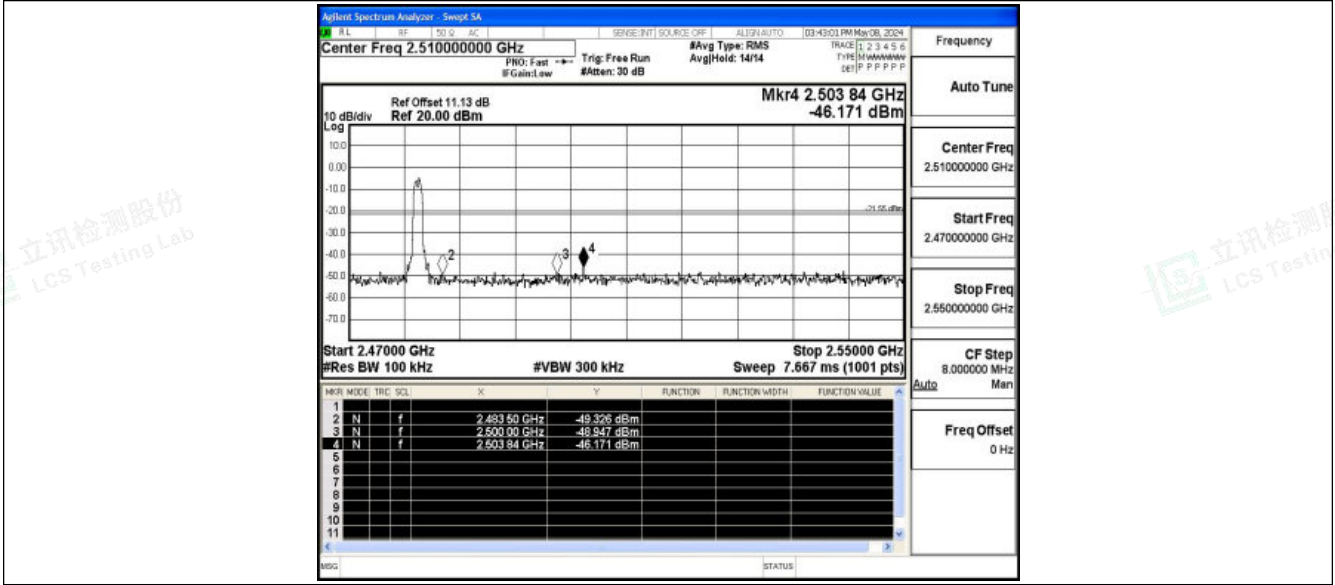


3DH5_Ant1_Low_2402



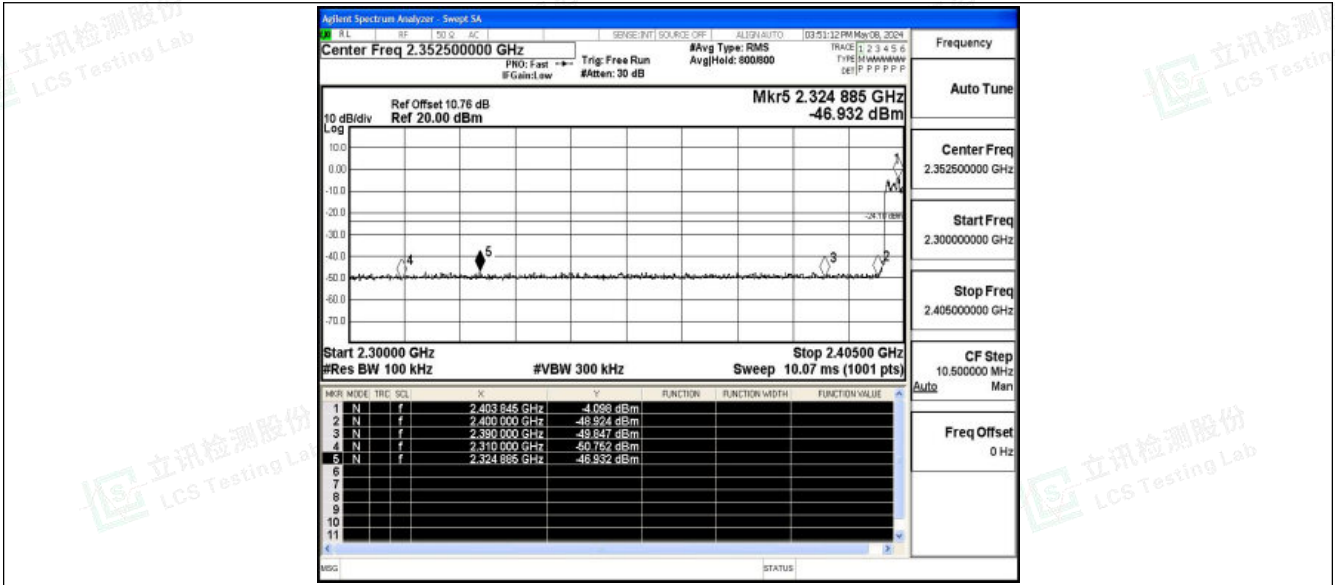


3DH5_Ant1_High_2480

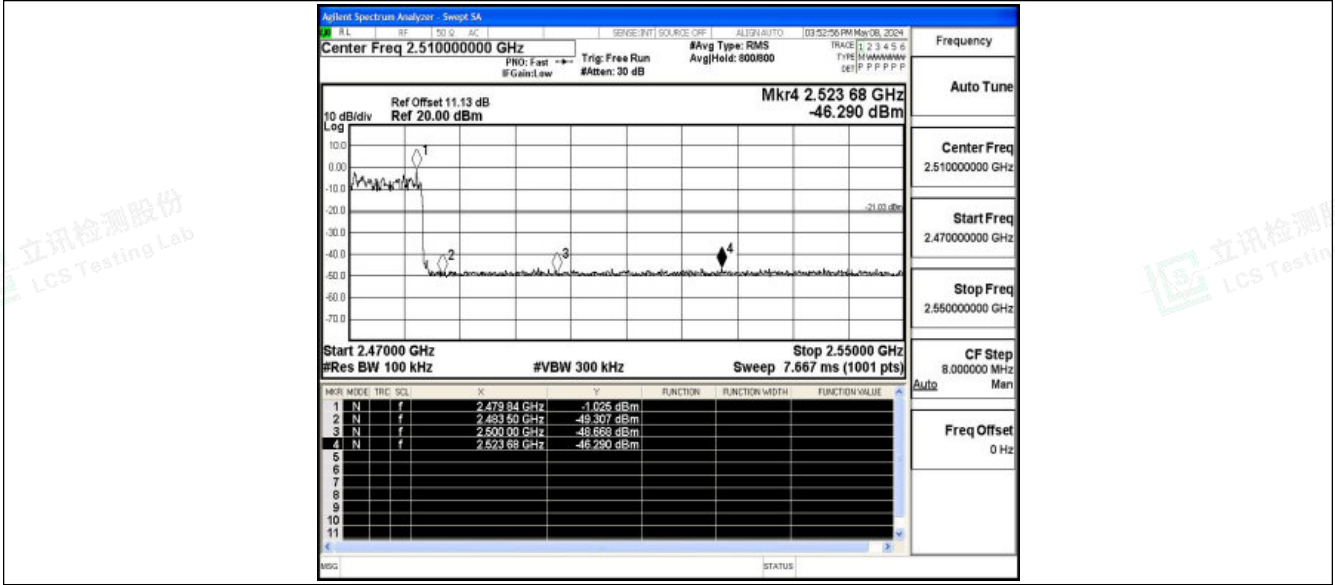


3DH5_Ant1_Low_Hop_2402





3DH5_Ant1_High_Hop_2480





A.7 Conducted Spurious Emission

Test Result

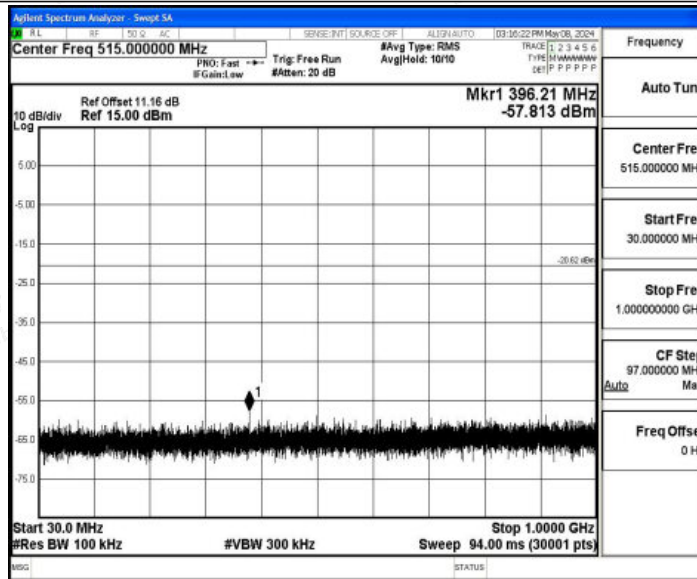
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	30~1000	-0.62	-57.81	≤-20.62	PASS
			1000~26500	-0.62	-46.33	≤-20.62	PASS
		2441	30~1000	-0.34	-57.73	≤-20.34	PASS
			1000~26500	-0.34	-46.79	≤-20.34	PASS
		2480	30~1000	-0.08	-57.69	≤-20.08	PASS
			1000~26500	-0.08	-45.84	≤-20.08	PASS
2DH5	Ant1	2402	30~1000	-1.58	-56.5	≤-21.58	PASS
			1000~26500	-1.58	-46.65	≤-21.58	PASS
		2441	30~1000	-1.04	-58.31	≤-21.04	PASS
			1000~26500	-1.04	-46.04	≤-21.04	PASS
		2480	30~1000	-1.58	-58.84	≤-21.58	PASS
			1000~26500	-1.58	-46	≤-21.58	PASS
3DH5	Ant1	2402	30~1000	-1.24	-58.51	≤-21.24	PASS
			1000~26500	-1.24	-46.31	≤-21.24	PASS
		2441	30~1000	-1.14	-58.56	≤-21.14	PASS
			1000~26500	-1.14	-45.98	≤-21.14	PASS
		2480	30~1000	-1.55	-58.11	≤-21.55	PASS
			1000~26500	-1.55	-46.04	≤-21.55	PASS



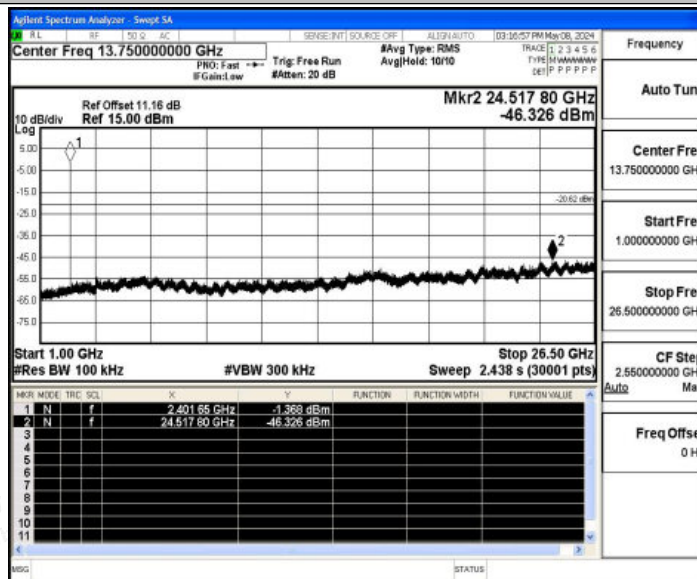


Test Graphs

DH5_Ant1_2402_30~1000

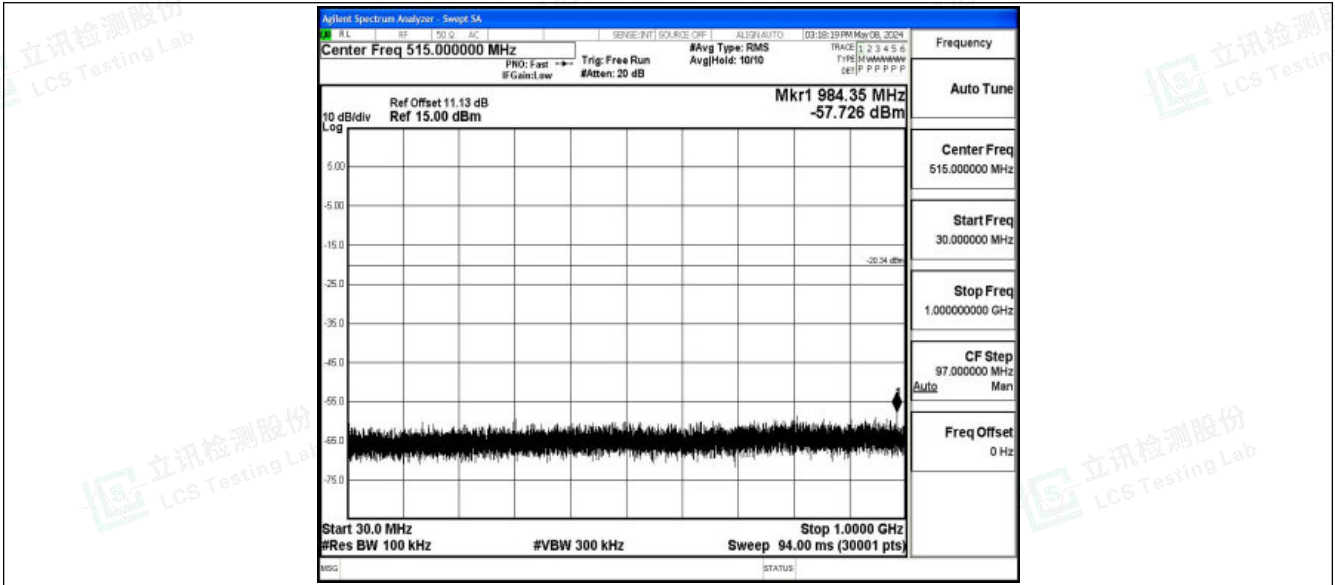


DH5_Ant1_2402_1000~26500

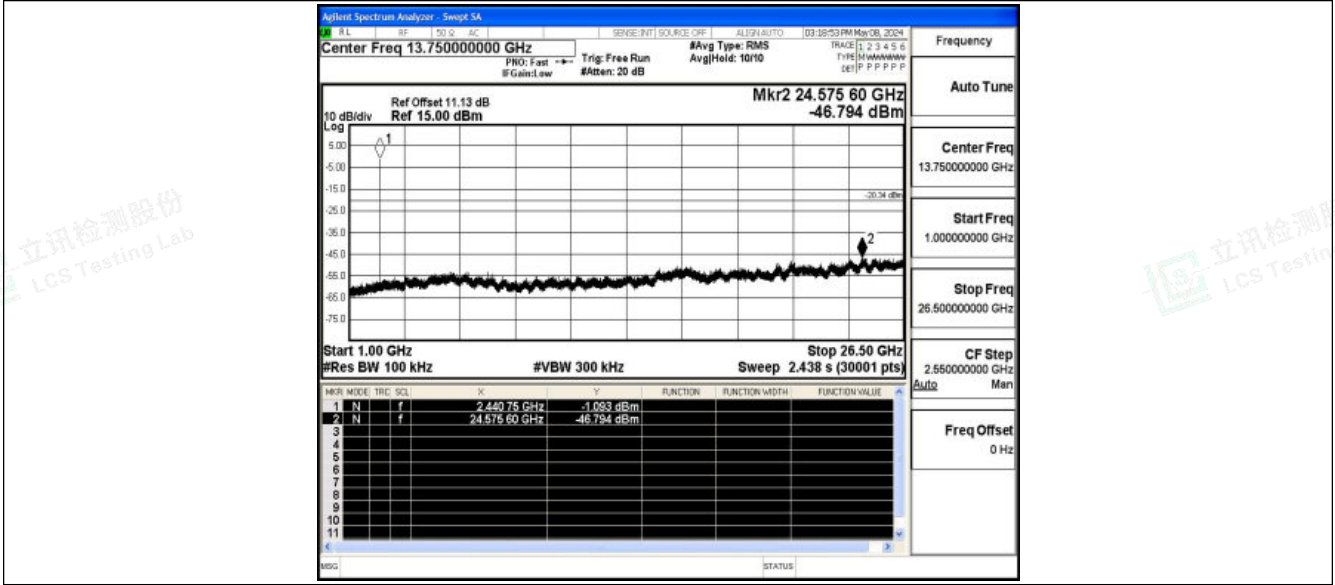


DH5_Ant1_2441_30~1000



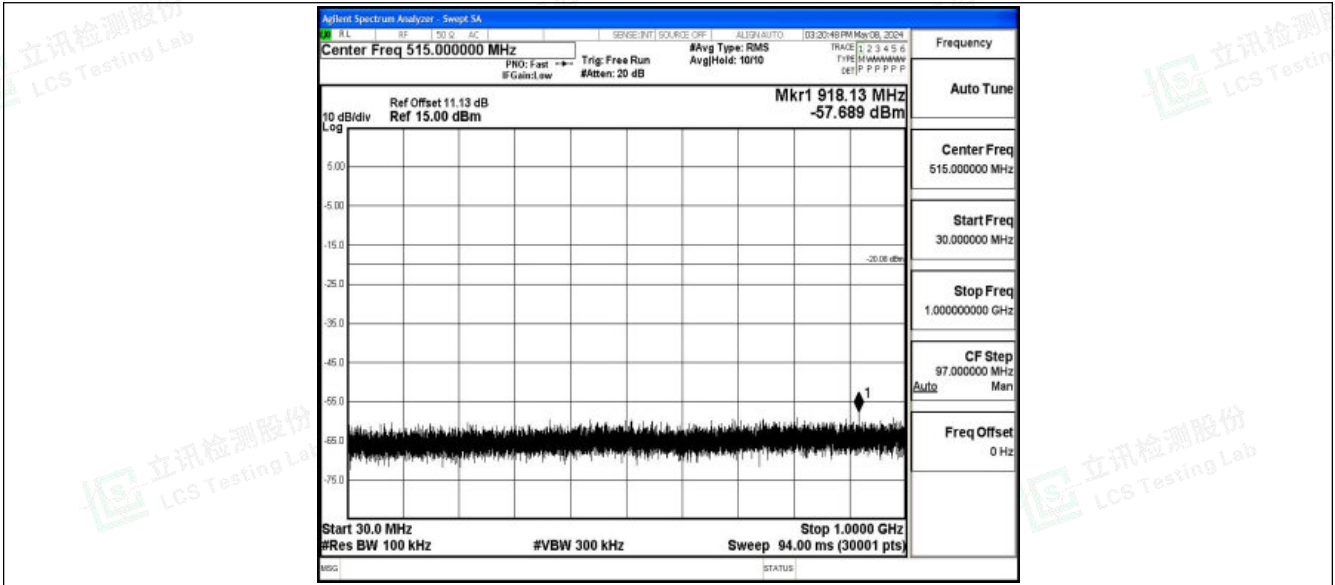


DH5_Ant1_2441_1000~26500

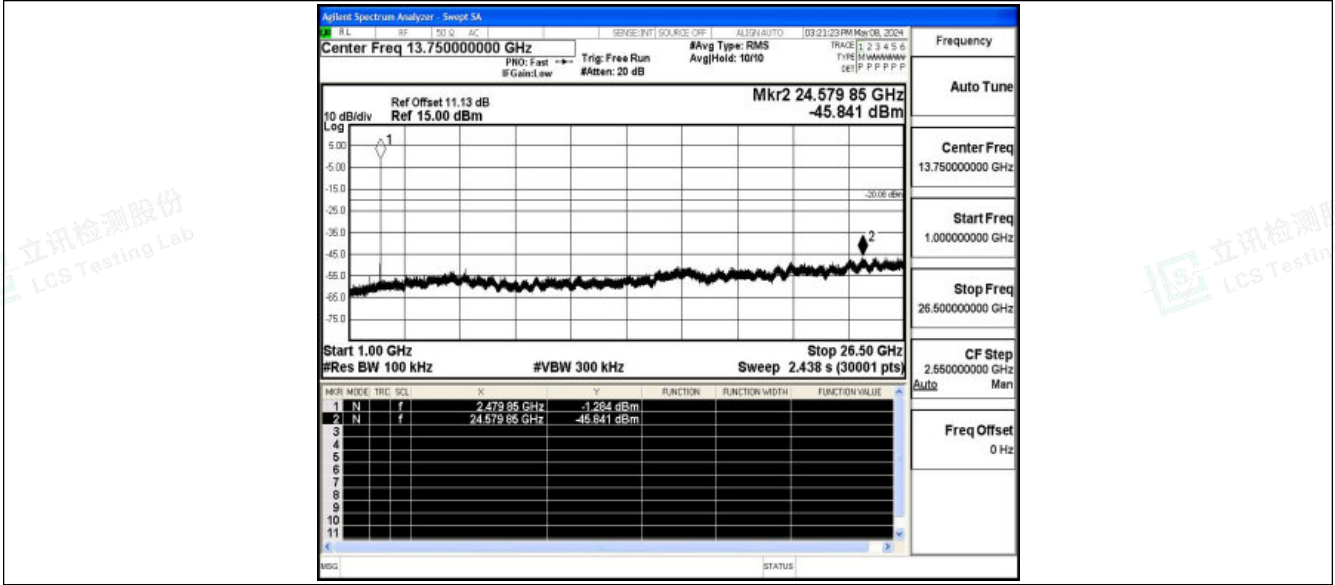


DH5_Ant1_2480_30~1000



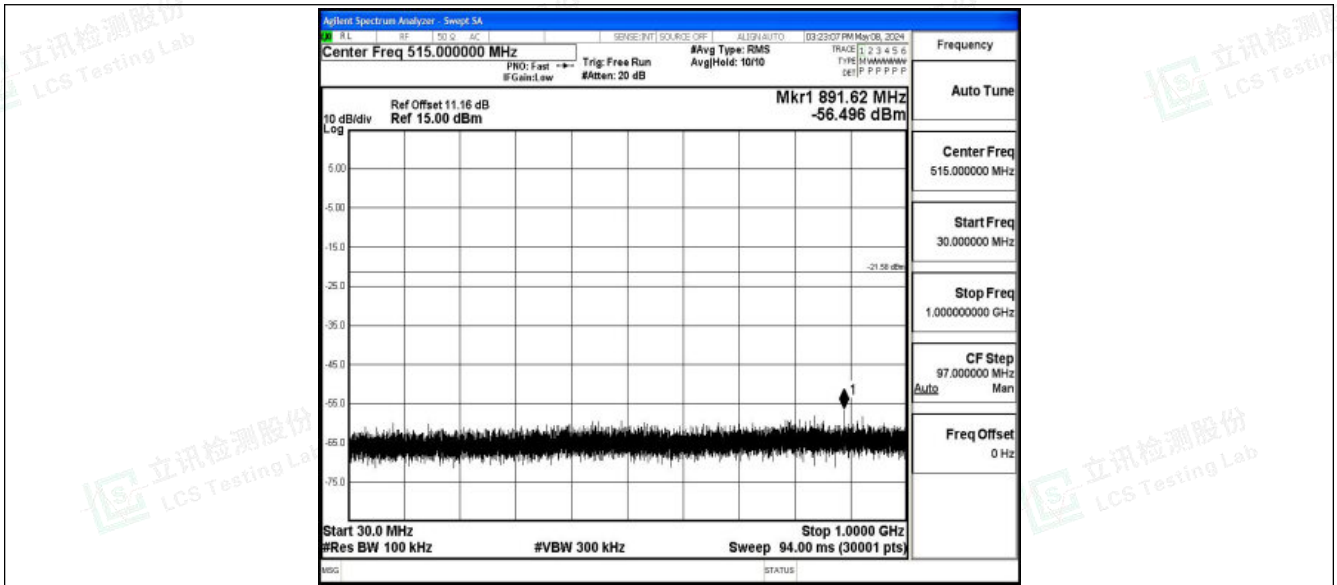


DH5_Ant1_2480_1000~26500

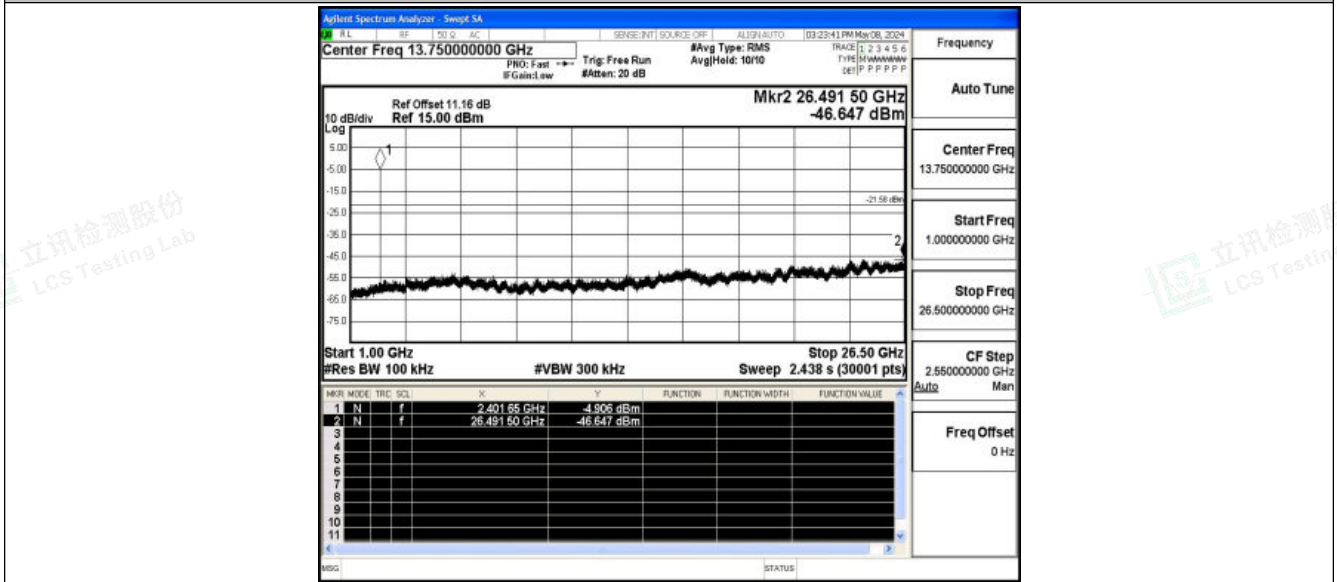


2DH5_Ant1_2402_30~1000



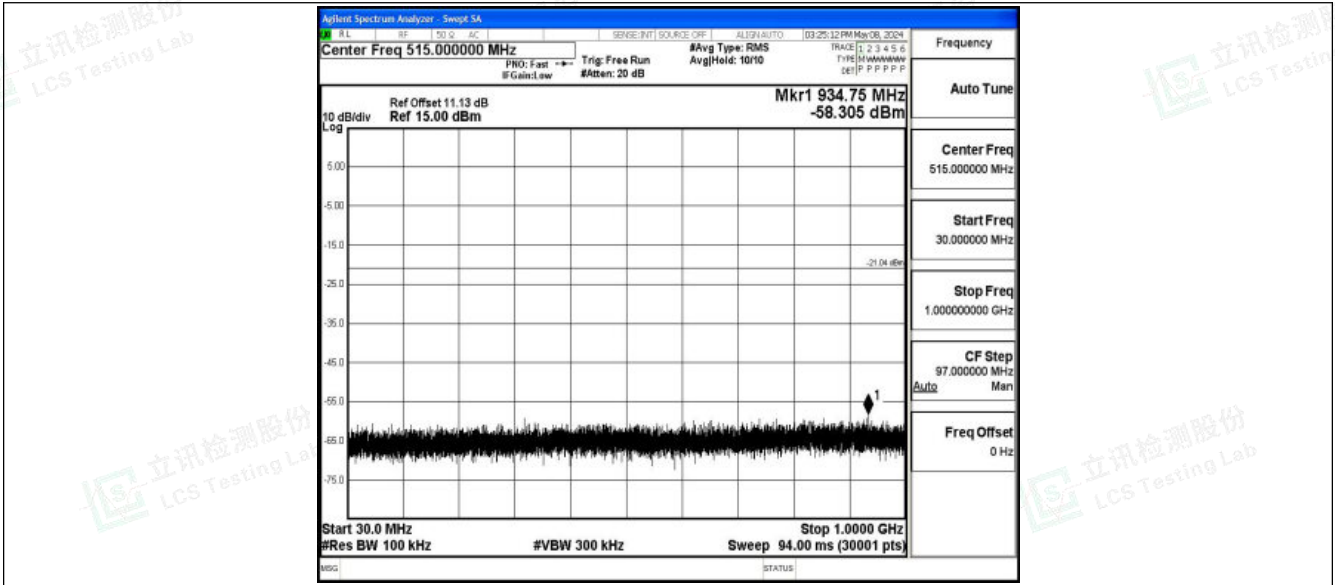


2DH5_Ant1_2402_1000~26500

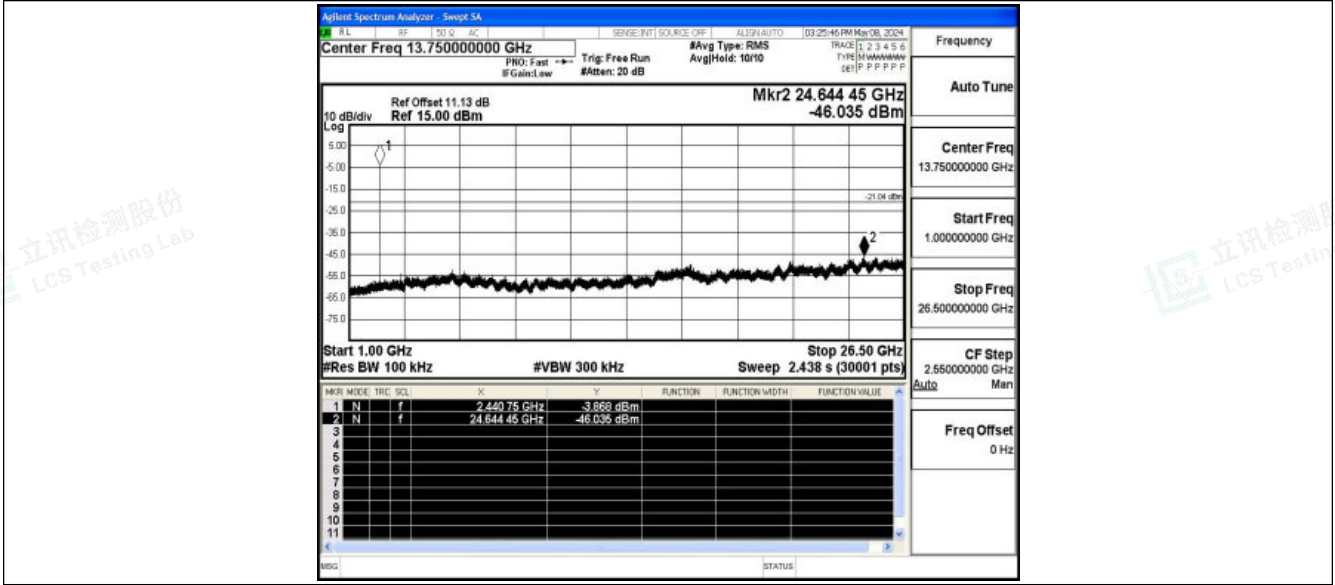


2DH5_Ant1_2441_30~1000



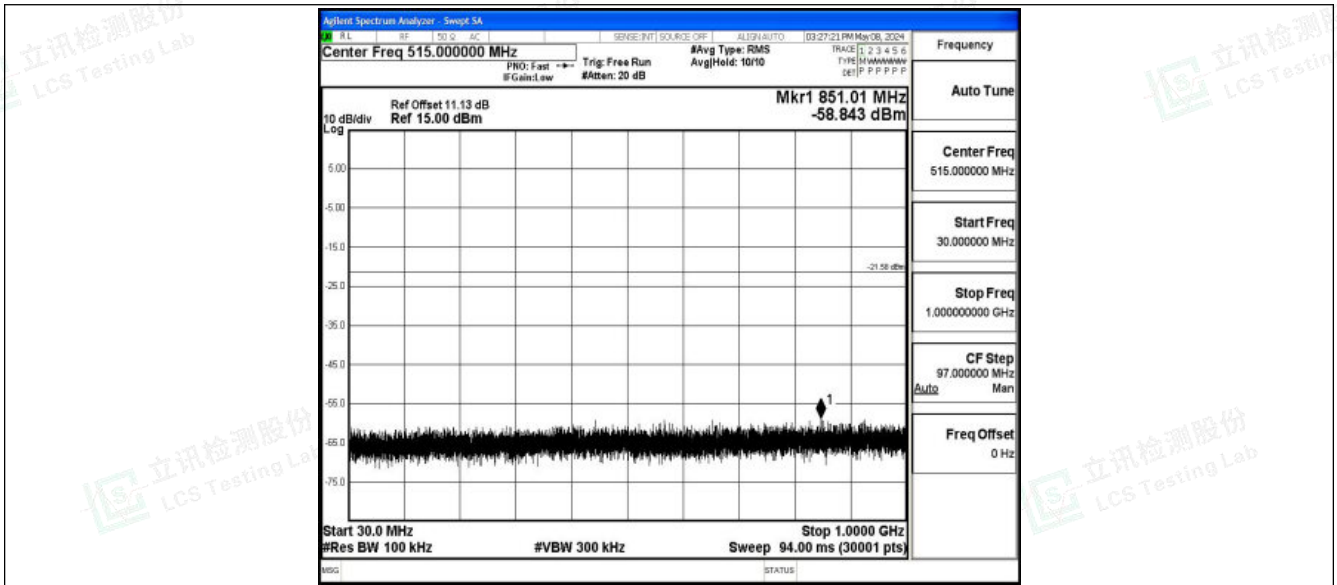


2DH5_Ant1_2441_1000~26500

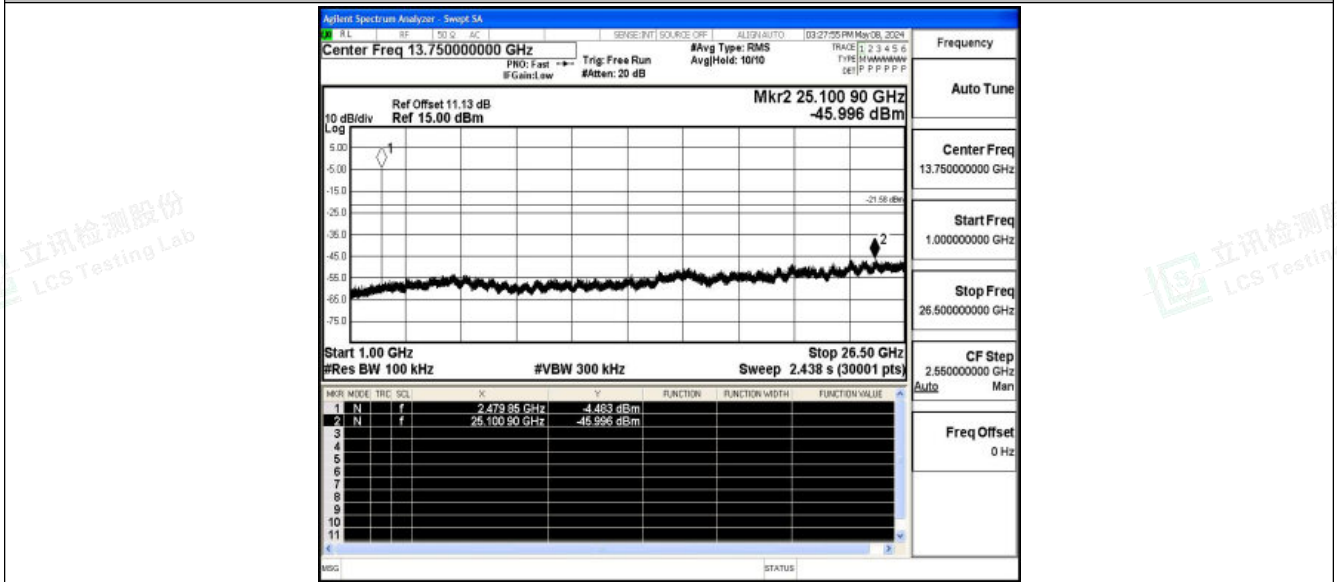


2DH5_Ant1_2480_30~1000



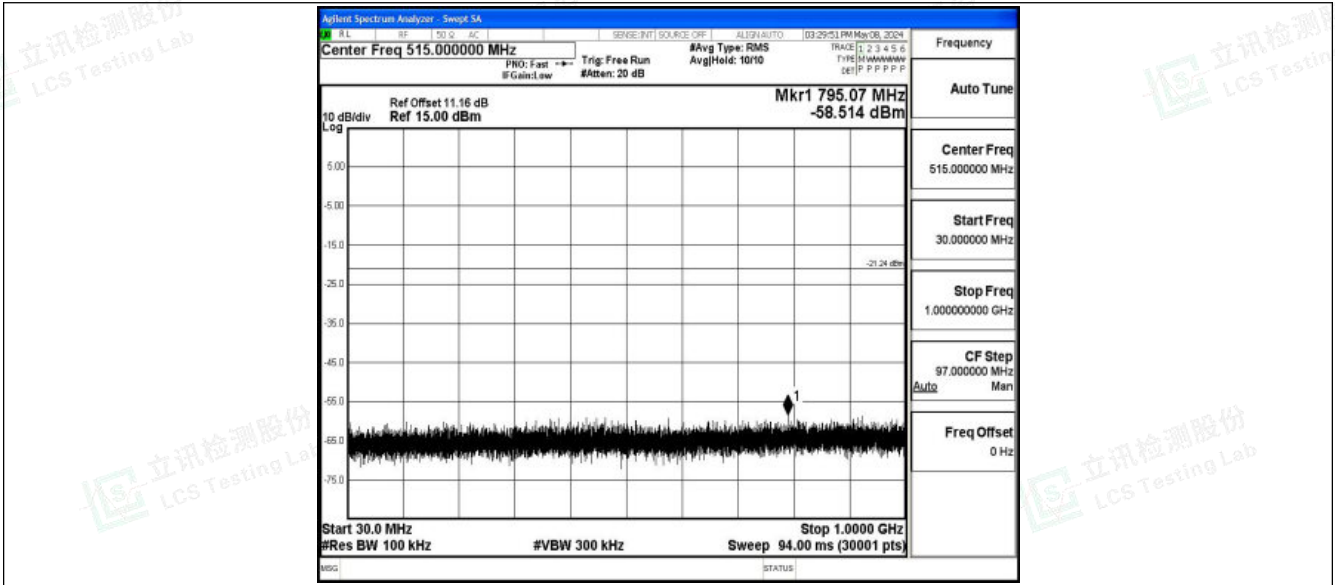


2DH5_Ant1_2480_1000~26500

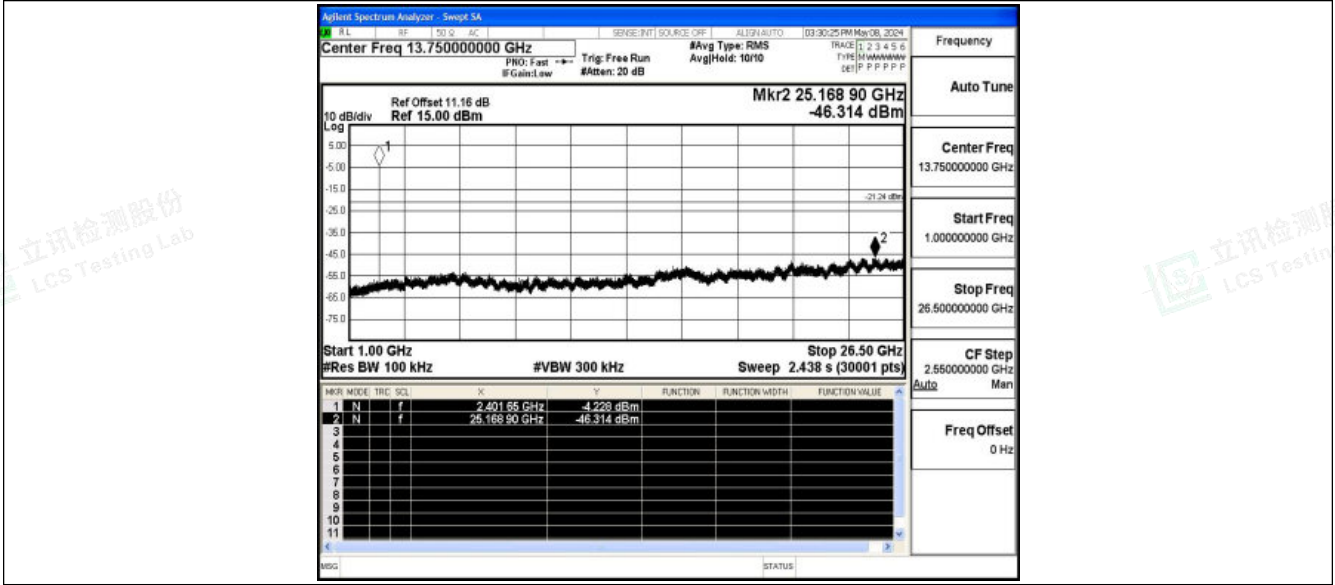


3DH5_Ant1_2402_30~1000



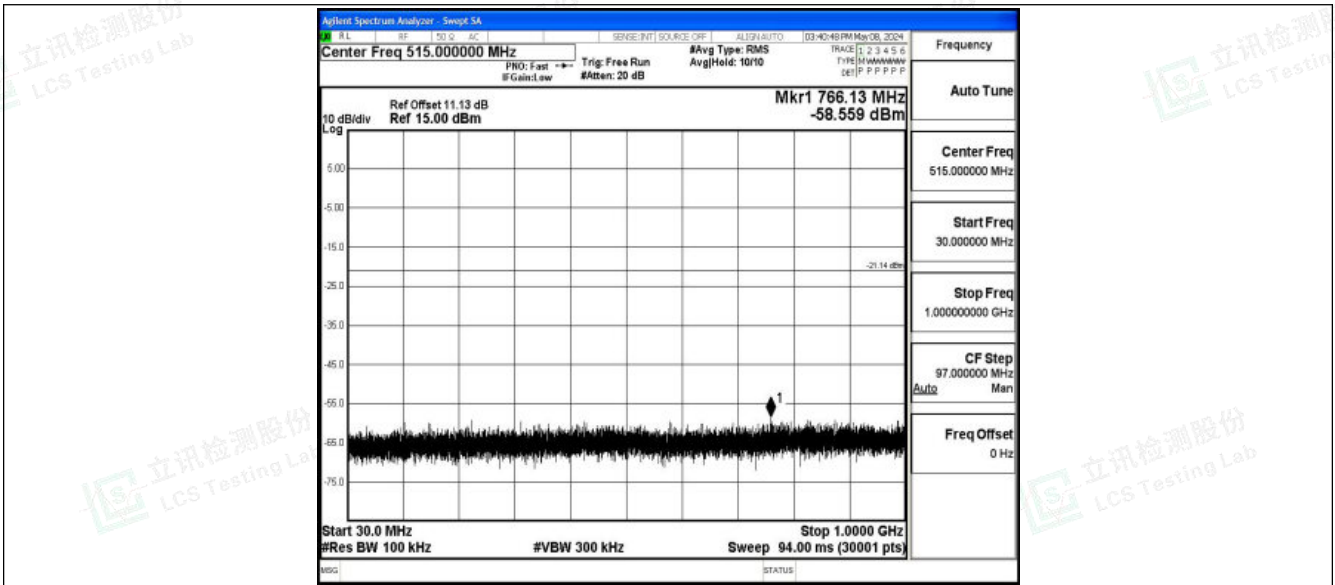


3DH5_Ant1_2402_1000~26500

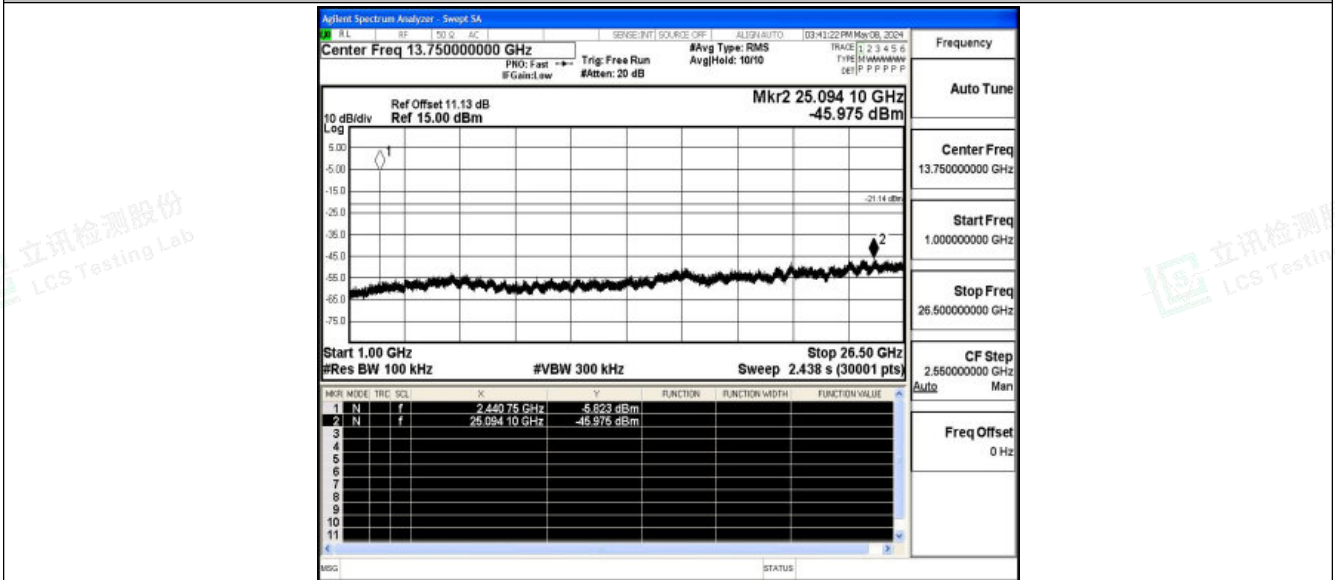


3DH5_Ant1_2441_30~1000



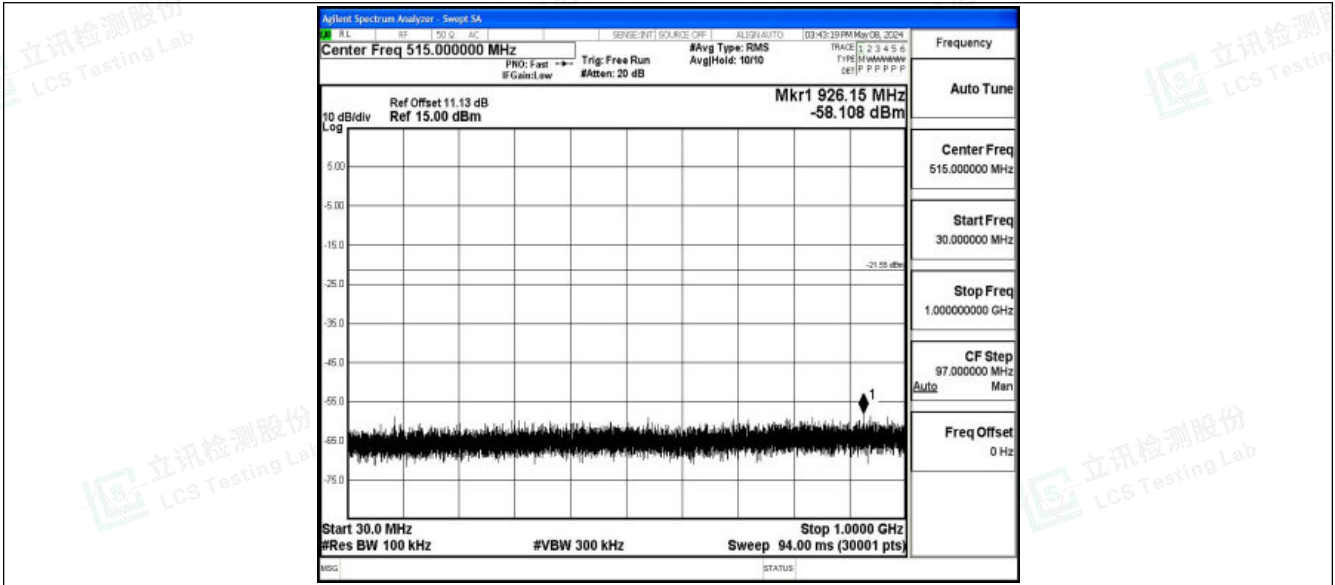


3DH5_Ant1_2441_1000~26500

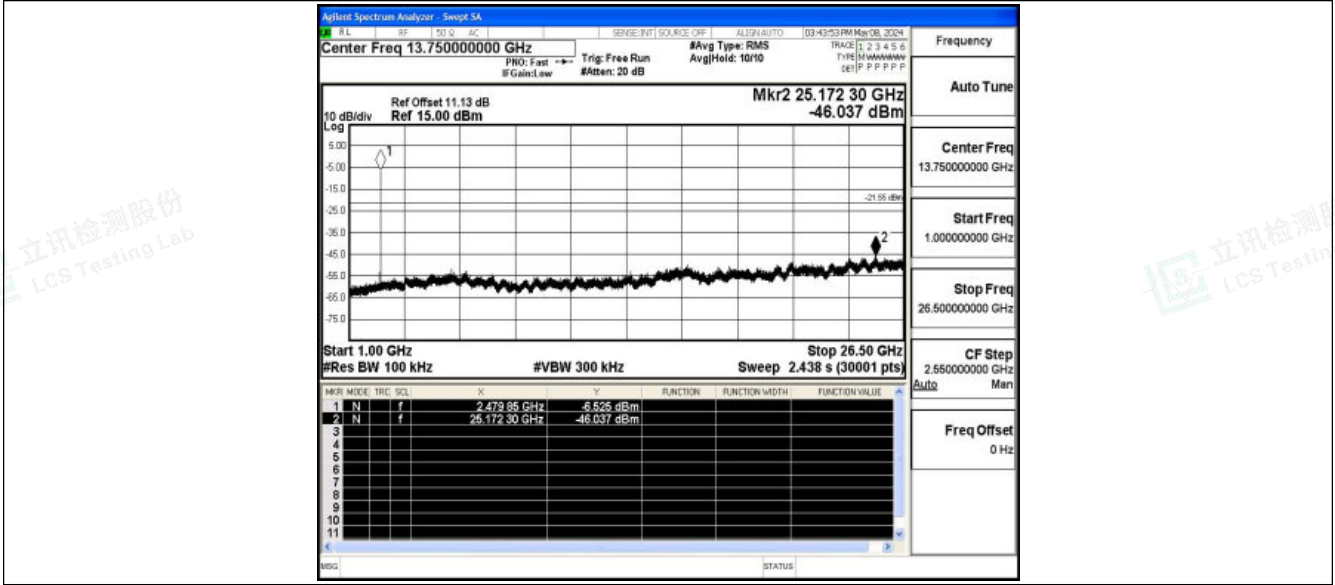


3DH5_Ant1_2480_30~1000





3DH5_Ant1_2480_1000~26500





Reference Level

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	2401.83	-0.62	---	PASS
		2441	2441.17	-0.34	---	PASS
		2480	2480.14	-0.08	---	PASS
2DH5	Ant1	2402	2402.17	-1.58	---	PASS
		2441	2440.83	-1.04	---	PASS
		2480	2480.15	-1.58	---	PASS
3DH5	Ant1	2402	2402.14	-1.24	---	PASS
		2441	2440.84	-1.14	---	PASS
		2480	2479.83	-1.55	---	PASS

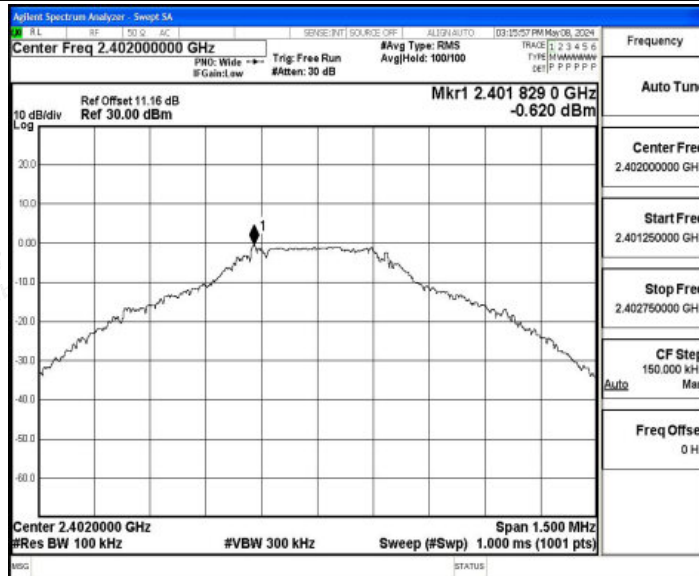


Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity

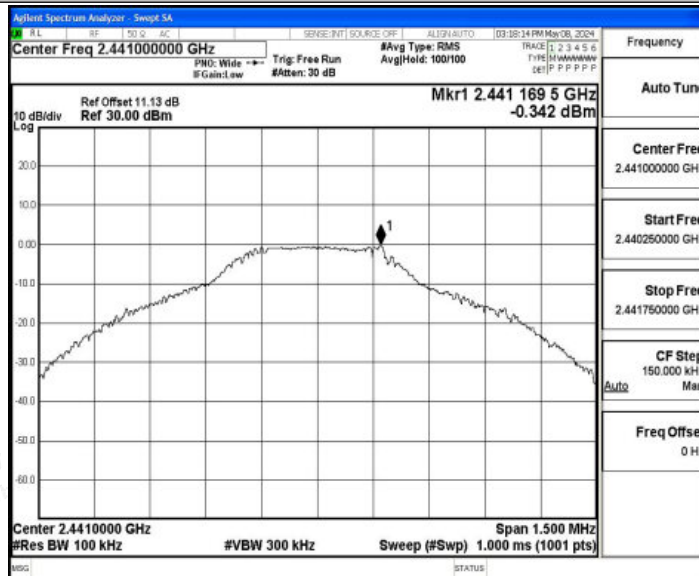


Test Graphs

DH5_Ant1_2402

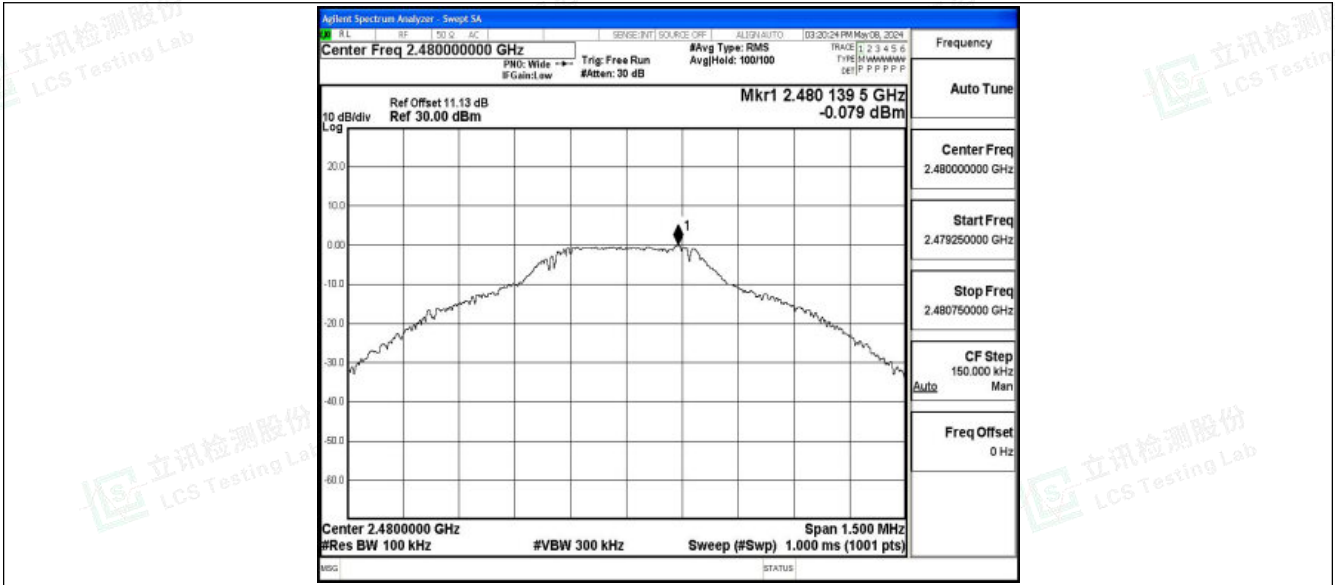


DH5_Ant1_2441

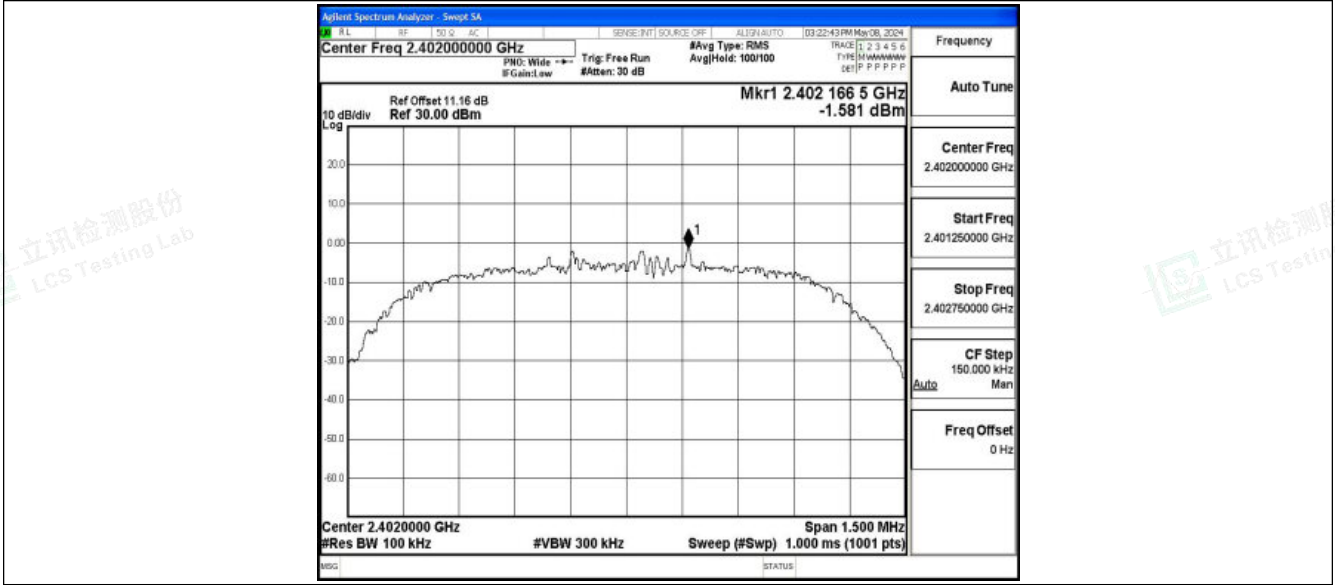


DH5_Ant1_2480



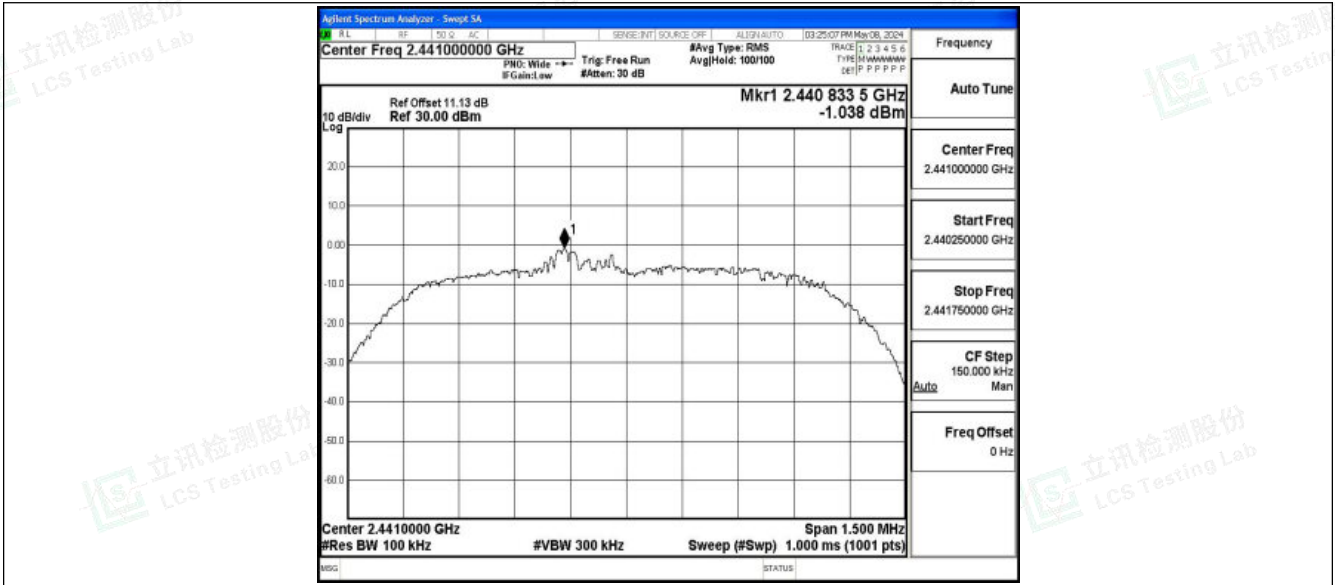


2DH5_Ant1_2402

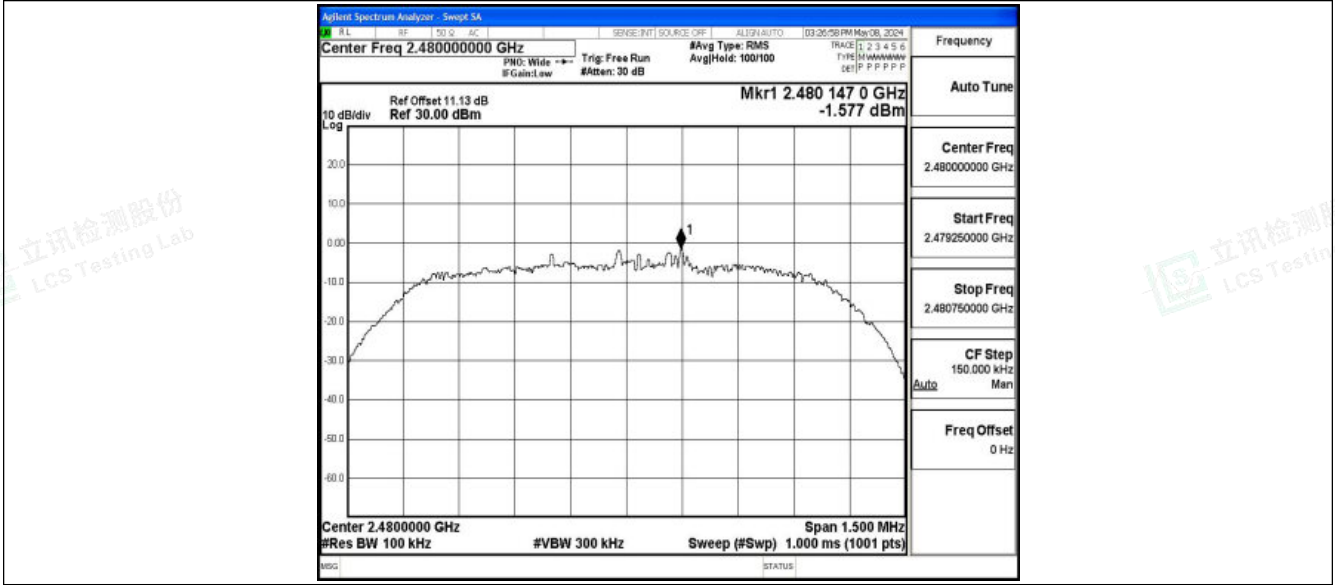


2DH5_Ant1_2441



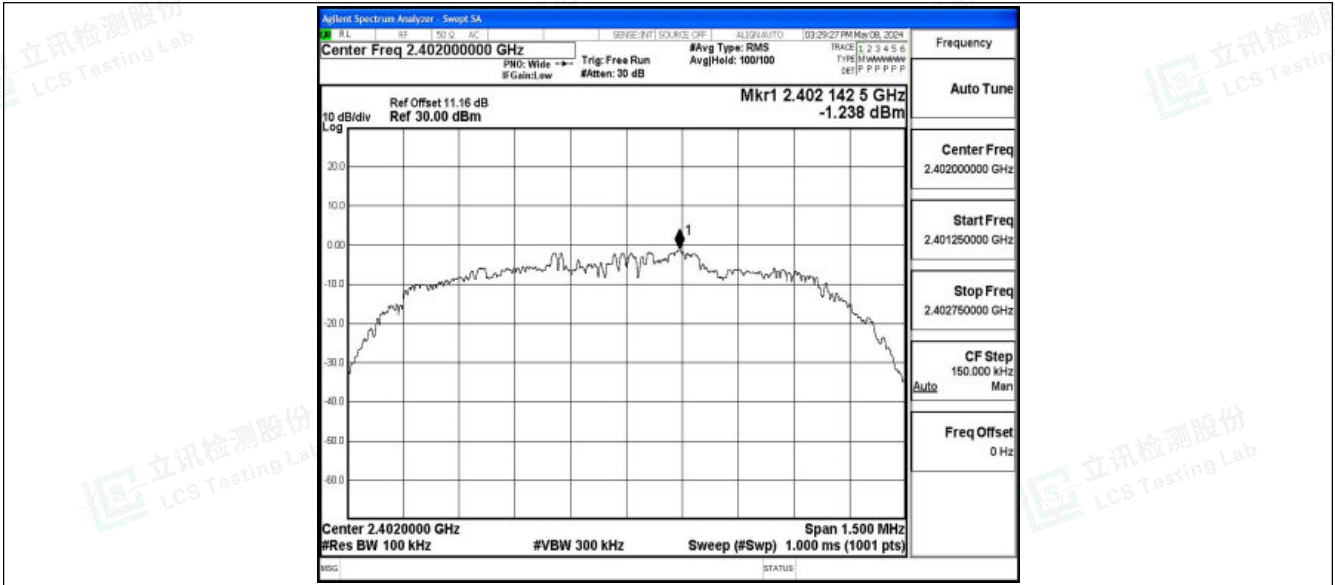


2DH5_Ant1_2480

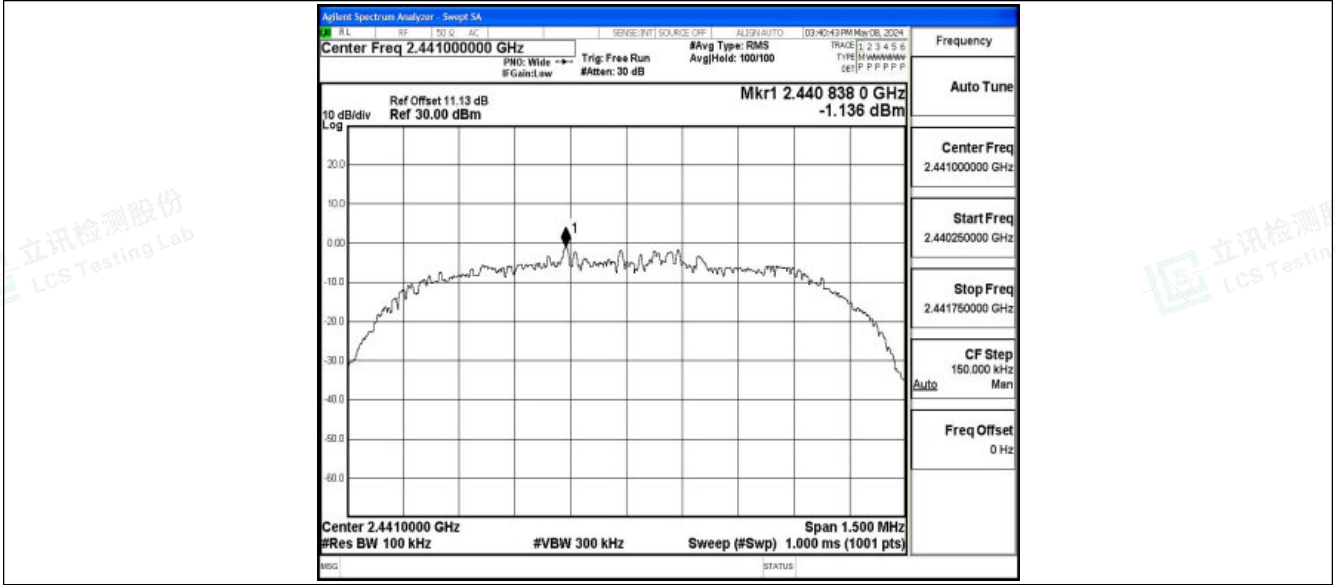


3DH5_Ant1_2402



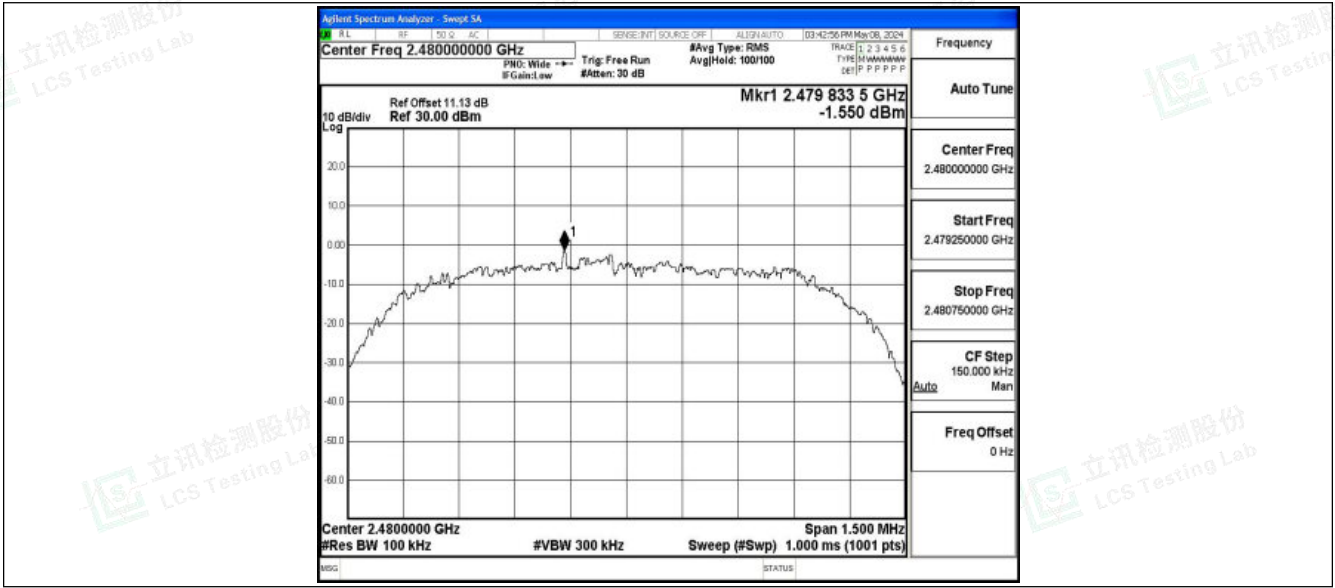


3DH5_Ant1_2441



3DH5_Ant1_2480







A.8 Duty Cycle

Test Result

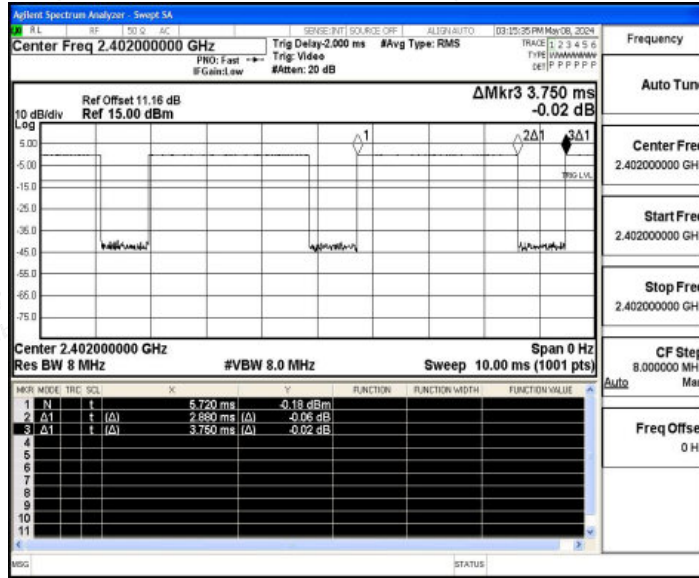
TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]	1/T Factor[kHz]
DH5	Ant1	2402	2.88	3.75	76.80	1.15	0.35
		2441	2.89	3.75	77.07	1.13	0.35
		2480	2.88	3.75	76.80	1.15	0.35
2DH5	Ant1	2402	2.88	3.75	76.80	1.15	0.35
		2441	2.89	3.75	77.07	1.13	0.35
		2480	2.89	3.75	77.07	1.13	0.35
3DH5	Ant1	2402	2.88	3.75	76.80	1.15	0.35
		2441	2.89	3.75	77.07	1.13	0.35
		2480	2.89	3.75	77.07	1.13	0.35



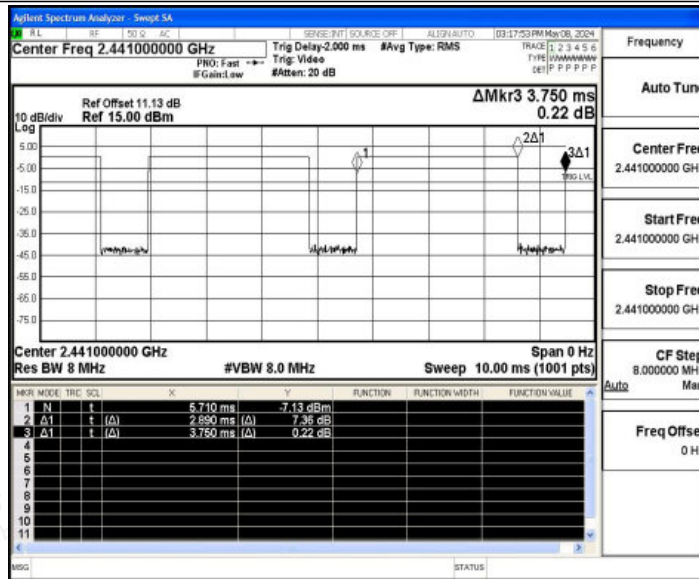


Test Graphs

DH5_Ant1_2402

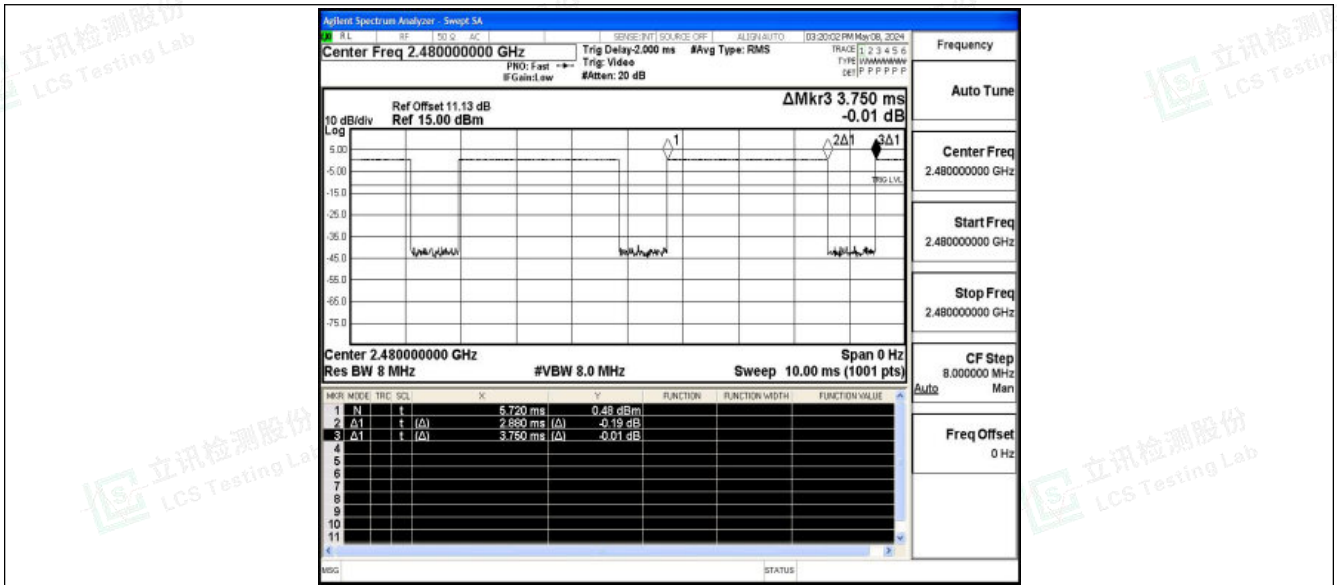


DH5_Ant1_2441

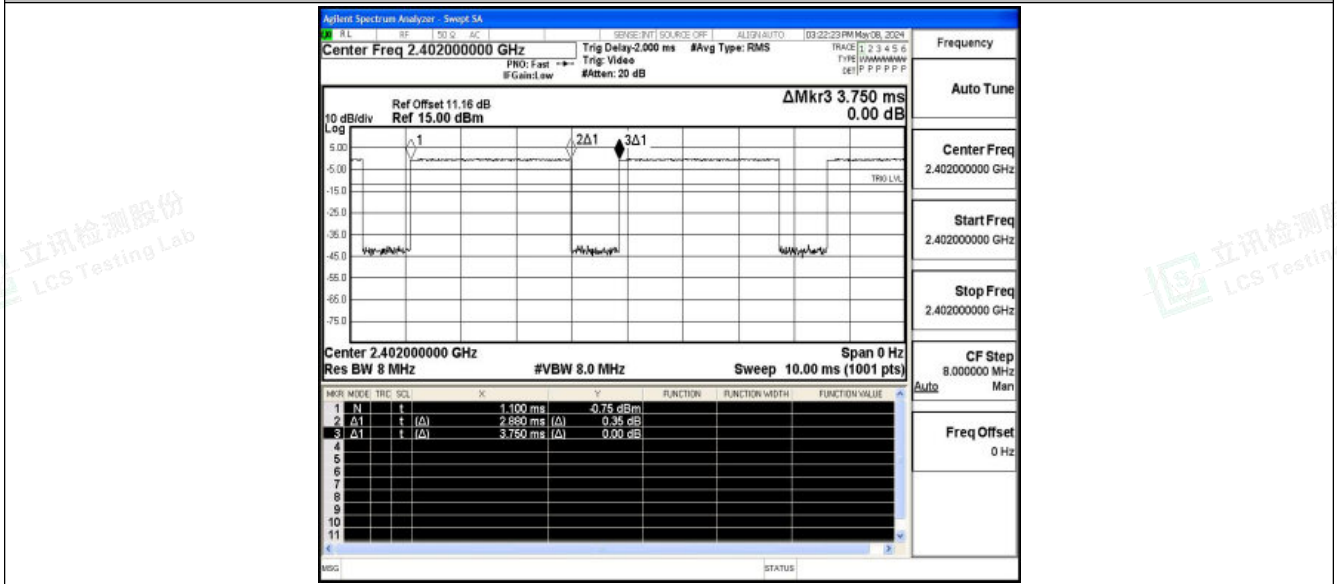


DH5_Ant1_2480



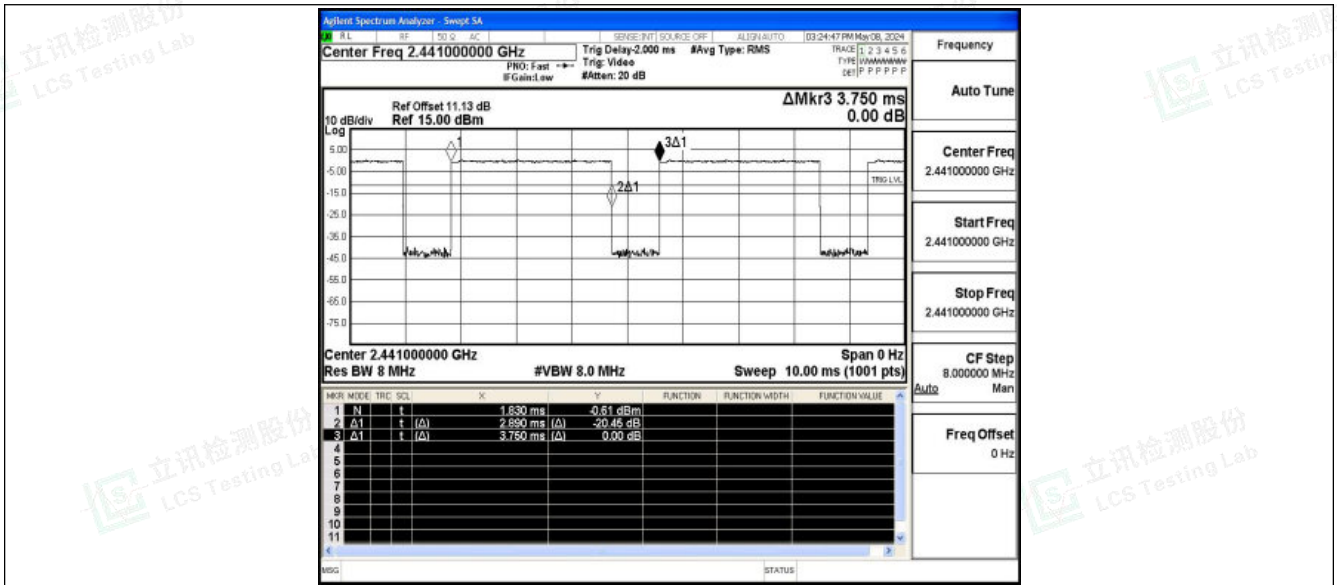


2DH5_Ant1_2402

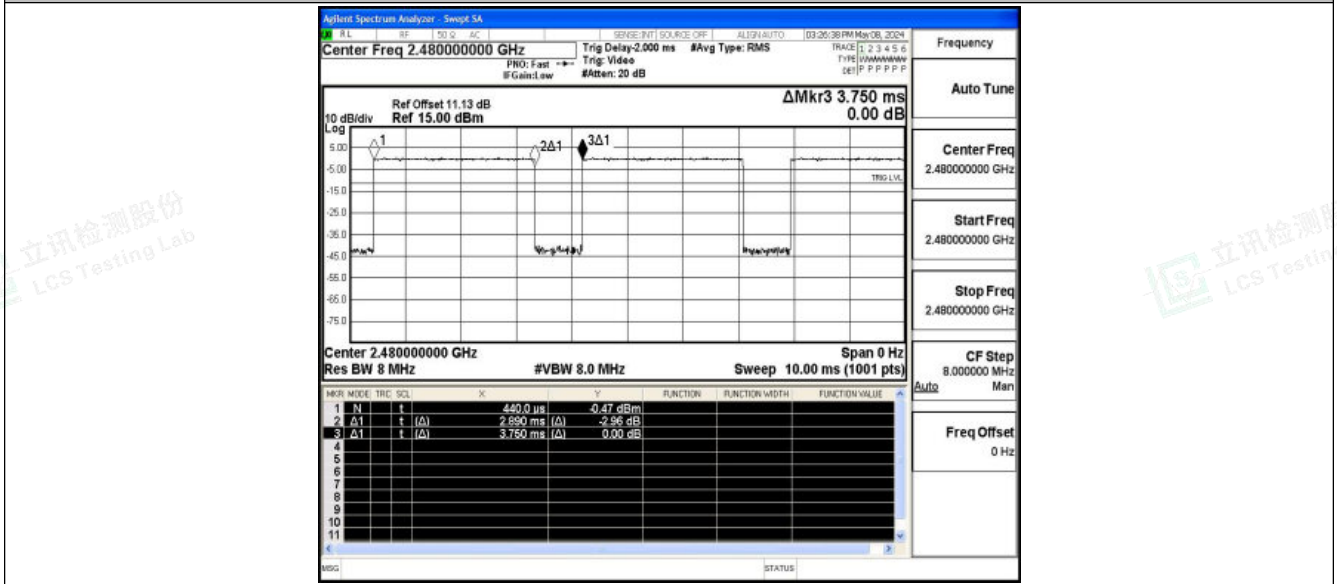


2DH5_Ant1_2441



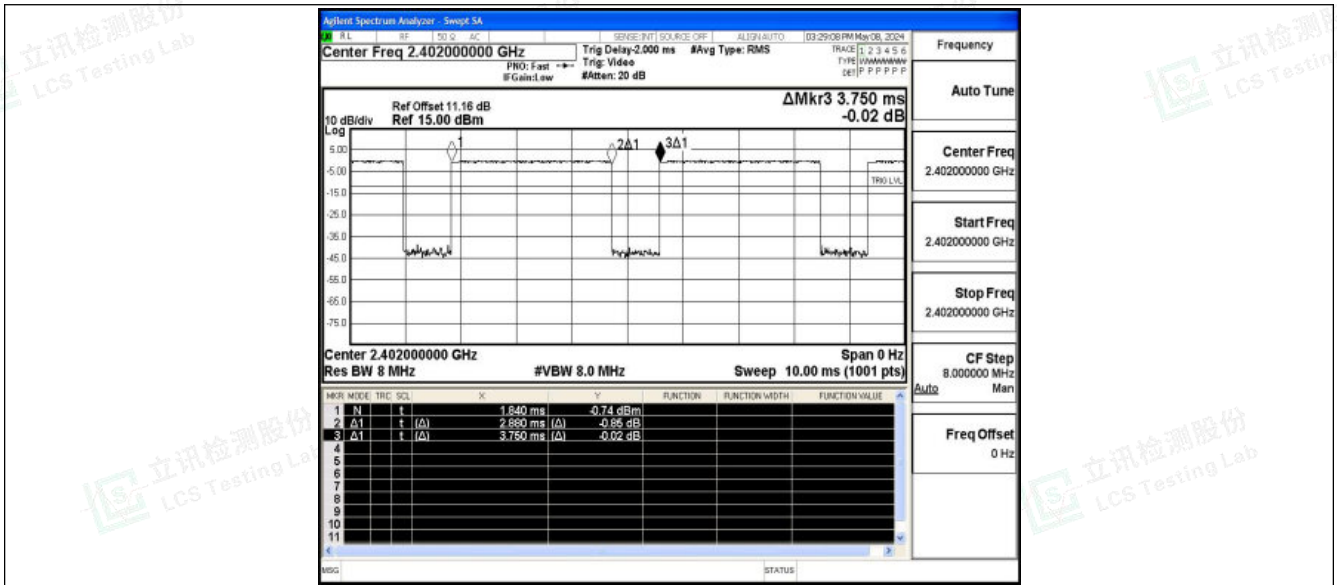


2DH5_Ant1_2480

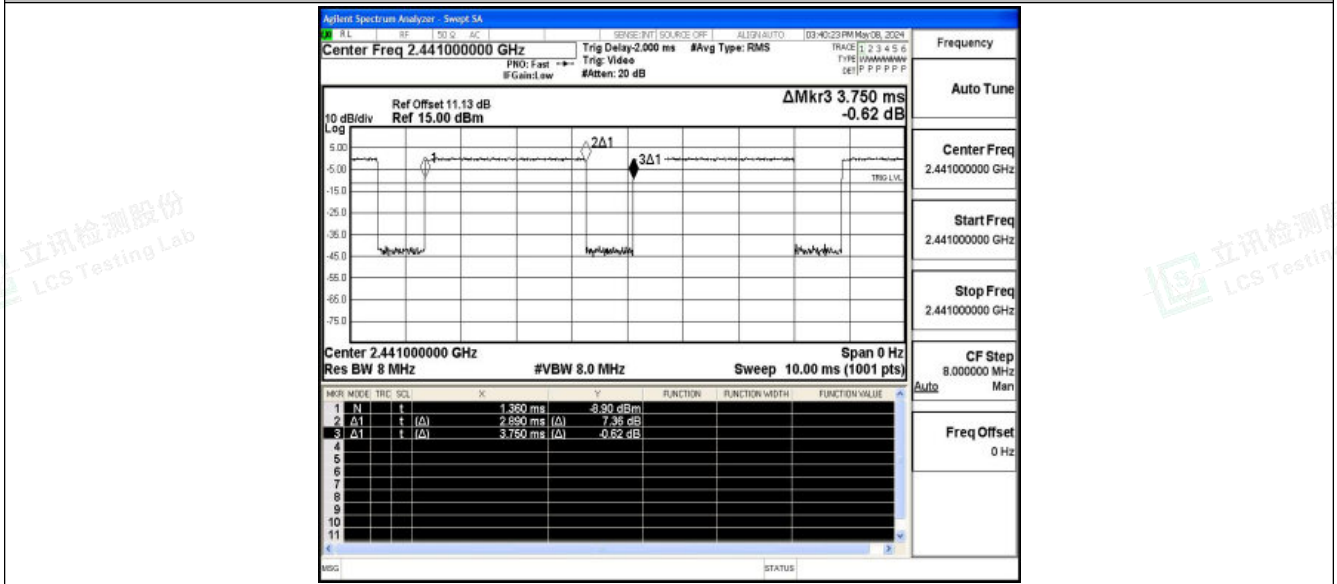


3DH5_Ant1_2402



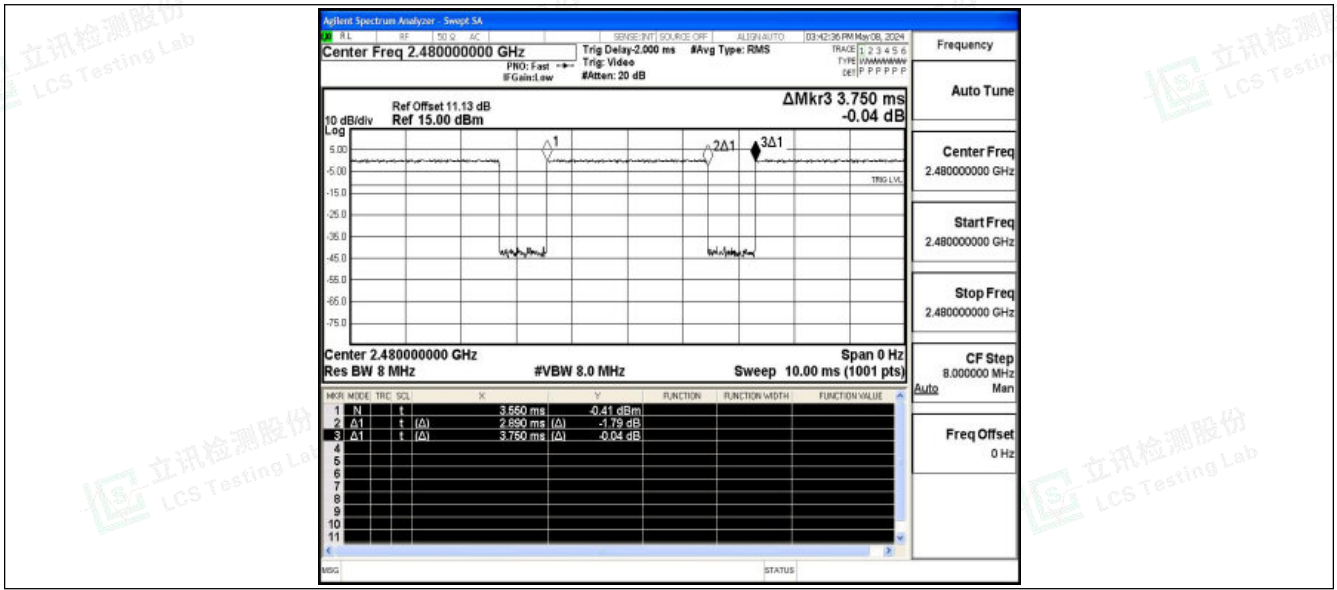


3DH5_Ant1_2441



3DH5_Ant1_2480







A.9 Emissions in Restricted Bands

Test Result

TestMode	Antenna	Channel Name	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-46.19	≤-41.20	49.01	≤54	PASS
				AV	2369.090	-44.73	≤-41.20	50.47	≤54	PASS
				AV	2390.000	-46.1	≤-41.20	49.10	≤54	PASS
				Peak	2310.000	-37.86	≤-21.20	57.34	≤74	PASS
				Peak	2332.025	-33.94	≤-21.20	61.26	≤74	PASS
				Peak	2390.000	-37.17	≤-21.20	58.03	≤74	PASS
		High	2480	AV	2483.500	-45.37	≤-41.20	49.83	≤54	PASS
				AV	2493.280	-44.74	≤-41.20	50.46	≤54	PASS
				AV	2500.000	-45.86	≤-41.20	49.34	≤54	PASS
				Peak	2483.500	-37.82	≤-21.20	57.38	≤74	PASS
				Peak	2494.640	-35.49	≤-21.20	59.71	≤74	PASS
				Peak	2500.000	-39.51	≤-21.20	55.69	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-40.61	≤-21.20	54.59	≤74	PASS
				Peak	2352.605	-36.14	≤-21.20	59.06	≤74	PASS
				Peak	2390.000	-39.92	≤-21.20	55.28	≤74	PASS
		High	Hop_2480	Peak	2483.500	-37.36	≤-21.20	57.84	≤74	PASS
				Peak	2494.800	-35.7	≤-21.20	59.50	≤74	PASS
				Peak	2500.000	-39.24	≤-21.20	55.96	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-46.25	≤-41.20	48.95	≤54	PASS
				AV	2376.020	-44.69	≤-41.20	50.51	≤54	PASS
				AV	2390.000	-45.41	≤-41.20	49.79	≤54	PASS
				Peak	2310.000	-38.98	≤-21.20	56.22	≤74	PASS
				Peak	2317.955	-35.32	≤-21.20	59.88	≤74	PASS
				Peak	2390.000	-38.04	≤-21.20	57.16	≤74	PASS
		High	2480	AV	2483.500	-45.15	≤-41.20	50.05	≤54	PASS
				AV	2489.600	-44.76	≤-41.20	50.44	≤54	PASS
				AV	2500.000	-45.98	≤-41.20	49.22	≤54	PASS
				Peak	2483.500	-37.02	≤-21.20	58.18	≤74	PASS
				Peak	2493.520	-36.52	≤-21.20	58.68	≤74	PASS
				Peak	2500.000	-37.31	≤-21.20	57.89	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-37.66	≤-21.20	57.54	≤74	PASS
				Peak	2333.705	-35.7	≤-21.20	59.50	≤74	PASS
				Peak	2390.000	-38.72	≤-21.20	56.48	≤74	PASS
		High	Hop_2480	Peak	2483.500	-38.48	≤-21.20	56.72	≤74	PASS
				Peak	2499.920	-36.06	≤-21.20	59.14	≤74	PASS



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Scan code to check authenticity



3DH5	Ant1	Low	2402	Peak	2500.000	-38.99	≤-21.20	56.21	≤74	PASS
				AV	2310.000	-45.57	≤-41.20	49.63	≤54	PASS
				AV	2385.995	-44.78	≤-41.20	50.42	≤54	PASS
				AV	2390.000	-45.34	≤-41.20	49.86	≤54	PASS
				Peak	2310.000	-37.68	≤-21.20	57.52	≤74	PASS
				Peak	2326.460	-35.75	≤-21.20	59.45	≤74	PASS
		High	2480	AV	2483.500	-44.96	≤-41.20	50.24	≤54	PASS
				AV	2492.000	-44.65	≤-41.20	50.55	≤54	PASS
				AV	2500.000	-46.08	≤-41.20	49.12	≤54	PASS
				Peak	2483.500	-38.88	≤-21.20	56.32	≤74	PASS
				Peak	2484.480	-35.78	≤-21.20	59.42	≤74	PASS
				Peak	2500.000	-38.09	≤-21.20	57.11	≤74	PASS
		Low	Hop_240 2	Peak	2310.000	-40.01	≤-21.20	55.19	≤74	PASS
				Peak	2334.965	-35.45	≤-21.20	59.75	≤74	PASS
				Peak	2390.000	-39.09	≤-21.20	56.11	≤74	PASS
		High	Hop_248 0	Peak	2483.500	-36.75	≤-21.20	58.45	≤74	PASS
				Peak	2490.480	-35.44	≤-21.20	59.76	≤74	PASS
				Peak	2500.000	-36.88	≤-21.20	58.32	≤74	PASS

Note:

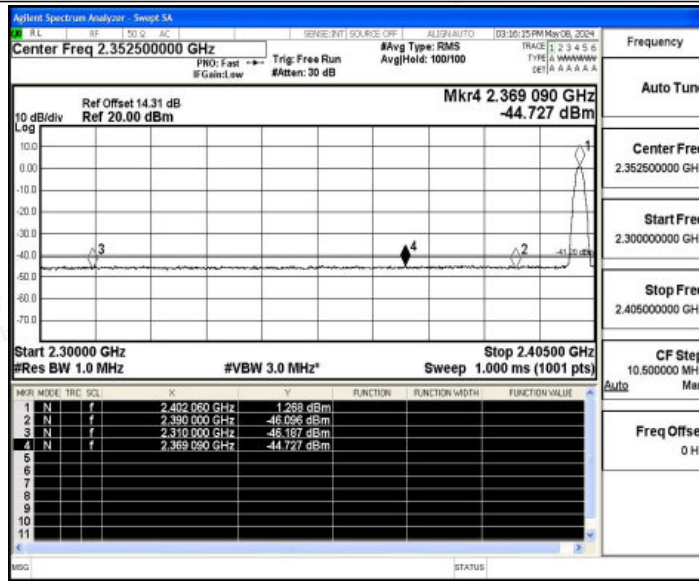
1. The Antenna Gain is compensated in the graph. The Correction Factor is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



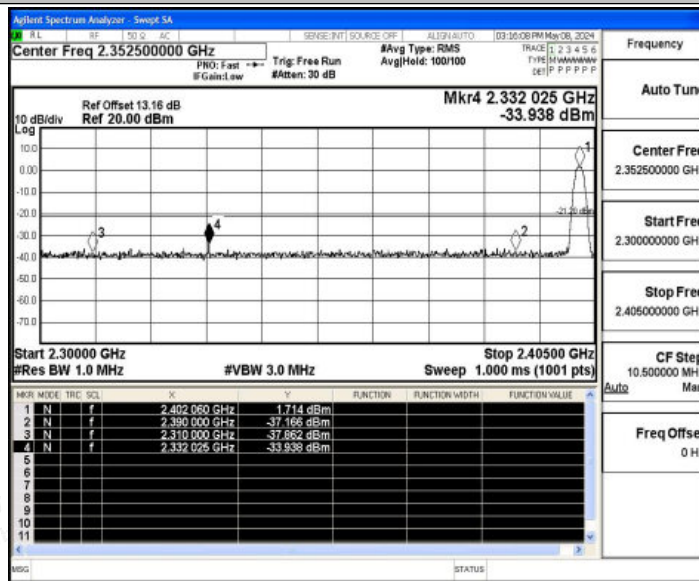


Test Graphs

DH5_Ant1_Low_2402_AV

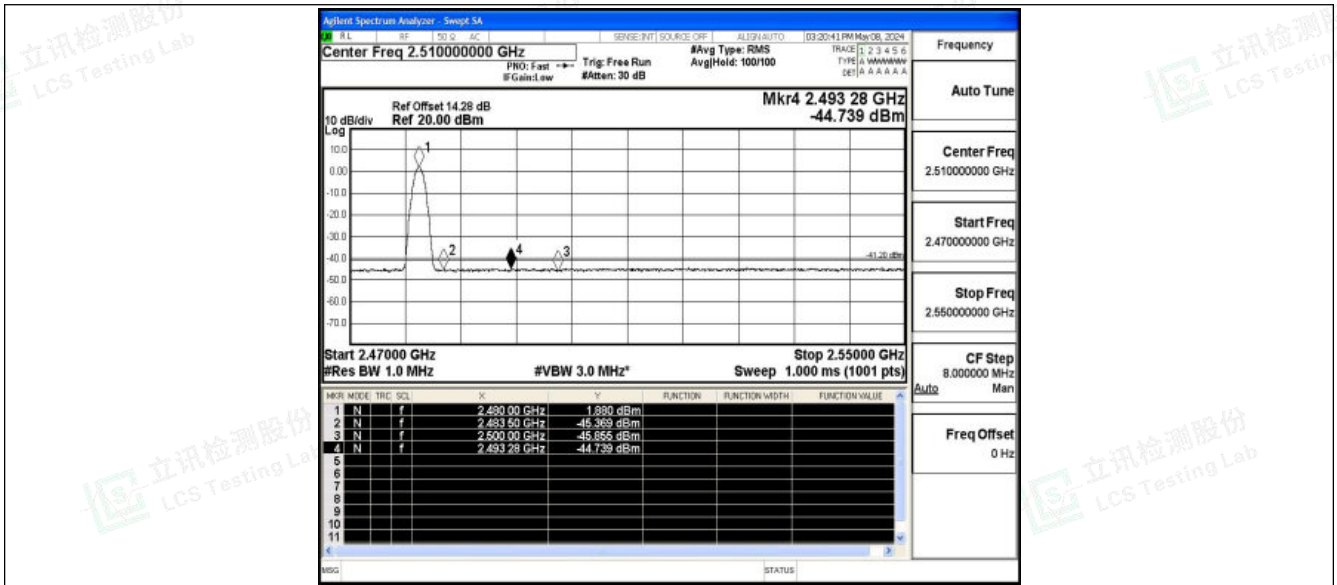


DH5_Ant1_Low_2402_Peak

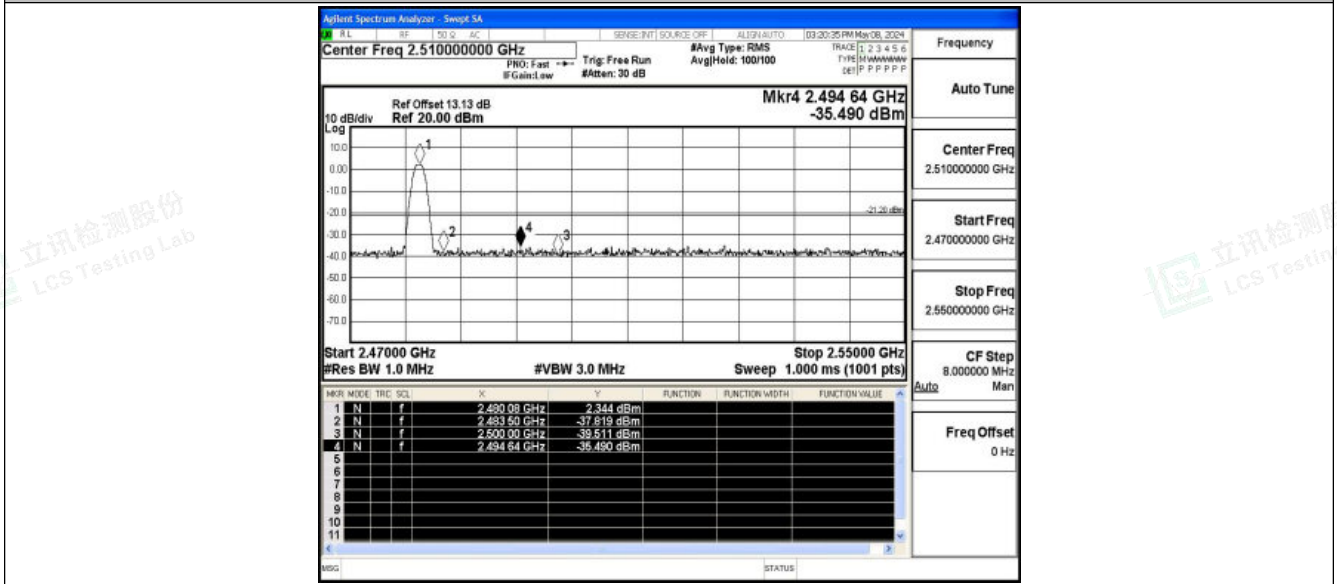


DH5_Ant1_High_2480_AV



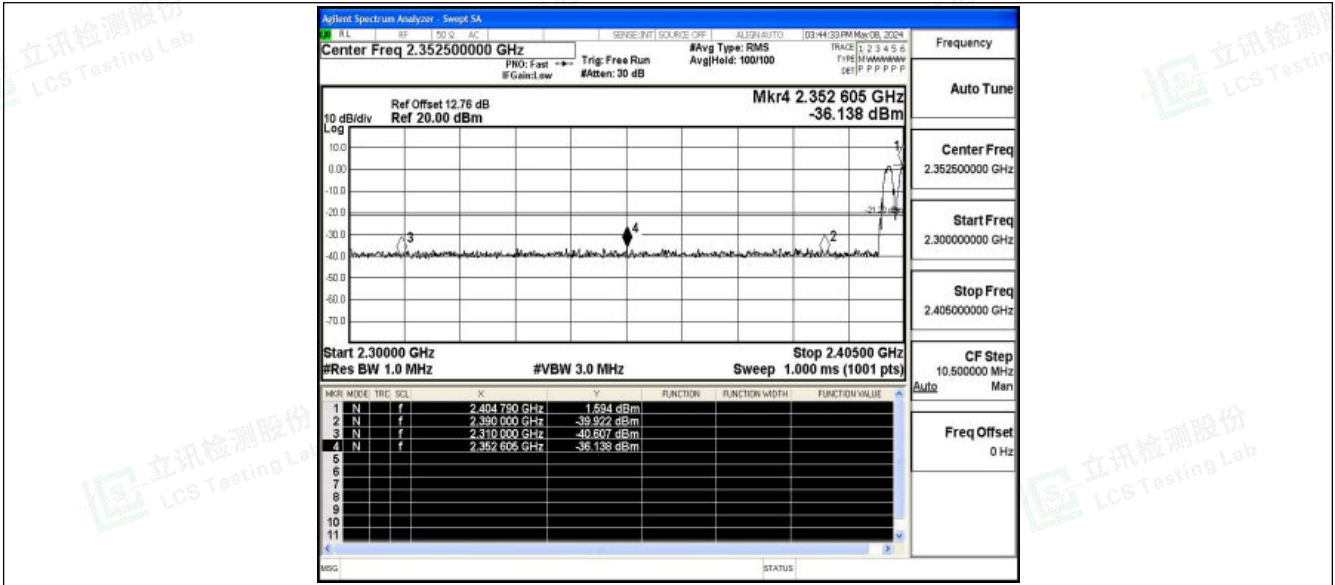


DH5_Ant1_High_2480_Peak

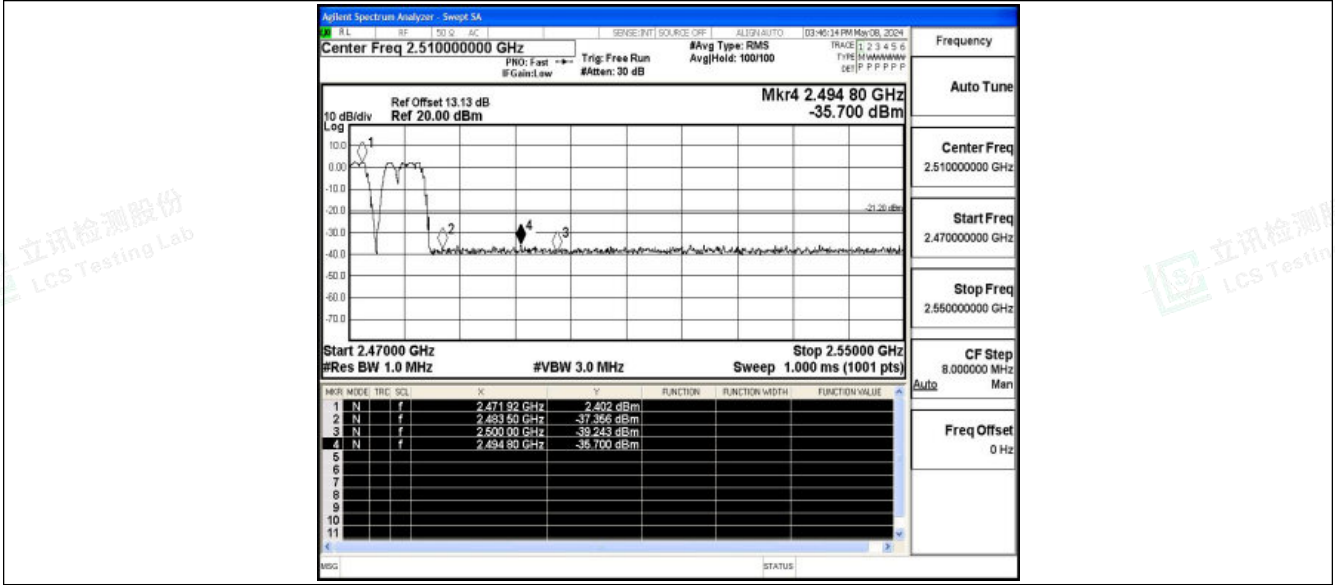


DH5_Ant1_Low_Hop_2402_Peak



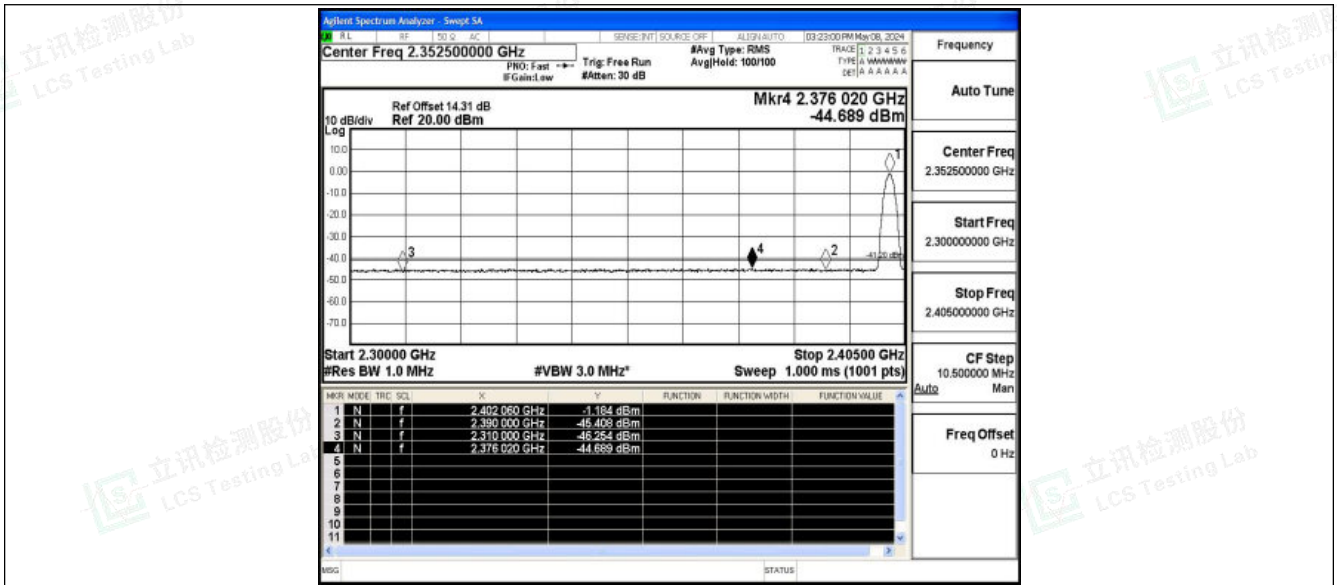


DH5_Ant1_High_Hop_2480_Peak

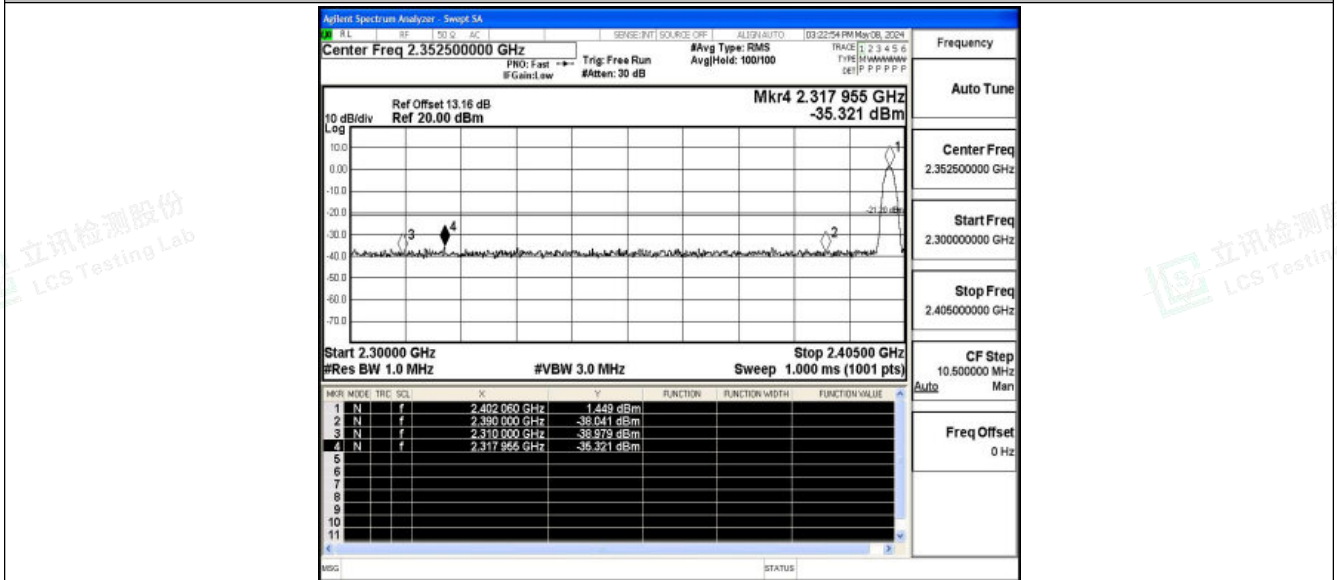


2DH5_Ant1_Low_2402_AV



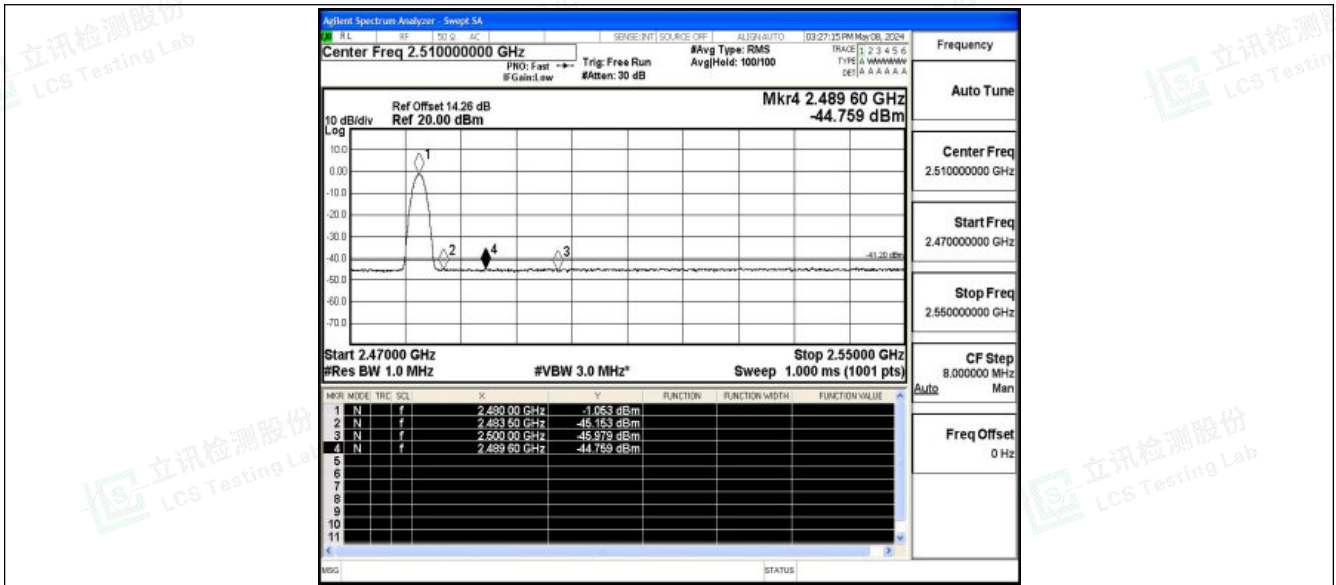


2DH5_Ant1_Low_2402_Peak

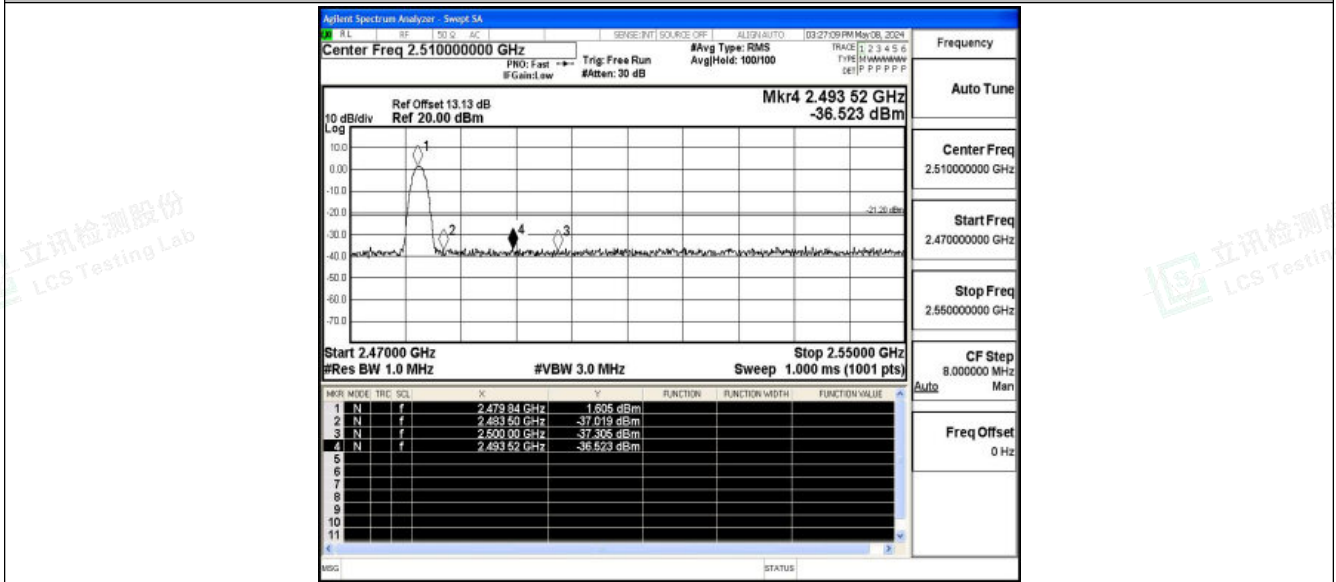


2DH5_Ant1_High_2480_AV



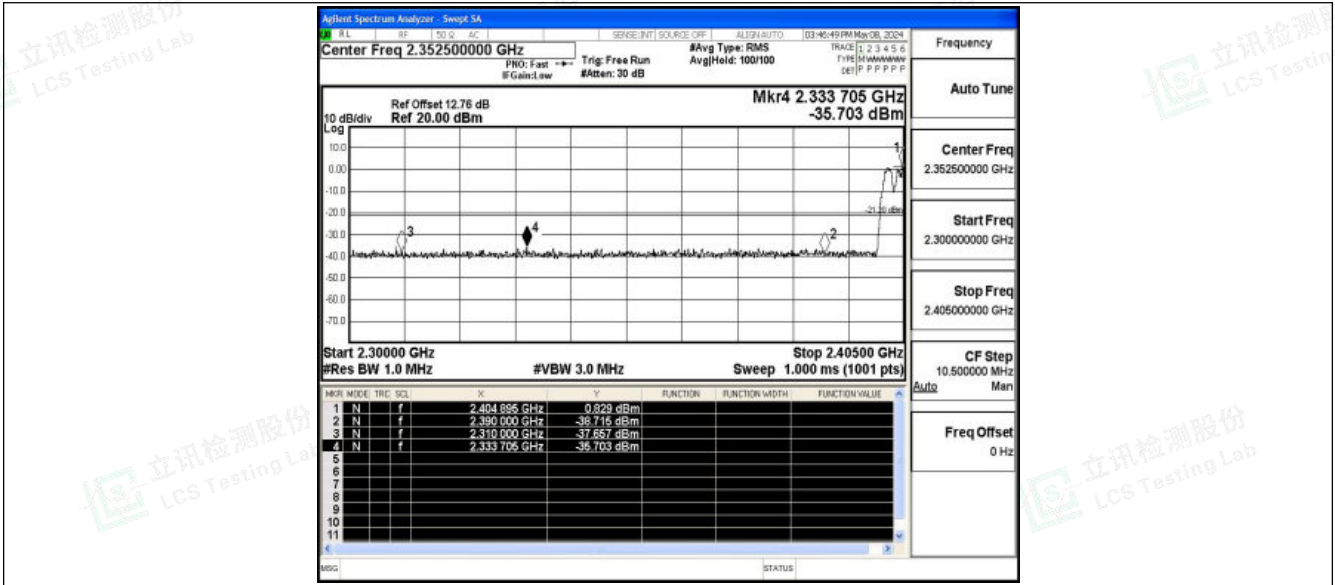


2DH5_Ant1_High_2480_Peak

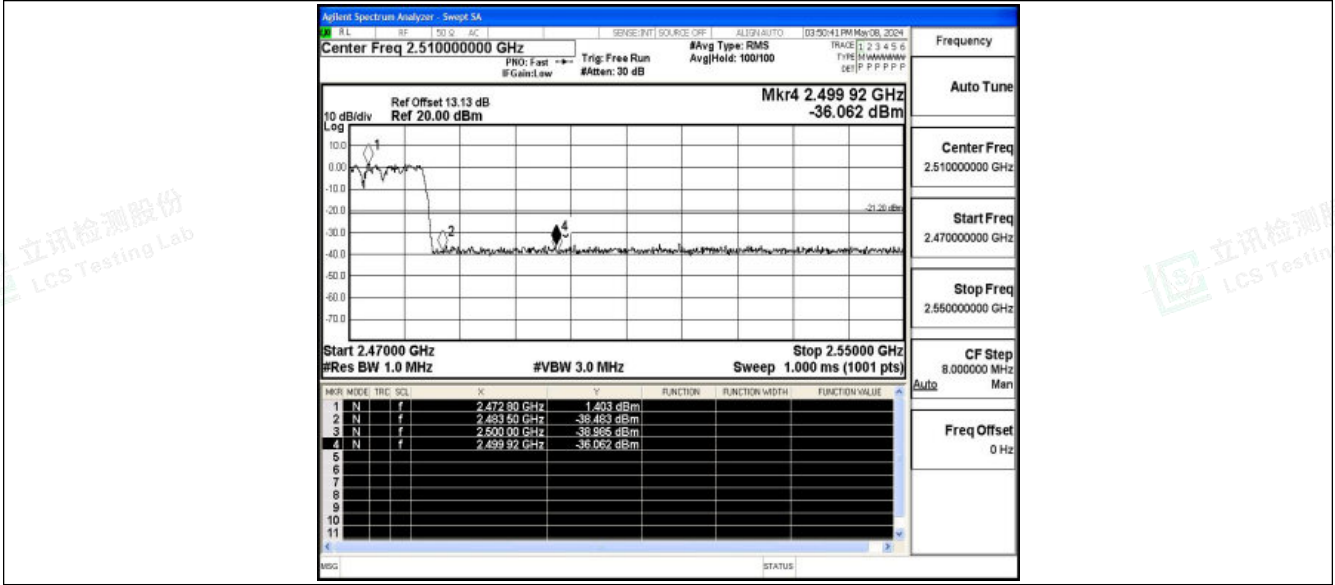


2DH5_Ant1_Low_Hop_2402_Peak



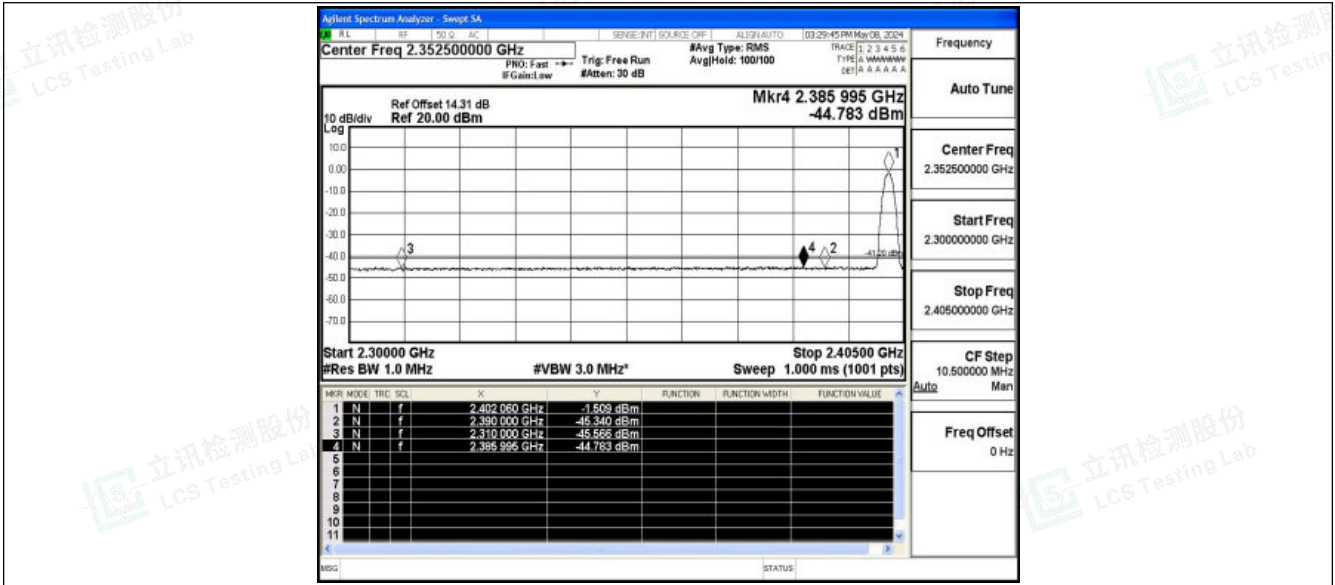


2DH5_Ant1_High_Hop_2480_Peak

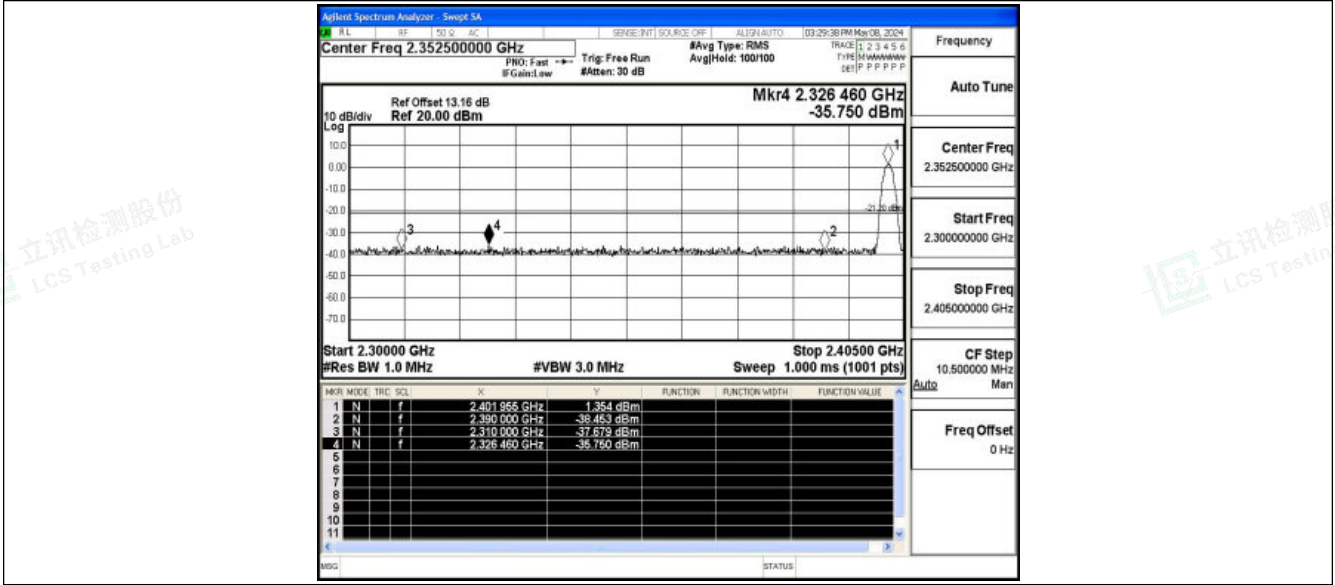


3DH5_Ant1_Low_2402_AV



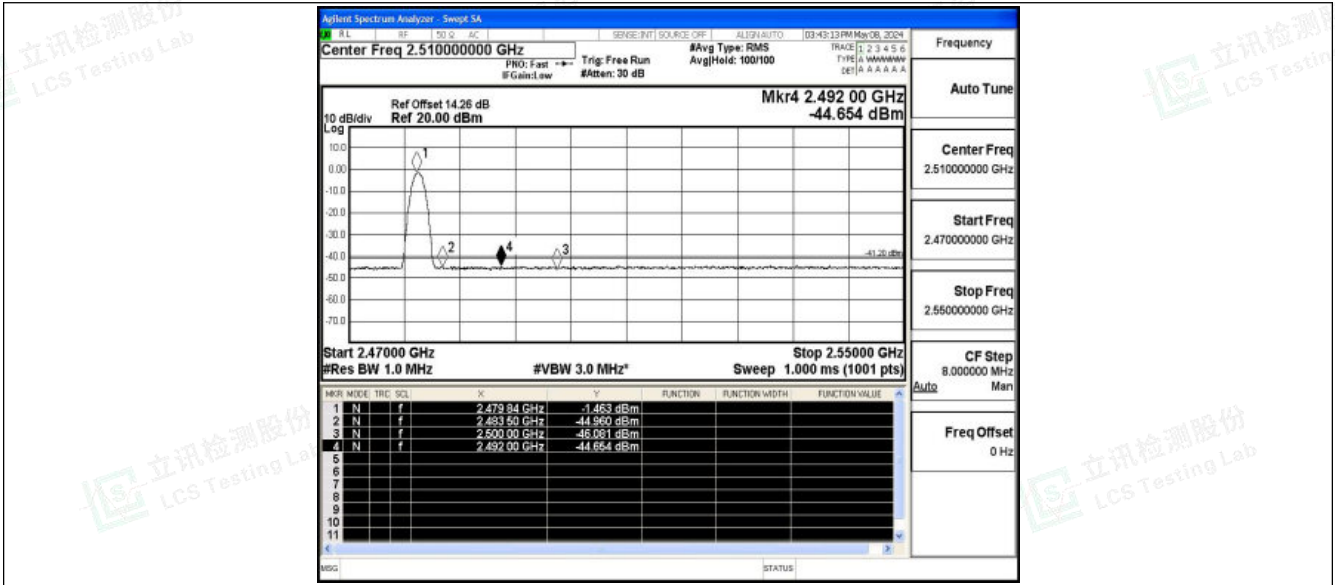


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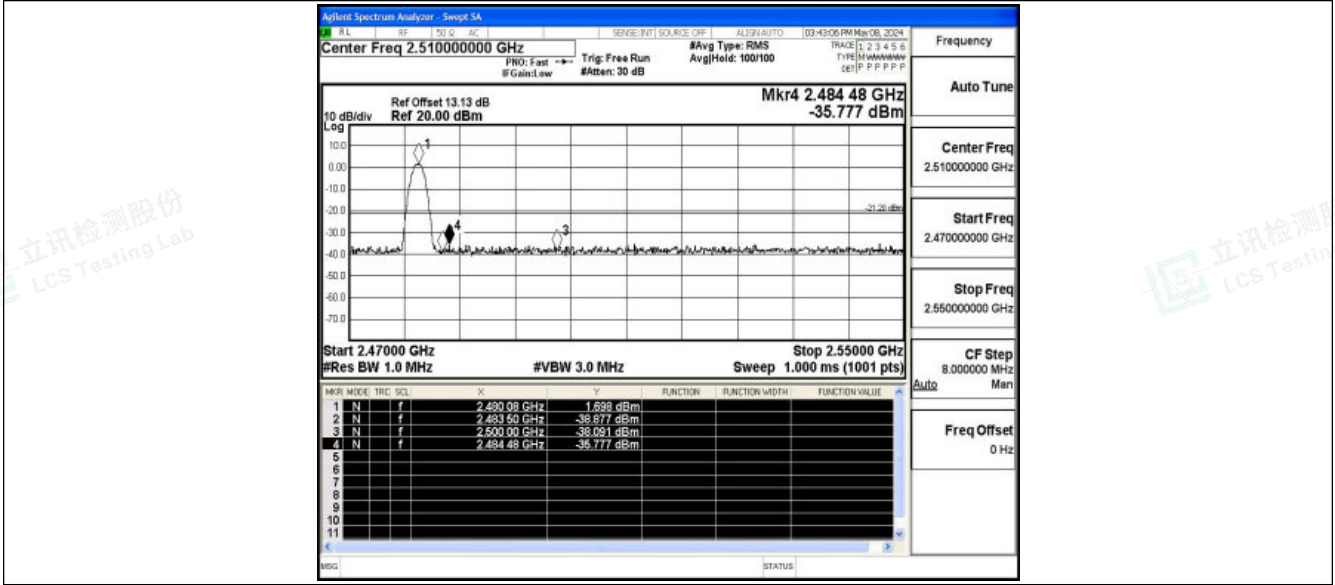


3DH5_Ant1_High_2480_AV



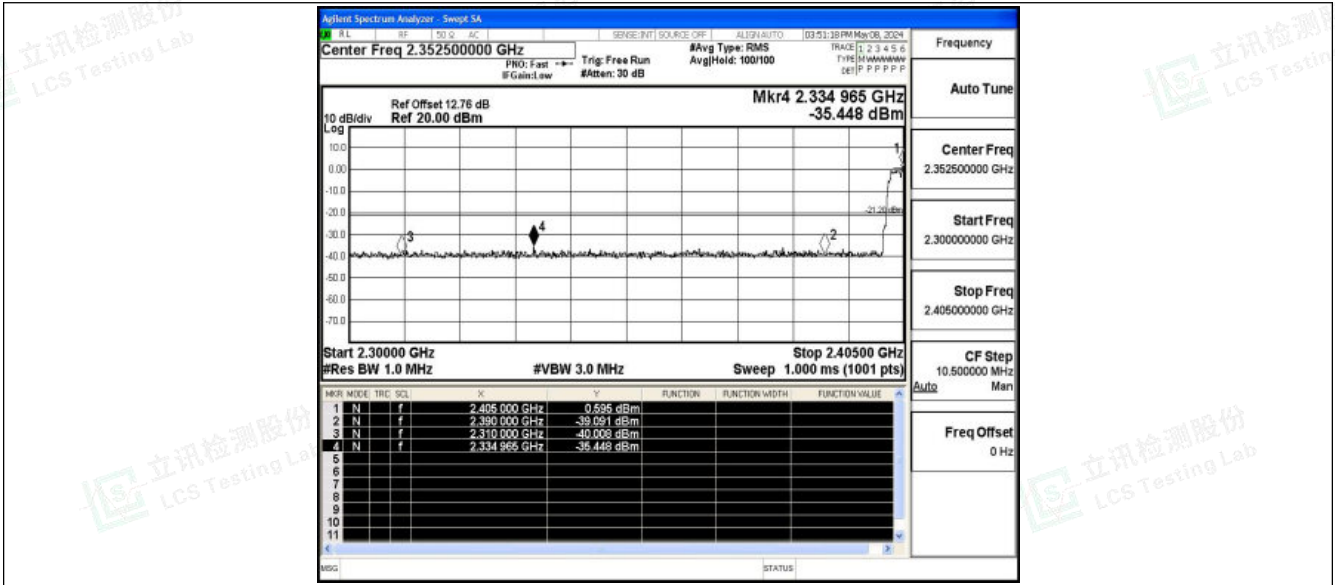


3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak





3DH5_Ant1_High_Hop_2480_Peak

