



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: SWITCH Bluetooth Controller

Test Model: SZ-932B

Environmental Conditions

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



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A.1 20dB Emission Bandwidth

Test Result

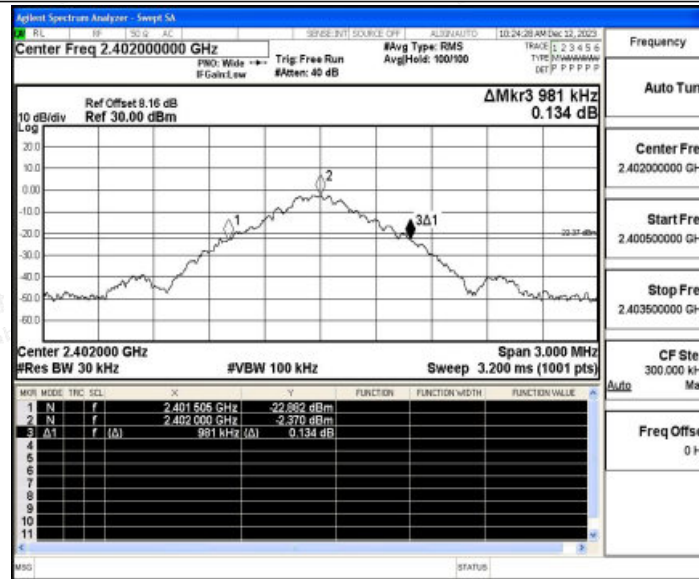
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Verdict
DH5	Ant1	2402	0.981	2401.505	2402.486	---
		2441	0.972	2440.514	2441.486	---
		2480	1.029	2479.460	2480.489	---
2DH5	Ant1	2402	1.326	2401.325	2402.651	---
		2441	1.284	2440.352	2441.636	---
		2480	1.338	2479.319	2480.657	---
3DH5	Ant1	2402	1.305	2401.337	2402.642	---
		2441	1.296	2440.337	2441.633	---
		2480	1.305	2479.337	2480.642	---



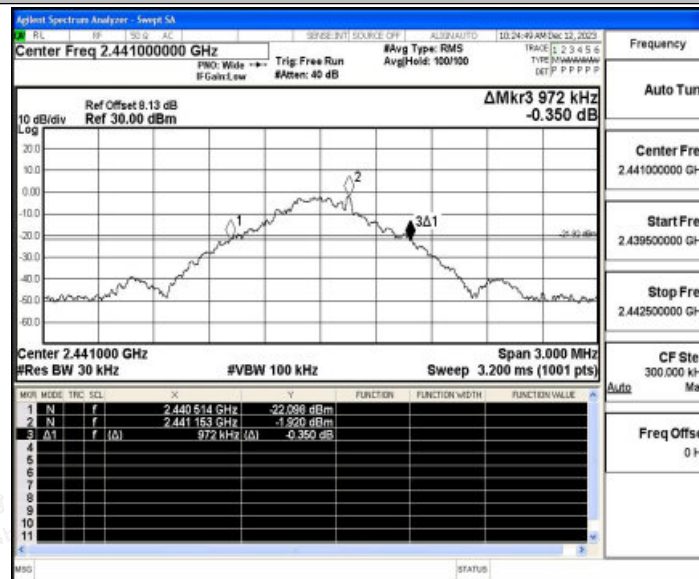


Test Graphs

DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480

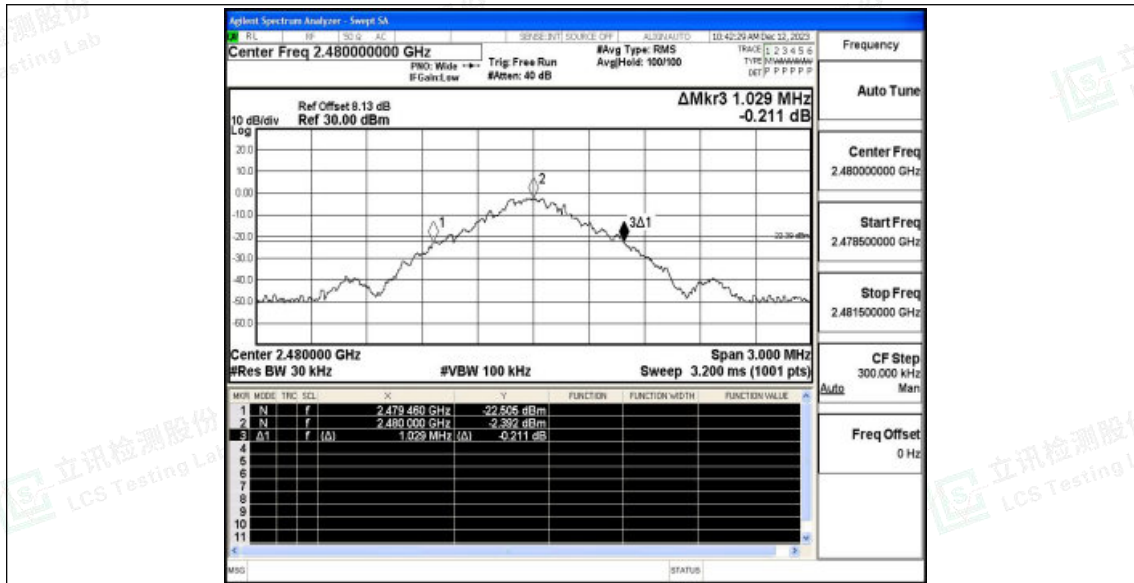


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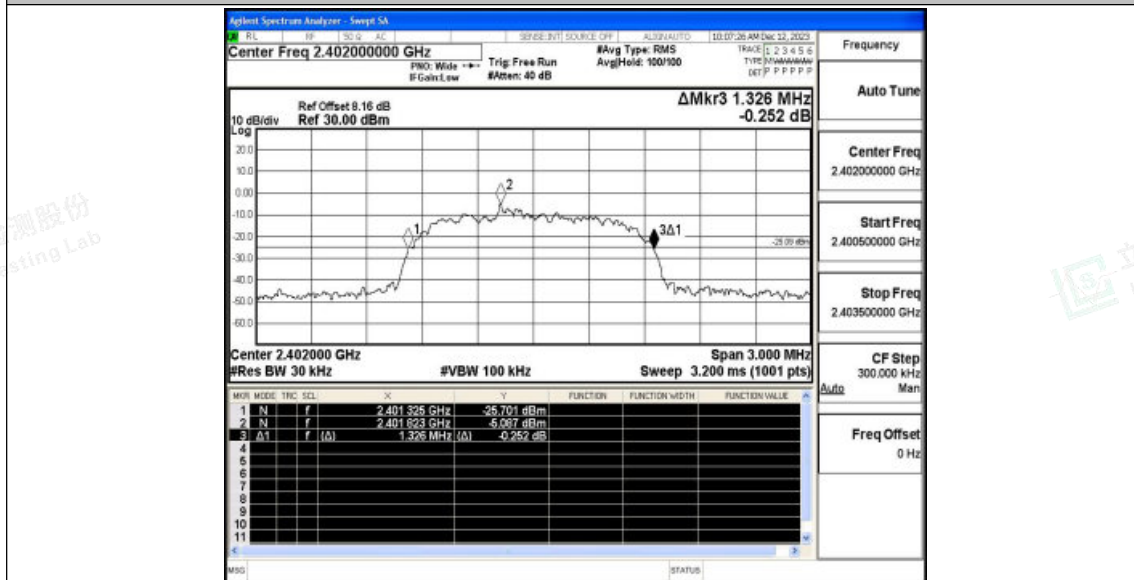
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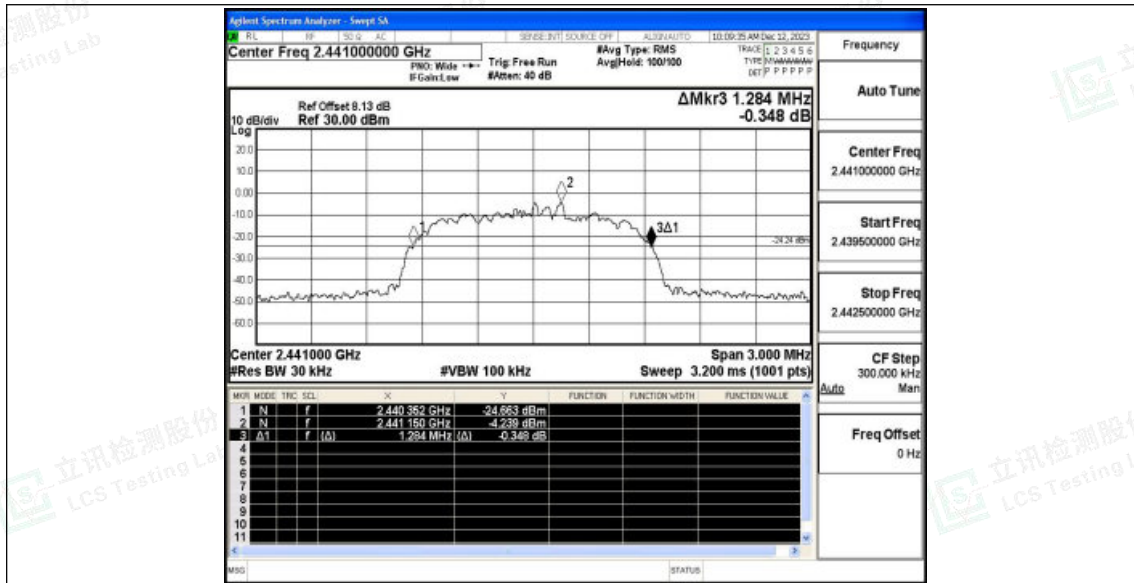


2DH5_Ant1_2402

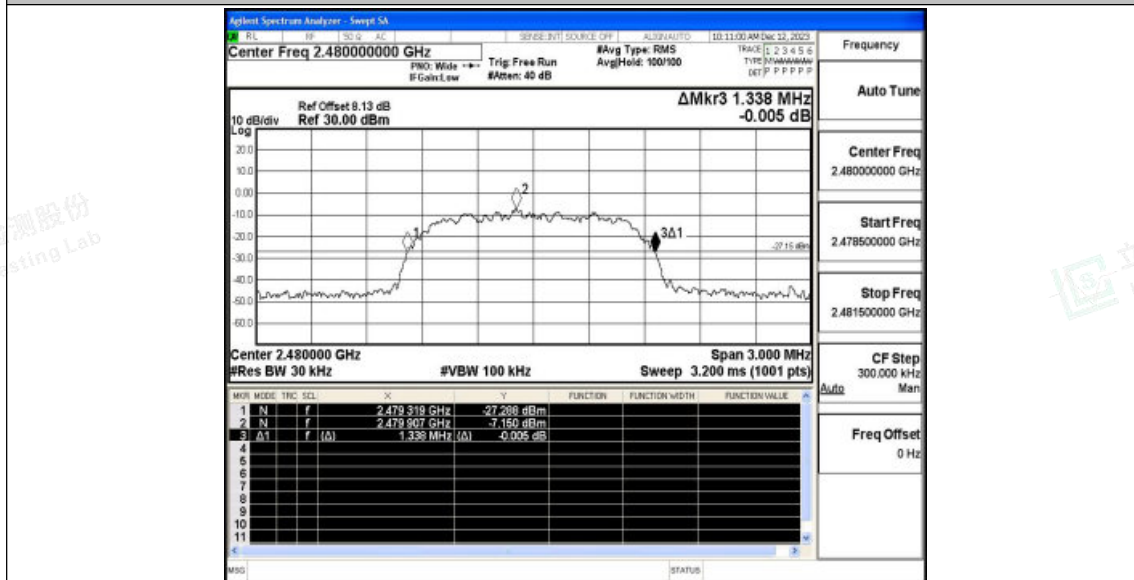


2DH5_Ant1_2441





2DH5_Ant1_2480



3DH5_Ant1_2402

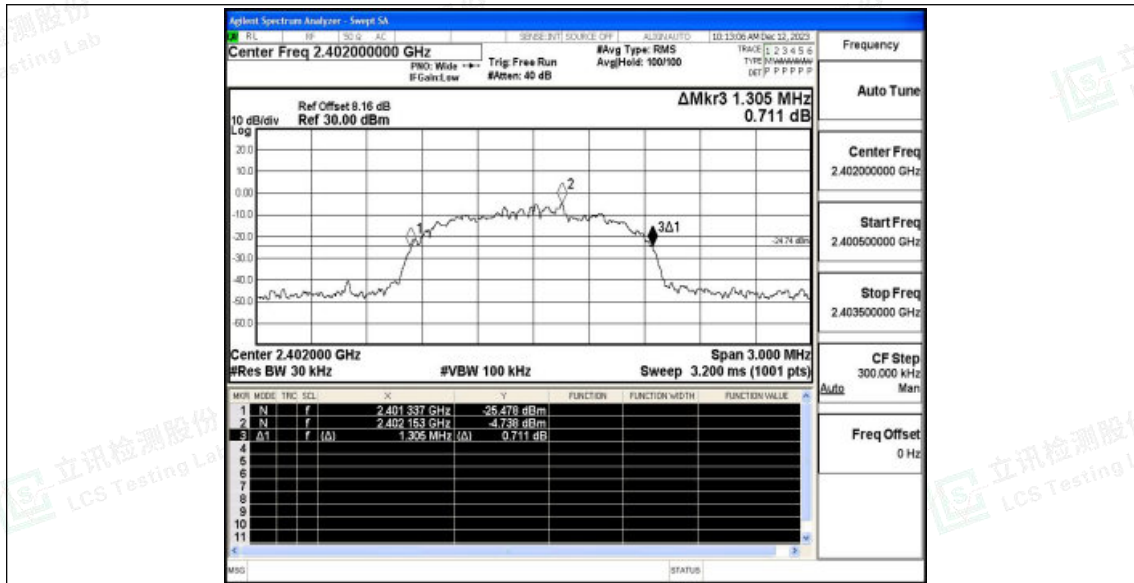


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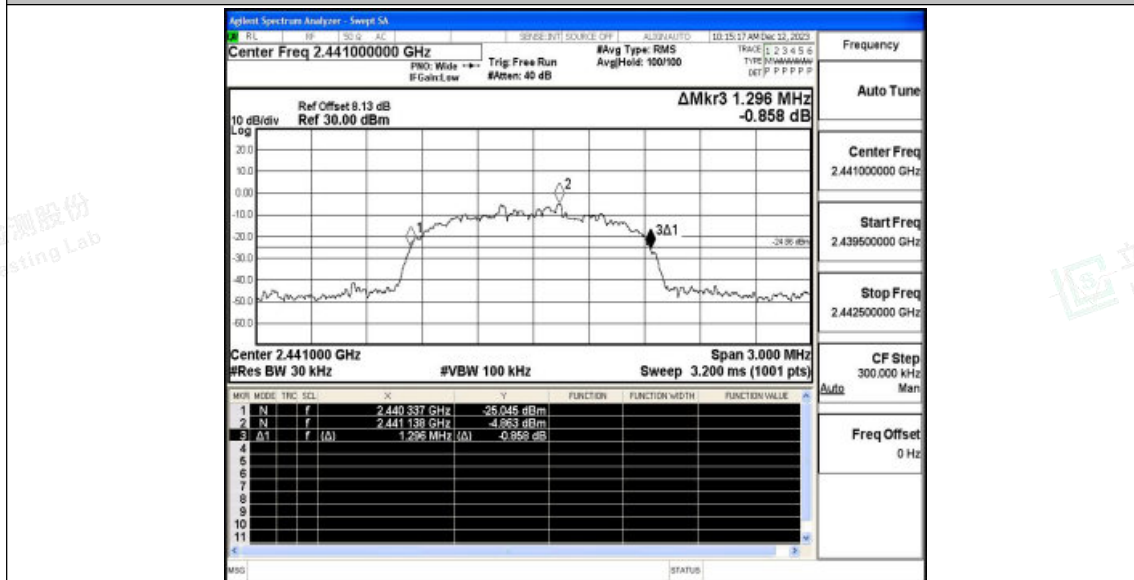
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3DH5_Ant1_2441



3DH5_Ant1_2480

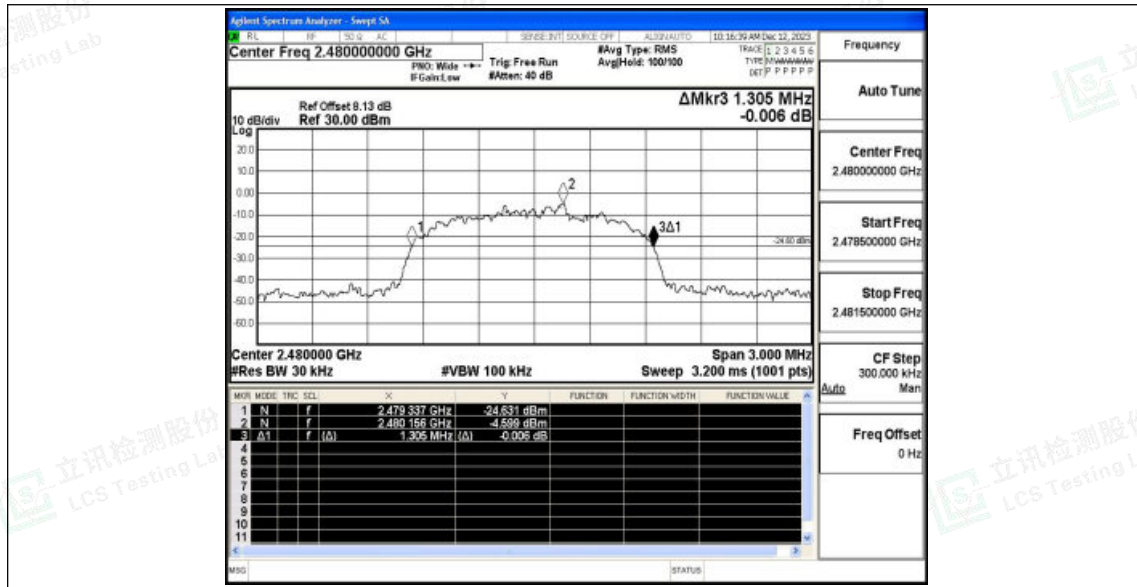


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Scan code to check authenticity





A.2 Maximum peak conducted output power

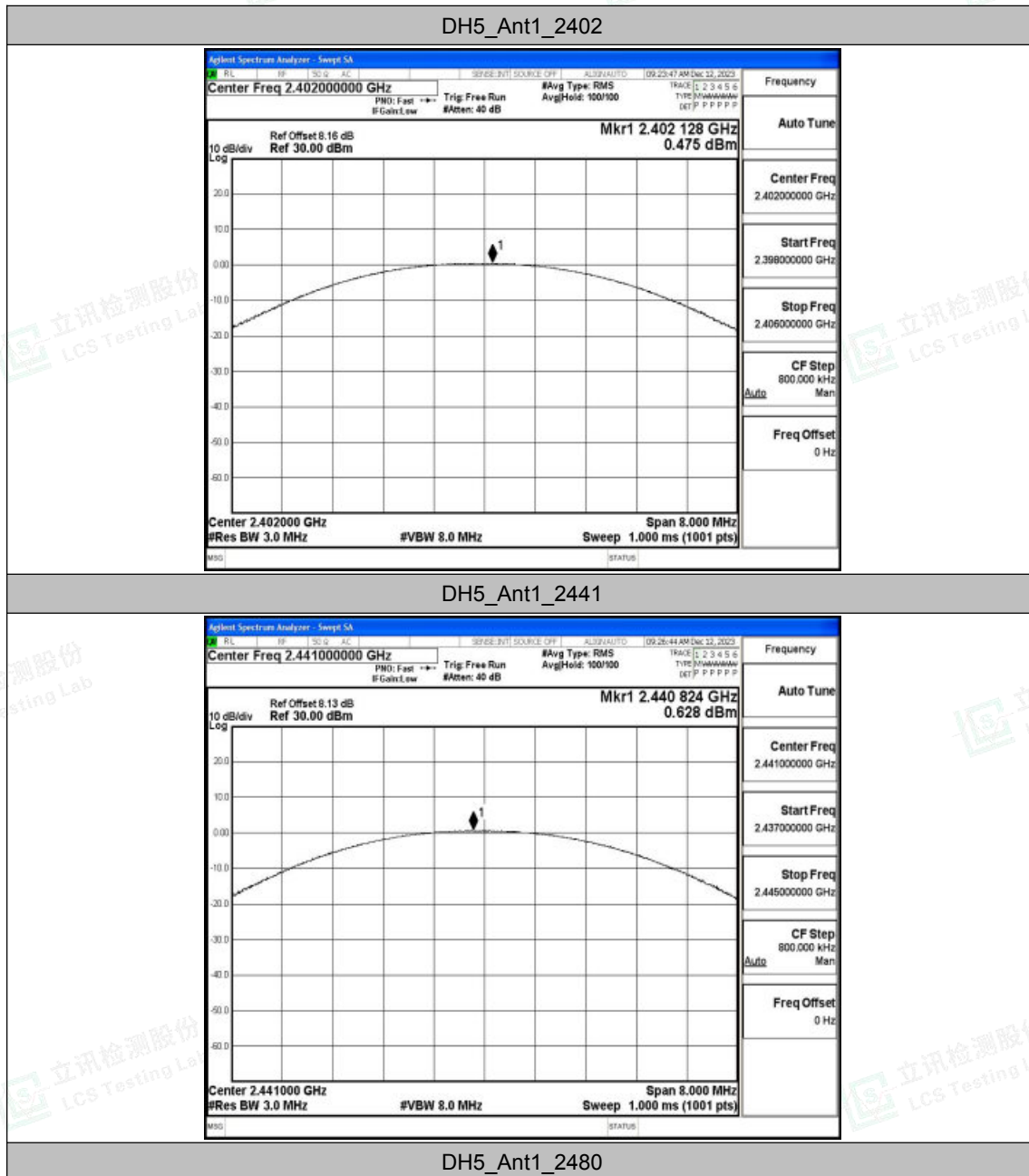
Test Result

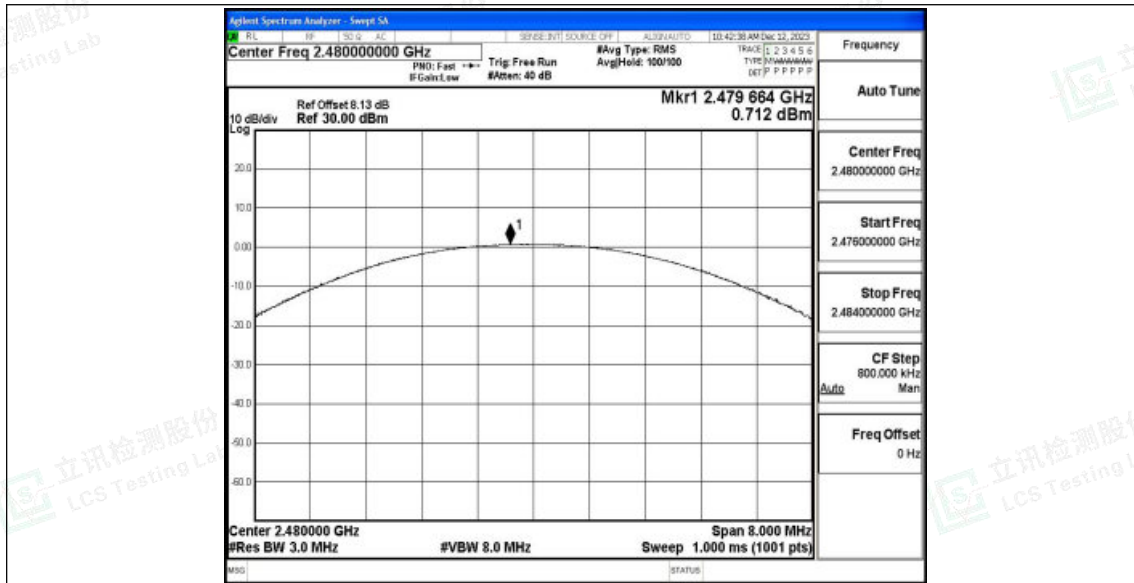
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	0.48	≤20.97	PASS
		2441	0.63	≤20.97	PASS
		2480	0.71	≤20.97	PASS
2DH5	Ant1	2402	0.13	≤20.97	PASS
		2441	0.39	≤20.97	PASS
		2480	0.51	≤20.97	PASS
3DH5	Ant1	2402	0.43	≤20.97	PASS
		2441	0.54	≤20.97	PASS
		2480	0.7	≤20.97	PASS



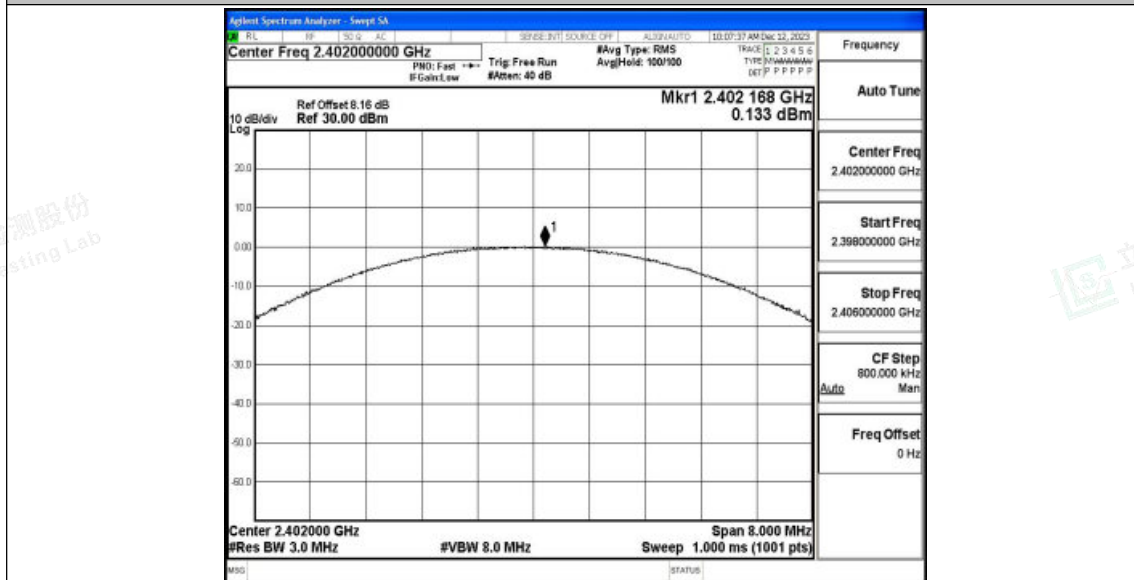


Test Graphs



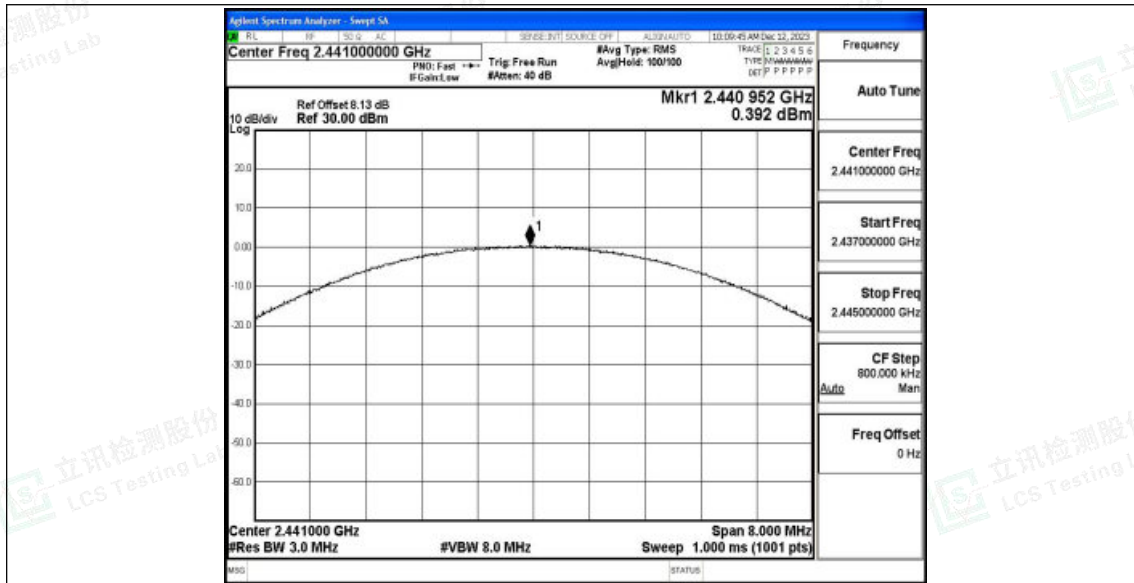


2DH5_Ant1_2402

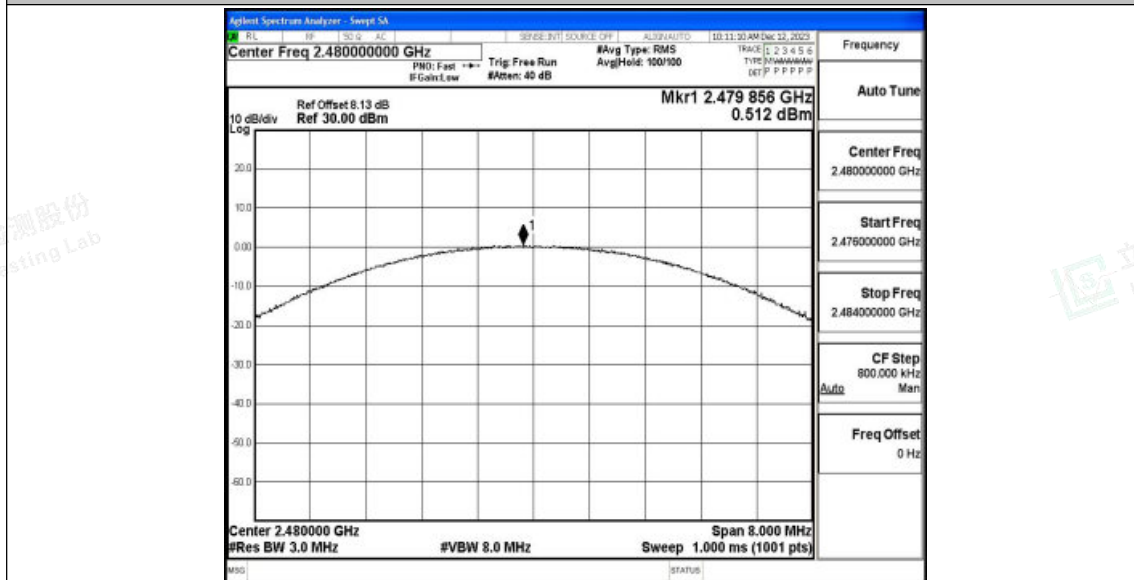


2DH5_Ant1_2441



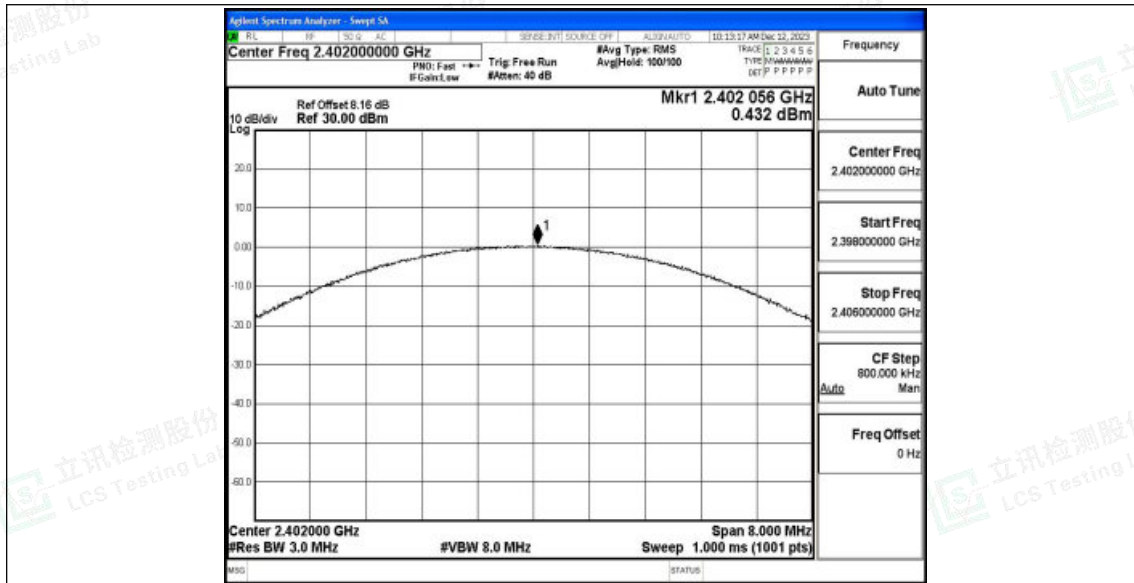


2DH5_Ant1_2480

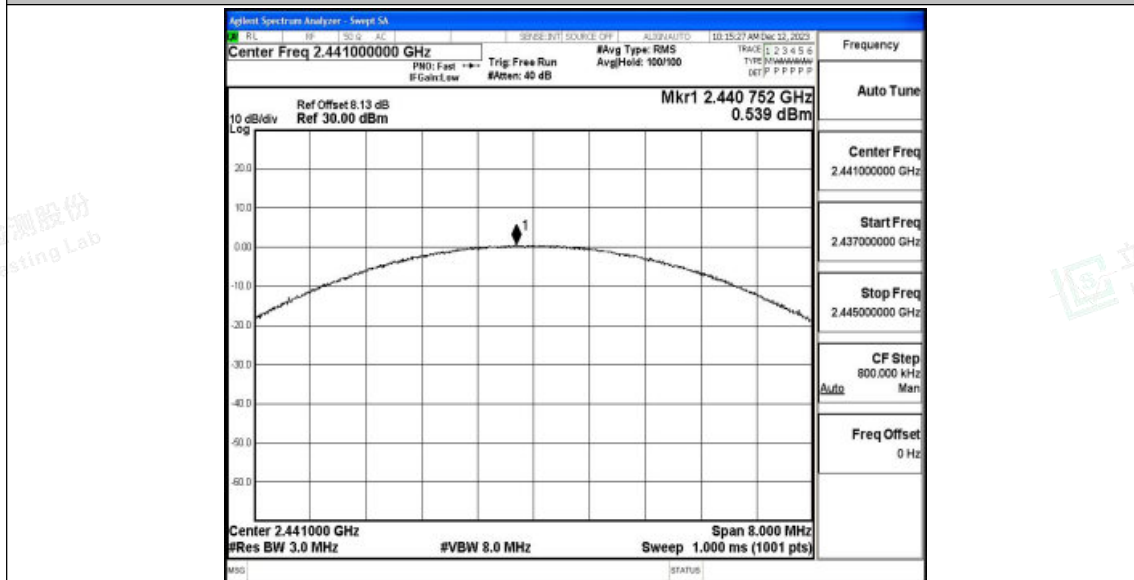


3DH5_Ant1_2402



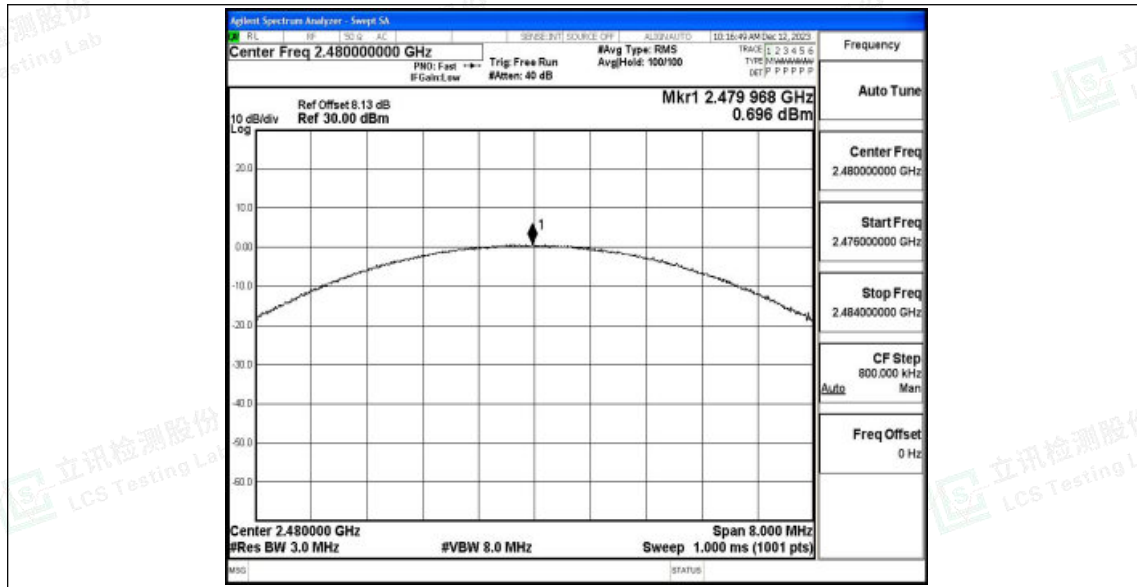


3DH5_Ant1_2441



3DH5_Ant1_2480







A.3 Carrier frequency separation

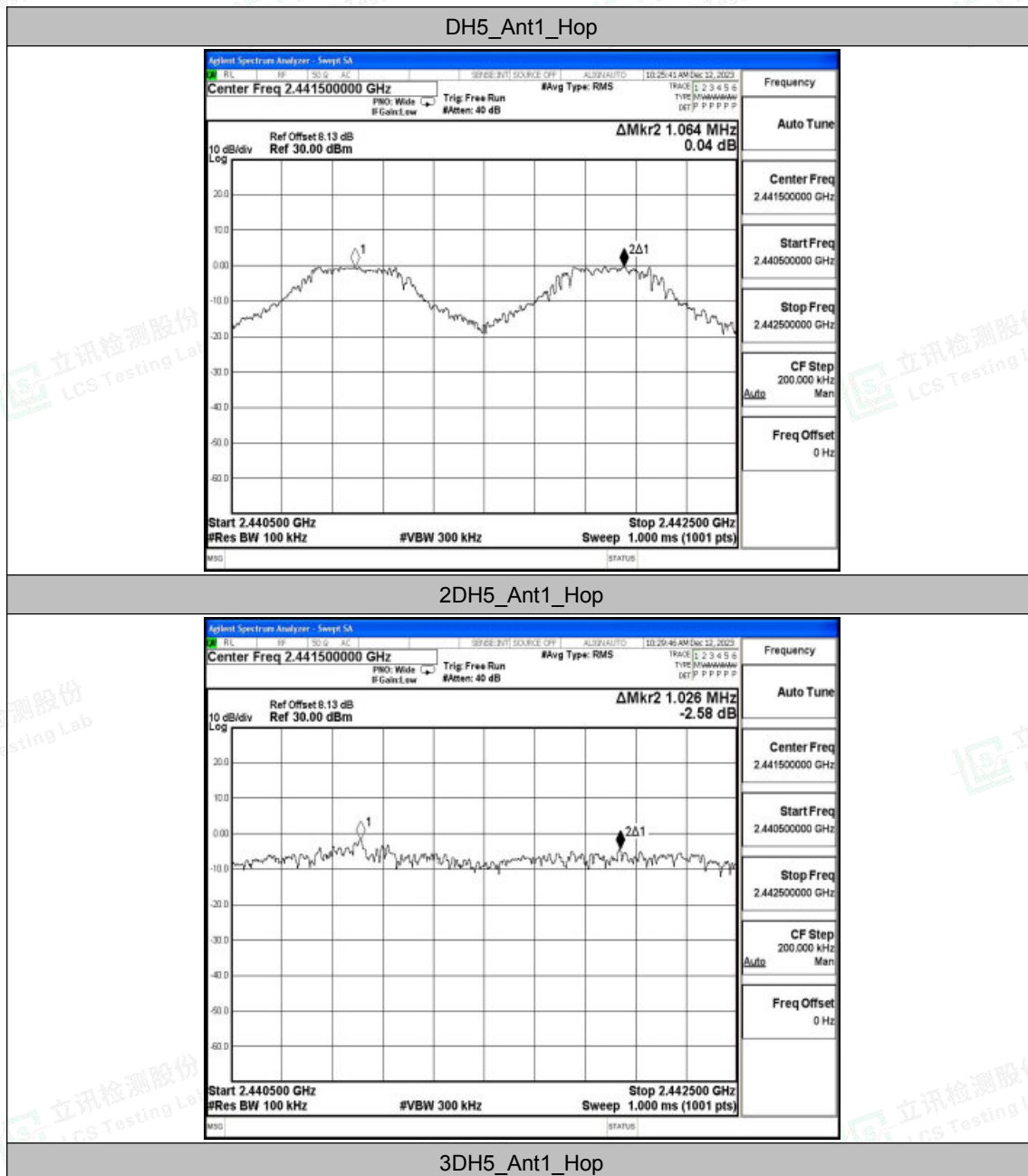
Test Result

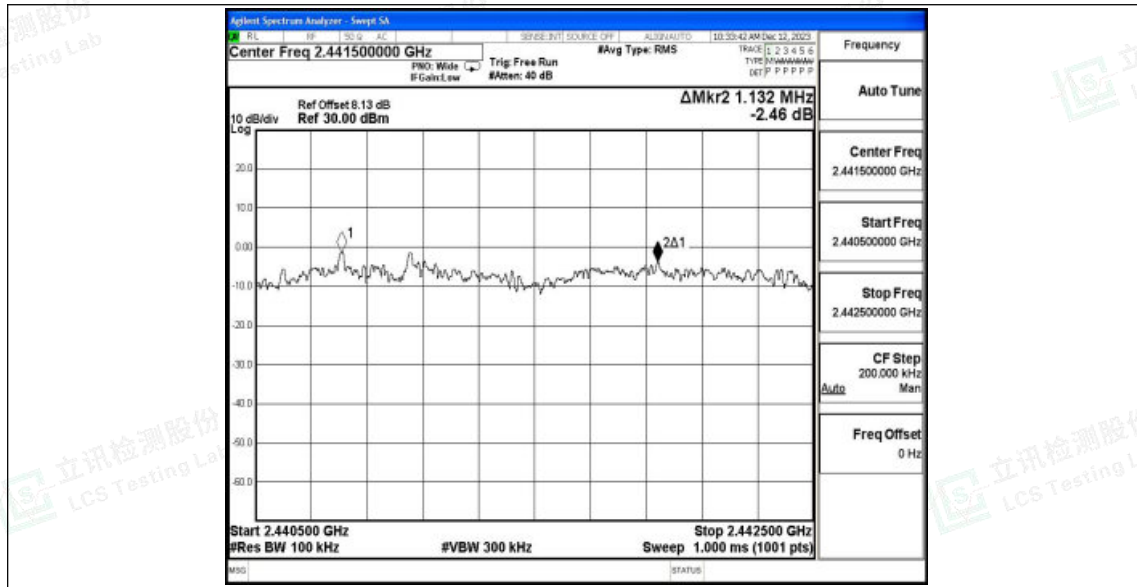
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.064	≥ 1.014	PASS
2DH5	Ant1	Hop	1.026	≥ 0.892	PASS
3DH5	Ant1	Hop	1.132	≥ 0.870	PASS





Test Graphs







A.4 Time of occupancy

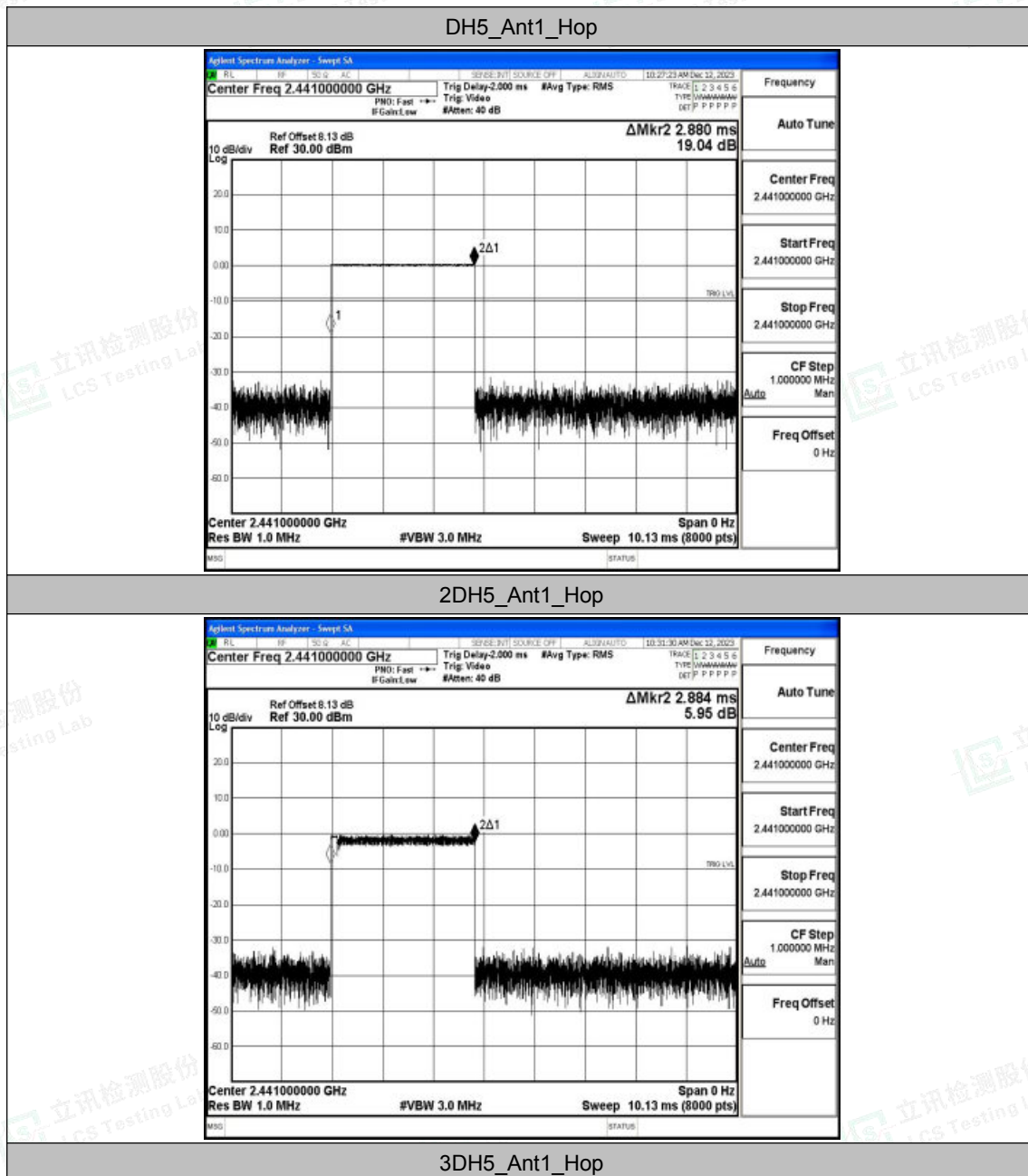
Test Result

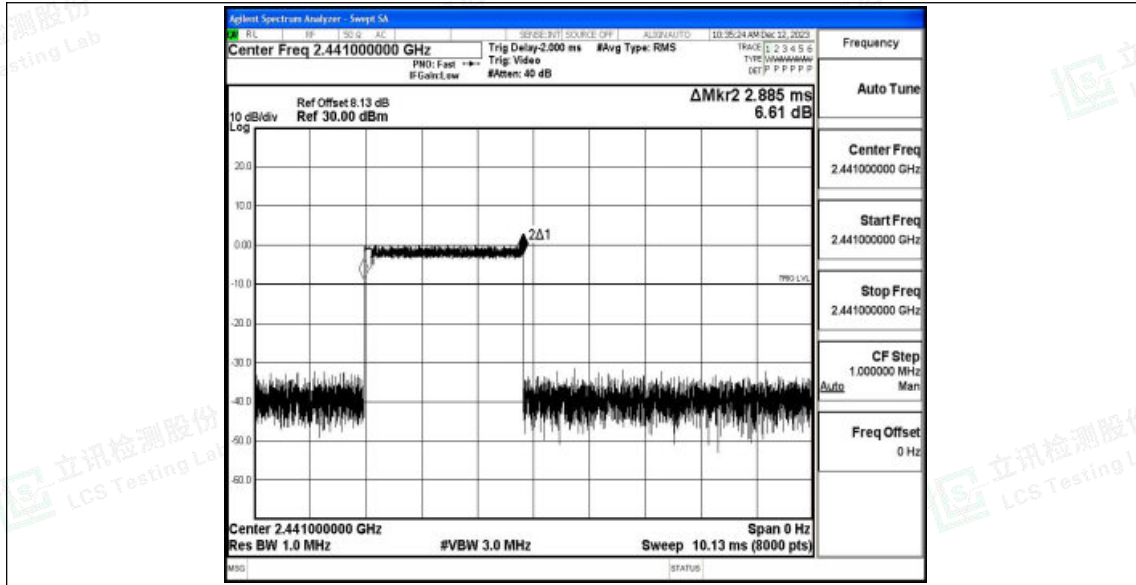
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.880	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.884	106.67	0.308	≤0.4	PASS
3DH5	Ant1	Hop	2.885	106.67	0.308	≤0.4	PASS





Test Graphs







A.5 Number of hopping channels

Test Result

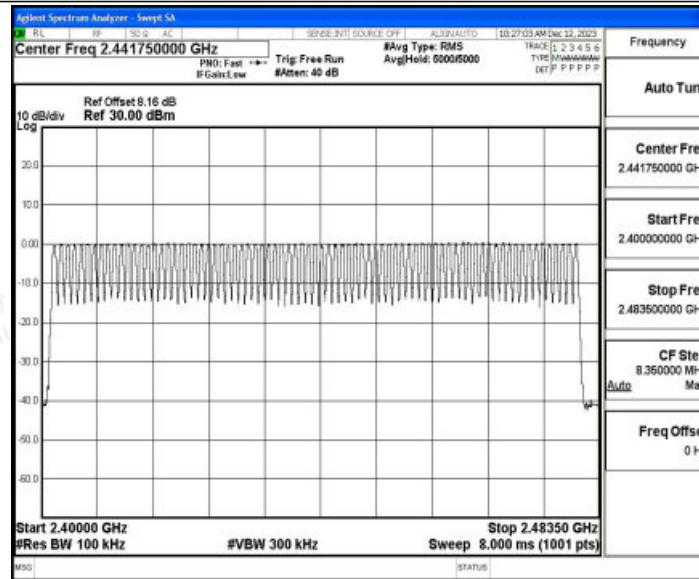
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS



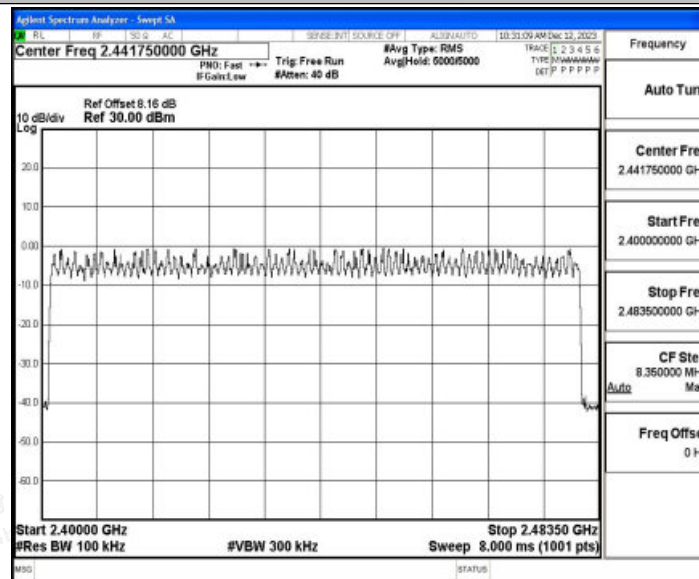


Test Graphs

DH5_Ant1_Hop

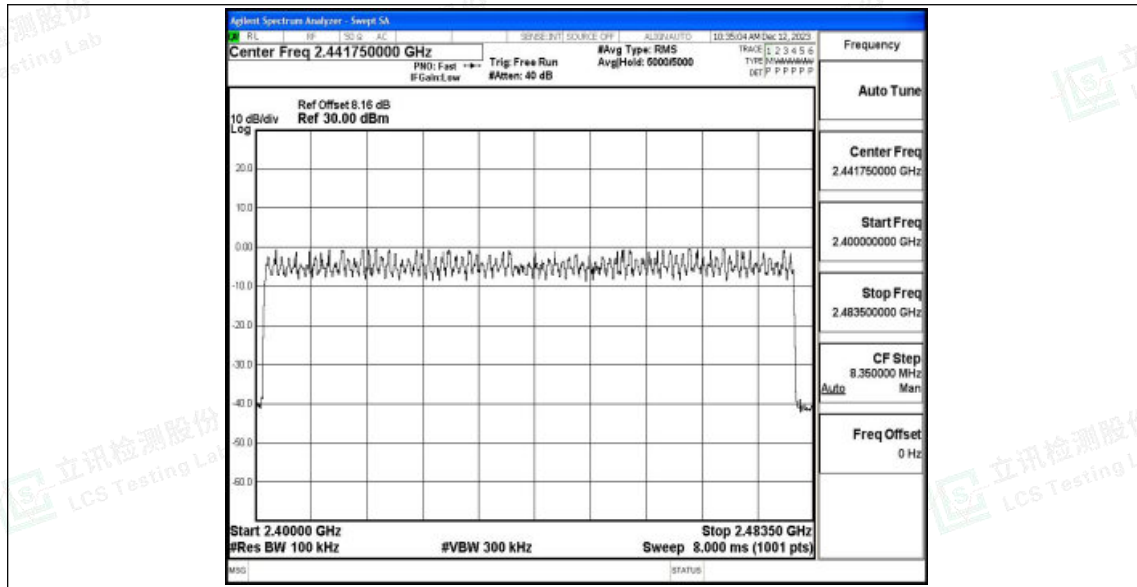


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.6 Band edge measurements

Test Result

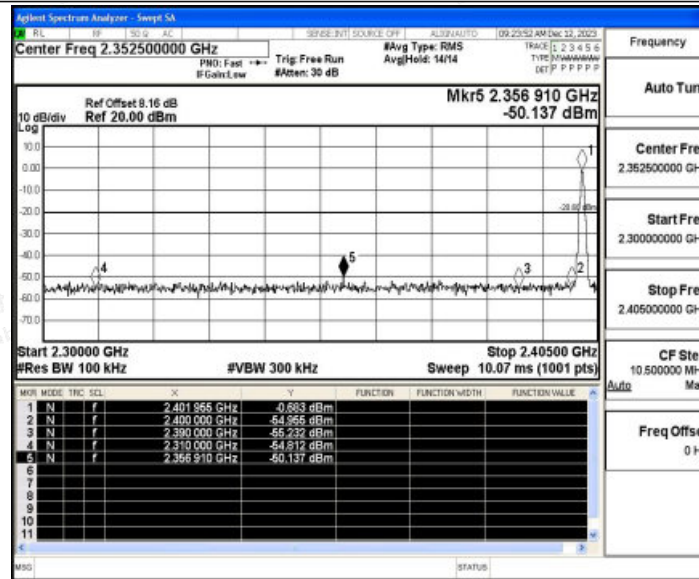
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.68	-50.14	≤-20.68	PASS
		High	2480	-0.05	-50.27	≤-20.05	PASS
		Low	Hop_2402	-0.77	-49.72	≤-20.77	PASS
		High	Hop_2480	0.01	-49.11	≤-19.99	PASS
2DH5	Ant1	Low	2402	-4.22	-50.74	≤-24.22	PASS
		High	2480	-3.49	-49.19	≤-23.49	PASS
		Low	Hop_2402	-3.72	-50.11	≤-23.72	PASS
		High	Hop_2480	-1.37	-49.29	≤-21.37	PASS
3DH5	Ant1	Low	2402	-4.60	-50.61	≤-24.6	PASS
		High	2480	-3.66	-50.62	≤-23.66	PASS
		Low	Hop_2402	-1.41	-49.81	≤-21.41	PASS
		High	Hop_2480	-2.87	-49.06	≤-22.87	PASS



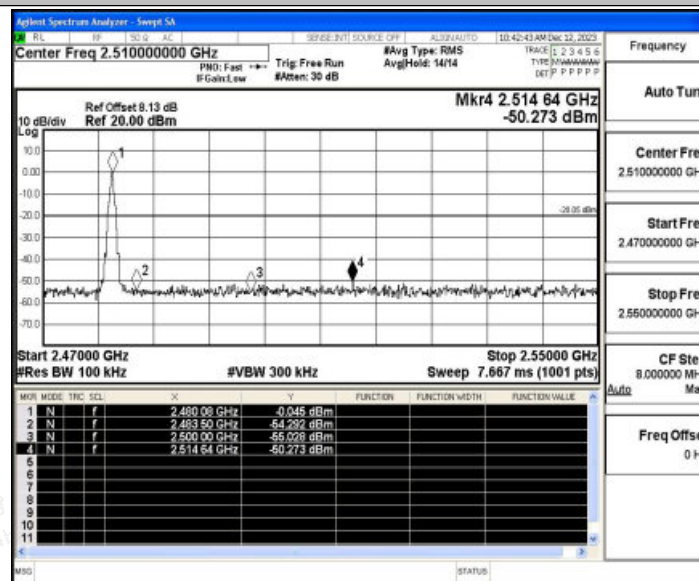


Test Graphs

DH5_Ant1_Low_2402

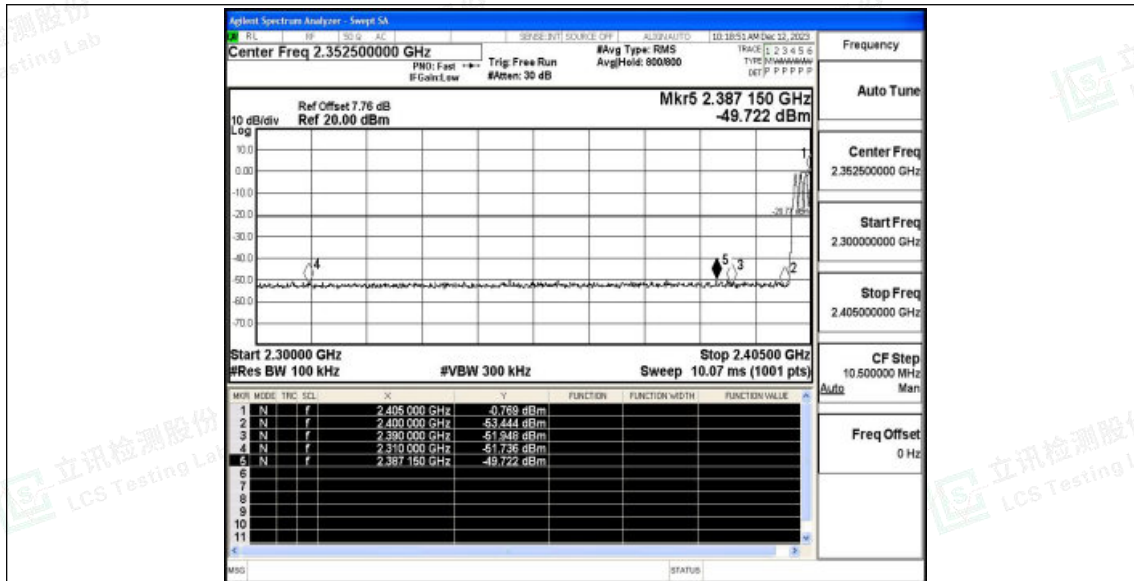


DH5_Ant1_High_2480

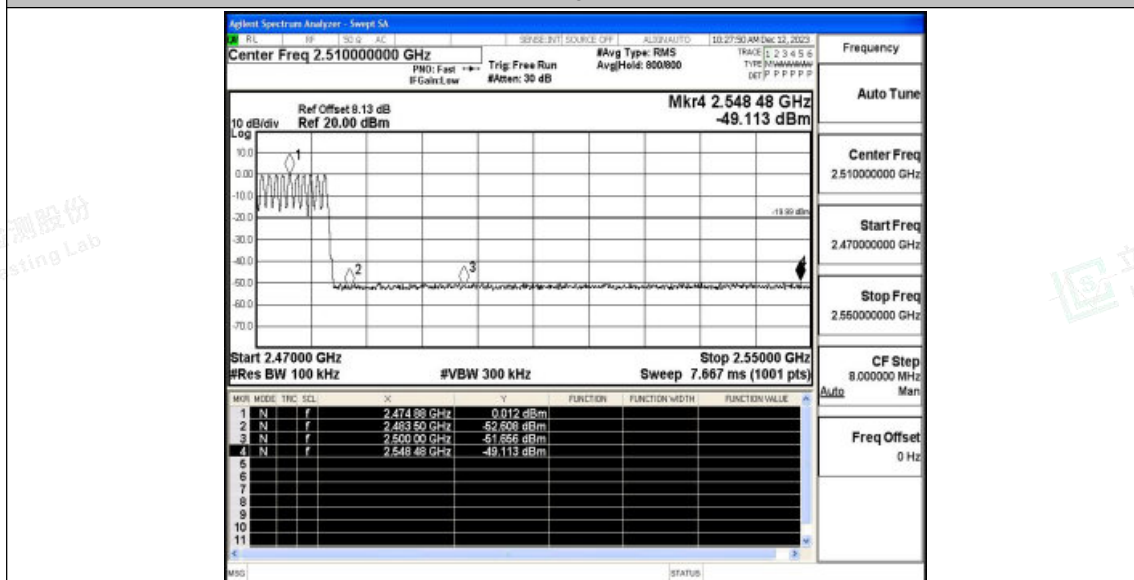


DH5_Ant1_Low_Hop_2402



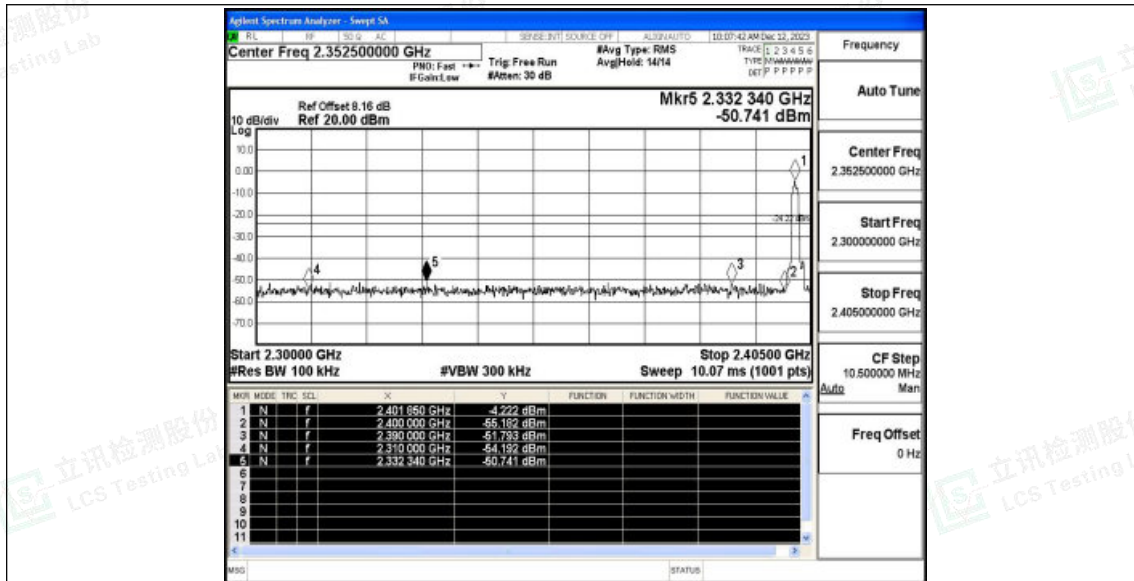


DH5_Ant1_High_Hop_2480

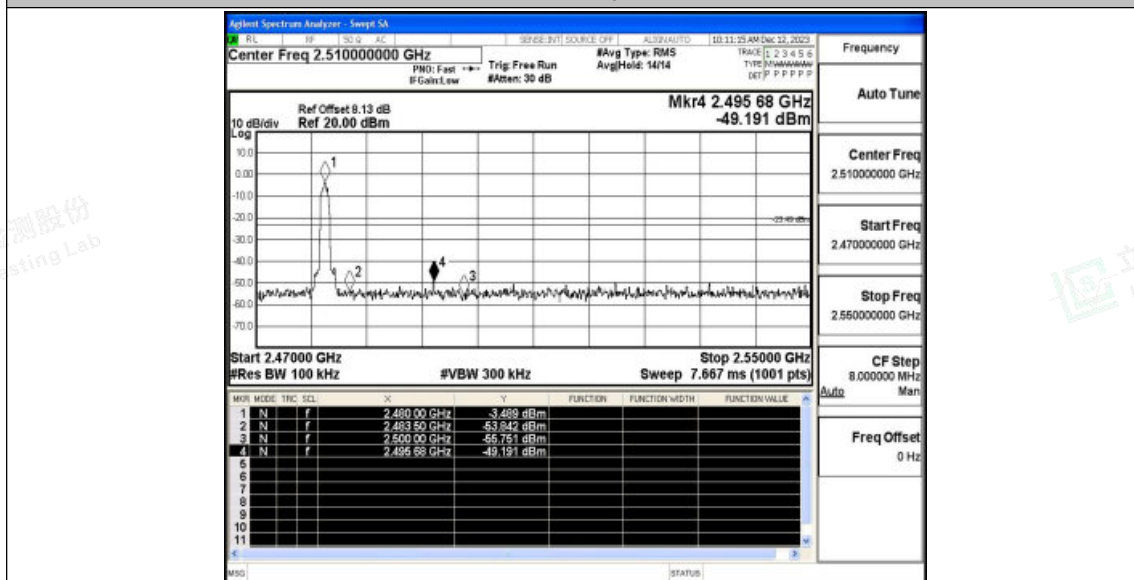


2DH5_Ant1_Low_2402



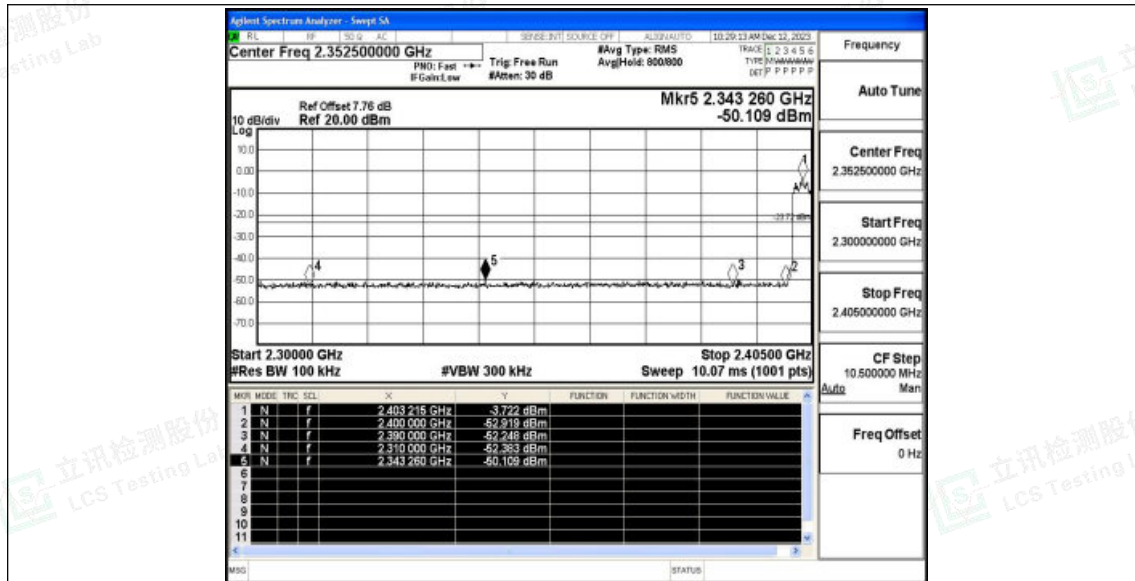


2DH5_Ant1_High_2480

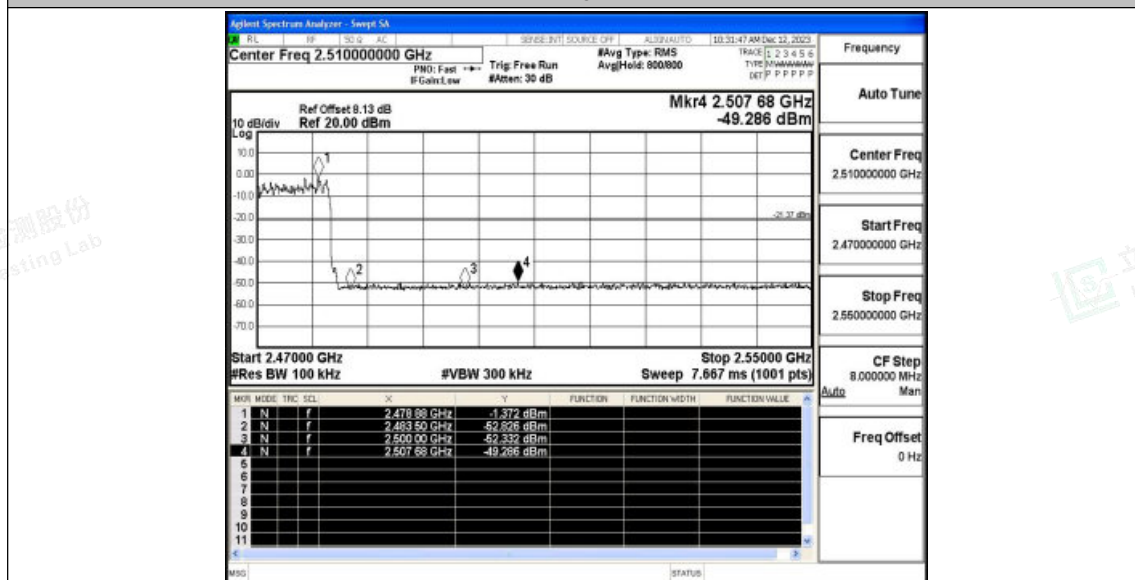


2DH5_Ant1_Low_Hop_2402



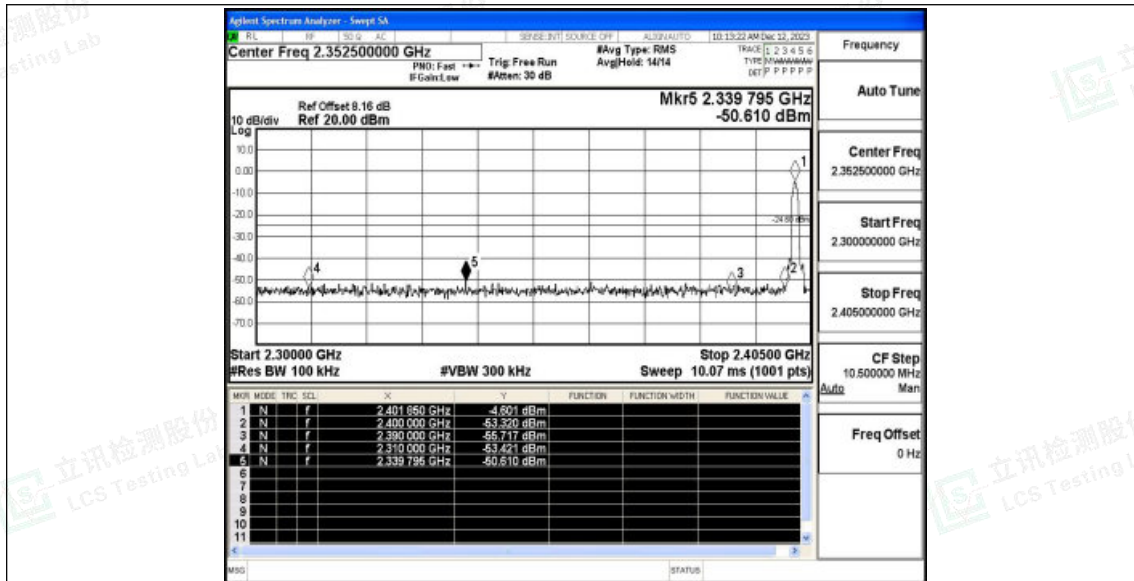


2DH5_Ant1_High_Hop_2480

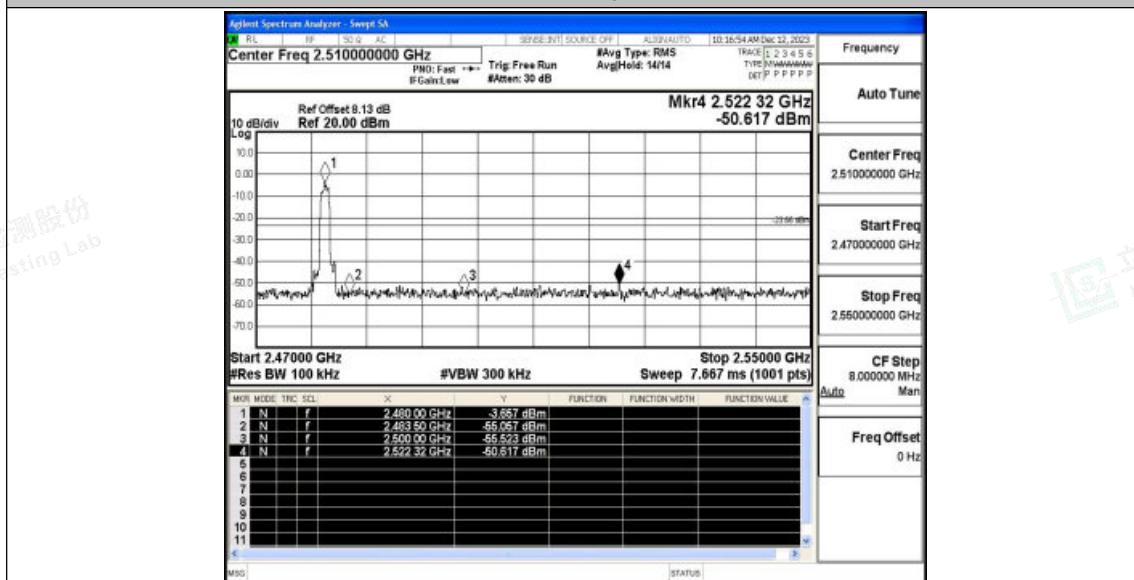


3DH5_Ant1_Low_2402



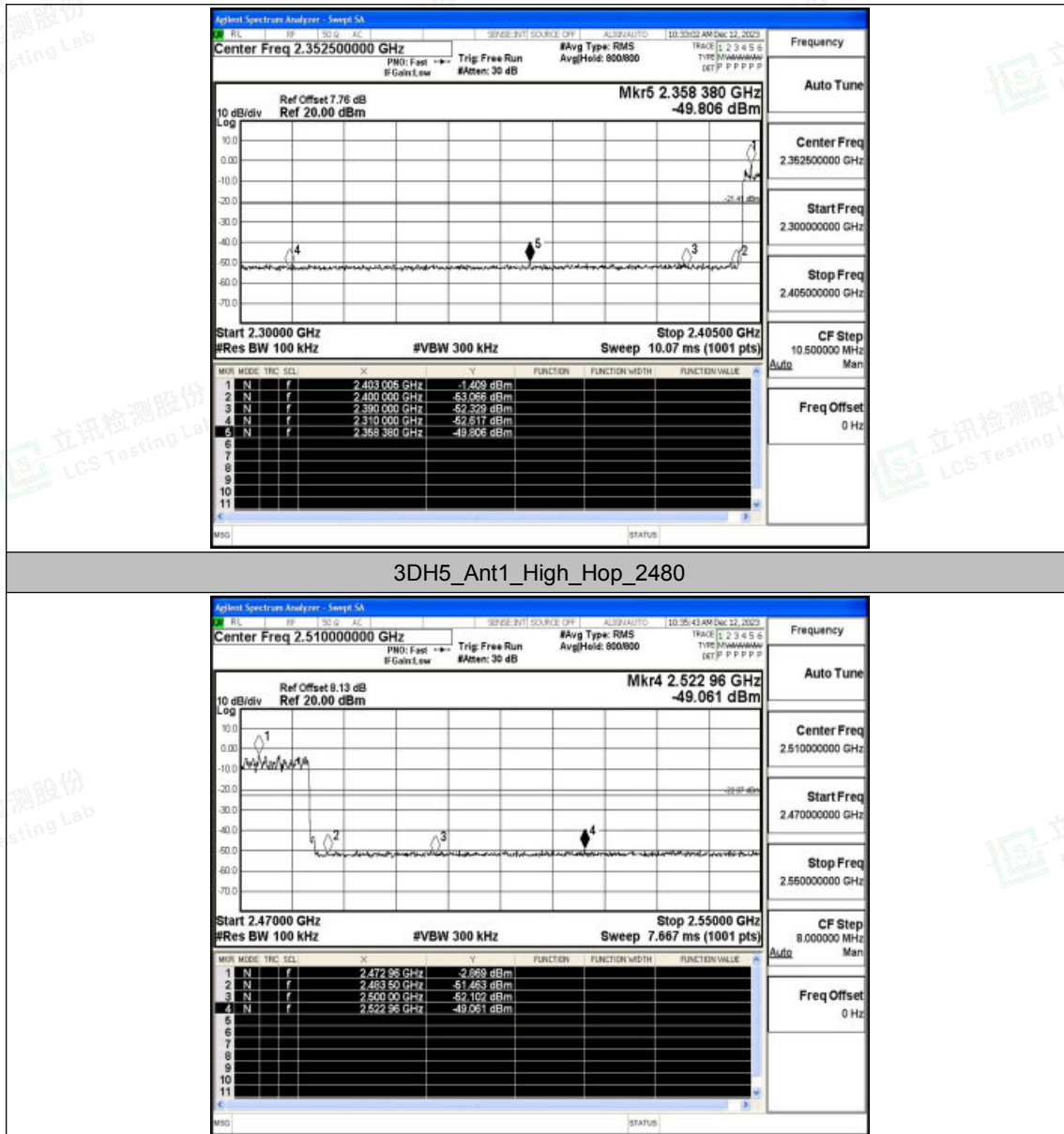


3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402







A.7 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.43	-0.43	---	PASS
			30~1000	-0.43	-61.4	≤-20.43	PASS
			1000~26500	-0.43	-48.64	≤-20.43	PASS
		2441	Reference	-0.47	-0.47	---	PASS
			30~1000	-0.47	-60.78	≤-20.47	PASS
			1000~26500	-0.47	-48.55	≤-20.47	PASS
		2480	Reference	-0.29	-0.29	---	PASS
			30~1000	-0.29	-61.75	≤-20.29	PASS
			1000~26500	-0.29	-49.45	≤-20.29	PASS
2DH5	Ant1	2402	Reference	-0.97	-0.97	---	PASS
			30~1000	-0.97	-61.71	≤-20.97	PASS
			1000~26500	-0.97	-48.43	≤-20.97	PASS
		2441	Reference	-1.58	-1.58	---	PASS
			30~1000	-1.58	-61.28	≤-21.58	PASS
			1000~26500	-1.58	-48.81	≤-21.58	PASS
		2480	Reference	-1.01	-1.01	---	PASS
			30~1000	-1.01	-61.12	≤-21.01	PASS
			1000~26500	-1.01	-49.2	≤-21.01	PASS
3DH5	Ant1	2402	Reference	-1.84	-1.84	---	PASS
			30~1000	-1.84	-61.45	≤-21.84	PASS
			1000~26500	-1.84	-49.16	≤-21.84	PASS
		2441	Reference	-1.57	-1.57	---	PASS
			30~1000	-1.57	-61.27	≤-21.57	PASS
			1000~26500	-1.57	-49.35	≤-21.57	PASS
		2480	Reference	-1.18	-1.18	---	PASS
			30~1000	-1.18	-60.73	≤-21.18	PASS
			1000~26500	-1.18	-49.16	≤-21.18	PASS



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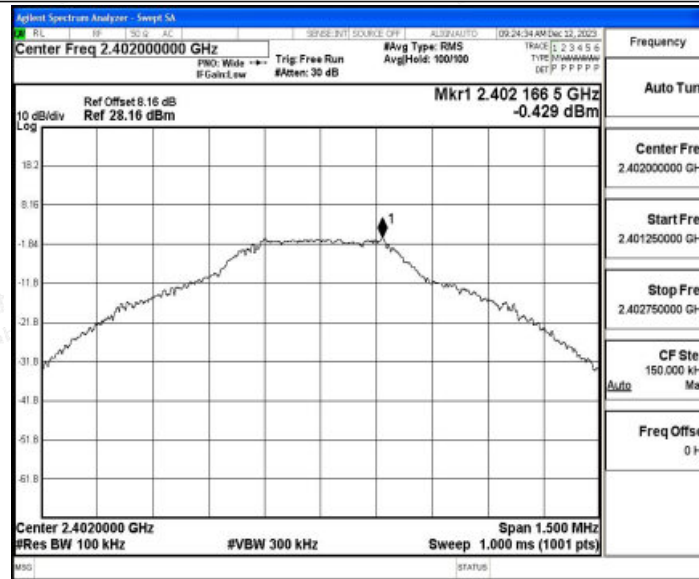
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Scan code to check authenticity

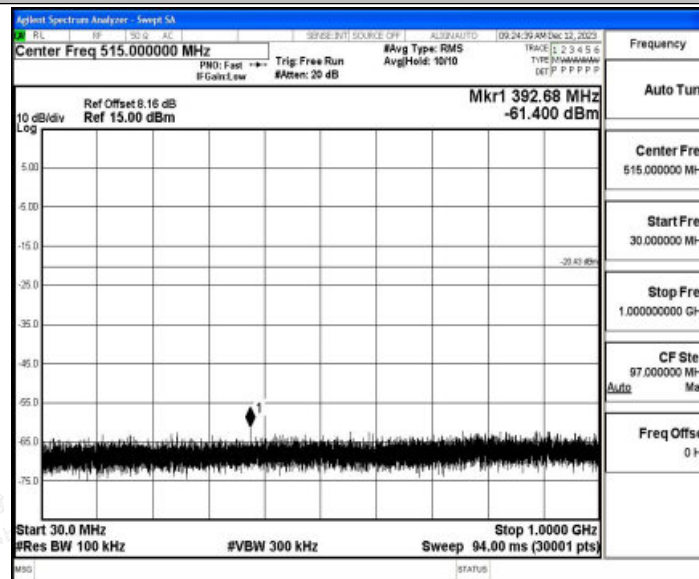


Test Graphs

DH5_Ant1_2402_0~Reference

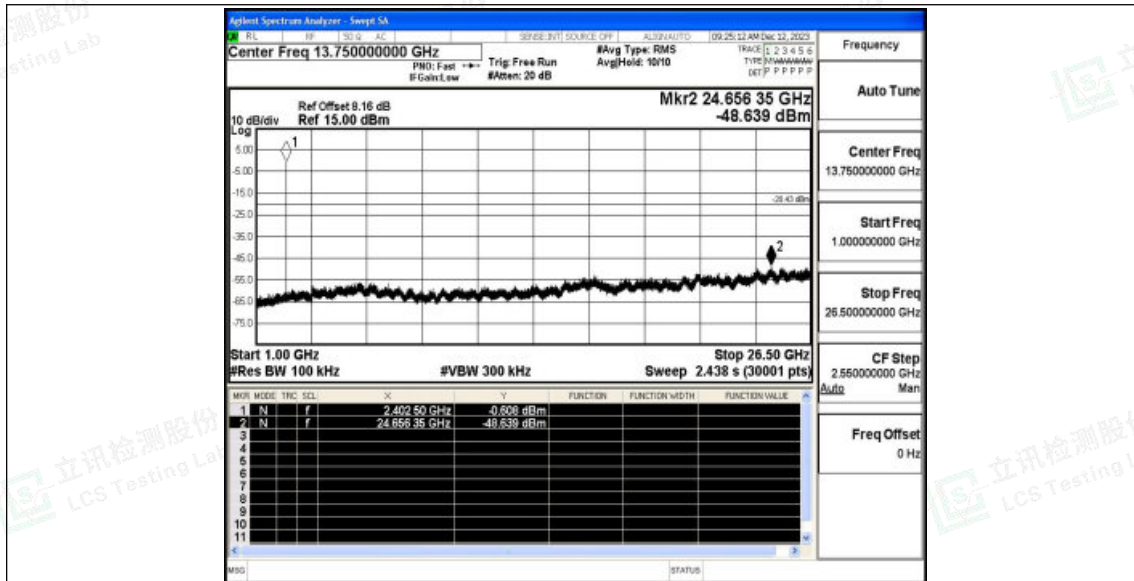


DH5_Ant1_2402_30~1000

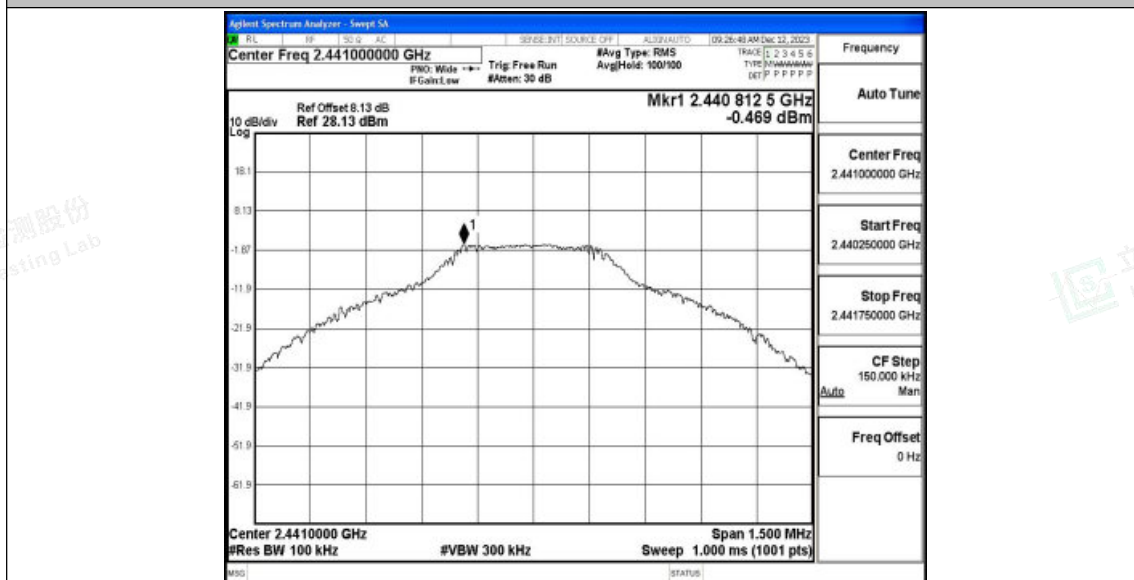


DH5_Ant1_2402_1000~26500



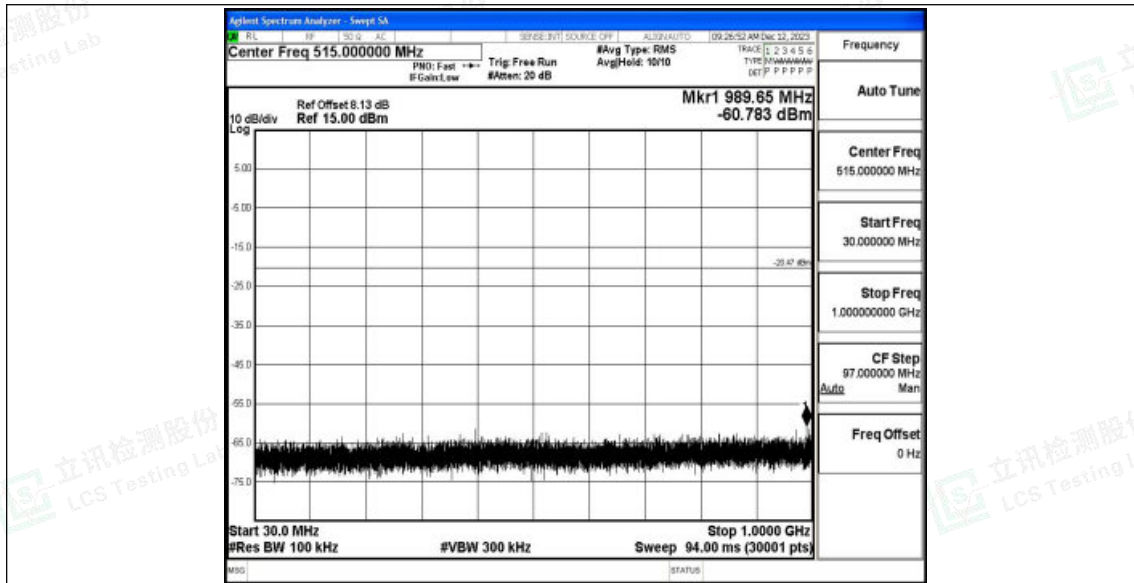


DH5_Ant1_2441_0~Reference

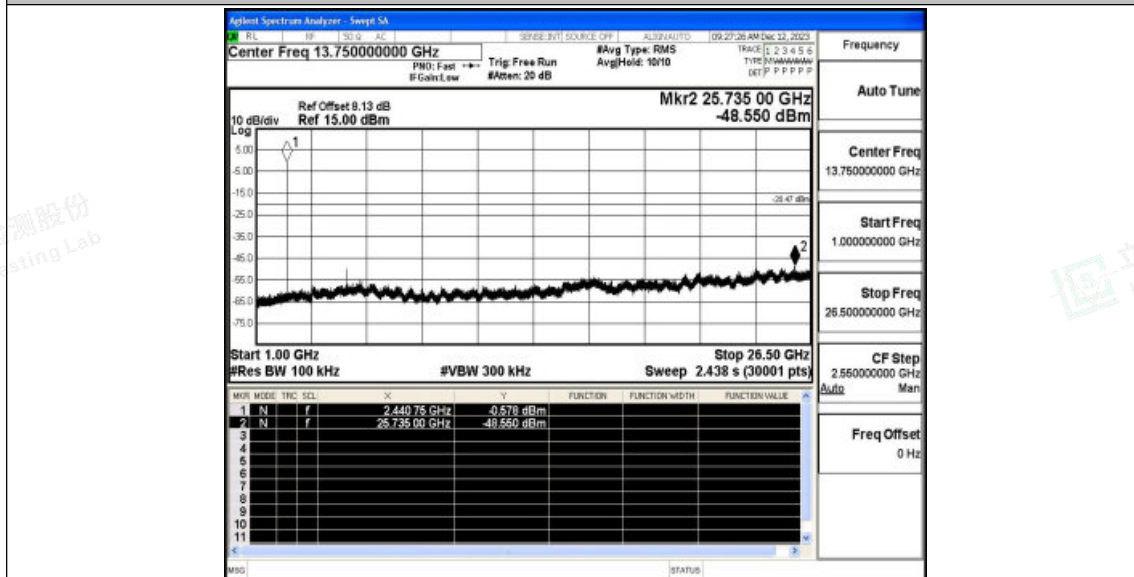


DH5_Ant1_2441_30~1000



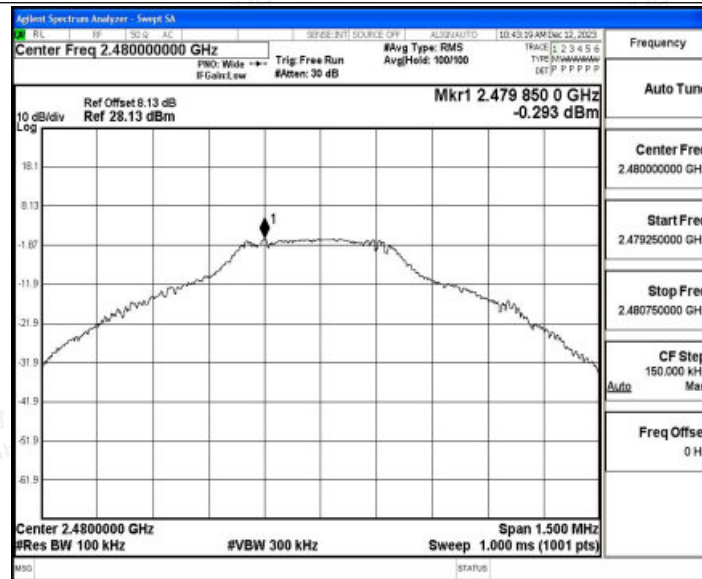


DH5_Ant1_2441_1000~26500

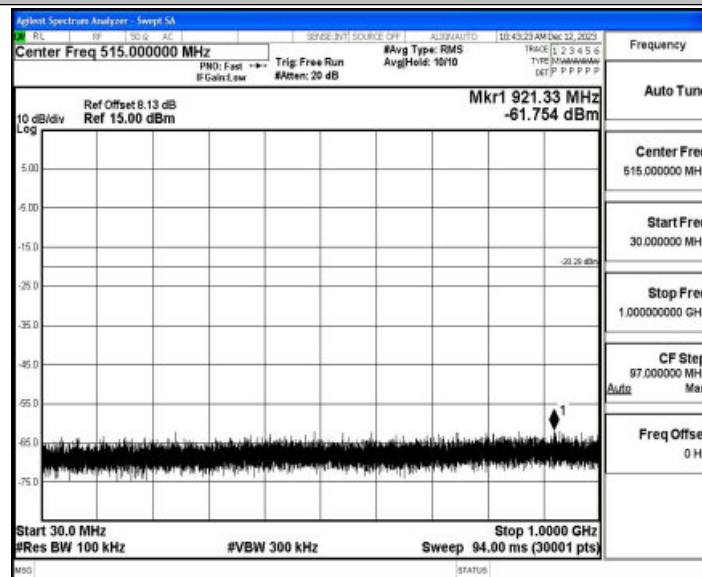


DH5_Ant1_2480_0~Reference



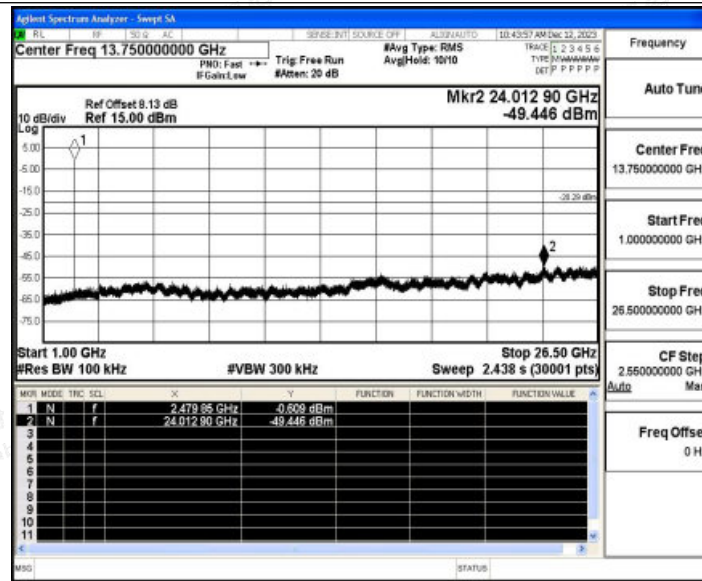


DH5_Ant1_2480_30~1000

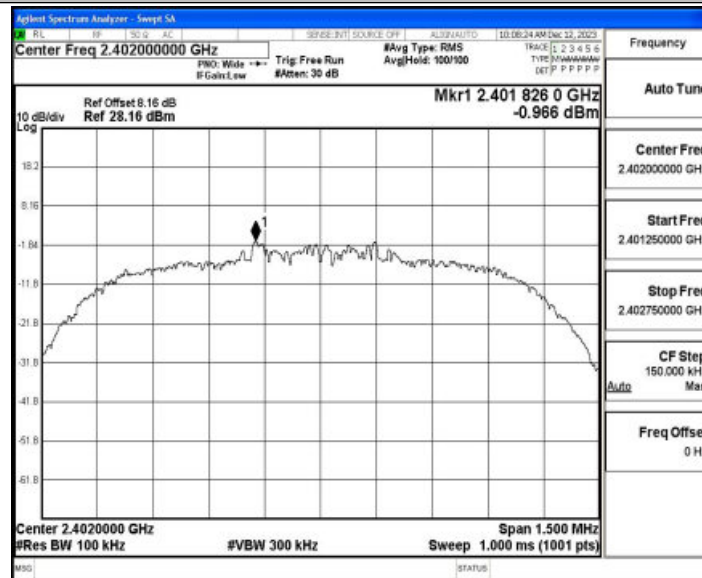


DH5_Ant1_2480_1000~26500



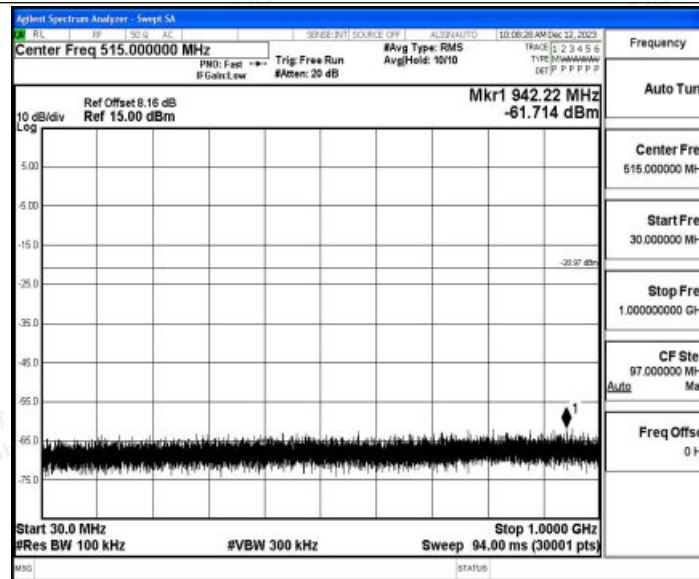


2DH5_Ant1_2402_0~Reference

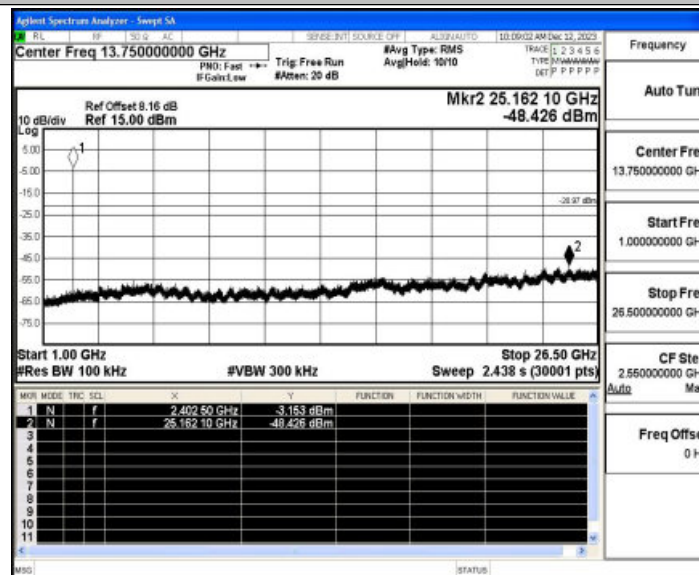


2DH5_Ant1_2402_30~1000



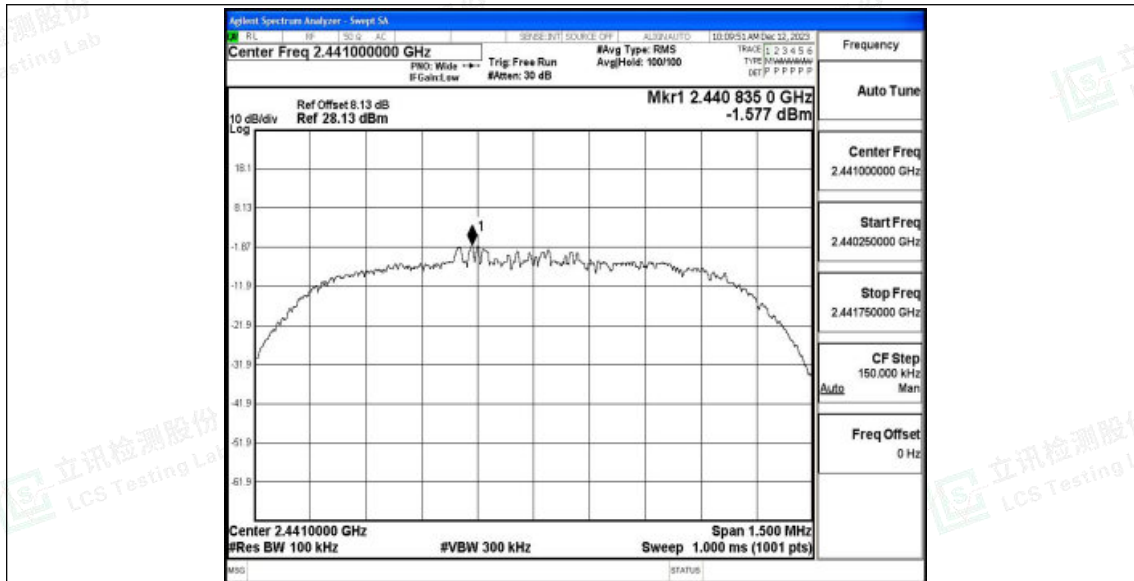


2DH5_Ant1_2402_1000~26500

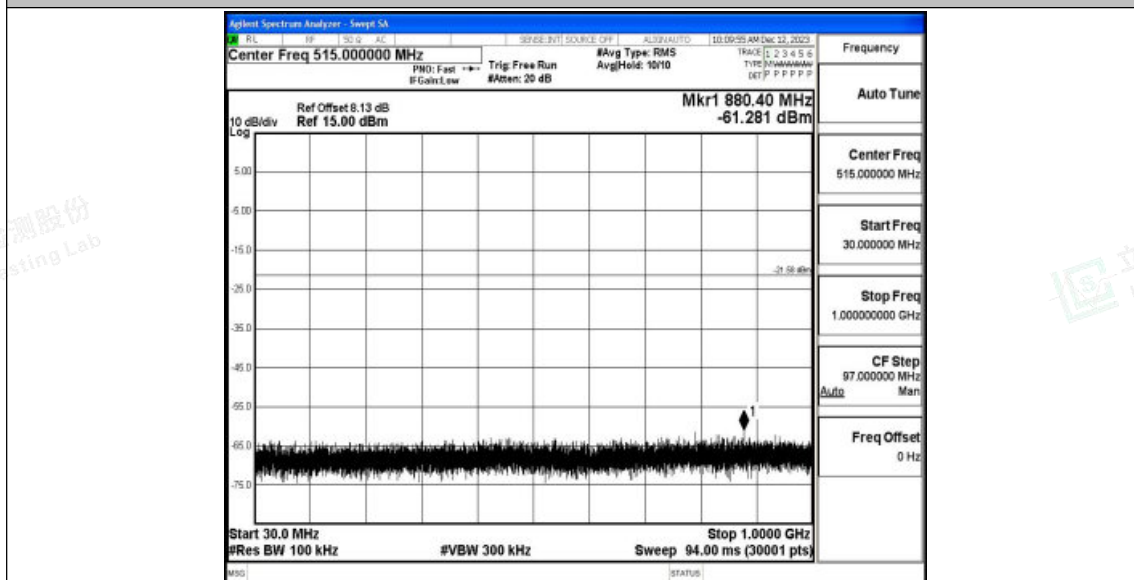


2DH5_Ant1_2441_0~Reference



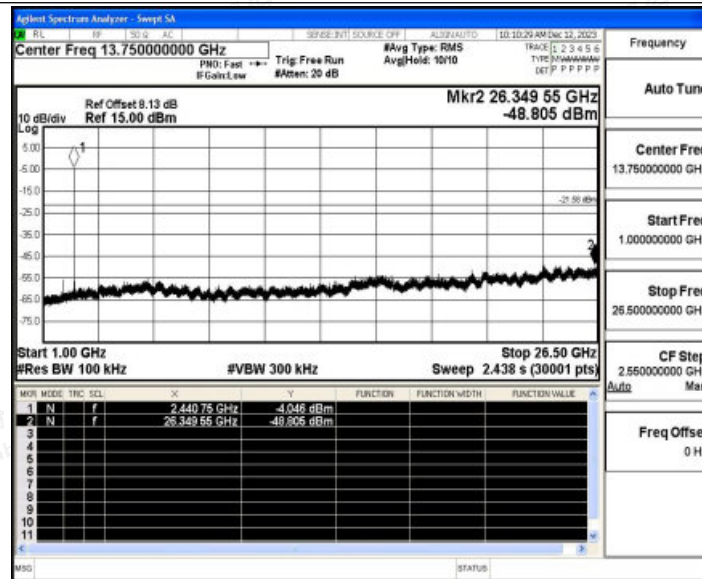


2DH5_Ant1_2441_30~1000

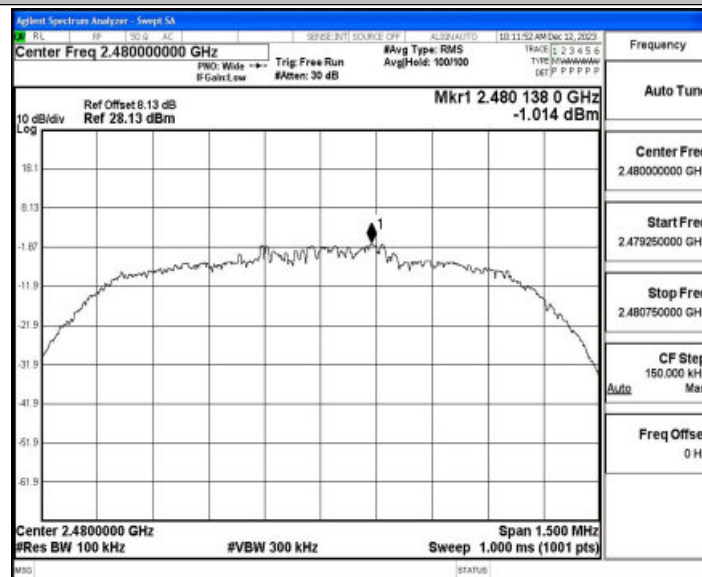


2DH5_Ant1_2441_1000~26500



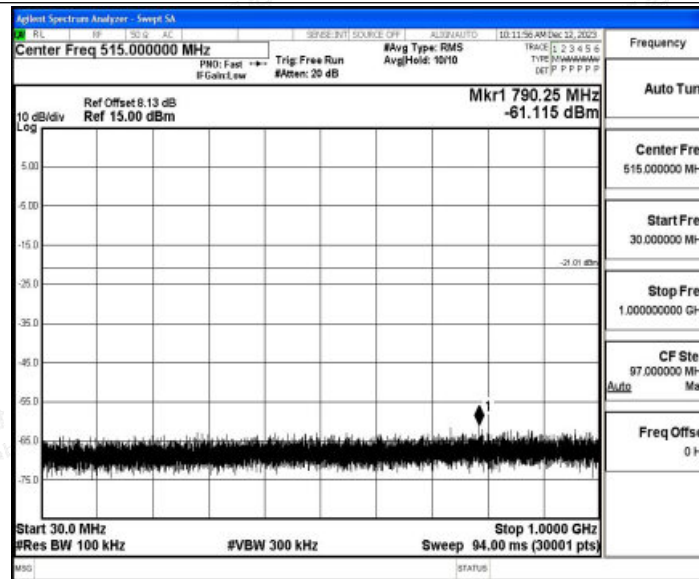


2DH5_Ant1_2480_0~Reference

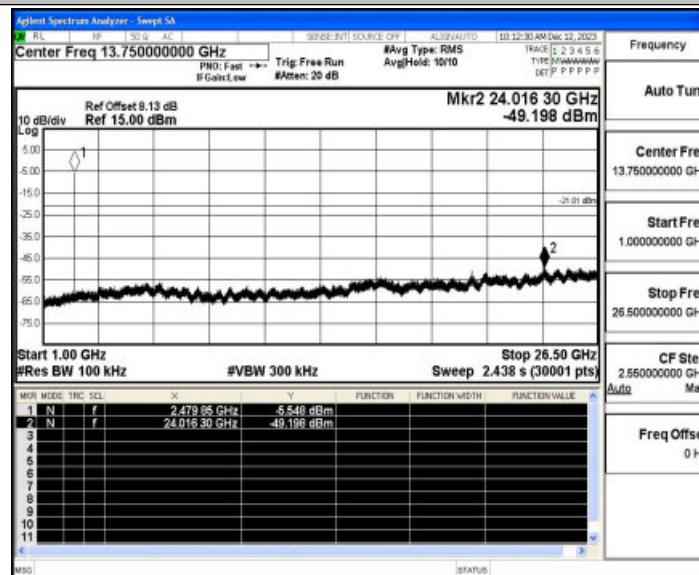


2DH5_Ant1_2480_30~1000



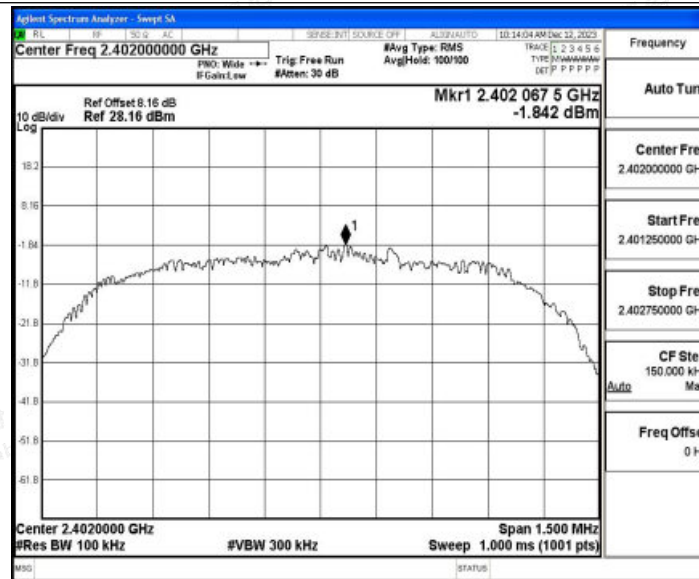


2DH5_Ant1_2480_1000~26500

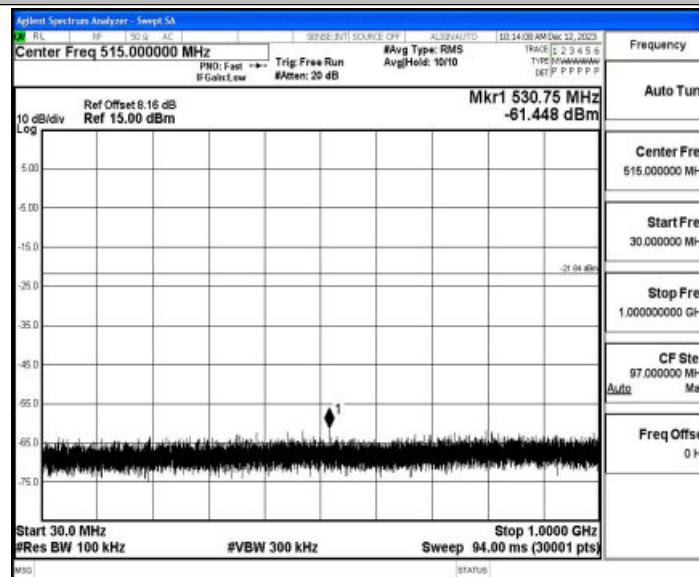


3DH5_Ant1_2402_0~Reference



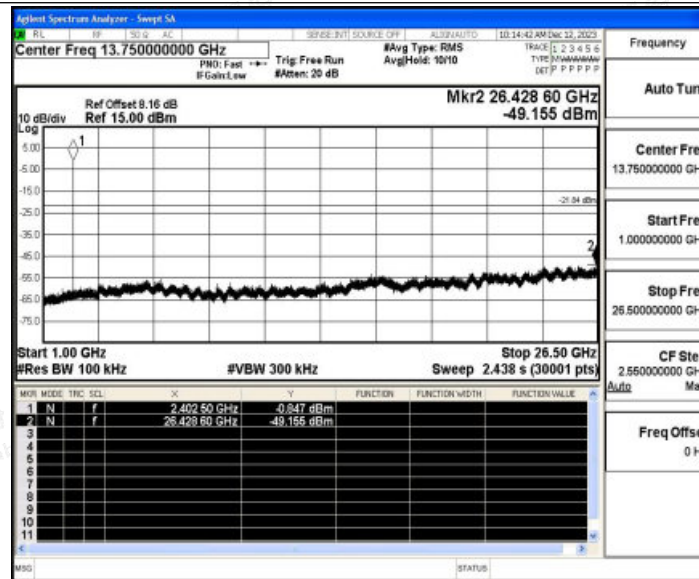


3DH5_Ant1_2402_30~1000

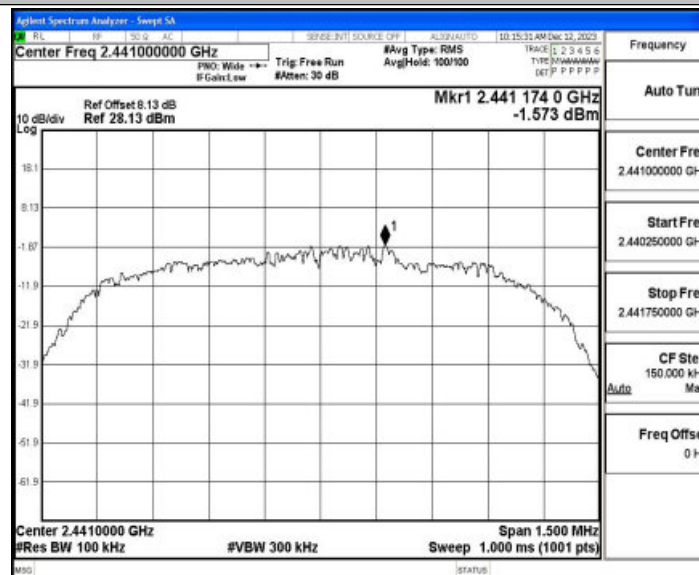


3DH5_Ant1_2402_1000~26500



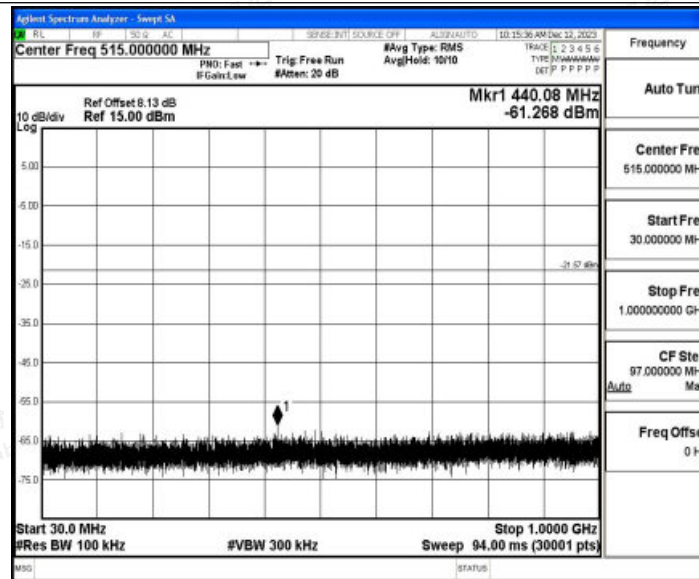


3DH5_Ant1_2441_0~Reference

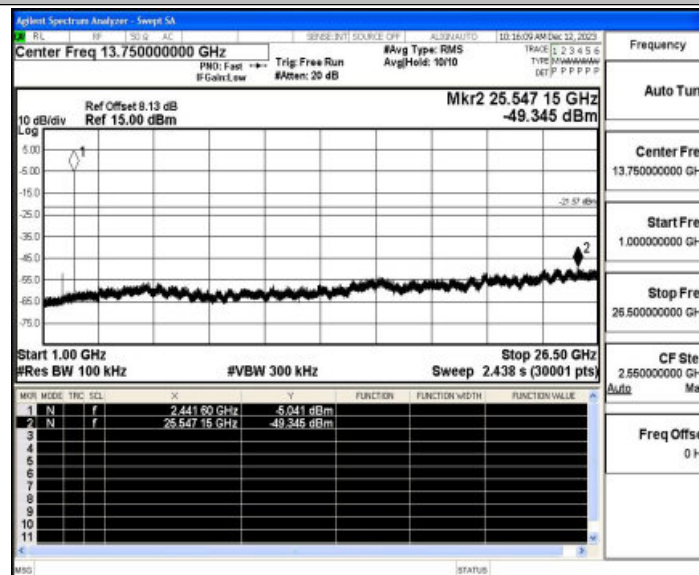


3DH5_Ant1_2441_30~1000



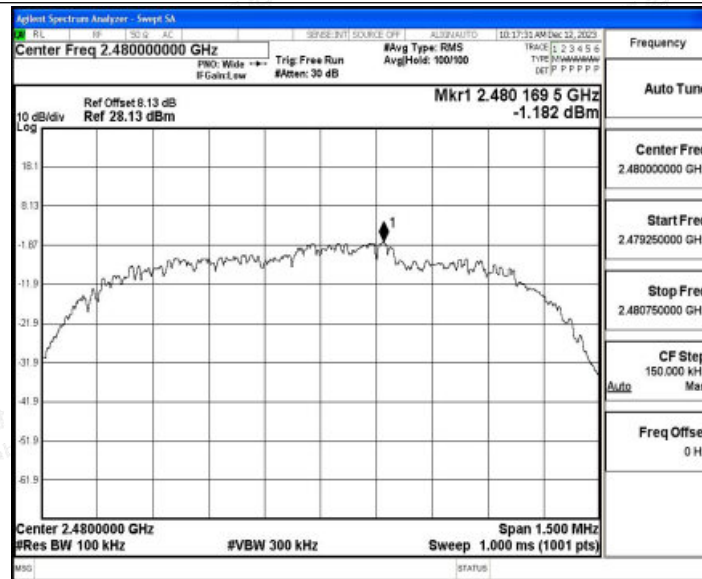


3DH5_Ant1_2441_1000~26500

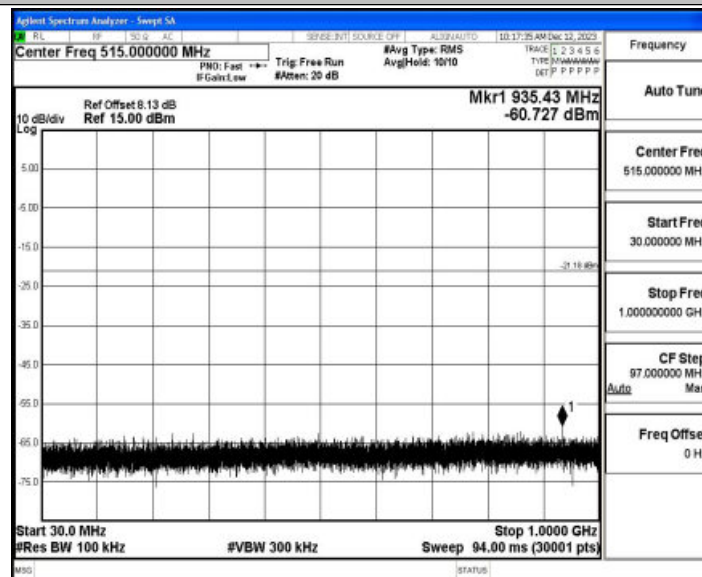


3DH5_Ant1_2480_0~Reference



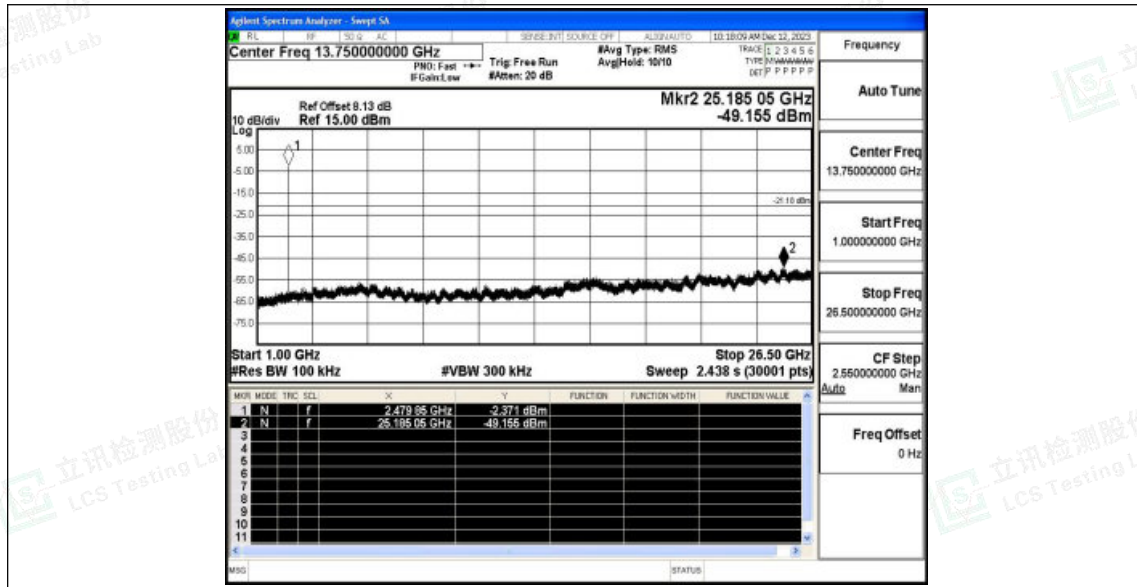


3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500







A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.04	≤-41.20	46.16	≤54	PASS
				AV	2385.680	-48.66	≤-41.20	46.54	≤54	PASS
				AV	2390.000	-48.84	≤-41.20	46.36	≤54	PASS
				Peak	2310.000	-42.82	≤-21.20	52.38	≤74	PASS
				Peak	2380.220	-39.53	≤-21.20	55.67	≤74	PASS
				Peak	2390.000	-43.49	≤-21.20	51.71	≤74	PASS
		High	2480	AV	2483.500	-48.49	≤-41.20	46.71	≤54	PASS
				AV	2483.600	-48.44	≤-41.20	46.76	≤54	PASS
				AV	2500.000	-48.65	≤-41.20	46.55	≤54	PASS
				Peak	2483.500	-42.85	≤-21.20	52.35	≤74	PASS
				Peak	2498.640	-38.99	≤-21.20	56.21	≤74	PASS
				Peak	2500.000	-42.74	≤-21.20	52.46	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-41.89	≤-21.20	53.31	≤74	PASS
				Peak	2313.230	-38.11	≤-21.20	57.09	≤74	PASS
				Peak	2390.000	-39.38	≤-21.20	55.82	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2499.280	-38.03	≤-21.20	57.17	≤74	PASS
				Peak	2500.000	-39.75	≤-21.20	55.45	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.2	≤-41.20	46.00	≤54	PASS
				AV	2381.165	-48.65	≤-41.20	46.55	≤54	PASS
				AV	2390.000	-48.8	≤-41.20	46.40	≤54	PASS
				Peak	2310.000	-43.52	≤-21.20	51.68	≤74	PASS
				Peak	2349.455	-39.97	≤-21.20	55.23	≤74	PASS
				Peak	2390.000	-41.5	≤-21.20	53.70	≤74	PASS
		High	2480	AV	2483.500	-48.36	≤-41.20	46.84	≤54	PASS
				AV	2483.520	-48.36	≤-41.20	46.84	≤54	PASS
				AV	2500.000	-48.72	≤-41.20	46.48	≤54	PASS
				Peak	2483.500	-45.55	≤-21.20	49.65	≤74	PASS
				Peak	2497.760	-39.79	≤-21.20	55.41	≤74	PASS
				Peak	2500.000	-41.37	≤-21.20	53.83	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-40.1	≤-21.20	55.10	≤74	PASS
				Peak	2384.000	-38.57	≤-21.20	56.63	≤74	PASS
				Peak	2390.000	-39.9	≤-21.20	55.30	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-40.56	≤-21.20	54.64	≤74	PASS
				Peak	2489.520	-38.62	≤-21.20	56.58	≤74	PASS



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Scan code to check authenticity



3DH5	Ant1	Low	2402	Peak	2500.000	-40.85	≤ -21.20	54.35	≤ 74	PASS
				AV	2310.000	-49.11	≤ -41.20	46.09	≤ 54	PASS
				AV	2385.470	-48.68	≤ -41.20	46.52	≤ 54	PASS
				AV	2390.000	-48.8	≤ -41.20	46.40	≤ 54	PASS
				Peak	2310.000	-43.49	≤ -21.20	51.71	≤ 74	PASS
				Peak	2353.130	-39.81	≤ -21.20	55.39	≤ 74	PASS
		High	2480	Peak	2390.000	-43.17	≤ -21.20	52.03	≤ 74	PASS
				AV	2483.500	-48.4	≤ -41.20	46.80	≤ 54	PASS
				AV	2483.520	-48.4	≤ -41.20	46.80	≤ 54	PASS
				AV	2500.000	-48.65	≤ -41.20	46.55	≤ 54	PASS
				Peak	2483.500	-43.77	≤ -21.20	51.43	≤ 74	PASS
				Peak	2494.720	-39.56	≤ -21.20	55.64	≤ 74	PASS
		Low	Hop_24 02	Peak	2500.000	-42.26	≤ -21.20	52.94	≤ 74	PASS
				Peak	2310.000	-40.8	≤ -21.20	54.40	≤ 74	PASS
				Peak	2368.040	-38.38	≤ -21.20	56.82	≤ 74	PASS
		High	Hop_24 80	Peak	2390.000	-39.38	≤ -21.20	55.82	≤ 74	PASS
				Peak	2483.500	-40.04	≤ -21.20	55.16	≤ 74	PASS
				Peak	2489.280	-38.2	≤ -21.20	57.00	≤ 74	PASS
				Peak	2500.000	-40.17	≤ -21.20	55.03	≤ 74	PASS

Note:

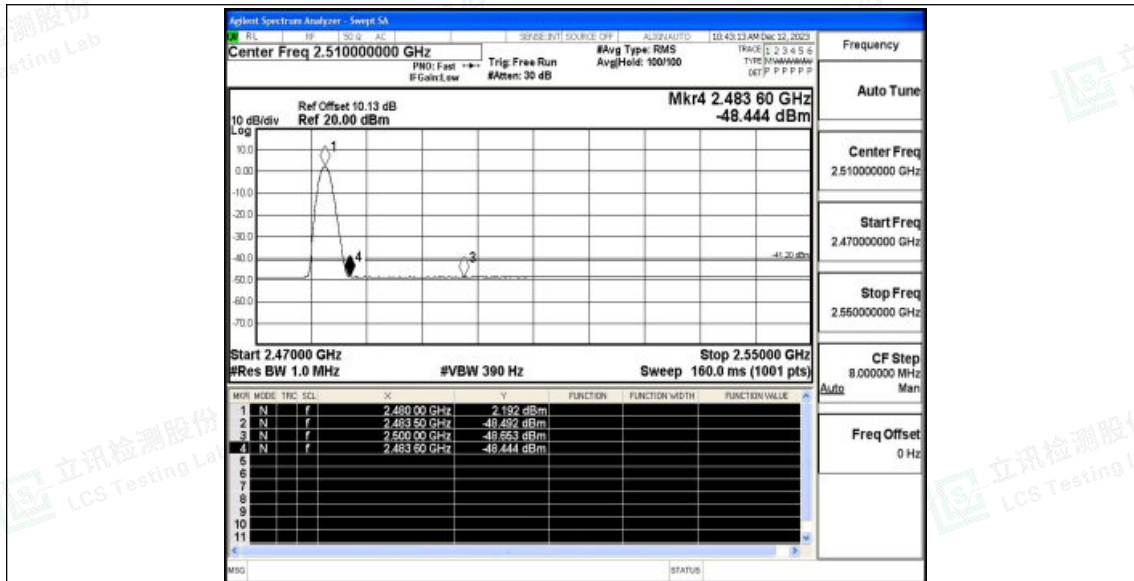
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



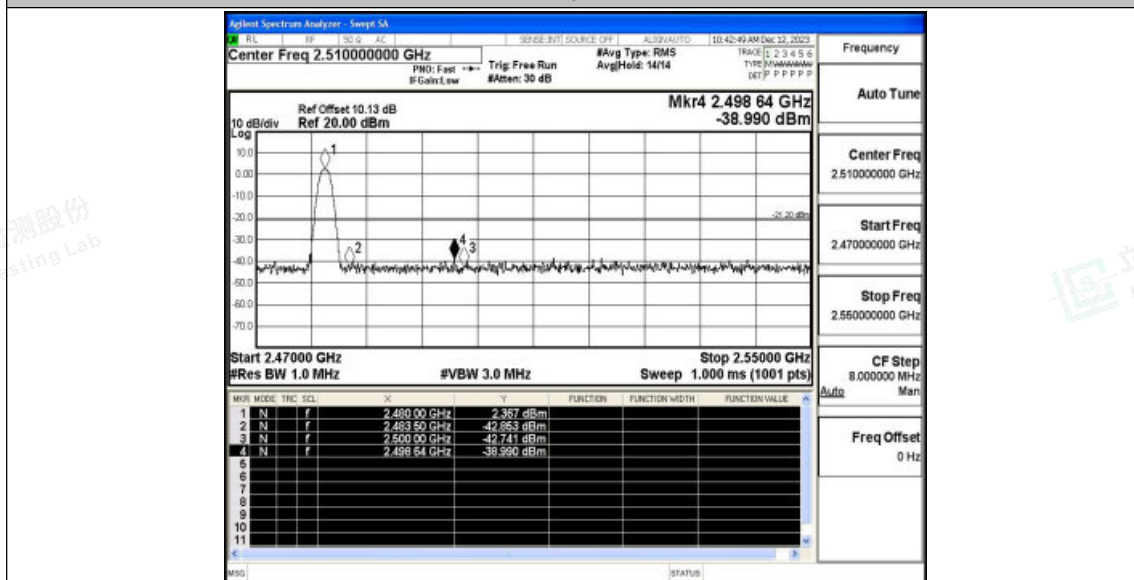


Test Graphs





DH5_Ant1_High_2480_Peak



DH5_Ant1_Low_Hop_2402_Peak

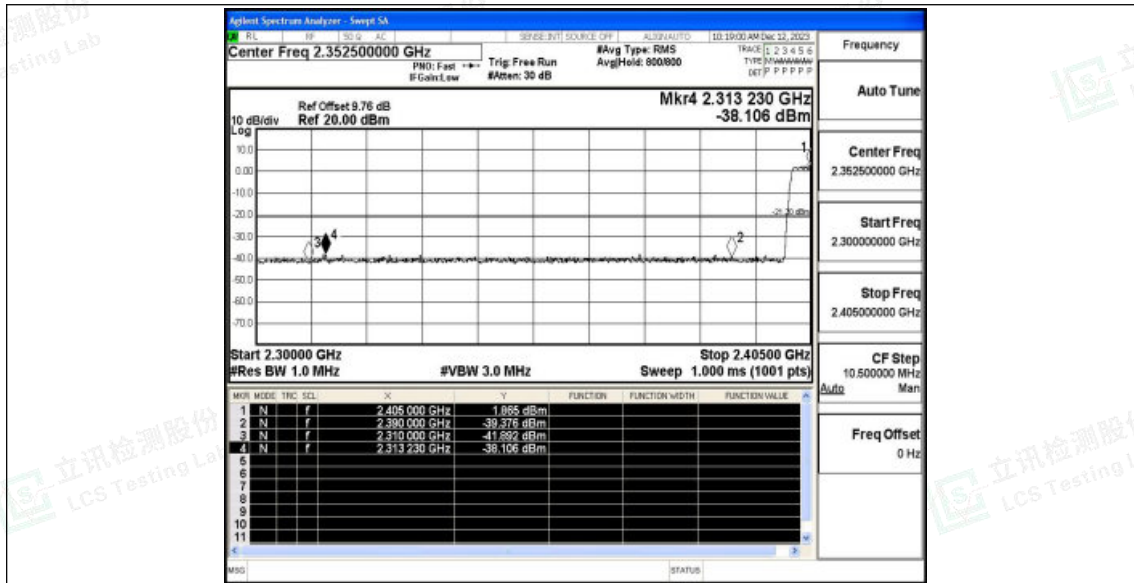


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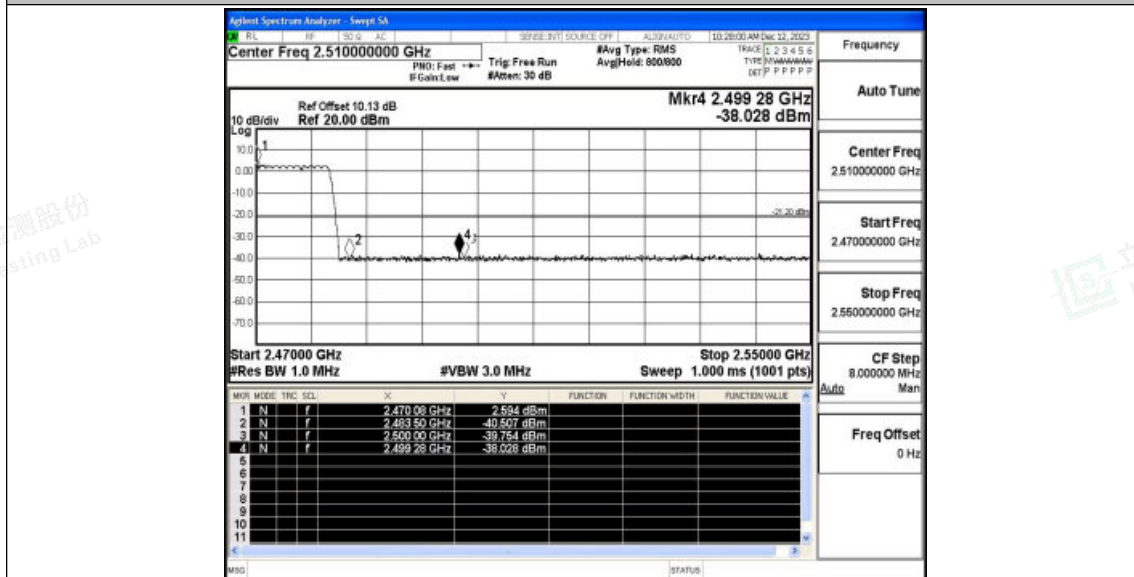
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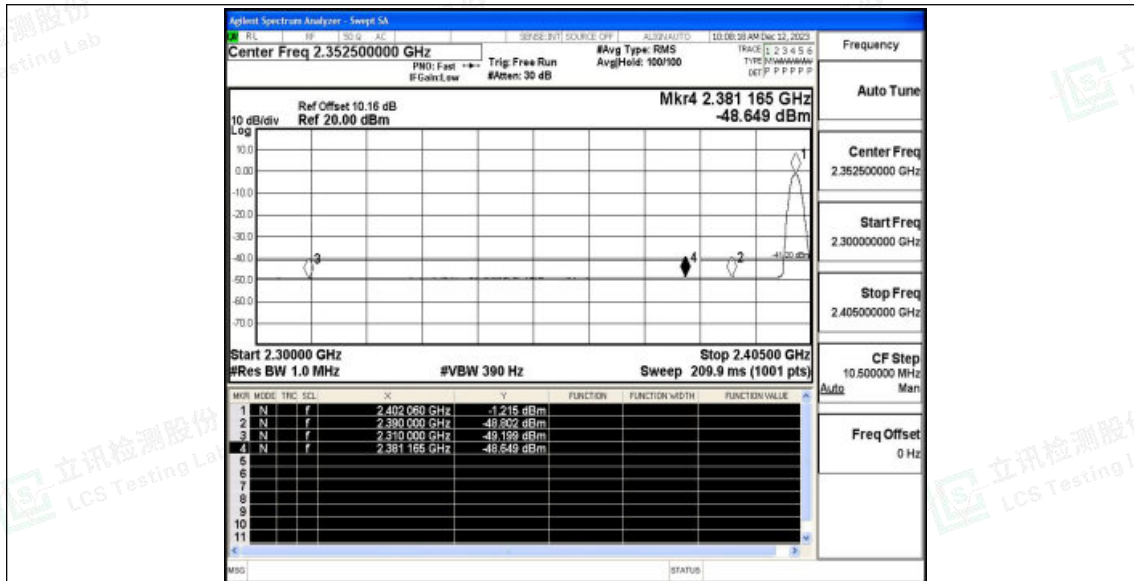


DH5_Ant1_High_Hop_2480_Peak

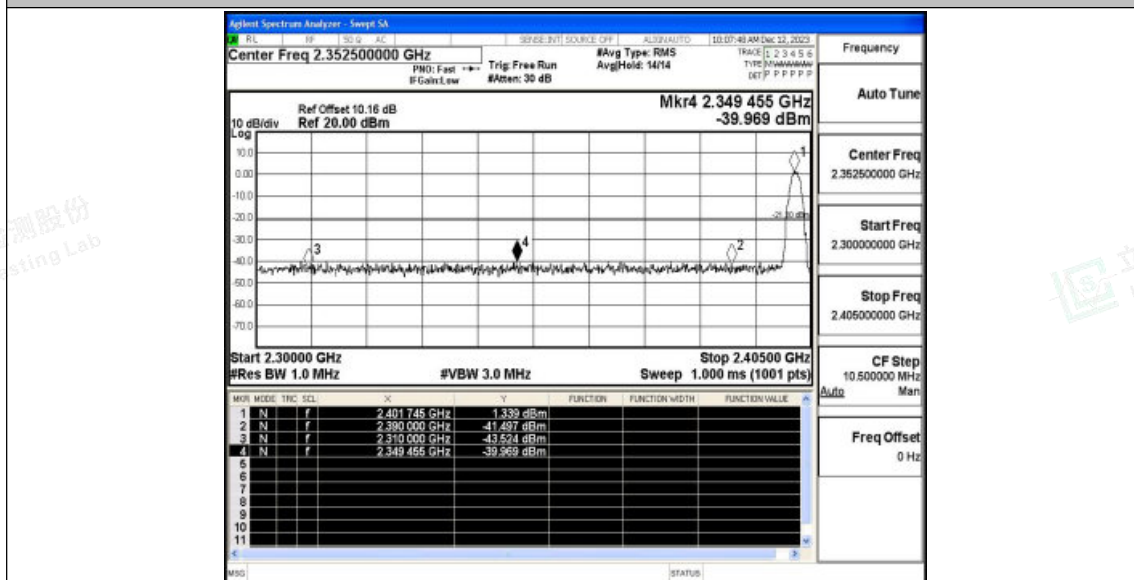


2DH5_Ant1_Low_2402_AV



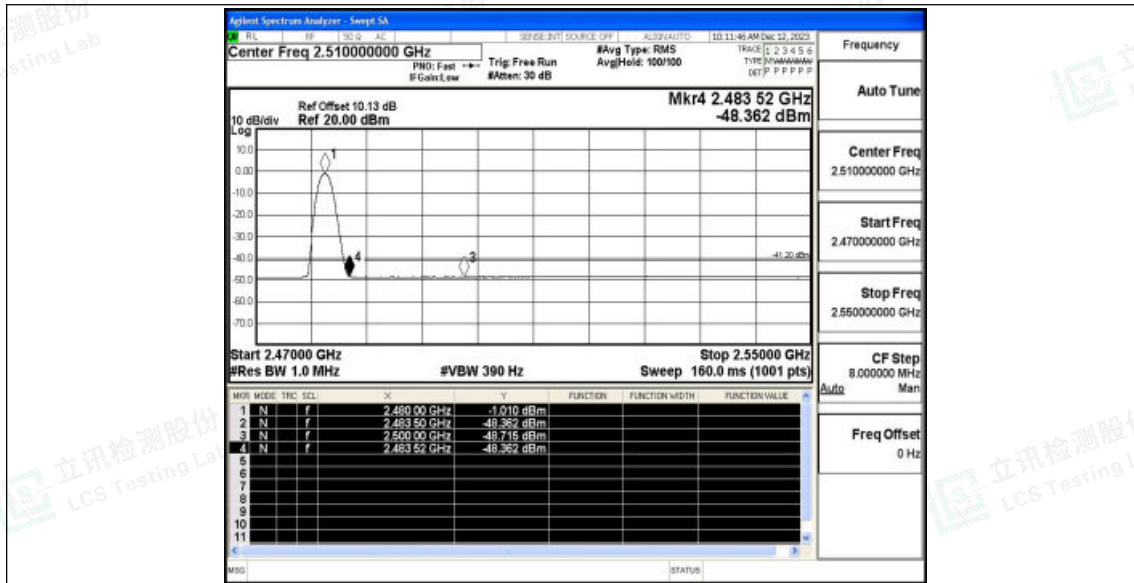


2DH5_Ant1_Low_2402_Peak

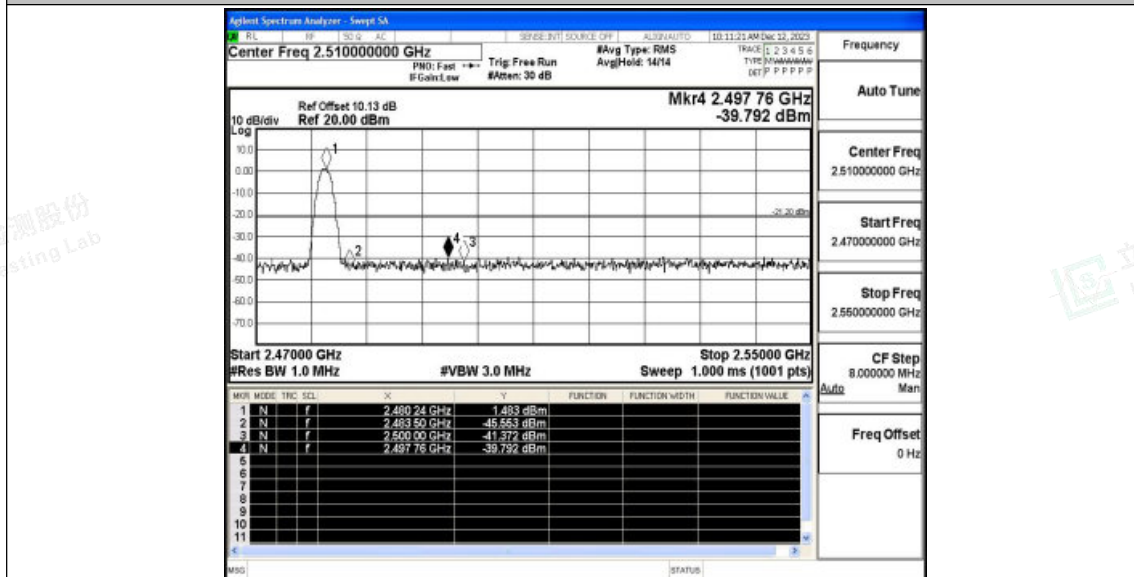


2DH5_Ant1_High_2480_AV



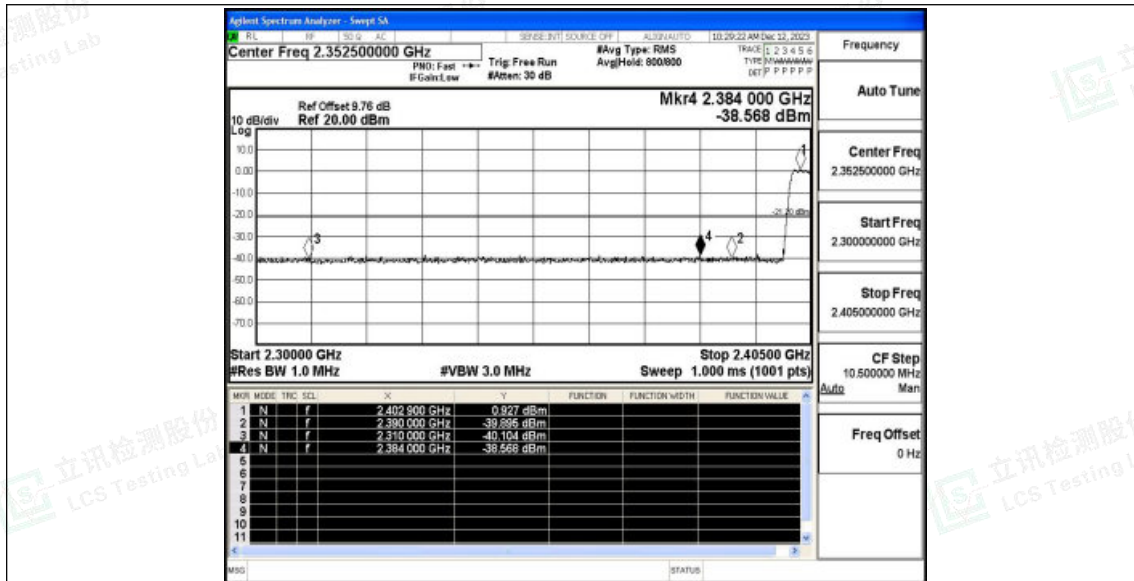


2DH5_Ant1_High_2480_Peak

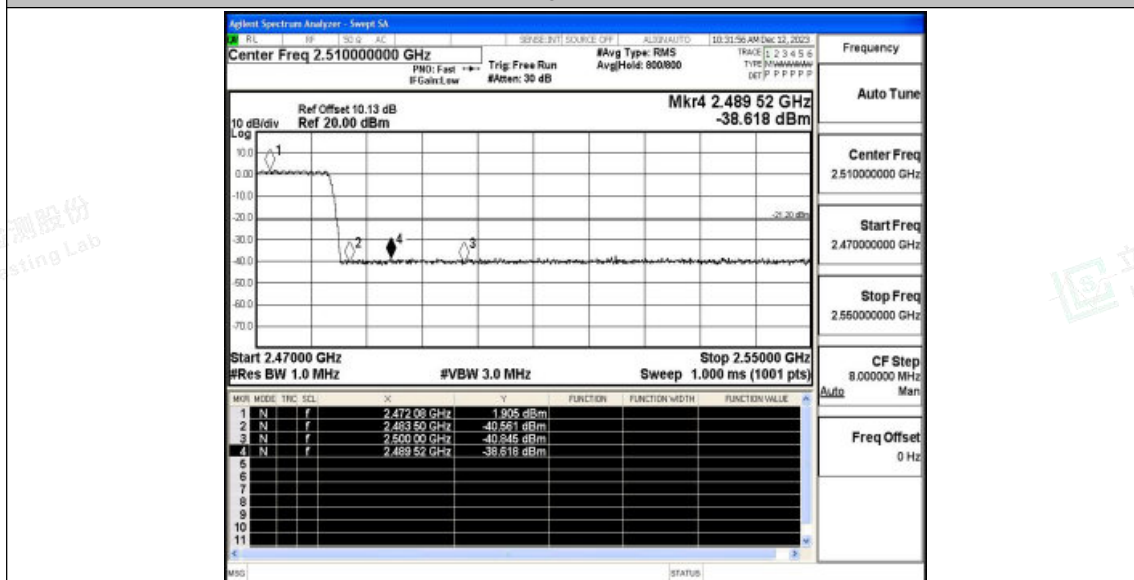


2DH5_Ant1_Low_Hop_2402_Peak



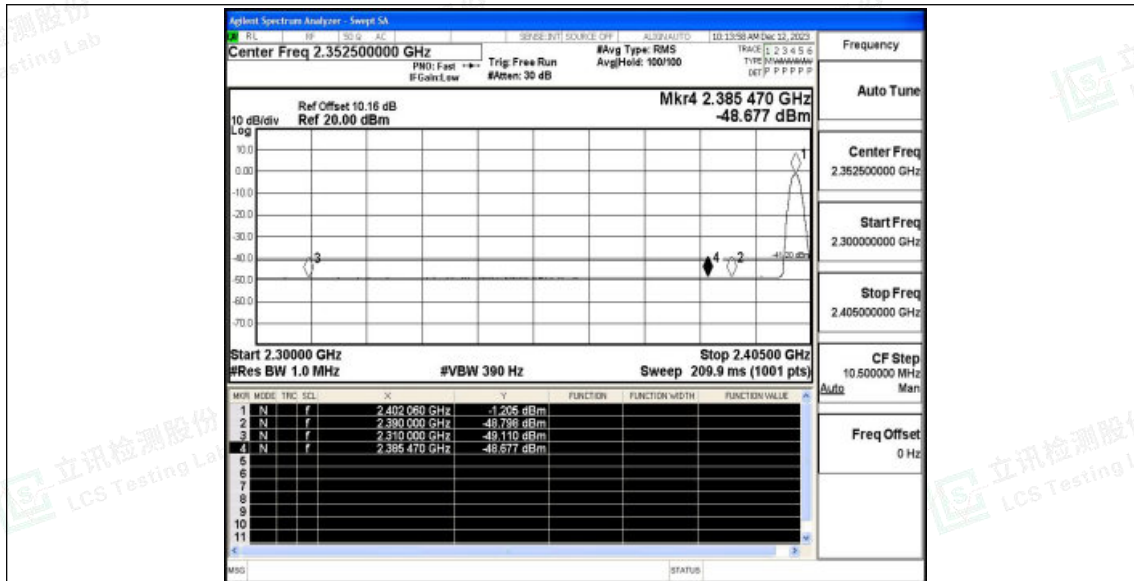


2DH5_Ant1_High_Hop_2480_Peak

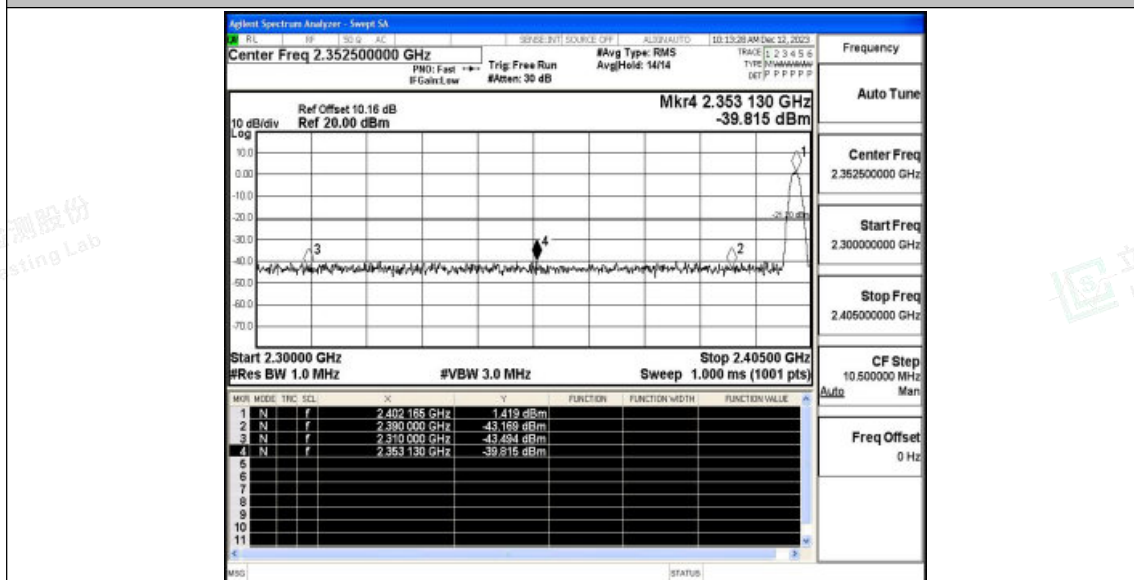


3DH5_Ant1_Low_2402_AV



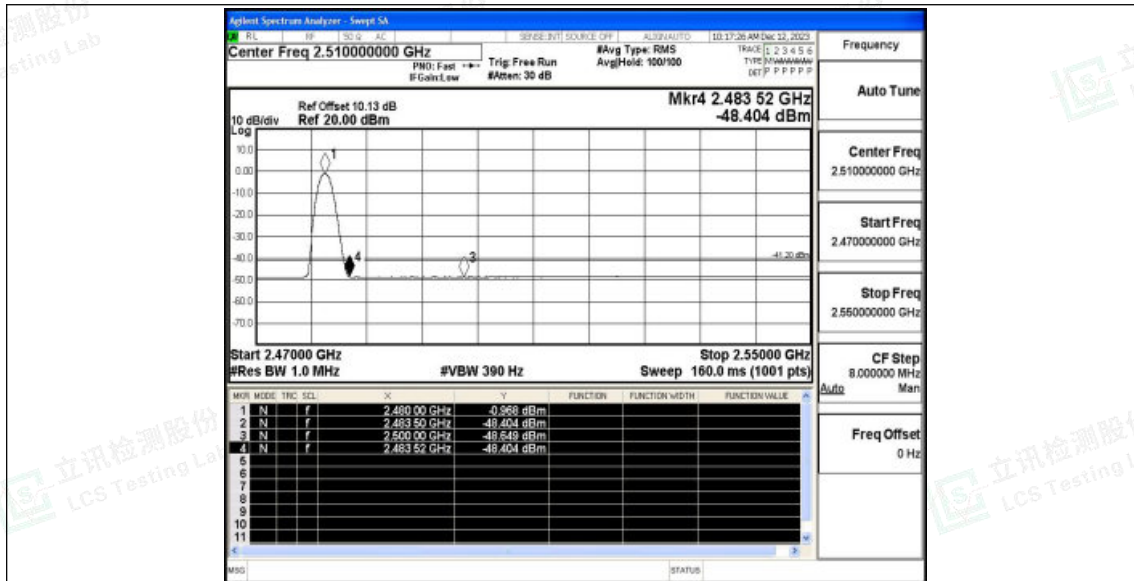


3DH5_Ant1_Low_2402_Peak

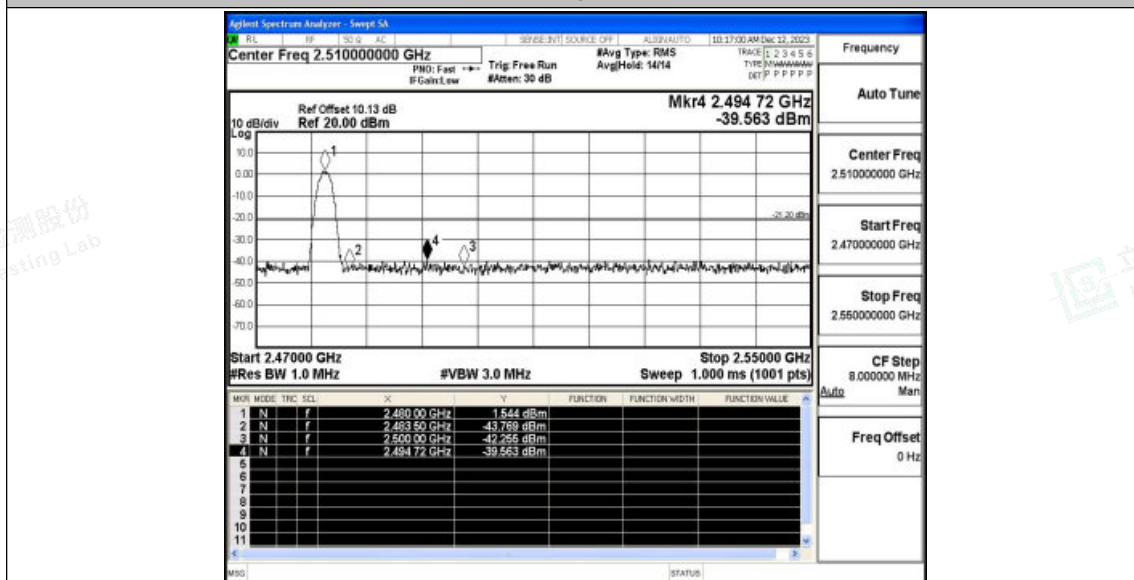


3DH5_Ant1_High_2480_AV





3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak



