



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Bluetooth FM Transmitter with Gooseneck

Test Model: VM-208N

Environmental Conditions

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





A.1 20dB Emission Bandwidth

Test Result

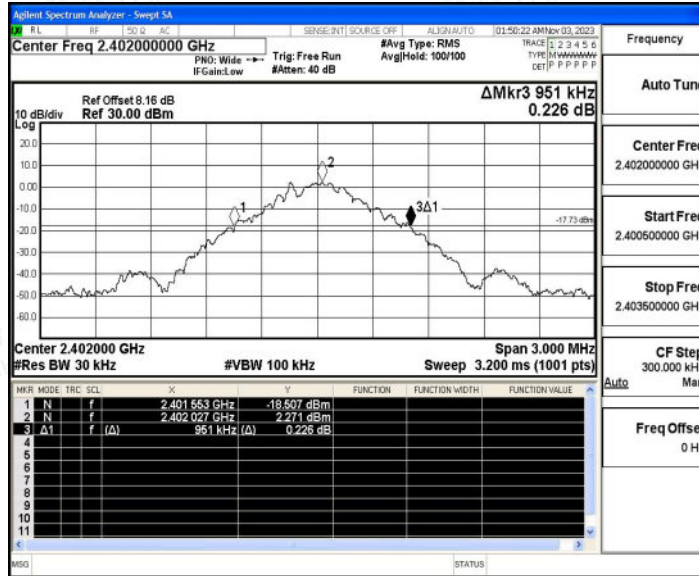
TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.951	2401.553	2402.504	---	---
		2441	0.948	2440.553	2441.501	---	---
		2480	0.942	2479.553	2480.495	---	---
2DH5	Ant1	2402	1.314	2401.343	2402.657	---	---
		2441	1.329	2440.343	2441.672	---	---
		2480	1.320	2479.355	2480.675	---	---



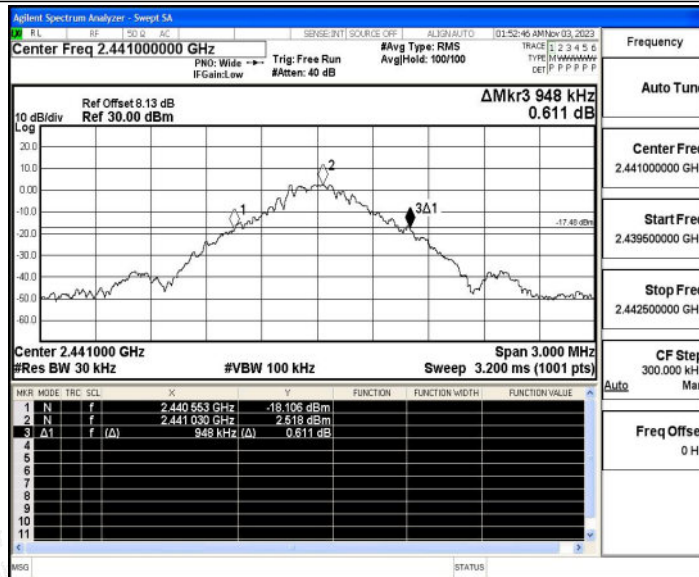


Test Graphs

DH5_Ant1_2402

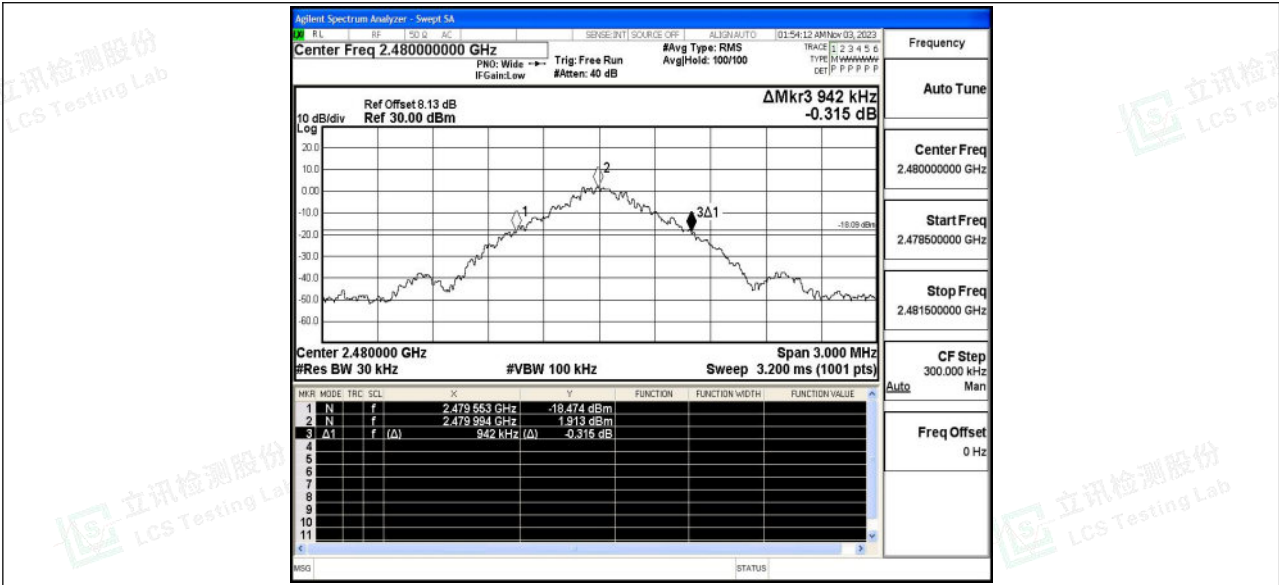


DH5_Ant1_2441

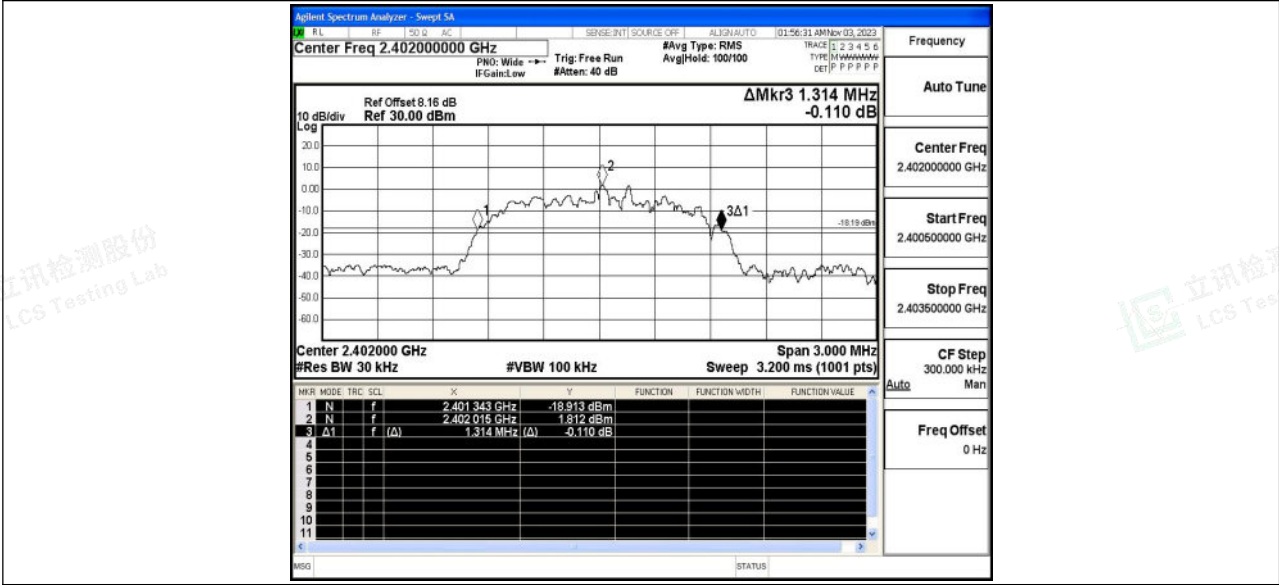


DH5_Ant1_2480



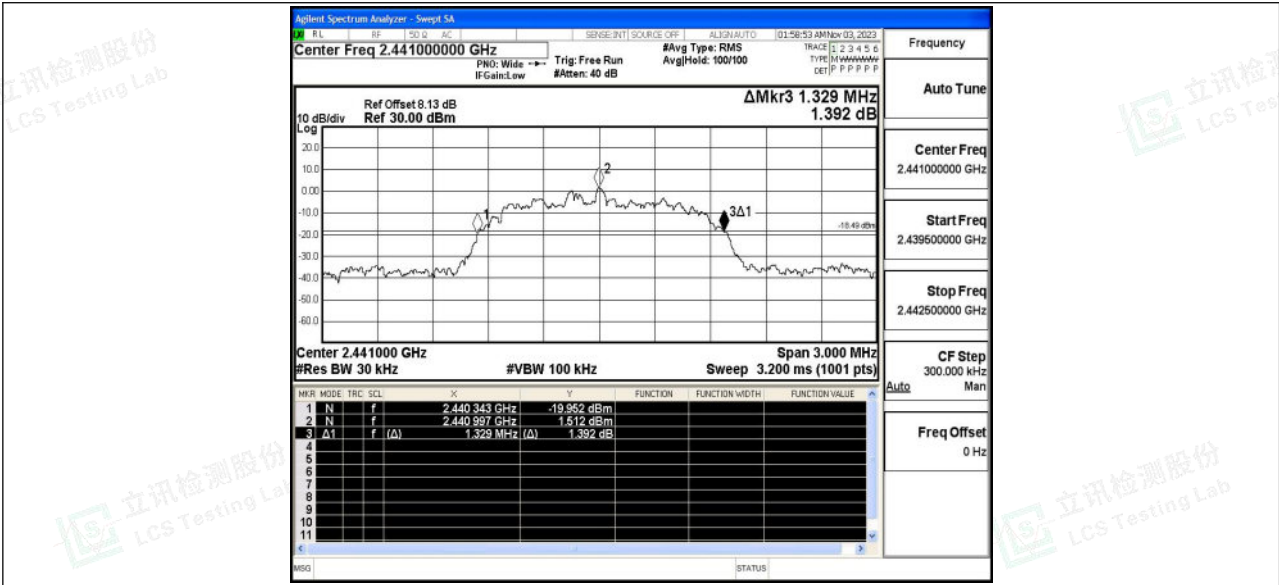


2DH5_Ant1_2402

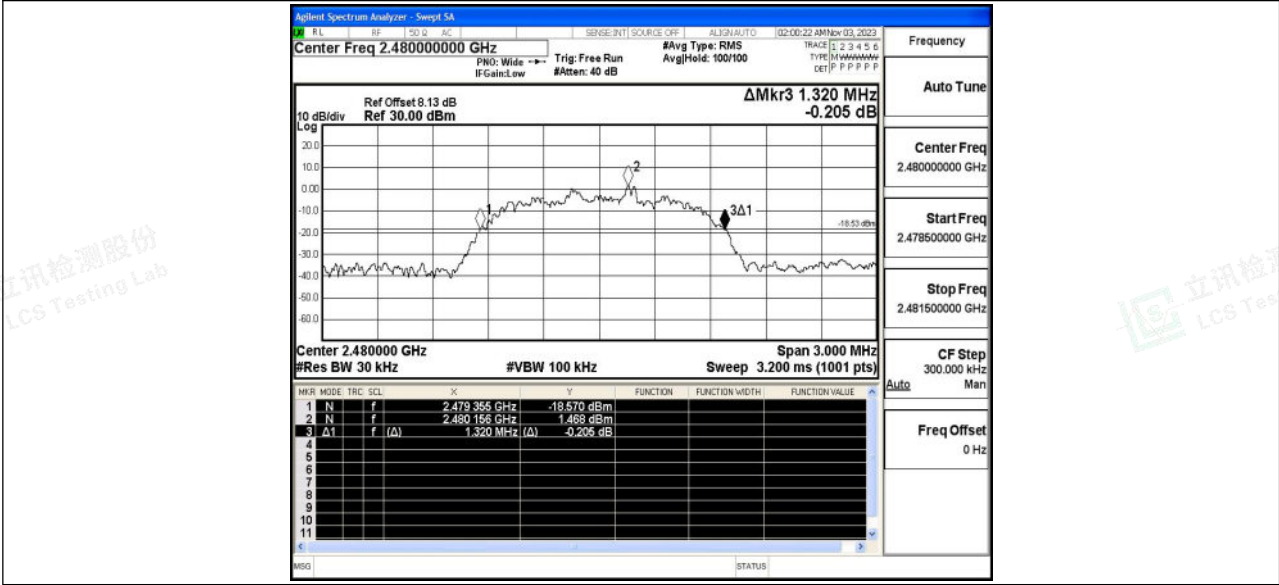


2DH5_Ant1_2441





2DH5_Ant1_2480





A.2 Maximum conducted output power

Test Result Peak

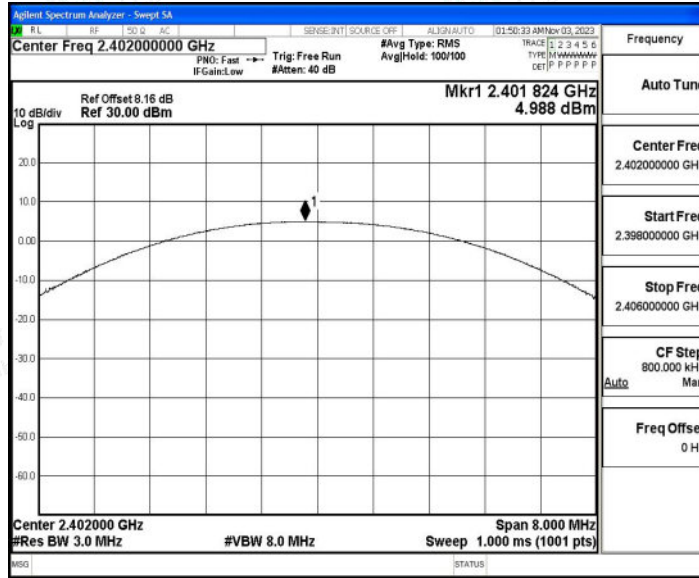
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	4.99	≤20.97	PASS
		2441	5.16	≤20.97	PASS
		2480	5.23	≤20.97	PASS
2DH5	Ant1	2402	5.58	≤20.97	PASS
		2441	5.73	≤20.97	PASS
		2480	5.75	≤20.97	PASS



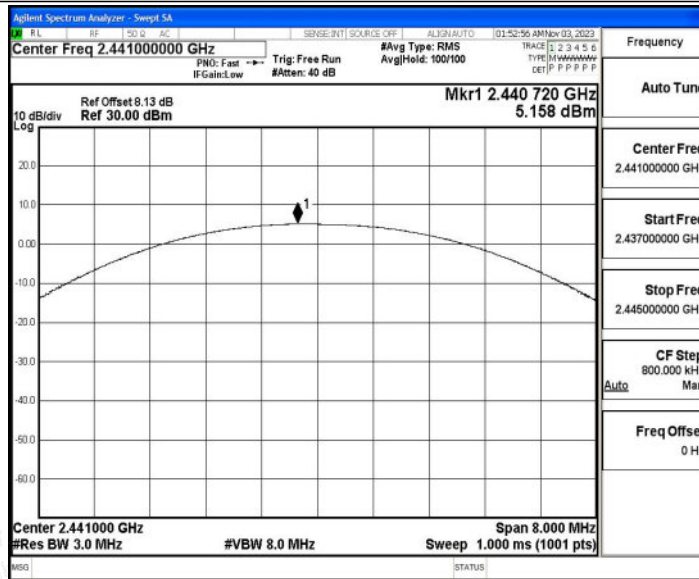


Test Graphs

DH5_Ant1_2402

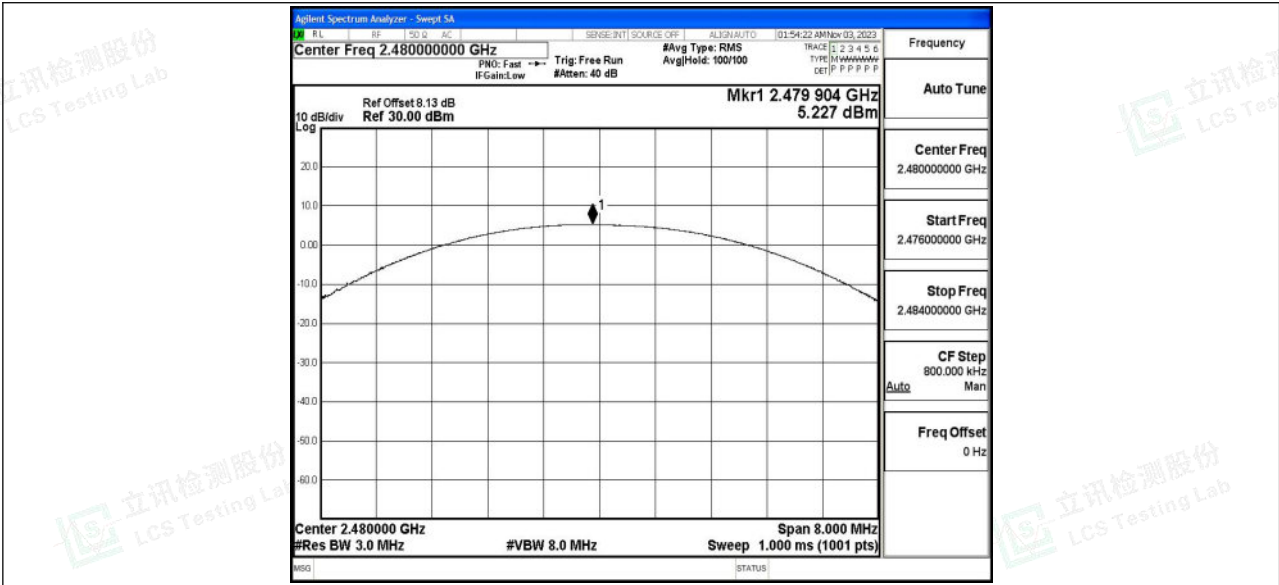


DH5_Ant1_2441

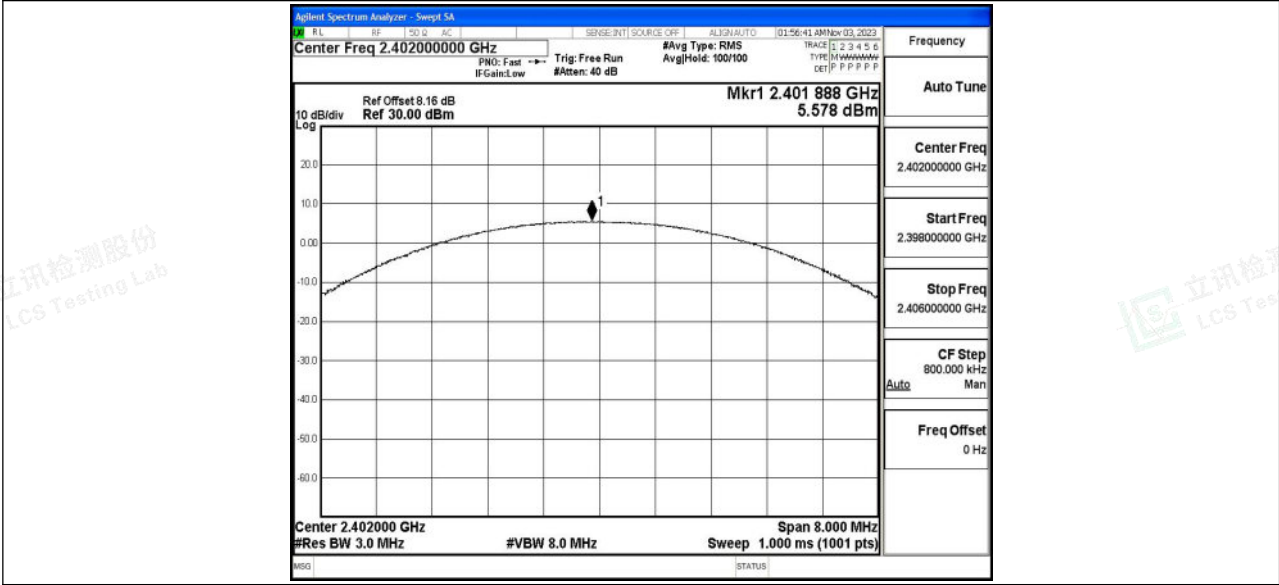


DH5_Ant1_2480



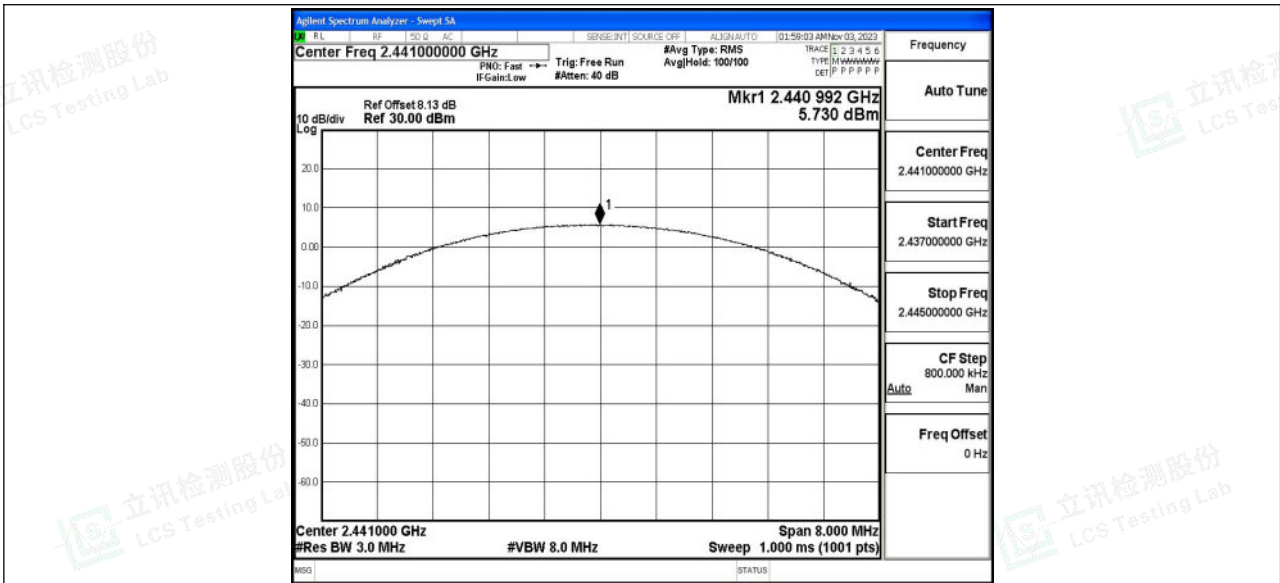


2DH5_Ant1_2402

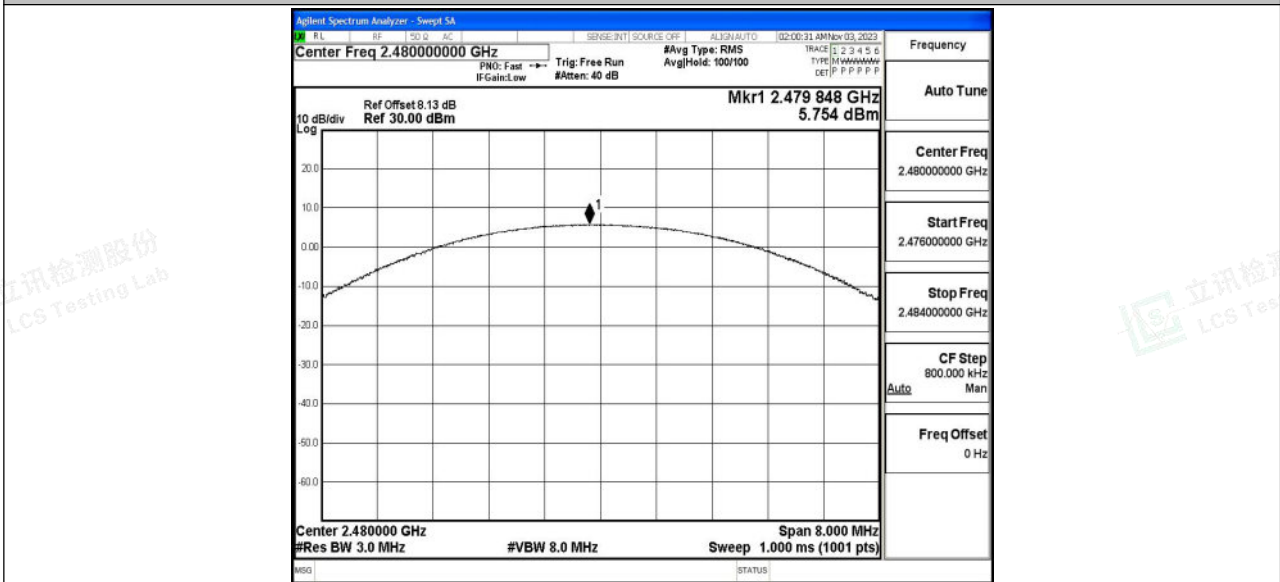


2DH5_Ant1_2441





2DH5_Ant1_2480





A.3 Carrier frequency separation

Test Result

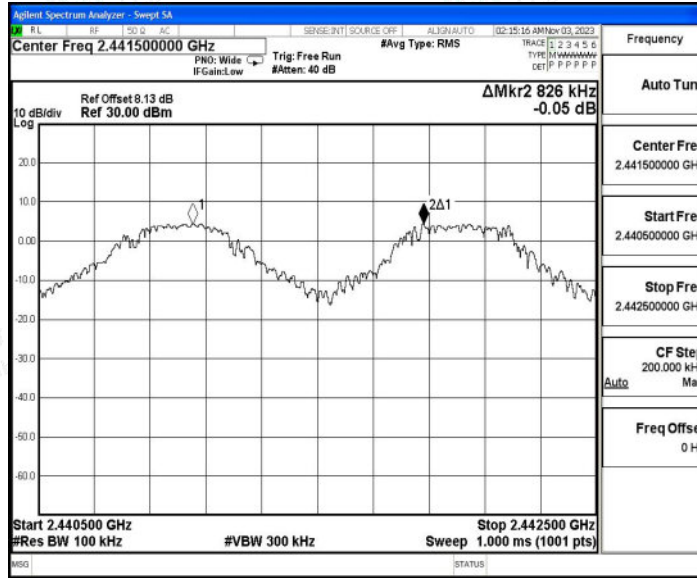
TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.826	≥0.634	PASS
2DH5	Ant1	Hop	1.036	≥0.886	PASS



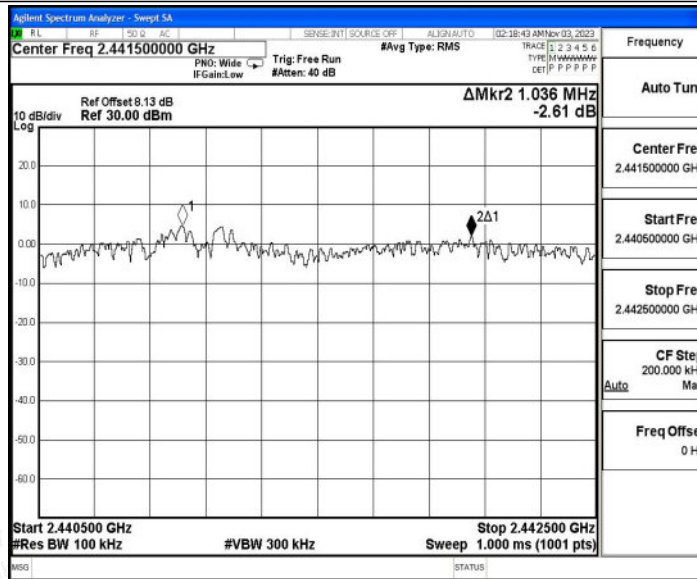


Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop





A.4 Time of occupancy

Test Result

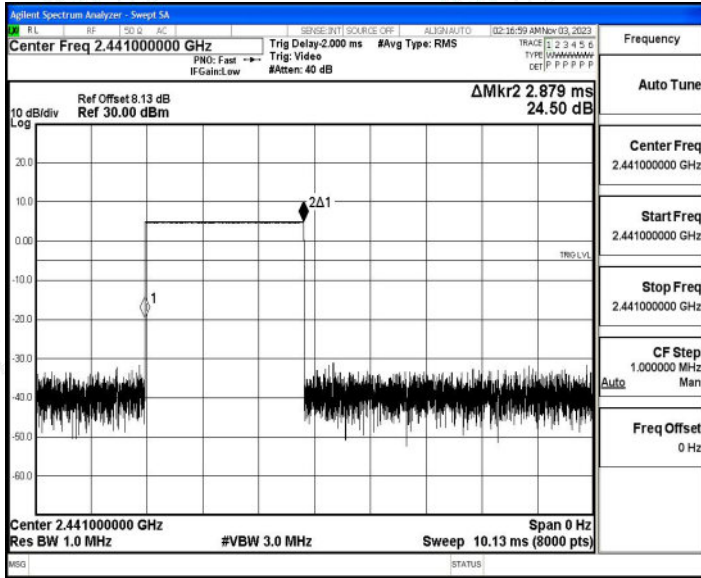
TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.879	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.885	106.67	0.308	≤0.4	PASS



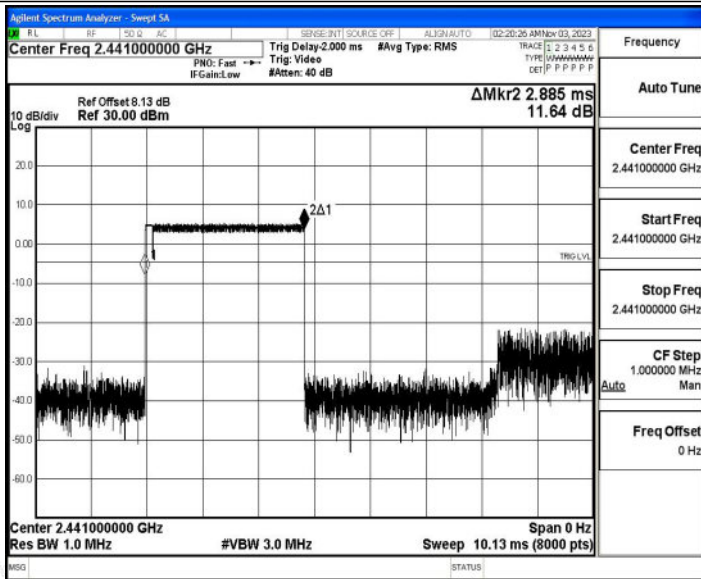


Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop





A.5 Number of hopping channels

Test Result

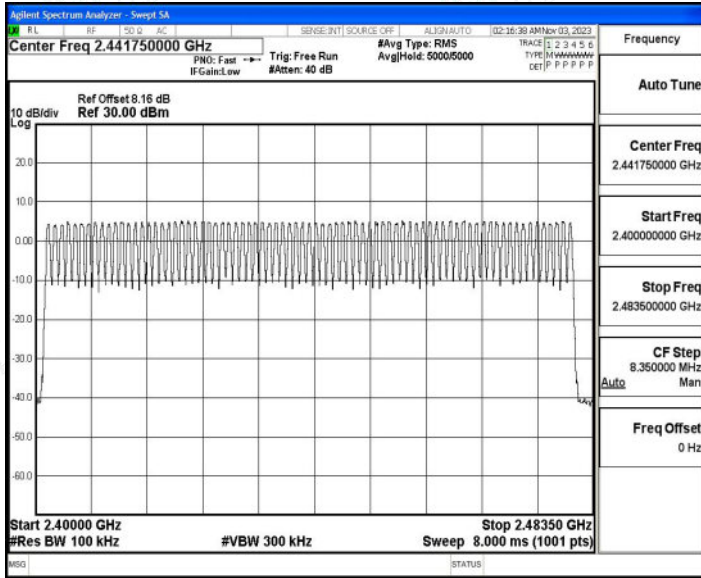
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS



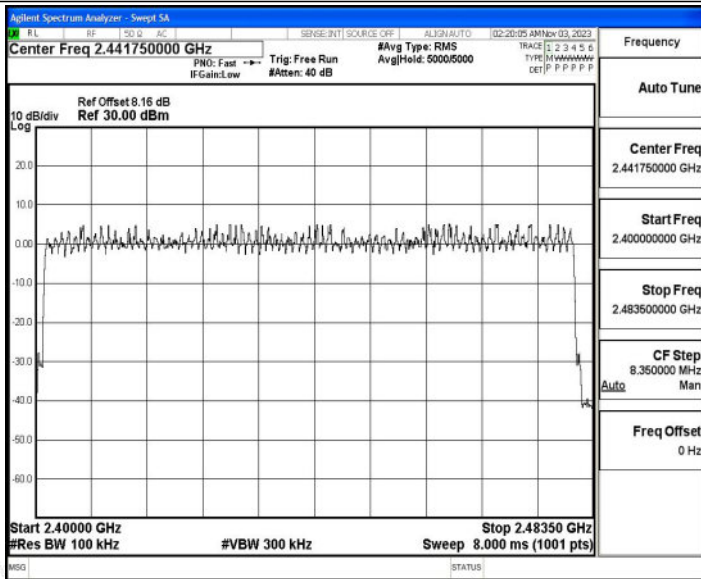


Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop





A.6 Band edge measurements

Test Result

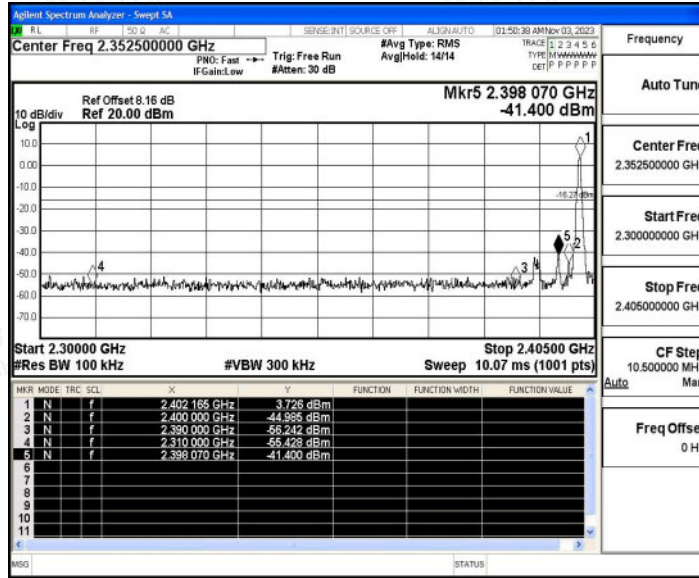
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	3.73	-41.4	≤-16.27	PASS
		High	2480	4.03	-48.92	≤-15.97	PASS
		Low	Hop_2402	4.11	-50.34	≤-15.89	PASS
		High	Hop_2480	4.68	-47.86	≤-15.32	PASS
2DH5	Ant1	Low	2402	-0.86	-43.61	≤-20.86	PASS
		High	2480	1.75	-50.46	≤-18.25	PASS
		Low	Hop_2402	3.25	-50.07	≤-16.75	PASS
		High	Hop_2480	4.94	-49.42	≤-15.06	PASS



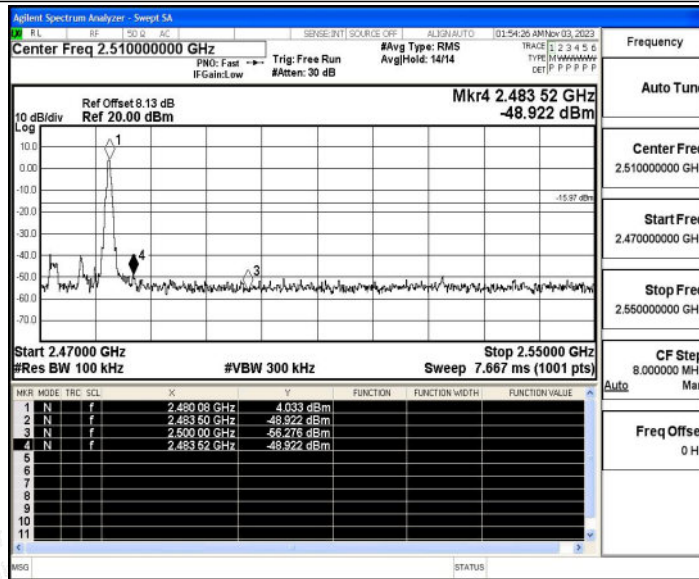


Test Graphs

DH5_Ant1_Low_2402

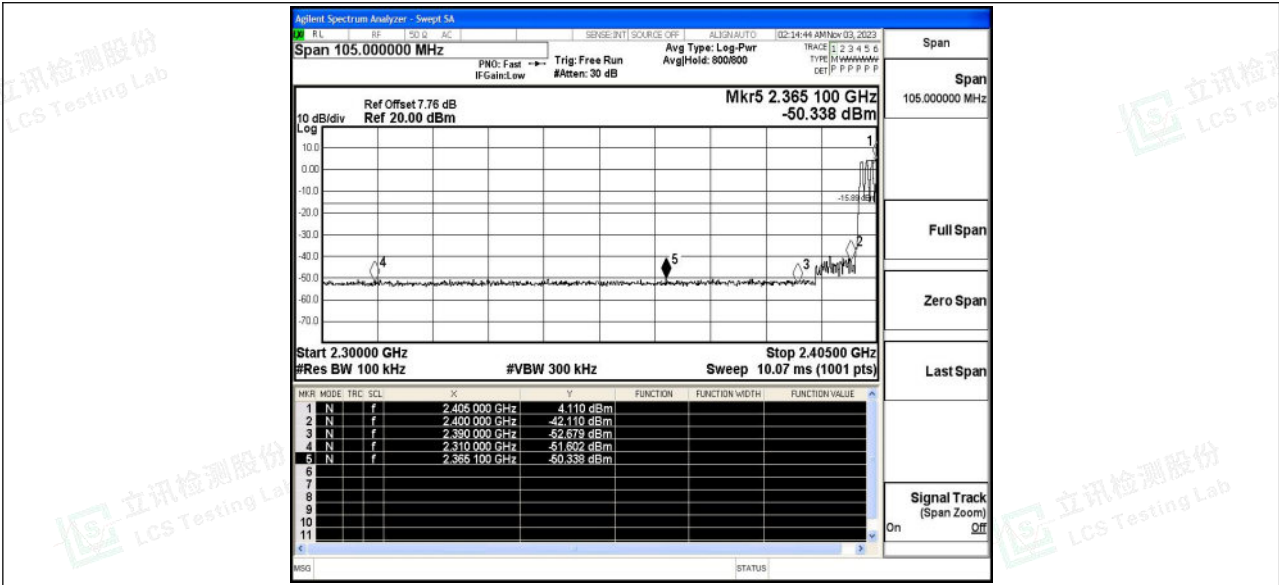


DH5_Ant1_High_2480

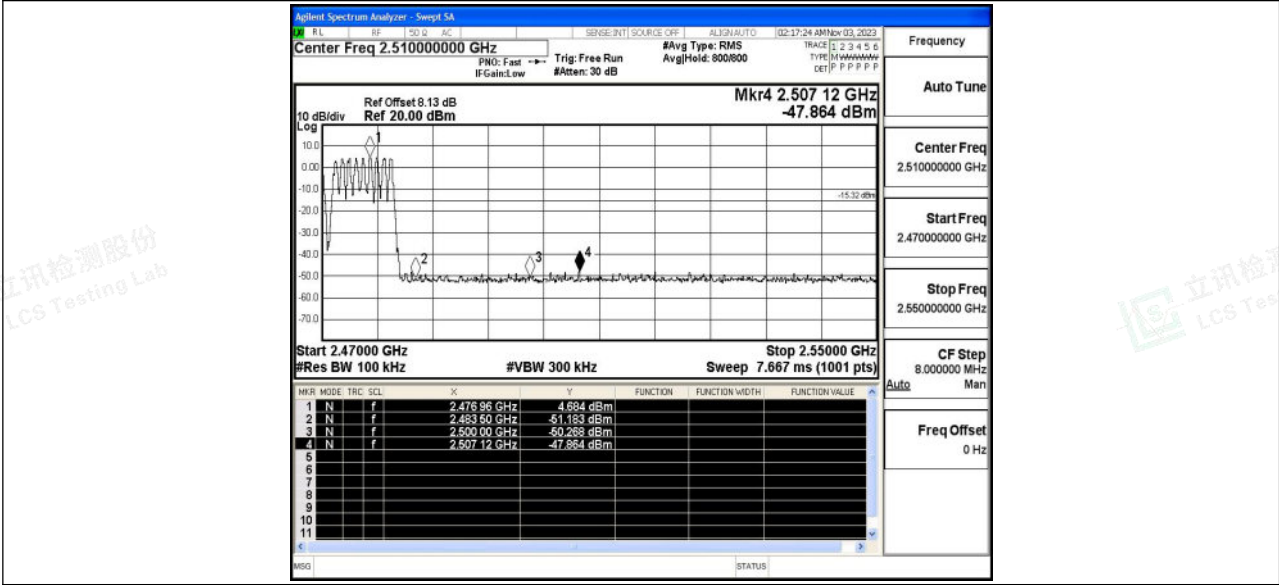


DH5_Ant1_Low_Hop_2402



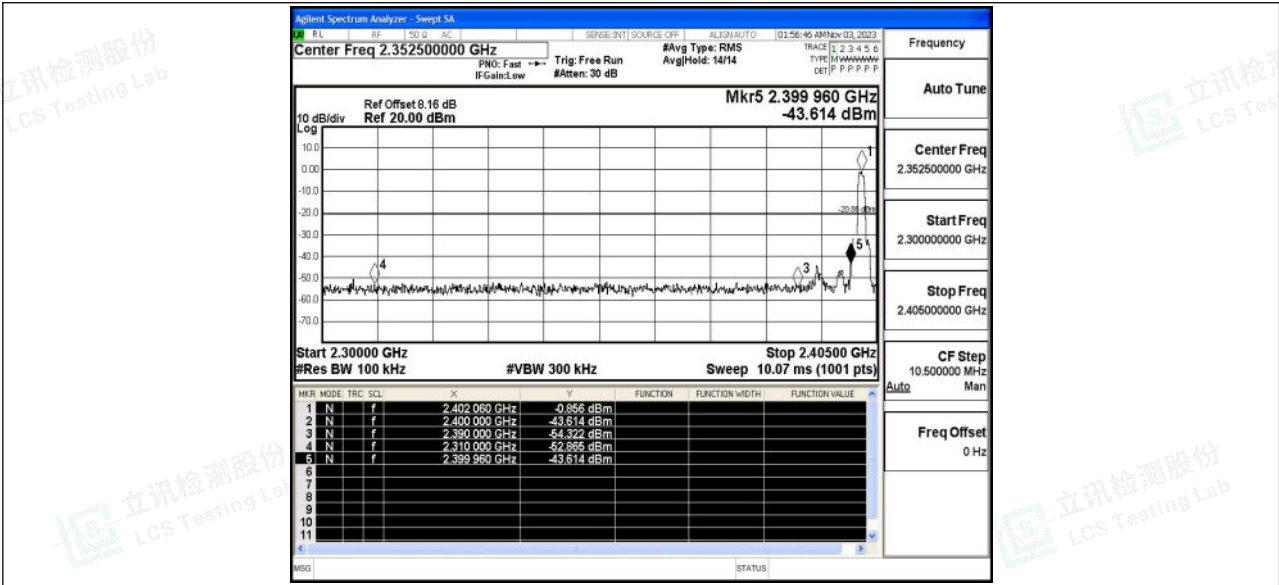


DH5_Ant1_High_Hop_2480

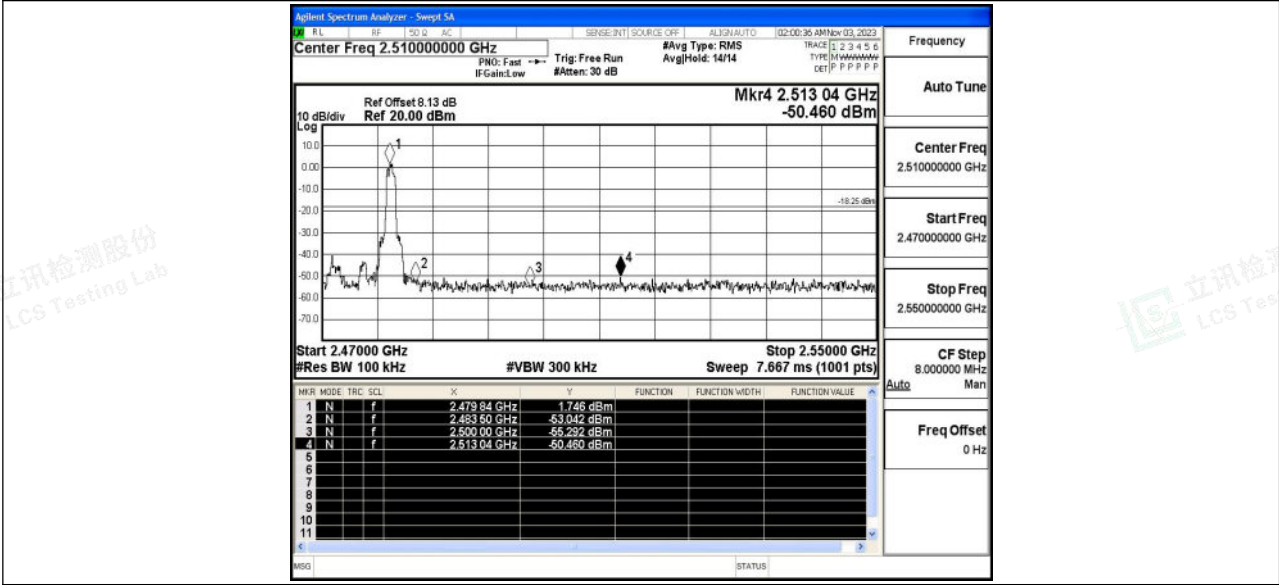


2DH5_Ant1_Low_2402



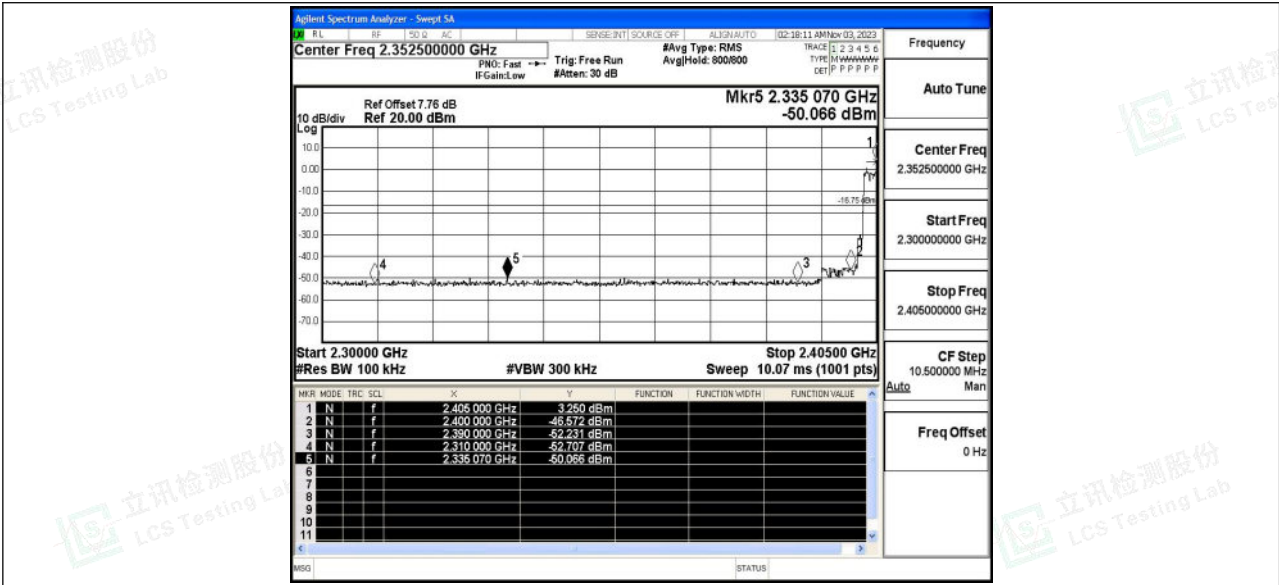


2DH5_Ant1_High_2480

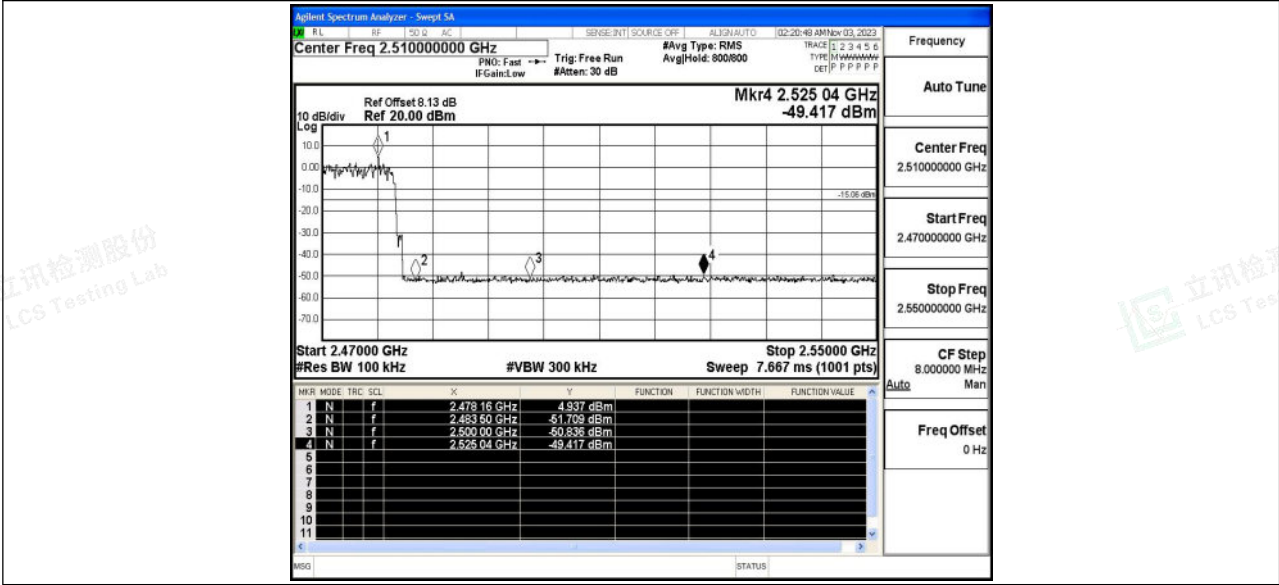


2DH5_Ant1_Low_Hop_2402





2DH5_Ant1_High_Hop_2480





A.7 Conducted Spurious Emission

Test Result

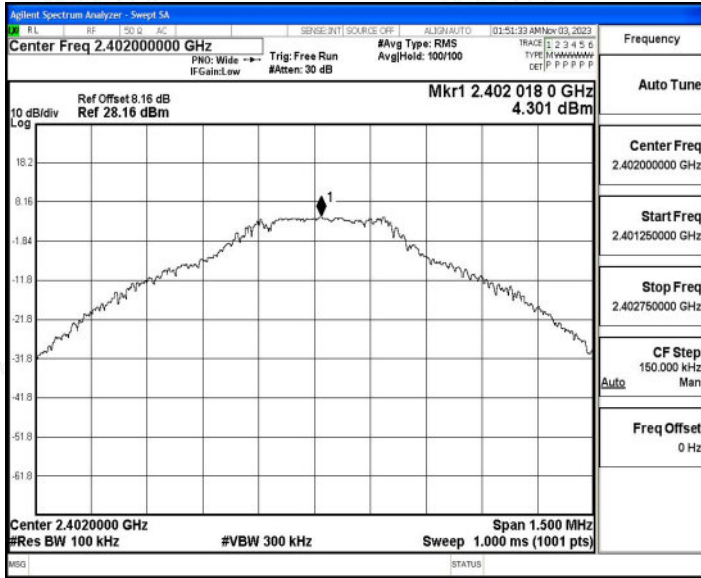
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.30	4.30	---	PASS
			30~1000	4.30	-56.65	≤-15.7	PASS
			1000~26500	4.30	-34.81	≤-15.7	PASS
		2441	Reference	4.26	4.26	---	PASS
			30~1000	4.26	-55.25	≤-15.74	PASS
			1000~26500	4.26	-33.2	≤-15.74	PASS
		2480	Reference	4.72	4.72	---	PASS
			30~1000	4.72	-57.29	≤-15.28	PASS
			1000~26500	4.72	-33.4	≤-15.28	PASS
2DH5	Ant1	2402	Reference	1.13	1.13	---	PASS
			30~1000	1.13	-57.78	≤-18.87	PASS
			1000~26500	1.13	-37.81	≤-18.87	PASS
		2441	Reference	4.66	4.66	---	PASS
			30~1000	4.66	-55.48	≤-15.34	PASS
			1000~26500	4.66	-35.58	≤-15.34	PASS
		2480	Reference	4.83	4.83	---	PASS
			30~1000	4.83	-57.57	≤-15.17	PASS
			1000~26500	4.83	-39.31	≤-15.17	PASS



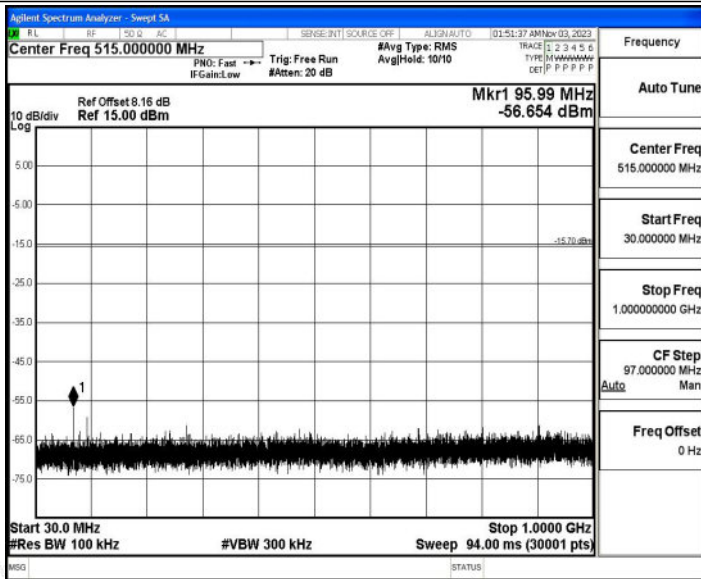


Test Graphs

DH5_Ant1_2402_0~Reference

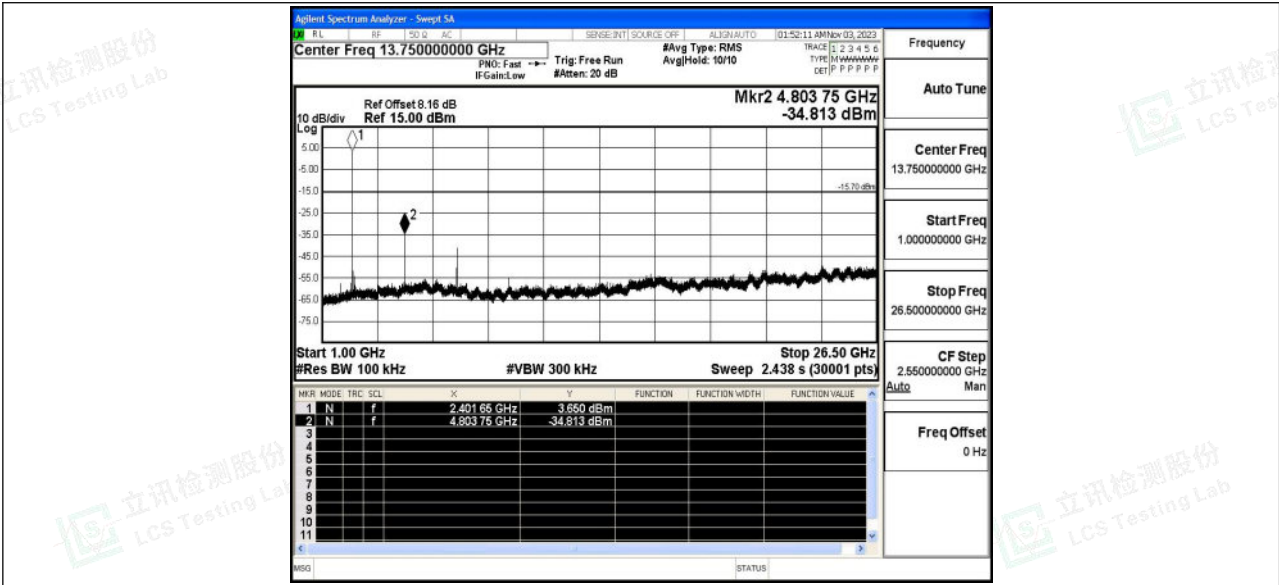


DH5_Ant1_2402_30~1000

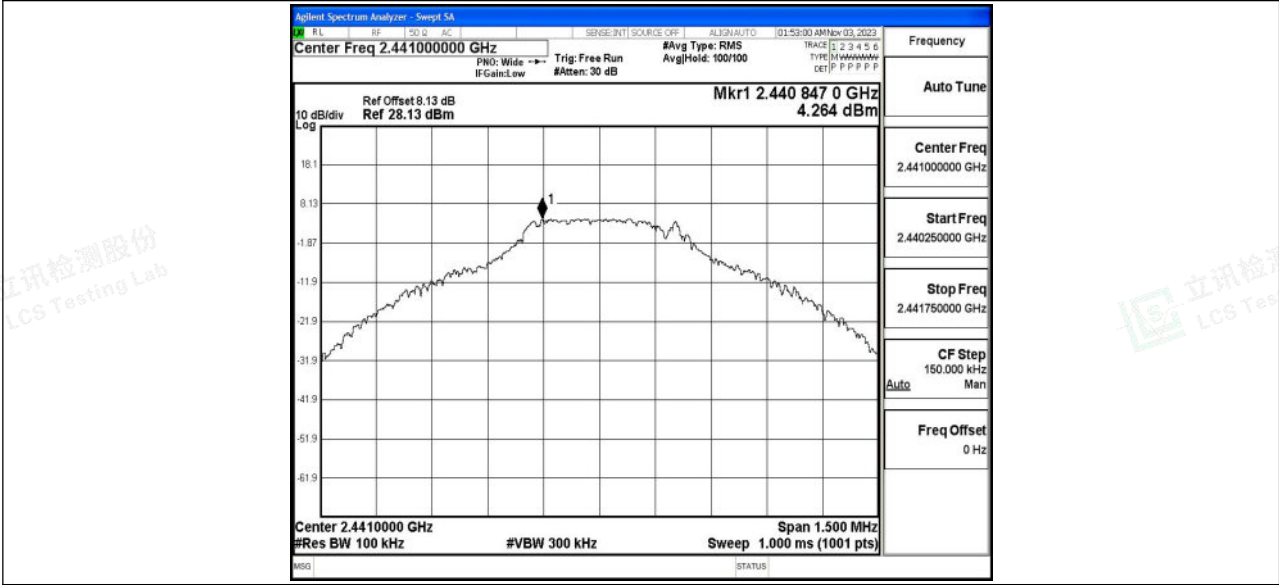


DH5_Ant1_2402_1000~26500



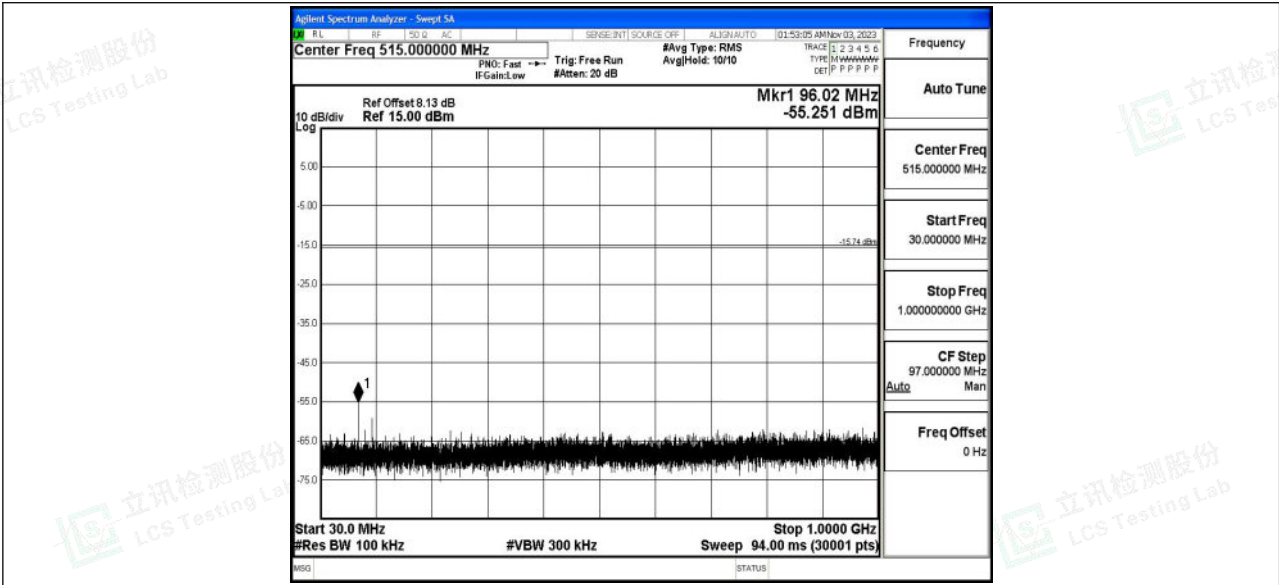


DH5_Ant1_2441_0~Reference

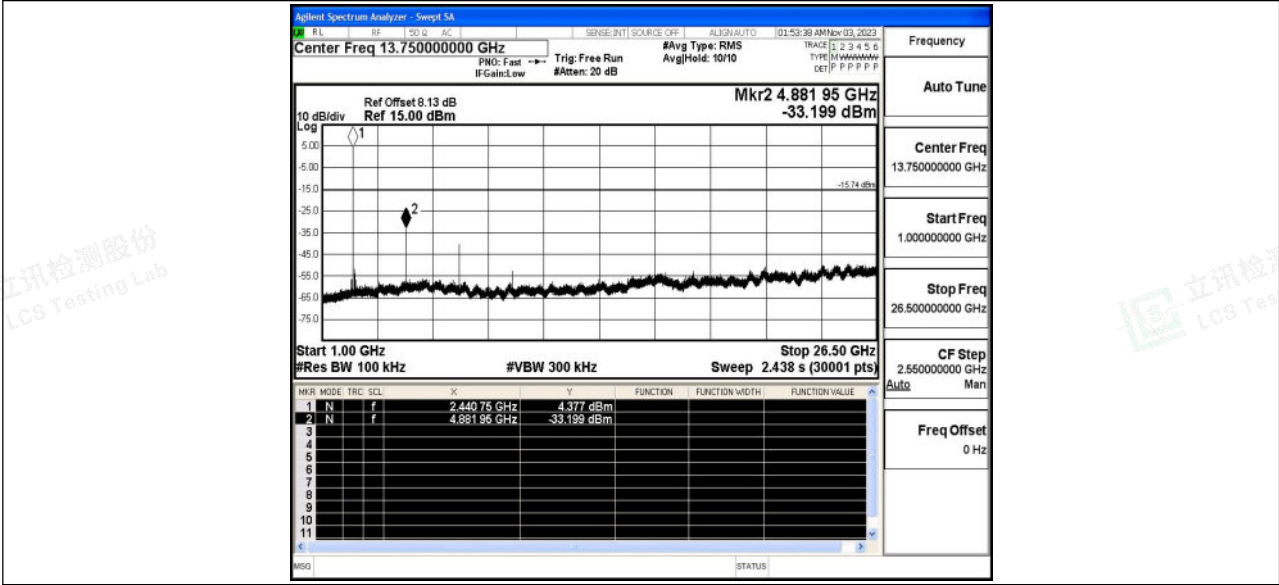


DH5_Ant1_2441_30~1000



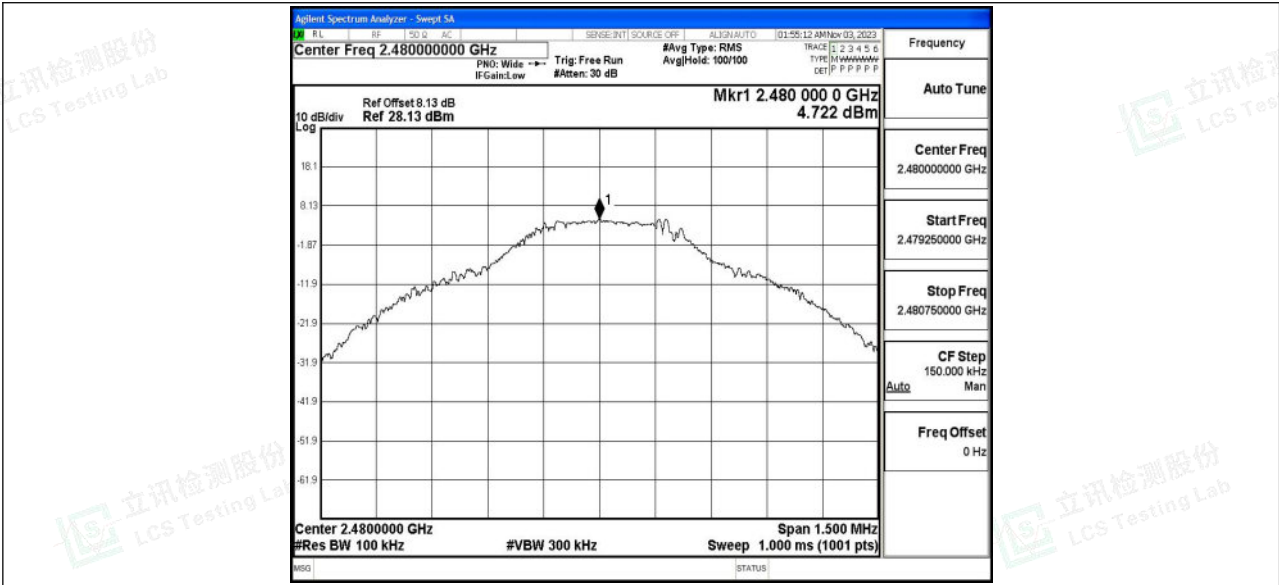


DH5_Ant1_2441_1000~26500

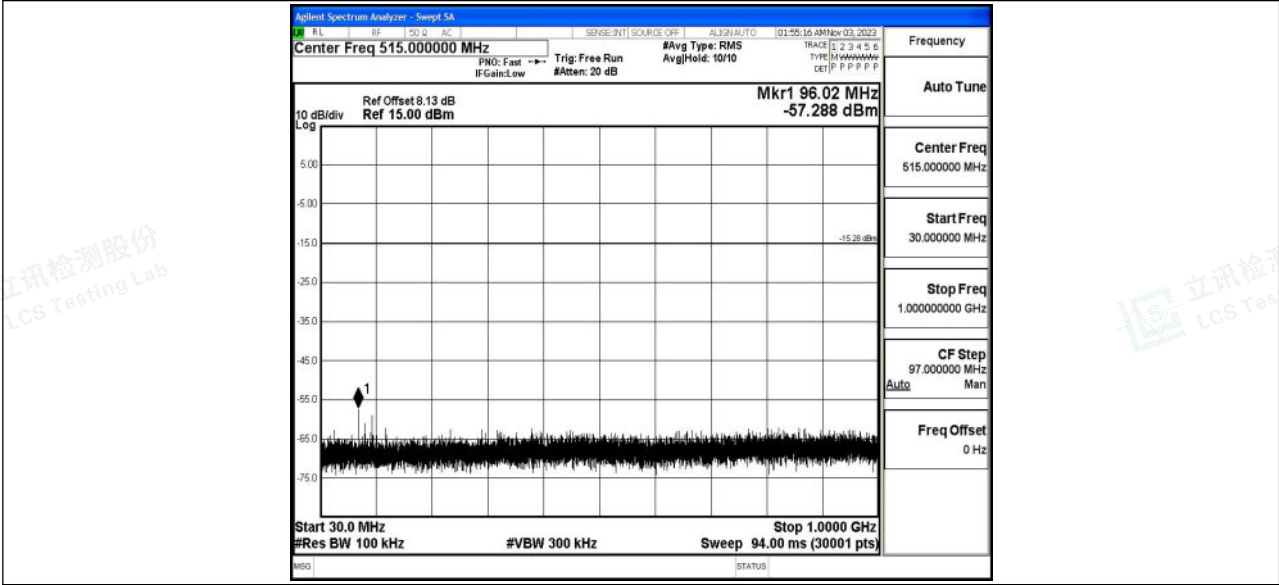


DH5_Ant1_2480_0~Reference



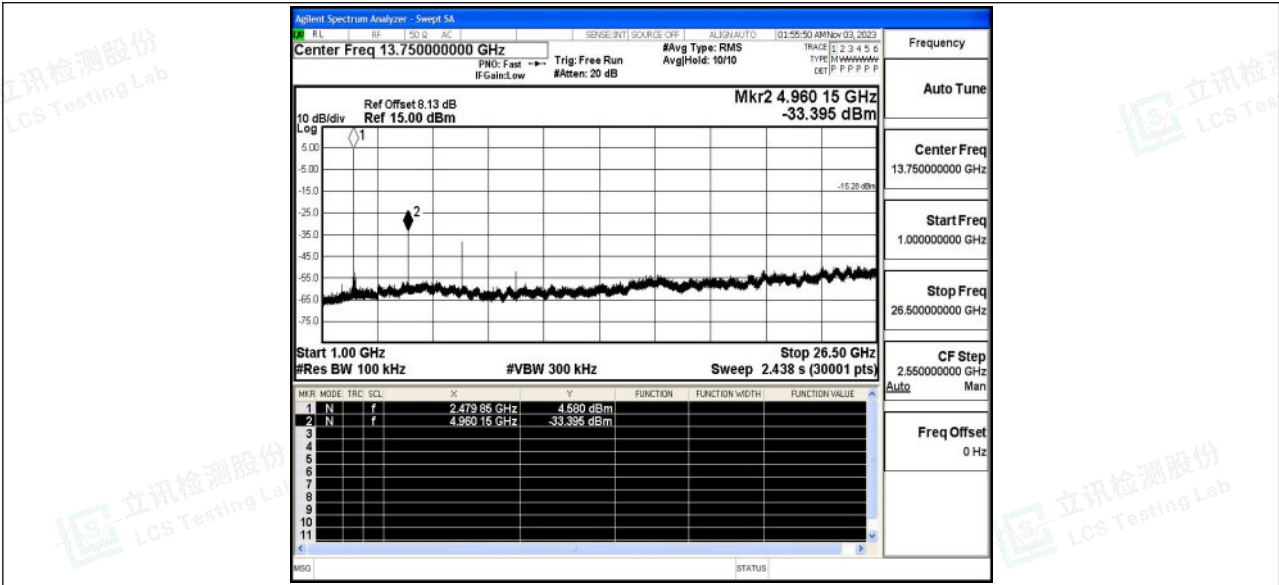


DH5_Ant1_2480_30~1000

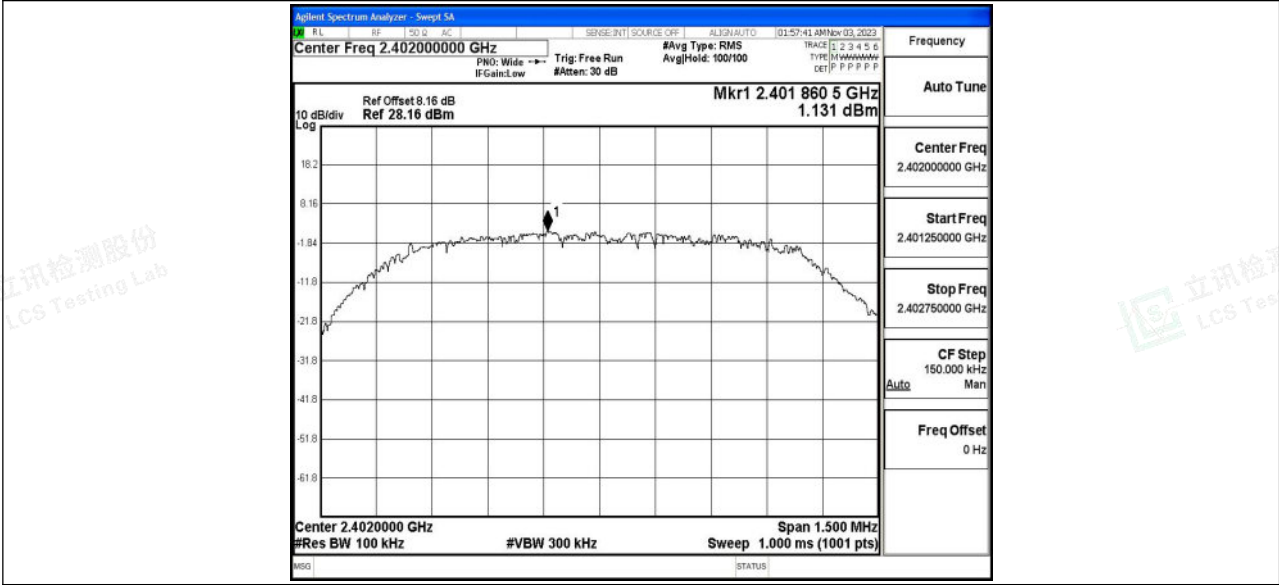


DH5_Ant1_2480_1000~26500



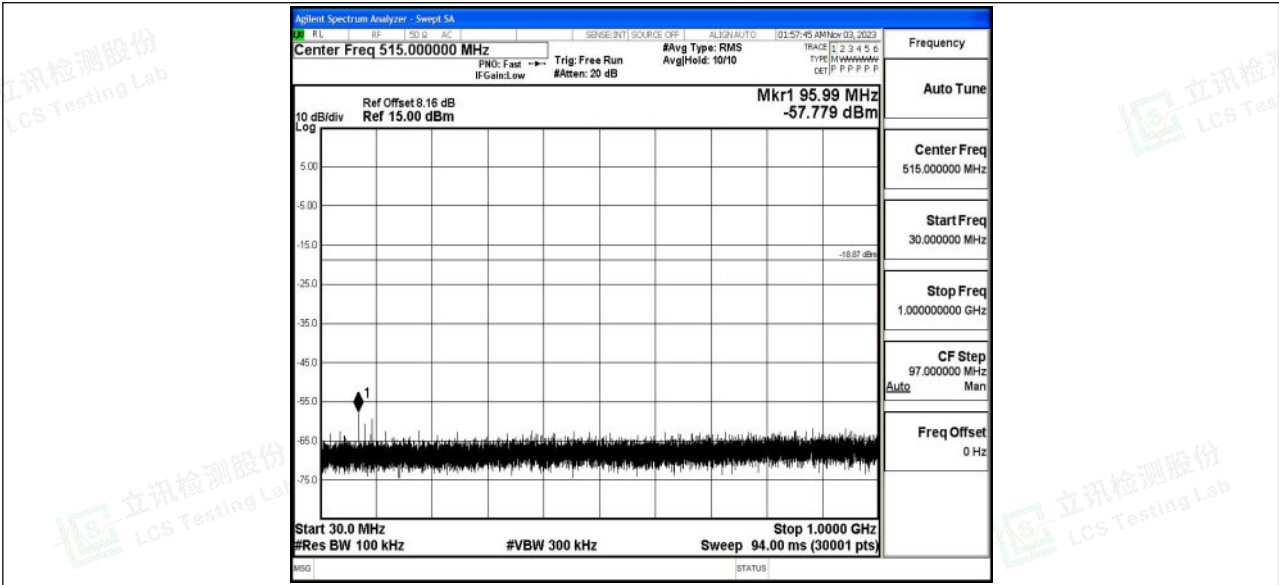


2DH5_Ant1_2402_0~Reference

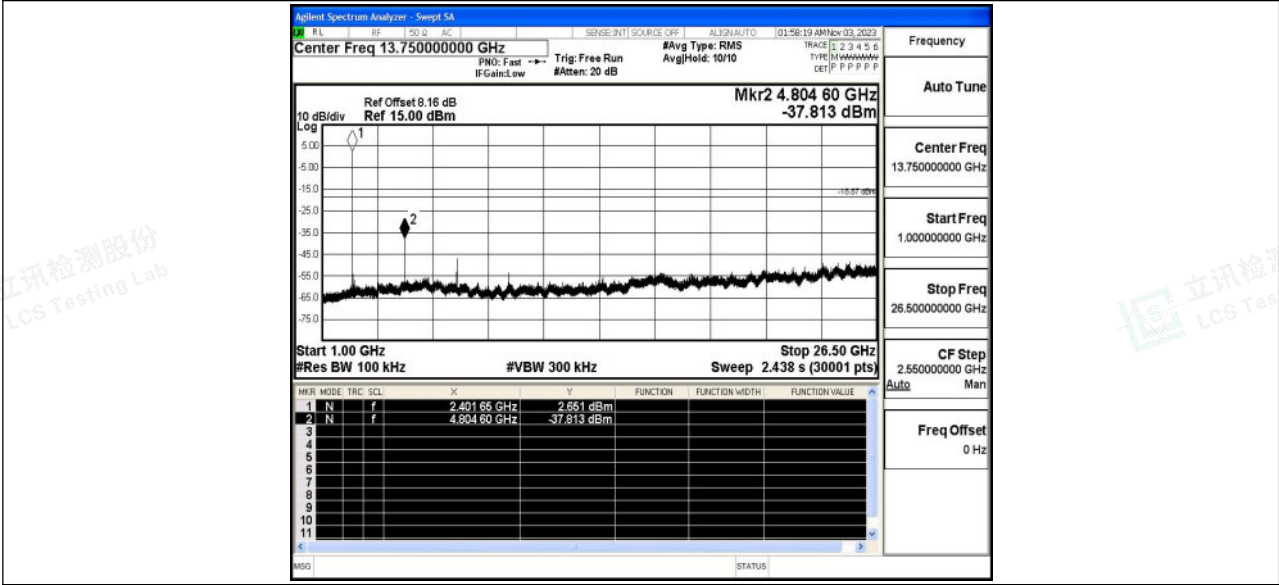


2DH5_Ant1_2402_30~1000



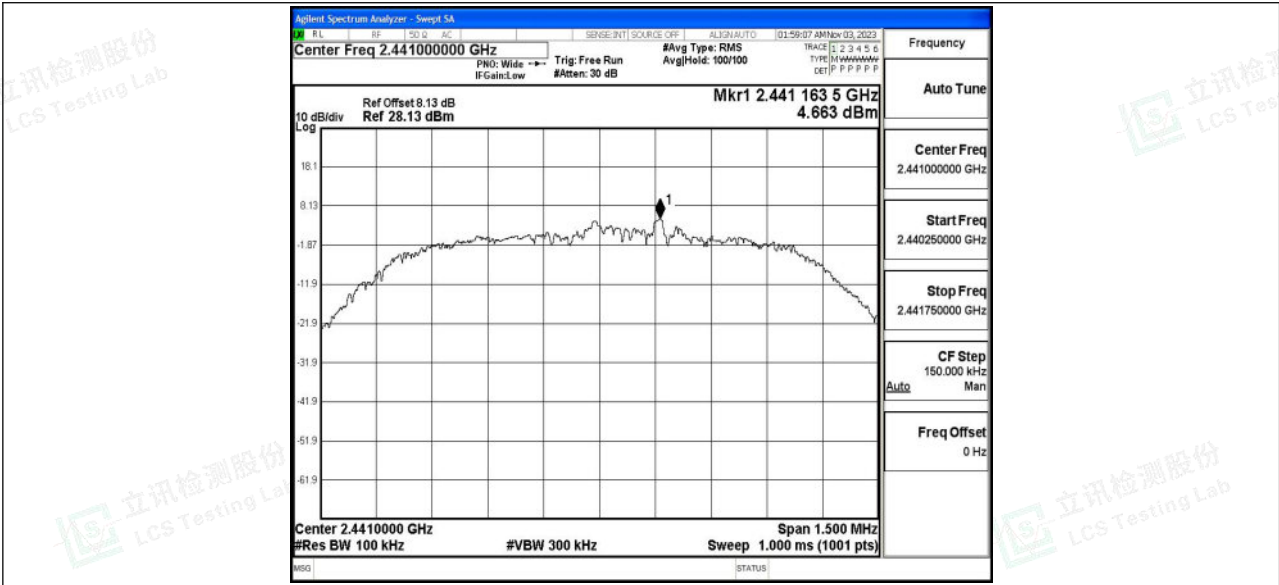


2DH5_Ant1_2402_1000~26500

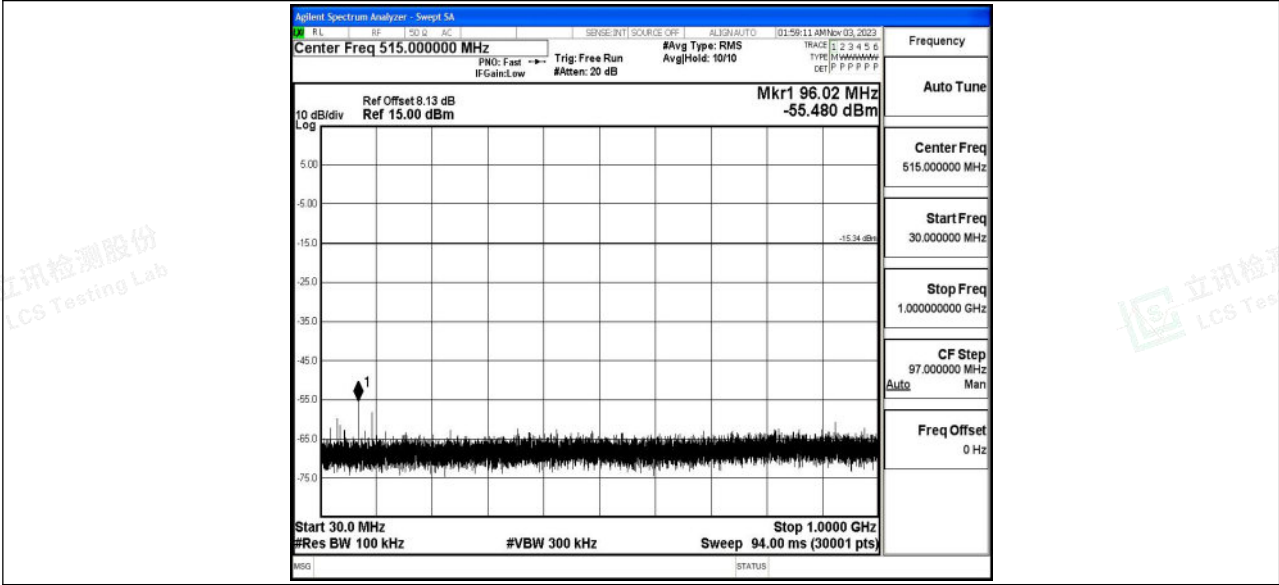


2DH5_Ant1_2441_0~Reference



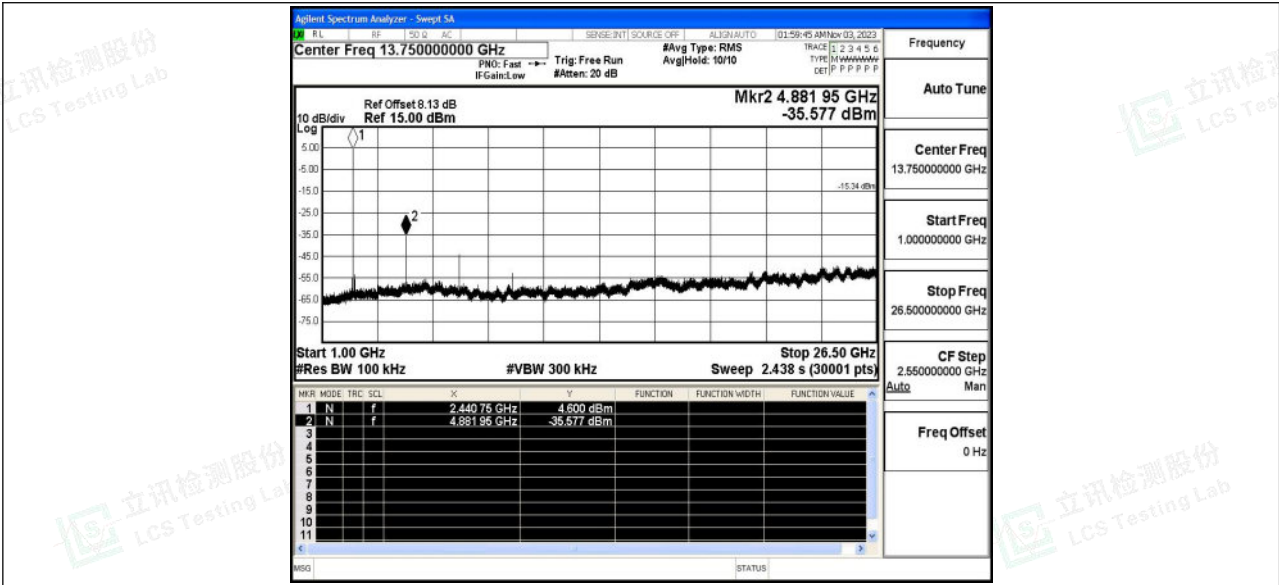


2DH5_Ant1_2441_30~1000

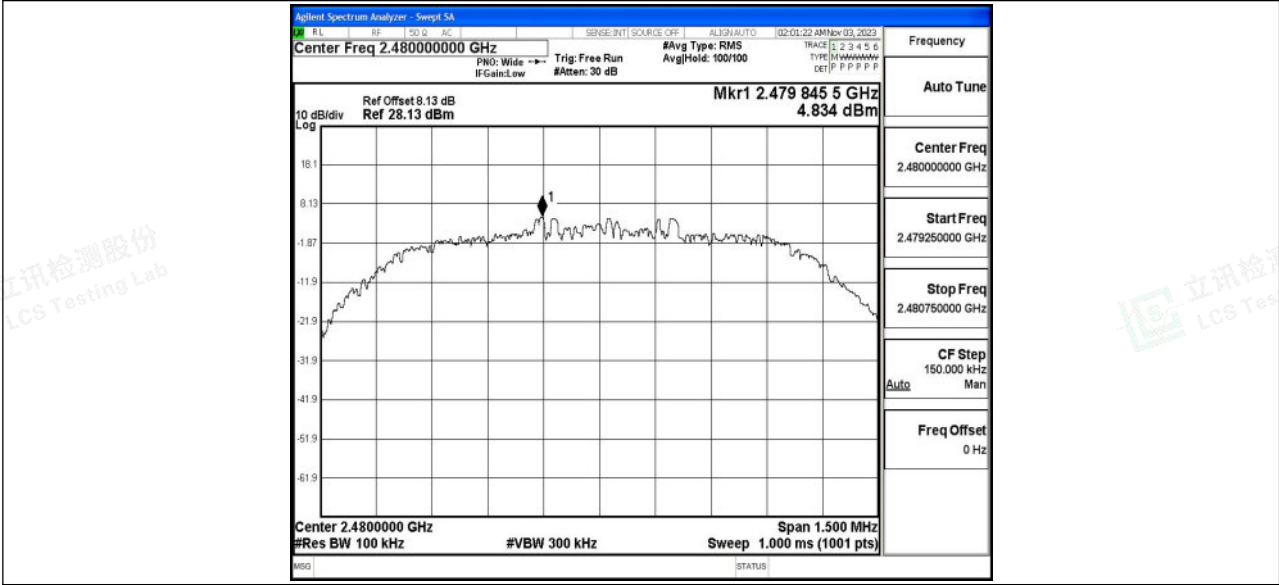


2DH5_Ant1_2441_1000~26500



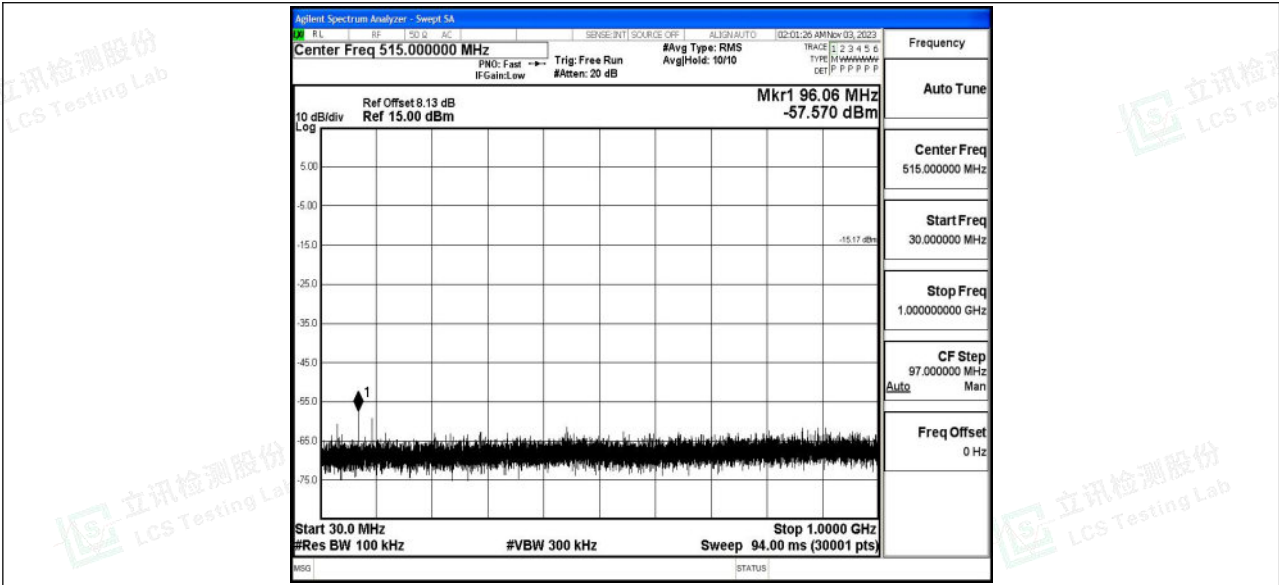


2DH5_Ant1_2480_0~Reference

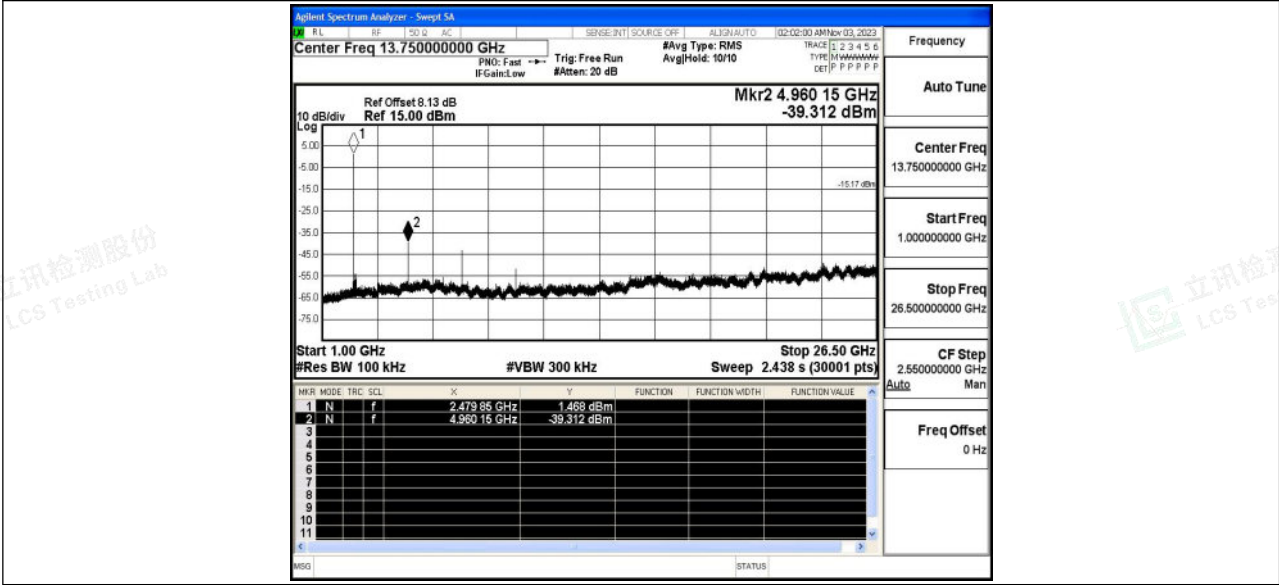


2DH5_Ant1_2480_30~1000





2DH5_Ant1_2480_1000~26500





A.8 Emissions in Restricted Bands

Test Result

Test Mode	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	-49.12	≤-41.20	46.08	≤54	PASS		
				AV	2353.970	-47.95	≤-41.20	47.25	≤54	PASS		
				AV	2390.000	-48.69	≤-41.20	46.51	≤54	PASS		
				Peak	2310.000	-43.25	≤-21.20	51.95	≤74	PASS		
				Peak	2338.745	-38.47	≤-21.20	56.73	≤74	PASS		
				Peak	2390.000	-44.05	≤-21.20	51.15	≤74	PASS		
		High	2480	AV	2483.500	-45.09	≤-41.20	50.11	≤54	PASS		
				AV	2483.520	-45.09	≤-41.20	50.11	≤54	PASS		
				AV	2500.000	-48.7	≤-41.20	46.50	≤54	PASS		
				Peak	2483.500	-39.37	≤-21.20	55.83	≤74	PASS		
				Peak	2484.720	-38.32	≤-21.20	56.88	≤74	PASS		
				Peak	2500.000	-42.38	≤-21.20	52.82	≤74	PASS		
		Low	Hop_2402	Peak	2310.000	-41.92	≤-21.20	53.28	≤74	PASS		
				Peak	2335.910	-38.37	≤-21.20	56.83	≤74	PASS		
				Peak	2390.000	-41.69	≤-21.20	53.51	≤74	PASS		
		High	Hop_2480	Peak	2483.500	-40.54	≤-21.20	54.66	≤74	PASS		
				Peak	2488.000	-37.76	≤-21.20	57.44	≤74	PASS		
				Peak	2500.000	-39.11	≤-21.20	56.09	≤74	PASS		
		2DH5	Ant1	Low	2402	AV	2310.000	-49.18	≤-41.20	46.02	≤54	PASS
						AV	2354.180	-48.24	≤-41.20	46.96	≤54	PASS
						AV	2390.000	-48.65	≤-41.20	46.55	≤54	PASS
Peak	2310.000					-41.94	≤-21.20	53.26	≤74	PASS		
Peak	2378.645					-40.22	≤-21.20	54.98	≤74	PASS		
Peak	2390.000					-42.88	≤-21.20	52.32	≤74	PASS		
High	2480			AV	2483.500	-45.73	≤-41.20	49.47	≤54	PASS		
				AV	2483.520	-45.73	≤-41.20	49.47	≤54	PASS		
				AV	2500.000	-48.53	≤-41.20	46.67	≤54	PASS		
				Peak	2483.500	-38.18	≤-21.20	57.02	≤74	PASS		
				Peak	2483.520	-38.18	≤-21.20	57.02	≤74	PASS		
				Peak	2500.000	-42.13	≤-21.20	53.07	≤74	PASS		
Low	Hop_2402			Peak	2310.000	-41.5	≤-21.20	53.70	≤74	PASS		
				Peak	2357.645	-38.39	≤-21.20	56.81	≤74	PASS		
				Peak	2390.000	-39.52	≤-21.20	55.68	≤74	PASS		
High	Hop_2480			Peak	2483.500	-37.8	≤-21.20	57.40	≤74	PASS		
				Peak	2500.000	-41.04	≤-21.20	54.16	≤74	PASS		

Note:



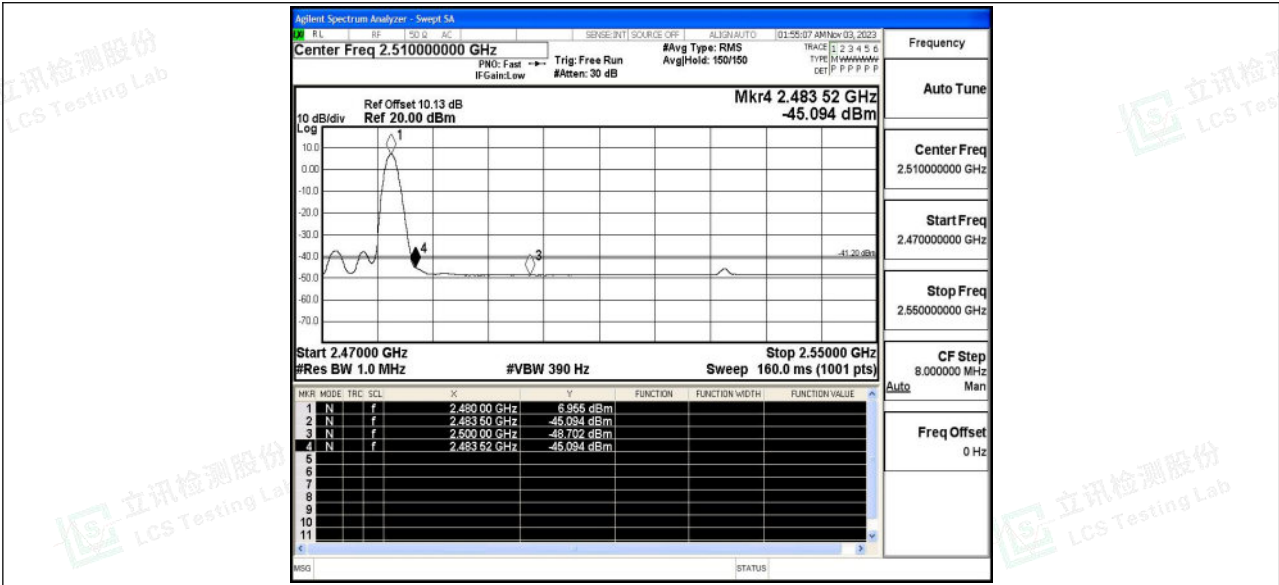
Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity



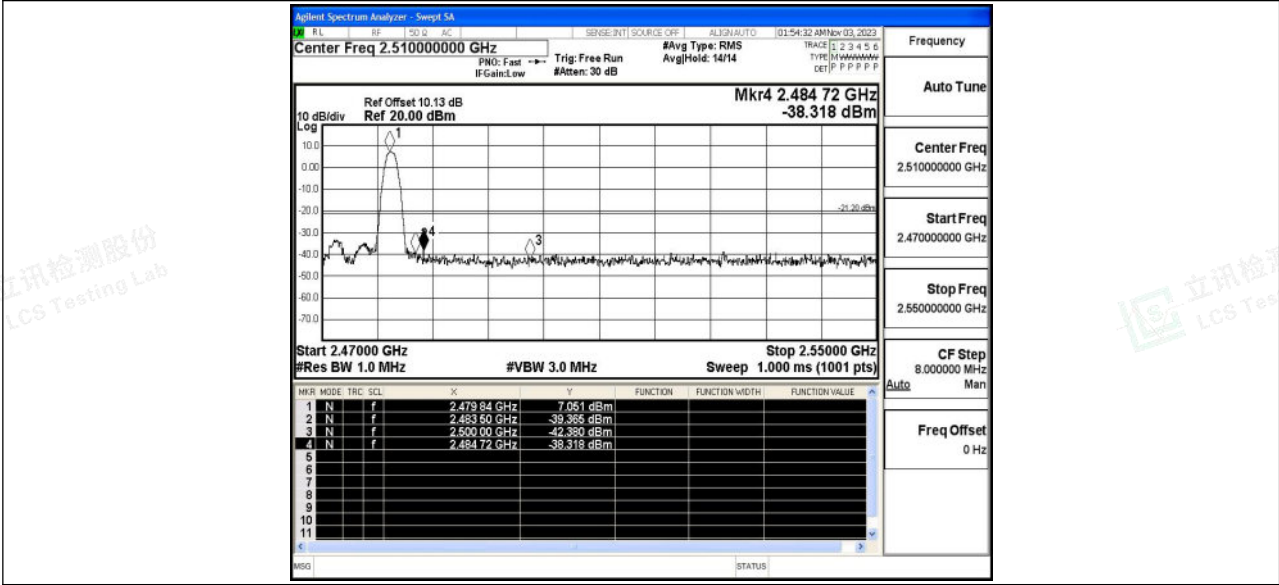
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs



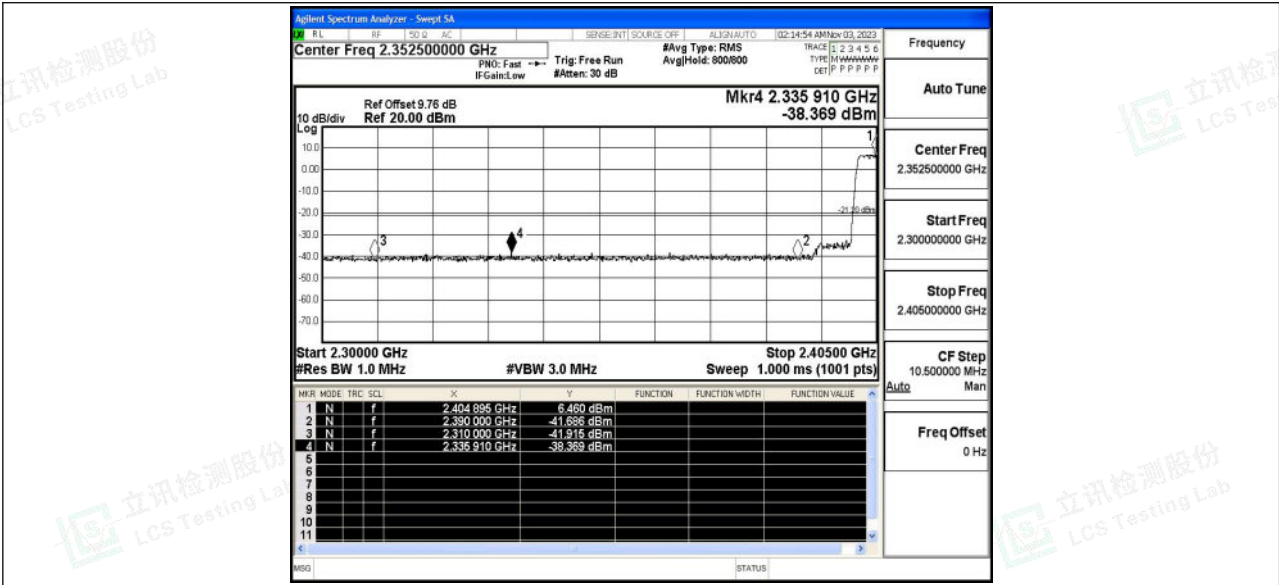


DH5_Ant1_High_2480_Peak

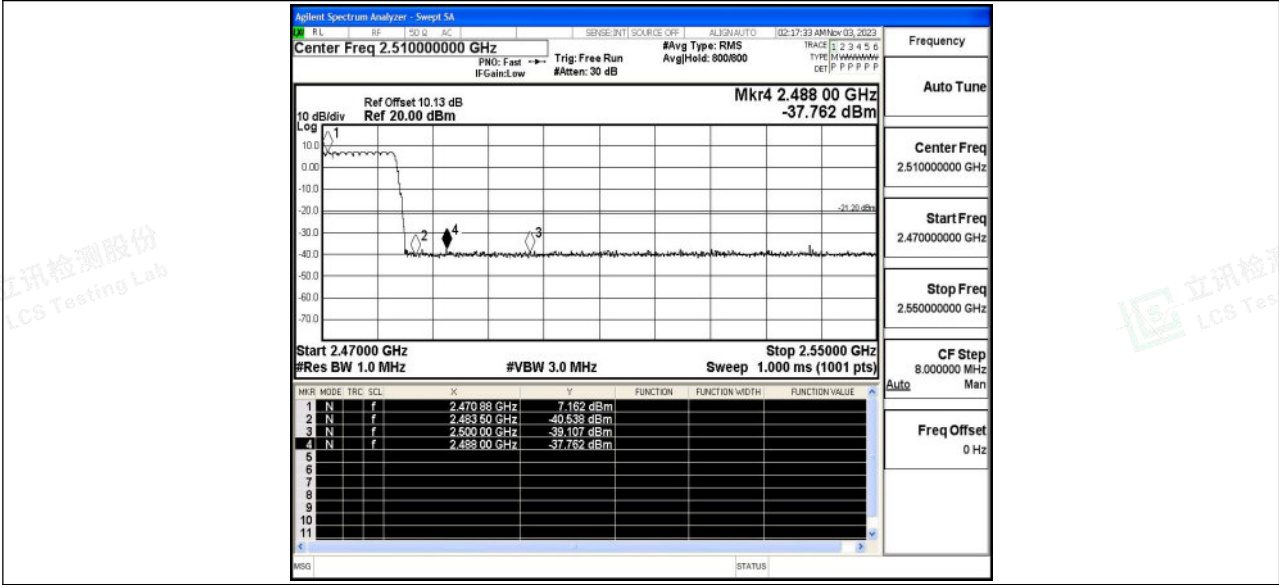


DH5_Ant1_Low_Hop_2402_Peak



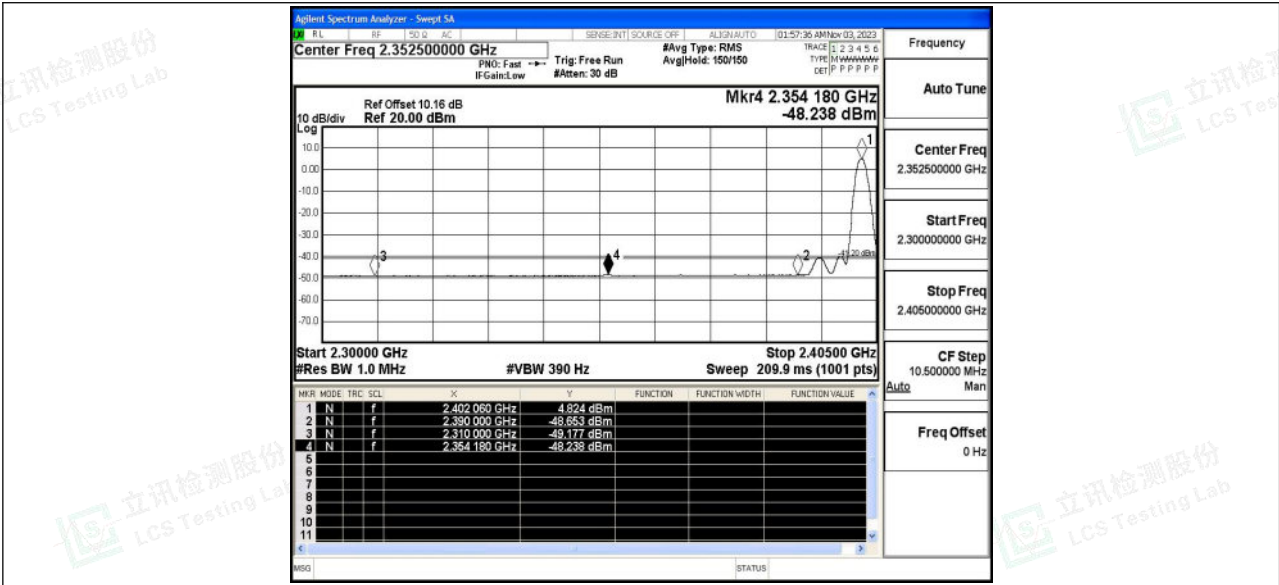


DH5_Ant1_High_Hop_2480_Peak

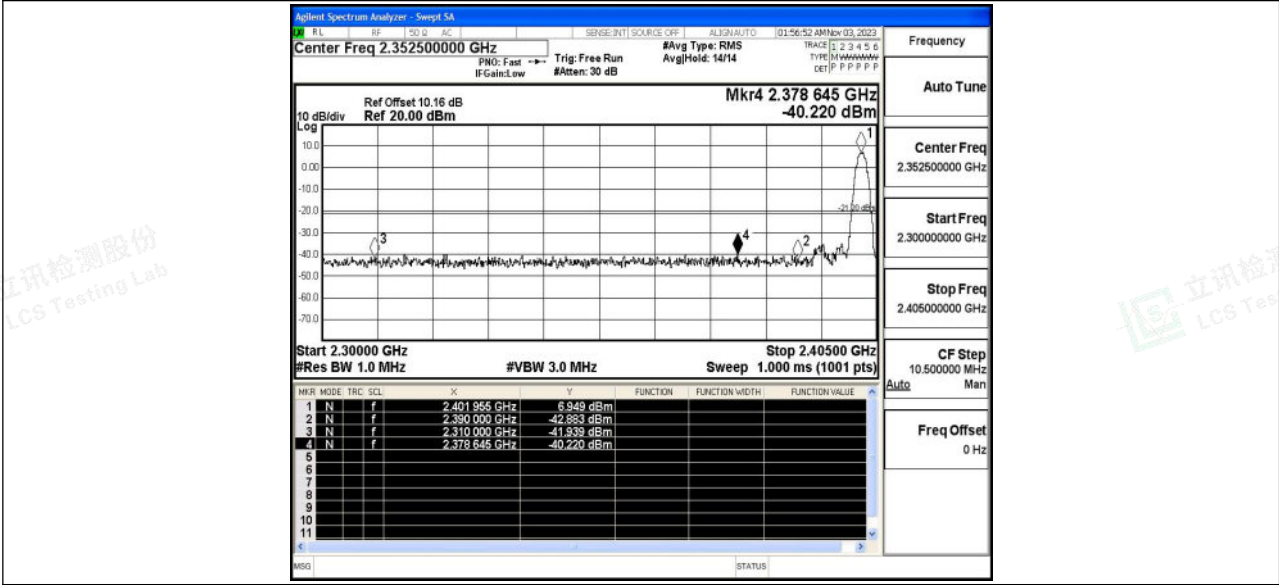


2DH5_Ant1_Low_2402_AV



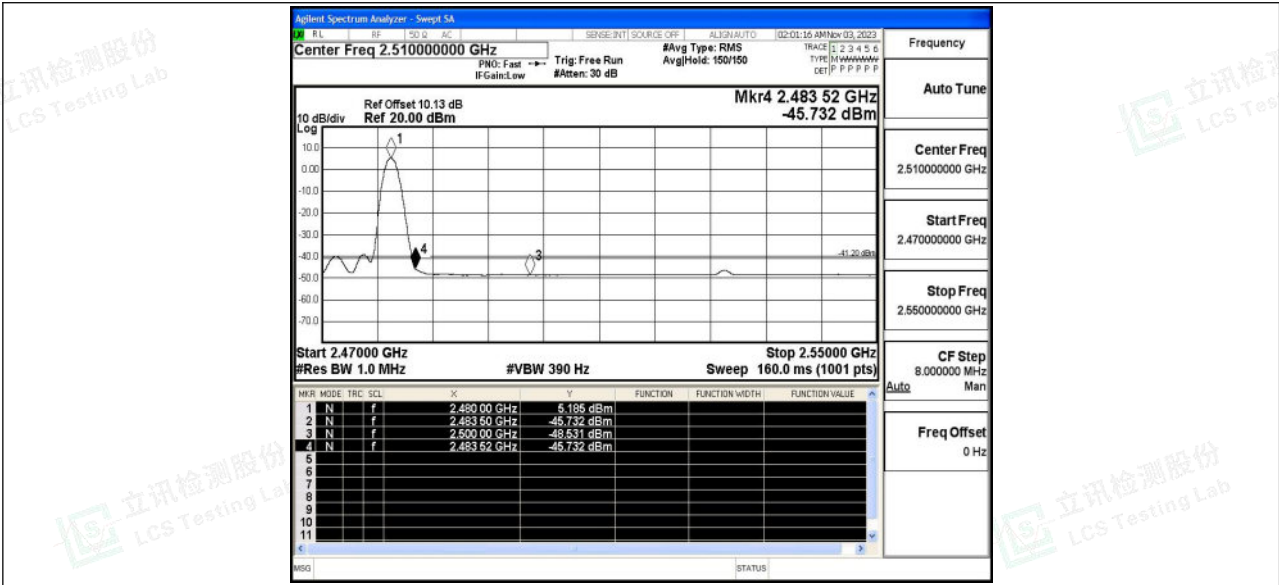


2DH5_Ant1_Low_2402_Peak

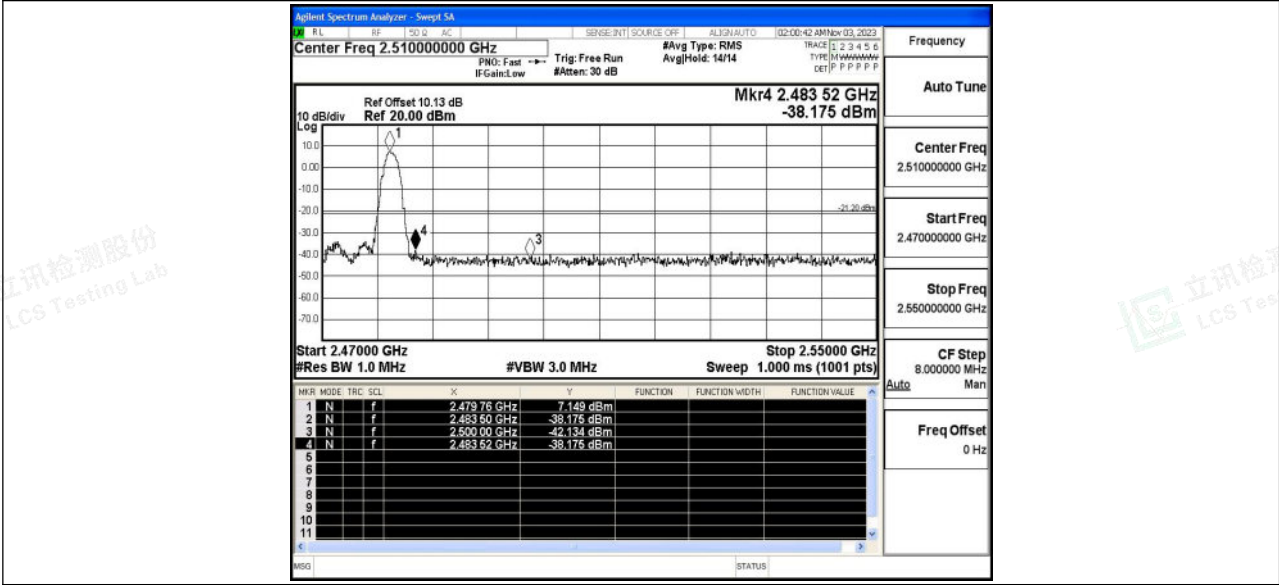


2DH5_Ant1_High_2480_AV



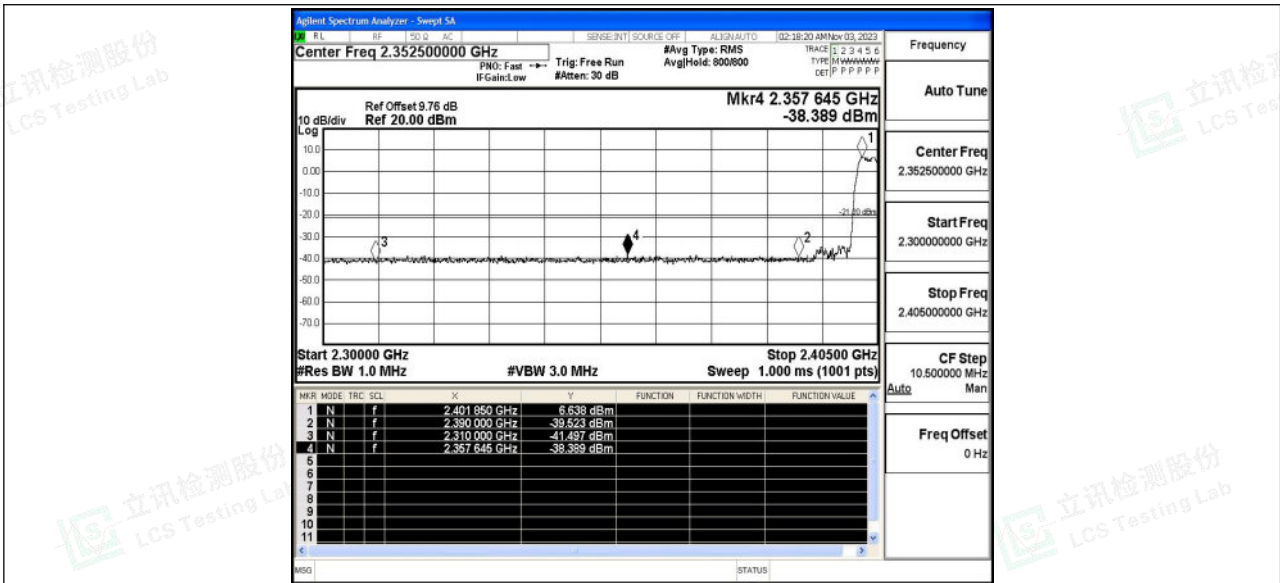


2DH5_Ant1_High_2480_Peak



2DH5_Ant1_Low_Hop_2402_Peak





2DH5_Ant1_High_Hop_2480_Peak

