



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Laptop computer

Test Model: DS133

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan





A.1 20dB Emission Bandwidth

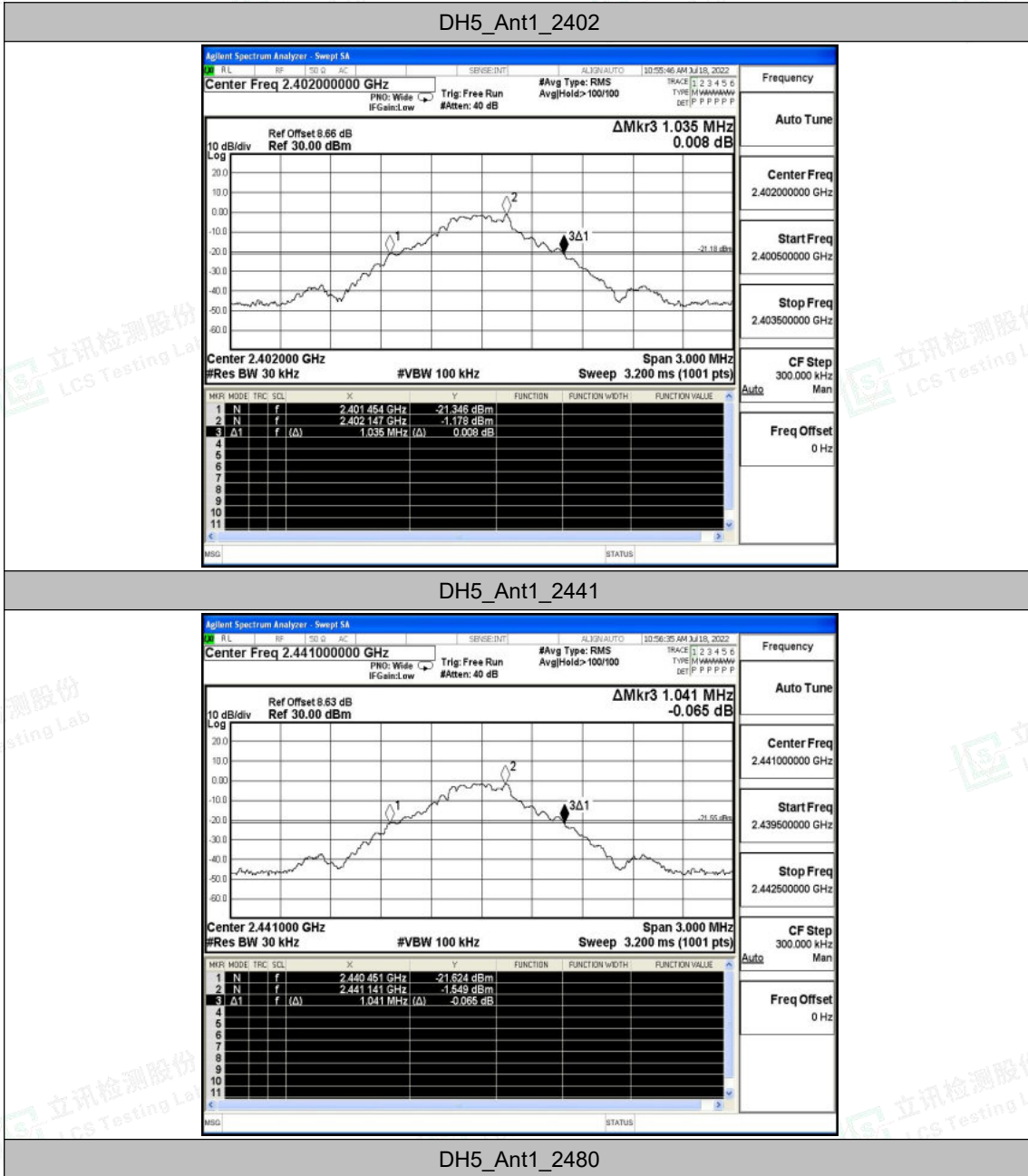
Test Result

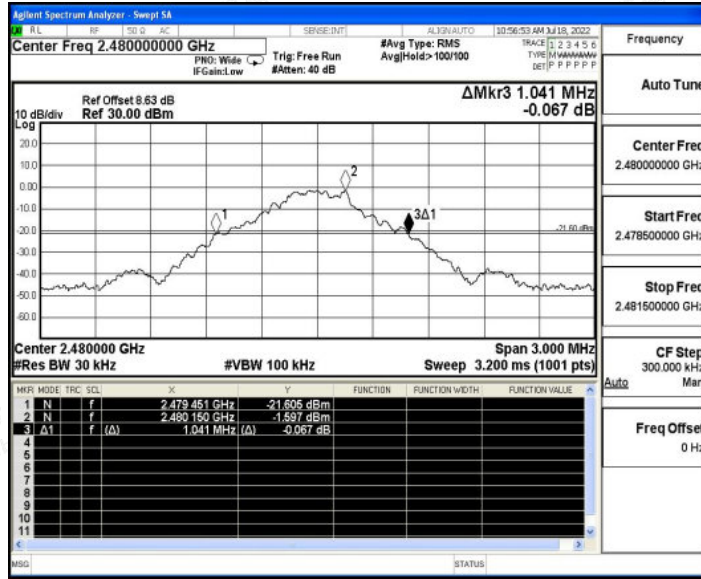
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Verdict
DH5	Ant1	2402	1.035	2401.454	2402.489	---
		2441	1.041	2440.451	2441.492	---
		2480	1.041	2479.451	2480.492	---
2DH5	Ant1	2402	1.290	2401.349	2402.639	---
		2441	1.287	2440.349	2441.636	---
		2480	1.296	2479.346	2480.642	---
3DH5	Ant1	2402	1.278	2401.373	2402.651	---
		2441	1.287	2440.340	2441.627	---
		2480	1.302	2479.334	2480.636	---



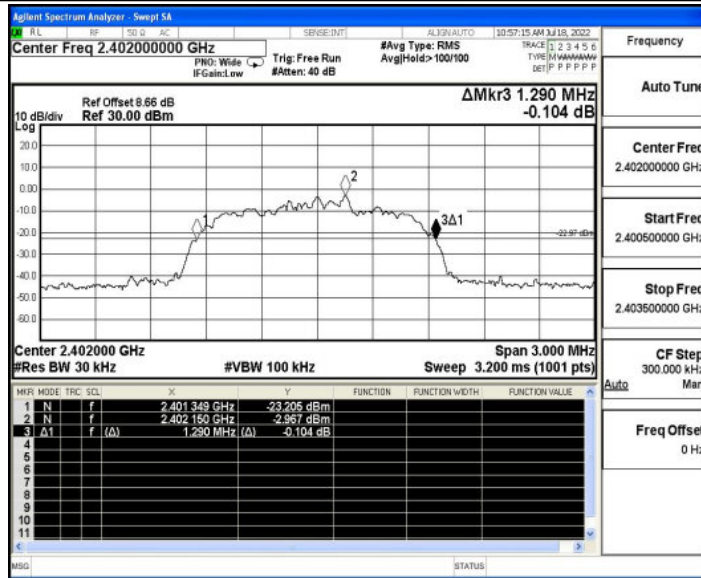


Test Graphs



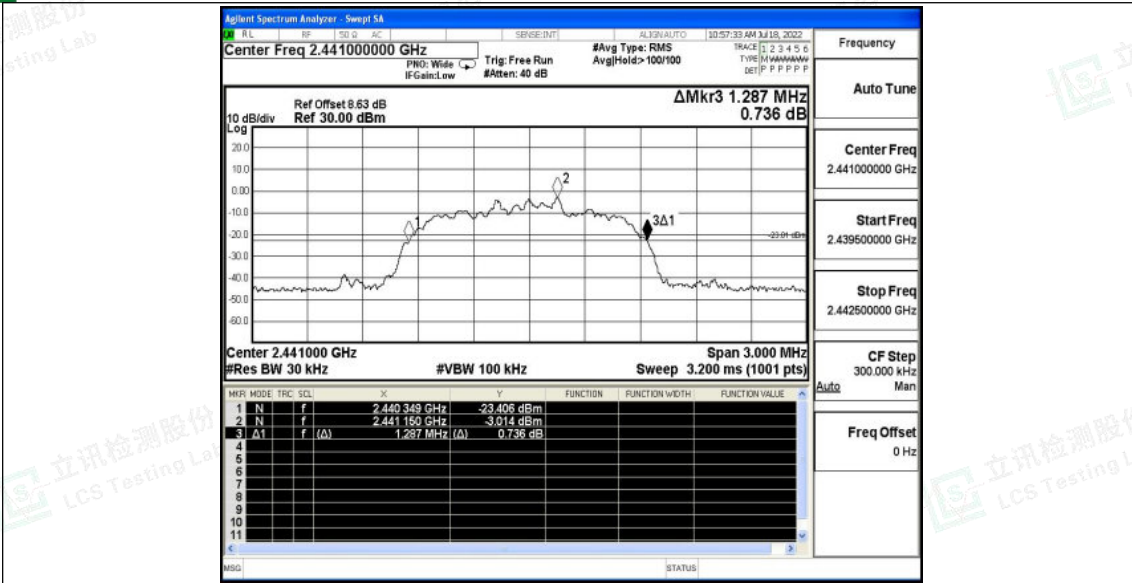


2Dh5_Ant1_2402

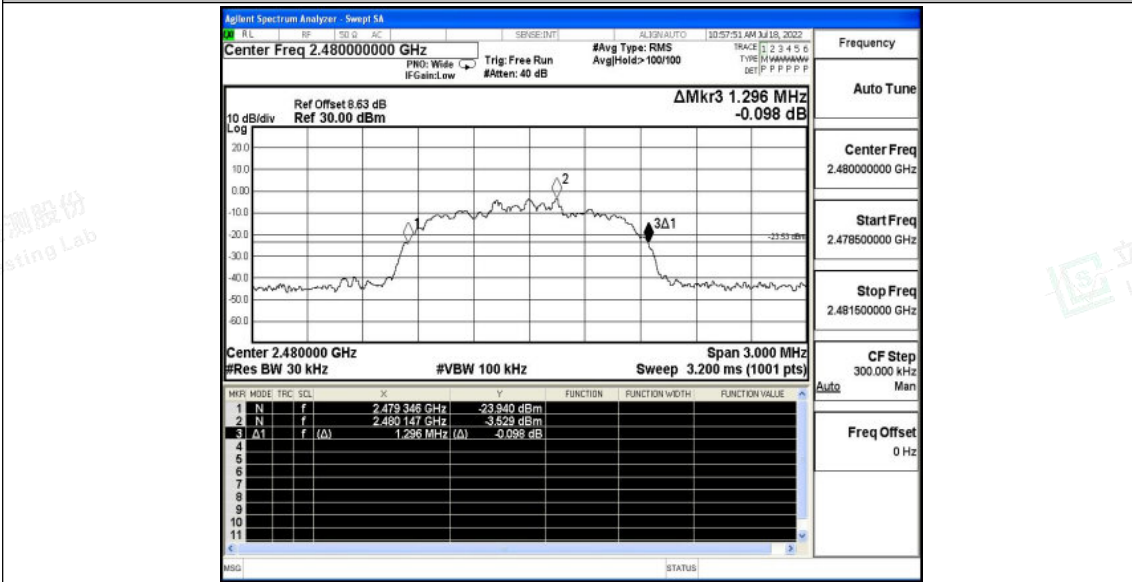


2Dh5_Ant1_2441



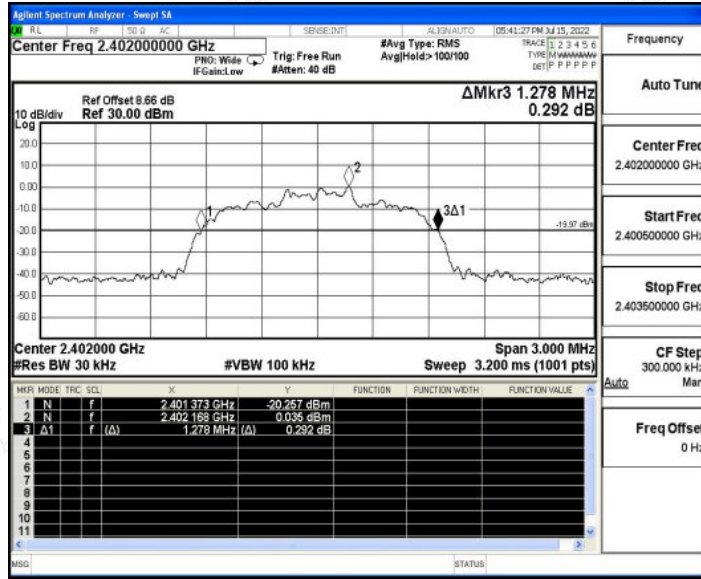


2Dh5_Ant1_2480

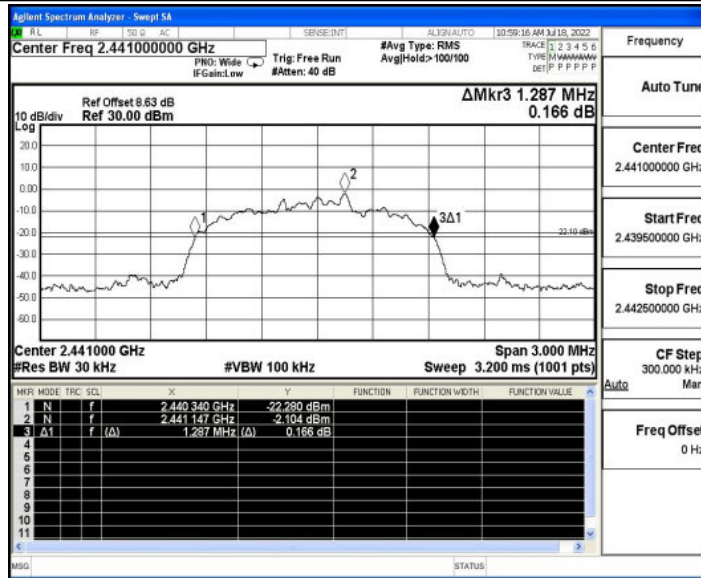


3Dh5_Ant1_2402



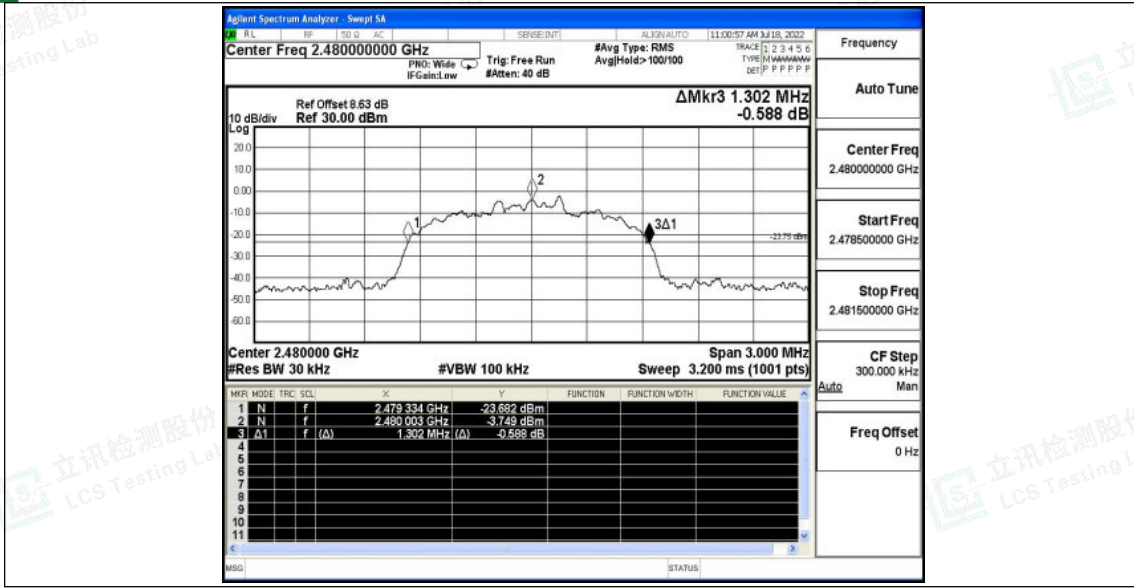


3DH5_Ant1_2441



3DH5_Ant1_2480







A.2 Maximum conducted output power

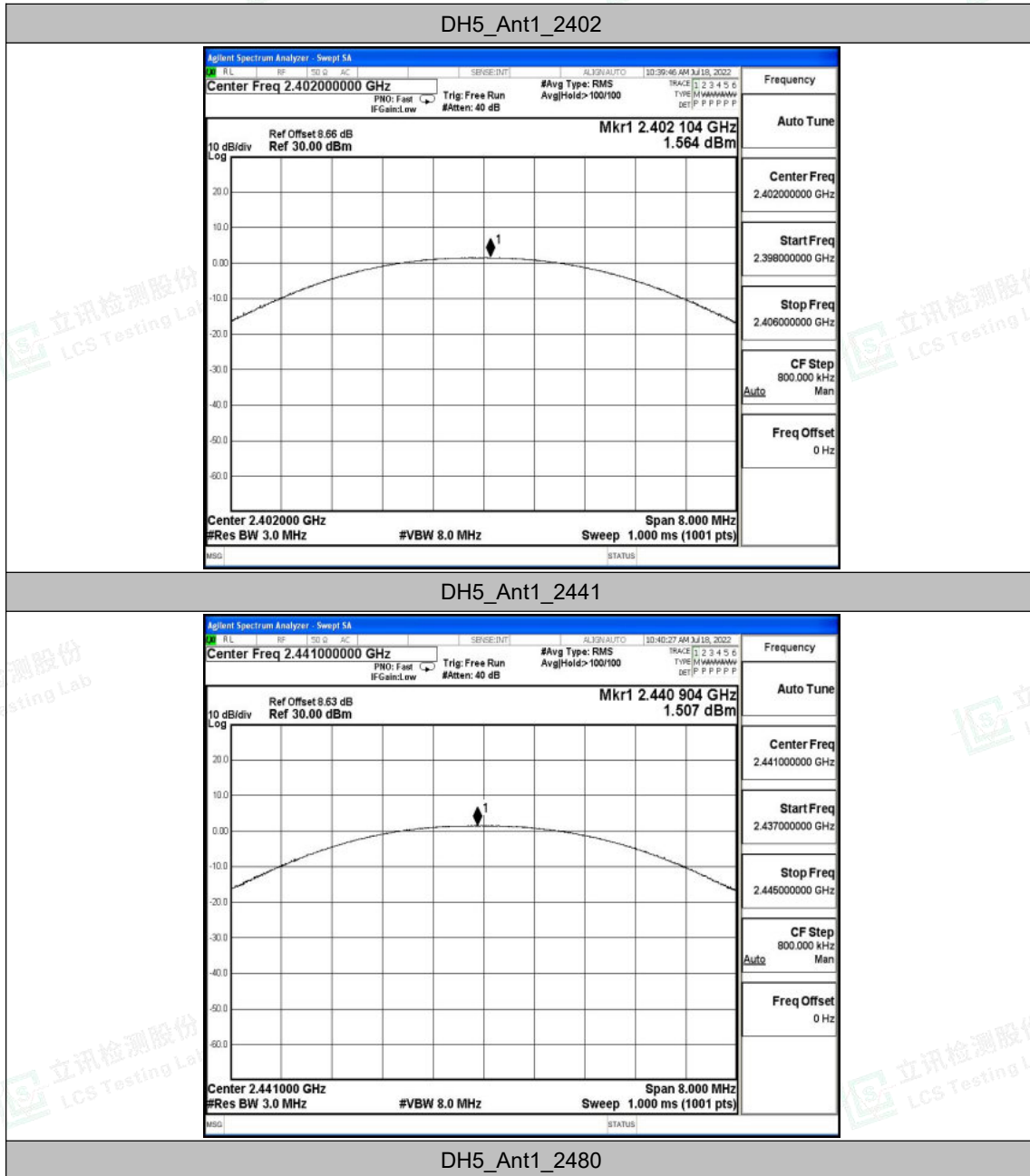
Test Result

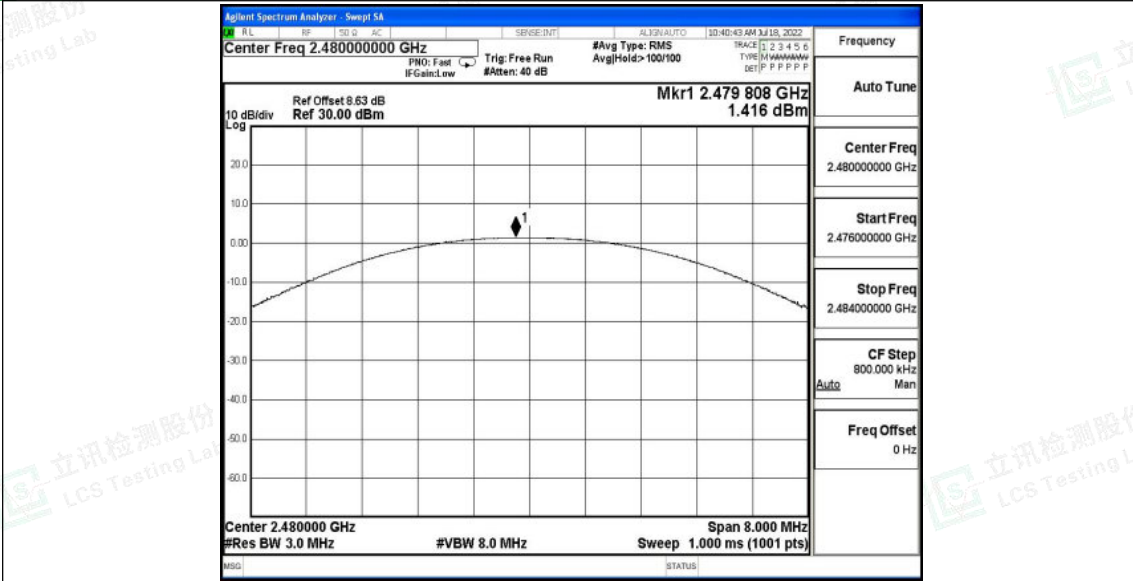
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.56	≤20.97	PASS
		2441	1.51	≤20.97	PASS
		2480	1.42	≤20.97	PASS
2DH5	Ant1	2402	1.23	≤20.97	PASS
		2441	1.25	≤20.97	PASS
		2480	1.22	≤20.97	PASS
3DH5	Ant1	2402	1.37	≤20.97	PASS
		2441	1.31	≤20.97	PASS
		2480	1.27	≤20.97	PASS



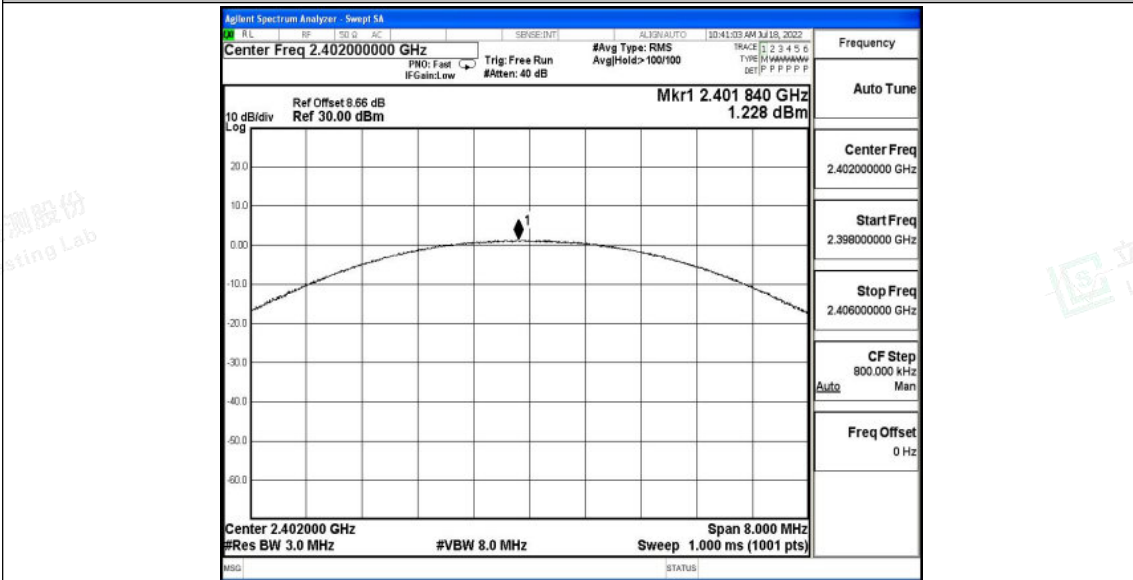


Test Graphs



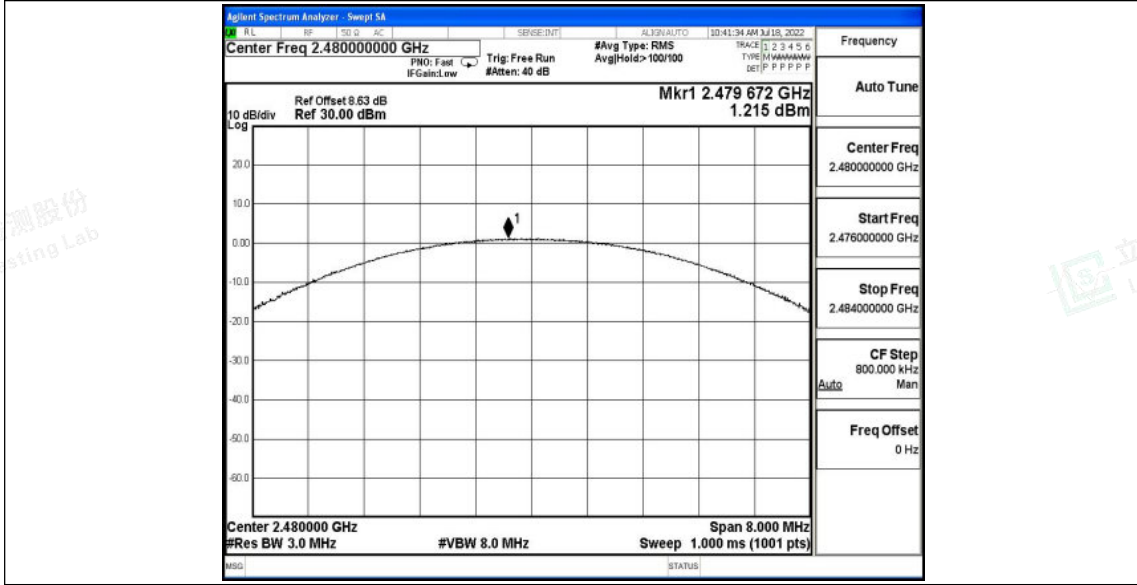
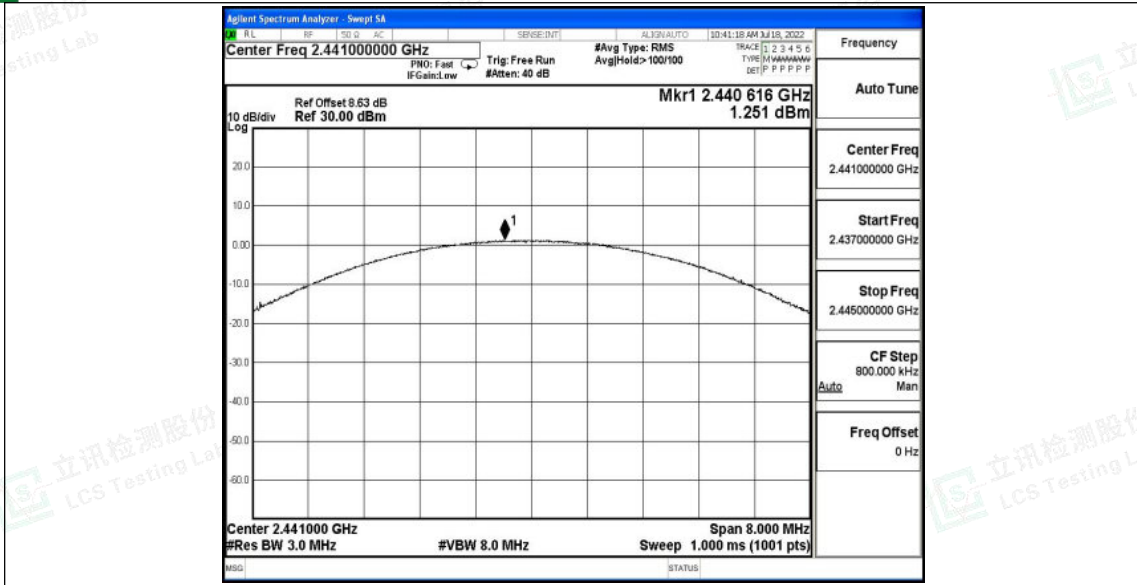


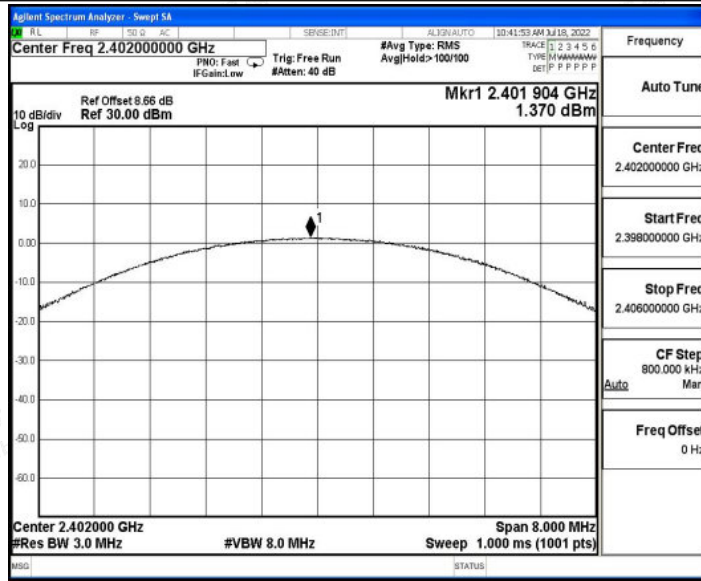
2DH5_Ant1_2402



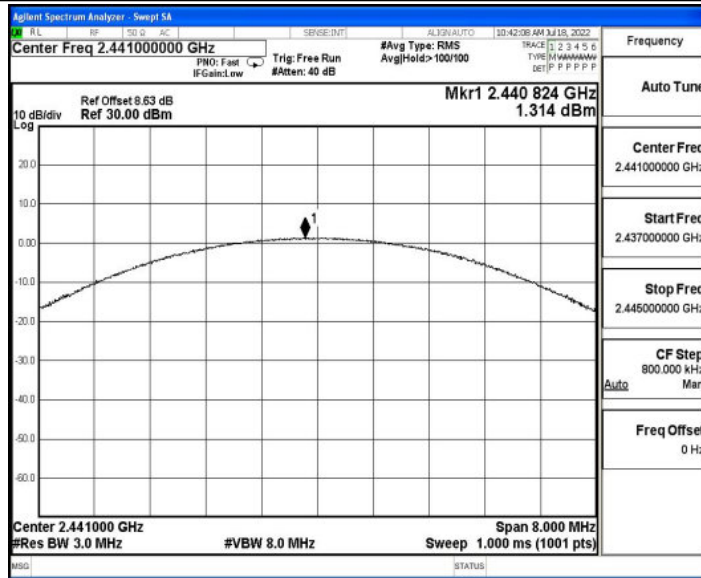
2DH5_Ant1_2441





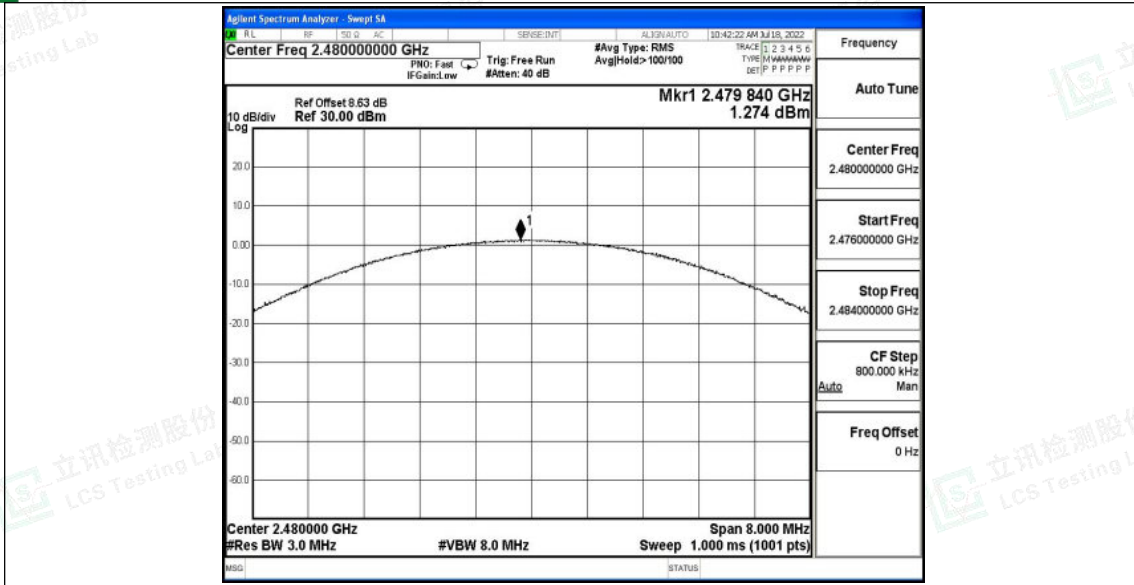


3DH5_Ant1_2441



3DH5_Ant1_2480







A.3 Carrier frequency separation

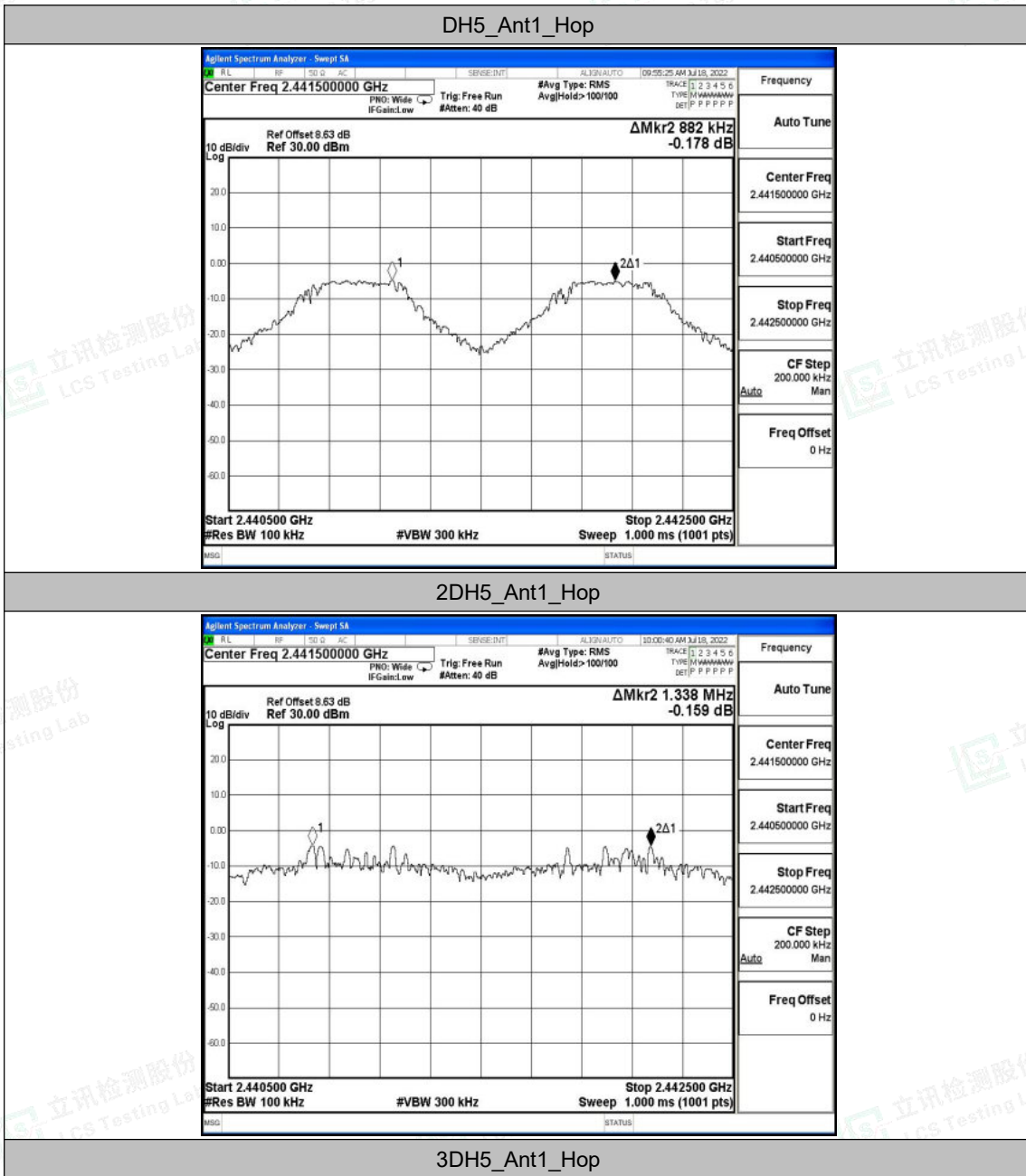
Test Result

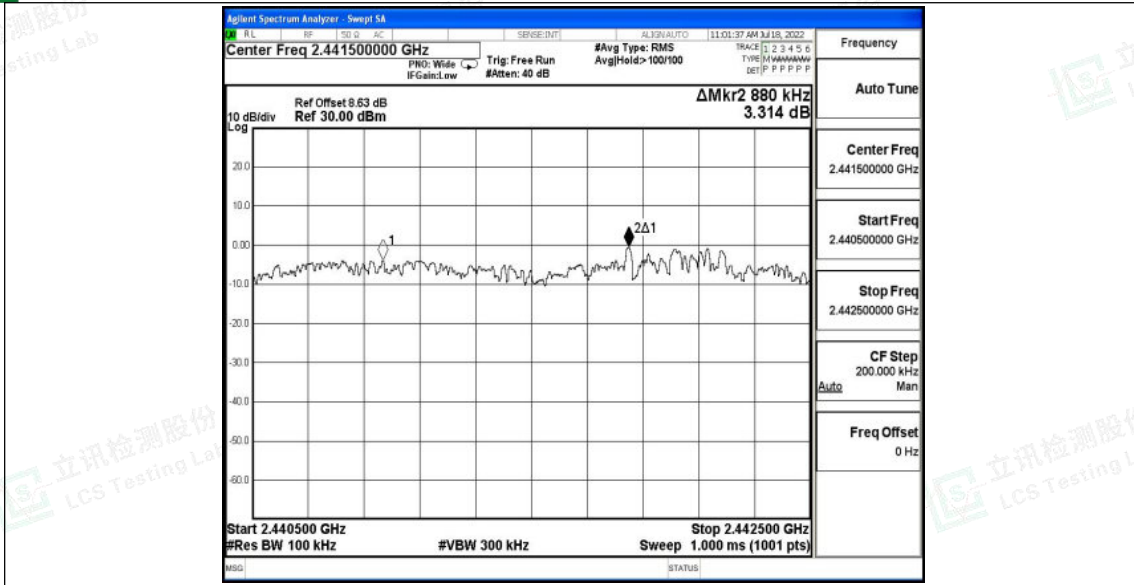
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.882	≥0.626	PASS
2DH5	Ant1	Hop	1.338	≥0.986	PASS
3DH5	Ant1	Hop	0.88	≥0.868	PASS





Test Graphs







A.4 Time of occupancy

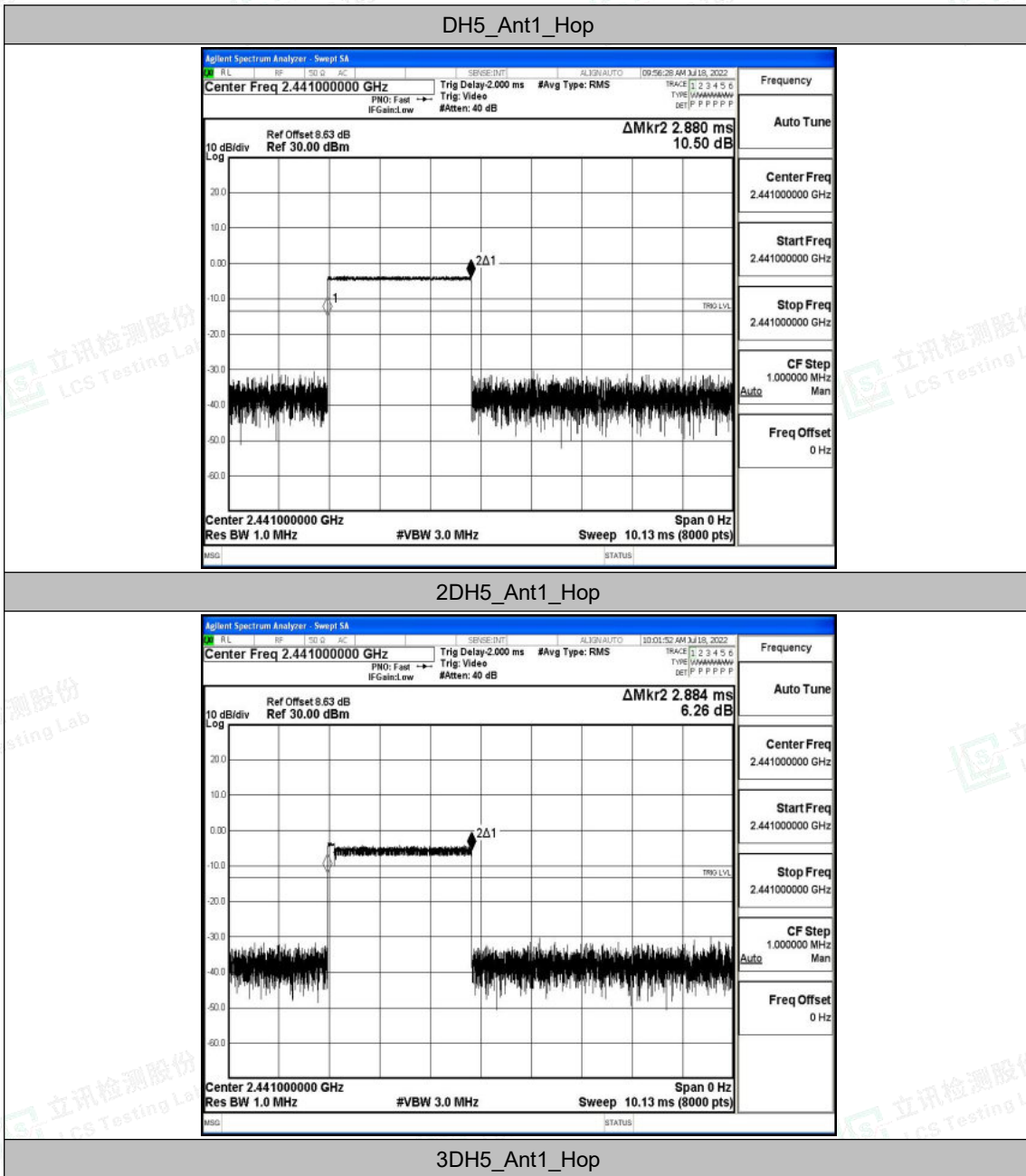
Test Result

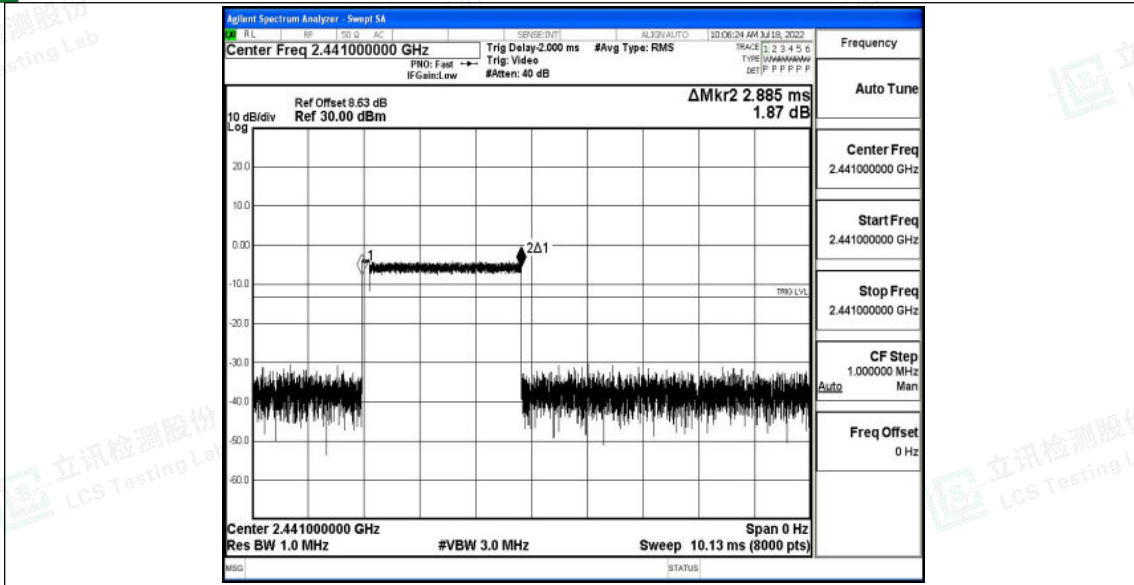
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.88	106.67	0.308	≤0.4	PASS
3DH5	Ant1	Hop	2.89	106.67	0.308	≤0.4	PASS





Test Graphs







A.5 Number of hopping channels

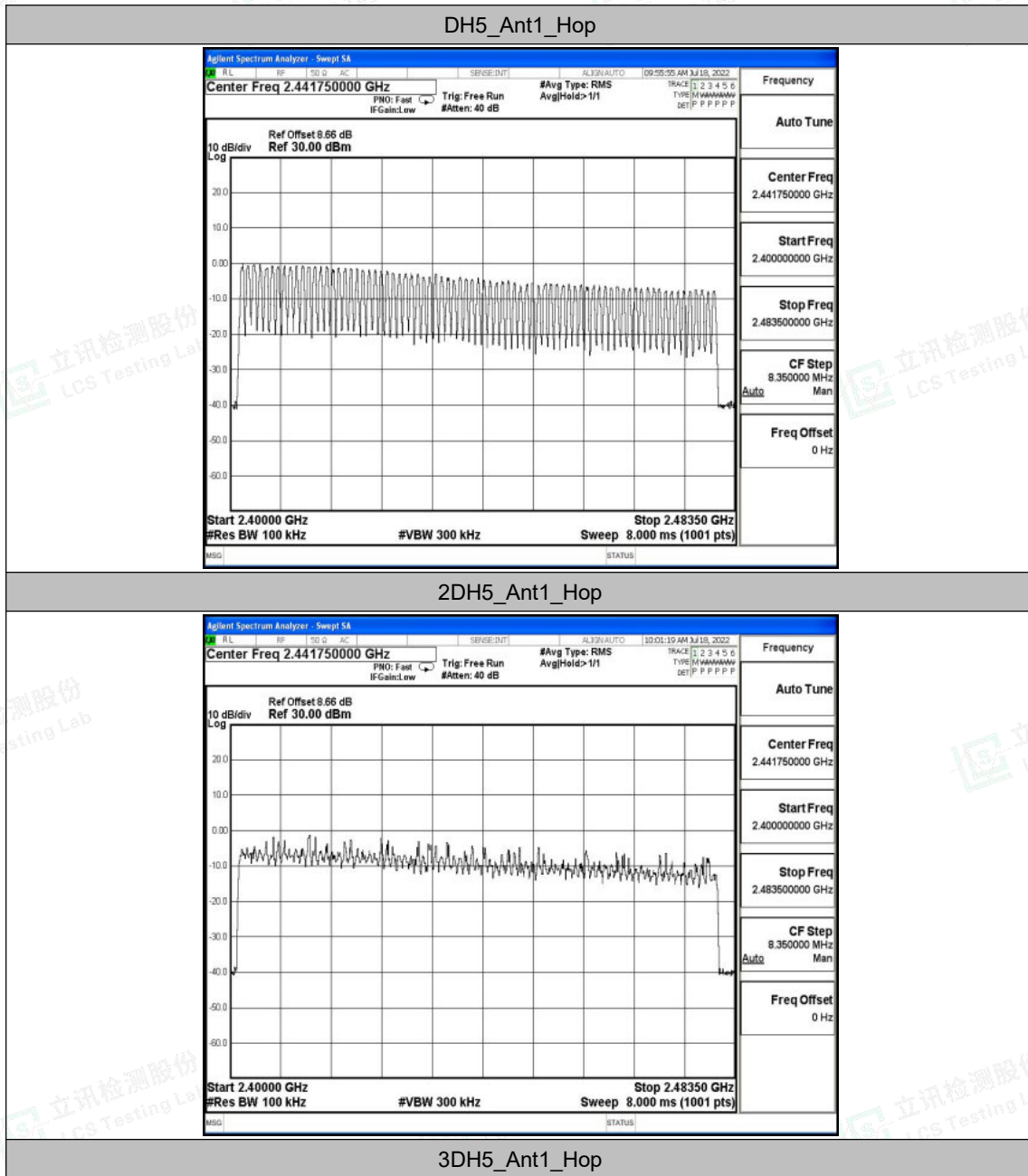
Test Result

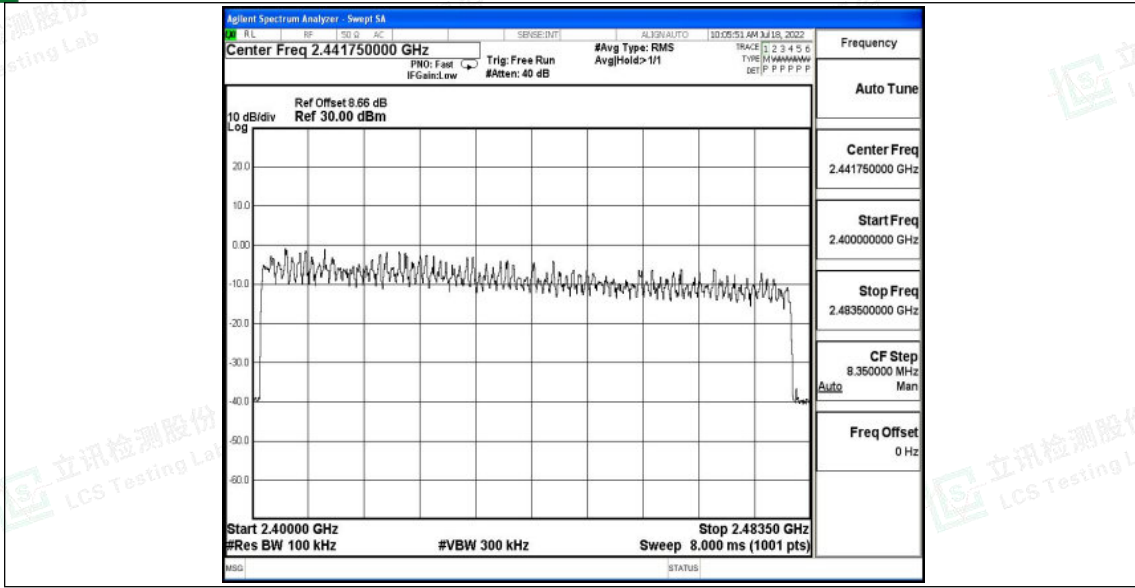
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS





Test Graphs







A.6 Band edge measurements

Test Result

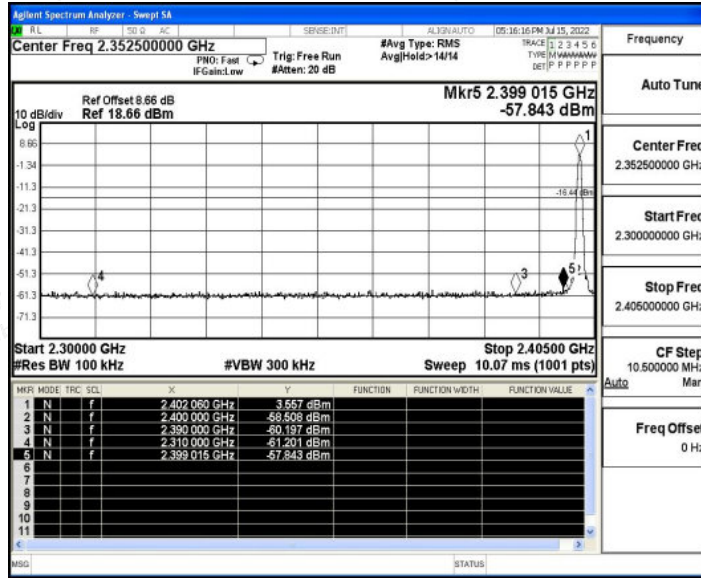
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	3.56	-57.84	≤-16.44	PASS
		High	2480	4.08	-56.38	≤-15.92	PASS
		Low	Hop_2402	-1.15	-47.81	≤-21.15	PASS
		High	Hop_2480	-7.31	-57.63	≤-27.31	PASS
2DH5	Ant1	Low	2402	2.45	-54.97	≤-17.55	PASS
		High	2480	4.30	-57.87	≤-15.7	PASS
		Low	Hop_2402	-5.77	-52.36	≤-25.77	PASS
		High	Hop_2480	-6.56	-57.5	≤-26.56	PASS
3DH5	Ant1	Low	2402	1.90	-54.35	≤-18.1	PASS
		High	2480	-7.70	-58.29	≤-27.7	PASS
		Low	Hop_2402	-5.55	-59.26	≤-25.55	PASS
		High	Hop_2480	-8.57	-58.2	≤-28.57	PASS



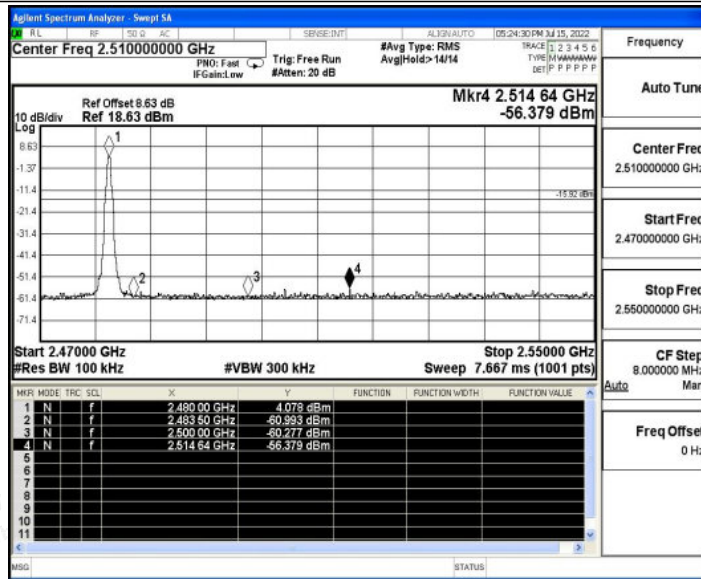


Test Graphs

DH5_Ant1_Low_2402

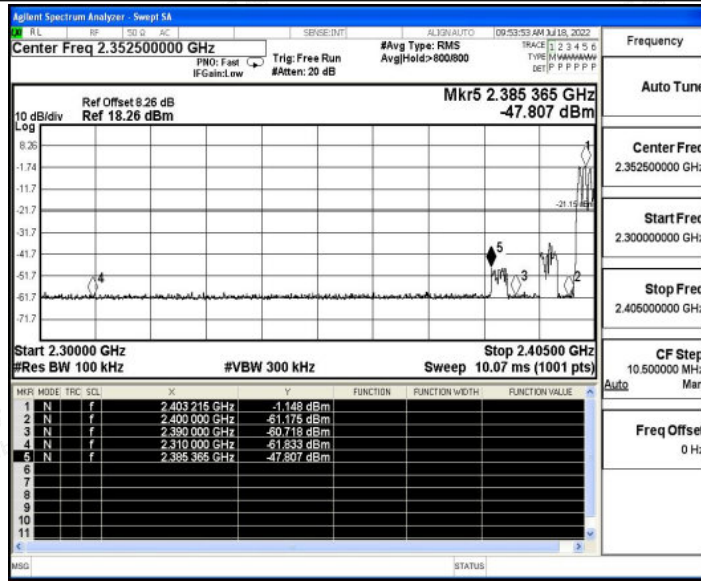


DH5_Ant1_High_2480

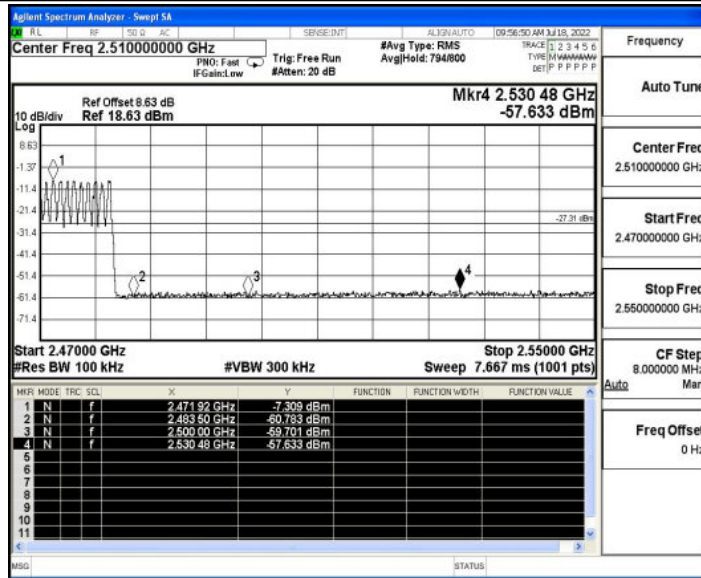


DH5_Ant1_Low_Hop_2402



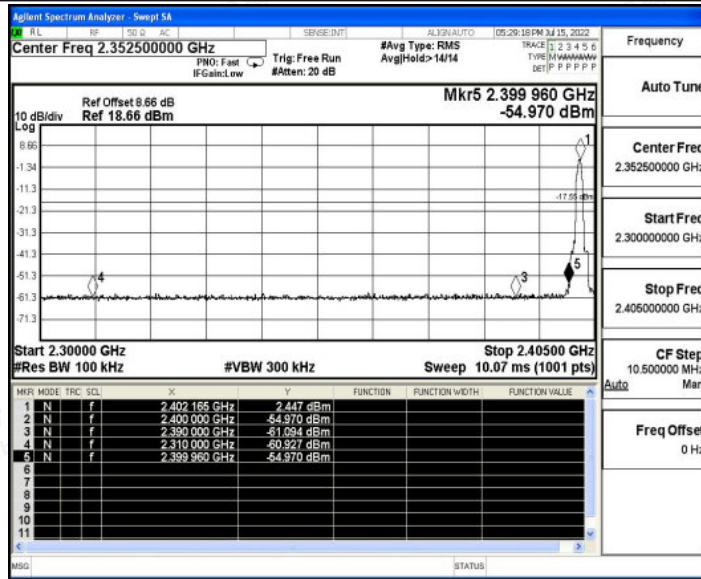


DH5_Ant1_High_Hop_2480

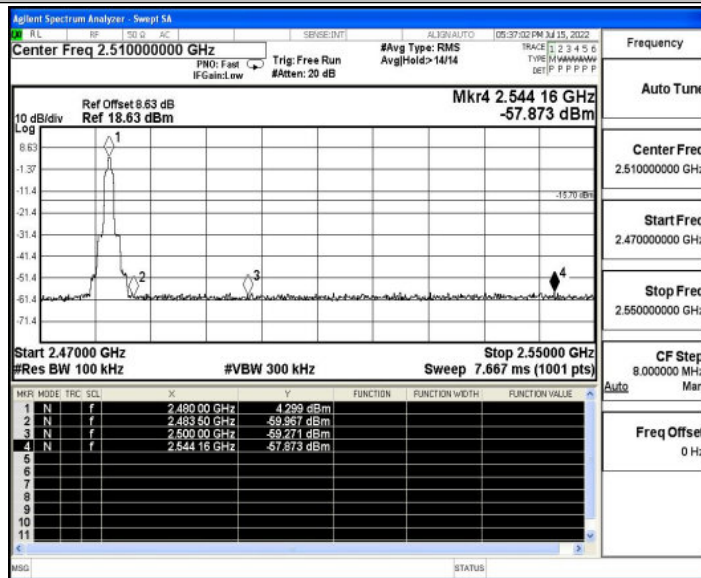


2DH5_Ant1_Low_2402



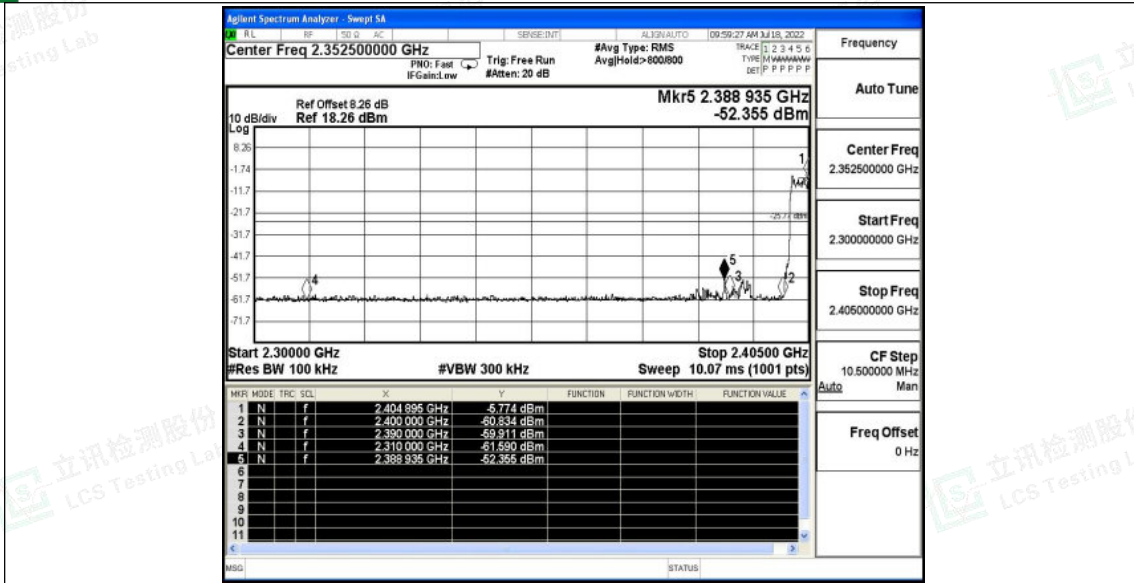


2DH5_Ant1_High_2480

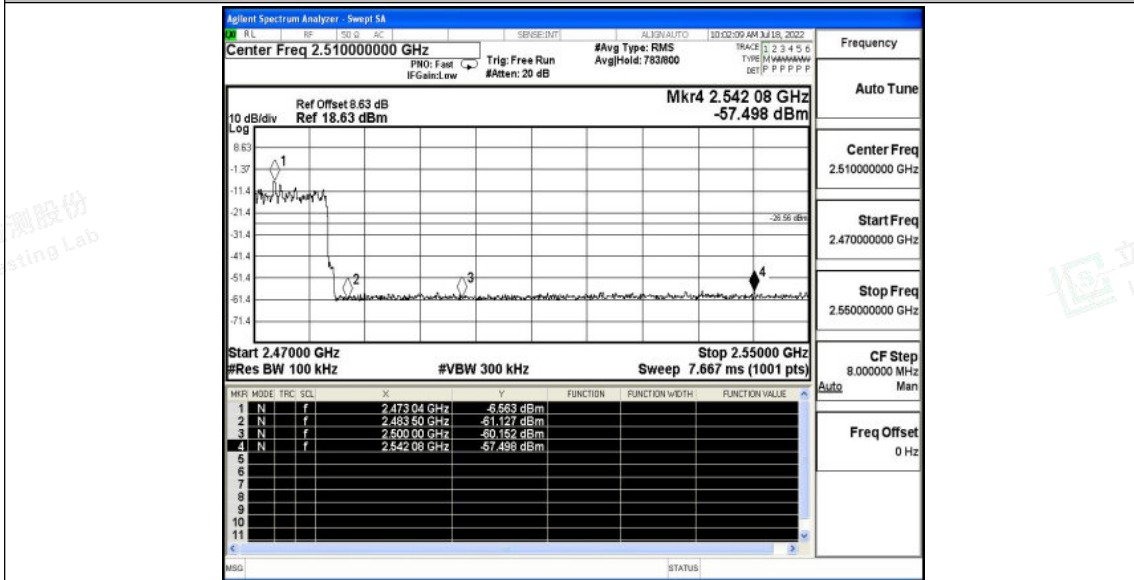


2DH5_Ant1_Low_Hop_2402



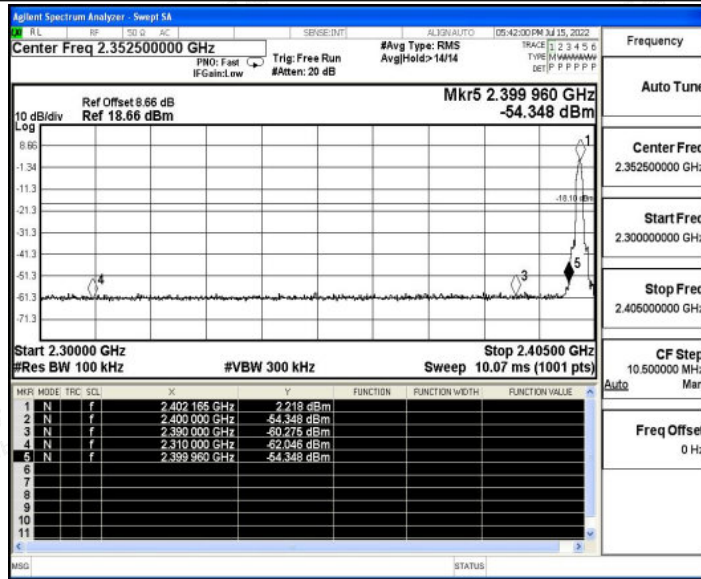


2DH5_Ant1_High_Hop_2480

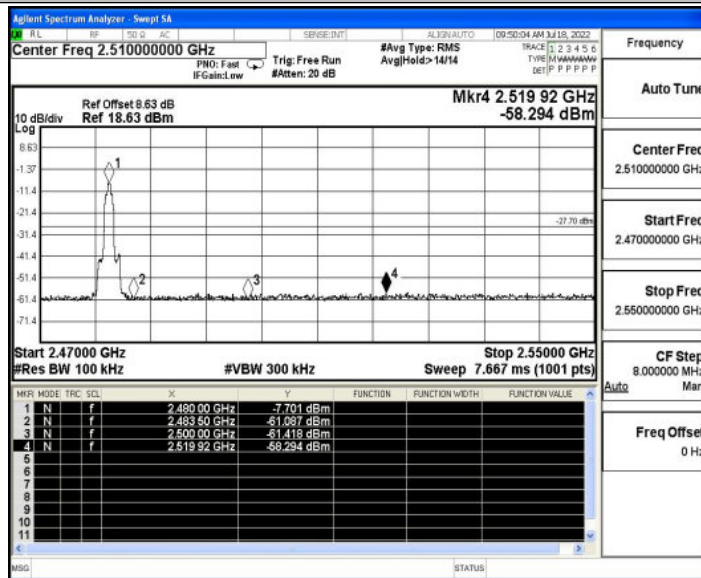


3DH5_Ant1_Low_2402



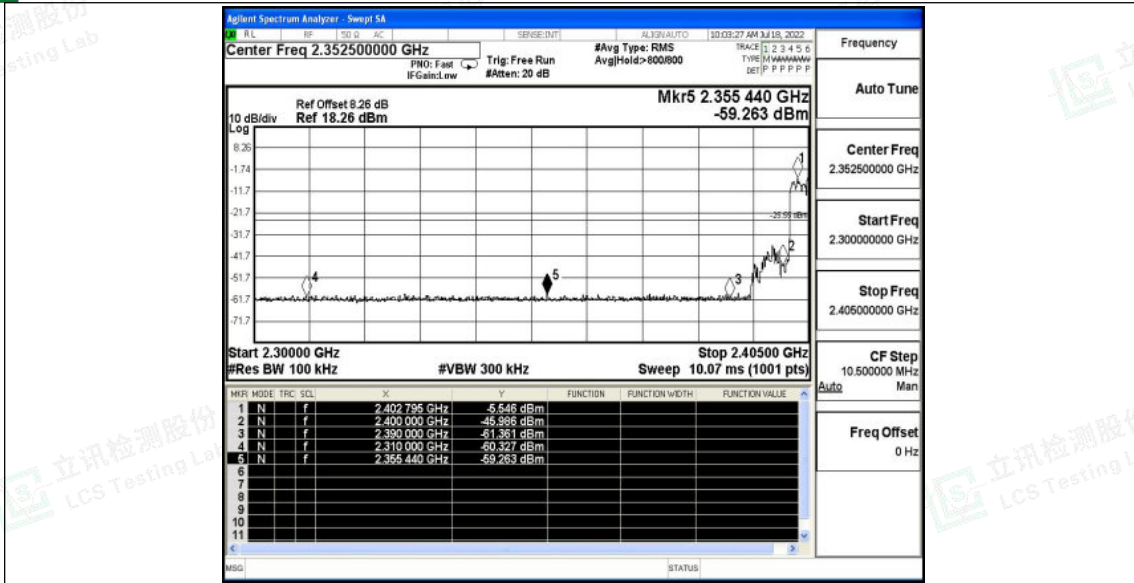


3DH5_Ant1_High_2480

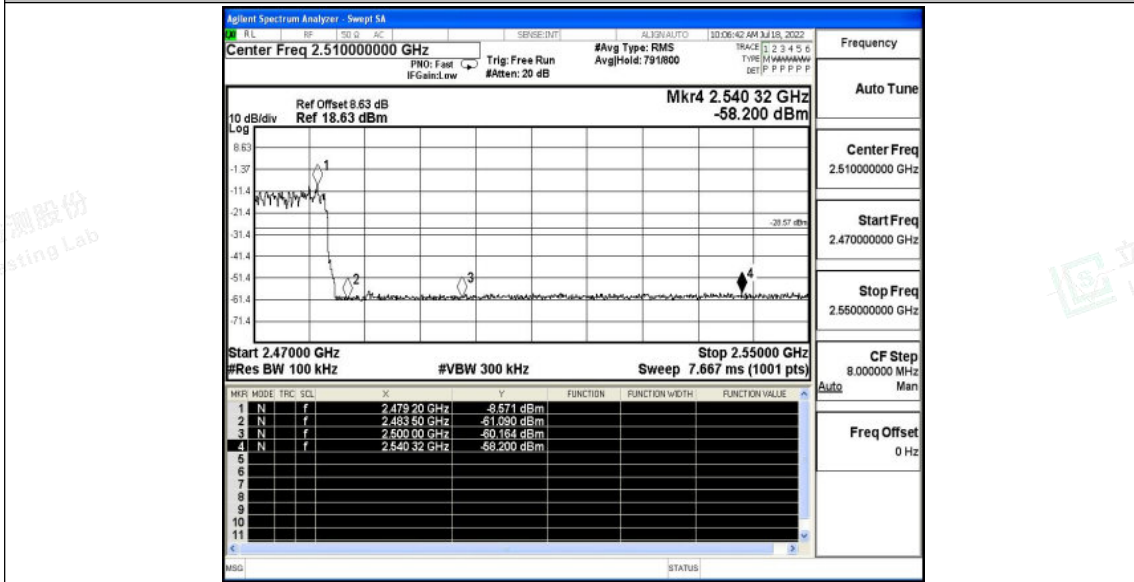


3DH5_Ant1_Low_Hop_2402





3DH5_Ant1_High_Hop_2480





A.7 Conducted Spurious Emission

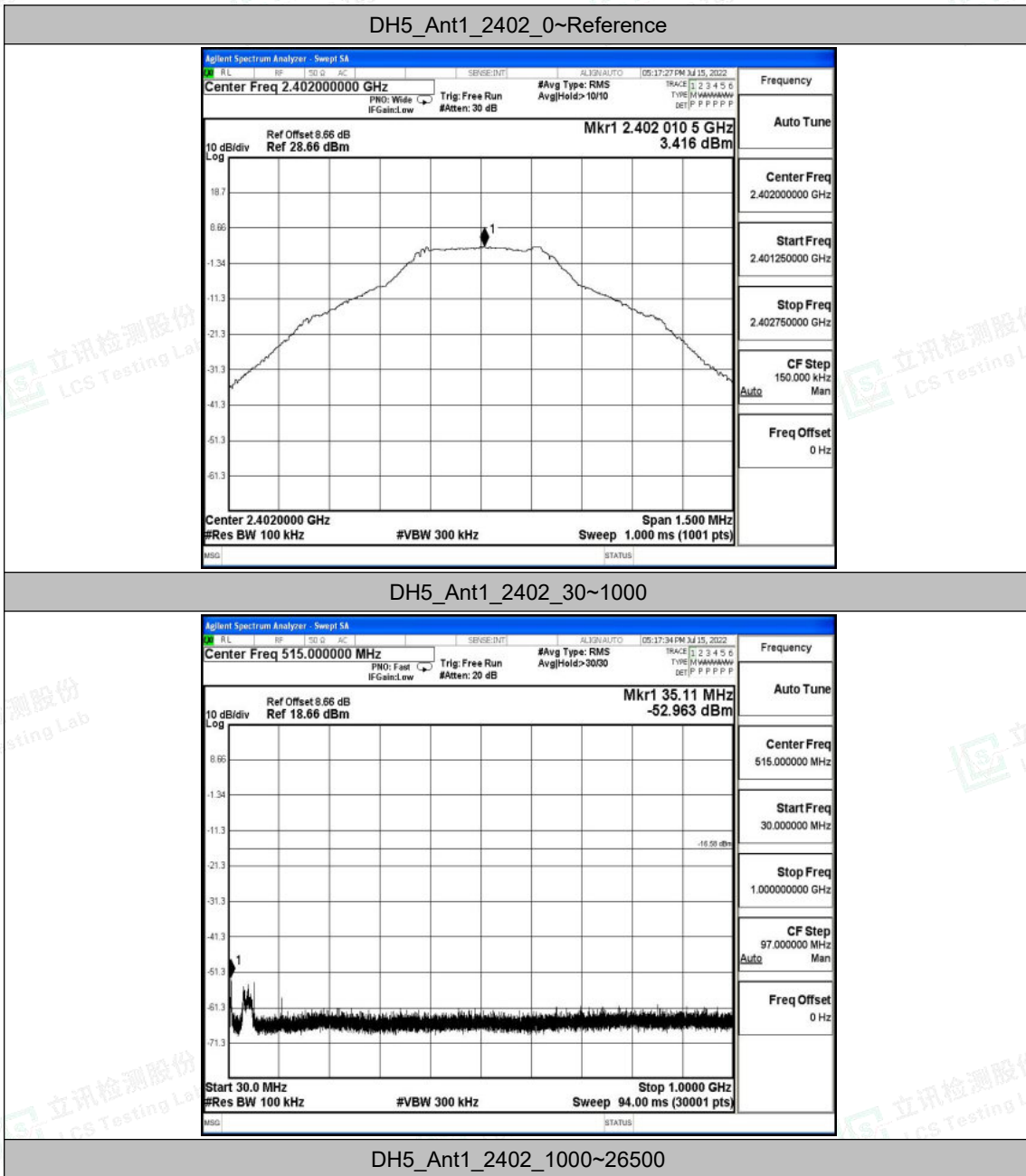
Test Result

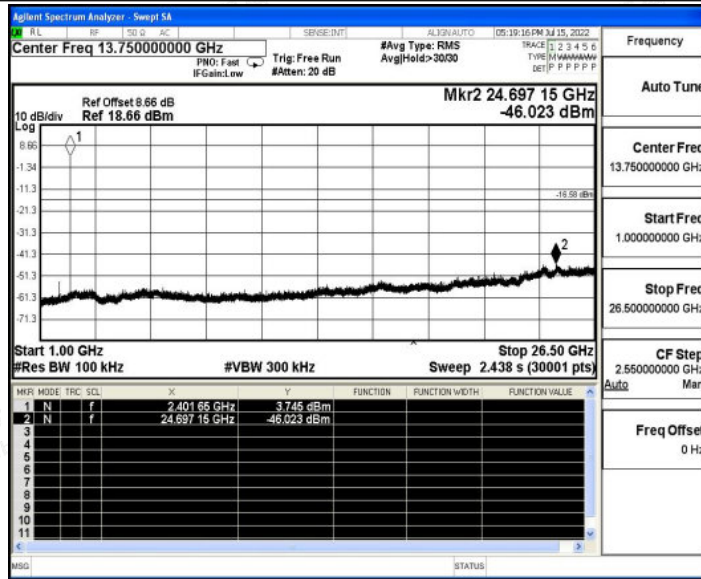
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	3.42	3.42	---	PASS
			30~1000	3.42	-52.96	≤-16.58	PASS
			1000~26500	3.42	-46.02	≤-16.58	PASS
		2441	Reference	3.46	3.46	---	PASS
			30~1000	3.46	-52.53	≤-16.54	PASS
			1000~26500	3.46	-46.44	≤-16.54	PASS
		2480	Reference	3.82	3.82	---	PASS
			30~1000	3.82	-41.24	≤-16.18	PASS
			1000~26500	3.82	-46.35	≤-16.18	PASS
2DH5	Ant1	2402	Reference	2.44	2.44	---	PASS
			30~1000	2.44	-52.74	≤-17.56	PASS
			1000~26500	2.44	-46.41	≤-17.56	PASS
		2441	Reference	3.72	3.72	---	PASS
			30~1000	3.72	-51.74	≤-16.28	PASS
			1000~26500	3.72	-46.25	≤-16.28	PASS
		2480	Reference	3.93	3.93	---	PASS
			30~1000	3.93	-52.76	≤-16.07	PASS
			1000~26500	3.93	-46.06	≤-16.07	PASS
3DH5	Ant1	2402	Reference	2.66	2.66	---	PASS
			30~1000	2.66	-51.16	≤-17.34	PASS
		2441	Reference	-4.34	-4.34	---	PASS
			30~1000	-4.34	-60.74	≤-24.34	PASS
			1000~26500	-4.34	-46.3	≤-24.34	PASS
		2480	Reference	-7.46	-7.46	---	PASS
			30~1000	-7.46	-60.05	≤-27.46	PASS
			1000~26500	-7.46	-46.41	≤-27.46	PASS



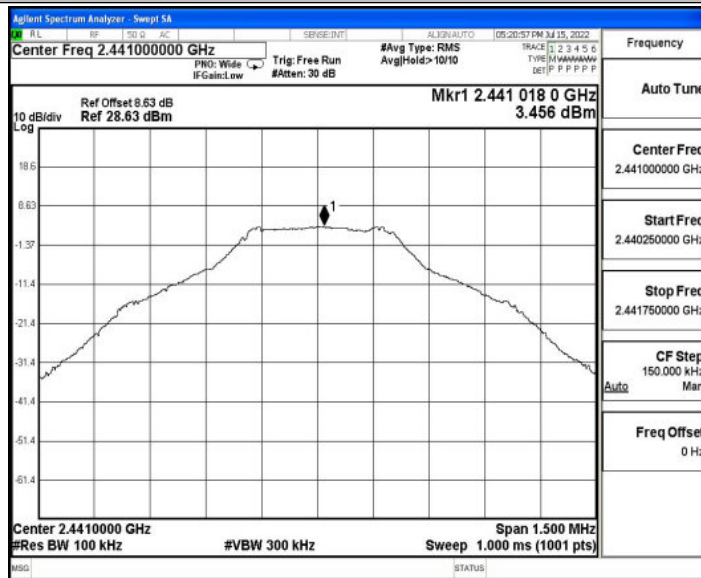


Test Graphs



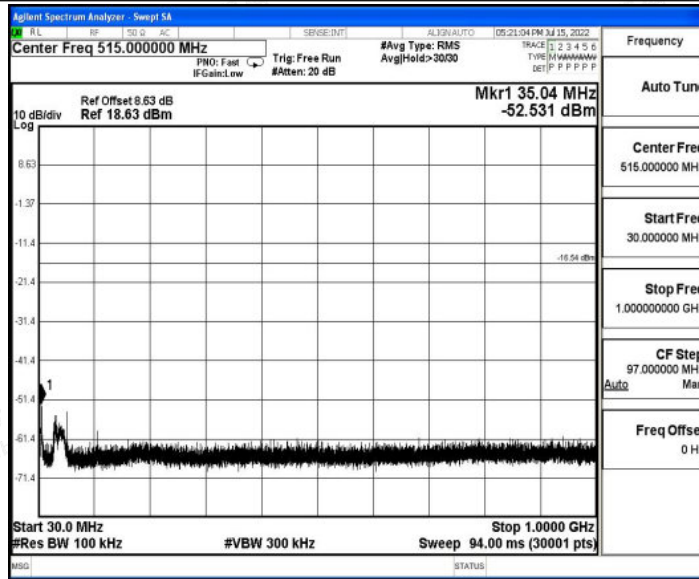


DH5_Ant1_2441_0~Reference

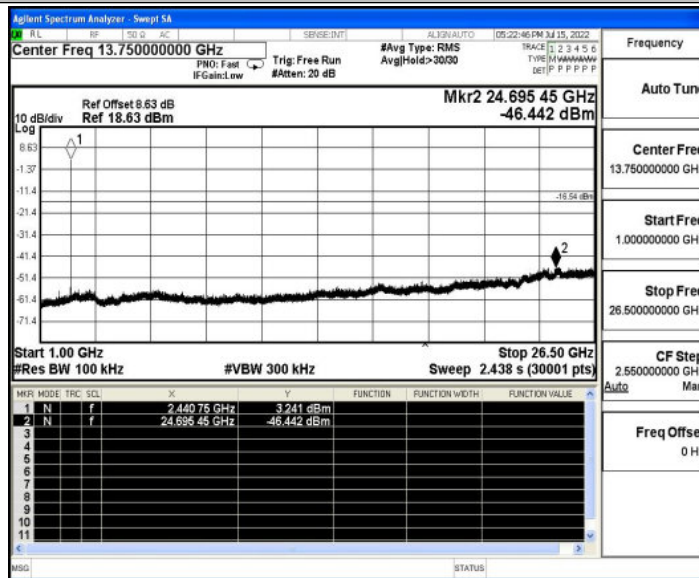


DH5_Ant1_2441_30~1000



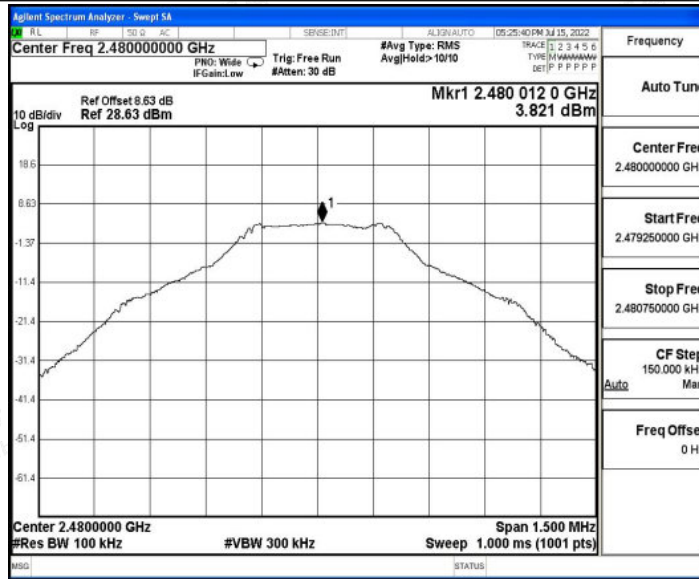


DH5_Ant1_2441_1000~26500

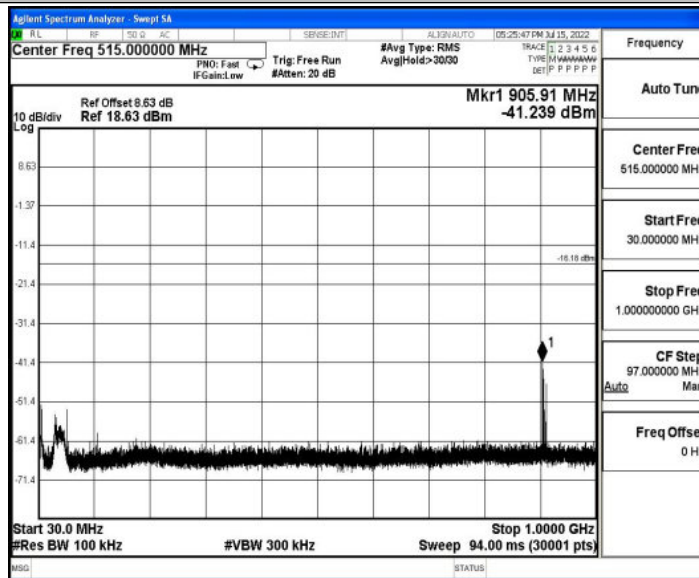


DH5_Ant1_2480_0~Reference



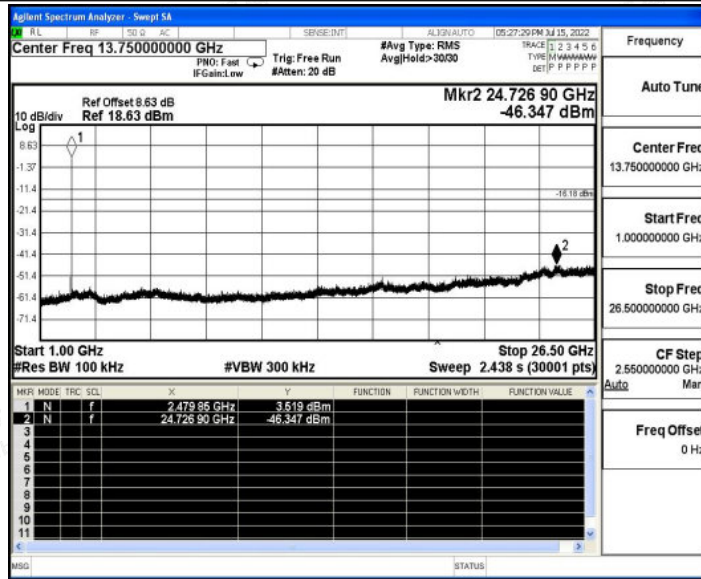


DH5_Ant1_2480_30~1000

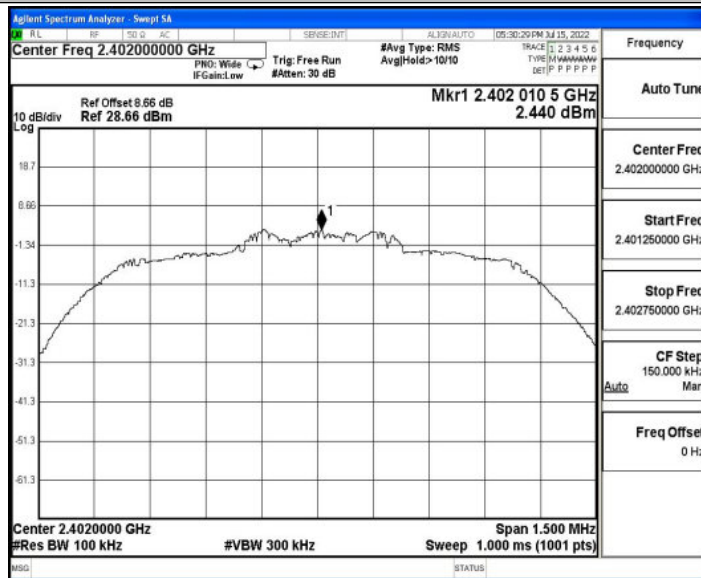


DH5_Ant1_2480_1000~26500



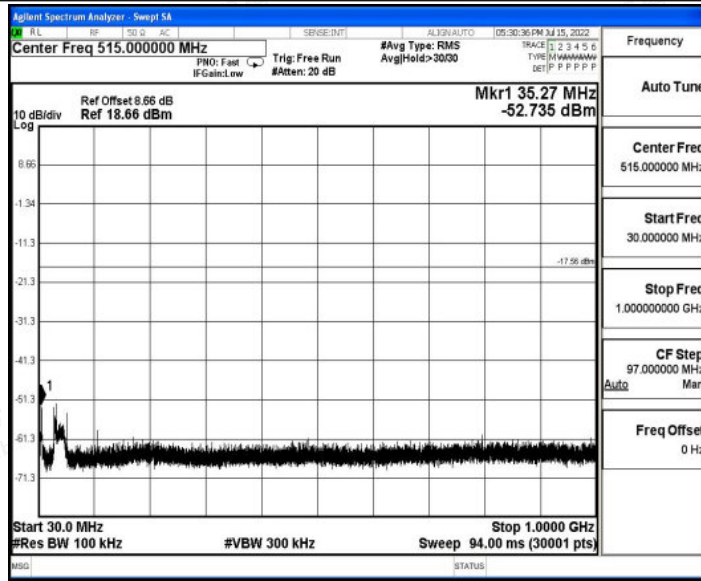


2DH5_Ant1_2402_0~Reference

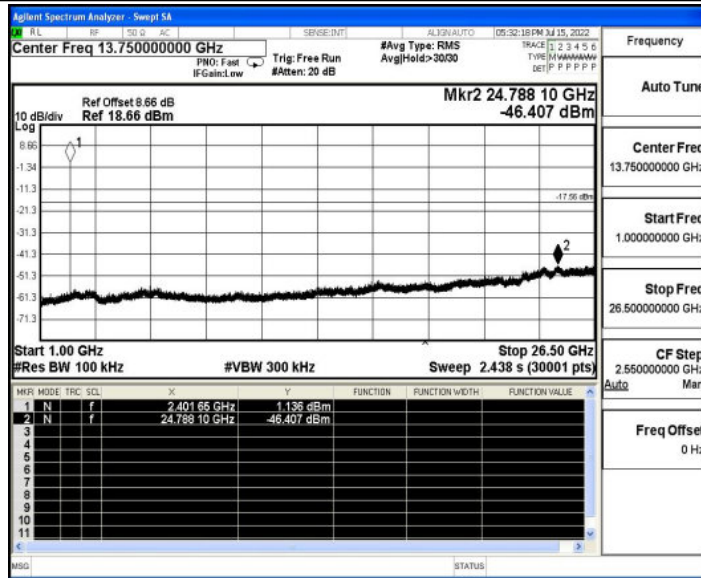


2DH5_Ant1_2402_30~1000



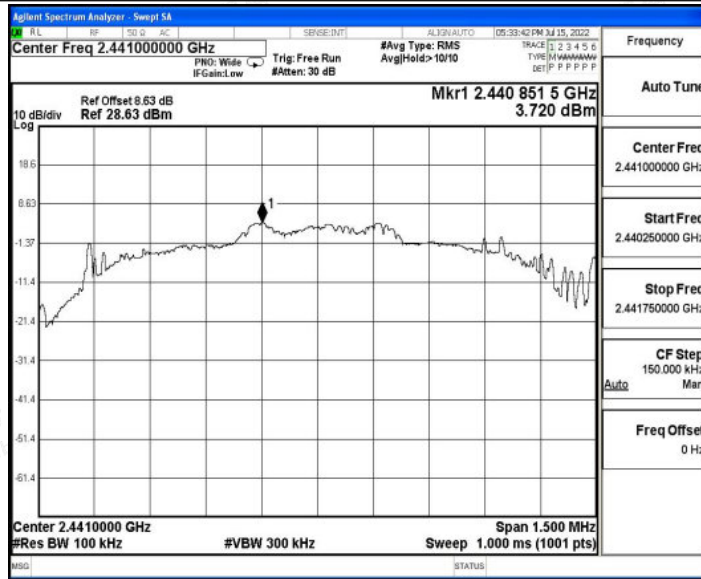


2DH5_Ant1_2402_1000~26500

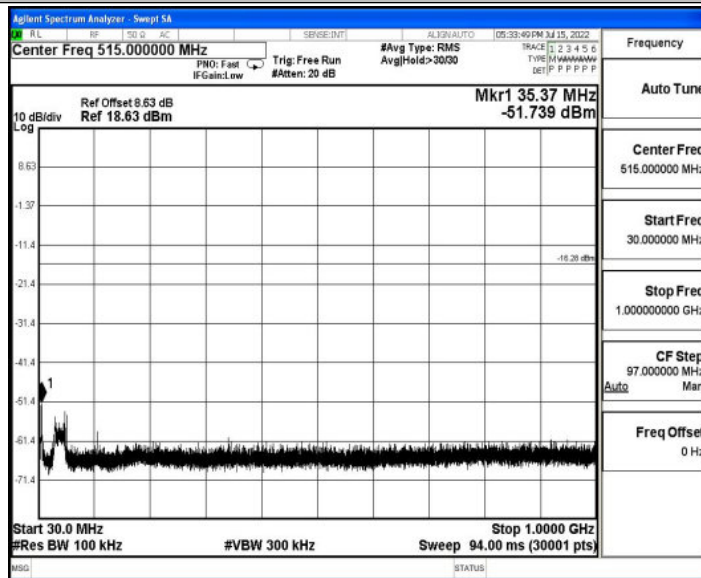


2DH5_Ant1_2441_0~Reference



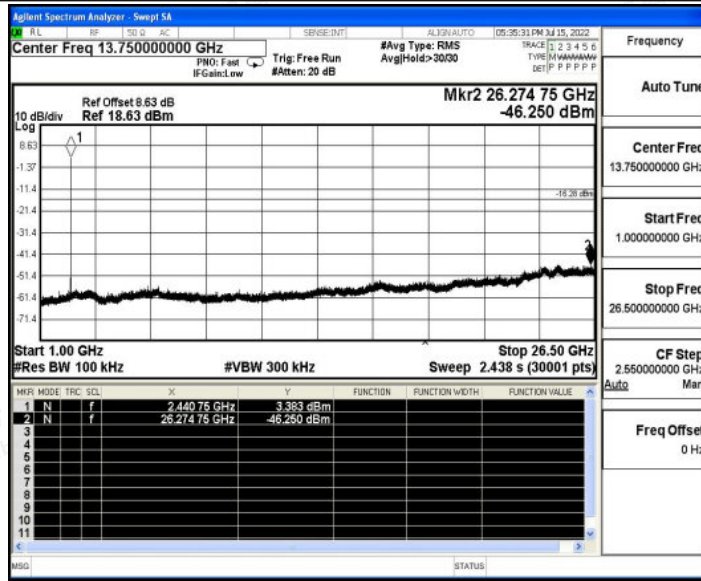


2DH5_Ant1_2441_30~1000

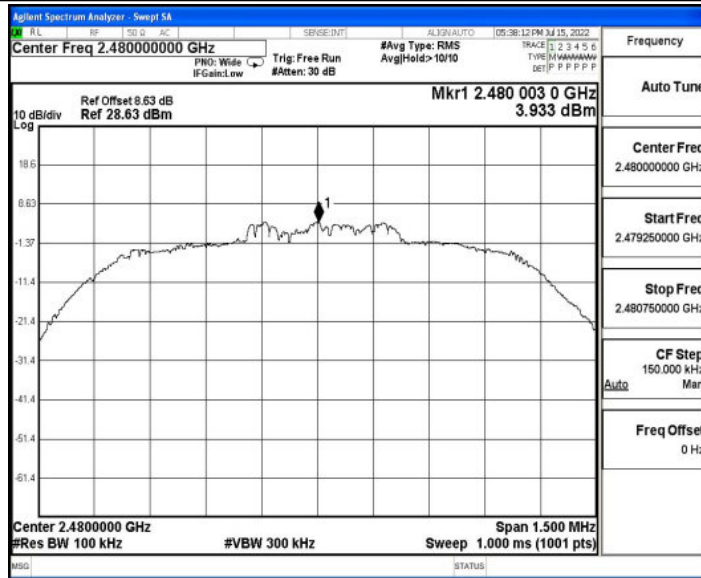


2DH5_Ant1_2441_1000~26500



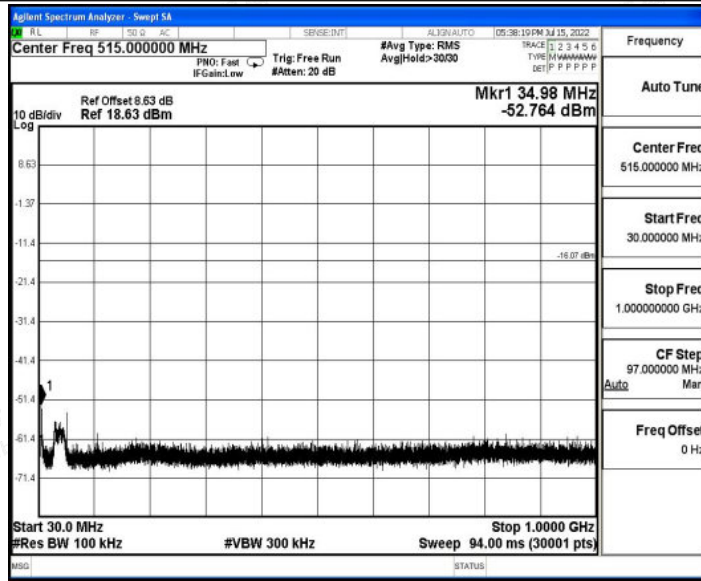


2DH5_Ant1_2480_0~Reference

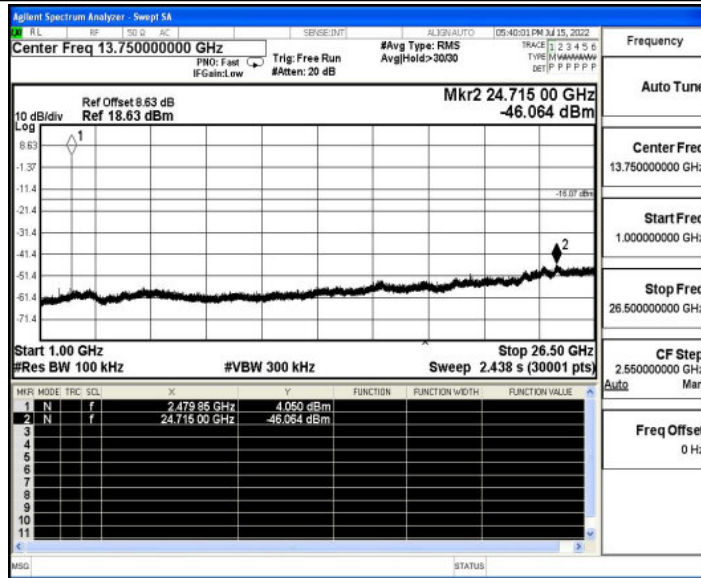


2DH5_Ant1_2480_30~1000



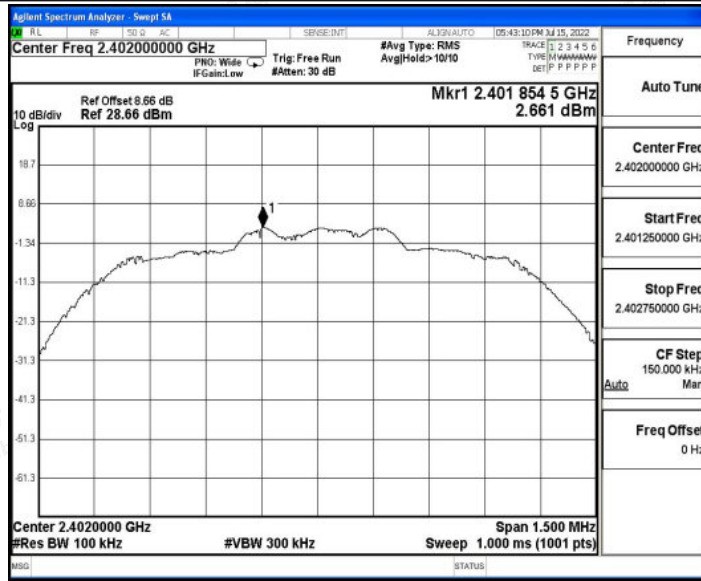


2DH5_Ant1_2480_1000~26500

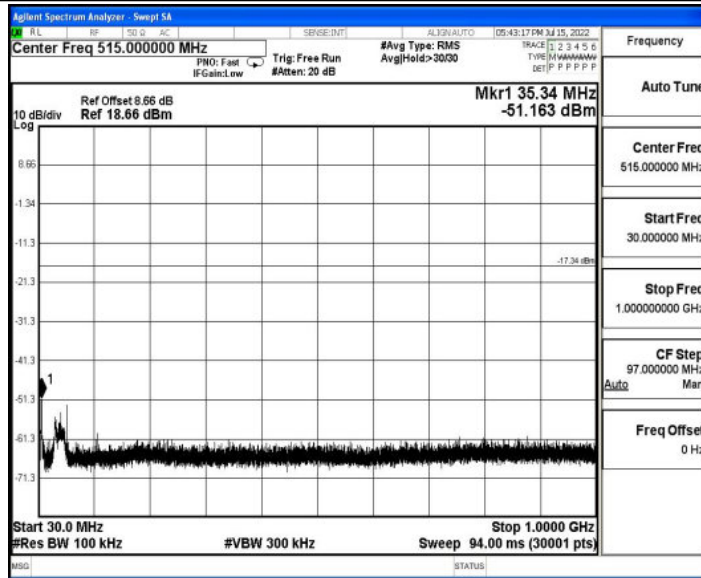


3DH5_Ant1_2402_0~Reference



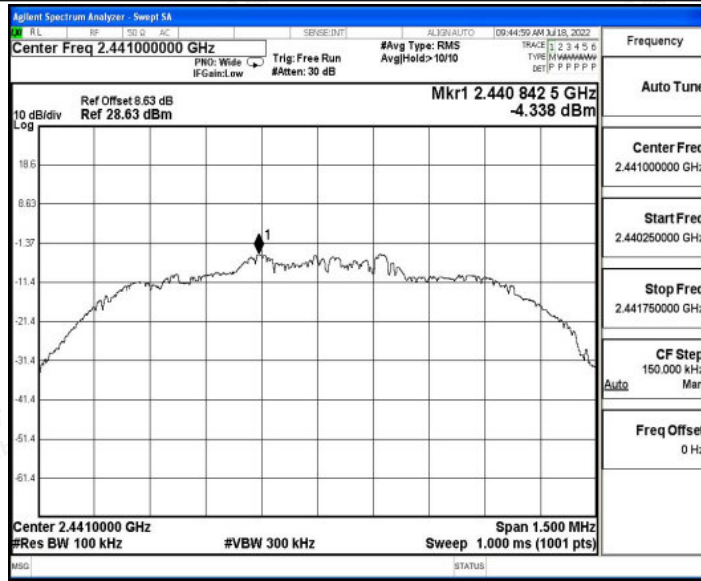


3DH5_Ant1_2402_30~1000

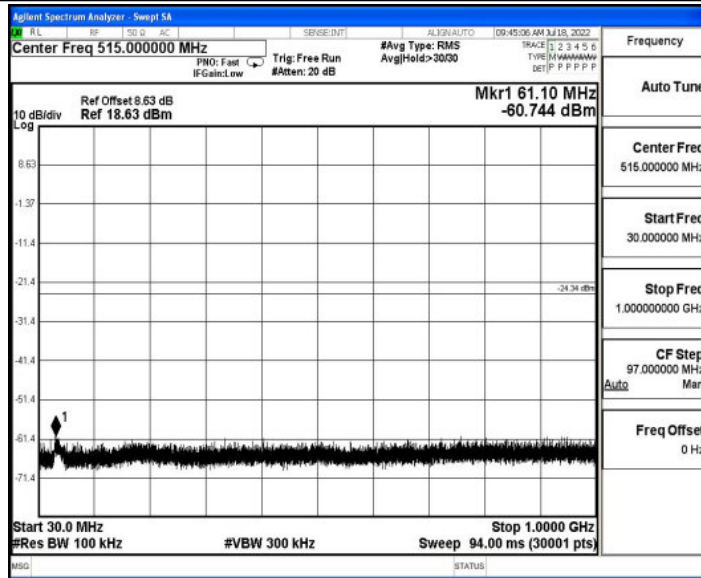


3DH5_Ant1_2441_0~Reference



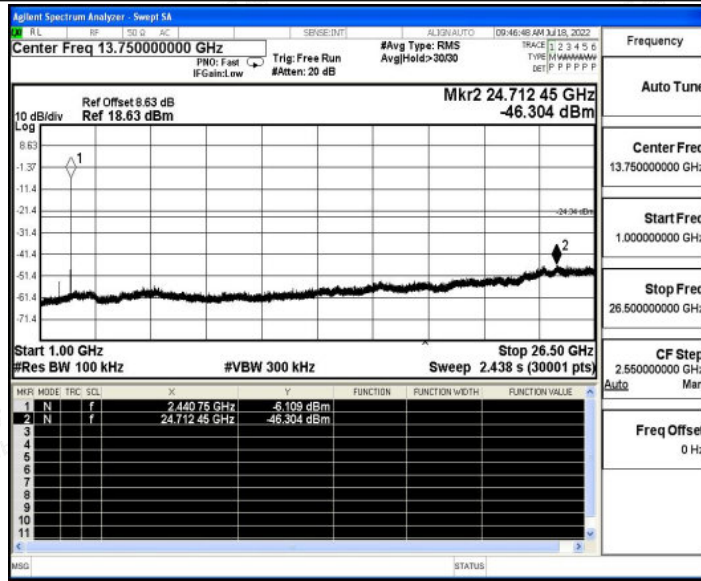


3DH5_Ant1_2441_30~1000

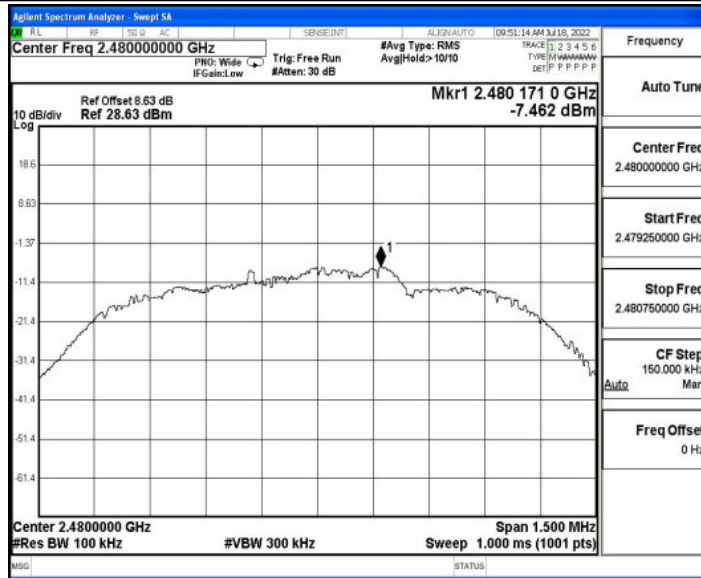


3DH5_Ant1_2441_1000~26500



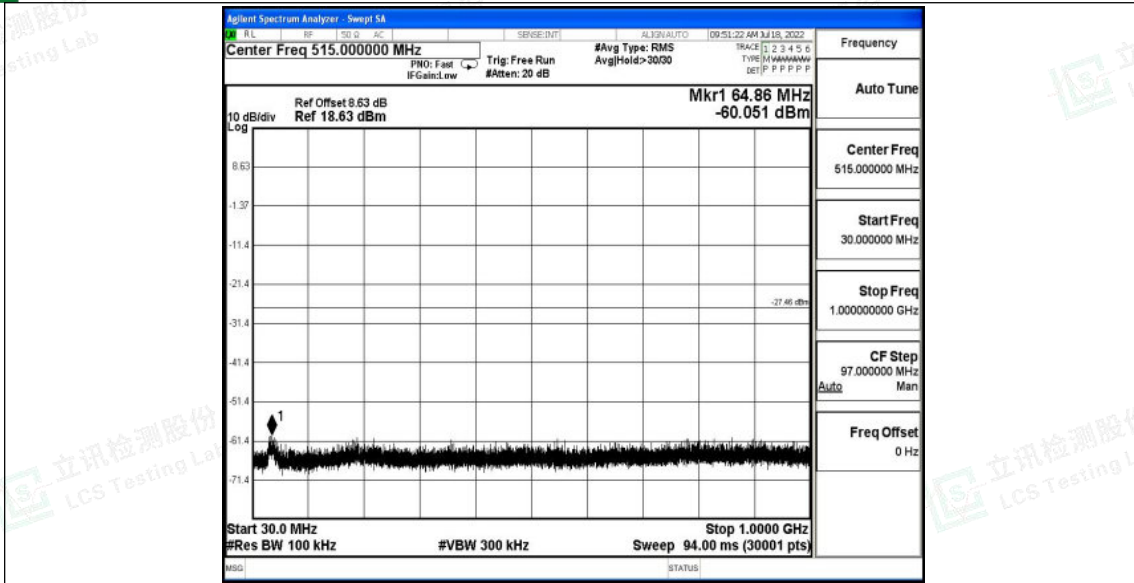


3DH5_Ant1_2480_0~Reference

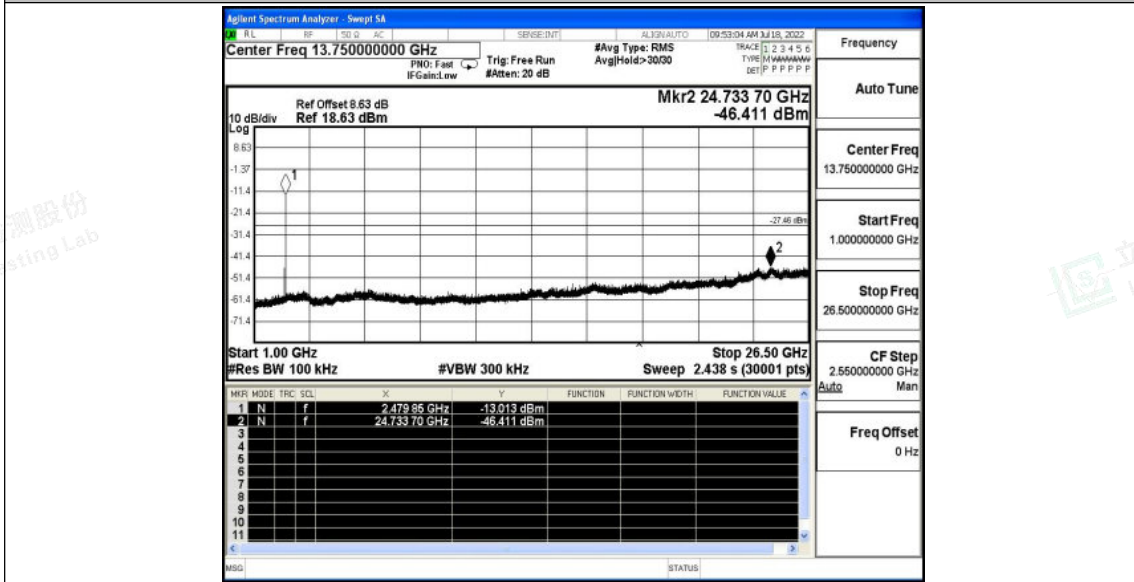


3DH5_Ant1_2480_30~1000





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	-58.22	≤-41.20	36.98	≤54	PASS		
				AV	2389.250	-57.36	≤-41.20	37.84	≤54	PASS		
				AV	2390.000	-57.47	≤-41.20	37.73	≤54	PASS		
				Peak	2310.000	-48.74	≤-21.20	46.46	≤74	PASS		
				Peak	2387.780	-46.42	≤-21.20	48.78	≤74	PASS		
				Peak	2390.000	-48.05	≤-21.20	47.15	≤74	PASS		
		High	2480	AV	2483.500	-53.94	≤-41.20	41.26	≤54	PASS		
				AV	2483.520	-53.94	≤-41.20	41.26	≤54	PASS		
				AV	2500.000	-57.05	≤-41.20	38.15	≤54	PASS		
				Peak	2483.500	-46.63	≤-21.20	48.57	≤74	PASS		
				Peak	2486.400	-45.25	≤-21.20	49.95	≤74	PASS		
				Peak	2500.000	-47.72	≤-21.20	47.48	≤74	PASS		
		Low	Hop_2402	Peak	2310.000	-49.32	≤-21.20	45.88	≤74	PASS		
				Peak	2387.885	-41.92	≤-21.20	53.28	≤74	PASS		
				Peak	2390.000	-47.09	≤-21.20	48.11	≤74	PASS		
		High	Hop_2480	Peak	2483.500	-47.25	≤-21.20	47.95	≤74	PASS		
				Peak	2490.080	-45.81	≤-21.20	49.39	≤74	PASS		
				Peak	2500.000	-47.67	≤-21.20	47.53	≤74	PASS		
		2DH5	Ant1	Low	2402	AV	2310.000	-58	≤-41.20	37.20	≤54	PASS
						AV	2385.995	-57.27	≤-41.20	37.93	≤54	PASS
						AV	2390.000	-57.41	≤-41.20	37.79	≤54	PASS
Peak	2310.000					-48.92	≤-21.20	46.28	≤74	PASS		
Peak	2365.310					-46.2	≤-21.20	49.00	≤74	PASS		
Peak	2390.000					-48.28	≤-21.20	46.92	≤74	PASS		
High	2480			AV	2483.500	-50.82	≤-41.20	44.38	≤54	PASS		
				AV	2483.520	-50.82	≤-41.20	44.38	≤54	PASS		
				AV	2500.000	-56.96	≤-41.20	38.24	≤54	PASS		
				Peak	2483.500	-45.12	≤-21.20	50.08	≤74	PASS		
				Peak	2483.520	-45.12	≤-21.20	50.08	≤74	PASS		
				Peak	2500.000	-46.48	≤-21.20	48.72	≤74	PASS		
Low	Hop_2402			Peak	2310.000	-48.8	≤-21.20	46.40	≤74	PASS		
				Peak	2386.100	-44.47	≤-21.20	50.73	≤74	PASS		
				Peak	2390.000	-48.1	≤-21.20	47.10	≤74	PASS		
High	Hop_2480			Peak	2483.500	-47.72	≤-21.20	47.48	≤74	PASS		
				Peak	2499.520	-46.18	≤-21.20	49.02	≤74	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



3DH5	Ant1	Low	2402	Peak	2500.000	-47.9	≤-21.20	47.30	≤74	PASS
				AV	2310.000	-58.11	≤-41.20	37.09	≤54	PASS
				AV	2389.040	-57.15	≤-41.20	38.05	≤54	PASS
				AV	2390.000	-57.38	≤-41.20	37.82	≤54	PASS
				Peak	2310.000	-47.91	≤-21.20	47.29	≤74	PASS
				Peak	2346.935	-46.28	≤-21.20	48.92	≤74	PASS
		High	2480	AV	2483.500	-56.65	≤-41.20	38.55	≤54	PASS
				AV	2499.040	-56.64	≤-41.20	38.56	≤54	PASS
				AV	2500.000	-56.76	≤-41.20	38.44	≤54	PASS
				Peak	2483.500	-47.91	≤-21.20	47.29	≤74	PASS
				Peak	2490.880	-45.9	≤-21.20	49.30	≤74	PASS
				Peak	2500.000	-48.34	≤-21.20	46.86	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-49.32	≤-21.20	45.88	≤74	PASS
				Peak	2372.765	-46.48	≤-21.20	48.72	≤74	PASS
				Peak	2390.000	-47.94	≤-21.20	47.26	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-47.75	≤-21.20	47.45	≤74	PASS
				Peak	2494.080	-45.84	≤-21.20	49.36	≤74	PASS
				Peak	2500.000	-47.58	≤-21.20	47.62	≤74	PASS

Note:

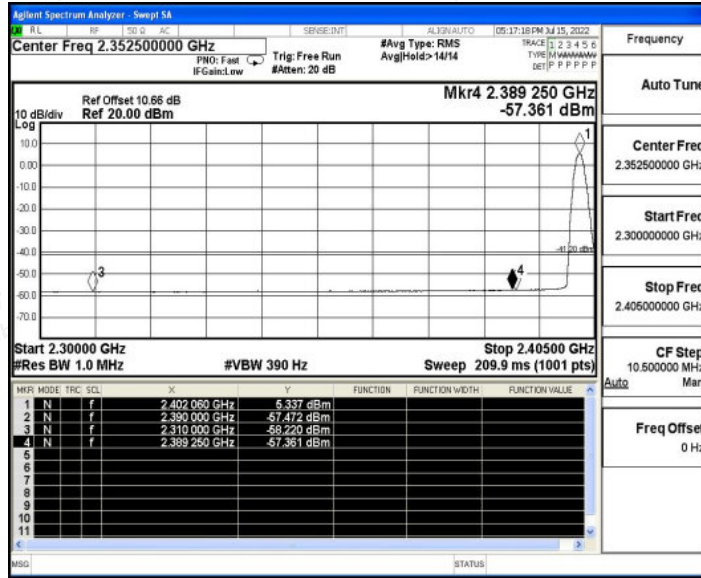
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



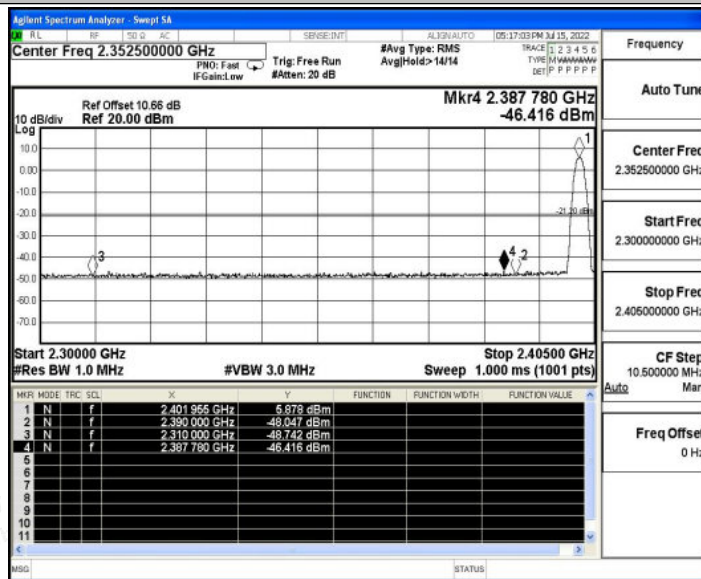


Test Graphs

DH5_Ant1_Low_2402_AV

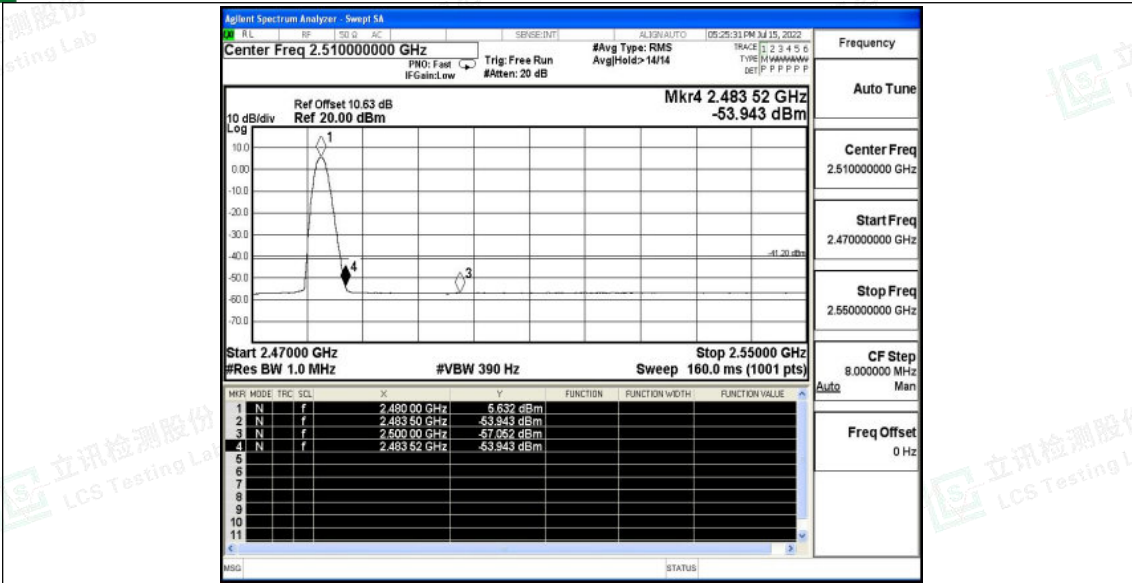


DH5_Ant1_Low_2402_Peak

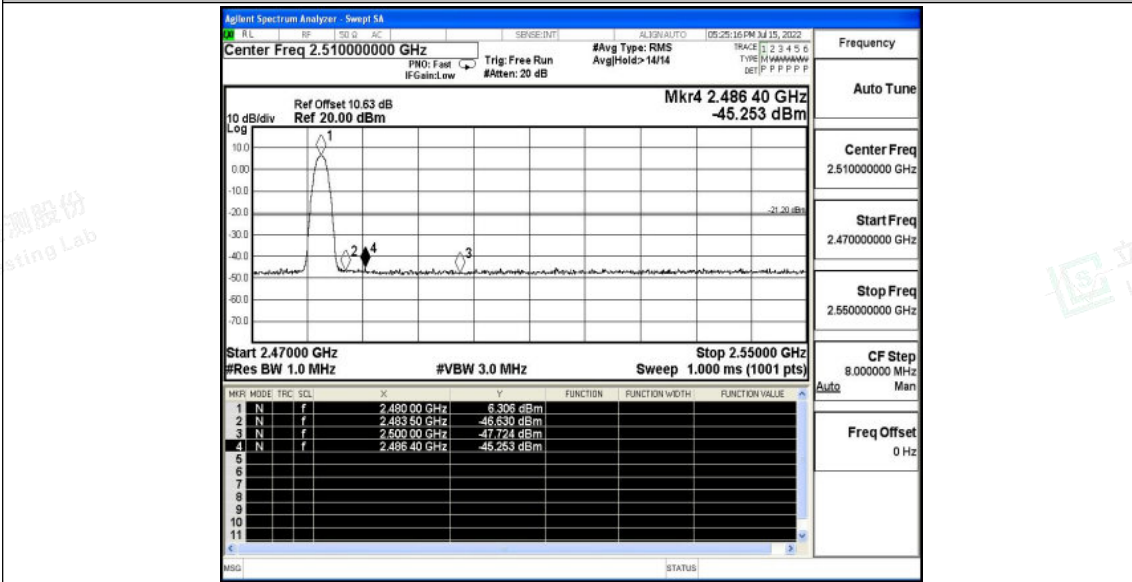


DH5_Ant1_High_2480_AV



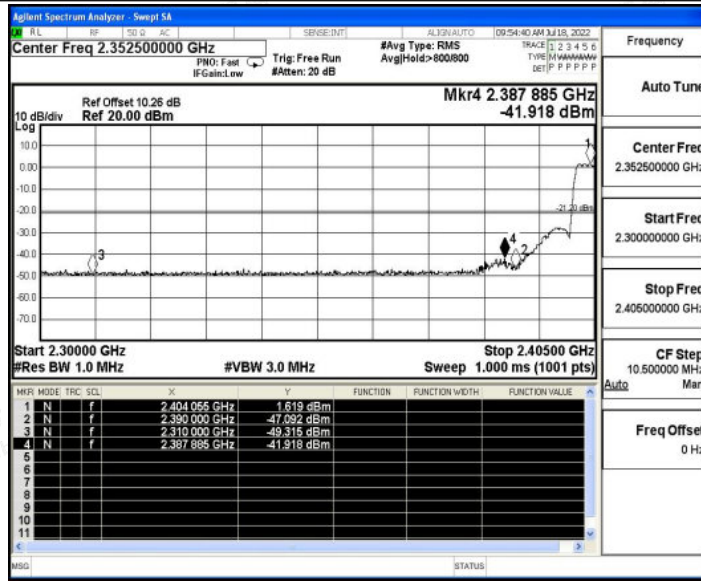


DH5_Ant1_High_2480_Peak

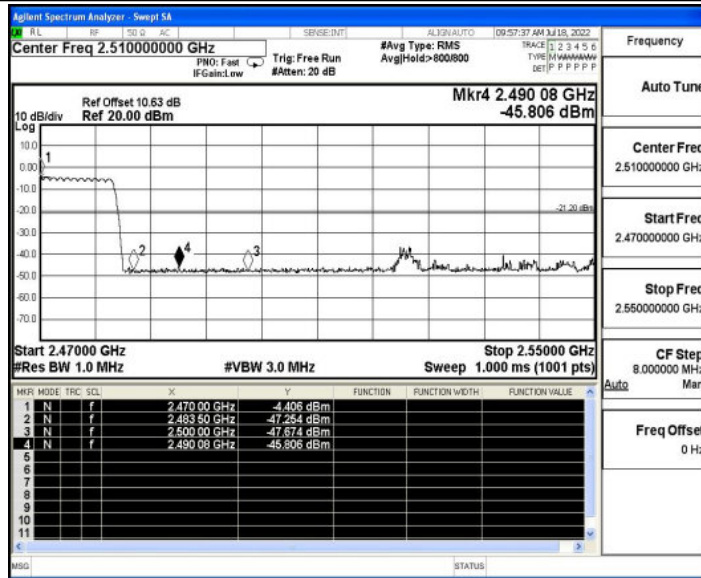


DH5_Ant1_Low_Hop_2402_Peak



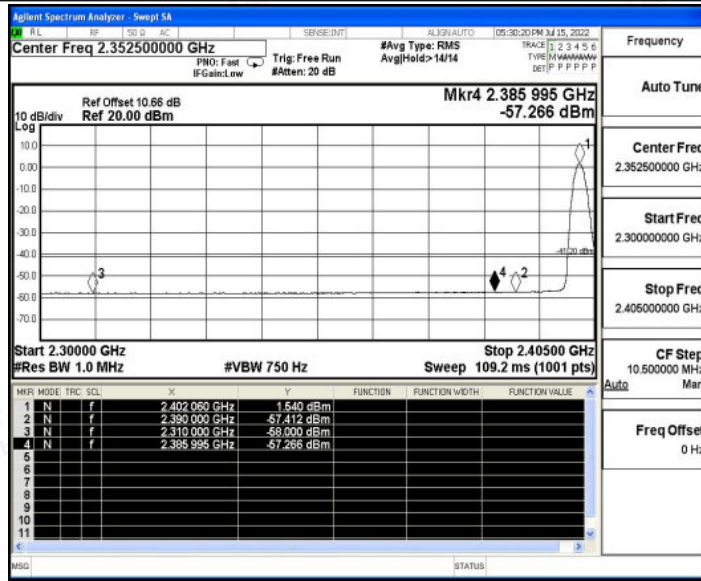


DH5_Ant1_High_Hop_2480_Peak

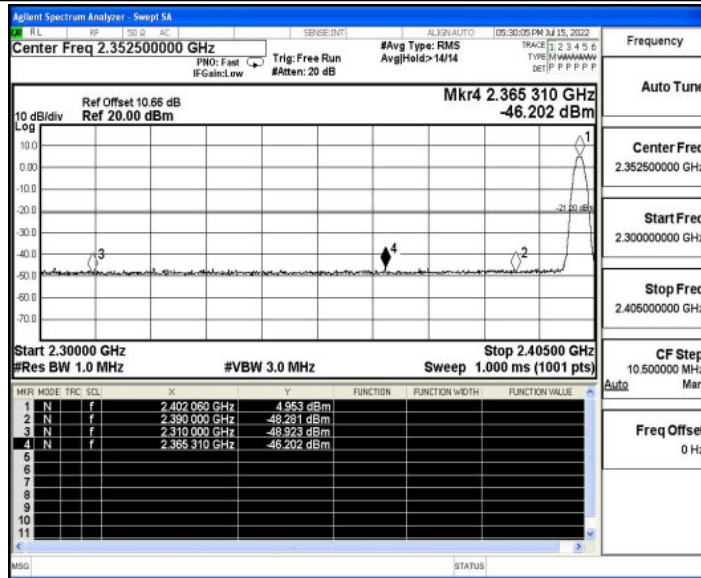


2DH5_Ant1_Low_2402_AV



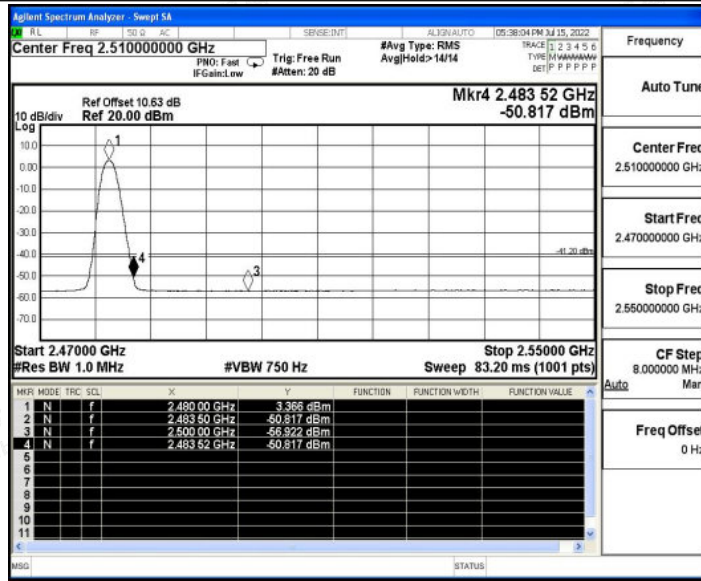


2DH5_Ant1_Low_2402_Peak

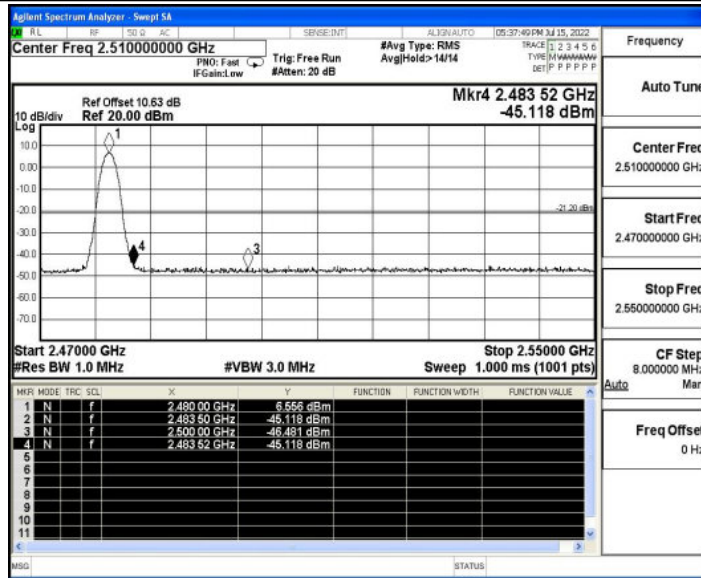


2DH5_Ant1_High_2480_AV



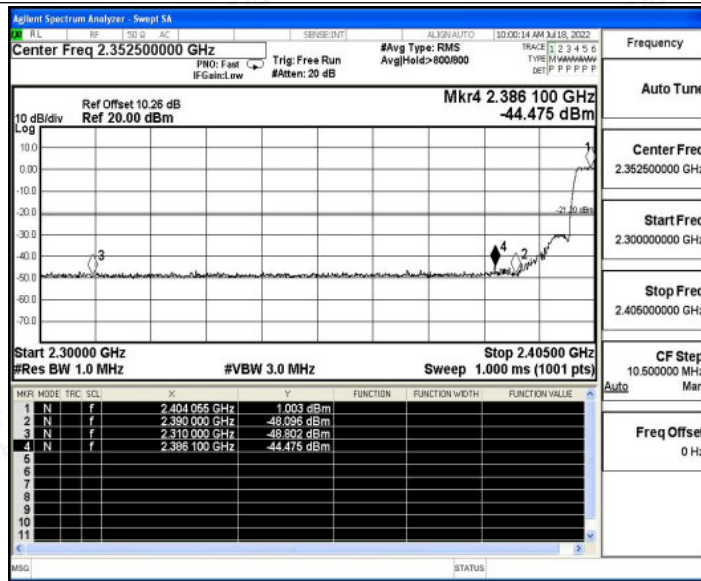


2DH5_Ant1_High_2480_Peak

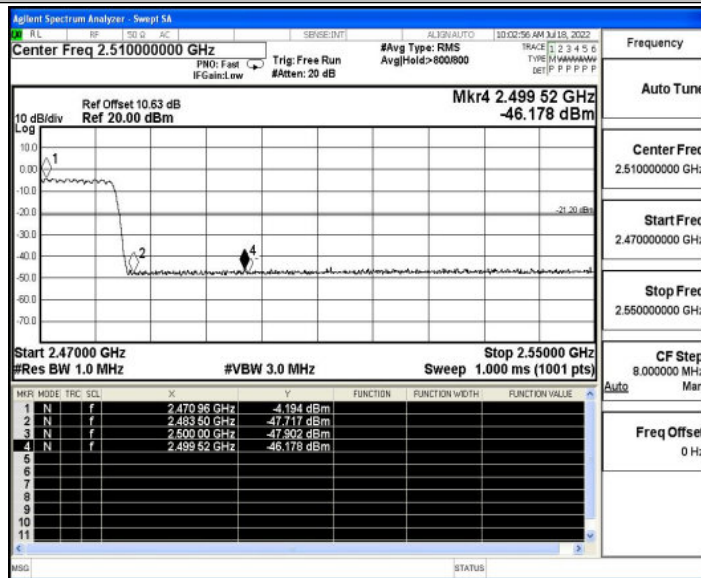


2DH5_Ant1_Low_Hop_2402_Peak



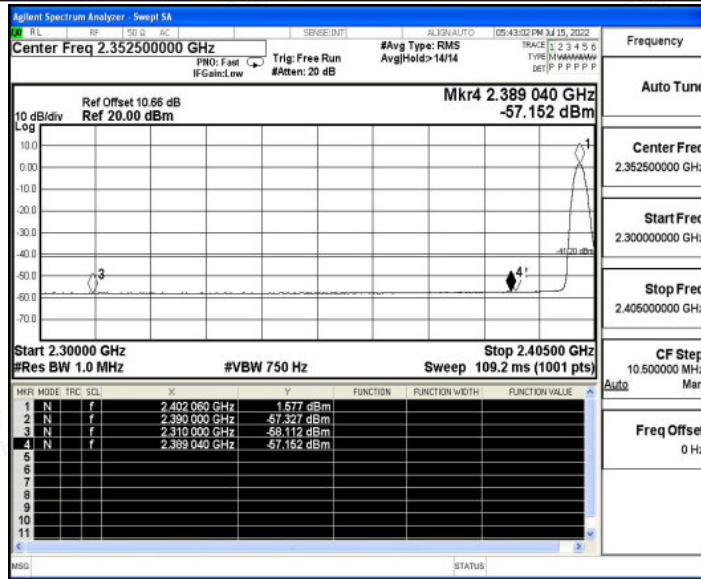


2DH5_Ant1_High_Hop_2480_Peak

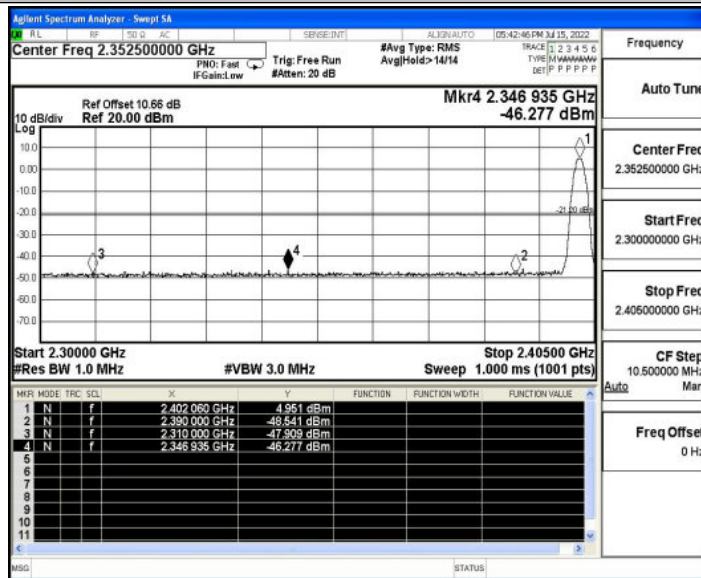


3DH5_Ant1_Low_2402_AV



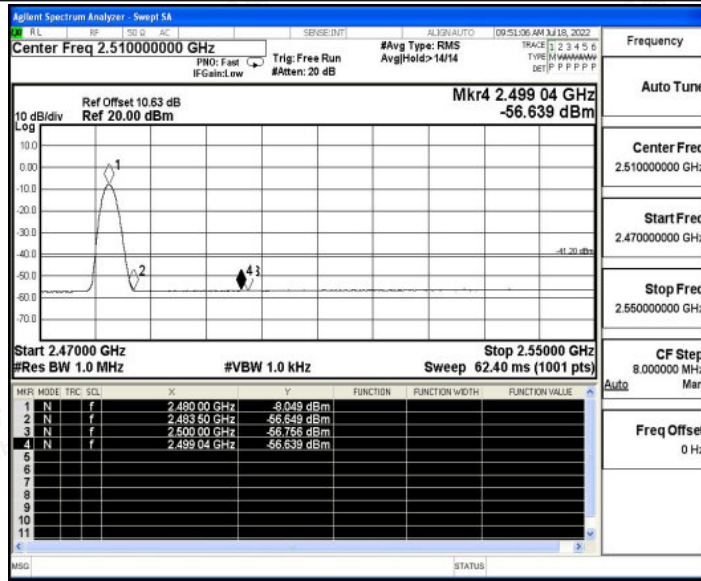


3DH5_Ant1_Low_2402_Peak

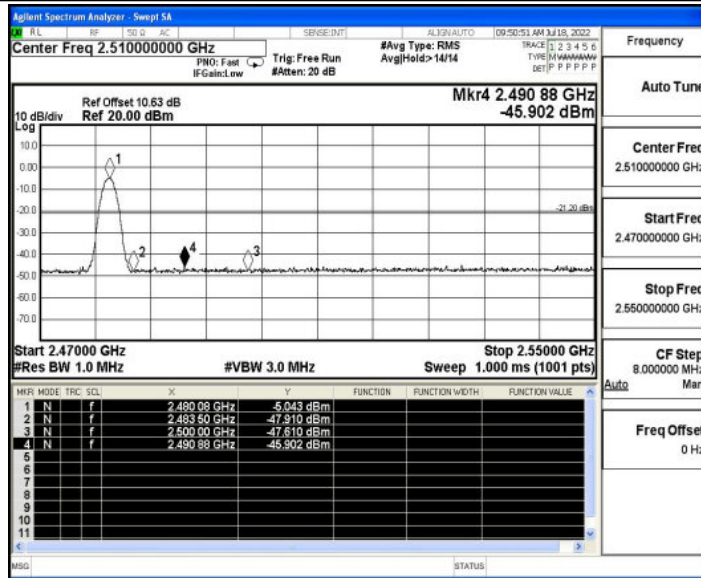


3DH5_Ant1_High_2480_AV



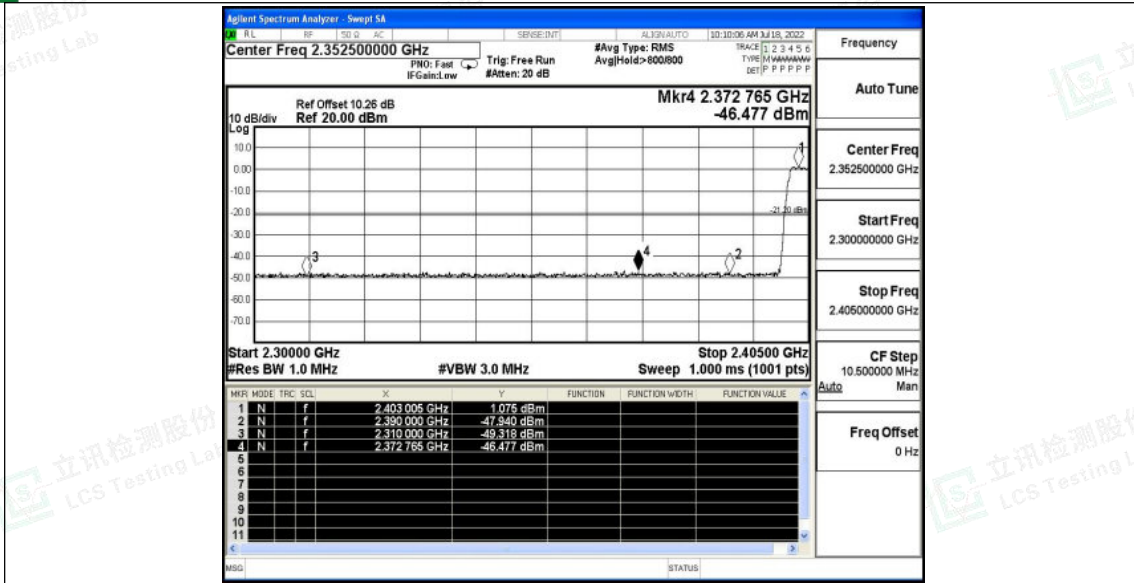


3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak





3DH5_Ant1_High_Hop_2480_Peak

