



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Karaoke Machine

Test Model: KA215

Environmental Conditions

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





A.1 20dB Emission Bandwidth

Test Result

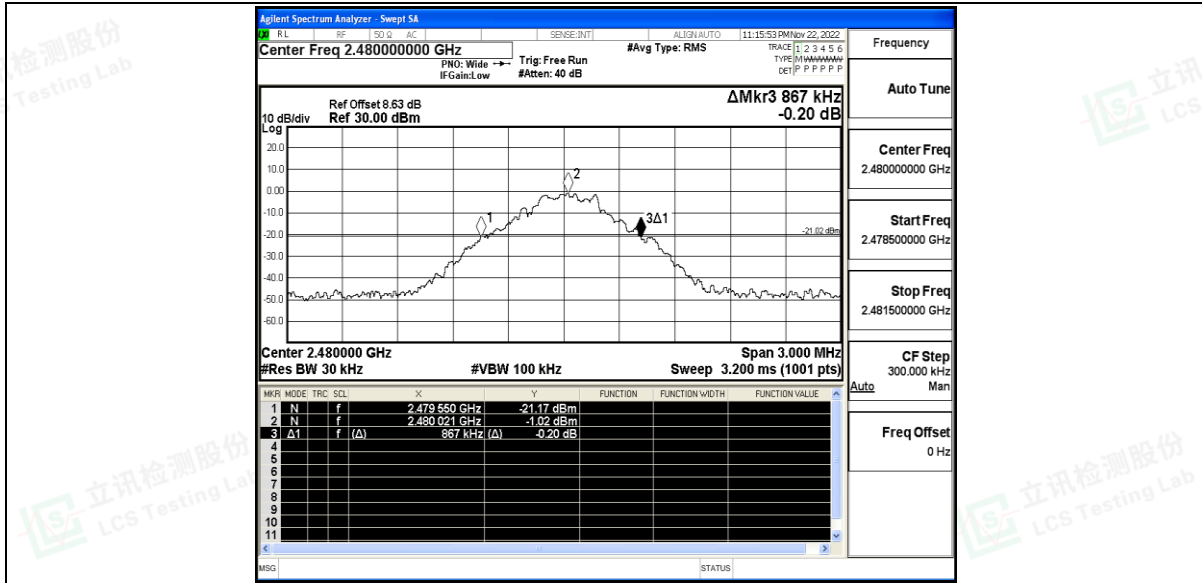
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Verdict
DH5	Ant	2402	0.849	2401.568	2402.417	---
		2441	0.852	2440.568	2441.420	---
		2480	0.867	2479.550	2480.417	---
2DH5	Ant	2402	1.281	2401.367	2402.648	---
		2441	1.320	2440.340	2441.660	---
		2480	1.290	2479.364	2480.654	---
3DH5	Ant	2402	1.293	2401.358	2402.651	---
		2441	1.308	2440.349	2441.657	---
		2480	1.296	2479.349	2480.645	---



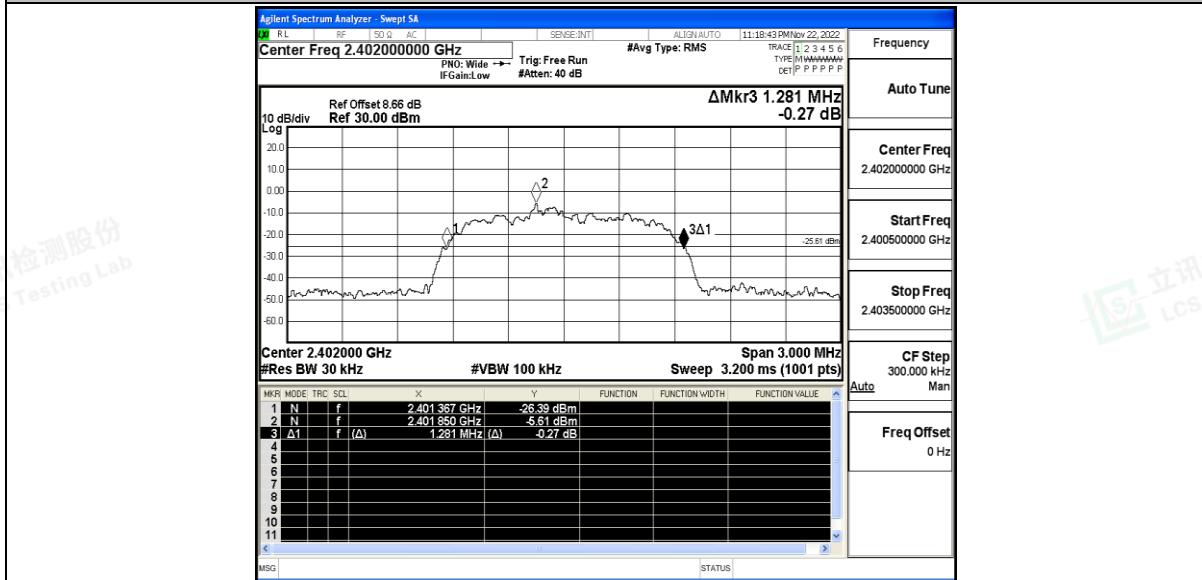


Test Graphs





2DH5_Ant_2402



2DH5_Ant_2441

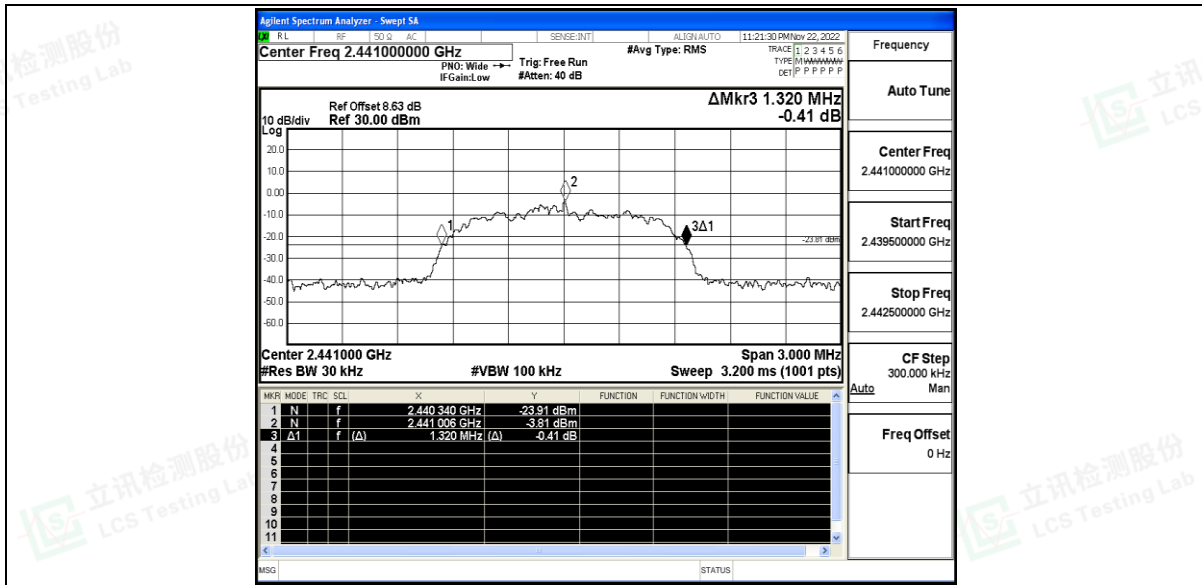


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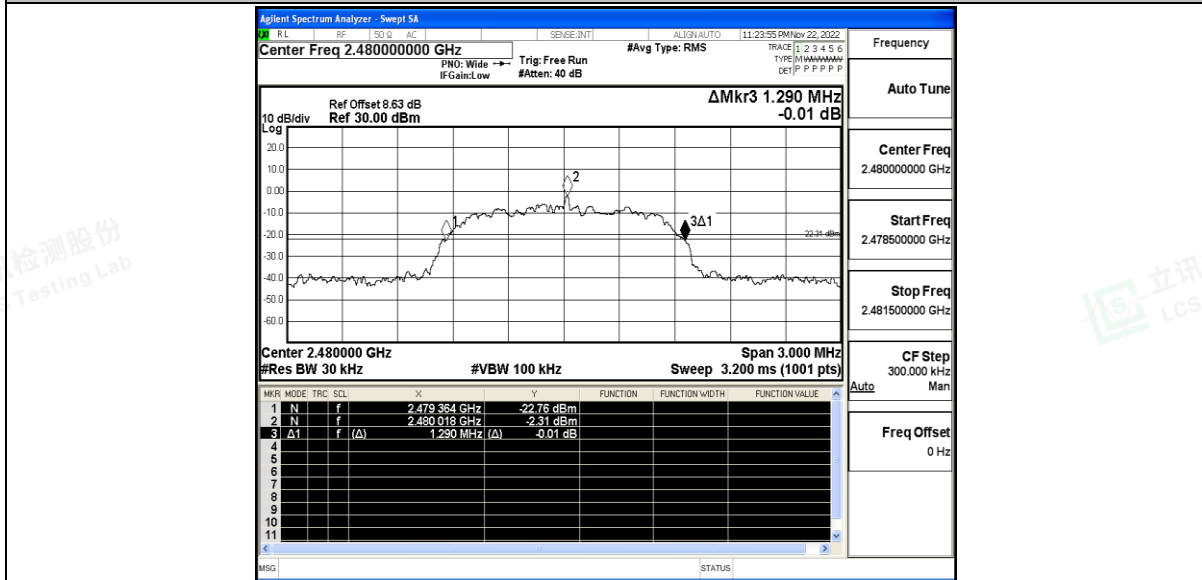
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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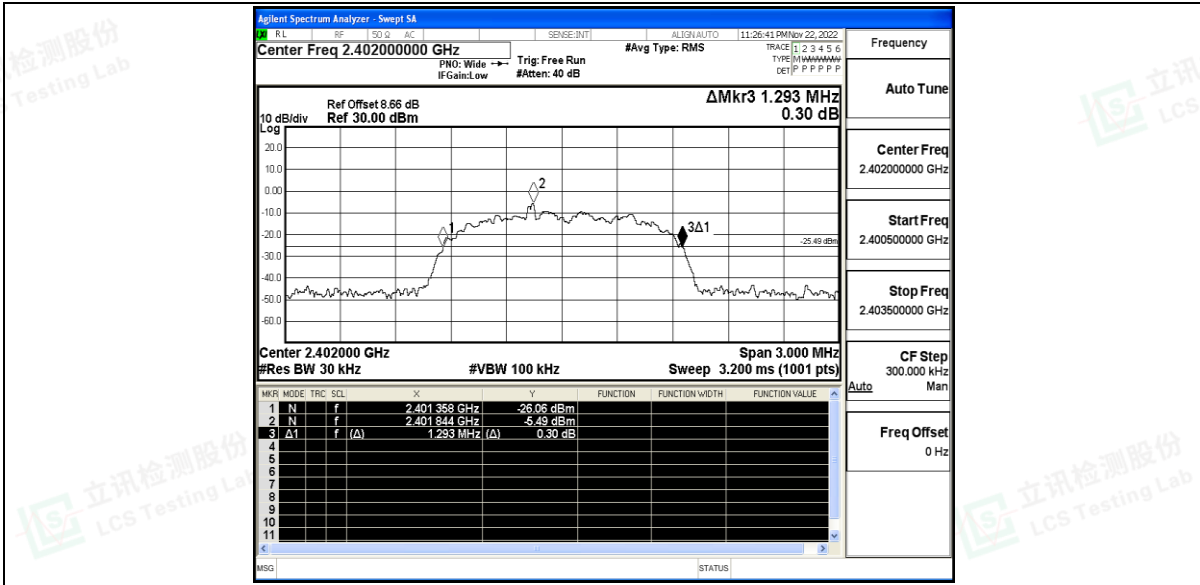


2DH5_Ant_2480

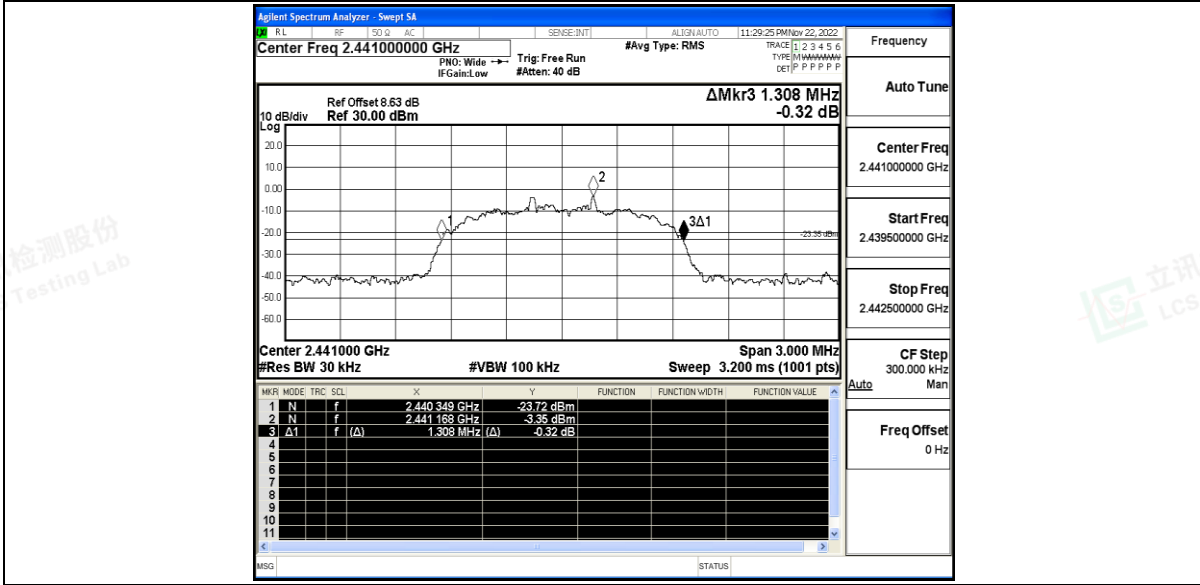


3DH5_Ant_2402





3DH5_Ant_2441



3DH5_Ant_2480

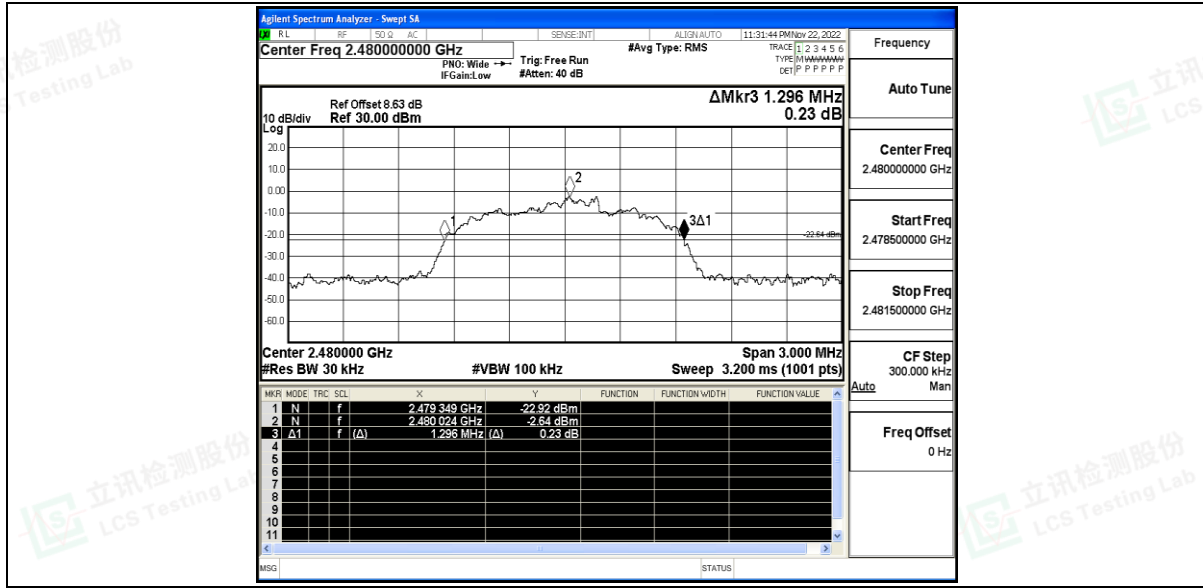


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A.2 Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant	2402	0.31	≤20.97	PASS
		2441	-0.31	≤20.97	PASS
		2480	0.45	≤20.97	PASS
2DH5	Ant	2402	-0.57	≤20.97	PASS
		2441	-0.39	≤20.97	PASS
		2480	0.41	≤20.97	PASS
3DH5	Ant	2402	-0.55	≤20.97	PASS
		2441	-0.41	≤20.97	PASS
		2480	0.46	≤20.97	PASS



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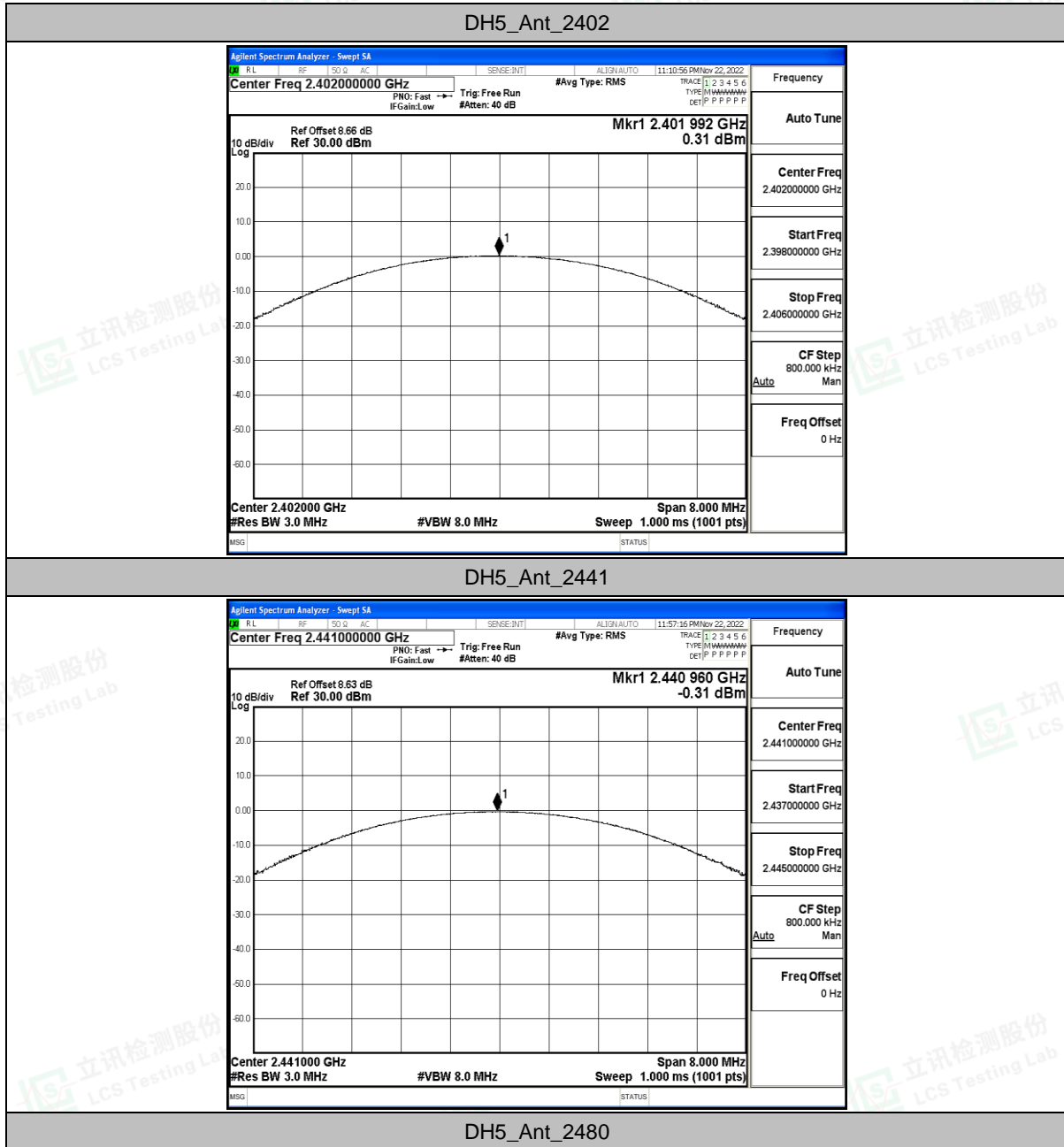
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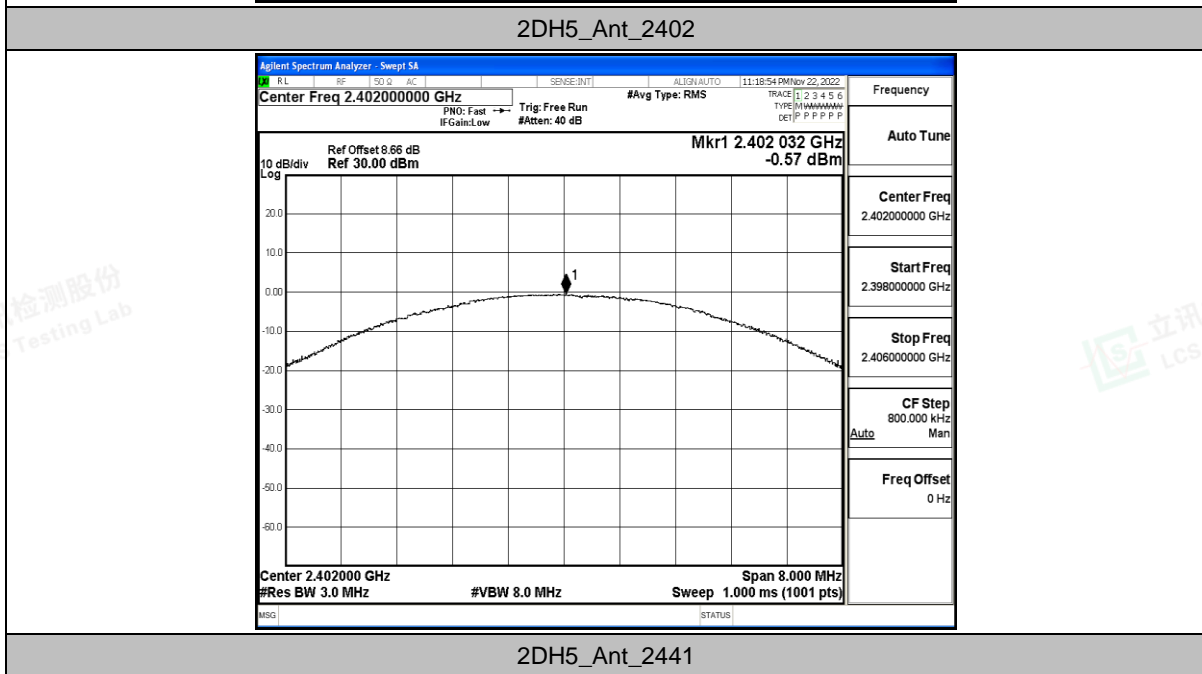
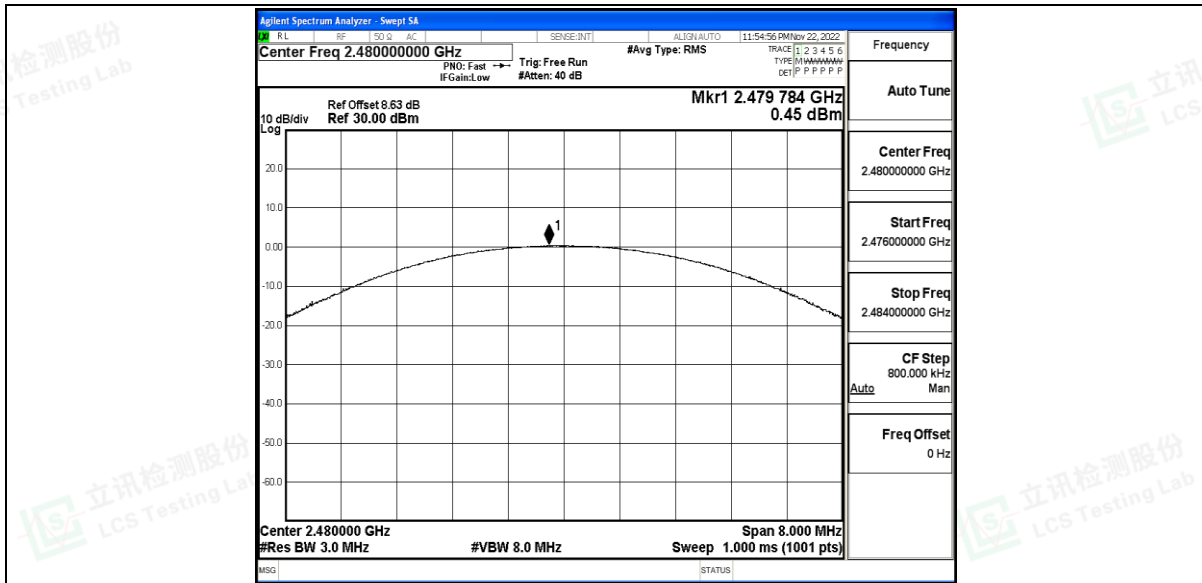
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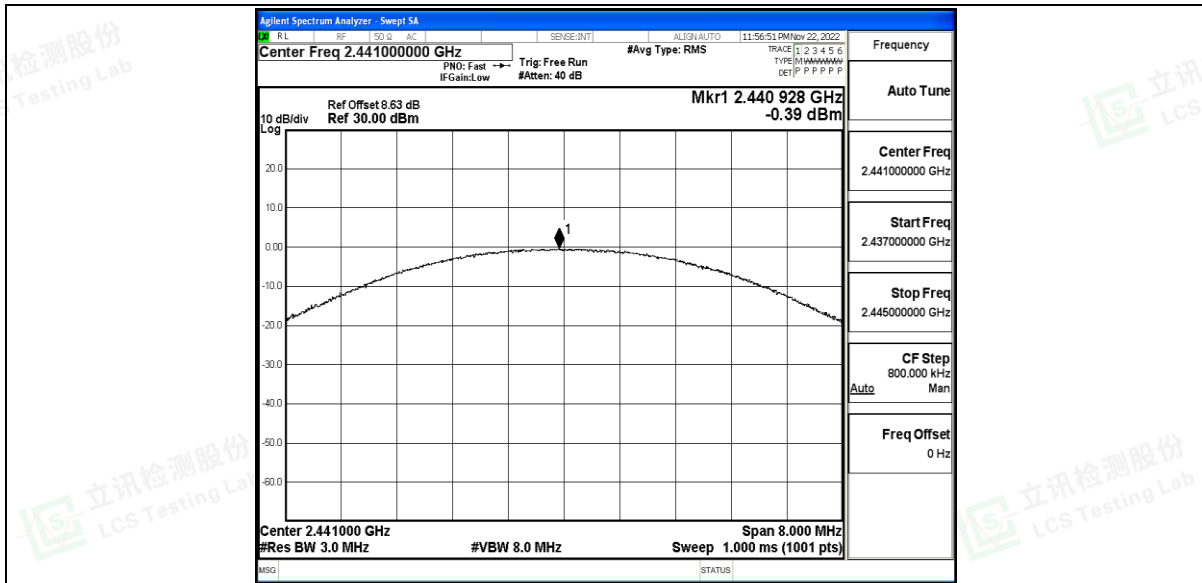
Scan code to check authenticity



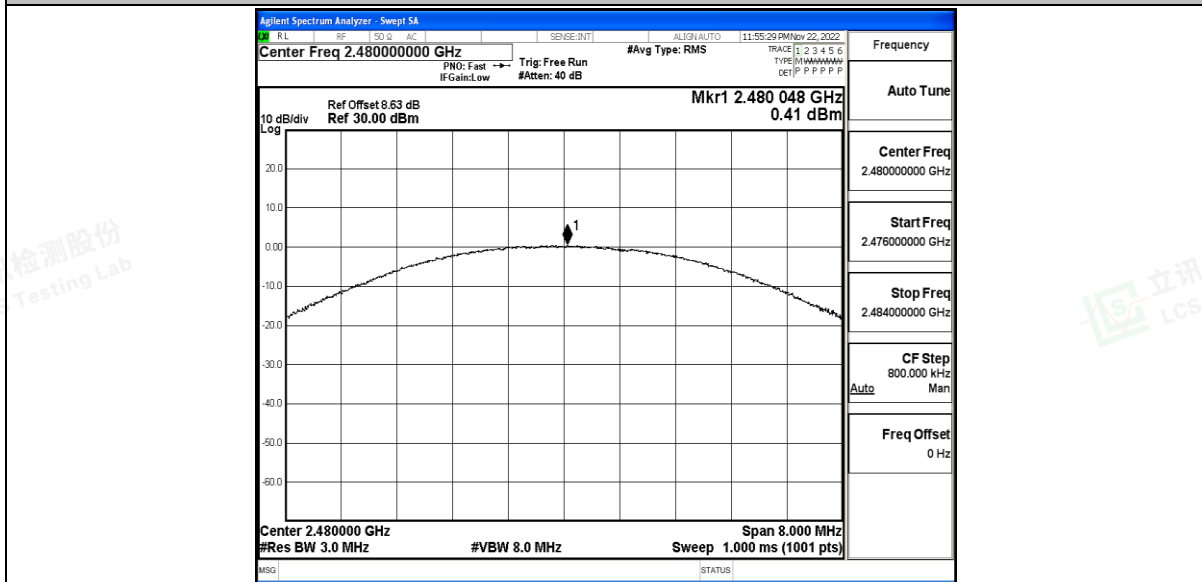
Test Graphs





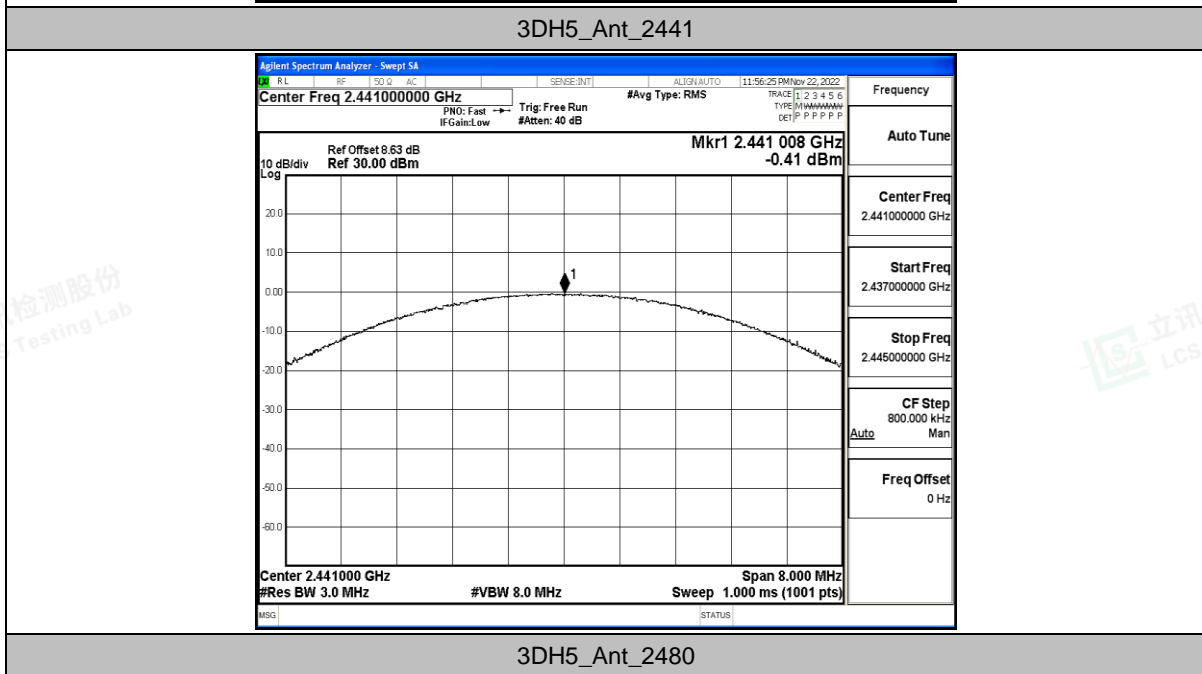
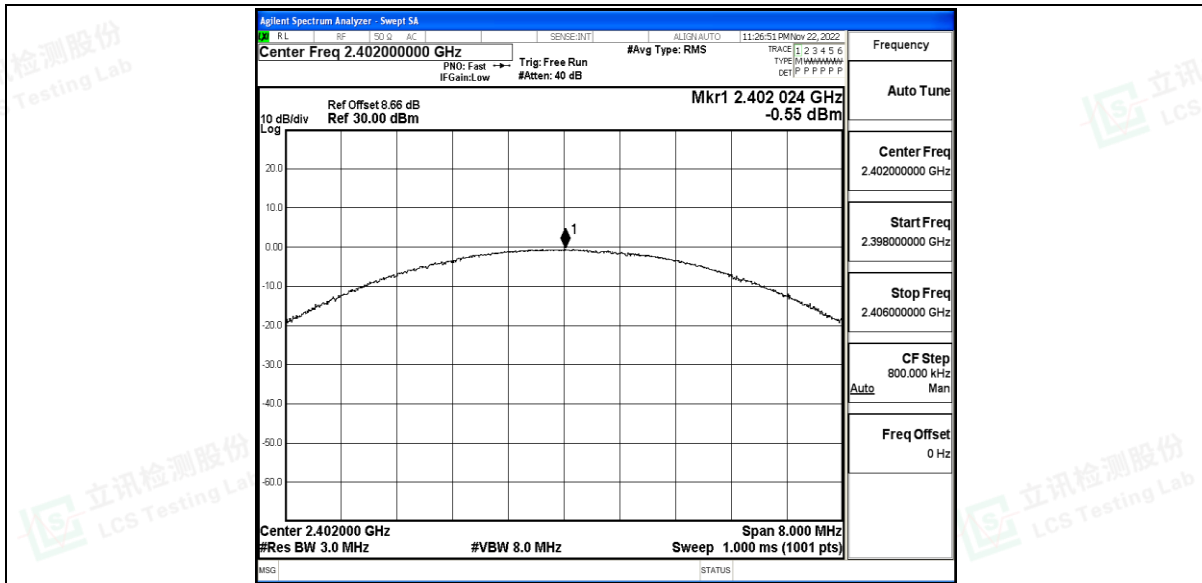


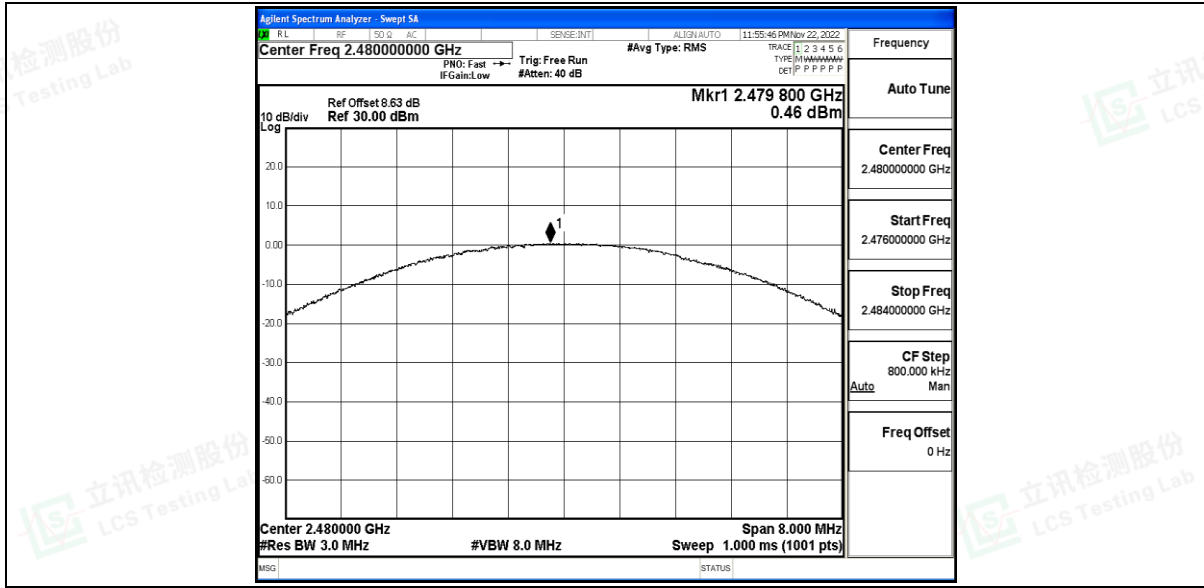
2DH5_Ant_2480



3DH5_Ant_2402









A.3 Carrier frequency separation

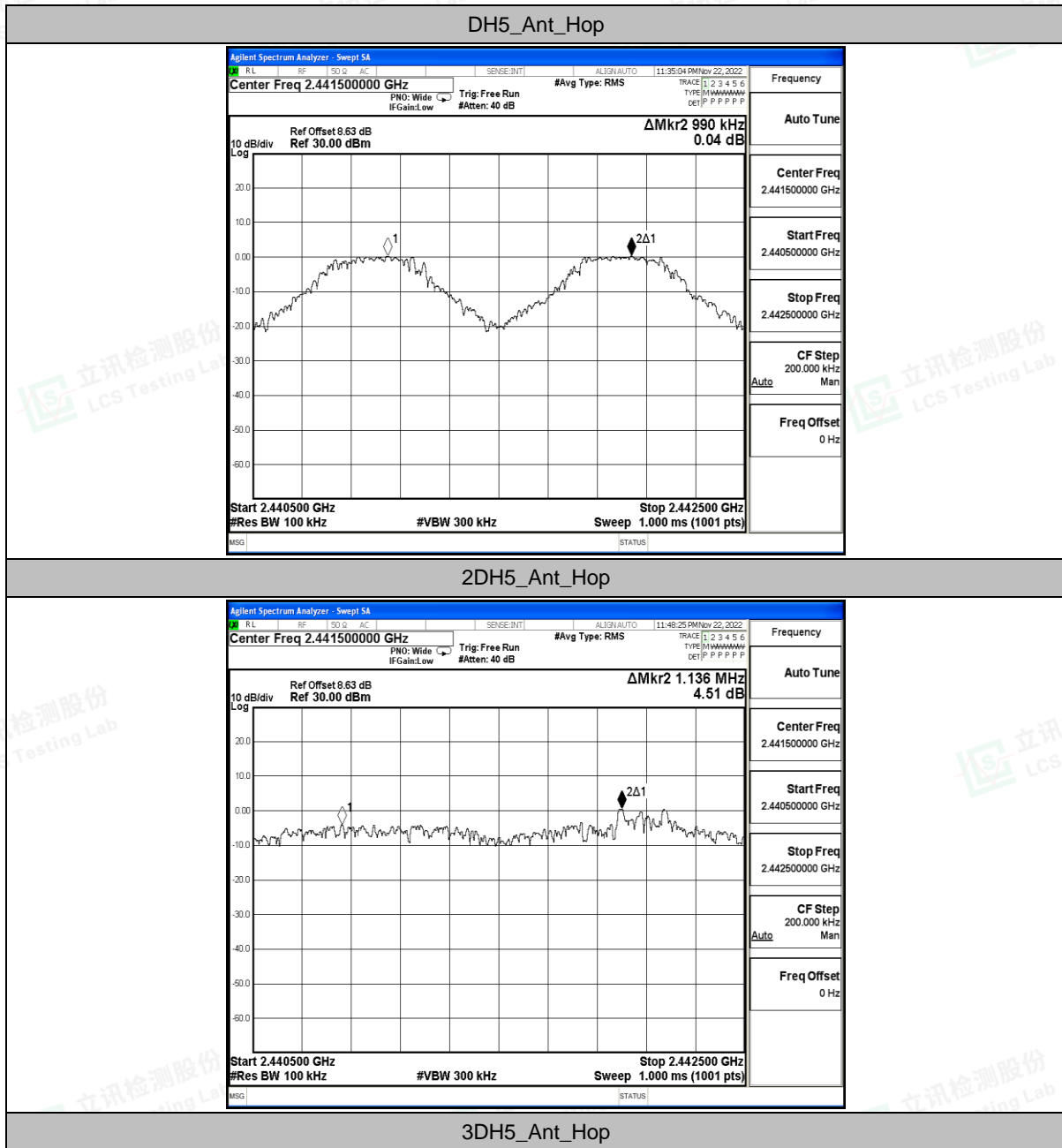
Test Result

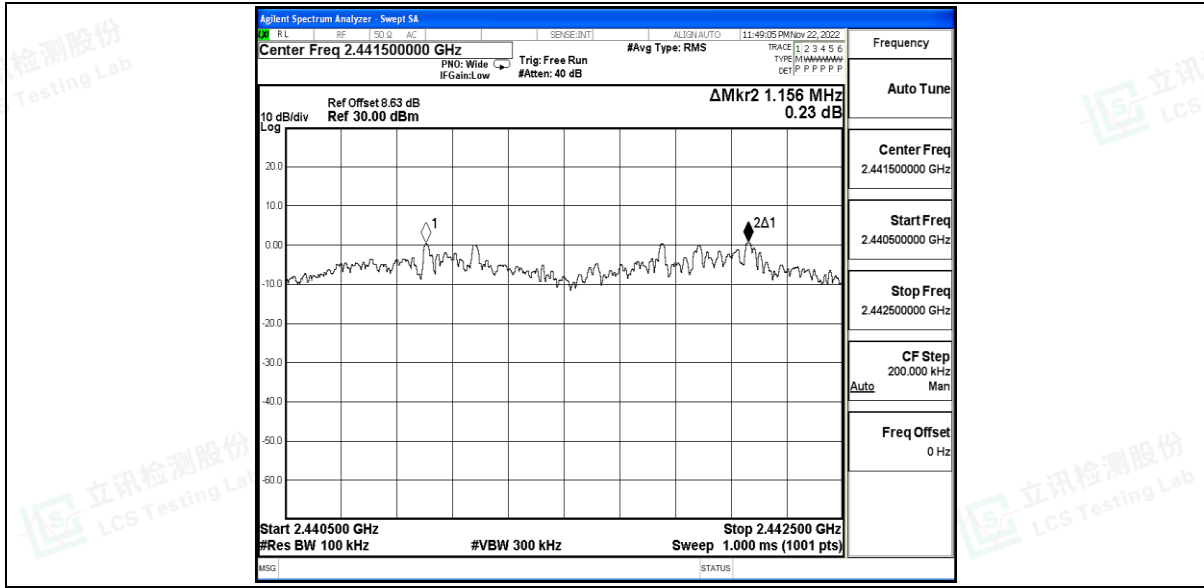
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant	Hop	0.99	≥0.578	PASS
2DH5	Ant	Hop	1.136	≥0.880	PASS
3DH5	Ant	Hop	1.156	≥0.872	PASS





Test Graphs







A.4 Time of occupancy

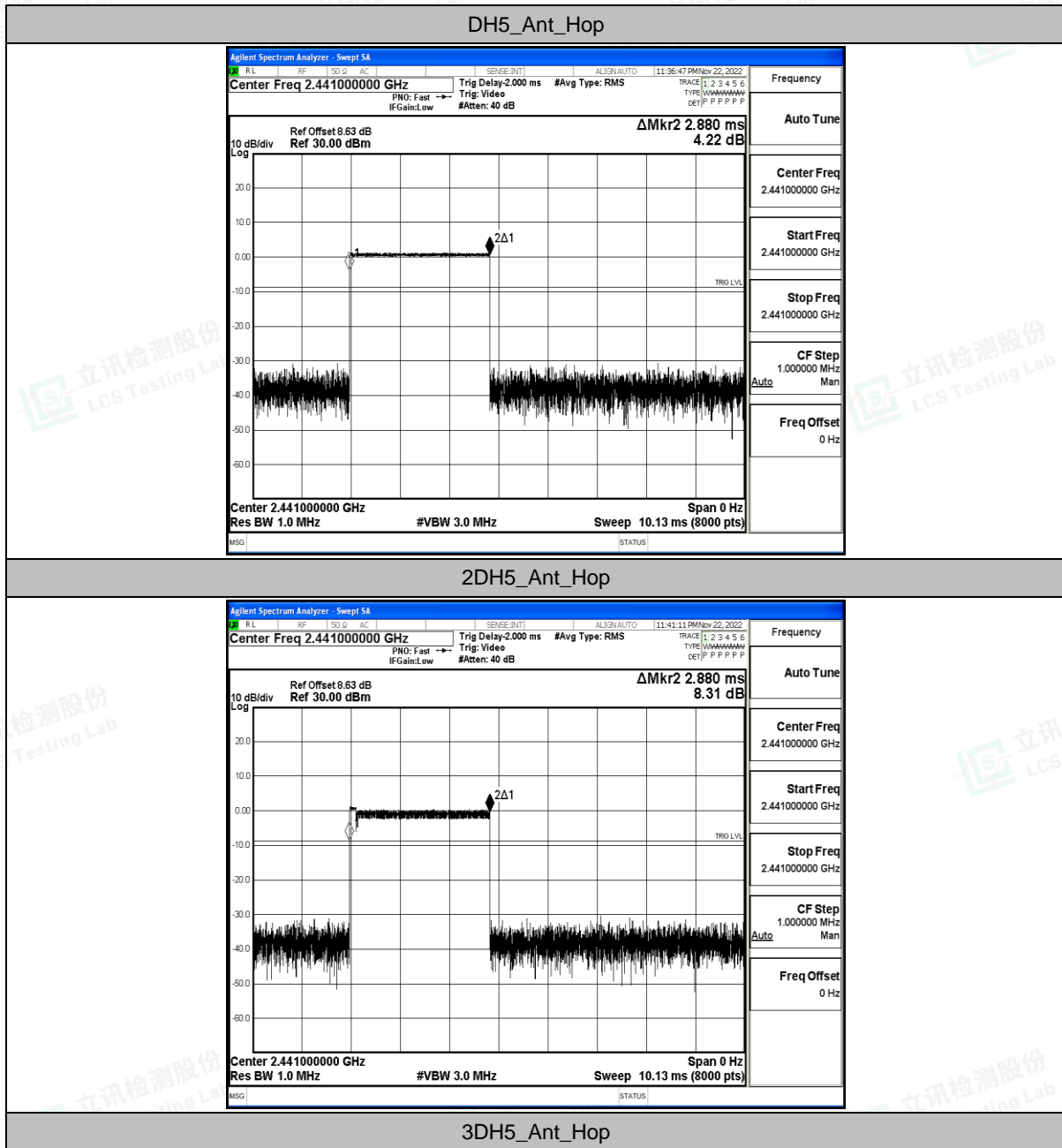
Test Result

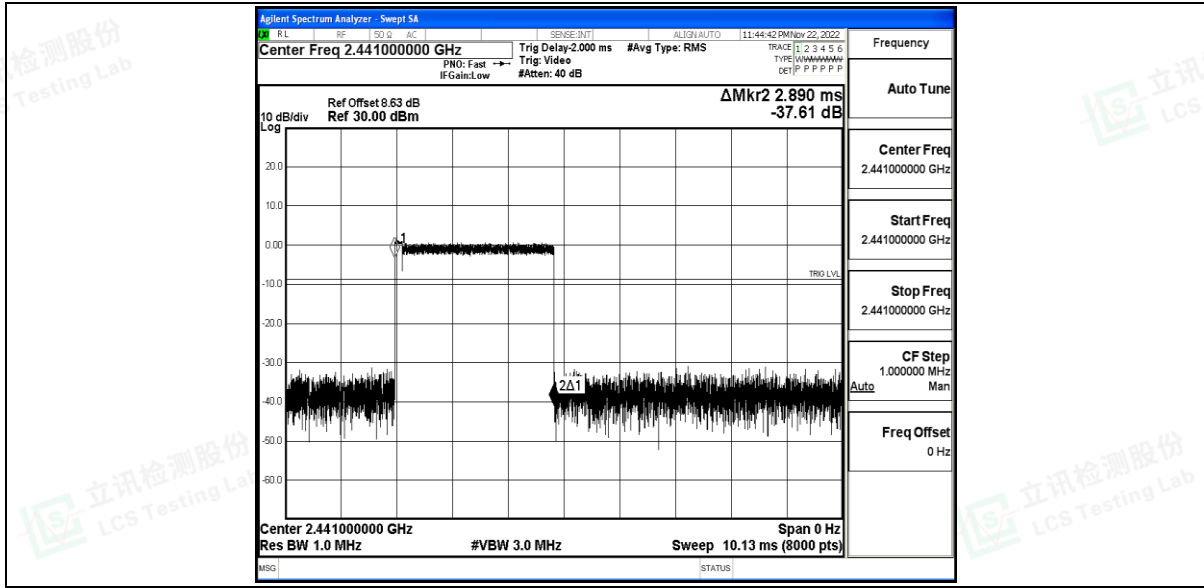
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	Ant	Hop	2.88	106.67	0.307	≤0.4	PASS
3DH5	Ant	Hop	2.89	106.67	0.308	≤0.4	PASS





Test Graphs







A.5 Number of hopping channels

Test Result

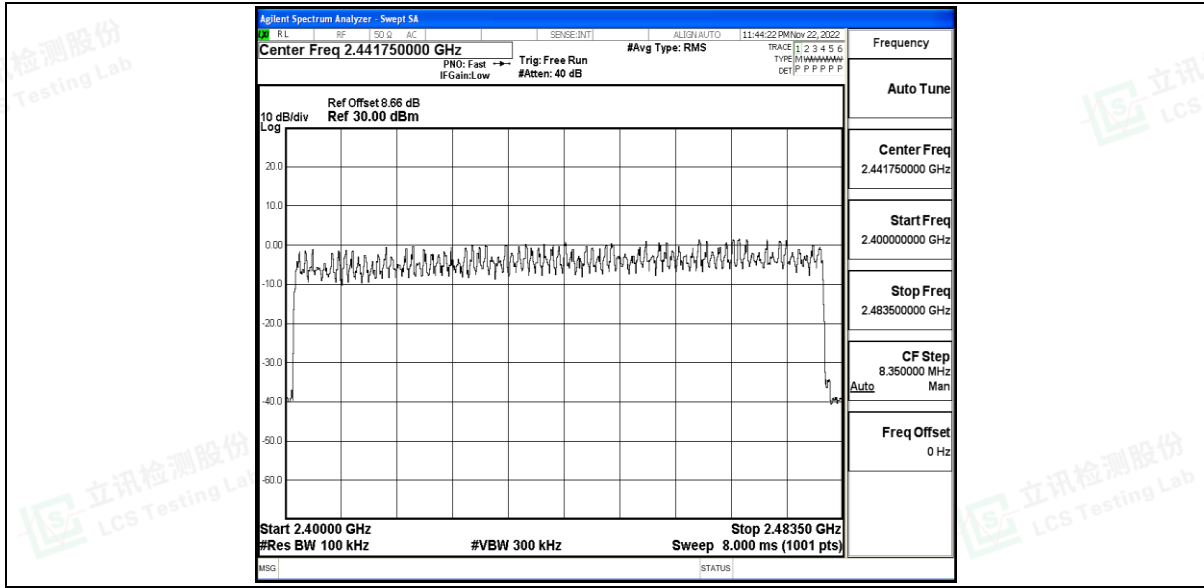
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant	Hop	79	≥15	PASS
2DH5	Ant	Hop	79	≥15	PASS
3DH5	Ant	Hop	79	≥15	PASS





Test Graphs







A.6 Band edge measurements

Test Result

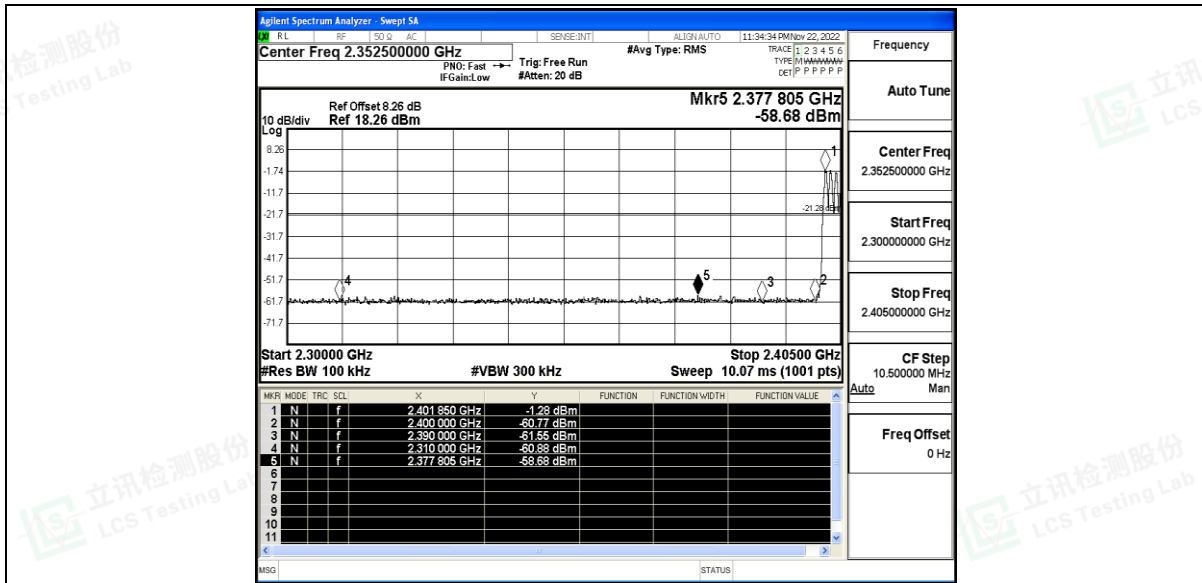
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	Low	2402	-1.09	-59.19	≤-21.09	PASS
		High	2480	0.59	-57.7	≤-19.41	PASS
		Low	Hop_2402	-1.28	-58.69	≤-21.28	PASS
		High	Hop_2480	1.19	-57.82	≤-18.81	PASS
2DH5	Ant	Low	2402	-1.11	-58.82	≤-21.11	PASS
		High	2480	-3.09	-59.28	≤-23.09	PASS
		Low	Hop_2402	-2.61	-58.37	≤-22.61	PASS
		High	Hop_2480	0.17	-57.76	≤-19.83	PASS
3DH5	Ant	Low	2402	-5.65	-59.34	≤-25.65	PASS
		High	2480	-3.44	-58.56	≤-23.44	PASS
		Low	Hop_2402	-2.08	-57.86	≤-22.08	PASS
		High	Hop_2480	1.54	-57.11	≤-18.46	PASS



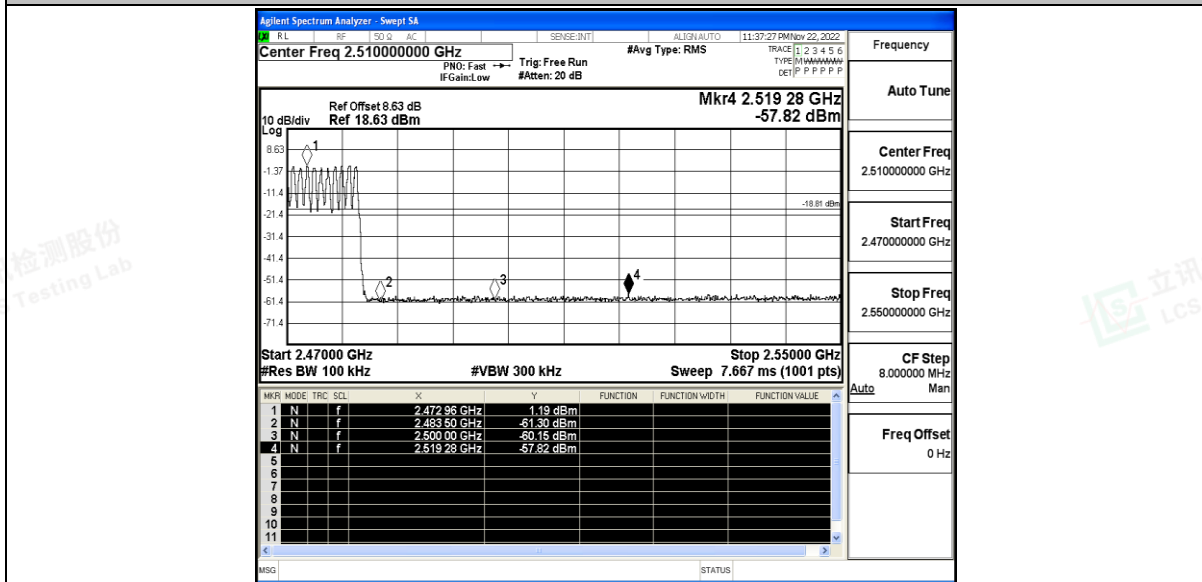


Test Graphs



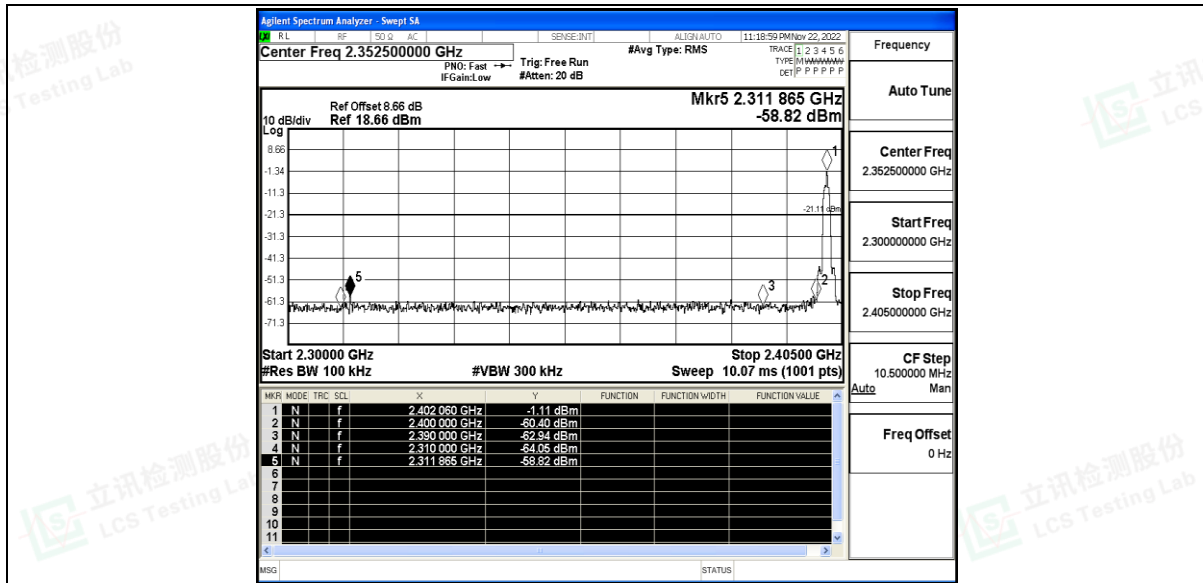


DH5_Ant_High_Hop_2480

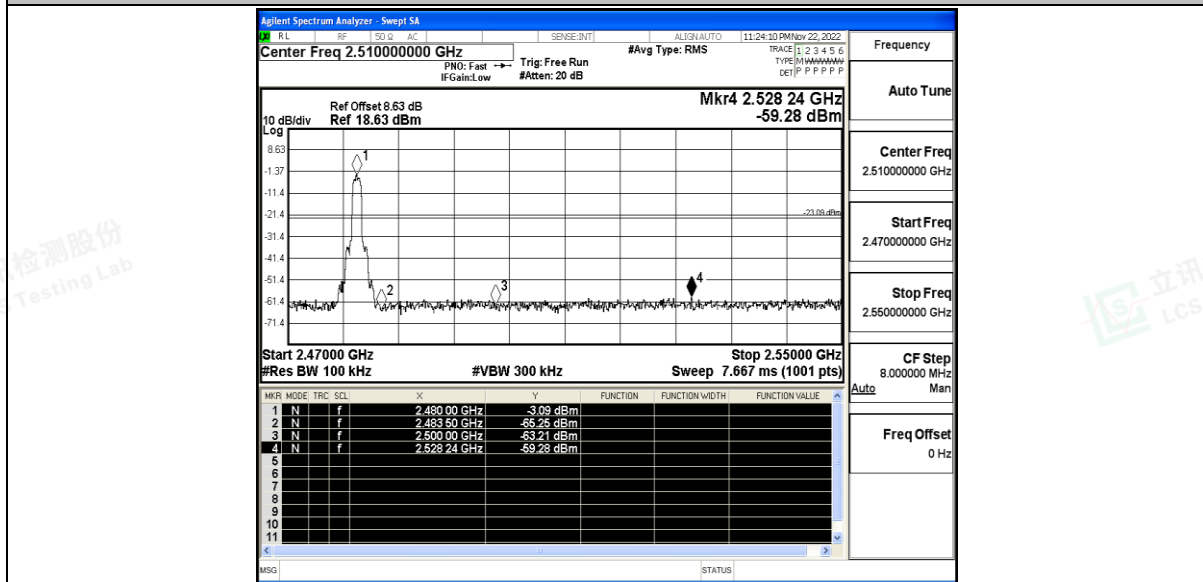


2DH5_Ant_Low_2402



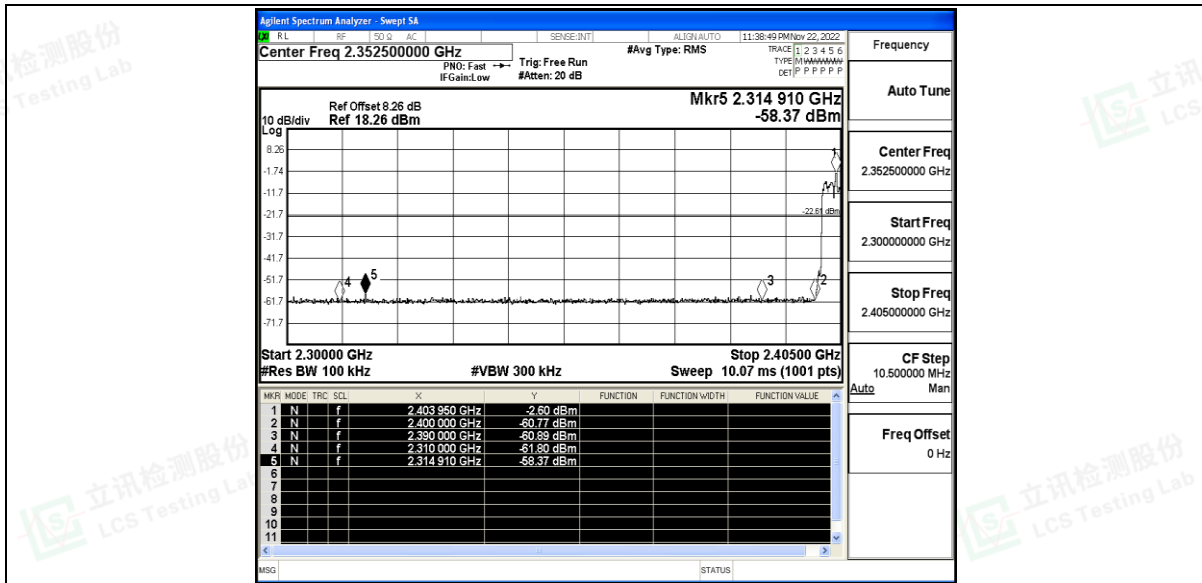


2DH5_Ant_High_2480

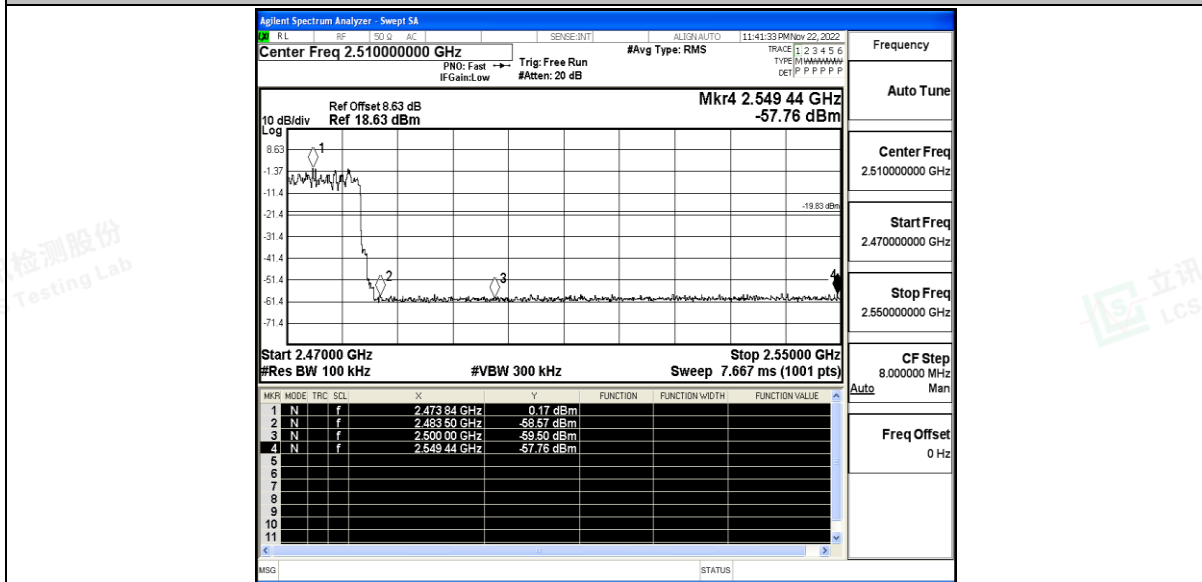


2DH5_Ant_Low_Hop_2402





2DH5_Ant_High_Hop_2480



3DH5_Ant_Low_2402

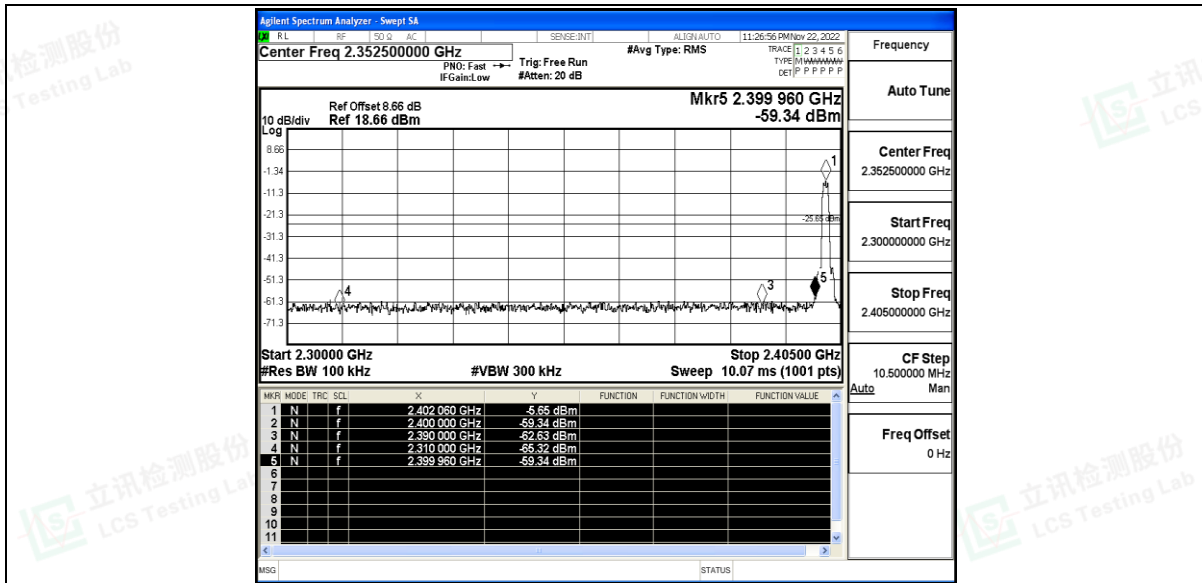


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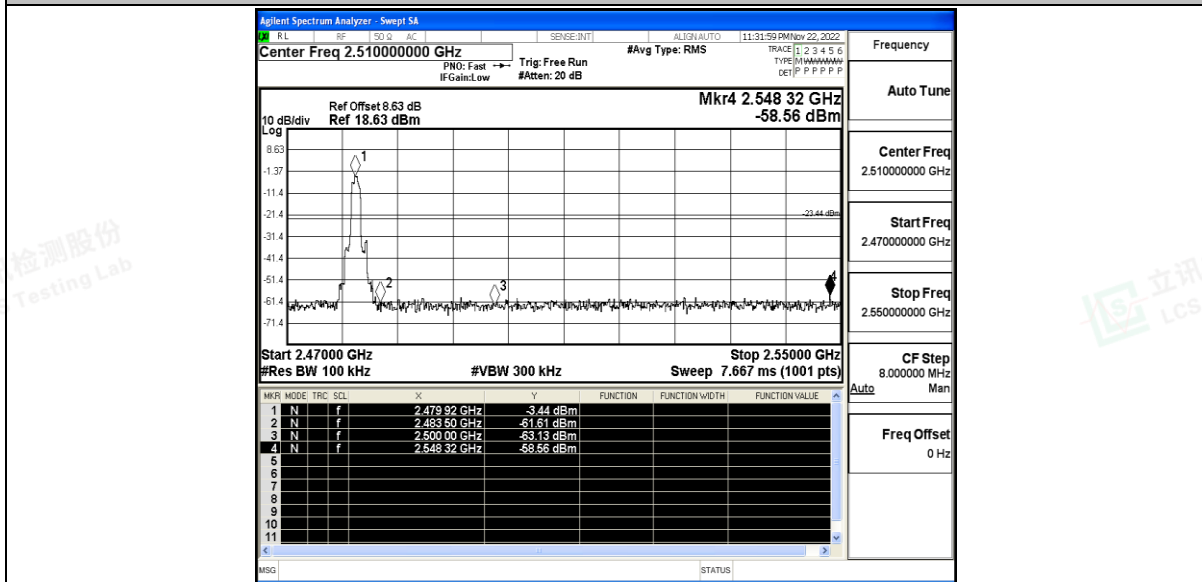
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3DH5_Ant_High_2480



3DH5_Ant_Low_Hop_2402

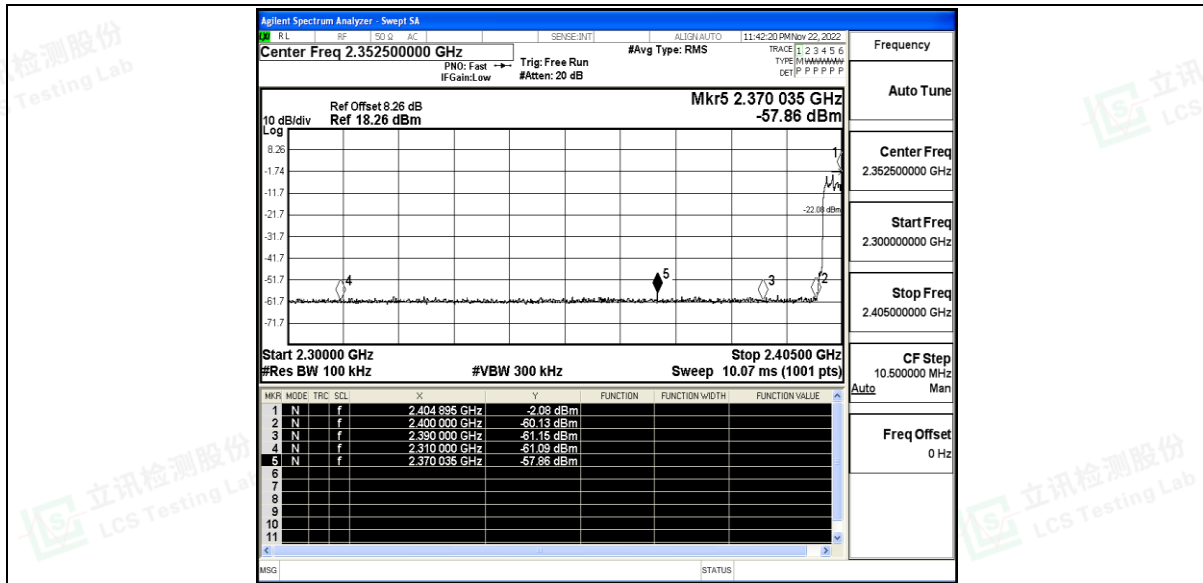


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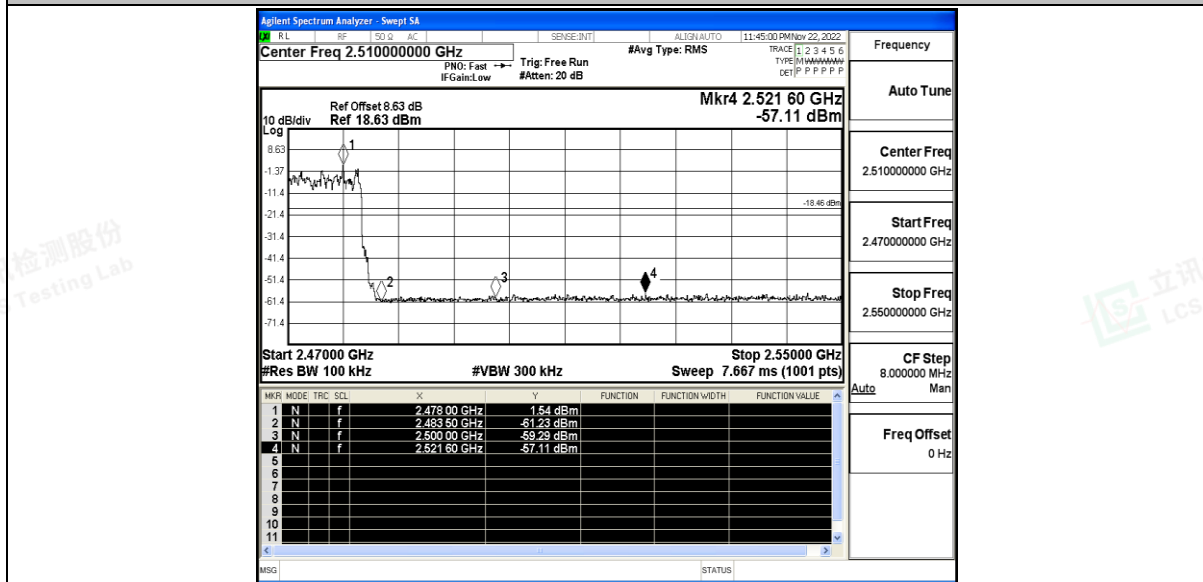
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3DH5_Ant_High_Hop_2480



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A.7 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	2402	Reference	-0.90	-0.90	---	PASS
			30~1000	-0.90	-60.85	≤-20.9	PASS
			1000~26500	-0.90	-45.63	≤-20.9	PASS
		2441	Reference	0.21	0.21	---	PASS
			30~1000	0.21	-60.21	≤-19.79	PASS
			1000~26500	0.21	-46.12	≤-19.79	PASS
		2480	Reference	0.63	0.63	---	PASS
			30~1000	0.63	-60.74	≤-19.37	PASS
			1000~26500	0.63	-46.32	≤-19.37	PASS
2DH5	Ant	2402	Reference	-6.13	-6.13	---	PASS
			30~1000	-6.13	-60.74	≤-26.13	PASS
			1000~26500	-6.13	-46.82	≤-26.13	PASS
		2441	Reference	-0.18	-0.18	---	PASS
			30~1000	-0.18	-60.86	≤-20.18	PASS
			1000~26500	-0.18	-46.24	≤-20.18	PASS
		2480	Reference	0.11	0.11	---	PASS
			30~1000	0.11	-60.3	≤-19.89	PASS
			1000~26500	0.11	-46.11	≤-19.89	PASS
3DH5	Ant	2402	Reference	-3.23	-3.23	---	PASS
			30~1000	-3.23	-60.99	≤-23.23	PASS
			1000~26500	-3.23	-45.92	≤-23.23	PASS
		2441	Reference	-3.20	-3.20	---	PASS
			30~1000	-3.20	-60.95	≤-23.2	PASS
			1000~26500	-3.20	-46.16	≤-23.2	PASS
		2480	Reference	-2.31	-2.31	---	PASS
			30~1000	-2.31	-60.3	≤-22.31	PASS
			1000~26500	-2.31	-45.8	≤-22.31	PASS



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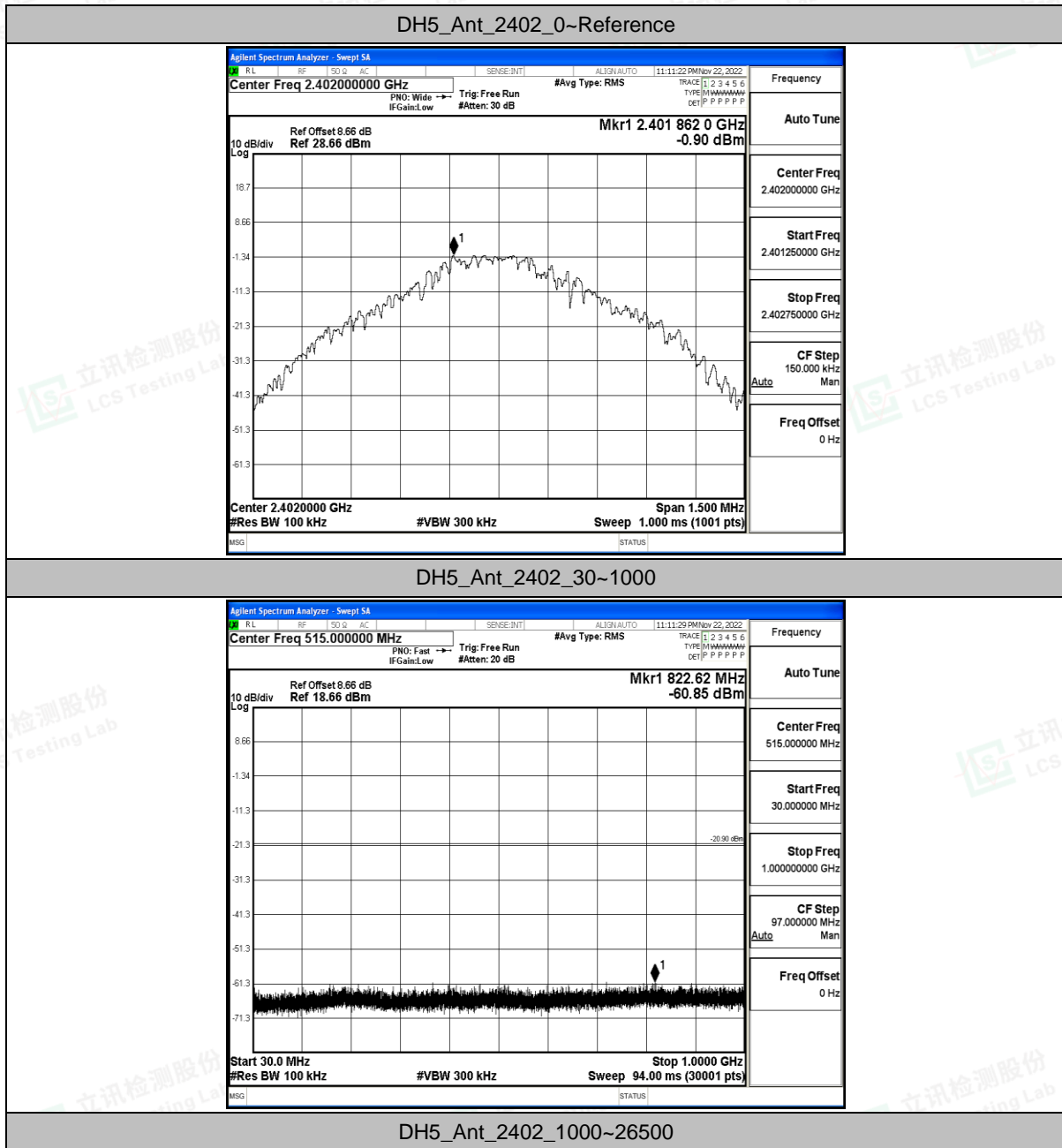
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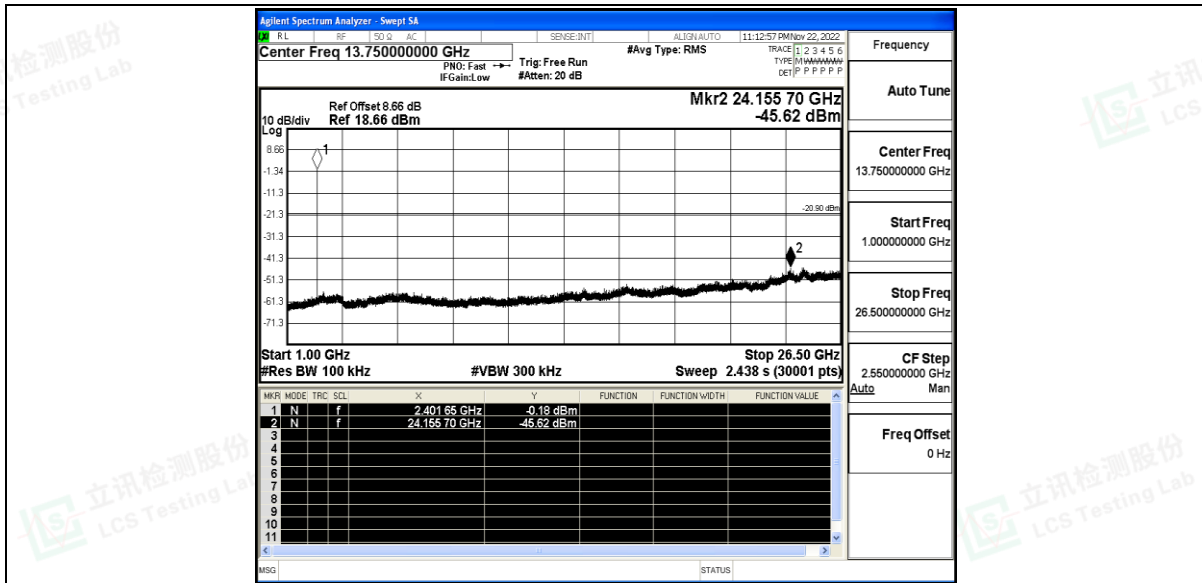
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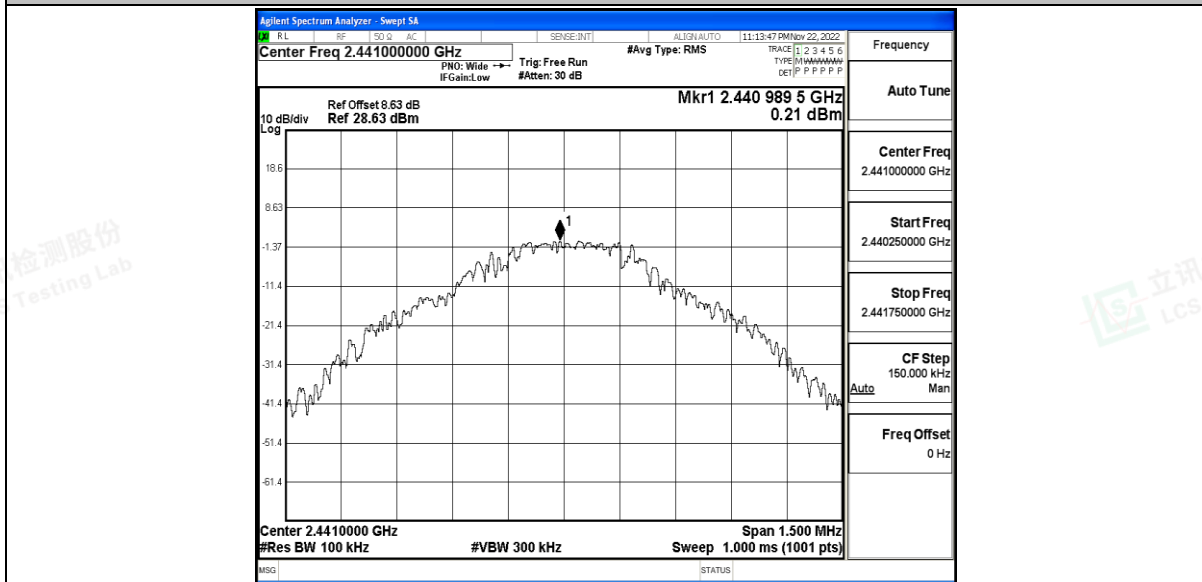


Test Graphs



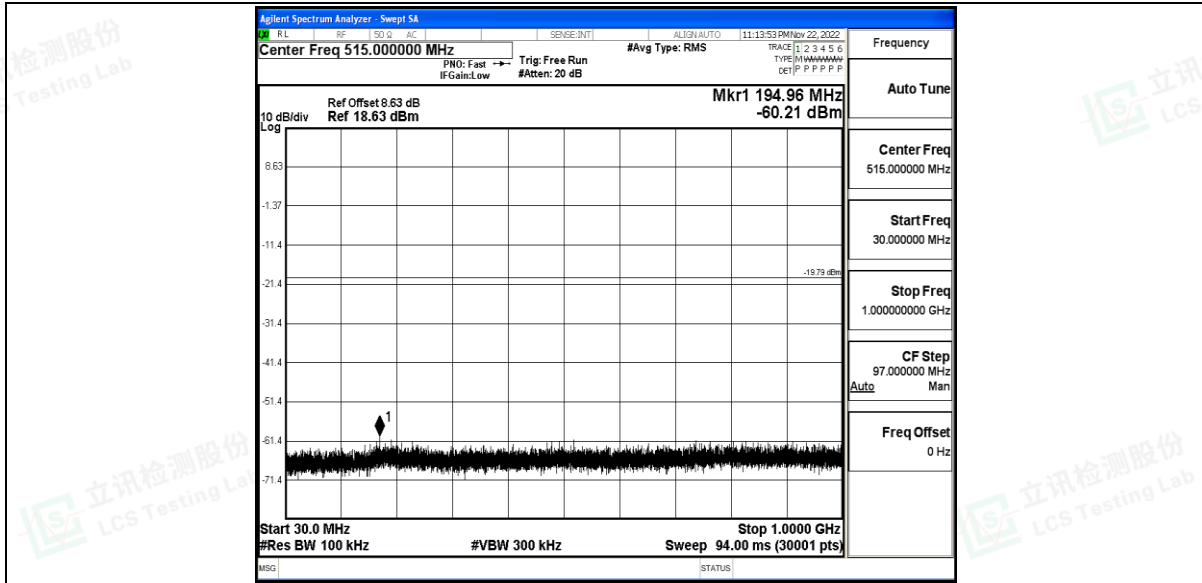


DH5_Ant_2441_0~Reference

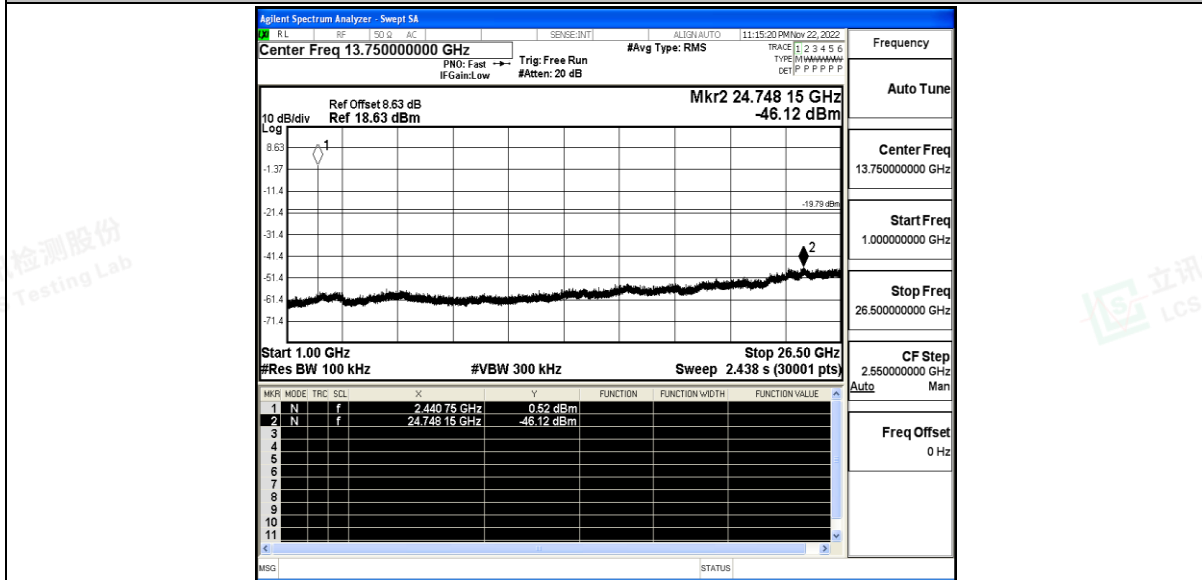


DH5_Ant_2441_30~1000





DH5_Ant_2441_1000~26500



DH5_Ant_2480_0~Reference

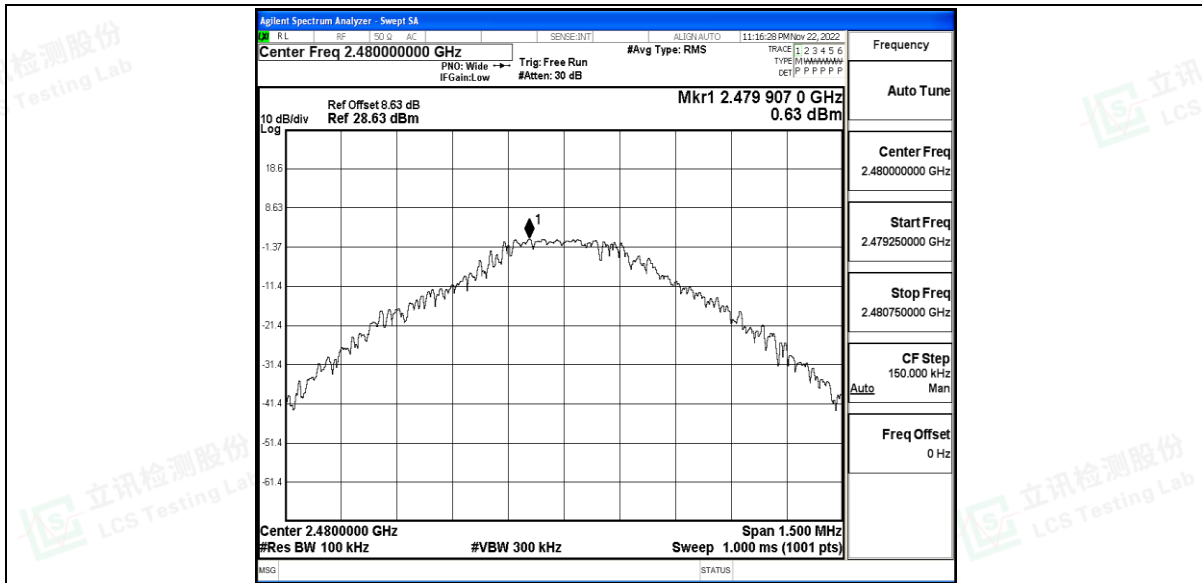


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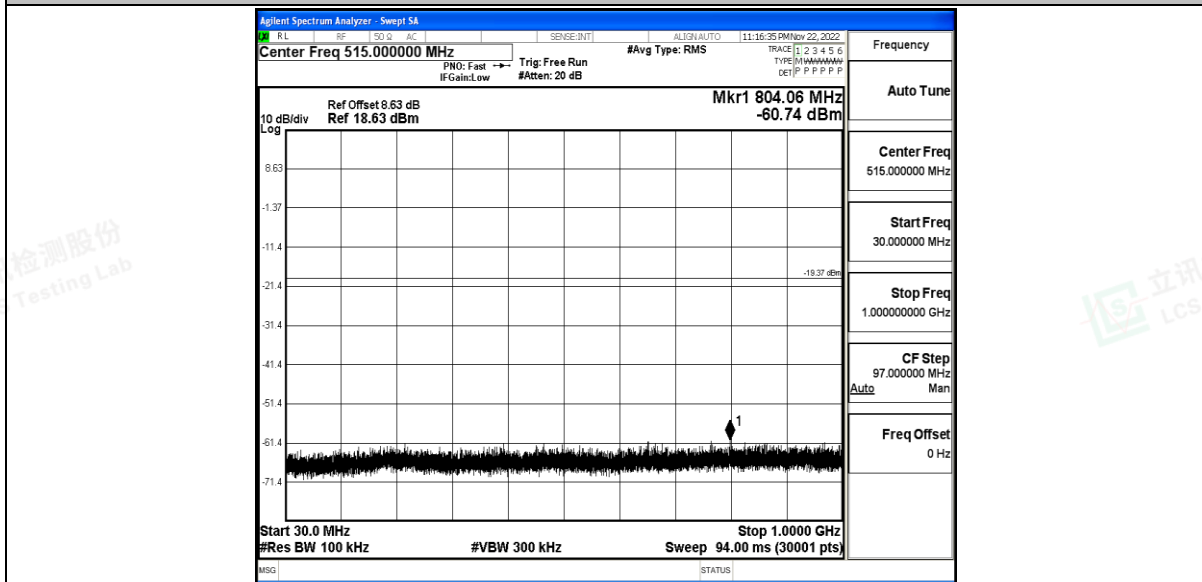
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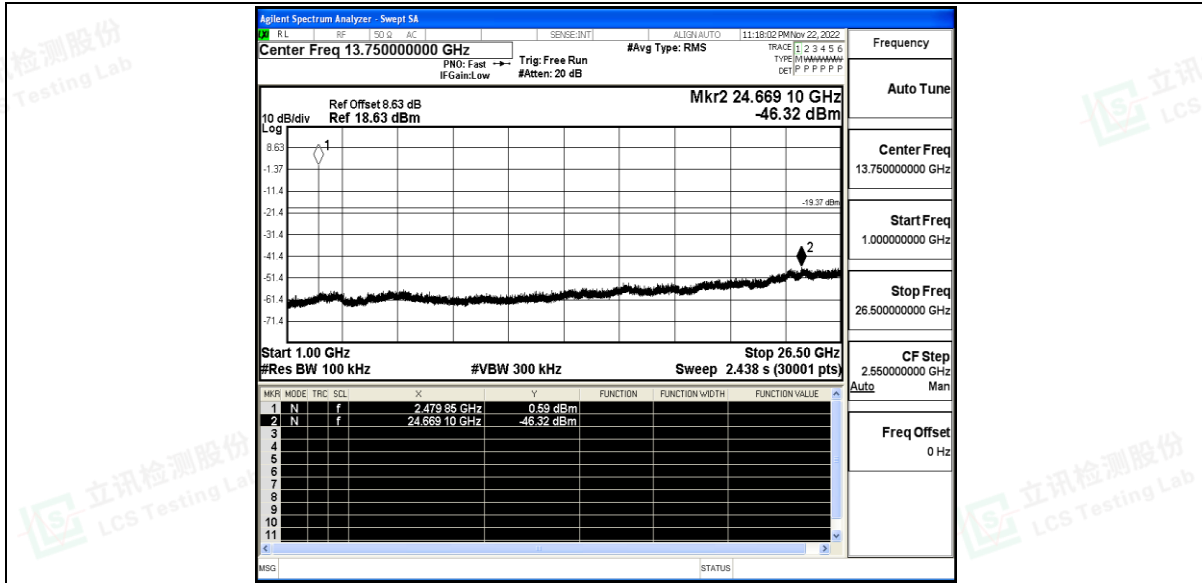


DH5_Ant_2480_30~1000

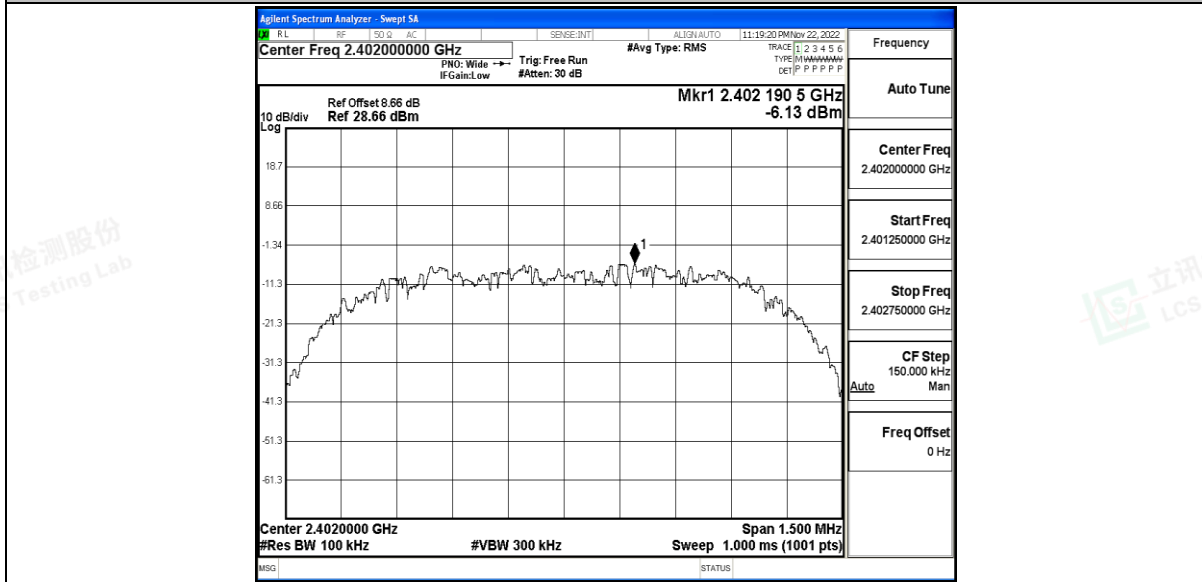


DH5_Ant_2480_1000~26500





2DH5_Ant_2402_0-Reference



2DH5_Ant_2402_30~1000

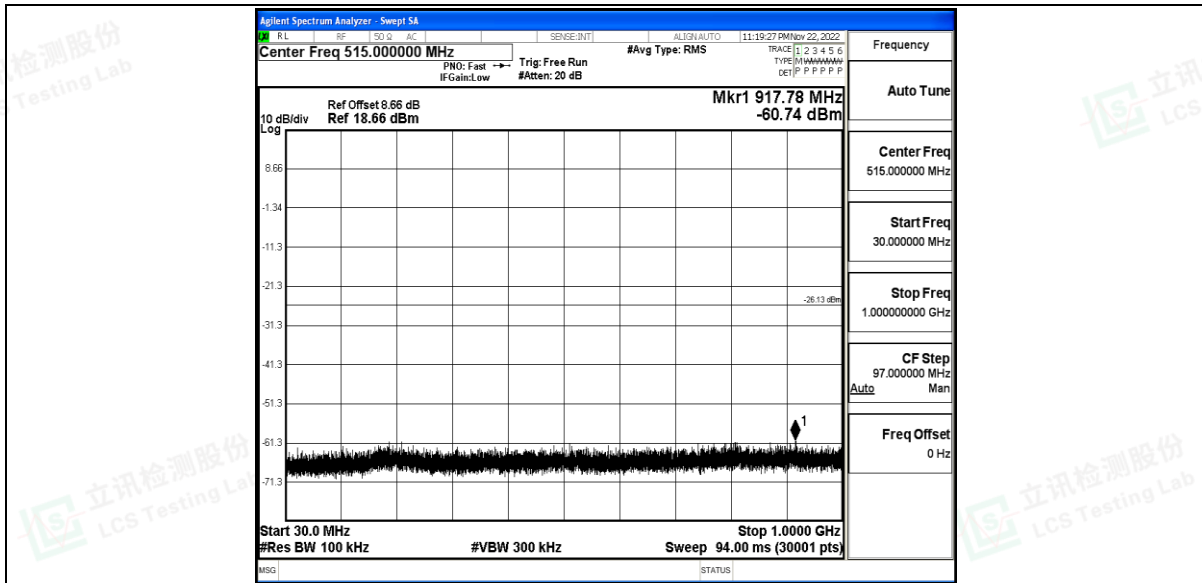


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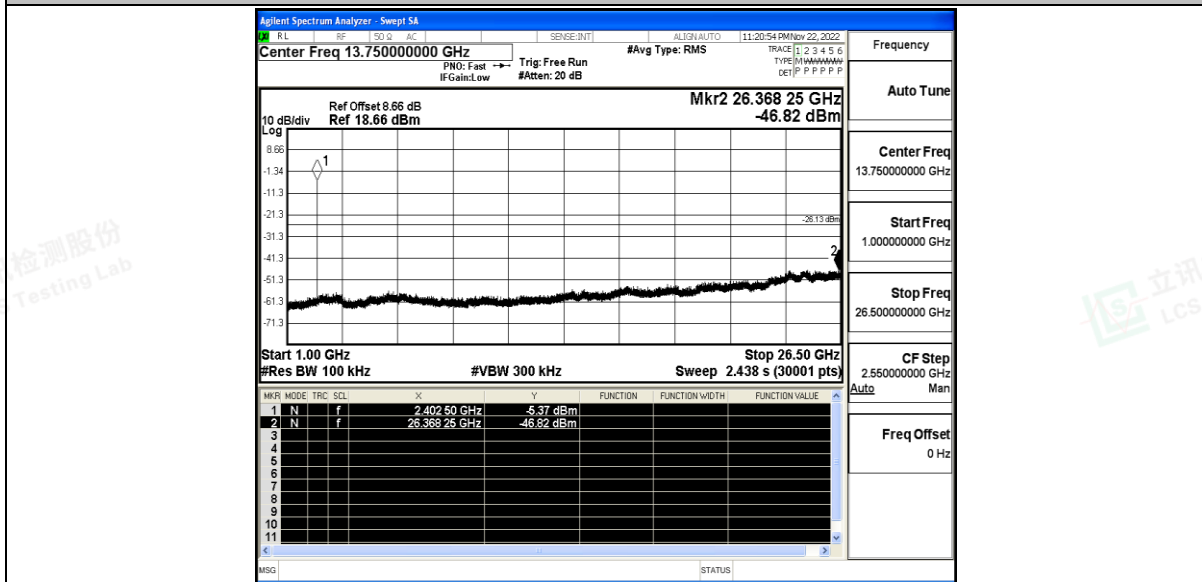
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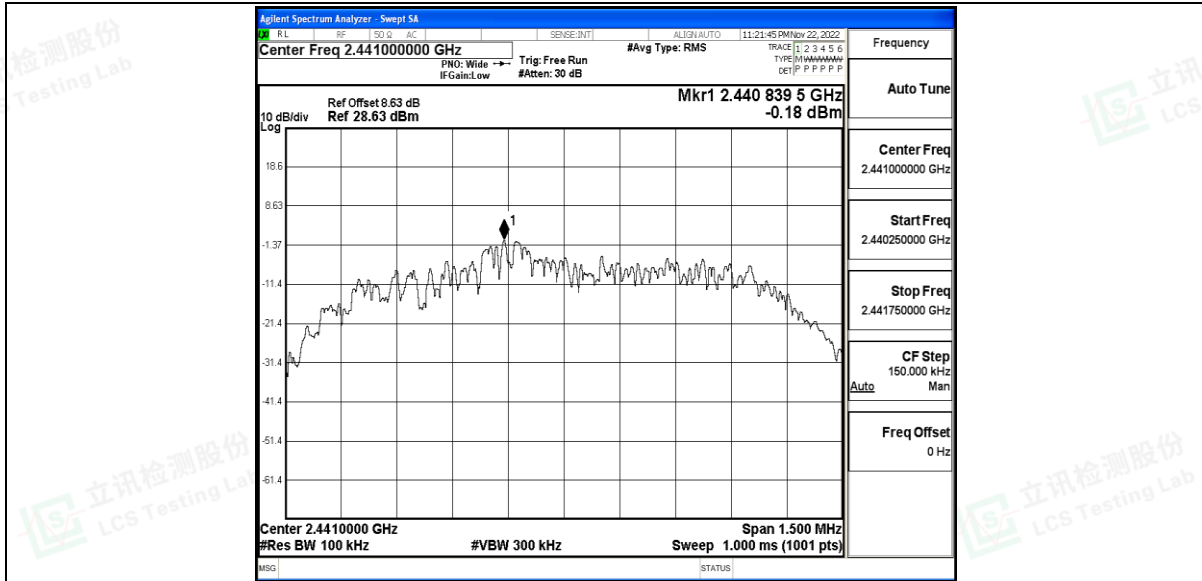


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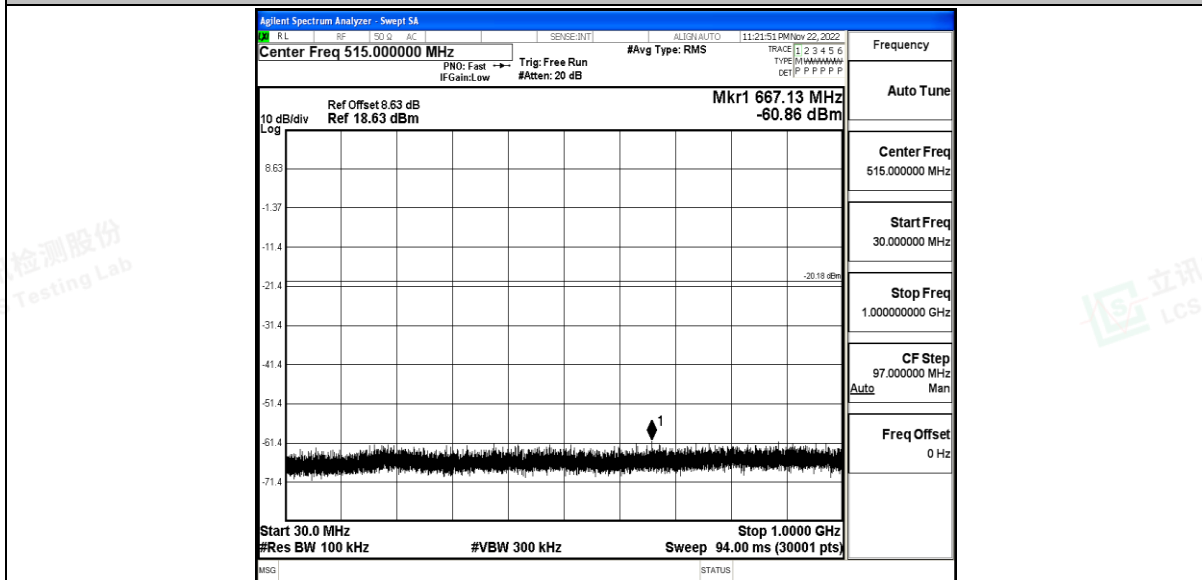


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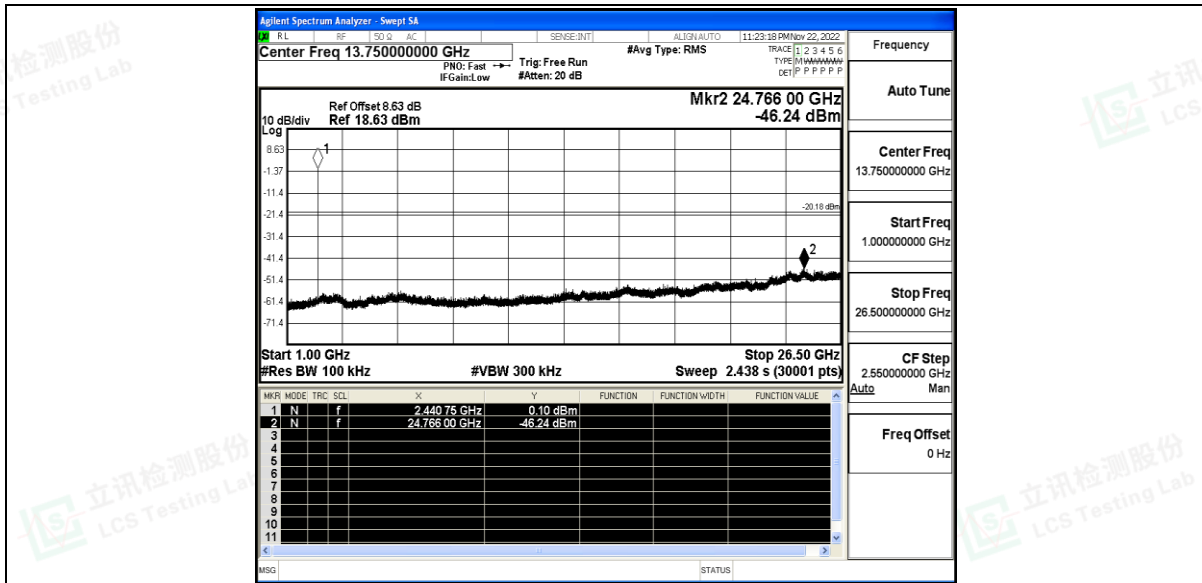


2DH5_Ant_2441_30~1000

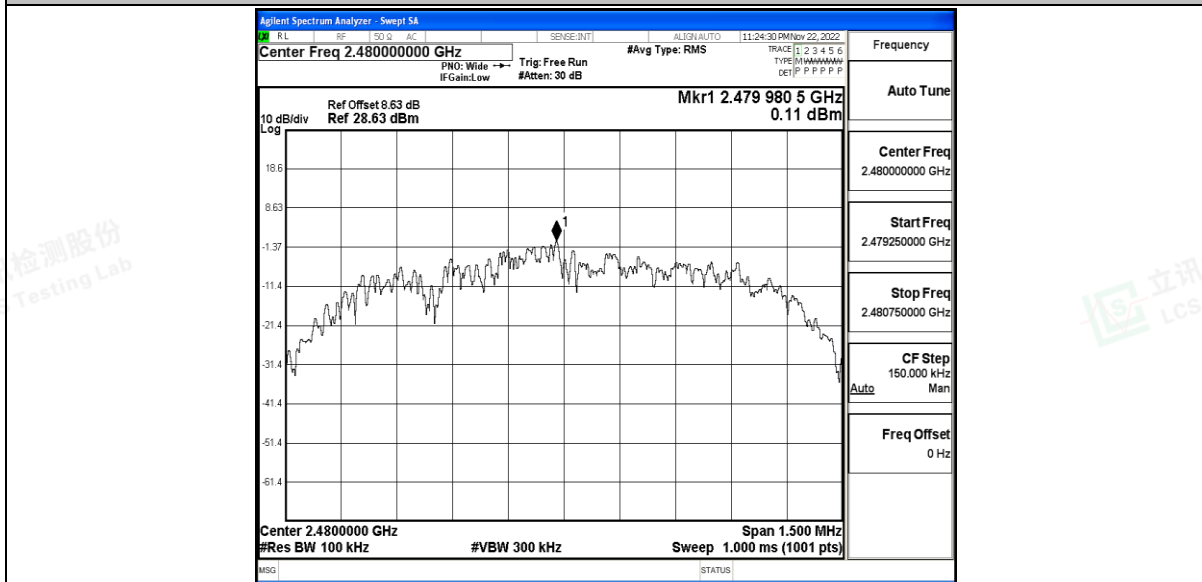


2DH5_Ant_2441_1000~26500



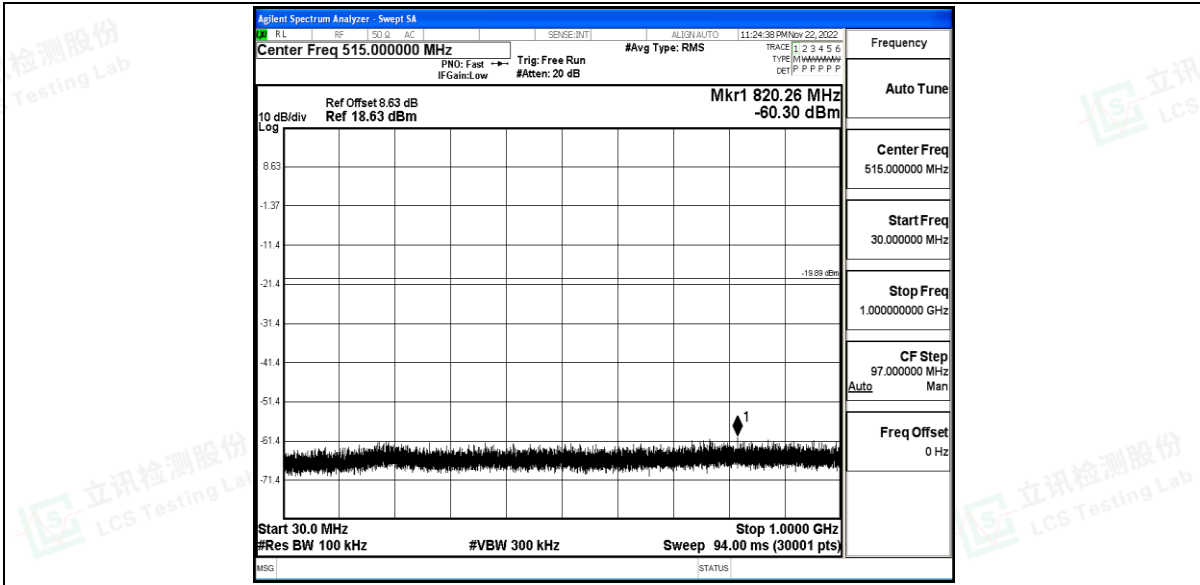


2DH5_Ant_2480_0-Reference

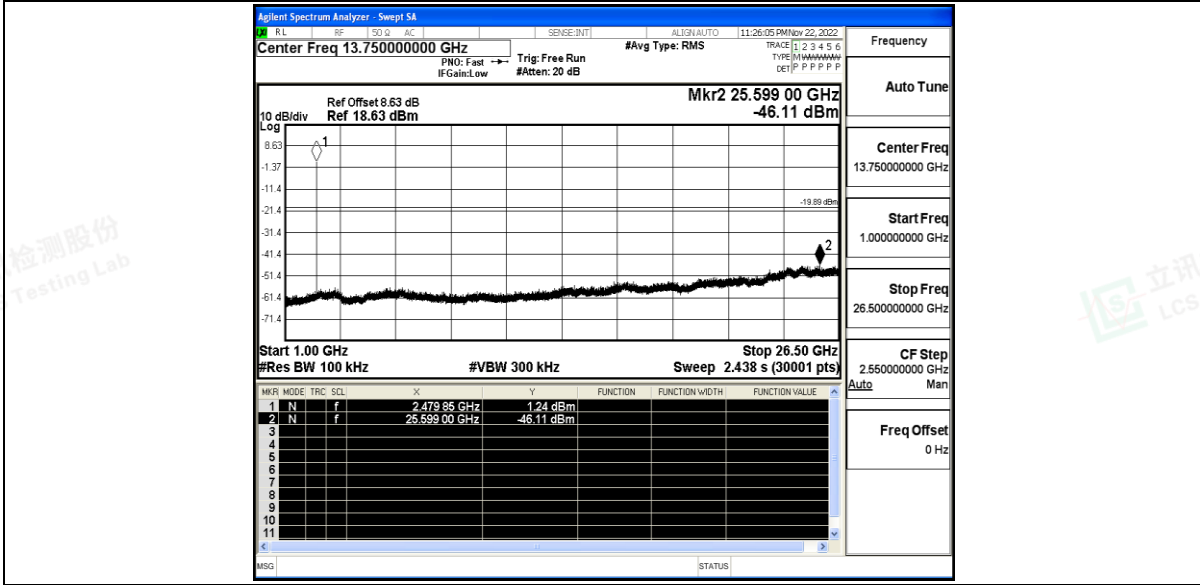


2DH5_Ant_2480_30-1000





2DH5_Ant_2480_1000~26500



3DH5_Ant_2402_0~Reference

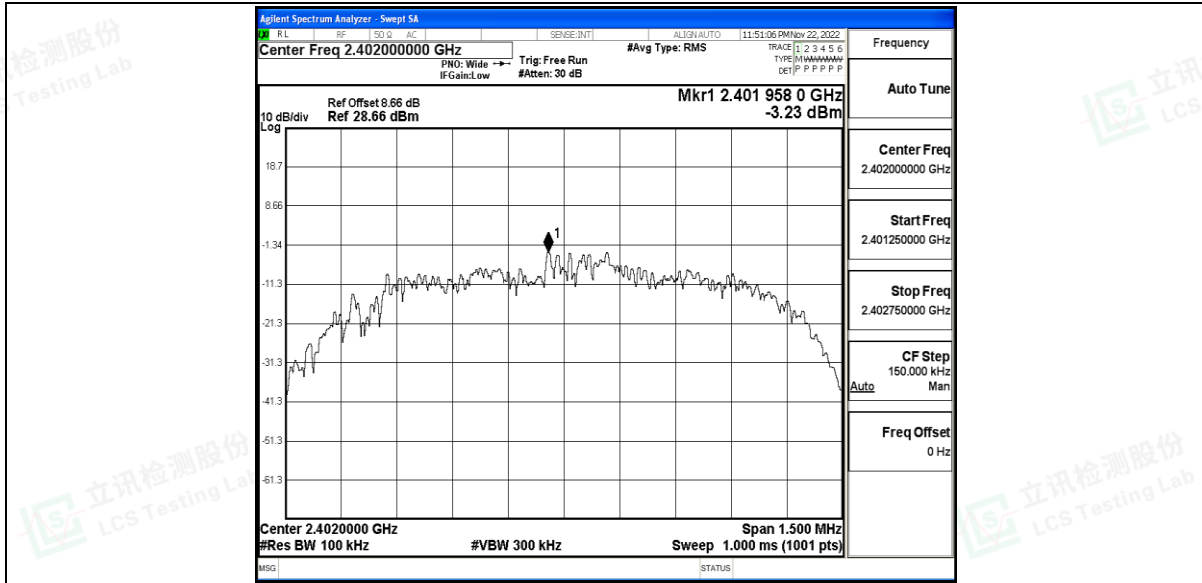


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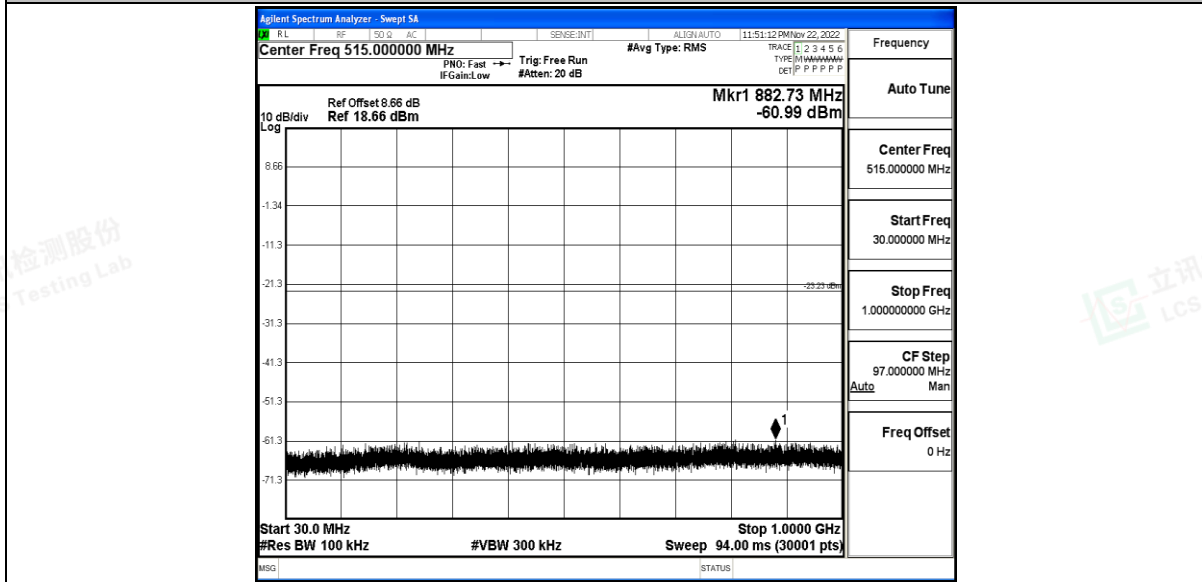
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3DH5_Ant_2402_30~1000



3DH5_Ant_2402_1000~26500

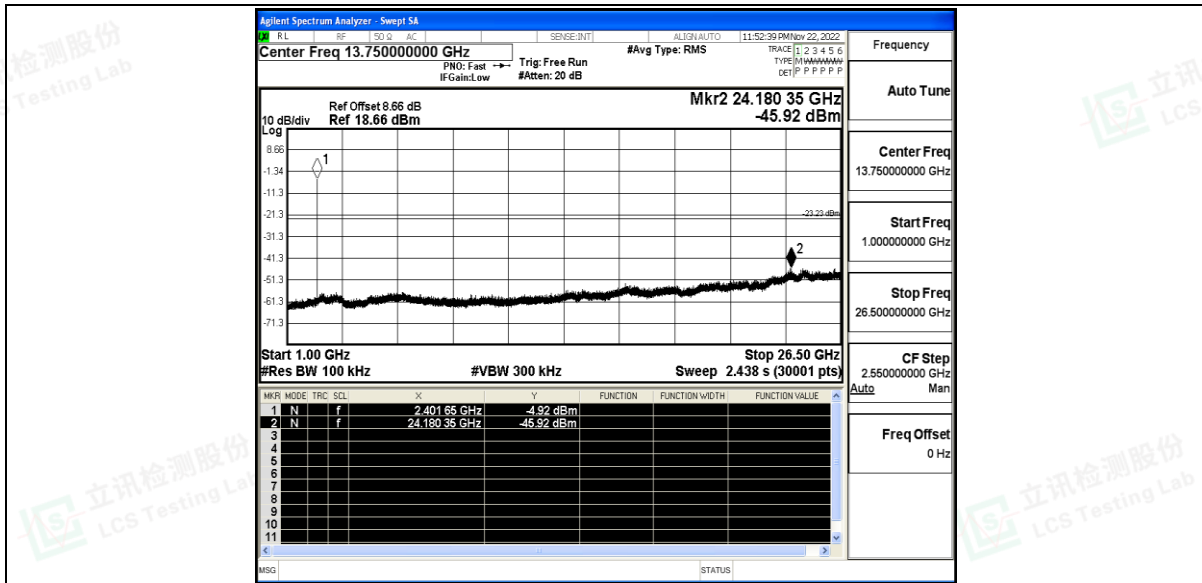


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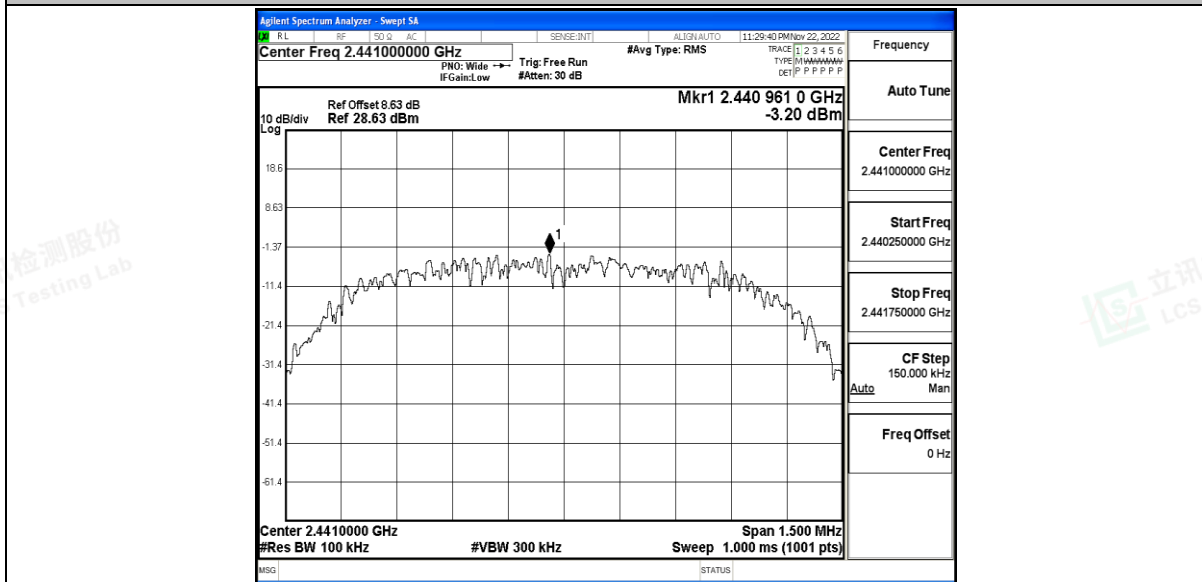
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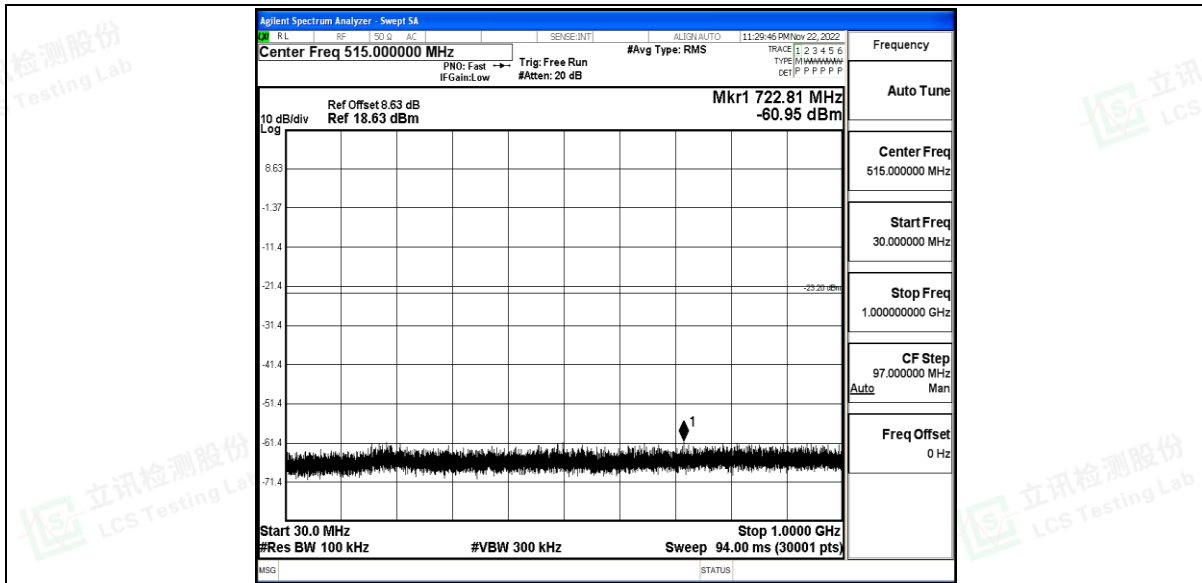


3DH5_Ant_2441_0-Reference

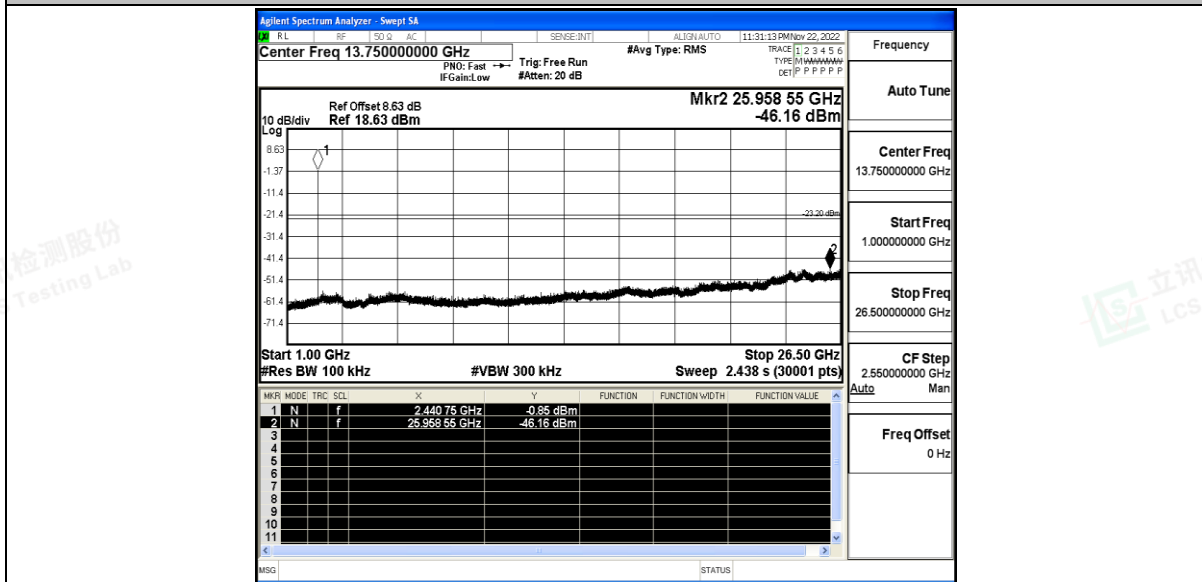


3DH5_Ant_2441_30~1000



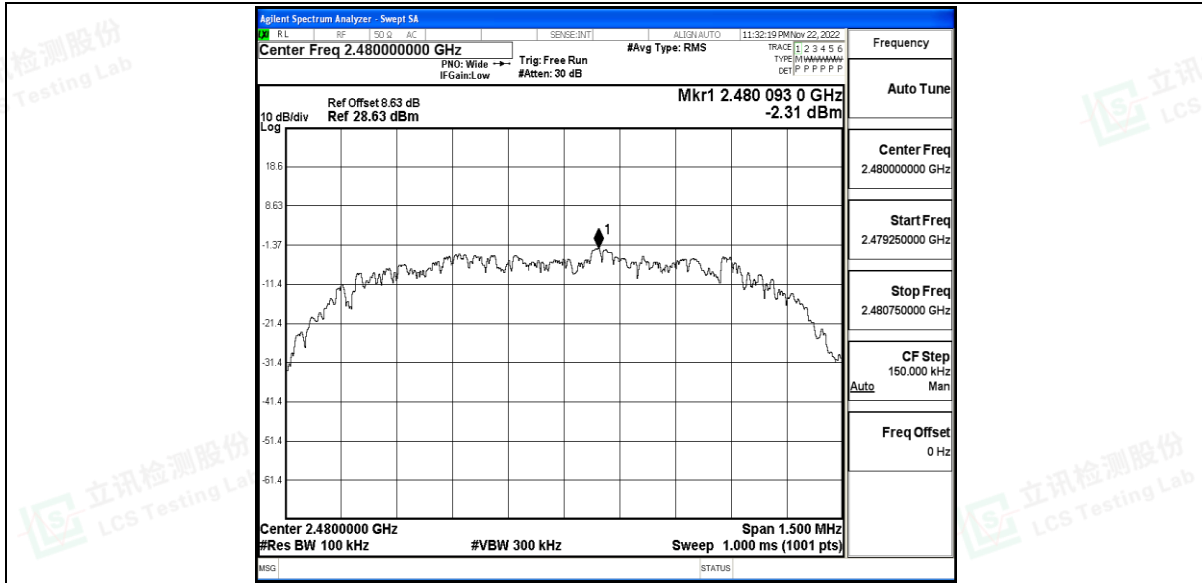


3DH5_Ant_2441_1000~26500

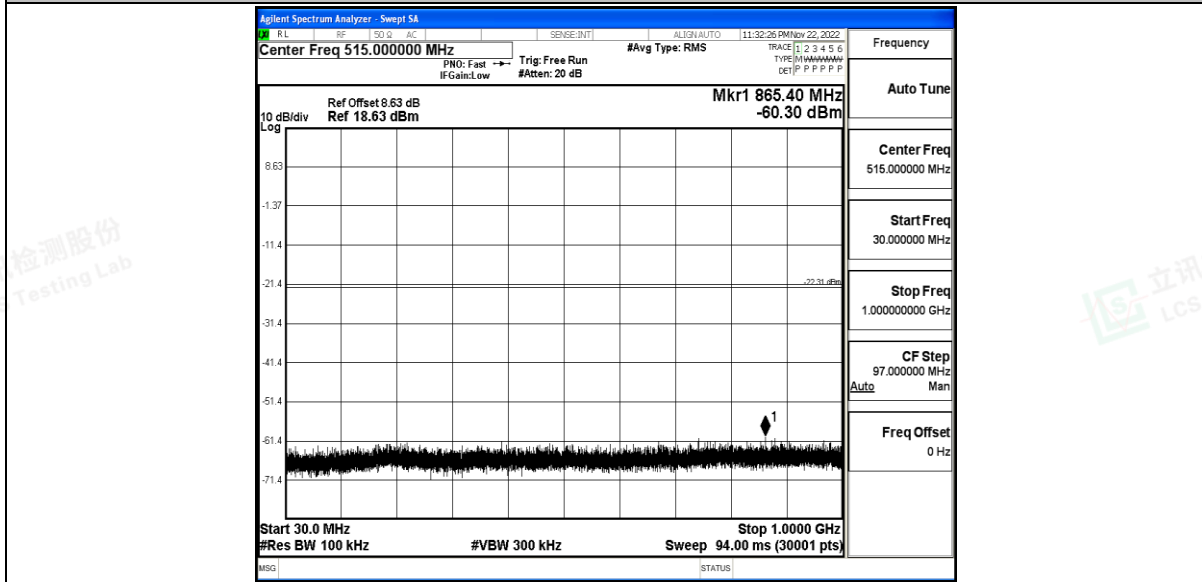


3DH5_Ant_2480_0~Reference





3DH5_Ant_2480_30~1000



3DH5_Ant_2480_1000~26500

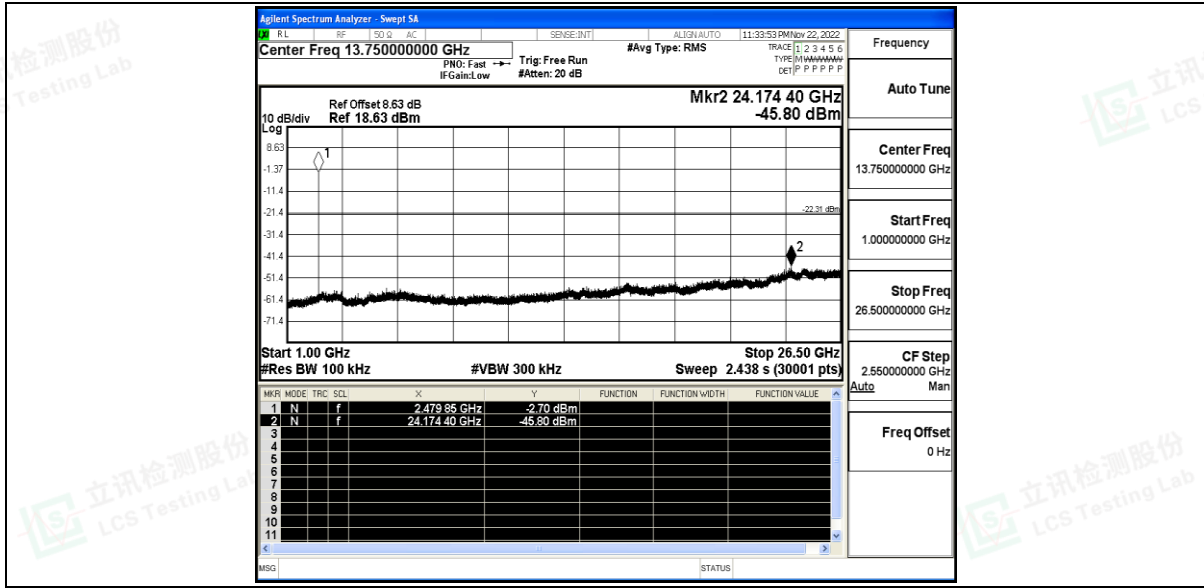


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A.8 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant	Low	2402	AV	2310.000	-58.36	≤-41.20	36.84	≤54	PASS
				AV	2387.360	-57.47	≤-41.20	37.73	≤54	PASS
				AV	2390.000	-57.91	≤-41.20	37.29	≤54	PASS
				Peak	2310.000	-54.9	≤-21.20	40.30	≤74	PASS
				Peak	2359.115	-48.29	≤-21.20	46.91	≤74	PASS
				Peak	2390.000	-51.94	≤-21.20	43.26	≤74	PASS
		High	2480	AV	2483.500	-54.96	≤-41.20	40.24	≤54	PASS
				AV	2483.520	-54.96	≤-41.20	40.24	≤54	PASS
				AV	2500.000	-57.23	≤-41.20	37.97	≤54	PASS
				Peak	2483.500	-49.16	≤-21.20	46.04	≤74	PASS
				Peak	2484.480	-47.53	≤-21.20	47.67	≤74	PASS
				Peak	2500.000	-50.93	≤-21.20	44.27	≤74	PASS
2DH5	Ant	Low	2402	AV	2310.000	-58.25	≤-41.20	36.95	≤54	PASS
				AV	2388.410	-57.62	≤-41.20	37.58	≤54	PASS
				AV	2390.000	-57.69	≤-41.20	37.51	≤54	PASS
				Peak	2310.000	-52.58	≤-21.20	42.62	≤74	PASS
				Peak	2356.595	-48.19	≤-21.20	47.01	≤74	PASS
				Peak	2390.000	-51.38	≤-21.20	43.82	≤74	PASS
		High	2480	AV	2483.500	-53.8	≤-41.20	41.40	≤54	PASS
				AV	2483.520	-53.8	≤-41.20	41.40	≤54	PASS
				AV	2500.000	-57.25	≤-41.20	37.95	≤54	PASS
				Peak	2483.500	-50.26	≤-21.20	44.94	≤74	PASS
				Peak	2499.920	-49.12	≤-21.20	46.08	≤74	PASS
				Peak	2500.000	-49.29	≤-21.20	45.91	≤74	PASS
3DH5	Ant	Low	2402	AV	2310.000	-58.1	≤-41.20	37.10	≤54	PASS
				AV	2389.040	-57.58	≤-41.20	37.62	≤54	PASS
				AV	2390.000	-57.76	≤-41.20	37.44	≤54	PASS
				Peak	2310.000	-51.39	≤-21.20	43.81	≤74	PASS
				Peak	2355.650	-48.32	≤-21.20	46.88	≤74	PASS
				Peak	2390.000	-50.02	≤-21.20	45.18	≤74	PASS
		High	2480	AV	2483.500	-53.66	≤-41.20	41.54	≤54	PASS
				AV	2483.520	-53.66	≤-41.20	41.54	≤54	PASS
				AV	2500.000	-57.25	≤-41.20	37.95	≤54	PASS
				Peak	2483.500	-50.22	≤-21.20	44.98	≤74	PASS
				Peak	2488.800	-48.67	≤-21.20	46.53	≤74	PASS
				Peak	2500.000	-52.71	≤-21.20	42.49	≤74	PASS



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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.



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Test Graphs

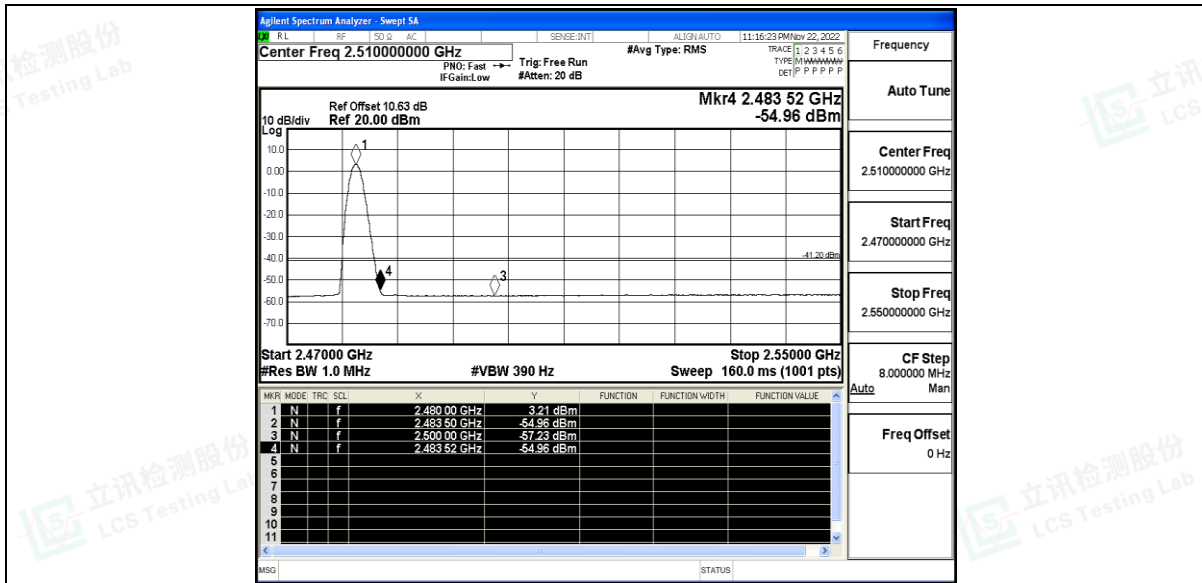


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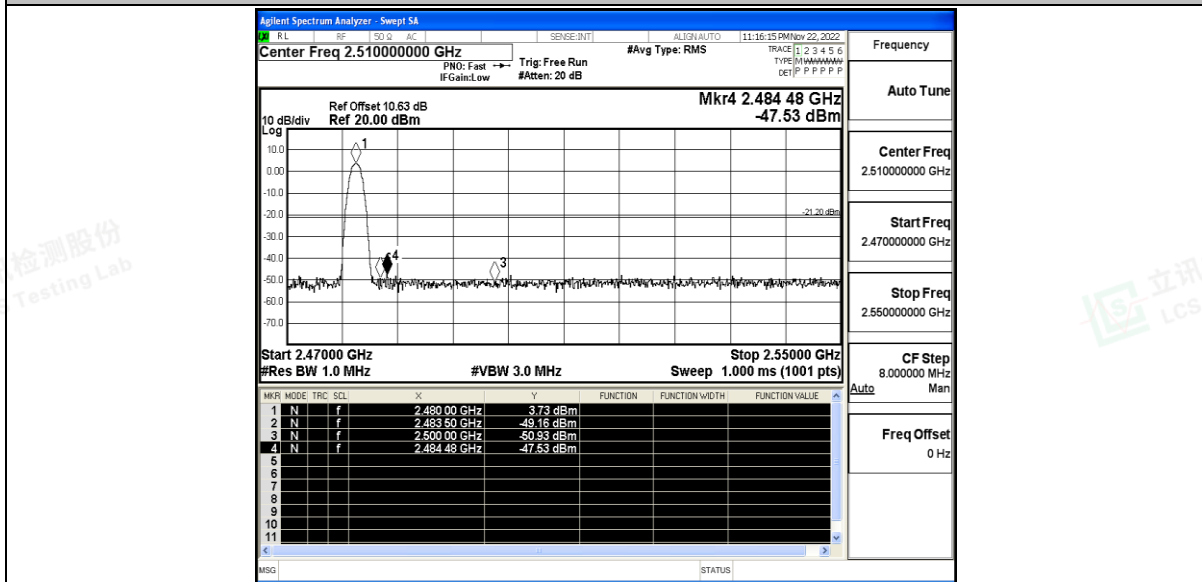
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DH5_Ant_High_2480_Peak



2DH5_Ant_Low_2402_AV

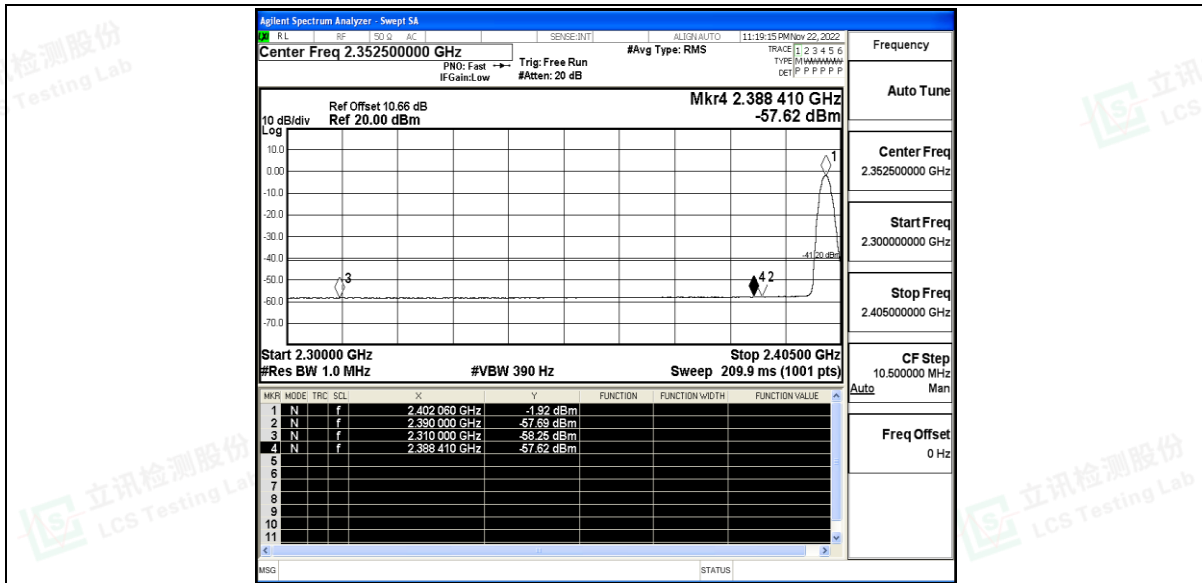


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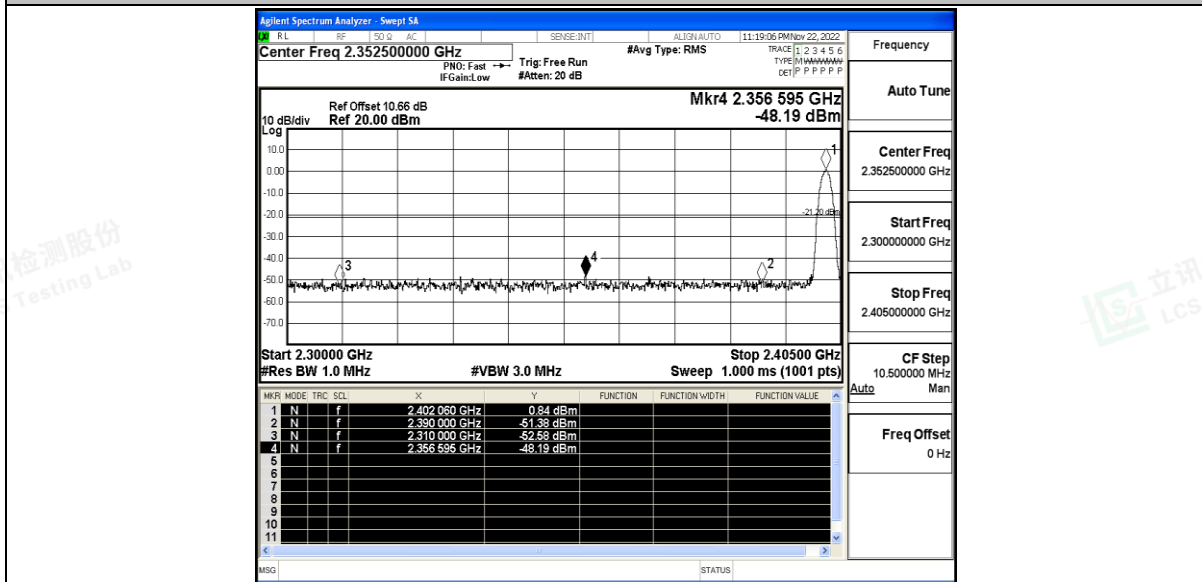
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2DH5_Ant_Low_2402_Peak



2DH5_Ant_High_2480_AV

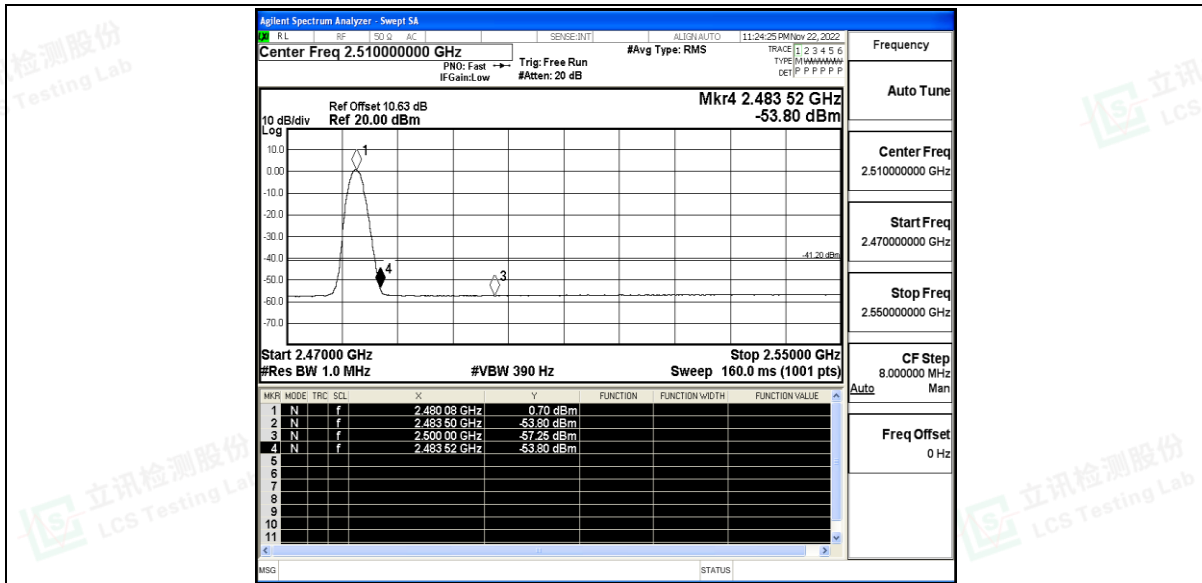


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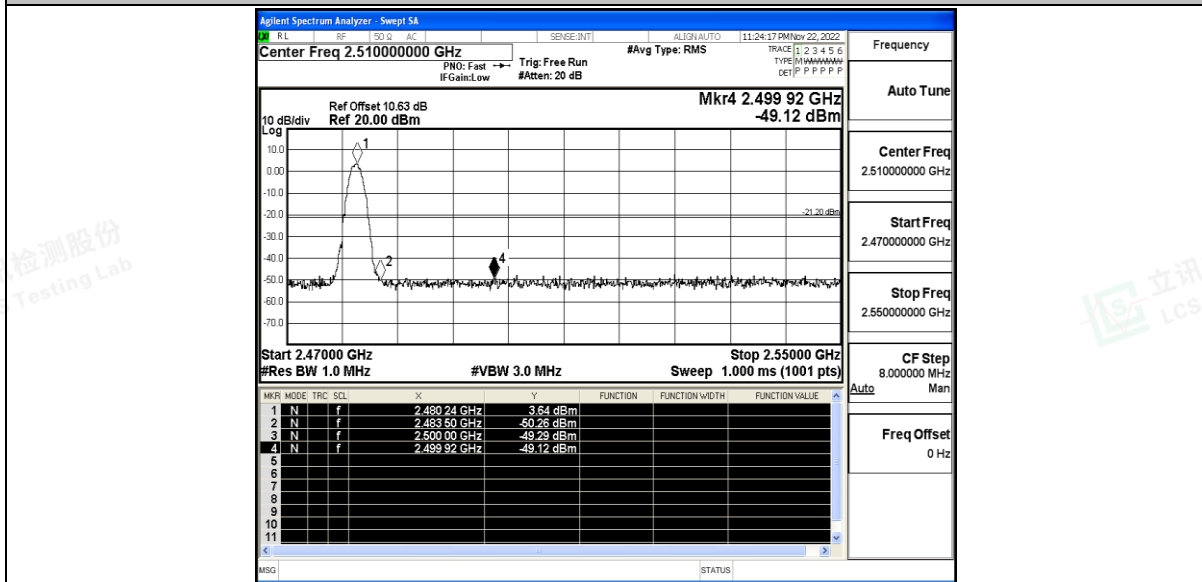
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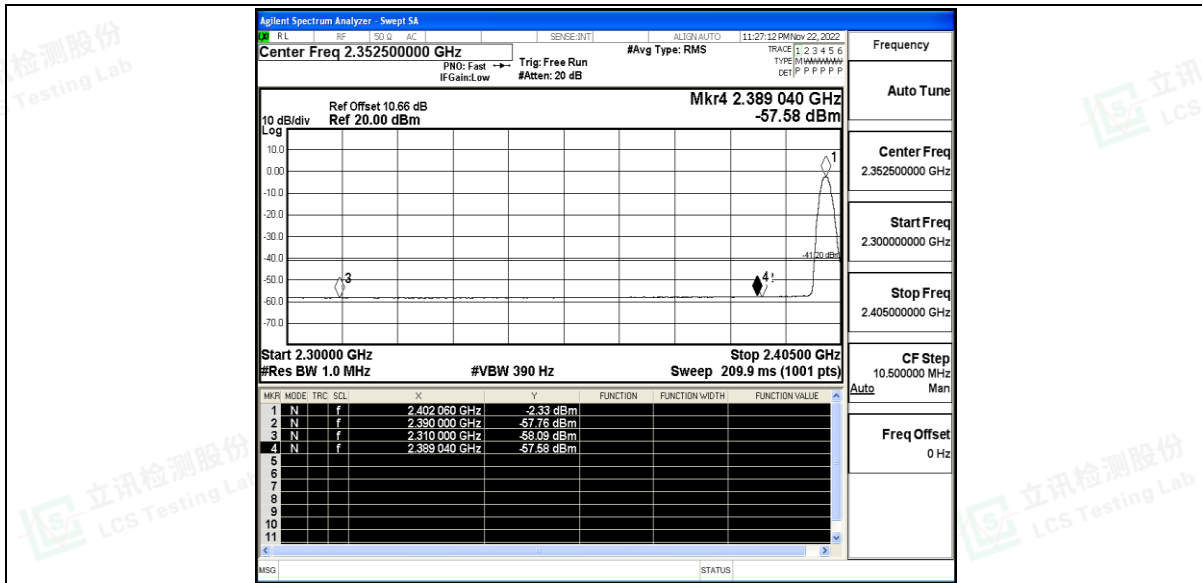


2DH5_Ant_High_2480_Peak

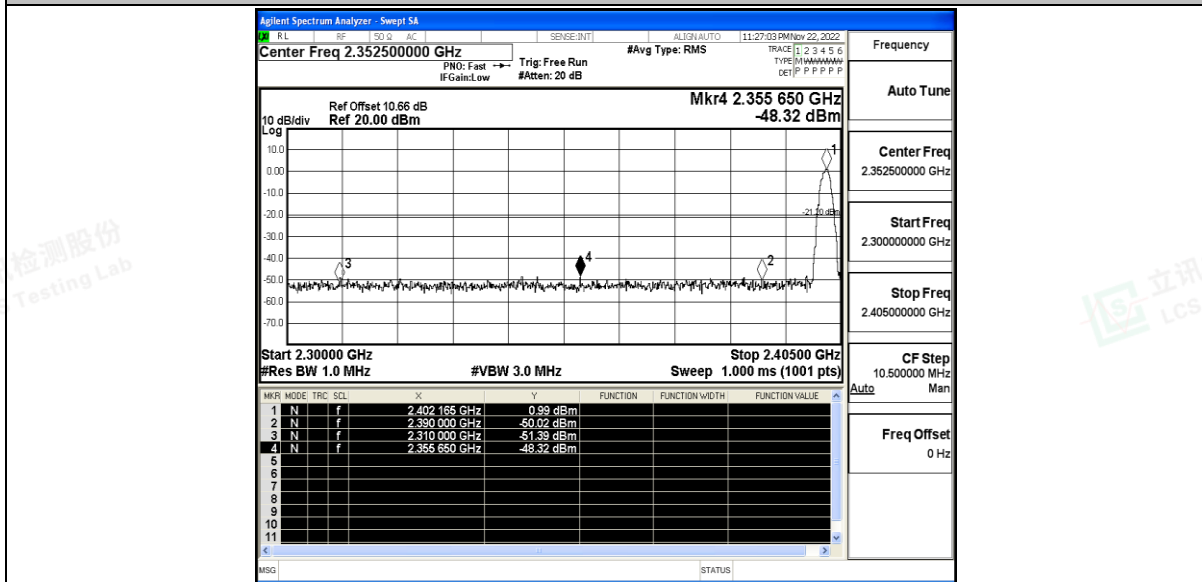


3DH5_Ant_Low_2402_AV



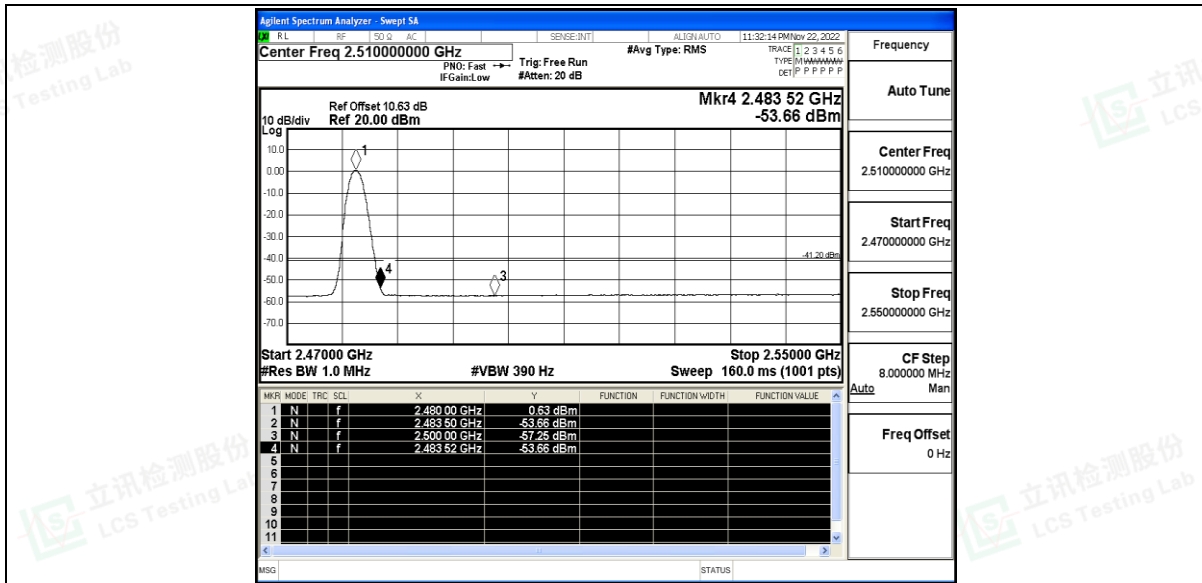


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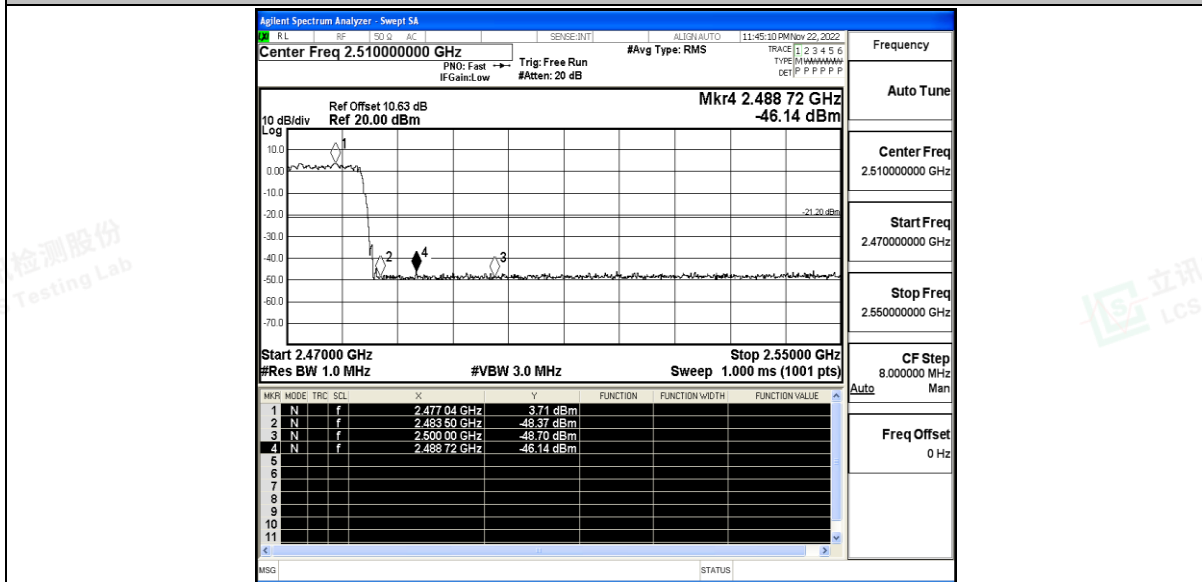


3DH5_Ant_High_2480_AV





3DH5_Ant_High_Hop_2480_Peak



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