



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: LED PROJECTOR

Test Model: L005A

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	Ant1	2402	1.017	2401.475	2402.492	---
		2441	0.972	2440.508	2441.480	---
		2480	1.011	2479.457	2480.468	---
2DH5	Ant1	2402	1.290	2401.358	2402.648	---
		2441	1.341	2440.319	2441.660	---
		2480	1.311	2479.334	2480.645	---
3DH5	Ant1	2402	1.305	2401.340	2402.645	---
		2441	1.302	2440.337	2441.639	---
		2480	1.311	2479.337	2480.648	---



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

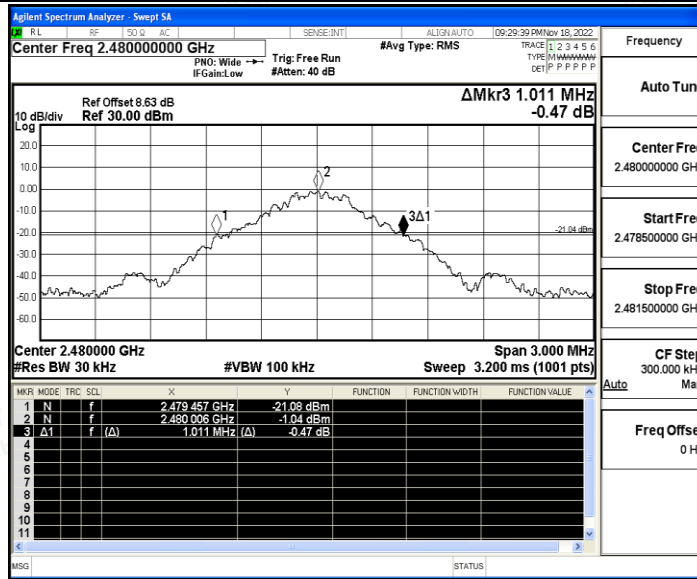
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

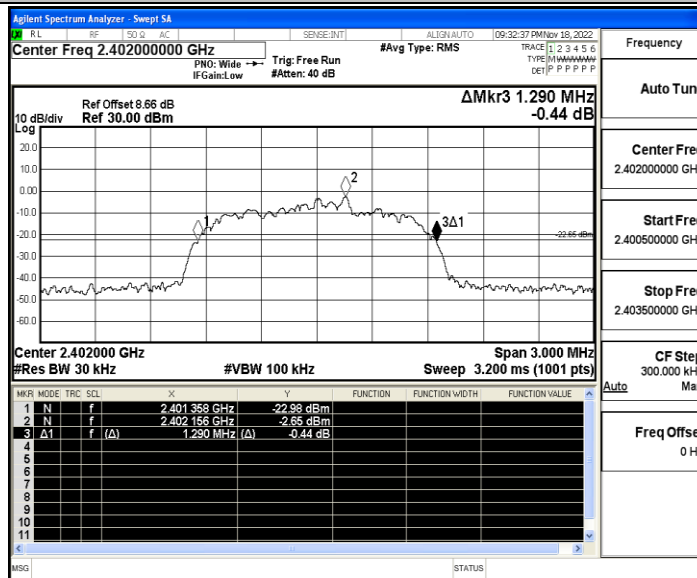


Test Graphs



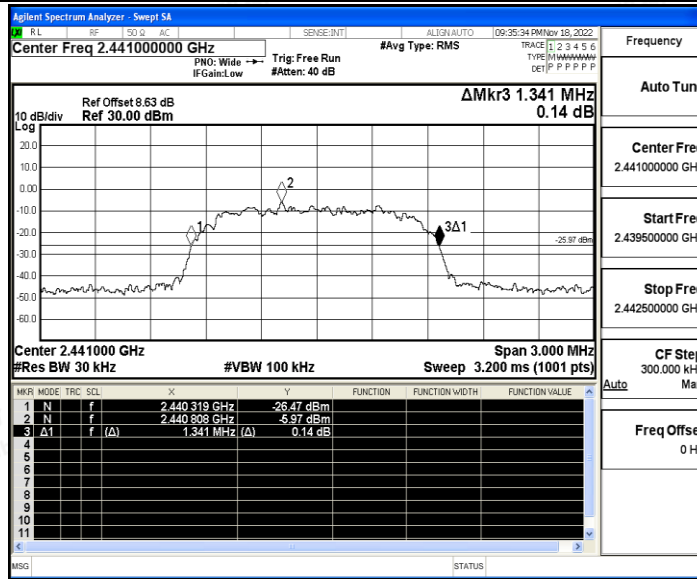


2DH5_Ant1_2402

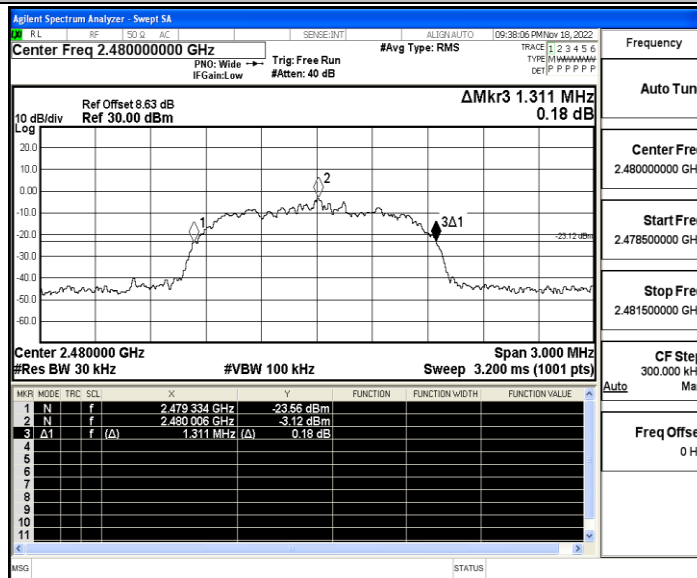


2DH5_Ant1_2441



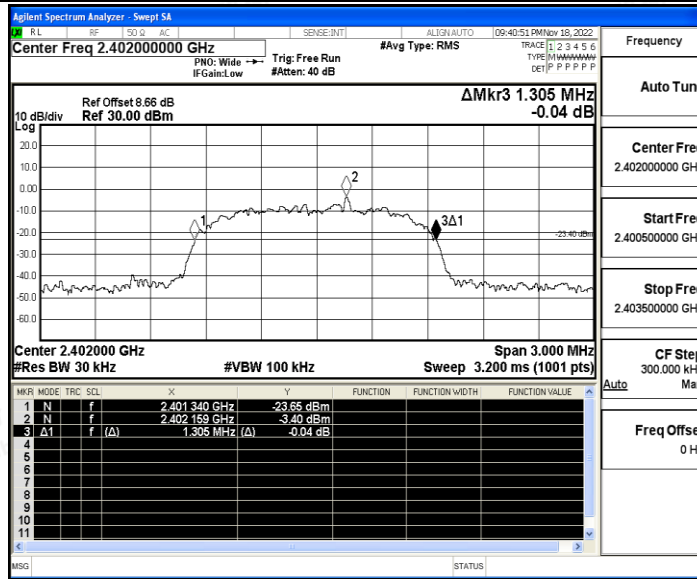


2DH5_Ant1_2480

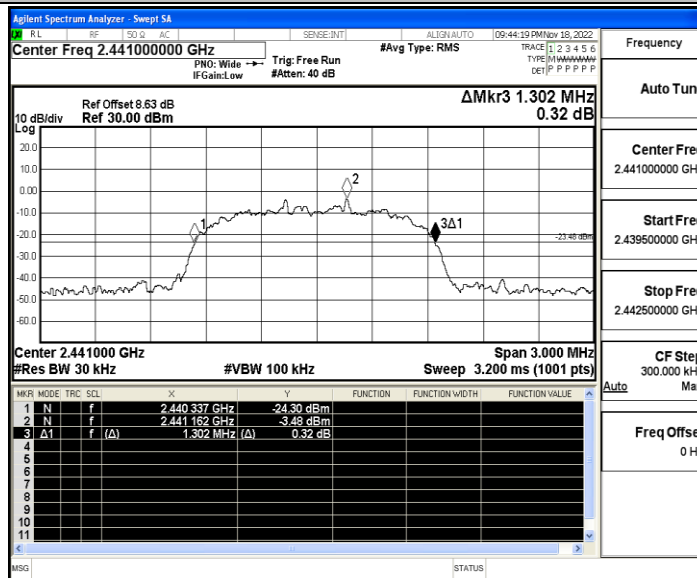


3DH5_Ant1_2402



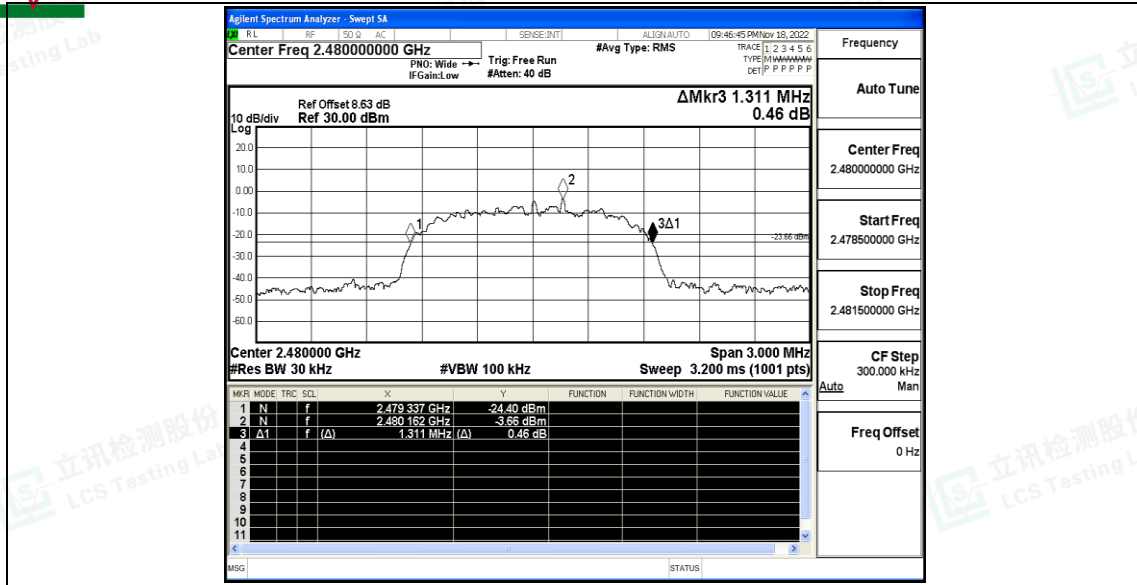


3DH5_Ant1_2441



3DH5_Ant1_2480







A.2 Maximum conducted output power

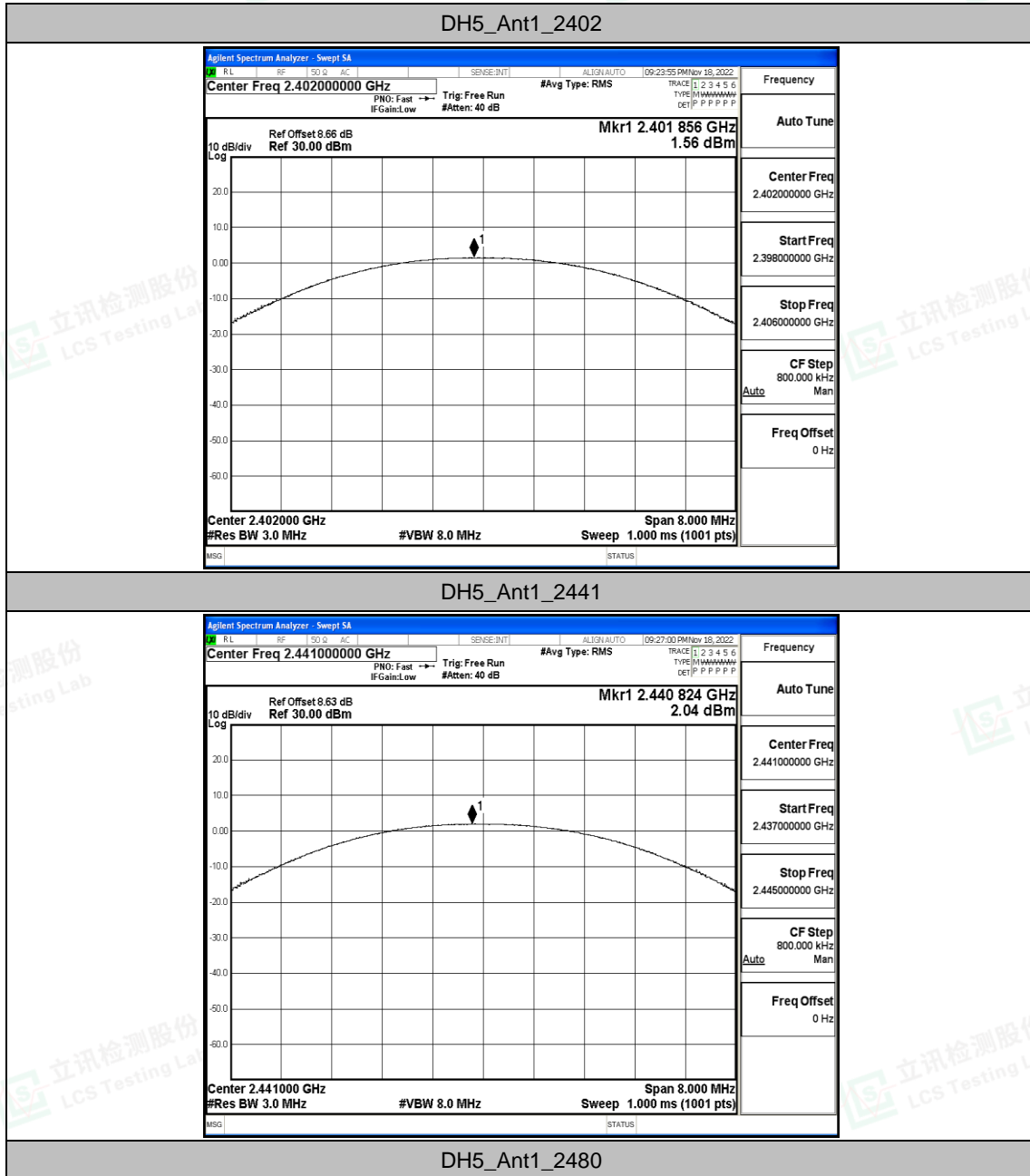
Test Result

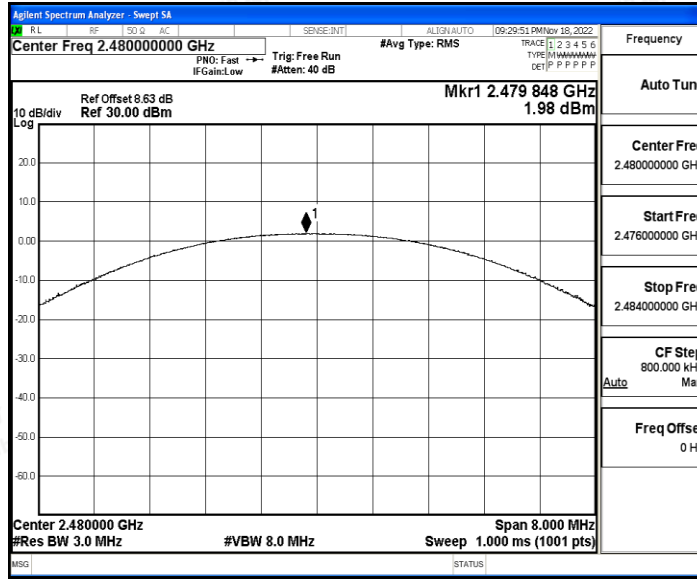
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.56	≤21	PASS
		2441	2.04	≤21	PASS
		2480	1.98	≤21	PASS
2DH5	Ant1	2402	1.69	≤21	PASS
		2441	1.77	≤21	PASS
		2480	1.69	≤21	PASS
3DH5	Ant1	2402	1.78	≤21	PASS
		2441	1.96	≤21	PASS
		2480	1.76	≤21	PASS



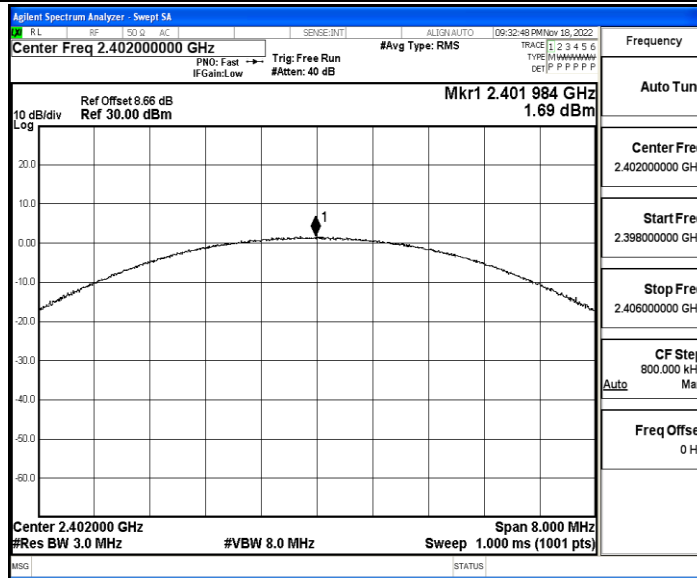


Test Graphs



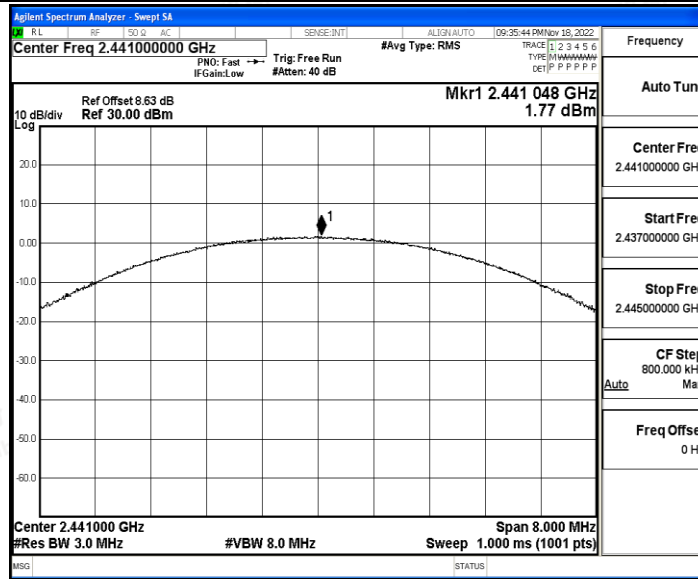


2DH5_Ant1_2402

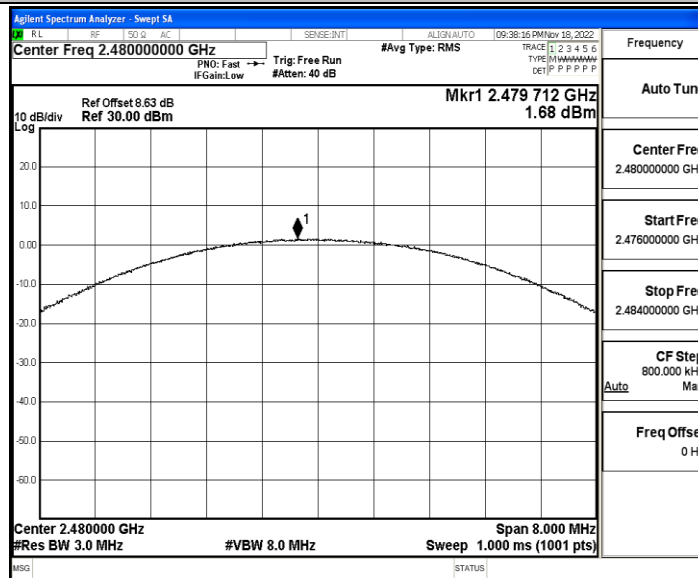


2DH5_Ant1_2441



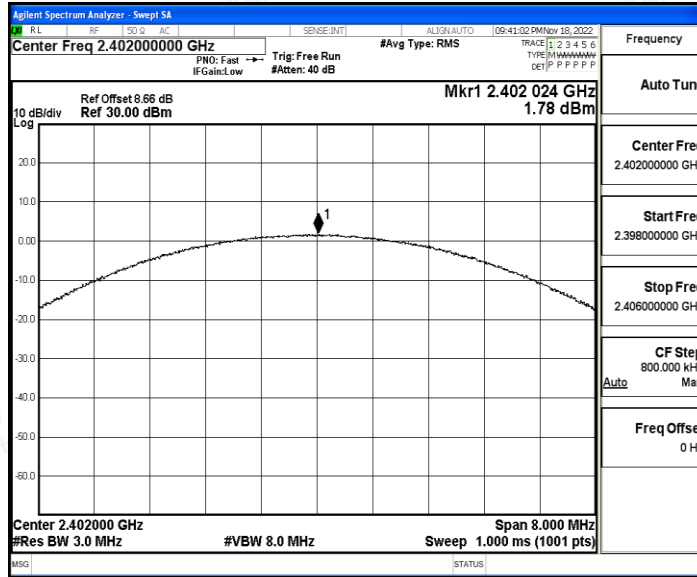


2DH5_Ant1_2480

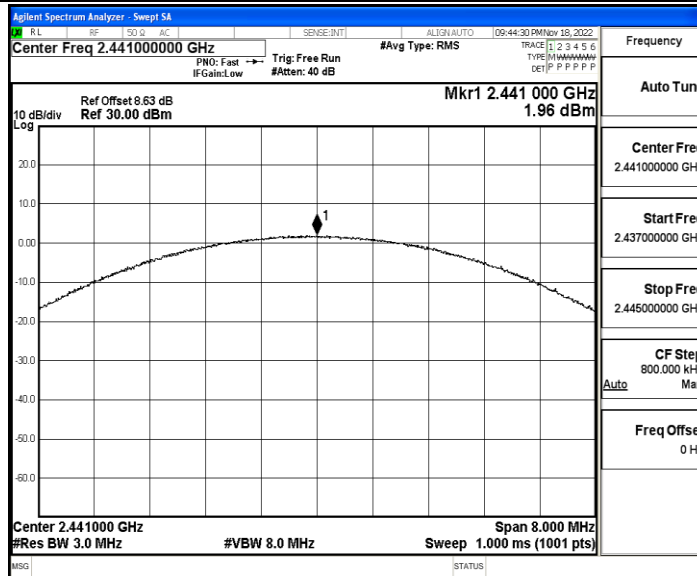


3DH5_Ant1_2402



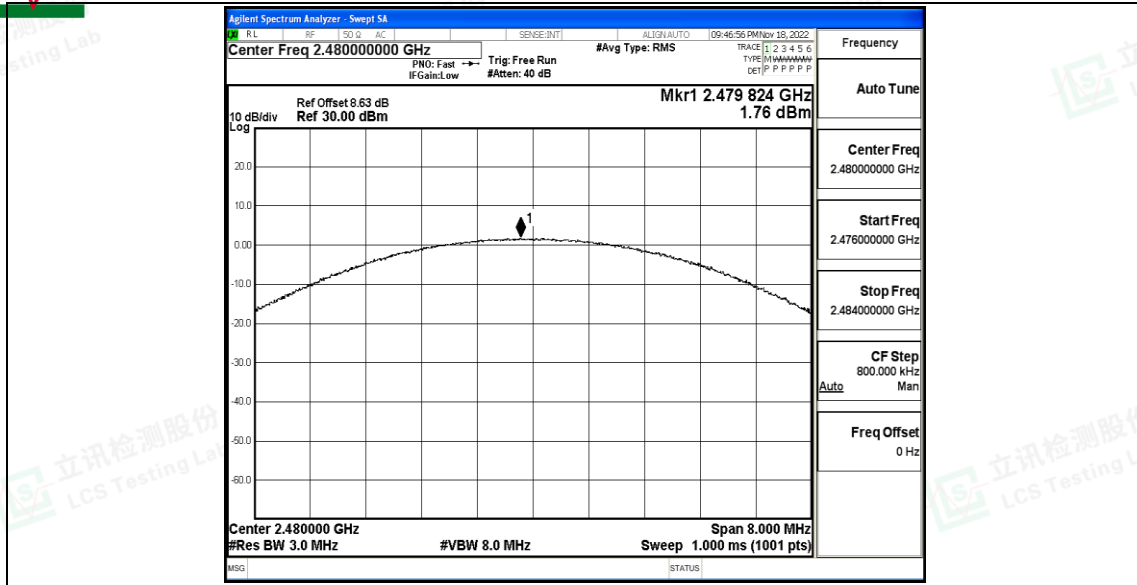


3DH5_Ant1_2441



3DH5_Ant1_2480







A.3 Carrier frequency separation

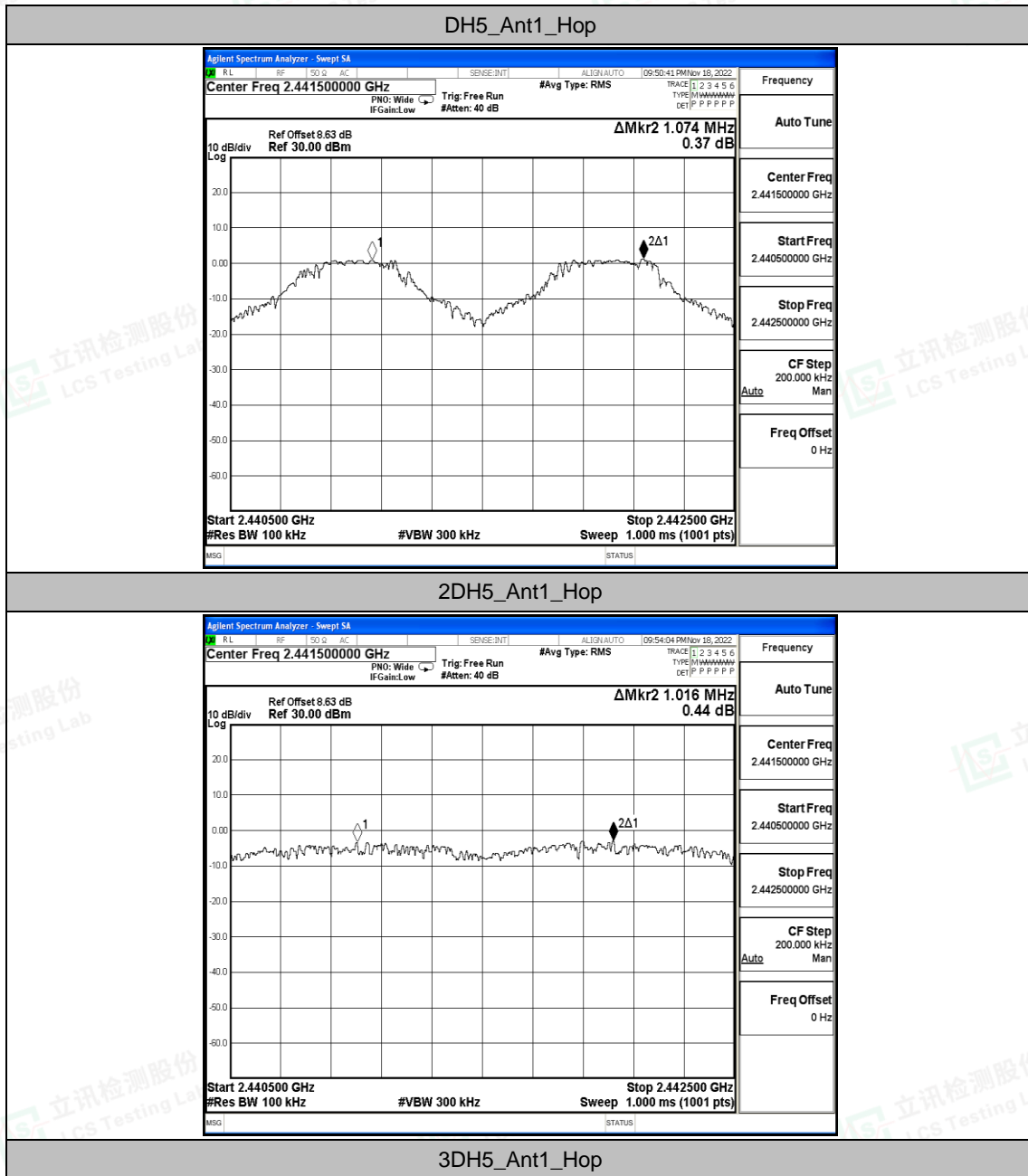
Test Result

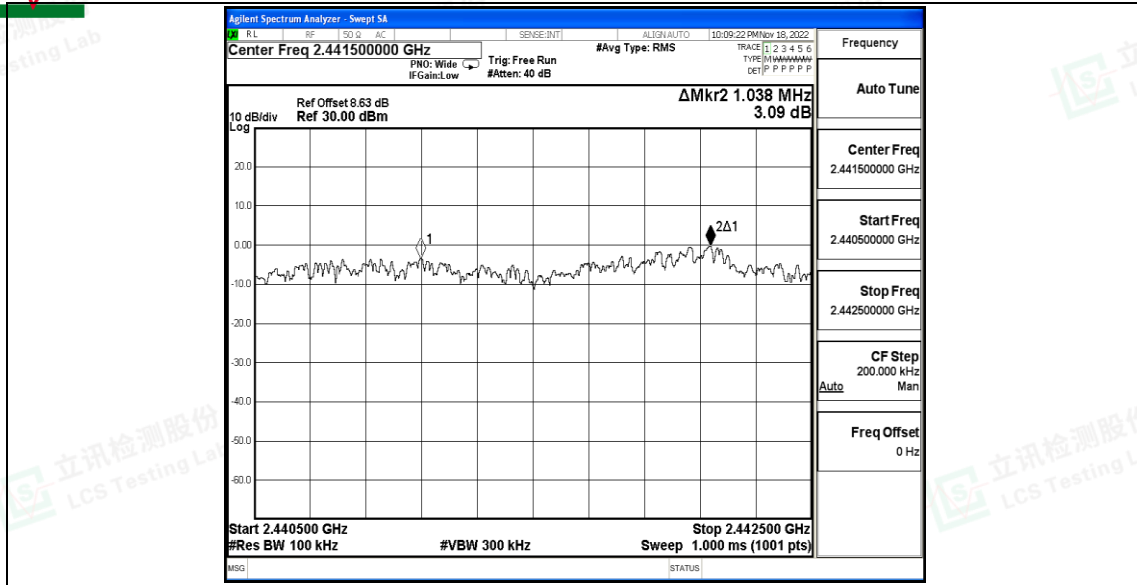
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.074	≥0.678	PASS
2DH5	Ant1	Hop	1.016	≥0.894	PASS
3DH5	Ant1	Hop	1.038	≥0.874	PASS





Test Graphs







A.4 Time of occupancy

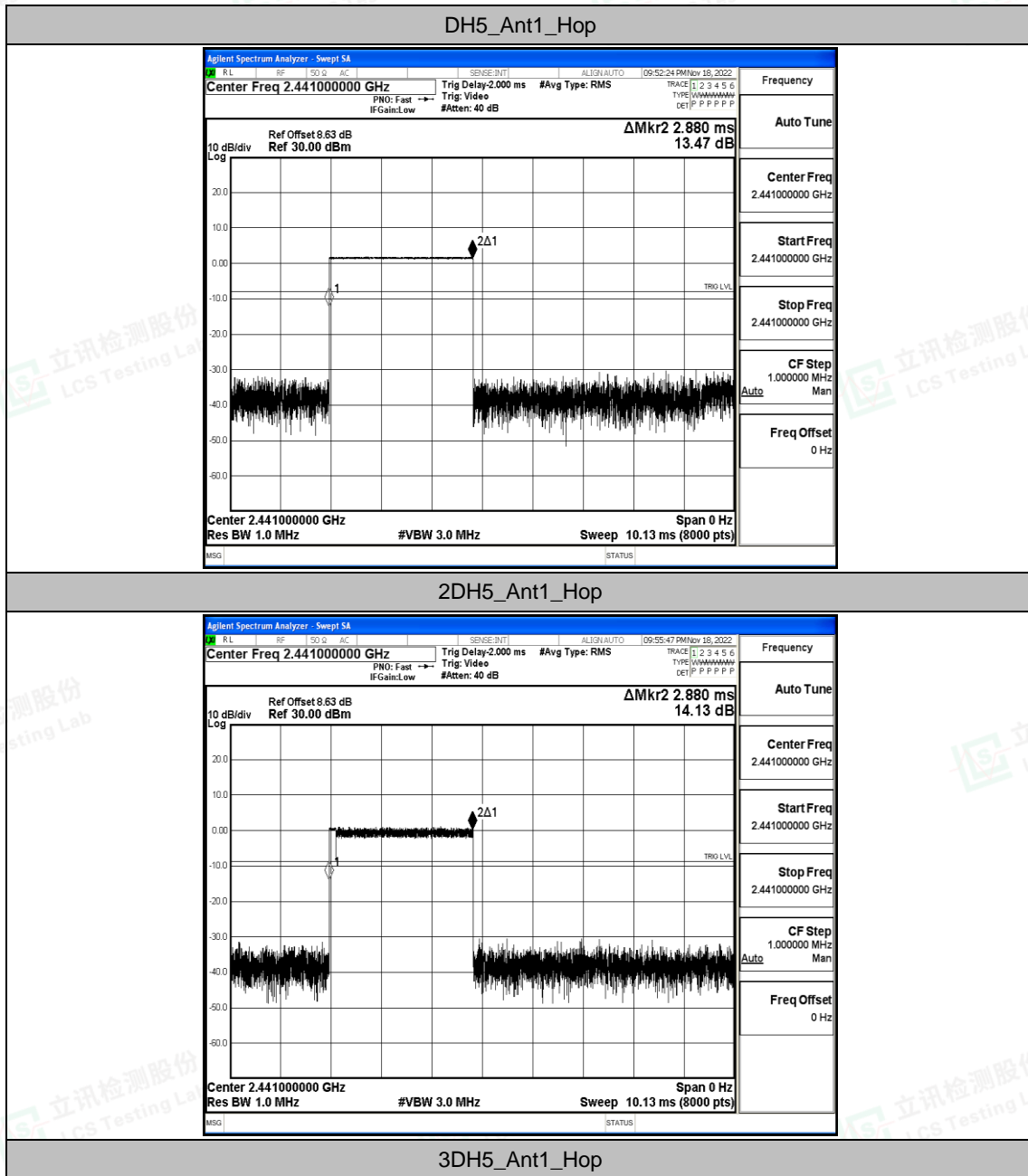
Test Result

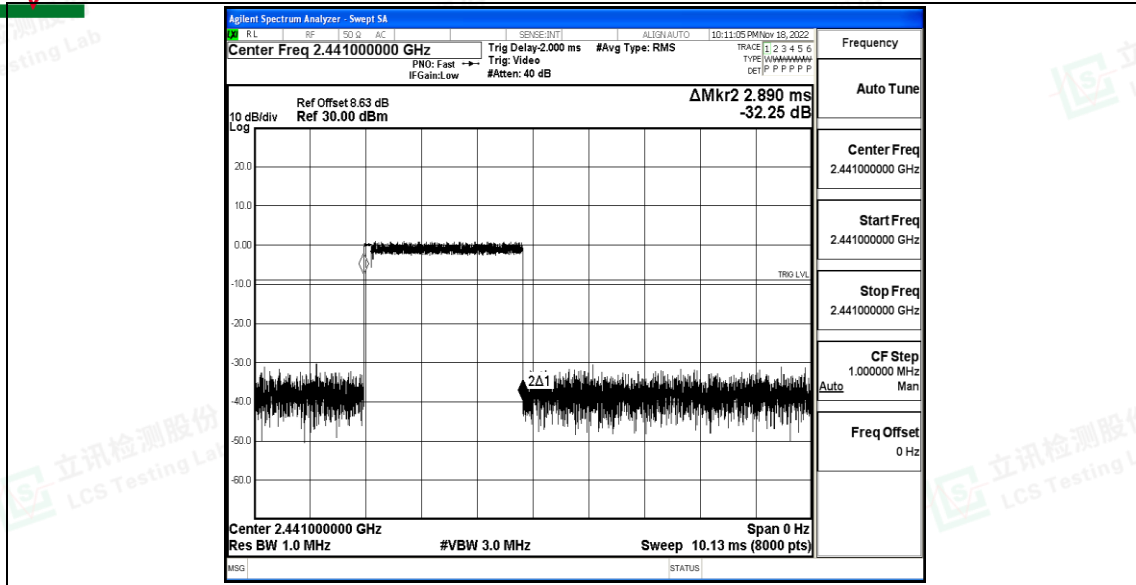
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS
3DH5	Ant1	Hop	2.89	106.67	0.308	≤0.4	PASS





Test Graphs







A.5 Number of hopping channels

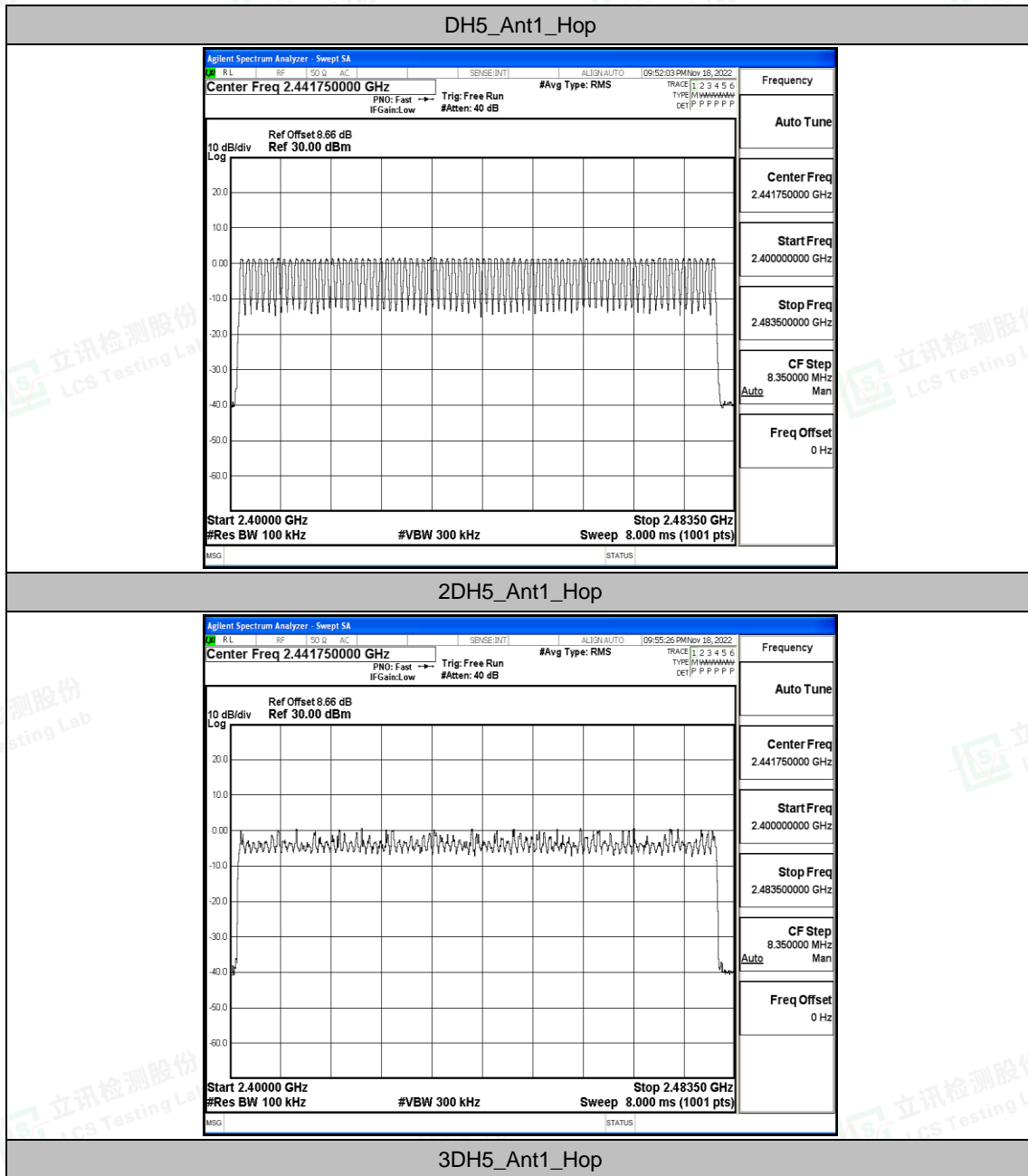
Test Result

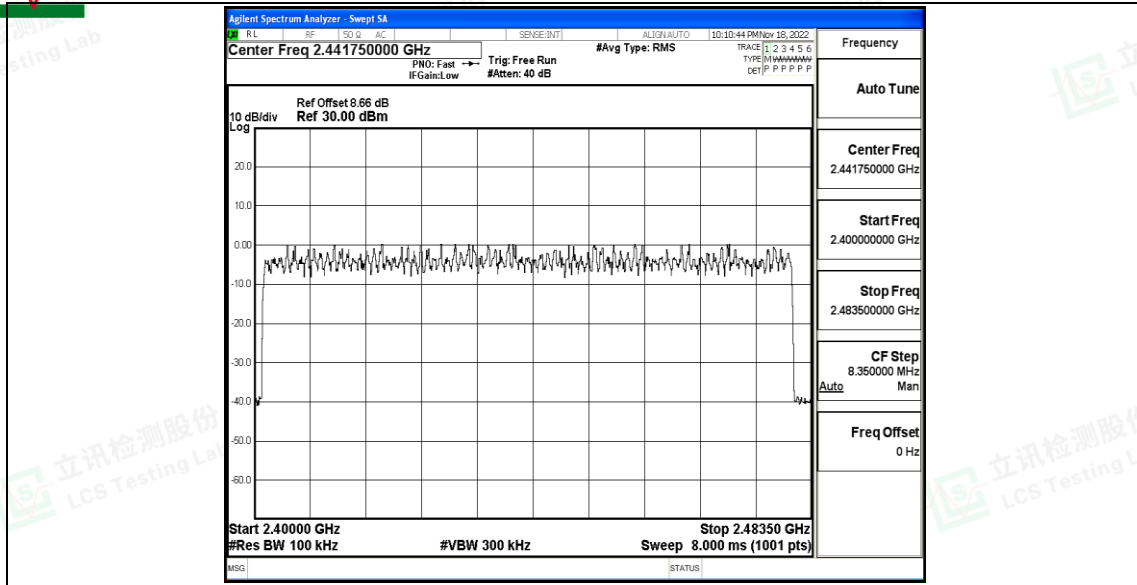
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS





Test Graphs







A.6 Band edge measurements

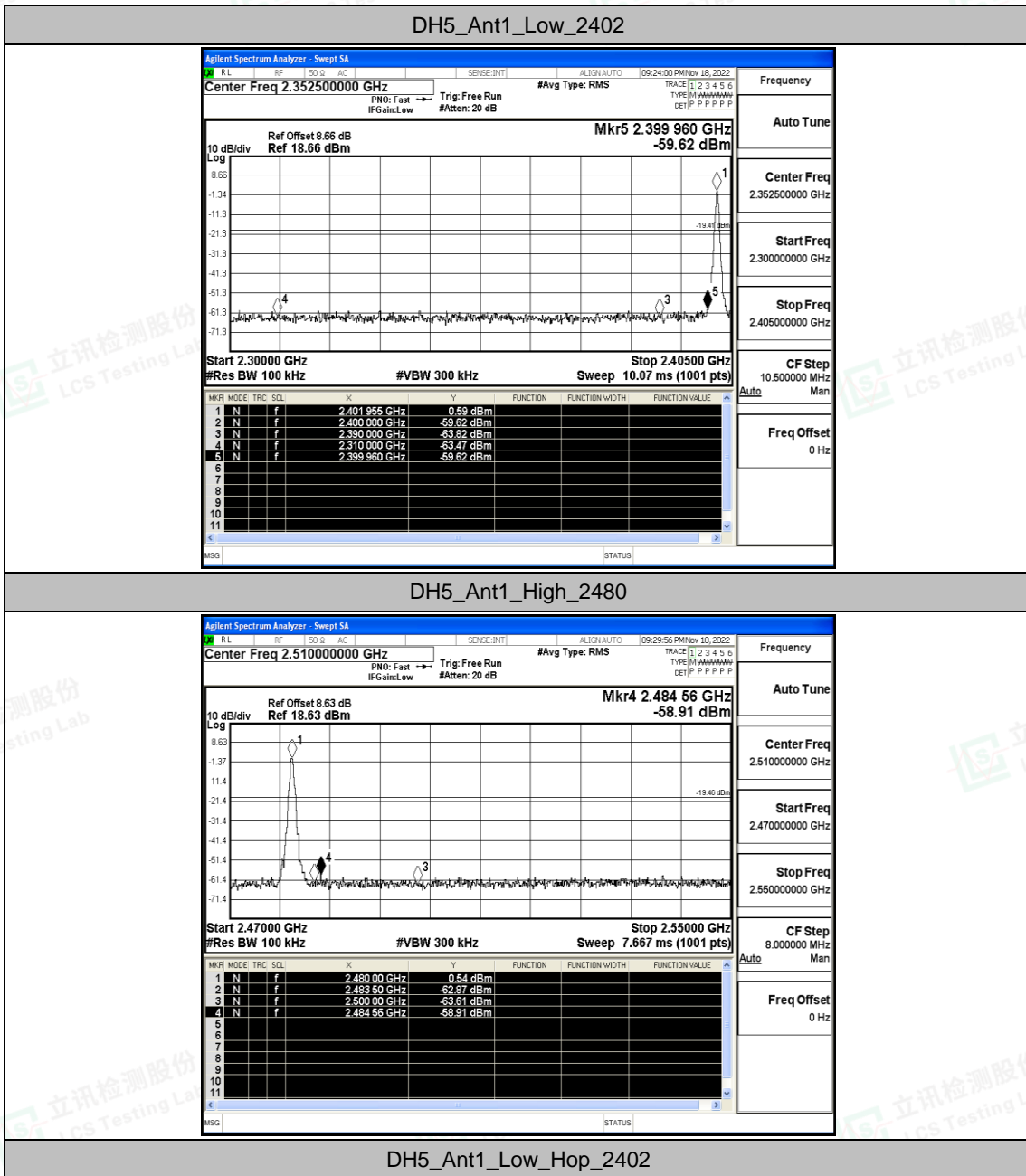
Test Result

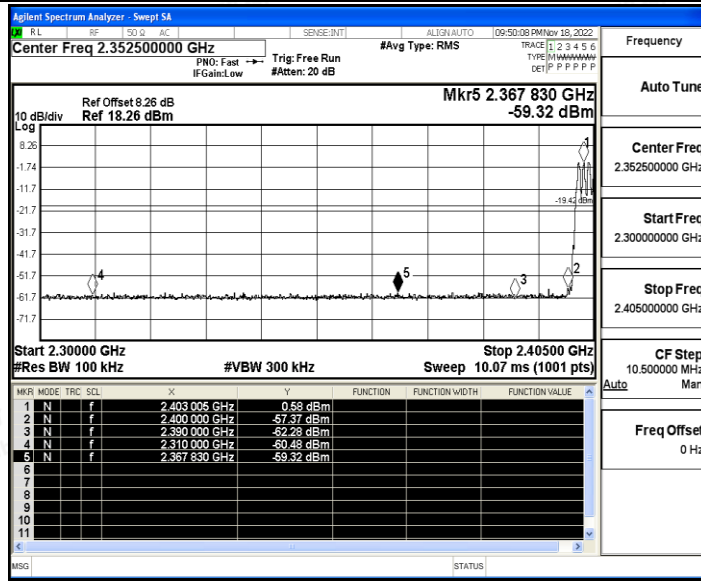
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.59	-59.62	≤-19.41	PASS
		High	2480	0.54	-58.91	≤-19.46	PASS
		Low	2402	0.59	-59.32	≤-19.42	PASS
		High	2480	1.47	-57.88	≤-18.53	PASS
2DH5	Ant1	Low	2402	-2.90	-57.19	≤-22.9	PASS
		High	2480	-1.66	-59.44	≤-21.66	PASS
		Low	2402	-0.15	-59.03	≤-20.15	PASS
		High	2480	0.38	-56.65	≤-19.62	PASS
3DH5	Ant1	Low	2402	0.05	-56.88	≤-19.95	PASS
		High	2480	-3.02	-58.77	≤-23.02	PASS
		Low	2402	-3.56	-58.58	≤-23.56	PASS
		High	2480	-0.43	-57.55	≤-20.43	PASS



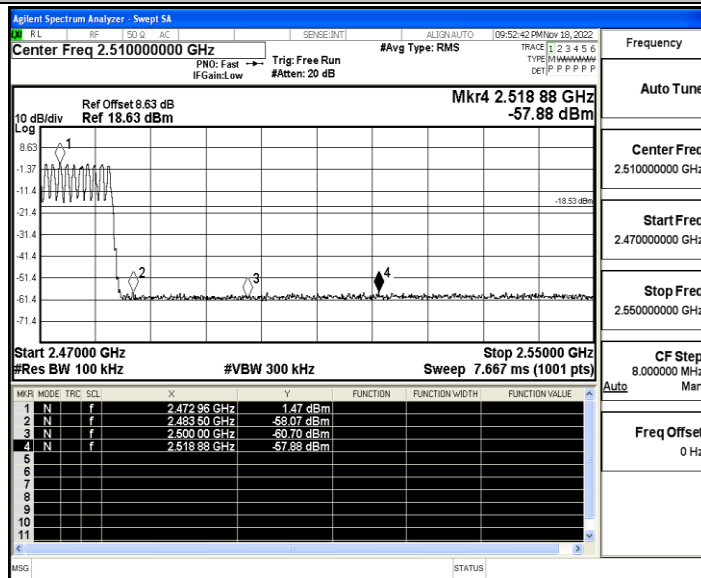


Test Graphs



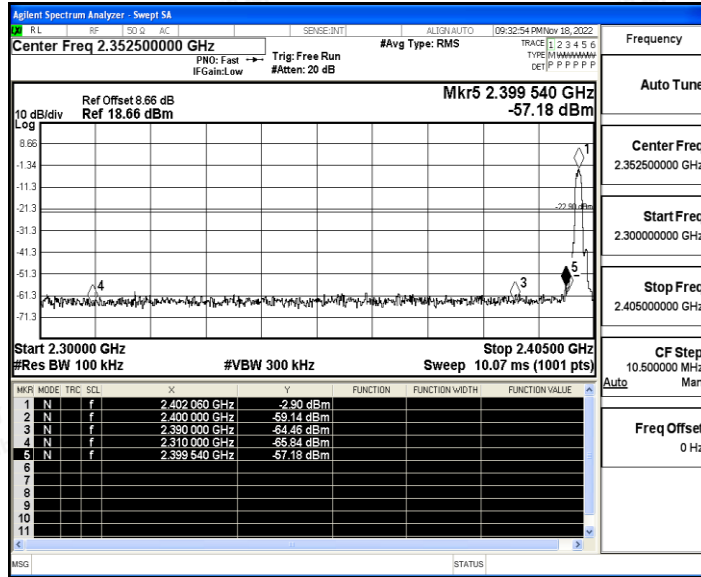


DH5_Ant1_High_Hop_2480

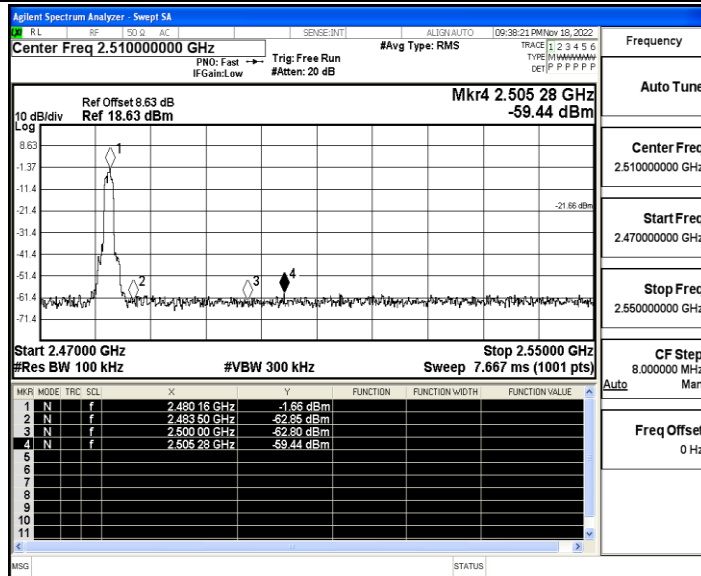


2DH5_Ant1_Low_2402



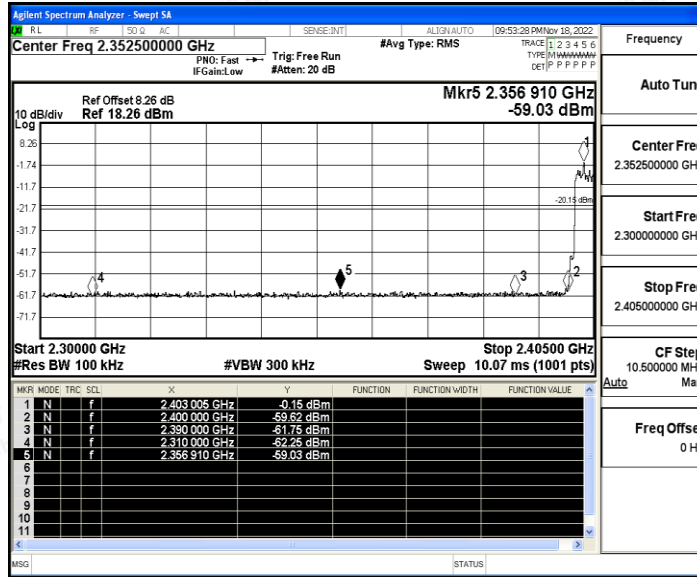


2DH5_Ant1_High_2480

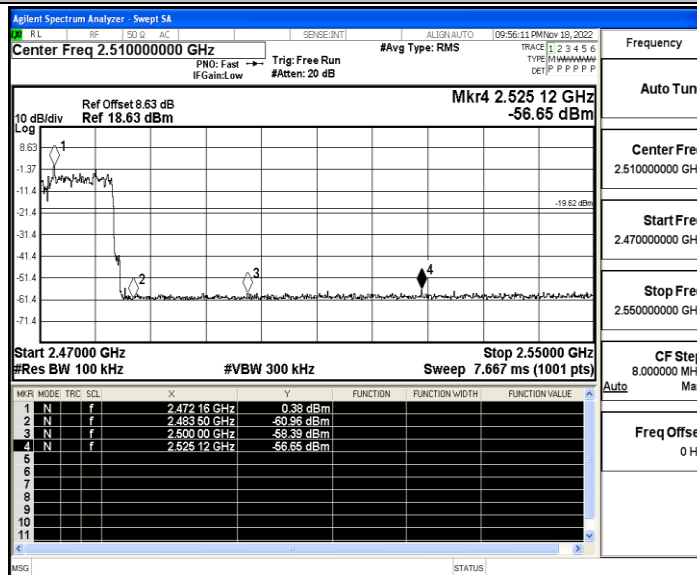


2DH5_Ant1_Low_Hop_2402



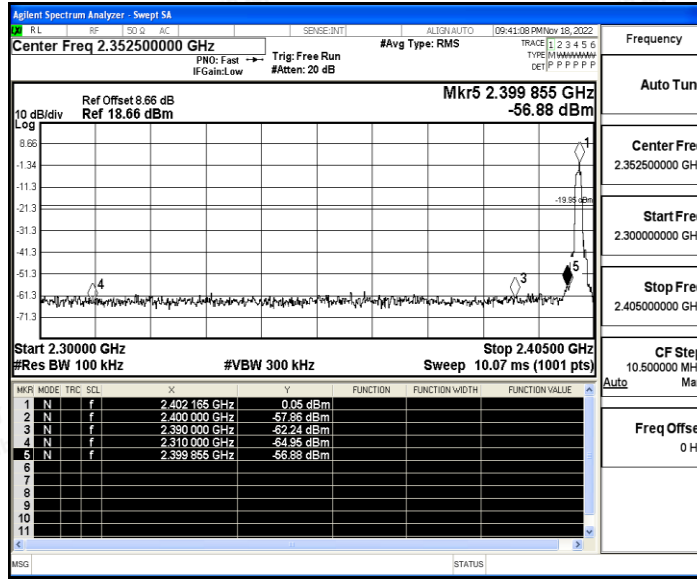


2DH5_Ant1_High_Hop_2480

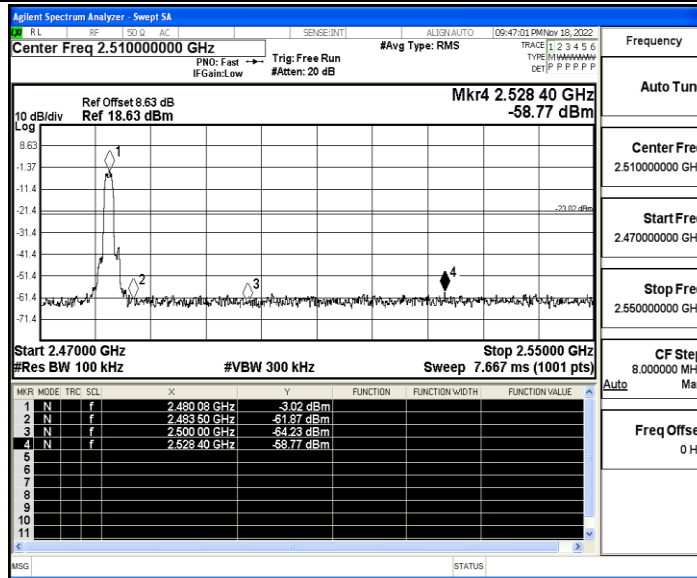


3DH5_Ant1_Low_2402



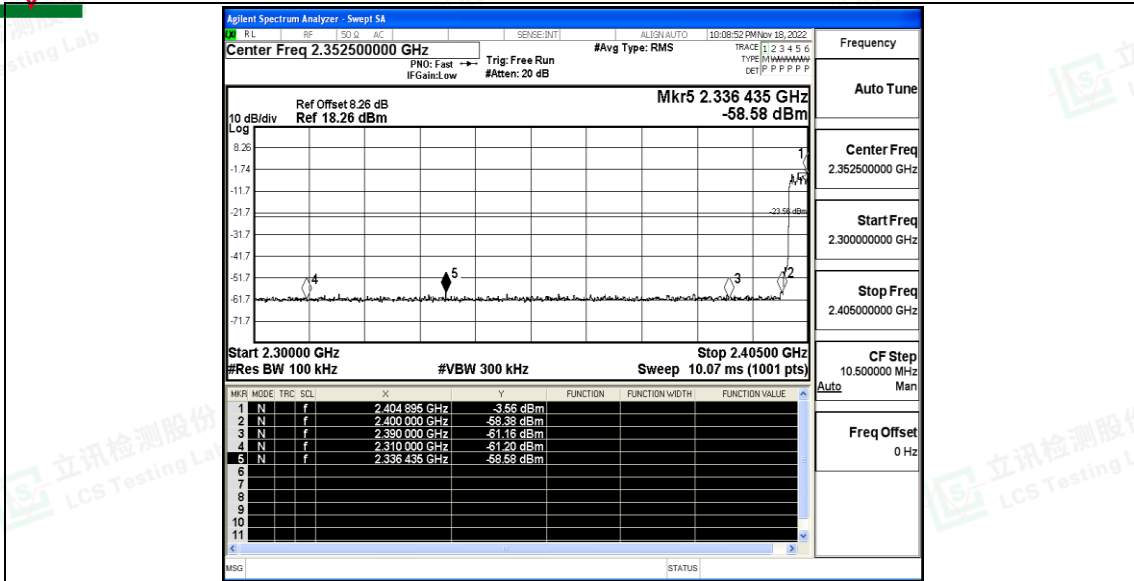


3DH5_Ant1_High_2480

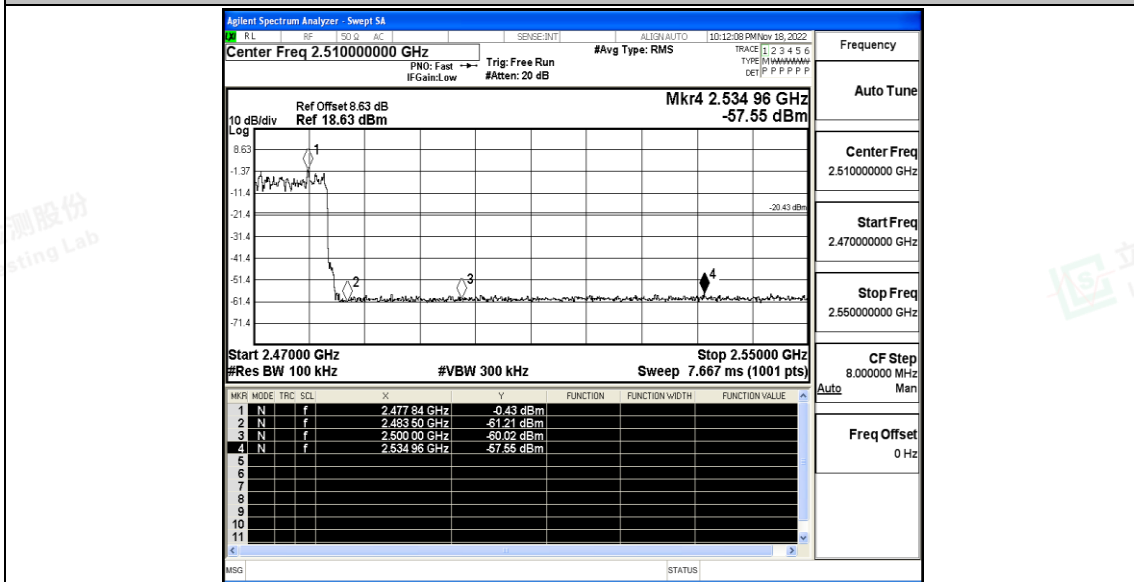


3DH5_Ant1_Low_Hop_2402





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	0.52	0.52	---	PASS
			30~1000	0.52	-60.11	≤-19.48	PASS
			1000~26500	0.52	-45.3	≤-19.48	PASS
		2441	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-60.29	≤-19.42	PASS
			1000~26500	0.58	-46.12	≤-19.42	PASS
		2480	Reference	0.74	0.74	---	PASS
			30~1000	0.74	-60.43	≤-19.26	PASS
			1000~26500	0.74	-46.32	≤-19.26	PASS
2DH5	Ant1	2402	Reference	-3.85	-3.85	---	PASS
			30~1000	-3.85	-53.77	≤-23.85	PASS
			1000~26500	-3.85	-44.51	≤-23.85	PASS
		2441	Reference	-4.10	-4.10	---	PASS
			30~1000	-4.10	-60.35	≤-24.1	PASS
			1000~26500	-4.10	-45.73	≤-24.1	PASS
		2480	Reference	-2.94	-2.94	---	PASS
			30~1000	-2.94	-48.85	≤-22.94	PASS
			1000~26500	-2.94	-46.09	≤-22.94	PASS
3DH5	Ant1	2402	Reference	-3.35	-3.35	---	PASS
			30~1000	-3.35	-55.32	≤-23.35	PASS
			1000~26500	-3.35	-46.03	≤-23.35	PASS
		2441	Reference	0.47	0.47	---	PASS
			30~1000	0.47	-45.69	≤-19.53	PASS
			1000~26500	0.47	-46.03	≤-19.53	PASS
		2480	Reference	-3.27	-3.27	---	PASS
			30~1000	-3.27	-60.25	≤-23.27	PASS
			1000~26500	-3.27	-46.33	≤-23.27	PASS



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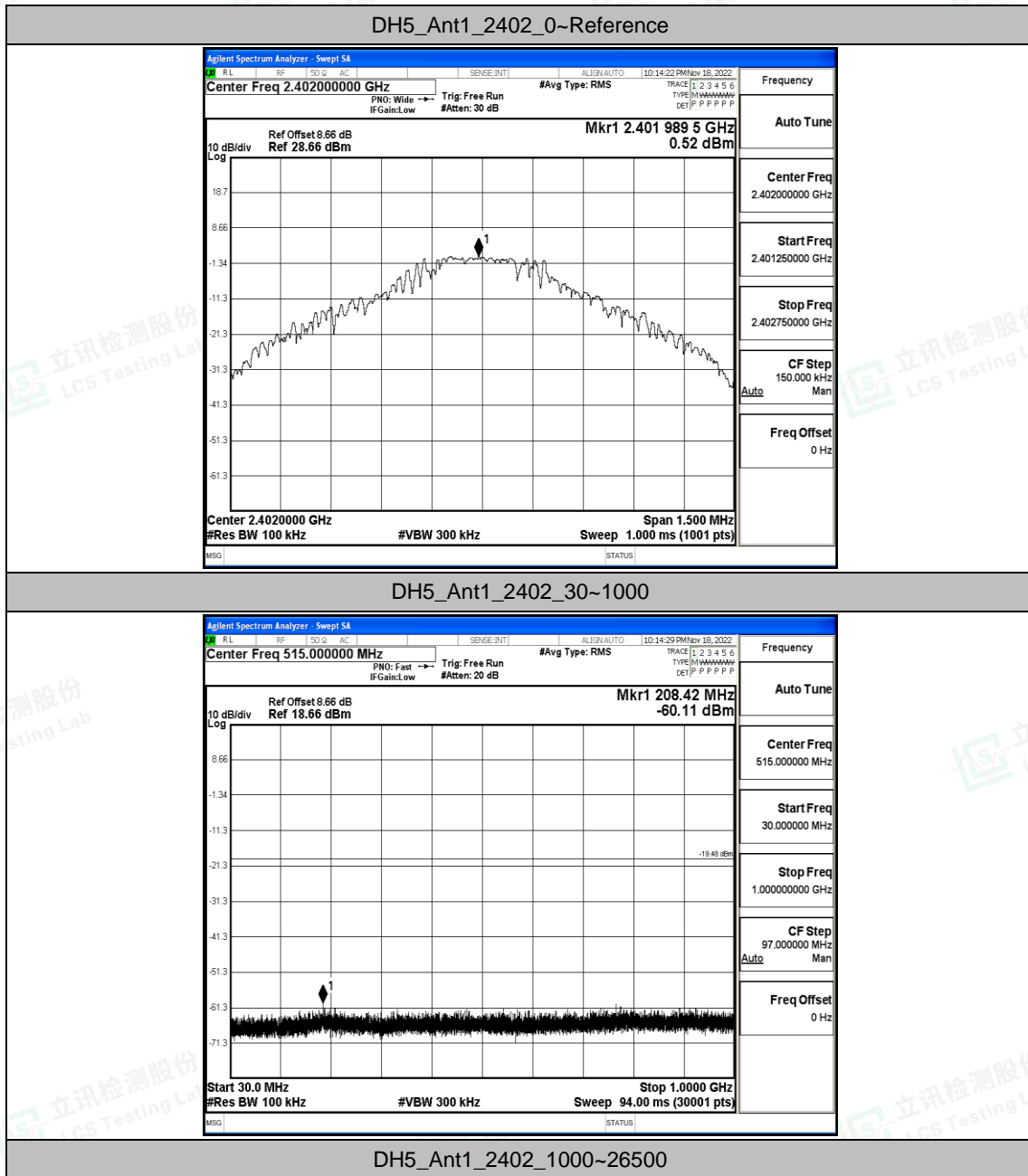
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

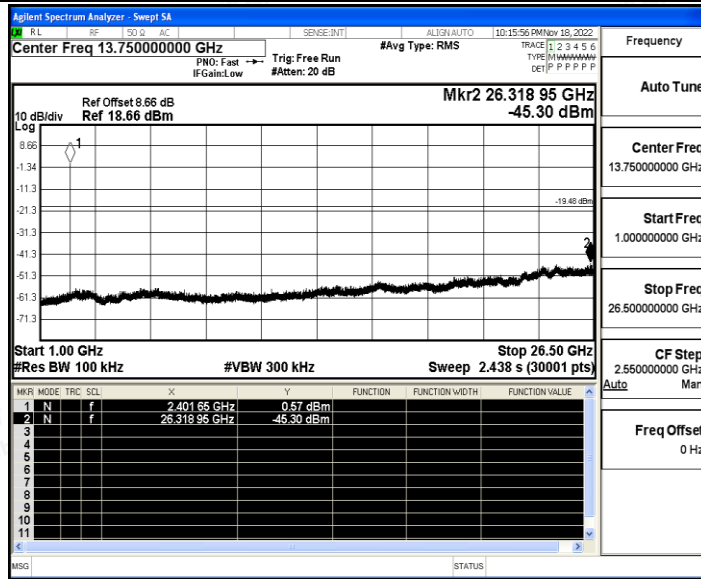
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

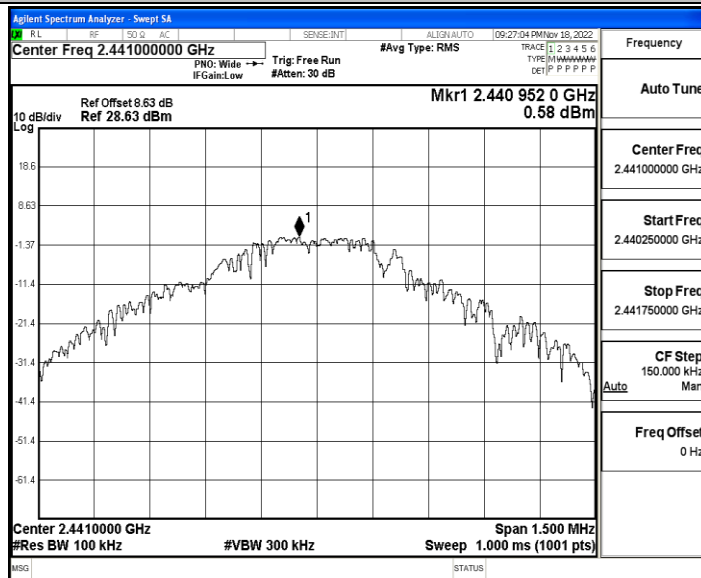


Test Graphs



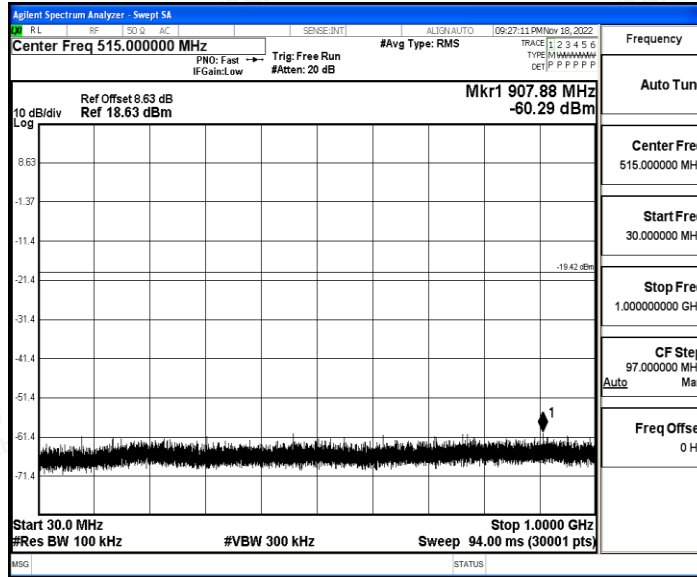


DH5_Ant1_2441_0-Reference

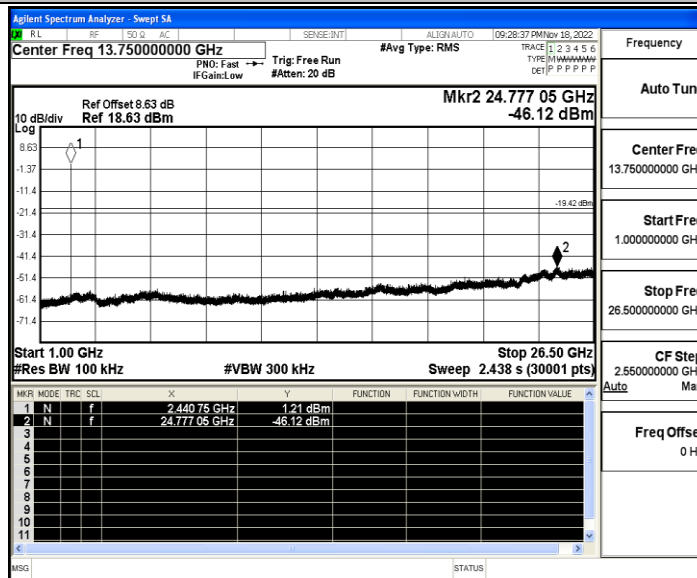


DH5_Ant1_2441_30~1000



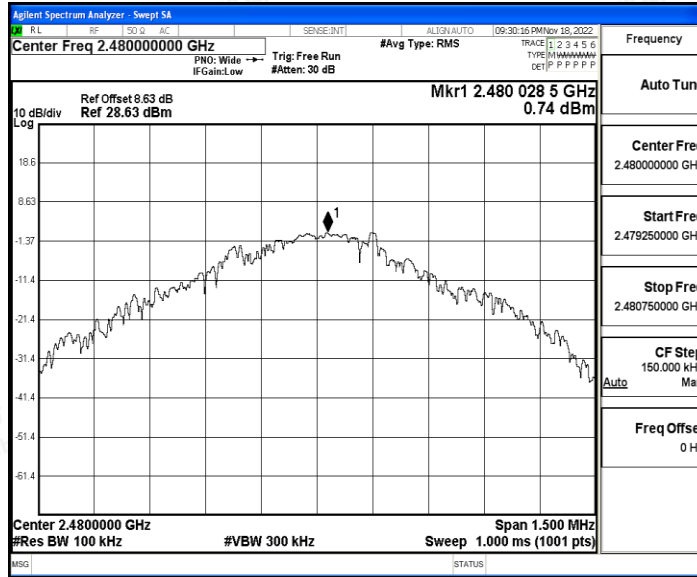


DH5_Ant1_2441_1000~26500

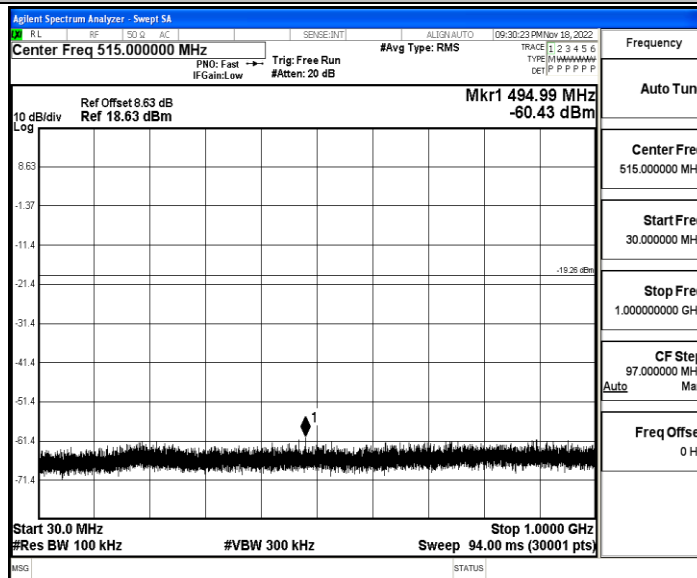


DH5_Ant1_2480_0-Reference



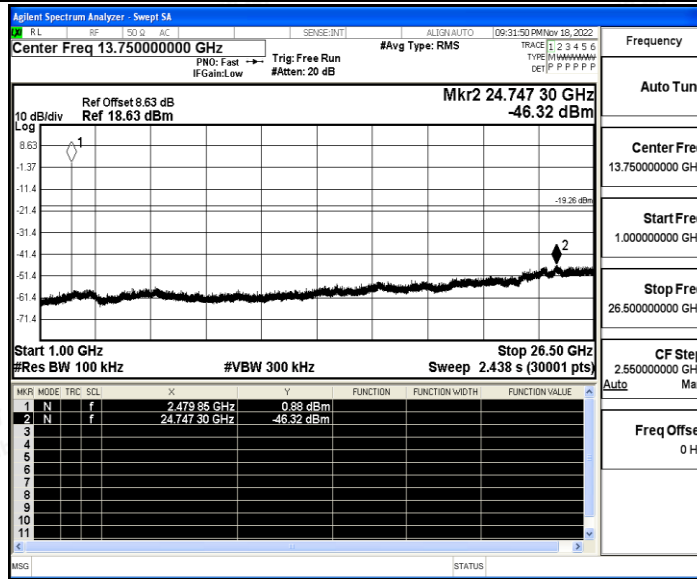


DH5_Ant1_2480_30~1000

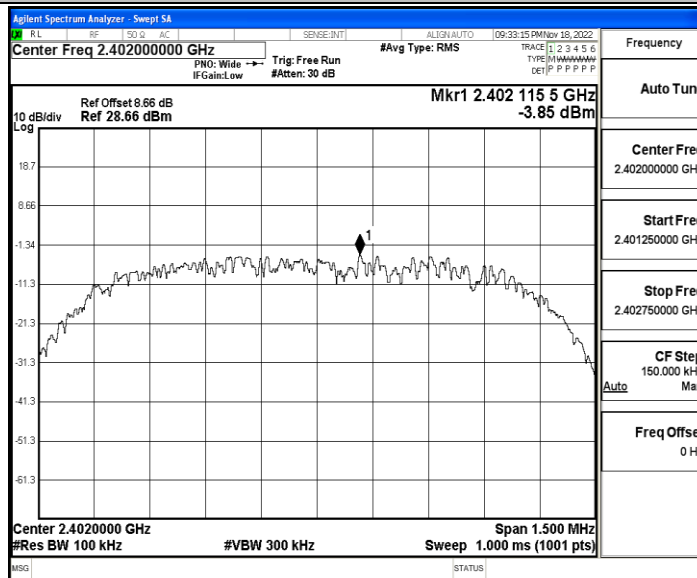


DH5_Ant1_2480_1000~26500



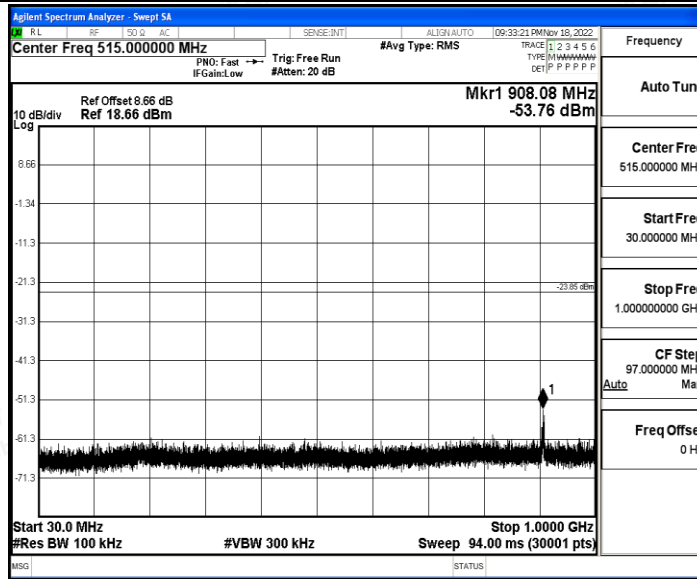


2DH5_Ant1_2402_0~Reference

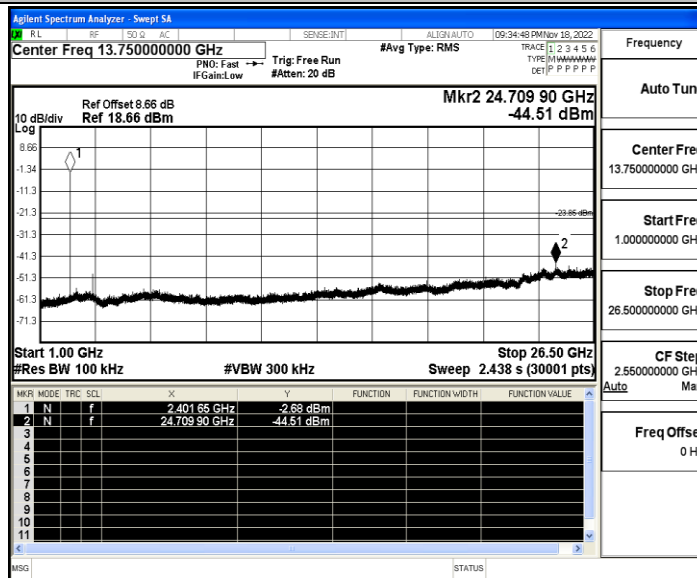


2DH5_Ant1_2402_30~1000



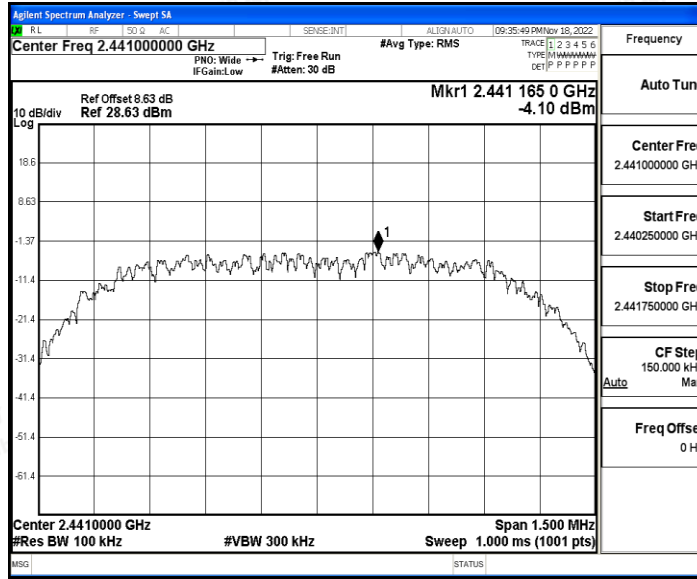


2DH5_Ant1_2402_1000~26500

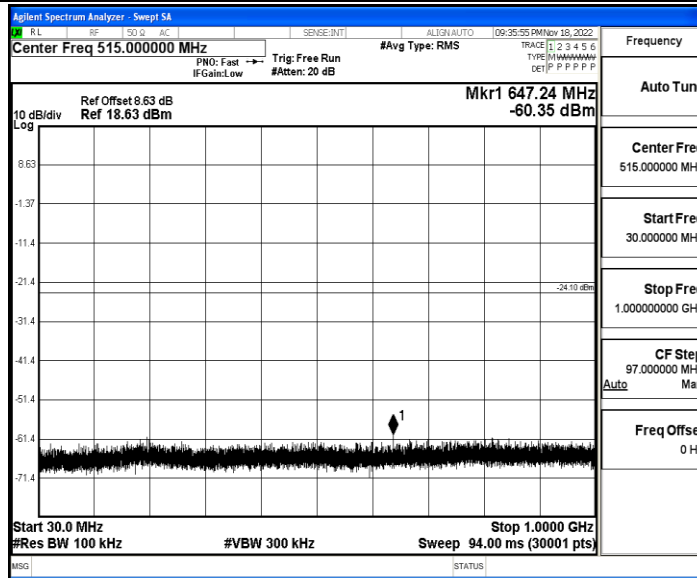


2DH5_Ant1_2441_0~Reference



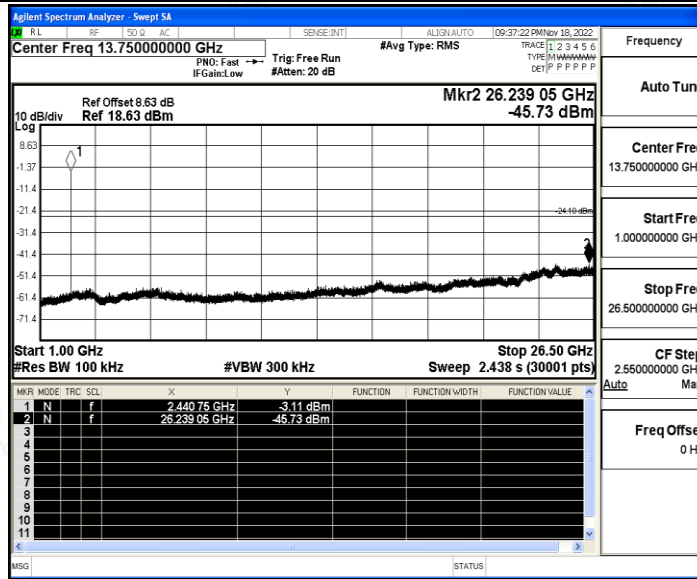


2DH5_Ant1_2441_30~1000

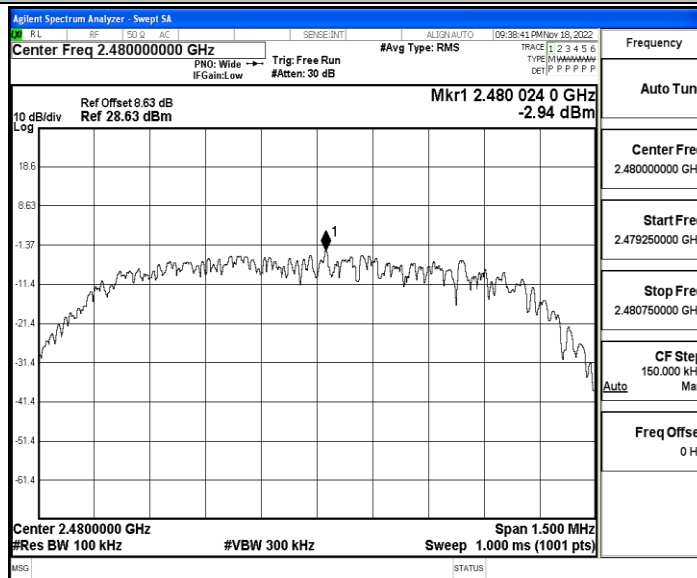


2DH5_Ant1_2441_1000~26500



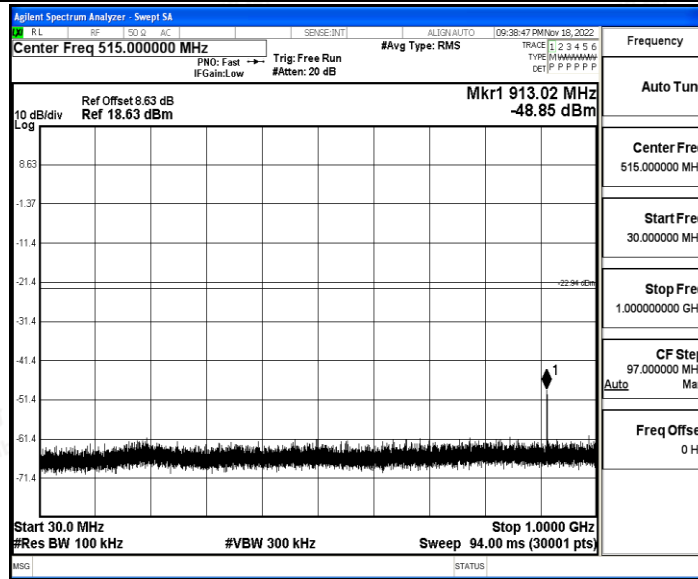


2DH5_Ant1_2480_0~Reference

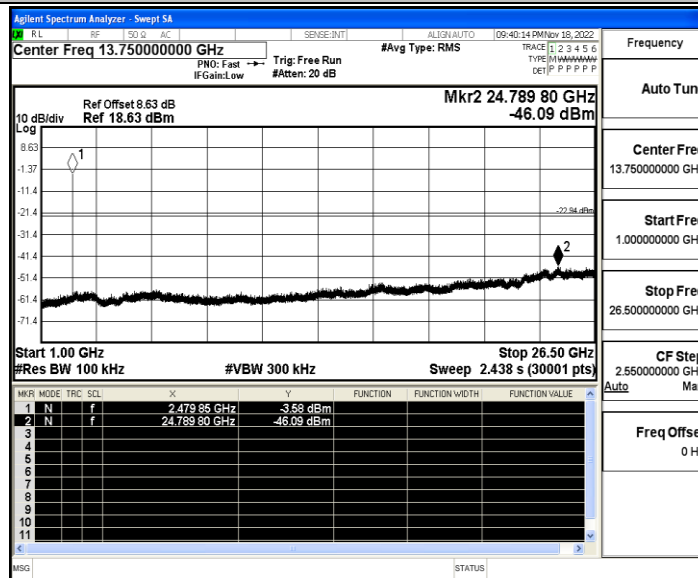


2DH5_Ant1_2480_30~1000



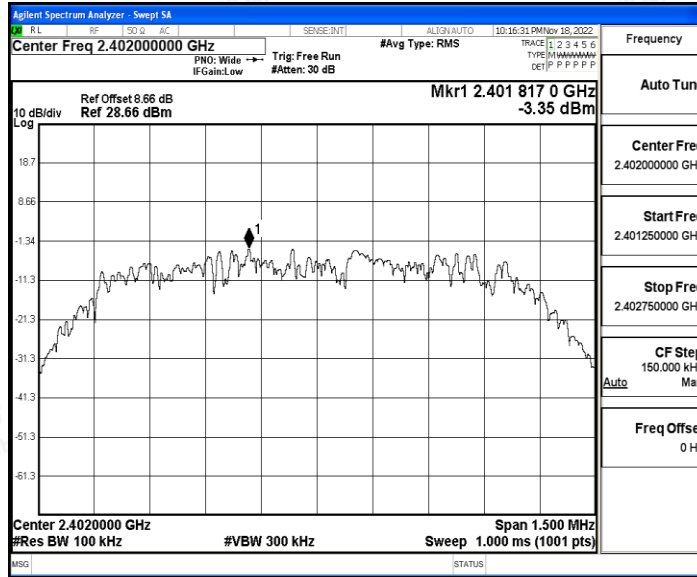


2DH5_Ant1_2480_1000~26500

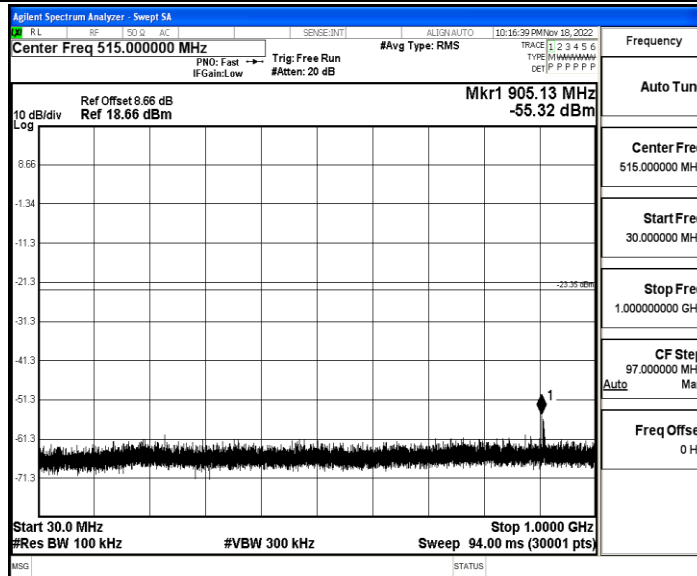


3DH5_Ant1_2402_0~Reference



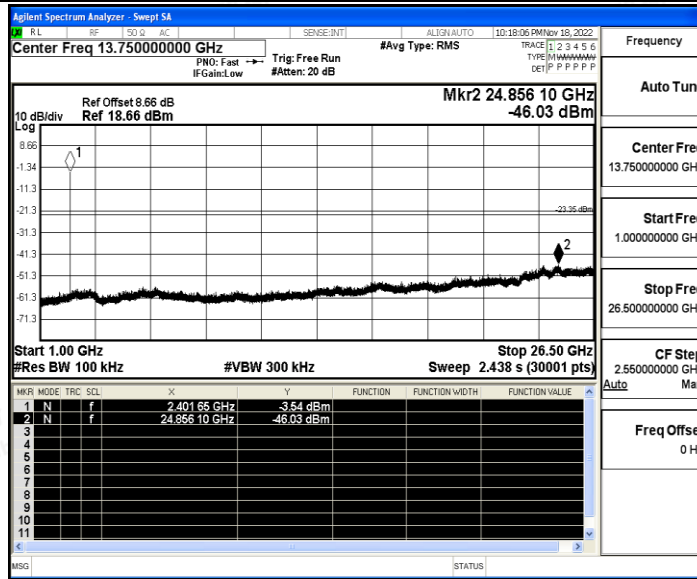


3DH5_Ant1_2402_30~1000

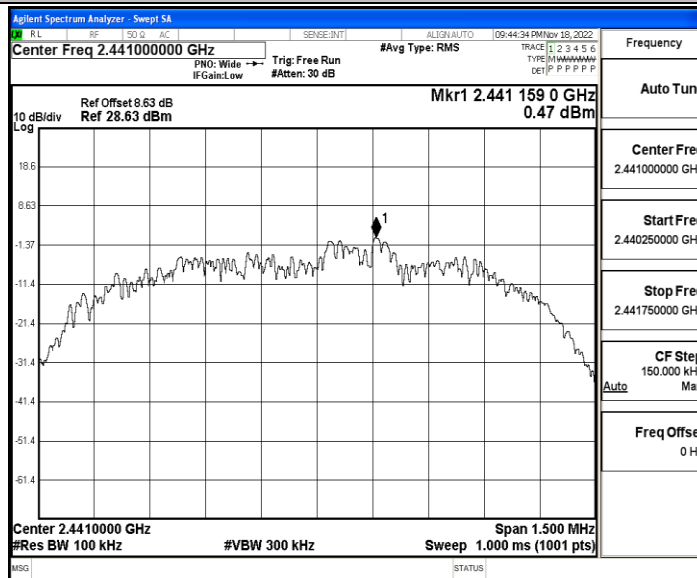


3DH5_Ant1_2402_1000~26500



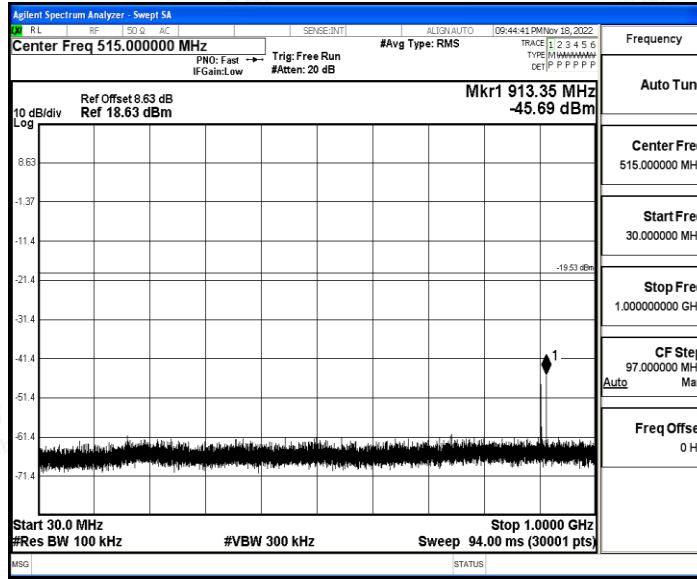


3DH5_Ant1_2441_0~Reference

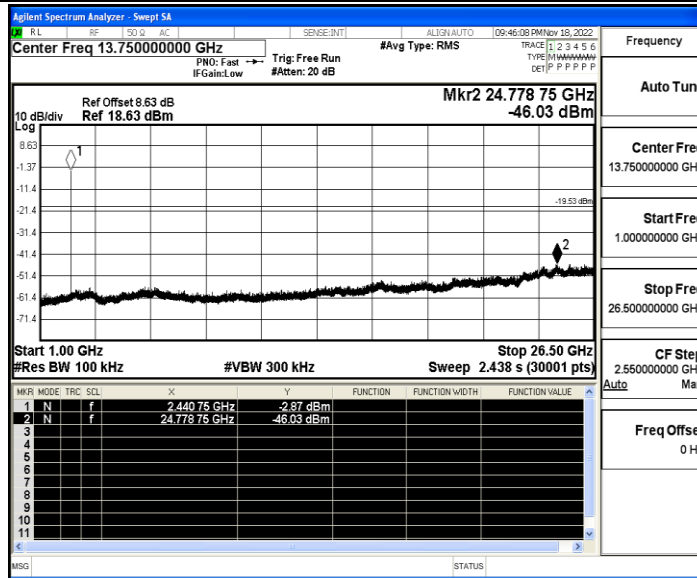


3DH5_Ant1_2441_30~1000



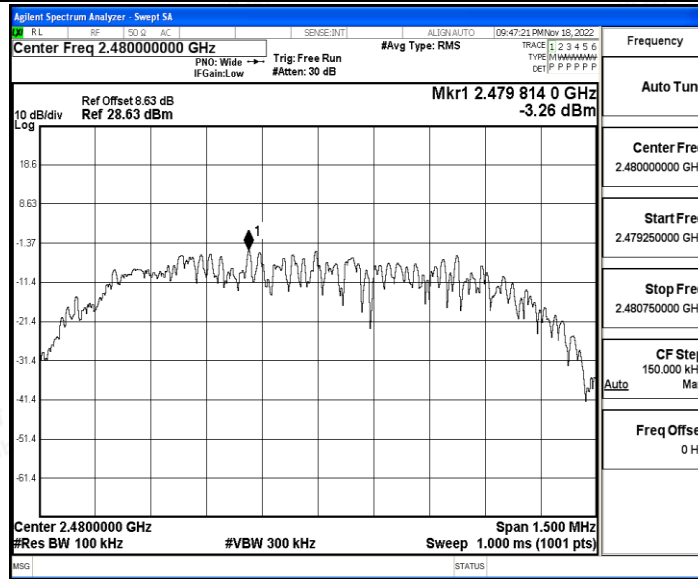


3DH5_Ant1_2441_1000~26500

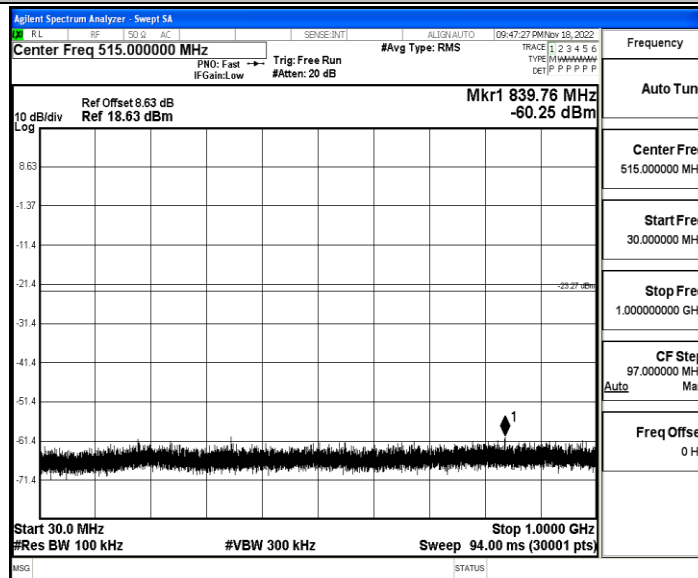


3DH5_Ant1_2480_0~Reference



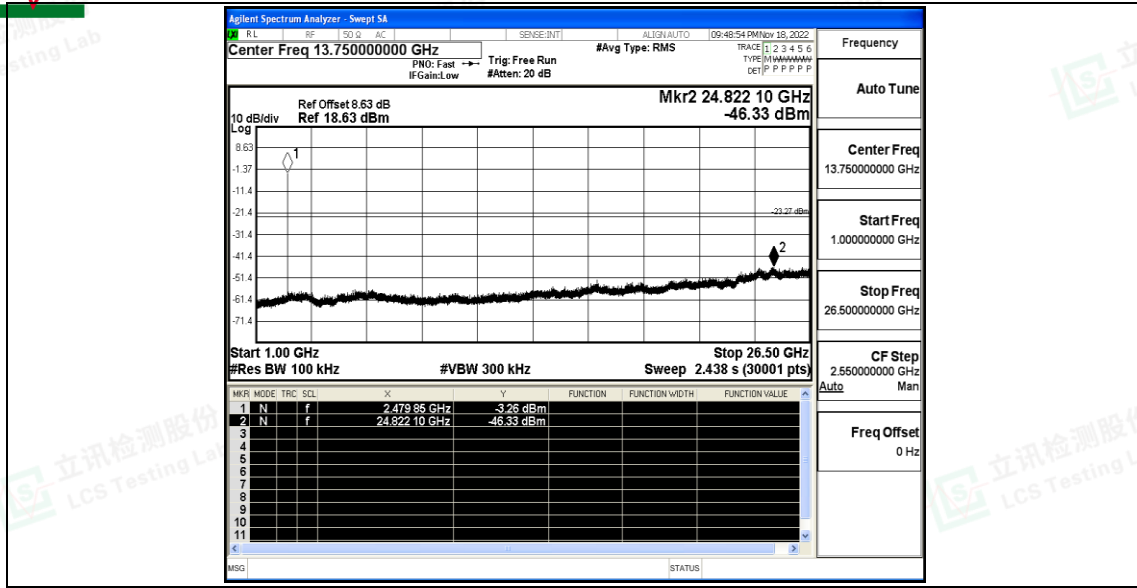


3DH5_Ant1_2480_30~1000



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	-58.24	≤-41.20	36.96	≤54	PASS
				AV	2388.830	-57.49	≤-41.20	37.71	≤54	PASS
				AV	2390.000	-57.81	≤-41.20	37.39	≤54	PASS
				Peak	2310.000	-50.9	≤-21.20	44.30	≤74	PASS
				Peak	2318.900	-48.01	≤-21.20	47.19	≤74	PASS
				Peak	2390.000	-51.89	≤-21.20	43.31	≤74	PASS
		High	2480	AV	2483.500	-54.86	≤-41.20	40.34	≤54	PASS
				AV	2483.520	-54.86	≤-41.20	40.34	≤54	PASS
				AV	2500.000	-57.19	≤-41.20	38.01	≤54	PASS
				Peak	2483.500	-51.7	≤-21.20	43.50	≤74	PASS
				Peak	2483.920	-47.7	≤-21.20	47.50	≤74	PASS
				Peak	2500.000	-52.26	≤-21.20	42.94	≤74	PASS
		Low	2402	Peak	2310.000	-49.32	≤-21.20	45.88	≤74	PASS
				Peak	2370.245	-47.56	≤-21.20	47.64	≤74	PASS
				Peak	2390.000	-50.05	≤-21.20	45.15	≤74	PASS
		High	2480	Peak	2483.500	-48.58	≤-21.20	46.62	≤74	PASS
				Peak	2495.920	-46.87	≤-21.20	48.33	≤74	PASS
				Peak	2500.000	-49.11	≤-21.20	46.09	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-58.11	≤-41.20	37.09	≤54	PASS
				AV	2389.040	-57.56	≤-41.20	37.64	≤54	PASS
				AV	2390.000	-57.7	≤-41.20	37.50	≤54	PASS
				Peak	2310.000	-52.25	≤-21.20	42.95	≤74	PASS
				Peak	2346.935	-48.95	≤-21.20	46.25	≤74	PASS
				Peak	2390.000	-52.24	≤-21.20	42.96	≤74	PASS
		High	2480	AV	2483.500	-54.63	≤-41.20	40.57	≤54	PASS
				AV	2483.520	-54.63	≤-41.20	40.57	≤54	PASS
				AV	2500.000	-57.31	≤-41.20	37.89	≤54	PASS
				Peak	2483.500	-50.91	≤-21.20	44.29	≤74	PASS
				Peak	2488.320	-48.84	≤-21.20	46.36	≤74	PASS
				Peak	2500.000	-50.64	≤-21.20	44.56	≤74	PASS
		Low	2402	Peak	2310.000	-50.22	≤-21.20	44.98	≤74	PASS
				Peak	2372.870	-47.15	≤-21.20	48.05	≤74	PASS
				Peak	2390.000	-48.79	≤-21.20	46.41	≤74	PASS
		High	2480	Peak	2483.500	-49.06	≤-21.20	46.14	≤74	PASS
				Peak	2491.360	-46.89	≤-21.20	48.31	≤74	PASS



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Scan code to check authenticity



3DH5	Ant1	Low	2402	Peak	2500.000	-49.37	≤-21.20	45.83	≤74	PASS
				AV	2310.000	-58.15	≤-41.20	37.05	≤54	PASS
				AV	2388.620	-57.58	≤-41.20	37.62	≤54	PASS
				AV	2390.000	-57.66	≤-41.20	37.54	≤54	PASS
				Peak	2310.000	-51.93	≤-21.20	43.27	≤74	PASS
				Peak	2315.645	-48.65	≤-21.20	46.55	≤74	PASS
		High	2480	AV	2483.500	-54.45	≤-41.20	40.75	≤54	PASS
				AV	2483.520	-54.45	≤-41.20	40.75	≤54	PASS
				AV	2500.000	-57.23	≤-41.20	37.97	≤54	PASS
				Peak	2483.500	-51.32	≤-21.20	43.88	≤74	PASS
				Peak	2499.360	-48.52	≤-21.20	46.68	≤74	PASS
				Peak	2500.000	-49.53	≤-21.20	45.67	≤74	PASS
		Low	2402	Peak	2310.000	-50.29	≤-21.20	44.91	≤74	PASS
				Peak	2331.815	-47.75	≤-21.20	47.45	≤74	PASS
				Peak	2390.000	-49.62	≤-21.20	45.58	≤74	PASS
		High	2480	Peak	2483.500	-49.75	≤-21.20	45.45	≤74	PASS
				Peak	2495.280	-46.75	≤-21.20	48.45	≤74	PASS
				Peak	2500.000	-47.99	≤-21.20	47.21	≤74	PASS

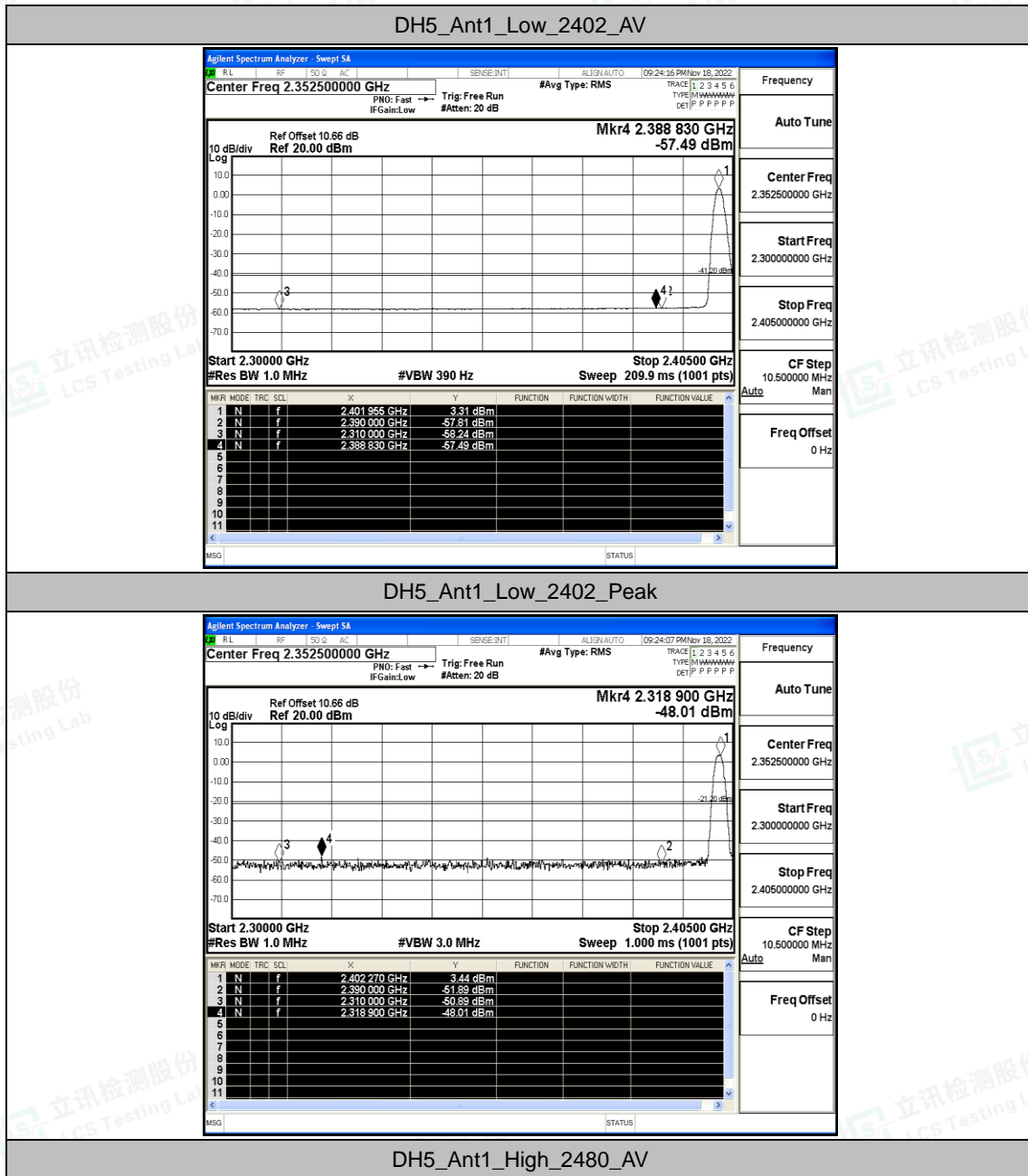
Note:

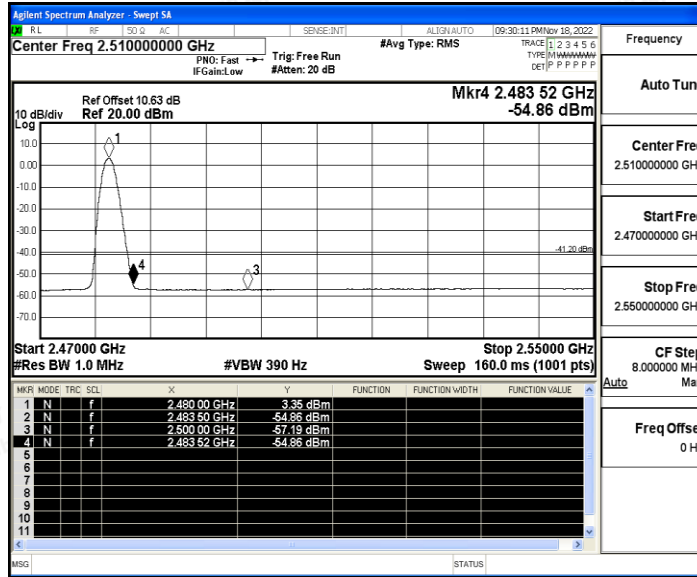
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



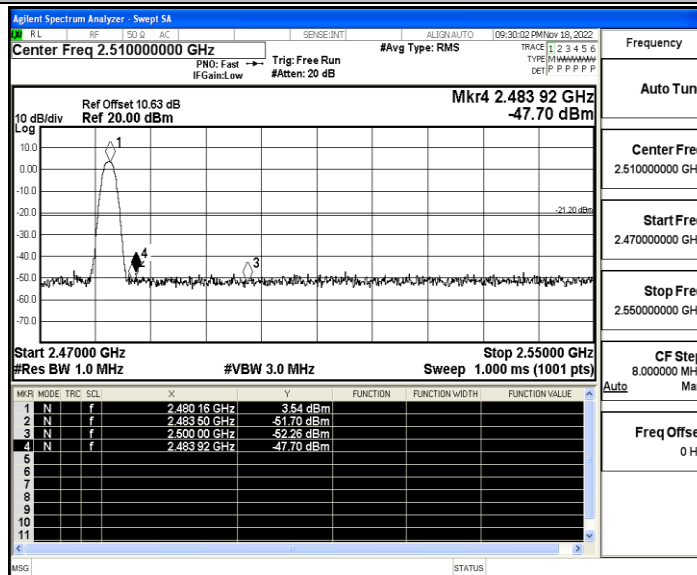


Test Graphs



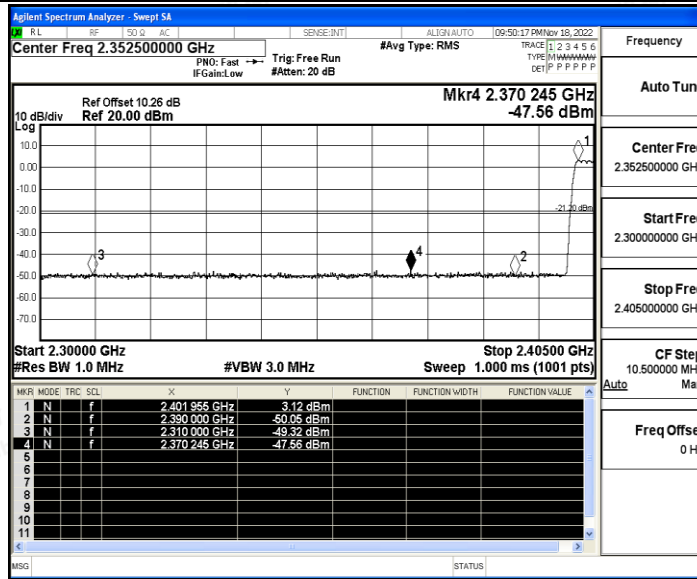


DH5_Ant1_High_2480_Peak

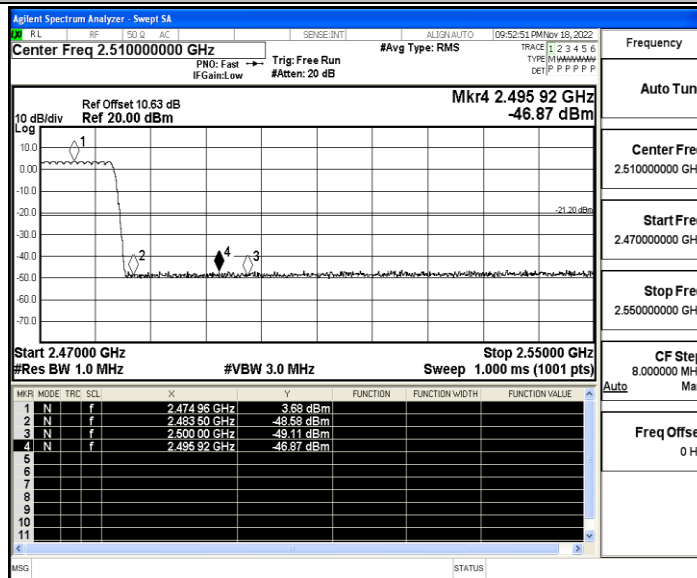


DH5_Ant1_Low_Hop_2402_Peak



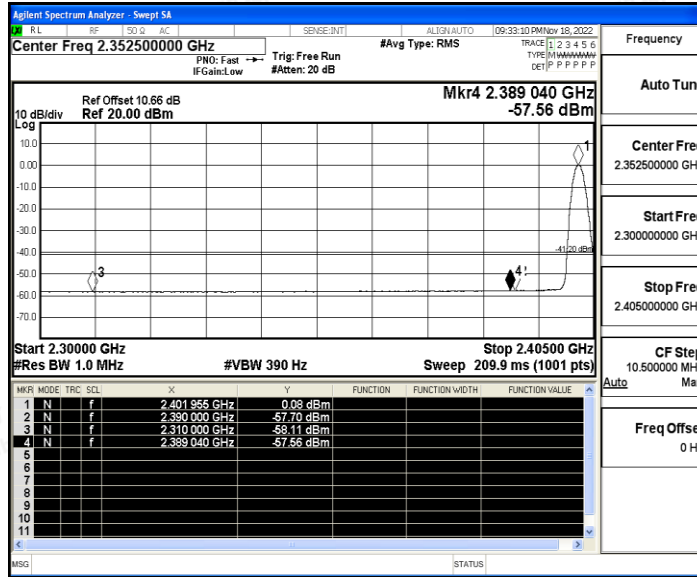


DH5_Ant1_High_Hop_2480_Peak

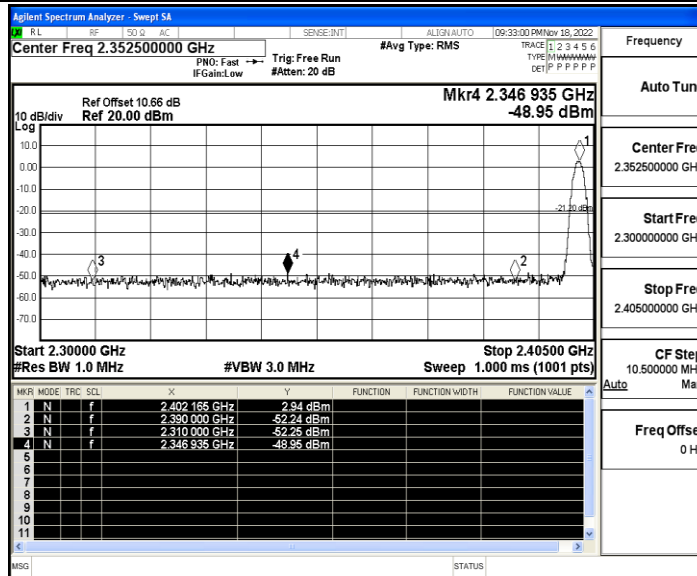


2DH5_Ant1_Low_2402_AV



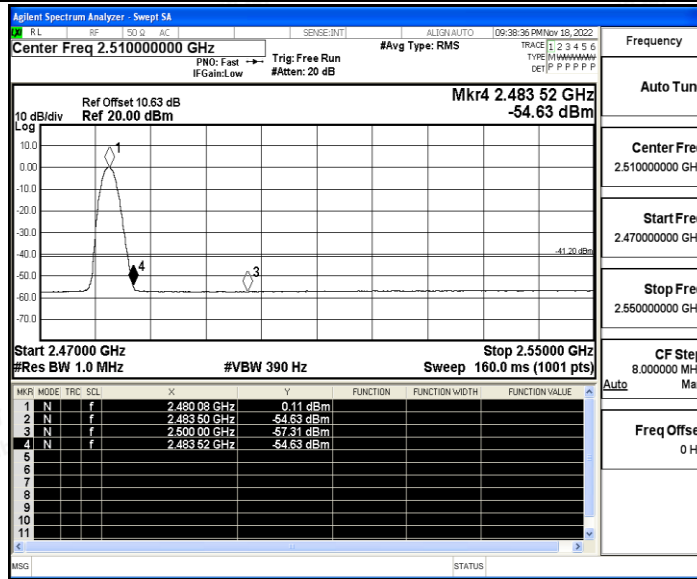


2DH5_Ant1_Low_2402_Peak

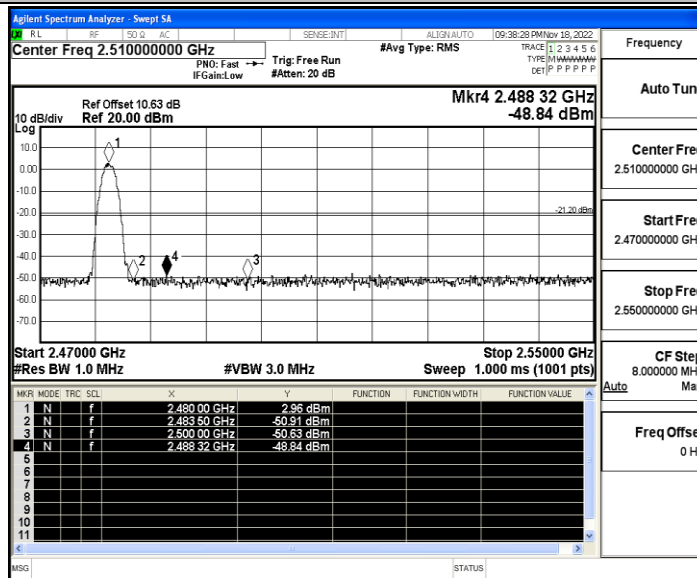


2DH5_Ant1_High_2480_AV



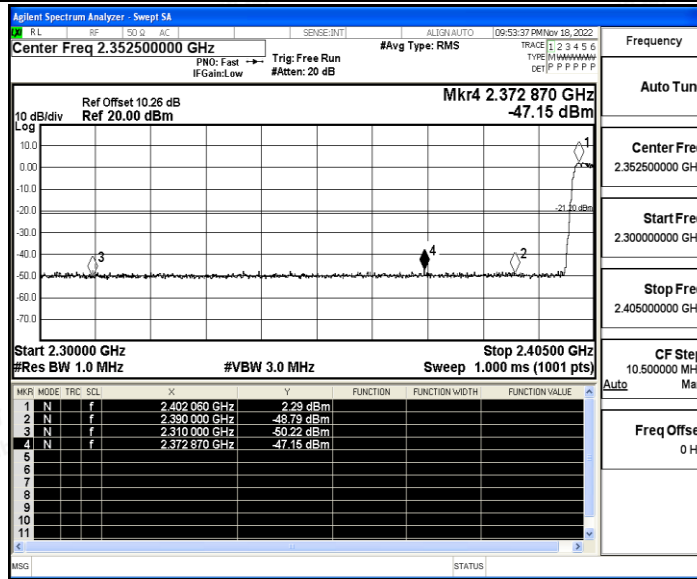


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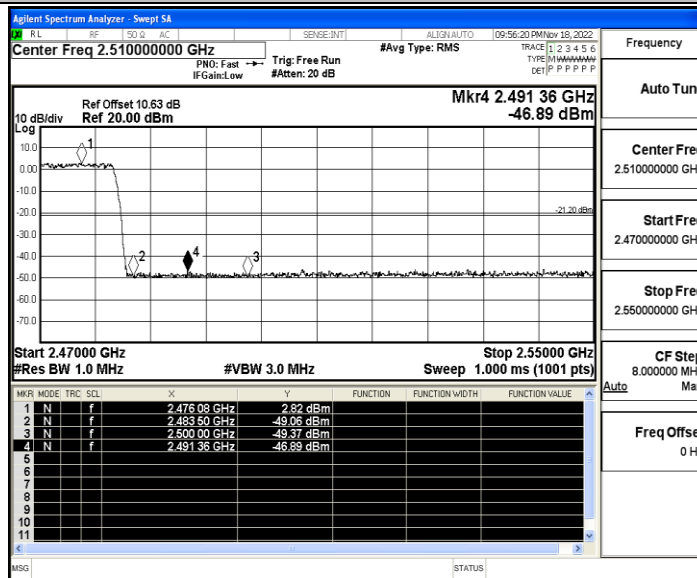


2DH5_Ant1_Low_Hop_2402_Peak



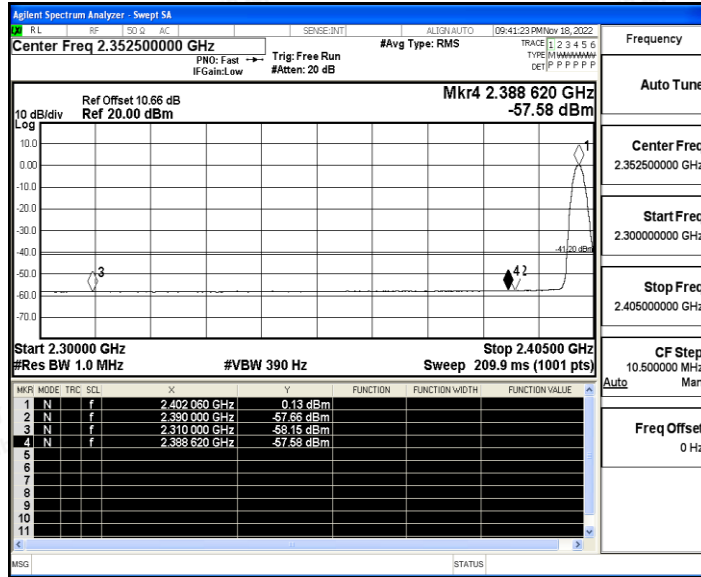


2DH5_Ant1_High_Hop_2480_Peak

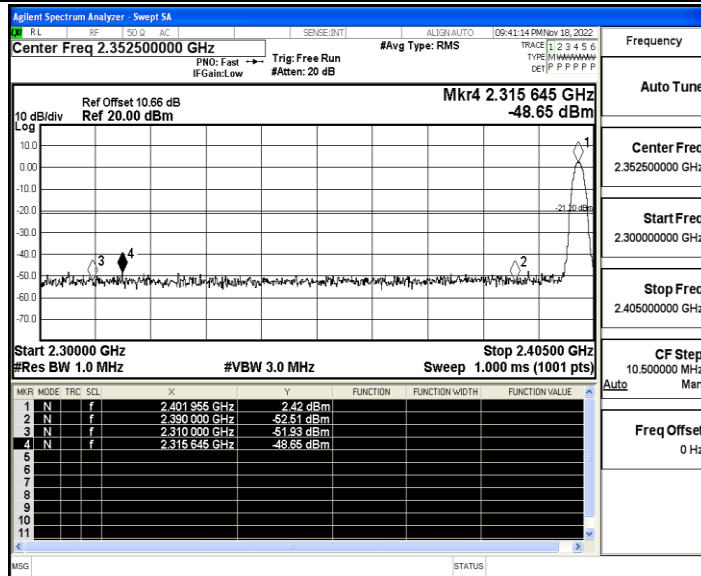


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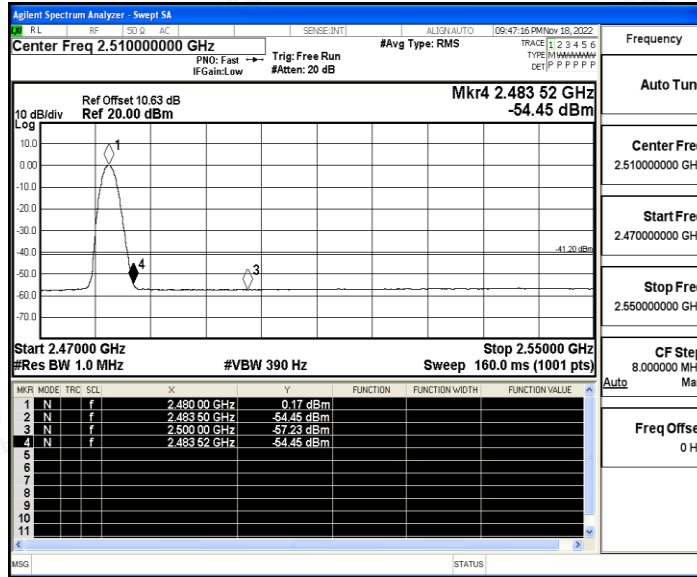


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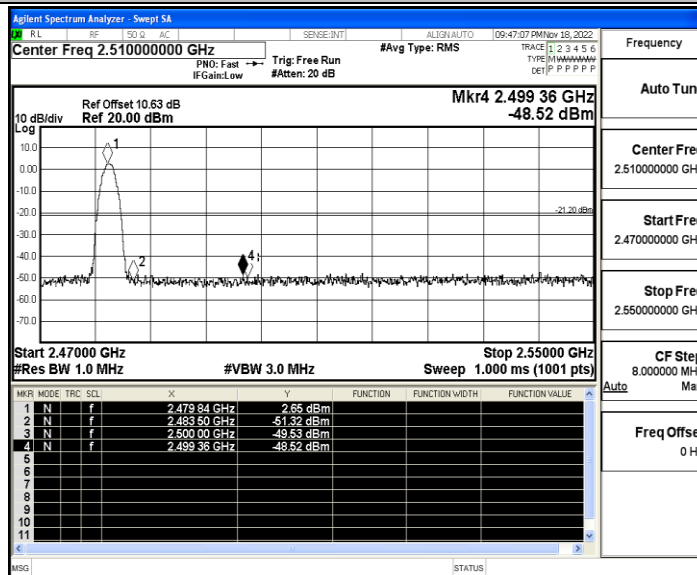


3DH5_Ant1_High_2480_AV



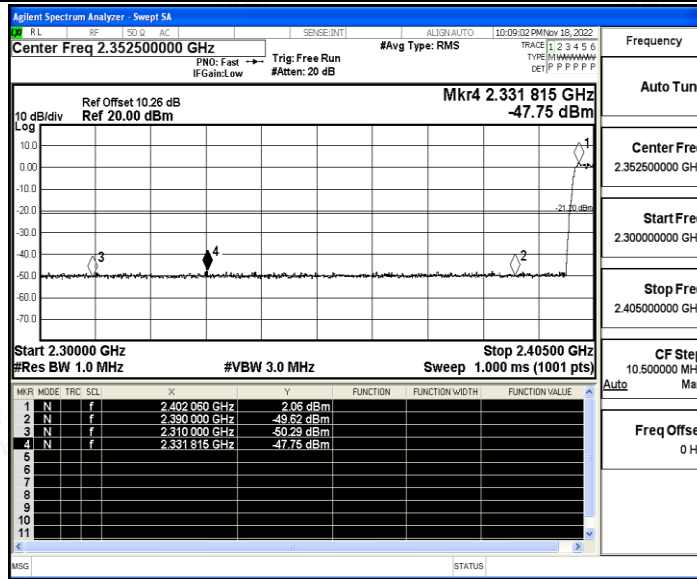


3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak





3DH5_Ant1_High_Hop_2480_Peak

