



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: 4G Phone

Test Model: mindphone 1

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
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	0.978	2401.526	2402.504	---
		2441	1.035	2440.466	2441.501	---
		2480	1.044	2479.460	2480.504	---
2DH5	Ant1	2402	1.335	2401.328	2402.663	---
		2441	1.314	2440.343	2441.657	---
		2480	1.338	2479.328	2480.666	---
3DH5	Ant1	2402	1.293	2401.349	2402.642	---
		2441	1.356	2440.319	2441.675	---
		2480	1.305	2479.346	2480.651	---

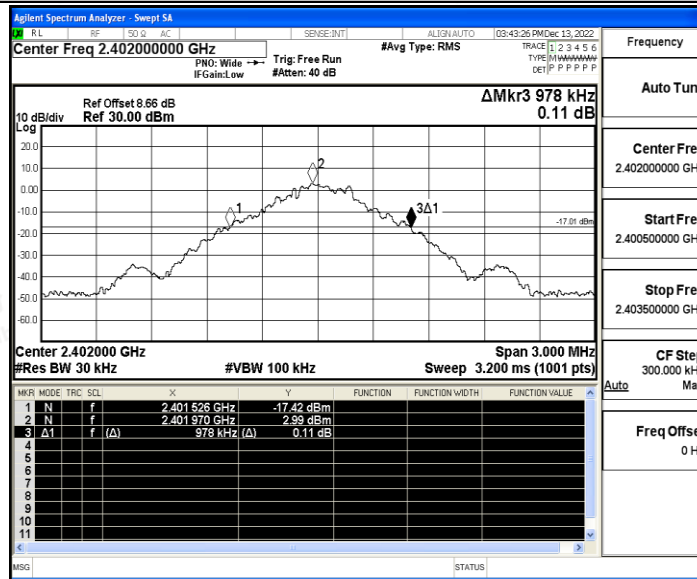


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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

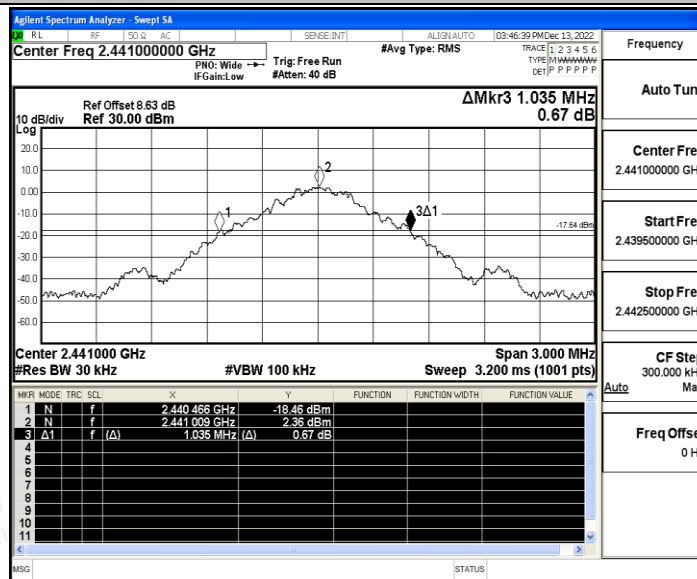


Test Graphs

DH5_Ant1_2402

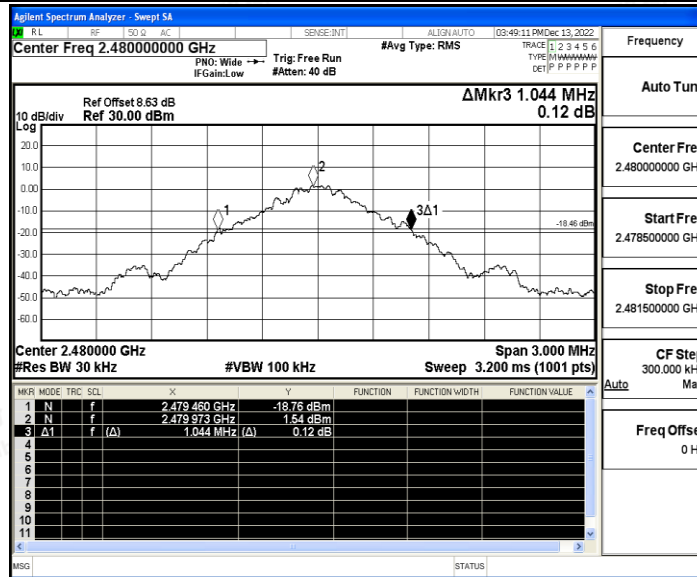


DH5_Ant1_2441

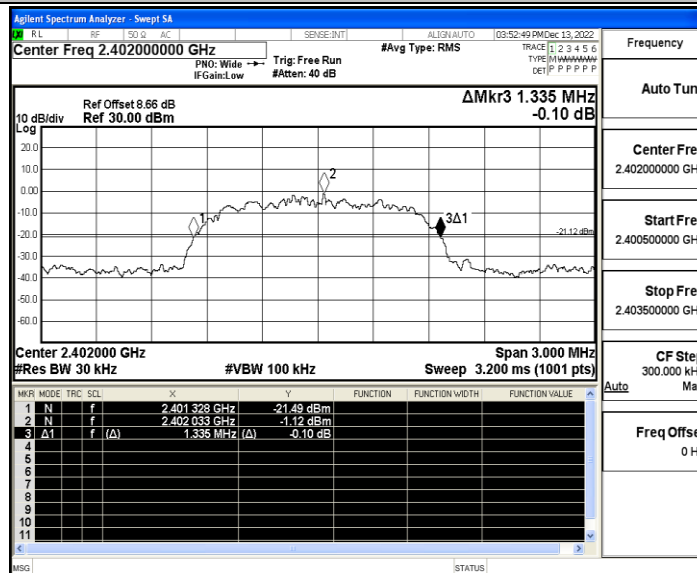


DH5_Ant1_2480



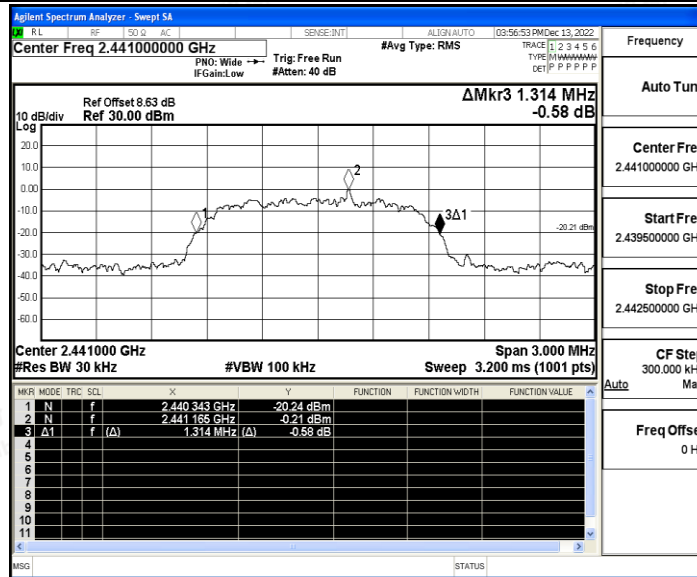


2DH5_Ant1_2402

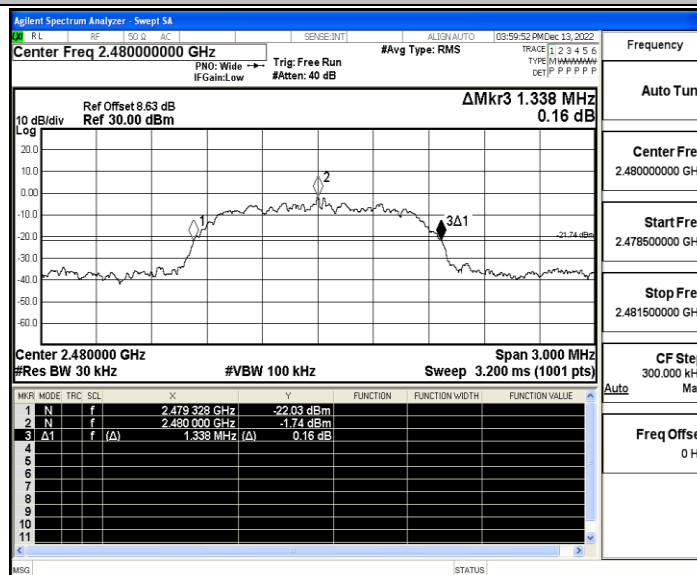


2DH5_Ant1_2441



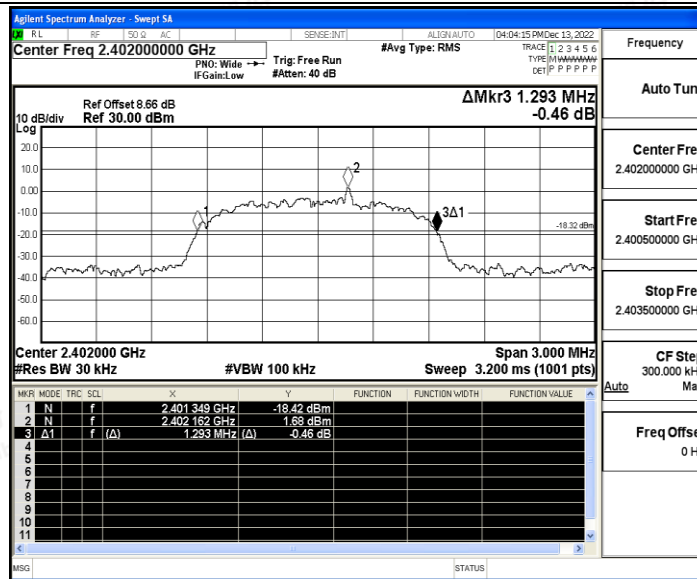


2DH5_Ant1_2480

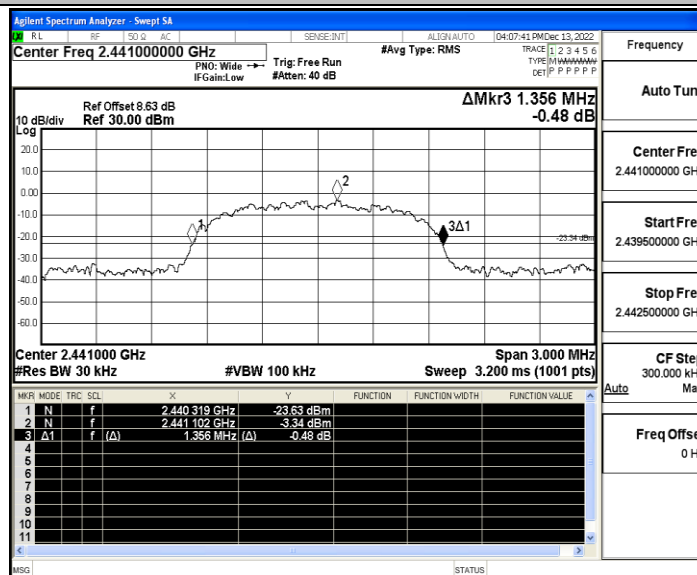


3DH5_Ant1_2402



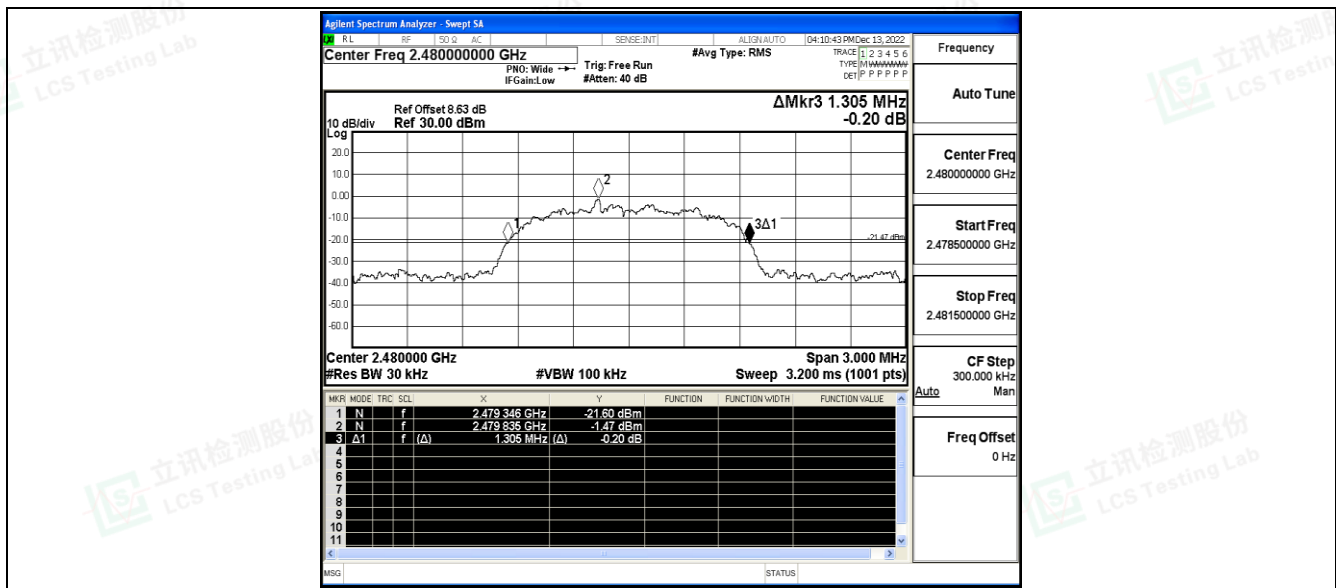


3DH5_Ant1_2441



3DH5_Ant1_2480





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Scan code to check authenticity



A.2 Maximum conducted output power

Test Result

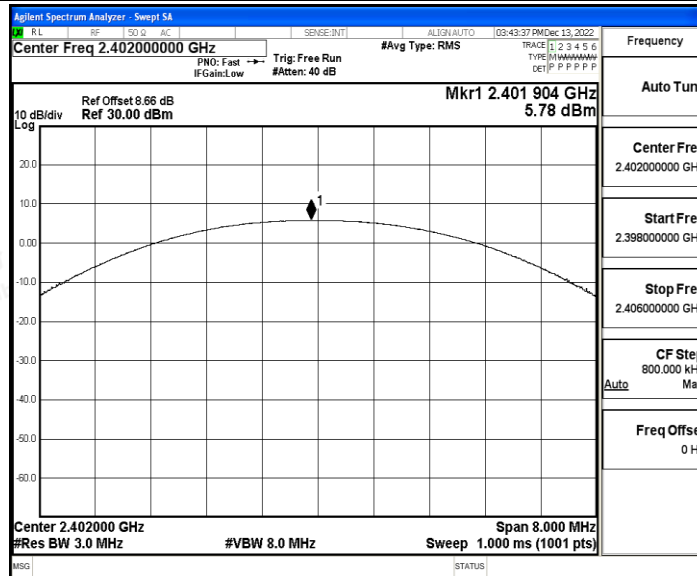
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	5.78	≤ 20.97	PASS
		2441	5.17	≤ 20.97	PASS
		2480	4.52	≤ 20.97	PASS
2DH5	Ant1	2402	4.96	≤ 20.97	PASS
		2441	4.43	≤ 20.97	PASS
		2480	3.69	≤ 20.97	PASS
3DH5	Ant1	2402	5.07	≤ 20.97	PASS
		2441	4.63	≤ 20.97	PASS
		2480	3.82	≤ 20.97	PASS



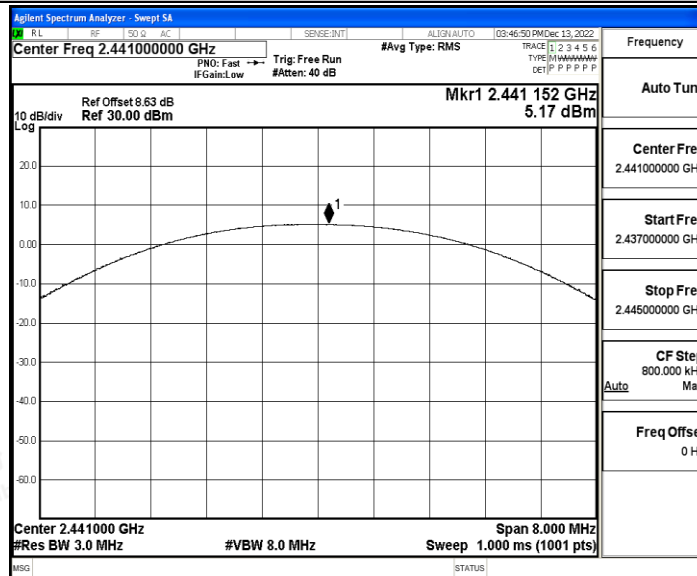


Test Graphs

DH5_Ant1_2402

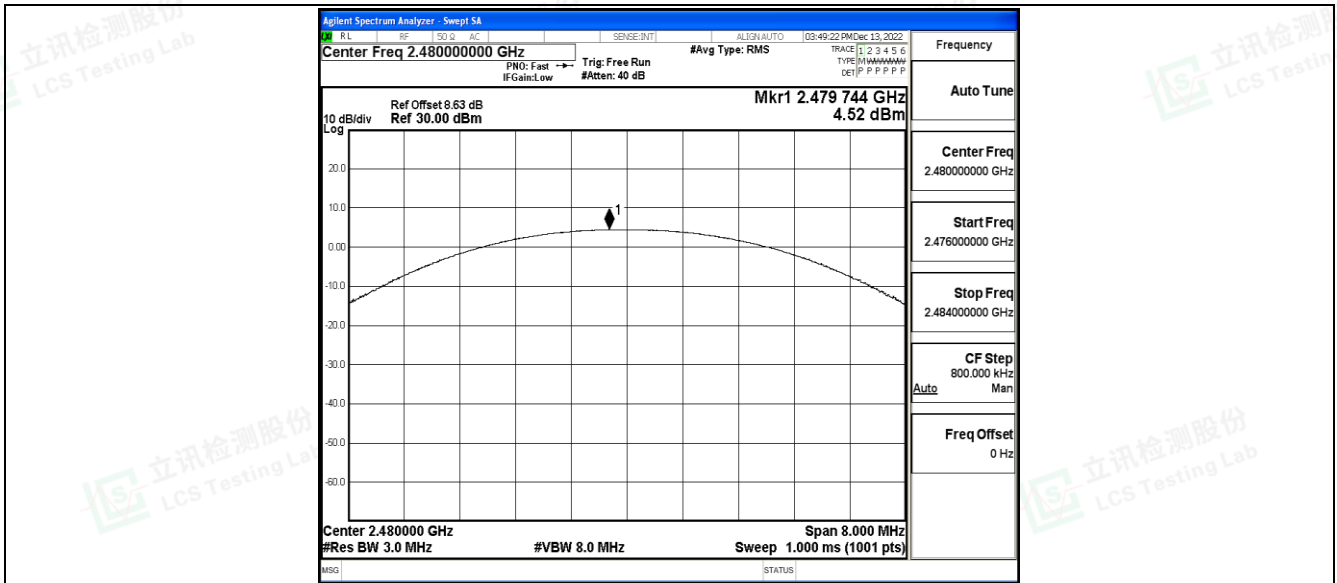


DH5_Ant1_2441

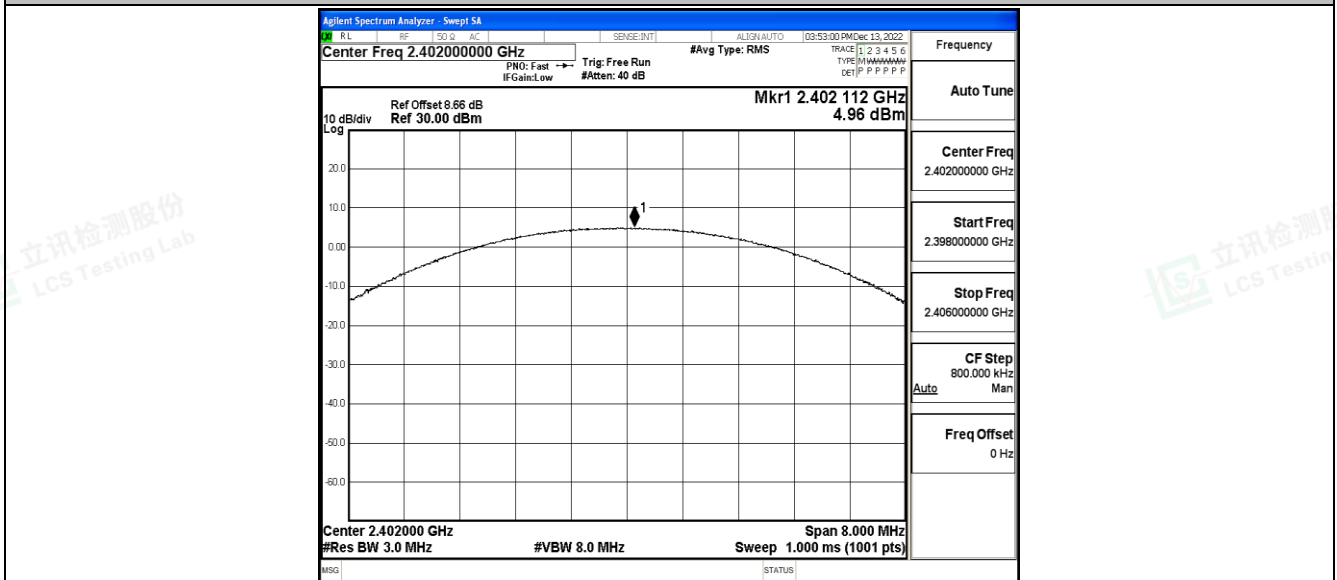


DH5_Ant1_2480



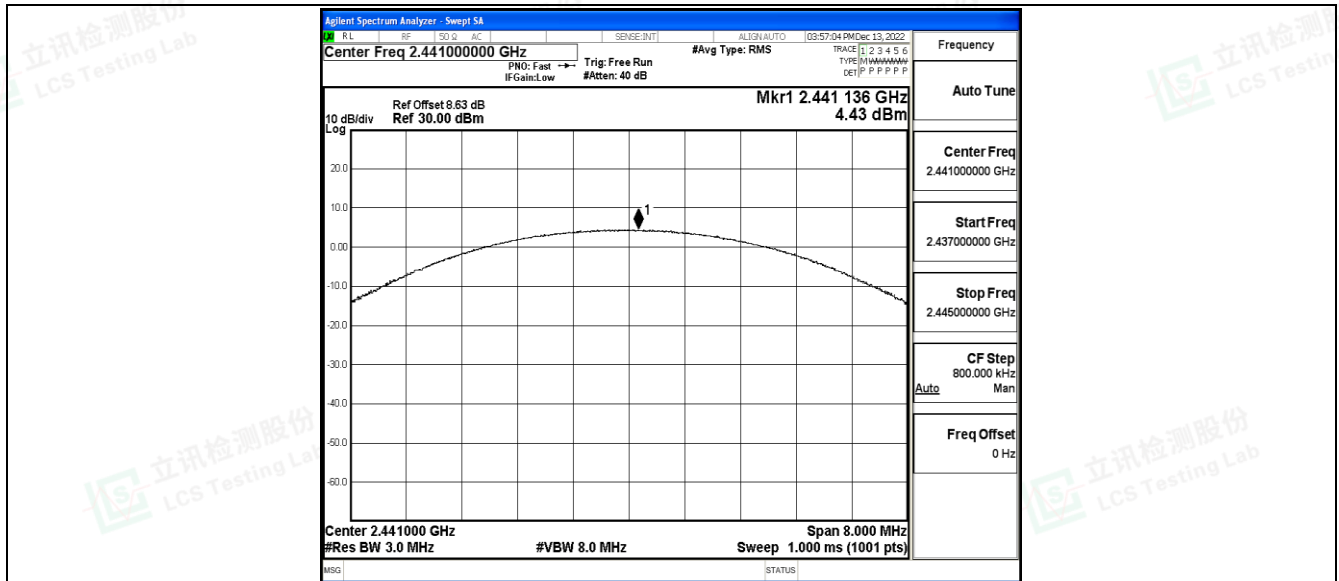


2DH5_Ant1_2402

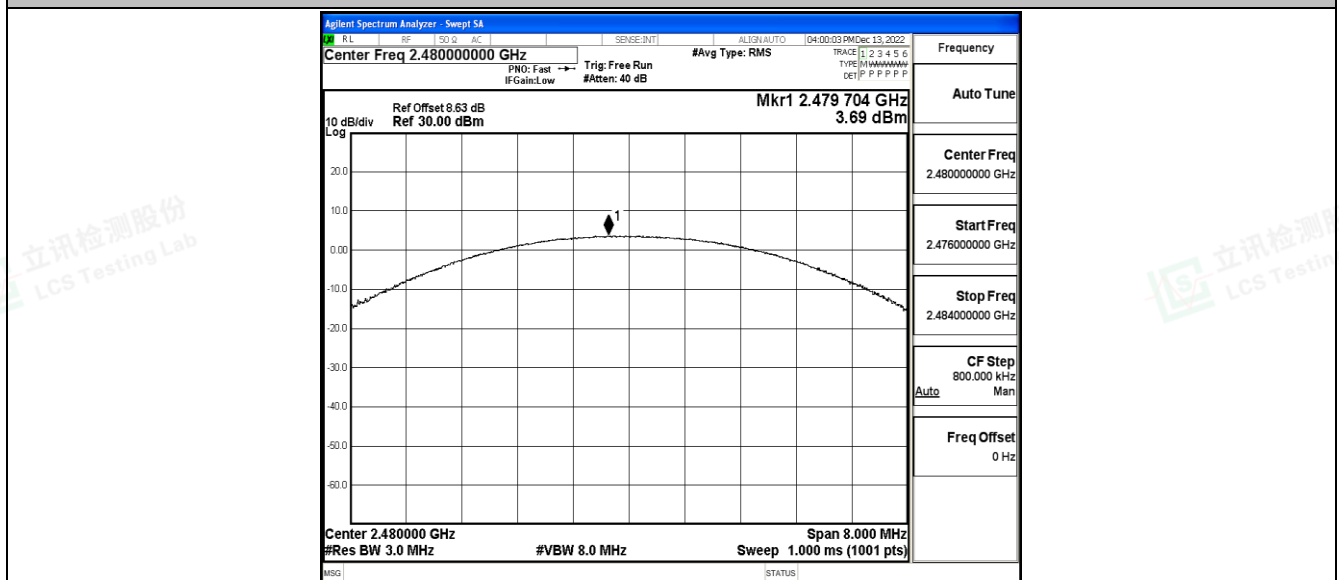


2DH5_Ant1_2441



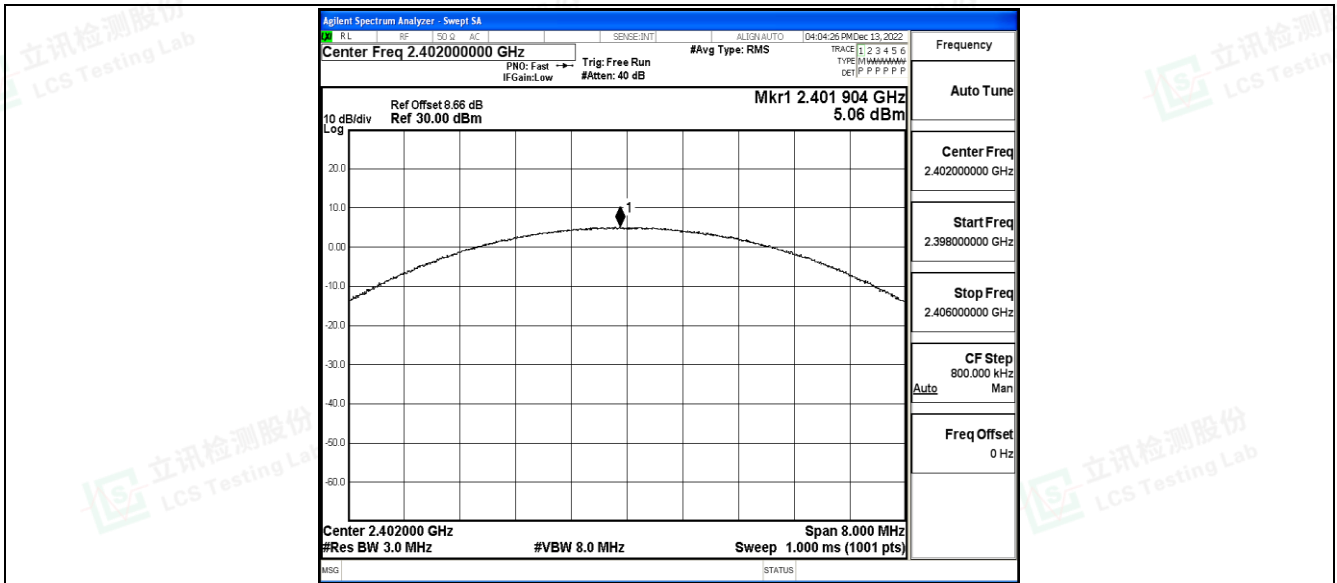


2DH5_Ant1_2480

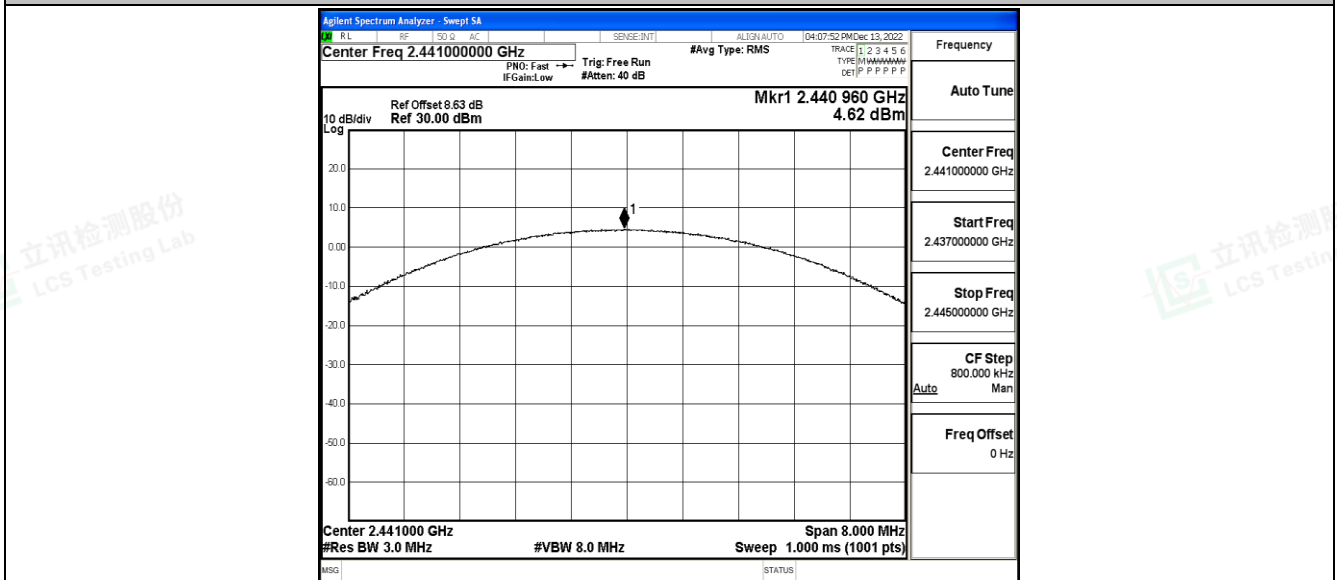


3DH5_Ant1_2402



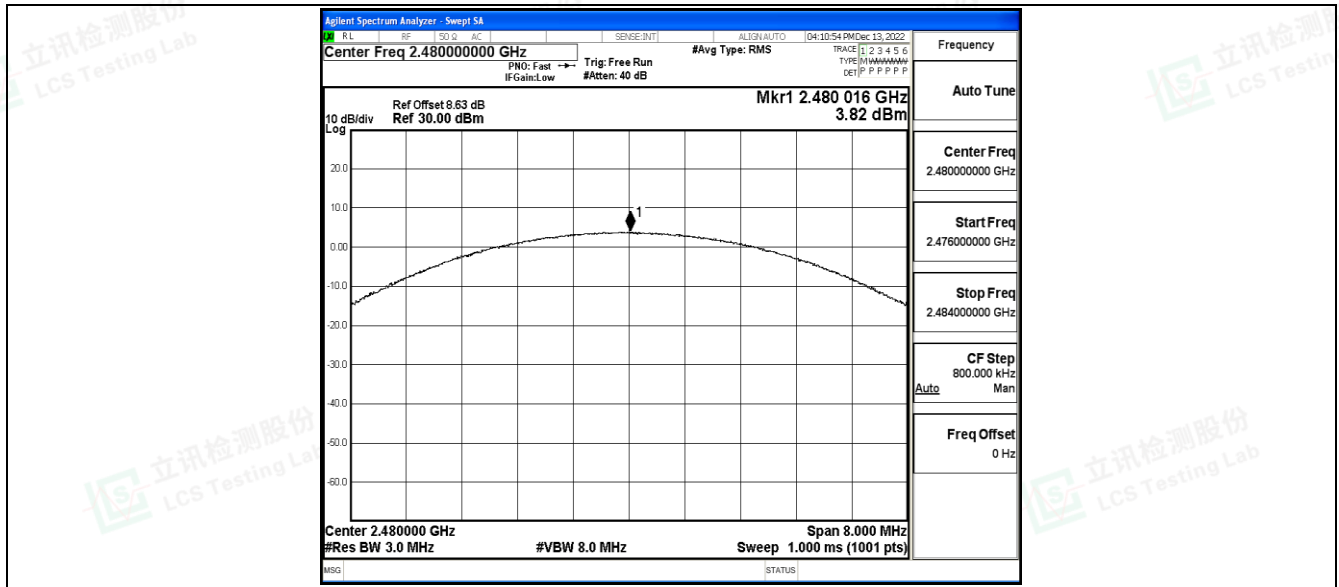


3DH5_Ant1_2441



3DH5_Ant1_2480







A.3 Carrier frequency separation

Test Result

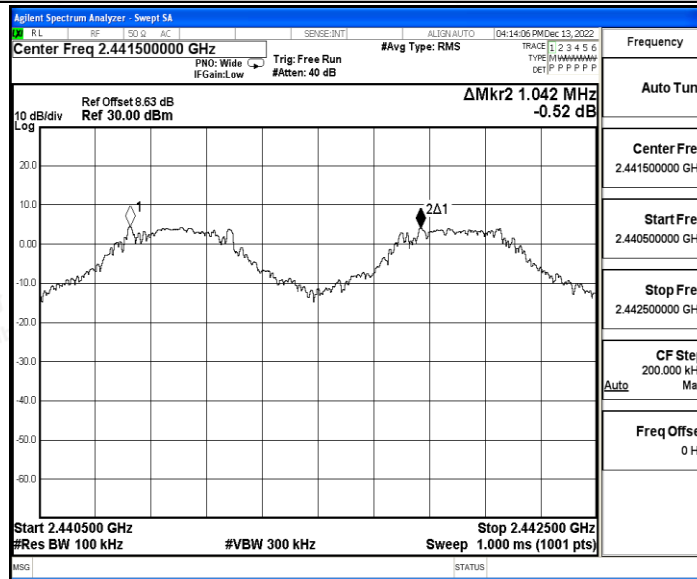
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.042	≥0.696	PASS
2DH5	Ant1	Hop	0.94	≥0.892	PASS
3DH5	Ant1	Hop	0.992	≥0.904	PASS



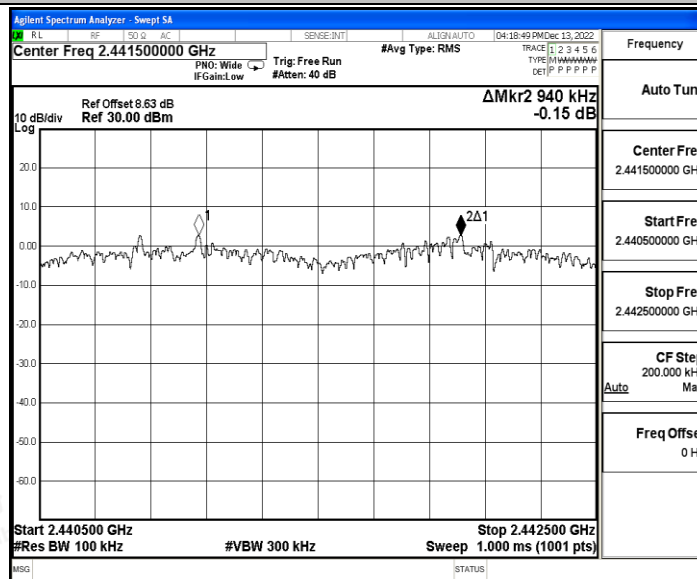


Test Graphs

DH5_Ant1_Hop

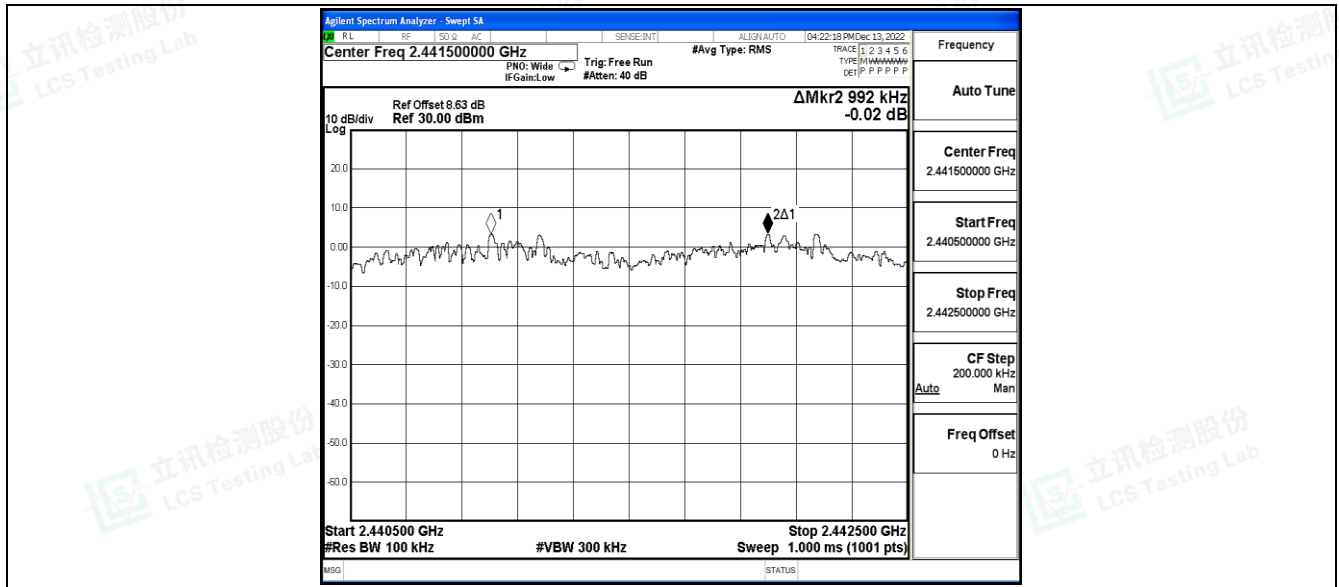


2DH5_Ant1_Hop



3DH5_Ant1_Hop







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

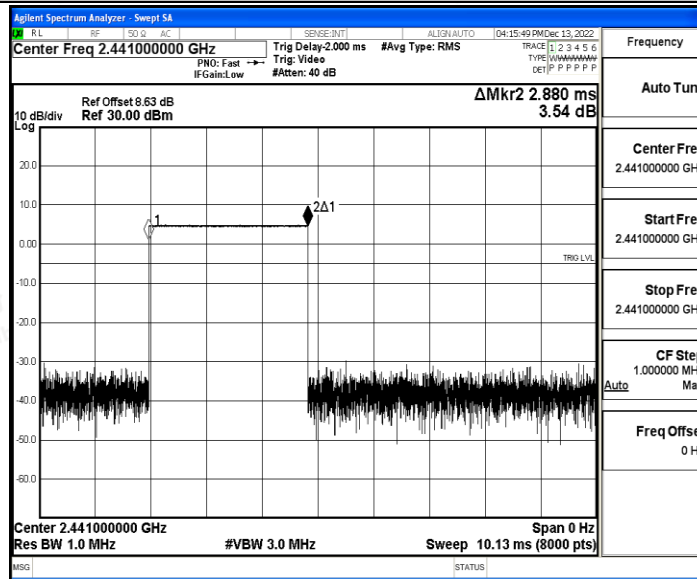


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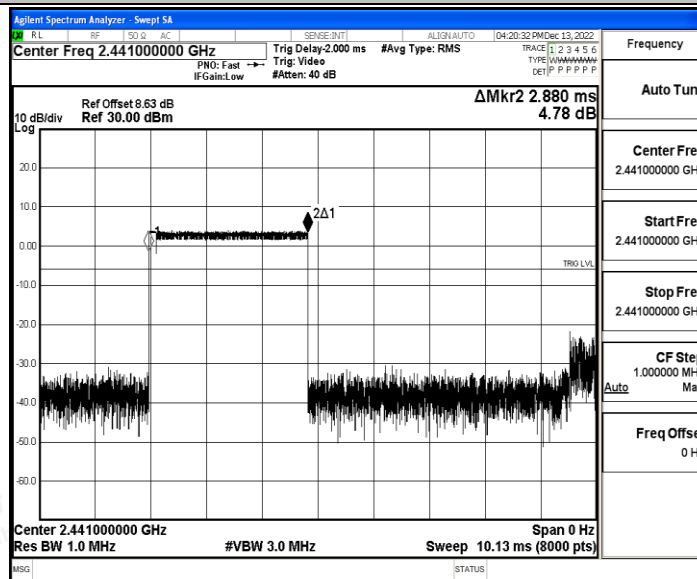


Test Graphs

DH5_Ant1_Hop

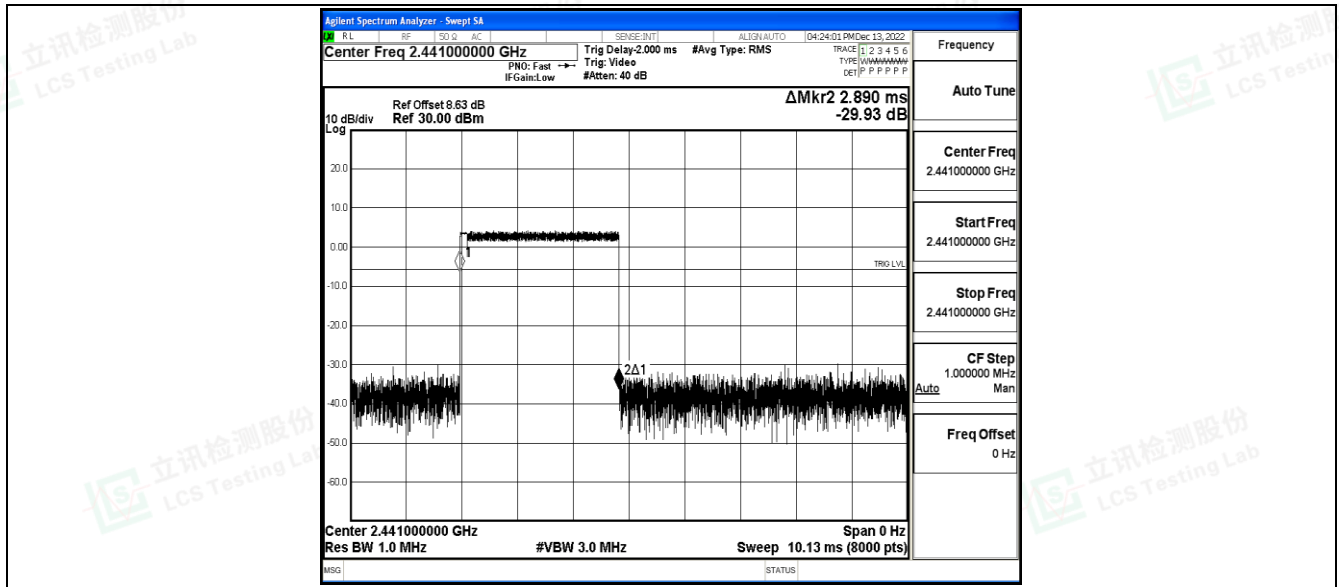


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.5 Number of hopping channels

Test Result

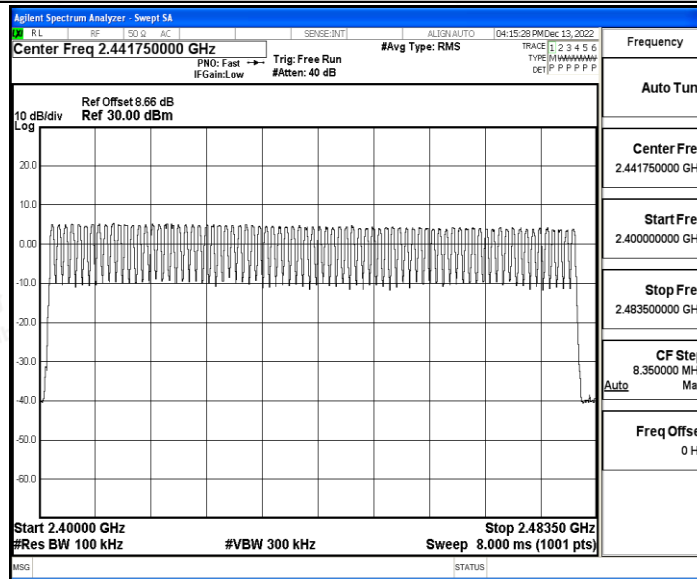
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥ 15	PASS
2DH5	Ant1	Hop	79	≥ 15	PASS
3DH5	Ant1	Hop	79	≥ 15	PASS



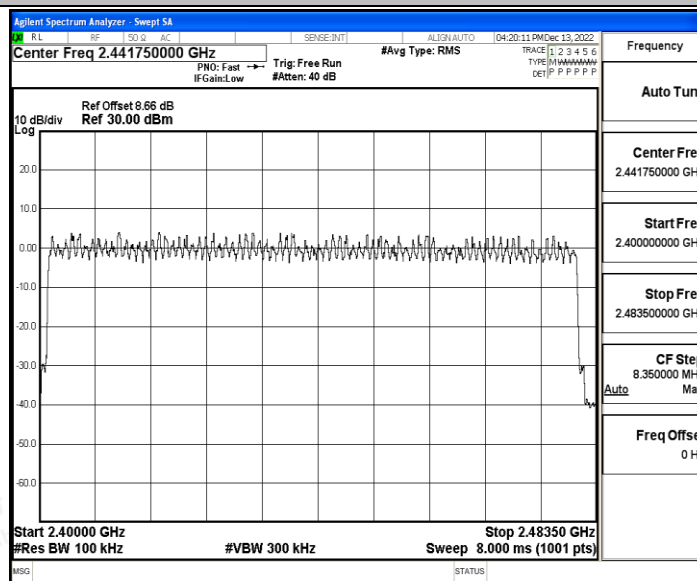


Test Graphs

DH5_Ant1_Hop

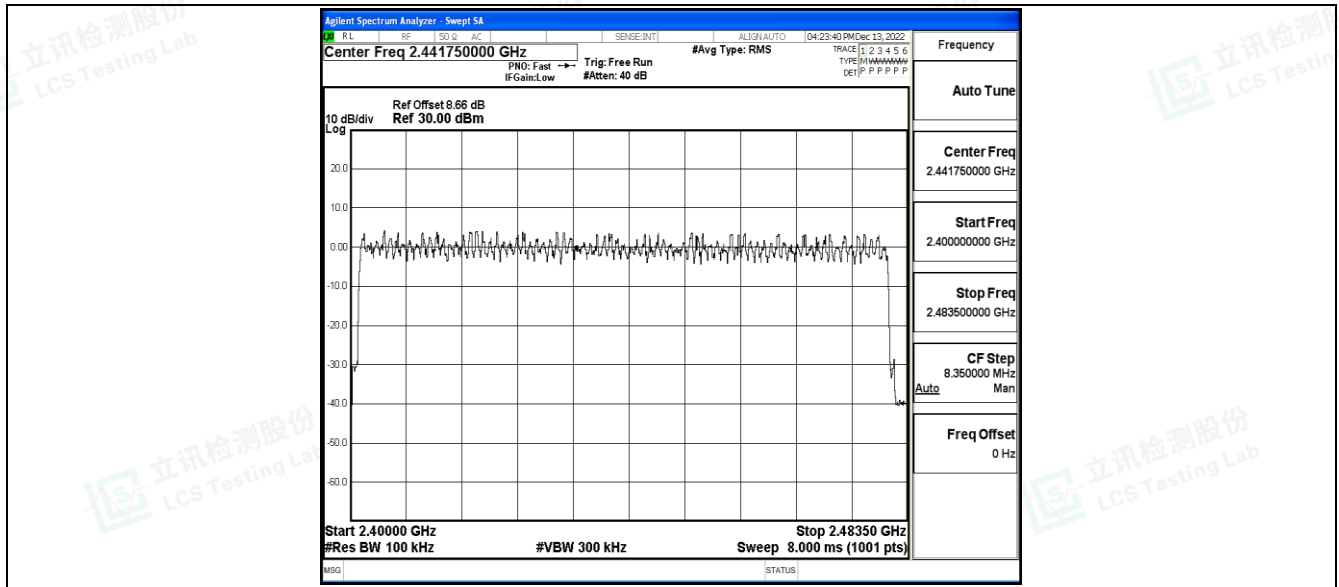


2DH5_Ant1_Hop



3DH5_Ant1_Hop







A.6 Band edge measurements

Test Result

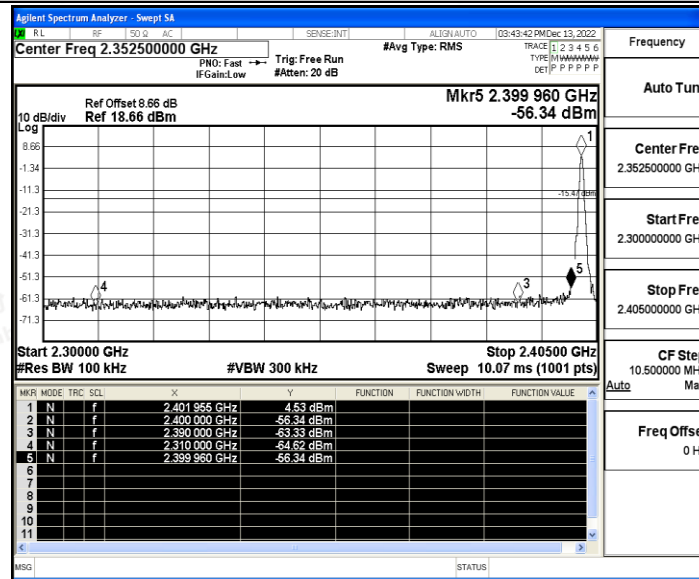
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	4.53	-56.34	≤ -15.47	PASS
		High	2480	3.28	-58.13	≤ -16.72	PASS
		Low	Hop_2402	4.34	-58.57	≤ -15.66	PASS
		High	Hop_2480	3.92	-58	≤ -16.08	PASS
2DH5	Ant1	Low	2402	1.66	-52.1	≤ -18.34	PASS
		High	2480	2.21	-58.59	≤ -17.79	PASS
		Low	Hop_2402	3.30	-58.26	≤ -16.7	PASS
		High	Hop_2480	2.92	-57.41	≤ -17.09	PASS
3DH5	Ant1	Low	2402	2.25	-54.77	≤ -17.75	PASS
		High	2480	-0.38	-57.6	≤ -20.38	PASS
		Low	Hop_2402	2.27	-58.55	≤ -17.73	PASS
		High	Hop_2480	2.59	-56.91	≤ -17.41	PASS



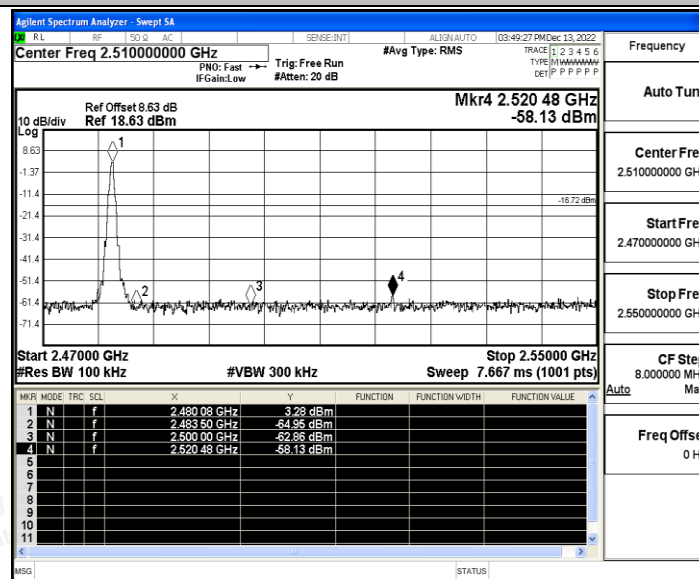


Test Graphs

DH5_Ant1_Low_2402

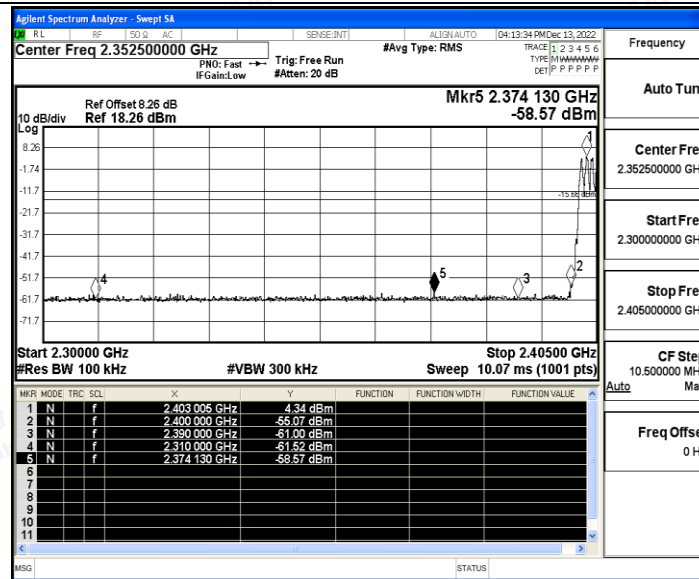


DH5_Ant1_High_2480

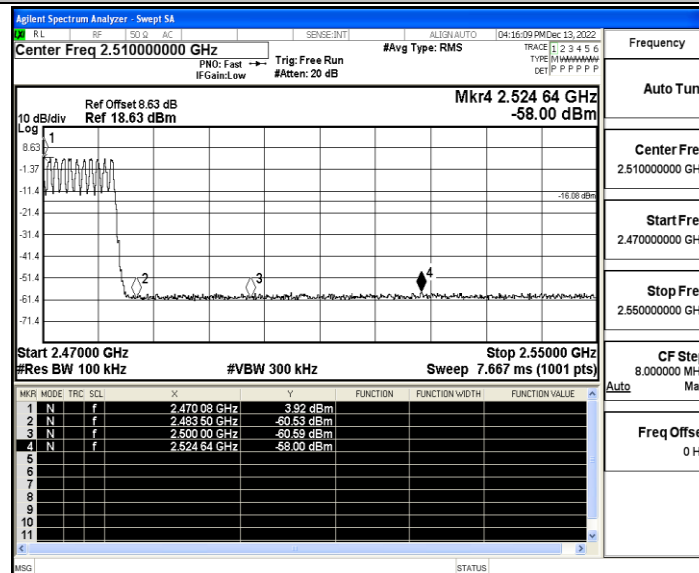


DH5_Ant1_Low_Hop_2402



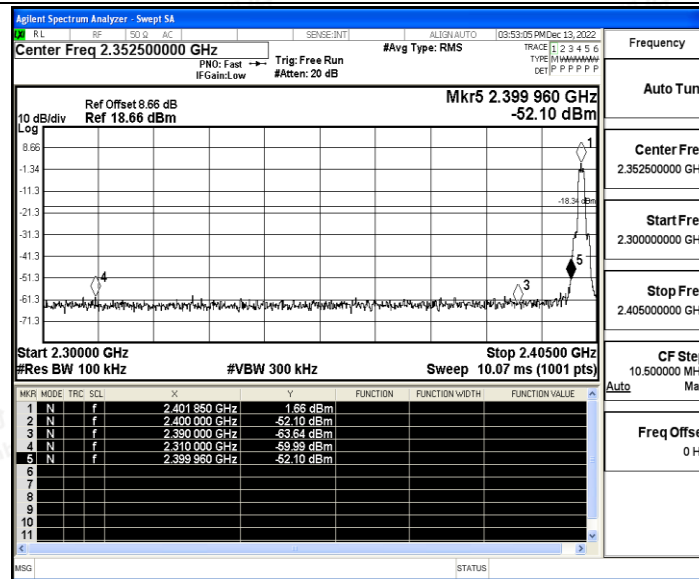


DH5_Ant1_High_Hop_2480

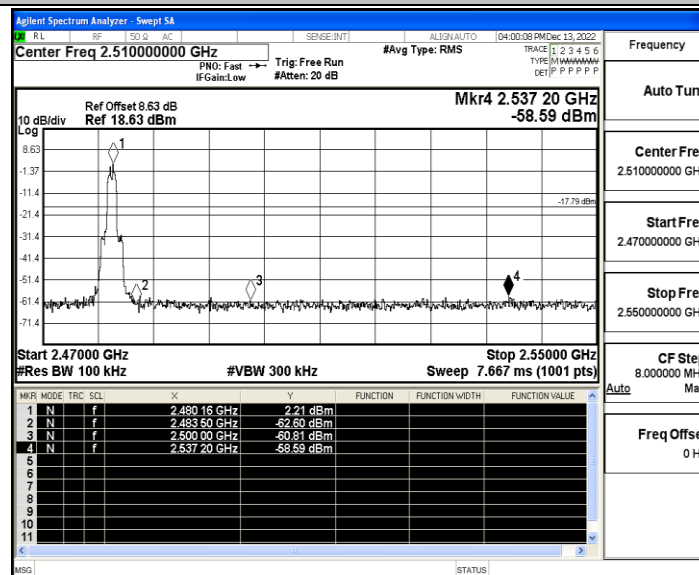


2DH5_Ant1_Low_2402



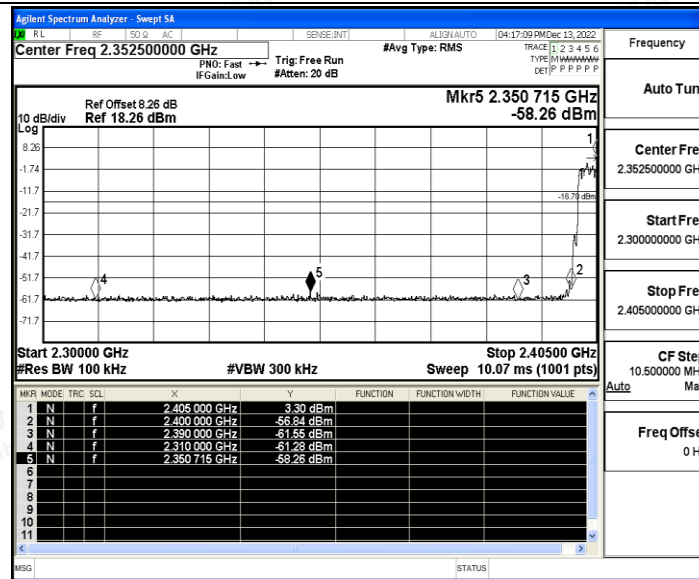


2DH5_Ant1_High_2480

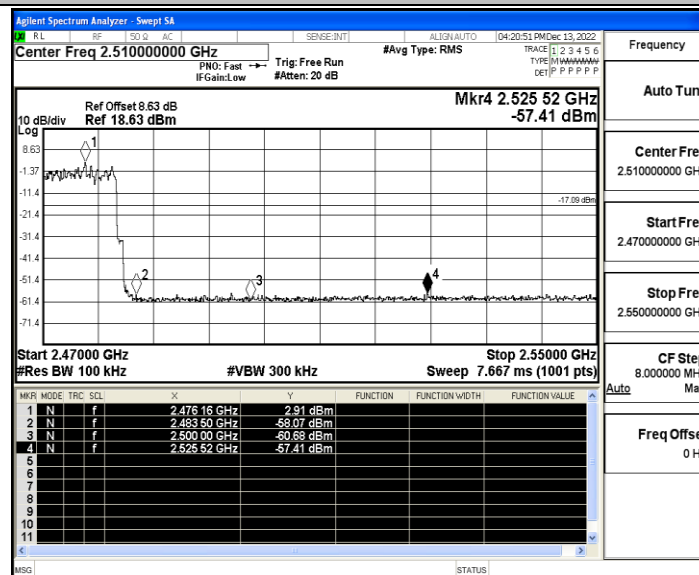


2DH5_Ant1_Low_Hop_2402



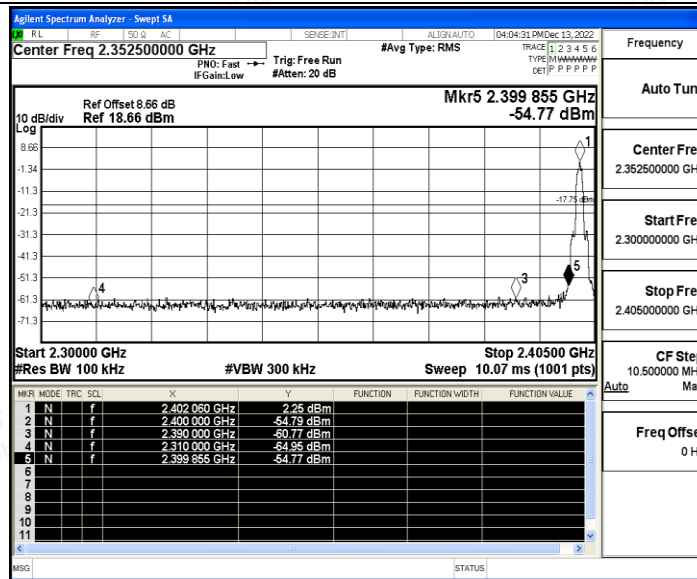


2DH5_Ant1_High_Hop_2480

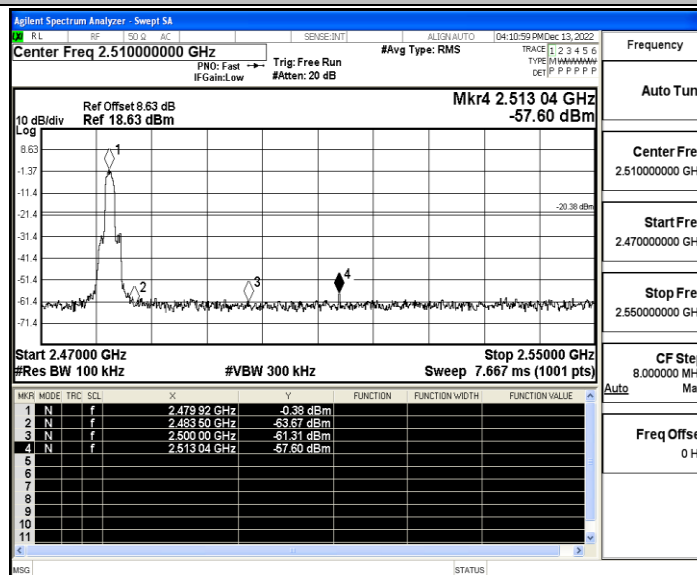


3DH5_Ant1_Low_2402



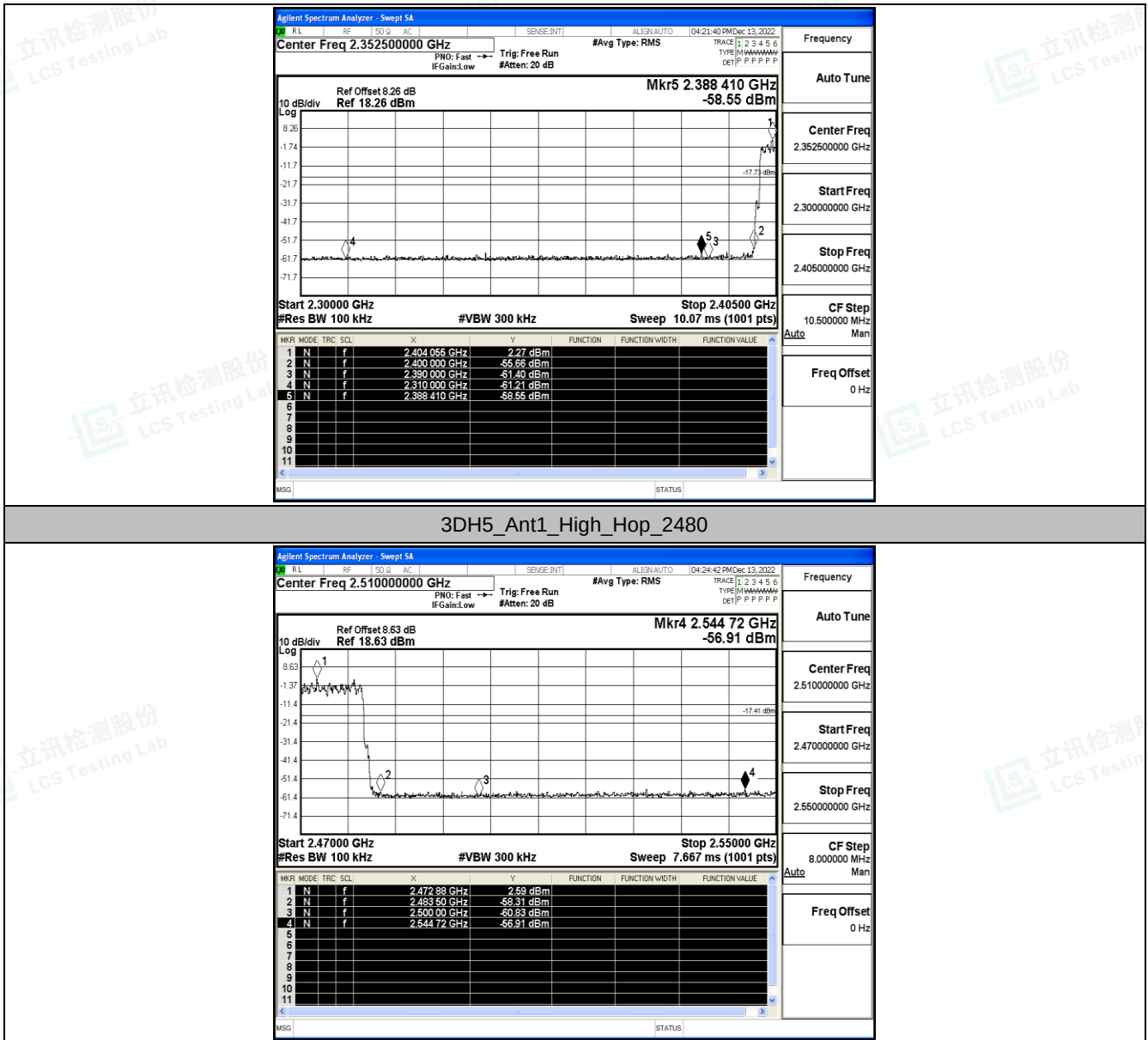


3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402







A.7 Conducted Spurious Emission

Test Result

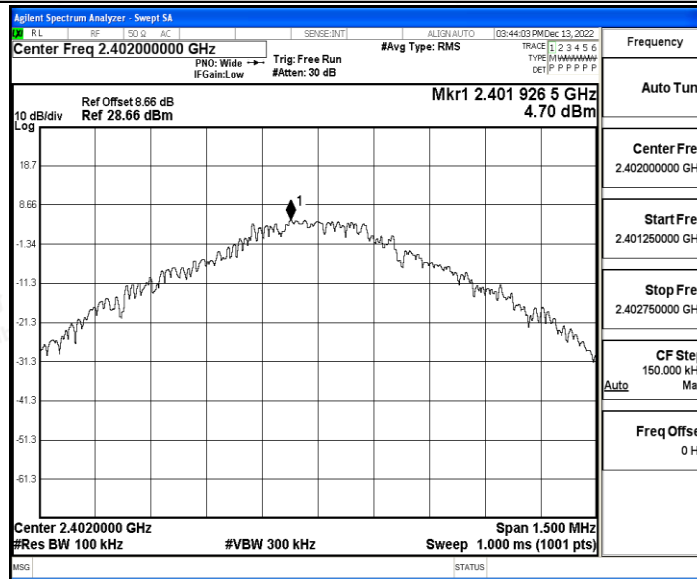
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	4.70	4.70	---	PASS
			30~1000	4.70	-60.73	≤ -15.3	PASS
			1000~26500	4.70	-30.34	≤ -15.3	PASS
		2441	Reference	4.07	4.07	---	PASS
			30~1000	4.07	-61.06	≤ -15.93	PASS
			1000~26500	4.07	-46.39	≤ -15.93	PASS
		2480	Reference	3.42	3.42	---	PASS
			30~1000	3.42	-59.58	≤ -16.58	PASS
			1000~26500	3.42	-45.96	≤ -16.58	PASS
2DH5	Ant1	2402	Reference	3.93	3.93	---	PASS
			30~1000	3.93	-44.75	≤ -16.07	PASS
			1000~26500	3.93	-45.79	≤ -16.07	PASS
		2441	Reference	-0.28	-0.28	---	PASS
			30~1000	-0.28	-45.05	≤ -20.28	PASS
			1000~26500	-0.28	-45.8	≤ -20.28	PASS
		2480	Reference	-1.18	-1.18	---	PASS
			30~1000	-1.18	-46.23	≤ -21.18	PASS
			1000~26500	-1.18	-45.7	≤ -21.18	PASS
3DH5	Ant1	2402	Reference	1.02	1.02	---	PASS
			30~1000	1.02	-30.4	≤ -18.98	PASS
			1000~26500	1.02	-46.14	≤ -18.98	PASS
		2441	Reference	0.42	0.42	---	PASS
			30~1000	0.42	-49.35	≤ -19.58	PASS
			1000~26500	0.42	-45.84	≤ -19.58	PASS
		2480	Reference	-0.32	-0.32	---	PASS
			30~1000	-0.32	-48.6	≤ -20.32	PASS
			1000~26500	-0.32	-46.32	≤ -20.32	PASS



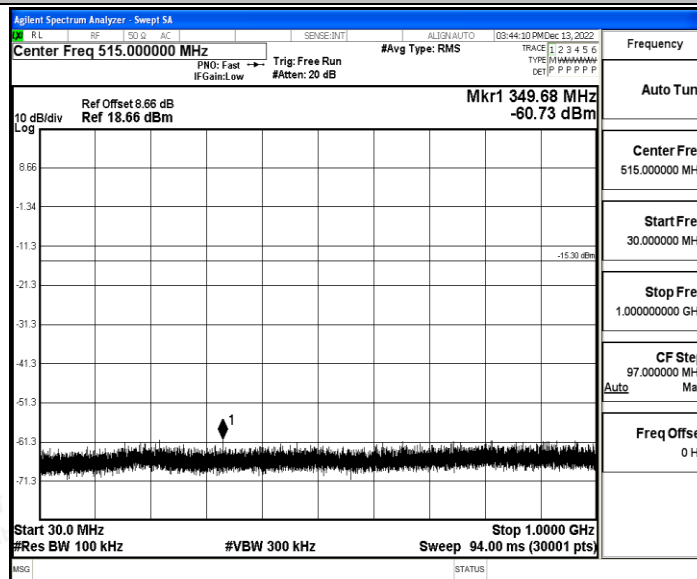


Test Graphs

DH5_Ant1_2402_0~Reference

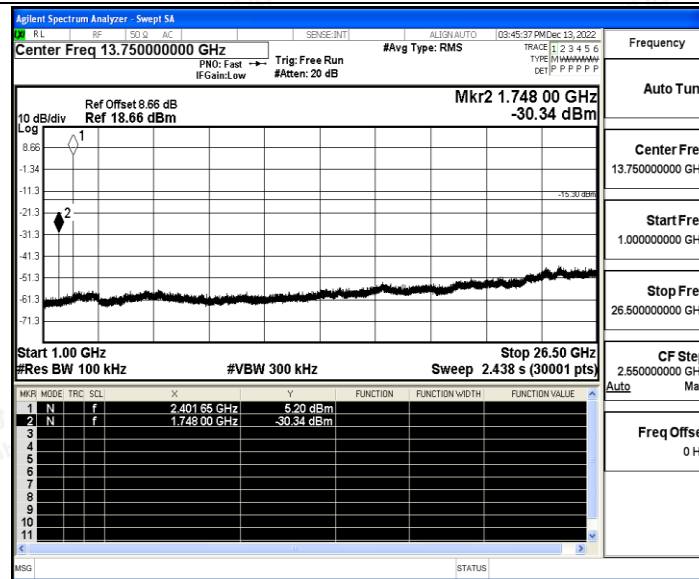


DH5_Ant1_2402_30~1000

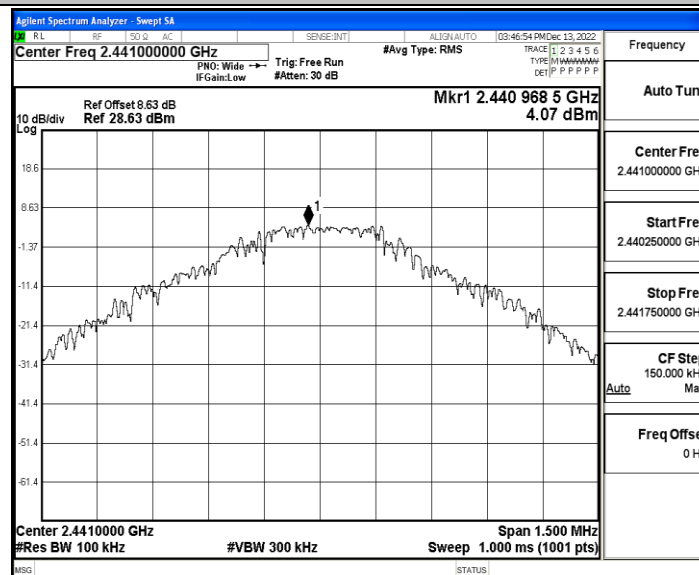


DH5_Ant1_2402_1000~26500



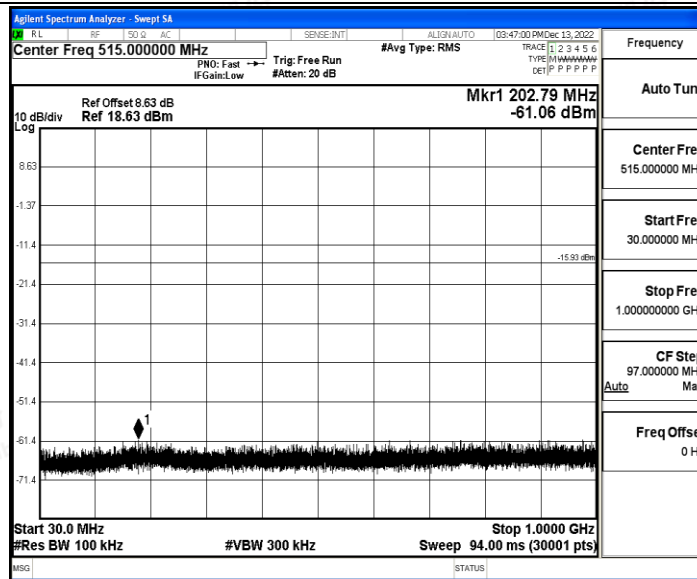


DH5_Ant1_2441_0~Reference

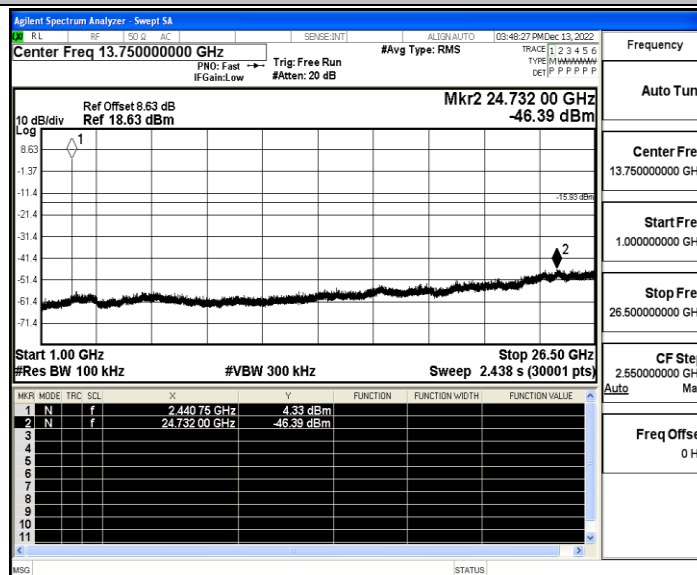


DH5_Ant1_2441_30~1000



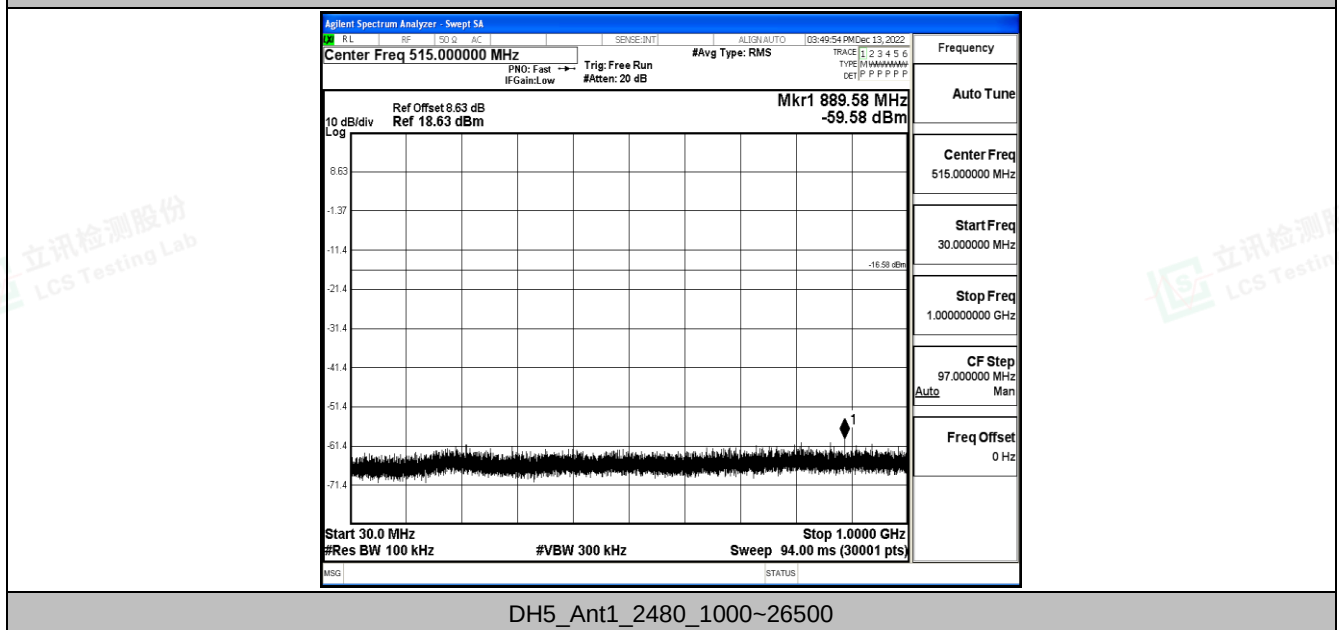
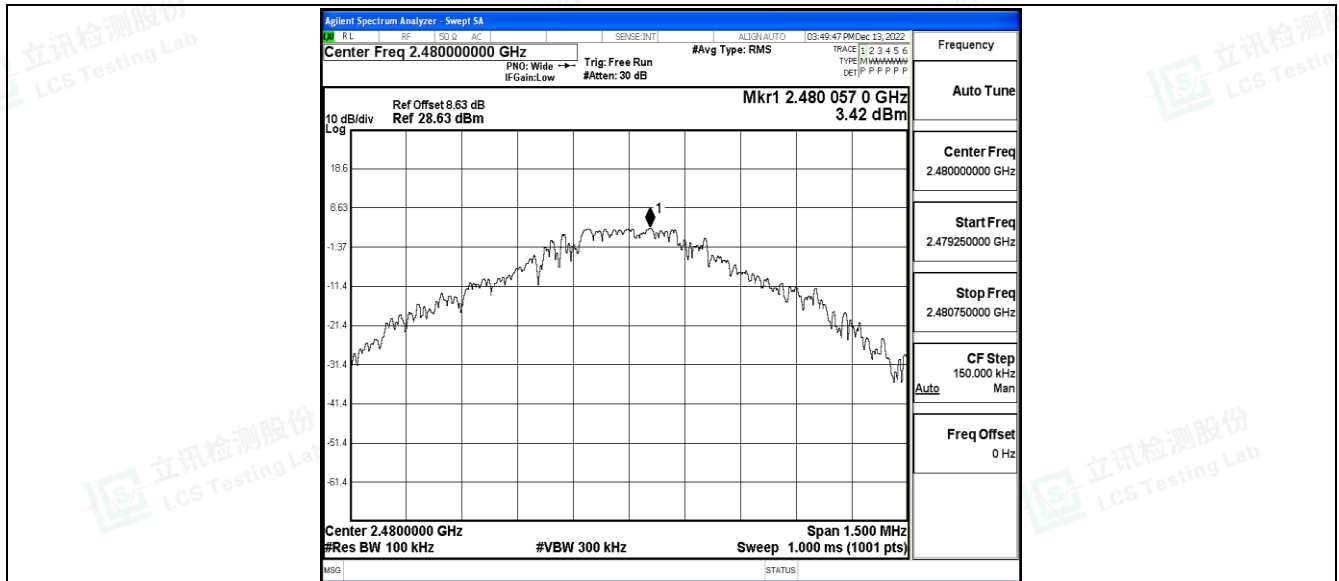


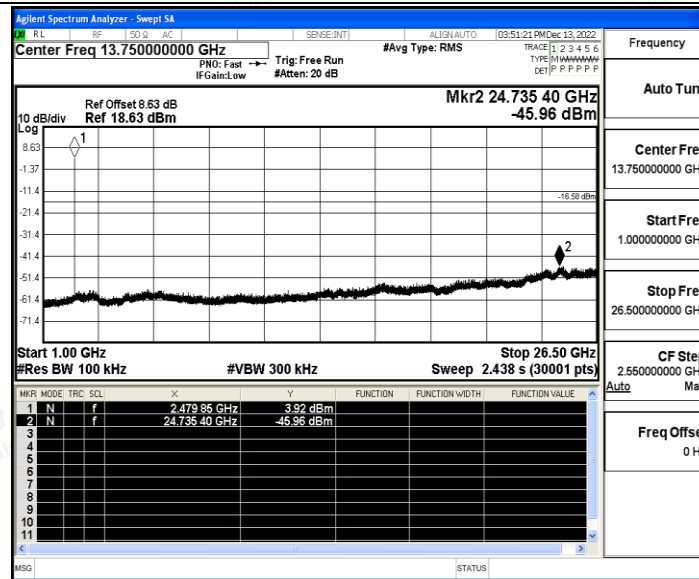
DH5_Ant1_2441_1000~26500



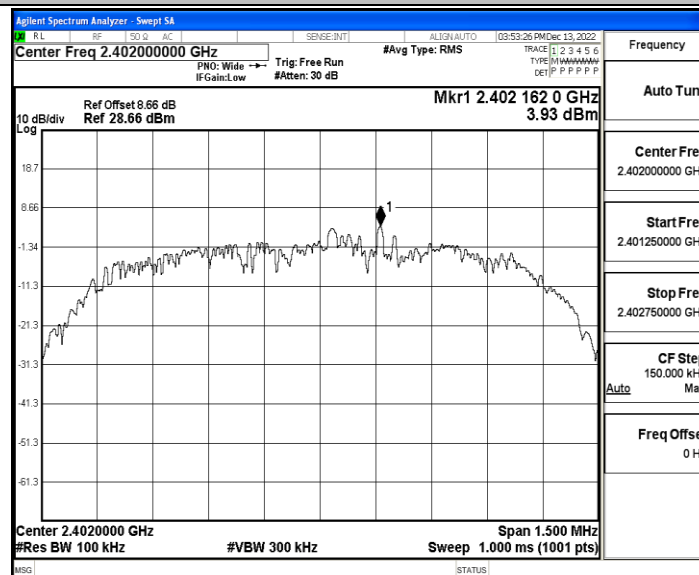
DH5_Ant1_2480_0~Reference





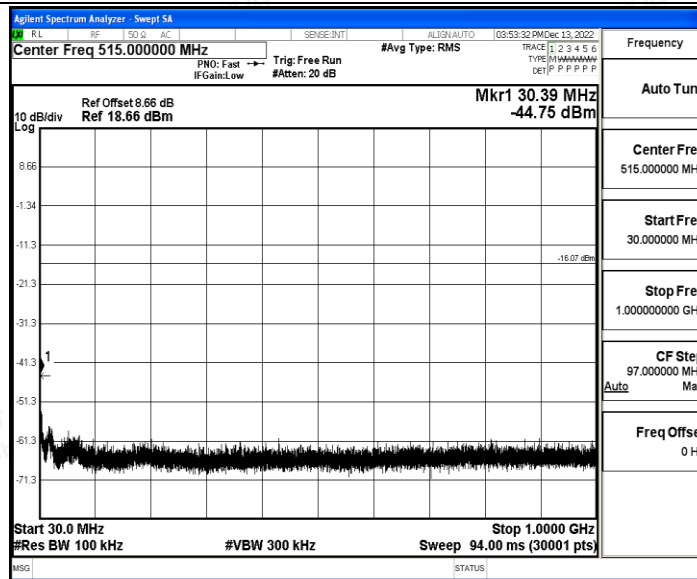


2DH5_Ant1_2402_0~Reference

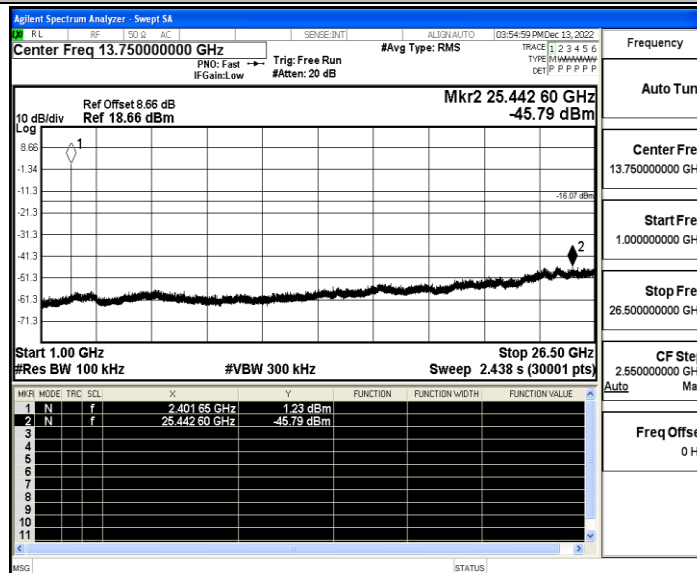


2DH5_Ant1_2402_30~1000



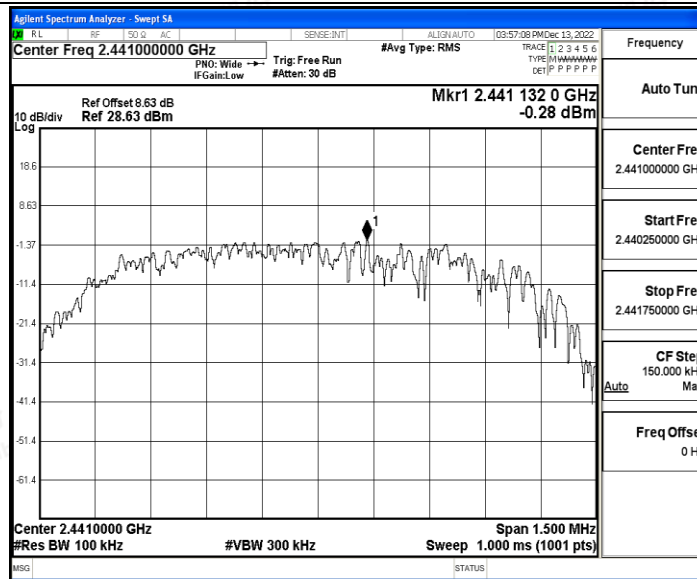


2DH5_Ant1_2402_1000~26500

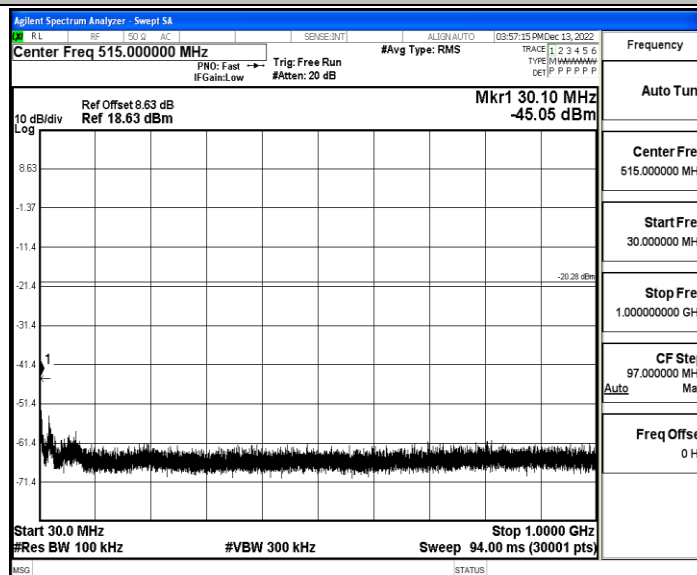


2DH5_Ant1_2441_0~Reference



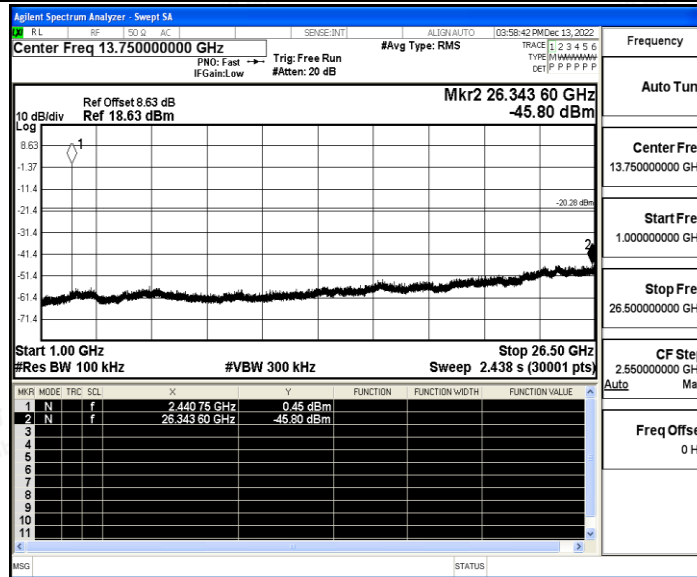


2DH5_Ant1_2441_30~1000

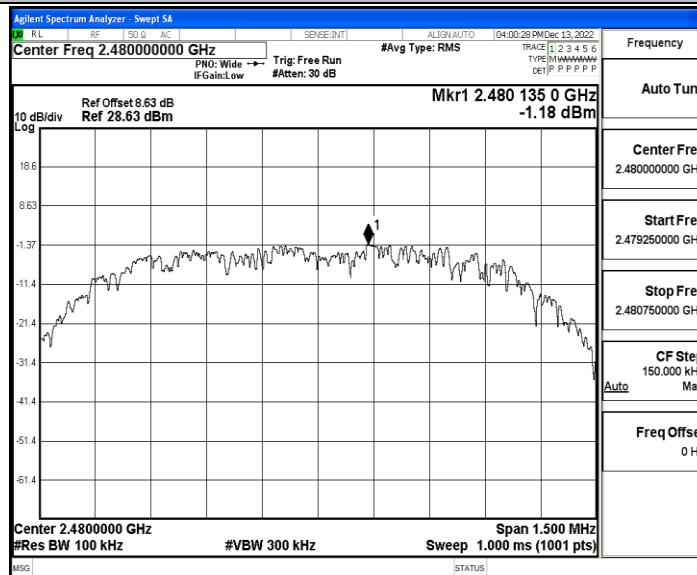


2DH5_Ant1_2441_1000~26500



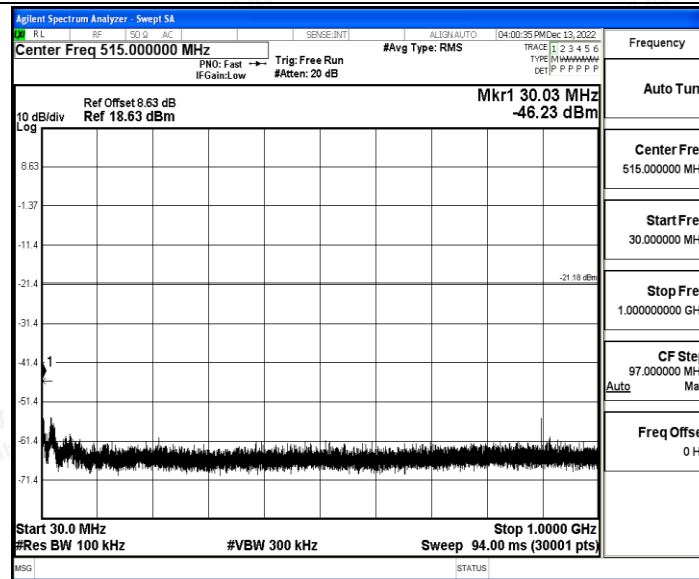


2DH5_Ant1_2480_0~Reference

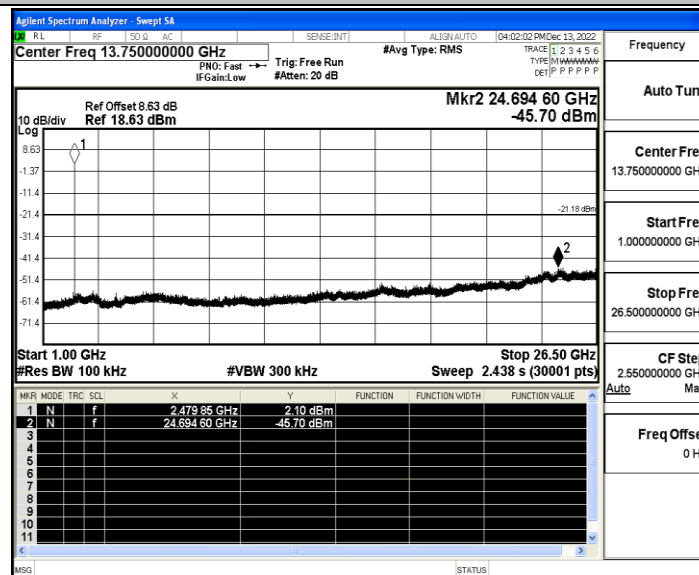


2DH5_Ant1_2480_30~1000



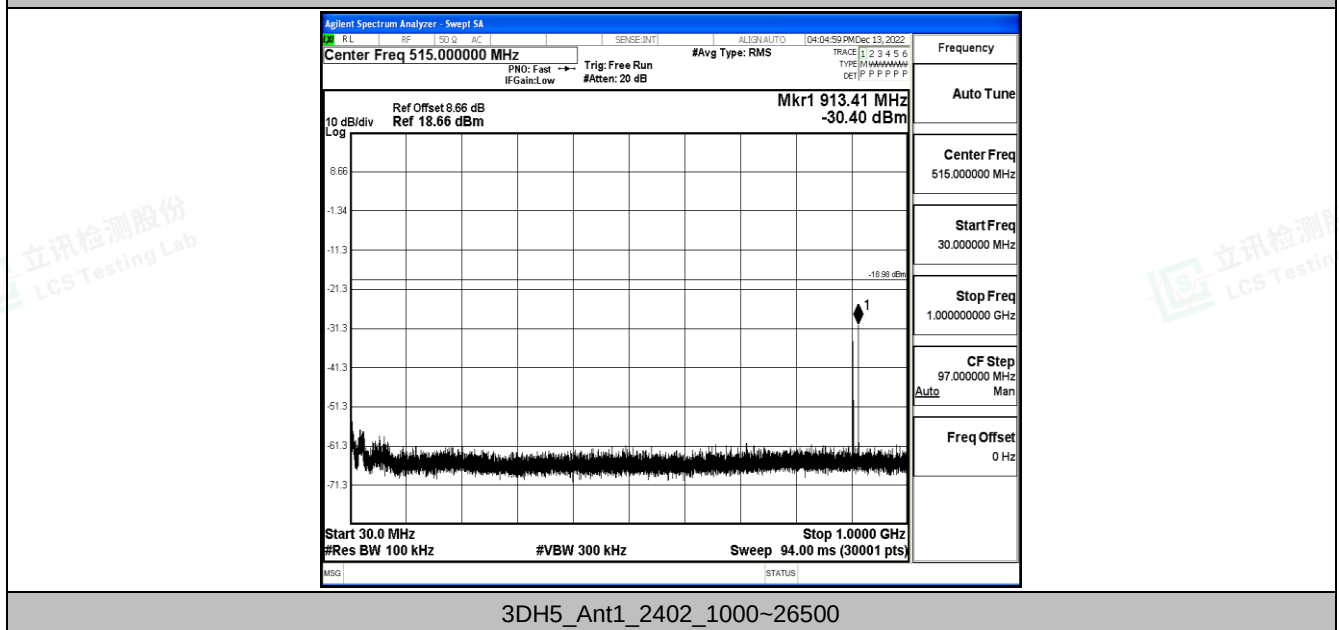
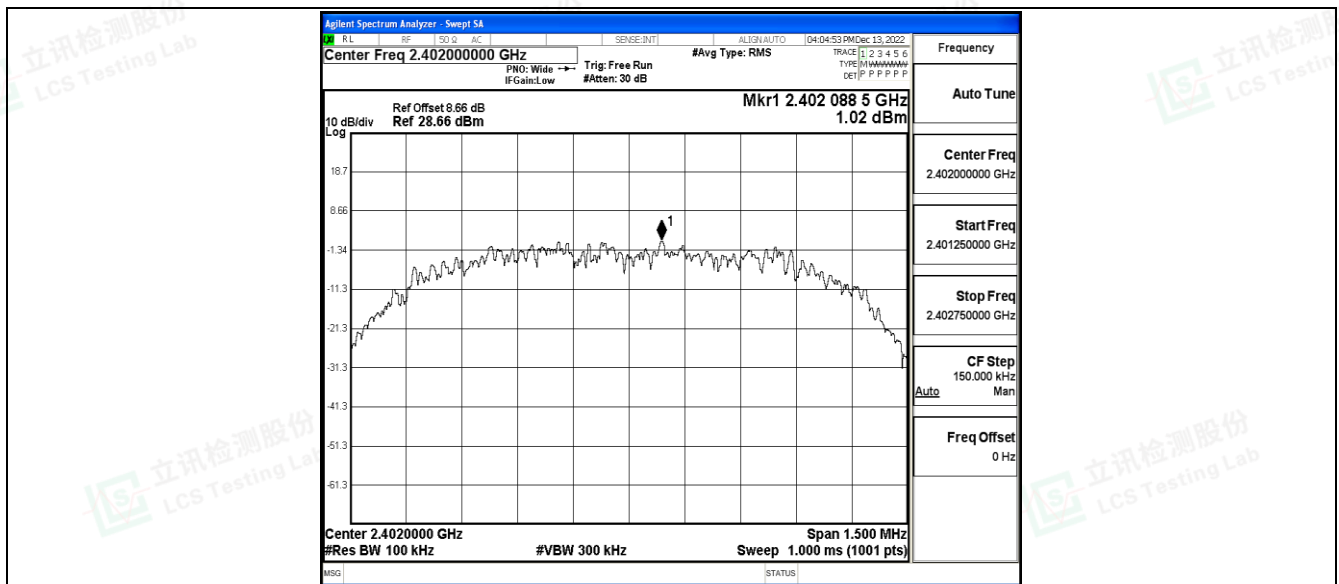


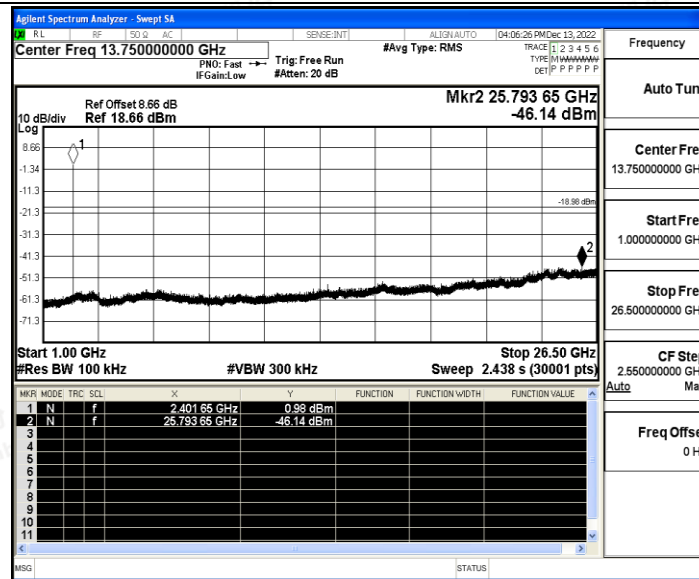
2DH5_Ant1_2480_1000~26500



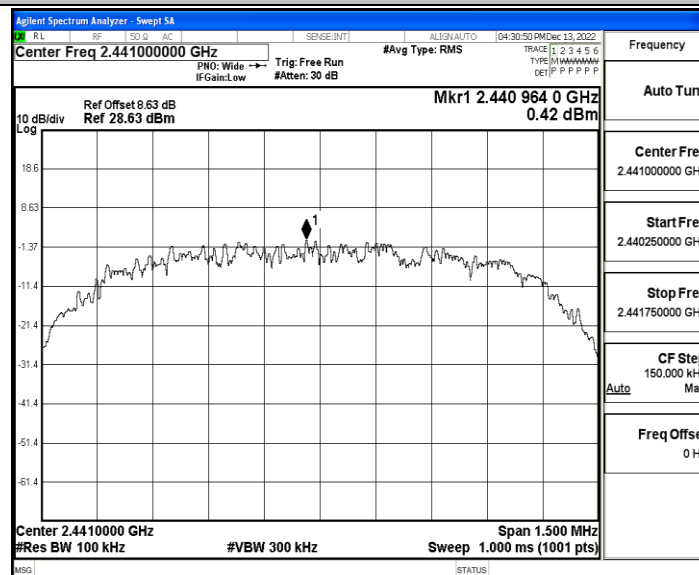
3DH5_Ant1_2402_0~Reference







3DH5_Ant1_2441_0~Reference



3DH5_Ant1_2441_30~1000

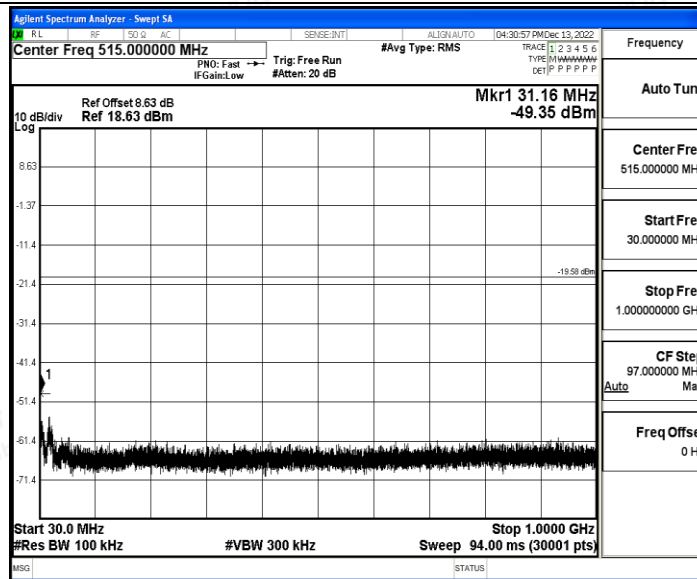


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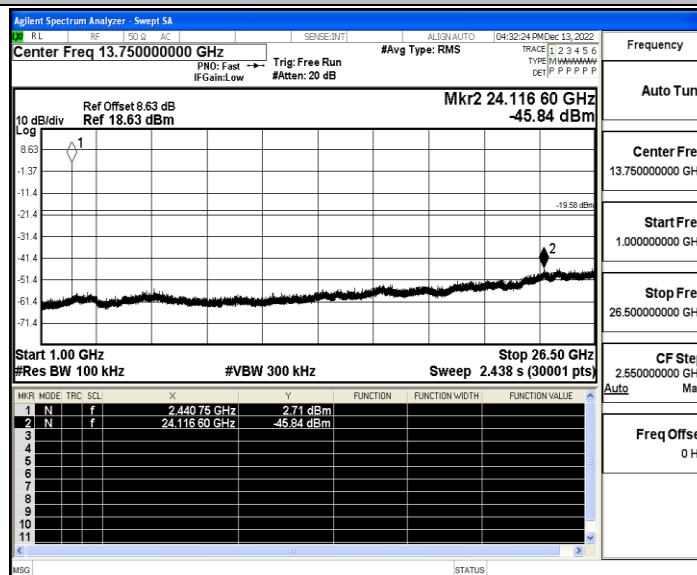
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

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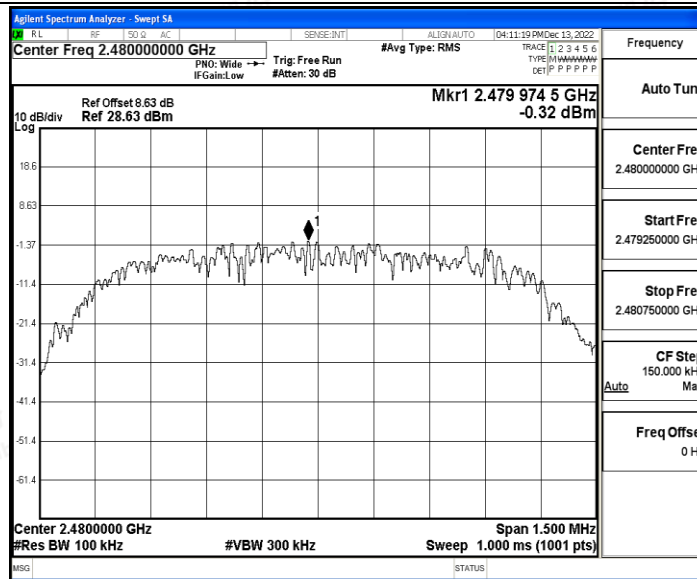


3DH5_Ant1_2441_1000~26500

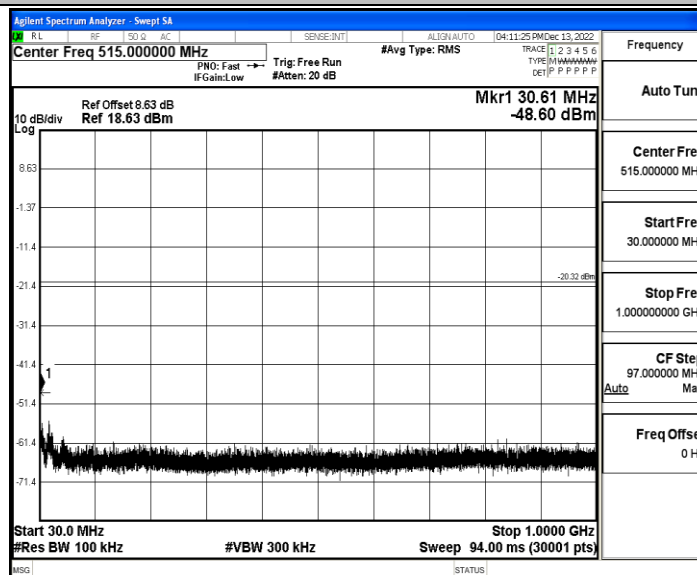


3DH5_Ant1_2480_0~Reference



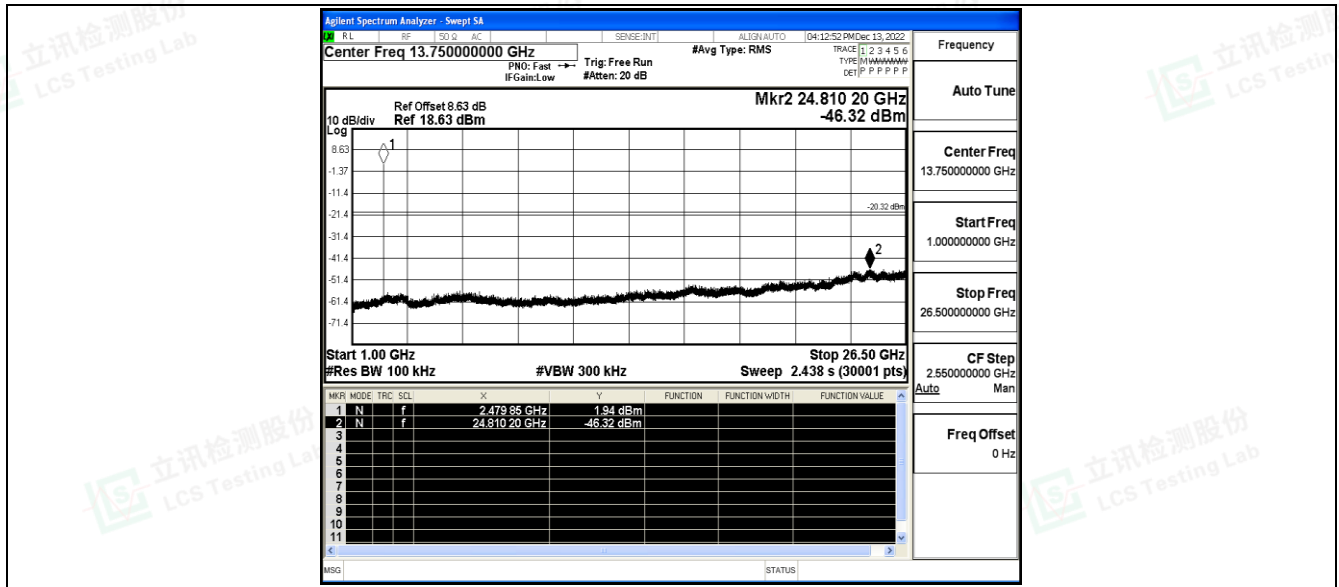


3DH5_Ant1_2480_30~1000



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	-58.1	≤-41.20	37.10	≤54	PASS
				AV	2389.775	-57.13	≤-41.20	38.07	≤54	PASS
				AV	2390.000	-57.32	≤-41.20	37.88	≤54	PASS
				Peak	2310.000	-52.59	≤-21.20	42.61	≤74	PASS
				Peak	2389.355	-48.85	≤-21.20	46.35	≤74	PASS
				Peak	2390.000	-51.53	≤-21.20	43.67	≤74	PASS
		High	2480	AV	2483.500	-53.02	≤-41.20	42.18	≤54	PASS
				AV	2483.520	-53.02	≤-41.20	42.18	≤54	PASS
				AV	2500.000	-57.05	≤-41.20	38.15	≤54	PASS
				Peak	2483.500	-52.74	≤-21.20	42.46	≤74	PASS
				Peak	2499.360	-48.65	≤-21.20	46.55	≤74	PASS
				Peak	2500.000	-51.38	≤-21.20	43.82	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-50.58	≤-21.20	44.62	≤74	PASS
				Peak	2375.180	-47.21	≤-21.20	47.99	≤74	PASS
				Peak	2390.000	-48.11	≤-21.20	47.09	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-48.89	≤-21.20	46.31	≤74	PASS
				Peak	2484.960	-46	≤-21.20	49.20	≤74	PASS
				Peak	2500.000	-47.94	≤-21.20	47.26	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-58.12	≤-41.20	37.08	≤54	PASS
				AV	2389.985	-57.01	≤-41.20	38.19	≤54	PASS
				AV	2390.000	-57.01	≤-41.20	38.19	≤54	PASS
				Peak	2310.000	-49.27	≤-21.20	45.93	≤74	PASS
				Peak	2376.650	-47.78	≤-21.20	47.42	≤74	PASS
				Peak	2390.000	-48.99	≤-21.20	46.21	≤74	PASS
		High	2480	AV	2483.500	-52.05	≤-41.20	43.15	≤54	PASS
				AV	2483.520	-52.04	≤-41.20	43.16	≤54	PASS
				AV	2500.000	-57.14	≤-41.20	38.06	≤54	PASS
				Peak	2483.500	-49.6	≤-21.20	45.60	≤74	PASS
				Peak	2498.800	-48.12	≤-21.20	47.08	≤74	PASS
				Peak	2500.000	-51.23	≤-21.20	43.97	≤74	PASS
		Low	Hop_24 02	Peak	2310.000	-50.54	≤-21.20	44.66	≤74	PASS
				Peak	2384.315	-47.4	≤-21.20	47.80	≤74	PASS
				Peak	2390.000	-50.29	≤-21.20	44.91	≤74	PASS
		High	Hop_24 80	Peak	2483.500	-48.74	≤-21.20	46.46	≤74	PASS
				Peak	2500.000	-46.71	≤-21.20	48.49	≤74	PASS



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3DH5	Ant1	Low	2402	AV	2310.000	-58.07	≤ -41.20	37.13	≤ 54	PASS
				AV	2389.460	-57.15	≤ -41.20	38.05	≤ 54	PASS
				AV	2390.000	-57.3	≤ -41.20	37.90	≤ 54	PASS
				Peak	2310.000	-54.46	≤ -21.20	40.74	≤ 74	PASS
				Peak	2383.790	-47.75	≤ -21.20	47.45	≤ 74	PASS
				Peak	2390.000	-50.57	≤ -21.20	44.63	≤ 74	PASS
		High	2480	AV	2483.500	-52.04	≤ -41.20	43.16	≤ 54	PASS
				AV	2483.520	-52.04	≤ -41.20	43.16	≤ 54	PASS
				AV	2500.000	-57.1	≤ -41.20	38.10	≤ 54	PASS
				Peak	2483.500	-50.25	≤ -21.20	44.95	≤ 74	PASS
				Peak	2484.000	-45.76	≤ -21.20	49.44	≤ 74	PASS
				Peak	2500.000	-53.85	≤ -21.20	41.35	≤ 74	PASS
		Low	Hop_2402	Peak	2310.000	-50.96	≤ -21.20	44.24	≤ 74	PASS
				Peak	2323.310	-47.33	≤ -21.20	47.87	≤ 74	PASS
				Peak	2390.000	-48.95	≤ -21.20	46.25	≤ 74	PASS
		High	Hop_2480	Peak	2483.500	-48.44	≤ -21.20	46.76	≤ 74	PASS
				Peak	2494.800	-45.25	≤ -21.20	49.95	≤ 74	PASS
				Peak	2500.000	-48.87	≤ -21.20	46.33	≤ 74	PASS

Note:

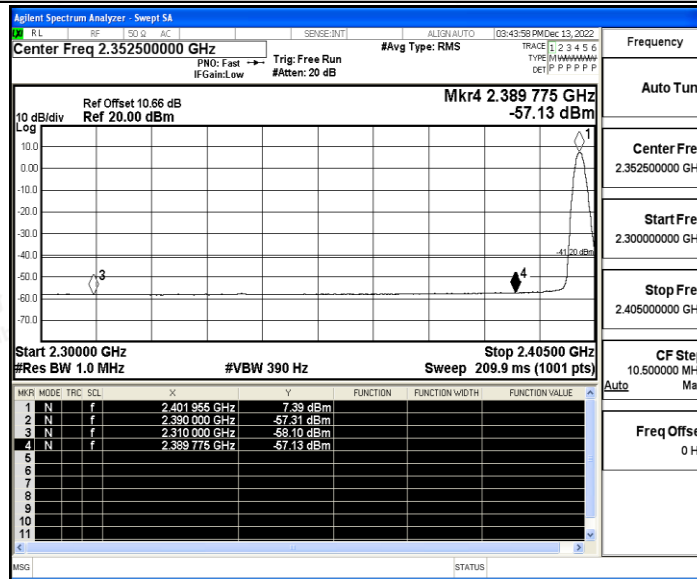
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



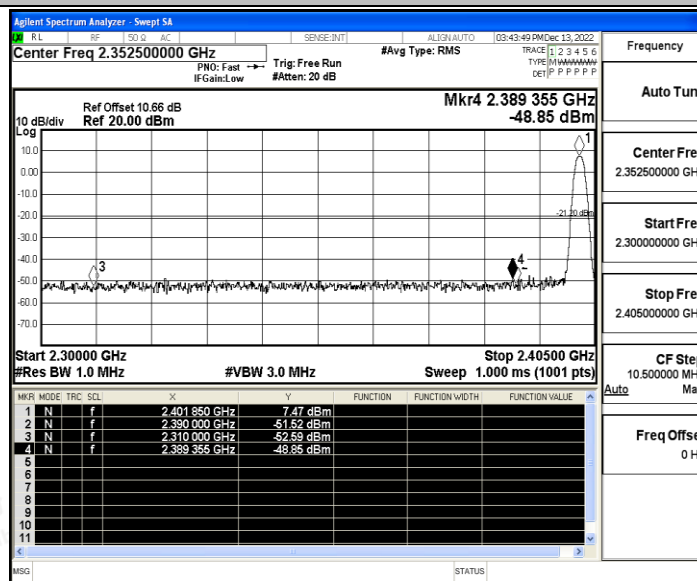


Test Graphs

DH5_Ant1_Low_2402_AV

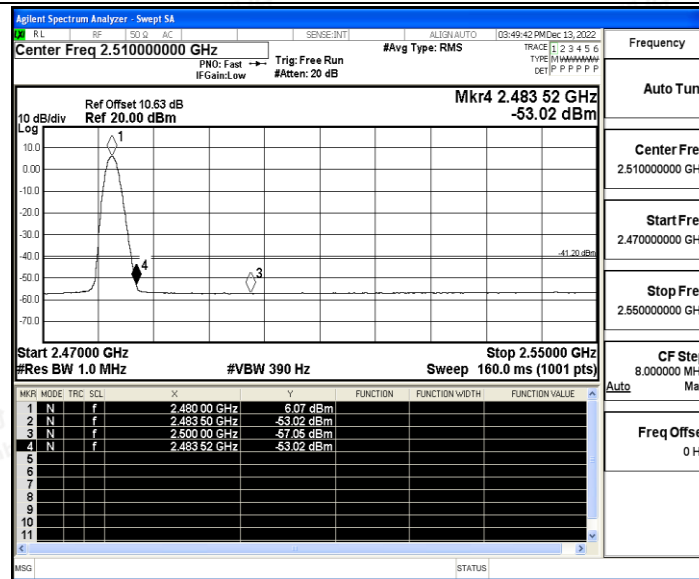


DH5_Ant1_Low_2402_Peak

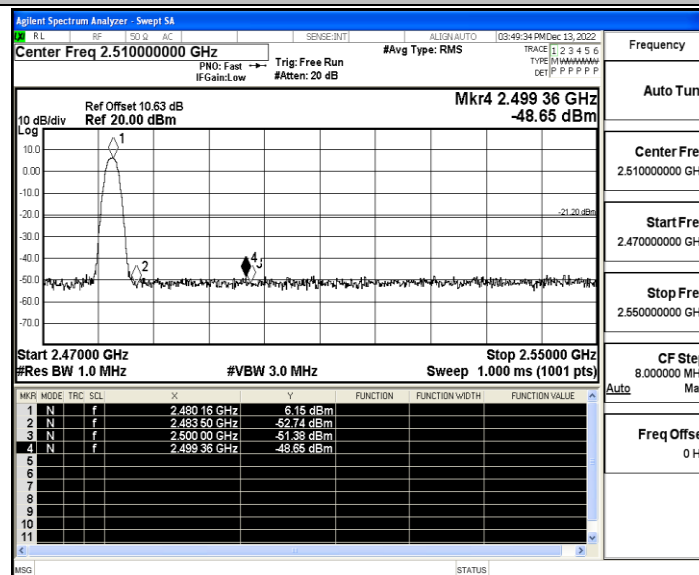


DH5_Ant1_High_2480_AV



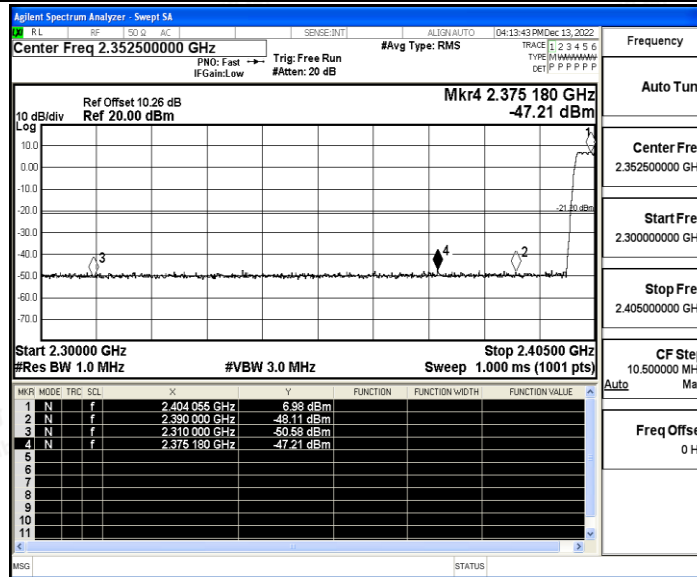


DH5_Ant1_High_2480_Peak

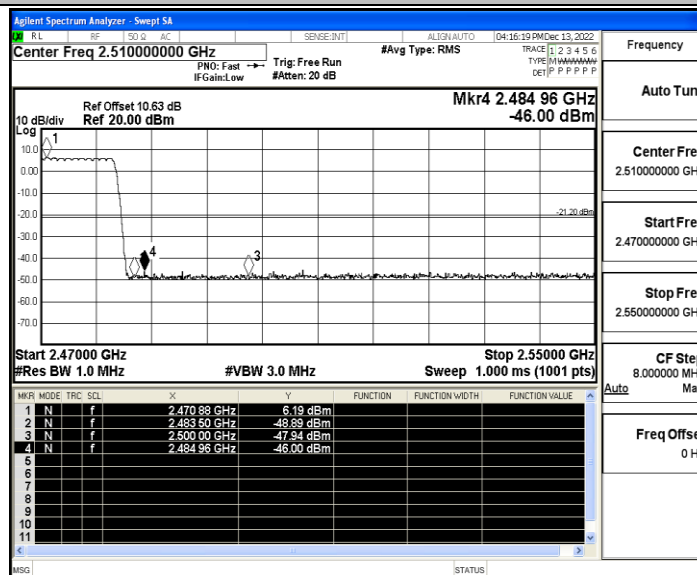


DH5_Ant1_Low_Hop_2402_Peak



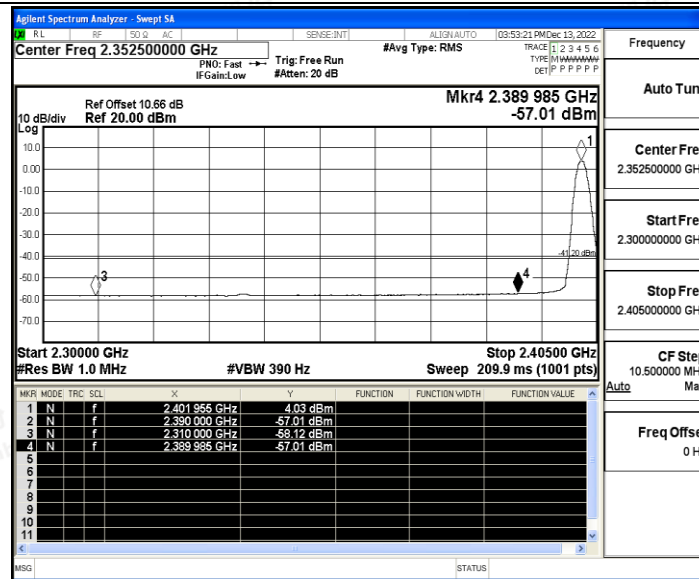


DH5_Ant1_High_Hop_2480_Peak

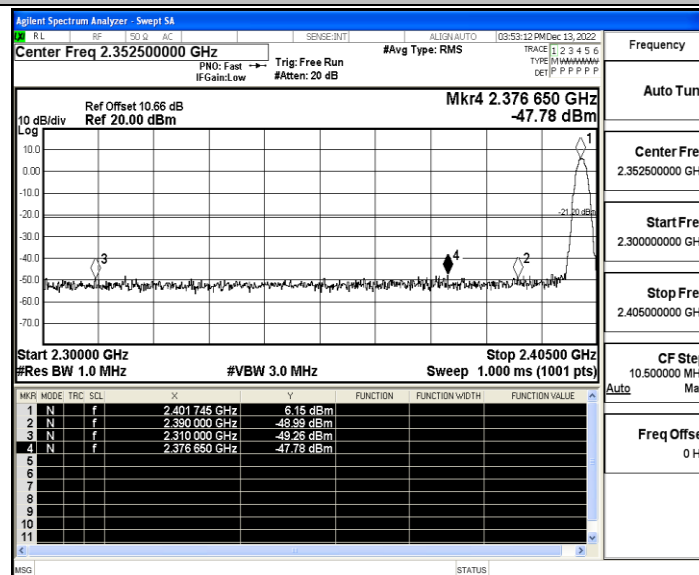


2DH5_Ant1_Low_2402_AV



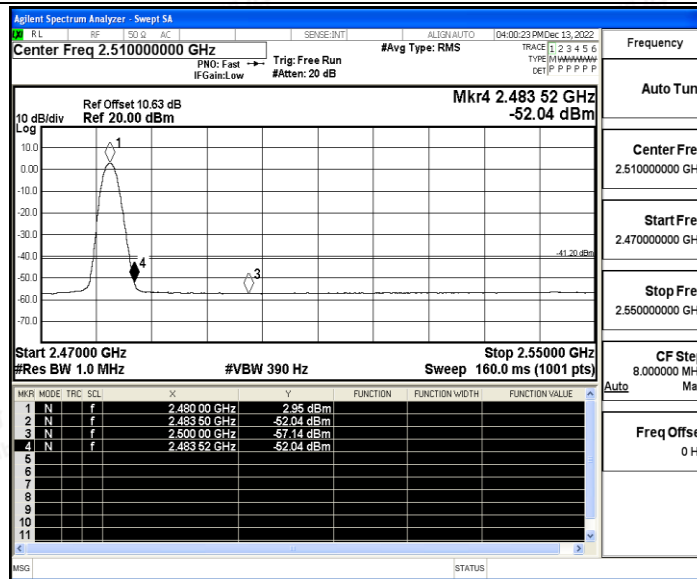


2DH5_Ant1_Low_2402_Peak

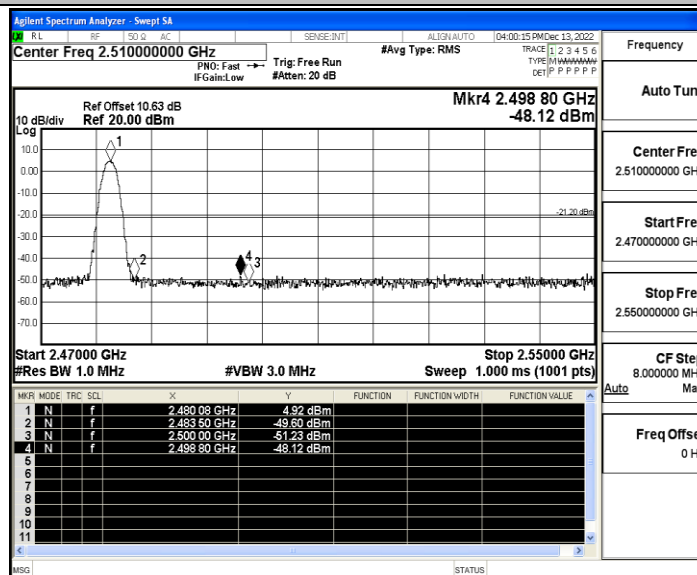


2DH5_Ant1_High_2480_AV



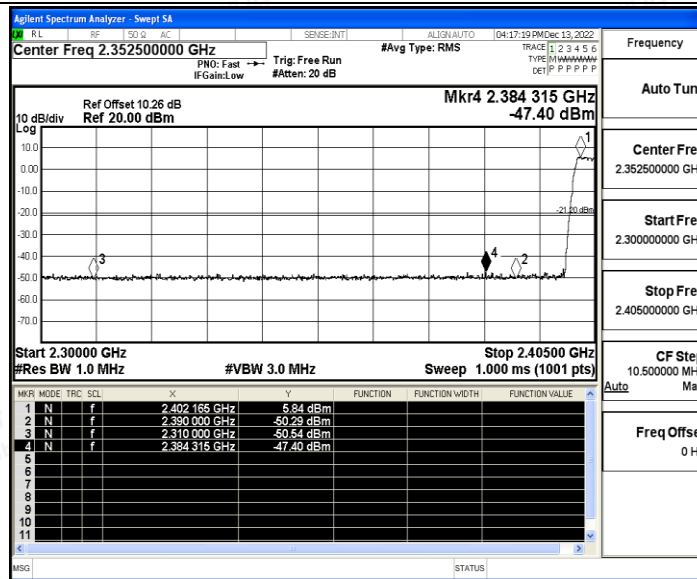


2DH5_Ant1_High_2480_Peak

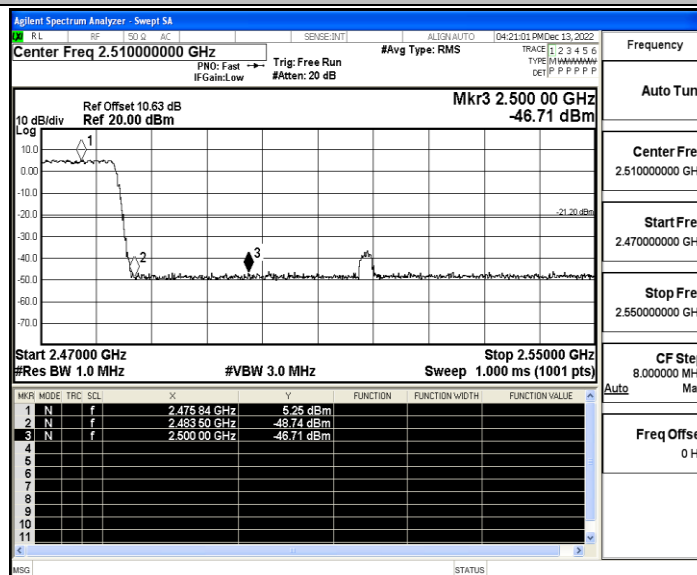


2DH5_Ant1_Low_Hop_2402_Peak



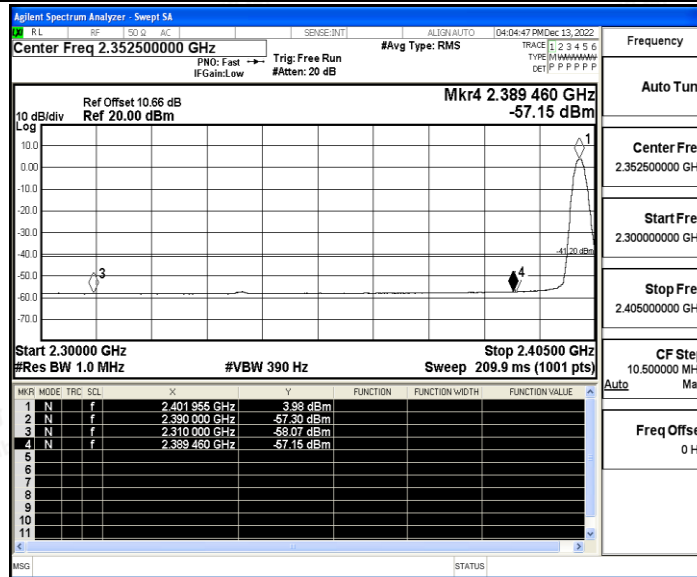


2DH5_Ant1_High_Hop_2480_Peak

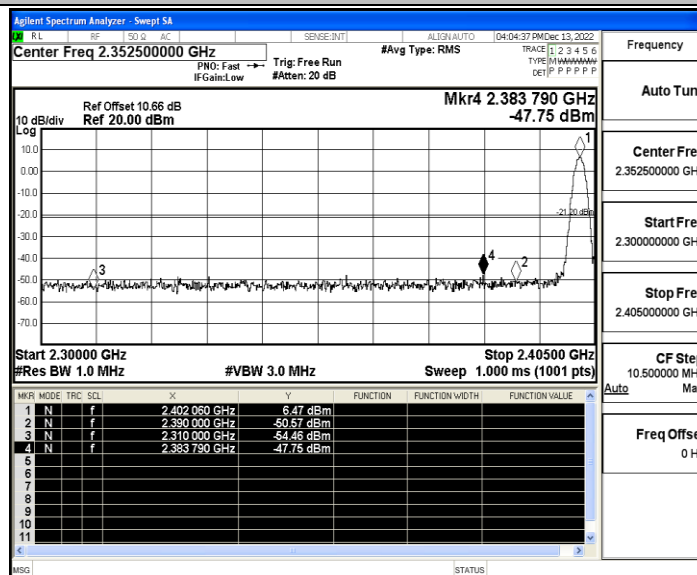


3DH5_Ant1_Low_2402_AV



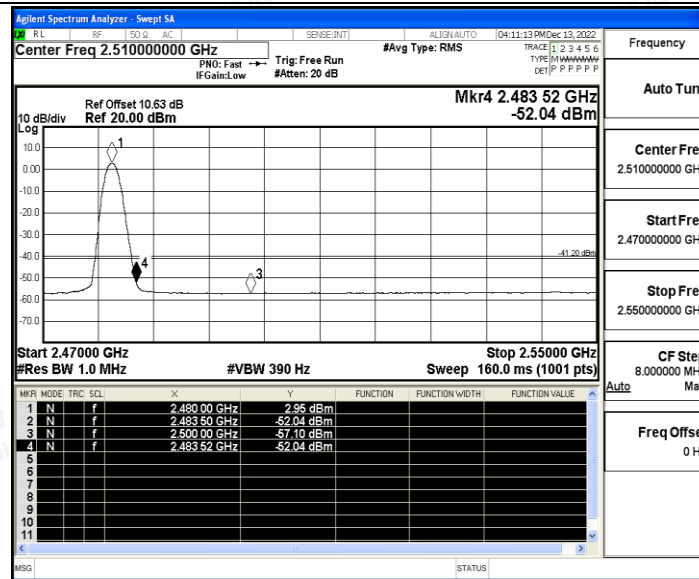


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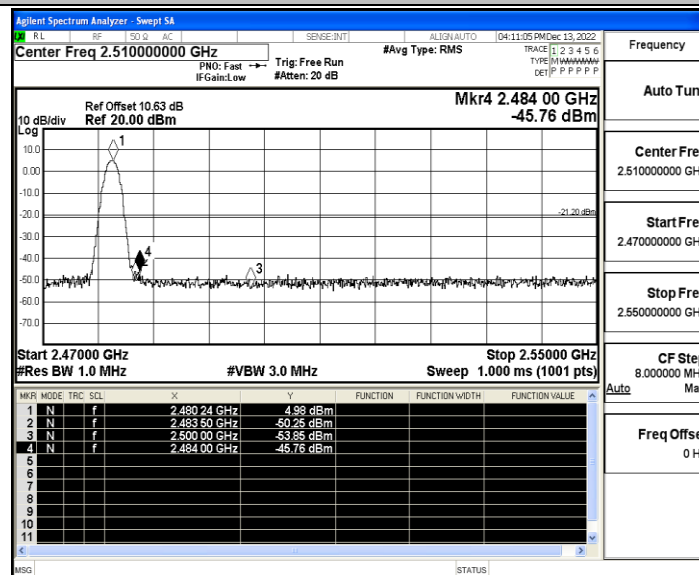


3DH5_Ant1_High_2480_AV



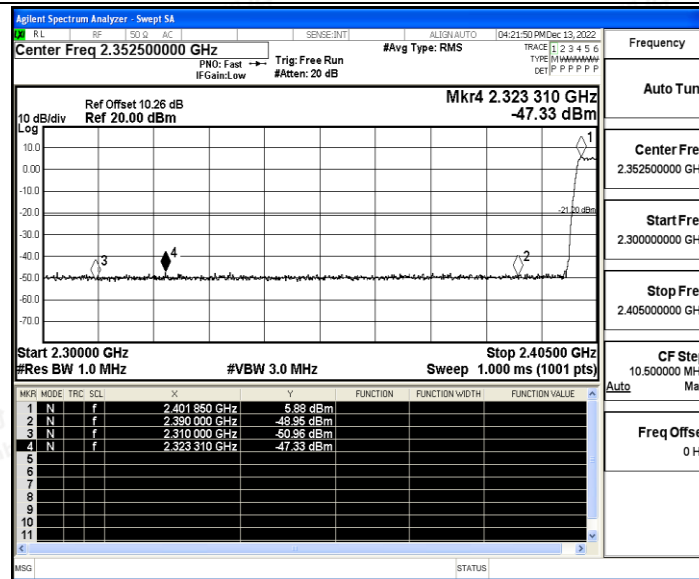


3DH5_Ant1_High_2480_Peak



3DH5_Ant1_Low_Hop_2402_Peak





3DH5_Ant1_High_Hop_2480_Peak

