

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: WIRELESS SPEAKER

Test Model: ZEALOT-PT11

Environmental Conditions

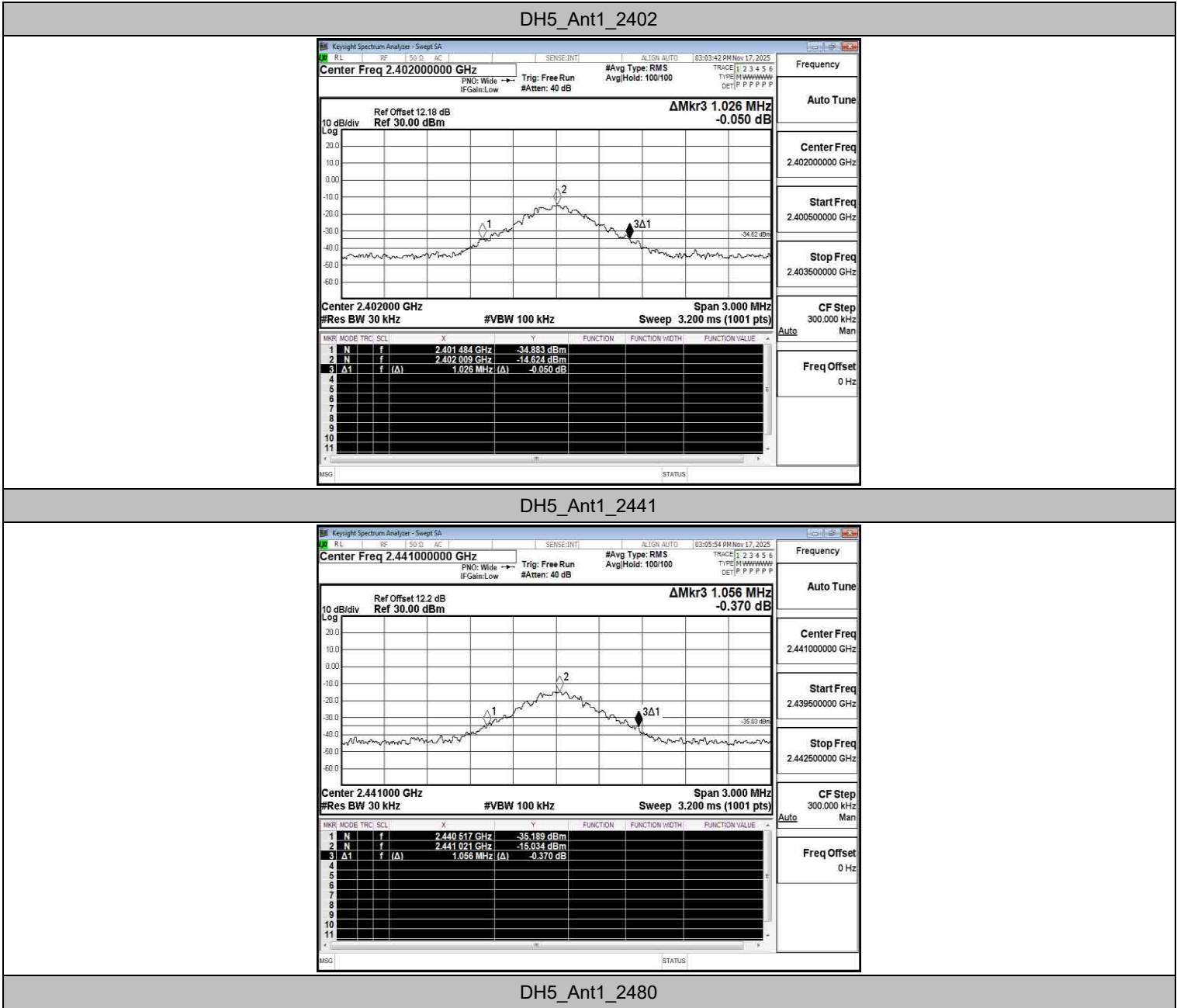
Temperature:	23.6°C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

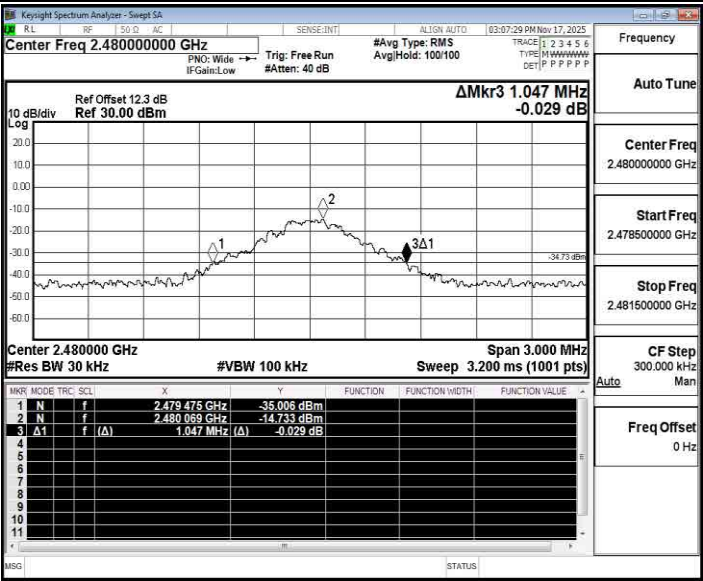
A.1 20dB Emission Bandwidth

Test Result

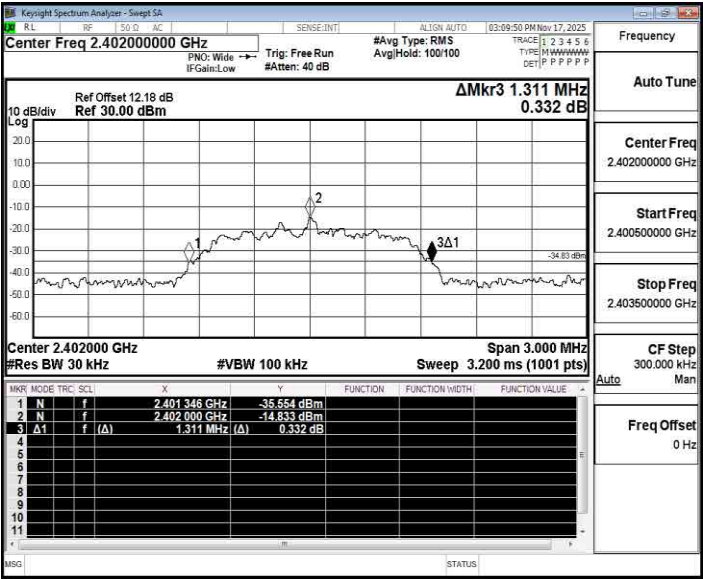
TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.026	2401.484	2402.510	---	---
		2441	1.056	2440.517	2441.573	---	---
		2480	1.047	2479.475	2480.522	---	---
2DH5	Ant1	2402	1.311	2401.346	2402.657	---	---
		2441	1.260	2440.385	2441.645	---	---
		2480	1.284	2479.382	2480.666	---	---
3DH5	Ant1	2402	1.380	2401.328	2402.708	---	---
		2441	1.296	2440.364	2441.660	---	---
		2480	1.266	2479.370	2480.636	---	---

Test Graphs

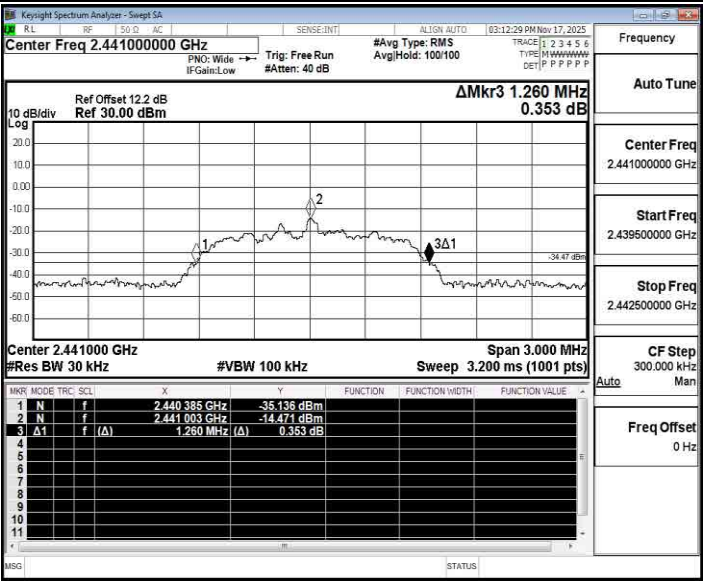




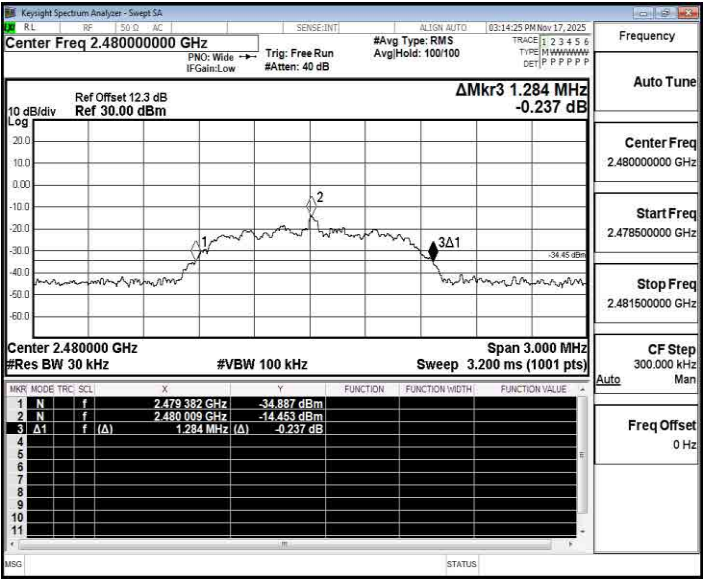
2DH5_Ant1_2402



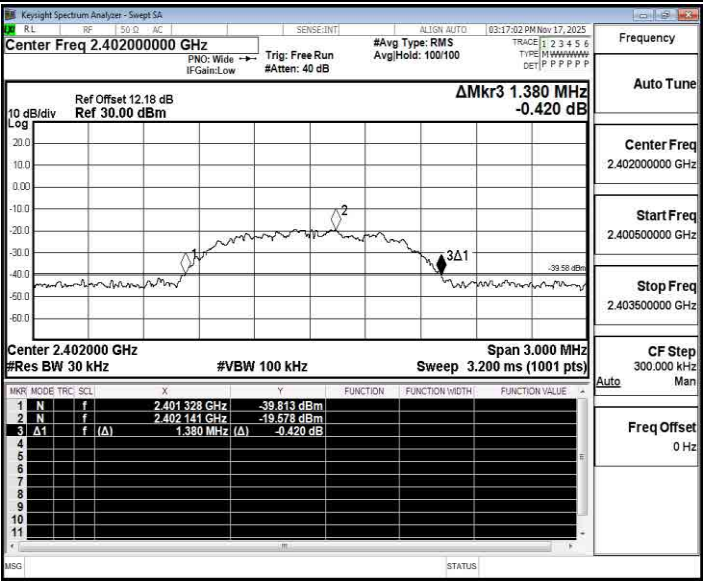
2DH5_Ant1_2441



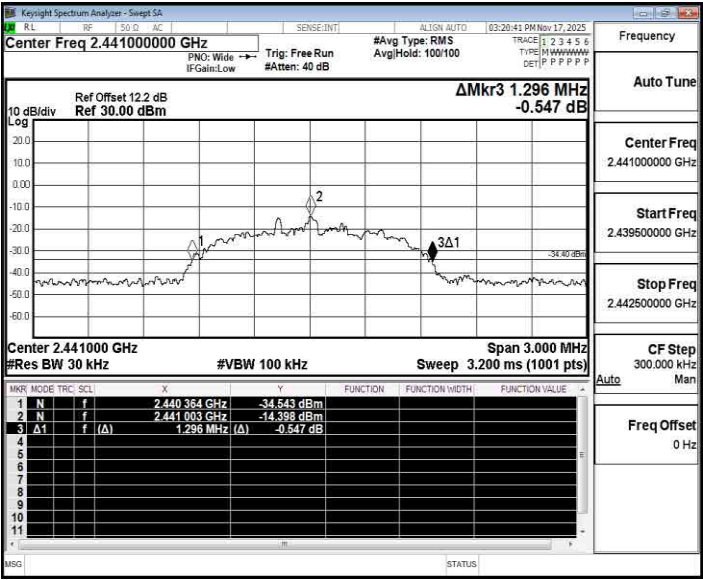
2DH5_Ant1_2480



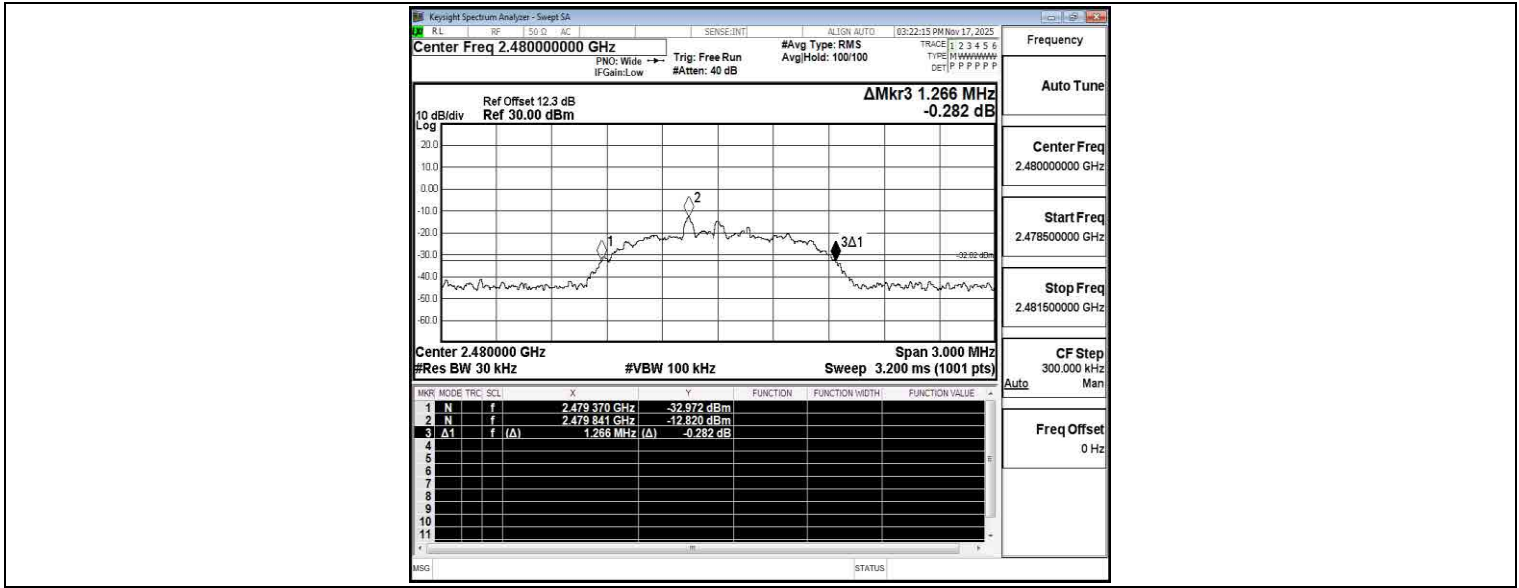
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

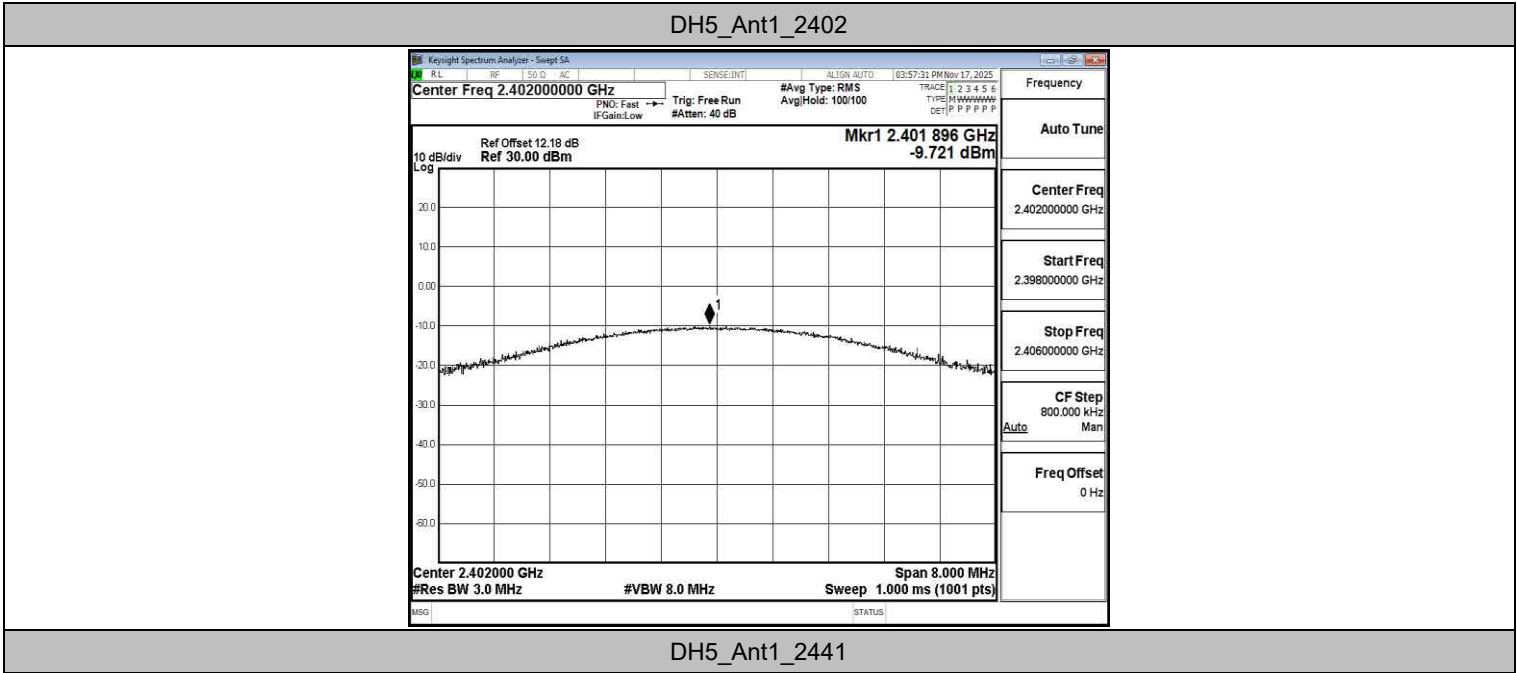


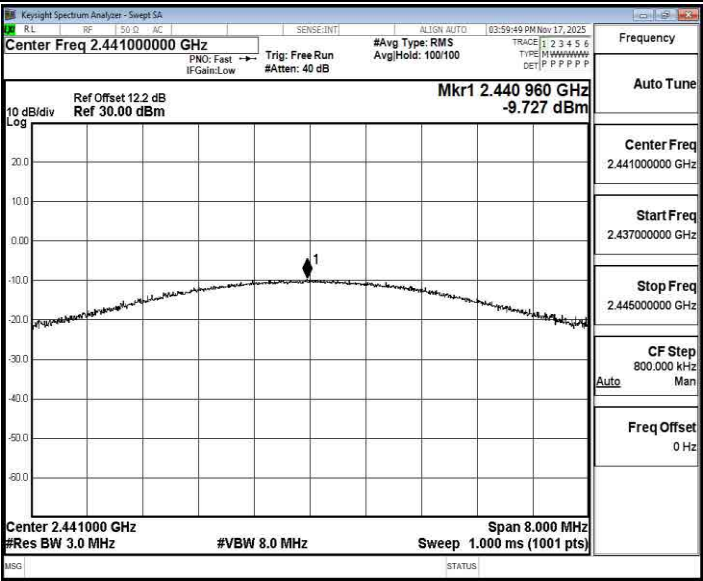
A.2 Maximum peak conducted output power

Test Result Peak

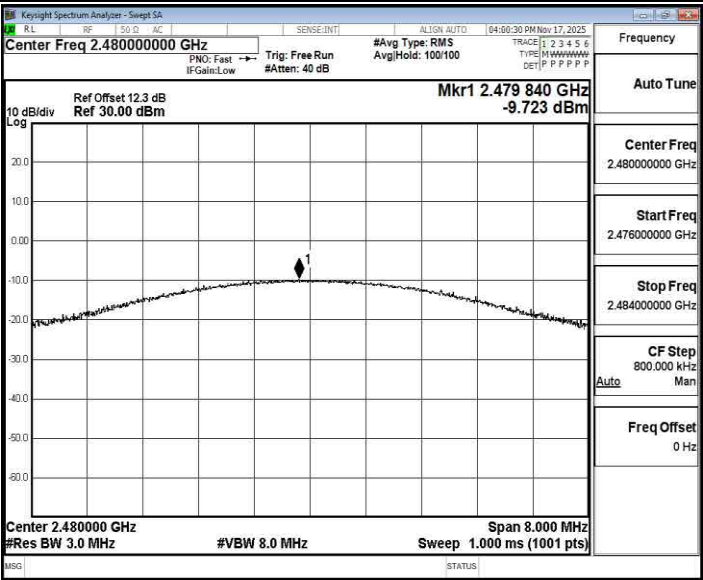
Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-9.72	≤20.97	PASS
		2441	-9.73	≤20.97	PASS
		2480	-9.72	≤20.97	PASS
2DH5	Ant1	2402	-9.84	≤20.97	PASS
		2441	-9.72	≤20.97	PASS
		2480	-9.56	≤20.97	PASS
3DH5	Ant1	2402	-9.81	≤20.97	PASS
		2441	-9.41	≤20.97	PASS
		2480	-9.24	≤20.97	PASS

Test Graphs

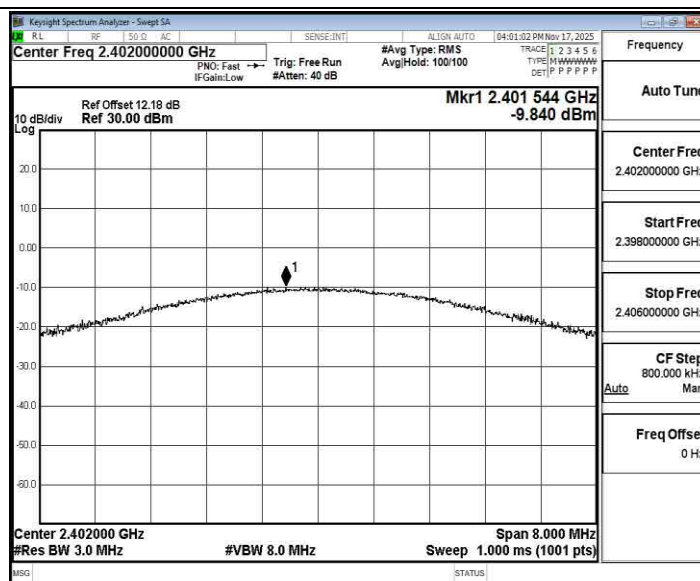




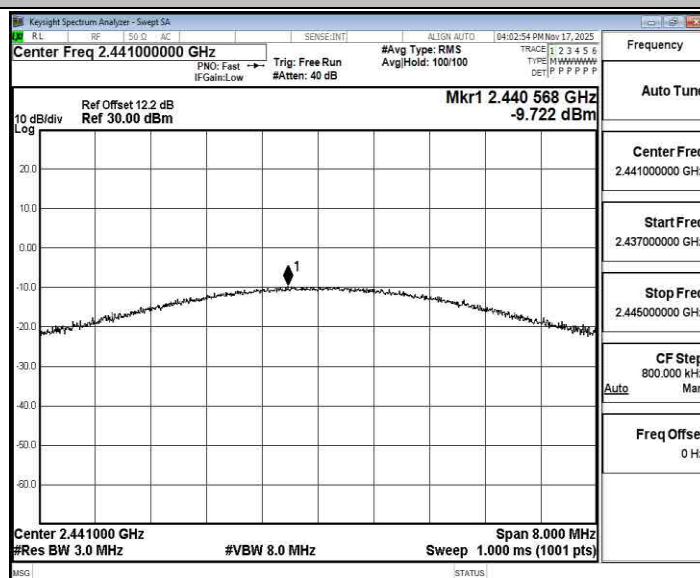
DH5_Ant1_2480



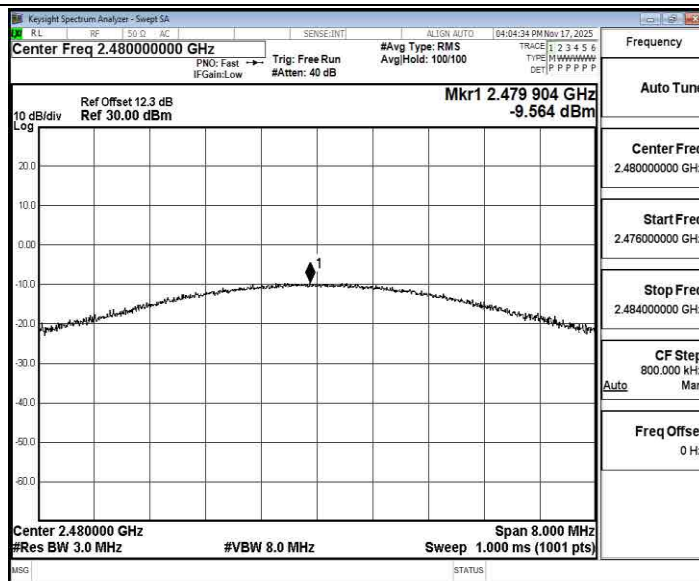
2DH5_Ant1_2402



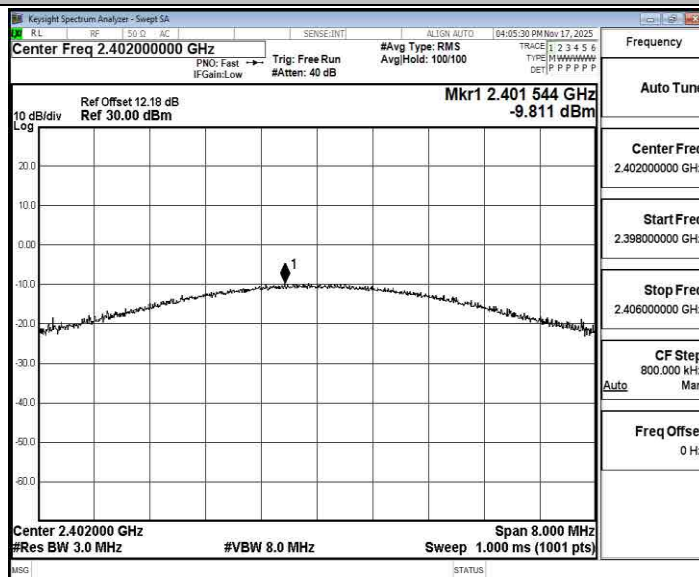
2DH5_Ant1_2441



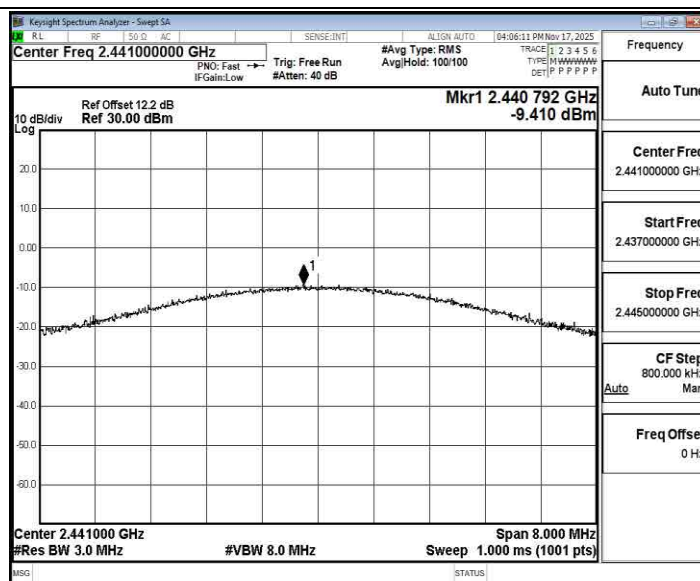
2DH5_Ant1_2480



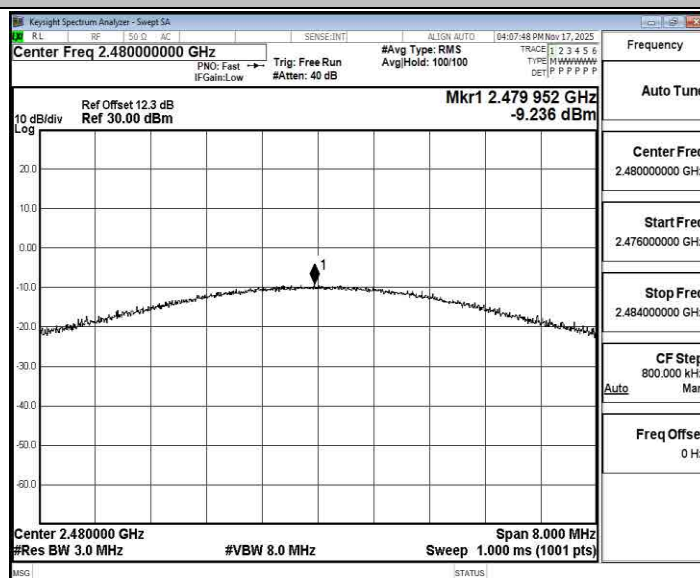
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



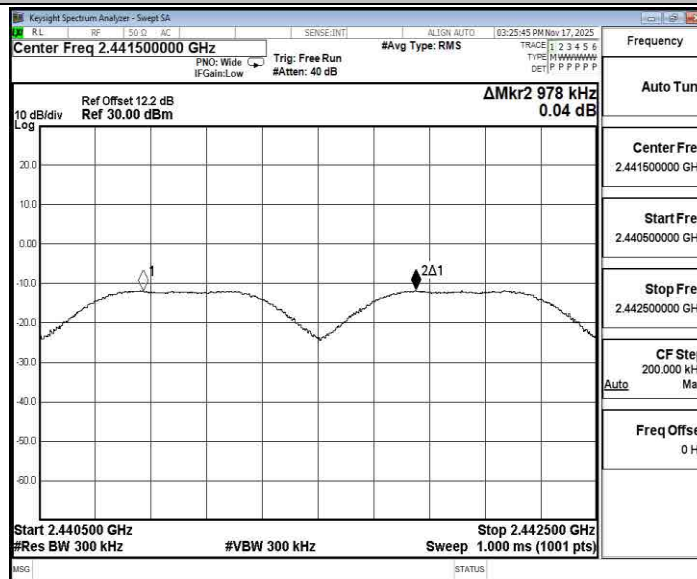
A.3 Carrier frequency separation

Test Result

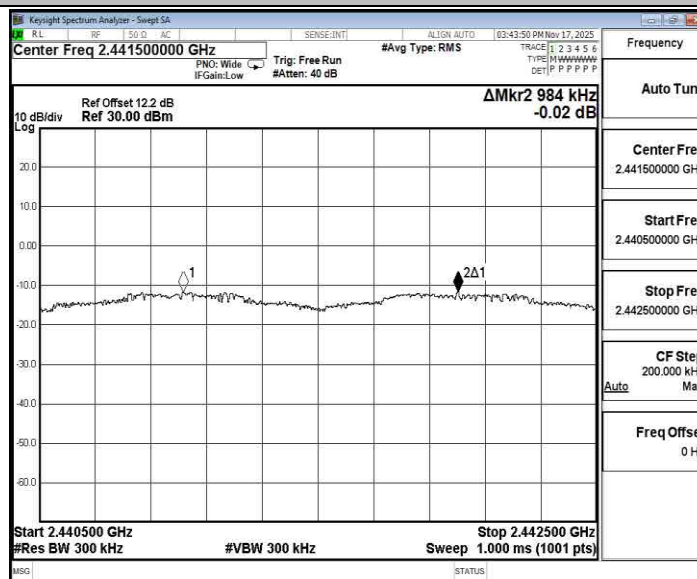
TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.978	≥0.704	PASS
2DH5	Ant1	Hop	0.984	≥0.874	PASS
3DH5	Ant1	Hop	1.036	≥0.920	PASS

Test Graphs

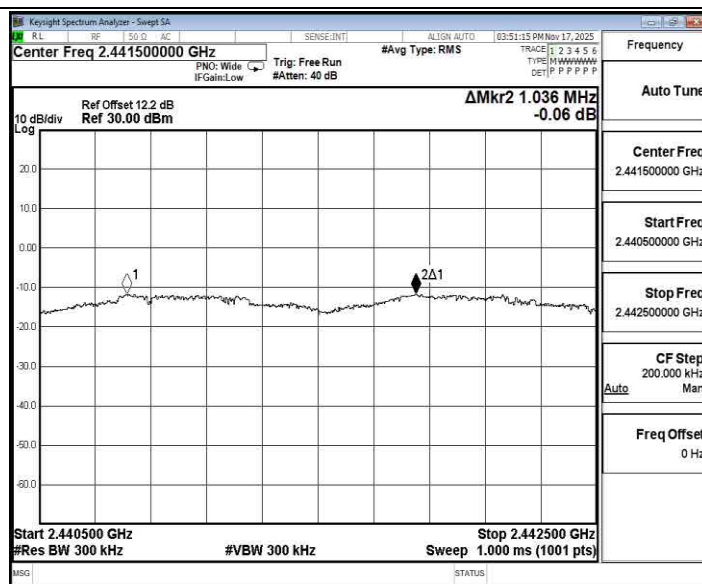
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



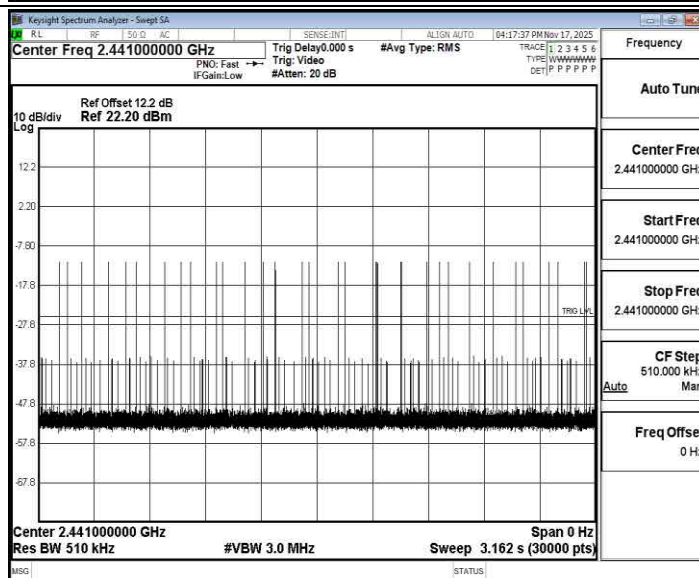
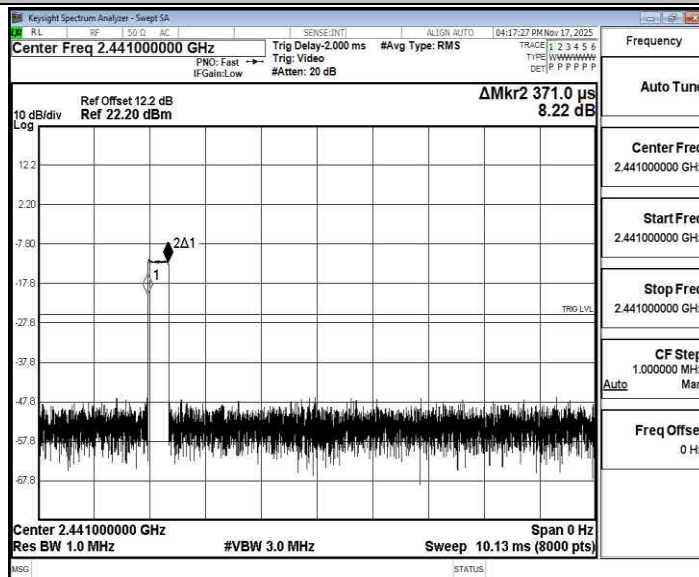
A.4 Time of occupancy

Test Result

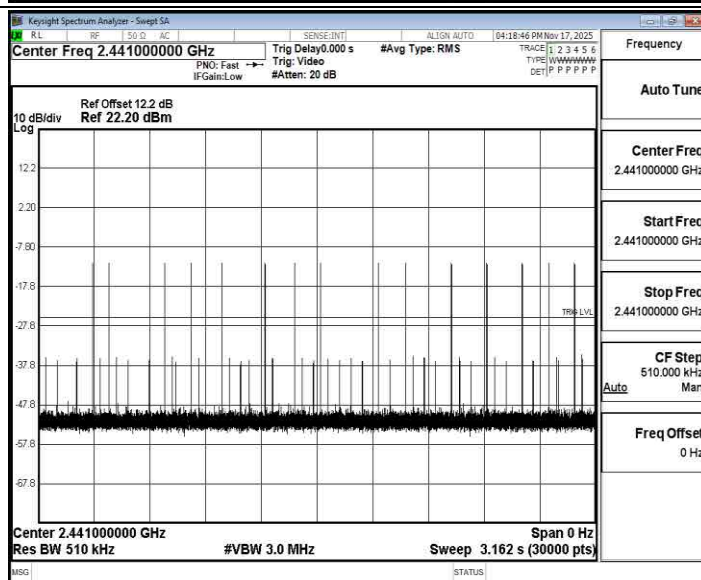
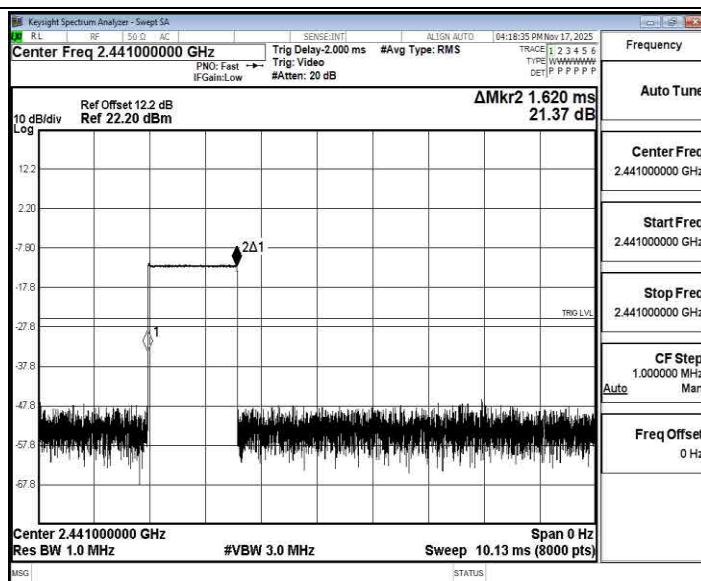
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.371	330	0.122	≤0.4	PASS
DH3	Ant1	Hop	1.620	160	0.259	≤0.4	PASS
DH5	Ant1	Hop	2.868	110	0.315	≤0.4	PASS
2DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
2DH3	Ant1	Hop	1.631	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.879	110	0.317	≤0.4	PASS
3DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.629	170	0.277	≤0.4	PASS
3DH5	Ant1	Hop	2.880	110	0.317	≤0.4	PASS

Test Graphs

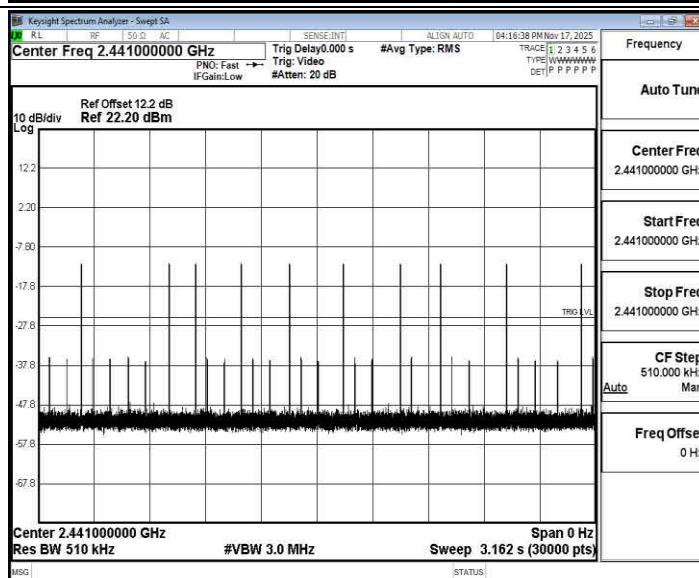
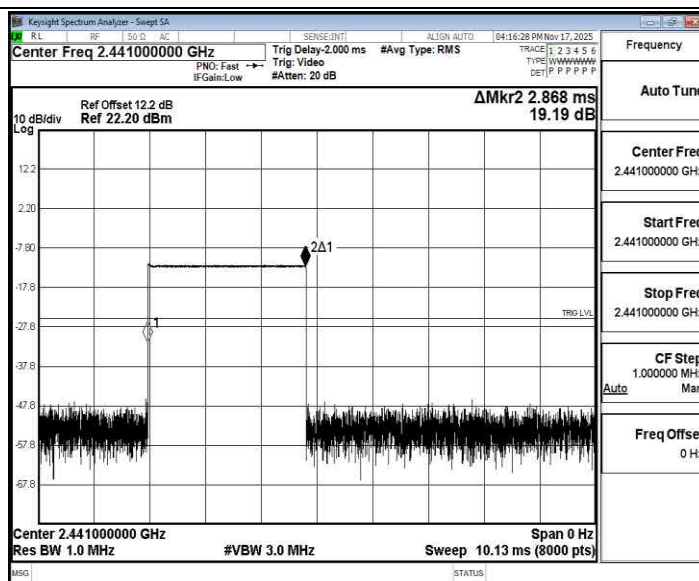
DH1_Ant1_Hop



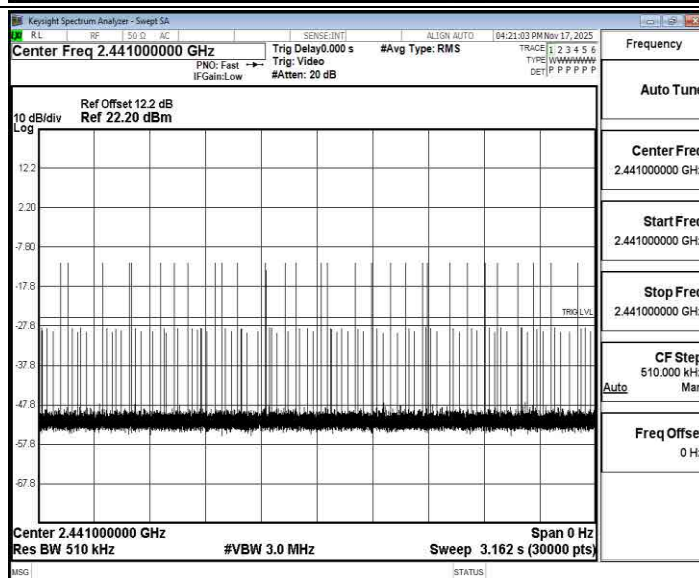
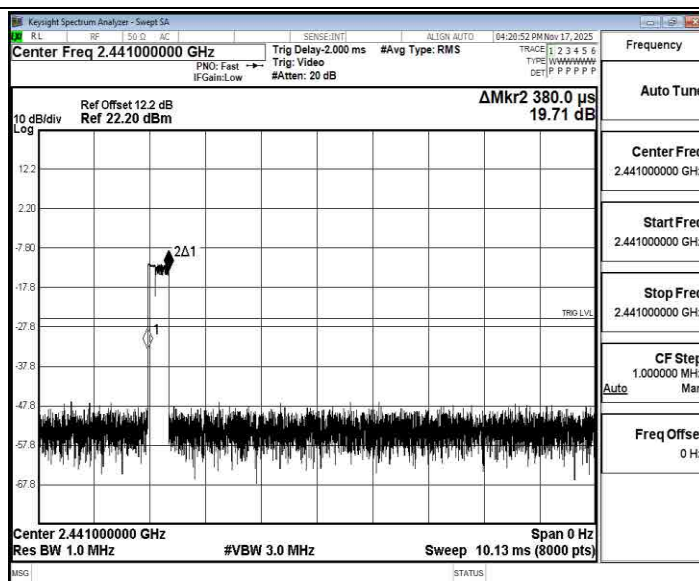
DH3_Ant1_Hop



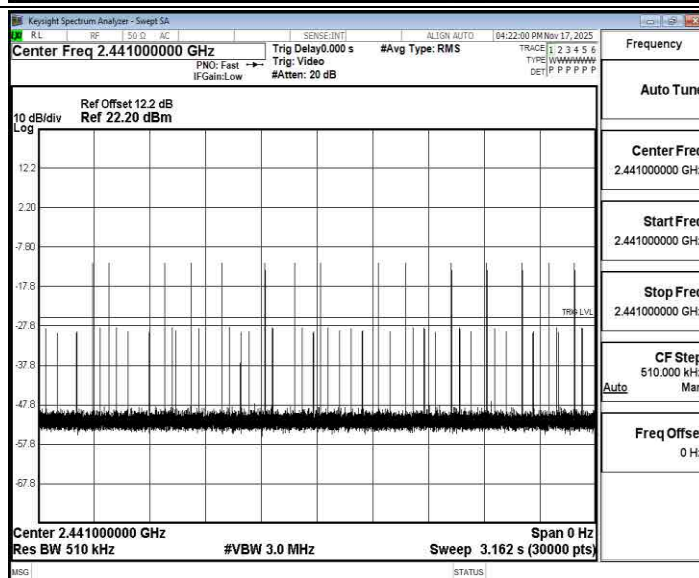
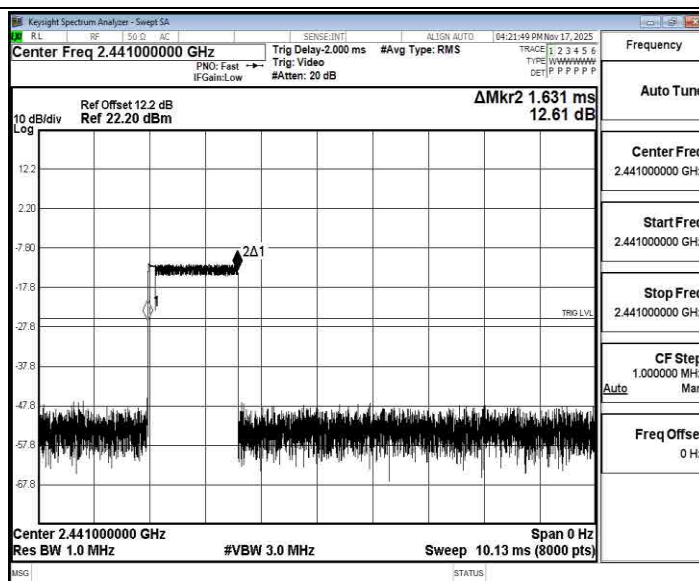
DH5_Ant1_Hop



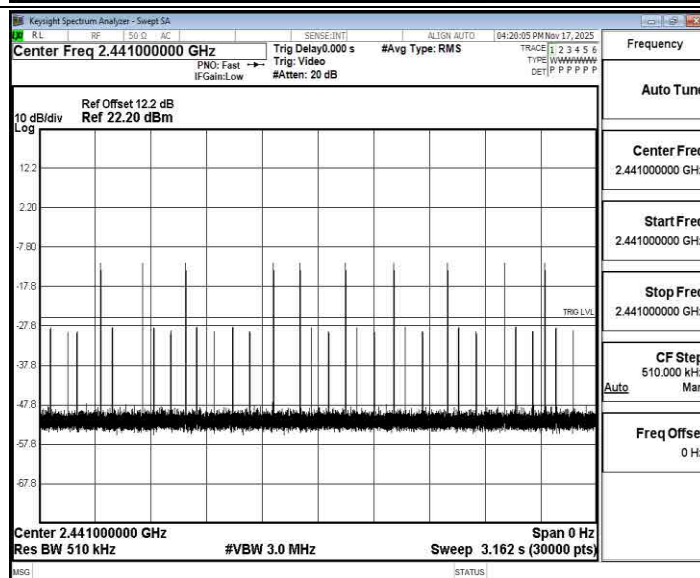
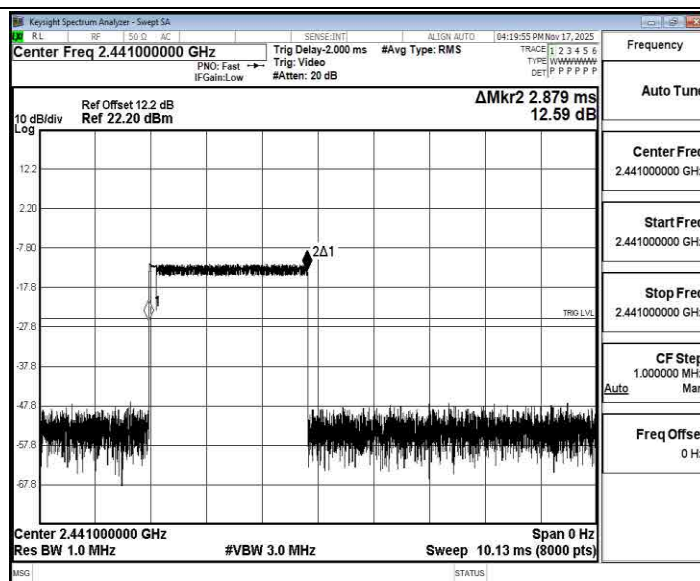
2DH1_Ant1_Hop



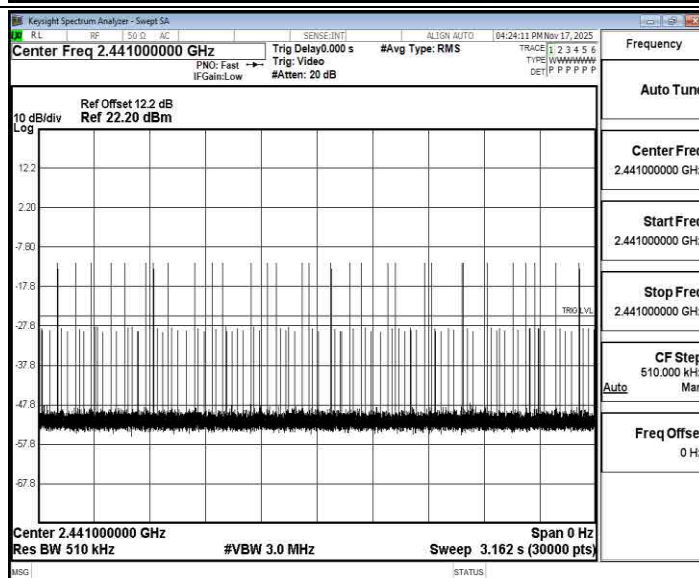
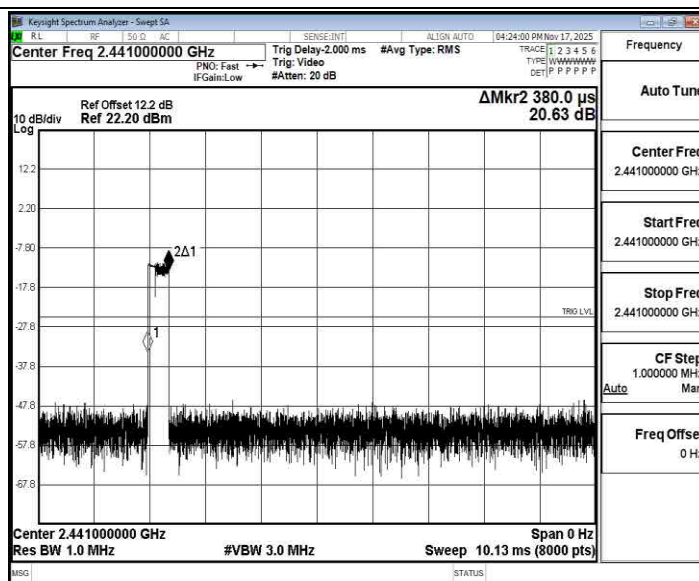
2DH3_Ant1_Hop



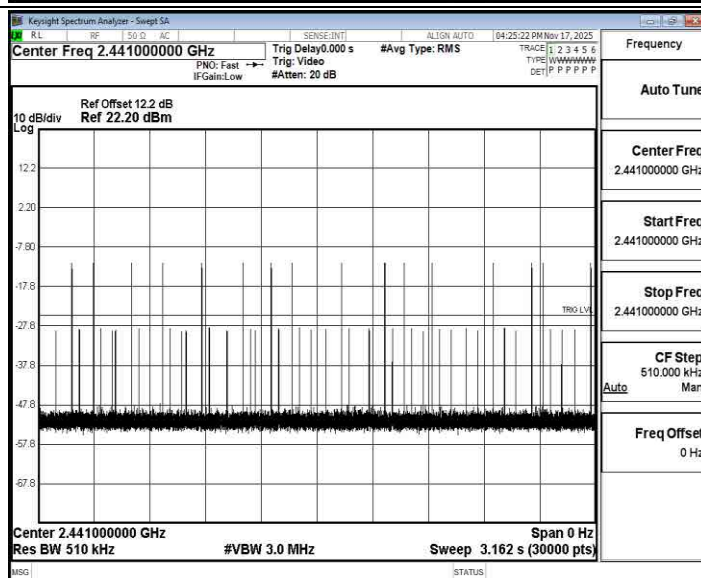
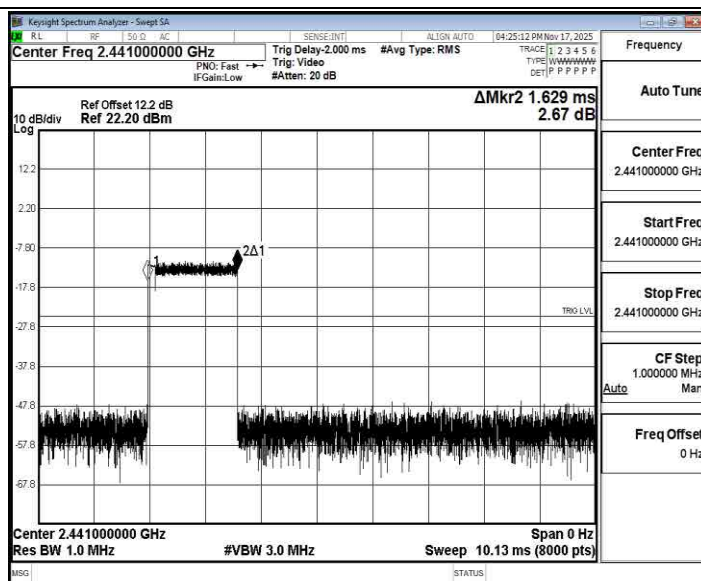
2DH5_Ant1_Hop



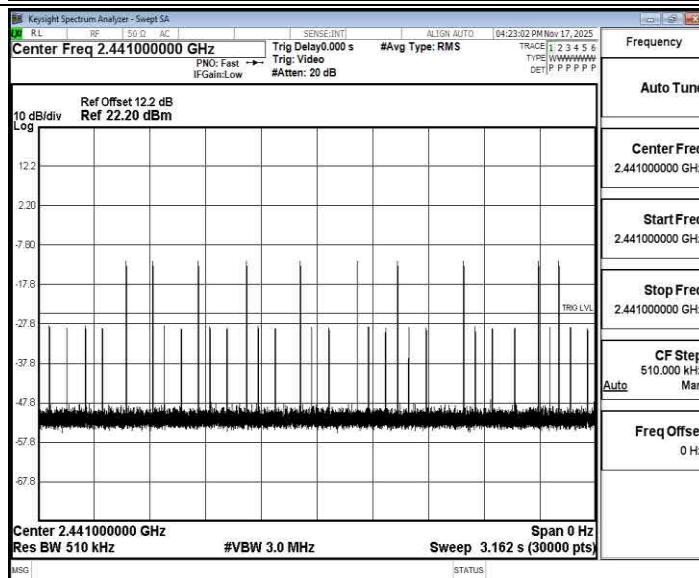
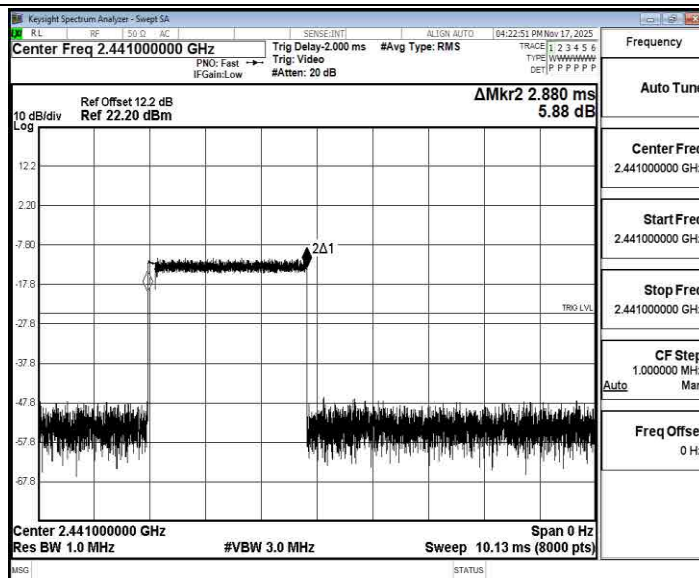
3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop



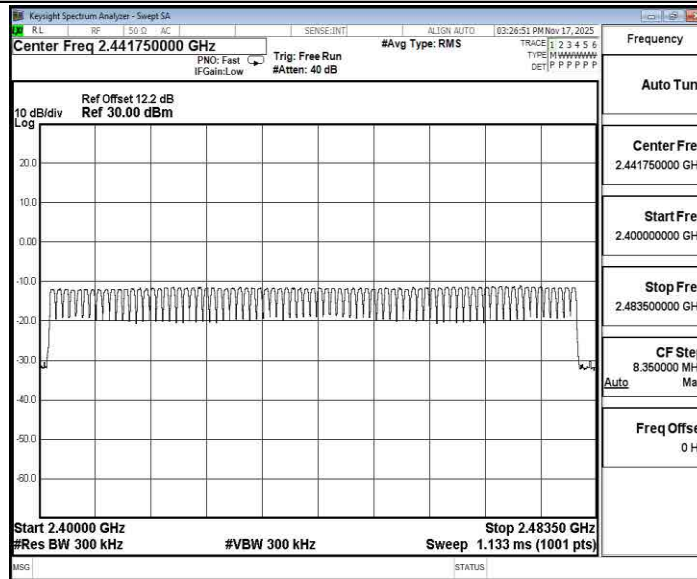
A.5 Number of hopping channels

Test Result

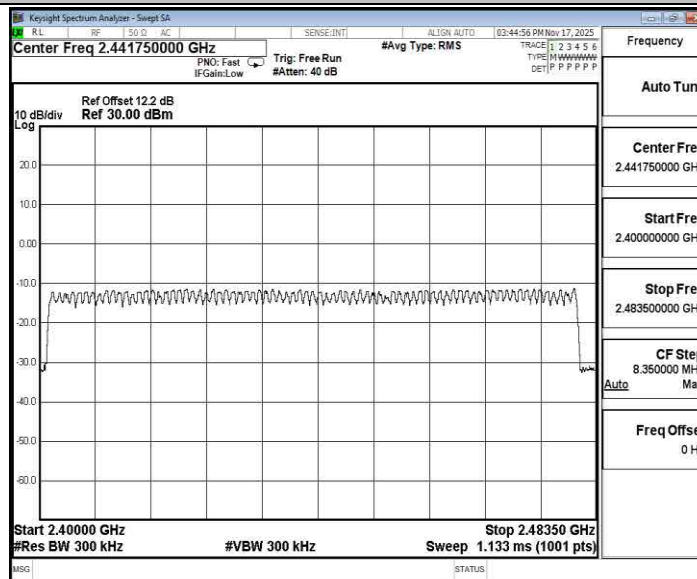
TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

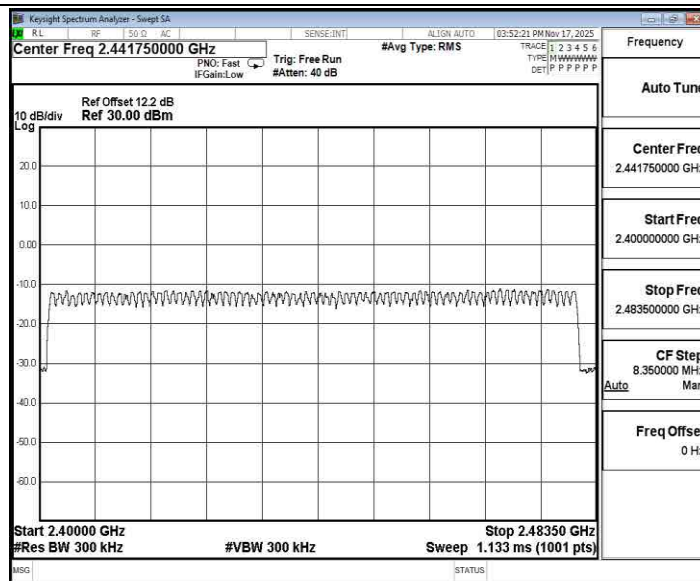
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



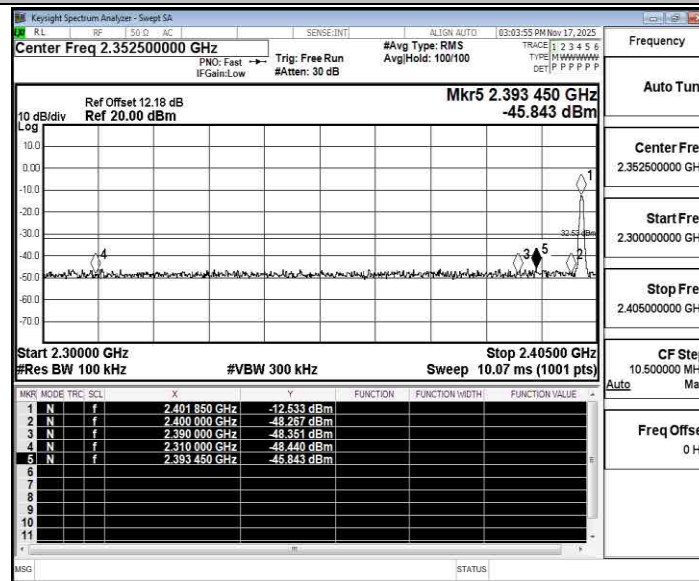
A.6 Band edge measurements

Test Result

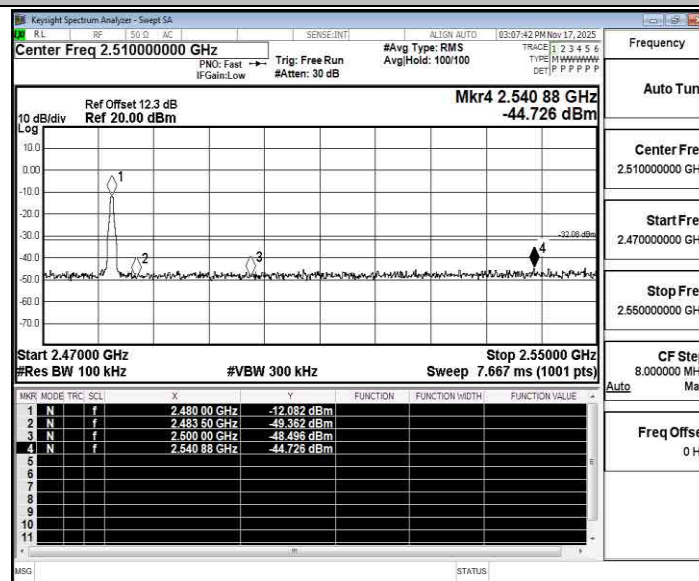
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-12.53	-45.84	≤ -32.53	PASS
		High	2480	-12.08	-44.73	≤ -32.08	PASS
		Low	Hop_2402	-12.91	-45.58	≤ -32.91	PASS
		High	Hop_2480	-12.47	-45.48	≤ -32.47	PASS
2DH5	Ant1	Low	2402	-13.82	-45.44	≤ -33.82	PASS
		High	2480	-13.95	-45.38	≤ -33.95	PASS
		Low	Hop_2402	-14.73	-45.82	≤ -34.73	PASS
		High	Hop_2480	-15.91	-45.27	≤ -35.91	PASS
3DH5	Ant1	Low	2402	-12.41	-45.98	≤ -32.41	PASS
		High	2480	-12.09	-43.95	≤ -32.09	PASS
		Low	Hop_2402	-19.32	-45.83	≤ -39.32	PASS
		High	Hop_2480	-13.80	-44.64	≤ -33.8	PASS

Test Graphs

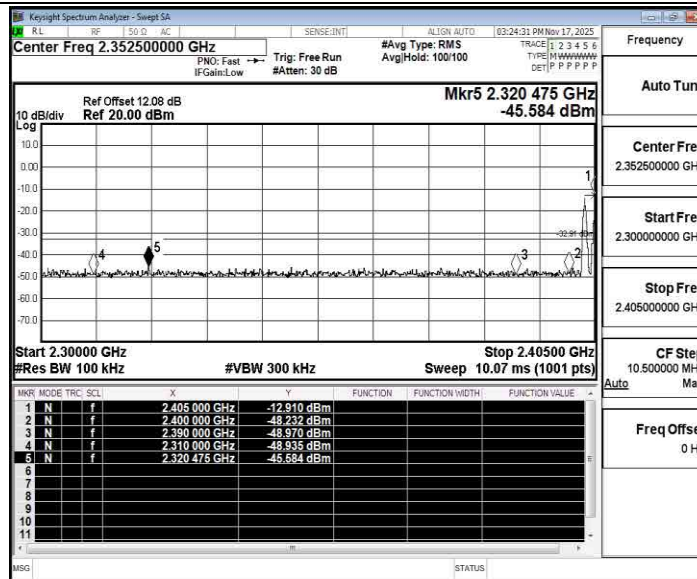
DH5_Ant1_Low_2402



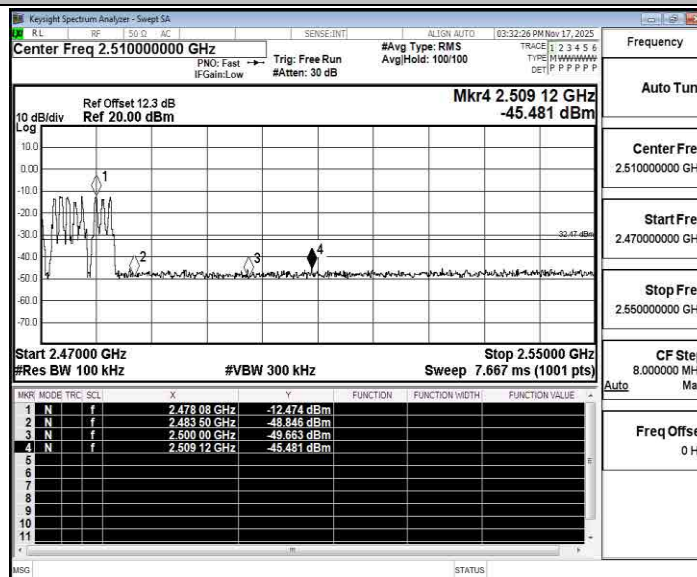
DH5_Ant1_High_2480



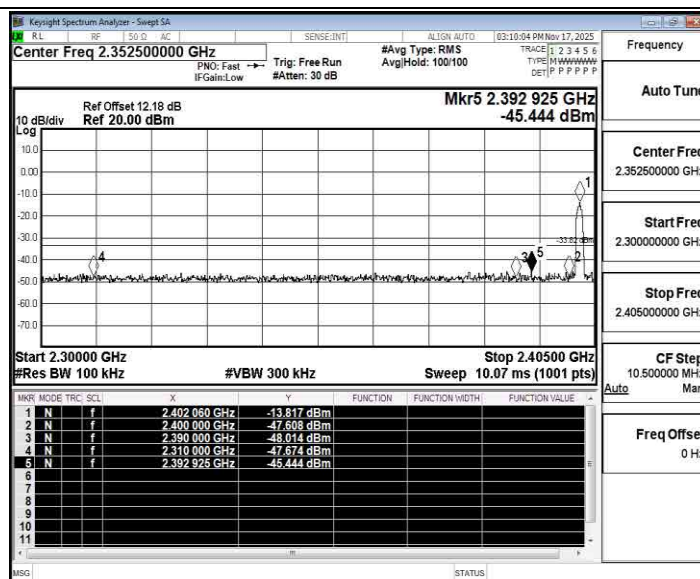
DH5_Ant1_Low_Hop_2402



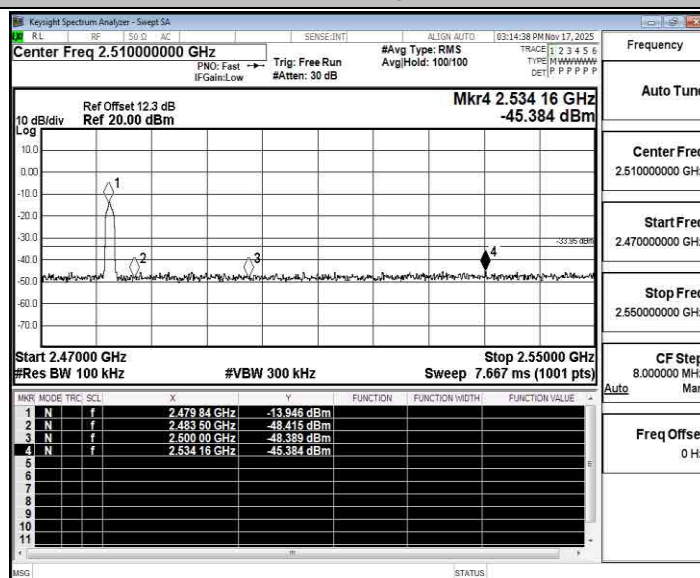
DH5_Ant1_High_Hop_2480



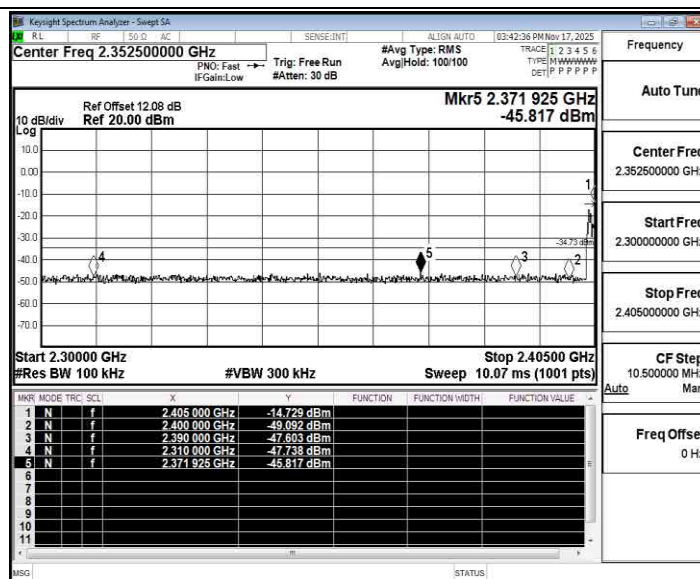
2DH5_Ant1_Low_2402



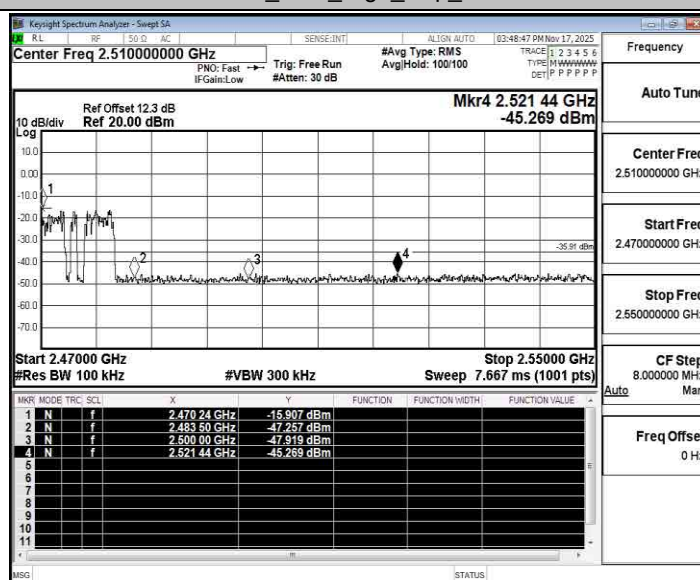
2DH5_Ant1_High_2480



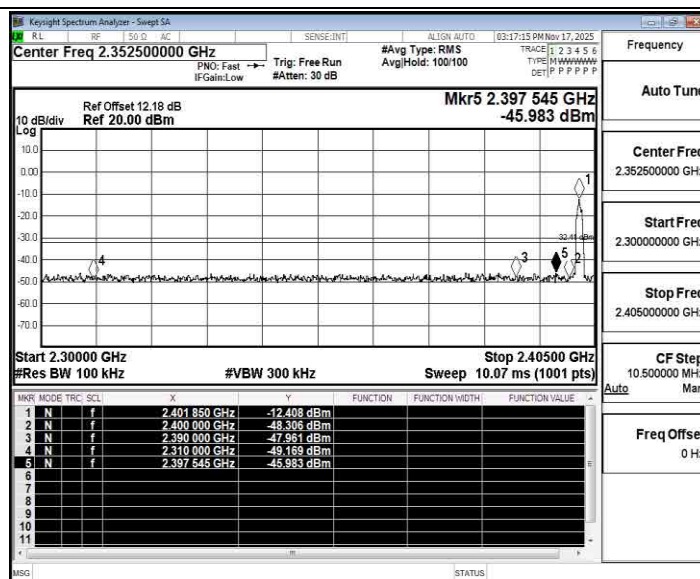
2DH5_Ant1_Low_Hop_2402



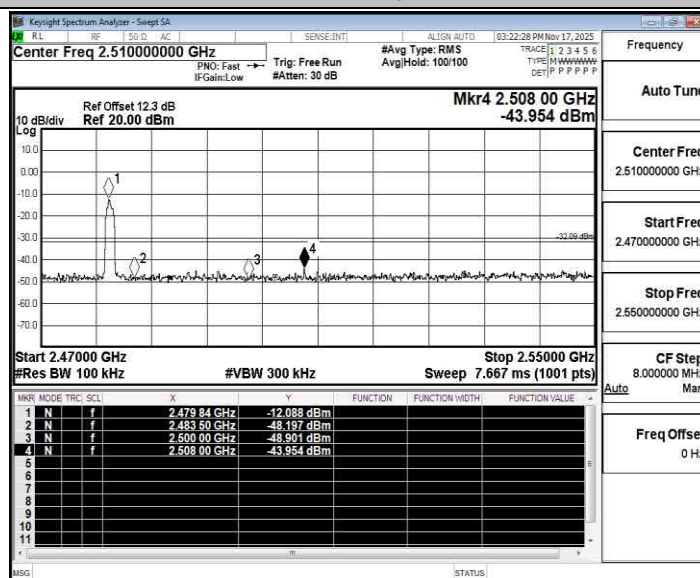
2DH5_Ant1_High_Hop_2480



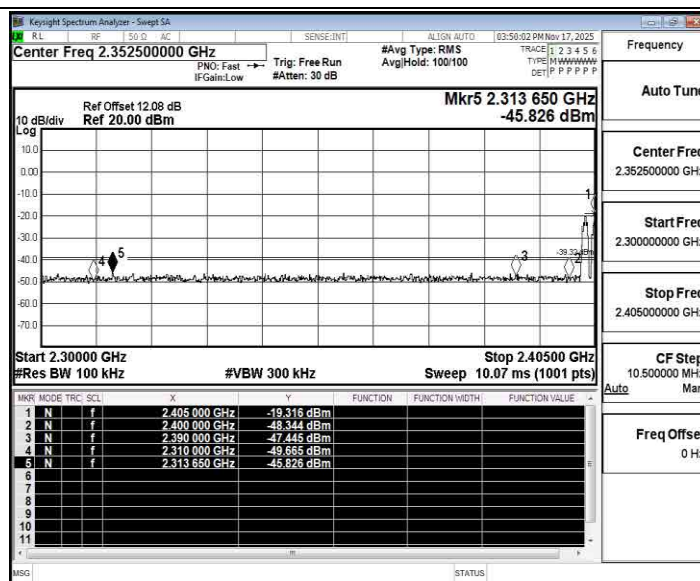
3DH5_Ant1_Low_2402



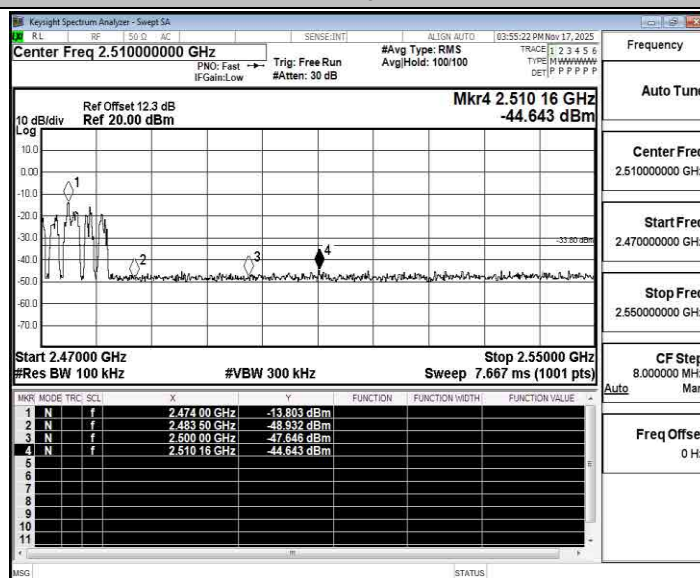
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



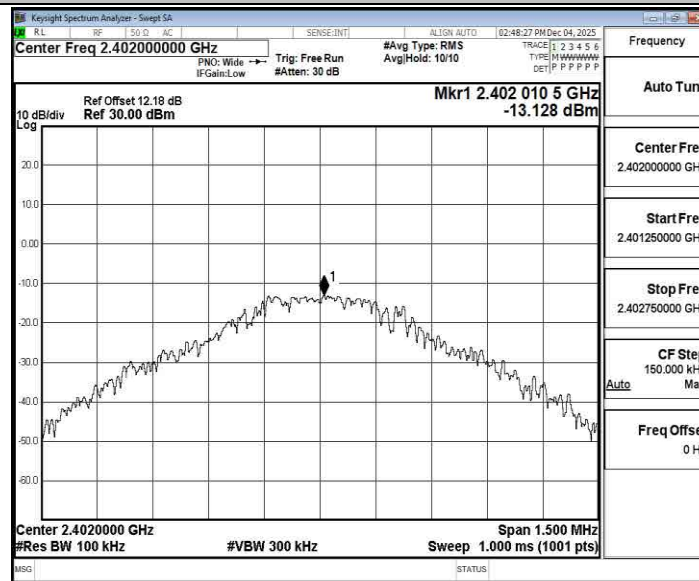
A.7 Conducted Spurious Emission

Test Result

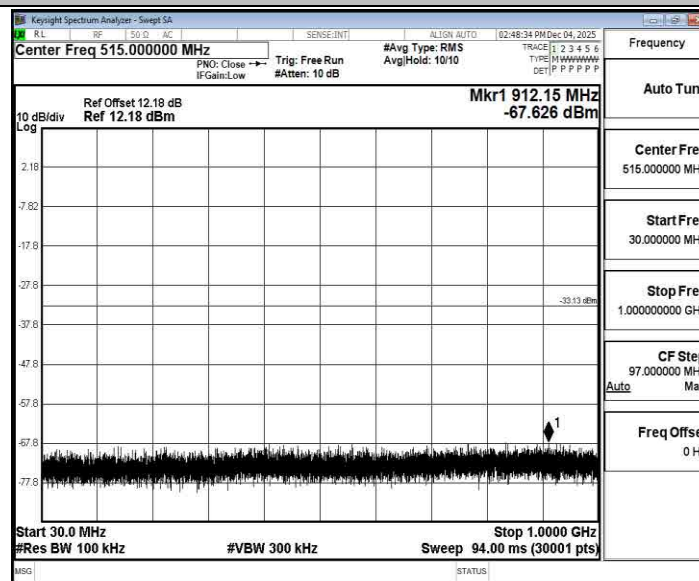
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-13.13	-13.13	---	PASS
			30~1000	-13.13	-67.63	≤-33.13	PASS
			1000~26500	-13.13	-54.46	≤-33.13	PASS
		2441	Reference	-13.09	-13.09	---	PASS
			30~1000	-13.09	-66.84	≤-33.09	PASS
			1000~26500	-13.09	-54.88	≤-33.09	PASS
		2480	Reference	-13.05	-13.05	---	PASS
			30~1000	-13.05	-67.49	≤-33.05	PASS
			1000~26500	-13.05	-54.04	≤-33.05	PASS
2DH5	Ant1	2402	Reference	-16.44	-16.44	---	PASS
			30~1000	-16.44	-67.15	≤-36.44	PASS
			1000~26500	-16.44	-54.49	≤-36.44	PASS
		2441	Reference	-16.34	-16.34	---	PASS
			30~1000	-16.34	-66.98	≤-36.34	PASS
			1000~26500	-16.34	-54.6	≤-36.34	PASS
		2480	Reference	-12.36	-12.36	---	PASS
			30~1000	-12.36	-67.44	≤-32.36	PASS
			1000~26500	-12.36	-53.99	≤-32.36	PASS
3DH5	Ant1	2402	Reference	-15.81	-15.81	---	PASS
			30~1000	-15.81	-67.3	≤-35.81	PASS
			1000~26500	-15.81	-54.18	≤-35.81	PASS
		2441	Reference	-15.79	-15.79	---	PASS
			30~1000	-15.79	-65.14	≤-35.79	PASS
			1000~26500	-15.79	-54.73	≤-35.79	PASS
		2480	Reference	-12.08	-12.08	---	PASS
			30~1000	-12.08	-67.15	≤-32.08	PASS
			1000~26500	-12.08	-54.67	≤-32.08	PASS

Test Graphs

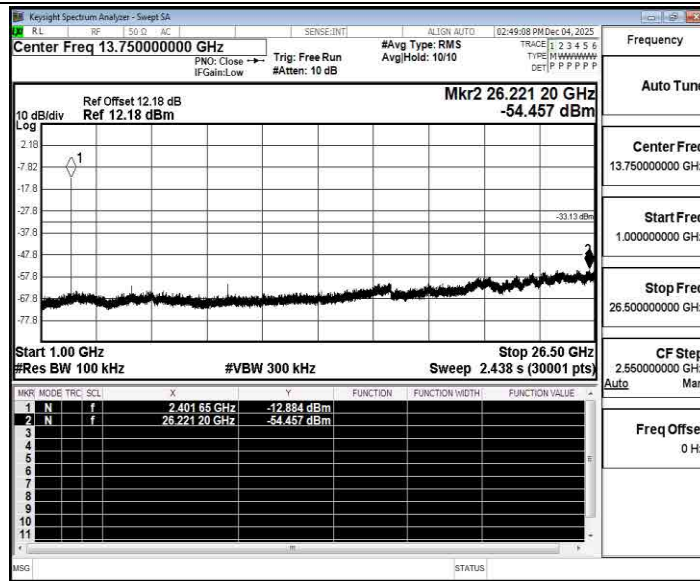
DH5_Ant1_2402_0~Reference



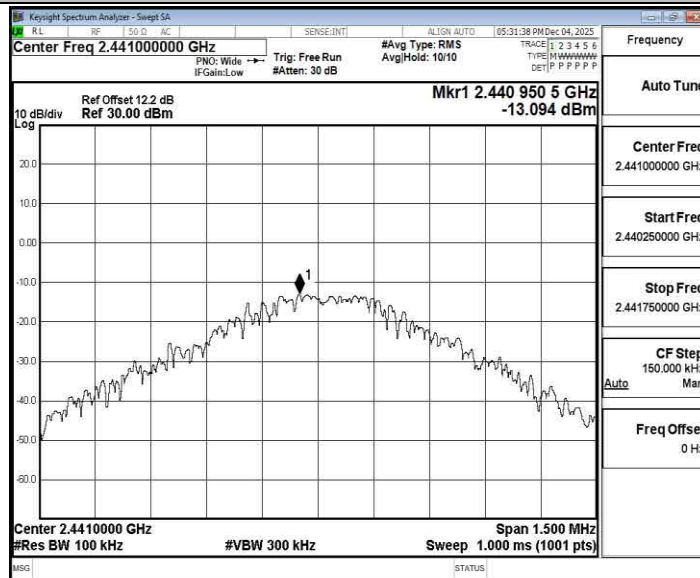
DH5_Ant1_2402_30~1000



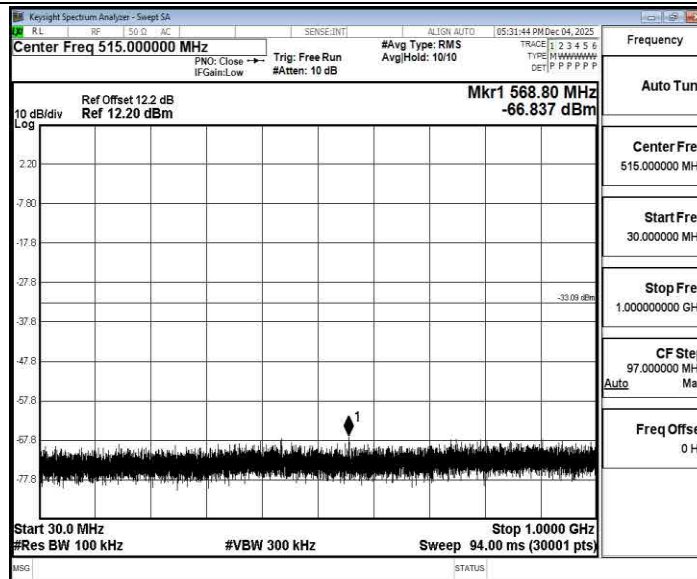
DH5_Ant1_2402_1000~26500



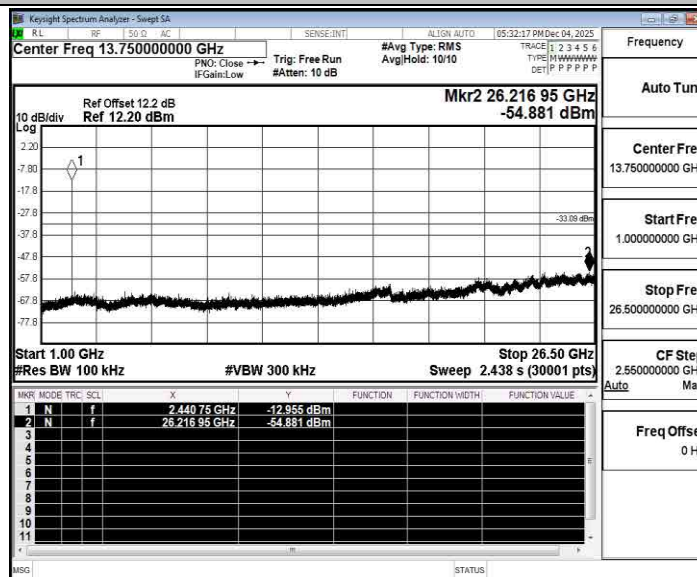
DH5_Ant1_2441_0~Reference



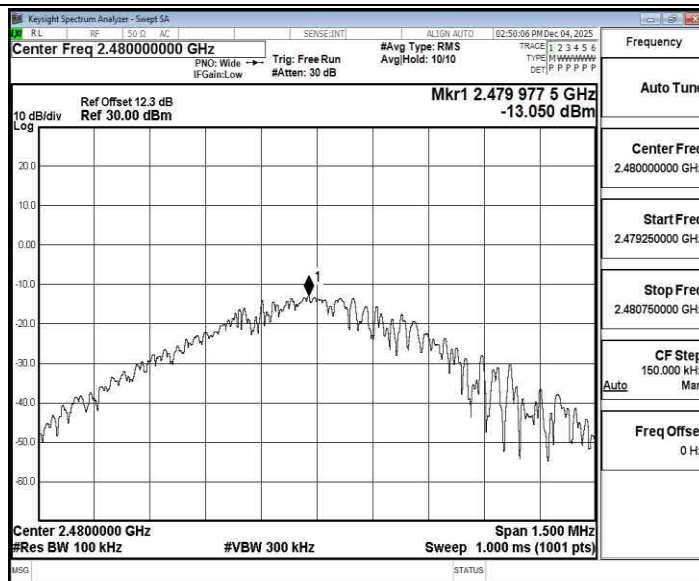
DH5_Ant1_2441_30~1000



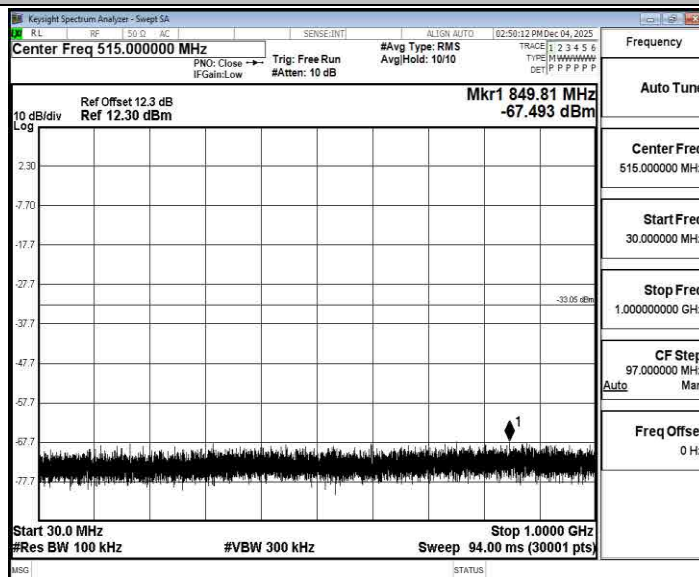
DH5_Ant1_2441_1000~26500



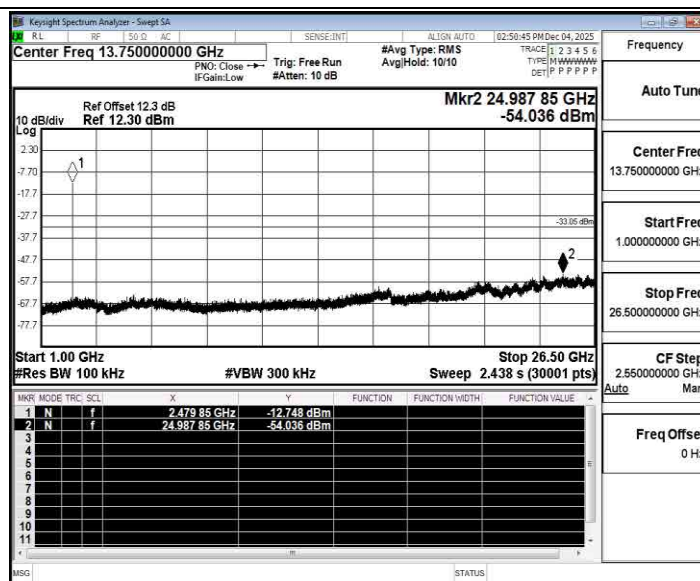
DH5_Ant1_2480_0~Reference



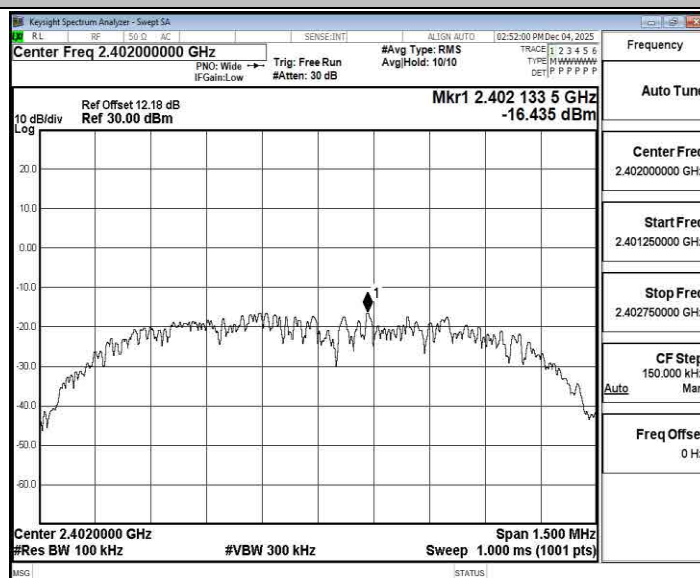
DH5_Ant1_2480_30~1000



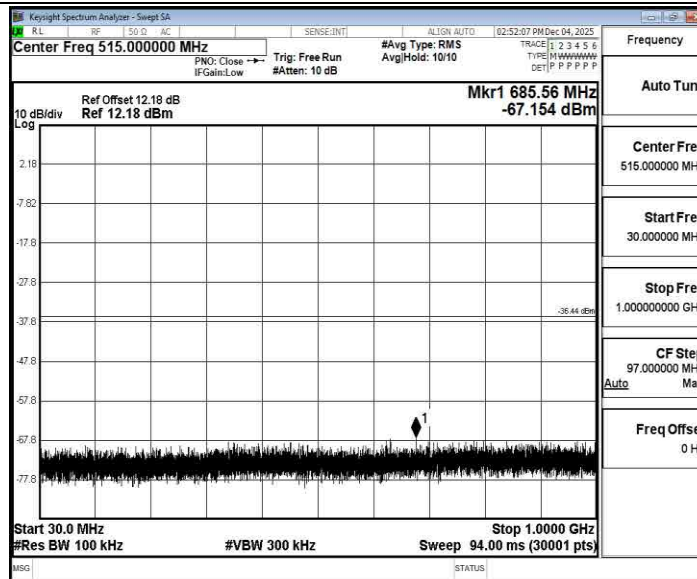
DH5_Ant1_2480_1000~26500



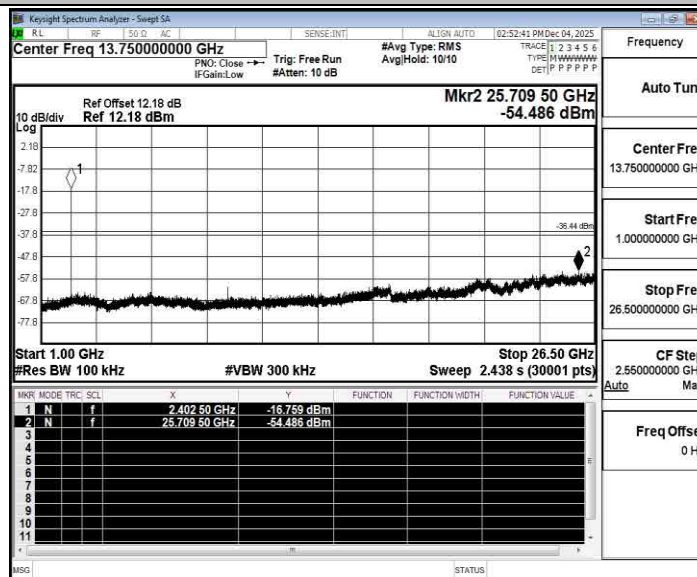
2DH5_Ant1_2402_0~Reference



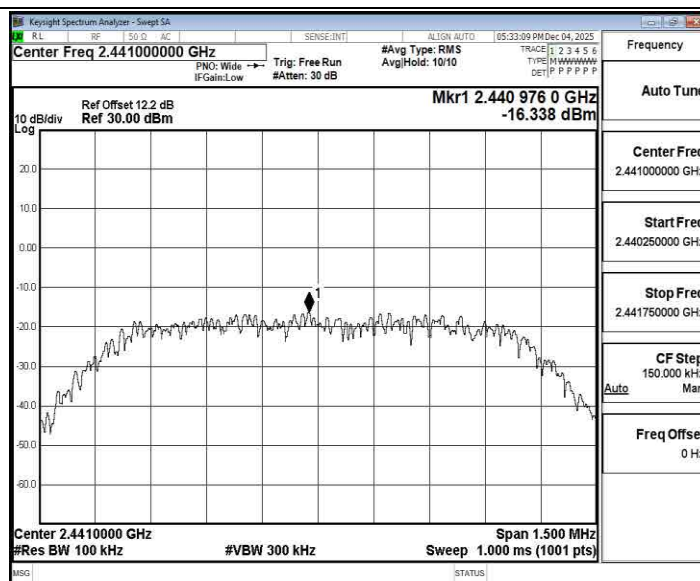
2DH5_Ant1_2402_30~1000



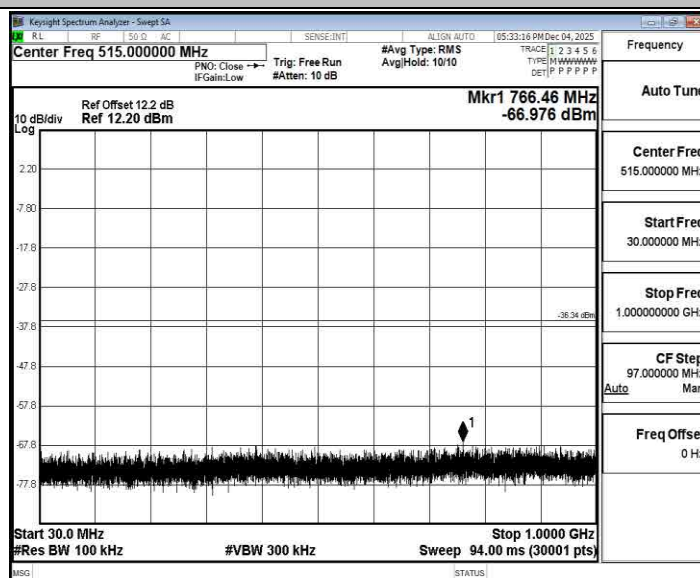
2DH5_Ant1_2402_1000~26500



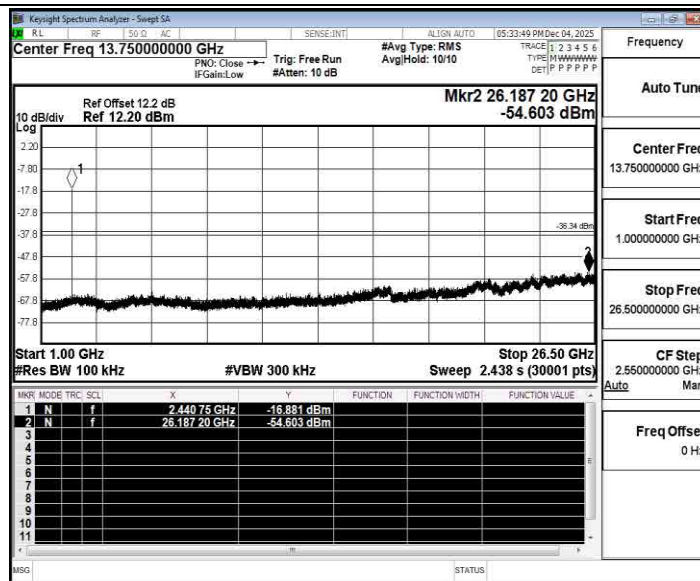
2DH5_Ant1_2441_0~Reference



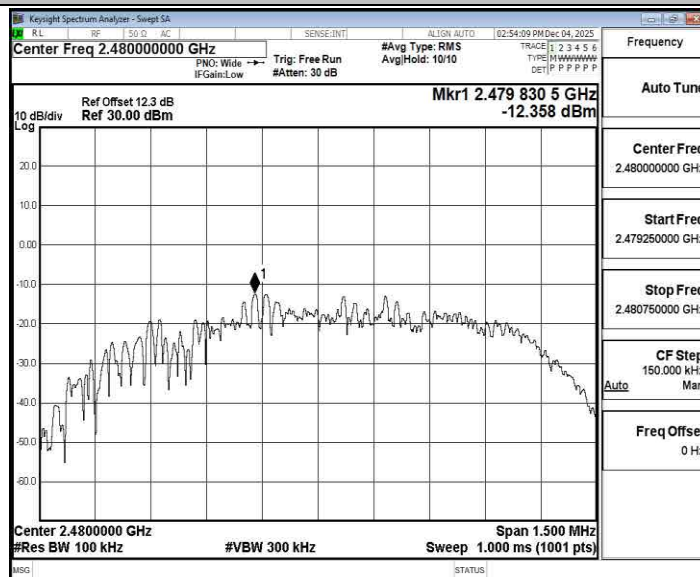
2DH5_Ant1_2441_30~1000



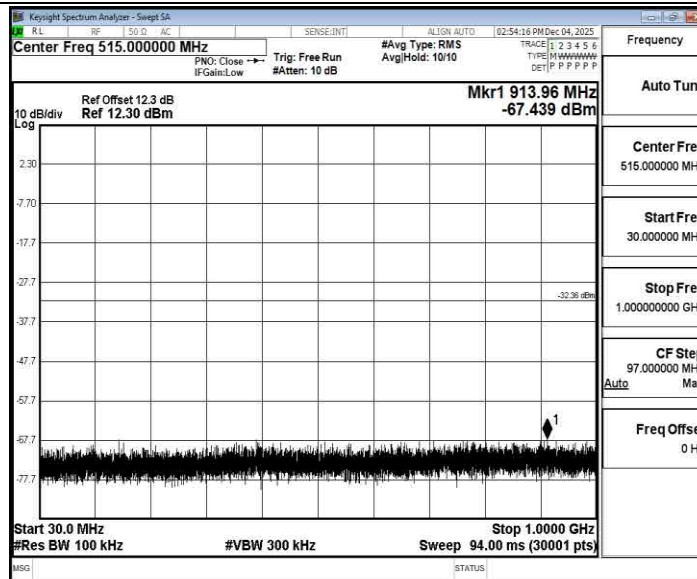
2DH5_Ant1_2441_1000~26500



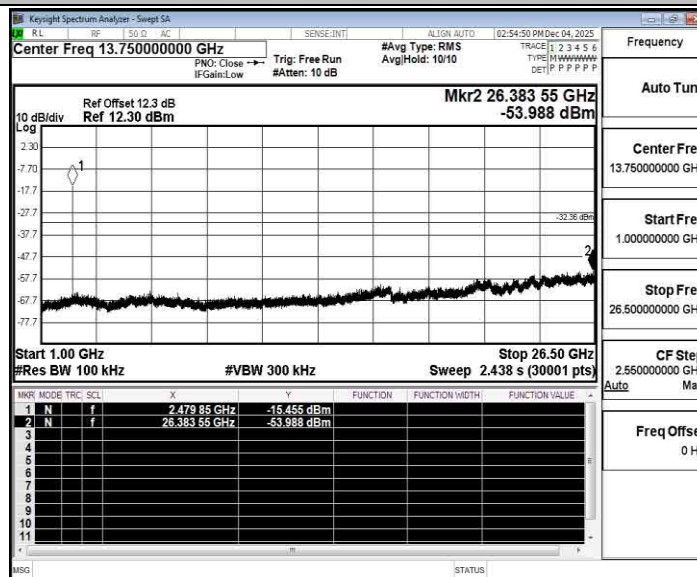
2DH5_Ant1_2480_0~Reference



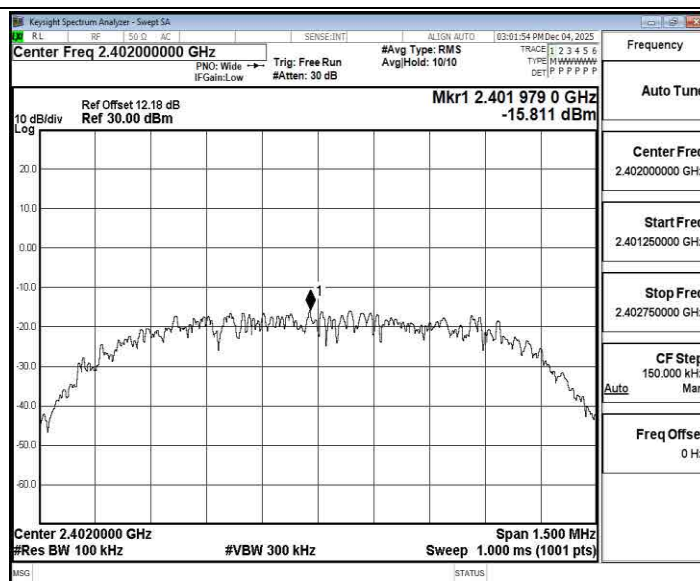
2DH5_Ant1_2480_30~1000



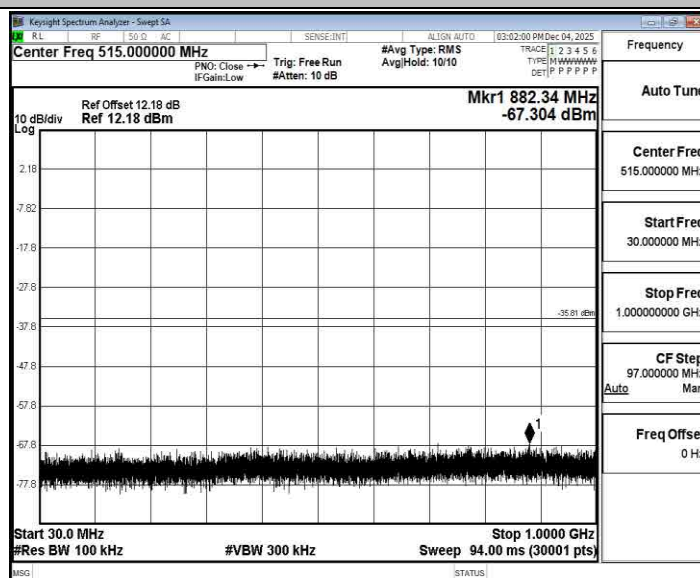
2DH5_Ant1_2480_1000~26500



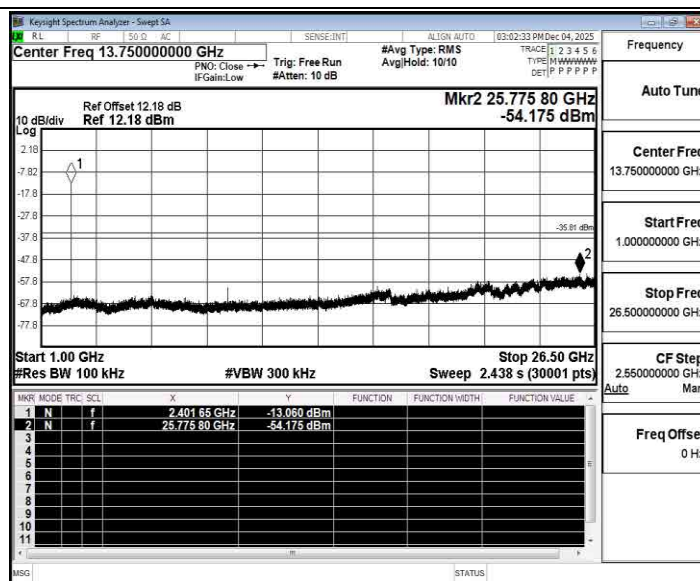
3DH5_Ant1_2402_0~Reference



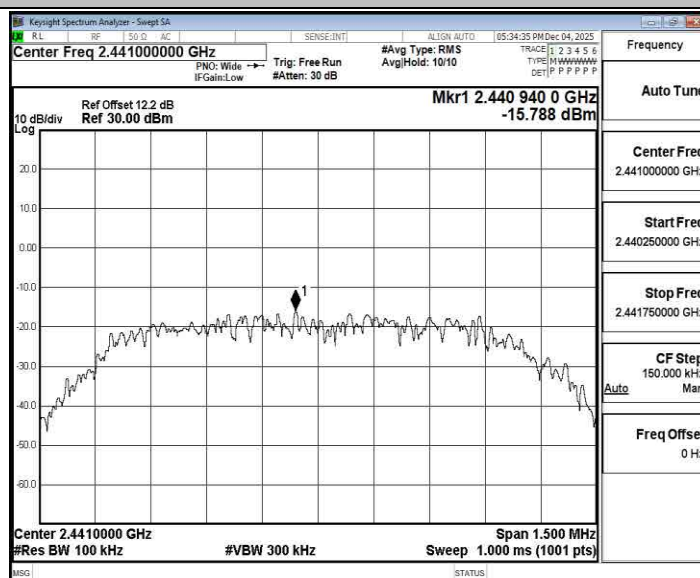
3DH5_Ant1_2402_30~1000



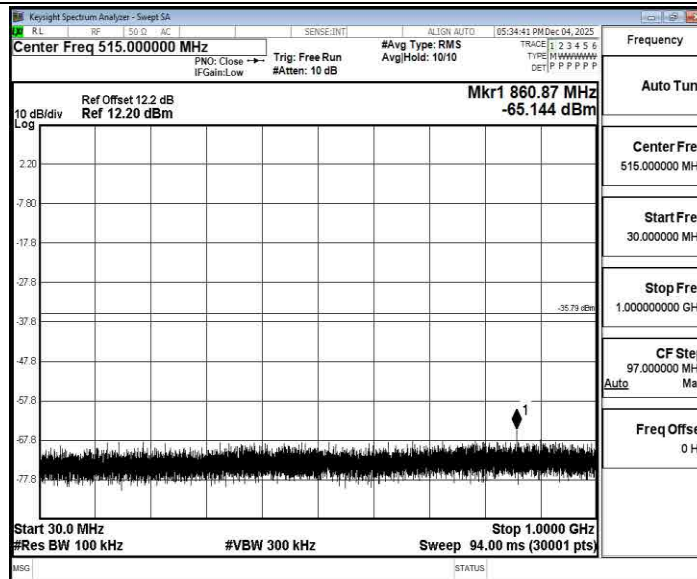
3DH5_Ant1_2402_1000~26500



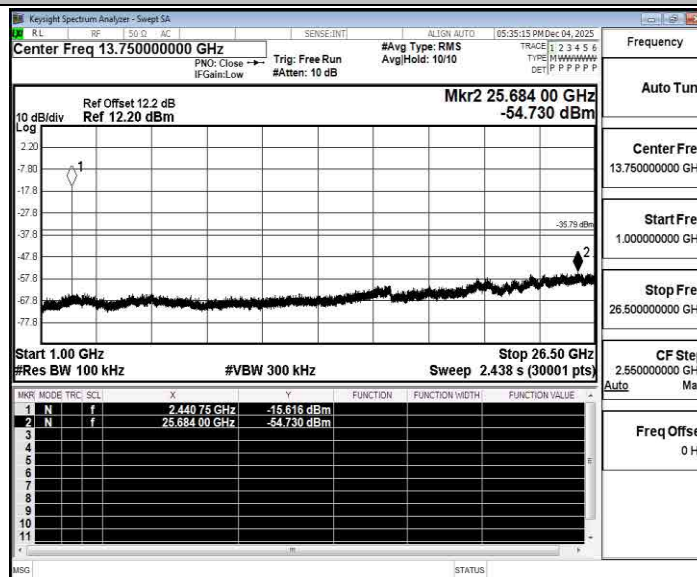
3DH5_Ant1_2441_0~Reference



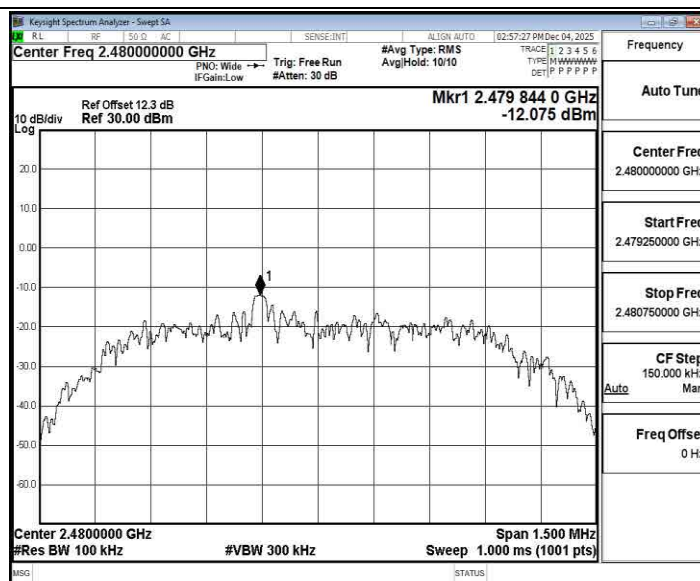
3DH5_Ant1_2441_30~1000



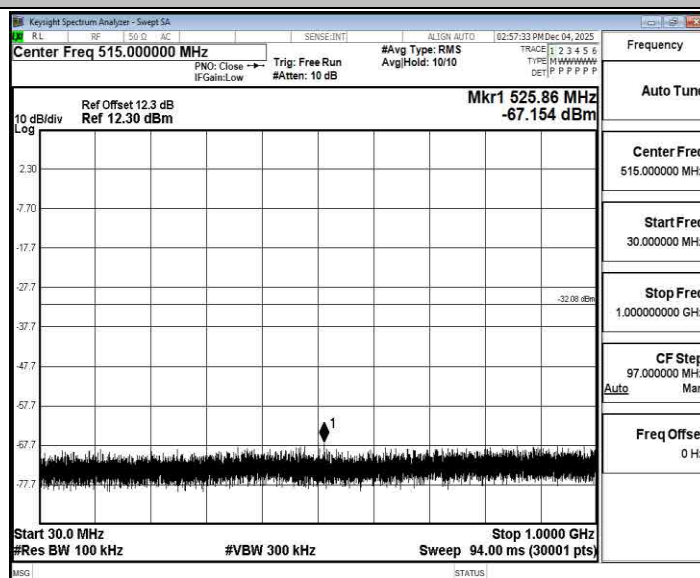
3DH5_Ant1_2441_1000~26500



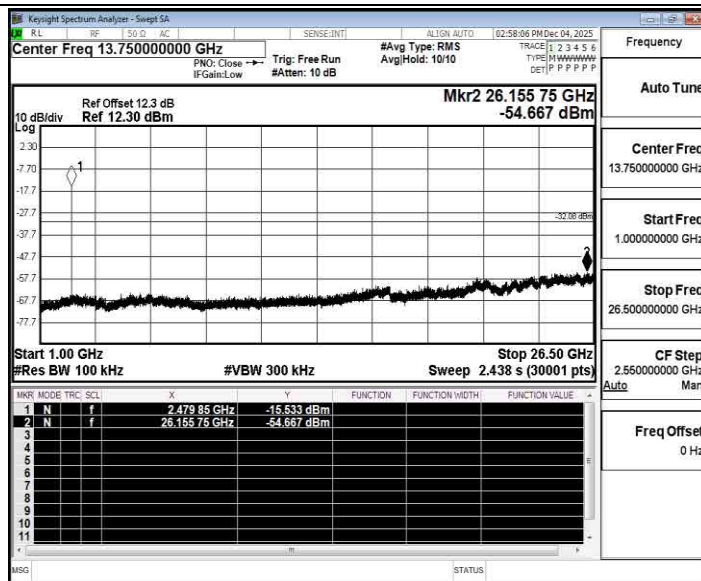
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



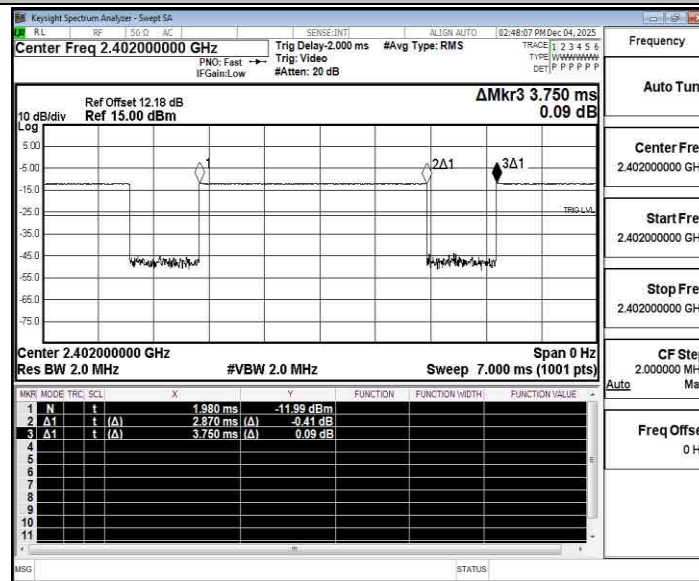
A.8 Duty Cycle

Test Result

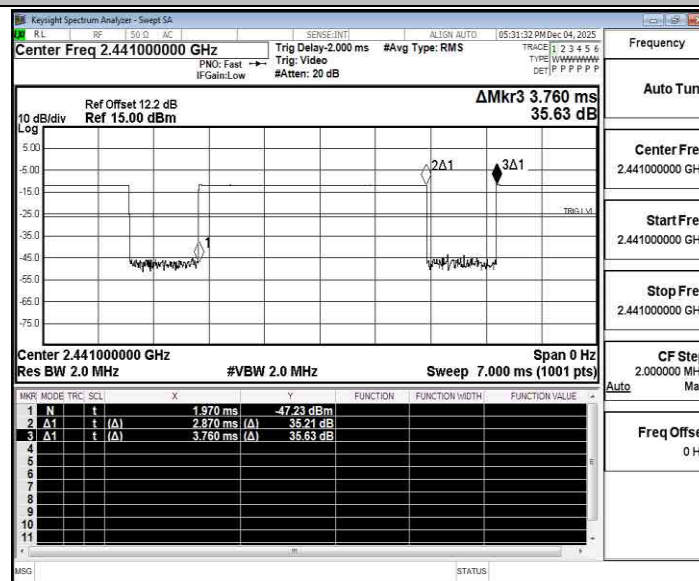
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	xFactor	Limit	Verdict
DH5	Ant1	2402	2.87	3.75	76.53	1.16	---	---
		2441	2.87	3.76	76.33	1.17	---	---
		2480	2.87	3.75	76.53	1.16	---	---
2DH5	Ant1	2402	2.88	3.75	76.80	1.15	---	---
		2441	2.89	3.76	76.86	1.14	---	---
		2480	2.89	3.76	76.86	1.14	---	---
3DH5	Ant1	2402	2.88	3.75	76.80	1.15	---	---
		2441	2.89	3.75	77.07	1.13	---	---
		2480	2.88	3.75	76.80	1.15	---	---

Test Graphs

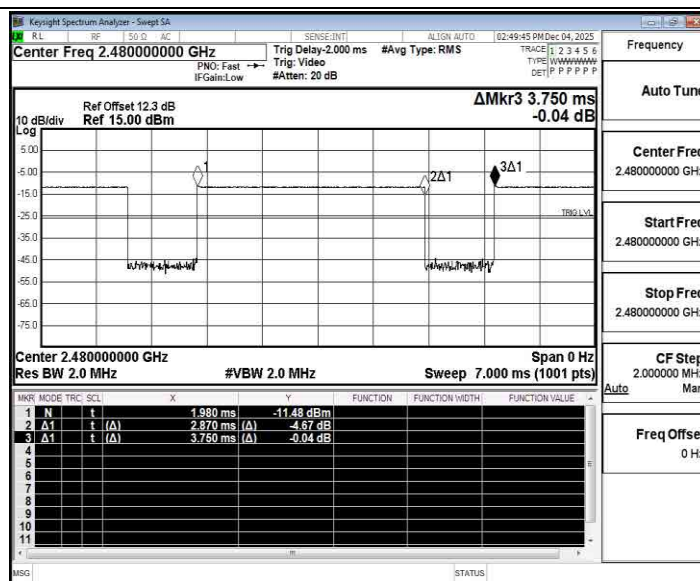
DH5_Ant1_2402



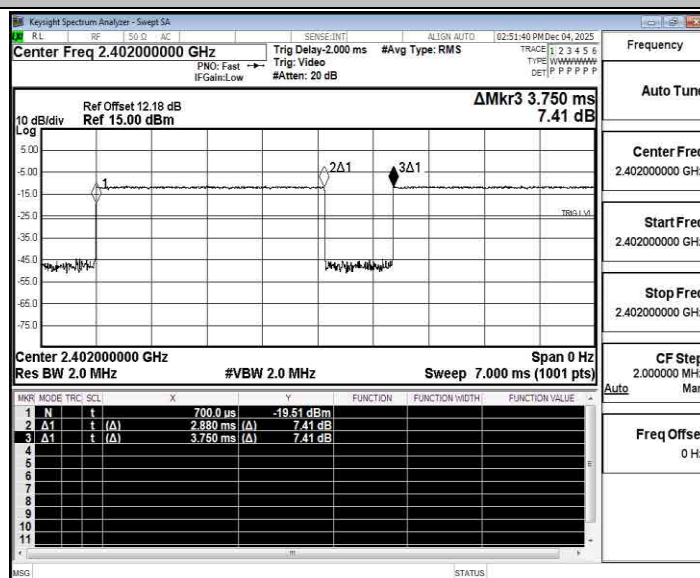
DH5_Ant1_2441



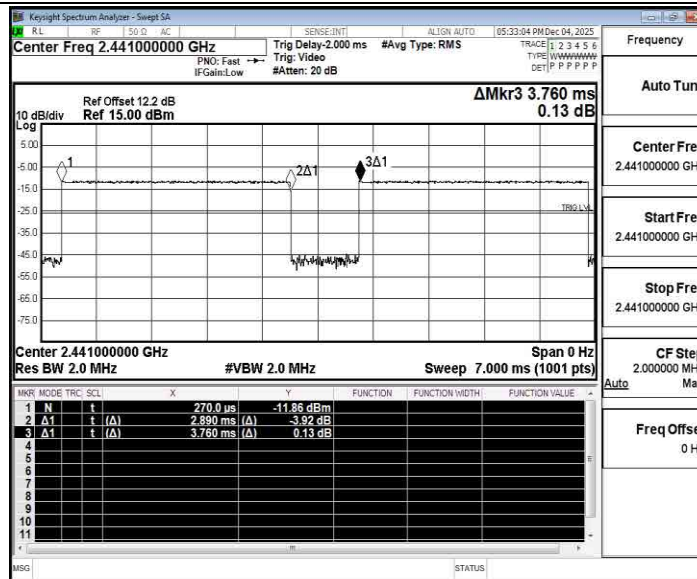
DH5_Ant1_2480



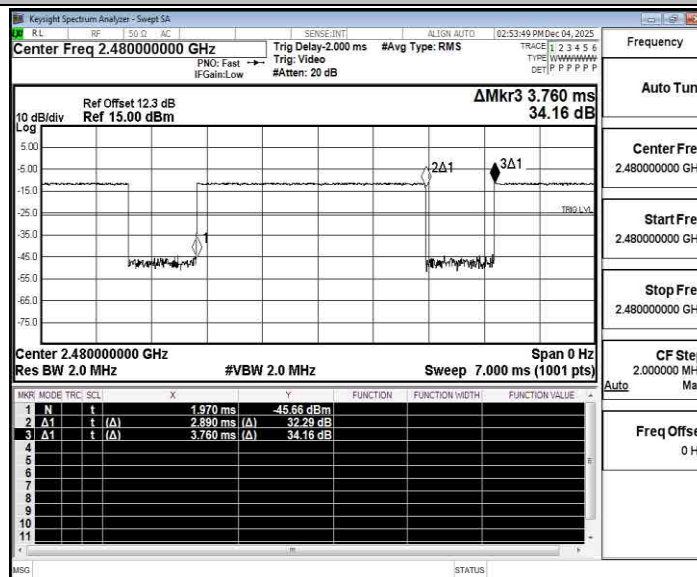
2DH5_Ant1_2402



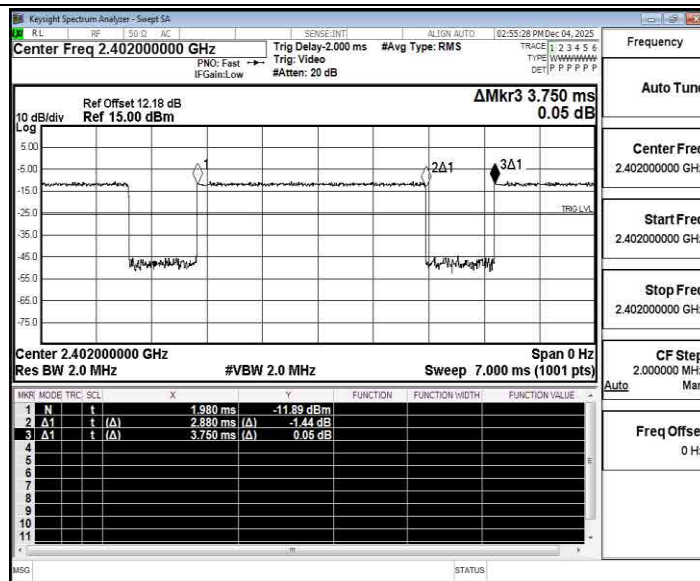
2DH5_Ant1_2441



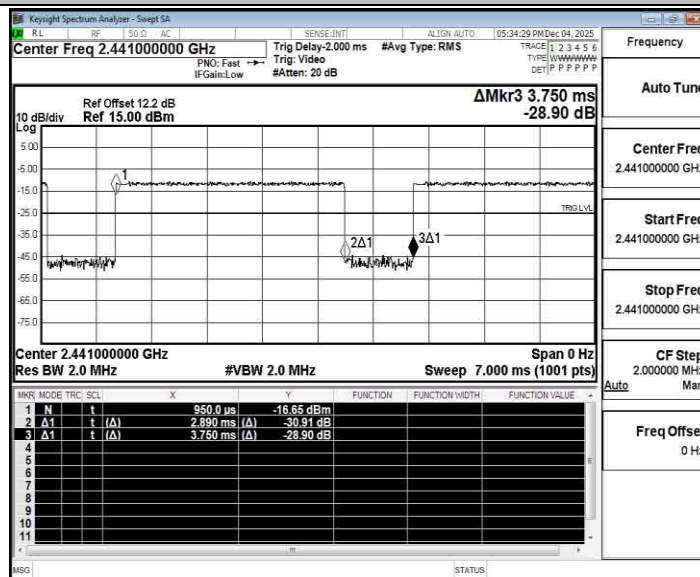
2DH5_Ant1_2480



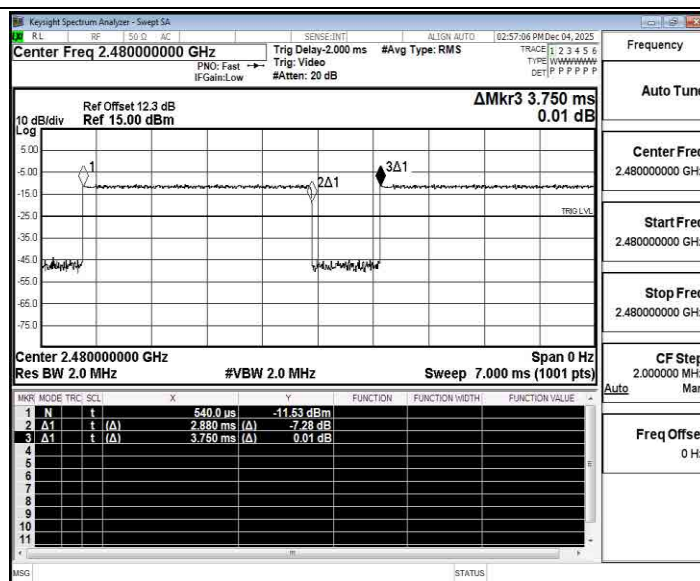
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



A.9 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-61.31	≤-44.36	2.00	1.16	37.05	≤54	PASS
				AV	2347.775	-60	≤-44.36	2.00	1.16	38.36	≤54	PASS
				AV	2390.000	-60.52	≤-44.36	2.00	1.16	37.84	≤54	PASS
				Peak	2310.000	-53.34	≤-23.20	2.00	0.00	43.86	≤74	PASS
				Peak	2375.705	-49.86	≤-23.20	2.00	0.00	47.34	≤74	PASS
				Peak	2390.000	-53.47	≤-23.20	2.00	0.00	43.73	≤74	PASS
		High	2480	AV	2483.500	-60.28	≤-44.36	2.00	1.16	38.08	≤54	PASS
				AV	2492.400	-59.8	≤-44.36	2.00	1.16	38.56	≤54	PASS
				AV	2500.000	-59.97	≤-44.36	2.00	1.16	38.39	≤54	PASS
				Peak	2483.500	-52.78	≤-23.20	2.00	0.00	44.42	≤74	PASS
				Peak	2497.040	-50.19	≤-23.20	2.00	0.00	47.01	≤74	PASS
				Peak	2500.000	-53.02	≤-23.20	2.00	0.00	44.18	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-61.19	≤-44.35	2.00	1.15	37.16	≤54	PASS
				AV	2382.320	-60.12	≤-44.35	2.00	1.15	38.23	≤54	PASS
				AV	2390.000	-60.83	≤-44.35	2.00	1.15	37.52	≤54	PASS
				Peak	2310.000	-53.66	≤-23.20	2.00	0.00	43.54	≤74	PASS
				Peak	2363.840	-49.53	≤-23.20	2.00	0.00	47.67	≤74	PASS
				Peak	2390.000	-52.21	≤-	2.00	0.00	44.99	≤74	PASS

Guangzhou LCS Compliance Testing Laboratory Ltd.

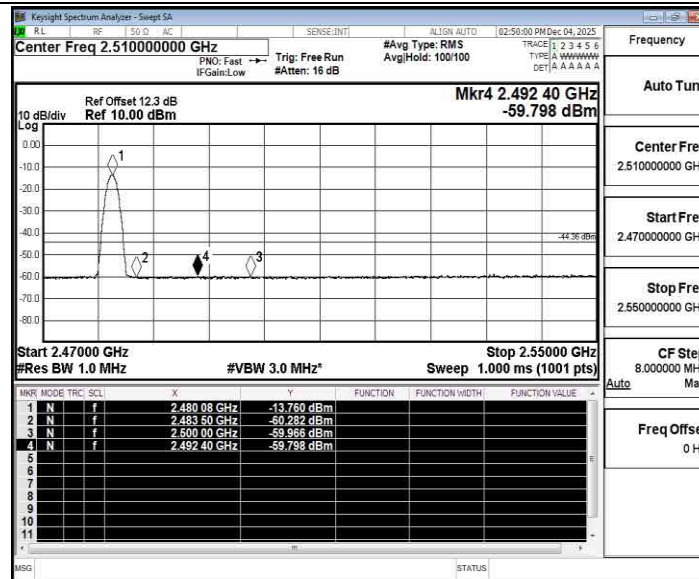
Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

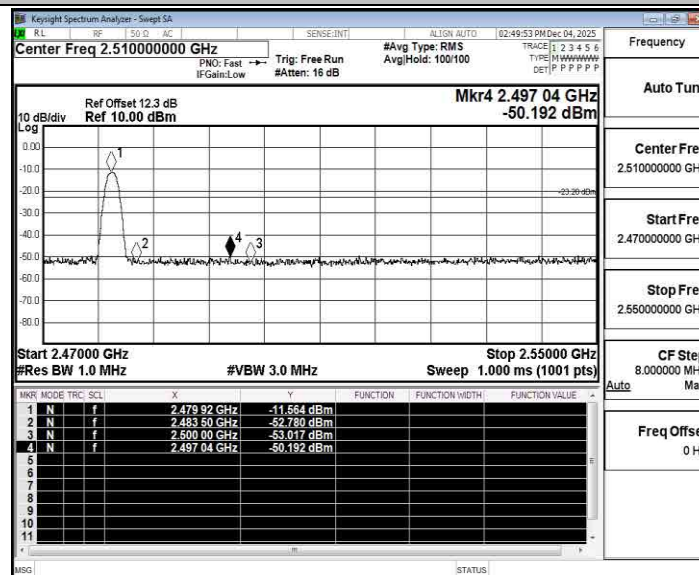
		High	2480				23.20					
				AV	2483.500	-60.46	≤ 44.34	2.00	1.14	37.88	≤54	PASS
				AV	2498.720	-59.73	≤ 44.34	2.00	1.14	38.61	≤54	PASS
				AV	2500.000	-60.85	≤ 44.34	2.00	1.14	37.49	≤54	PASS
				Peak	2483.500	-52.39	≤ 23.20	2.00	0.00	44.81	≤74	PASS
				Peak	2489.840	-49.14	≤ 23.20	2.00	0.00	48.06	≤74	PASS
3DH5	Ant1	Low	2402	Peak	2500.000	-52.45	≤ 23.20	2.00	0.00	44.75	≤74	PASS
				AV	2310.000	-60.84	≤ 44.35	2.00	1.15	37.51	≤54	PASS
				AV	2328.560	-60.17	≤ 44.35	2.00	1.15	38.18	≤54	PASS
				AV	2390.000	-60.98	≤ 44.35	2.00	1.15	37.37	≤54	PASS
				Peak	2310.000	-52.21	≤ 23.20	2.00	0.00	44.99	≤74	PASS
				Peak	2389.985	-50.63	≤ 23.20	2.00	0.00	46.57	≤74	PASS
		High	2480	Peak	2390.000	-50.63	≤ 23.20	2.00	0.00	46.57	≤74	PASS
				AV	2483.500	-60.76	≤ 44.35	2.00	1.15	37.59	≤54	PASS
				AV	2494.880	-59.52	≤ 44.35	2.00	1.15	38.83	≤54	PASS
				AV	2500.000	-60.36	≤ 44.35	2.00	1.15	37.99	≤54	PASS
				Peak	2483.500	-52.24	≤ 23.20	2.00	0.00	44.96	≤74	PASS
				Peak	2496.720	-49.4	≤ 23.20	2.00	0.00	47.80	≤74	PASS
				Peak	2500.000	-52.36	≤ 23.20	2.00	0.00	44.84	≤74	PASS

Note:

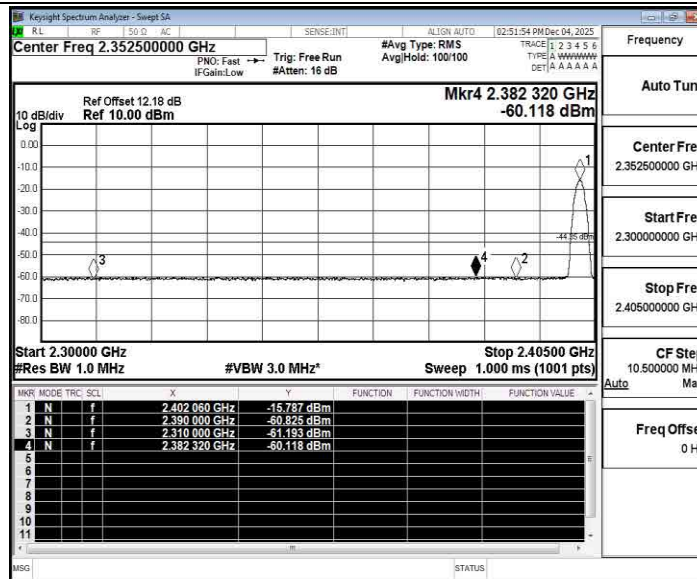
- The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



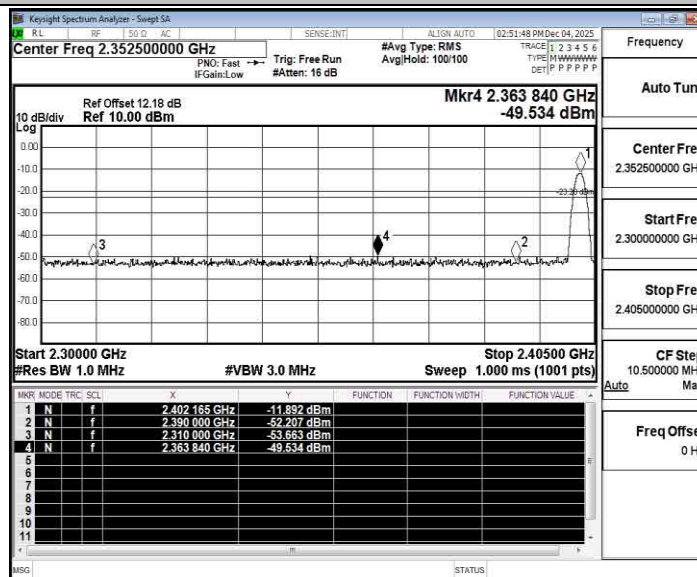
DH5_Ant1_High_2480_Peak



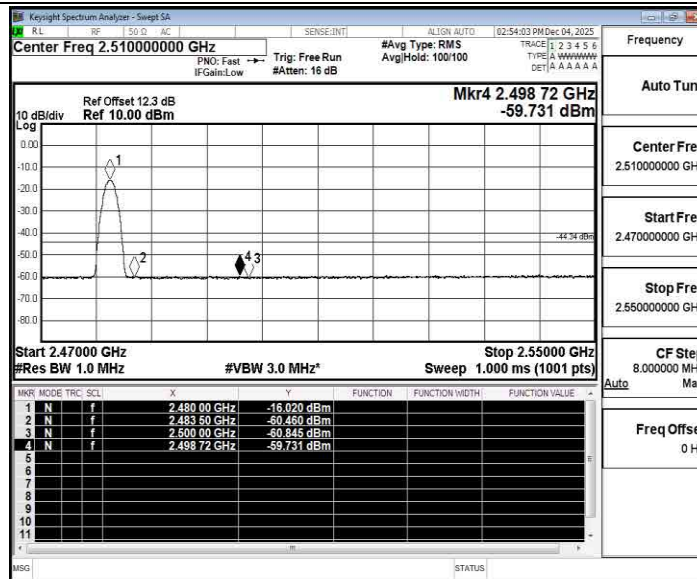
2DH5_Ant1_Low_2402_AV



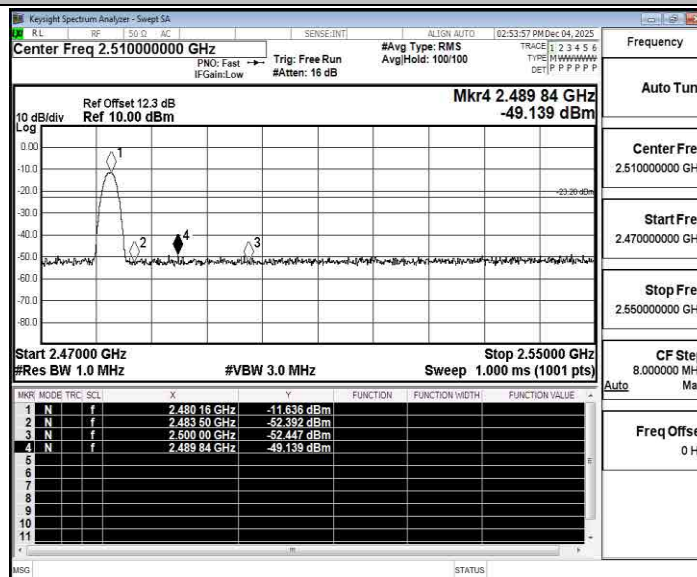
2DH5_Ant1_Low_2402_Peak



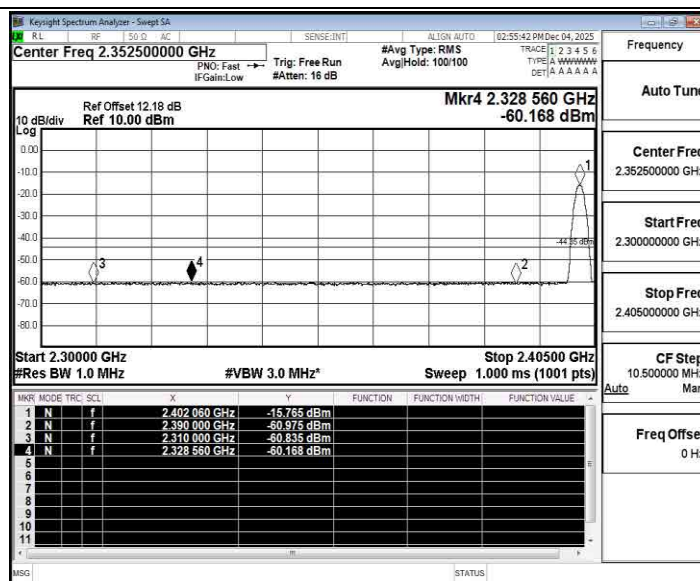
2DH5_Ant1_High_2480_AV



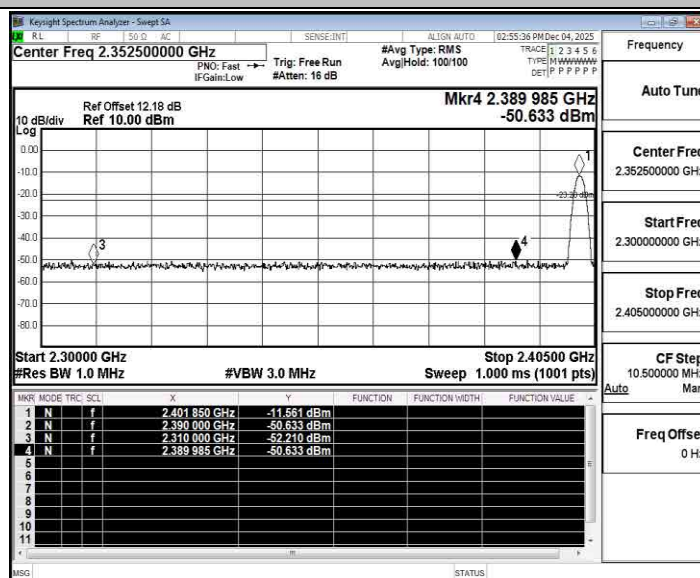
2DH5_Ant1_High_2480_Peak



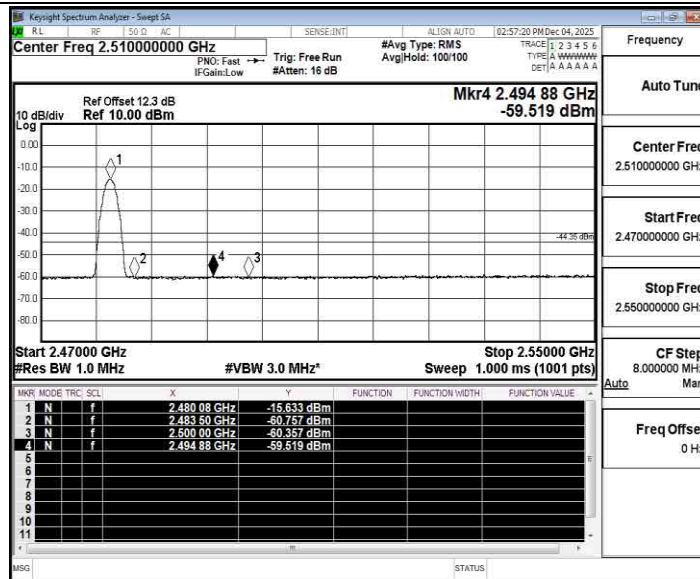
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

