

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Smart Sound Machine N19

Test Model: N19

Environmental Conditions

Temperature:	23.6°C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

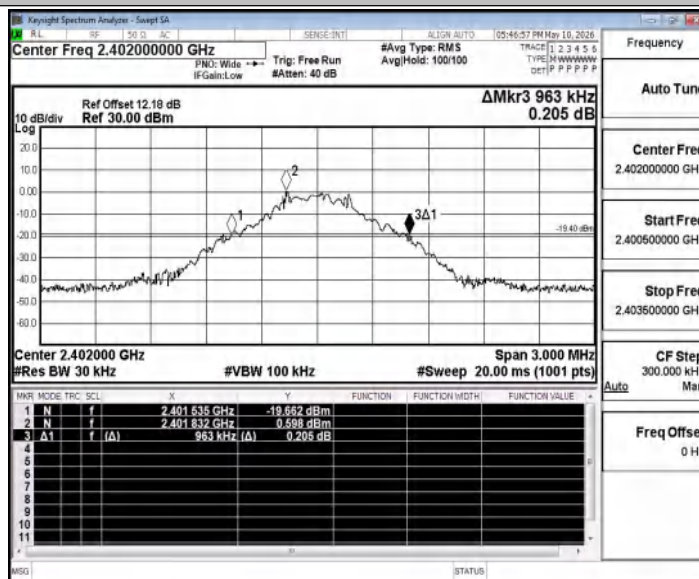
A.1 20dB Emission Bandwidth

Test Result

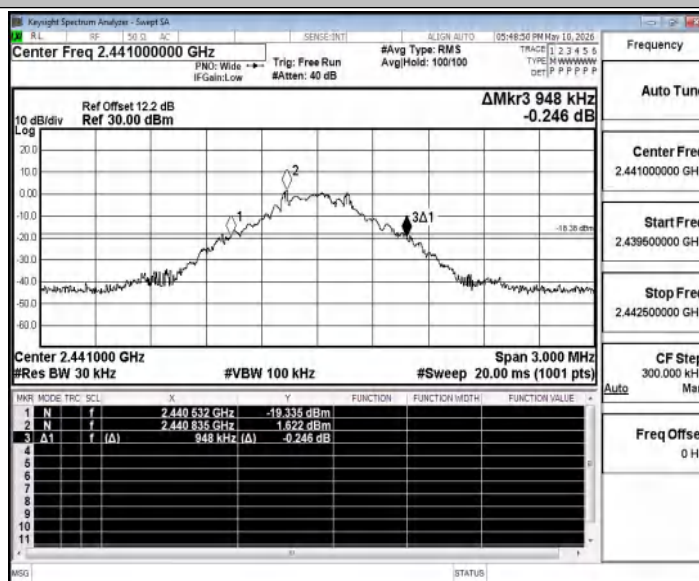
TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.963	2401.535	2402.498	---	---
		2441	0.948	2440.532	2441.480	---	---
		2480	0.954	2479.535	2480.489	---	---
2DH5	Ant1	2402	1.287	2401.361	2402.648	---	---
		2441	1.296	2440.352	2441.648	---	---
		2480	1.284	2479.361	2480.645	---	---
3DH5	Ant1	2402	1.299	2401.346	2402.645	---	---
		2441	1.296	2440.346	2441.642	---	---
		2480	1.299	2479.346	2480.645	---	---

Test Graphs

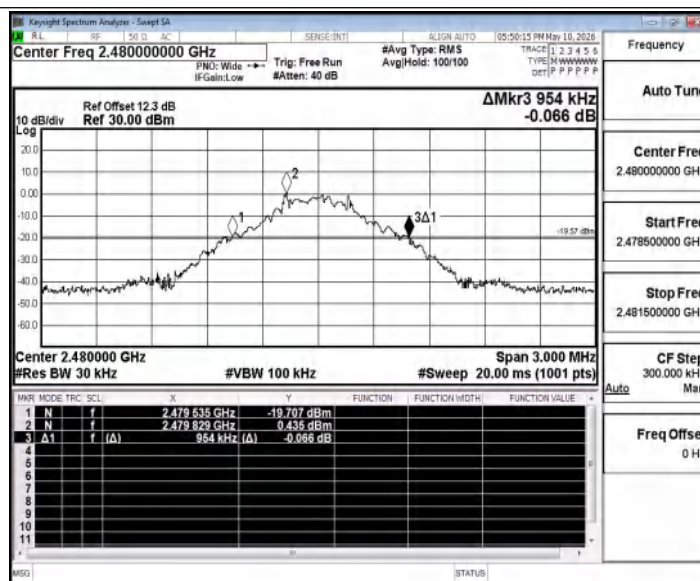
DH5_Ant1_2402



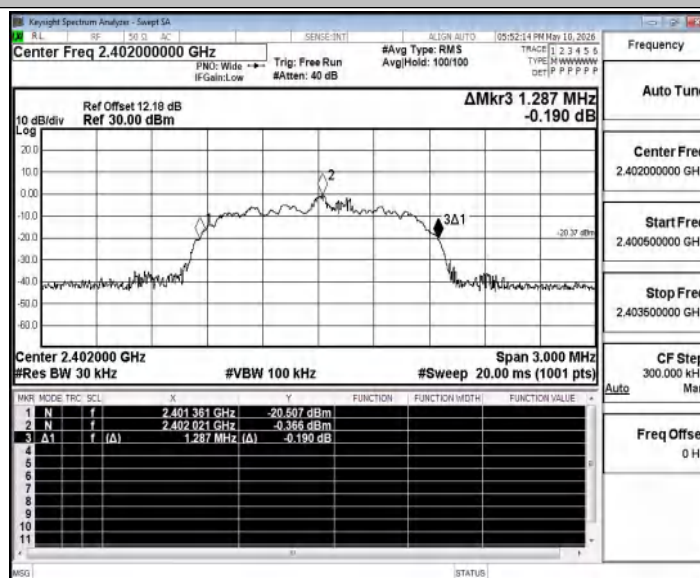
DH5_Ant1_2441



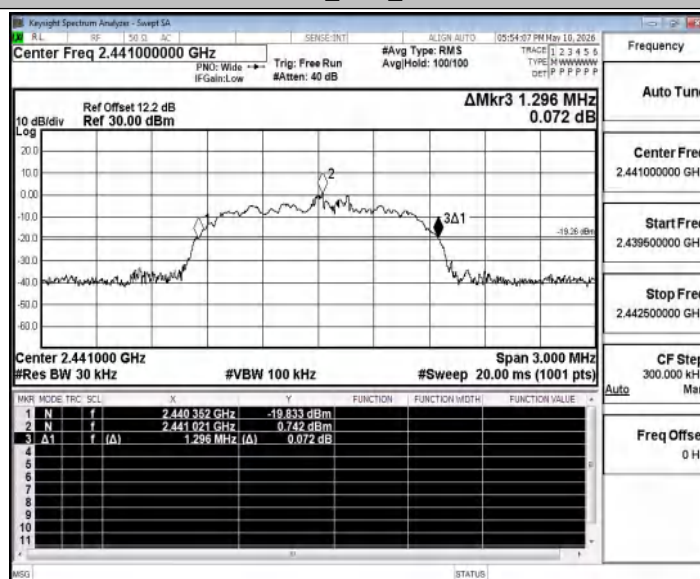
DH5_Ant1_2480



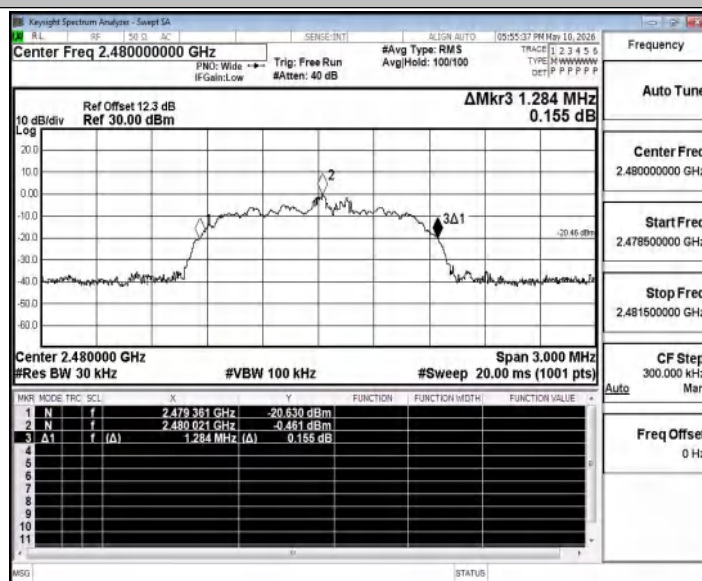
2DH5_Ant1_2402



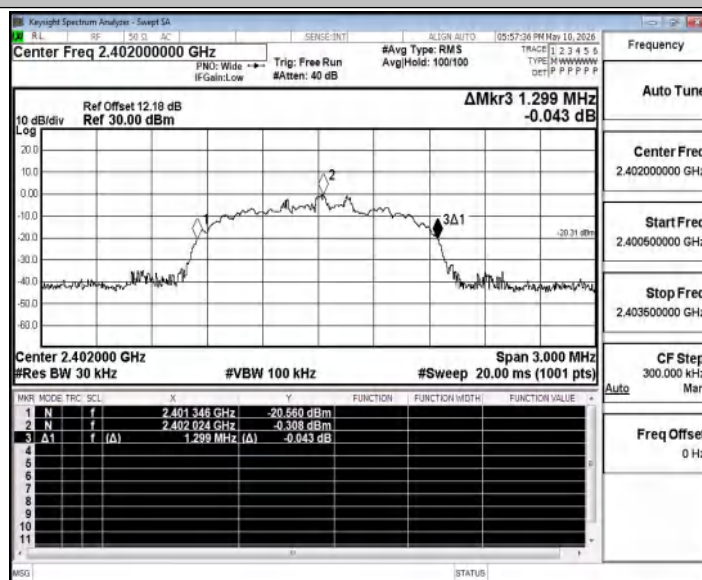
2DH5_Ant1_2441



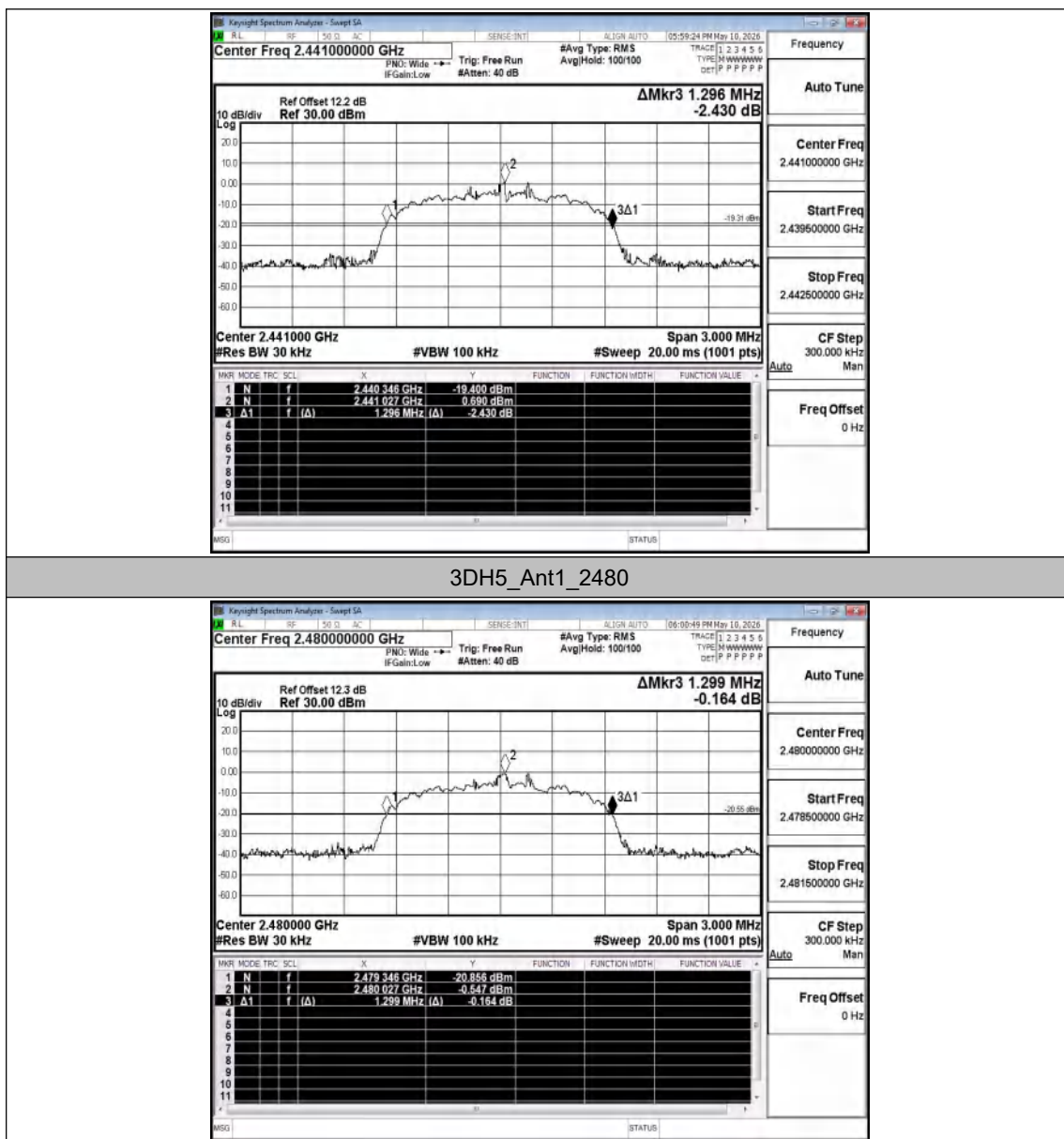
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



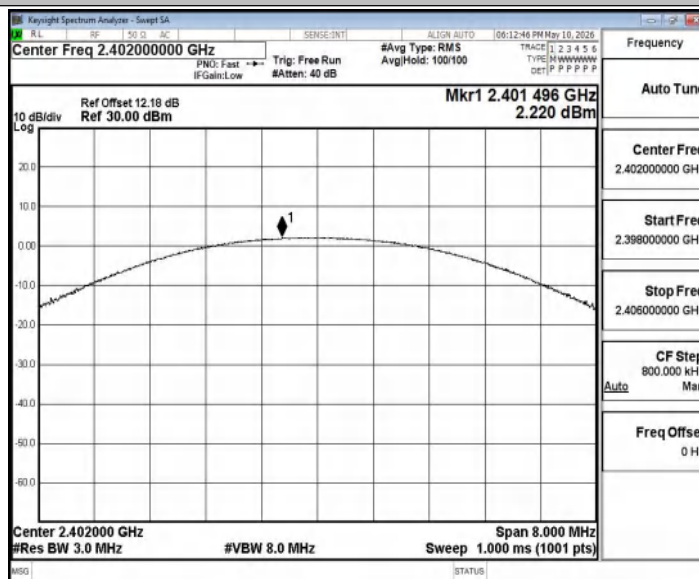
A.2 Maximum Peak conducted output power

Test Result Peak

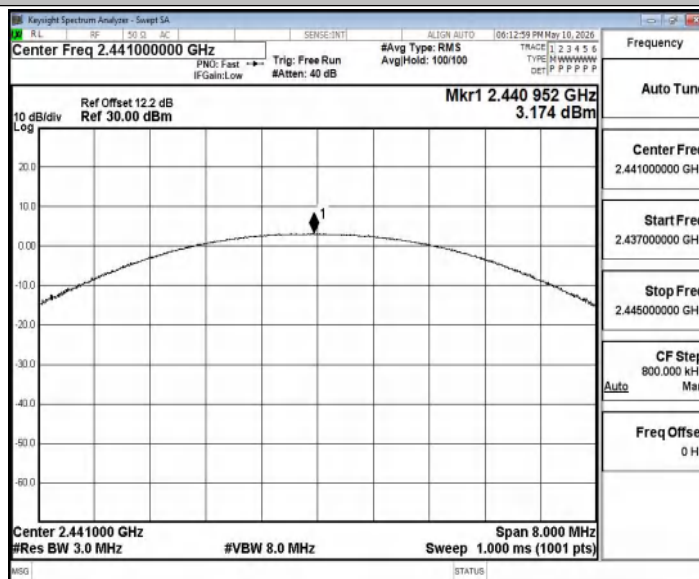
Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	2.22	≤30	PASS
		2441	3.17	≤30	PASS
		2480	1.93	≤30	PASS
2DH5	Ant1	2402	3.67	≤21	PASS
		2441	4.31	≤21	PASS
		2480	2.96	≤21	PASS
3DH5	Ant1	2402	3.89	≤21	PASS
		2441	4.42	≤21	PASS
		2480	3.14	≤21	PASS

Test Graphs

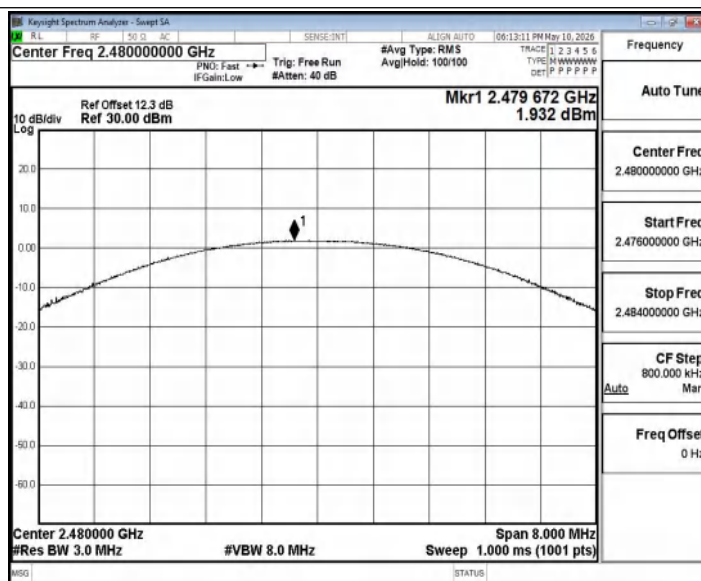
DH5_Ant1_2402



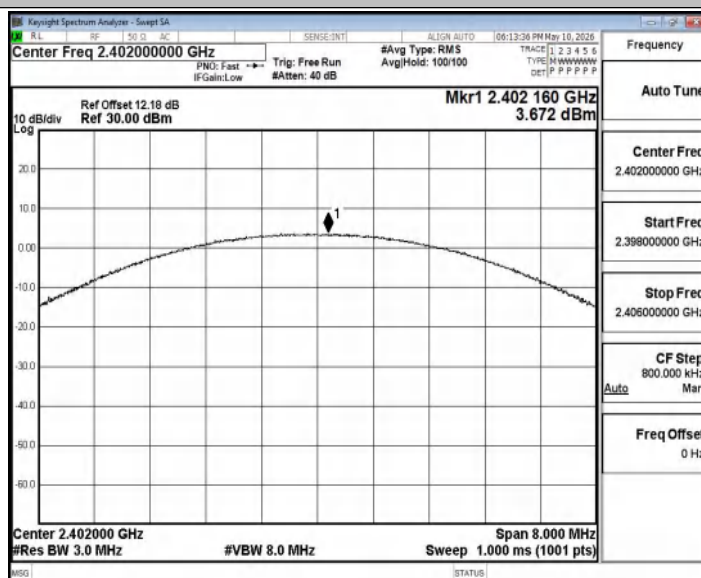
DH5_Ant1_2441



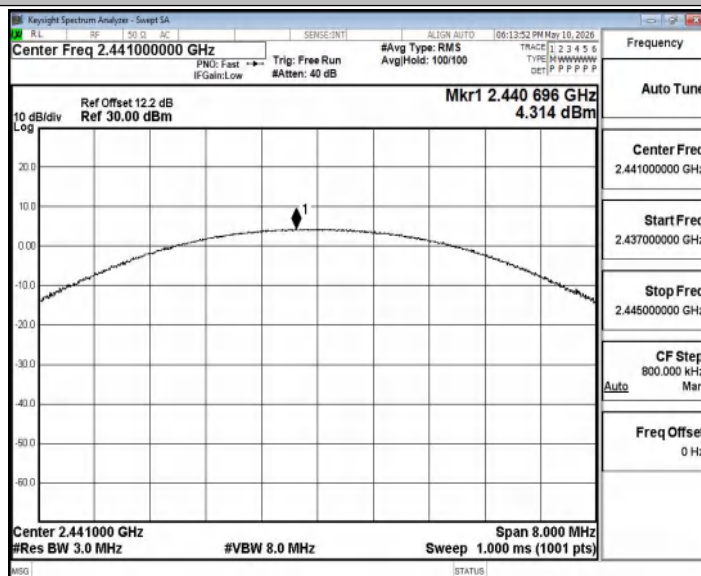
DH5_Ant1_2480



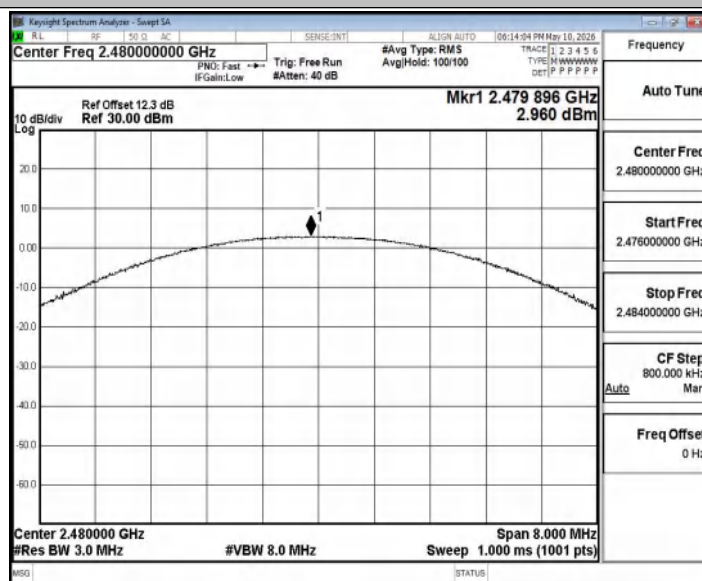
2DH5_Ant1_2402



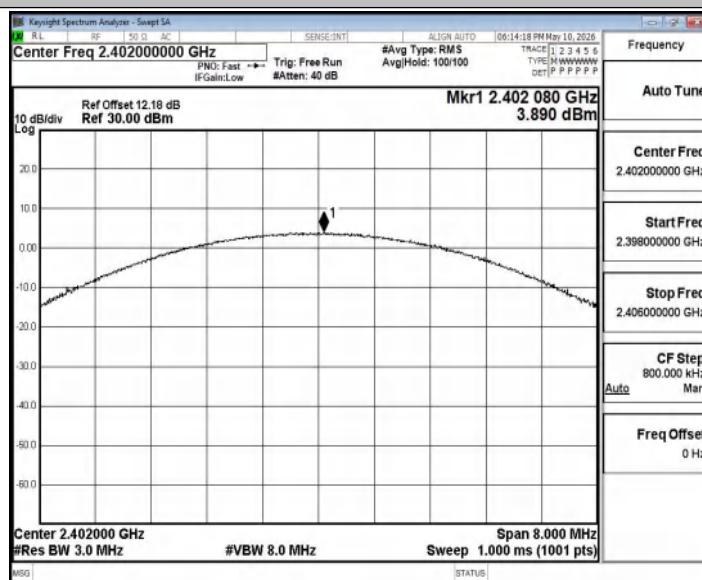
2DH5_Ant1_2441



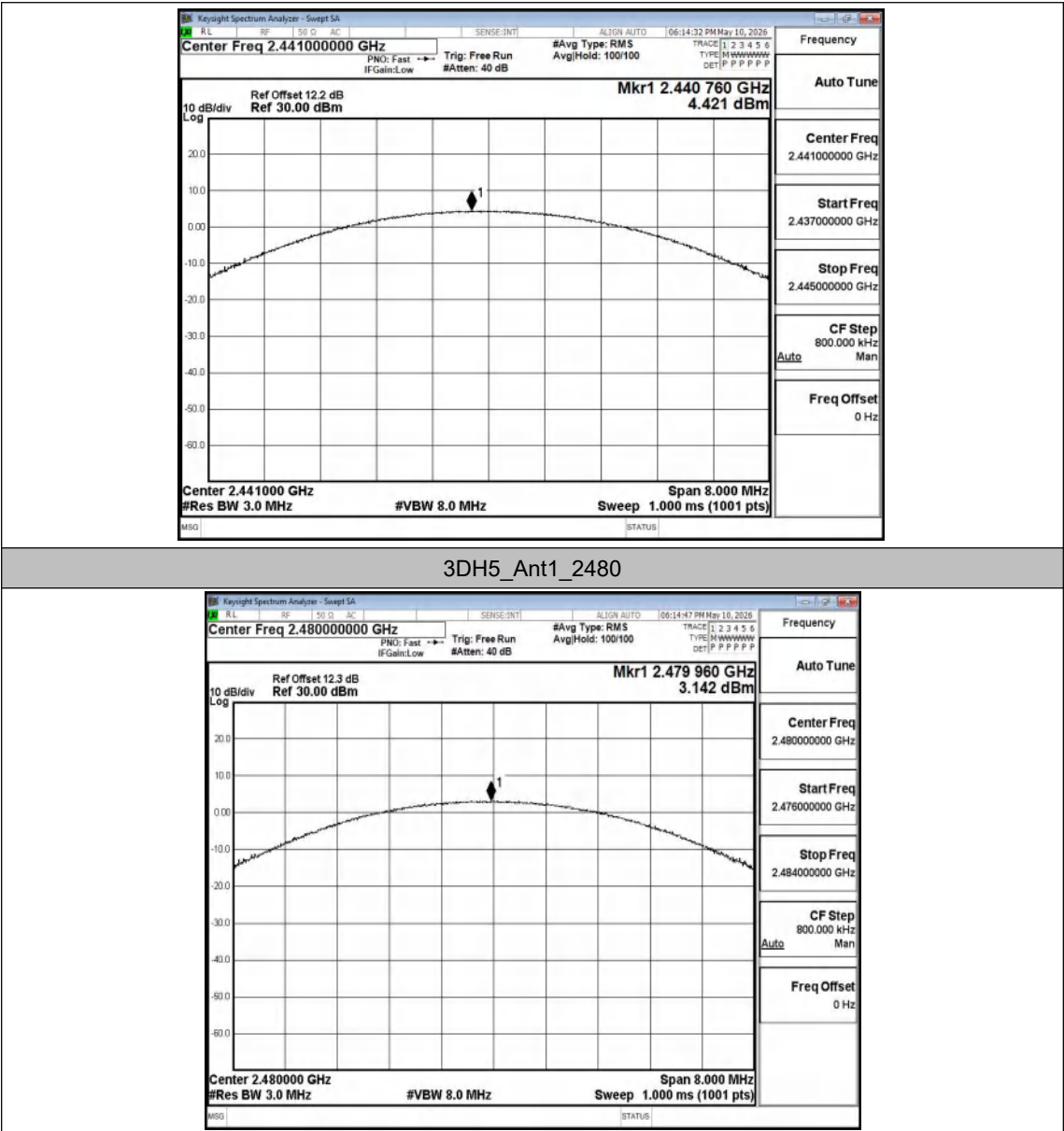
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



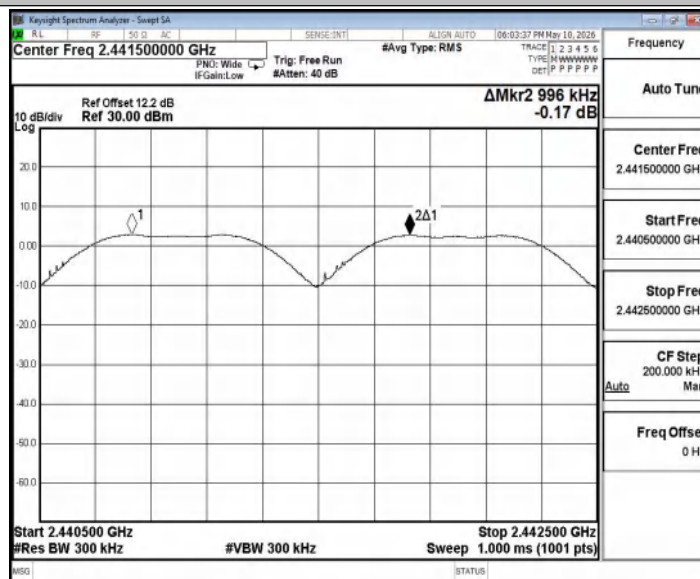
A.3 Carrier frequency separation

Test Result

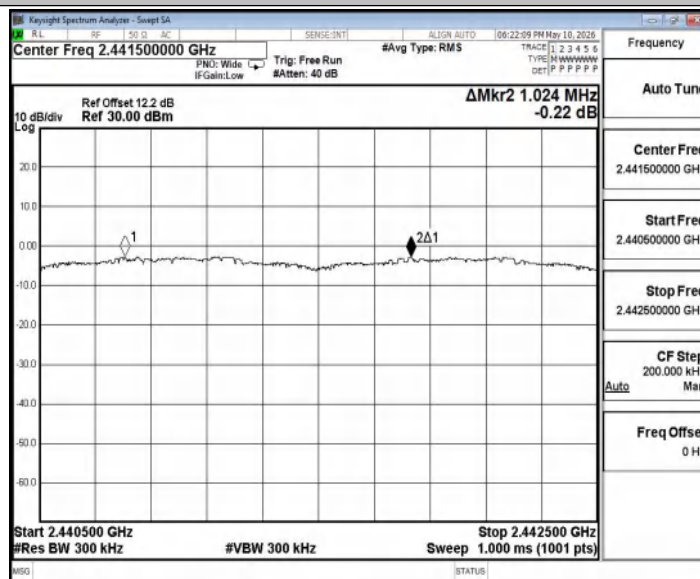
TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.996	≥ 0.963	PASS
2DH5	Ant1	Hop	1.024	≥ 0.864	PASS
3DH5	Ant1	Hop	0.99	≥ 0.866	PASS

Test Graphs

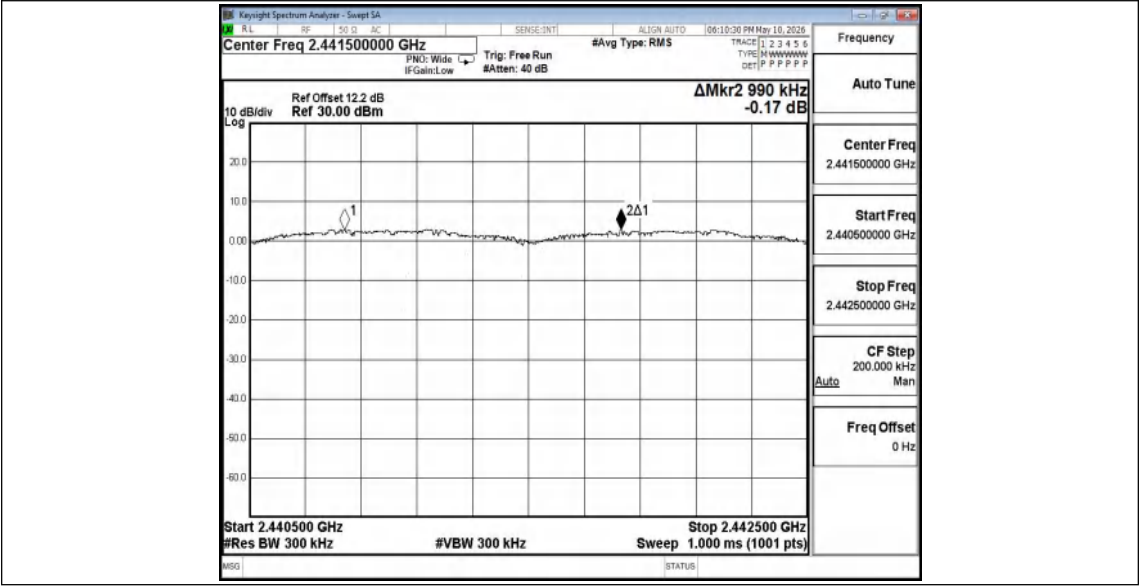
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop

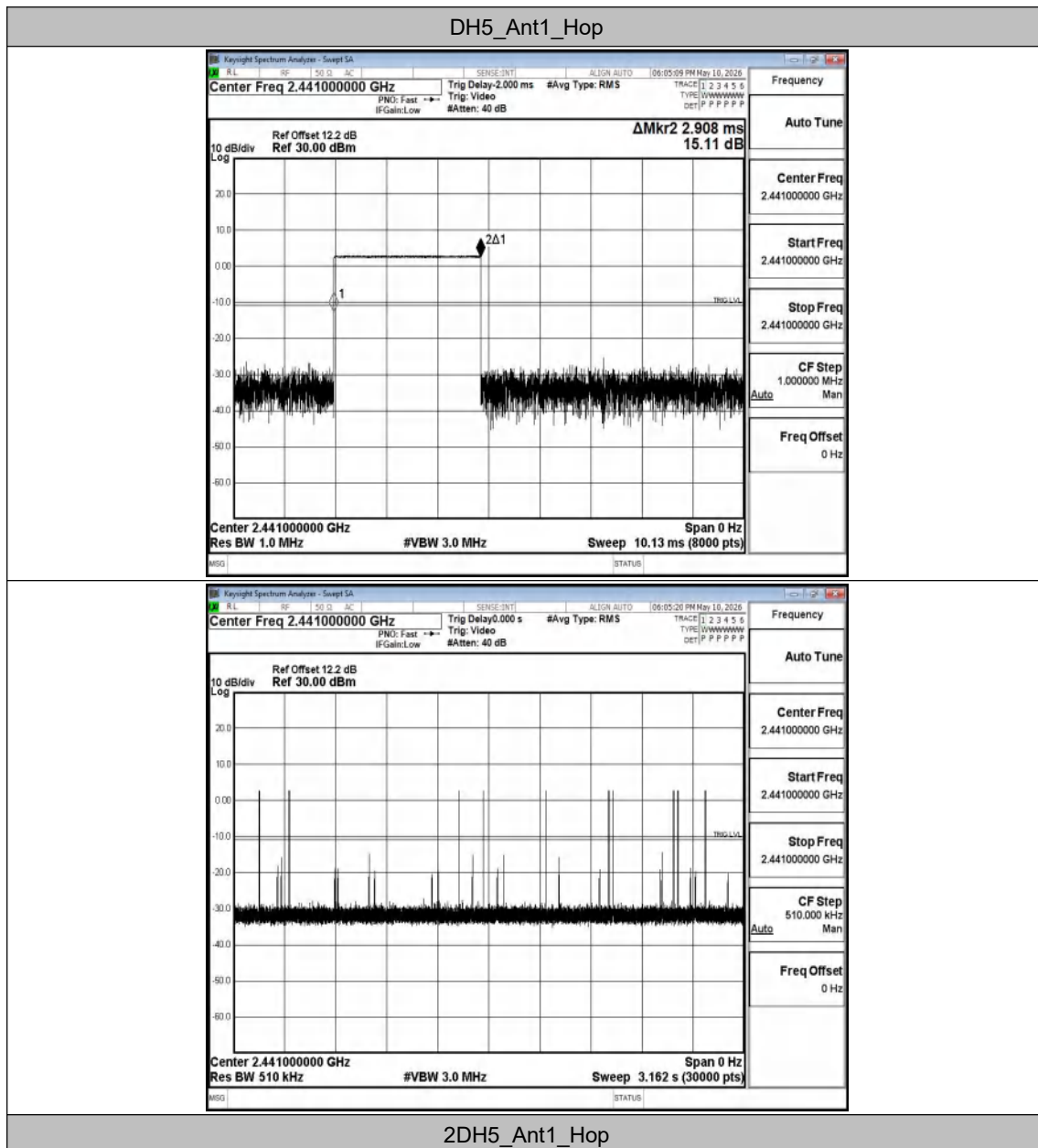


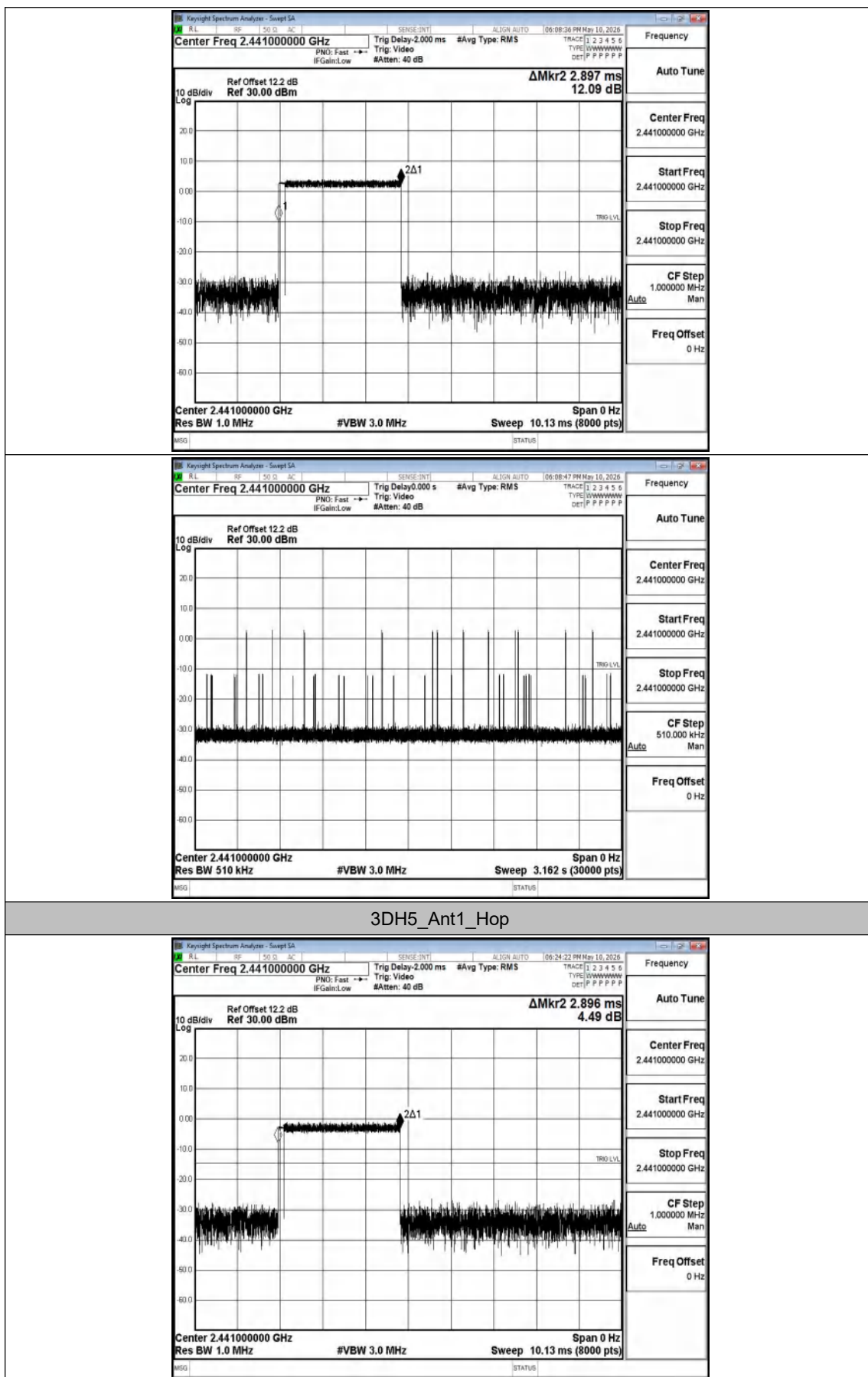
A.4 Time of occupancy

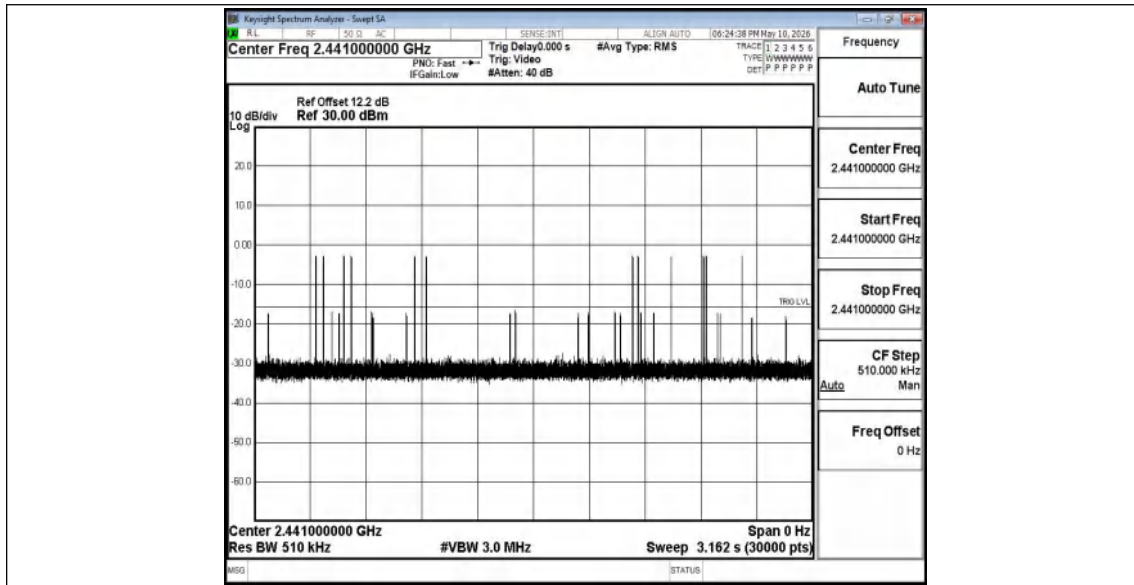
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.908	110	0.32	≤0.4	PASS
2DH5	Ant1	Hop	2.897	130	0.377	≤0.4	PASS
3DH5	Ant1	Hop	2.896	130	0.376	≤0.4	PASS

Test Graphs







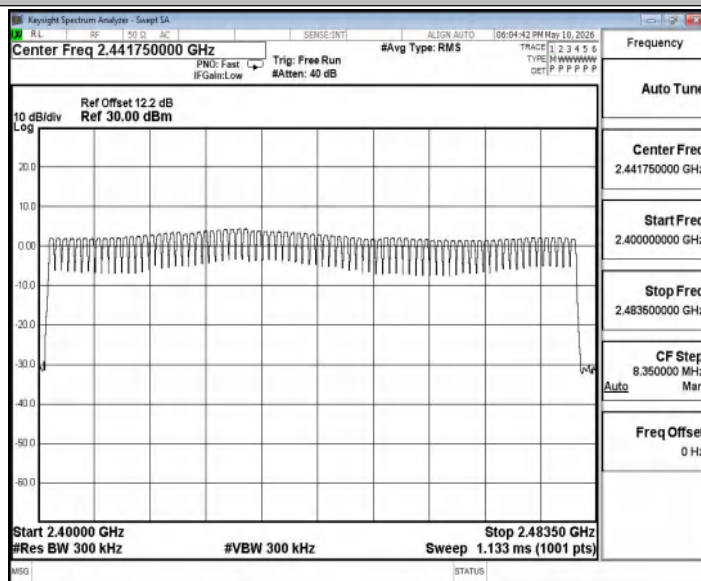
A.5 Number of hopping channels

Test Result

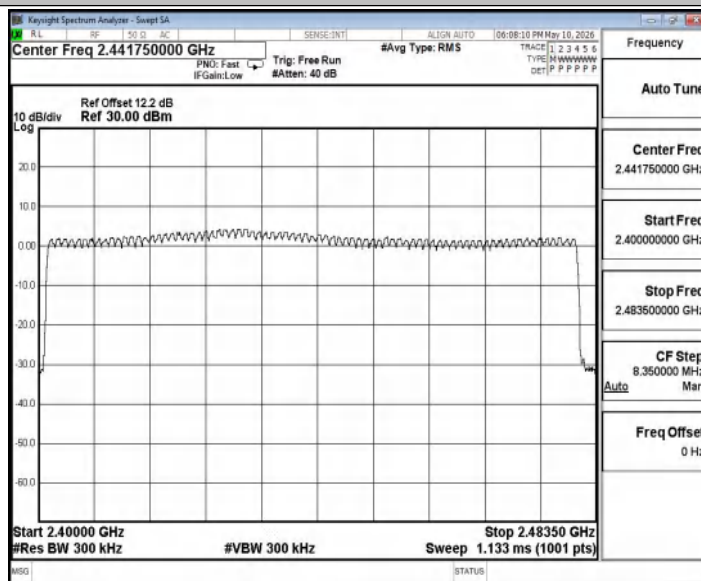
TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

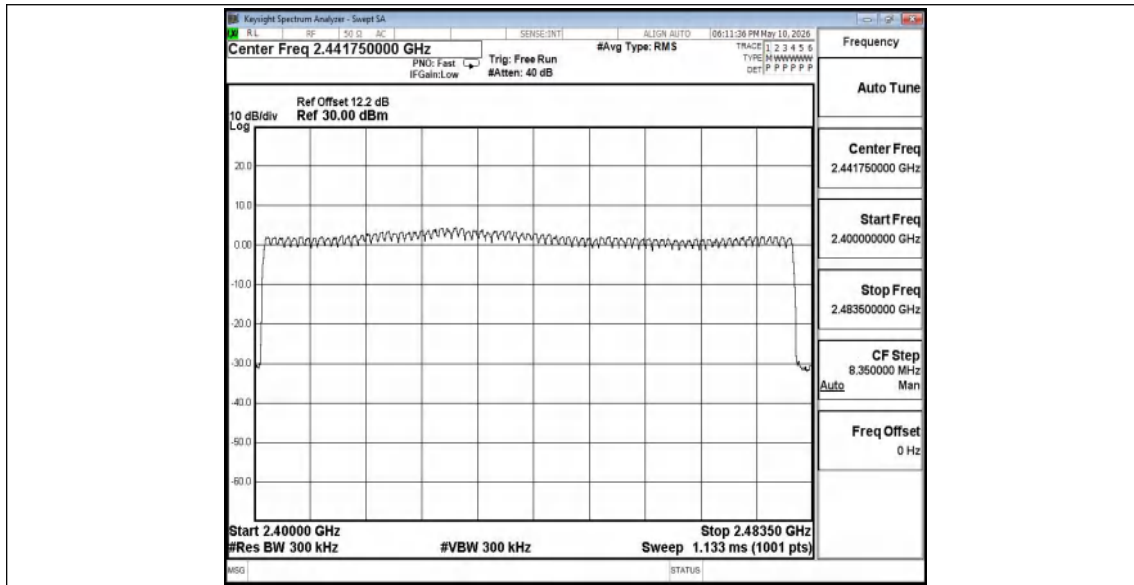
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



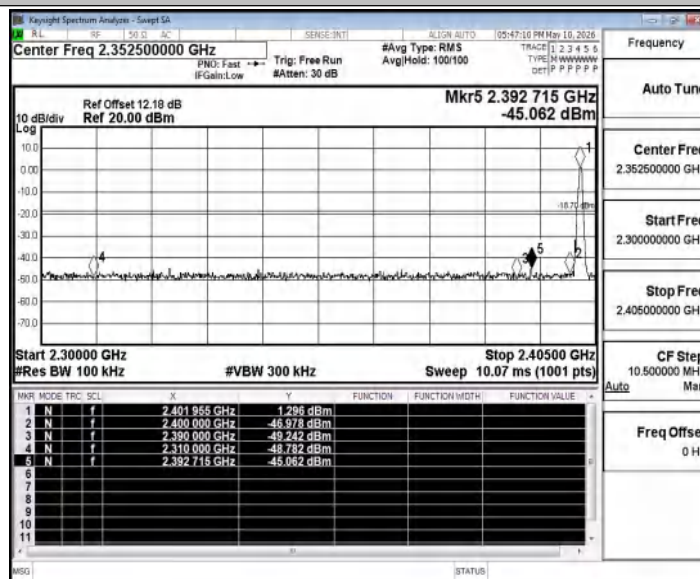
A.6 Band edge measurements

Test Result

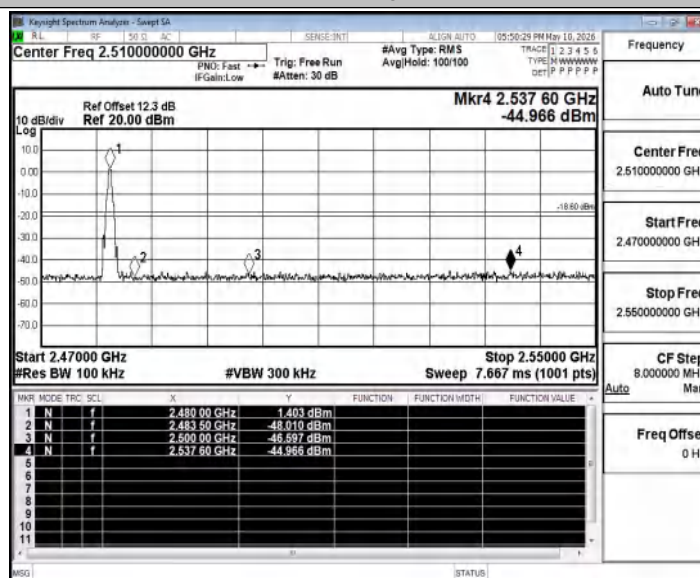
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.30	-45.06	≤-18.7	PASS
		High	2480	1.40	-44.97	≤-18.6	PASS
		Low	Hop_2402	0.61	-45.53	≤-19.39	PASS
		High	Hop_2480	1.32	-44.65	≤-18.68	PASS
2DH5	Ant1	Low	2402	1.17	-44.66	≤-18.84	PASS
		High	2480	1.22	-45.22	≤-18.78	PASS
		Low	Hop_2402	-0.02	-44.69	≤-20.02	PASS
		High	Hop_2480	-0.98	-44.52	≤-20.98	PASS
3DH5	Ant1	Low	2402	1.28	-44.73	≤-18.72	PASS
		High	2480	1.64	-44.59	≤-18.36	PASS
		Low	Hop_2402	-1.26	-44.78	≤-21.26	PASS
		High	Hop_2480	1.70	-44.89	≤-18.3	PASS

Test Graphs

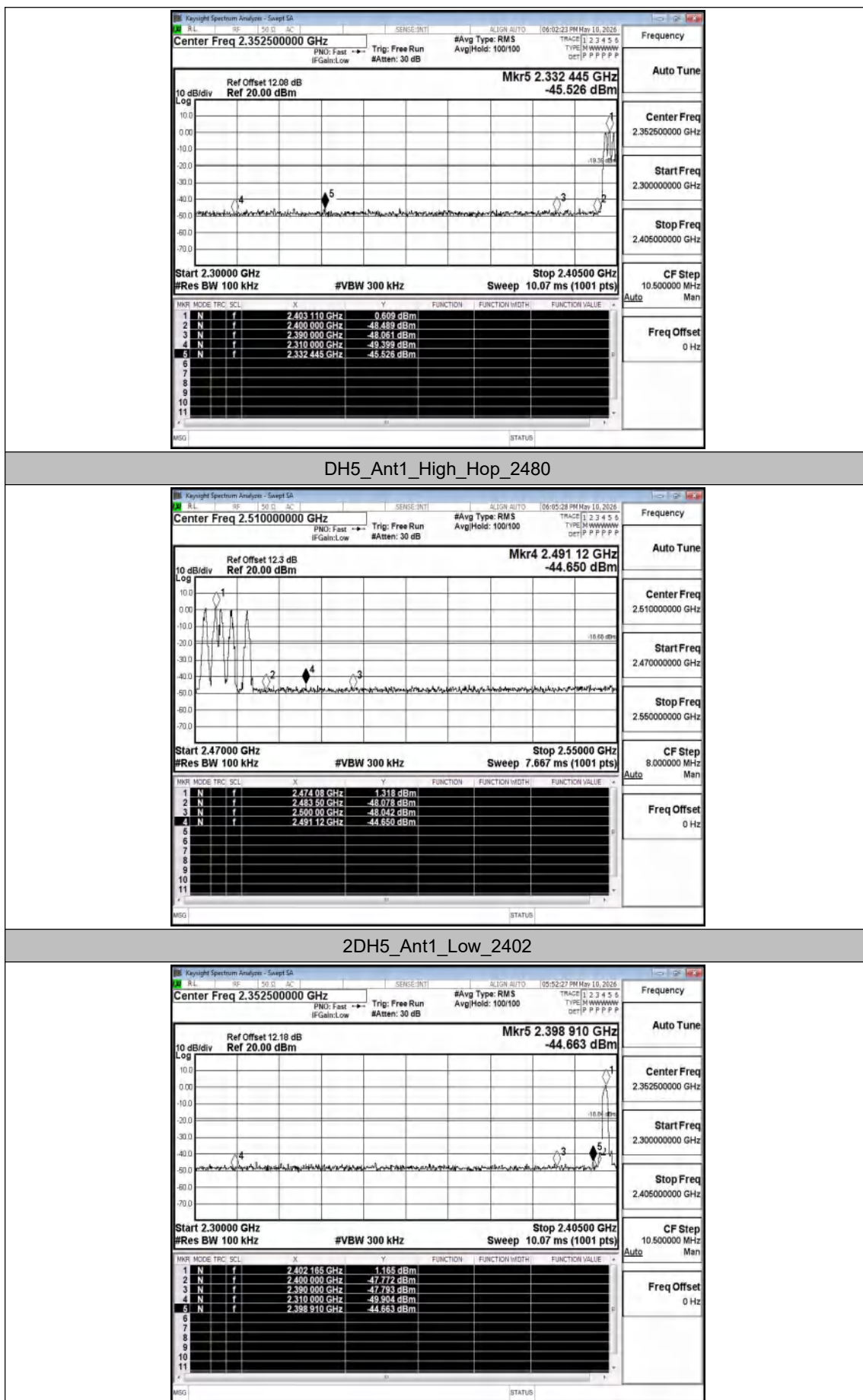
DH5_Ant1_Low_2402



DH5_Ant1_High_2480



DH5_Ant1_Low_Hop_2402

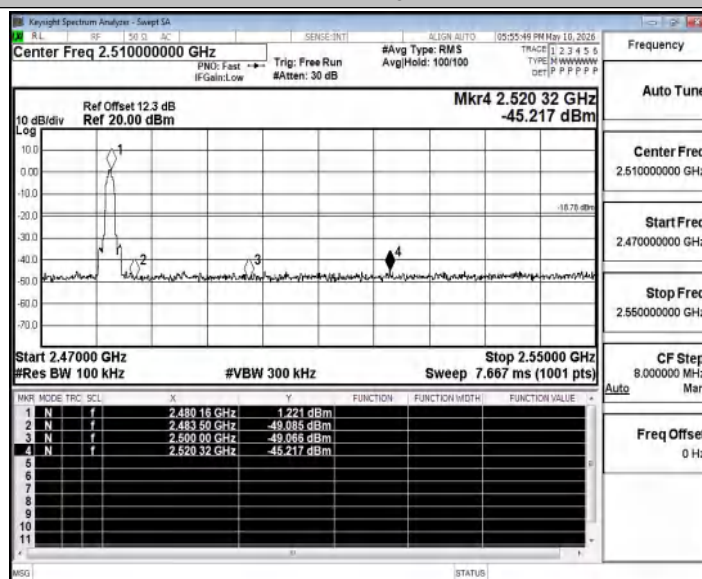


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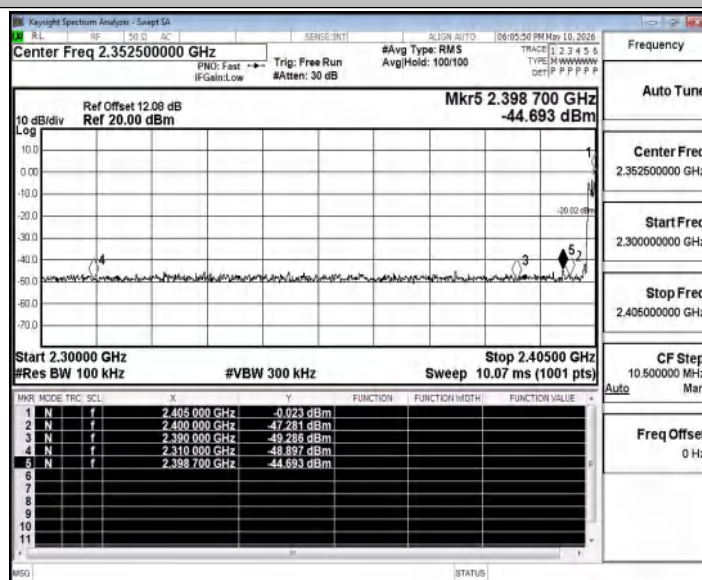
Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

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

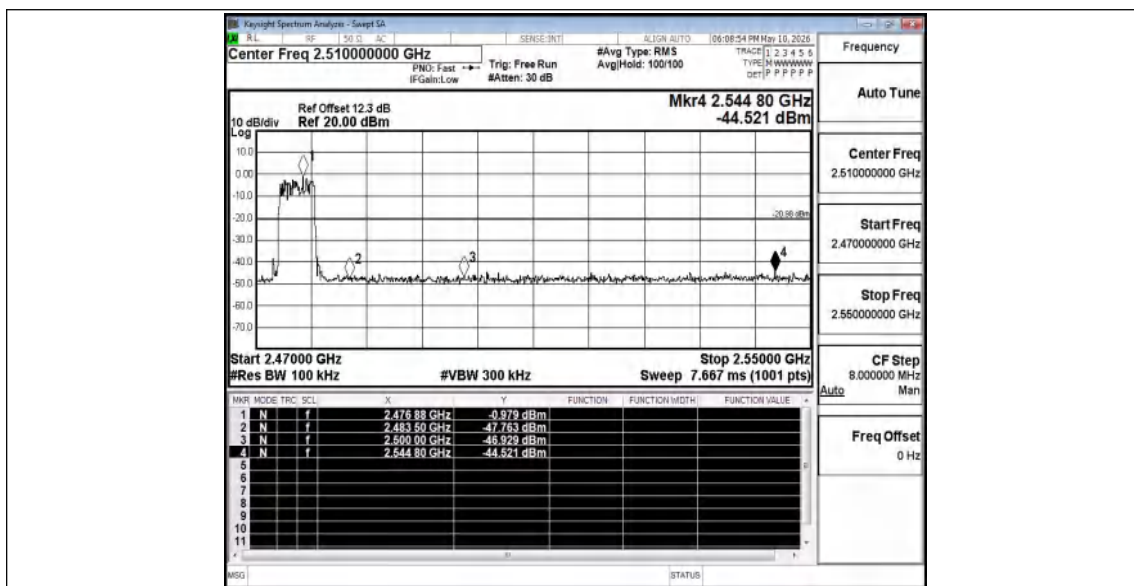
2DH5_Ant1_High_2480



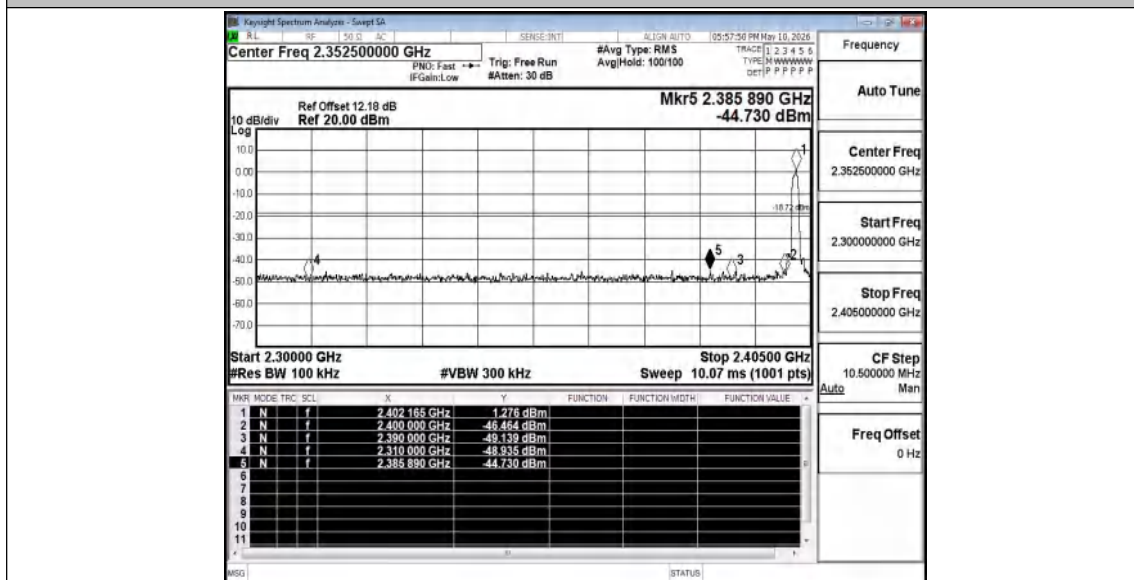
2DH5_Ant1_Low_Hop_2402



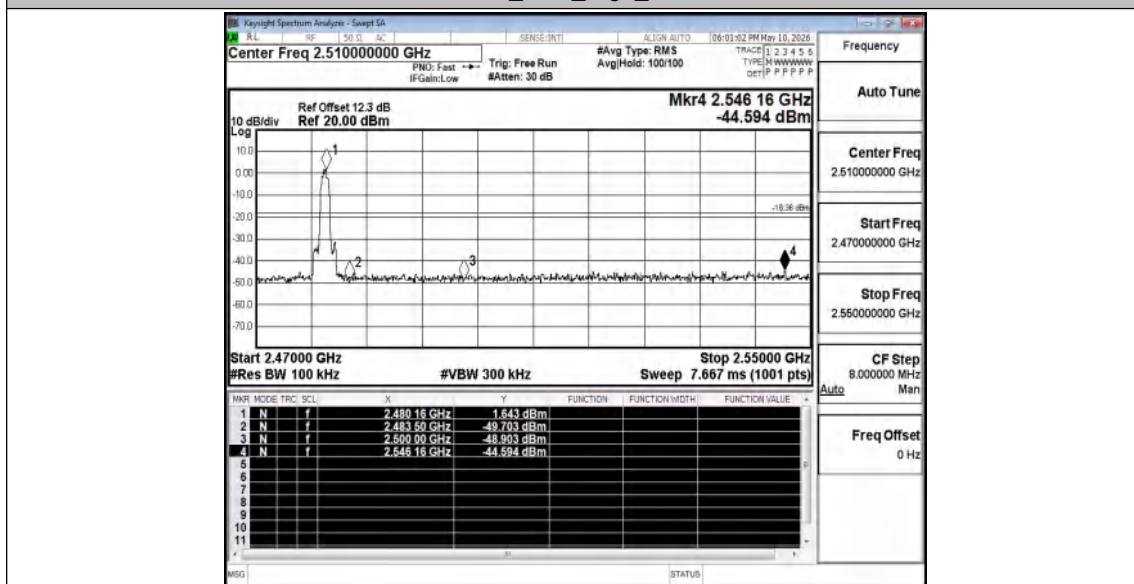
2DH5_Ant1_High_Hop_2480



3DH5_Ant1_Low_2402



3DH5_Ant1_High_2480

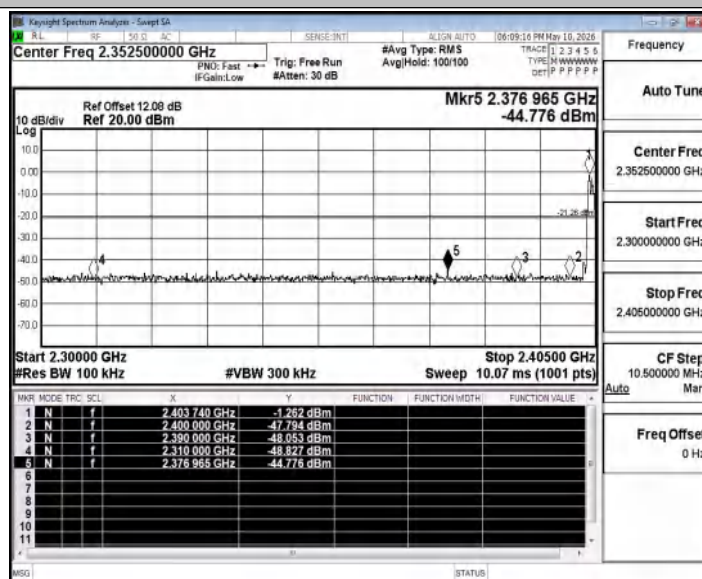


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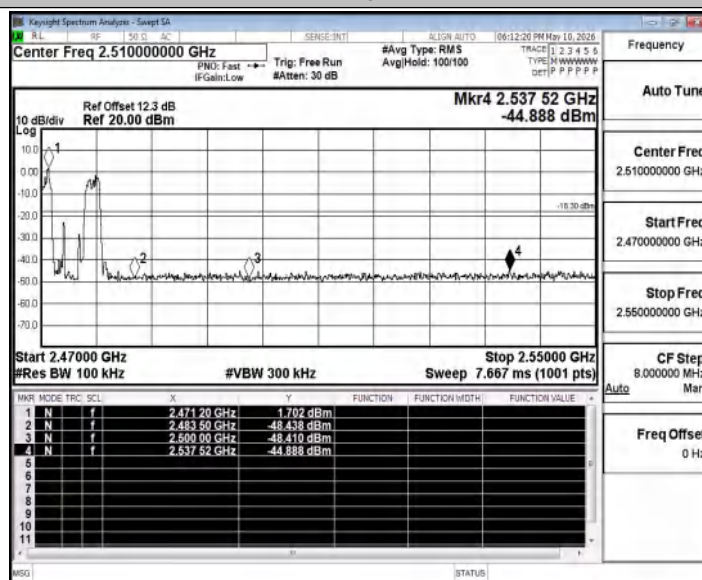
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3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

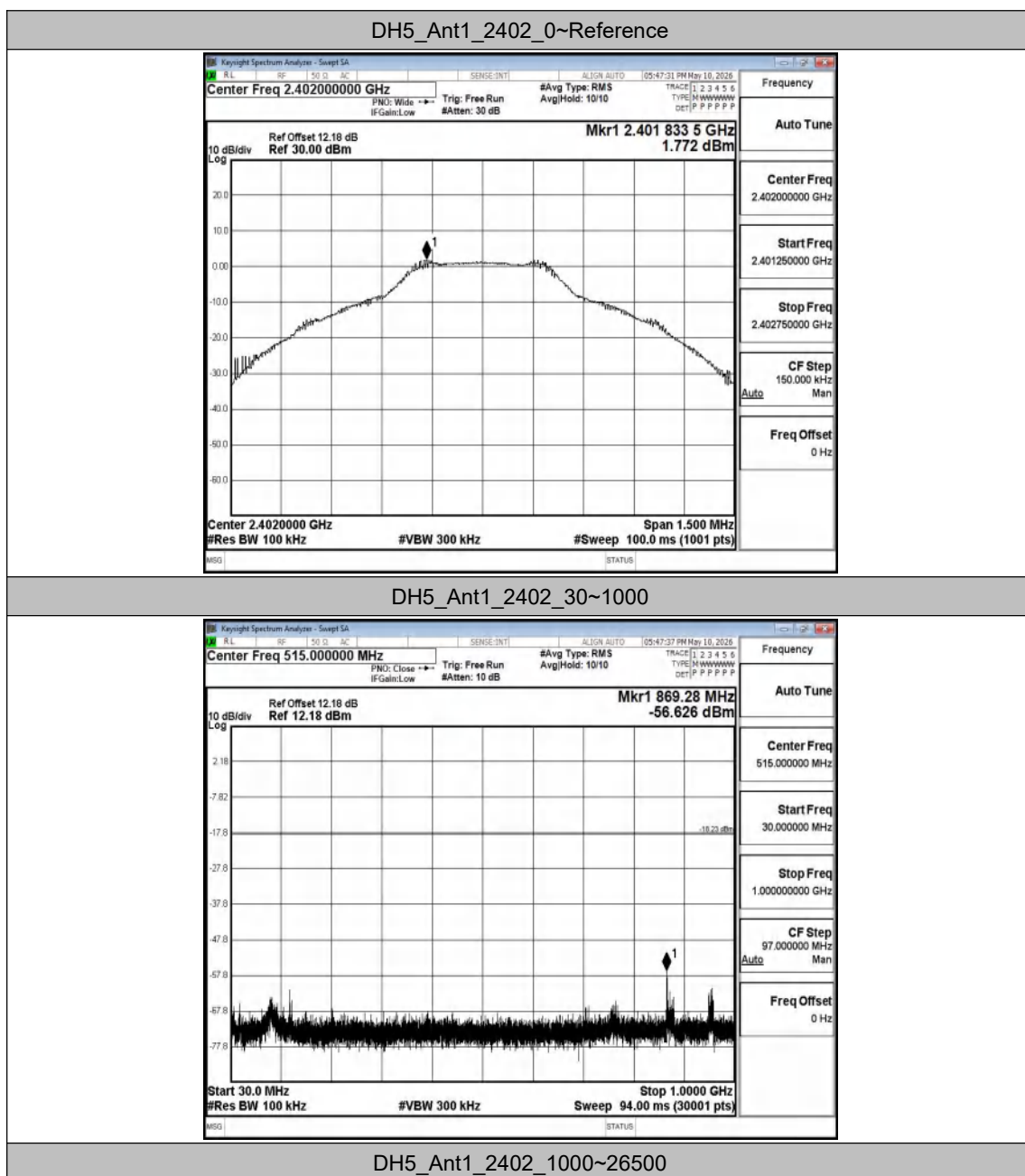


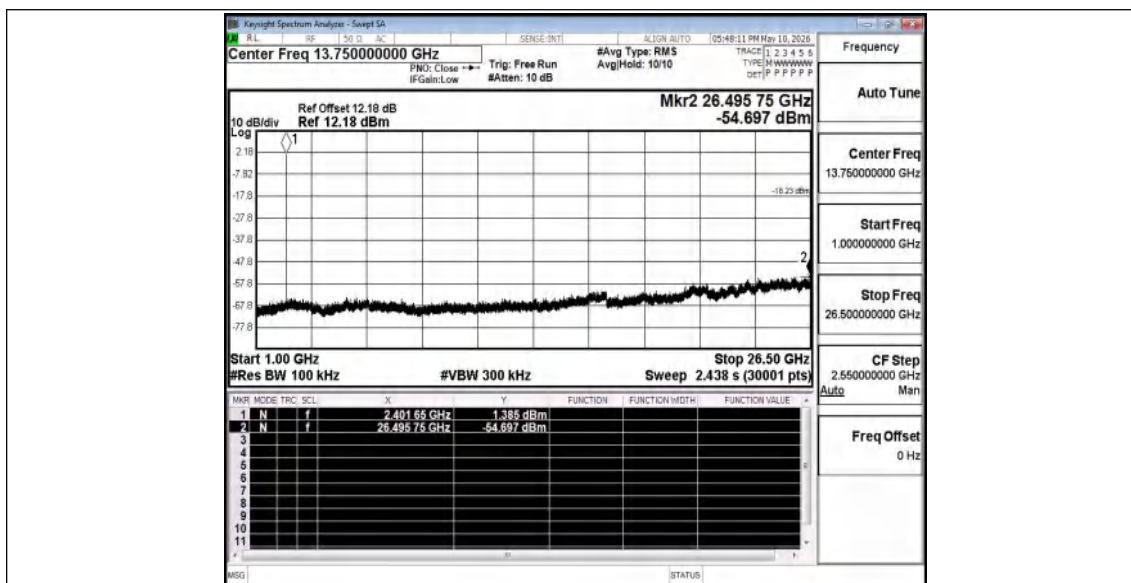
A.7 Conducted Spurious Emission

Test Result

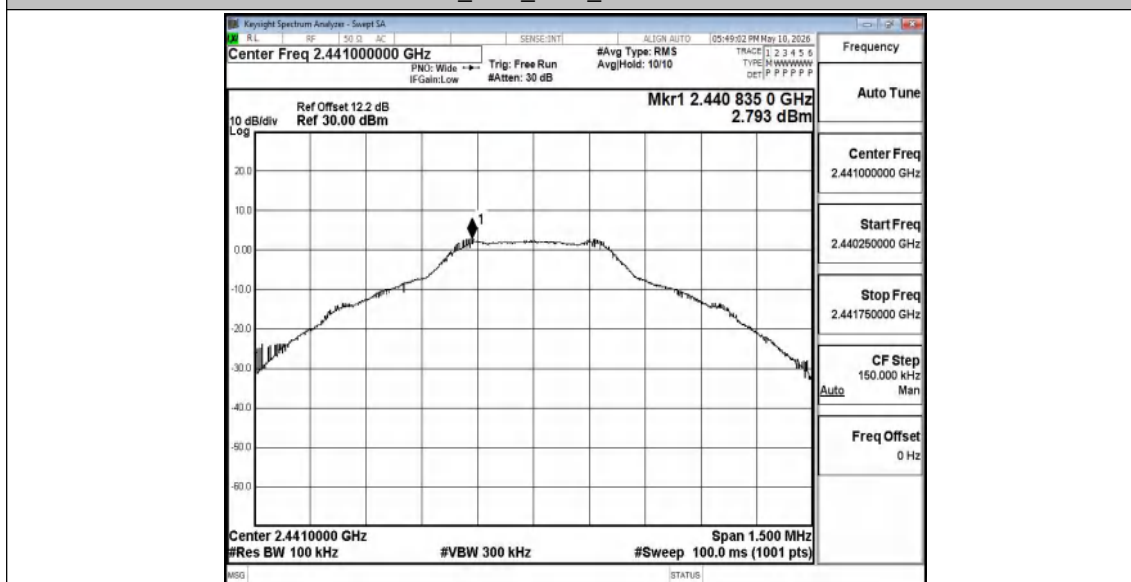
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	1.77	1.77	---	PASS
			30~1000	1.77	-56.63	≤-18.23	PASS
			1000~26500	1.77	-54.7	≤-18.23	PASS
		2441	Reference	2.79	2.79	---	PASS
			30~1000	2.79	-56.99	≤-17.21	PASS
			1000~26500	2.79	-53.94	≤-17.21	PASS
		2480	Reference	1.66	1.66	---	PASS
			30~1000	1.66	-58.44	≤-18.34	PASS
			1000~26500	1.66	-54.46	≤-18.34	PASS
2DH5	Ant1	2402	Reference	1.67	1.67	---	PASS
			30~1000	1.67	-57.75	≤-18.33	PASS
			1000~26500	1.67	-54.19	≤-18.33	PASS
		2441	Reference	2.64	2.64	---	PASS
			30~1000	2.64	-58.97	≤-17.36	PASS
			1000~26500	2.64	-53.87	≤-17.36	PASS
		2480	Reference	1.52	1.52	---	PASS
			30~1000	1.52	-58.02	≤-18.48	PASS
			1000~26500	1.52	-55.14	≤-18.48	PASS
3DH5	Ant1	2402	Reference	1.81	1.81	---	PASS
			30~1000	1.81	-54.25	≤-18.19	PASS
			1000~26500	1.81	-54.67	≤-18.19	PASS
		2441	Reference	2.80	2.80	---	PASS
			30~1000	2.80	-54.49	≤-17.2	PASS
			1000~26500	2.80	-54.7	≤-17.2	PASS
		2480	Reference	1.70	1.70	---	PASS
			30~1000	1.70	-60.77	≤-18.3	PASS
			1000~26500	1.70	-54.56	≤-18.3	PASS

Test Graphs

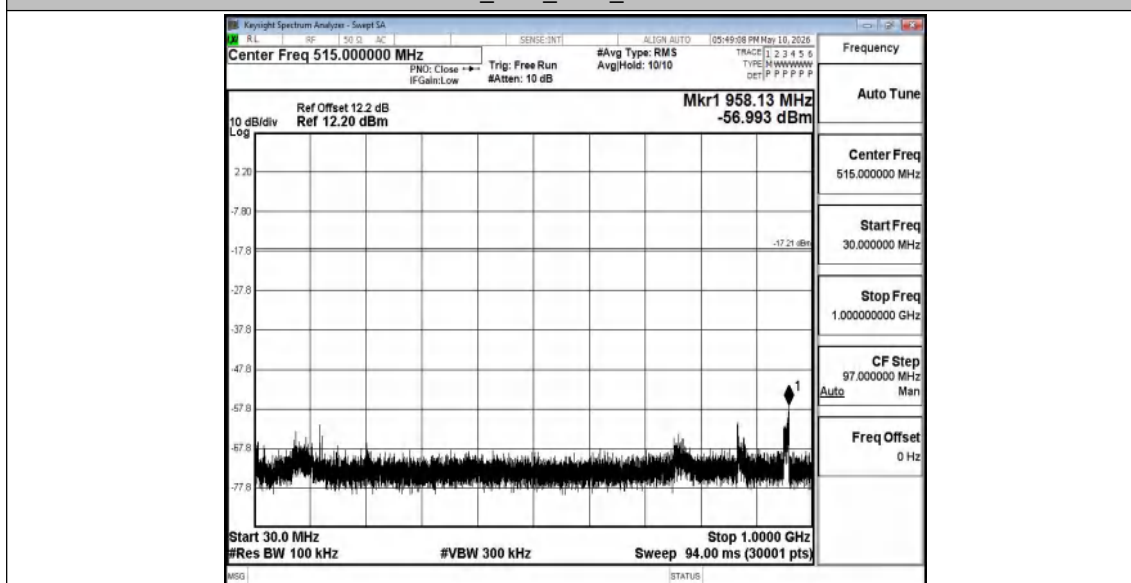




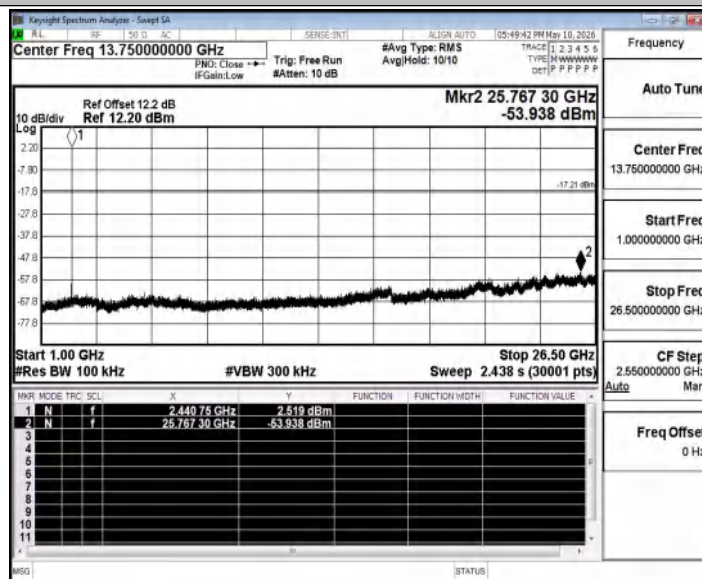
DH5_Ant1_2441_0~Reference



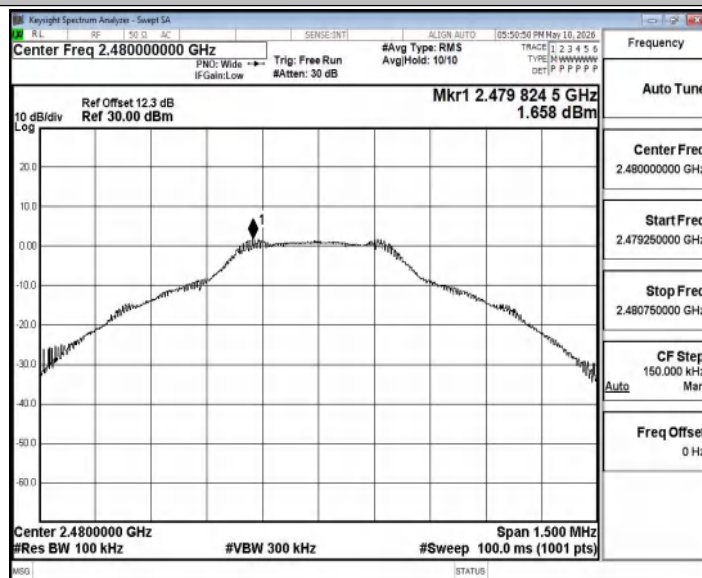
DH5_Ant1_2441_30~1000



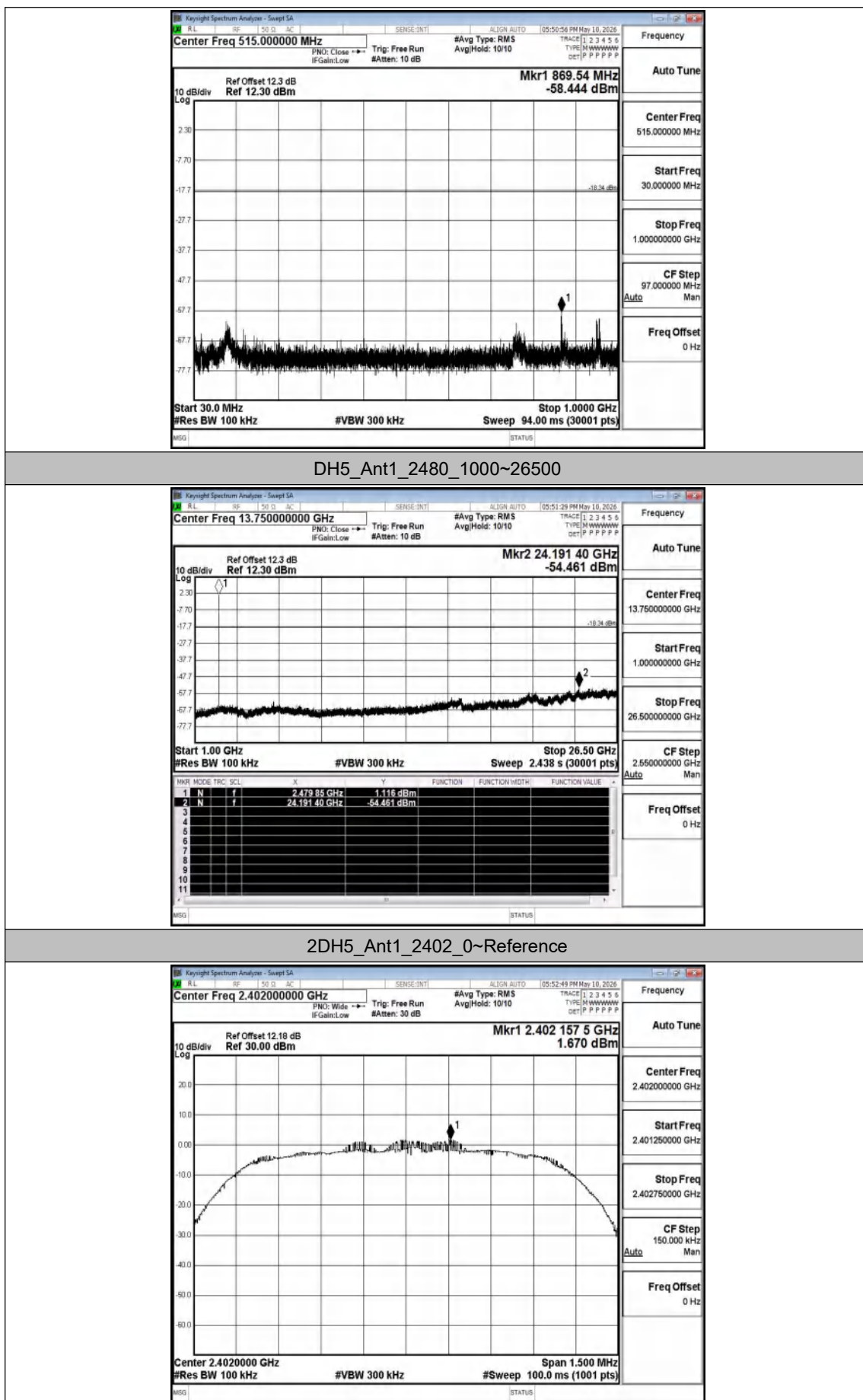
DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference



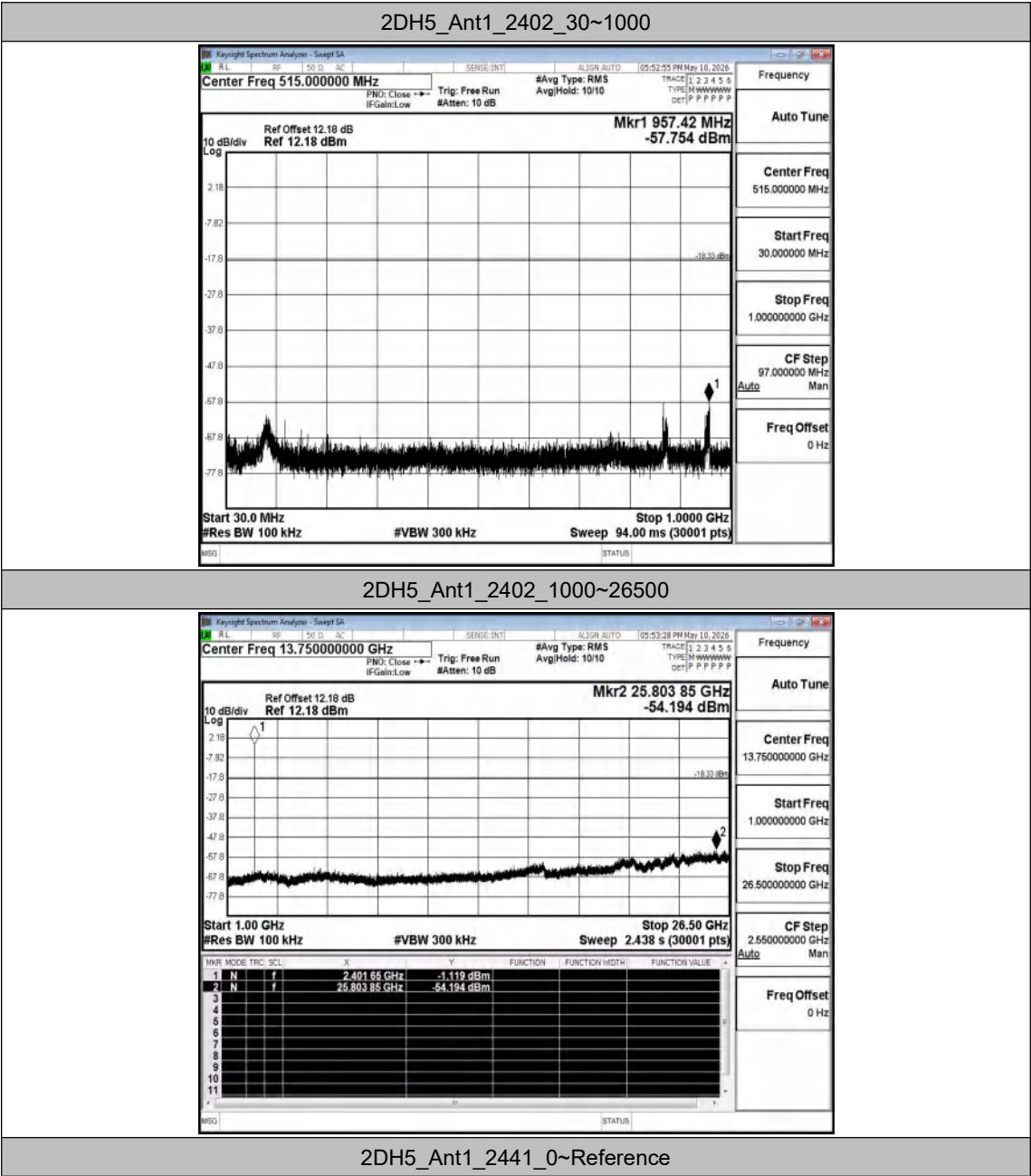
DH5_Ant1_2480_30~1000

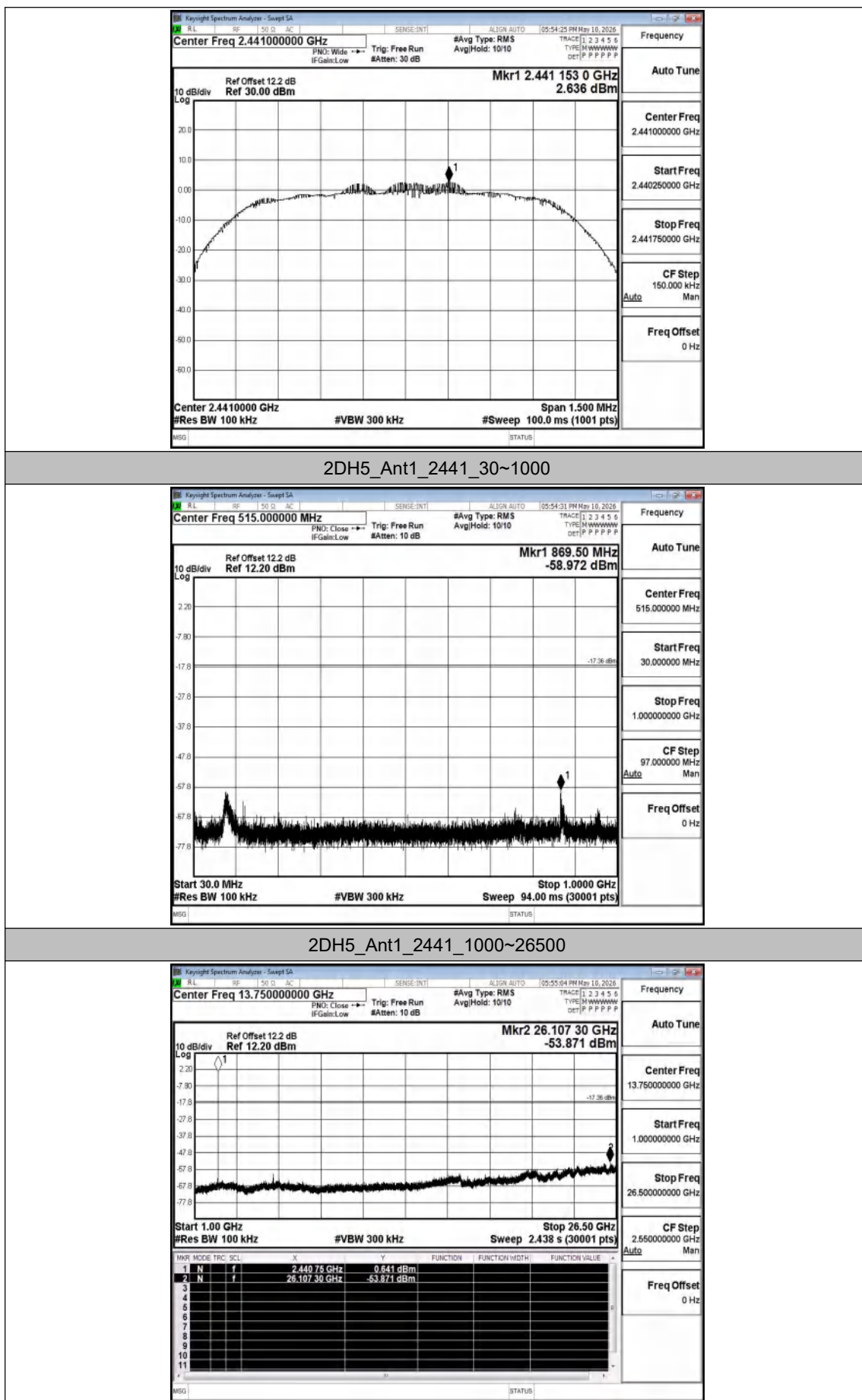


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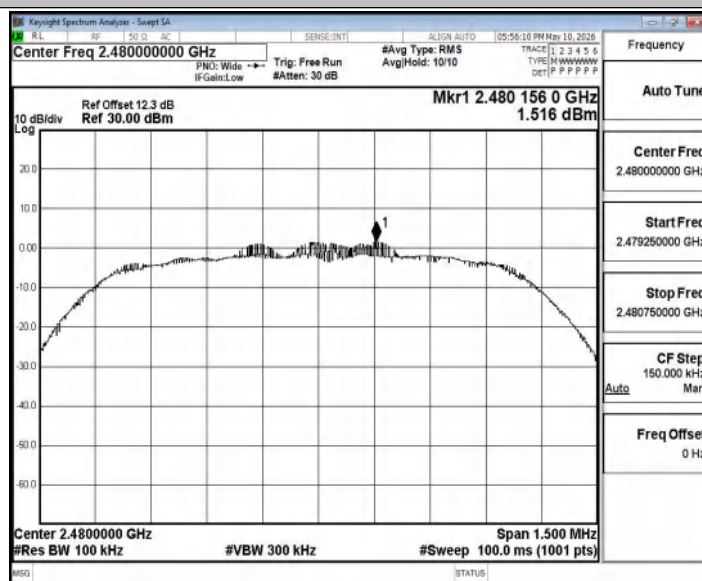


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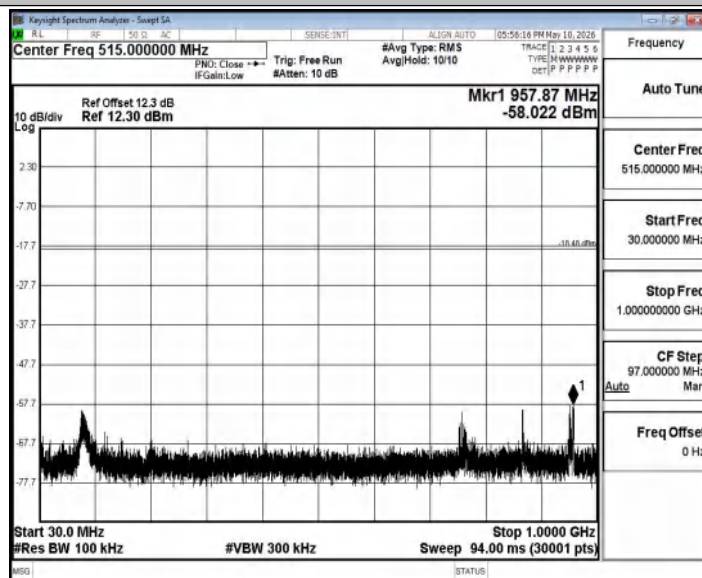
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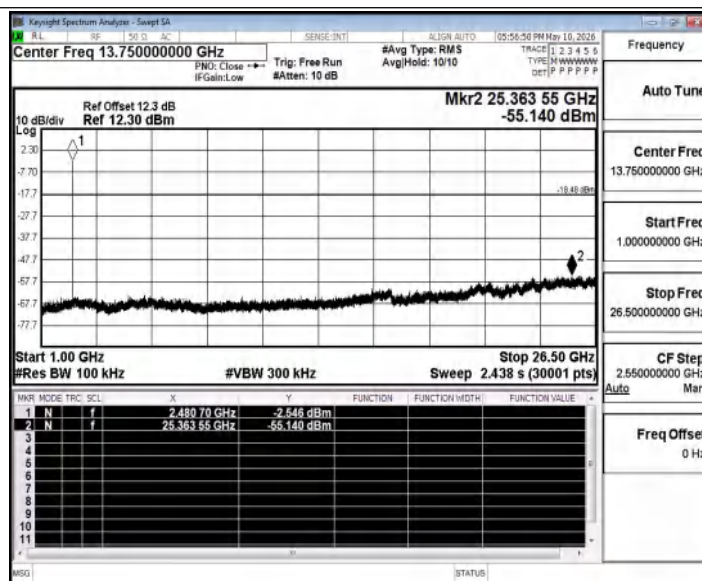
2DH5_Ant1_2480_0~Reference



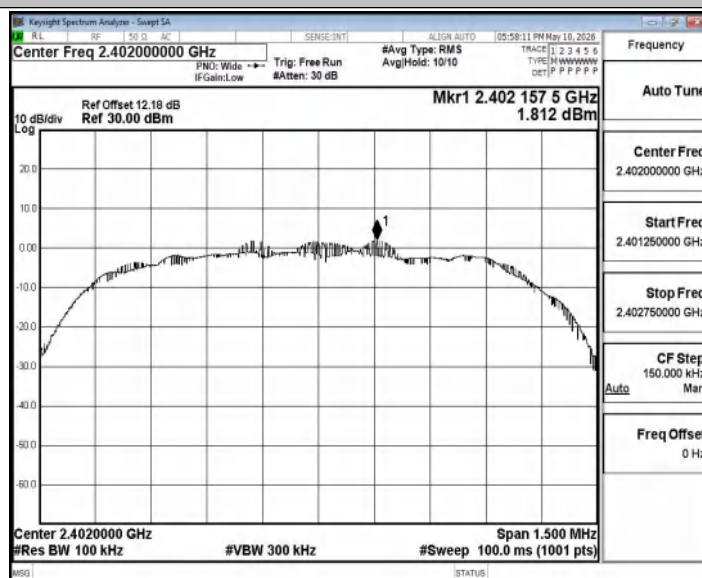
2DH5_Ant1_2480_30~1000



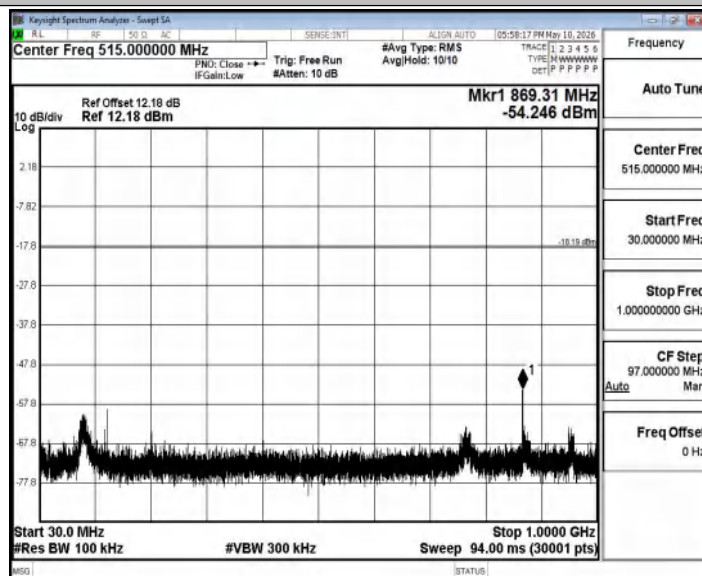
2DH5_Ant1_2480_1000~26500



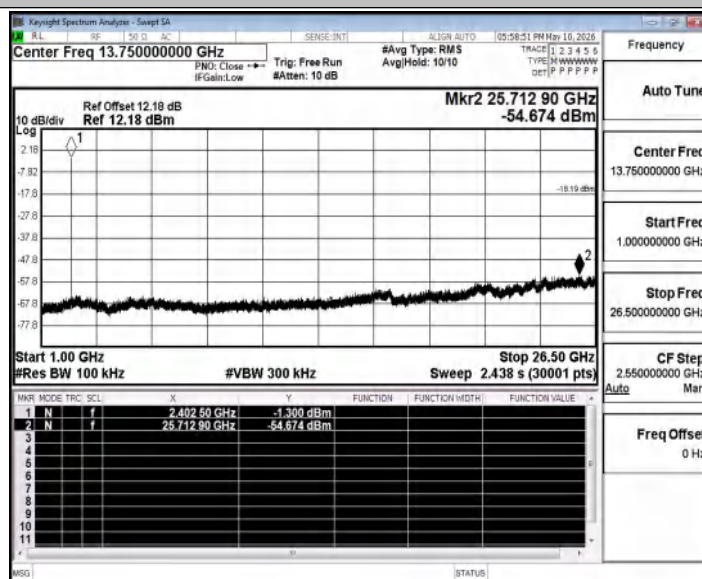
3DH5_Ant1_2402_0~Reference



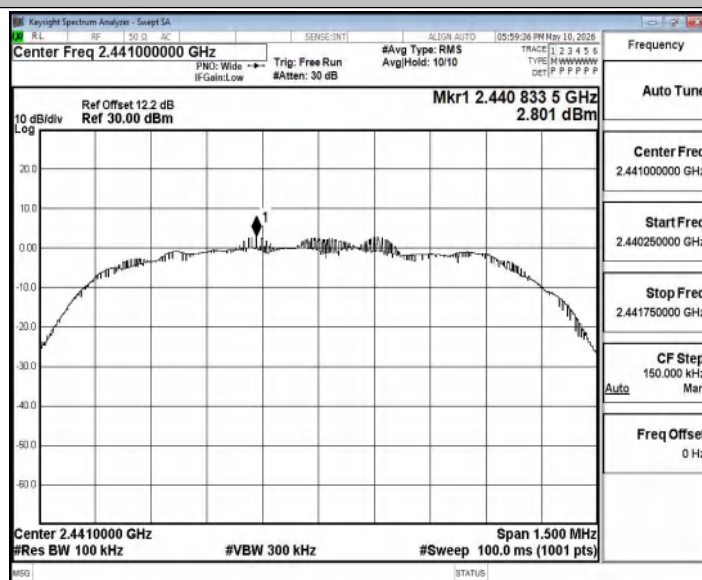
3DH5_Ant1_2402_30~1000



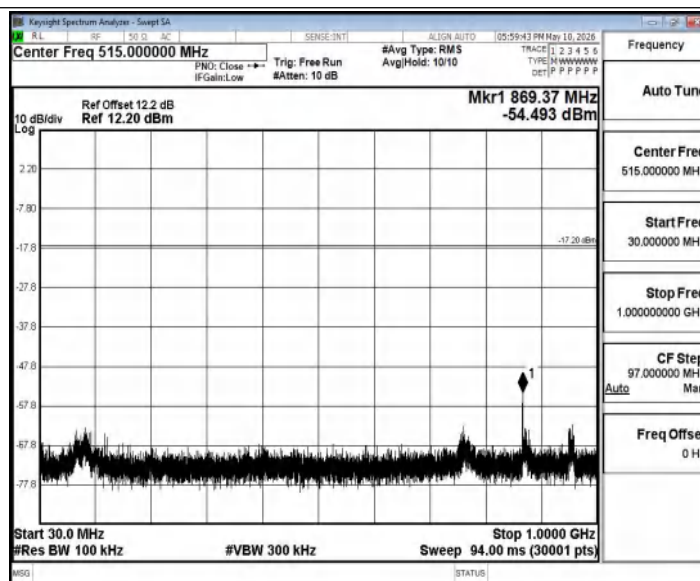
3DH5_Ant1_2402_1000~26500



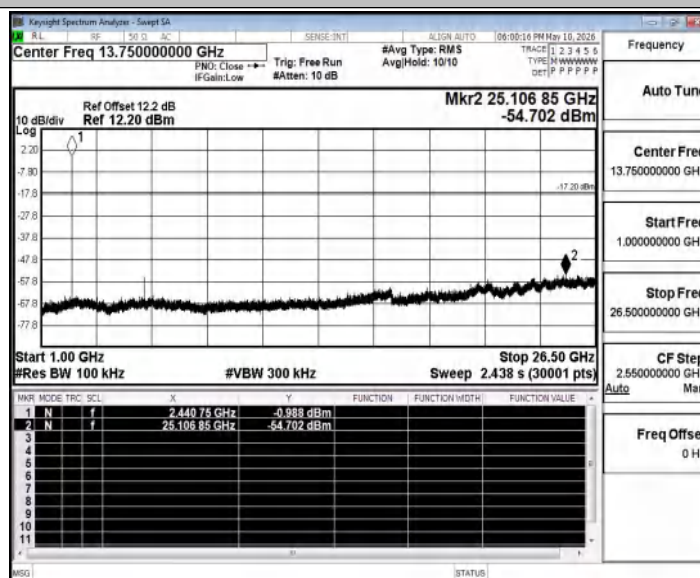
3DH5_Ant1_2441_0~Reference



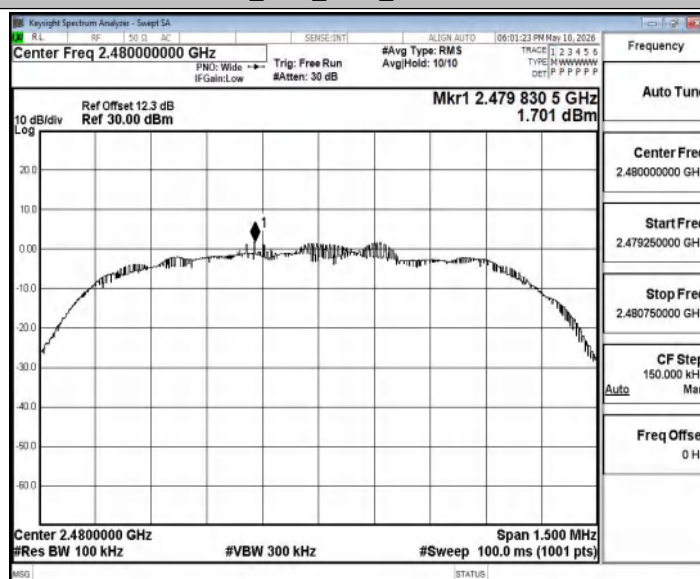
3DH5_Ant1_2441_30~1000



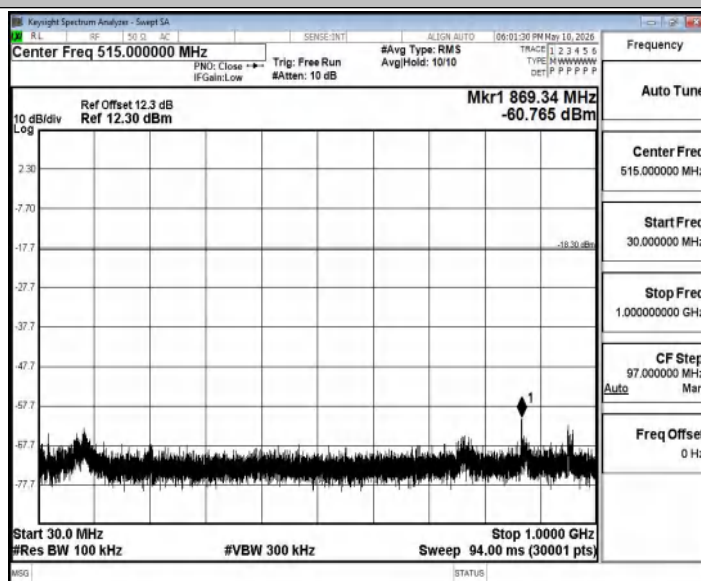
3DH5_Ant1_2441_1000~26500



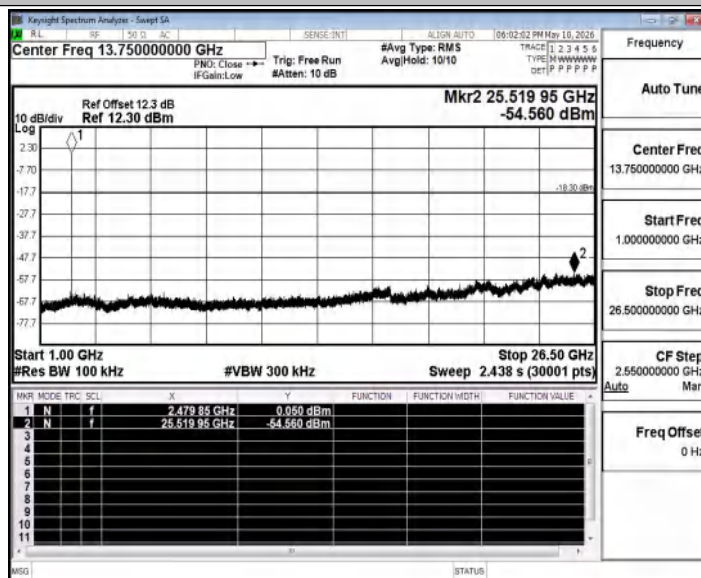
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



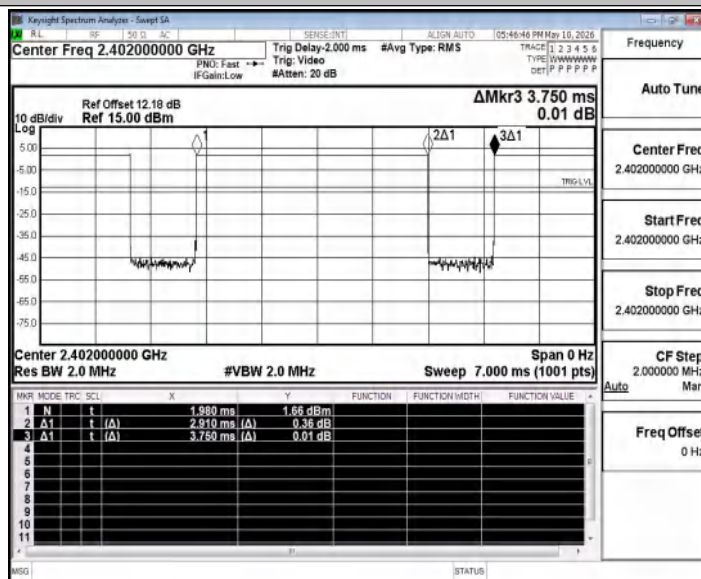
A.8 Duty Cycle

Test Result

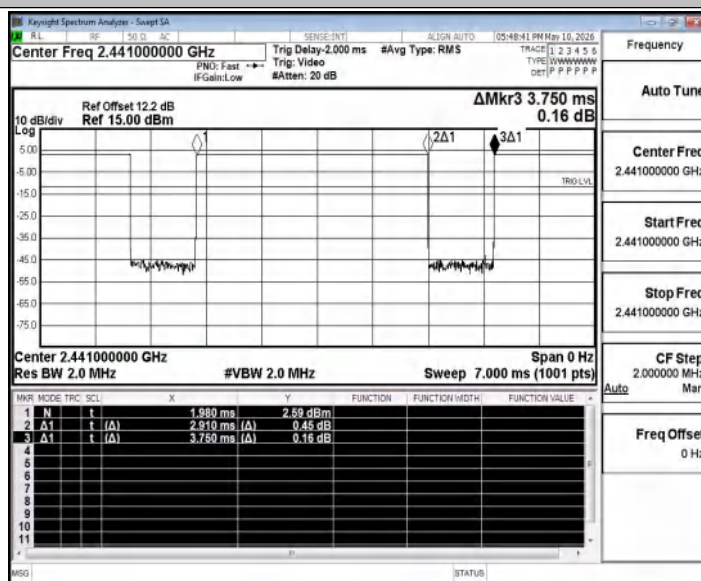
TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	xFactor	Limit	Verdict
DH5	Ant1	2402	2.91	3.75	77.60	1.10	---	---
		2441	2.91	3.75	77.60	1.10	---	---
		2480	2.91	3.75	77.60	1.10	---	---
2DH5	Ant1	2402	2.90	3.75	77.33	1.12	---	---
		2441	2.90	3.74	77.54	1.10	---	---
		2480	2.90	3.75	77.33	1.12	---	---
3DH5	Ant1	2402	2.90	3.75	77.33	1.12	---	---
		2441	2.90	3.75	77.33	1.12	---	---
		2480	2.90	3.75	77.33	1.12	---	---

Test Graphs

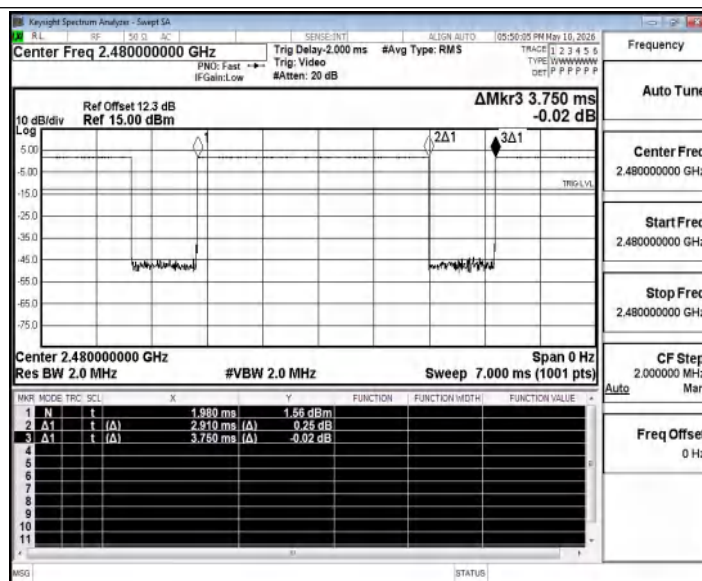
DH5_Ant1_2402



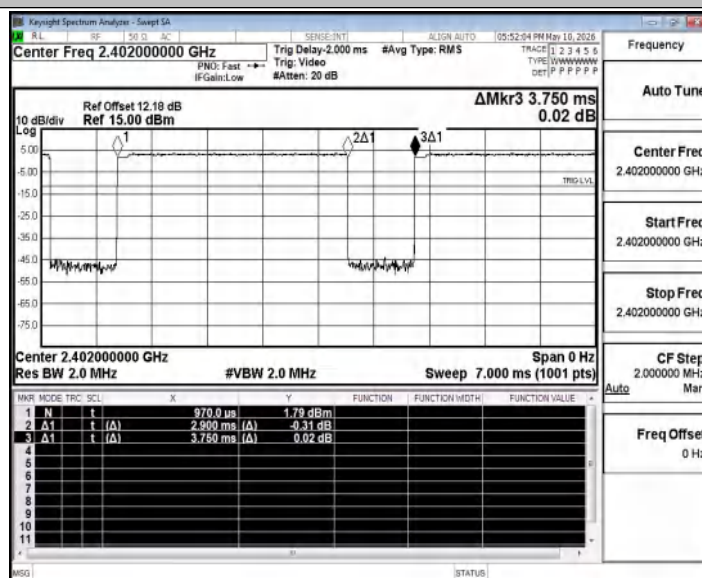
DH5_Ant1_2441



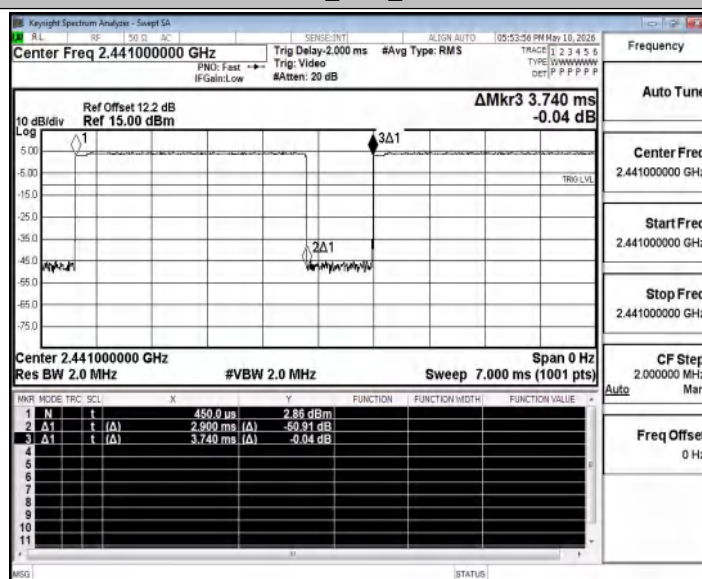
DH5_Ant1_2480



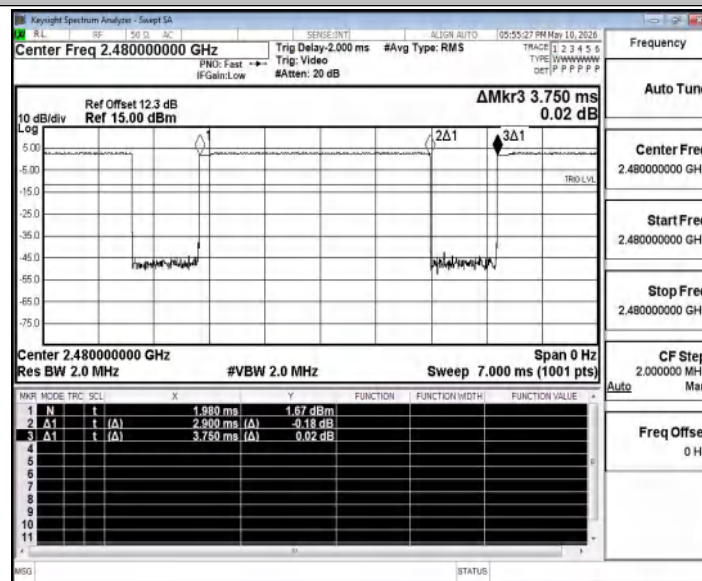
2DH5_Ant1_2402



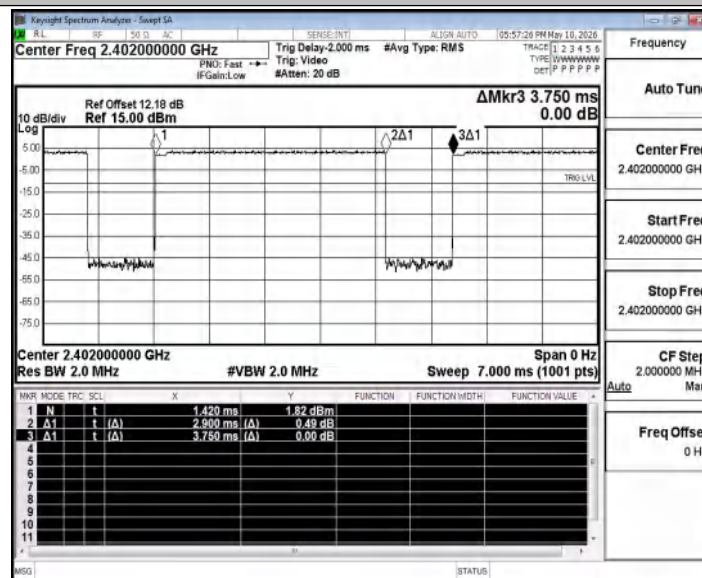
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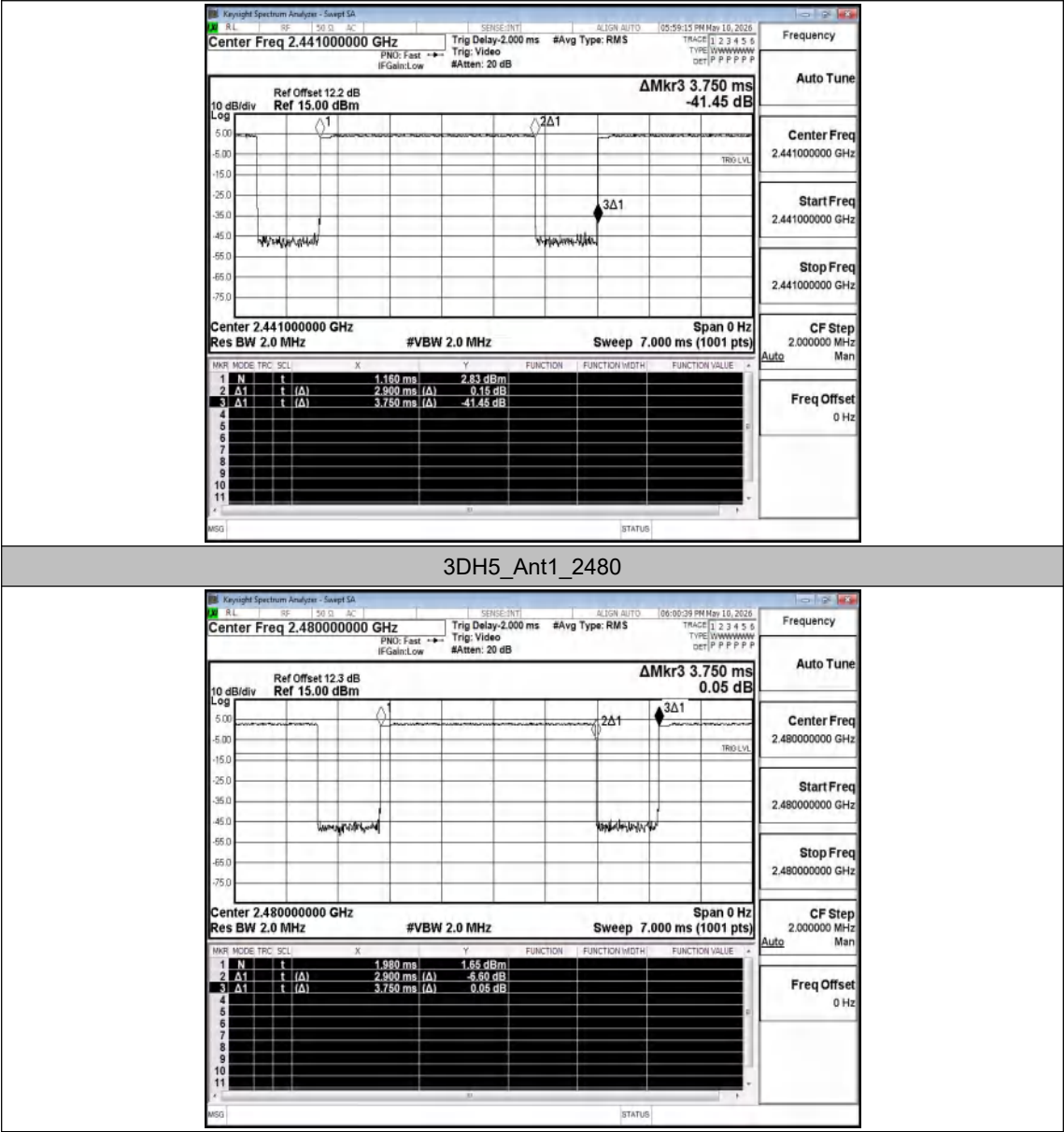
2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



A.9 Emissions in Restricted Bands

Test Result

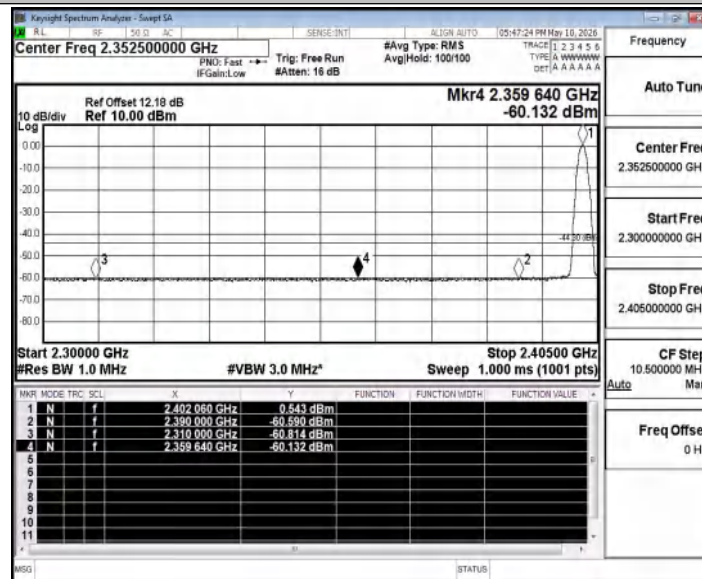
TestMode	Antenna	ChName	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBUV/m]	Limit [dBUV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-60.81	≤-44.30	2.00	1.10	37.49	≤54	PASS
				AV	2359.640	-60.13	≤-44.30	2.00	1.10	38.17	≤54	PASS
				AV	2390.000	-60.59	≤-44.30	2.00	1.10	37.71	≤54	PASS
				Peak	2310.000	-52.06	≤-23.20	2.00	0.00	45.14	≤74	PASS
				Peak	2358.695	-45.46	≤-23.20	2.00	0.00	51.74	≤74	PASS
				Peak	2390.000	-53.71	≤-23.20	2.00	0.00	43.49	≤74	PASS
		High	2480	AV	2483.500	-59.44	≤-44.30	2.00	1.10	38.86	≤54	PASS
				AV	2483.680	-58.71	≤-44.30	2.00	1.10	39.59	≤54	PASS
				AV	2500.000	-60.7	≤-44.30	2.00	1.10	37.60	≤54	PASS
				Peak	2483.500	-50.35	≤-23.20	2.00	0.00	46.85	≤74	PASS
				Peak	2487.520	-47.94	≤-23.20	2.00	0.00	49.26	≤74	PASS
				Peak	2500.000	-51.99	≤-23.20	2.00	0.00	45.21	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-60.9	≤-44.32	2.00	1.12	37.42	≤54	PASS
				AV	2322.365	-60.07	≤-44.32	2.00	1.12	38.25	≤54	PASS
				AV	2390.000	-60.93	≤-44.32	2.00	1.12	37.39	≤54	PASS
				Peak	2310.000	-52.81	≤-23.20	2.00	0.00	44.39	≤74	PASS
				Peak	2369.825	-49.65	≤-23.20	2.00	0.00	47.55	≤74	PASS
				Peak	2390.000	-51.89	≤-23.20	2.00	0.00	45.31	≤74	PASS
		High	2480	AV	2483.500	-56.99	≤-44.32	2.00	1.12	41.33	≤54	PASS
				AV	2483.760	-56.87	≤-44.32	2.00	1.12	41.45	≤54	PASS
				AV	2500.000	-60.22	≤-44.32	2.00	1.12	38.10	≤54	PASS
				Peak	2483.500	-45.72	≤-23.20	2.00	0.00	51.48	≤74	PASS
				Peak	2483.520	-45.71	≤-23.20	2.00	0.00	51.49	≤74	PASS
				Peak	2500.000	-52	≤-23.20	2.00	0.00	45.20	≤74	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-61.13	≤-44.32	2.00	1.12	37.19	≤54	PASS
				AV	2382.845	-60.11	≤-44.32	2.00	1.12	38.21	≤54	PASS
				AV	2390.000	-61.37	≤-44.32	2.00	1.12	36.95	≤54	PASS
				Peak	2310.000	-53.96	≤-23.20	2.00	0.00	43.24	≤74	PASS
				Peak	2312.390	-49.64	≤-23.20	2.00	0.00	47.56	≤74	PASS
				Peak	2390.000	-51.31	≤-23.20	2.00	0.00	45.89	≤74	PASS
		High	2480	AV	2483.500	-56.93	≤-44.32	2.00	1.12	41.39	≤54	PASS
				AV	2483.600	-56.43	≤-44.32	2.00	1.12	41.89	≤54	PASS
				AV	2500.000	-60.6	≤-44.32	2.00	1.12	37.72	≤54	PASS
				Peak	2483.500	-42.91	≤-23.20	2.00	0.00	54.29	≤74	PASS
				Peak	2483.520	-42.91	≤-23.20	2.00	0.00	54.29	≤74	PASS
				Peak	2500.000	-52.56	≤-23.20	2.00	0.00	44.64	≤74	PASS

Note:

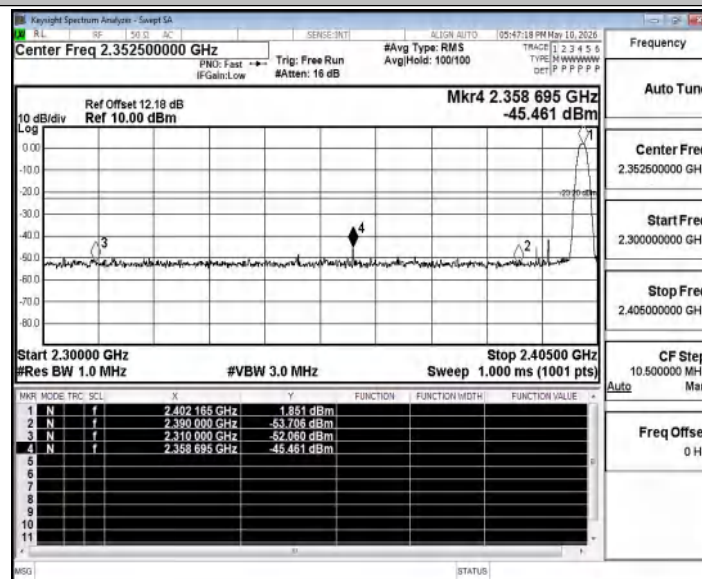
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

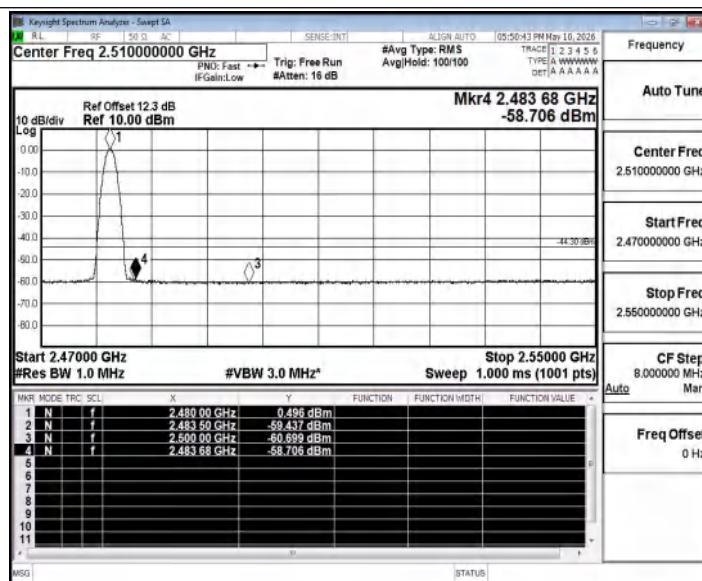
DH5_Ant1_Low_2402_AV



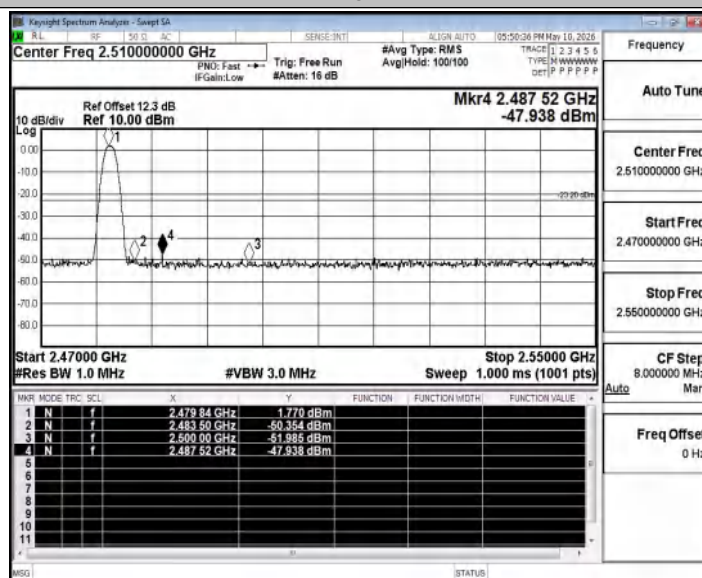
DH5_Ant1_Low_2402_Peak



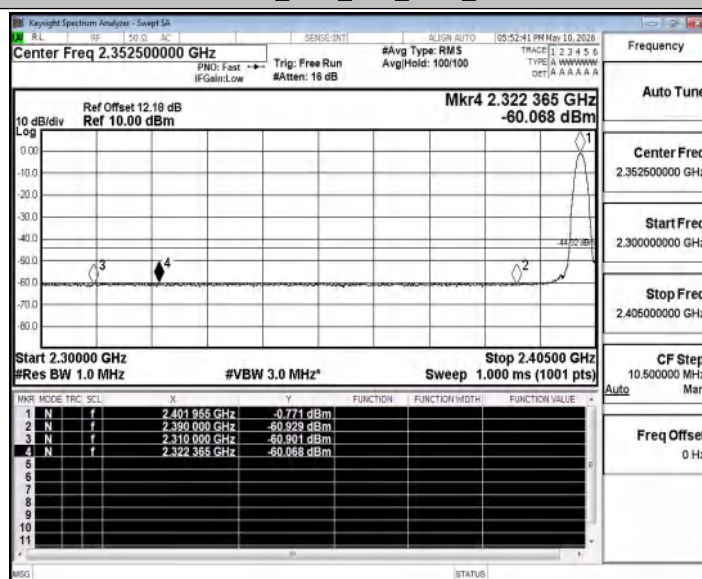
DH5_Ant1_High_2480_AV



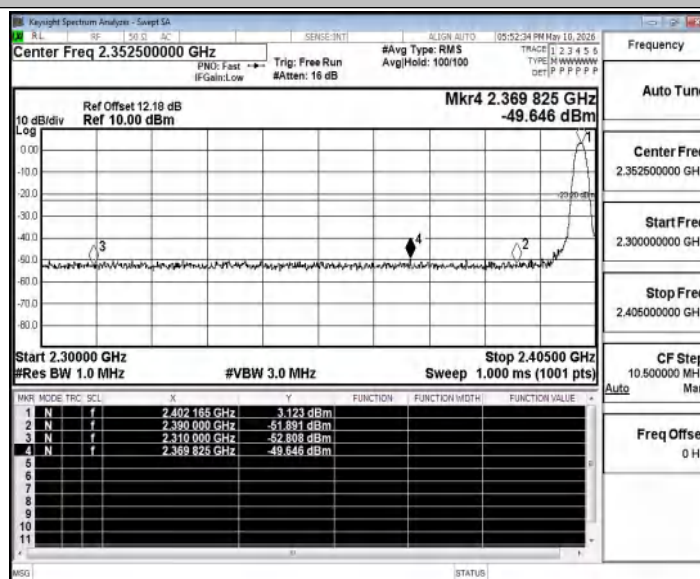
DH5_Ant1_High_2480_Peak



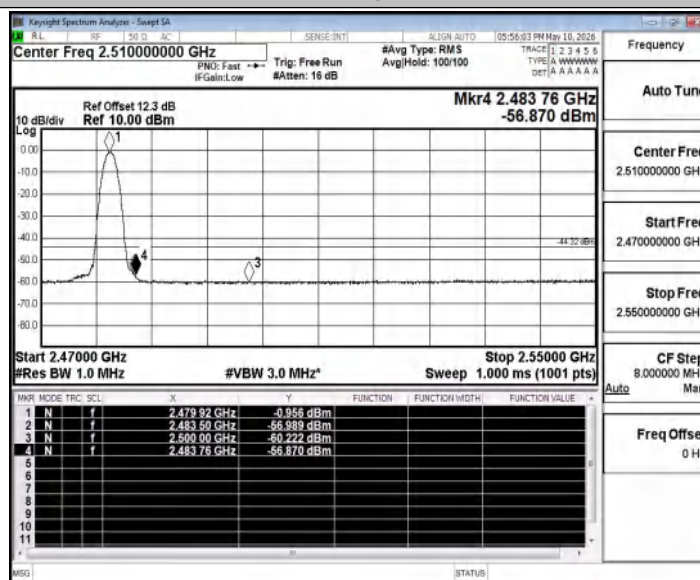
2DH5_Ant1_Low_2402_AV



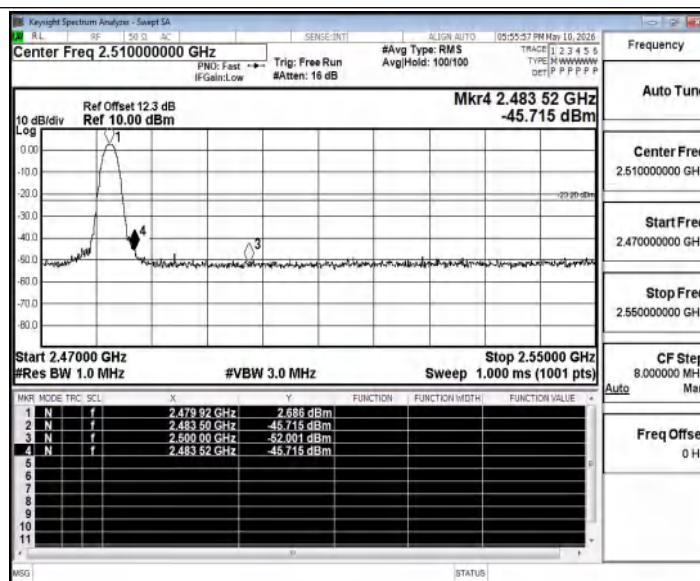
2DH5_Ant1_Low_2402_Peak



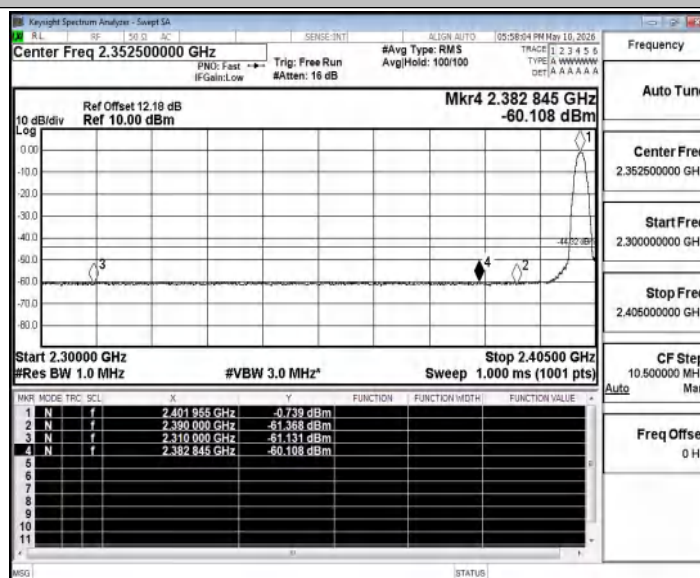
2DH5_Ant1_High_2480_AV



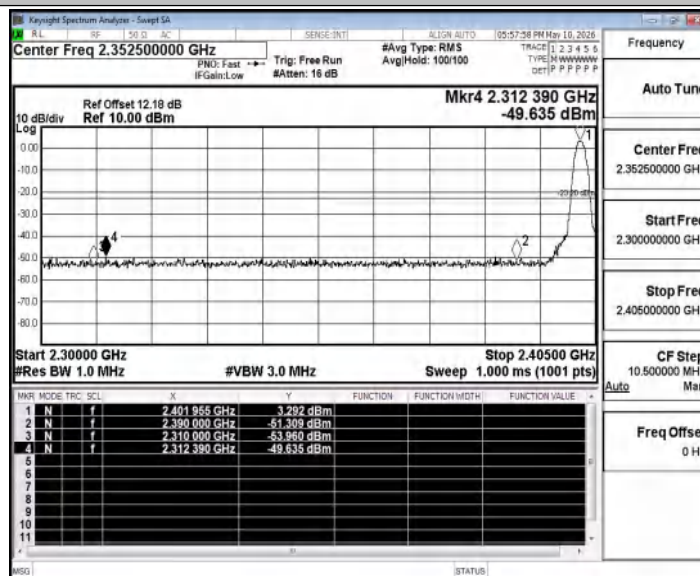
2DH5_Ant1_High_2480_Peak



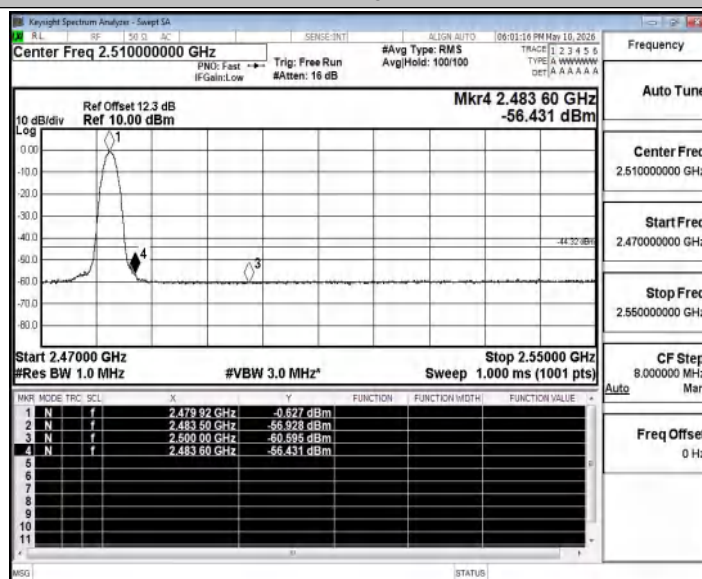
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

