

**RF Test Data for BT(BDR/EDR) (Conducted Measurement)****Product Name: 4K Set Top Box****Trade Mark: Force1****Test Model: IPA2114HDW****FCC ID: 2AOVU-IPA2114HDW****IC: 25669-IPA2114HDW****Environmental Conditions**

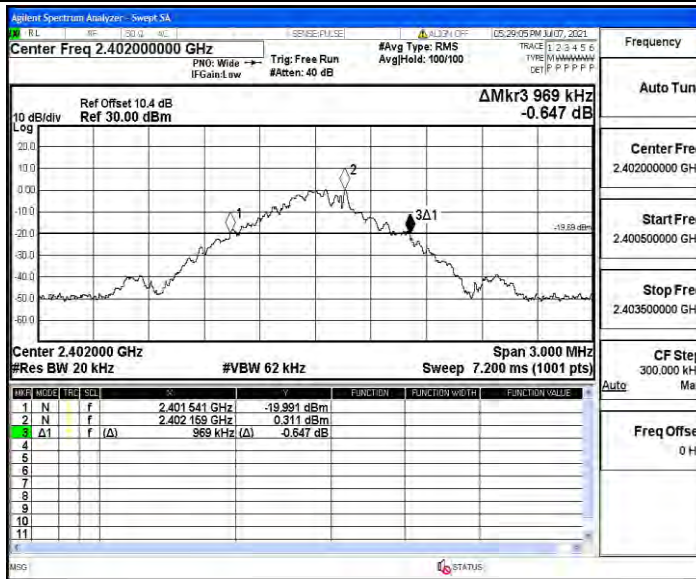
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

**Appendix A.1: 20dB Emission Bandwidth****Test Result**

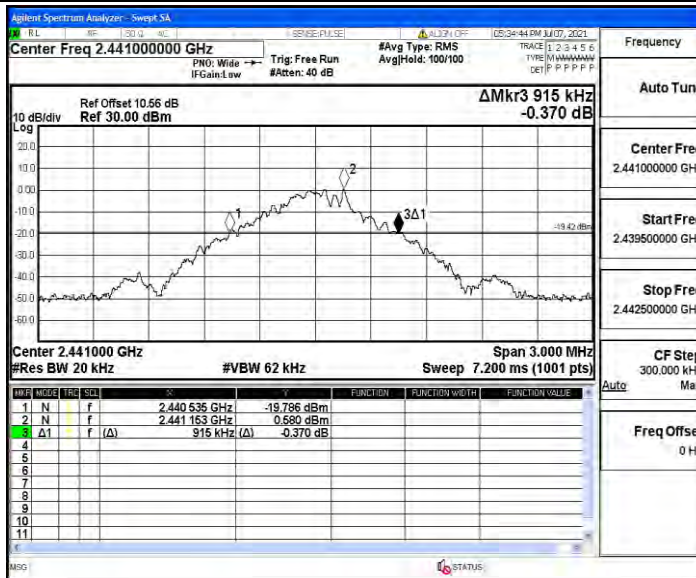
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.969	2401.541	2402.510	---	PASS
		2441	0.915	2440.535	2441.450	---	PASS
		2480	0.858	2479.529	2480.387	---	PASS
2DH5	Ant1	2402	1.329	2401.334	2402.663	---	PASS
		2441	1.353	2440.319	2441.672	---	PASS
		2480	1.386	2479.286	2480.672	---	PASS
3DH5	Ant1	2402	1.302	2401.346	2402.648	---	PASS
		2441	1.326	2440.322	2441.648	---	PASS
		2480	1.323	2479.316	2480.639	---	PASS

Test Graphs

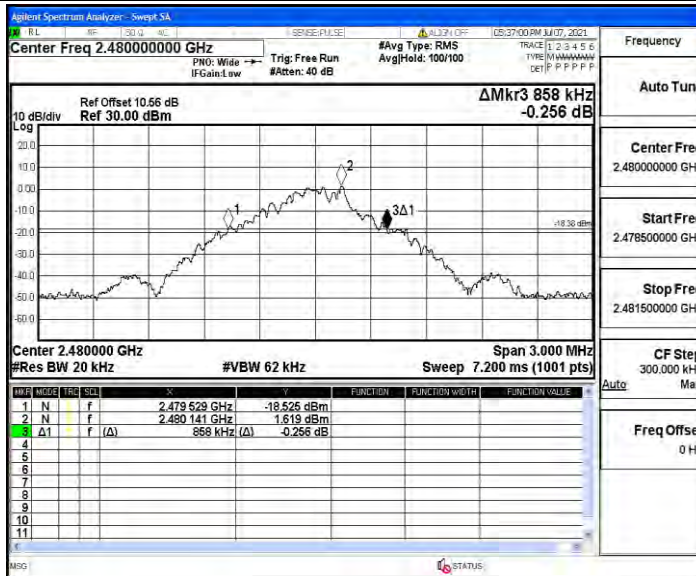
DH5\_Ant1\_2402



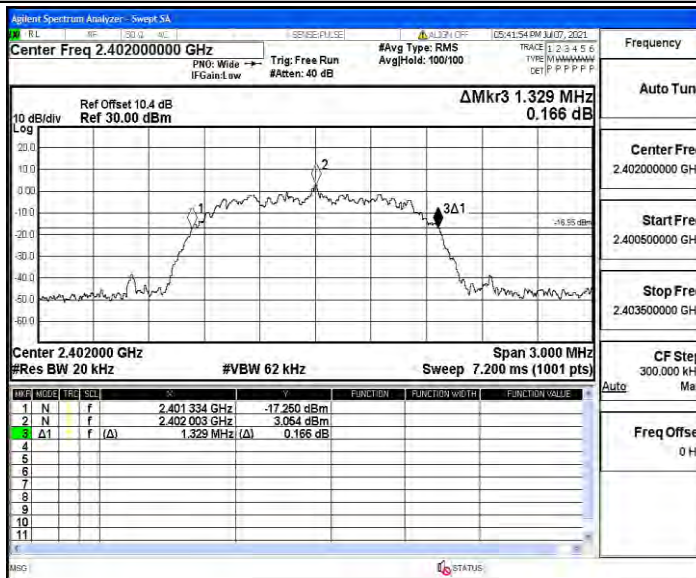
DH5\_Ant1\_2441



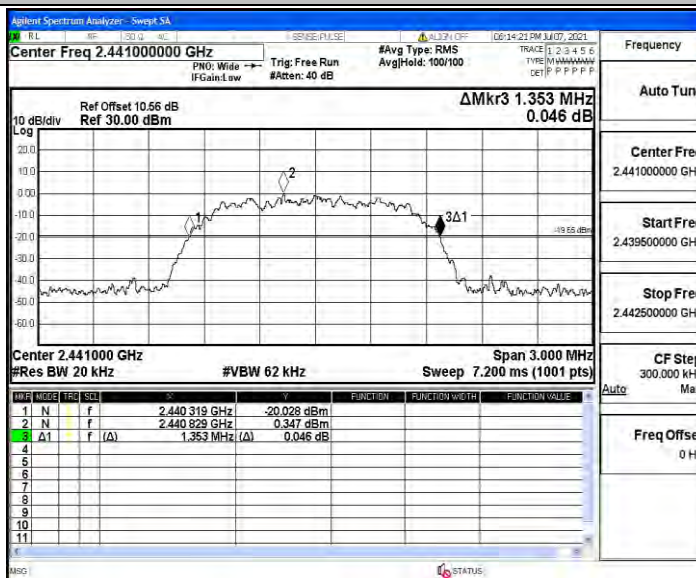
DH5\_Ant1\_2480



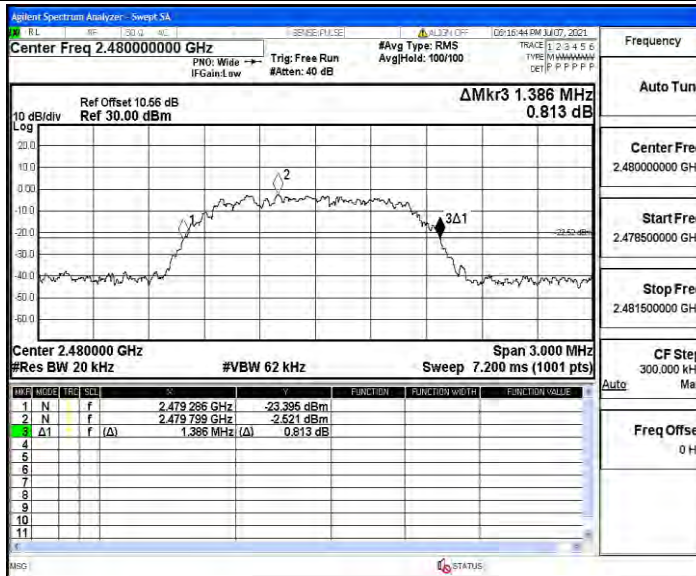
2DH5\_Ant1\_2402



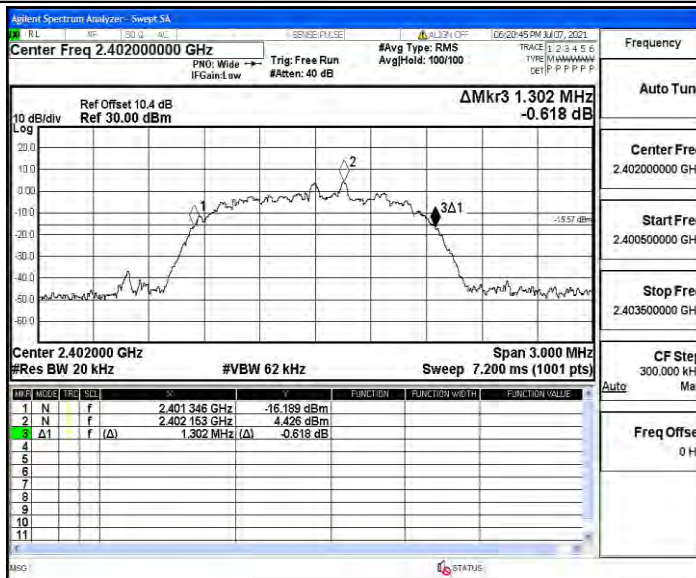
2DH5\_Ant1\_2441



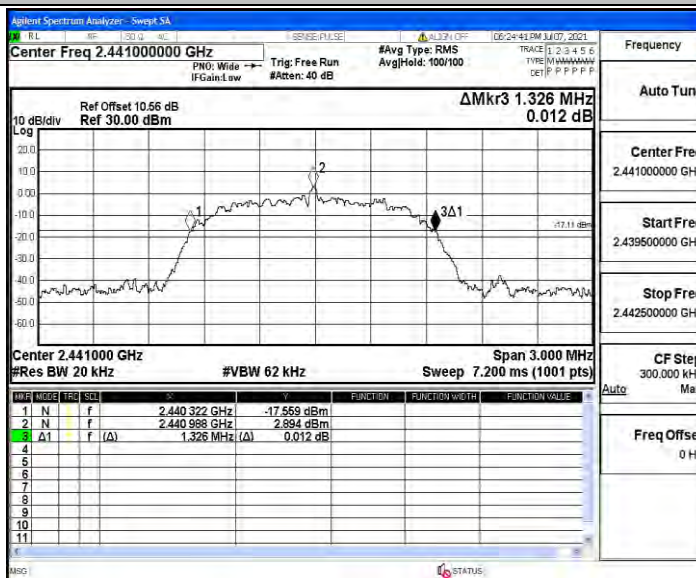
2DH5\_Ant1\_2480



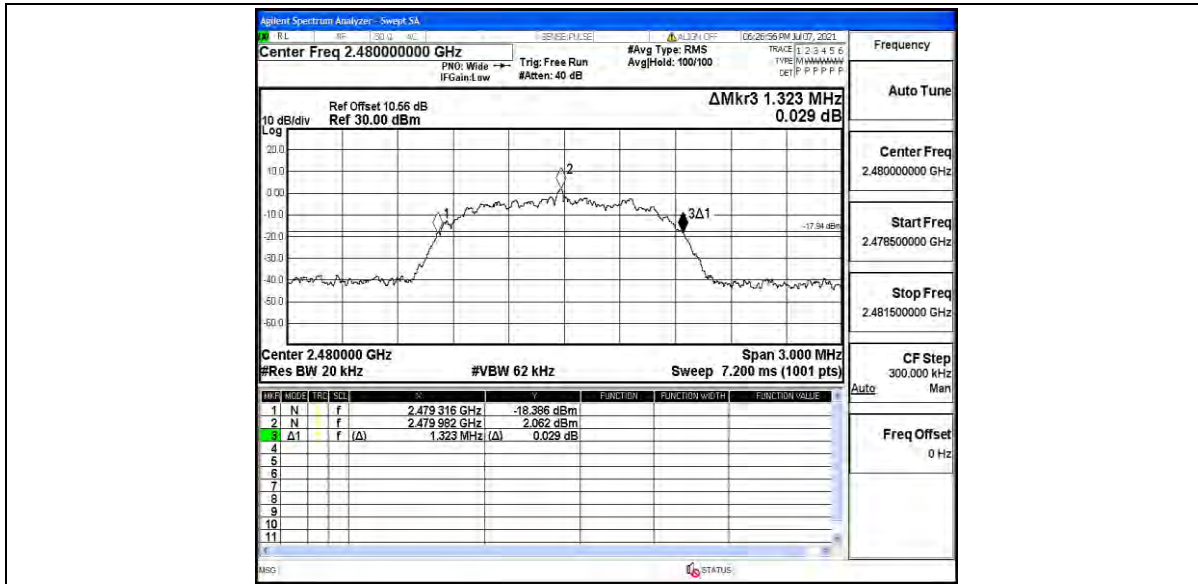
3DH5\_Ant1\_2402



3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



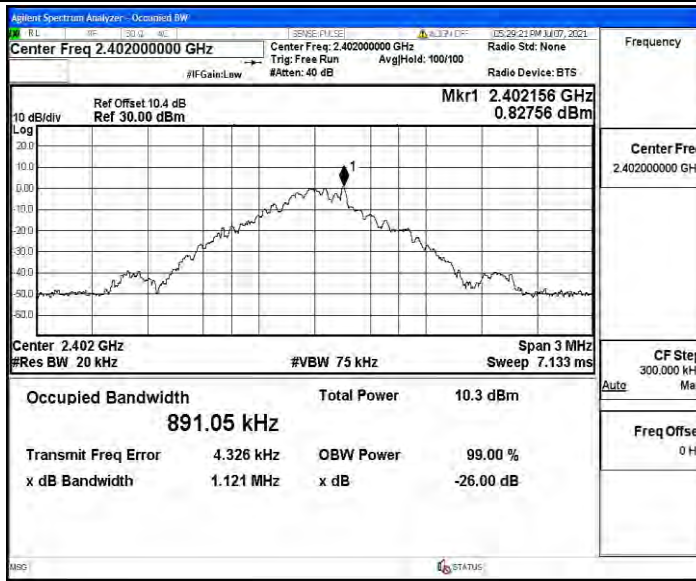
## Appendix A.2: Occupied Channel Bandwidth

### Test Result

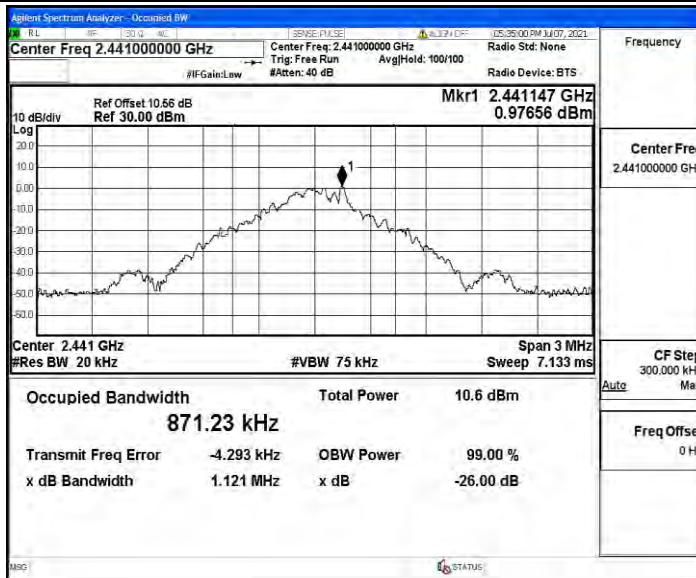
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89105	2401.559	2402.450	---	PASS
		2441	0.87123	2440.560	2441.431	---	PASS
		2480	0.88032	2479.543	2480.424	---	PASS
2DH5	Ant1	2402	1.1936	2401.402	2402.596	---	PASS
		2441	1.2118	2440.385	2441.597	---	PASS
		2480	1.2047	2479.381	2480.586	---	PASS
3DH5	Ant1	2402	1.2012	2401.389	2402.590	---	PASS
		2441	1.2080	2440.379	2441.587	---	PASS
		2480	1.2077	2479.371	2480.578	---	PASS

Test Graphs

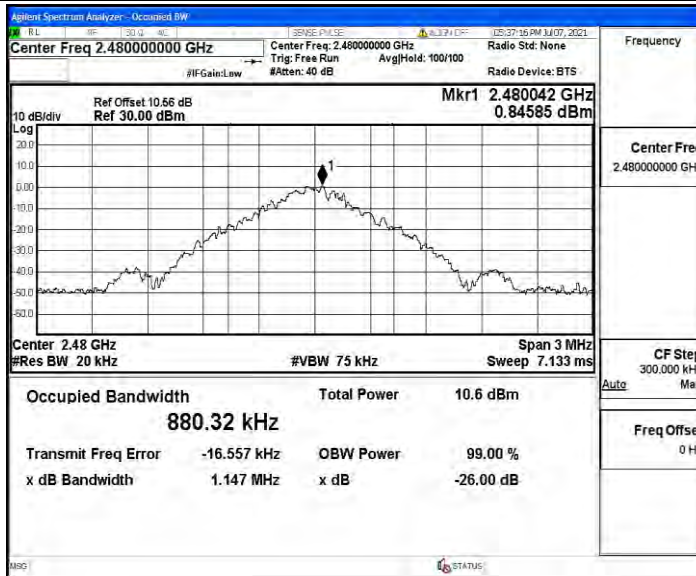
DH5\_Ant1\_2402



DH5\_Ant1\_2441



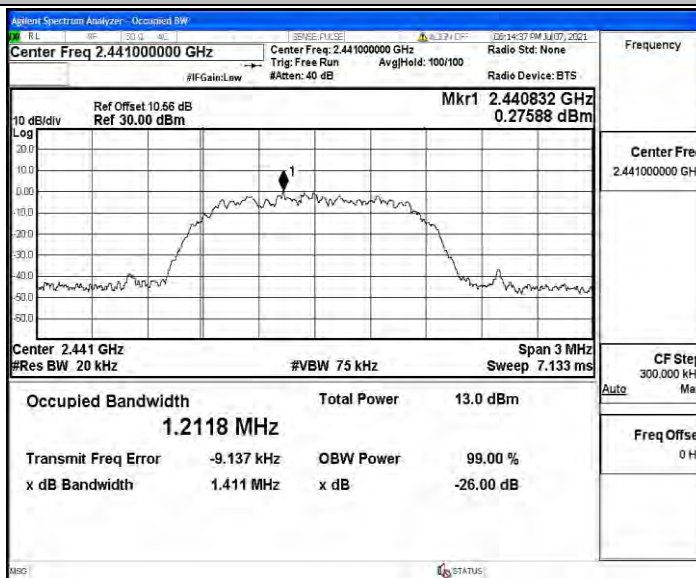
DH5\_Ant1\_2480



2DH5\_Ant1\_2402

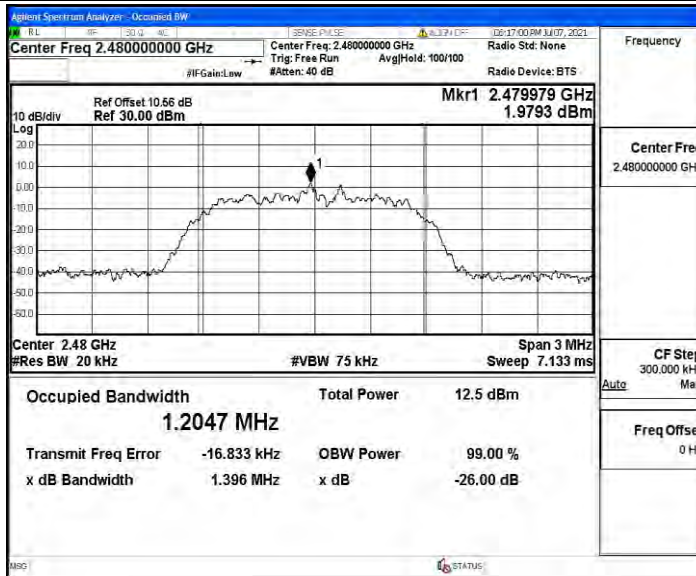


2DH5\_Ant1\_2441



2DH5\_Ant1\_2480

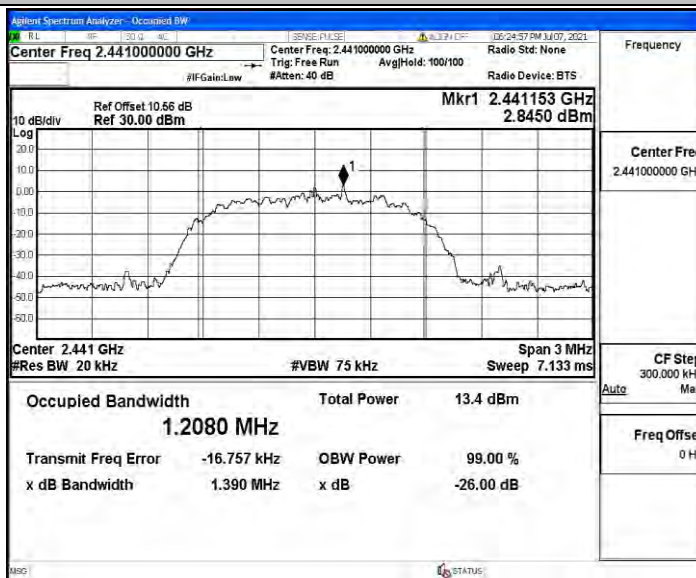




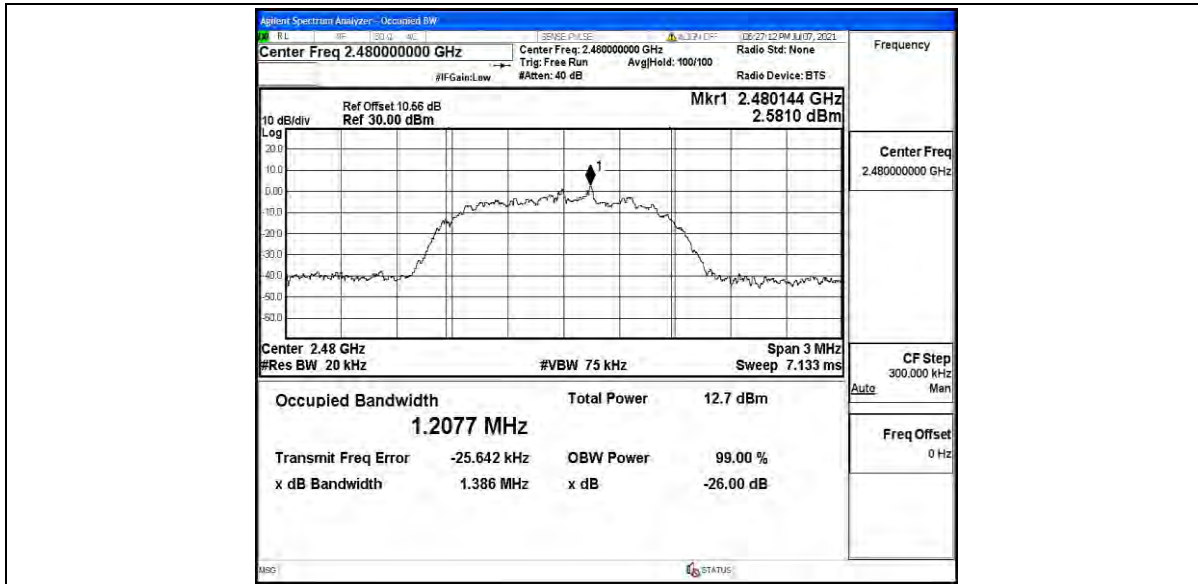
3DH5\_Ant1\_2402



3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



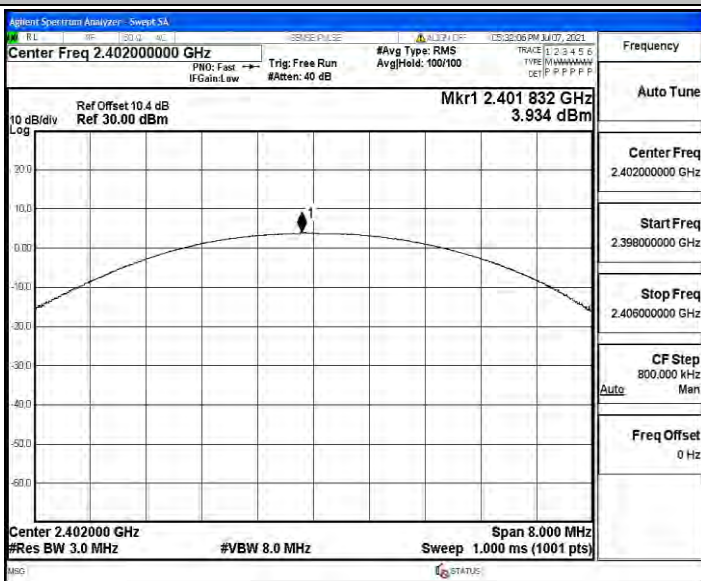
## Appendix B: Maximum conducted output power

### Test Result

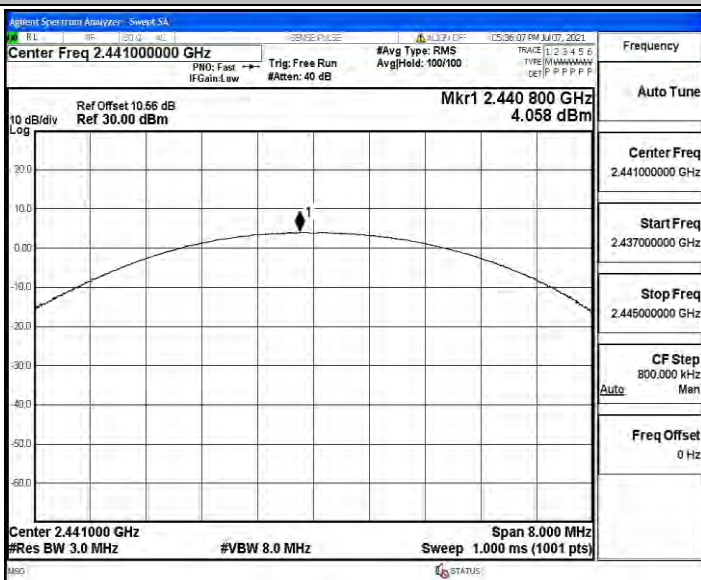
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	3.93	<=30.0	PASS
		2441	4.06	<=30.0	PASS
		2480	4.52	<=30.0	PASS
2DH5	Ant1	2402	9.14	<=20.97	PASS
		2441	8.77	<=20.97	PASS
		2480	7.9	<=20.97	PASS
3DH5	Ant1	2402	10	<=20.97	PASS
		2441	9.22	<=20.97	PASS
		2480	8.45	<=20.97	PASS

Test Graphs

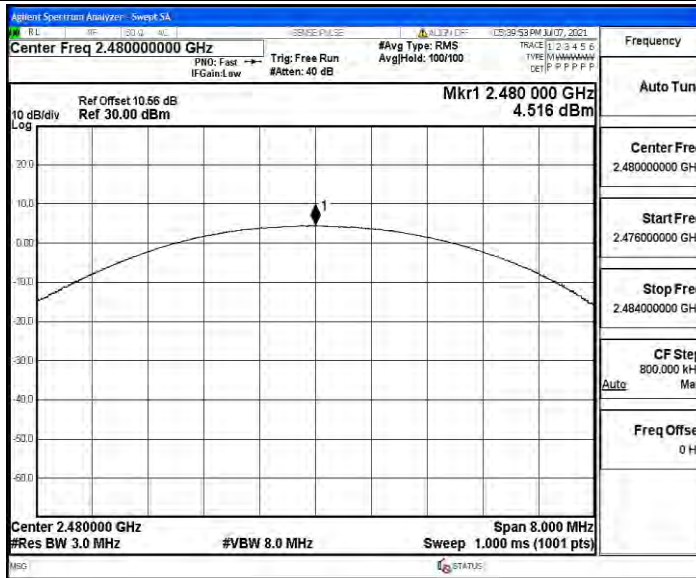
DH5\_Ant1\_2402



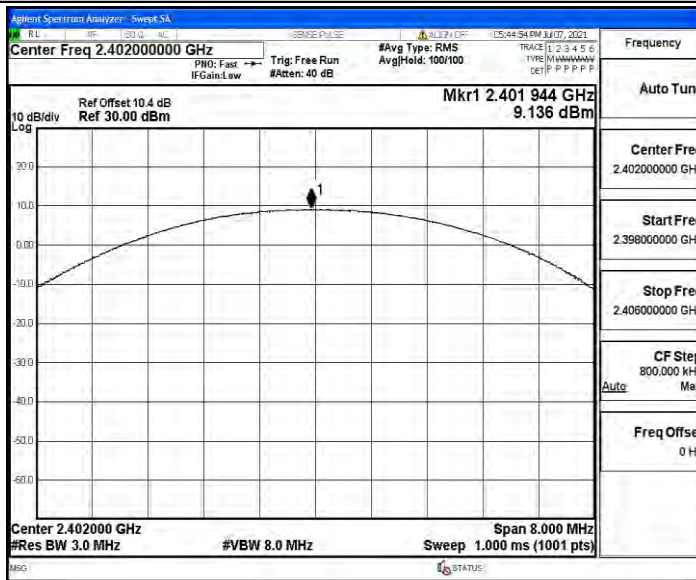
DH5\_Ant1\_2441



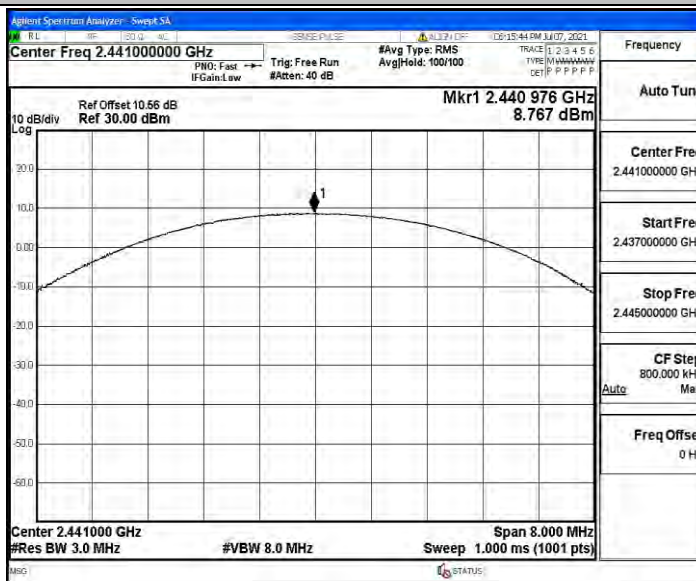
DH5\_Ant1\_2480



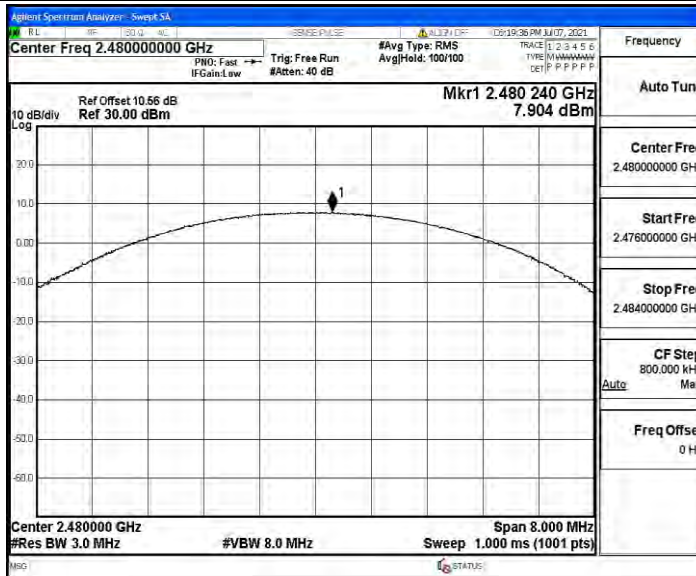
2DH5\_Ant1\_2402



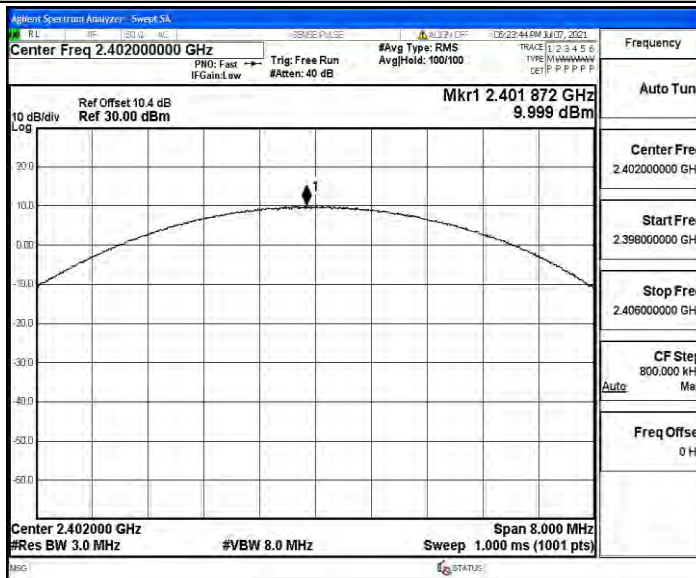
2DH5\_Ant1\_2441



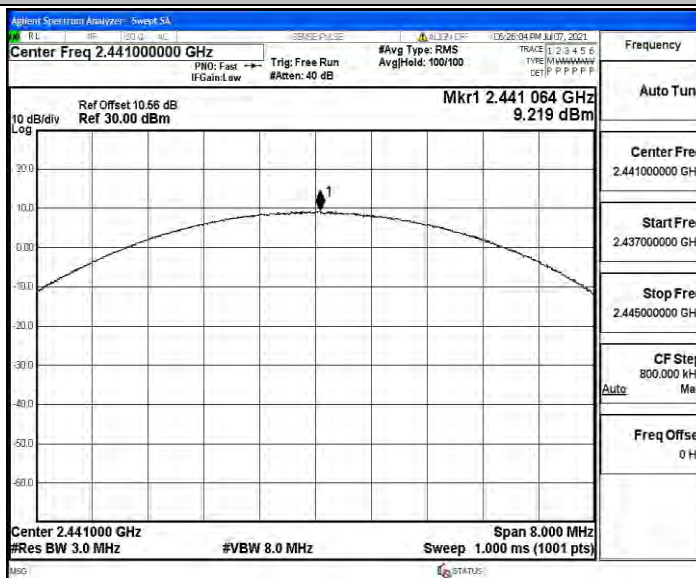
2DH5\_Ant1\_2480



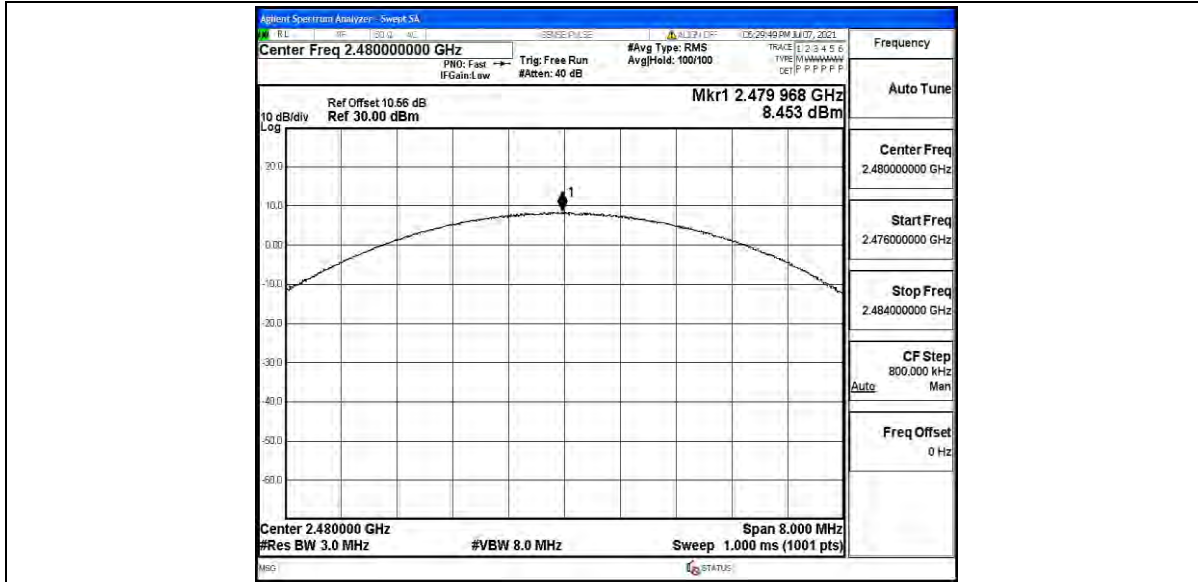
3DH5\_Ant1\_2402



3DH5\_Ant1\_2441



3DH5\_Ant1\_2480



## Appendix C: Carrier frequency separation

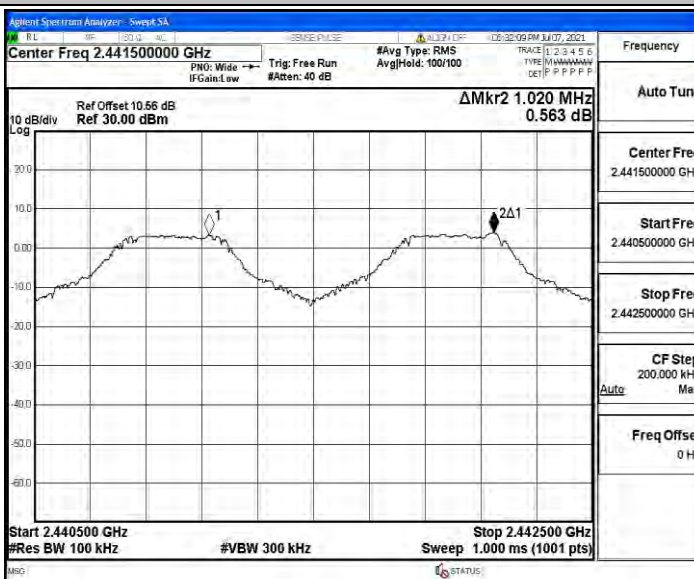
### Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.02	$\geq 0.969$	PASS
2DH5	Ant1	Hop	0.976	$\geq 0.924$	PASS
3DH5	Ant1	Hop	0.996	$\geq 0.884$	PASS

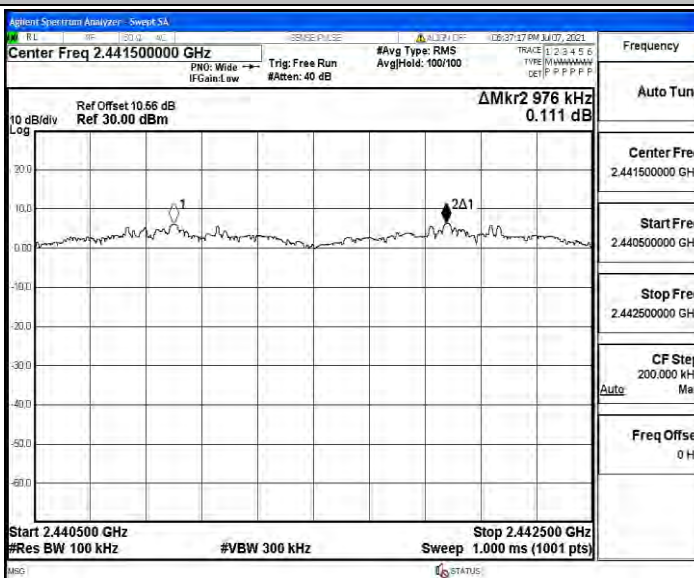


### Test Graphs

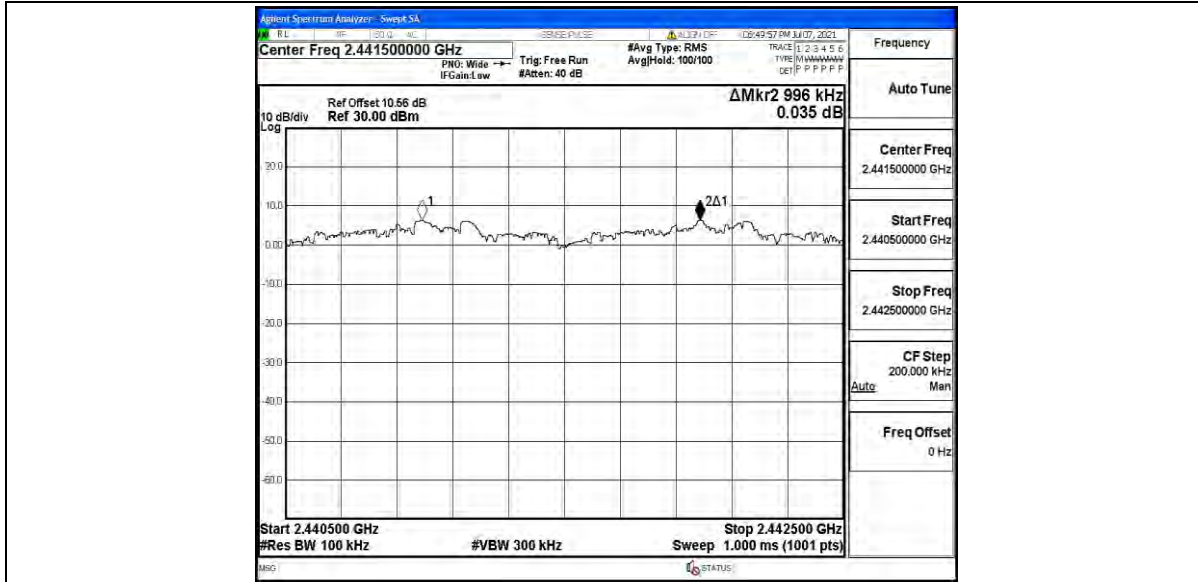
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop



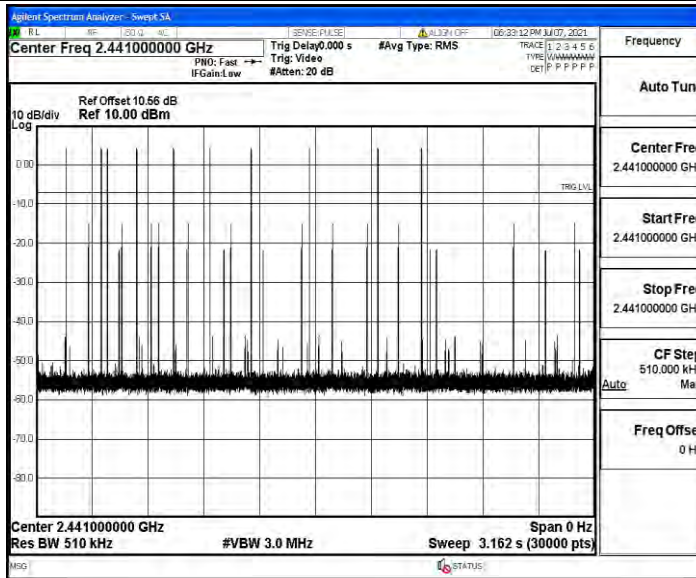
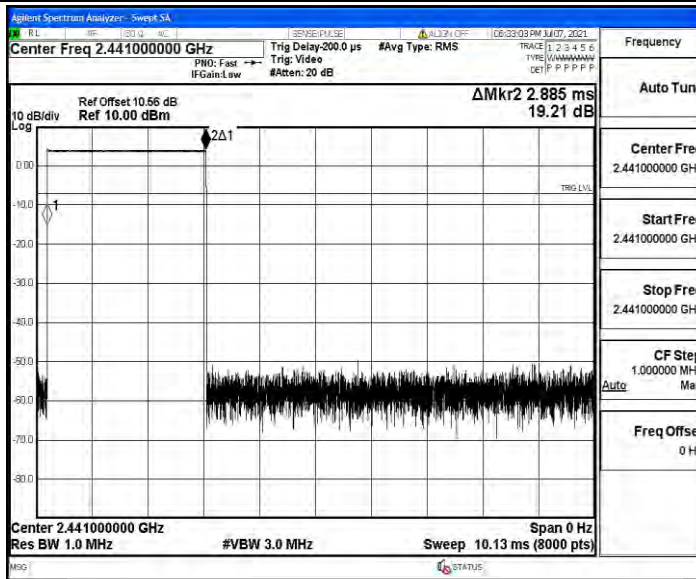
## Appendix D: Time of occupancy

### Test Result

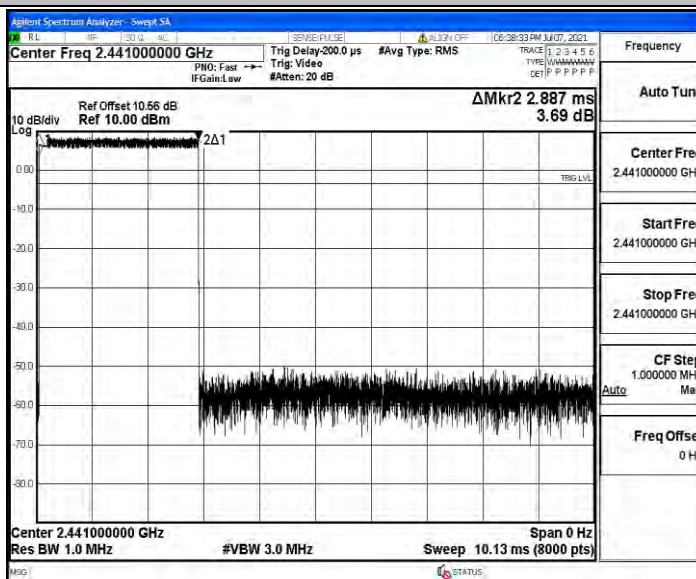
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	110	0.317	<=0.4	PASS
2DH5	Ant1	Hop	2.89	130	0.375	<=0.4	PASS
3DH5	Ant1	Hop	2.89	100	0.289	<=0.4	PASS

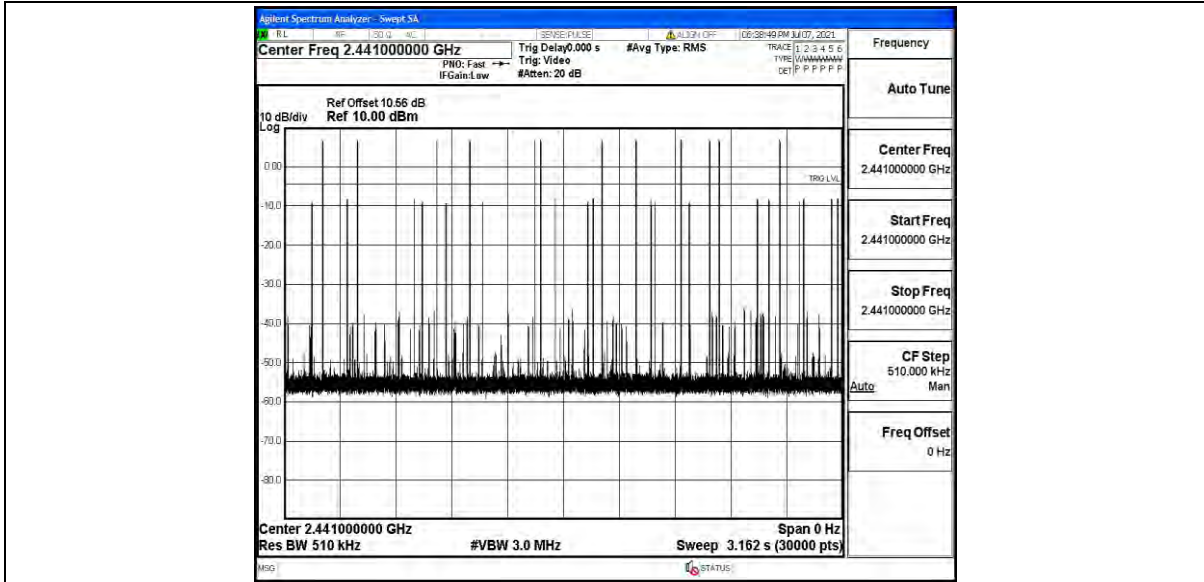
Test Graphs

DH5\_Ant1\_Hop

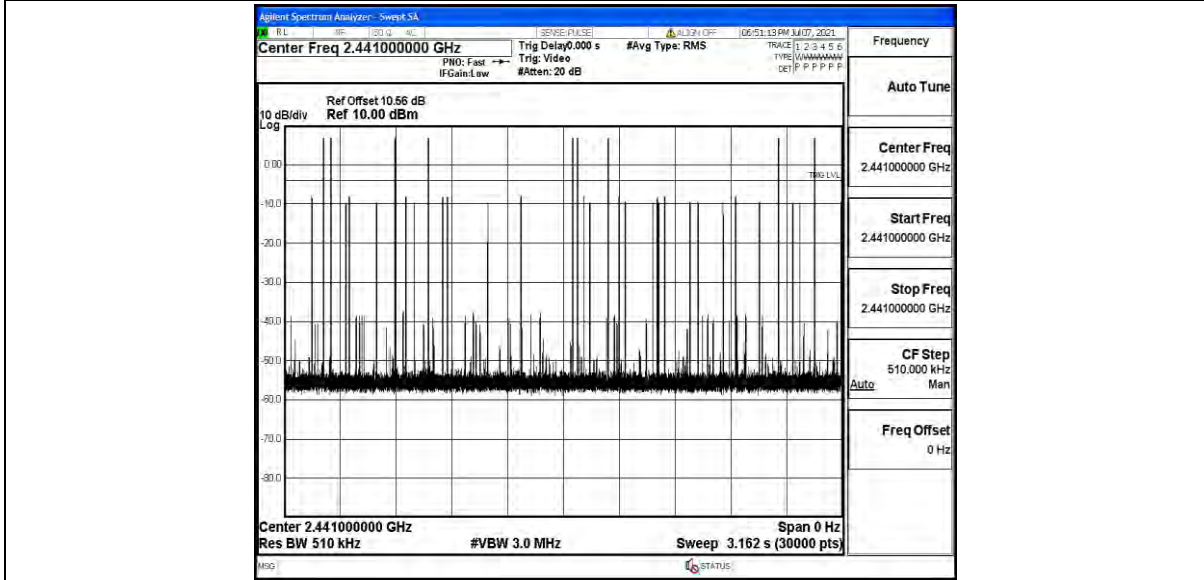
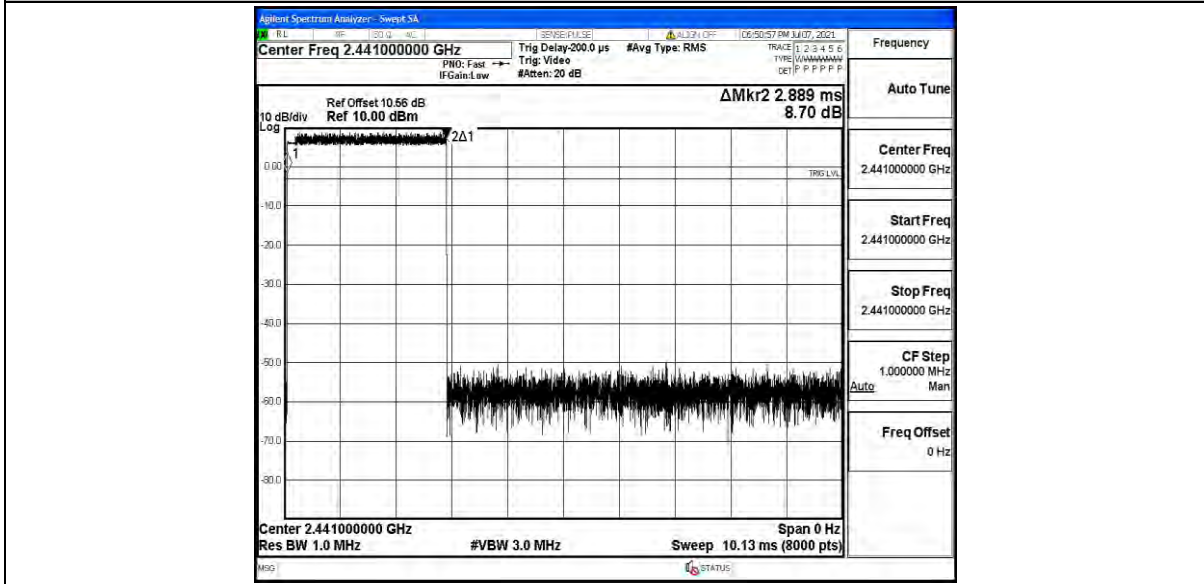


2DH5\_Ant1\_Hop





3DH5\_Ant1\_Hop



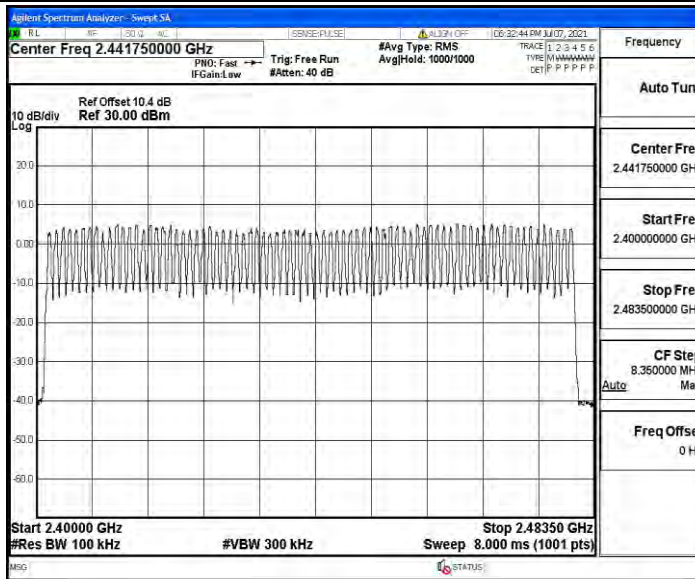
## Appendix E: Number of hopping channels

### Test Result

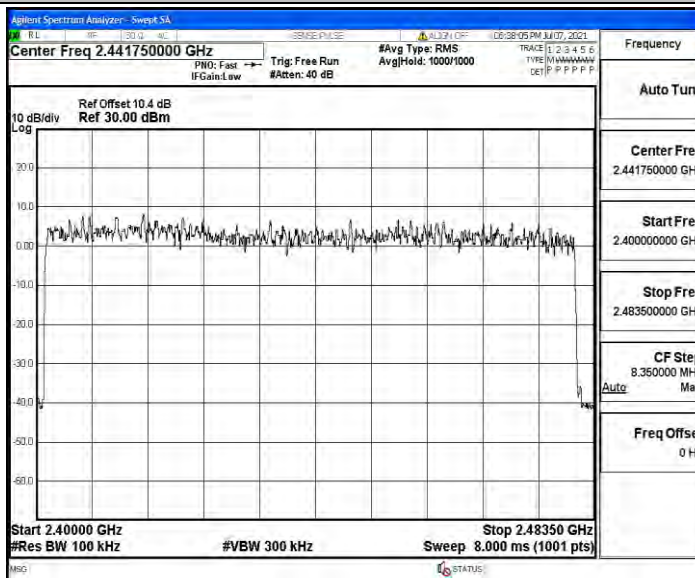
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	$\geq 15$	PASS
2DH5	Ant1	Hop	79	$\geq 15$	PASS
3DH5	Ant1	Hop	79	$\geq 15$	PASS

Test Graphs

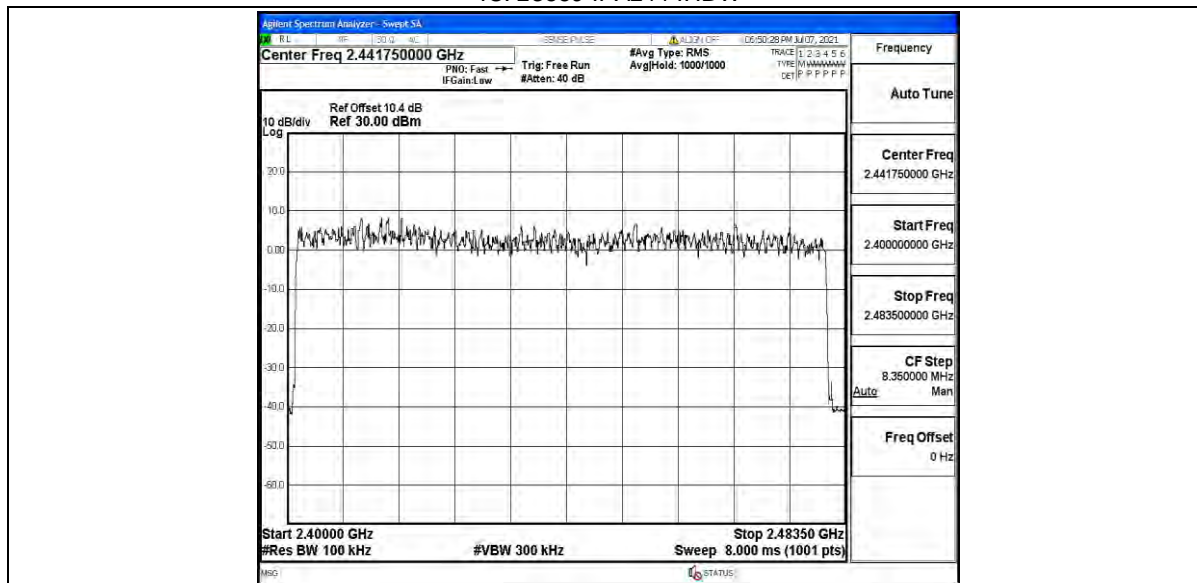
DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



3DH5\_Ant1\_Hop



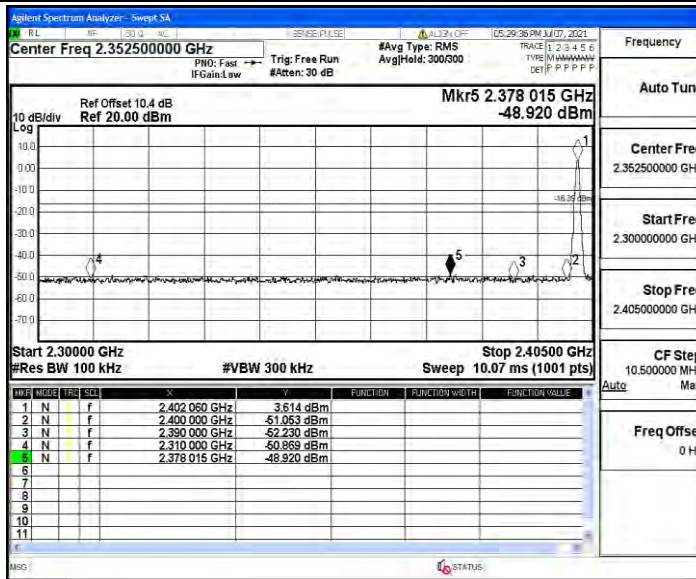
## Appendix F: Band edge measurements

### Test Result

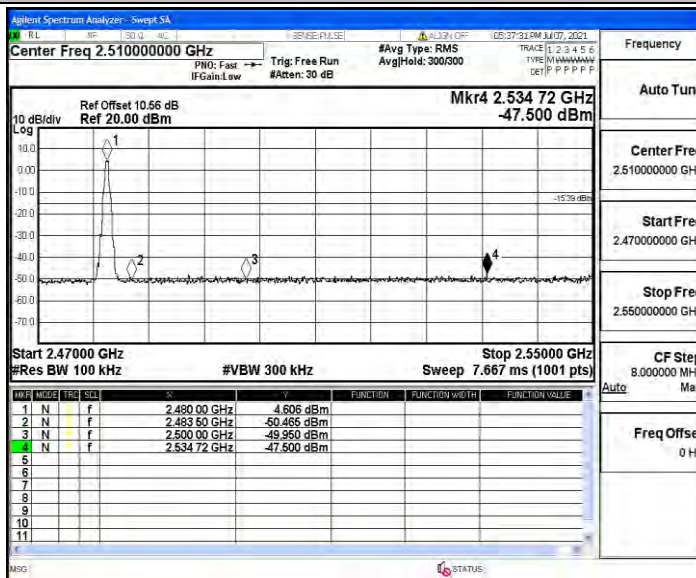
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	3.61	-48.92	<=-16.39	PASS
		High	2480	4.61	-47.5	<=-15.39	PASS
		Low	Hop_2402	3.48	-49.46	<=-16.52	PASS
		High	Hop_2480	4.71	-47.77	<=-15.3	PASS
2DH5	Ant1	Low	2402	5.46	-47.23	<=-14.54	PASS
		High	2480	5.78	-47.56	<=-14.22	PASS
		Low	Hop_2402	5.59	-48.46	<=-14.41	PASS
		High	Hop_2480	6.10	-48.24	<=-13.9	PASS
3DH5	Ant1	Low	2402	6.95	-47.24	<=-13.05	PASS
		High	2480	5.73	-47.65	<=-14.28	PASS
		Low	Hop_2402	5.08	-48.8	<=-14.92	PASS
		High	Hop_2480	5.58	-47.81	<=-14.43	PASS

Test Graphs

DH5\_Ant1\_Low\_2402

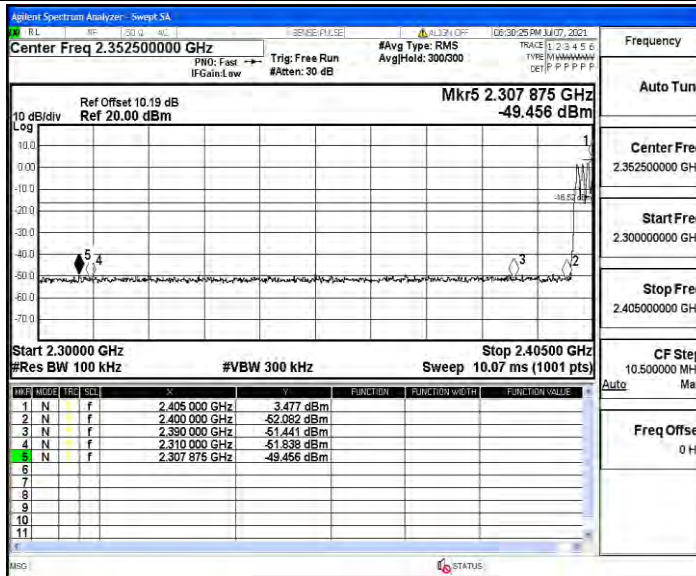


DH5\_Ant1\_High\_2480

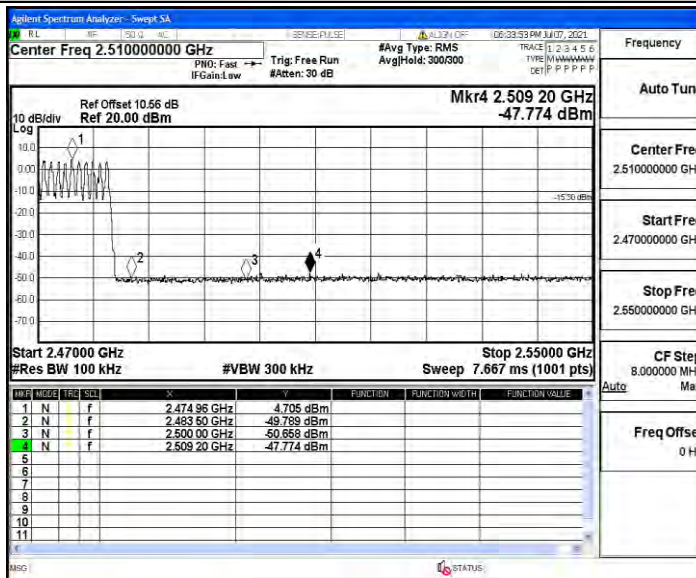


DH5\_Ant1\_Low\_Hop\_2402

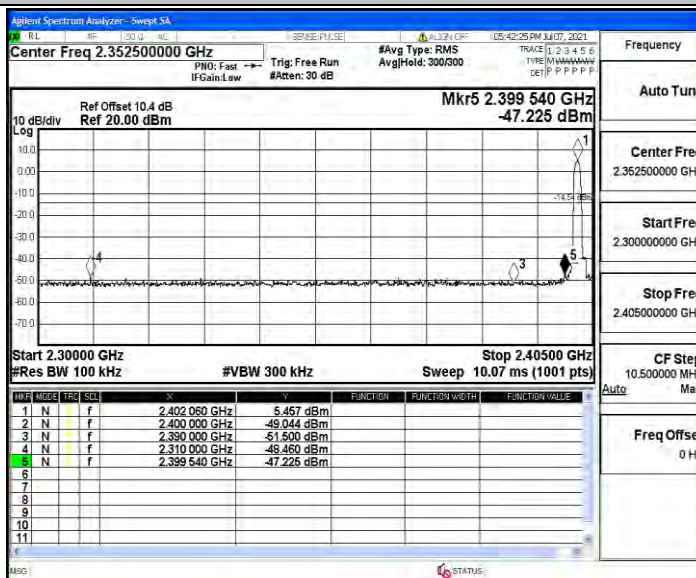




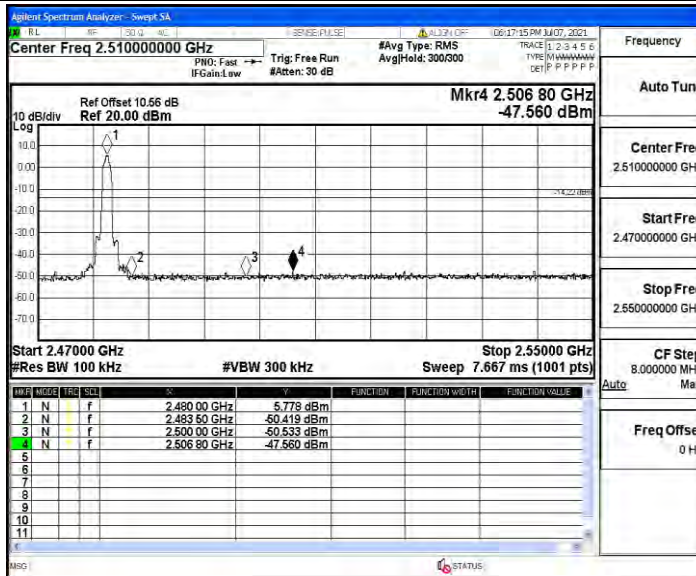
DH5\_Ant1\_High\_Hop\_2480



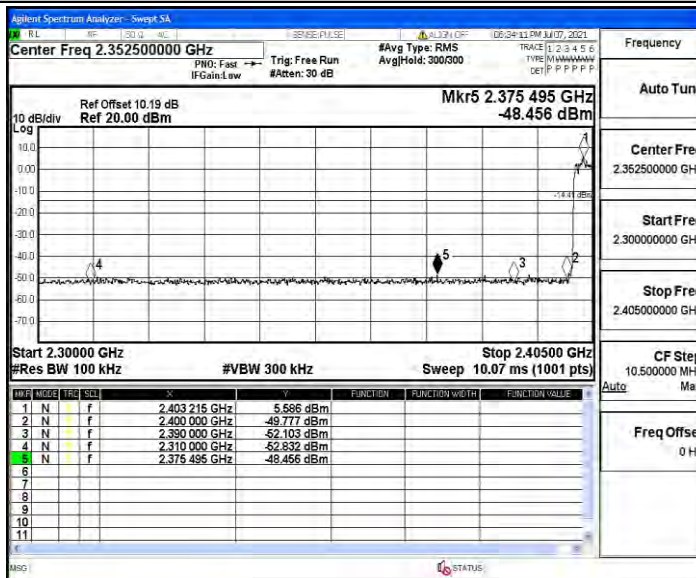
2DH5\_Ant1\_Low\_2402



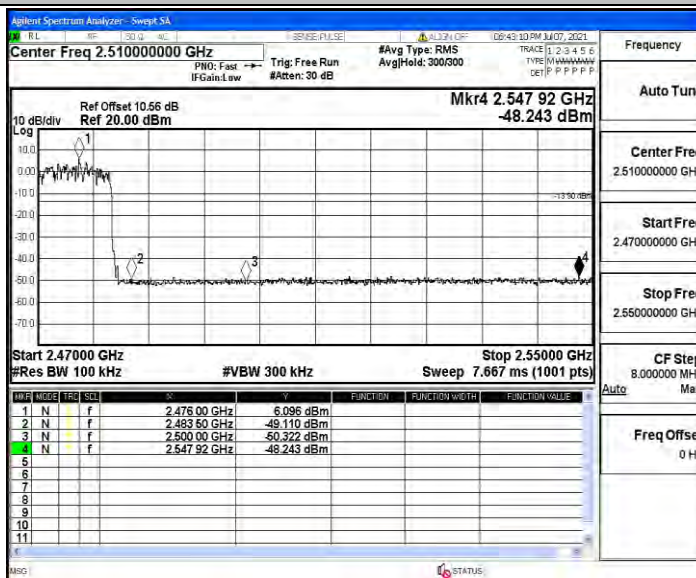
2DH5\_Ant1\_High\_2480



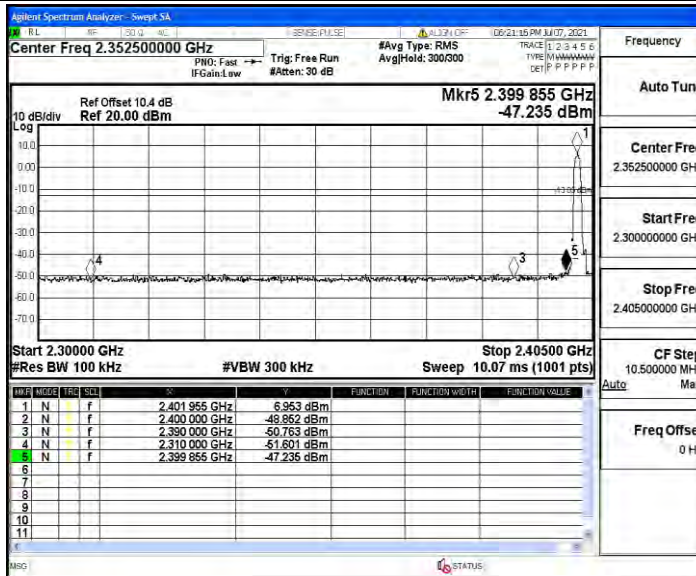
2DH5\_Ant1\_Low\_Hop\_2402



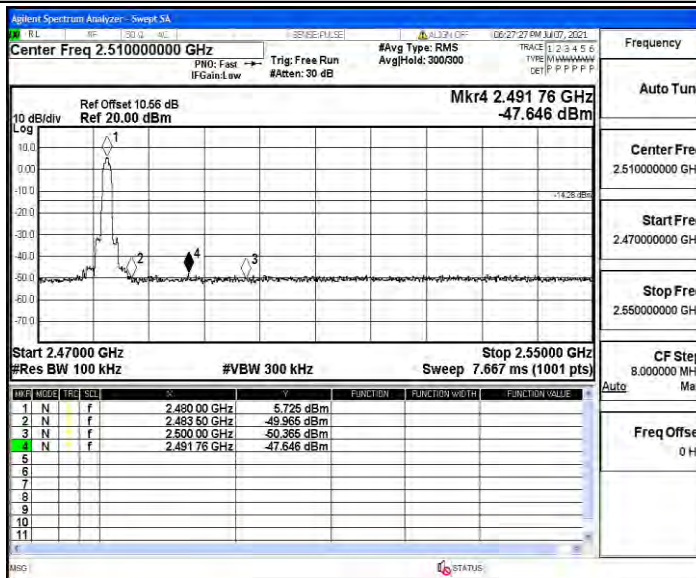
2DH5\_Ant1\_High\_Hop\_2480



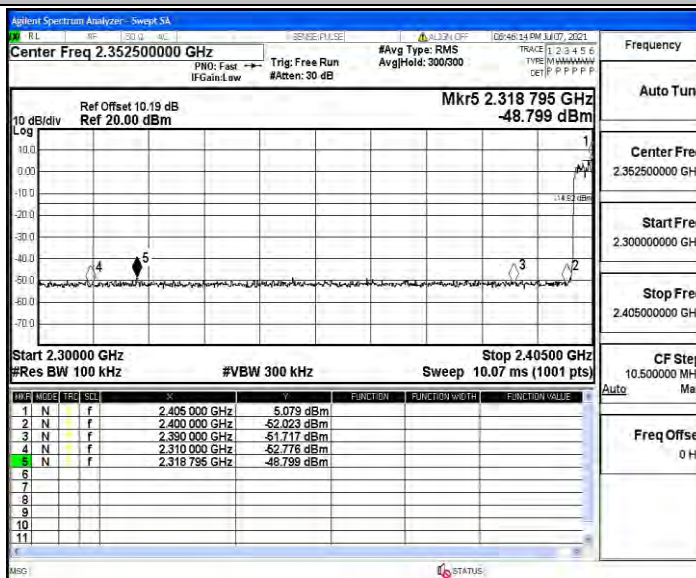
3DH5\_Ant1\_Low\_2402



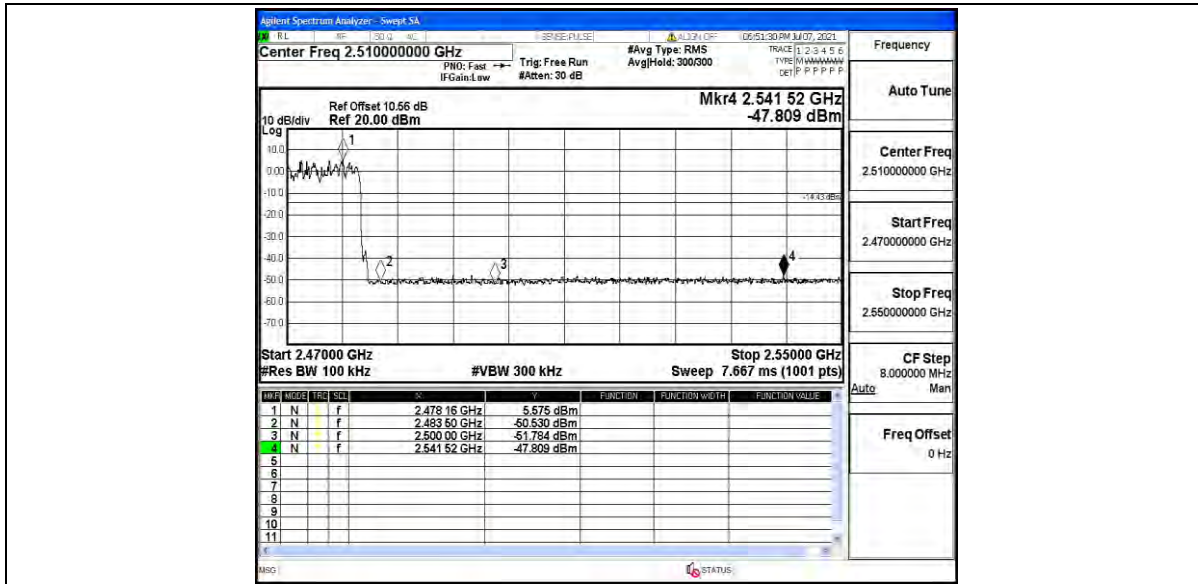
3DH5\_Ant1\_High\_2480



3DH5\_Ant1\_Low\_Hop\_2402



3DH5\_Ant1\_High\_Hop\_2480

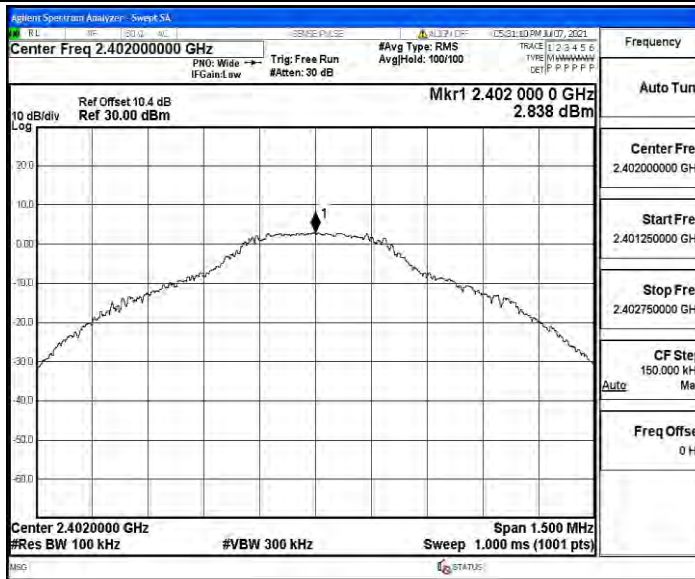


**Appendix G: Conducted Spurious Emission****Test Result**

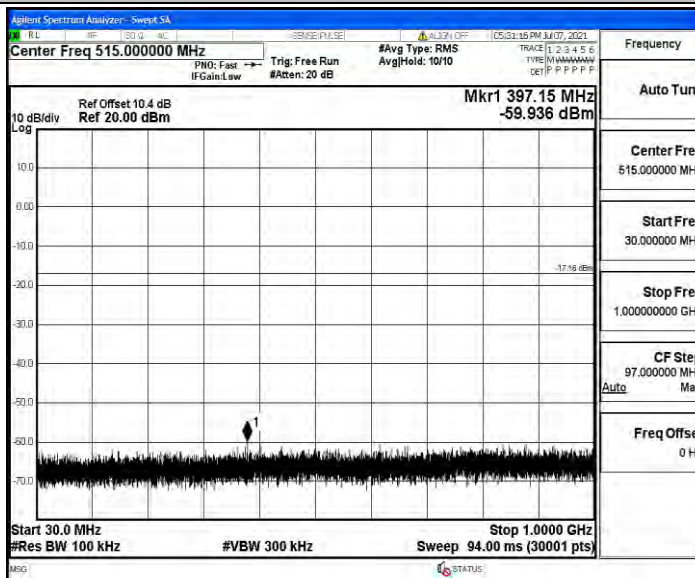
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-59.94	<=-17.16	PASS
			1000~26500	2.84	-43.99	<=-17.16	PASS
		2441	Reference	2.99	2.99	---	PASS
			30~1000	2.99	-60.3	<=-17.01	PASS
			1000~26500	2.99	-37.94	<=-17.01	PASS
		2480	Reference	4.15	4.15	---	PASS
			30~1000	4.15	-58.55	<=-15.85	PASS
			1000~26500	4.15	-34.79	<=-15.85	PASS
2DH5	Ant1	2402	Reference	6.69	6.69	---	PASS
			30~1000	6.69	-59.66	<=-13.31	PASS
			1000~26500	6.69	-40.15	<=-13.31	PASS
		2441	Reference	6.22	6.22	---	PASS
			30~1000	6.22	-60.12	<=-13.78	PASS
			1000~26500	6.22	-36.21	<=-13.78	PASS
		2480	Reference	5.37	5.37	---	PASS
			30~1000	5.37	-59.94	<=-14.63	PASS
			1000~26500	5.37	-32.21	<=-14.63	PASS
3DH5	Ant1	2402	Reference	6.71	6.71	---	PASS
			30~1000	6.71	-59.63	<=-13.29	PASS
			1000~26500	6.71	-40.37	<=-13.29	PASS
		2441	Reference	5.04	5.04	---	PASS
			30~1000	5.04	-59	<=-14.97	PASS
			1000~26500	5.04	-43.58	<=-14.97	PASS
		2480	Reference	4.86	4.86	---	PASS
			30~1000	4.86	-60.35	<=-15.14	PASS
			1000~26500	4.86	-42.9	<=-15.14	PASS

### Test Graphs

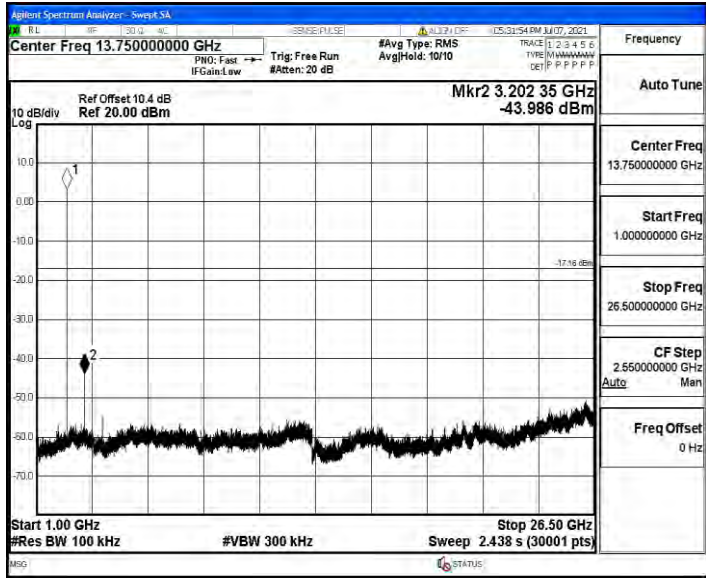
DH5\_Ant1\_2402\_0~Reference



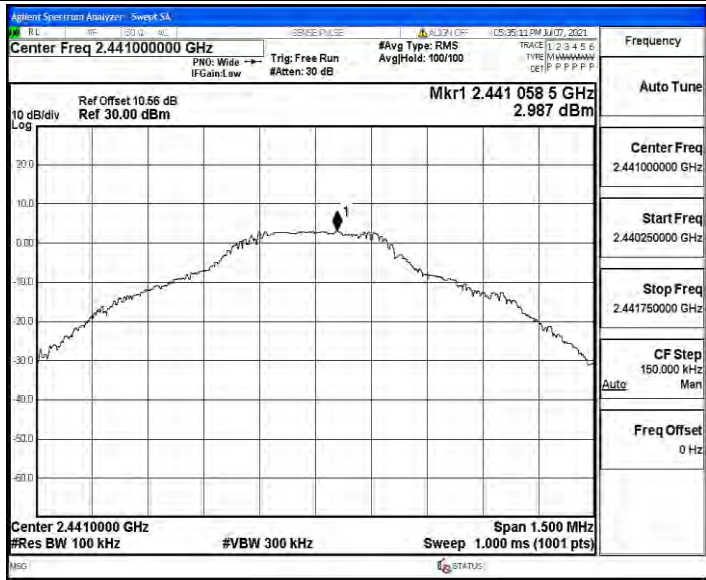
DH5\_Ant1\_2402\_30~1000



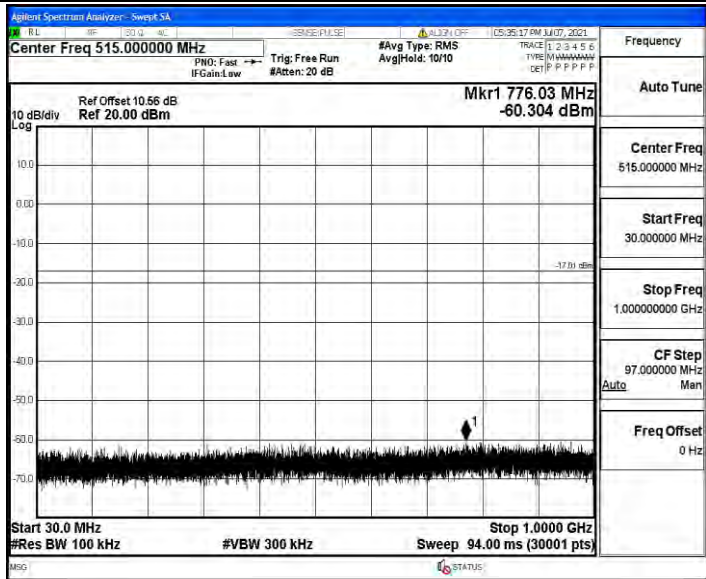
DH5\_Ant1\_2402\_1000~26500



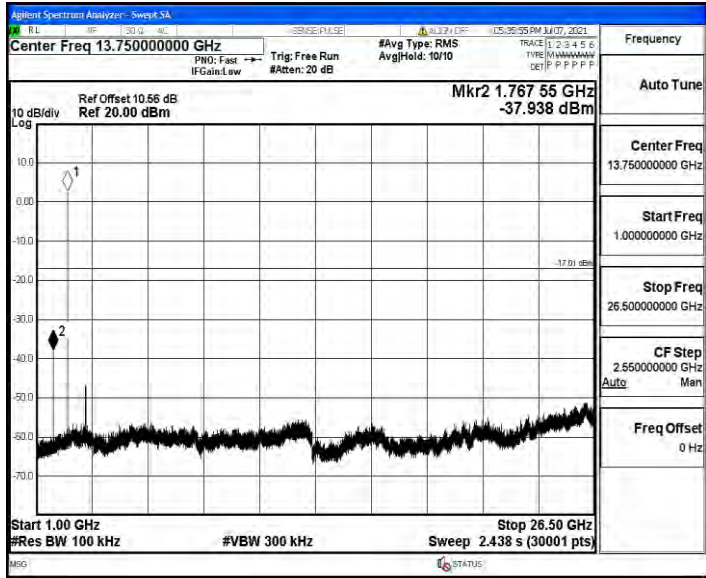
DH5\_Ant1\_2441\_0~Reference



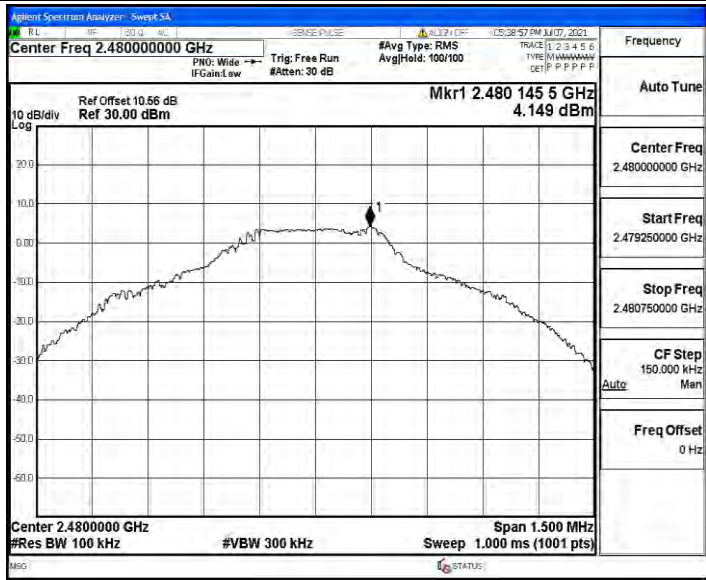
DH5\_Ant1\_2441\_30~1000



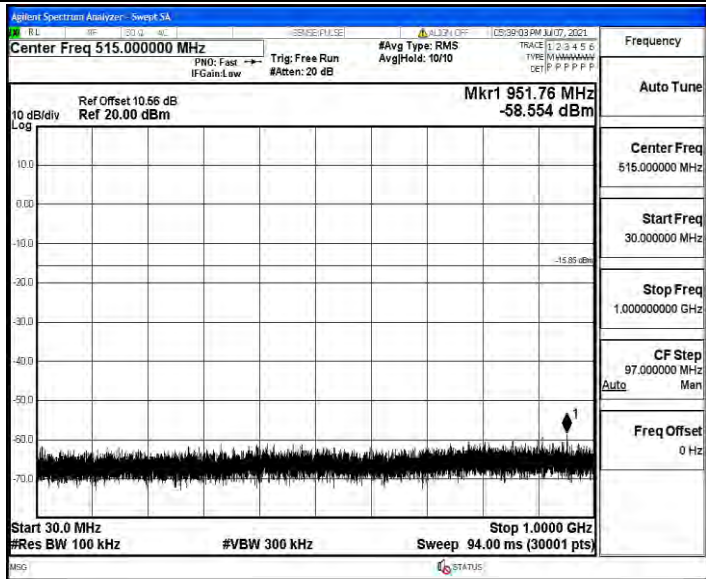
DH5\_Ant1\_2441\_1000~26500



DH5\_Ant1\_2480\_0~Reference

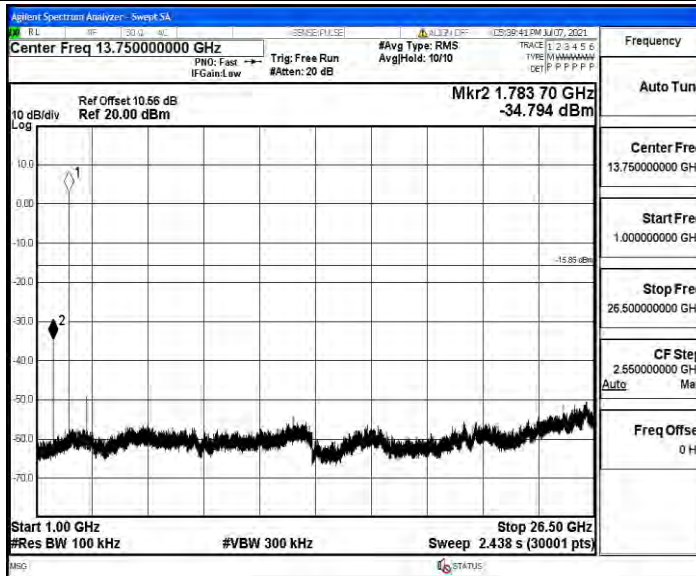


DH5\_Ant1\_2480\_30~1000

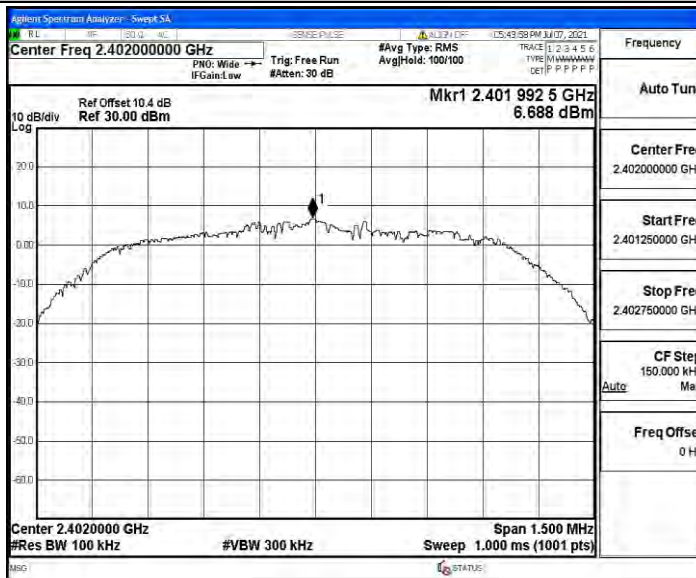


DH5\_Ant1\_2480\_1000~26500

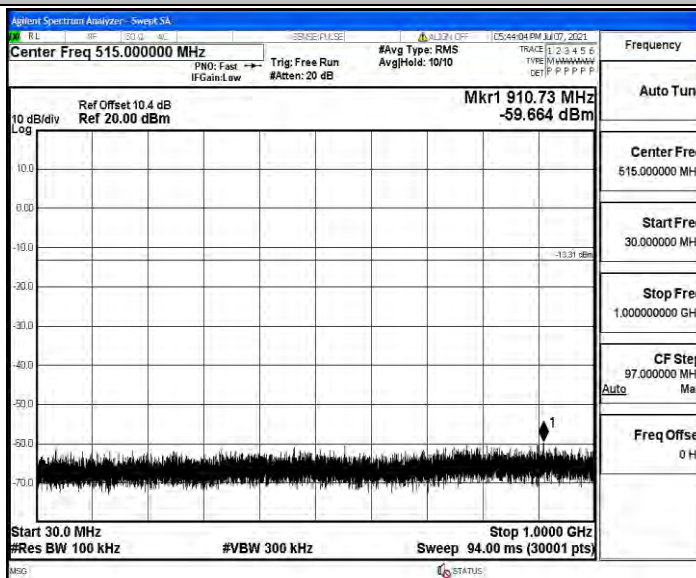




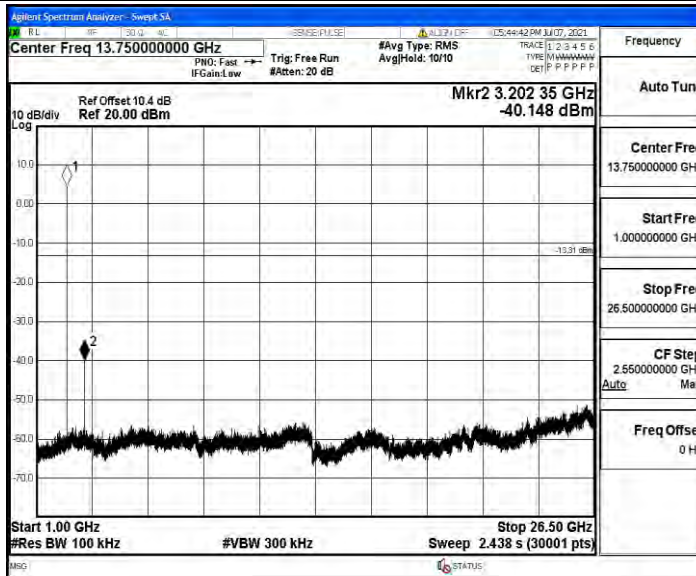
2DH5\_Ant1\_2402\_0~Reference



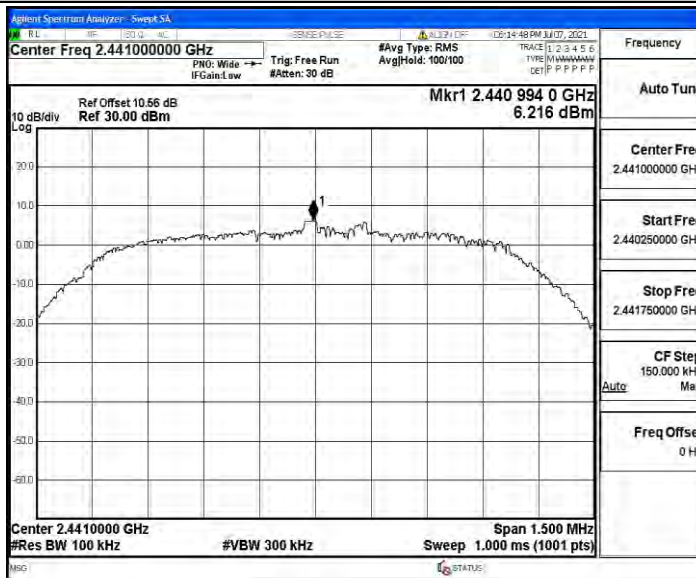
2DH5\_Ant1\_2402\_30~1000



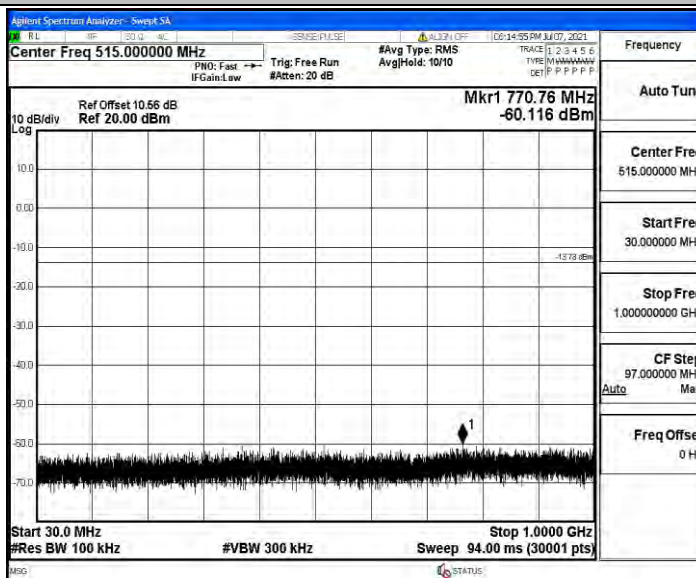
2DH5\_Ant1\_2402\_1000~26500



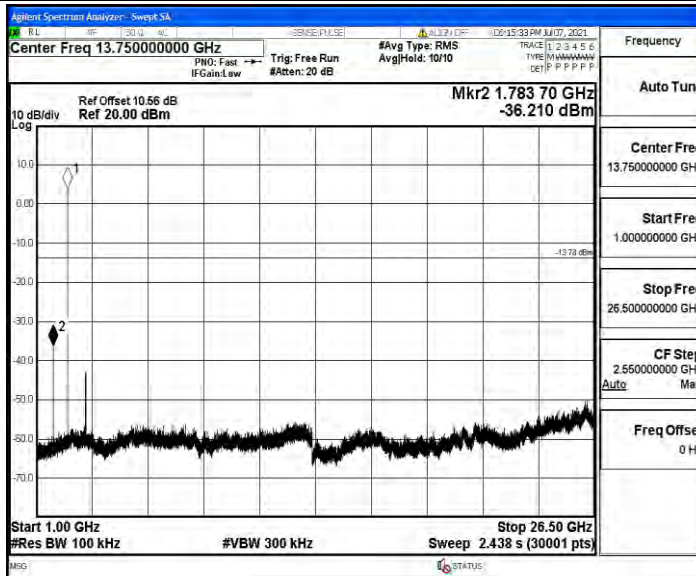
2DH5\_Ant1\_2441\_0~Reference



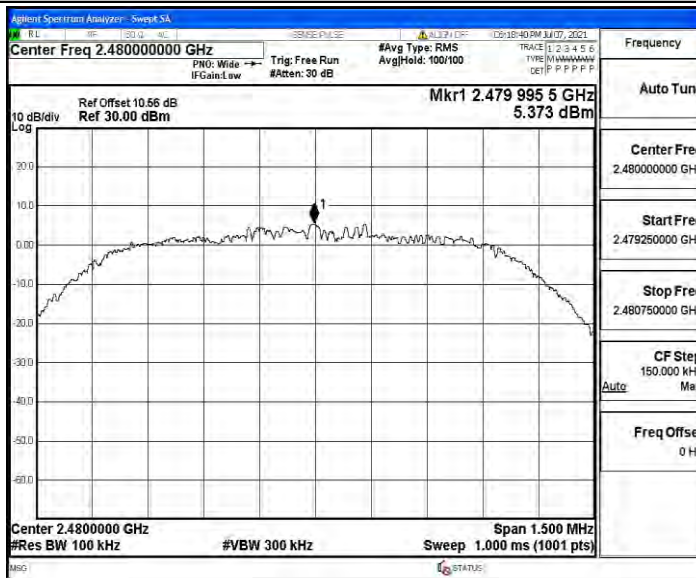
2DH5\_Ant1\_2441\_30~1000



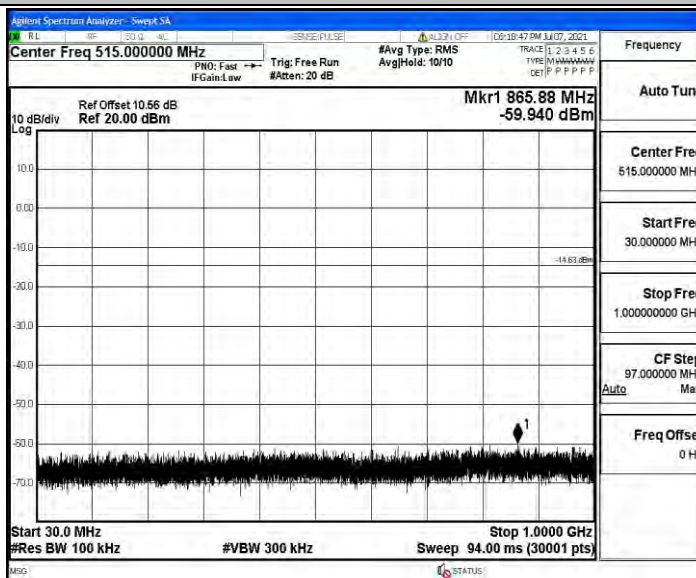
2DH5\_Ant1\_2441\_1000~26500



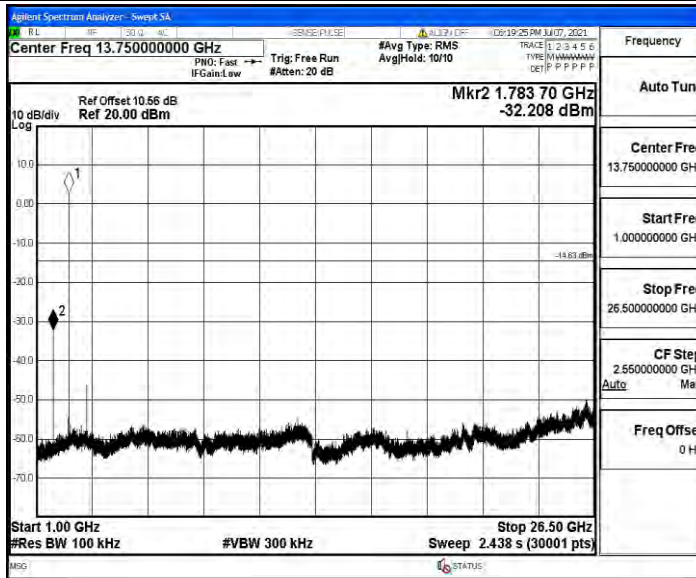
2DH5\_Ant1\_2480\_0~Reference



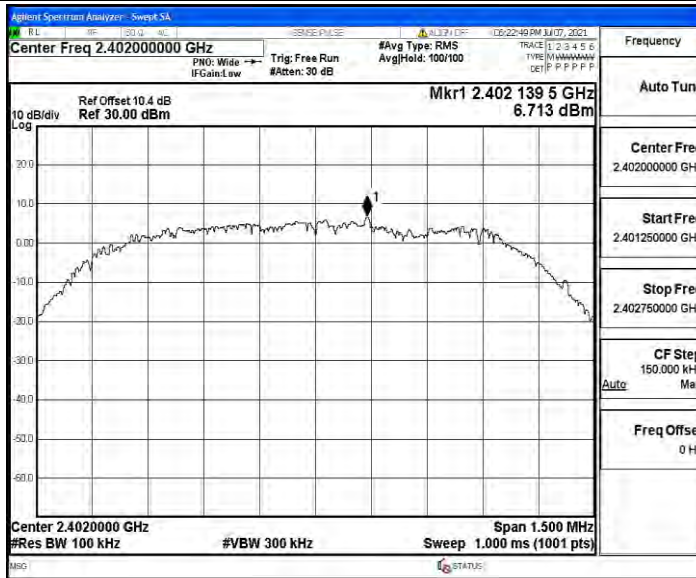
2DH5\_Ant1\_2480\_30~1000



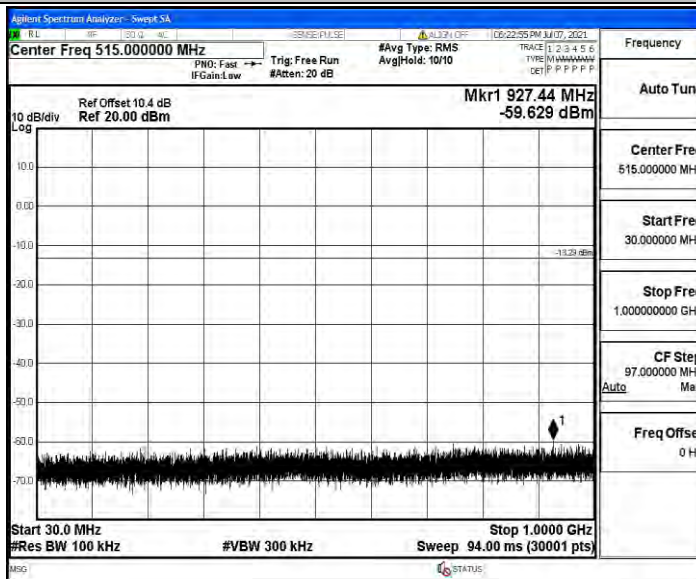
2DH5\_Ant1\_2480\_1000~26500



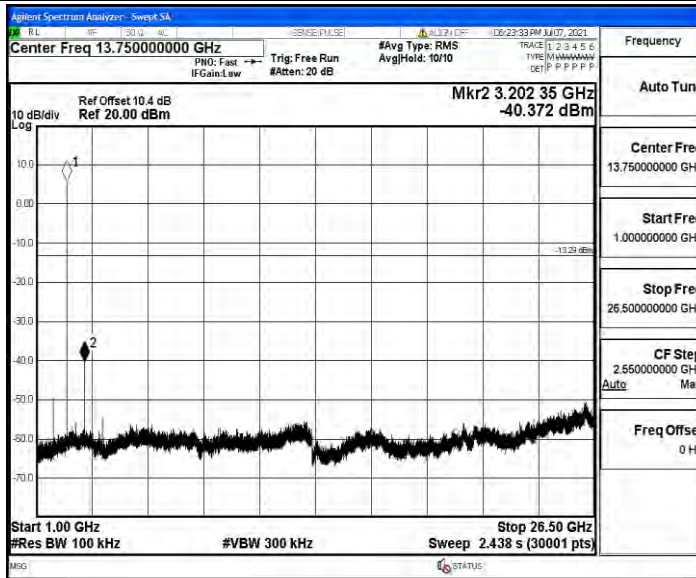
3DH5\_Ant1\_2402\_0~Reference



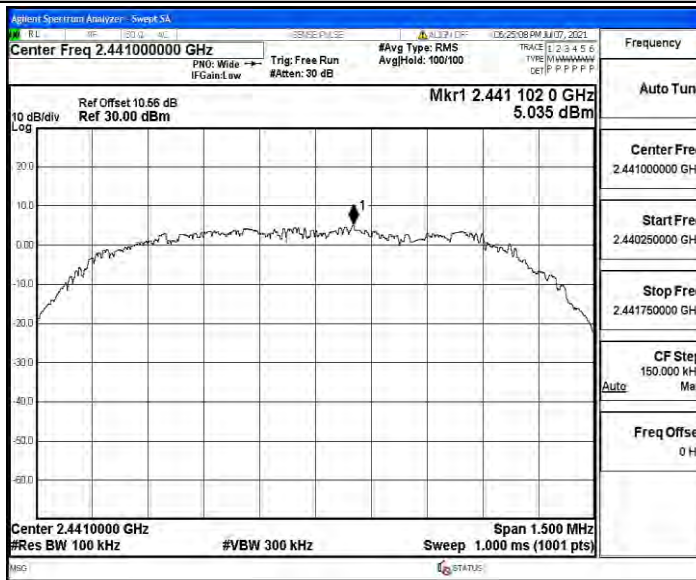
3DH5\_Ant1\_2402\_30~1000



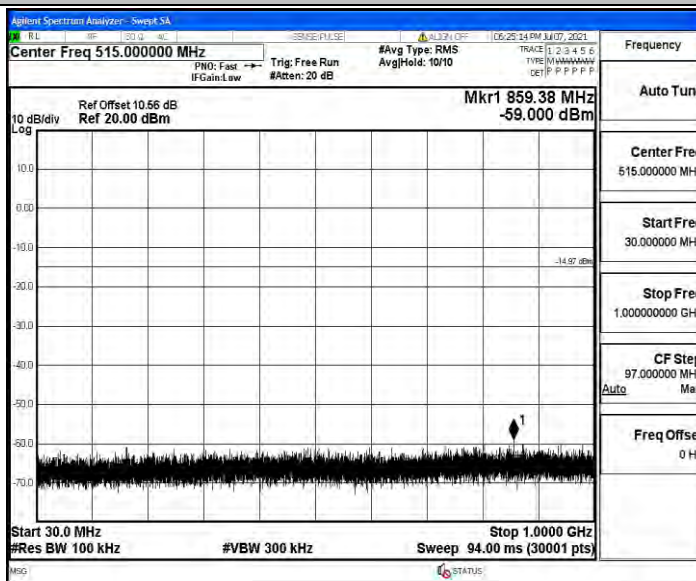
3DH5\_Ant1\_2402\_1000~26500



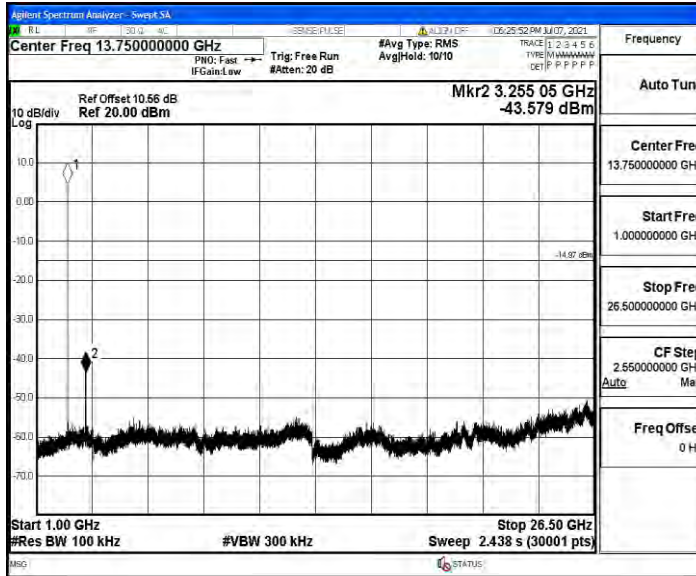
3DH5\_Ant1\_2441\_0~Reference



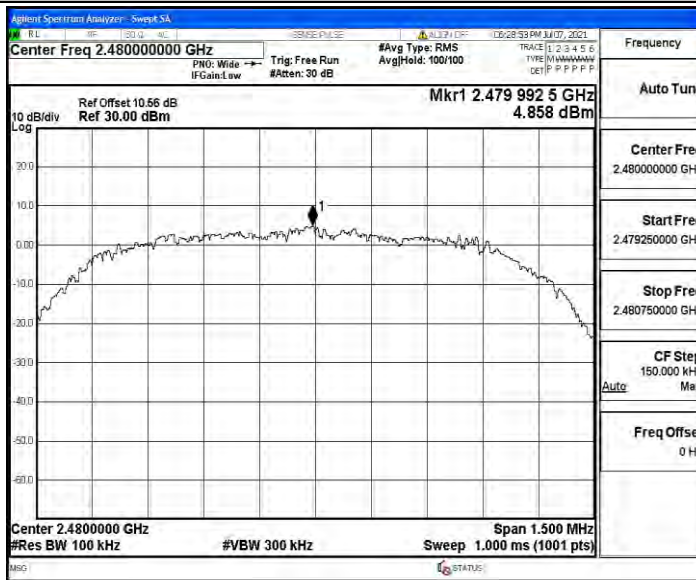
3DH5\_Ant1\_2441\_30~1000



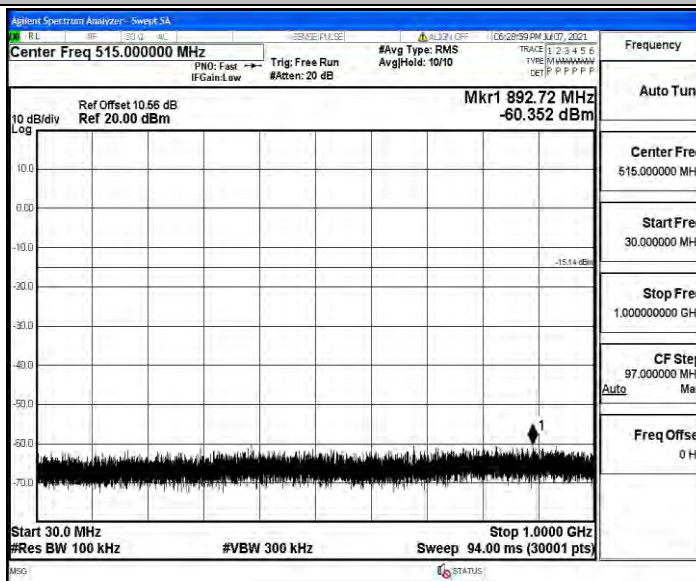
3DH5\_Ant1\_2441\_1000~26500



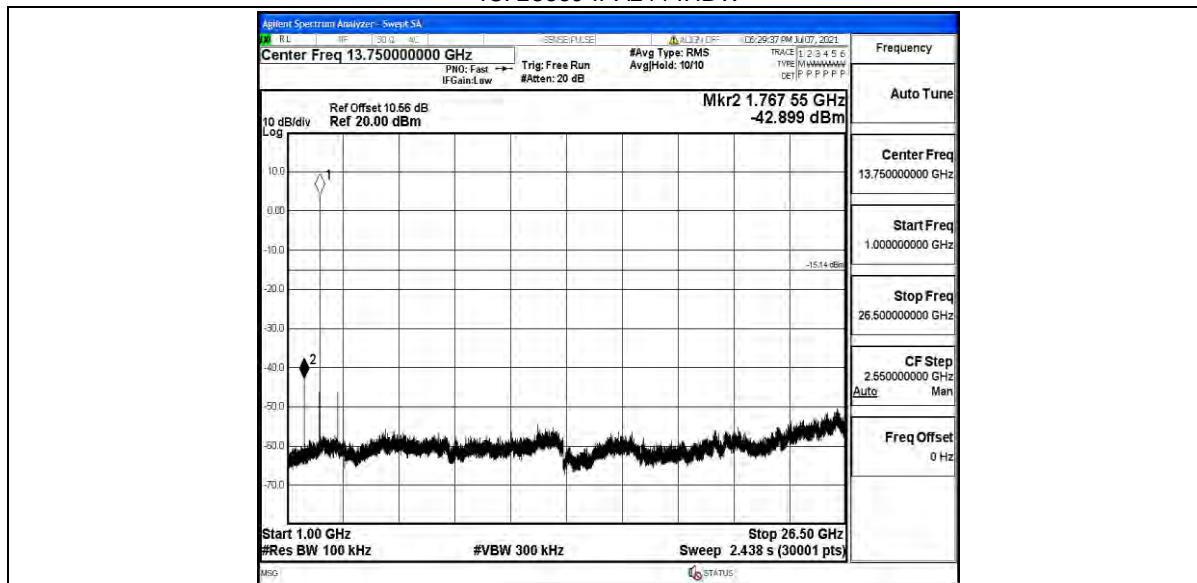
3DH5\_Ant1\_2480\_0~Reference



3DH5\_Ant1\_2480\_30~1000



3DH5\_Ant1\_2480\_1000~26500



## Appendix H: Emissions in Restricted Bands

### Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq (MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-46.97	<=-41.20	PASS
				AV	2387.570	-46.63	<=-41.20	PASS
				AV	2390.000	-46.8	<=-41.20	PASS
				Peak	2310.000	-40.7	<=-21.20	PASS
				Peak	2374.655	-36.96	<=-21.20	PASS
		High	2480	AV	2483.500	-45.92	<=-41.20	PASS
				AV	2500.000	-46.14	<=-41.20	PASS
				Peak	2483.500	-38.95	<=-21.20	PASS
				Peak	2486.800	-36.5	<=-21.20	PASS
				Peak	2500.000	-39.1	<=-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-47.12	<=-41.20	PASS
				AV	2386.520	-46.66	<=-41.20	PASS
				AV	2390.000	-46.82	<=-41.20	PASS
				Peak	2310.000	-39.34	<=-21.20	PASS
				Peak	2380.220	-37.3	<=-21.20	PASS
		High	2480	Peak	2390.000	-40.28	<=-21.20	PASS
				AV	2483.500	-43.8	<=-41.20	PASS
				AV	2500.000	-46.12	<=-41.20	PASS
				Peak	2483.500	-39.05	<=-21.20	PASS
				Peak	2493.840	-36.79	<=-21.20	PASS
Peak	2500.000	-40.04	<=-21.20	PASS				
3DH5	Ant1	Low	2402	AV	2310.000	-47.14	<=-41.20	PASS

				AV	2382.530	-46.67	<=-41.20	PASS
				AV	2390.000	-46.68	<=-41.20	PASS
				Peak	2310.000	-40.02	<=-21.20	PASS
				Peak	2377.175	-36.41	<=-21.20	PASS
				Peak	2390.000	-39.92	<=-21.20	PASS
		High	2480	AV	2483.500	-44.32	<=-41.20	PASS
				AV	2500.000	-46.13	<=-41.20	PASS
				Peak	2483.500	-37.23	<=-21.20	PASS
				Peak	2498.800	-36.64	<=-21.20	PASS
				Peak	2500.000	-38.72	<=-21.20	PASS

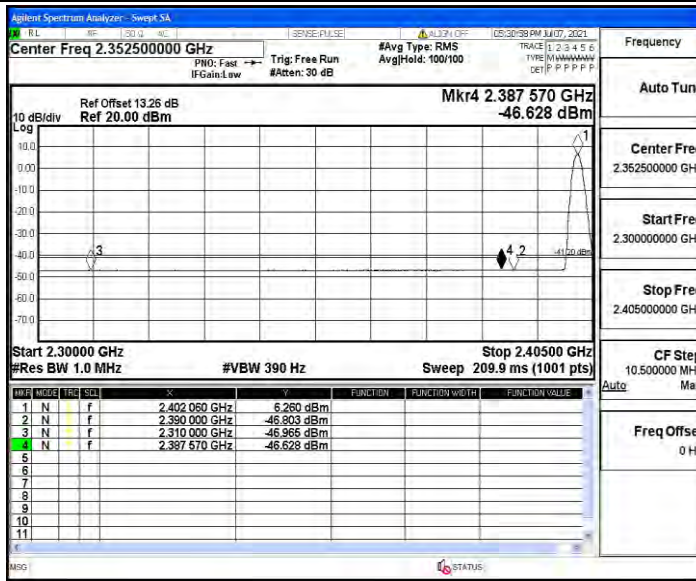
## Note:

1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
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.

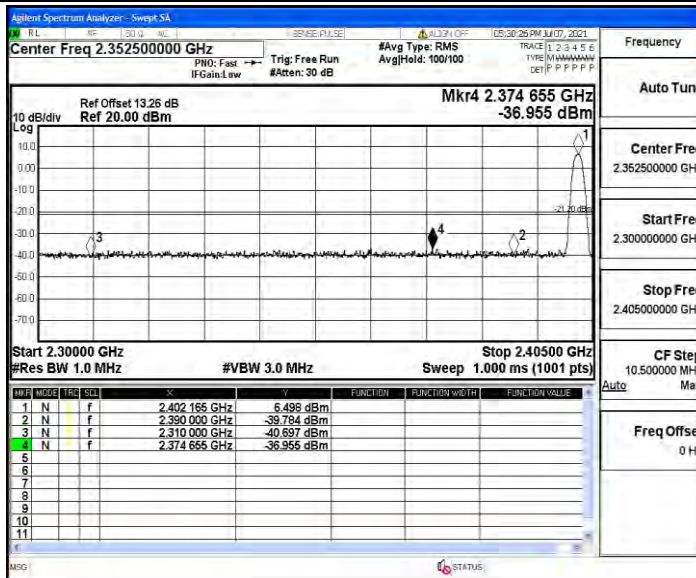


Test Graphs

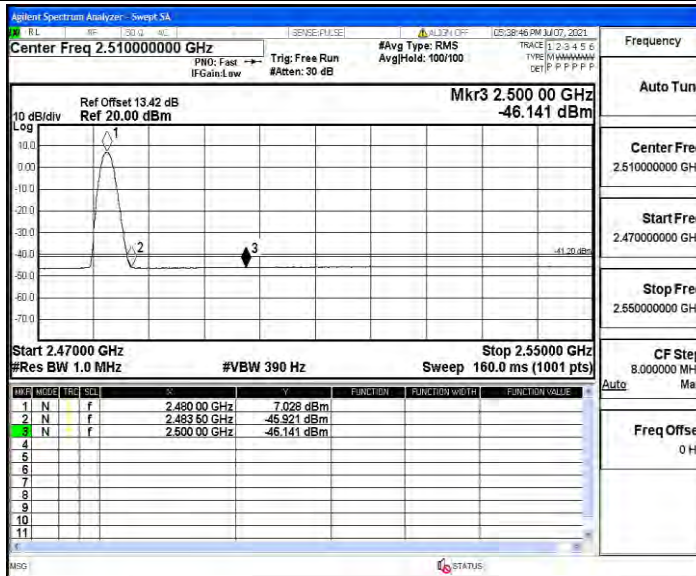
DH5\_Ant1\_Low\_2402\_AV



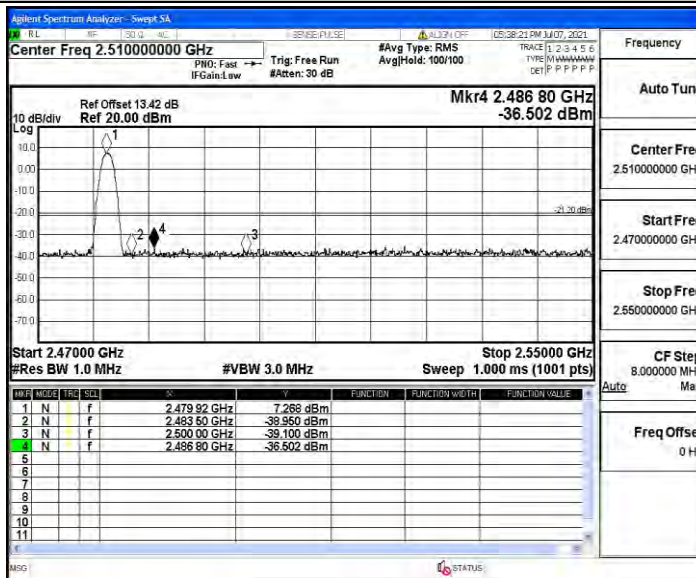
DH5\_Ant1\_Low\_2402\_Peak



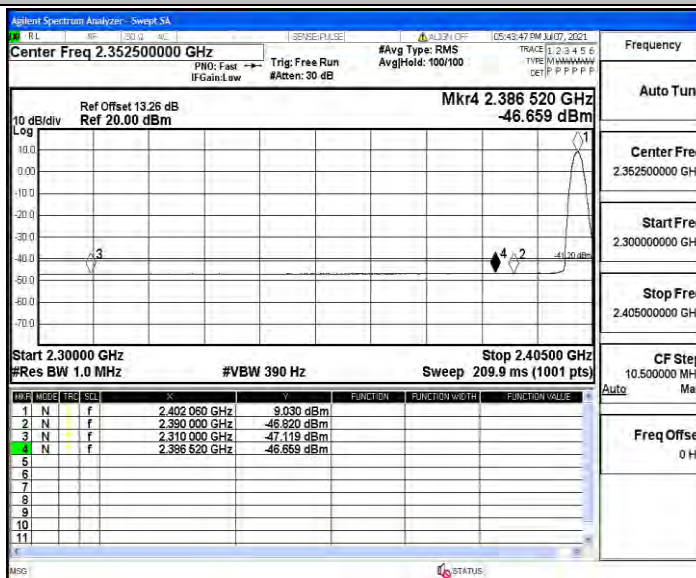
DH5\_Ant1\_High\_2480\_AV



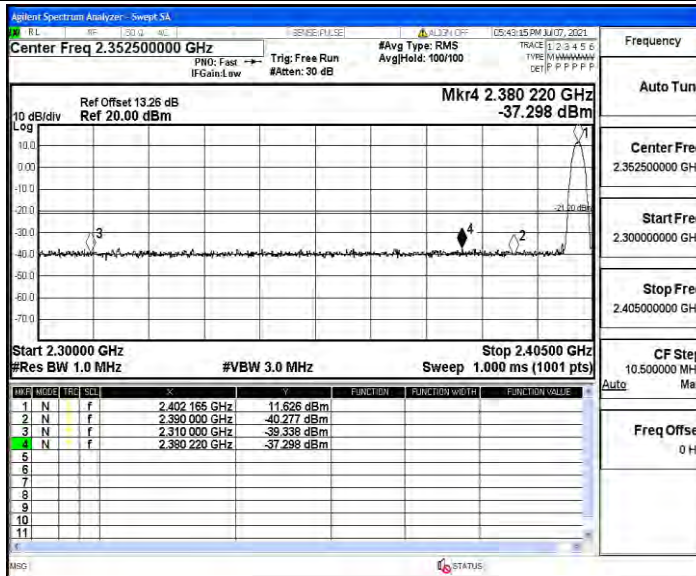
DH5\_Ant1\_High\_2480\_Peak



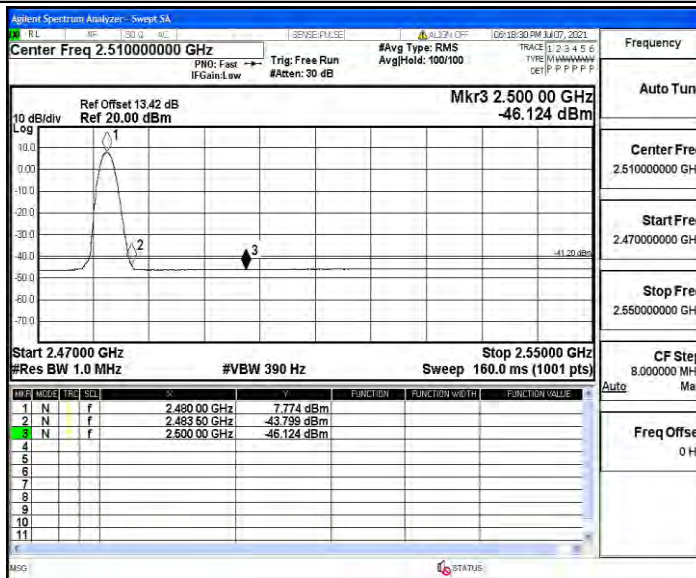
2DH5\_Ant1\_Low\_2402\_AV



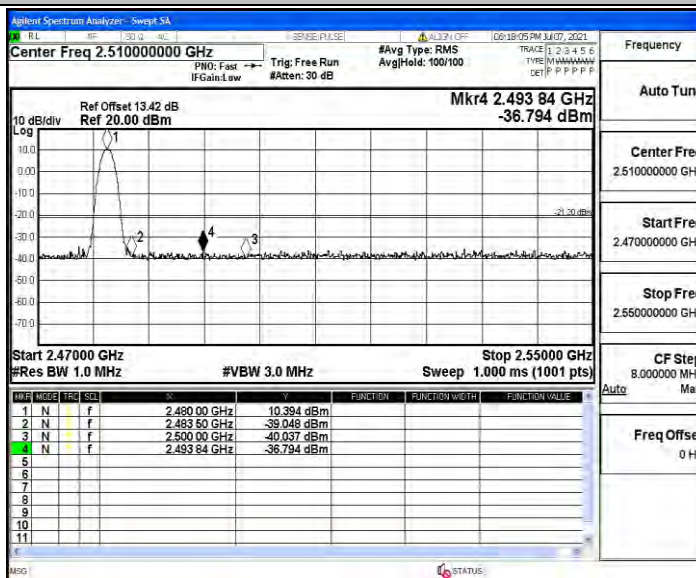
2DH5\_Ant1\_Low\_2402\_Peak



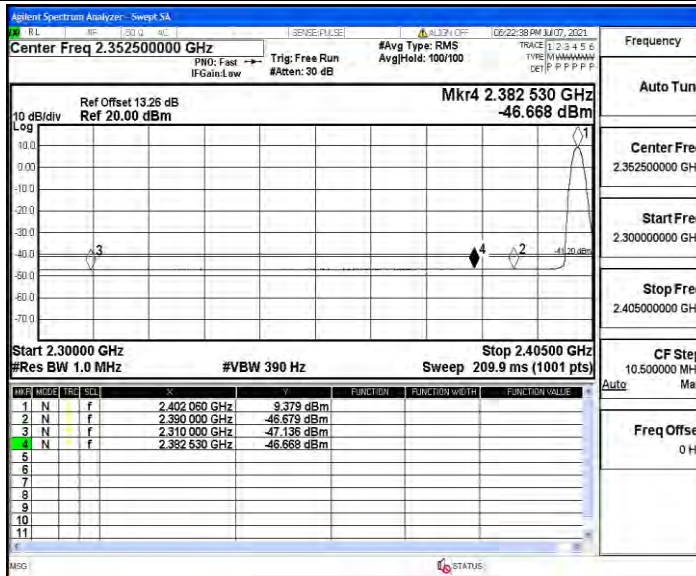
2DH5\_Ant1\_High\_2480\_AV



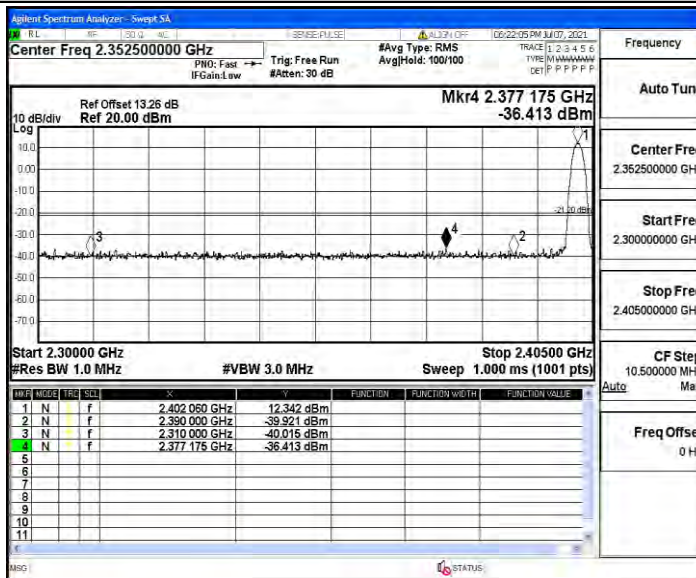
2DH5\_Ant1\_High\_2480\_Peak



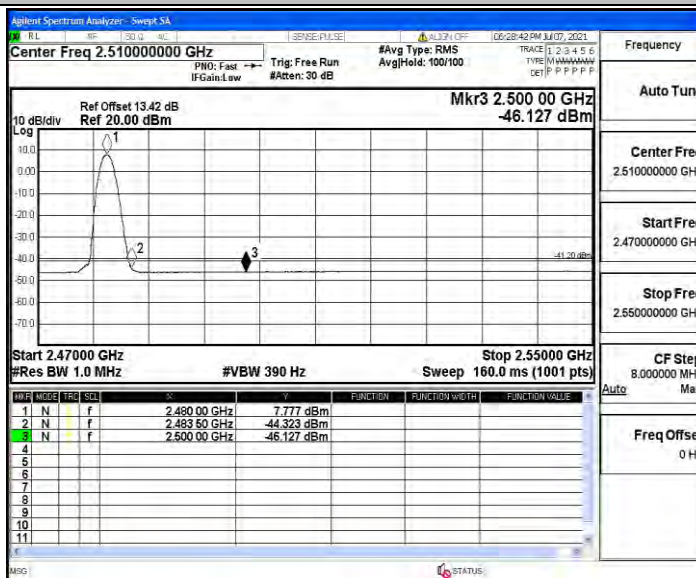
3DH5\_Ant1\_Low\_2402\_AV



3DH5\_Ant1\_Low\_2402\_Peak



3DH5\_Ant1\_High\_2480\_AV



3DH5\_Ant1\_High\_2480\_Peak

