Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: STAGE & STUDIO SPEAKER

Test Model: PADH15BTA

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

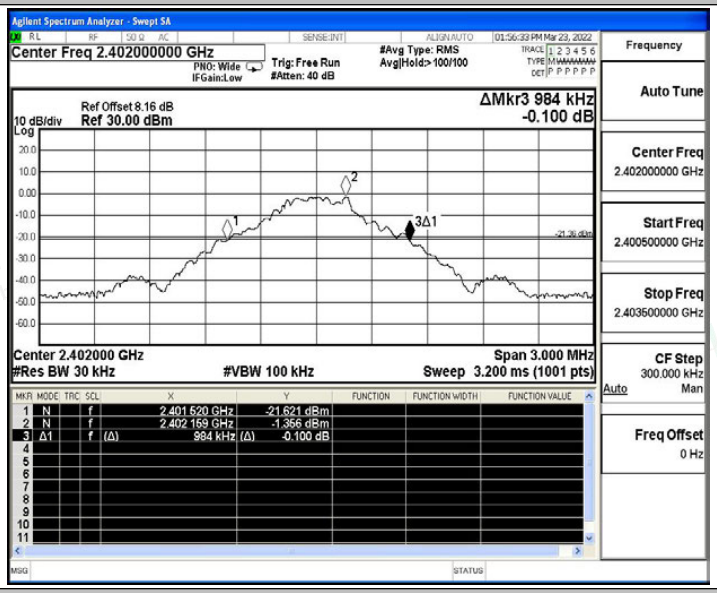
A.1 20dB Emission Bandwidth

Test Result

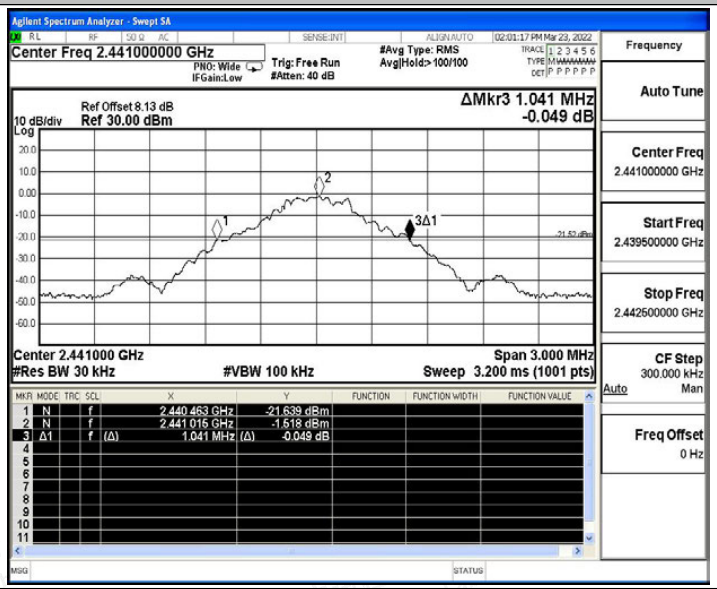
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.984	2401.520	2402.504	---	---
		2441	1.041	2440.463	2441.504	---	---
		2480	1.044	2479.460	2480.504	---	---
2DH5	Ant1	2402	1.293	2401.361	2402.654	---	---
		2441	1.290	2440.364	2441.654	---	---
		2480	1.320	2479.337	2480.657	---	---
3DH5	Ant1	2402	1.296	2401.352	2402.648	---	---
		2441	1.317	2440.343	2441.660	---	---
		2480	1.293	2479.352	2480.645	---	---

Test Graphs

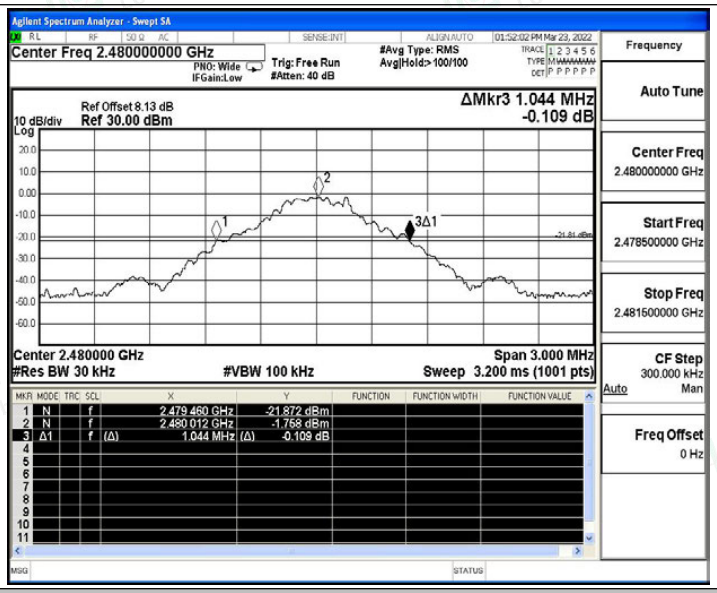
DH5_Ant1_2402



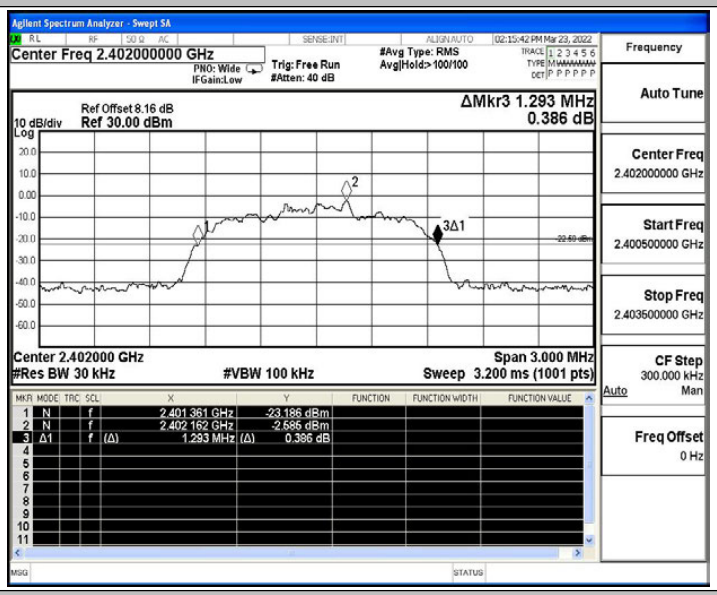
DH5_Ant1_2441



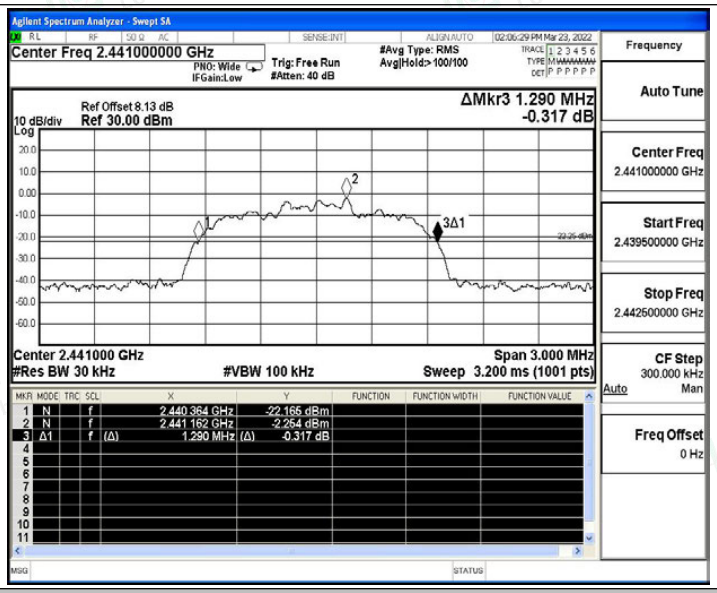
DH5_Ant1_2480



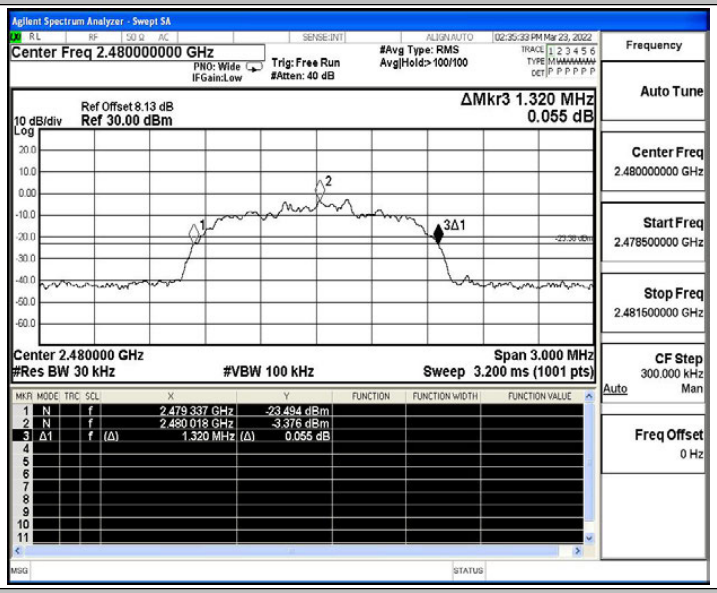
2DH5_Ant1_2402



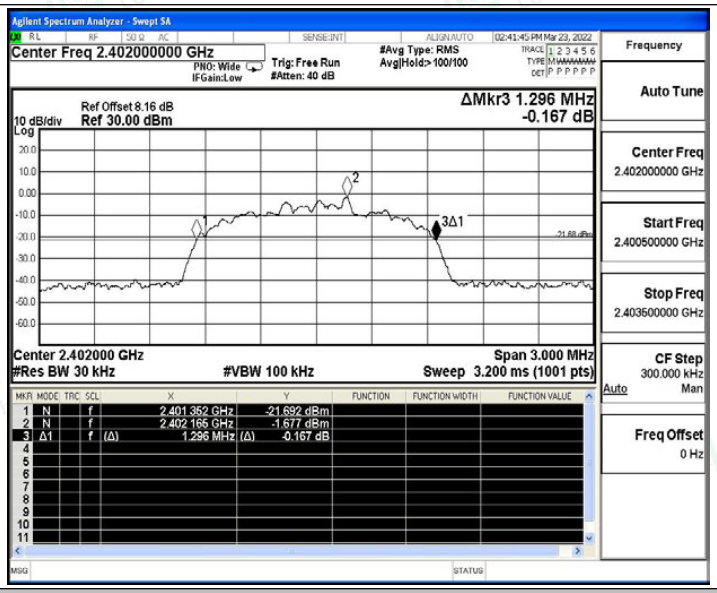
2DH5_Ant1_2441



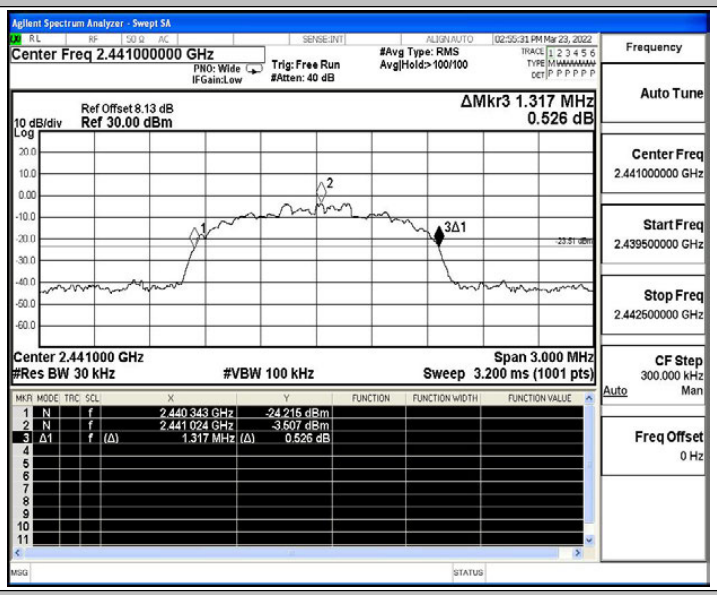
2DH5_Ant1_2480



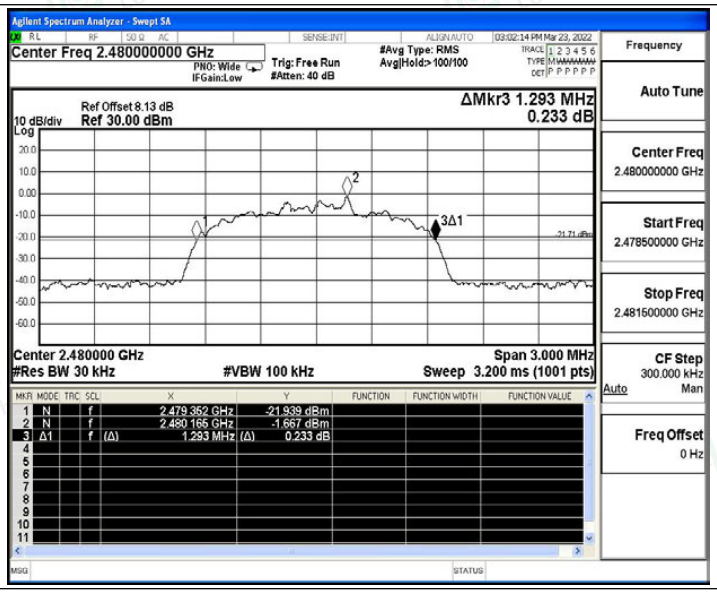
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold:>100/100
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.481500000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 8.13 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 1.293 MHz
0.233 dB
Center 2.480000 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3.000 MHz
Sweep 3.200 ms (1001 pts)
1 N f 2.479 352 GHz -21.939 dBm
2 N f 2.480 165 GHz -1.667 dBm
3 Δ1 f (Δ) 1.293 MHz (Δ) 0.233 dB

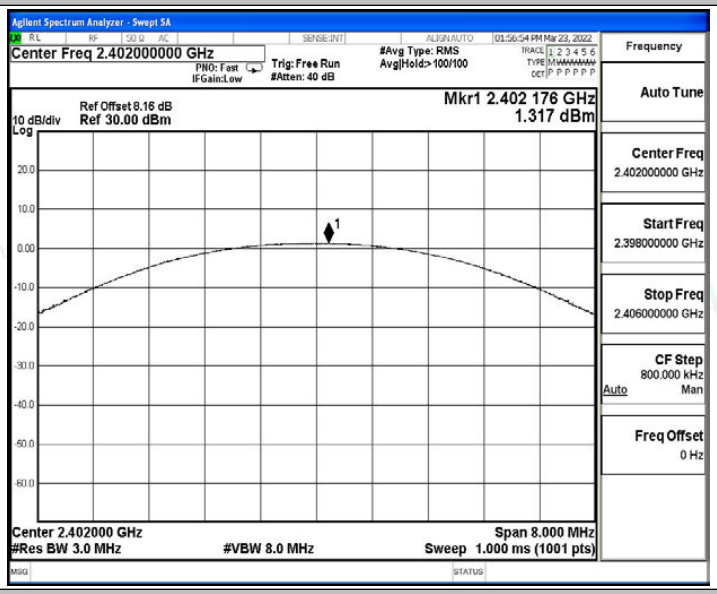
A.2 Maximum peak conducted output power

Test Result

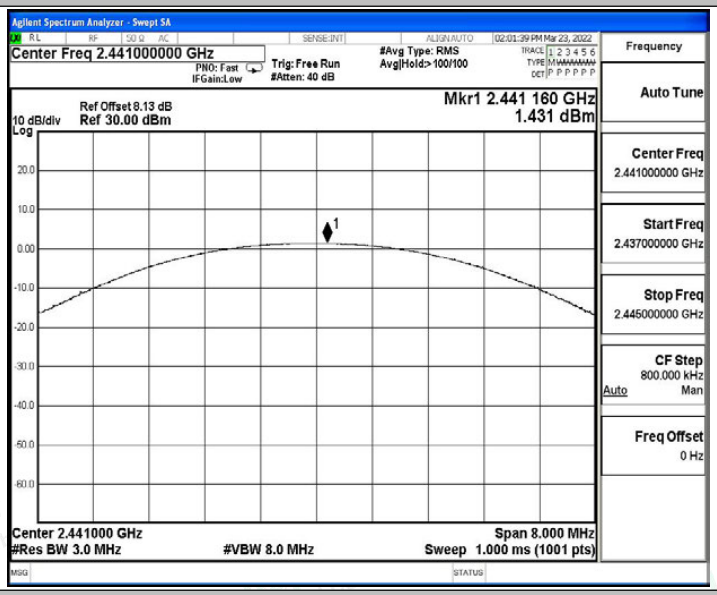
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.32	≤20.97	PASS
		2441	1.43	≤20.97	PASS
		2480	1.17	≤20.97	PASS
2DH5	Ant1	2402	1.39	≤20.97	PASS
		2441	1.69	≤20.97	PASS
		2480	1.43	≤20.97	PASS
3DH5	Ant1	2402	1.71	≤20.97	PASS
		2441	1.84	≤20.97	PASS
		2480	1.73	≤20.97	PASS

Test Graphs

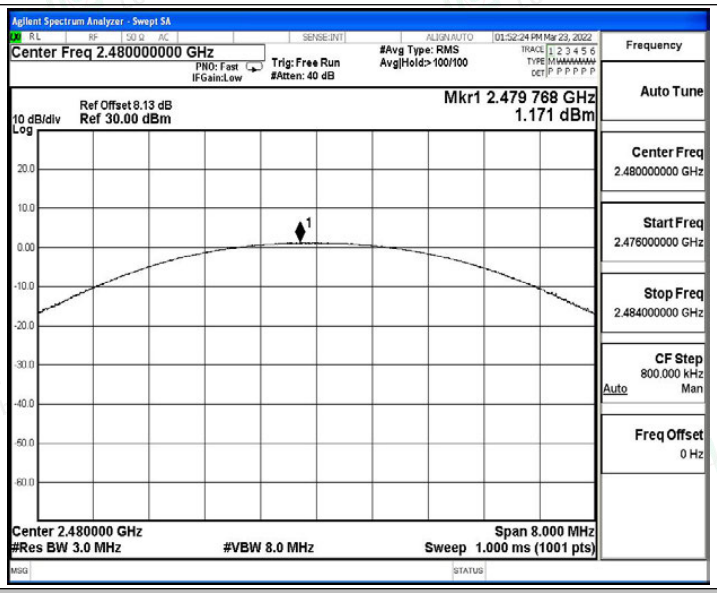
DH5_Ant1_2402



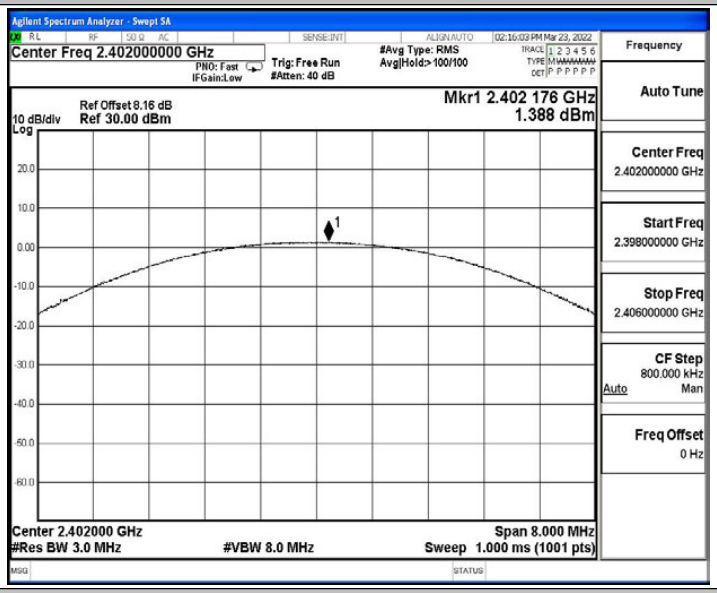
DH5_Ant1_2441



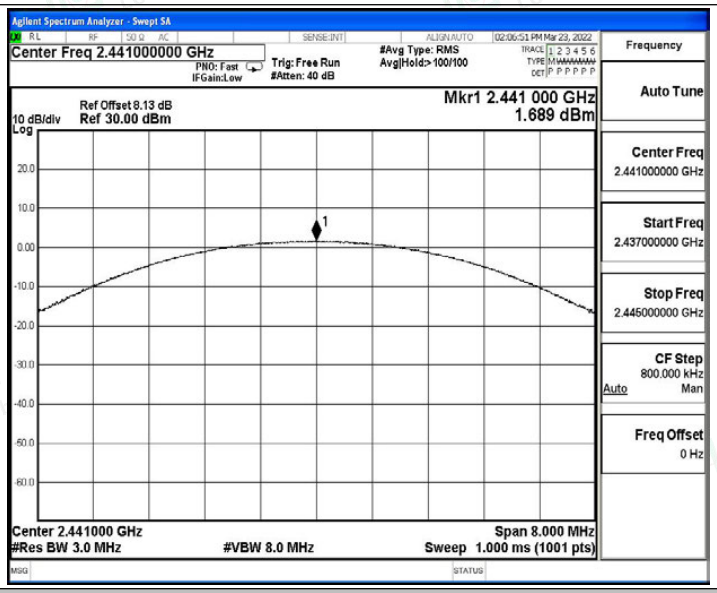
DH5_Ant1_2480



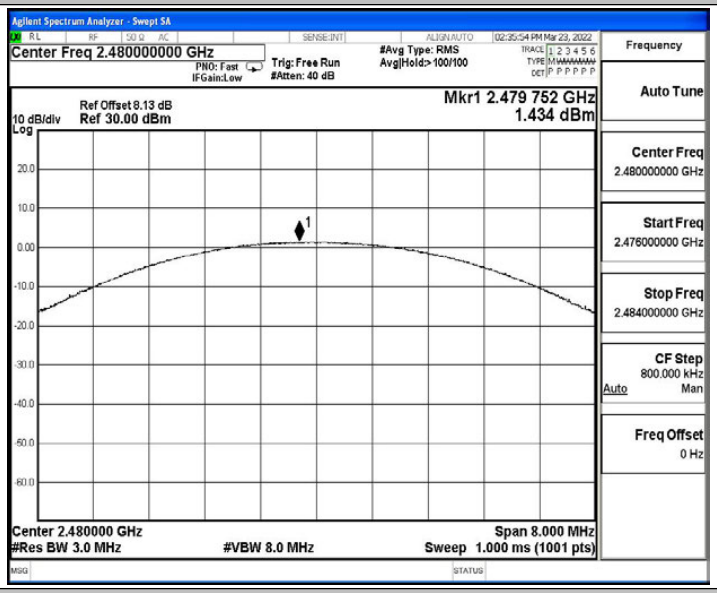
2DH5_Ant1_2402



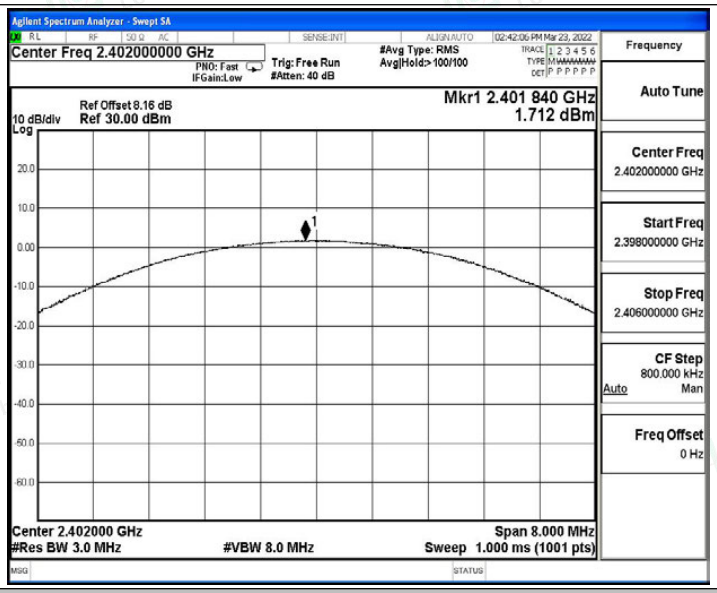
2DH5_Ant1_2441



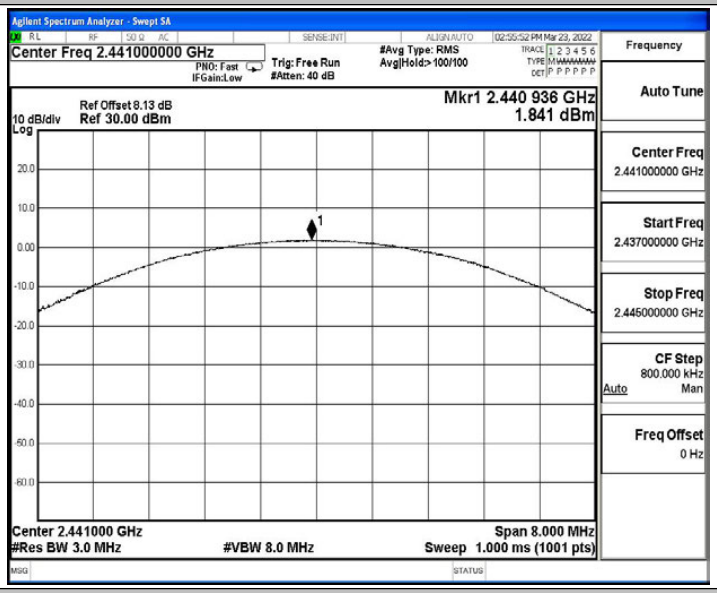
2DH5_Ant1_2480



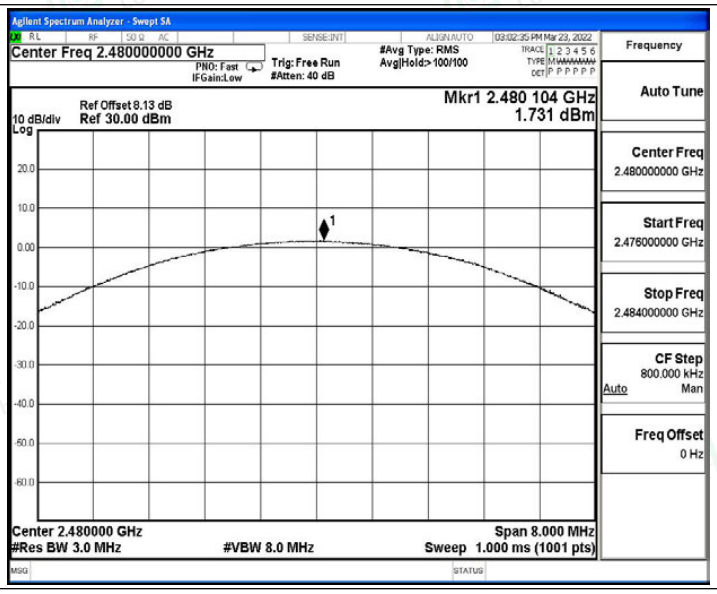
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold:>100/100
03:02:35 PM Mar 23, 2022
Frequency
Auto Tune
Ref Offset 8.13 dB
10 dB/div Ref 30.00 dBm
Log
Mkr1 2.480 104 GHz
1.731 dBm
Center Freq
2.480000000 GHz
Start Freq
2.476000000 GHz
Stop Freq
2.484000000 GHz
CF Step
800.000 kHz
Auto Man
Freq Offset
0 Hz
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 8.000 MHz
Sweep 1.000 ms (1001 pts)

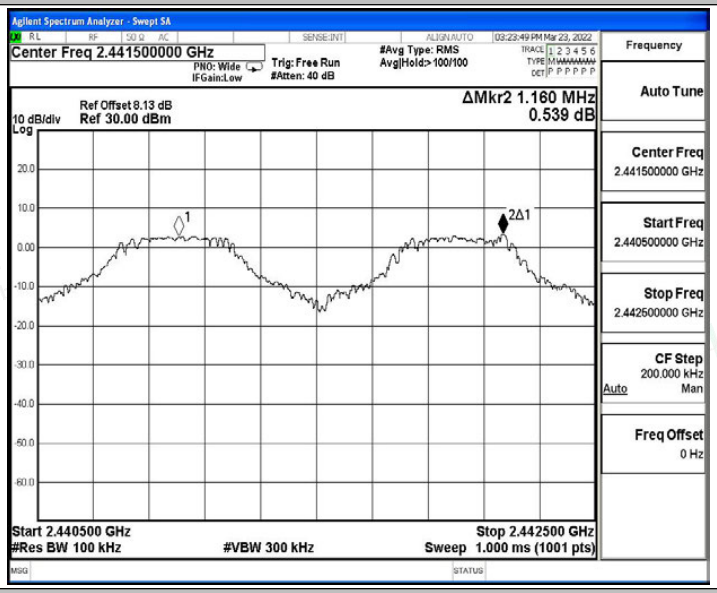
A.3 Carrier frequency separation

Test Result

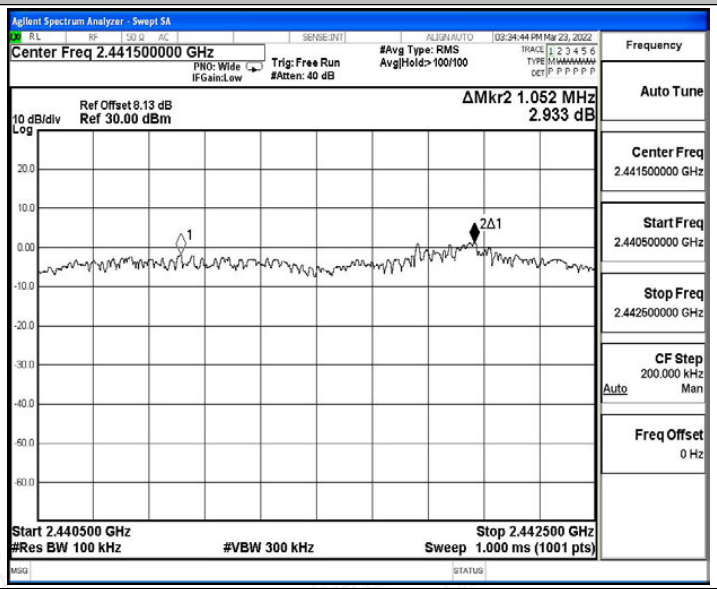
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.16	≥0.696	PASS
2DH5	Ant1	Hop	1.052	≥0.880	PASS
3DH5	Ant1	Hop	1.152	≥0.878	PASS

Test Graphs

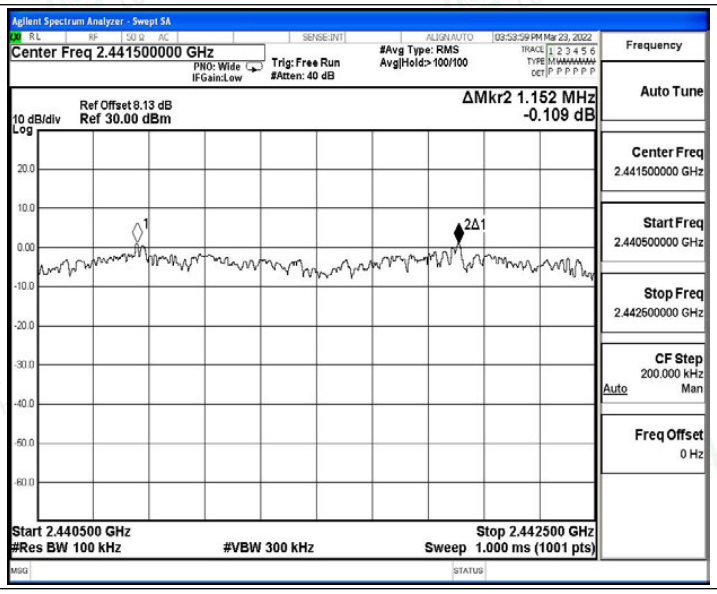
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold:>100/100
03:53:59 PM Mar 23, 2022
Frequency
Auto Tune
Ref Offset 8.13 dB
10 dB/div Ref 30.00 dBm
Log
ΔMkr2 1.152 MHz
-0.109 dB
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz
Start 2.440500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.442500 GHz
Sweep 1.000 ms (1001 pts)

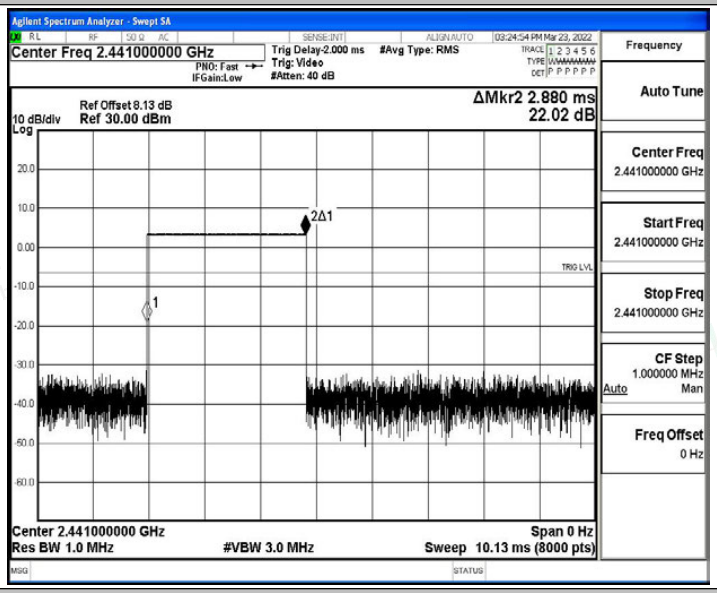
A.4 Time of occupancy

Test Result

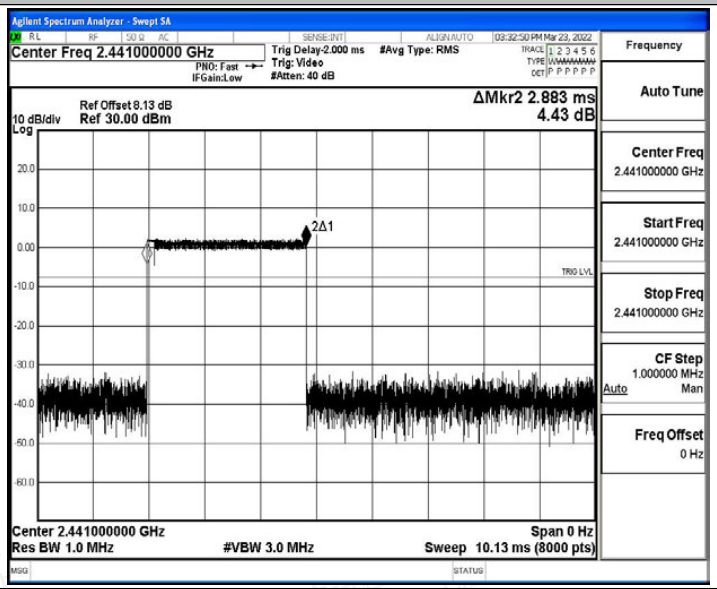
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	106.67	0.308	≤0.4	PASS
2DH5	Ant1	Hop	2.88	106.67	0.308	≤0.4	PASS
3DH5	Ant1	Hop	2.89	106.67	0.309	≤0.4	PASS

Test Graphs

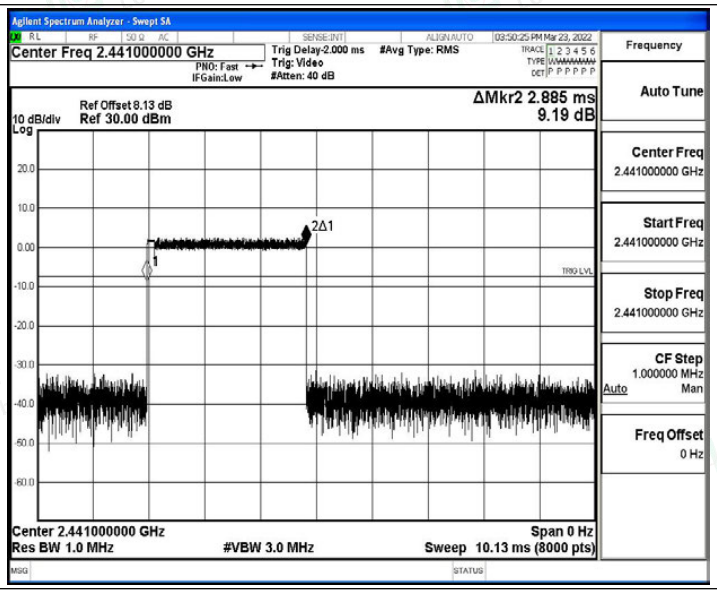
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay-2.000 ms
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
Frequency
Auto Tune
Ref Offset 8.13 dB
10 dB/div Ref 30.00 dBm
Log
ΔMkr2 2.885 ms
9.19 dB
2Δ1
1
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
1.000000 MHz
Auto Man
Freq Offset
0 Hz
Center 2.441000000 GHz
Span 0 Hz
Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 10.13 ms (8000 pts)

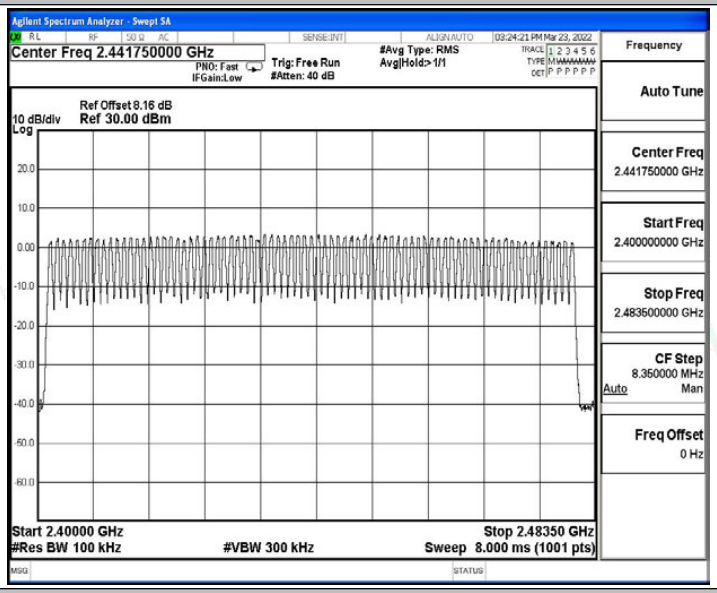
A.5 Number of hopping channels

Test Result

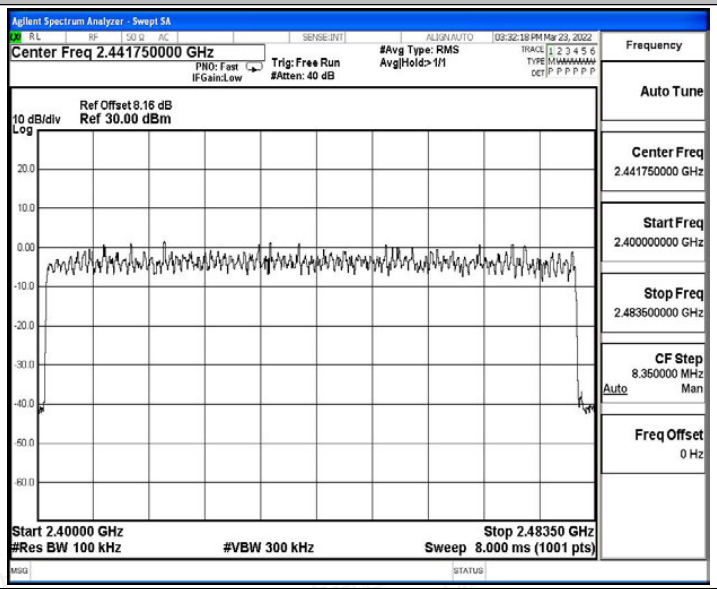
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

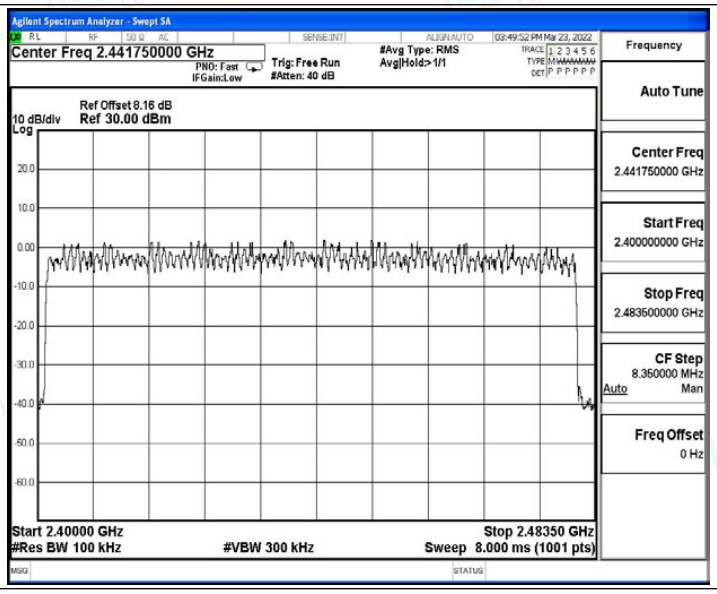
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold:>1/1
03:49:52 PM Mar 23, 2022
Ref Offset 8.16 dB
10 dB/div
Ref 30.00 dBm
Log
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.441750000 GHz
Start Freq
2.400000000 GHz
Stop Freq
2.483500000 GHz
CF Step
8.350000 MHz
Auto
Man
Freq Offset
0 Hz

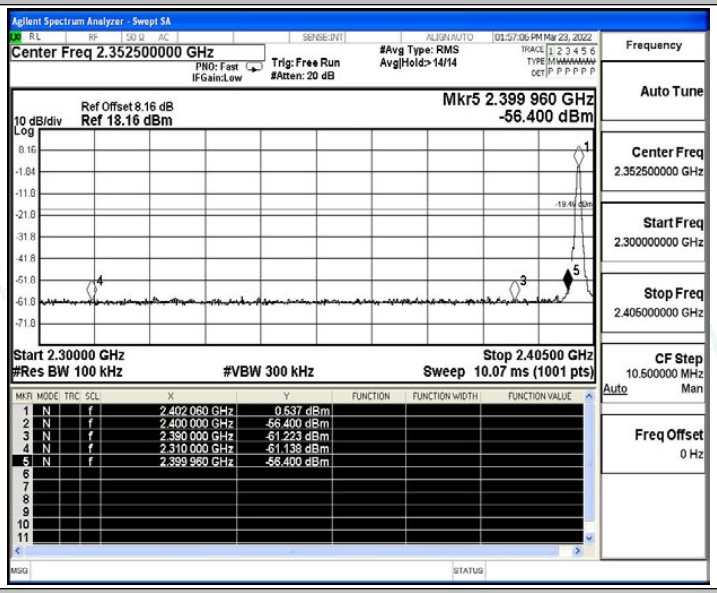
A.6 Band edge measurements

Test Result

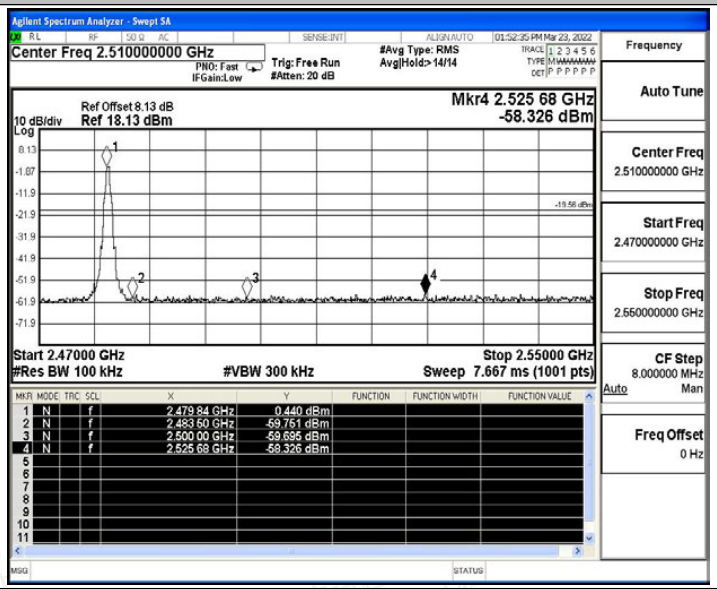
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.54	-56.4	≤-19.46	PASS
		High	2480	0.44	-58.33	≤-19.56	PASS
		Low	Hop_2402	1.13	-60.02	≤-18.87	PASS
		High	Hop_2480	1.89	-57.61	≤-18.11	PASS
2DH5	Ant1	Low	2402	0.21	-55.84	≤-19.79	PASS
		High	2480	0.18	-56.46	≤-19.82	PASS
		Low	Hop_2402	-3.61	-59.74	≤-23.61	PASS
		High	Hop_2480	-0.11	-57.98	≤-20.11	PASS
3DH5	Ant1	Low	2402	-2.08	-56.51	≤-22.08	PASS
		High	2480	0.29	-58.23	≤-19.71	PASS
		Low	Hop_2402	-3.30	-59.33	≤-23.3	PASS
		High	Hop_2480	-2.30	-57.95	≤-22.3	PASS

Test Graphs

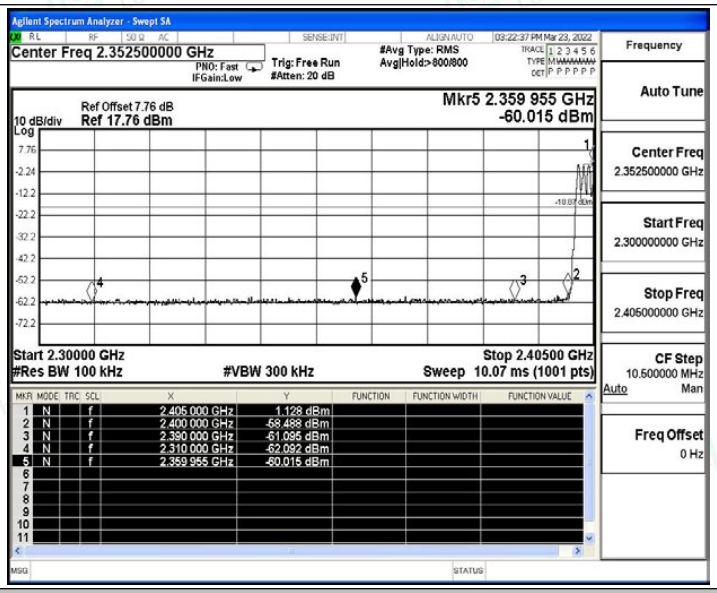
DH5_Ant1_Low_2402



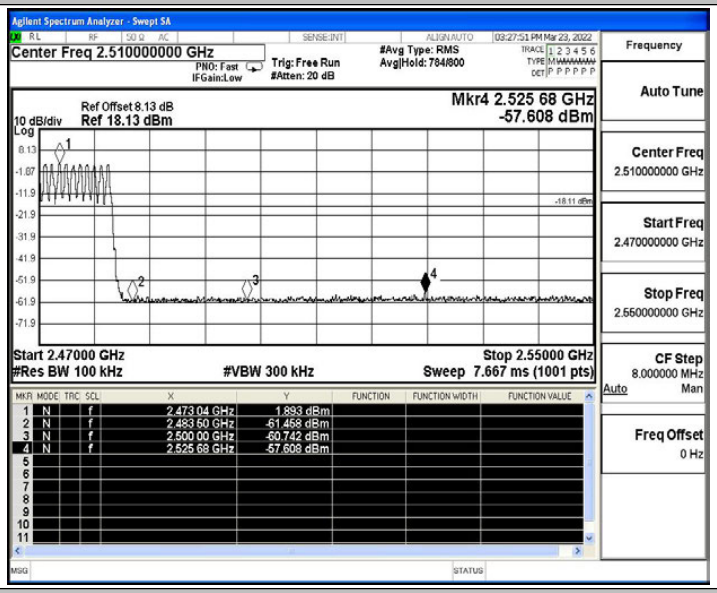
DH5_Ant1_High_2480



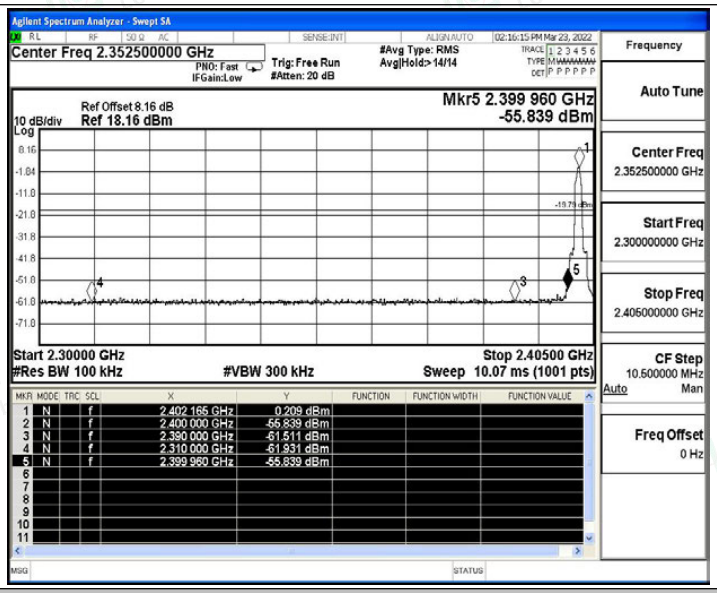
DH5_Ant1_Low_Hop_2402



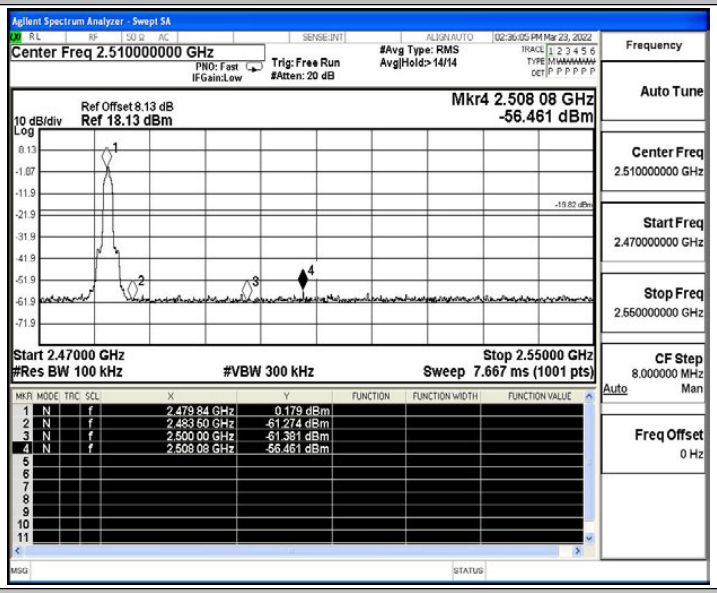
DH5_Ant1_High_Hop_2480



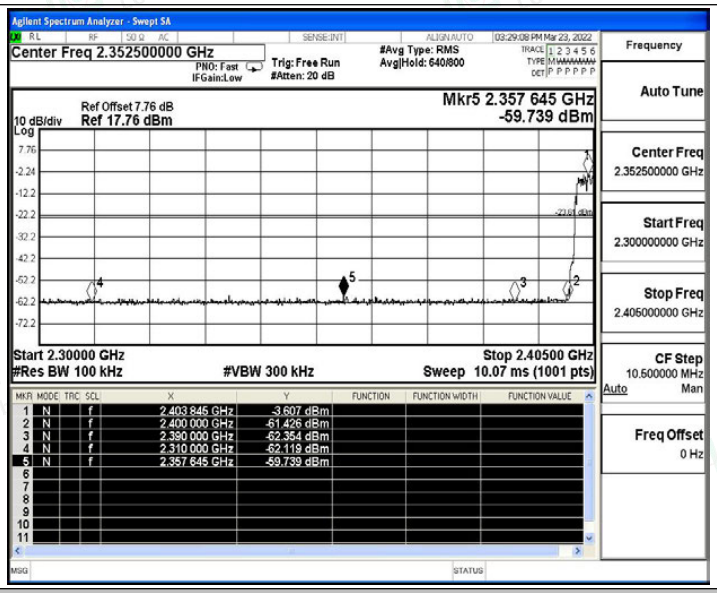
2DH5_Ant1_Low_2402



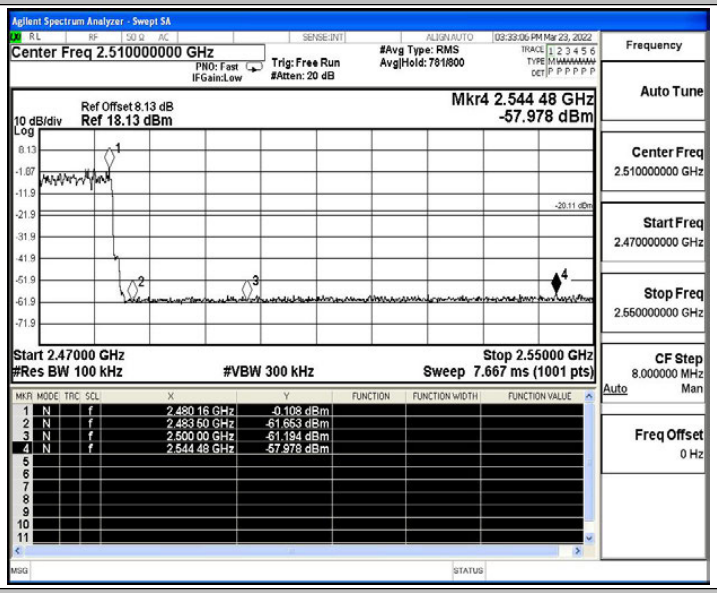
2DH5_Ant1_High_2480



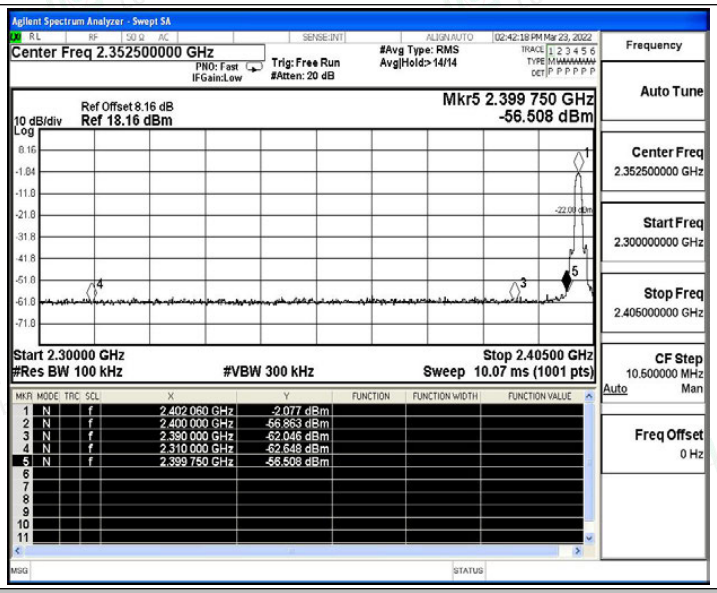
2DH5_Ant1_Low_Hop_2402



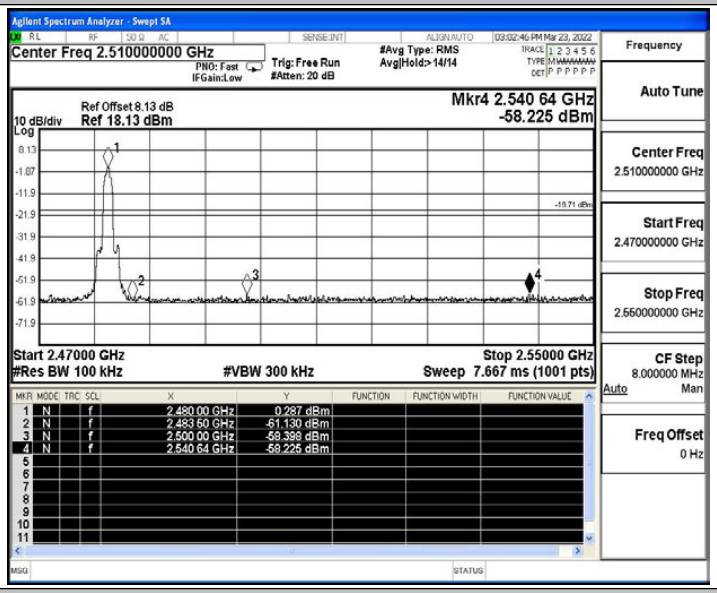
2DH5_Ant1_High_Hop_2480



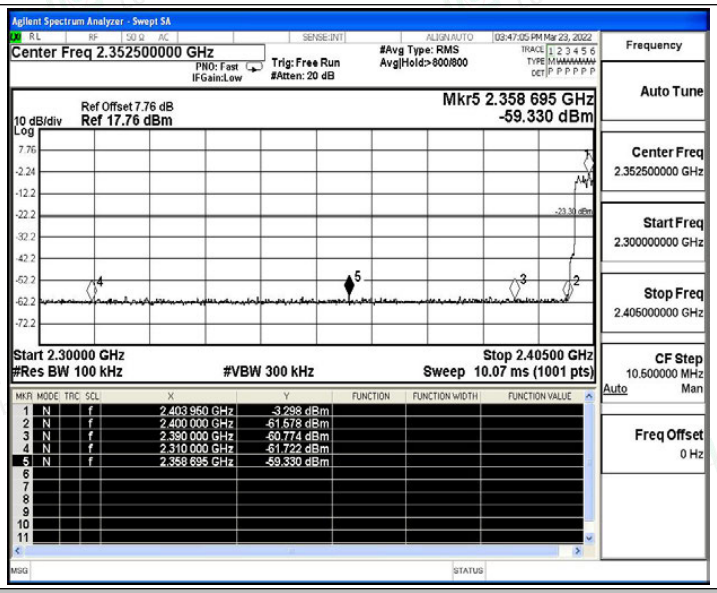
3DH5_Ant1_Low_2402



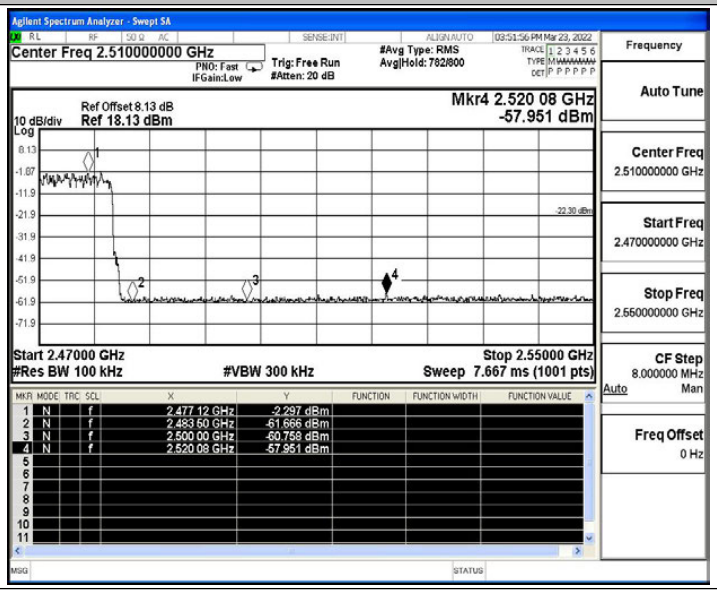
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



A.7 Conducted Spurious Emission

Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.79	0.79	---	PASS
			30~1000	0.79	-61.11	≤-19.21	PASS
			1000~26500	0.79	-46.39	≤-19.21	PASS
		2441	Reference	0.81	0.81	---	PASS
			30~1000	0.81	-60.59	≤-19.19	PASS
			1000~26500	0.81	-46.4	≤-19.19	PASS
		2480	Reference	0.54	0.54	---	PASS
			30~1000	0.54	-60.56	≤-19.46	PASS
			1000~26500	0.54	-47.17	≤-19.46	PASS
2DH5	Ant1	2402	Reference	0.23	0.23	---	PASS
			30~1000	0.23	-60.56	≤-19.77	PASS
			1000~26500	0.23	-46.75	≤-19.77	PASS
		2441	Reference	0.37	0.37	---	PASS
			30~1000	0.37	-61.25	≤-19.63	PASS
			1000~26500	0.37	-46.72	≤-19.63	PASS
		2480	Reference	0.22	0.22	---	PASS
			30~1000	0.22	-60.76	≤-19.78	PASS
			1000~26500	0.22	-46.62	≤-19.78	PASS
3DH5	Ant1	2402	Reference	0.49	0.49	---	PASS
			30~1000	0.49	-60.93	≤-19.51	PASS
			1000~26500	0.49	-46.4	≤-19.51	PASS
		2441	Reference	0.52	0.52	---	PASS
			30~1000	0.52	-61.36	≤-19.48	PASS
			1000~26500	0.52	-46.45	≤-19.48	PASS
		2480	Reference	0.44	0.44	---	PASS
			30~1000	0.44	-60.85	≤-19.56	PASS
			1000~26500	0.44	-46.83	≤-19.56	PASS