FCC Appendix RF Test Data

FCC ID	**:**	**2BP5V-8SA8P**
Company	**:**	**Dong Guan Zhen Ke Technology Co., LTD**
EUT	**:**	**Weather Station**
Model Number	**:**	**SA8 Plus**
Report No.	**:**	**CTA25061800502**
Reviewed By	**:**	**Eric Wang**

Appendix A: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.954	2401.547	2402.501	---	---
		2441	0.948	2440.550	2441.498	---	---
		2480	0.948	2479.550	2480.498	---	---
2DH5	Ant1	2402	1.272	2401.382	2402.654	---	---
		2441	1.320	2440.349	2441.669	---	---
		2480	1.314	2479.364	2480.678	---	---
3DH5	Ant1	2402	1.281	2401.367	2402.648	---	---
		2441	1.287	2440.367	2441.654	---	---
		2480	1.290	2479.367	2480.657	---	---

Test Graphs

DH5_Ant1_2402

DH5_Ant1_2441

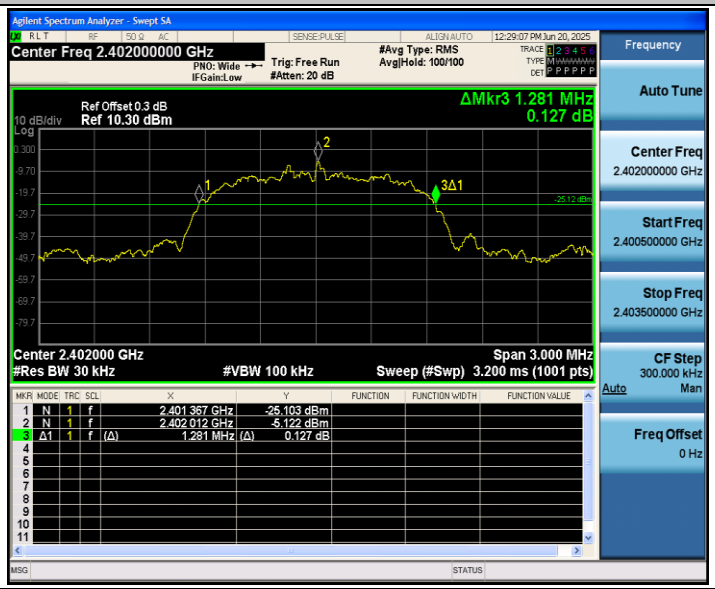
DH5_Ant1_2480

2DH5_Ant1_2402

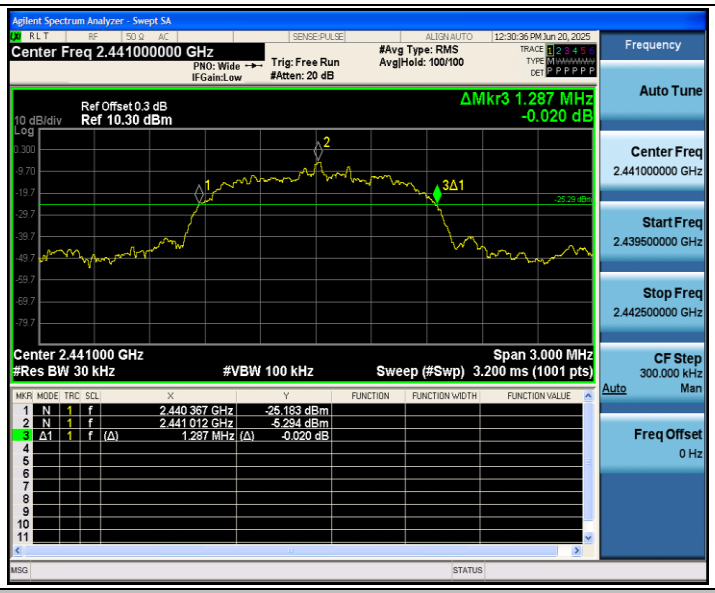
2DH5_Ant1_2441

2DH5_Ant1_2480

3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

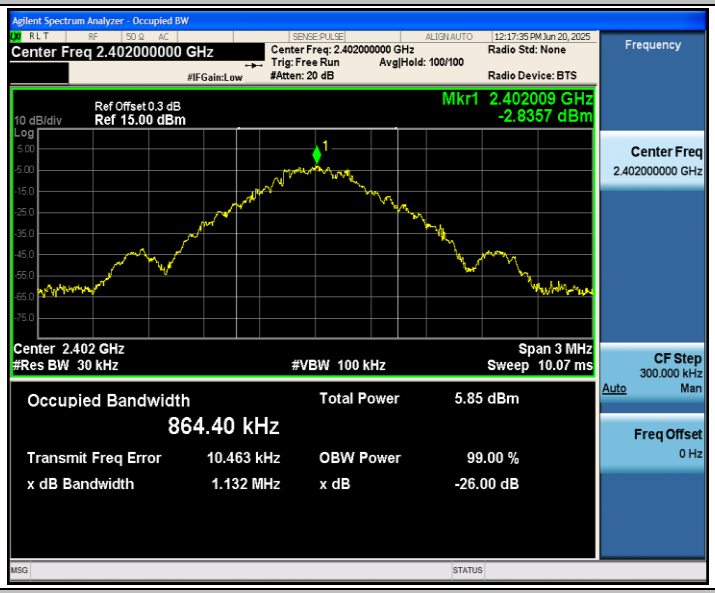
Appendix B: Occupied Channel Bandwidth

Test Result

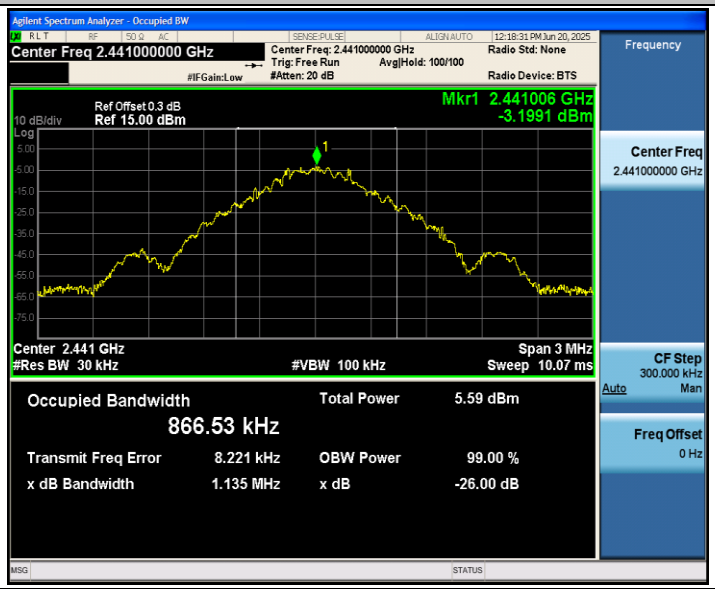
TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.86440	2401.5783	2402.4427	---	---
		2441	0.86653	2440.5750	2441.4415	---	---
		2480	0.86580	2479.5754	2480.4412	---	---
2DH5	Ant1	2402	1.1919	2401.4145	2402.6064	---	---
		2441	1.1868	2440.4174	2441.6042	---	---
		2480	1.1898	2479.4164	2480.6062	---	---
3DH5	Ant1	2402	1.1896	2401.4160	2402.6056	---	---
		2441	1.1862	2440.4178	2441.6040	---	---
		2480	1.1838	2479.4203	2480.6041	---	---

Test Graphs

DH5_Ant1_2402

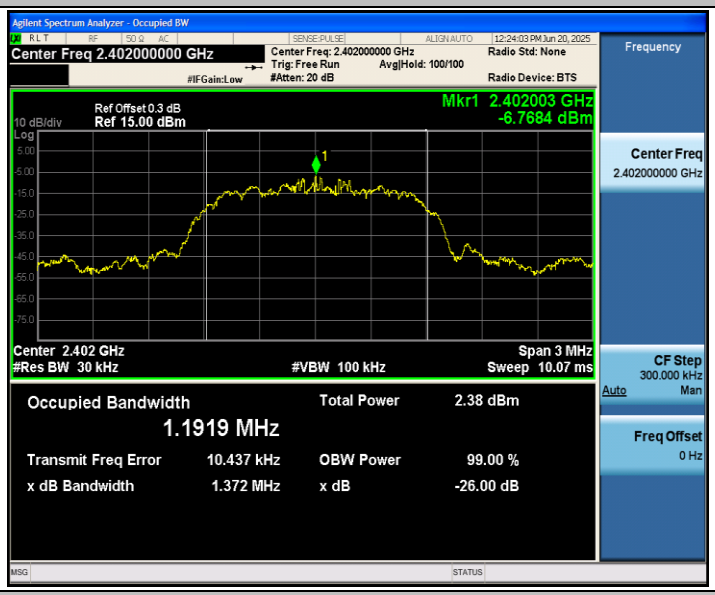


DH5_Ant1_2441

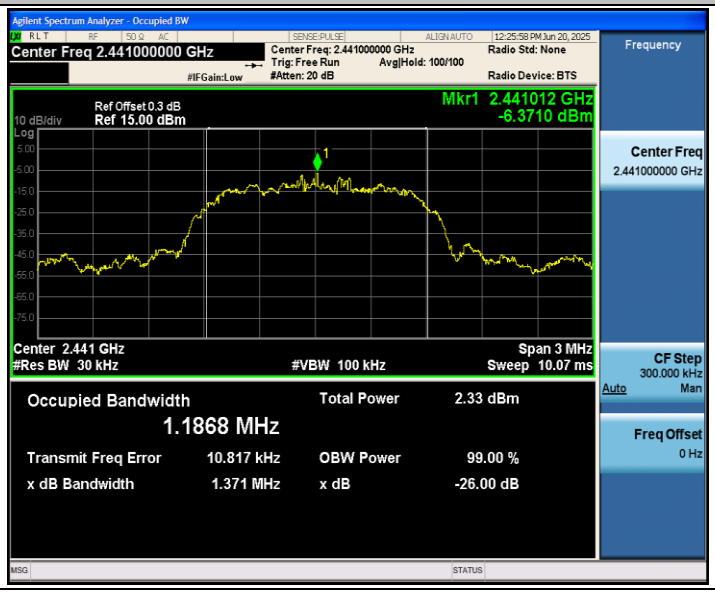


DH5_Ant1_2480

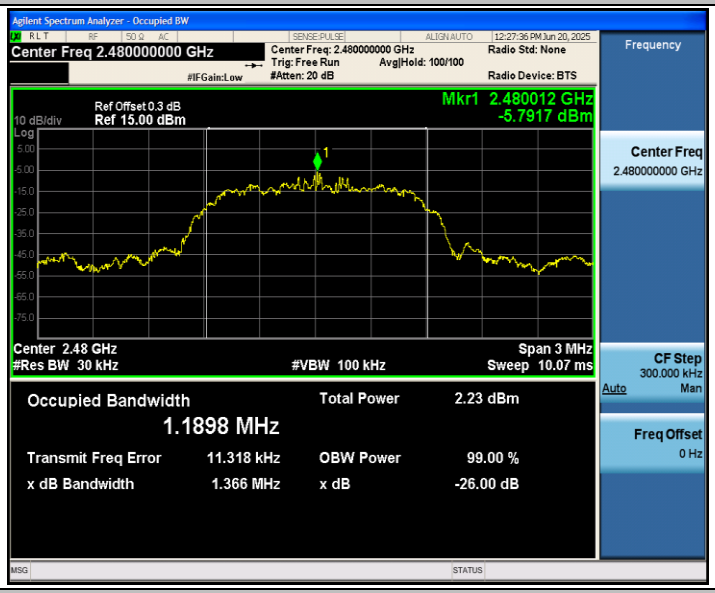
2DH5_Ant1_2402



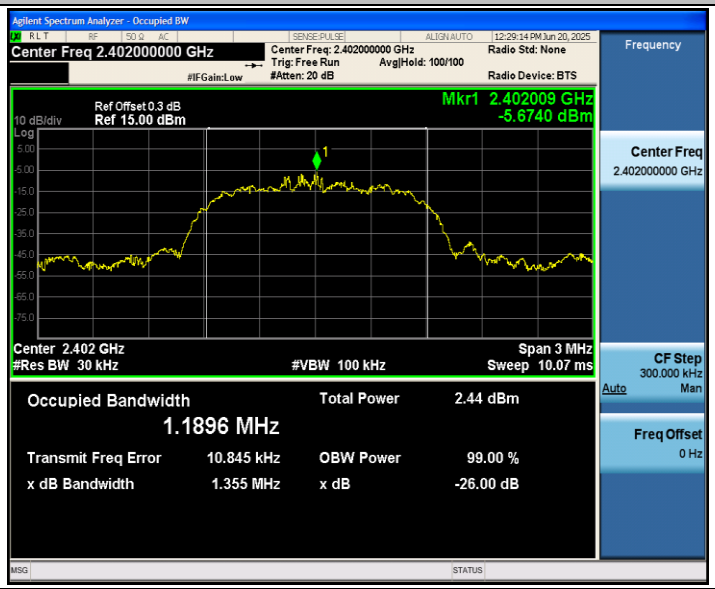
2DH5_Ant1_2441



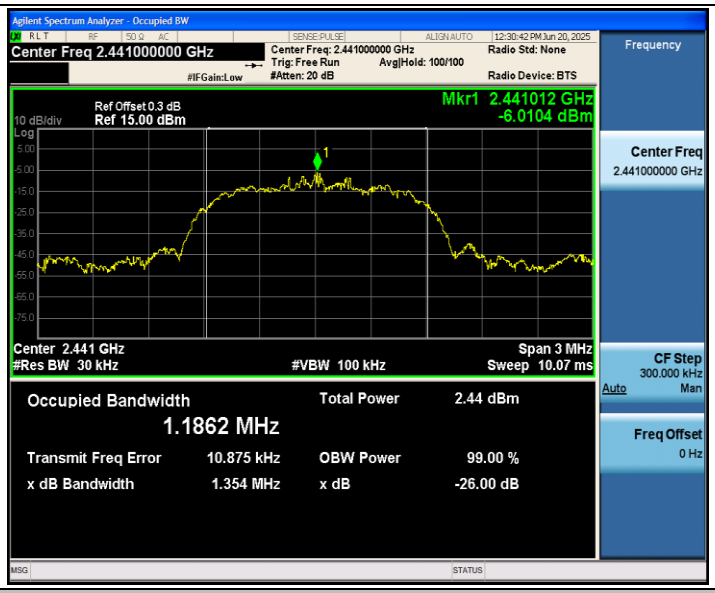
2DH5_Ant1_2480



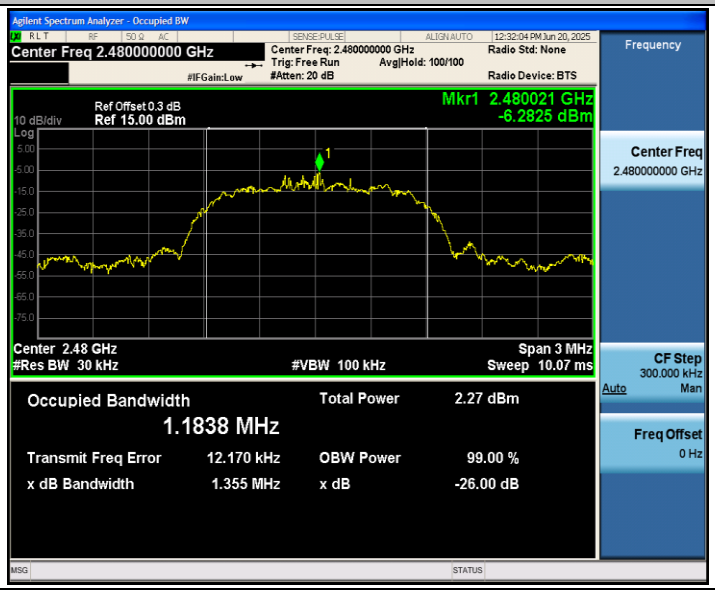
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

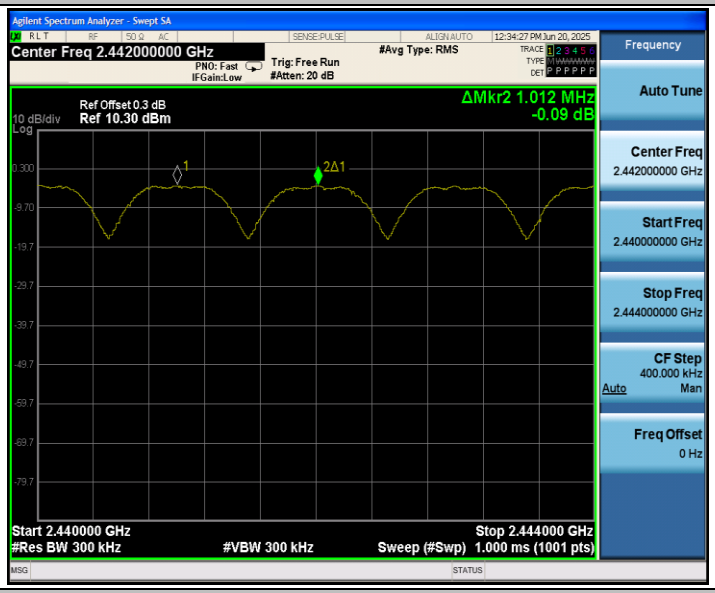
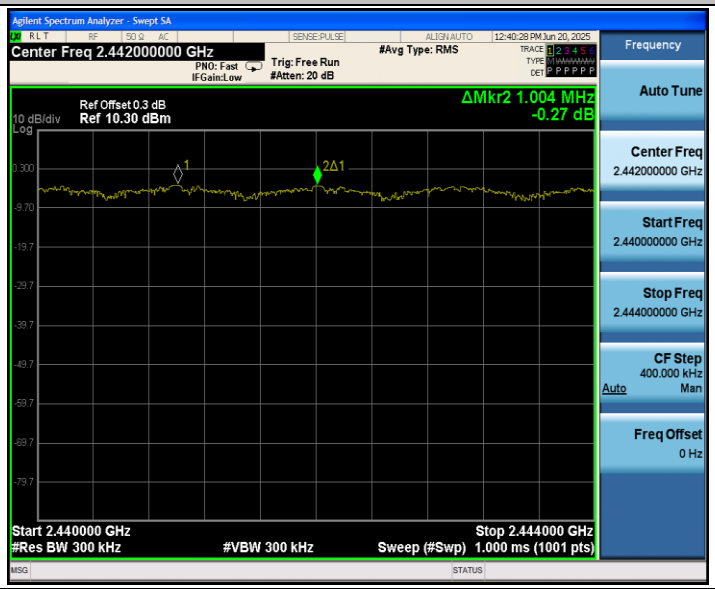
Test Mode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-0.15	≤20.97	PASS
		2441	-0.35	≤20.97	PASS
		2480	-0.39	≤20.97	PASS
2DH5	Ant1	2402	-0.99	≤20.97	PASS
		2441	-1.16	≤20.97	PASS
		2480	-1.21	≤20.97	PASS
3DH5	Ant1	2402	-0.59	≤20.97	PASS
		2441	-0.79	≤20.97	PASS
		2480	-0.82	≤20.97	PASS

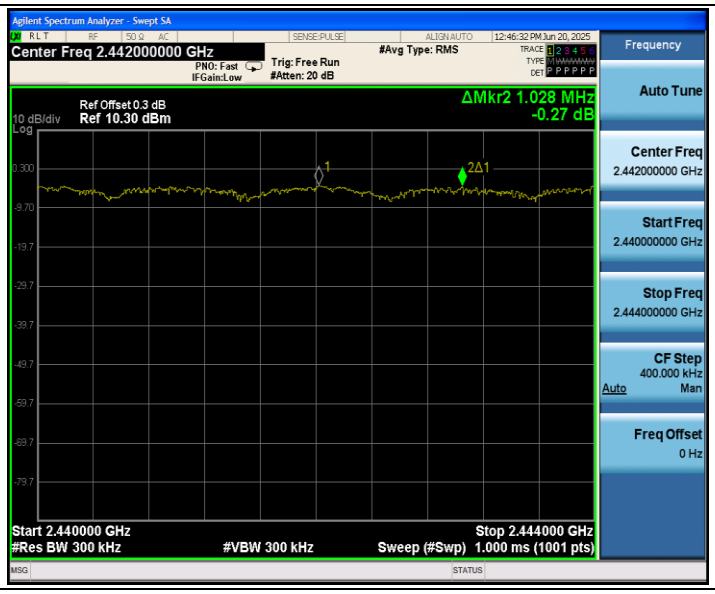
Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.012	≥0.954	PASS
2DH5	Ant1	Hop	1.004	≥0.880	PASS
3DH5	Ant1	Hop	1.028	≥0.860	PASS

Test Graphs

DH5_Ant1_Hop

2DH5_Ant1_Hop

3DH5_Ant1_Hop

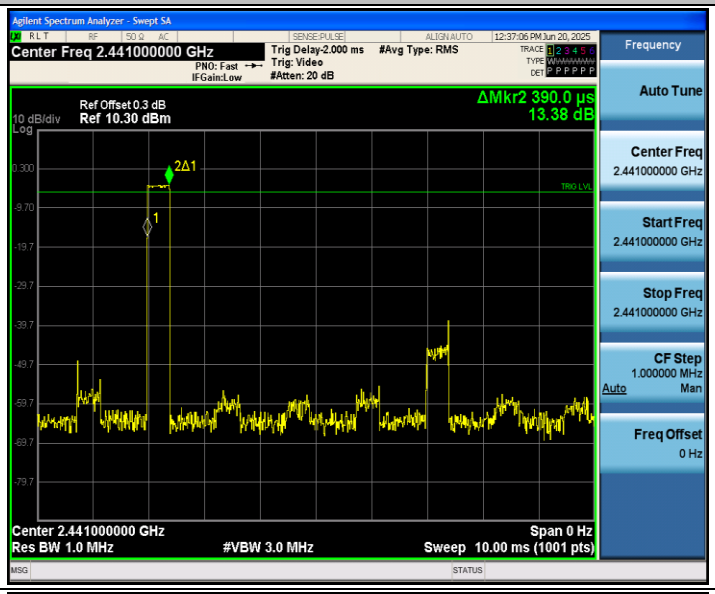
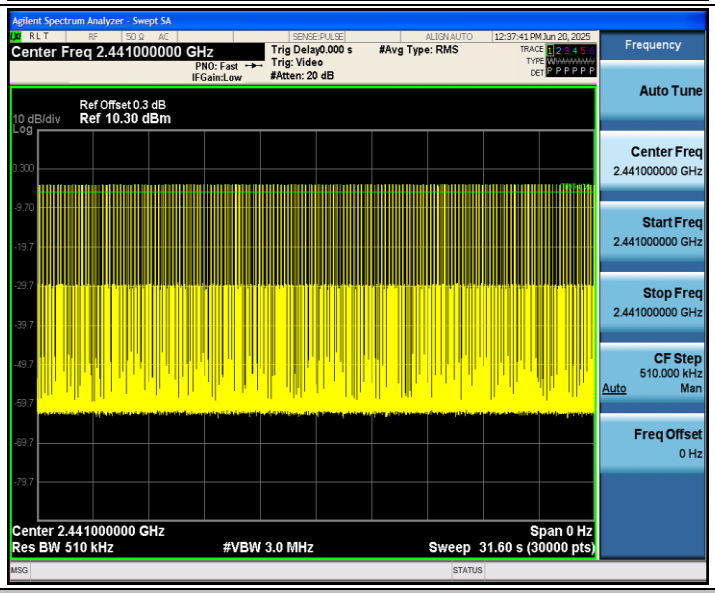

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.442000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
12:46:32 PM Jun 20, 2025
Frequency
Auto Tune
Center Freq
2.442000000 GHz
Start Freq
2.440000000 GHz
Stop Freq
2.444000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
Log
ΔMkr2 1.028 MHz
-0.27 dB
Start 2.440000 GHz
#Res BW 300 kHz
#VBW 300 kHz
Stop 2.444000 GHz
Sweep (#Swp) 1.000 ms (1001 pts)

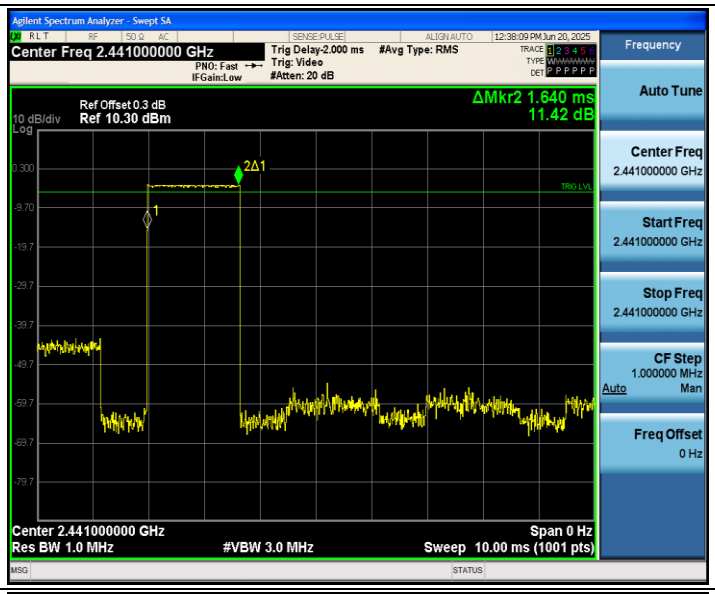
Appendix E: Time of occupancy

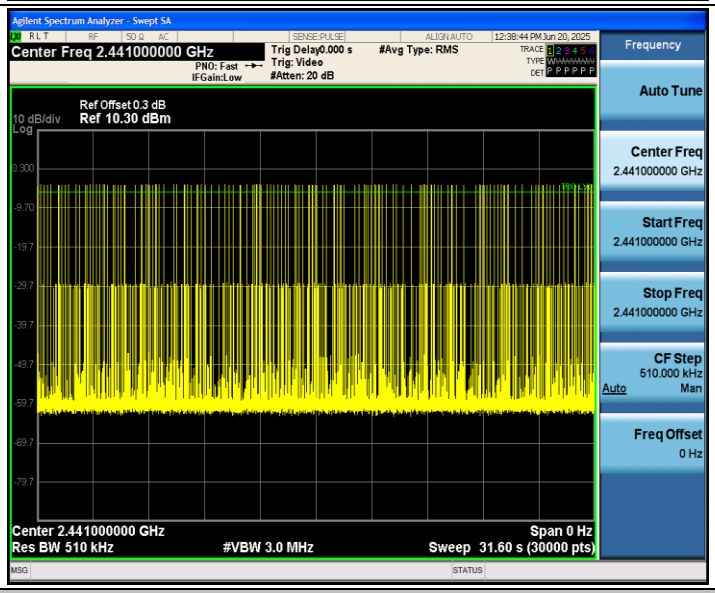
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.390	319	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.640	153	0.251	≤0.4	PASS
DH5	Ant1	Hop	2.890	110	0.318	≤0.4	PASS
2DH1	Ant1	Hop	0.400	317	0.127	≤0.4	PASS
2DH3	Ant1	Hop	1.650	152	0.251	≤0.4	PASS
2DH5	Ant1	Hop	2.900	118	0.342	≤0.4	PASS
3DH1	Ant1	Hop	0.400	320	0.128	≤0.4	PASS
3DH3	Ant1	Hop	1.650	149	0.246	≤0.4	PASS
3DH5	Ant1	Hop	2.900	95	0.276	≤0.4	PASS

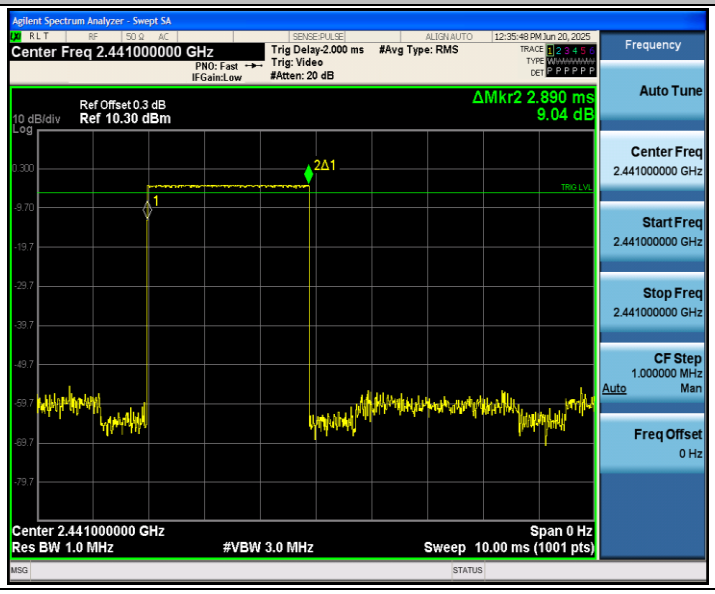
Test Graphs

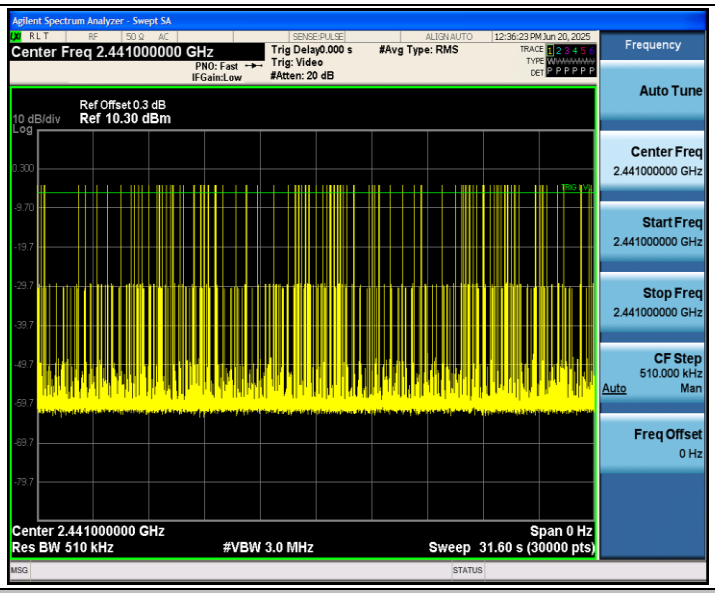
DH1_Ant1_Hop


DH3_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay-2.000 ms
#Avg Type: RMS
Trig: Video
PNO: Fast
IFGain:Low
#Atten: 20 dB
12:38:09 PM Jun 20, 2025
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
ΔMkr2 1.640 ms
11.42 dB
2Δ1
1
Center 2.441000000 GHz
Span 0 Hz
Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 10.00 ms (1001 pts)
Frequency
Auto Tune
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

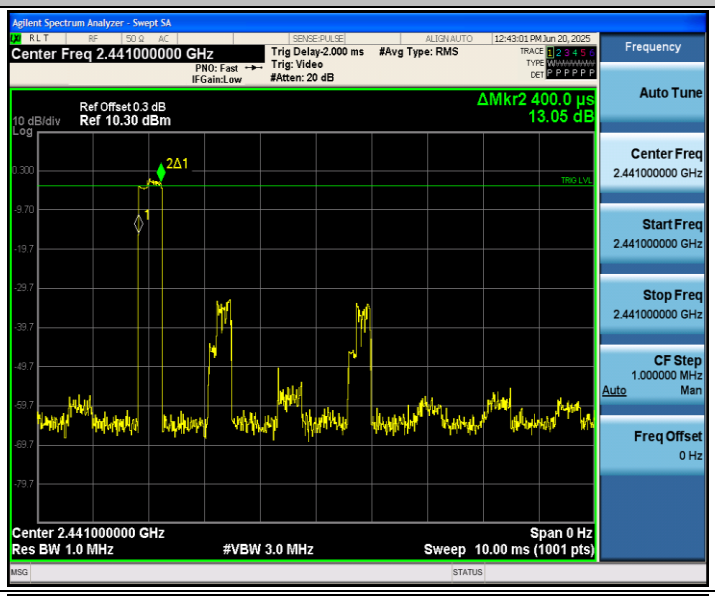

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay0.000 s
#Avg Type: RMS
Trig: Video
PNO: Fast
IFGain:Low
#Atten: 20 dB
12:38:44 PM Jun 20, 2025
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
Center 2.441000000 GHz
Span 0 Hz
Res BW 510 kHz
#VBW 3.0 MHz
Sweep 31.60 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz

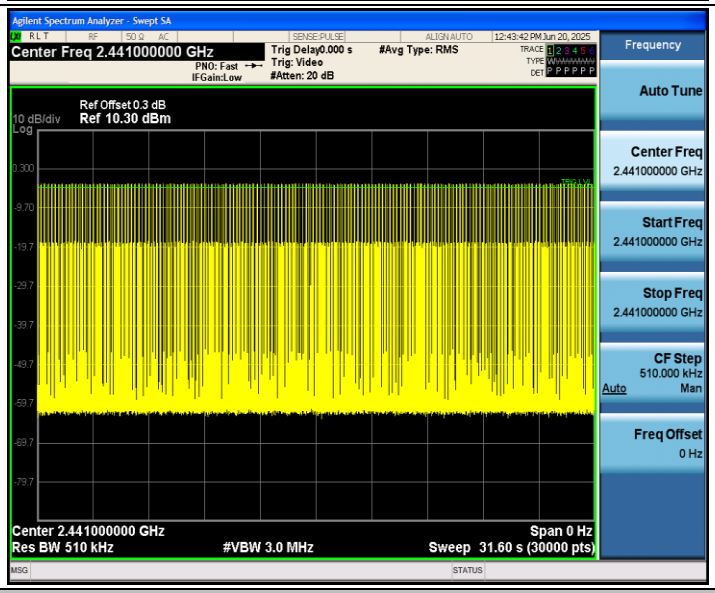
DH5_Ant1_Hop


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay-2.000 ms
#Avg Type: RMS
Trig: Video
PNO: Fast
IFGain:Low
#Atten: 20 dB
12:35:48 PM Jun 20, 2025
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
ΔMkr2 2.890 ms
9.04 dB
2Δ1
1
Center 2.441000000 GHz
Span 0 Hz
Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 10.00 ms (1001 pts)
Frequency
Auto Tune
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

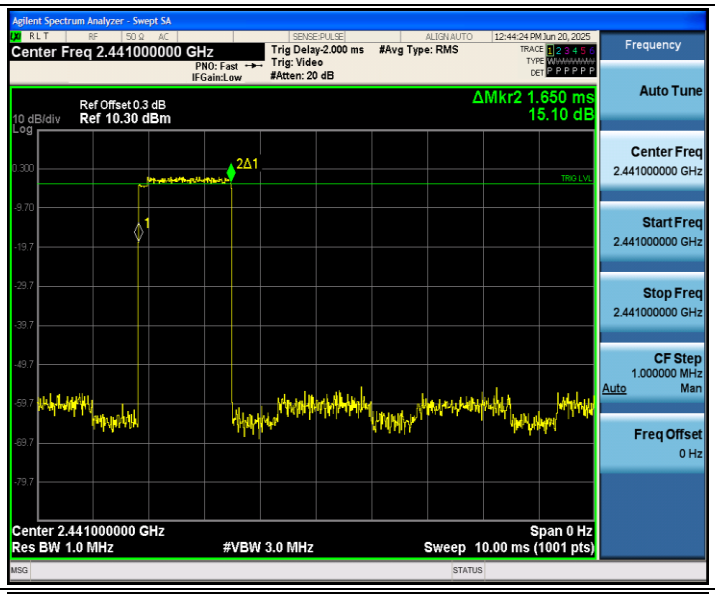


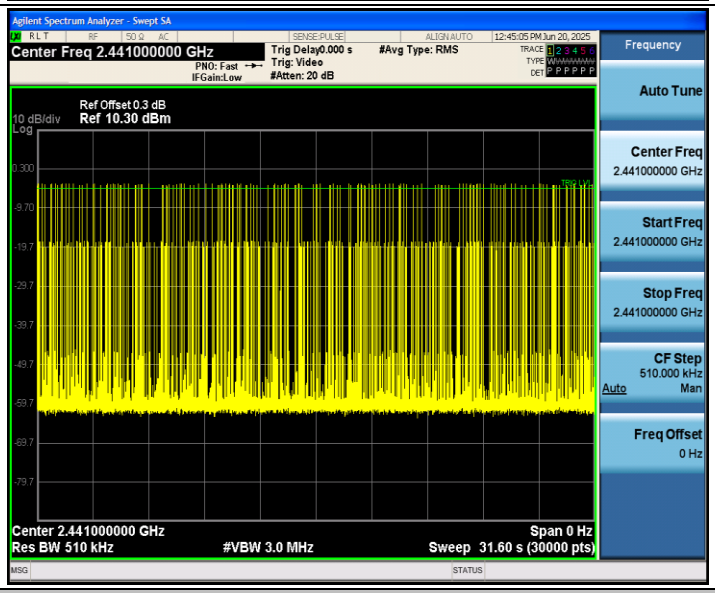
2DH1_Ant1_Hop



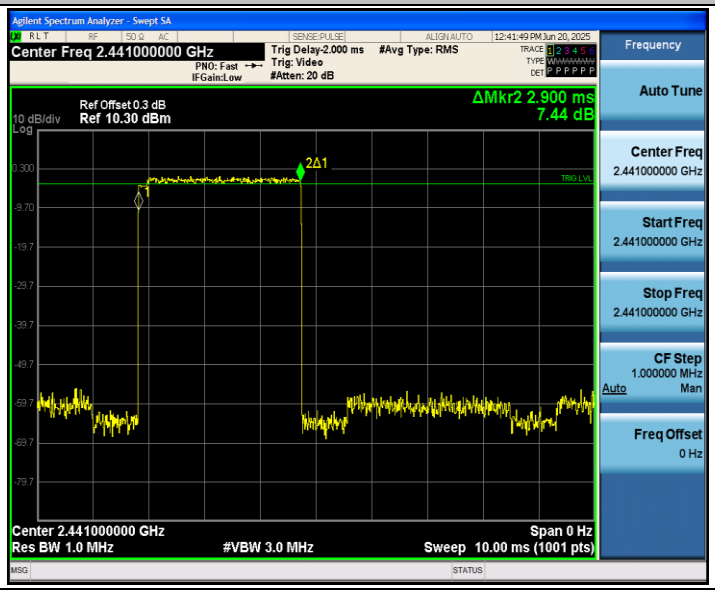


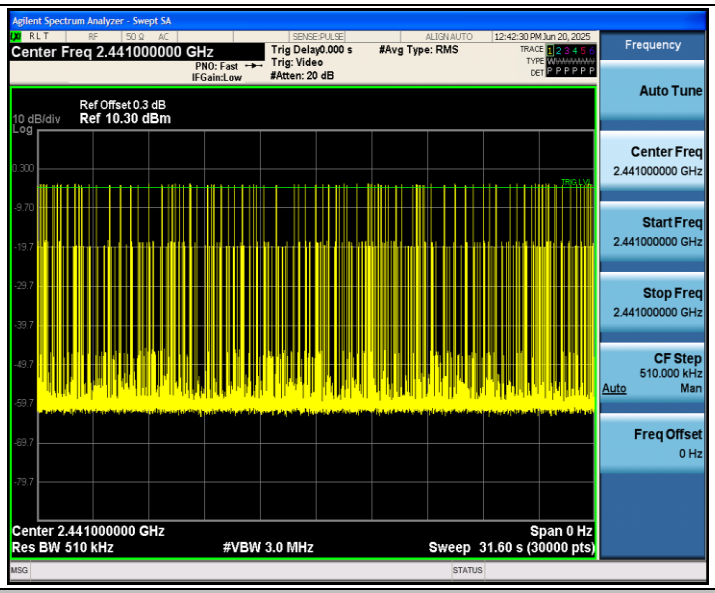
2DH3_Ant1_Hop



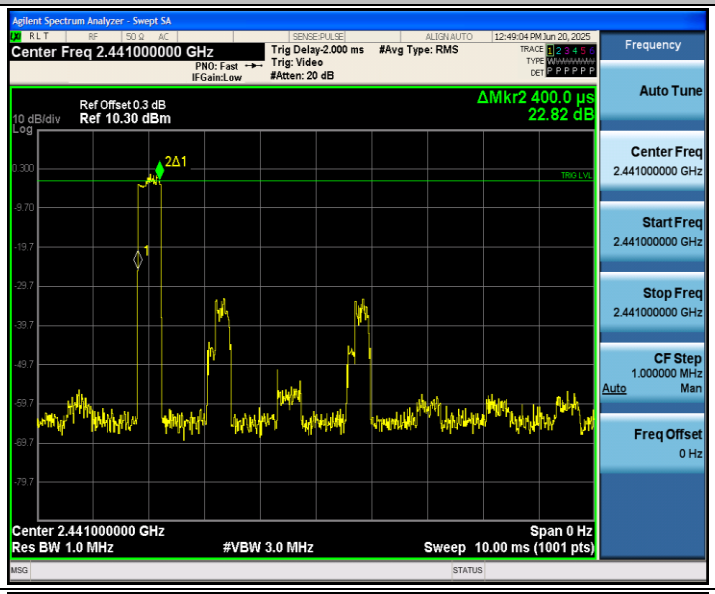


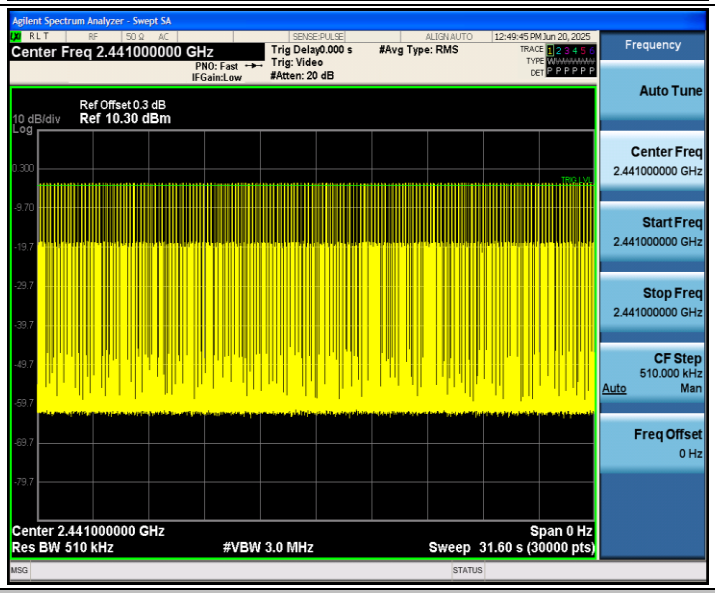
2DH5_Ant1_Hop



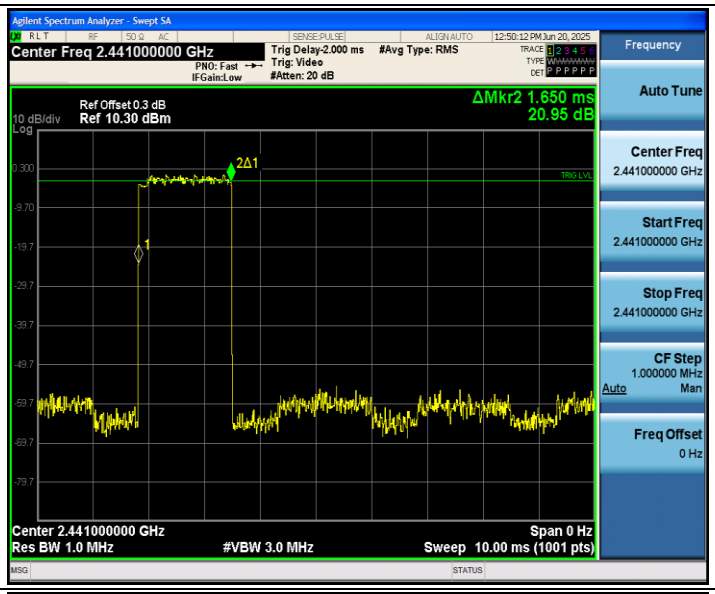


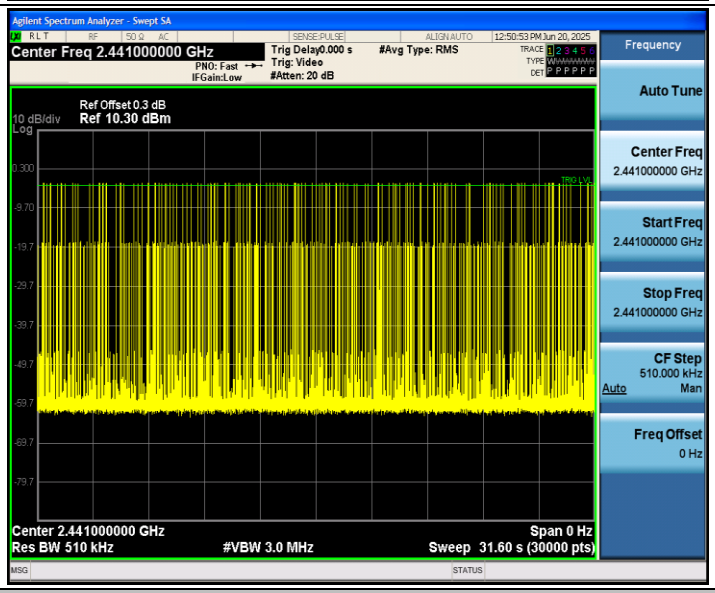
3DH1_Ant1_Hop



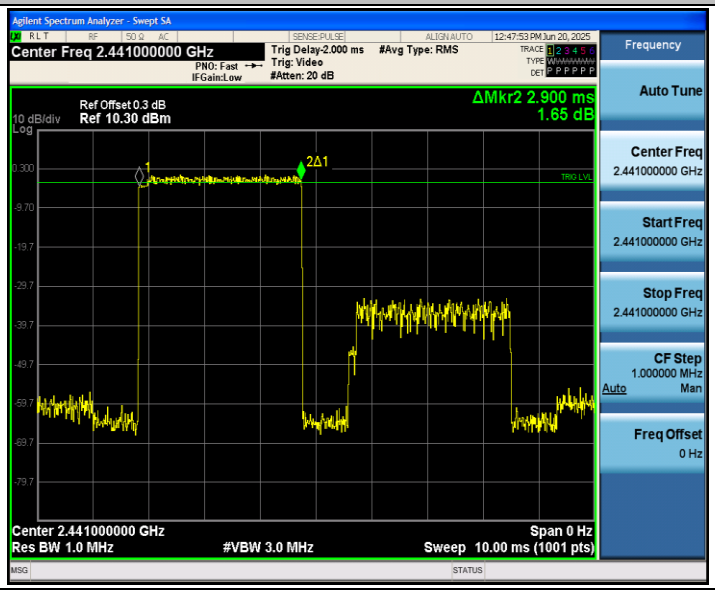


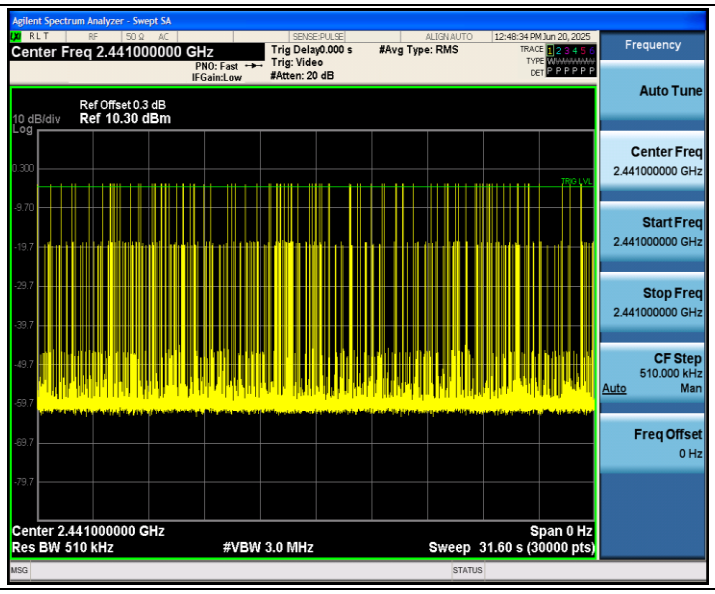
3DH3_Ant1_Hop





3DH5_Ant1_Hop



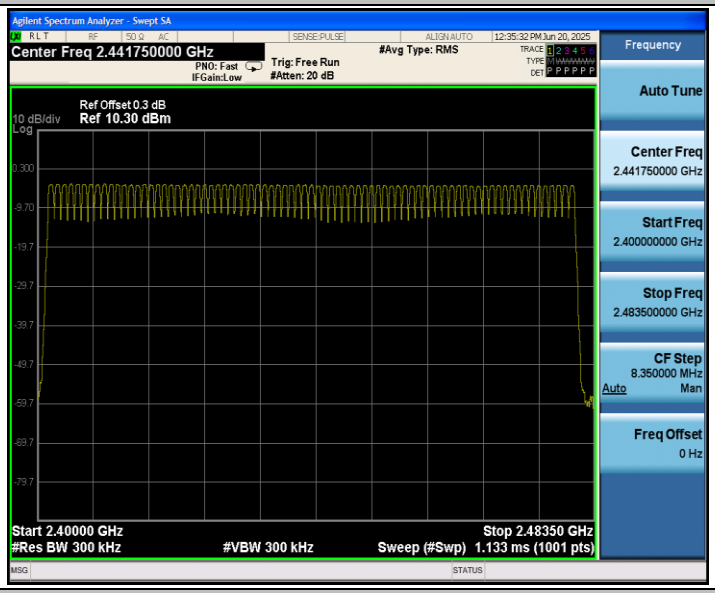
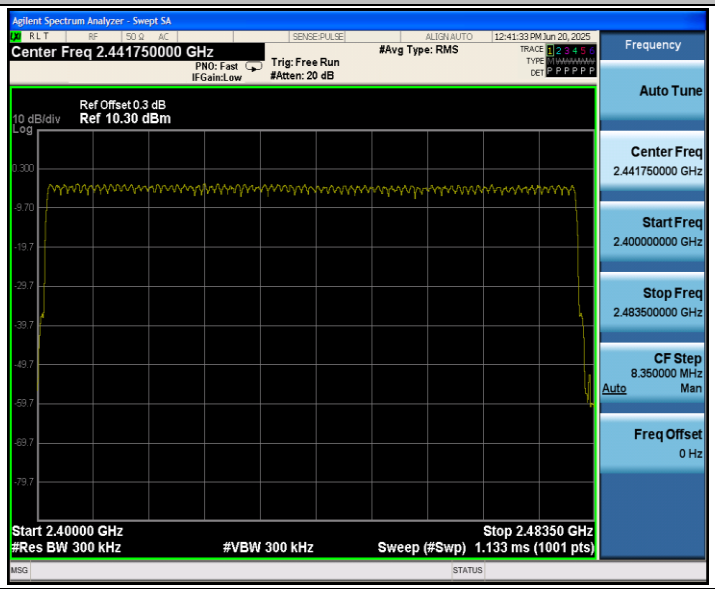

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay0.000 s
#Avg Type: RMS
Trig: Video
#Atten: 20 dB
PNO: Fast
IFGain:Low
12:48:34 PM Jun 20, 2025
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
Log
Center 2.441000000 GHz
Span 0 Hz
Res BW 510 kHz
#VBW 3.0 MHz
Sweep 31.60 s (30000 pts)

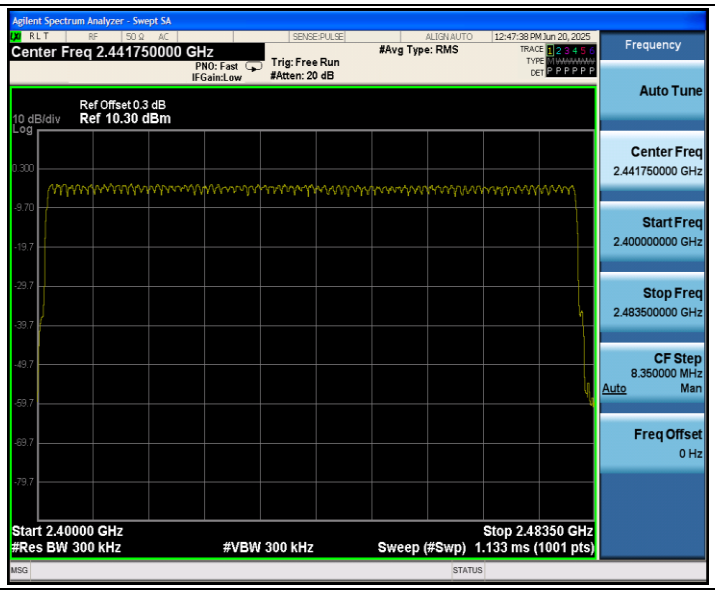
Appendix F: Number of hopping channels

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


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
12:47:38 PM Jun 20, 2025
Ref Offset 0.3 dB
10 dB/div
Ref 10.30 dBm
Log
0.300
-9.70
-19.7
-29.7
-39.7
-49.7
-59.7
-69.7
-79.7
Start 2.40000 GHz
#Res BW 300 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep (#Swp) 1.133 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

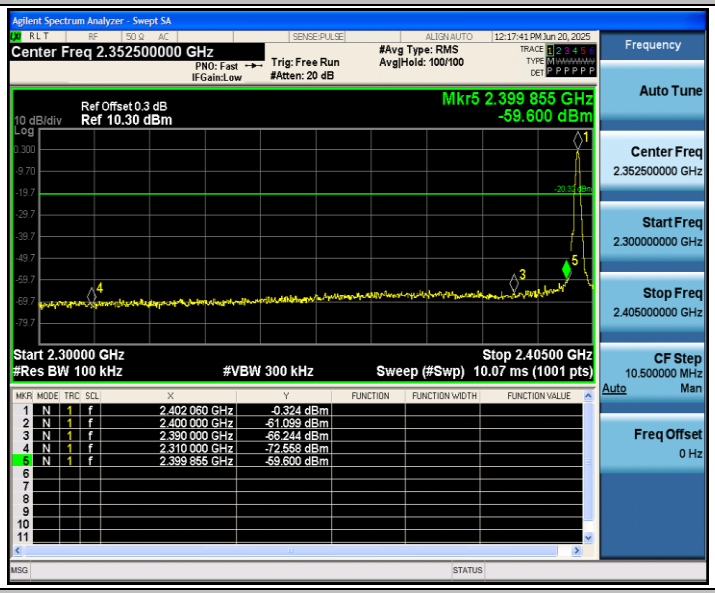
Appendix G: Band edge measurements

Test Result

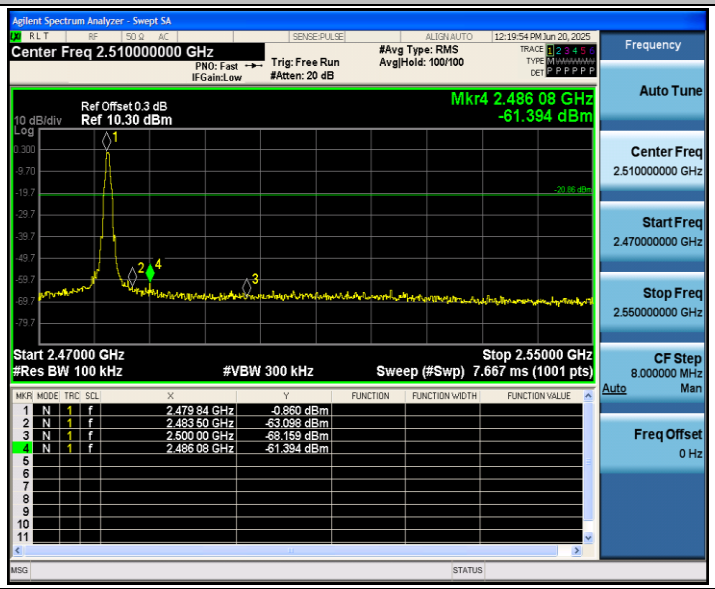
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.32	-59.6	≤-20.32	PASS
		High	2480	-0.86	-61.39	≤-20.86	PASS
		Low	Hop_2402	-4.61	-62.6	≤-24.61	PASS
		High	Hop_2480	-4.06	-65.21	≤-24.06	PASS
2DH5	Ant1	Low	2402	-4.38	-59.22	≤-24.38	PASS
		High	2480	-4.45	-63.39	≤-24.45	PASS
		Low	Hop_2402	-7.21	-62.93	≤-27.21	PASS
		High	Hop_2480	-5.09	-64.4	≤-25.09	PASS
3DH5	Ant1	Low	2402	-3.94	-58.22	≤-23.94	PASS
		High	2480	-3.96	-57.59	≤-23.96	PASS
		Low	Hop_2402	-6.10	-61.9	≤-26.1	PASS
		High	Hop_2480	-5.08	-65.4	≤-25.08	PASS

Test Graphs

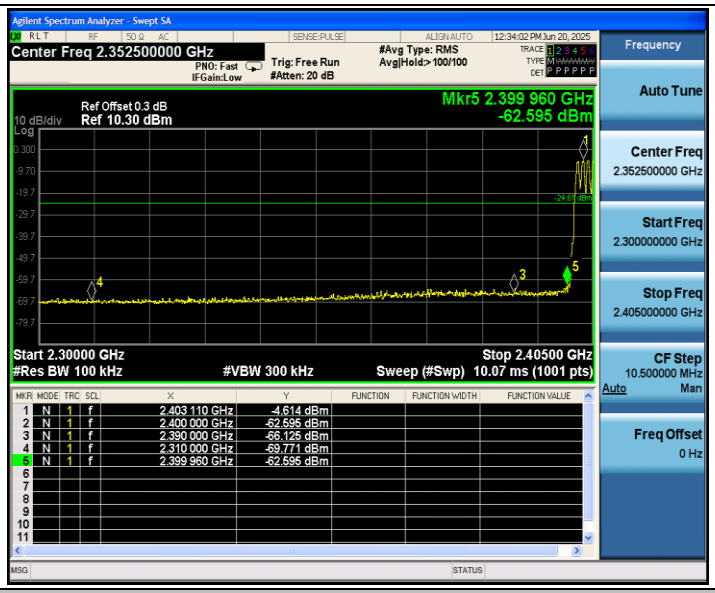
DH5_Ant1_Low_2402



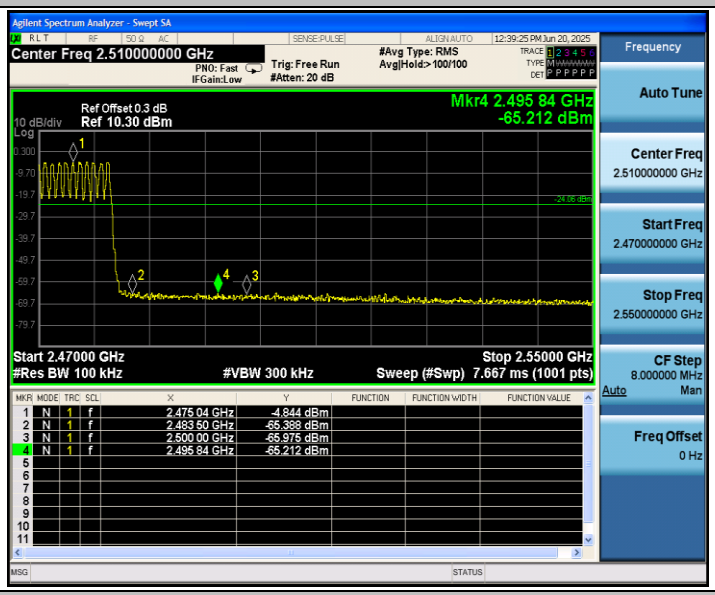
DH5_Ant1_High_2480



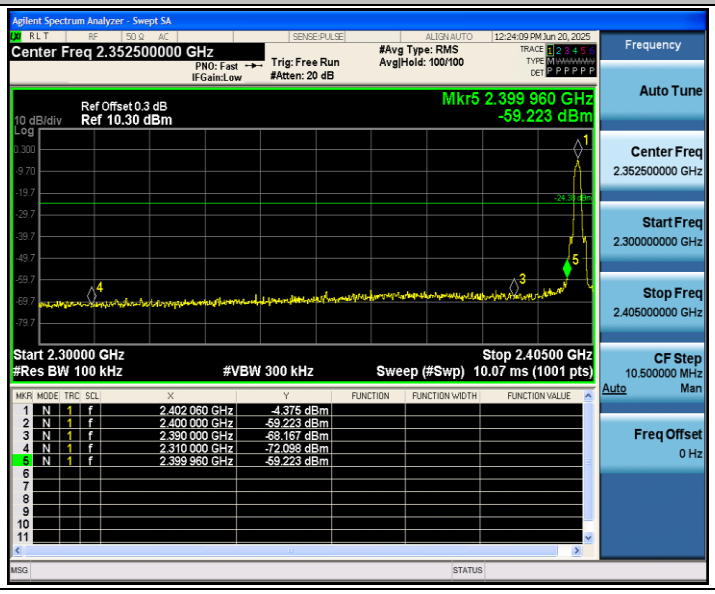
DH5_Ant1_Low_Hop_2402



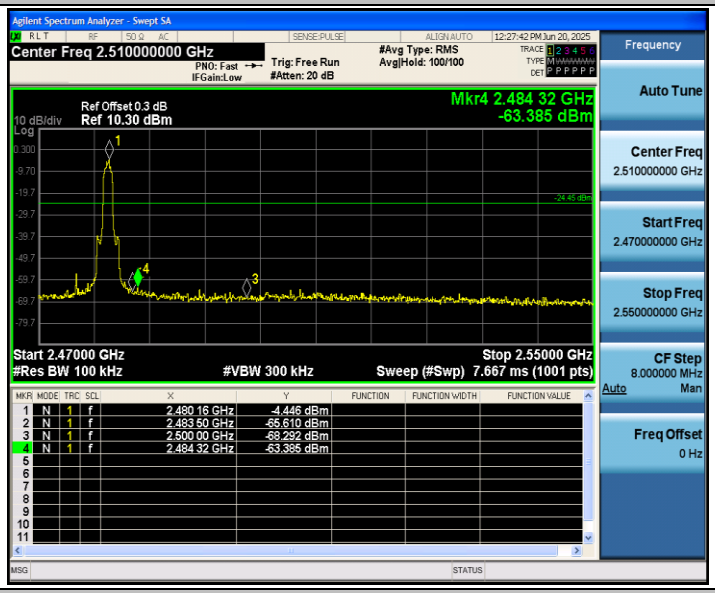
DH5_Ant1_High_Hop_2480



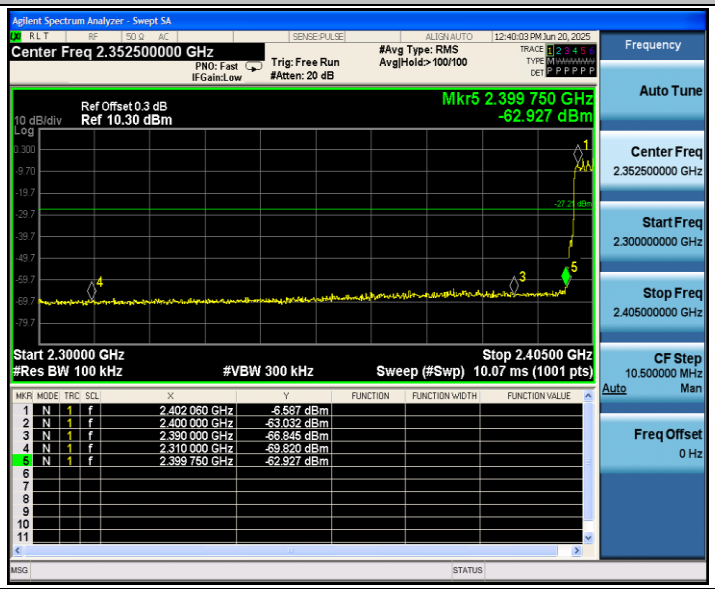
2DH5_Ant1_Low_2402



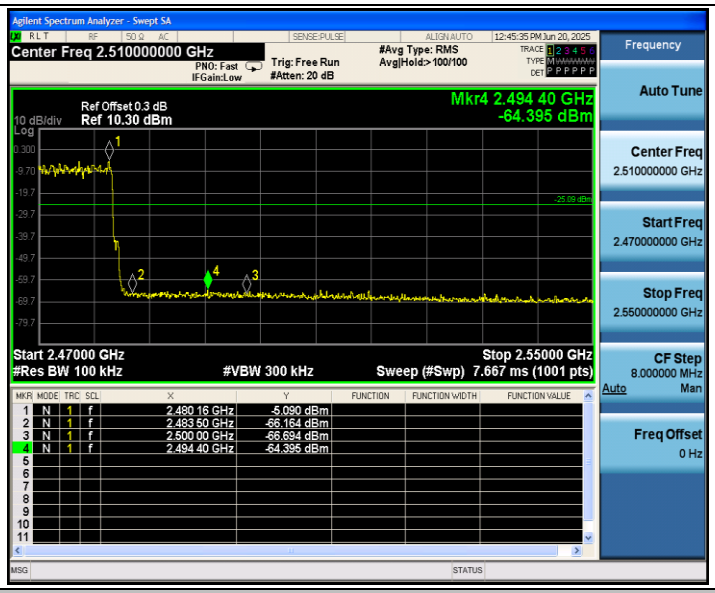
2DH5_Ant1_High_2480



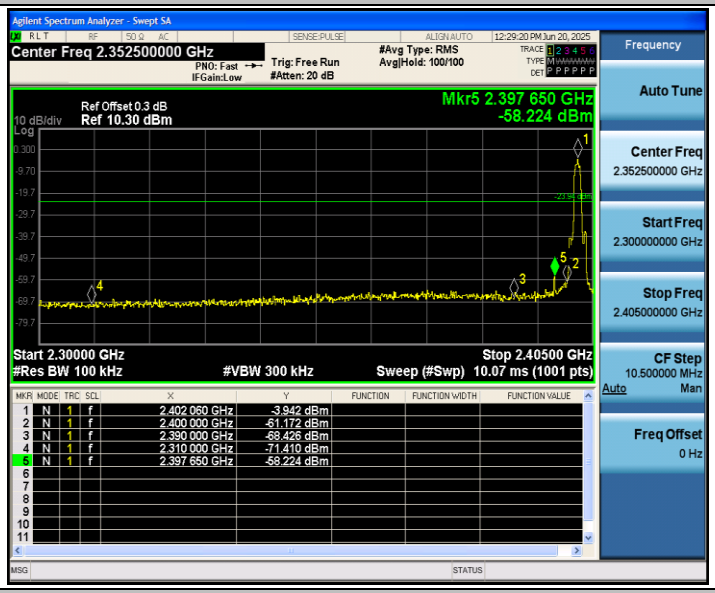
2DH5_Ant1_Low_Hop_2402



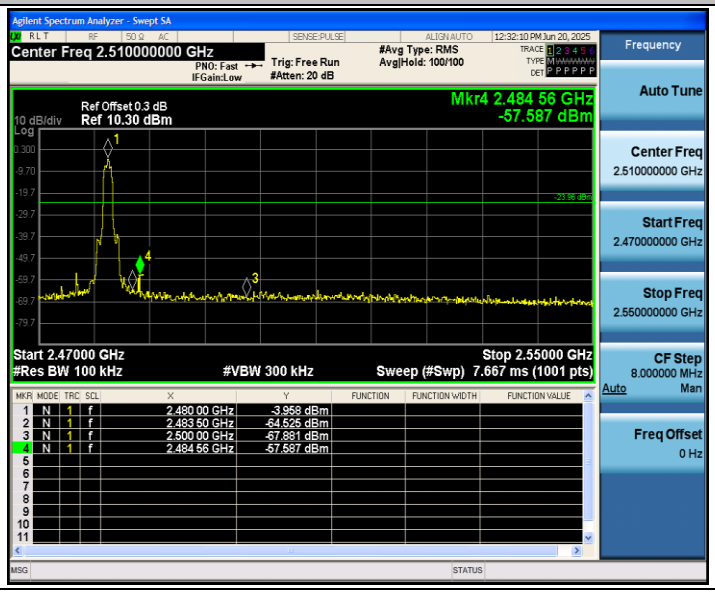
2DH5_Ant1_High_Hop_2480



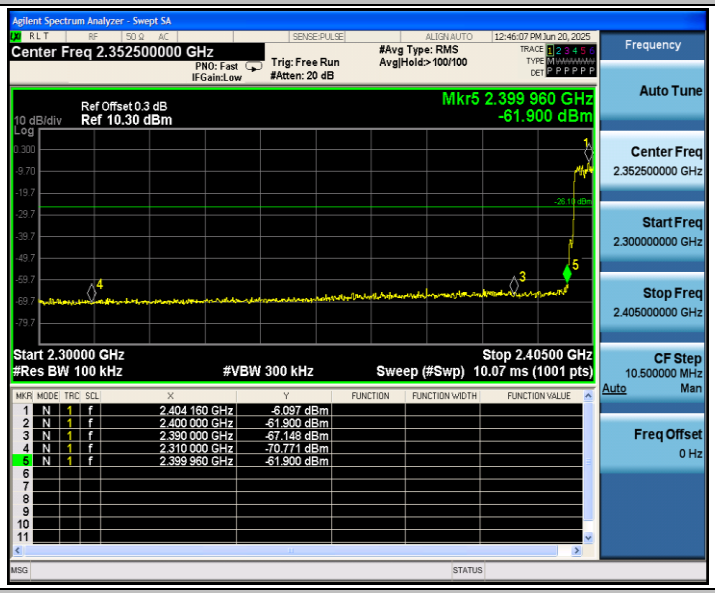
3DH5_Ant1_Low_2402



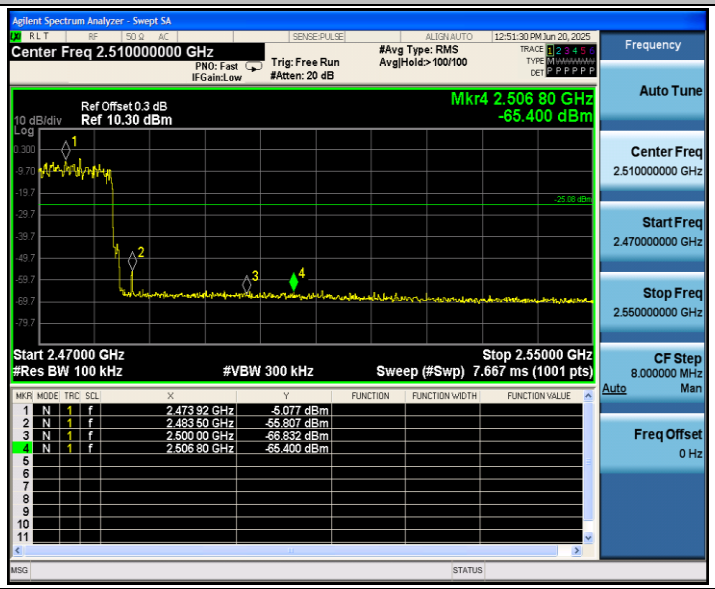
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



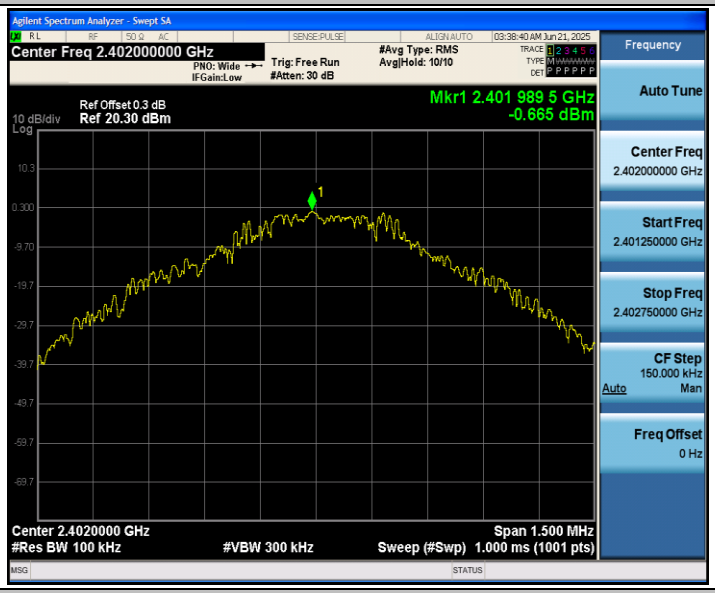
Appendix H: Conducted Spurious Emission

Test Result

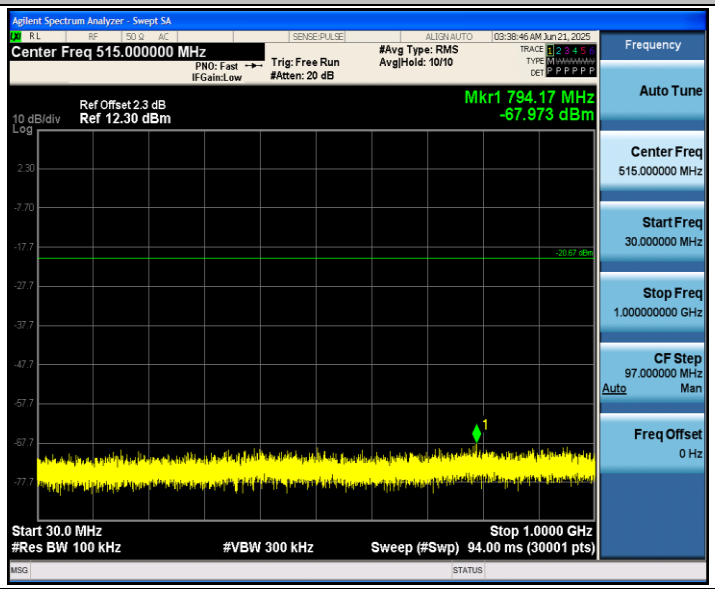
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.67	-0.67	---	PASS
			30~1000	-0.67	-67.97	≤-20.67	PASS
			1000~26500	-0.67	-43.06	≤-20.67	PASS
		2441	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-67.77	≤-20.89	PASS
			1000~26500	-0.89	-45.3	≤-20.89	PASS
		2480	Reference	-1.30	-1.30	---	PASS
			30~1000	-1.30	-68.28	≤-21.3	PASS
			1000~26500	-1.30	-45.14	≤-21.3	PASS
2DH5	Ant1	2402	Reference	-6.90	-6.90	---	PASS
			30~1000	-6.90	-68.29	≤-26.9	PASS
			1000~26500	-6.90	-49.21	≤-26.9	PASS
		2441	Reference	-5.84	-5.84	---	PASS
			30~1000	-5.84	-68.26	≤-25.84	PASS
			1000~26500	-5.84	-46.75	≤-25.84	PASS
		2480	Reference	-4.90	-4.90	---	PASS
			30~1000	-4.90	-67.92	≤-24.9	PASS
			1000~26500	-4.90	-50.89	≤-24.9	PASS
3DH5	Ant1	2402	Reference	-5.30	-5.30	---	PASS
			30~1000	-5.30	-67.64	≤-25.3	PASS
			1000~26500	-5.30	-49.17	≤-25.3	PASS
		2441	Reference	-4.49	-4.49	---	PASS
			30~1000	-4.49	-68.59	≤-24.49	PASS
			1000~26500	-4.49	-50.16	≤-24.49	PASS
		2480	Reference	-5.43	-5.43	---	PASS
			30~1000	-5.43	-68.72	≤-25.43	PASS
			1000~26500	-5.43	-49.2	≤-25.43	PASS

Test Graphs

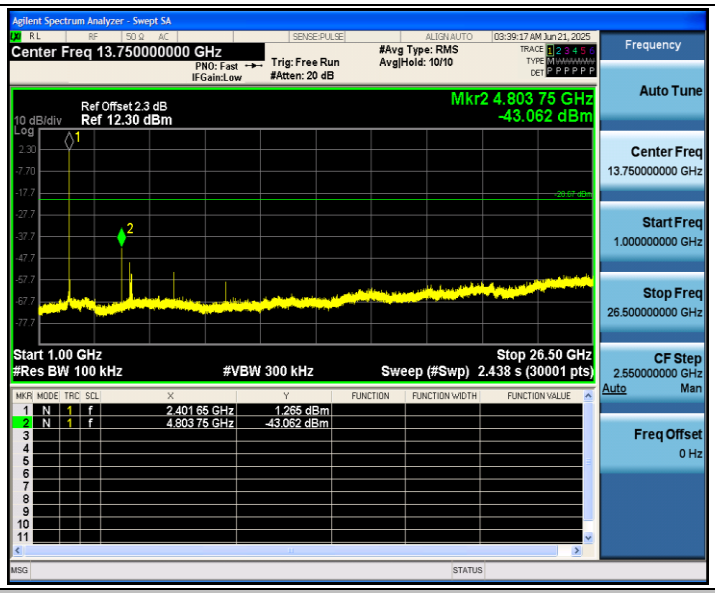
DH5_Ant1_2402_0~Reference



DH5_Ant1_2402_30~1000

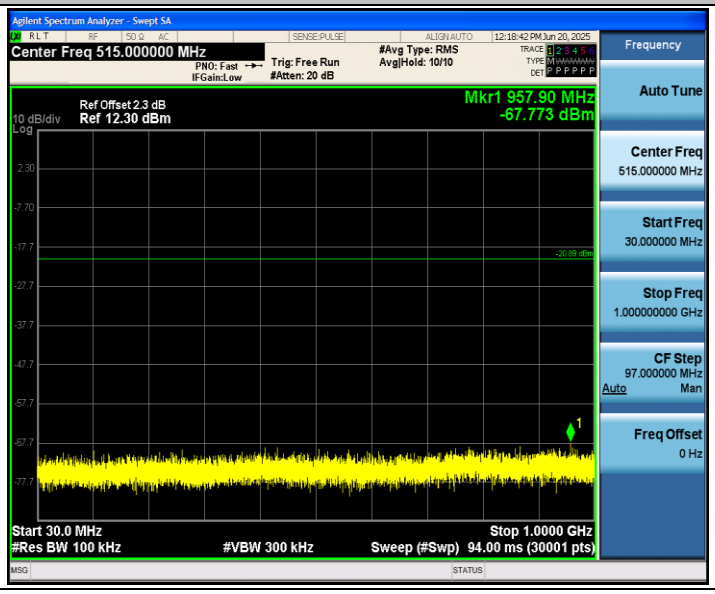


DH5_Ant1_2402_1000~26500

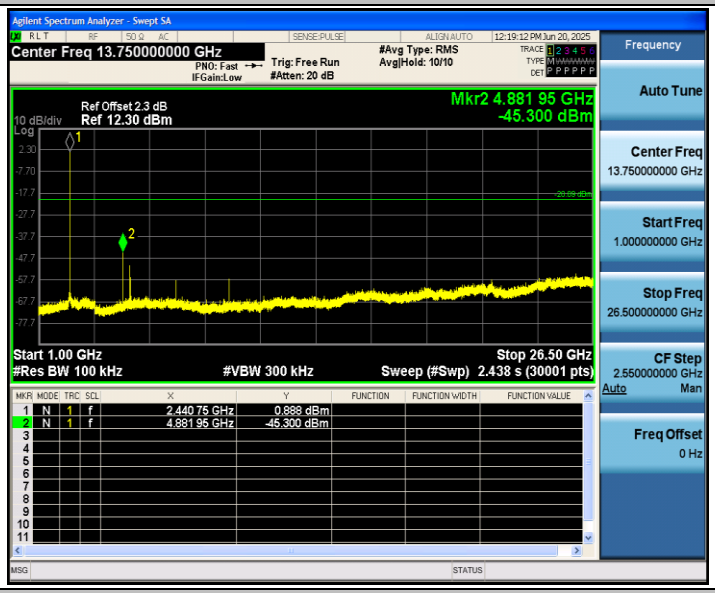


DH5_Ant1_2441_0~Reference

DH5_Ant1_2441_30~1000

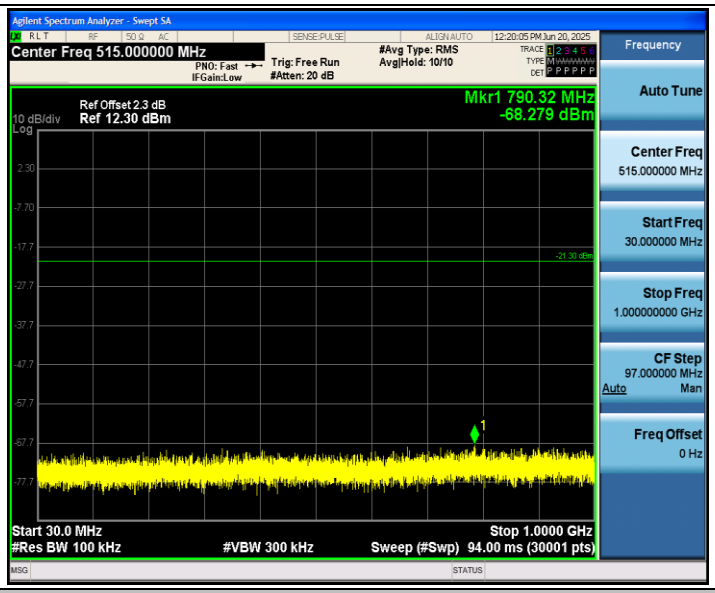


DH5_Ant1_2441_1000~26500

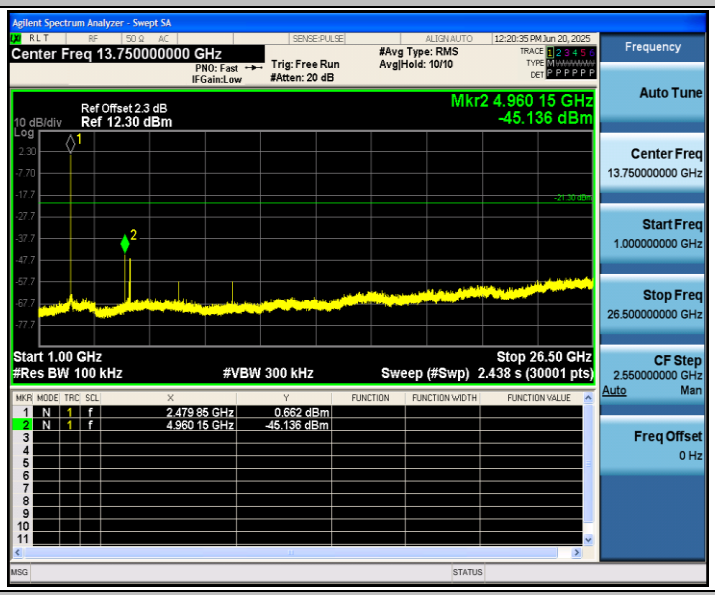


DH5_Ant1_2480_0~Reference

DH5_Ant1_2480_30~1000

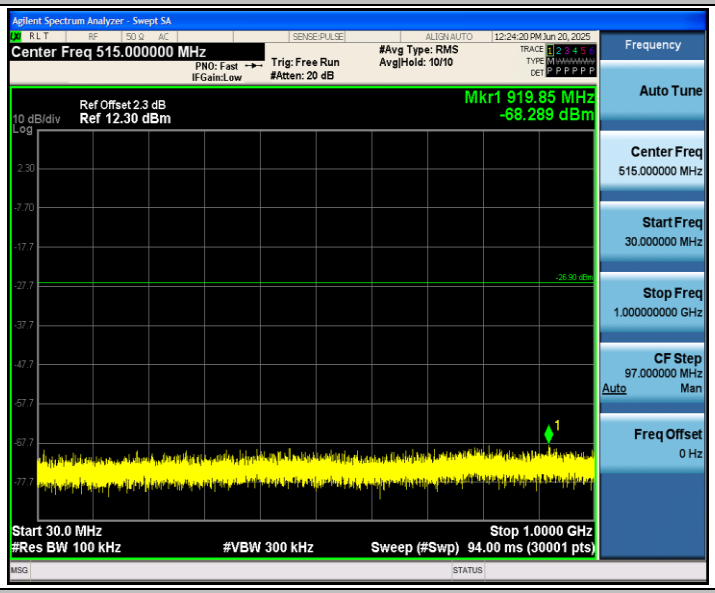


DH5_Ant1_2480_1000~26500

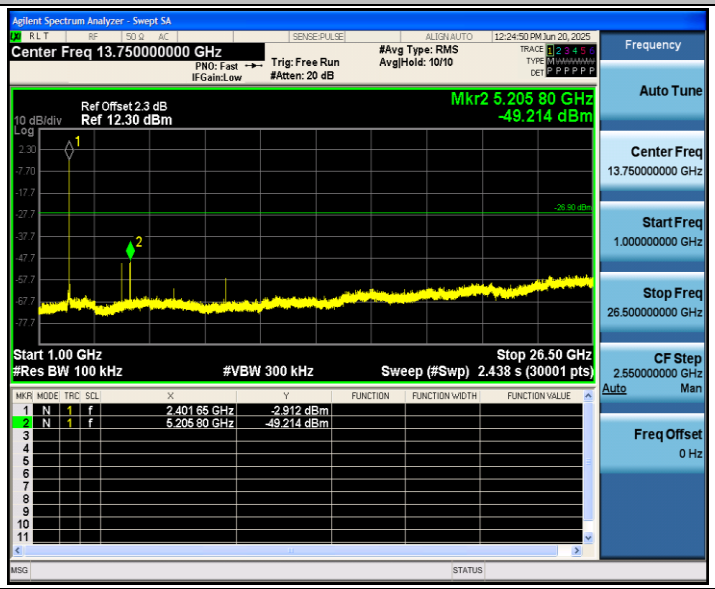


2DH5_Ant1_2402_0~Reference

2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference