Appendix Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: OTT+speaker

Trade Mark: /

Test Model: SK410D

FCC ID: 2AOVU-SK410D

Environmental Conditions

Temperature:	24.2℃
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engneer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

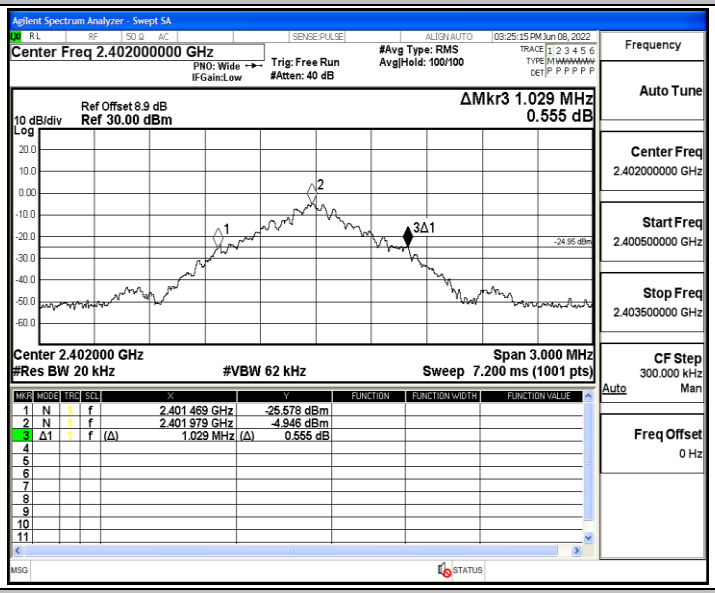
Appendix A: 20dB Emission Bandwidth

Test Result

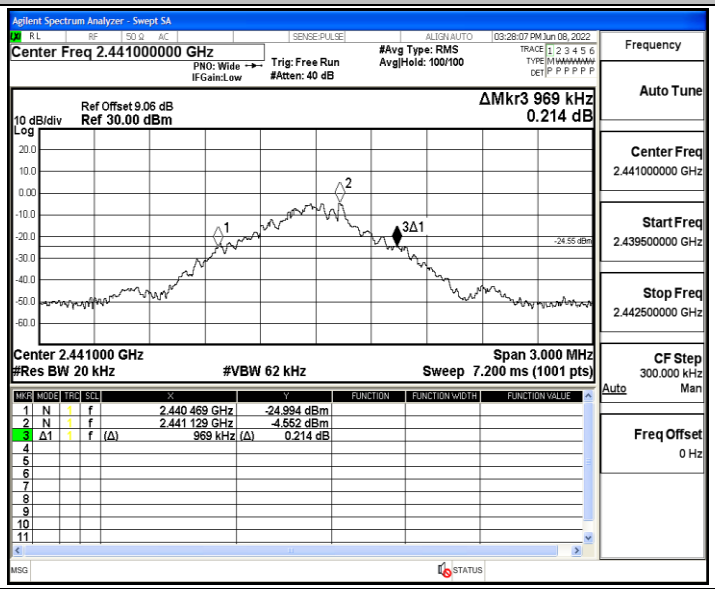
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.029	2401.469	2402.498	---	---
		2441	0.969	2440.469	2441.438	---	---
		2480	1.011	2479.475	2480.486	---	---
2DH5	Ant1	2402	1.341	2401.316	2402.657	---	---
		2441	1.347	2440.304	2441.651	---	---
		2480	1.344	2479.298	2480.642	---	---
3DH5	Ant1	2402	1.353	2401.304	2402.657	---	---
		2441	1.329	2440.307	2441.636	---	---
		2480	1.359	2479.283	2480.642	---	---

Test Graphs

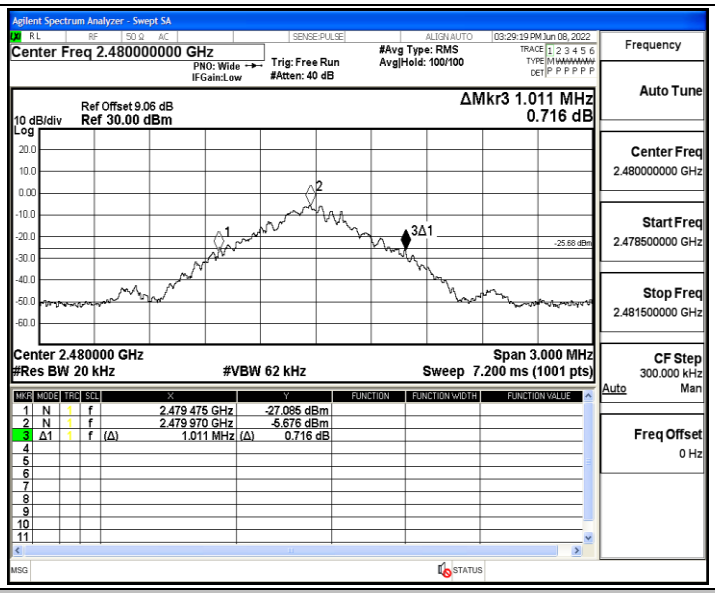
DH5_Ant1_2402



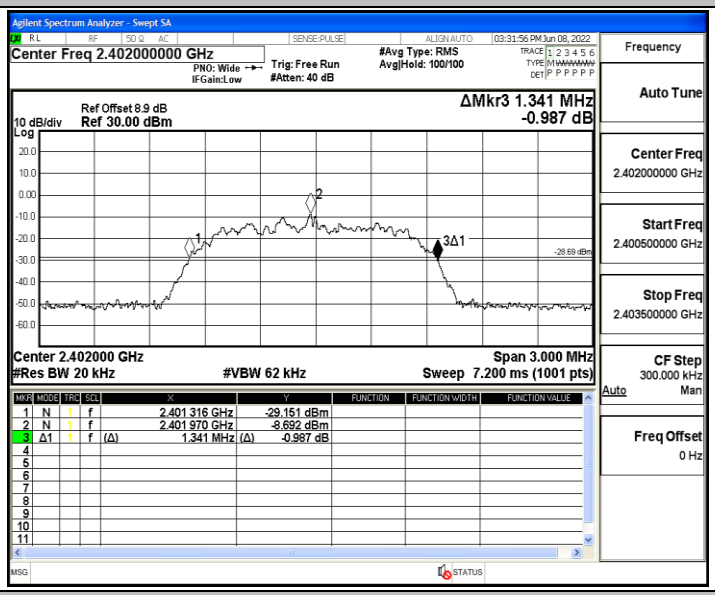
DH5_Ant1_2441



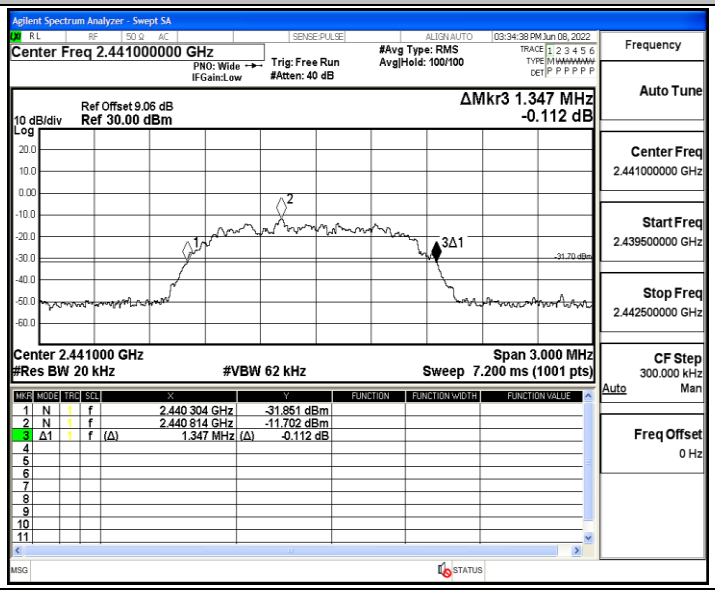
DH5_Ant1_2480



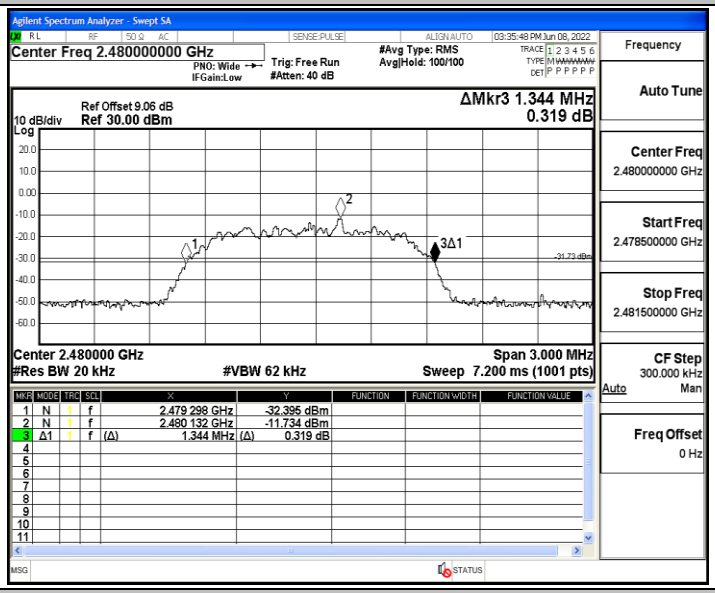
2DH5_Ant1_2402



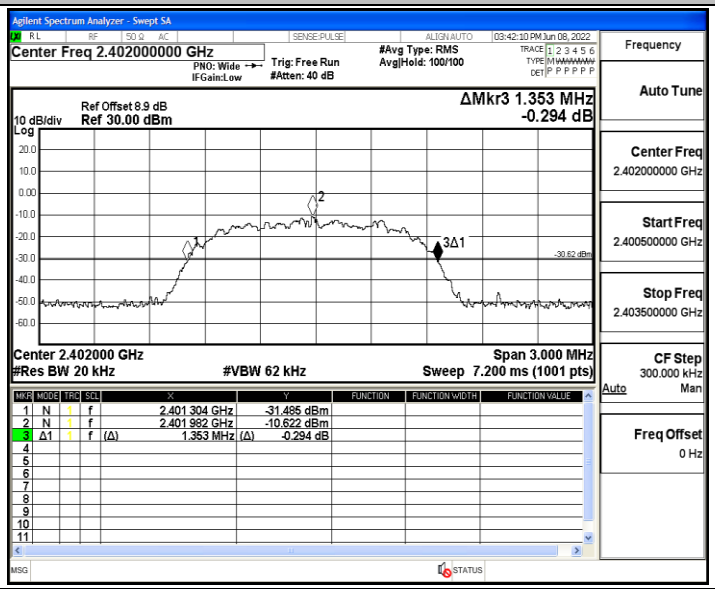
2DH5_Ant1_2441



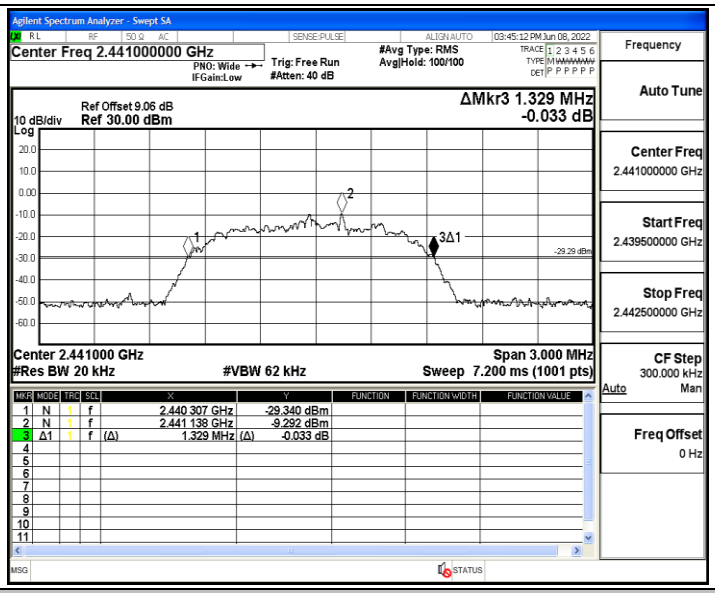
2DH5_Ant1_2480



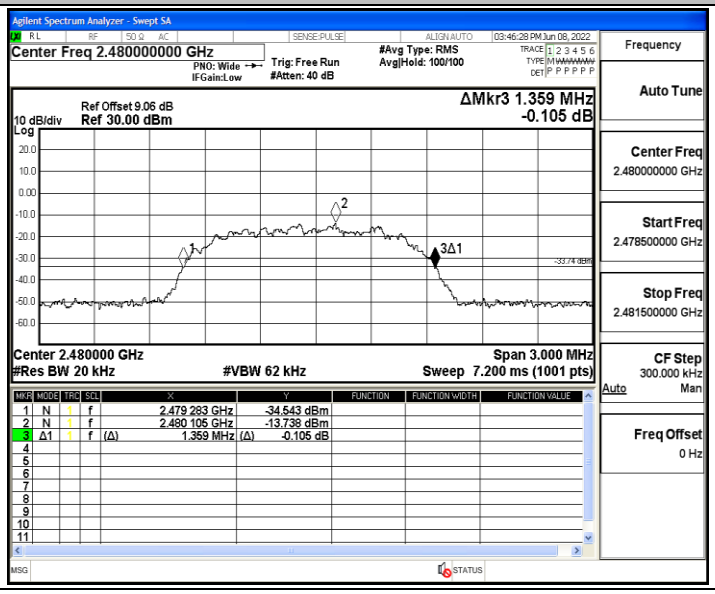
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



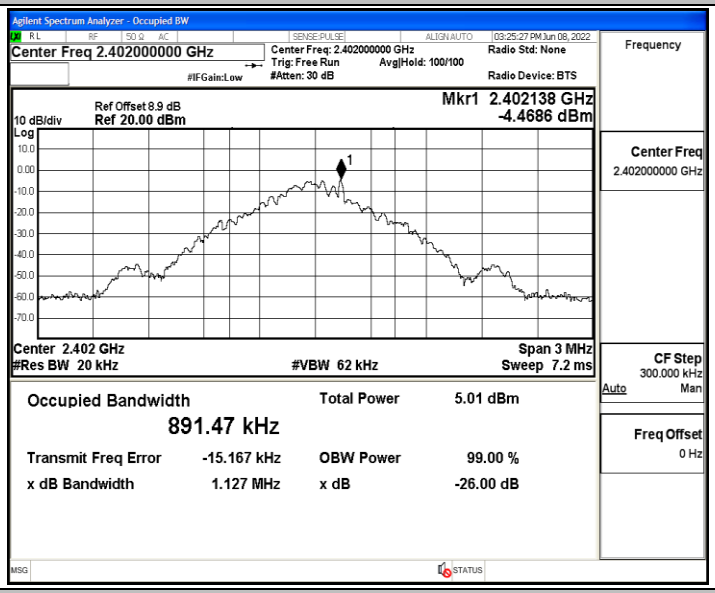
Appendix B: Occupied Channel Bandwidth

Test Result

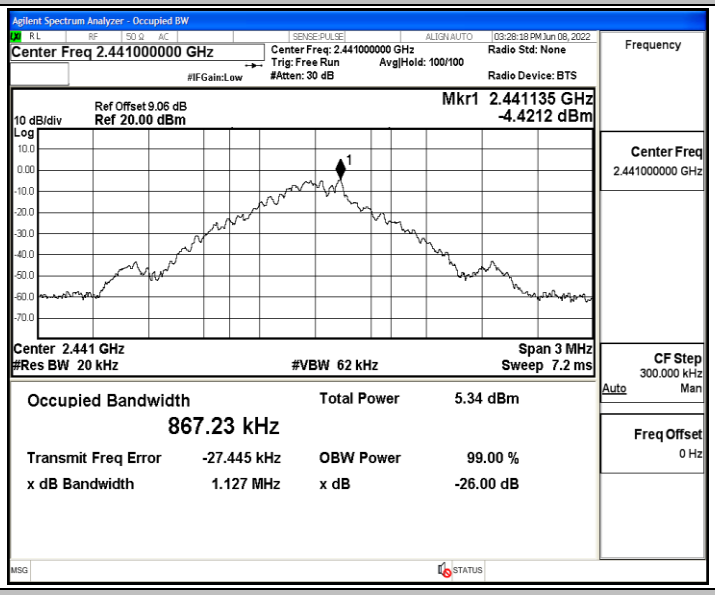
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89147	2401.539	2402.431	---	---
		2441	0.86723	2440.539	2441.406	---	---
		2480	0.89161	2479.519	2480.410	---	---
2DH5	Ant1	2402	1.2092	2401.376	2402.585	---	---
		2441	1.2109	2440.369	2441.580	---	---
		2480	1.1990	2479.367	2480.566	---	---
3DH5	Ant1	2402	1.2057	2401.369	2402.575	---	---
		2441	1.2034	2440.365	2441.568	---	---
		2480	1.2088	2479.356	2480.564	---	---

Test Graphs

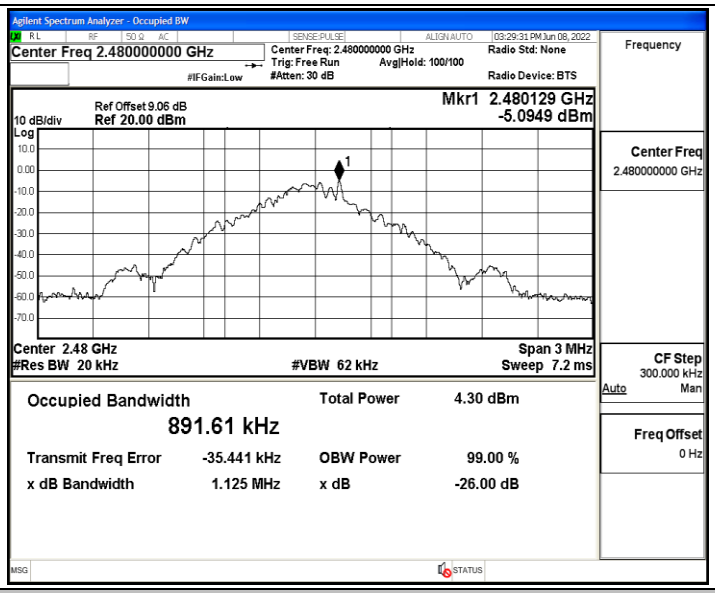
DH5_Ant1_2402



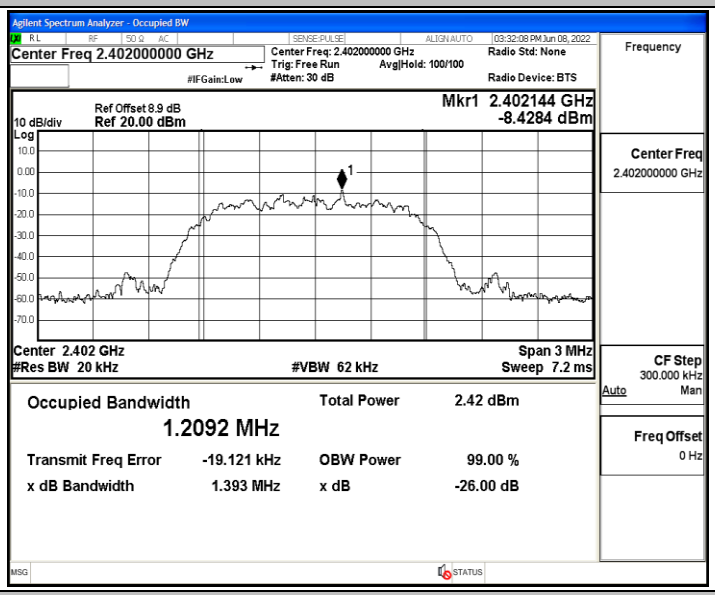
DH5_Ant1_2441



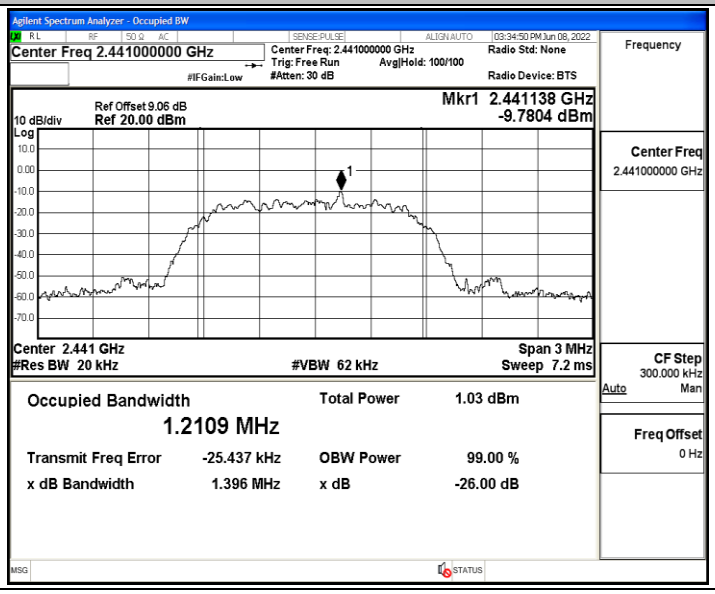
DH5_Ant1_2480



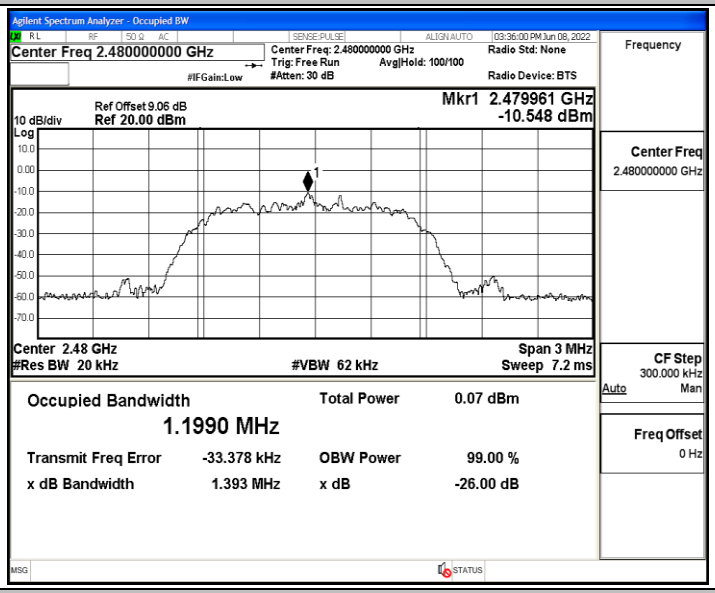
2DH5_Ant1_2402



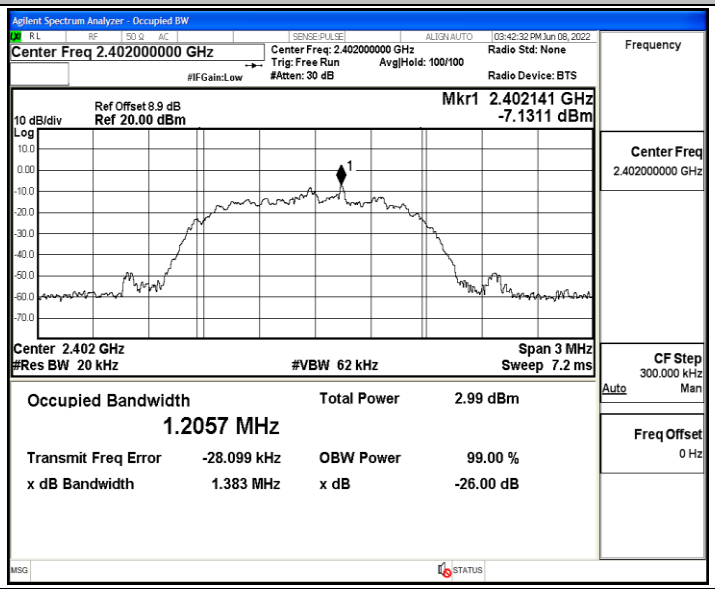
2DH5_Ant1_2441



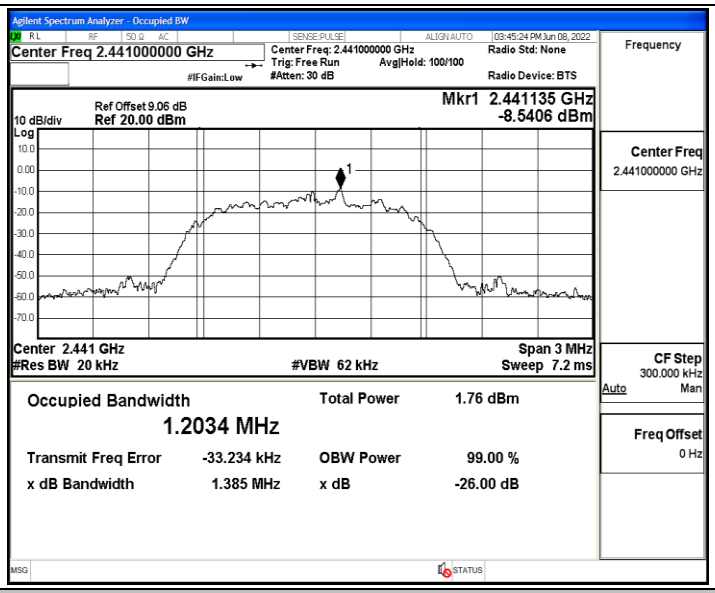
2DH5_Ant1_2480



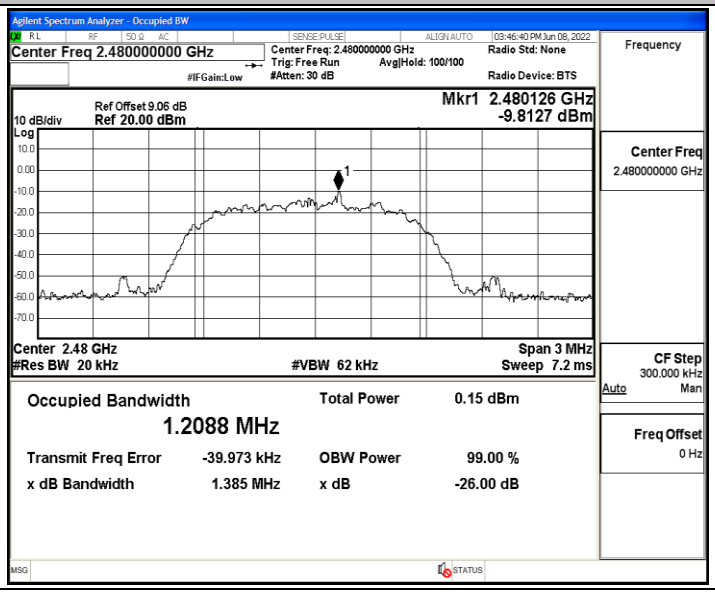
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



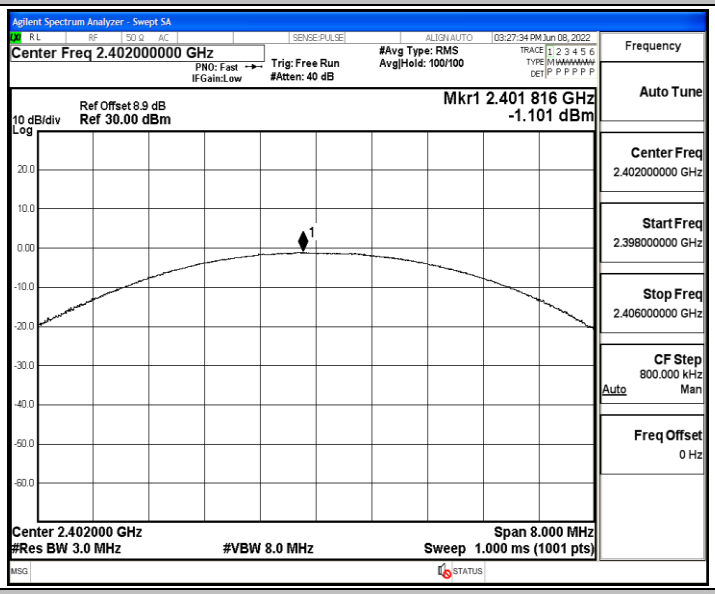
Appendix C: Maximum conducted output power

Test Result

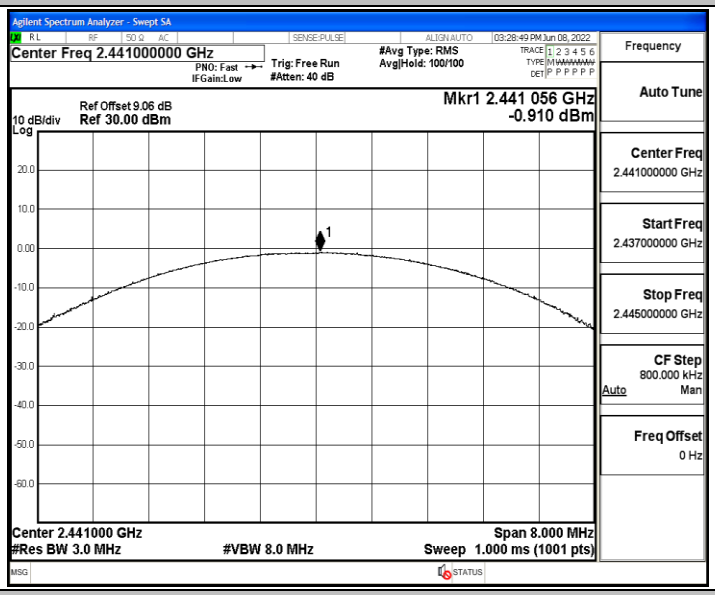
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-1.1	≤20.97	PASS
		2441	-0.91	≤20.97	PASS
		2480	-1.73	≤20.97	PASS
2DH5	Ant1	2402	-1.77	≤20.97	PASS
		2441	-3	≤20.97	PASS
		2480	-4.19	≤20.97	PASS
3DH5	Ant1	2402	-1.12	≤20.97	PASS
		2441	-2.47	≤20.97	PASS
		2480	-3.75	≤20.97	PASS

Test Graphs

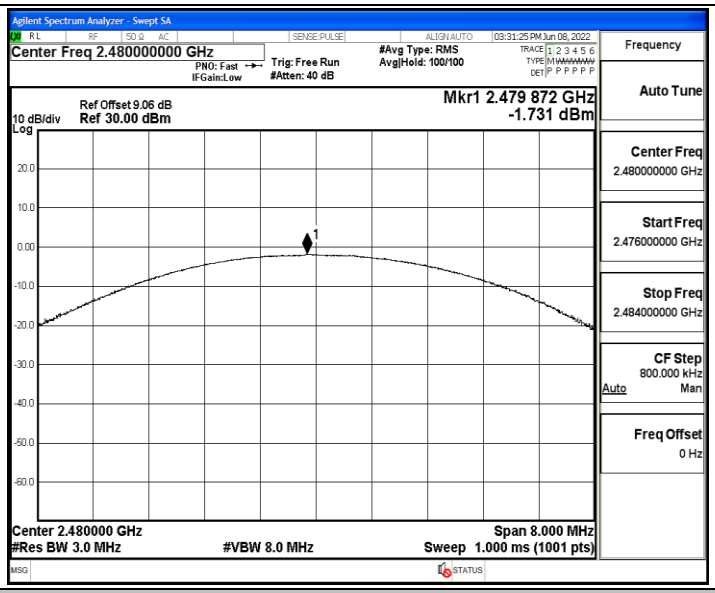
DH5_Ant1_2402



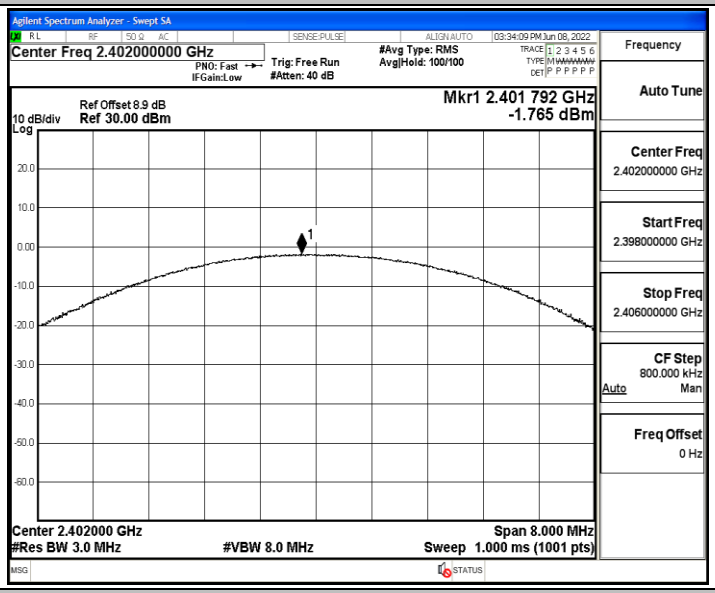
DH5_Ant1_2441



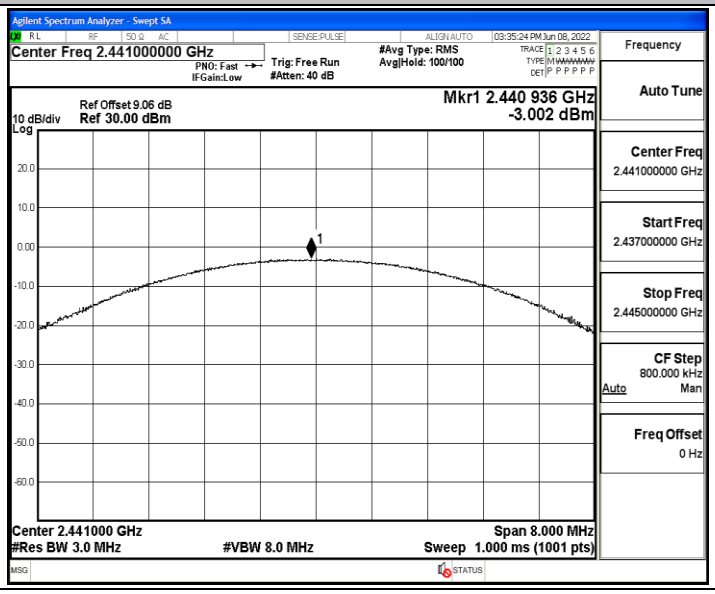
DH5_Ant1_2480



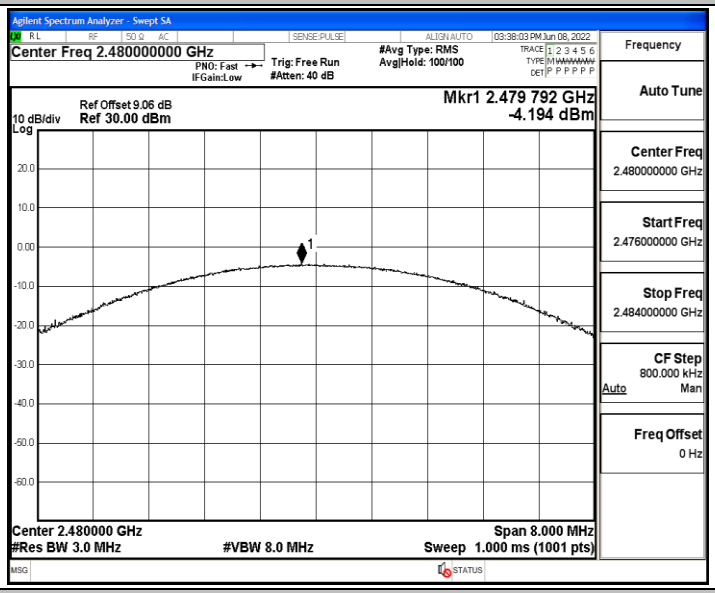
2DH5_Ant1_2402



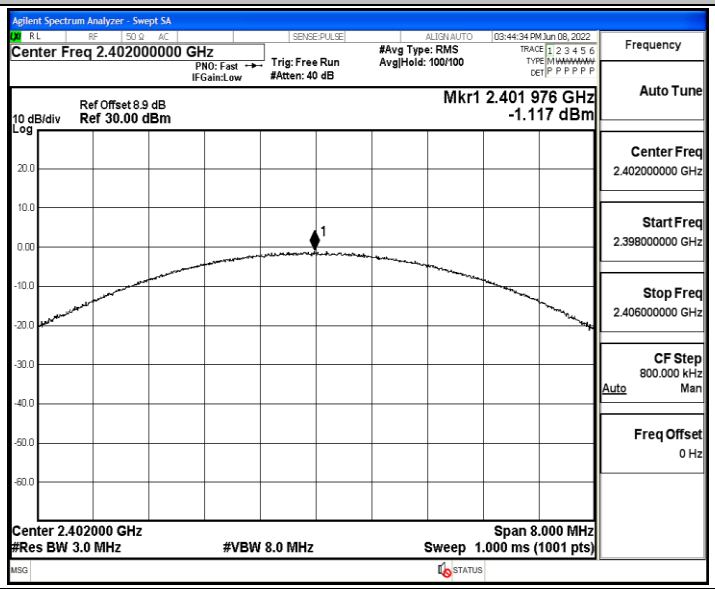
2DH5_Ant1_2441



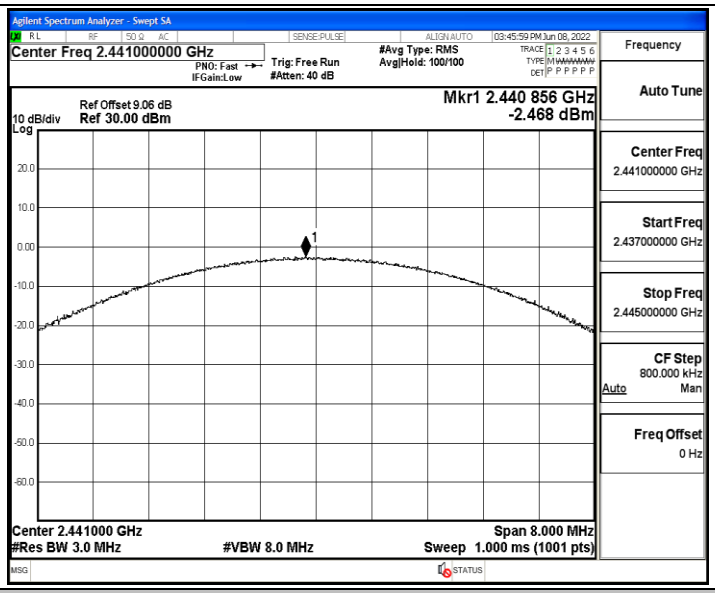
2DH5_Ant1_2480



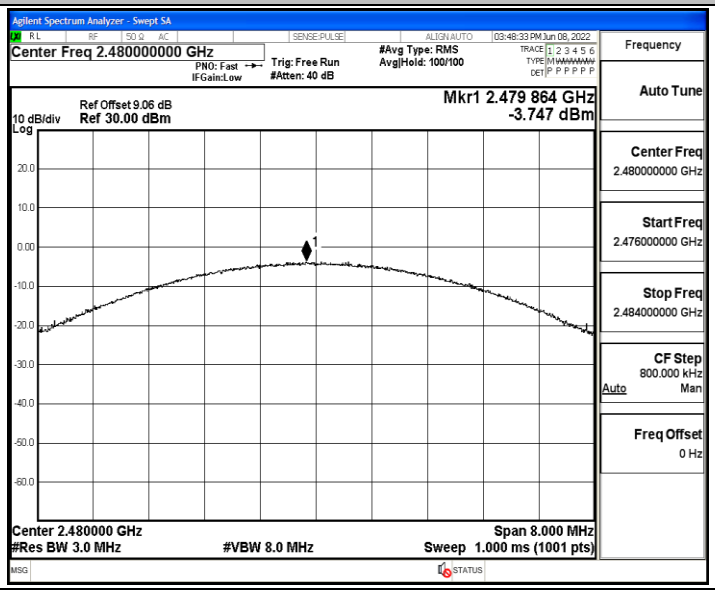
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



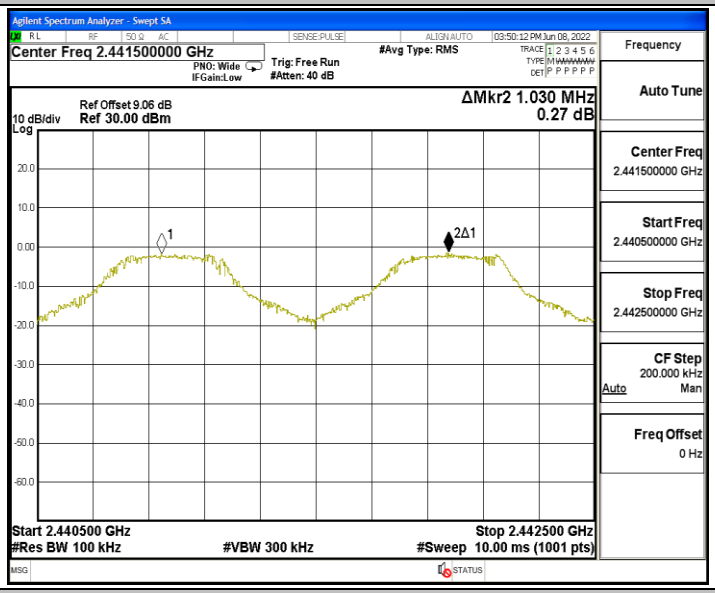
Appendix D: Carrier frequency separation

Test Result

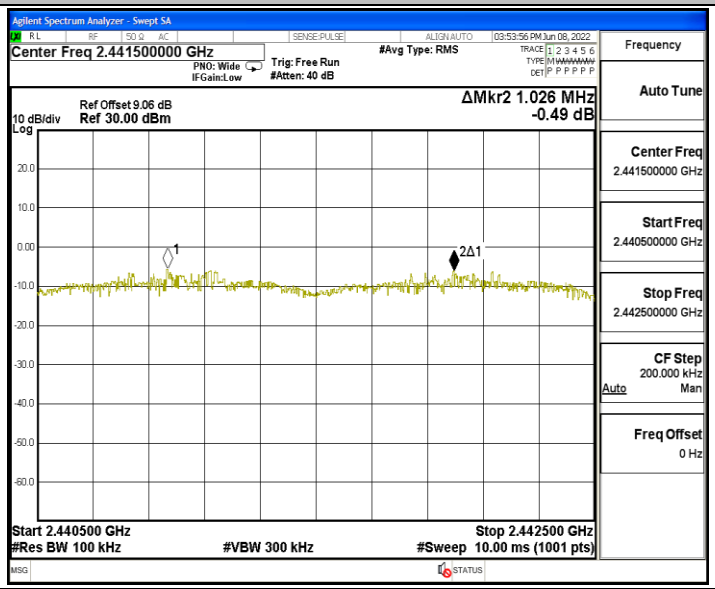
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.03	≥1.029	PASS
2DH5	Ant1	Hop	1.026	≥0.898	PASS
3DH5	Ant1	Hop	0.982	≥0.906	PASS

Test Graphs

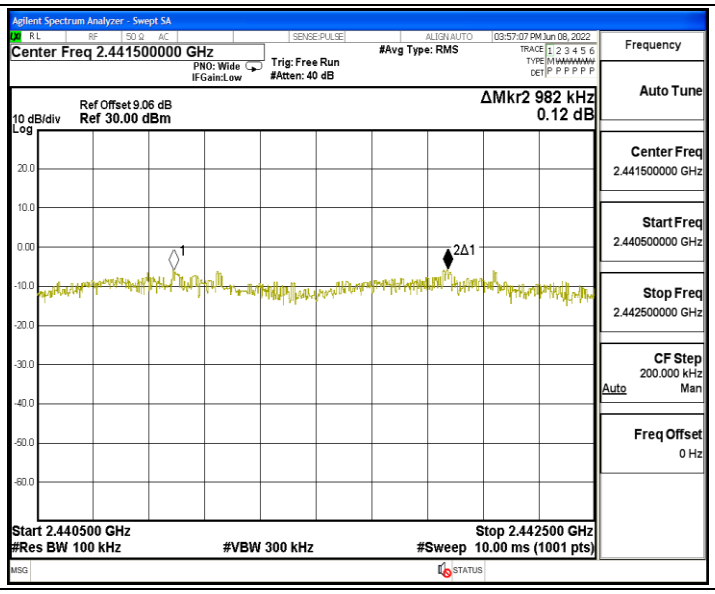
DH5_Ant1_Hop



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
03:57:07 PM Jun 08, 2022
Ref Offset 9.06 dB
10 dB/div Ref 30.00 dBm
Log
ΔMkr2 982 kHz
0.12 dB
Start 2.440500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.442500 GHz
#Sweep 10.00 ms (1001 pts)
Frequency
Auto Tune
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

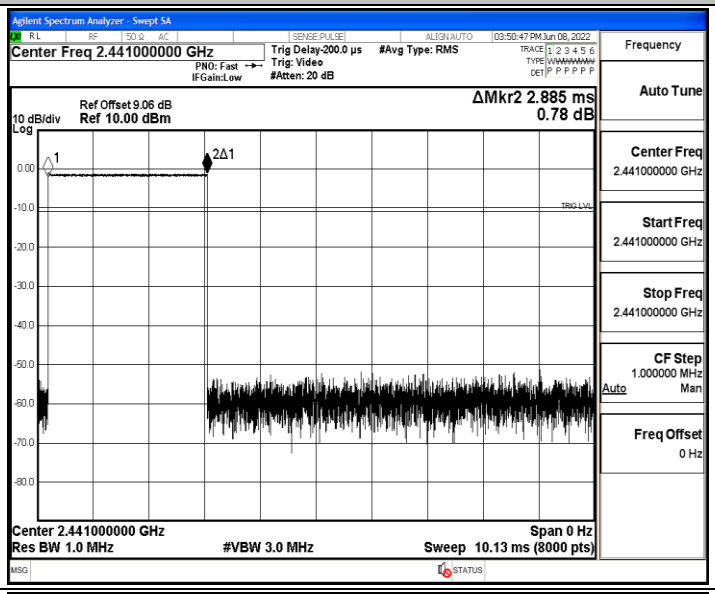
Appendix E: Time of occupancy

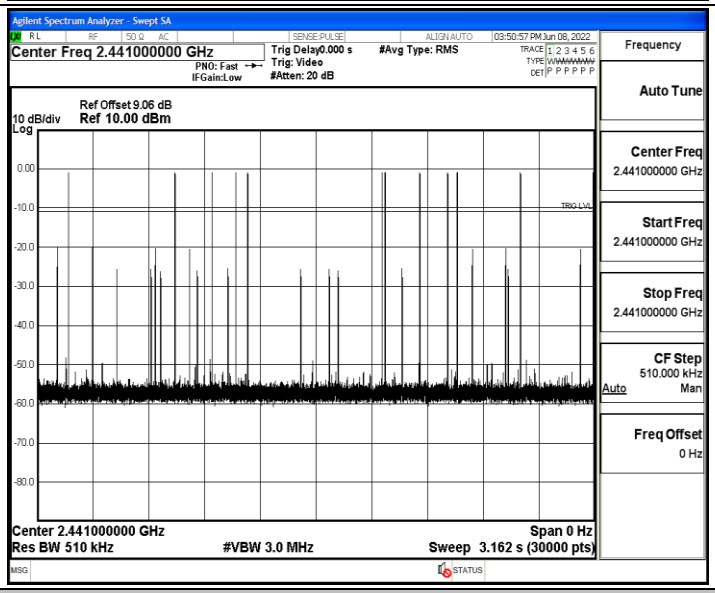
Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	130	0.375	≤0.4	PASS
2DH5	Ant1	Hop	2.89	120	0.347	≤0.4	PASS
3DH5	Ant1	Hop	2.89	120	0.347	≤0.4	PASS

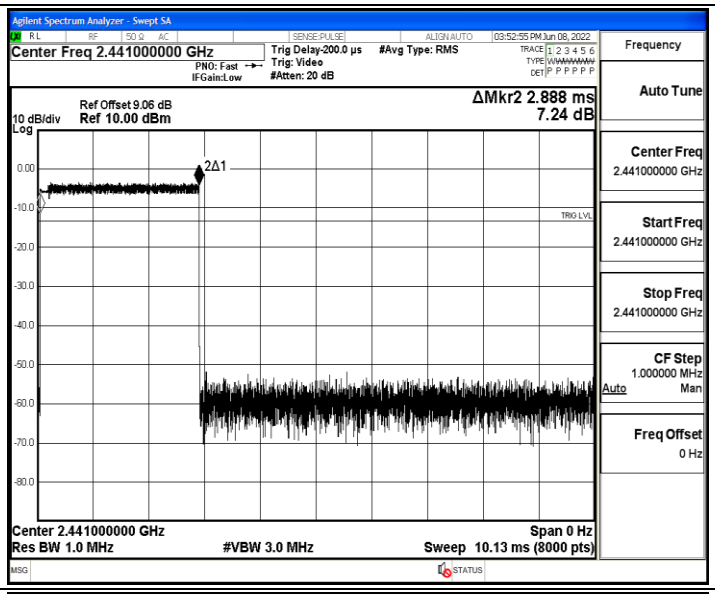
Test Graphs

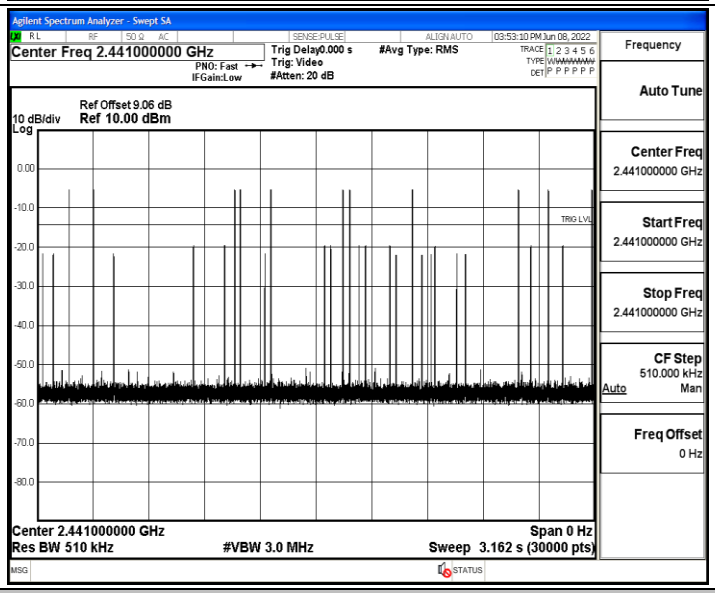
DH5_Ant1_Hop



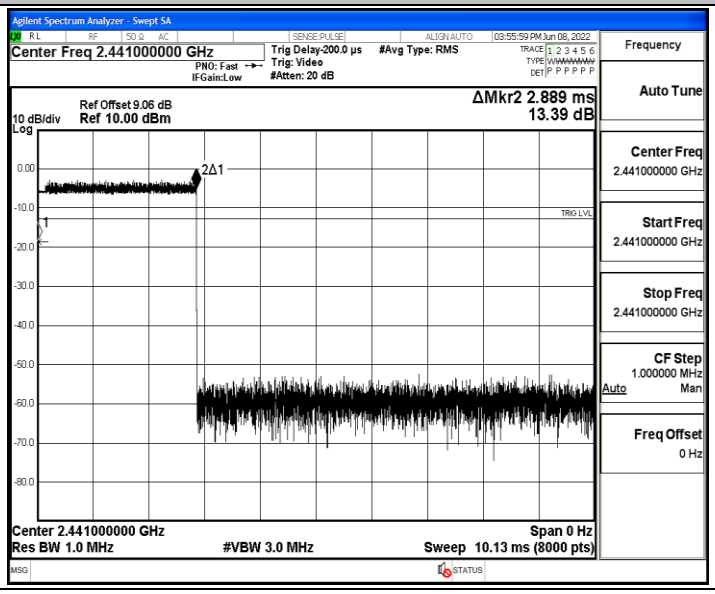


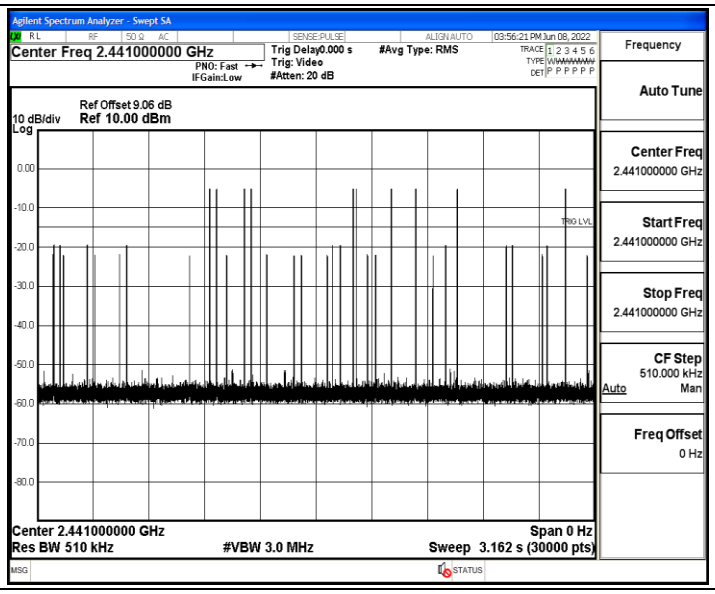
2DH5_Ant1_Hop





3DH5_Ant1_Hop




Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay0.000 s
Trig: Video
#Atten: 20 dB
#Avg Type: RMS
03:56:21 PM Jun 08, 2022
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 9.06 dB
10 dB/div
Ref 10.00 dBm
Log
Center 2.441000000 GHz
Span 0 Hz
Res BW 510 kHz
#VBW 3.0 MHz
Sweep 3.162 s (30000 pts)

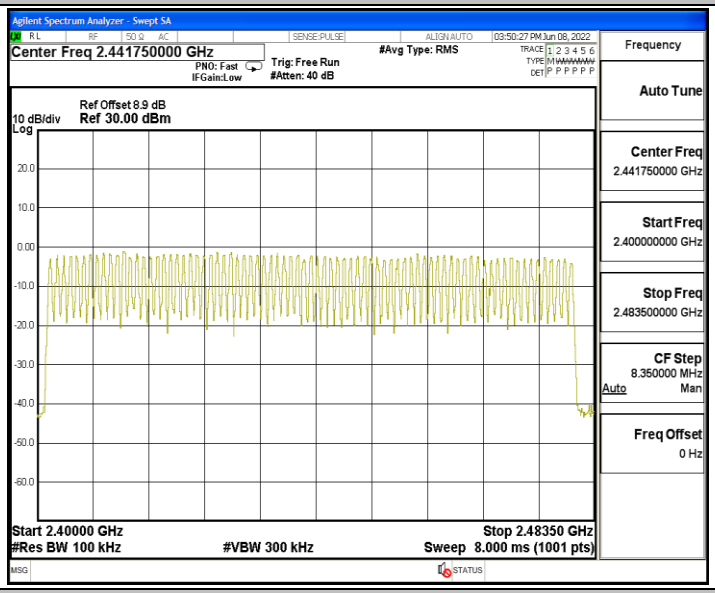
Appendix F: Number of hopping channels

Test Result

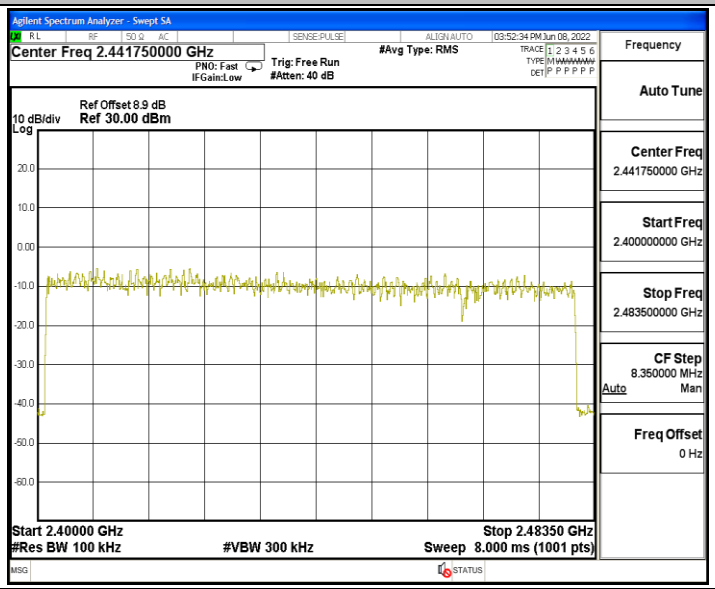
TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

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
03:55:38 PM Jun 08, 2022
Ref Offset 8.9 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

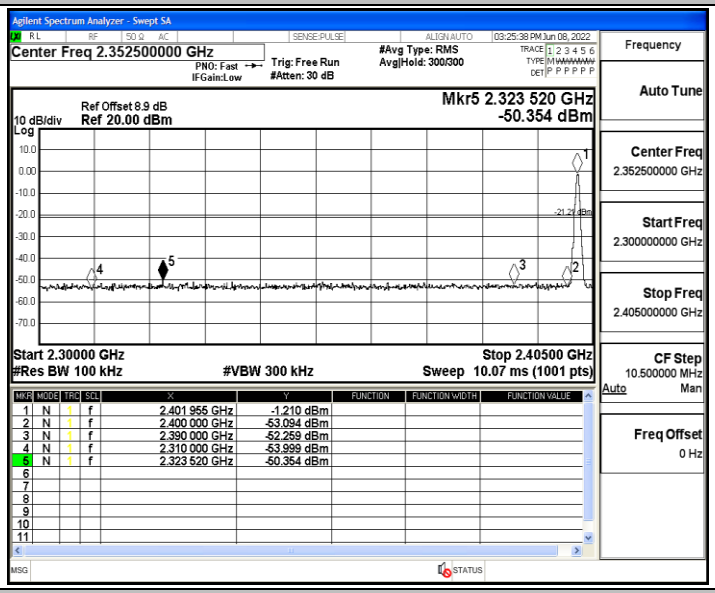
Appendix G: Band edge measurements

Test Result

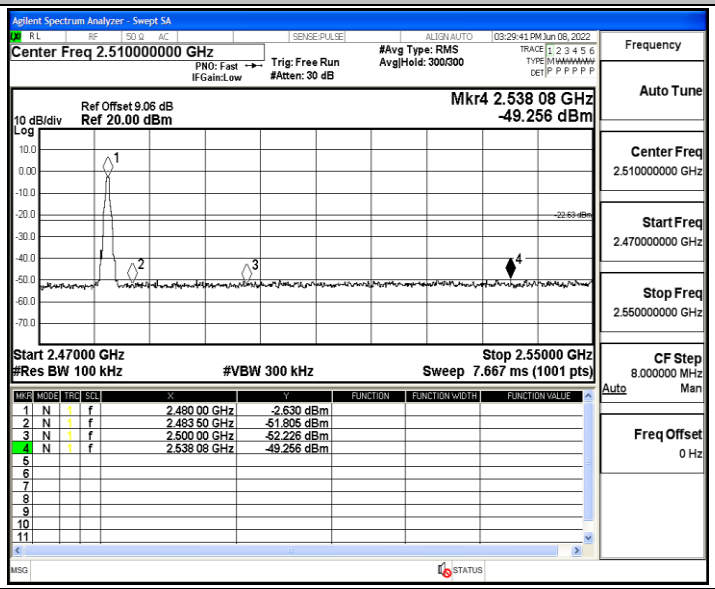
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-1.21	-50.35	≤-21.21	PASS
		High	2480	-2.63	-49.26	≤-22.63	PASS
		Low	Hop_2402	-1.83	-51.06	≤-21.83	PASS
		High	Hop_2480	-2.68	-49.53	≤-22.68	PASS
2DH5	Ant1	Low	2402	-4.33	-50.39	≤-24.33	PASS
		High	2480	-6.94	-49.03	≤-26.94	PASS
		Low	Hop_2402	-7.29	-50.26	≤-27.29	PASS
		High	Hop_2480	-6.45	-48.4	≤-26.45	PASS
3DH5	Ant1	Low	2402	-4.56	-49.64	≤-24.56	PASS
		High	2480	-7.20	-49.12	≤-27.2	PASS
		Low	Hop_2402	-7.01	-50.59	≤-27.01	PASS
		High	Hop_2480	-6.67	-48	≤-26.67	PASS

Test Graphs

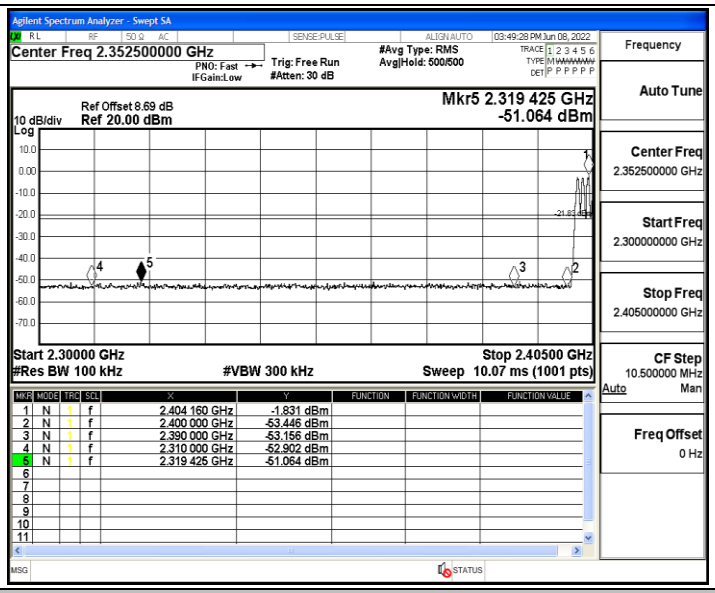
DH5_Ant1_Low_2402



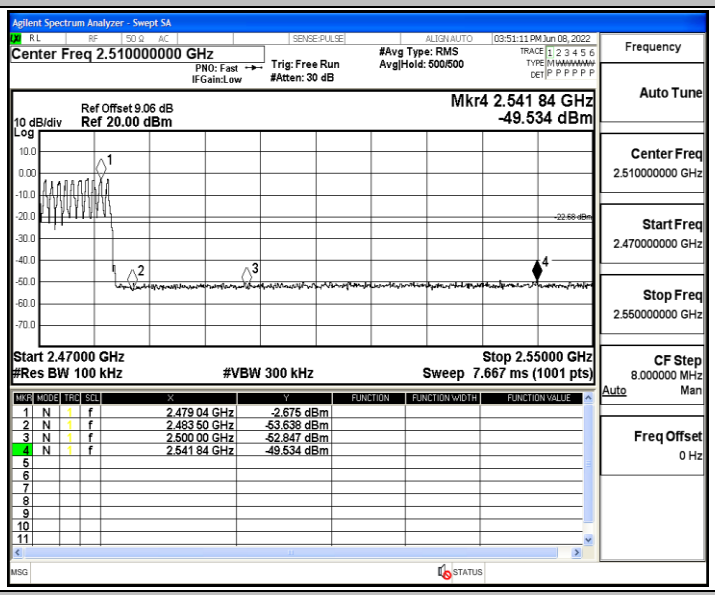
DH5_Ant1_High_2480



DH5_Ant1_Low_Hop_2402



DH5_Ant1_High_Hop_2480



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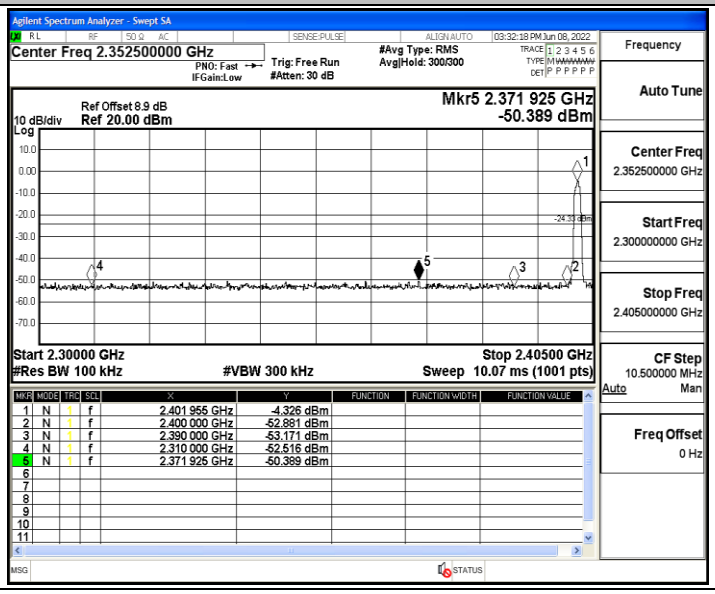
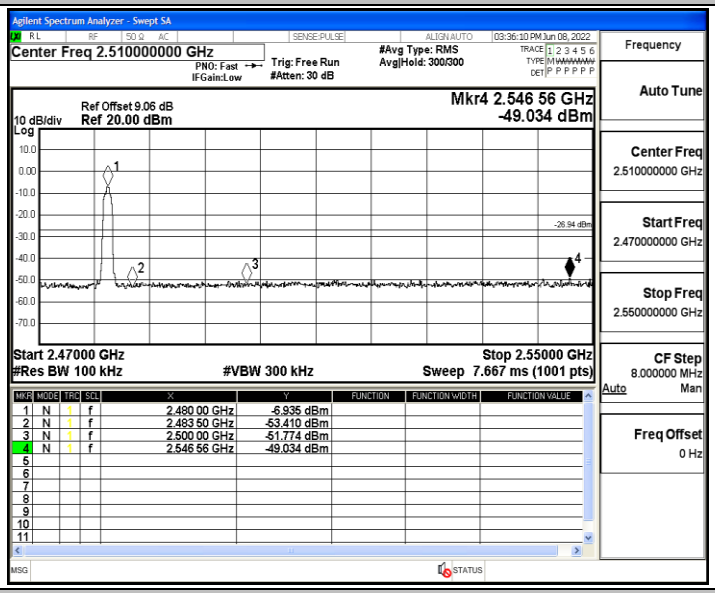


2DH5_Ant1_High_2480



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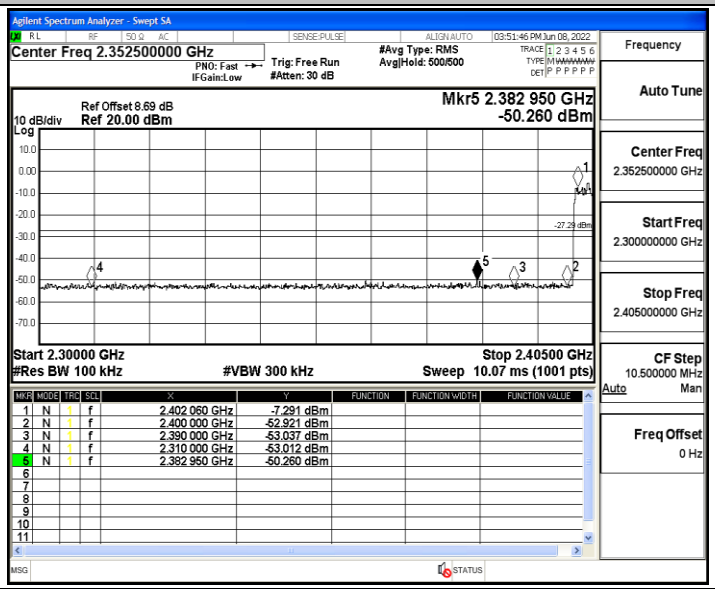

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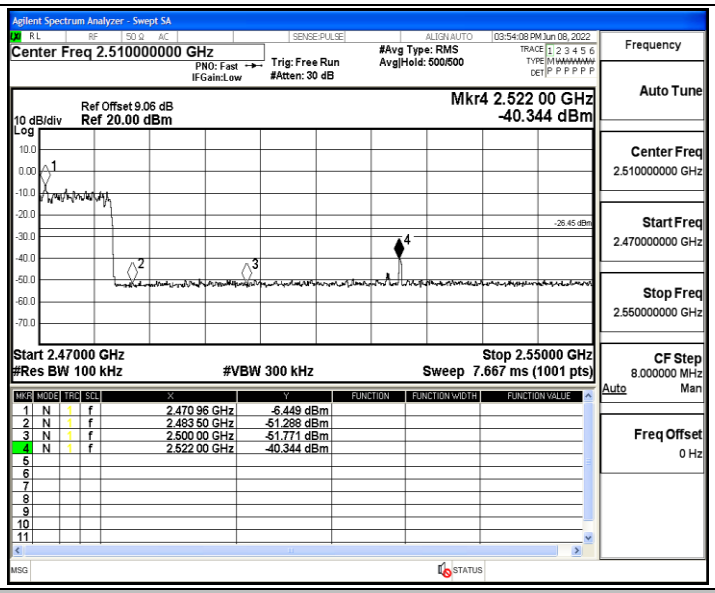
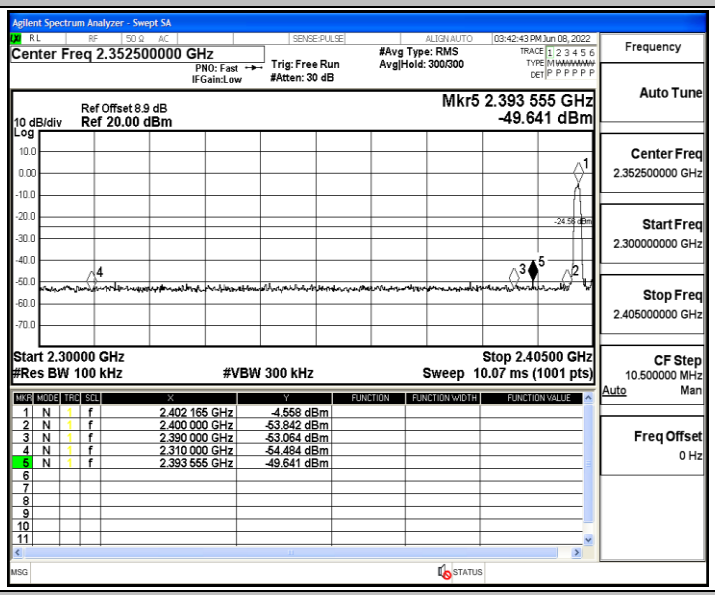
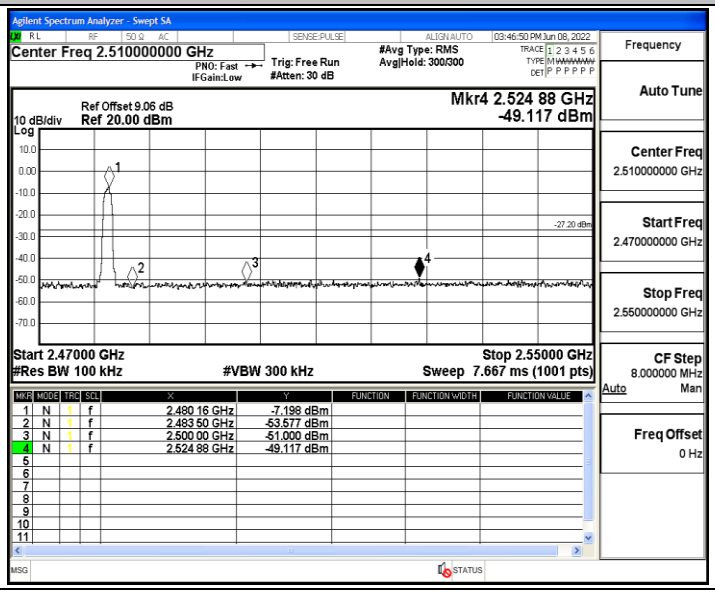


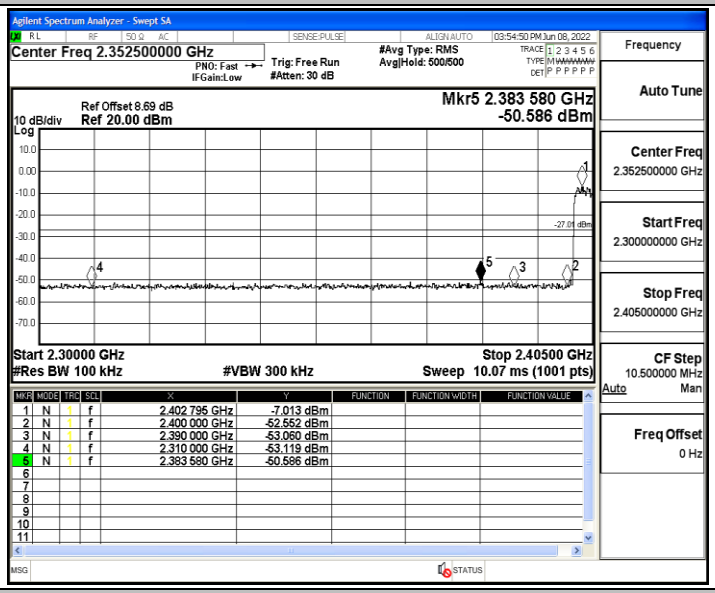
3DH5_Ant1_Low_2402



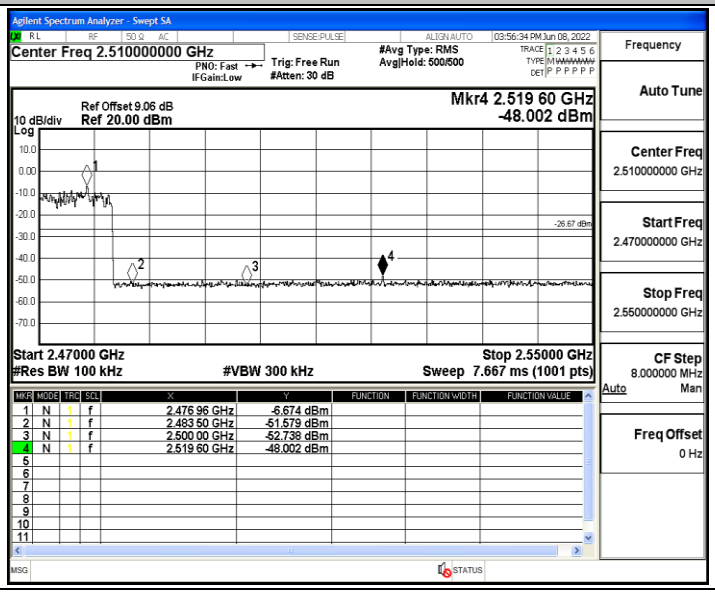
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



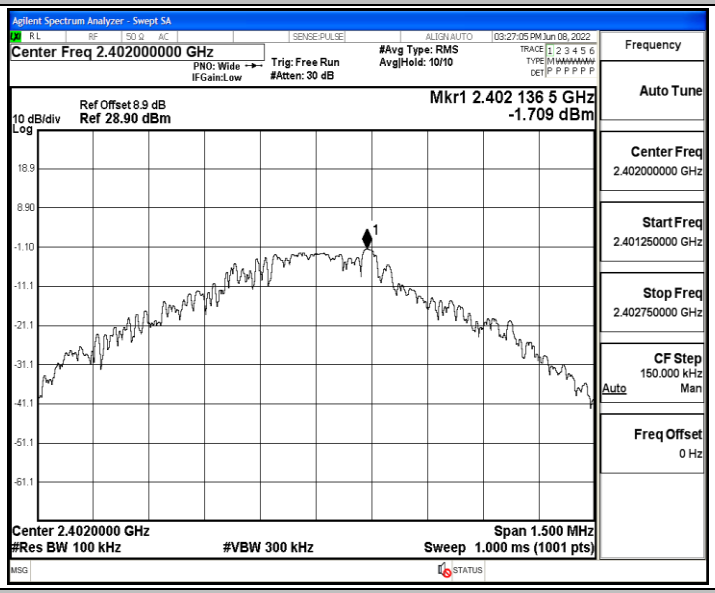
Appendix H: Conducted Spurious Emission

Test Result

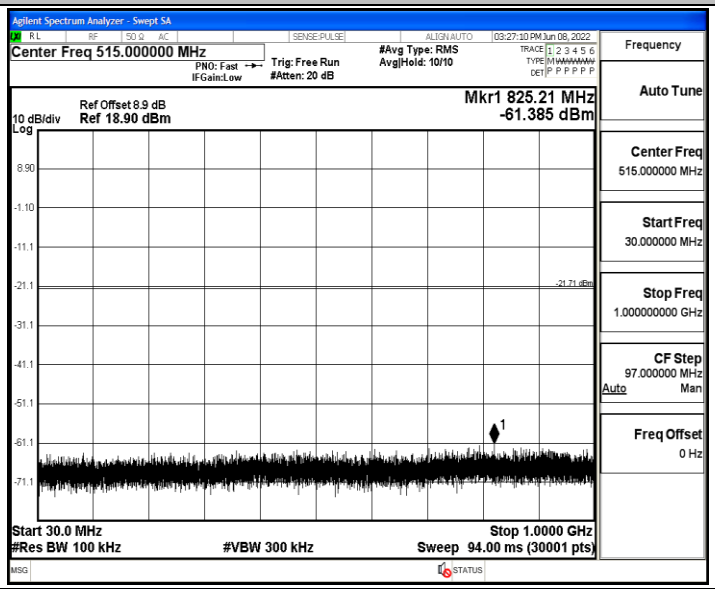
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-1.71	-1.71	---	PASS
			30~1000	-1.71	-61.39	≤-21.71	PASS
			1000~26500	-1.71	-51.84	≤-21.71	PASS
		2441	Reference	-1.79	-1.79	---	PASS
			30~1000	-1.79	-61.06	≤-21.79	PASS
			1000~26500	-1.79	-52	≤-21.79	PASS
		2480	Reference	-3.11	-3.11	---	PASS
			30~1000	-3.11	-61.29	≤-23.11	PASS
			1000~26500	-3.11	-50.63	≤-23.11	PASS
2DH5	Ant1	2402	Reference	-6.52	-6.52	---	PASS
			30~1000	-6.52	-61.85	≤-26.52	PASS
			1000~26500	-6.52	-50.11	≤-26.52	PASS
		2441	Reference	-7.58	-7.58	---	PASS
			30~1000	-7.58	-61.84	≤-27.58	PASS
			1000~26500	-7.58	-50.56	≤-27.58	PASS
		2480	Reference	-8.20	-8.20	---	PASS
			30~1000	-8.20	-57.37	≤-28.2	PASS
			1000~26500	-8.20	-51.76	≤-28.2	PASS
3DH5	Ant1	2402	Reference	-6.04	-6.04	---	PASS
			30~1000	-6.04	-60.98	≤-26.04	PASS
			1000~26500	-6.04	-51.18	≤-26.04	PASS
		2441	Reference	-7.51	-7.51	---	PASS
			30~1000	-7.51	-61.41	≤-27.51	PASS
			1000~26500	-7.51	-51.27	≤-27.51	PASS
		2480	Reference	-7.32	-7.32	---	PASS
			30~1000	-7.32	-60.45	≤-27.32	PASS
			1000~26500	-7.32	-51.44	≤-27.32	PASS

Test Graphs

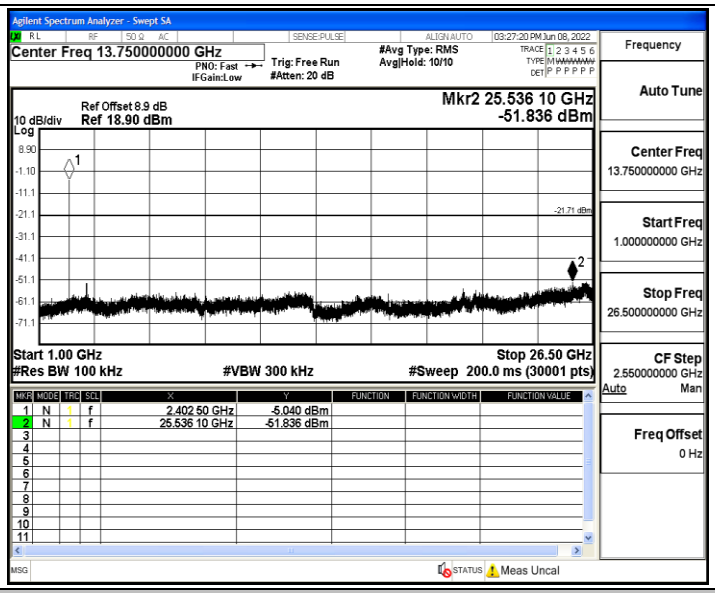
DH5_Ant1_2402_0~Reference



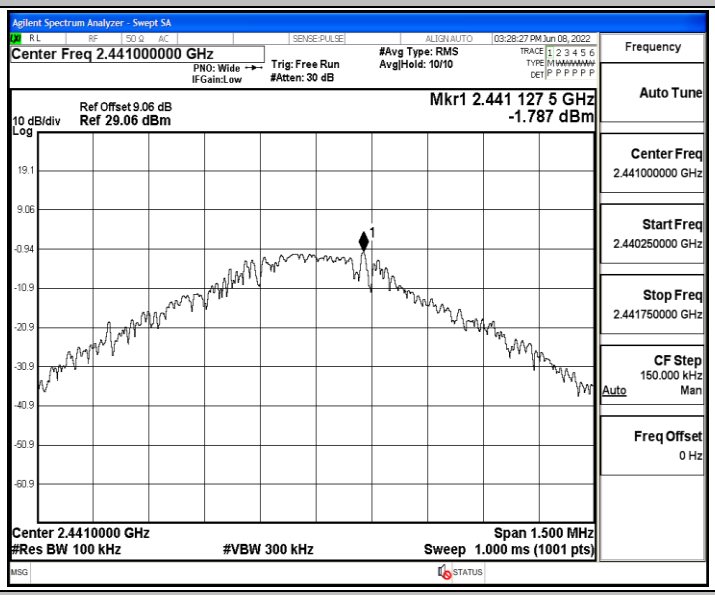
DH5_Ant1_2402_30~1000



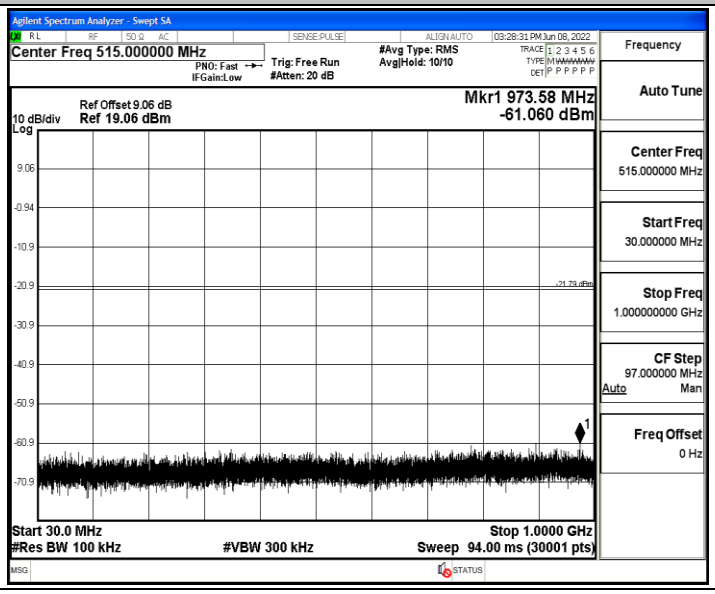
DH5_Ant1_2402_1000~26500



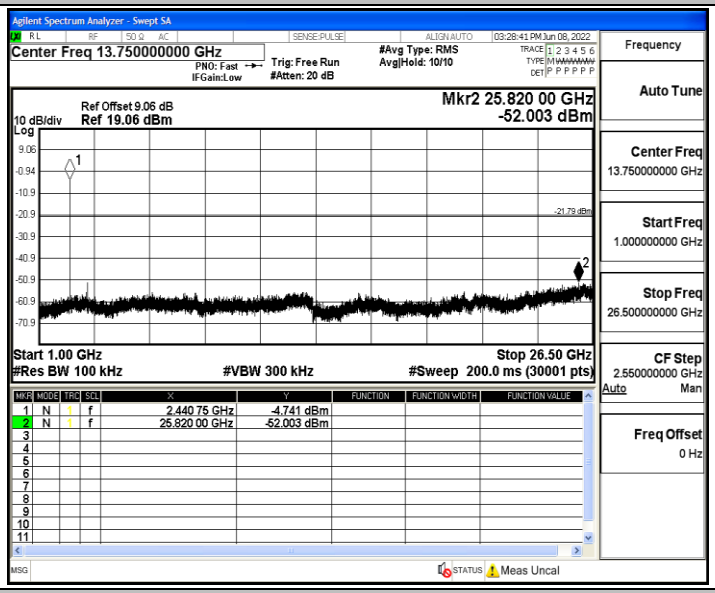
DH5_Ant1_2441_0~Reference



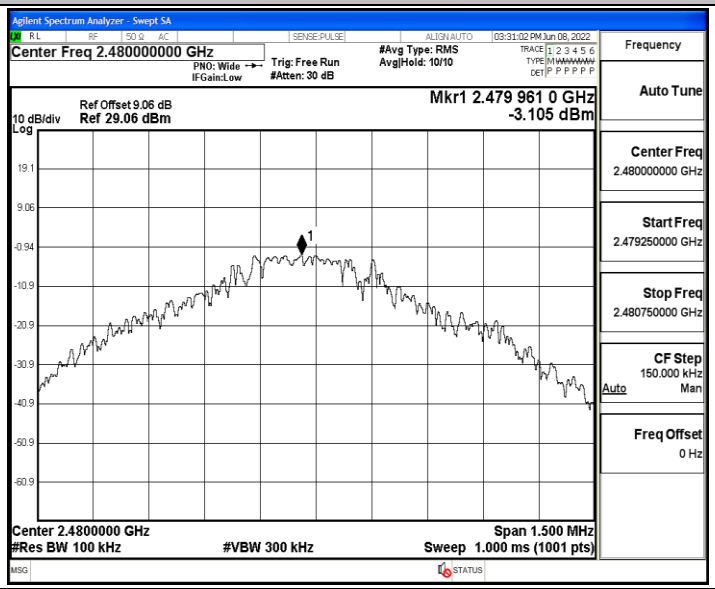
DH5_Ant1_2441_30~1000



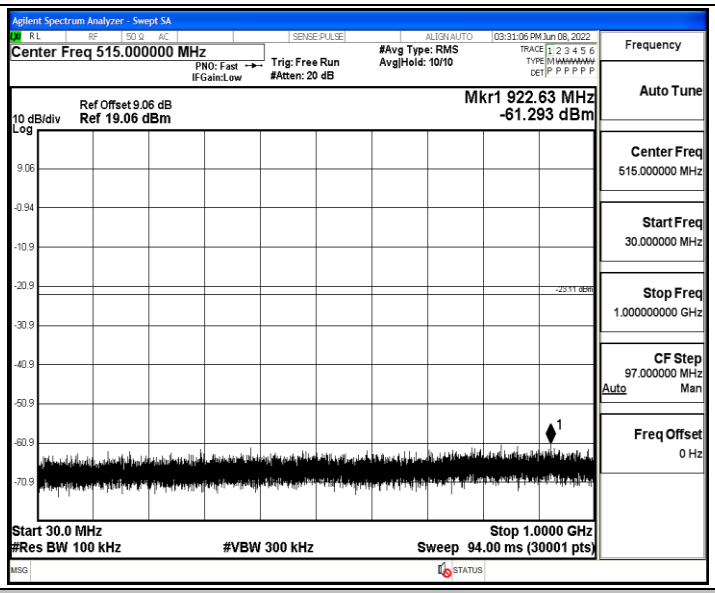
DH5_Ant1_2441_1000~26500



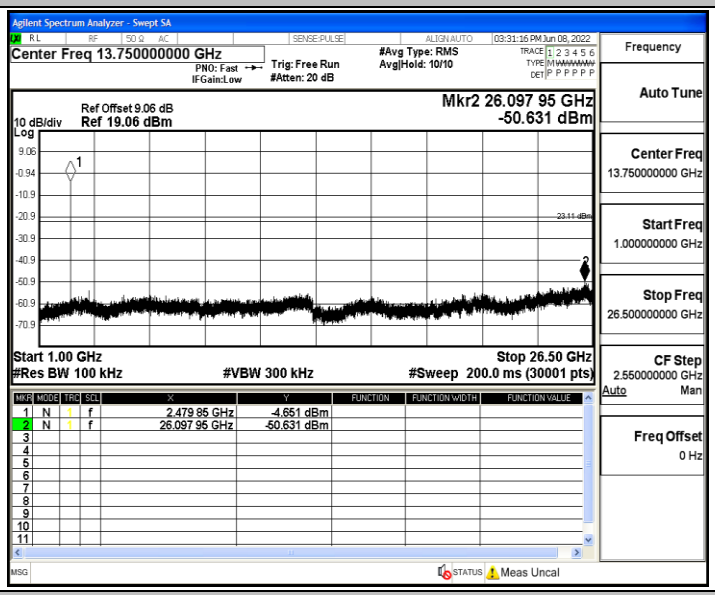
DH5_Ant1_2480_0~Reference



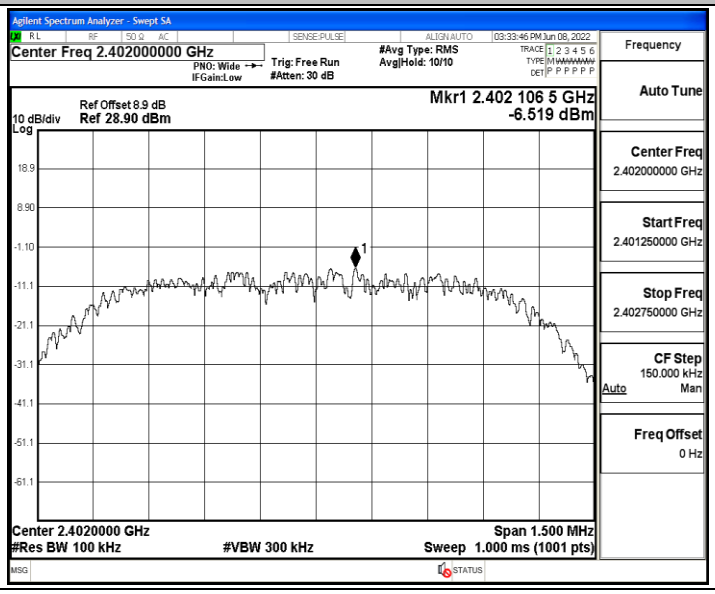
DH5_Ant1_2480_30~1000



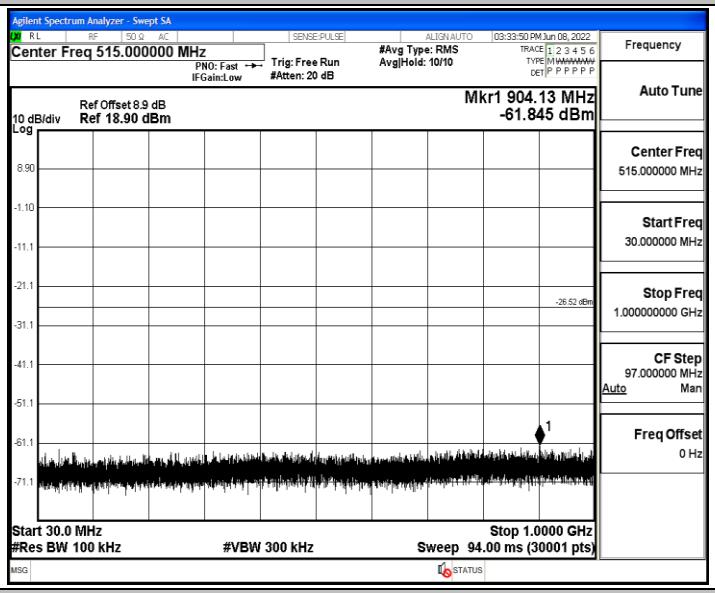
DH5_Ant1_2480_1000~26500



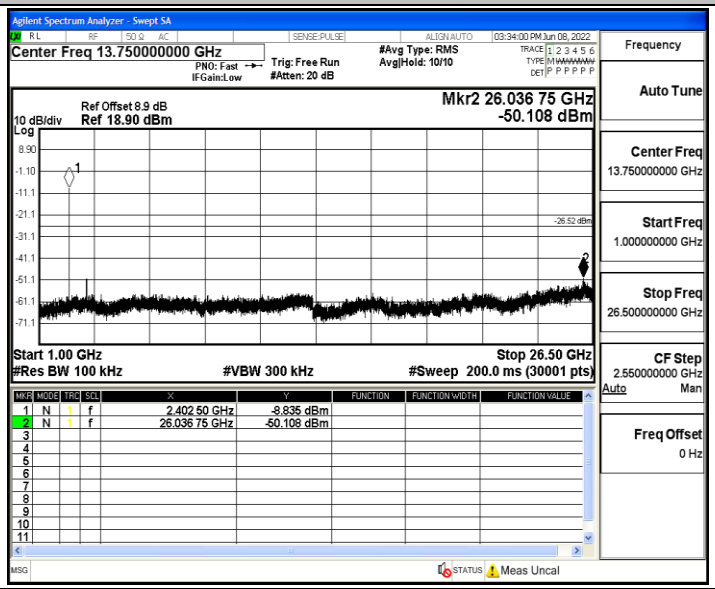
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



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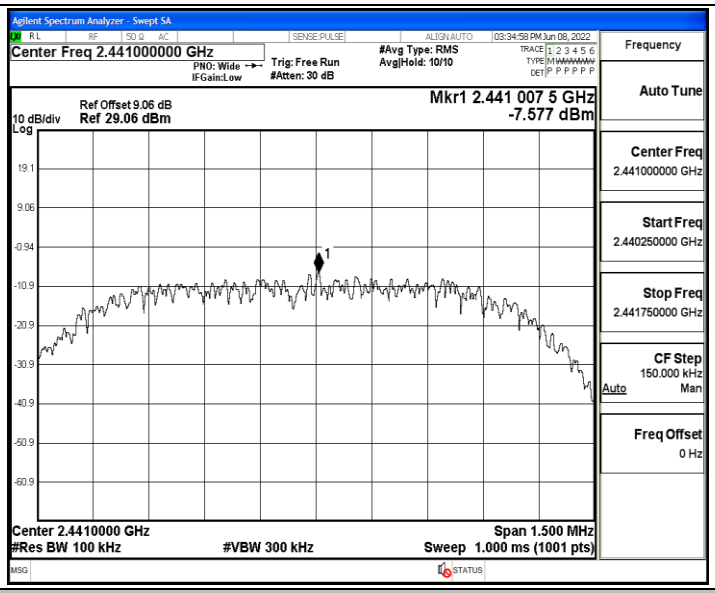
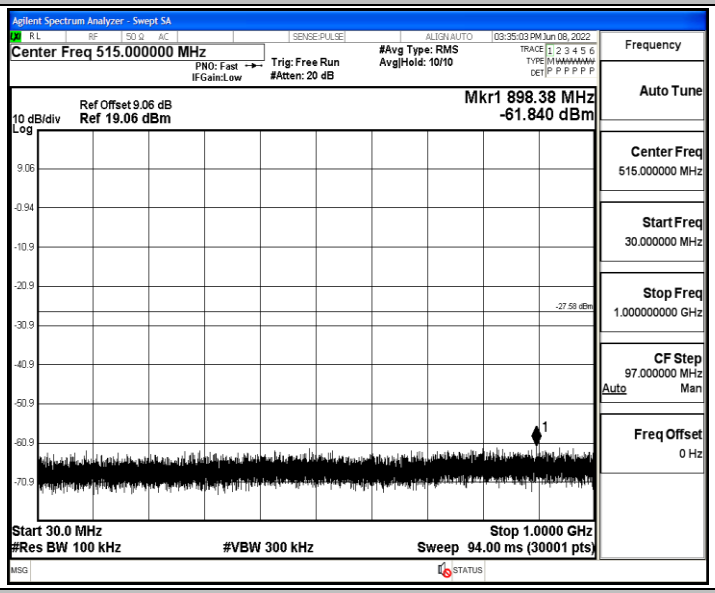
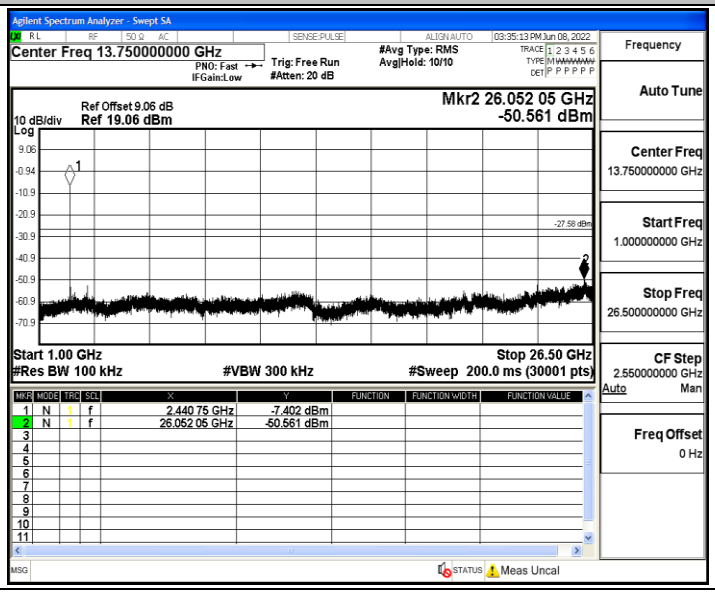


2DH5_Ant1_2441_30~1000



2DH5_Ant1_2441_1000~26500



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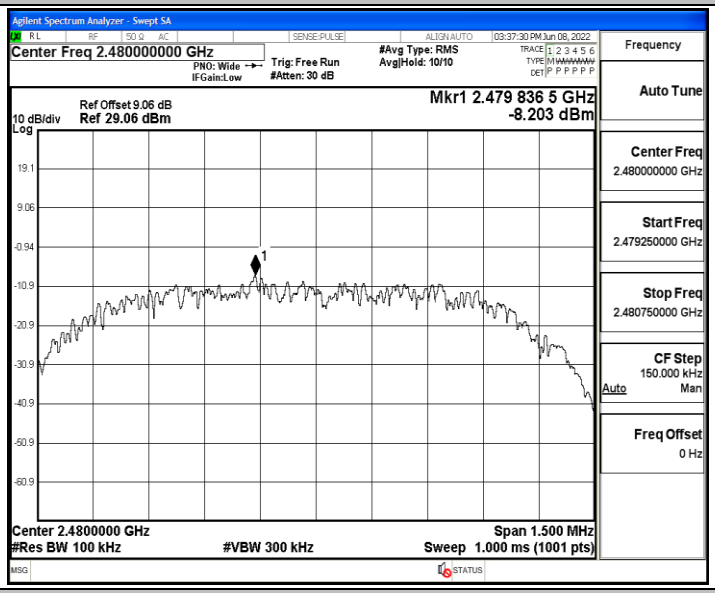
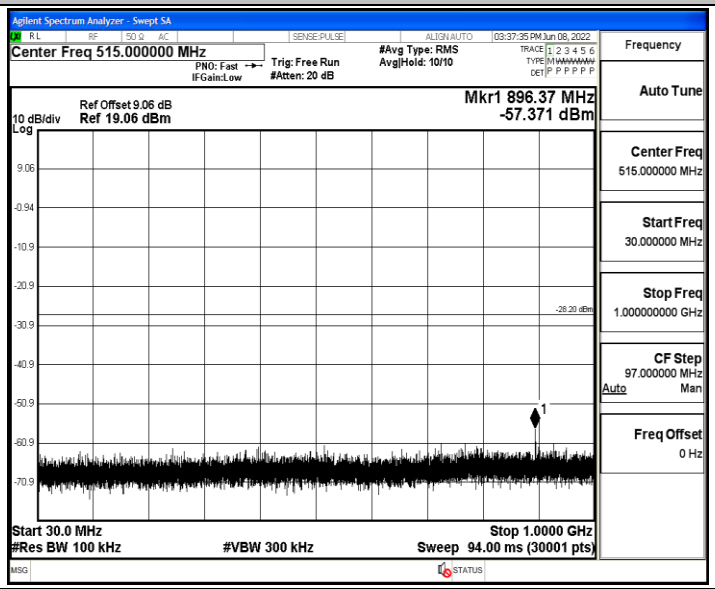
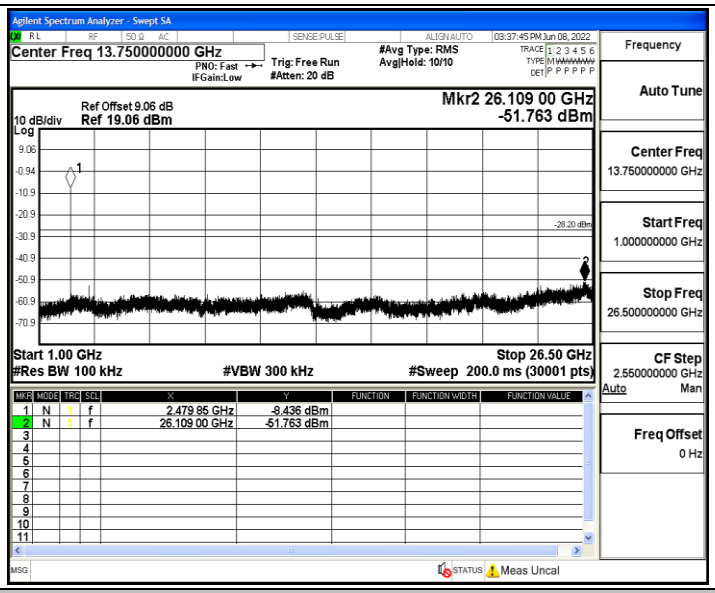


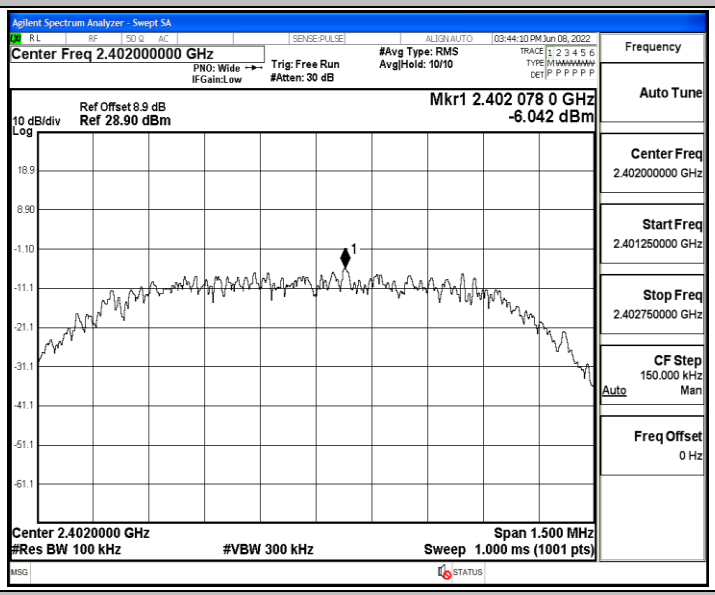
2DH5_Ant1_2480_30~1000



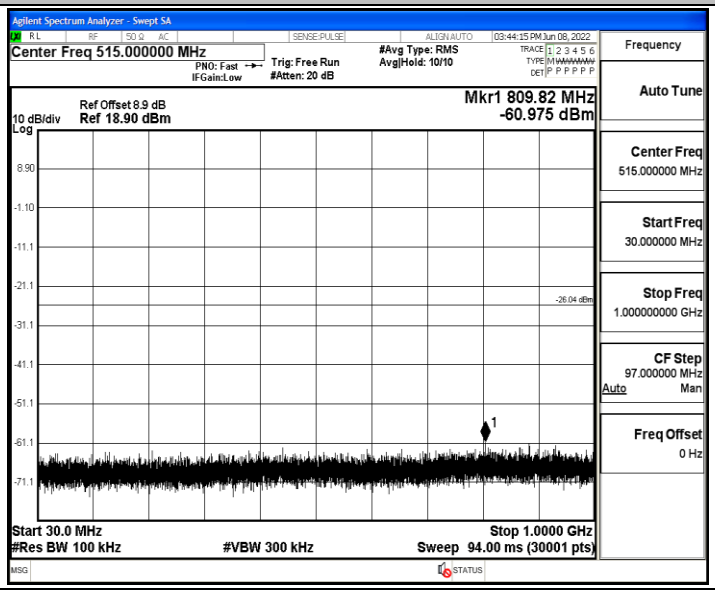
2DH5_Ant1_2480_1000~26500



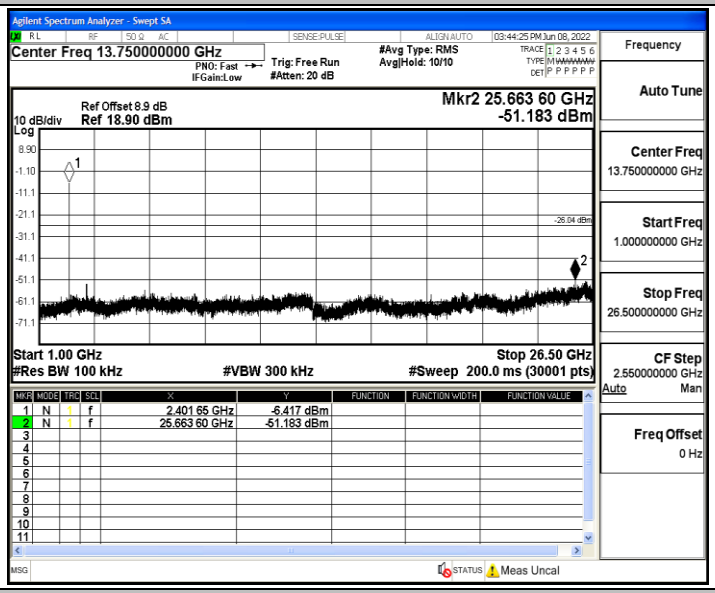
3DH5_Ant1_2402_0~Reference



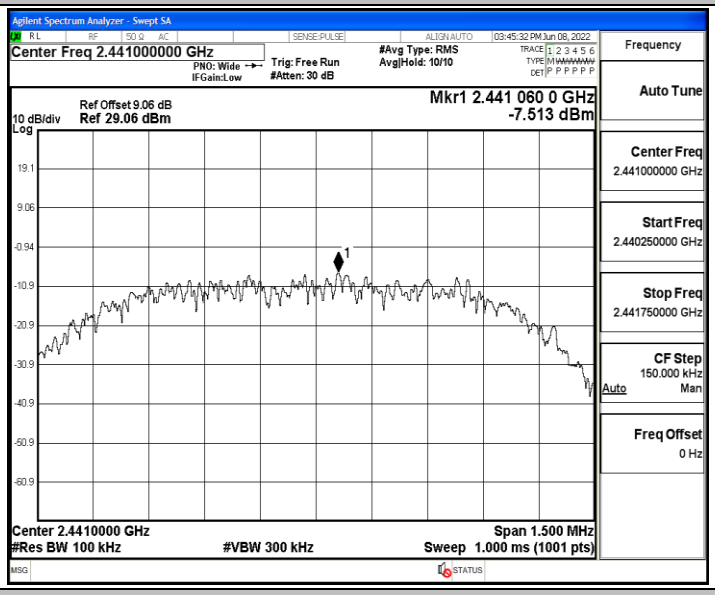
3DH5_Ant1_2402_30~1000



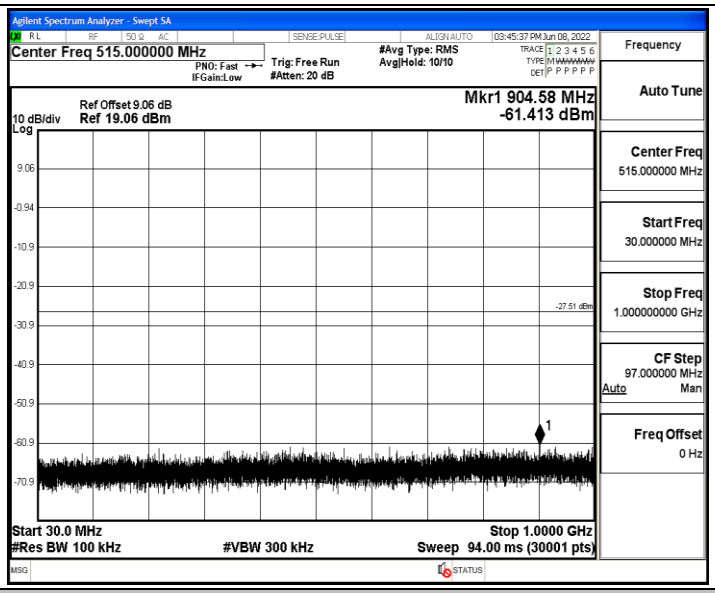
3DH5_Ant1_2402_1000~26500



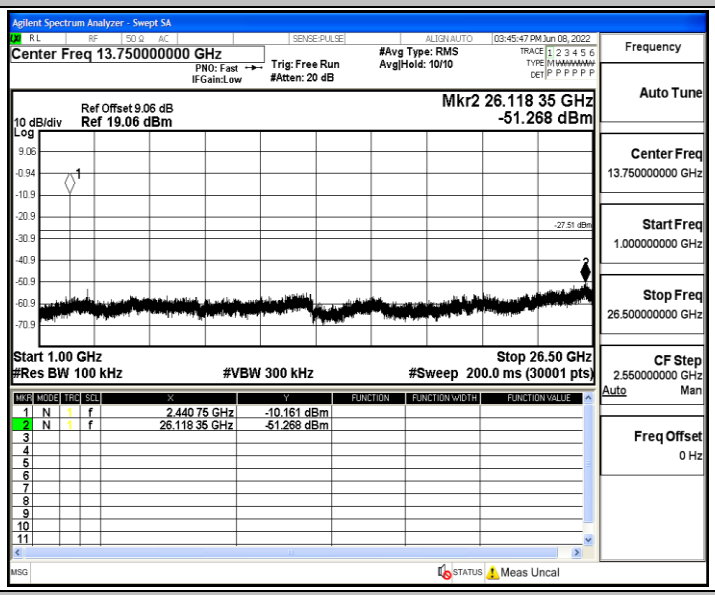
3DH5_Ant1_2441_0~Reference



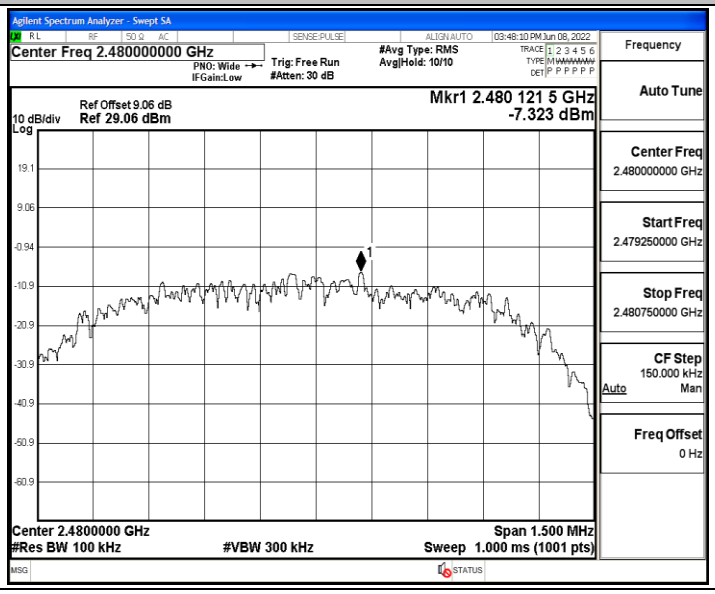
3DH5_Ant1_2441_30~1000



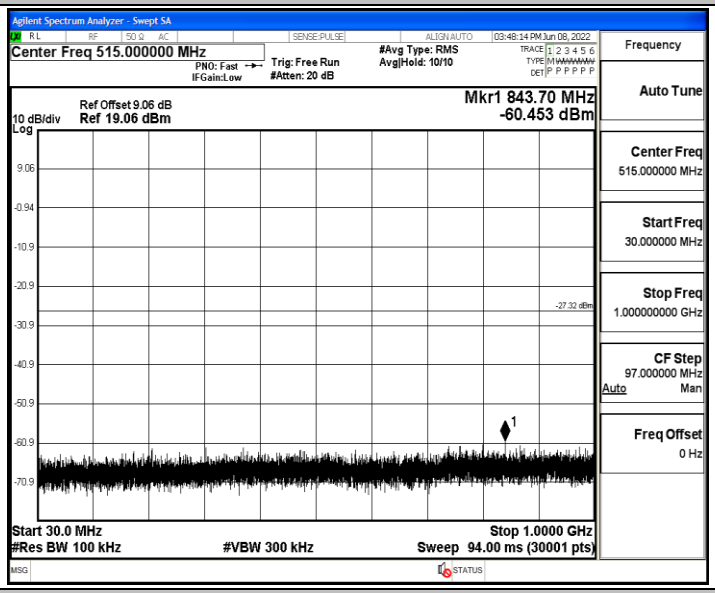
3DH5_Ant1_2441_1000~26500



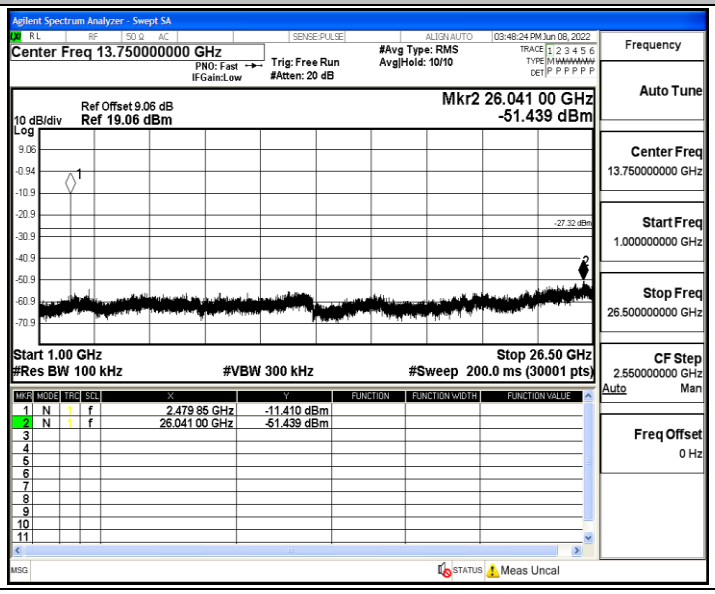
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



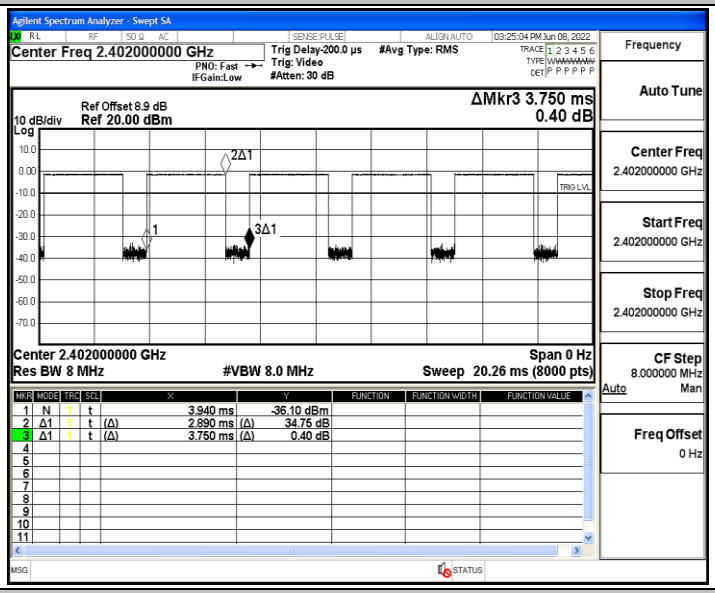
Appendix I: Duty Cycle

Test Result

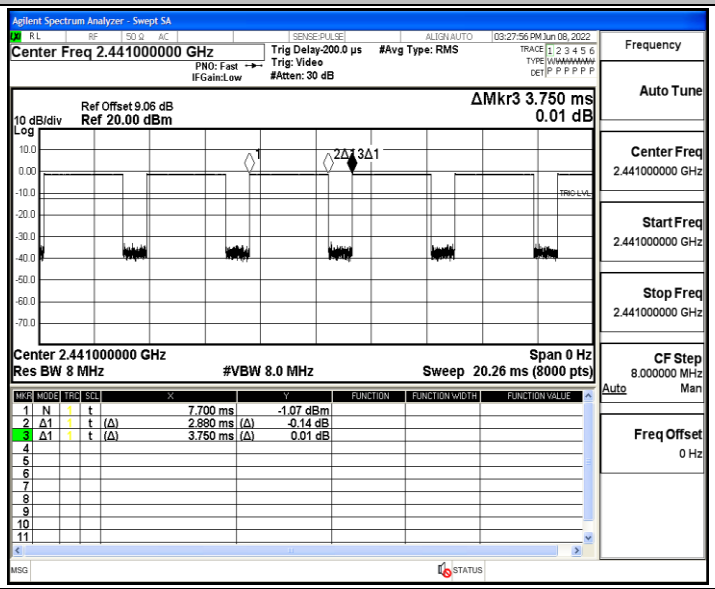
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
DH5	Ant1	2402	2.89	3.75	77.07	0.35
		2441	2.88	3.75	76.80	0.35
		2480	2.88	3.75	76.80	0.35
2DH5	Ant1	2402	2.89	3.75	77.07	0.35
		2441	2.89	3.75	77.07	0.35
		2480	2.89	3.75	77.07	0.35
3DH5	Ant1	2402	2.89	3.75	77.07	0.35
		2441	2.89	3.75	77.07	0.35
		2480	2.89	3.75	77.07	0.35

Test Graphs

DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480