

FCC Appendix RF Test Data for BT

FCC ID : 2BLG9-CP-FC203

Company : Nework LLC

EUT : FreeChat 203

Model Number : CP-FC203

Report No. : CTA26070201001

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	0.942	2401.553	2402.495	---	---
		2441	0.957	2440.547	2441.504	---	---
		2480	0.933	2479.547	2480.480	---	---
2DH5	Ant1	2402	1.290	2401.376	2402.666	---	---
		2441	1.287	2440.376	2441.663	---	---
		2480	1.278	2479.379	2480.657	---	---

DH5_Ant1_2402

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.402000000 GHz

Ref Offset 0.4 dB
Ref 30.00 dBm

Trig: Free Run
#Ave: 40 dB

#Avg Type: RMS
AvgHold: 100/100

Span 3.000 MHz
Sweep 3.200 ms (1001 pts)

#Res BW 30 kHz
#VBW 100 kHz

MNR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401553 GHz	-25.122 dBm			
2	N	1	f	2.402012 GHz	-4.907 dBm			
3	A1	1	f (Δ)	942 kHz (Δ)	0.177 dB			

DH5_Ant1_2441

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.441000000 GHz

Ref Offset 0.4 dB
Ref 30.00 dBm

Trig: Free Run
#Ave: 40 dB

#Avg Type: RMS
AvgHold: 100/100

Span 3.000 MHz
Sweep 3.200 ms (1001 pts)

#Res BW 30 kHz
#VBW 100 kHz

MNR	MODE	TRC	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.440547 GHz	-26.668 dBm			
2	N	1	f	2.441003 GHz	-6.310 dBm			
3	A1	1	f (Δ)	957 kHz (Δ)	-0.161 dB			



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480

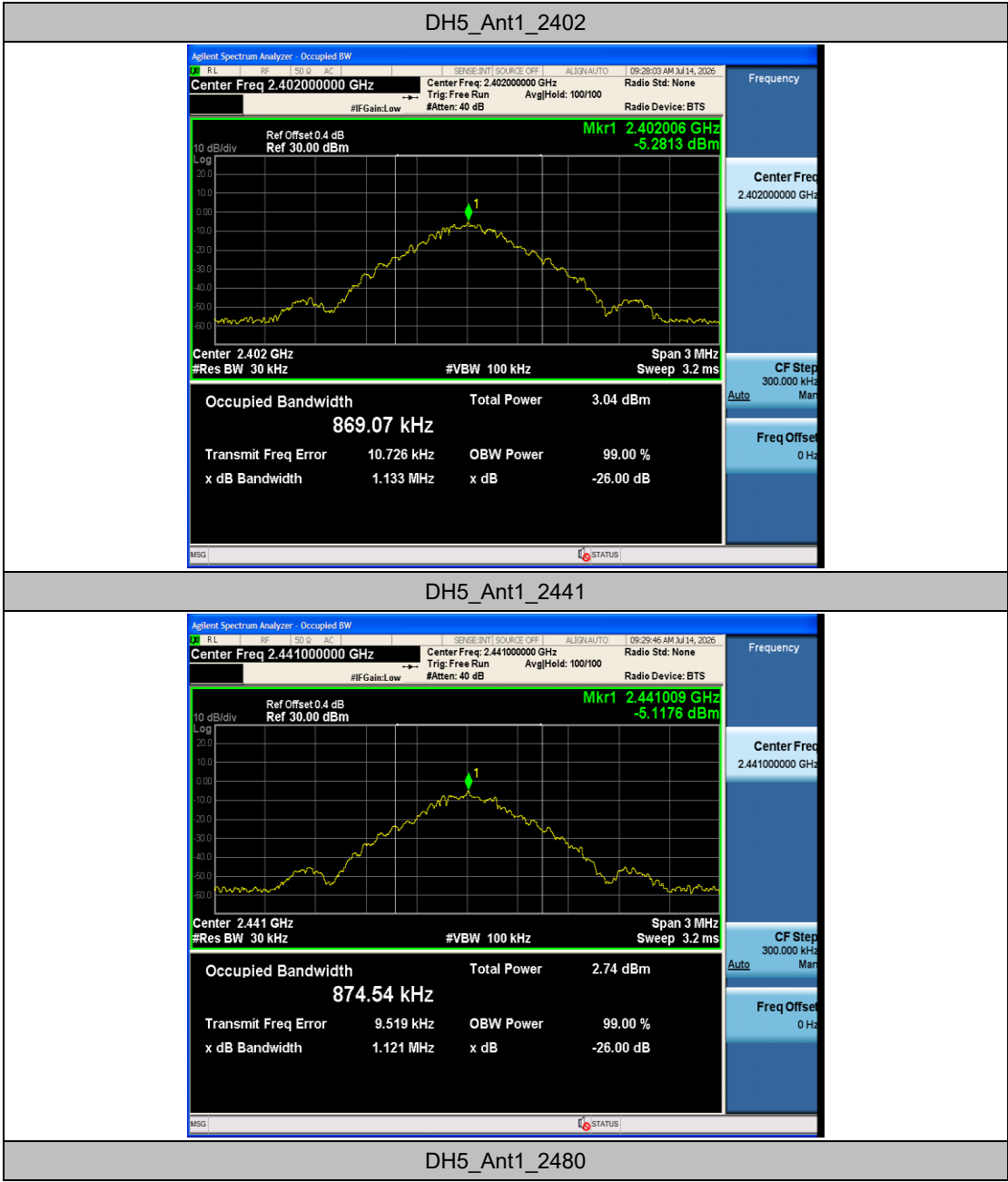


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.86907	2401.5762	2402.4453	---	---
		2441	0.87454	2440.5723	2441.4468	---	---
		2480	0.85759	2479.5820	2480.4396	---	---
2DH5	Ant1	2402	1.1788	2401.4185	2402.5973	---	---
		2441	1.1883	2440.4142	2441.6025	---	---
		2480	1.1857	2479.4168	2480.6025	---	---

Test Graphs





2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-3.34	≤20.97	PASS
		2441	-3.42	≤20.97	PASS
		2480	-3.76	≤20.97	PASS
2DH5	Ant1	2402	-0.73	≤20.97	PASS
		2441	-0.82	≤20.97	PASS
		2480	-1.14	≤20.97	PASS

Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.972	≥ 0.957	PASS
2DH5	Ant1	Hop	1.138	≥ 0.860	PASS

Test Graphs

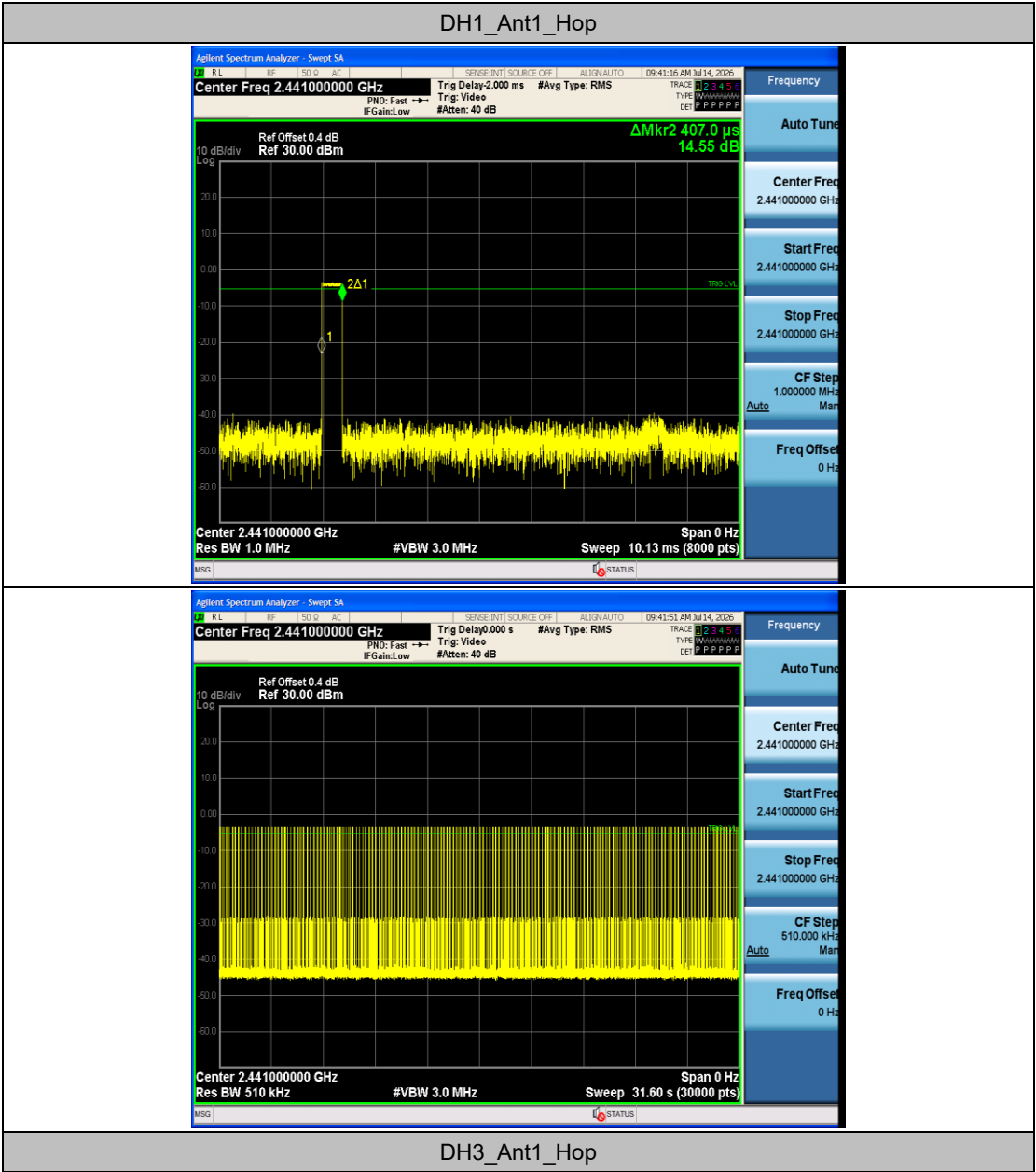


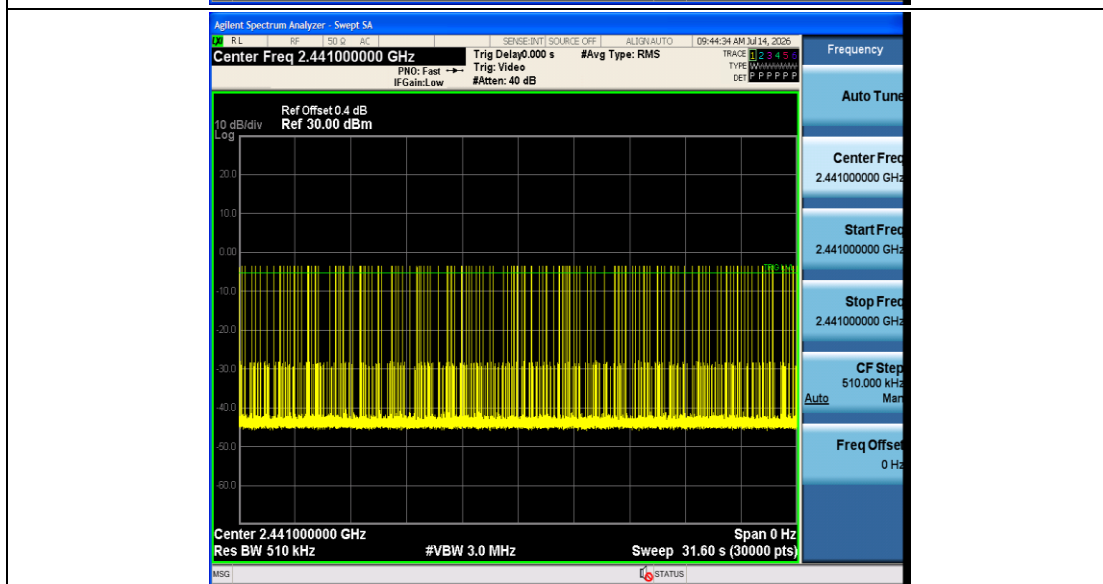
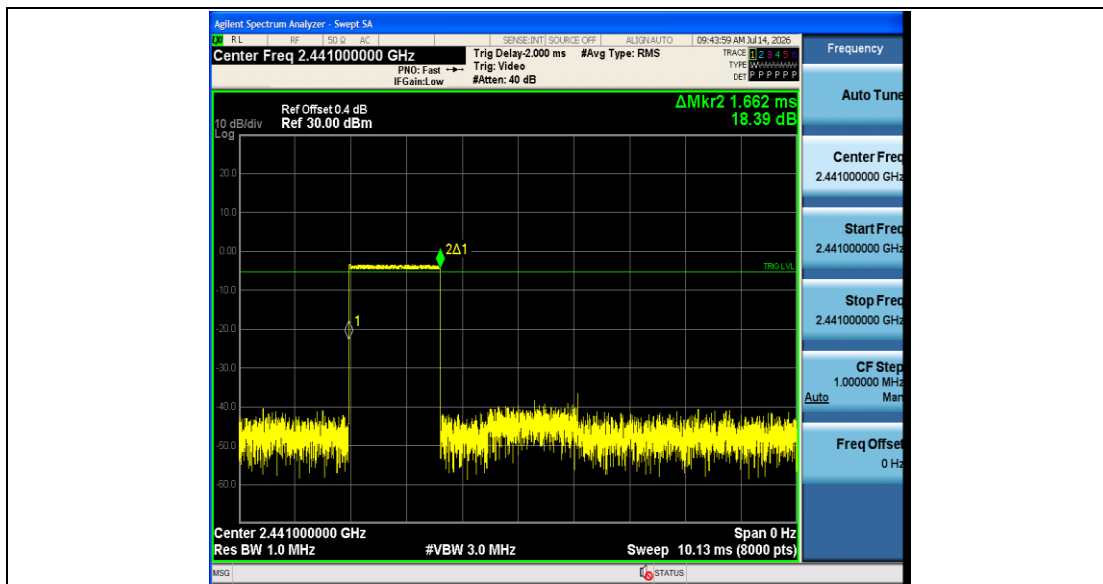
Appendix E: Time of occupancy

Test Result

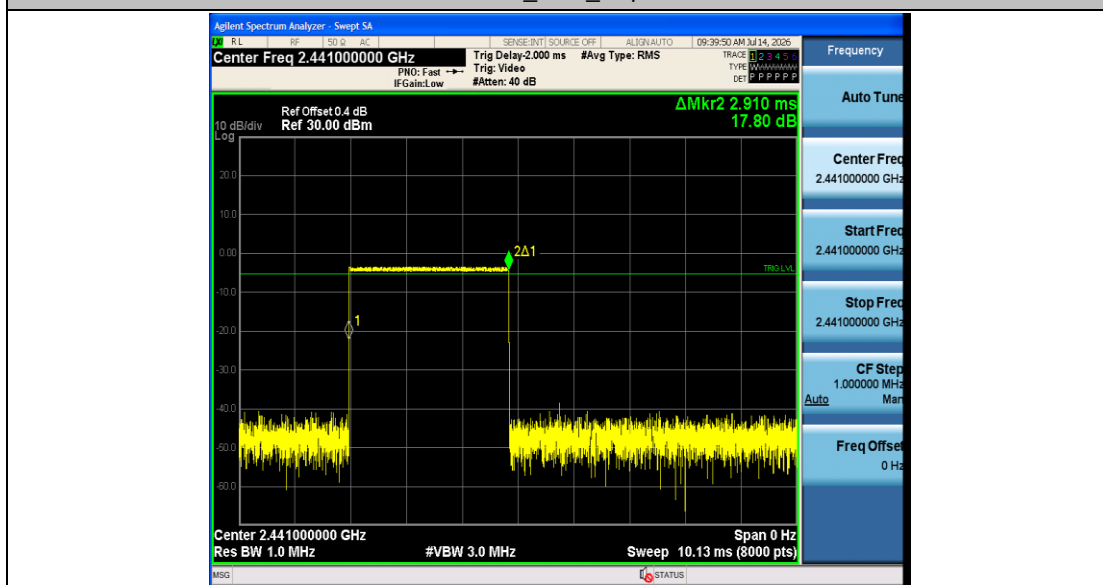
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.407	315	0.128	≤0.4	PASS
DH3	Ant1	Hop	1.662	159	0.264	≤0.4	PASS
DH5	Ant1	Hop	2.910	104	0.303	≤0.4	PASS
2DH1	Ant1	Hop	0.415	317	0.132	≤0.4	PASS
2DH3	Ant1	Hop	1.667	160	0.267	≤0.4	PASS
2DH5	Ant1	Hop	2.916	102	0.297	≤0.4	PASS

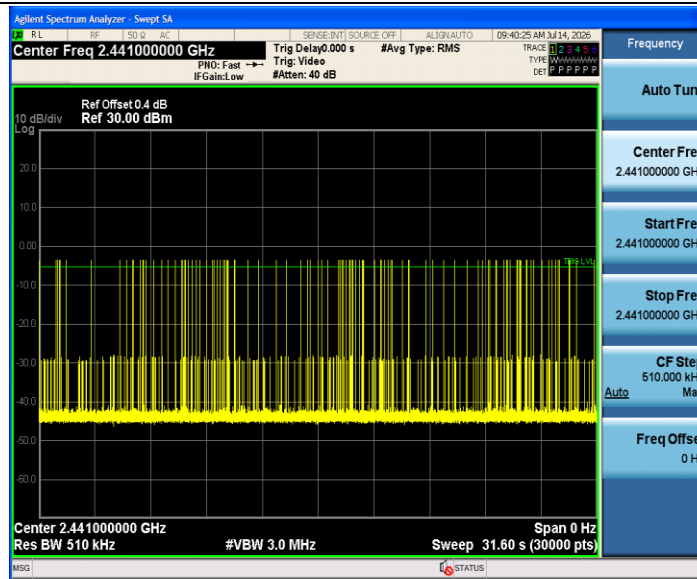
Test Graphs



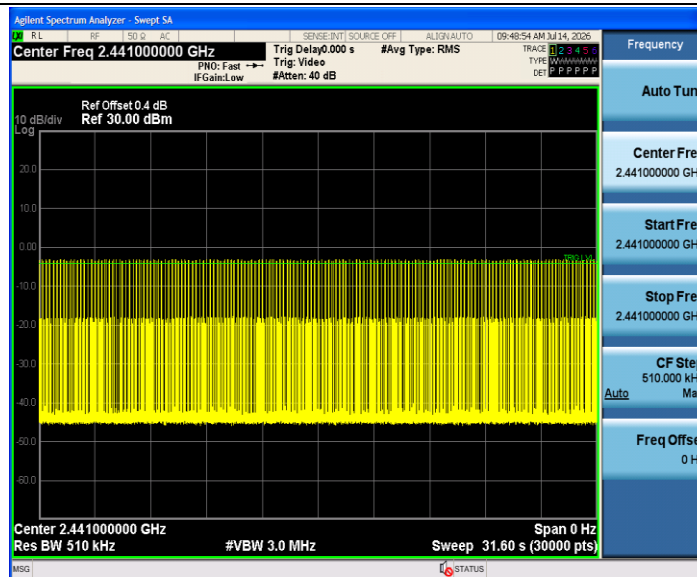
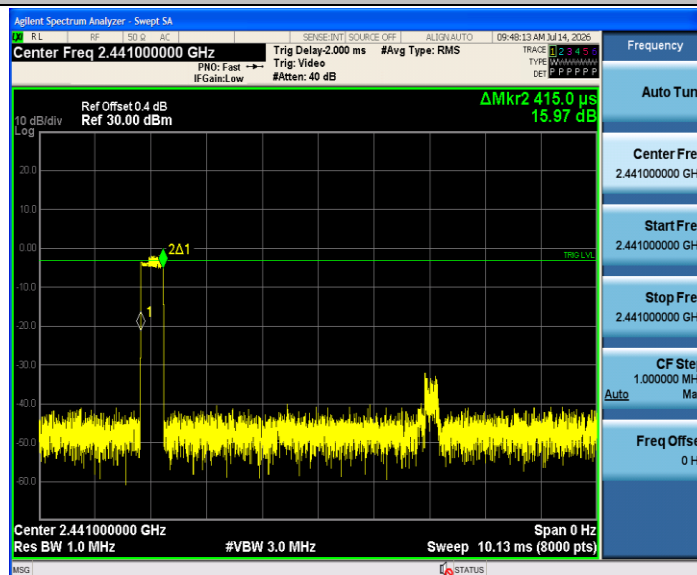


DH5_Ant1_Hop

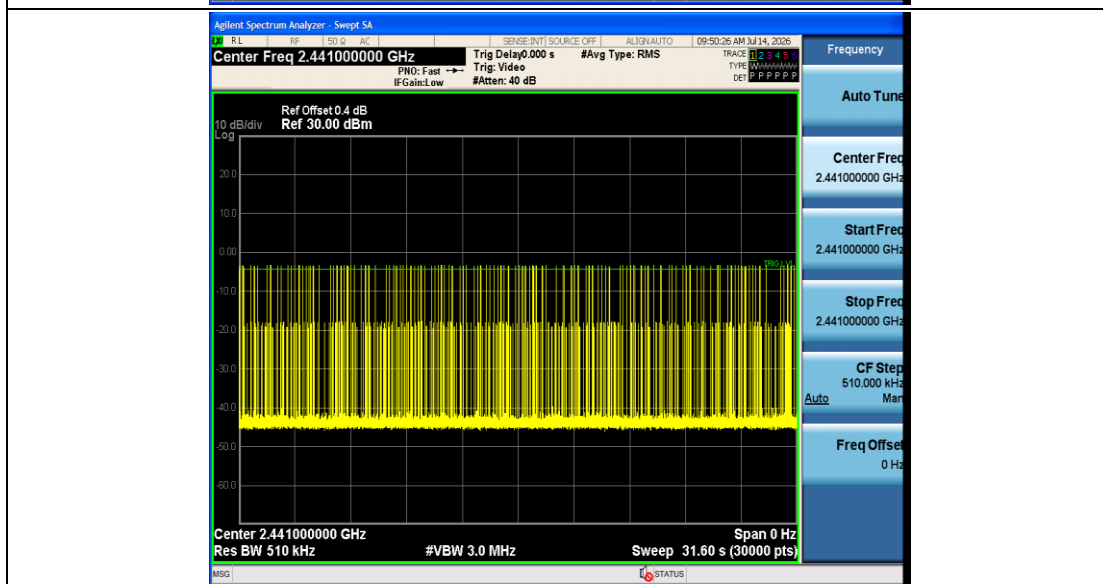
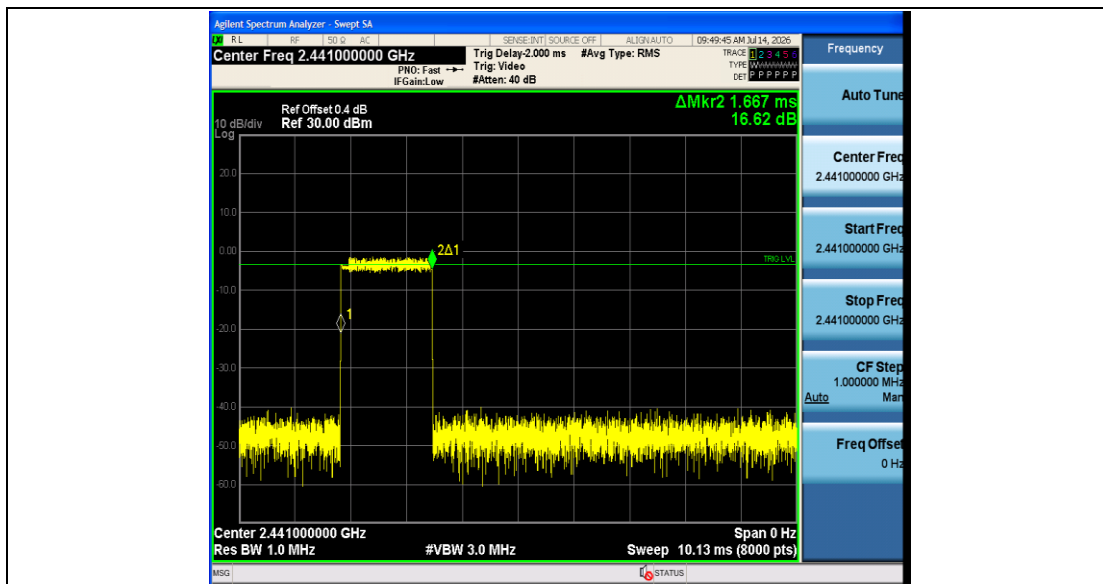




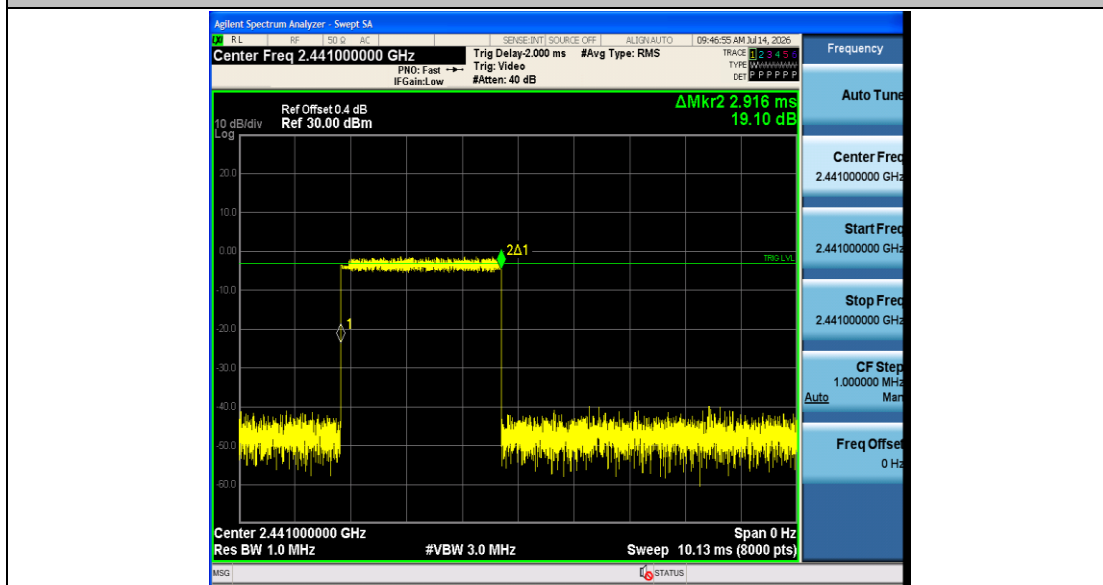
2DH1_Ant1_Hop

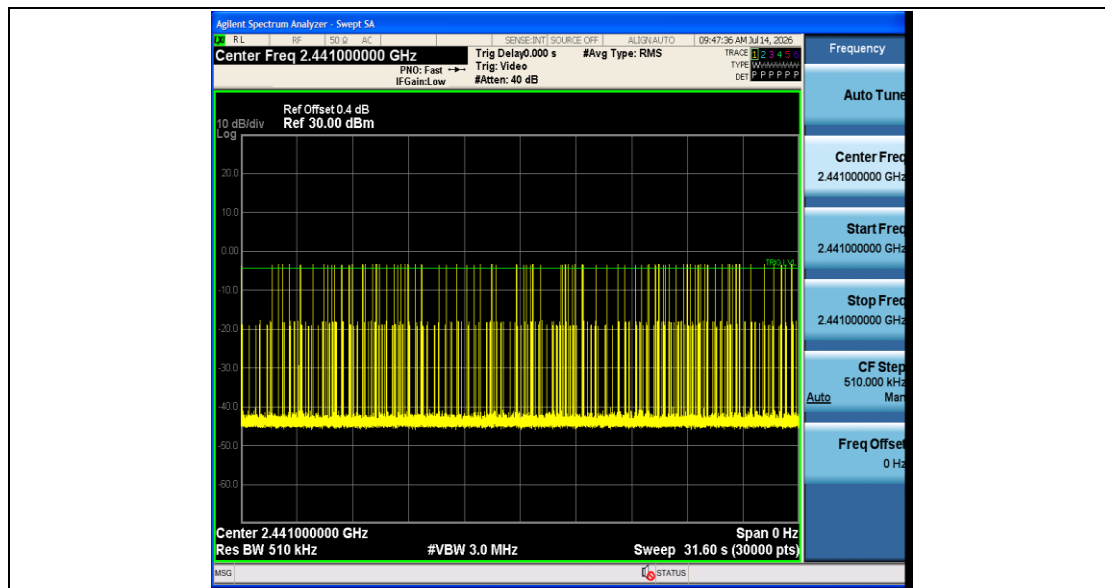


2DH3_Ant1_Hop



2DH5_Ant1_Hop



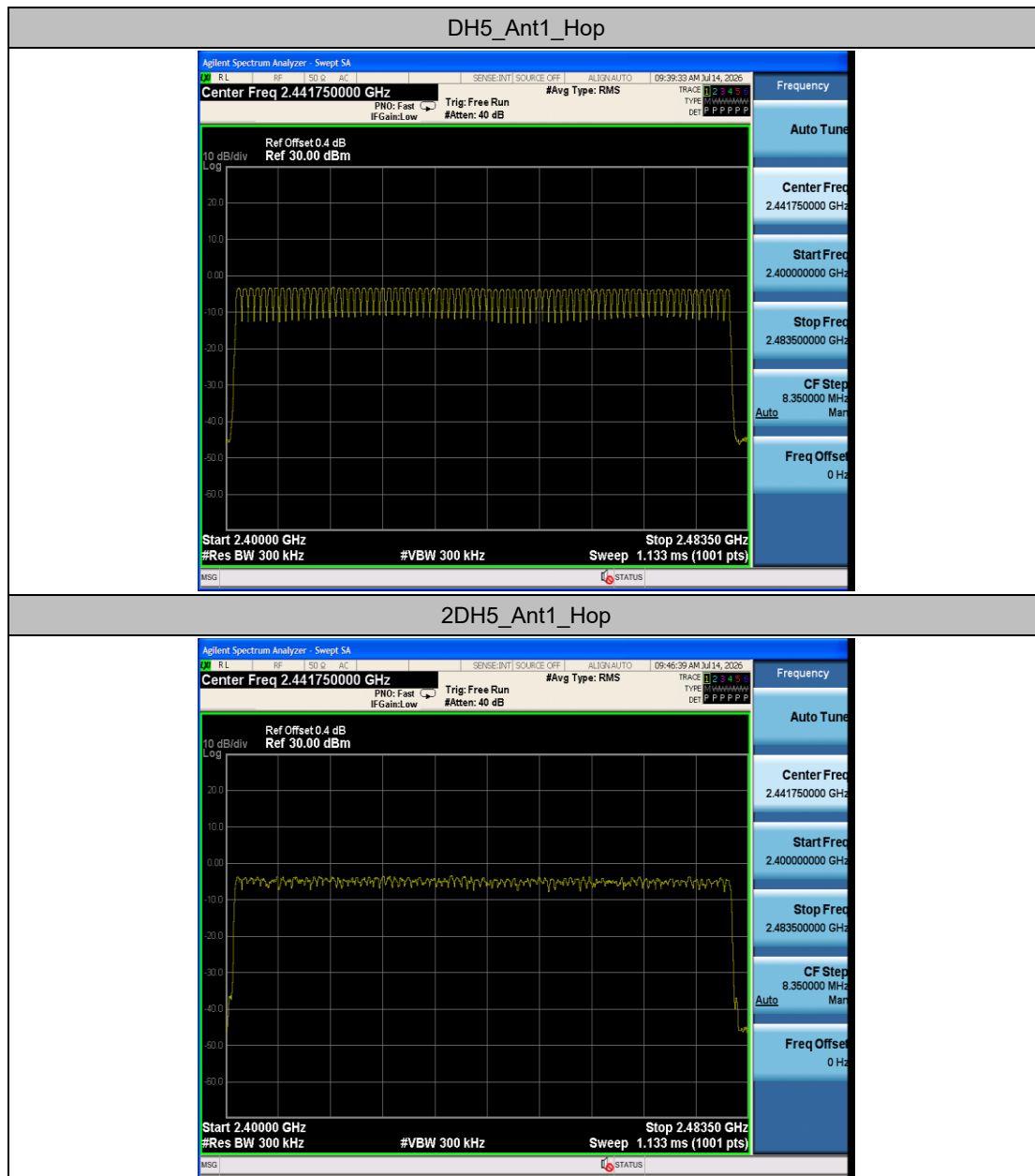


Appendix F: Number of hopping channels

Test Result

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

Test Graphs

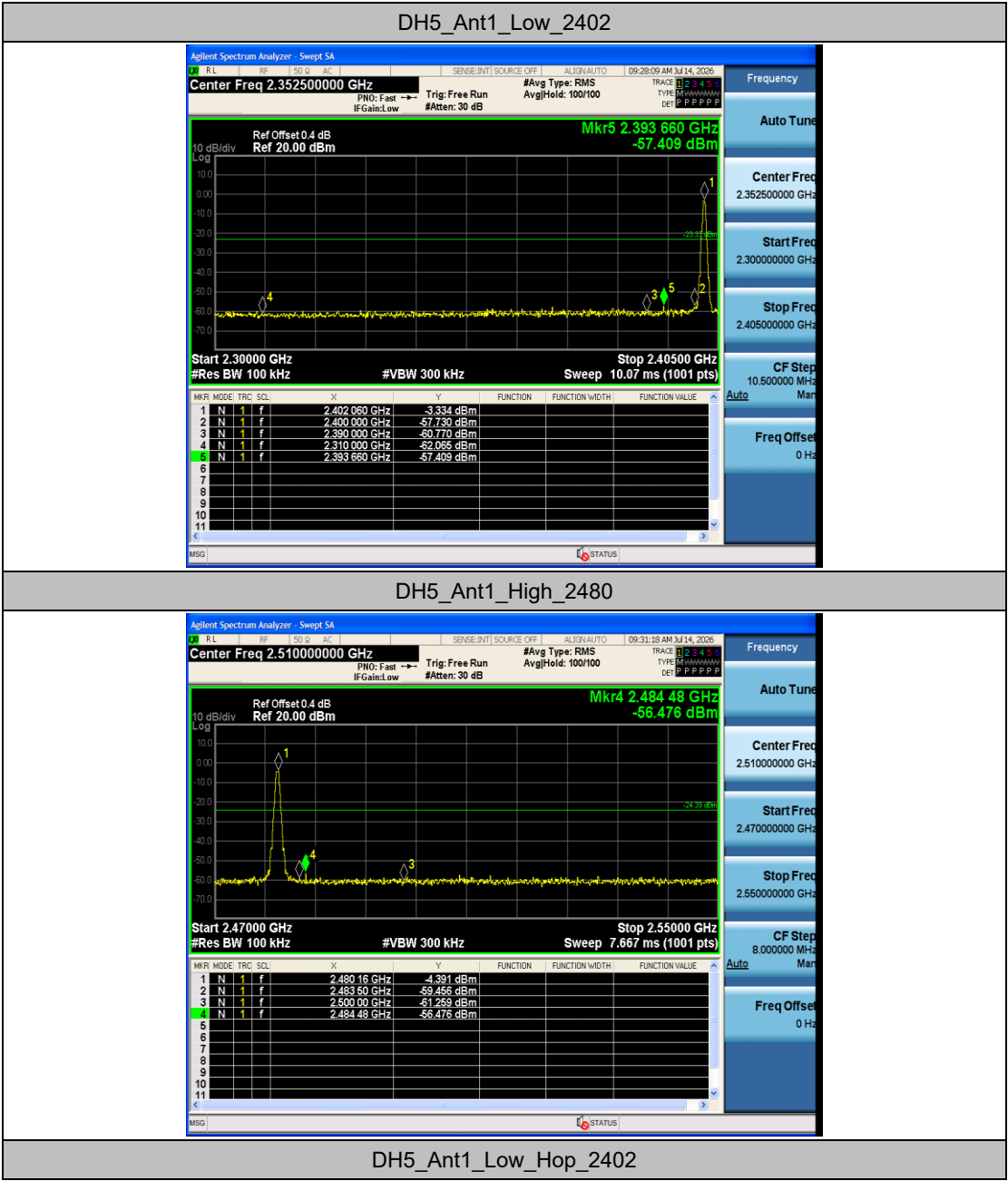


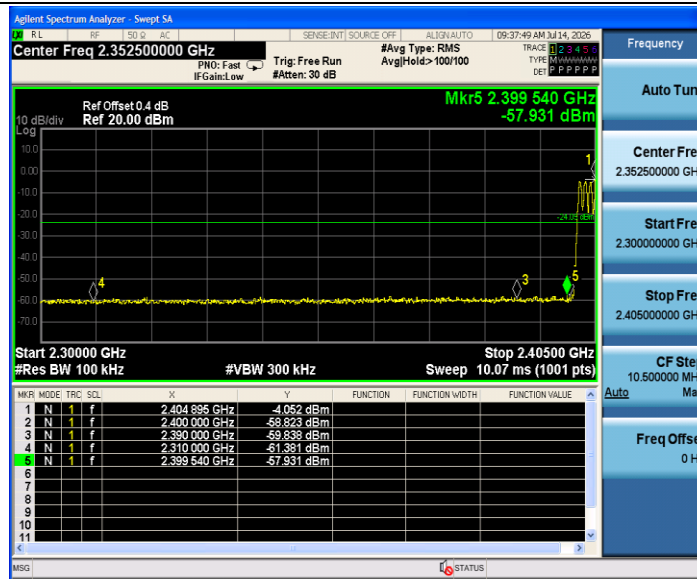
Appendix G: Band edge measurements

Test Result

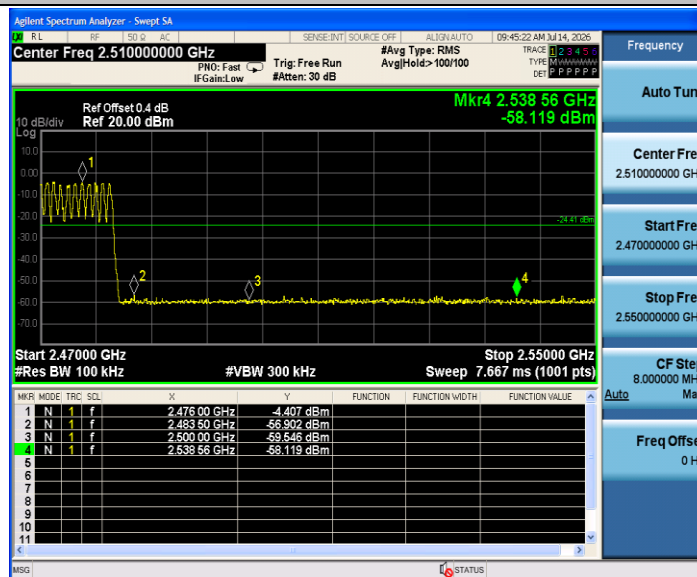
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-3.33	-57.41	≤-23.33	PASS
		High	2480	-4.39	-56.48	≤-24.39	PASS
		Low	Hop_2402	-4.05	-57.93	≤-24.05	PASS
		High	Hop_2480	-4.41	-58.12	≤-24.41	PASS
2DH5	Ant1	Low	2402	-5.54	-55.31	≤-25.54	PASS
		High	2480	-4.95	-42.22	≤-24.95	PASS
		Low	Hop_2402	-8.61	-58.19	≤-28.61	PASS
		High	Hop_2480	-7.95	-57.69	≤-27.95	PASS

Test Graphs

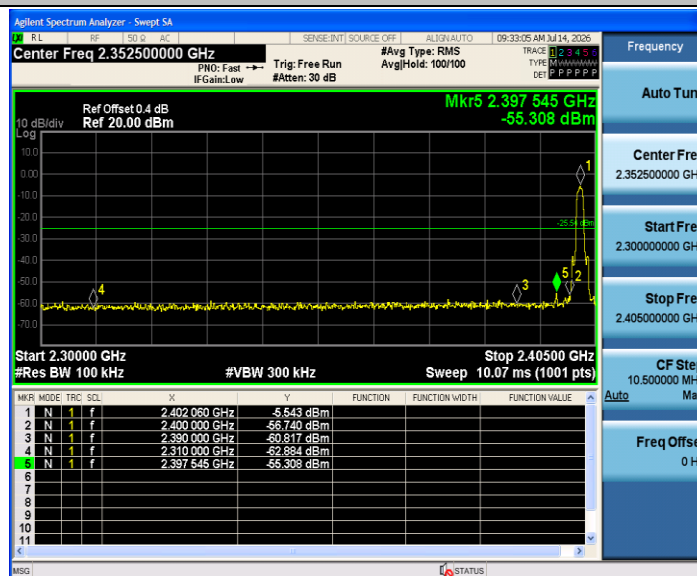




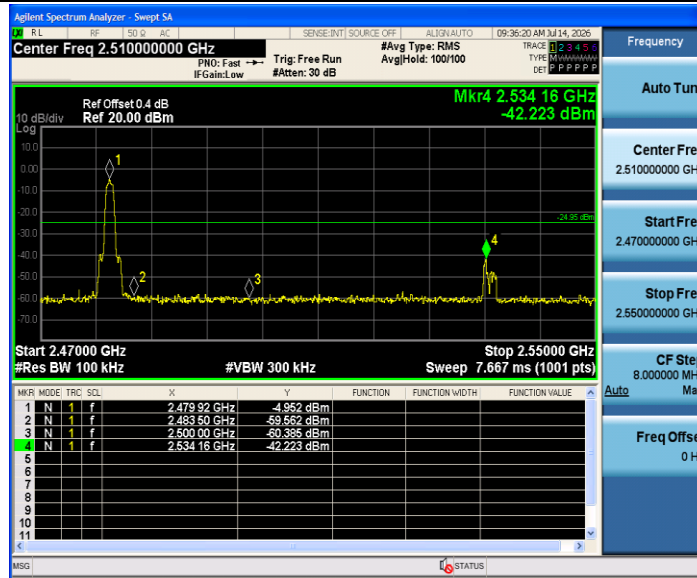
DH5_Ant1_High_Hop_2480



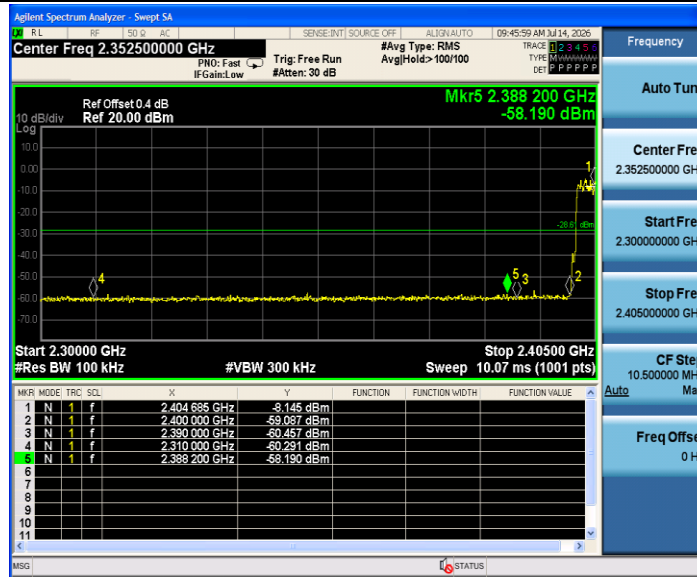
2DH5_Ant1_Low_2402



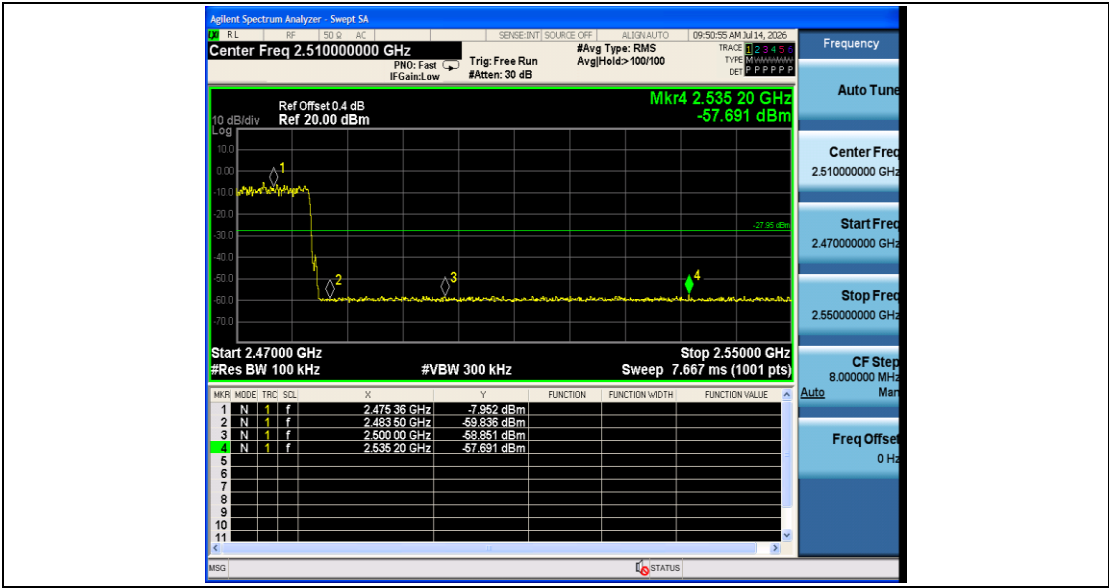
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480

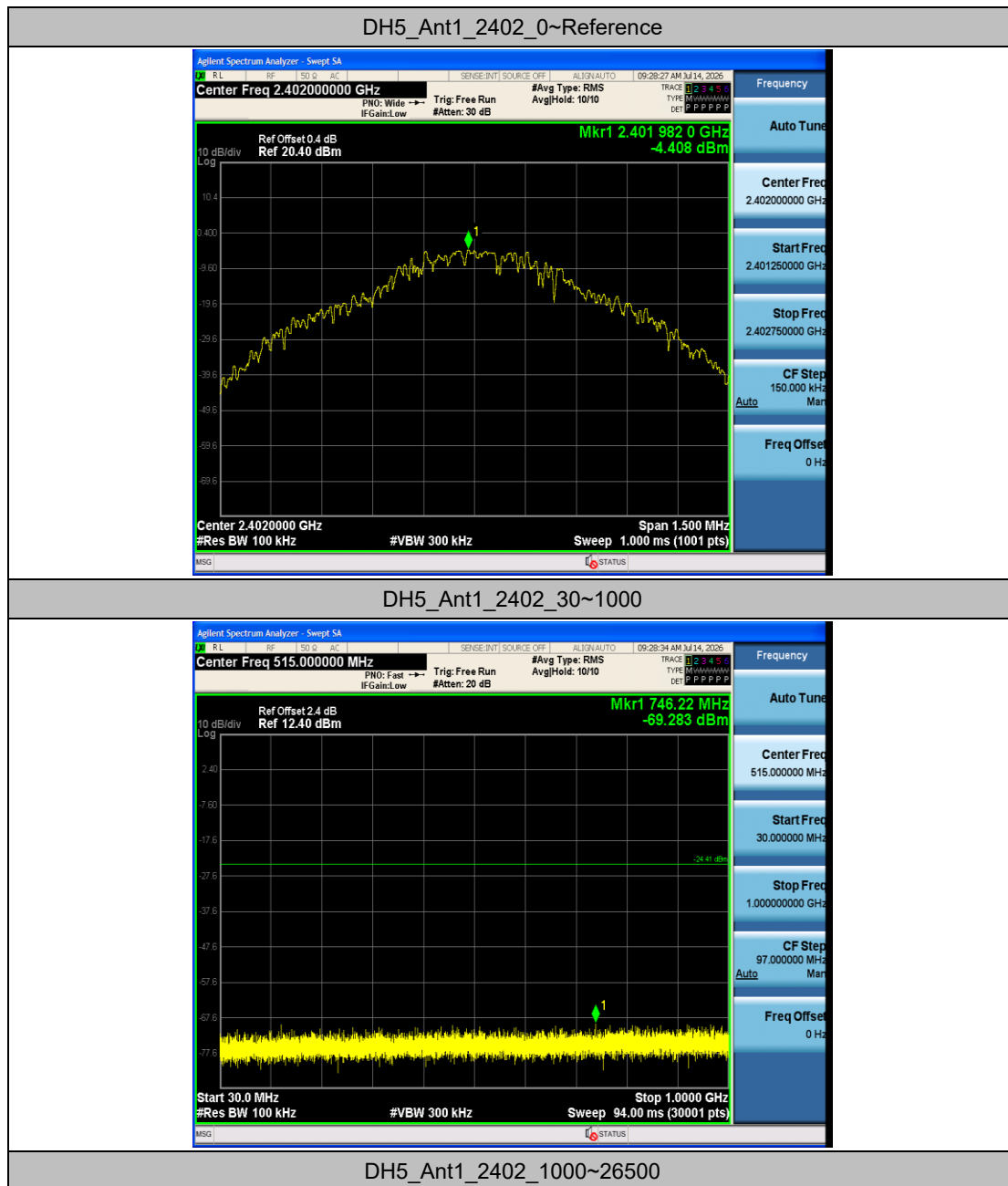


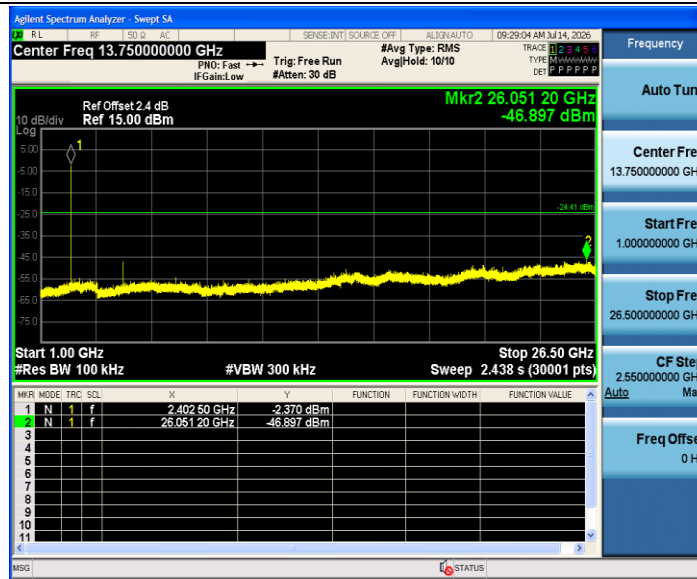
Appendix H: Conducted Spurious Emission

Test Result

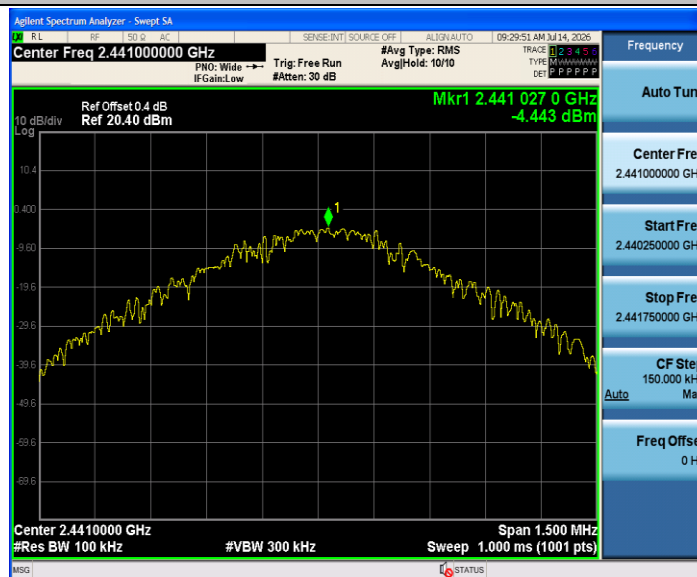
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-4.41	-4.41	---	PASS
			30~1000	-4.41	-69.28	≤-24.41	PASS
			1000~26500	-4.41	-46.9	≤-24.41	PASS
		2441	Reference	-4.44	-4.44	---	PASS
			30~1000	-4.44	-69.06	≤-24.44	PASS
			1000~26500	-4.44	-46.59	≤-24.44	PASS
		2480	Reference	-4.69	-4.69	---	PASS
			30~1000	-4.69	-69.11	≤-24.69	PASS
			1000~26500	-4.69	-46.51	≤-24.69	PASS
2DH5	Ant1	2402	Reference	-6.87	-6.87	---	PASS
			30~1000	-6.87	-69.01	≤-26.87	PASS
			1000~26500	-6.87	-46.52	≤-26.87	PASS
		2441	Reference	-6.87	-6.87	---	PASS
			30~1000	-6.87	-69.29	≤-26.87	PASS
			1000~26500	-6.87	-46.7	≤-26.87	PASS
		2480	Reference	-5.77	-5.77	---	PASS
			30~1000	-5.77	-68.75	≤-25.77	PASS
			1000~26500	-5.77	-46.71	≤-25.77	PASS

Test Graphs

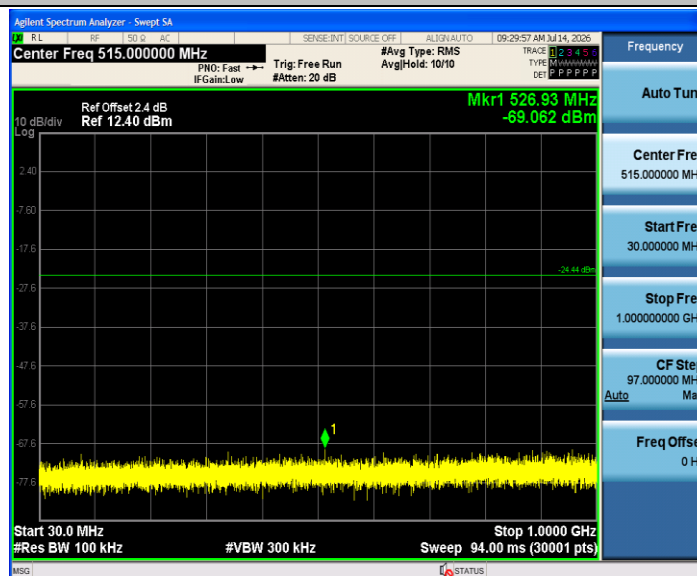




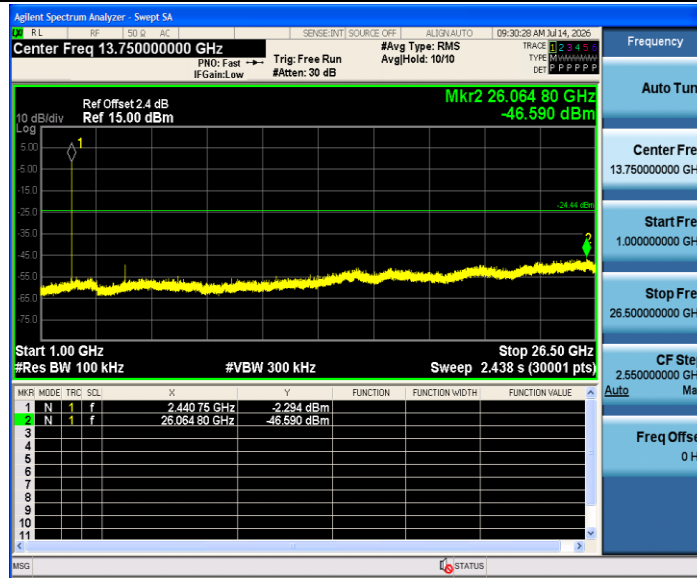
DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



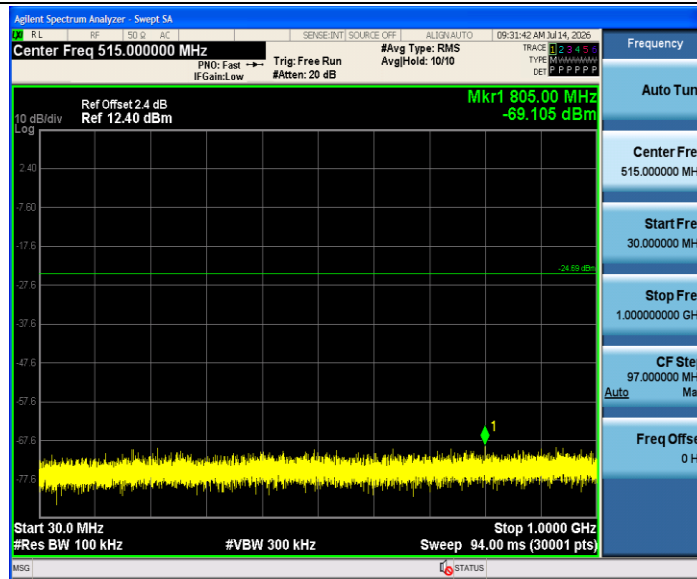
DH5_Ant1_2441_1000~26500



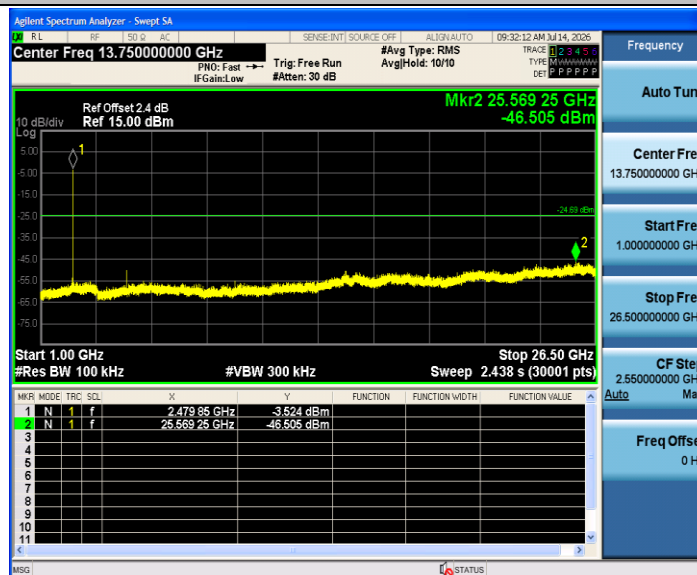
DH5_Ant1_2480_0~Reference



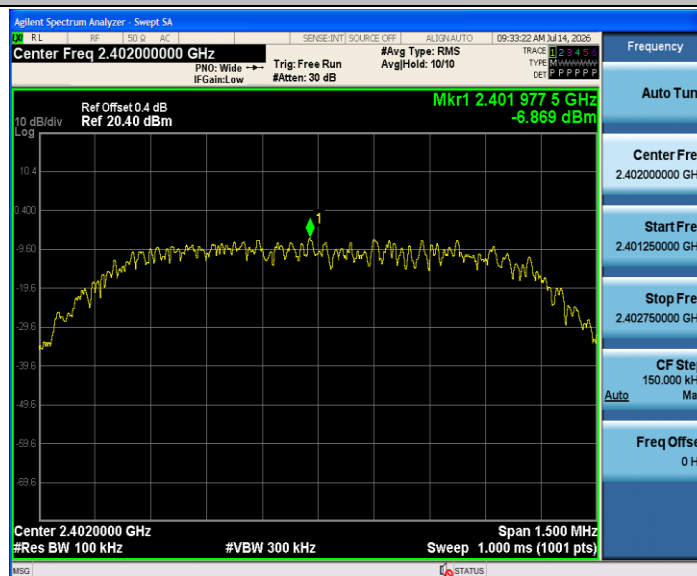
DH5_Ant1_2480_30~1000



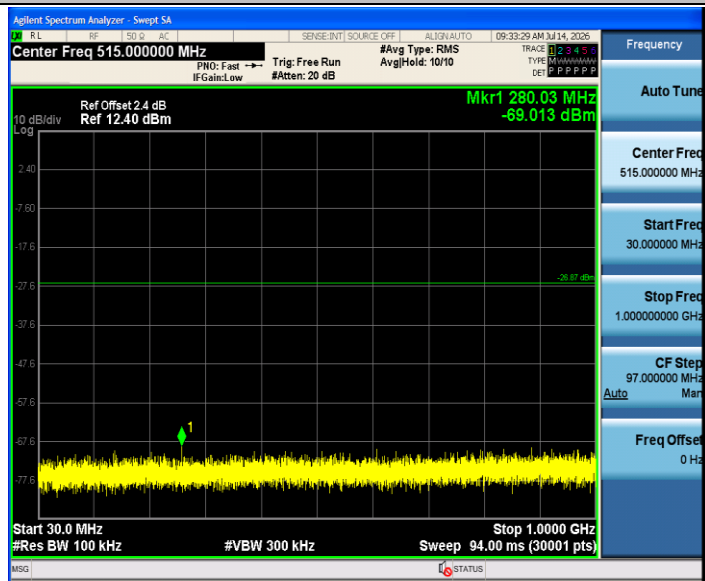
DH5_Ant1_2480_1000~26500



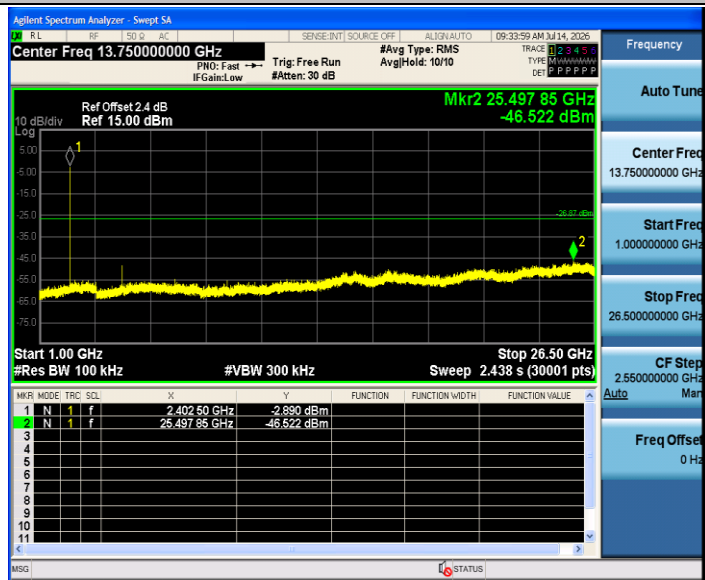
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



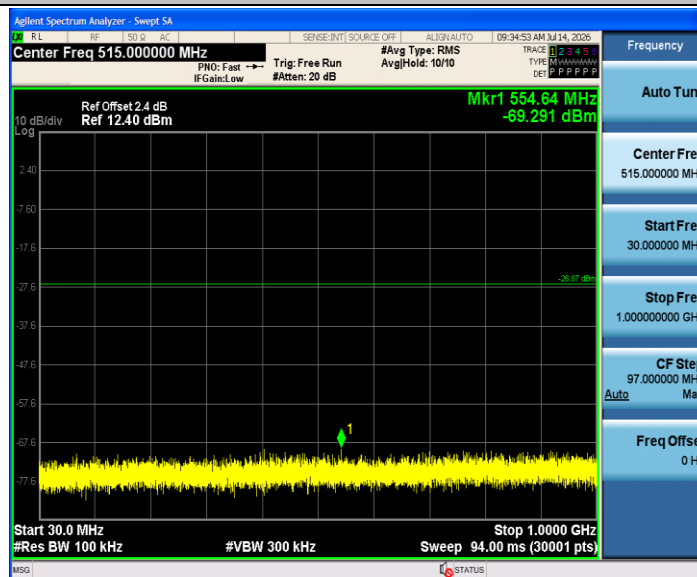
2DH5_Ant1_2402_1000~26500



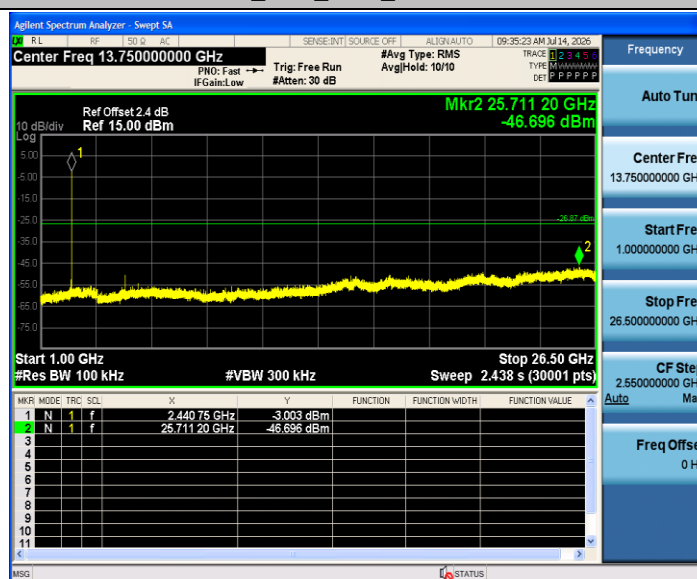
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000



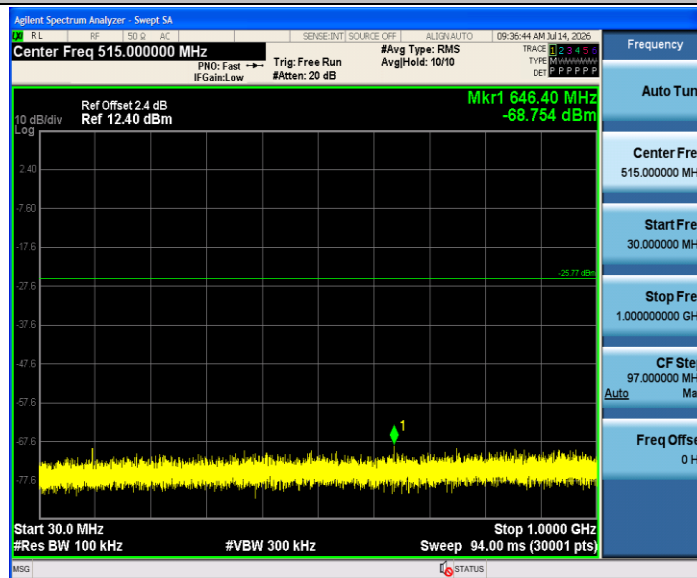
2DH5_Ant1_2441_1000~26500



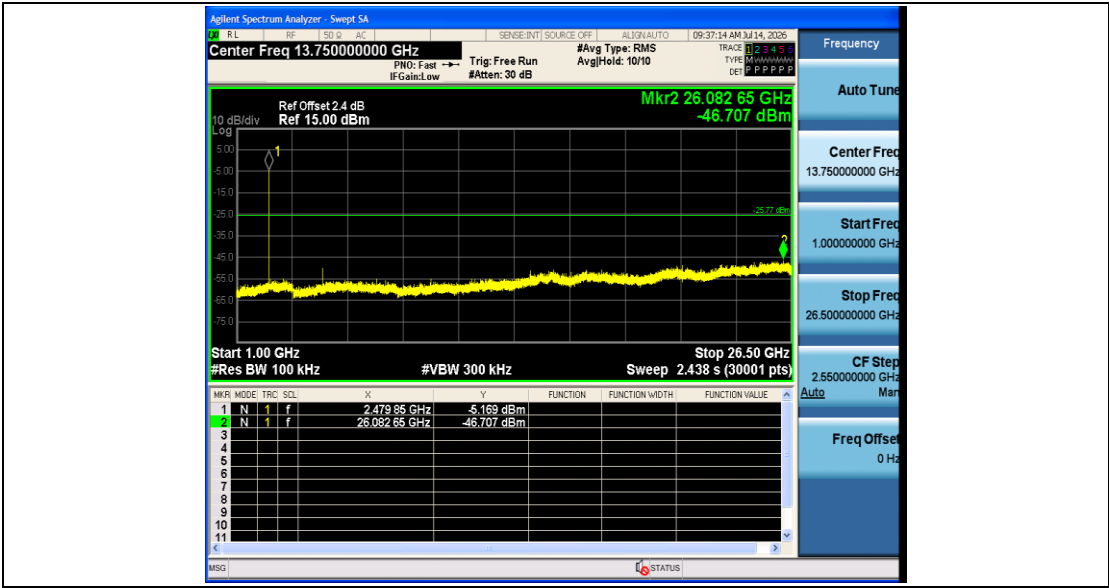
2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



2DH5_Ant1_2480_1000~26500



Appendix I: Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	xFactor	Limit	Verdict
DH5	Ant1	2402	2.91	3.75	77.60	1.10	---	---
		2441	2.91	3.75	77.60	1.10	---	---
		2480	2.91	3.75	77.60	1.10	---	---
2DH5	Ant1	2402	2.92	3.75	77.87	1.09	---	---
		2441	2.92	3.75	77.87	1.09	---	---
		2480	2.92	3.75	77.87	1.09	---	---

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.402000000 GHz

Trig Delay: 2.000 ms #Avg Type: RMS

Ref Offset 0.4 dB Ref 10.40 dBm

ΔMkr3 3.750 ms 4.18 dB

Center 2.402000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 7.000 ms (1001 pts)

Mkr	Mode	Trig	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	1.980 ms	-20.51 dBm			
2	Δ1	1	t (Δ)	2.910 ms (Δ)	17.07 dB			
3	Δ1	1	t (Δ)	3.750 ms (Δ)	4.18 dB			

Center Freq 2.441000000 GHz

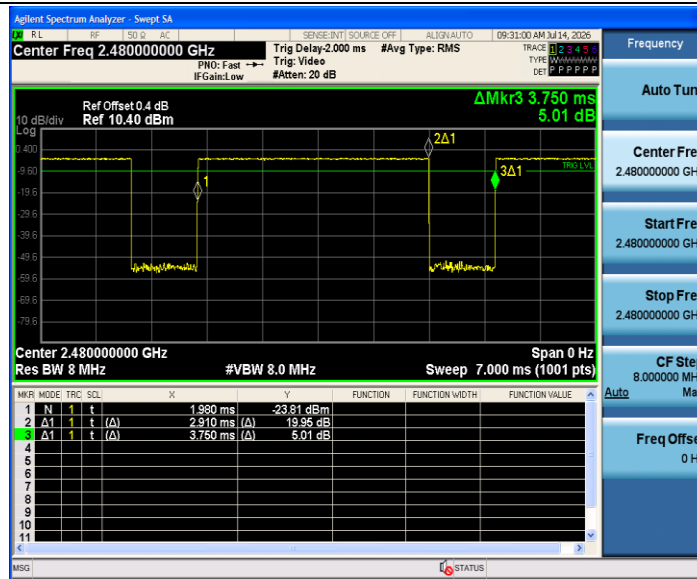
Trig Delay: 2.000 ms #Avg Type: RMS

Ref Offset 0.4 dB Ref 10.40 dBm

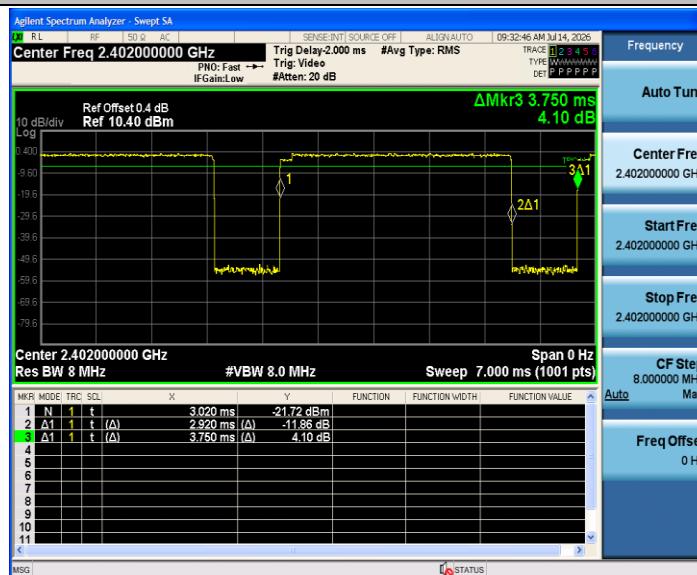
ΔMkr3 3.750 ms 4.43 dB

Center 2.441000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 7.000 ms (1001 pts)

Mkr	Mode	Trig	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	1.980 ms	-16.62 dBm			
2	Δ1	1	t (Δ)	2.910 ms (Δ)	11.12 dB			
3	Δ1	1	t (Δ)	3.750 ms (Δ)	4.43 dB			



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480

