

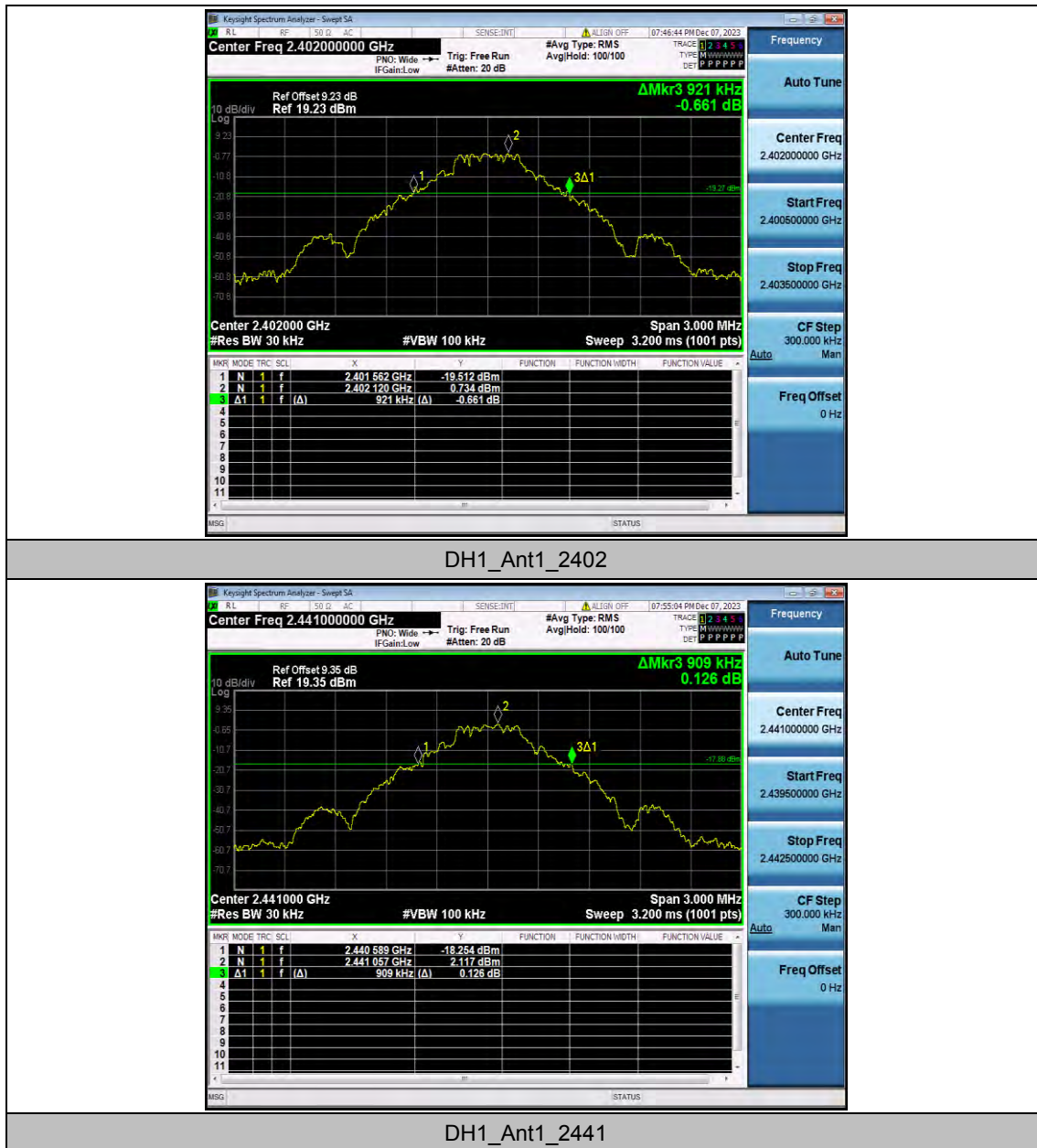
Case No. : <u>GTS20231012003-1-8</u>	
Ambient Condition: <u>24</u> °C, <u>48</u> %RH, Atmos100.1Kpa,	
Test Date: <u>2023.12.7</u>	Test Engineer: <u>Evan ouyang</u>

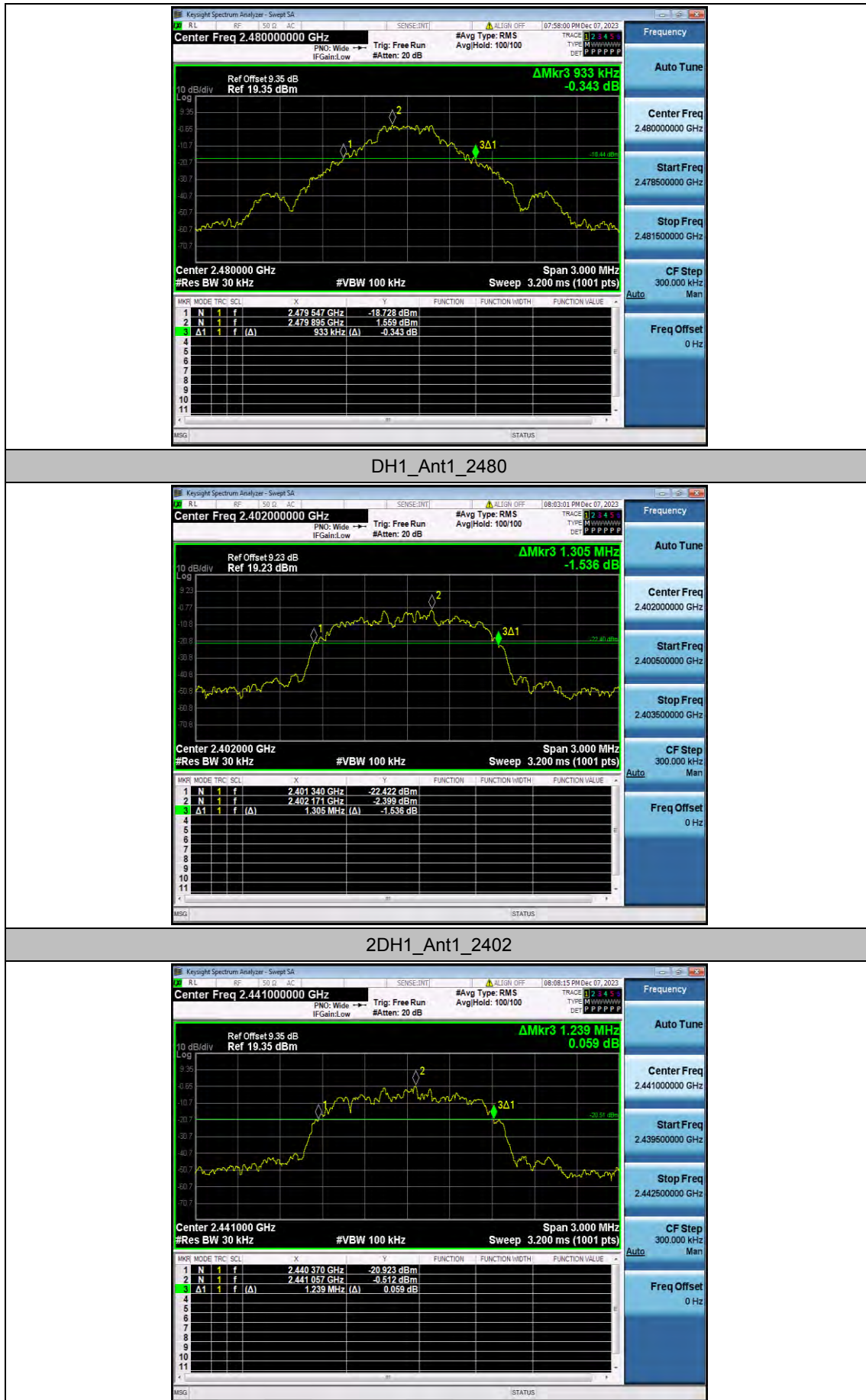
Appendix A.1: 20dB Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.921	2401.562	2402.483	---	---
		2441	0.909	2440.589	2441.498	---	---
		2480	0.933	2479.547	2480.480	---	---
2DH1	Ant1	2402	1.305	2401.340	2402.645	---	---
		2441	1.239	2440.370	2441.609	---	---
		2480	1.257	2479.385	2480.642	---	---
3DH1	Ant1	2402	1.266	2401.367	2402.633	---	---
		2441	1.242	2440.382	2441.624	---	---
		2480	1.260	2479.367	2480.627	---	---

Test Graphs





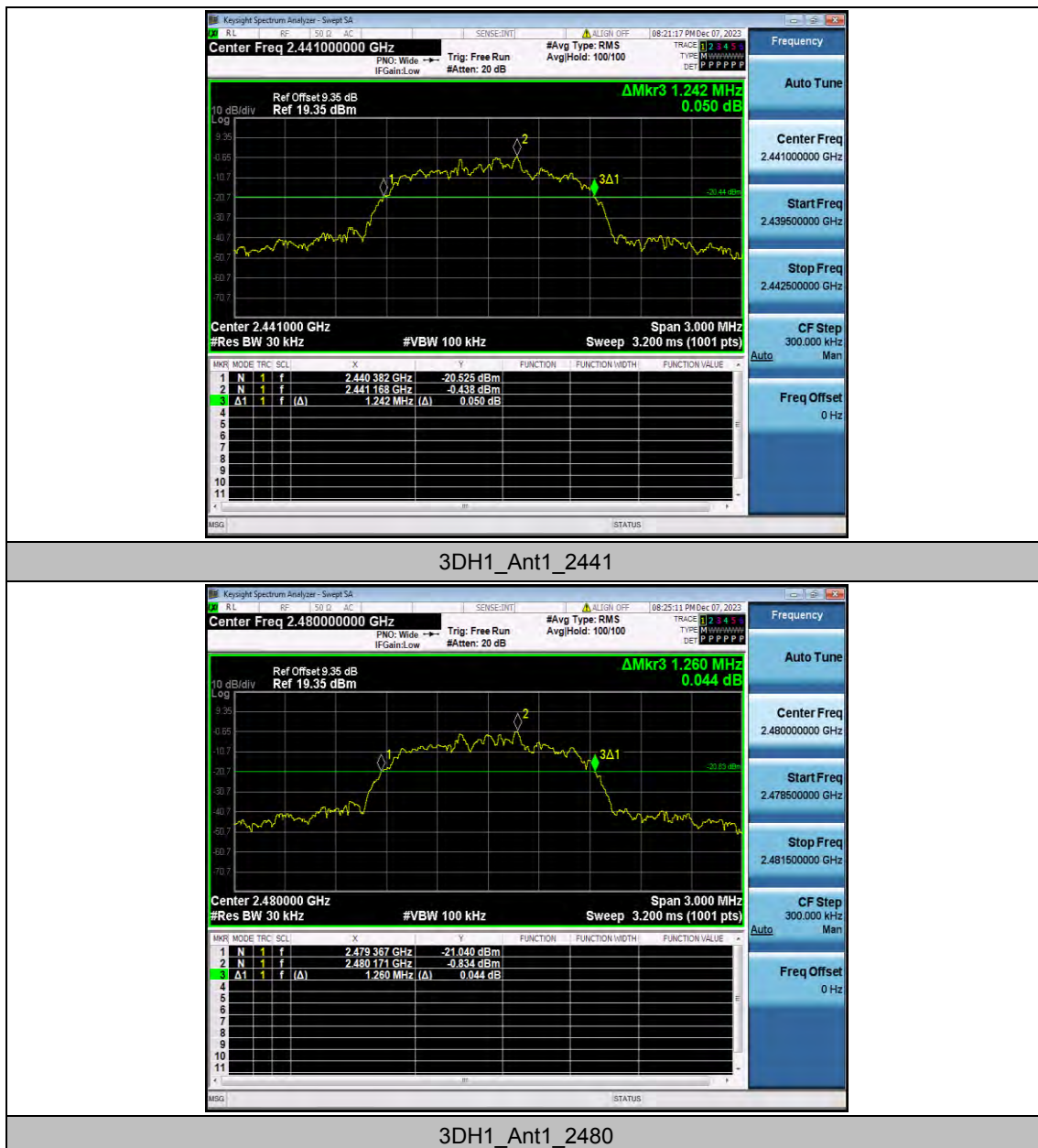
2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



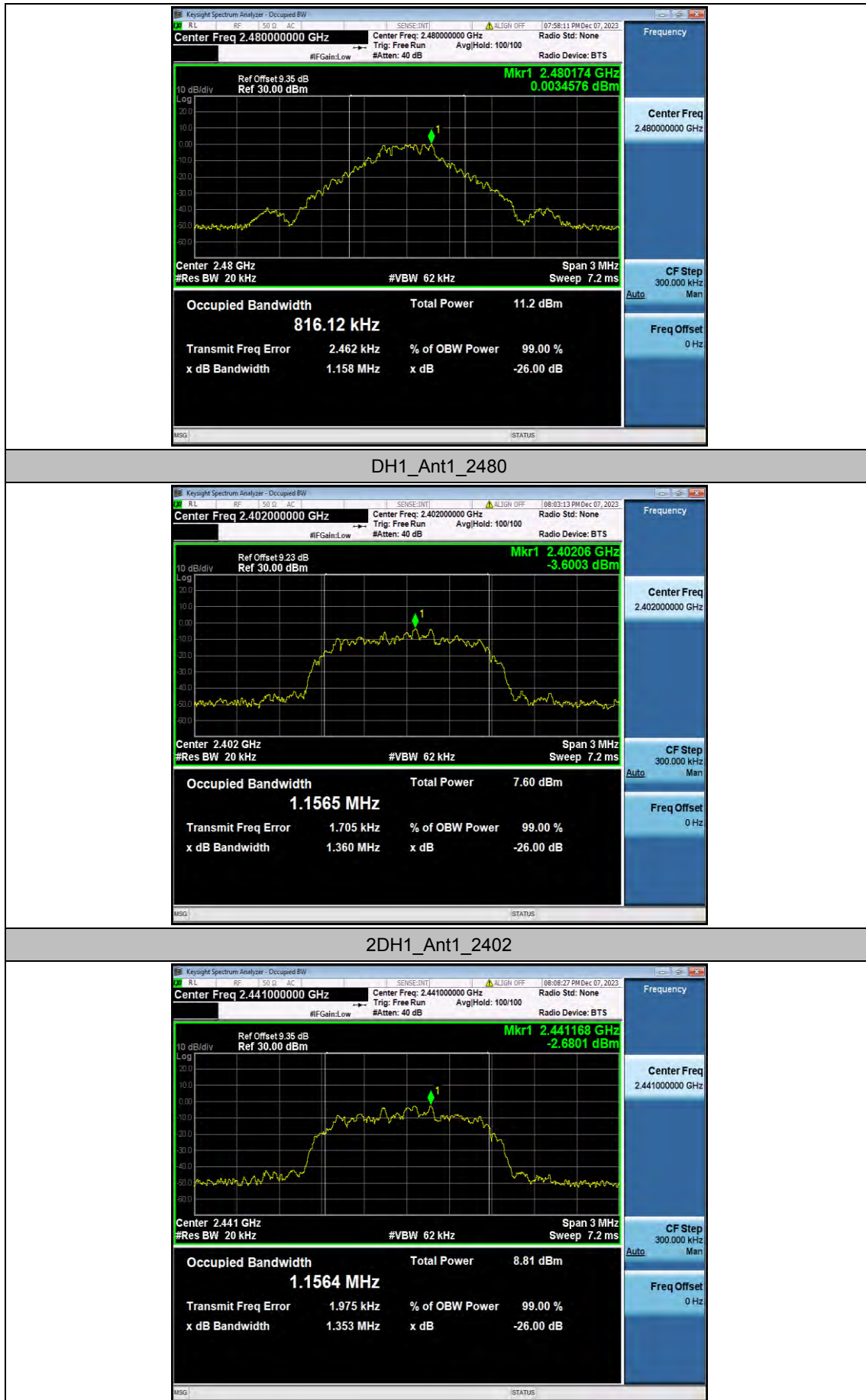
Appendix A.2: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.83190	2401.587	2402.419	---	---
		2441	0.81796	2440.594	2441.412	---	---
		2480	0.81612	2479.594	2480.411	---	---
2DH1	Ant1	2402	1.1565	2401.423	2402.580	---	---
		2441	1.1564	2440.424	2441.580	---	---
		2480	1.1603	2479.420	2480.580	---	---
3DH1	Ant1	2402	1.1515	2401.439	2402.590	---	---
		2441	1.1513	2440.439	2441.590	---	---
		2480	1.1472	2479.439	2480.586	---	---

Test Graphs





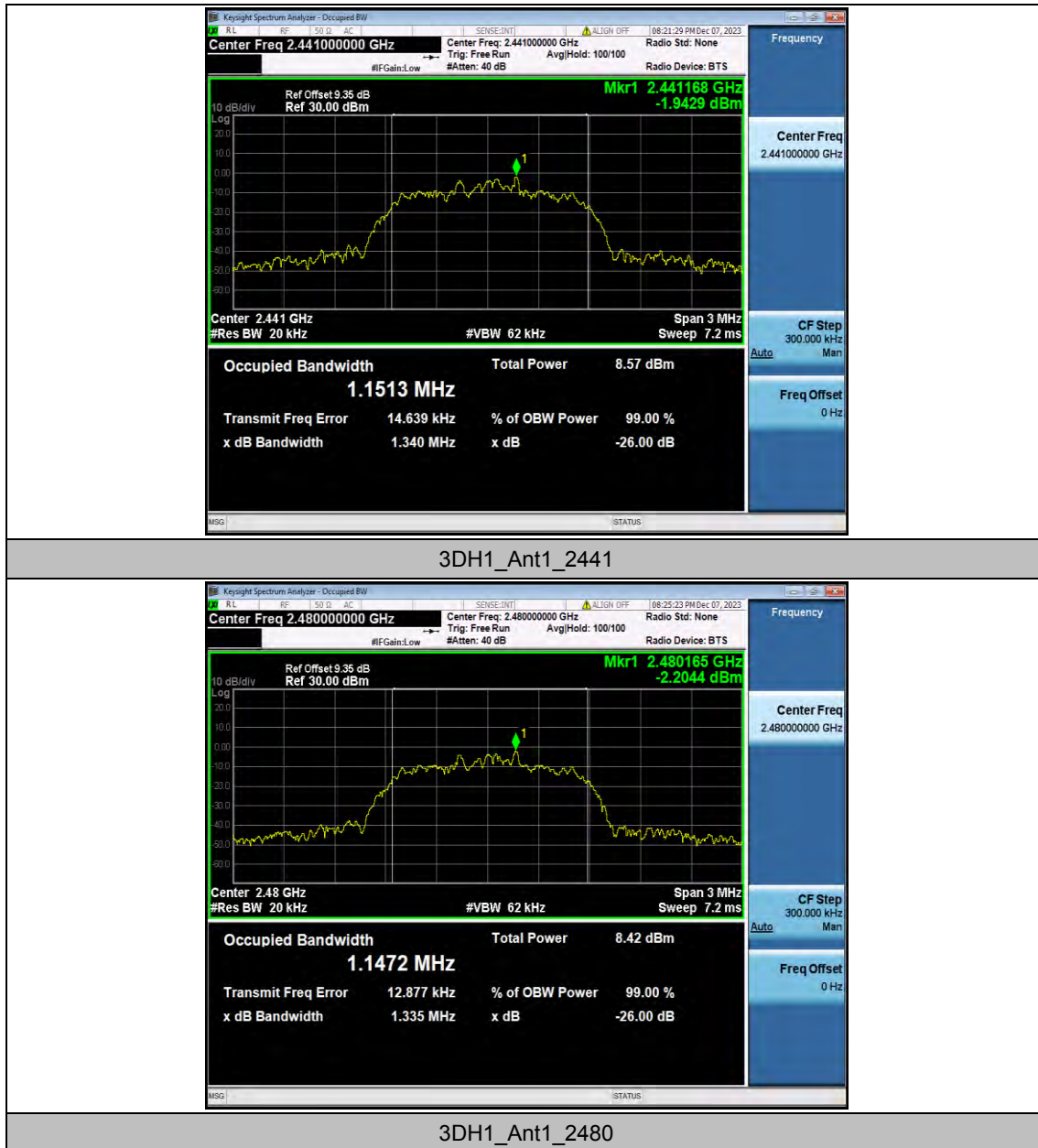
2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



Appendix A.3: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	4.13	≤20.97	PASS
		2441	5.12	≤20.97	PASS
		2480	5.01	≤20.97	PASS
2DH1	Ant1	2402	3.33	≤20.97	PASS
		2441	4.49	≤20.97	PASS
		2480	4.26	≤20.97	PASS
3DH1	Ant1	2402	3.64	≤20.97	PASS
		2441	4.7	≤20.97	PASS
		2480	4.47	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.006	≥ 0.622	PASS
		Hop_2441	1	≥ 0.622	PASS
		Hop_2480	0.678	≥ 0.622	PASS
2DH1	Ant1	Hop_2402	1.01	≥ 0.870	PASS
		Hop_2441	1.008	≥ 0.870	PASS
		Hop_2480	1.006	≥ 0.870	PASS
3DH1	Ant1	Hop_2402	0.88	≥ 0.844	PASS
		Hop_2441	1.324	≥ 1.266	PASS
		Hop_2480	1.326	≥ 1.266	PASS

Test Graphs





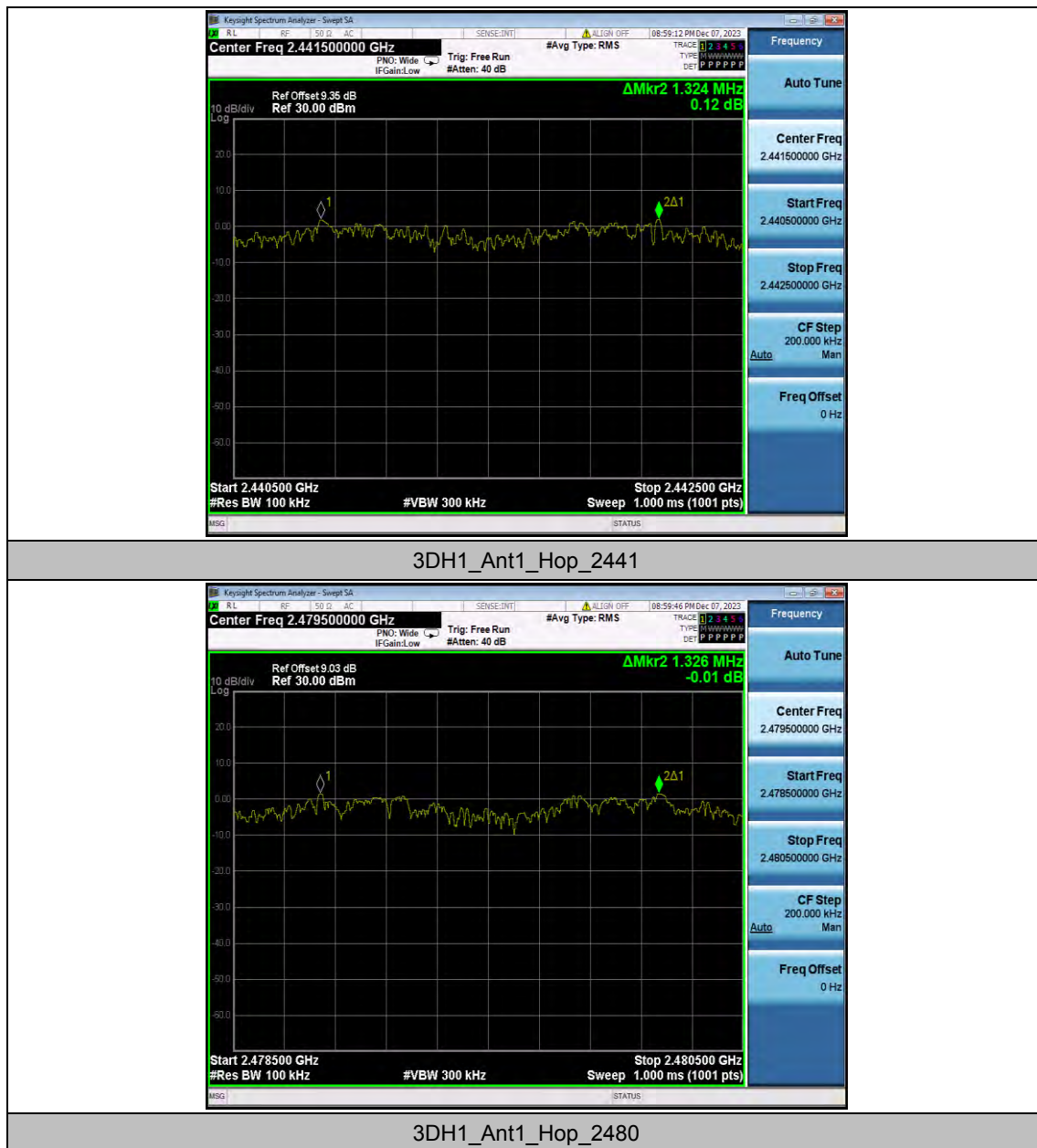
2DH1_Ant1_Hop_2441



2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402

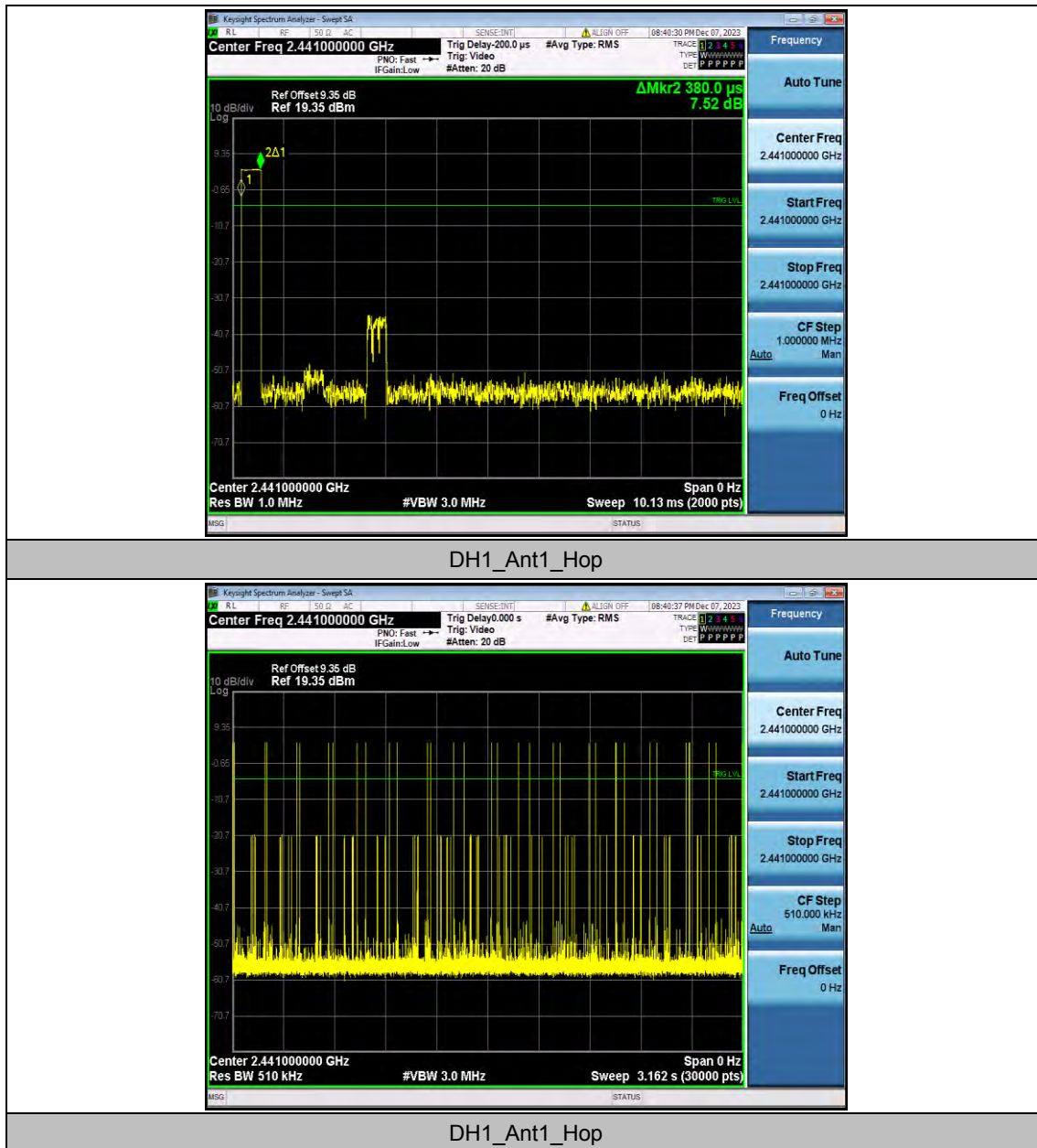


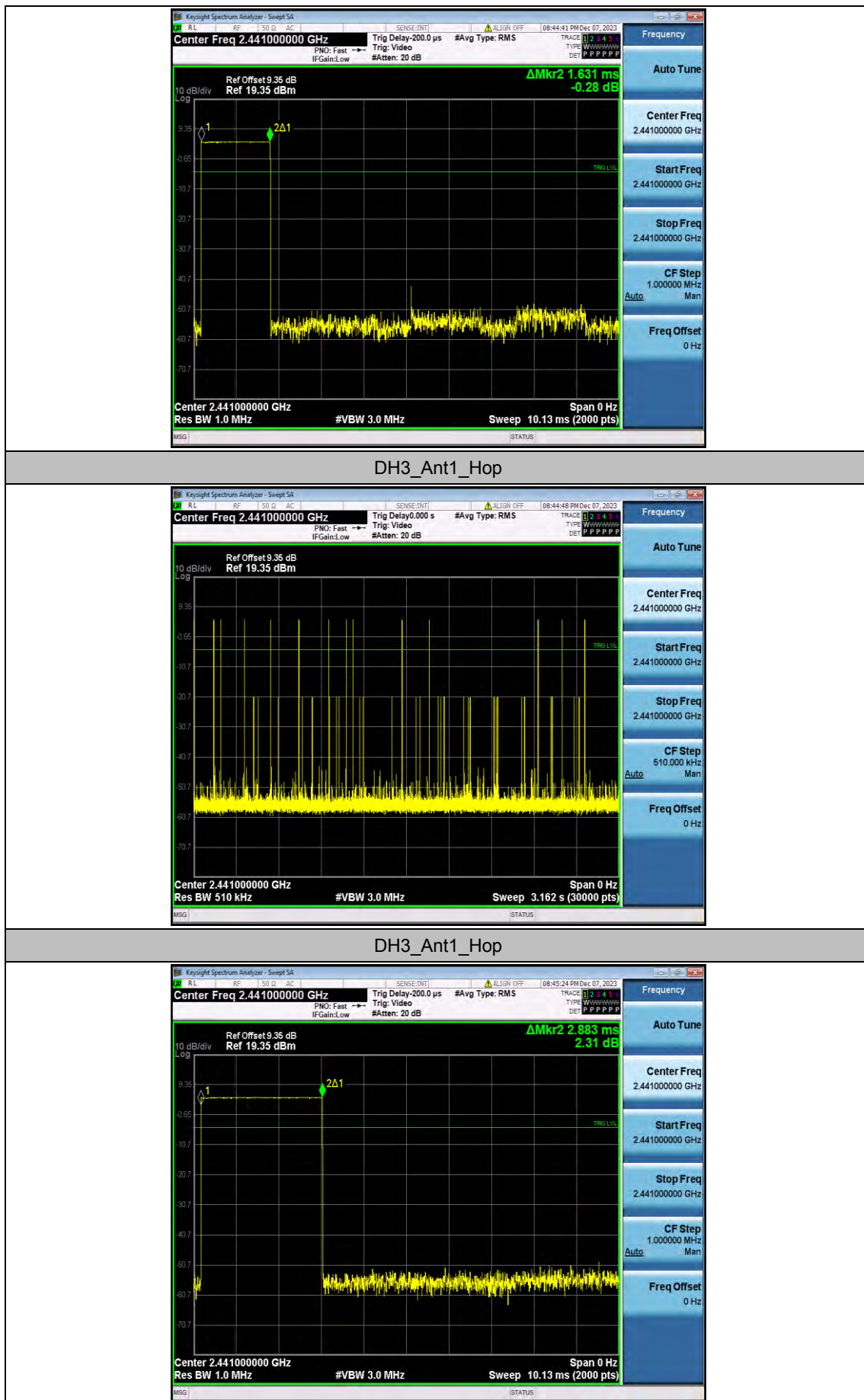
Appendix A.5: Time of occupancy

Test Result

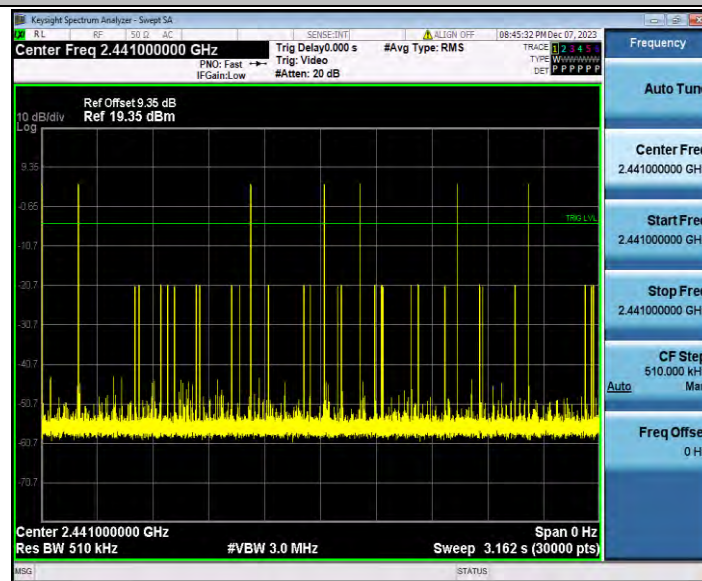
Test Mode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.38	330	0.125	≤0.4	PASS
DH3	Ant1	Hop	1.63	140	0.228	≤0.4	PASS
DH5	Ant1	Hop	2.88	70	0.202	≤0.4	PASS
2DH1	Ant1	Hop	0.38	320	0.122	≤0.4	PASS
2DH3	Ant1	Hop	1.63	170	0.277	≤0.4	PASS
2DH5	Ant1	Hop	2.88	130	0.374	≤0.4	PASS
3DH1	Ant1	Hop	0.37	330	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.63	180	0.293	≤0.4	PASS
3DH5	Ant1	Hop	2.88	130	0.374	≤0.4	PASS

Test Graphs

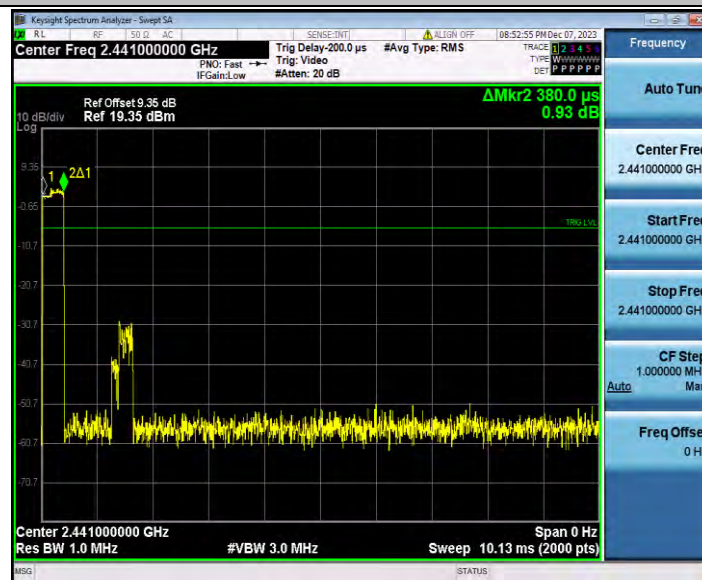




DH5_Ant1_Hop



DH5_Ant1_Hop



2DH1_Ant1_Hop

Keysight Spectrum Analyzer - Sweep SA

AL 10.0 dB

SENSE: TWT

ALIGN OFF

08:53:49 PM Dec 07, 2023

Center Freq 2.441000000 GHz

Trig Delay: 200.0 μ s

#Avg Type: RMS

TRACED 12.4 s

TYPE: WWWW

DET: P P P P P P

PNO: Fast

IFGain: Low

#Atten: 20 dB

Ref Offset: 9.35 dB

Ref 19.35 dBm

Δ Mkr2 1.631 ms

1.20 dB

10 dB/div

Log

9.35

0.65

2.41

TRG LVL

Center 2.441000000 GHz

Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 10.13 ms (2000 pts)

Span 0 Hz

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

MSG STATUS

Keysight Spectrum Analyzer - Sweep SA

SENSE: FWT

ALIGN: OFF

08:54:09 PM Dec 07, 2023

Center Freq 2.441000000 GHz

Trig Delay: 0.000 s

#Avg Type: RMS

Trace 1 2 4 8

PNO: Fast

IF Gain: Low

#Atten: 20 dB

TYPE: WWWWWWW

DET: P P P P P P

Ref Offset: 9.35 dB

Ref 19.35 dBm

10 dB/div

Log

9.35

0.65

0.7

20.7

30.7

40.7

50.7

60.7

70.7

Center 2.441000000 GHz

Res BW 510 kHz

#VBW 3.0 MHz

Span 0 Hz

Sweep 3.162 s (30000 pts)

Auto Tune

Center Freq 2.441000000 GHz

Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 510.000 kHz

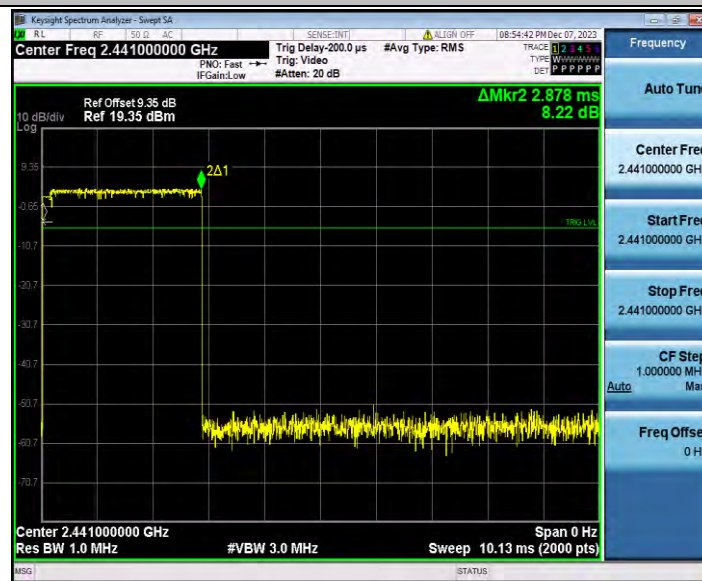
Man

Auto

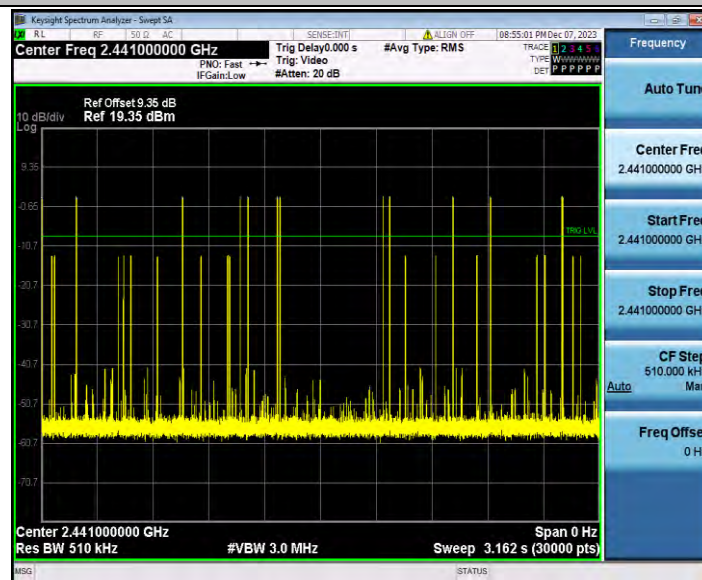
Freq Offset 0 Hz

MSG STATUS

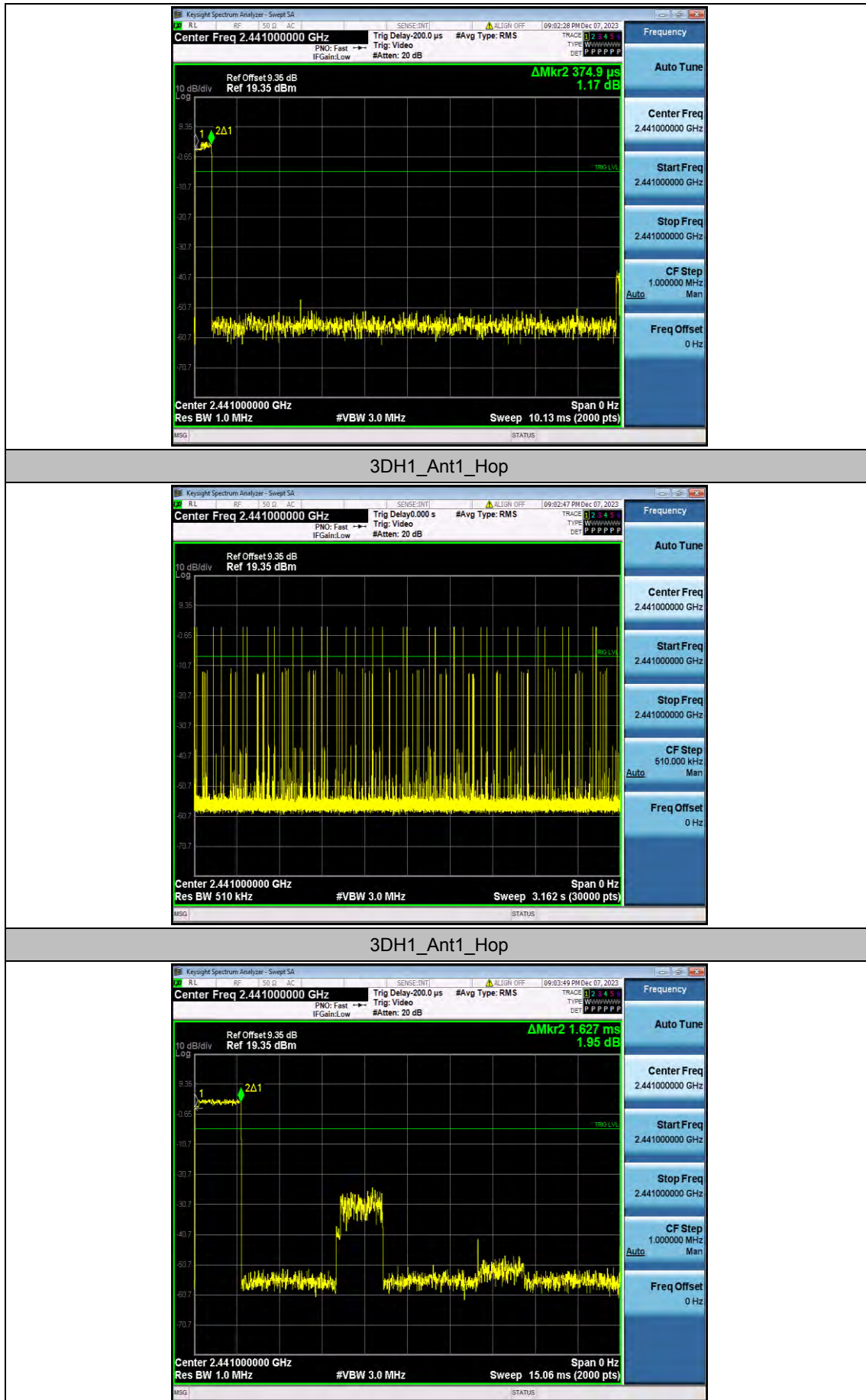
2DH3_Ant1_Hop



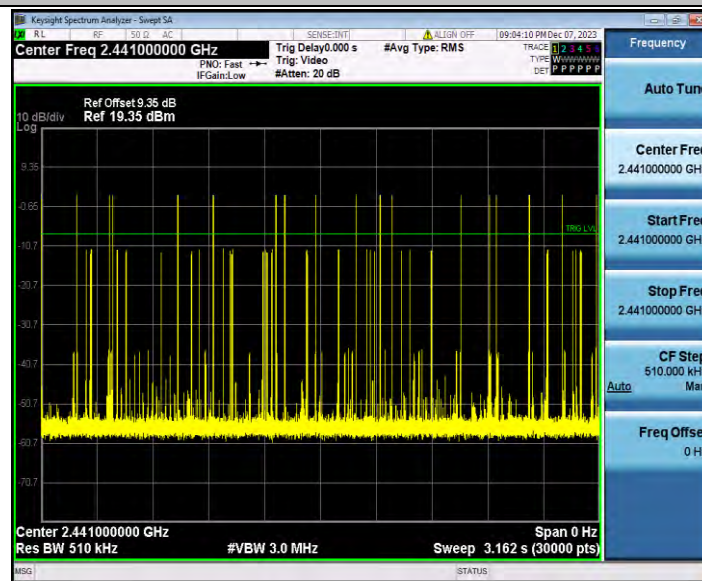
2DH5_Ant1_Hop



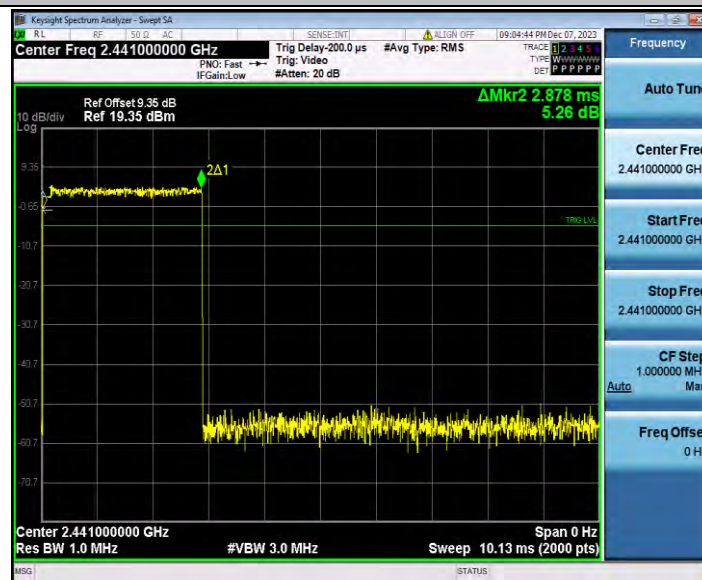
2DH5_Ant1_Hop



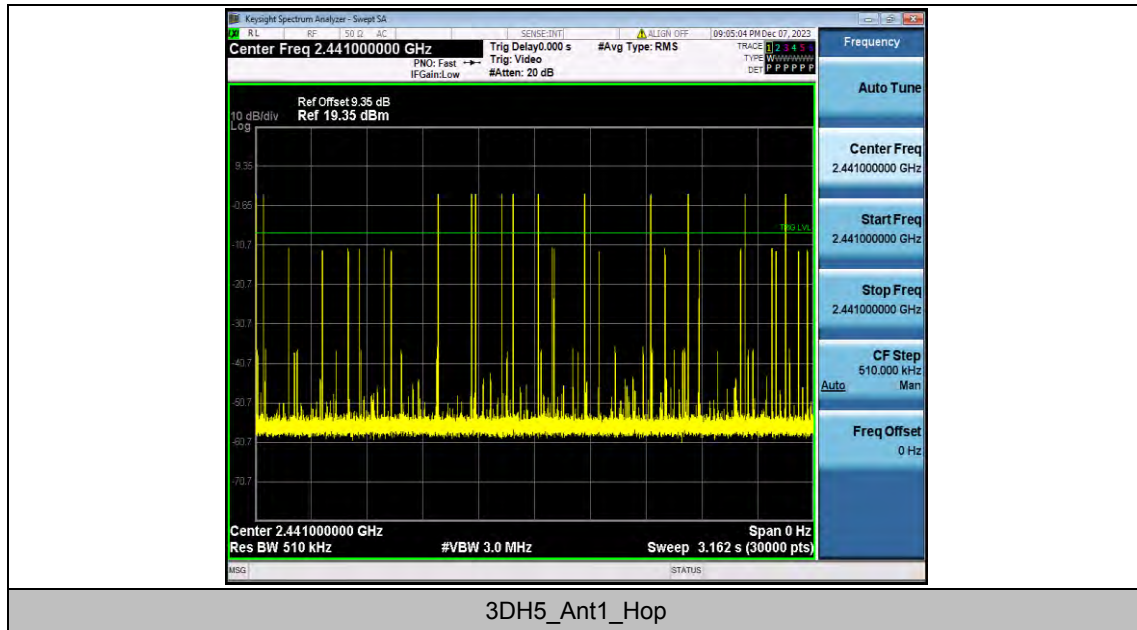
3DH3_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop

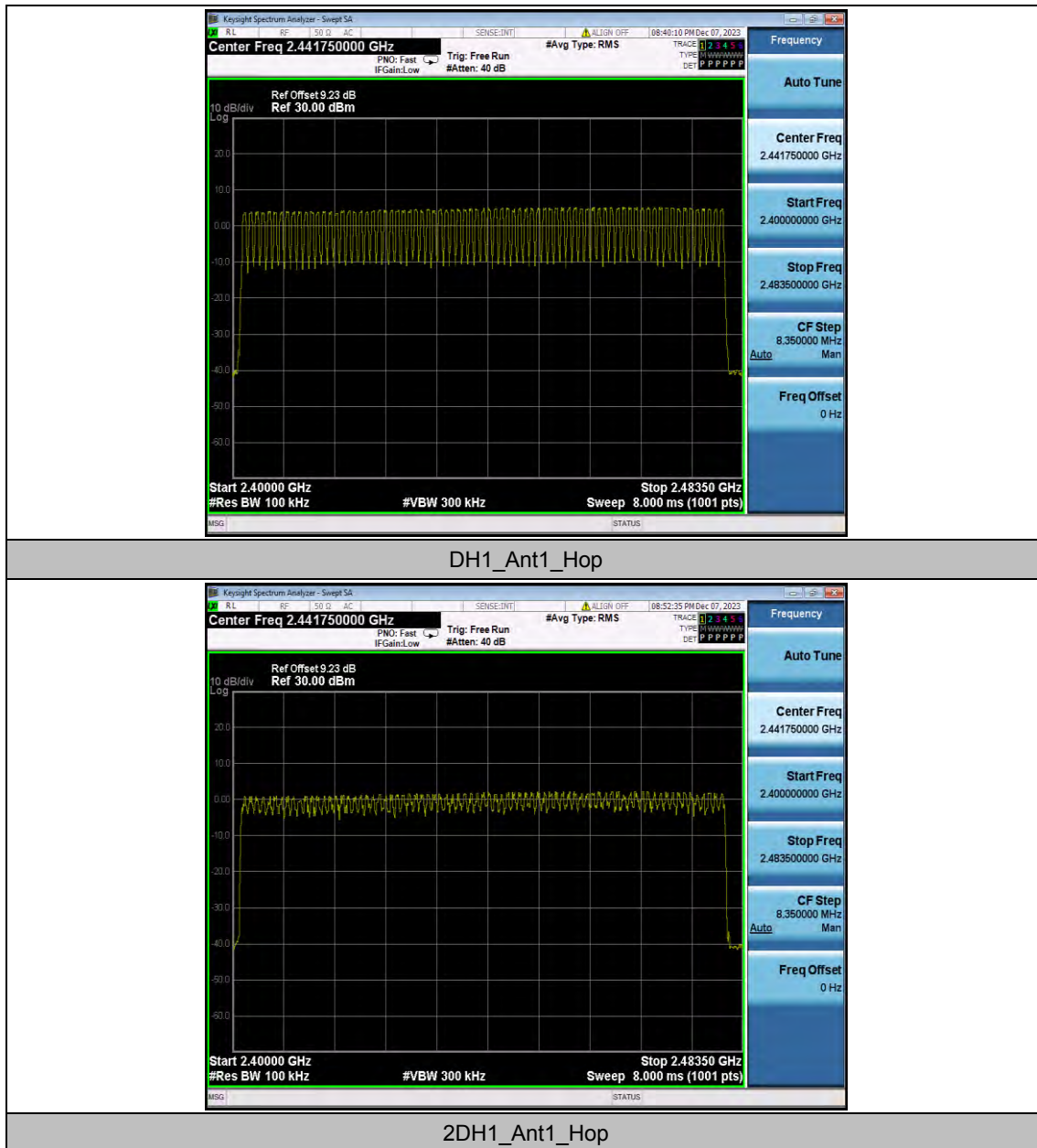


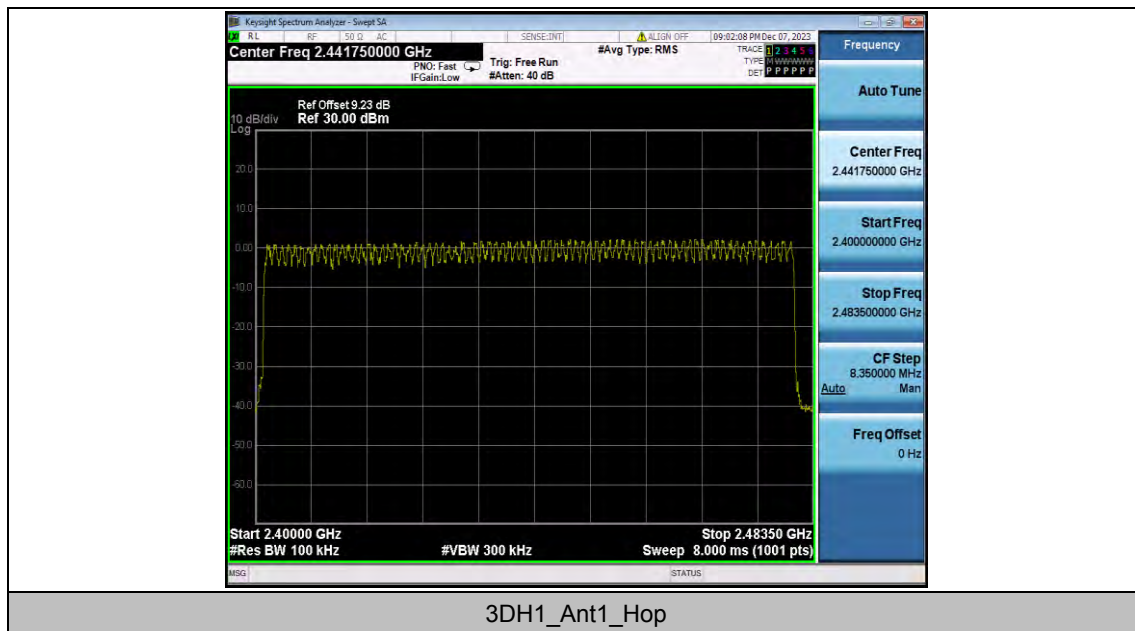
Appendix A.6: Number of hopping channels

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Hop	79	≥15	PASS
2DH1	Ant1	Hop	79	≥15	PASS
3DH1	Ant1	Hop	79	≥15	PASS

Test Graphs



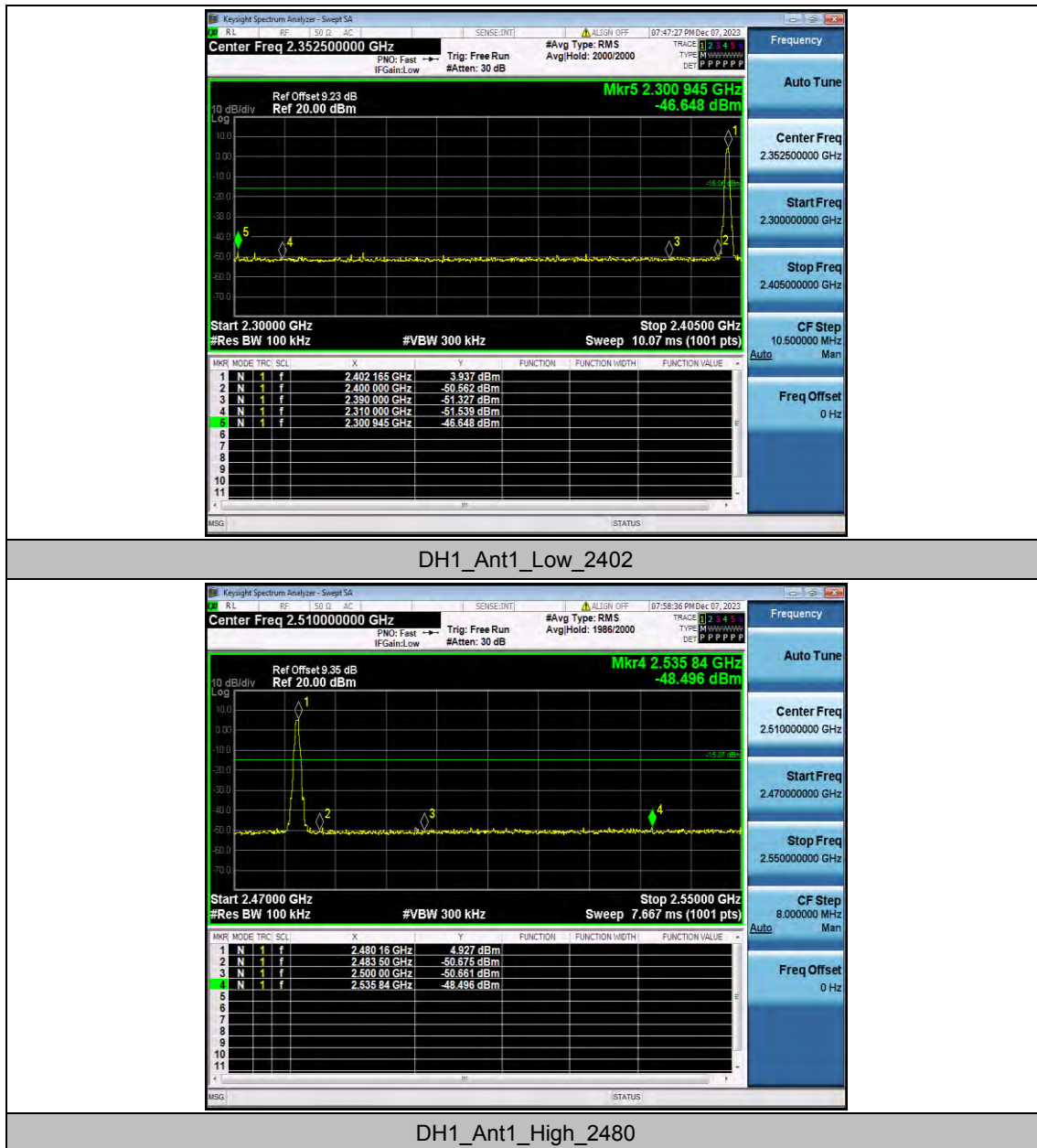


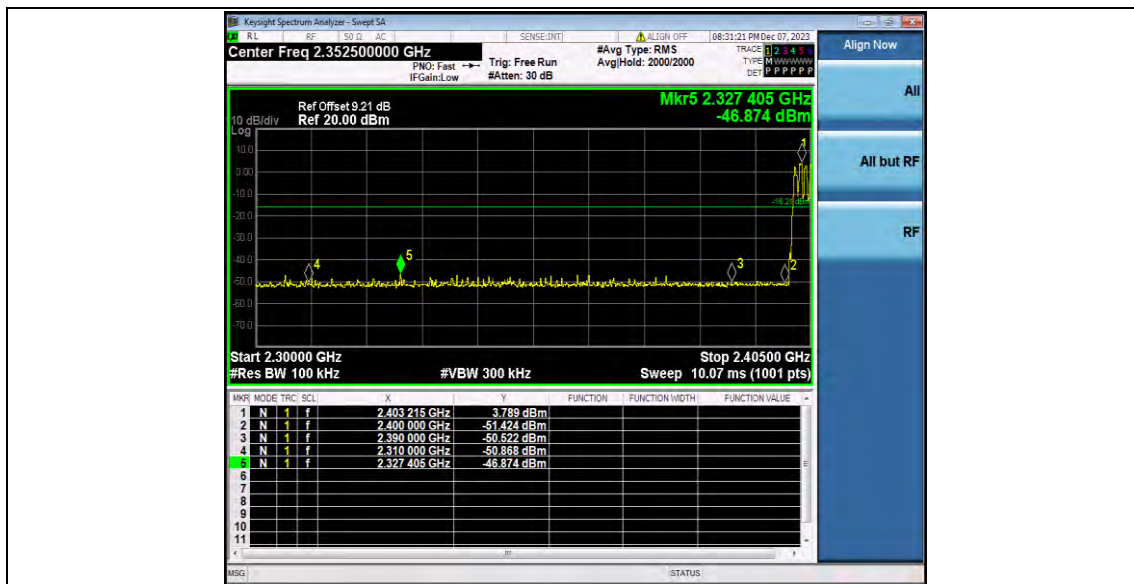
Appendix A.7: Band edge measurements

Test Result

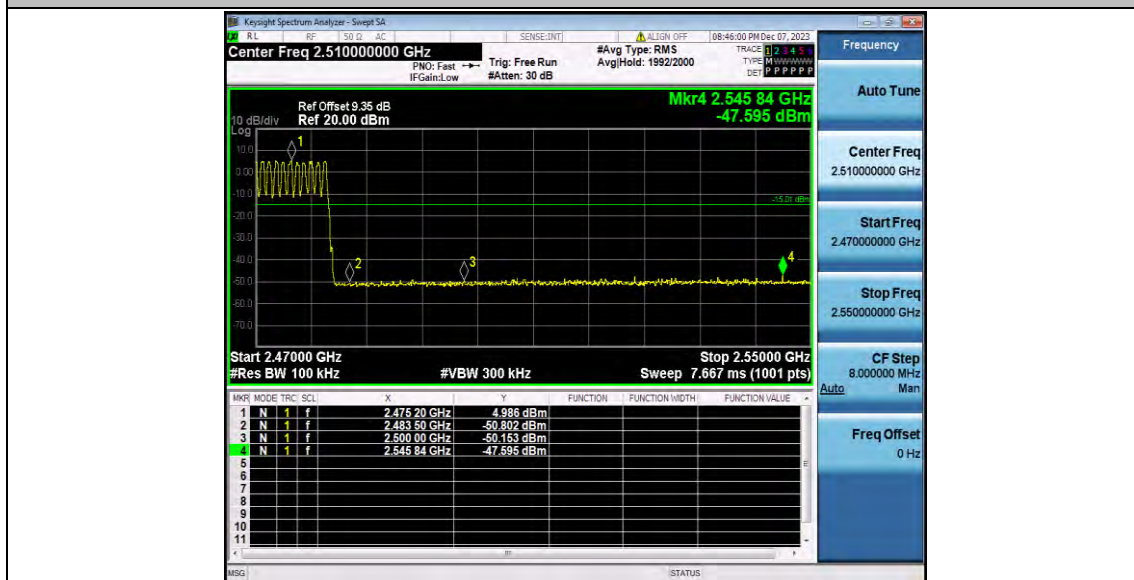
Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	3.94	-46.65	≤-16.06	PASS
		High	2480	4.93	-48.5	≤-15.07	PASS
		Low	Hop_2402	3.79	-46.87	≤-16.21	PASS
		High	Hop_2480	4.99	-47.6	≤-15.01	PASS
2DH1	Ant1	Low	2402	0.82	-48.06	≤-19.18	PASS
		High	2480	1.86	-48.34	≤-18.14	PASS
		Low	Hop_2402	-0.30	-49.42	≤-20.3	PASS
		High	Hop_2480	1.14	-48.71	≤-18.86	PASS
3DH1	Ant1	Low	2402	0.86	-47.84	≤-19.14	PASS
		High	2480	1.79	-48.53	≤-18.21	PASS
		Low	Hop_2402	0.75	-49.53	≤-19.25	PASS
		High	Hop_2480	0.30	-48.33	≤-19.7	PASS

Test Graphs

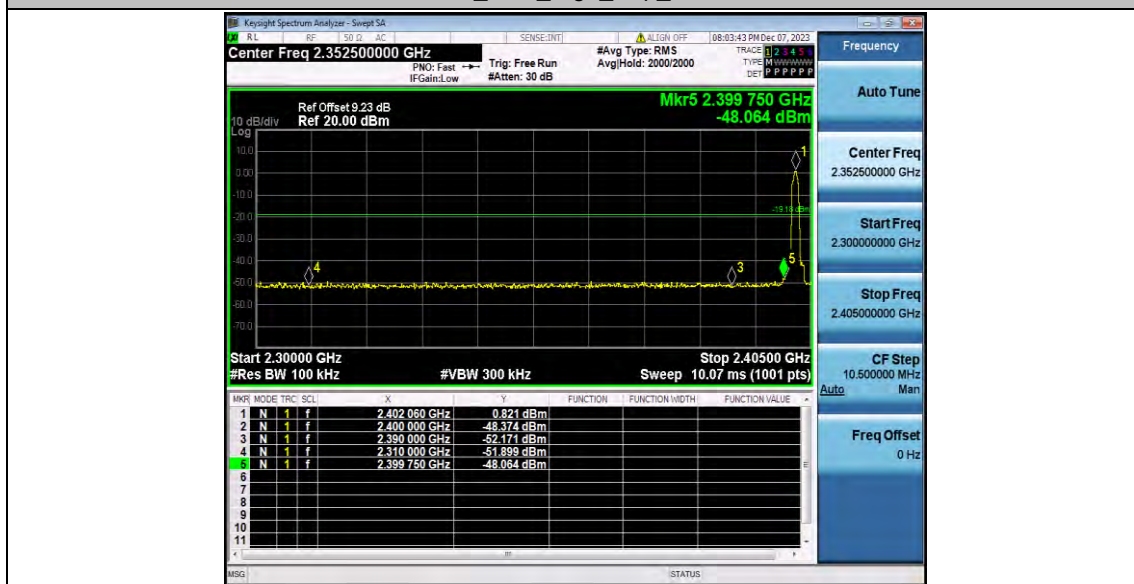




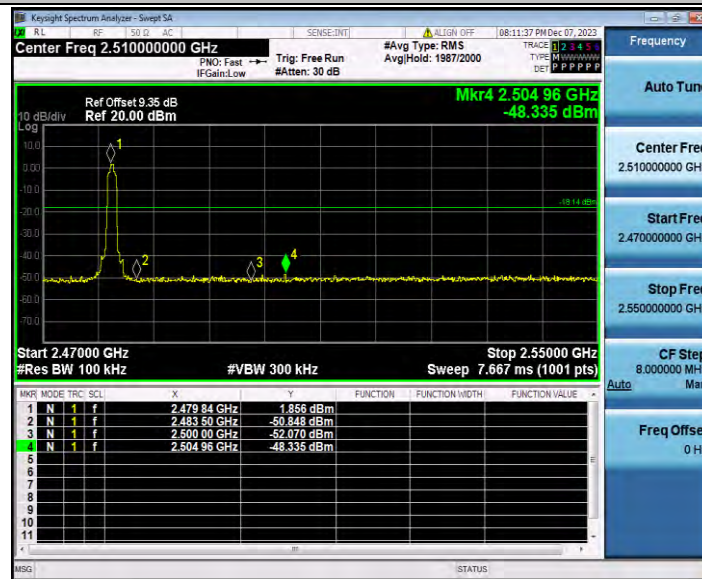
DH1_Ant1_Low_Hop_2402



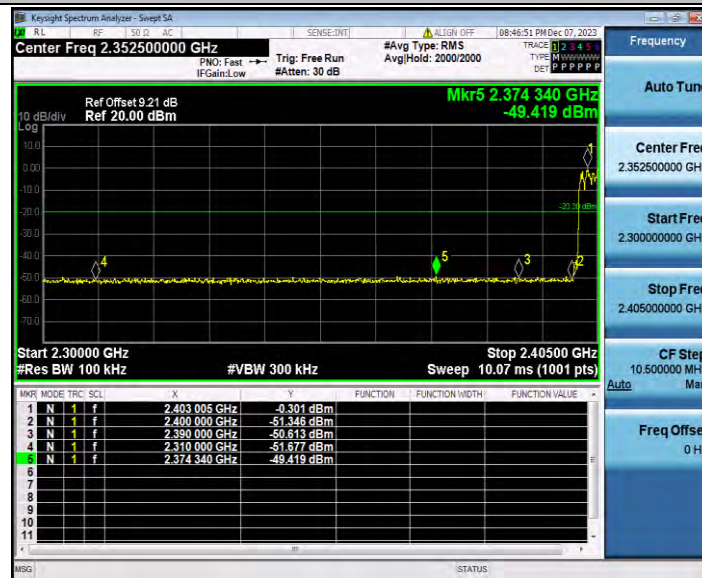
DH1_Ant1_High_Hop_2480



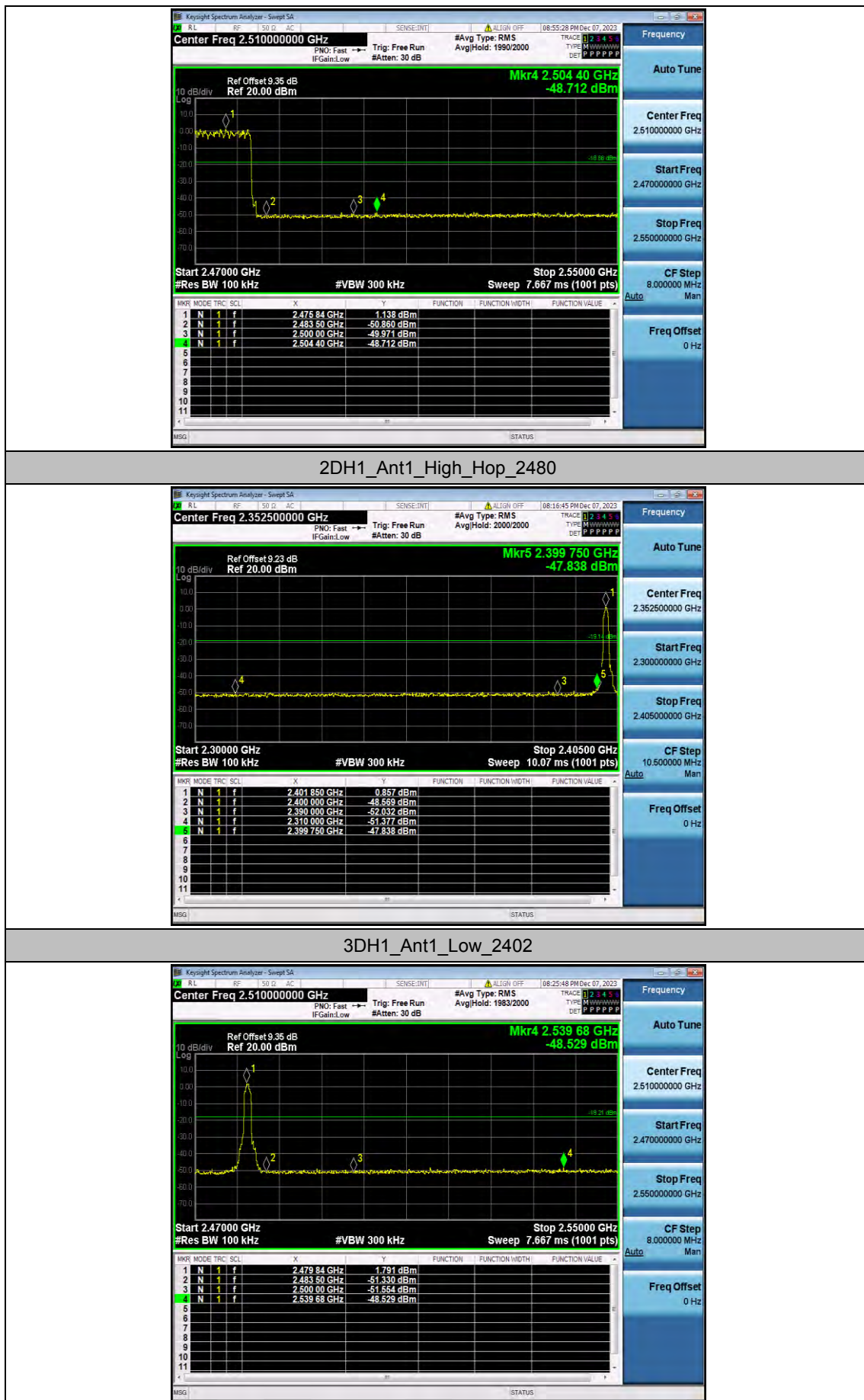
2DH1_Ant1_Low_2402



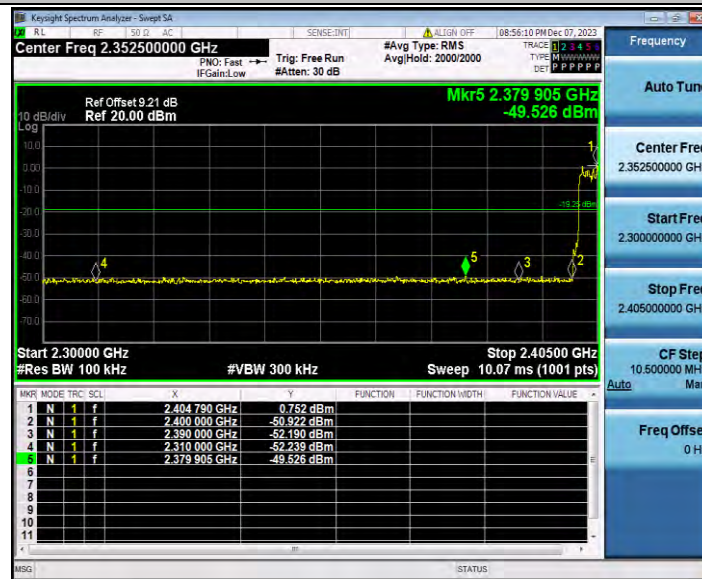
2DH1_Ant1_High_2480



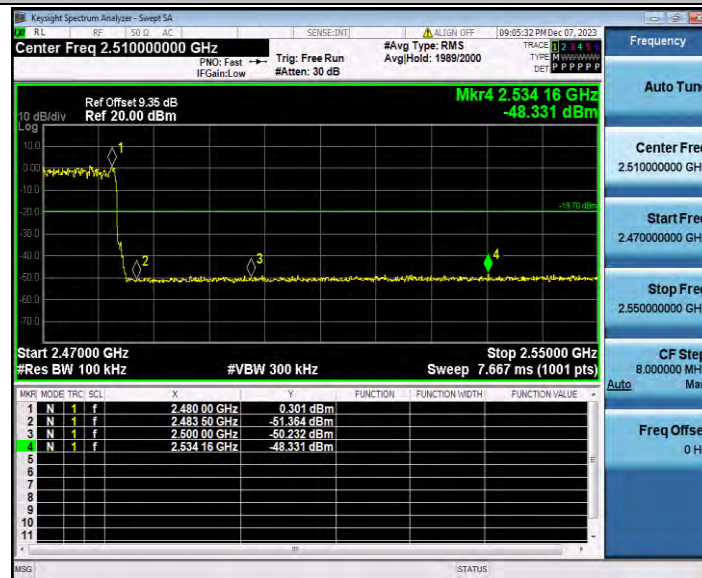
2DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



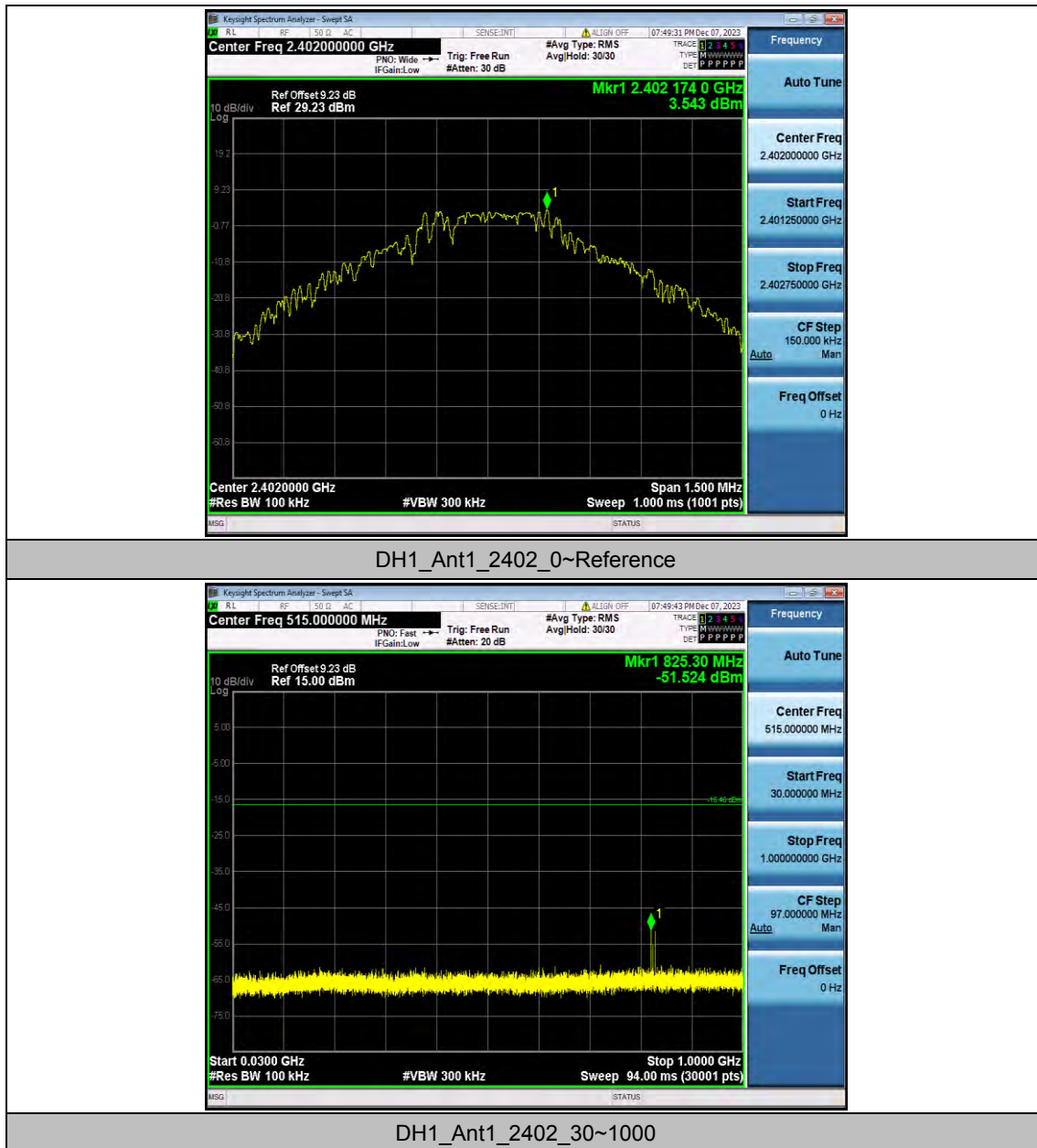
3DH1_Ant1_High_Hop_2480

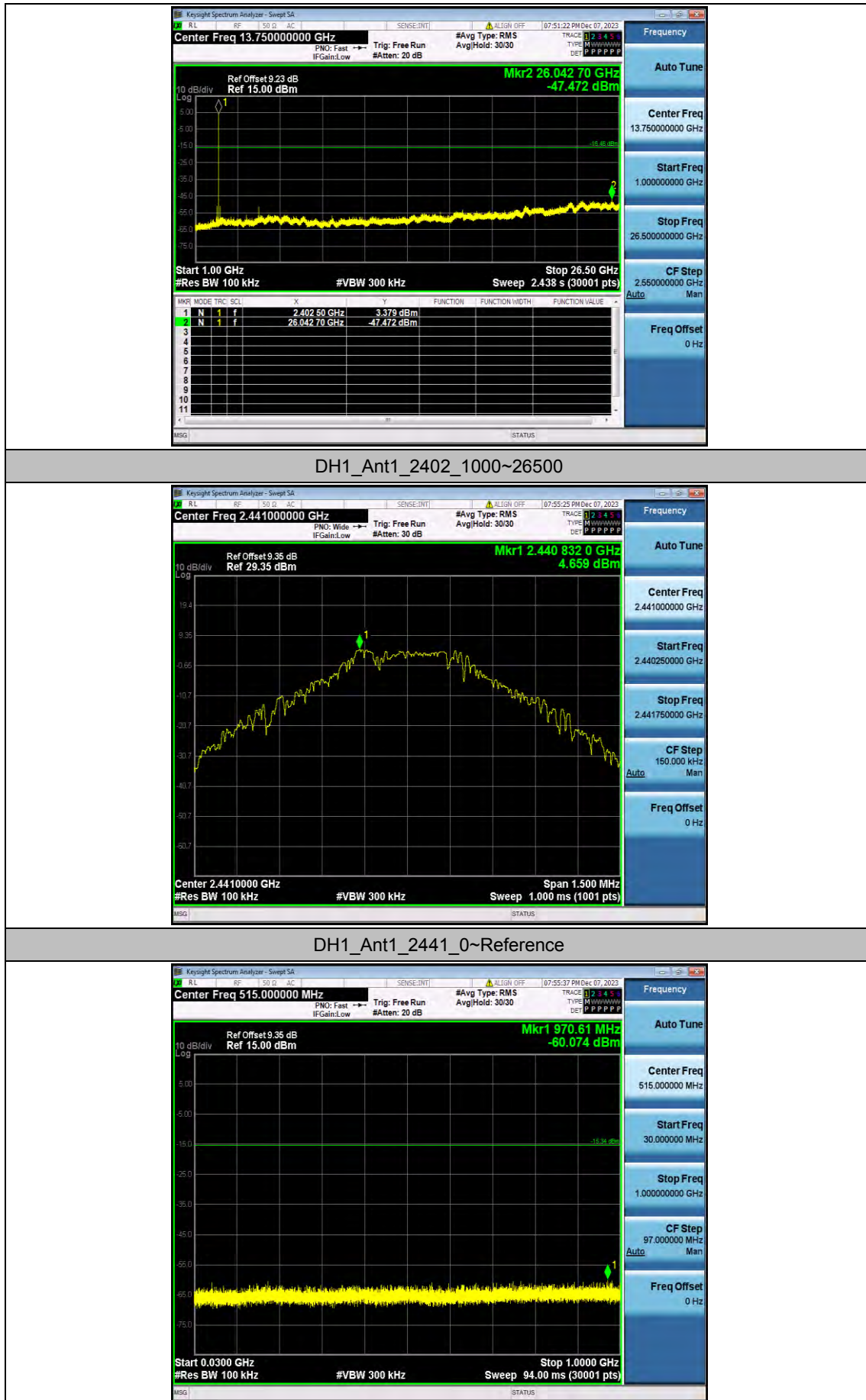
Appendix A.8: Conducted Spurious Emission

Test Result

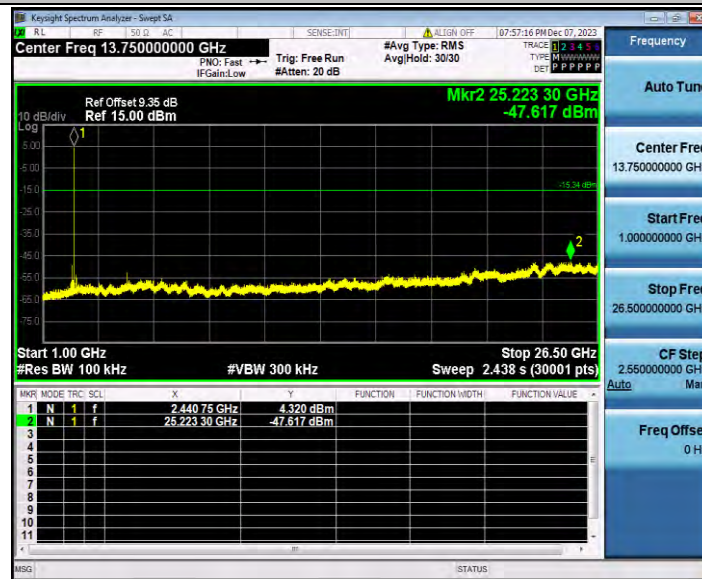
Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	3.54	3.54	---	PASS
			30~1000	3.54	-51.52	≤-16.46	PASS
			1000~26500	3.54	-47.47	≤-16.46	PASS
		2441	Reference	4.66	4.66	---	PASS
			30~1000	4.66	-60.07	≤-15.34	PASS
			1000~26500	4.66	-47.62	≤-15.34	PASS
		2480	Reference	4.47	4.47	---	PASS
			30~1000	4.47	-48.64	≤-15.53	PASS
			1000~26500	4.47	-47.86	≤-15.53	PASS
2DH1	Ant1	2402	Reference	0.33	0.33	---	PASS
			30~1000	0.33	-59.67	≤-19.67	PASS
			1000~26500	0.33	-47.92	≤-19.67	PASS
		2441	Reference	1.34	1.34	---	PASS
			30~1000	1.34	-60.14	≤-18.66	PASS
			1000~26500	1.34	-47.49	≤-18.66	PASS
		2480	Reference	0.96	0.96	---	PASS
			30~1000	0.96	-46.9	≤-19.04	PASS
			1000~26500	0.96	-47.24	≤-19.04	PASS
3DH1	Ant1	2402	Reference	0.01	0.01	---	PASS
			30~1000	0.01	-46.12	≤-19.99	PASS
			1000~26500	0.01	-47.85	≤-19.99	PASS
		2441	Reference	1.63	1.63	---	PASS
			30~1000	1.63	-60.33	≤-18.37	PASS
			1000~26500	1.63	-47.49	≤-18.37	PASS
		2480	Reference	1.29	1.29	---	PASS
			30~1000	1.29	-60.87	≤-18.71	PASS
			1000~26500	1.29	-47.68	≤-18.71	PASS

Test Graphs





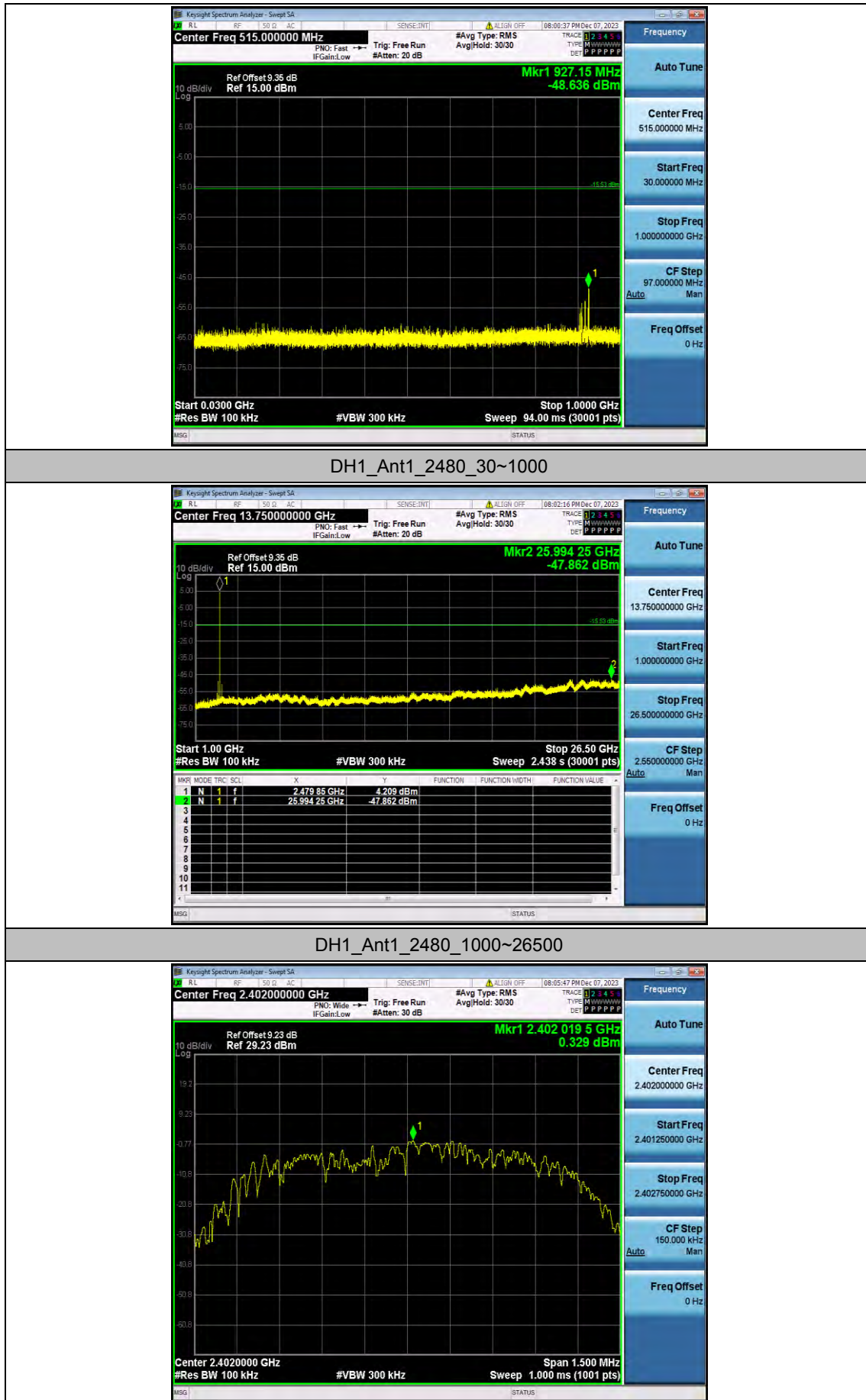
DH1_Ant1_2441_30~1000



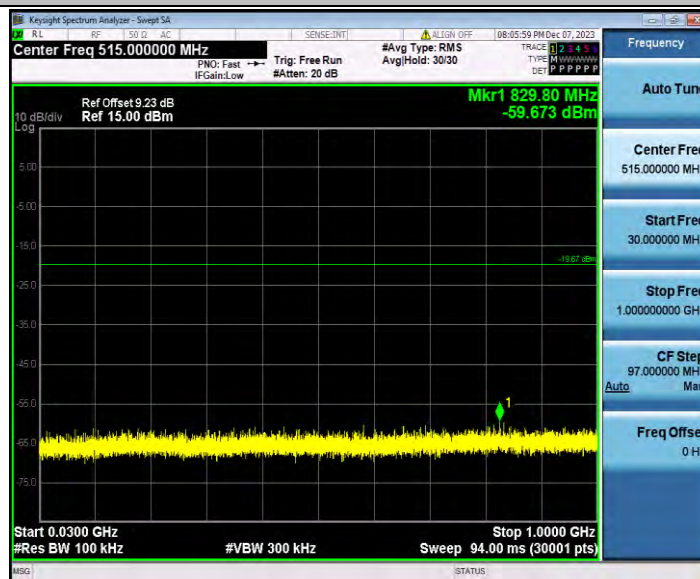
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



2DH1_Ant1_2402_0~Reference



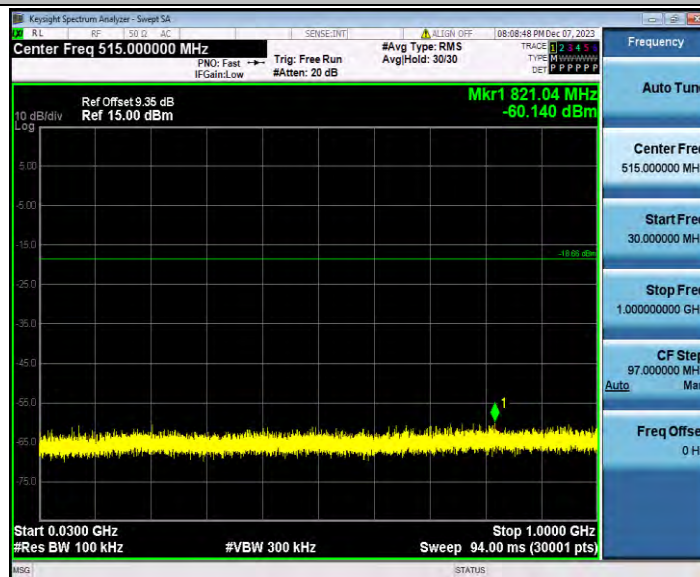
2DH1_Ant1_2402_30~1000



2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



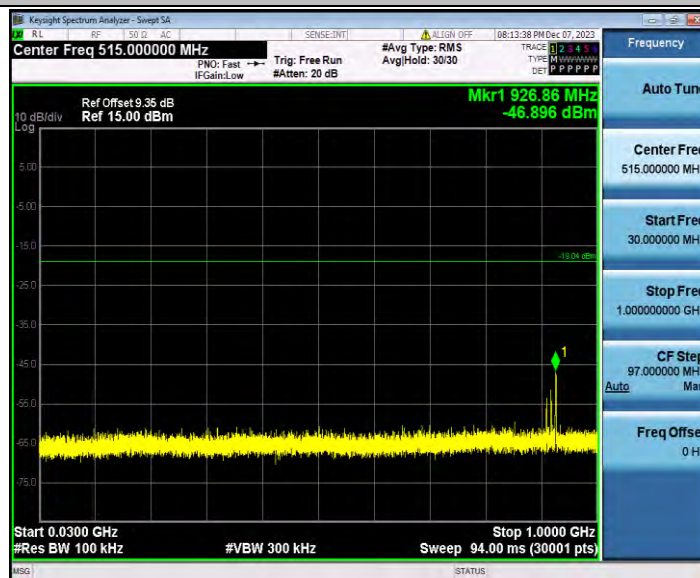
2DH1_Ant1_2441_30~1000



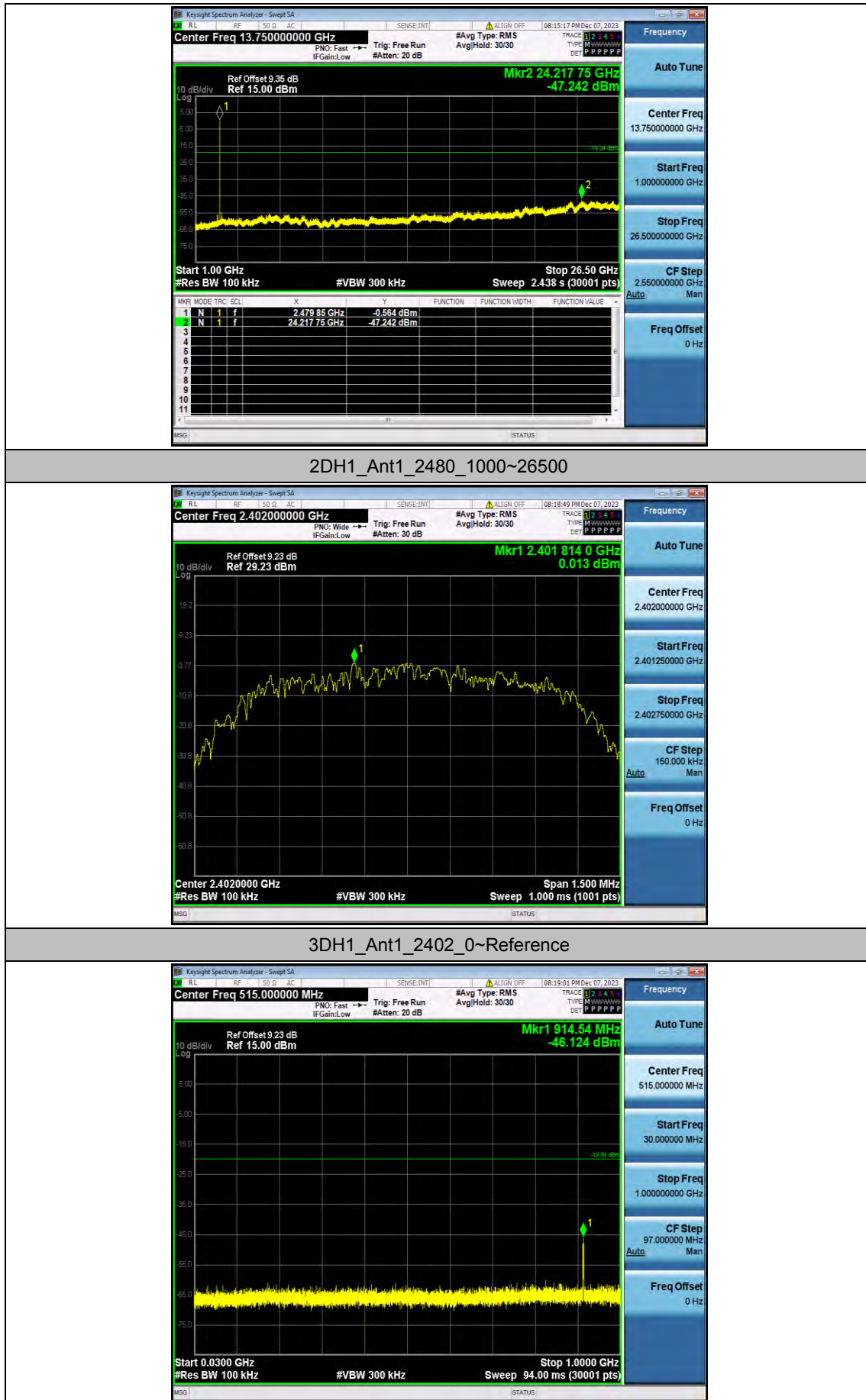
2DH1_Ant1_2441_1000~26500

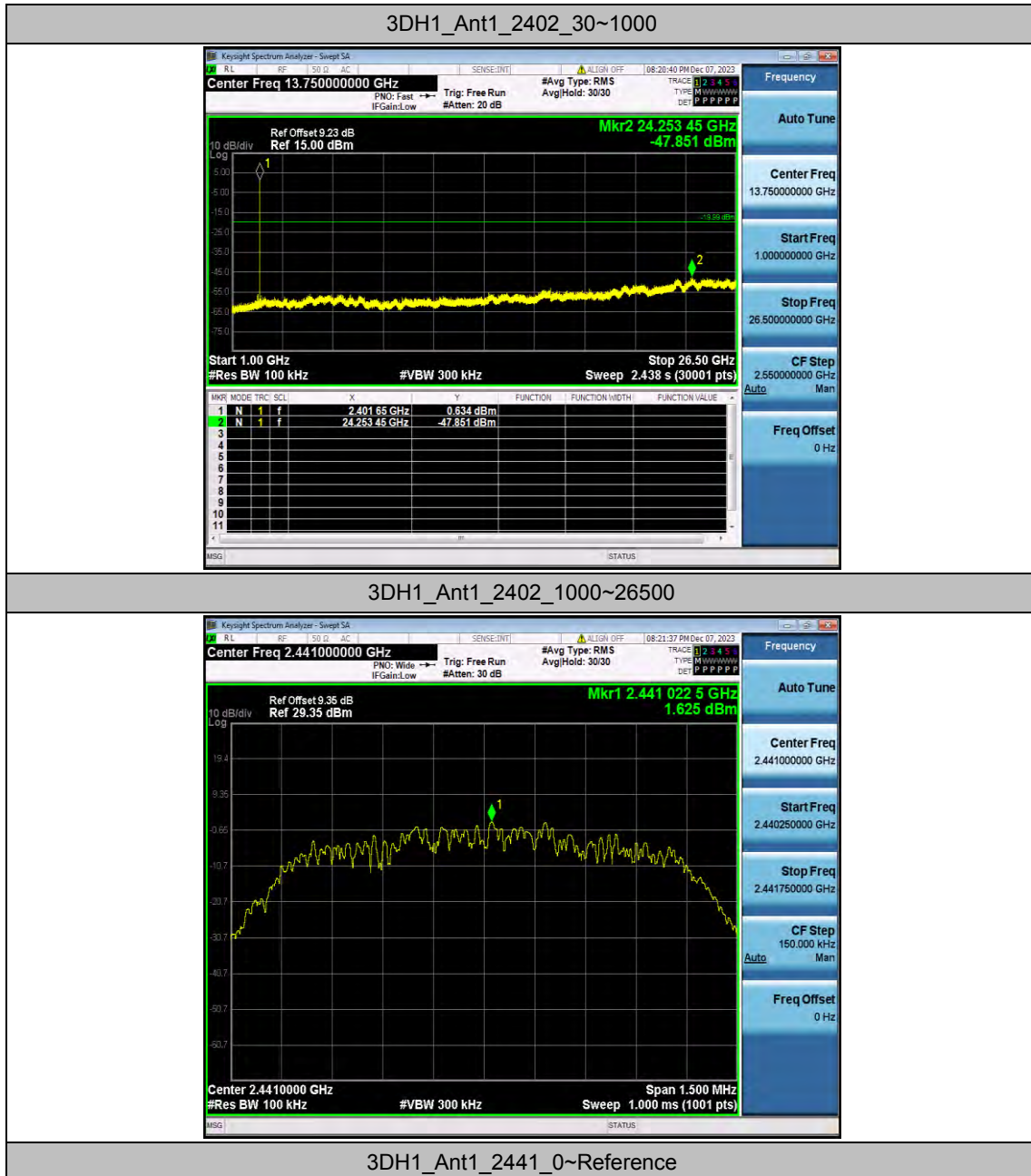


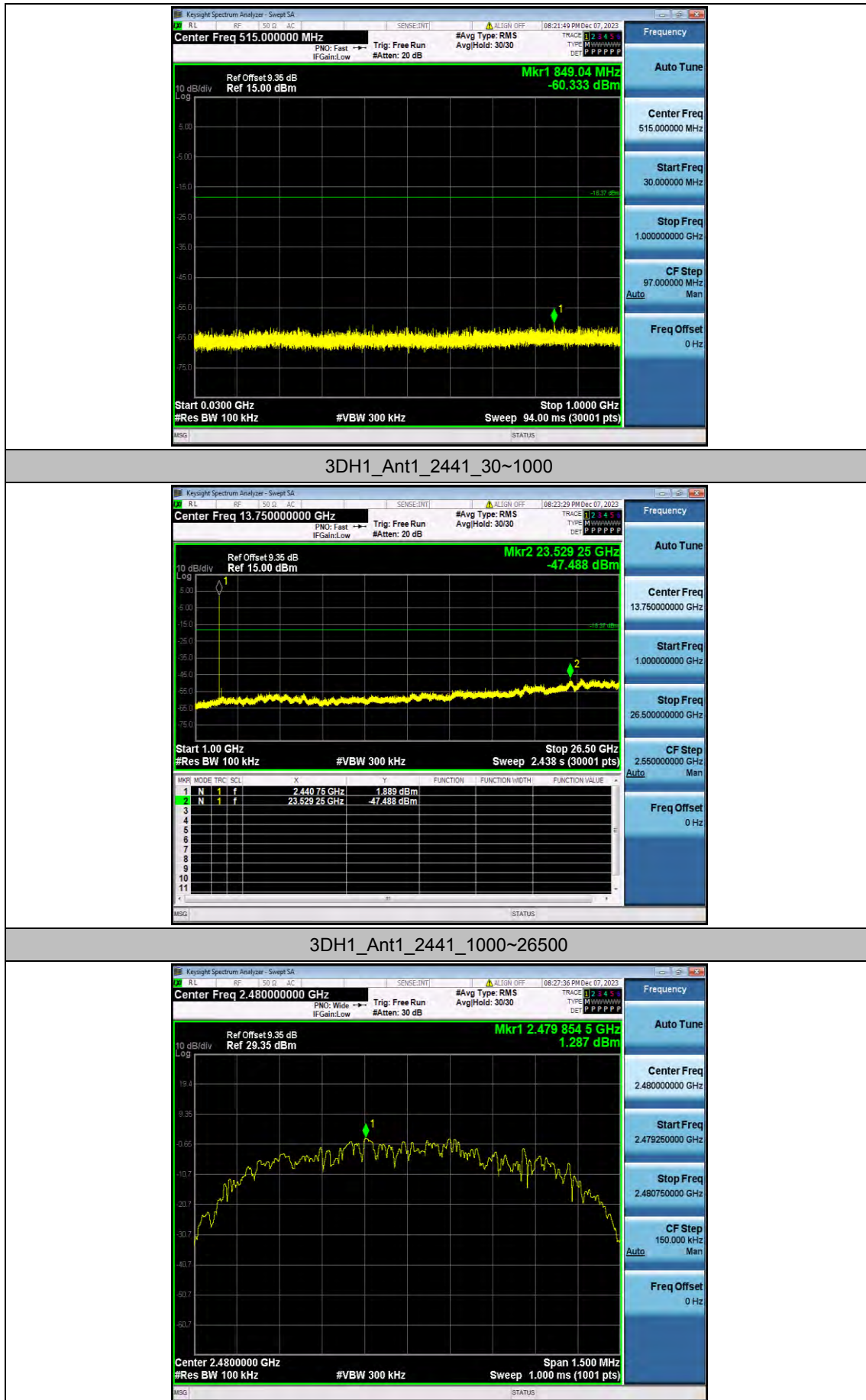
2DH1_Ant1_2480_0~Reference



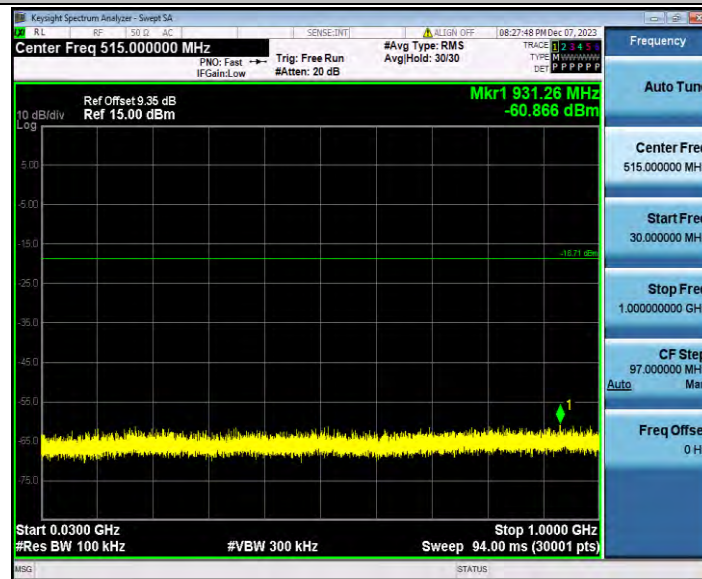
2DH1_Ant1_2480_30~1000



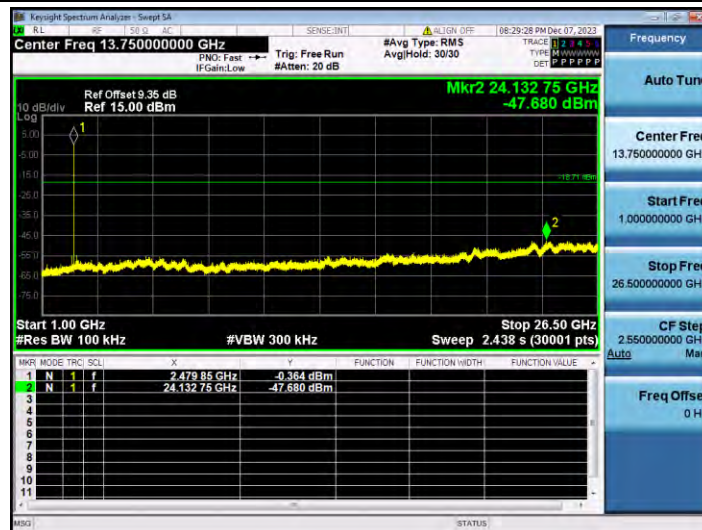




3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500