

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

Product Name: 4K HDMI Dongle

Trade Mark: N/A

Test Model: SN8BKCB

FCC ID: 2AOVU-SN8BKCX

Environmental Conditions

Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

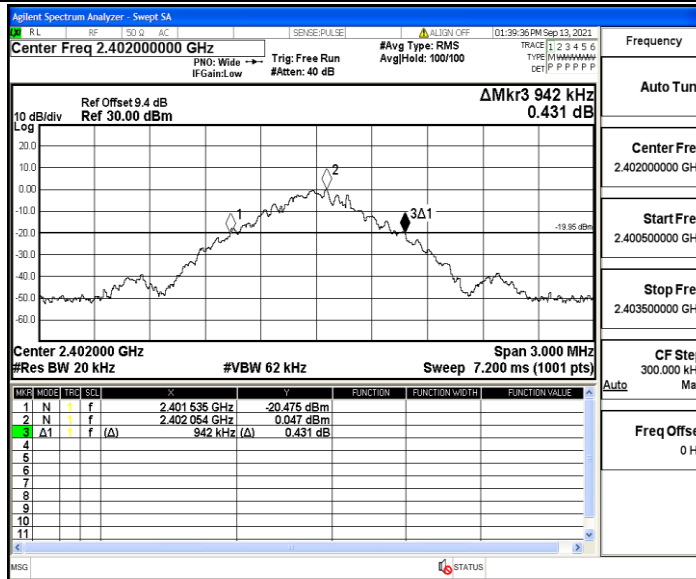
Appendix A: 20dB Emission Bandwidth

Test Result

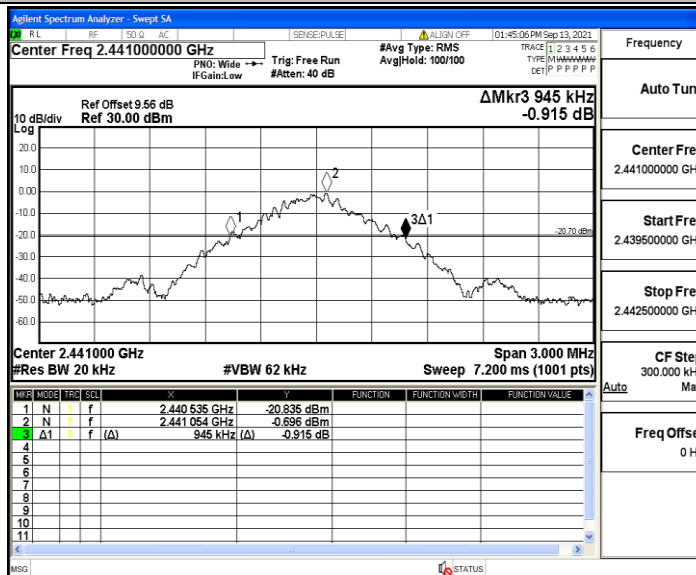
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.942	2401.535	2402.477	---	PASS
		2441	0.945	2440.535	2441.480	---	PASS
		2480	0.945	2479.532	2480.477	---	PASS
2DH5	Ant1	2402	1.320	2401.334	2402.654	---	PASS
		2441	1.344	2440.328	2441.672	---	PASS
		2480	1.332	2479.331	2480.663	---	PASS
3DH5	Ant1	2402	1.299	2401.349	2402.648	---	PASS
		2441	1.293	2440.352	2441.645	---	PASS
		2480	1.308	2479.343	2480.651	---	PASS

Test Graphs

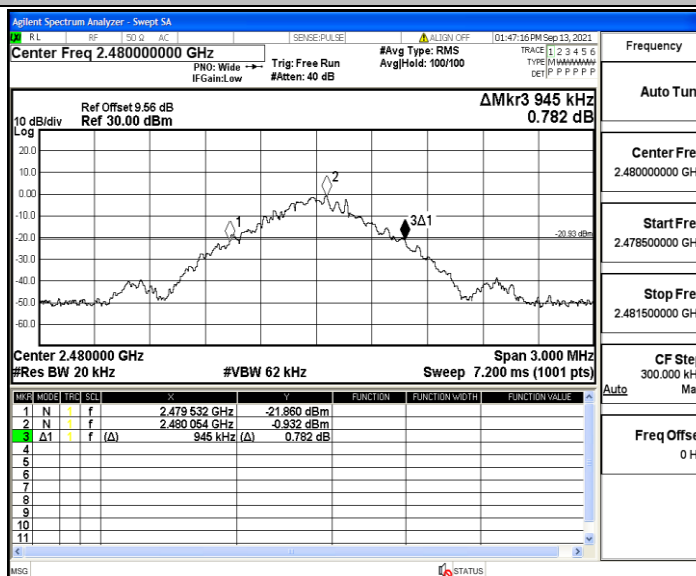
DH5_Ant1_2402



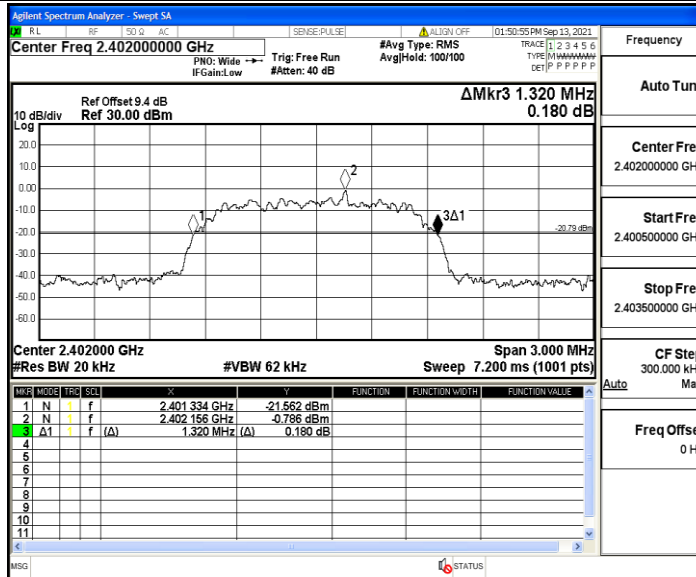
DH5_Ant1_2441



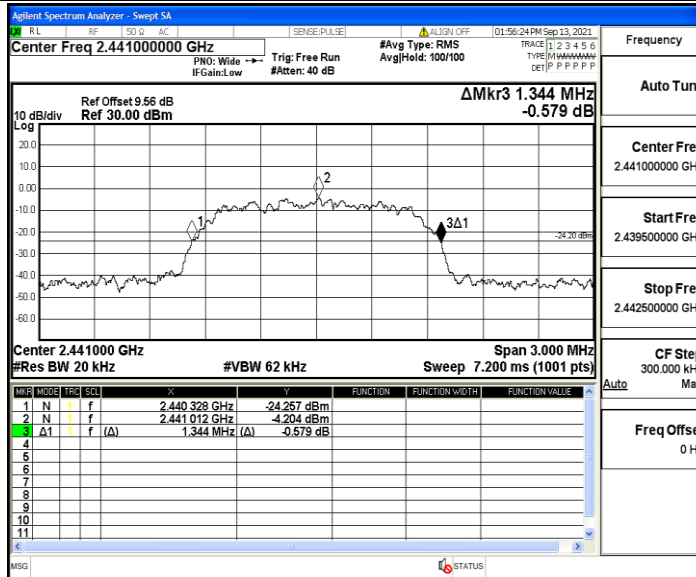
DH5_Ant1_2480



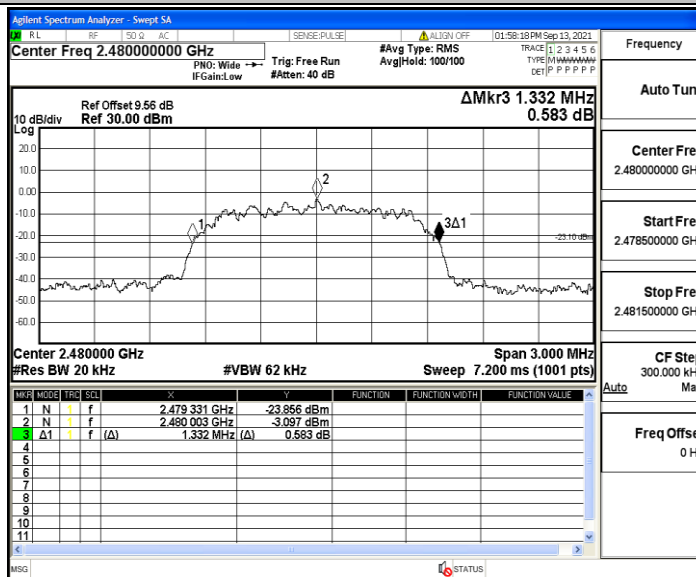
2DH5_Ant1_2402



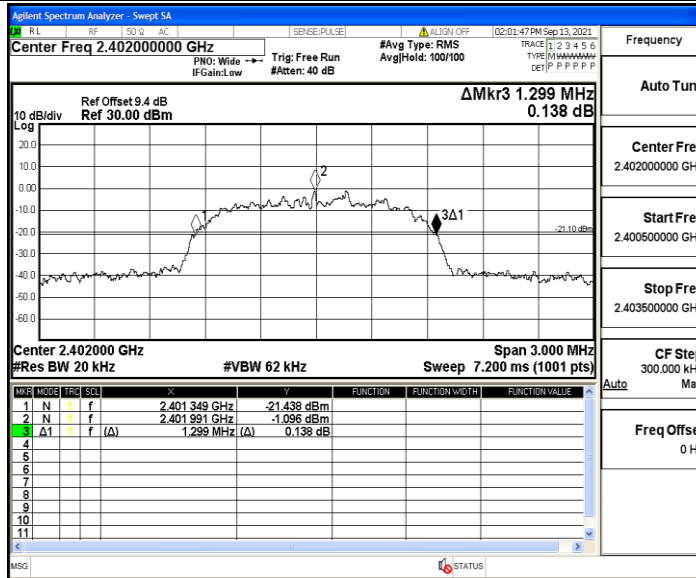
2DH5_Ant1_2441



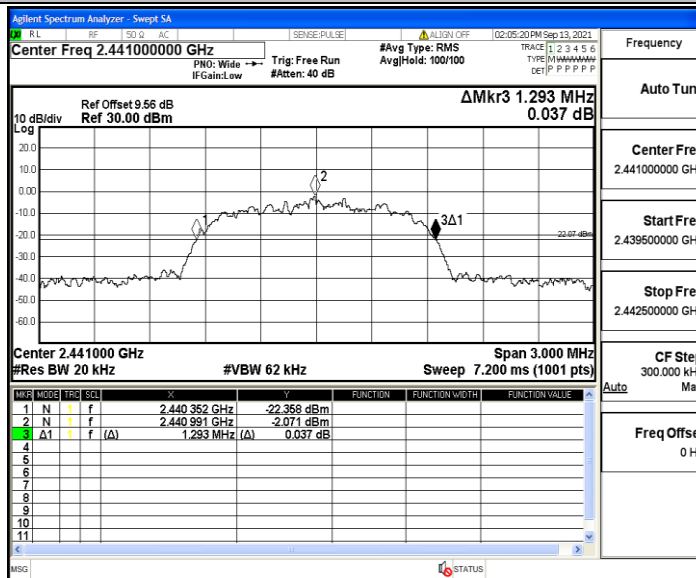
2DH5_Ant1_2480



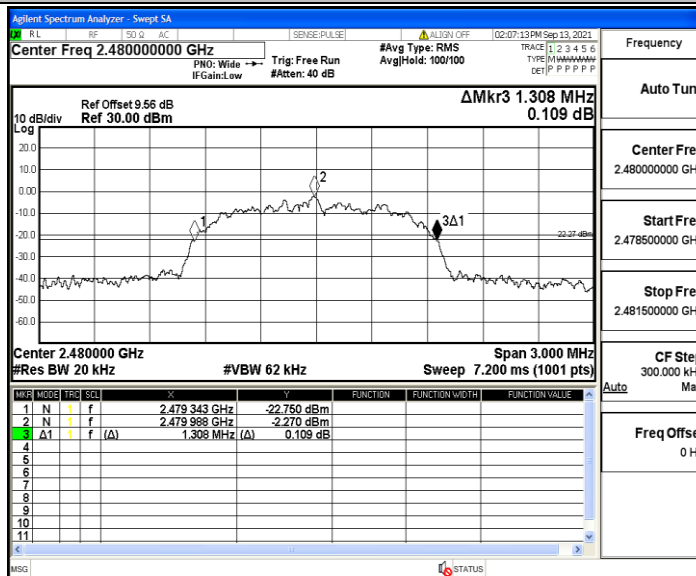
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

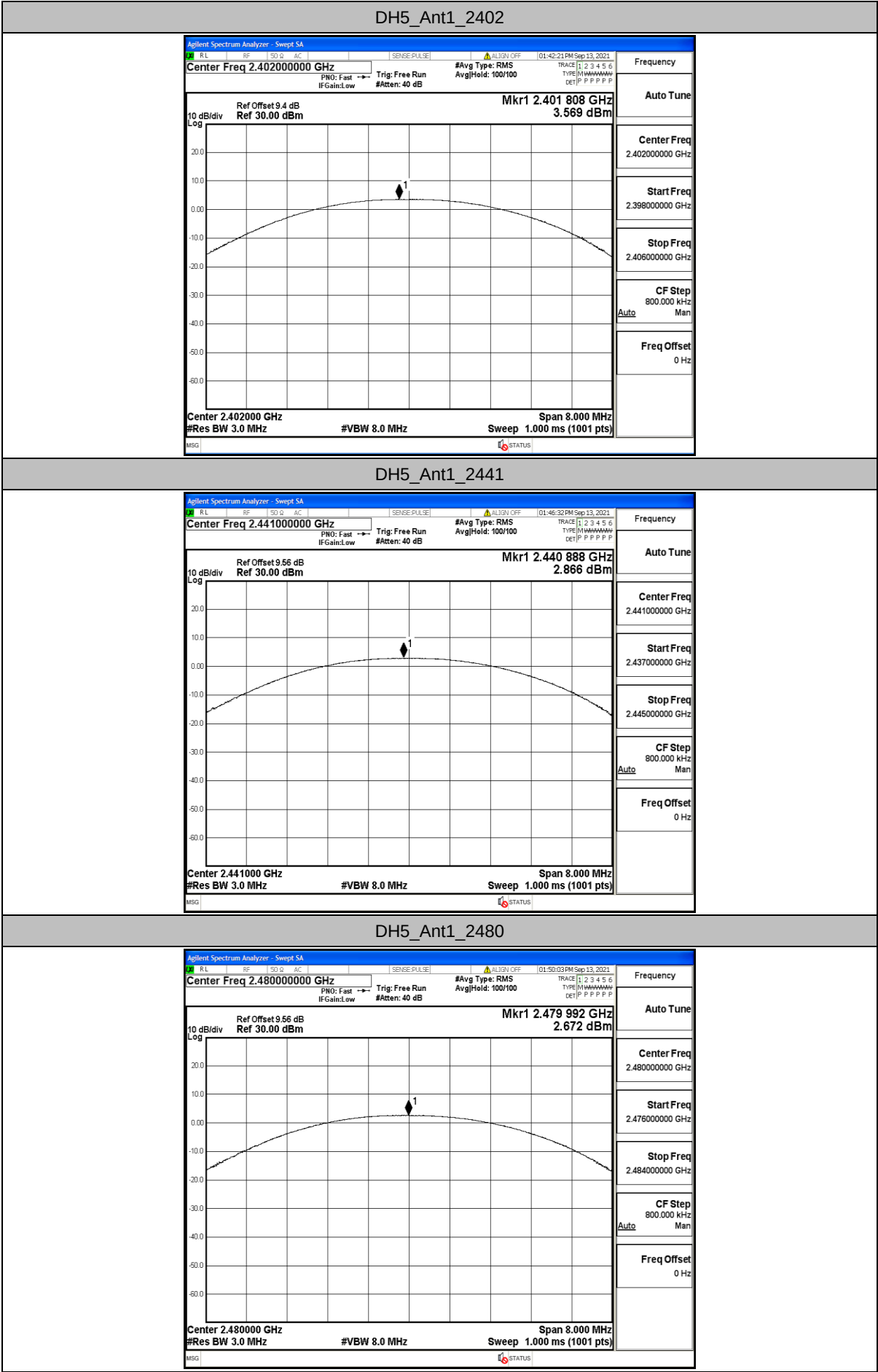


Appendix B: Maximum conducted output power

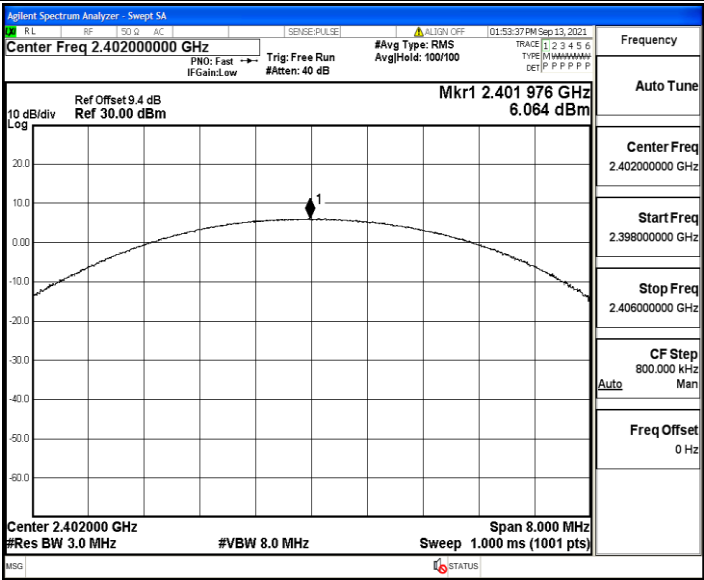
Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	3.57	≤30.00	PASS
		2441	2.87	≤30.00	PASS
		2480	2.67	≤30.00	PASS
2DH5	Ant1	2402	6.06	≤20.97	PASS
		2441	5.33	≤20.97	PASS
		2480	5.08	≤20.97	PASS
3DH5	Ant1	2402	6.35	≤20.97	PASS
		2441	5.61	≤20.97	PASS
		2480	5.3	≤20.97	PASS

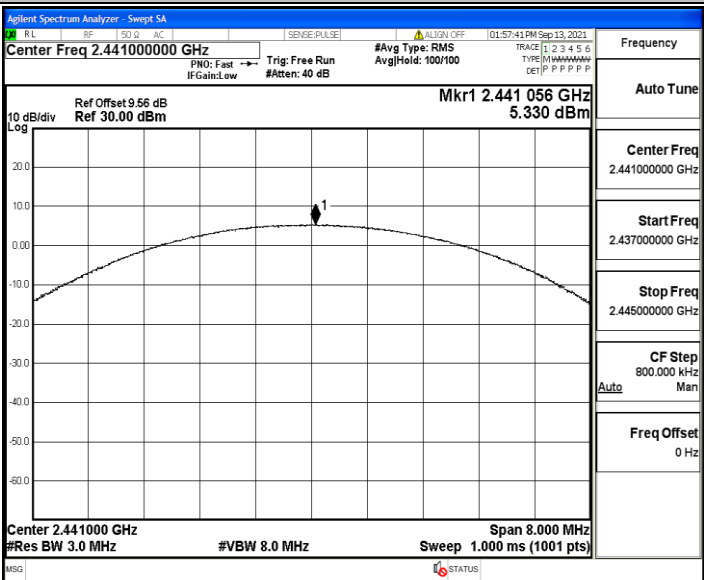
Test Graphs



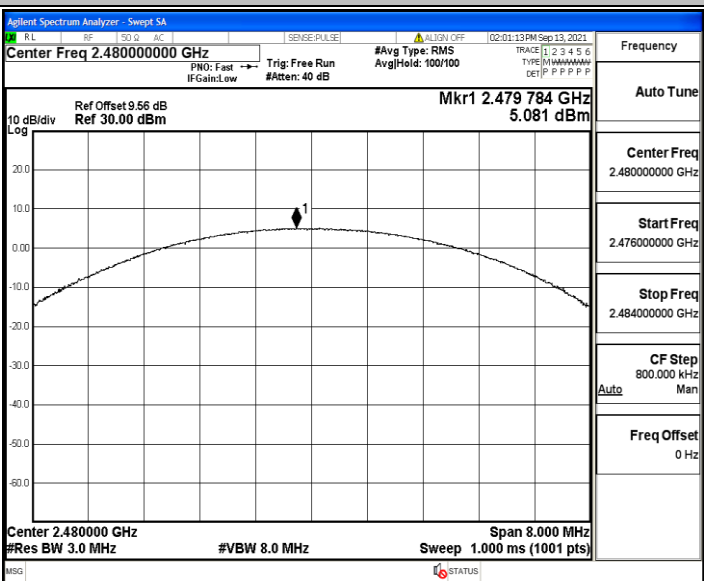
2DH5_Ant1_2402



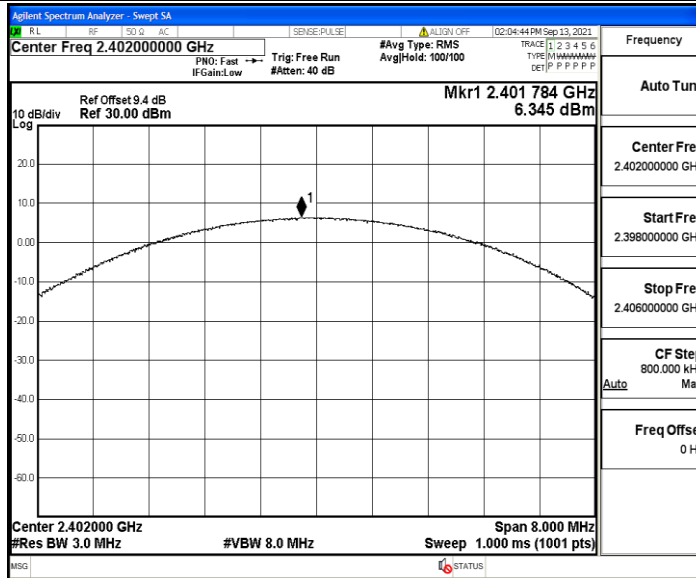
2DH5_Ant1_2441



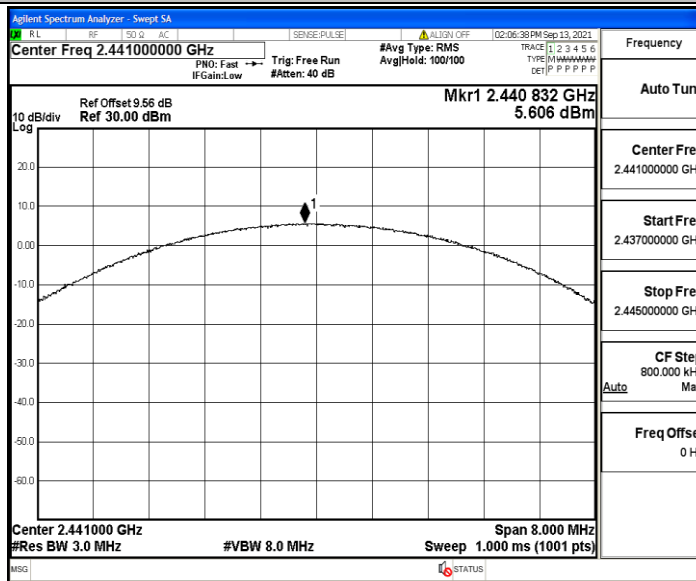
2DH5_Ant1_2480



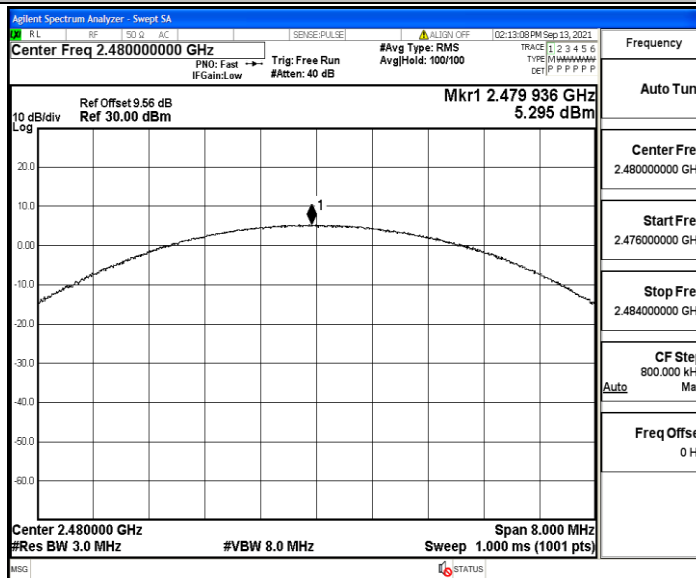
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

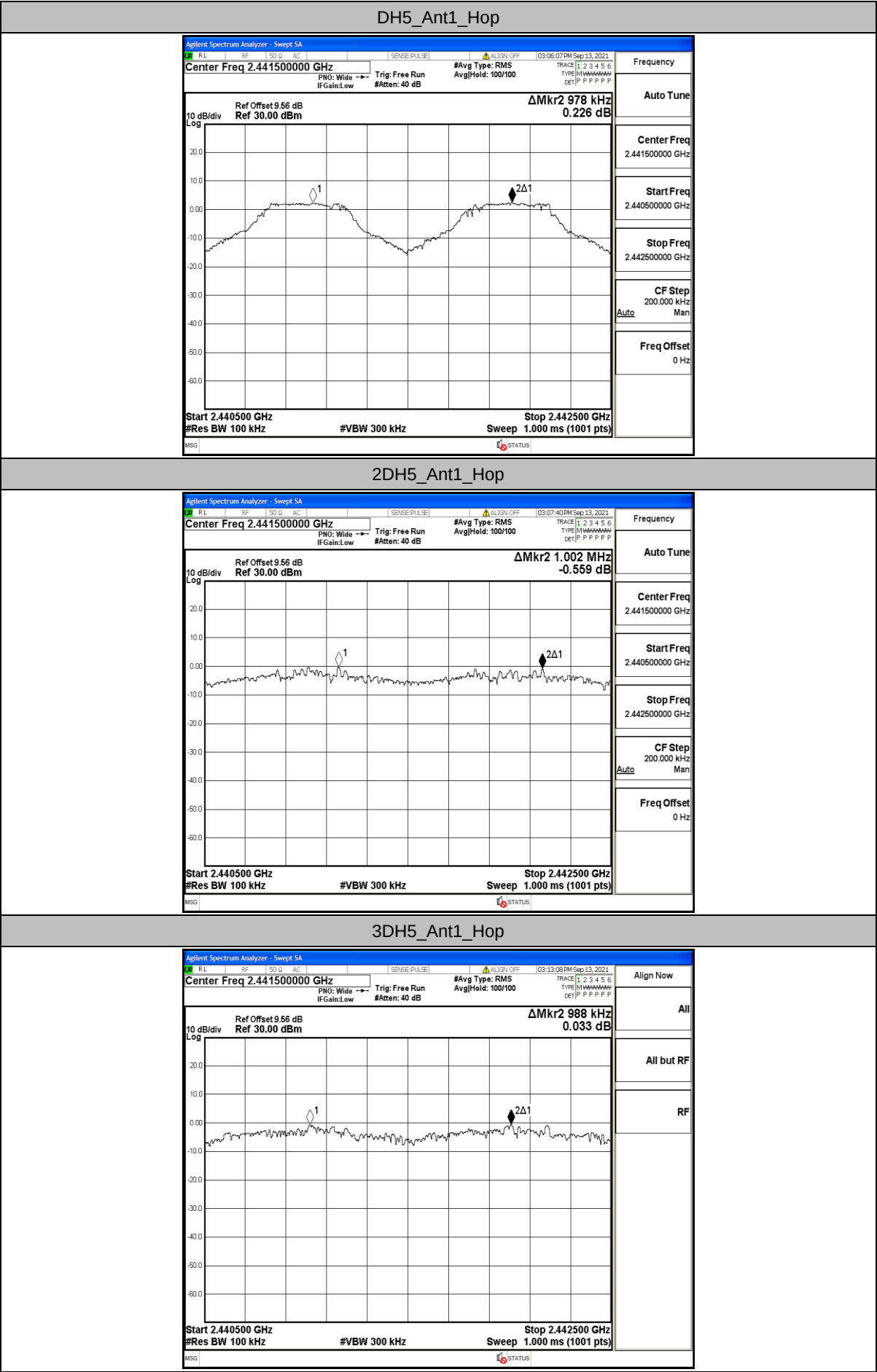


Appendix C: Carrier frequency separation

Test Result

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.978	≥0.948	PASS
2DH5	Ant1	Hop	1.002	≥0.890	PASS
3DH5	Ant1	Hop	0.988	≥0.870	PASS

Test Graphs

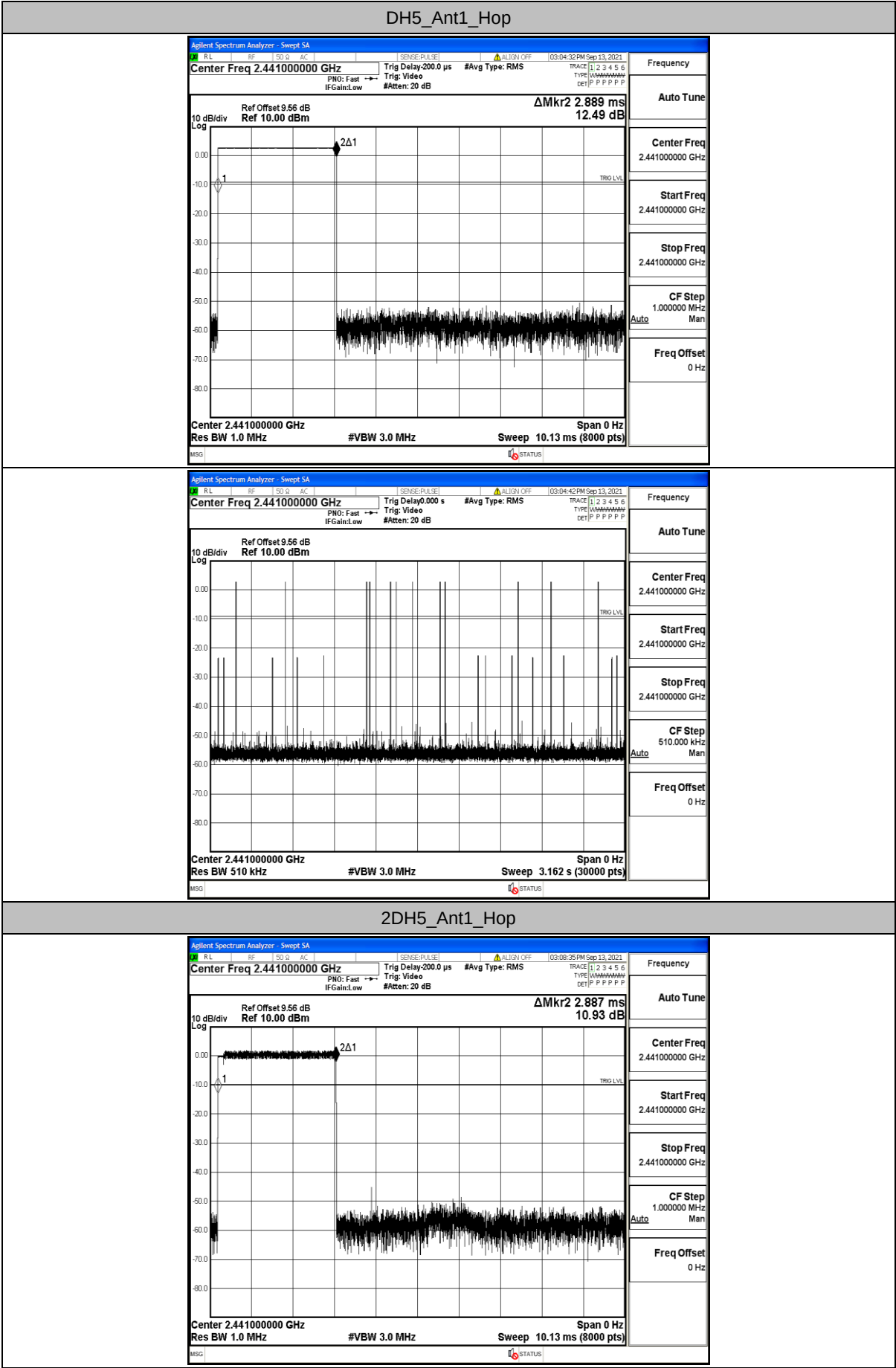


Appendix D: Time of occupancy

Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	130	0.376	≤0.4	PASS
2DH5	Ant1	Hop	2.89	130	0.375	≤0.4	PASS
3DH5	Ant1	Hop	2.89	100	0.289	≤0.4	PASS

Test Graphs



Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC

SENSE: PULSE

ALIGN: OFF

03:04:42 PM Sep 13, 2021

Center Freq 2.441000000 GHz

Trig Delay: 0.000 s

#Avg Type: RMS

TRACE [1] 2 3 4 5 6

TYPE: WWWWWWWW

DET: P P P P P P

PNO: Fast

IF Gain: Low

#Atten: 20 dB

Ref Offset 9.56 dB

Ref 10.00 dBm

ΔMkr2 2.887 ms

10.93 dB

10 dB/div

Log

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

-70.0

-80.0

TRIG LVL

2Δ1

1

Center 2.441000000 GHz

Res BW 510 kHz

#VBW 3.0 MHz

Sweep 3.162 s (30000 pts)

Span 0 Hz

MSG

STATUS

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

2DH5_Ant1_Hop

Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC

SENSE: PULSE

ALIGN: OFF

03:08:35 PM Sep 13, 2021

Center Freq 2.441000000 GHz

Trig Delay: 200.0 μs

#Avg Type: RMS

TRACE [1] 2 3 4 5 6

TYPE: WWWWWWWW

DET: P P P P P P

PNO: Fast

IF Gain: Low

#Atten: 20 dB

Ref Offset 9.56 dB

Ref 10.00 dBm

ΔMkr2 2.887 ms

10.93 dB

10 dB/div

Log

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

-70.0

-80.0

TRIG LVL

2Δ1

1

Center 2.441000000 GHz

Res BW 1.0 MHz

#VBW 3.0 MHz

Sweep 10.13 ms (8000 pts)

Span 0 Hz

MSG

STATUS

Frequency

Auto Tune

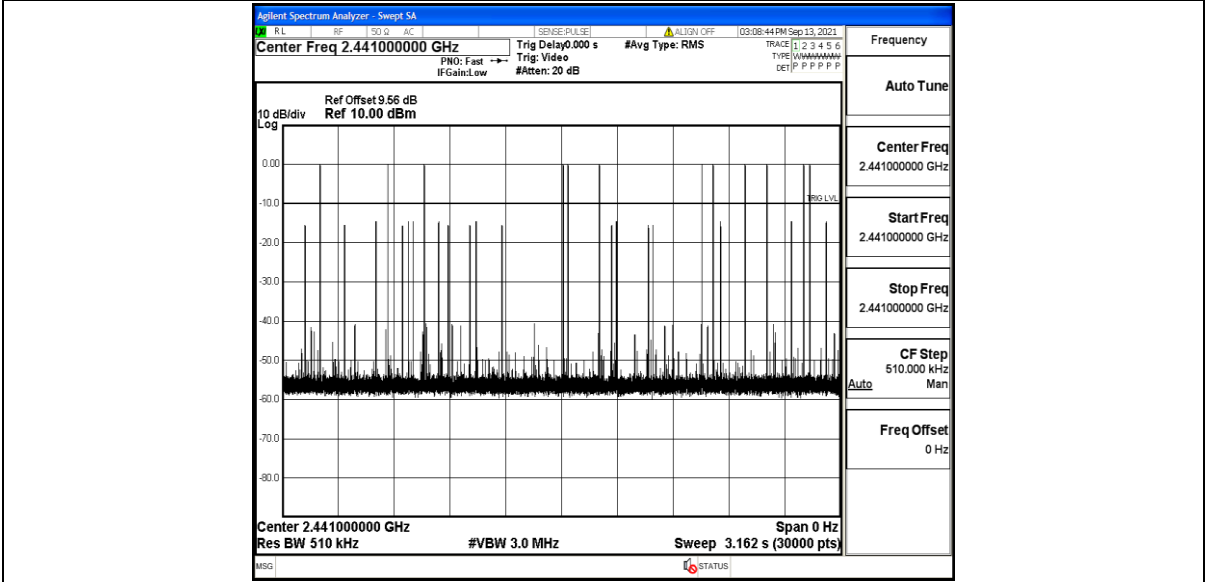
Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

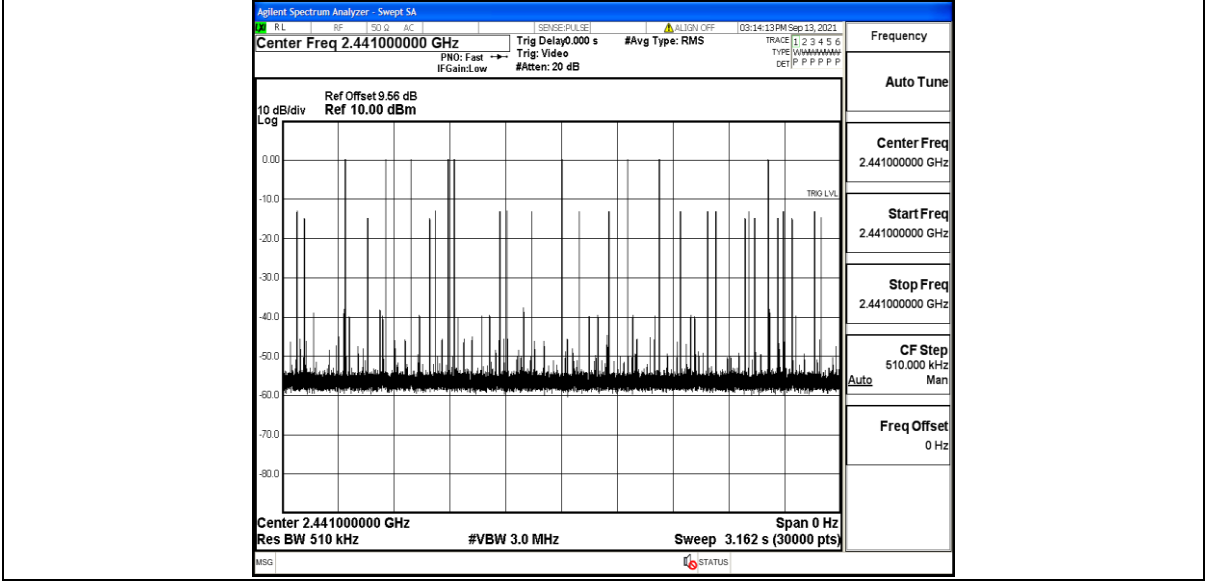
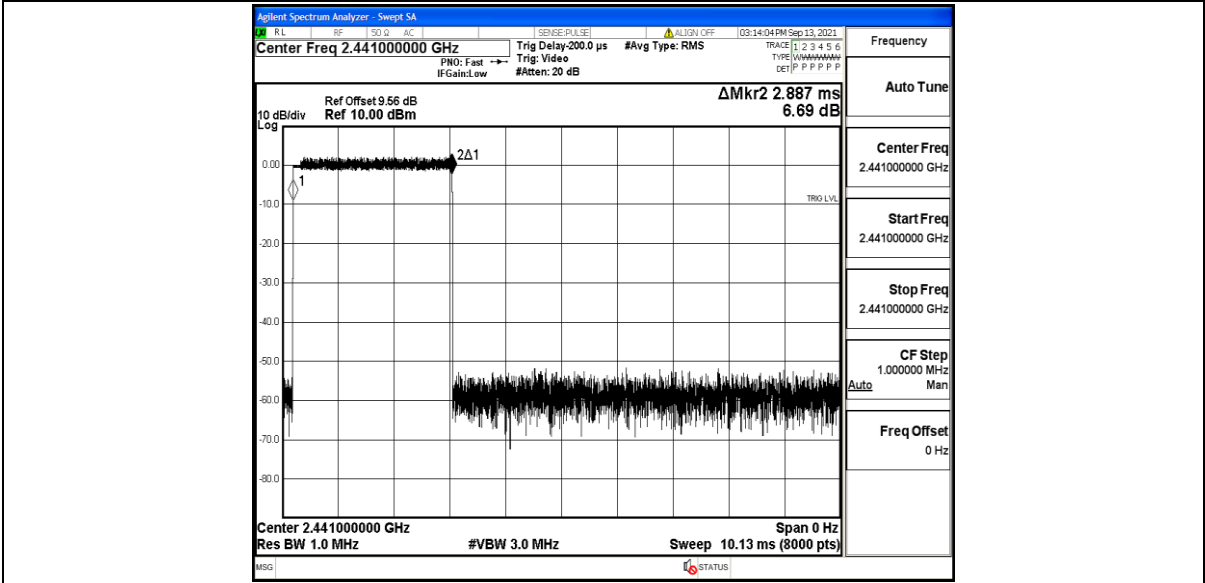
Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz



3DH5_Ant1_Hop

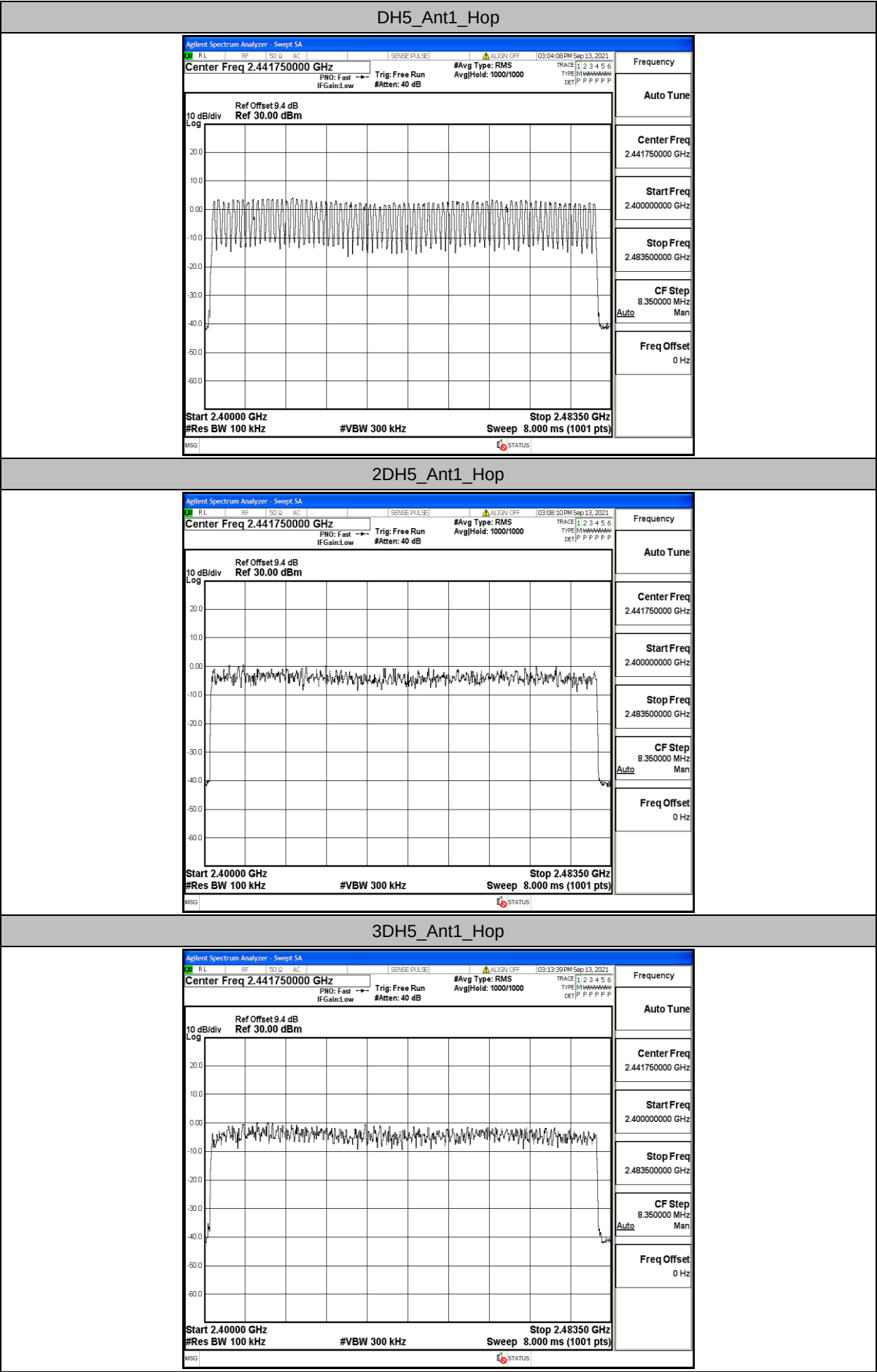


Appendix E: Number of hopping channels

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

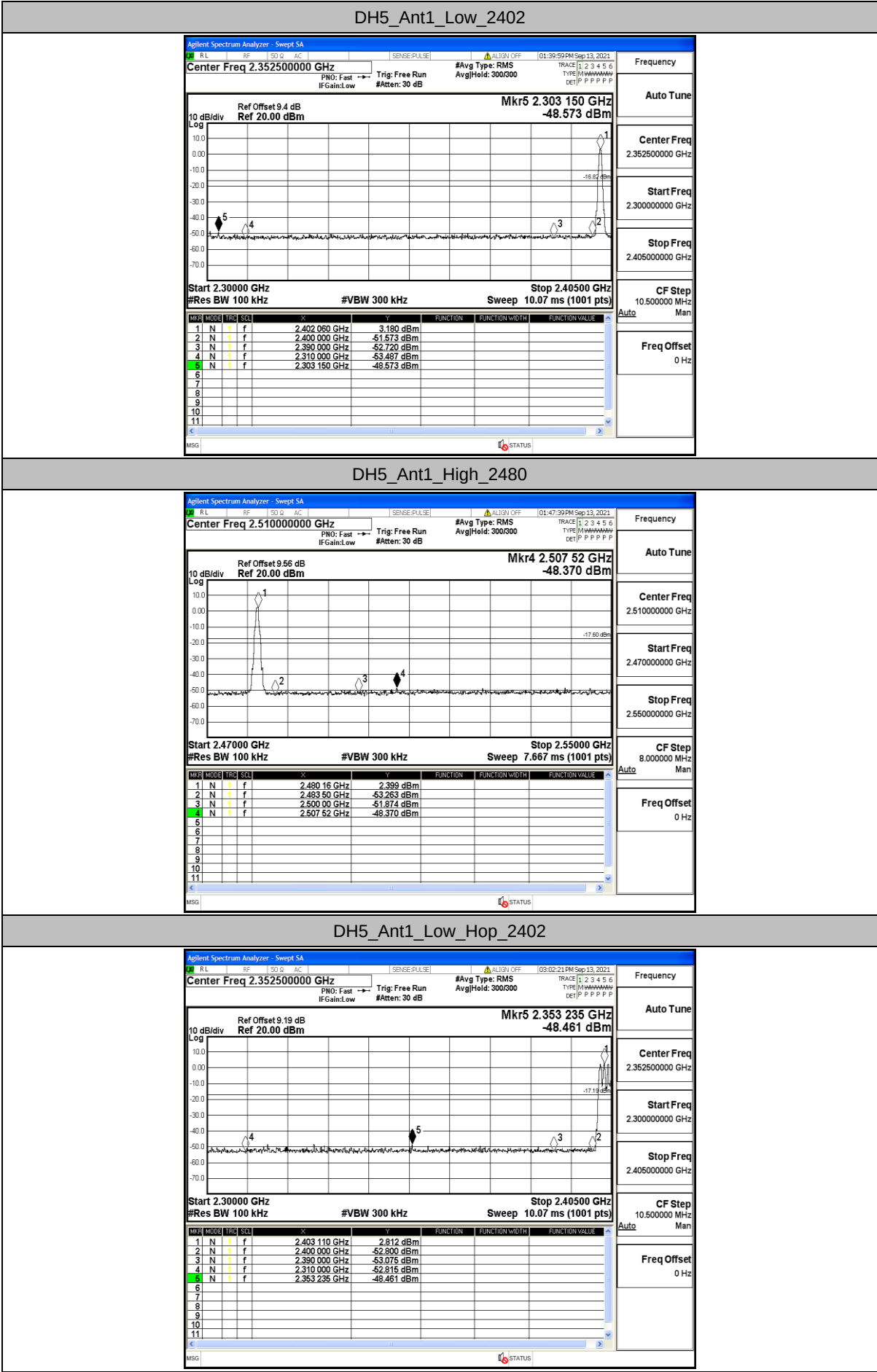


Appendix F: Band edge measurements

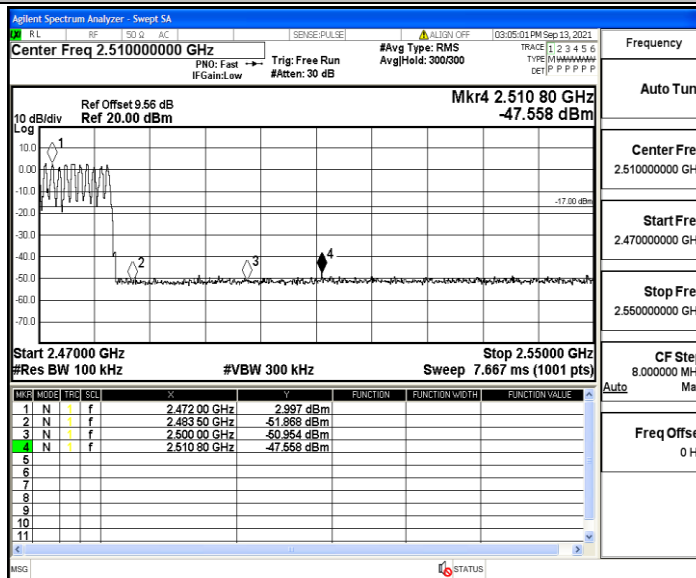
Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	3.18	-48.57	≤ -16.82	PASS
		High	2480	2.40	-48.37	≤ -17.6	PASS
		Low	Hop_2402	2.81	-48.46	≤ -17.19	PASS
		High	Hop_2480	3.00	-47.56	≤ -17	PASS
2DH5	Ant1	Low	2402	3.50	-47.82	≤ -16.5	PASS
		High	2480	2.46	-48.62	≤ -17.54	PASS
		Low	Hop_2402	-2.52	-50.26	≤ -22.52	PASS
		High	Hop_2480	-1.68	-48.02	≤ -21.68	PASS
3DH5	Ant1	Low	2402	3.68	-46	≤ -16.33	PASS
		High	2480	2.36	-48.32	≤ -17.64	PASS
		Low	Hop_2402	-2.05	-49.74	≤ -22.05	PASS
		High	Hop_2480	-0.49	-48.6	≤ -20.49	PASS

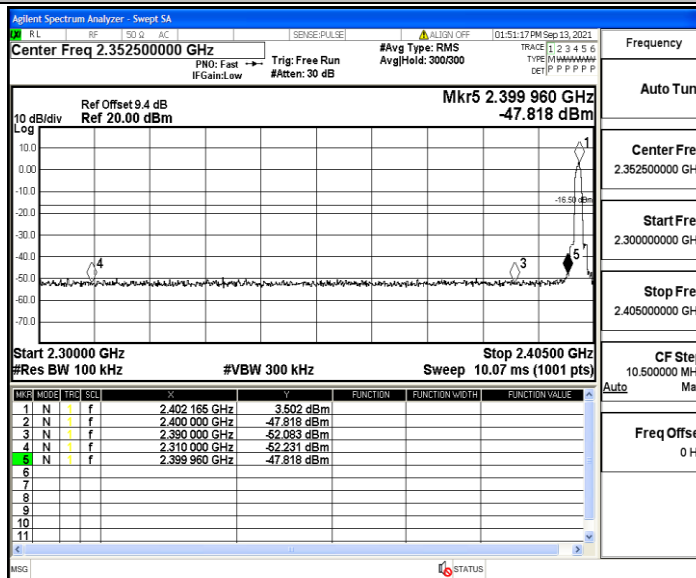
Test Graphs



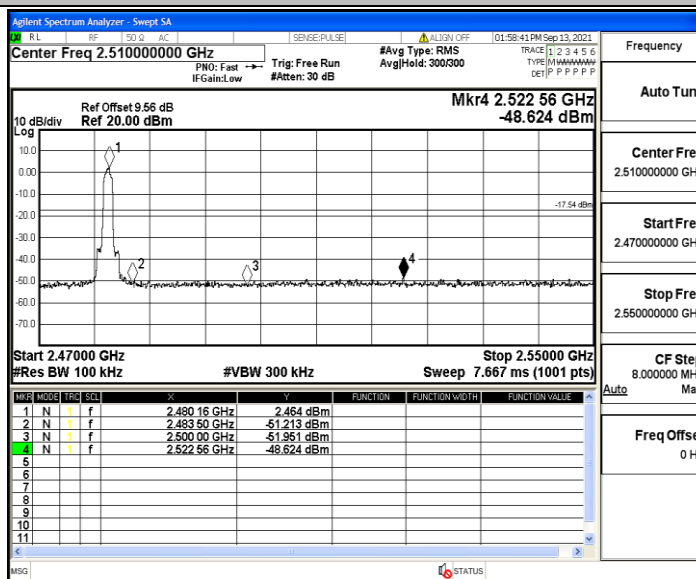
DH5_Ant1_High_Hop_2480



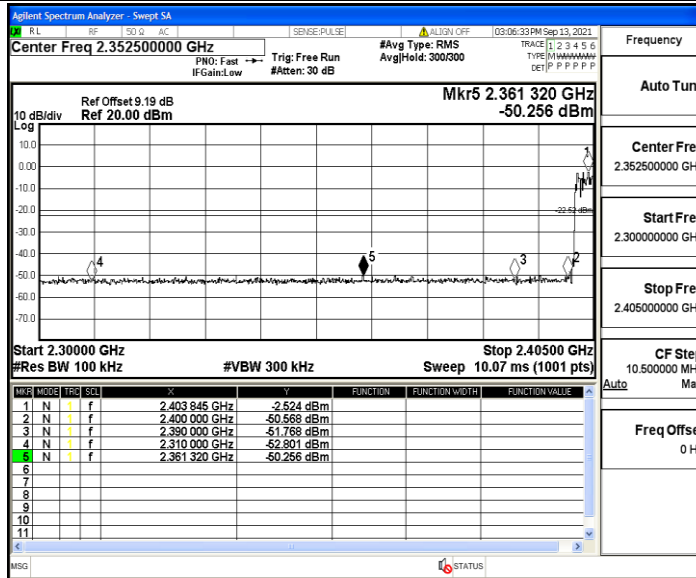
2DH5_Ant1_Low_2402



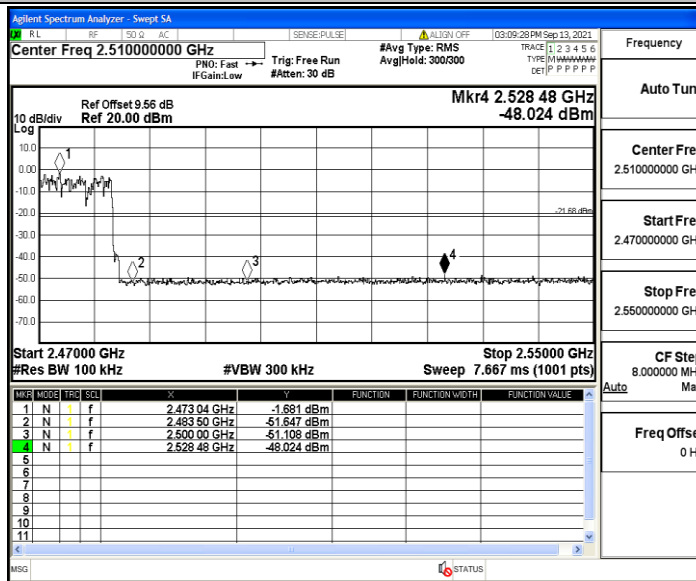
2DH5_Ant1_High_2480



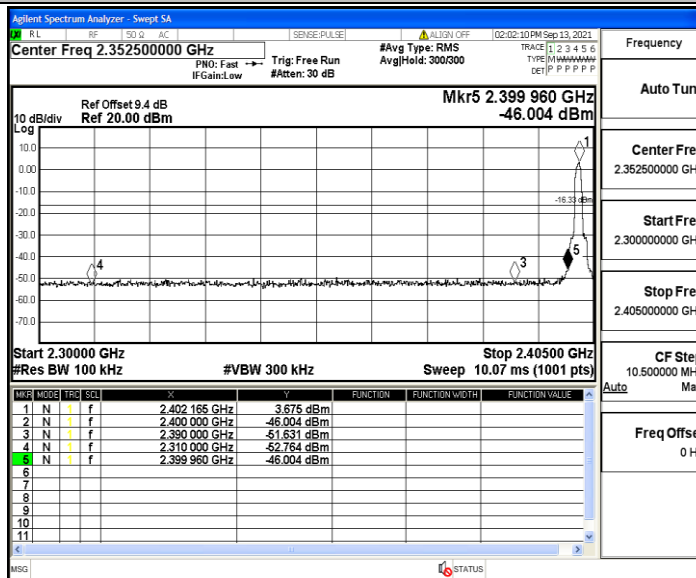
2DH5_Ant1_Low_Hop_2402



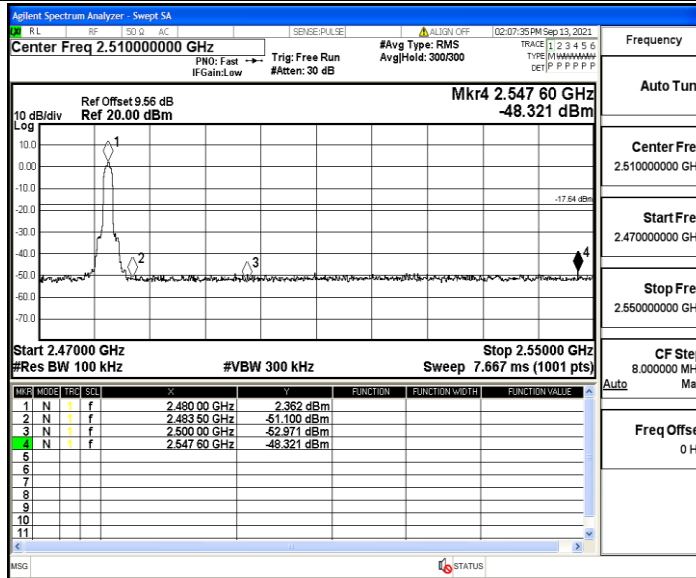
2DH5_Ant1_High_Hop_2480



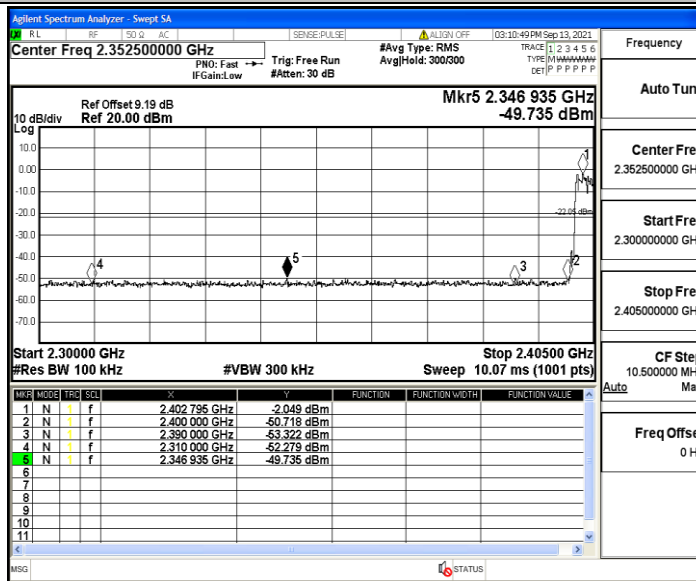
3DH5_Ant1_Low_2402



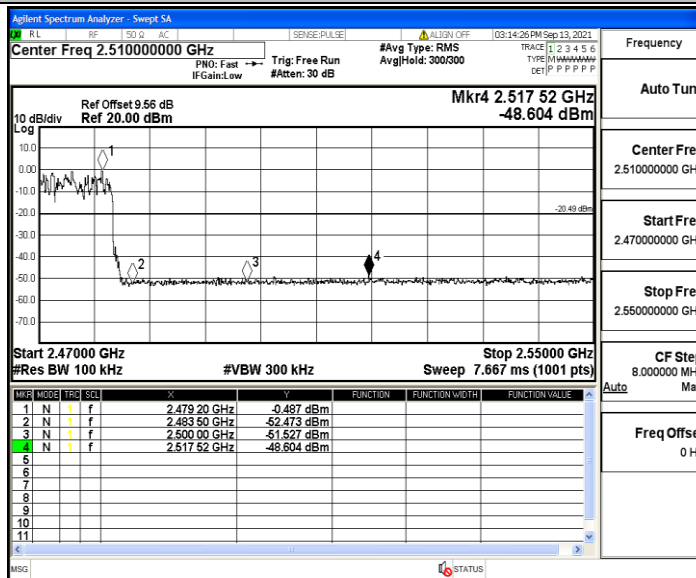
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

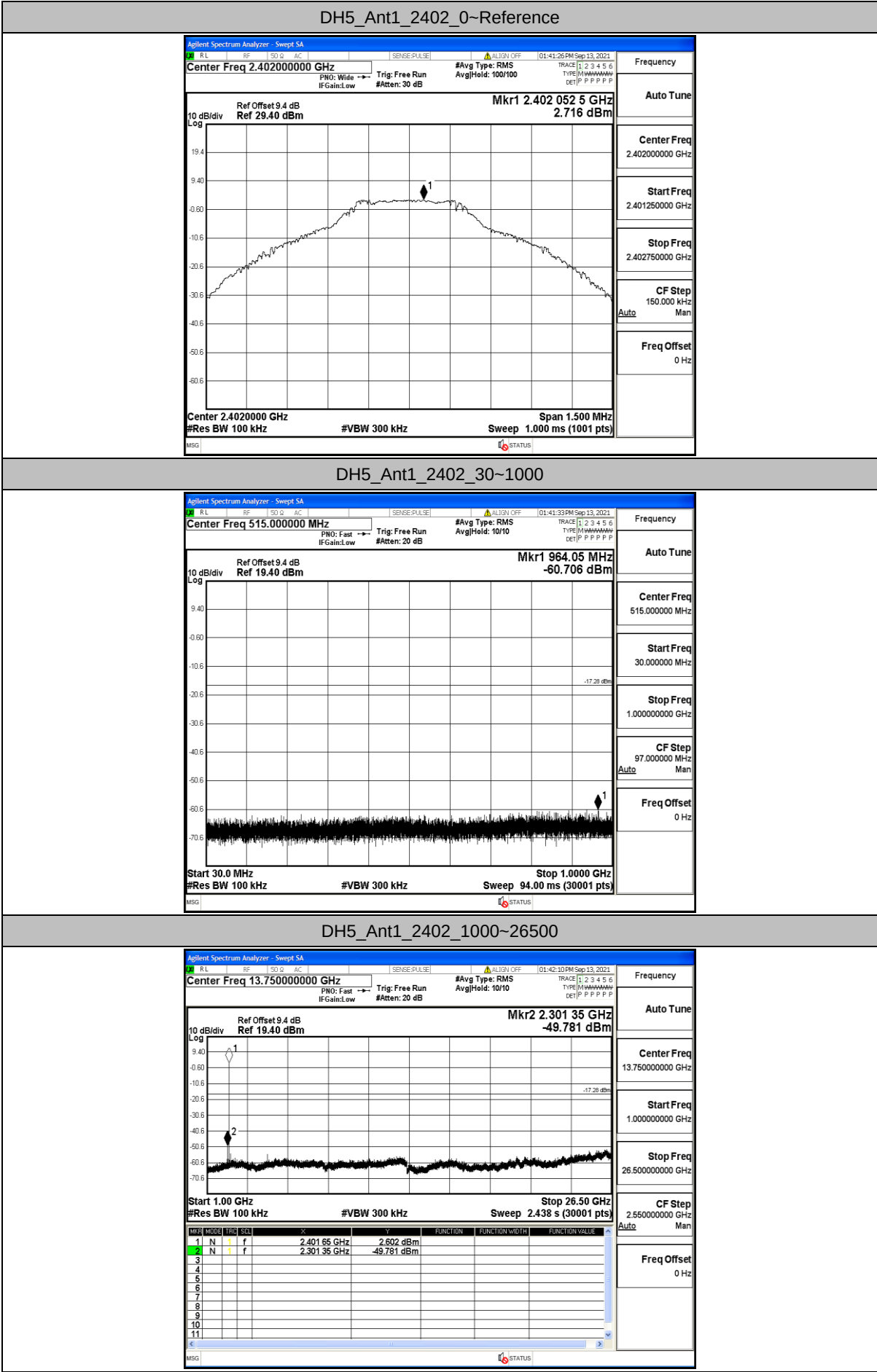


Appendix G: Conducted Spurious Emission

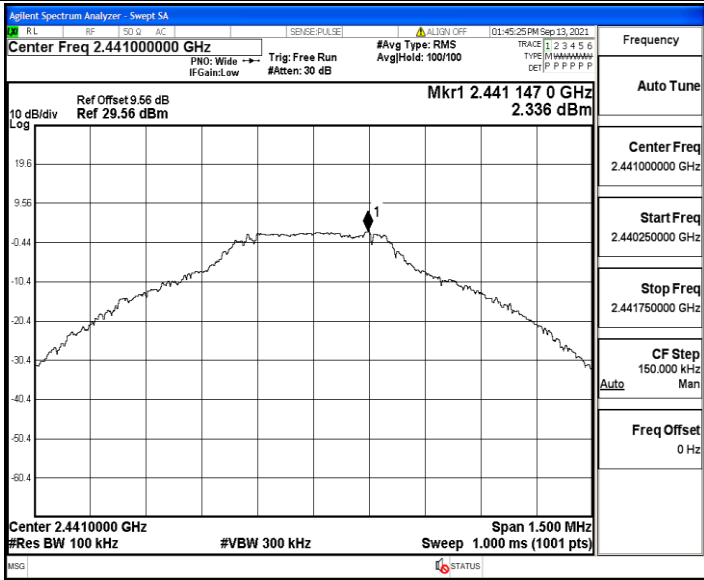
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	2.72	2.72	---	PASS
			30~1000	2.72	-60.71	≤-17.28	PASS
			1000~26500	2.72	-49.78	≤-17.28	PASS
		2441	Reference	2.34	2.34	---	PASS
			30~1000	2.34	-61.12	≤-17.66	PASS
			1000~26500	2.34	-51.84	≤-17.66	PASS
		2480	Reference	1.74	1.74	---	PASS
			30~1000	1.74	-60.52	≤-18.26	PASS
			1000~26500	1.74	-50.93	≤-18.26	PASS
2DH5	Ant1	2402	Reference	2.84	2.84	---	PASS
			30~1000	2.84	-60.19	≤-17.16	PASS
			1000~26500	2.84	-51.99	≤-17.16	PASS
		2441	Reference	2.57	2.57	---	PASS
			30~1000	2.57	-60.1	≤-17.43	PASS
			1000~26500	2.57	-50.92	≤-17.43	PASS
		2480	Reference	0.66	0.66	---	PASS
			30~1000	0.66	-60.88	≤-19.34	PASS
			1000~26500	0.66	-51.27	≤-19.34	PASS
3DH5	Ant1	2402	Reference	3.15	3.15	---	PASS
			30~1000	3.15	-60.18	≤-16.86	PASS
			1000~26500	3.15	-51.45	≤-16.86	PASS
		2441	Reference	2.01	2.01	---	PASS
			30~1000	2.01	-60.95	≤-17.99	PASS
			1000~26500	2.01	-52.34	≤-17.99	PASS
		2480	Reference	2.49	2.49	---	PASS
			30~1000	2.49	-61.16	≤-17.51	PASS
			1000~26500	2.49	-51.83	≤-17.51	PASS

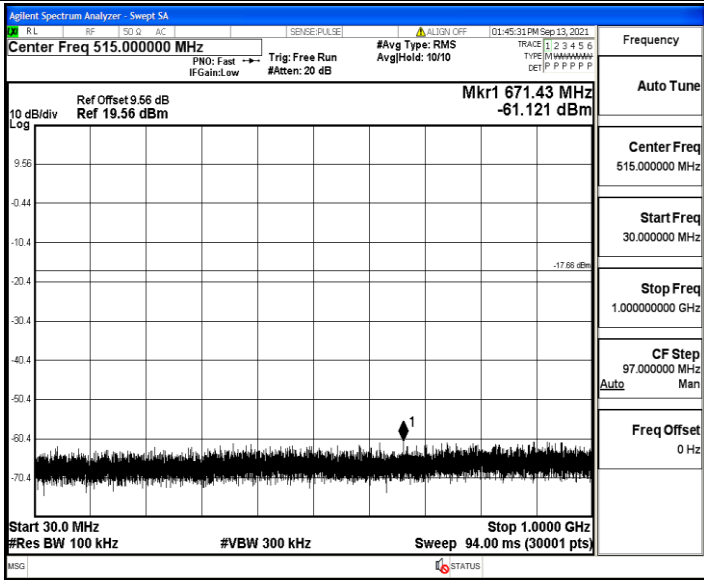
Test Graphs



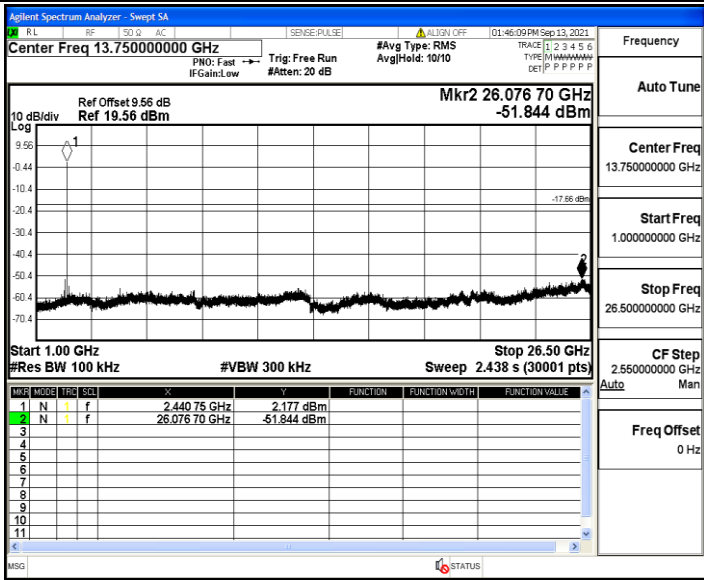
DH5_Ant1_2441_0~Reference



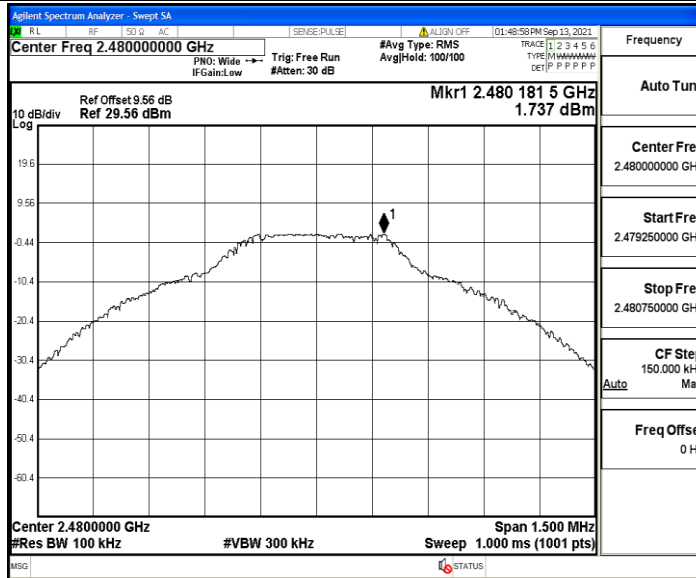
DH5_Ant1_2441_30~1000



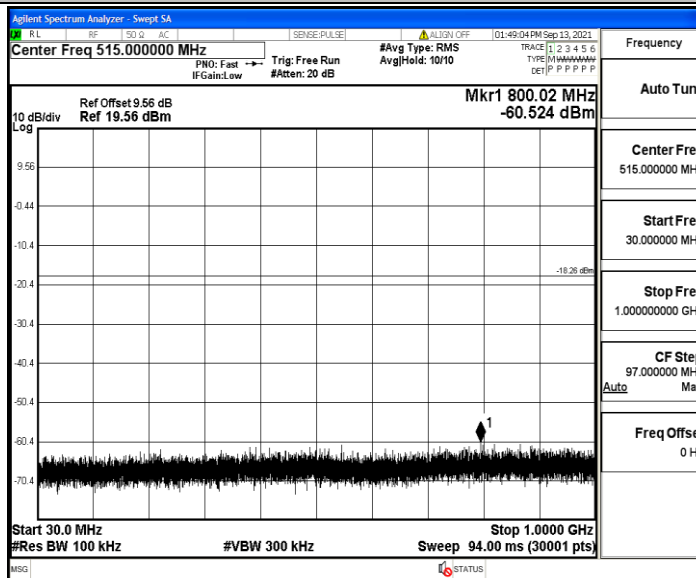
DH5_Ant1_2441_1000~26500



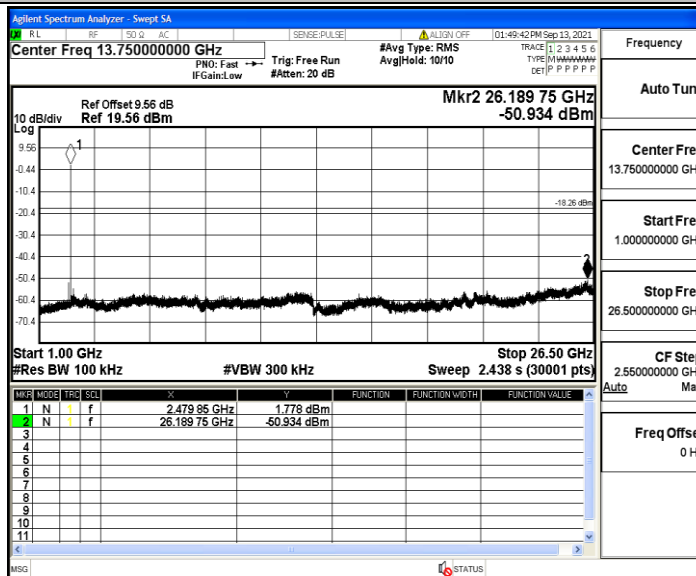
DH5_Ant1_2480_0~Reference



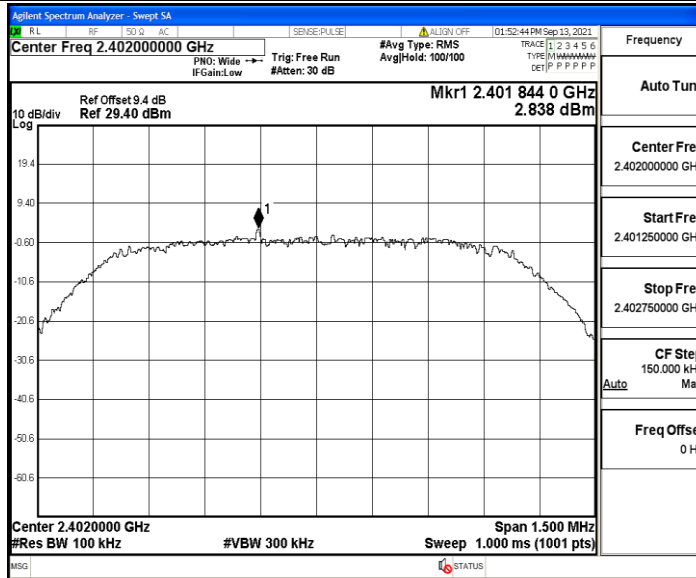
DH5_Ant1_2480_30~1000



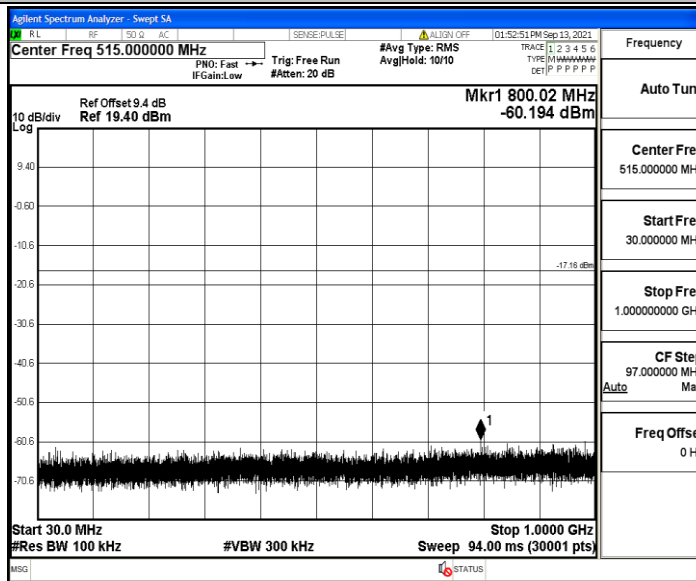
DH5_Ant1_2480_1000~26500



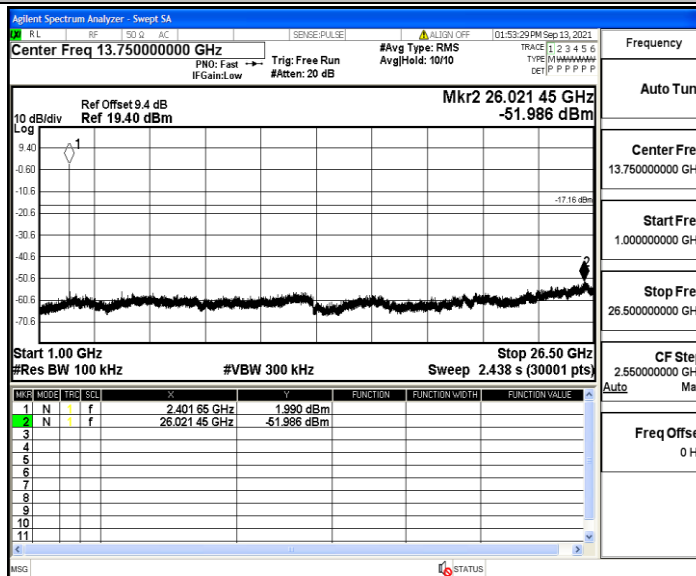
2DH5_Ant1_2402_0~Reference



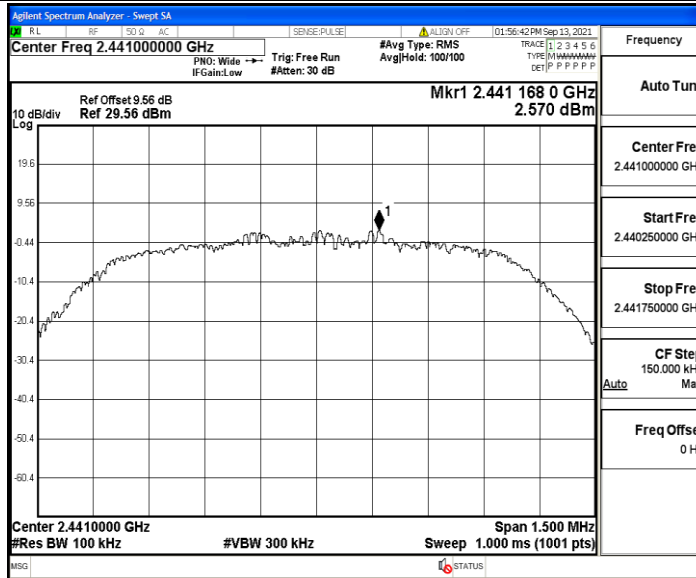
2DH5_Ant1_2402_30~1000



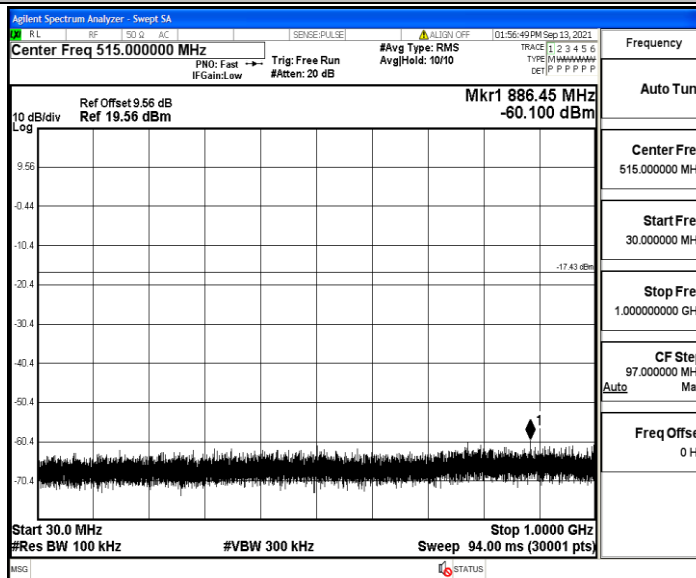
2DH5_Ant1_2402_1000~26500



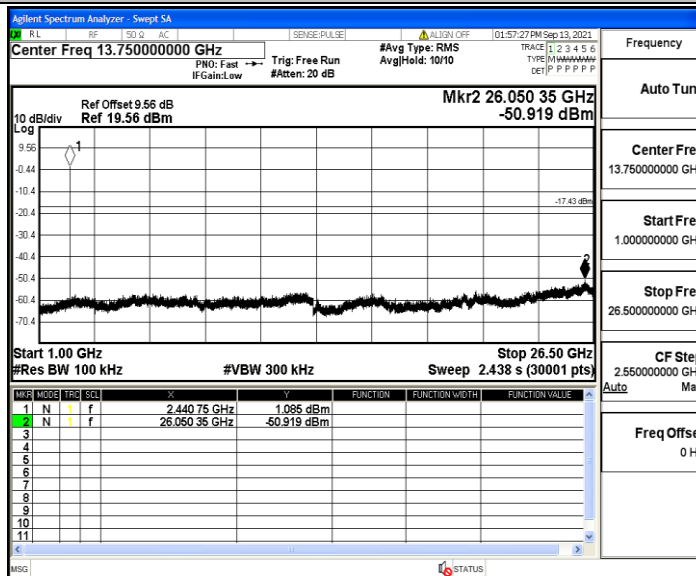
2DH5_Ant1_2441_0~Reference



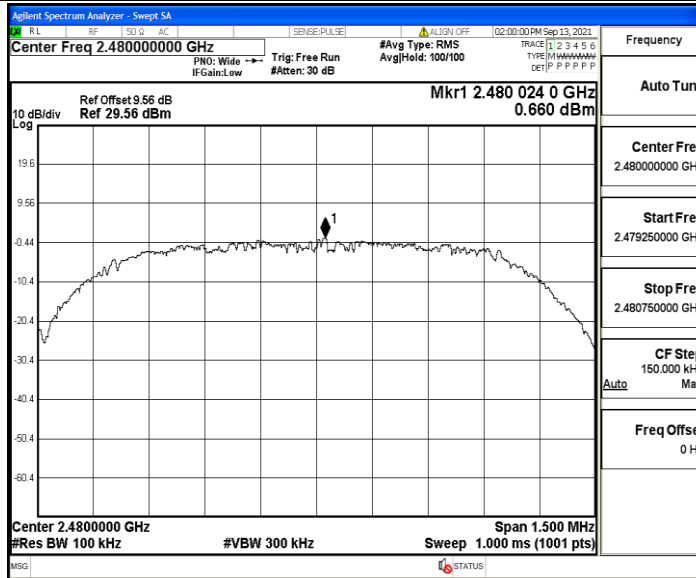
2DH5_Ant1_2441_30~1000



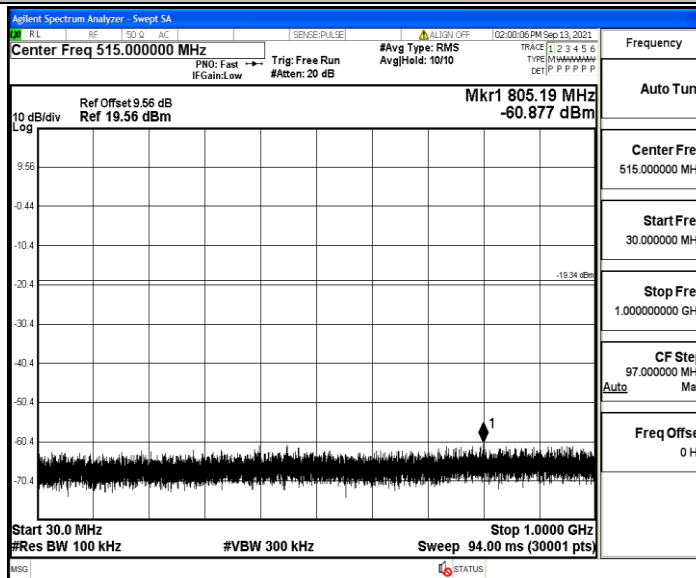
2DH5_Ant1_2441_1000~26500



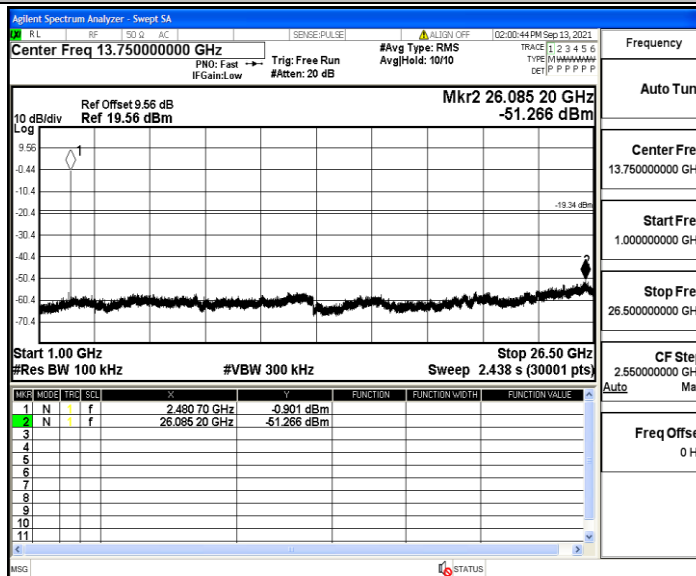
2DH5_Ant1_2480_0~Reference



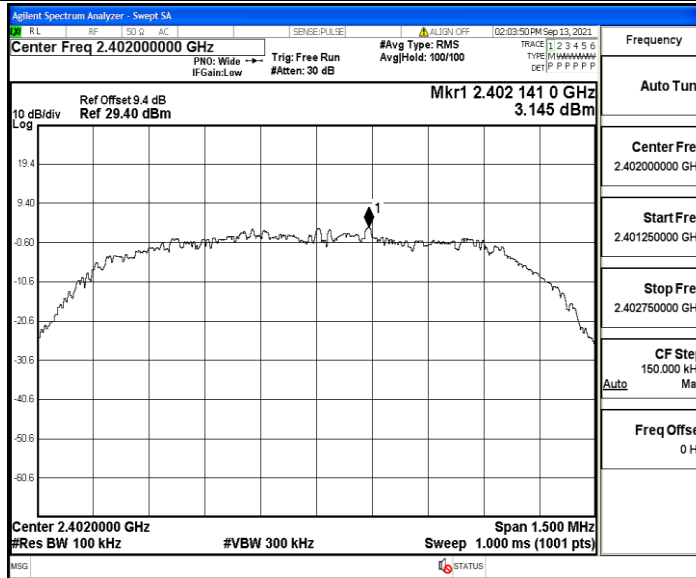
2DH5_Ant1_2480_30~1000



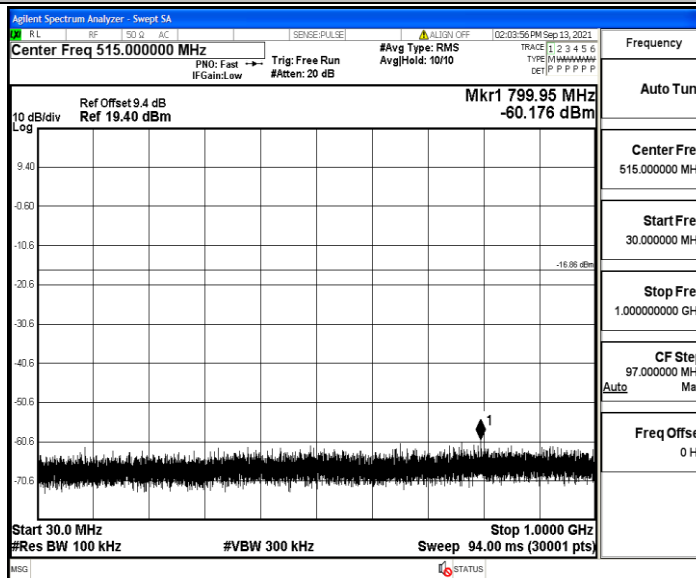
2DH5_Ant1_2480_1000~26500



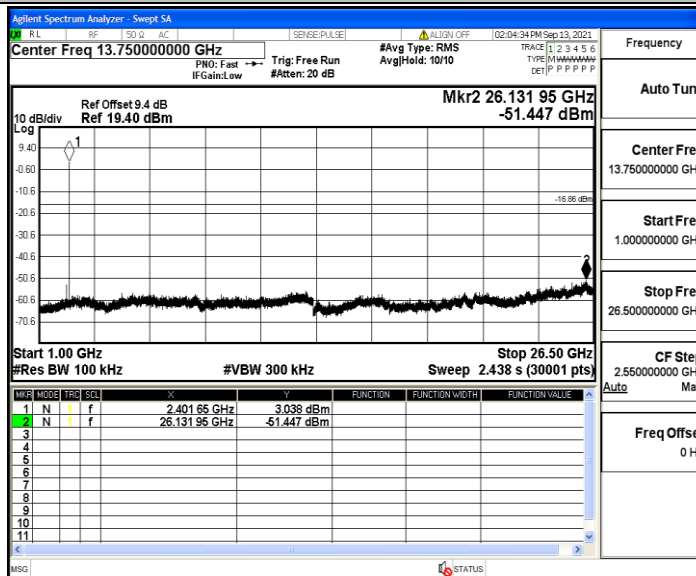
3DH5_Ant1_2402_0~Reference



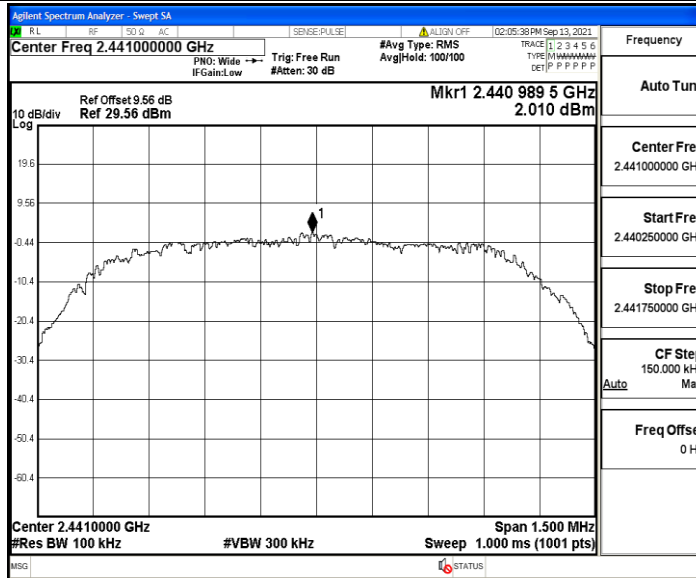
3DH5_Ant1_2402_30~1000



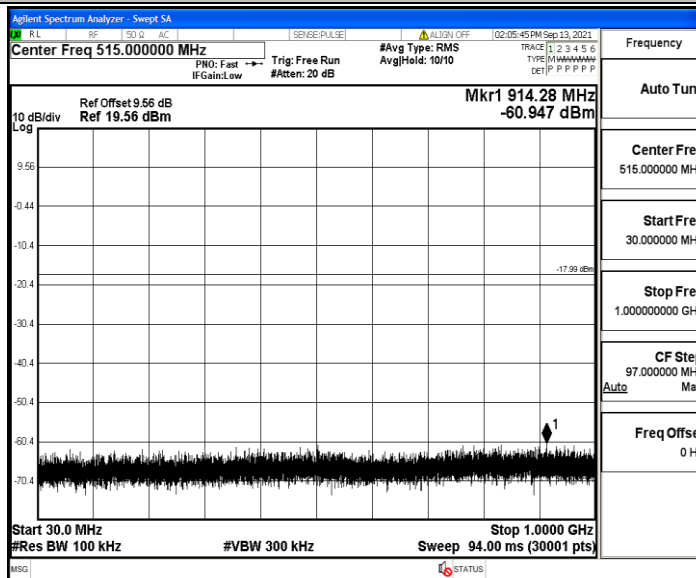
3DH5_Ant1_2402_1000~26500



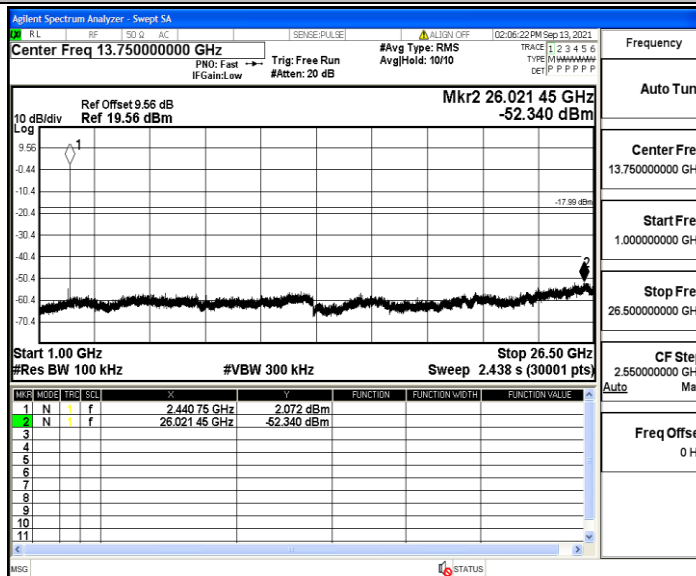
3DH5_Ant1_2441_0~Reference



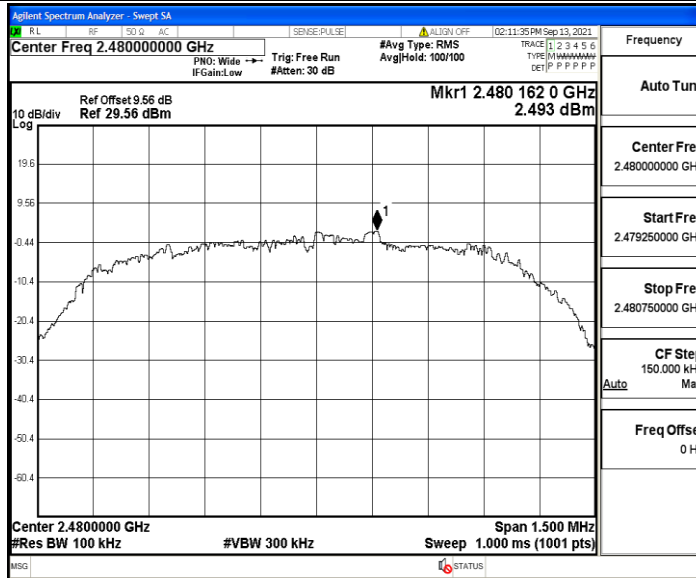
3DH5_Ant1_2441_30~1000



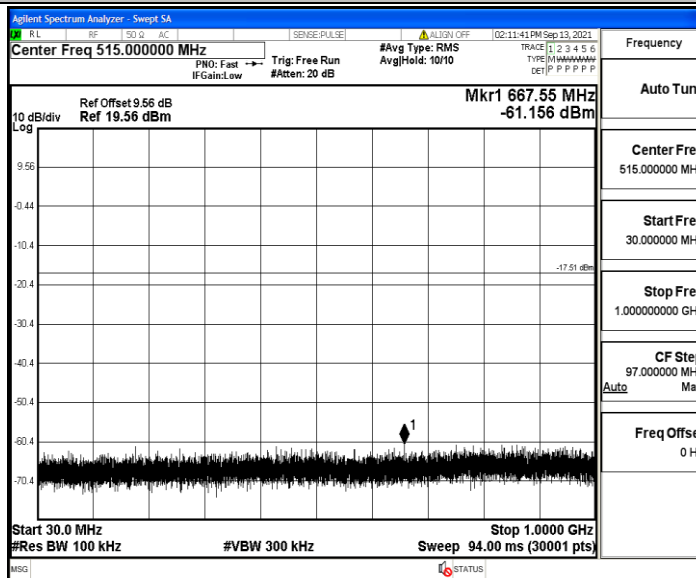
3DH5_Ant1_2441_1000~26500



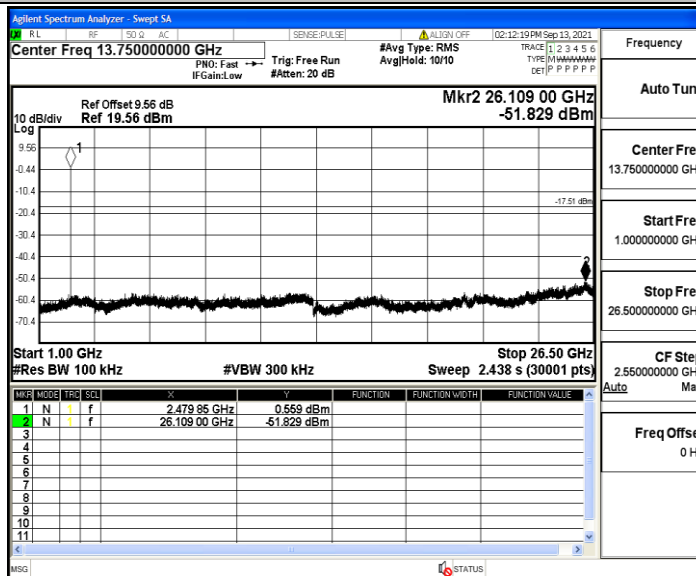
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



Appendix H: Emissions in Restricted Bands

Test Result

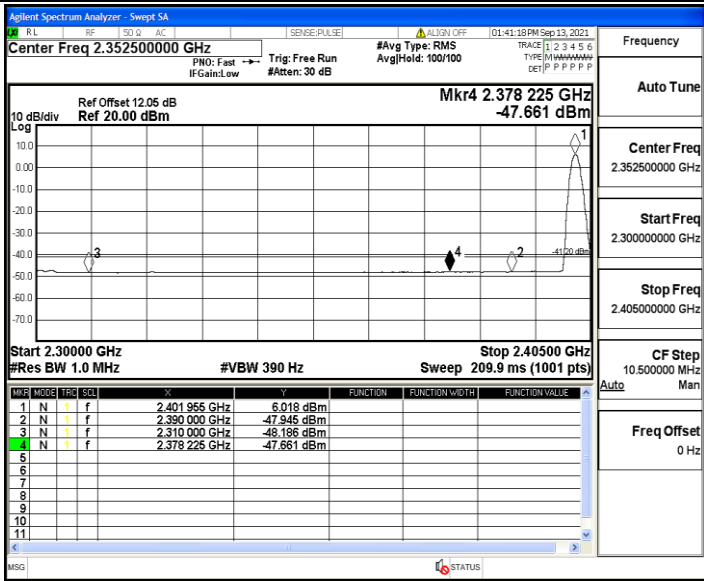
TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-48.19	≤-41.20	PASS
				AV	2385.785	-47.66	≤-41.20	PASS
				AV	2390.000	-47.95	≤-41.20	PASS
				Peak	2310.000	-40.99	≤-21.20	PASS
				Peak	2344.625	-38.51	≤-21.20	PASS
				Peak	2390.000	-39.52	≤-21.20	PASS
		High	2480	AV	2483.500	-47	≤-41.20	PASS
				AV	2483.520	-46.97	≤-41.20	PASS
				AV	2500.000	-47.22	≤-41.20	PASS
				Peak	2483.500	-40.2	≤-21.20	PASS
				Peak	2489.040	-37.87	≤-21.20	PASS
				Peak	2500.000	-36.93	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.11	≤-41.20	PASS
				AV	2380.220	-47.72	≤-41.20	PASS
				AV	2390.000	-47.8	≤-41.20	PASS
				Peak	2310.000	-41.26	≤-21.20	PASS
				Peak	2334.440	-37.52	≤-21.20	PASS
				Peak	2390.000	-41.19	≤-21.20	PASS
		High	2480	AV	2483.500	-46.2	≤-41.20	PASS
				AV	2483.520	-46.2	≤-41.20	PASS
				AV	2500.000	-47.25	≤-41.20	PASS
				Peak	2483.500	-41.71	≤-21.20	PASS
				Peak	2487.760	-37.28	≤-21.20	PASS
				Peak	2500.000	-40.34	≤-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-47.98	≤-41.20	PASS
				AV	2385.680	-47.64	≤-41.20	PASS
				AV	2390.000	-47.78	≤-41.20	PASS
				Peak	2310.000	-41.66	≤-21.20	PASS
				Peak	2325.935	-37.22	≤-21.20	PASS
				Peak	2390.000	-41.03	≤-21.20	PASS
		High	2480	AV	2483.500	-45.97	≤-41.20	PASS
				AV	2483.520	-45.97	≤-41.20	PASS
				AV	2500.000	-47.12	≤-41.20	PASS
				Peak	2483.500	-39.06	≤-21.20	PASS
				Peak	2493.520	-37.6	≤-21.20	PASS
				Peak	2500.000	-39.81	≤-21.20	PASS

Note:

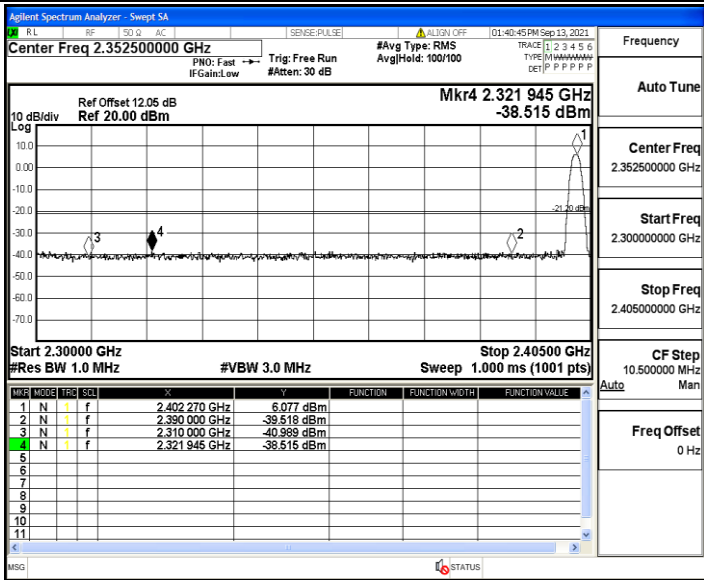
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

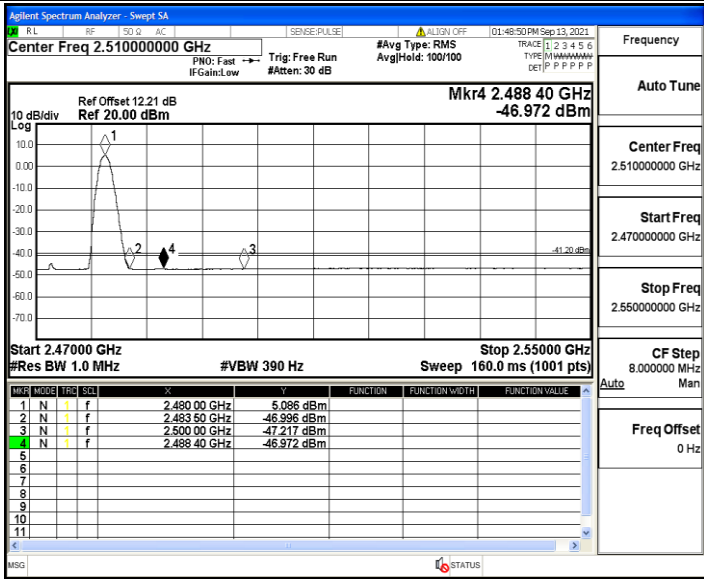
DH5_Ant1_Low_2402_AV



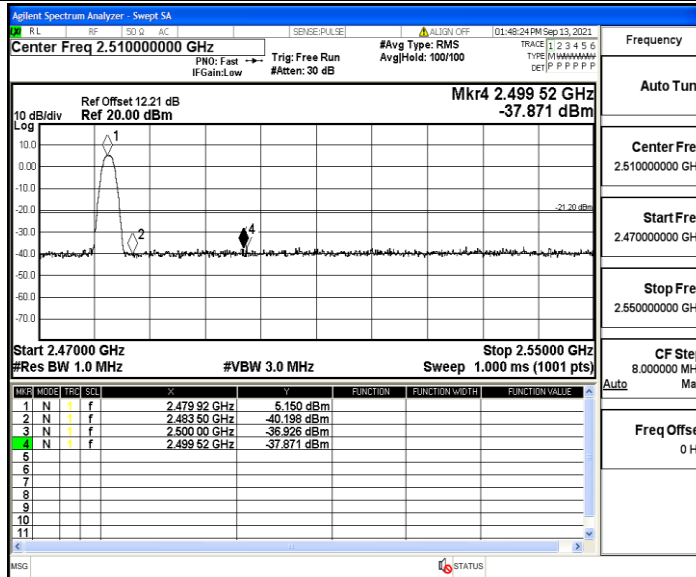
DH5_Ant1_Low_2402_Peak



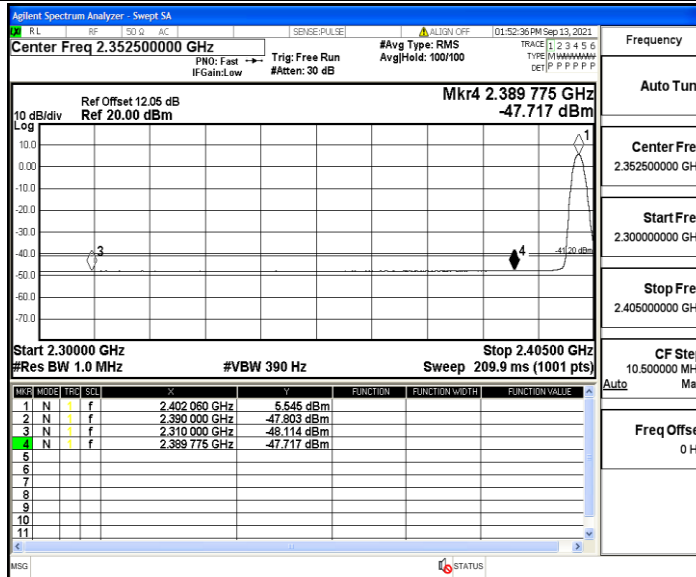
DH5_Ant1_High_2480_AV



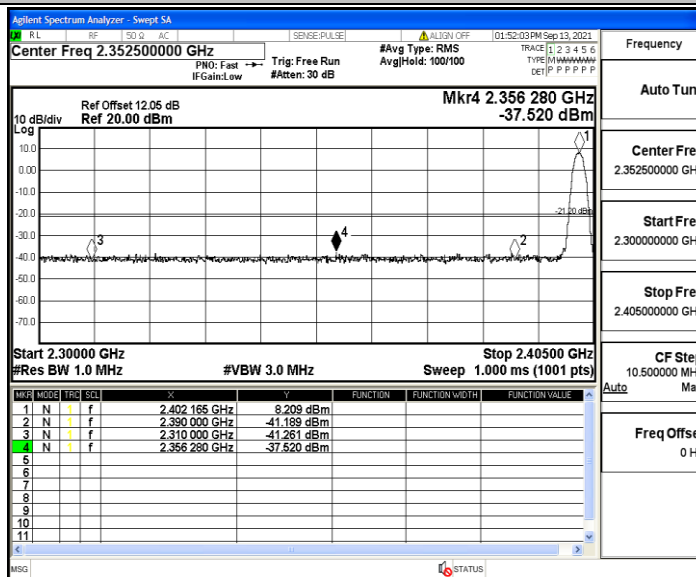
DH5_Ant1_High_2480_Peak



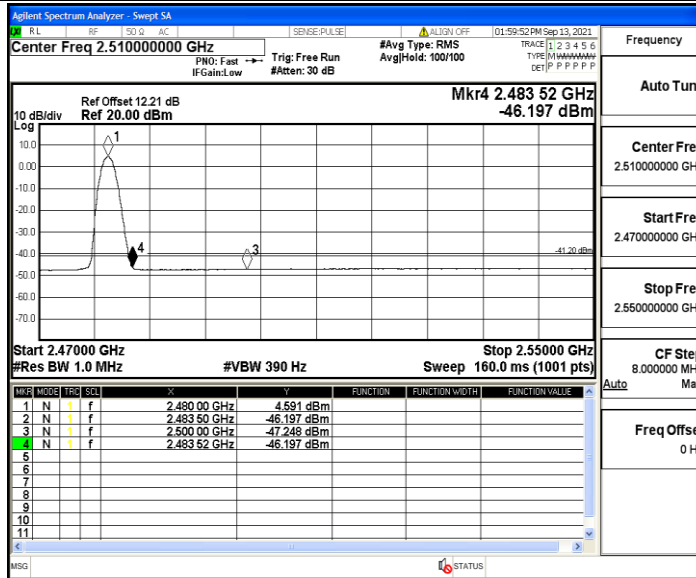
2DH5_Ant1_Low_2402_AV



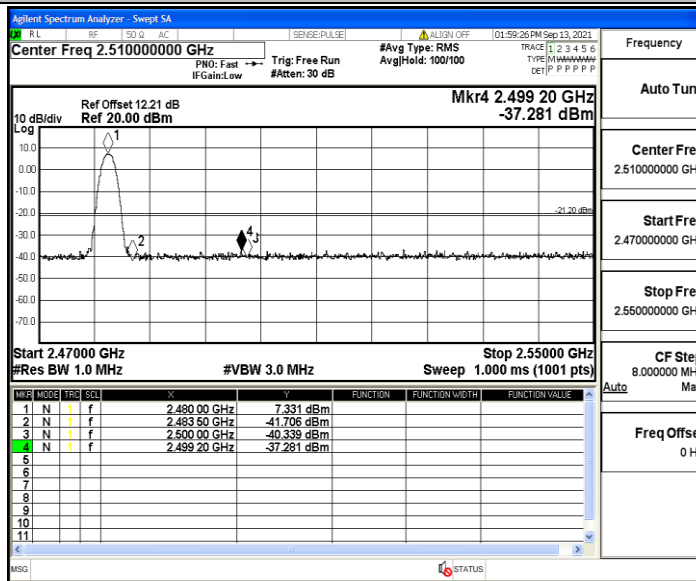
2DH5_Ant1_Low_2402_Peak



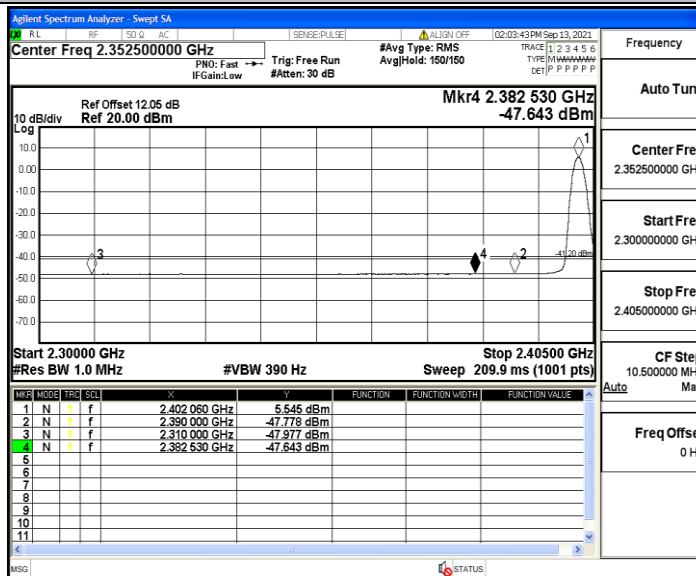
2DH5_Ant1_High_2480_AV



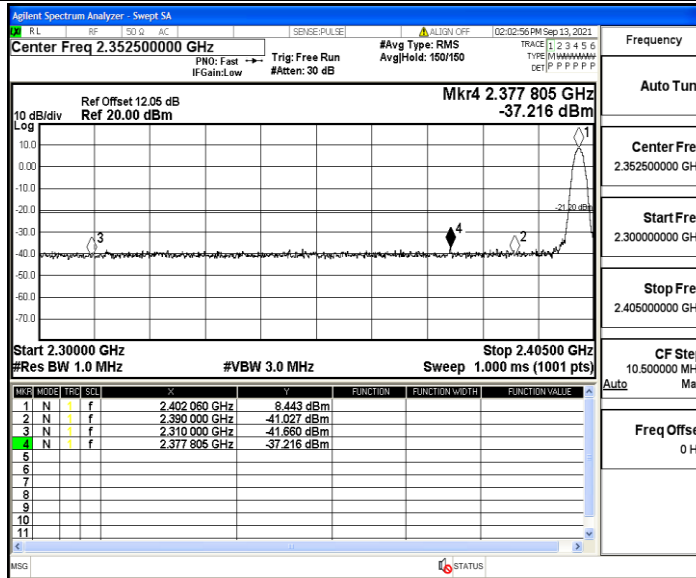
2DH5_Ant1_High_2480_Peak



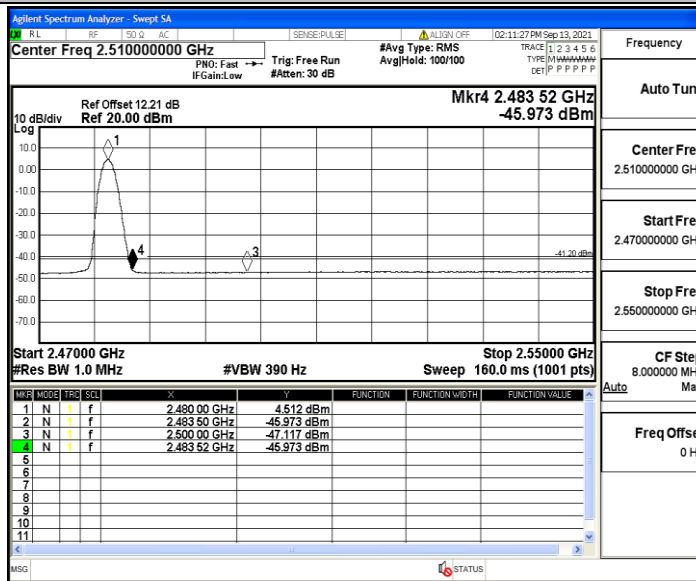
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

