

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: Wireless Earphone

Test Model: PIN AI

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

A.1 -20dB Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant	2402	0.960	2401.535	2402.495	---	---
		2441	0.966	2440.532	2441.498	---	---
		2480	0.942	2479.532	2480.474	---	---
2DH5	Ant	2402	1.287	2401.361	2402.648	---	---
		2441	1.293	2440.352	2441.645	---	---
		2480	1.302	2479.346	2480.648	---	---
3DH5	Ant	2402	1.293	2401.349	2402.642	---	---
		2441	1.296	2440.346	2441.642	---	---
		2480	1.296	2479.346	2480.642	---	---

DH5_Ant_2402

Center Freq 2.402000000 GHz
 PNO: Wide → IF Gain: Low #Atten: 40 dB
 #Avg Type: RMS AvgHold: 100/100
 TRACE 1 2 3 4 5 6 TYPE: M W W W W W W W W DET: P P P P P P P P

Ref Offset 12.18 dB
 Ref 30.00 dBm
ΔMkr3 960 kHz 0.342 dB

10 dB/div
 Log
 20.0
 10.0
 0.0
 -10.0
 -20.0
 -30.0
 -40.0
 -50.0
 -60.0

Center 2.402000 GHz
 #Res BW 30 kHz #VBW 100 kHz #Sweep 20.00 ms (1001 pts) Span 3.000 MHz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.401535 GHz	-21.925 dBm			
2	N	f		2.401829 GHz	-1.487 dBm			
3	Δ1	f	(Δ)	960 kHz (Δ)	0.342 dB			

MSG [STATUS]

DH5_Ant_2441

Center Freq 2.441000000 GHz
 PNO: Wide → IF Gain: Low #Atten: 40 dB
 #Avg Type: RMS AvgHold: 100/100
 TRACE 1 2 3 4 5 6 TYPE: M W W W W W W W W DET: P P P P P P P P

Ref Offset 12.2 dB
 Ref 30.00 dBm
ΔMkr3 966 kHz 0.621 dB

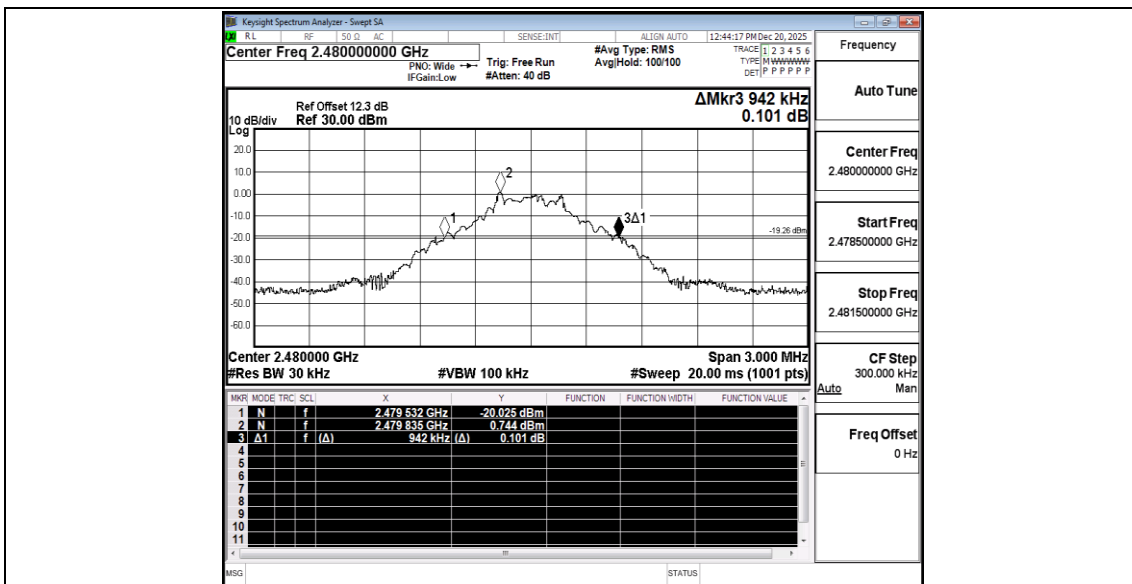
10 dB/div
 Log
 20.0
 10.0
 0.0
 -10.0
 -20.0
 -30.0
 -40.0
 -50.0
 -60.0

Center 2.441000 GHz
 #Res BW 30 kHz #VBW 100 kHz #Sweep 20.00 ms (1001 pts) Span 3.000 MHz

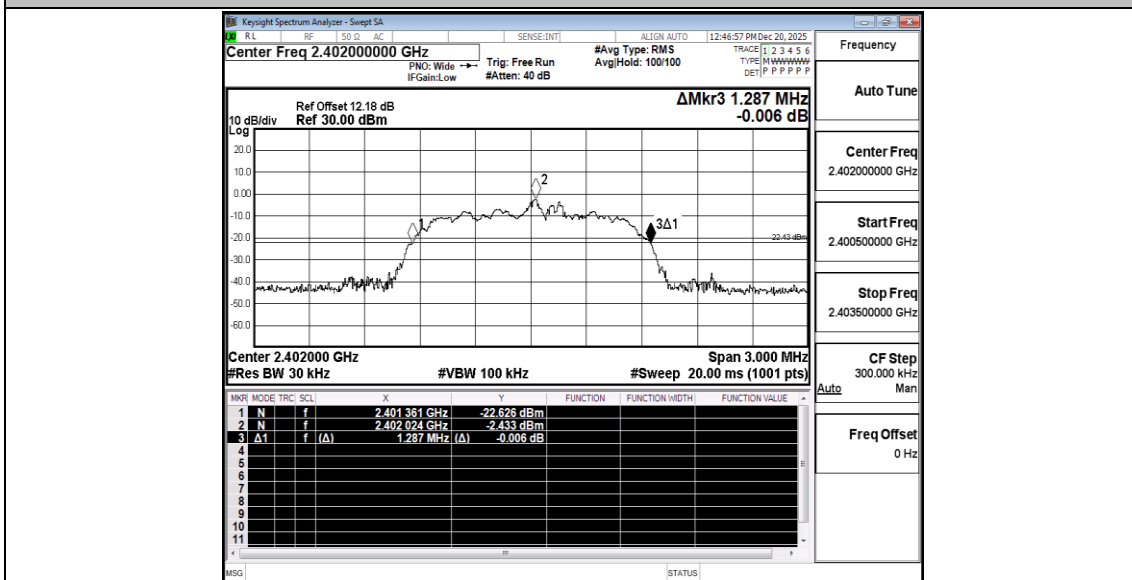
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.440532 GHz	-20.389 dBm			
2	N	f		2.440829 GHz	0.562 dBm			
3	Δ1	f	(Δ)	966 kHz (Δ)	0.621 dB			

MSG [STATUS]

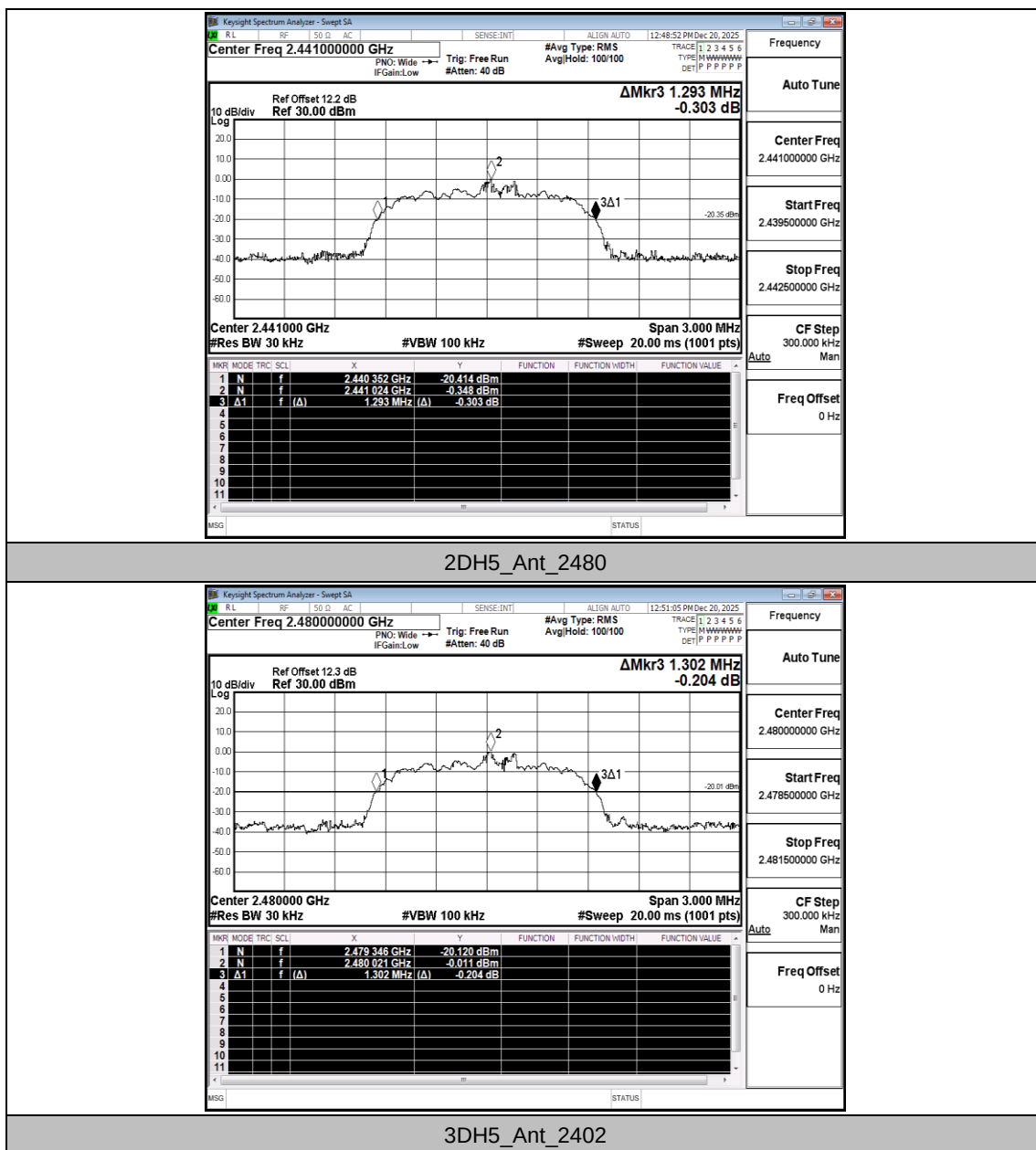
DH5_Ant_2480

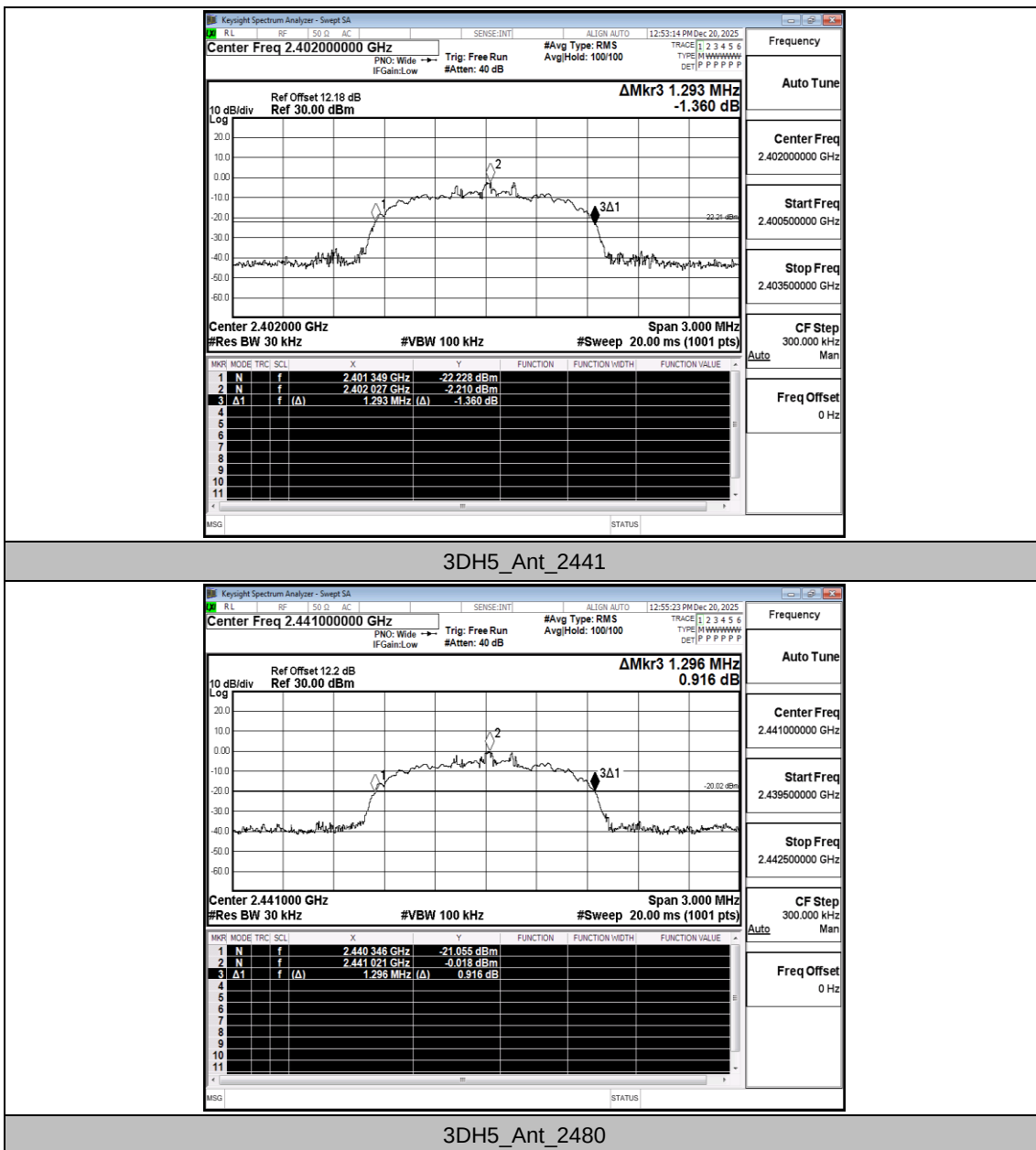


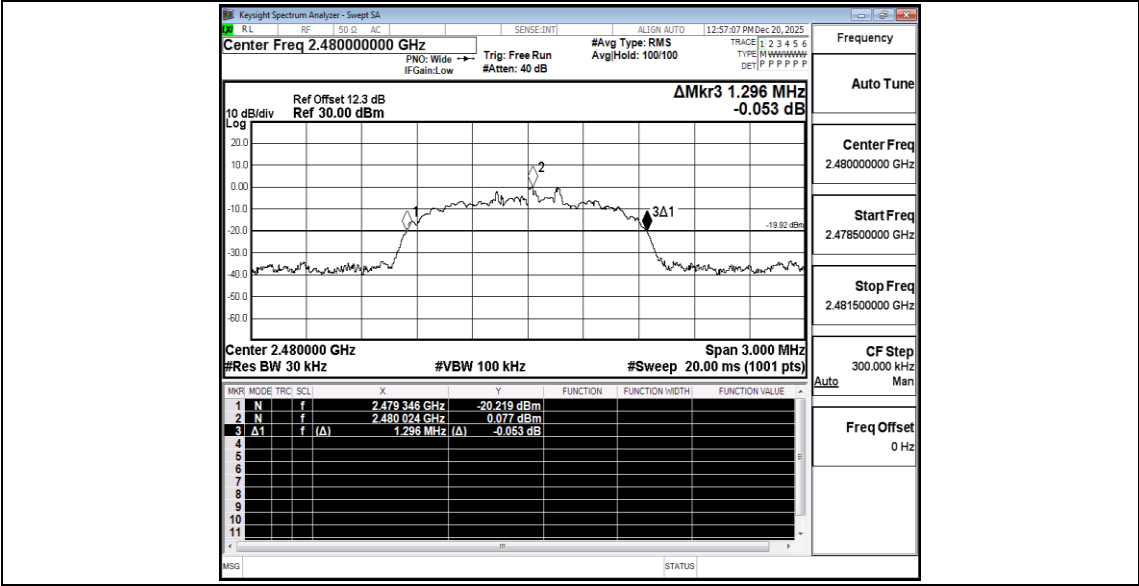
2DH5_Ant_2402



2DH5_Ant_2441





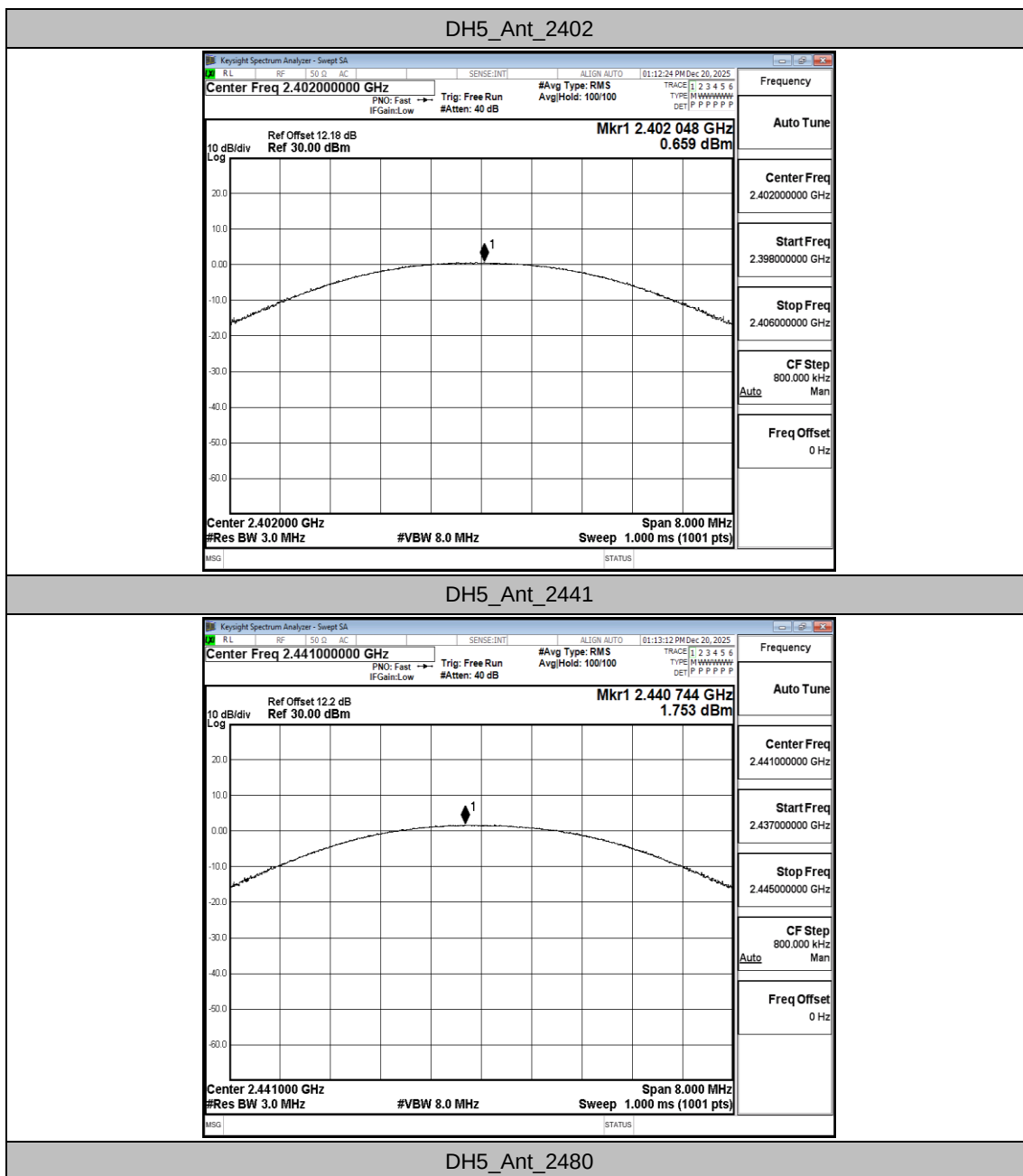


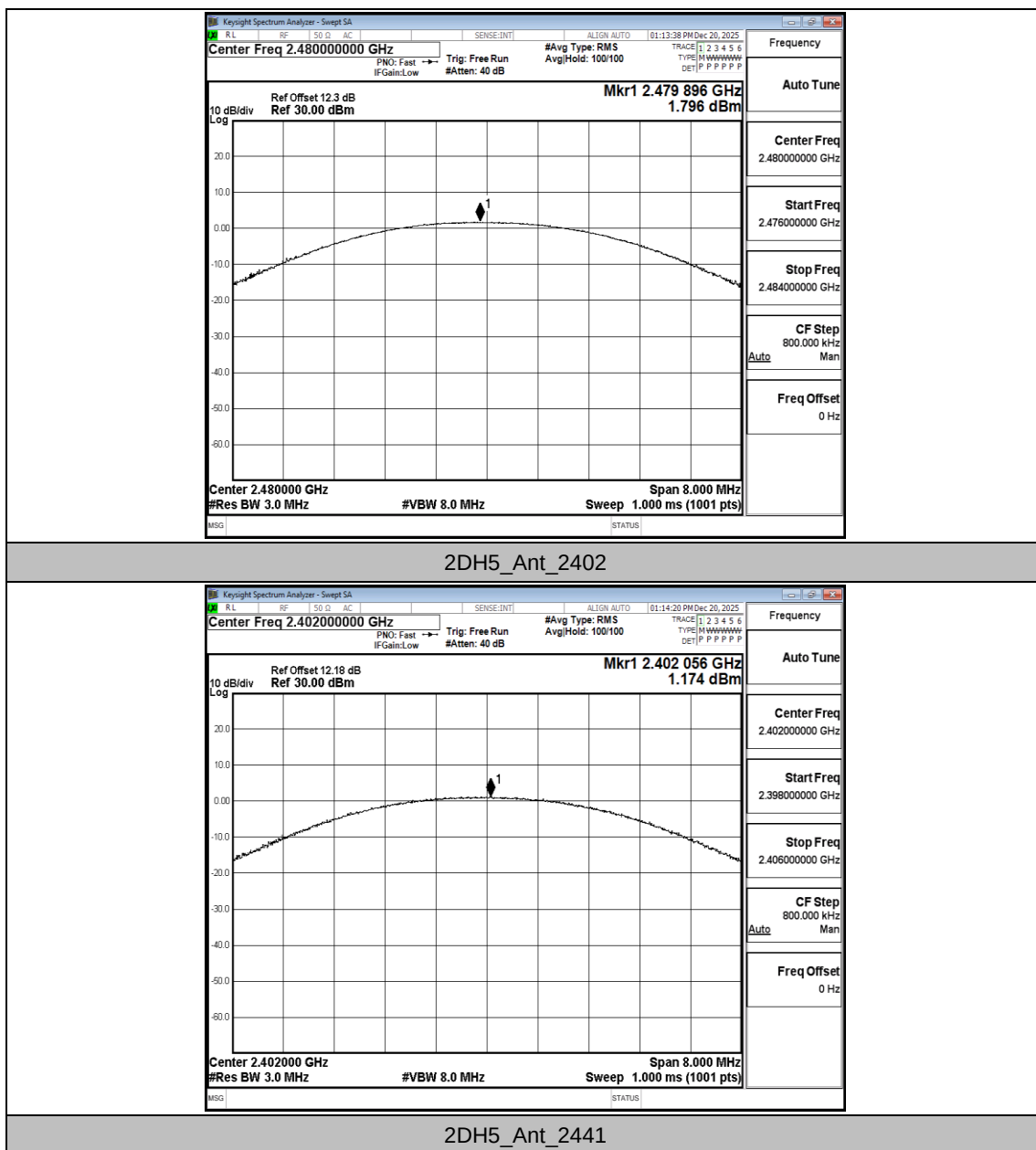
A.2 Maximum Peak Conducted Output Power

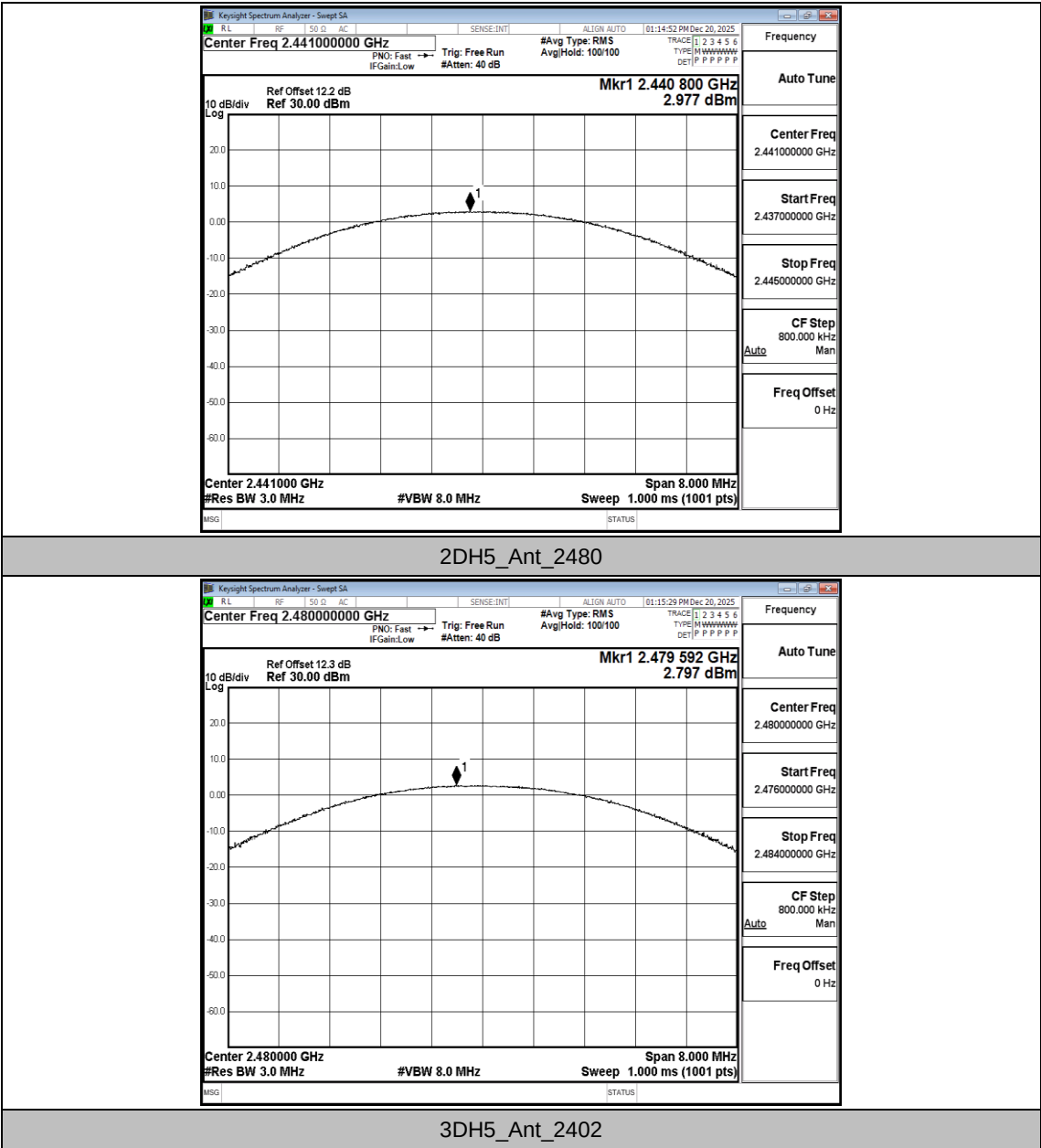
Test Result Peak

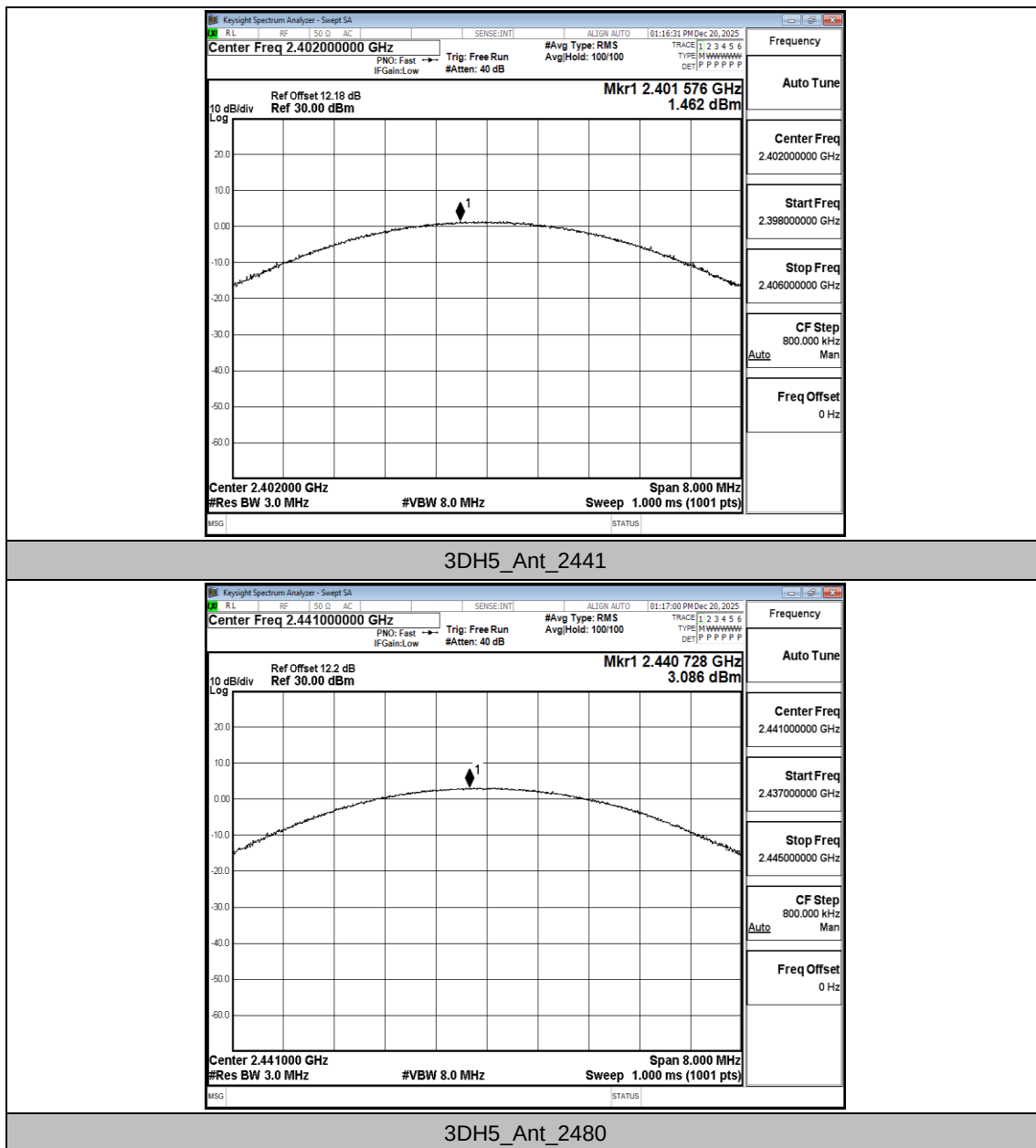
Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant	2402	0.66	≤30	PASS
		2441	1.75	≤30	PASS
		2480	1.80	≤30	PASS
2DH5	Ant	2402	1.17	≤30	PASS
		2441	2.98	≤30	PASS
		2480	2.80	≤30	PASS
3DH5	Ant	2402	1.46	≤30	PASS
		2441	3.09	≤30	PASS
		2480	2.89	≤30	PASS

Test Graphs







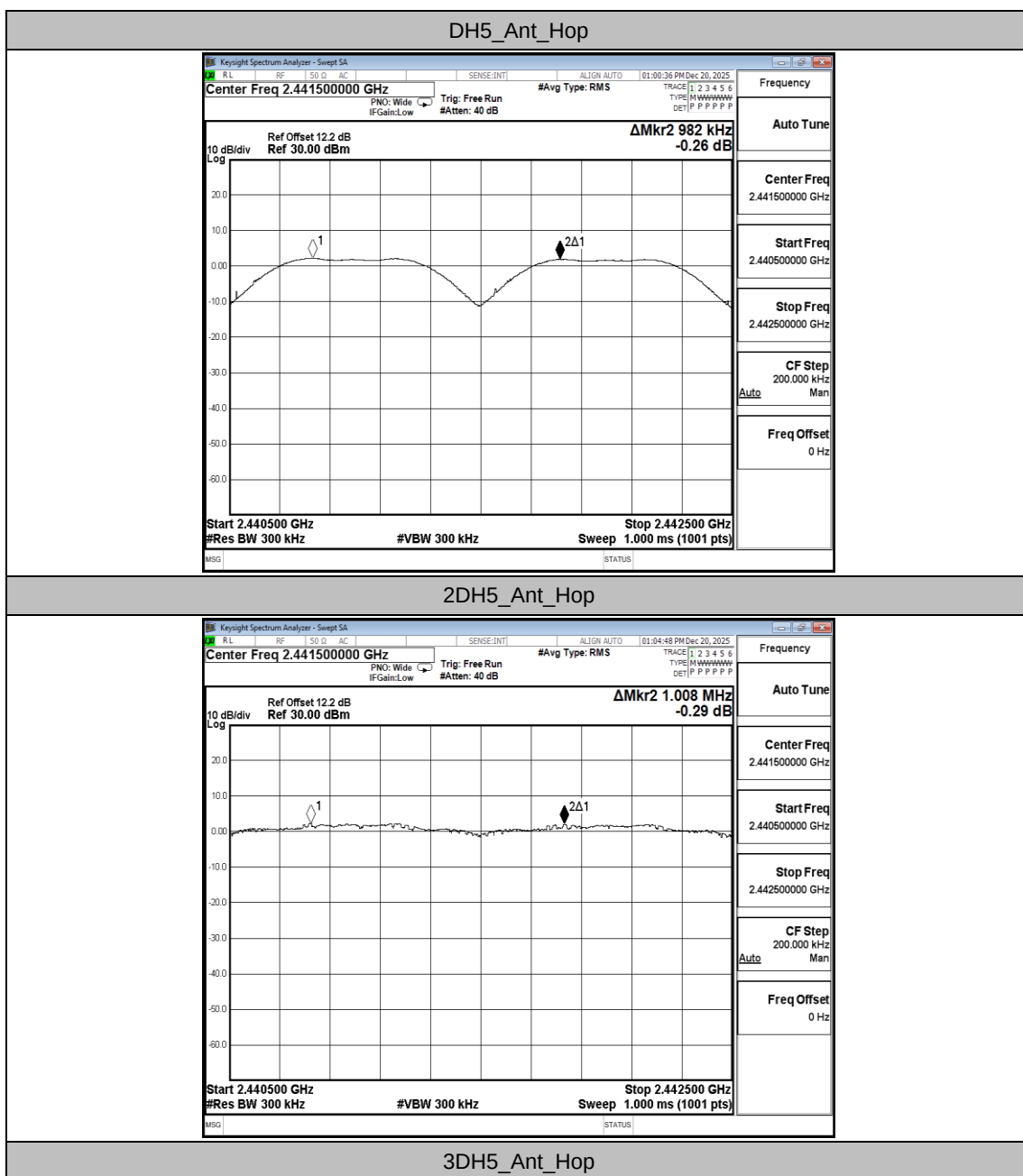


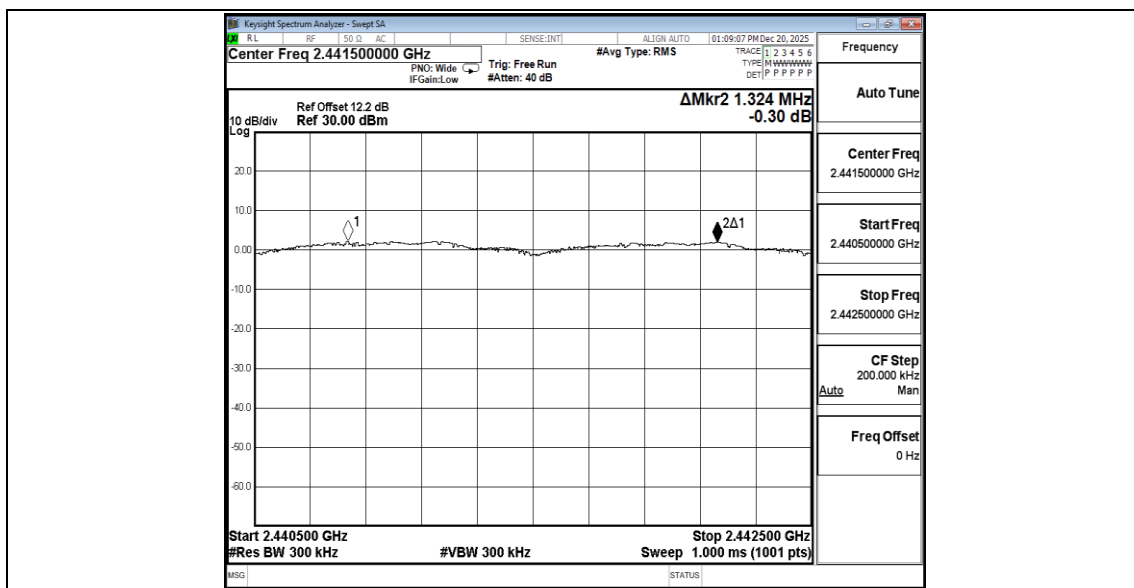
A.3 Carrier Frequencies Separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant	Hop	0.982	0.644	PASS
2DH5	Ant	Hop	1.008	0.868	PASS
3DH5	Ant	Hop	1.324	0.864	PASS

Test Graphs



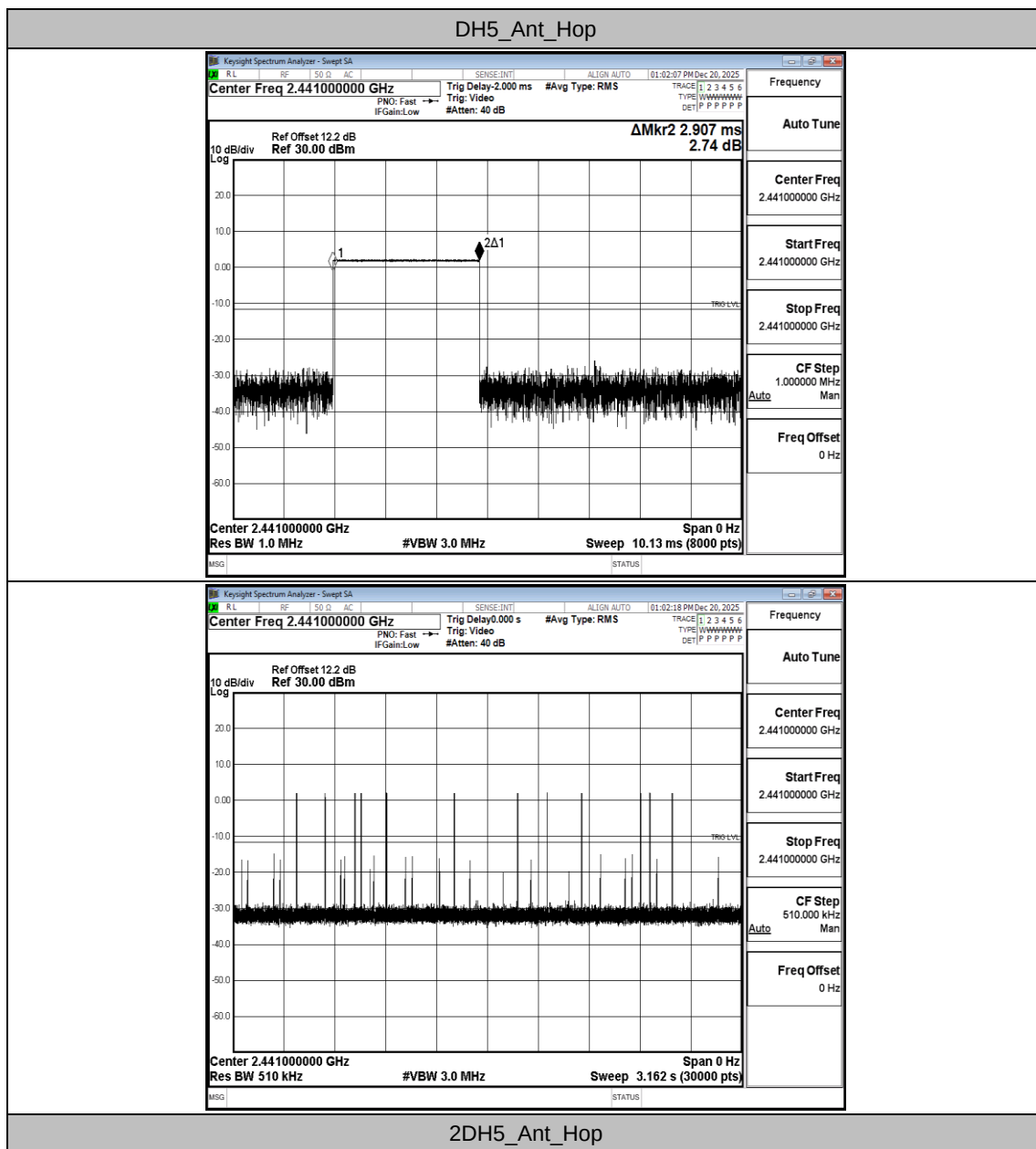


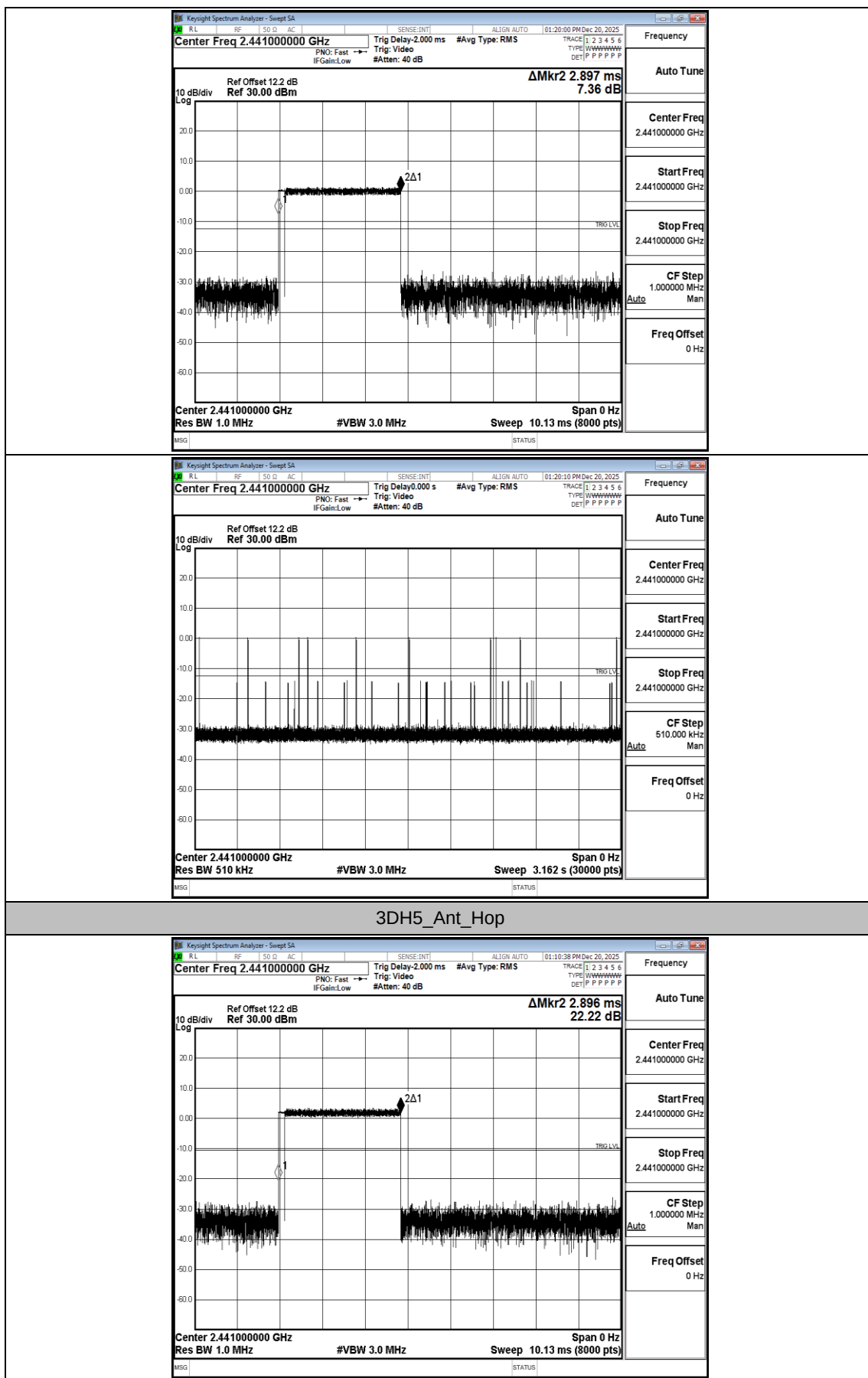
A.4 Dwell Time

Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant	Hop	2.907	130	0.378	≤0.4	PASS
2DH5	Ant	Hop	2.897	110	0.319	≤0.4	PASS
3DH5	Ant	Hop	2.896	110	0.319	≤0.4	PASS

Test Graphs

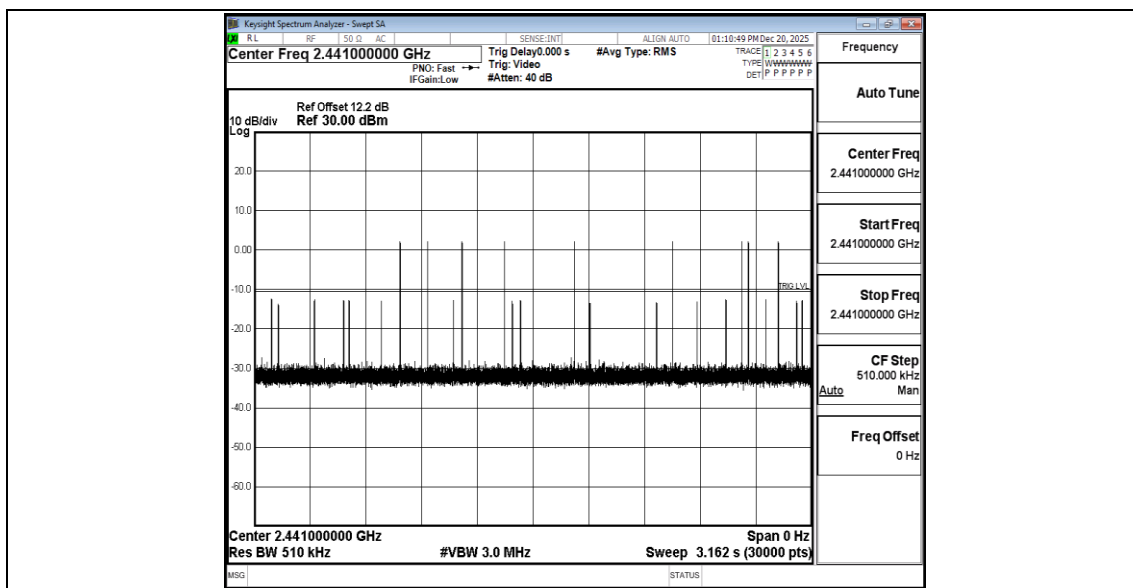




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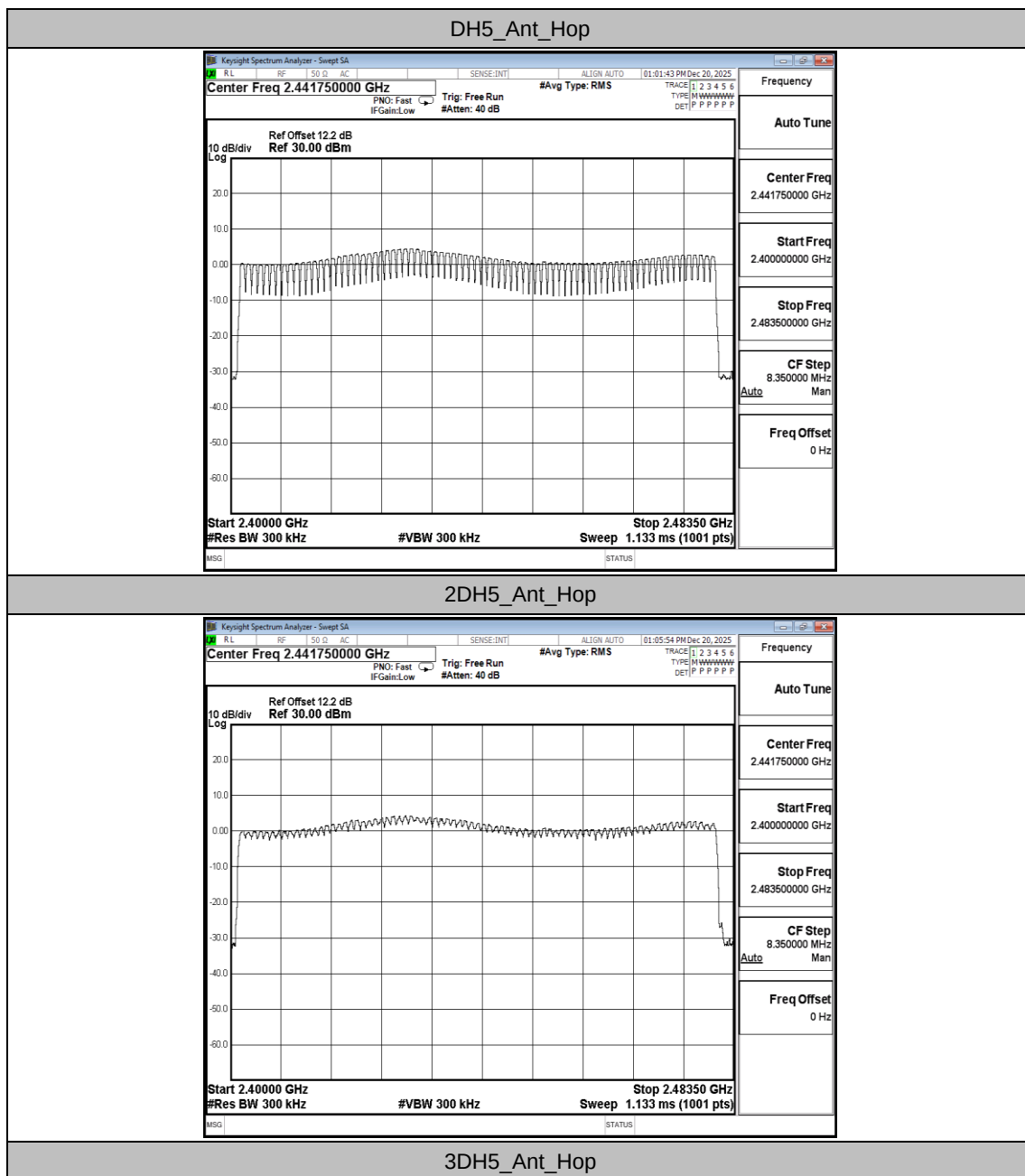


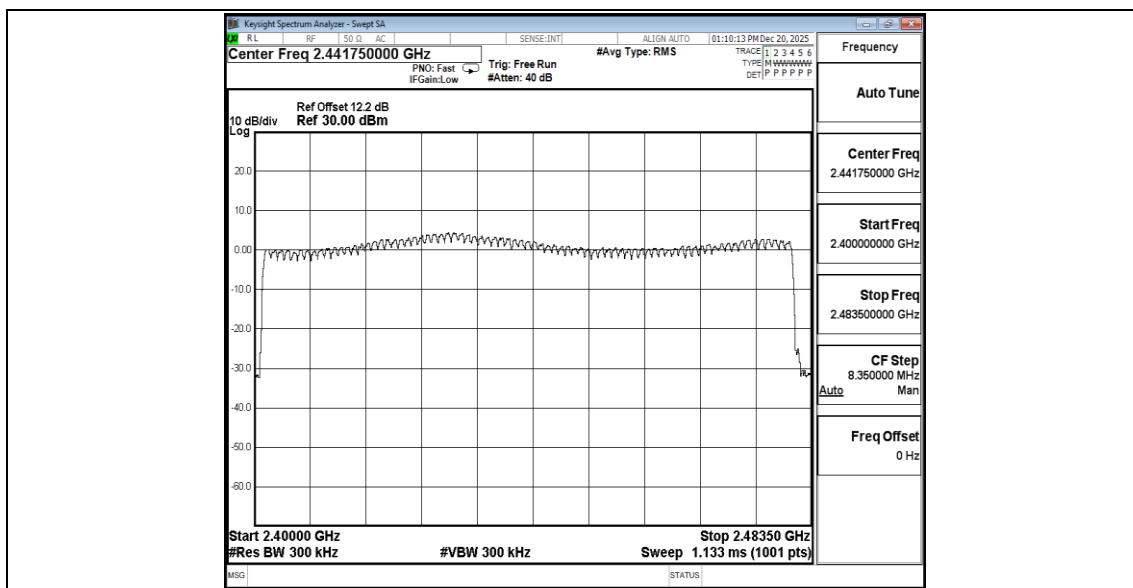
A.5 Number of Hopping Channel

Test Result

TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH5	Ant	Hop	79	≥15	PASS
2DH5	Ant	Hop	79	≥15	PASS
3DH5	Ant	Hop	79	≥15	PASS

Test Graphs



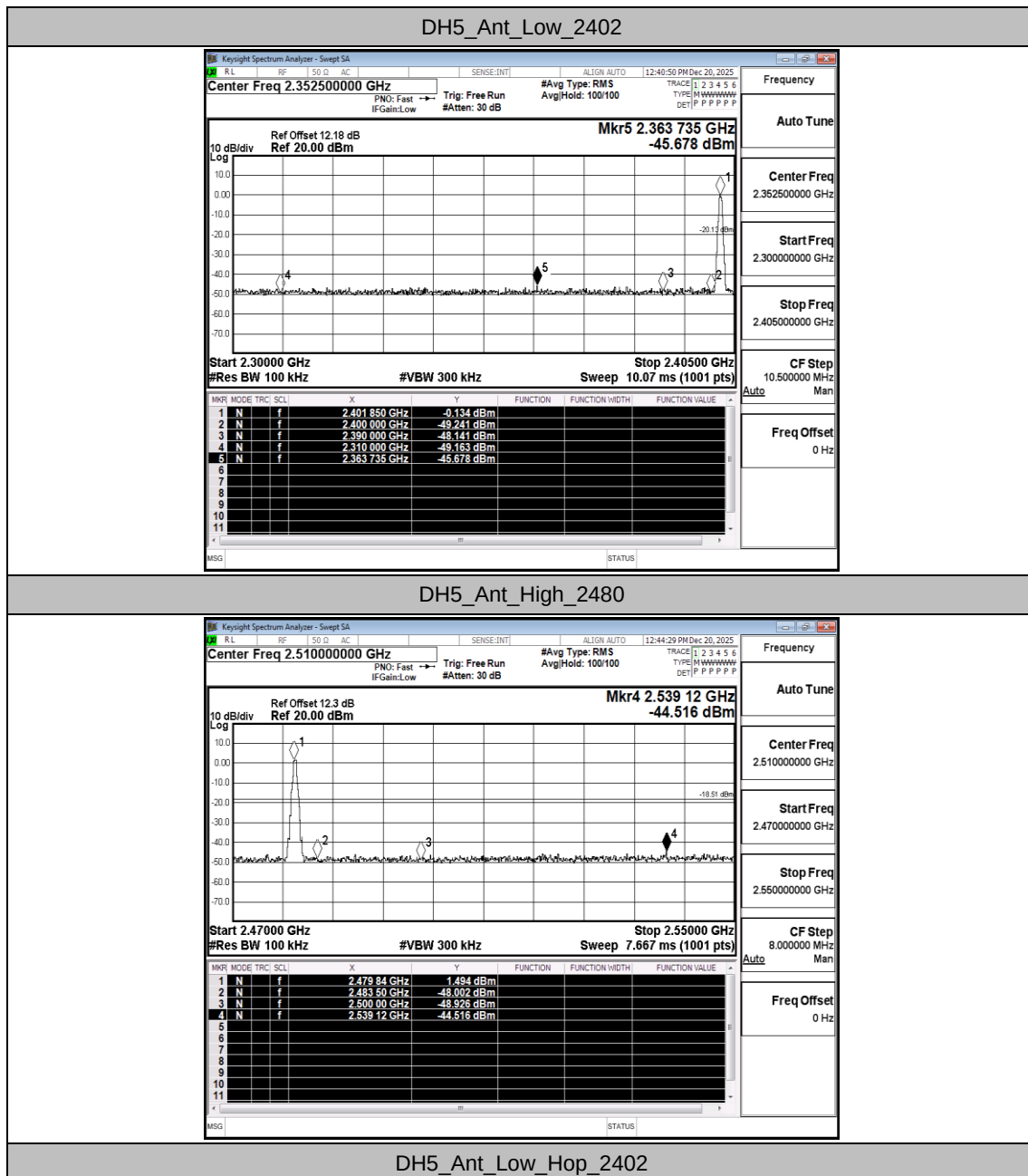


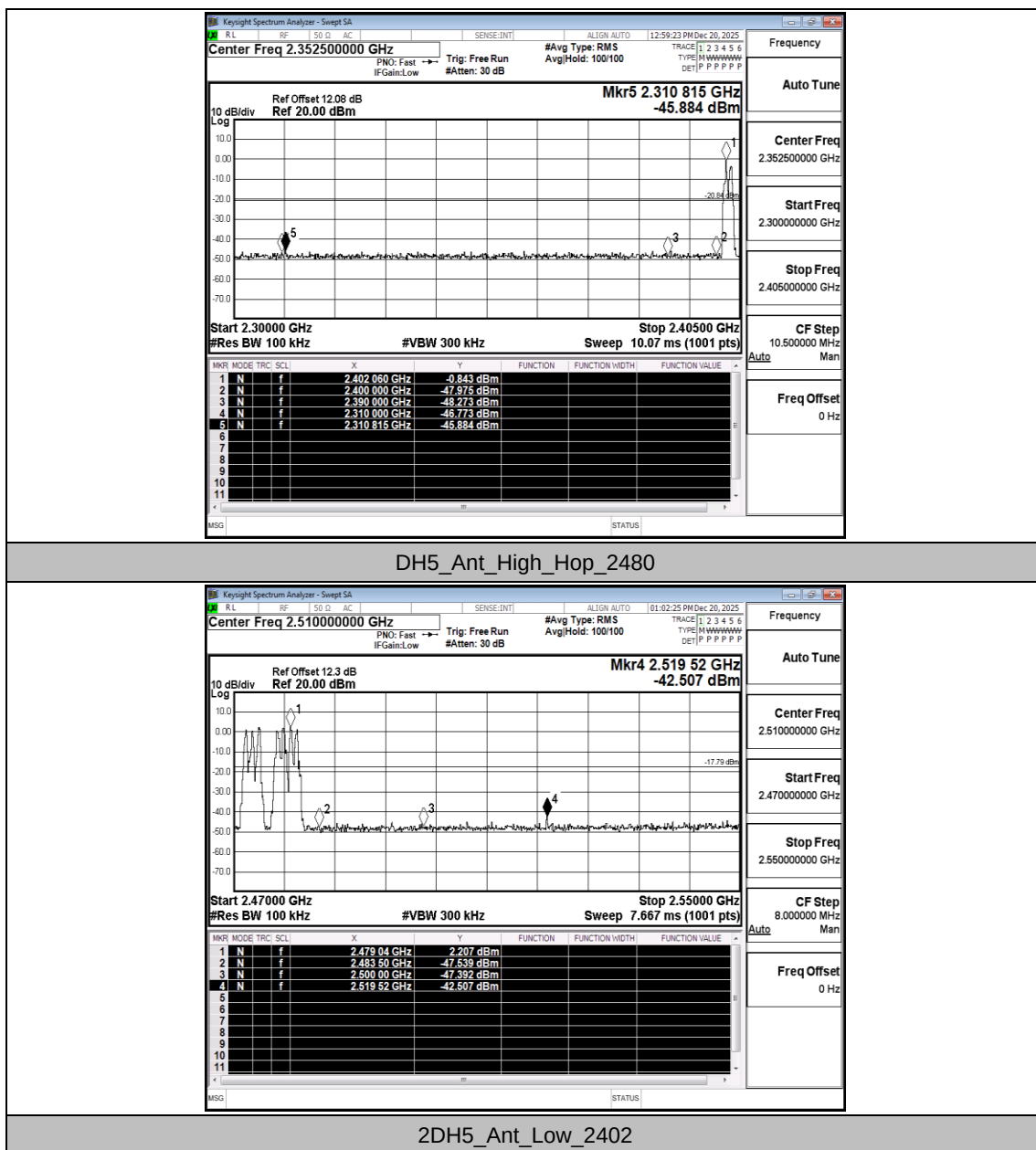
A.6 Band Edge

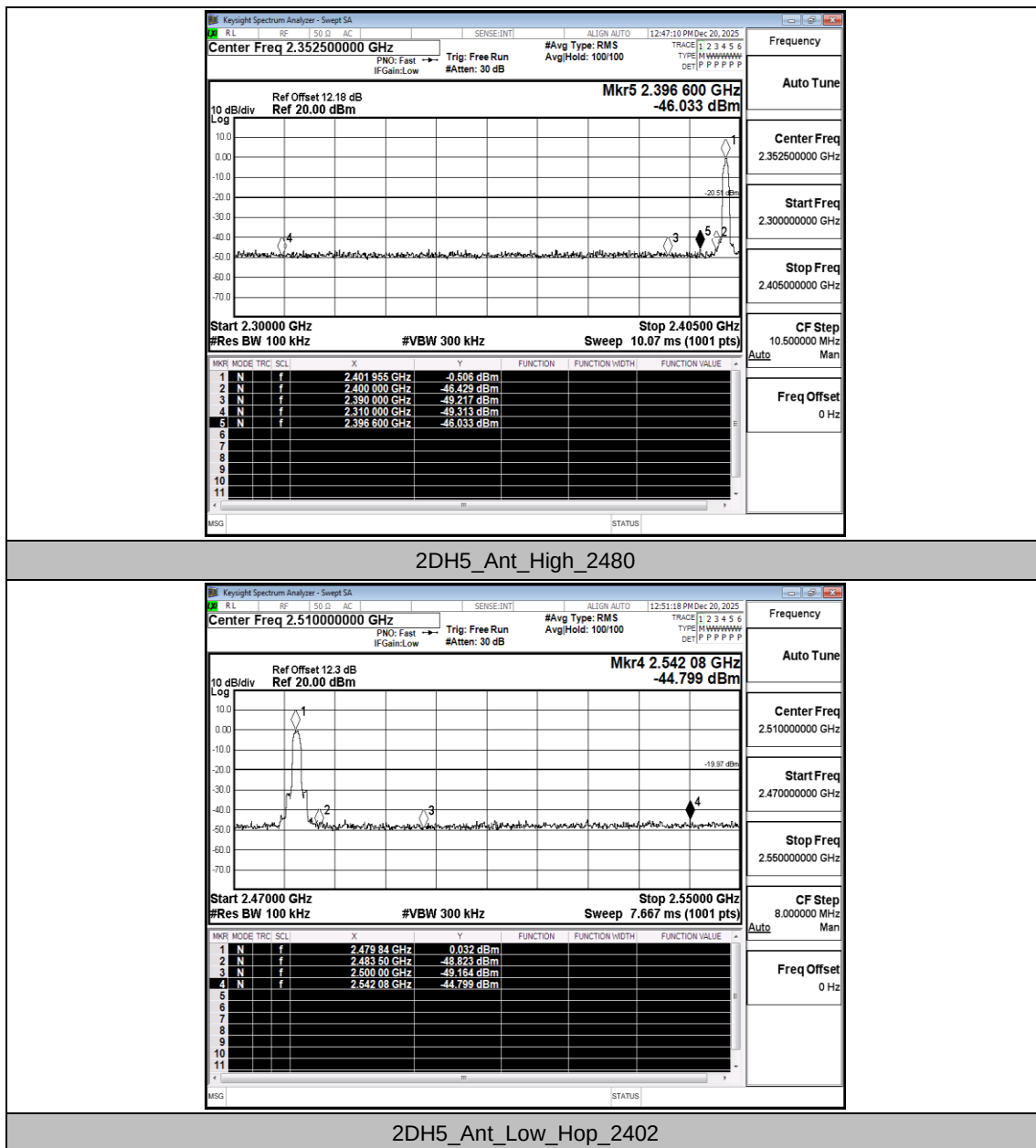
Test Result

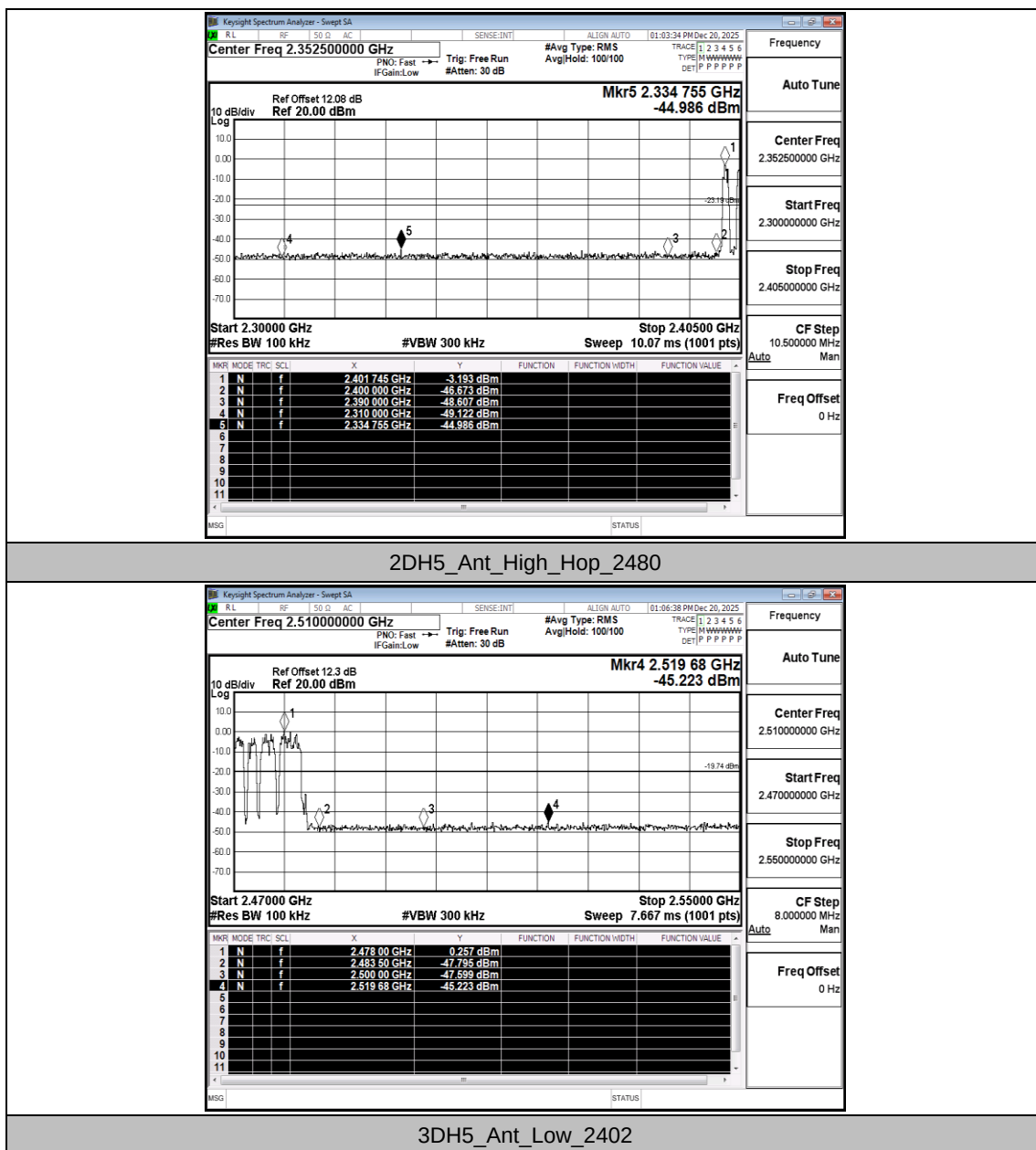
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	Low	2402	-0.13	-45.68	≤ -20.13	PASS
		High	2480	1.49	-44.52	≤ -18.51	PASS
		Low	Hop_2402	-0.84	-45.88	≤ -20.84	PASS
		High	Hop_2480	2.21	-42.51	≤ -17.79	PASS
2DH5	Ant	Low	2402	-0.51	-46.03	≤ -20.51	PASS
		High	2480	0.03	-44.8	≤ -19.97	PASS
		Low	Hop_2402	-3.19	-44.99	≤ -23.19	PASS
		High	Hop_2480	0.26	-45.22	≤ -19.74	PASS
3DH5	Ant	Low	2402	-0.93	-45.8	≤ -20.93	PASS
		High	2480	0.69	-44.98	≤ -19.31	PASS
		Low	Hop_2402	-5.07	-45.76	≤ -25.07	PASS
		High	Hop_2480	-0.31	-44.74	≤ -20.31	PASS

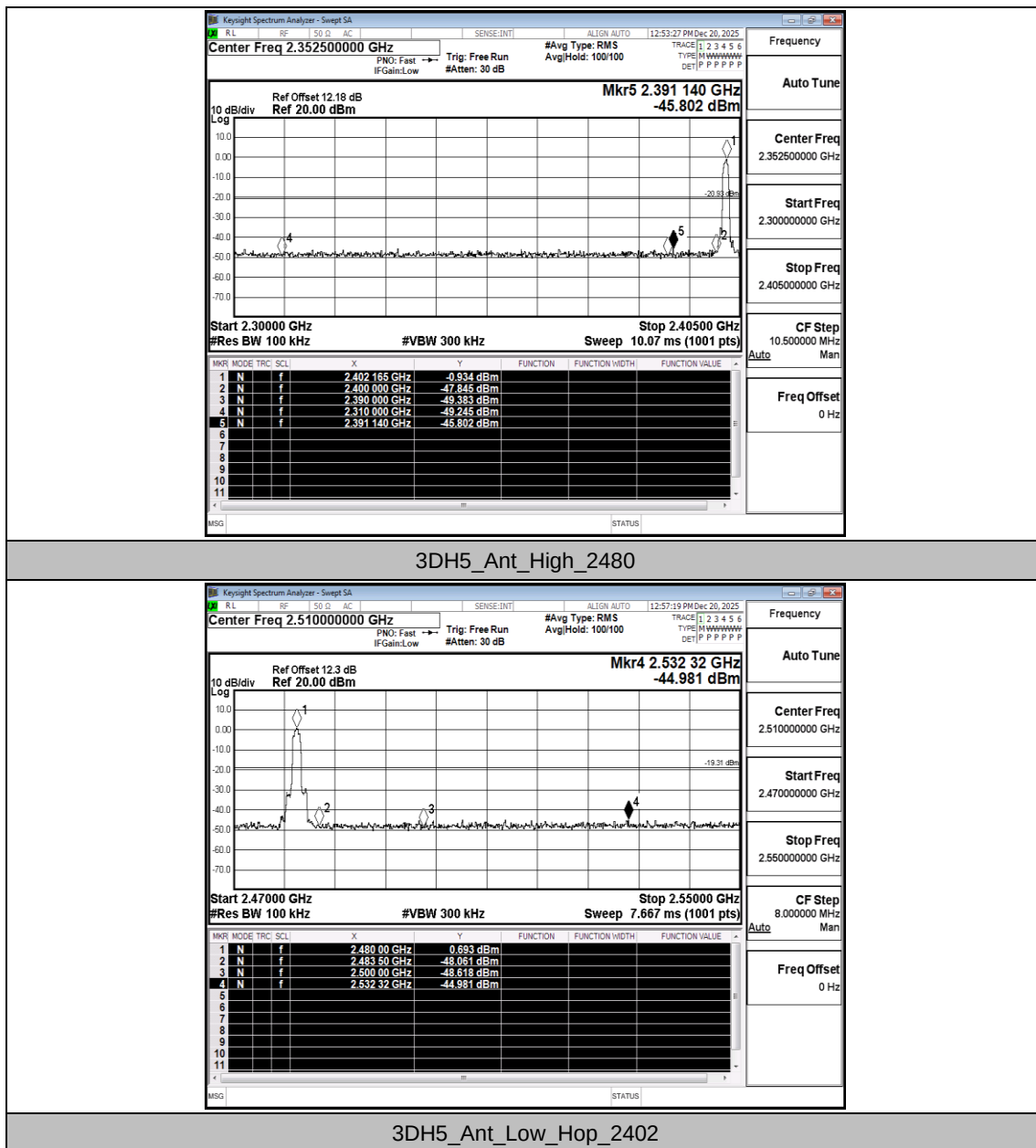
Test Graphs

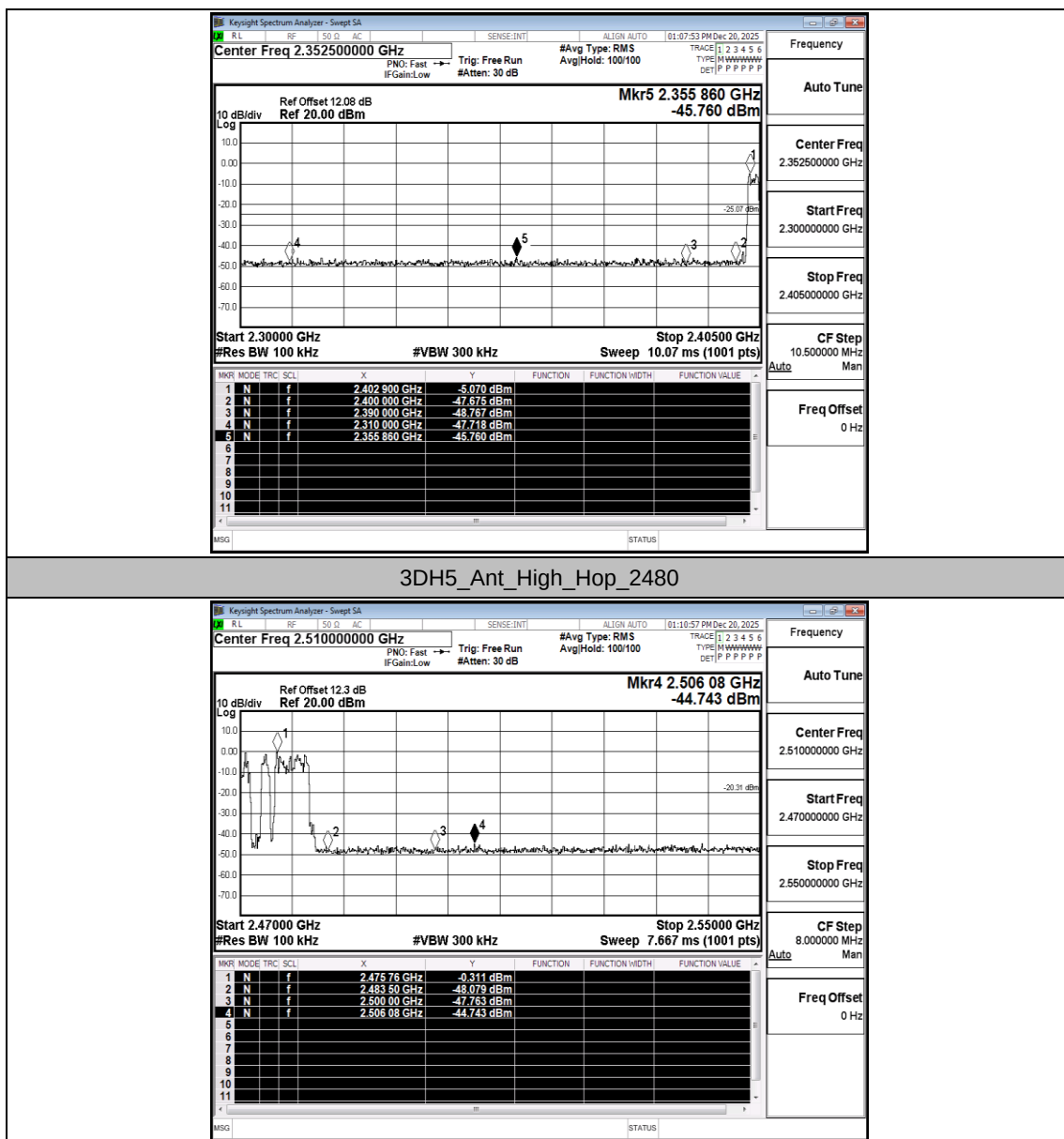












A.7 Conducted RF Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant	2402	Reference	-0.19	-0.19	---	PASS
			30~1000	-0.19	-37.14	≤-20.19	PASS
			1000~26500	-0.19	-55.86	≤-20.19	PASS
		2441	Reference	1.78	1.78	---	PASS
			30~1000	1.78	-56.32	≤-18.22	PASS
			1000~26500	1.78	-55.48	≤-18.22	PASS
		2480	Reference	1.93	1.93	---	PASS
			30~1000	1.93	-53.54	≤-18.07	PASS
			1000~26500	1.93	-55.52	≤-18.07	PASS
2DH5	Ant	2402	Reference	-0.44	-0.44	---	PASS
			30~1000	-0.44	-56.62	≤-20.44	PASS
			1000~26500	-0.44	-55.13	≤-20.44	PASS
		2441	Reference	1.52	1.52	---	PASS
			30~1000	1.52	-55.69	≤-18.48	PASS
			1000~26500	1.52	-55.01	≤-18.48	PASS
		2480	Reference	1.98	1.98	---	PASS
			30~1000	1.98	-52.54	≤-18.02	PASS
			1000~26500	1.98	-55.3	≤-18.02	PASS
3DH5	Ant	2402	Reference	0.08	0.08	---	PASS
			30~1000	0.08	-55.53	≤-19.92	PASS
			1000~26500	0.08	-53.61	≤-19.92	PASS
		2441	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-55.21	≤-17.88	PASS
			1000~26500	2.12	-54.47	≤-17.88	PASS
		2480	Reference	2.20	2.20	---	PASS
			30~1000	2.20	-33.02	≤-17.8	PASS
			1000~26500	2.20	-54.81	≤-17.8	PASS

Test Graphs

