

Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: CAR SPEAKER

Test Model: BT-1970

Environmental Conditions

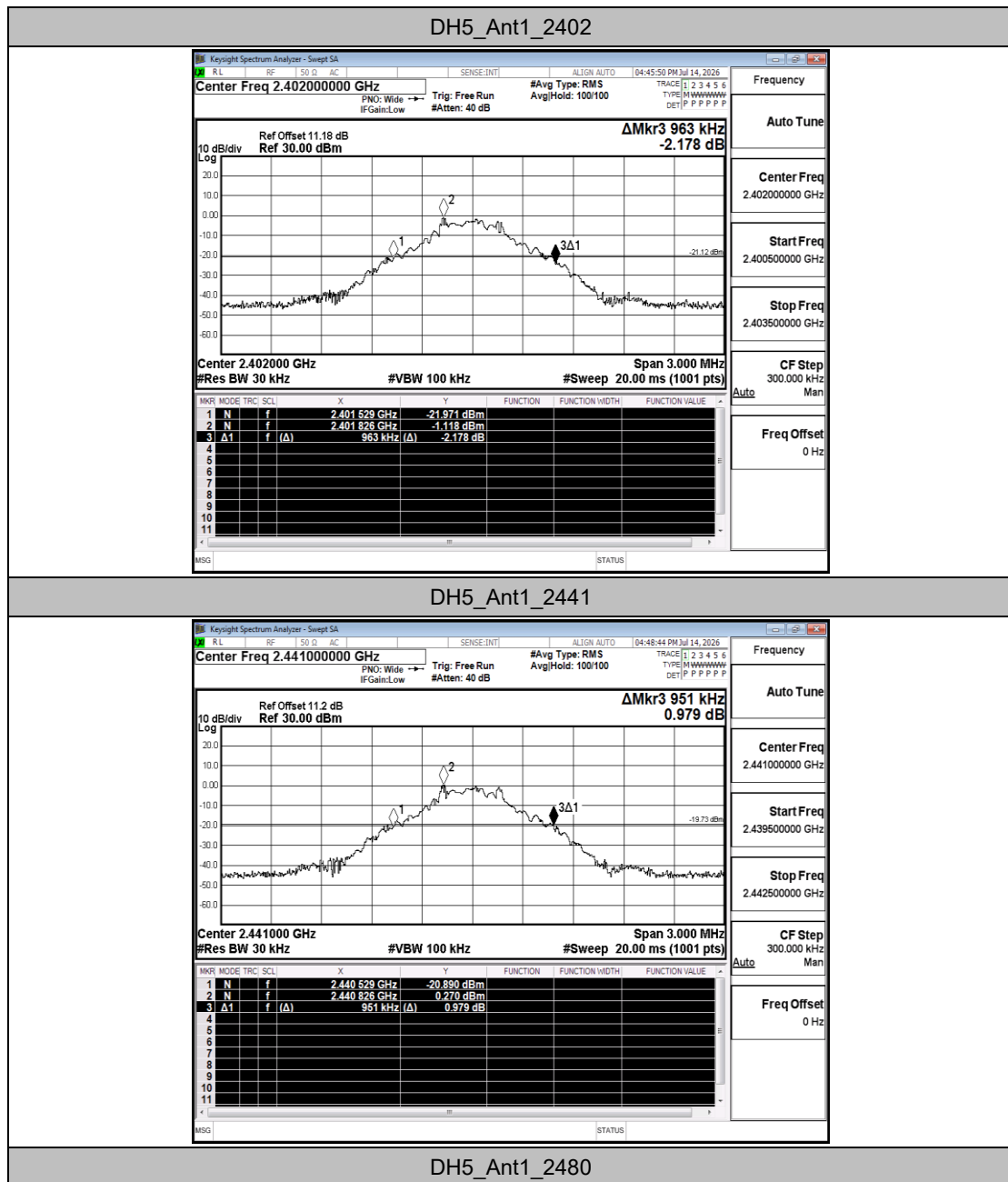
Temperature:	24.2°C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

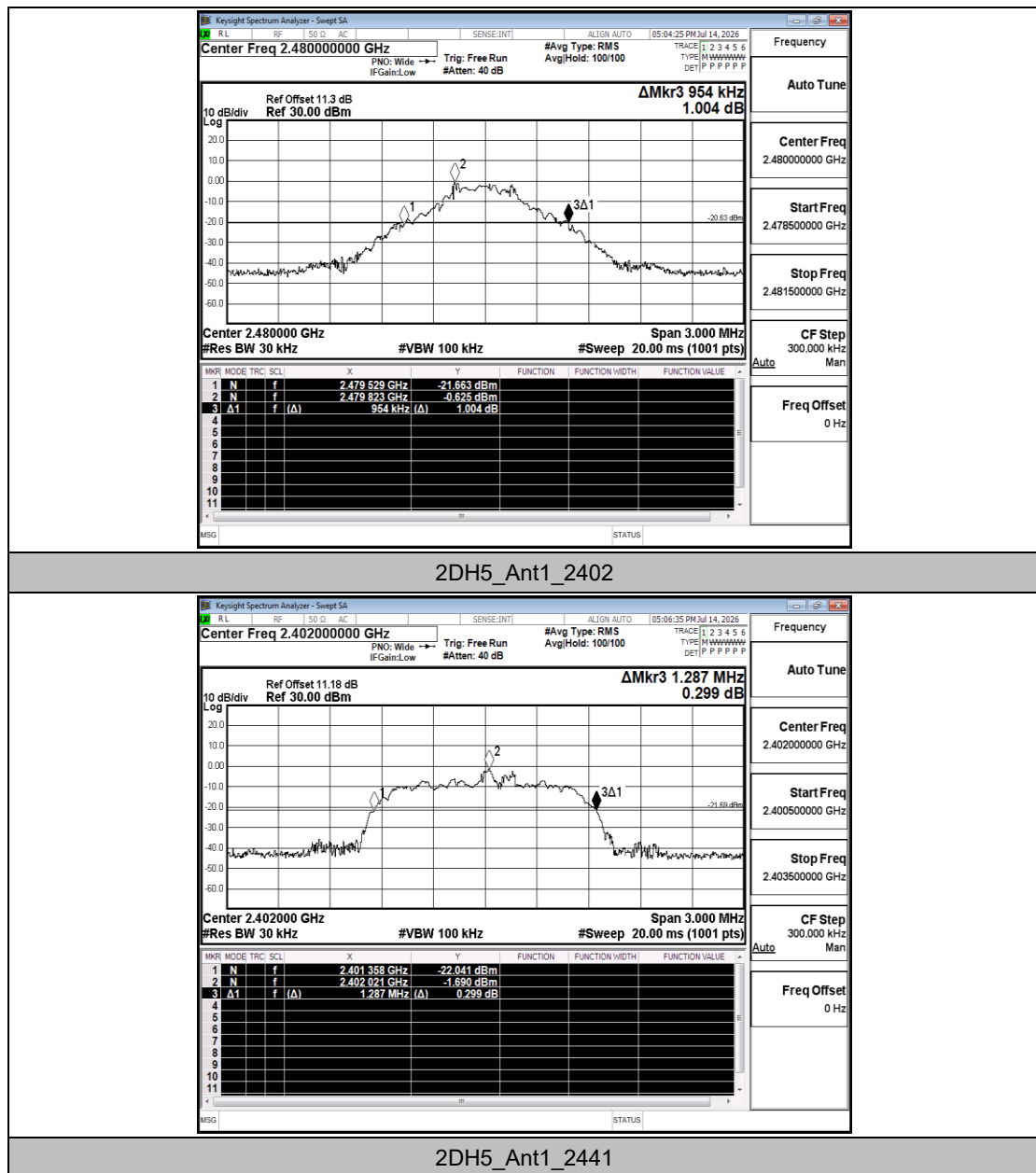
A.1 20dB Emission Bandwidth

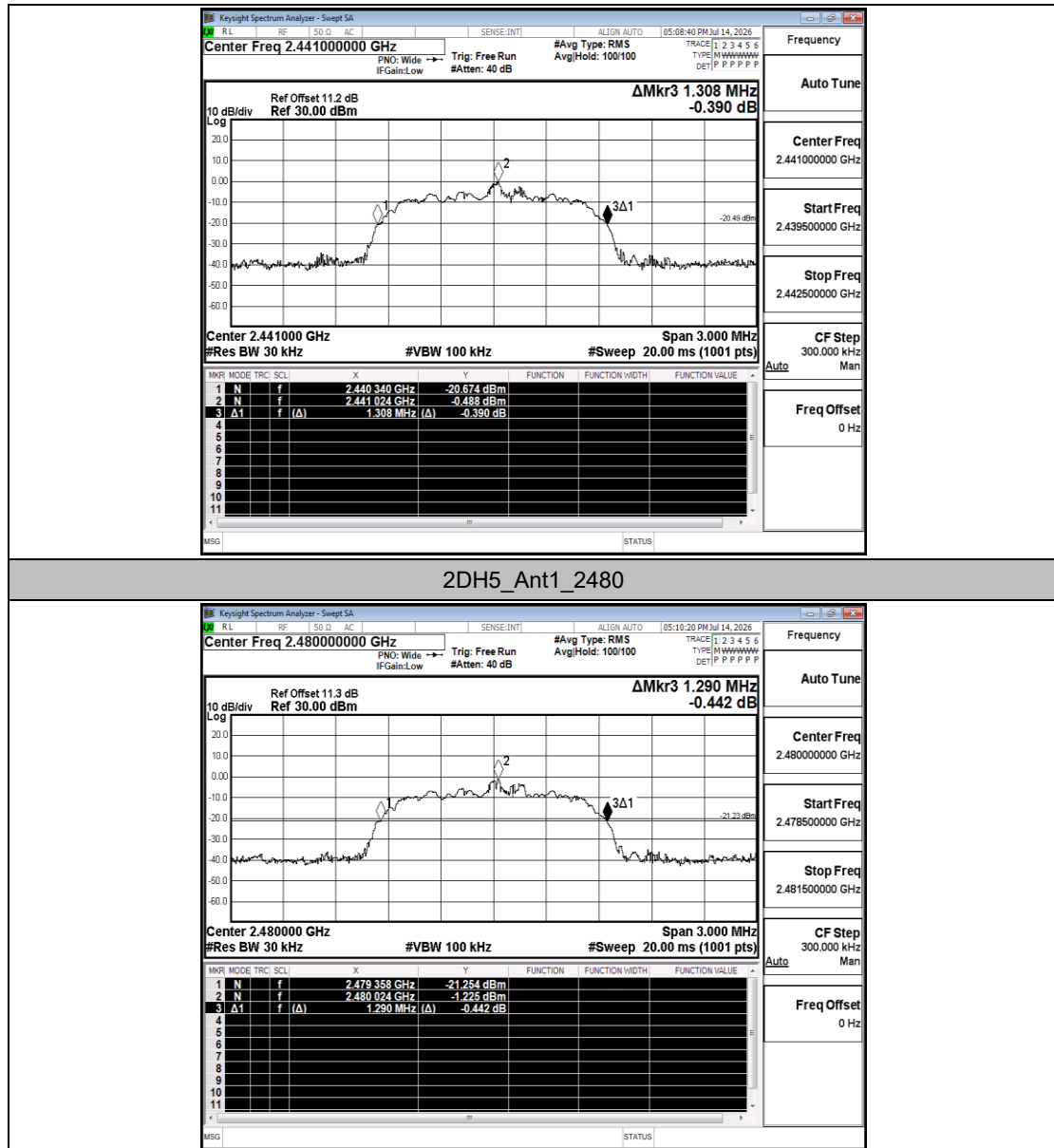
Test Result

TestMode	Antenna	Freq (MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
DH5	Ant1	2402	0.963	2401.529	2402.492	---	---
		2441	0.951	2440.529	2441.480	---	---
		2480	0.954	2479.529	2480.483	---	---
2DH5	Ant1	2402	1.287	2401.358	2402.645	---	---
		2441	1.308	2440.340	2441.648	---	---
		2480	1.290	2479.358	2480.648	---	---

Test Graphs





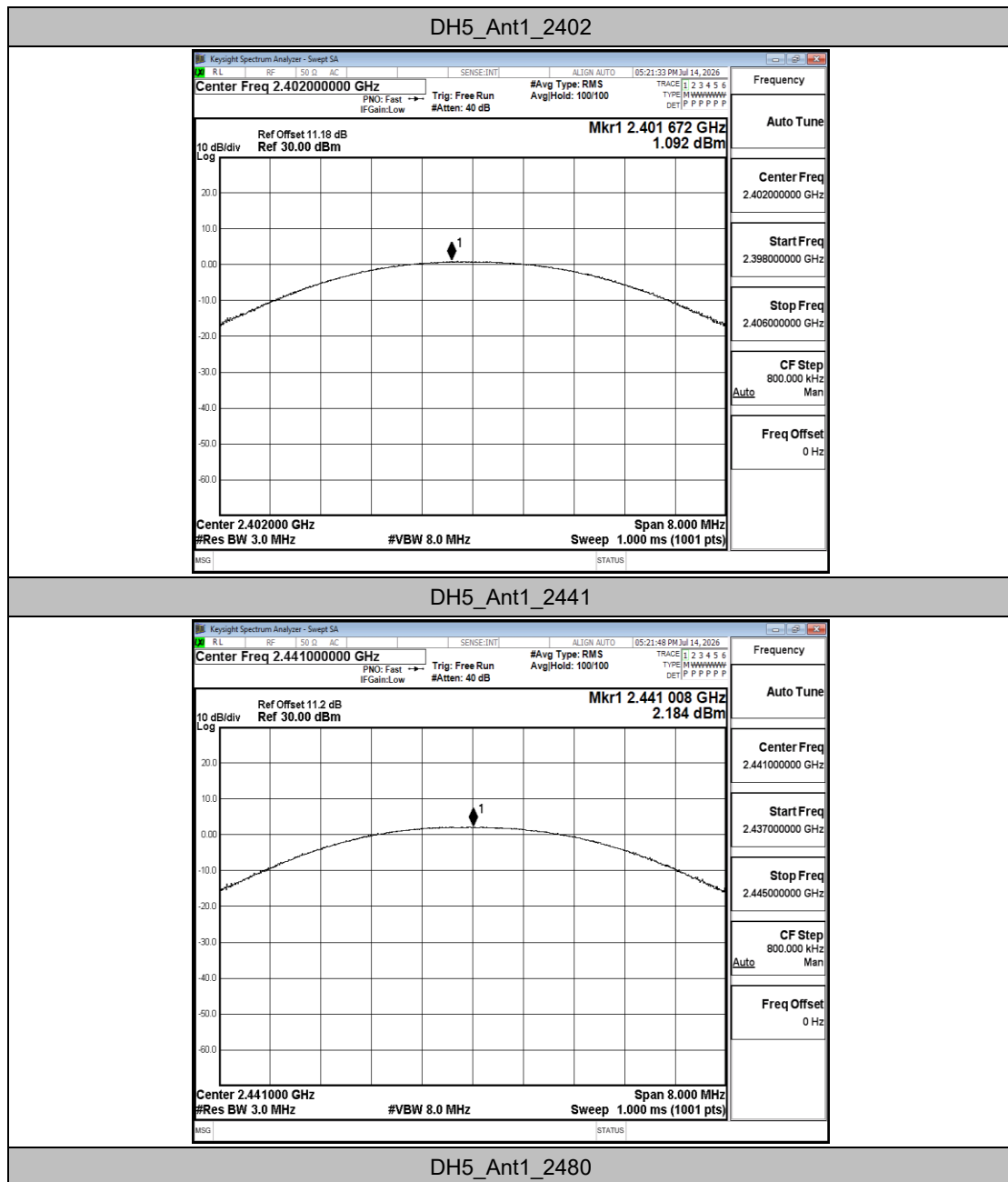


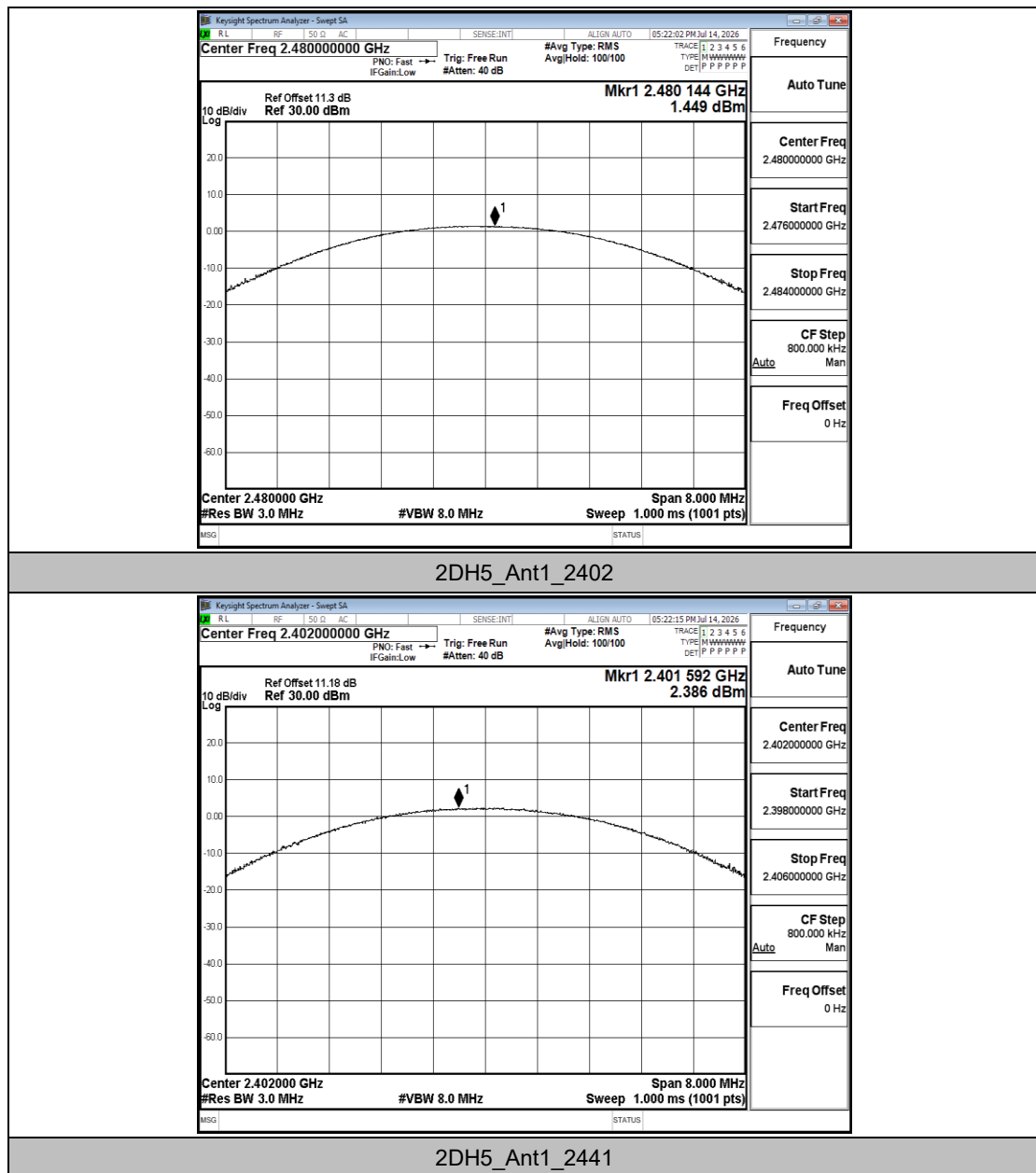
A.2 Maximum Peak conducted output power

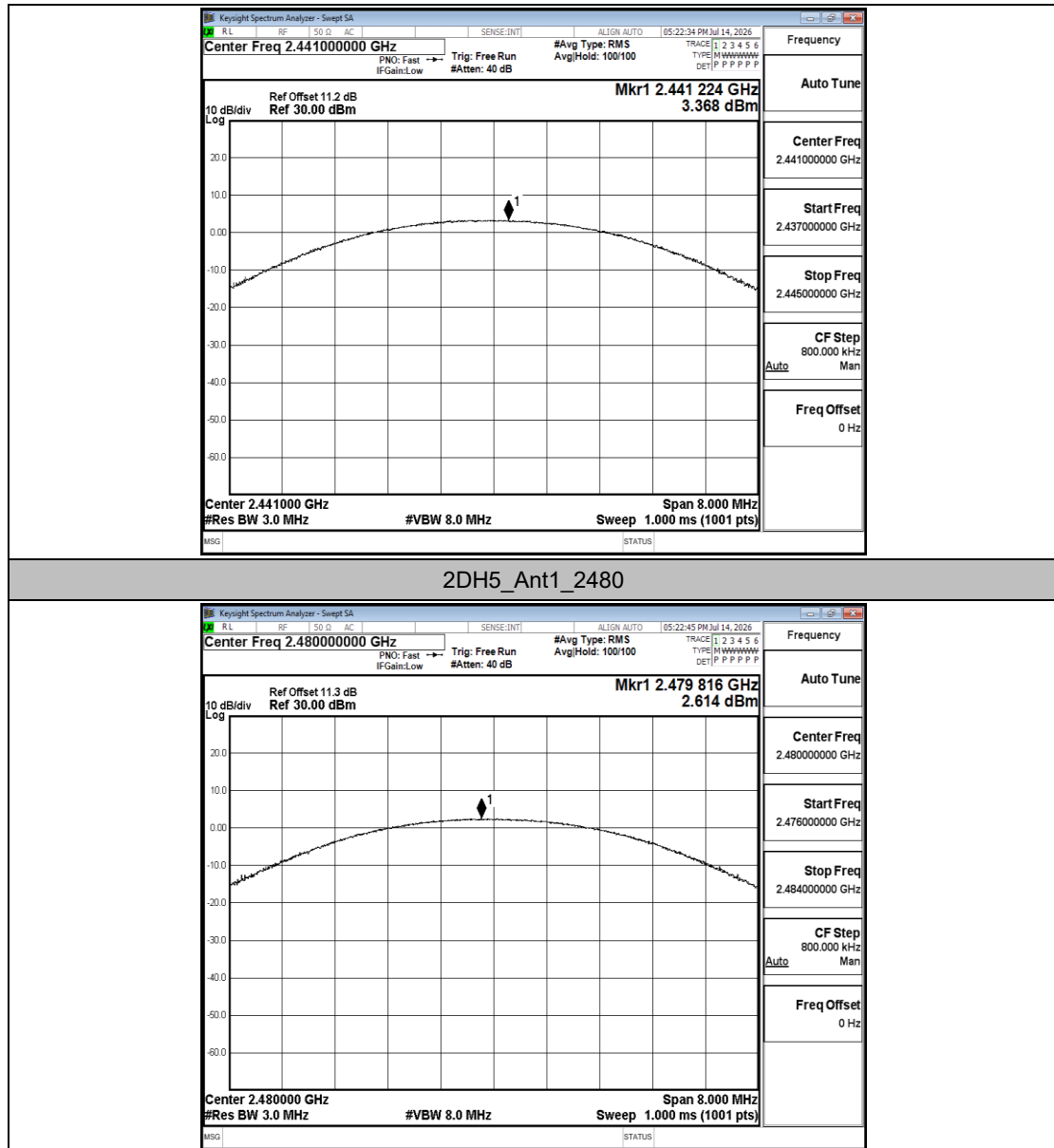
Test Result

Test Mode	Antenna	Freq (MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	1.09	≤30	PASS
		2441	2.18	≤30	PASS
		2480	1.45	≤30	PASS
2DH5	Ant1	2402	2.39	≤20.97	PASS
		2441	3.37	≤20.97	PASS
		2480	2.61	≤20.97	PASS

Test Graphs





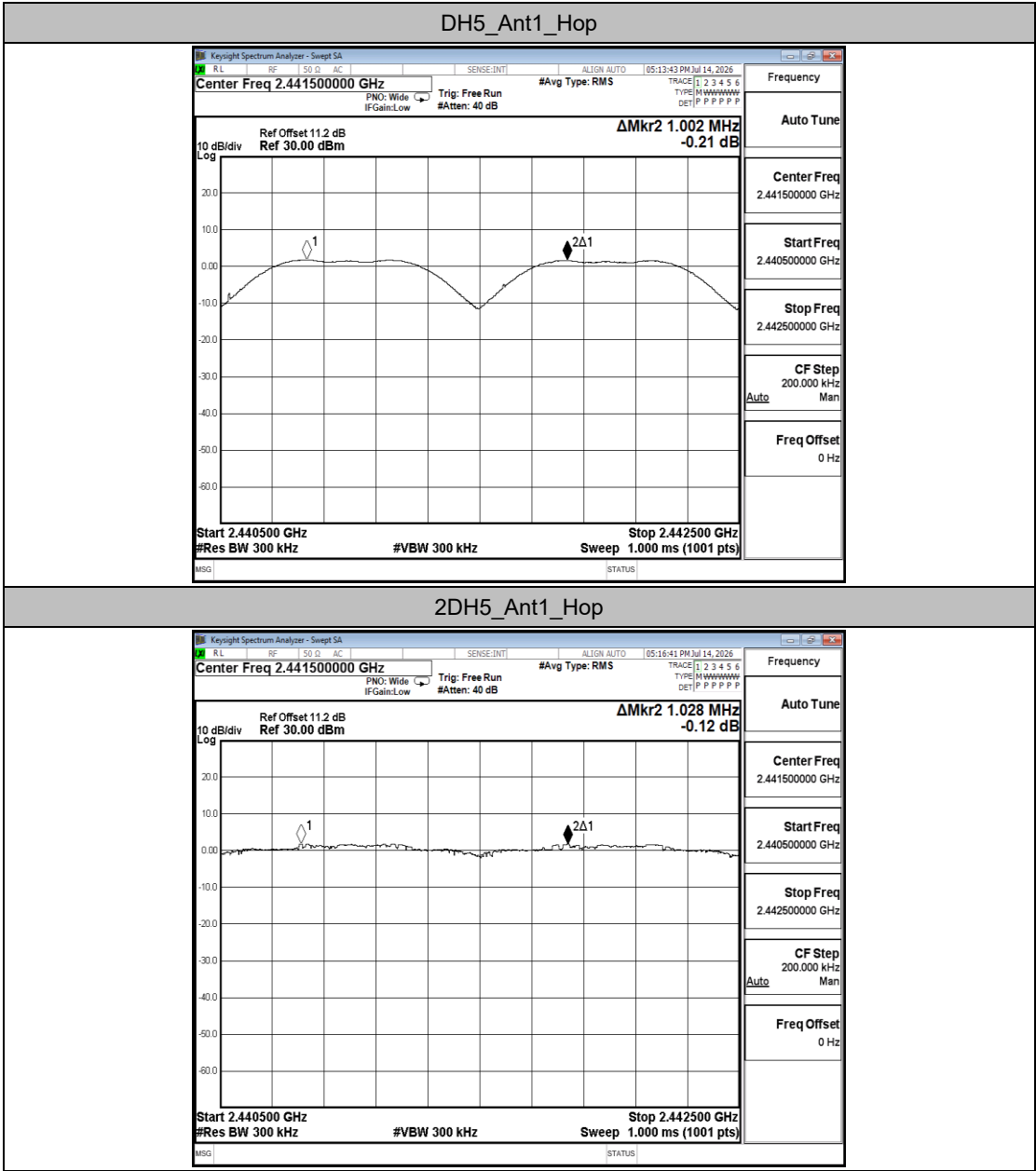


A.3 Carrier frequency separation

Test Result

TestMode	Antenna	Freq (MHz)	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	1.002	≥ 0.642	PASS
2DH5	Ant1	Hop	1.028	≥ 0.872	PASS

Test Graphs

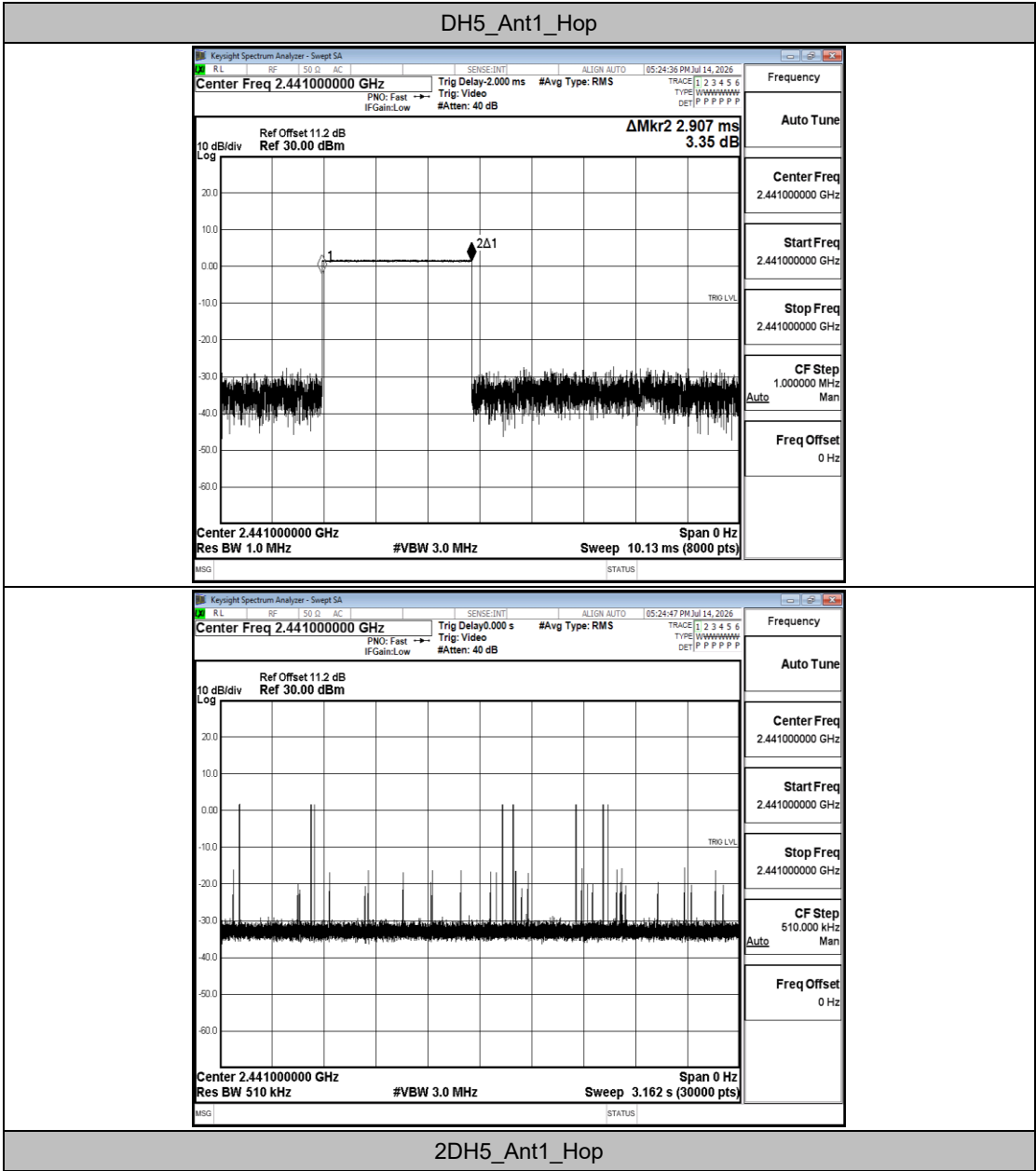


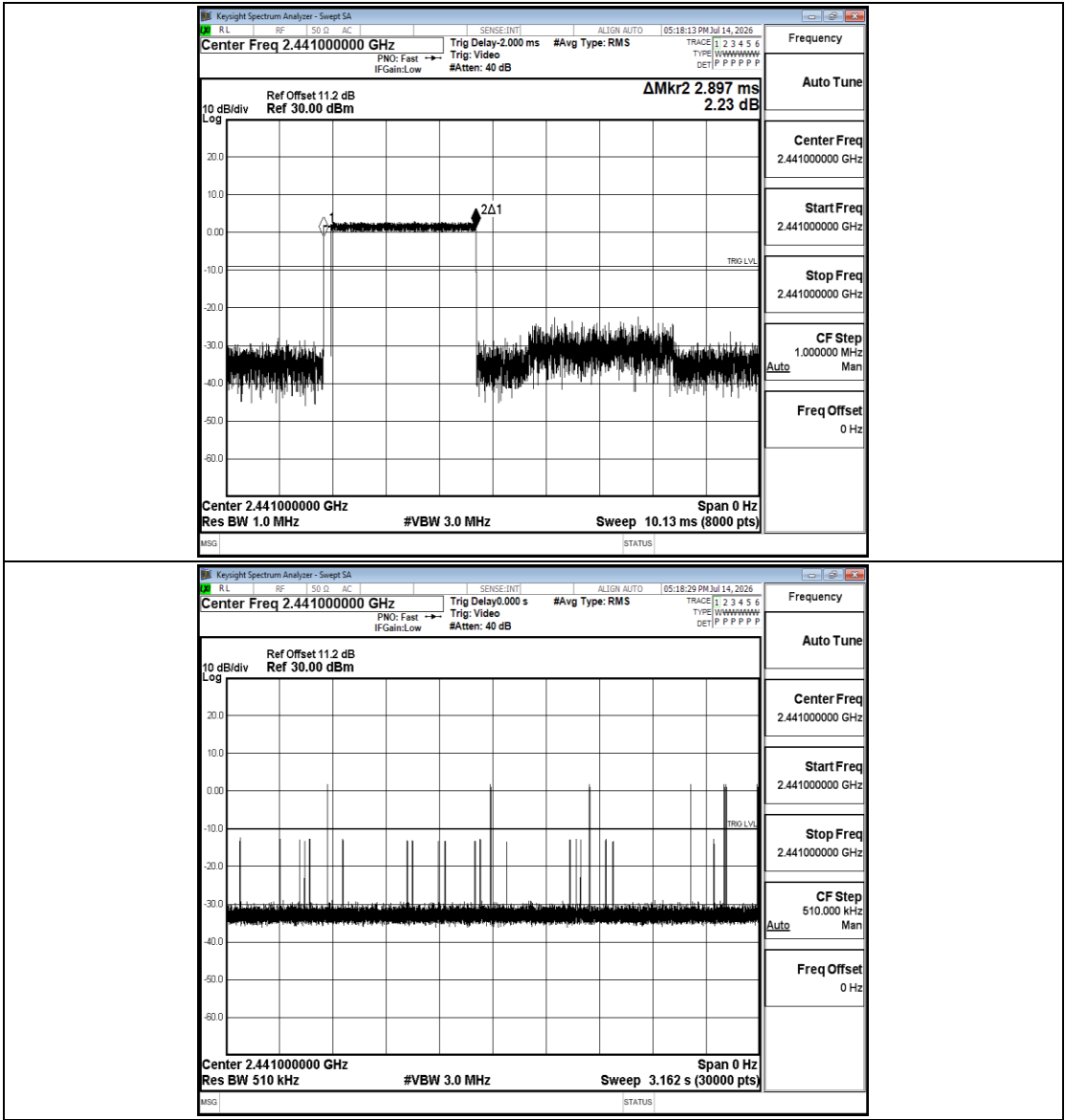
A.4 Time of occupancy

Test Result

TestMode	Antenna	Freq (MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.907	90	0.262	≤0.4	PASS
2DH5	Ant1	Hop	2.897	80	0.232	≤0.4	PASS

Test Graphs



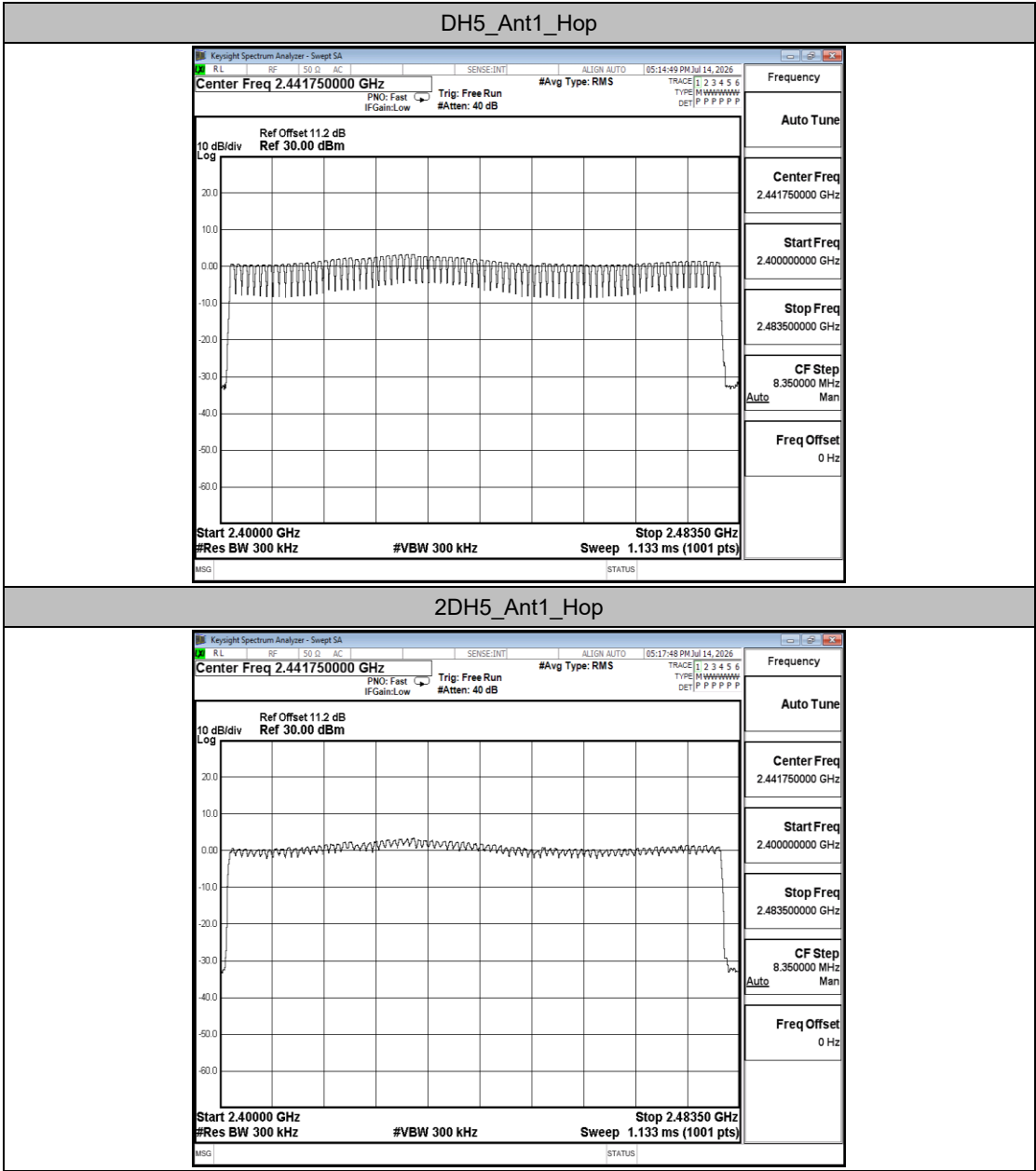


A.5 Number of hopping channels

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

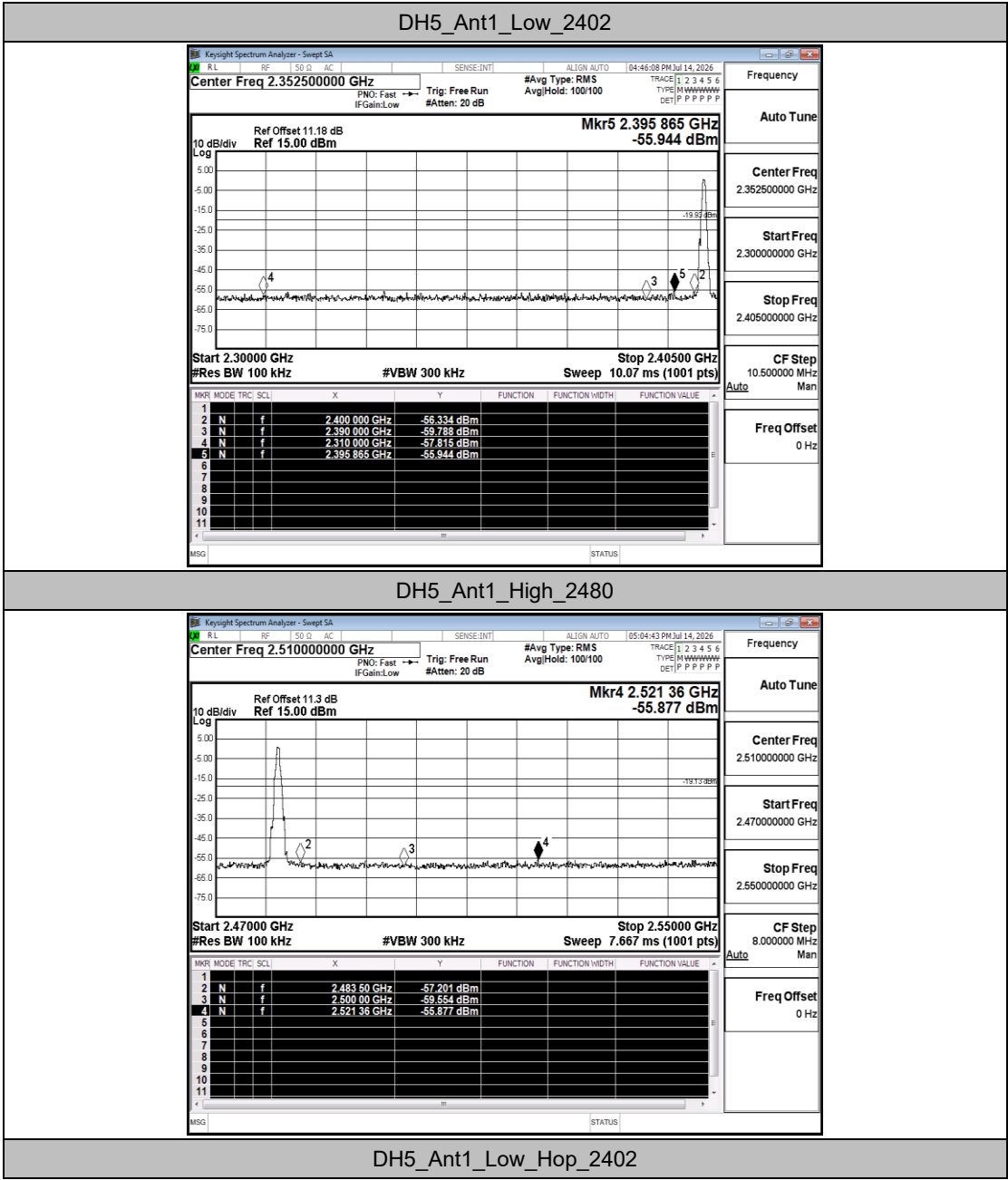


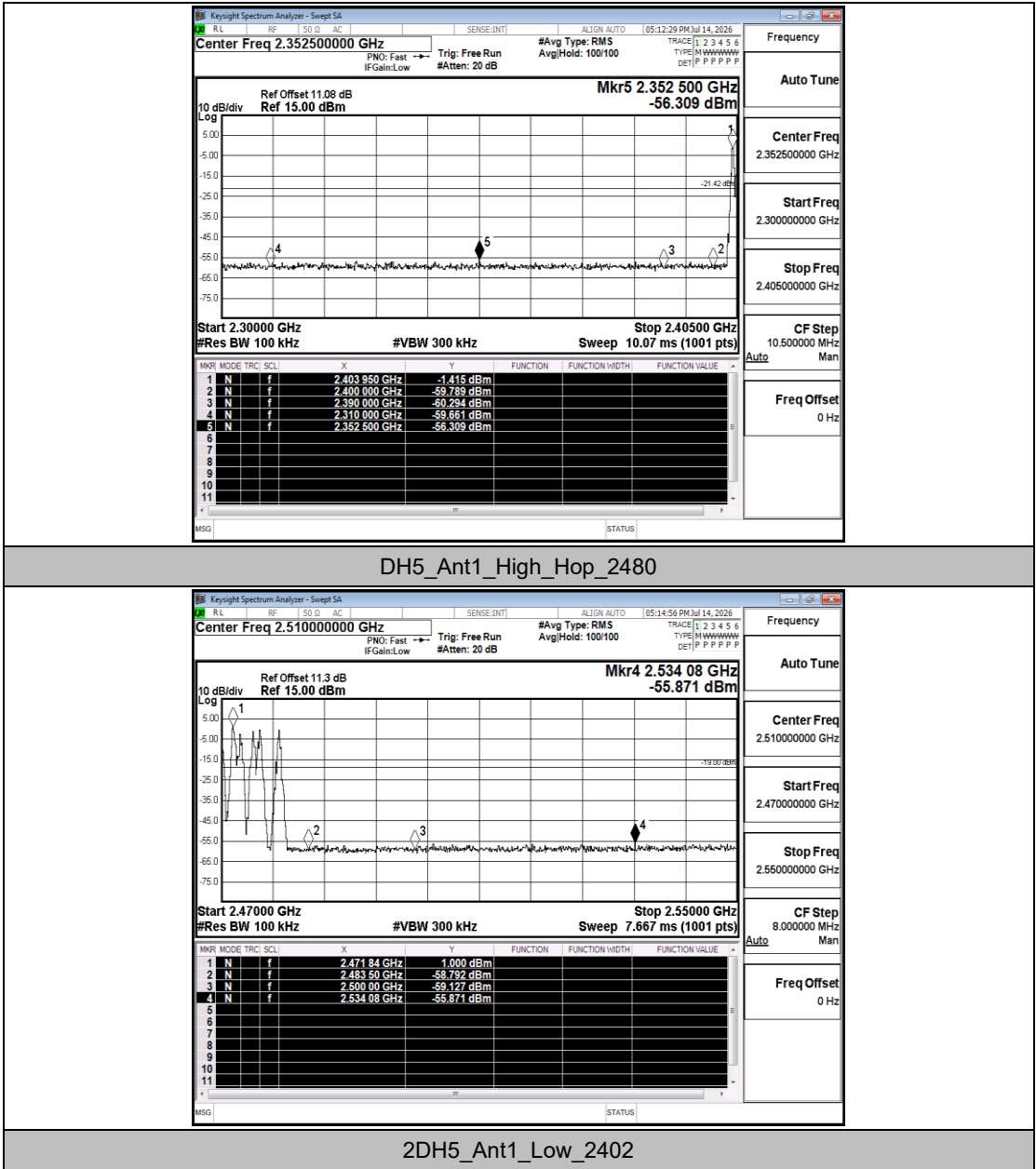
A.6 Band edge measurements

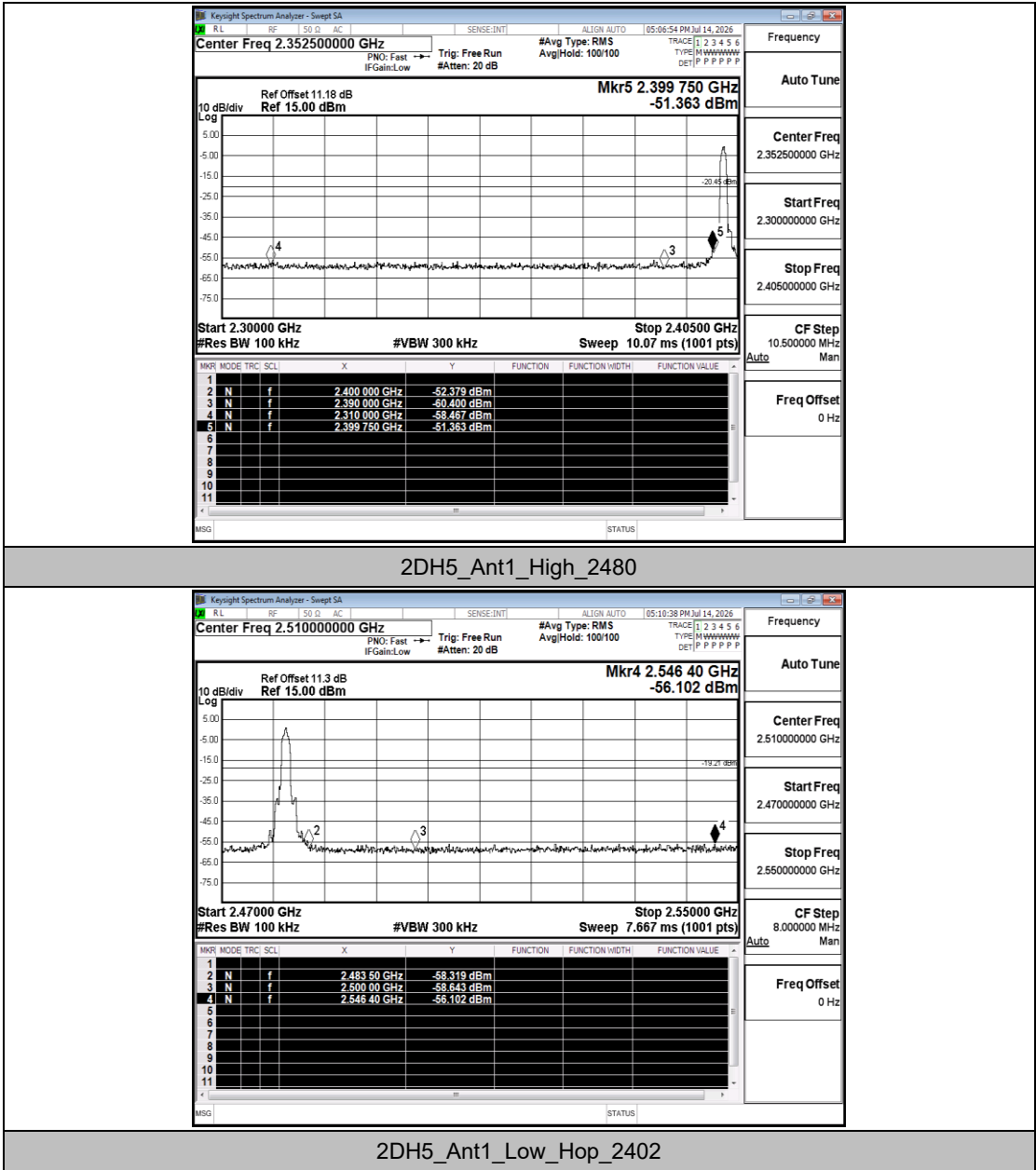
Test Result

TestMode	Antenna	ChName	Freq (MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.07	-55.94	≤-19.93	PASS
		High	2480	0.87	-55.88	≤-19.13	PASS
		Low	Hop_2402	-1.42	-56.31	≤-21.42	PASS
		High	Hop_2480	1.00	-55.87	≤-19	PASS
2DH5	Ant1	Low	2402	-0.45	-51.36	≤-20.45	PASS
		High	2480	0.79	-56.1	≤-19.21	PASS
		Low	Hop_2402	-3.33	-55.46	≤-23.33	PASS
		High	Hop_2480	0.66	-55.01	≤-19.34	PASS

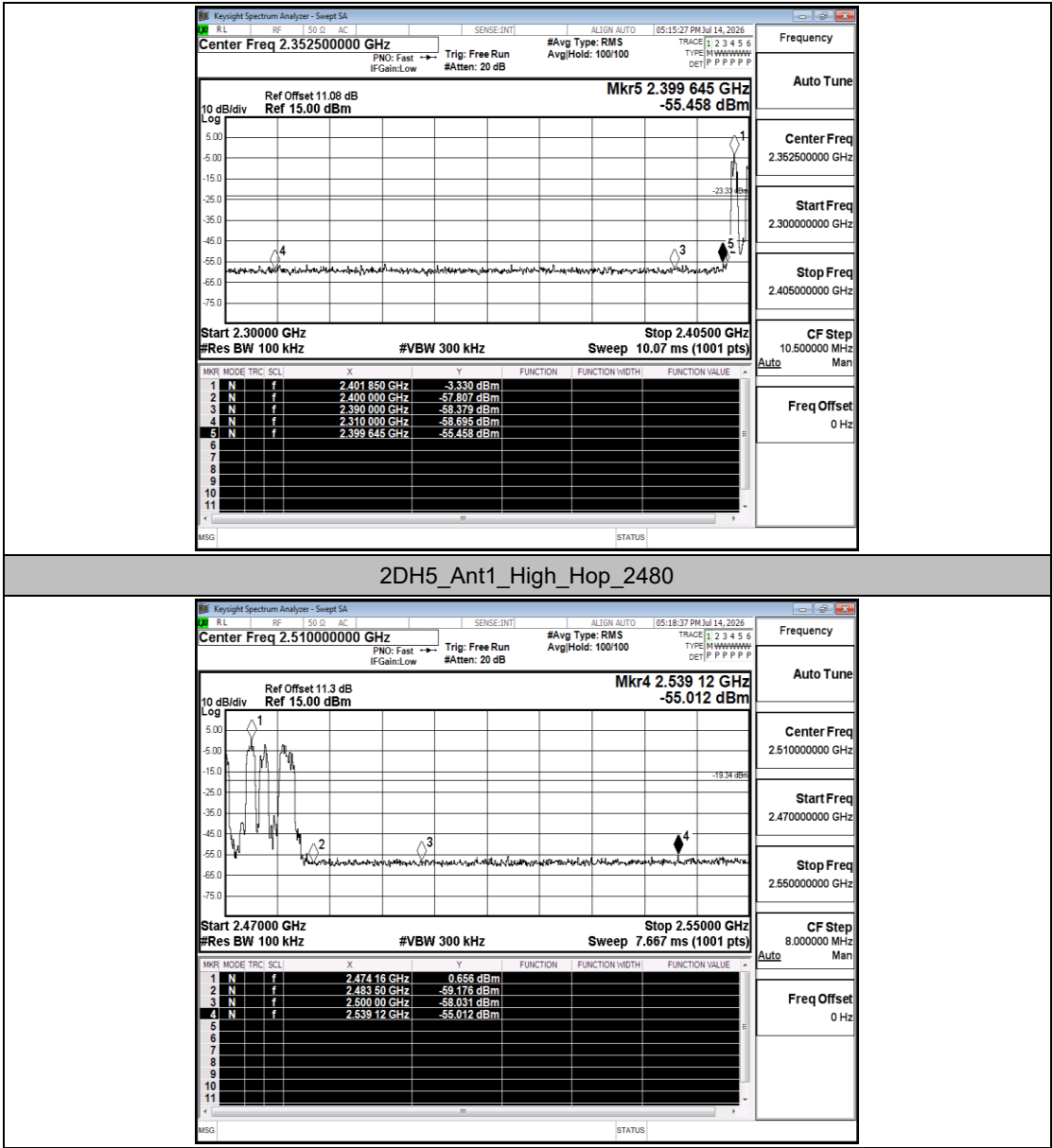
Test Graphs







2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480

Keyight Spectrum Analyzer - Sweep SA

RL

RF 150.0 AC

SENSE:INT

ALIGN AUTO

05:18:37 PM Jul 14, 2026

TRACE 1 2 3 4 5 6

TYPE: M W W W W W W W

DET: P P P P P P P

Center Freq 2.510000000 GHz

PNO: Fast

IFGain: Low

Trig: Free Run

#Atten: 20 dB

#Avg Type: RMS

Avg/Hold: 100/100

Frequency

Auto Tune

Center Freq 2.510000000 GHz

Start Freq 2.470000000 GHz

Stop Freq 2.550000000 GHz

CF Step 8.0000000 MHz

Auto

Man

Freq Offset 0 Hz

10 dB/div

Ref Offset 11.3 dB

Ref 15.00 dBm

Mkr4 2.539 12 GHz

-55.012 dBm

Log

5.00

-5.00

-15.00

-25.00

-35.00

-45.00

-55.00

-65.00

-75.00

Start 2.47000 GHz

#Res BW 100 kHz

#VBW 300 kHz

Stop 2.55000 GHz

Sweep 7.667 ms (1001 pts)

MKR MODE TRC: SCL

X

Y

FUNCTION

FUNCTION WIDTH

FUNCTION VALUE

1 N f 2.474 16 GHz 0.656 dBm

2 N f 2.483 50 GHz -59.176 dBm

3 N f 2.500 00 GHz -58.031 dBm

4 N f 2.539 12 GHz -55.012 dBm

5

6

7

8

9

10

11

MSG

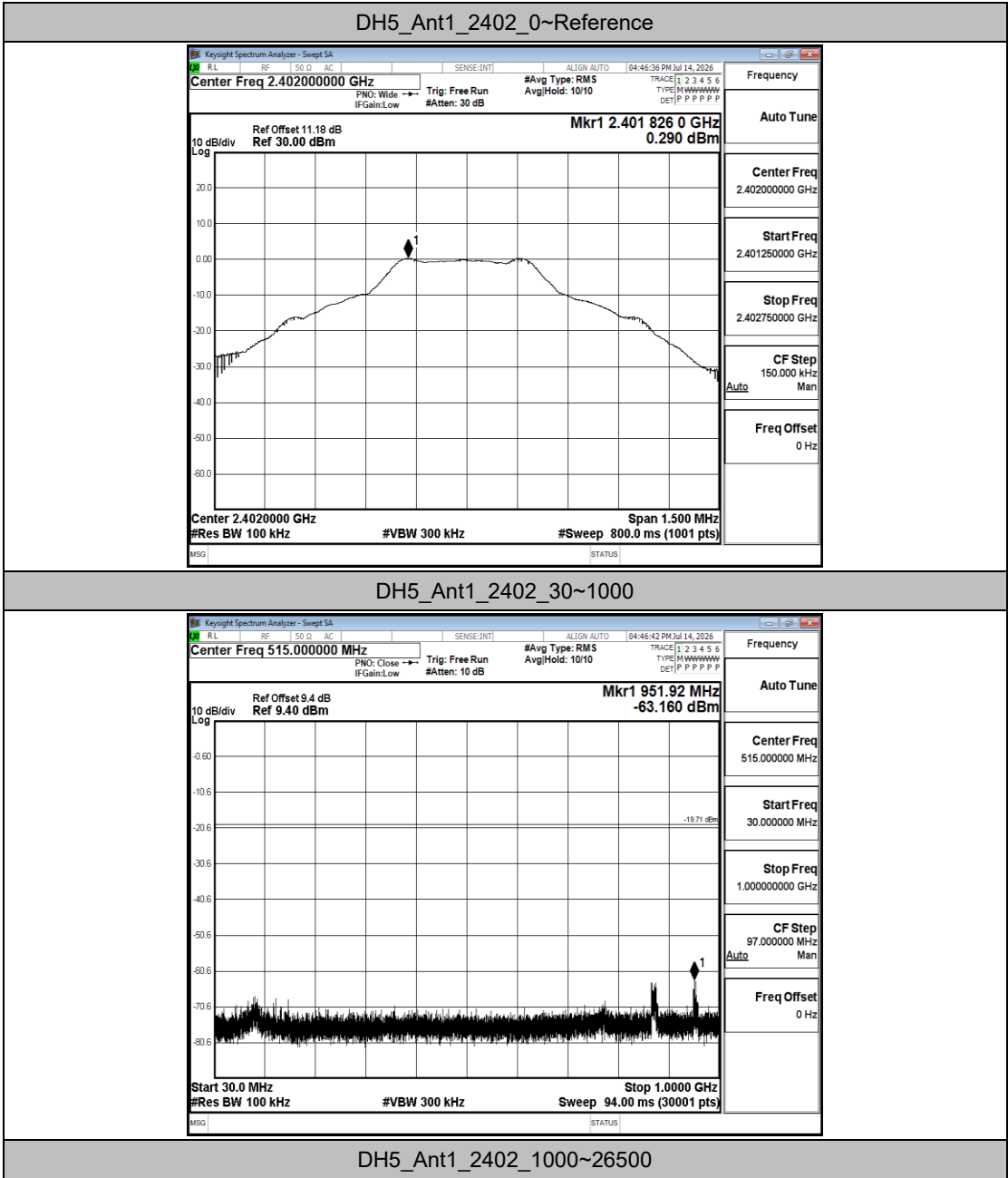
STATUS

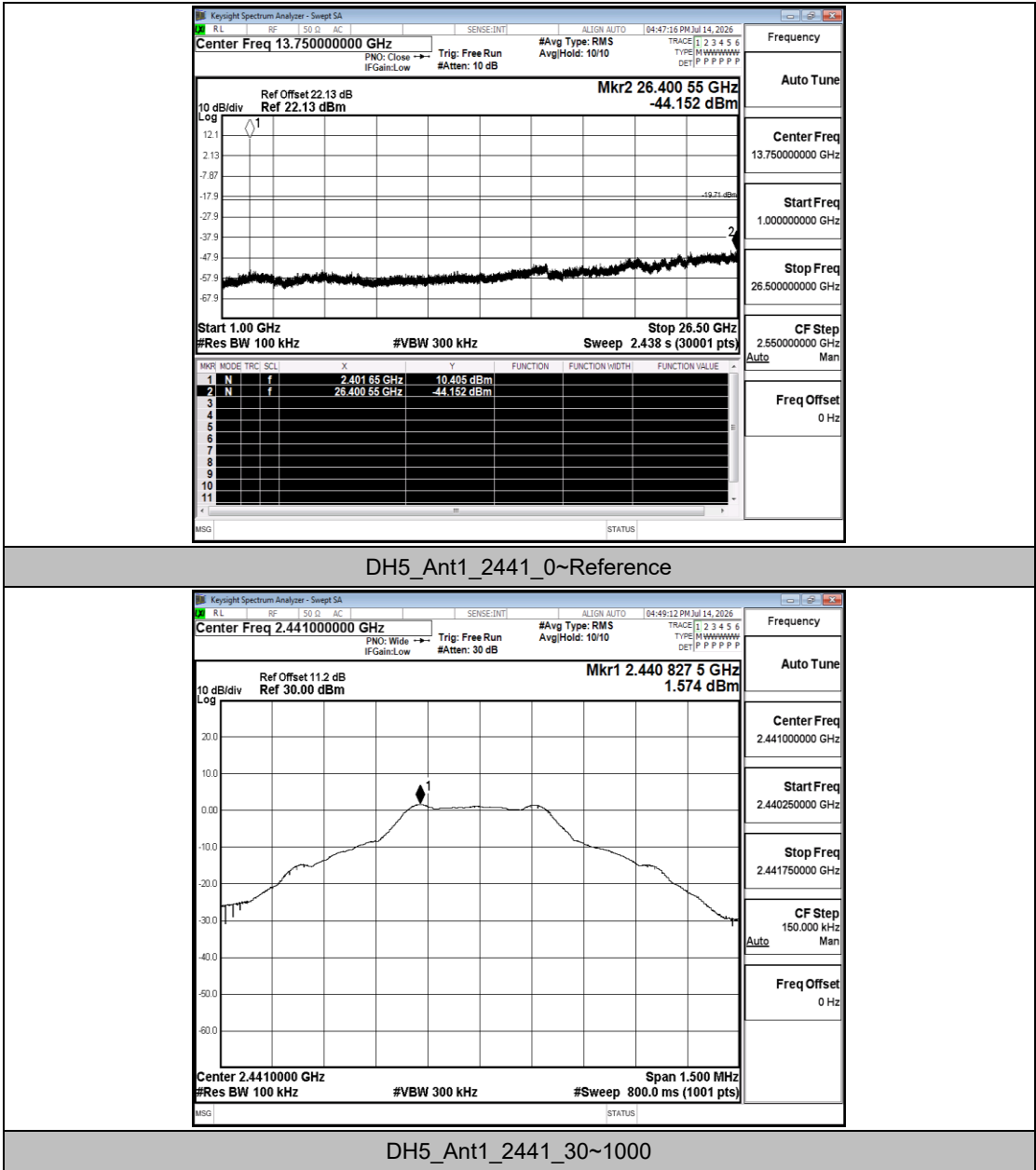
A.7 Conducted Spurious Emission

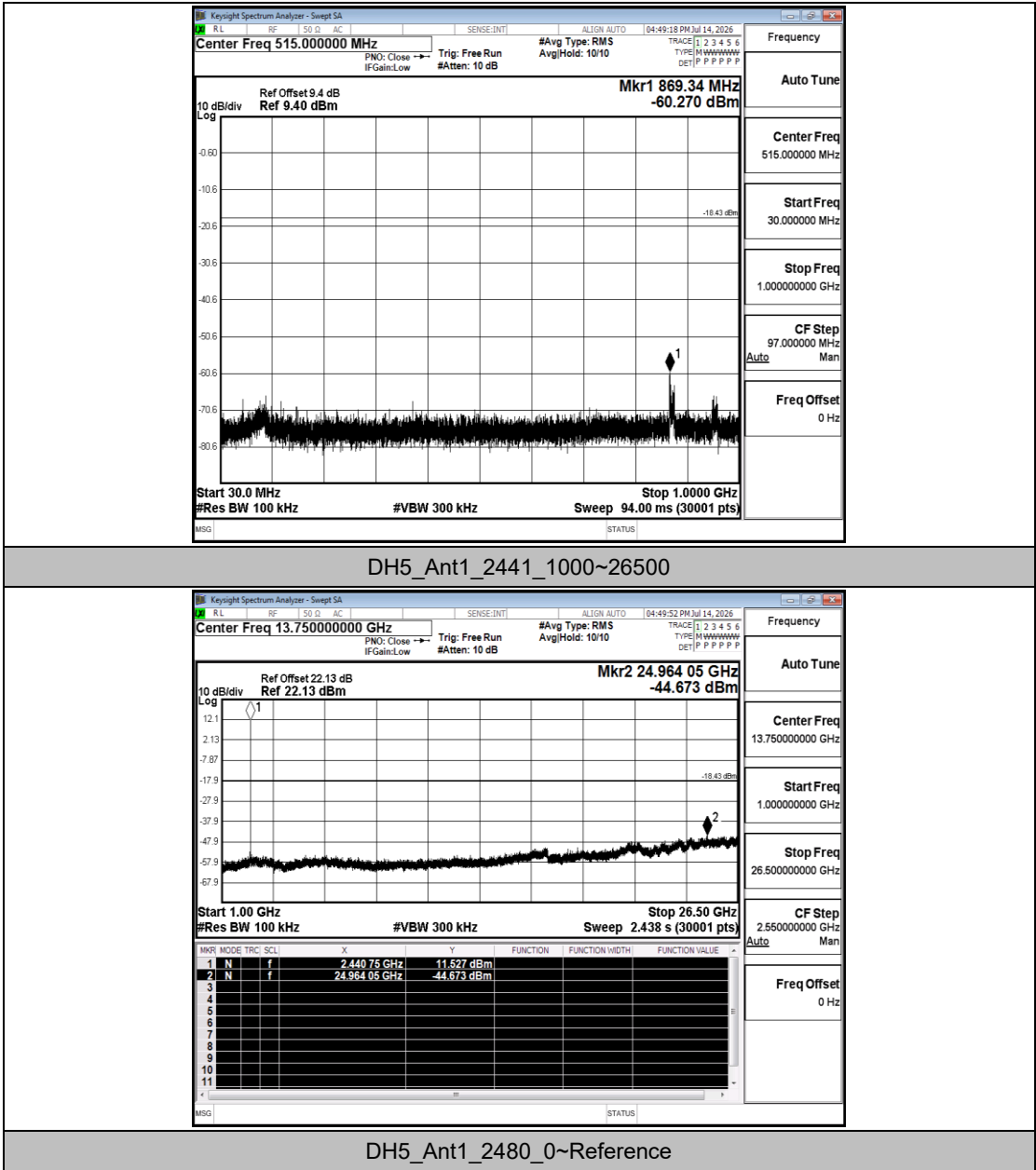
Test Result

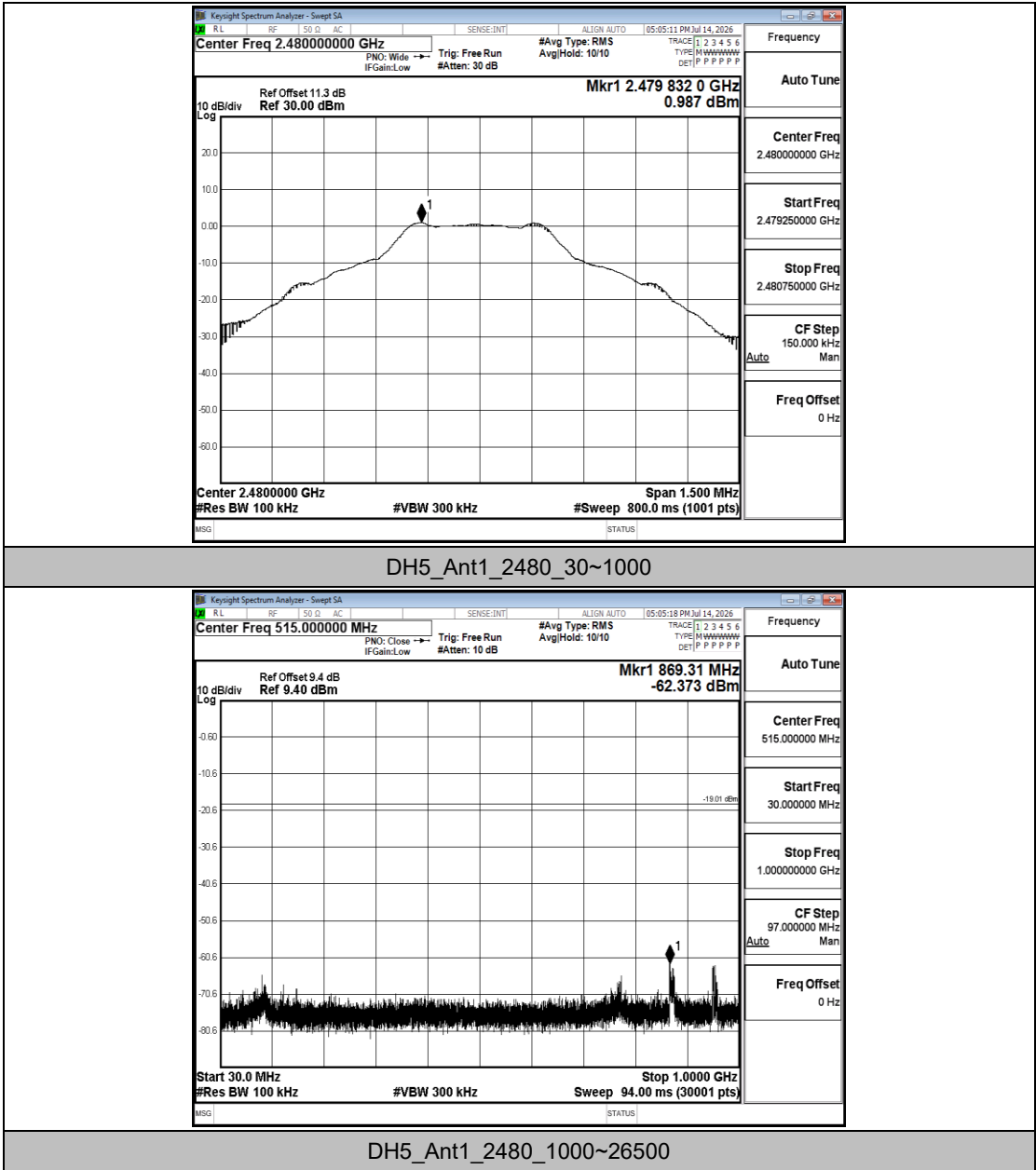
TestMode	Antenna	Freq (MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.29	0.29	---	PASS
			30~1000	0.29	-63.16	≤-19.71	PASS
			1000~26500	0.29	-44.15	≤-19.71	PASS
		2441	Reference	1.57	1.57	---	PASS
			30~1000	1.57	-60.27	≤-18.43	PASS
			1000~26500	1.57	-44.67	≤-18.43	PASS
		2480	Reference	0.99	0.99	---	PASS
			30~1000	0.99	-62.37	≤-19.01	PASS
			1000~26500	0.99	-44.17	≤-19.01	PASS
2DH5	Ant1	2402	Reference	0.24	0.24	---	PASS
			30~1000	0.24	-62.96	≤-19.76	PASS
			1000~26500	0.24	-44.69	≤-19.76	PASS
		2441	Reference	1.51	1.51	---	PASS
			30~1000	1.51	-57.79	≤-18.49	PASS
			1000~26500	1.51	-44.58	≤-18.49	PASS
		2480	Reference	0.82	0.82	---	PASS
			30~1000	0.82	-63.22	≤-19.18	PASS
			1000~26500	0.82	-45.05	≤-19.18	PASS

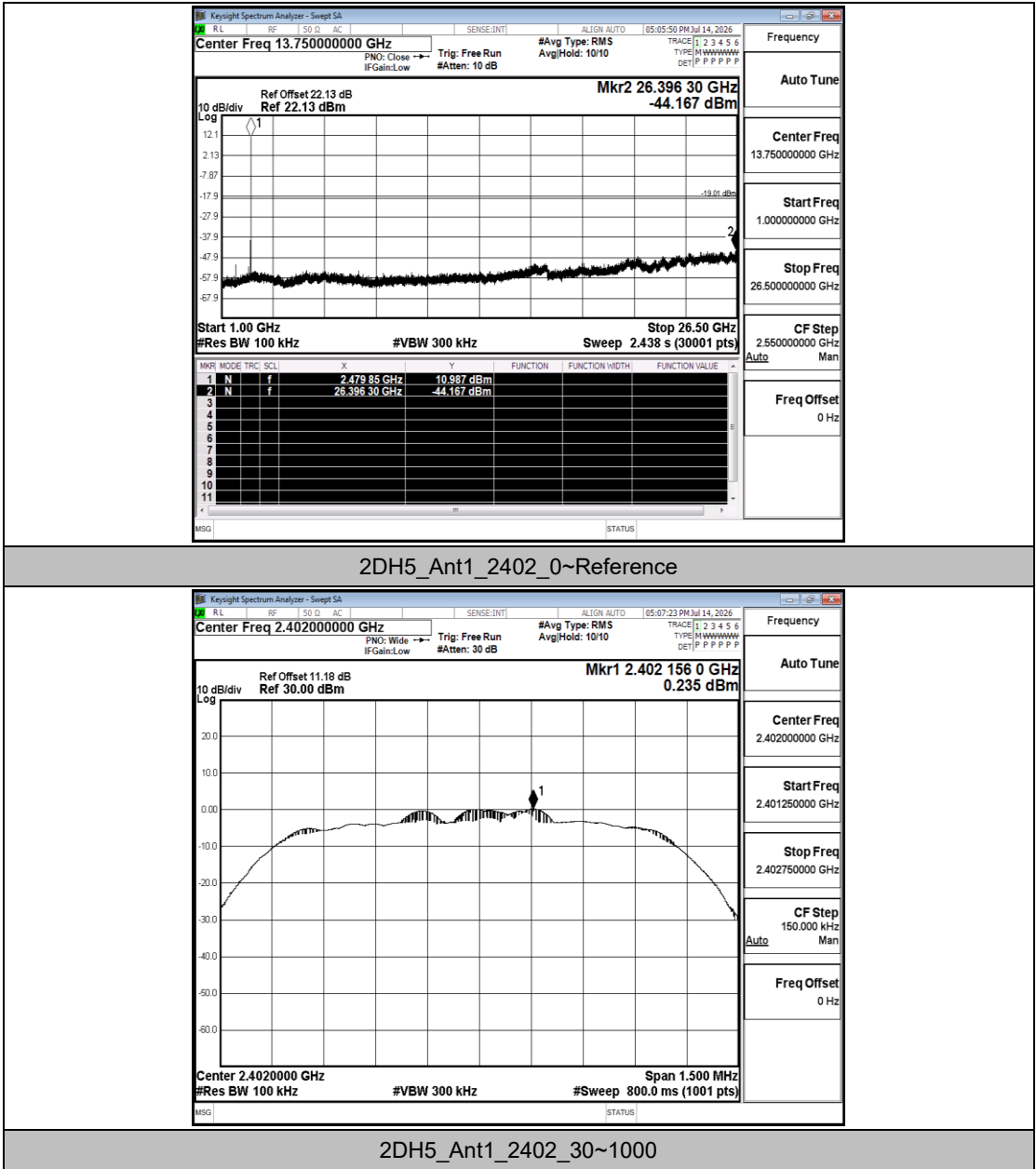
Test Graphs

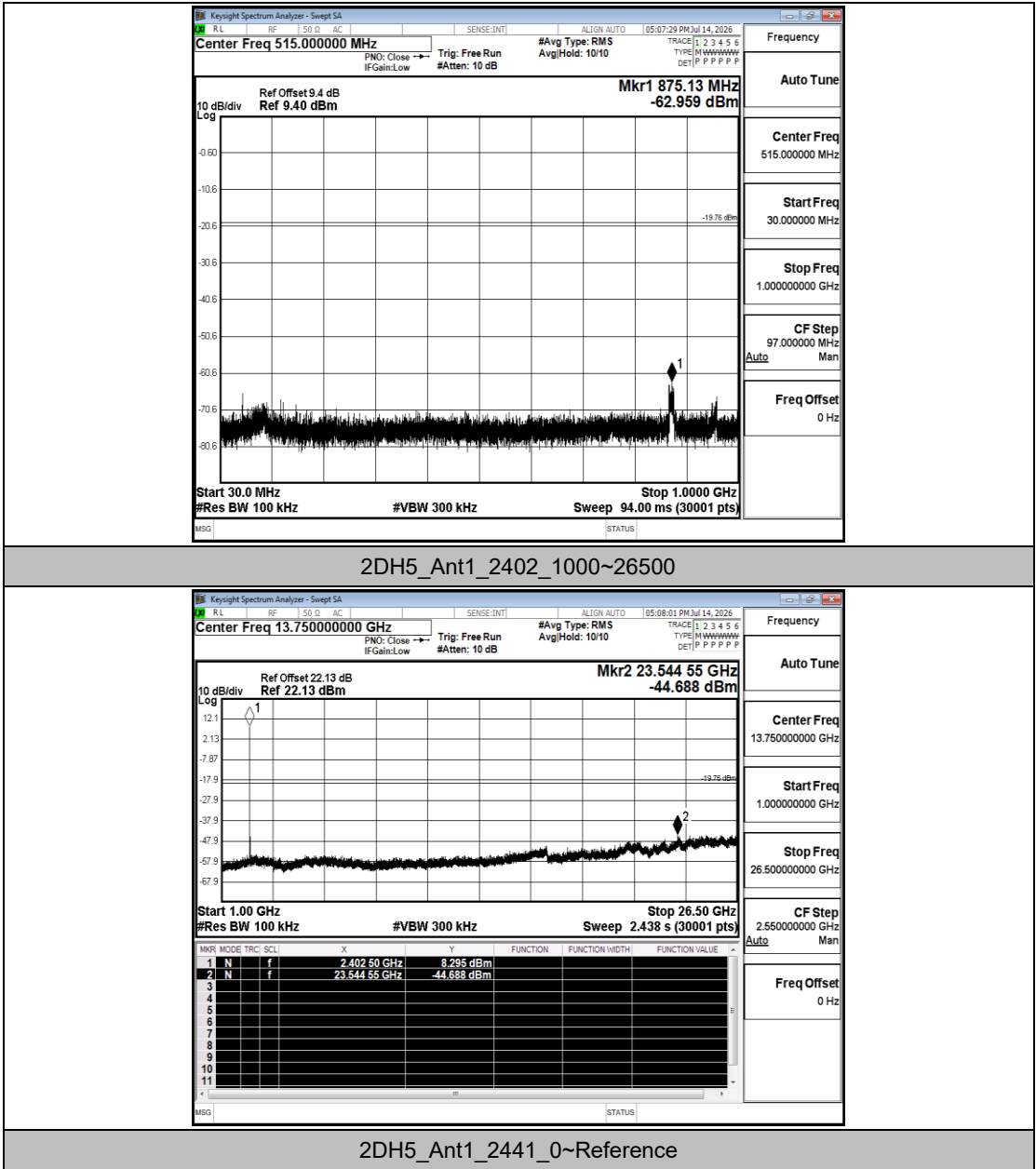


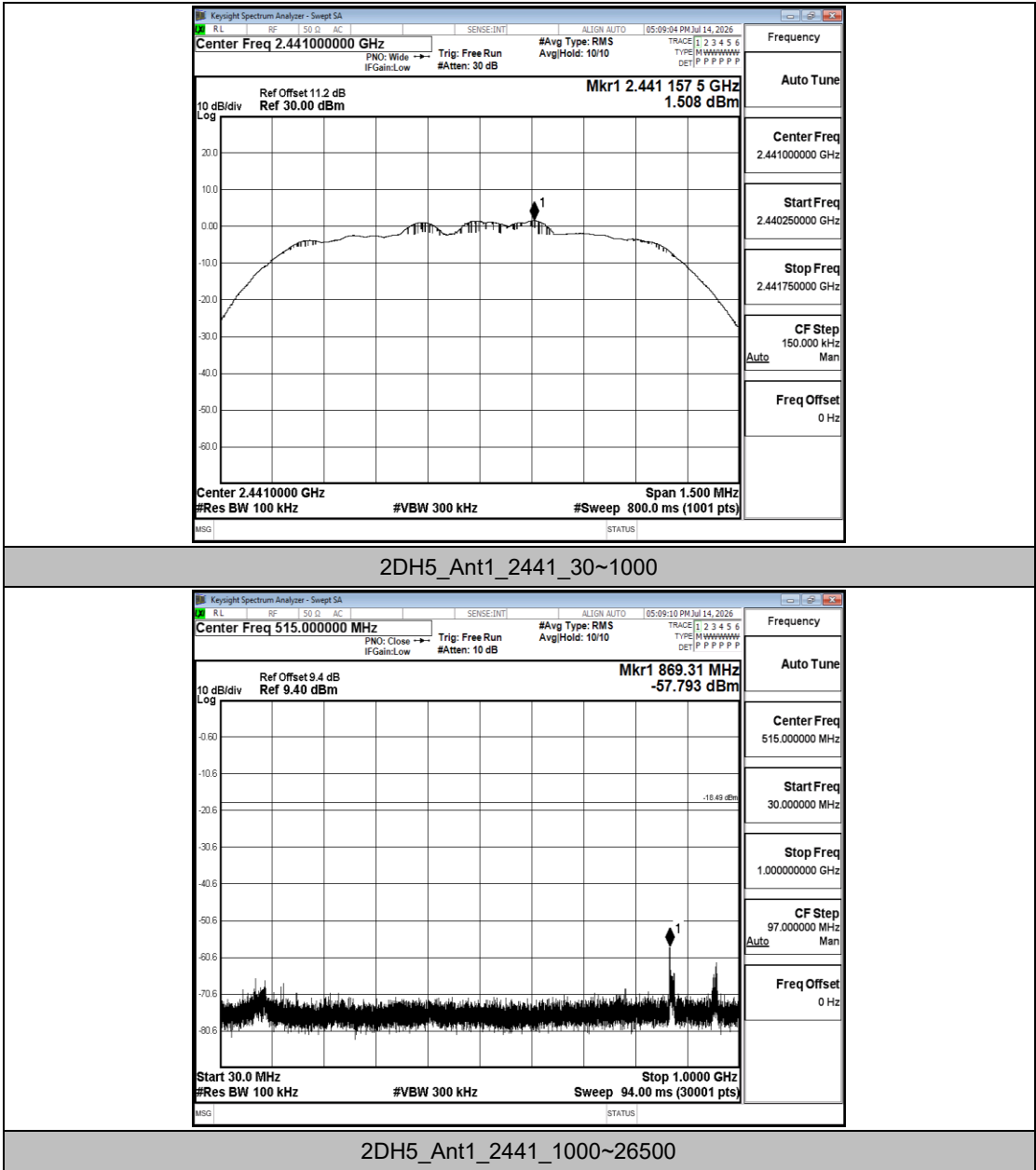


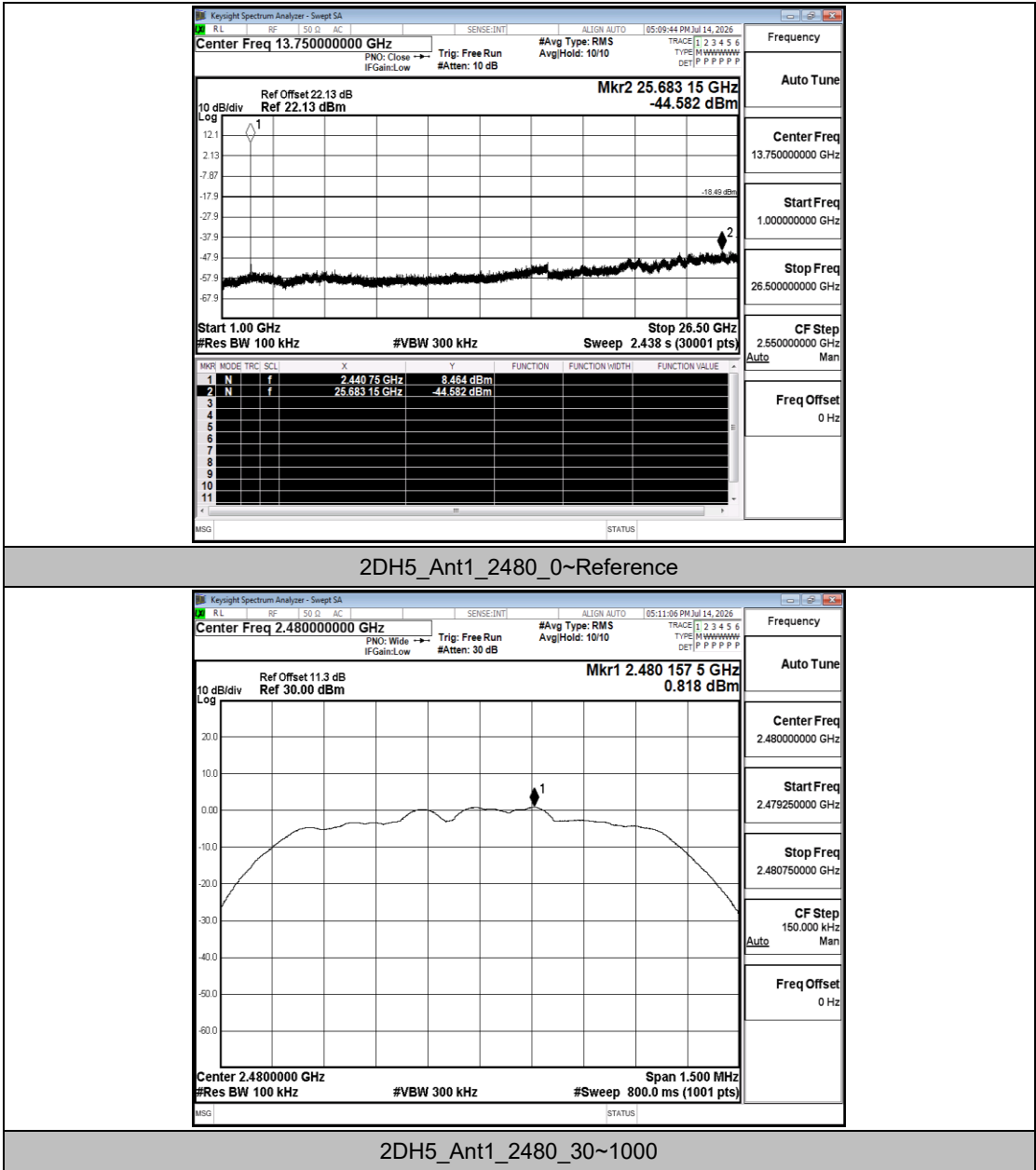


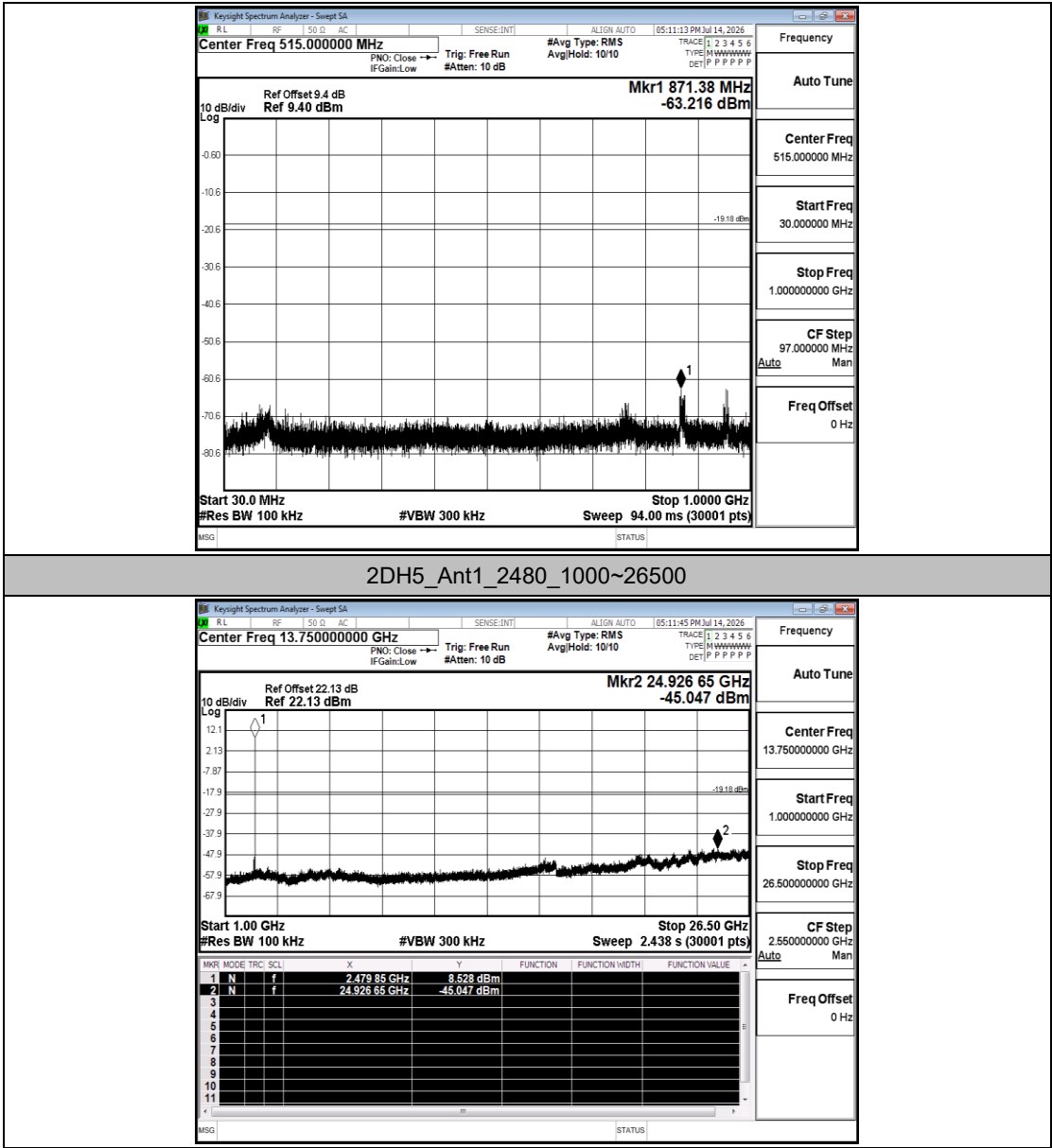










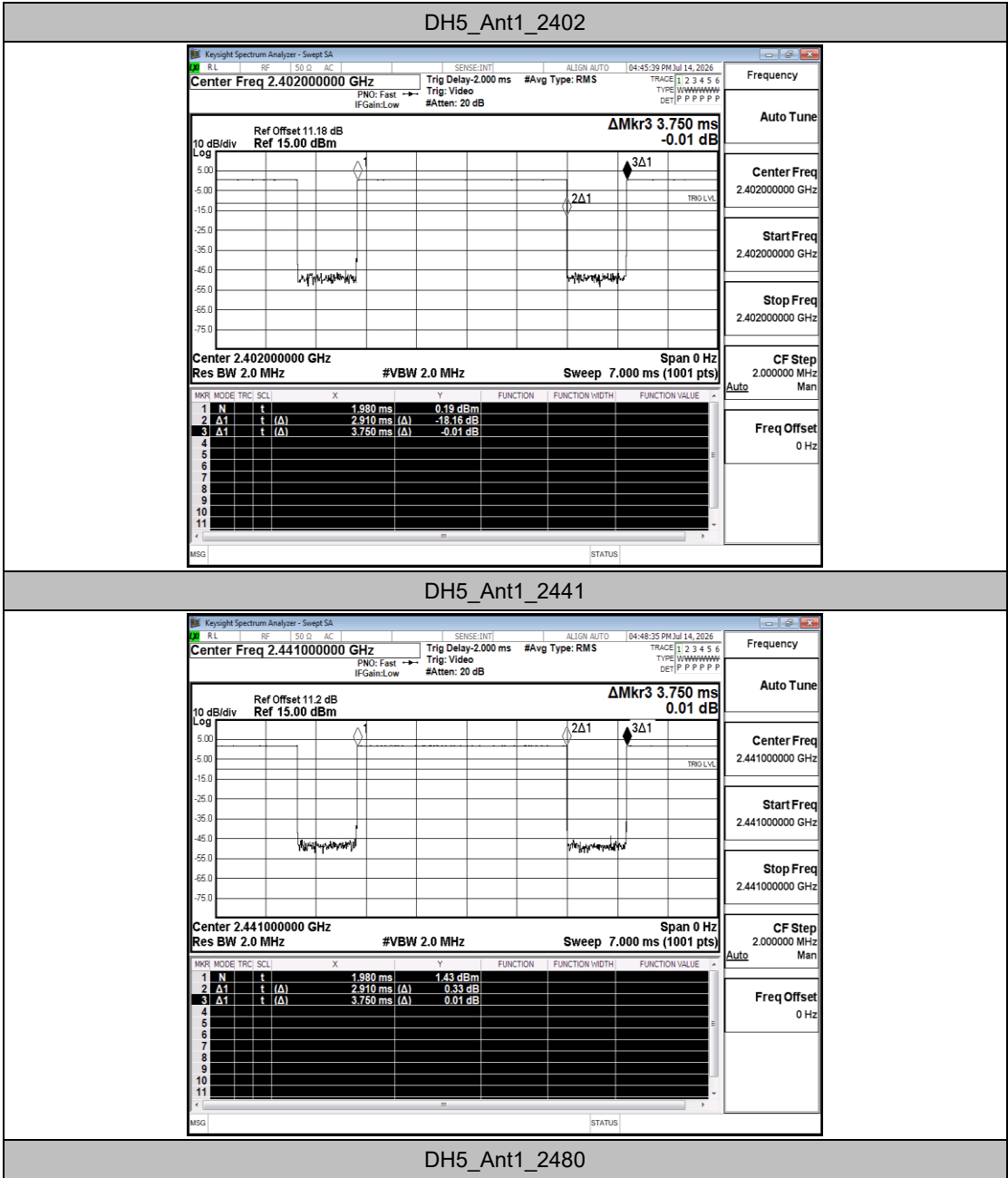


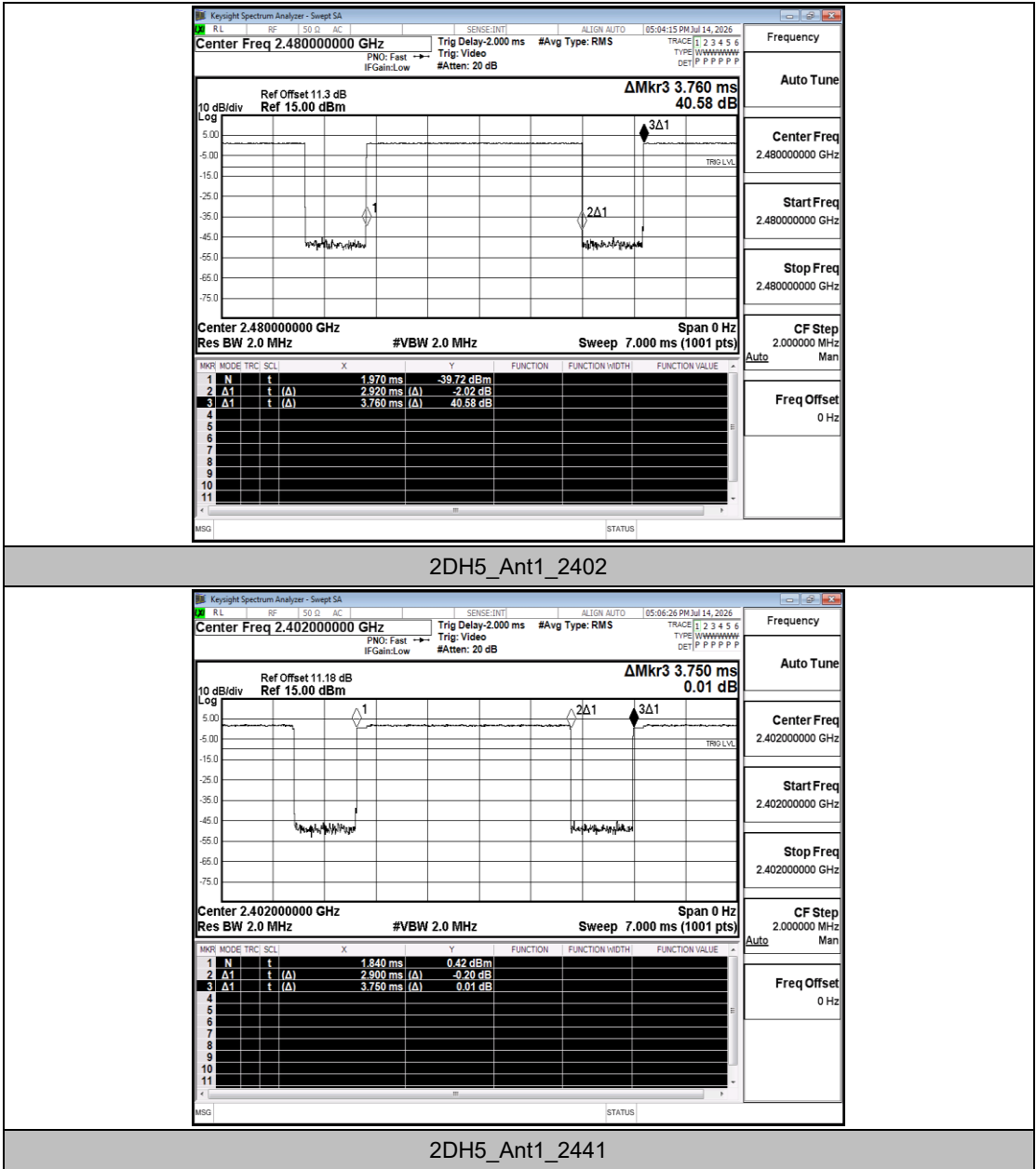
A.8 Duty Cycle

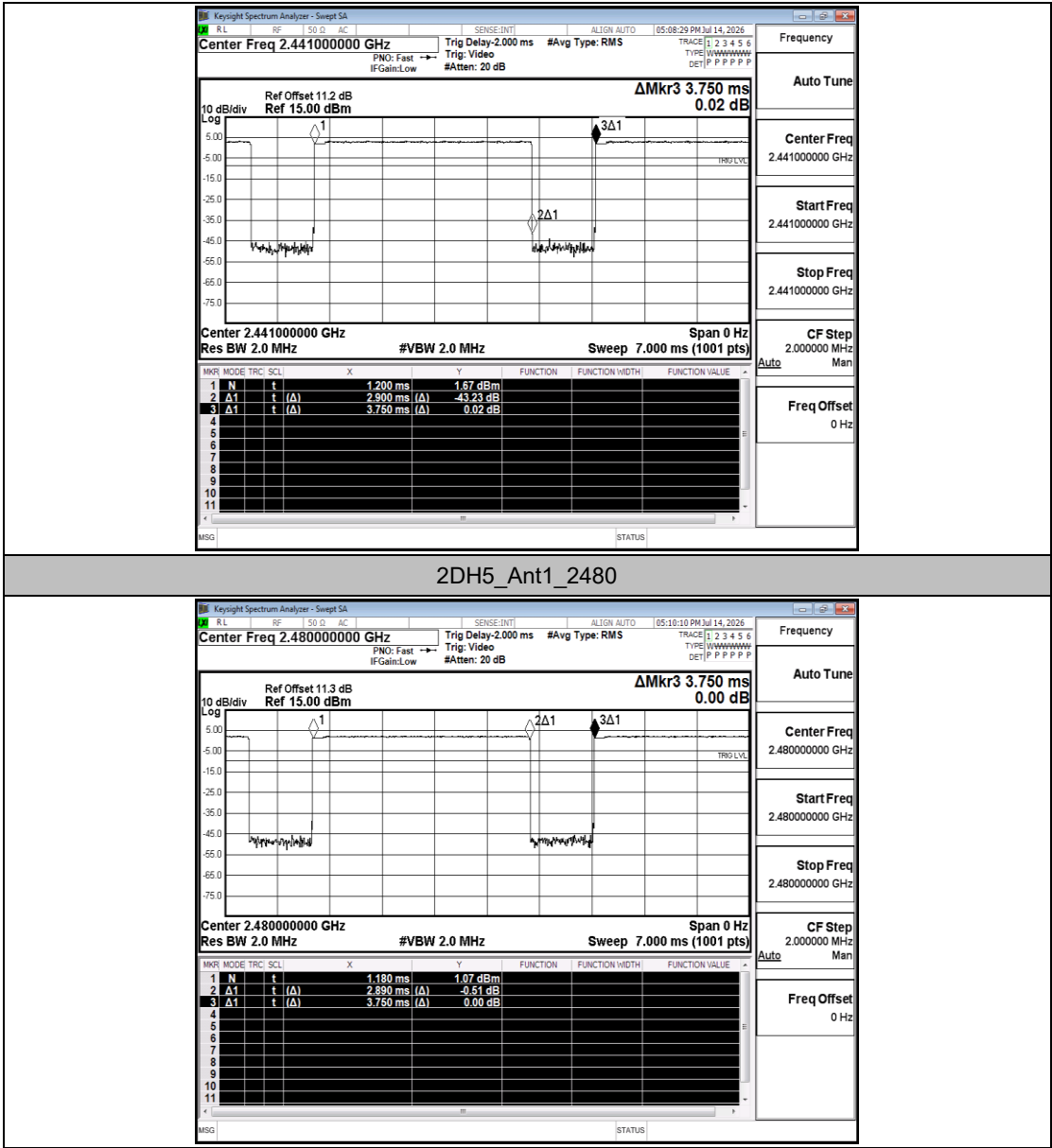
Test Result

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	2.92	3.76	77.66	1.10	---	---
2DH5	Ant1	2402	2.90	3.75	77.33	1.12	---	---
		2441	2.90	3.75	77.33	1.12	---	---
		2480	2.89	3.75	77.07	1.13	---	---

Test Graphs







A.9 Emissions in Restricted Bands

Test Result

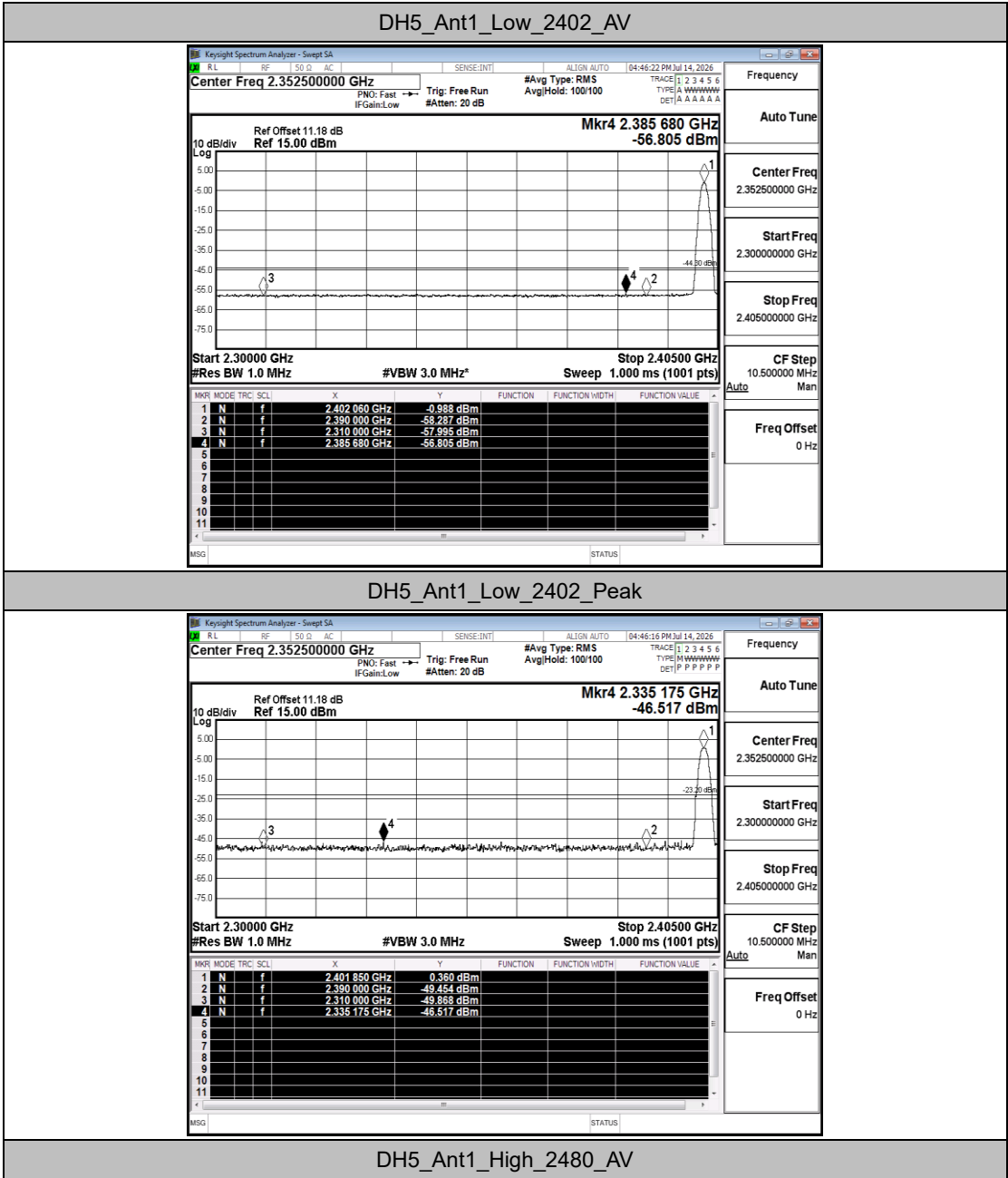
TestMode	Antenna	ChName	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-58	≤-44.30	2.00	1.10	40.30	≤54	PASS
				AV	2385.680	-56.8	≤-44.30	2.00	1.10	41.50	≤54	PASS
				AV	2390.000	-58.29	≤-44.30	2.00	1.10	40.01	≤54	PASS
				Peak	2310.000	-49.87	≤-23.20	2.00	0.00	47.33	≤74	PASS
				Peak	2335.175	-46.52	≤-23.20	2.00	0.00	50.68	≤74	PASS
				Peak	2390.000	-49.45	≤-23.20	2.00	0.00	47.75	≤74	PASS
		High	2480	AV	2483.500	-57.26	≤-44.30	2.00	1.10	41.04	≤54	PASS
				AV	2485.360	-56.5	≤-44.30	2.00	1.10	41.80	≤54	PASS
				AV	2500.000	-57.84	≤-44.30	2.00	1.10	40.46	≤54	PASS
				Peak	2483.500	-49.43	≤-23.20	2.00	0.00	47.77	≤74	PASS
				Peak	2483.680	-45.14	≤-23.20	2.00	0.00	52.06	≤74	PASS
				Peak	2500.000	-49.97	≤-23.20	2.00	0.00	47.23	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-50.57	≤-23.20	2.00	0.00	46.63	≤74	PASS
				Peak	2360.585	-47.03	≤-23.20	2.00	0.00	50.17	≤74	PASS
				Peak	2390.000	-50.68	≤-23.20	2.00	0.00	46.52	≤74	PASS
		High	Hop_2480	Peak	2483.500	-49.26	≤-23.20	2.00	0.00	47.94	≤74	PASS
				Peak	2484.400	-46.3	≤-23.20	2.00	0.00	50.90	≤74	PASS
				Peak	2500.000	-48.92	≤-23.20	2.00	0.00	48.28	≤74	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-57.84	≤-44.32	2.00	1.12	40.48	≤54	PASS
				AV	2367.410	-57.12	≤-44.32	2.00	1.12	41.20	≤54	PASS
				AV	2390.000	-58.14	≤-44.32	2.00	1.12	40.18	≤54	PASS
				Peak	2310.000	-49.44	≤-23.20	2.00	0.00	47.76	≤74	PASS
				Peak	2328.770	-47.11	≤-23.20	2.00	0.00	50.09	≤74	PASS
				Peak	2390.000	-50.54	≤-23.20	2.00	0.00	46.66	≤74	PASS
		High	2480	AV	2483.500	-55.35	≤-44.33	2.00	1.13	42.98	≤54	PASS
				AV	2483.520	-55.35	≤-44.33	2.00	1.13	42.98	≤54	PASS
				AV	2500.000	-57.19	≤-44.33	2.00	1.13	41.14	≤54	PASS
				Peak	2483.500	-46.18	≤-23.20	2.00	0.00	51.02	≤74	PASS
				Peak	2486.880	-46.07	≤-23.20	2.00	0.00	51.13	≤74	PASS
				Peak	2500.000	-48.67	≤-23.20	2.00	0.00	48.53	≤74	PASS
		Low	Hop_2402	Peak	2310.000	-49.65	≤-23.20	2.00	0.00	47.55	≤74	PASS
				Peak	2385.155	-46.98	≤-23.20	2.00	0.00	50.22	≤74	PASS
				Peak	2390.000	-50.05	≤-23.20	2.00	0.00	47.15	≤74	PASS
		High	Hop_2480	Peak	2483.500	-50.28	≤-23.20	2.00	0.00	46.92	≤74	PASS

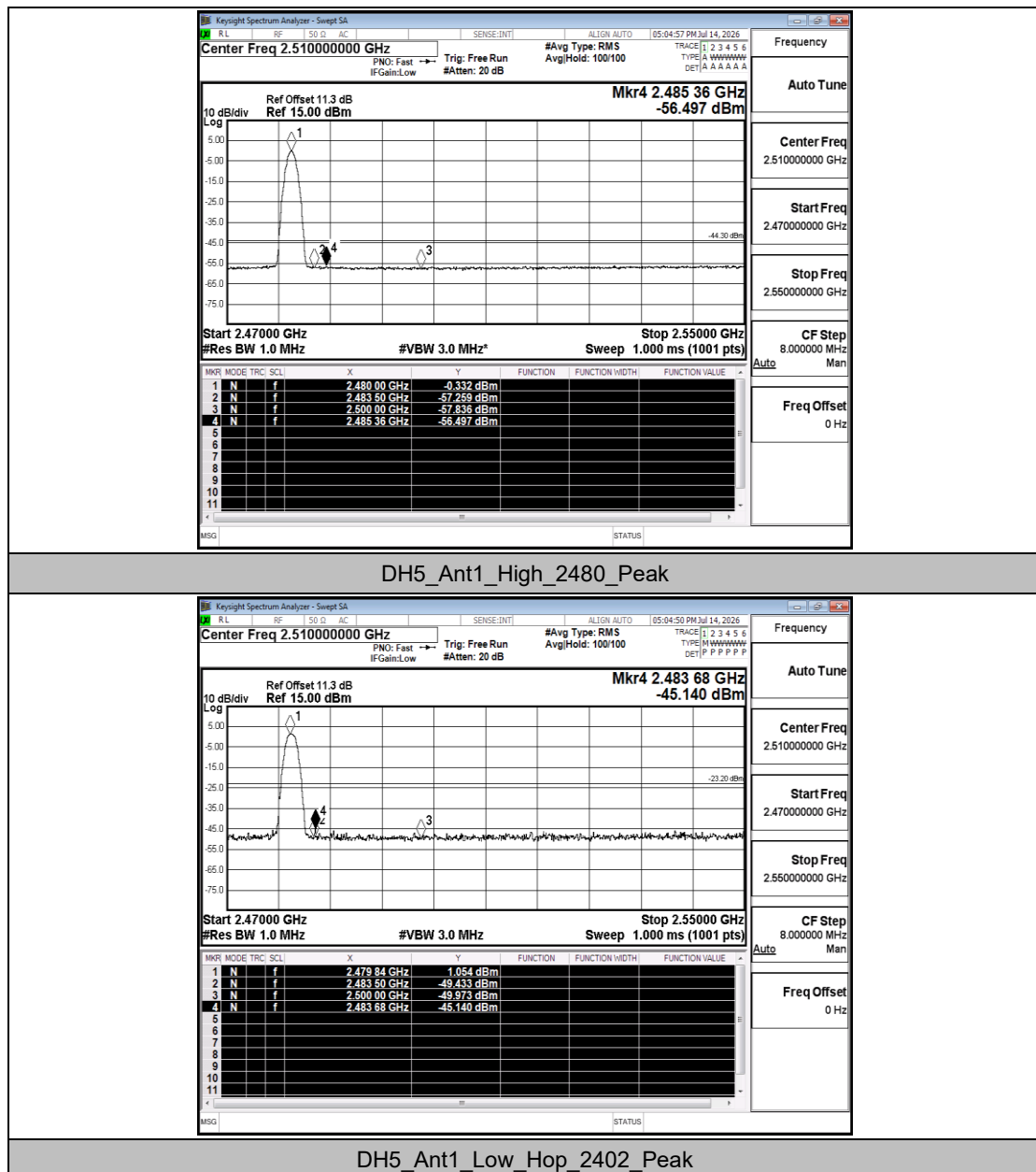
				Peak	2488.880	-46.77	≤-23.20	2.00	0.00	50.43	≤74	PASS
				Peak	2500.000	-48.91	≤-23.20	2.00	0.00	48.29	≤74	PASS

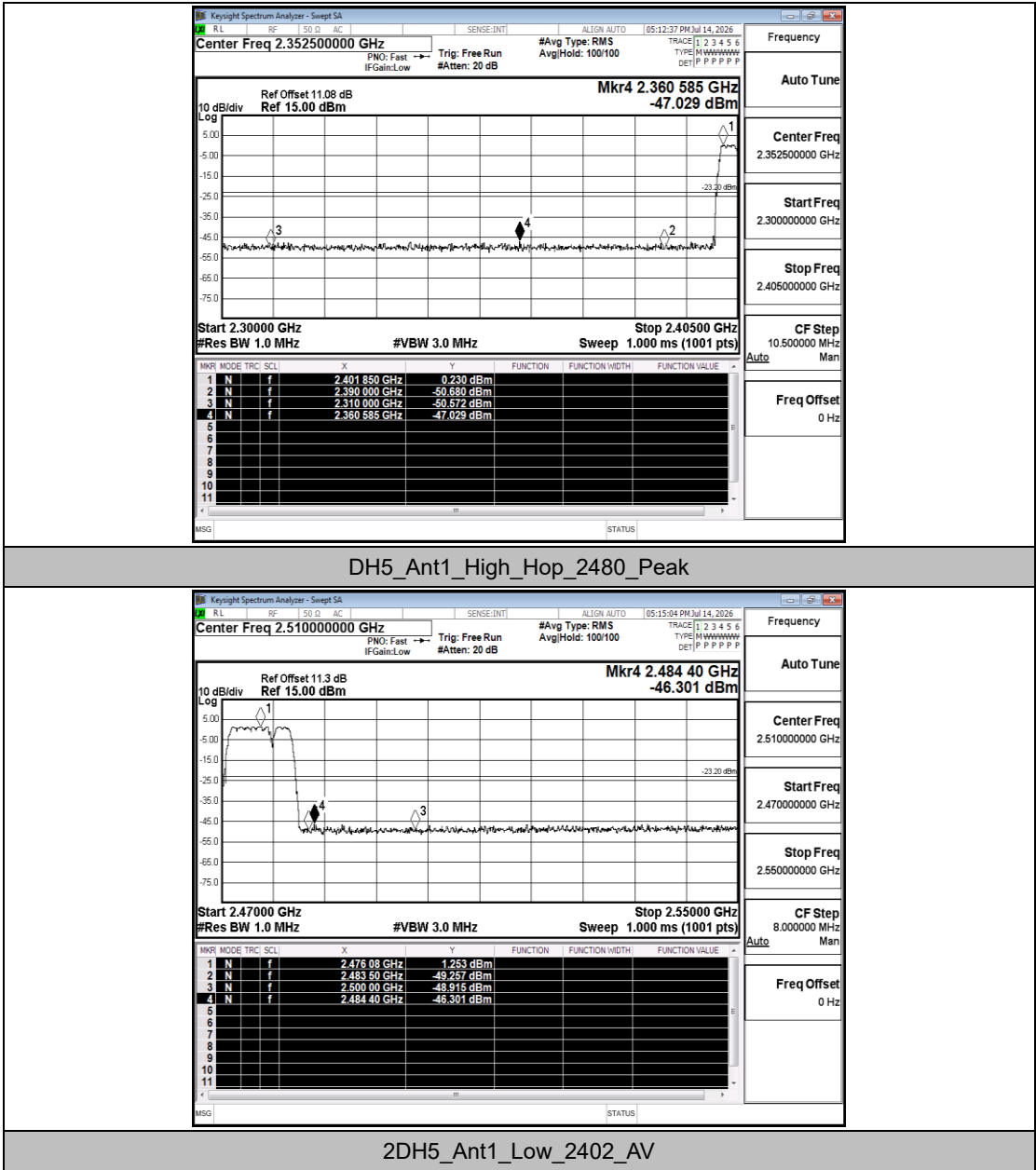
Note:

1. The Antenna Gain is compensated in the graph.
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







2DH5_Ant1_Low_2402_AV

