

Appendix A

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

Product Name: Ture Wireless Stereo Earbuds

Trade Mark: Beben

Test Model: F8

FCC ID: 2A5OU-F8

Environmental Conditions

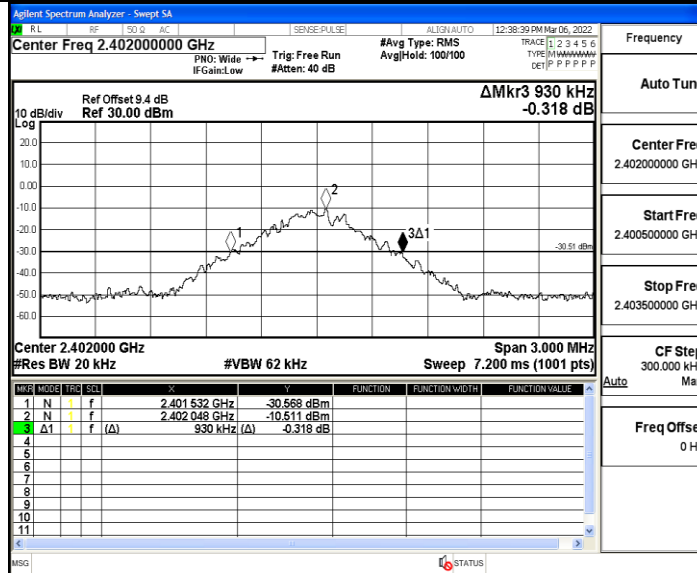
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen

A.1 20 dB Bandwidth

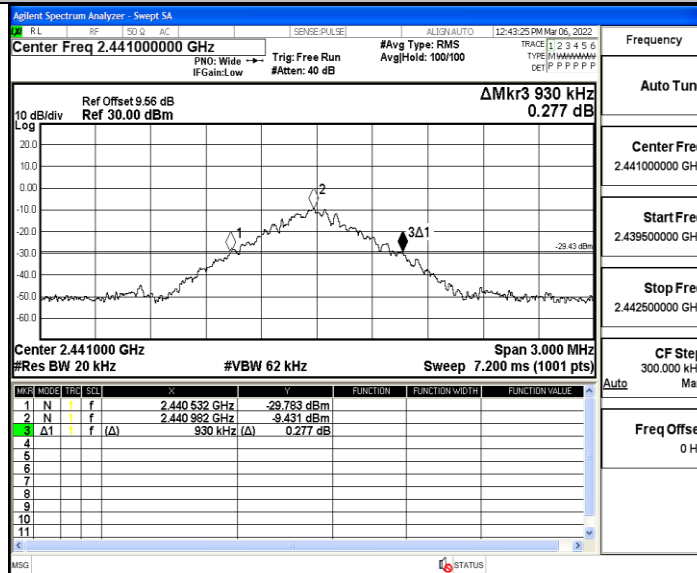
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.930	2401.532	2402.462	---	---
		2441	0.930	2440.532	2441.462	---	---
		2480	0.939	2479.526	2480.465	---	---
2DH5	Ant1	2402	1.257	2401.361	2402.618	---	---
		2441	1.266	2440.355	2441.621	---	---
		2480	1.260	2479.355	2480.615	---	---

Test Graph

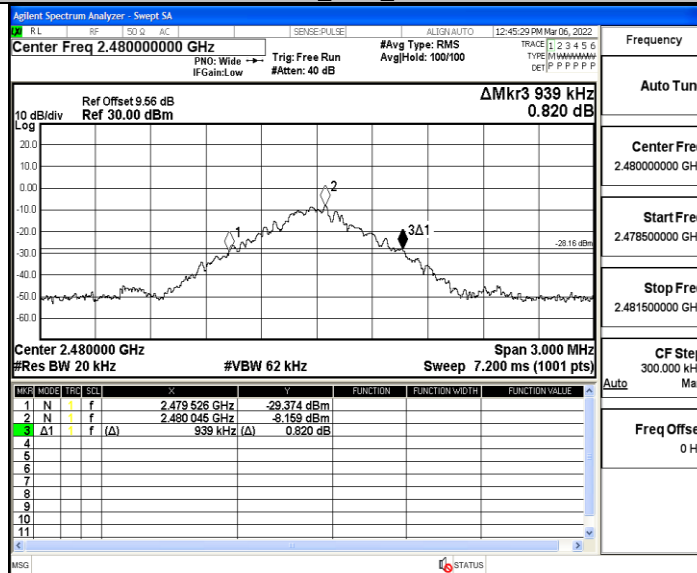
DH5_Ant1_2402



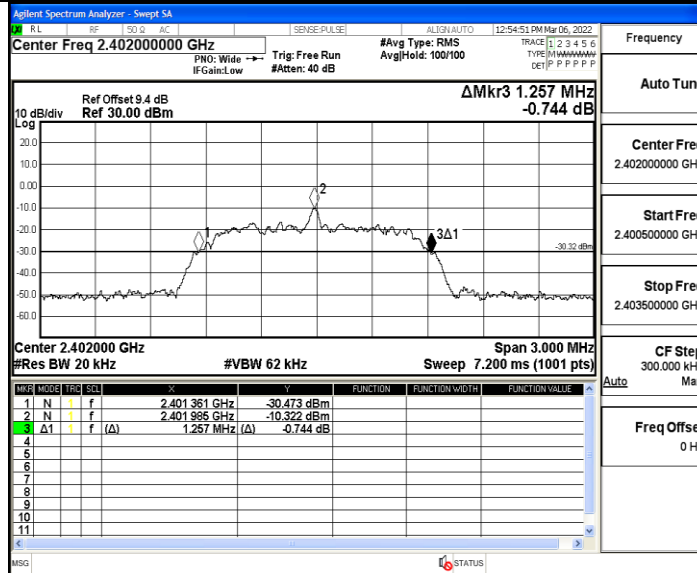
DH5_Ant1_2441



DH5_Ant1_2480

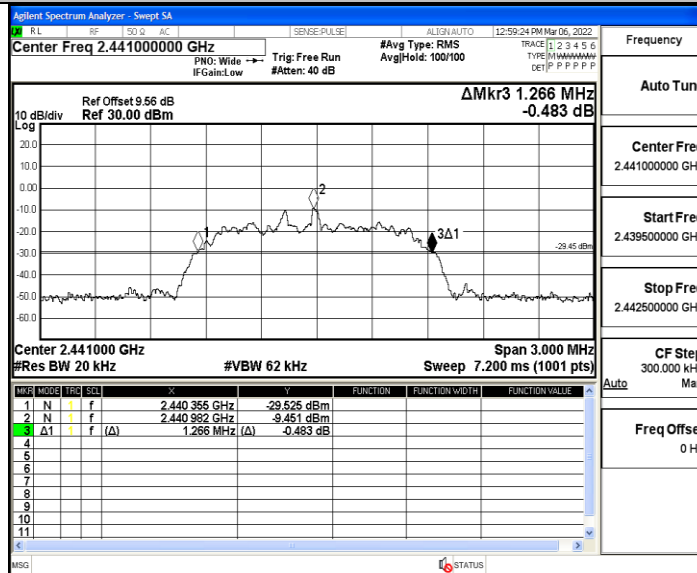


2DH5_Ant1_2402



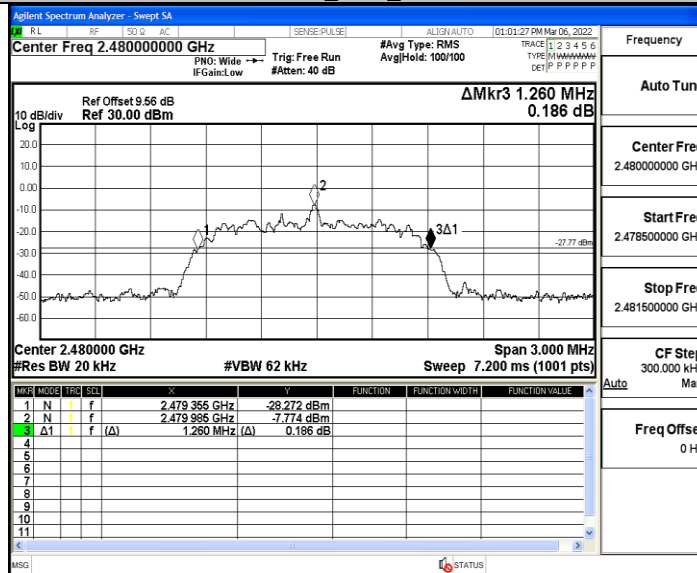
Frequency	Auto Tune
Center Freq	2.402000000 GHz
Start Freq	2.400500000 GHz
Stop Freq	2.403500000 GHz
CF Step	300.000 kHz
Freq Offset	0 Hz

2DH5_Ant1_2441



Frequency	Auto Tune
Center Freq	2.441000000 GHz
Start Freq	2.439500000 GHz
Stop Freq	2.442500000 GHz
CF Step	300.000 kHz
Freq Offset	0 Hz

2DH5_Ant1_2480



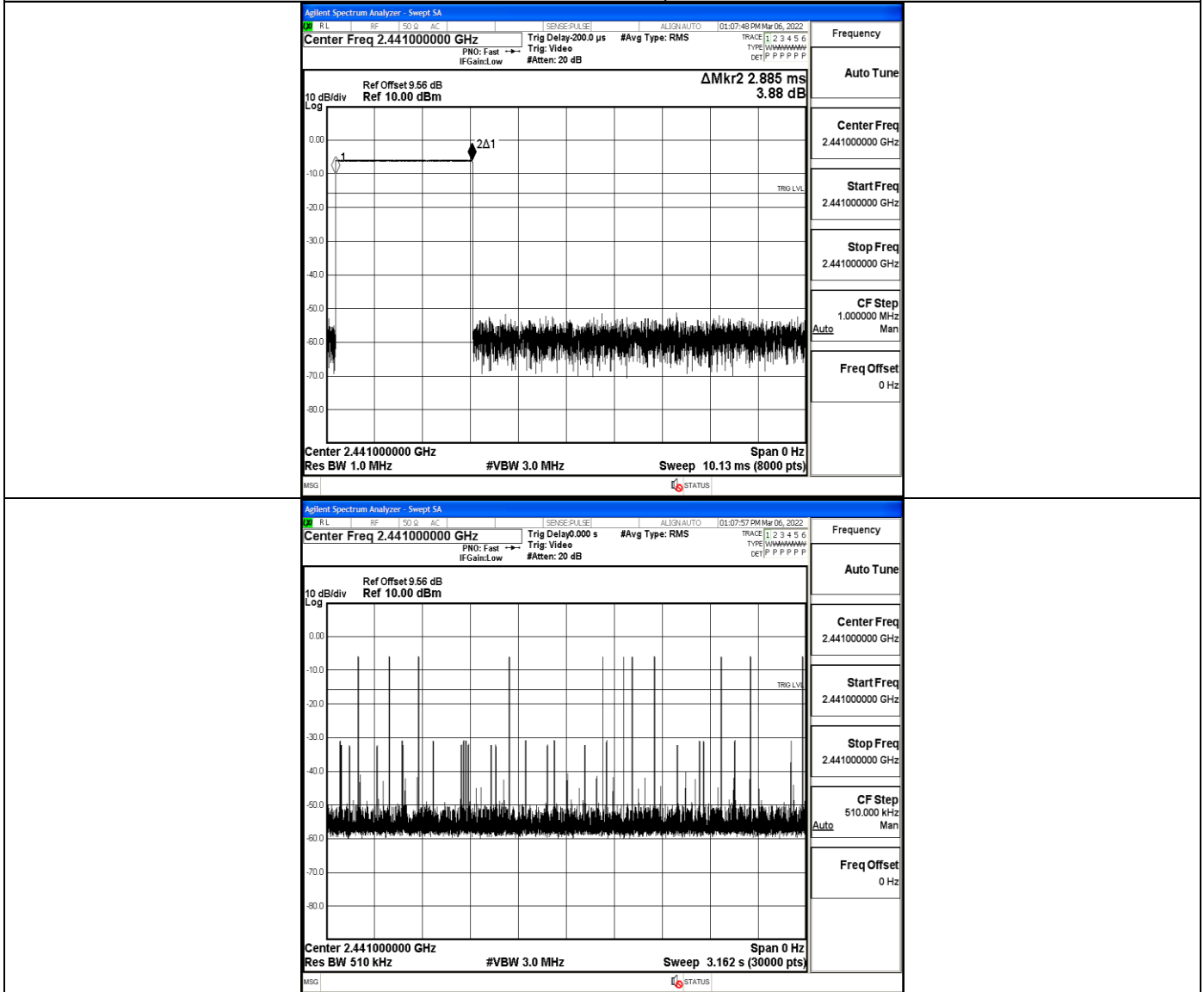
Frequency	Auto Tune
Center Freq	2.480000000 GHz
Start Freq	2.478500000 GHz
Stop Freq	2.481500000 GHz
CF Step	300.000 kHz
Freq Offset	0 Hz

A.2 Dwell Time

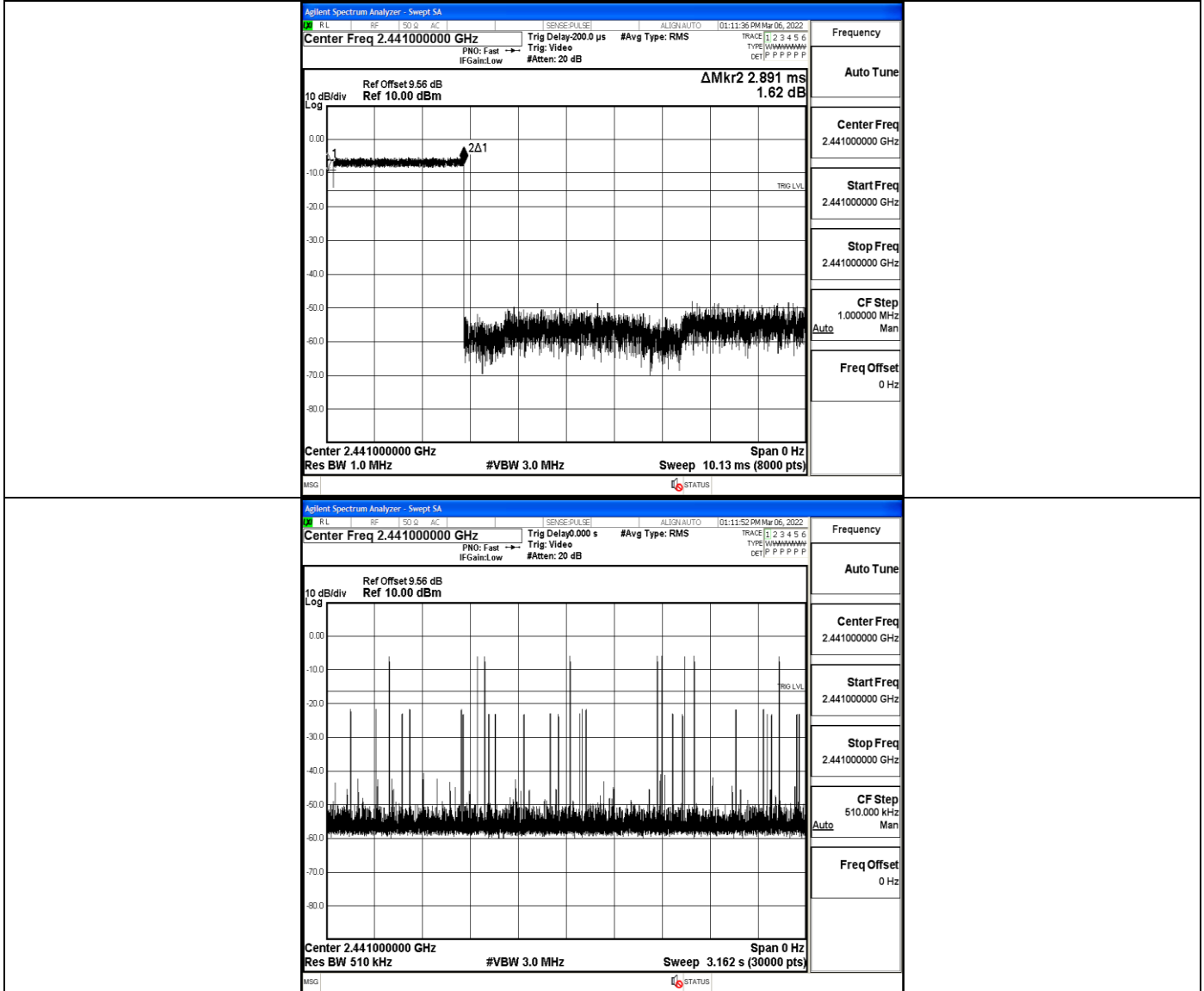
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	120	0.346	≤0.4	PASS
2DH5	Ant1	Hop	2.89	100	0.289	≤0.4	PASS

Test Graph

DH5_Ant1_Hop



2DH5_Ant1_Hop

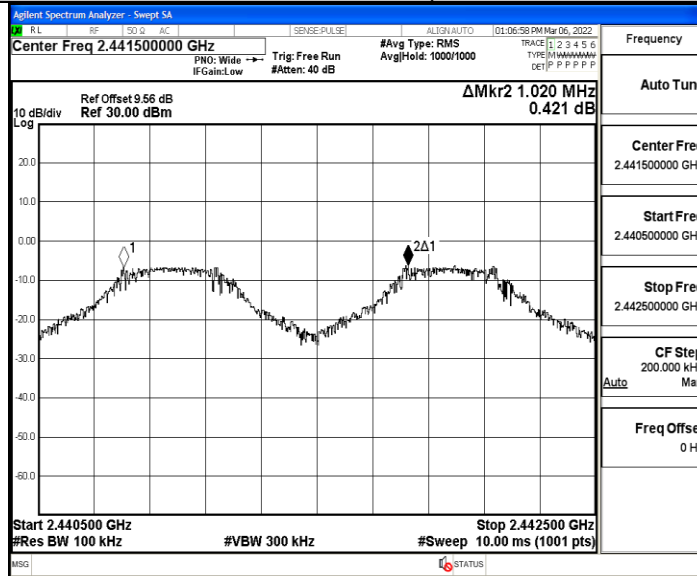


A.3 Carrier Frequency Separation

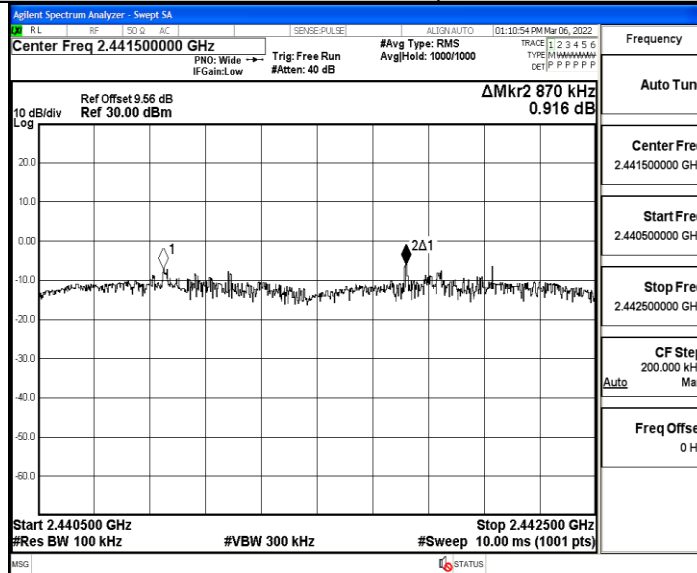
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.02	≥ 0.939	PASS
2DH5	Ant1	Hop	0.87	≥ 0.844	PASS

Test Graph

DH5_Ant1_Hop



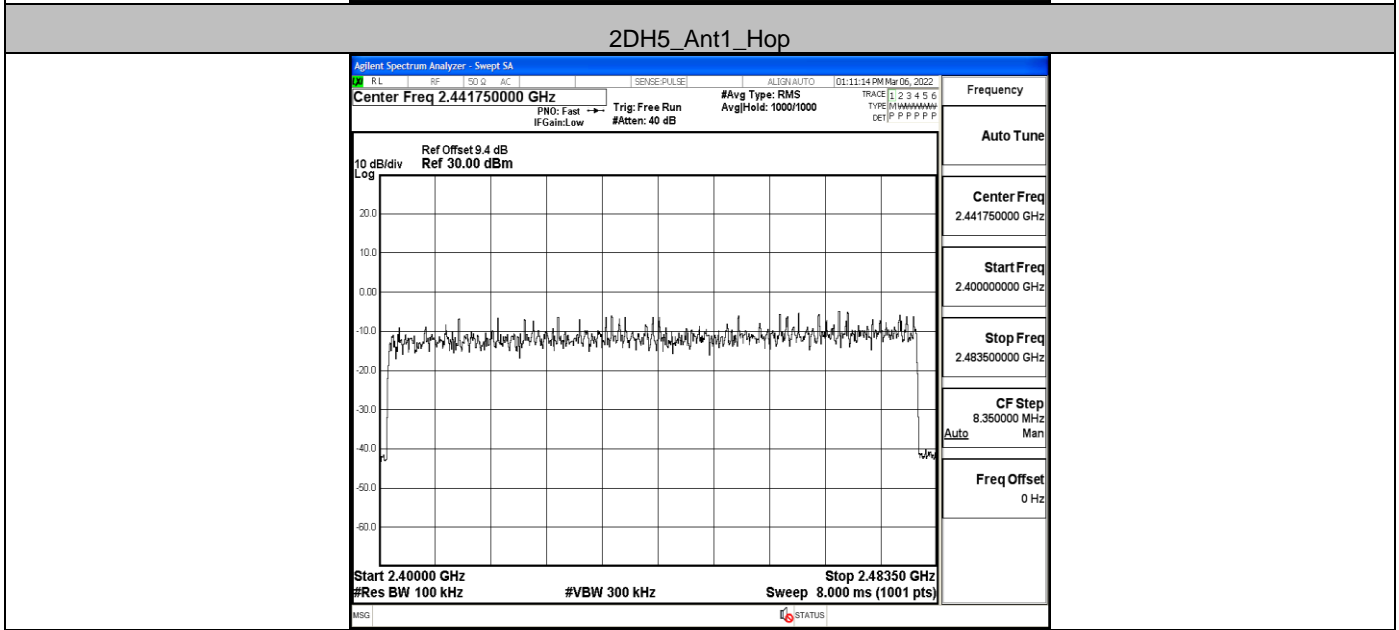
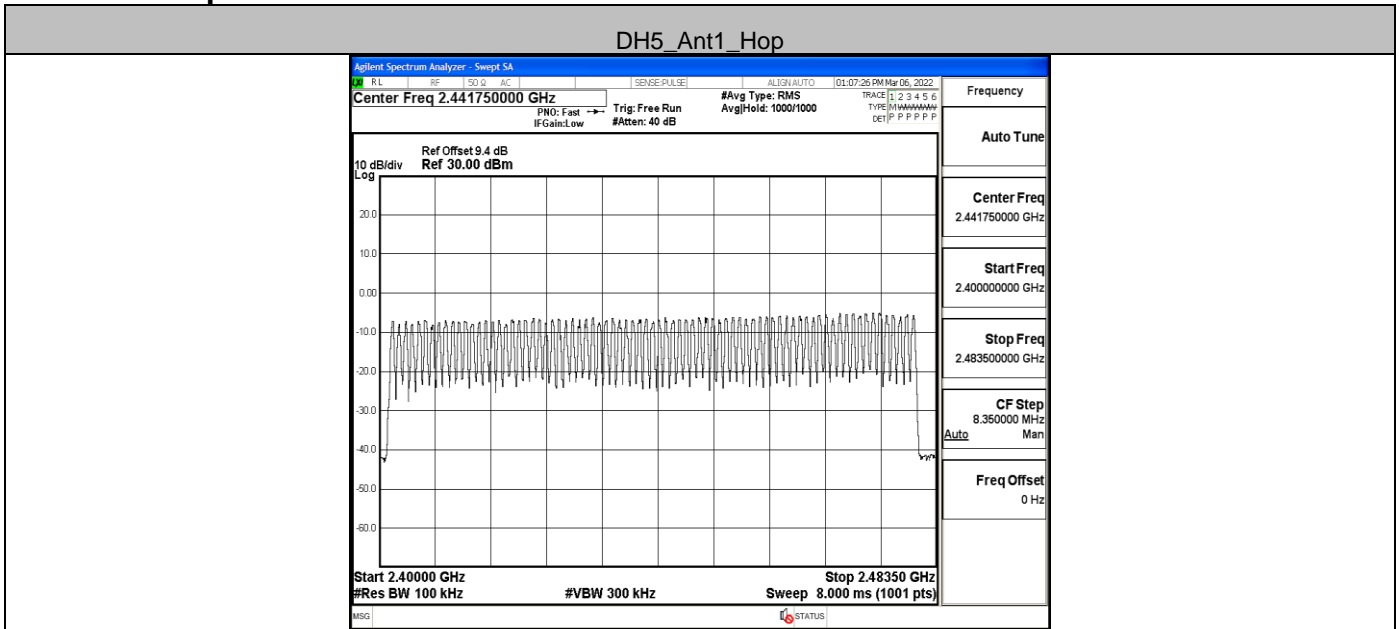
2DH5_Ant1_Hop



A.4 Hopping Channel Number

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	>=15	PASS
2DH5	Ant1	Hop	79	>=15	PASS

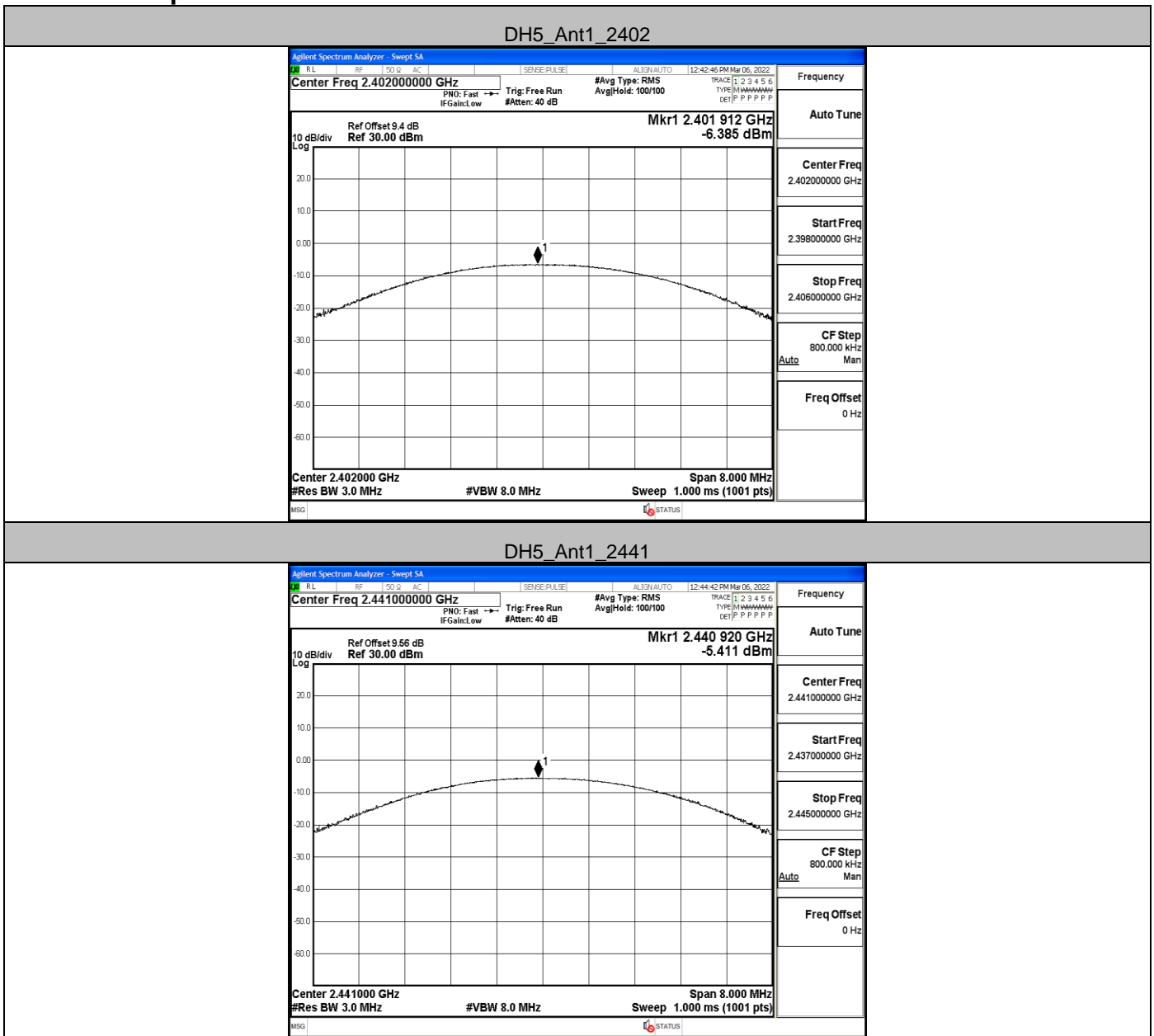
Test Graph



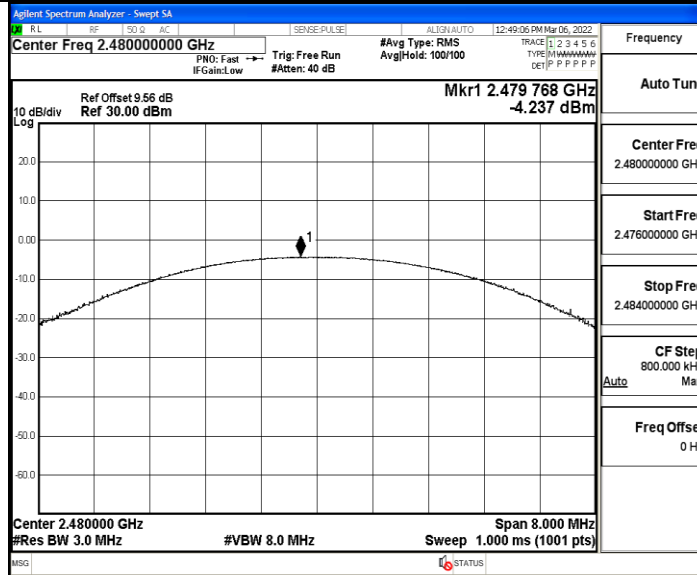
A.5 Conducted Peak Output Power

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	-6.39	≤30	PASS
		2441	-5.41	≤30	PASS
		2480	-4.24	≤30	PASS
2DH5	Ant1	2402	-5.71	≤20.97	PASS
		2441	-4.69	≤20.97	PASS
		2480	-3.35	≤20.97	PASS

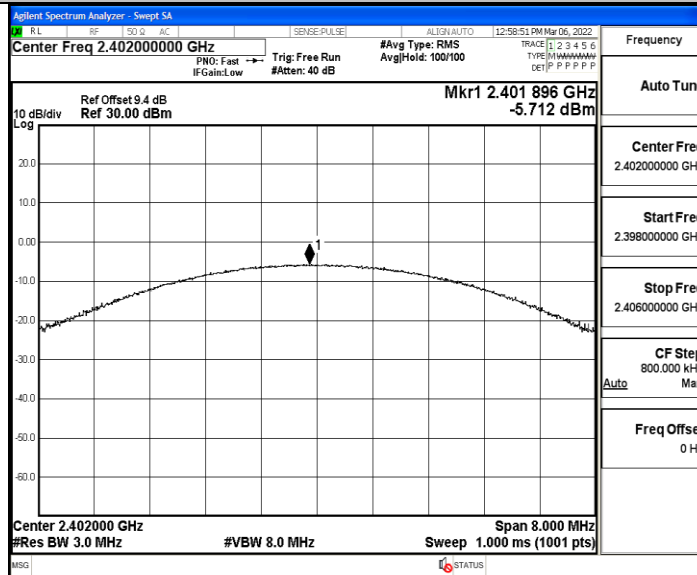
Test Graph



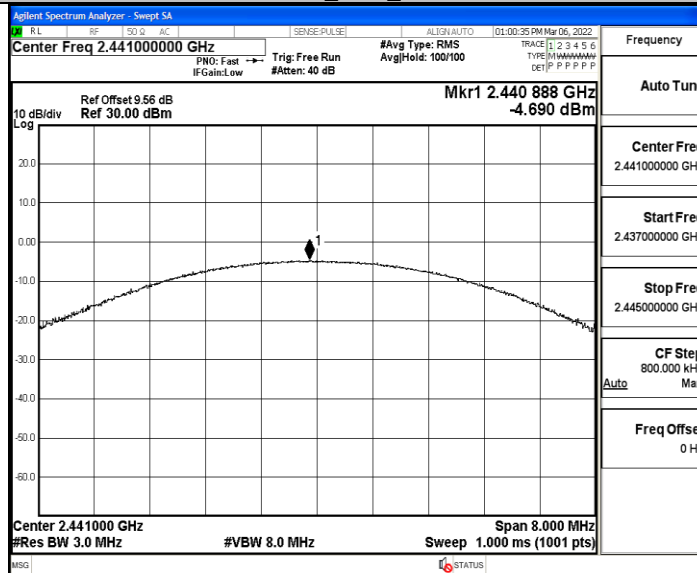
DH5_Ant1_2480



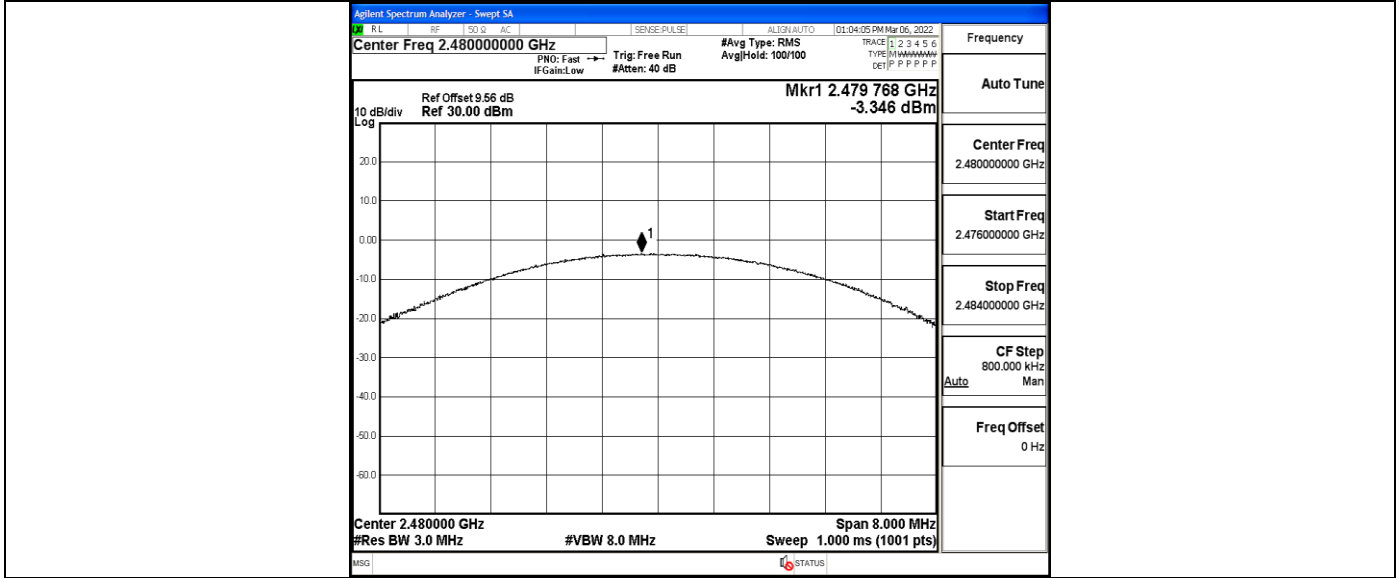
2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480

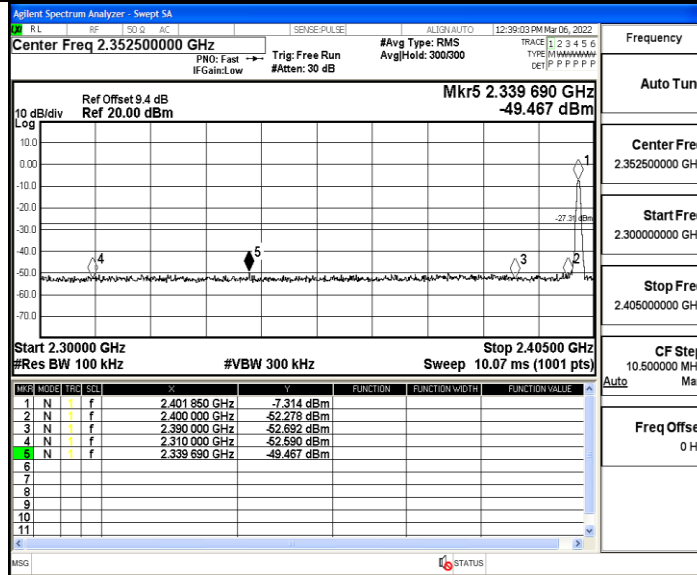


A.6 Band-edge for RF Conducted Emissions

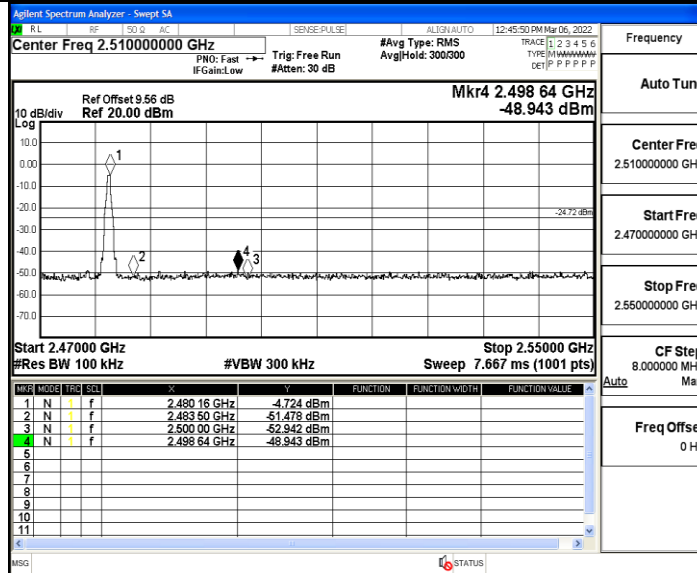
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-7.31	-49.47	≤-27.31	PASS
		High	2480	-4.72	-48.94	≤-24.72	PASS
		Low	Hop_2402	-7.44	-49.6	≤-27.44	PASS
		High	Hop_2480	-4.90	-48.94	≤-24.9	PASS
2DH5	Ant1	Low	2402	-6.99	-49.73	≤-26.99	PASS
		High	2480	-4.65	-48.6	≤-24.65	PASS
		Low	Hop_2402	-8.58	-49.8	≤-28.58	PASS
		High	Hop_2480	-6.01	-48.57	≤-26.01	PASS

Test Graph

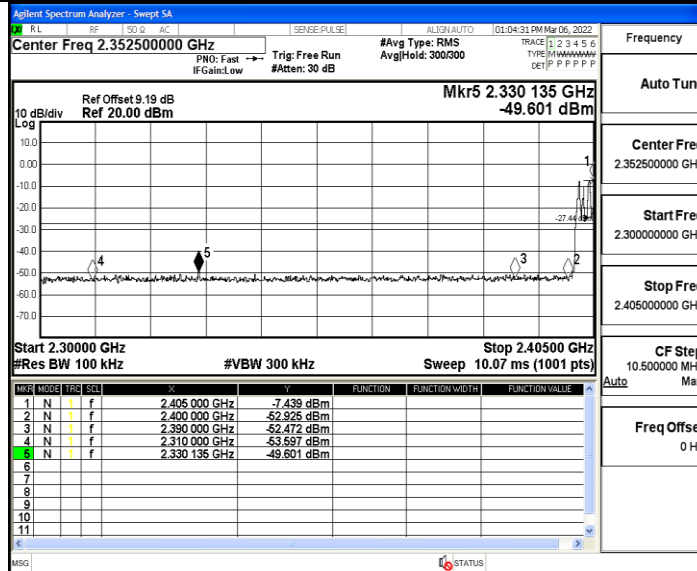
DH5_Ant1_Low_2402



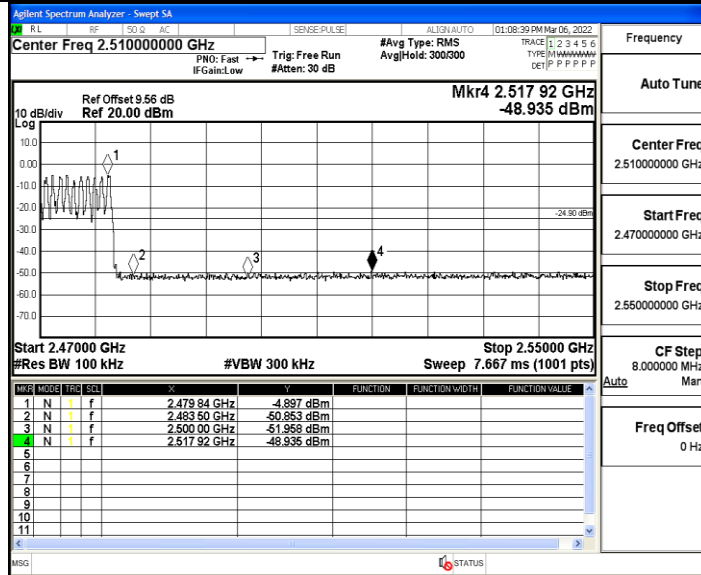
DH5_Ant1_High_2480



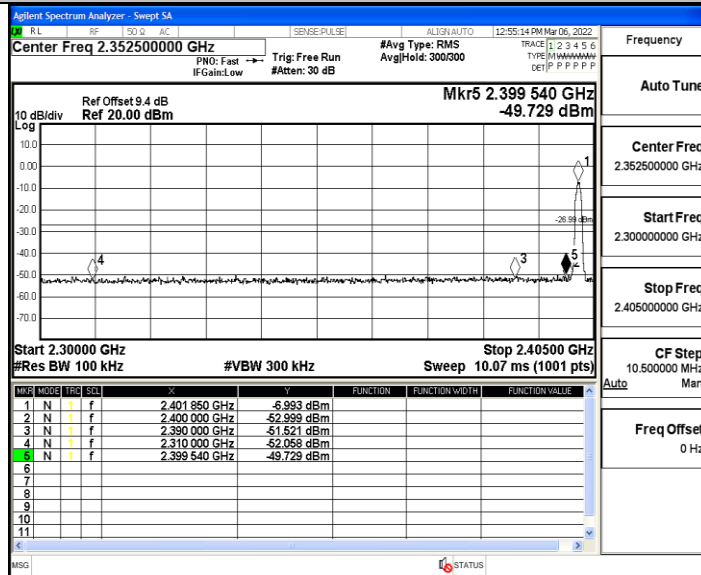
DH5_Ant1_Low_Hop_2402



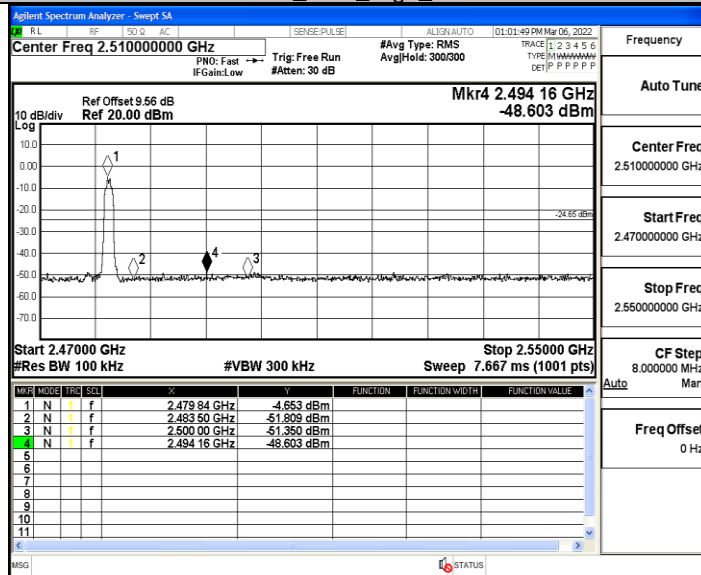
DH5_Ant1_High_Hop_2480



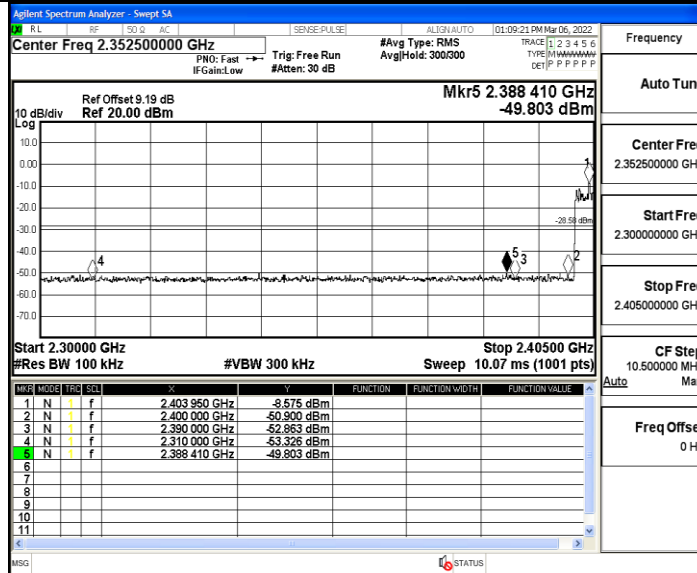
2DH5_Ant1_Low_2402



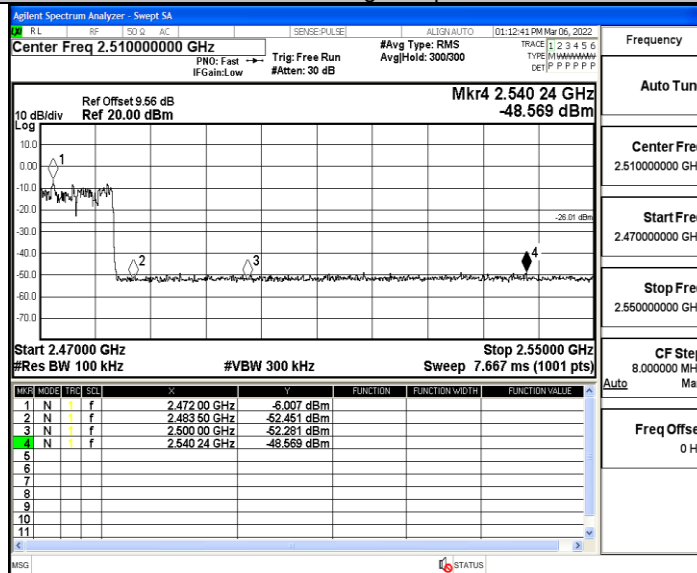
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402

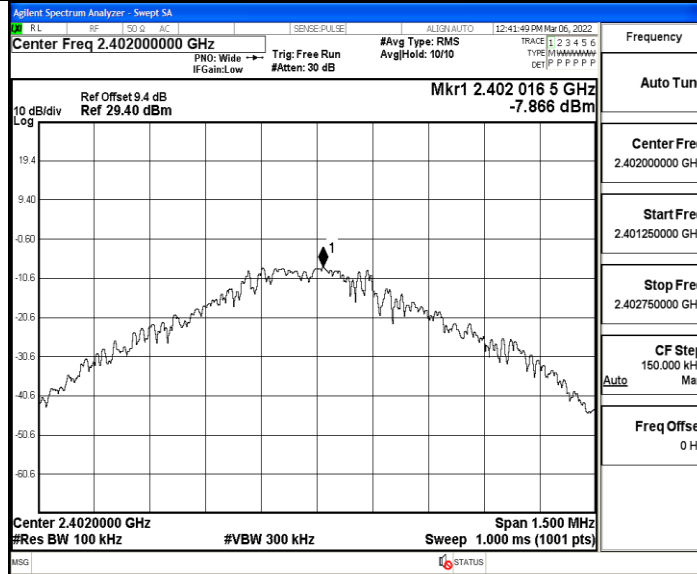


2DH5_Ant1_High_Hop_2480

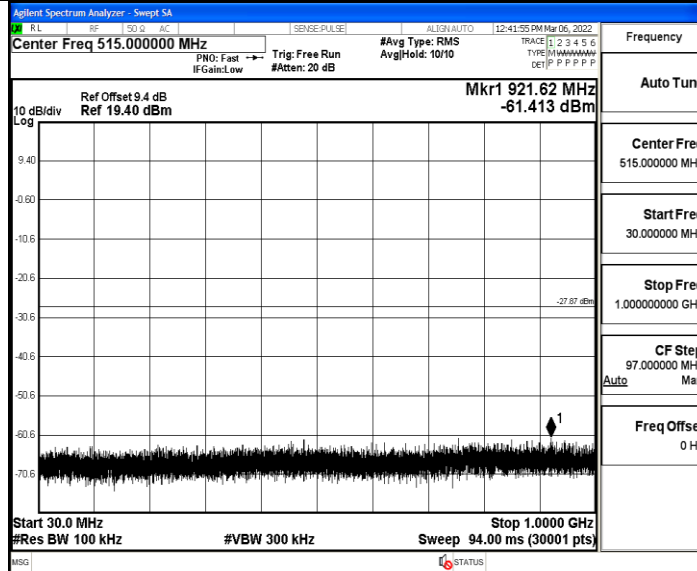


A.7 RF Conducted Spurious Emissions Test Graph

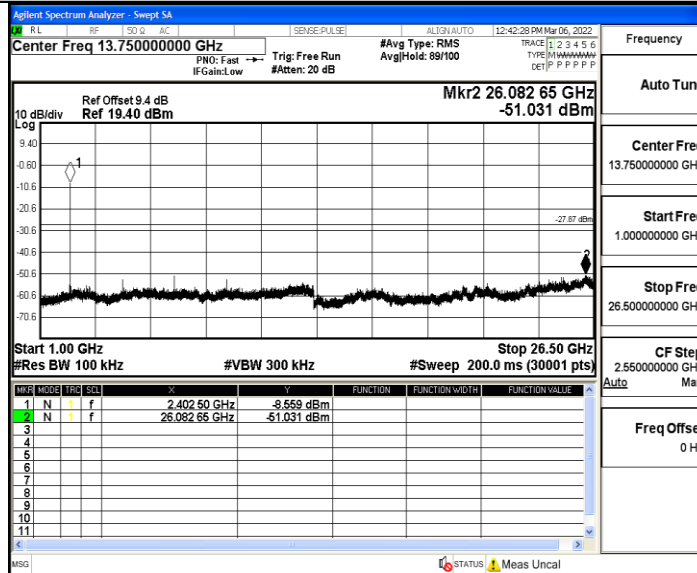
DH5_Ant1_2402_0~Reference



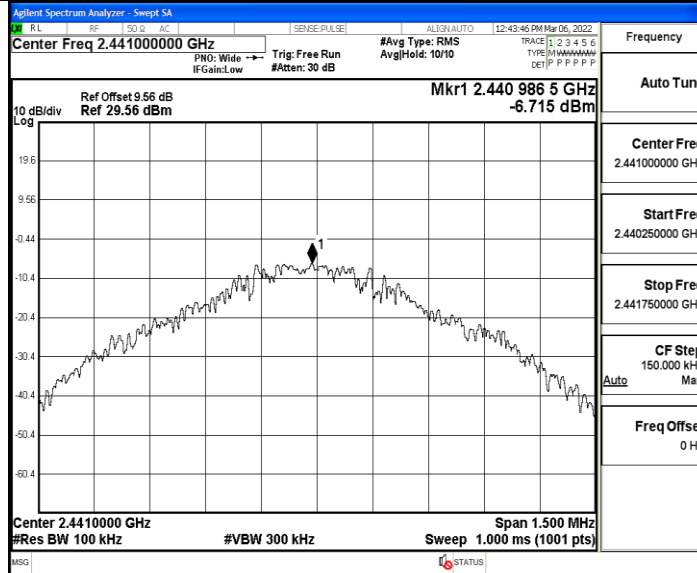
DH5_Ant1_2402_30~1000



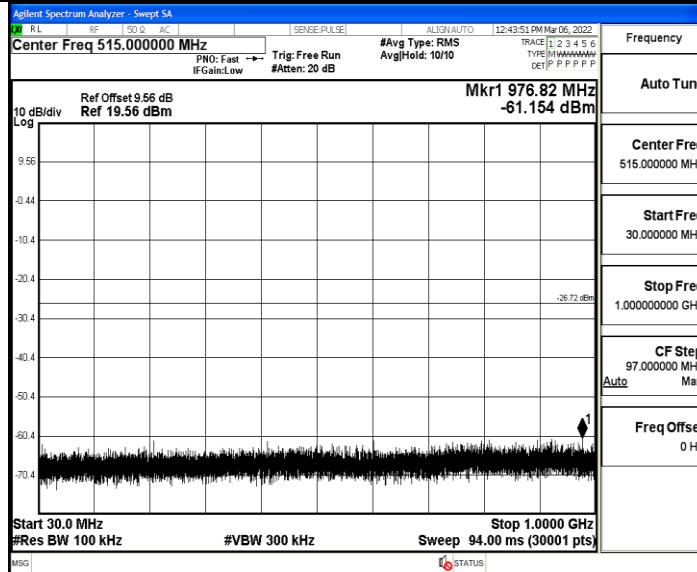
DH5_Ant1_2402_1000~26500



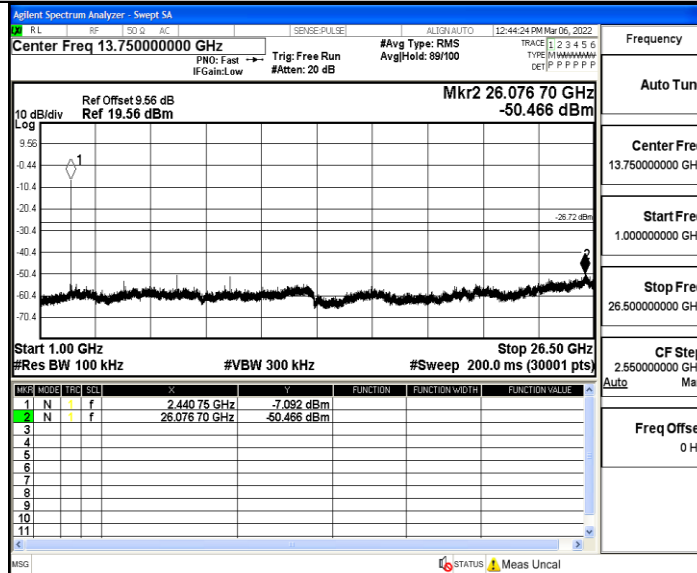
DH5_Ant1_2441_0~Reference



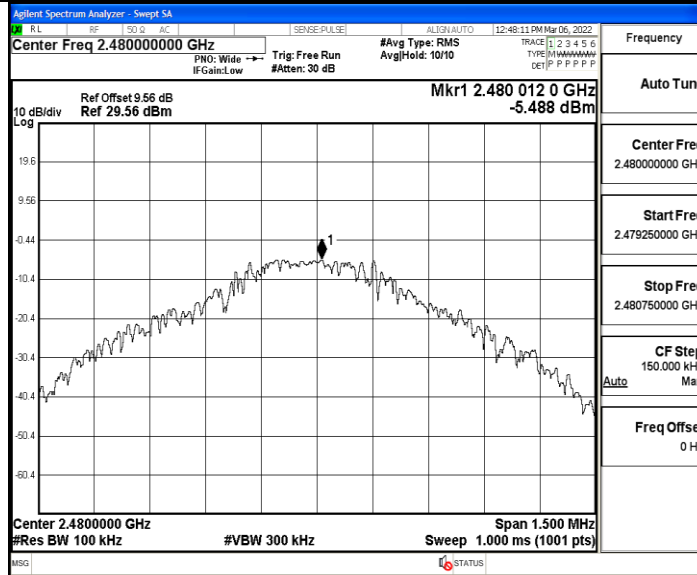
DH5_Ant1_2441_30~1000



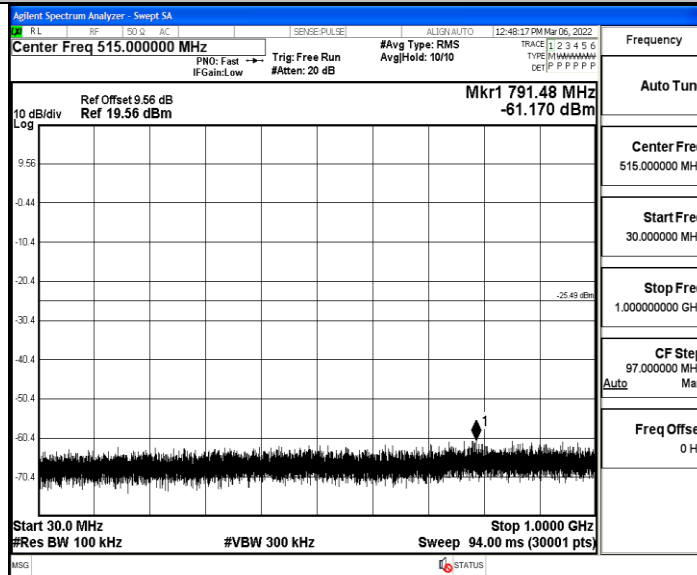
DH5_Ant1_2441_1000~26500



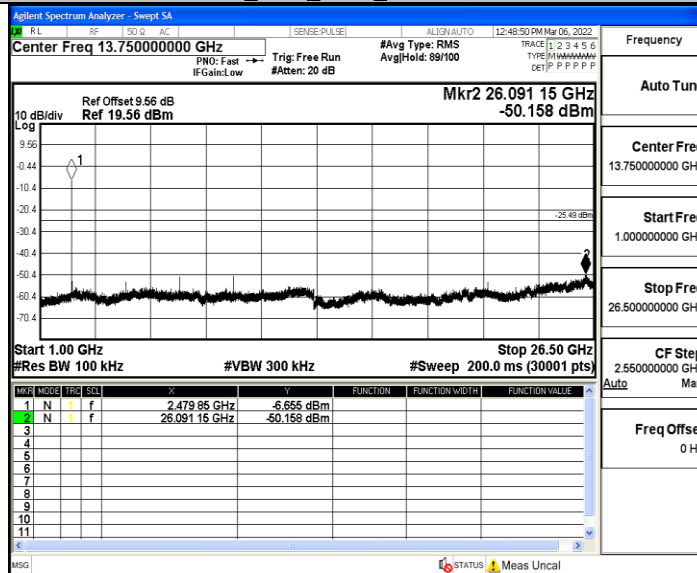
DH5_Ant1_2480_0-Reference



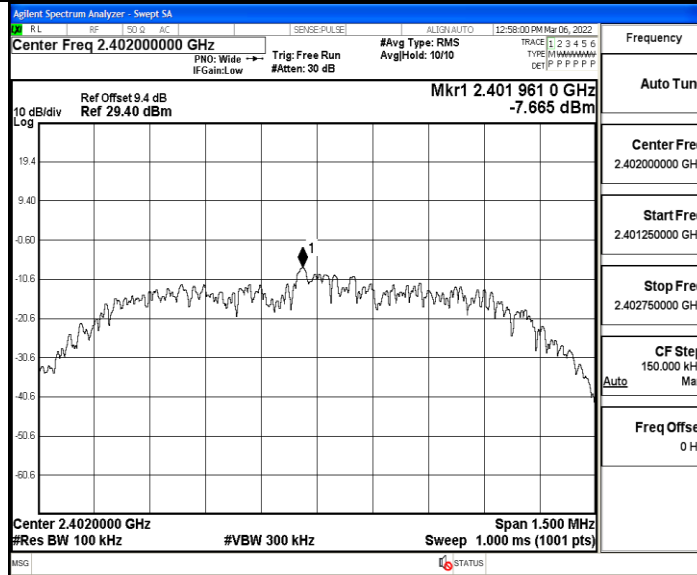
DH5_Ant1_2480_30-1000



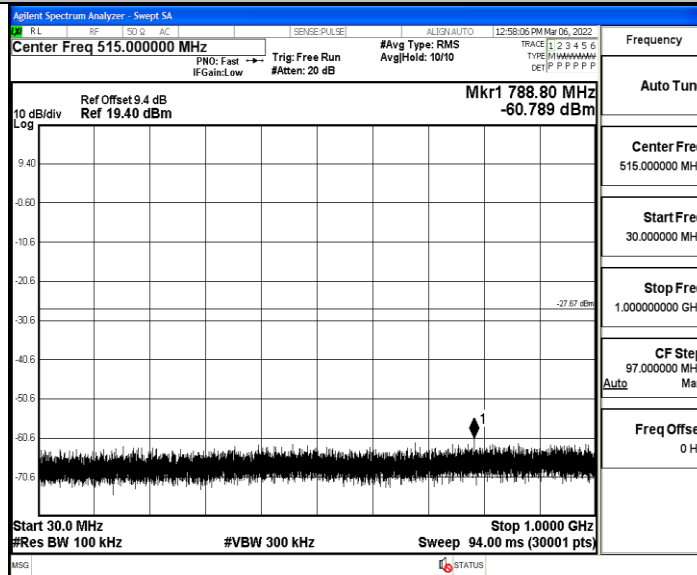
DH5_Ant1_2480_1000-26500



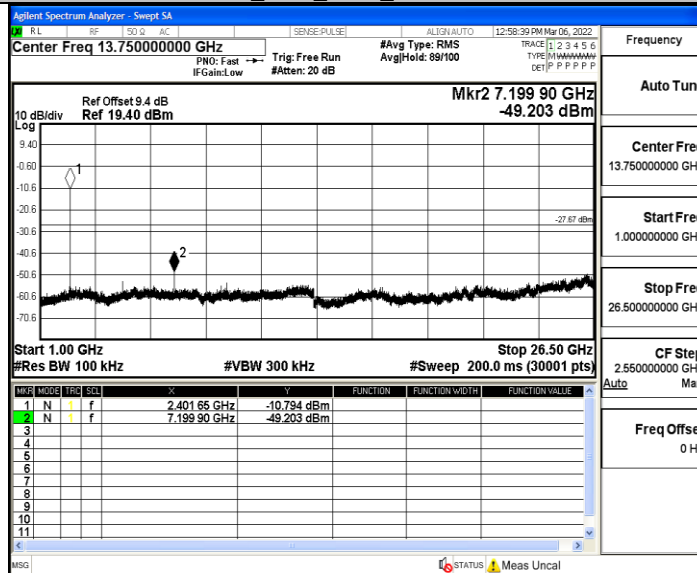
2DH5_Ant1_2402_0~Reference



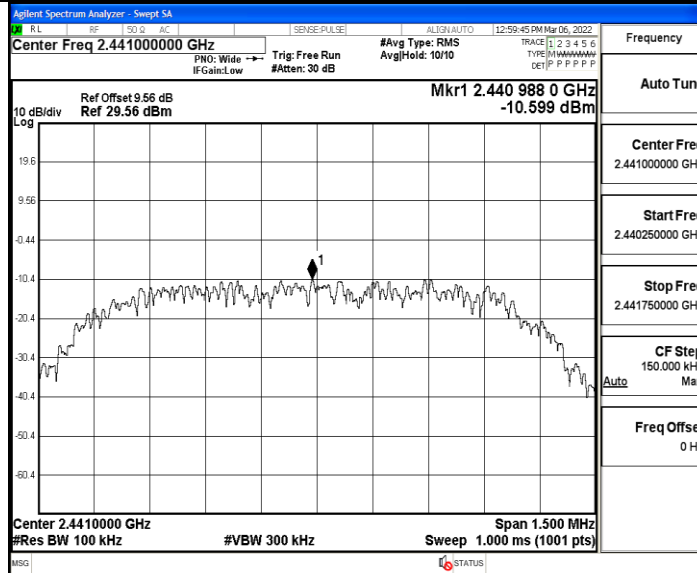
2DH5_Ant1_2402_30~1000



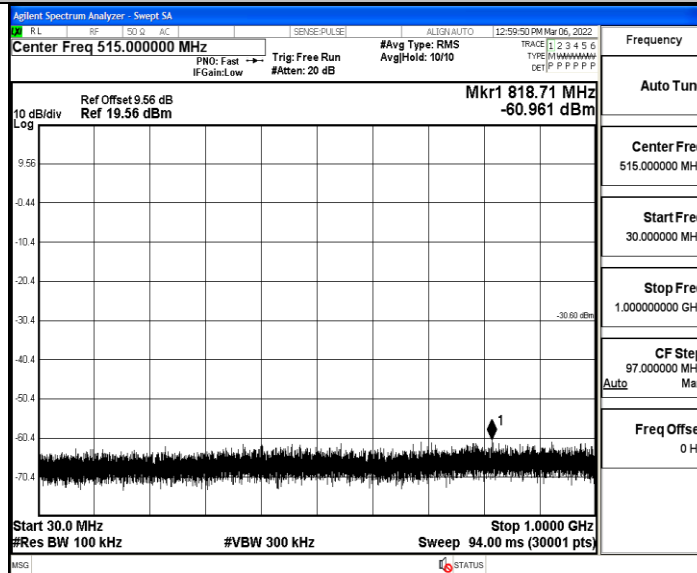
2DH5_Ant1_2402_1000~26500



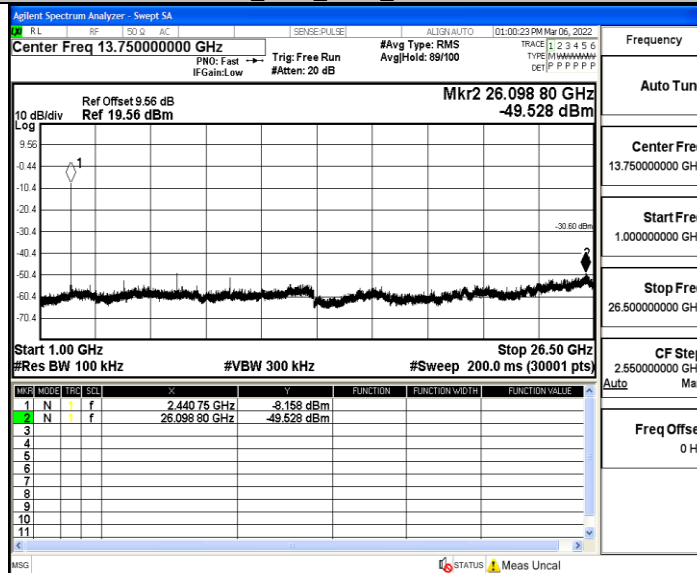
2DH5_Ant1_2441_0~Reference



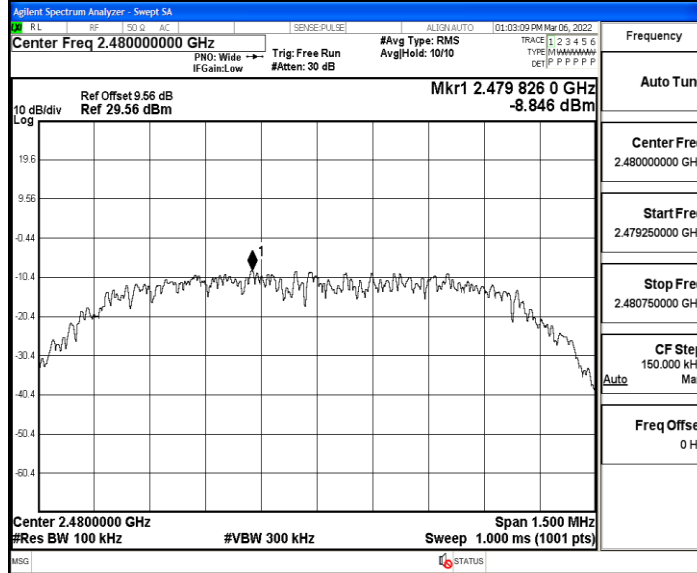
2DH5_Ant1_2441_30~1000



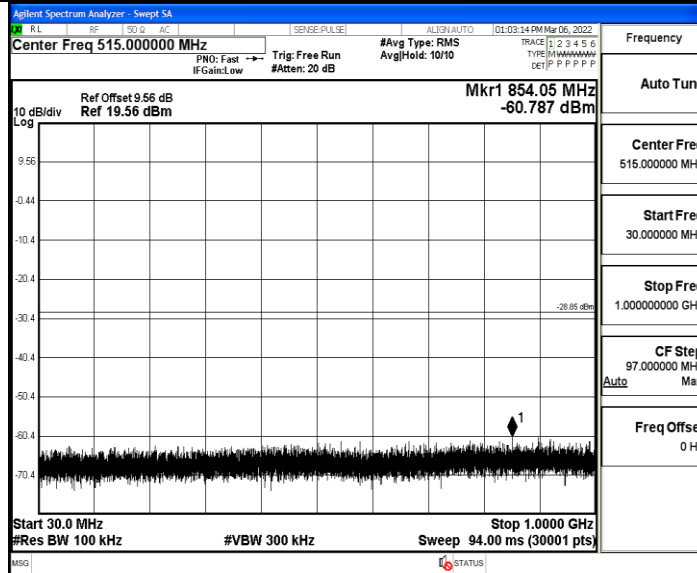
2DH5_Ant1_2441_1000~26500



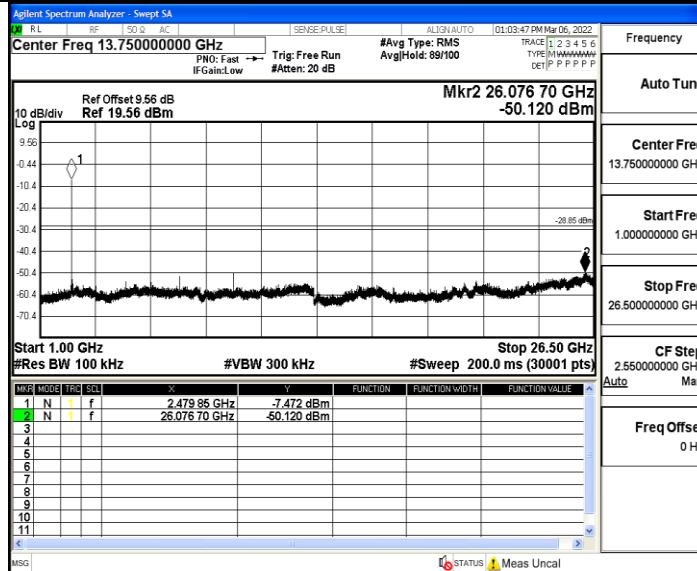
2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



2DH5_Ant1_2480_1000~26500



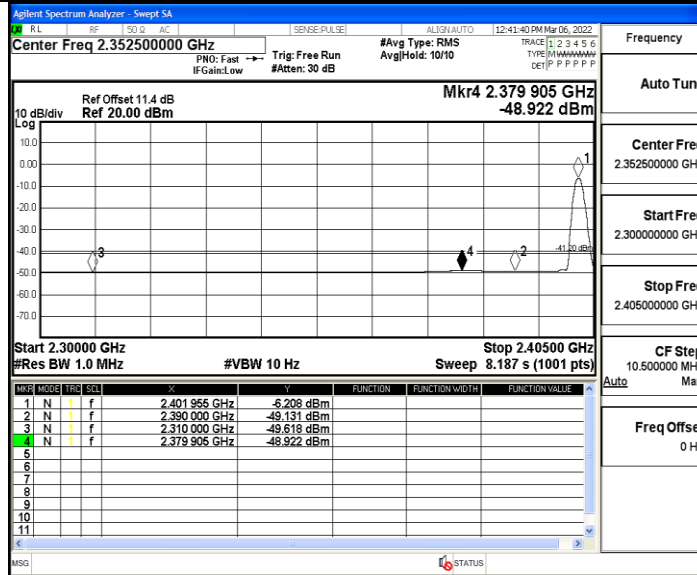
A.8 Restrict-band band-edge measurements

TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.62	≤-41.20	PASS
				AV	2379.905	-48.92	≤-41.20	PASS
				AV	2390.000	-49.13	≤-41.20	PASS
				Peak	2310.000	-42.49	≤-21.20	PASS
				Peak	2383.160	-40.18	≤-21.20	PASS
				Peak	2390.000	-44.34	≤-21.20	PASS
		High	2480	AV	2483.500	-48.53	≤-41.20	PASS
				AV	2499.680	-47.77	≤-41.20	PASS
				AV	2500.000	-47.79	≤-41.20	PASS
				Peak	2483.500	-44.02	≤-21.20	PASS
				Peak	2493.920	-38.47	≤-21.20	PASS
				Peak	2500.000	-41.11	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.49	≤-41.20	PASS
				AV	2381.690	-48.76	≤-41.20	PASS
				AV	2390.000	-48.97	≤-41.20	PASS
				Peak	2310.000	-43.67	≤-21.20	PASS
				Peak	2338.220	-39.88	≤-21.20	PASS
				Peak	2390.000	-44.11	≤-21.20	PASS
		High	2480	AV	2483.500	-48.09	≤-41.20	PASS
				AV	2498.000	-47.06	≤-41.20	PASS
				AV	2500.000	-47.41	≤-41.20	PASS
				Peak	2483.500	-41.54	≤-21.20	PASS
				Peak	2495.840	-37.33	≤-21.20	PASS
				Peak	2500.000	-40.57	≤-21.20	PASS

Note:

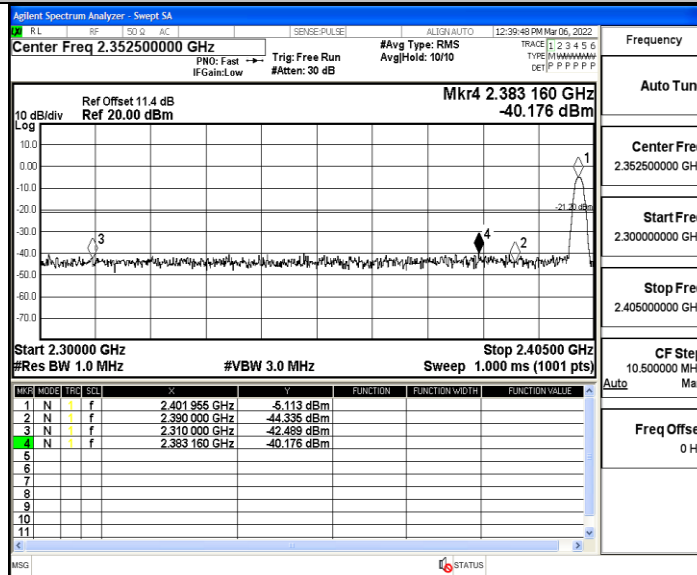
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

DH5_Ant1_Low_2402_AV



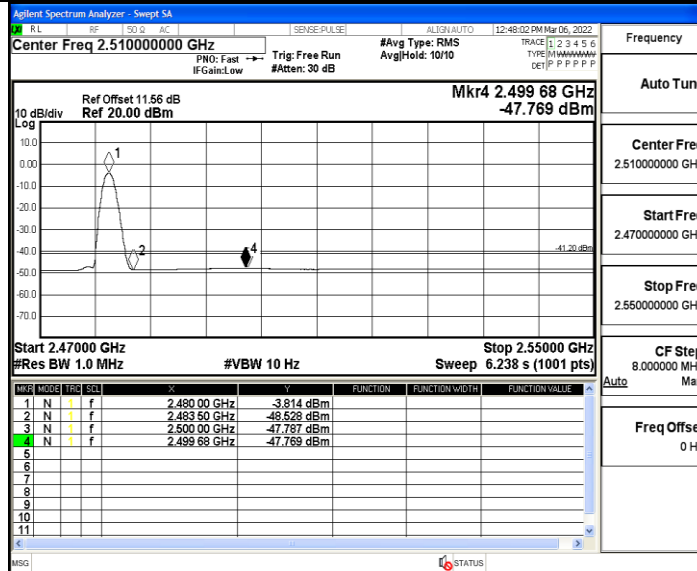
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Auto	Man
Freq Offset	0 Hz

DH5_Ant1_Low_2402_Peak



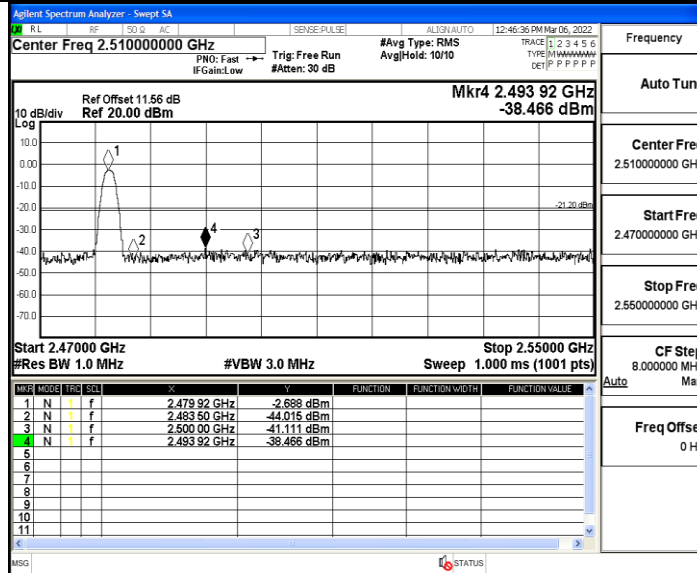
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Auto	Man
Freq Offset	0 Hz

DH5_Ant1_High_2480_AV



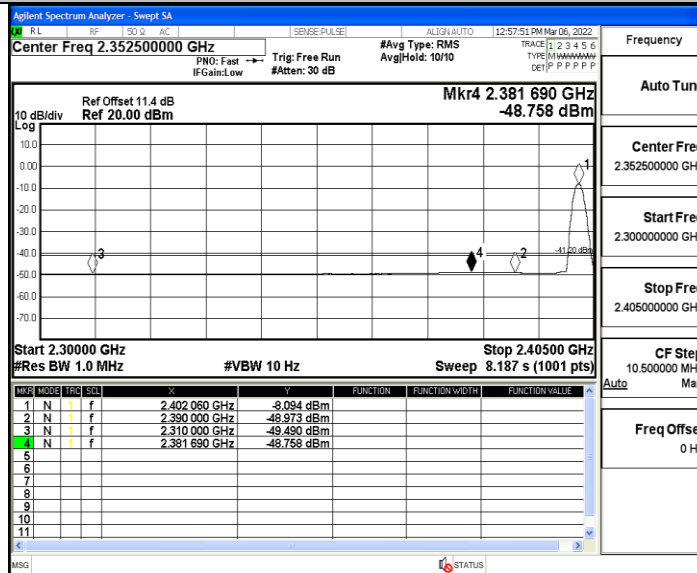
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Auto	Man
Freq Offset	0 Hz

DH5_Ant1_High_2480_Peak



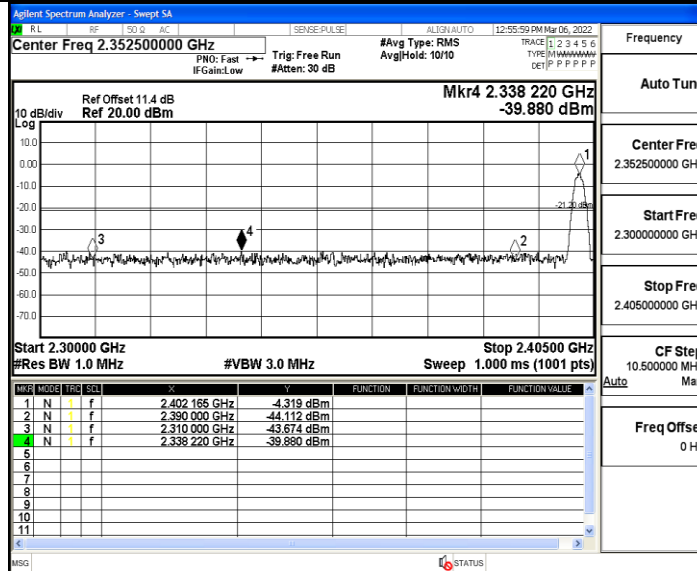
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz

2DH5_Ant1_Low_2402_AV



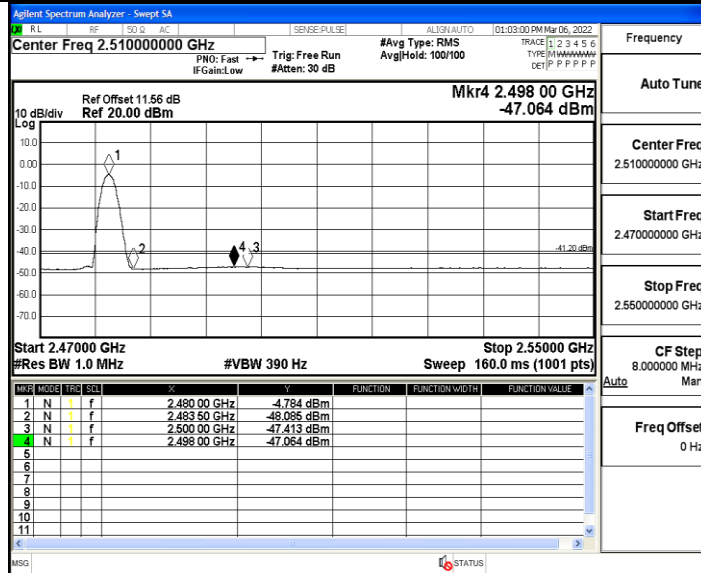
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

2DH5_Ant1_Low_2402_Peak



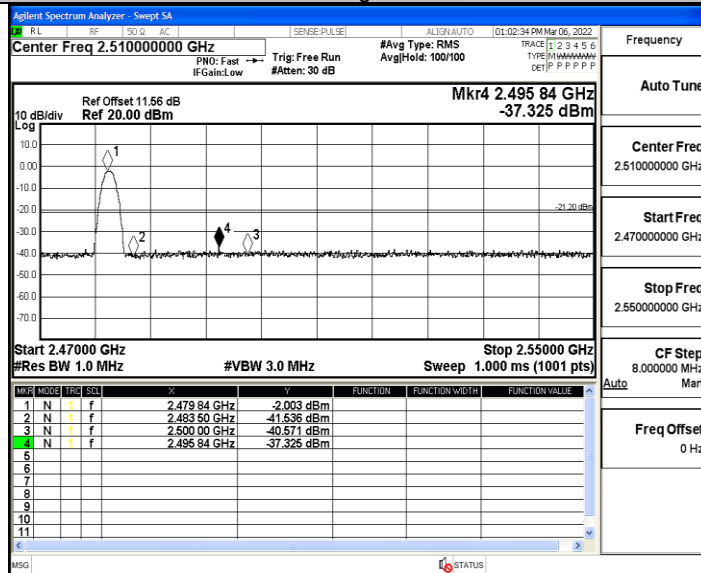
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

2DH5_Ant1_High_2480_AV



Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Auto	Man
Freq Offset	0 Hz

2DH5_Ant1_High_2480_Peak



Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Auto	Man
Freq Offset	0 Hz