

Appendix A

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

Product Name: Portable speaker

Trade Mark: QFX

Test Model: BT-ZX1

FCC ID: 2AOMX-BTZX1

Environmental Conditions

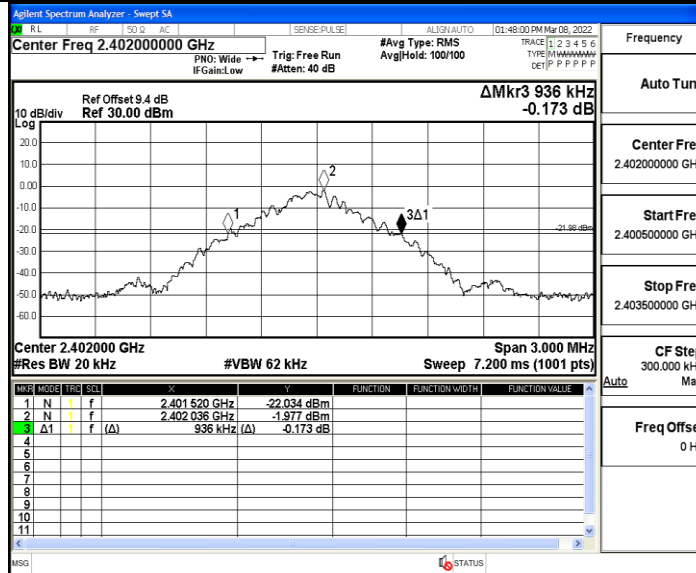
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Nancy Li
Supervised by:	Hugo Chen

A.1 20 dB Bandwidth

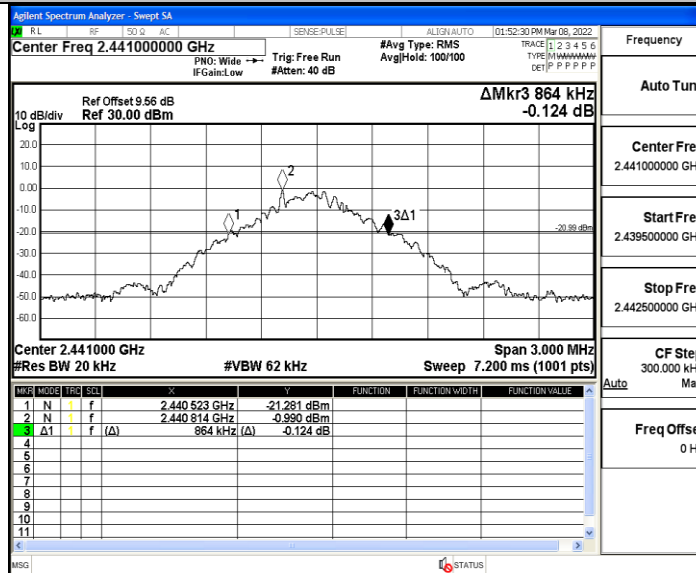
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.936	2401.520	2402.456	---	---
		2441	0.864	2440.523	2441.387	---	---
		2480	0.942	2479.523	2480.465	---	---
2DH5	Ant1	2402	1.332	2401.313	2402.645	---	---
		2441	1.314	2440.322	2441.636	---	---
		2480	1.347	2479.316	2480.663	---	---
3DH5	Ant1	2402	1.299	2401.331	2402.630	---	---
		2441	1.299	2440.331	2441.630	---	---
		2480	1.266	2479.343	2480.609	---	---

Test Graph

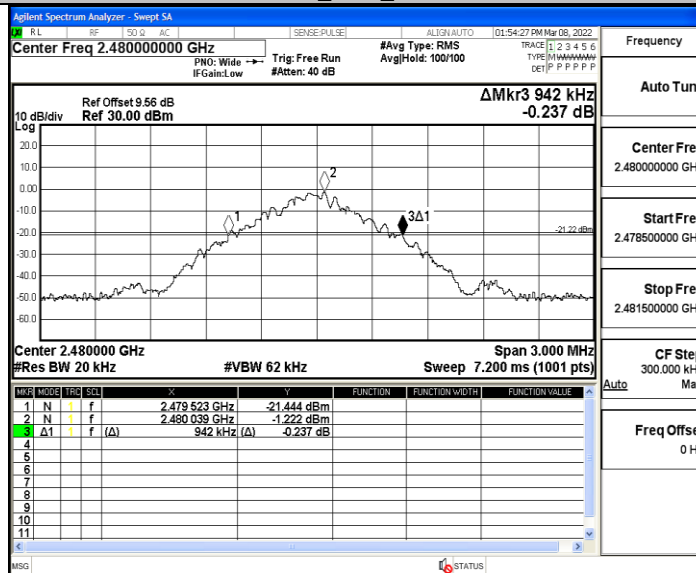
DH5_Ant1_2402



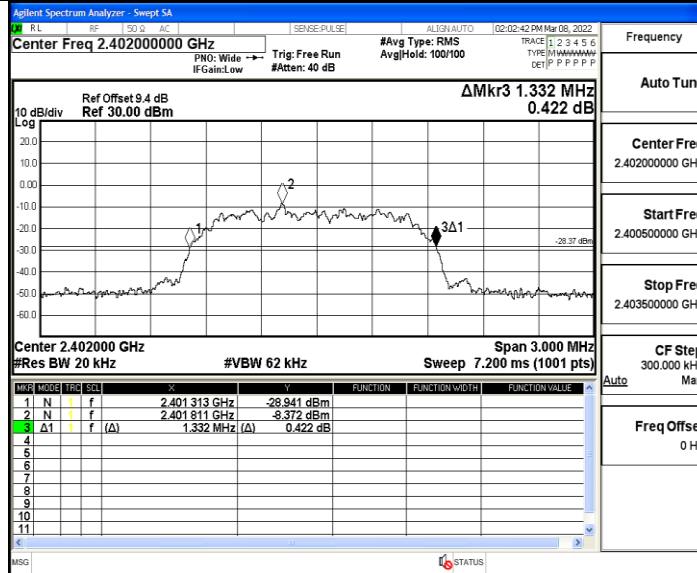
DH5_Ant1_2441



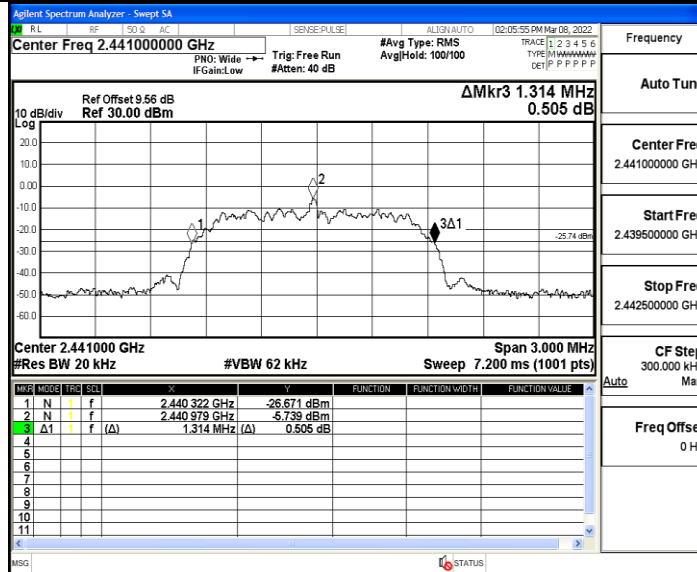
DH5_Ant1_2480



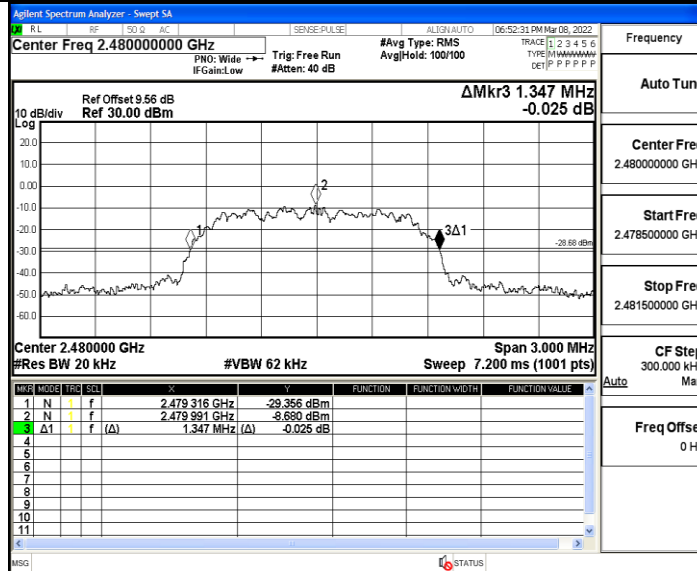
2DH5_Ant1_2402



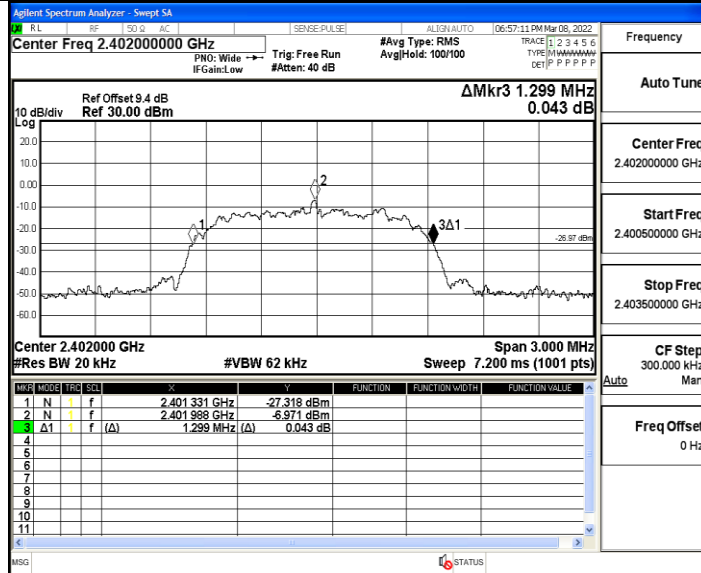
2DH5_Ant1_2441



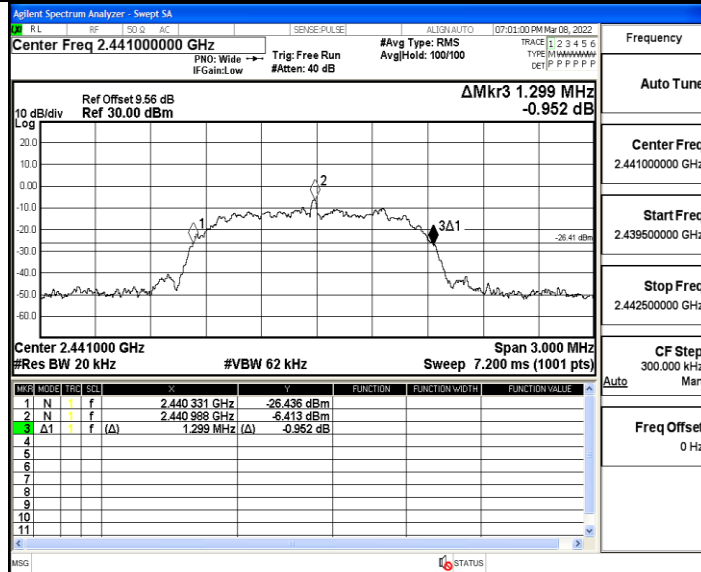
2DH5_Ant1_2480



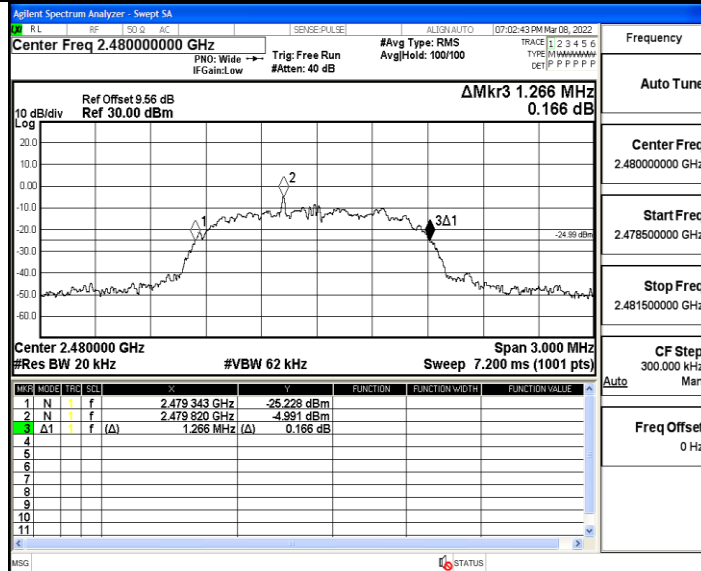
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

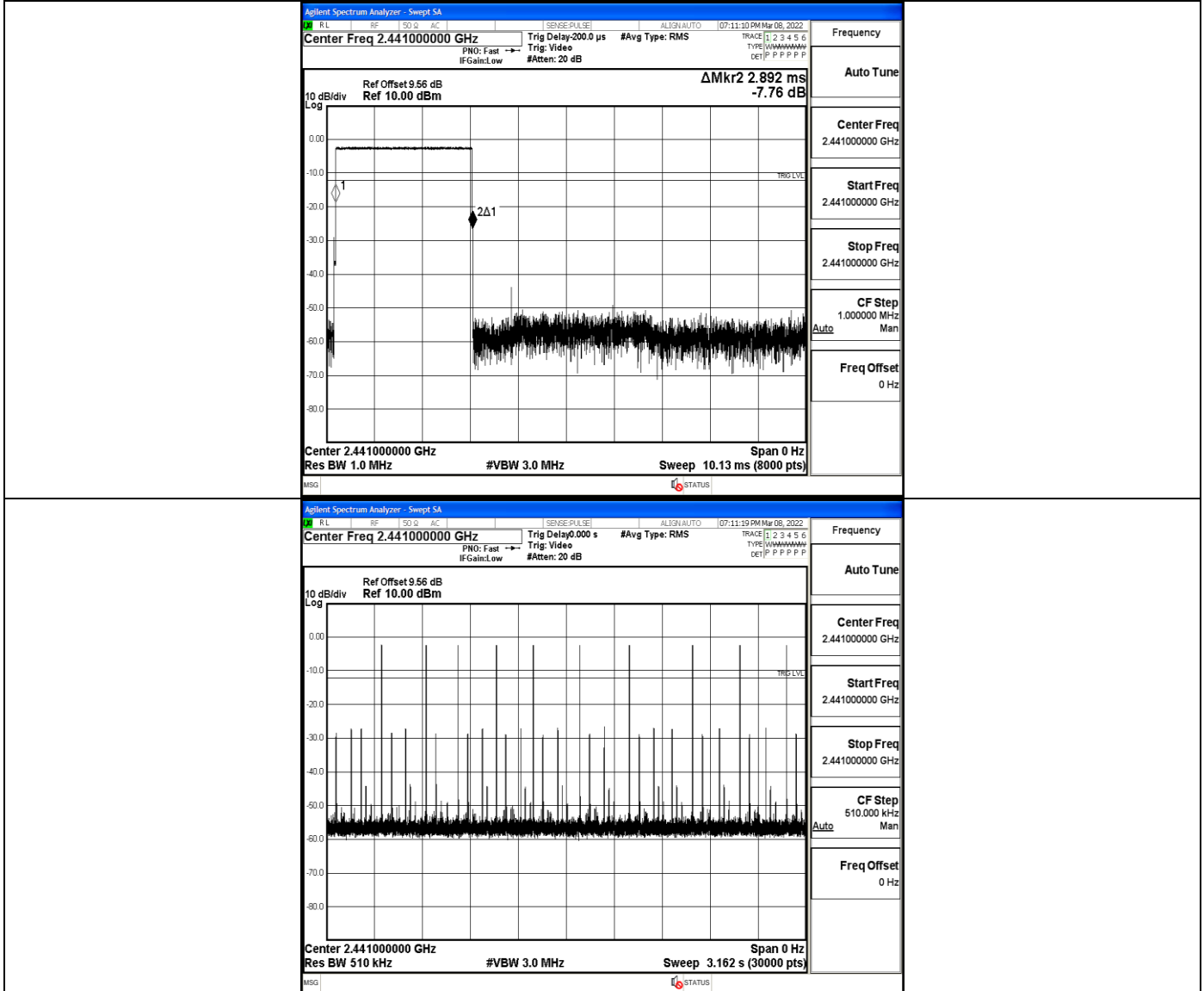


A.2 Dwell Time

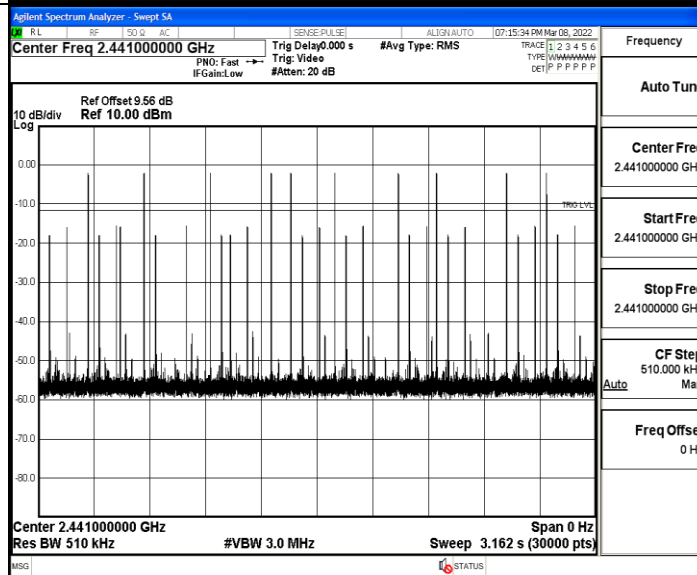
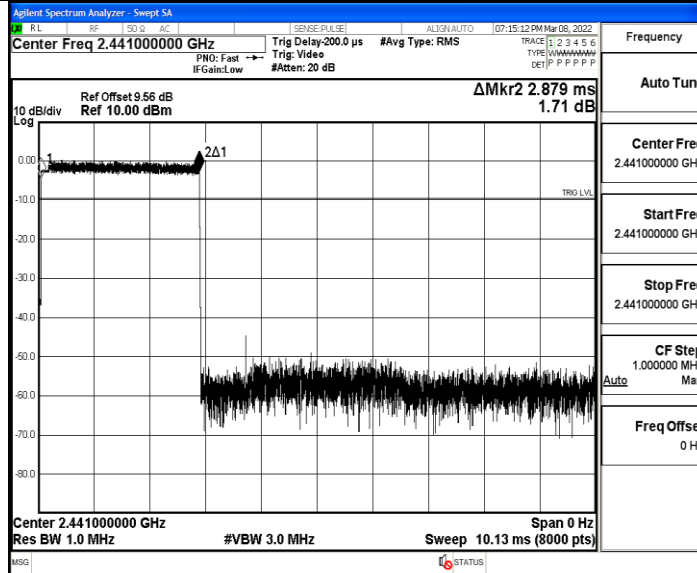
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	110	0.318	≤0.4	PASS
2DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS
3DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS

Test Graph

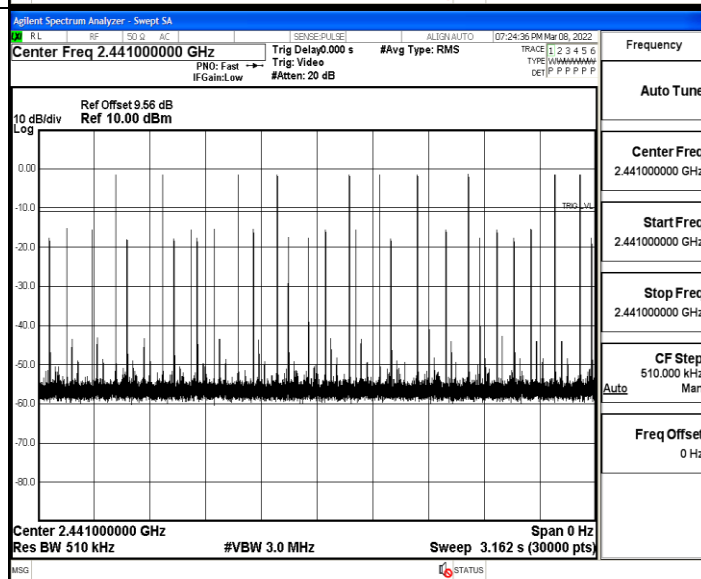
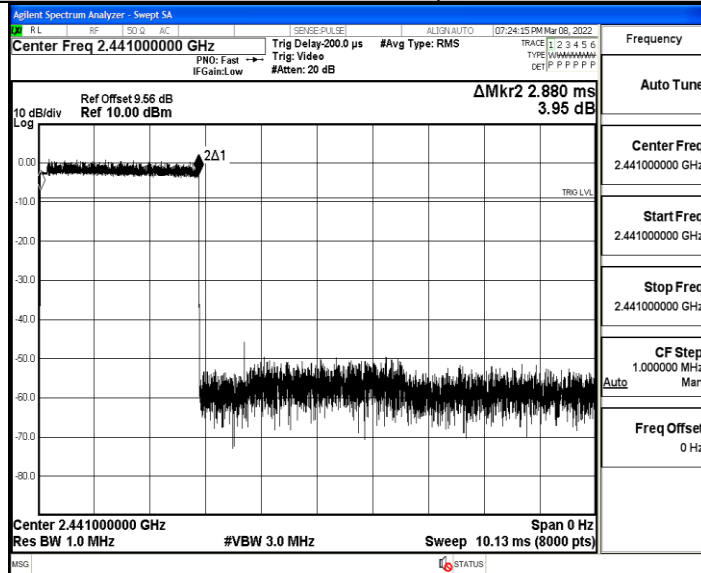
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop

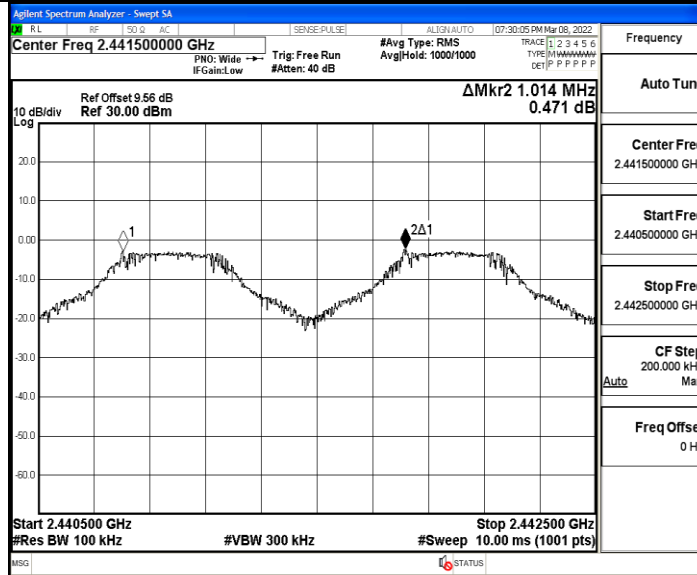


A.3 Carrier Frequency Separation

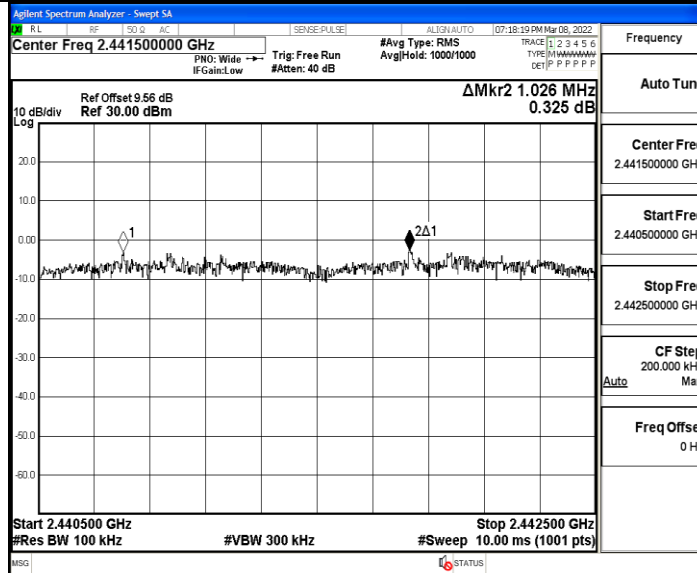
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.014	≥ 0.942	PASS
2DH5	Ant1	Hop	1.026	≥ 0.898	PASS
3DH5	Ant1	Hop	0.988	≥ 0.866	PASS

Test Graph

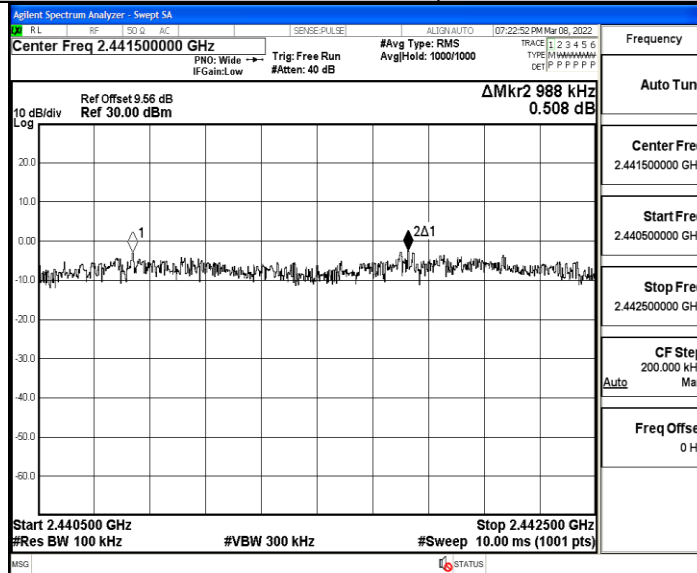
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



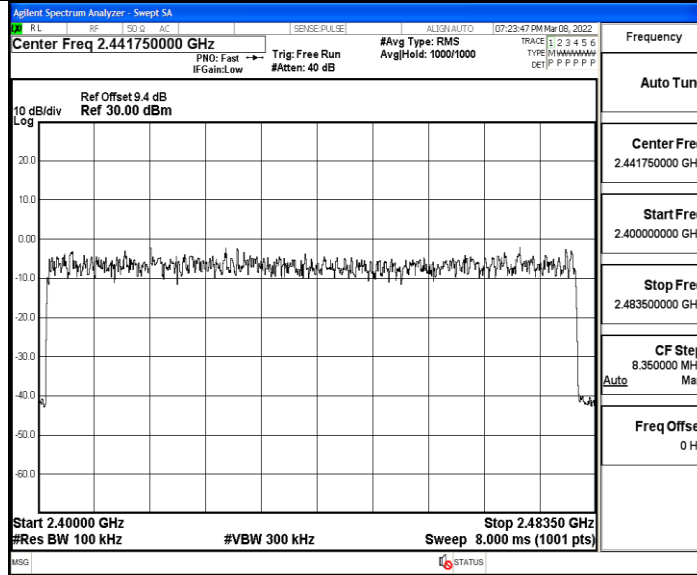
A.4 Hopping Channel Number

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	>=15	PASS
2DH5	Ant1	Hop	79	>=15	PASS
3DH5	Ant1	Hop	79	>=15	PASS

Test Graph



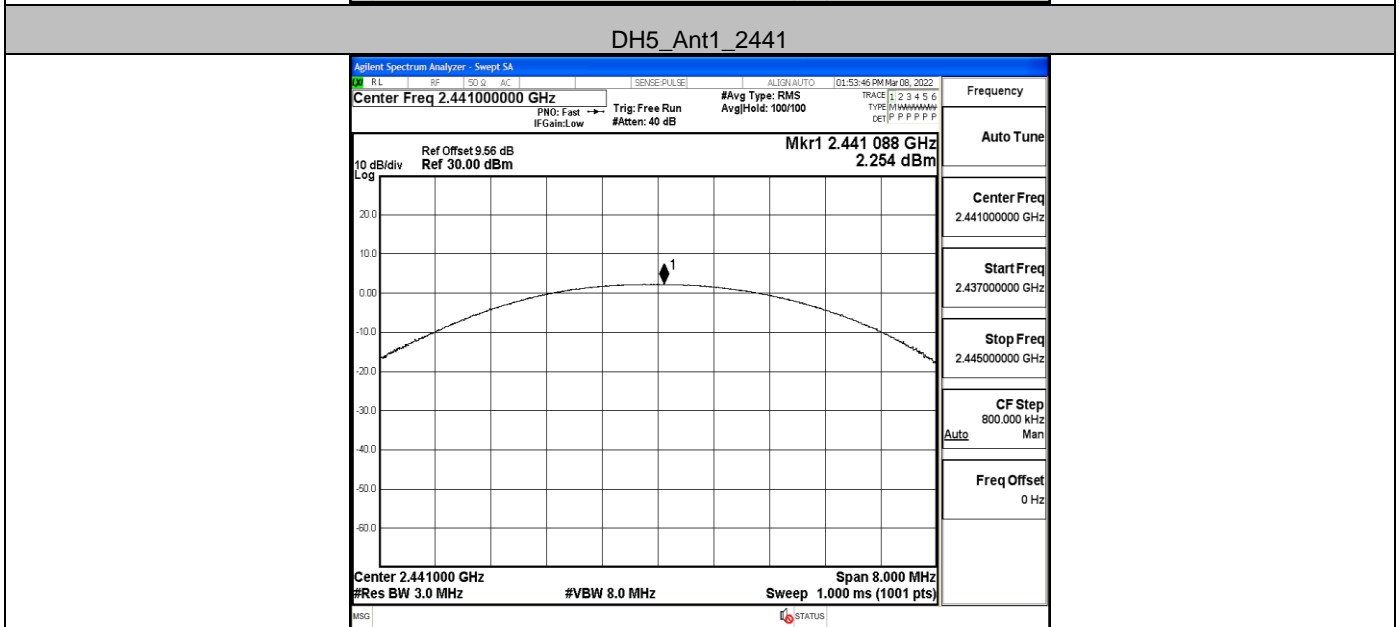
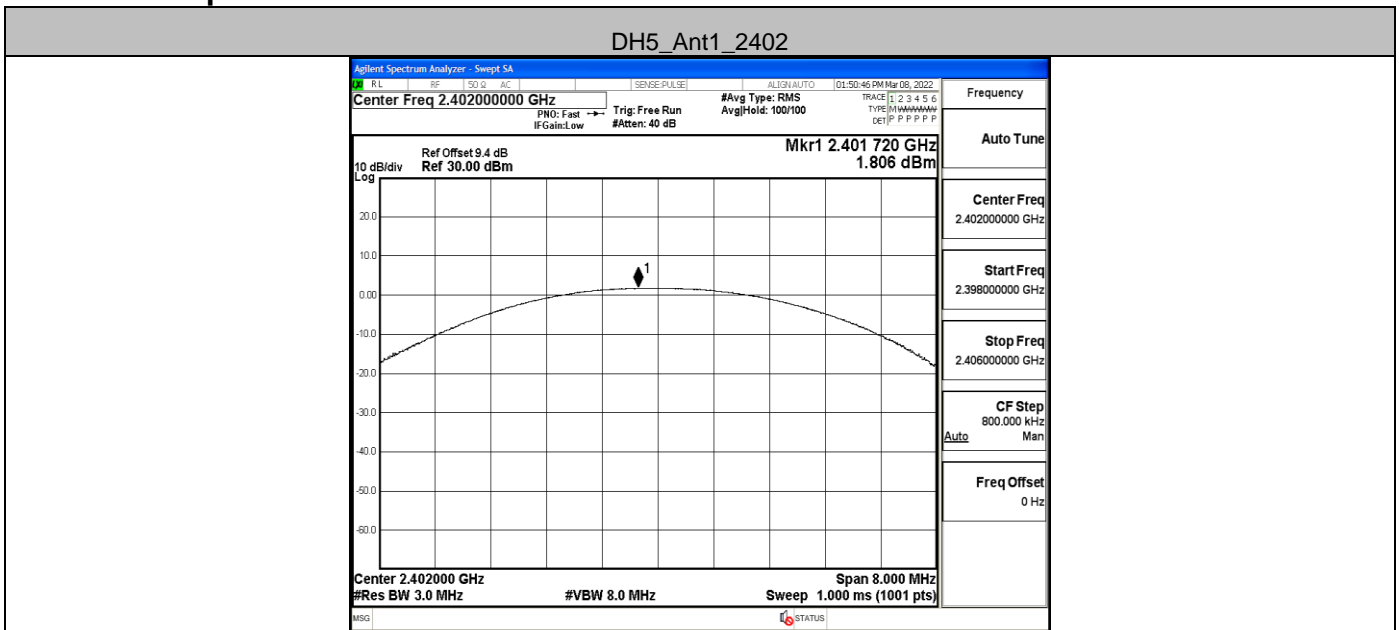
3DH5_Ant1_Hop



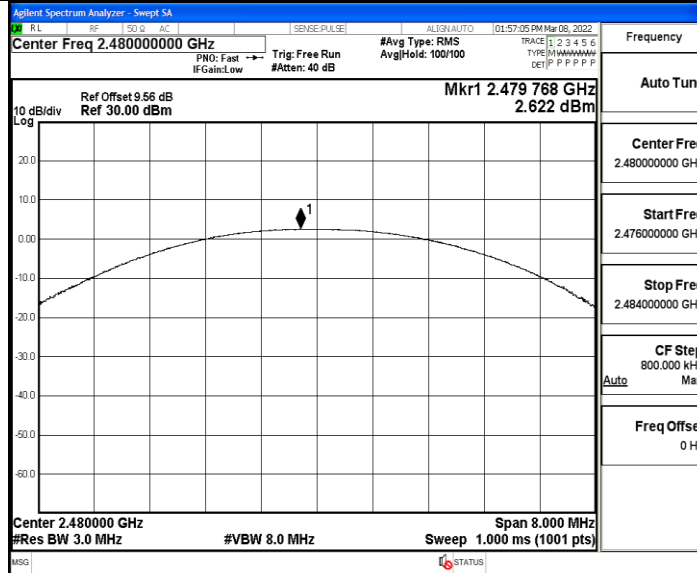
A.5 Conducted Peak Output Power

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	1.81	≤30	PASS
		2441	2.25	≤30	PASS
		2480	2.62	≤30	PASS
2DH5	Ant1	2402	0.49	≤20.97	PASS
		2441	1.21	≤20.97	PASS
		2480	1.13	≤20.97	PASS
3DH5	Ant1	2402	1.03	≤20.97	PASS
		2441	1.62	≤20.97	PASS
		2480	1.87	≤20.97	PASS

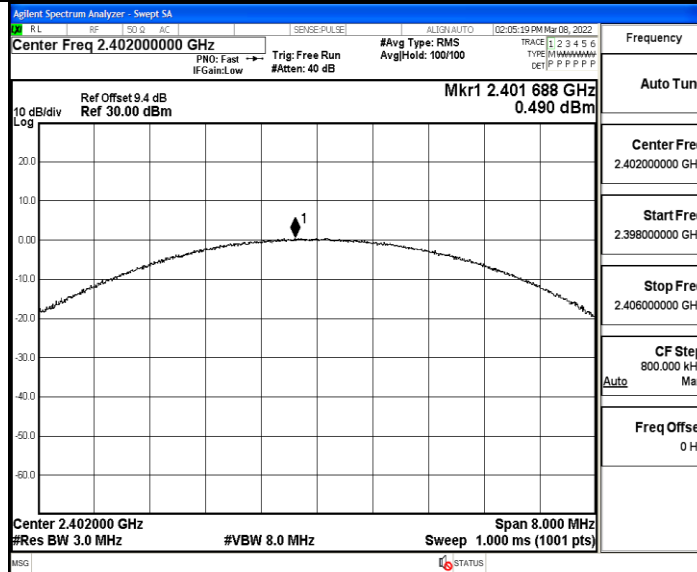
Test Graph



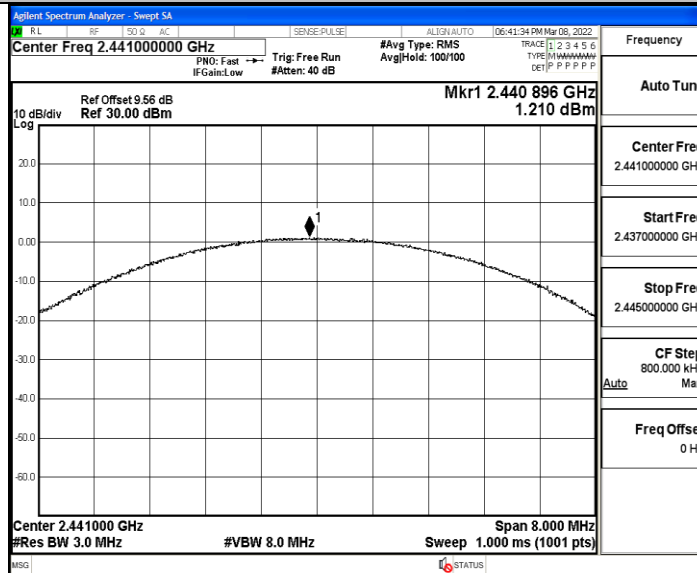
DH5_Ant1_2480



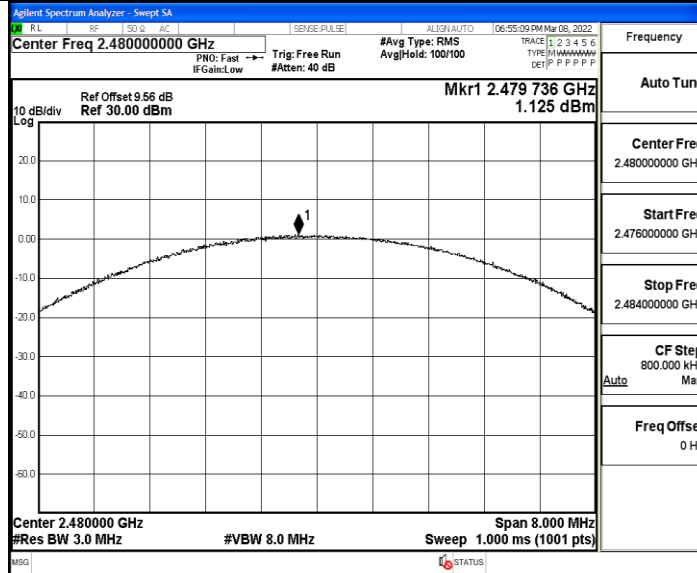
2DH5_Ant1_2402



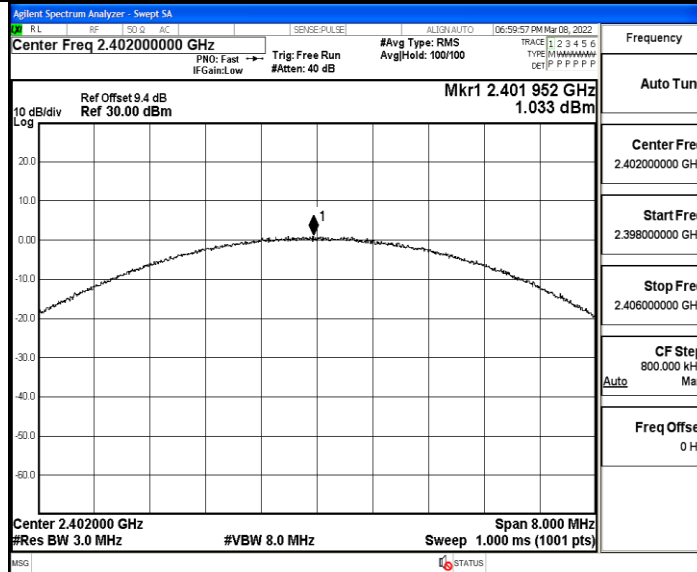
2DH5_Ant1_2441



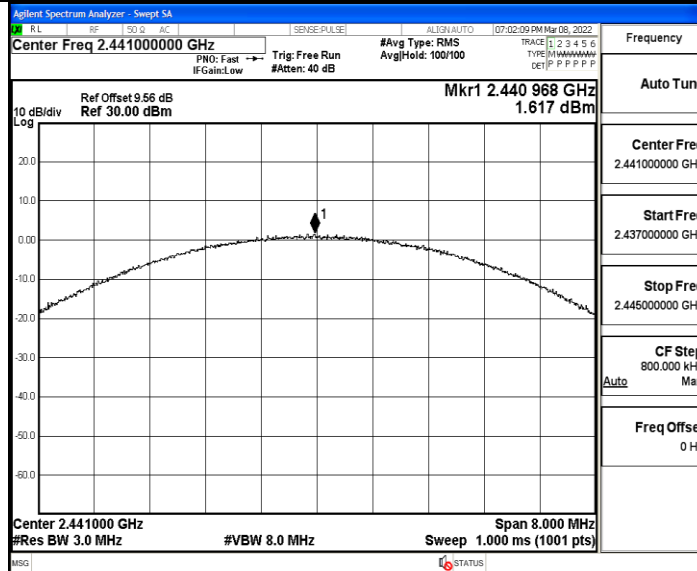
2DH5_Ant1_2480



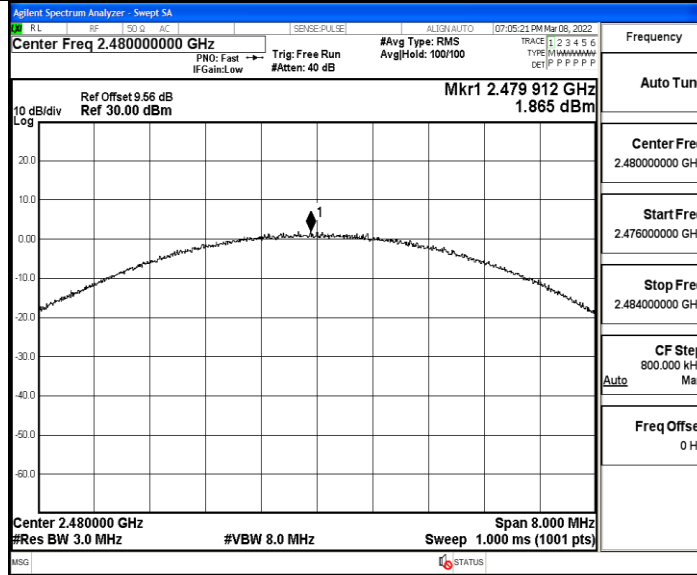
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

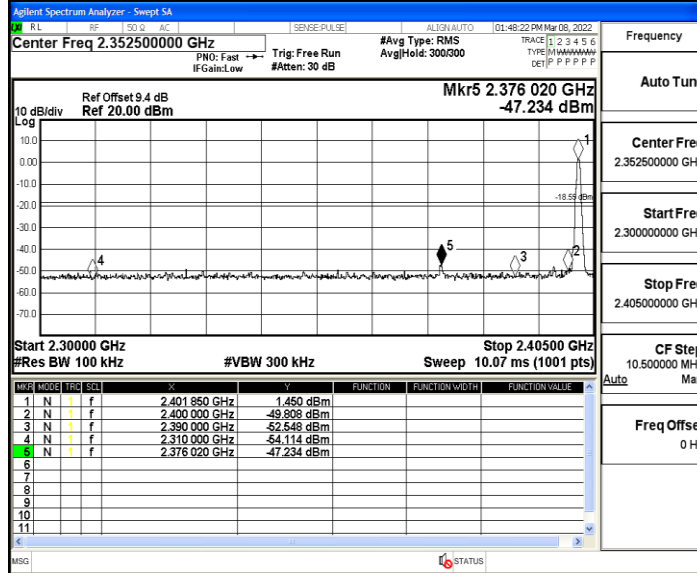


A.6 Band-edge for RF Conducted Emissions

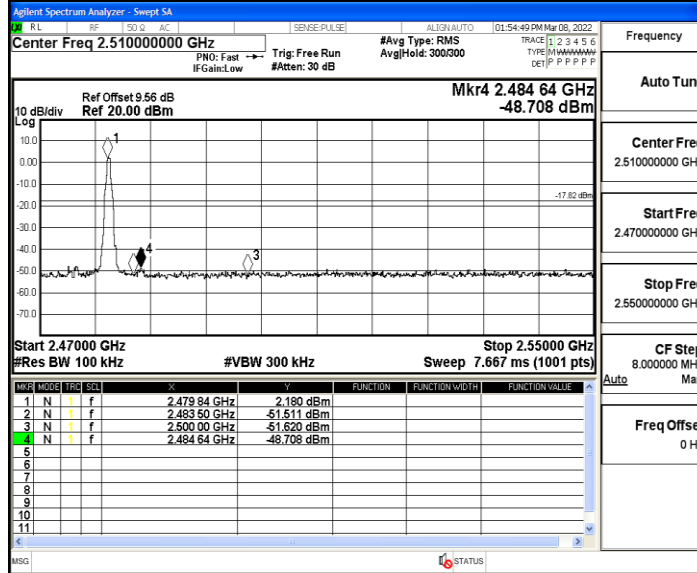
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	1.45	-47.23	≤-18.55	PASS
		High	2480	2.18	-48.71	≤-17.82	PASS
		Low	Hop_2402	-3.65	-47.72	≤-23.65	PASS
		High	Hop_2480	-2.24	-48.8	≤-22.24	PASS
2DH5	Ant1	Low	2402	-3.13	-47.69	≤-23.13	PASS
		High	2480	-3.21	-49.48	≤-23.21	PASS
		Low	Hop_2402	-5.41	-48.82	≤-25.41	PASS
		High	Hop_2480	-3.03	-48.88	≤-23.03	PASS
3DH5	Ant1	Low	2402	-2.97	-49.44	≤-22.97	PASS
		High	2480	-4.19	-48.77	≤-24.19	PASS
		Low	Hop_2402	-5.59	-49.64	≤-25.59	PASS
		High	Hop_2480	-2.39	-49.27	≤-22.39	PASS

Test Graph

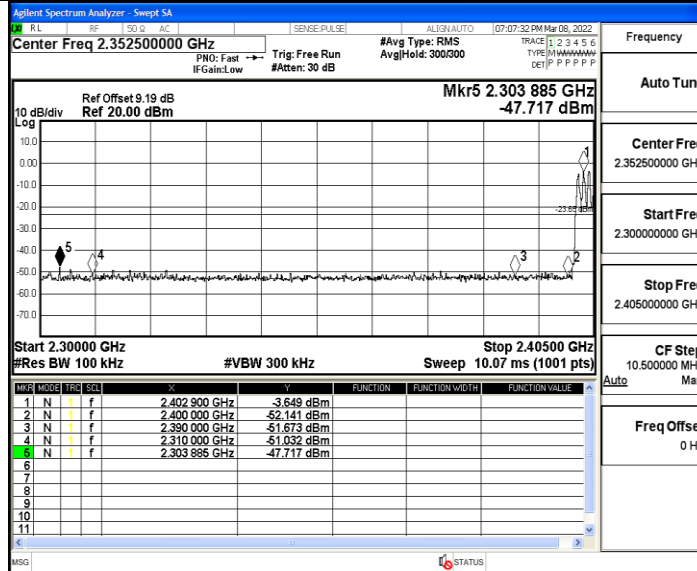
DH5_Ant1_Low_2402



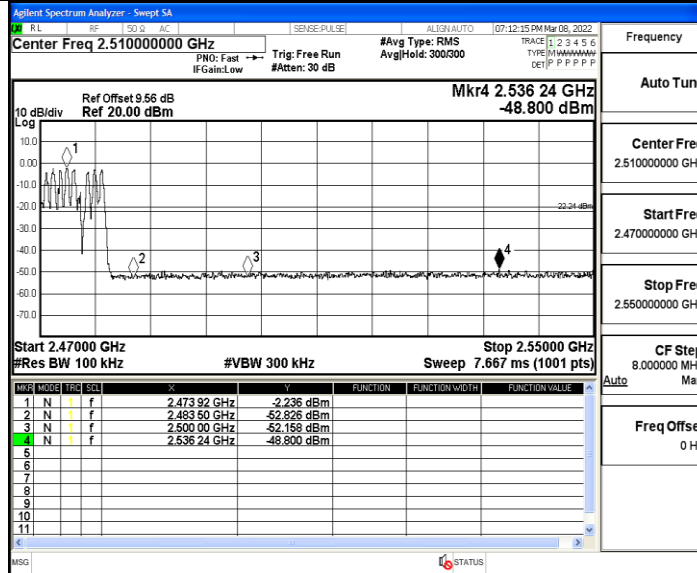
DH5_Ant1_High_2480



DH5_Ant1_Low_Hop_2402

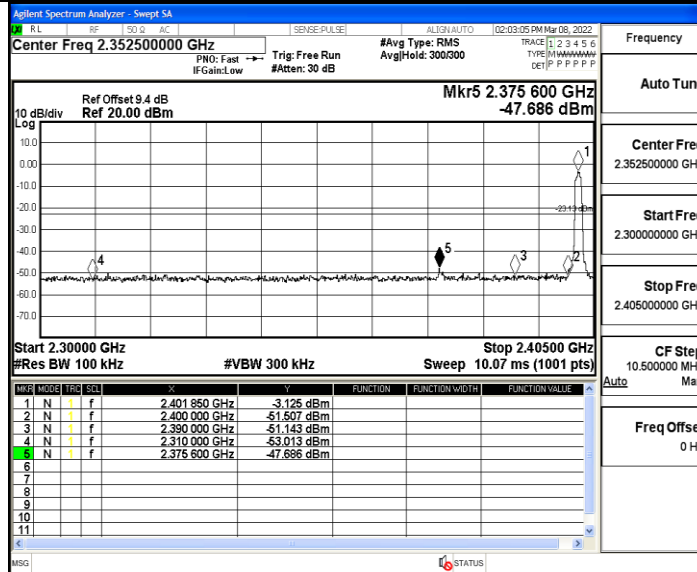


DH5_Ant1_High_Hop_2480



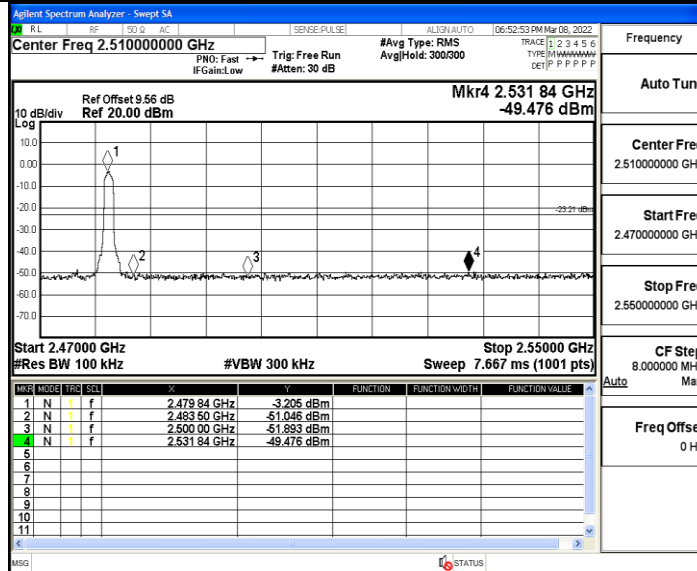
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Auto	Man
Freq Offset	0 Hz

2DH5_Ant1_Low_2402



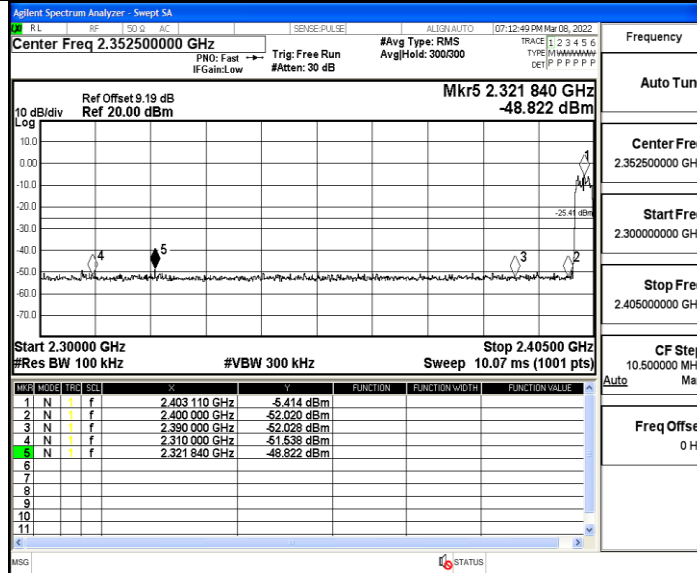
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Auto	Man
Freq Offset	0 Hz

2DH5_Ant1_High_2480

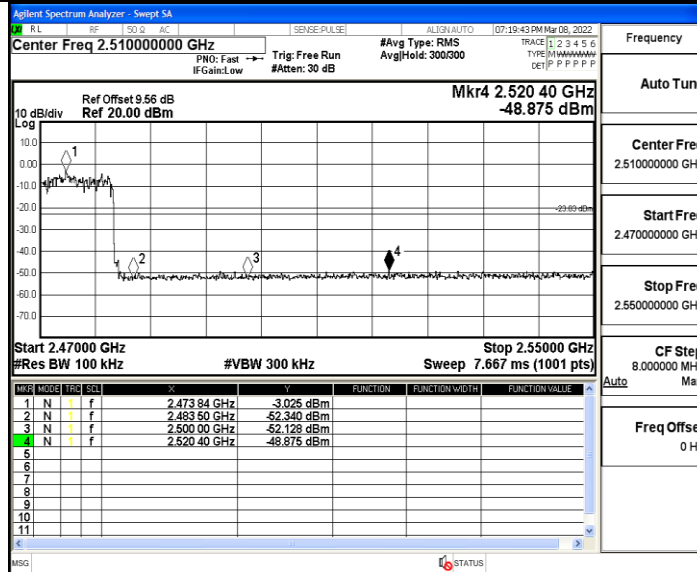


Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Auto	Man
Freq Offset	0 Hz

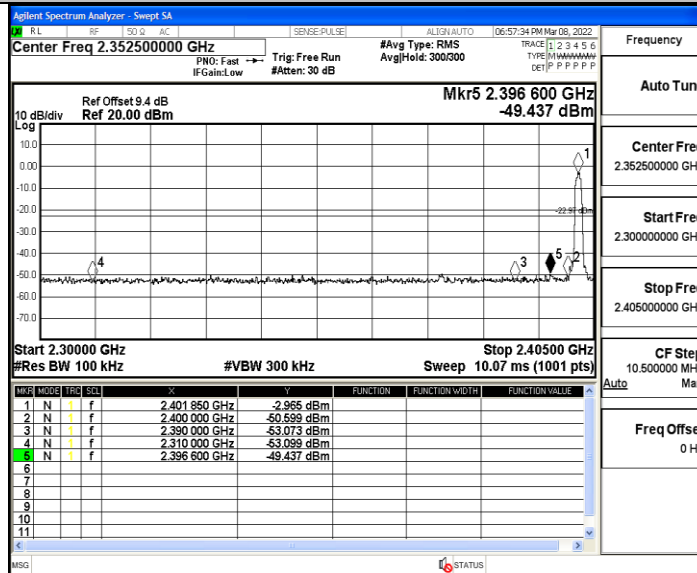
2DH5_Ant1_Low_Hop_2402



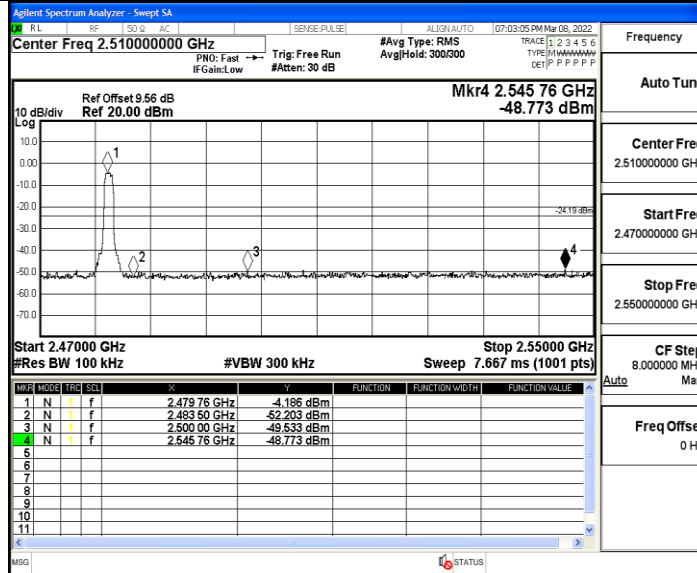
2DH5_Ant1_High_Hop_2480



3DH5_Ant1_Low_2402

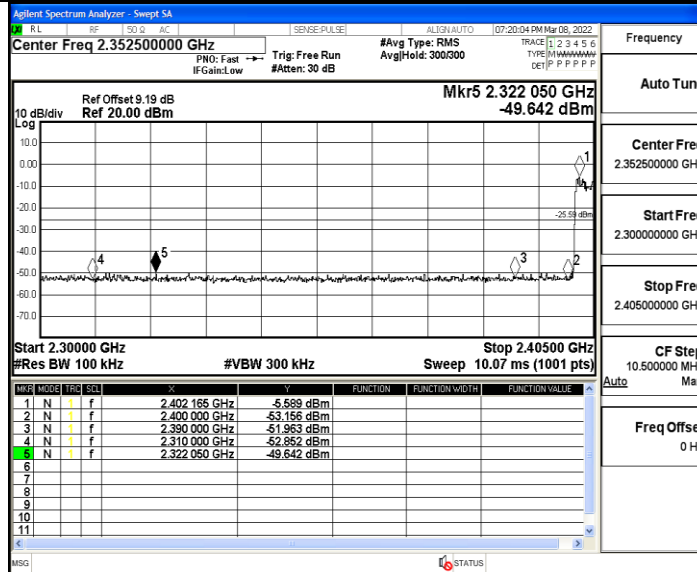


3DH5_Ant1_High_2480



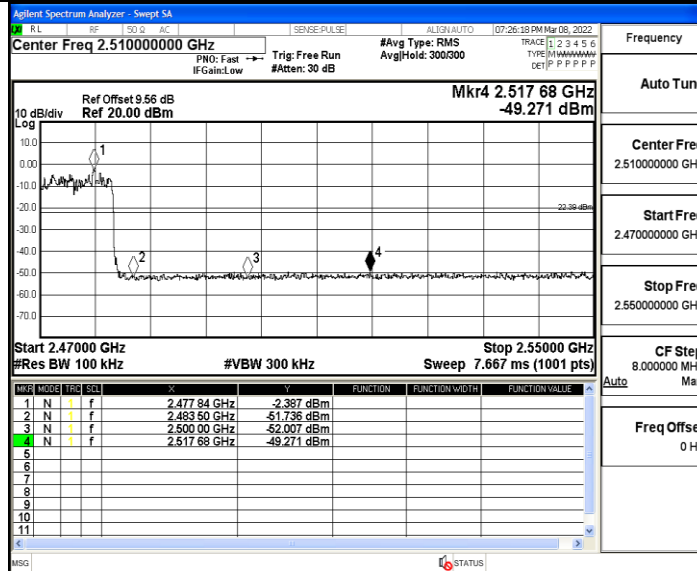
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz

3DH5_Ant1_Low_Hop_2402



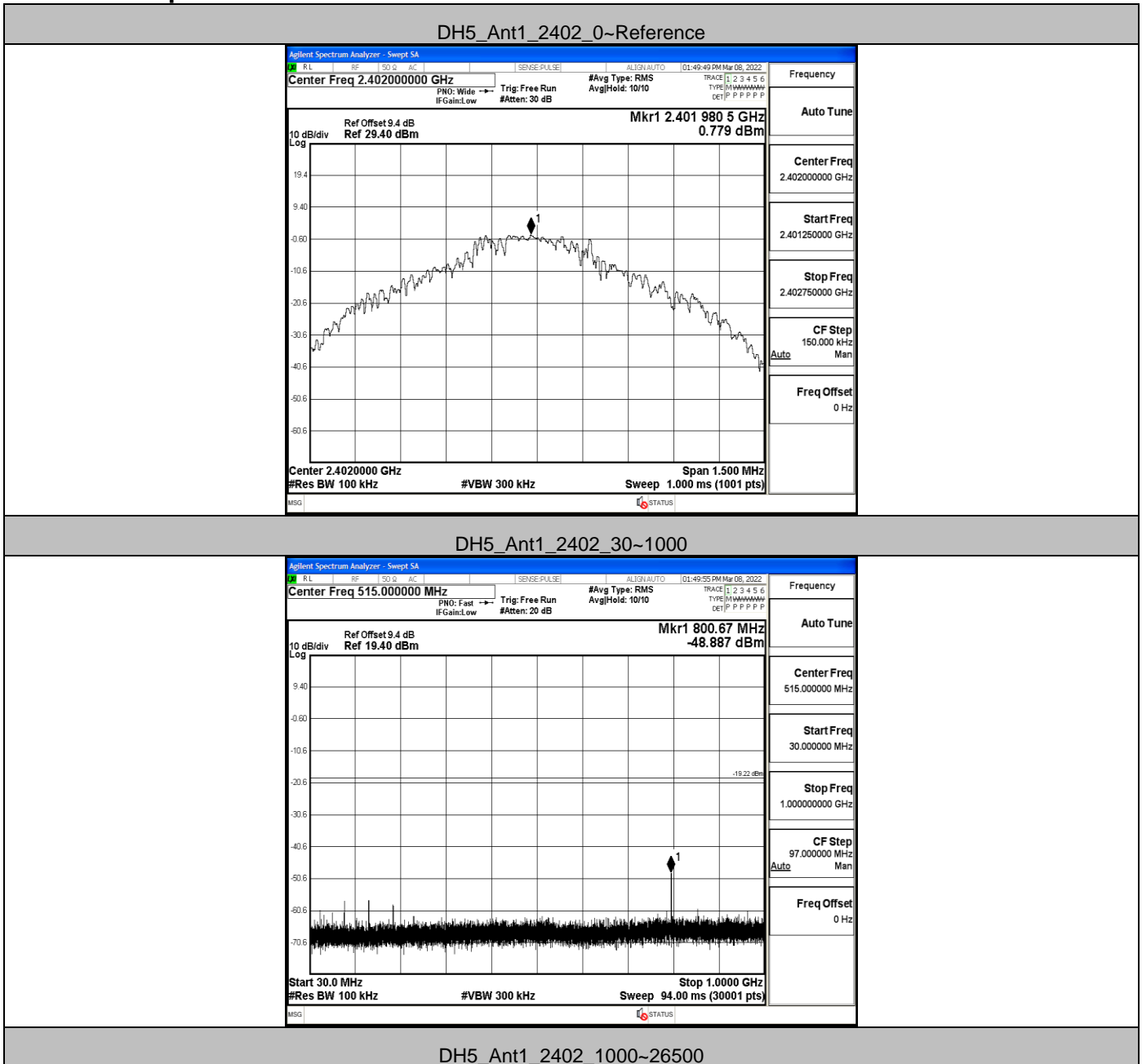
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

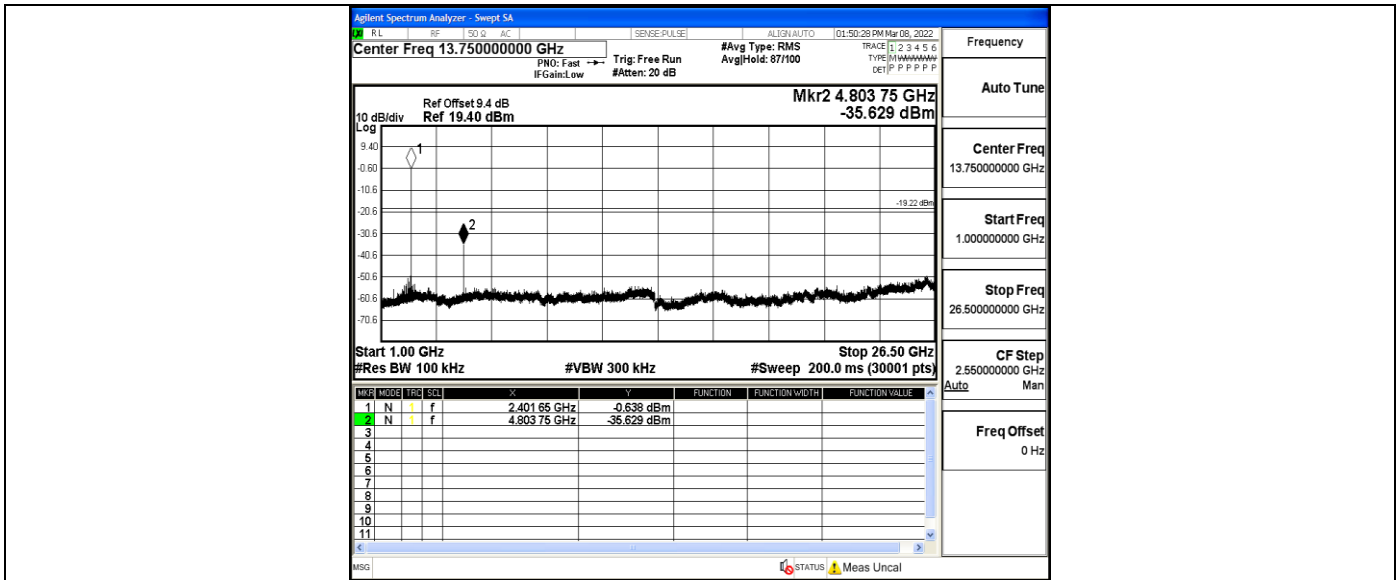
3DH5_Ant1_High_Hop_2480



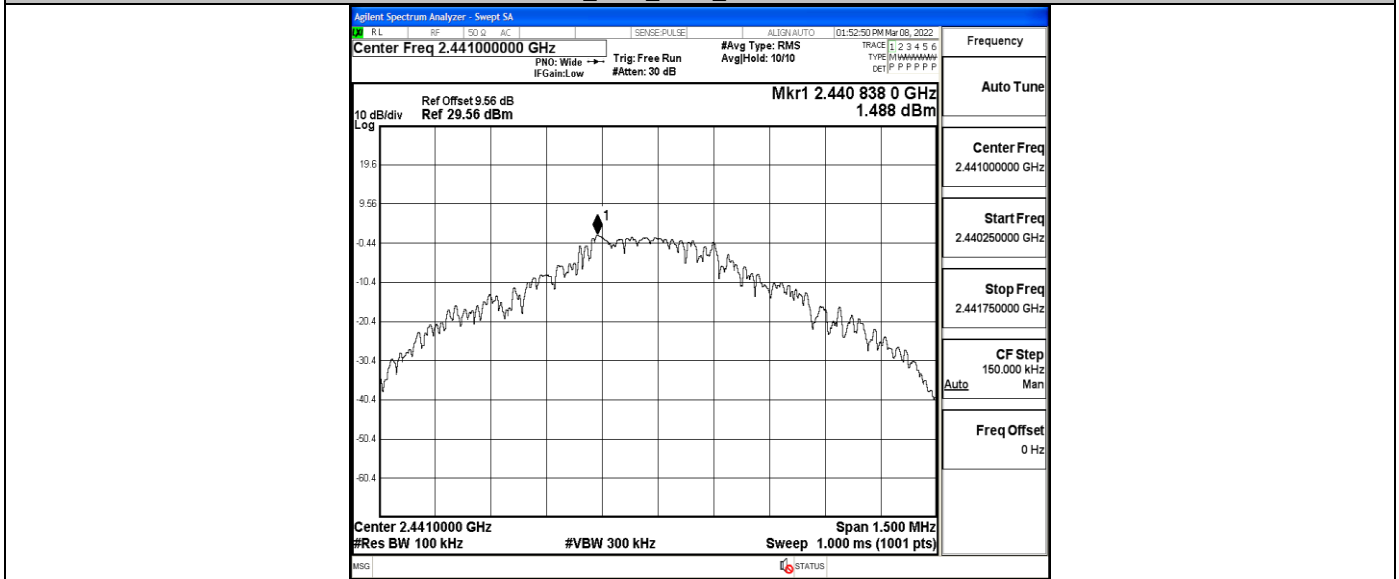
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz

A.7 RF Conducted Spurious Emissions Test Graph

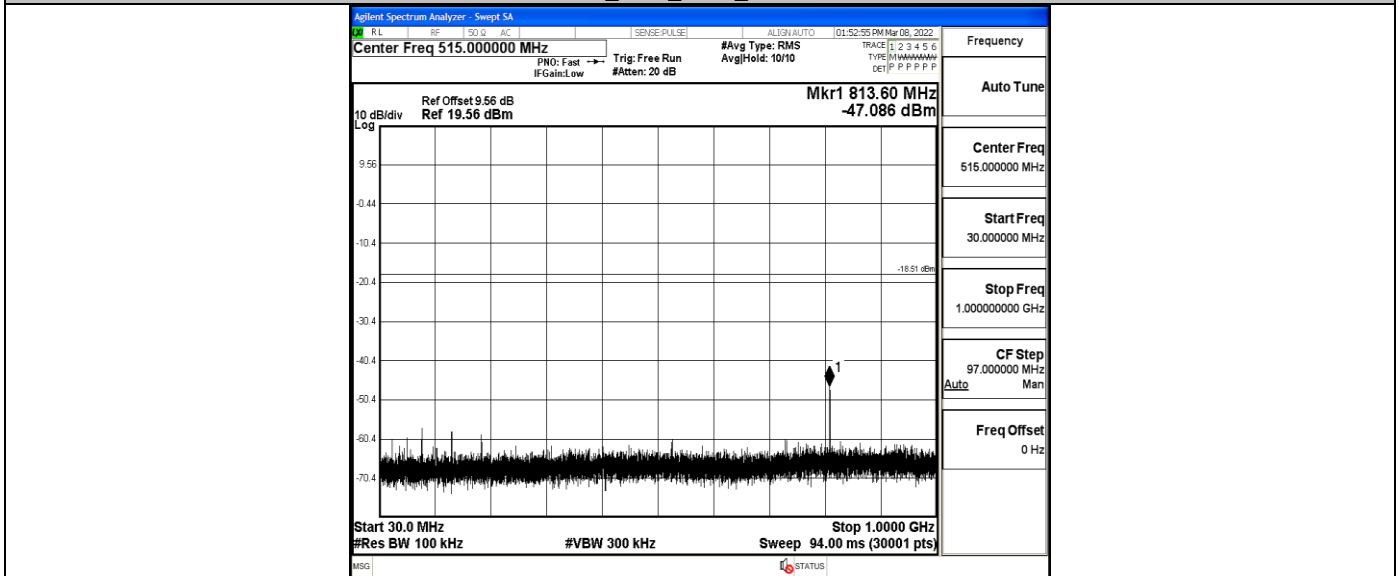




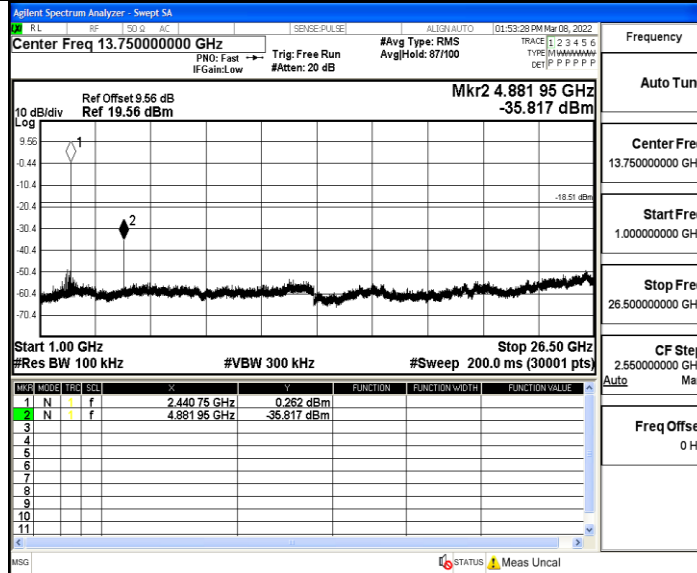
DH5_Ant1_2441_0~Reference



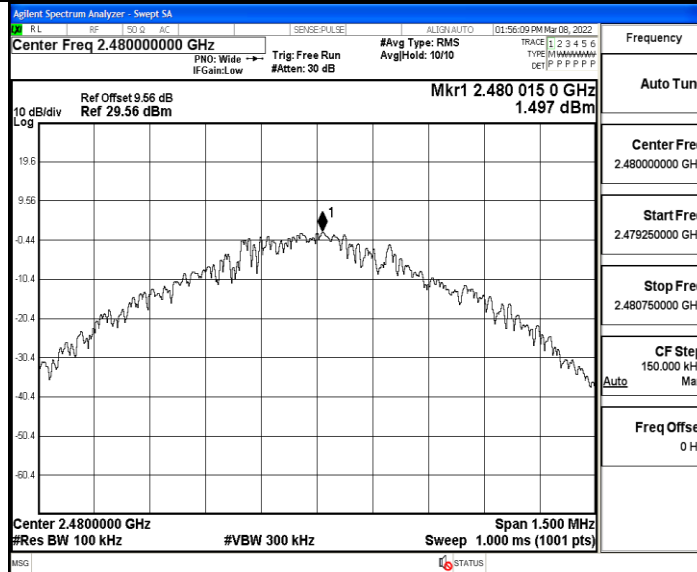
DH5_Ant1_2441_30~1000



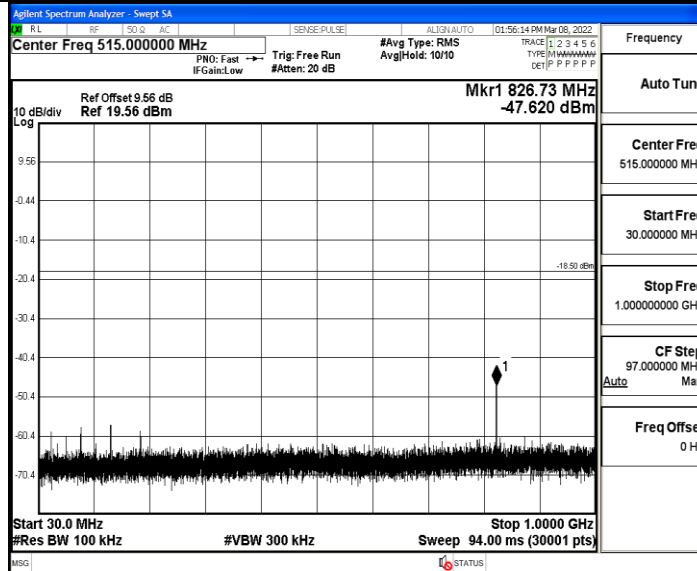
DH5_Ant1_2441_1000~26500



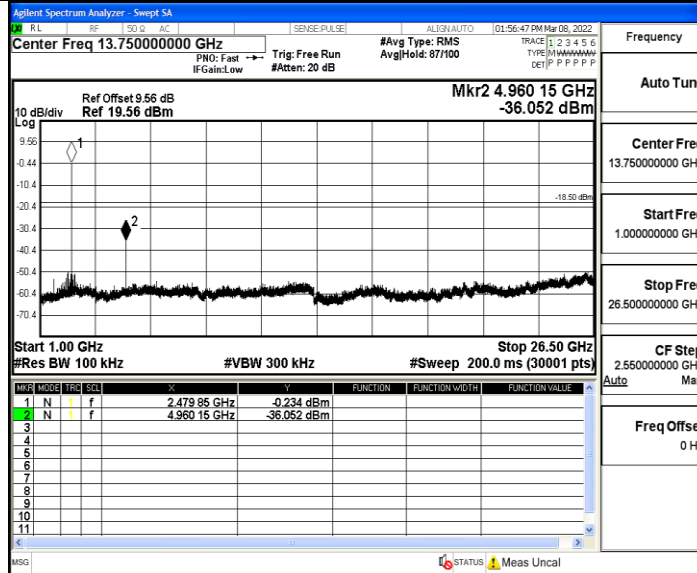
DH5_Ant1_2480_0~Reference



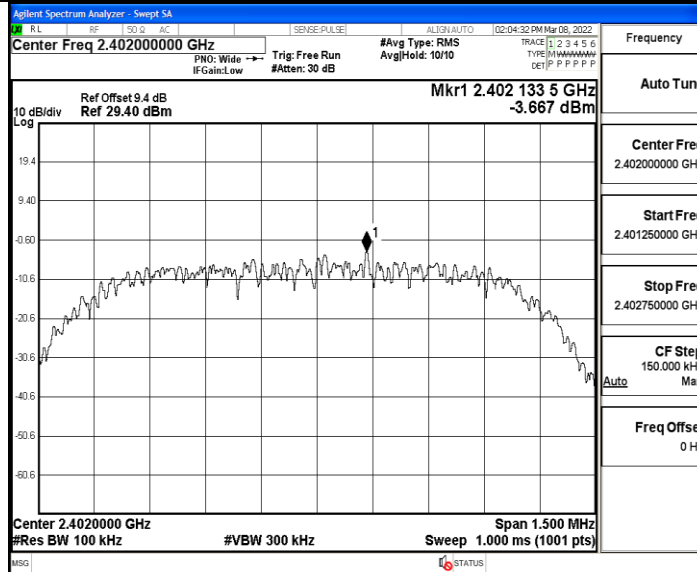
DH5_Ant1_2480_30~1000



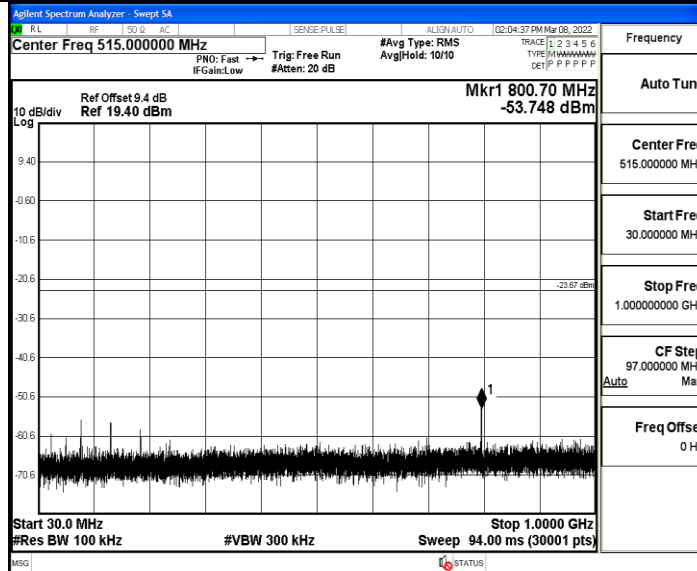
DH5_Ant1_2480_1000~26500



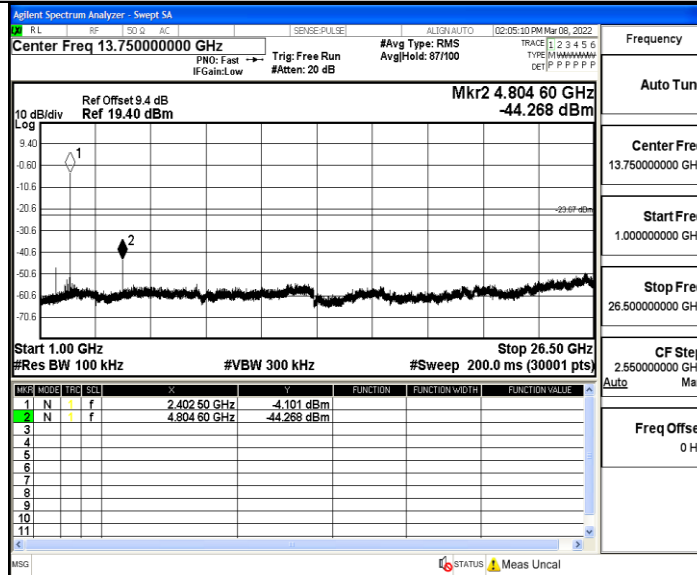
2DH5_Ant1_2402_0~Reference



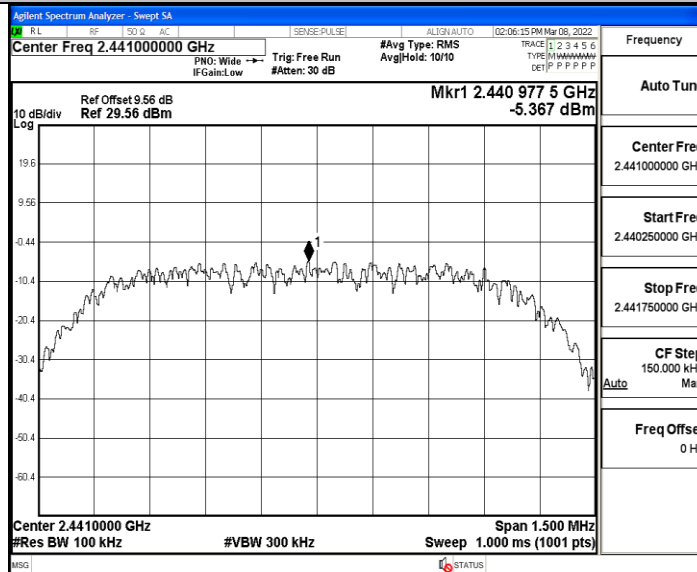
2DH5_Ant1_2402_30~1000



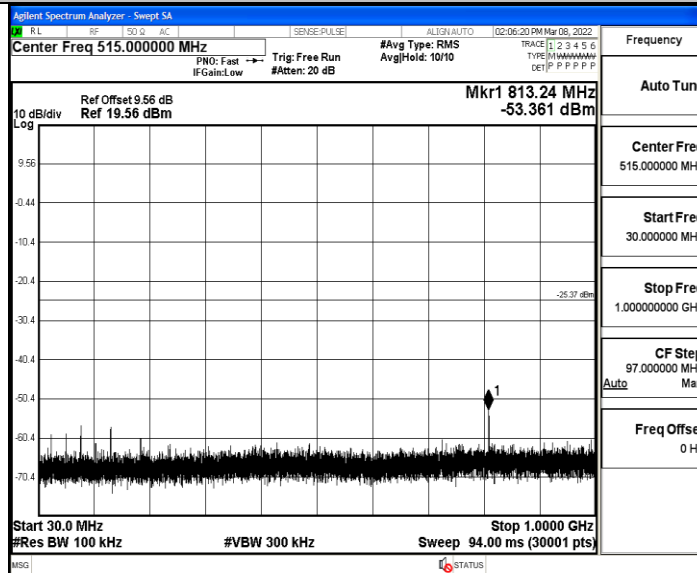
2DH5_Ant1_2402_1000~26500



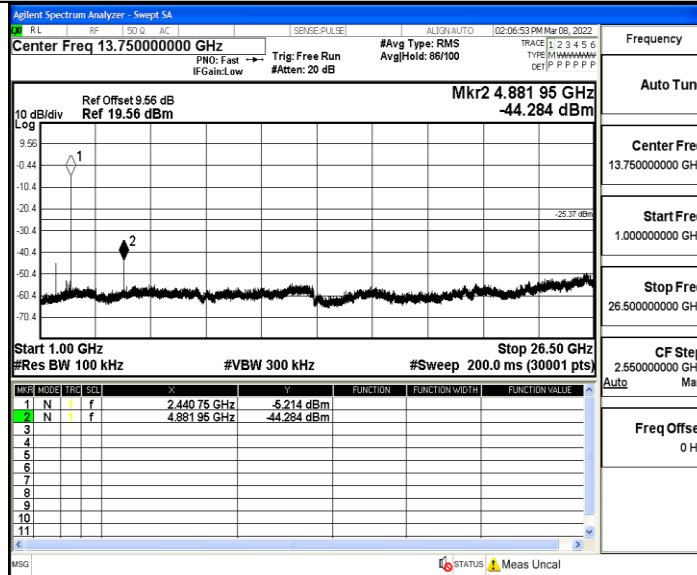
2DH5_Ant1_2441_0~Reference



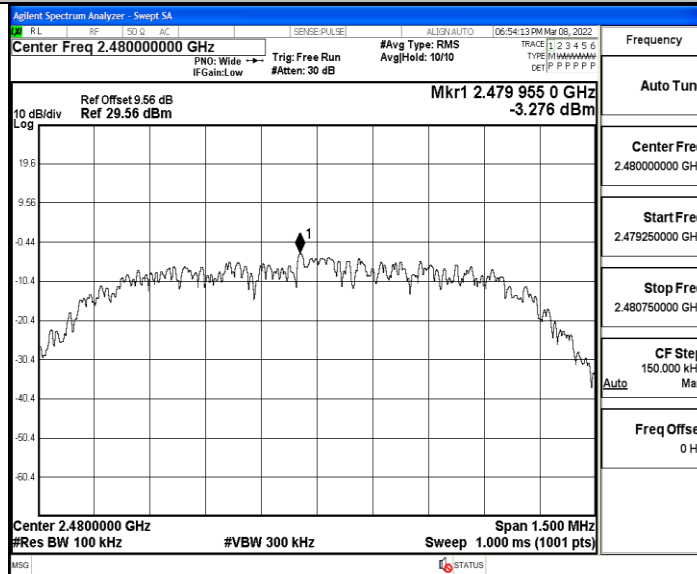
2DH5_Ant1_2441_30~1000



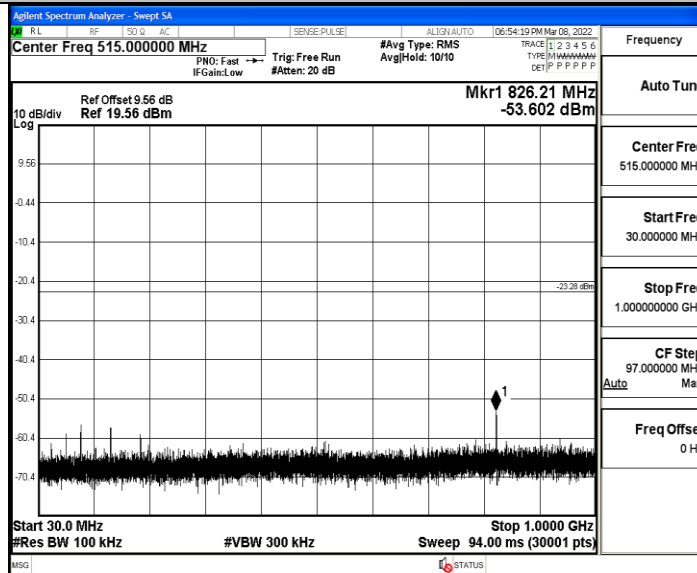
2DH5_Ant1_2441_1000~26500



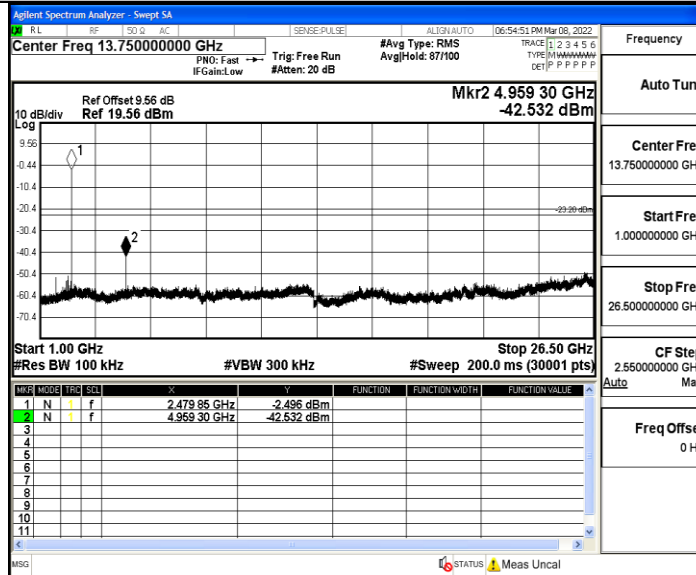
2DH5_Ant1_2480_0~Reference



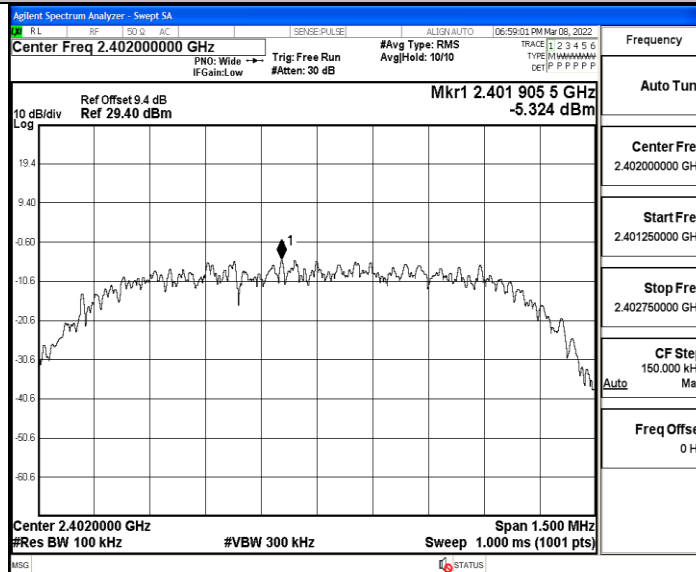
2DH5_Ant1_2480_30~1000



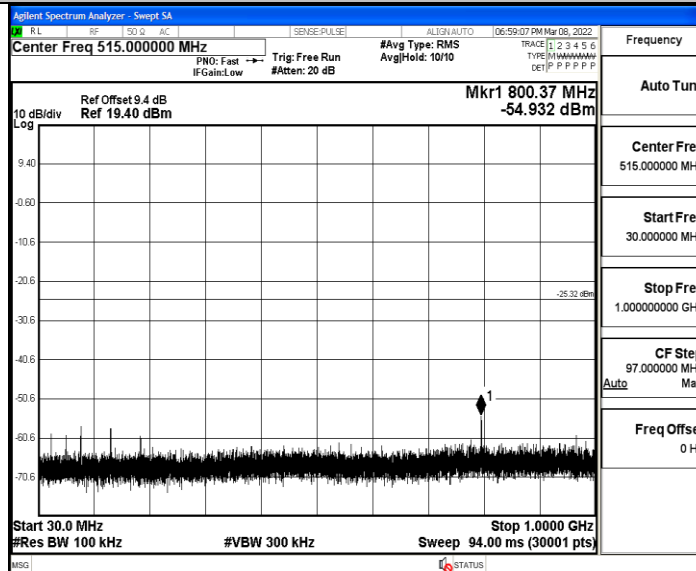
2DH5_Ant1_2480_1000~26500



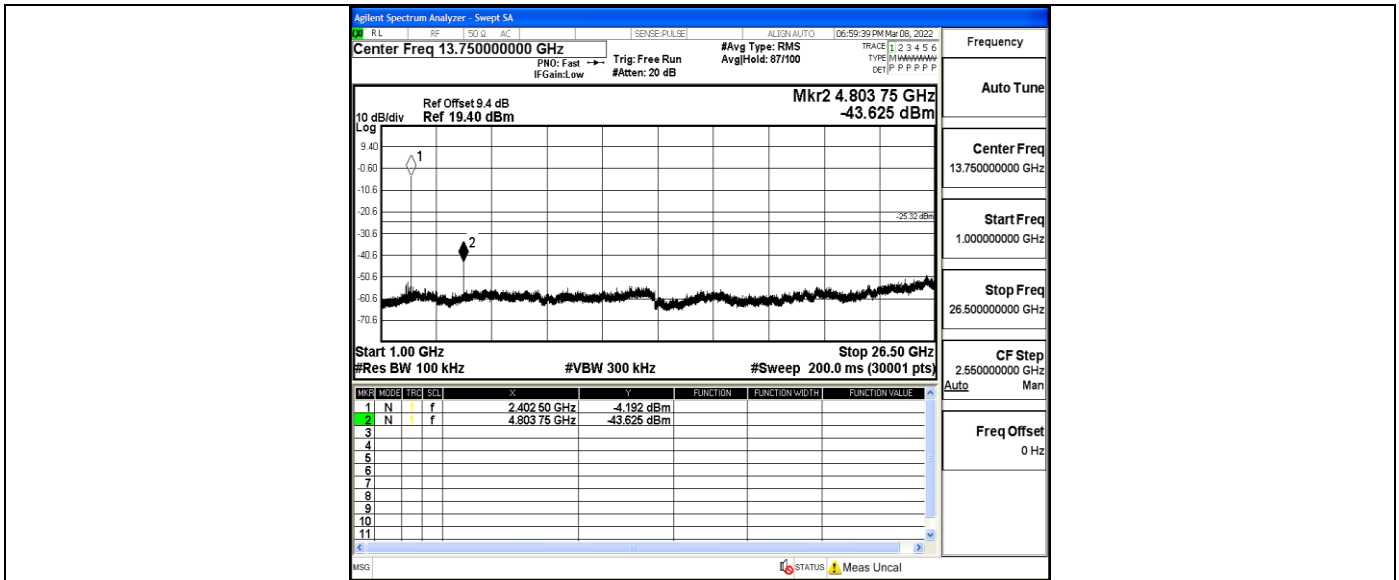
3DH5_Ant1_2402_0~Reference



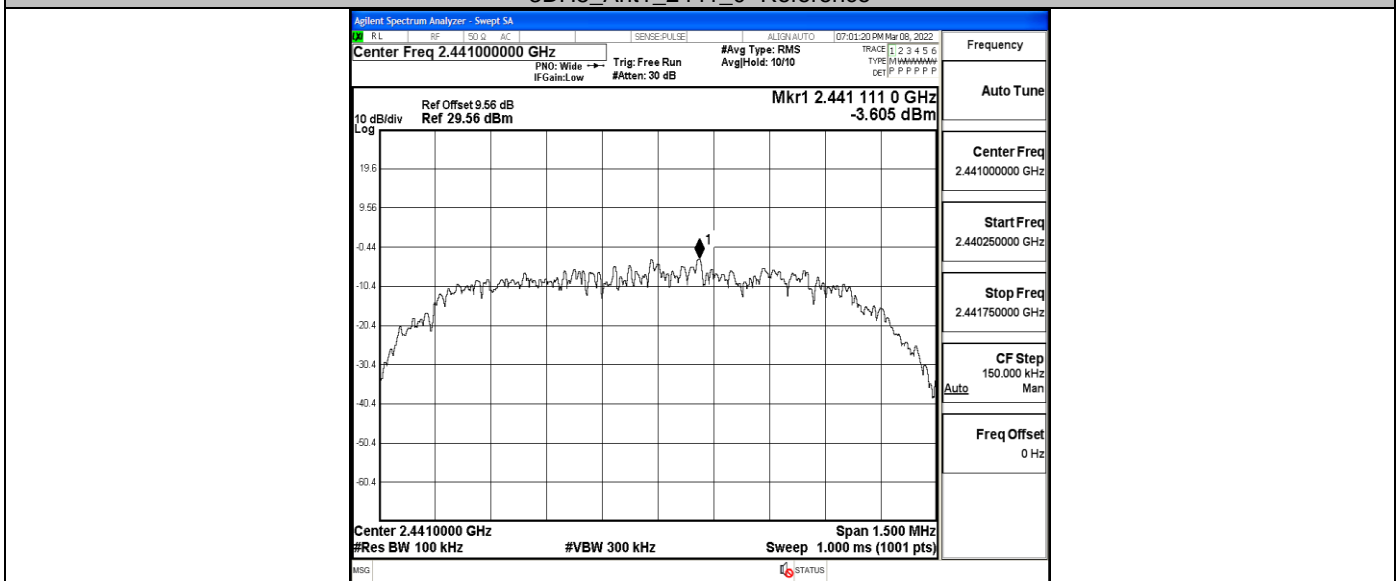
3DH5_Ant1_2402_30~1000



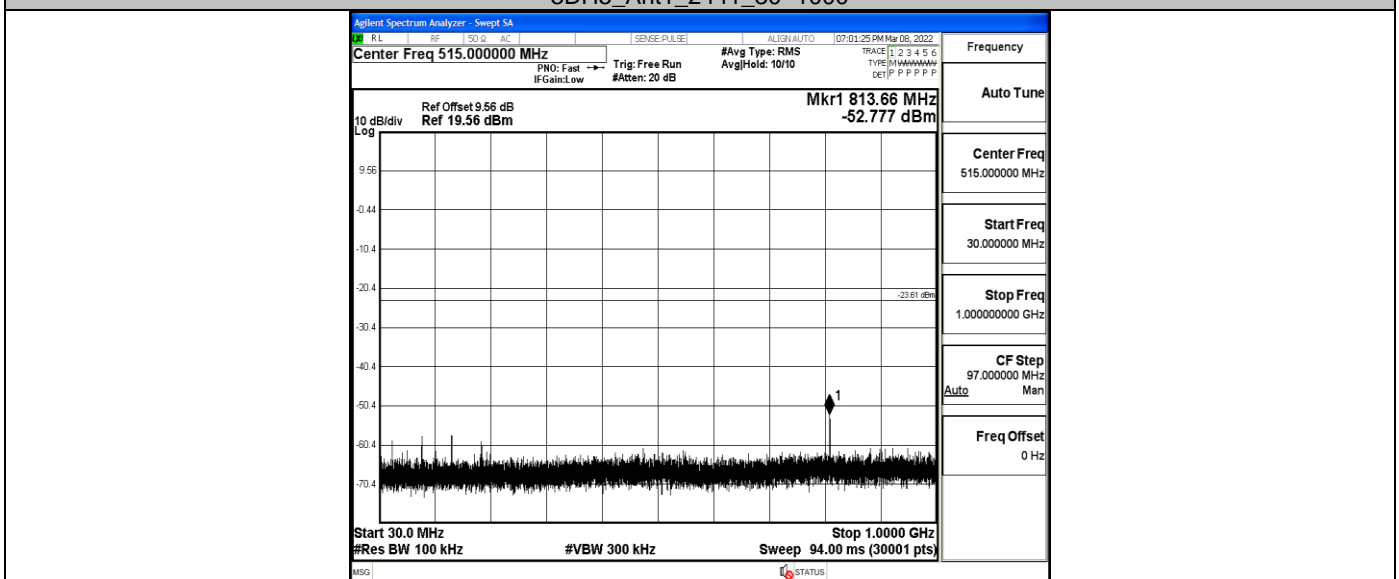
3DH5_Ant1_2402_1000~26500



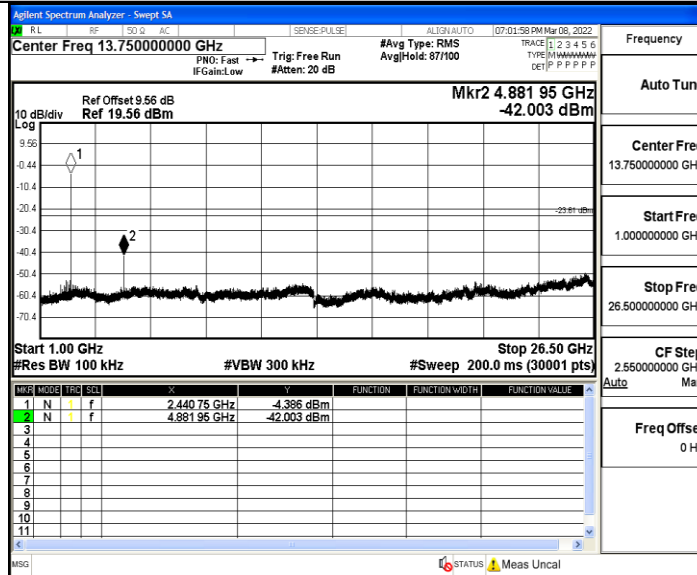
3DH5_Ant1_2441_0~Reference



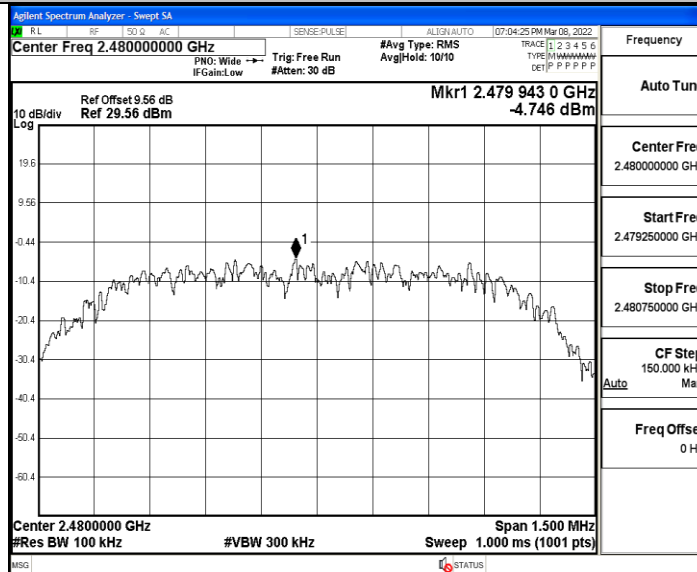
3DH5_Ant1_2441_30~1000



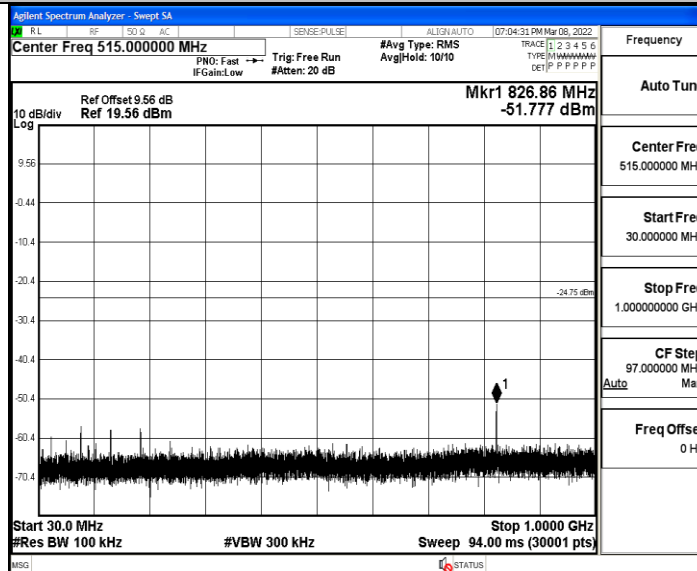
3DH5_Ant1_2441_1000~26500



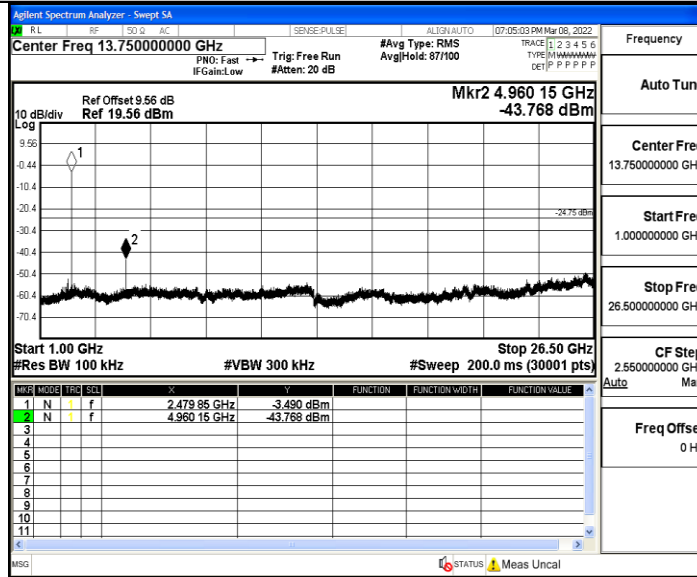
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000-26500



A.8 Restrict-band band-edge measurements

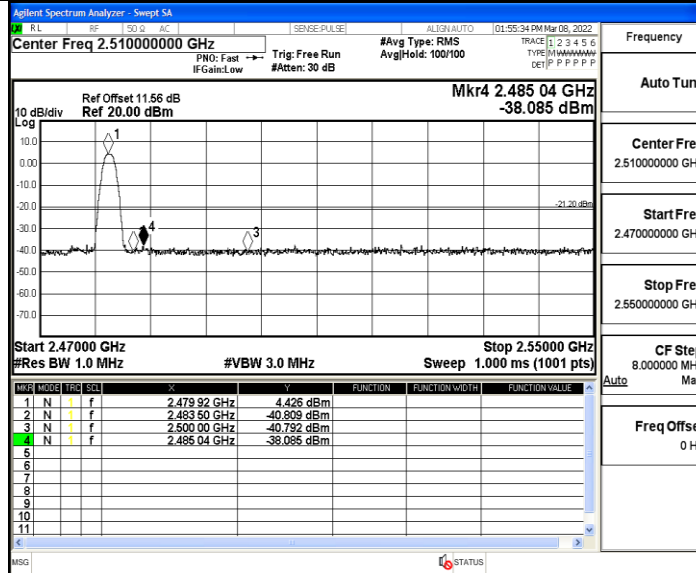
TestMode	Antenna	ChName	Channel	Detector	Freq(MHz)	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-49.07	≤-41.20	PASS
				AV	2375.915	-45.14	≤-41.20	PASS
				AV	2390.000	-48.82	≤-41.20	PASS
				Peak	2310.000	-41.84	≤-21.20	PASS
				Peak	2344.520	-38.04	≤-21.20	PASS
				Peak	2390.000	-43.3	≤-21.20	PASS
		High	2480	AV	2483.500	-47.36	≤-41.20	PASS
				AV	2484.640	-46.17	≤-41.20	PASS
				AV	2500.000	-48.15	≤-41.20	PASS
				Peak	2483.500	-40.81	≤-21.20	PASS
				Peak	2485.040	-38.08	≤-21.20	PASS
				Peak	2500.000	-40.79	≤-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-49.14	≤-41.20	PASS
				AV	2376.125	-47.29	≤-41.20	PASS
				AV	2390.000	-48.73	≤-41.20	PASS
				Peak	2310.000	-41.19	≤-21.20	PASS
				Peak	2323.205	-37.33	≤-21.20	PASS
				Peak	2390.000	-42.3	≤-21.20	PASS
		High	2480	AV	2483.500	-47.8	≤-41.20	PASS
				AV	2484.560	-47.38	≤-41.20	PASS
				AV	2500.000	-48.11	≤-41.20	PASS
				Peak	2483.500	-39.82	≤-21.20	PASS
				Peak	2490.480	-37.72	≤-21.20	PASS
				Peak	2500.000	-41.2	≤-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-49.17	≤-41.20	PASS
				AV	2376.020	-47.32	≤-41.20	PASS
				AV	2390.000	-48.84	≤-41.20	PASS
				Peak	2310.000	-40.78	≤-21.20	PASS
				Peak	2365.625	-38.14	≤-21.20	PASS
				Peak	2390.000	-40.93	≤-21.20	PASS
		High	2480	AV	2483.500	-47.9	≤-41.20	PASS
				AV	2484.640	-47.43	≤-41.20	PASS
				AV	2500.000	-48.16	≤-41.20	PASS
				Peak	2483.500	-40.49	≤-21.20	PASS
				Peak	2489.680	-37.98	≤-21.20	PASS
				Peak	2500.000	-40.49	≤-21.20	PASS

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

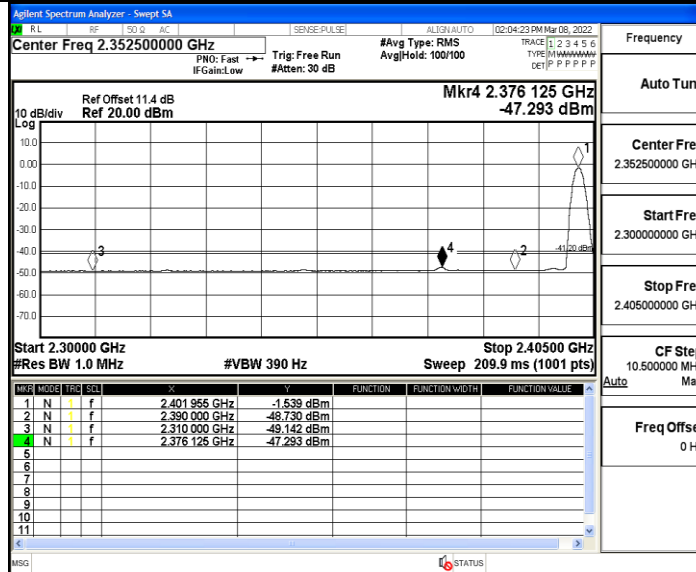


DH5_Ant1_High_2480_Peak



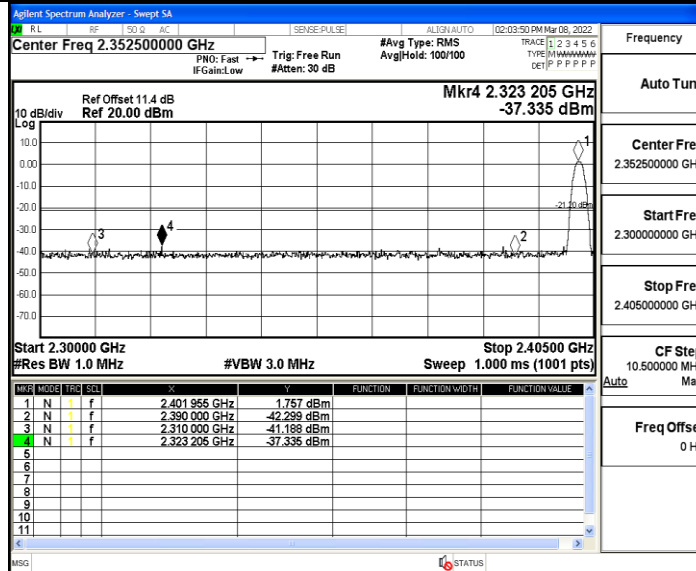
Frequency	Auto Tune
Center Freq	2.51000000 GHz
Start Freq	2.47000000 GHz
Stop Freq	2.55000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz

2DH5_Ant1_Low_2402_AV



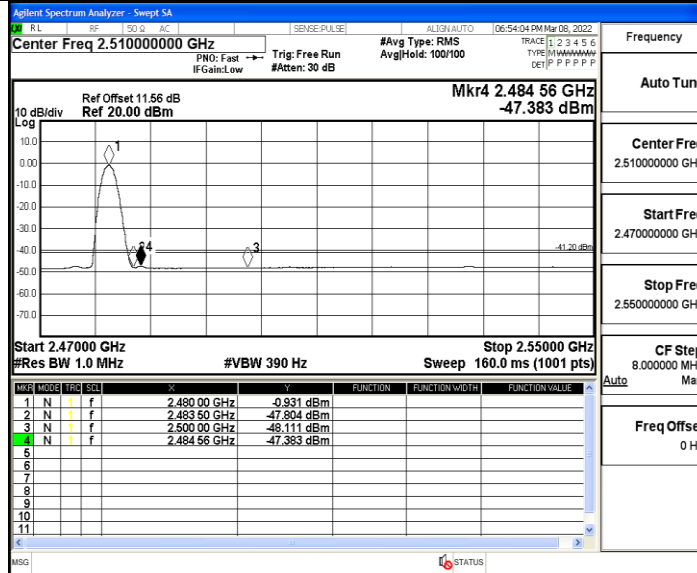
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

2DH5_Ant1_Low_2402_Peak

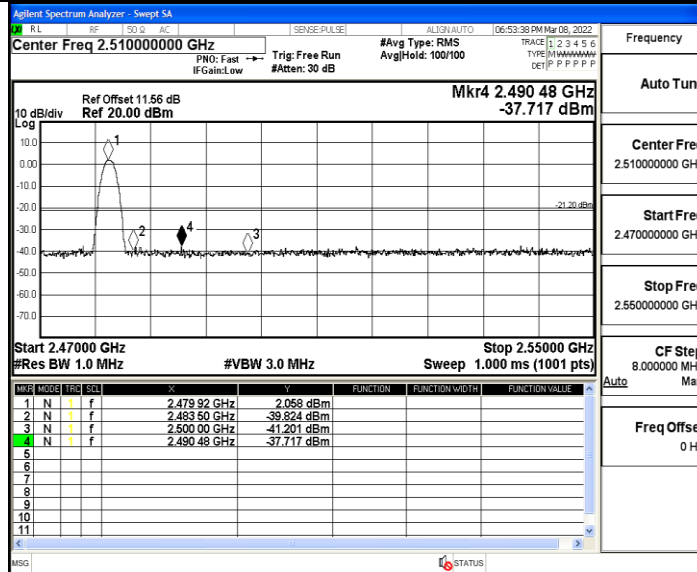


Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

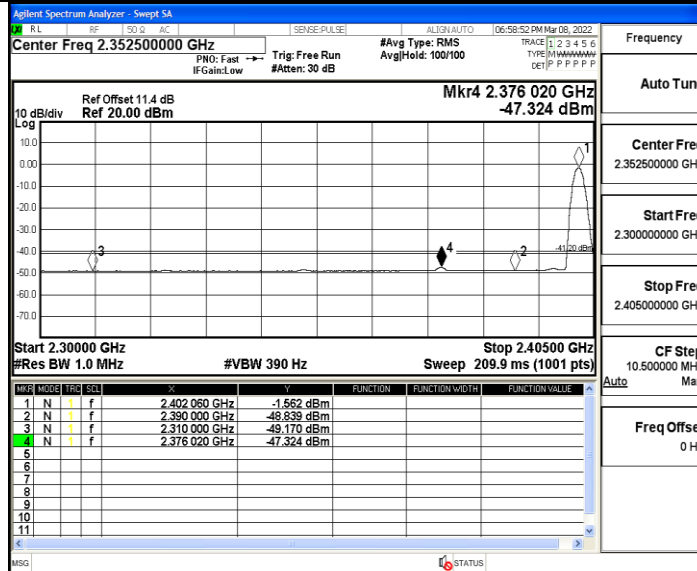
2DH5_Ant1_High_2480_AV



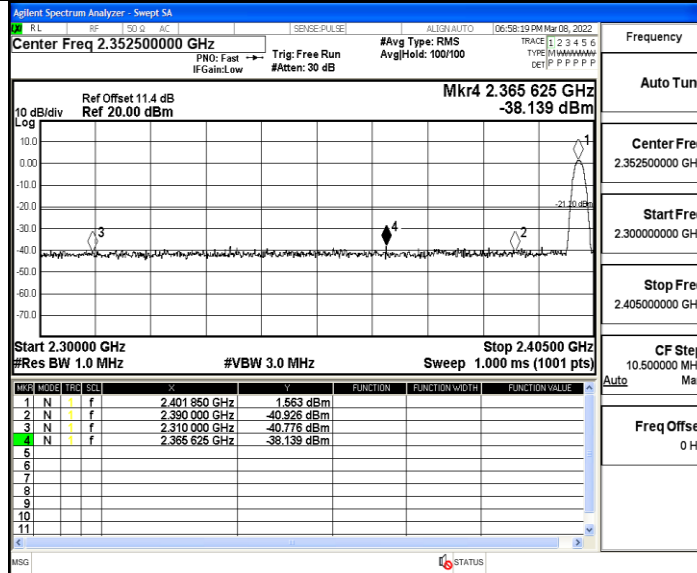
2DH5_Ant1_High_2480_Peak



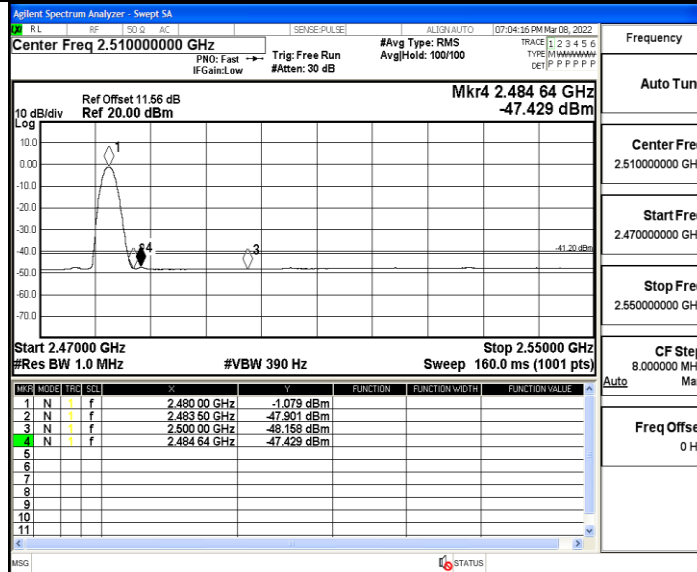
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_Peak



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_Peak

