

## Appendix A

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

Product Name: Bluetooth Headphone

Trade Mark: Vivitar

Test Model: VWC-105

FCC ID: 2AL9B-VWC105

### Environmental Conditions

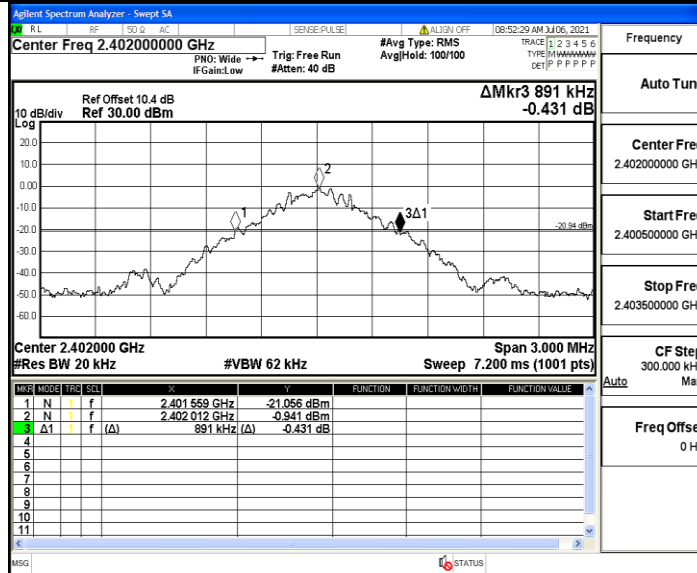
Temperature:	22.8° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen

#### A.1 20 dB Bandwidth

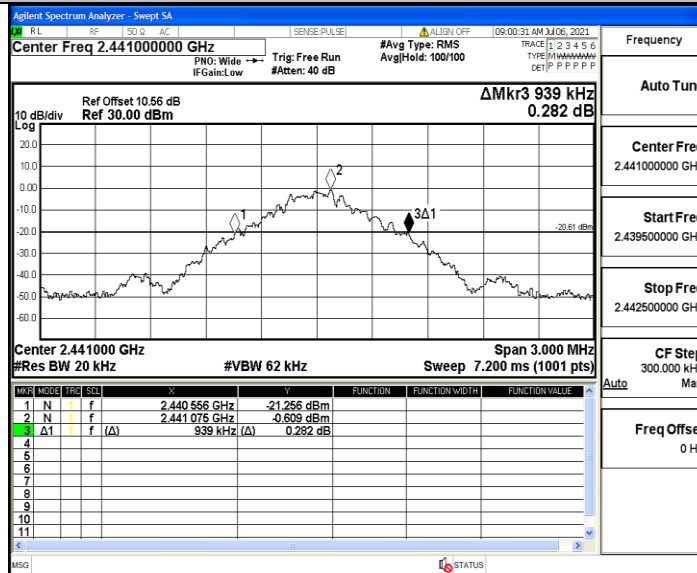
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.891	2401.559	2402.450	---	PASS
		2441	0.939	2440.556	2441.495	---	PASS
		2480	0.933	2479.556	2480.489	---	PASS
2DH5	Ant1	2402	1.260	2401.385	2402.645	---	PASS
		2441	1.257	2440.385	2441.642	---	PASS
		2480	1.257	2479.385	2480.642	---	PASS

Test Graph

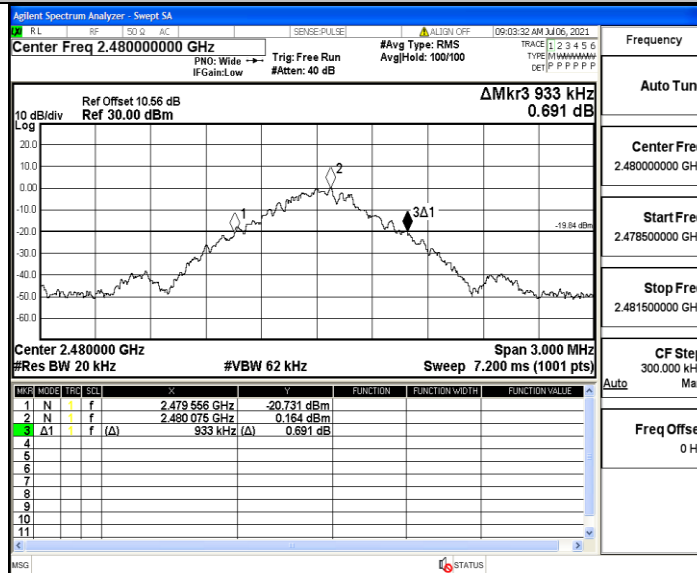
DH5\_Ant1\_2402



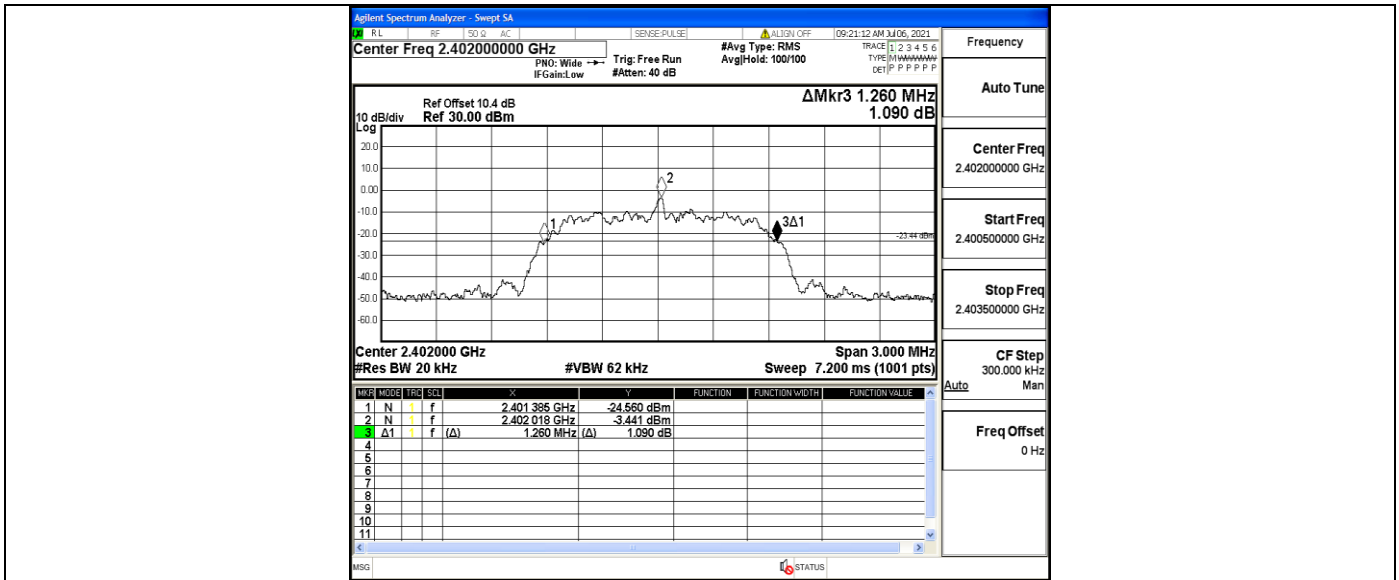
DH5\_Ant1\_2441



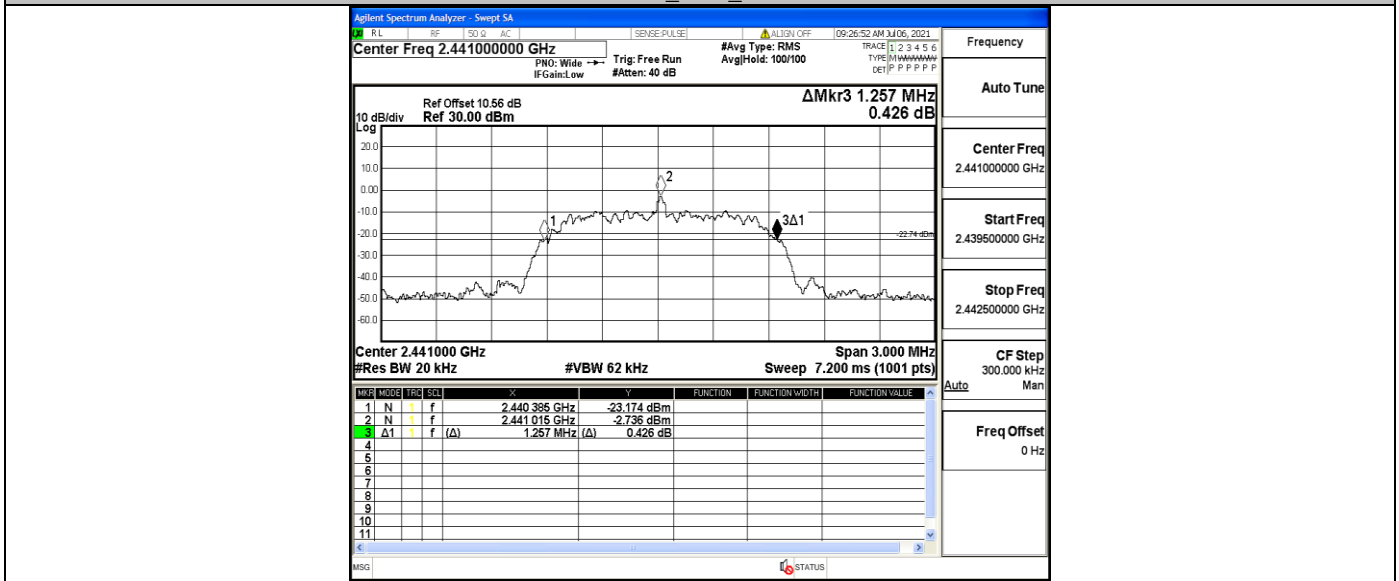
DH5\_Ant1\_2480



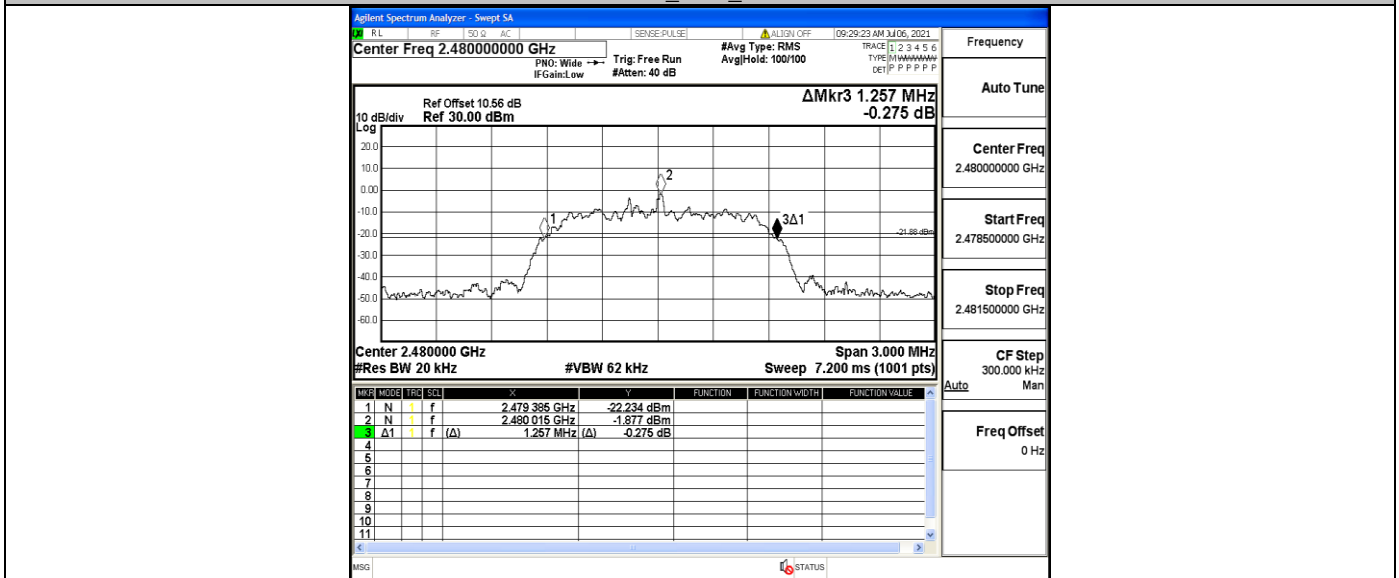
2DH5\_Ant1\_2402



2DH5\_Ant1\_2441



2DH5\_Ant1\_2480

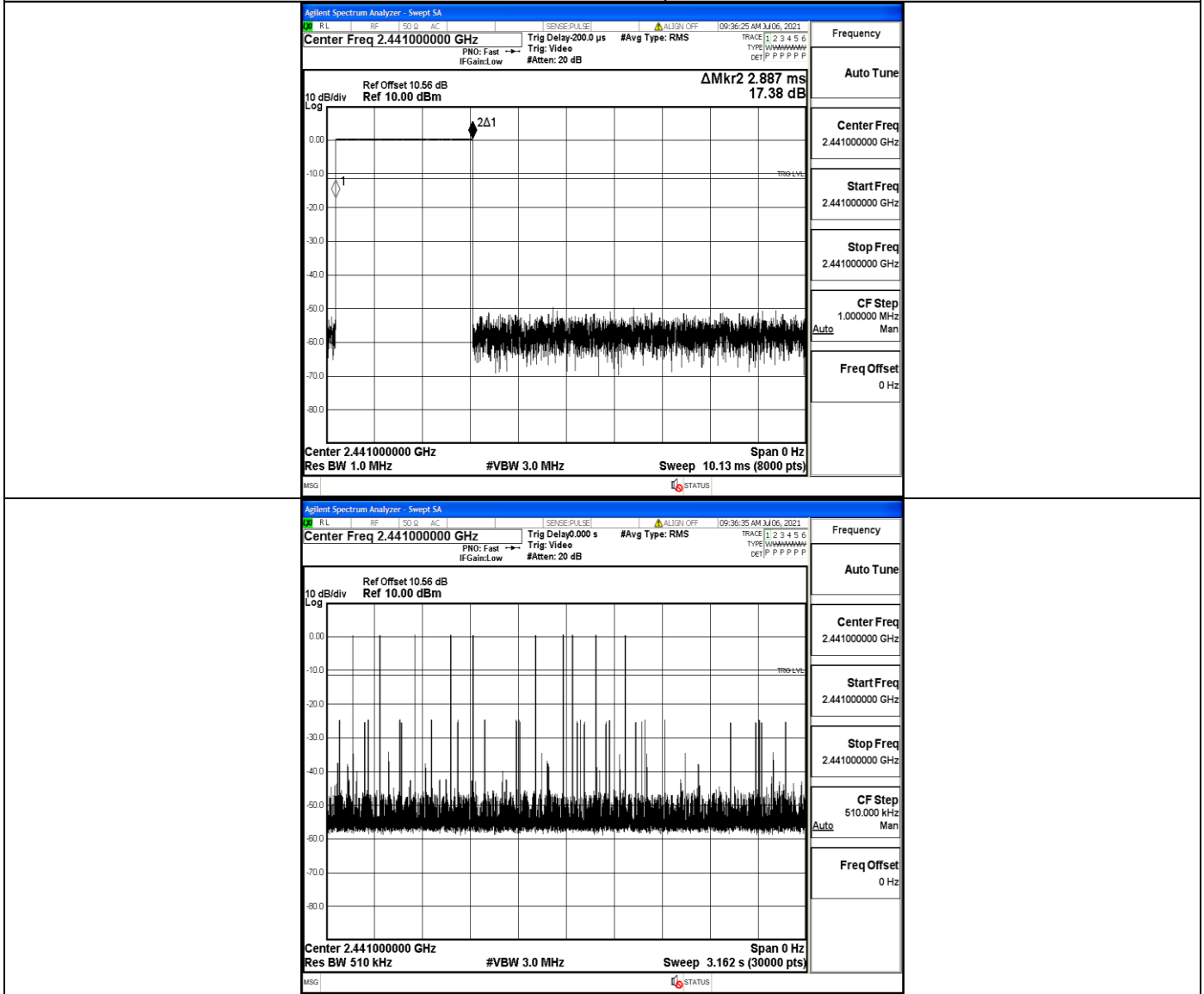


**A.2 Dwell Time**

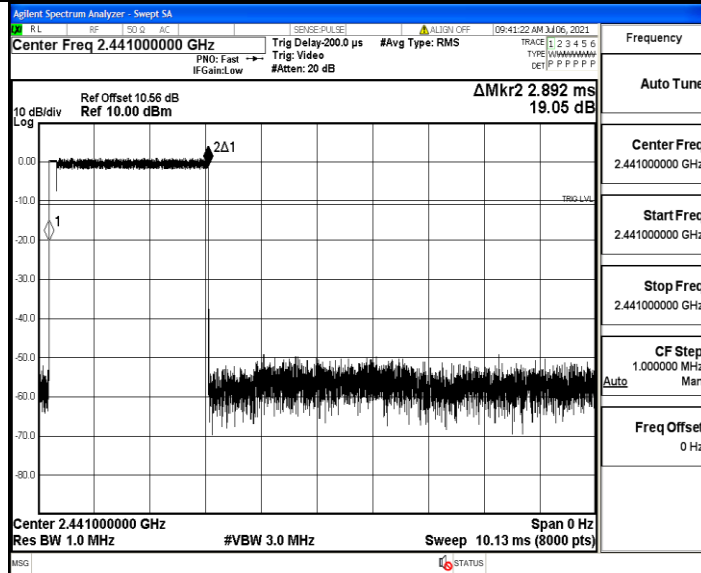
TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.89	110	0.318	<=0.4	PASS
2DH5	Ant1	Hop	2.89	110	0.318	<=0.4	PASS

### Test Graph

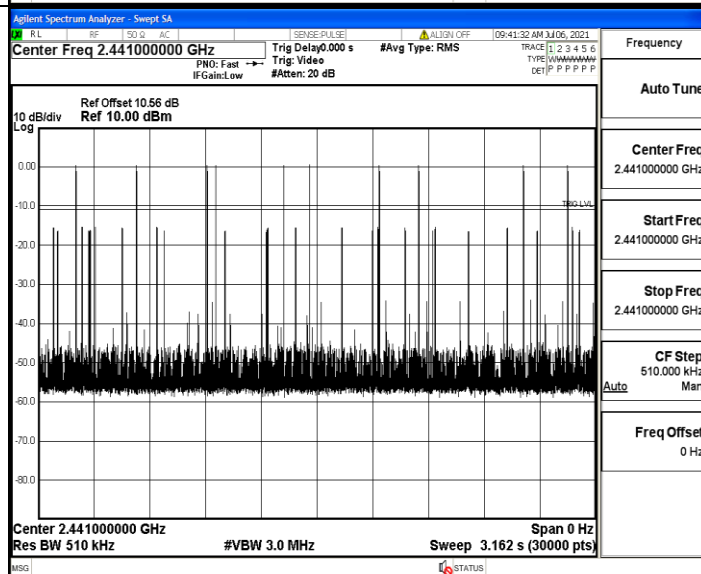
#### DH5\_Ant1\_Hop



2DH5\_Ant1\_Hop



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



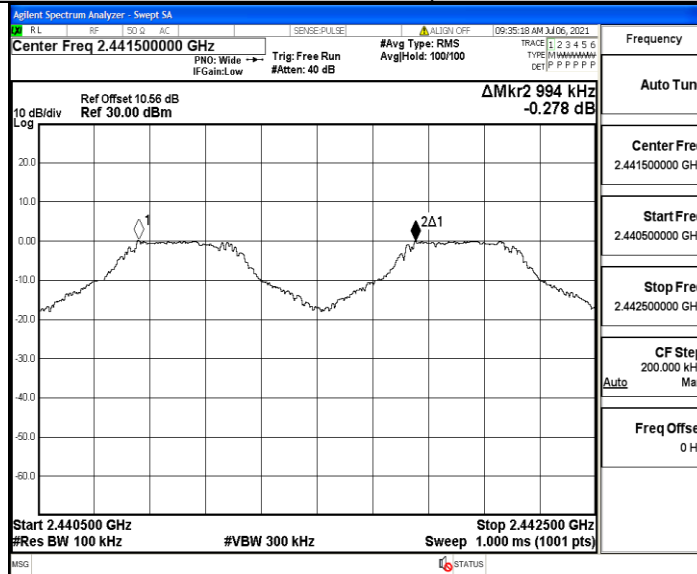
Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.441000000 GHz
Stop Freq 2.441000000 GHz
CF Step 510.000 kHz Auto Man
Freq Offset 0 Hz

### A.3 Carrier Frequency Separation

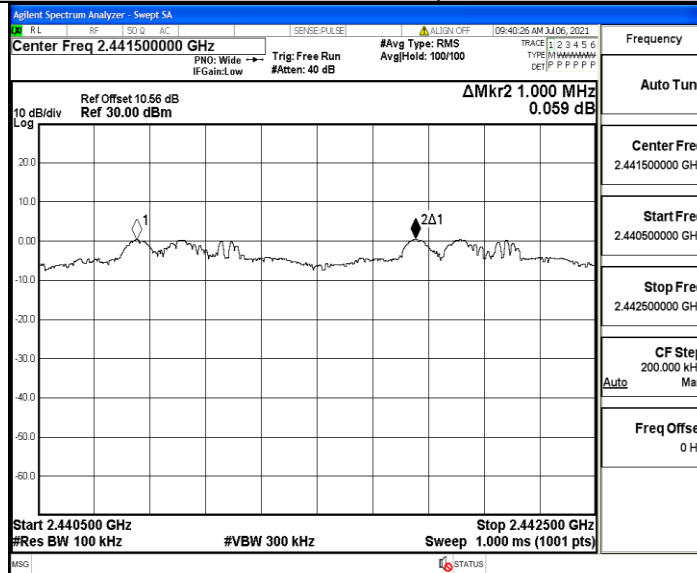
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.994	$\geq 0.939$	PASS
2DH5	Ant1	Hop	1.000	$\geq 0.840$	PASS

### Test Graph

#### DH5\_Ant1\_Hop



#### 2DH5\_Ant1\_Hop

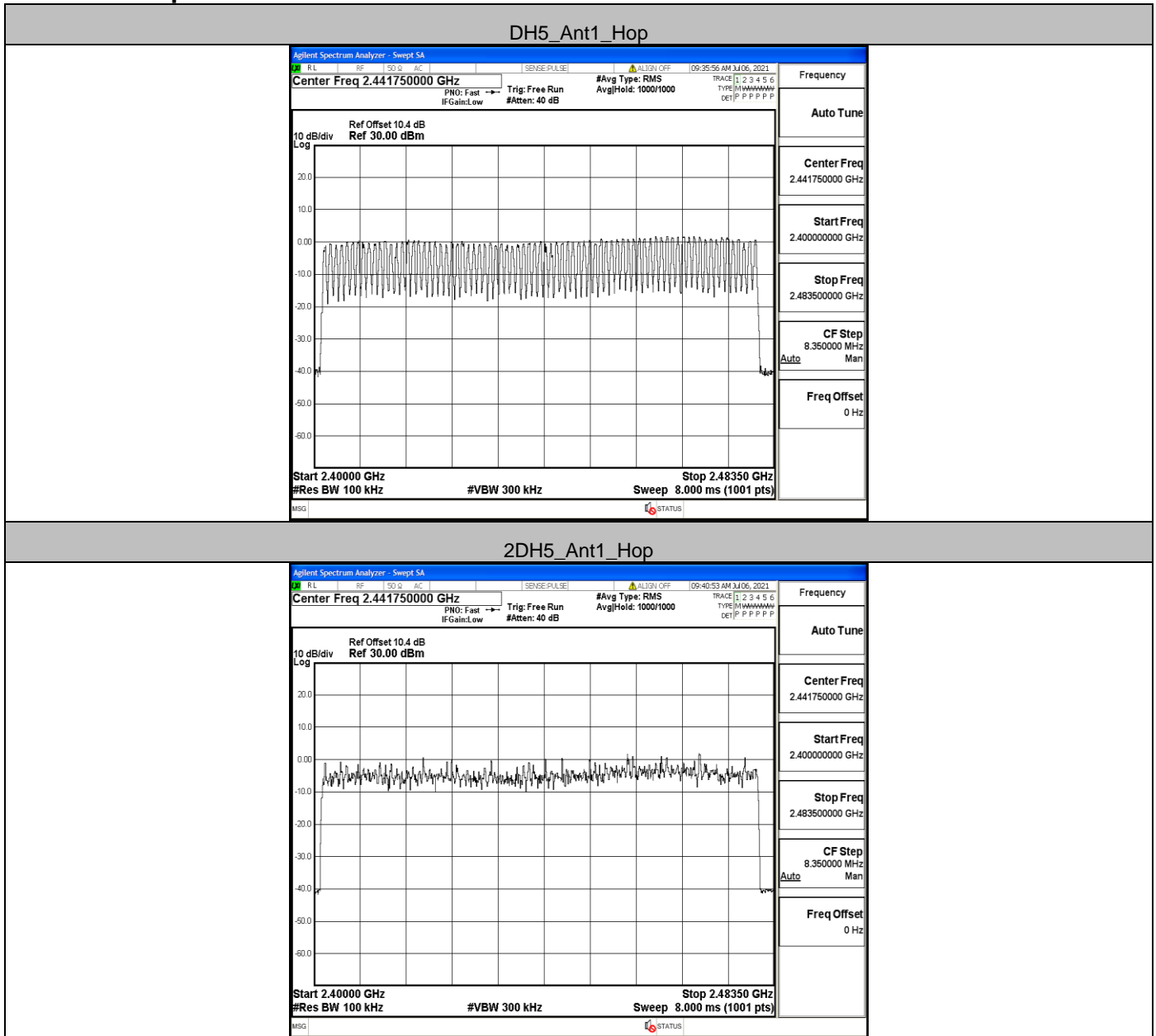




### A.4 Hopping Channel Number

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

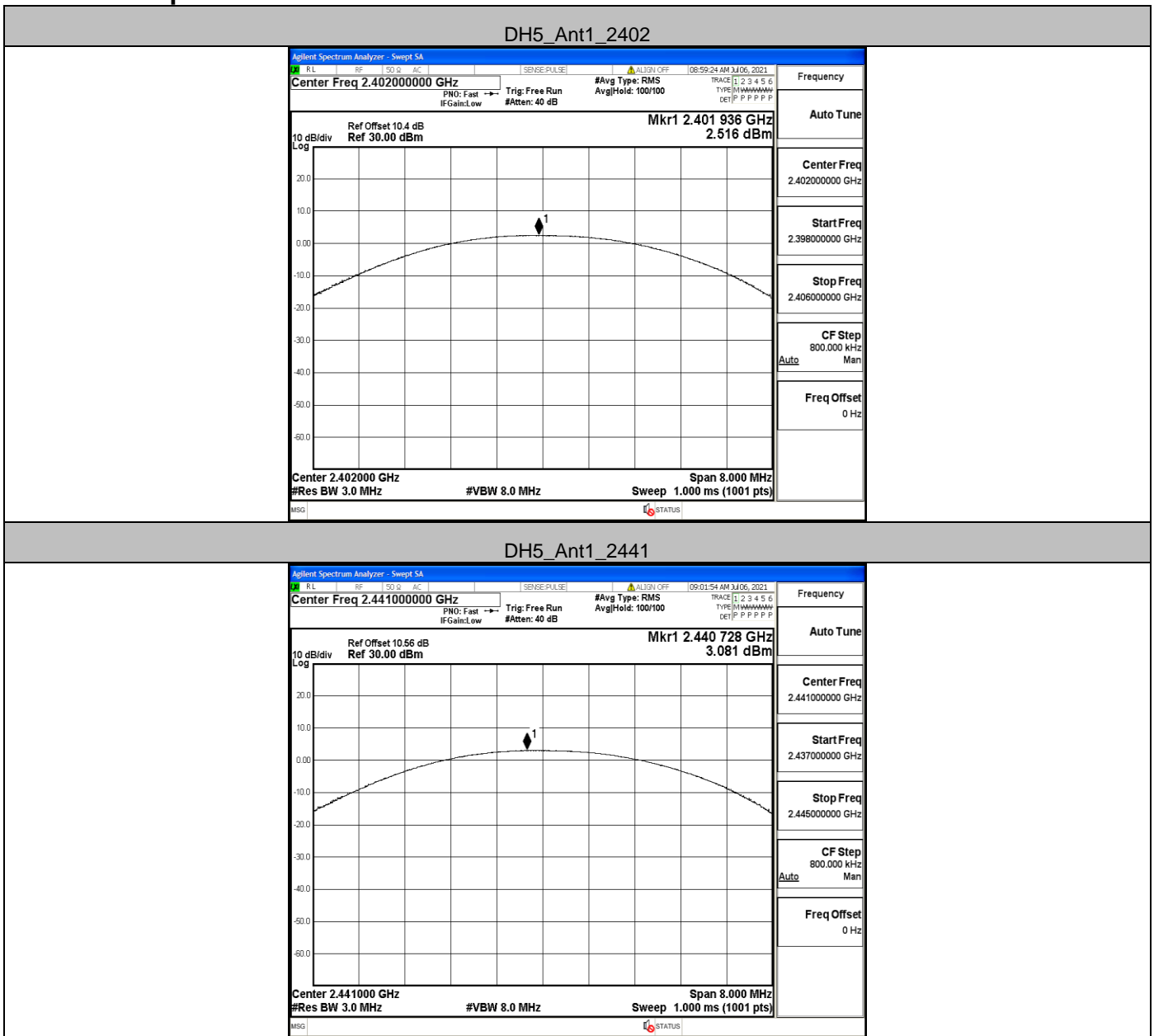
### Test Graph



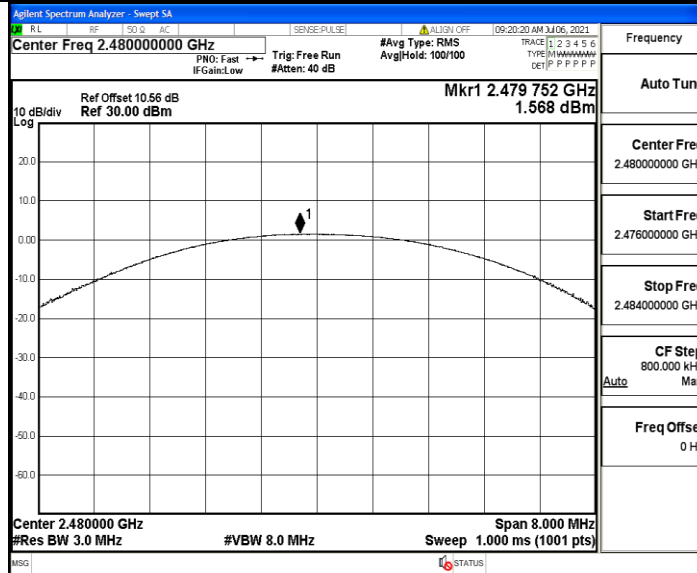
### A.5 Conducted Peak Output Power

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	2402	2.52	<=20.97	PASS
		2441	3.08	<=20.97	PASS
		2480	1.57	<=20.97	PASS
2DH5	Ant1	2402	0.97	<=20.97	PASS
		2441	1.50	<=20.97	PASS
		2480	2.32	<=20.97	PASS

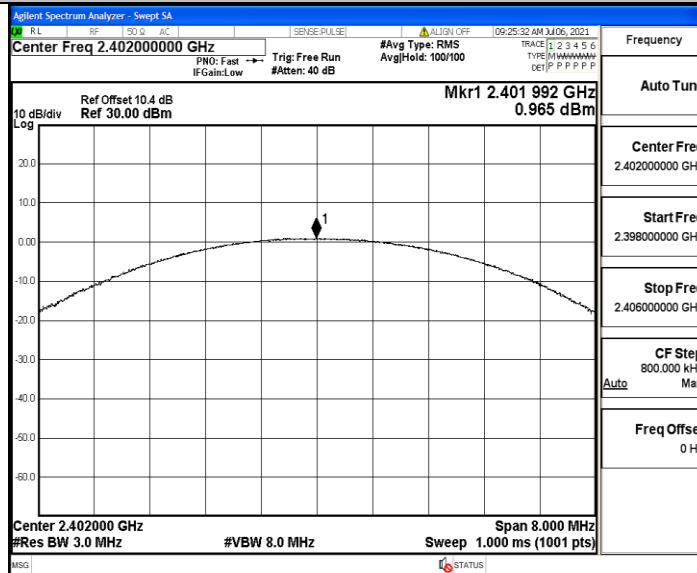
### Test Graph



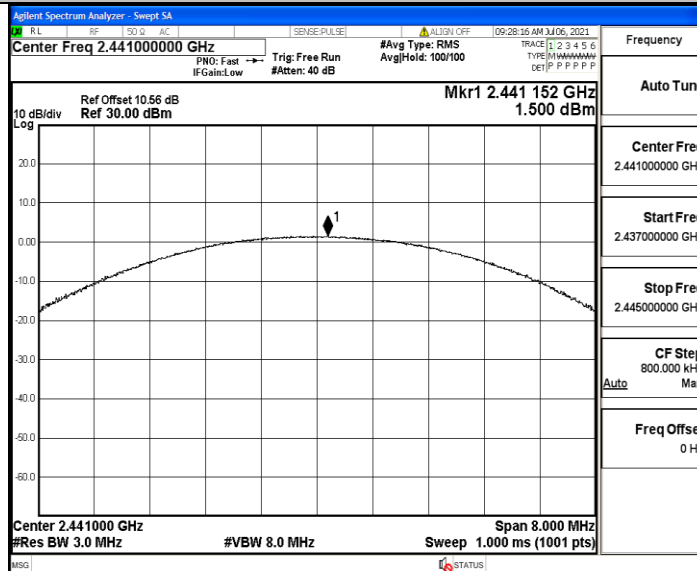
DH5\_Ant1\_2480



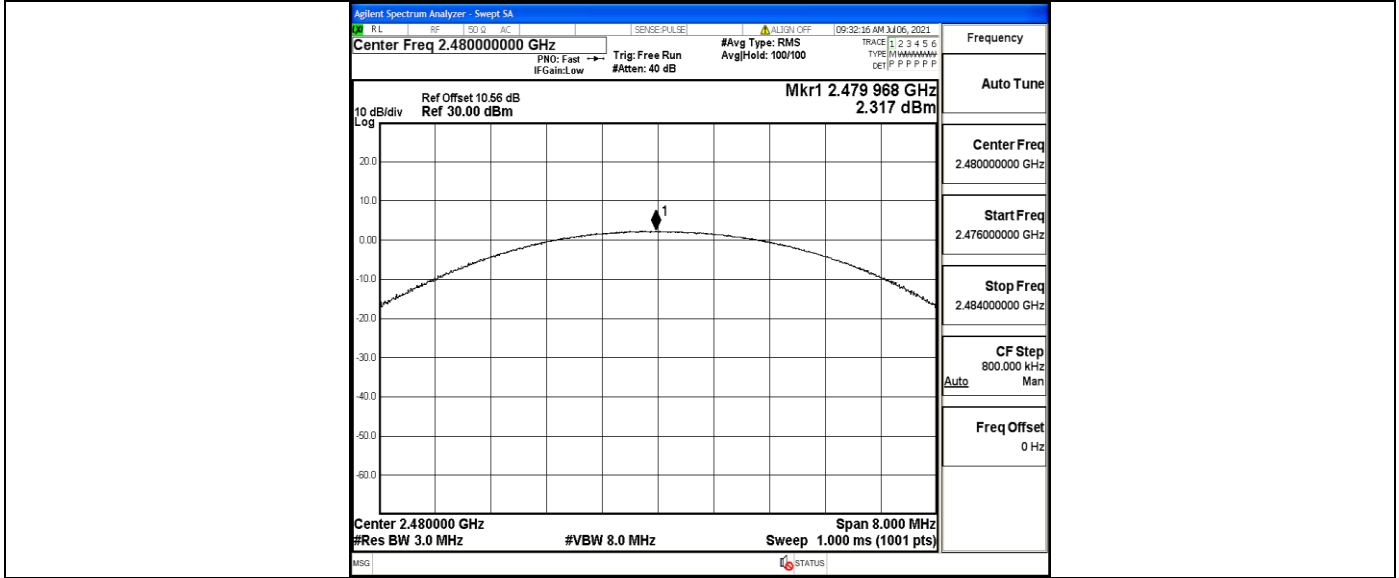
2DH5\_Ant1\_2402



2DH5\_Ant1\_2441



2DH5\_Ant1\_2480

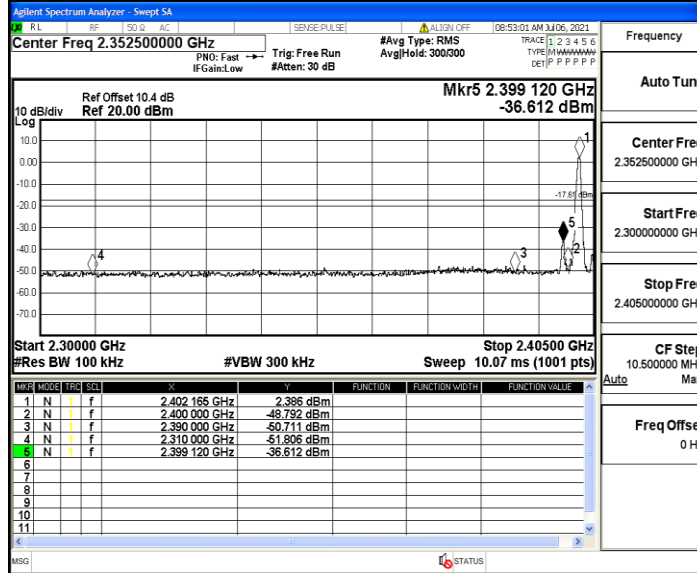


**A.6 Band-edge for RF Conducted Emissions**

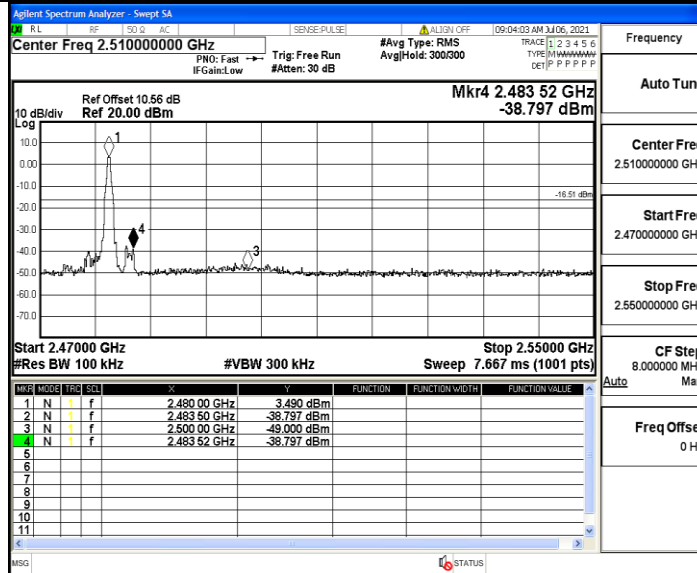
TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	2.39	-36.61	<=-17.61	PASS
		High	2480	3.49	-38.8	<=-16.51	PASS
		Low	Hop_2402	-0.58	-48.84	<=-20.58	PASS
		High	Hop_2480	1.83	-46.93	<=-18.17	PASS
2DH5	Ant1	Low	2402	-0.33	-40.16	<=-20.33	PASS
		High	2480	1.35	-46.48	<=-18.65	PASS
		Low	Hop_2402	-4.43	-48.9	<=-24.43	PASS
		High	Hop_2480	0.17	-47.38	<=-19.83	PASS

Test Graph

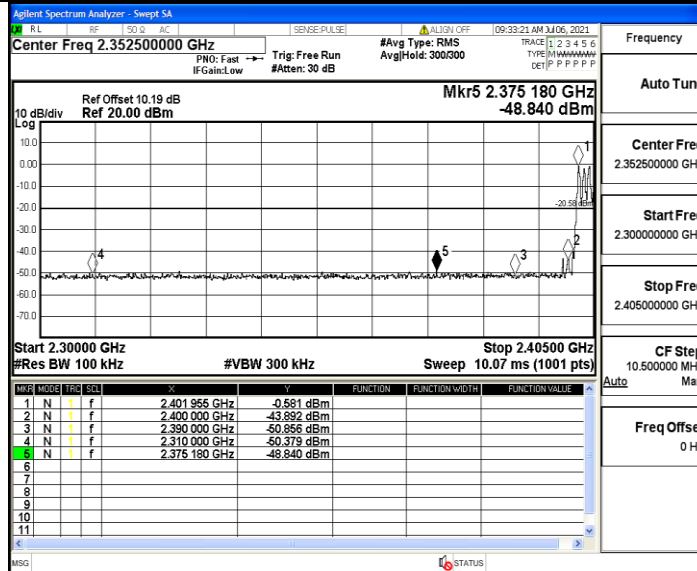
DH5\_Ant1\_Low\_2402



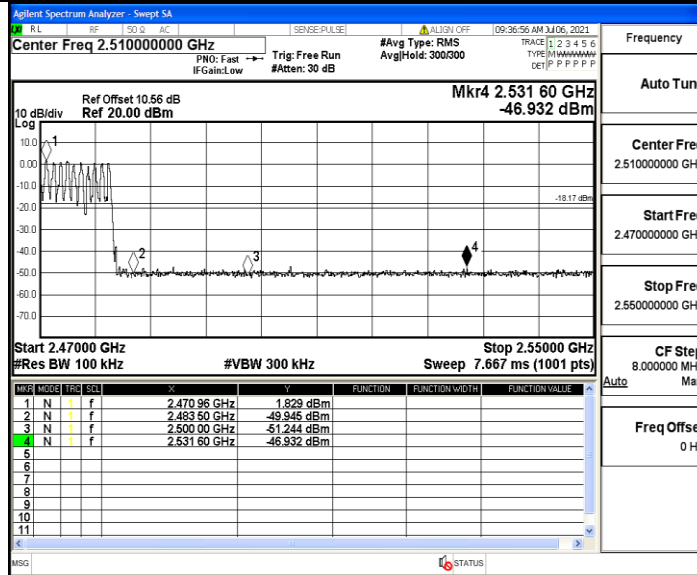
DH5\_Ant1\_High\_2480



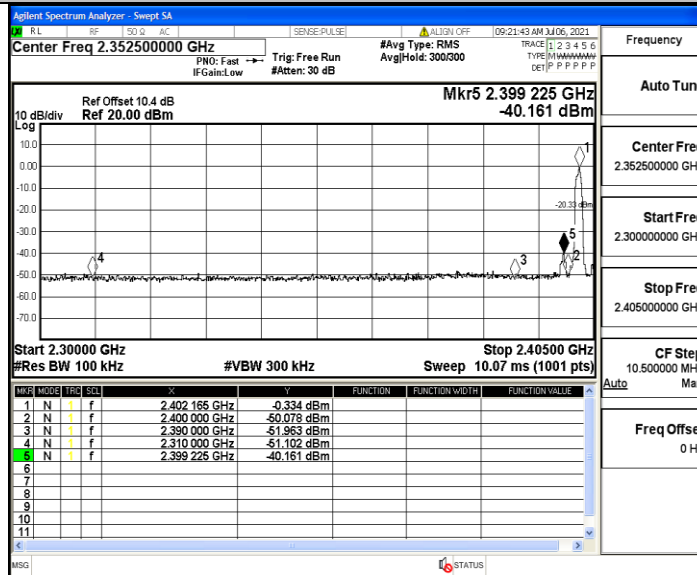
DH5\_Ant1\_Low\_Hop\_2402



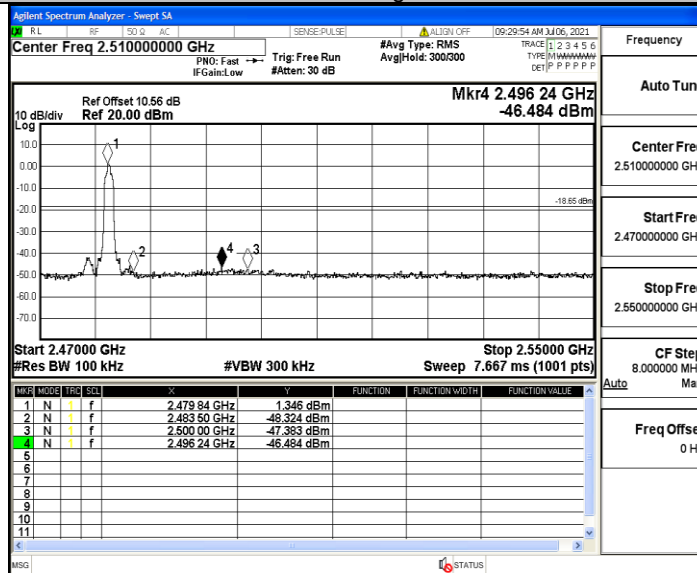
DH5\_Ant1\_High\_Hop\_2480



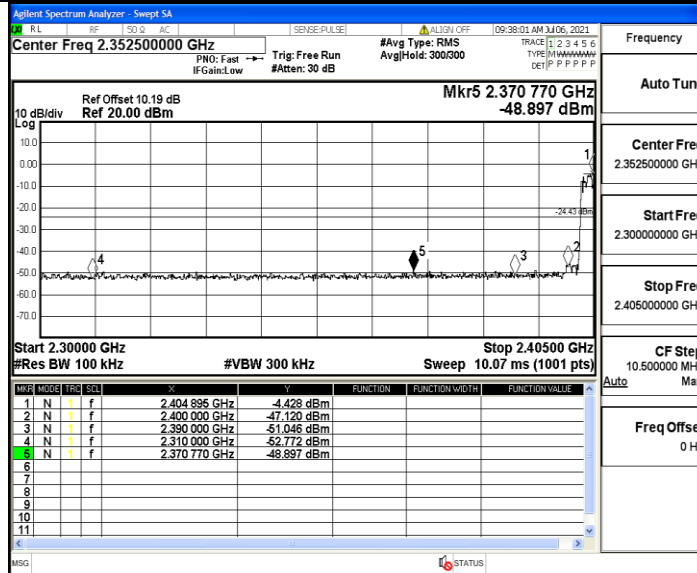
2DH5\_Ant1\_Low\_2402



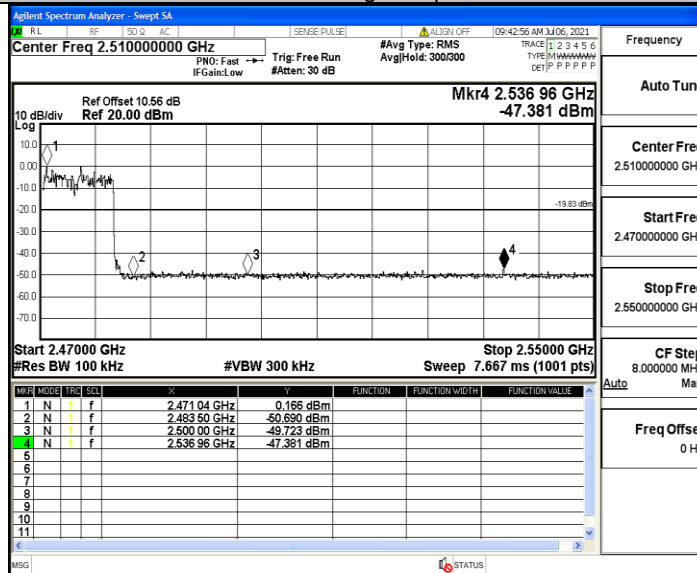
2DH5\_Ant1\_High\_2480



2DH5\_Ant1\_Low\_Hop\_2402

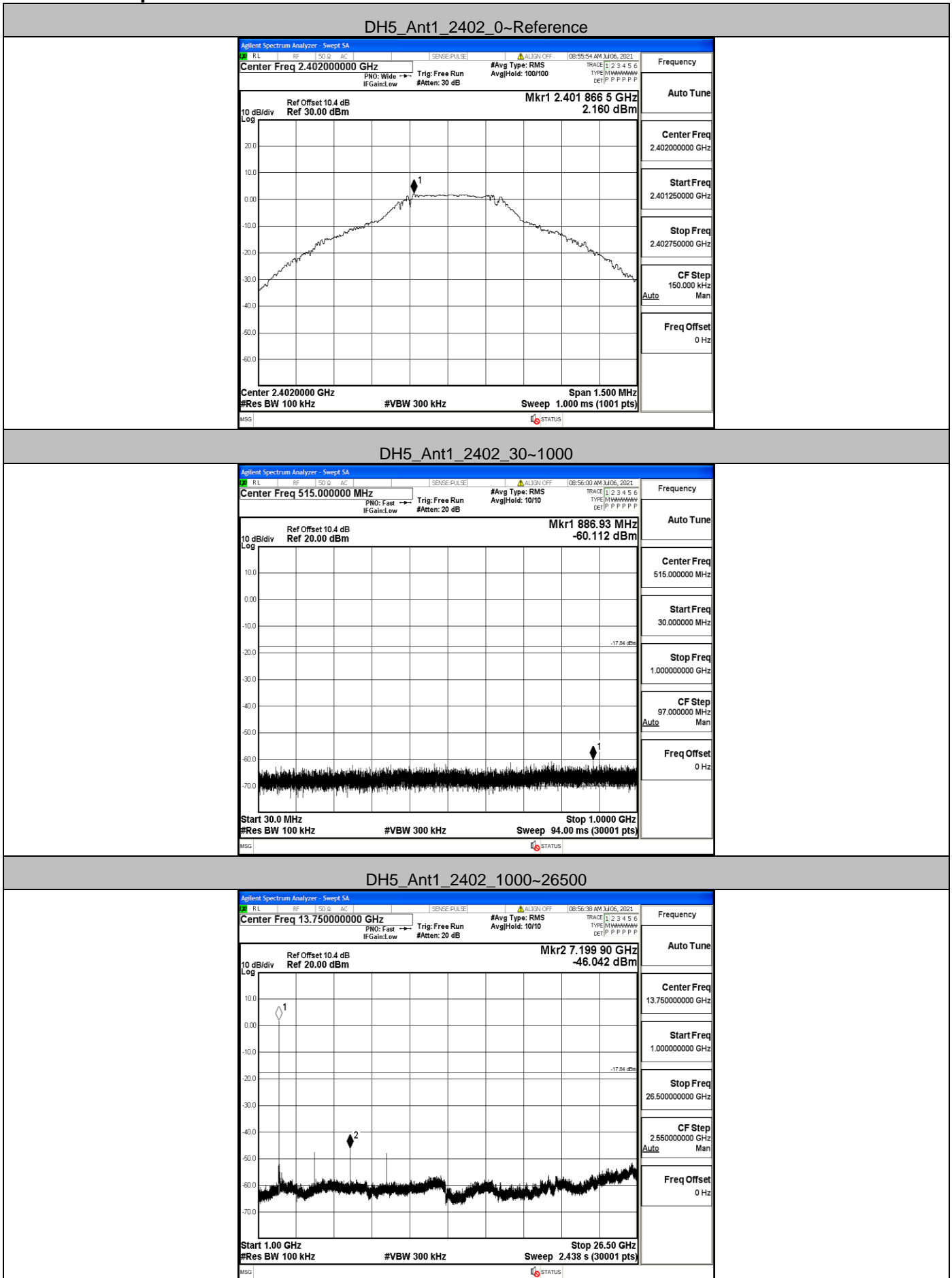


2DH5\_Ant1\_High\_Hop\_2480

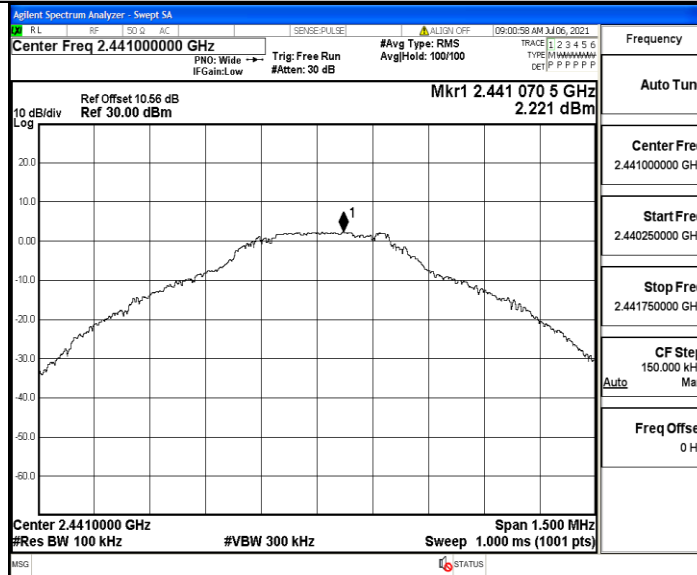




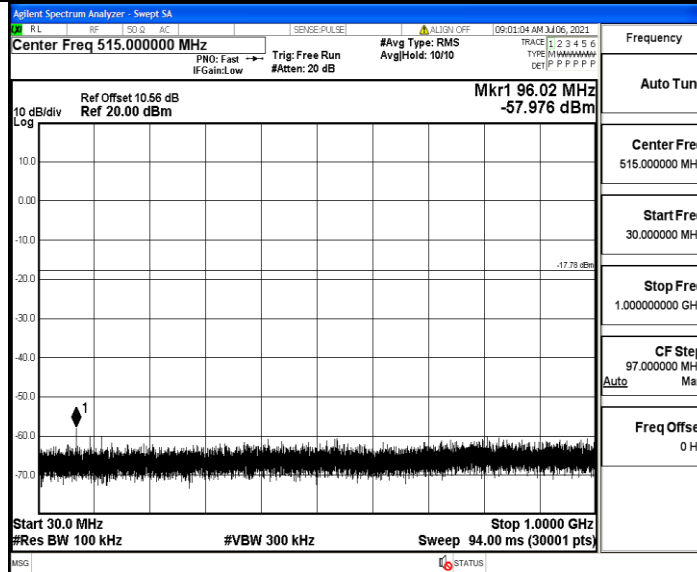
### A.7 RF Conducted Spurious Emissions Test Graph



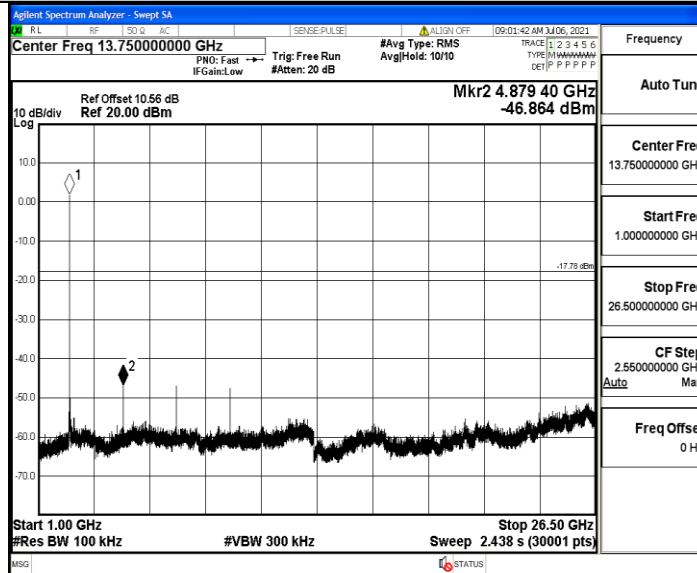
DH5\_Ant1\_2441\_0~Reference



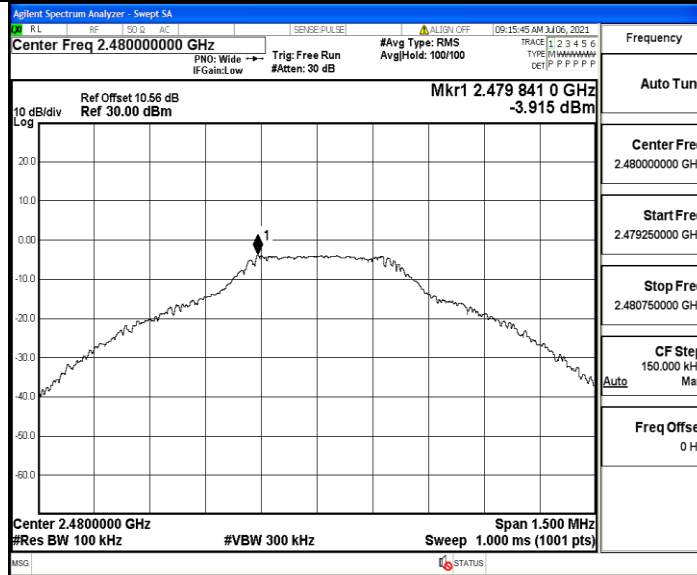
DH5\_Ant1\_2441\_30~1000



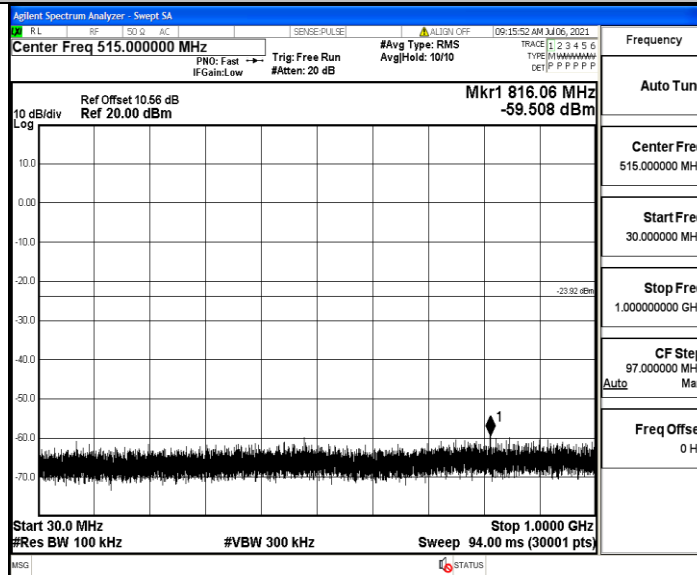
DH5\_Ant1\_2441\_1000~26500



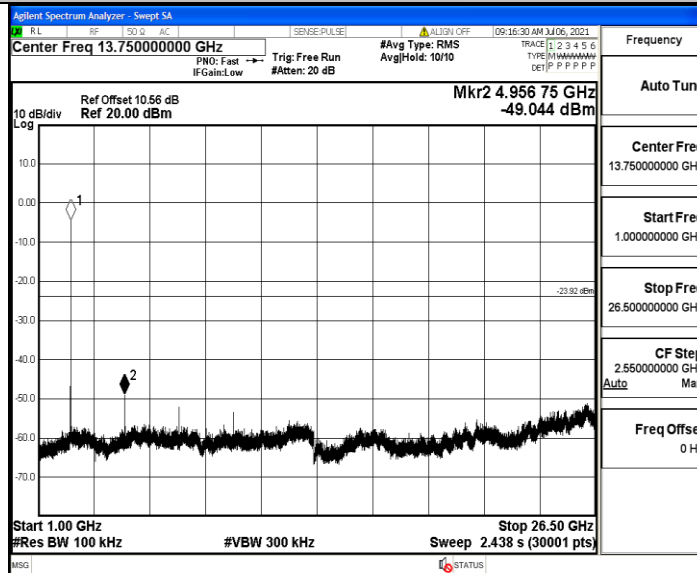
DH5\_Ant1\_2480\_0-Reference



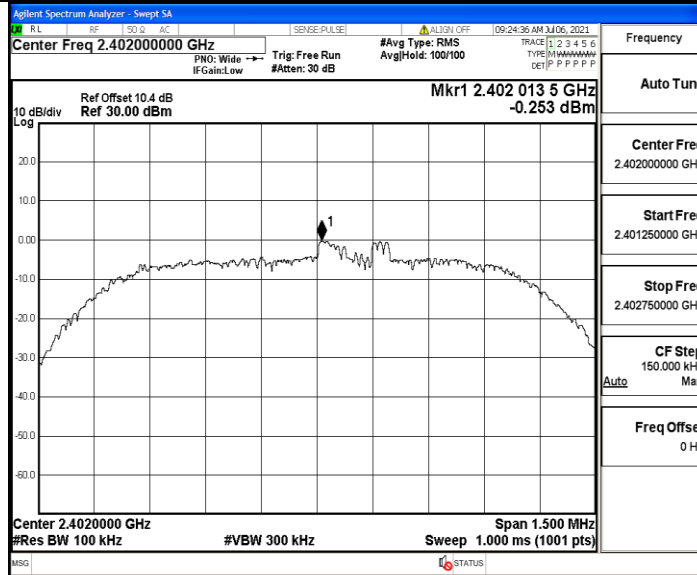
DH5\_Ant1\_2480\_30-1000



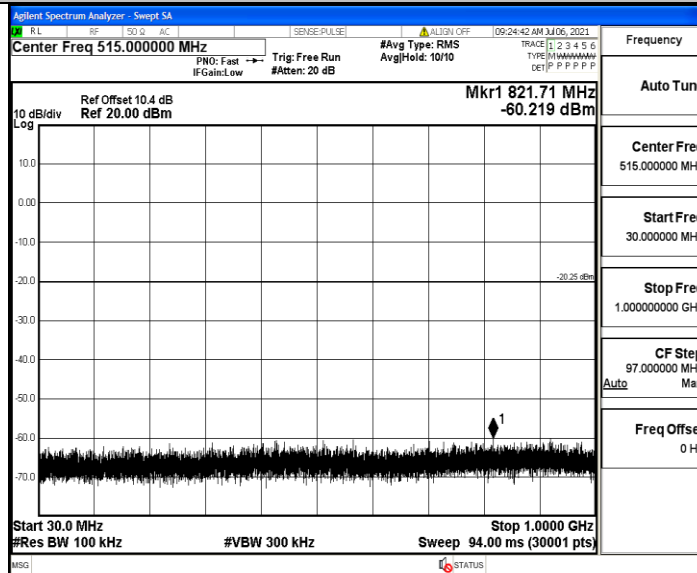
DH5\_Ant1\_2480\_1000-26500



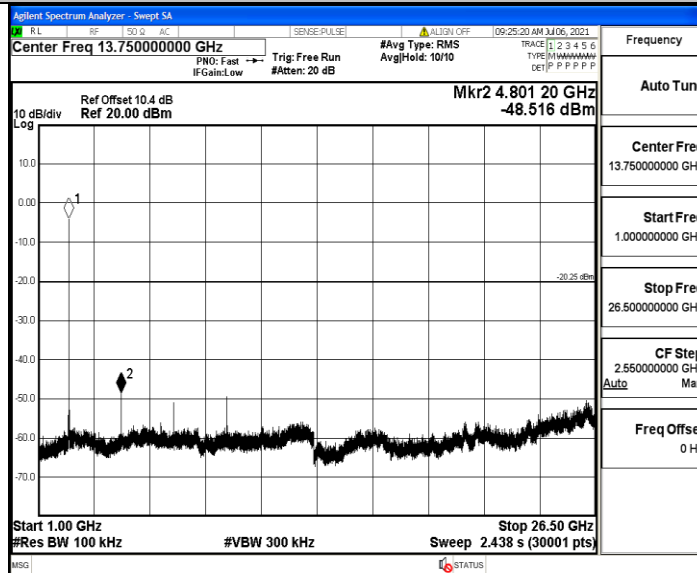
2DH5\_Ant1\_2402\_0~Reference



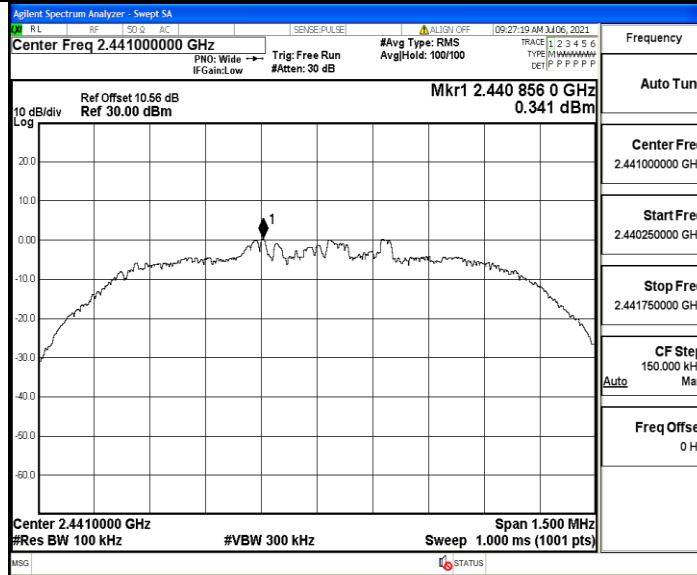
2DH5\_Ant1\_2402\_30~1000



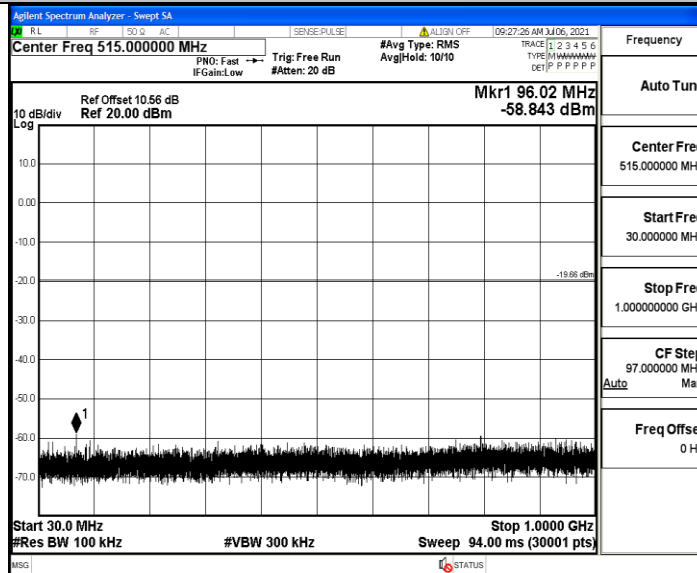
2DH5\_Ant1\_2402\_1000~26500



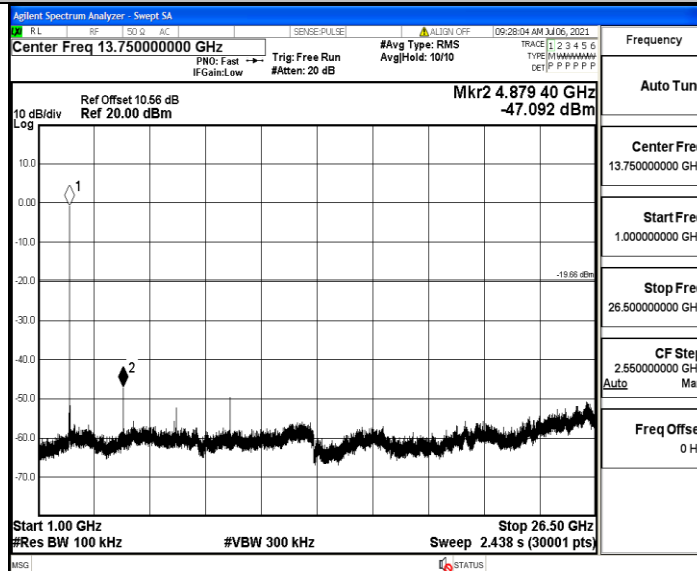
2DH5\_Ant1\_2441\_0-Reference



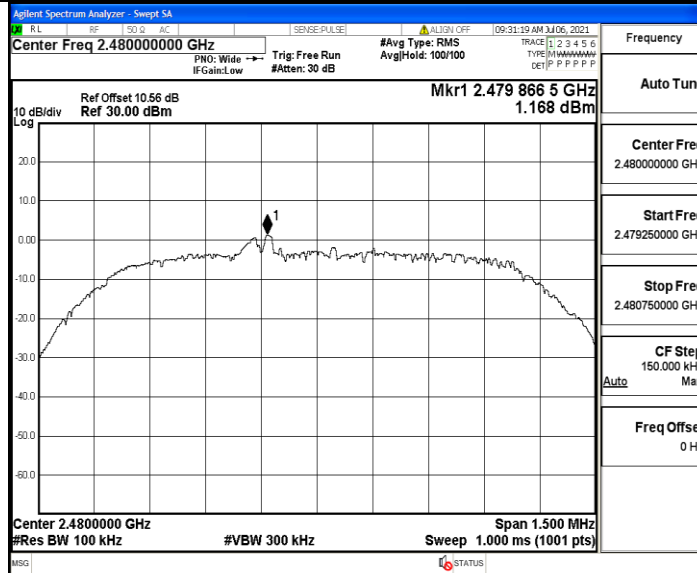
2DH5\_Ant1\_2441\_30~1000



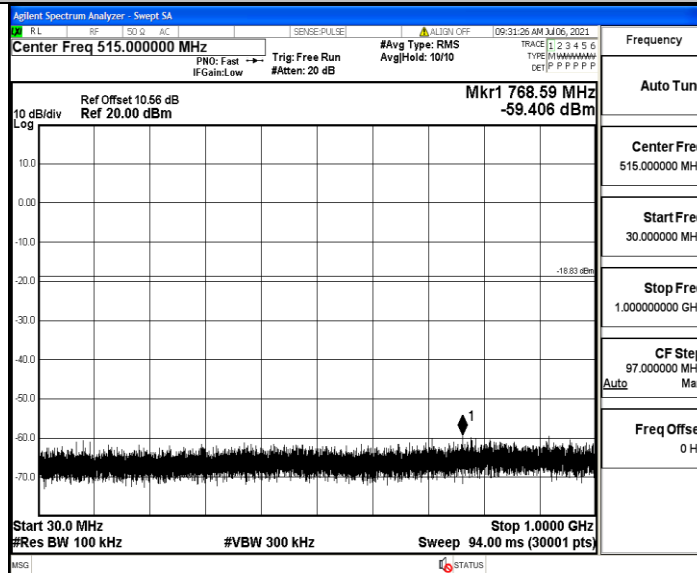
2DH5\_Ant1\_2441\_1000~26500



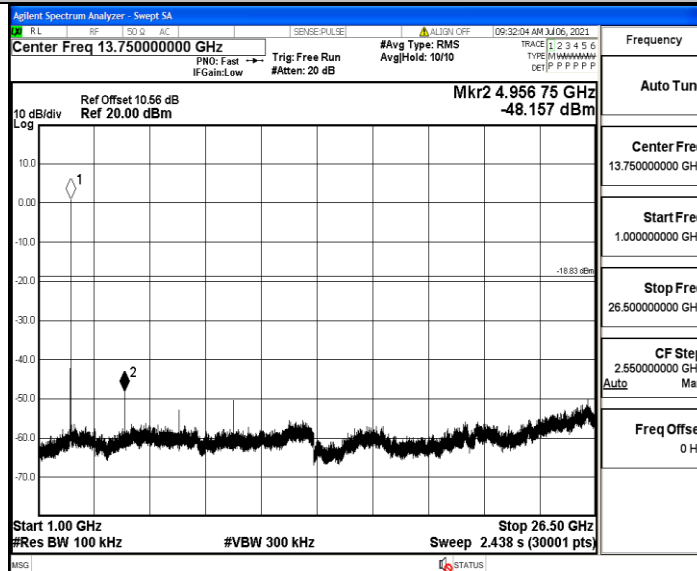
2DH5\_Ant1\_2480\_0-Reference



2DH5\_Ant1\_2480\_30~1000



2DH5\_Ant1\_2480\_1000~26500



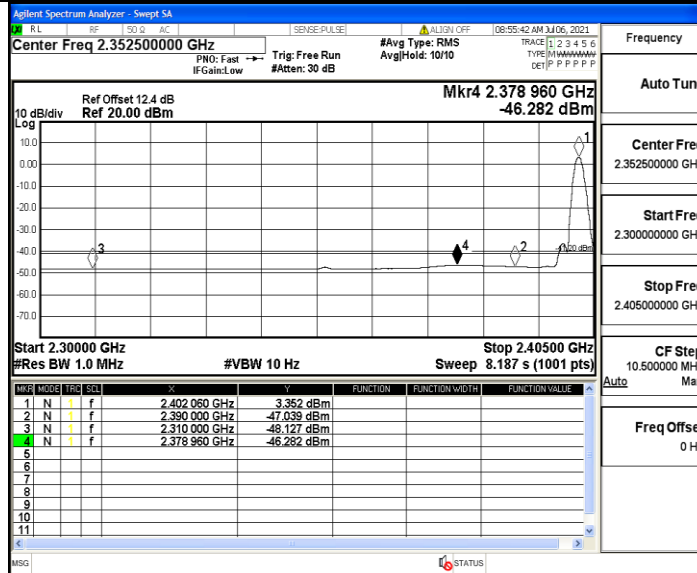
**A.8 Restrict-band band-edge measurements**

TestMode	Antenna	ChName	Channel	Detector	Freq ( MHz )	Result(dBm)	Limit(dBm)	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-48.13	<=-41.20	PASS
				AV	2378.960	-46.28	<=-41.20	PASS
				AV	2390.000	-47.04	<=-41.20	PASS
				Peak	2310.000	-41.2	<=-21.20	PASS
				Peak	2386.100	-37.75	<=-21.20	PASS
				Peak	2390.000	-41.68	<=-21.20	PASS
		High	2480	AV	2483.500	-44.96	<=-41.20	PASS
				AV	2500.000	-45.39	<=-41.20	PASS
				Peak	2483.500	-41.47	<=-21.20	PASS
				Peak	2488.880	-36.34	<=-21.20	PASS
				Peak	2500.000	-38.72	<=-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-48.3	<=-41.20	PASS
				AV	2379.065	-47.04	<=-41.20	PASS
				AV	2390.000	-47.52	<=-41.20	PASS
				Peak	2310.000	-43.79	<=-21.20	PASS
				Peak	2337.380	-37.9	<=-21.20	PASS
				Peak	2390.000	-42.73	<=-21.20	PASS
		High	2480	AV	2483.500	-45.01	<=-41.20	PASS
				AV	2499.440	-44.49	<=-41.20	PASS
				AV	2500.000	-44.61	<=-41.20	PASS
				Peak	2483.500	-39.16	<=-21.20	PASS
				Peak	2499.040	-35.74	<=-21.20	PASS
				Peak	2500.000	-38.71	<=-21.20	PASS

## Note:

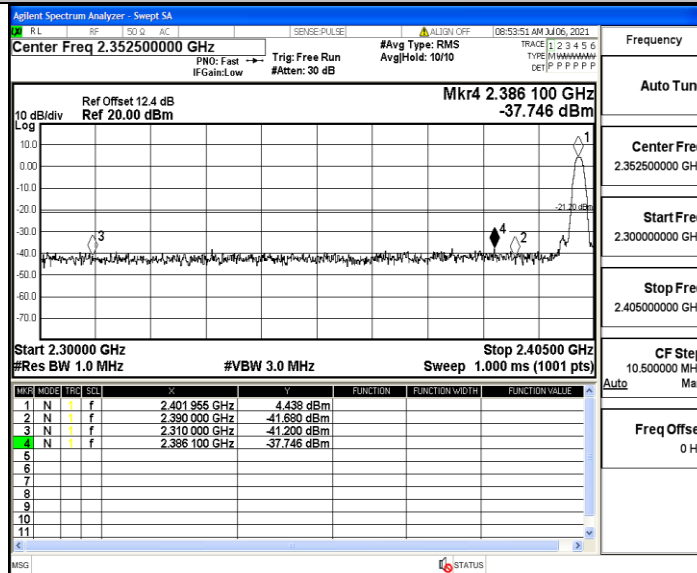
1. The Antenna Gain is compensated in the graph with 2dBi and Antenna Gain which is Higher.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

DH5\_Ant1\_Low\_2402\_AV



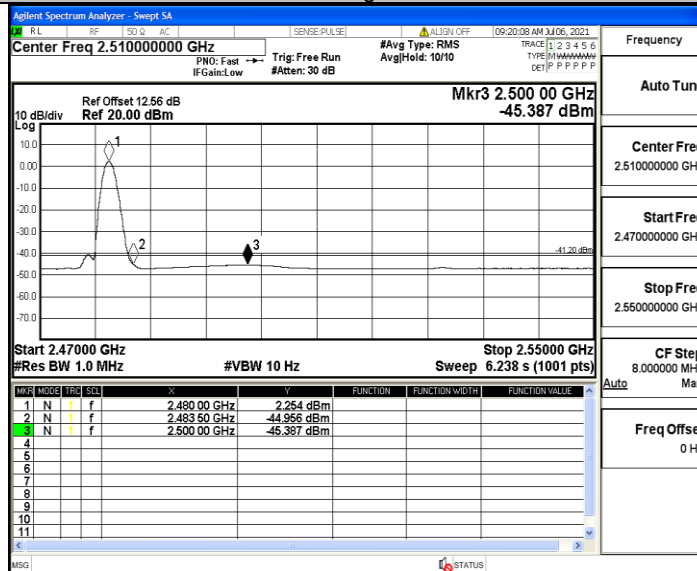
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Auto	Man
Freq Offset	0 Hz

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

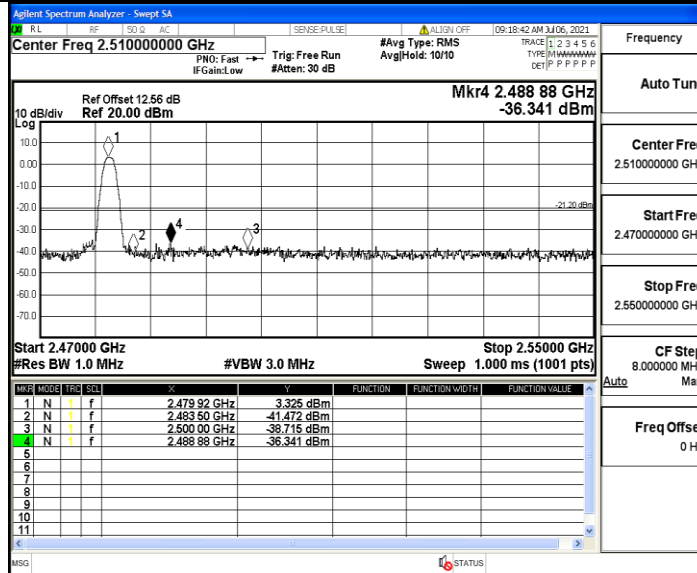
DH5\_Ant1\_High\_2480\_AV



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

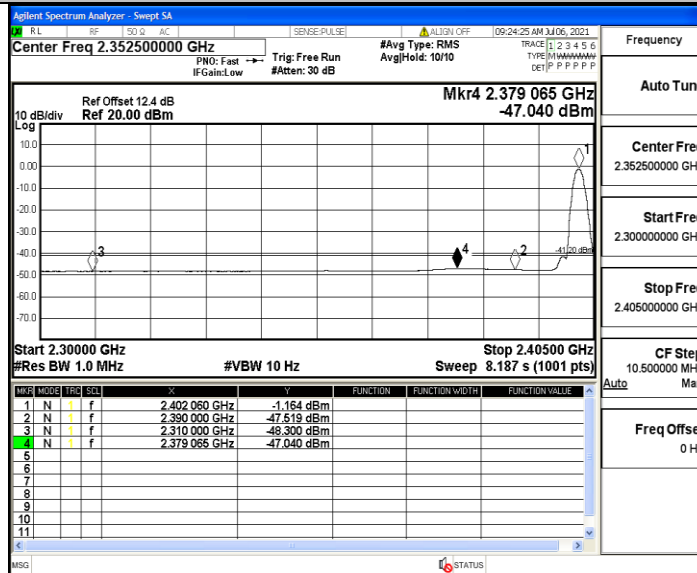


DH5\_Ant1\_High\_2480\_Peak



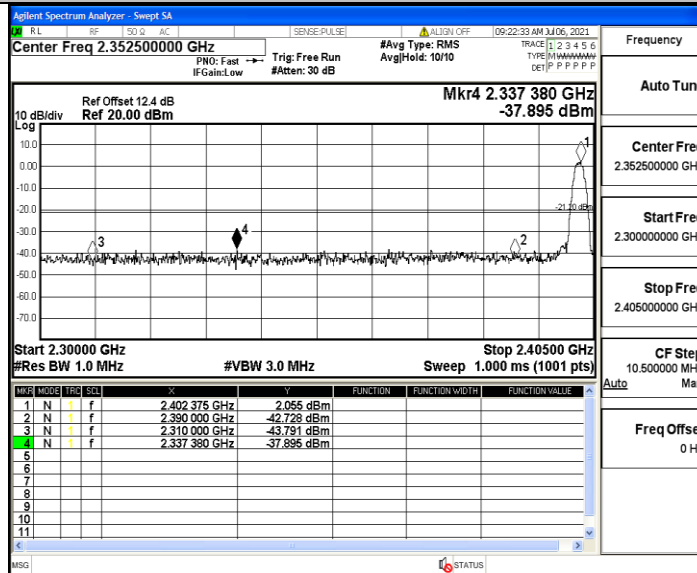
Frequency	Auto Tune
Center Freq	2.510000000 GHz
Start Freq	2.470000000 GHz
Stop Freq	2.550000000 GHz
CF Step	8.000000 MHz
Freq Offset	0 Hz

2DH5\_Ant1\_Low\_2402\_AV



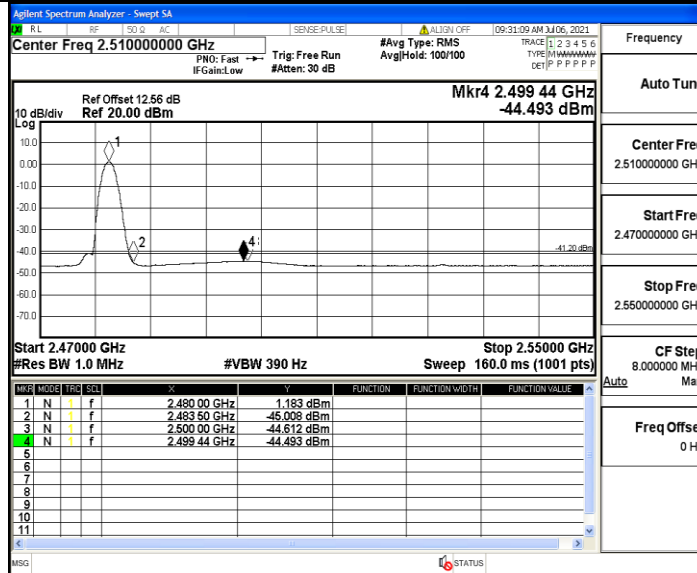
Frequency	Auto Tune
Center Freq	2.352500000 GHz
Start Freq	2.300000000 GHz
Stop Freq	2.405000000 GHz
CF Step	10.500000 MHz
Freq Offset	0 Hz

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



2DH5\_Ant1\_High\_2480\_Peak

