

Appendix A

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

Product Name: Foldable bluetooth keyboard

Trade Mark: N/A

Test Model: VAP-888

FCC ID: 2AZQG-VAP888

Environmental Conditions

Temperature:	24.5° C
Relative Humidity:	53%
ATM Pressure:	100.0 kPa
Test Engineer:	Nancy Li
Supervised by:	Hugo Chen

A.1. 20dB Bandwidth

Test Mode	Test Channel	Ant	20dB EBW[MHz]	Limit	Verdict
DH5	2402	Ant1	1.024	0.5	PASS
	2441	Ant1	0.927	0.5	PASS
	2480	Ant1	0.886	0.5	PASS
2DH5	2402	Ant1	1.127	0.5	PASS
	2441	Ant1	1.117	0.5	PASS
	2480	Ant1	1.116	0.5	PASS
3DH5	2402	Ant1	1.133	0.5	PASS
	2441	Ant1	1.129	0.5	PASS
	2480	Ant1	1.127	0.5	PASS

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

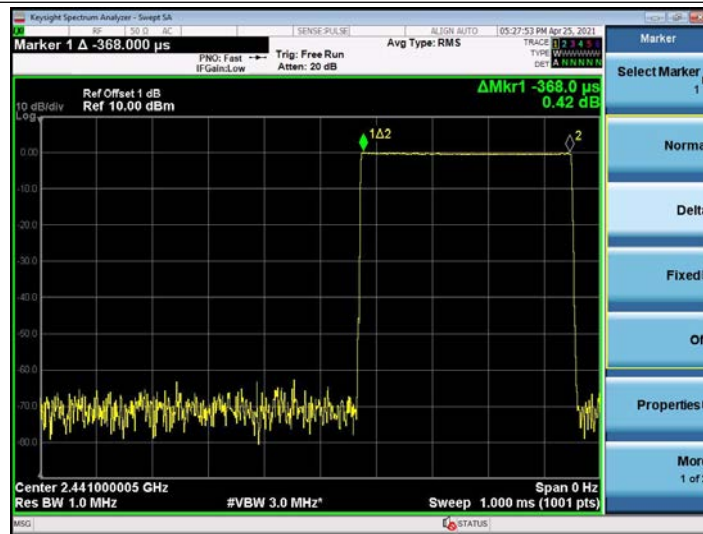
Modulation	Packet	Burst time (ms)	Dwell time (s)	Limit (s)	Result
GFSK	DH1	0.368	0.118	0.40	Pass
	DH3	1.620	0.259		
	DH5	2.87	0.306		
$\pi/4$ DQPSK	2-DH1	0.379	0.121	0.40	Pass
	2-DH3	1.350	0.216		
	2-DH5	2.855	0.304		
8DPSK	3-DH1	0.382	0.122	0.40	Pass
	3-DH3	1.625	0.259		
	3-DH5	2.865	0.305		

Dwell time=Pulse time (ms) $\times$ (1600 $\div$ 2 $\div$ 79) $\times$ 31.6 Second for DH1, 2-DH1, 3-DH1

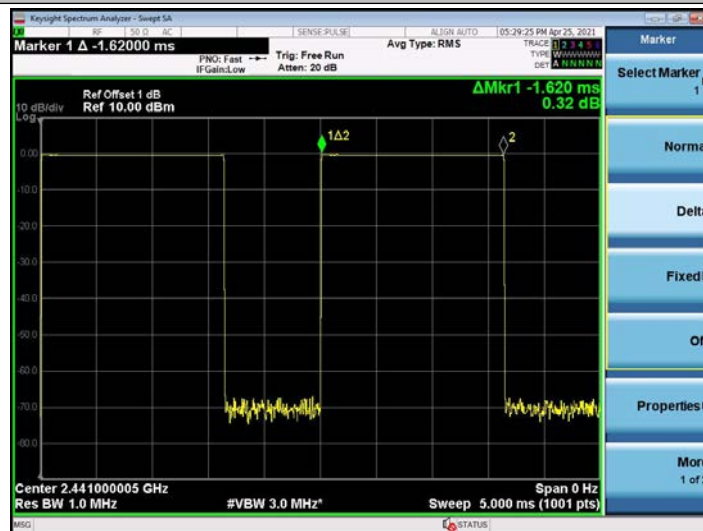
Dwell time=Pulse time (ms) $\times$ (1600 $\div$ 4 $\div$ 79) $\times$ 31.6 Second for DH3, 2-DH3, 3-DH3

Dwell time=Pulse time (ms) $\times$ (1600 $\div$ 6 $\div$ 79) $\times$ 31.6 Second for DH5, 2-DH5, 3-DH5

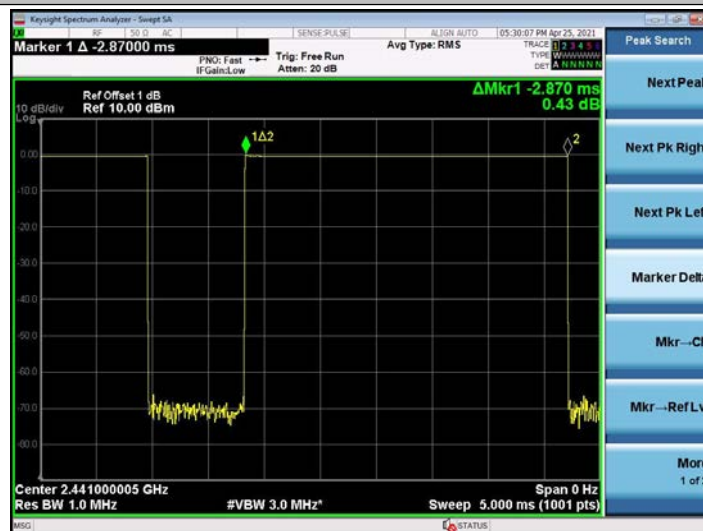
Test Graph



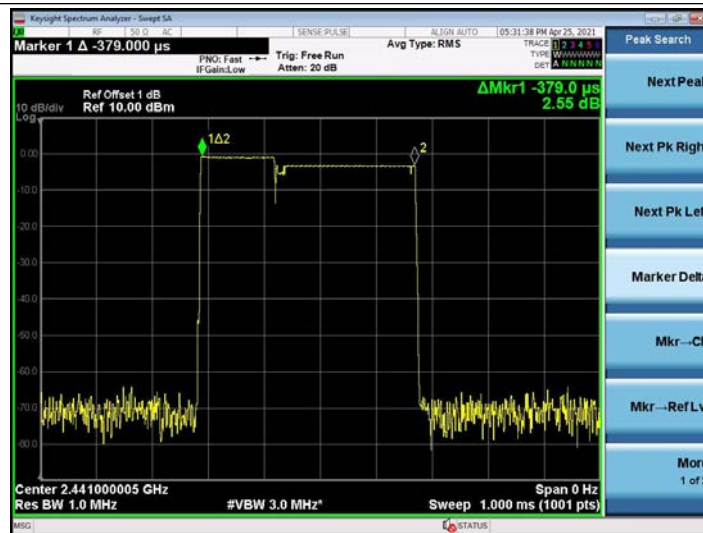
DH1_Ant1_burst time



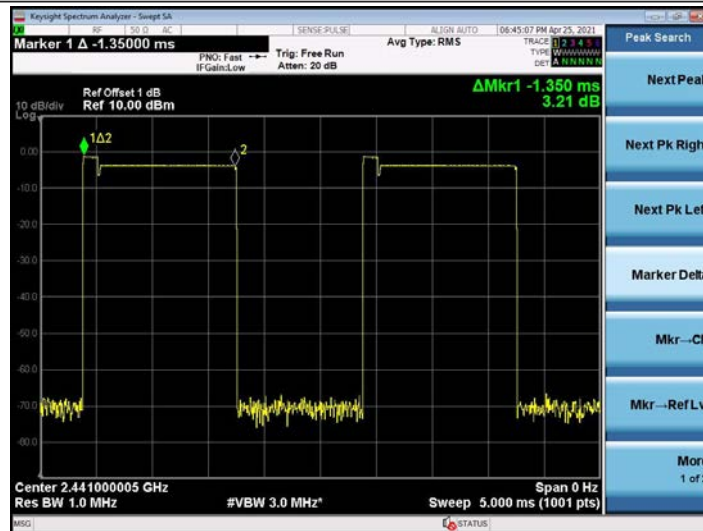
DH3_Ant1_burst time



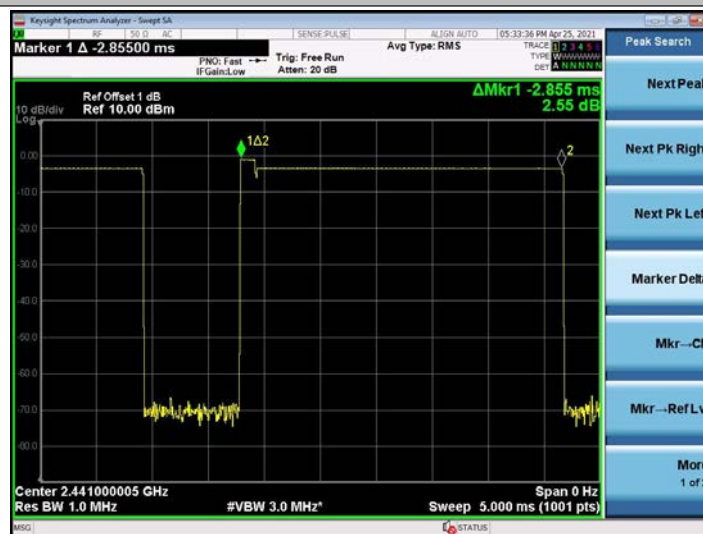
DH5_Ant1_burst time



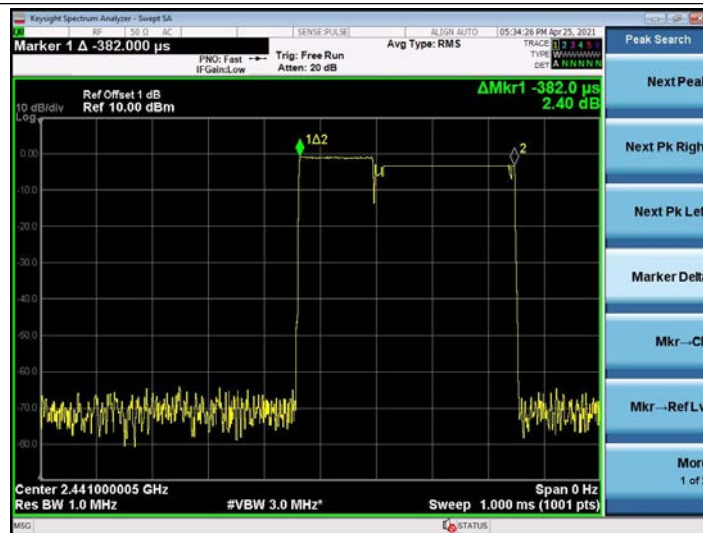
2DH1_Ant1_burst time



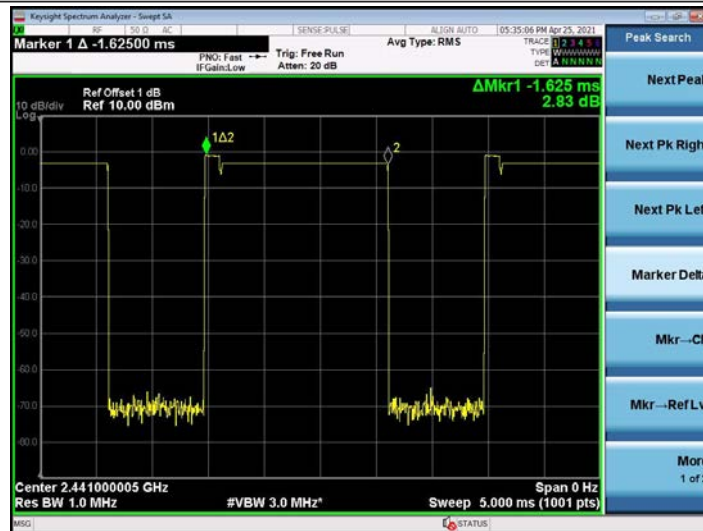
2DH3_Ant1_burst time



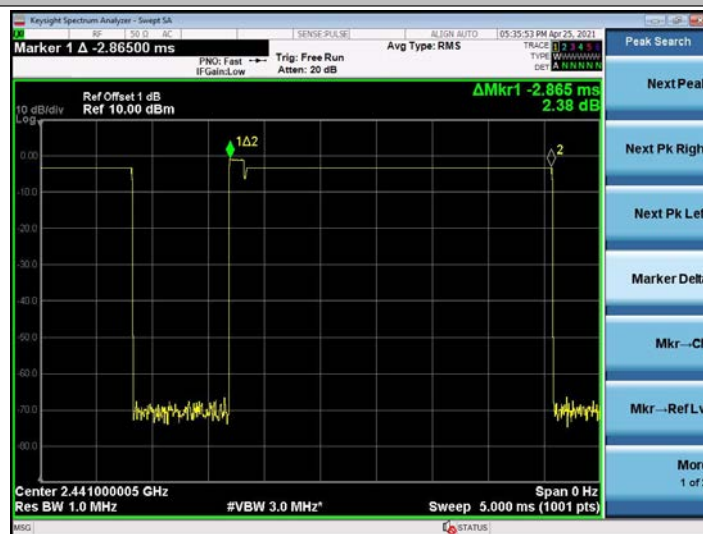
2DH5_Ant1_burst time



3DH1_Ant1_burst time



3DH3_Ant1_burst time



3DH5_Ant1_burst time

A.3. Carrier Frequency Separation

Test Mode	Antenna	Channel	Result[MHz]	Limit[dBm]	Verdict
DH5	Ant1	Hop	1.000	≥ -0.682	PASS
2DH5	Ant1	Hop	1.002	≥ -0.750	PASS
3DH5	Ant1	Hop	0.992	≥ -0.755	PASS

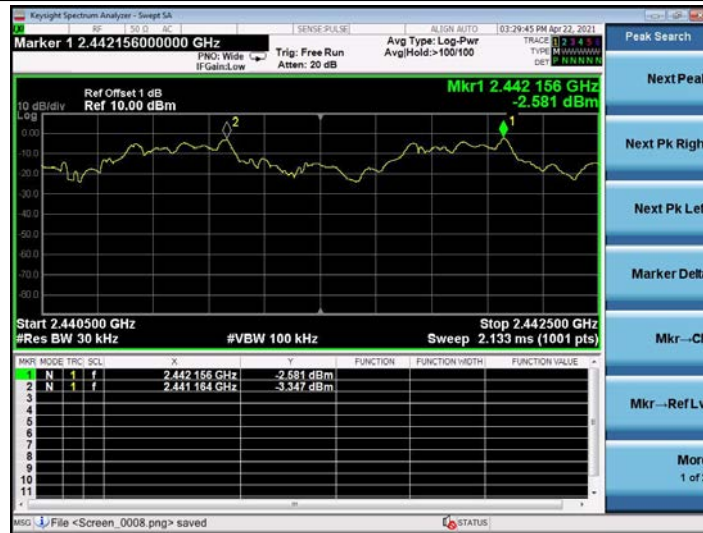
Test Graph



DH5_Ant1_Hop



2DH5_Ant1_Hop

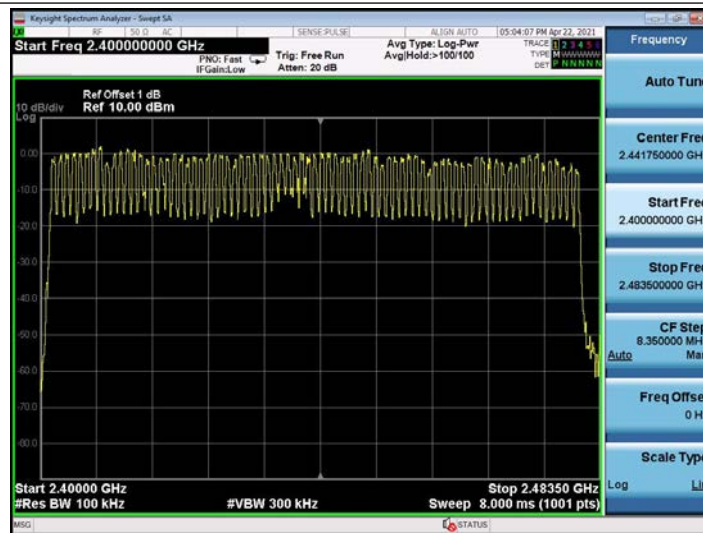


3DH5_Ant1_Hop

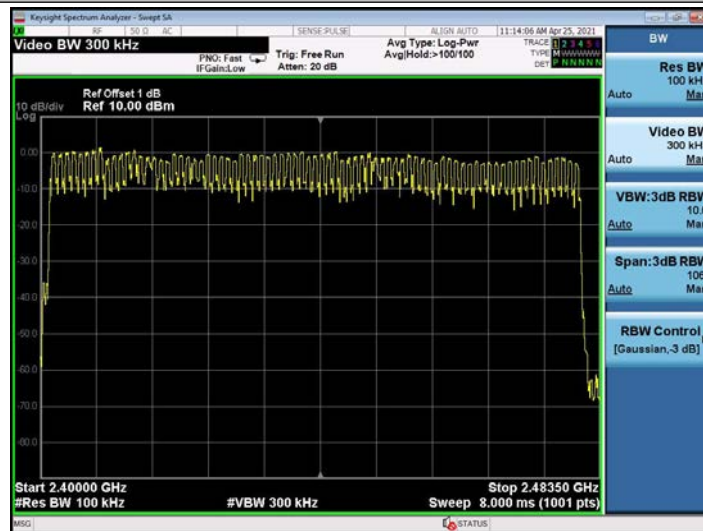
A.4. Hopping Channel Number

Test Mode	Antenna	Channel	Result[Num]	Limit[dBm]	Verdict
DH5	Ant1	Hop	79	≥ 15	PASS
2DH5	Ant1	Hop	79	≥ 15	PASS
3DH5	Ant1	Hop	79	≥ 15	PASS

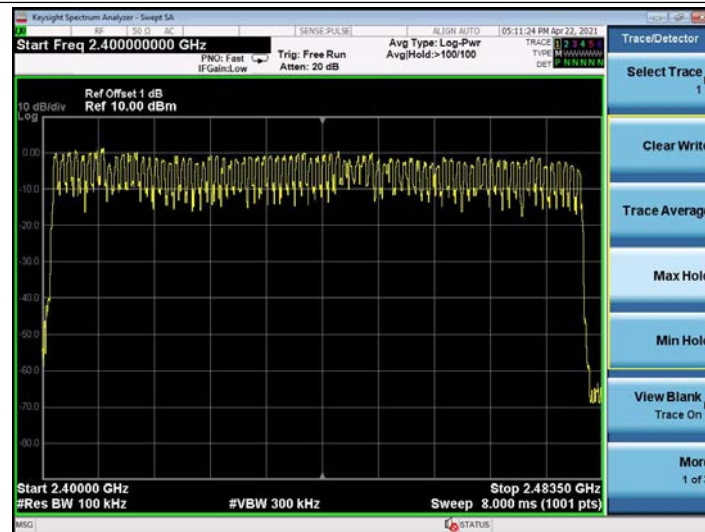
Test Graph



DH5_Ant1_Hop



2DH5_Ant1_Hop

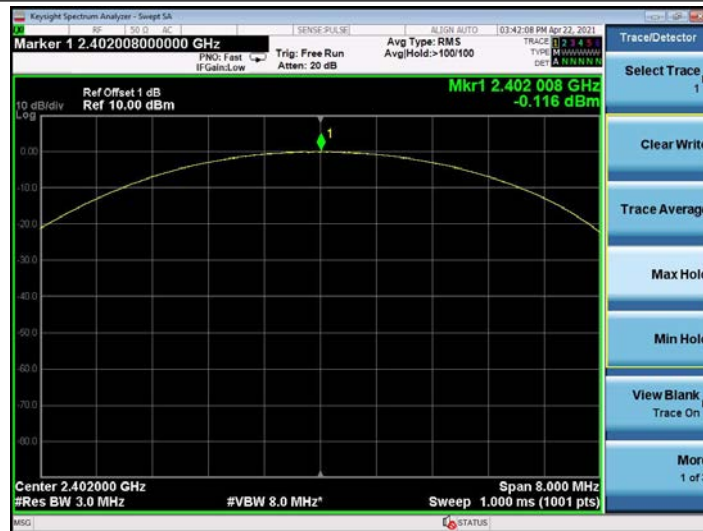


3DH5_Ant1_Hop

A.5. Conducted Peak Output Power

Test Mode	Test	Ant	Result[dBm]	Limit[dBm]	Verdict
DH5	2402	Ant1	-0.116	<=30	PASS
	2441	Ant1	0.189	<=30	PASS
	2480	Ant1	-3.504	<=30	PASS
2DH5	2402	Ant1	-0.025	<=20.97	PASS
	2441	Ant1	-0.844	<=20.97	PASS
	2480	Ant1	-3.215	<=20.97	PASS
3DH5	2402	Ant1	-0.026	<=20.97	PASS
	2441	Ant1	-0.717	<=20.97	PASS
	2480	Ant1	-4.472	<=20.97	PASS

Test Graph



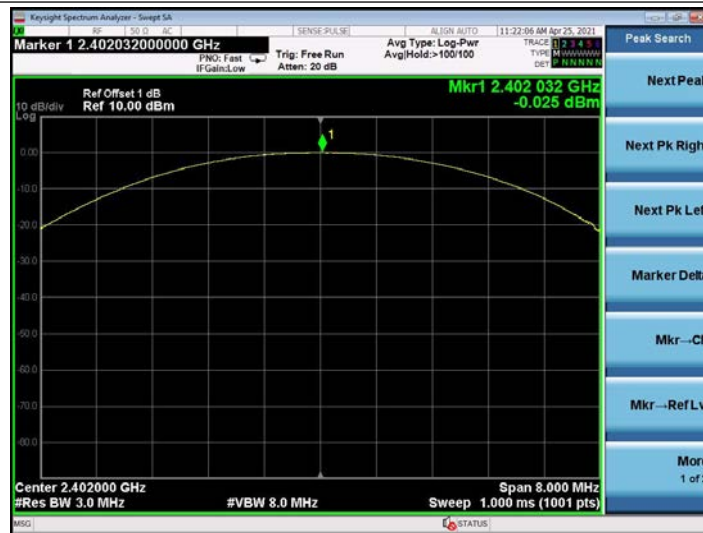
DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441

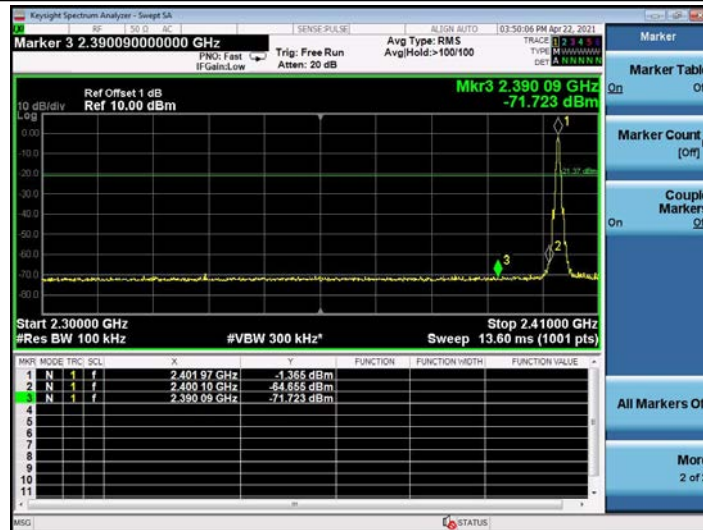


3DH5_Ant1_2480

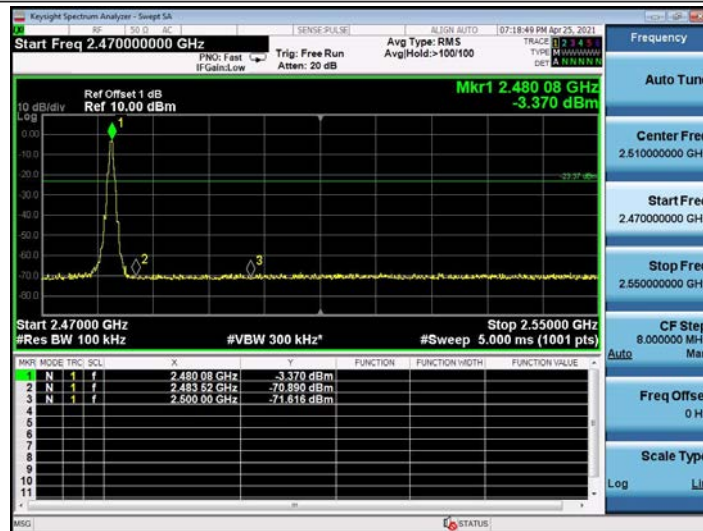
A.6. Band-edge for RF Conducted Emissions

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
DH5	Ant1	Low	2402	-1.36	-64.65	<=-21.36	PASS
		High	2480	-3.37	-70.89	<=-23.37	PASS
		Low	Hop_2402	-1.41	-66.43	<=-21.41	PASS
		High	Hop_2480	-1.81	-68.51	<=-21.81	PASS
2DH5	Ant1	Low	2402	-0.62	-57.35	<=-20.62	PASS
		High	2480	-3.40	-68.83	<=-23.40	PASS
		Low	Hop_2402	0.83	-57.35	<=-19.17	PASS
		High	Hop_2480	-1.67	-68.14	<=-21.67	PASS
3DH5	Ant1	Low	2402	-3.52	-50.02	<=-23.52	PASS
		High	2480	-6.27	-69.91	<=-26.27	PASS
		Low	Hop_2402	-1.95	-63.09	<=-21.95	PASS
		High	Hop_2480	-4.65	-69.51	<=-24.65	PASS

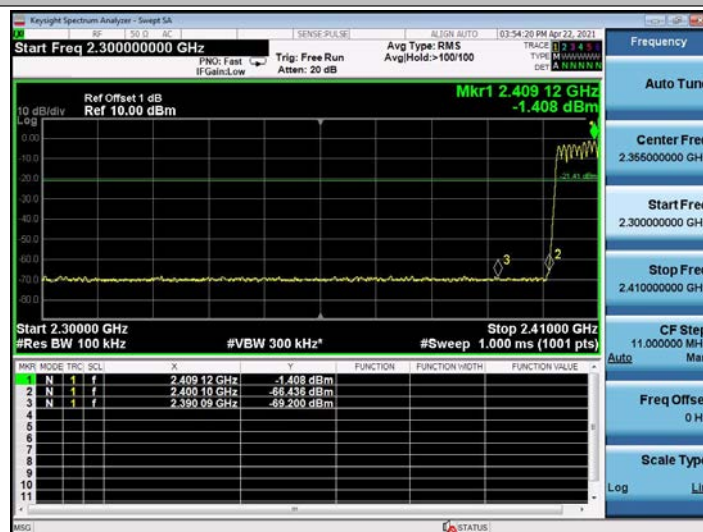
Test Graph



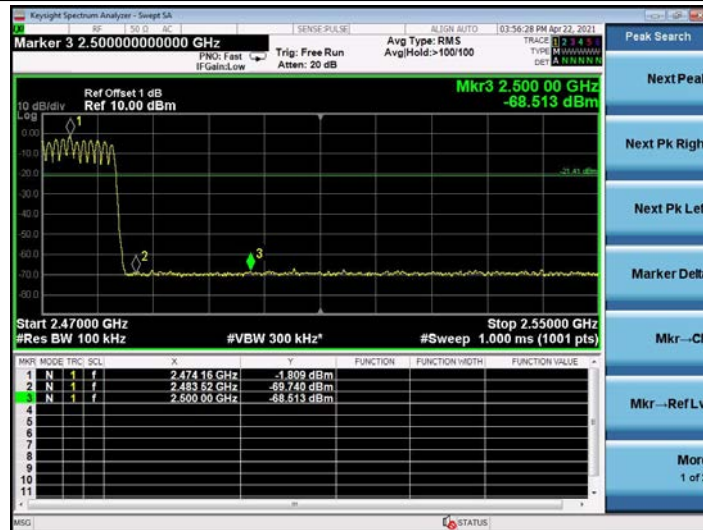
DH5_Ant1_Low_2402



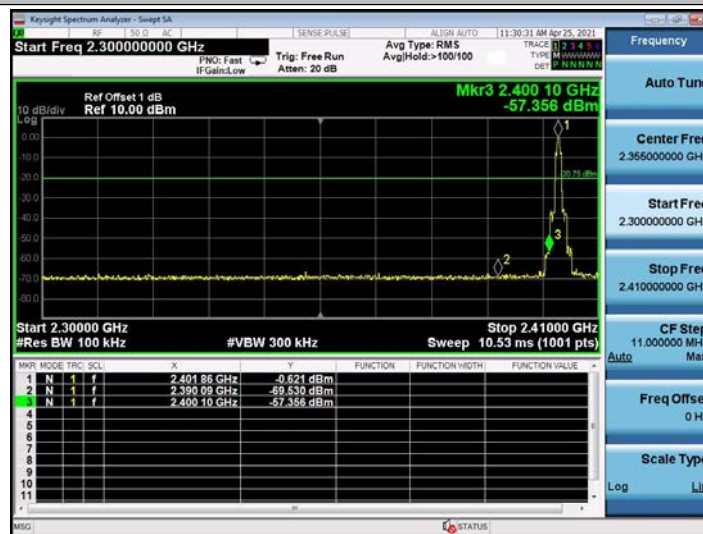
DH5_Ant1_High_2480



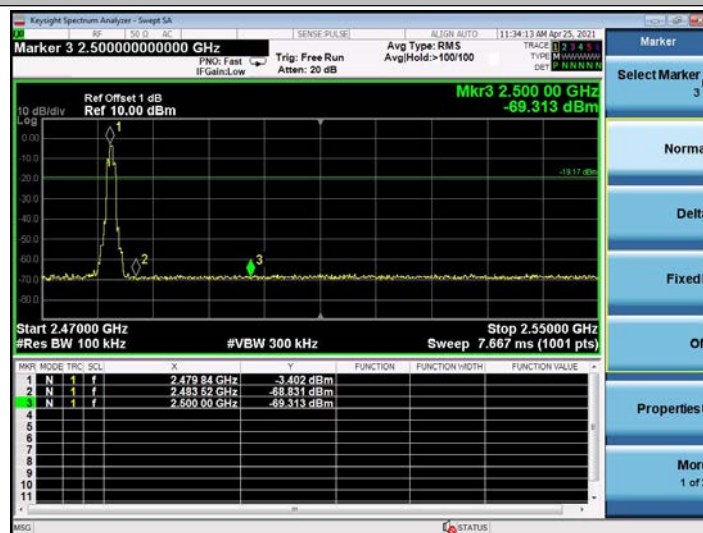
DH5_Ant1_Low_Hop_2402



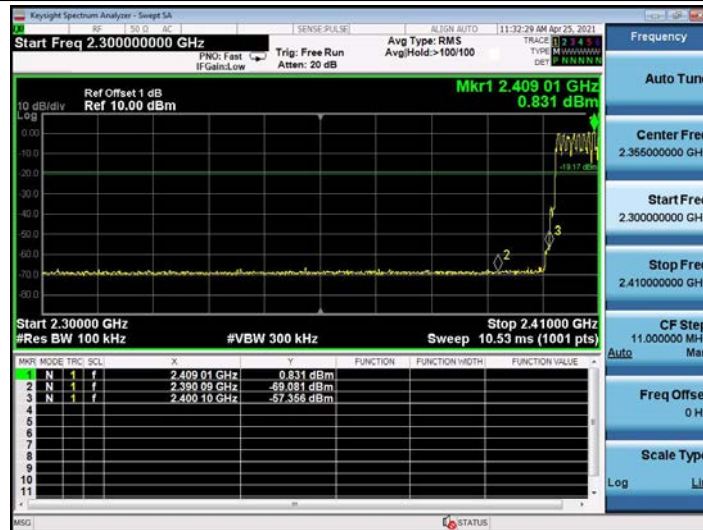
DH5_Ant1_High_Hop_2480



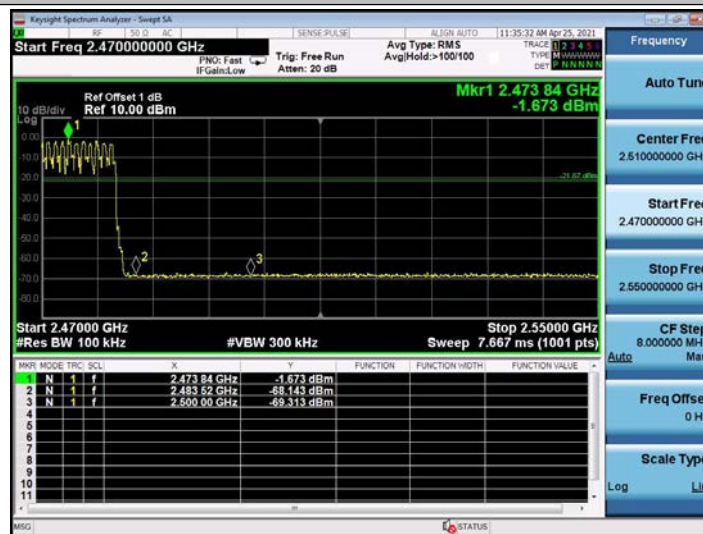
2DH5_Ant1_Low_2402



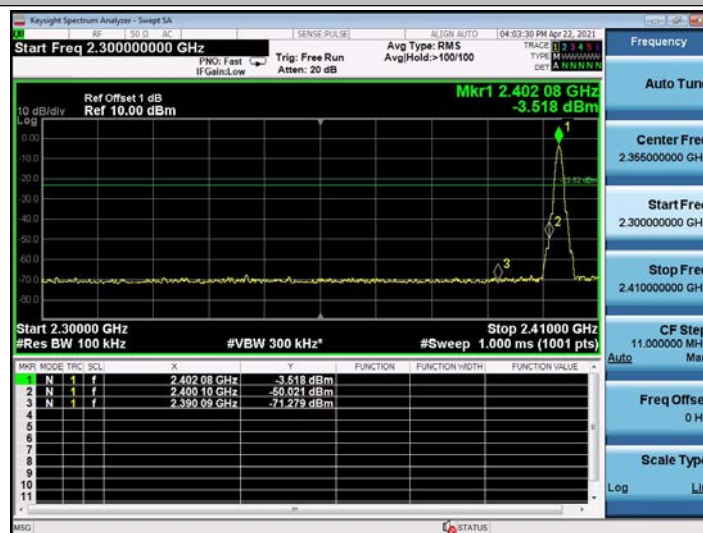
2DH5_Ant1_High_2480



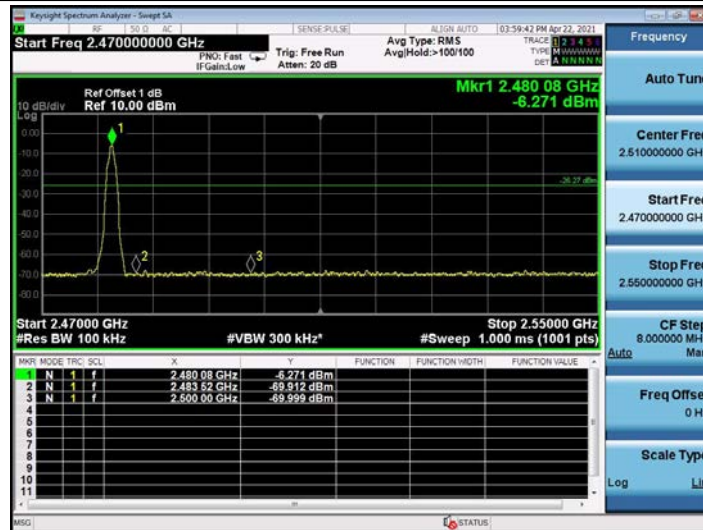
2DH5_Ant1_Low_Hop_2402



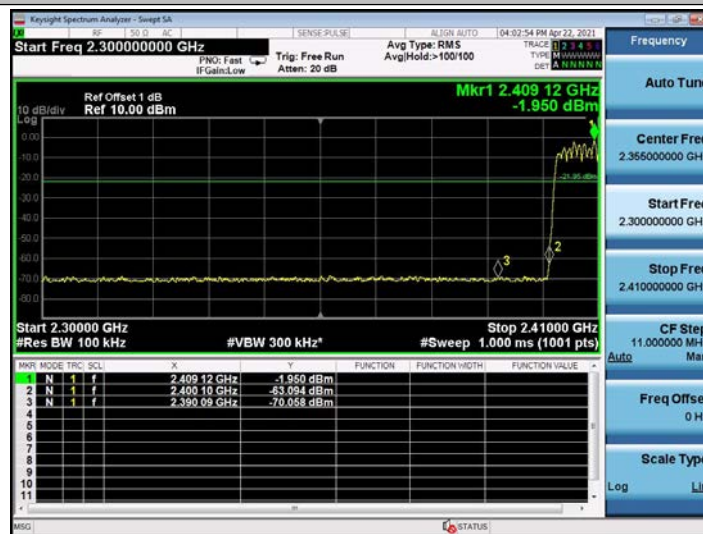
2DH5_Ant1_High_Hop_2480



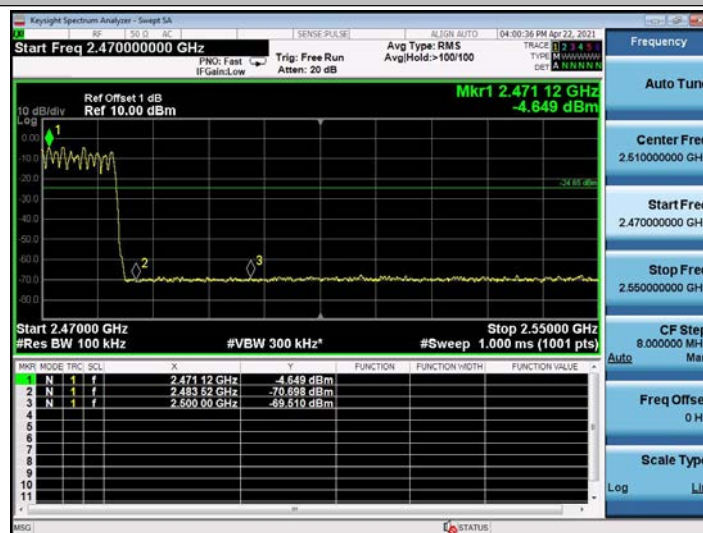
3DH5_Ant1_Low_2402



3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



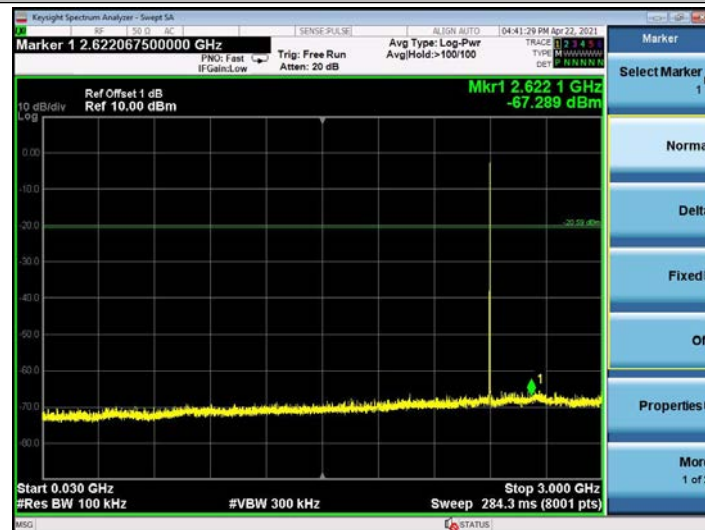
3DH5_Ant1_High_Hop_2480

A.7. RF Conducted Spurious Emissions

Test Graph



DH5_Ant1_2402_0~Reference



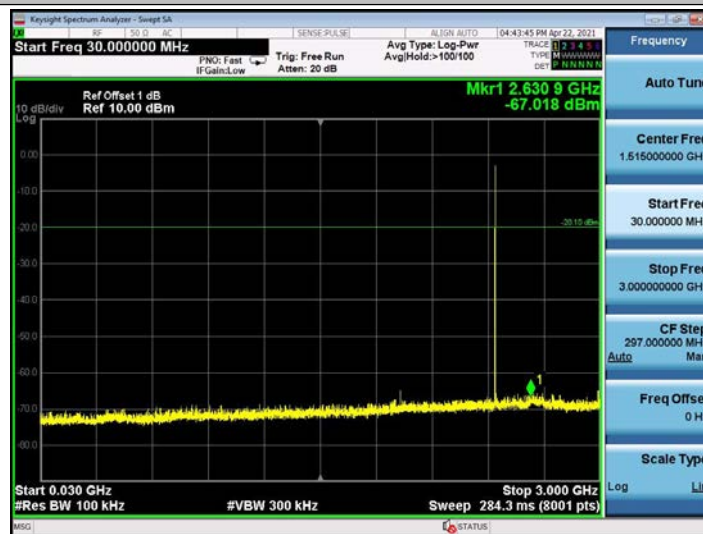
DH5_Ant1_2402_30~3000



DH5_Ant1_2402_3000~25000



DH5_Ant1_2441_0~Reference



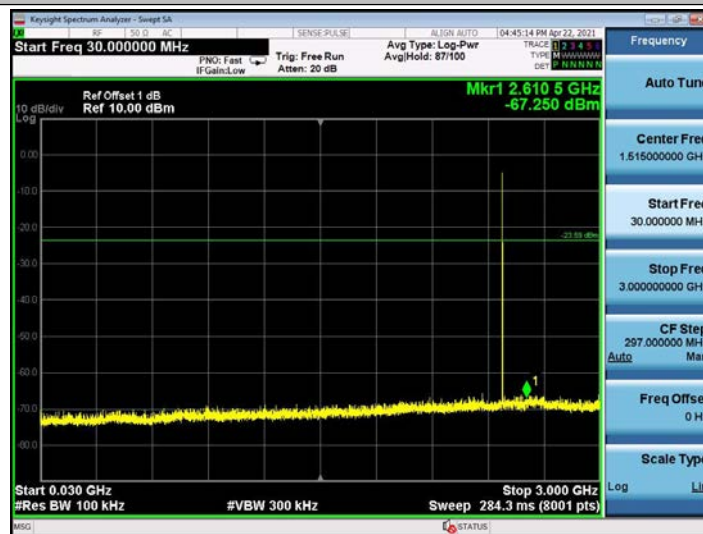
DH5_Ant1_2441_30~3000



DH5_Ant1_2441_3000~25000



DH5_Ant1_2480_0~Reference



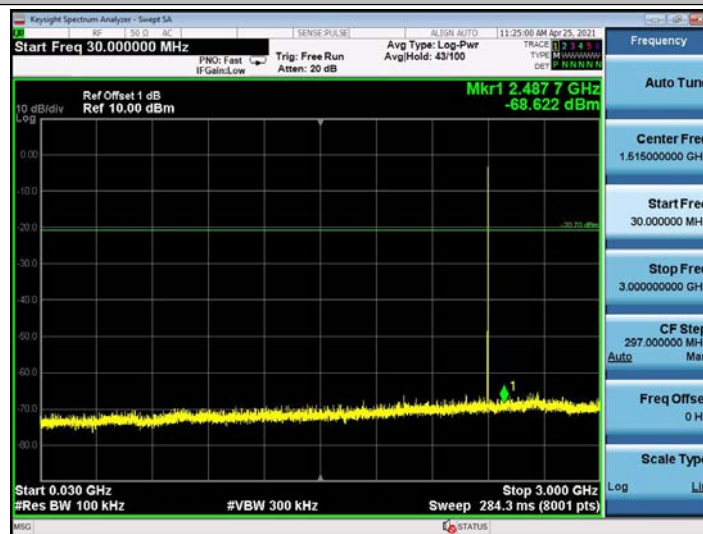
DH5_Ant1_2480_30~3000



DH5_Ant1_2480_3000~25000



2DH5_Ant1_2402_0~Reference



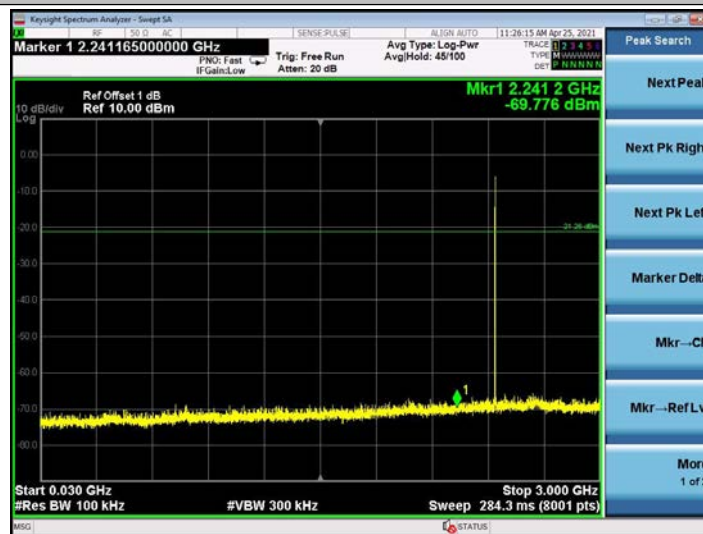
2DH5_Ant1_2402_30~3000



2DH5_Ant1_2402_3000~25000



2DH5_Ant1_2441_0~Reference



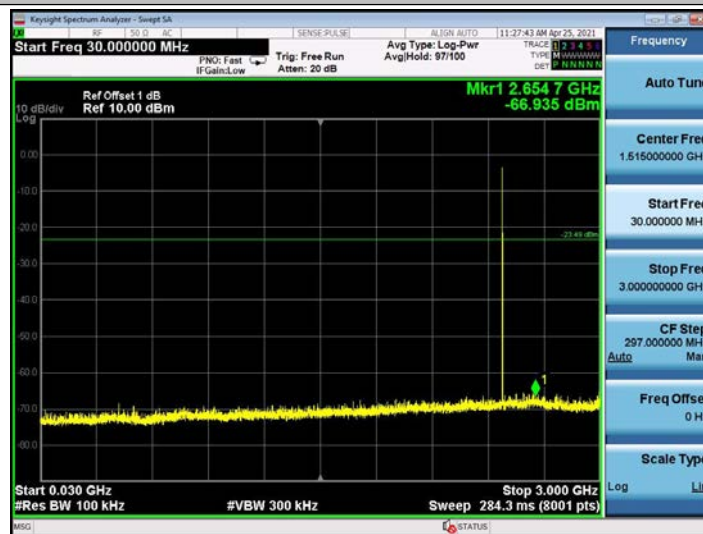
2DH5_Ant1_2441_30~3000



2DH5_Ant1_2441_3000~25000



2DH5_Ant1_2480_0~Reference



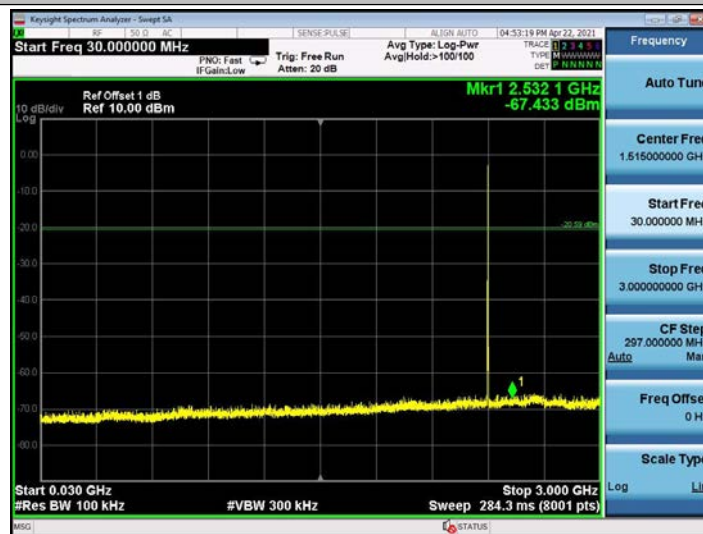
2DH5_Ant1_2480_30~3000



2DH5_Ant1_2480_3000~25000



3DH5_Ant1_2402_0~Reference



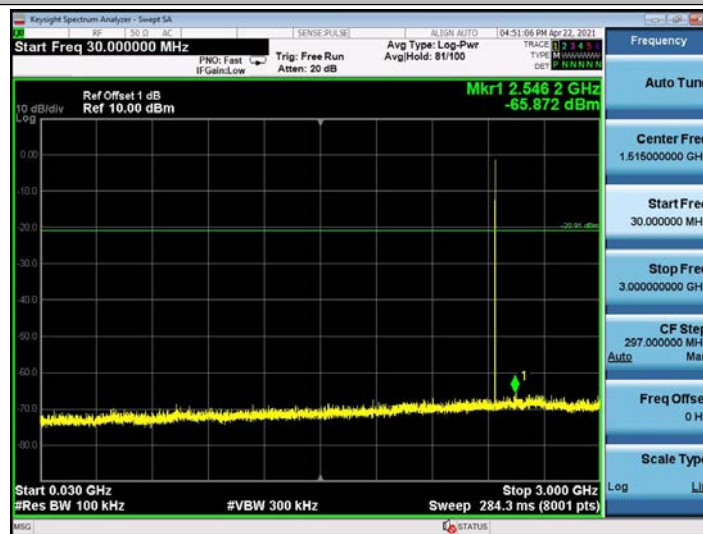
3DH5_Ant1_2402_30~3000



3DH5_Ant1_2402_3000~25000



3DH5_Ant1_2441_0~Reference



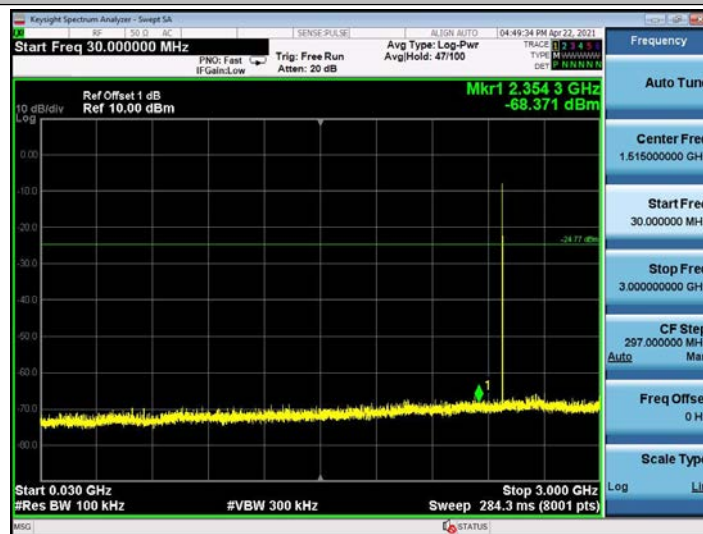
3DH5_Ant1_2441_30~3000



3DH5_Ant1_2441_3000~25000



3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~3000



3DH5_Ant1_2480_3000~25000

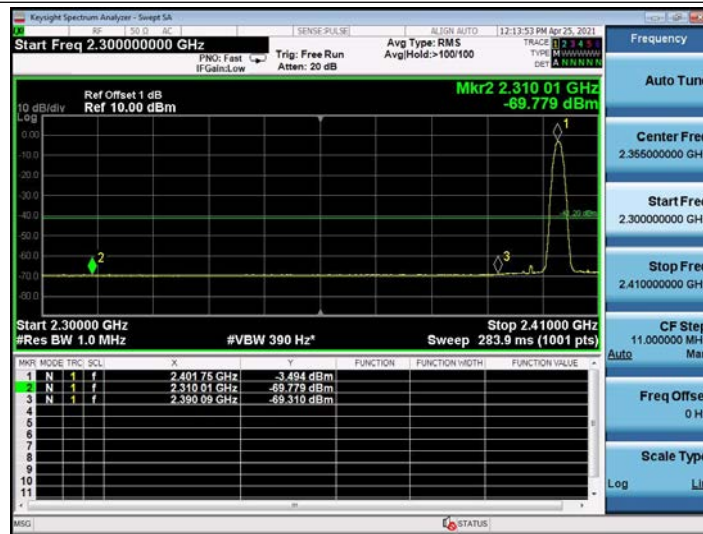
A.8. Restrict-band band-edge measurements

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	AV	2310.000	-69.77	<=-41.20	PASS
				AV	2390.000	-69.31	<=-41.20	PASS
				Peak	2310.000	-62.24	<=-21.20	PASS
				Peak	2390.000	-62.49	<=-21.20	PASS
		High	2480	AV	2483.500	-68.80	<=-41.20	PASS
				AV	2500.000	-68.81	<=-41.20	PASS
				Peak	2483.500	-61.54	<=-21.20	PASS
				Peak	2500.000	-62.05	<=-21.20	PASS
2DH5	Ant1	Low	2402	AV	2310.000	-69.32	<=-41.20	PASS
				AV	2390.000	-69.79	<=-41.20	PASS
				Peak	2310.000	-63.40	<=-21.20	PASS
				Peak	2390.000	-62.79	<=-21.20	PASS
		High	2480	AV	2483.500	-68.75	<=-41.20	PASS
				AV	2500.000	-68.85	<=-41.20	PASS
				Peak	2483.500	-62.88	<=-21.20	PASS
				Peak	2500.000	-61.70	<=-21.20	PASS
3DH5	Ant1	Low	2402	AV	2310.000	-69.88	<=-41.20	PASS
				AV	2390.000	-66.38	<=-41.20	PASS
				Peak	2310.000	-63.56	<=-21.20	PASS
				Peak	2390.000	-61.75	<=-21.20	PASS
		High	2480	AV	2483.500	-68.93	<=-41.20	PASS
				AV	2500.000	-68.93	<=-41.20	PASS
				Peak	2483.500	-61.51	<=-21.20	PASS
				Peak	2500.000	-62.00	<=-21.20	PASS

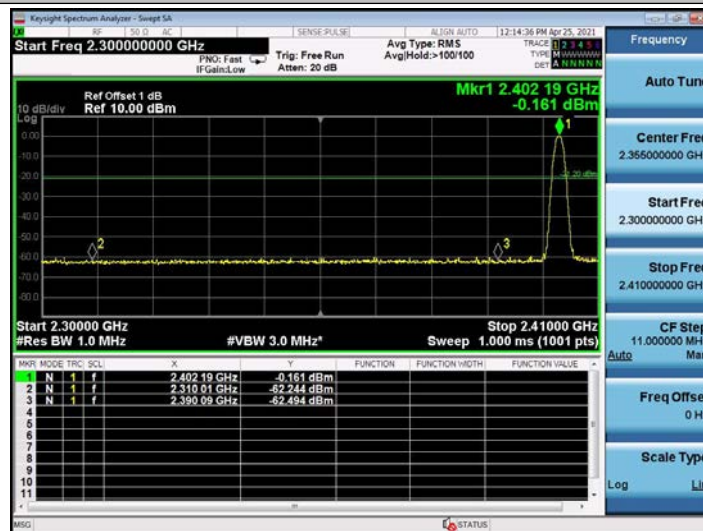
Note:

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.

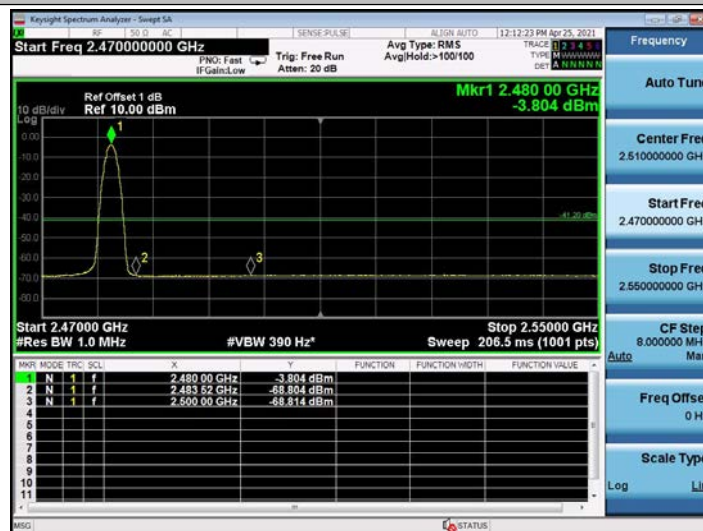
Test Graph



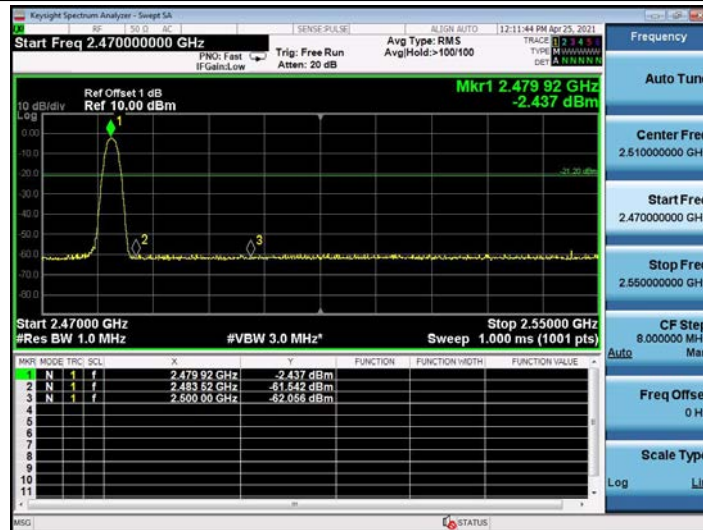
DH5_Ant1_Low_2402_AV



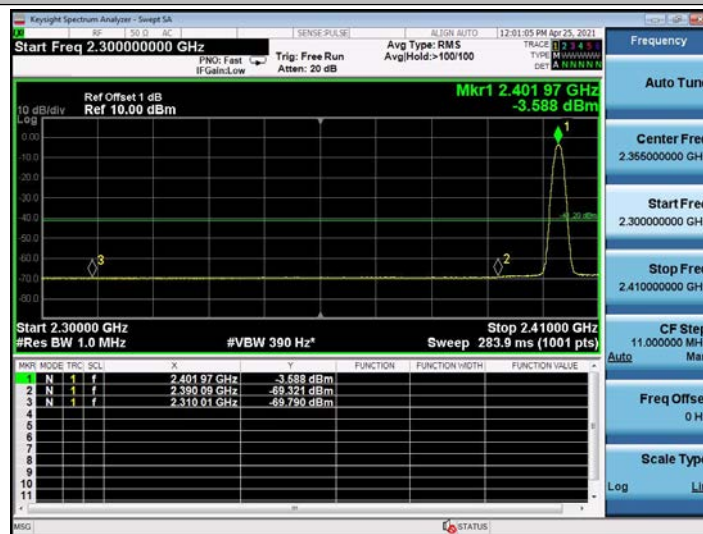
DH5_Ant1_Low_2402_PK



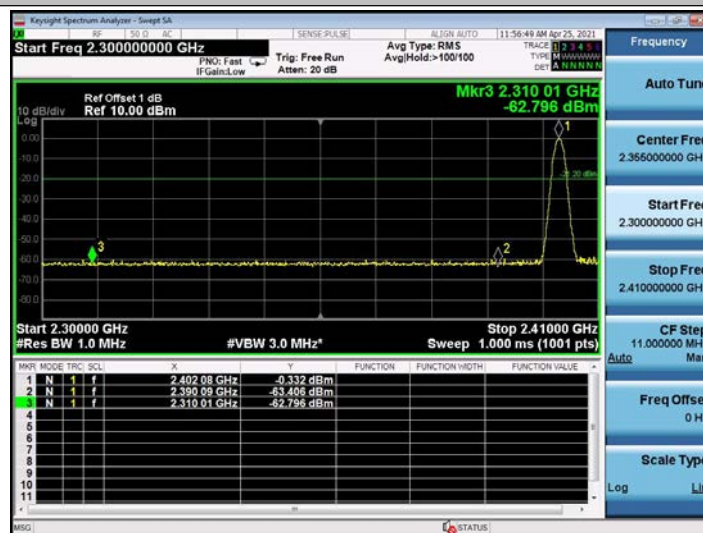
DH5_Ant1_High_2480_AV



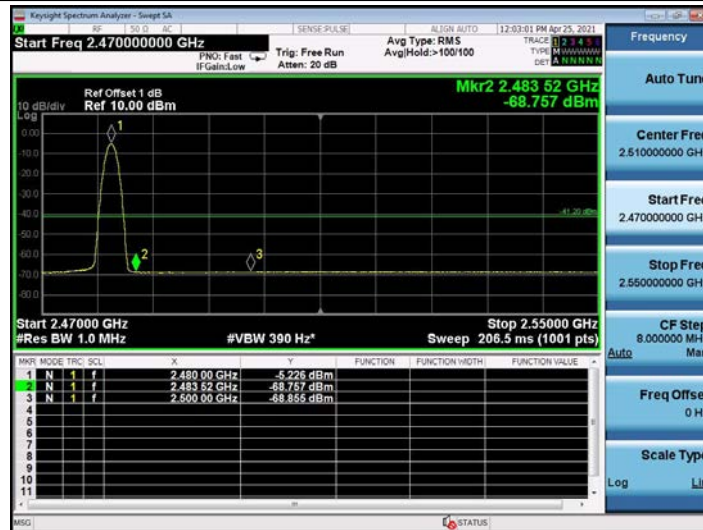
DH5_Ant1_High_2480_PK



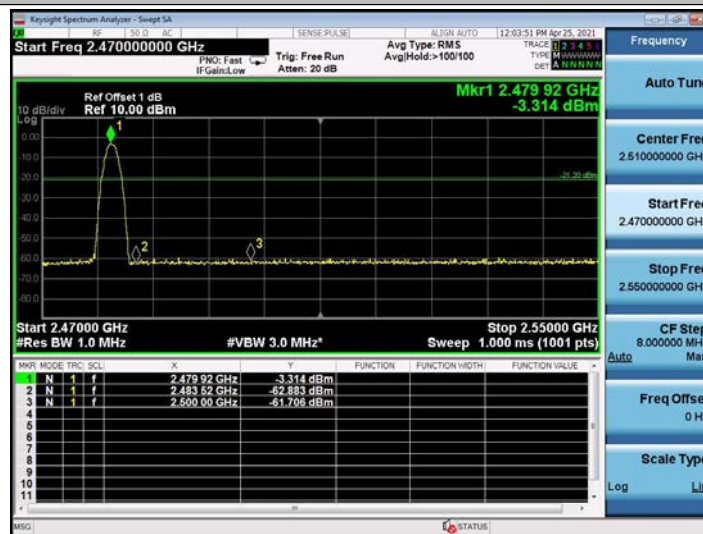
2DH5_Ant1_Low_2402_AV



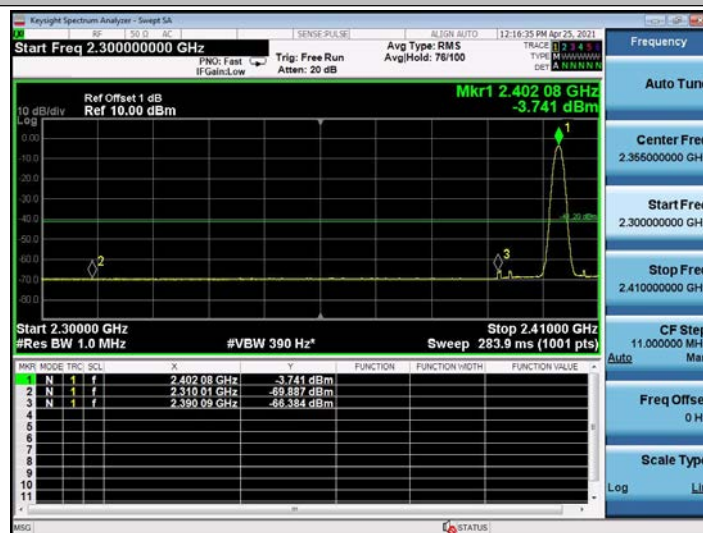
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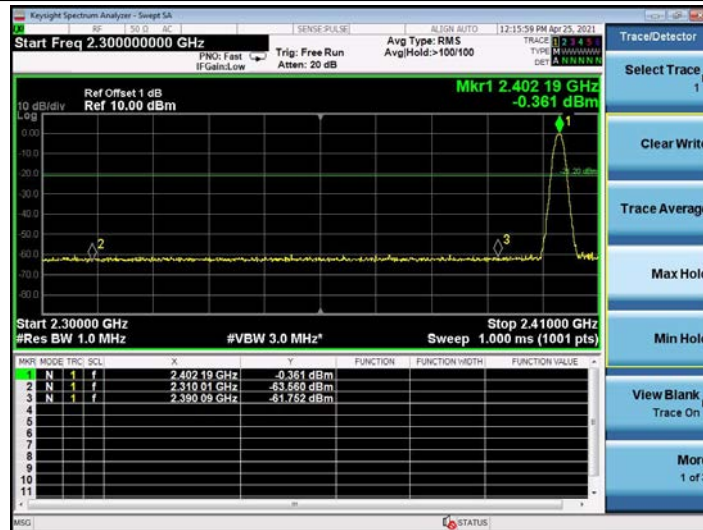
2DH5_Ant1_High_2480_AV



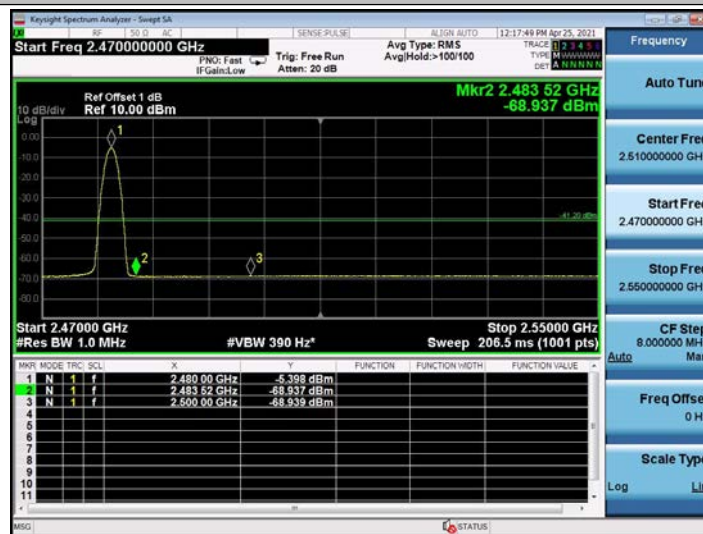
2DH5_Ant1_High_2480_PK



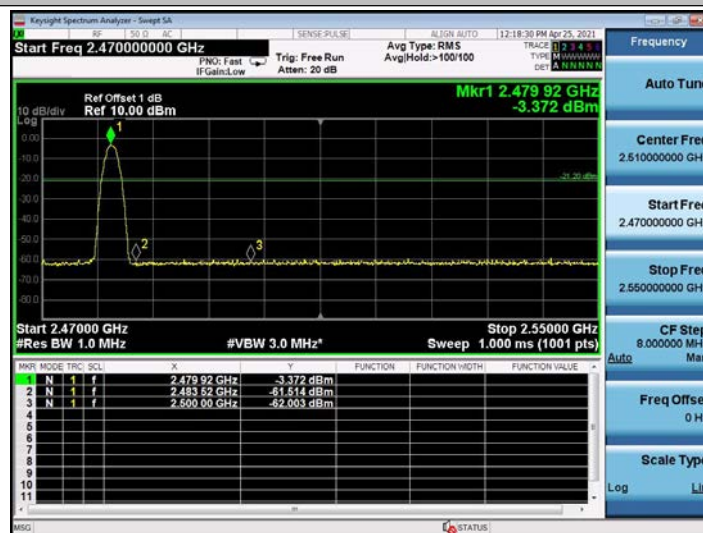
3DH5_Ant1_Low_2402_AV



3DH5_Ant1_Low_2402_PK



3DH5_Ant1_High_2480_AV



3DH5_Ant1_High_2480_PK