

Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: TWS Wireless Bluetooth Headset

Trade Mark: N/A

Test Model: K6

Environmental Conditions

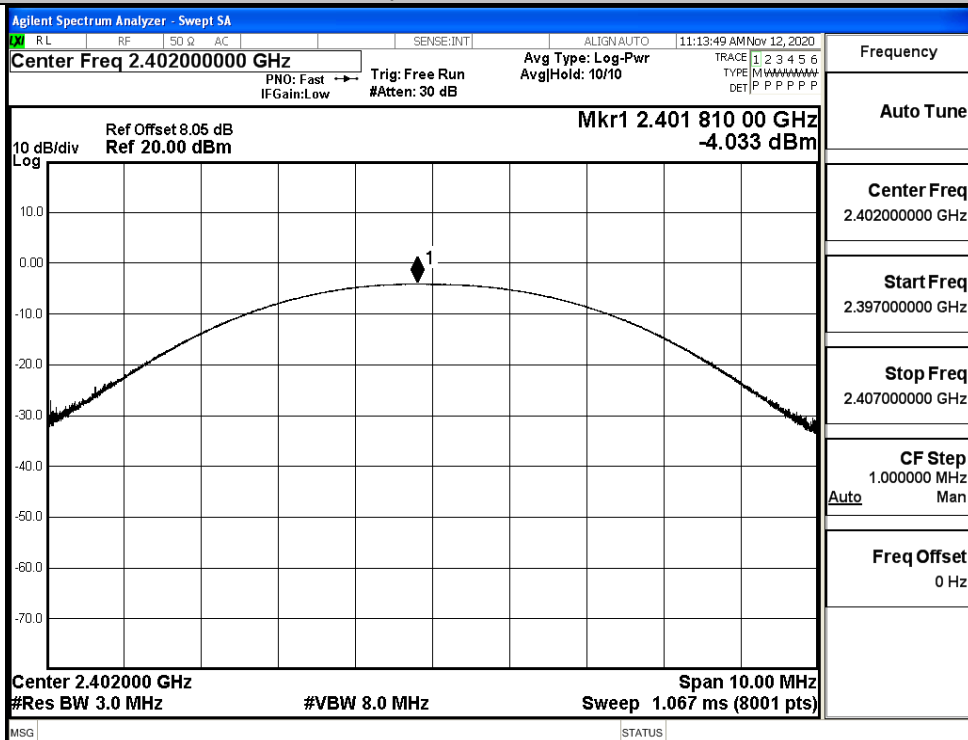
Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	JAM ZHENG
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

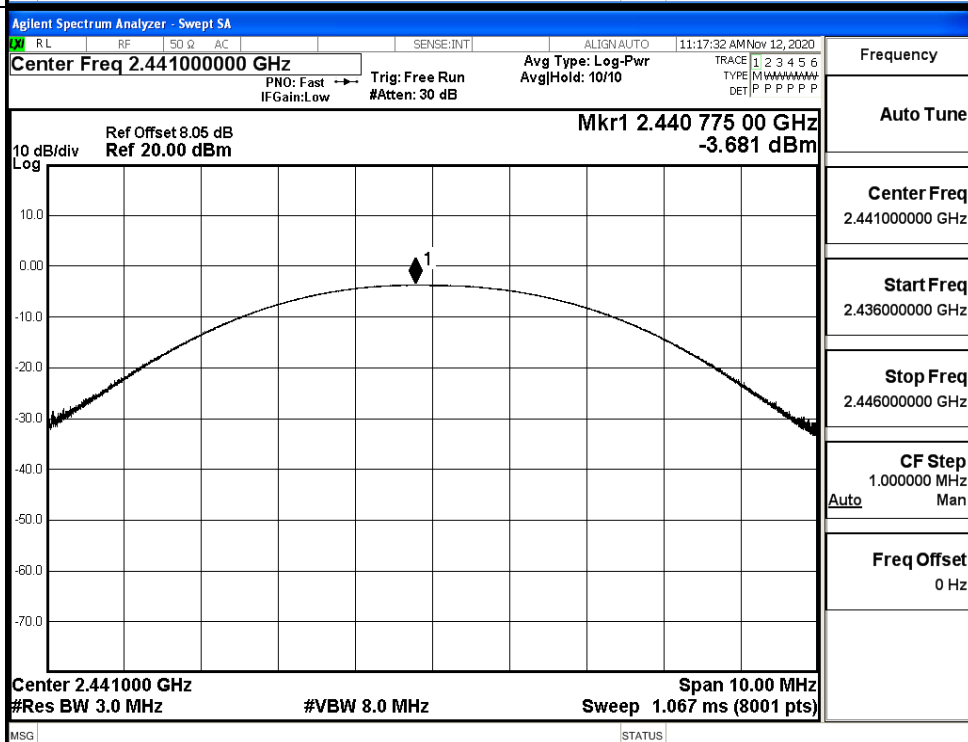
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-4.033	21	PASS
	MCH	-3.681	21	PASS
	HCH	-3.950	21	PASS
$\pi/4$ DQPSK	LCH	-3.727	21	PASS
	MCH	-3.360	21	PASS
	HCH	-3.633	21	PASS

Test Graphs

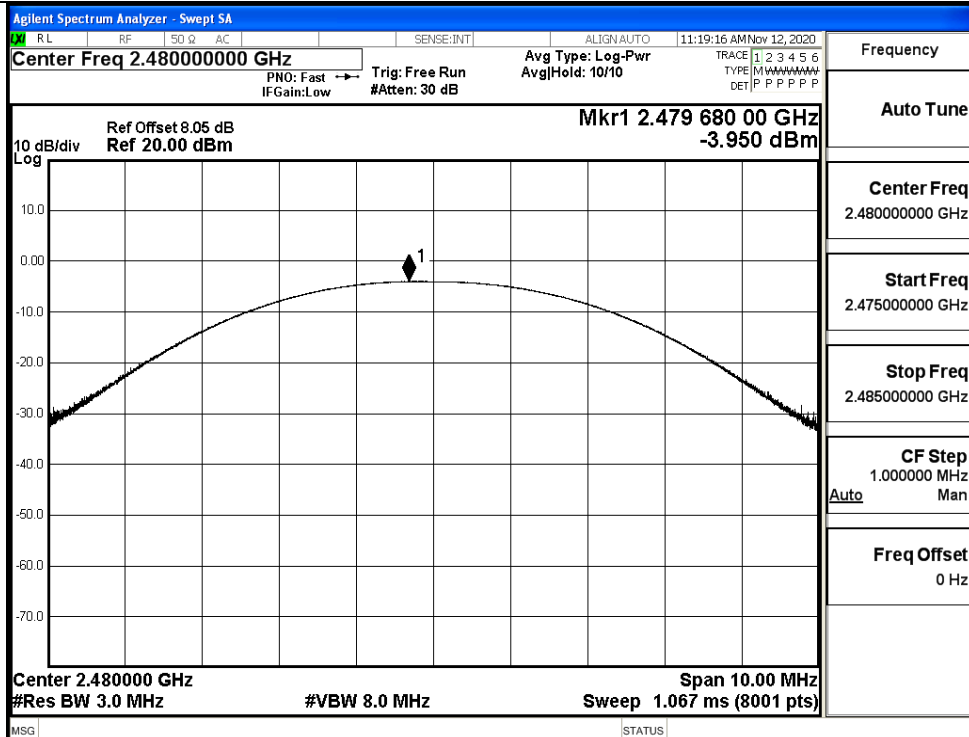
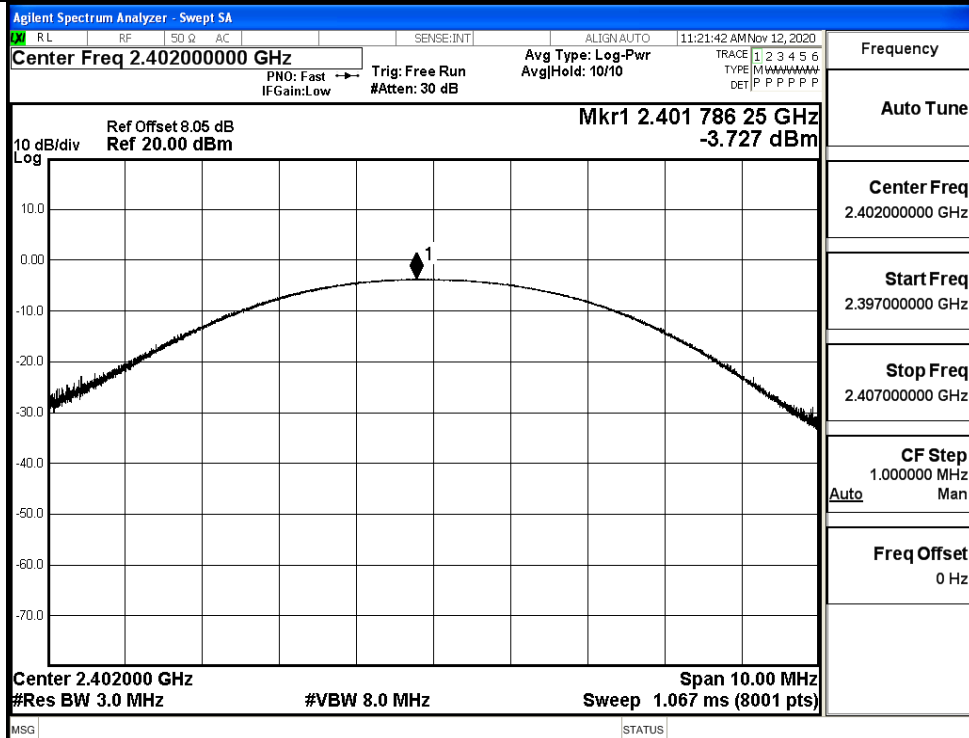
GFSK/LCH

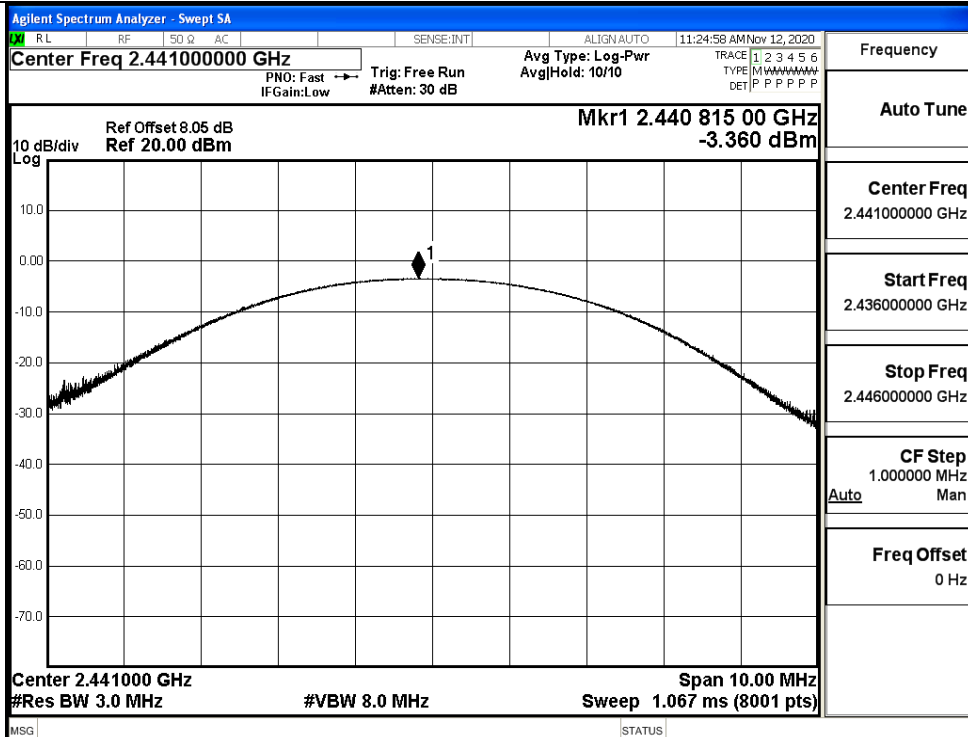
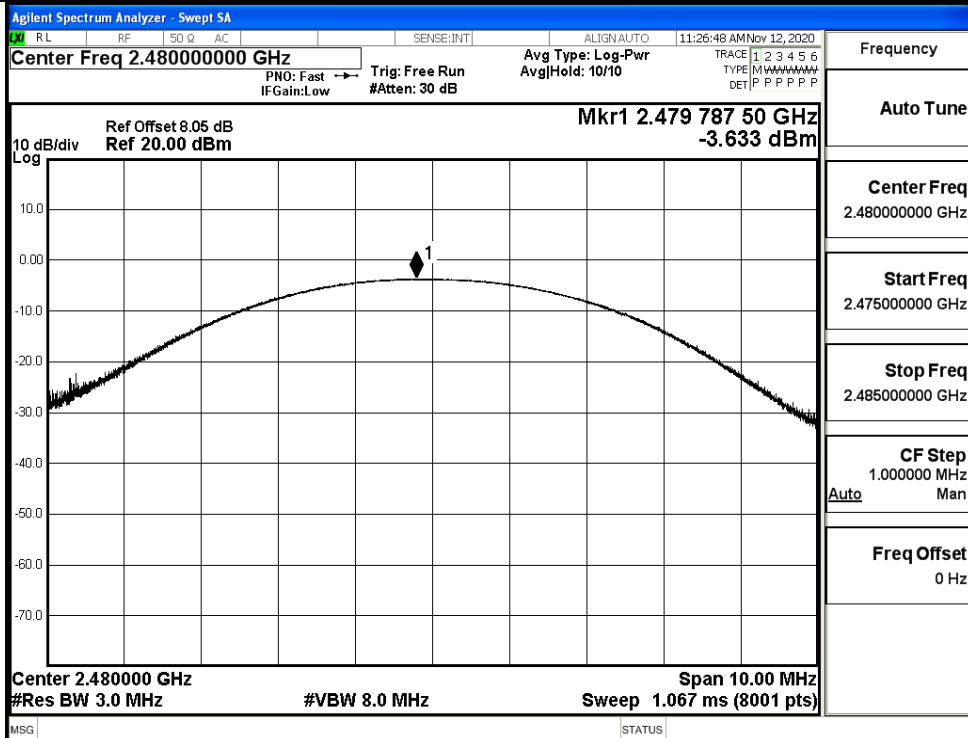


GFSK/MCH



GFSK/HCH

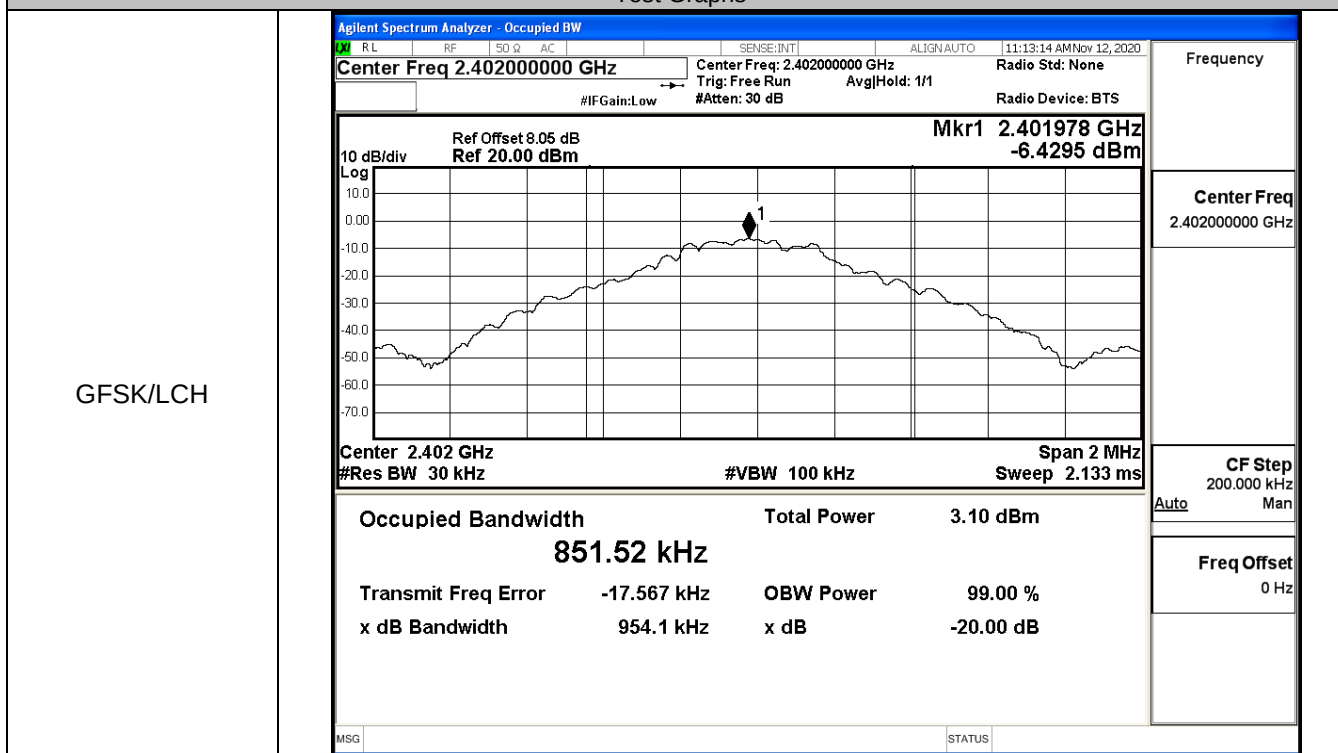
 $\pi/4$ DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

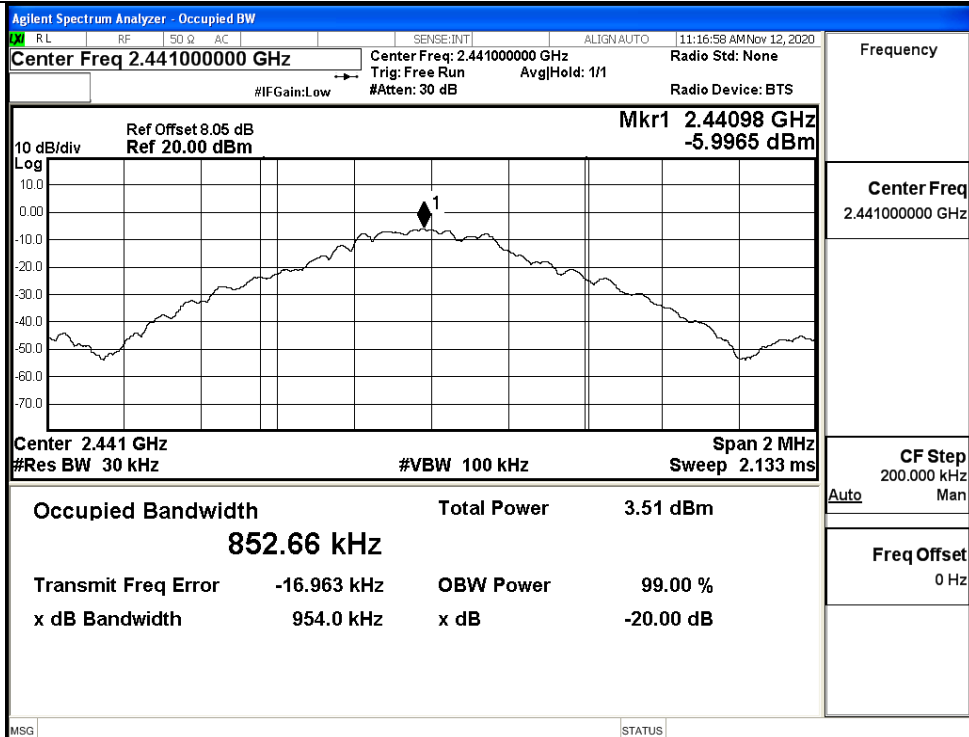
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9541	Not Specified	PASS
	MCH	0.9540	Not Specified	PASS
	HCH	0.9548	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.310	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.307	Not Specified	PASS

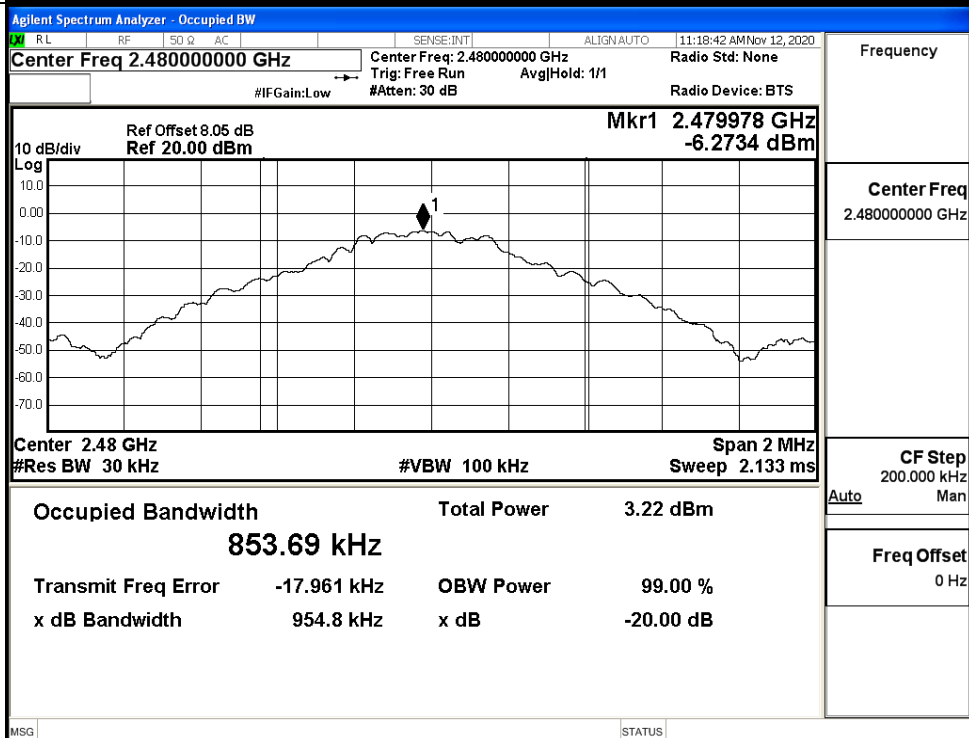
Test Graphs

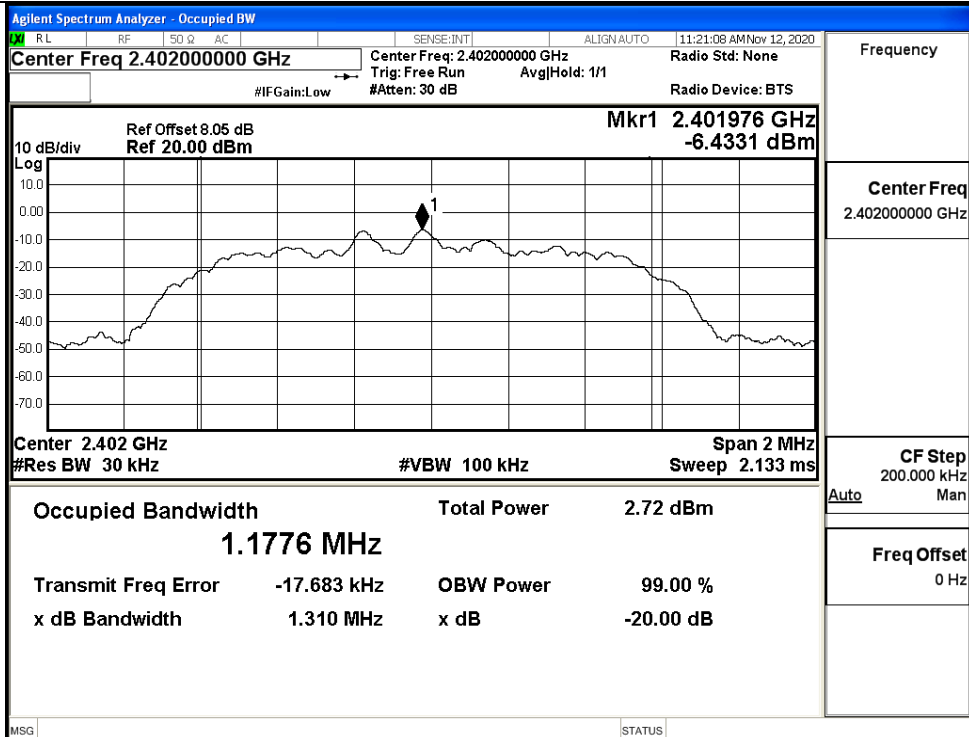
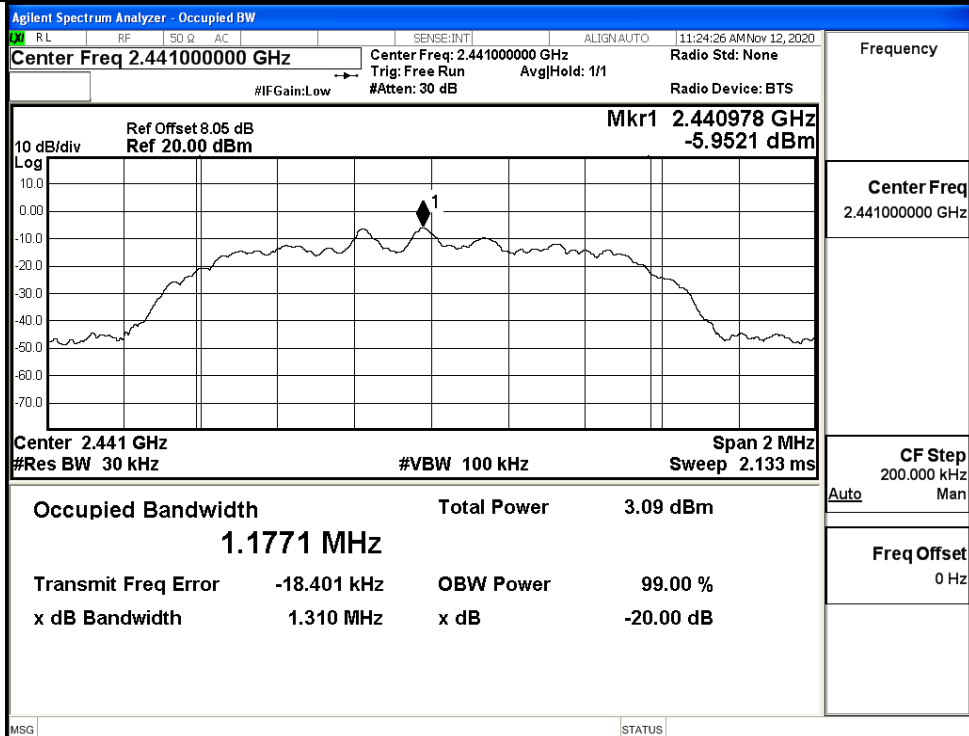


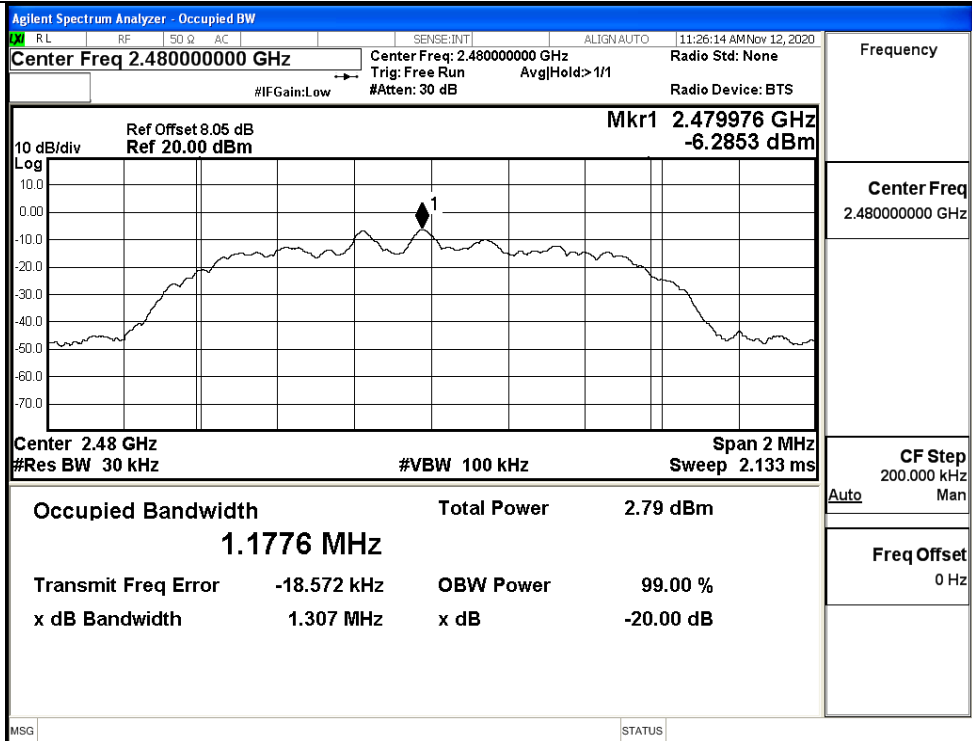
GFSK/MCH



GFSK/HCH



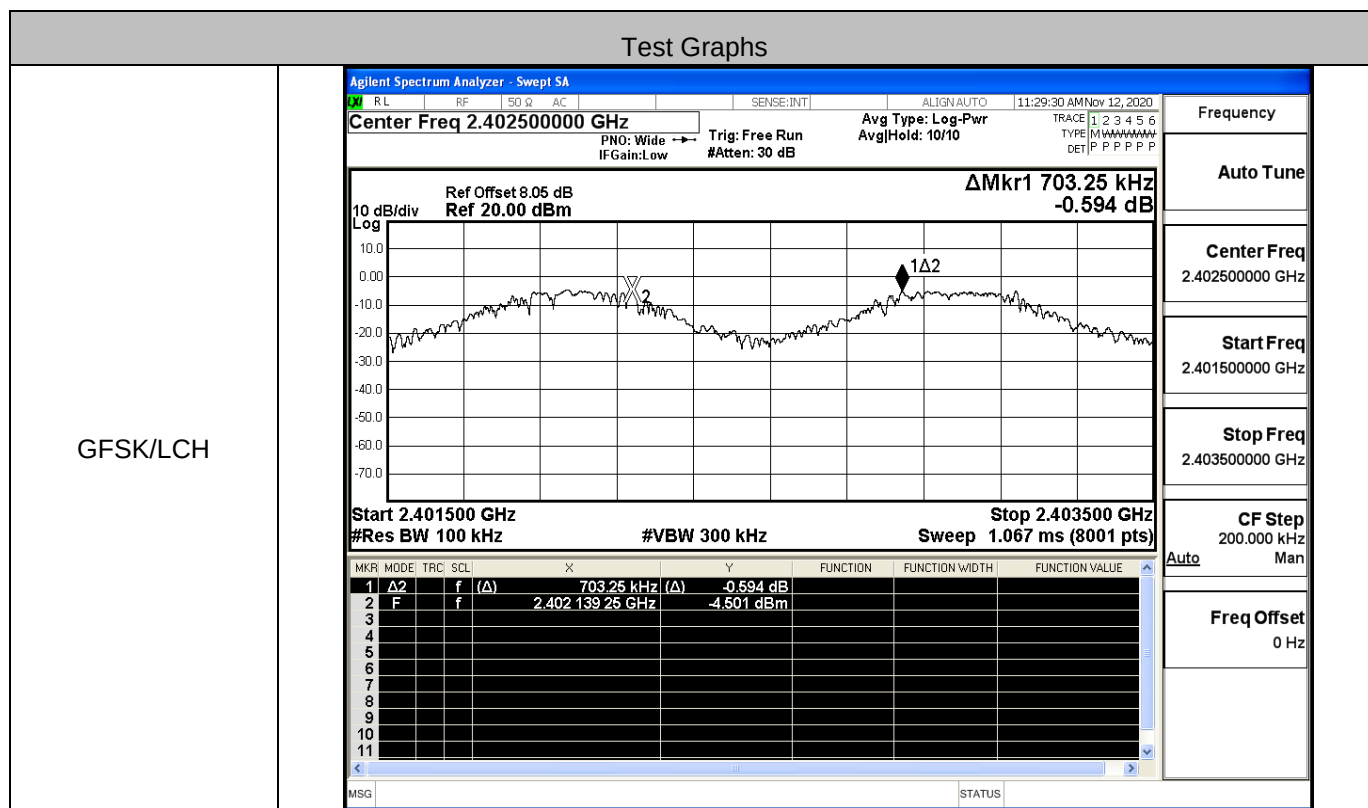
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

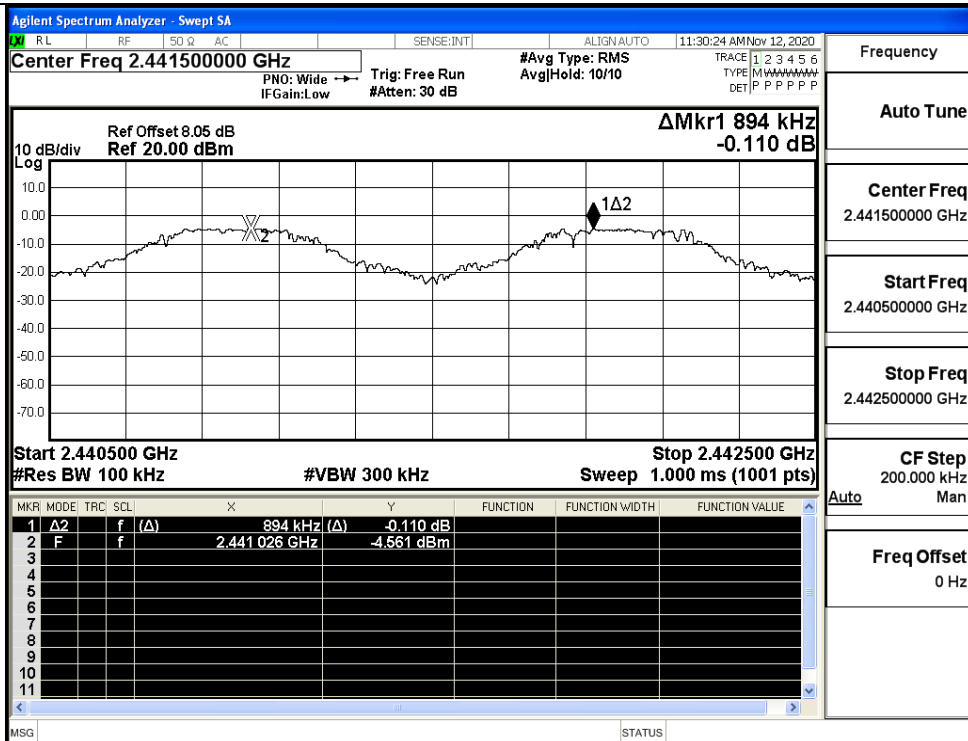
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.703	0.637	PASS
	MCH	0.894	0.637	PASS
	HCH	0.966	0.637	PASS
$\pi/4$ DQPSK	LCH	1.160	0.873	PASS
	MCH	1.338	0.873	PASS
	HCH	1.136	0.873	PASS

Test Graphs



GFSK/MCH

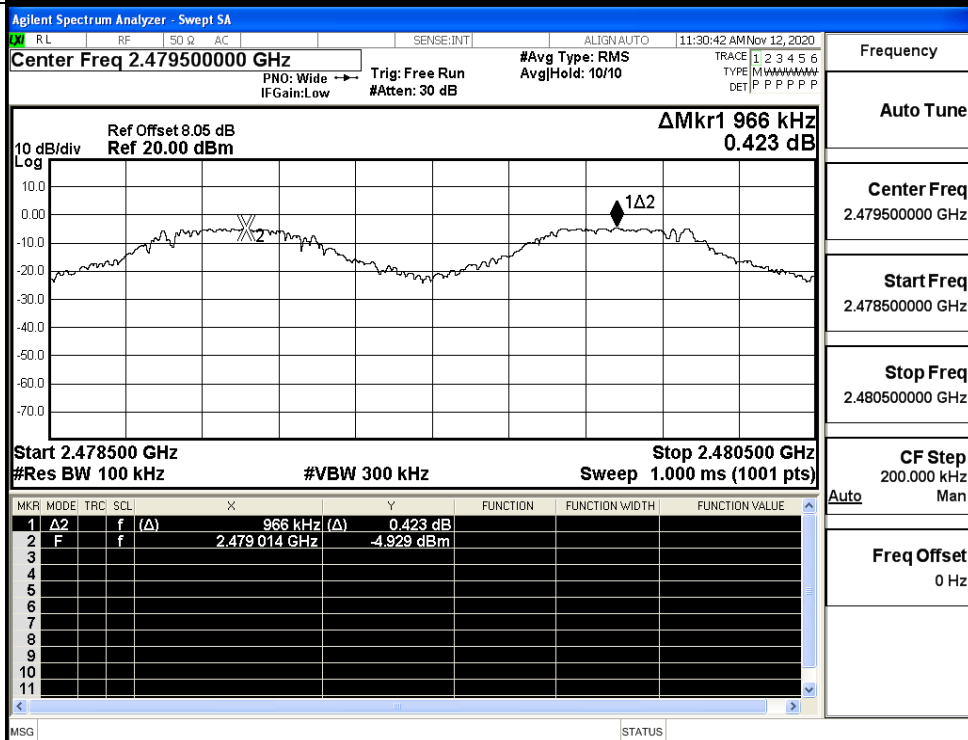


Frequency

Auto Tune

Center Freq
2.441500000 GHzStart Freq
2.440500000 GHzStop Freq
2.442500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

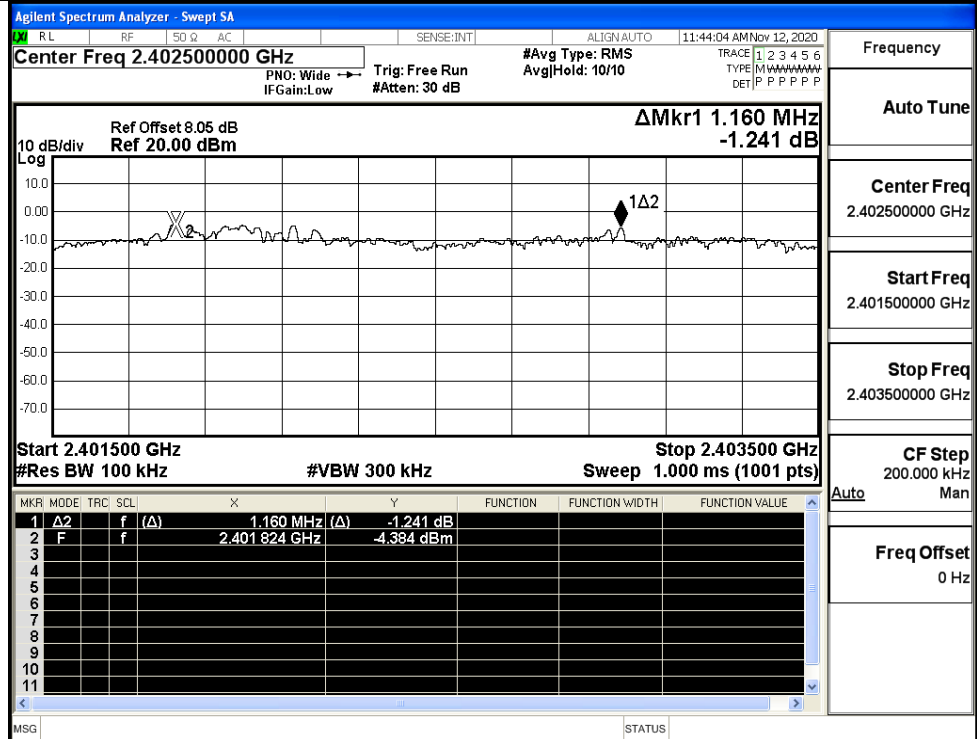
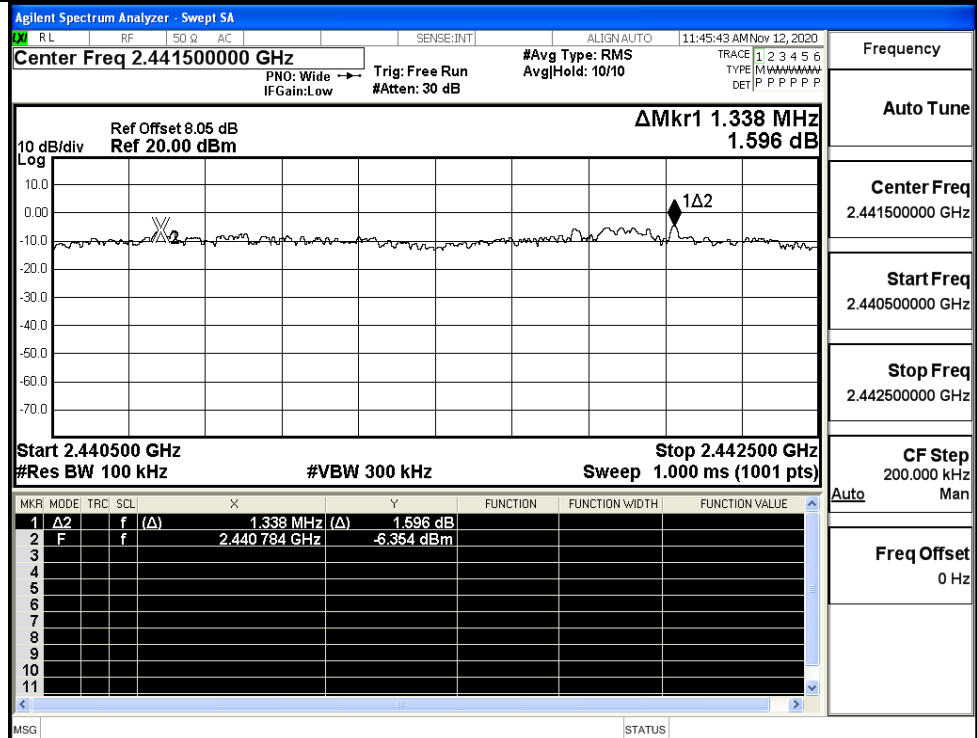
GFSK/HCH

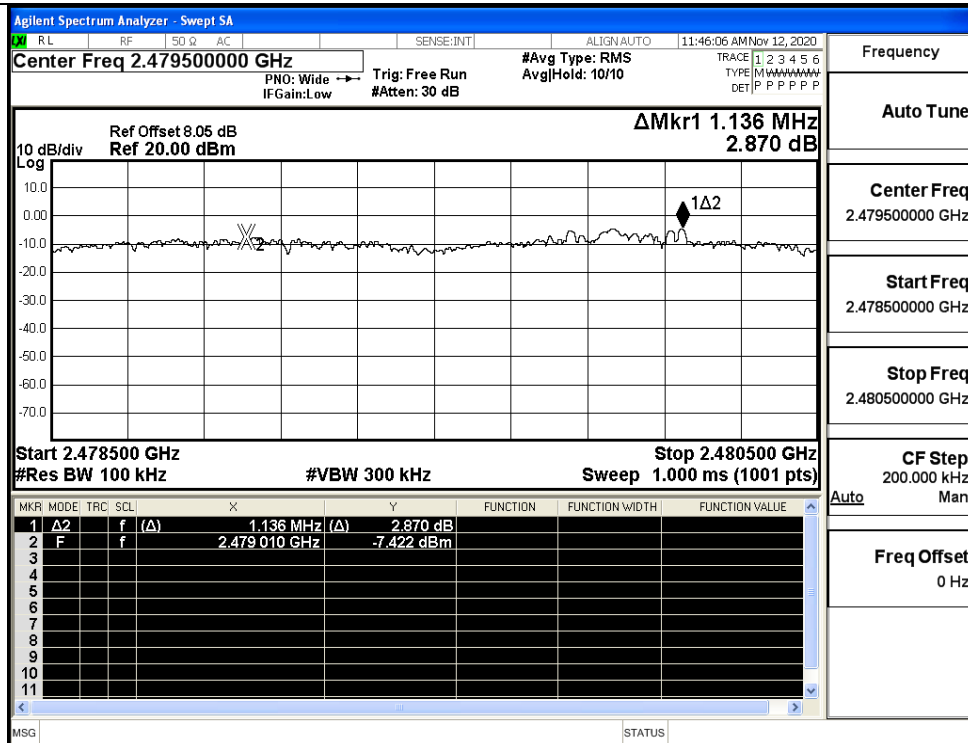


Frequency

Auto Tune

Center Freq
2.479500000 GHzStart Freq
2.478500000 GHzStop Freq
2.480500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

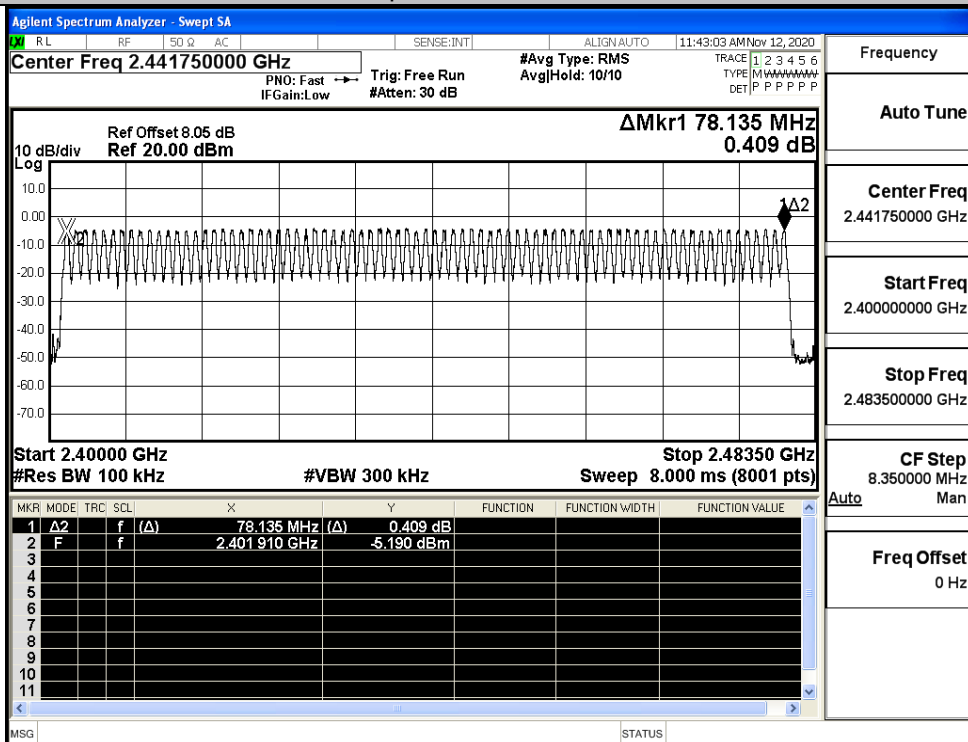
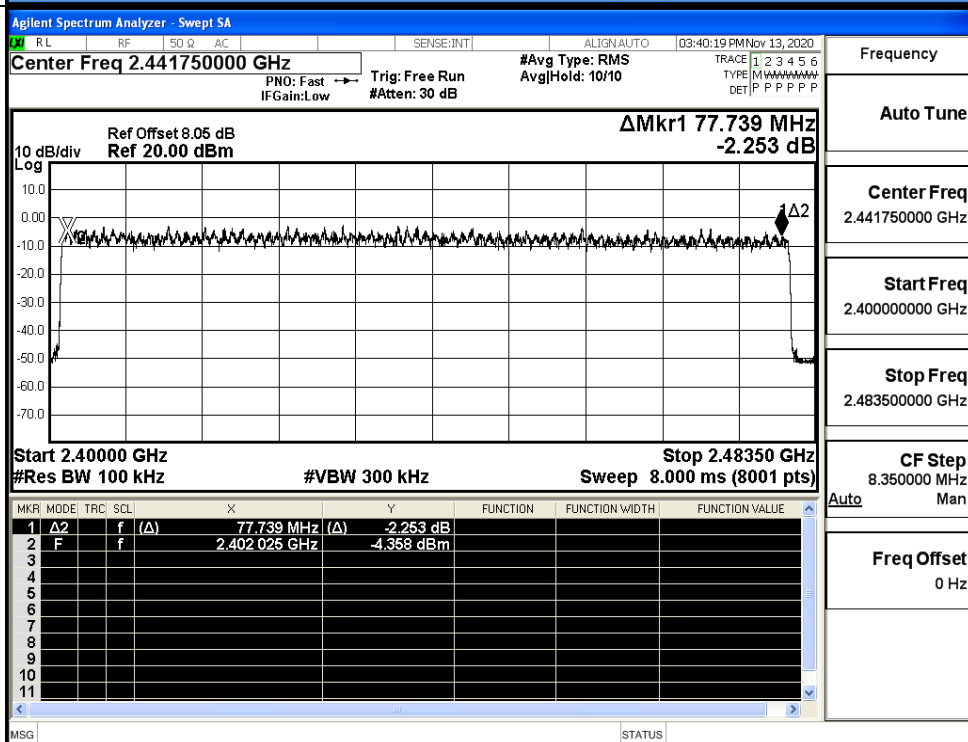
$\pi/4$ DQPSK/HCH

A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

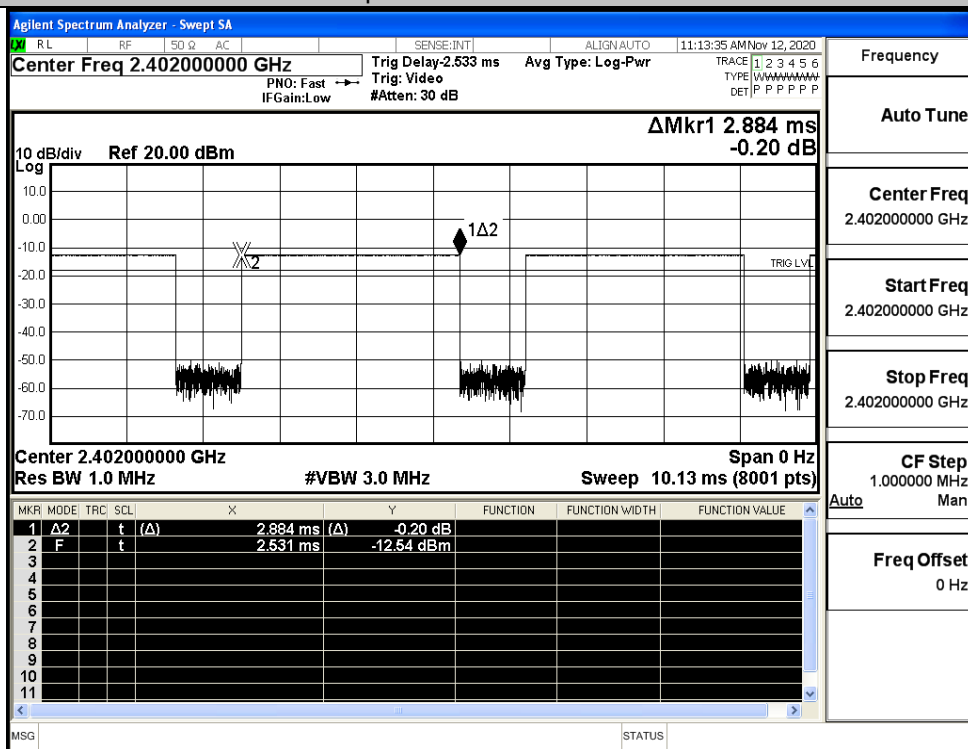
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

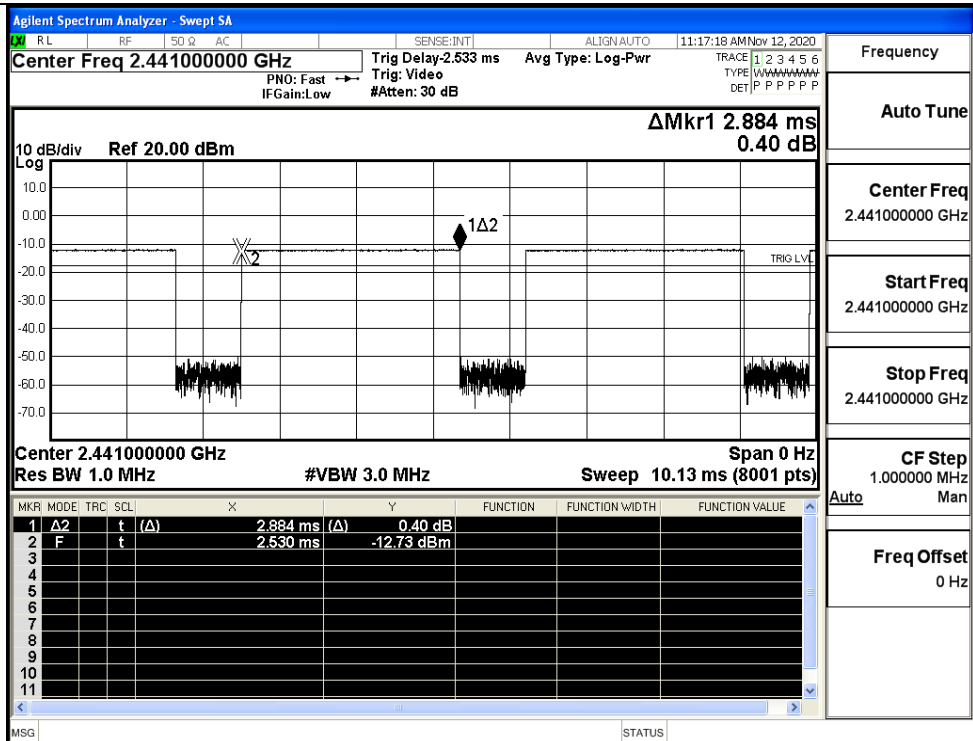
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.308	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs

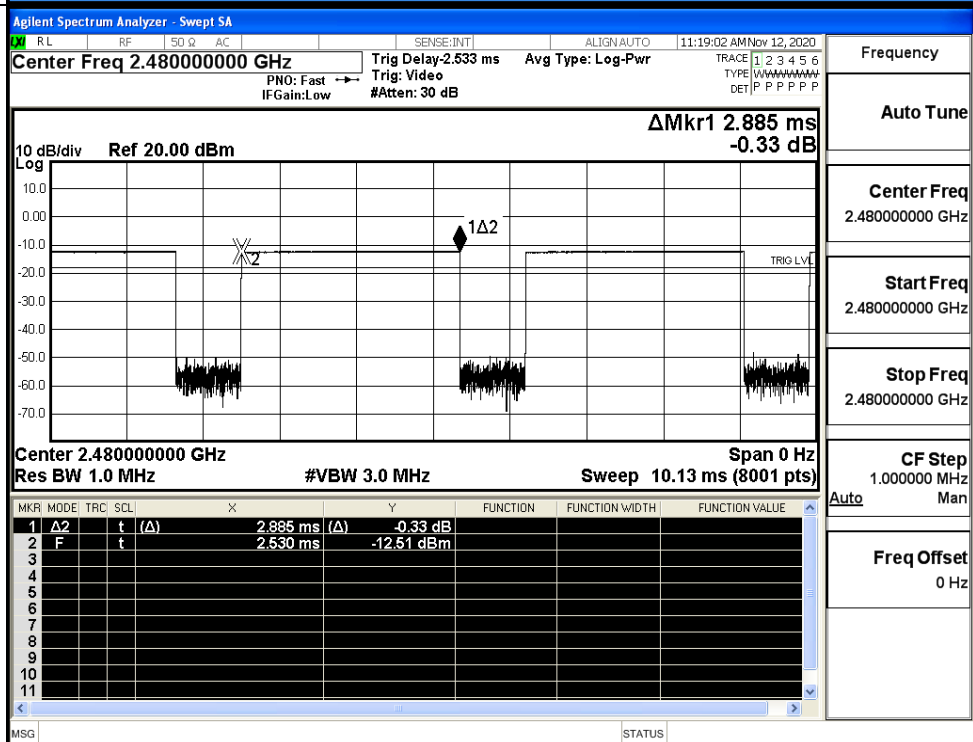
GFSK_DH5/LCH



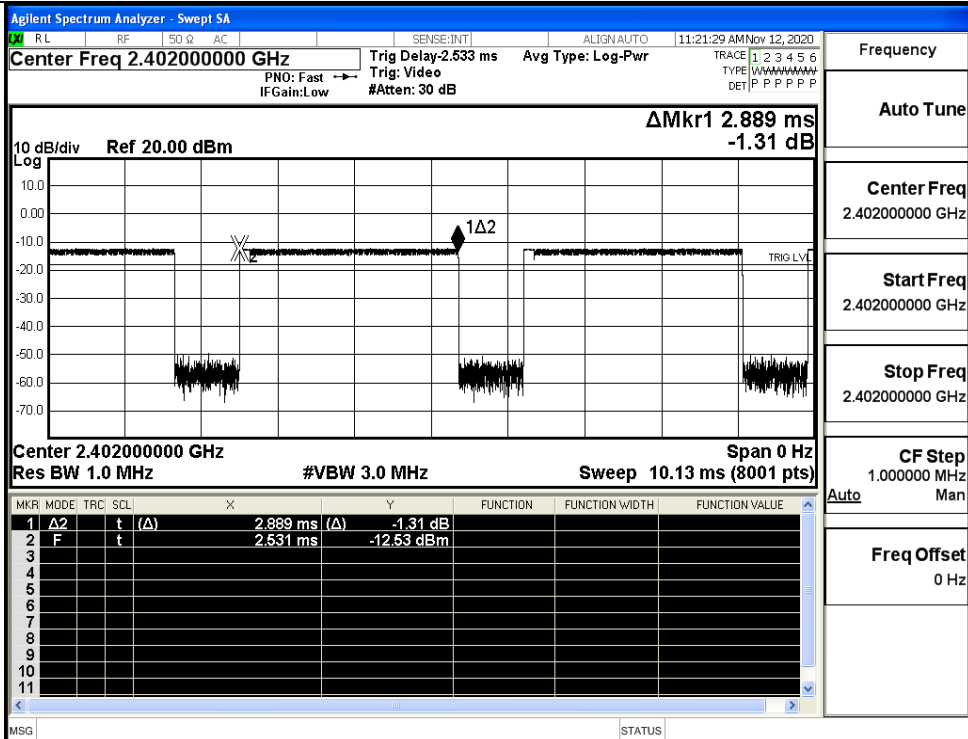
GFSK_DH5/MCH



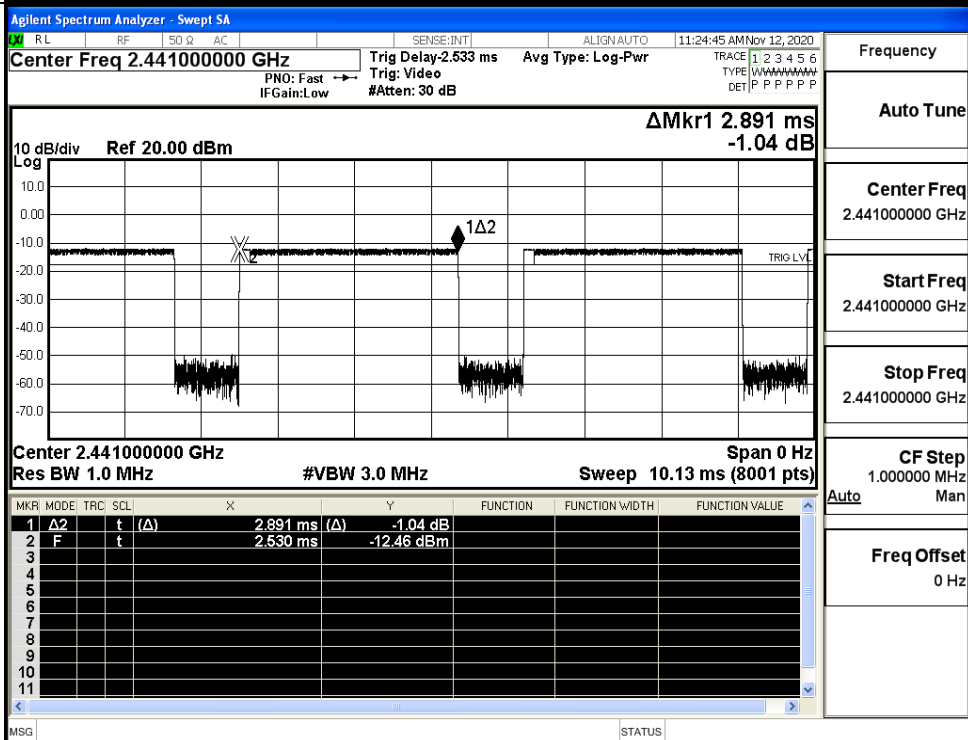
GFSK_DH5/HCH



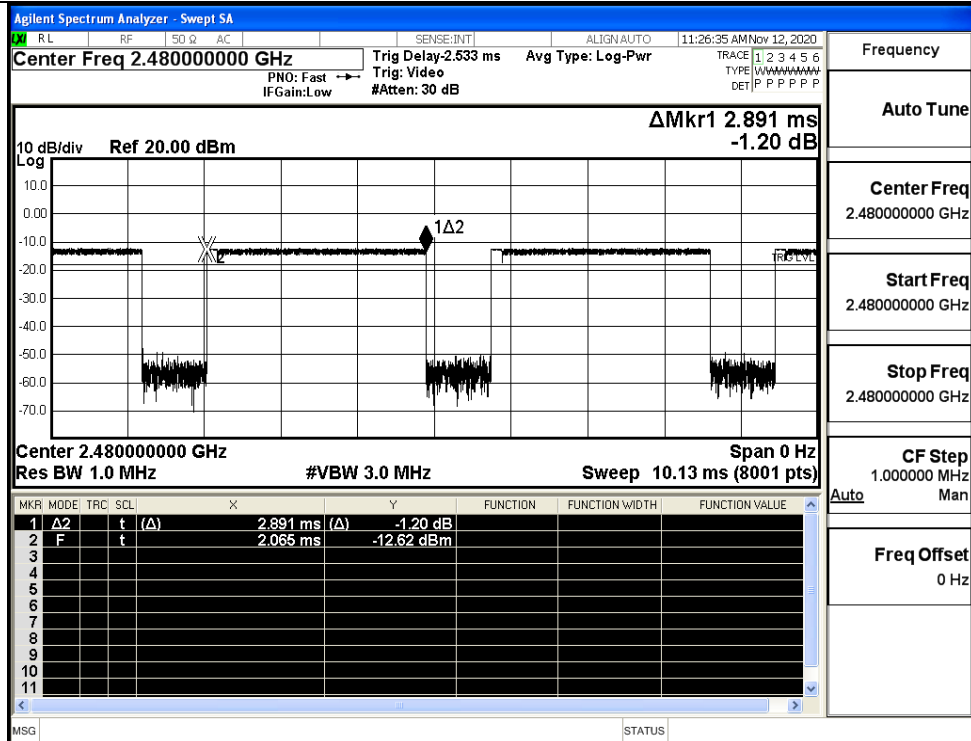
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

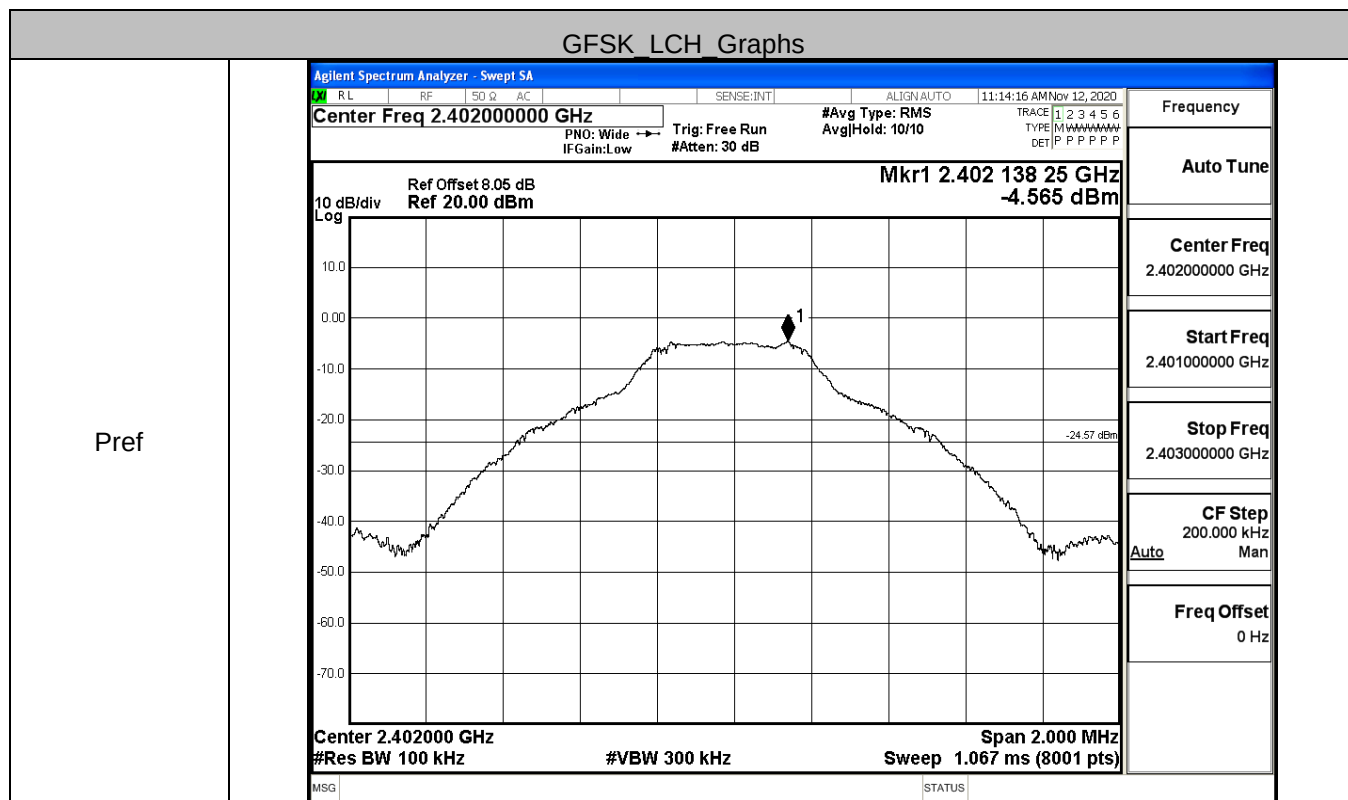


$\pi/4$ DQPSK
_2DH5/HCH

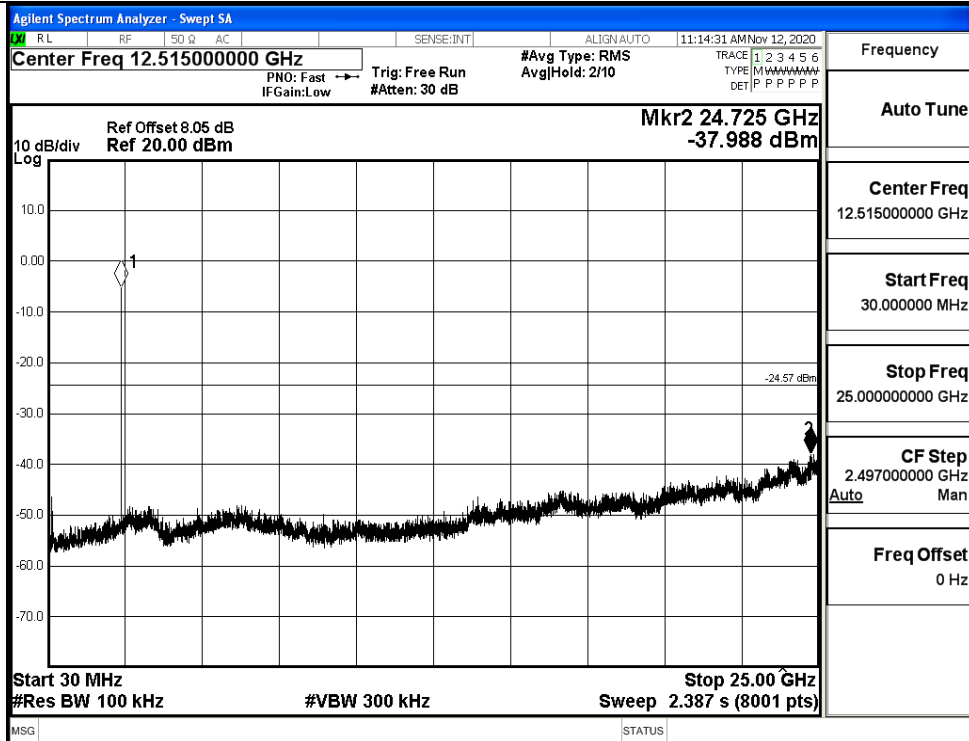


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-4.565	-37.988	-24.565	PASS
	MCH	-4.144	-37.088	-24.144	PASS
	HCH	-4.542	-38.255	-24.542	PASS
$\pi/4$ DQPSK	LCH	-4.571	-37.207	-24.571	PASS
	MCH	-4.221	-37.990	-24.221	PASS
	HCH	-4.342	-37.352	-24.342	PASS

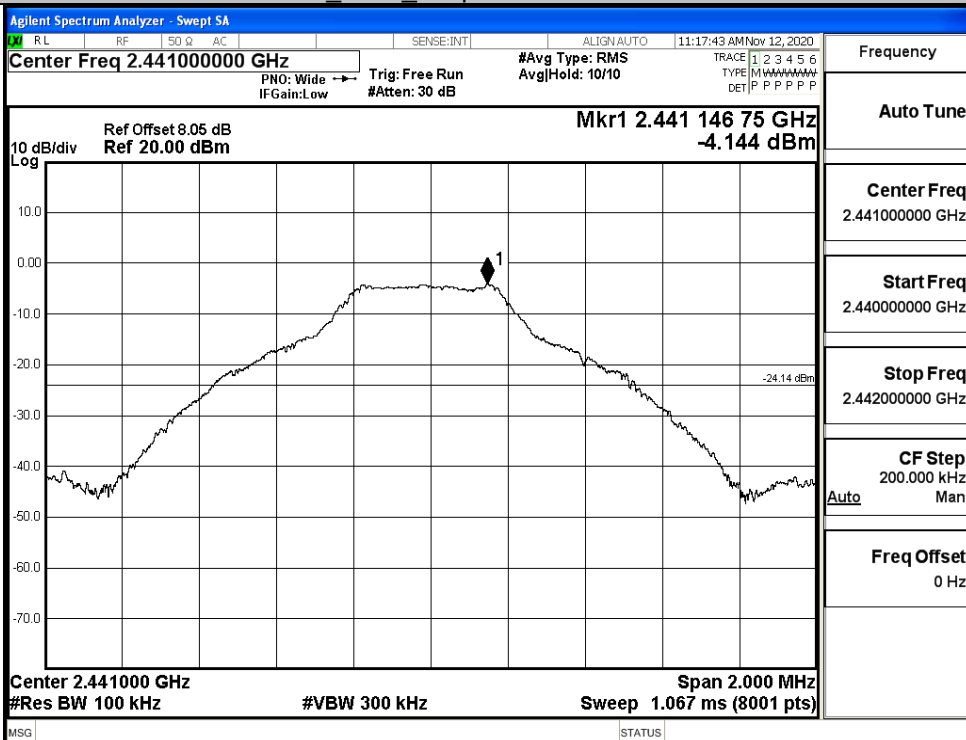


Puw

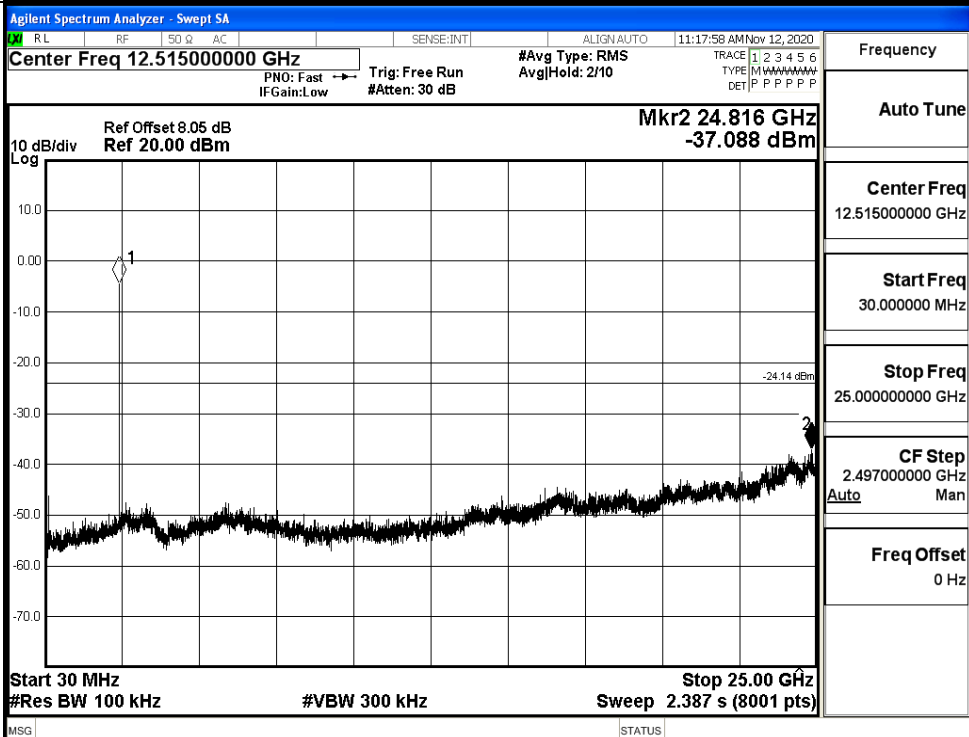


GFSK_MCH_Graphs

Pref

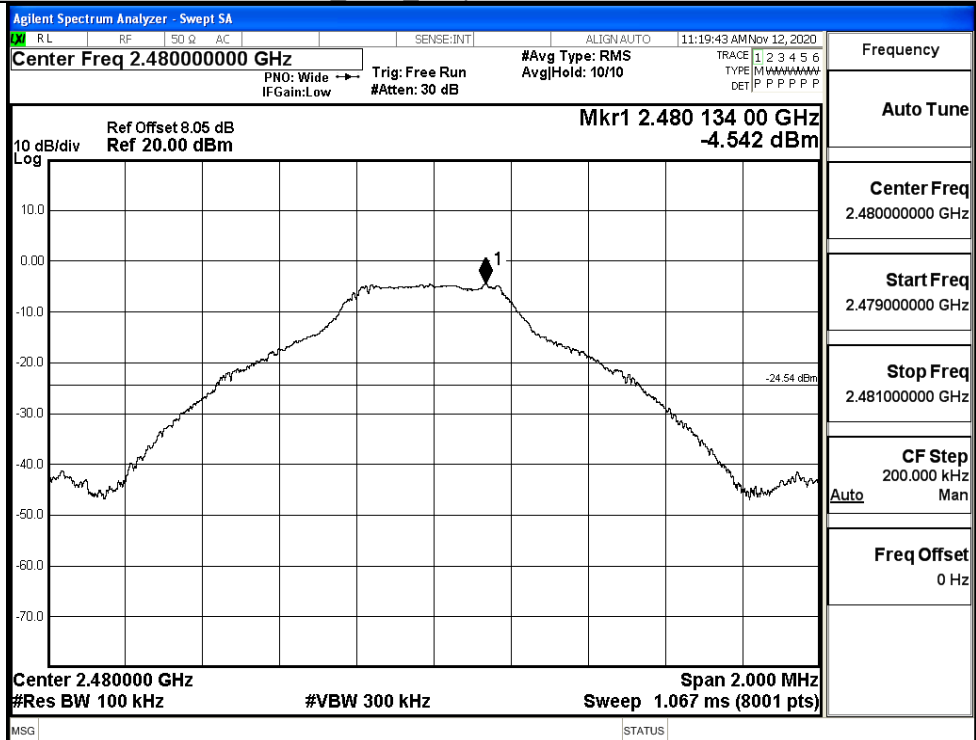


Puw

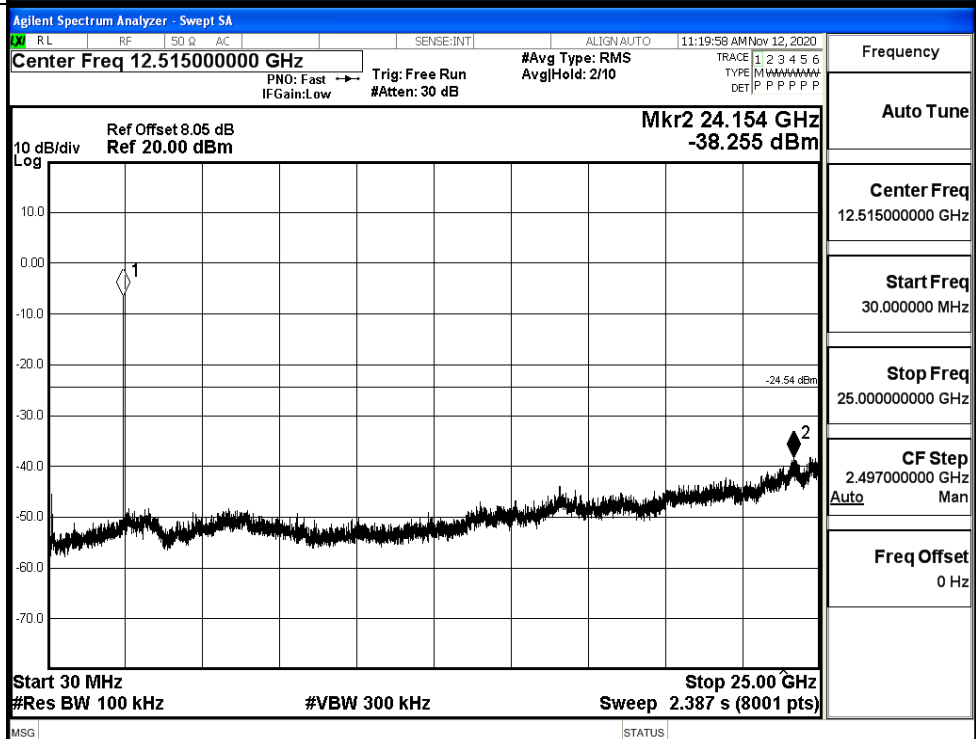


GFSK HCH_Graphs

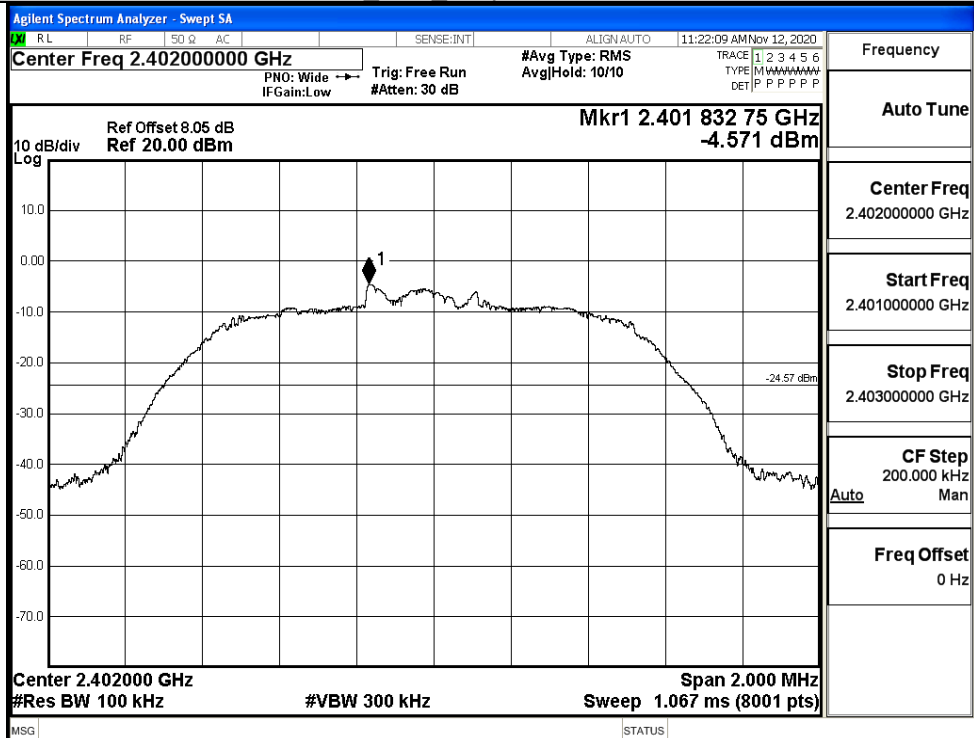
Pref



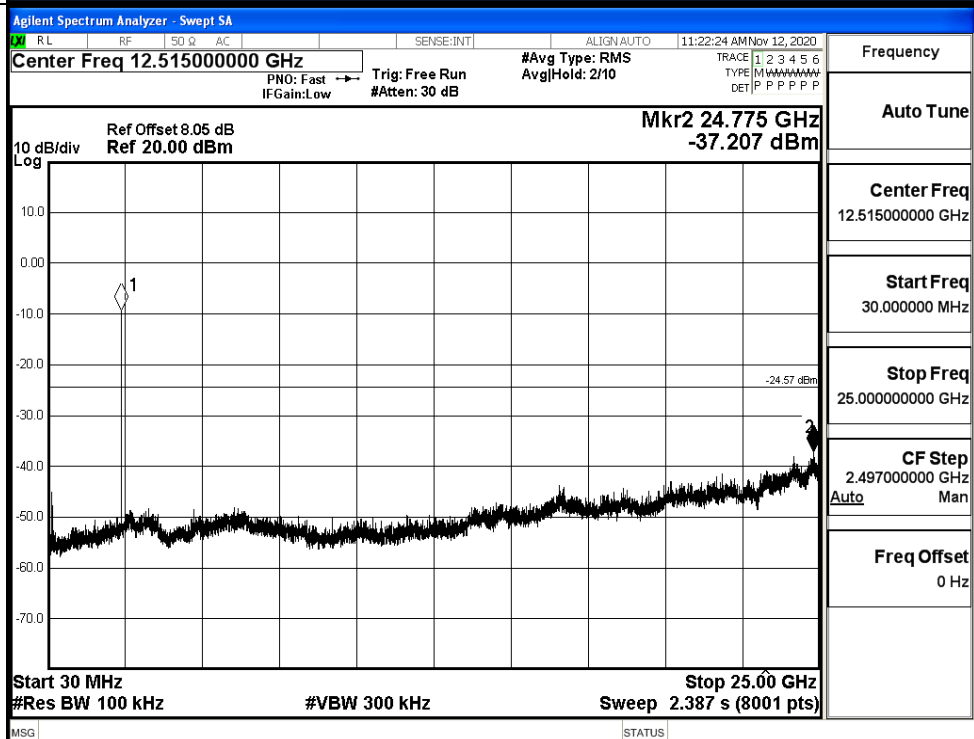
Puw



Pref

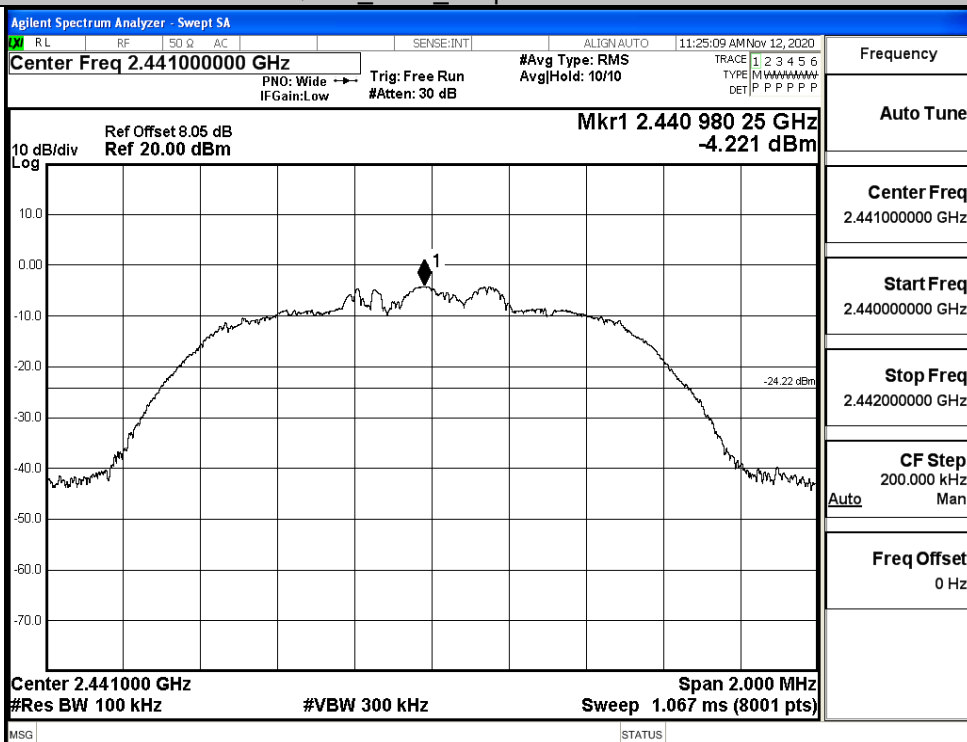


Puw

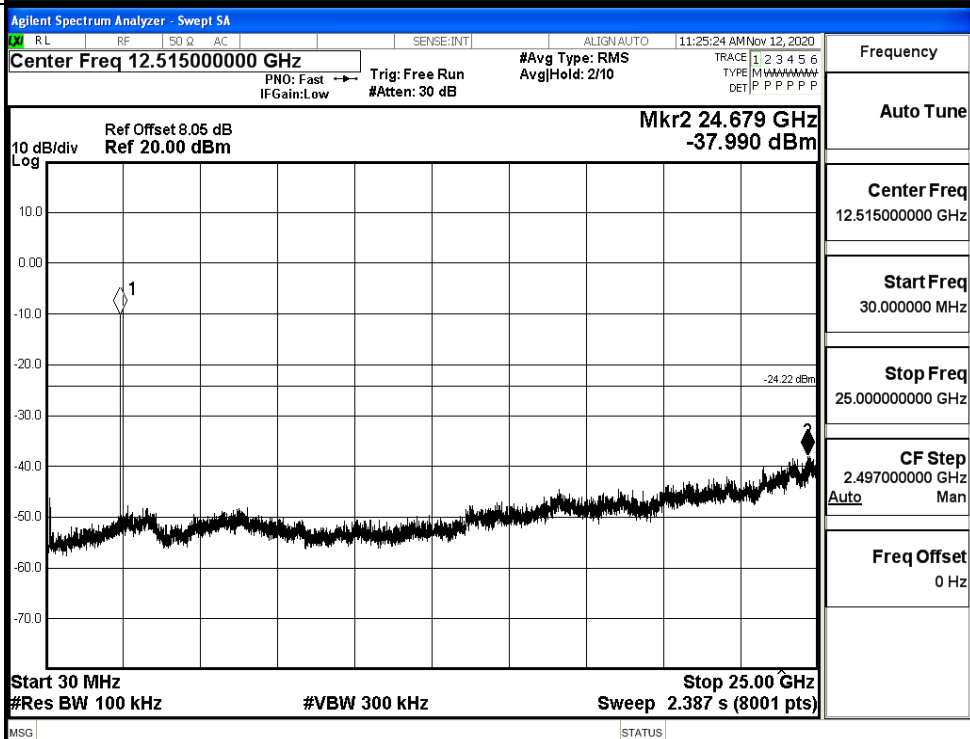


π /4DQPSK_MCH_Graphs

Pref

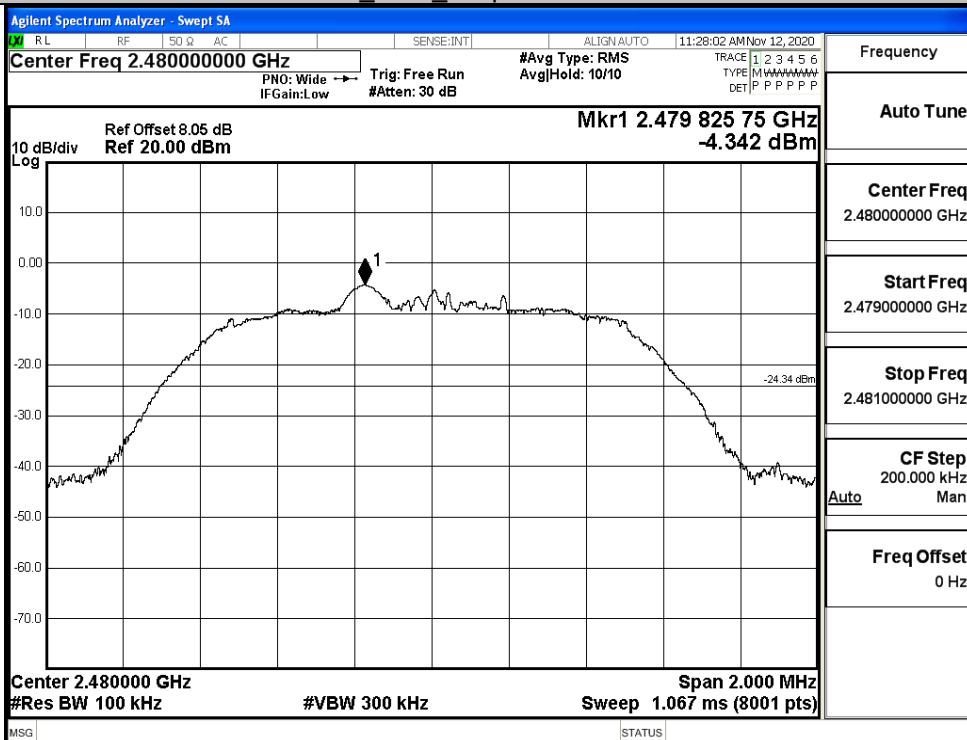


Puw

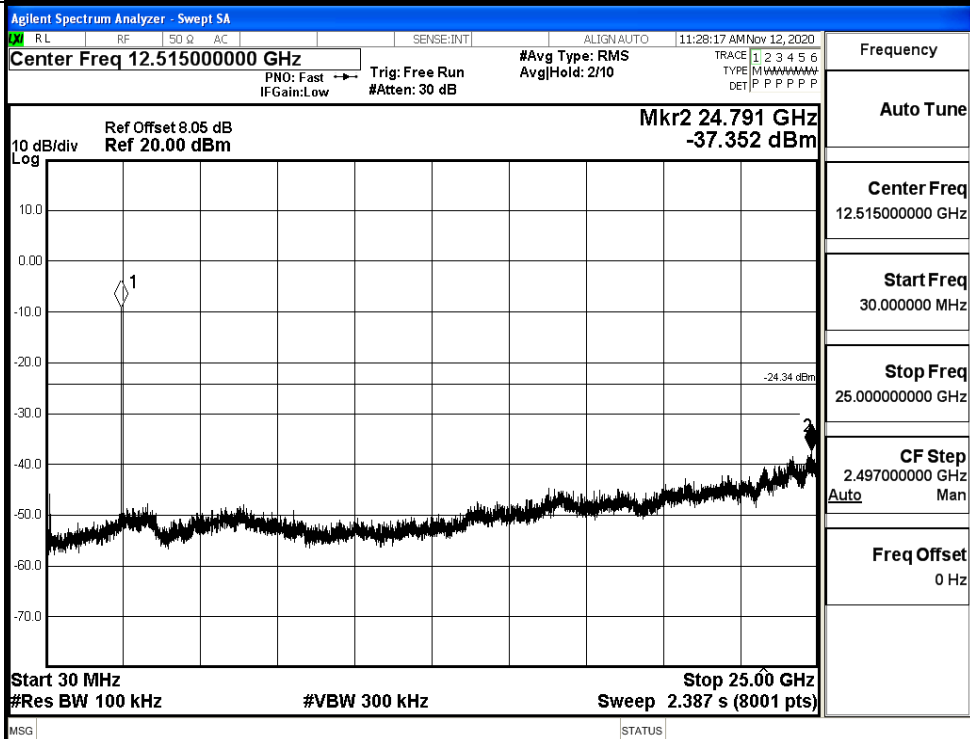


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

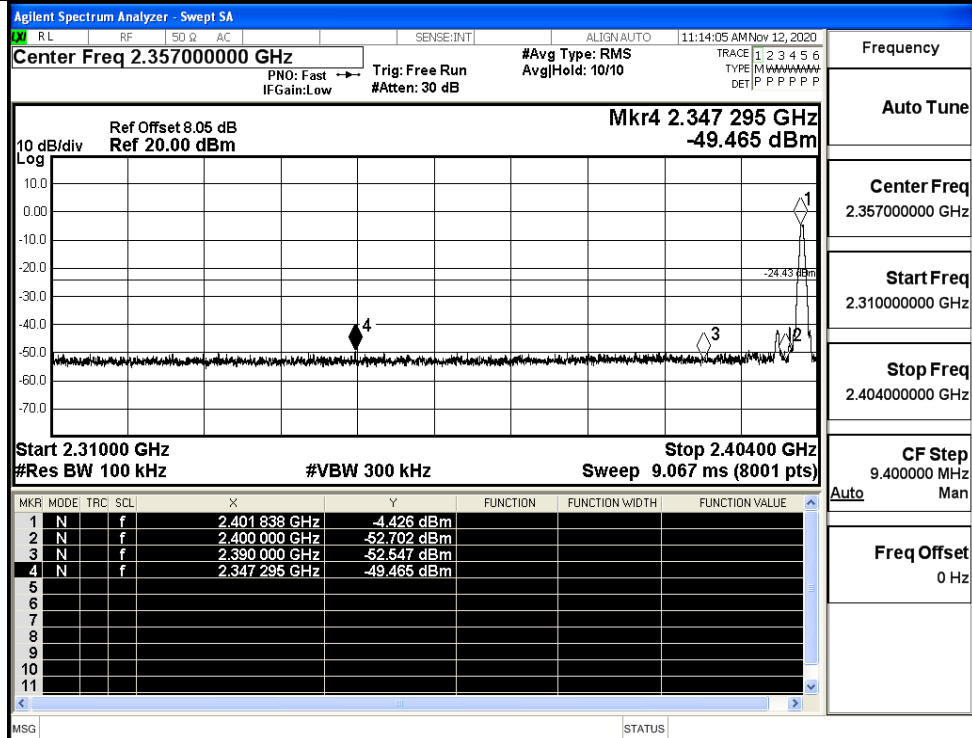


A.7 Band-edge for RF Conducted Emissions

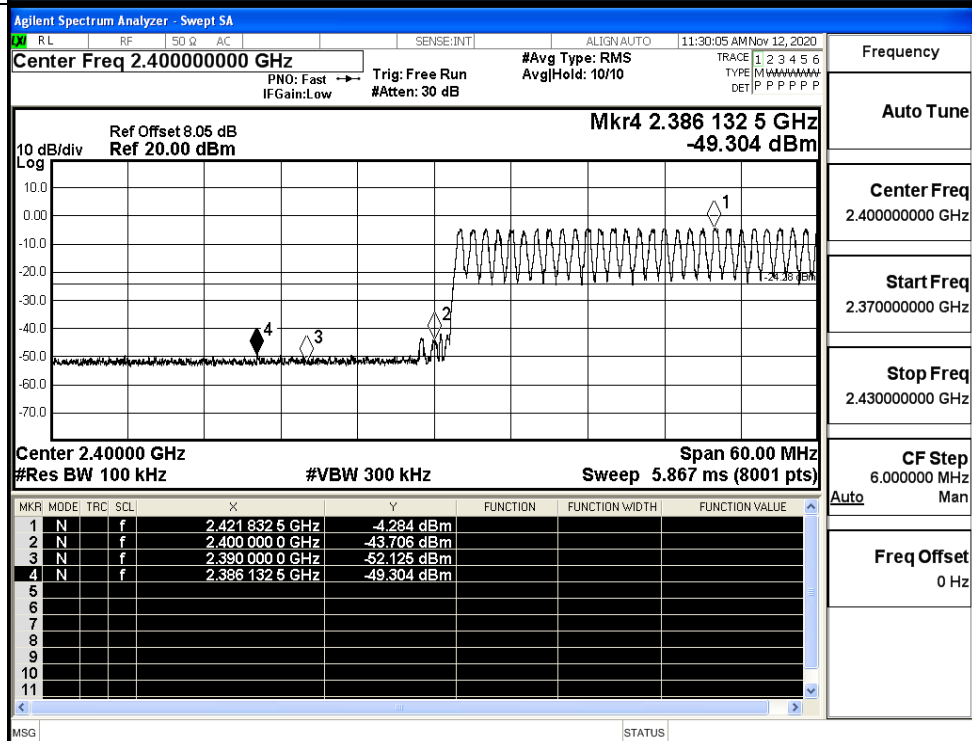
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-4.426	Off	-49.465	-24.43	PASS
			-4.284	On	-49.304	-24.28	PASS
	HCH	2480	-4.371	Off	-48.708	-24.37	PASS
			-4.332	On	-48.678	-24.33	PASS
$\pi/4$ DQPSK	LCH	2402	-4.352	Off	-49.682	-24.35	PASS
			-4.232	On	-49.174	-24.23	PASS
	HCH	2480	-4.318	Off	-48.610	-24.32	PASS
			-4.077	On	-48.464	-24.08	PASS

Test Graphs

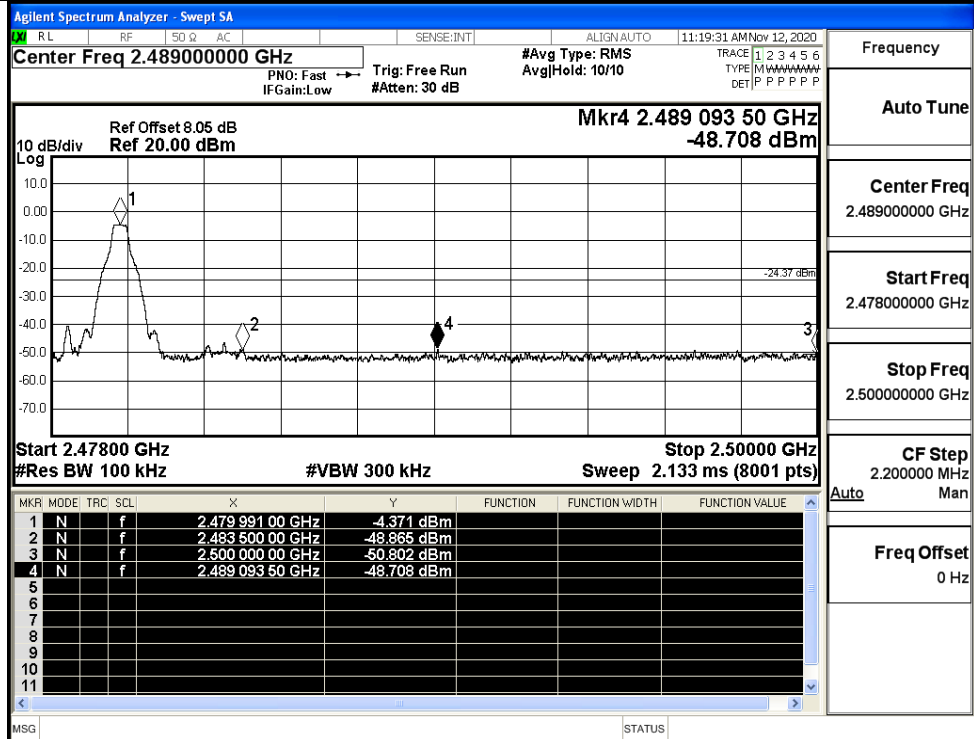
GFSK/LCH/No Hop



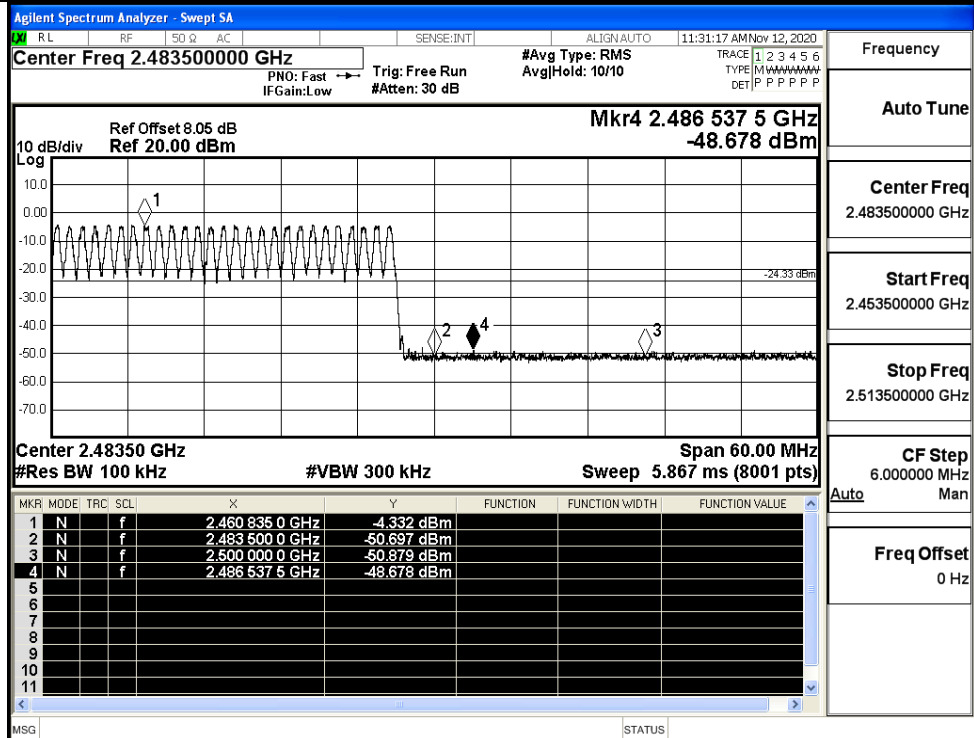
GFSK/LCH/Hop



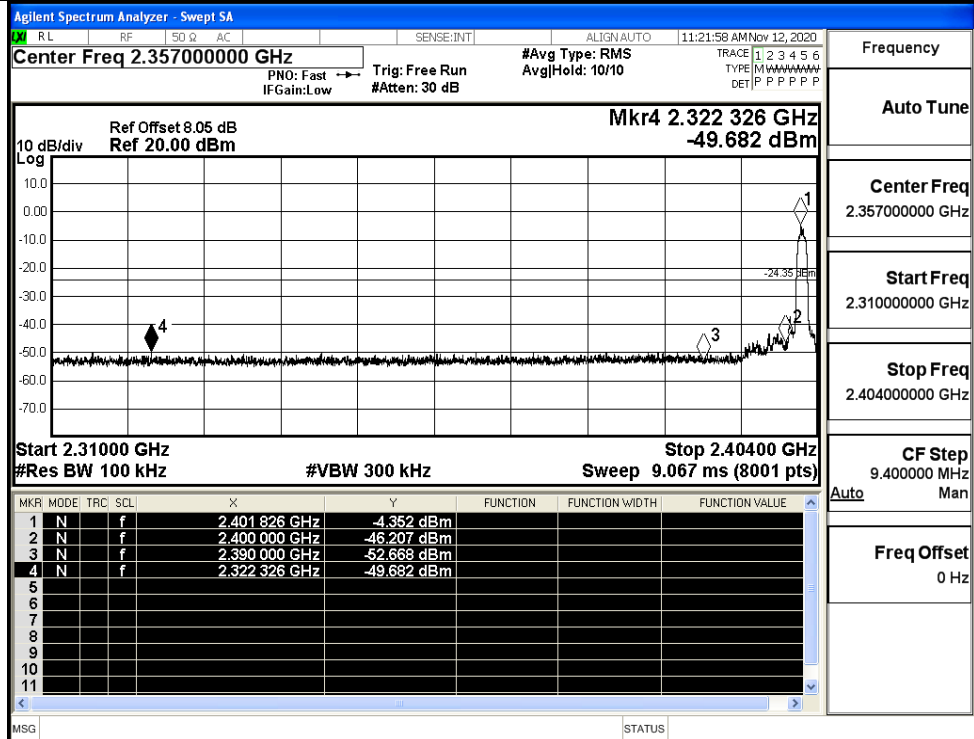
GFSK/HCH/No Hop



GFSK/HCH/Hop



$\pi/4$ DQPSK/LCH/No
Hop



Frequency

Auto Tune

Center Freq
2.357000000 GHz

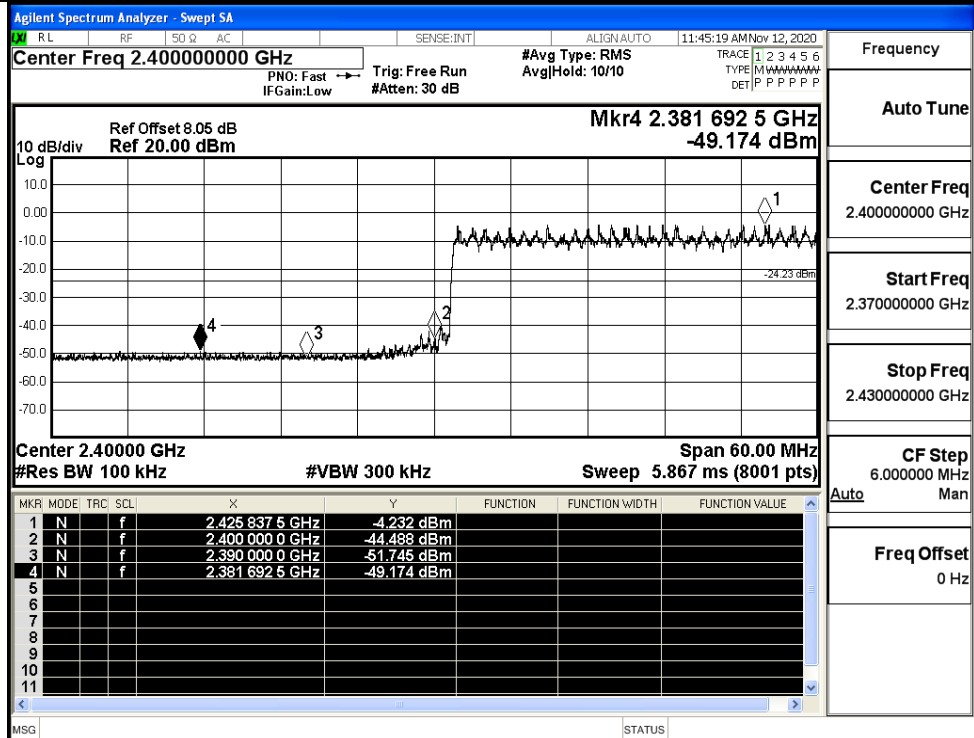
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

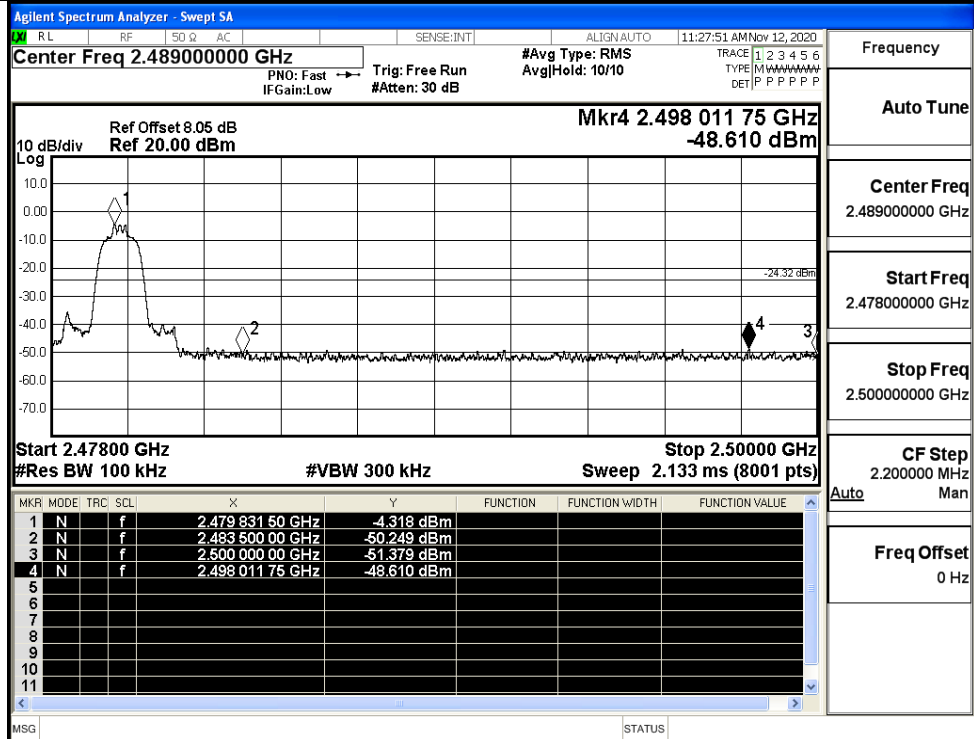
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/No
Hop

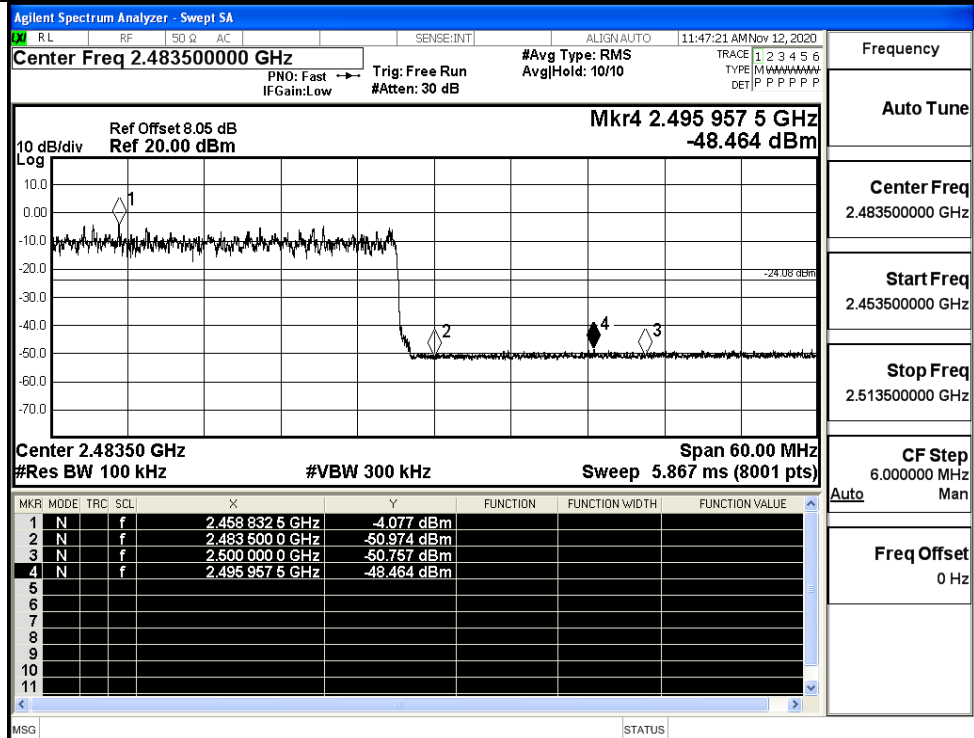


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

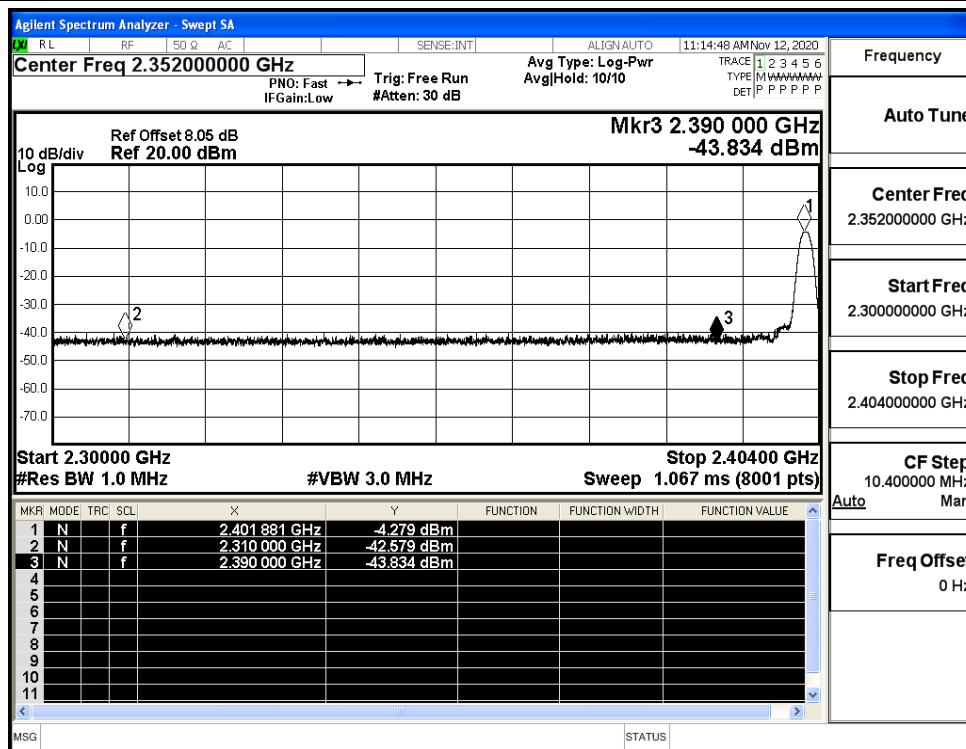
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

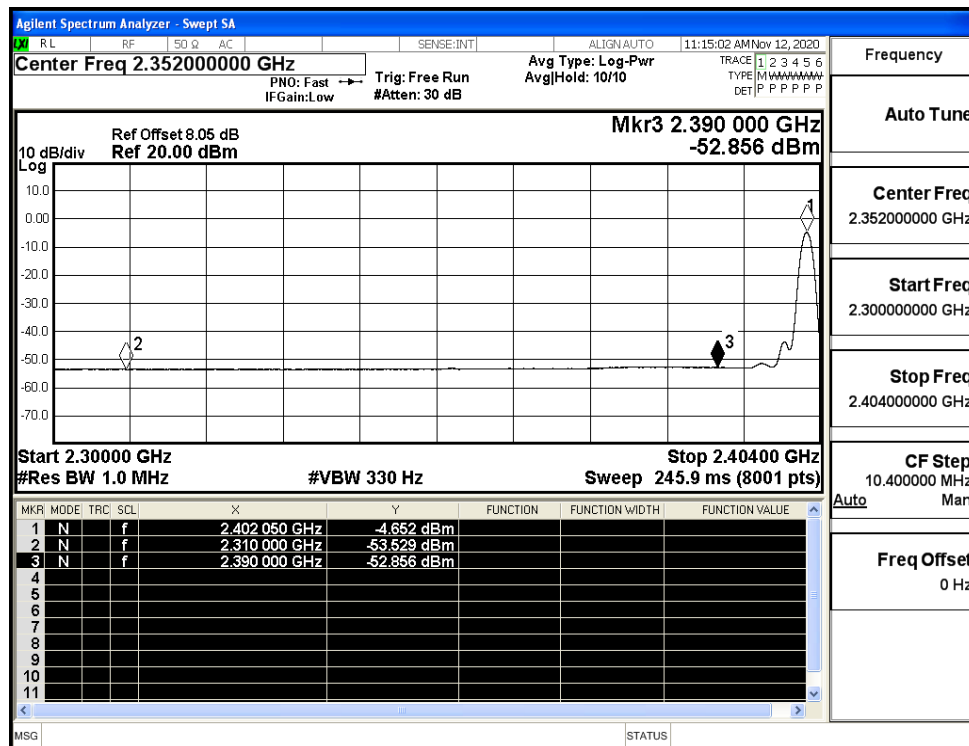
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.58	2.0	0	52.68	PEAK	74	PASS
	Off	2310.0	-53.53	2.0	0	41.73	AV	54	PASS
	Off	2390.0	-43.83	2.0	0	51.42	PEAK	74	PASS
	Off	2390.0	-52.86	2.0	0	42.40	AV	54	PASS
	Off	2483.5	-40.92	2.0	0	54.33	PEAK	74	PASS
	Off	2483.5	-50.89	2.0	0	44.37	AV	54	PASS
	Off	2500.0	-42.47	2.0	0	52.79	PEAK	74	PASS
	Off	2500.0	-52.05	2.0	0	43.21	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.36	2.0	0	51.90	PEAK	74	PASS
	Off	2310.0	-53.52	2.0	0	41.74	AV	54	PASS
	Off	2390.0	-42.45	2.0	0	52.81	PEAK	74	PASS
	Off	2390.0	-52.66	2.0	0	42.60	AV	54	PASS
	Off	2483.5	-39.87	2.0	0	55.38	PEAK	74	PASS
	Off	2483.5	-51.59	2.0	0	43.66	AV	54	PASS
	Off	2500.0	-42.19	2.0	0	53.07	PEAK	74	PASS
	Off	2500.0	-52.00	2.0	0	43.26	AV	54	PASS

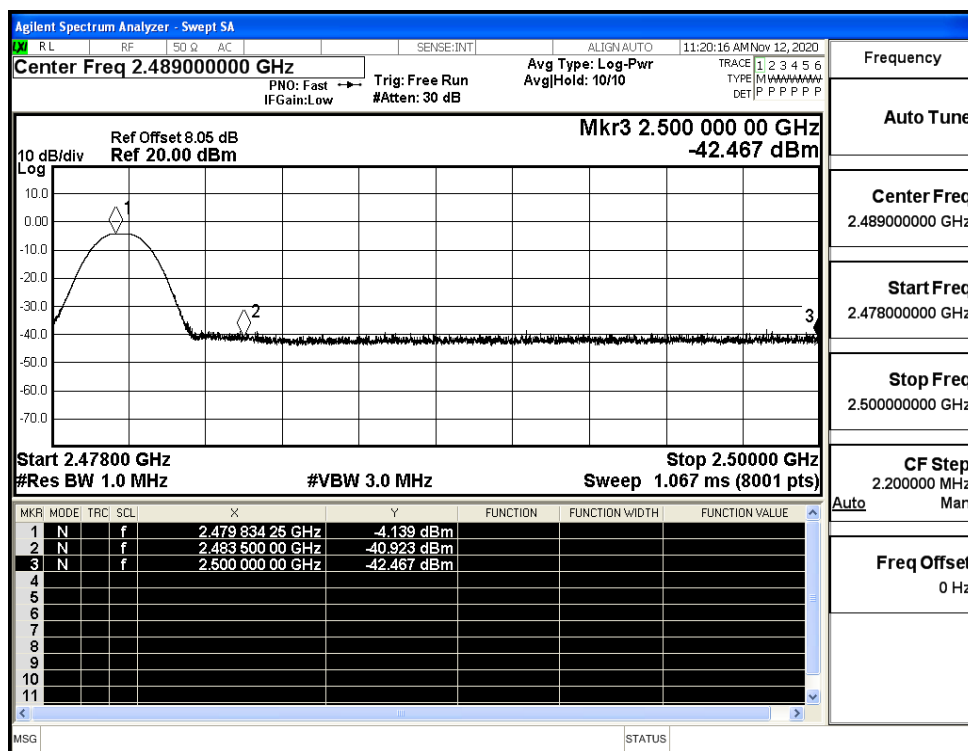
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



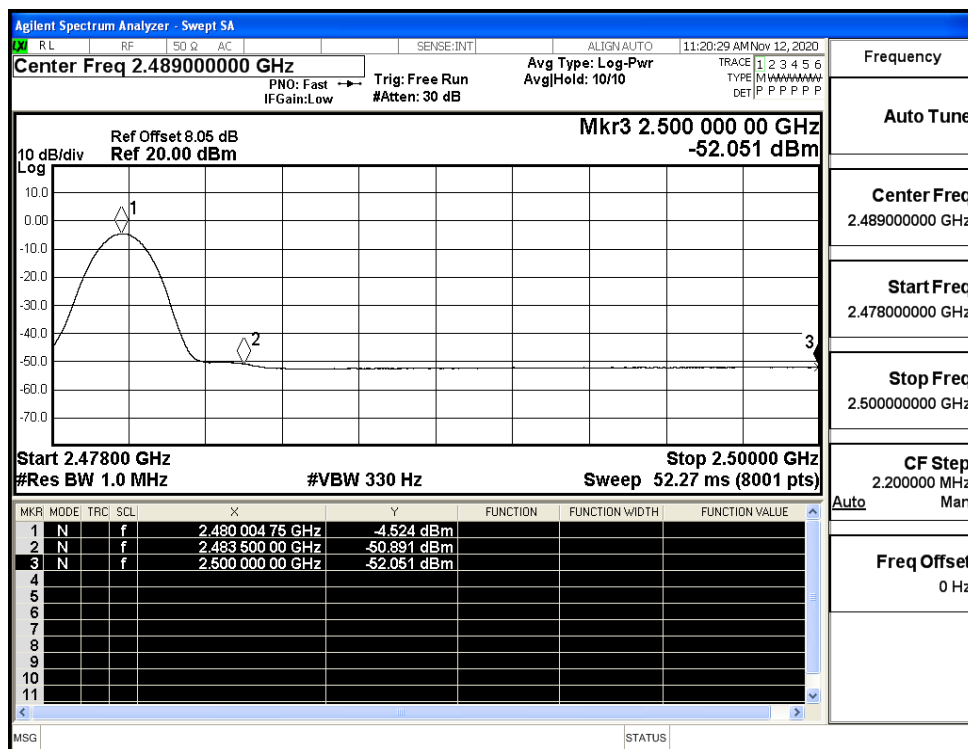
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

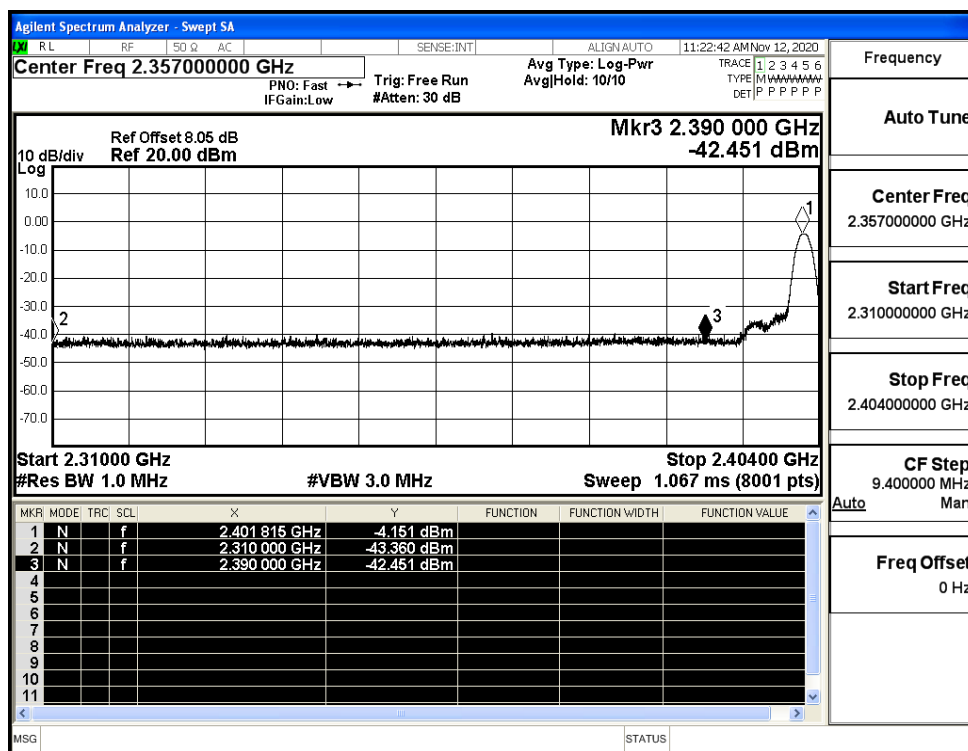
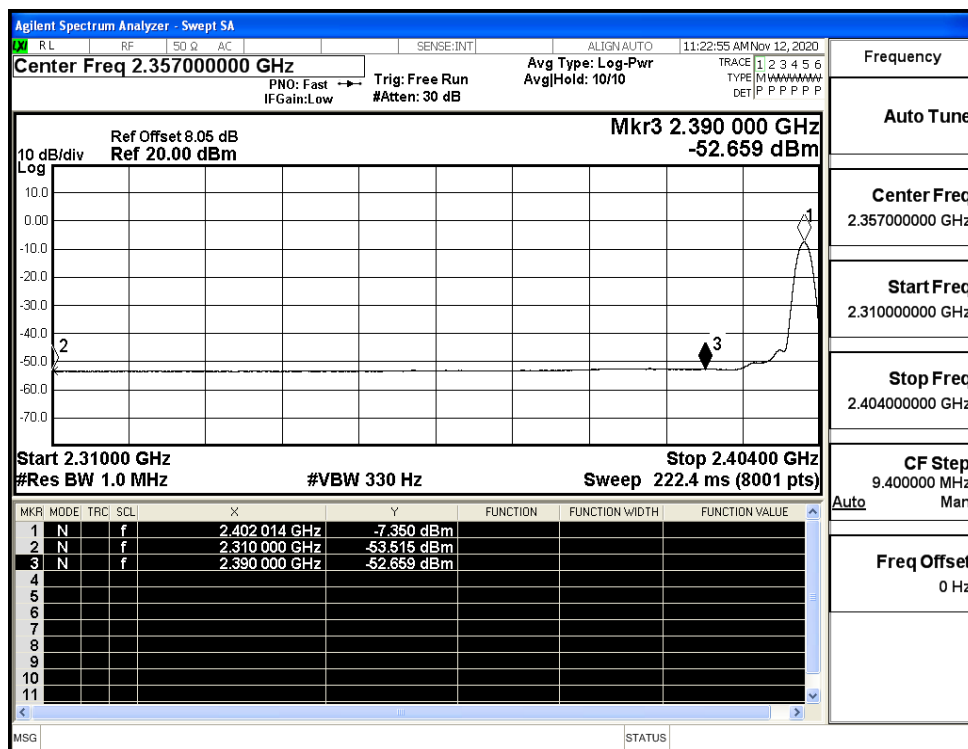


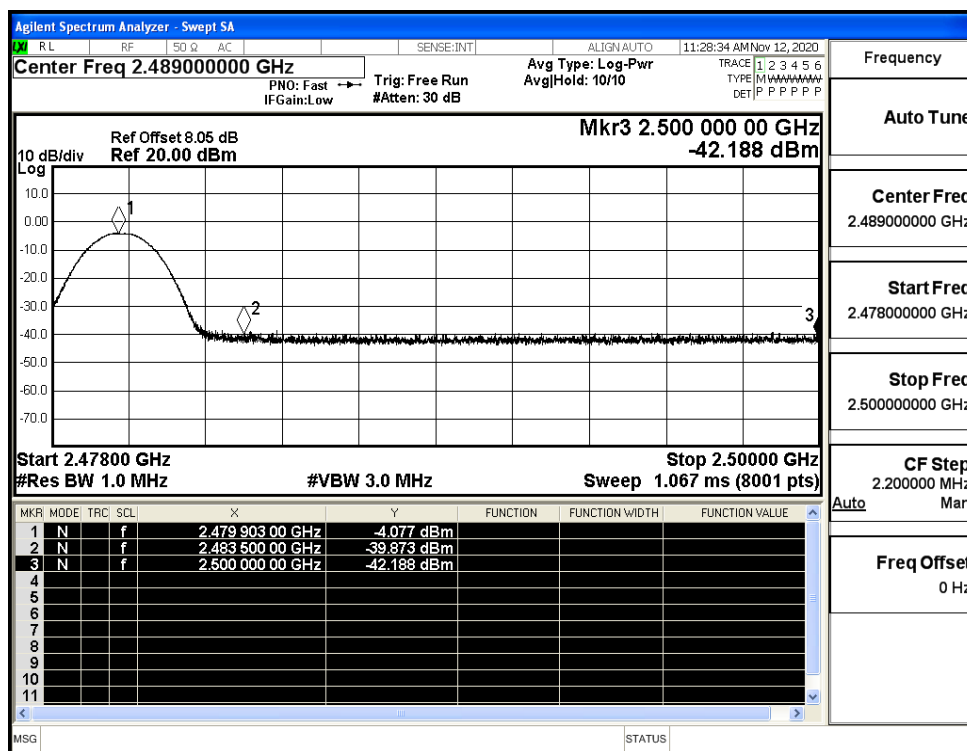
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (High Channel)