

Appendix A

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

Product Name: Bluetooth Headset

Trade Mark: AUSOUNDS

Test Model: AU-XT ANC

Environmental Conditions

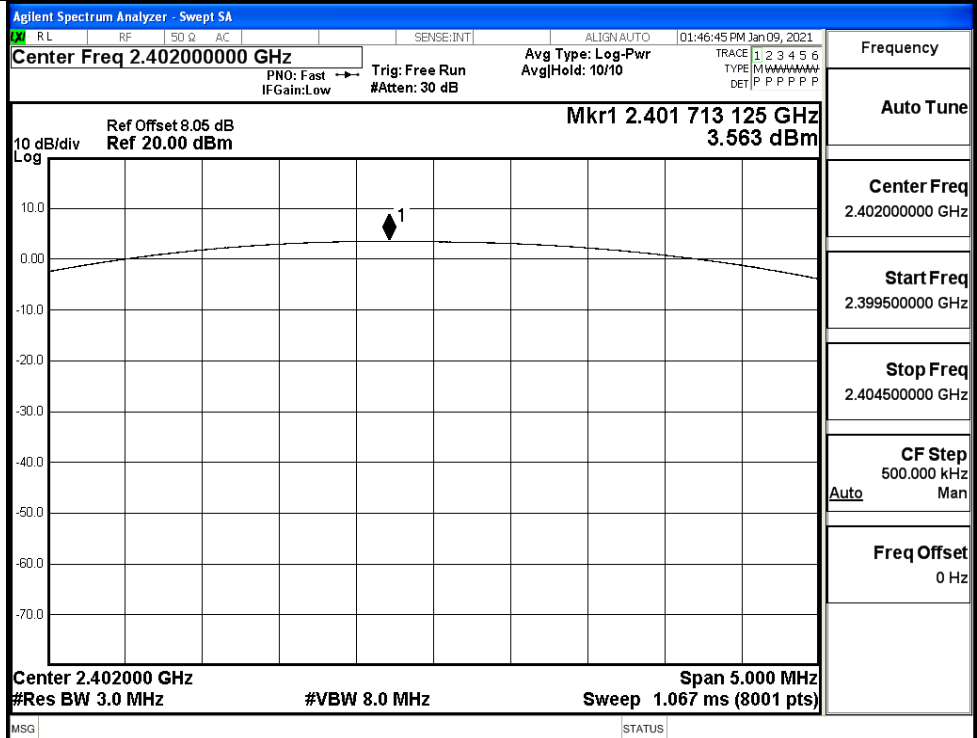
Temperature:	22.3° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

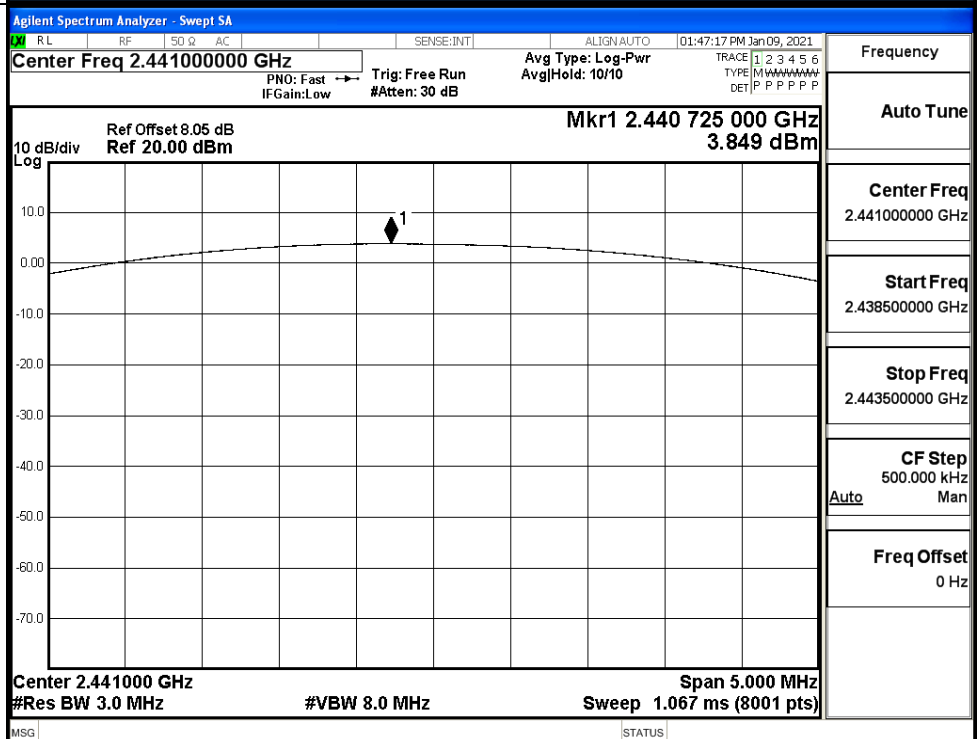
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.563	21	PASS
	MCH	3.849	21	PASS
	HCH	3.587	21	PASS
$\pi/4$ DQPSK	LCH	2.799	21	PASS
	MCH	3.063	21	PASS
	HCH	2.778	21	PASS
8DPSK	LCH	2.797	21	PASS
	MCH	3.075	21	PASS
	HCH	2.799	21	PASS

Test Graphs

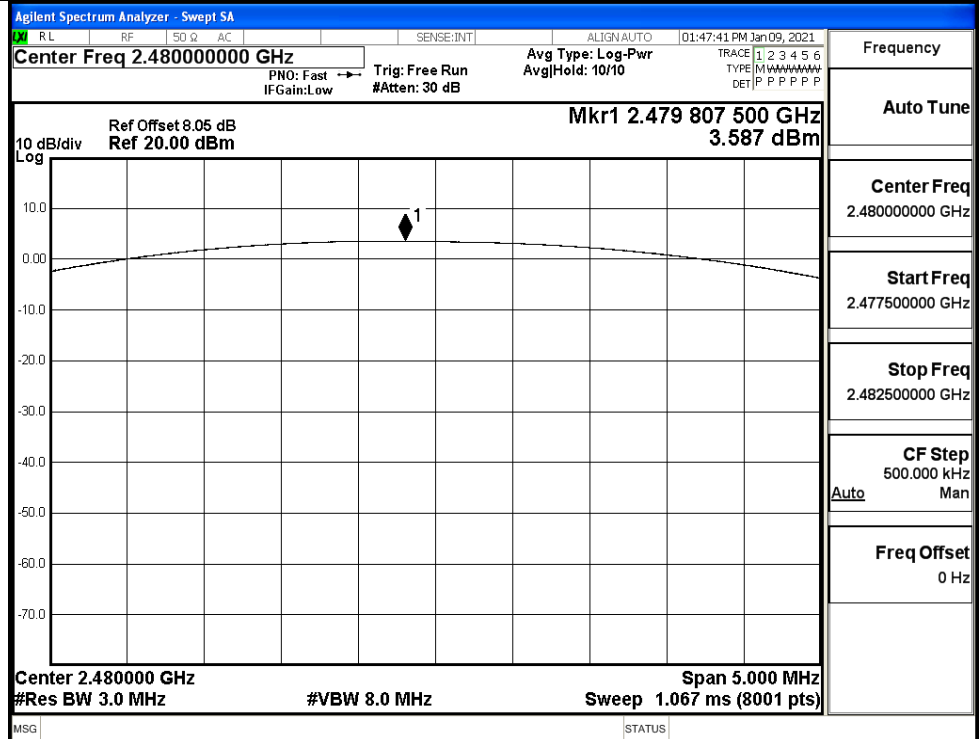
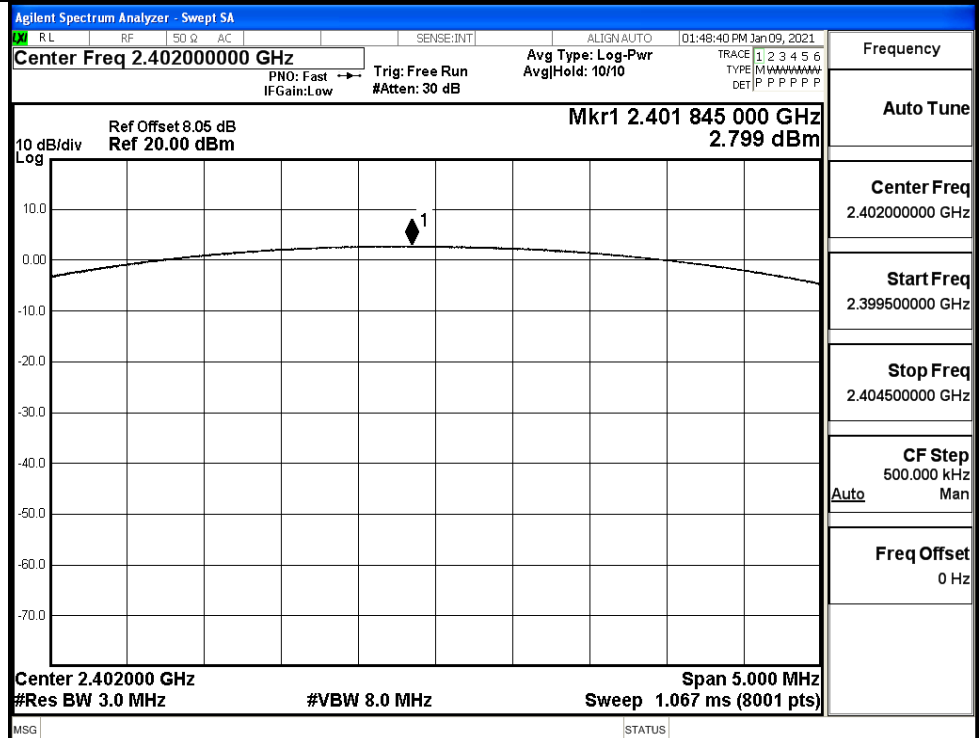
GFSK/LCH

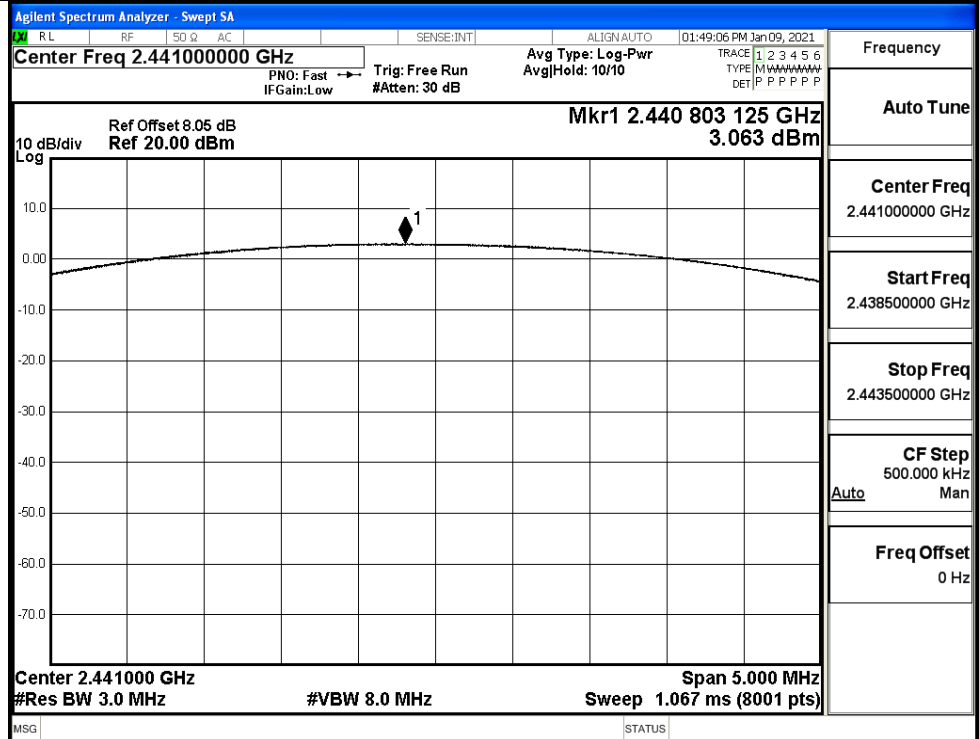
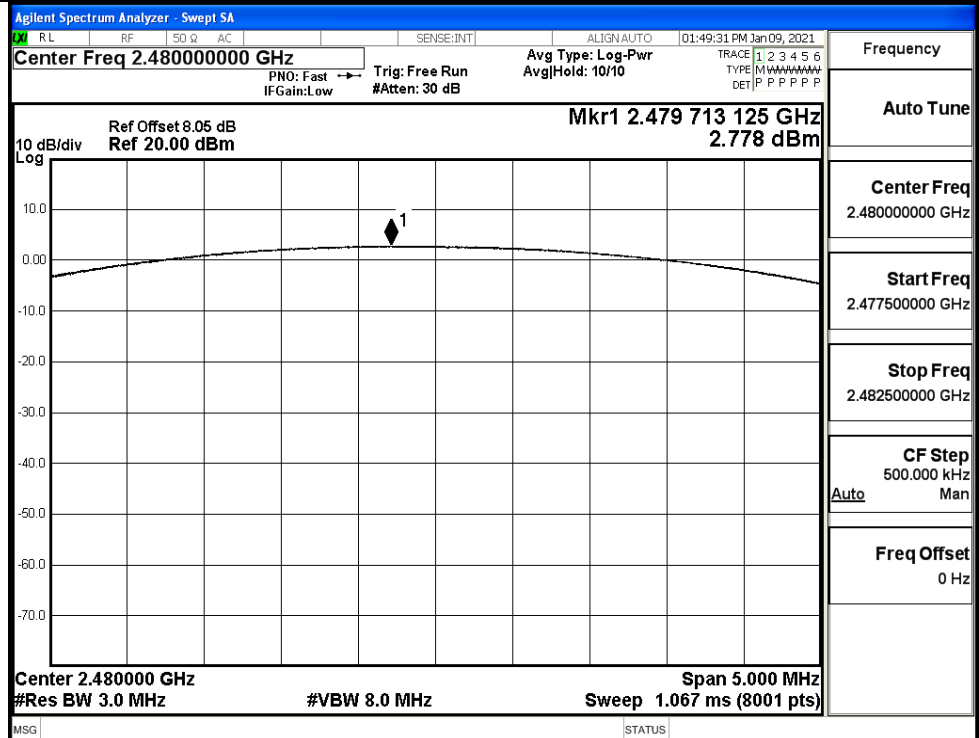


GFSK/MCH

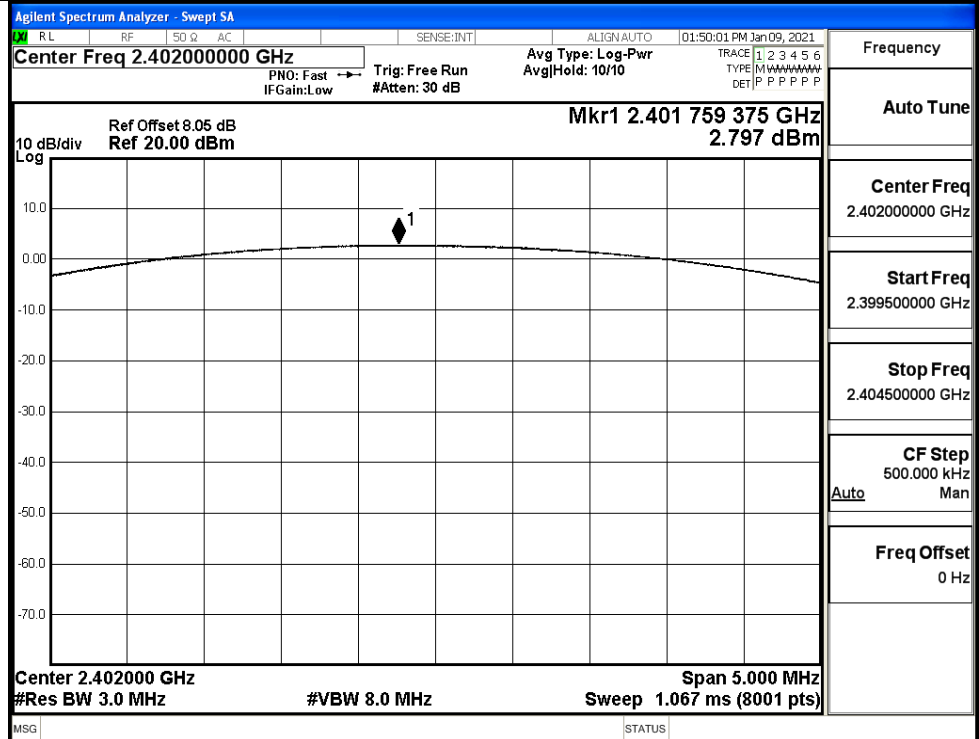


GFSK/HCH

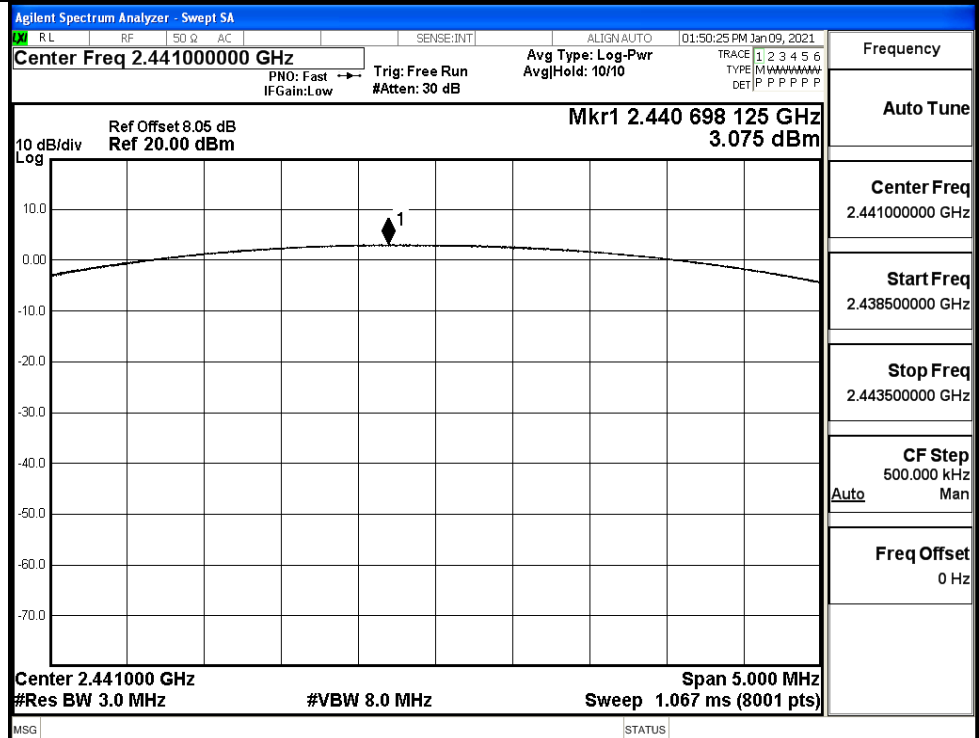
 $\pi/4$ DQPSK/LCH

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

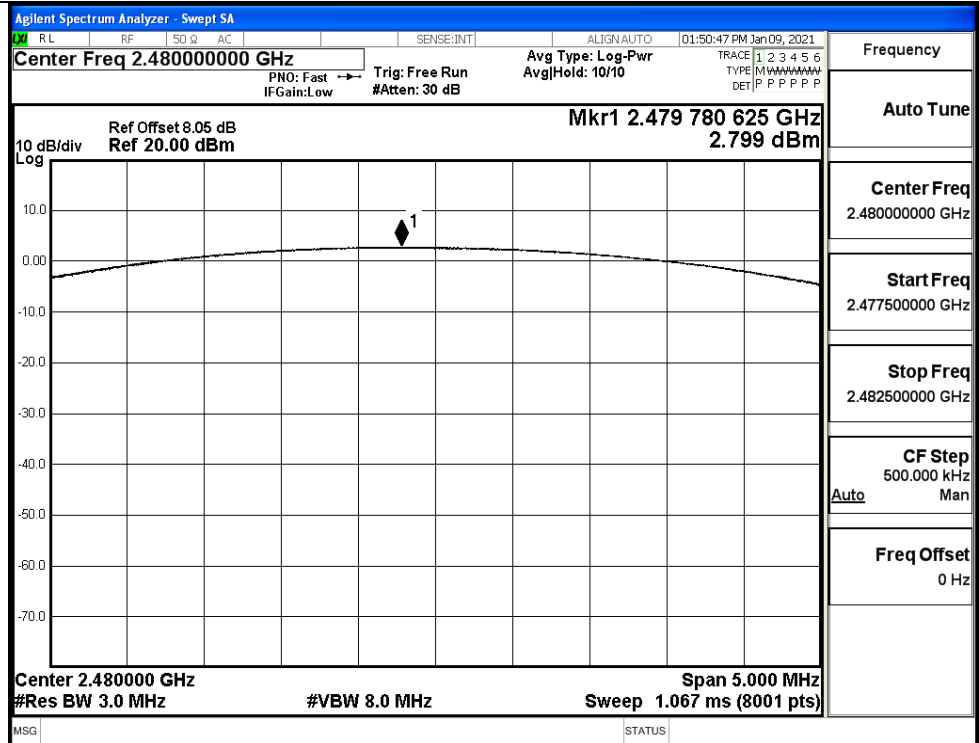
8DPSK/LCH



8DPSK/MCH



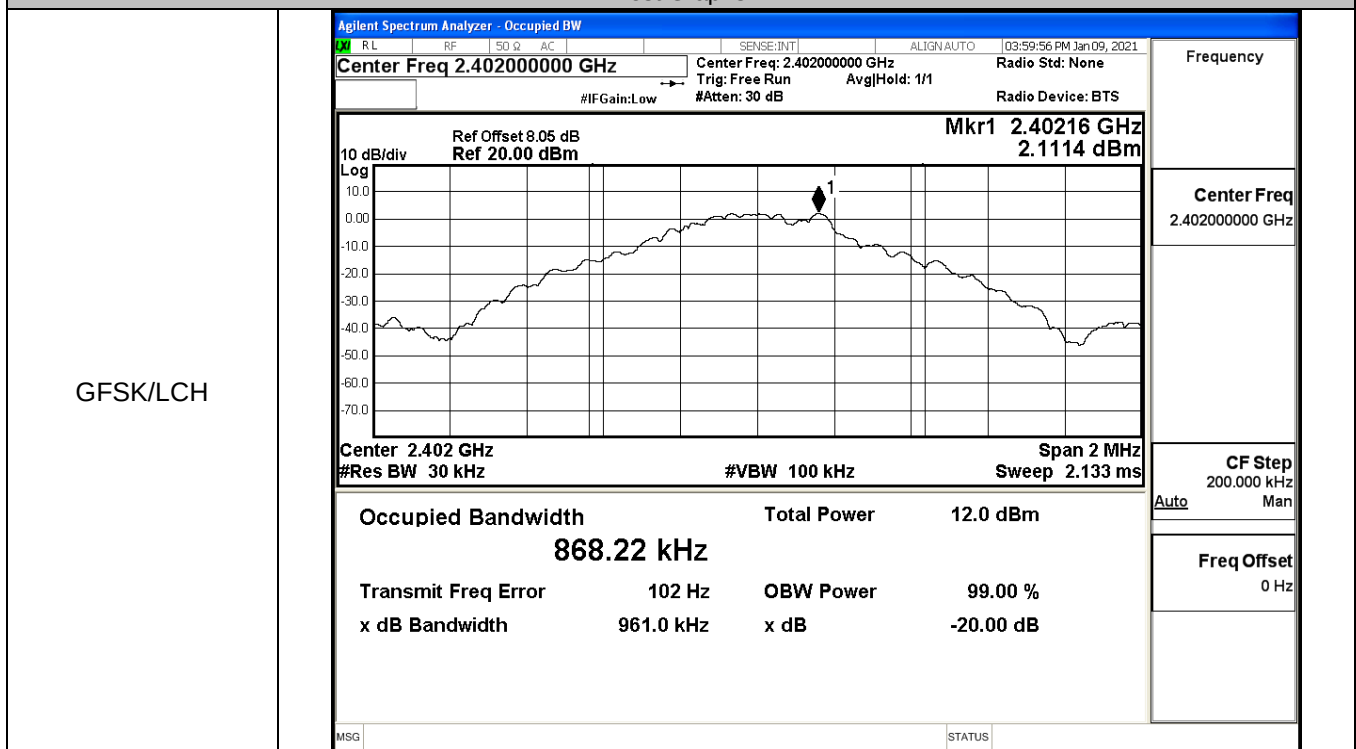
8DPSK/HCH



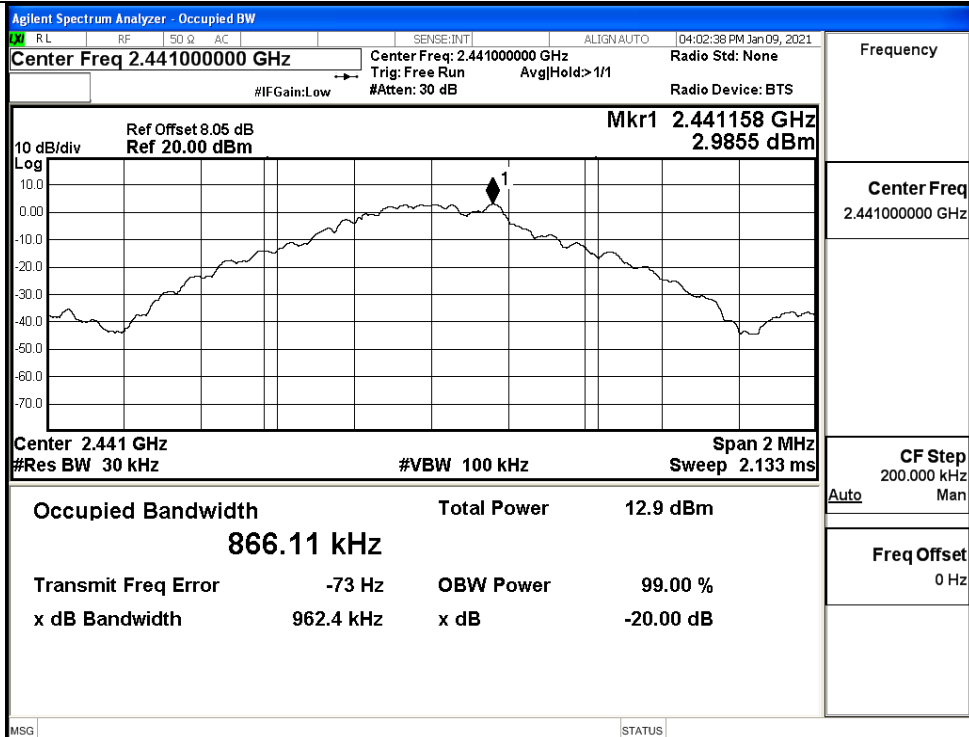
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9610	Not Specified	PASS
	MCH	0.9624	Not Specified	PASS
	HCH	0.9614	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.336	Not Specified	PASS
	MCH	1.334	Not Specified	PASS
	HCH	1.338	Not Specified	PASS
8DPSK	LCH	1.309	Not Specified	PASS
	MCH	1.312	Not Specified	PASS
	HCH	1.311	Not Specified	PASS

Test Graphs



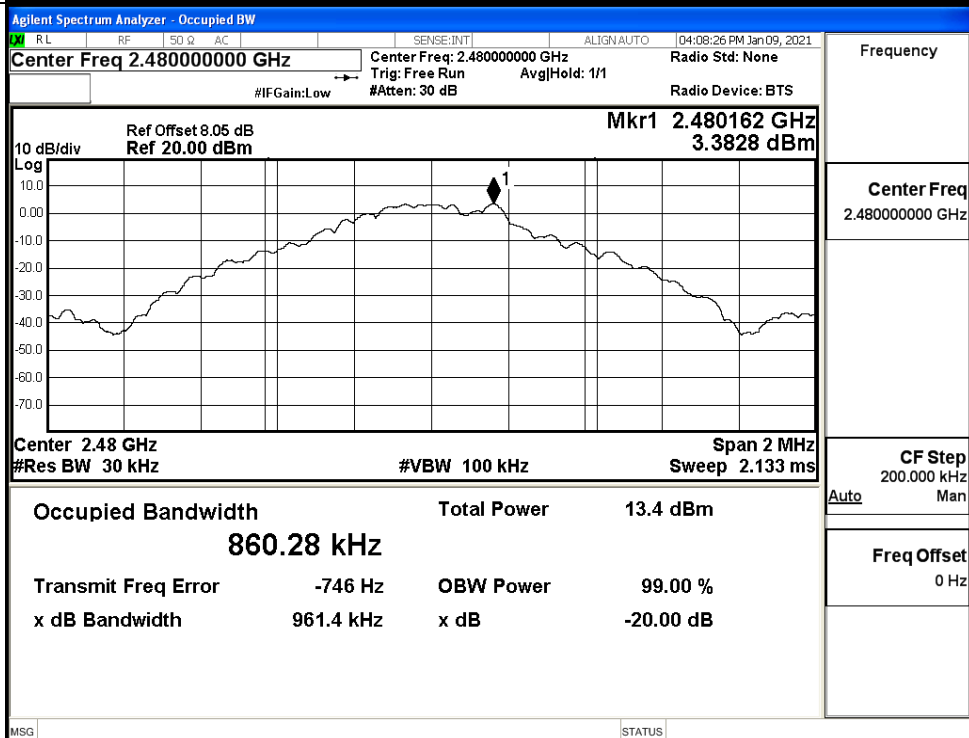
GFSK/MCH



Frequency

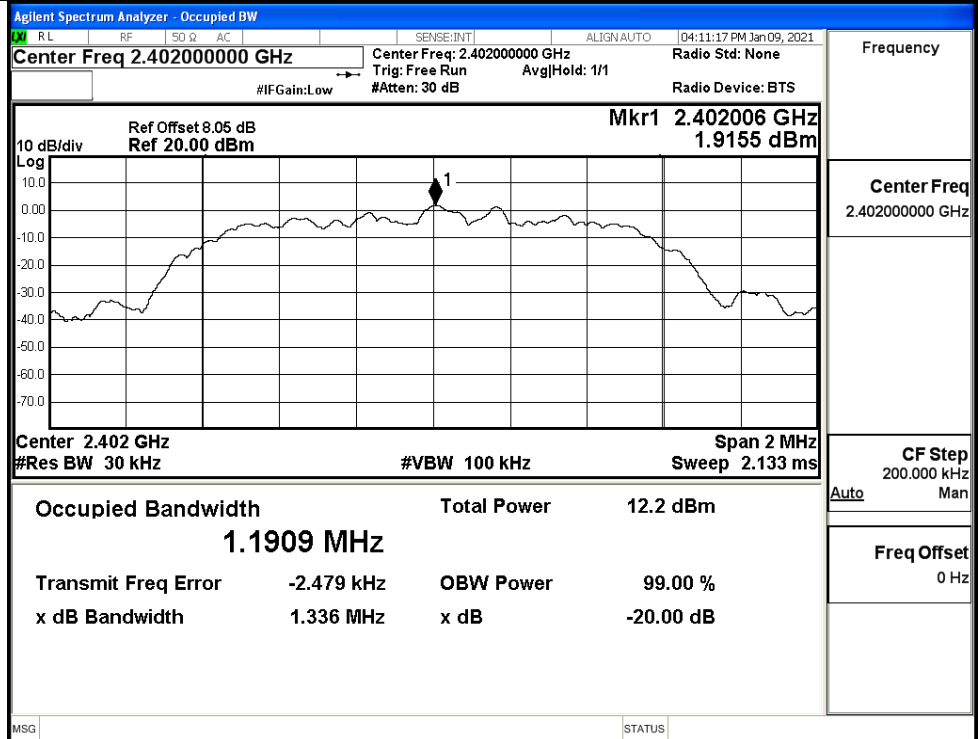
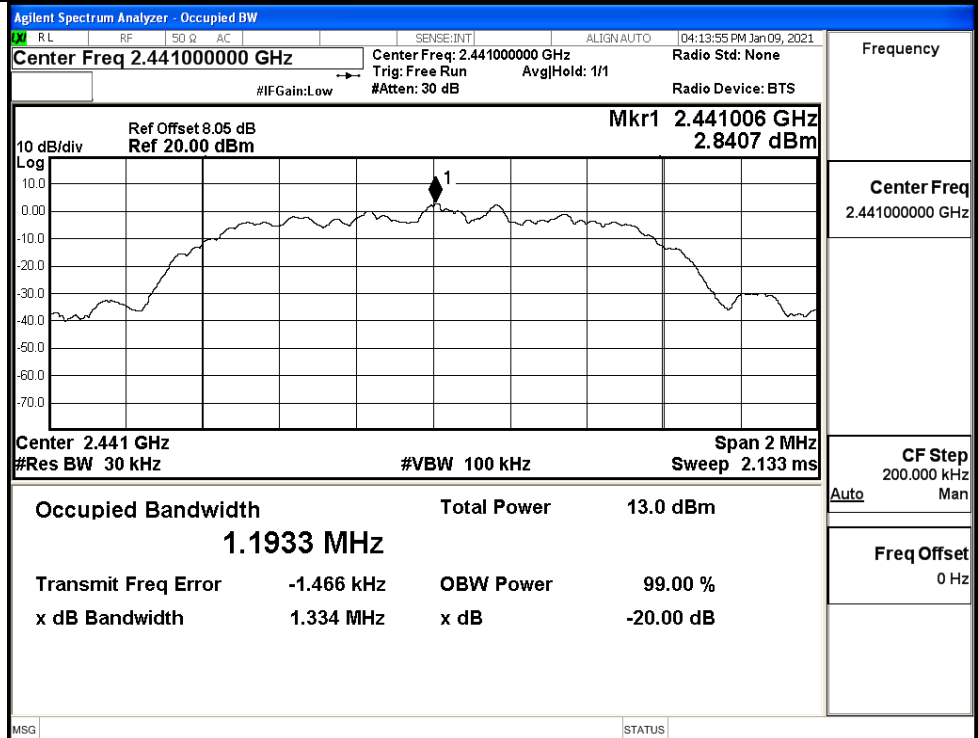
Center Freq
2.441000000 GHzCF Step
200.000 kHz
Auto ManFreq Offset
0 Hz

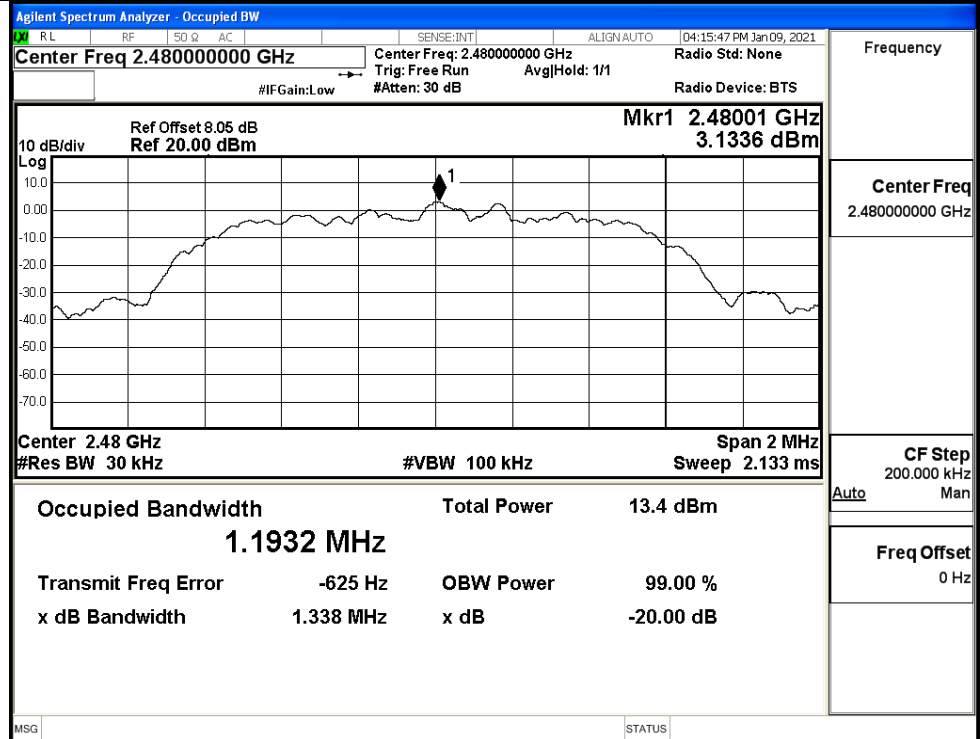
GFSK/HCH



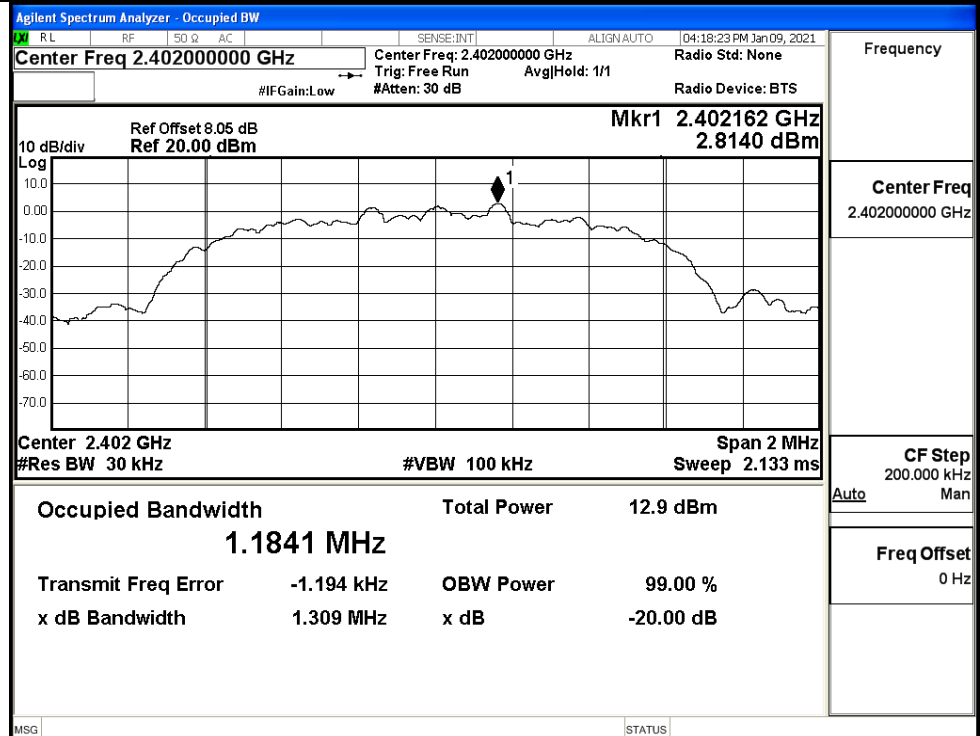
Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Auto ManFreq Offset
0 Hz

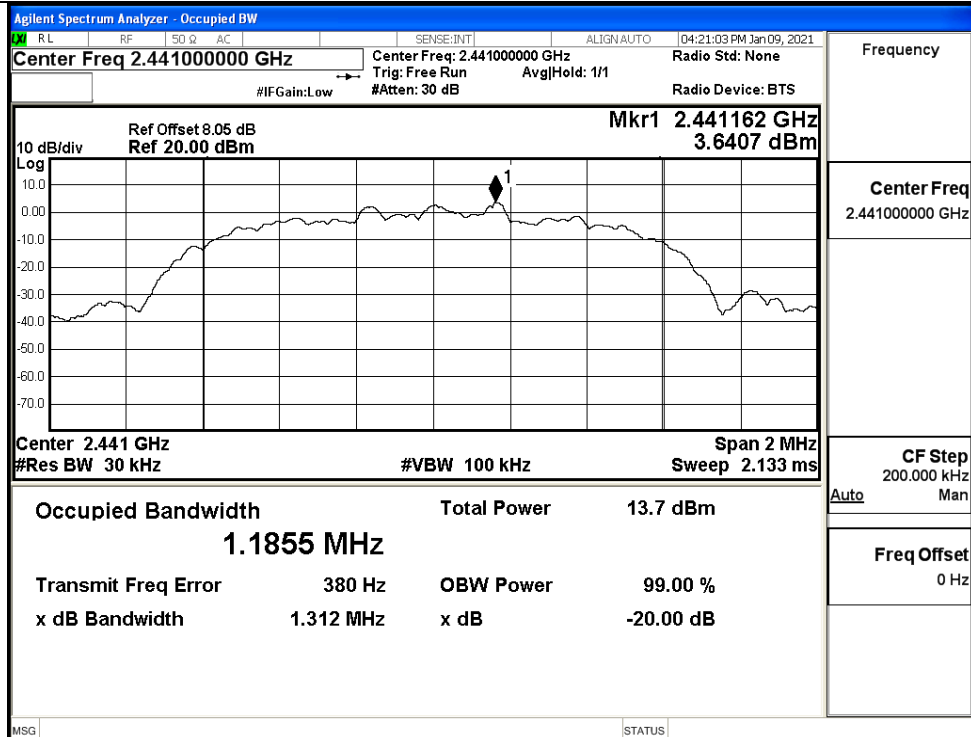
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

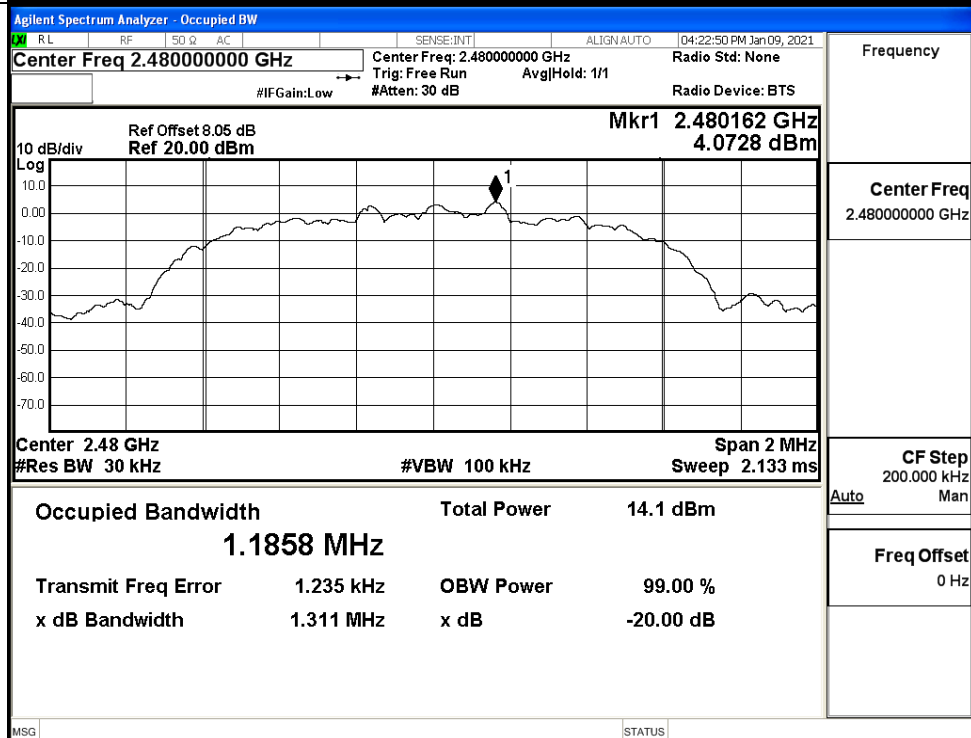
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

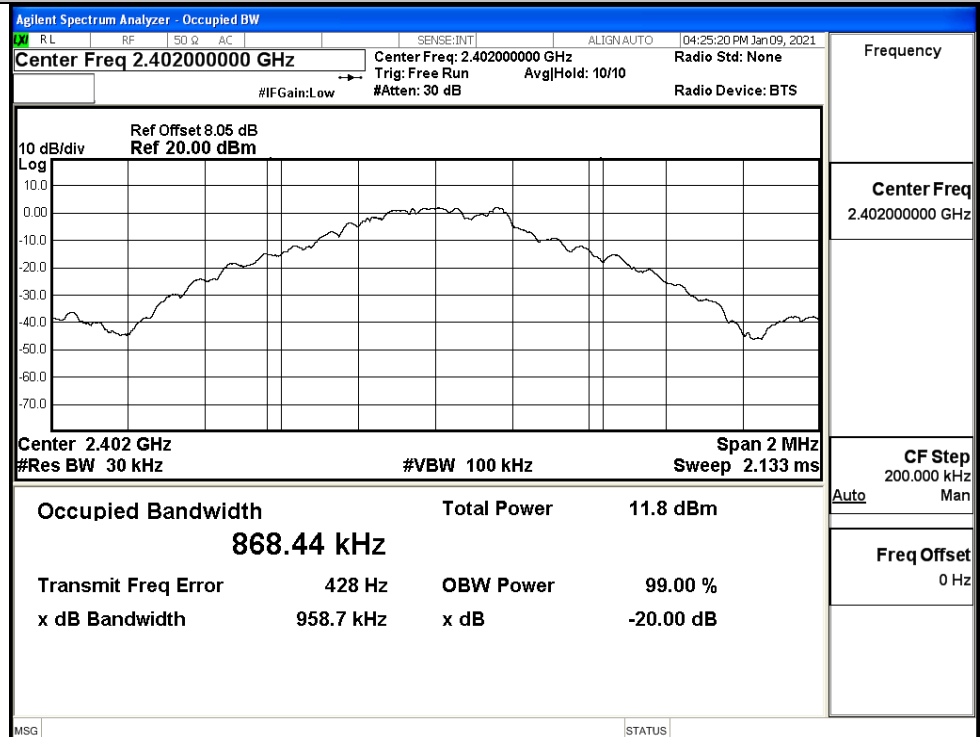


A.3 Occupied Bandwidth

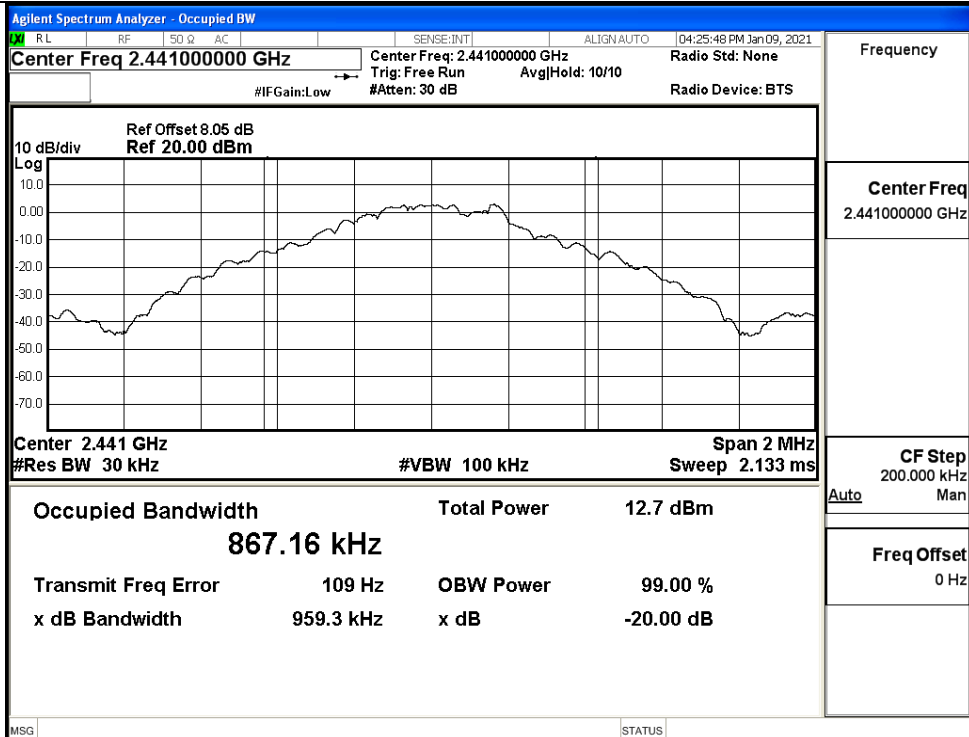
Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.86844	Not Specified	PASS
	MCH	0.86716	Not Specified	PASS
	HCH	0.86290	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1919	Not Specified	PASS
	MCH	1.1917	Not Specified	PASS
	HCH	1.1923	Not Specified	PASS
8DPSK	LCH	1.1861	Not Specified	PASS
	MCH	1.1838	Not Specified	PASS
	HCH	1.1858	Not Specified	PASS

Test Graphs

GFSK/LCH



GFSK/MCH



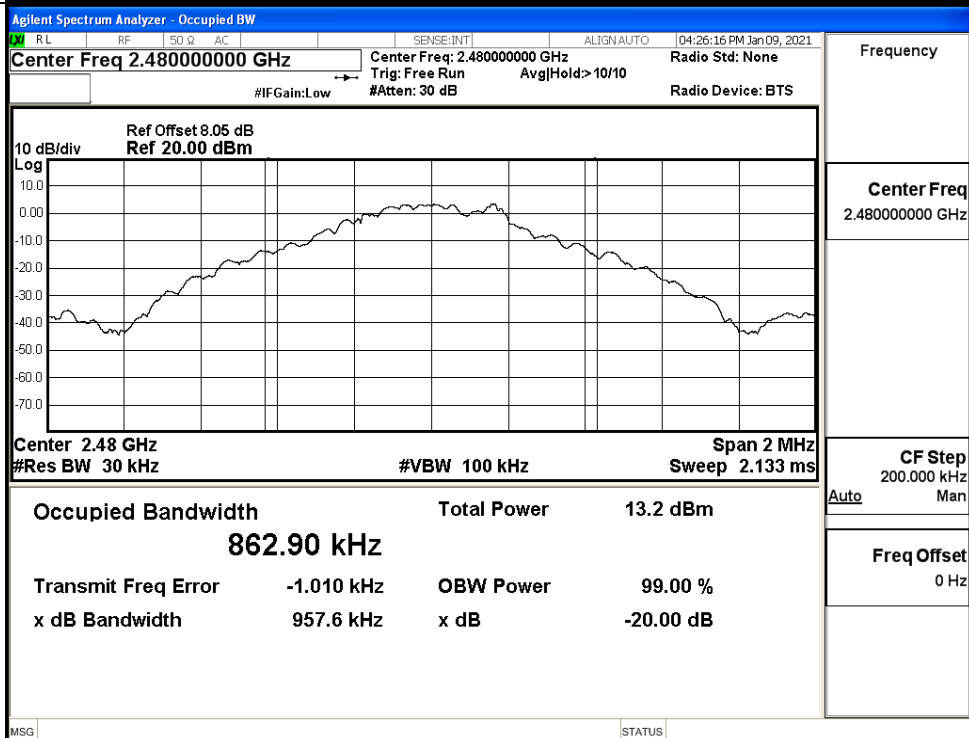
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

GFSK/HCH

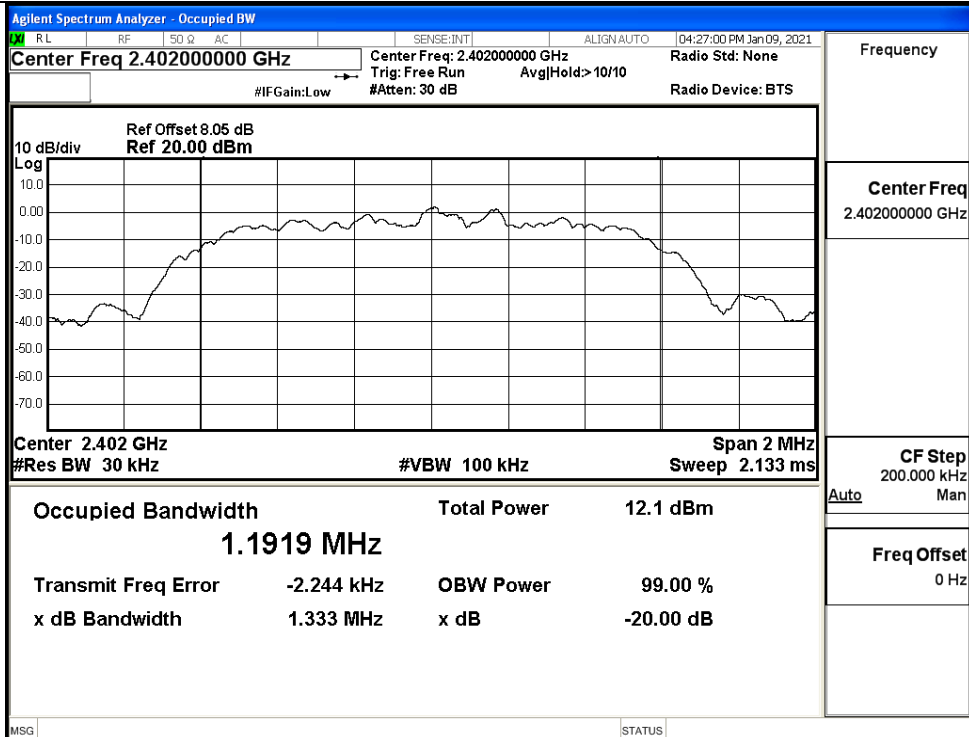
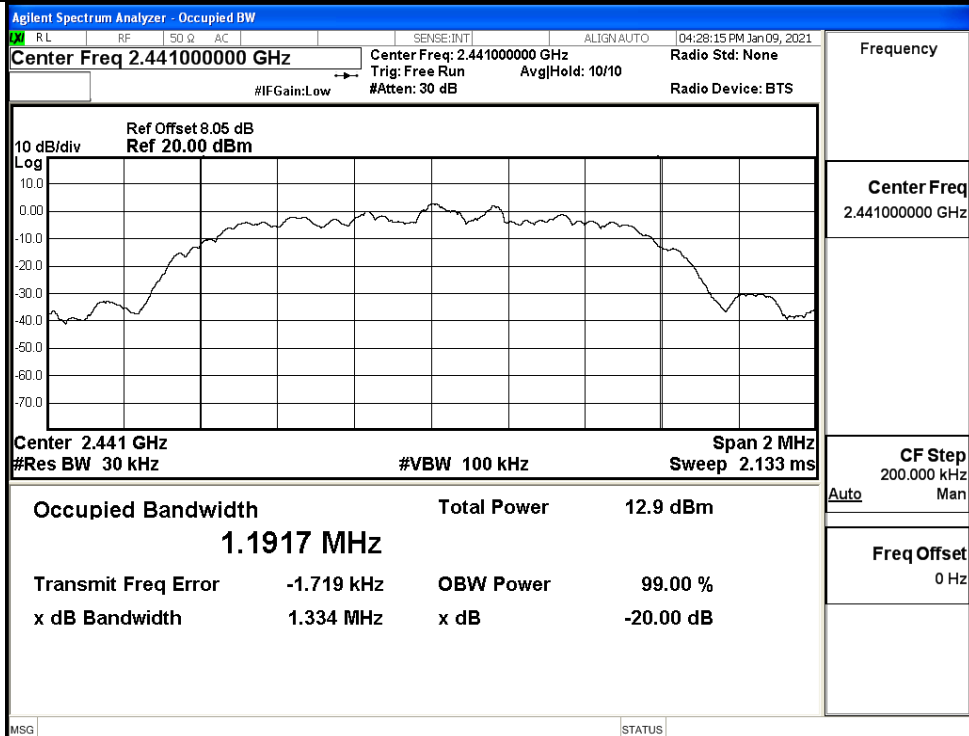


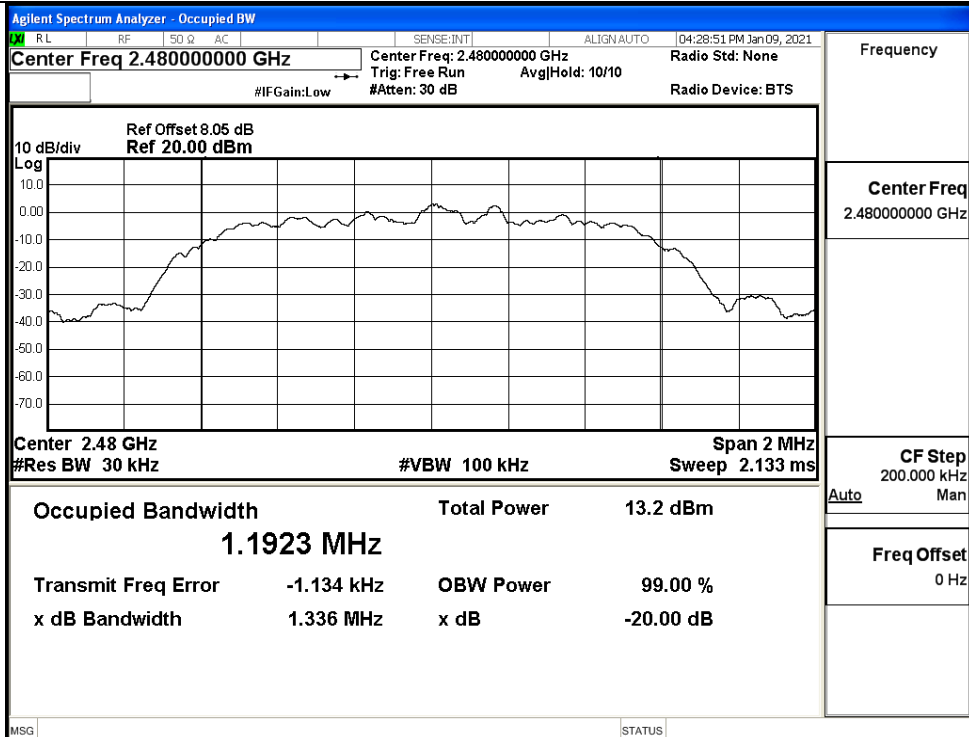
Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

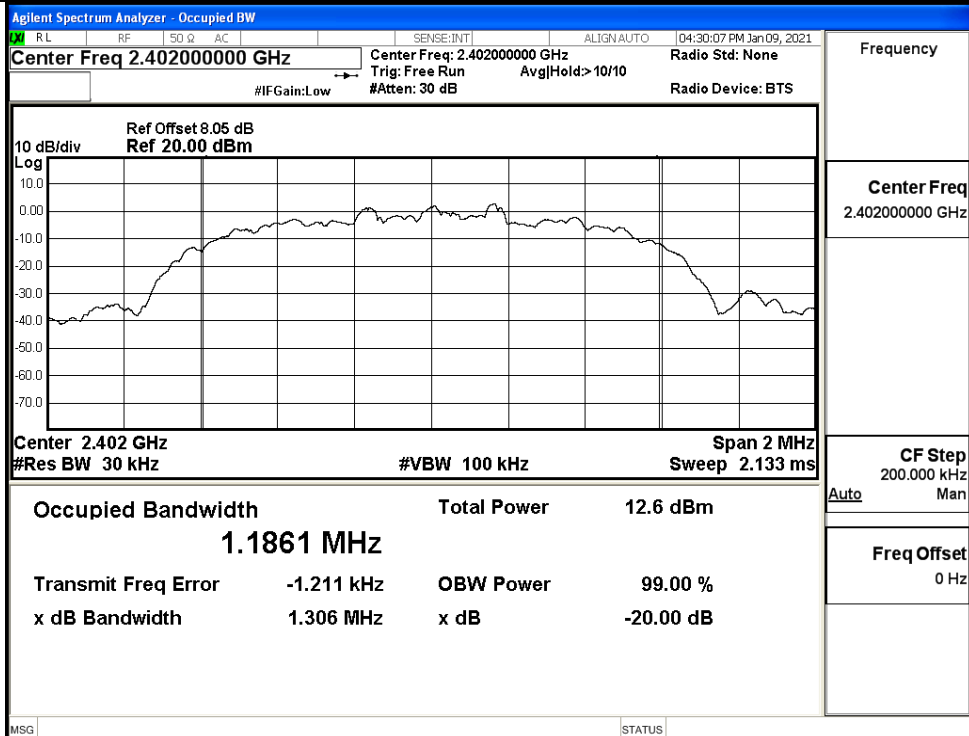
Auto

Freq Offset
0 Hz

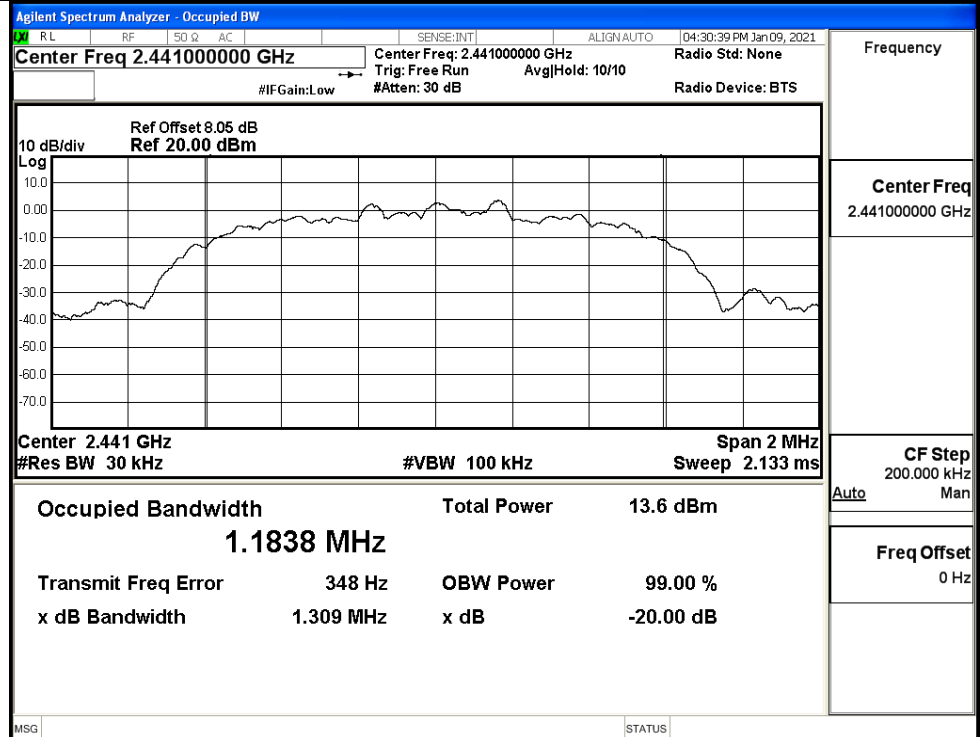
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

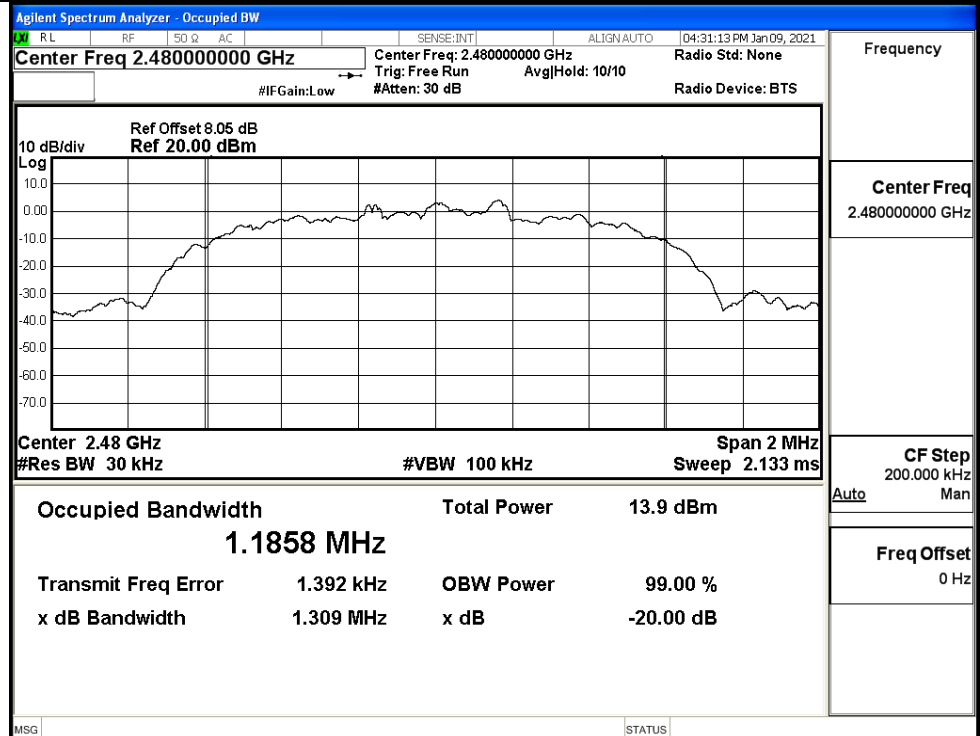
8DPSK/LCH



8DPSK/MCH



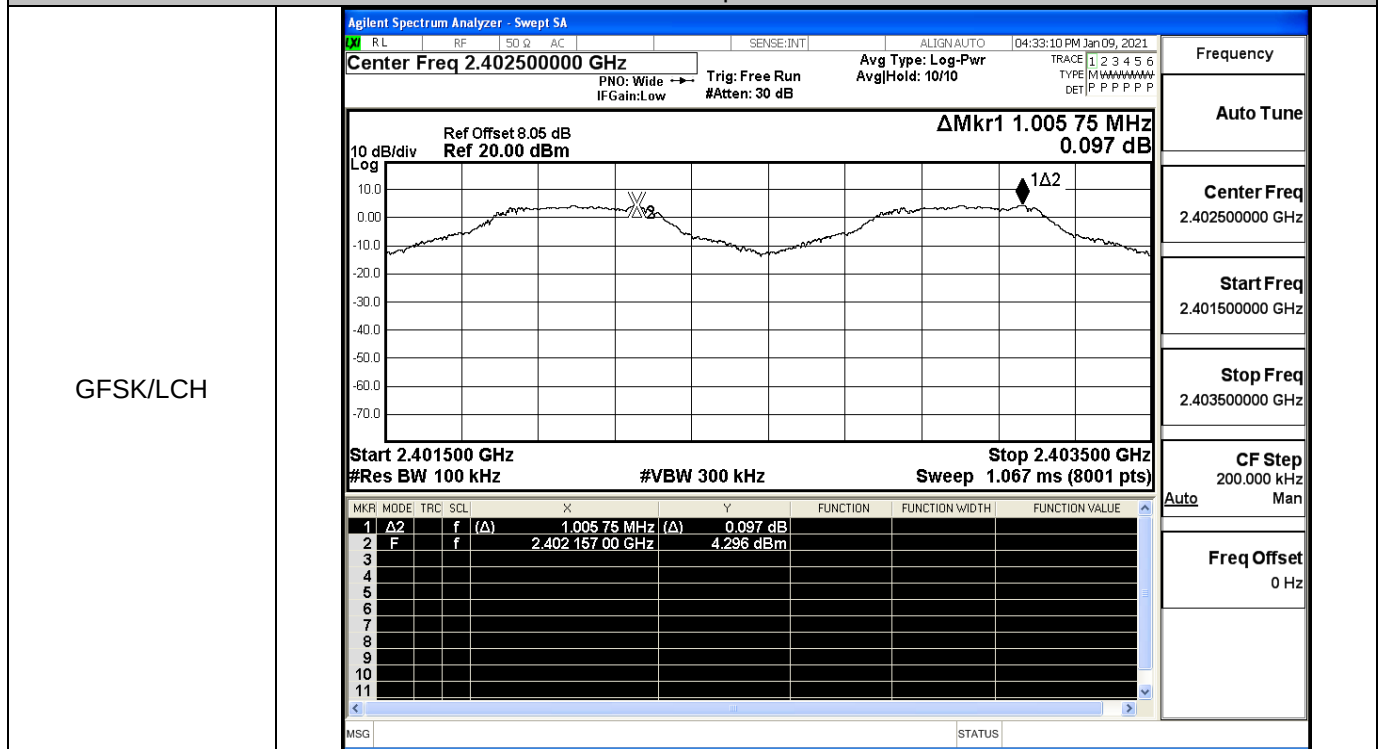
8DPSK/HCH



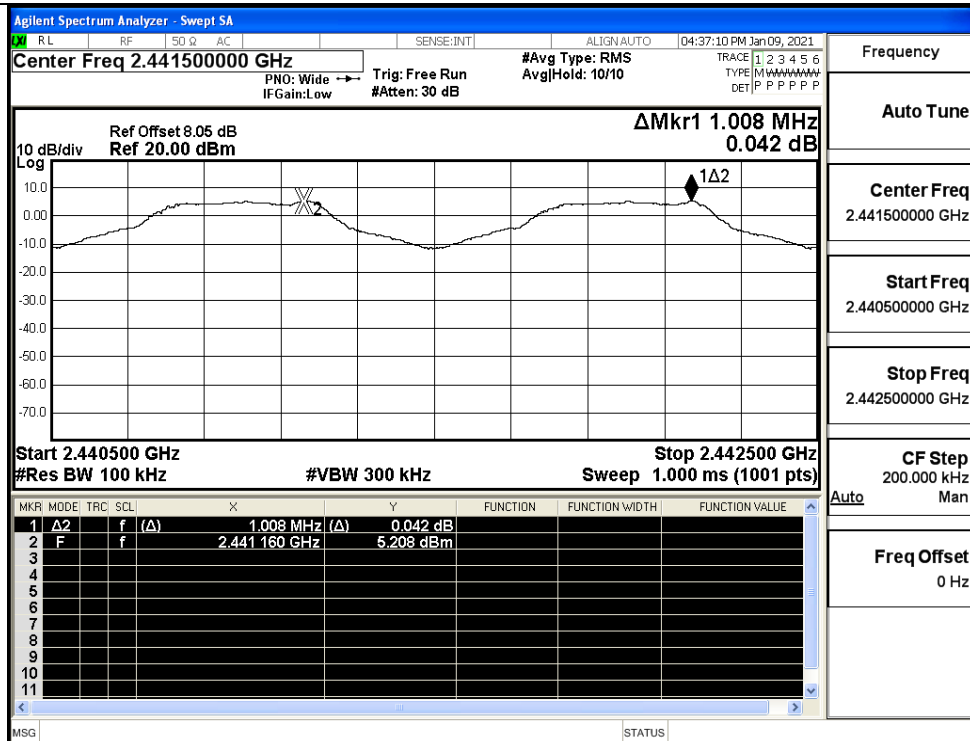
A.4 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.006	0.642	PASS
	MCH	1.008	0.642	PASS
	HCH	1.348	0.642	PASS
$\pi/4$ DQPSK	LCH	1.156	0.892	PASS
	MCH	1.002	0.892	PASS
	HCH	1.244	0.892	PASS
8DPSK	LCH	1.016	0.875	PASS
	MCH	1.070	0.875	PASS
	HCH	1.296	0.875	PASS

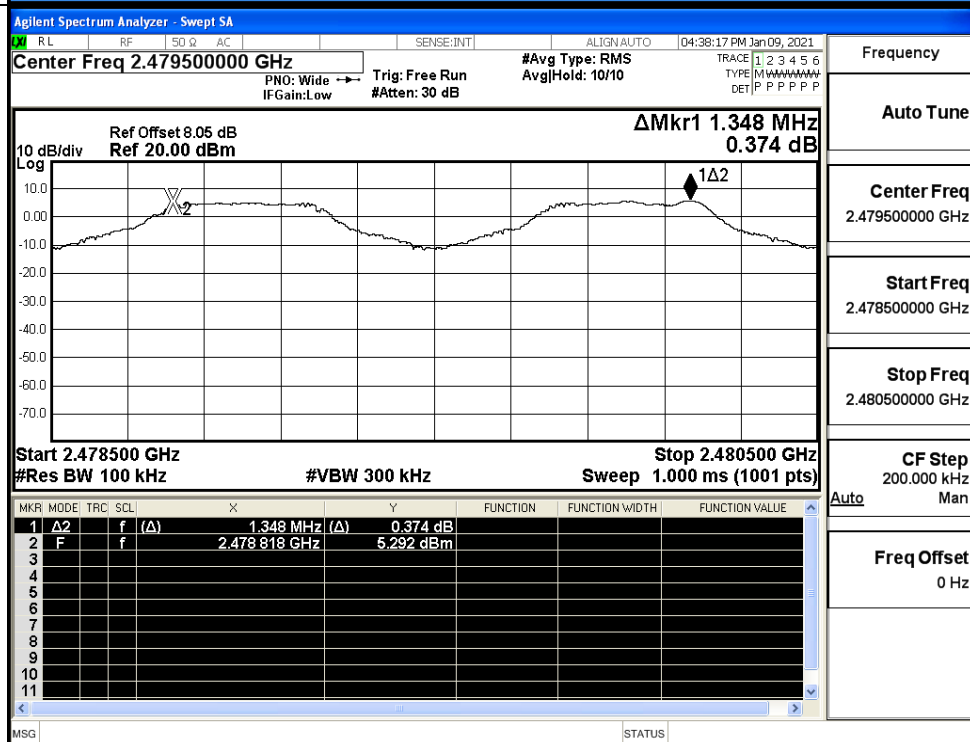
Test Graphs

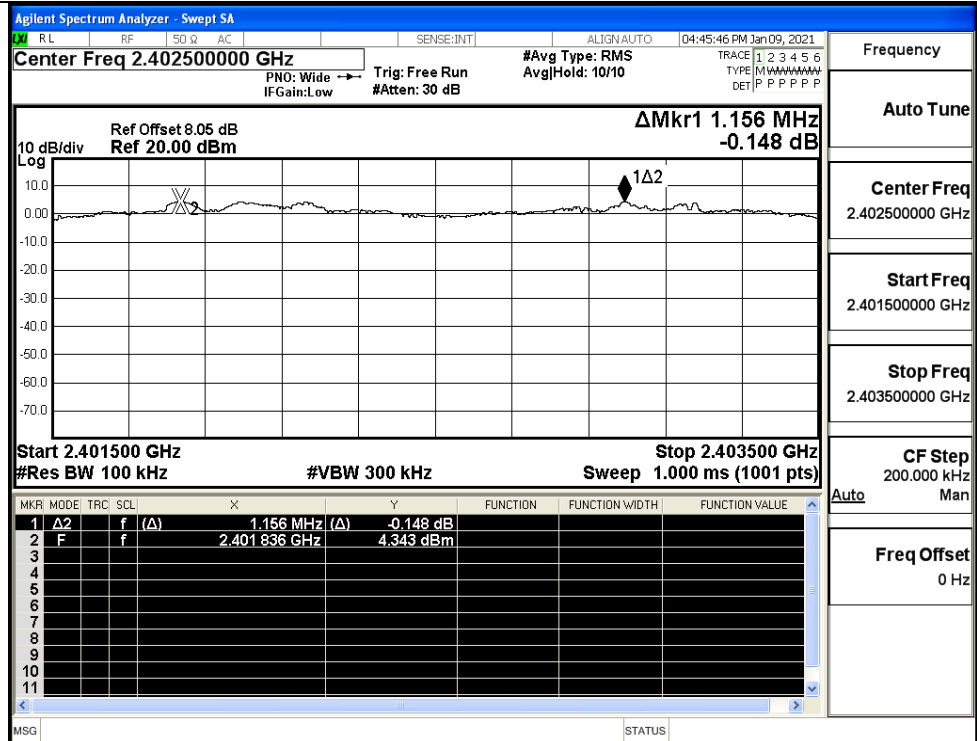
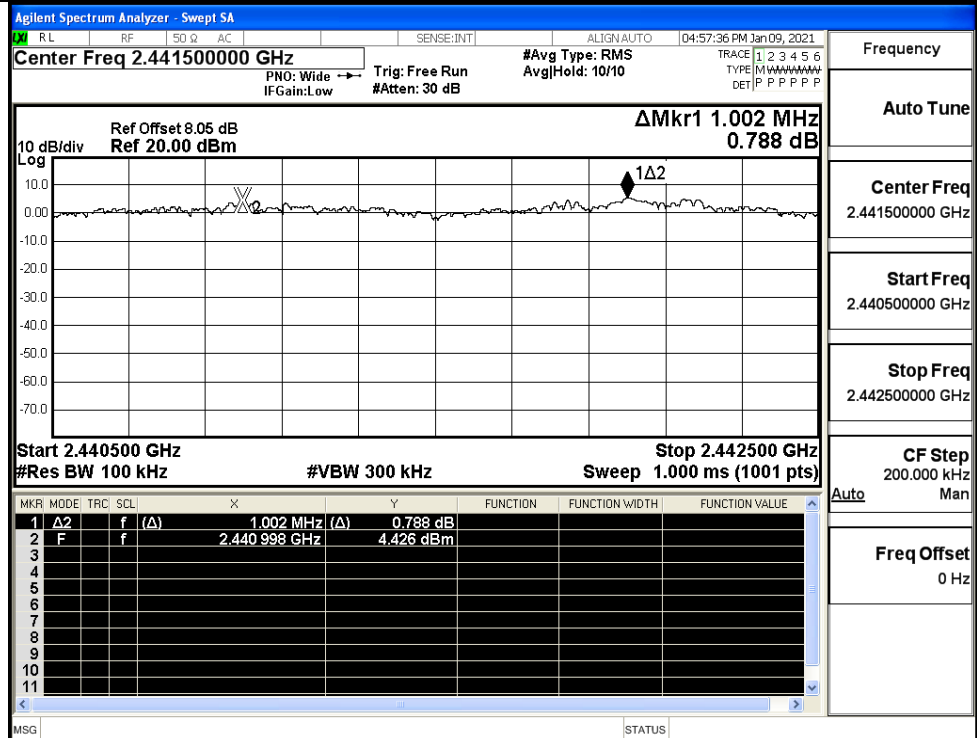


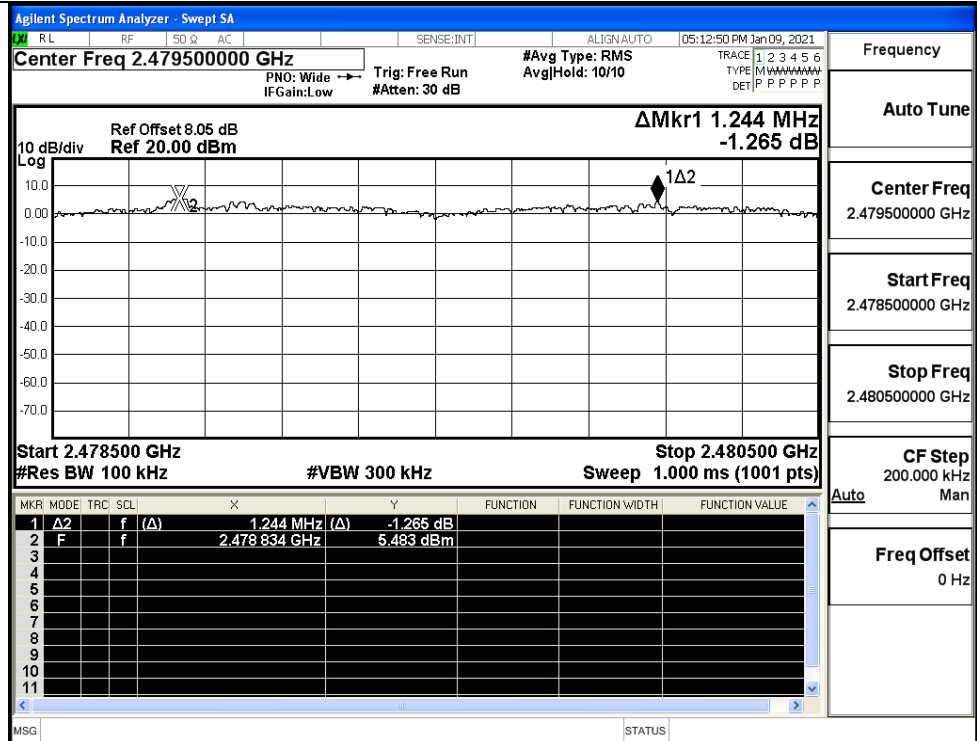
GFSK/MCH



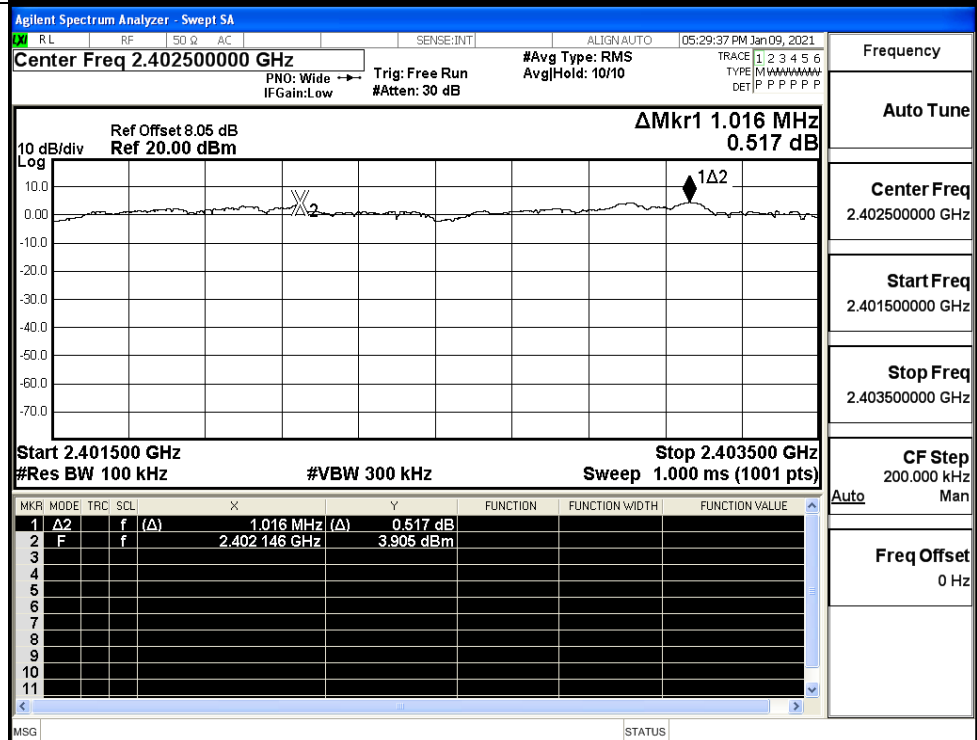
GFSK/HCH



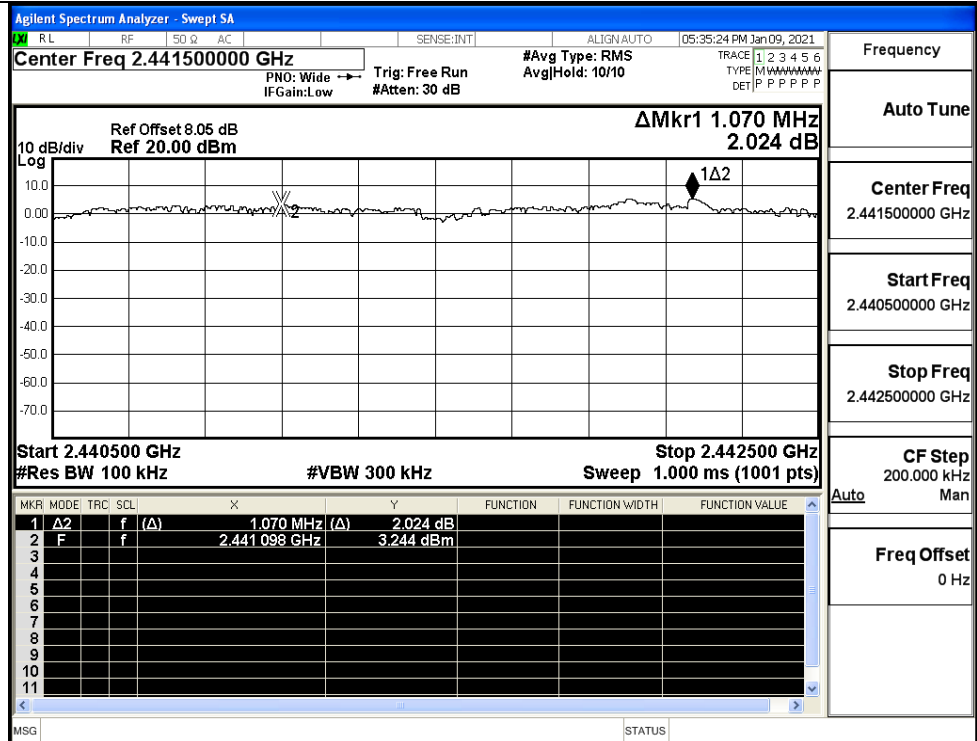
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

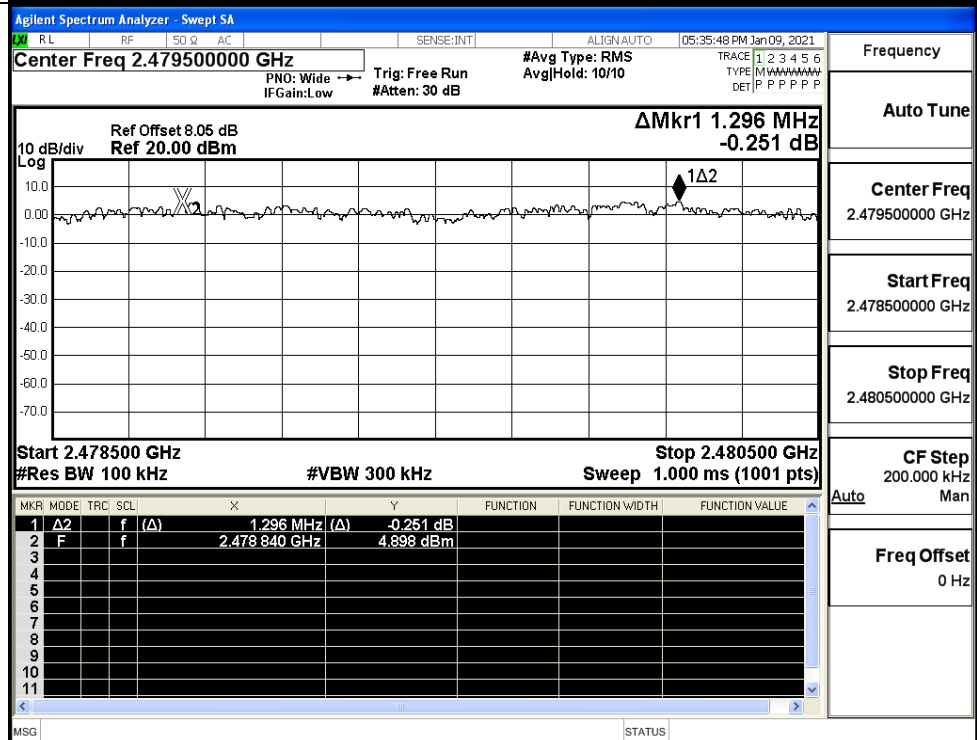
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

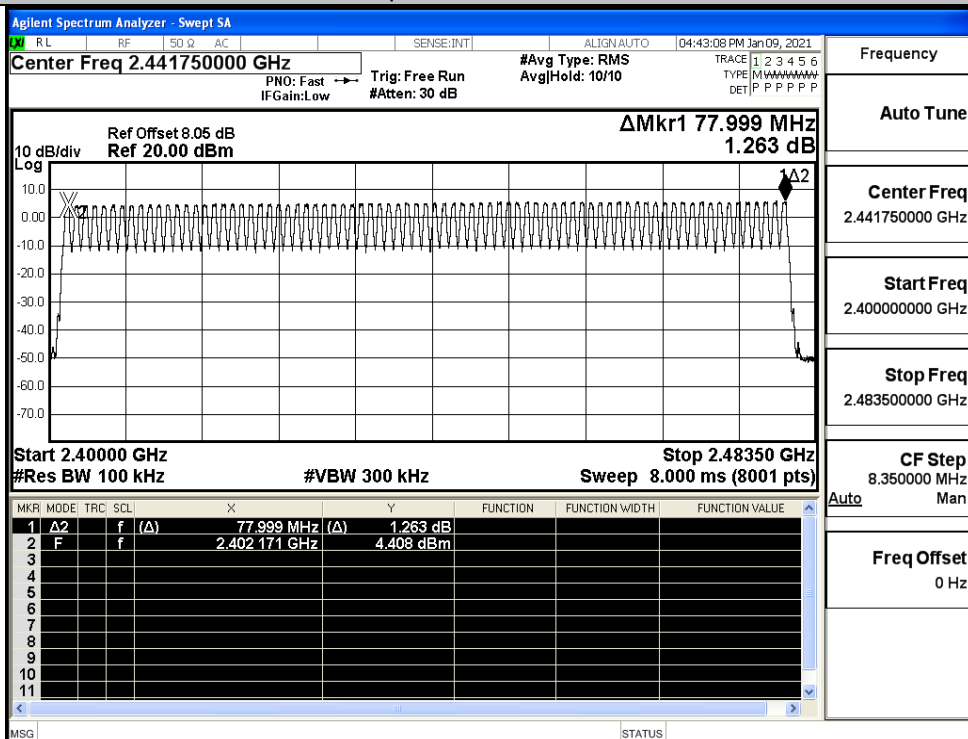
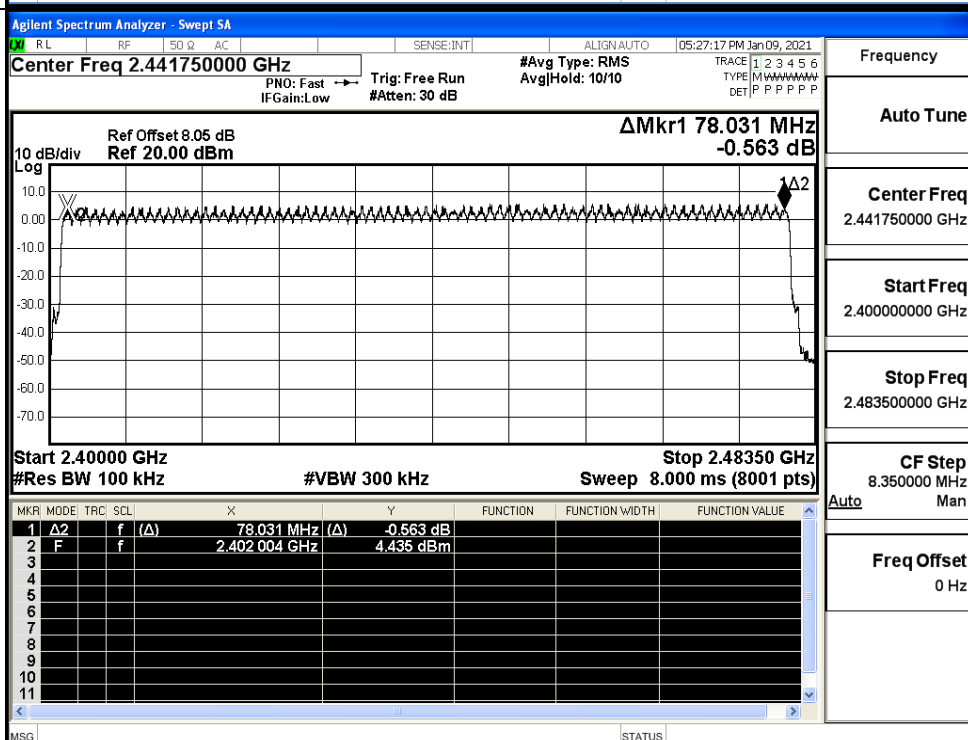


A.5 Hopping Channel Number

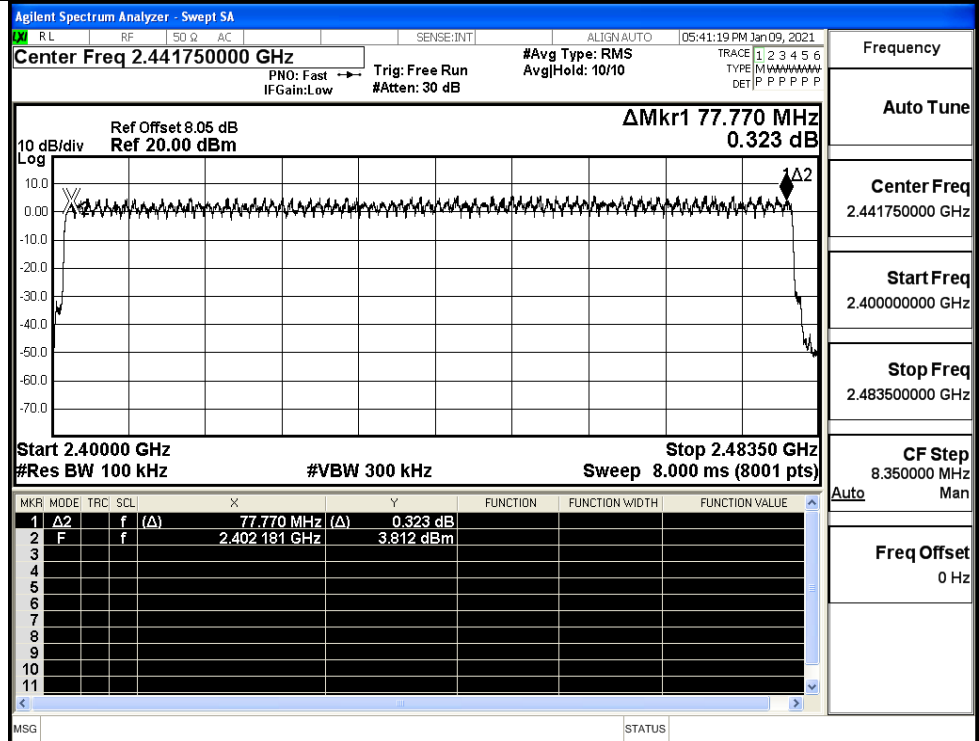
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

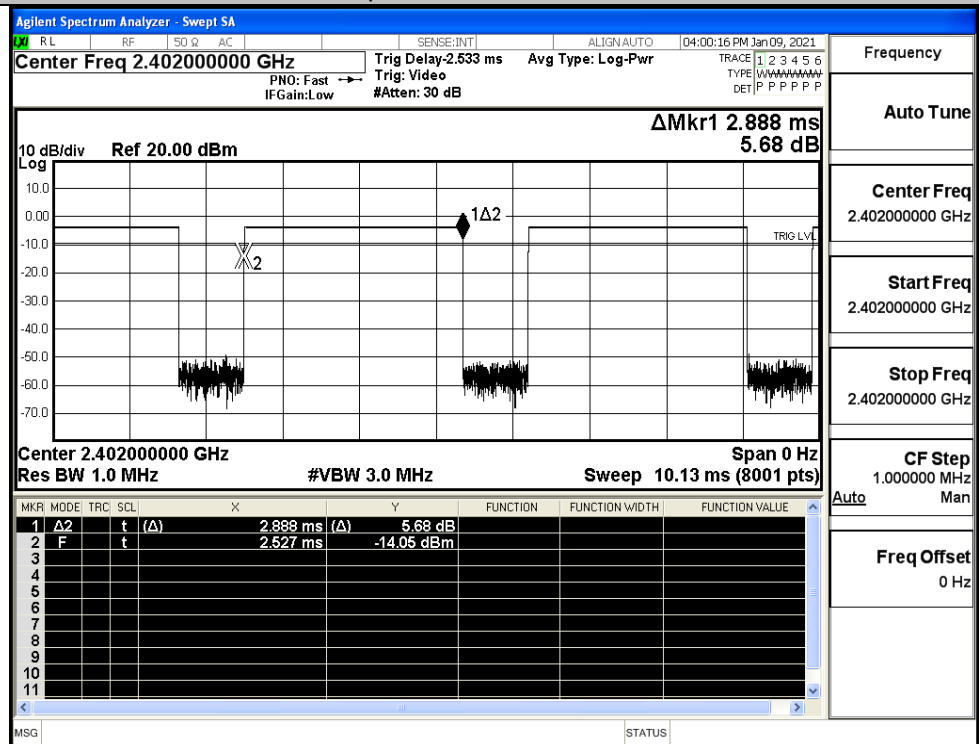


A.6 Dwell Time

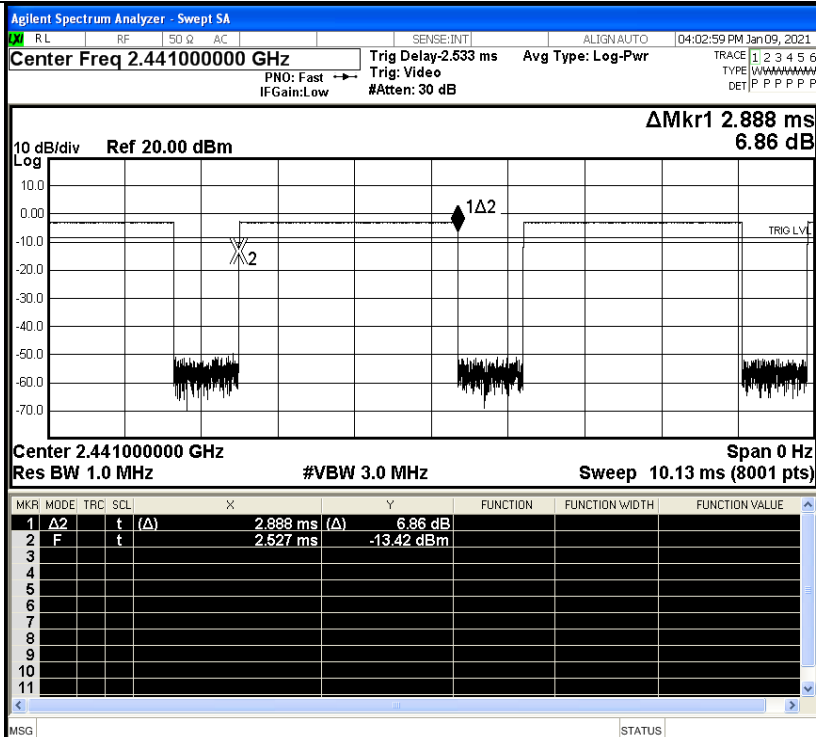
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.308	0.4	PASS
	2DH5	MCH	2.89	106.7	0.308	0.4	PASS
	2DH5	HCH	2.89	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.309	0.4	PASS
	3DH5	MCH	2.89	106.7	0.309	0.4	PASS
	3DH5	HCH	2.89	106.7	0.309	0.4	PASS

Test Graphs

GFSK_DH5/LCH



GFSK_DH5/MCH

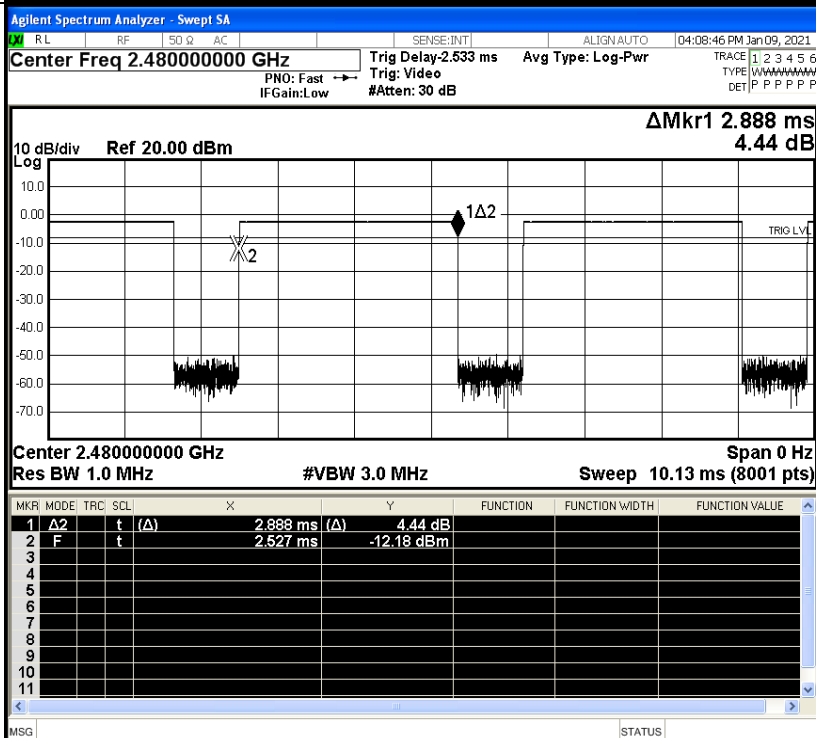


Frequency

Auto Tune

Center Freq
2.441000000 GHzStart Freq
2.441000000 GHzStop Freq
2.441000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

GFSK_DH5/HCH

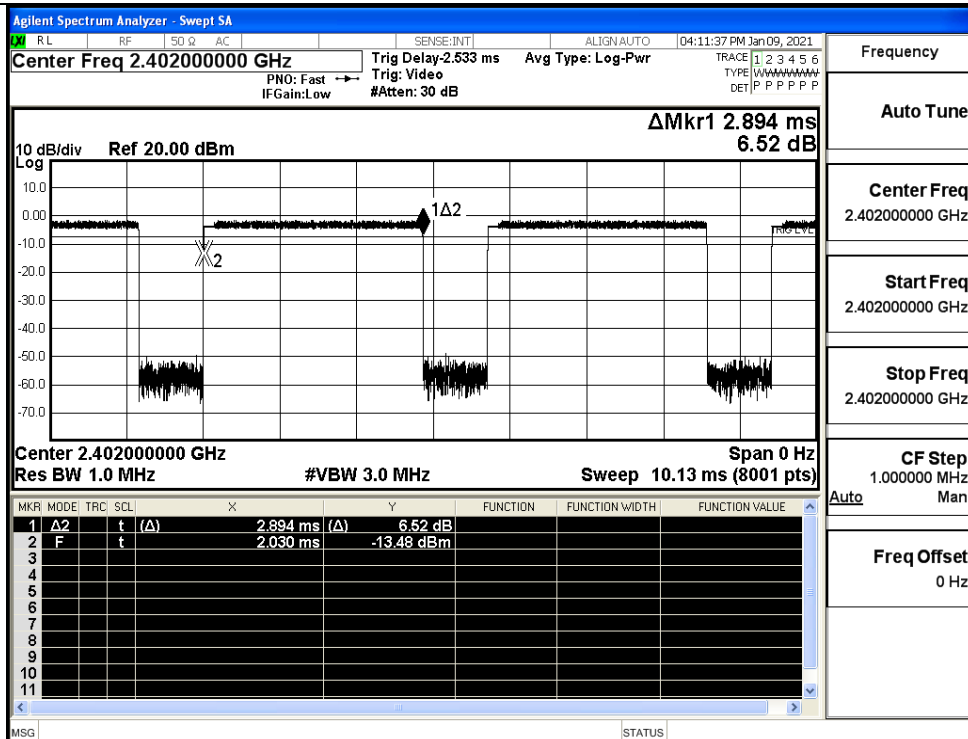


Frequency

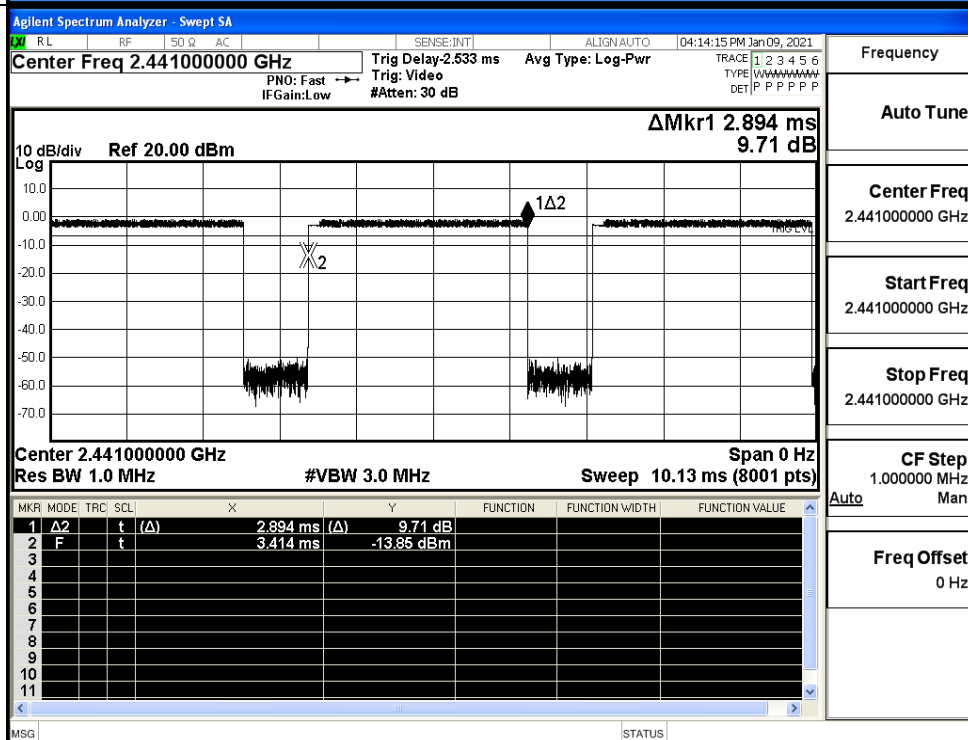
Auto Tune

Center Freq
2.480000000 GHzStart Freq
2.480000000 GHzStop Freq
2.480000000 GHzCF Step
1.000000 MHz
Auto ManFreq Offset
0 Hz

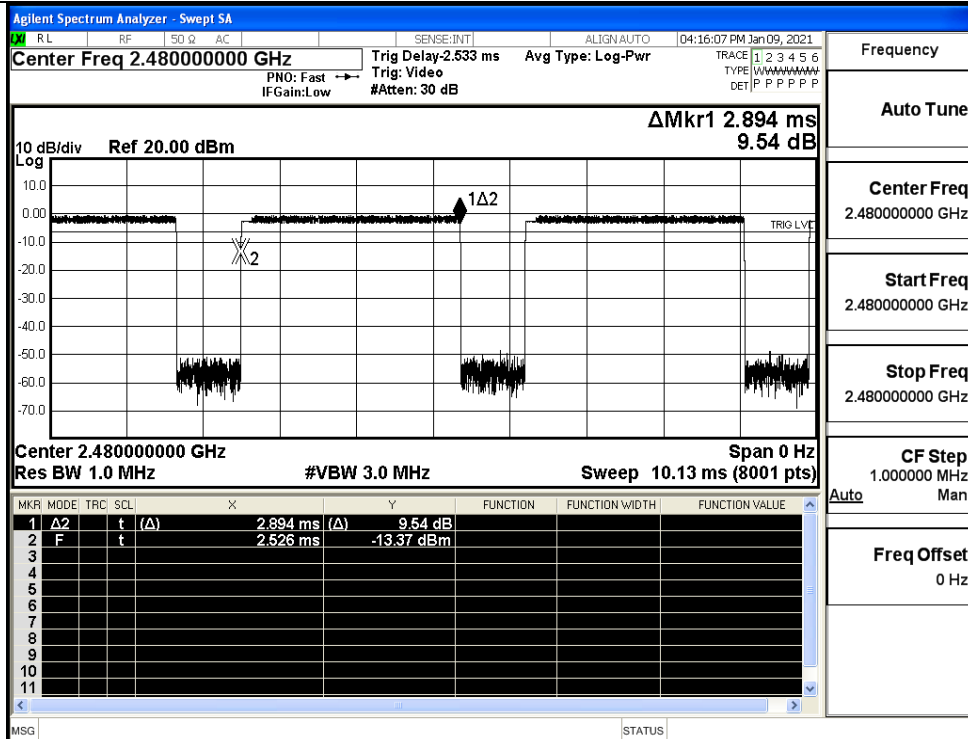
$\pi/4$ DQPSK
_2DH5/LCH



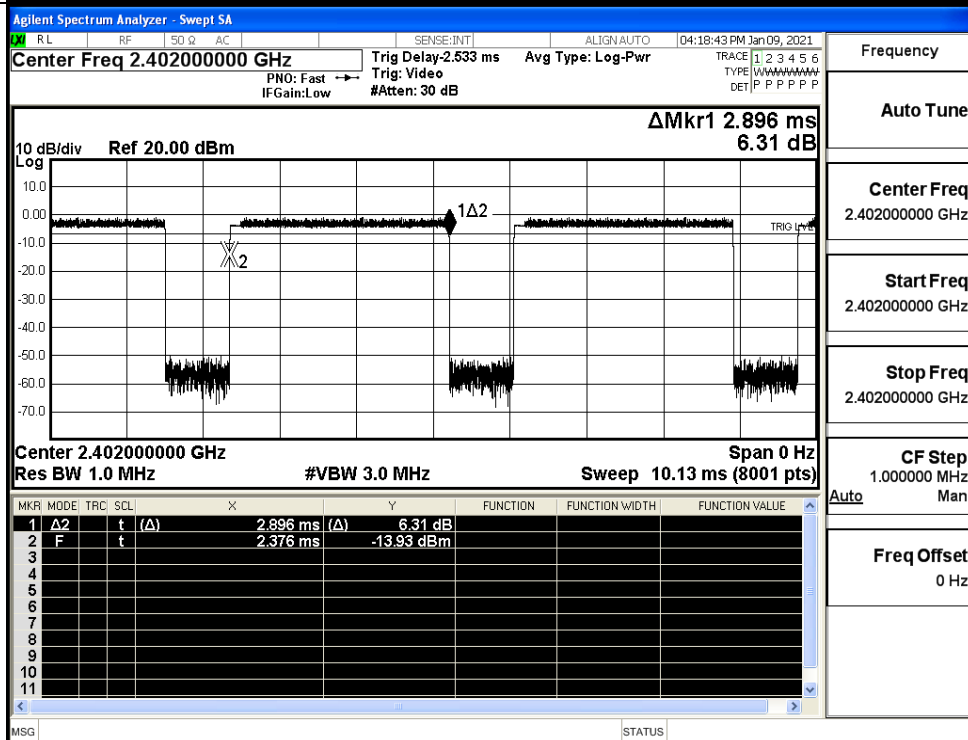
$\pi/4$ DQPSK
_2DH5/MCH



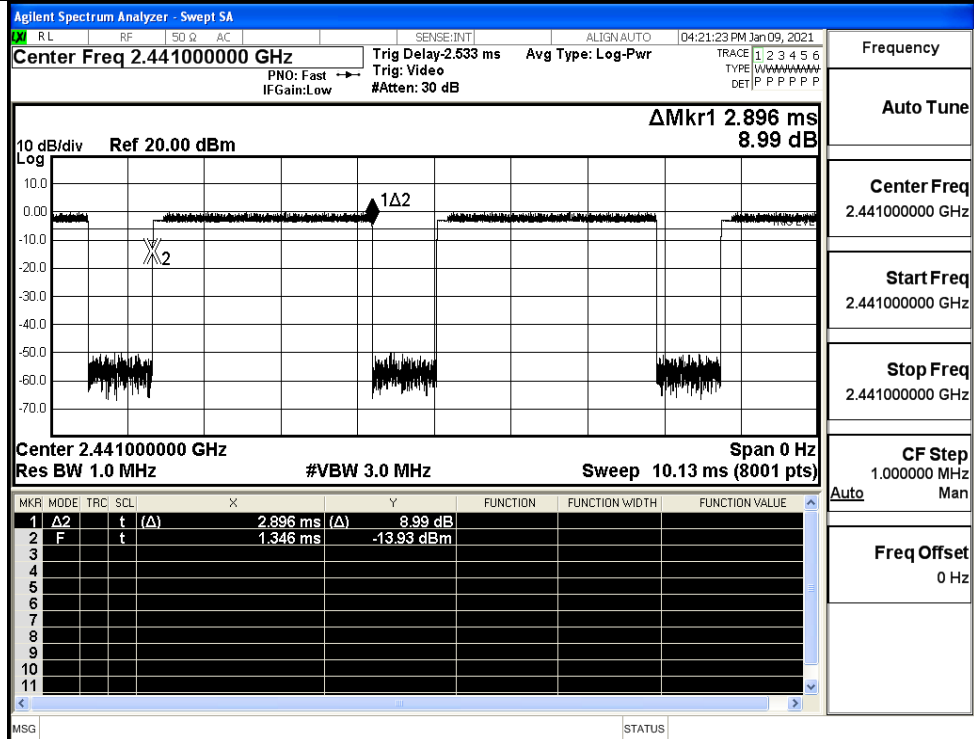
$\pi/4$ DQPSK
_2DH5/HCH



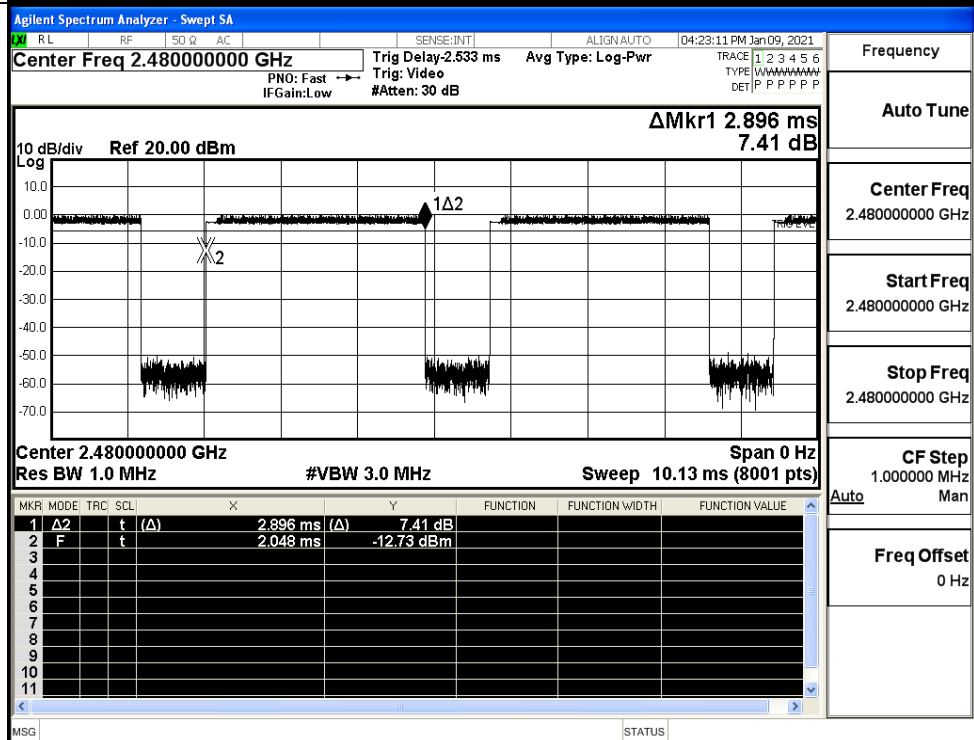
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



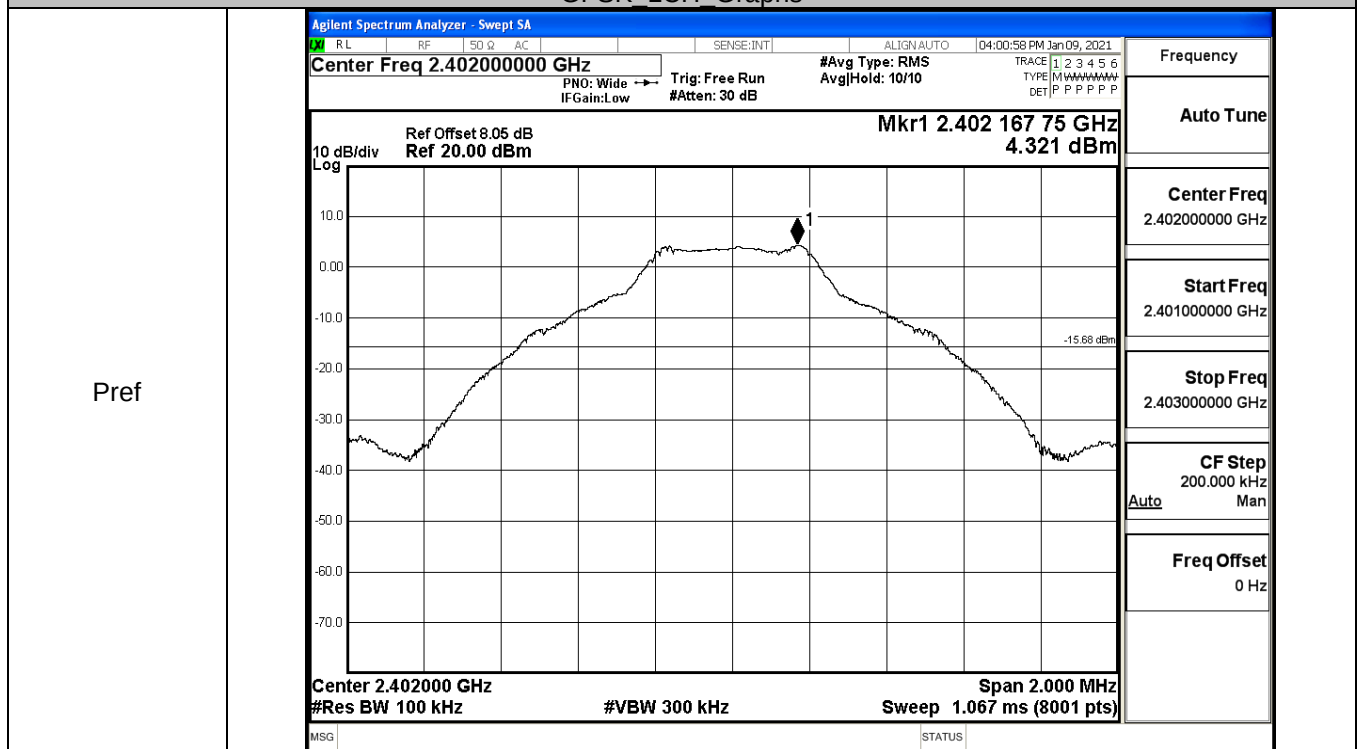
8DPSK_3DH5/HCH



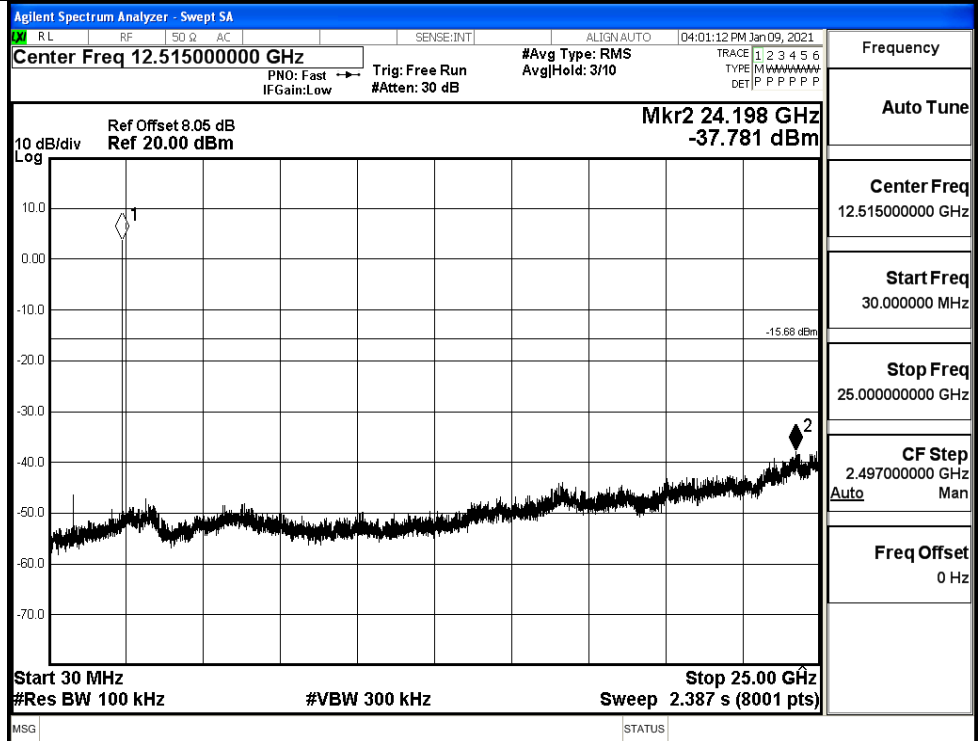
A.7 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.321	-37.781	-15.679	PASS
	MCH	5.25	-38.104	-14.750	PASS
	HCH	5.54	-37.458	-14.460	PASS
$\pi/4$ DQPSK	LCH	3.648	-37.737	-16.352	PASS
	MCH	5.142	-38.043	-14.858	PASS
	HCH	5.481	-38.104	-14.519	PASS
8DPSK	LCH	4.386	-36.949	-15.614	PASS
	MCH	5.213	-36.037	-14.787	PASS
	HCH	5.626	-37.268	-14.374	PASS

GFSK LCH Graphs

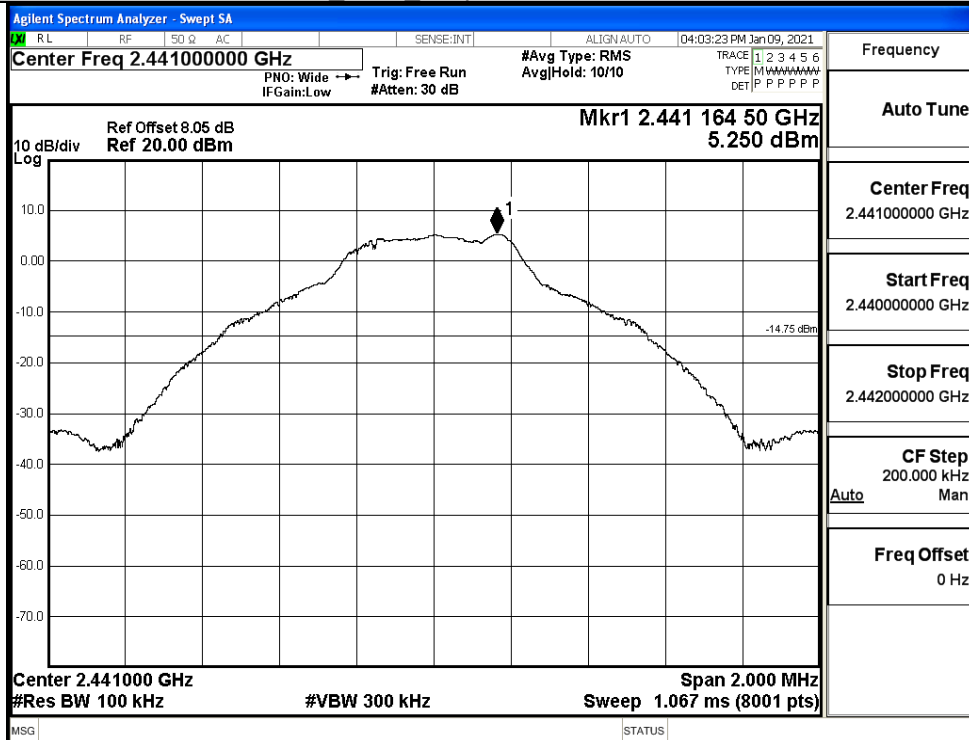


Puw

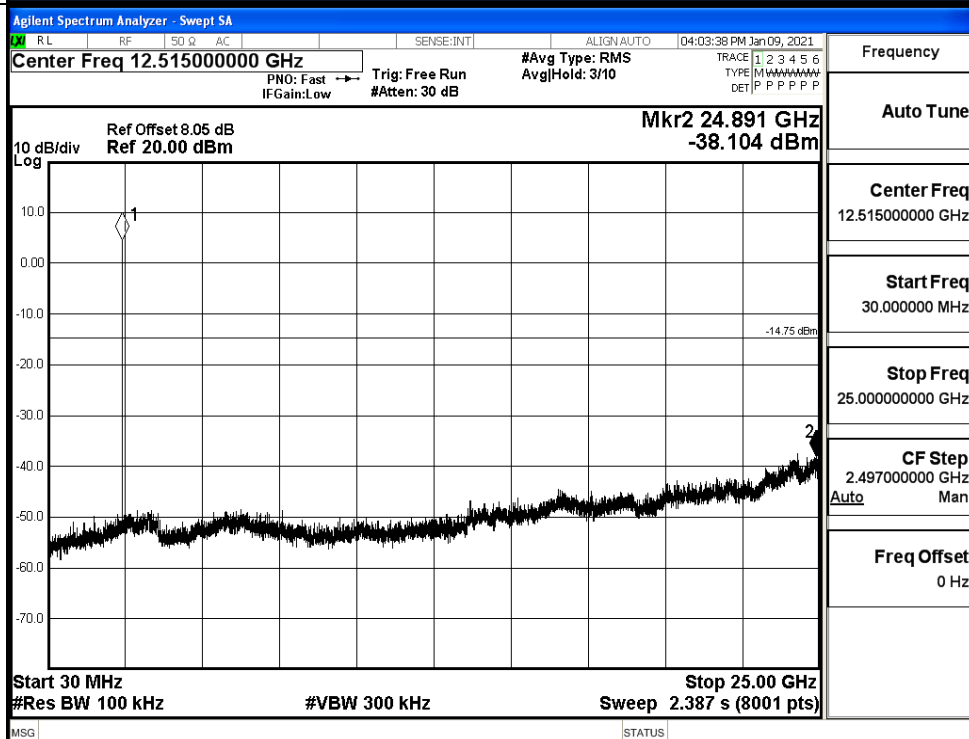


GFSK_MCH_Graphs

Pref

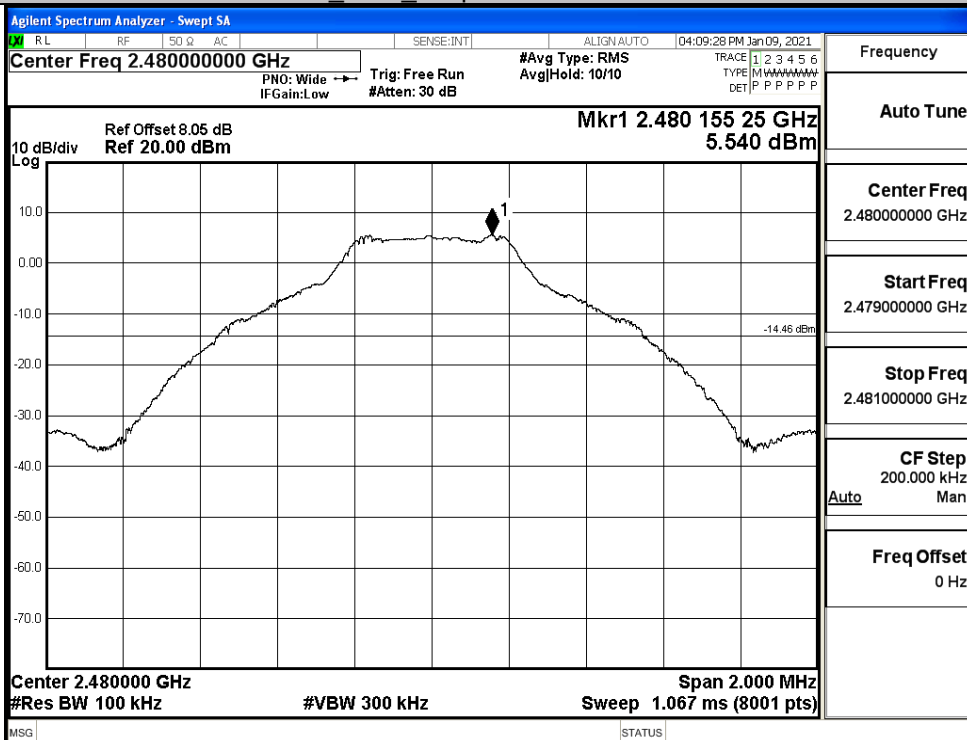


Puw

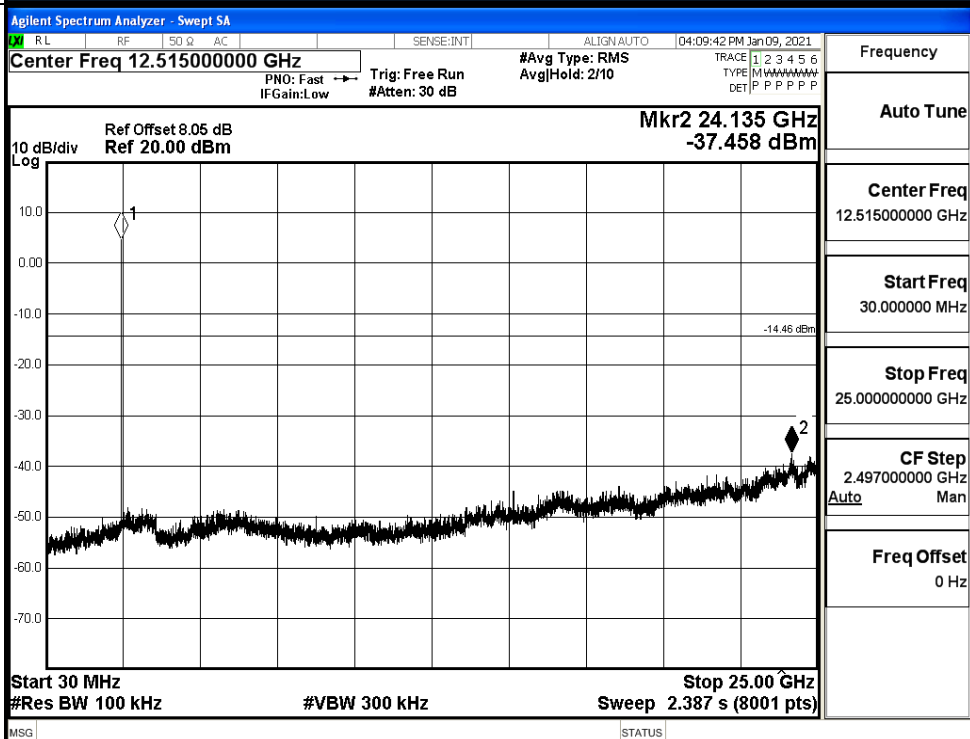


GFSK HCH Graphs

Pref

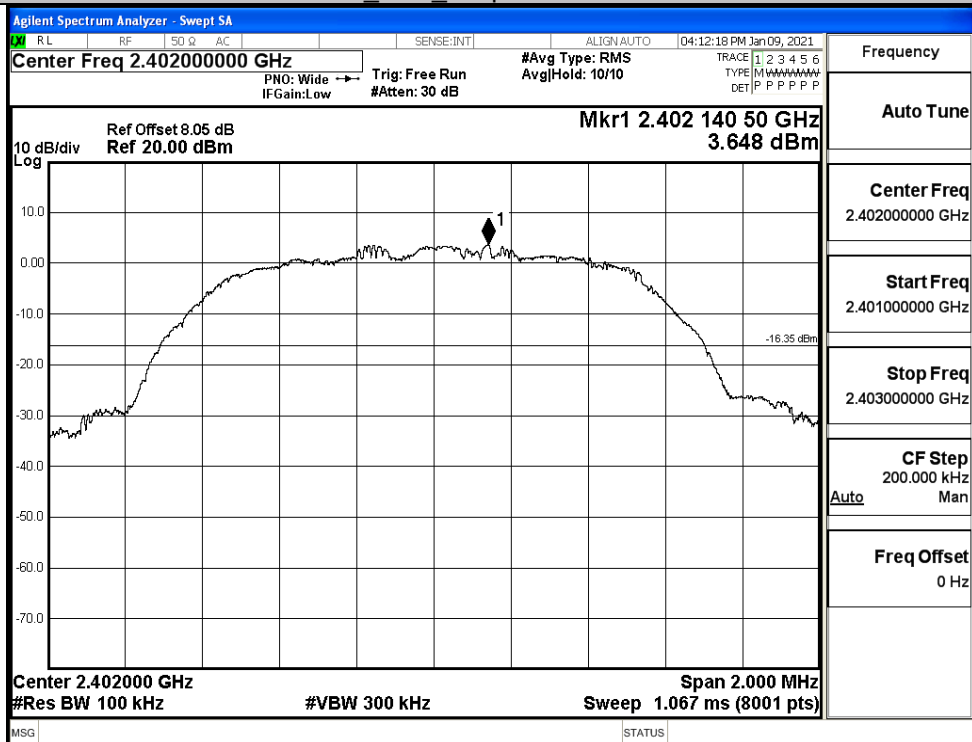


Puw

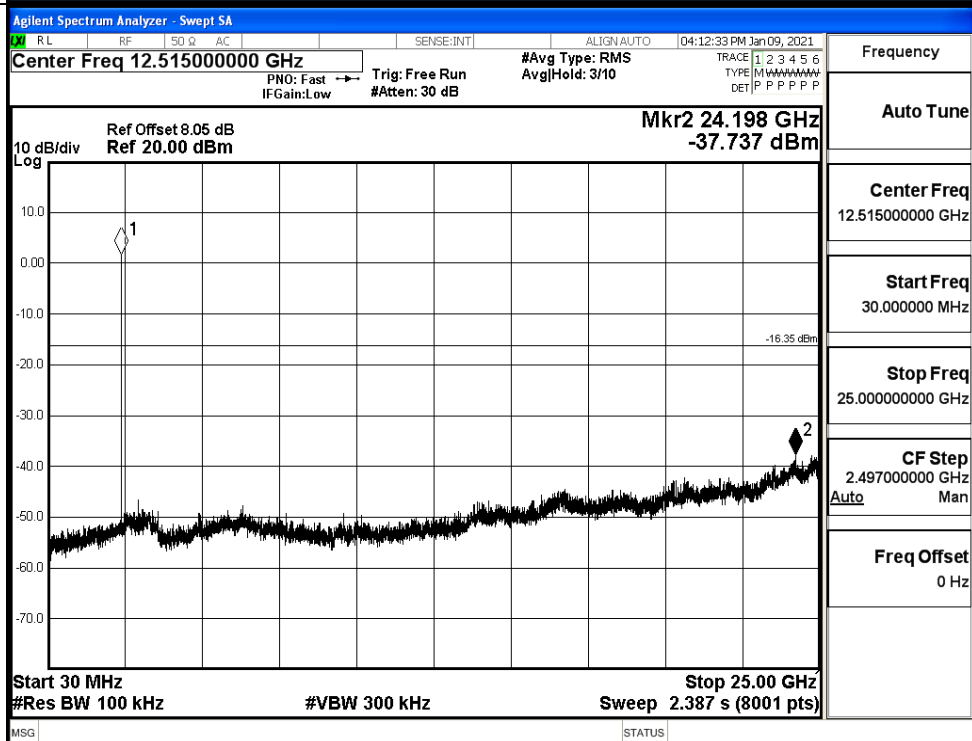


π /4DQPSK LCH_Graphs

Pref

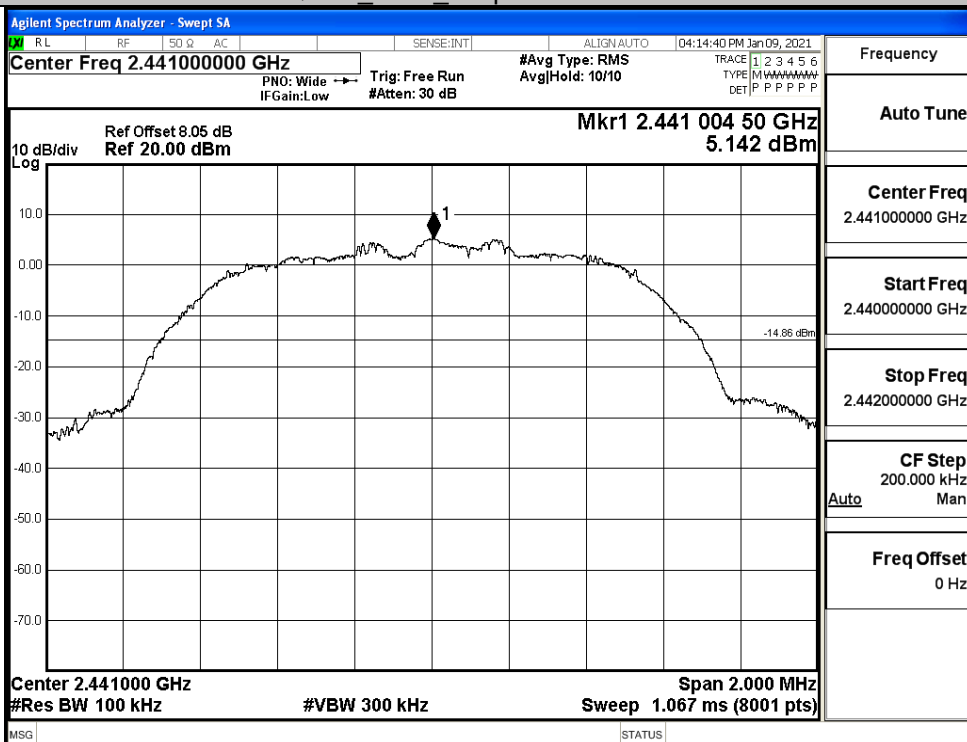


Puw

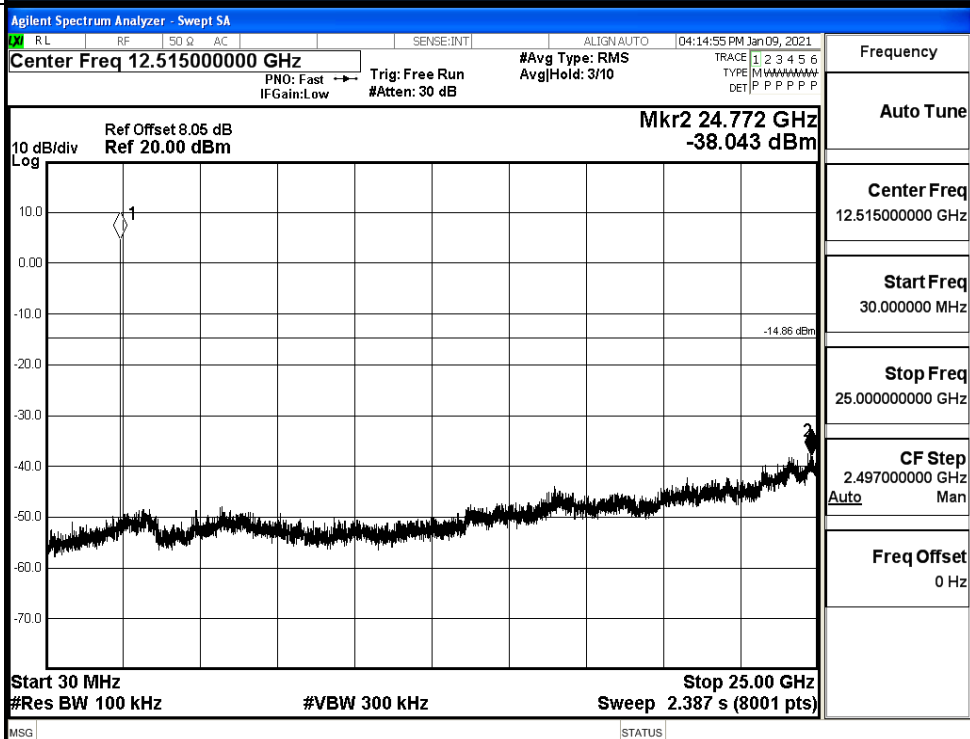


π /4DQPSK_MCH_Graphs

Pref

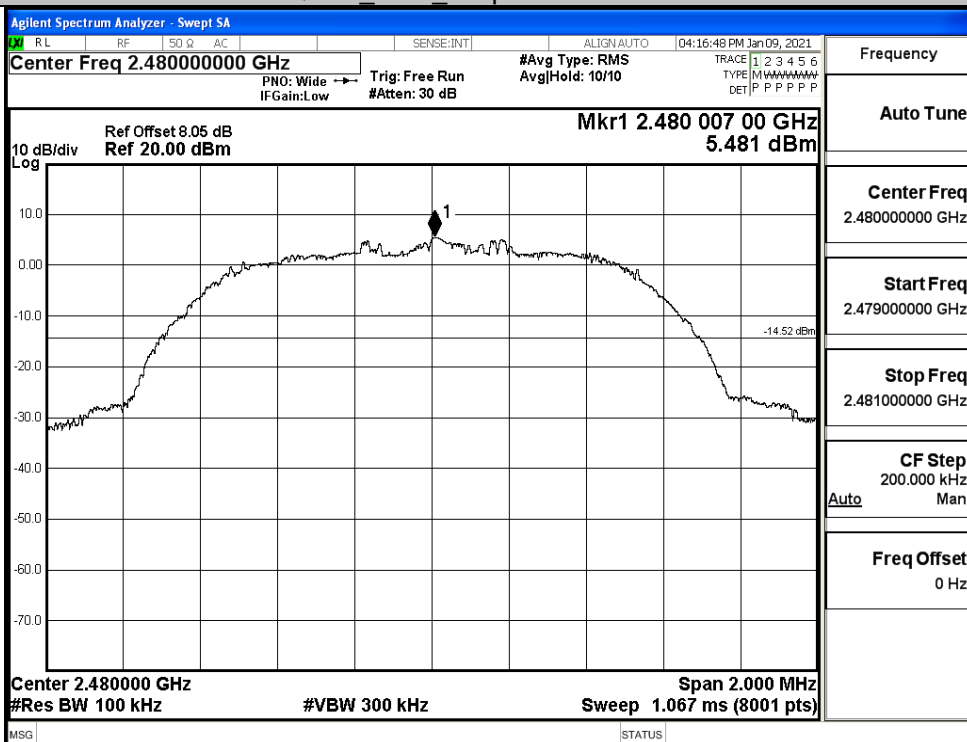


Puw

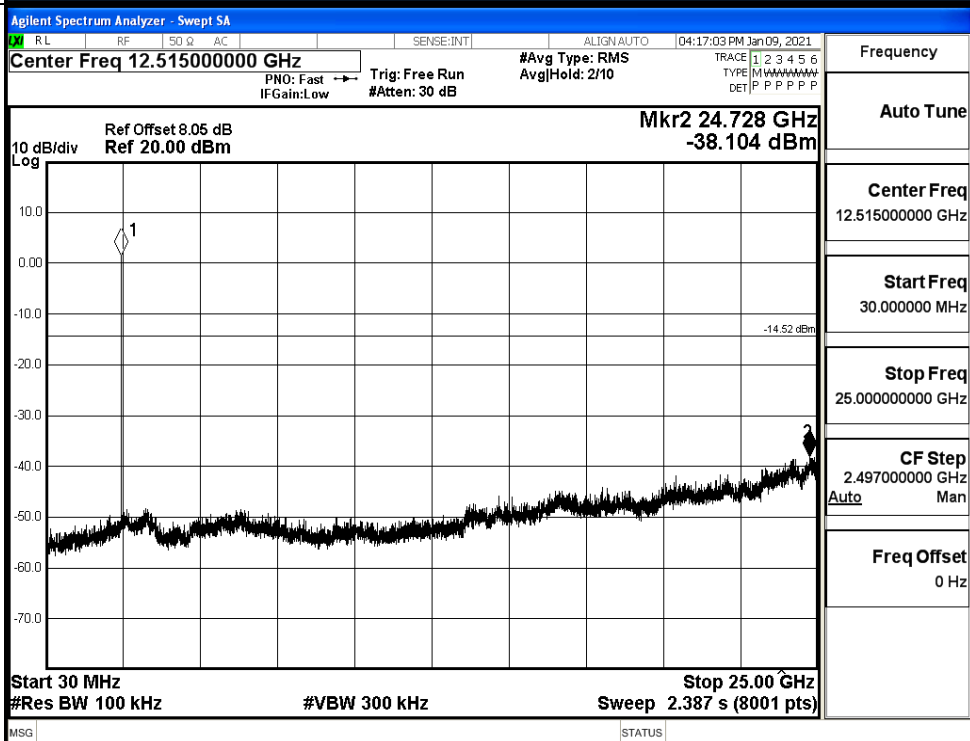


π /4DQPSK_HCH_Graphs

Pref

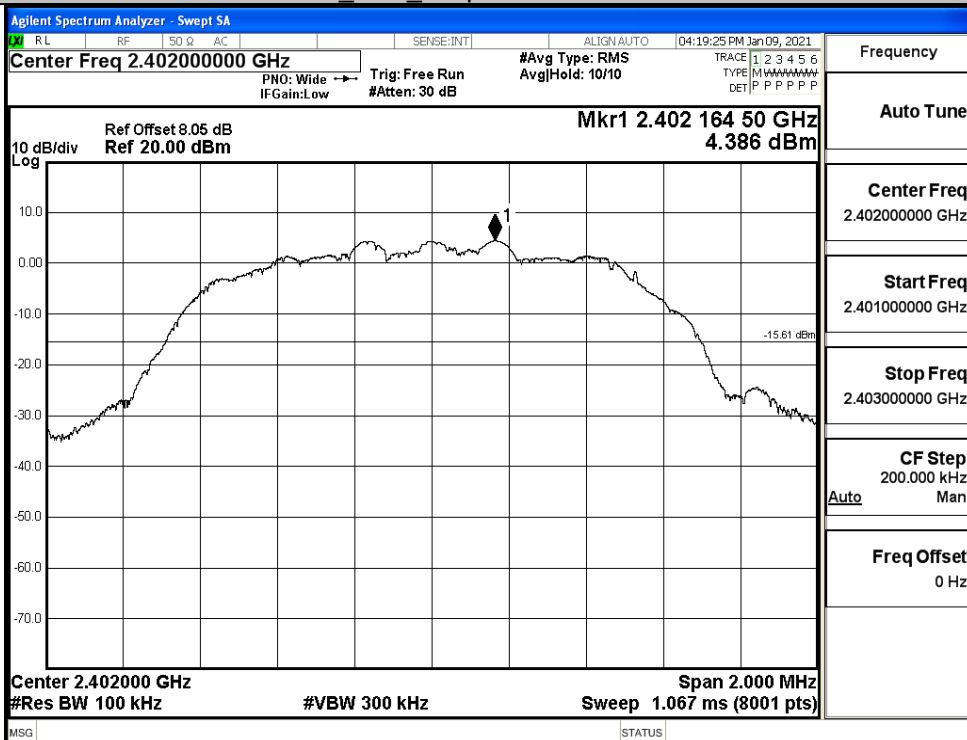


Puw

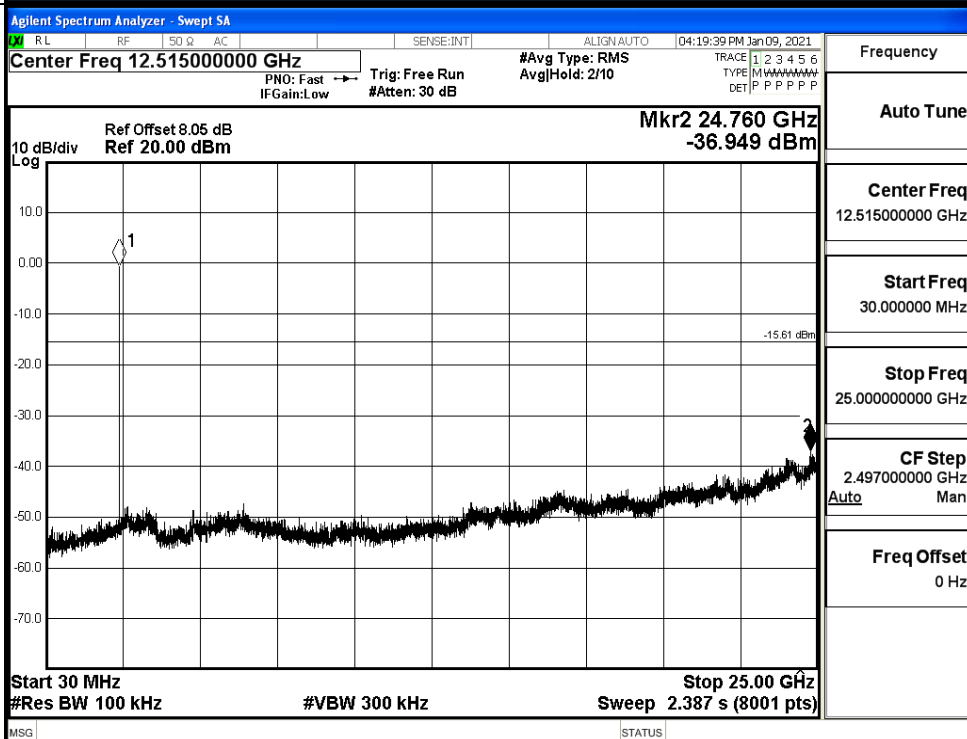


8DPSK_LCH_Graphs

Pref

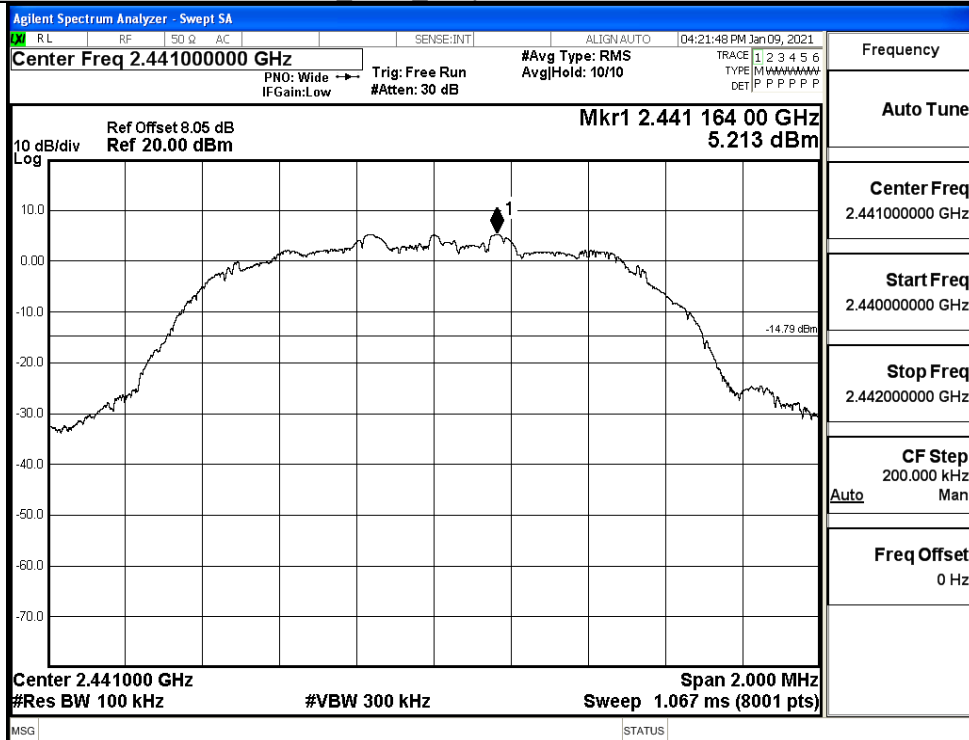


Puw

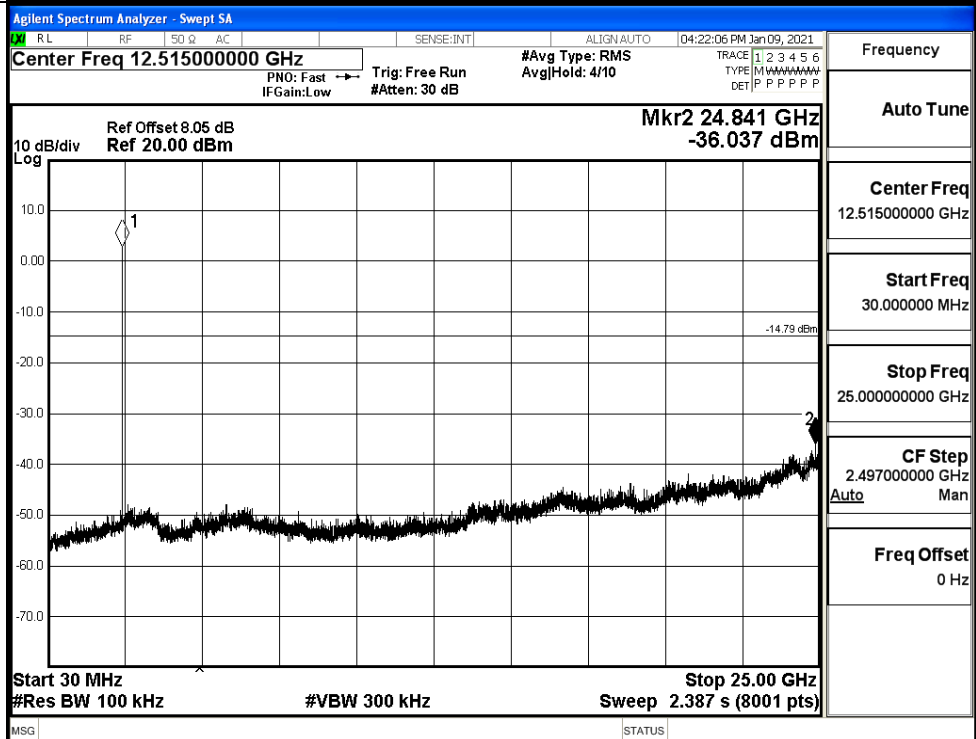


8DPSK_MCH_Graphs

Pref

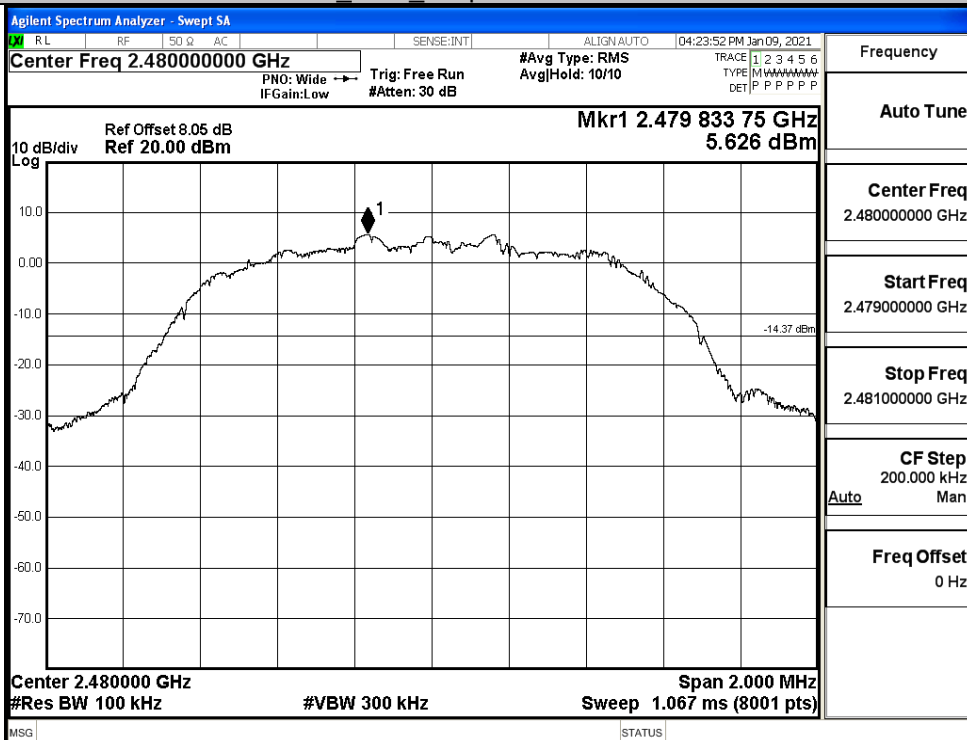


Puw

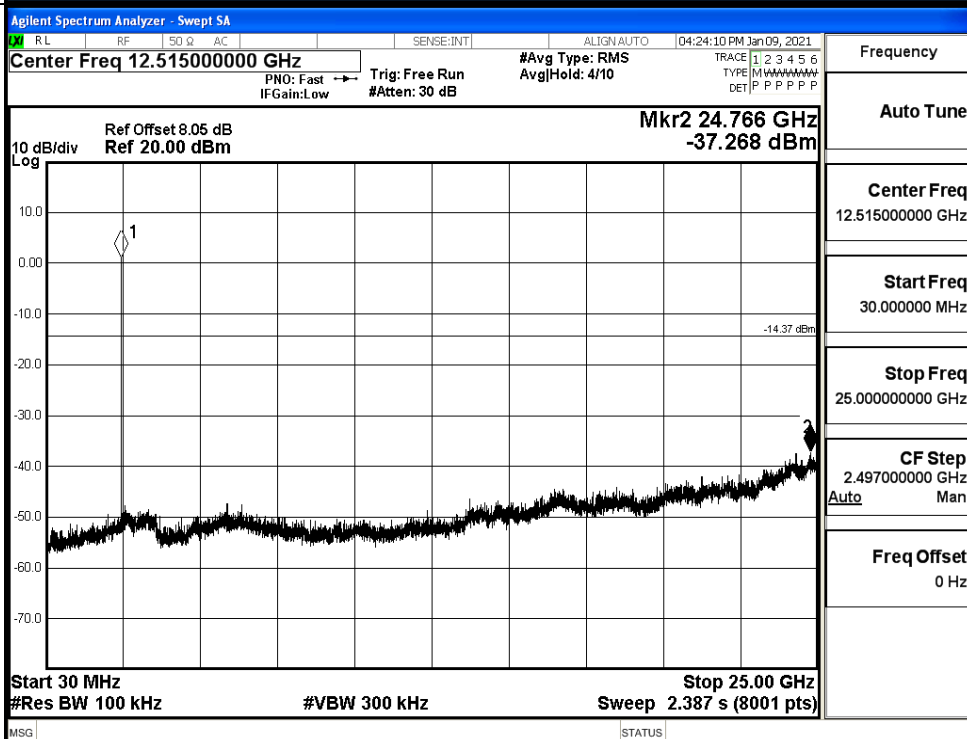


8DPSK_HCH_Graphs

Pref



Puw

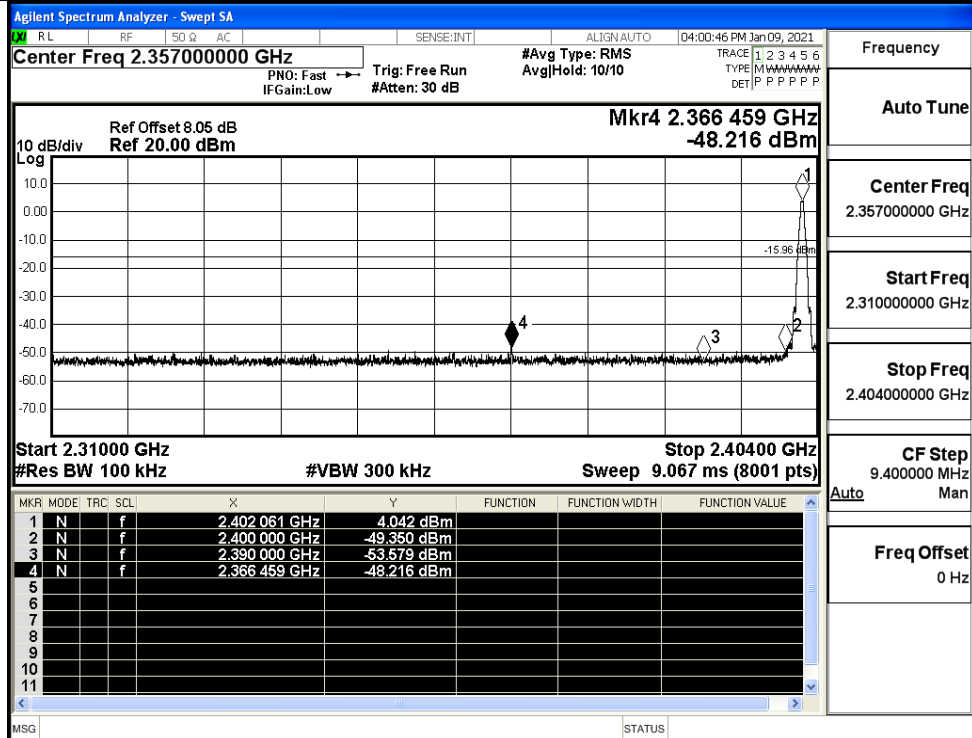


A.8 Band-edge for RF Conducted Emissions

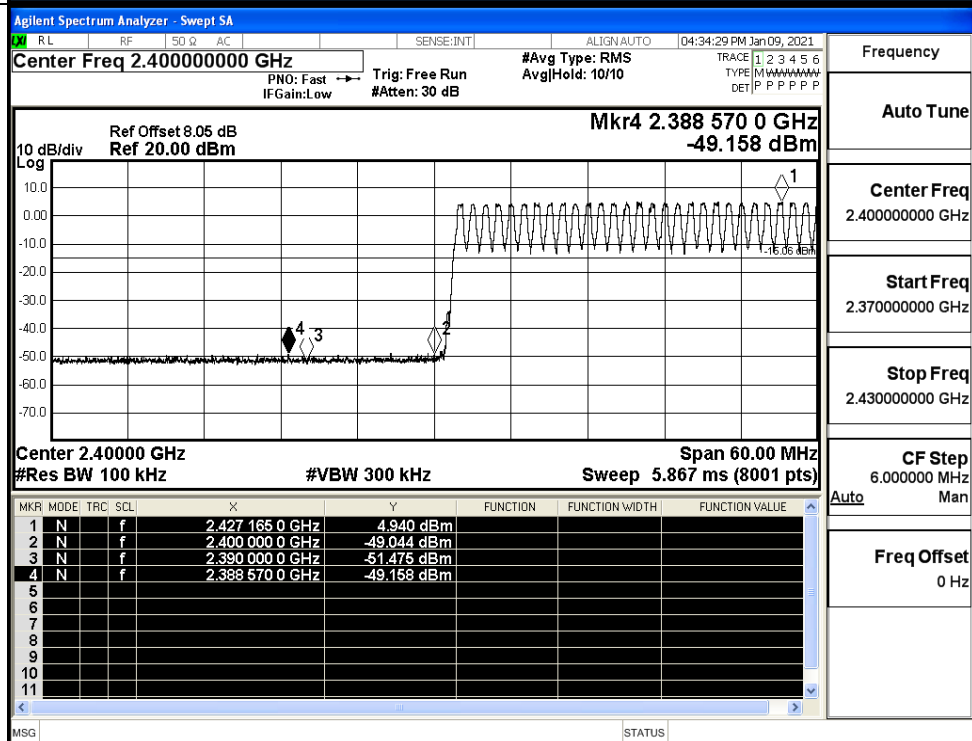
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	4.042	Off	-48.216	-15.96	PASS
			4.940	On	-49.158	-15.06	PASS
	HCH	2480	5.479	Off	-49.472	-14.52	PASS
			5.625	On	-48.308	-14.38	PASS
$\pi/4$ DQPSK	LCH	2402	4.408	Off	-49.792	-15.59	PASS
			4.963	On	-48.826	-15.04	PASS
	HCH	2480	5.600	Off	-48.387	-14.4	PASS
			5.711	On	-47.459	-14.29	PASS
8DPSK	LCH	2402	3.565	Off	-49.323	-16.44	PASS
			5.016	On	-48.683	-14.98	PASS
	HCH	2480	5.719	Off	-48.532	-14.28	PASS
			5.806	On	-46.345	-14.19	PASS

Test Graphs

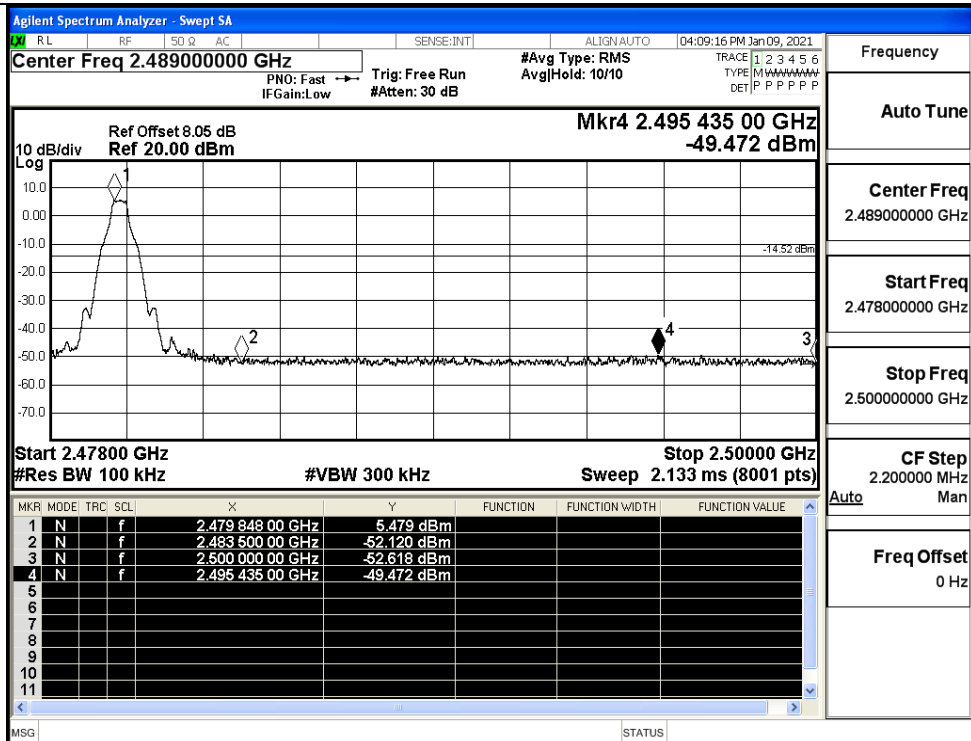
GFSK/LCH/No Hop



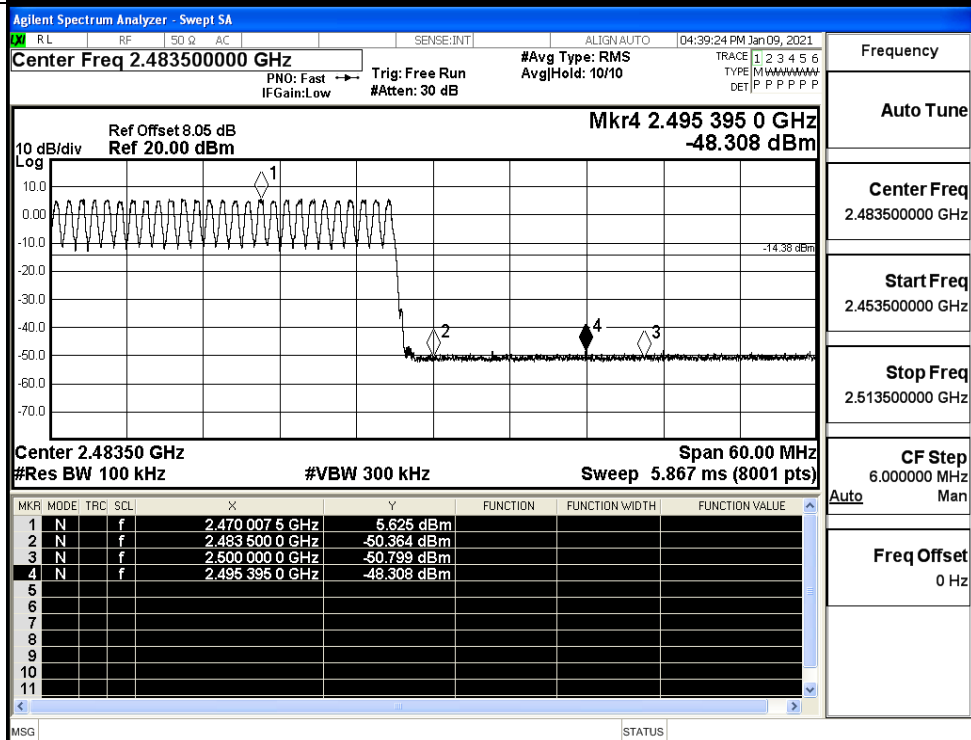
GFSK/LCH/Hop



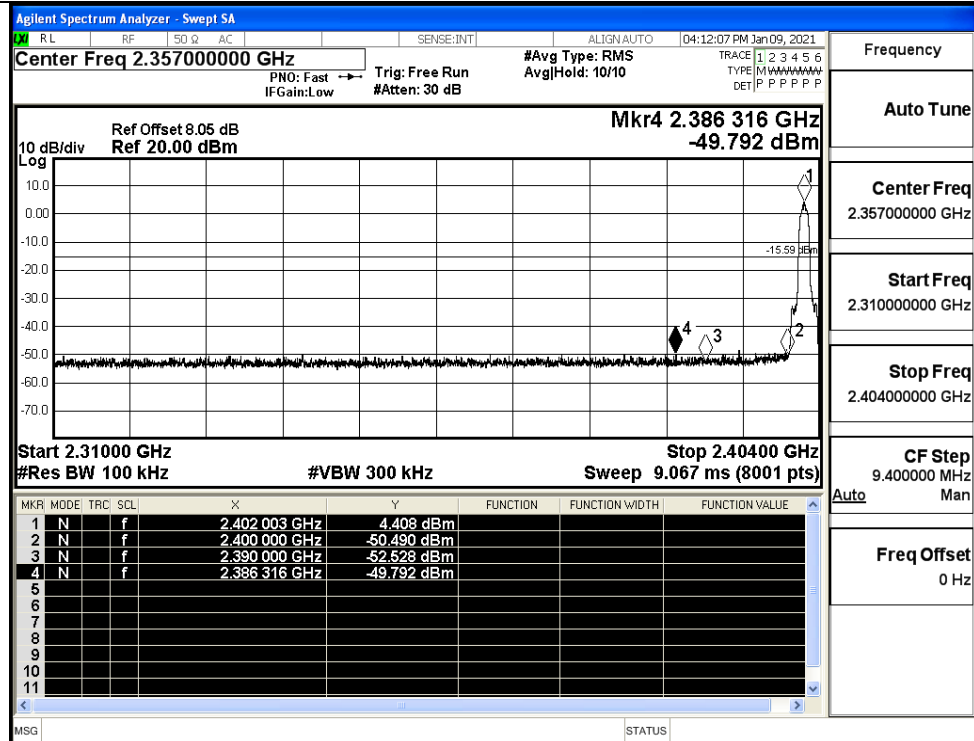
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

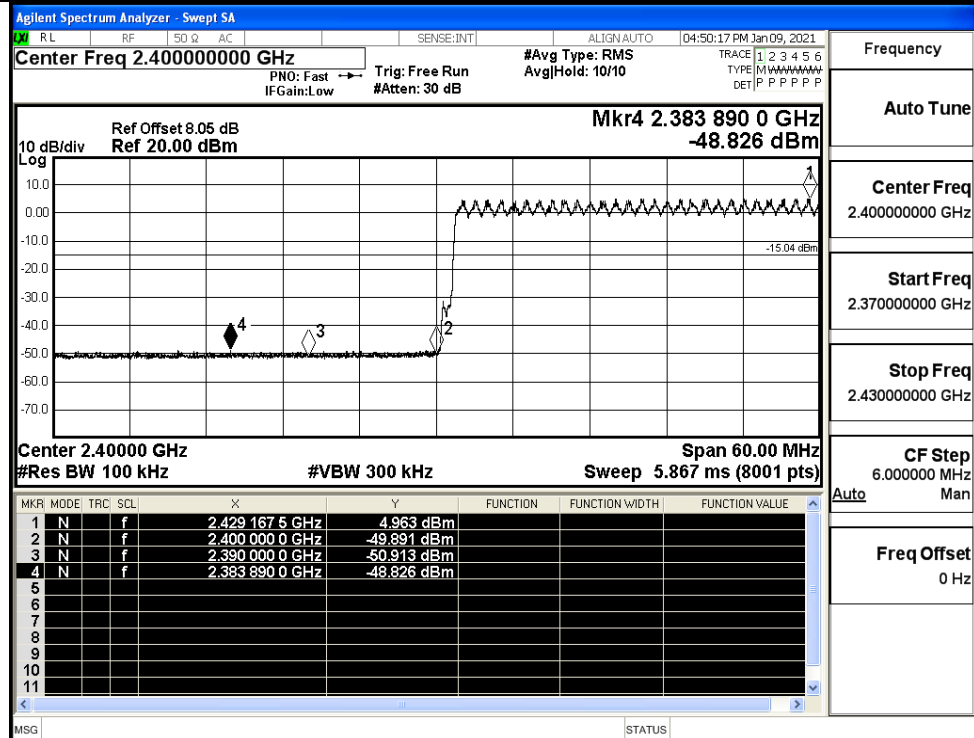
Start Freq
2.310000000 GHz

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

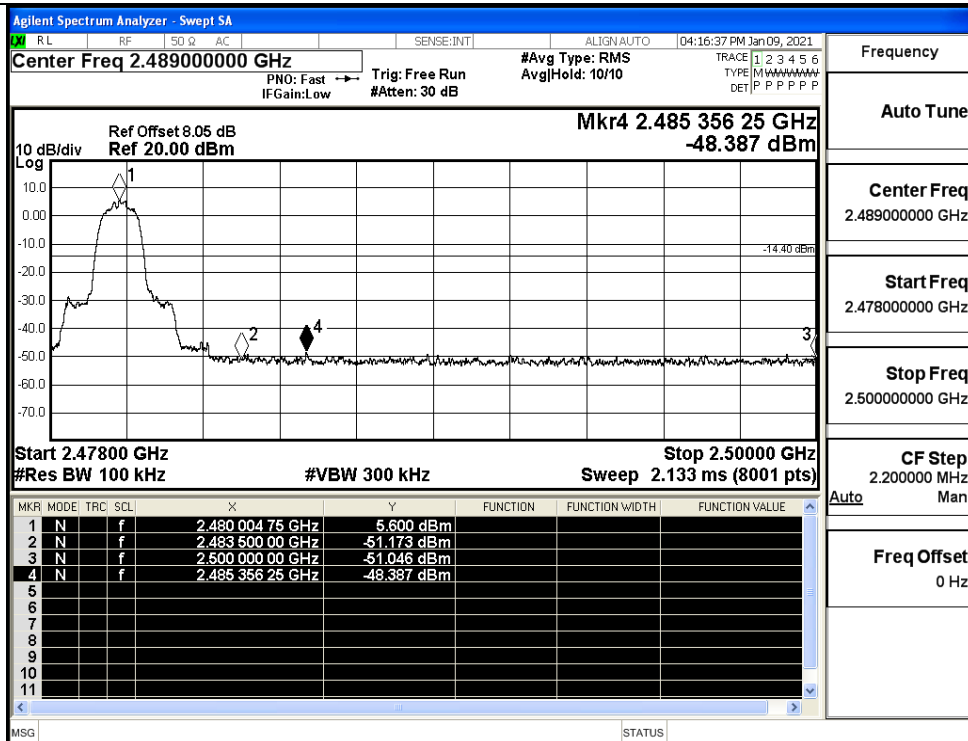
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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

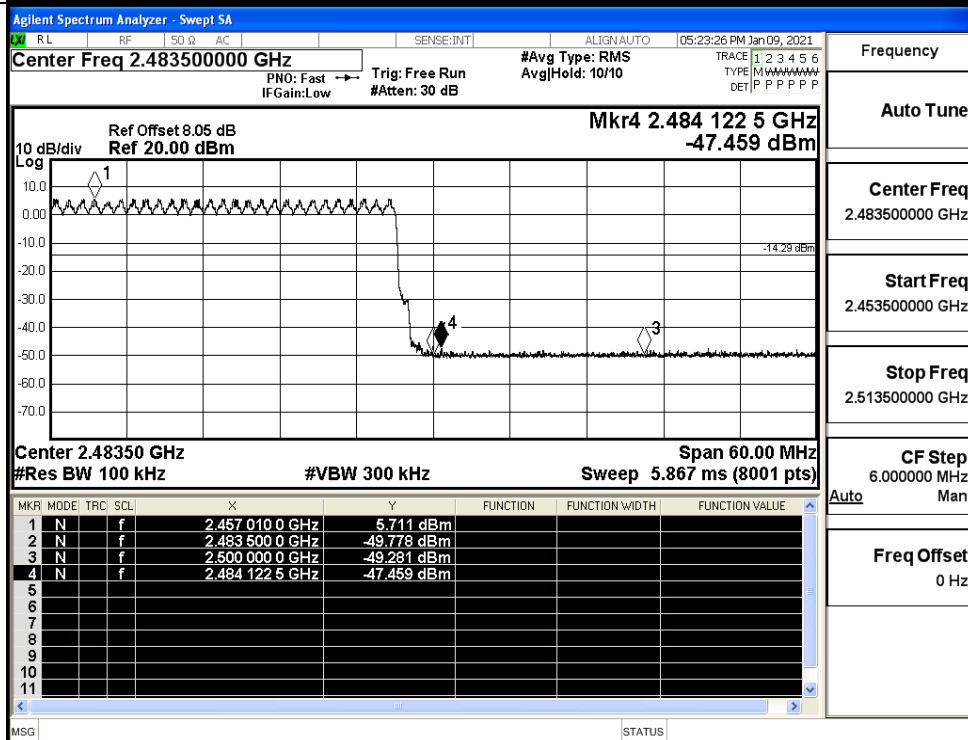


Frequency

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

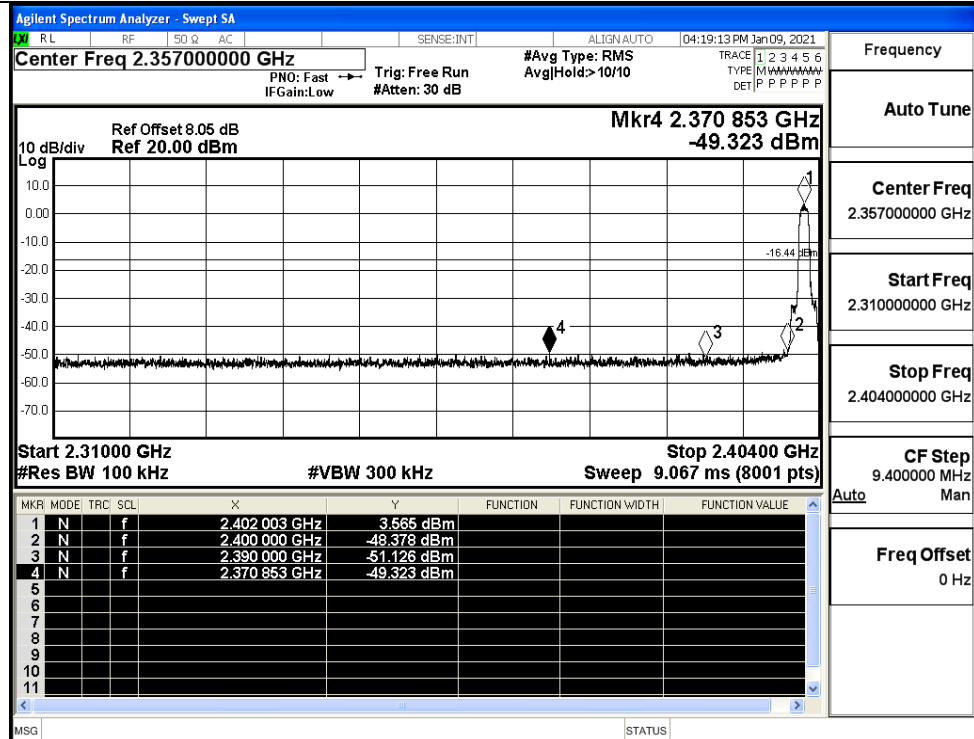


Frequency

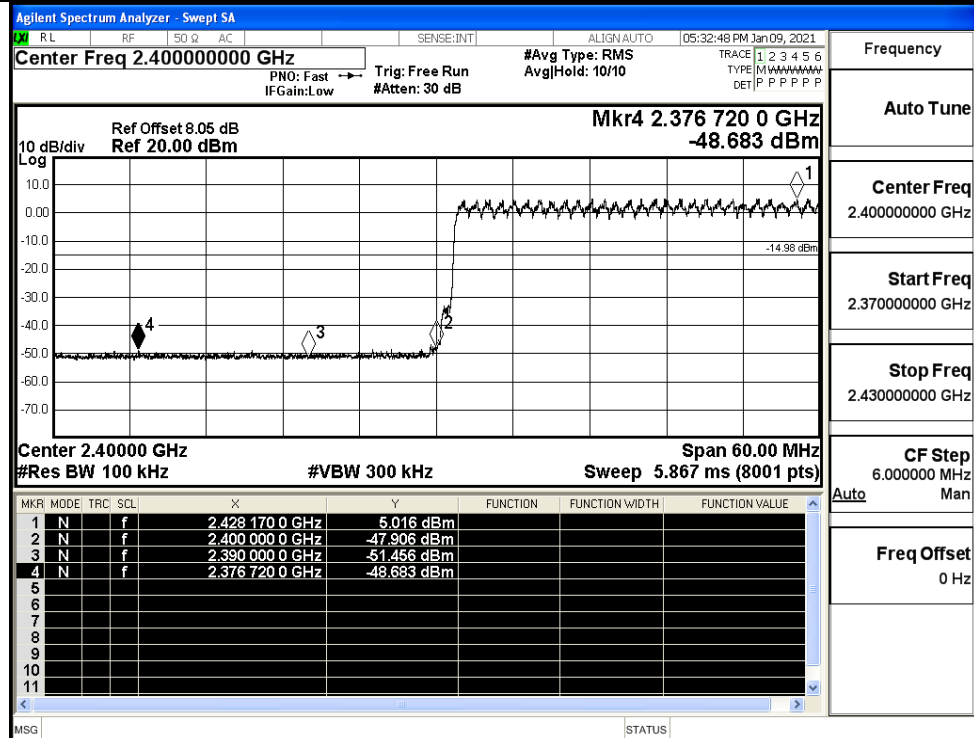
Auto Tune

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

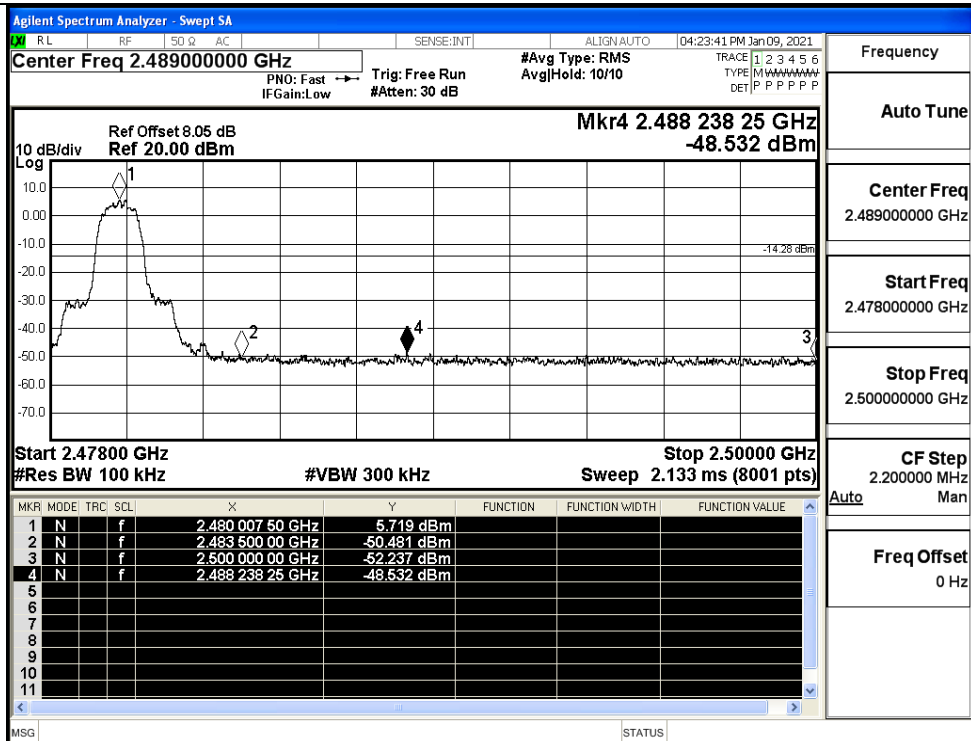
8DPSK/LCH/No Hop



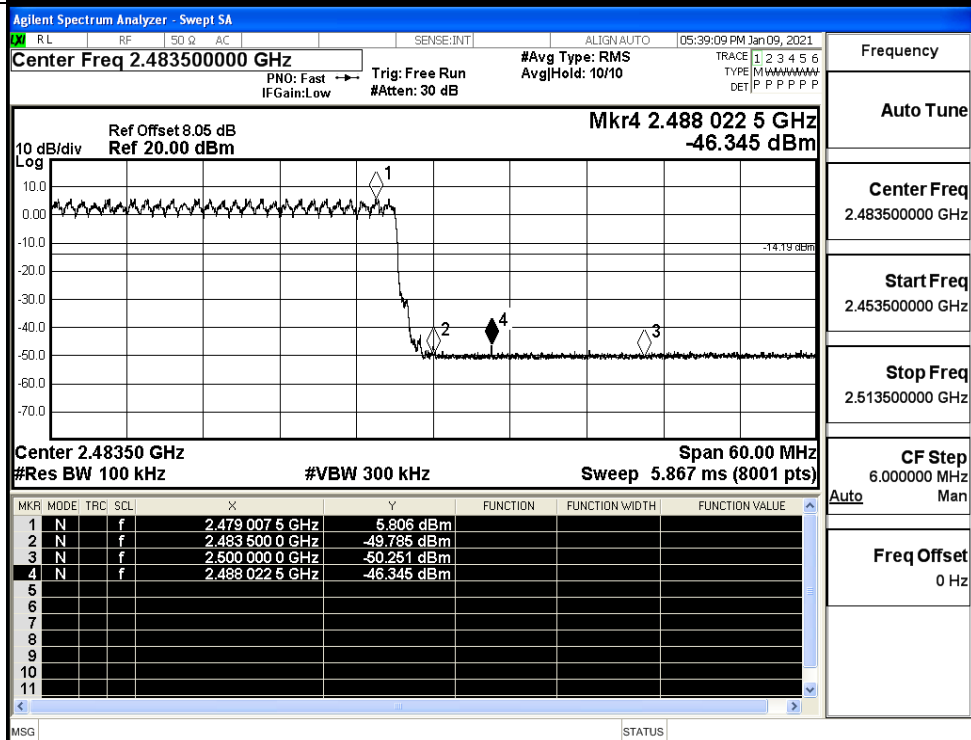
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



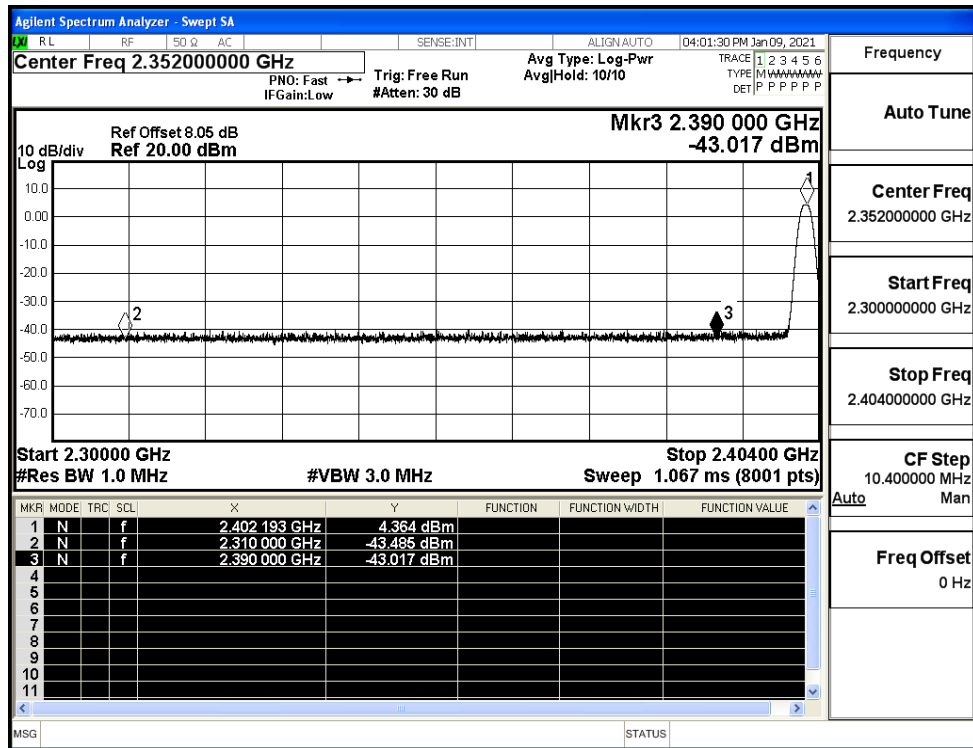
8DPSK/HCH/Hop



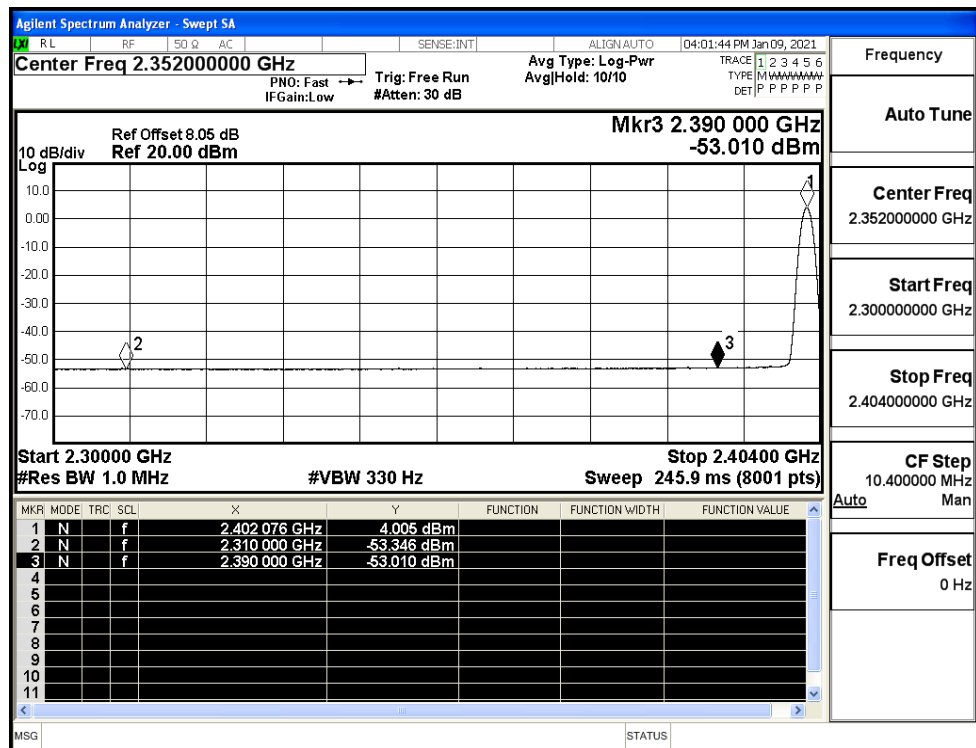
A.9 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.49	2.0	0	53.77	PEAK	74	PASS
	Off	2310.0	-53.35	2.0	0	43.91	AV	54	PASS
	Off	2390.0	-43.02	2.0	0	54.24	PEAK	74	PASS
	Off	2390.0	-53.01	2.0	0	44.25	AV	54	PASS
	Off	2483.5	-43.32	2.0	0	53.94	PEAK	74	PASS
	Off	2483.5	-52.00	2.0	0	45.26	AV	54	PASS
	Off	2500.0	-40.93	2.0	0	56.33	PEAK	74	PASS
	Off	2500.0	-52.24	2.0	0	45.02	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.21	2.0	0	54.05	PEAK	74	PASS
	Off	2310.0	-53.51	2.0	0	43.75	AV	54	PASS
	Off	2390.0	-42.57	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.97	2.0	0	44.29	AV	54	PASS
	Off	2483.5	-40.60	2.0	0	56.66	PEAK	74	PASS
	Off	2483.5	-51.39	2.0	0	45.87	AV	54	PASS
	Off	2500.0	-43.32	2.0	0	53.94	PEAK	74	PASS
	Off	2500.0	-52.36	2.0	0	44.9	AV	54	PASS
8DPSK	Off	2310.0	-43.74	2.0	0	53.52	PEAK	74	PASS
	Off	2310.0	-53.47	2.0	0	43.79	AV	54	PASS
	Off	2390.0	-42.62	2.0	0	54.64	PEAK	74	PASS
	Off	2390.0	-52.92	2.0	0	44.34	AV	54	PASS
	Off	2483.5	-39.03	2.0	0	58.23	PEAK	74	PASS
	Off	2483.5	-50.93	2.0	0	46.33	AV	54	PASS
	Off	2500.0	-41.92	2.0	0	55.34	PEAK	74	PASS
	Off	2500.0	-52.33	2.0	0	44.93	AV	54	PASS

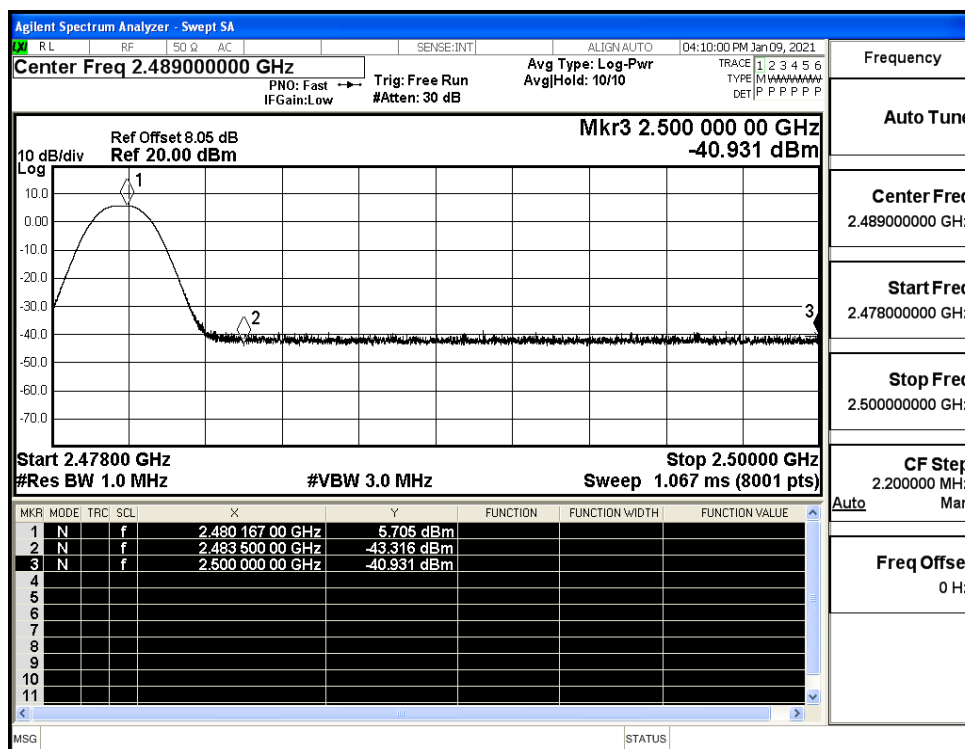
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



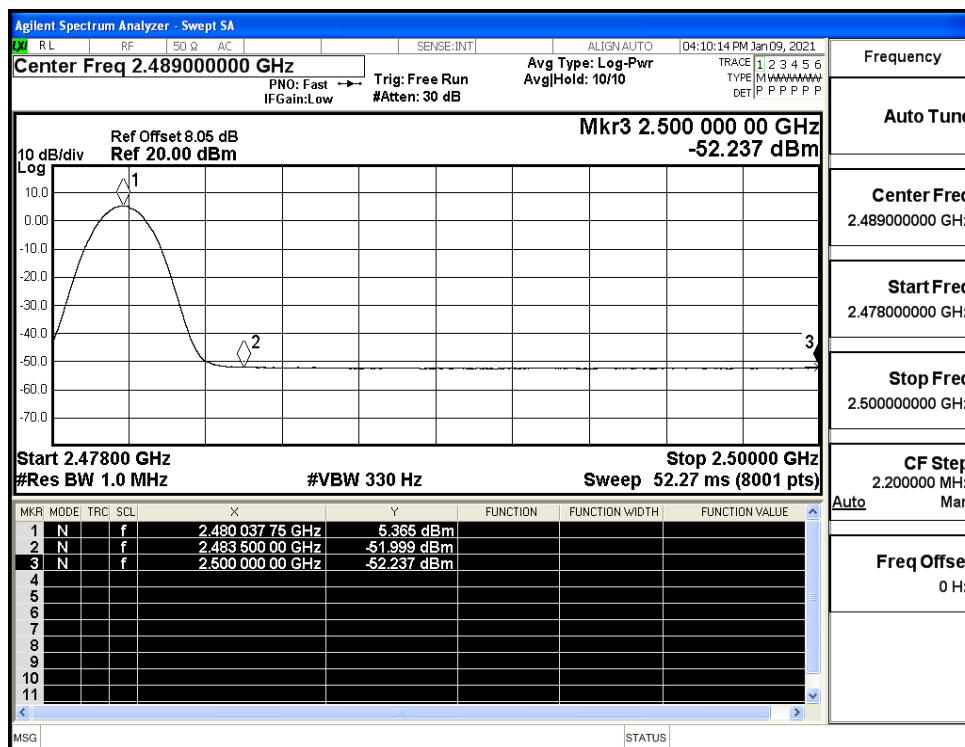
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

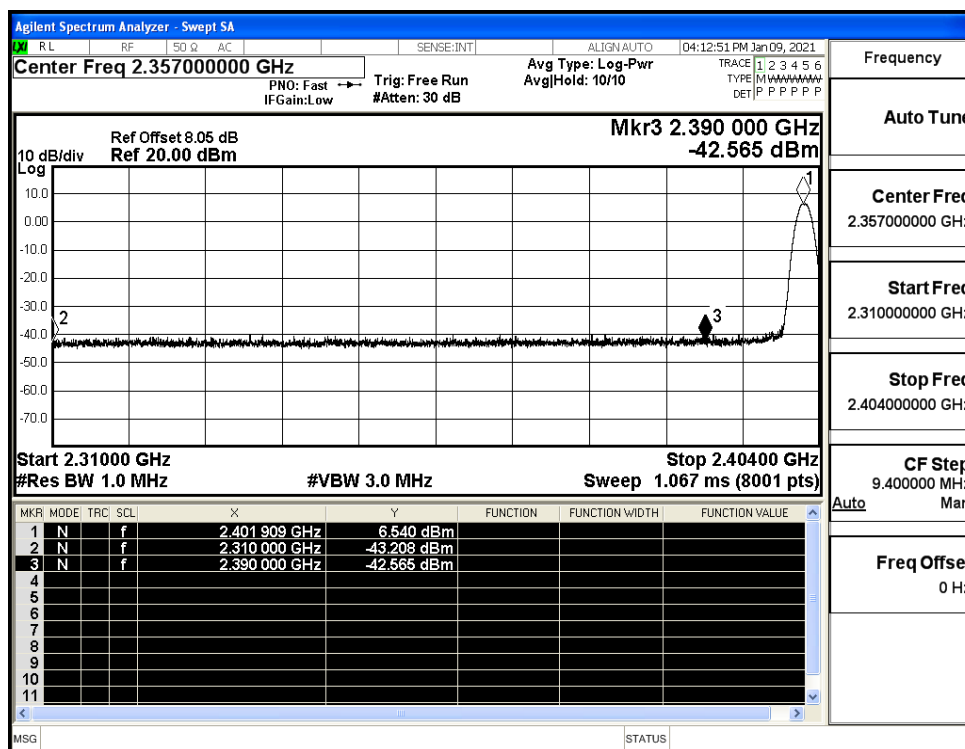
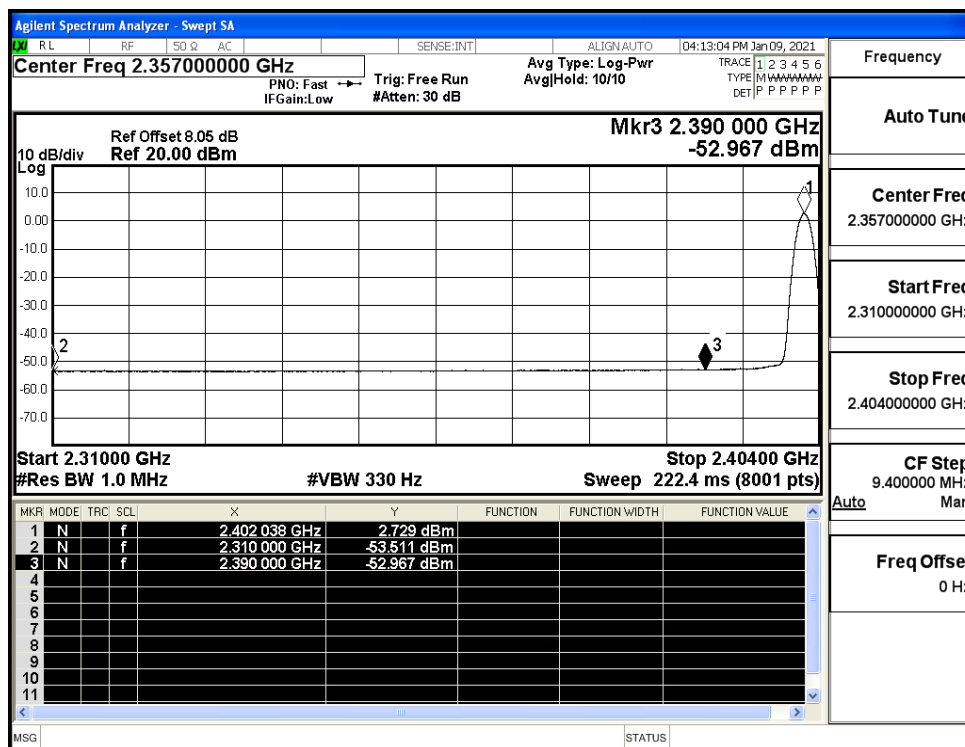


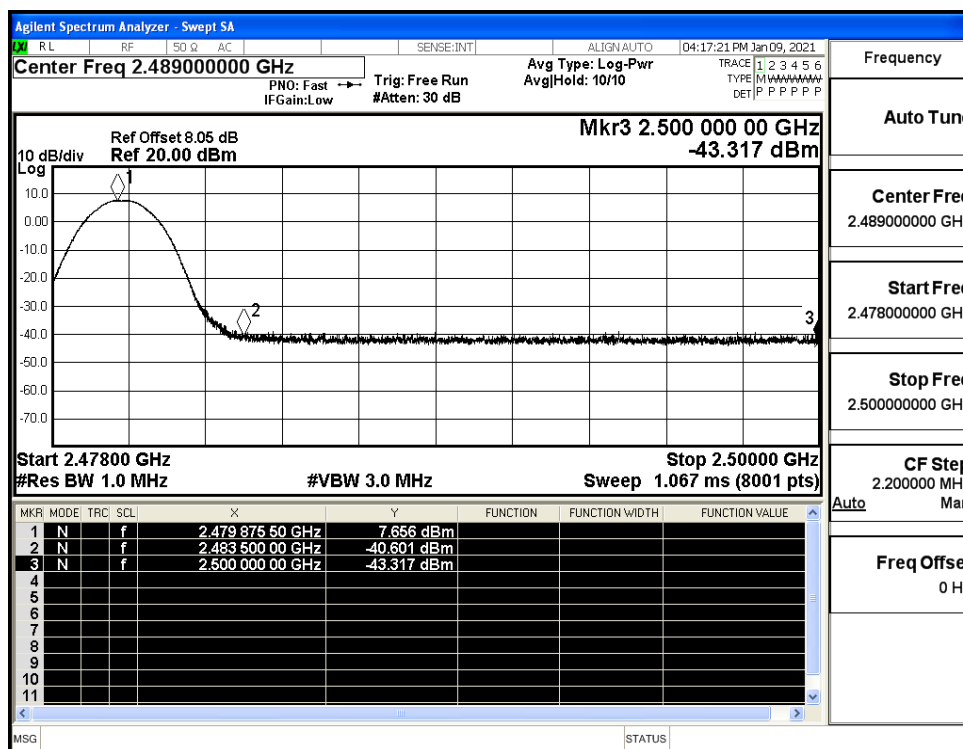
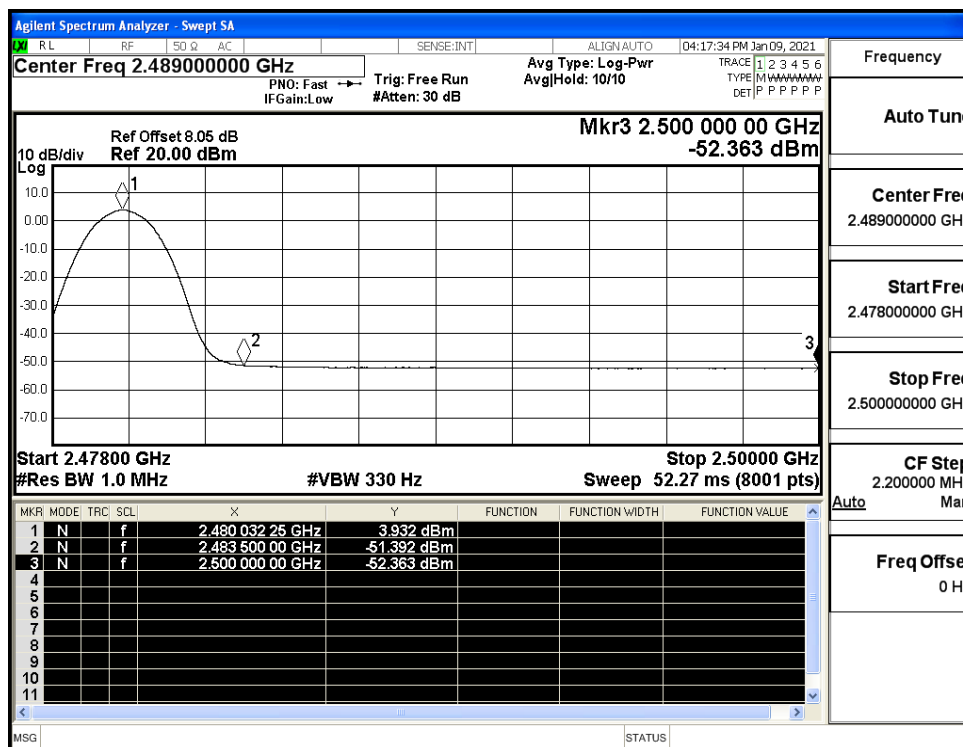
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



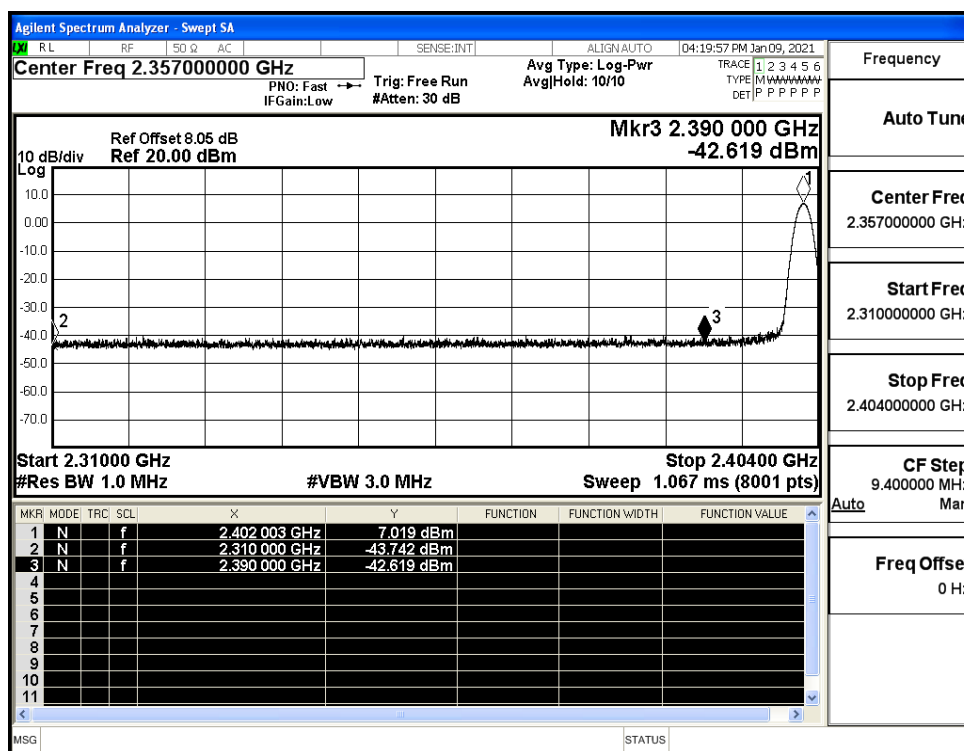
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



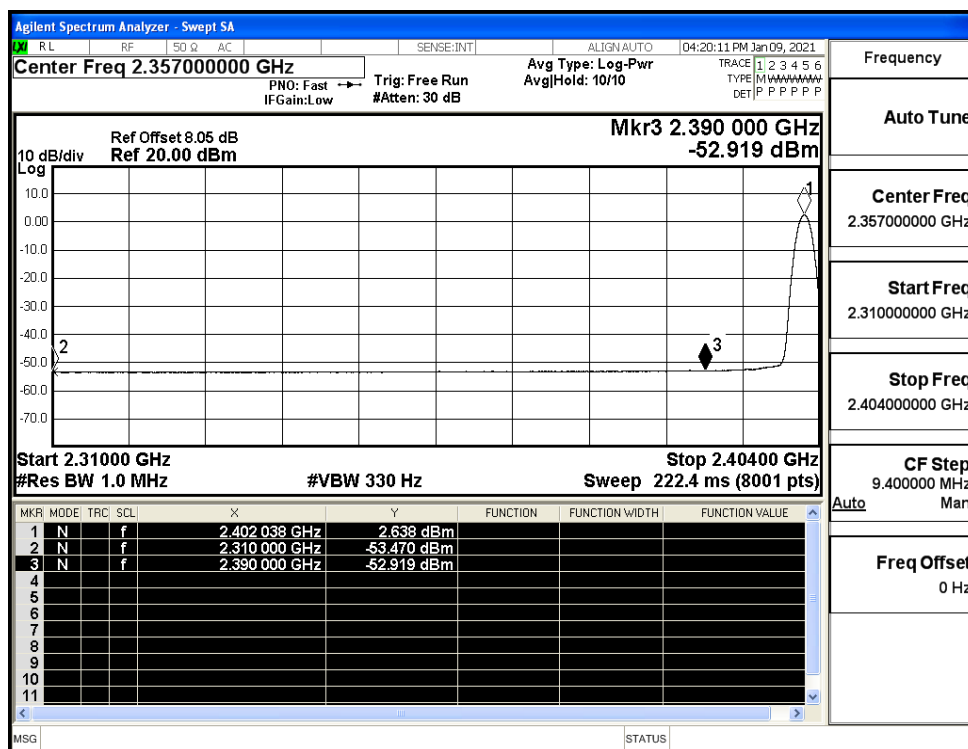
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

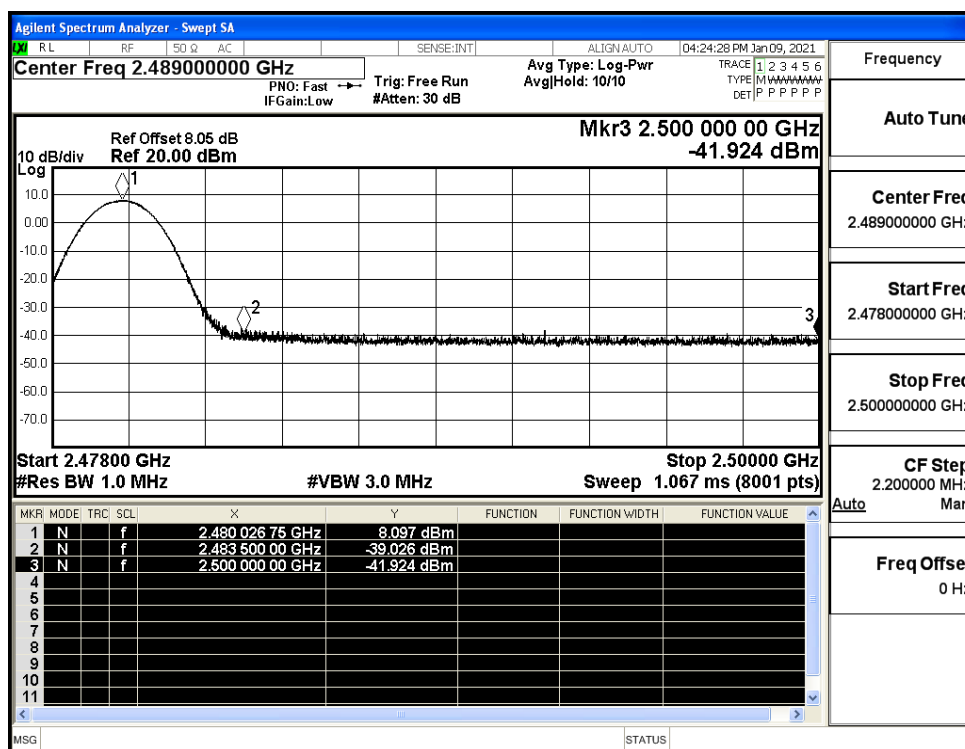
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

