

Appendix A

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

Product Name: 13.3 notebook

Trade Mark: N/A

Test Model: HTLB131NA58Z1EG

Environmental Conditions

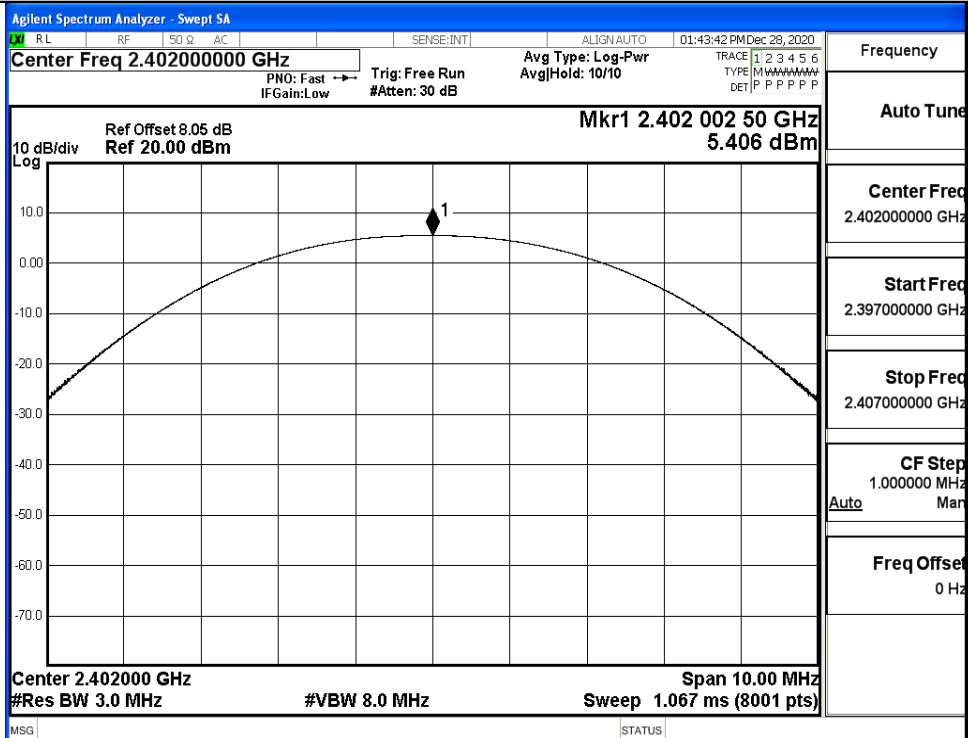
Temperature:	23.2° C
Relative Humidity:	51.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

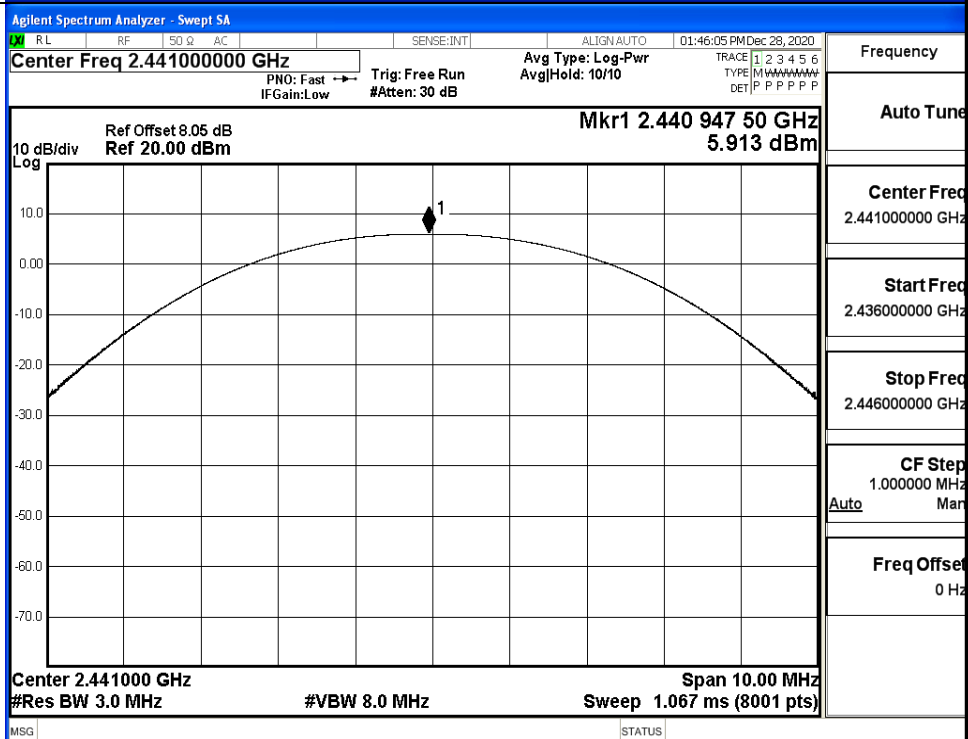
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.406	21	PASS
	MCH	5.913	21	PASS
	HCH	6.144	21	PASS
$\pi/4$ DQPSK	LCH	8.164	21	PASS
	MCH	8.440	21	PASS
	HCH	8.824	21	PASS
8DPSK	LCH	8.167	21	PASS
	MCH	8.455	21	PASS
	HCH	8.863	21	PASS

Test Graphs

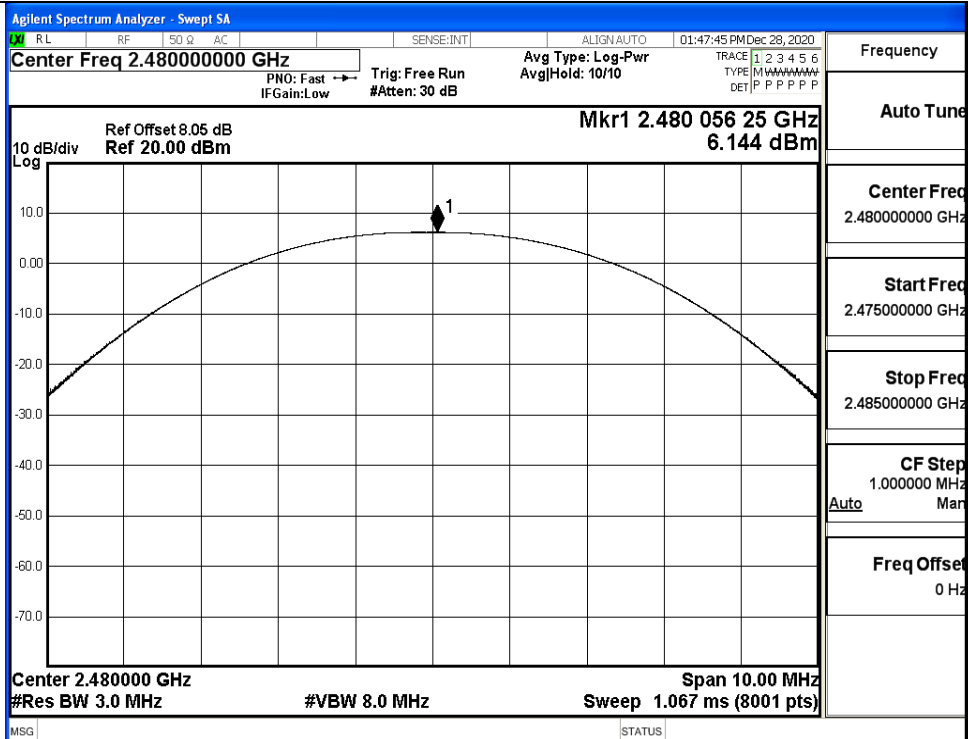
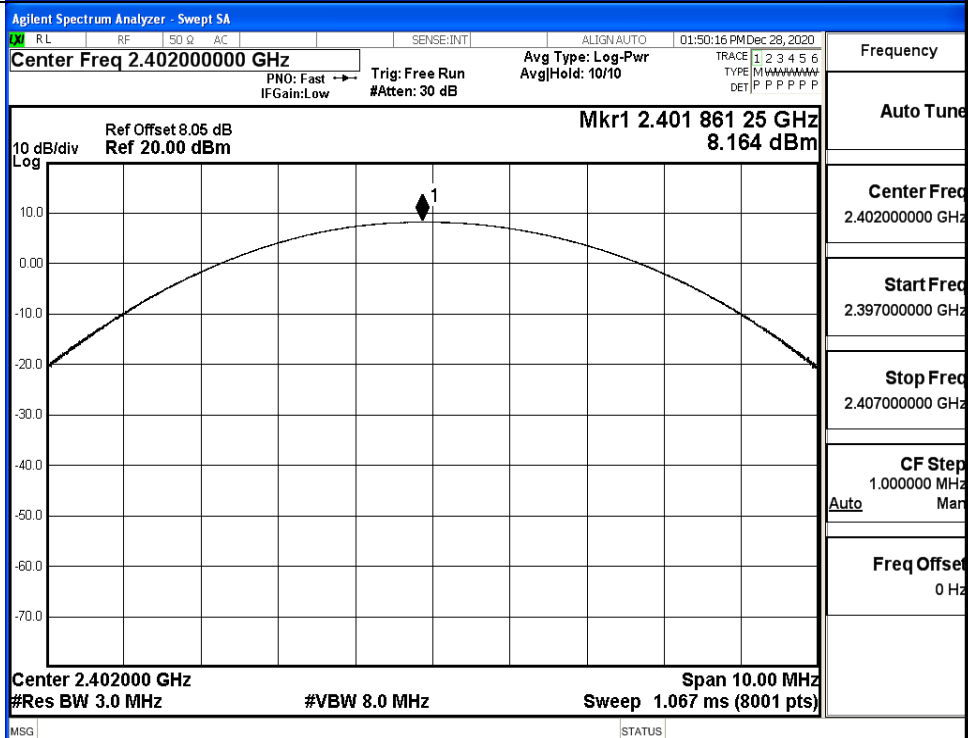
GFSK/LCH

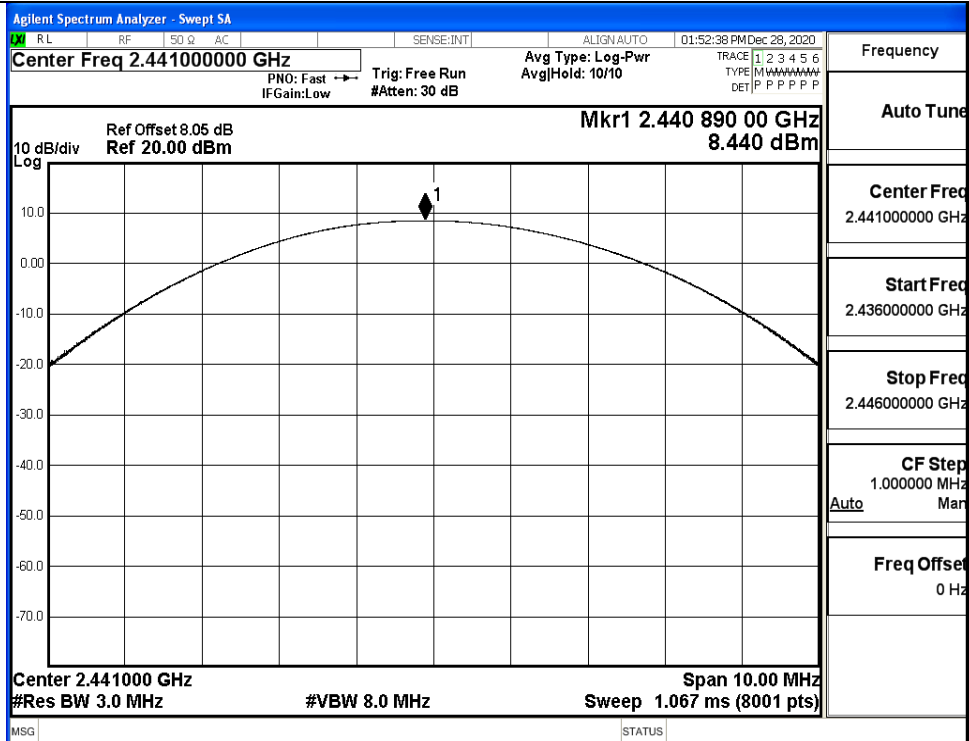
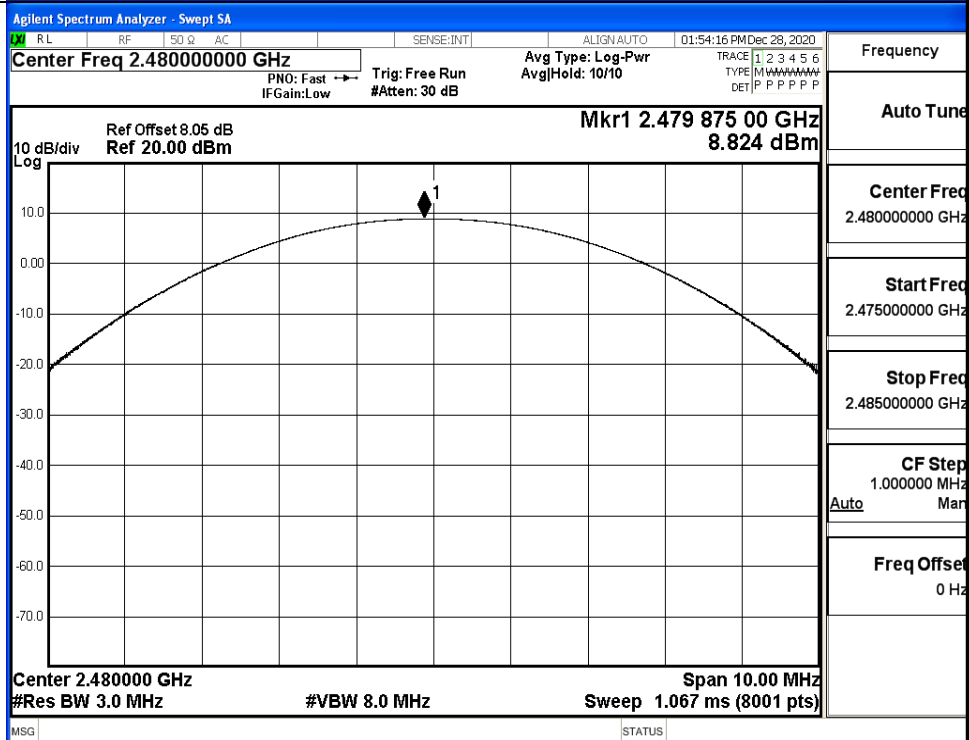


GFSK/MCH

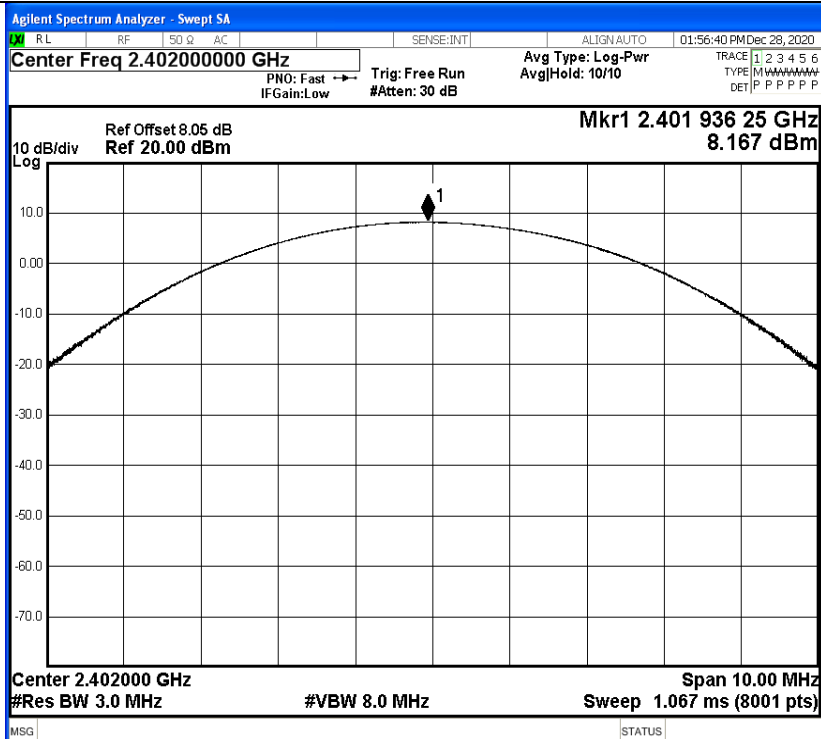


GFSK/HCH

 $\pi/4$ DQPSK/LCH

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

8DPSK/LCH



Frequency

Auto Tune

Center Freq
2.402000000 GHz

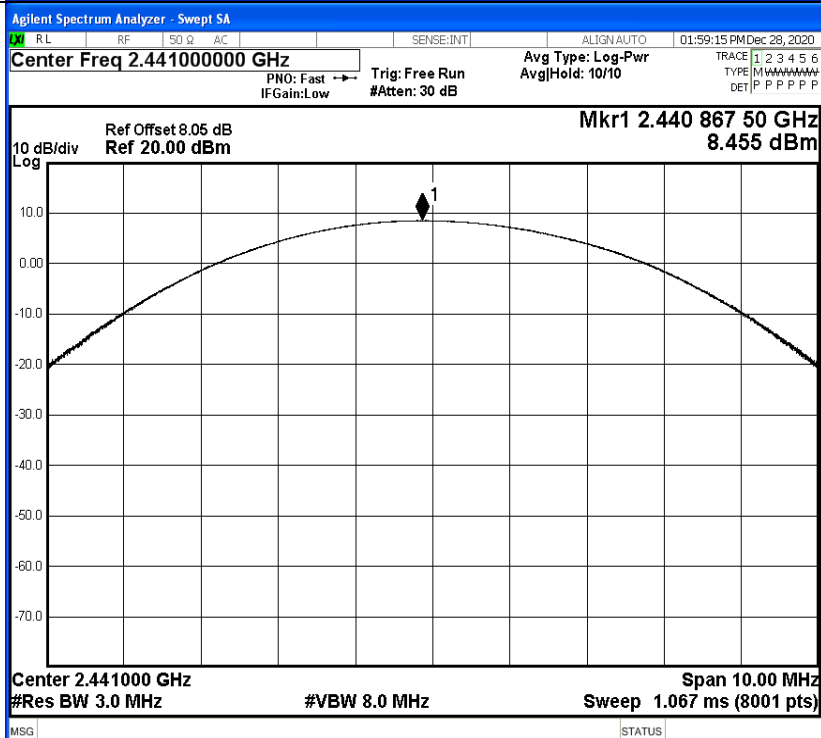
Start Freq
2.397000000 GHz

Stop Freq
2.407000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

8DPSK/MCH



Frequency

Auto Tune

Center Freq
2.441000000 GHz

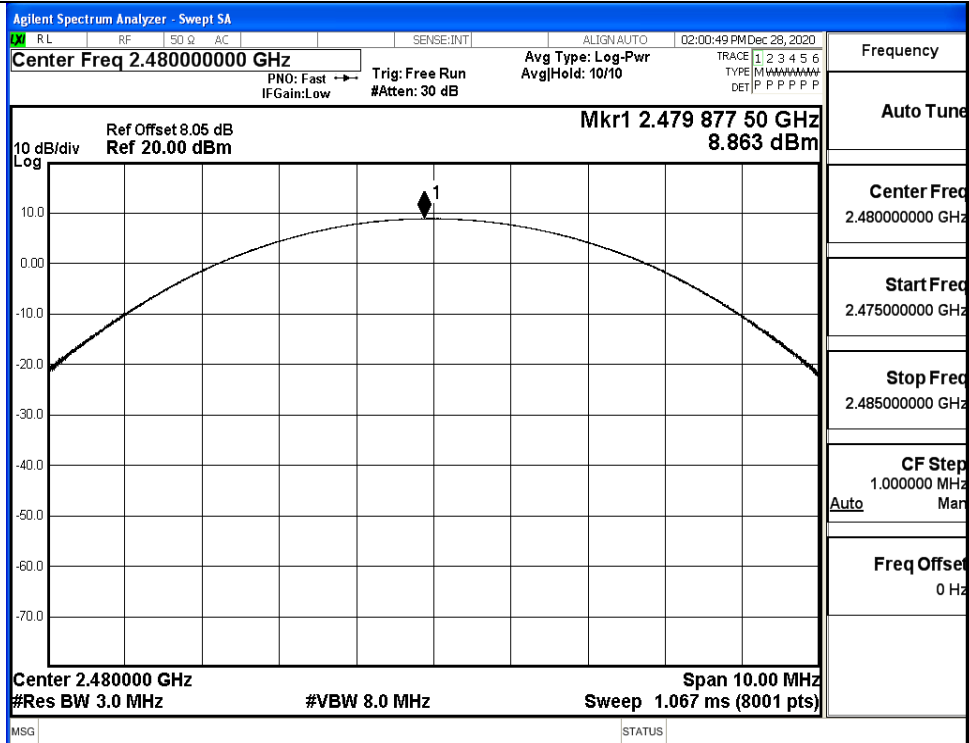
Start Freq
2.436000000 GHz

Stop Freq
2.446000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

8DPSK/HCH

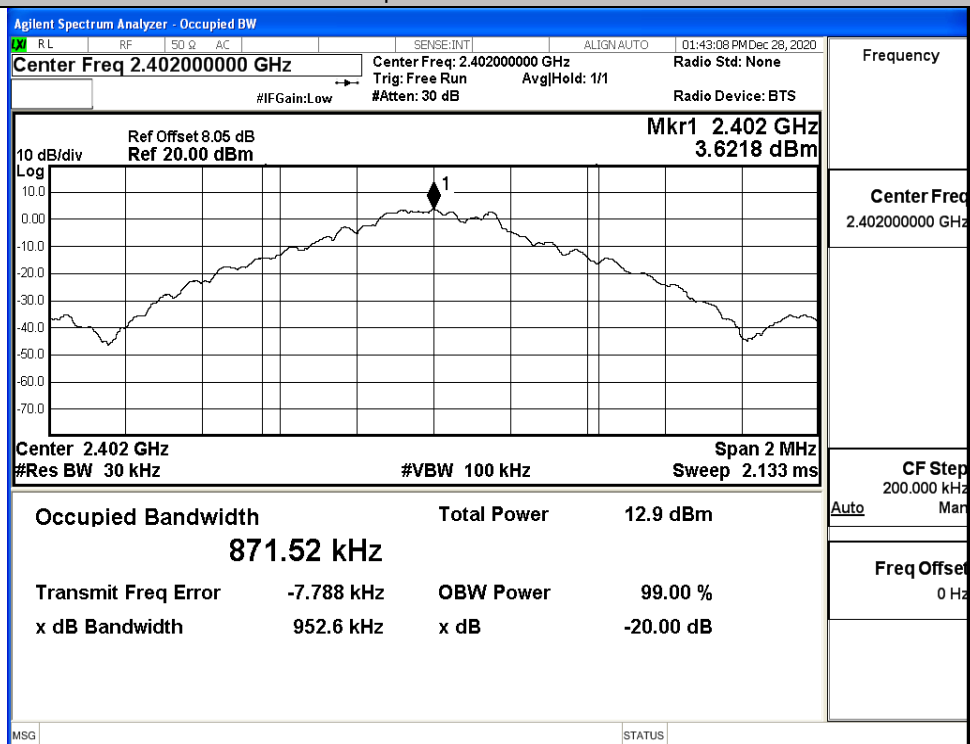


A.2 20dB Bandwidth

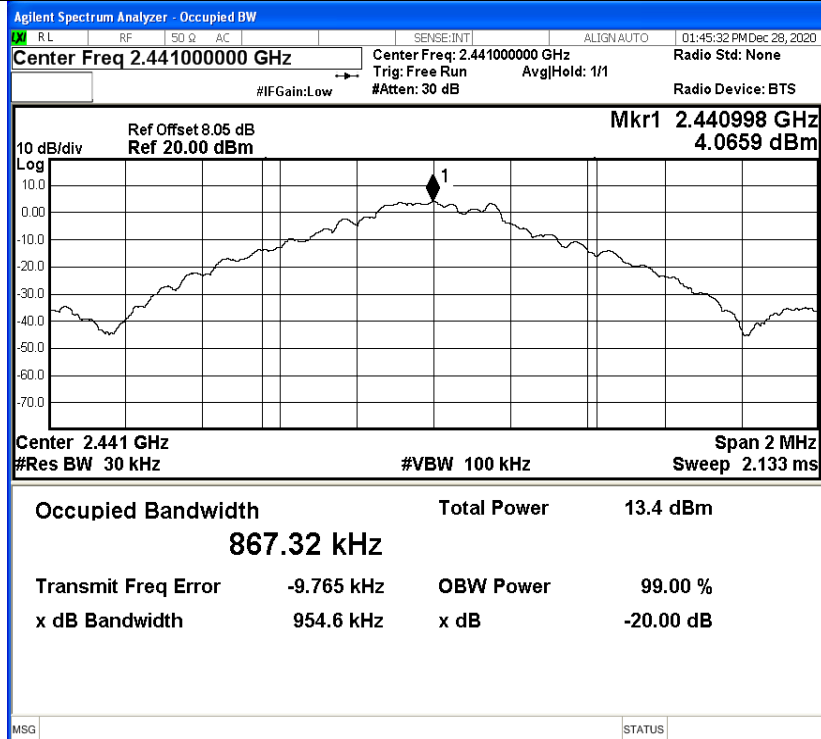
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9526	Not Specified	PASS
	MCH	0.9546	Not Specified	PASS
	HCH	0.9555	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.428	Not Specified	PASS
	MCH	1.430	Not Specified	PASS
	HCH	1.424	Not Specified	PASS
8DPSK	LCH	1.435	Not Specified	PASS
	MCH	1.432	Not Specified	PASS
	HCH	1.438	Not Specified	PASS

Test Graphs

GFSK/LCH



GFSK/MCH



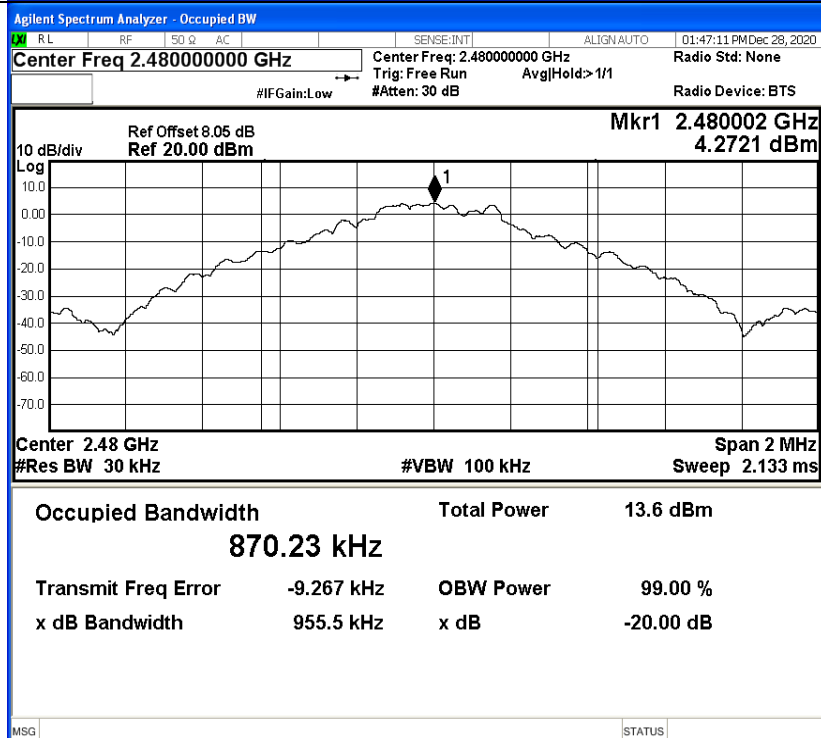
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz

Auto Mar

Freq Offset
0 Hz

GFSK/HCH

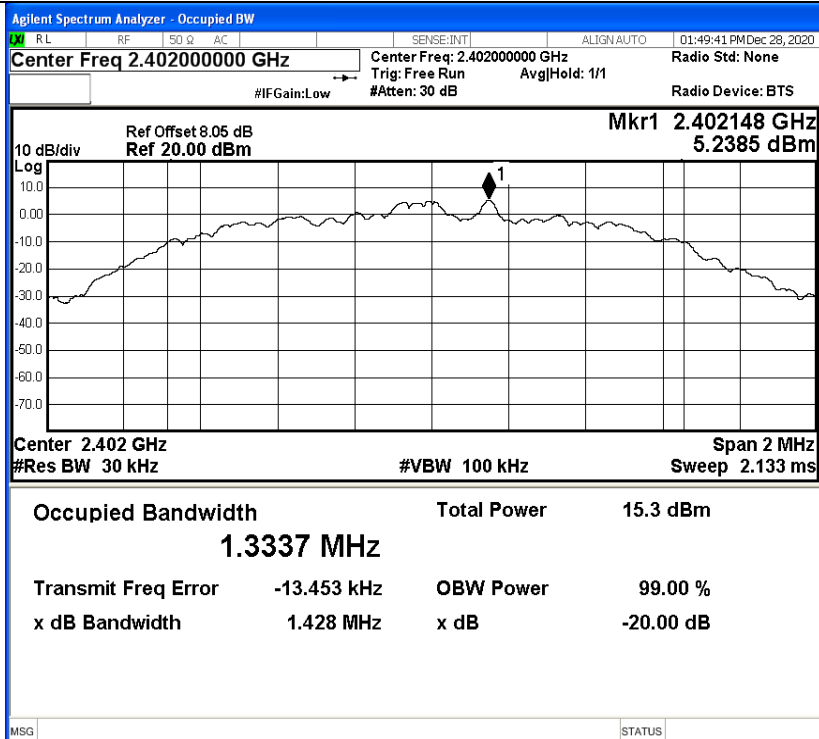


Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz

Auto Mar

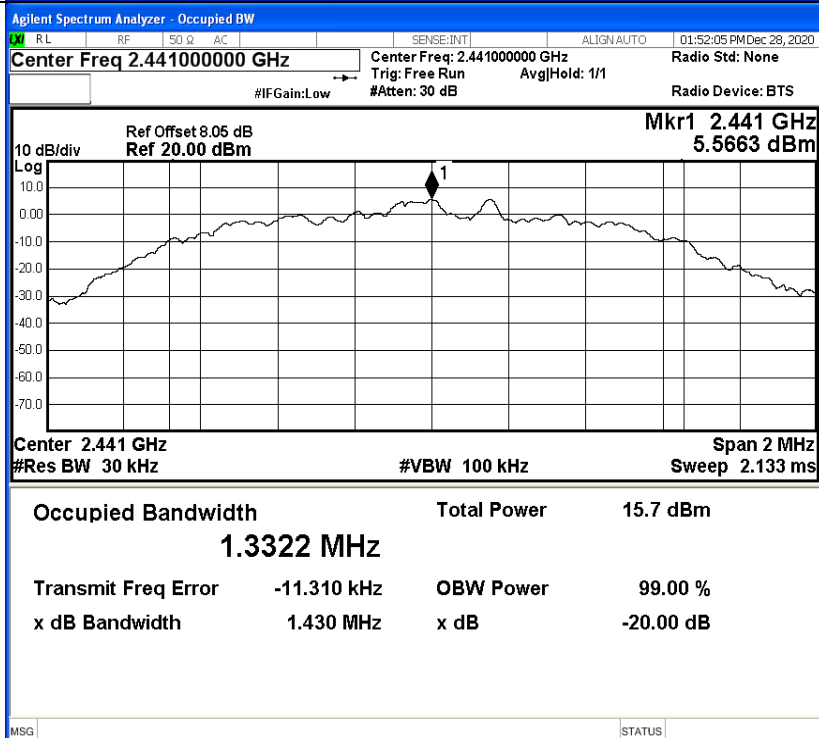
Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz

Auto Mar

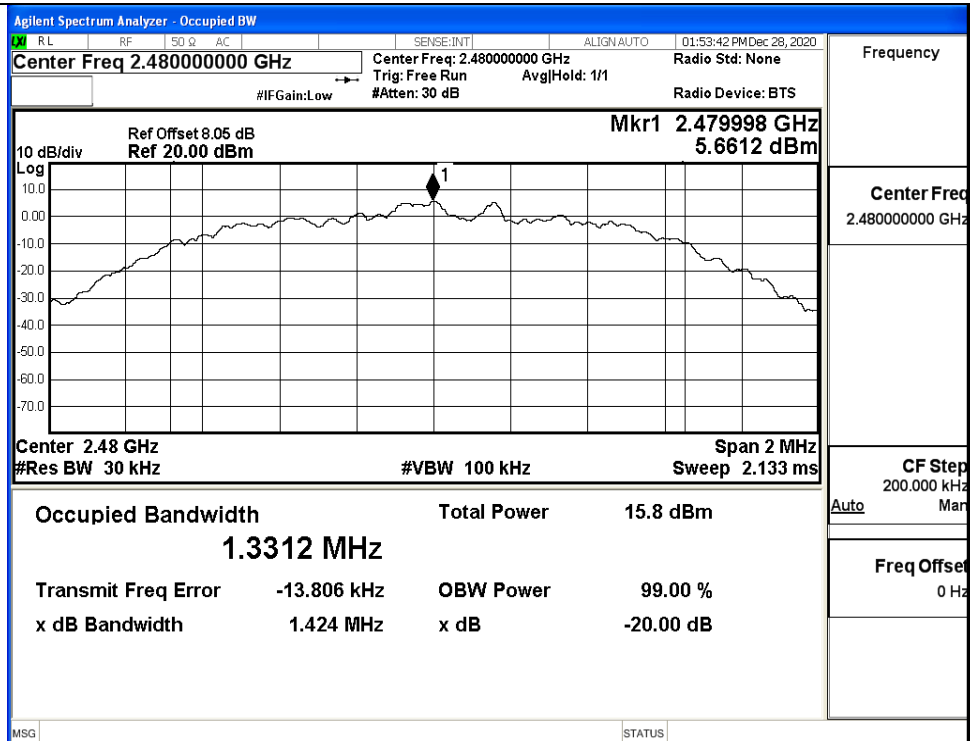
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

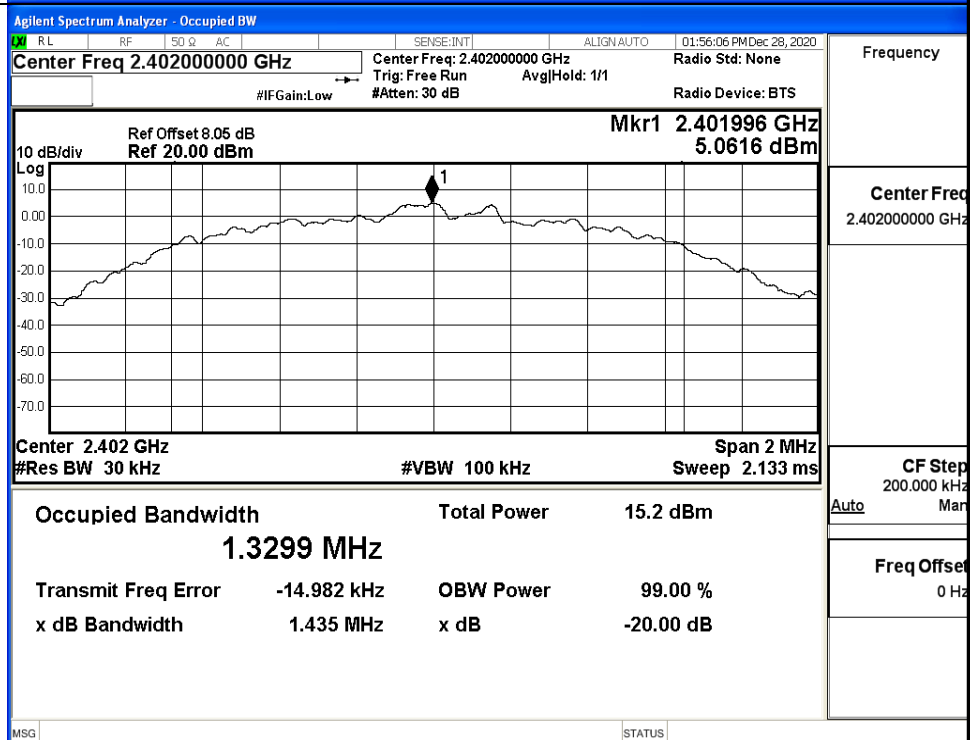
Center Freq
2.44100000 GHzCF Step
200.000 kHz

Auto Mar

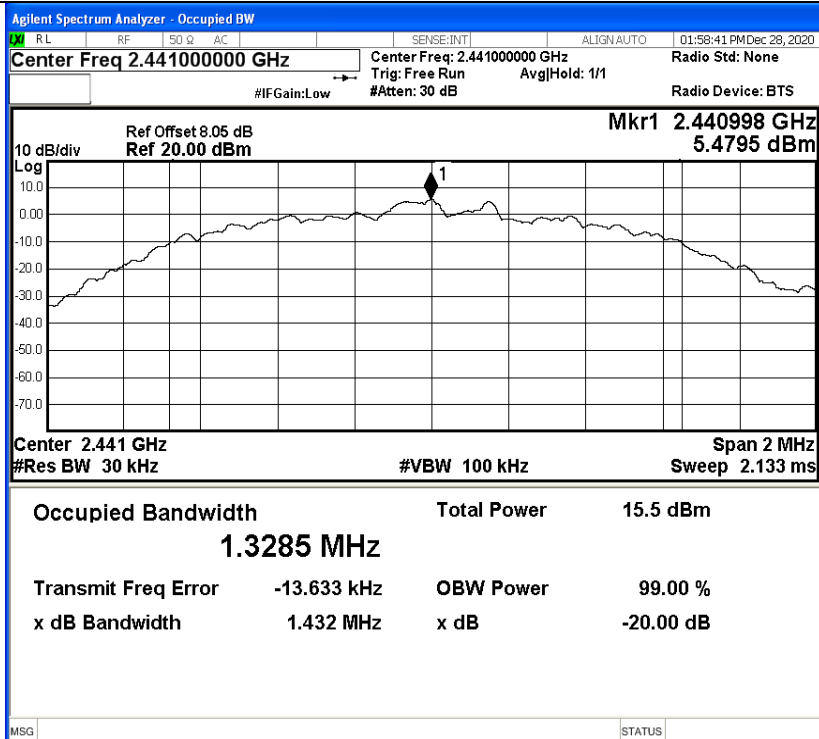
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH

8DPSK/LCH



8DPSK/MCH



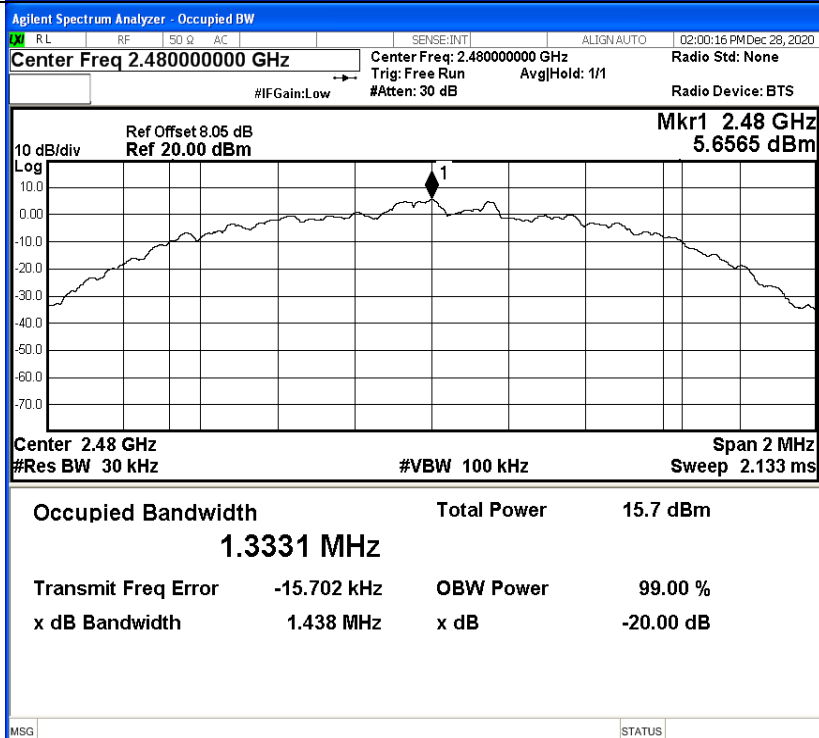
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz

Auto Mar

Freq Offset
0 Hz

8DPSK/HCH



Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz

Auto Mar

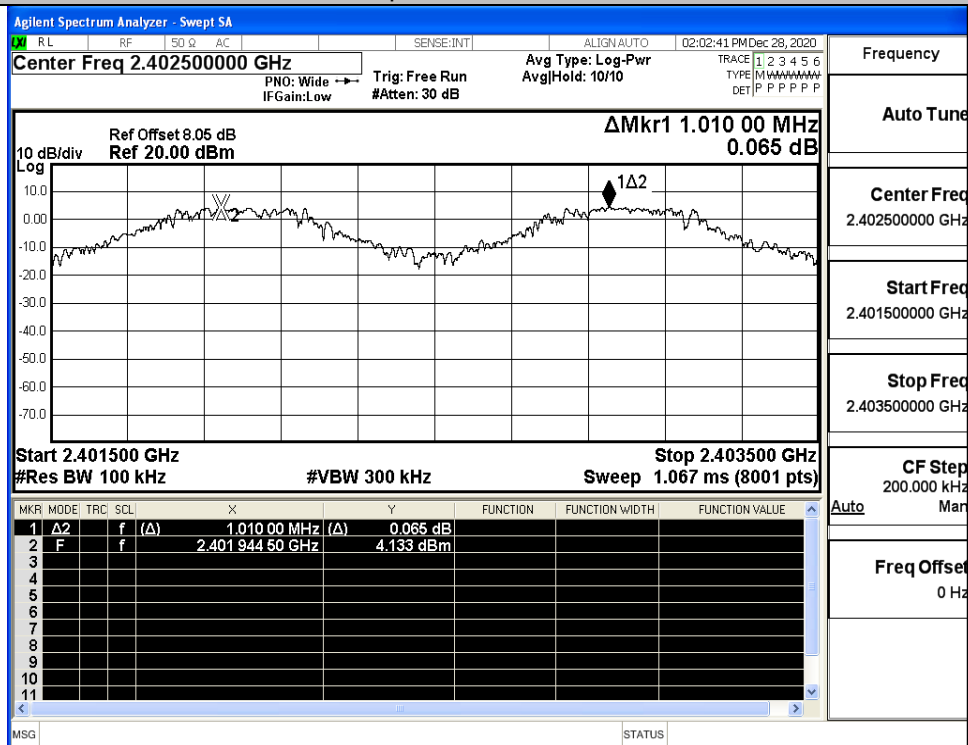
Freq Offset
0 Hz

A.3 Carrier Frequency Separation

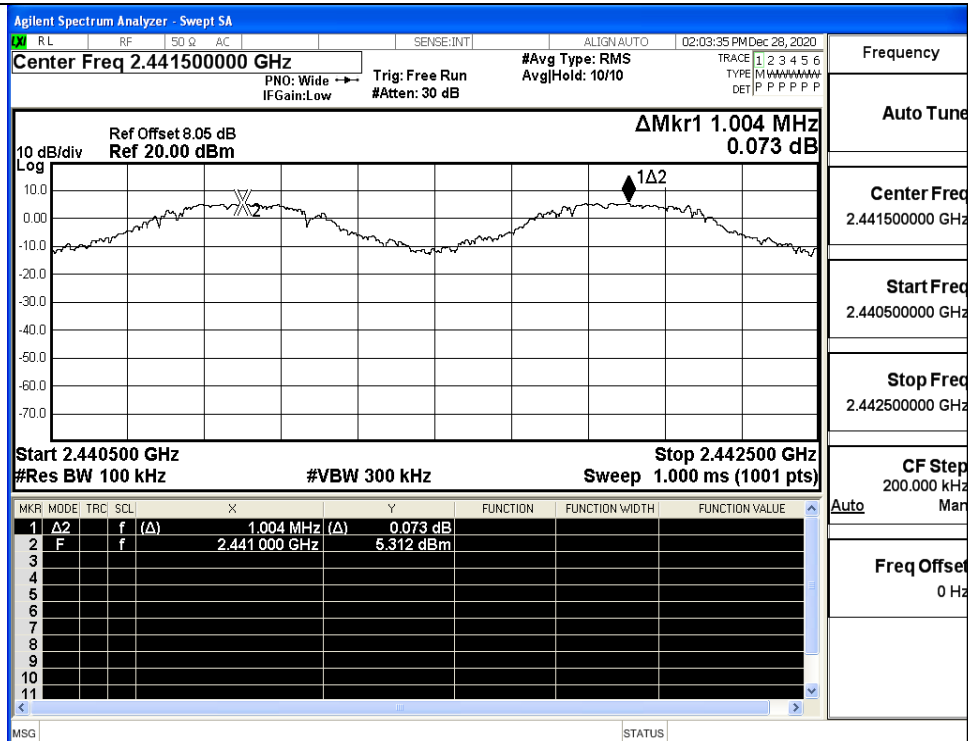
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.010	0.637	PASS
	MCH	1.004	0.637	PASS
	HCH	0.928	0.637	PASS
π /4DQPSK	LCH	1.154	0.953	PASS
	MCH	1.039	0.953	PASS
	HCH	0.972	0.953	PASS
8DPSK	LCH	1.034	0.959	PASS
	MCH	1.004	0.959	PASS
	HCH	1.028	0.959	PASS

Test Graphs

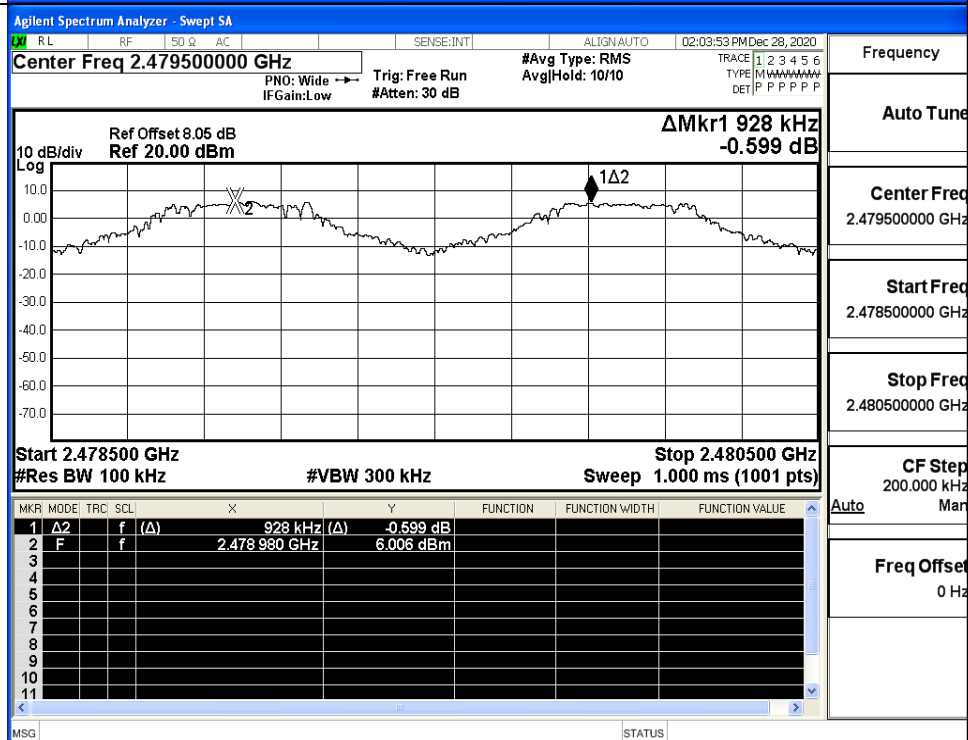
GFSK/LCH

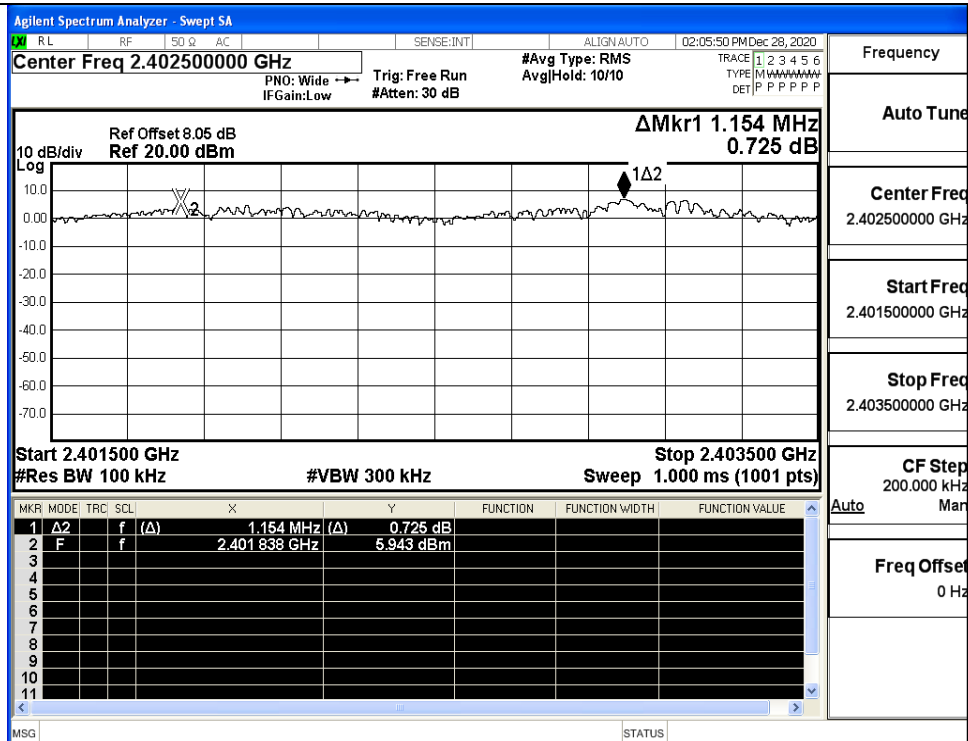


GFSK/MCH



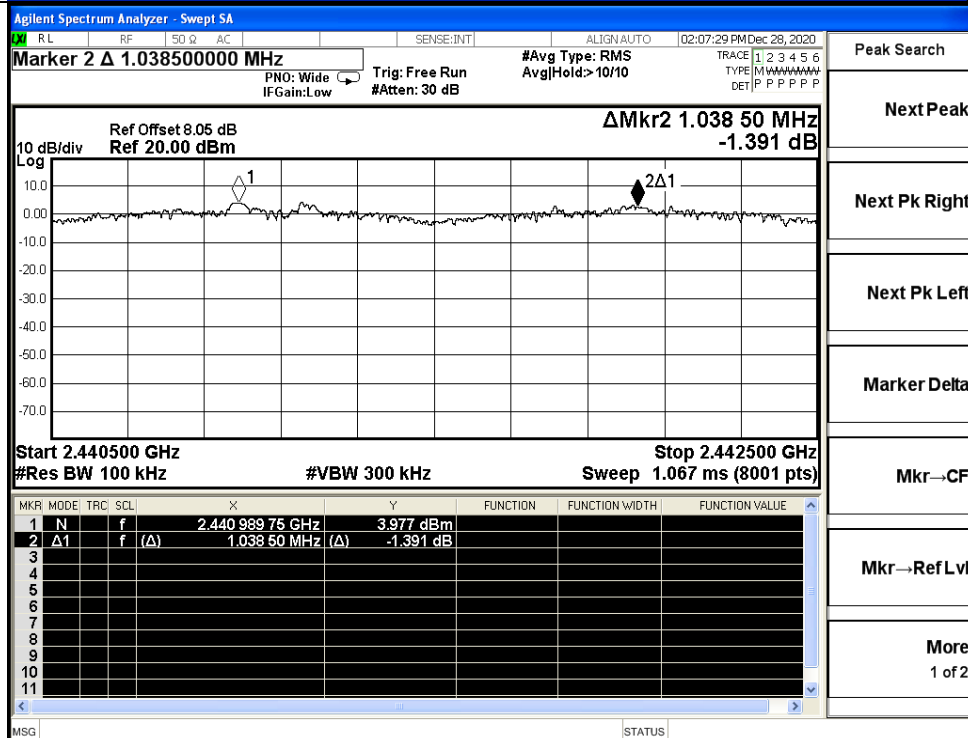
GFSK/HCH



$\pi/4$ DQPSK/LCH

Frequency

Auto Tune

Center Freq
2.402500000 GHzStart Freq
2.401500000 GHzStop Freq
2.403500000 GHzCF Step
200.000 kHzFreq Offset
0 Hz $\pi/4$ DQPSK/MCH

Peak Search

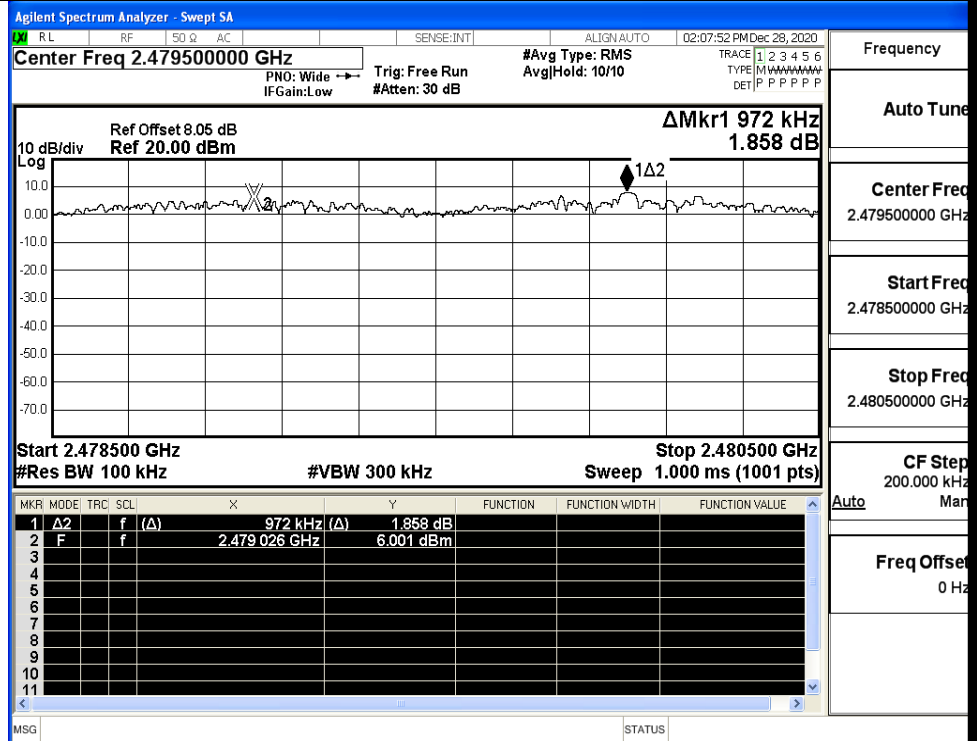
Next Peak

Next Pk Right

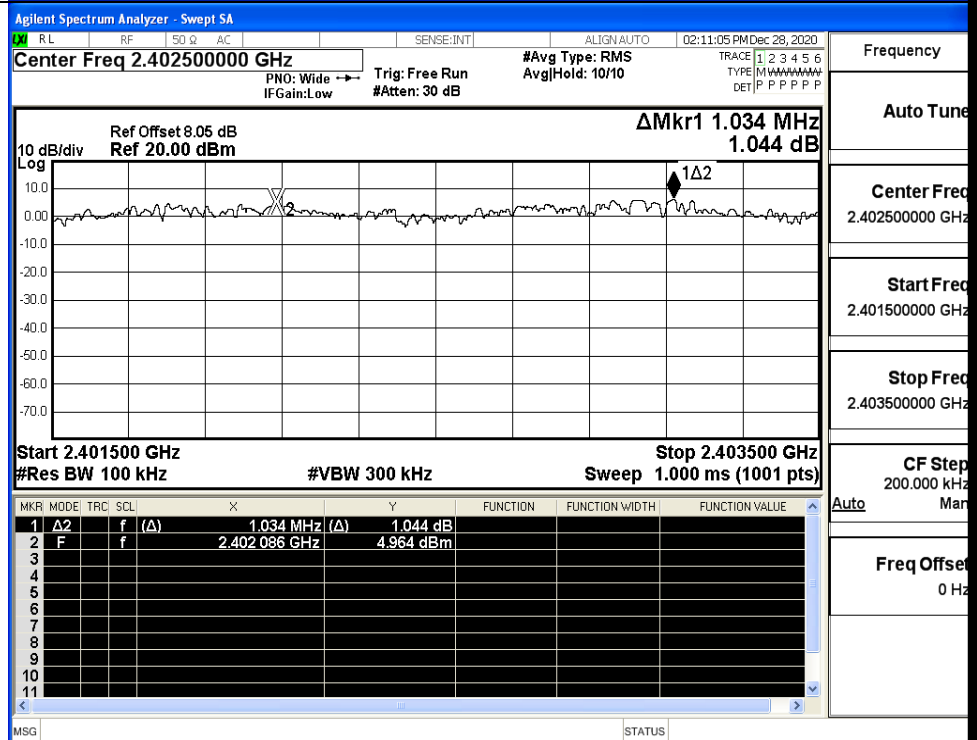
Next Pk Left

Marker Delta

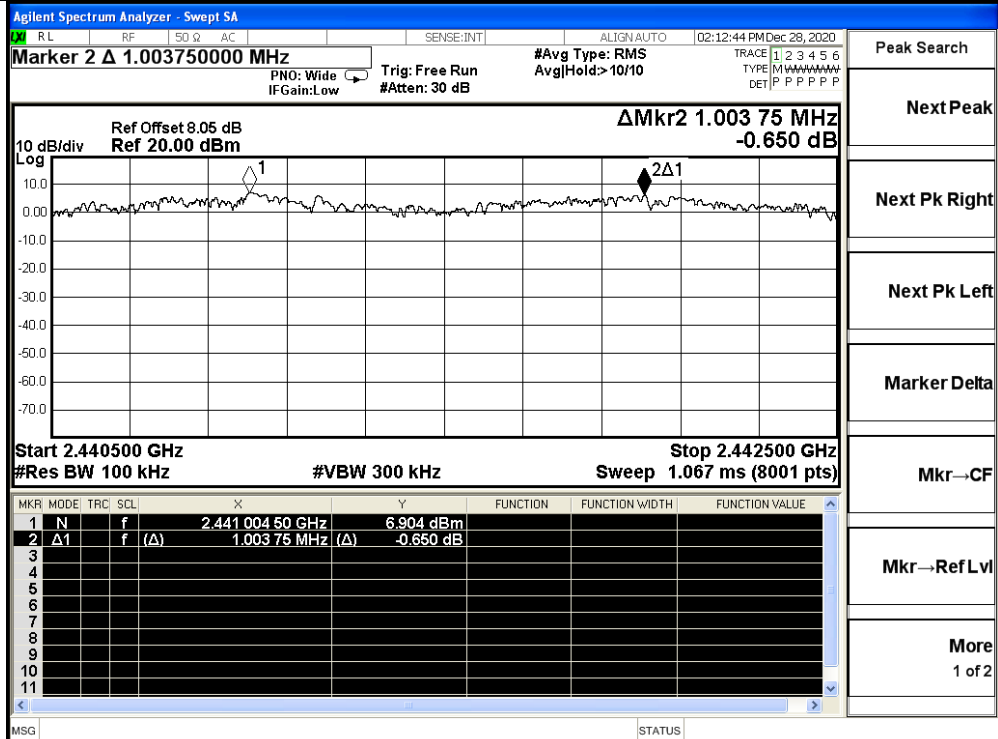
Mkr $\rightarrow$ CFMkr $\rightarrow$ Ref LvlMore
1 of 2

$\pi/4$ DQPSK/HCH

8DPSK/LCH



8DPSK/MCH



Peak Search

Next Peak

Next Pk Right

Next Pk Left

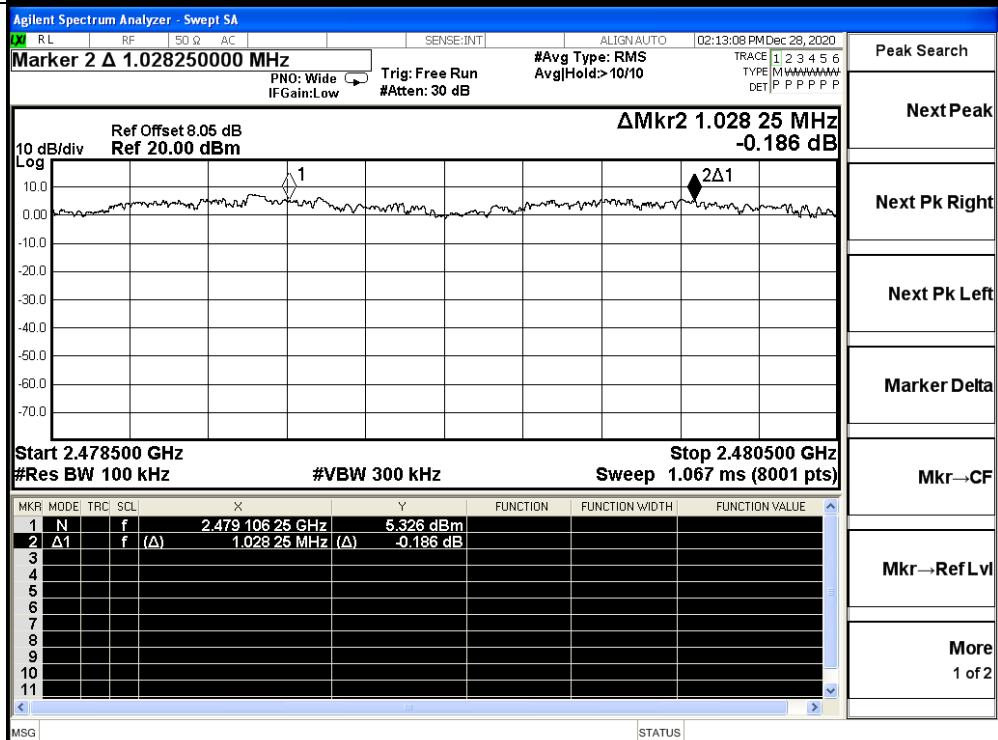
Marker Delta

Mkr→CF

Mkr→Ref Lvl

More
1 of 2

8DPSK/HCH



Peak Search

Next Peak

Next Pk Right

Next Pk Left

Marker Delta

Mkr→CF

Mkr→Ref Lvl

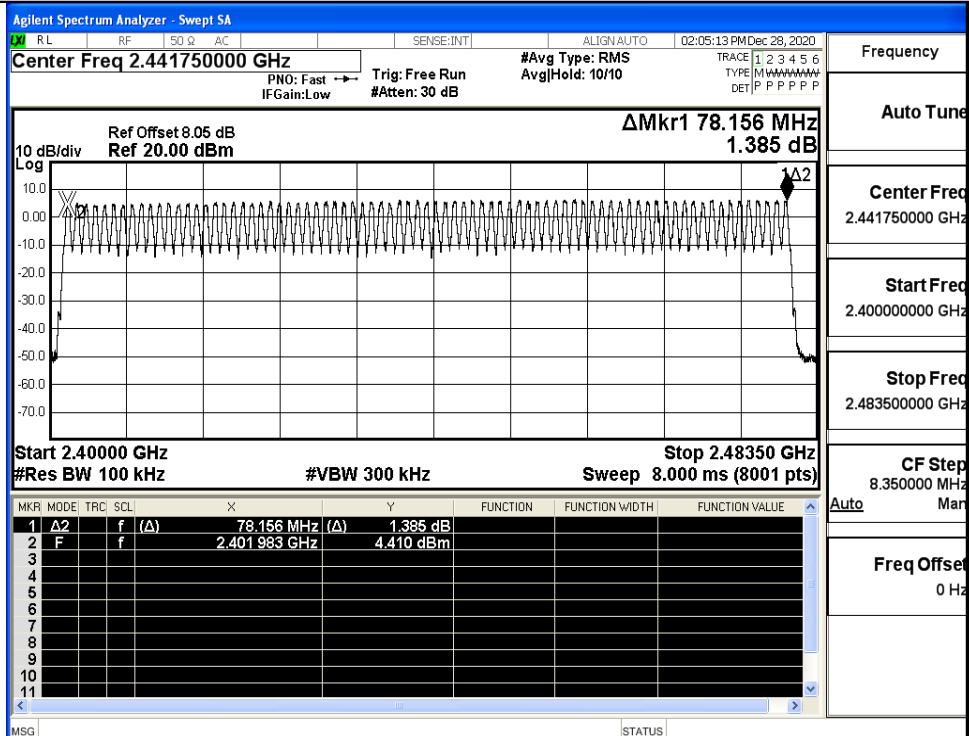
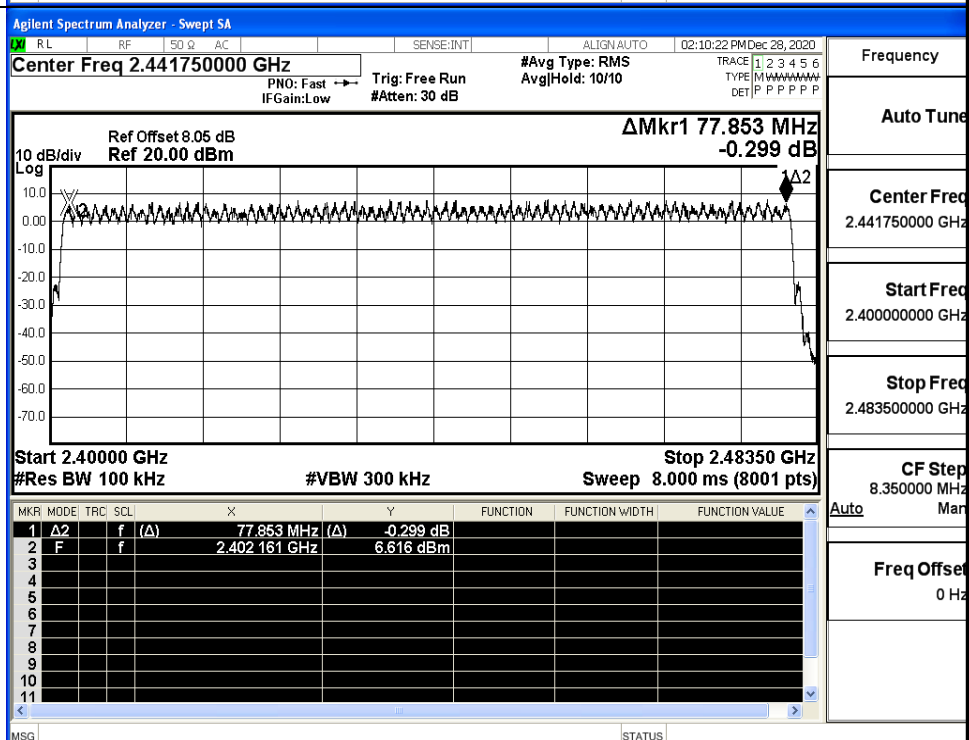
More
1 of 2

A.4 Hopping Channel Number

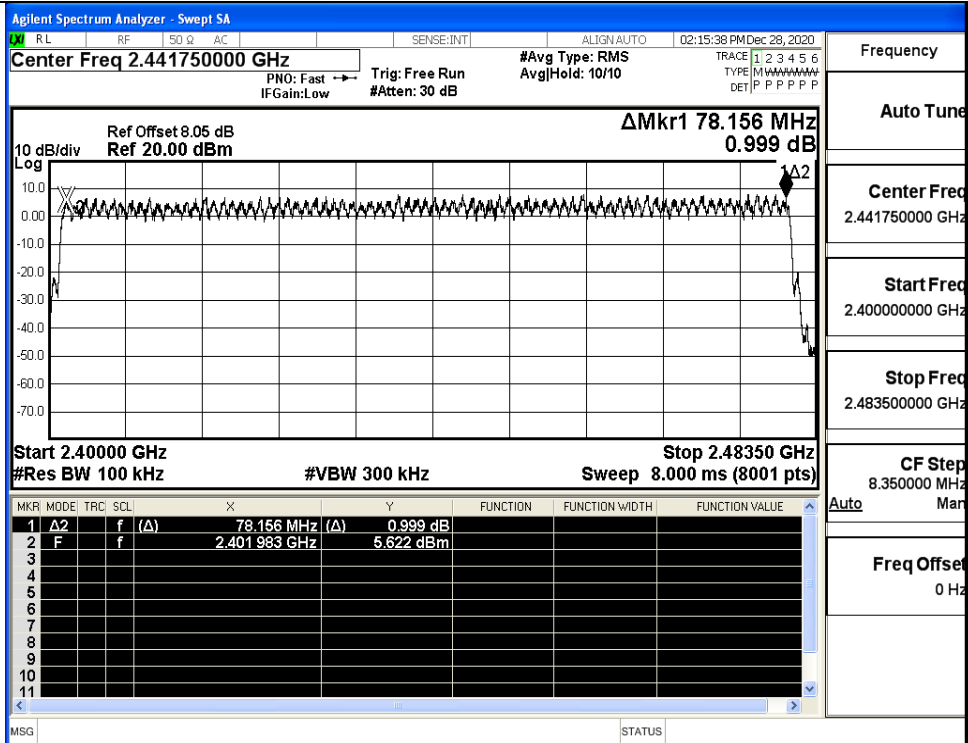
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

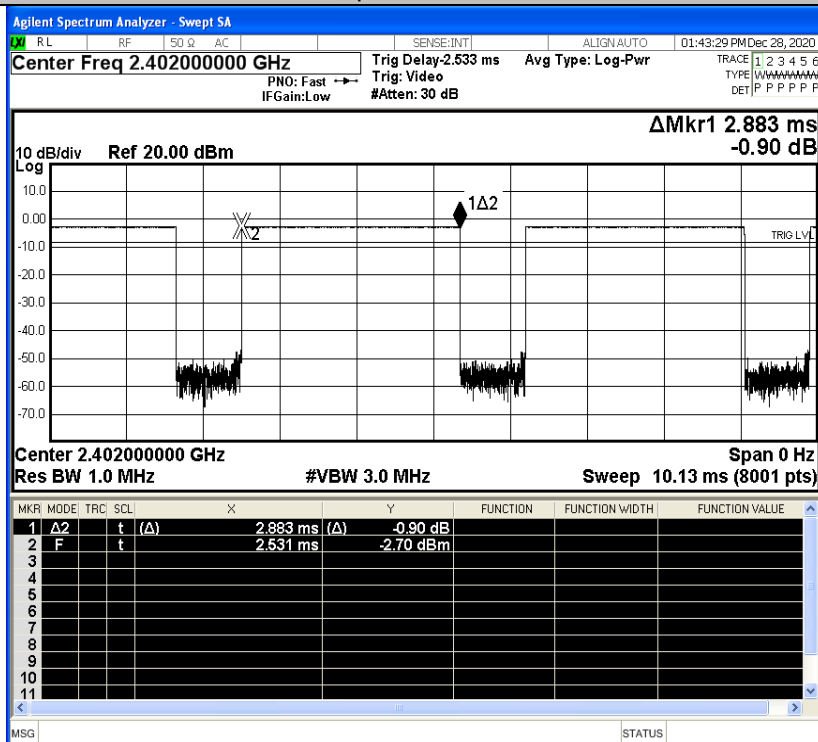


A.5 Dwell Time

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	2.88	106.7	0.307	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	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test GraphsA

GFSK_DH5/LCH



Frequency

Auto Tune

Center Freq
2.402000000 GHz

Start Freq
2.402000000 GHz

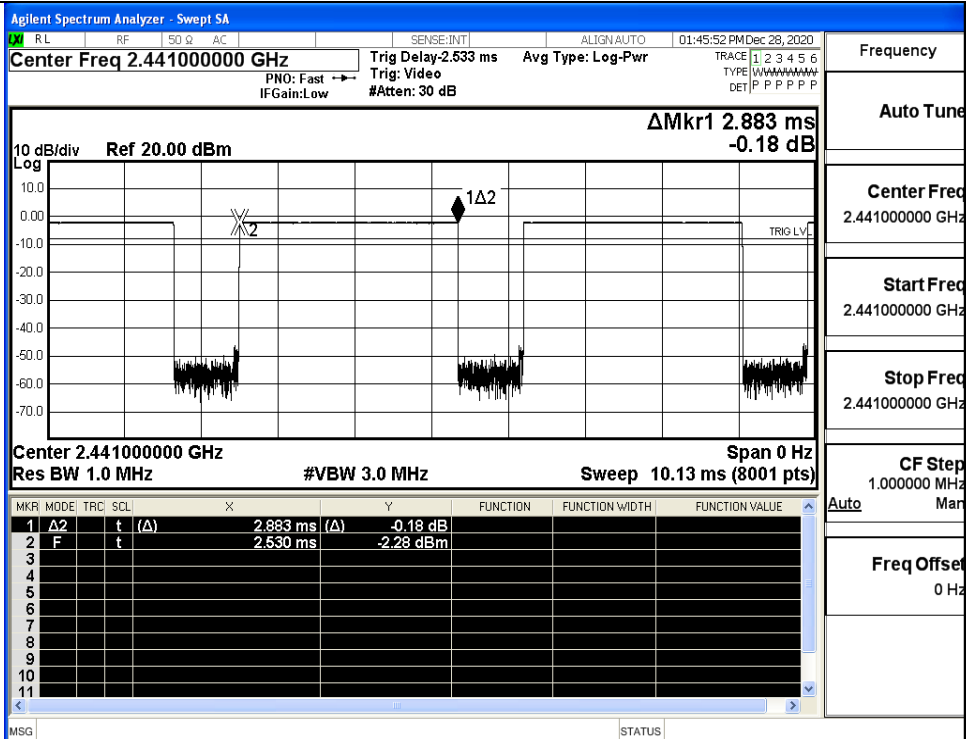
Stop Freq
2.402000000 GHz

CF Step
1.000000 MHz

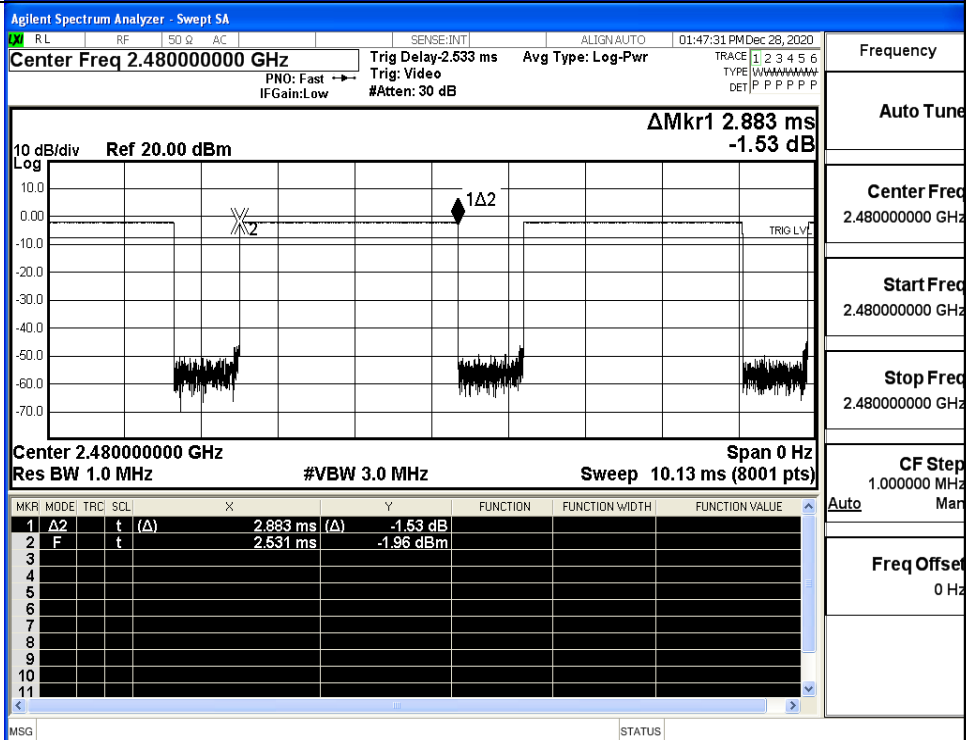
Auto

Freq Offset
0 Hz

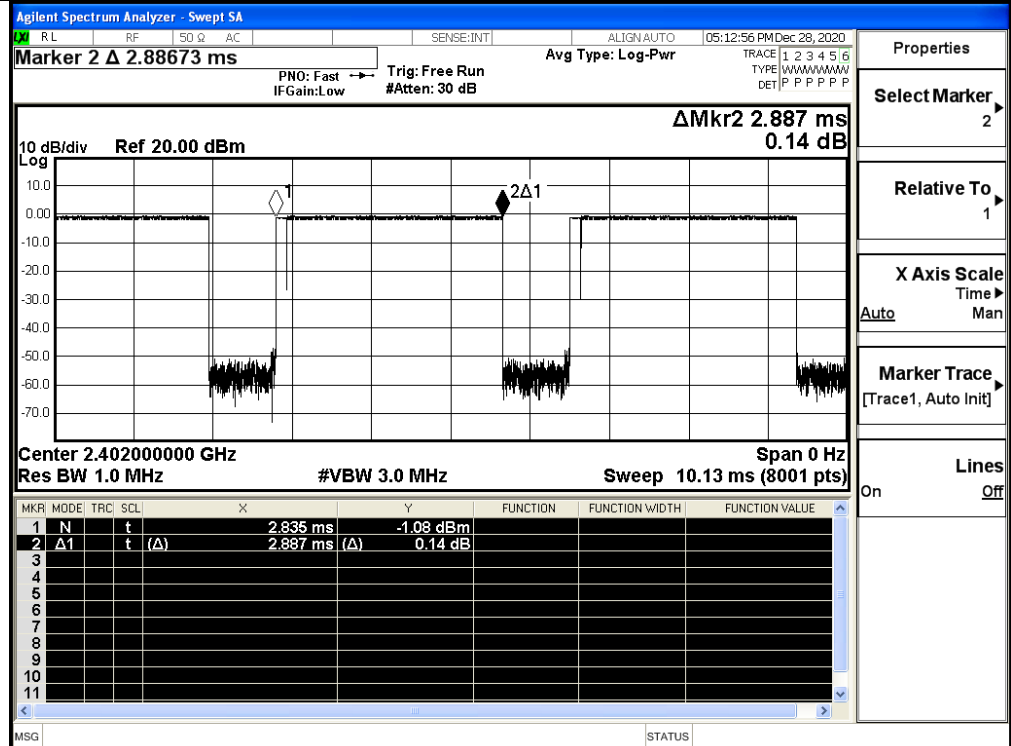
GFSK_DH5/MCH



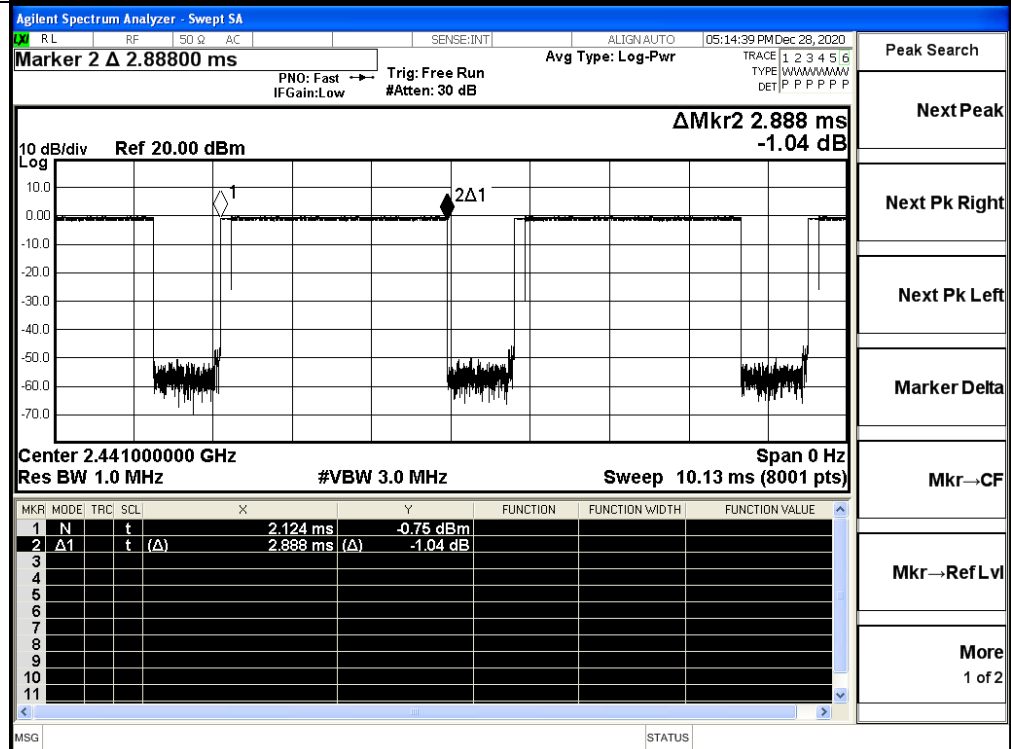
GFSK_DH5/HCH



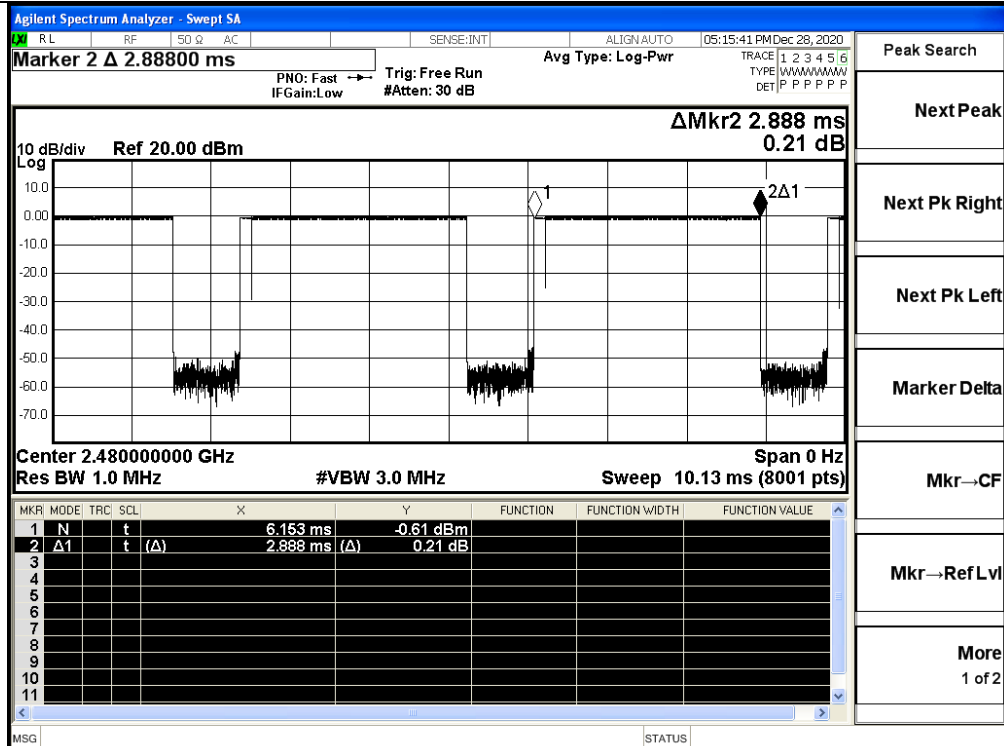
$\pi/4$ DQPSK
_2DH5/LCH



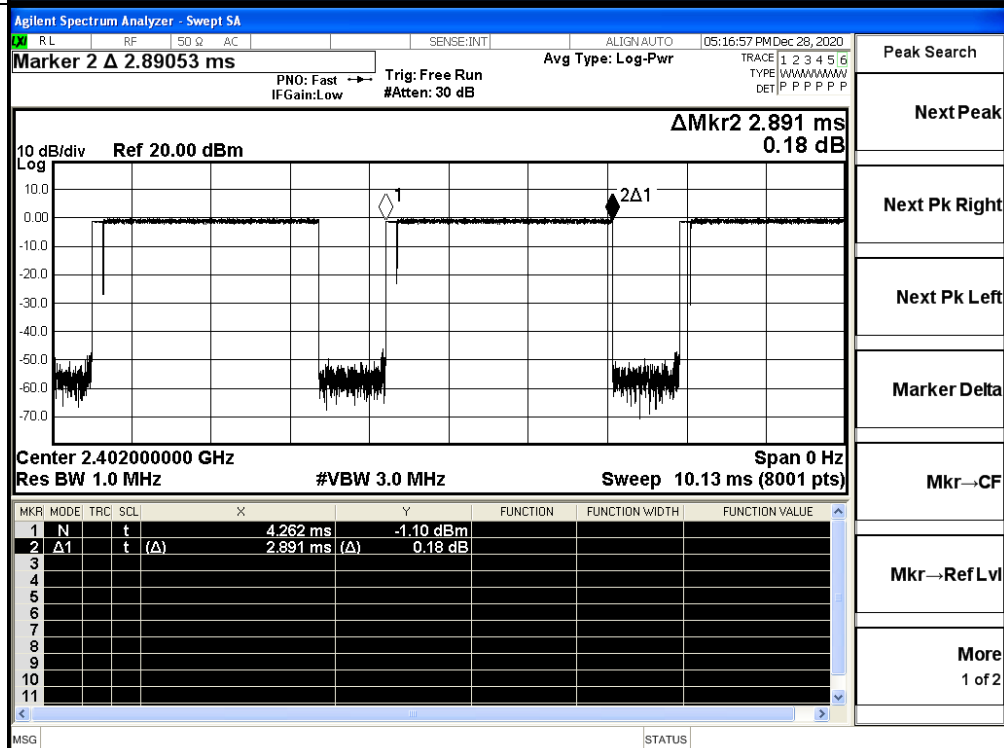
$\pi/4$ DQPSK
_2DH5/MCH



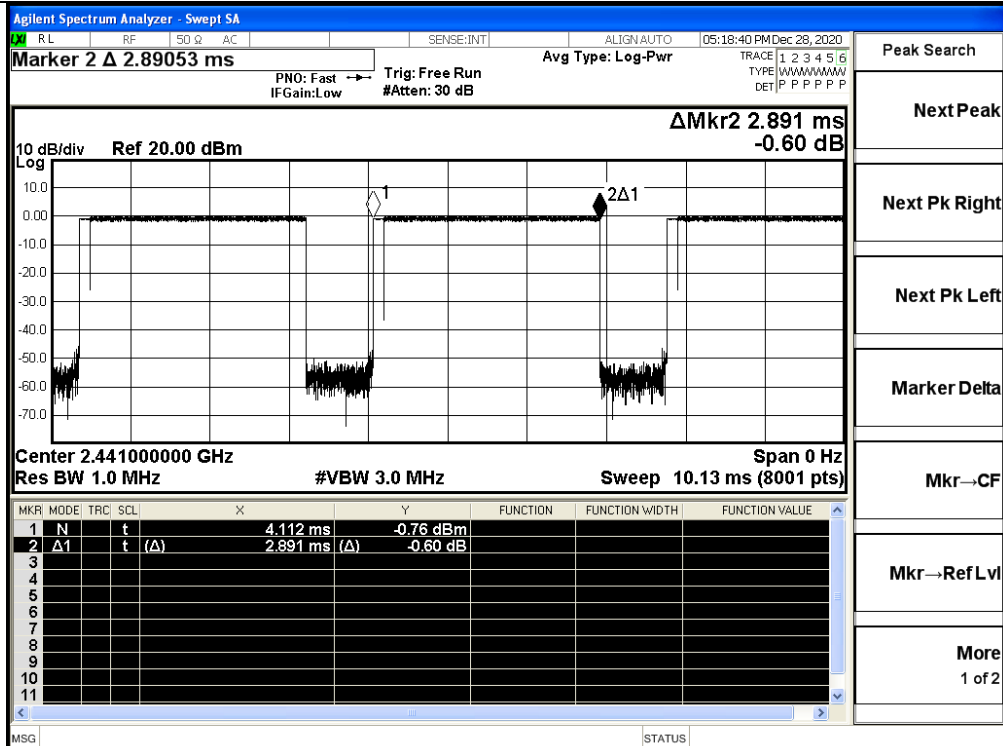
$\pi/4$ DQPSK
_2DH5/HCH



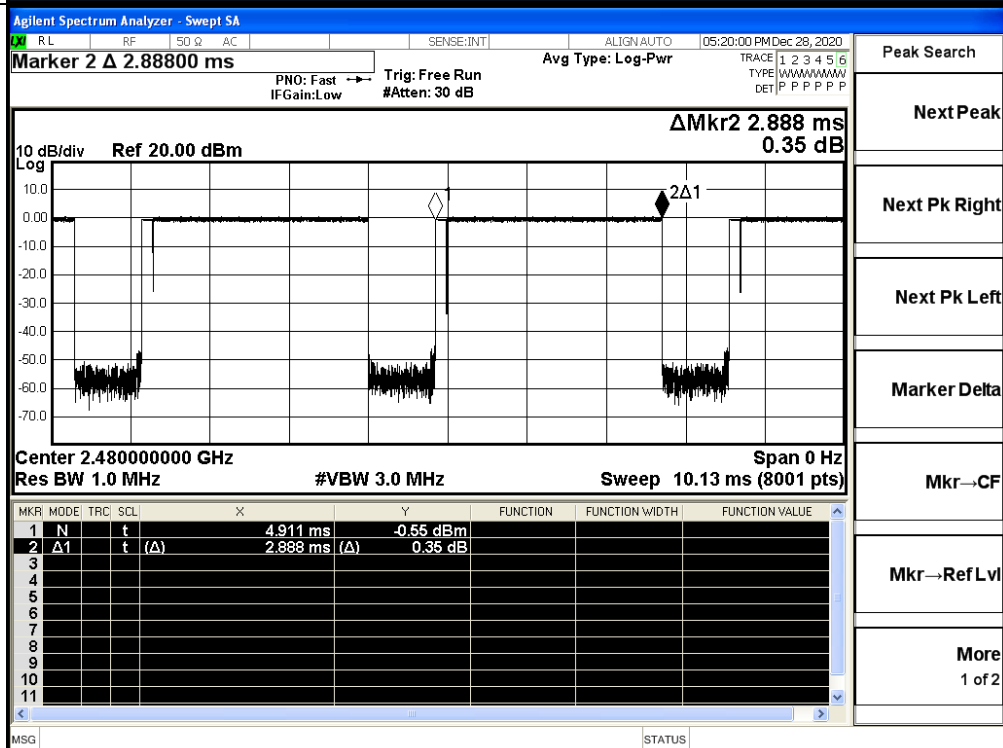
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



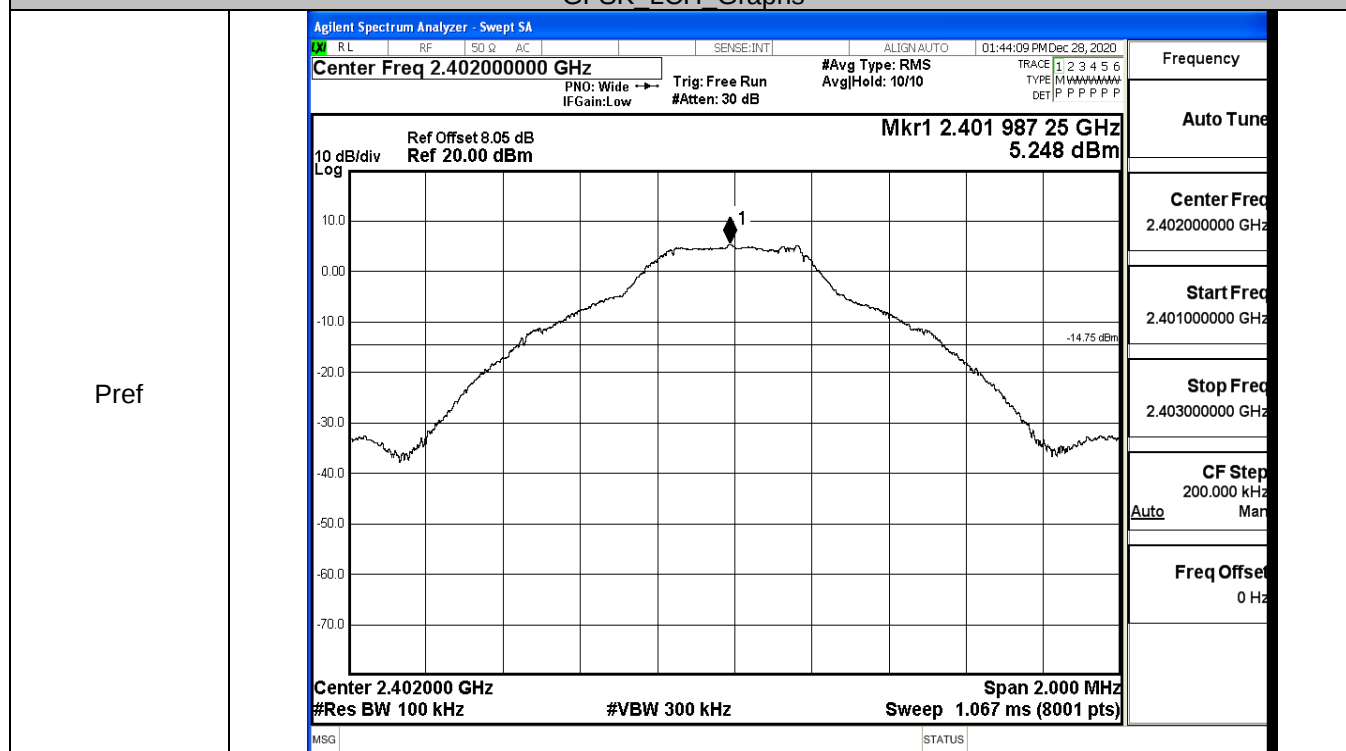
8DPSK_3DH5/HCH



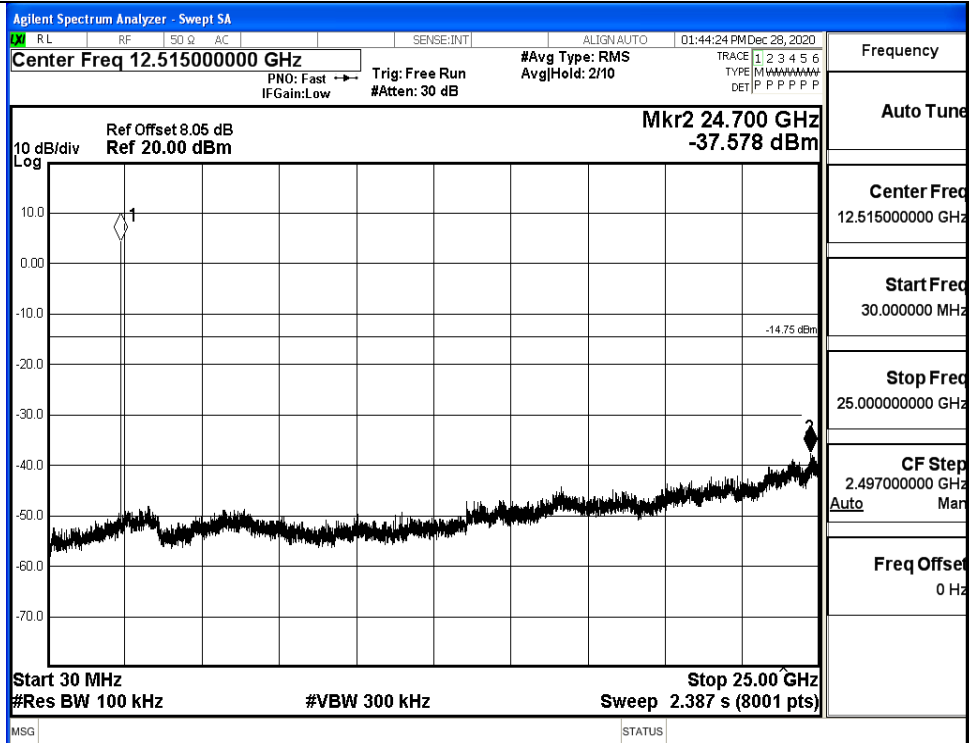
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.248	-37.578	-14.752	PASS
	MCH	5.637	-37.716	-14.363	PASS
	HCH	6.026	-36.765	-13.974	PASS
$\pi/4$ DQPSK	LCH	6.906	-36.887	-13.094	PASS
	MCH	7.151	-37.675	-12.849	PASS
	HCH	7.382	-37.917	-12.618	PASS
8DPSK	LCH	6.845	-38.102	-13.155	PASS
	MCH	6.644	-36.481	-13.356	PASS
	HCH	7.358	-37.947	-12.642	PASS

GFSK LCH Graphs

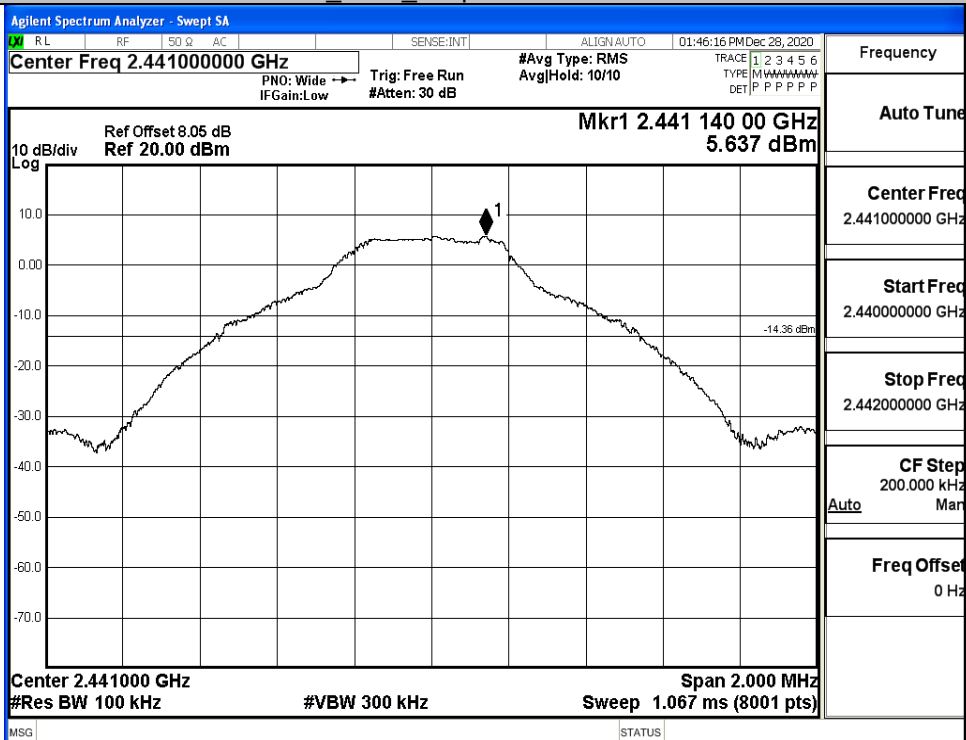


Puw

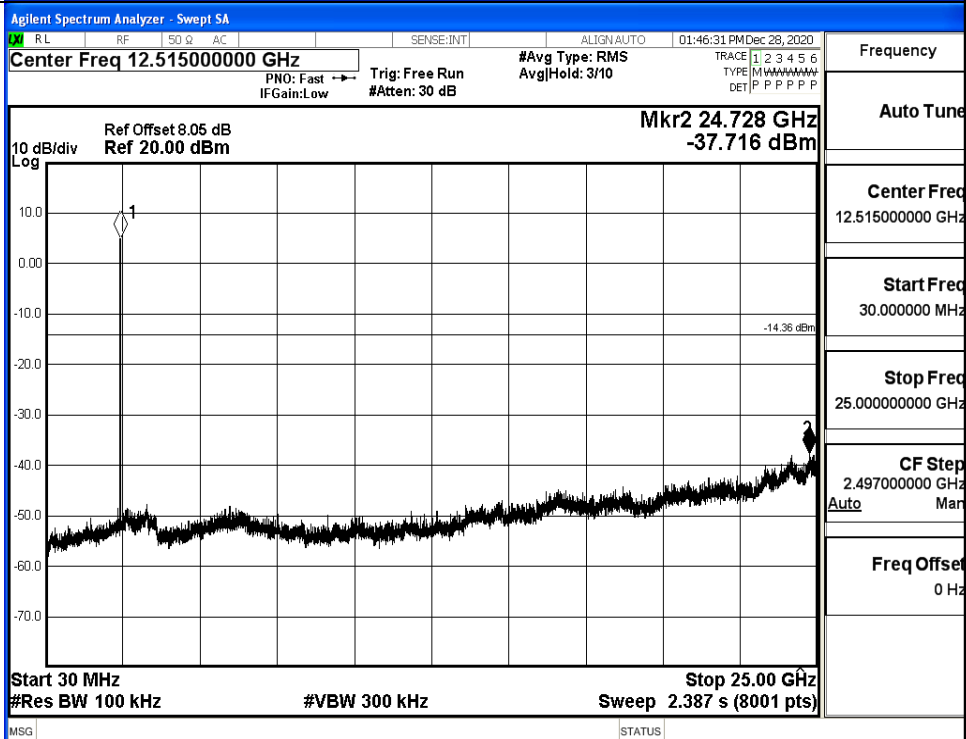


GFSK_MCH_Graphs

Pref

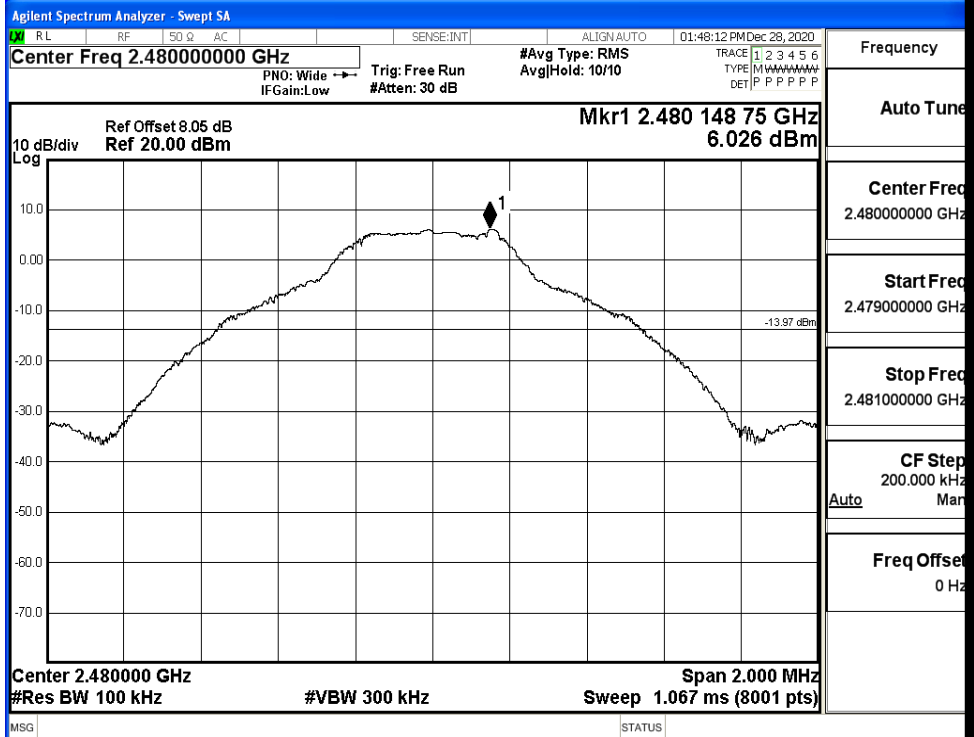


Puw

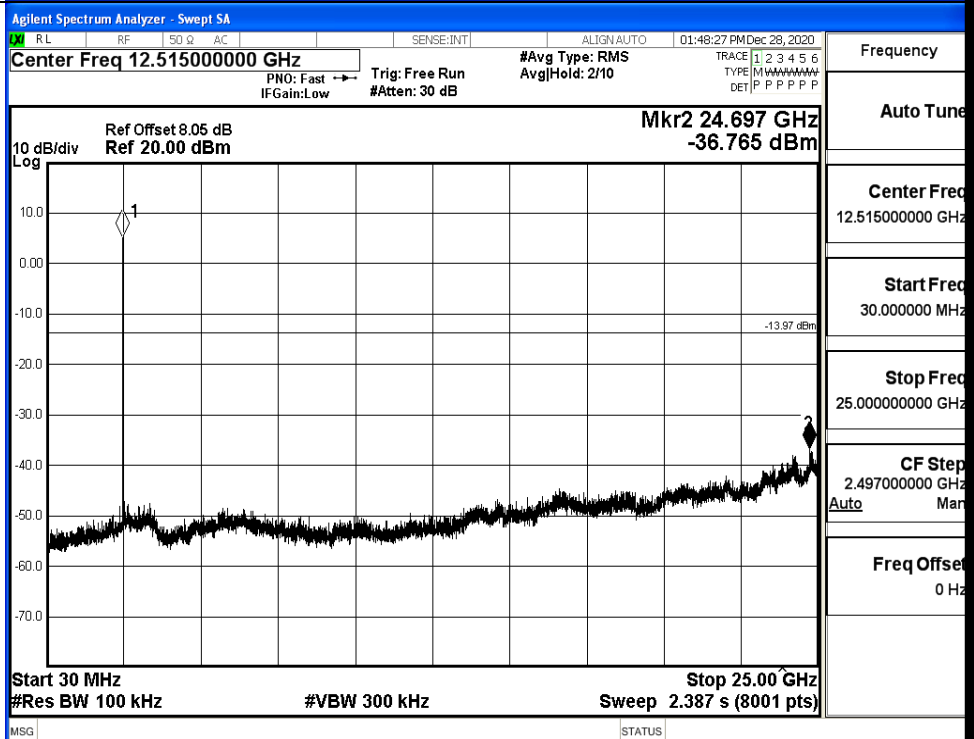


GFSK_HCH_Graphs

Pref

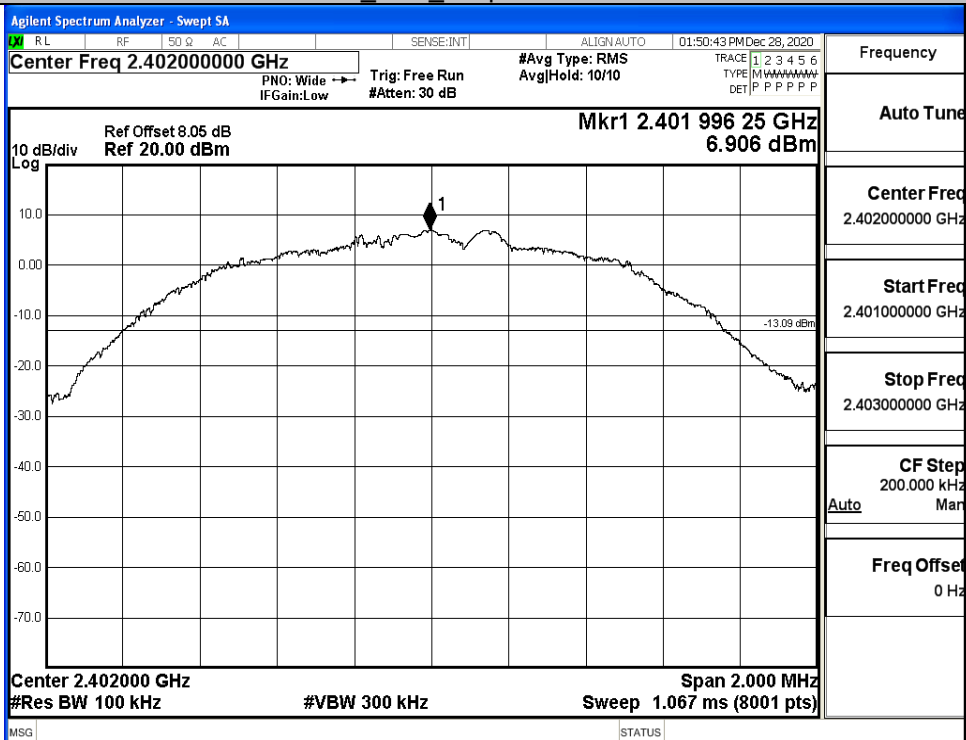


Puw

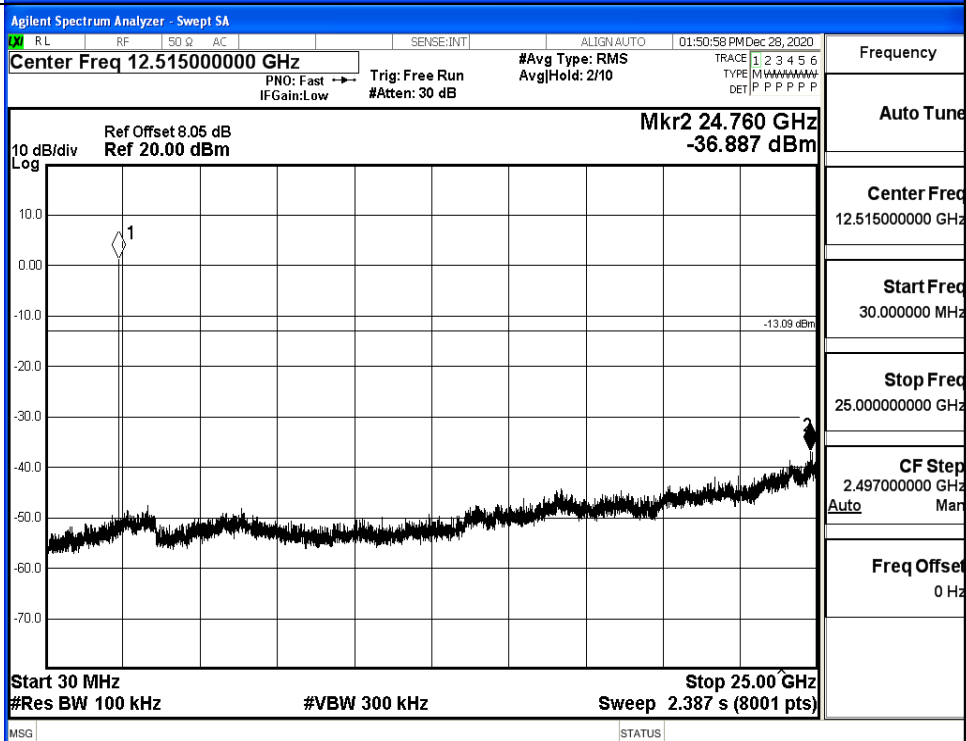


$\pi/4$ DQPSK_LCH_Graphs

Pref

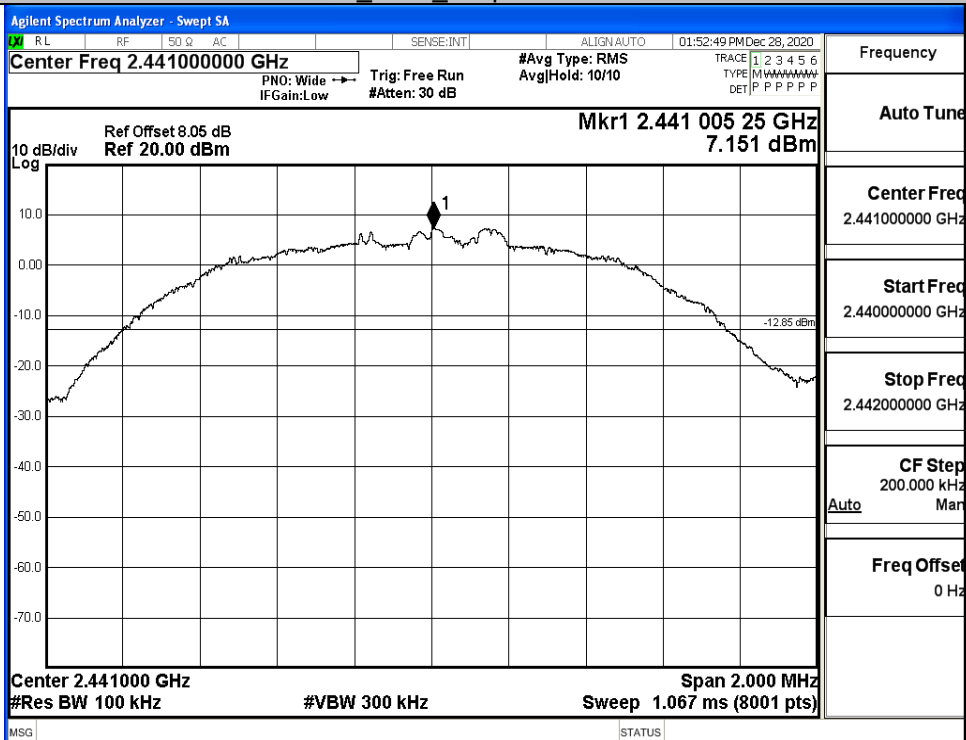


Puw

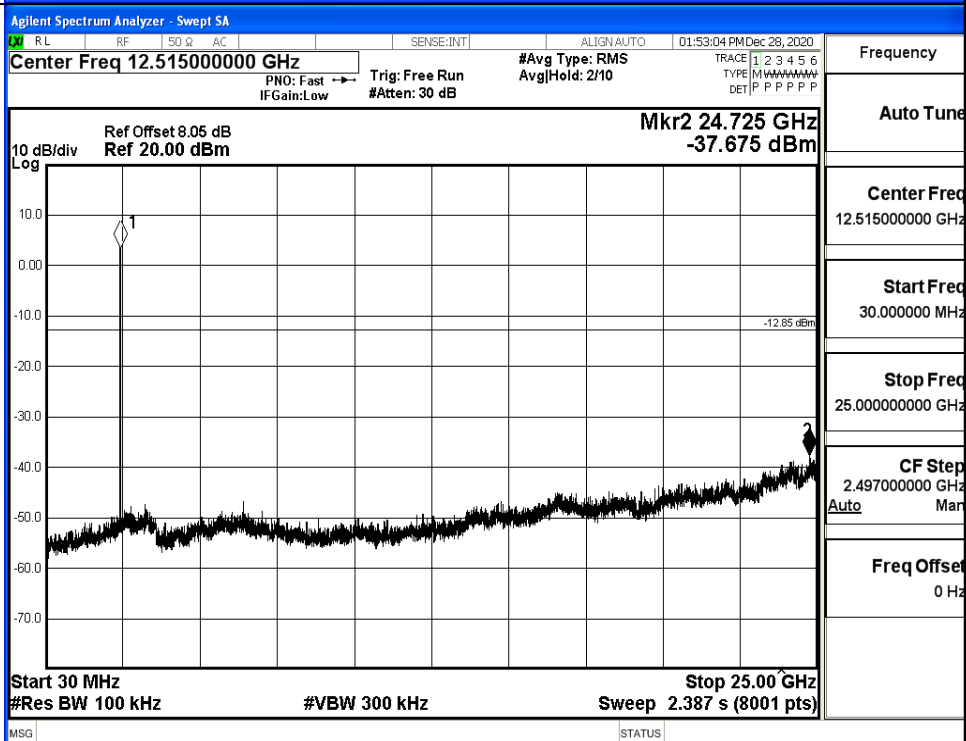


$\pi/4$ DQPSK_MCH_Graphs

Pref

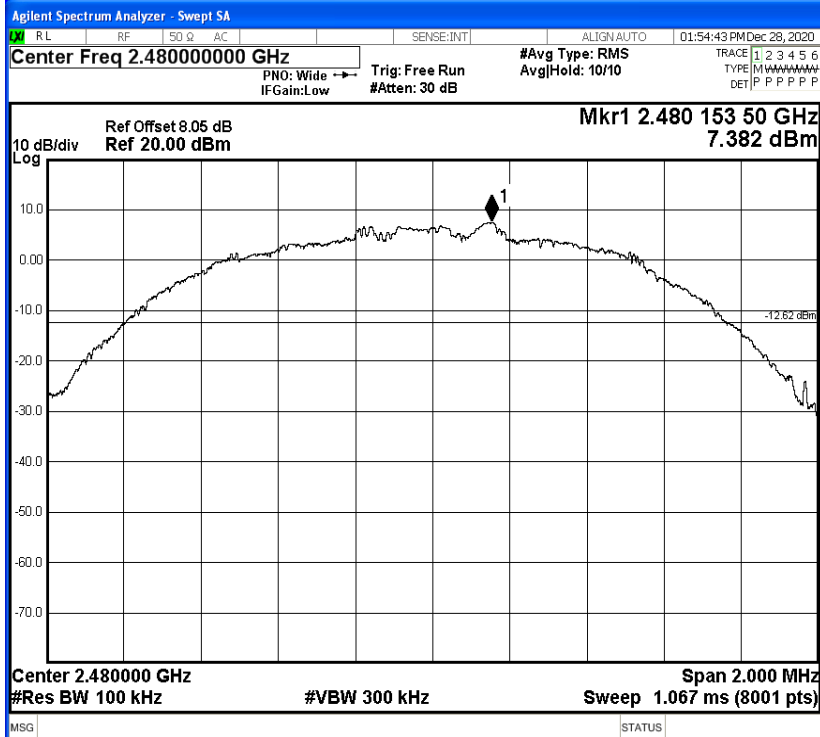


Puw

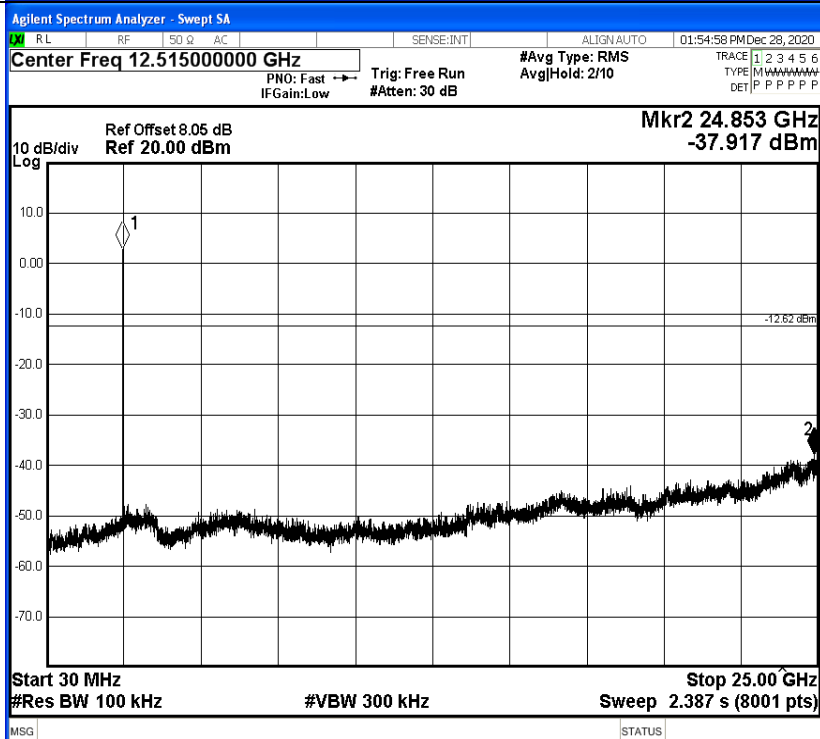


π /4DQPSK_HCH_Graphs

Pref

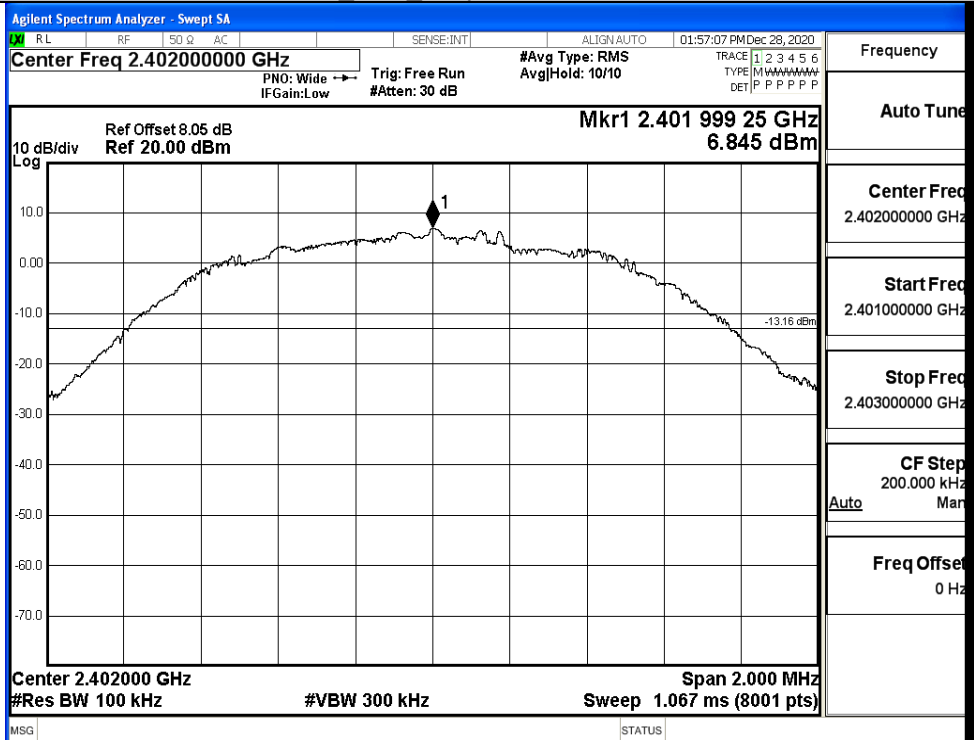


Puw

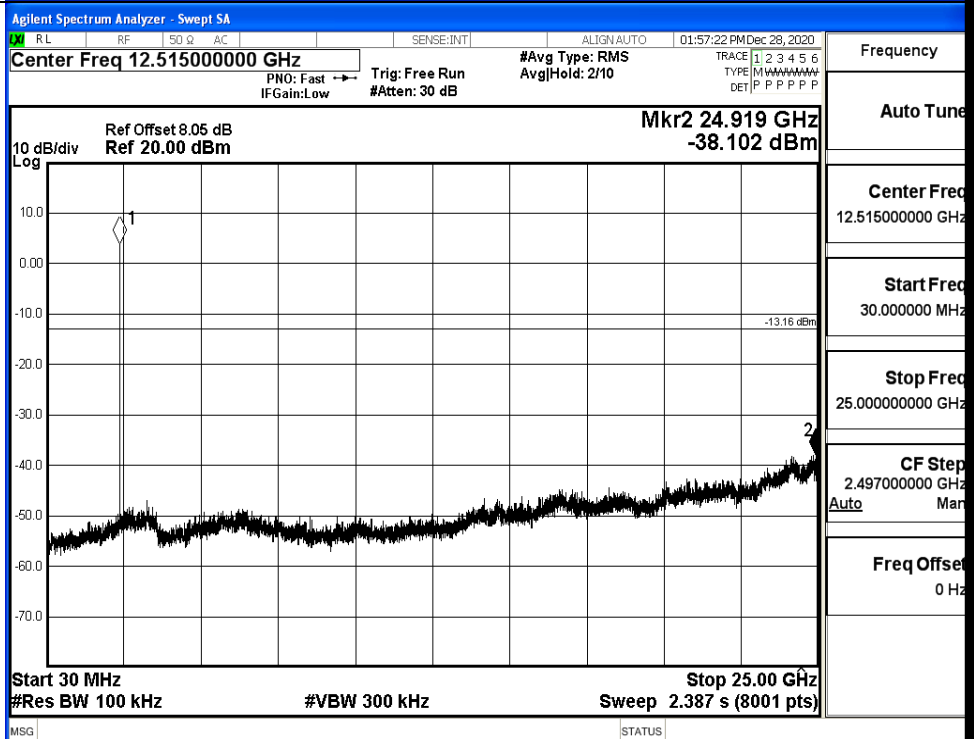


8DPSK_LCH_Graphs

Pref

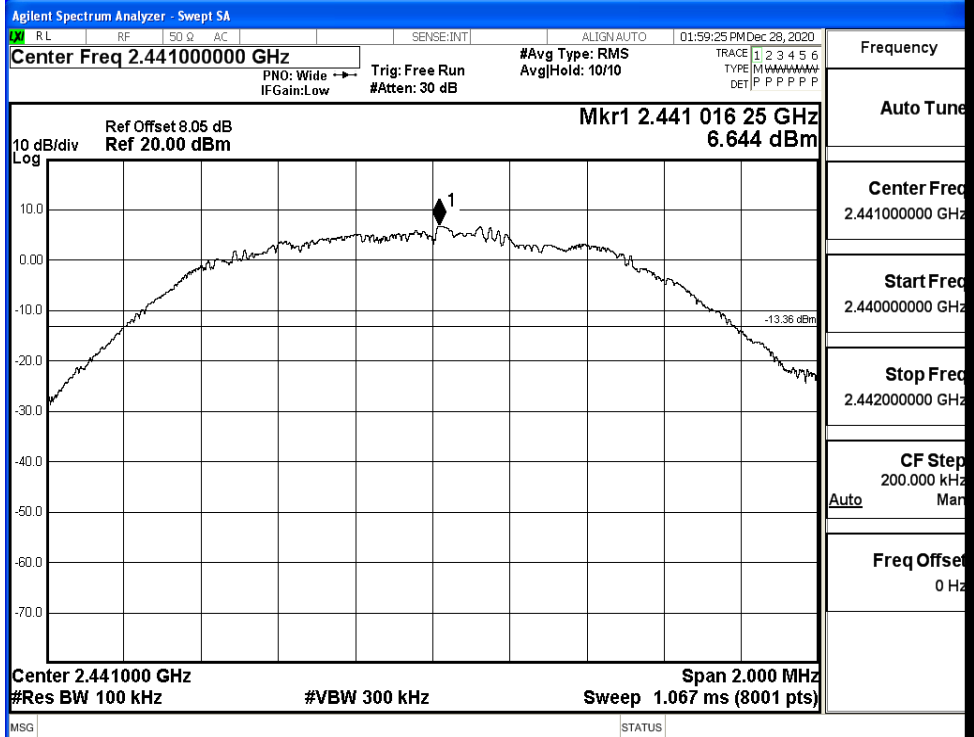


Puw

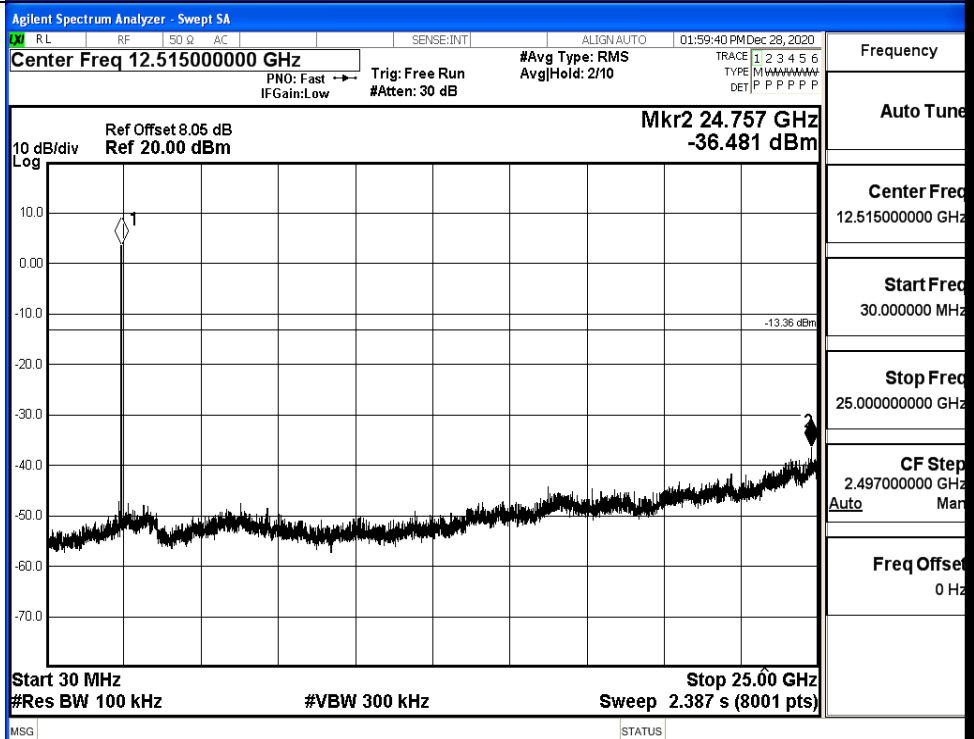


8DPSK_MCH_Graphs

Pref

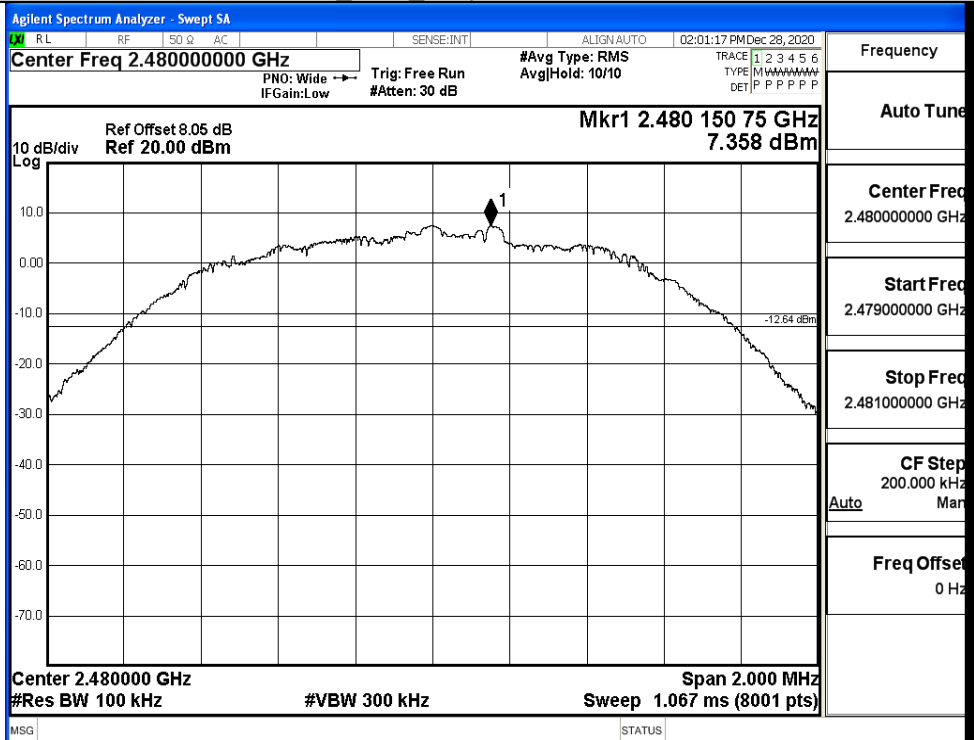


Puw

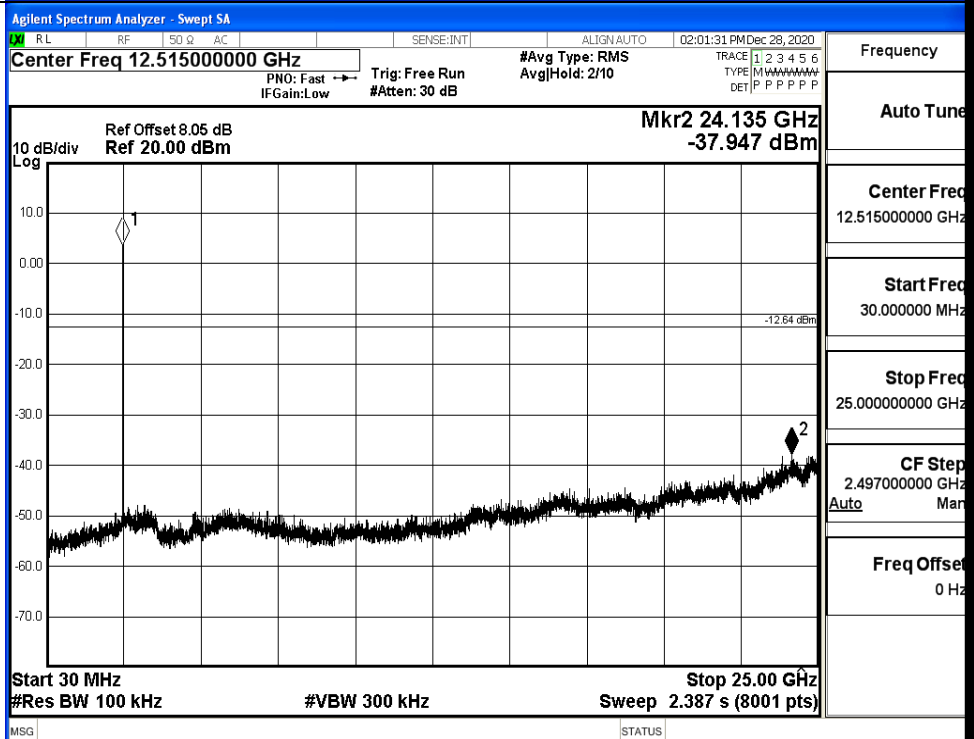


8DPSK_HCH_Graphs

Pref



Puw

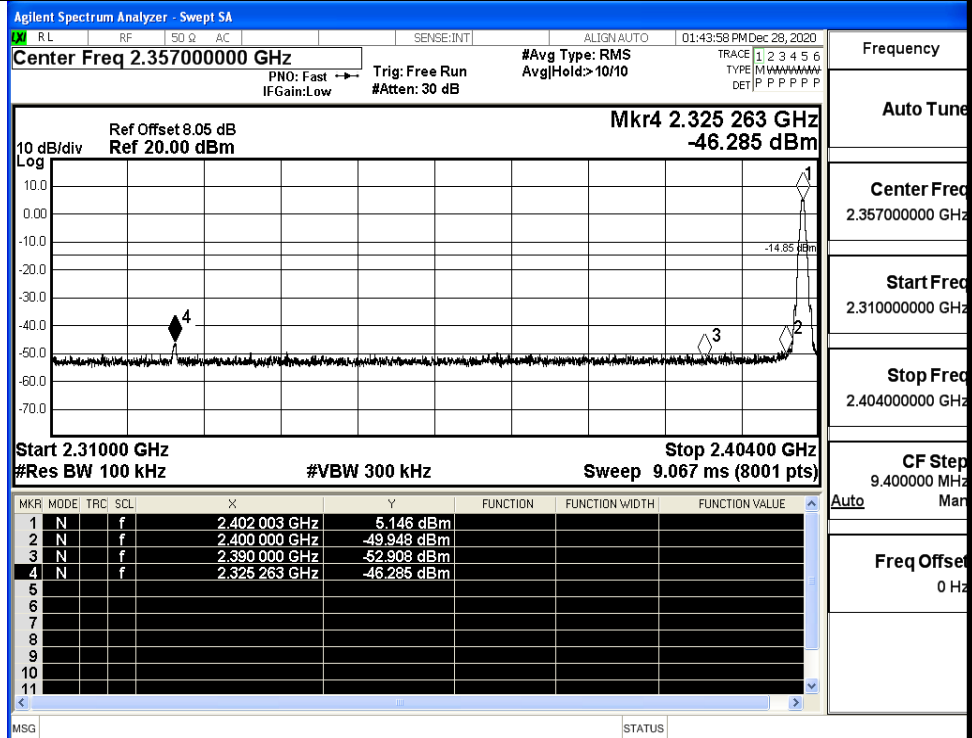


A.7 Band-edge for RF Conducted Emissions

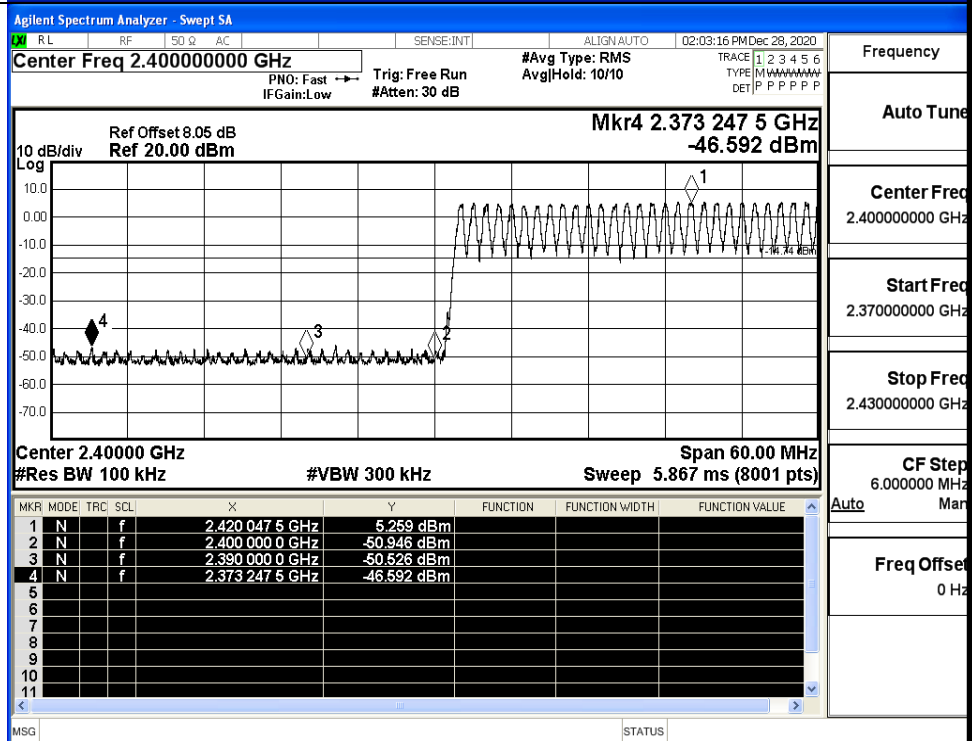
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	5.146	Off	-46.285	-14.85	PASS
			5.259	On	-46.592	-14.74	PASS
	HCH	2480	6.173	Off	-44.772	-13.83	PASS
			6.301	On	-44.265	-13.7	PASS
$\pi/4$ DQPSK	LCH	2402	6.479	Off	-45.321	-13.52	PASS
			7.192	On	-45.533	-12.81	PASS
	HCH	2480	7.388	Off	-42.696	-12.61	PASS
			7.911	On	-42.748	-12.09	PASS
8DPSK	LCH	2402	6.873	Off	-45.964	-13.13	PASS
			6.878	On	-46.220	-13.12	PASS
	HCH	2480	7.444	Off	-43.273	-12.56	PASS
			7.898	On	-42.705	-12.1	PASS

Test Graphs

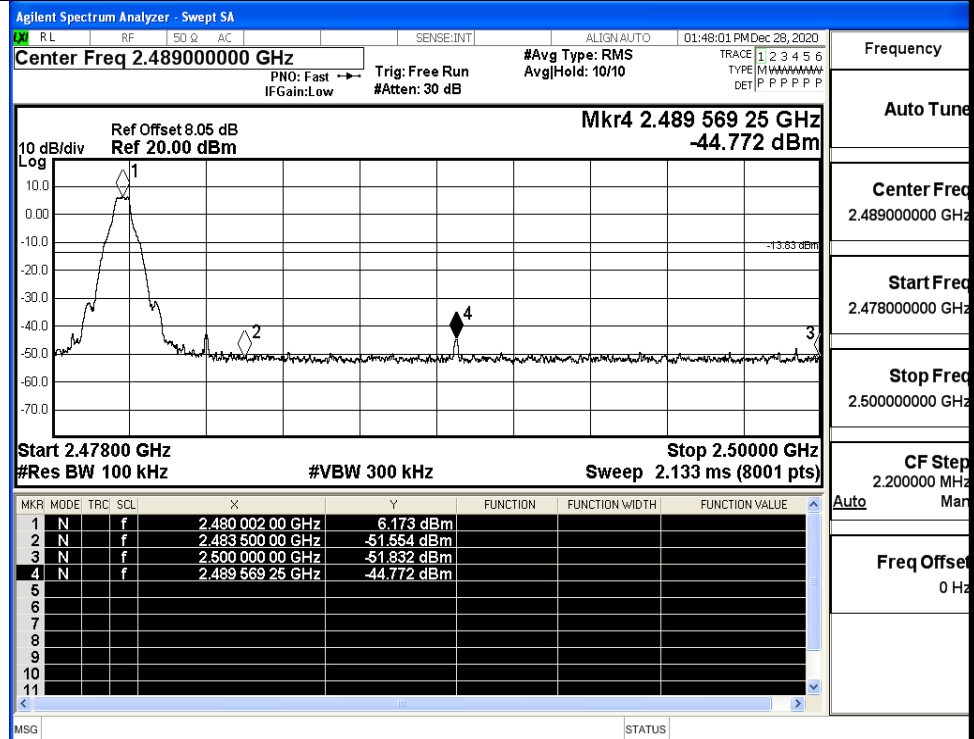
GFSK/LCH/No Hop



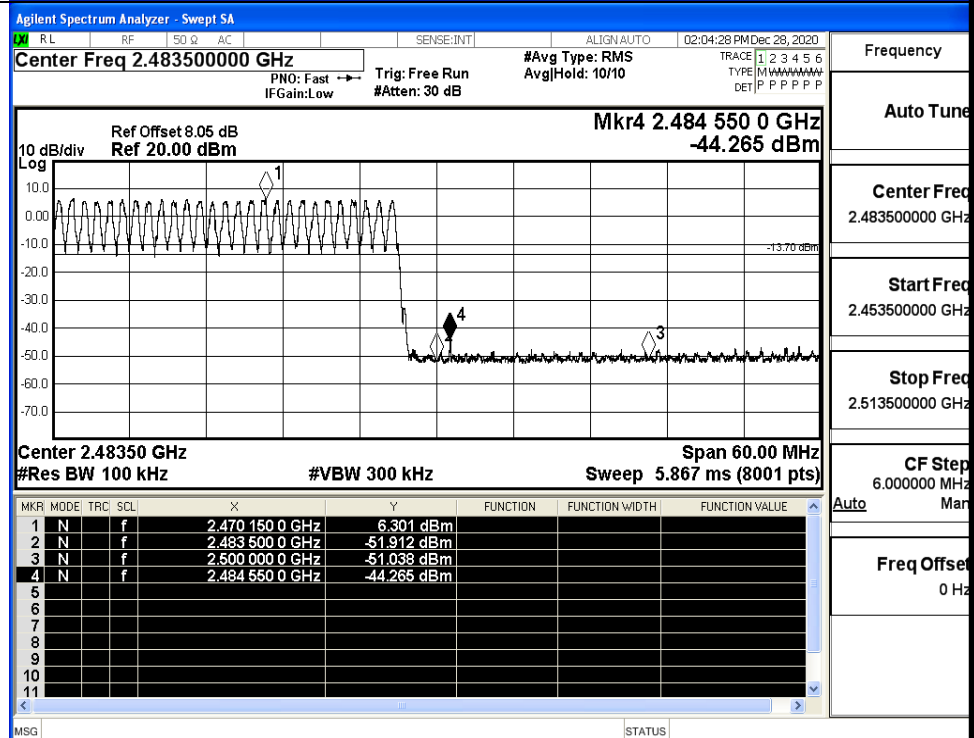
GFSK/LCH/Hop



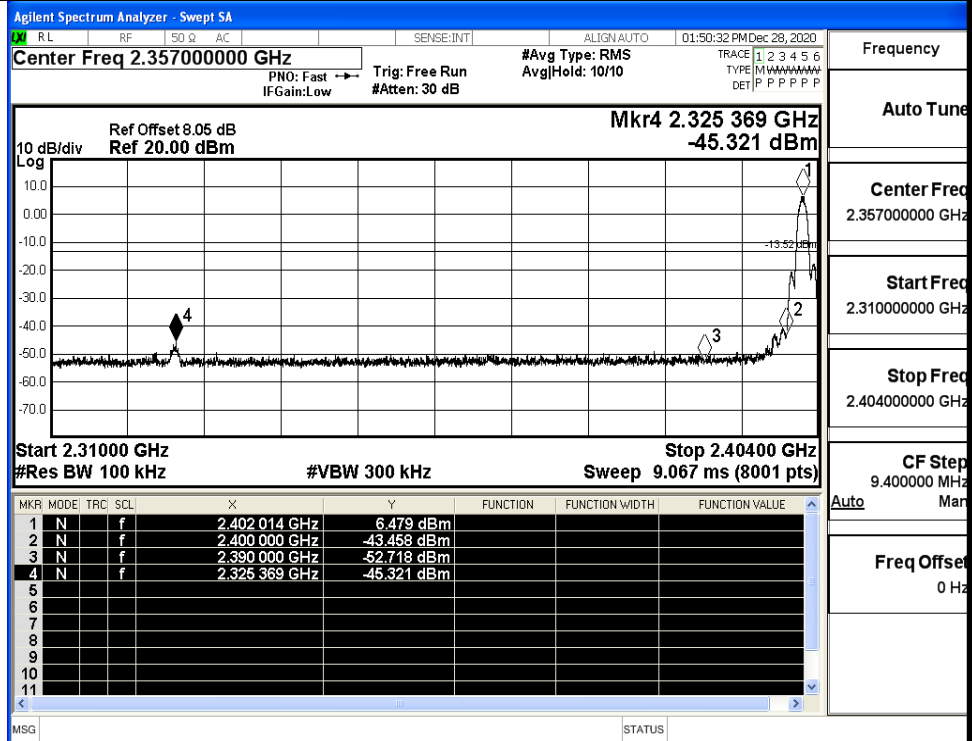
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

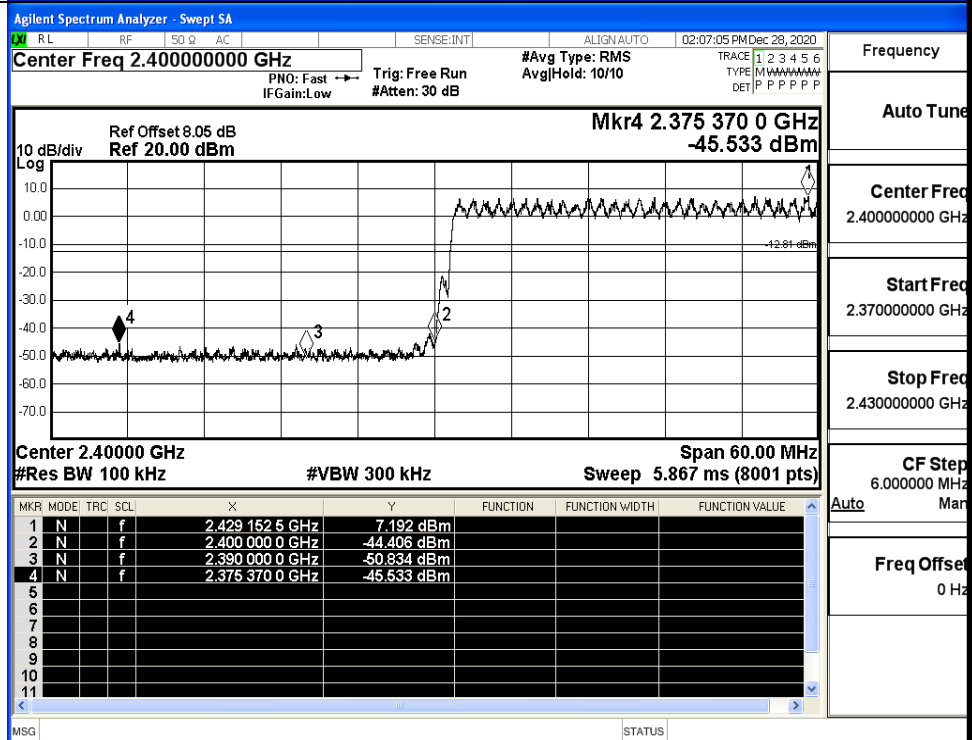
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

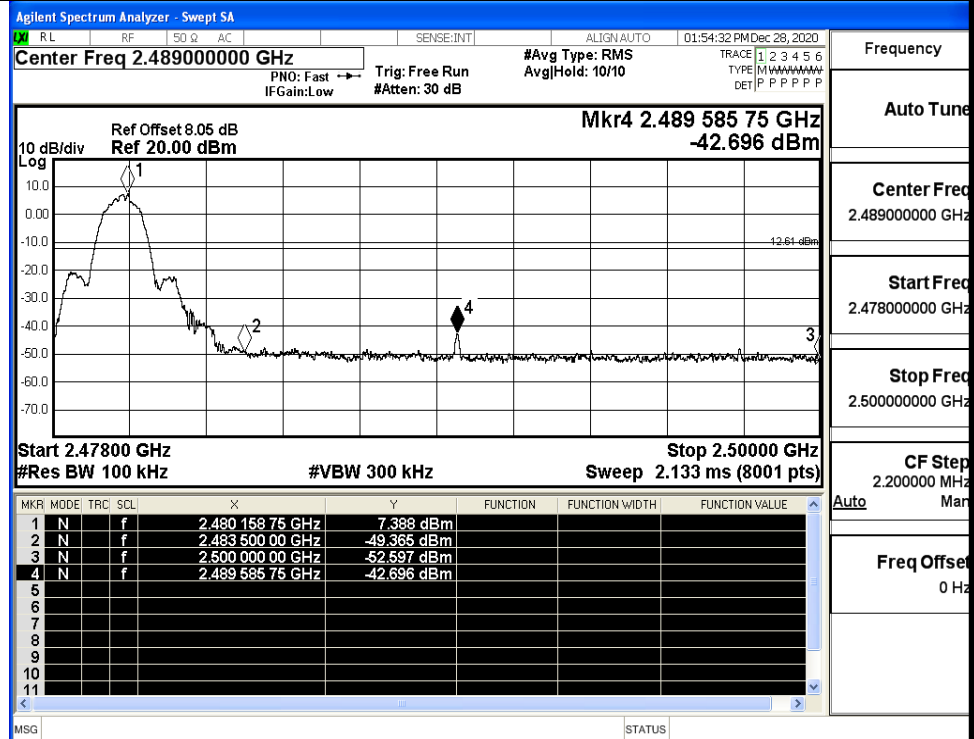
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz

Freq Offset
0 Hz

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

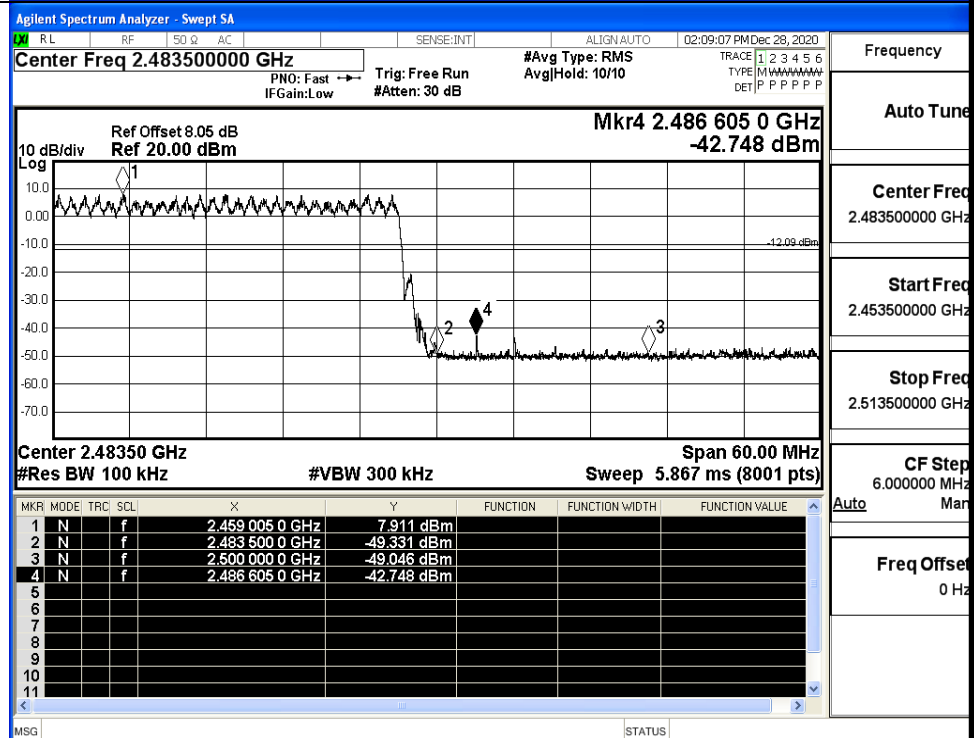


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHzFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop

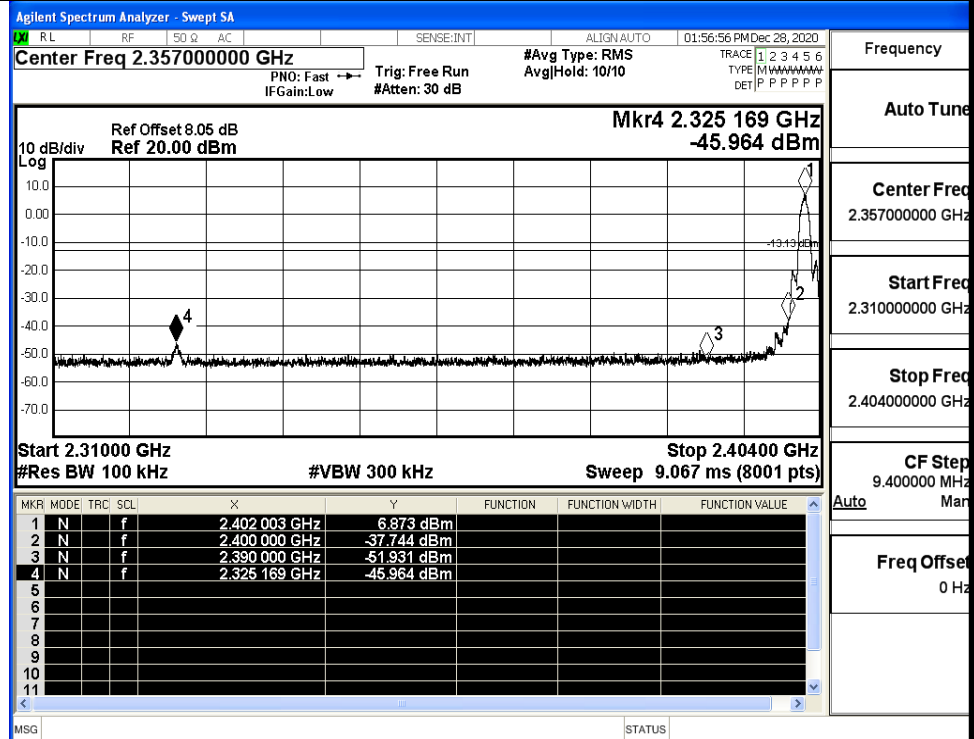


Frequency

Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHzFreq Offset
0 Hz

8DPSK/LCH/No Hop



Frequency

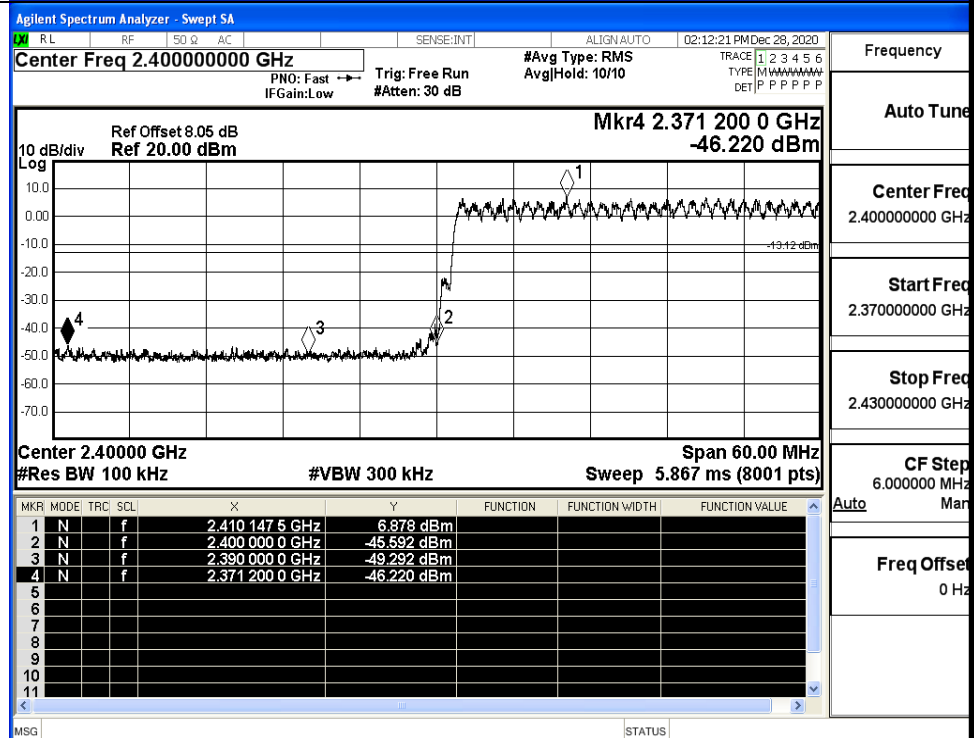
Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz

Auto Man

Freq Offset
0 Hz

8DPSK/LCH/Hop



Frequency

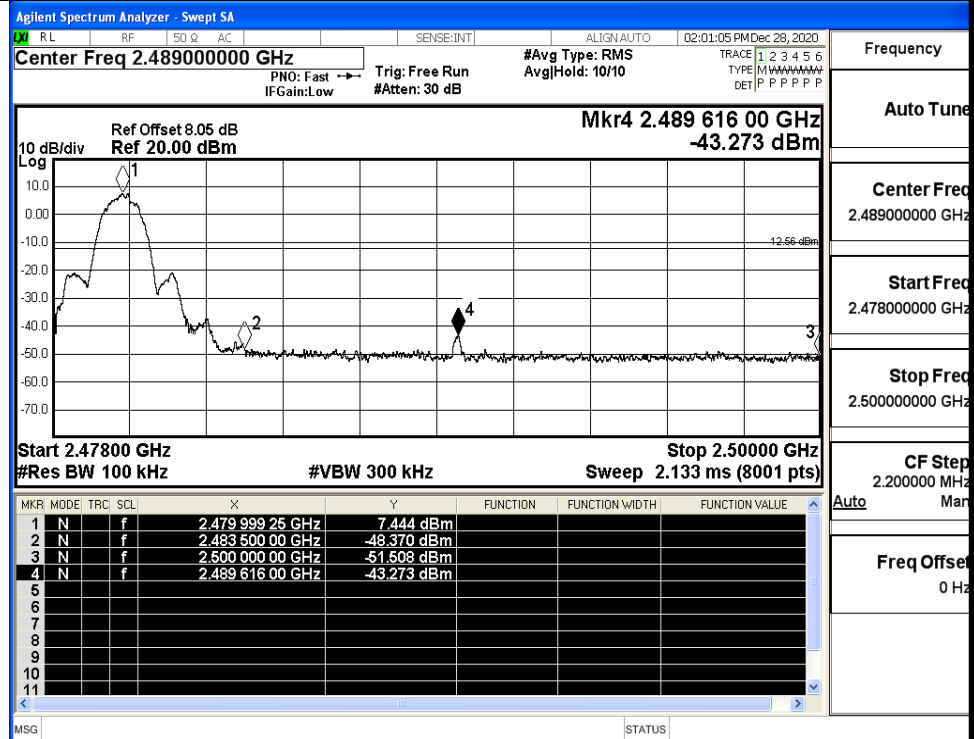
Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz

Auto Man

Freq Offset
0 Hz

8DPSK/HCH/No Hop

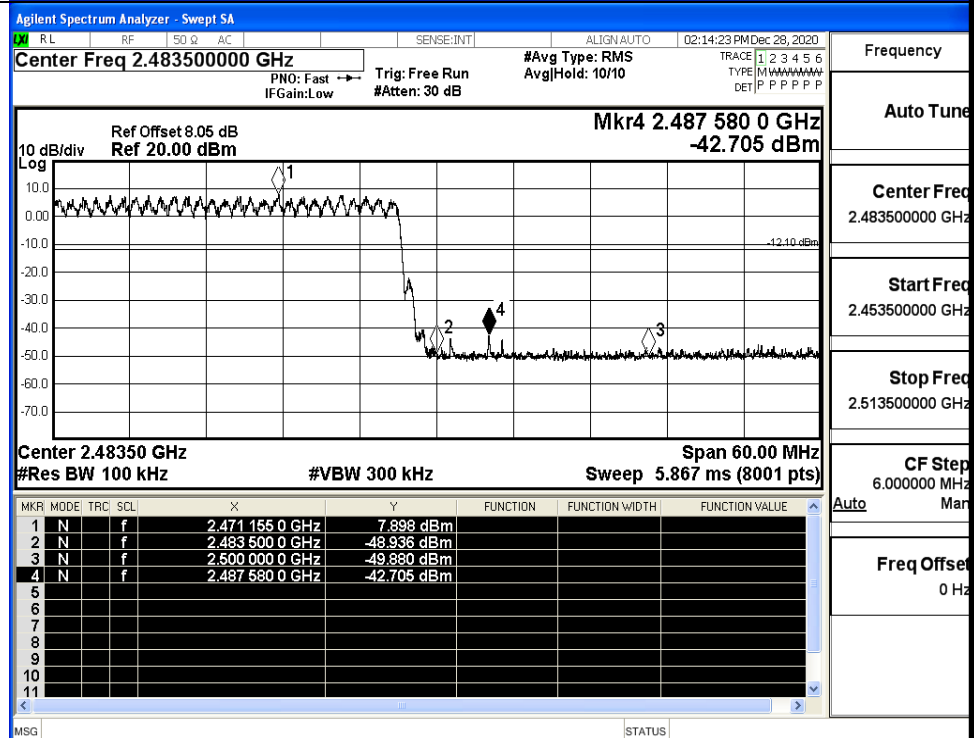


Frequency

Auto Tune

Center Freq
2.489000000 GHzStart Freq
2.478000000 GHzStop Freq
2.500000000 GHzCF Step
2.200000 MHzFreq Offset
0 Hz

8DPSK/HCH/Hop



Frequency

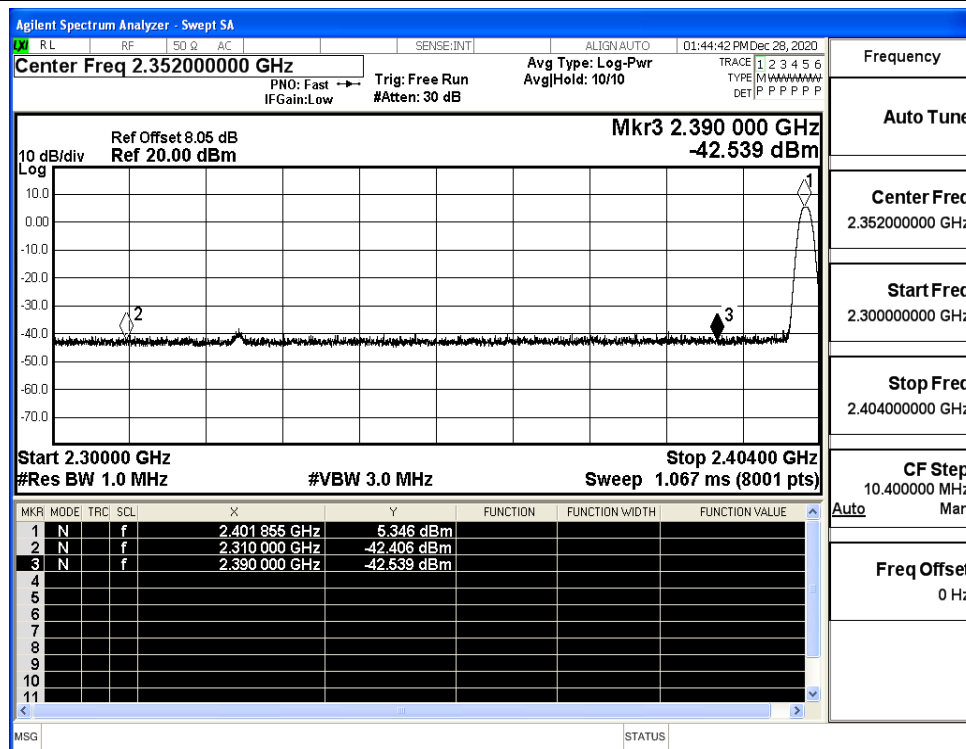
Auto Tune

Center Freq
2.483500000 GHzStart Freq
2.453500000 GHzStop Freq
2.513500000 GHzCF Step
6.000000 MHzFreq Offset
0 Hz

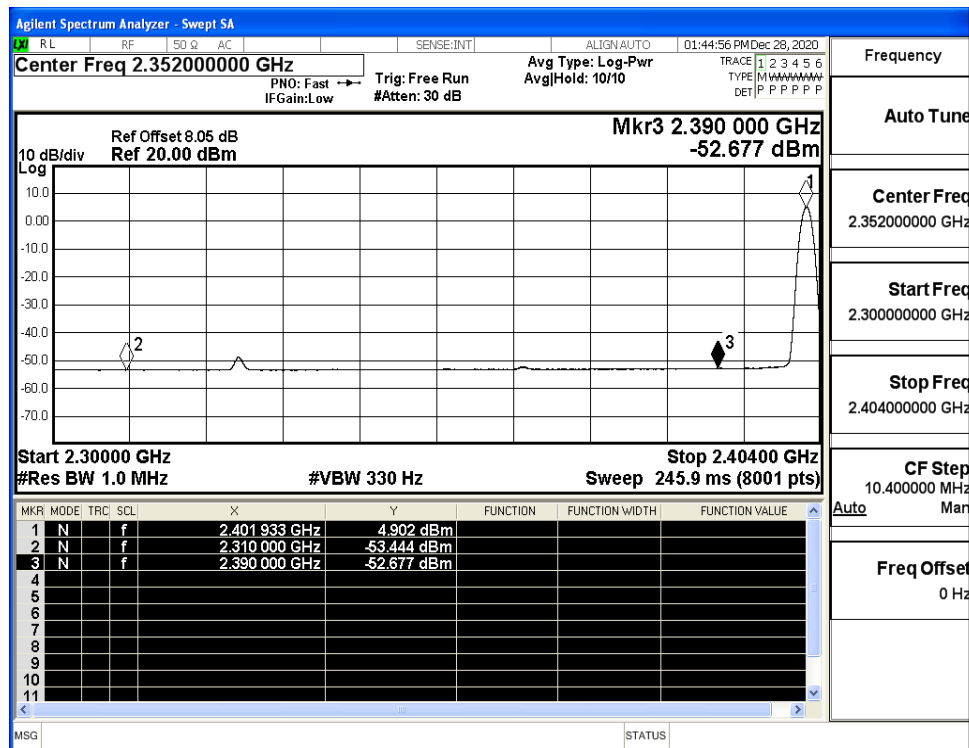
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.41	2.0	0	54.82	PEAK	74	PASS
	Off	2310.0	-53.44	2.0	0	43.79	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.68	2.0	0	44.55	AV	54	PASS
	Off	2483.5	-42.61	2.0	0	54.62	PEAK	74	PASS
	Off	2483.5	-51.83	2.0	0	45.40	AV	54	PASS
	Off	2500.0	-43.02	2.0	0	54.21	PEAK	74	PASS
	Off	2500.0	-52.31	2.0	0	44.92	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.90	2.0	0	54.33	PEAK	74	PASS
	Off	2310.0	-53.47	2.0	0	43.76	AV	54	PASS
	Off	2390.0	-42.54	2.0	0	54.69	PEAK	74	PASS
	Off	2390.0	-52.37	2.0	0	44.86	AV	54	PASS
	Off	2483.5	-38.85	2.0	0	58.38	PEAK	74	PASS
	Off	2483.5	-49.44	2.0	0	47.79	AV	54	PASS
	Off	2500.0	-42.80	2.0	0	54.43	PEAK	74	PASS
	Off	2500.0	-52.11	2.0	0	45.12	AV	54	PASS
8DPSK	Off	2310.0	-43.16	2.0	0	54.07	PEAK	74	PASS
	Off	2310.0	-53.42	2.0	0	43.81	AV	54	PASS
	Off	2390.0	-41.89	2.0	0	55.34	PEAK	74	PASS
	Off	2390.0	-52.49	2.0	0	44.74	AV	54	PASS
	Off	2483.5	-37.40	2.0	0	59.83	PEAK	74	PASS
	Off	2483.5	-49.04	2.0	0	48.19	AV	54	PASS
	Off	2500.0	-40.85	2.0	0	56.38	PEAK	74	PASS
	Off	2500.0	-51.91	2.0	0	45.32	AV	54	PASS

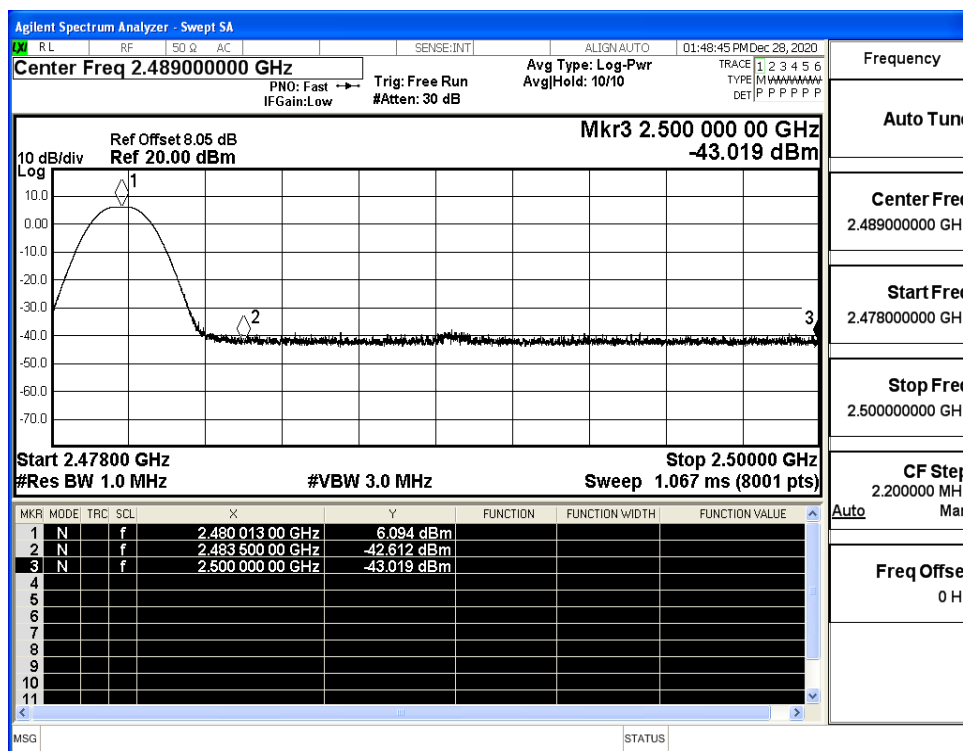
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



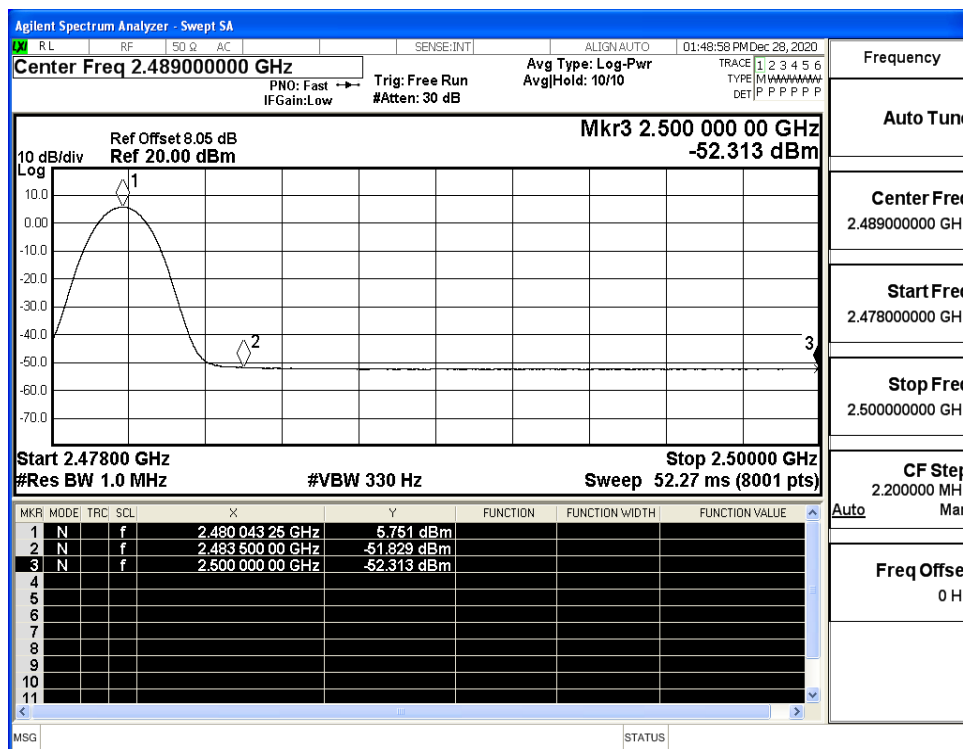
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

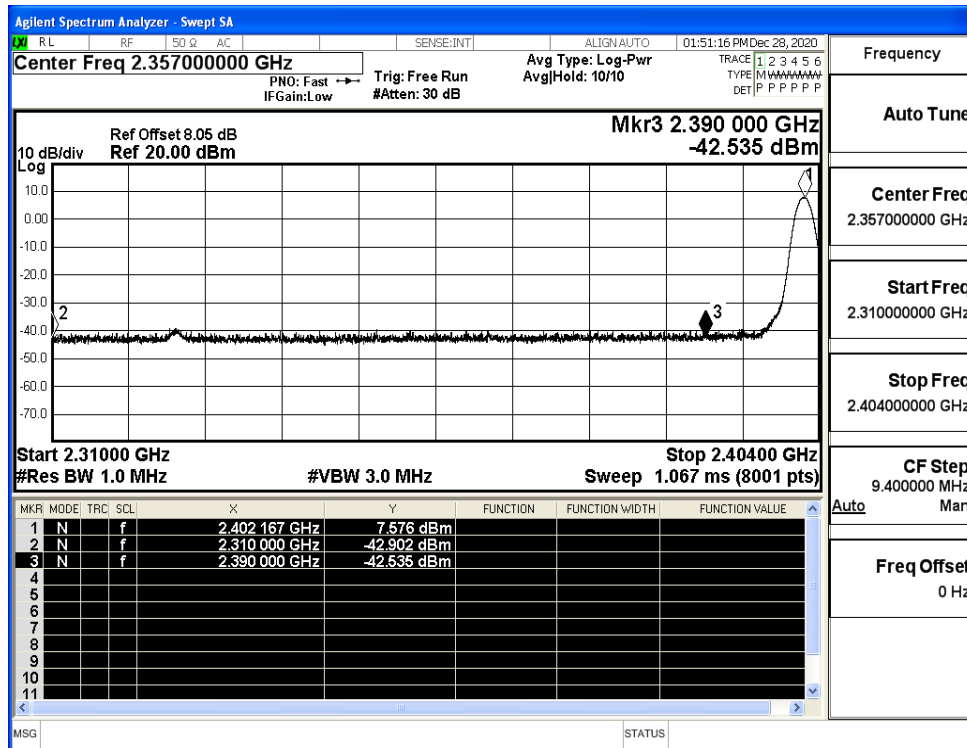
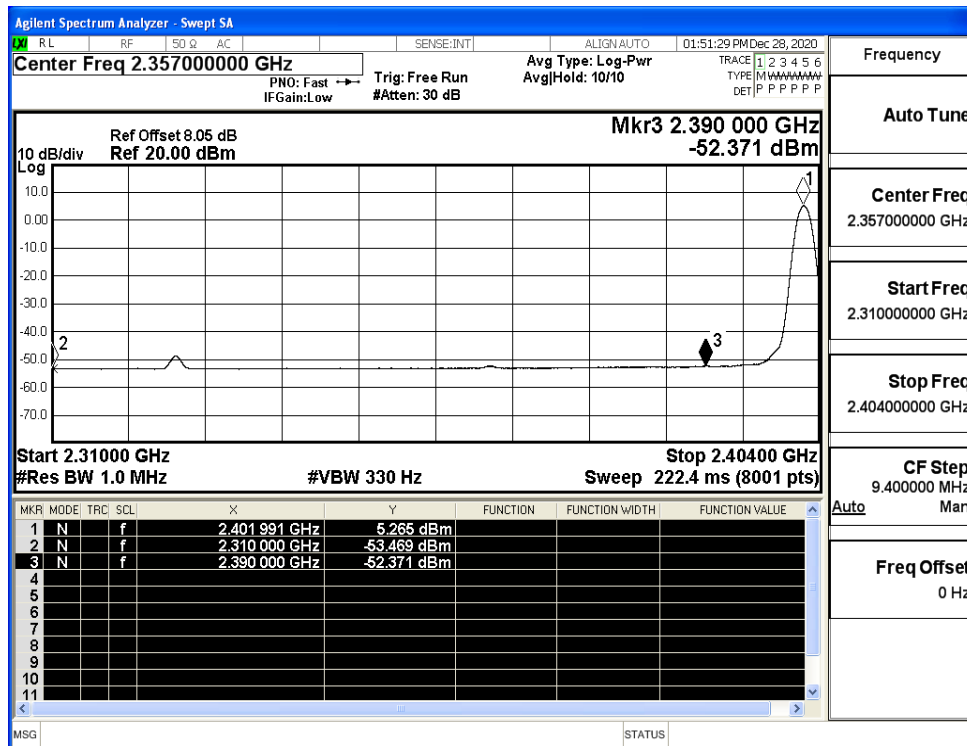


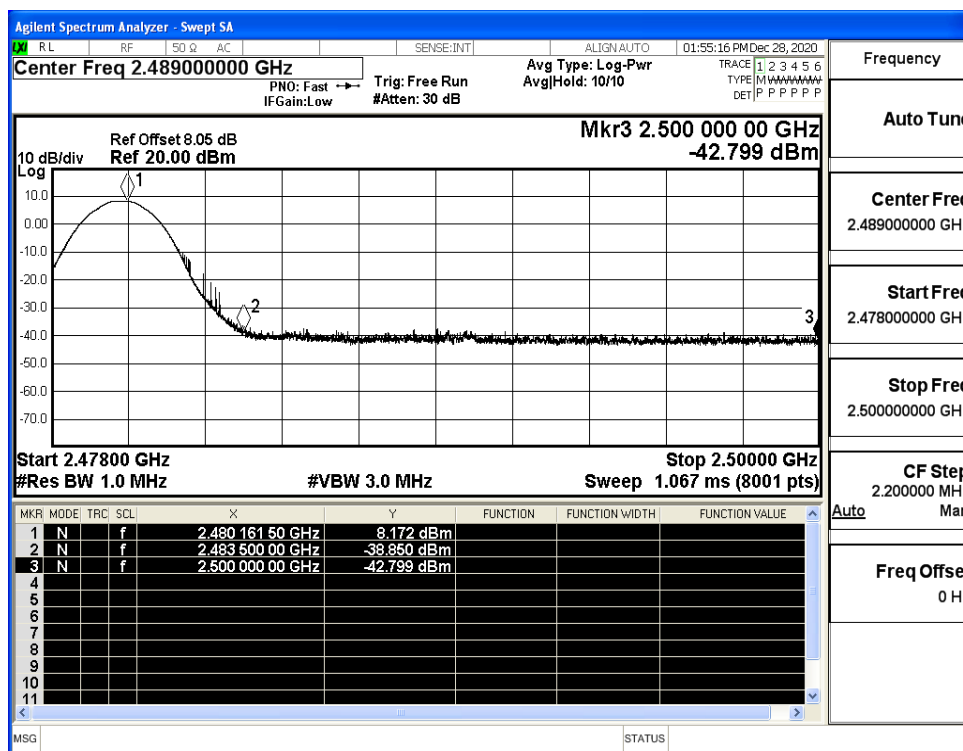
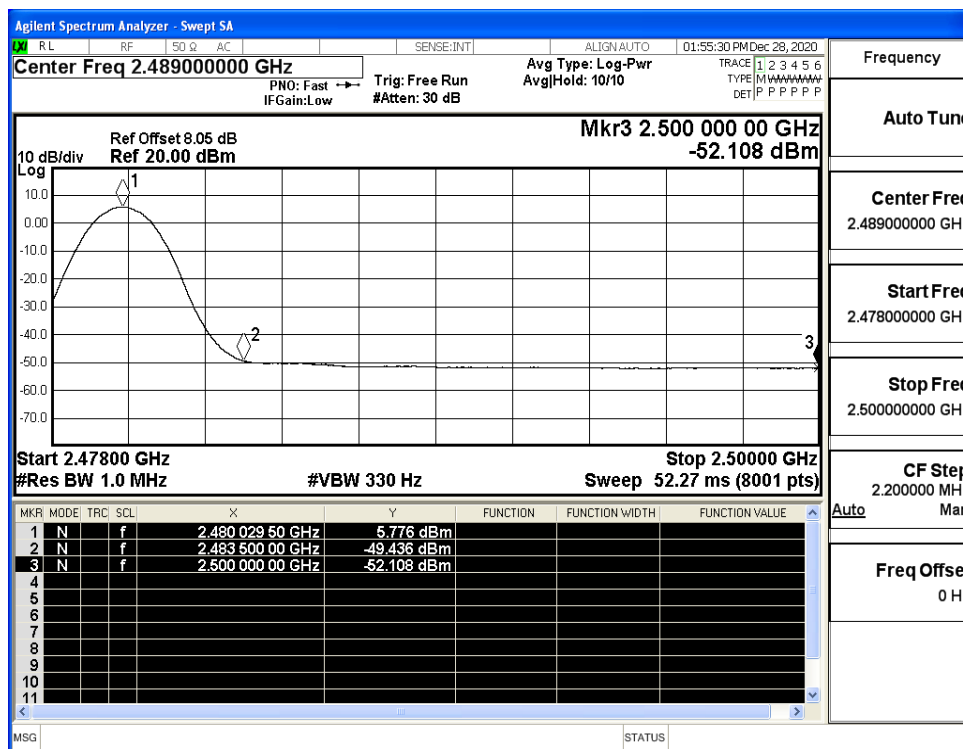
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



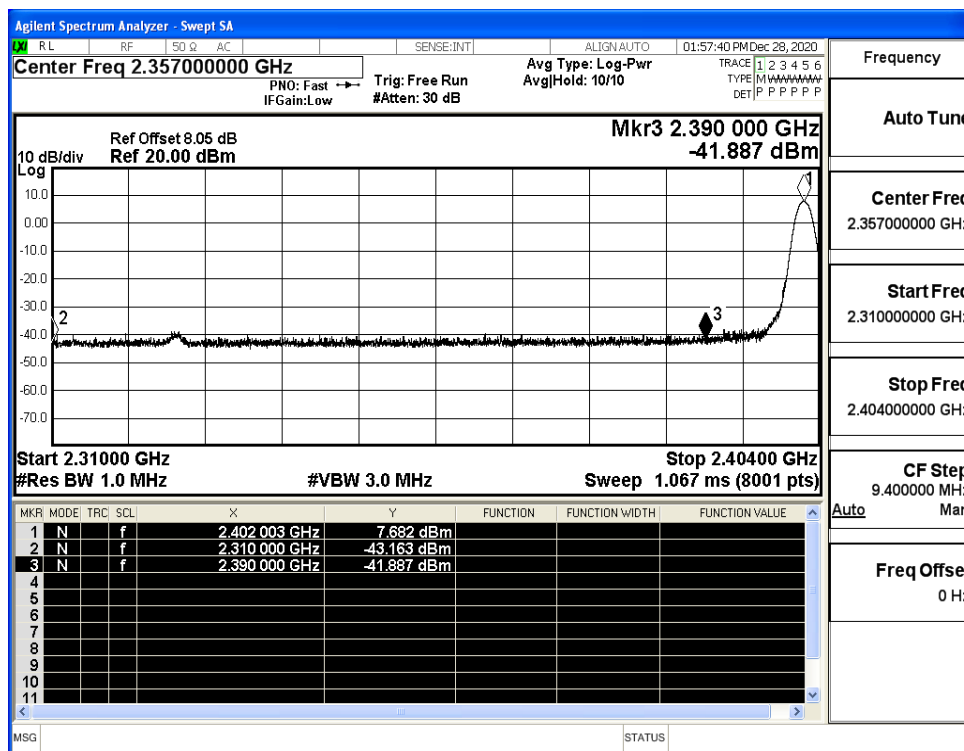
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



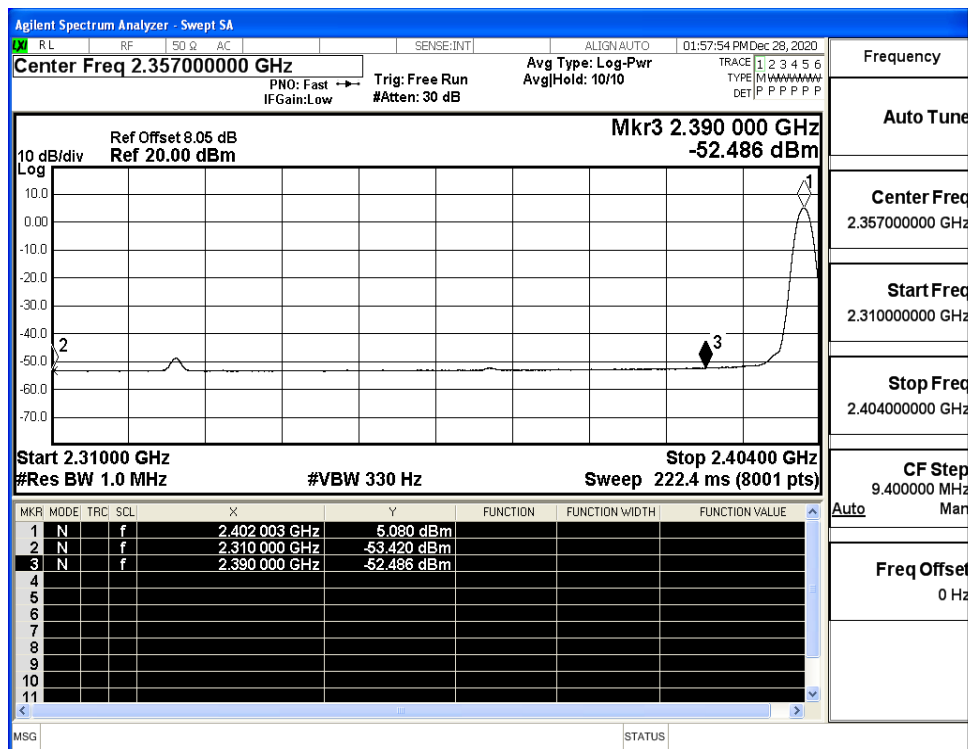
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

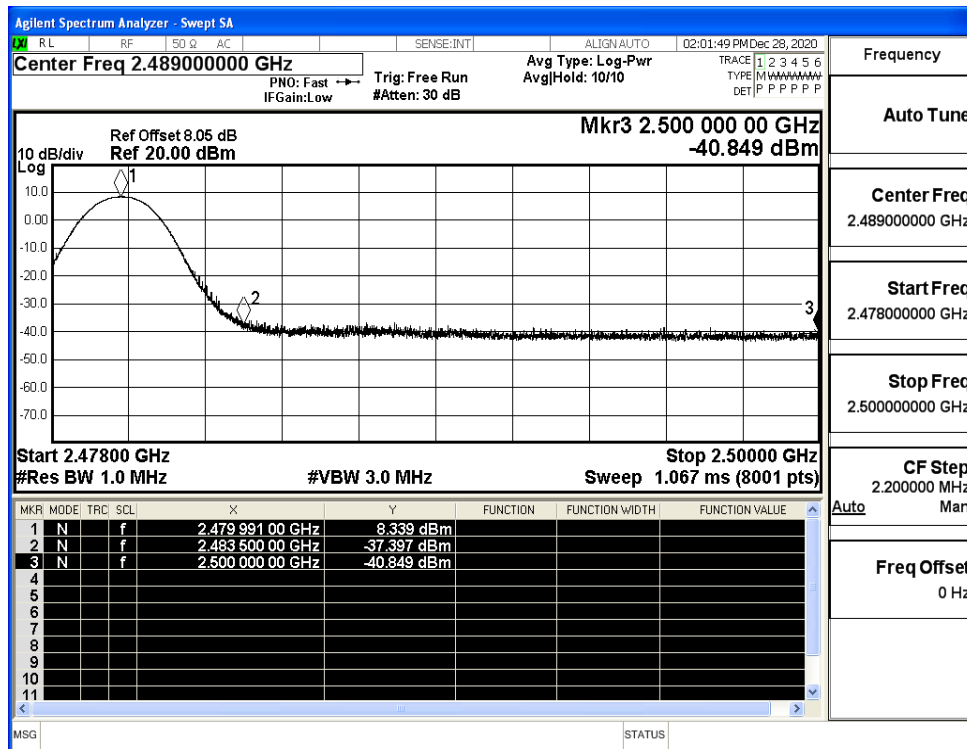
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

