

Appendix A
RF Test Data for BT V5.0(DSS) (Conducted Measurement)
Product Name: Wireless Keyboard
Trade Mark: Doking
Test Model: BD7603

Environmental Conditions

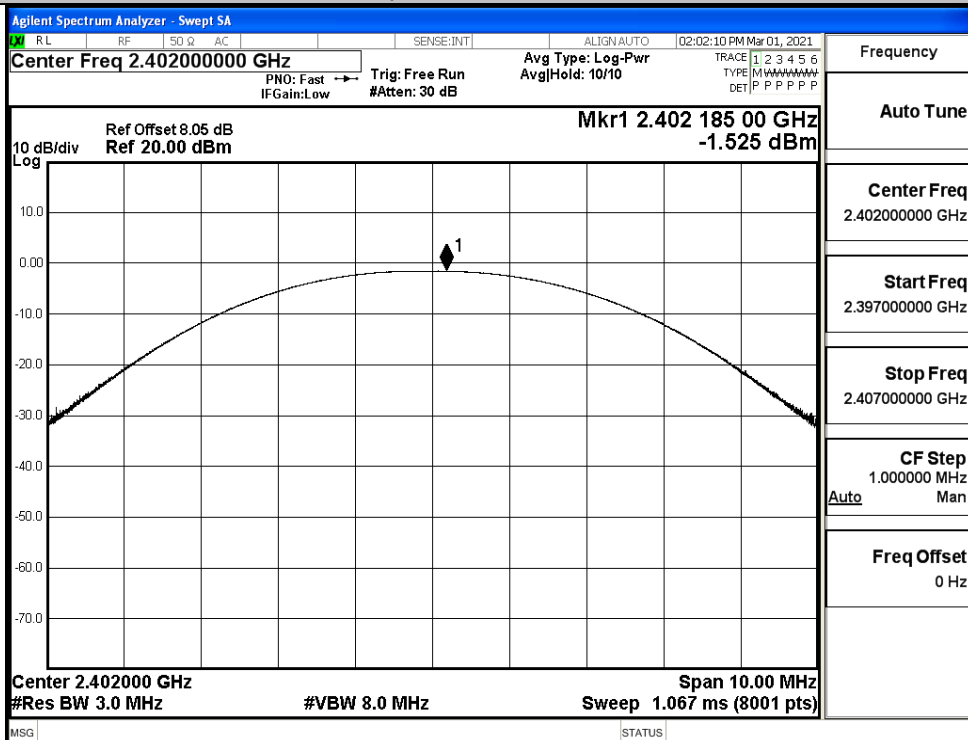
Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

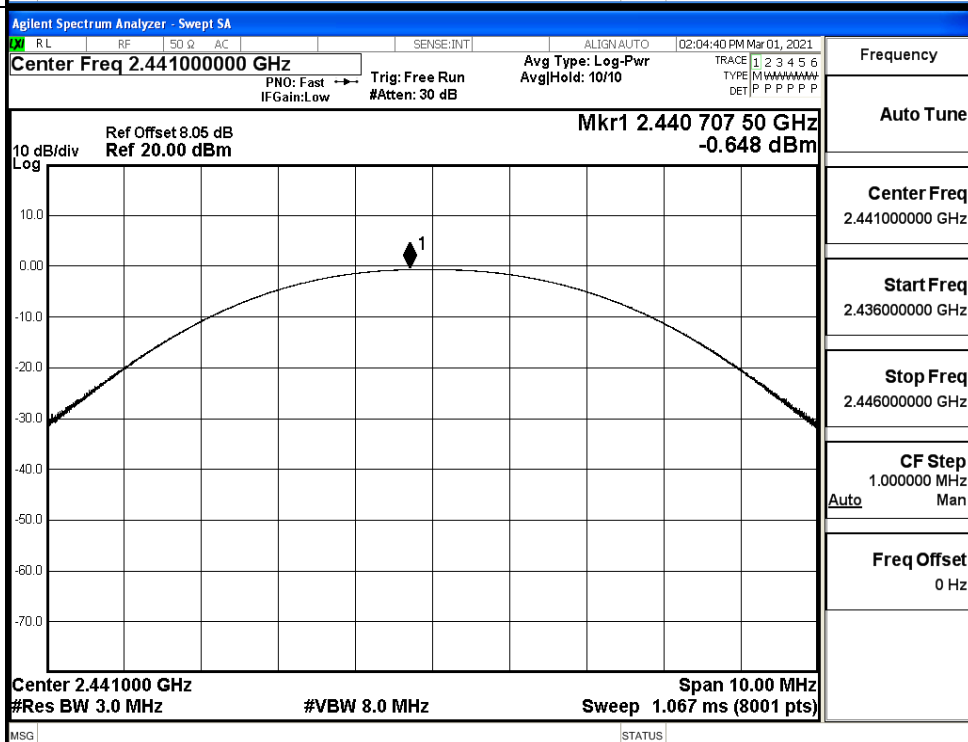
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.525	21	PASS
	MCH	-0.648	21	PASS
	HCH	-0.306	21	PASS
$\pi/4$ DQPSK	LCH	0.844	21	PASS
	MCH	1.632	21	PASS
	HCH	1.854	21	PASS
8DPSK	LCH	1.421	21	PASS
	MCH	2.237	21	PASS
	HCH	2.294	21	PASS

Test Graphs

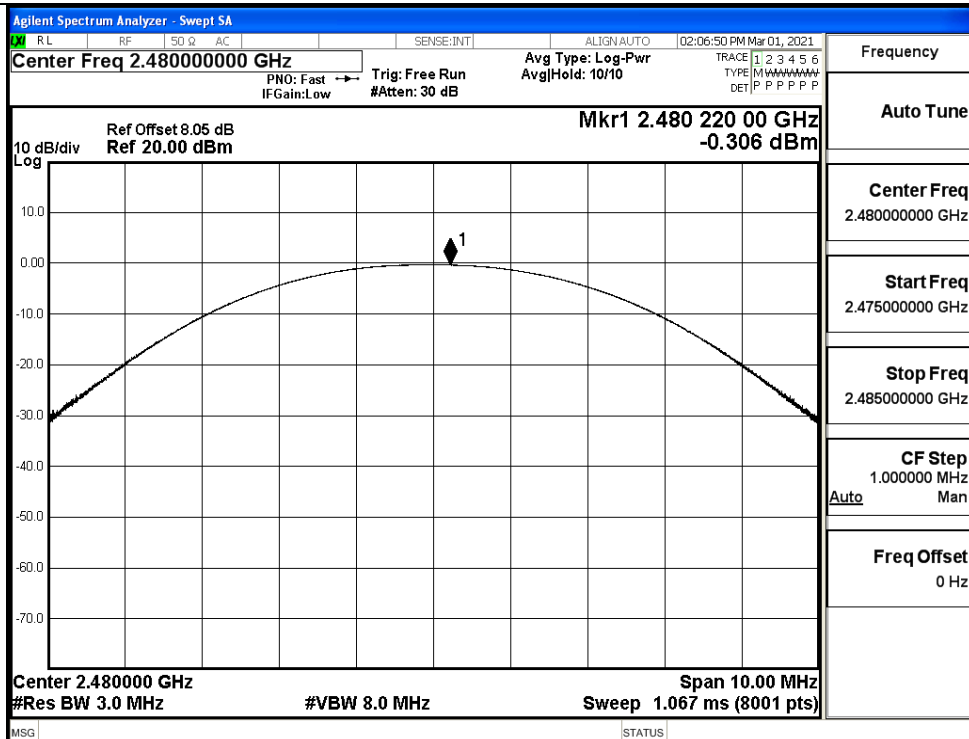
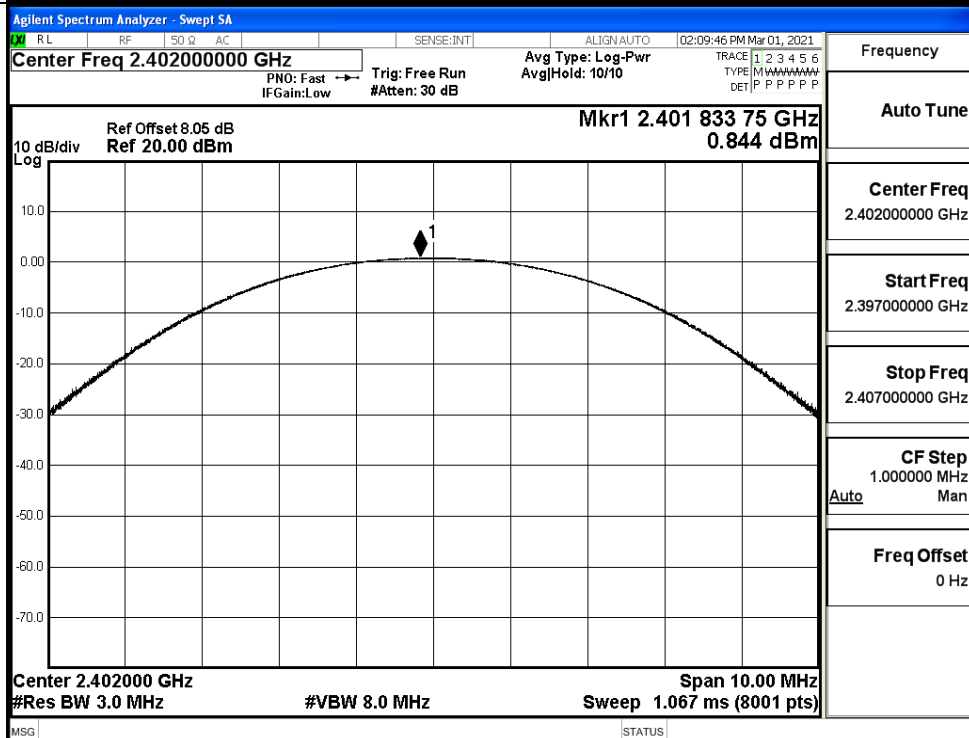
GFSK/LCH

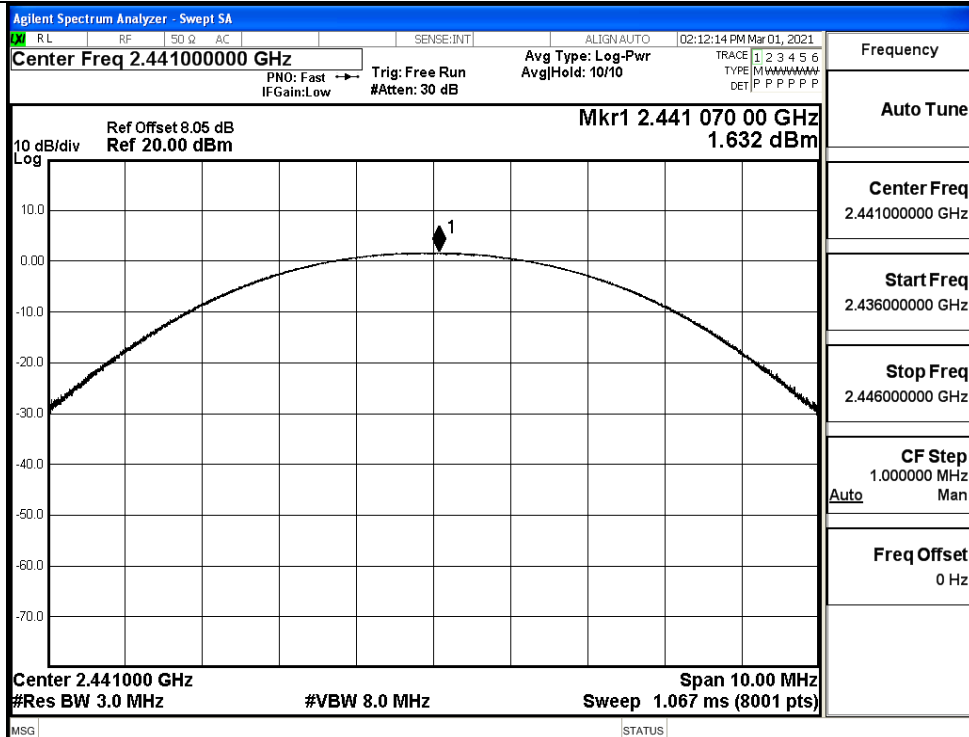
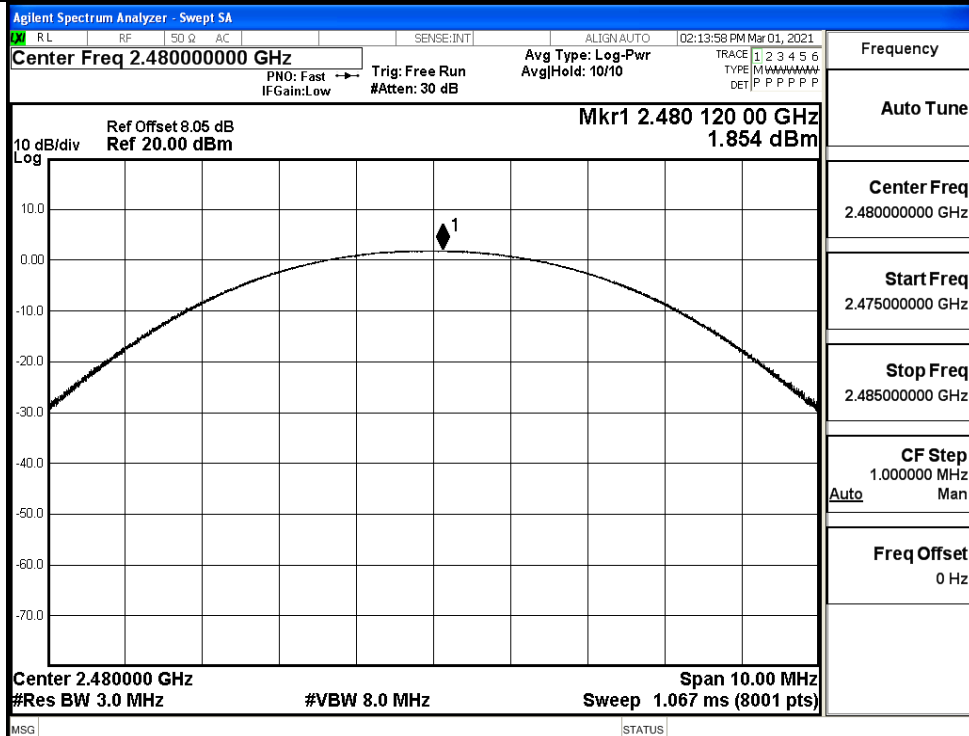


GFSK/MCH

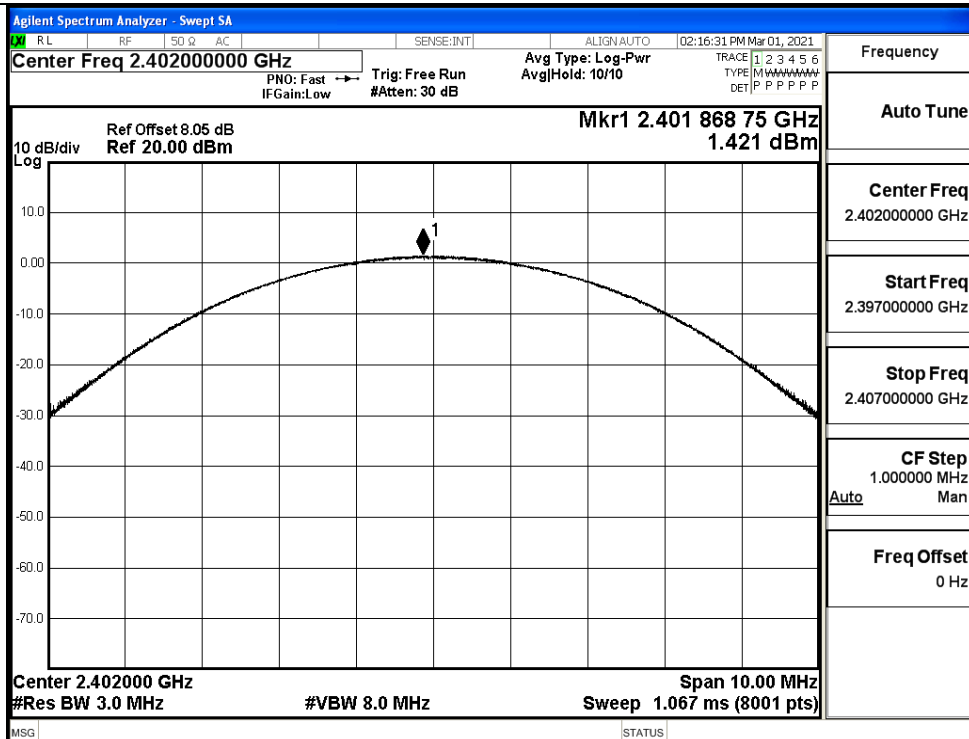


GFSK/HCH

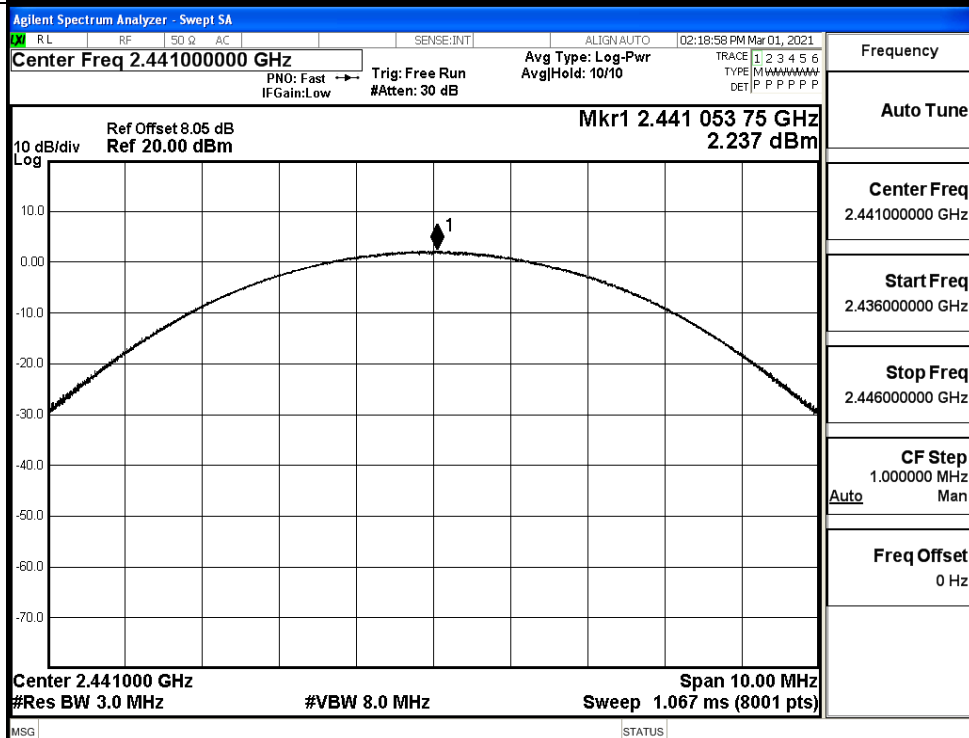
 π /4DQPSK/LCH

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

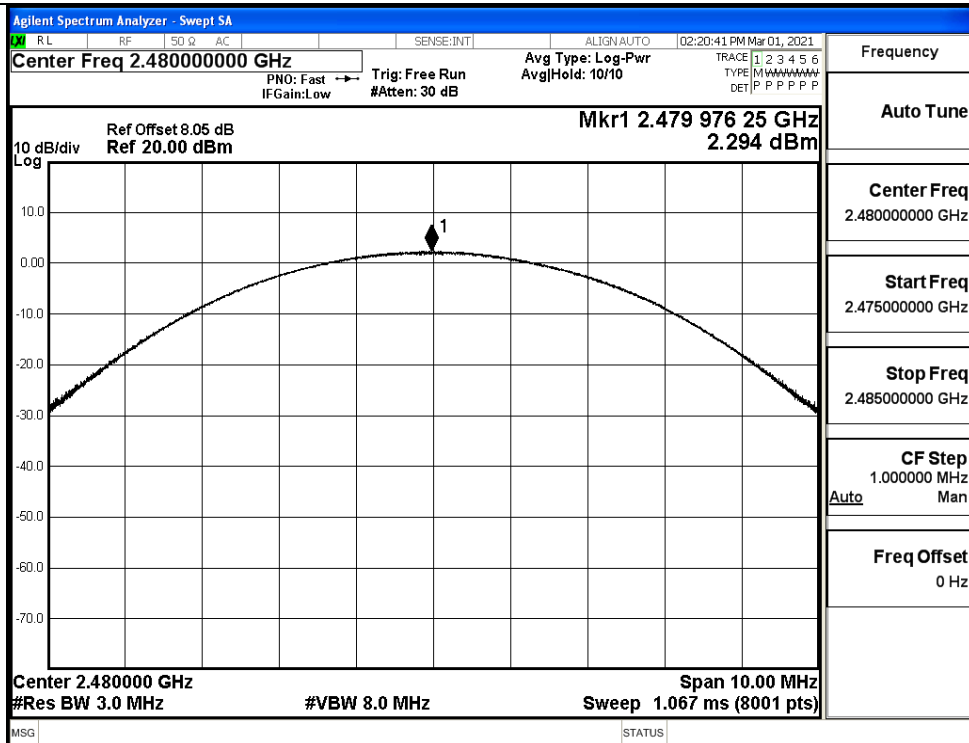
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

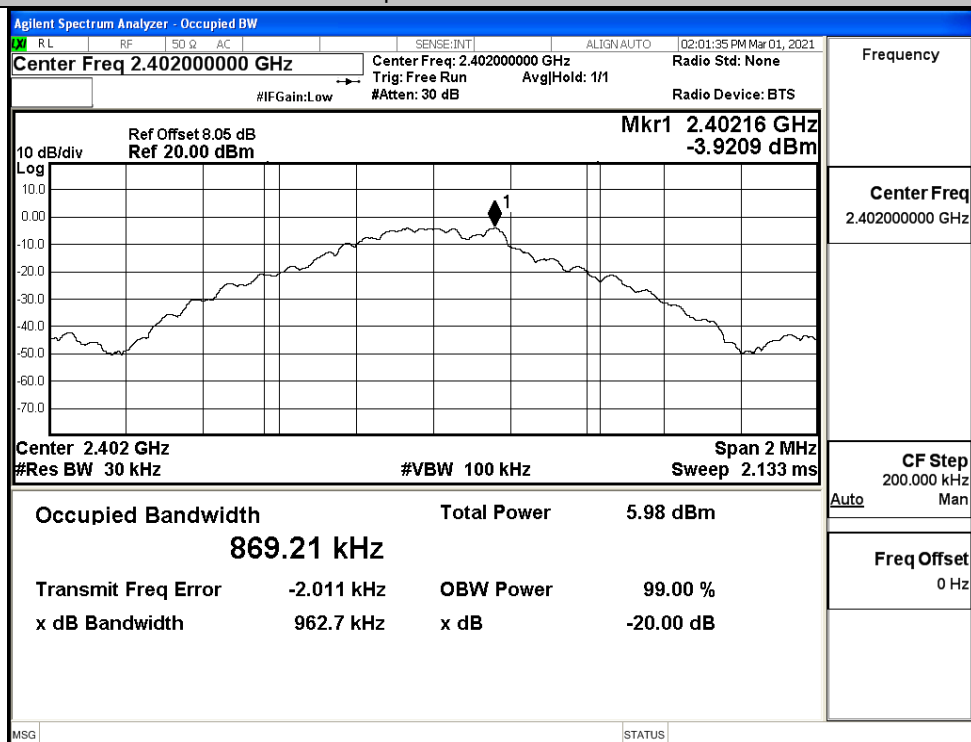


A.2 20dB Bandwidth

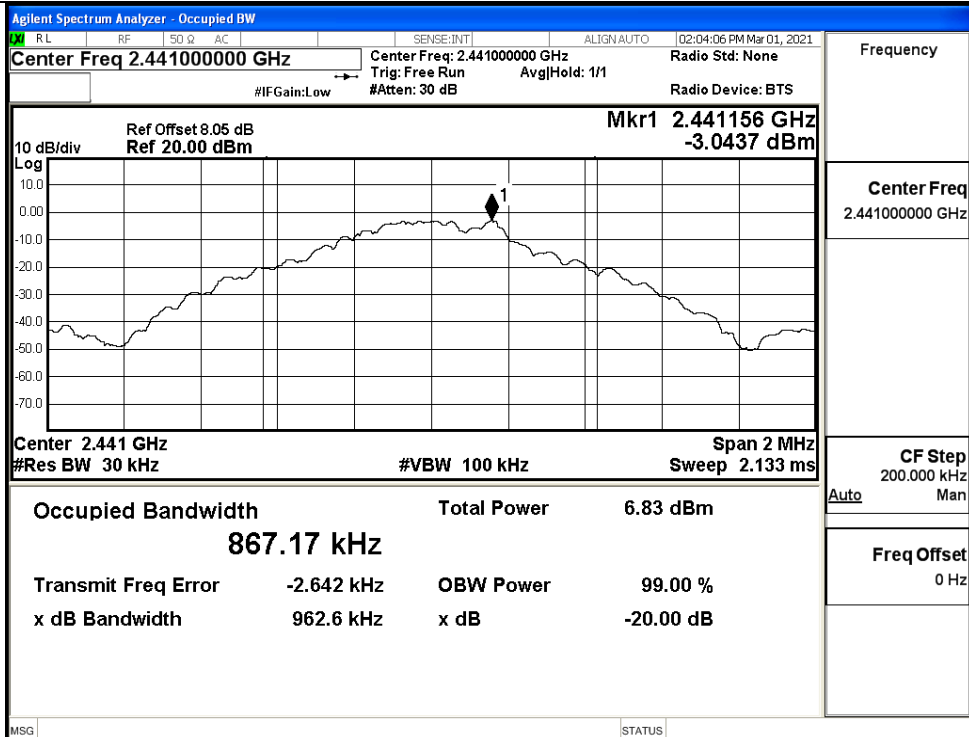
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9627	Not Specified	PASS
	MCH	0.9626	Not Specified	PASS
	HCH	0.9648	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.336	Not Specified	PASS
	MCH	1.336	Not Specified	PASS
	HCH	1.334	Not Specified	PASS
8DPSK	LCH	1.309	Not Specified	PASS
	MCH	1.310	Not Specified	PASS
	HCH	1.311	Not Specified	PASS

Test Graphs

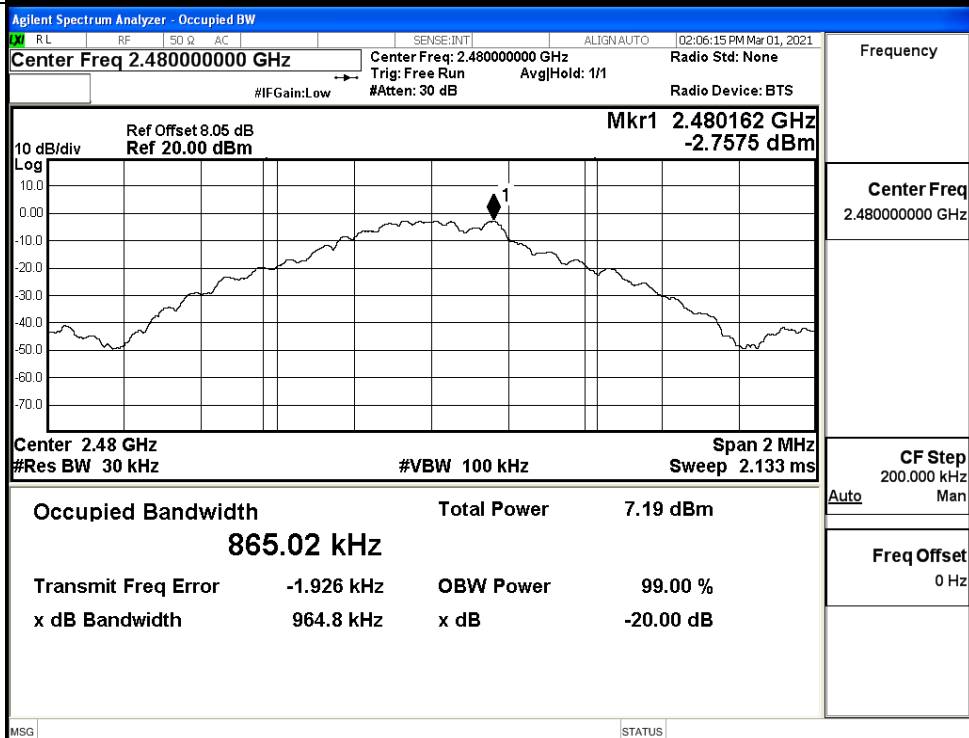
GFSK/LCH

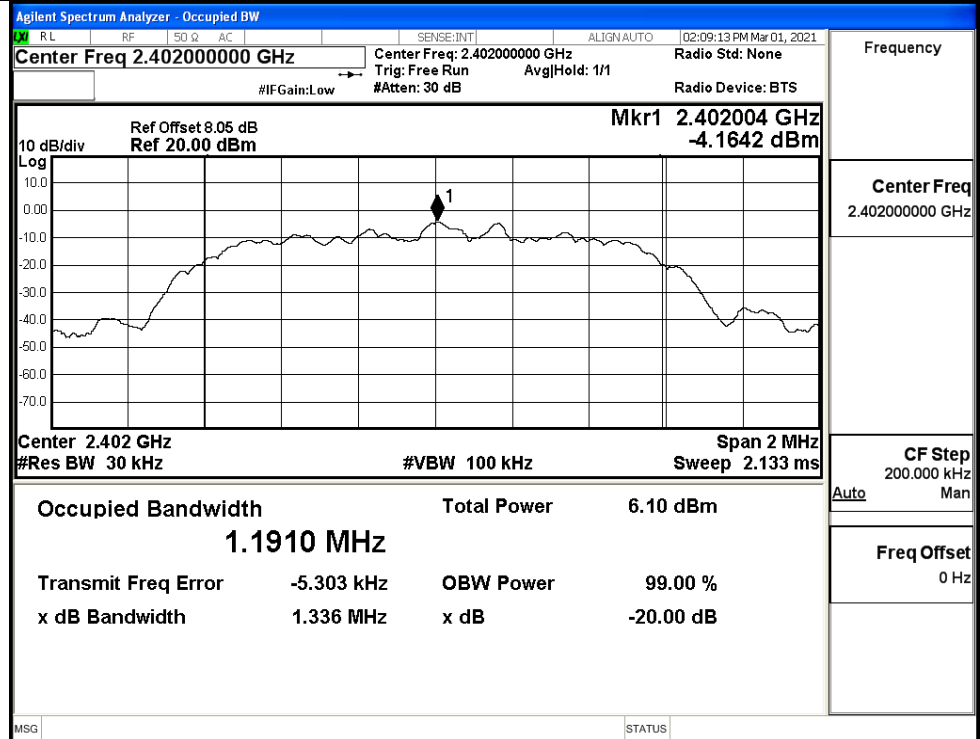
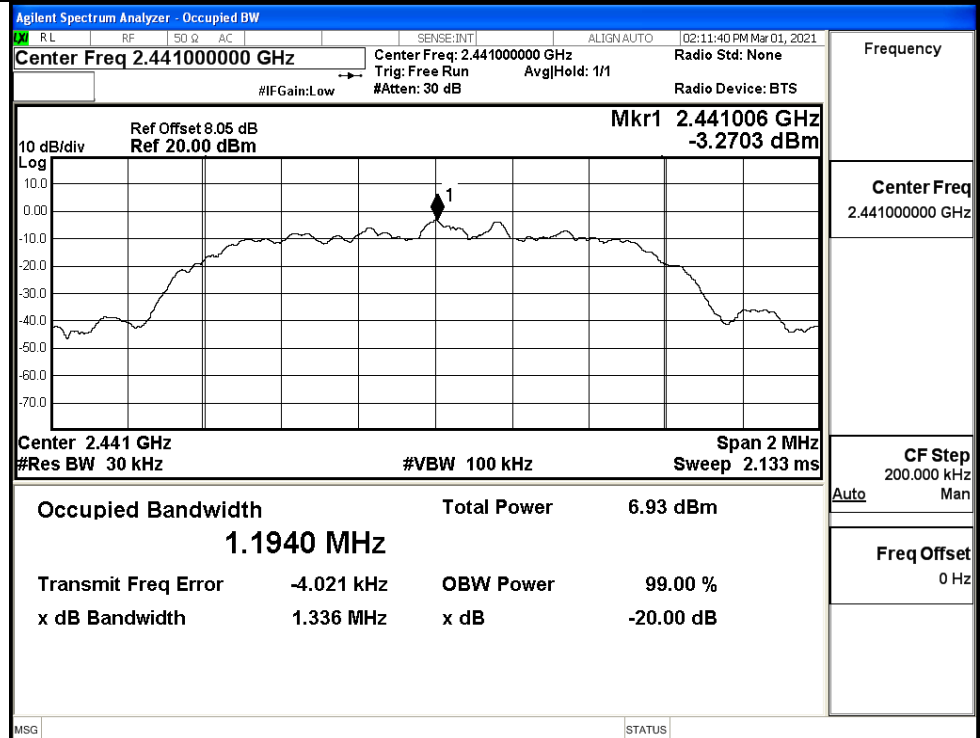


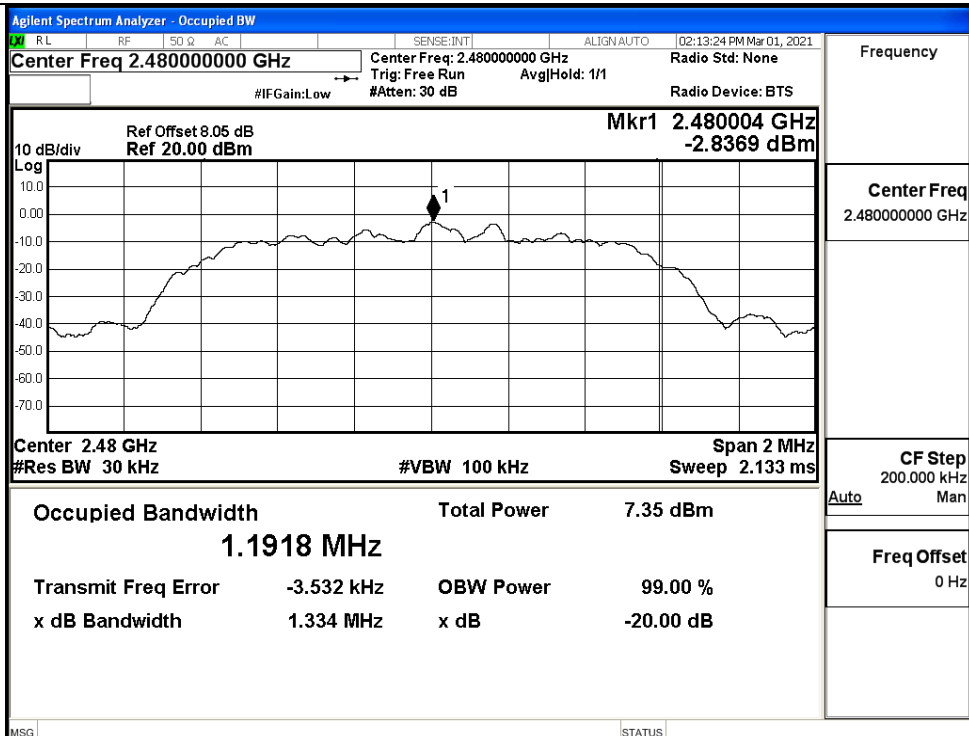
GFSK/MCH



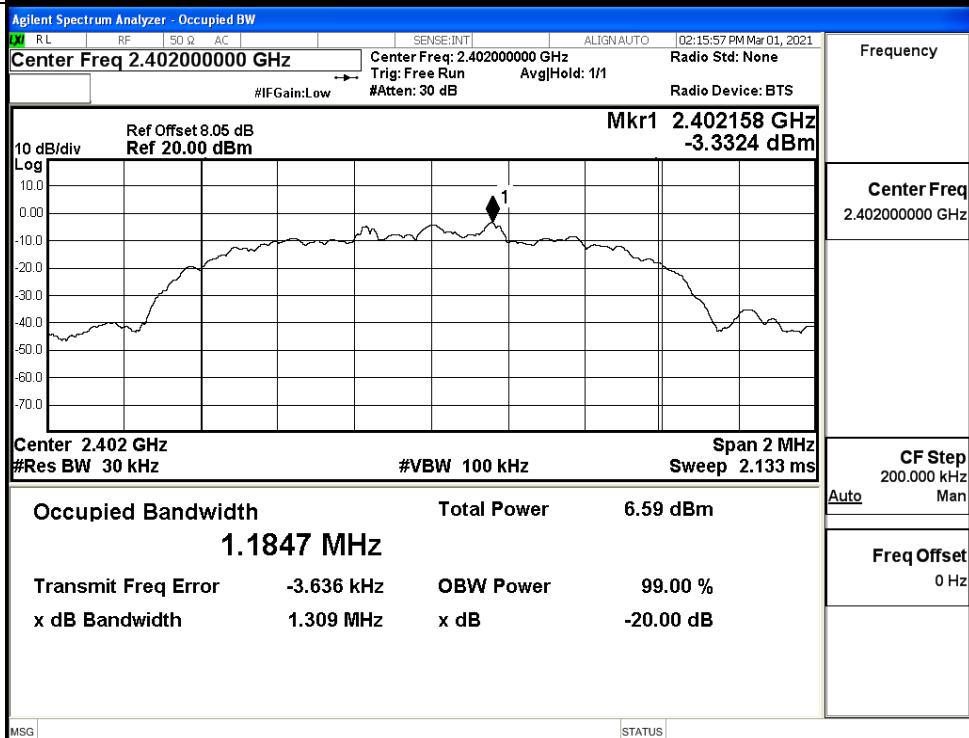
GFSK/HCH



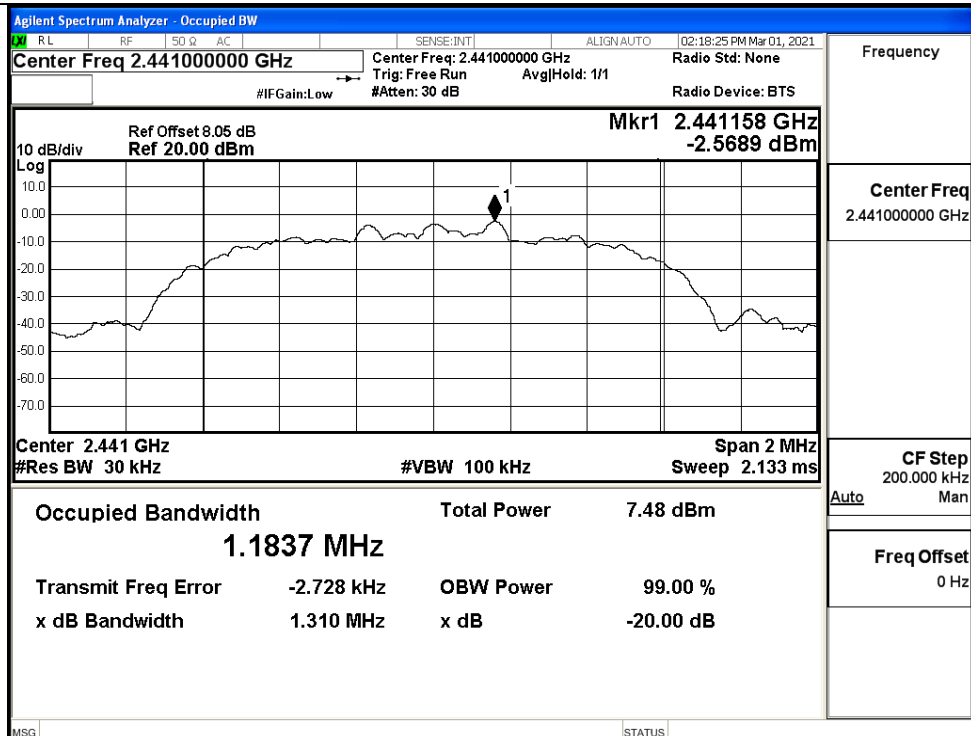
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

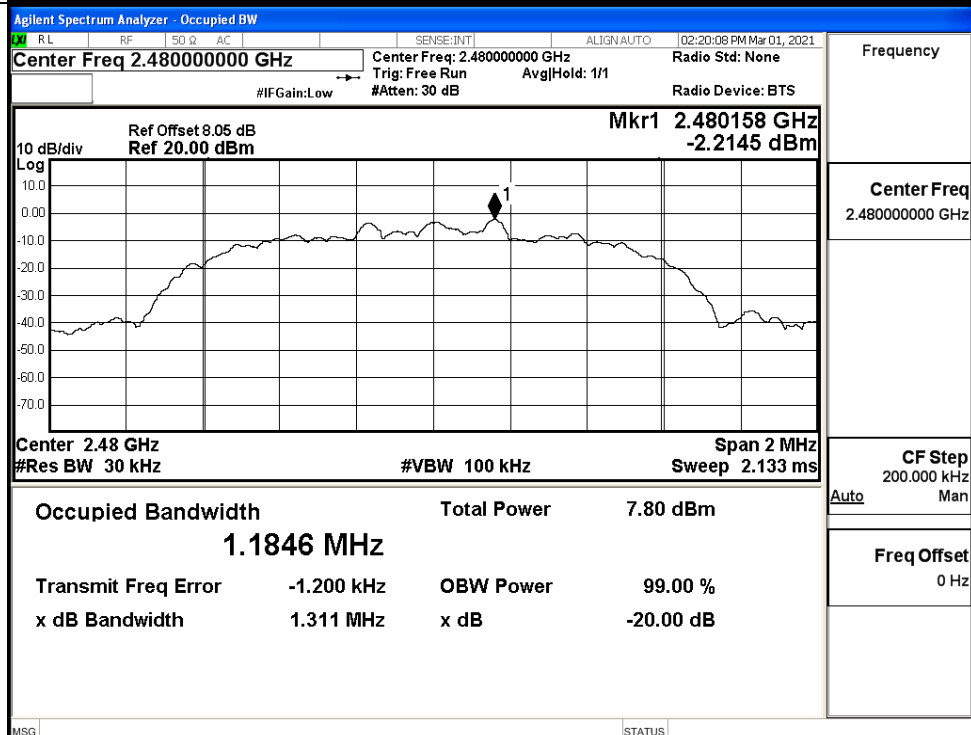
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.910	0.643	PASS
	MCH	0.860	0.643	PASS
	HCH	0.992	0.643	PASS
$\pi/4$ DQPSK	LCH	1.150	0.891	PASS
	MCH	1.040	0.891	PASS
	HCH	1.072	0.891	PASS
8DPSK	LCH	1.002	0.874	PASS
	MCH	1.020	0.874	PASS
	HCH	1.308	0.874	PASS

Test Graphs

Agilent Spectrum Analyzer - Swept SA

RL	RF	SQ	AC	SENSE:INT	ALIGN:AUTO	02:23:57 PM Mar 01, 2021
Center Freq 2.402500000 GHz	PNO: Wide →	Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE [M] W W W W W W W DET [P] P P P P P P		
IF Gain: Low	#Atten: 30 dB	Avg Hold: 10/10				

**Ref Offset 8.05 dB
Ref 20.00 dBm**

**ΔMkr1 909.75 kHz
-0.071 dB**

**Start 2.401500 GHz
#Res BW 100 kHz**

**Stop 2.403500 GHz
Sweep 1.067 ms (8001 pts)**

#VBW 300 kHz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ2	f	(Δ)	909.75 kHz (Δ)	-0.071 dB			
2	F	f		2.40214225 GHz	-2.471 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

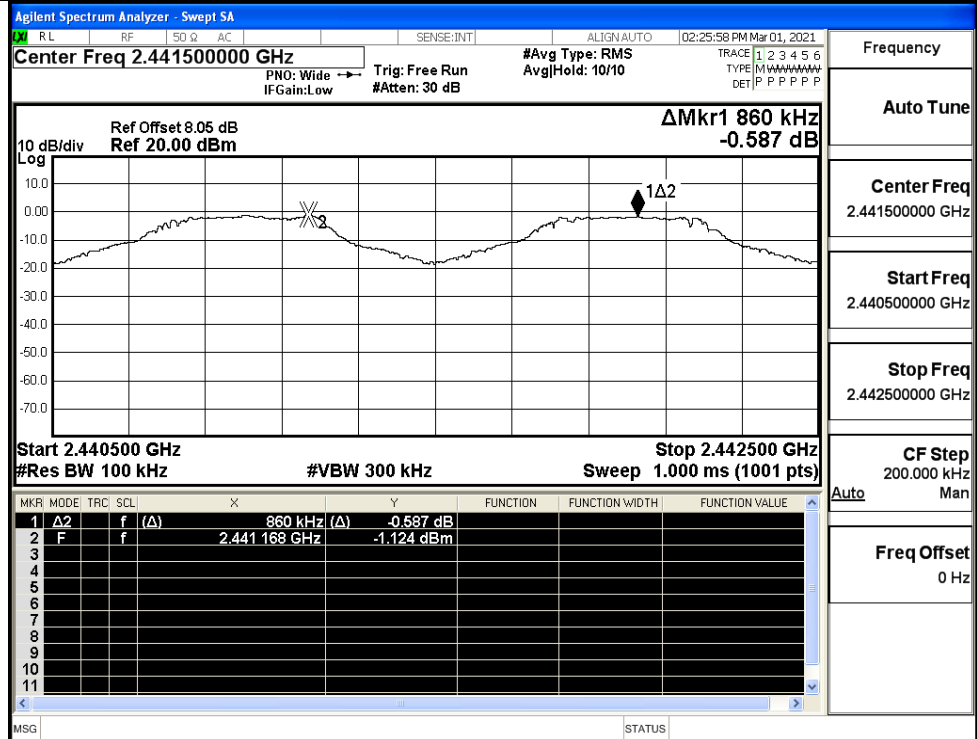
Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

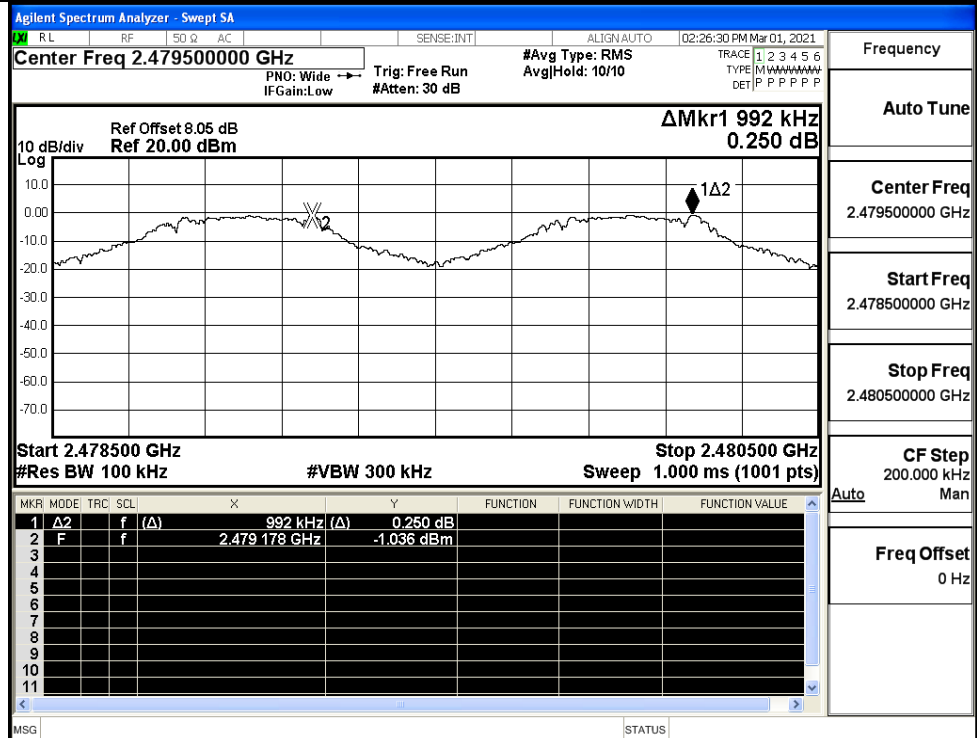
Auto Man

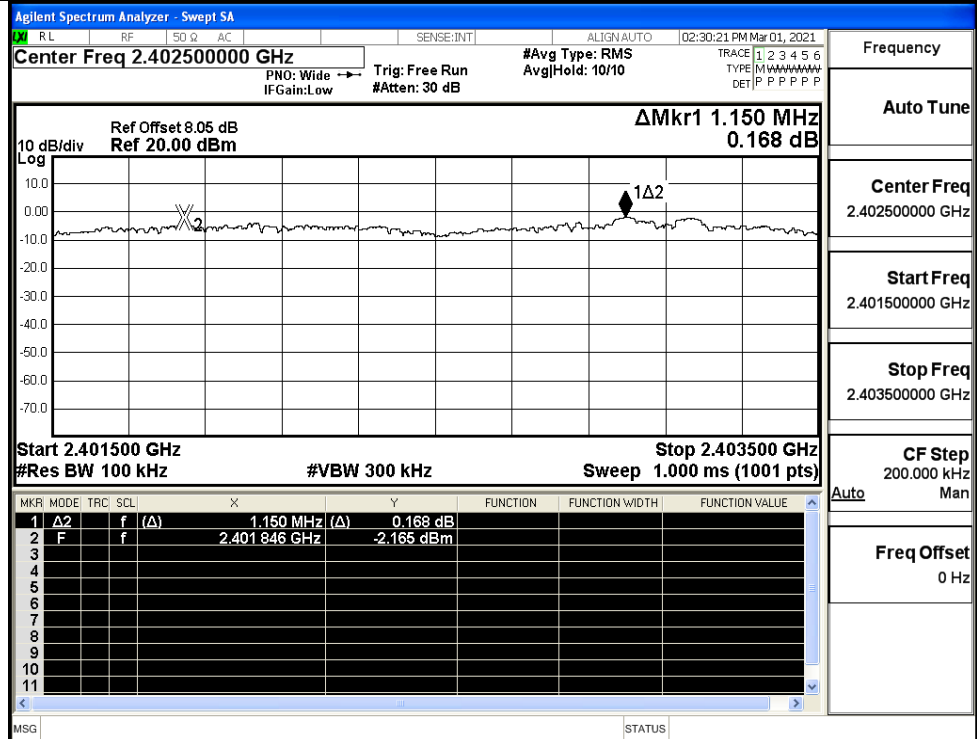
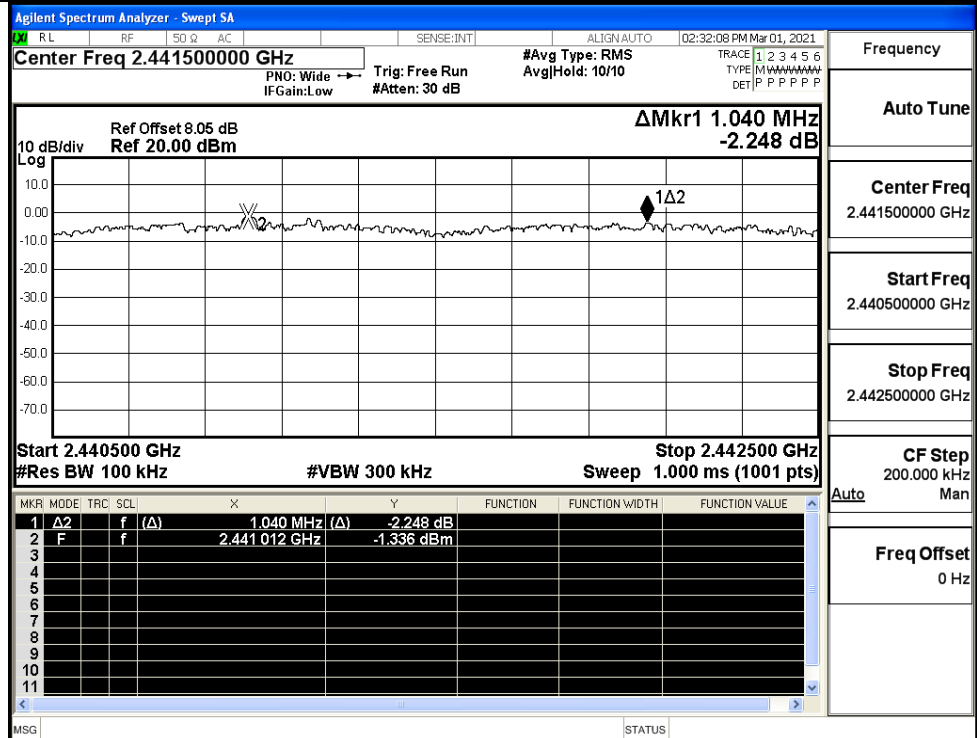
Freq Offset
0 Hz

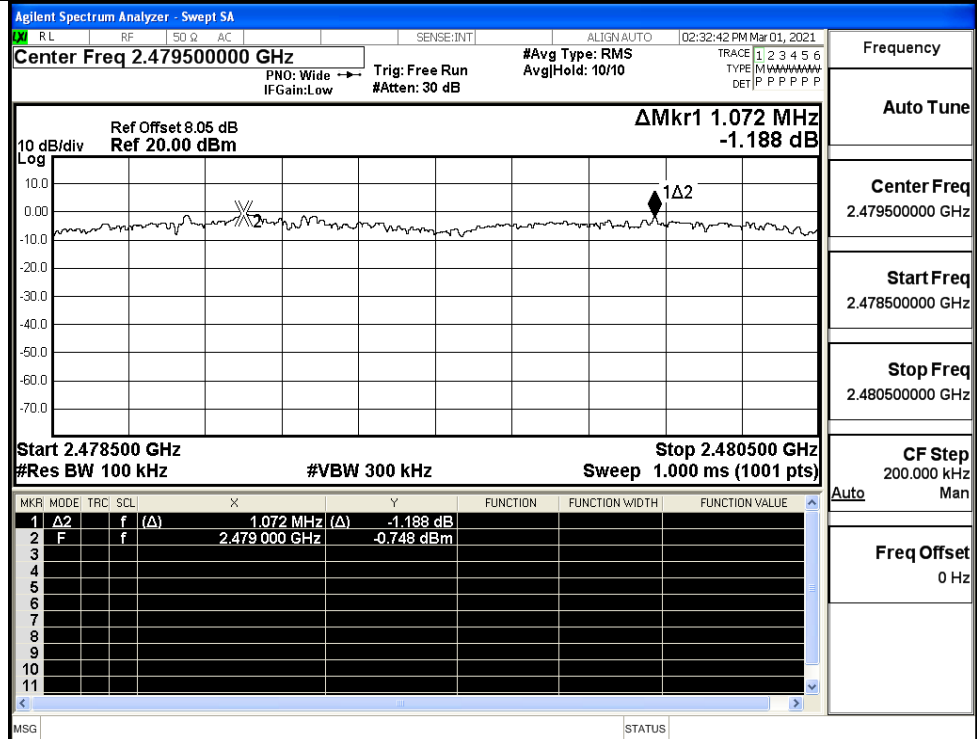
GFSK/MCH



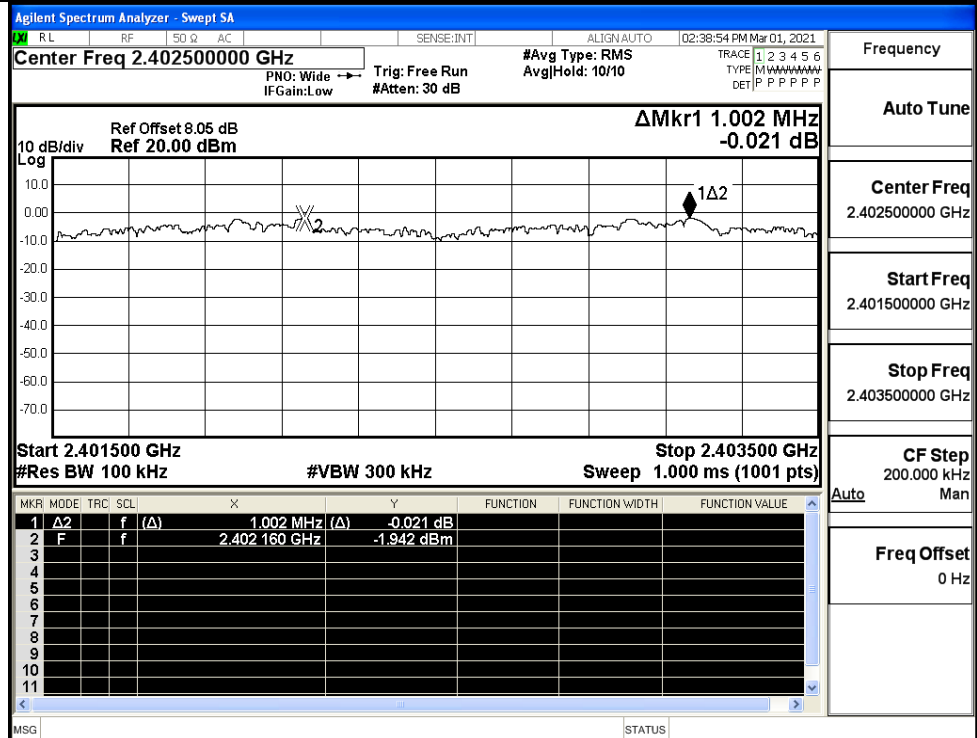
GFSK/HCH



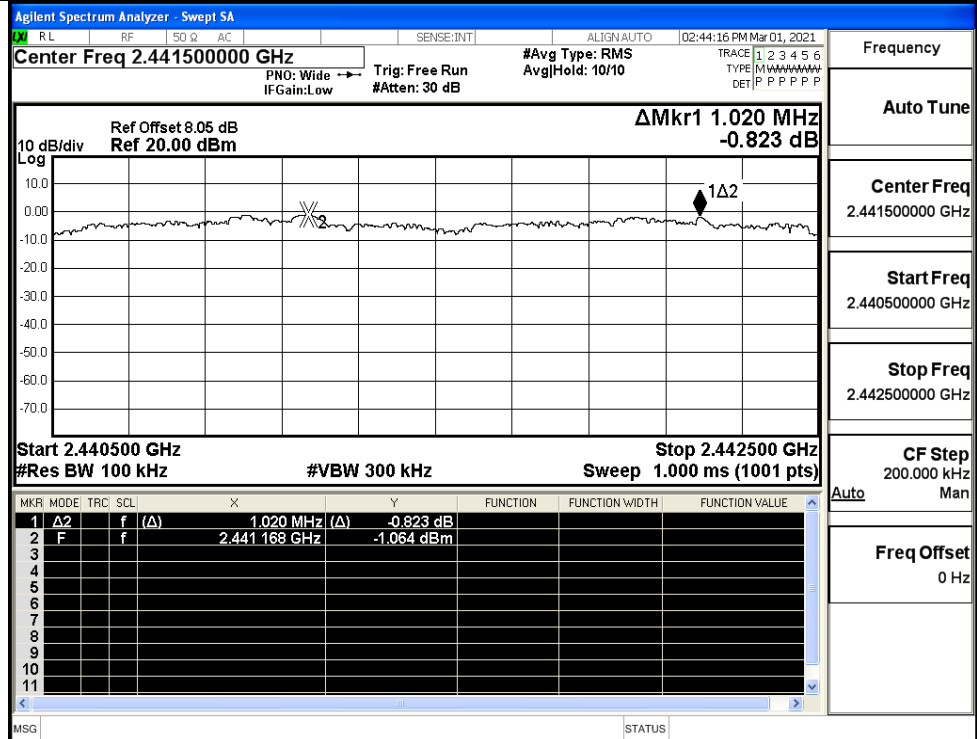
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

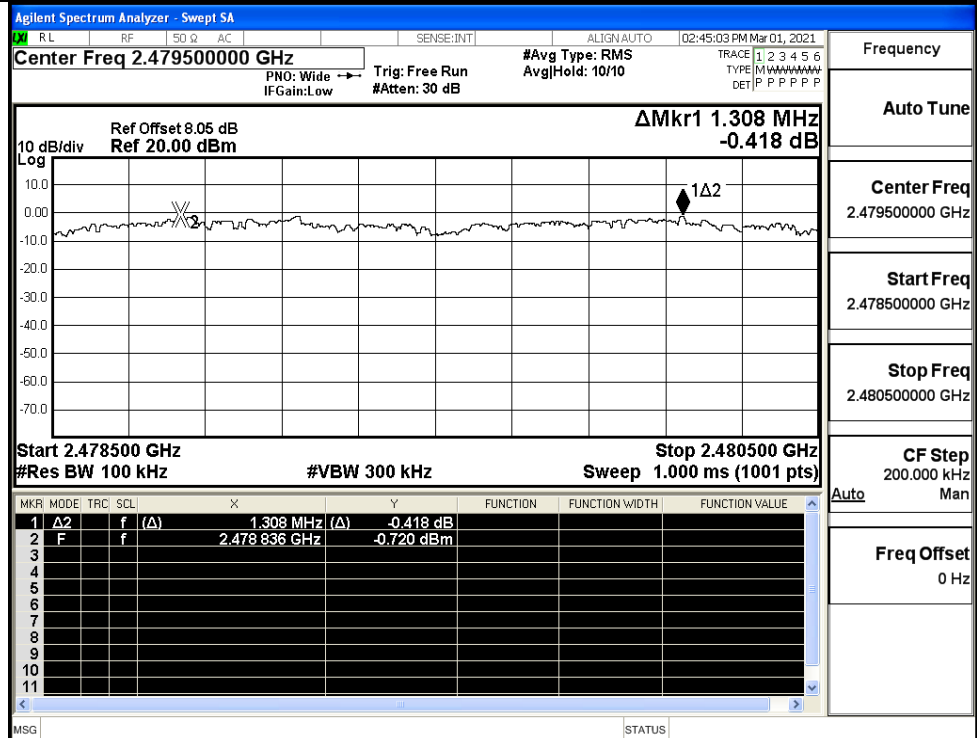
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

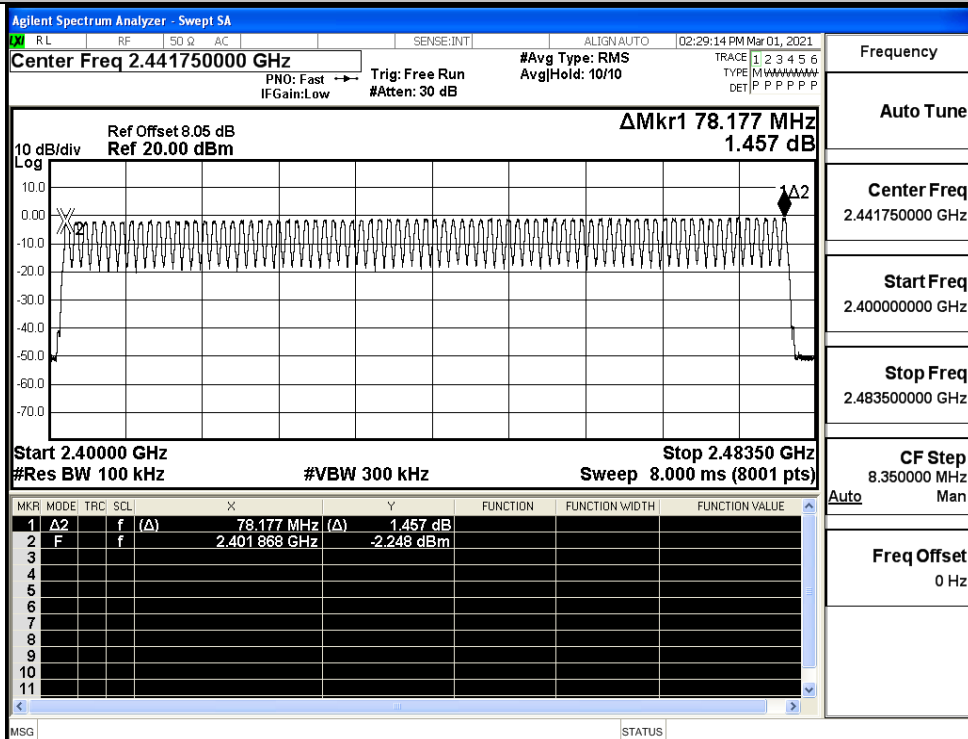
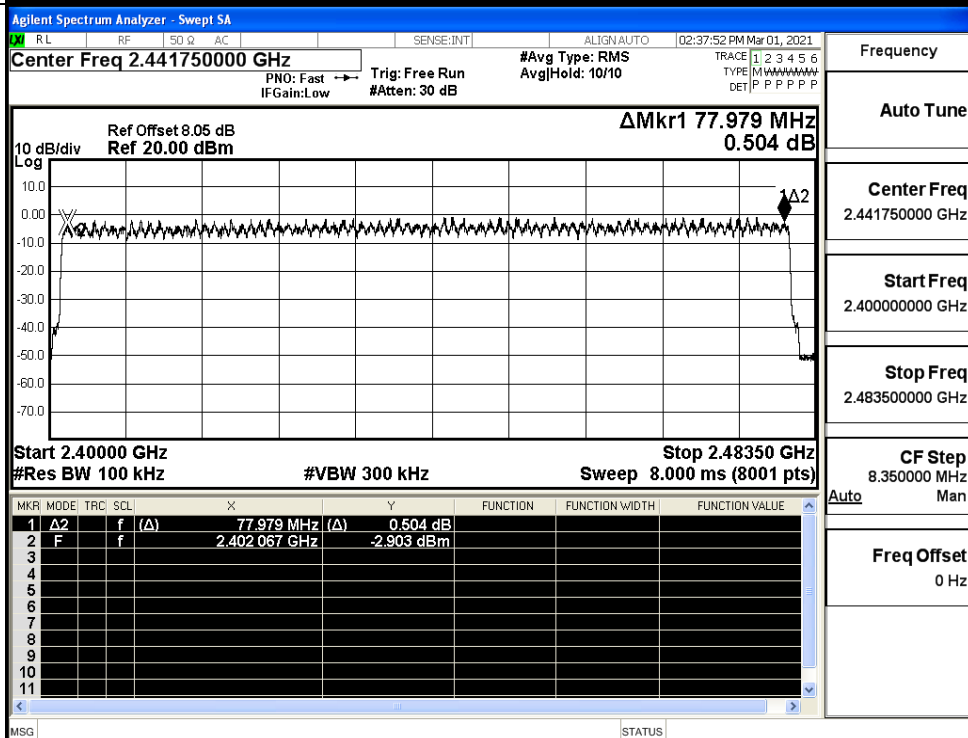


A.4 Hopping Channel Number

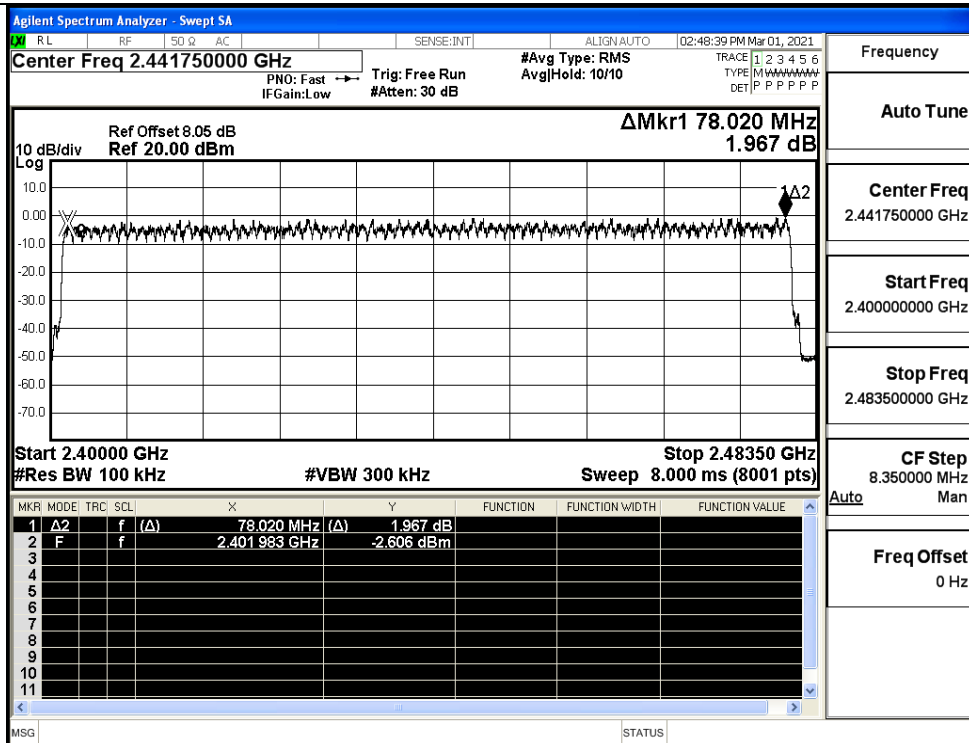
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

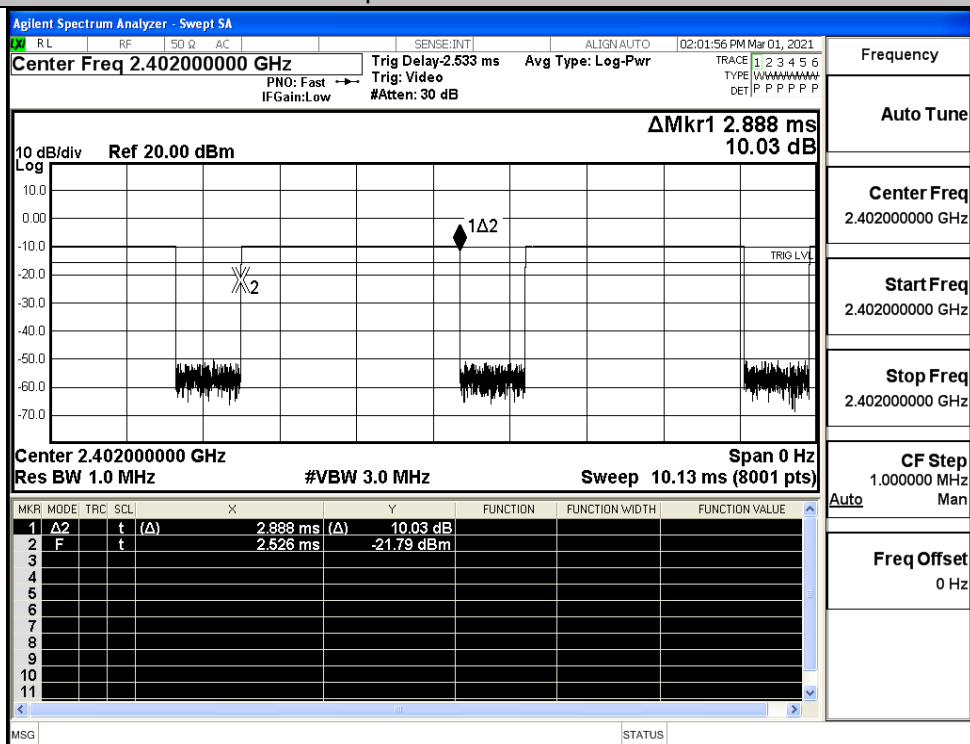


A.5 Dwell Time

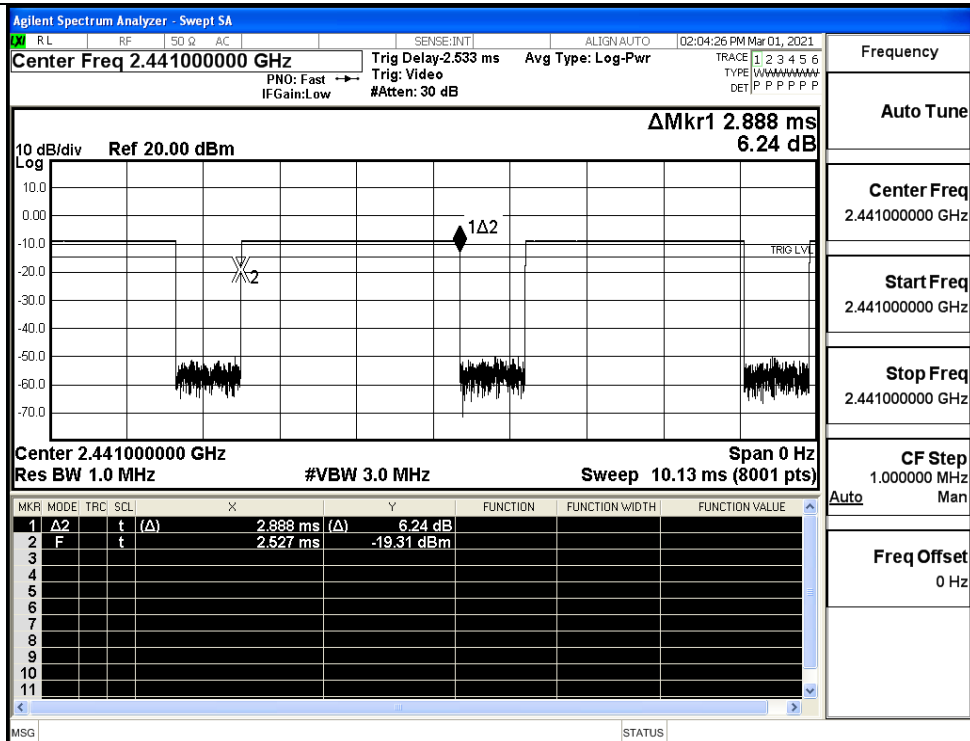
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.308	0.4	PASS
	2DH5	MCH	2.89	106.7	0.308	0.4	PASS
	2DH5	HCH	2.89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

Test Graphs

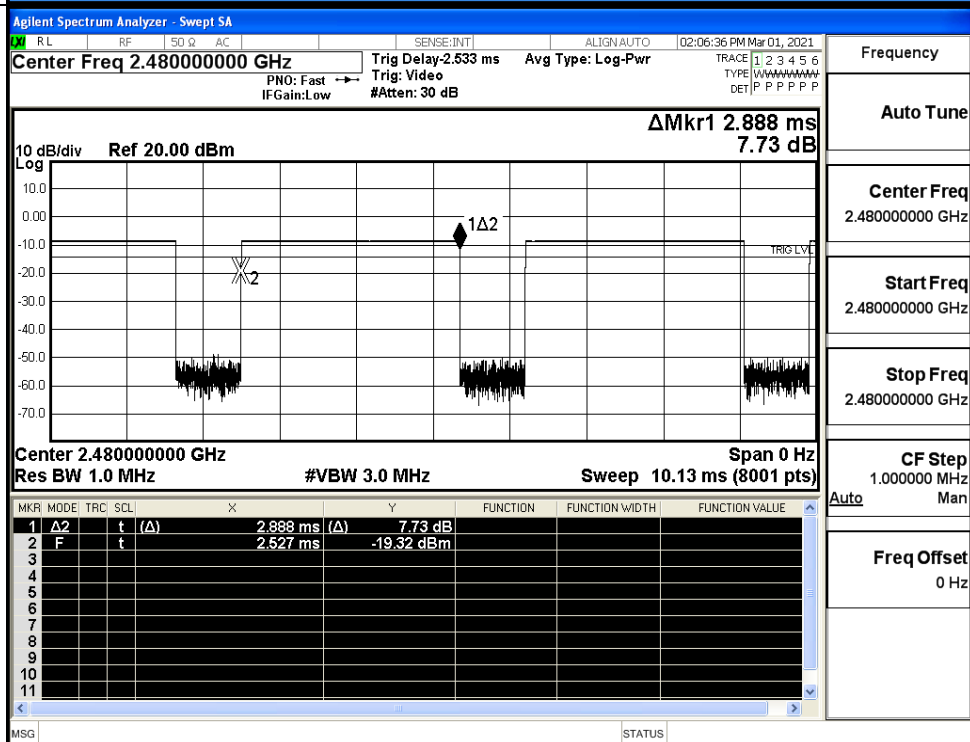
GFSK_DH5/LCH



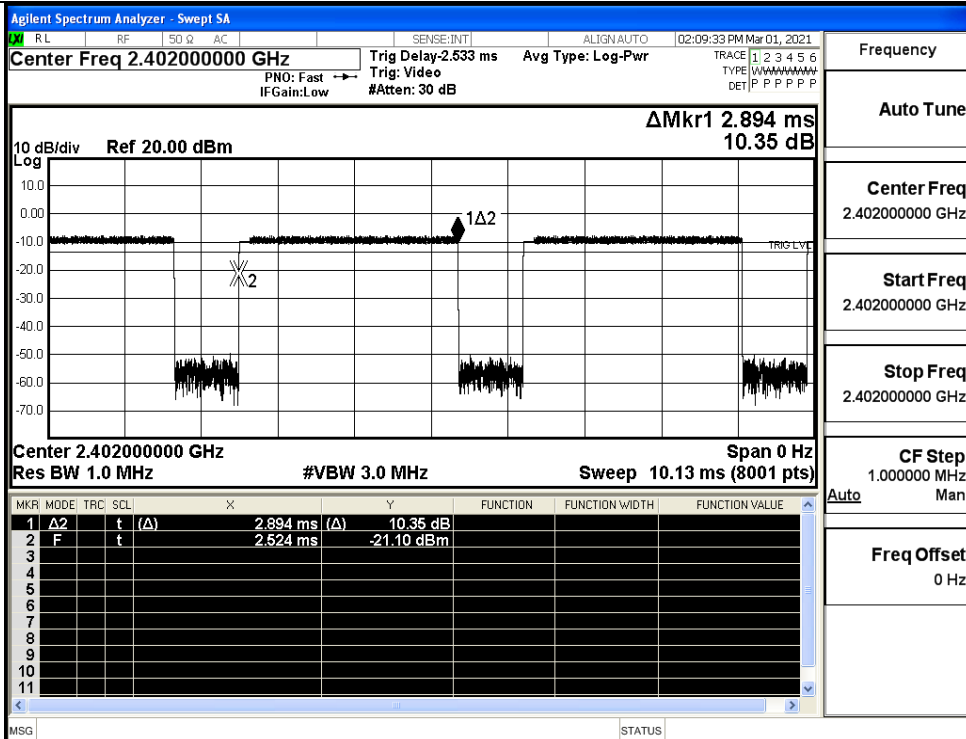
GFSK_DH5/MCH



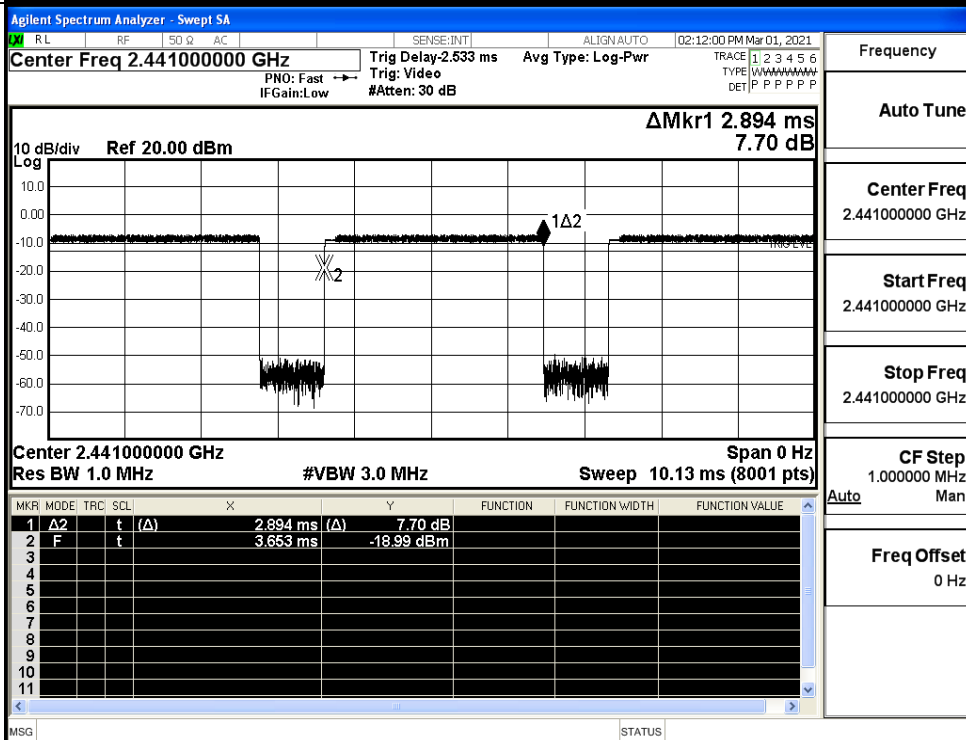
GFSK_DH5/HCH



$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



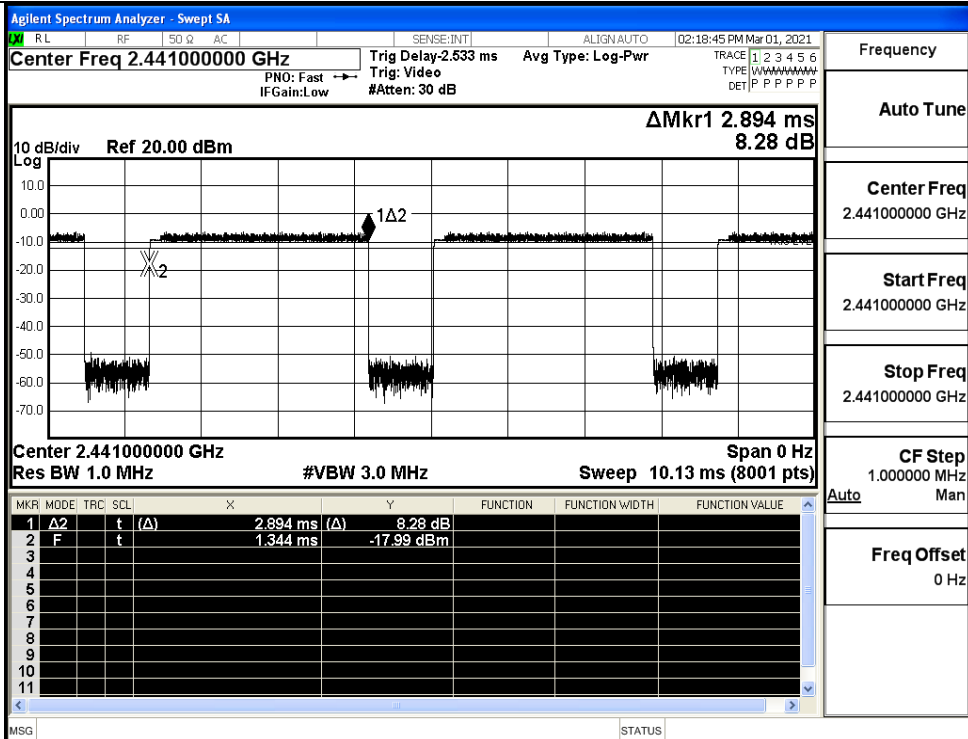
[illegible]

Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz

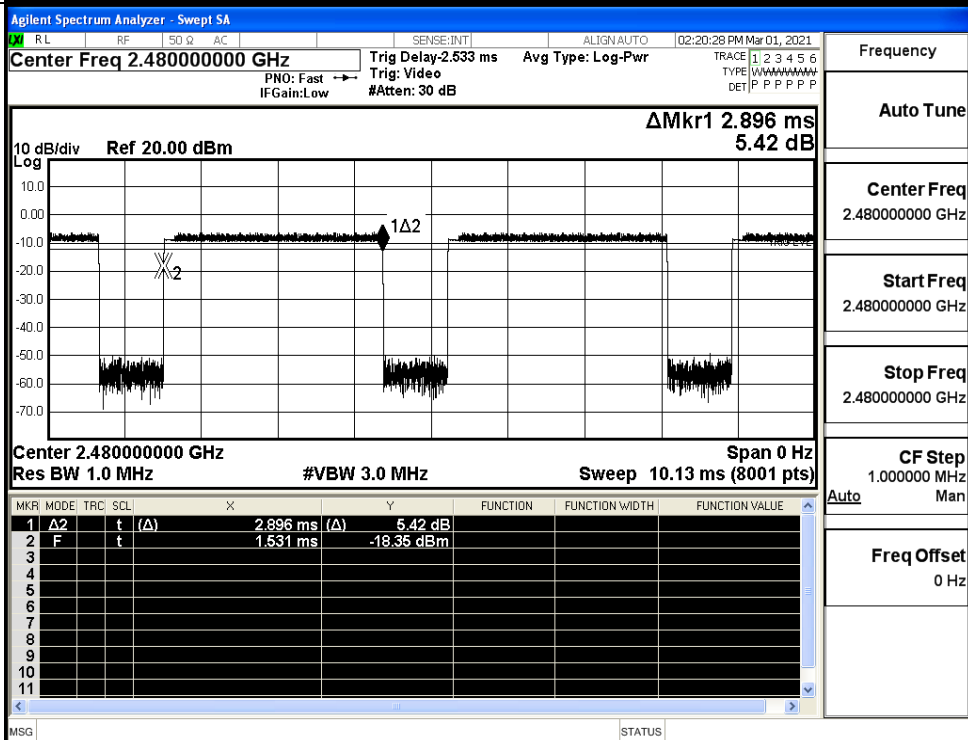
[illegible]

Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.402000000 GHz
Stop Freq 2.402000000 GHz
CF Step 1.000000 MHz
Auto Man
Freq Offset 0 Hz

8DPSK_3DH5/MCH



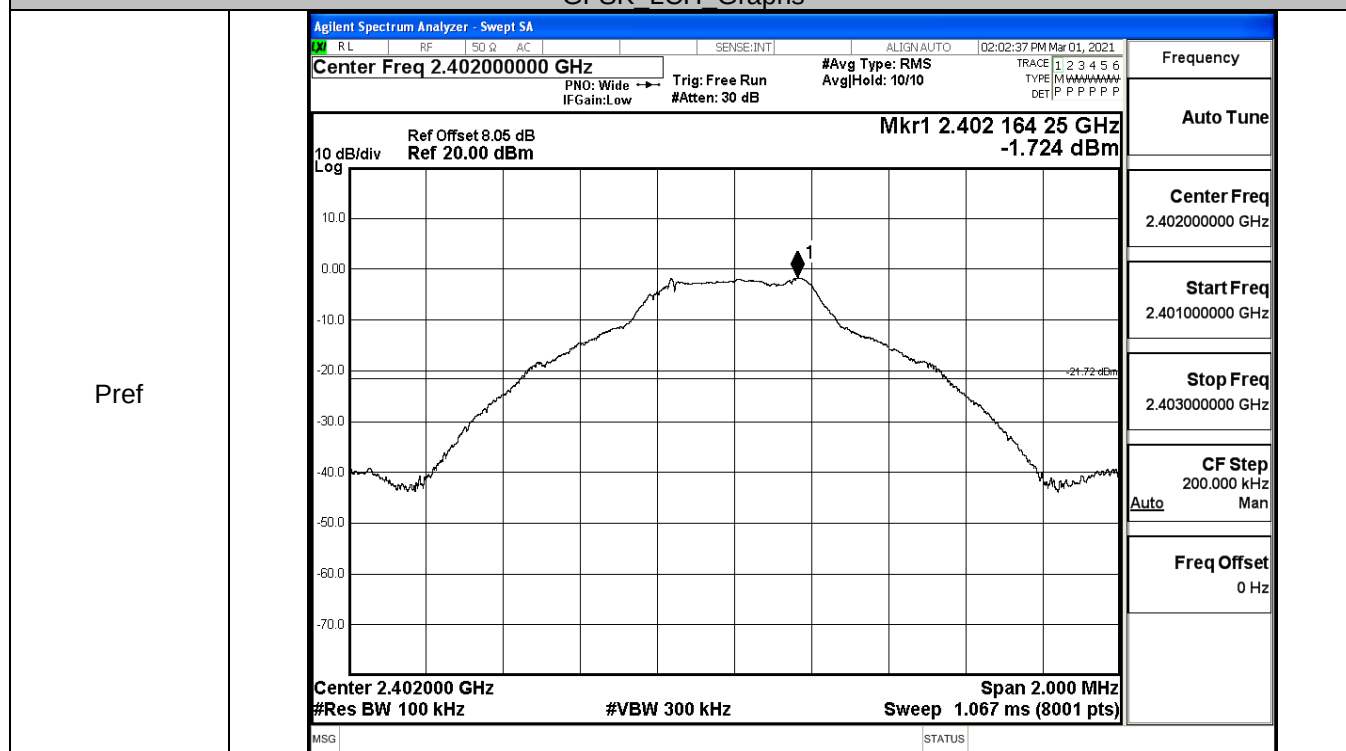
8DPSK_3DH5/HCH



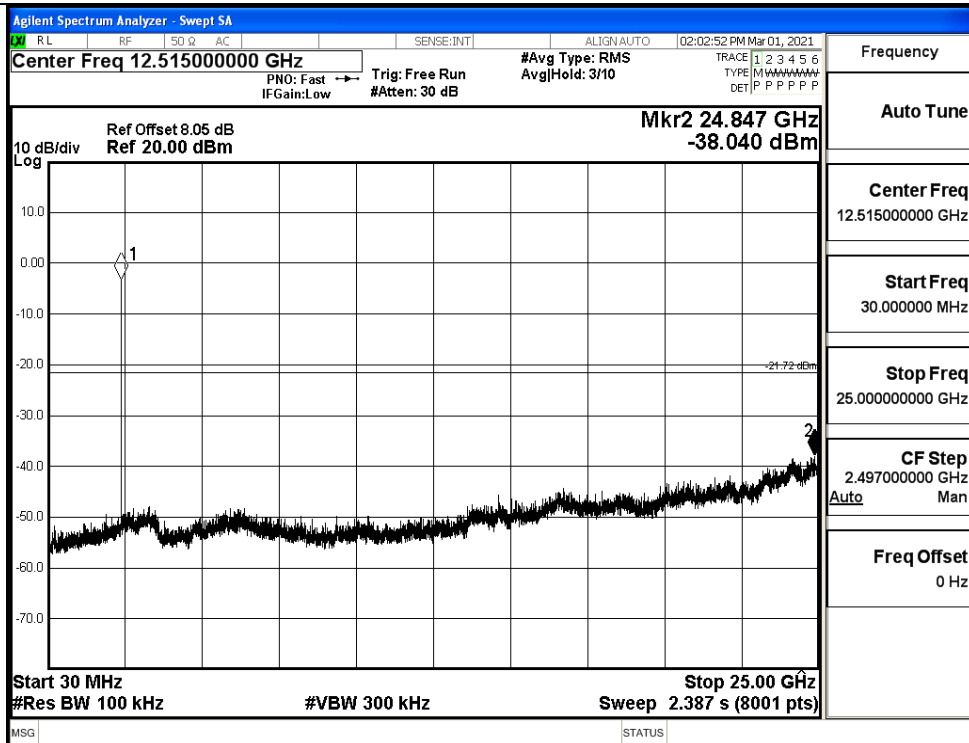
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.724	-38.040	-21.724	PASS
	MCH	-0.926	-37.961	-20.926	PASS
	HCH	-1.009	-37.505	-21.009	PASS
$\pi/4$ DQPSK	LCH	-1.997	-37.464	-21.997	PASS
	MCH	-0.95	-37.330	-20.950	PASS
	HCH	-0.57	-38.339	-20.570	PASS
8DPSK	LCH	-1.839	-37.472	-21.839	PASS
	MCH	-1.075	-36.647	-21.075	PASS
	HCH	-0.675	-37.101	-20.675	PASS

GFSK LCH Graphs

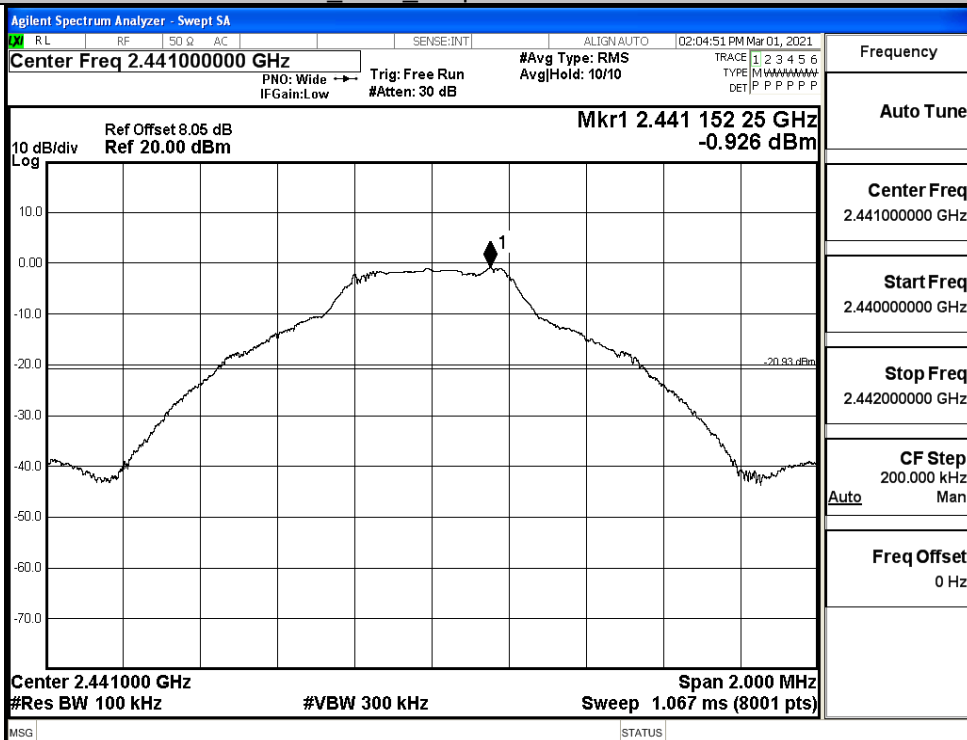


Puw

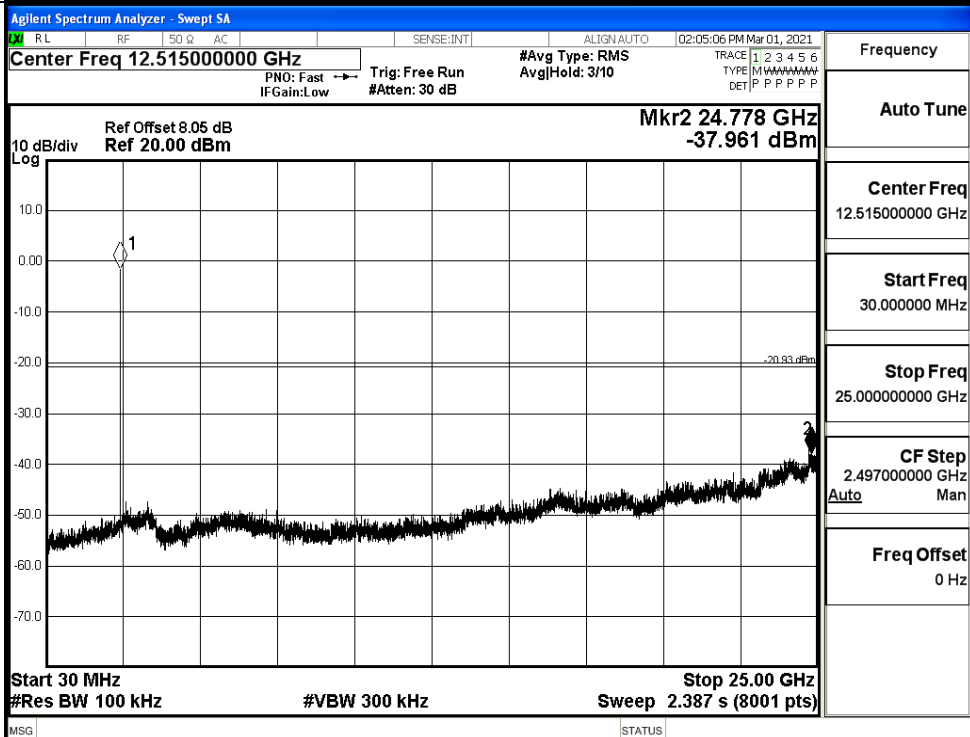


GFSK_MCH_Graphs

Pref

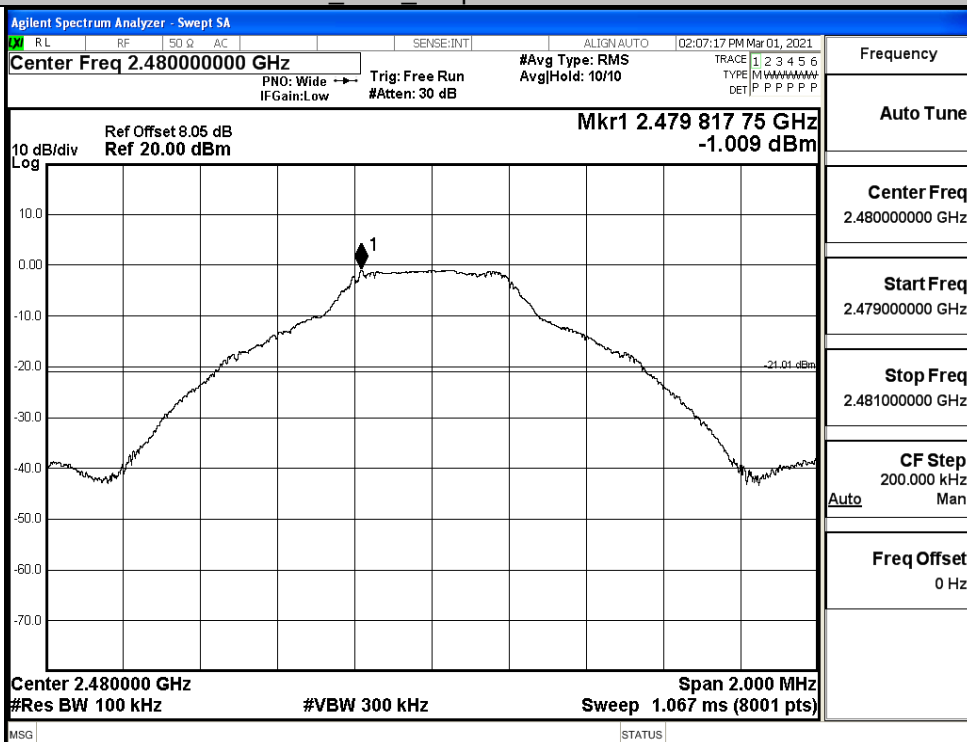


Puw

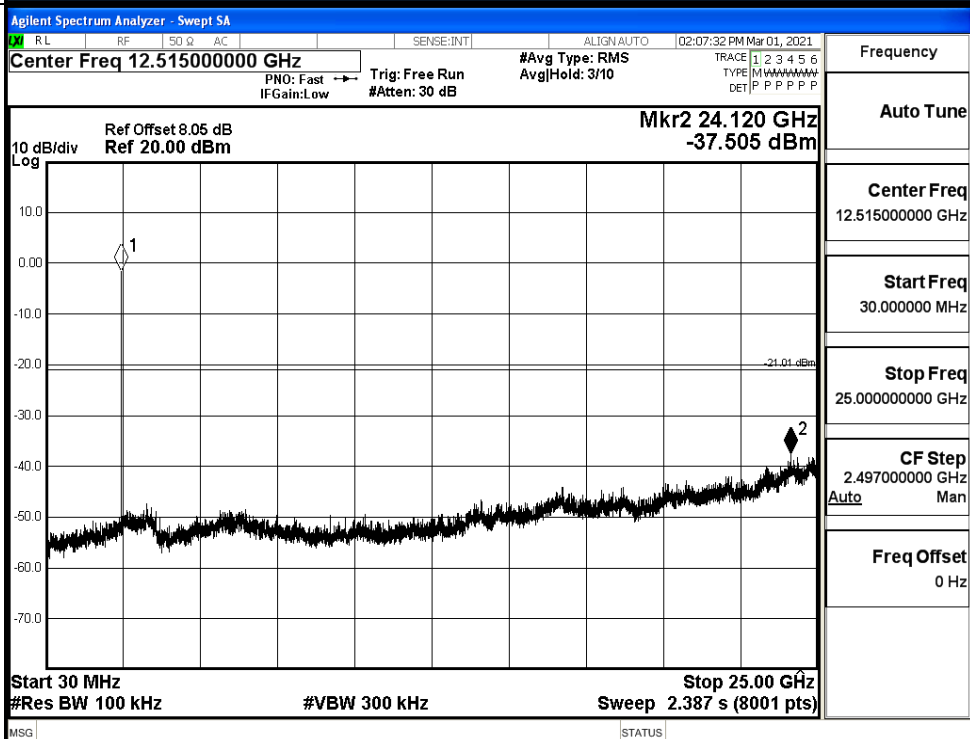


GFSK HCH_Graphs

Pref

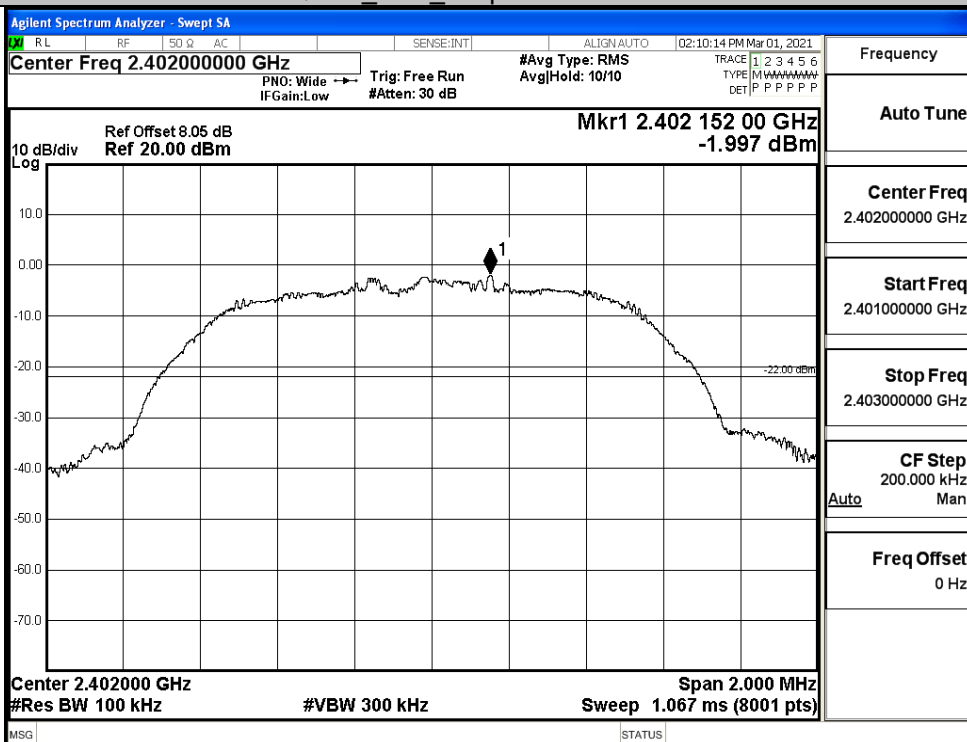


Puw

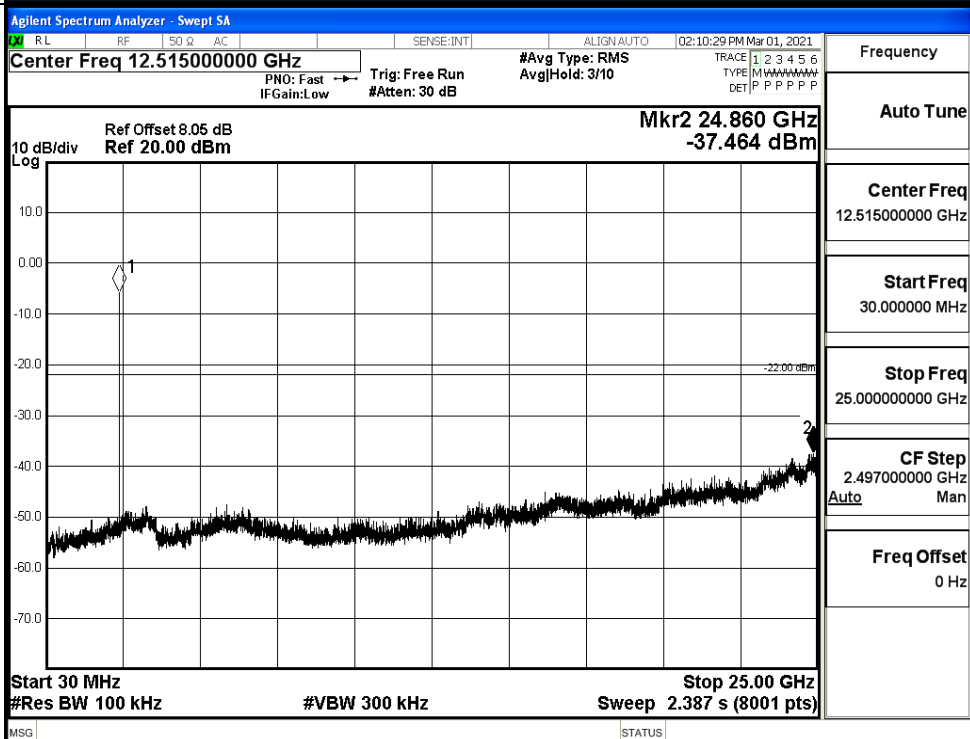


$\pi/4$ DQPSK_LCH_Graphs

Pref

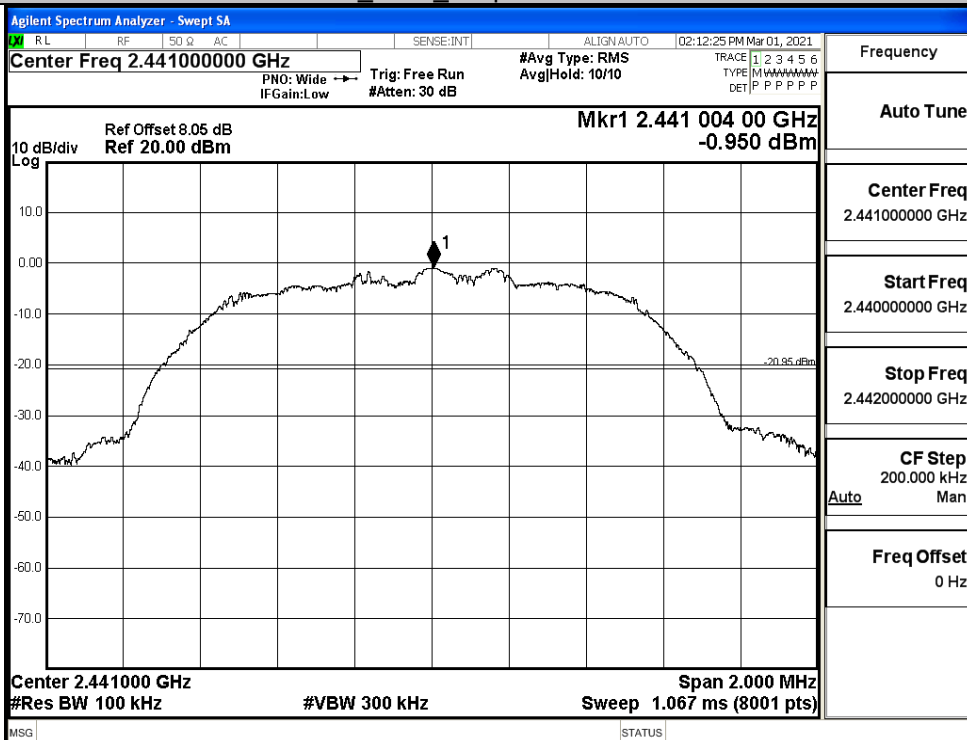


Puw

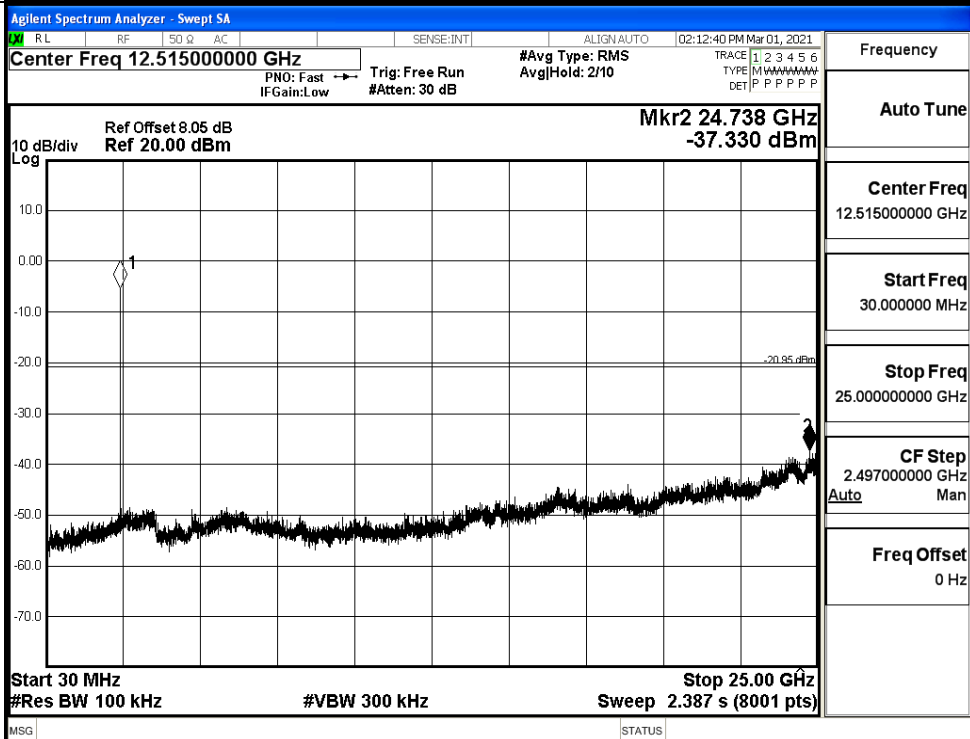


π /4DQPSK_MCH_Graphs

Pref

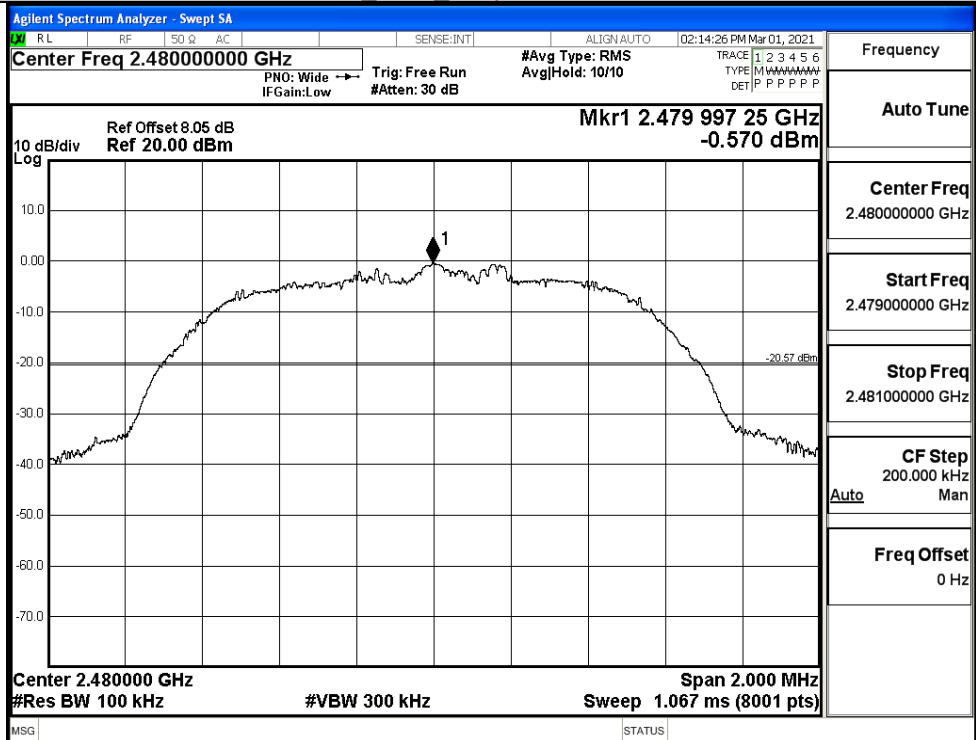


Puw

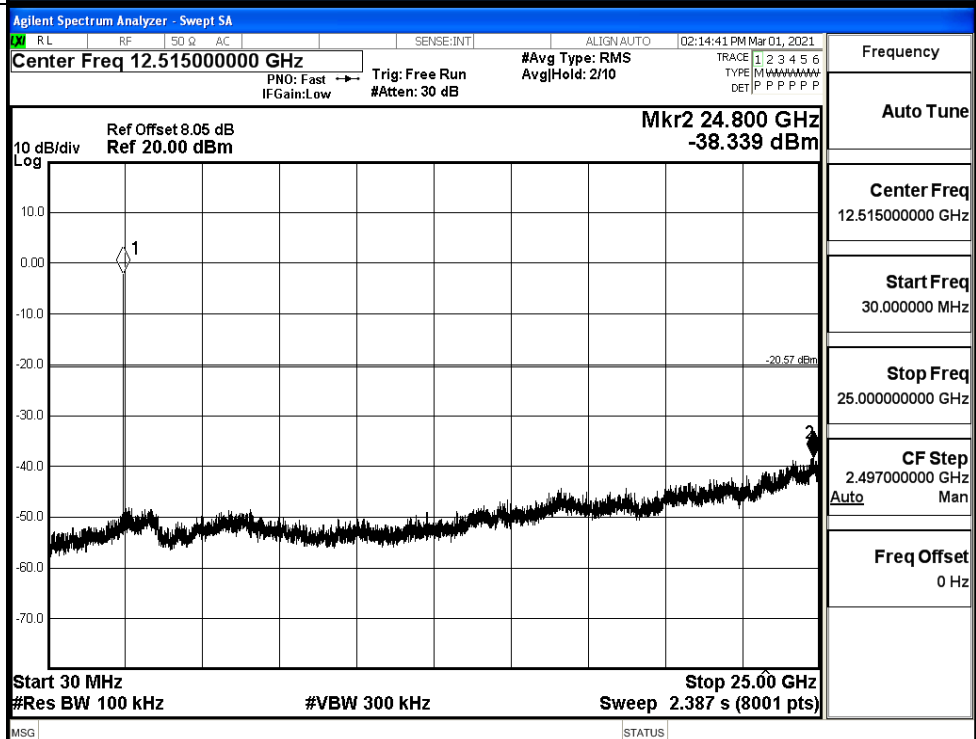


π /4DQPSK_HCH_Graphs

Pref

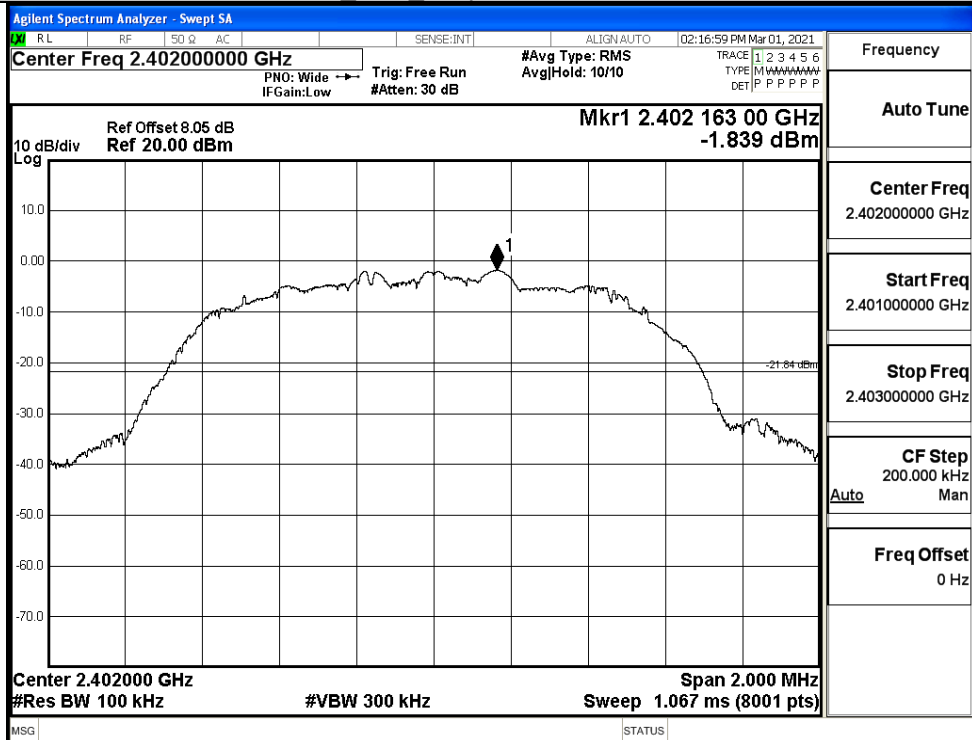


Puw

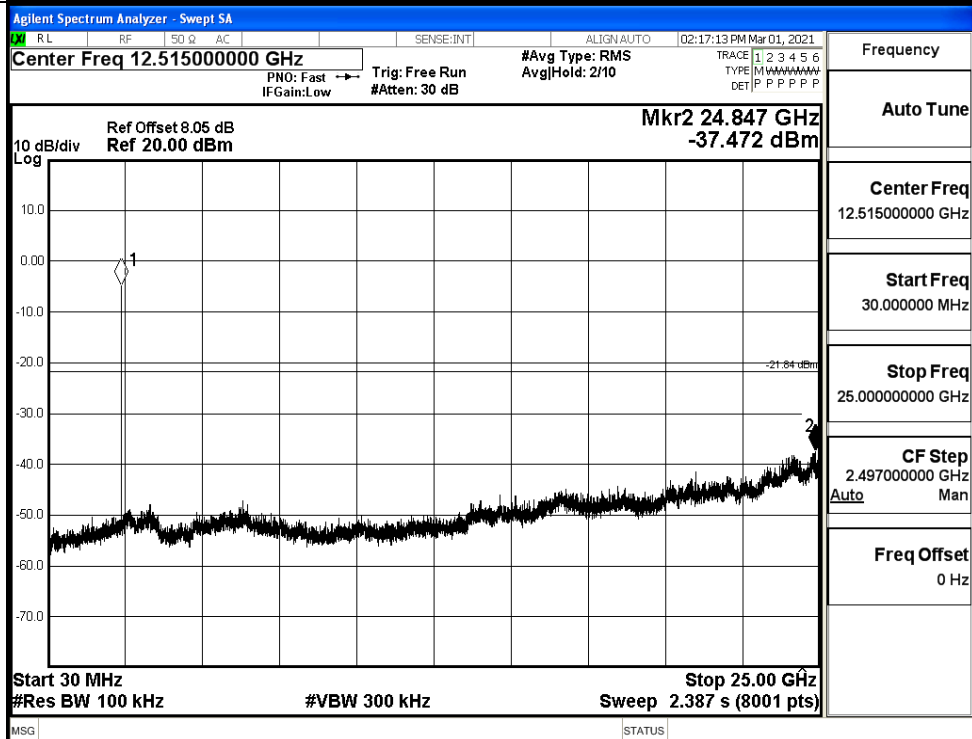


8DPSK_LCH_Graphs

Pref

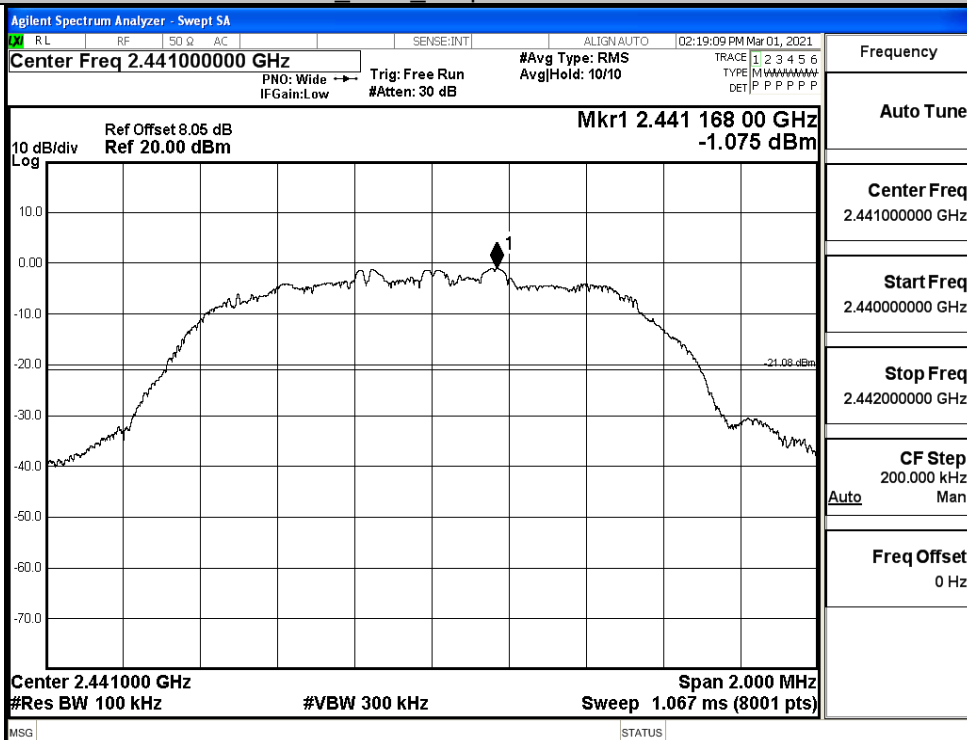


Puw

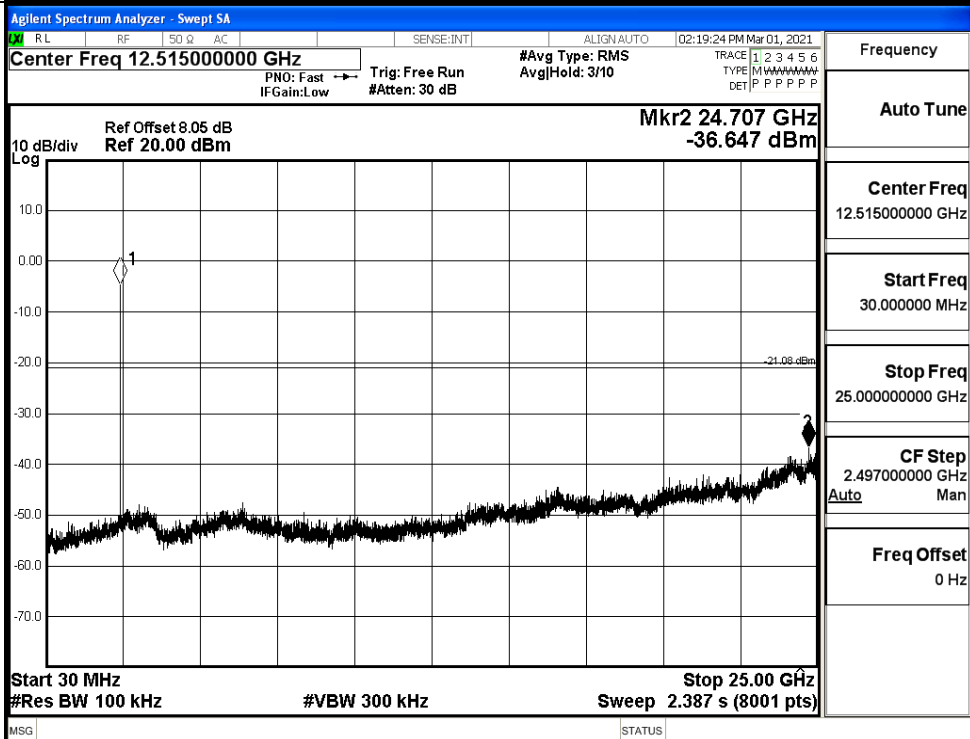


8DPSK_MCH_Graphs

Pref

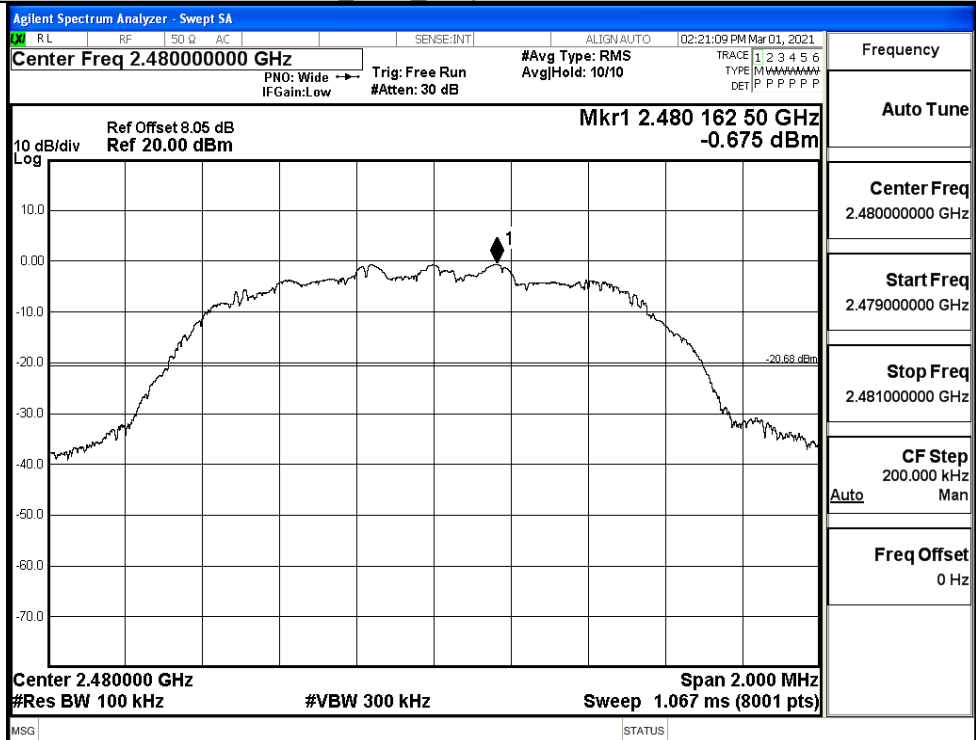


Puw

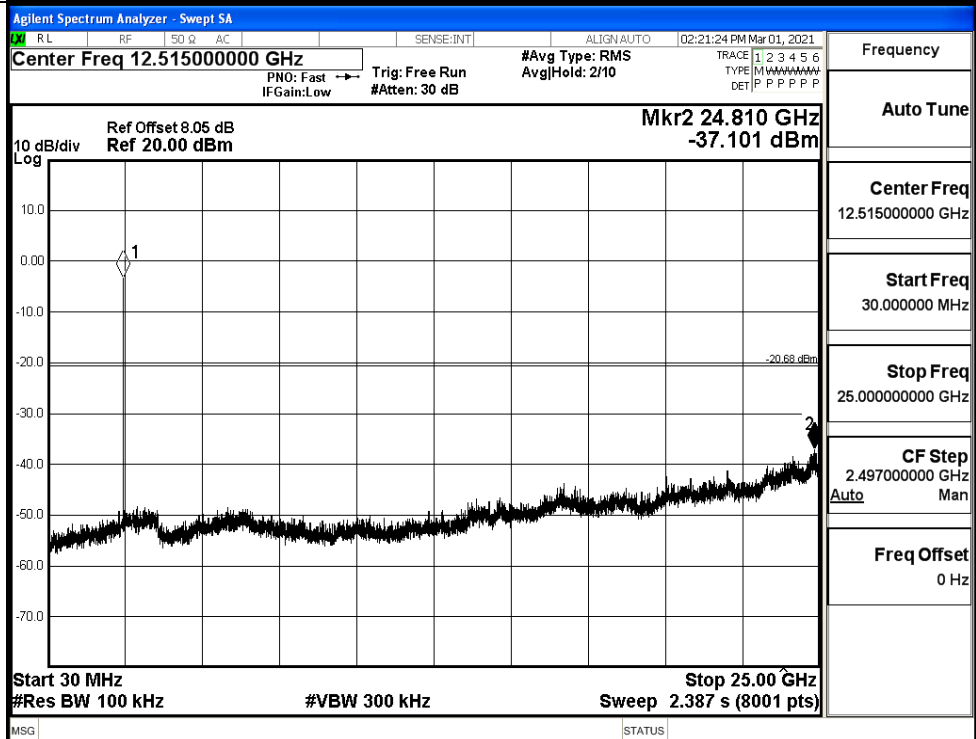


8DPSK_HCH_Graphs

Pref



Puw

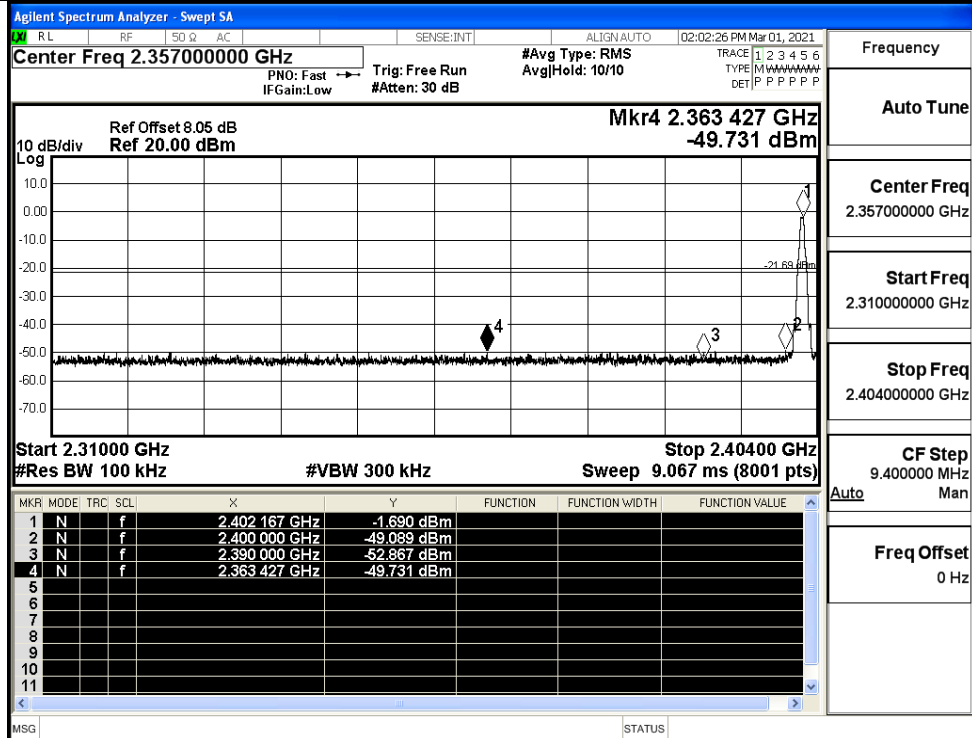


A.7 Band-edge for RF Conducted Emissions

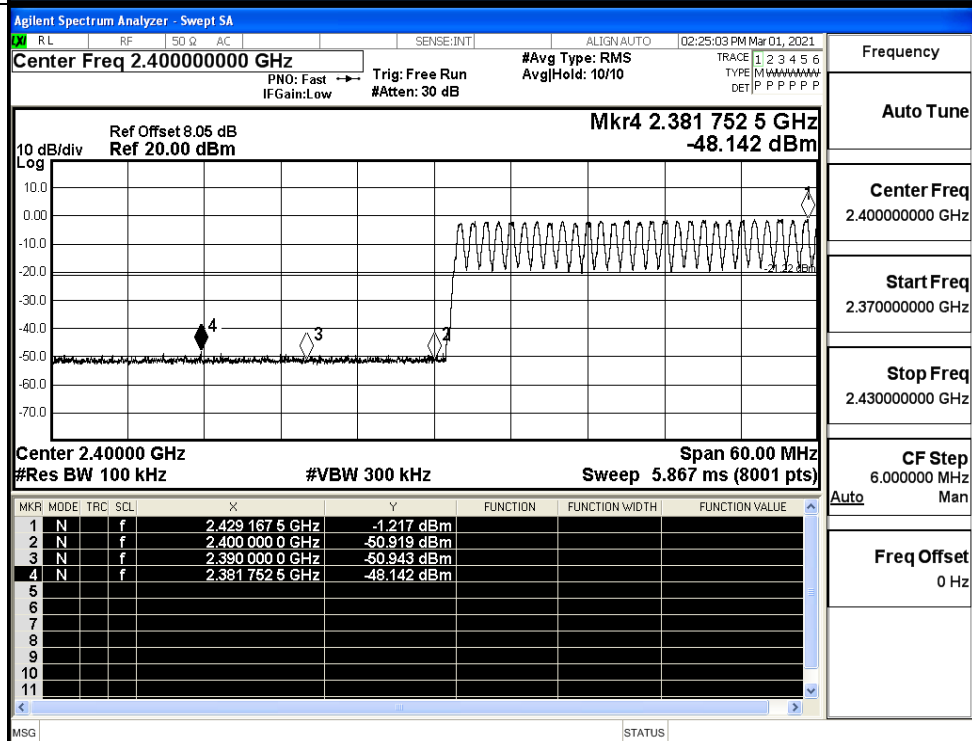
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.690	Off	-49.731	-21.69	PASS
			-1.217	On	-48.142	-21.22	PASS
	HCH	2480	-0.457	Off	-49.364	-20.46	PASS
			-0.669	On	-48.810	-20.67	PASS
$\pi/4$ DQPSK	LCH	2402	-1.744	Off	-49.138	-21.74	PASS
			-1.183	On	-49.354	-21.18	PASS
	HCH	2480	-0.363	Off	-48.708	-20.36	PASS
			-0.694	On	-48.133	-20.69	PASS
8DPSK	LCH	2402	-1.789	Off	-49.602	-21.79	PASS
			-1.318	On	-48.821	-21.32	PASS
	HCH	2480	-0.562	Off	-49.048	-20.56	PASS
			-0.707	On	-48.471	-20.71	PASS

Test Graphs

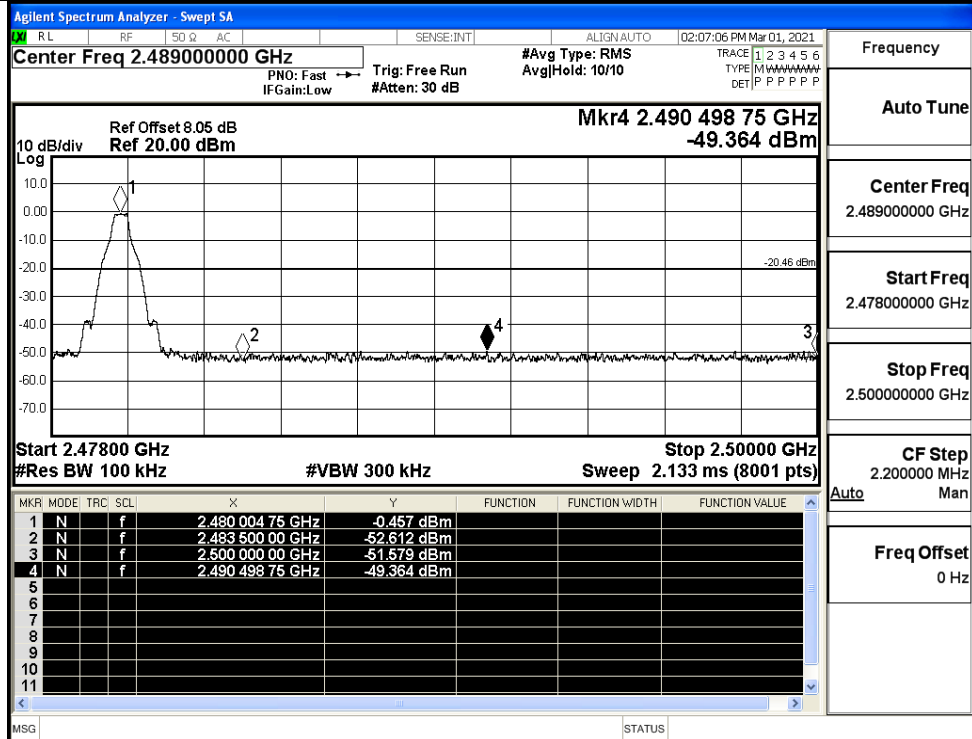
GFSK/LCH/No Hop



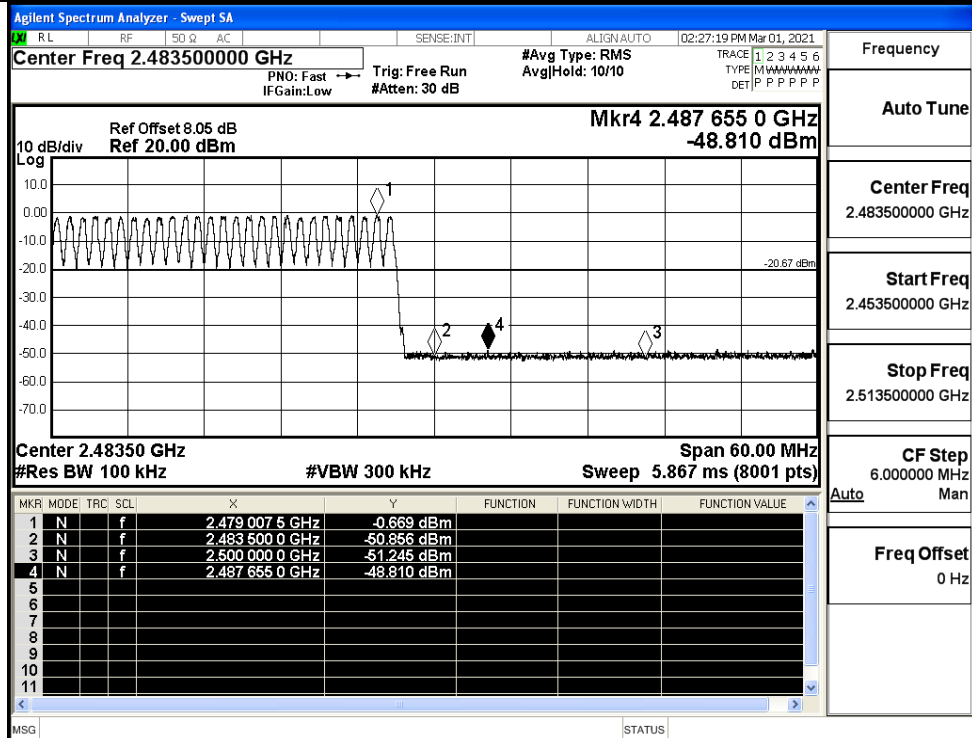
GFSK/LCH/Hop



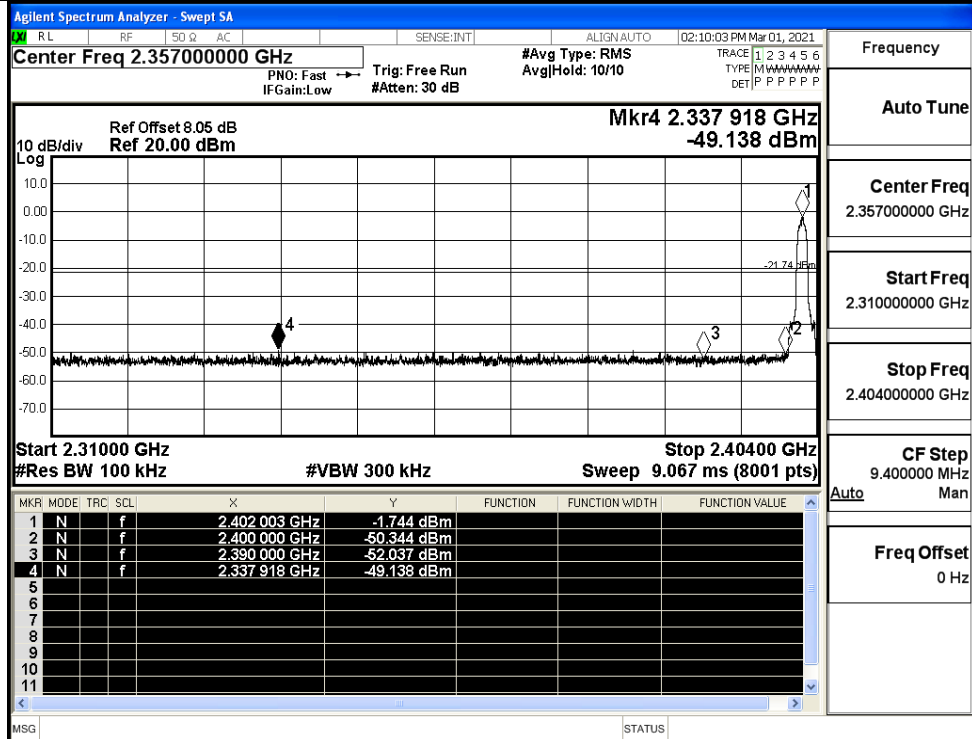
GFSK/HCH/No Hop



GFSK/HCH/Hop



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

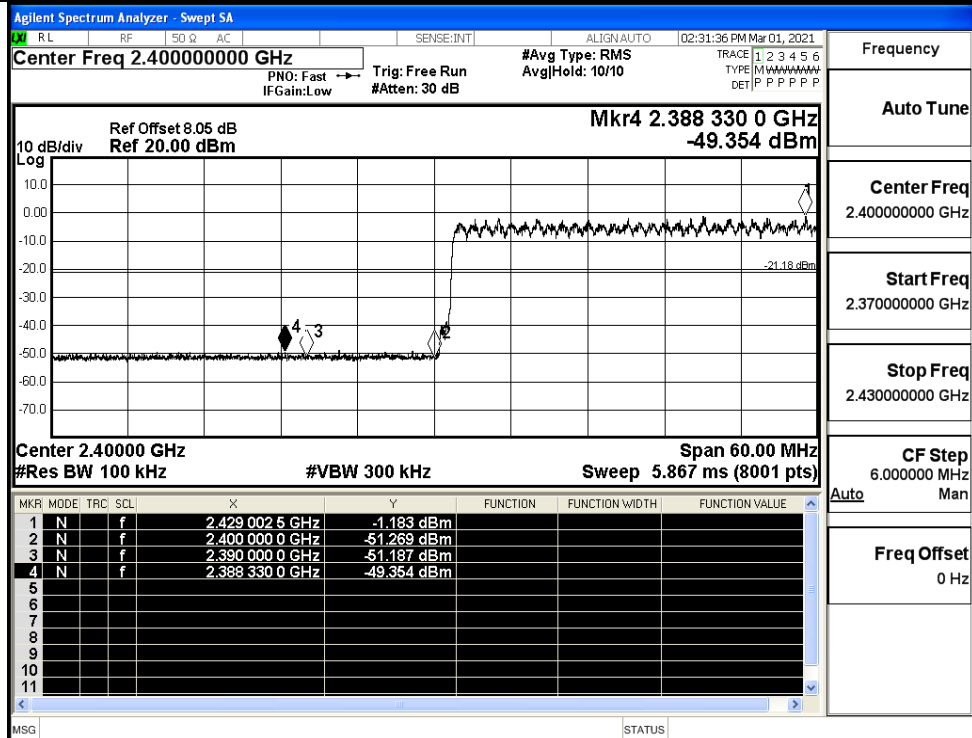


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop

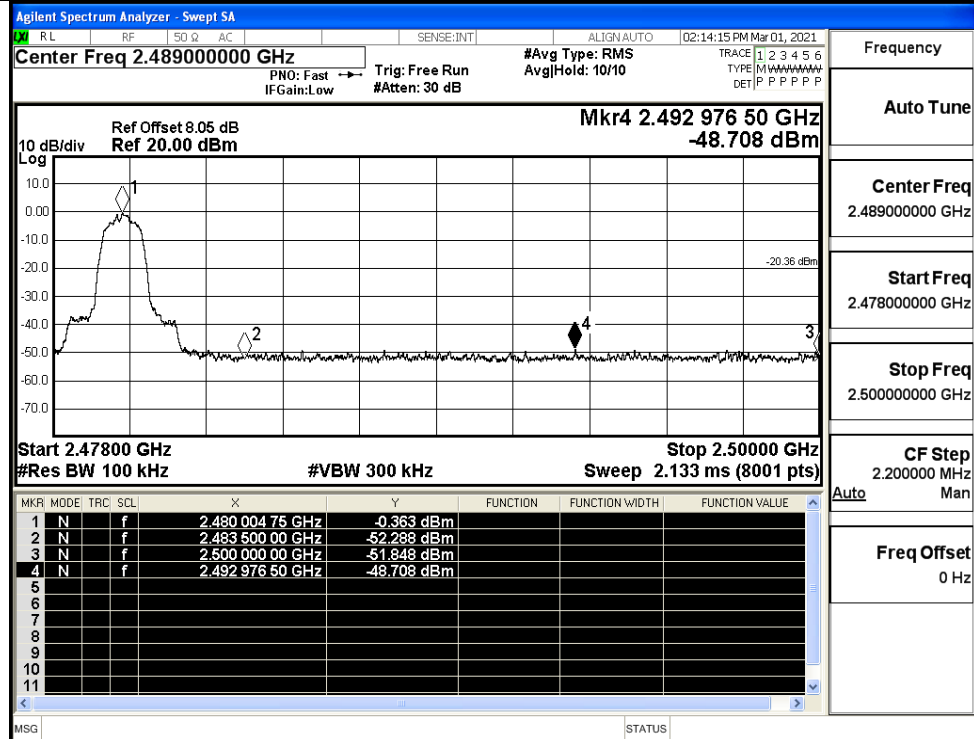


Frequency

Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

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

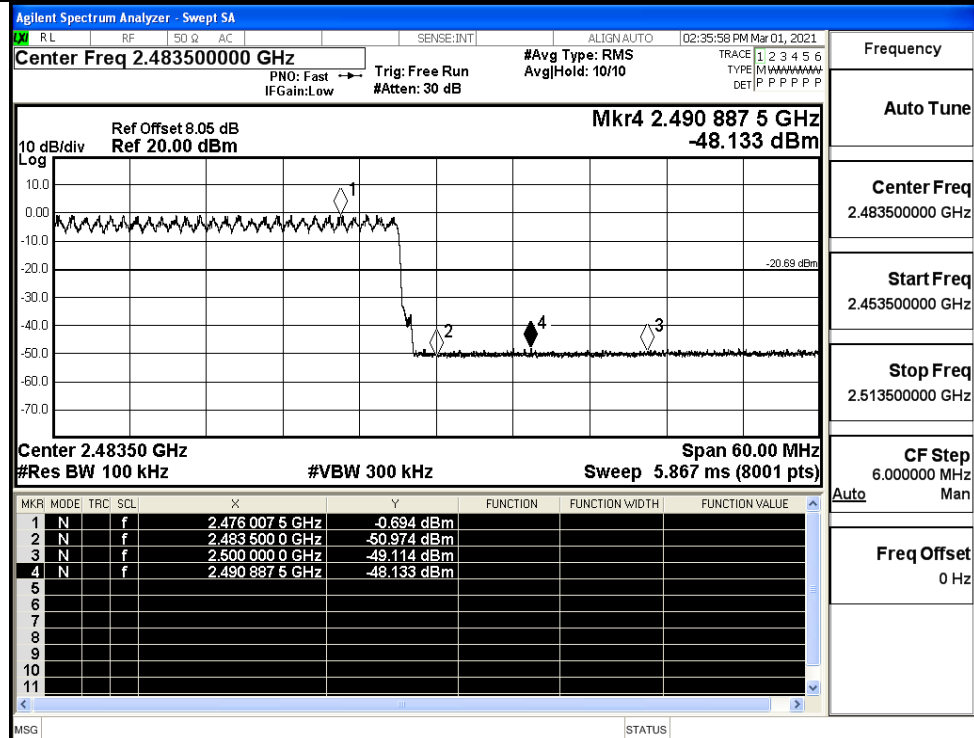


Frequency

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

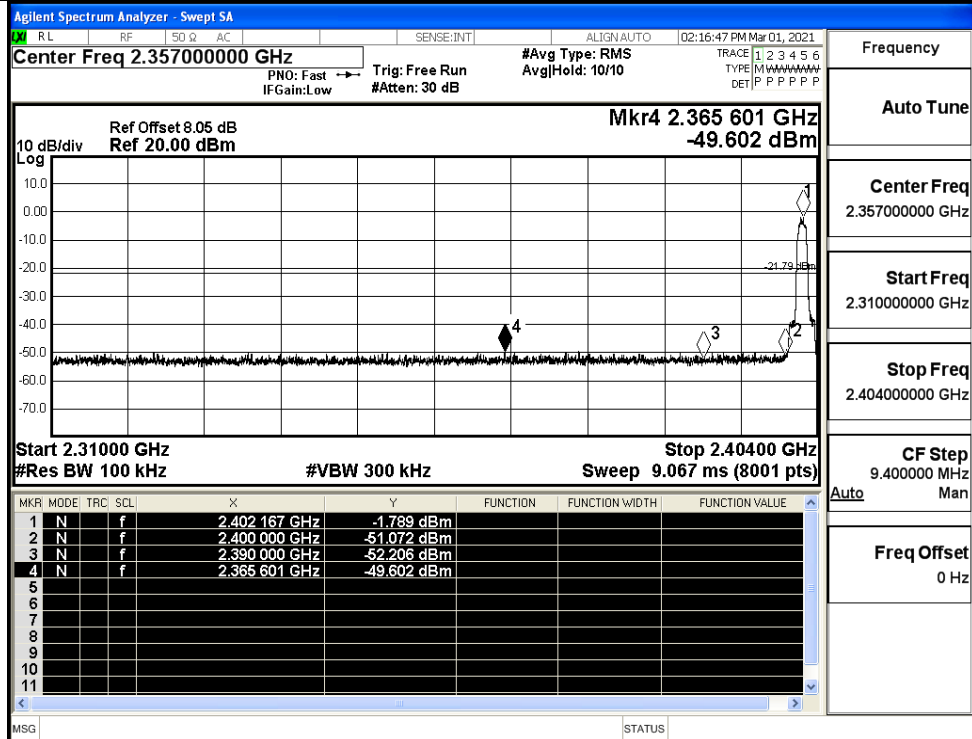


Frequency

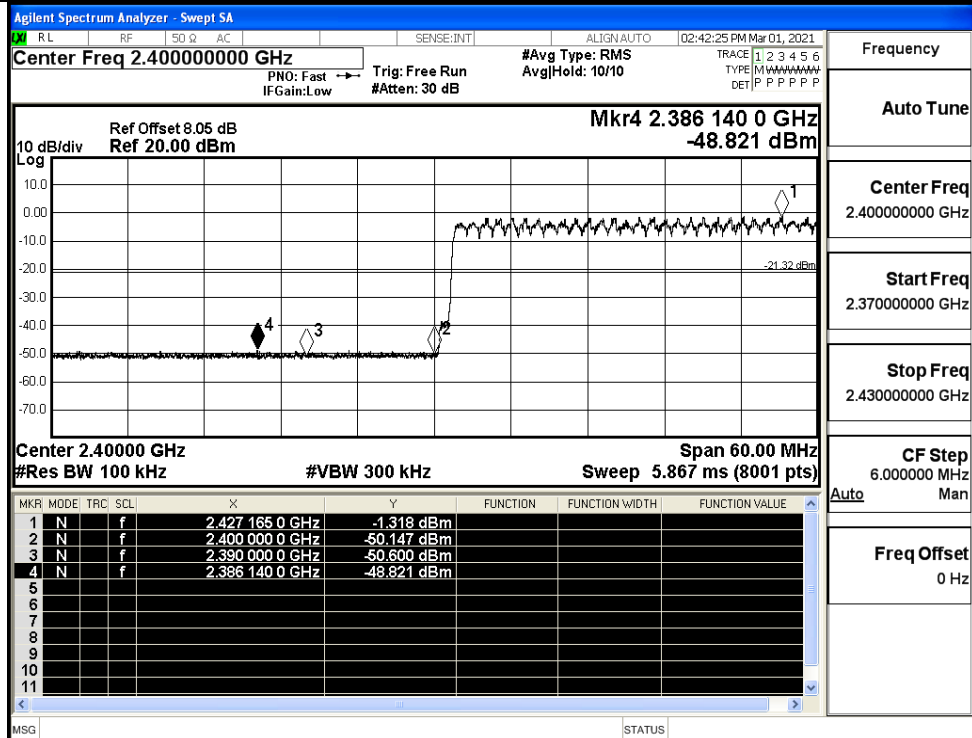
Auto Tune

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

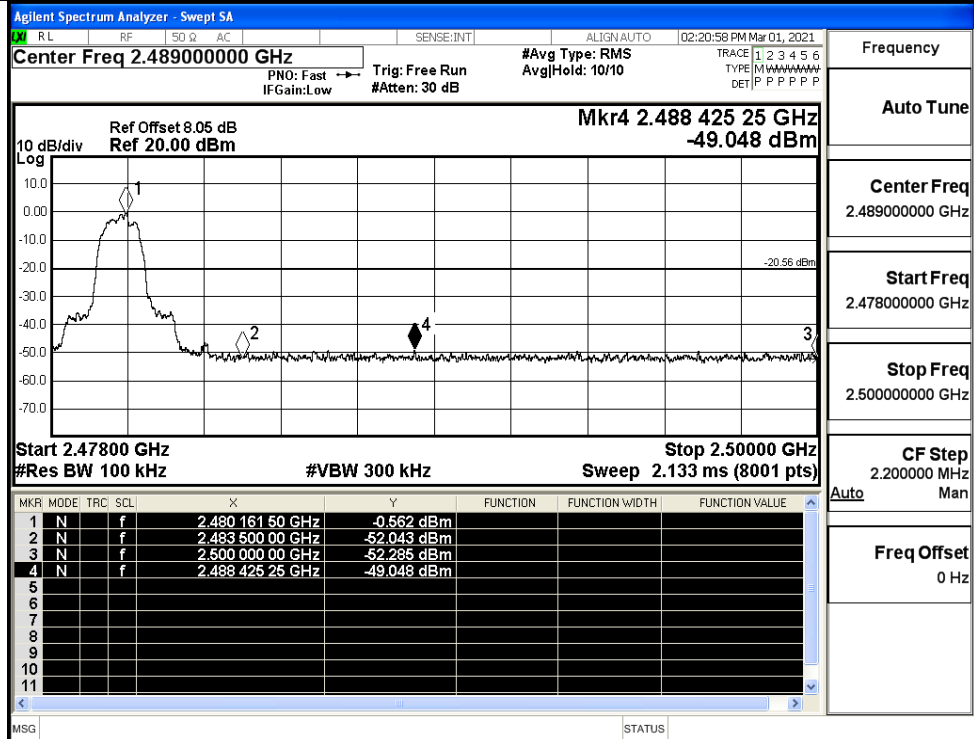
8DPSK/LCH/No Hop



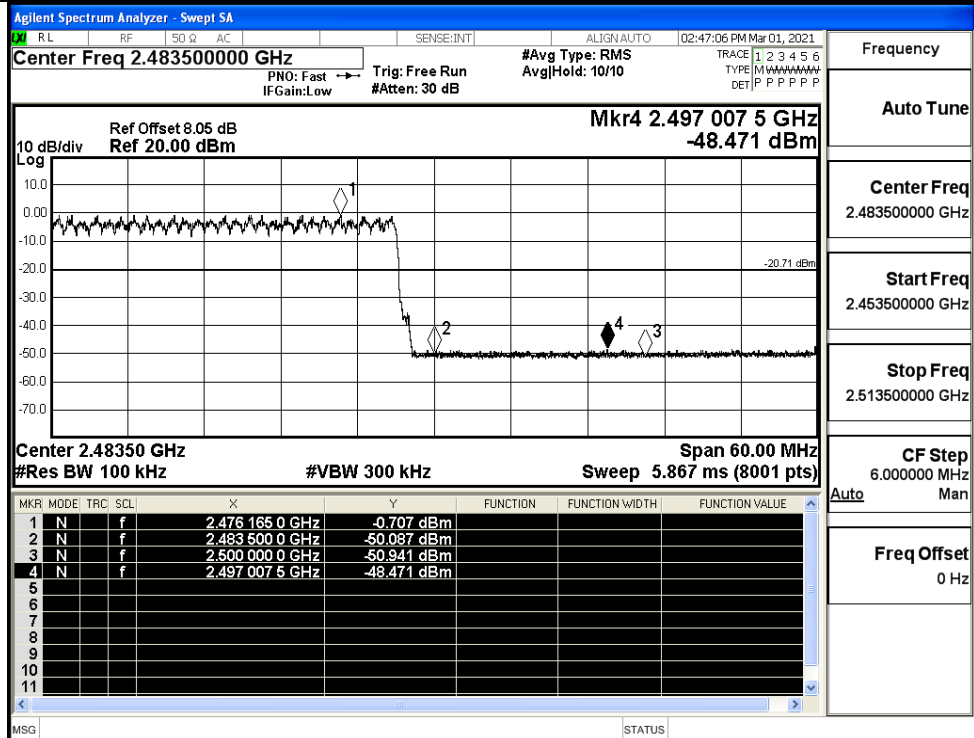
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



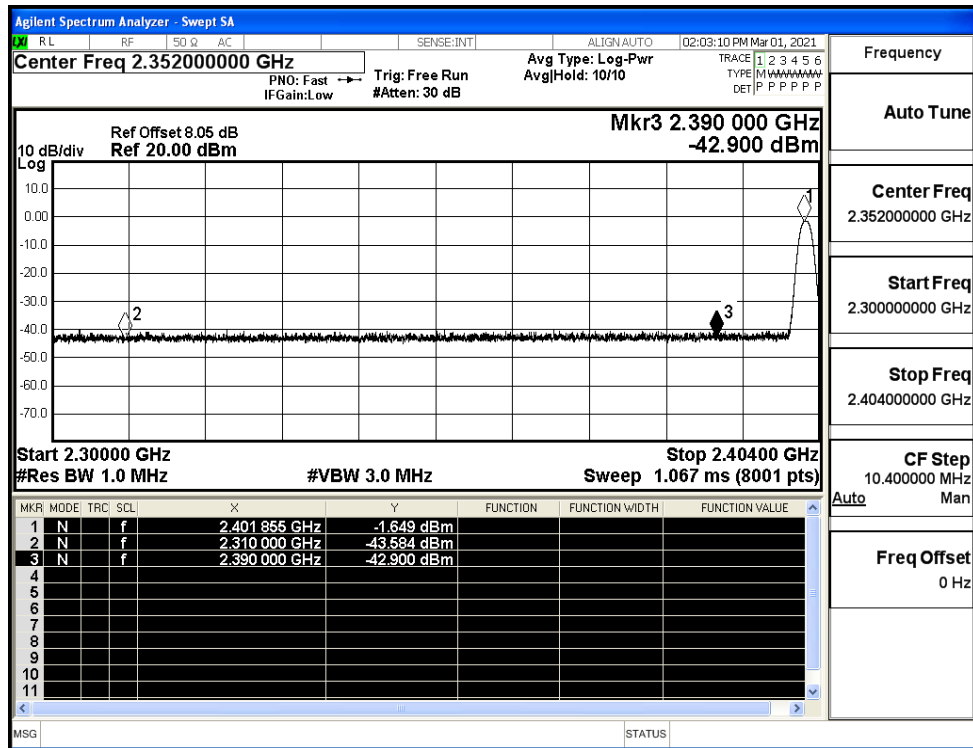
8DPSK/HCH/Hop



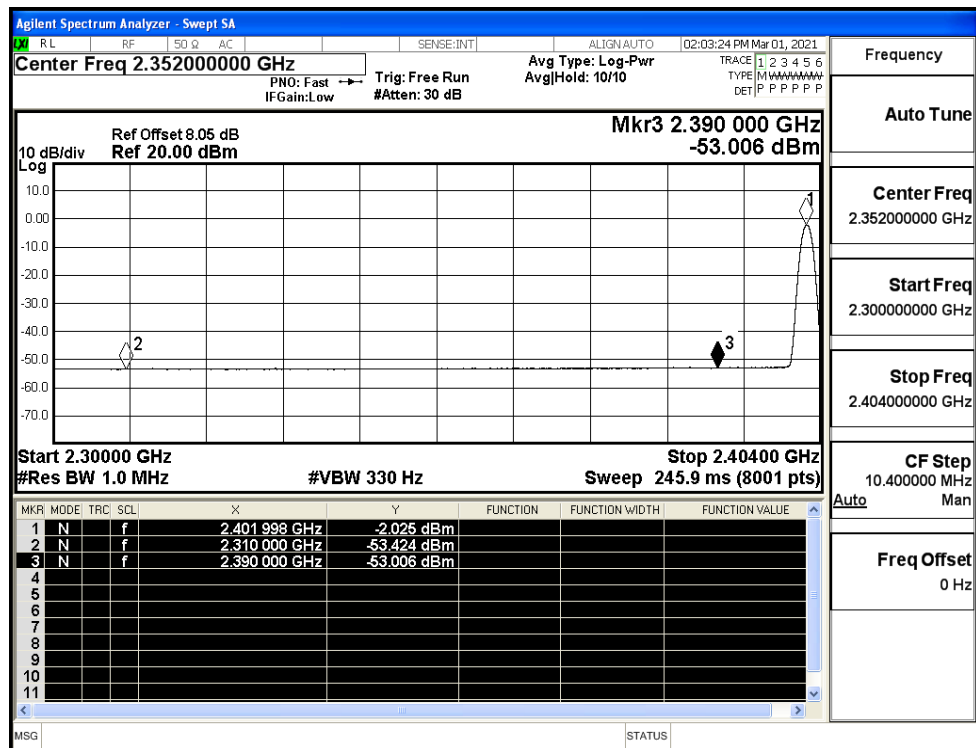
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.58	2.75	0	54.40	PEAK	74	PASS
	Off	2310.0	-53.42	2.75	0	44.56	AV	54	PASS
	Off	2390.0	-42.90	2.75	0	55.08	PEAK	74	PASS
	Off	2390.0	-53.01	2.75	0	44.97	AV	54	PASS
	Off	2483.5	-41.88	2.75	0	56.10	PEAK	74	PASS
	Off	2483.5	-52.37	2.75	0	45.61	AV	54	PASS
	Off	2500.0	-42.42	2.75	0	55.56	PEAK	74	PASS
	Off	2500.0	-52.31	2.75	0	45.67	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.52	2.75	0	55.46	PEAK	74	PASS
	Off	2310.0	-53.35	2.75	0	44.63	AV	54	PASS
	Off	2390.0	-41.64	2.75	0	56.34	PEAK	74	PASS
	Off	2390.0	-52.88	2.75	0	45.10	AV	54	PASS
	Off	2483.5	-40.92	2.75	0	57.06	PEAK	74	PASS
	Off	2483.5	-52.16	2.75	0	45.82	AV	54	PASS
	Off	2500.0	-42.18	2.75	0	55.80	PEAK	74	PASS
	Off	2500.0	-52.33	2.75	0	45.65	AV	54	PASS
8DPSK	Off	2310.0	-43.61	2.75	0	54.37	PEAK	74	PASS
	Off	2310.0	-53.32	2.75	0	44.66	AV	54	PASS
	Off	2390.0	-42.08	2.75	0	55.90	PEAK	74	PASS
	Off	2390.0	-52.90	2.75	0	45.08	AV	54	PASS
	Off	2483.5	-41.10	2.75	0	56.88	PEAK	74	PASS
	Off	2483.5	-51.96	2.75	0	46.02	AV	54	PASS
	Off	2500.0	-43.51	2.75	0	54.47	PEAK	74	PASS
	Off	2500.0	-52.15	2.75	0	45.83	AV	54	PASS

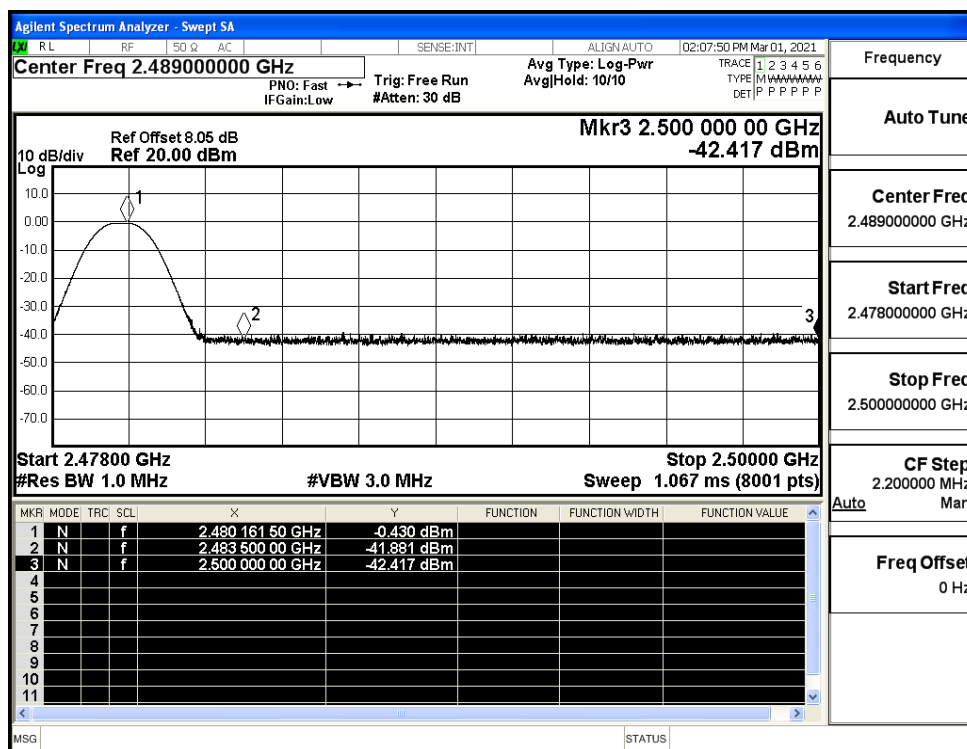
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



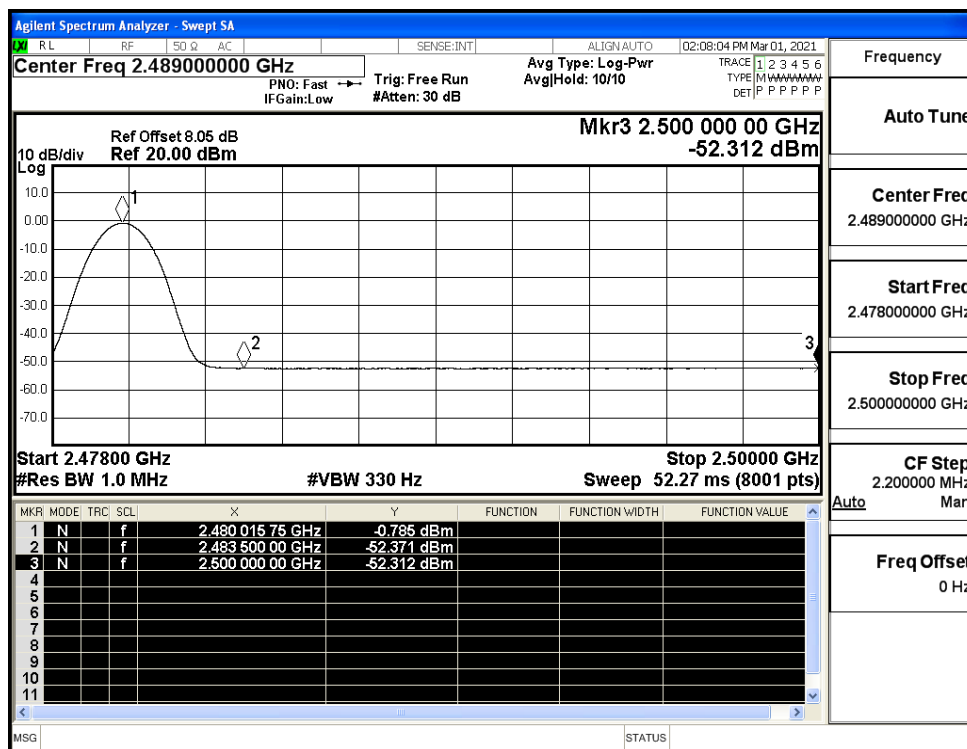
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

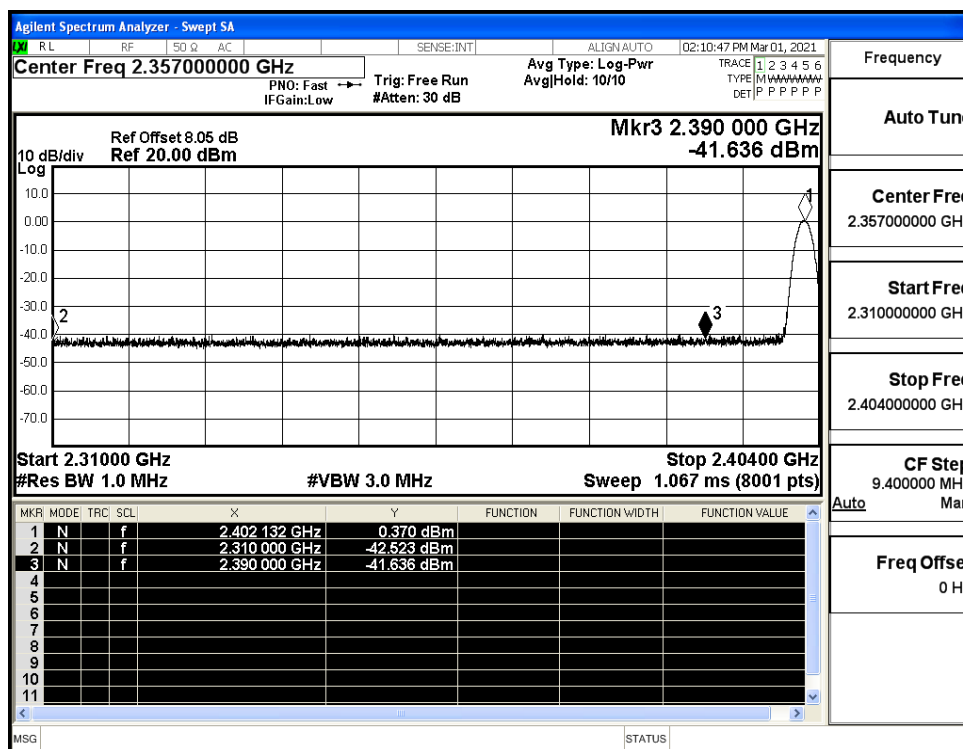
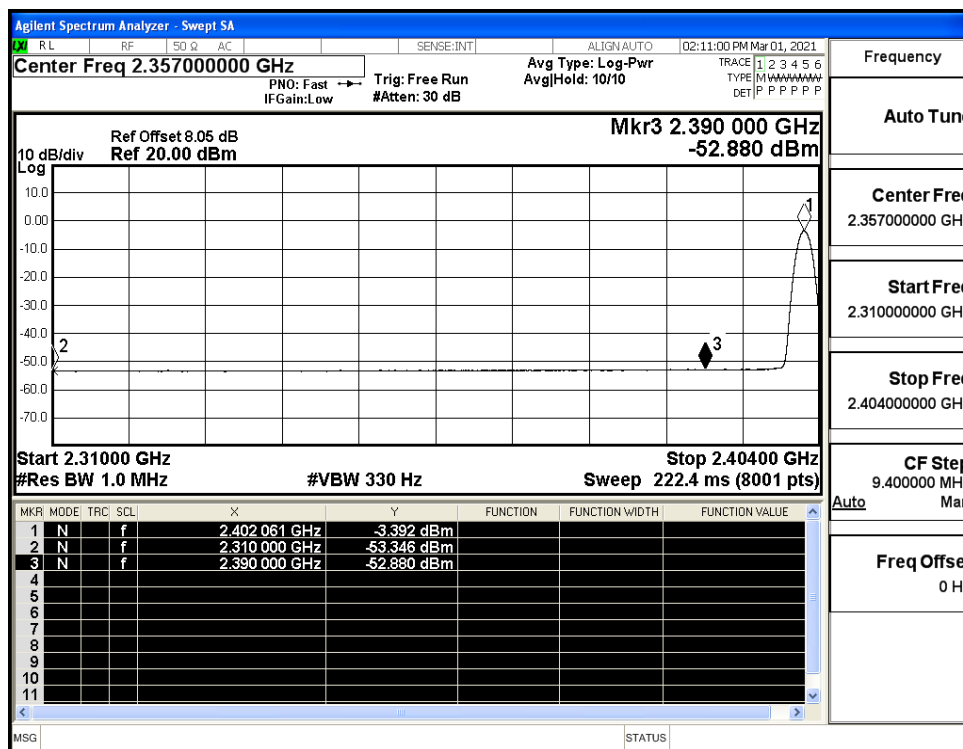


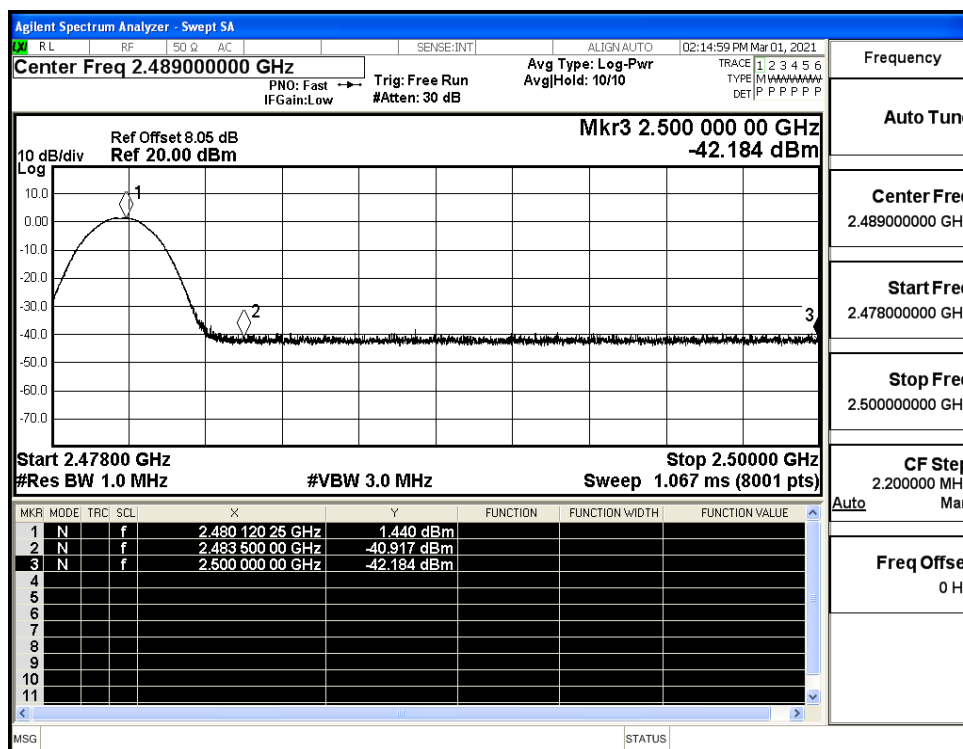
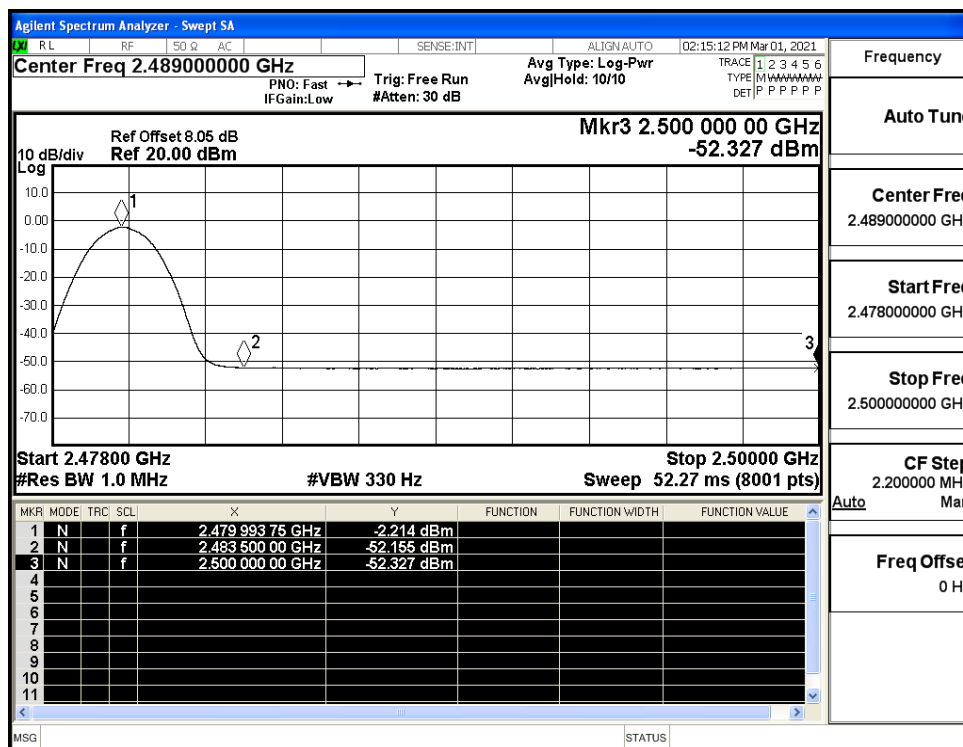
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



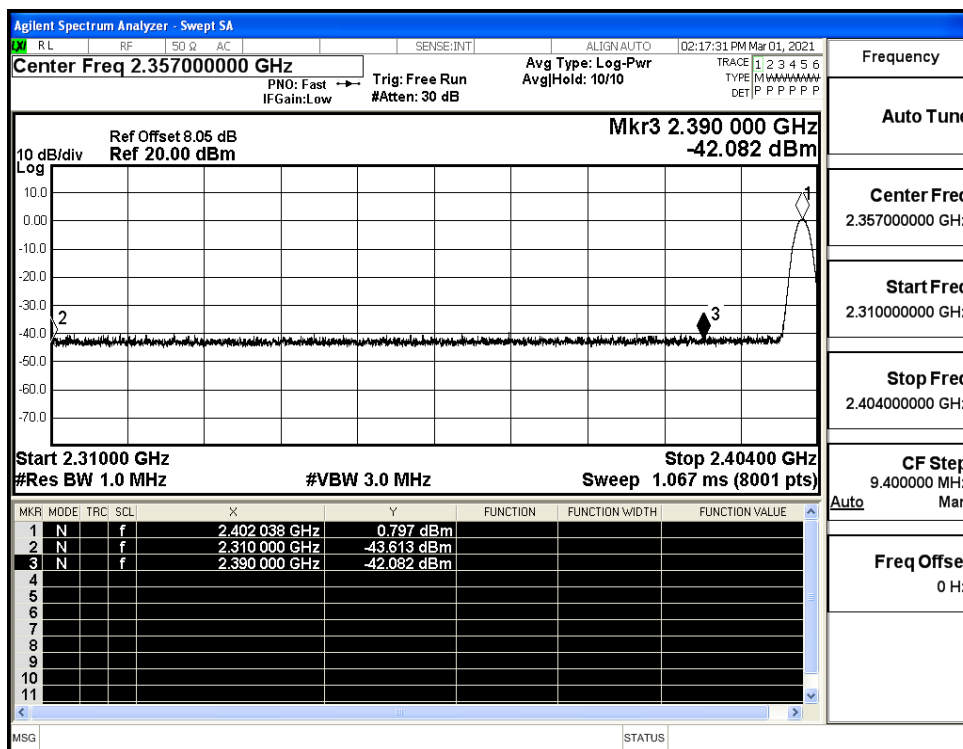
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



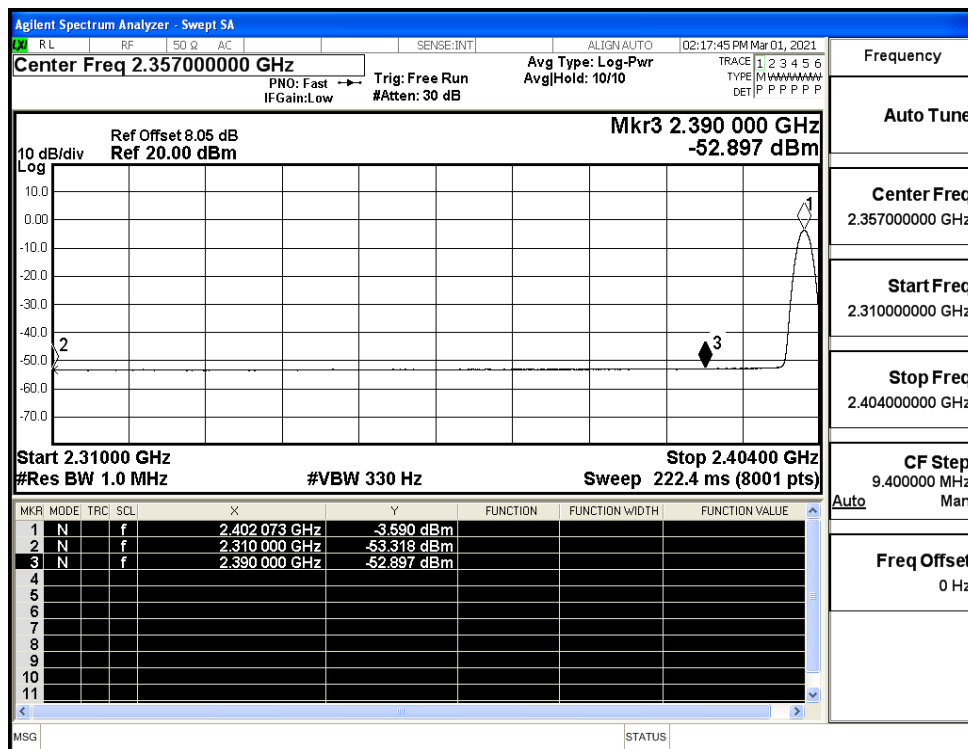
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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)

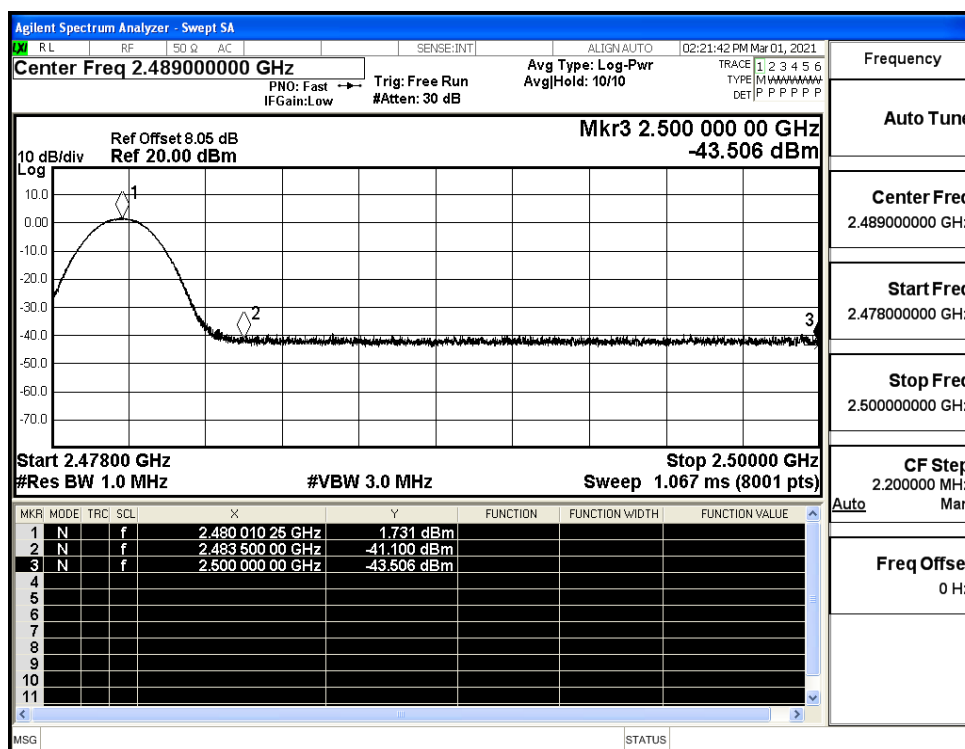
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

