

Appendix A

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

Product Name: Microphone

Trade Mark: N/A

Test Model: Mic-K17

Environmental Conditions

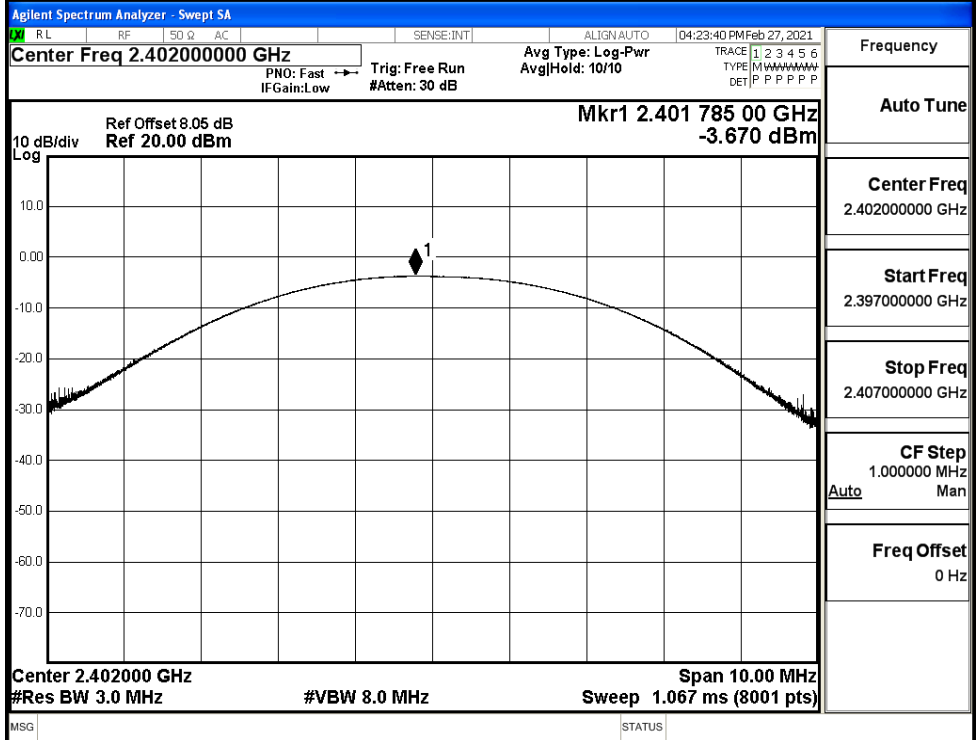
Temperature:	24.6° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

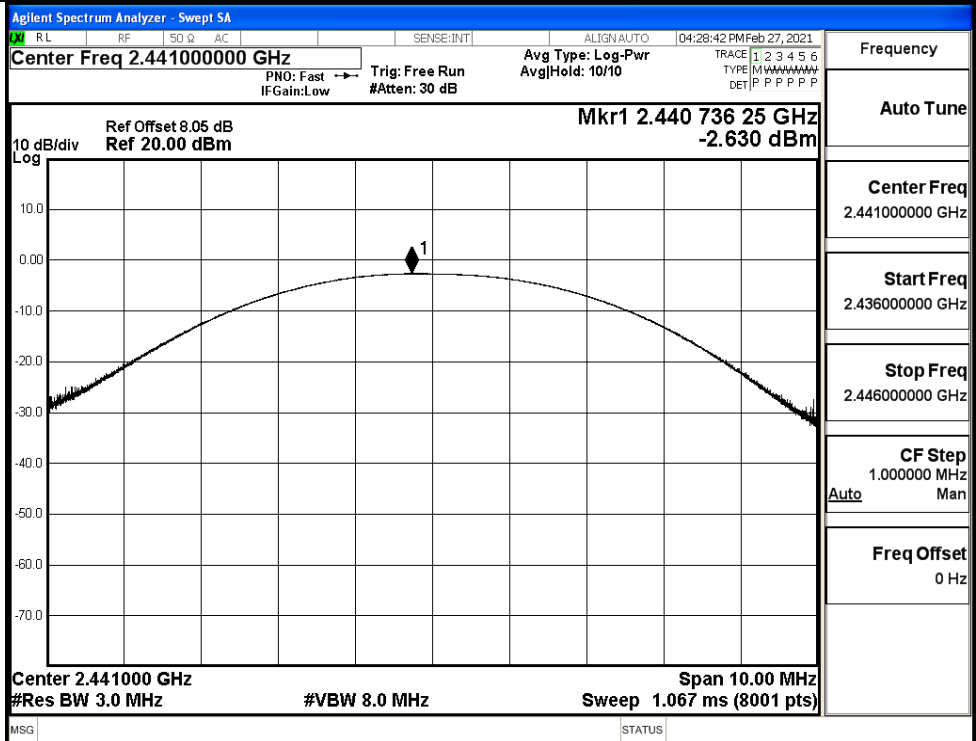
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.670	21	PASS
	MCH	-2.630	21	PASS
	HCH	-2.068	21	PASS
$\pi/4$ DQPSK	LCH	-2.914	21	PASS
	MCH	-1.907	21	PASS
	HCH	-1.352	21	PASS

Test Graphs

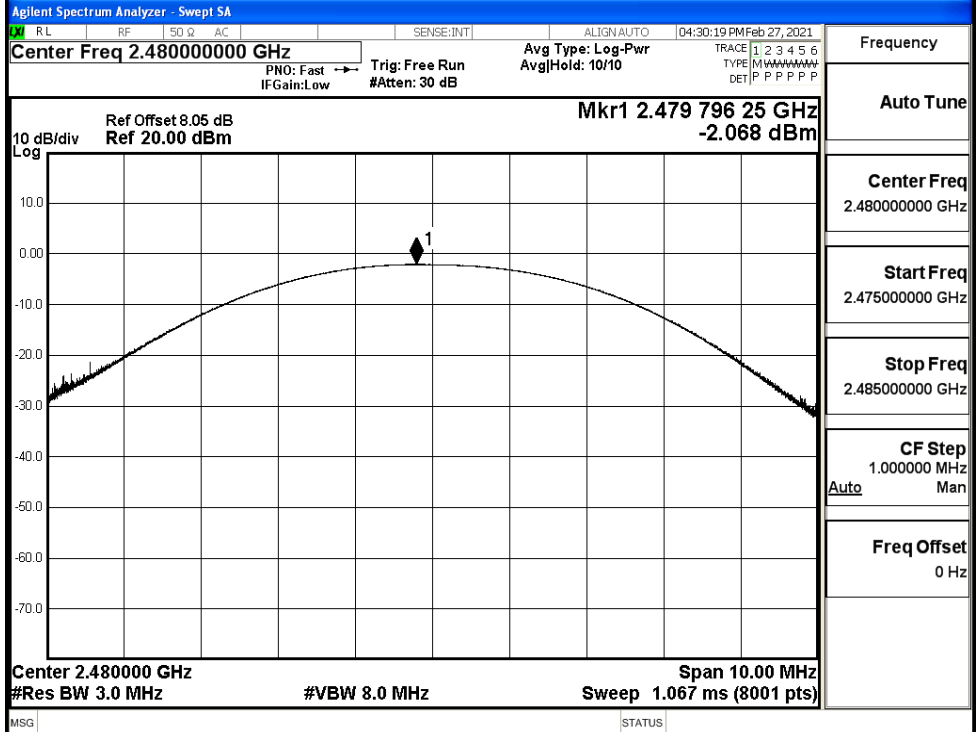
GFSK/LCH



GFSK/MCH

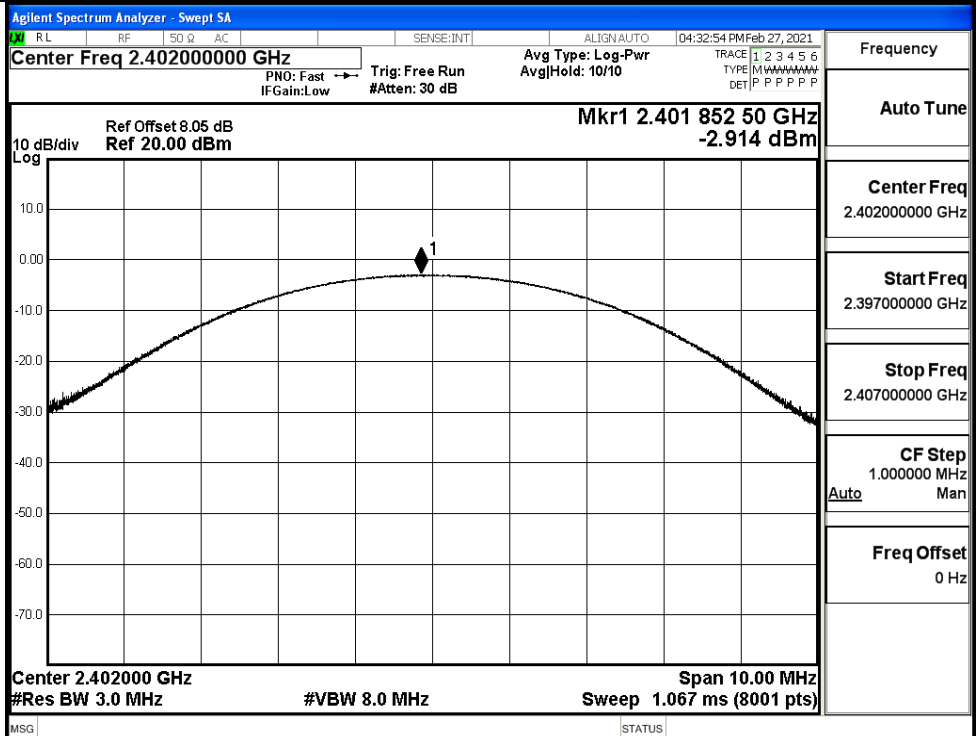


GFSK/HCH



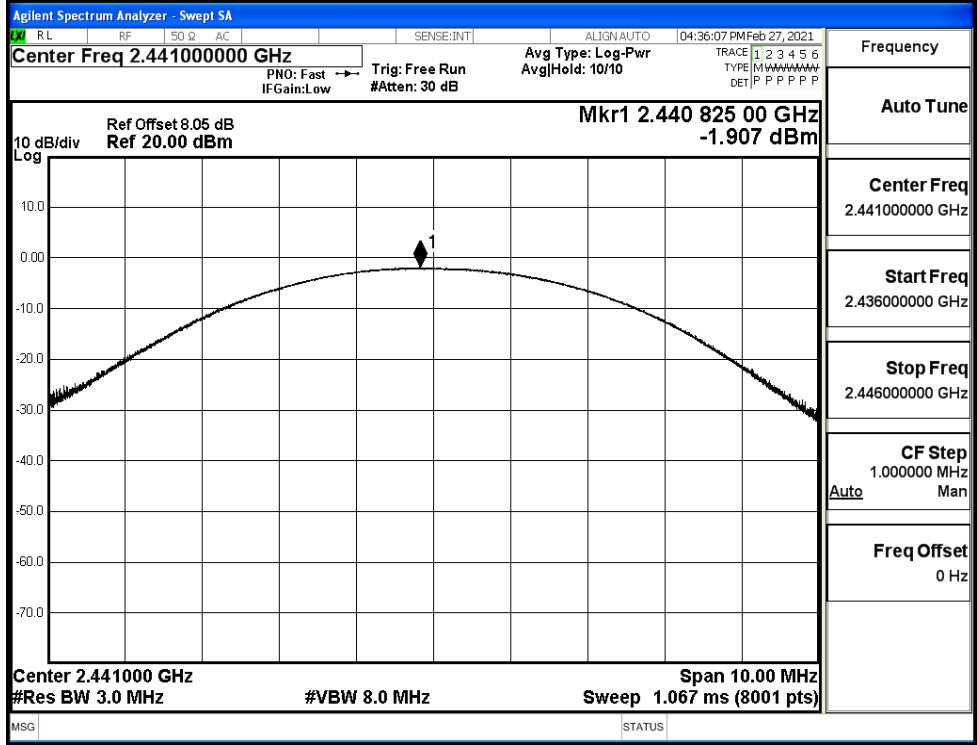
Frequency	
Auto Tune	
Center Freq	2.48000000 GHz
Start Freq	2.475000000 GHz
Stop Freq	2.485000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/LCH

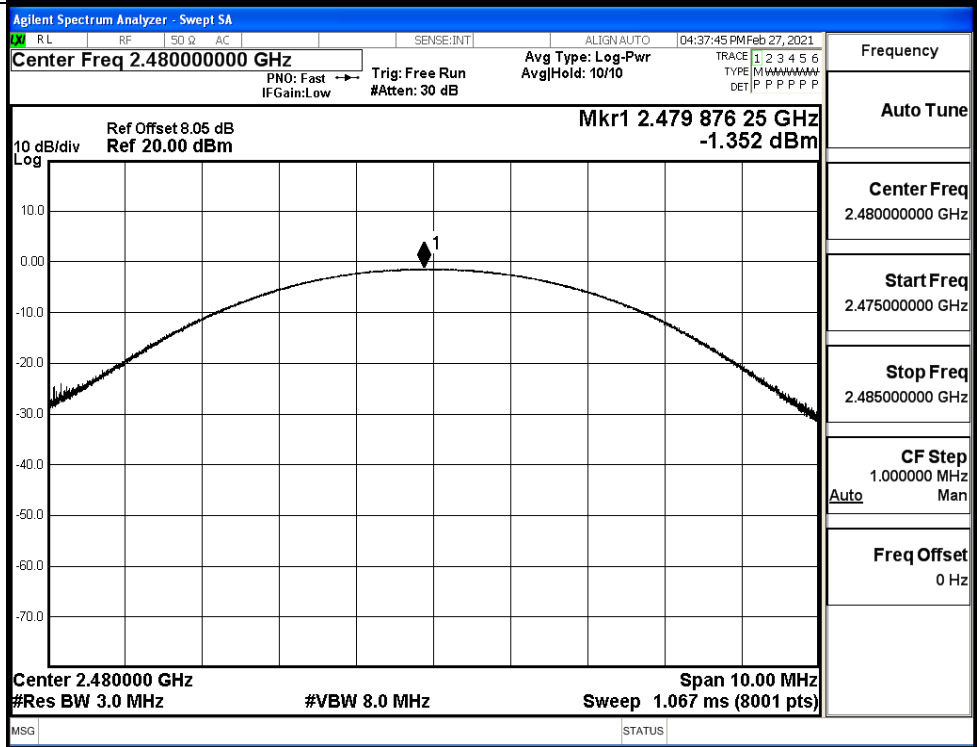


Frequency	
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.397000000 GHz
Stop Freq	2.407000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

π /4DQPSK/MCH

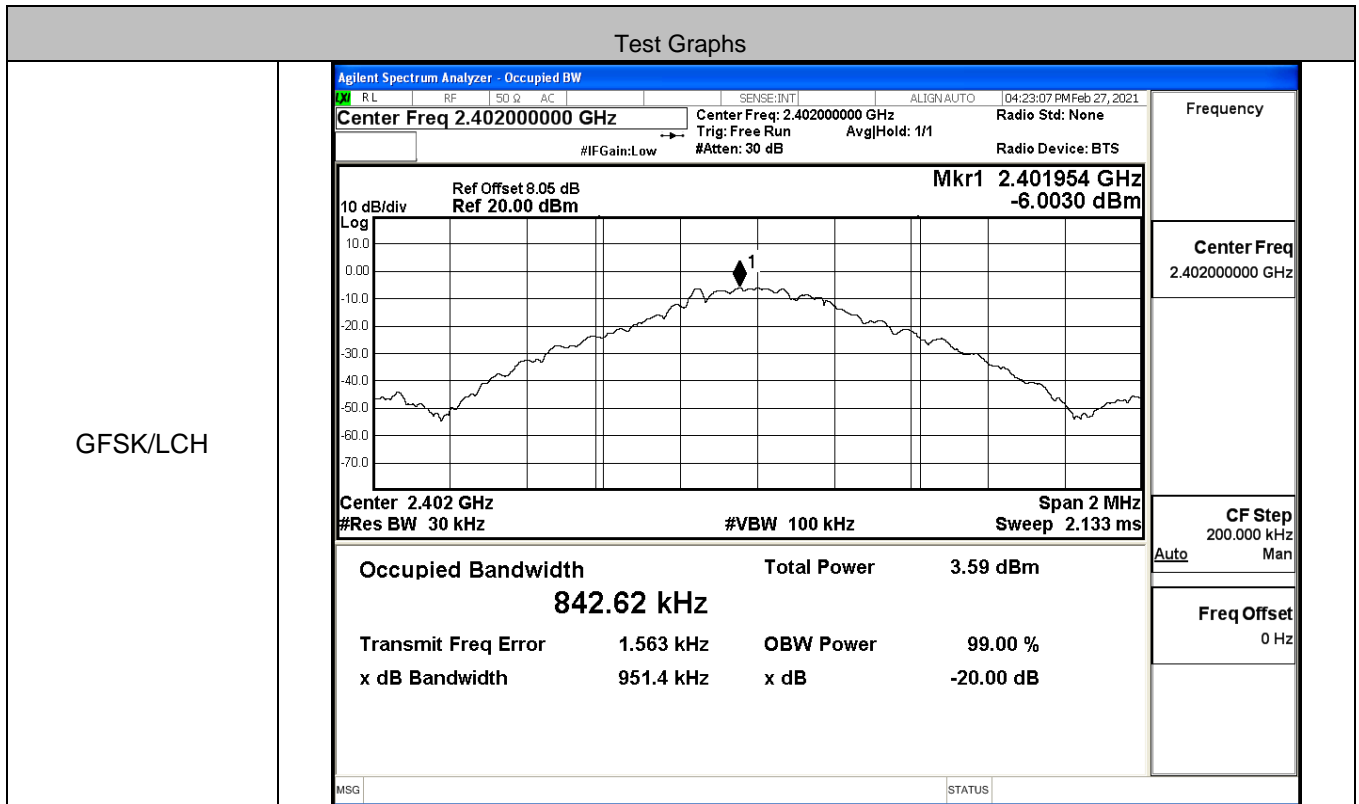


π /4DQPSK/HCH

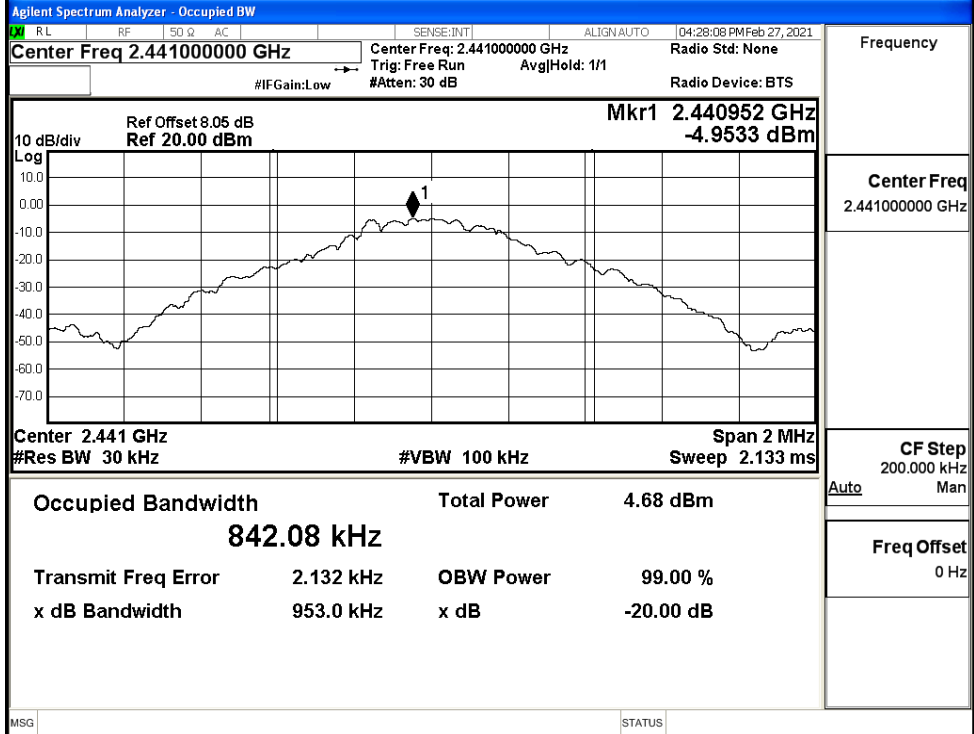


A.2 20dB Bandwidth

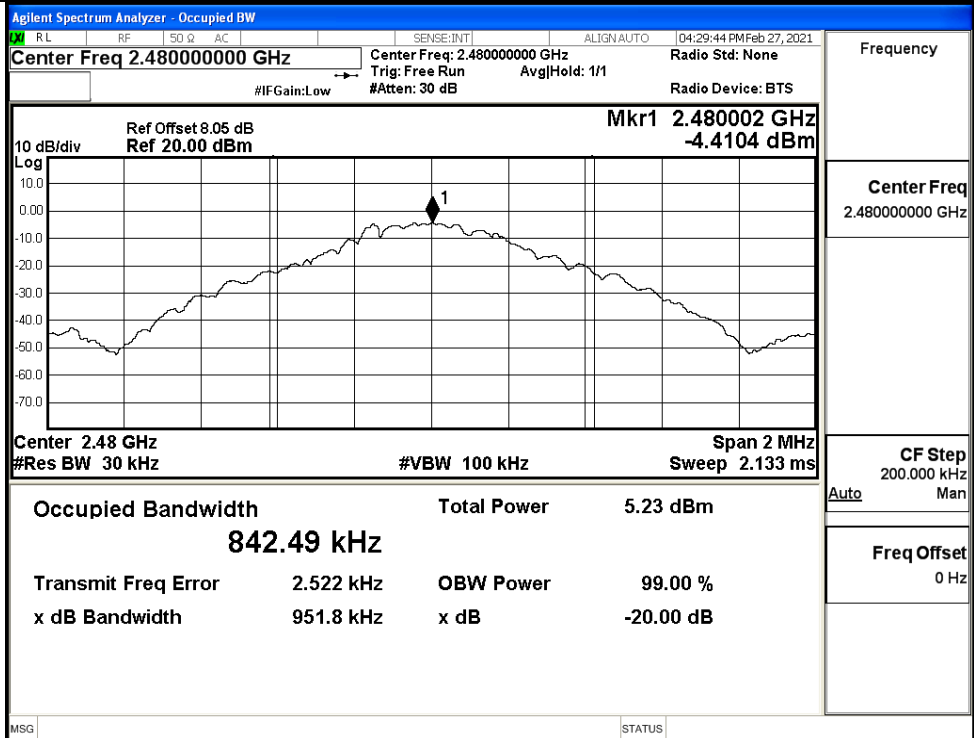
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9514	Not Specified	PASS
	MCH	0.9530	Not Specified	PASS
	HCH	0.9518	Not Specified	PASS
π/4DQPSK	LCH	1.313	Not Specified	PASS
	MCH	1.311	Not Specified	PASS
	HCH	1.311	Not Specified	PASS



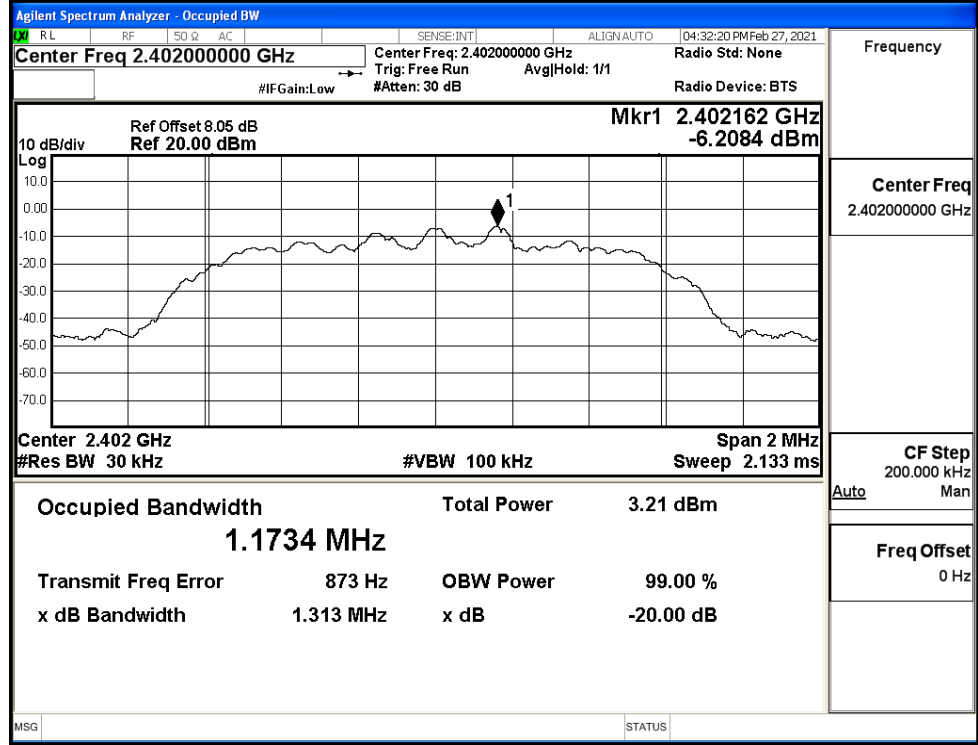
GFSK/MCH



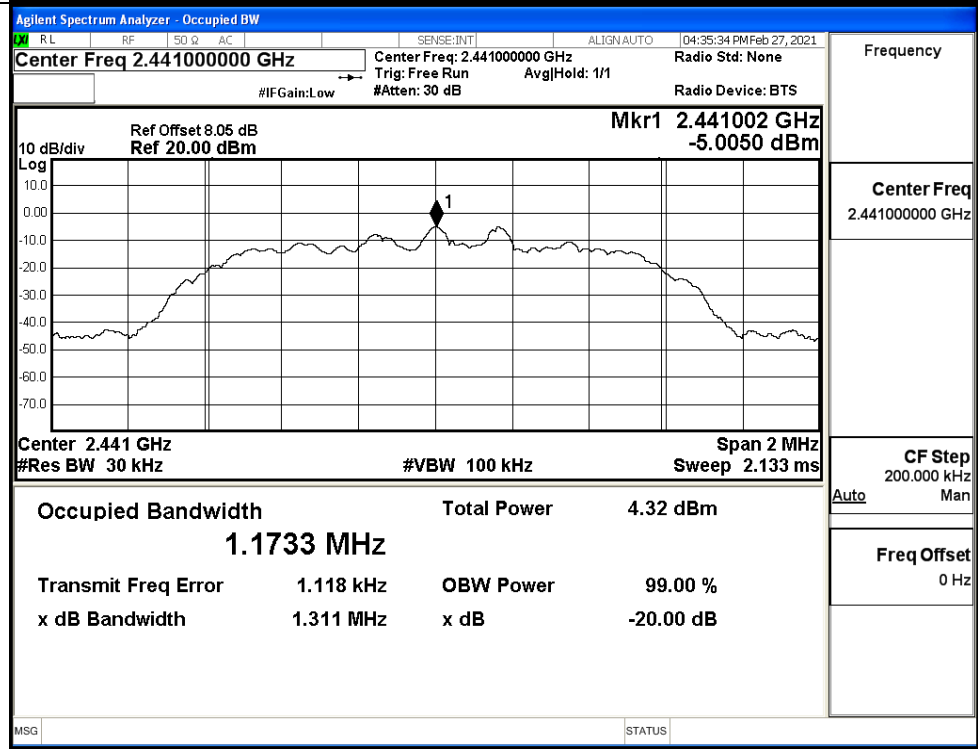
GFSK/HCH



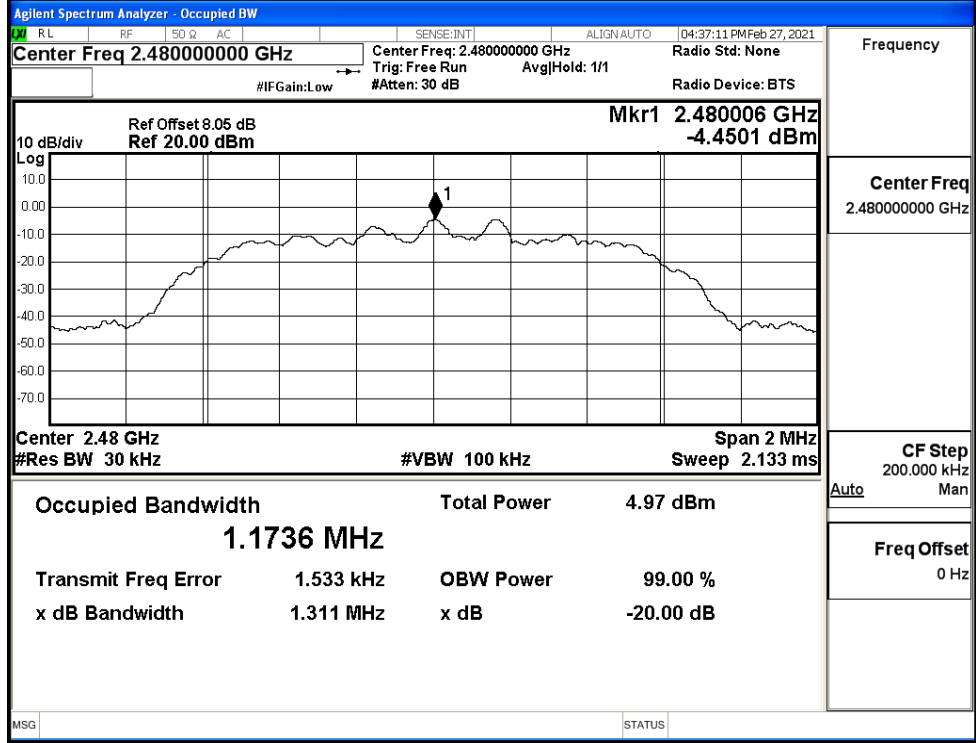
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

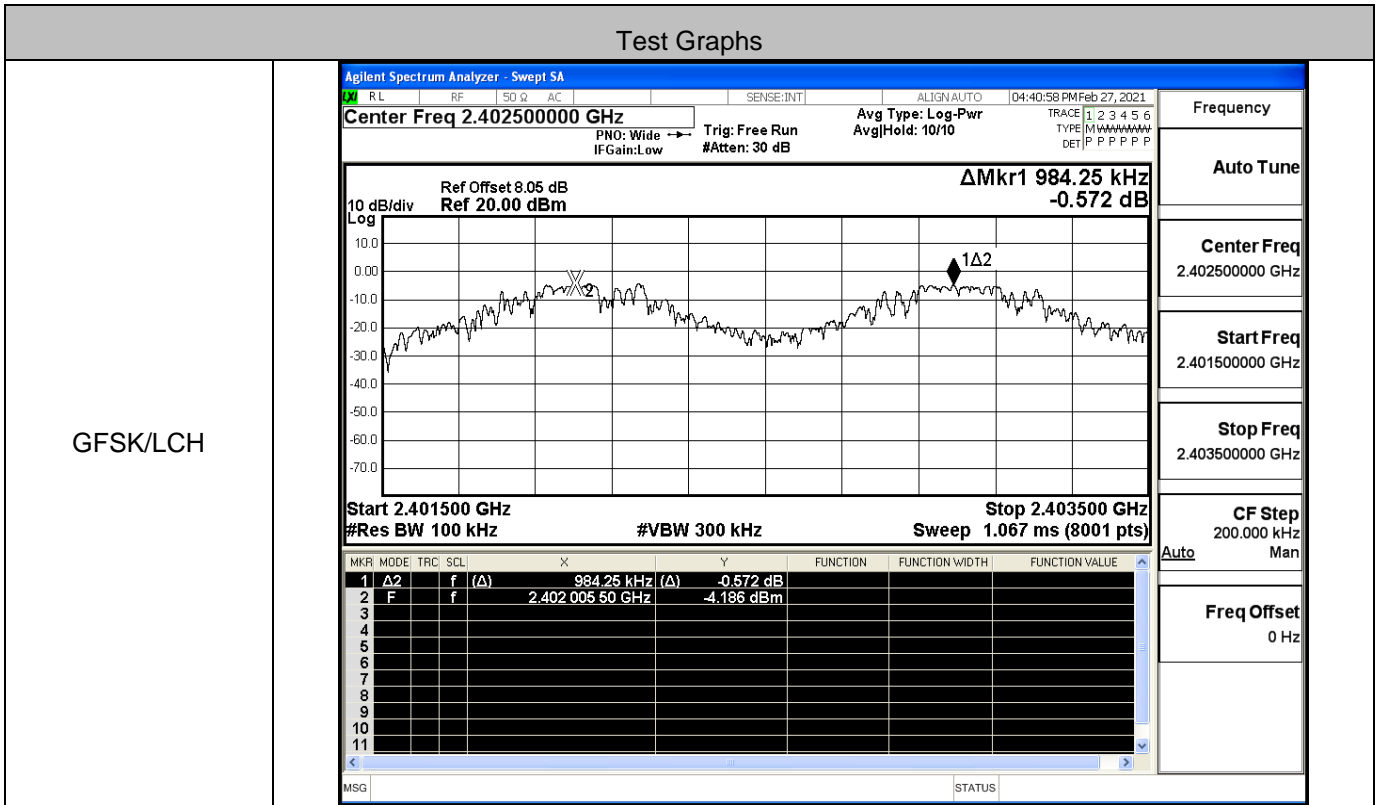


π/4DQPSK/HCH

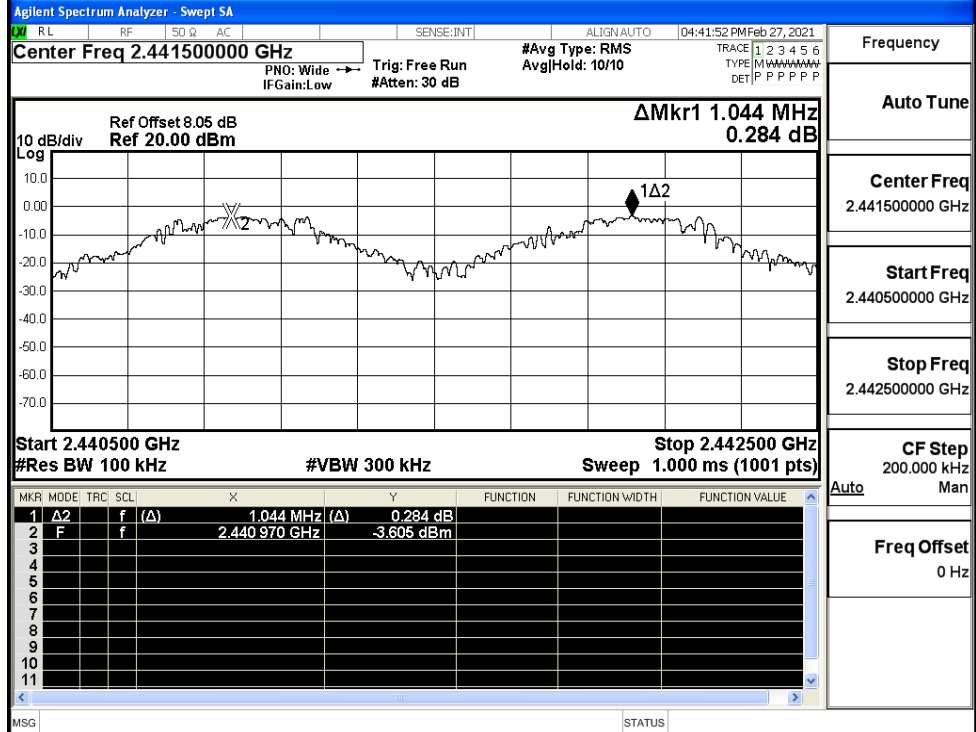


A.3 Carrier Frequency Separation

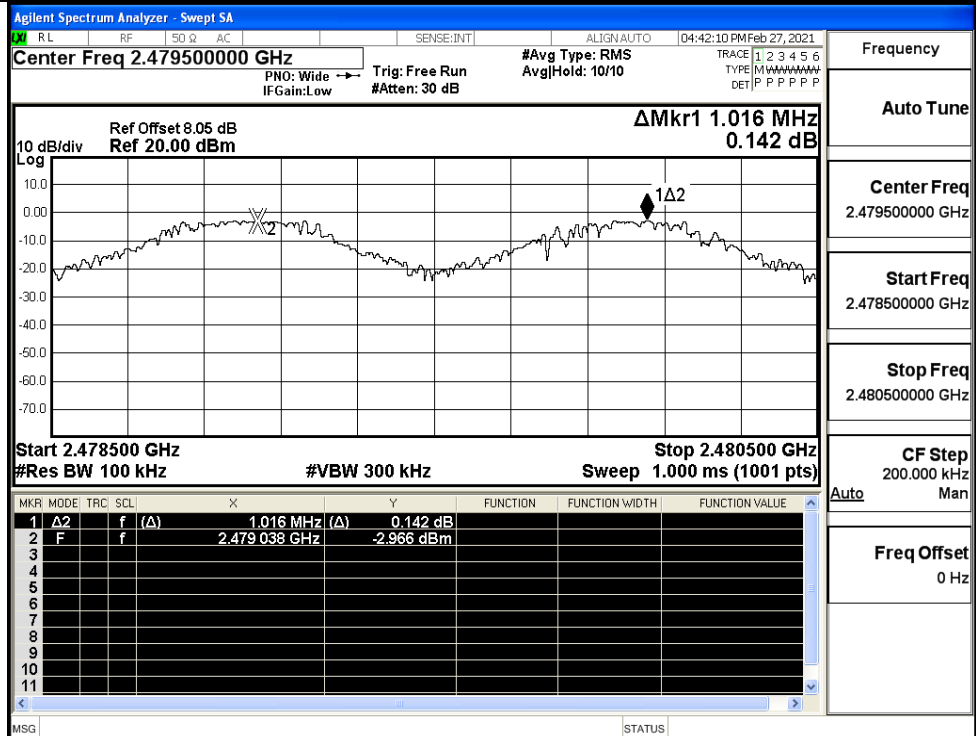
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.984	0.635	PASS
	MCH	1.044	0.635	PASS
	HCH	1.016	0.635	PASS
π/4DQPSK	LCH	0.982	0.875	PASS
	MCH	1.160	0.875	PASS
	HCH	1.114	0.875	PASS



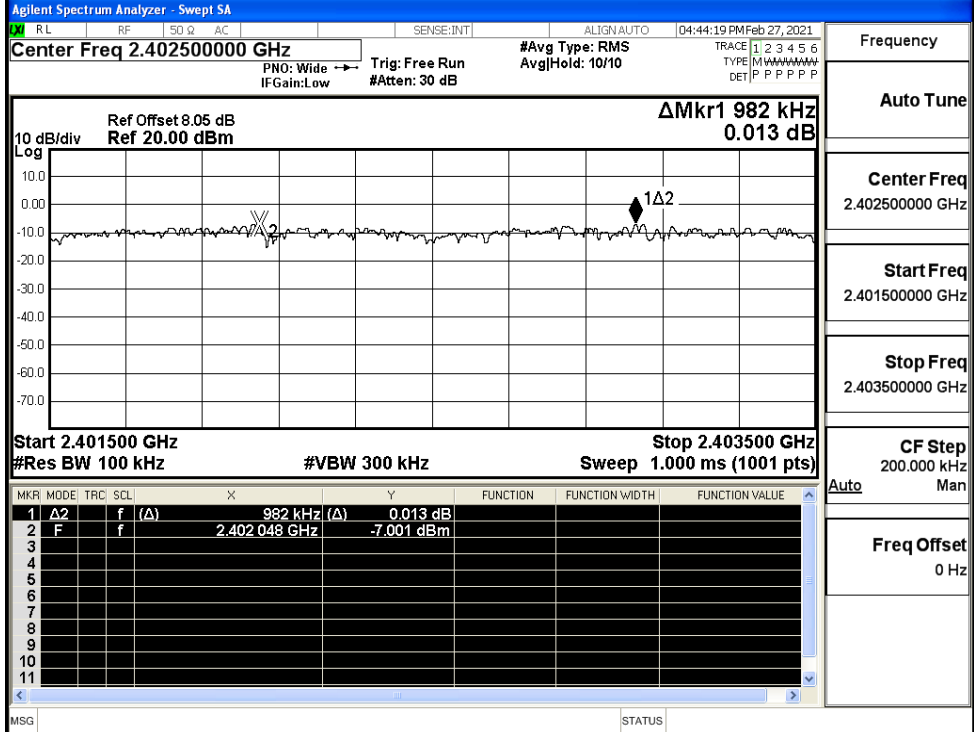
GFSK/MCH



GFSK/HCH

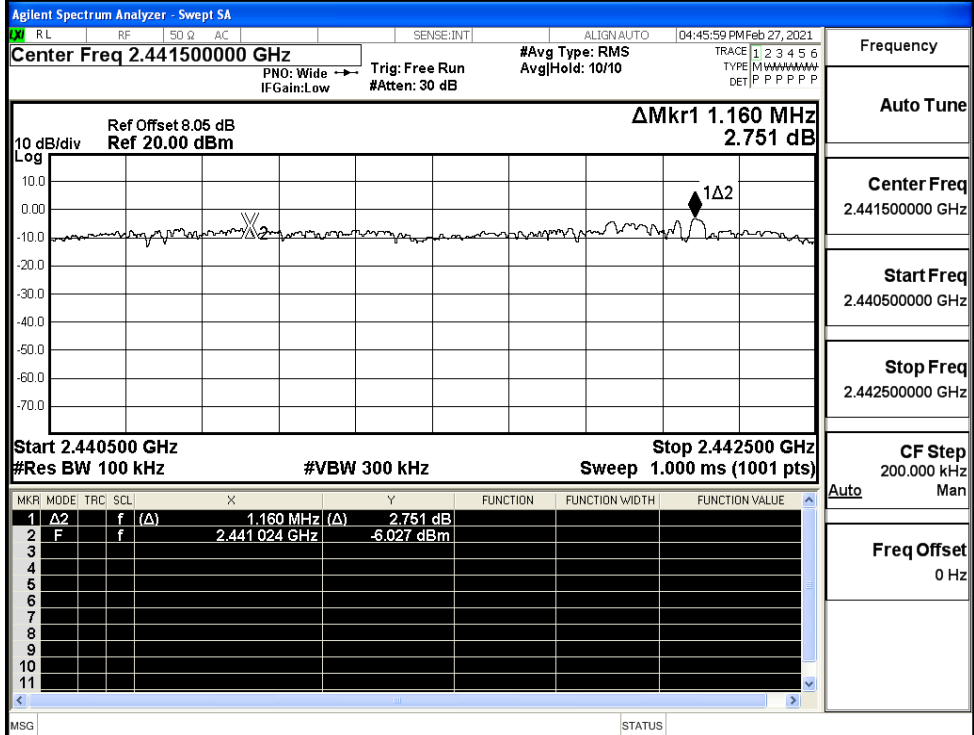


$\pi/4$ DQPSK/LCH



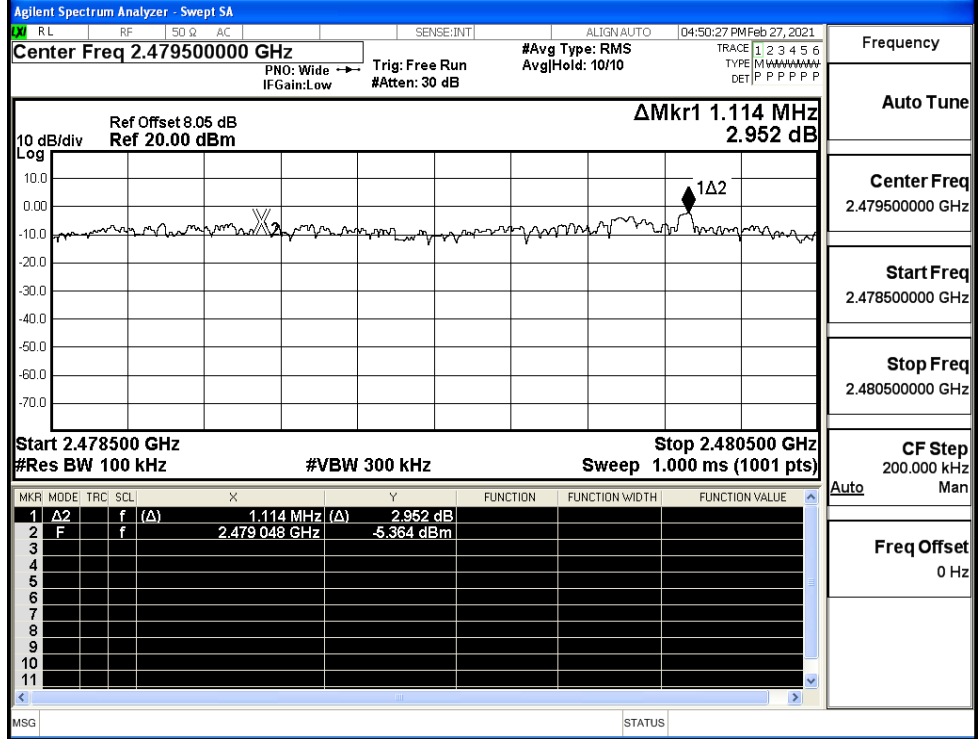
Frequency	
Auto Tune	
Center Freq	2.402500000 GHz
Start Freq	2.401500000 GHz
Stop Freq	2.403500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH



Frequency	
Auto Tune	
Center Freq	2.441500000 GHz
Start Freq	2.440500000 GHz
Stop Freq	2.442500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π/4DQPSK/HCH



Frequency
Auto Tune
Center Freq 2.479500000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.480500000 GHz
CF Step 200.000 kHz
Auto Man
Freq Offset 0 Hz

A.4 Hopping Channel Number

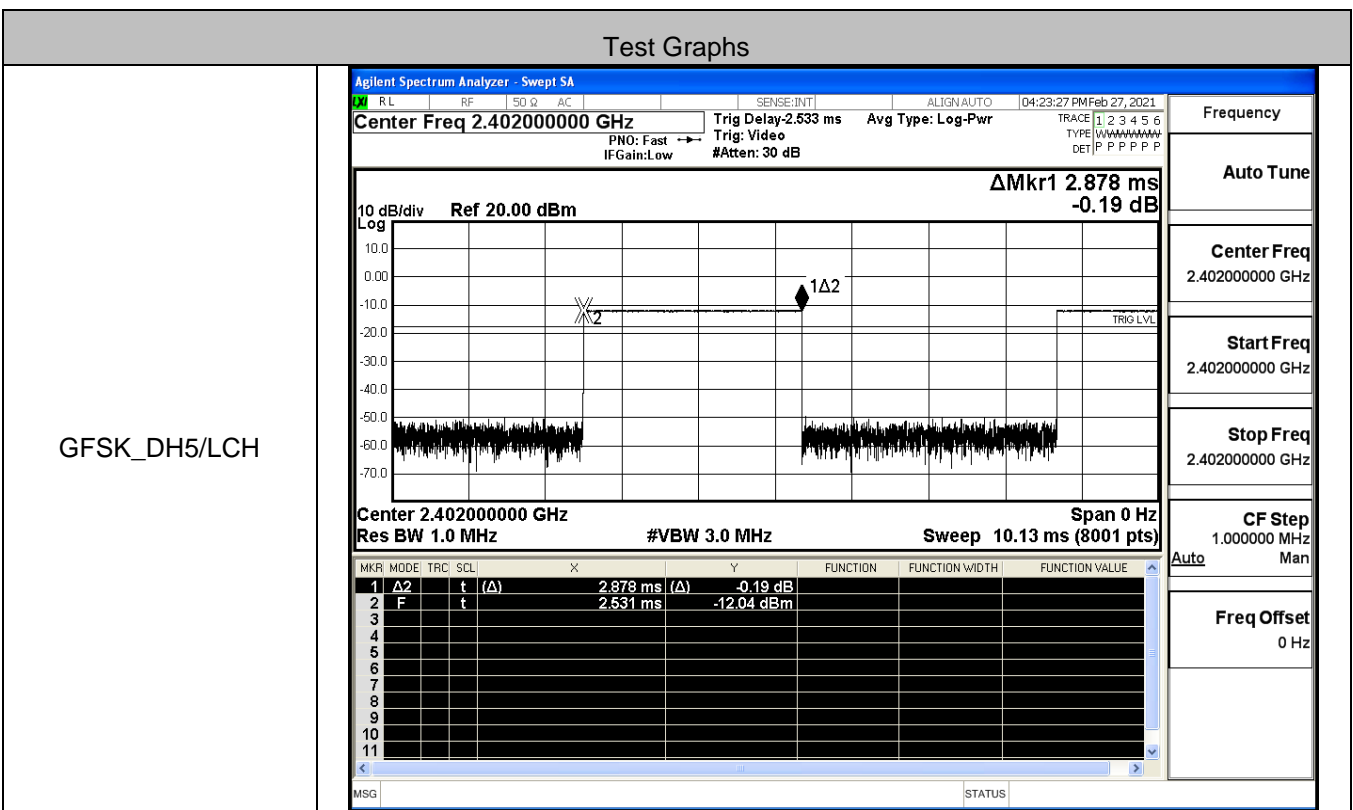
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS

Test Graphs

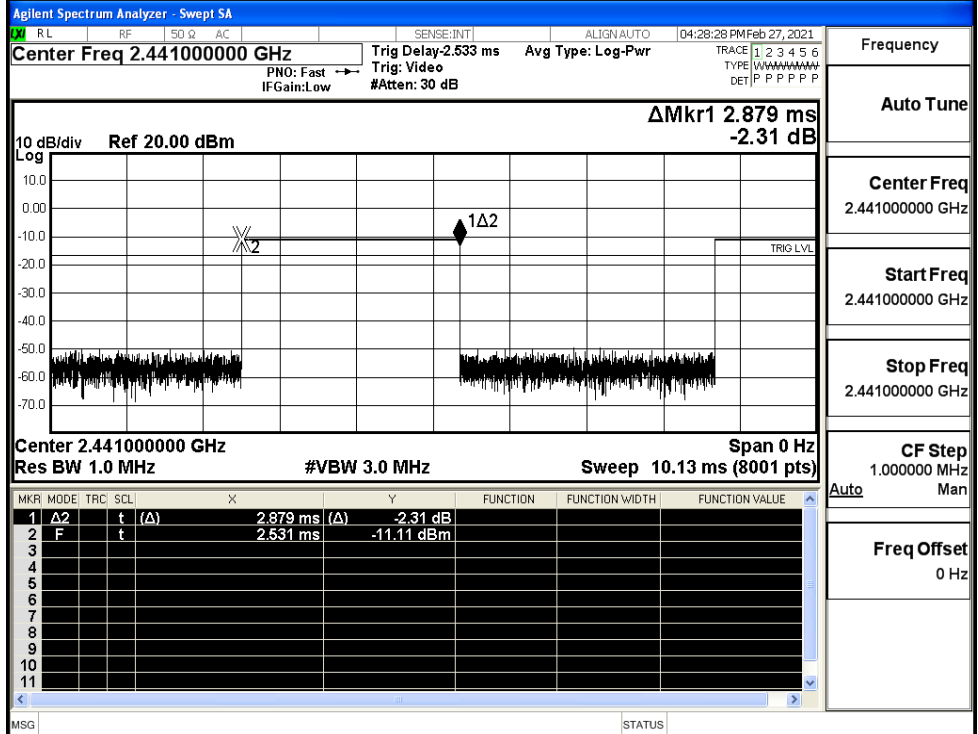
GFSK/Hop	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 2.441750000 GHz #Avg Type: RMS #Res BW 100 kHz #VBW 300 kHz Start 2.40000 GHz Stop 2.48350 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>78.041 MHz</td> <td>1.543 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td></td> <td>2.401952 GHz</td> <td>-4.375 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.041 MHz	1.543 dB				2	F	f		2.401952 GHz	-4.375 dBm				Frequency Auto Tune Center Freq 2.441750000 GHz Start Freq 2.400000000 GHz Stop Freq 2.483500000 GHz CF Step 8.350000 MHz Freq Offset 0 Hz
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MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ 2	f	(Δ)	78.083 MHz	1.633 dB																								
2	F	f		2.402046 GHz	-6.688 dBm																								

A.5 Dwell Time

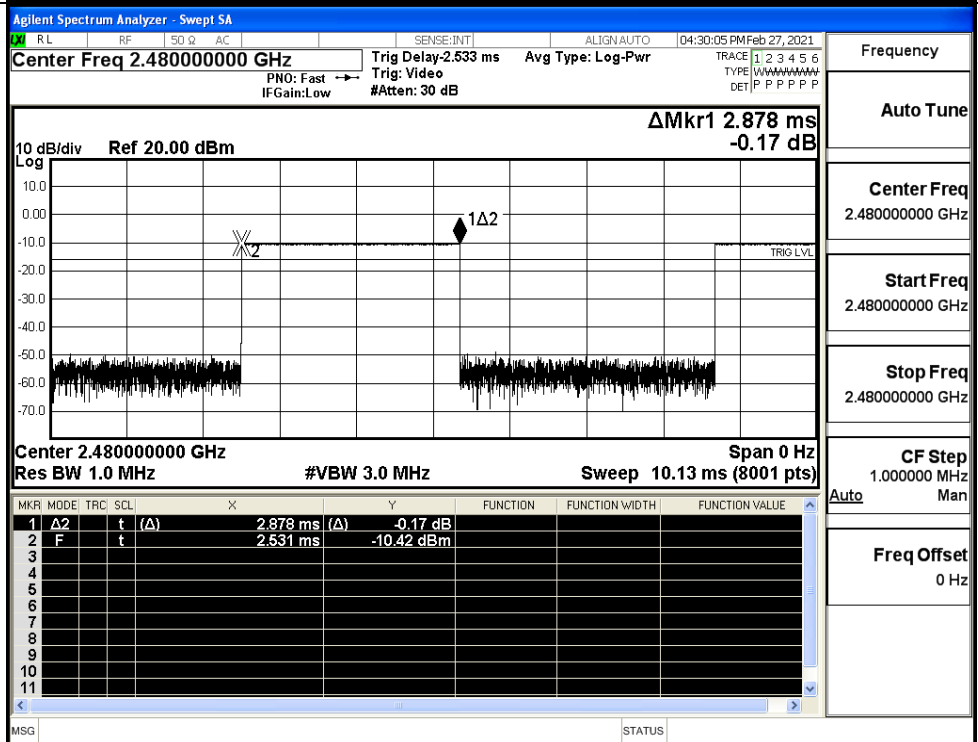
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7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



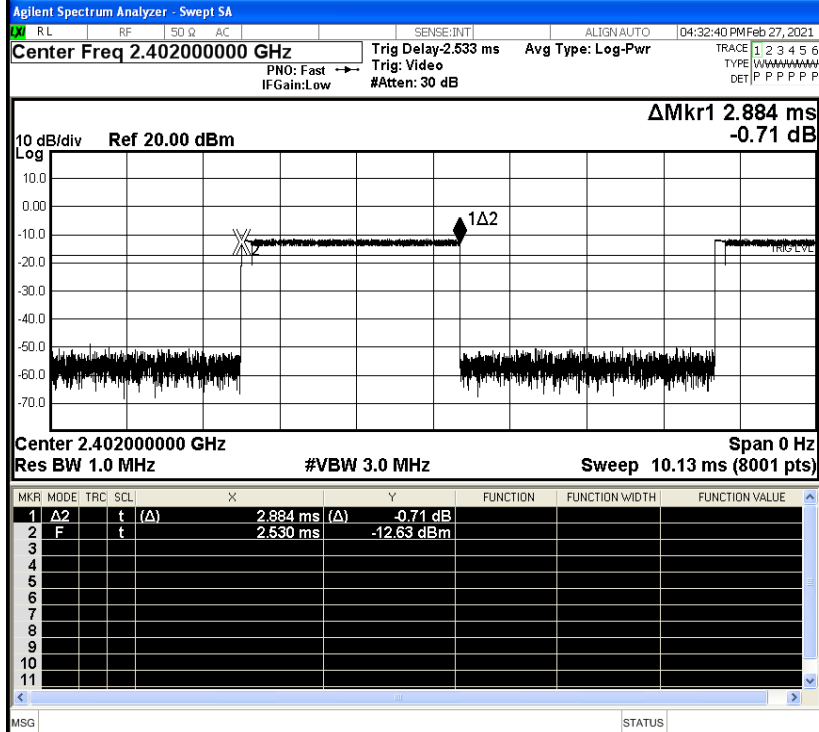
GFSK_DH5/MCH



GFSK_DH5/HCH

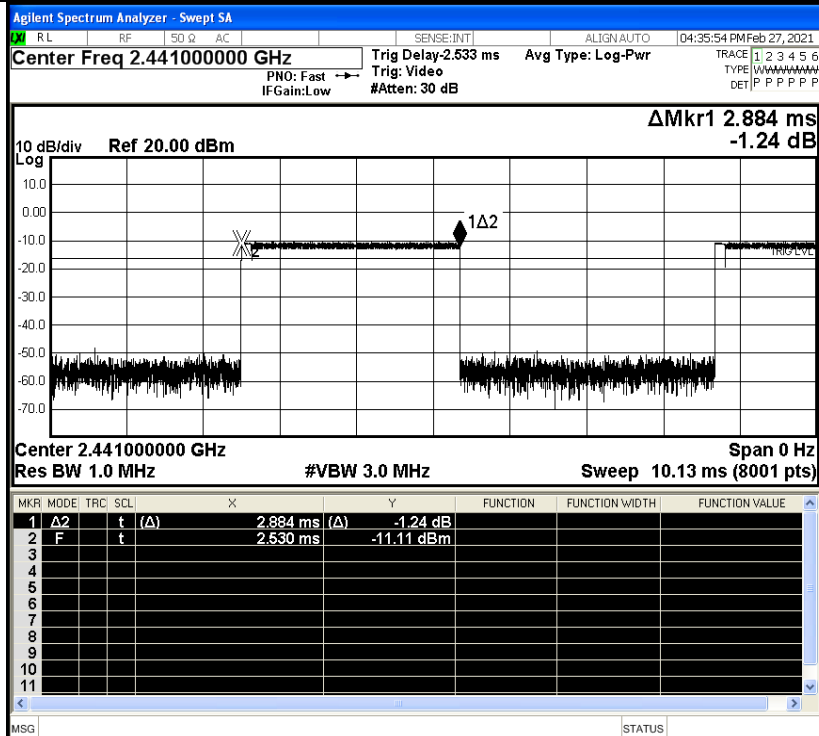


$\pi/4$ DQPSK
_2DH5/LCH



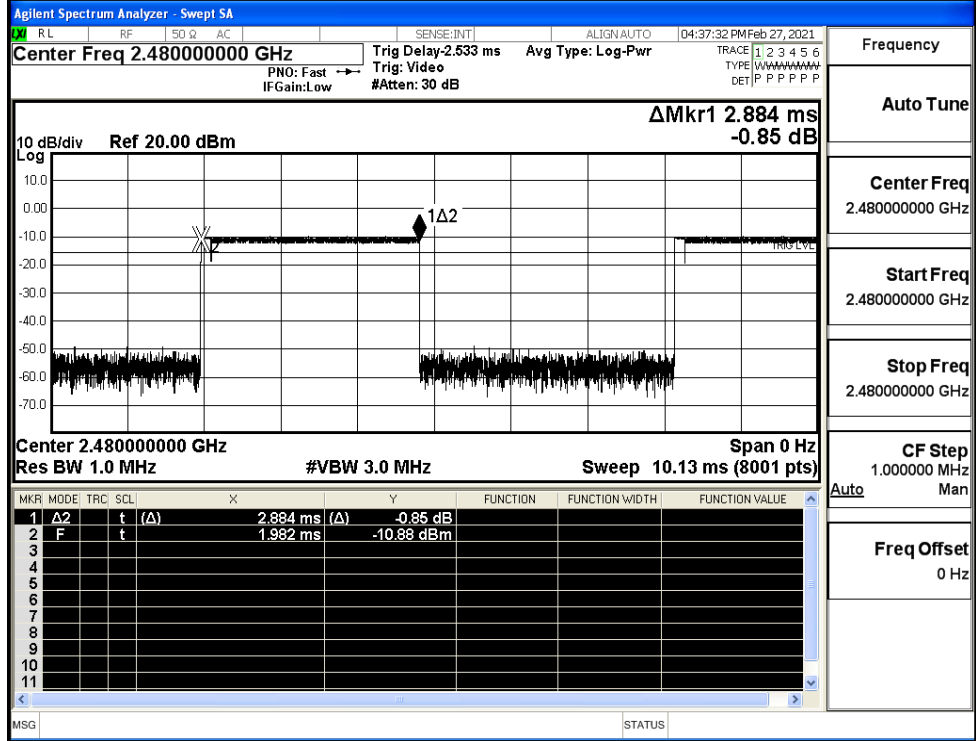
Frequency	2.40200000 GHz
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.40200000 GHz
Stop Freq	2.40200000 GHz
CF Step	1.000000 MHz
Auto Man	
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/MCH



Frequency	2.44100000 GHz
Auto Tune	
Center Freq	2.44100000 GHz
Start Freq	2.44100000 GHz
Stop Freq	2.44100000 GHz
CF Step	1.000000 MHz
Auto Man	
Freq Offset	0 Hz

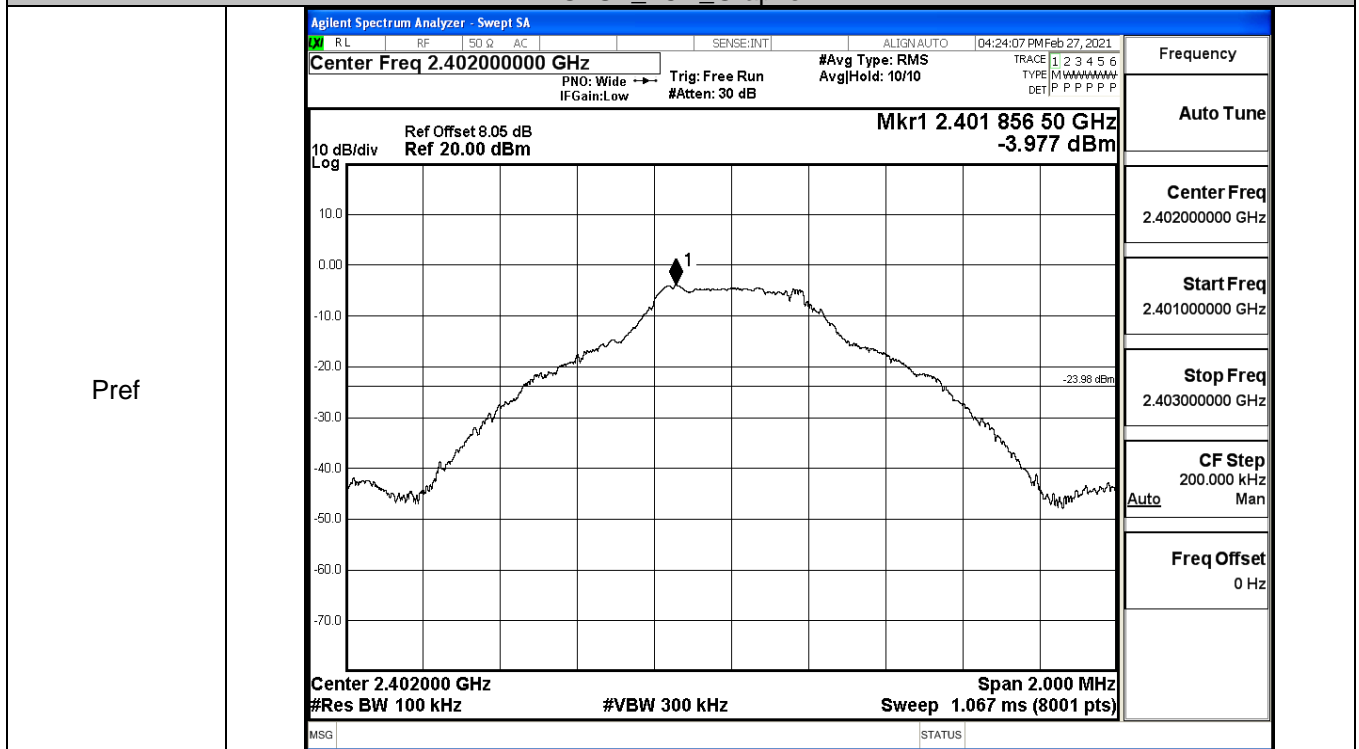
$\pi/4$ DQPSK
_2DH5/HCH

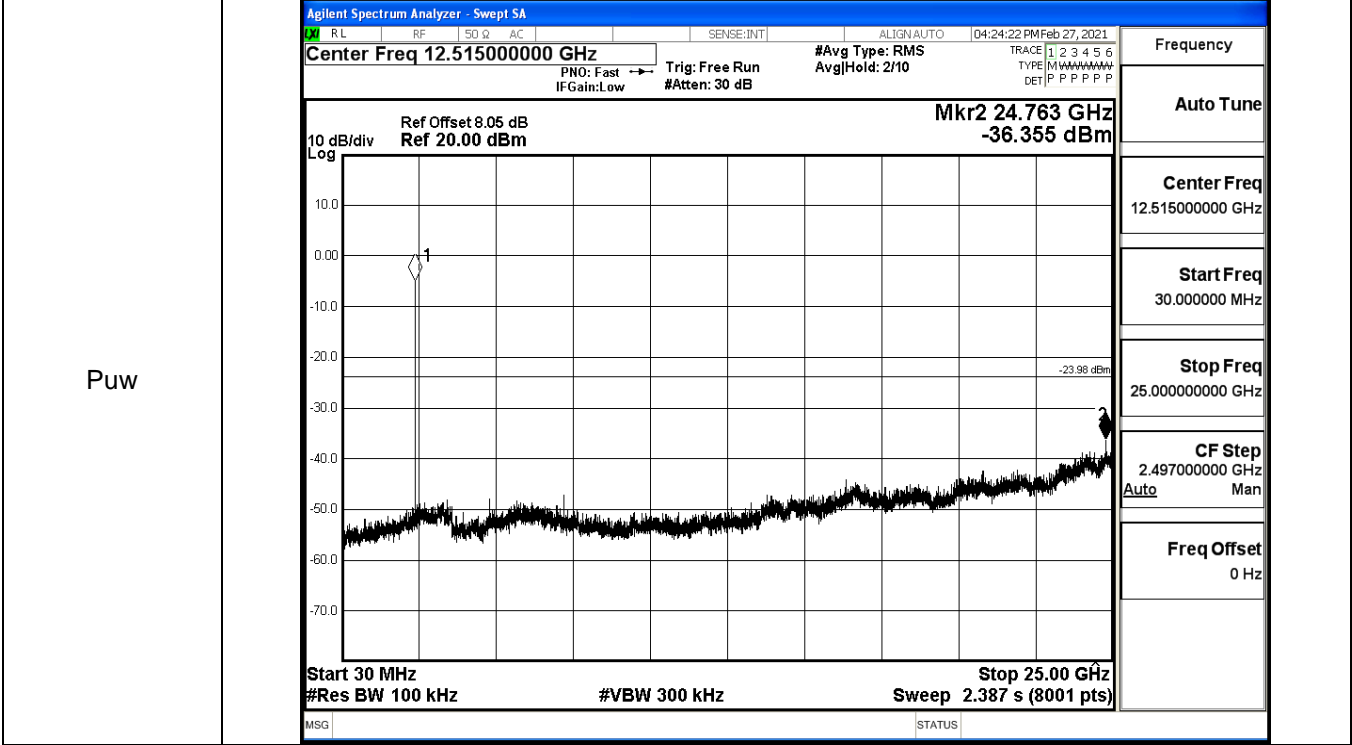


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.977	-36.355	-23.977	PASS
	MCH	-3.065	-38.046	-23.065	PASS
	HCH	-2.882	-37.542	-22.882	PASS
π/4DQPSK	LCH	-4.008	-35.768	-24.008	PASS
	MCH	-2.983	-38.586	-22.983	PASS
	HCH	-2.409	-37.592	-22.409	PASS

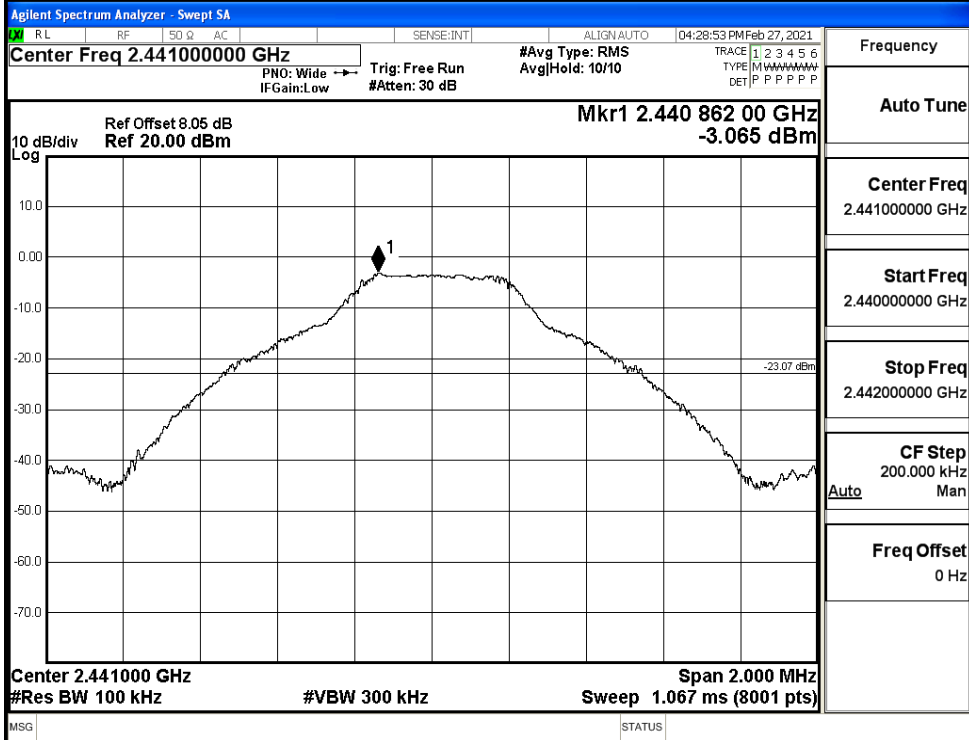
GFSK_LCH_Graphs



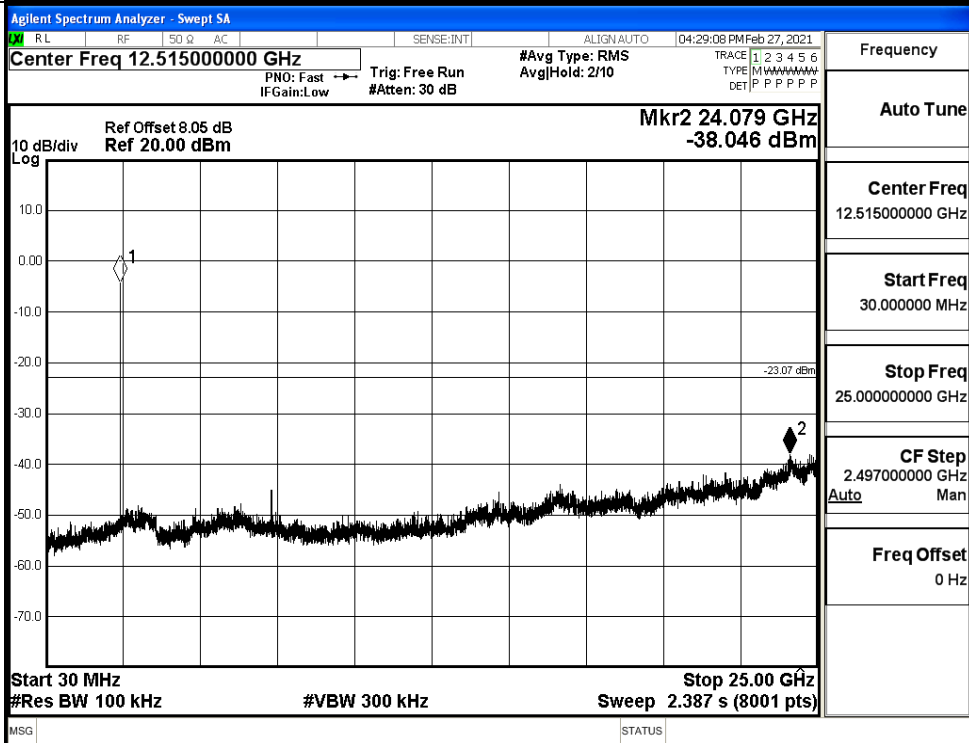


GFSK_MCH_Graphs

Pref

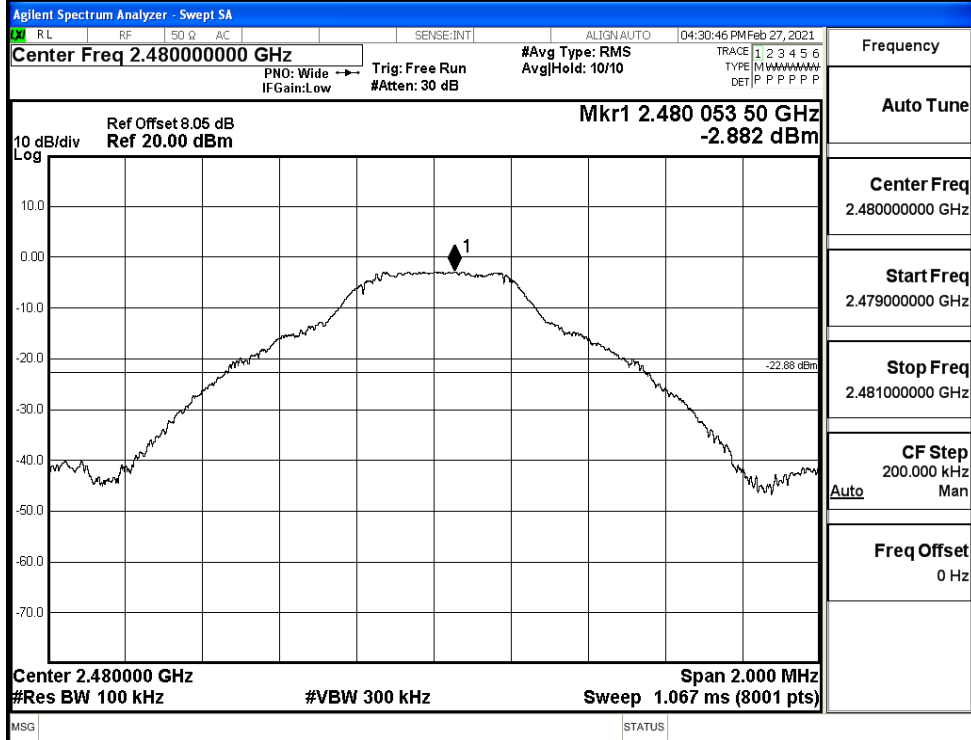


Puw

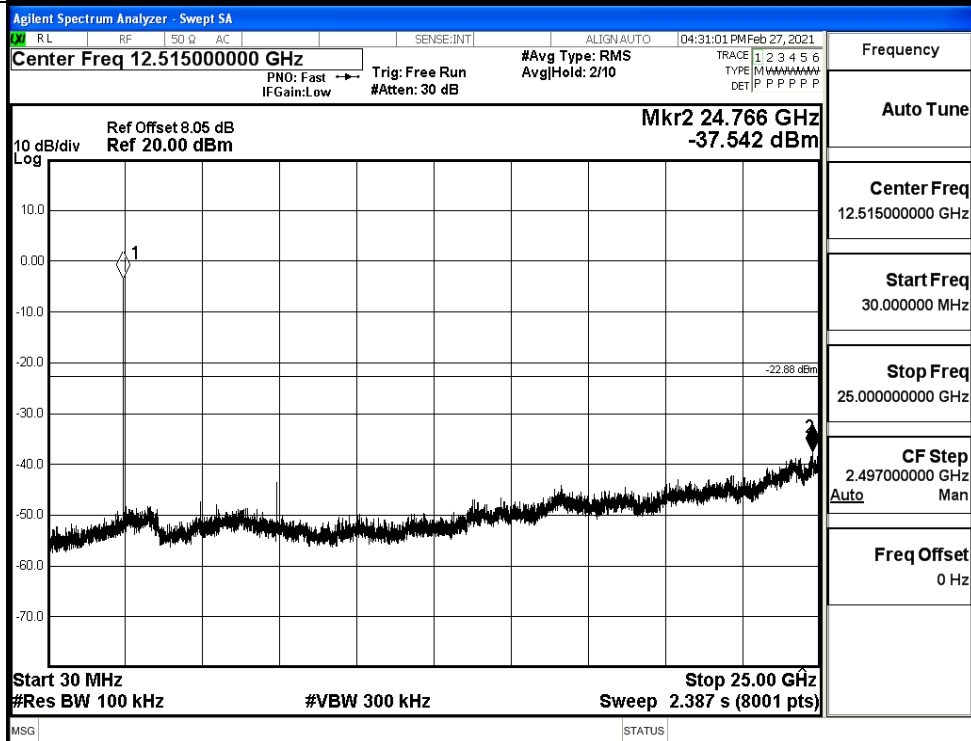


GFSK_HCH_Graphs

Pref

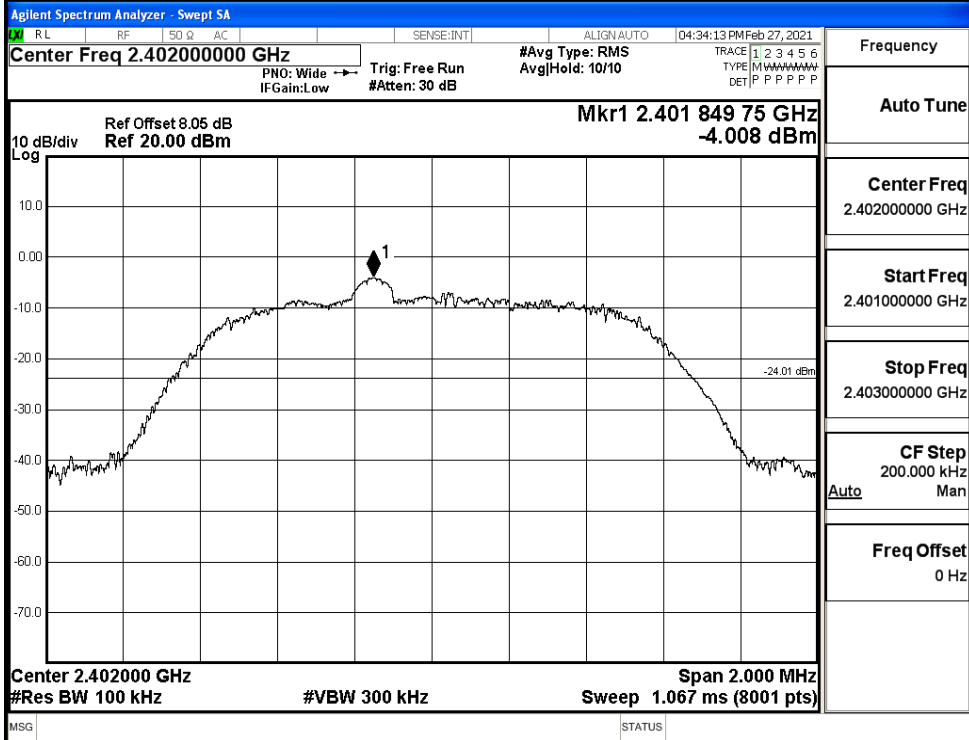


Puw

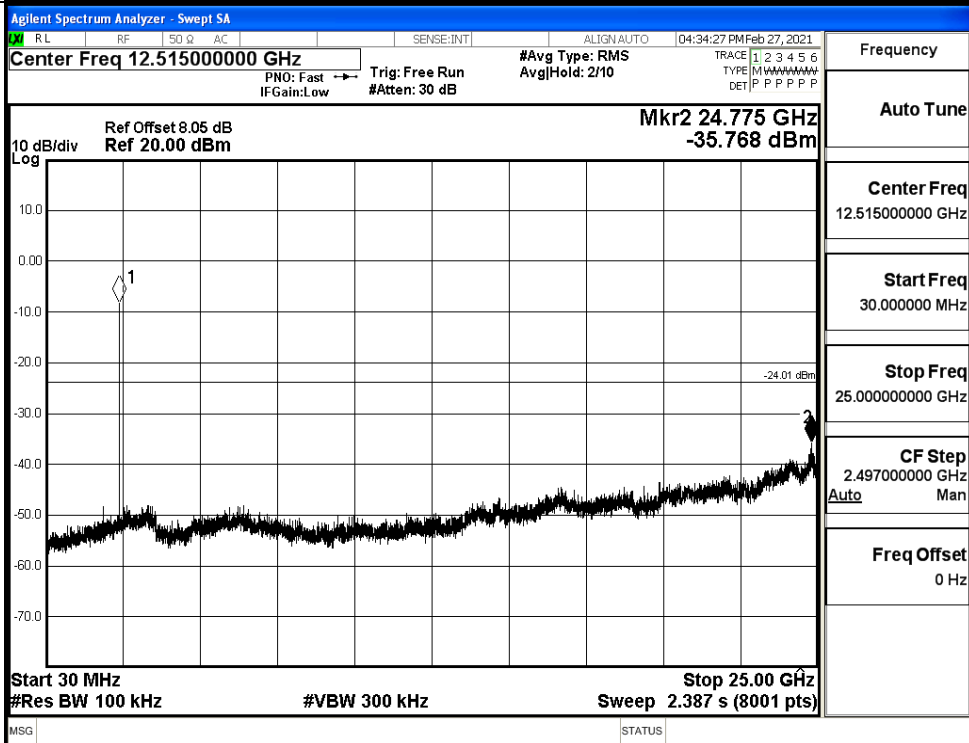


π /4DQPSK_LCH_Graphs

Pref

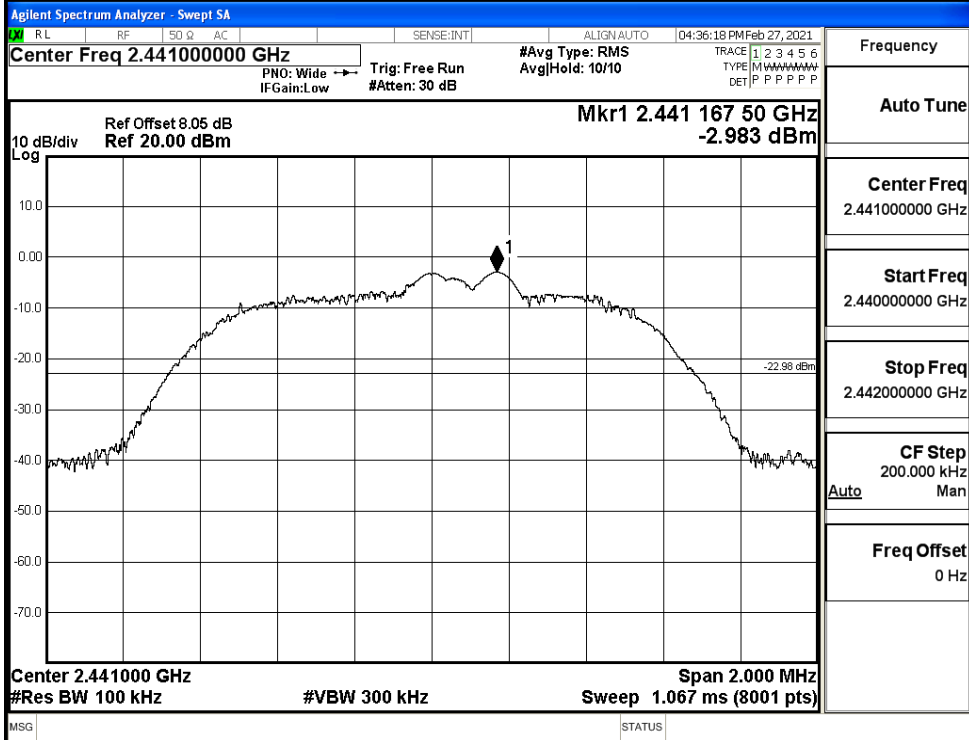


Puw

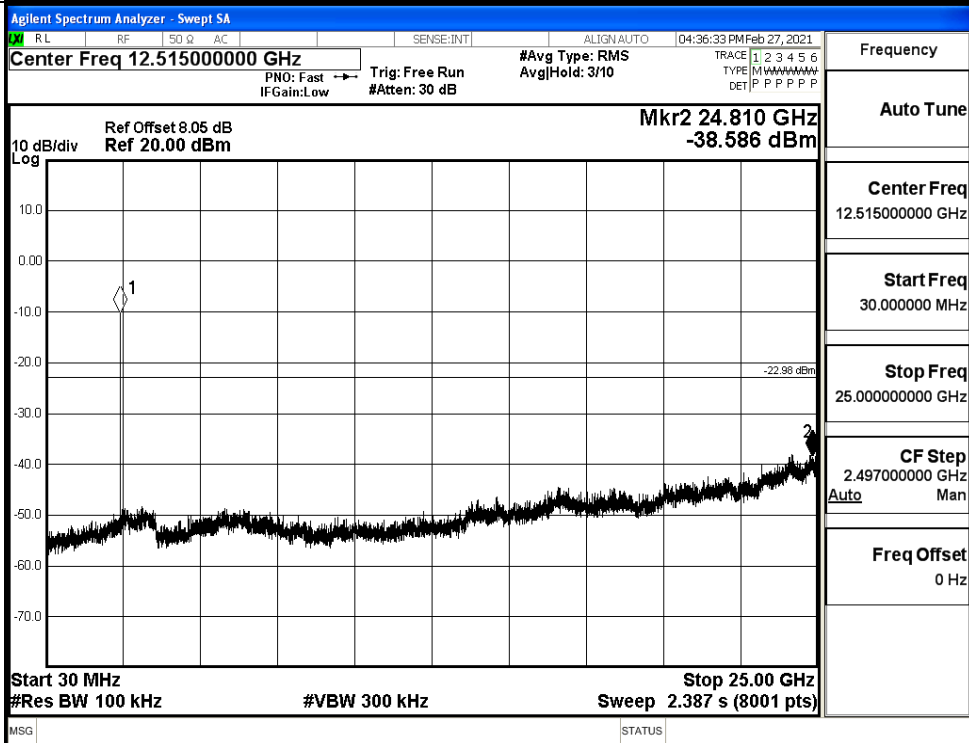


π /4DQPSK_MCH_Graphs

Pref

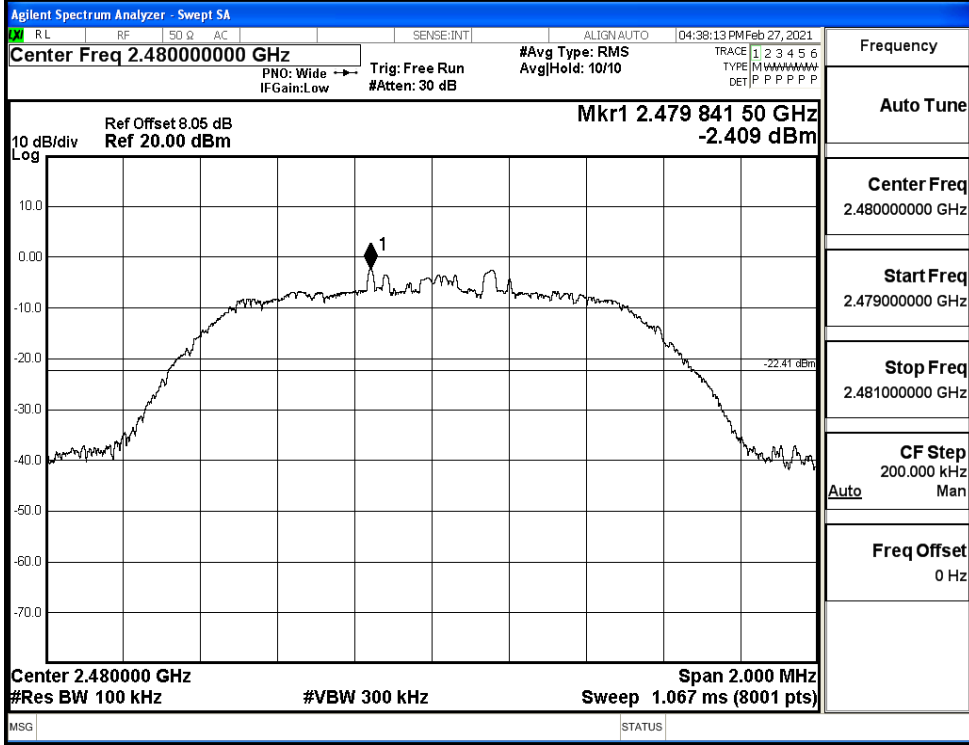


Puw



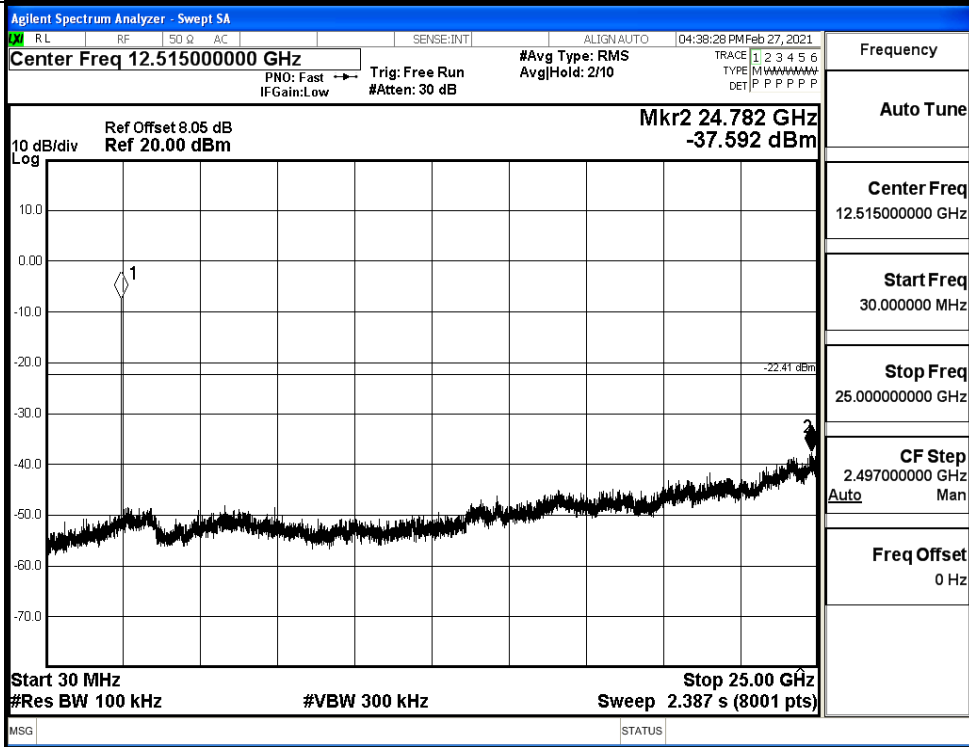
π /4DQPSK_HCH_Graphs

Pref



Frequency
Auto Tune
Center Freq 2.48000000 GHz
Start Freq 2.479000000 GHz
Stop Freq 2.481000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw



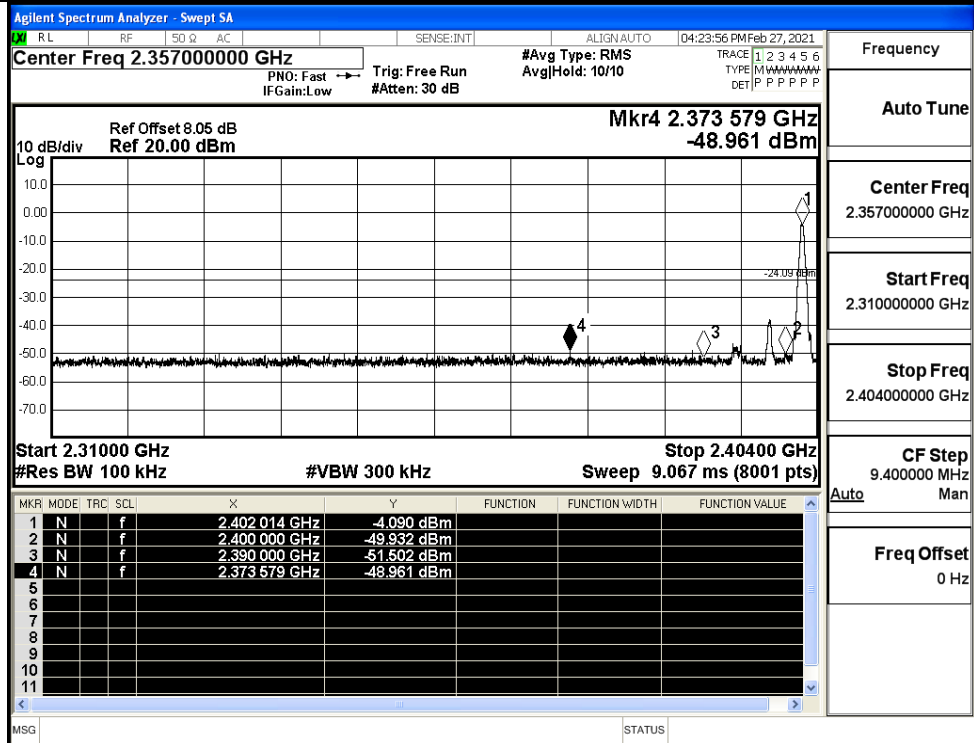
Frequency
Auto Tune
Center Freq 12.51500000 GHz
Start Freq 30.000000 MHz
Stop Freq 25.00000000 GHz
CF Step 2.497000000 GHz Auto Man
Freq Offset 0 Hz

A.7 Band-edge for RF Conducted Emissions

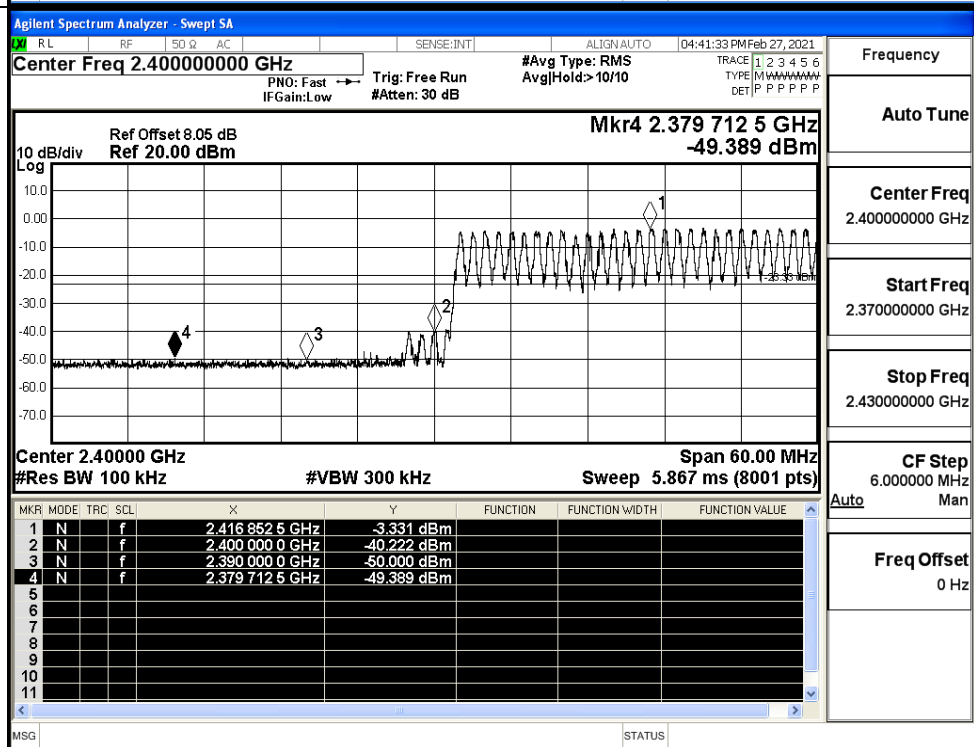
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-4.090	Off	-48.961	-24.09	PASS
			-3.331	On	-49.389	-23.33	PASS
	HCH	2480	-2.409	Off	-47.277	-22.41	PASS
			-2.284	On	-48.320	-22.28	PASS
π/4DQPSK	LCH	2402	-4.042	Off	-49.512	-24.04	PASS
			-3.262	On	-49.141	-23.26	PASS
	HCH	2480	-2.478	Off	-44.925	-22.48	PASS
			-2.459	On	-47.724	-22.46	PASS

Test Graphs

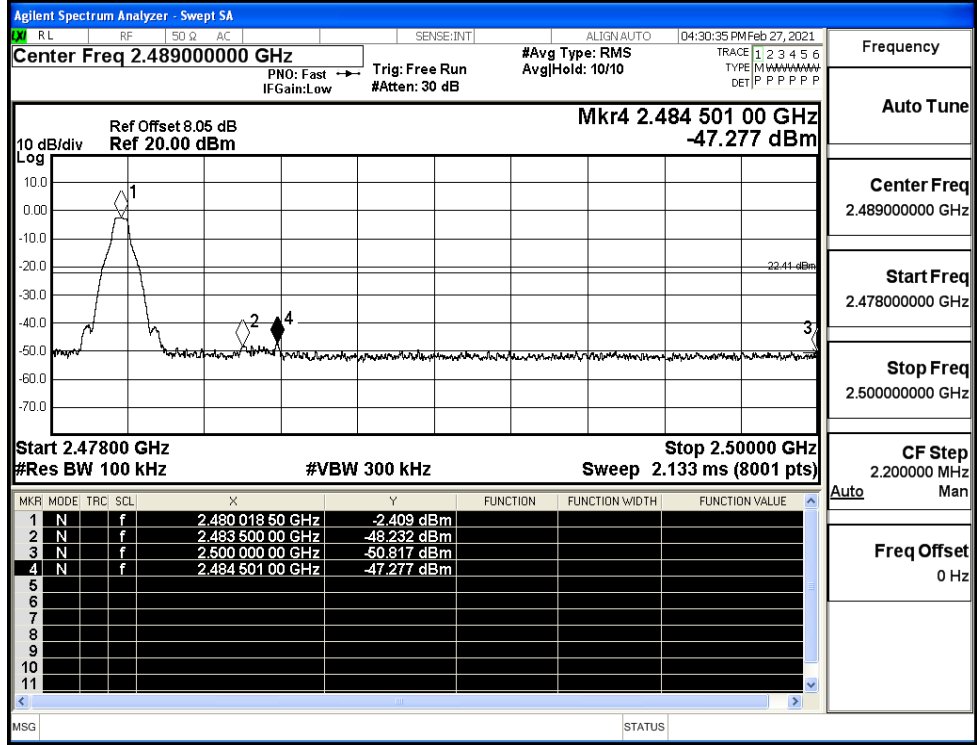
GFSK/LCH/No Hop



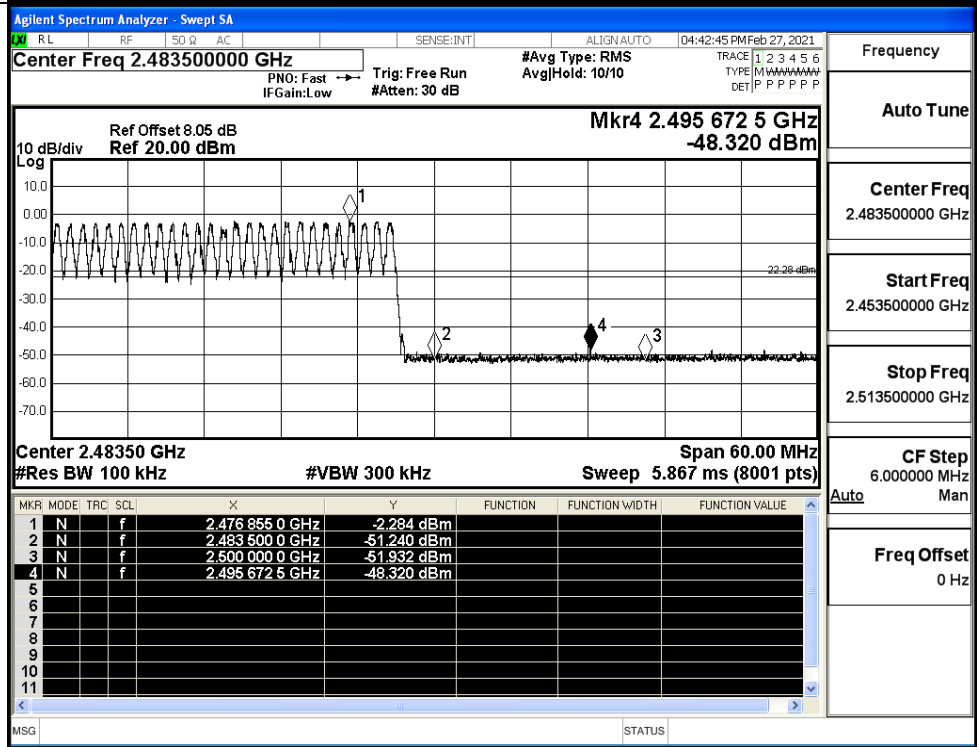
GFSK/LCH/Hop



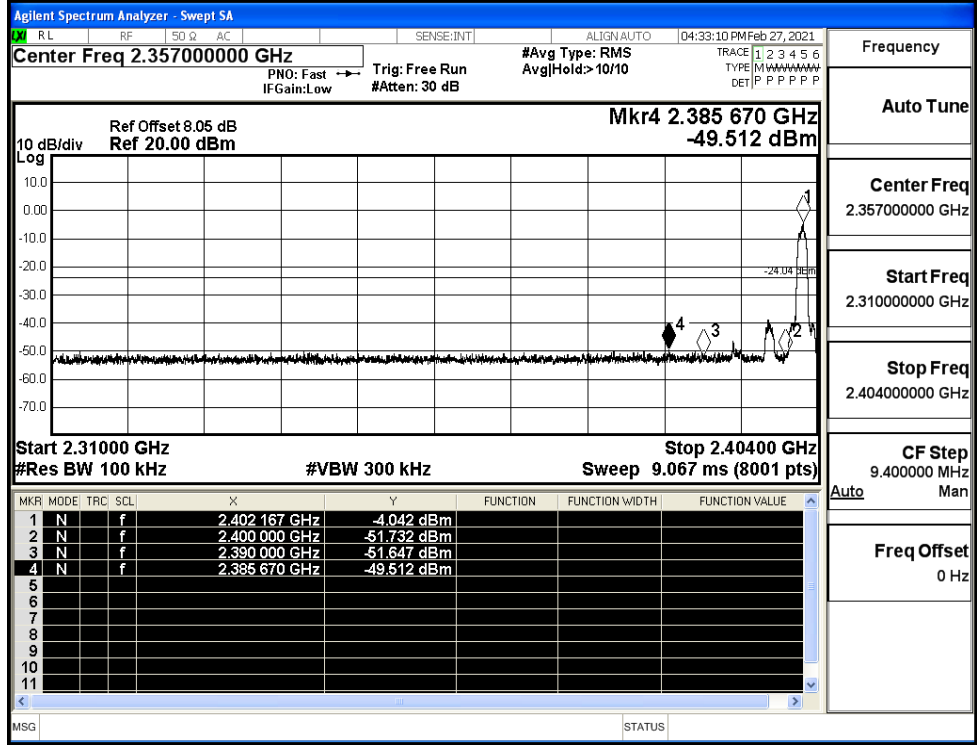
GFSK/HCH/No Hop



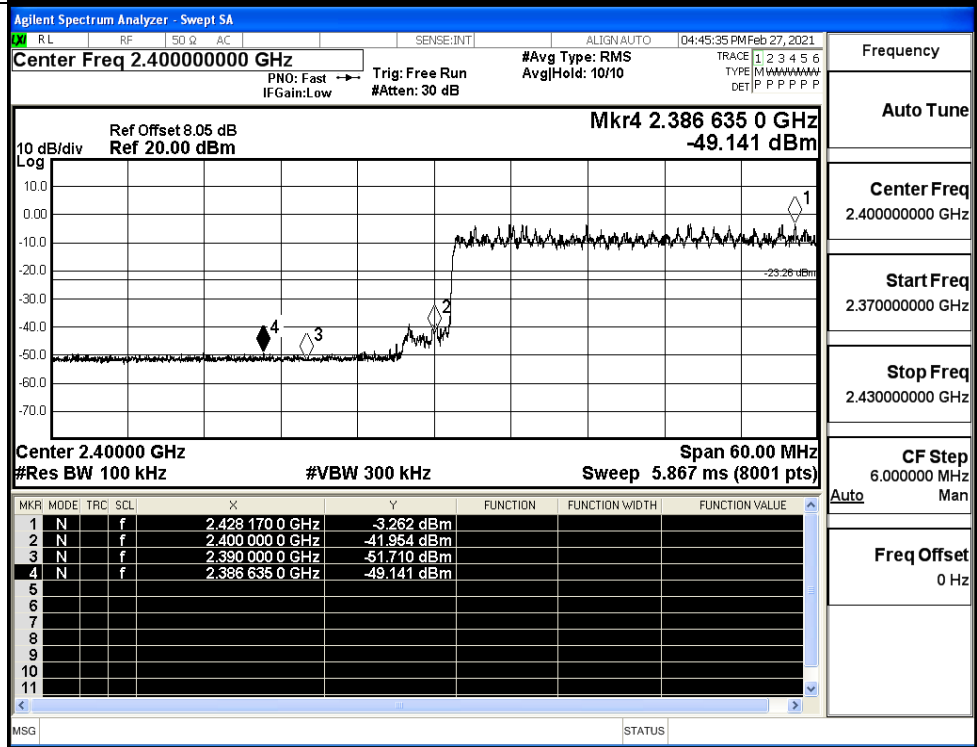
GFSK/HCH/Hop



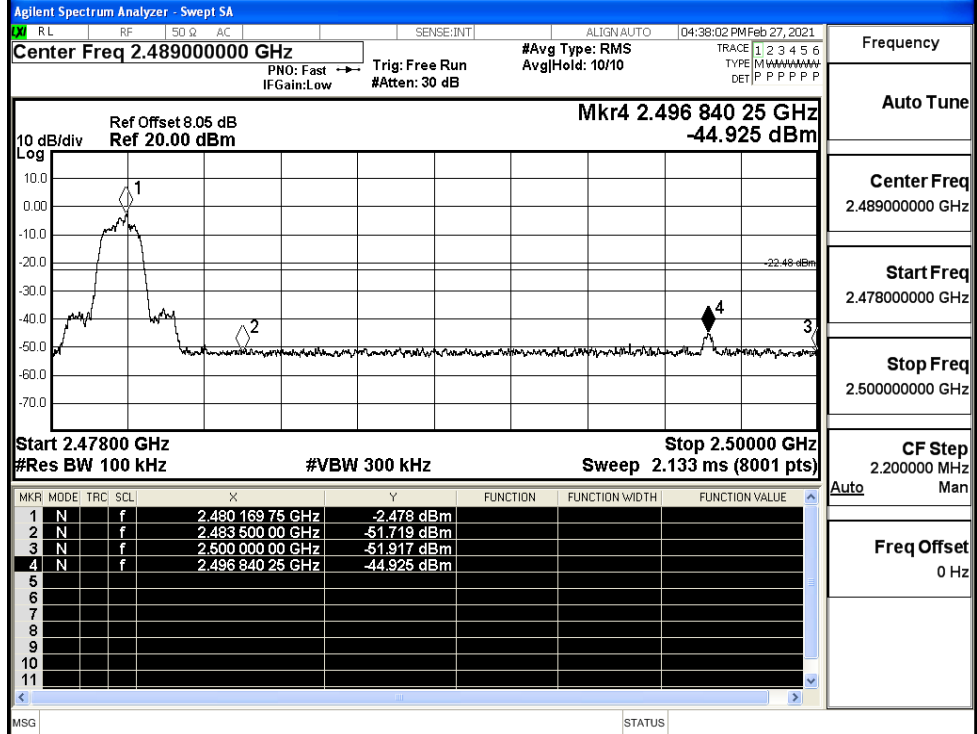
$\pi/4$ DQPSK/LCH/No Hop



$\pi/4$ DQPSK/LCH/Hop

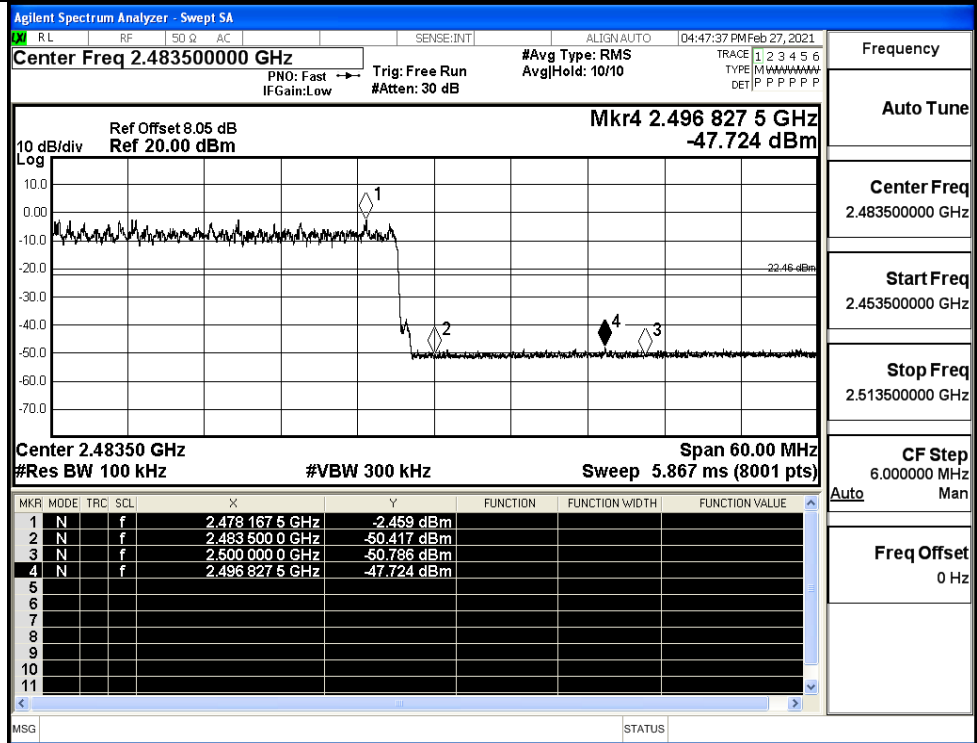


$\pi/4$ DQPSK/HCH/No Hop



Frequency	Auto Tune
Center Freq	2.48900000 GHz
Start Freq	2.47800000 GHz
Stop Freq	2.50000000 GHz
CF Step	2.200000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH/Hop

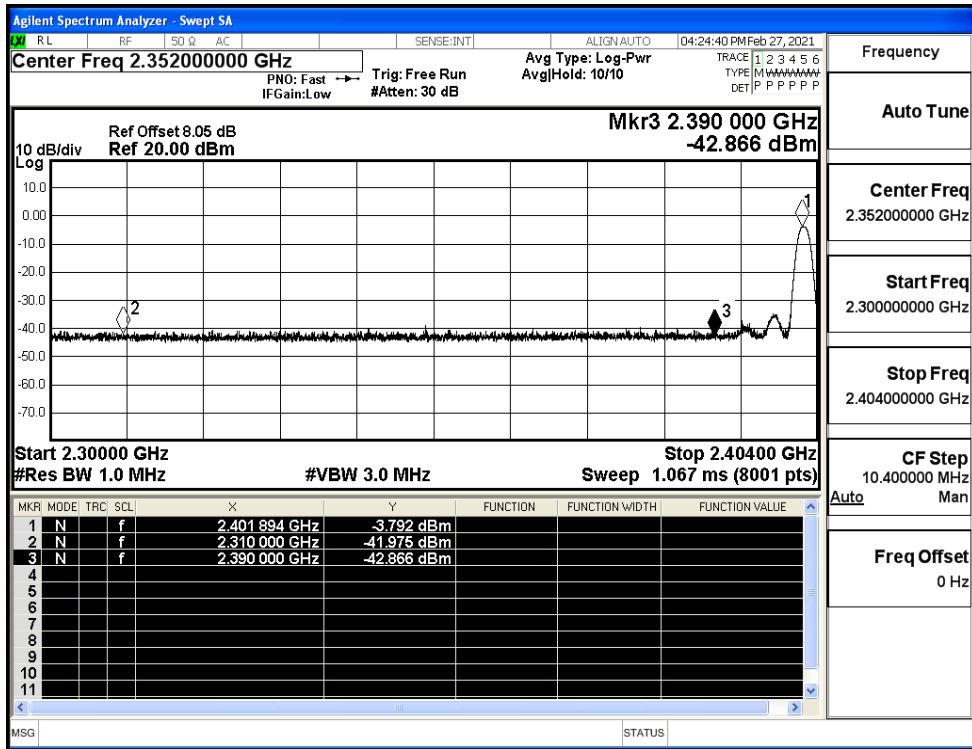


Frequency	Auto Tune
Center Freq	2.48350000 GHz
Start Freq	2.45350000 GHz
Stop Freq	2.51350000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

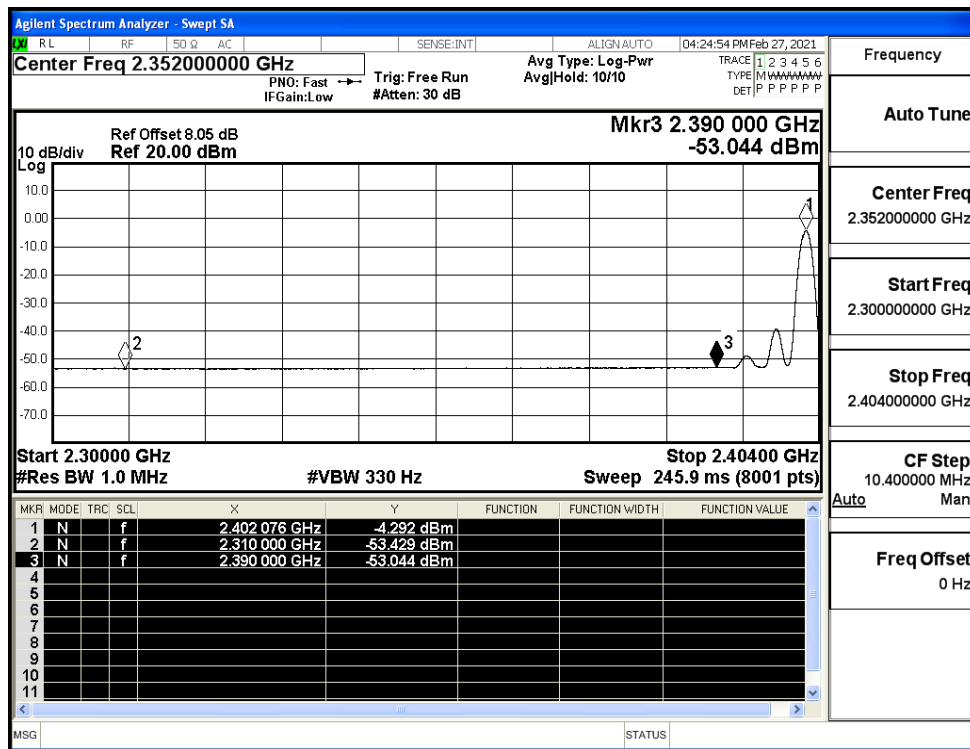
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-41.98	3.3	0	56.55	PEAK	74	PASS
	Off	2310.0	-53.43	3.3	0	45.10	AV	54	PASS
	Off	2390.0	-42.87	3.3	0	55.66	PEAK	74	PASS
	Off	2390.0	-53.04	3.3	0	45.49	AV	54	PASS
	Off	2483.5	-42.10	3.3	0	56.43	PEAK	74	PASS
	Off	2483.5	-50.45	3.3	0	48.08	AV	54	PASS
	Off	2500.0	-42.89	3.3	0	55.64	PEAK	74	PASS
	Off	2500.0	-52.37	3.3	0	46.16	AV	54	PASS
π/4DQPSK	Off	2310.0	-42.67	3.3	0	55.86	PEAK	74	PASS
	Off	2310.0	-53.31	3.3	0	45.22	AV	54	PASS
	Off	2390.0	-43.09	3.3	0	55.44	PEAK	74	PASS
	Off	2390.0	-52.99	3.3	0	45.54	AV	54	PASS
	Off	2483.5	-42.75	3.3	0	55.78	PEAK	74	PASS
	Off	2483.5	-51.18	3.3	0	47.35	AV	54	PASS
	Off	2500.0	-43.15	3.3	0	55.38	PEAK	74	PASS
	Off	2500.0	-52.40	3.3	0	46.13	AV	54	PASS

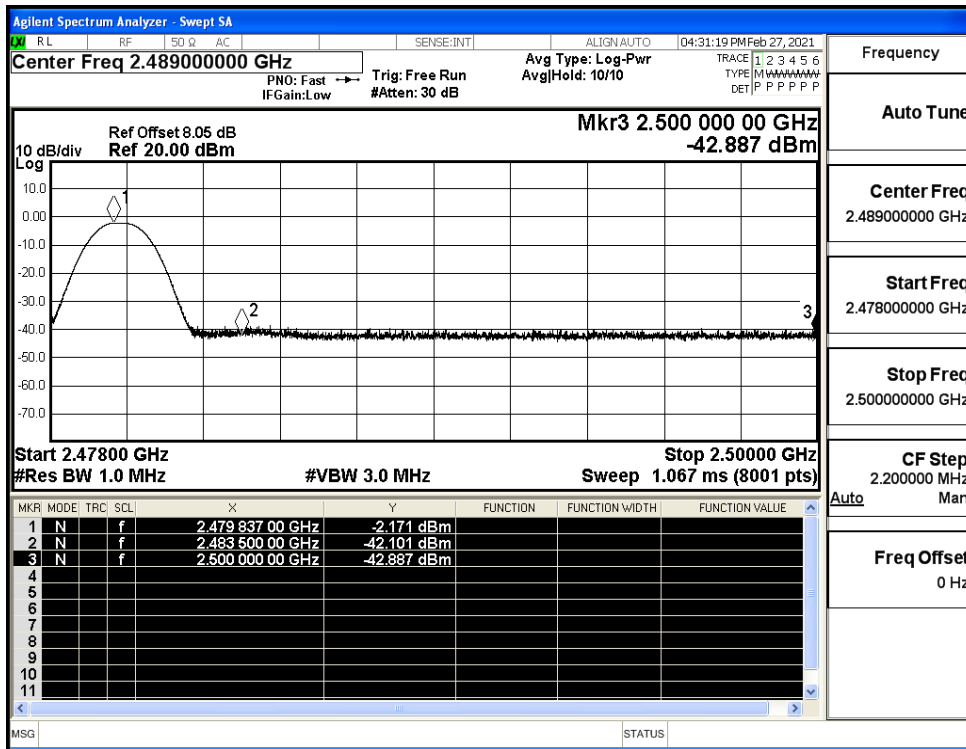
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



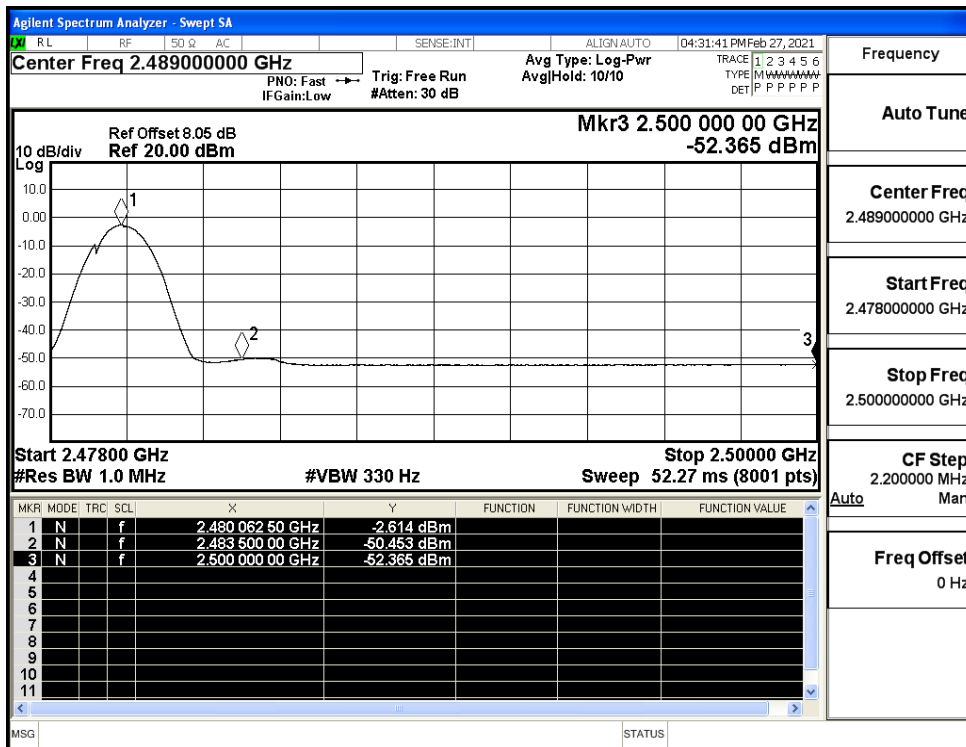
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



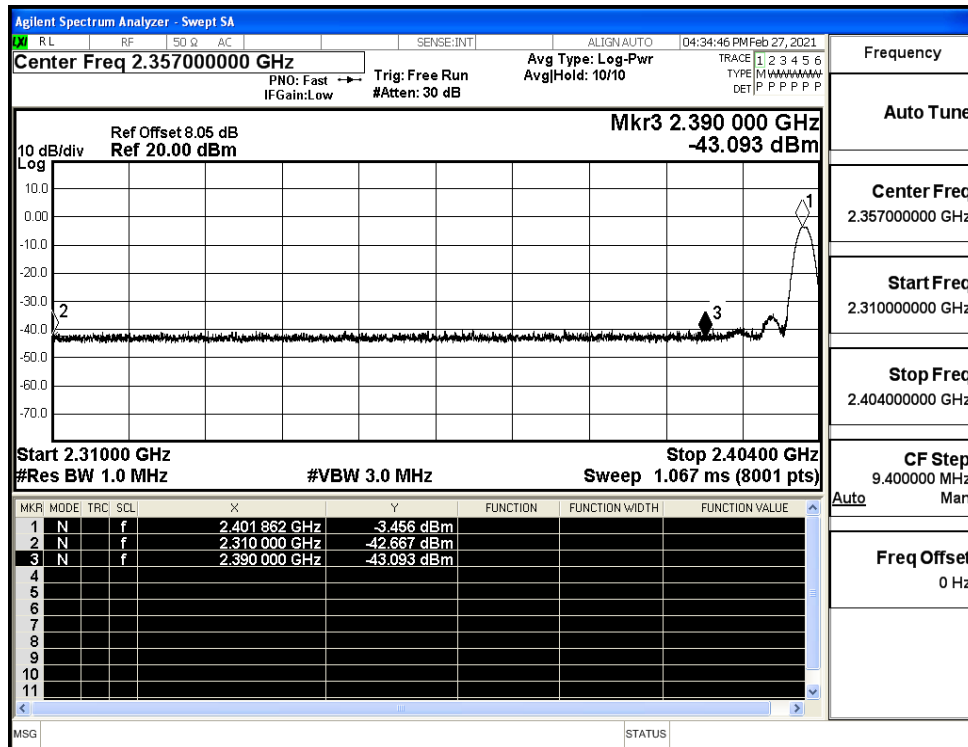
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



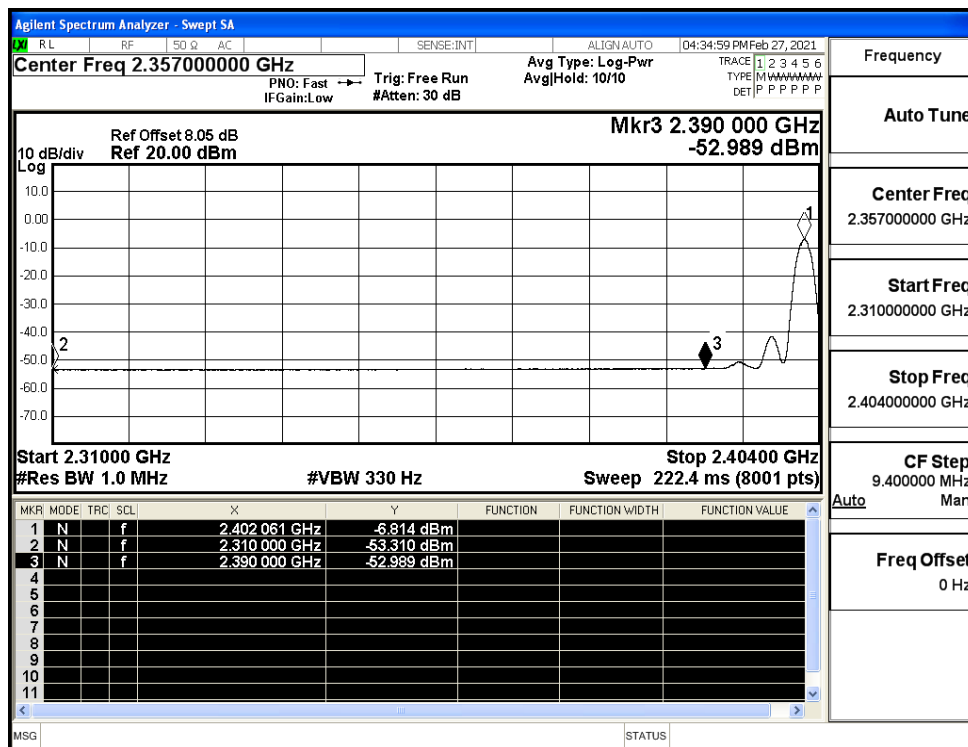
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



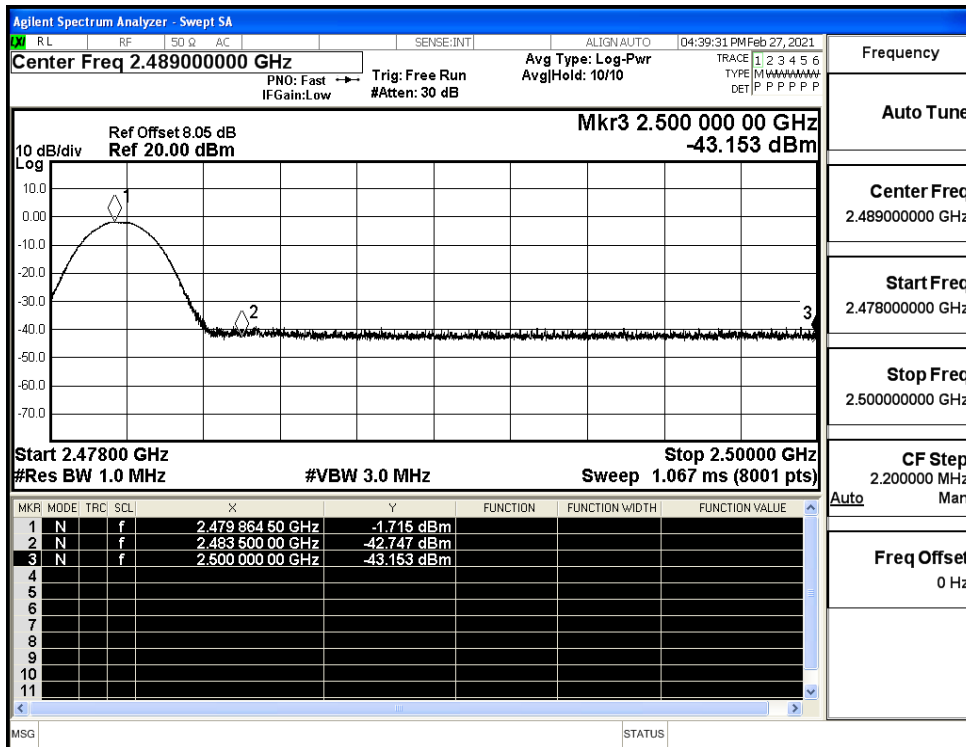
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)

