

Appendix A

RF Test Data for BT V4.2 (BDR/EDR) (Conducted Measurement)

Product Name: STEREO HEADPHONES

Trade Mark: PIONEER

Test Model: SE-E6BT

Environmental Conditions

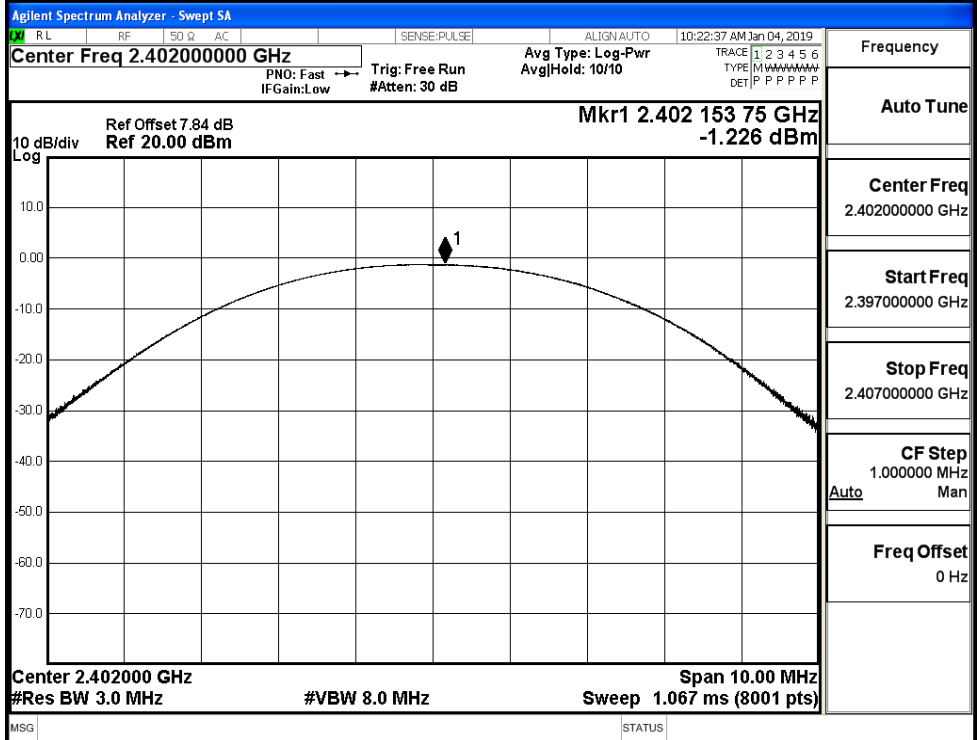
Temperature:	24.6 ° C
Relative Humidity:	51.3%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

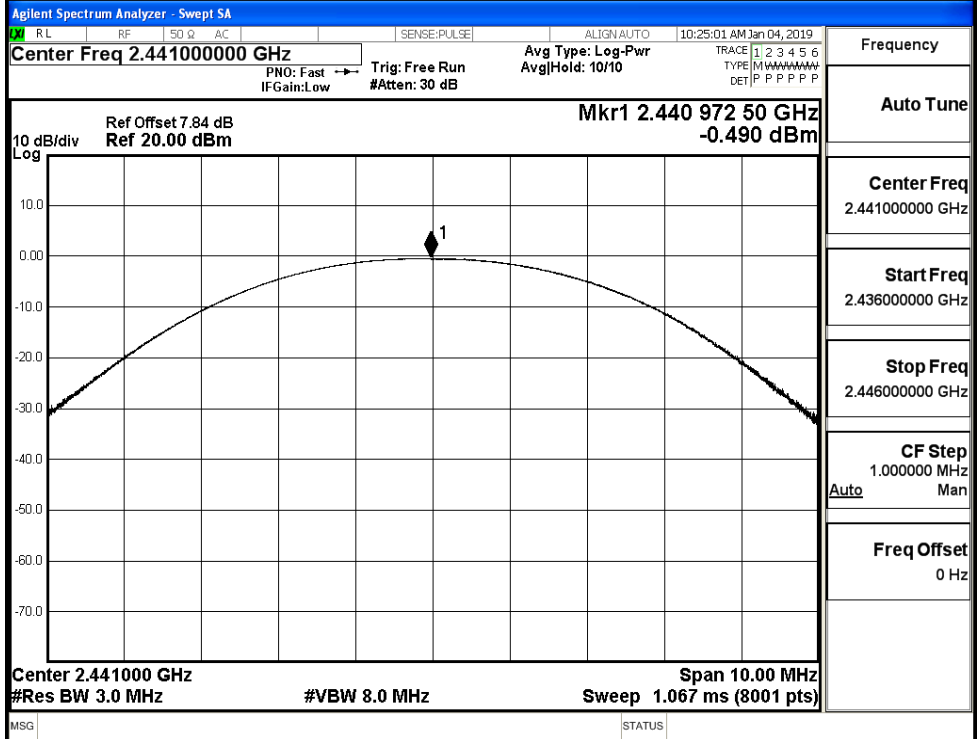
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.226	21	PASS
	MCH	-0.490	21	PASS
	HCH	-0.978	21	PASS
$\pi/4$ DQPSK	LCH	-2.362	21	PASS
	MCH	-1.477	21	PASS
	HCH	-1.470	21	PASS
8DPSK	LCH	-1.624	21	PASS
	MCH	-0.849	21	PASS
	HCH	-1.703	21	PASS

Test Graphs

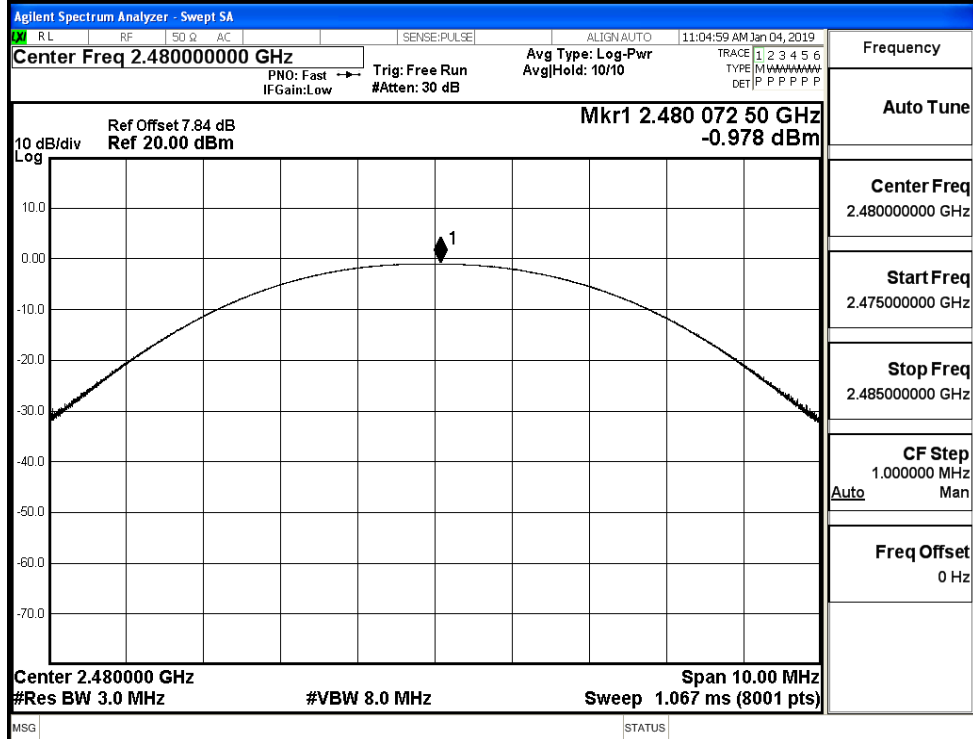
GFSK/LCH



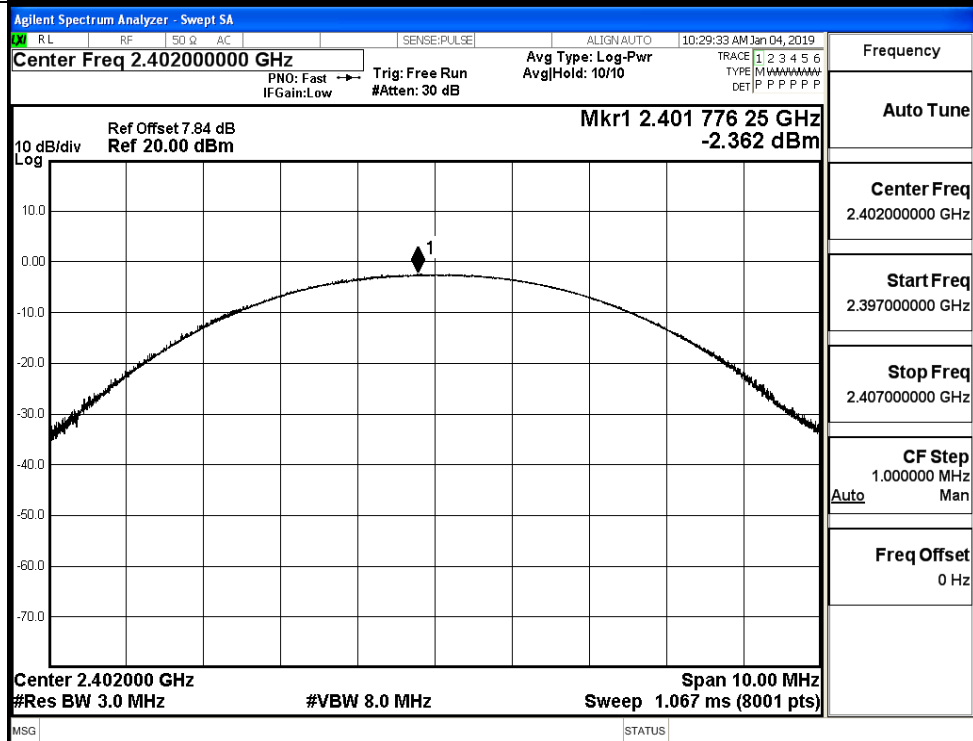
GFSK/MCH



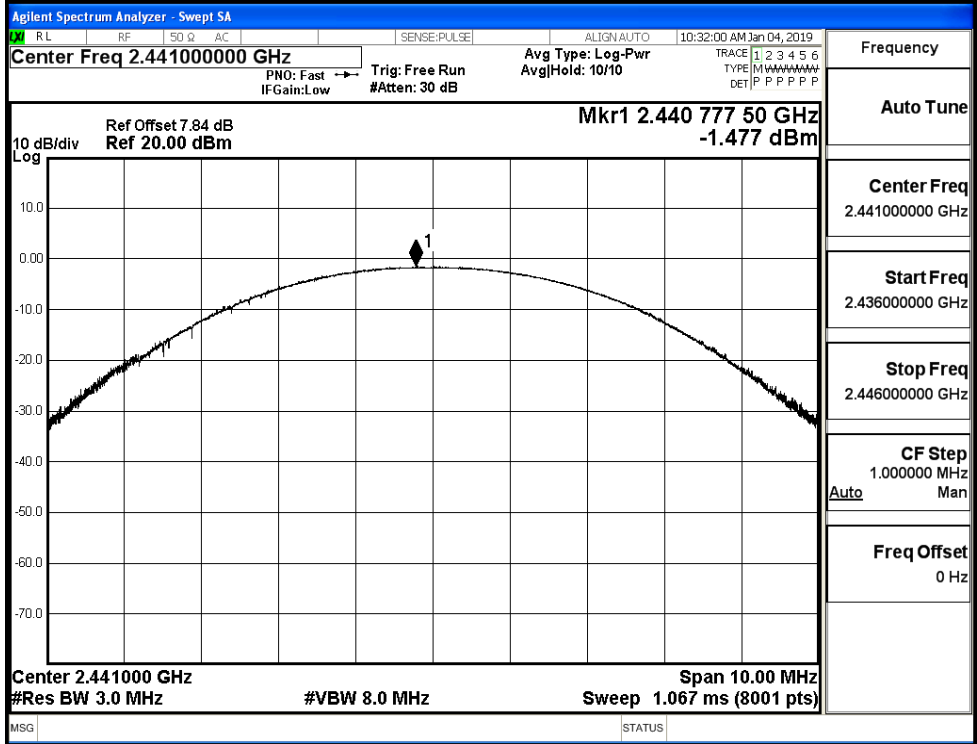
GFSK/HCH



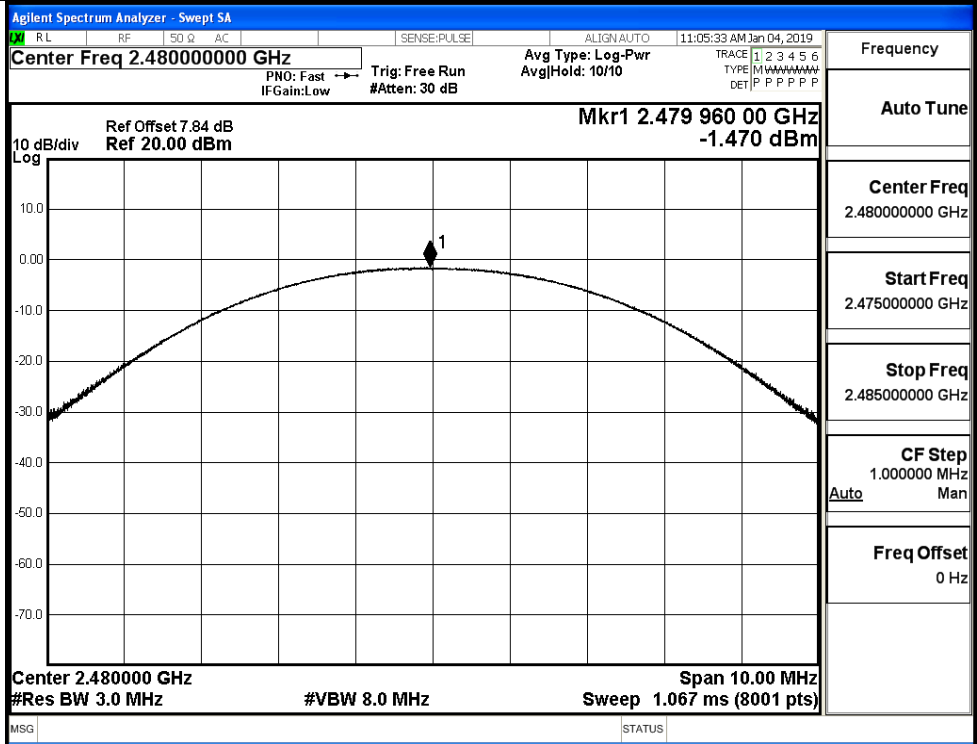
π /4DQPSK/LCH



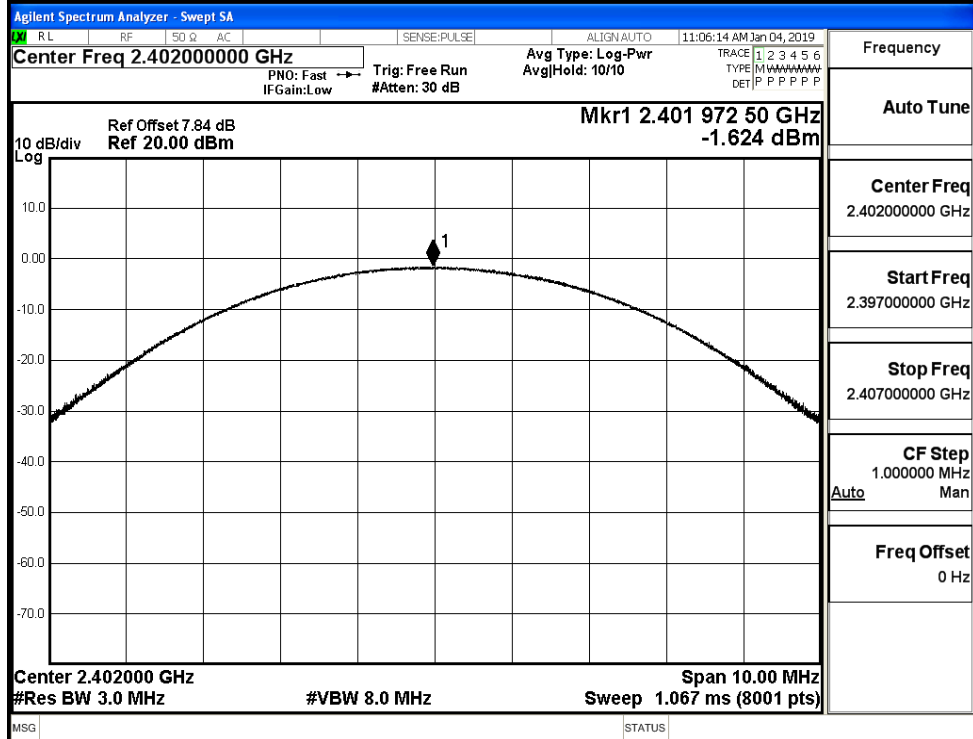
π /4DQPSK/MCH



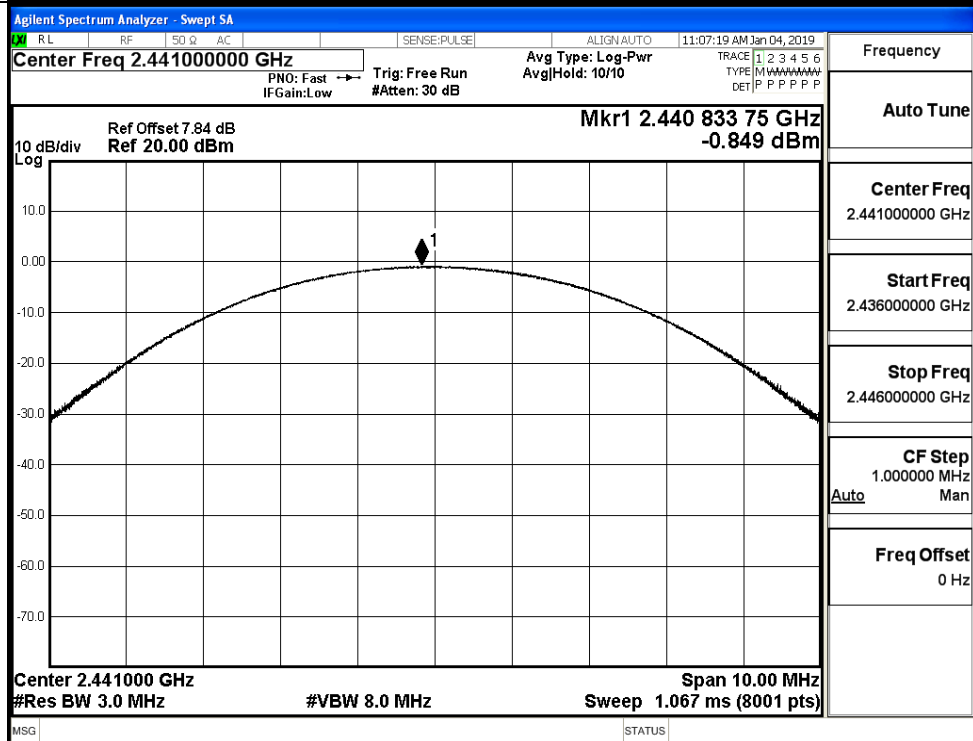
π /4DQPSK/HCH



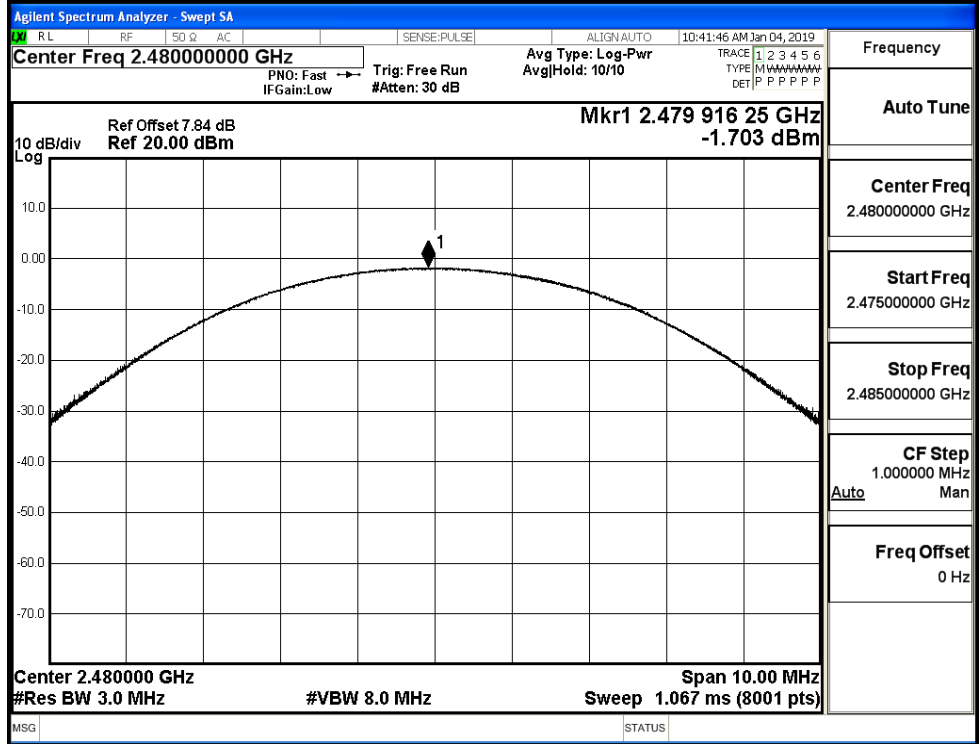
8DPSK/LCH



8DPSK/MCH

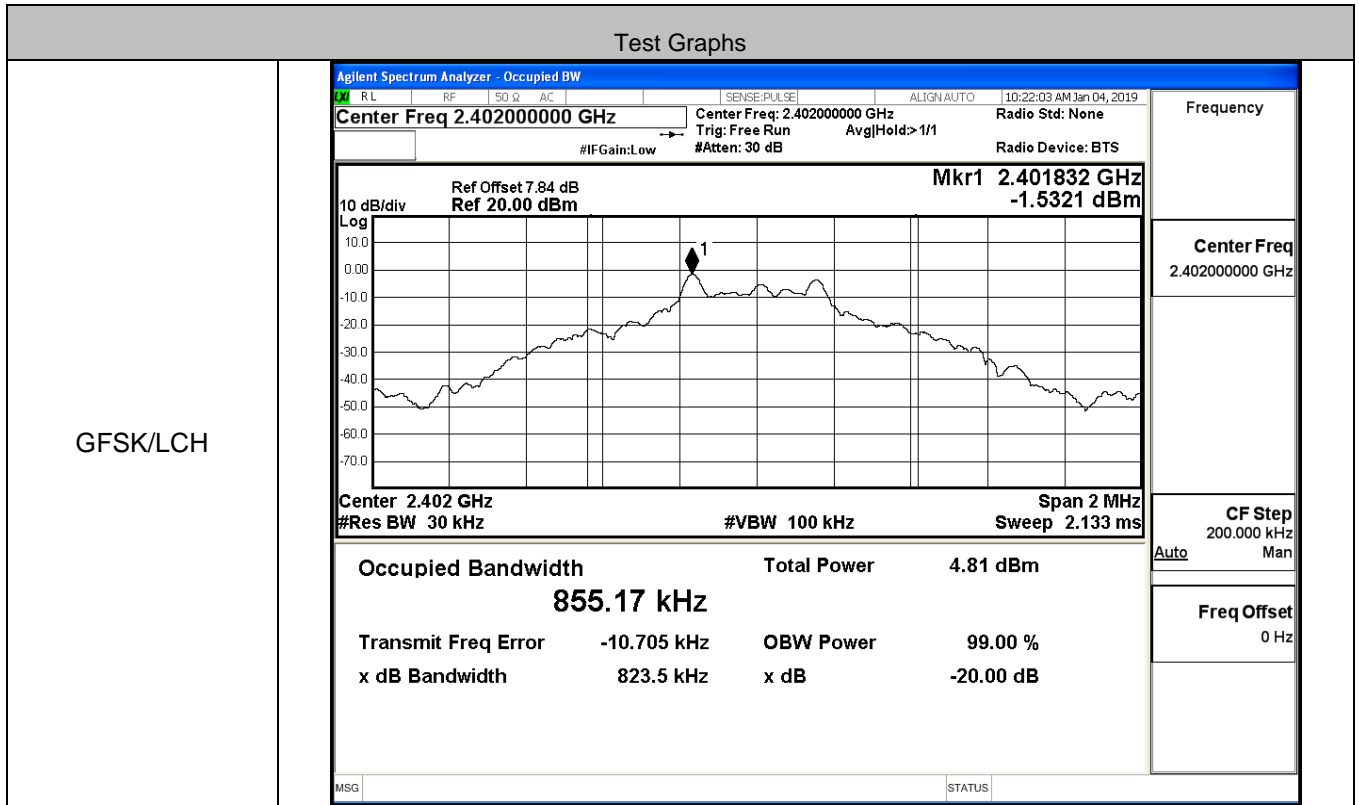


8DPSK/HCH

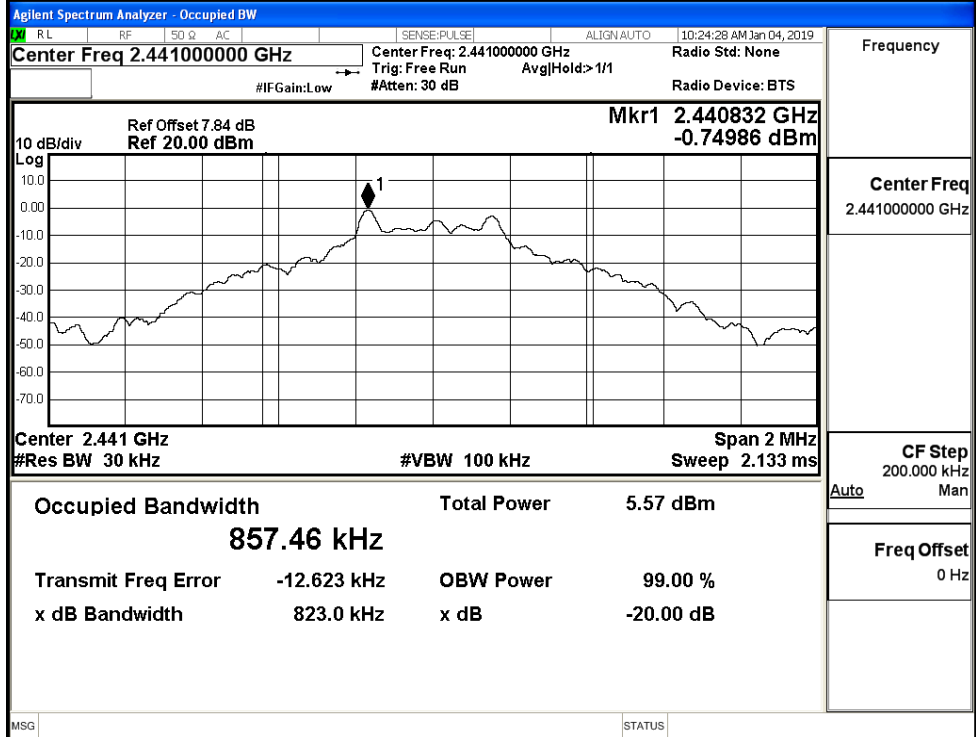


A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.85517	0.8235	Not Specified	PASS
	MCH	0.85746	0.8230	Not Specified	PASS
	HCH	0.86085	0.8263	Not Specified	PASS
π/4DQPSK	LCH	1.0729	1.144	Not Specified	PASS
	MCH	1.0716	1.128	Not Specified	PASS
	HCH	1.0709	1.139	Not Specified	PASS
8DPSK	LCH	1.1801	1.293	Not Specified	PASS
	MCH	1.1828	1.294	Not Specified	PASS
	HCH	1.1787	1.292	Not Specified	PASS

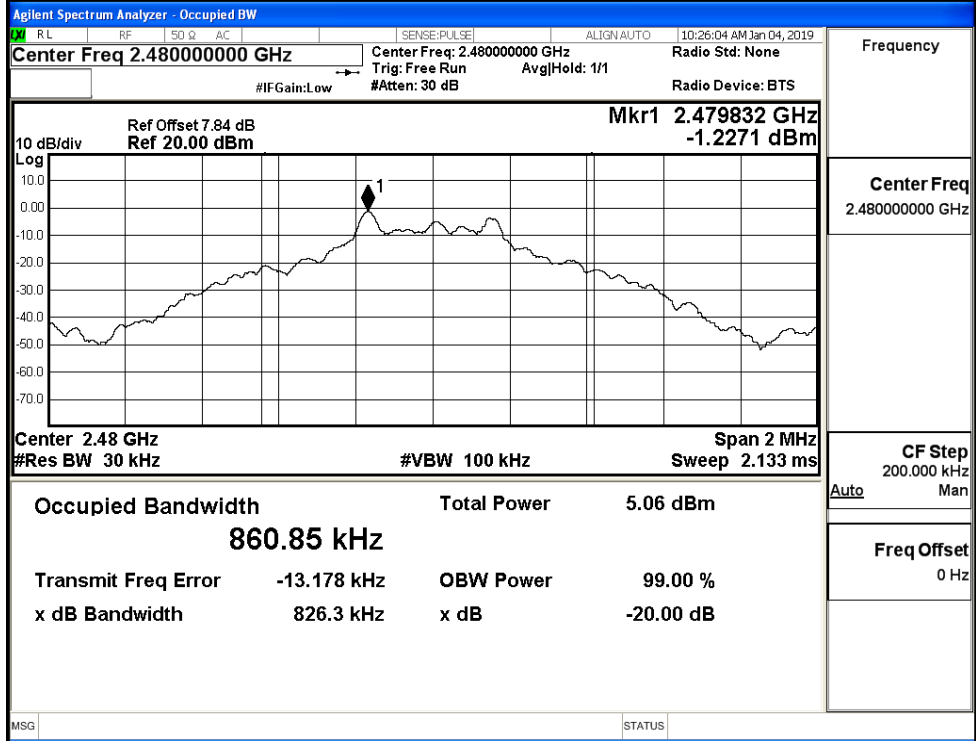


GFSK/MCH



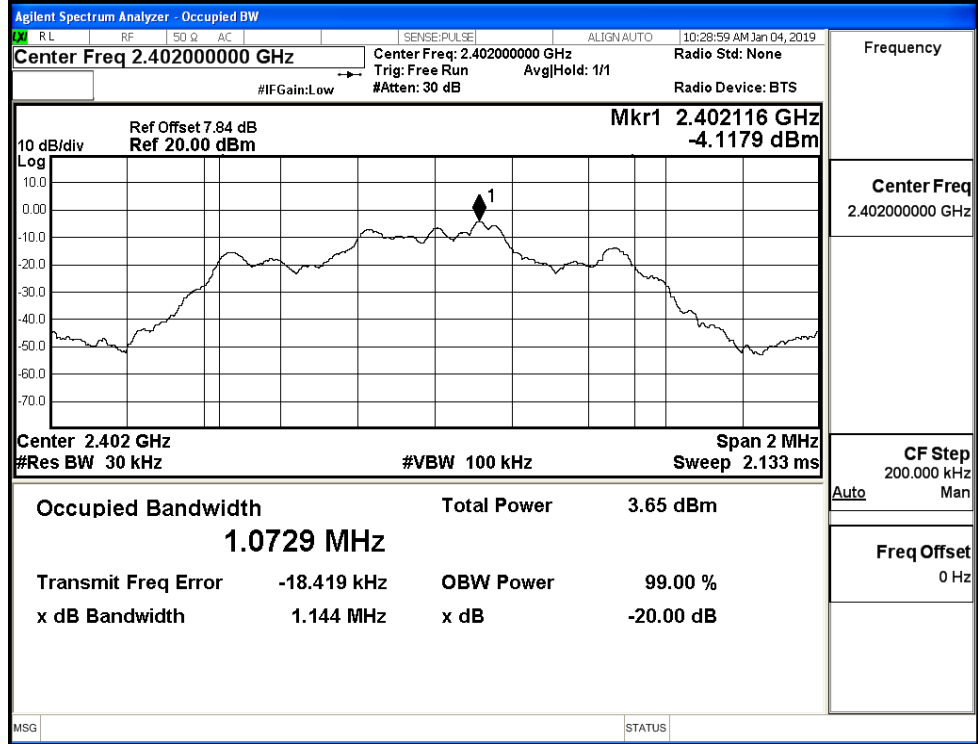
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH



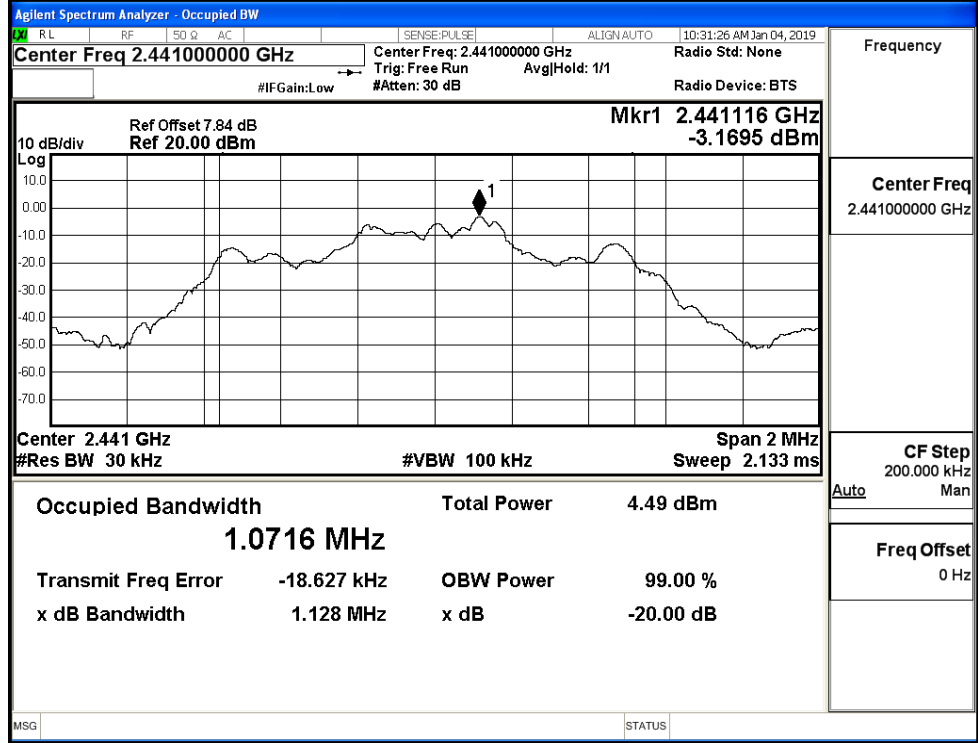
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/LCH



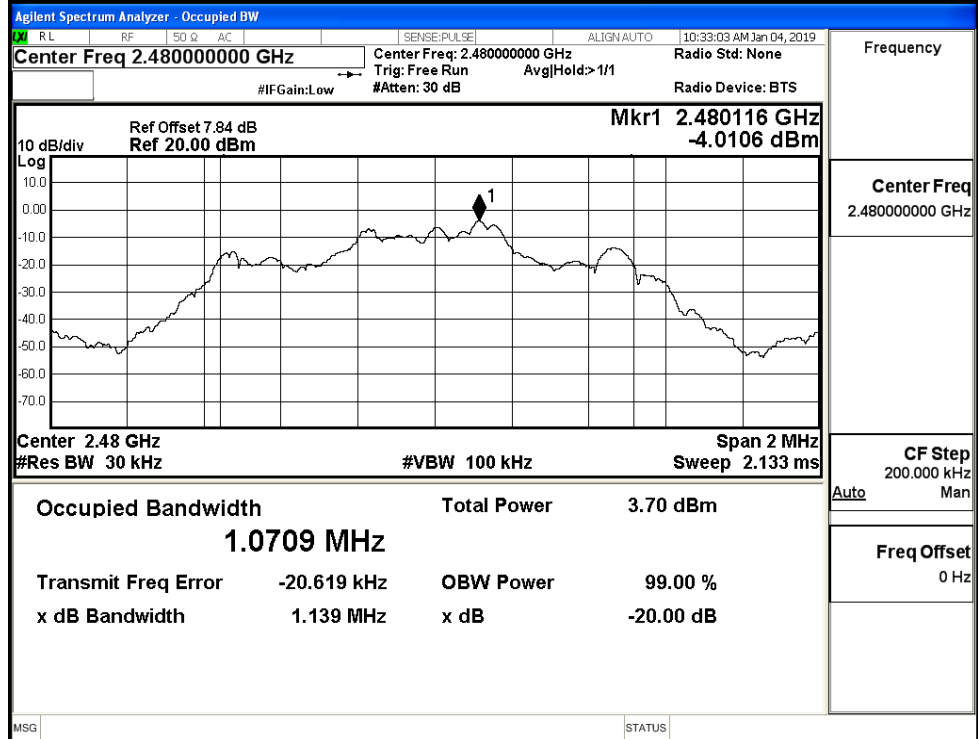
Frequency	2.40200000 GHz
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/MCH



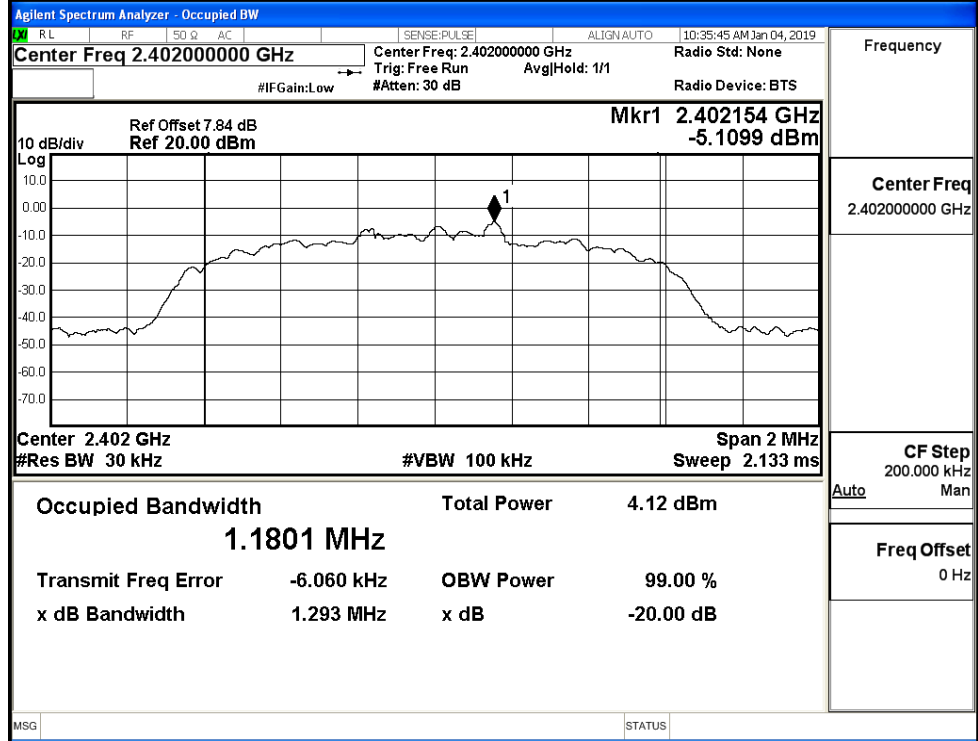
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Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

π/4DQPSK/HCH



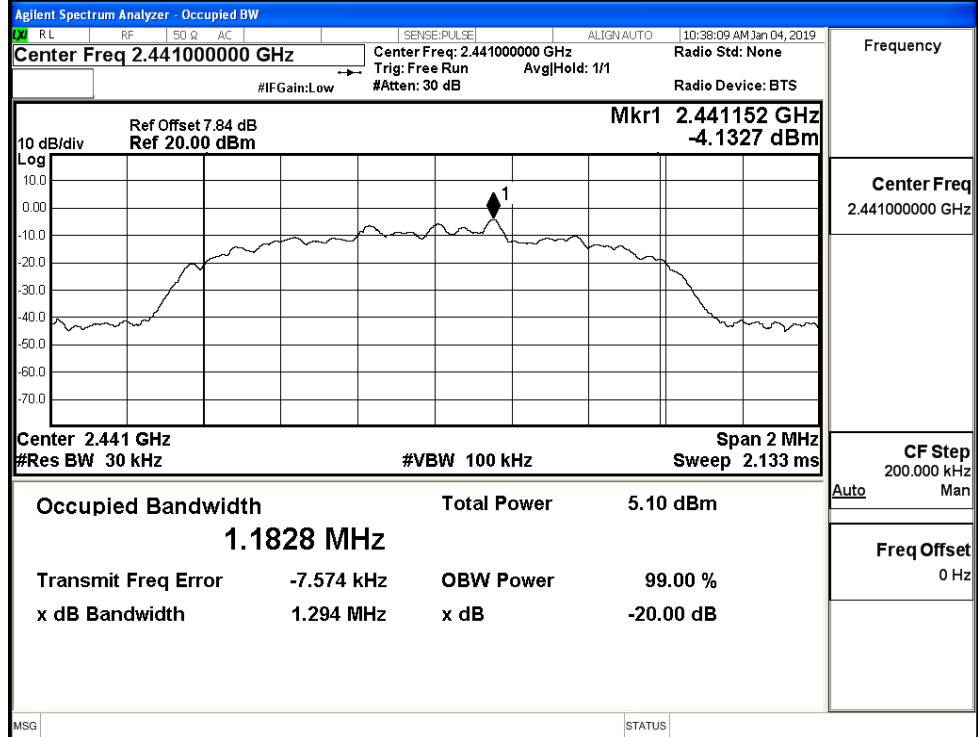
Frequency	
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH



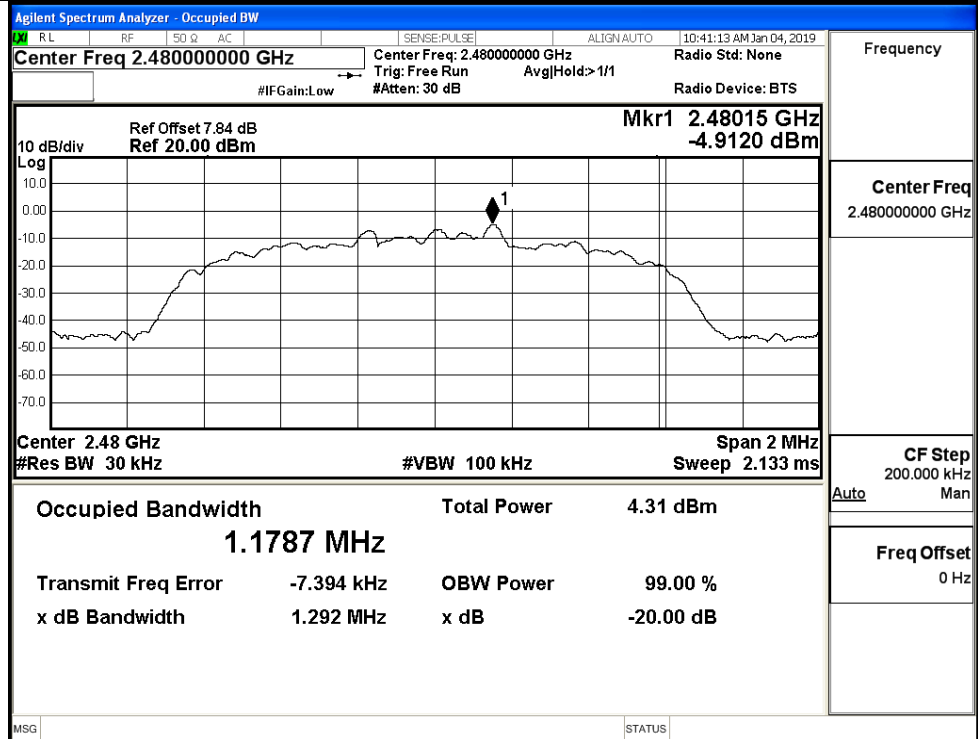
Frequency	
Center Freq	2.40200000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/MCH



Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

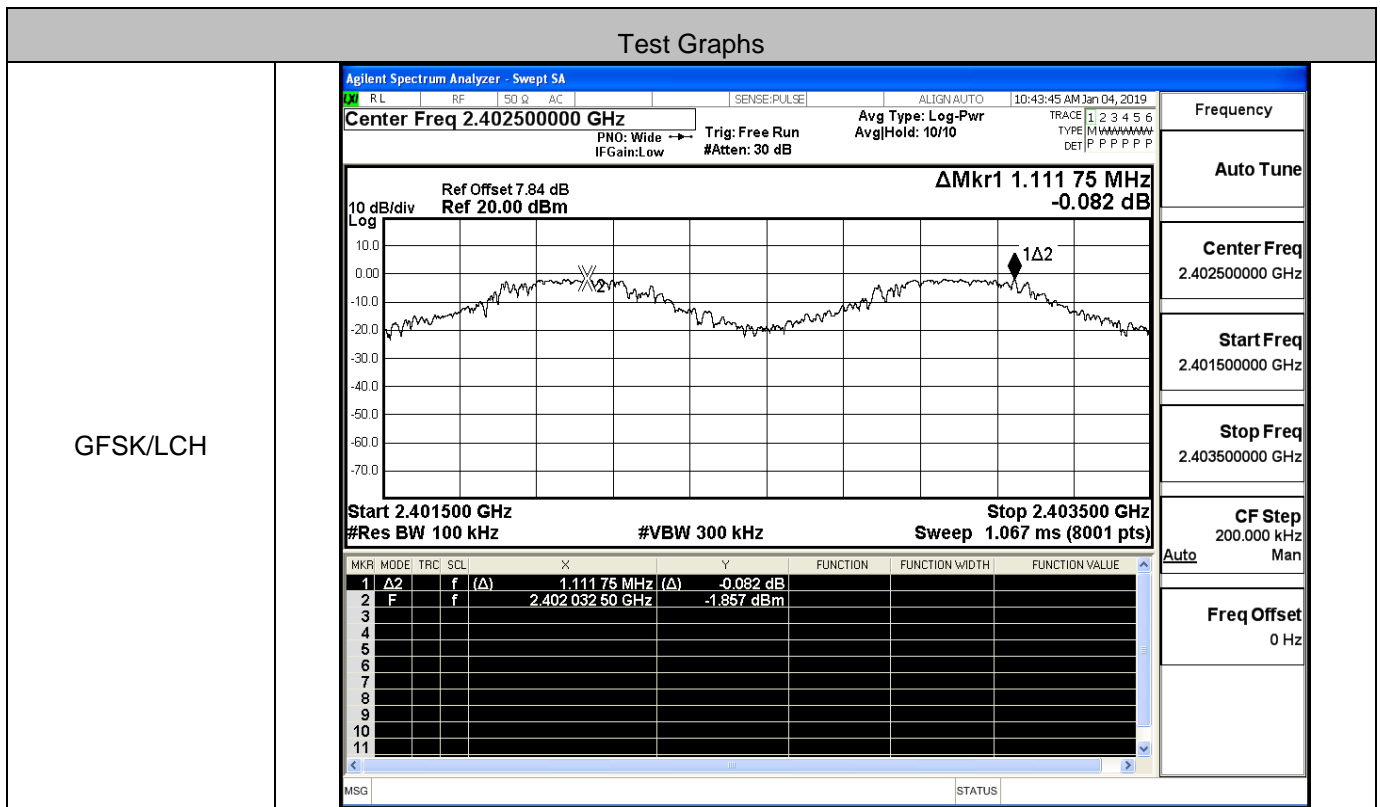
8DPSK/HCH



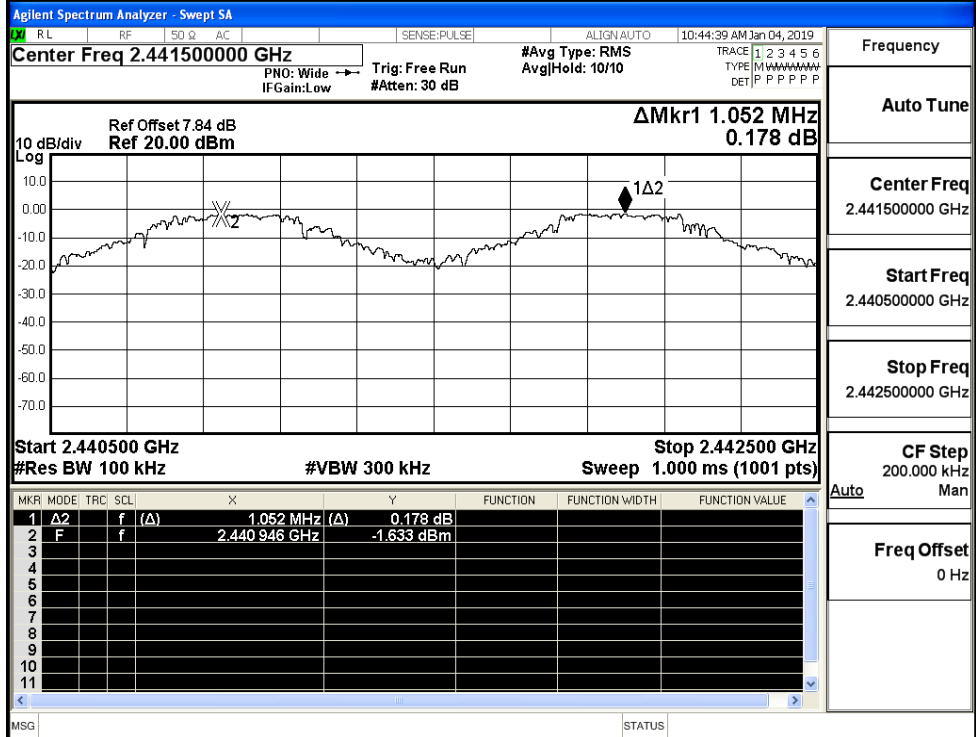
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.112	0.551	PASS
	MCH	1.052	0.551	PASS
	HCH	0.692	0.551	PASS
π/4DQPSK	LCH	1.094	0.763	PASS
	MCH	1.034	0.763	PASS
	HCH	1.130	0.763	PASS
8DPSK	LCH	1.096	0.863	PASS
	MCH	0.986	0.863	PASS
	HCH	0.958	0.863	PASS

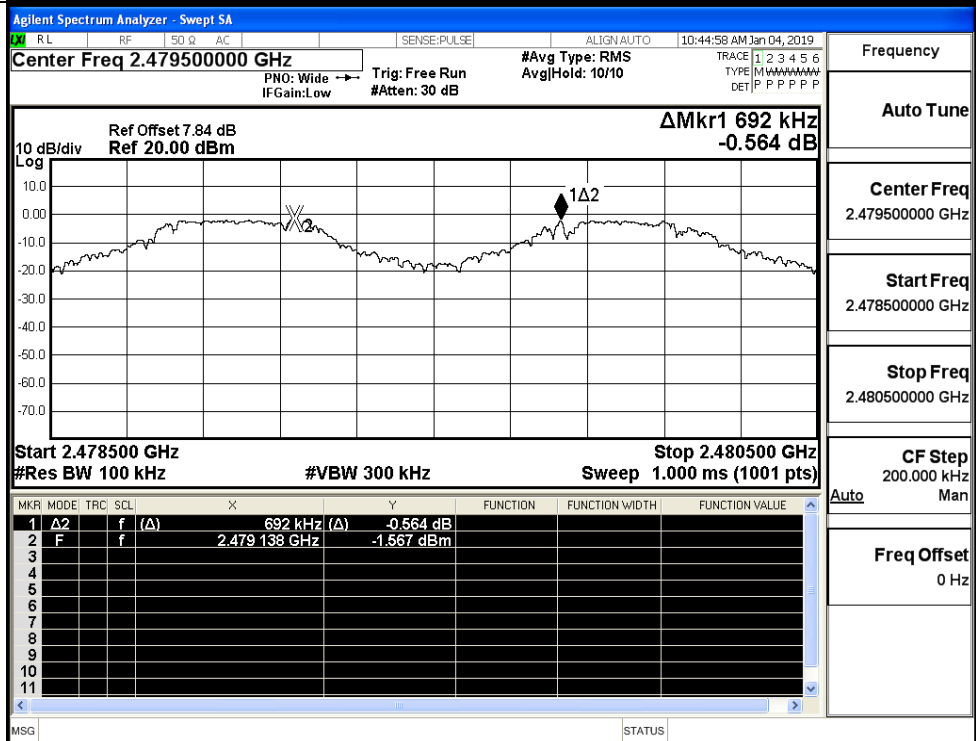


GFSK/MCH



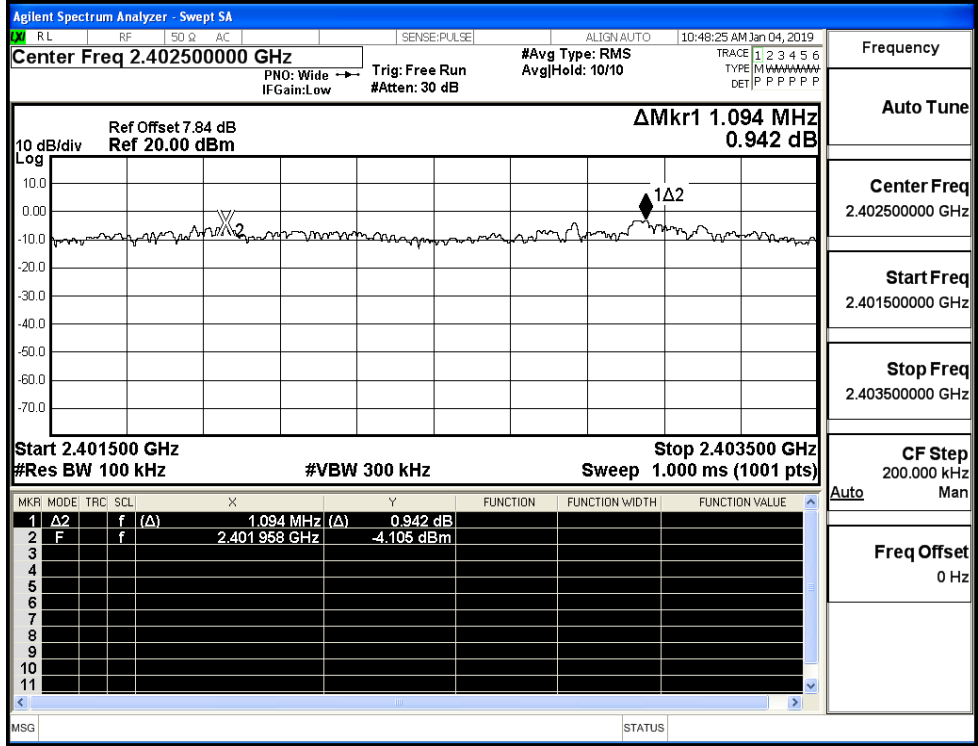
Frequency	
Auto Tune	
Center Freq	2.441500000 GHz
Start Freq	2.440500000 GHz
Stop Freq	2.442500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH



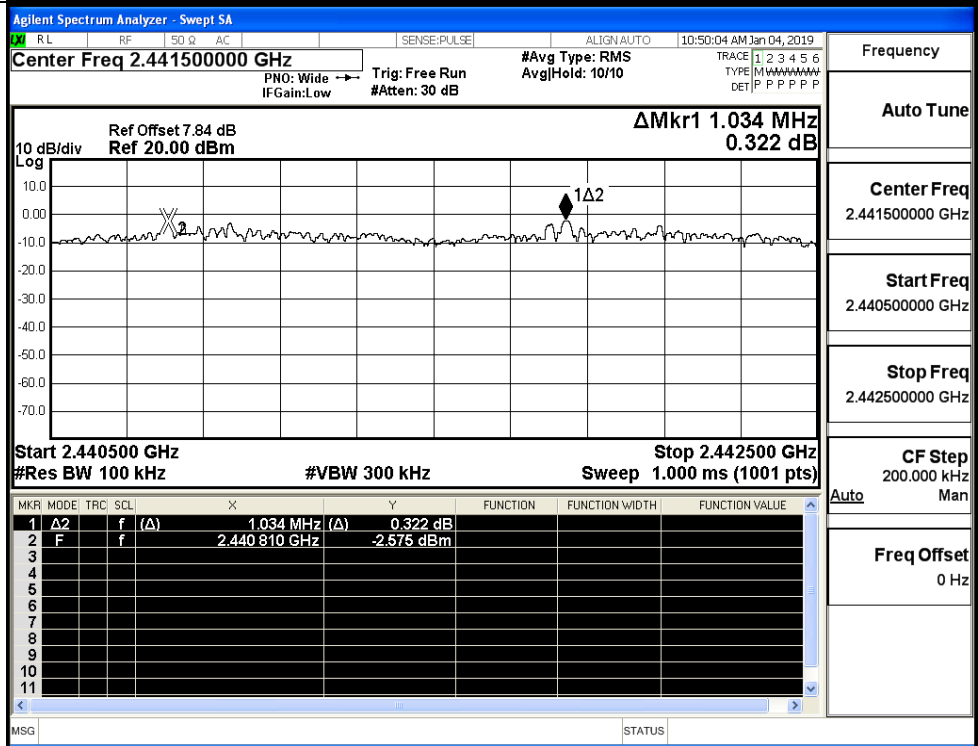
Frequency	
Auto Tune	
Center Freq	2.479500000 GHz
Start Freq	2.478500000 GHz
Stop Freq	2.480500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/LCH



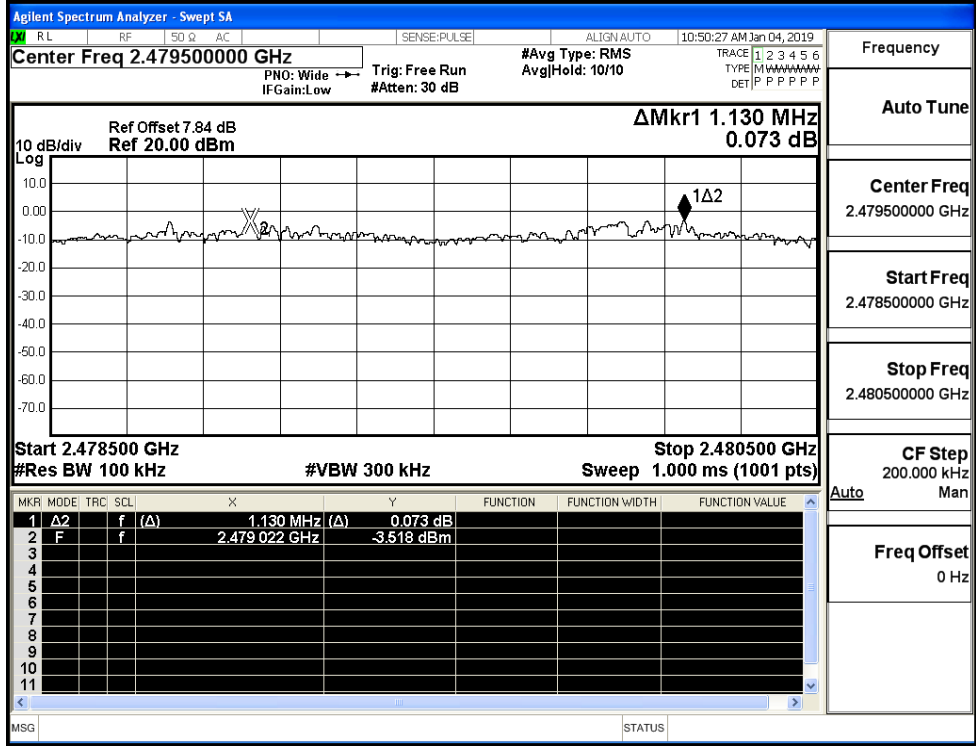
Frequency
Auto Tune
Center Freq 2.402500000 GHz
Start Freq 2.401500000 GHz
Stop Freq 2.403500000 GHz
CF Step 200.000 kHz
Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK/MCH

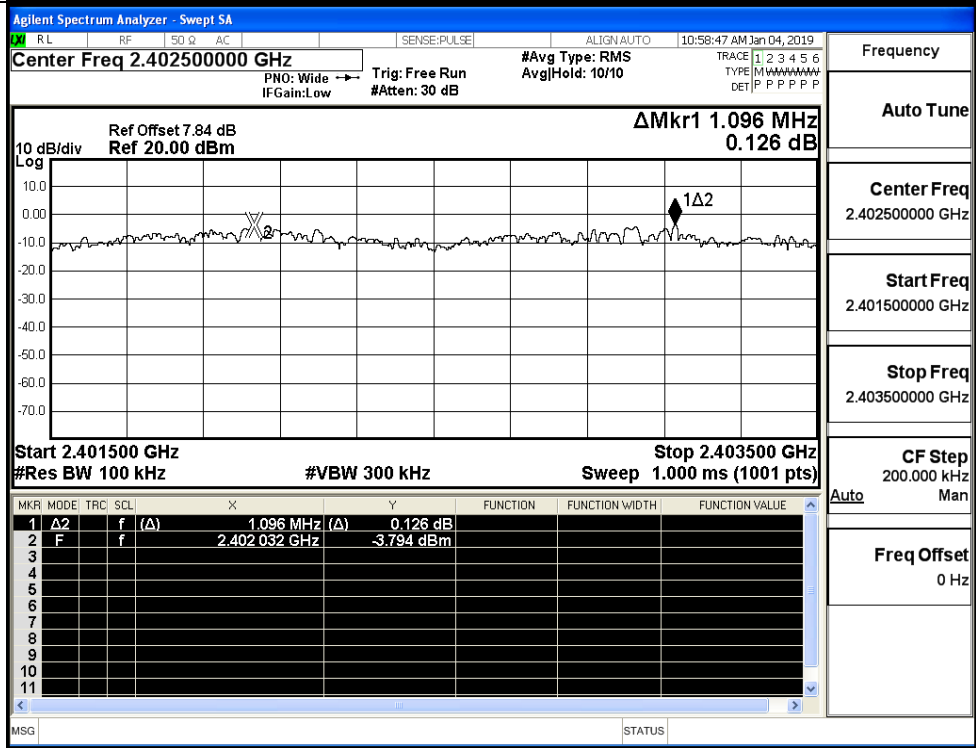


Frequency
Auto Tune
Center Freq 2.441500000 GHz
Start Freq 2.440500000 GHz
Stop Freq 2.442500000 GHz
CF Step 200.000 kHz
Auto Man
Freq Offset 0 Hz

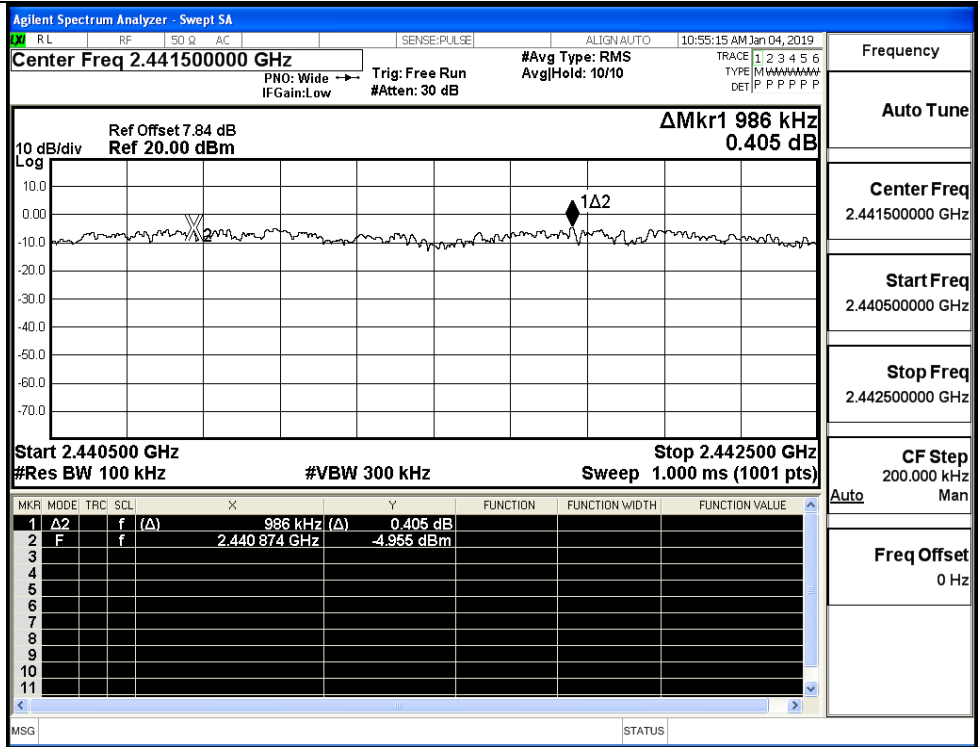
π/4DQPSK/HCH



8DPSK/LCH

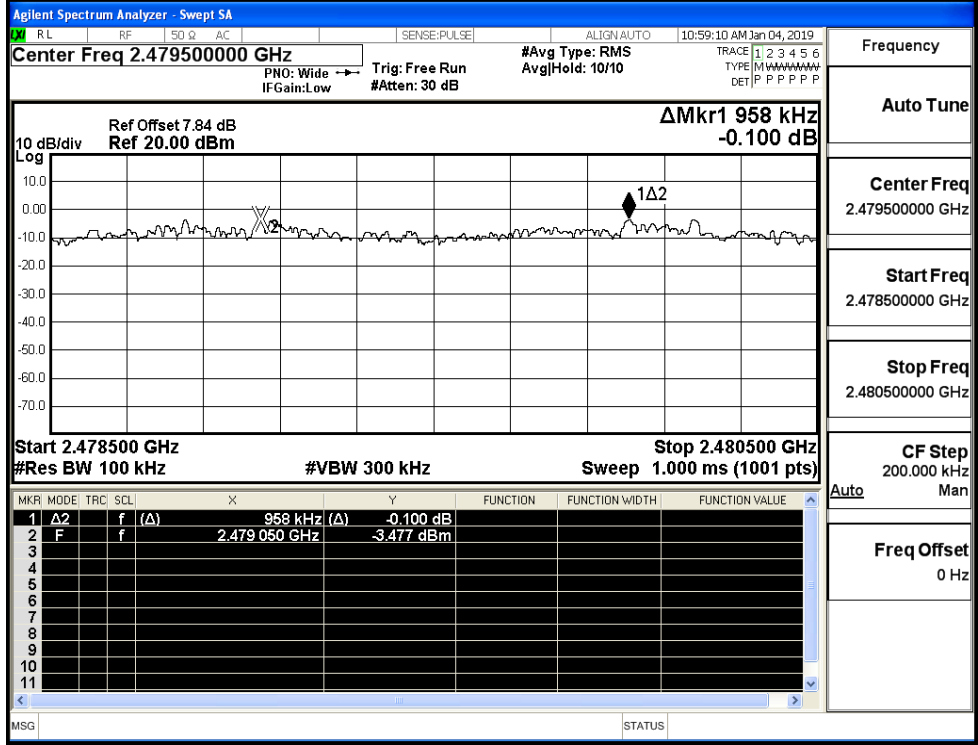


8DPSK/MCH



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

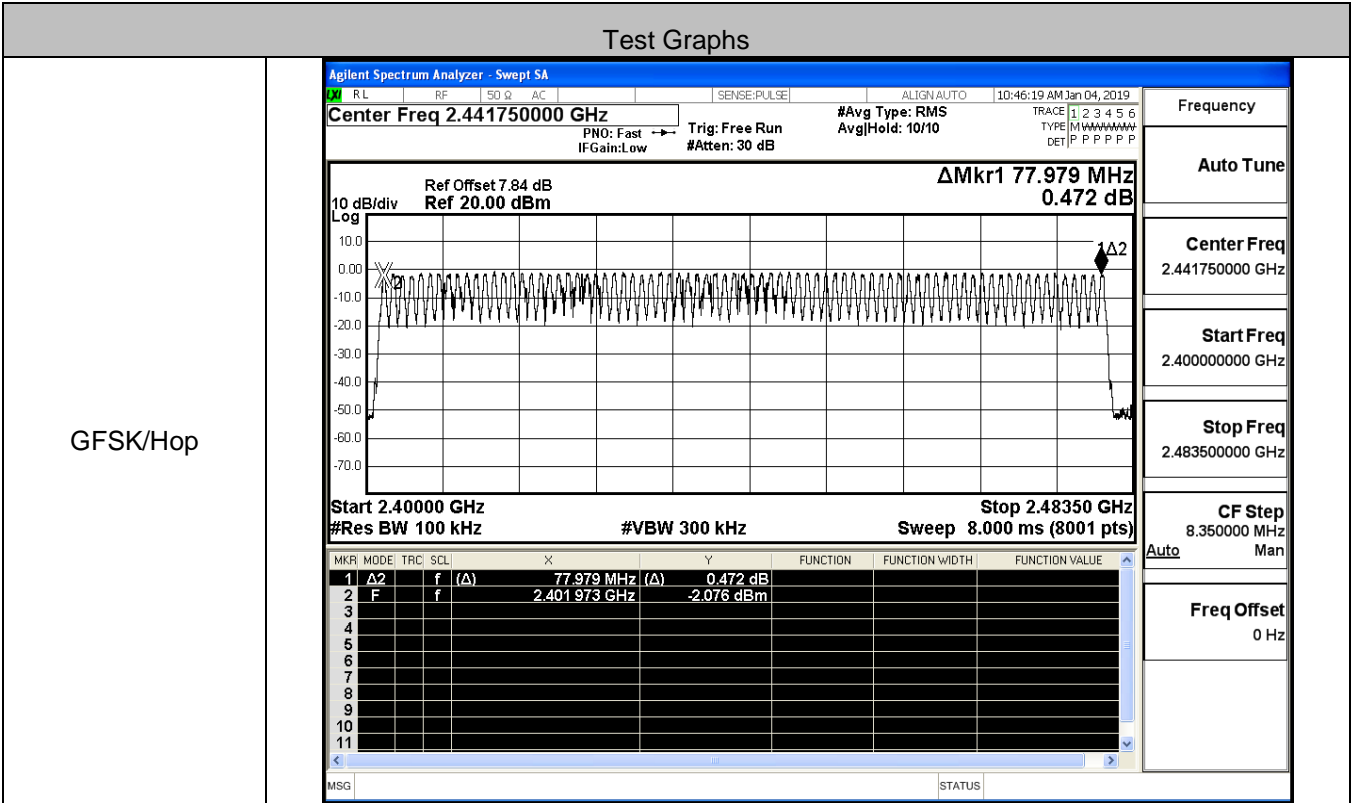
8DPSK/HCH



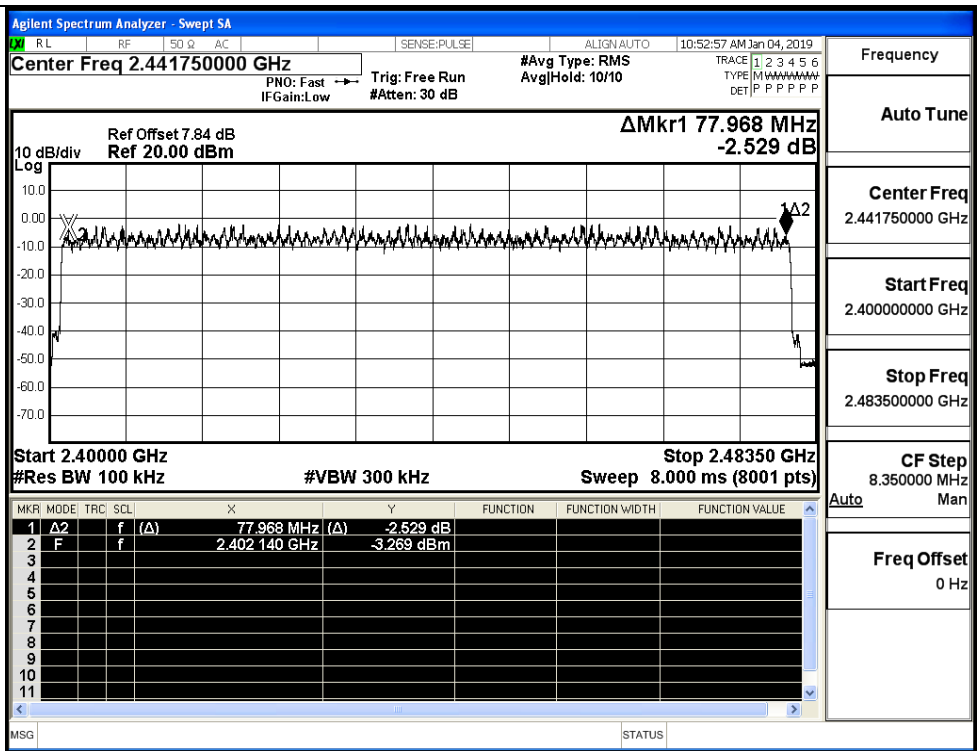
Frequency
Auto Tune
Center Freq 2.479500000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.480500000 GHz
CF Step 200.000 kHz
Auto
Freq Offset 0 Hz

A.4 Hopping Channel Number

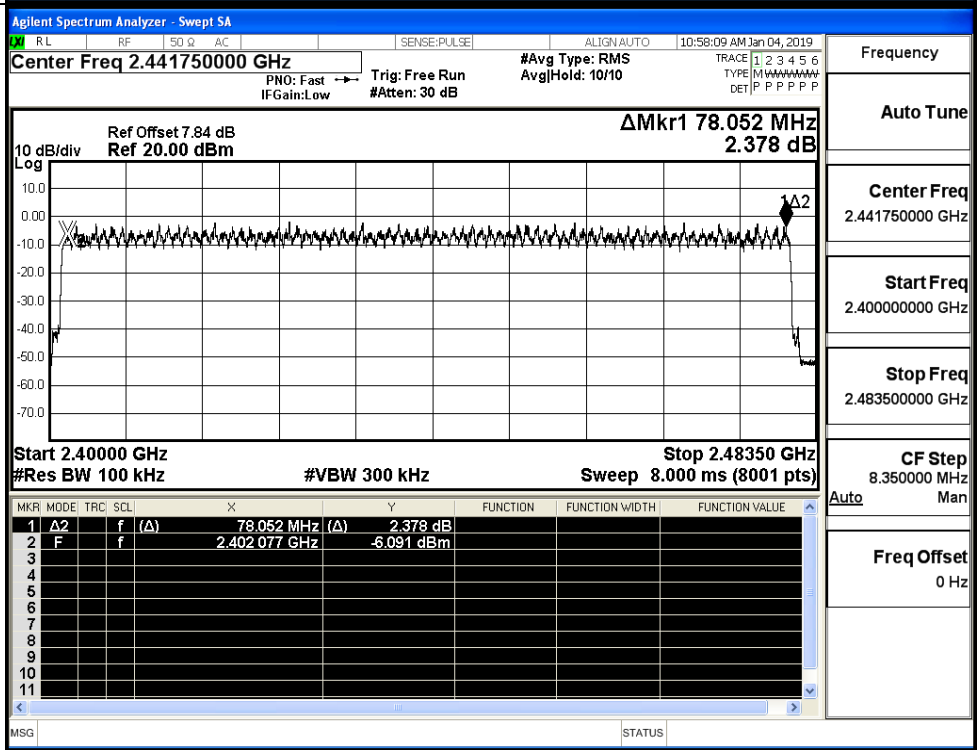
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS



$\pi/4$ DQPSK/Hop

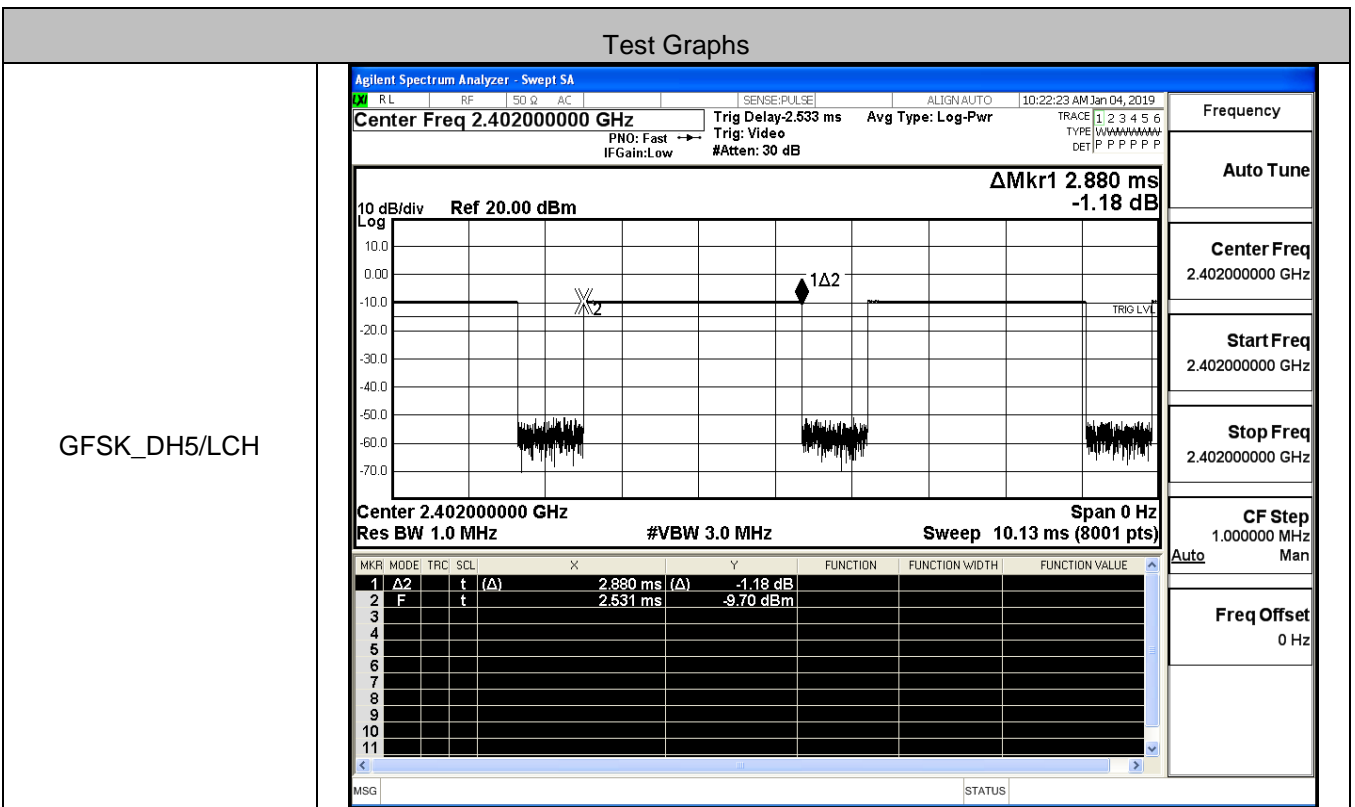


8DPSK/Hop

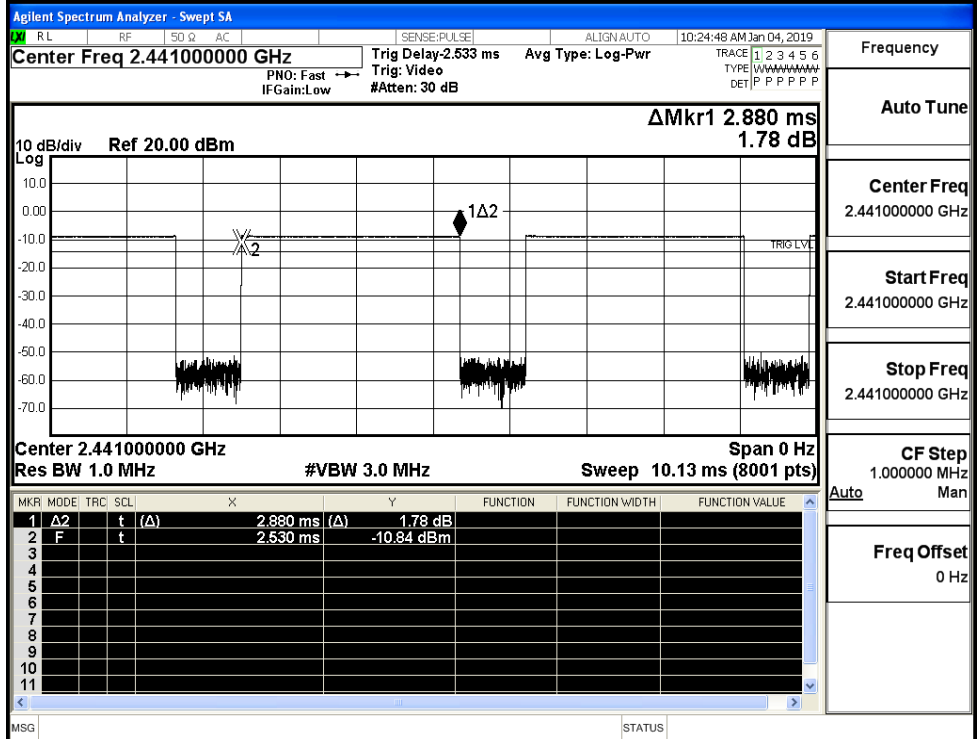


A.5 Dwell Time

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
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
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

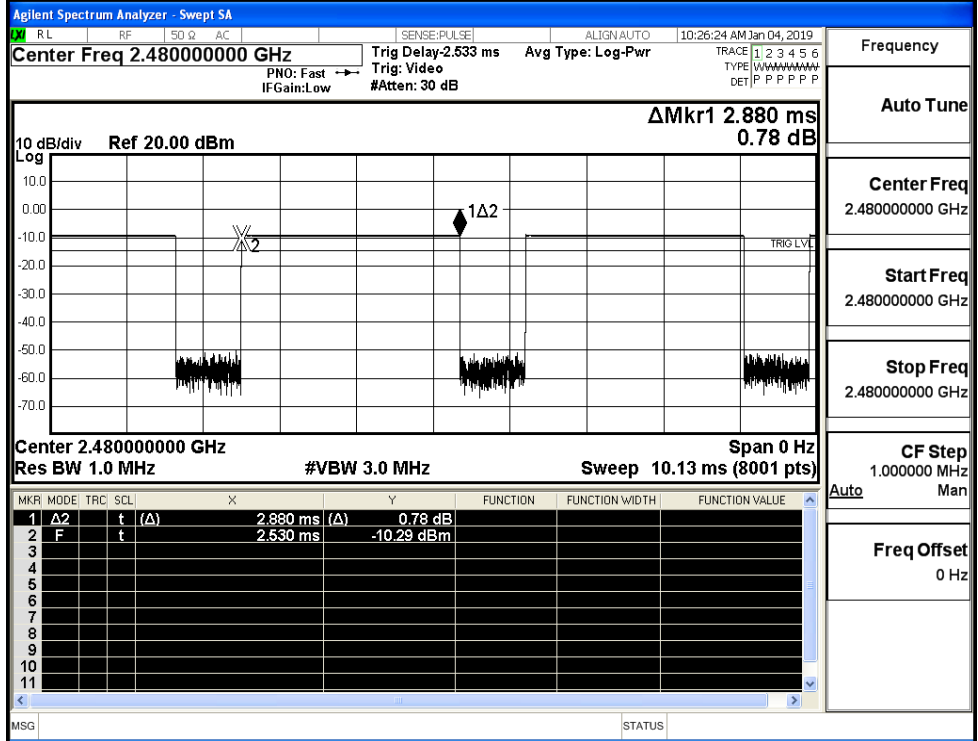


GFSK_DH5/MCH



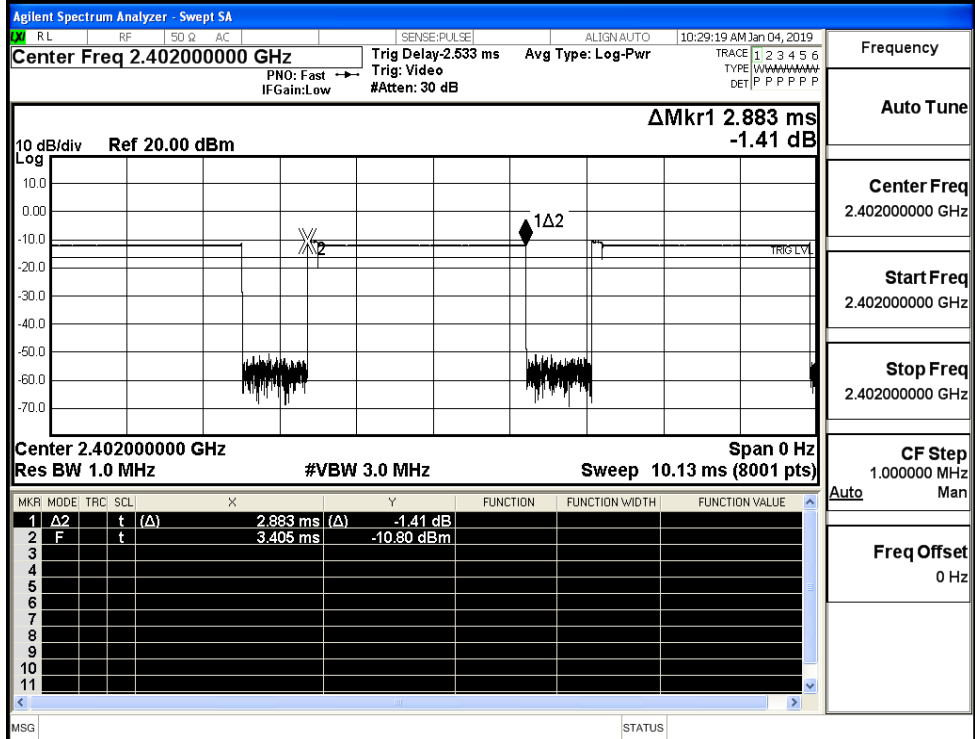
Frequency	
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.441000000 GHz
Stop Freq	2.441000000 GHz
CF Step	1.000000 MHz
Freq Offset	0 Hz

GFSK_DH5/HCH

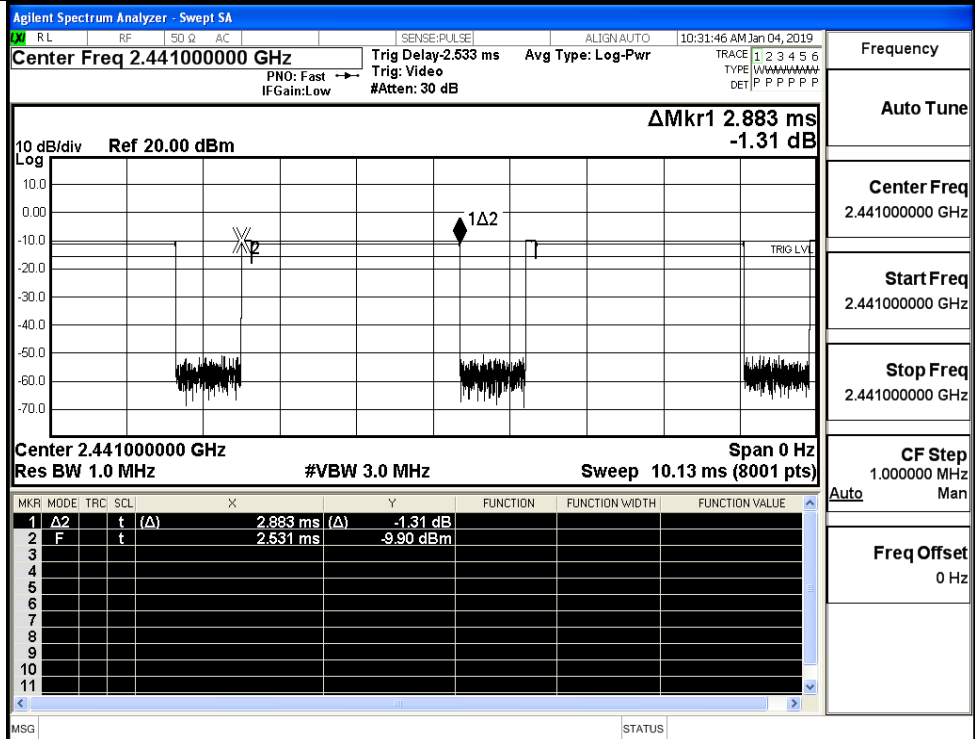


Frequency	
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Freq Offset	0 Hz

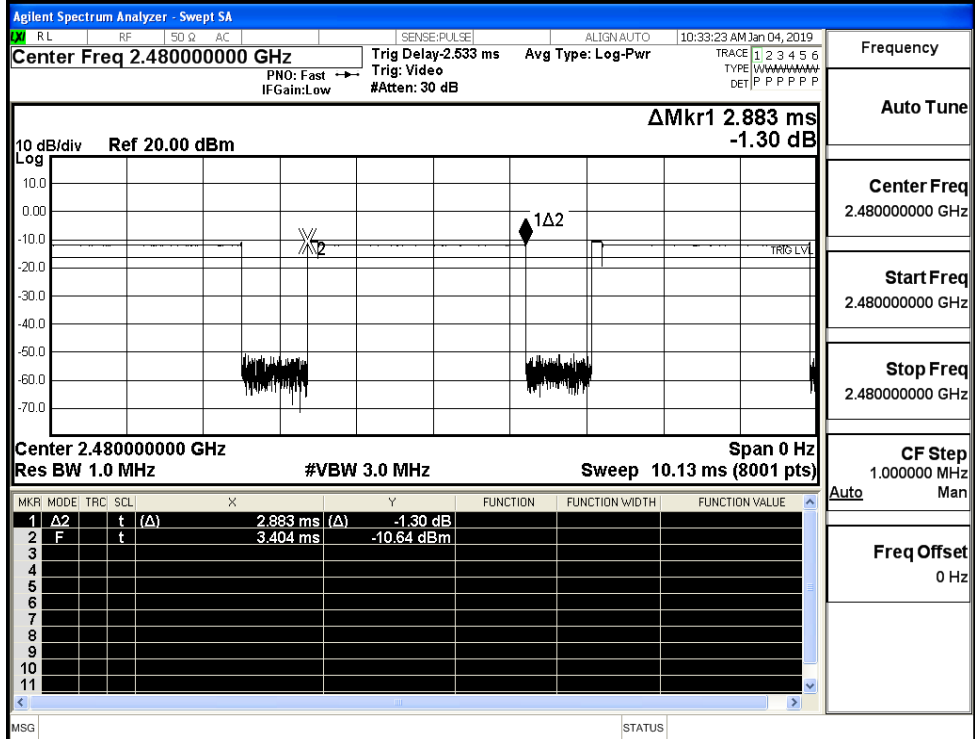
$\pi/4$ DQPSK
_2DH5/LCH



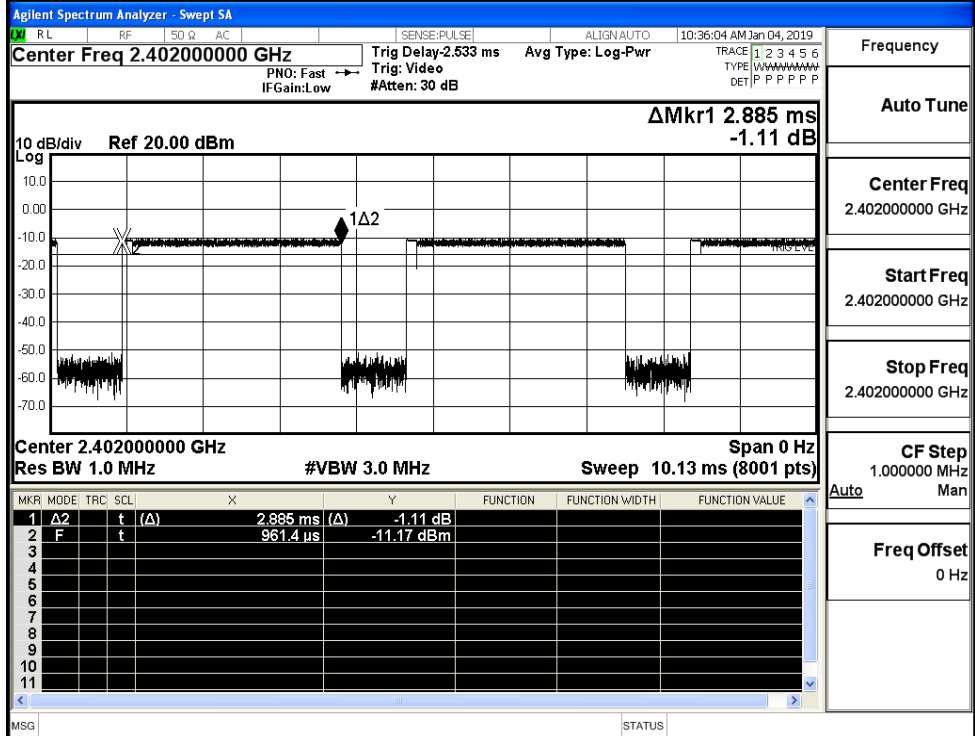
$\pi/4$ DQPSK
_2DH5/MCH



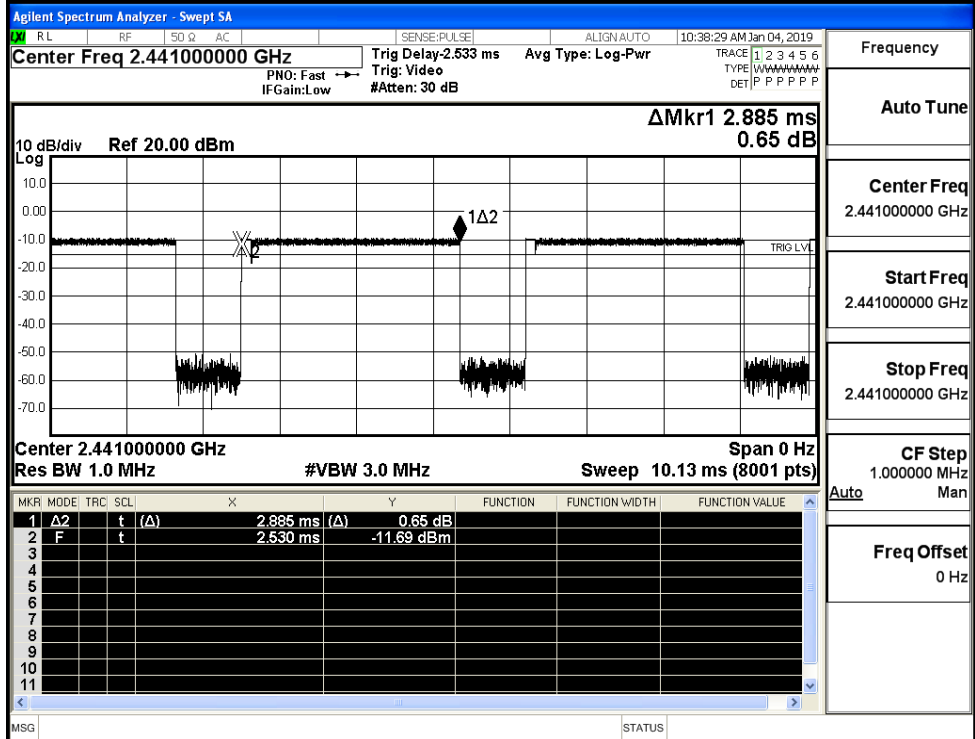
$\pi/4$ DQPSK
_2DH5/HCH



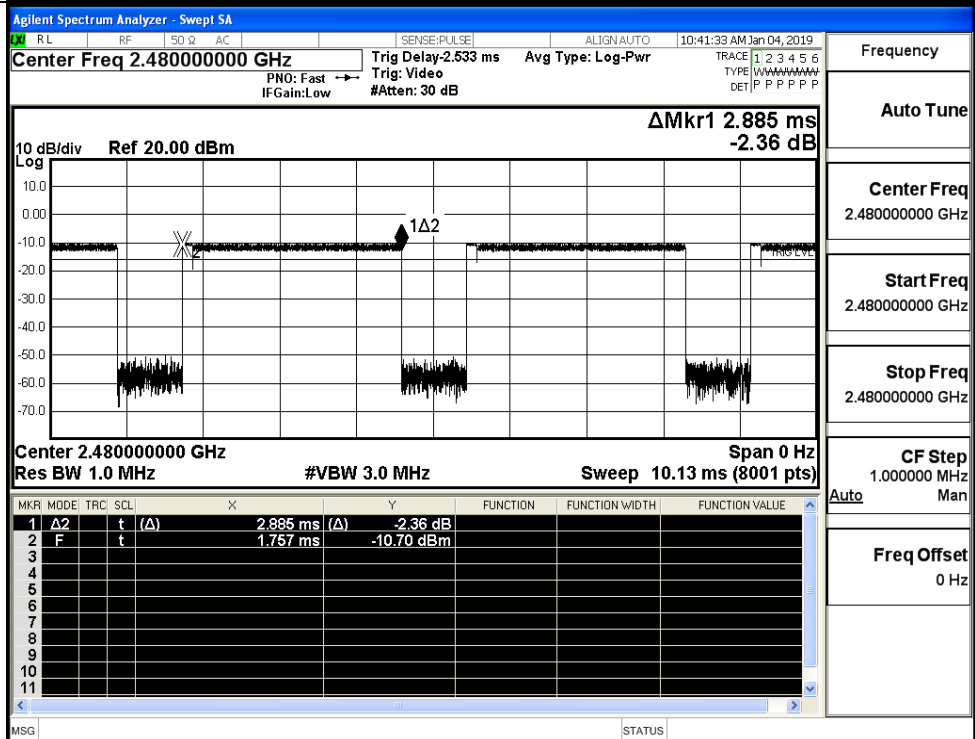
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

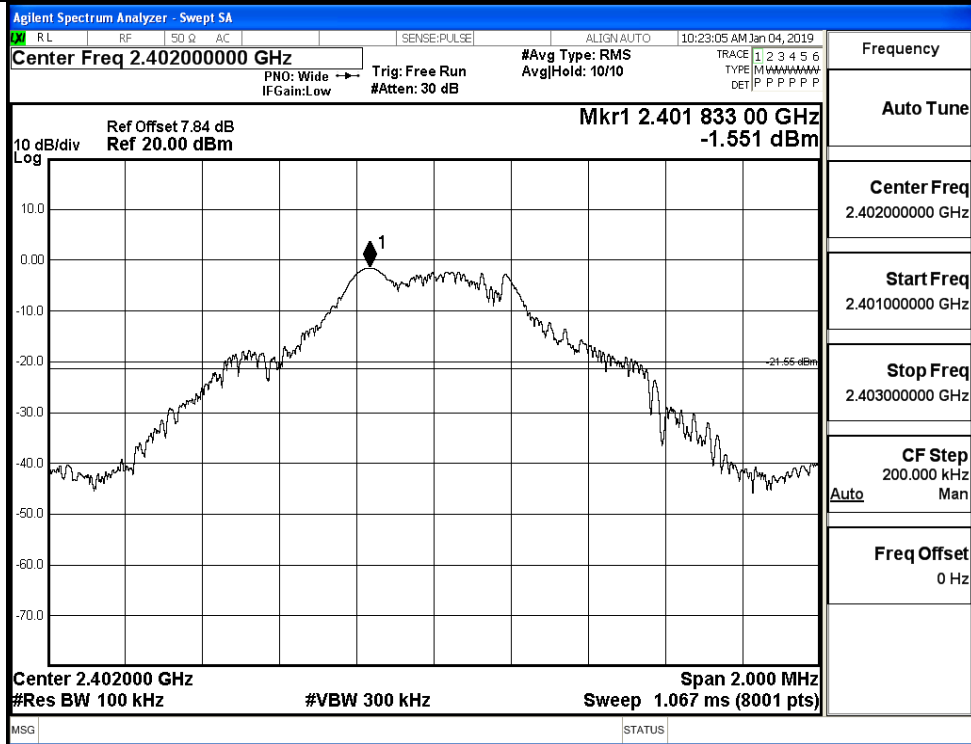


A.6 RF Conducted Spurious Emissions

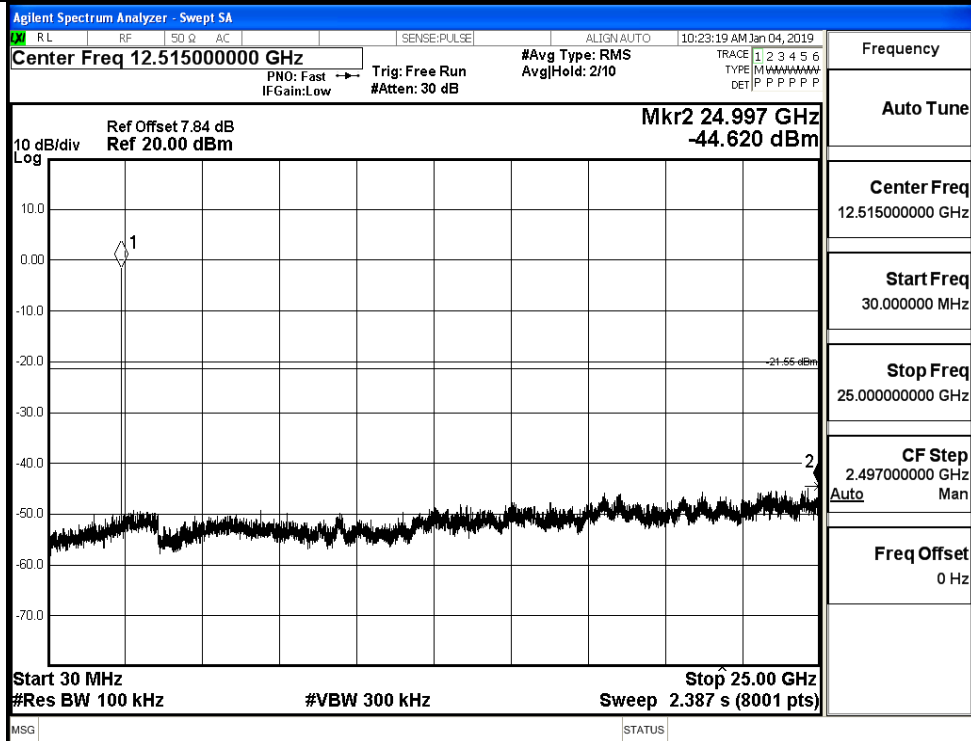
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.551	-44.620	-21.551	PASS
	MCH	-0.733	-44.640	-20.733	PASS
	HCH	-1.227	-44.716	-21.227	PASS
$\pi/4$ DQPSK	LCH	-2.918	-45.143	-22.918	PASS
	MCH	-2.599	-44.912	-22.599	PASS
	HCH	-3.407	-44.455	-23.407	PASS
8DPSK	LCH	-3.114	-45.102	-23.114	PASS
	MCH	-2.13	-45.004	-22.130	PASS
	HCH	-2.852	-44.127	-22.852	PASS

GFSK_LCH_Graphs

Pref

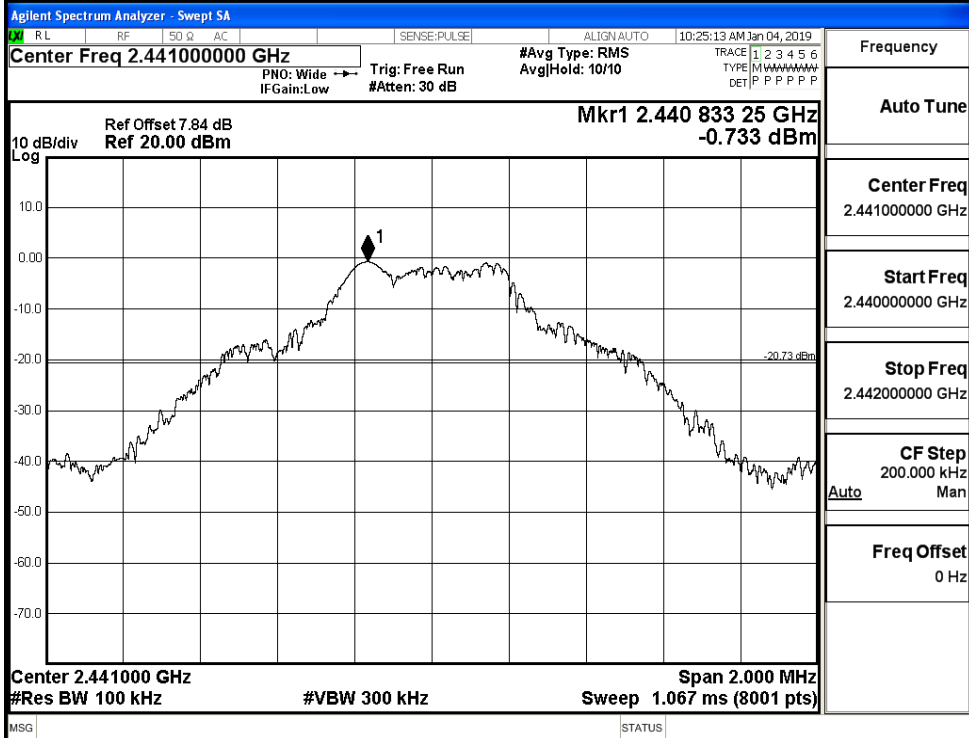


Puw

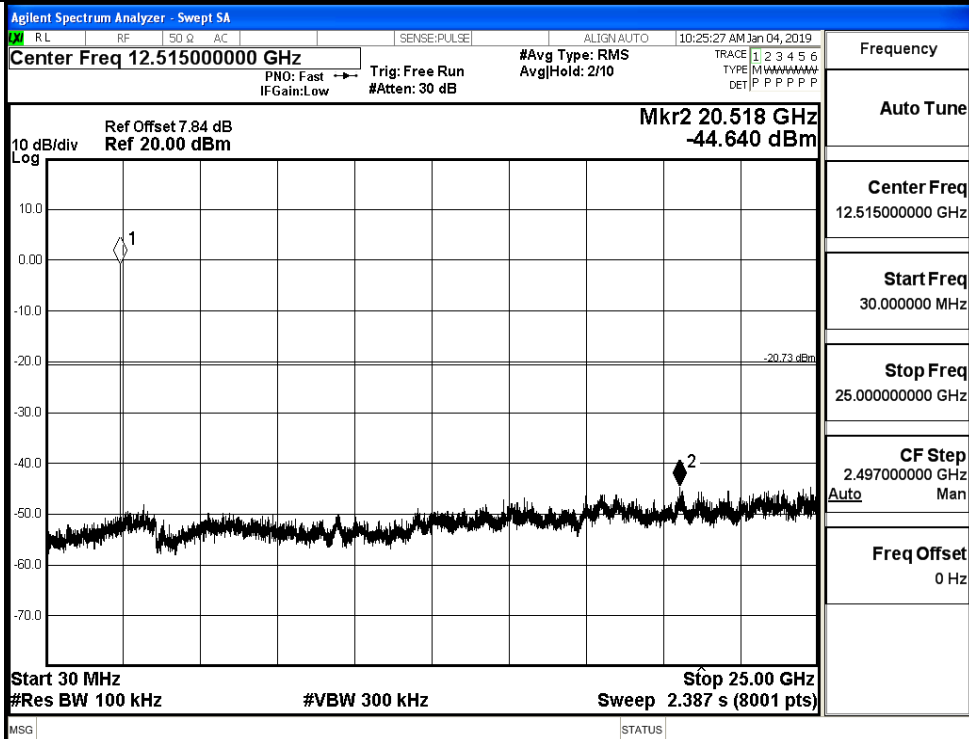


GFSK_MCH_Graphs

Pref

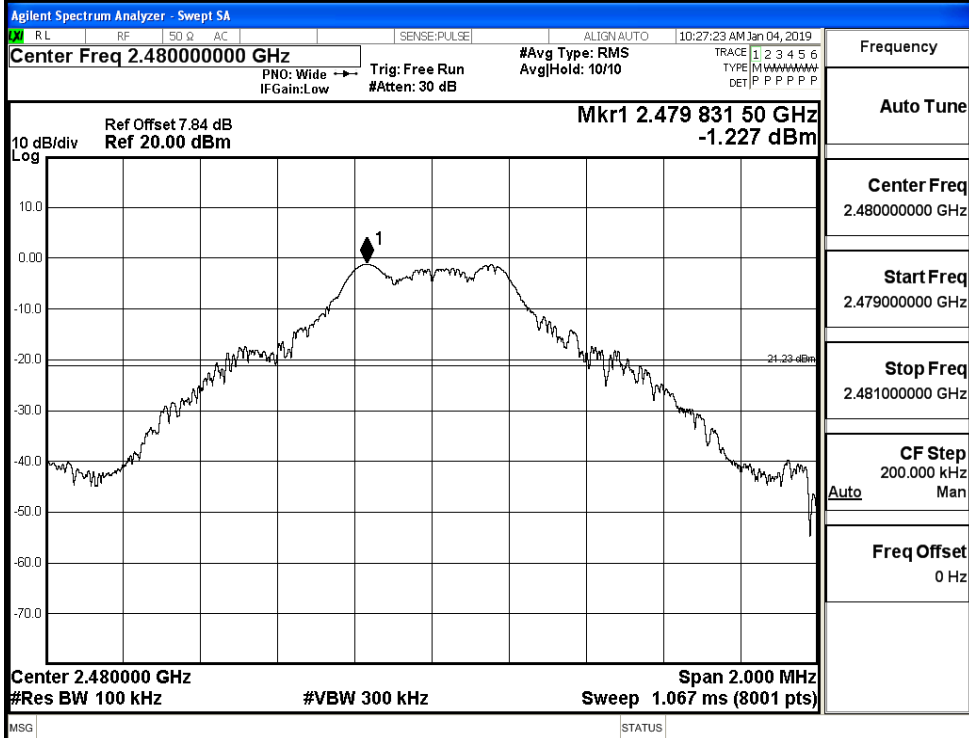


Puw

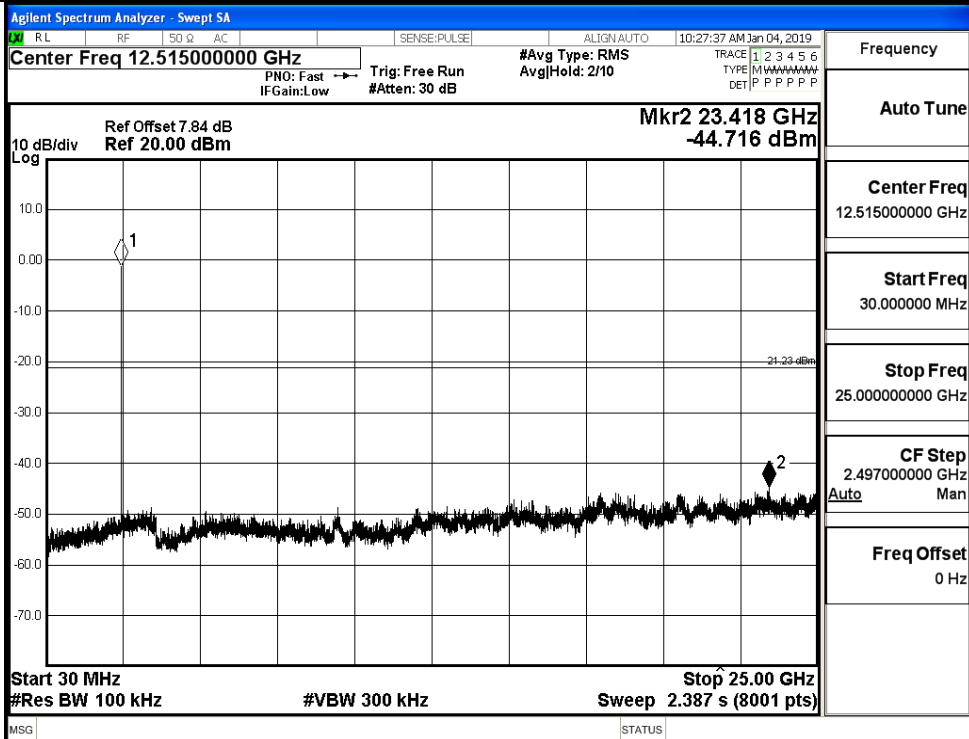


GFSK_HCH_Graphs

Pref

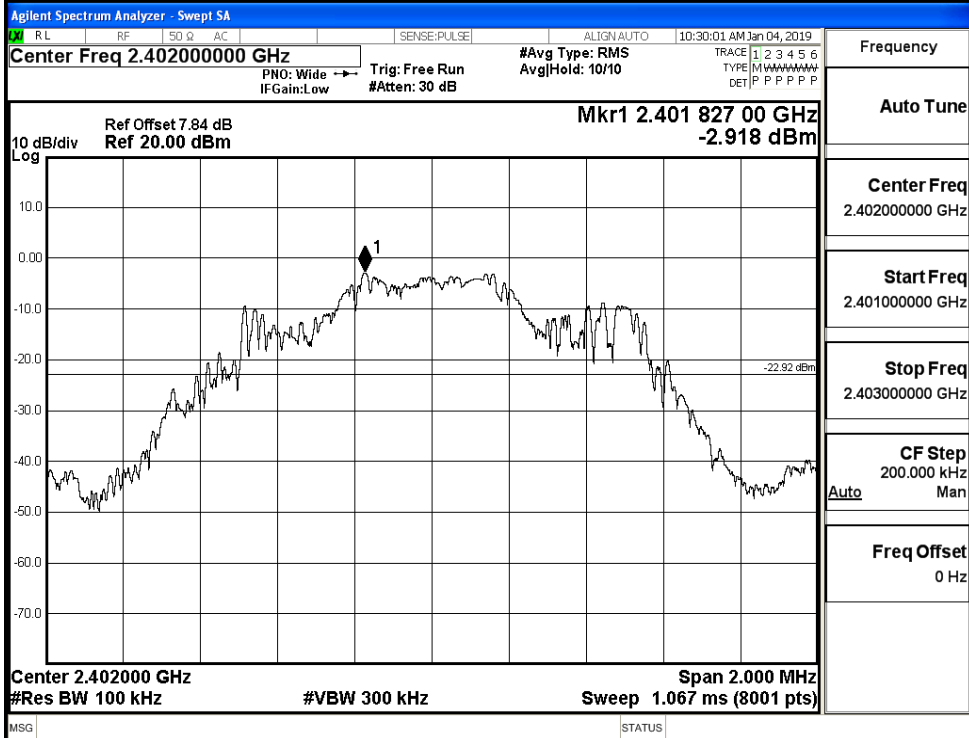


Puw

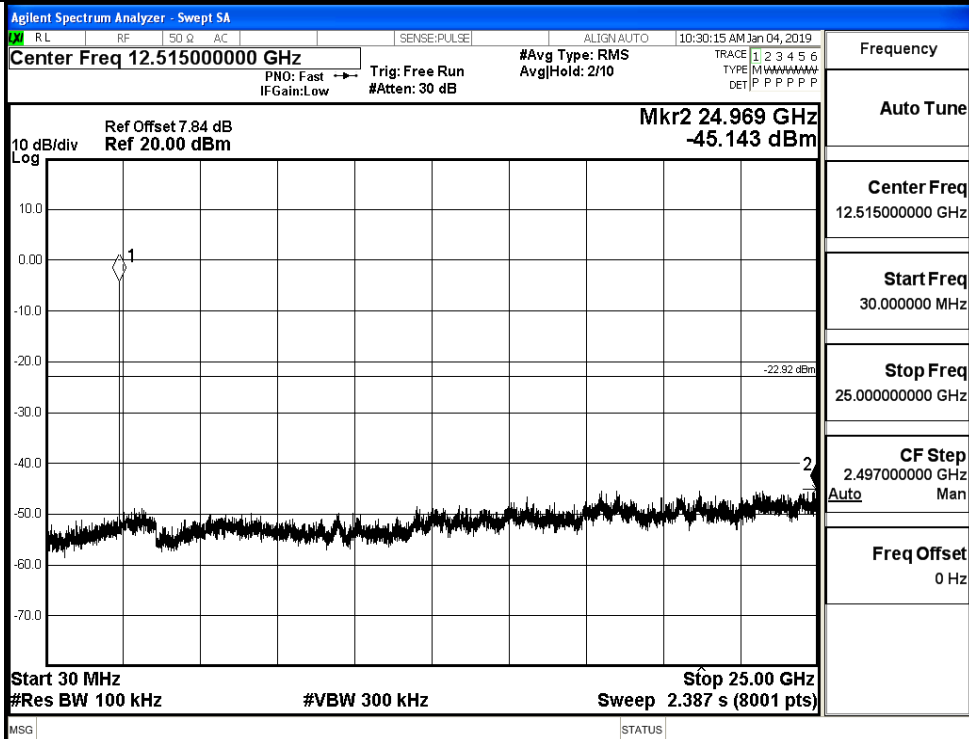


$\pi/4$ DQPSK_LCH_Graphs

Pref

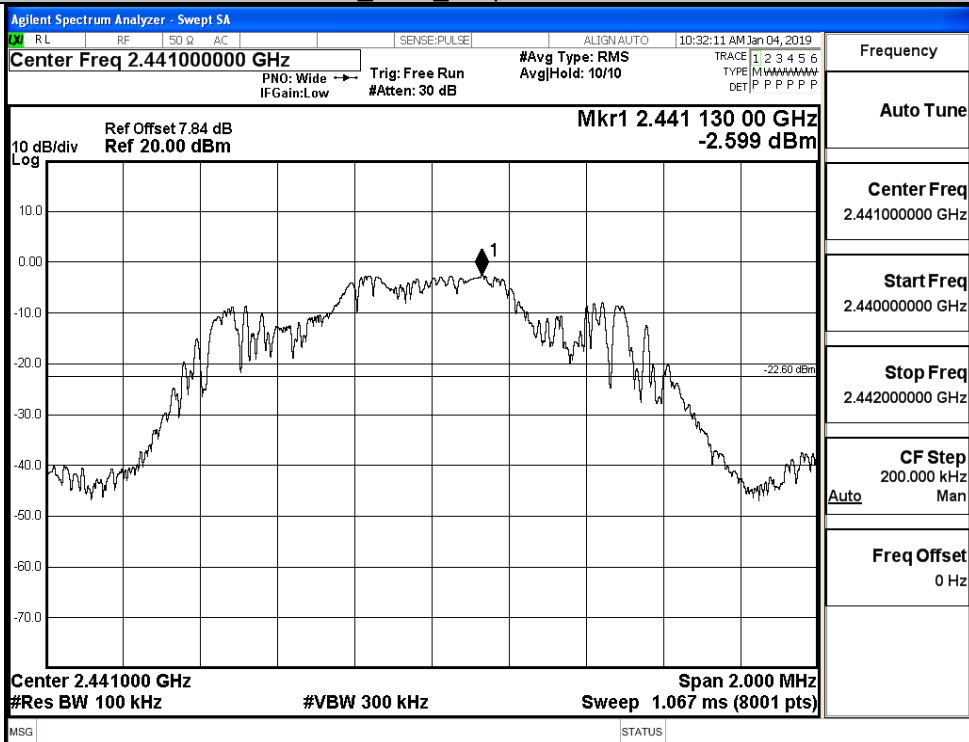


Puw

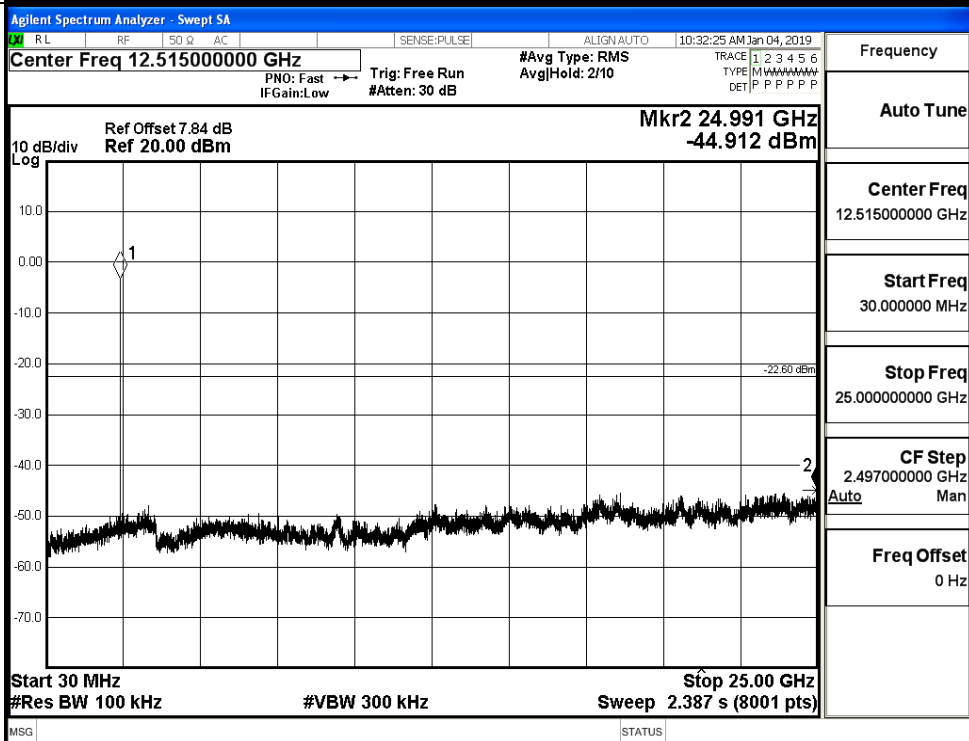


π /4DQPSK MCH Graphs

Pref

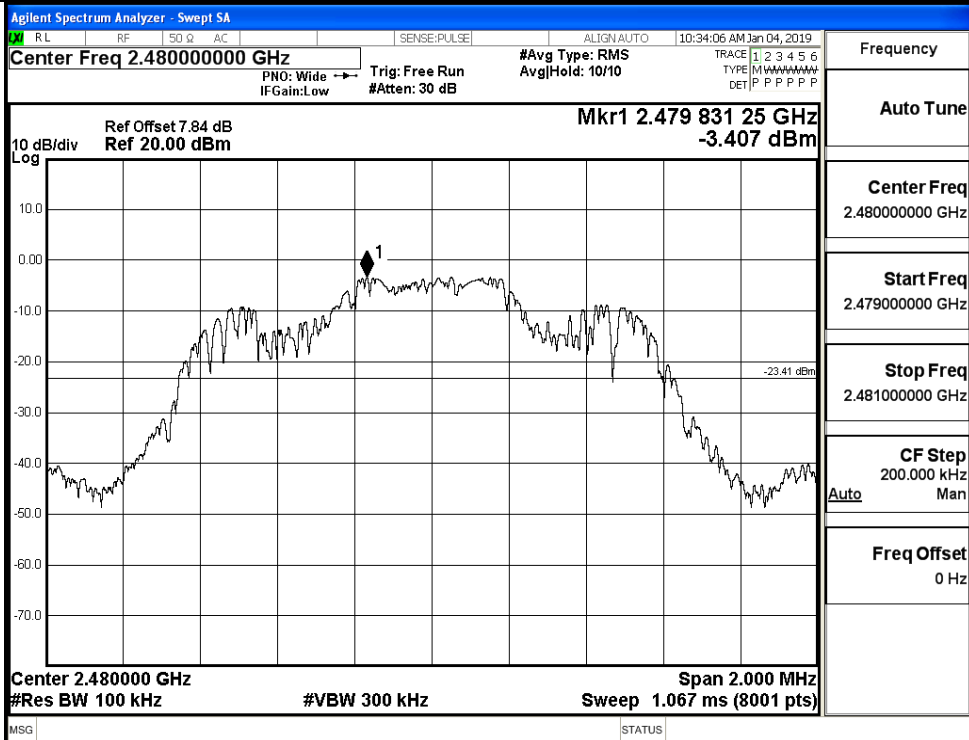


Puw

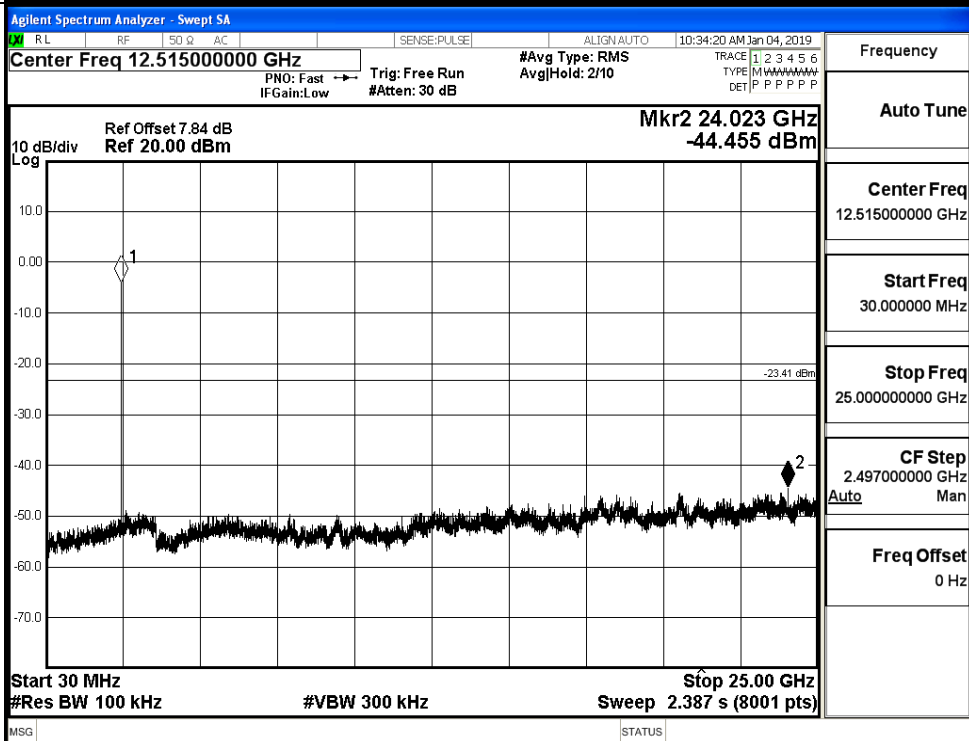


$\pi/4$ DQPSK HCH Graphs

Pref

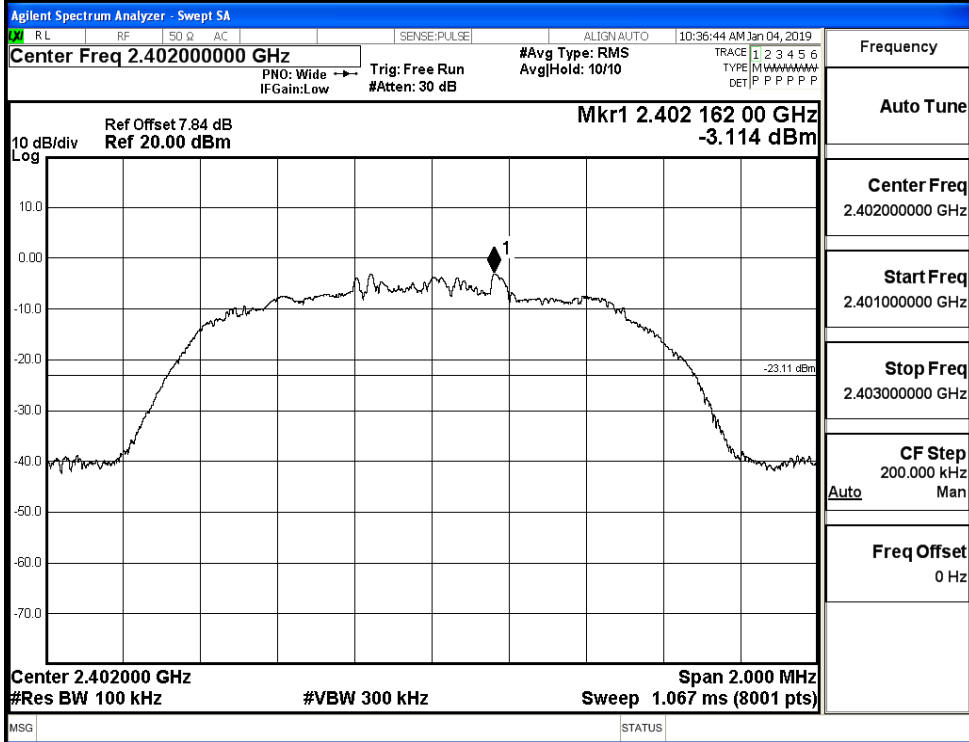


Puw

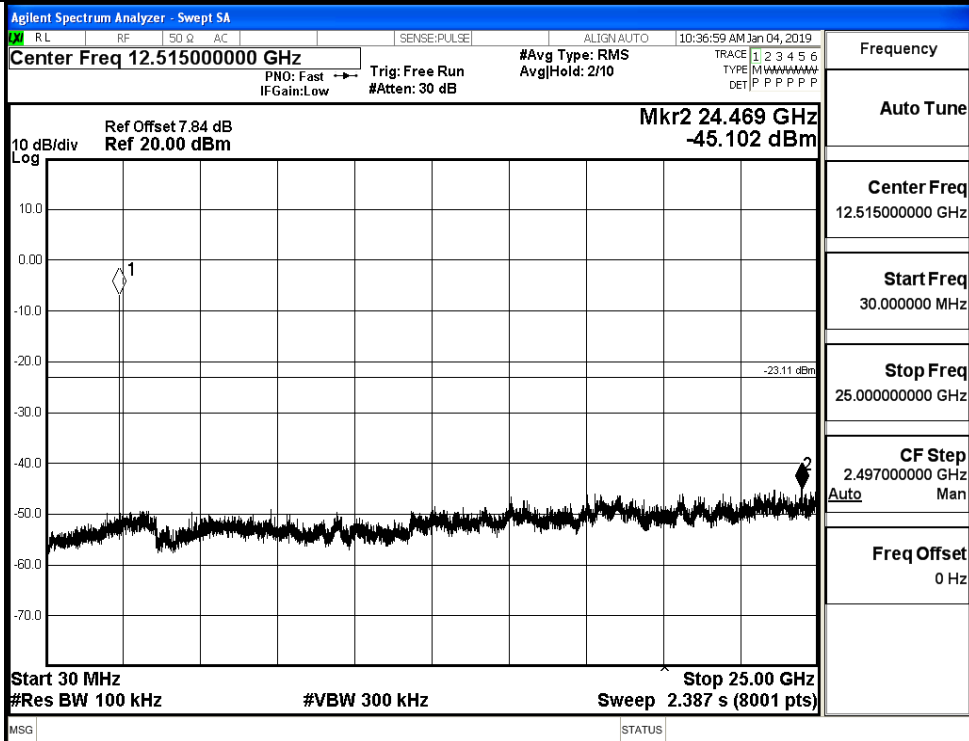


8DPSK_LCH_Graphs

Pref

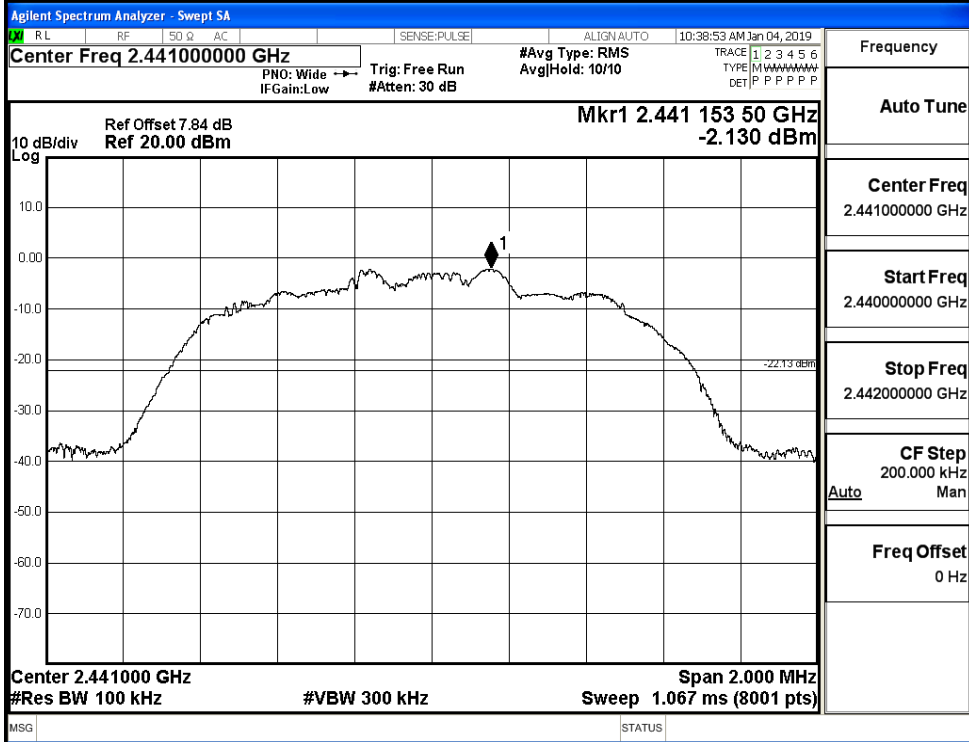


Puw

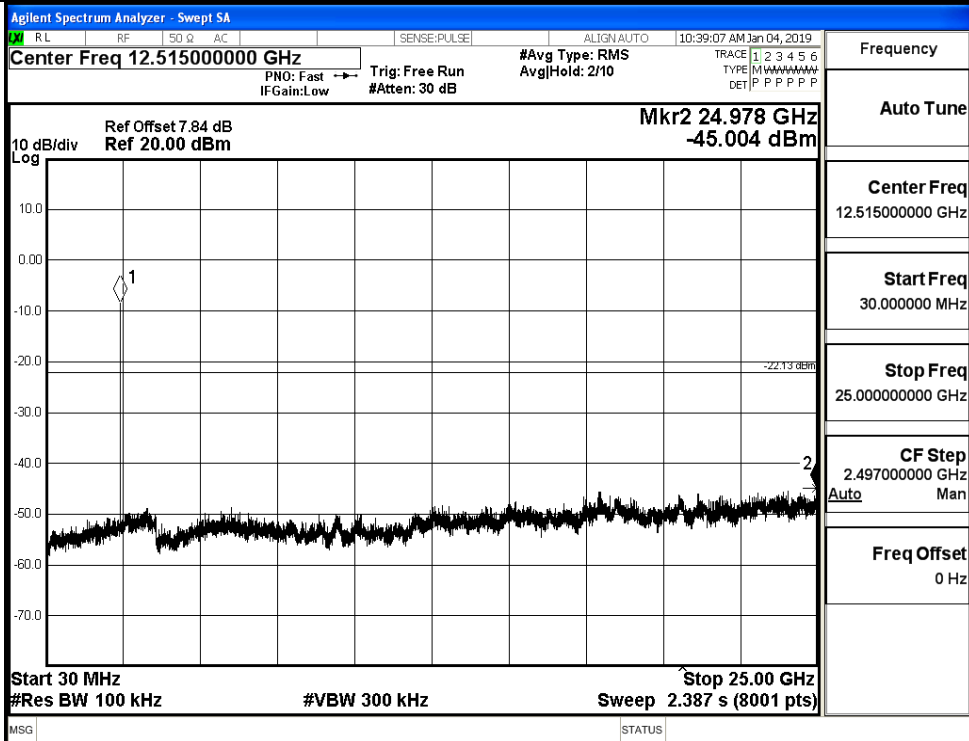


8DPSK_MCH_Graphs

Pref

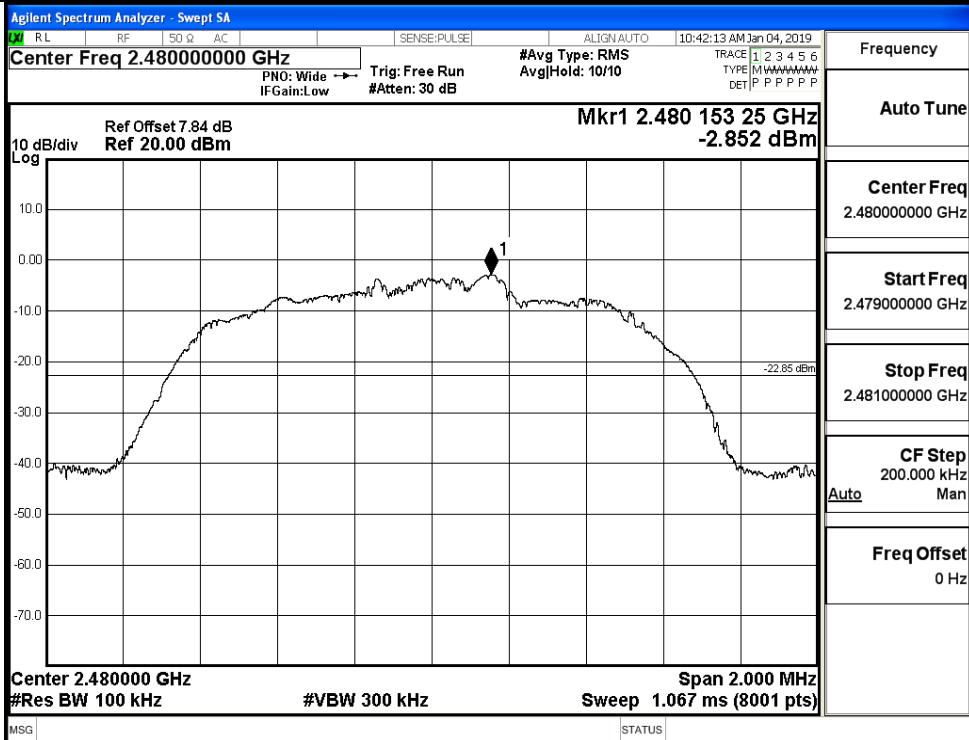


Puw

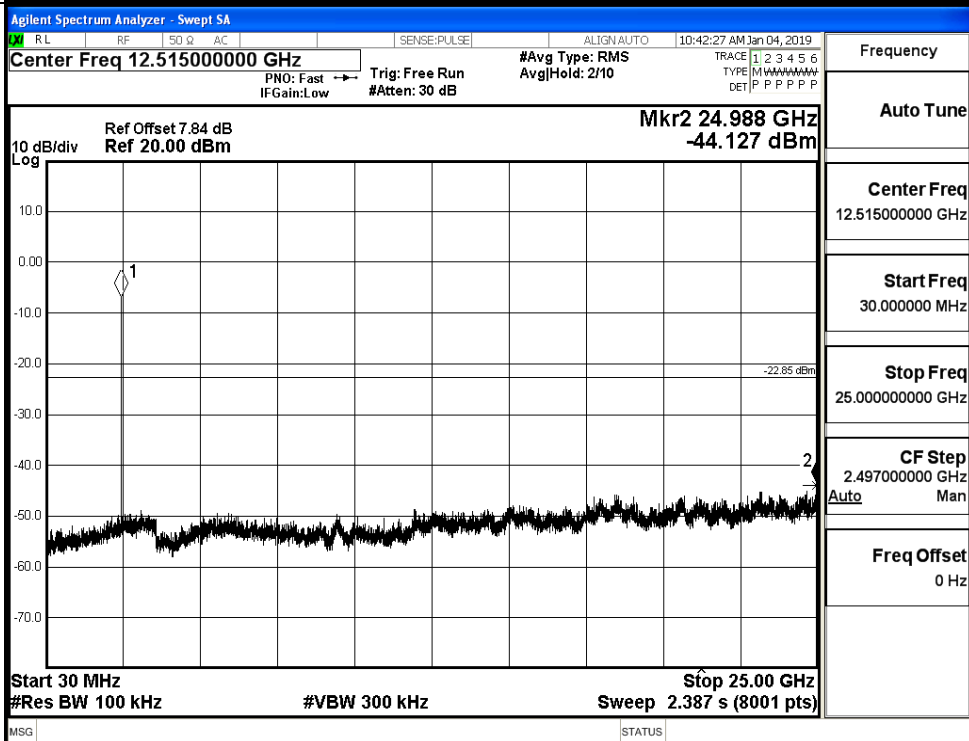


8DPSK_HCH_Graphs

Pref



Puw

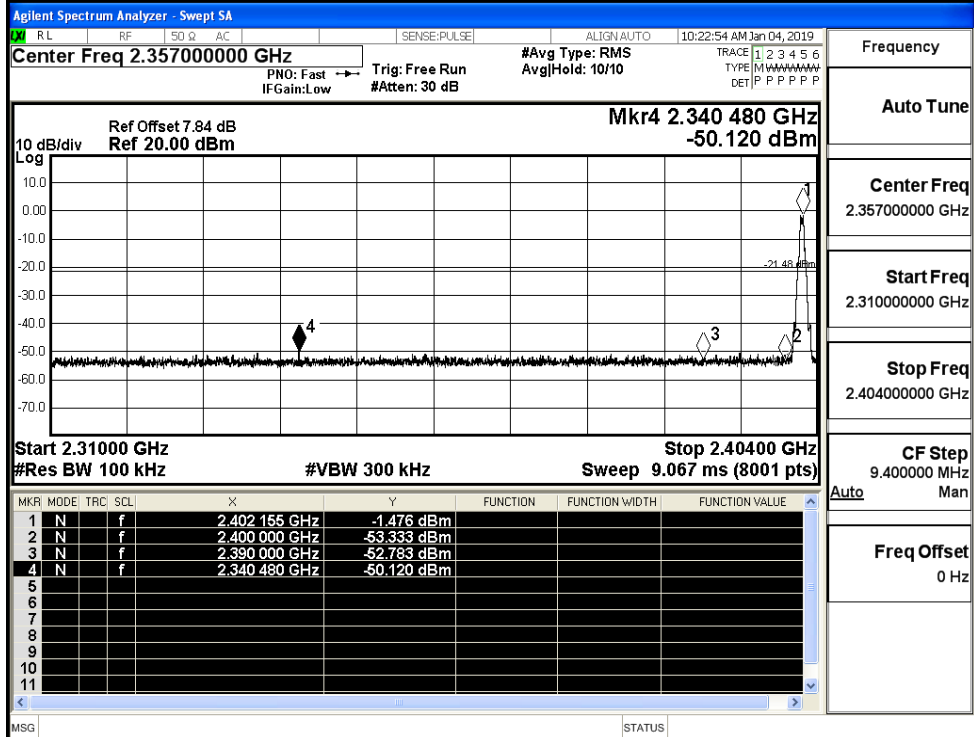


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-1.476	Off	-50.120	-21.48	PASS
			-0.781	On	-49.968	-20.78	PASS
	HCH	2480	-1.169	Off	-50.042	-21.17	PASS
			-1.046	On	-50.428	-21.05	PASS
$\pi/4$ DQPSK	LCH	2402	-2.810	Off	-50.142	-22.81	PASS
			-1.793	On	-50.045	-21.79	PASS
	HCH	2480	-2.651	Off	-50.038	-22.65	PASS
			-2.072	On	-48.932	-22.07	PASS
8DPSK	LCH	2402	-3.247	Off	-50.845	-23.25	PASS
			-1.998	On	-49.093	-22	PASS
	HCH	2480	-3.086	Off	-50.197	-23.09	PASS
			-2.057	On	-49.163	-22.06	PASS

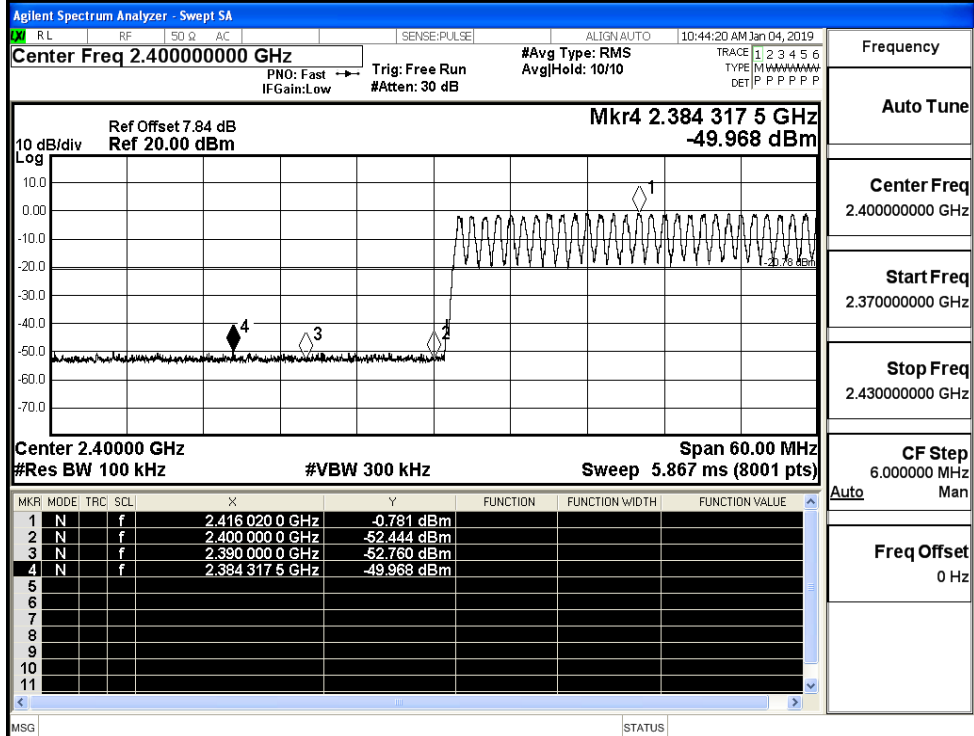
Test Graphs

GFSK/LCH/No Hop



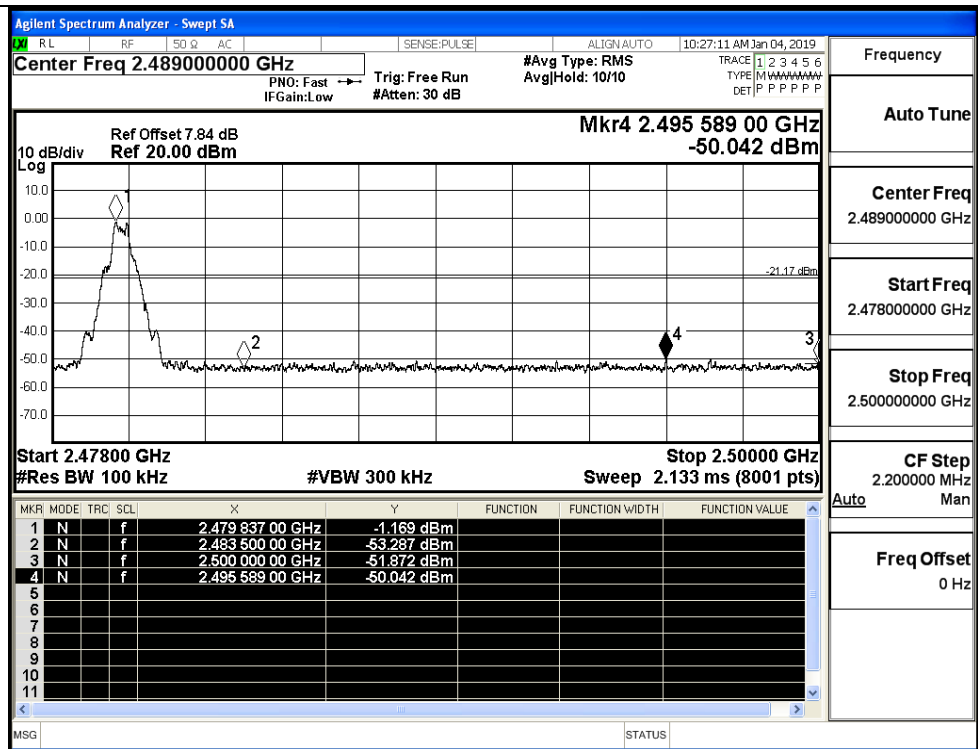
Frequency	Auto Tune
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz Auto Man
Freq Offset	0 Hz

GFSK/LCH/Hop

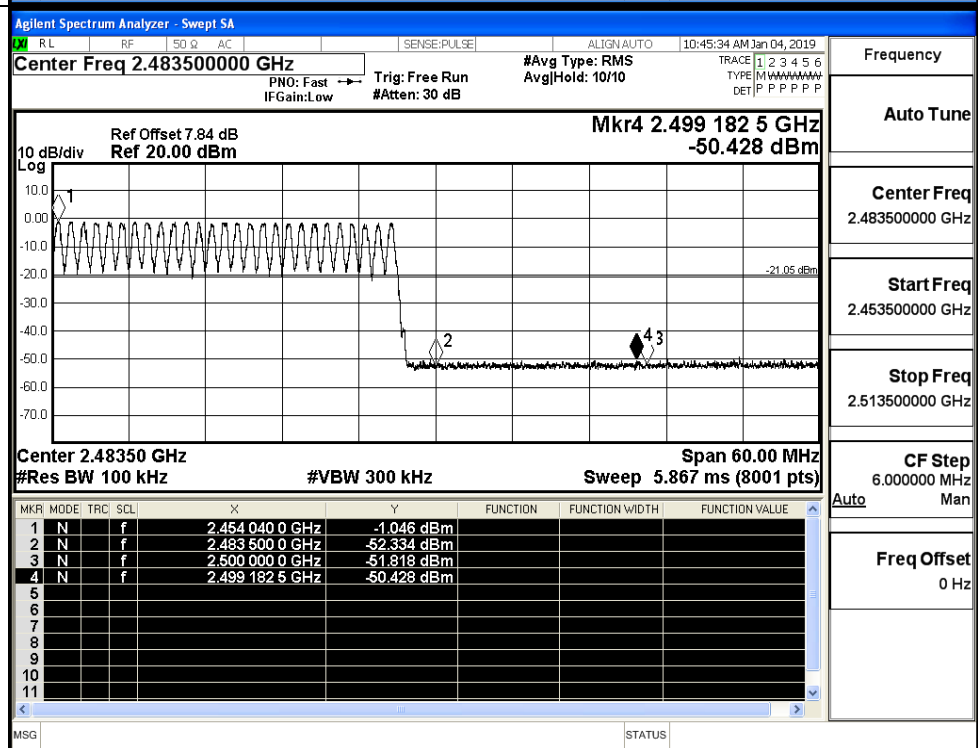


Frequency	Auto Tune
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz Auto Man
Freq Offset	0 Hz

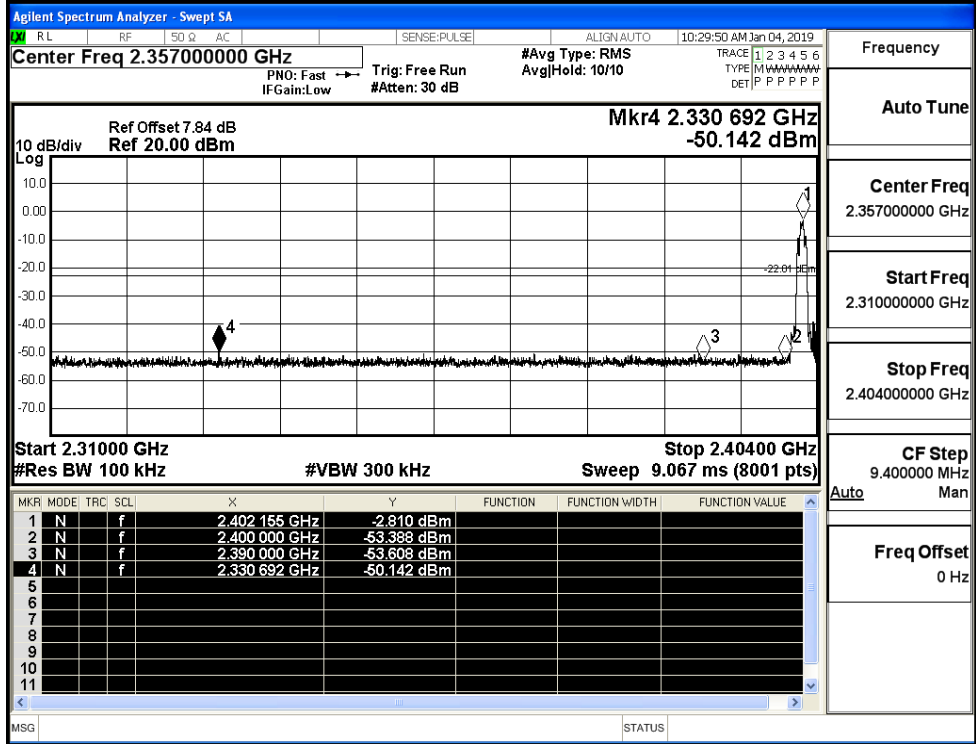
GFSK/HCH/No Hop



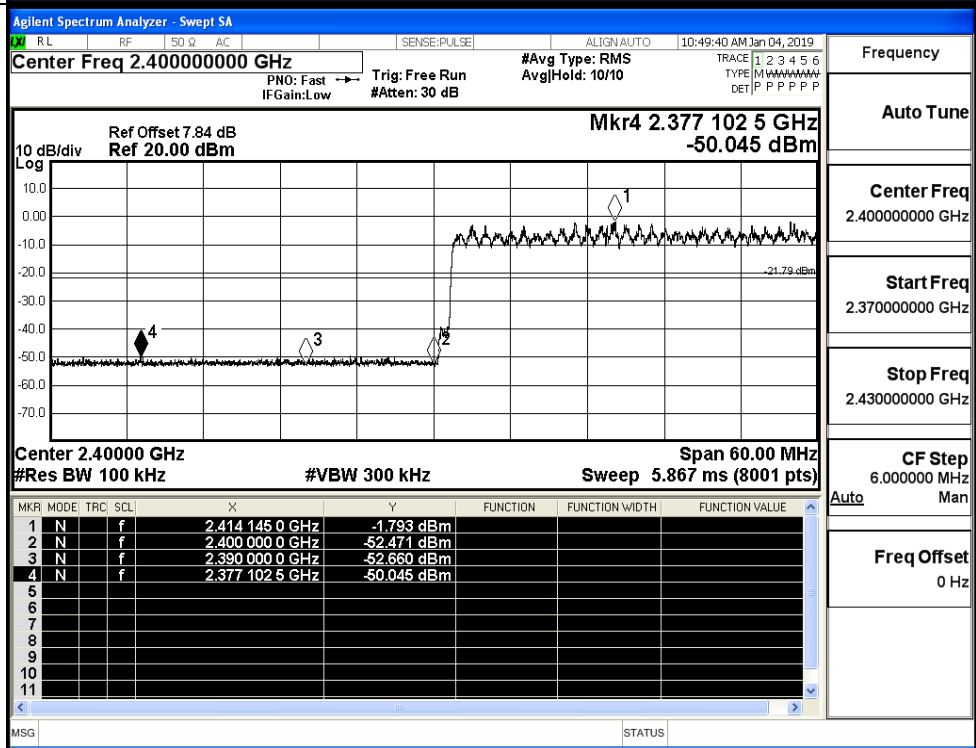
GFSK/HCH/Hop



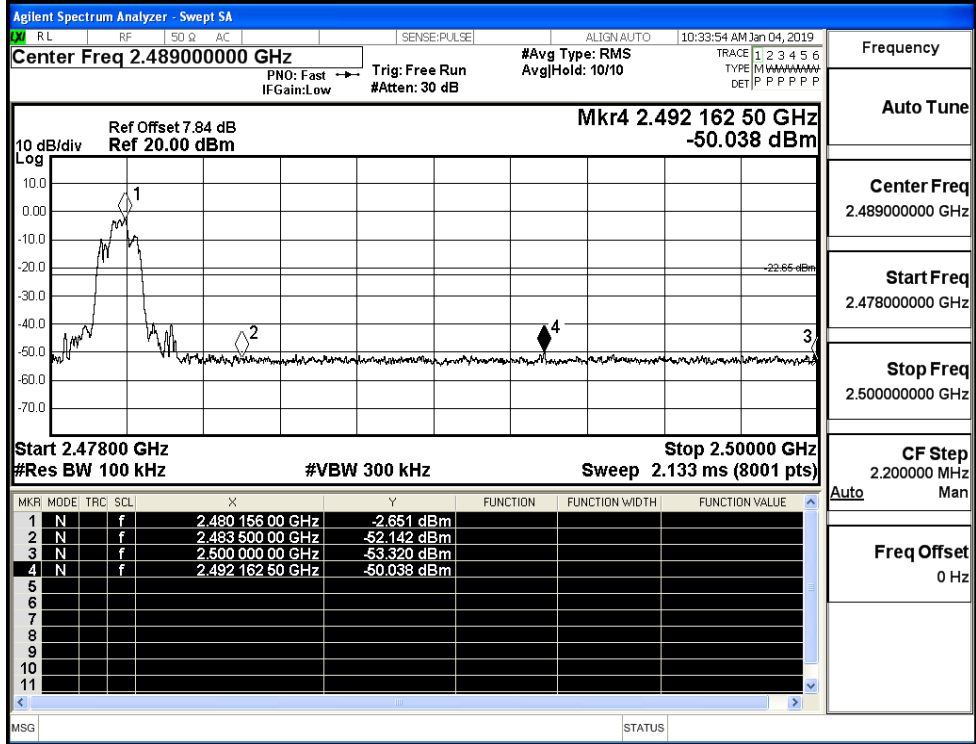
$\pi/4$ DQPSK/LCH/No
Hop



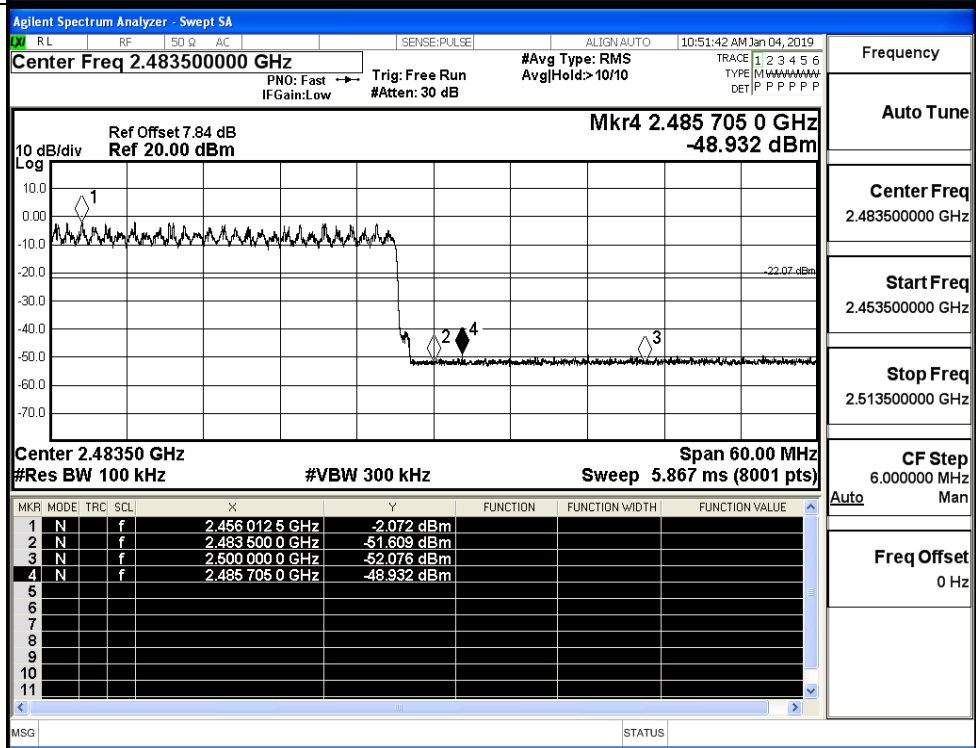
$\pi/4$ DQPSK/LCH/Hop



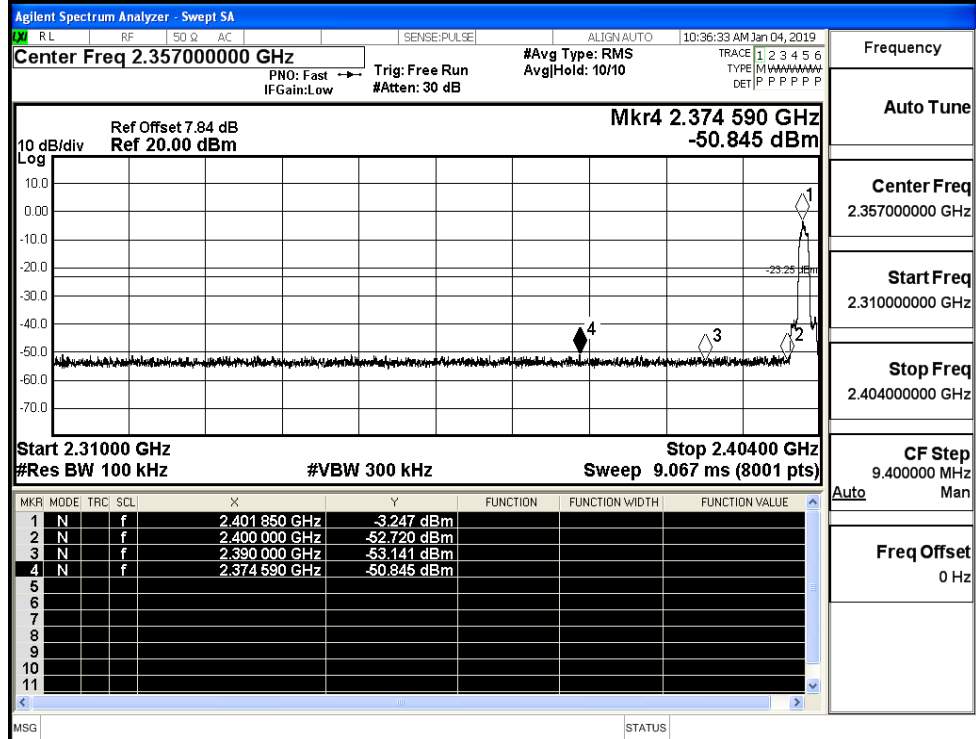
$\pi/4$ DQPSK/HCH/No
Hop



$\pi/4$ DQPSK/HCH/Hop

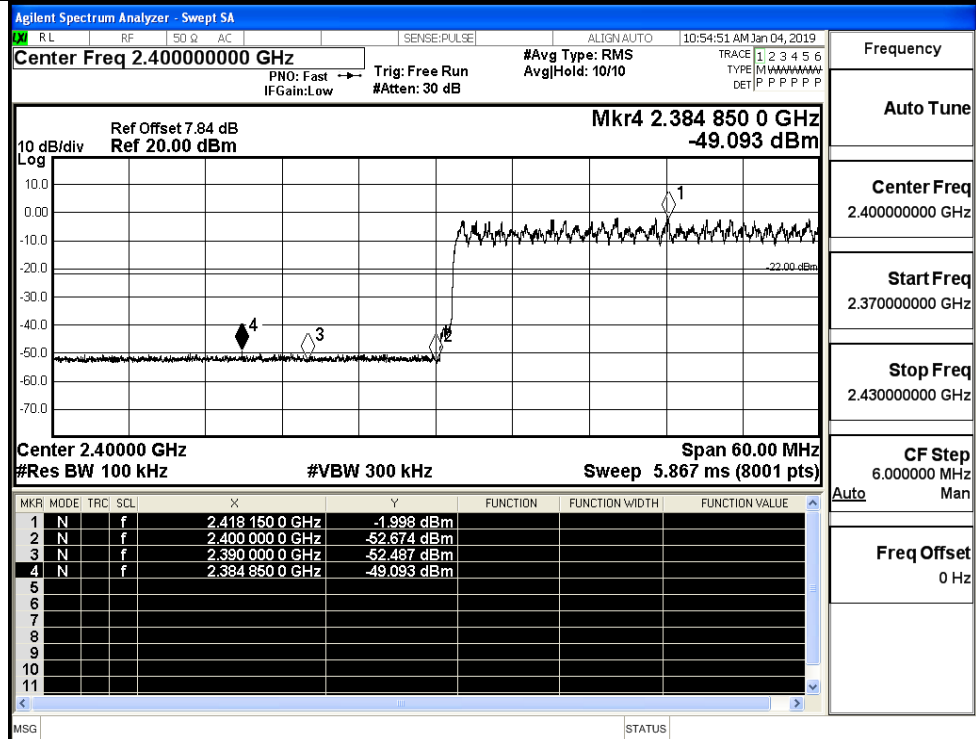


8DPSK/LCH/No Hop



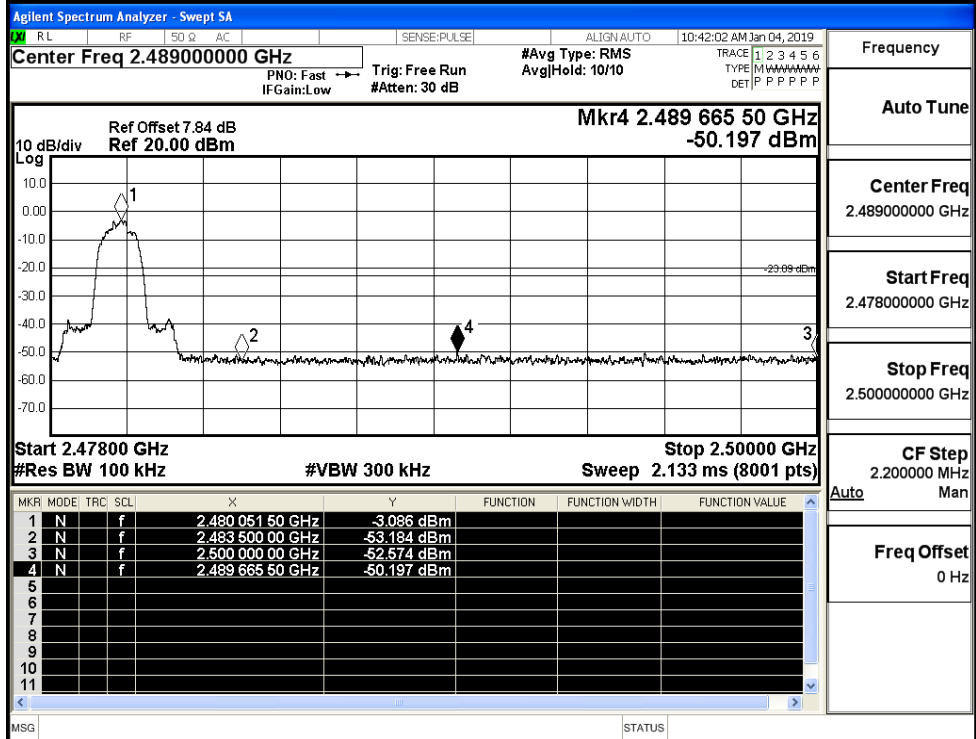
Frequency	
Auto Tune	
Center Freq	2.35700000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.40400000 GHz
CF Step	9.400000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH/Hop



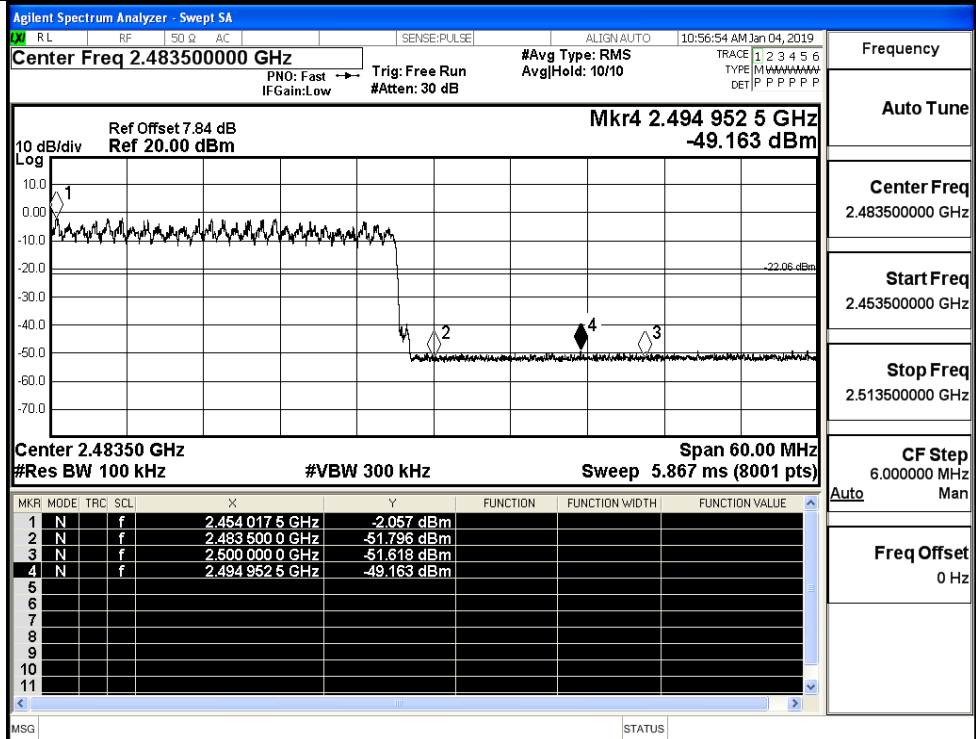
Frequency	
Auto Tune	
Center Freq	2.40000000 GHz
Start Freq	2.37000000 GHz
Stop Freq	2.43000000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH/No Hop



Frequency	
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH/Hop

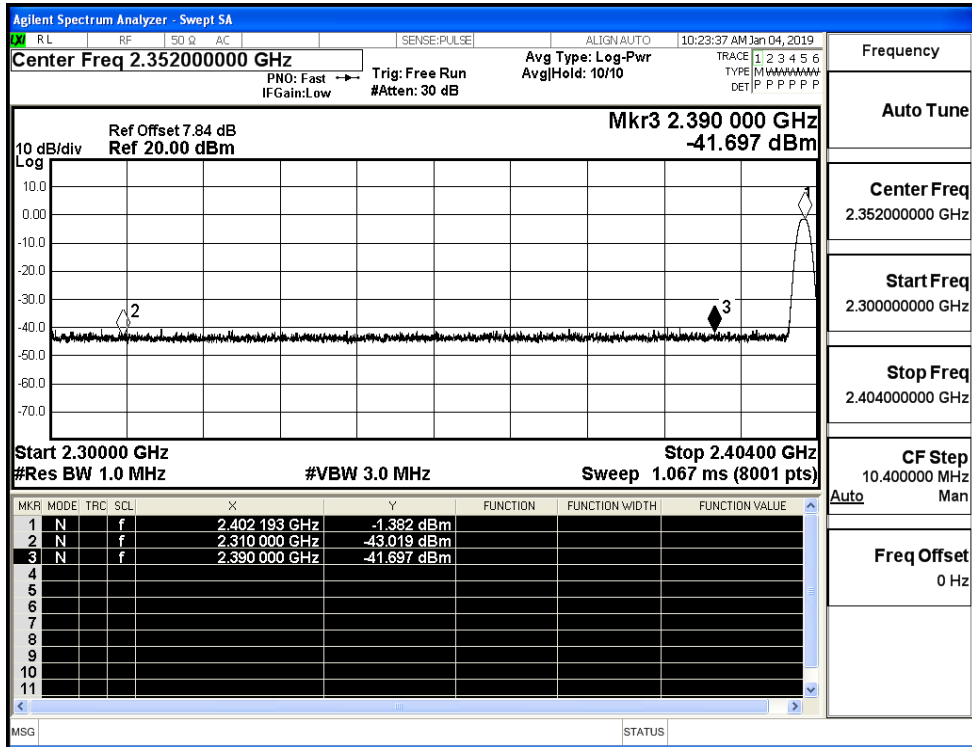


Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

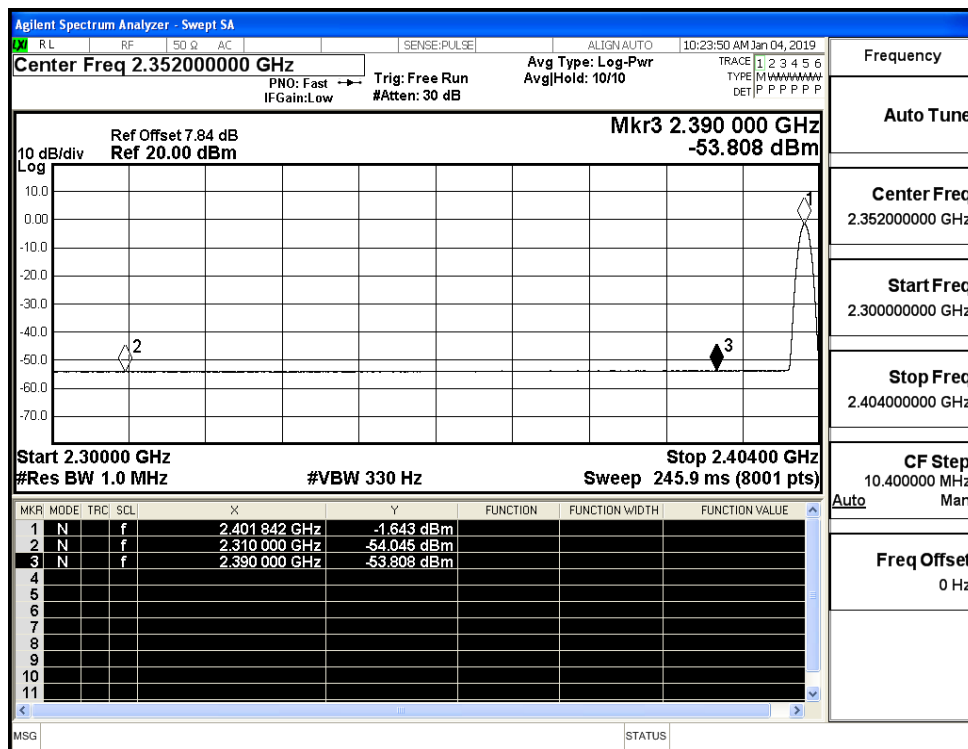
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.02	2.0	0	54.24	PEAK	74	PASS
	Off	2310.0	-54.05	2.0	0	43.21	AV	54	PASS
	Off	2390.0	-41.70	2.0	0	55.56	PEAK	74	PASS
	Off	2390.0	-53.81	2.0	0	43.45	AV	54	PASS
	Off	2483.5	-43.87	2.0	0	53.39	PEAK	74	PASS
	Off	2483.5	-53.51	2.0	0	43.74	AV	54	PASS
	Off	2500.0	-42.64	2.0	0	54.62	PEAK	74	PASS
	Off	2500.0	-53.51	2.0	0	43.74	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.40	2.0	0	54.86	PEAK	74	PASS
	Off	2310.0	-54.13	2.0	0	43.13	AV	54	PASS
	Off	2390.0	-43.83	2.0	0	53.43	PEAK	74	PASS
	Off	2390.0	-53.81	2.0	0	43.45	AV	54	PASS
	Off	2483.5	-42.64	2.0	0	54.62	PEAK	74	PASS
	Off	2483.5	-53.47	2.0	0	43.79	AV	54	PASS
	Off	2500.0	-43.57	2.0	0	53.69	PEAK	74	PASS
	Off	2500.0	-53.41	2.0	0	43.85	AV	54	PASS
8DPSK	Off	2310.0	-43.91	2.0	0	53.35	PEAK	74	PASS
	Off	2310.0	-54.02	2.0	0	43.24	AV	54	PASS
	Off	2390.0	-44.02	2.0	0	53.24	PEAK	74	PASS
	Off	2390.0	-53.82	2.0	0	43.44	AV	54	PASS
	Off	2483.5	-43.49	2.0	0	53.76	PEAK	74	PASS
	Off	2483.5	-53.50	2.0	0	43.75	AV	54	PASS
	Off	2500.0	-42.19	2.0	0	55.07	PEAK	74	PASS
	Off	2500.0	-53.41	2.0	0	43.84	AV	54	PASS

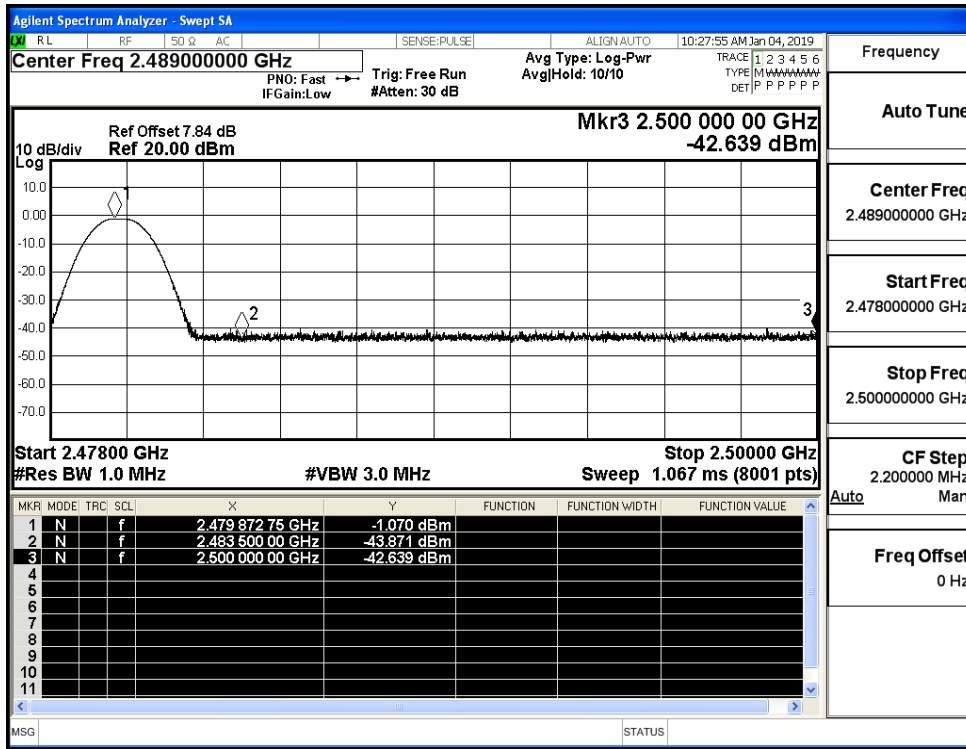
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



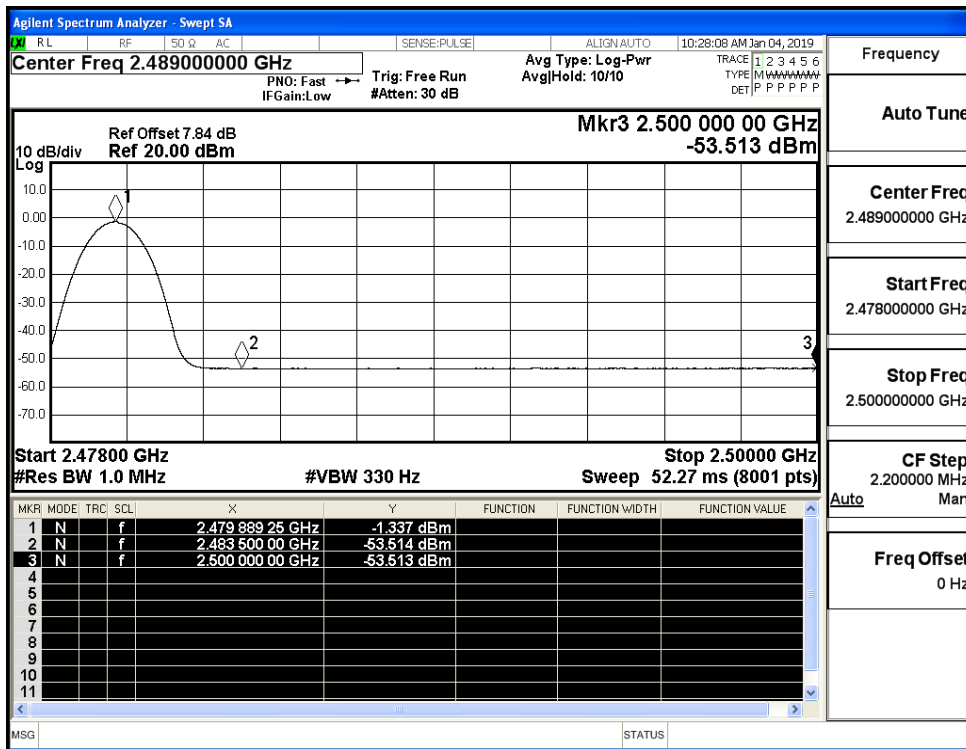
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



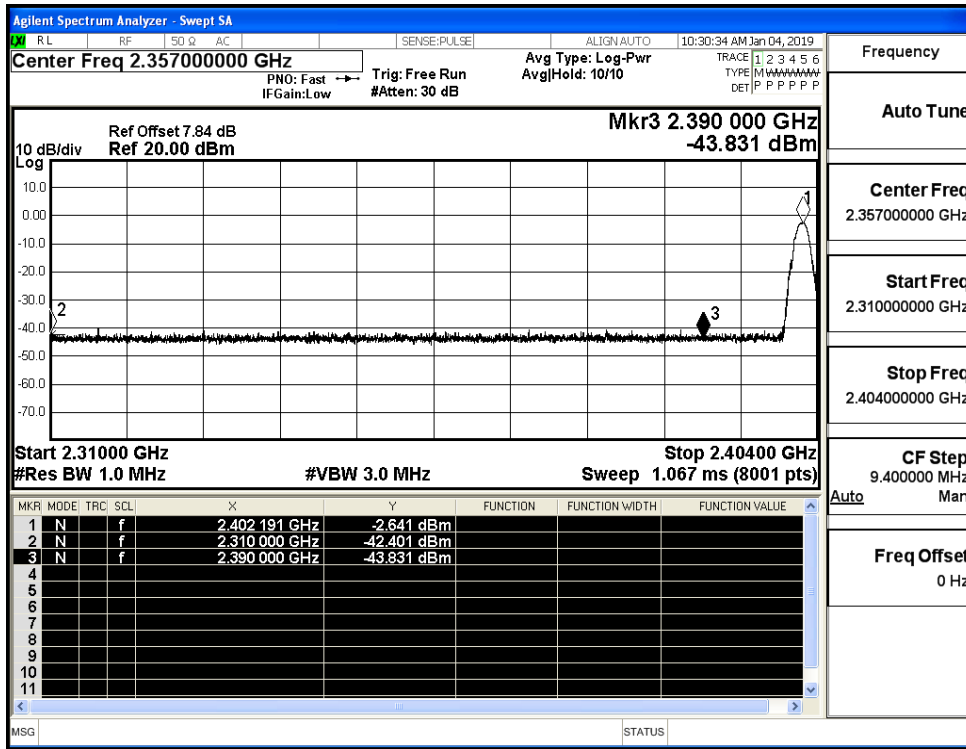
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



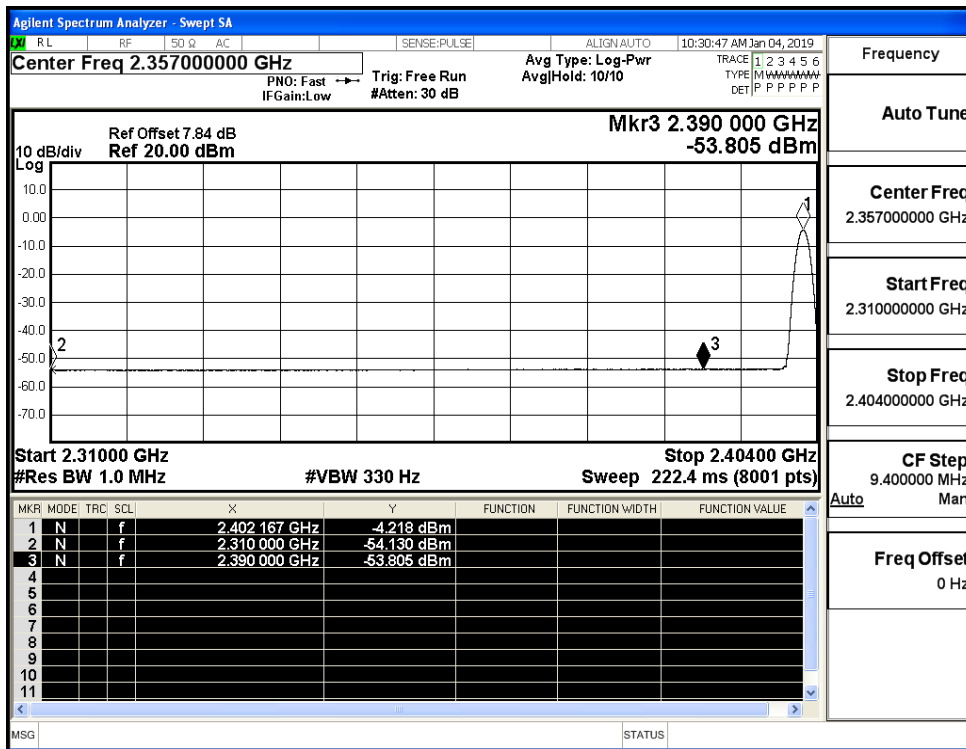
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



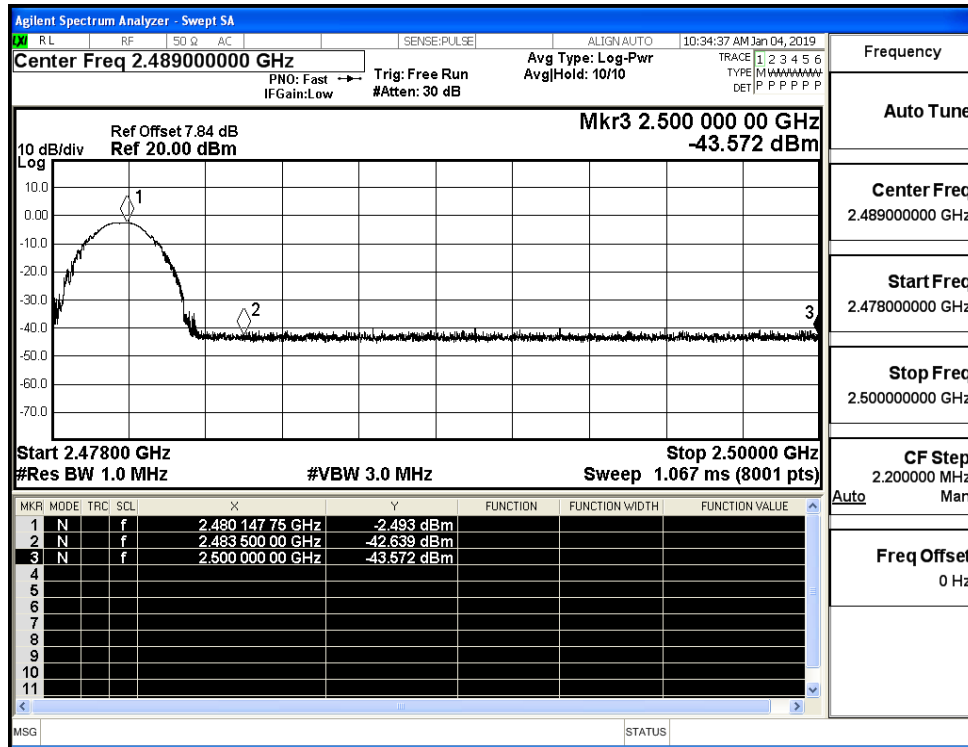
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



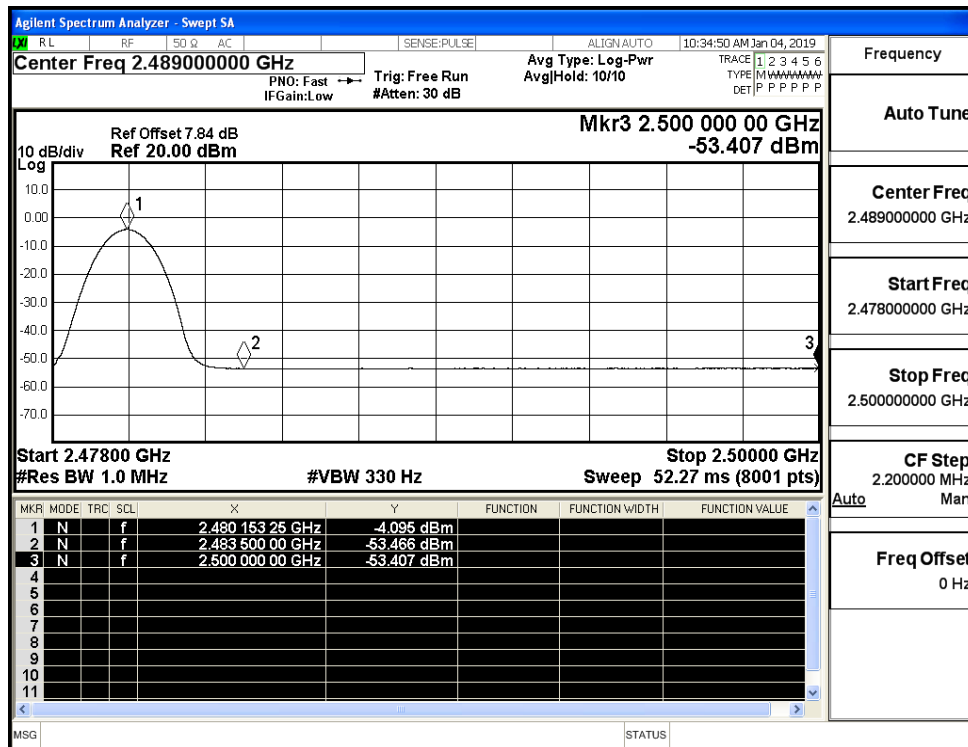
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



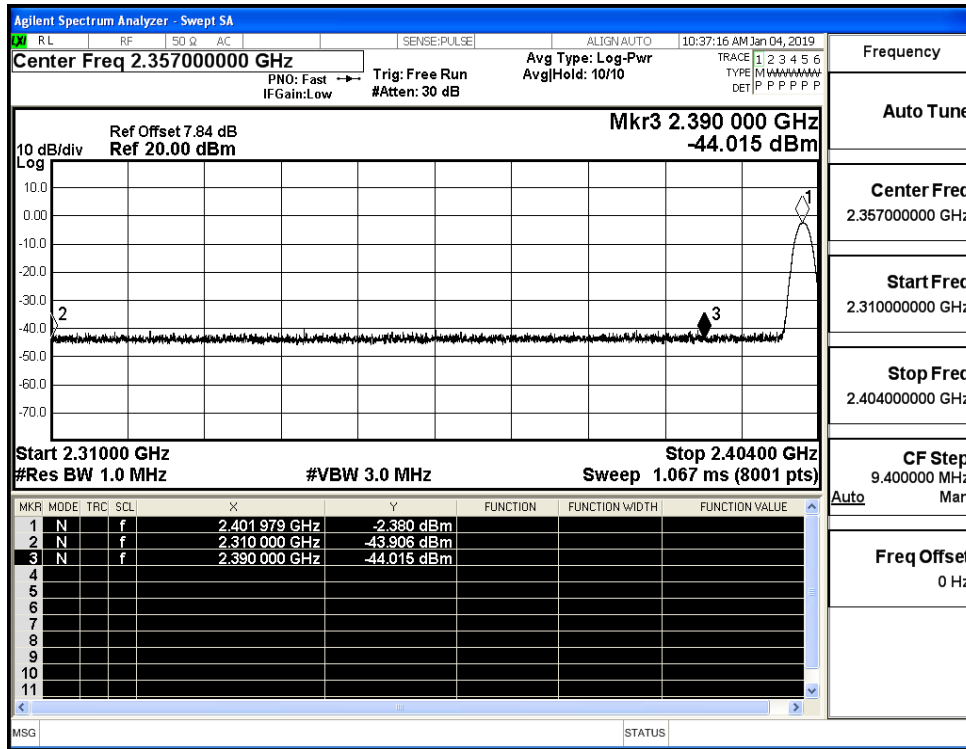
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



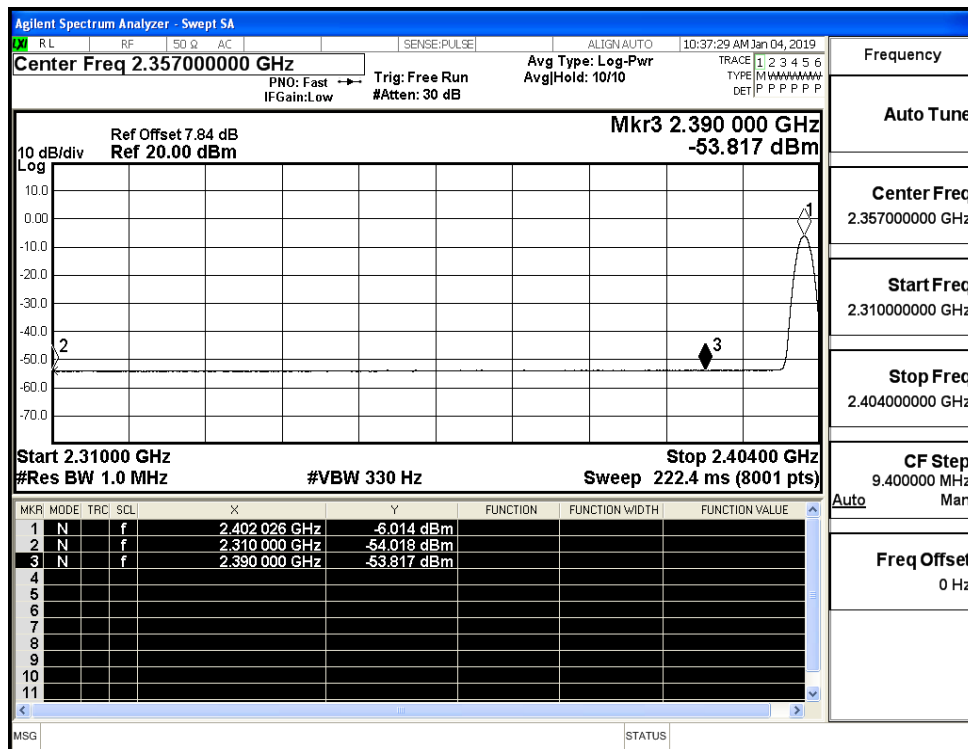
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



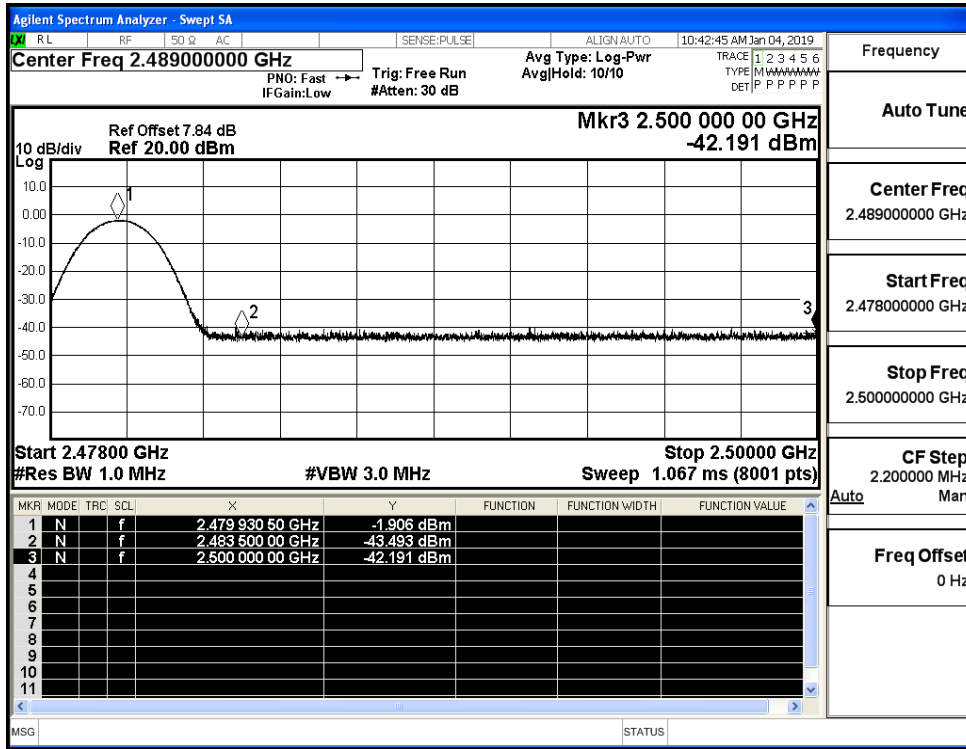
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

