

Appendix A

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

Product Name: CD MINI STEREO SYSTEM

Trade Mark:



Test Model: OND19AAA12

Environmental Conditions

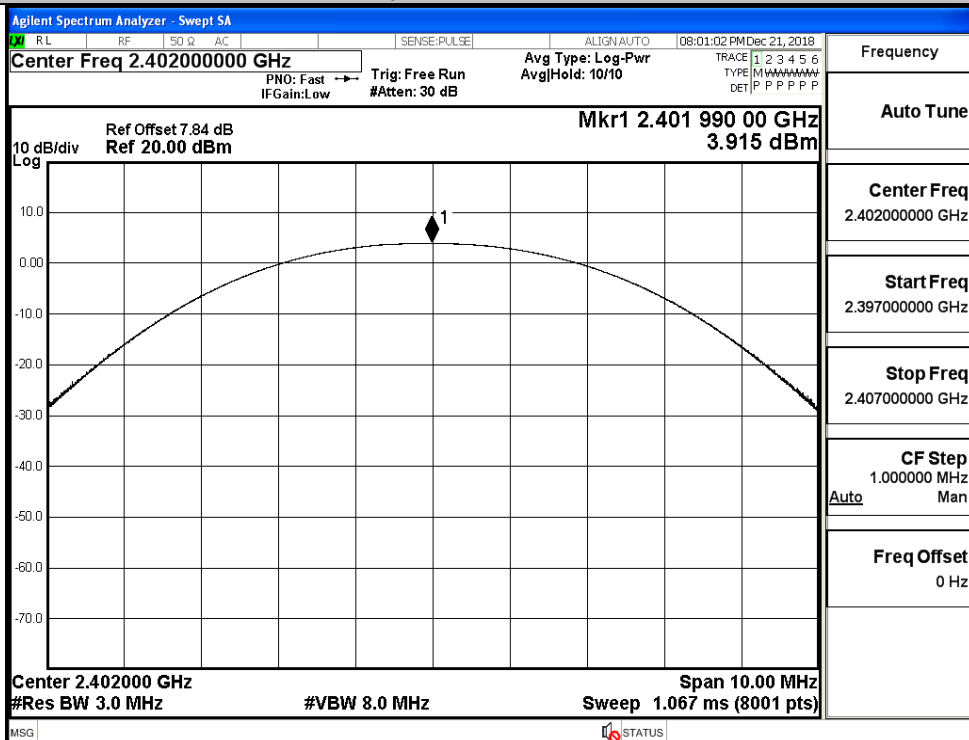
Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.Zeng
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

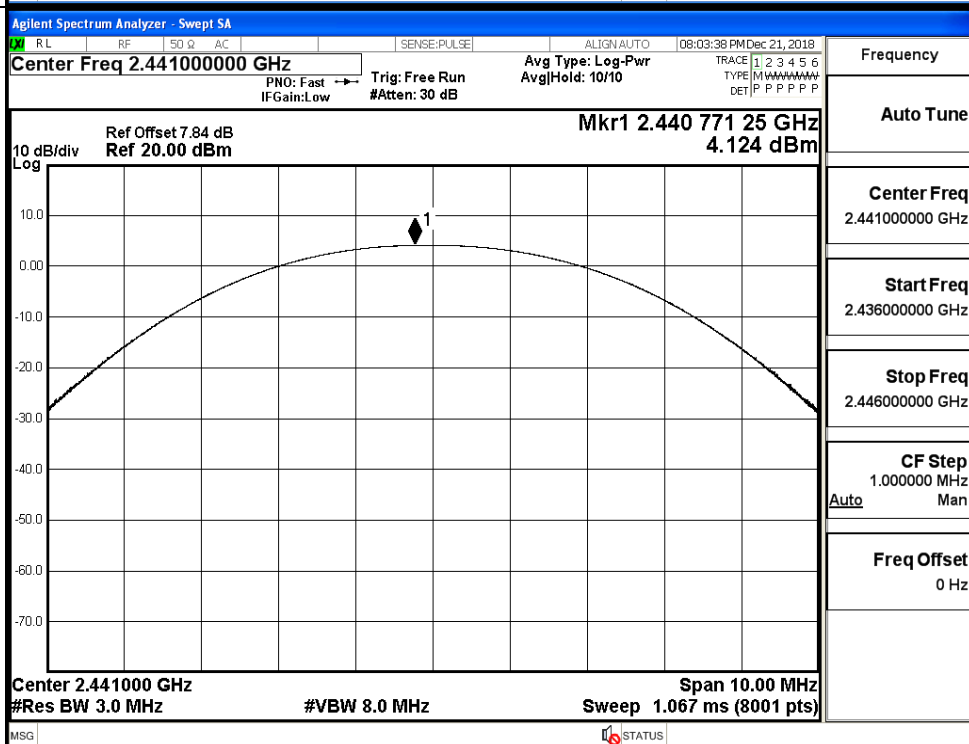
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.915	21	PASS
	MCH	4.124	21	PASS
	HCH	4.132	21	PASS
$\pi/4$ DQPSK	LCH	3.116	21	PASS
	MCH	3.270	21	PASS
	HCH	3.289	21	PASS
8DPSK	LCH	3.259	21	PASS
	MCH	3.434	21	PASS
	HCH	3.421	21	PASS

Test Graphs

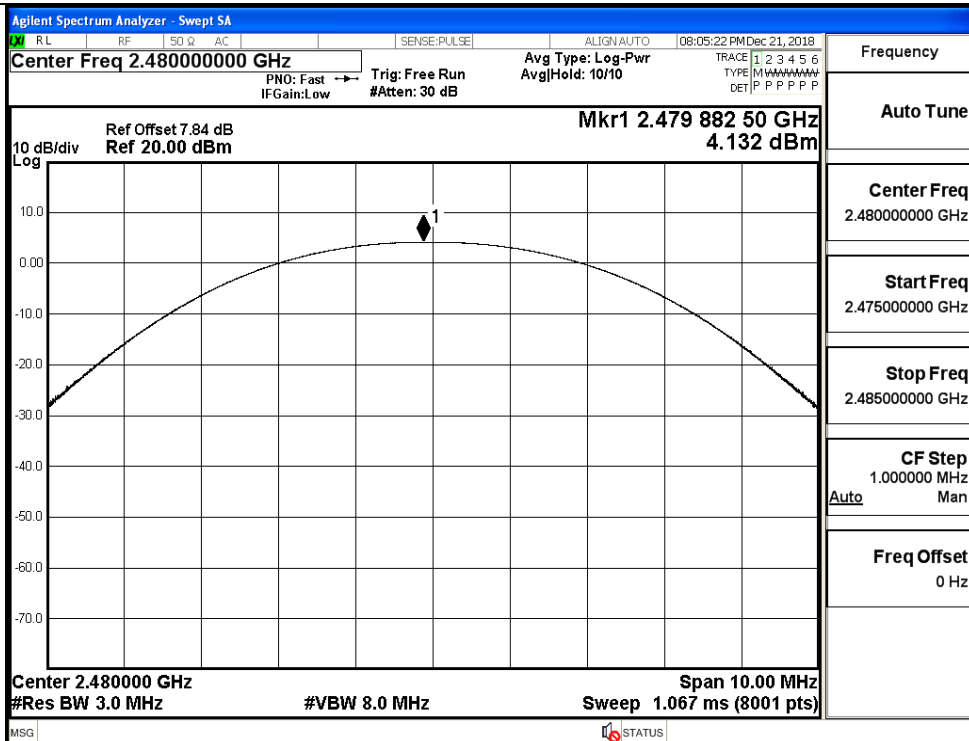
GFSK/LCH



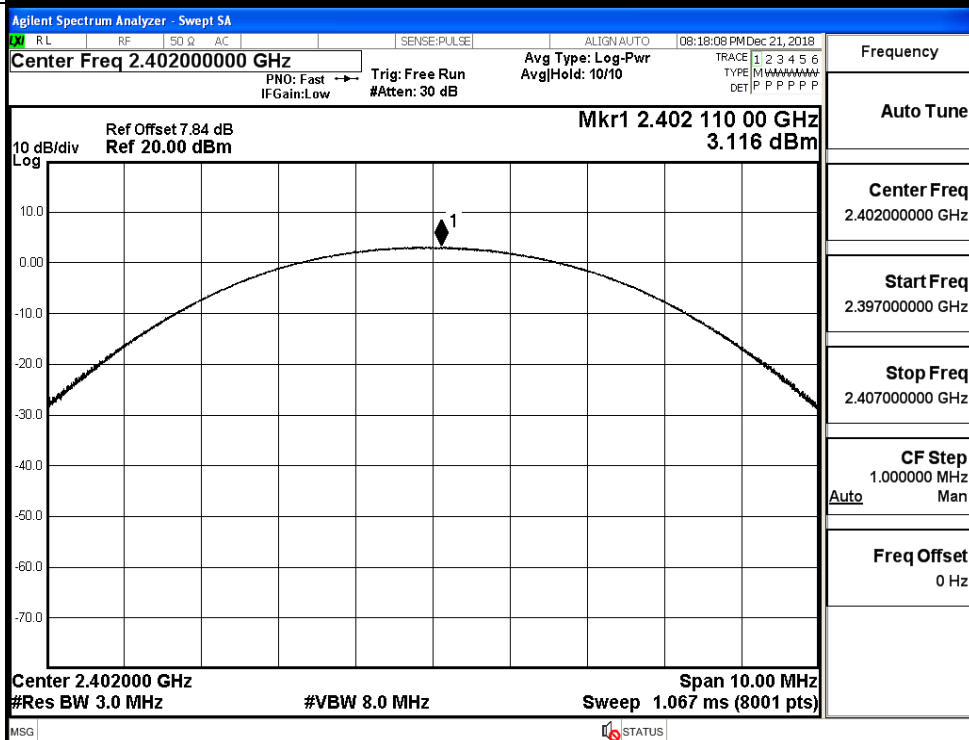
GFSK/MCH

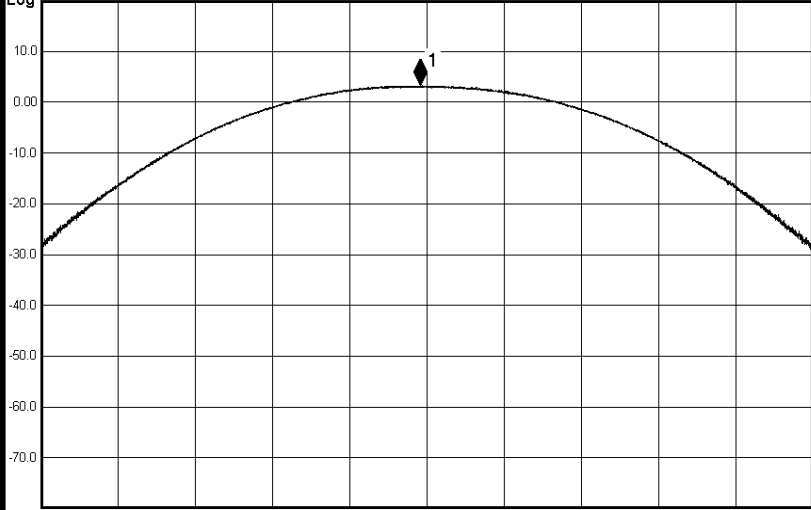
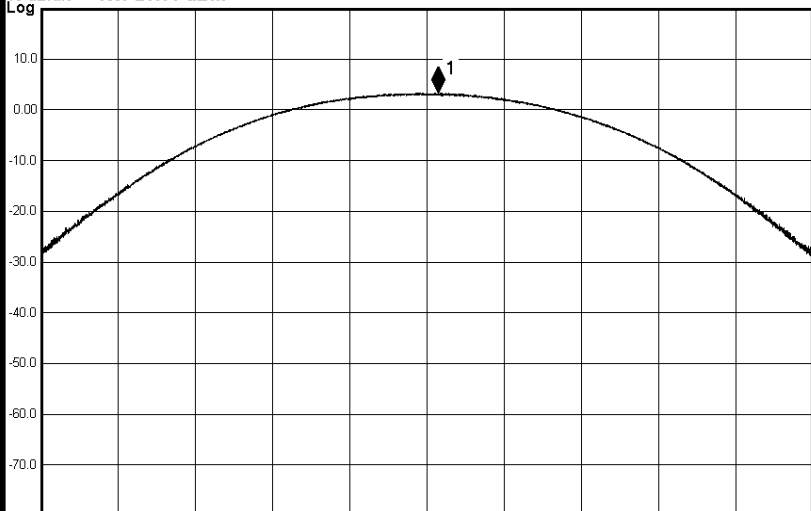


GFSK/HCH

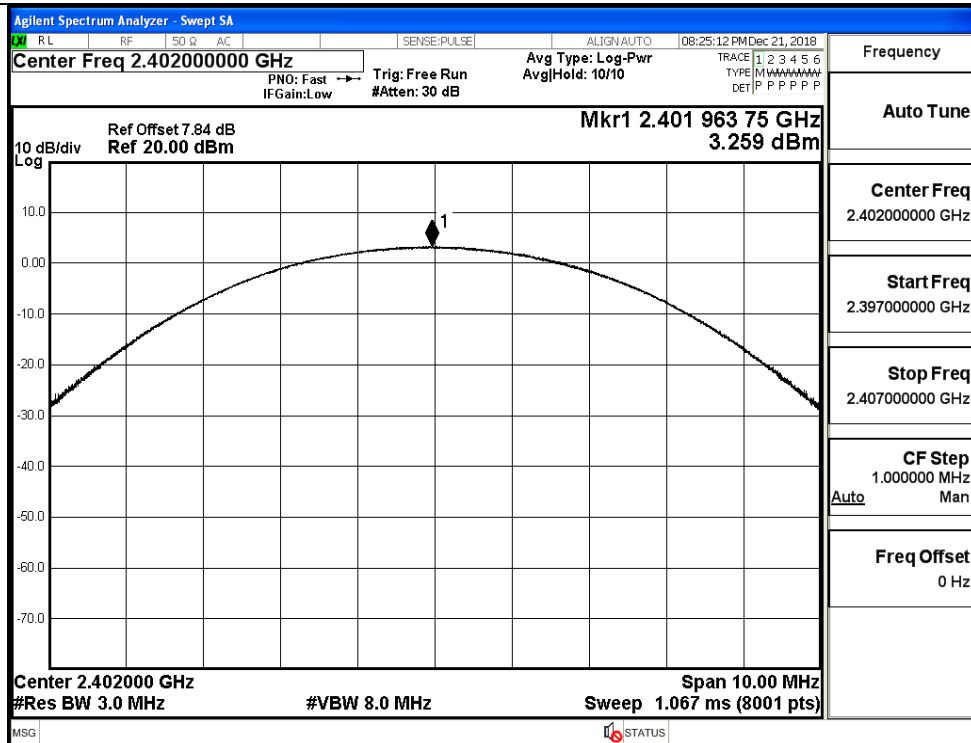


π /4DQPSK/LCH

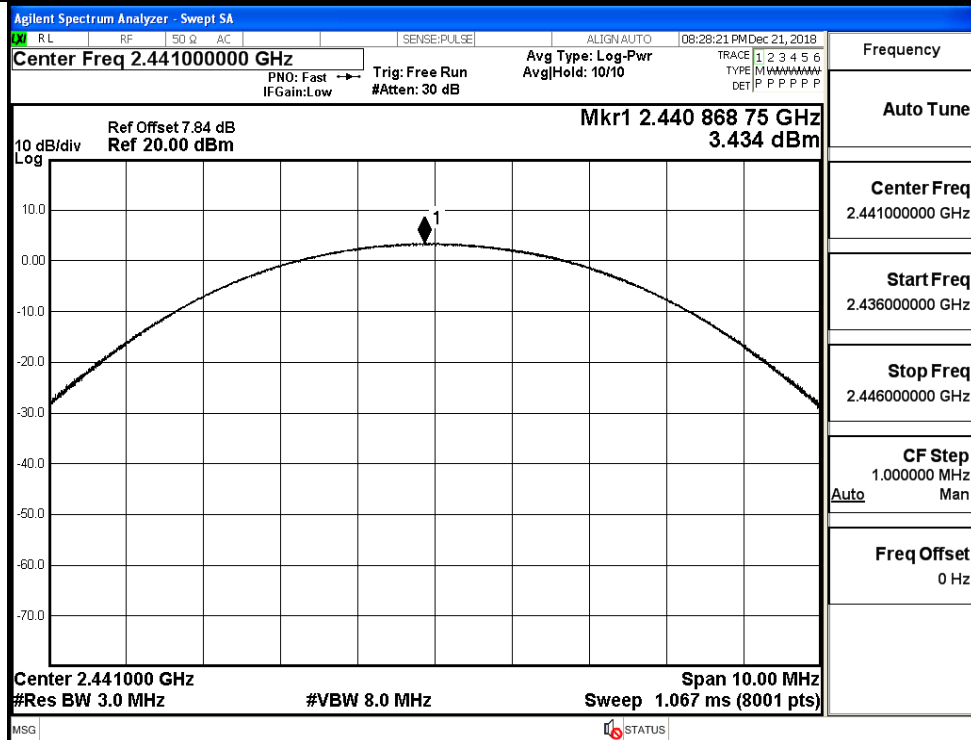


$\pi/4$DQPSK/MCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Q AC SENSE:PULSE ALIGN:AUTO 08:20:50 PM Dec 21, 2018 Center Freq 2.441000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg/Hold: 10/10 TRACE 1 2 3 4 5 6 TYPE M W W W W W W W DET P P P P P P P 10 dB/div Log Ref Offset 7.84 dB Ref 20.00 dBm Mkr1 2.440 916 25 GHz 3.270 dBm  Center 2.441000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) MSG STATUS 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
$\pi/4$DQPSK/HCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Q AC SENSE:PULSE ALIGN:AUTO 08:22:36 PM Dec 21, 2018 Center Freq 2.480000000 GHz PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg/Hold: 10/10 TRACE 1 2 3 4 5 6 TYPE M W W W W W W W DET P P P P P P P 10 dB/div Log Ref Offset 7.84 dB Ref 20.00 dBm Mkr1 2.480 145 00 GHz 3.289 dBm  Center 2.480000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz Span 10.00 MHz Sweep 1.067 ms (8001 pts) MSG STATUS Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.475000000 GHz Stop Freq 2.485000000 GHz CF Step 1.000000 MHz Auto Man Freq Offset 0 Hz

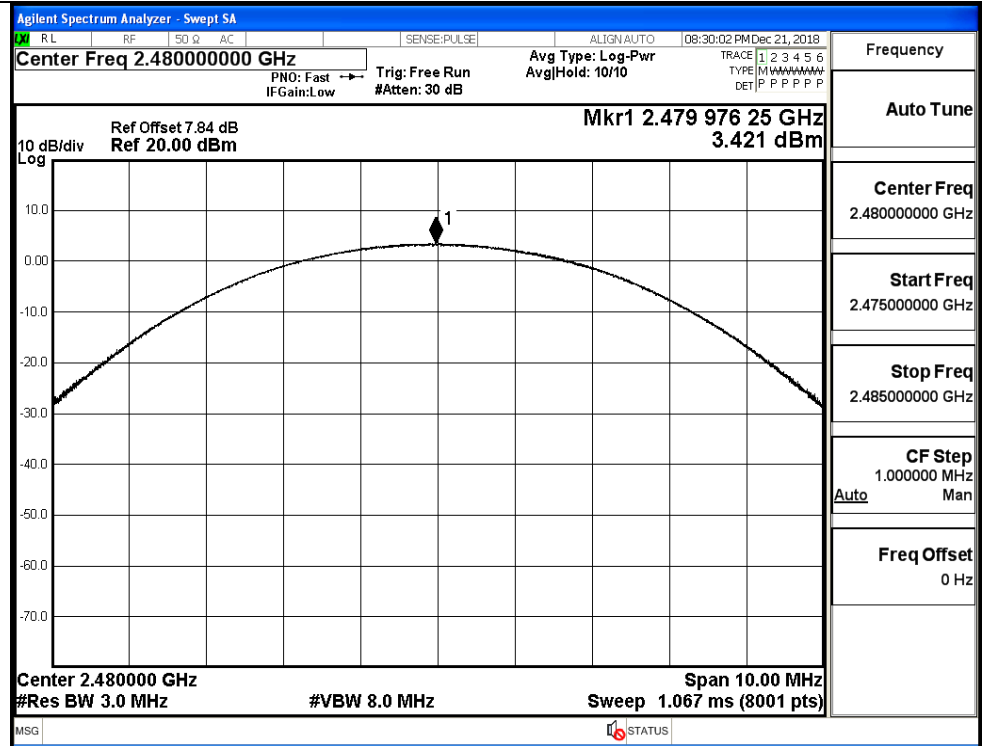
8DPSK/LCH



8DPSK/MCH



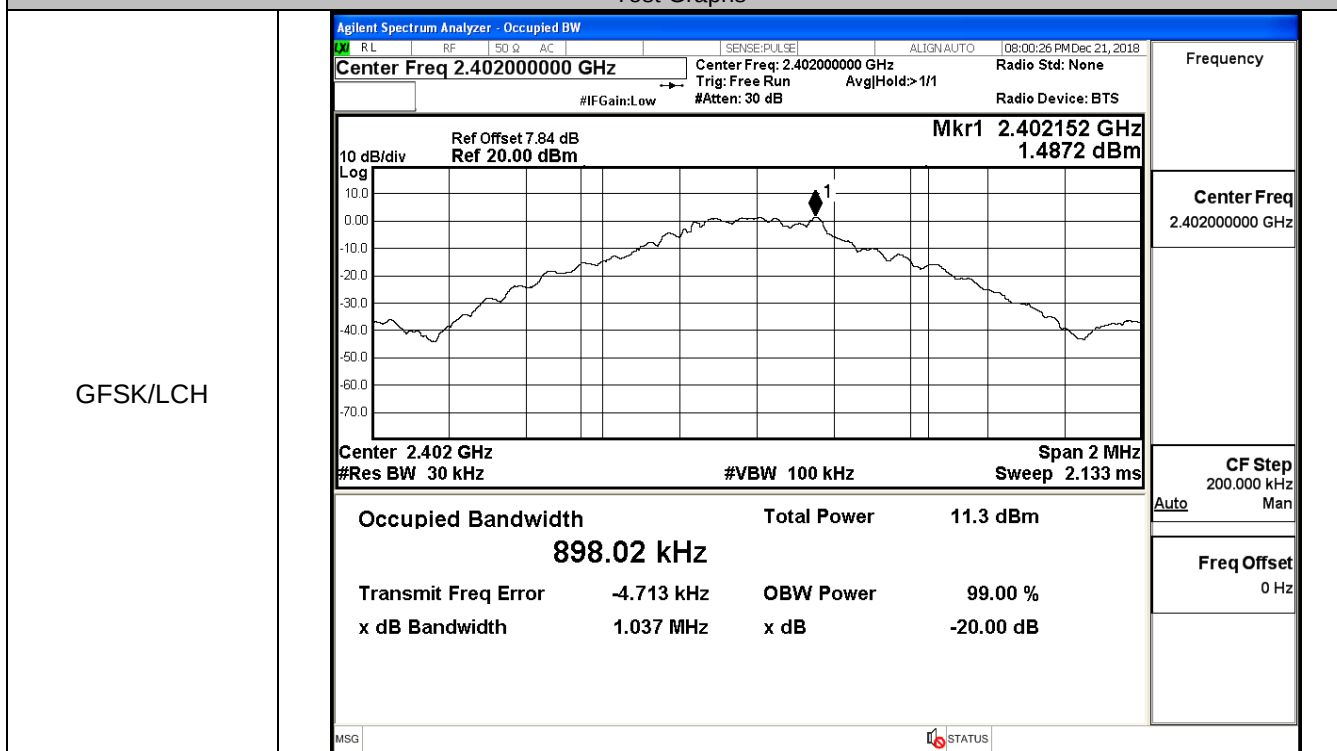
8DPSK/HCH



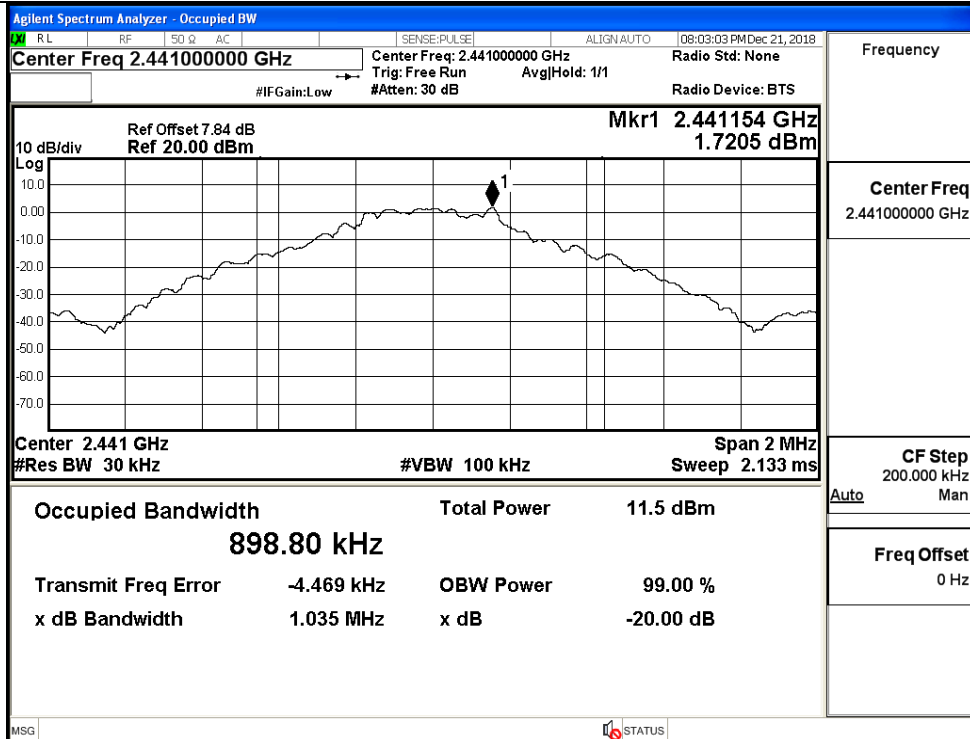
A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.89802	1.037	Not Specified	PASS
	MCH	0.89880	1.035	Not Specified	PASS
	HCH	0.89969	1.043	Not Specified	PASS
π /4DQPSK	LCH	1.1737	1.292	Not Specified	PASS
	MCH	1.1717	1.290	Not Specified	PASS
	HCH	1.1697	1.289	Not Specified	PASS
8DPSK	LCH	1.1811	1.294	Not Specified	PASS
	MCH	1.1802	1.295	Not Specified	PASS
	HCH	1.1795	1.294	Not Specified	PASS

Test Graphs



GFSK/MCH



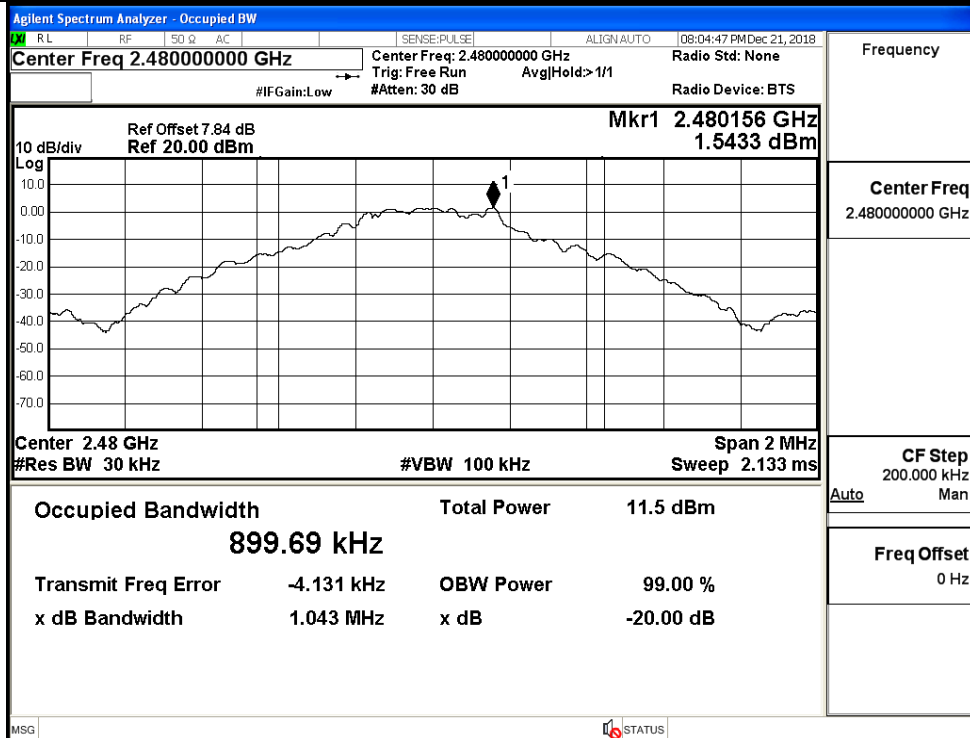
Frequency

Center Freq
2.441000000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

GFSK/HCH



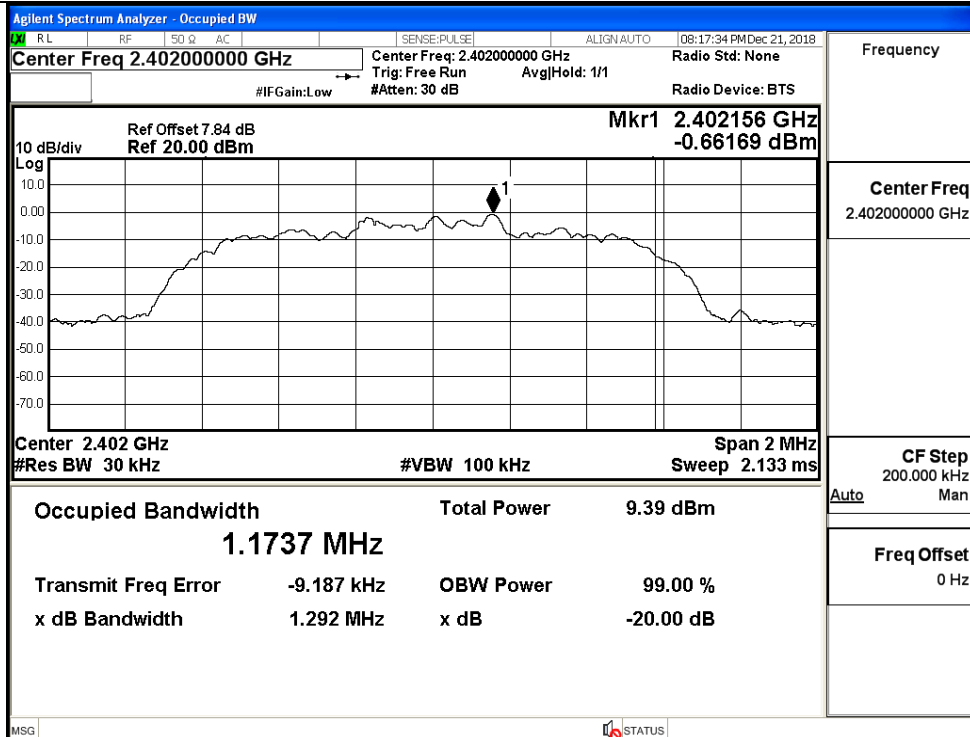
Frequency

Center Freq
2.480000000 GHz

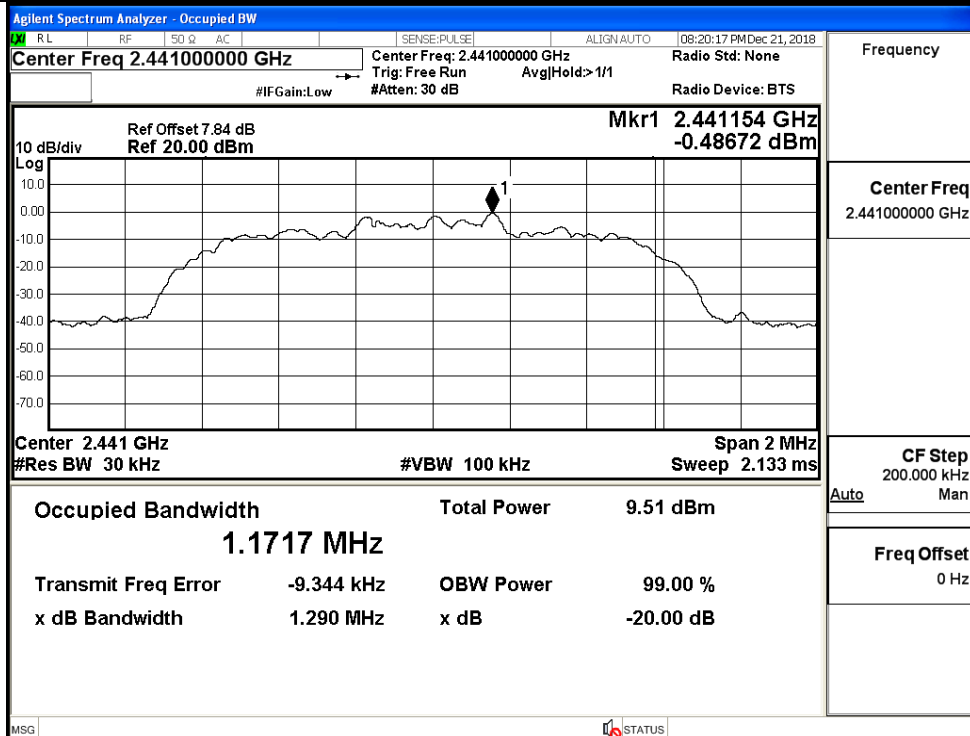
CF Step
200.000 kHz
Man

Freq Offset
0 Hz

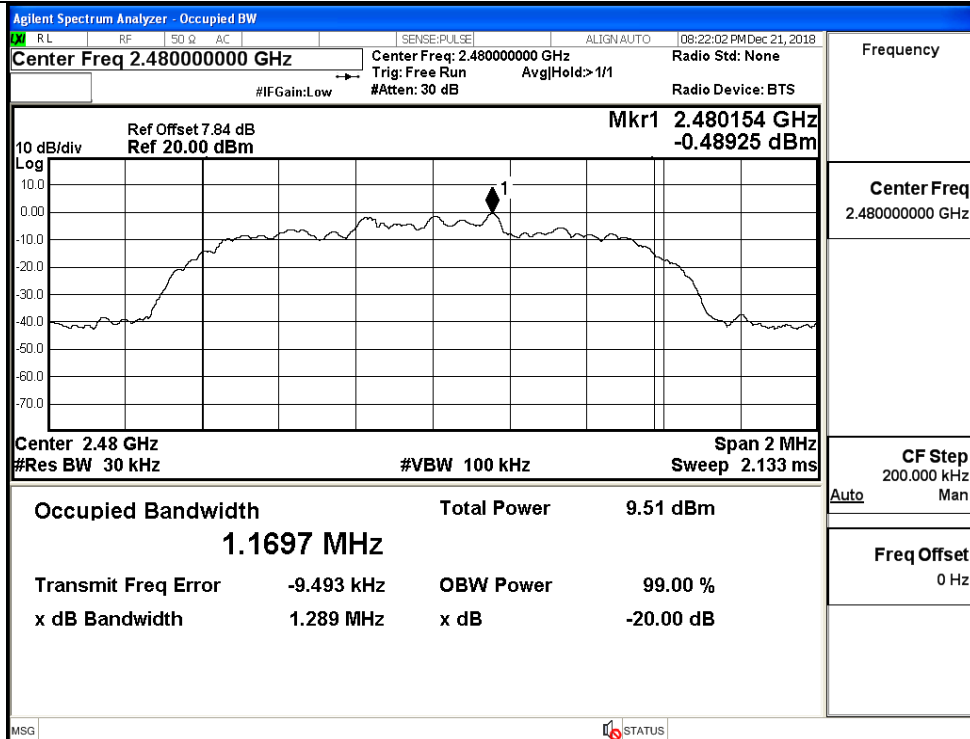
$\pi/4$ DQPSK/LCH



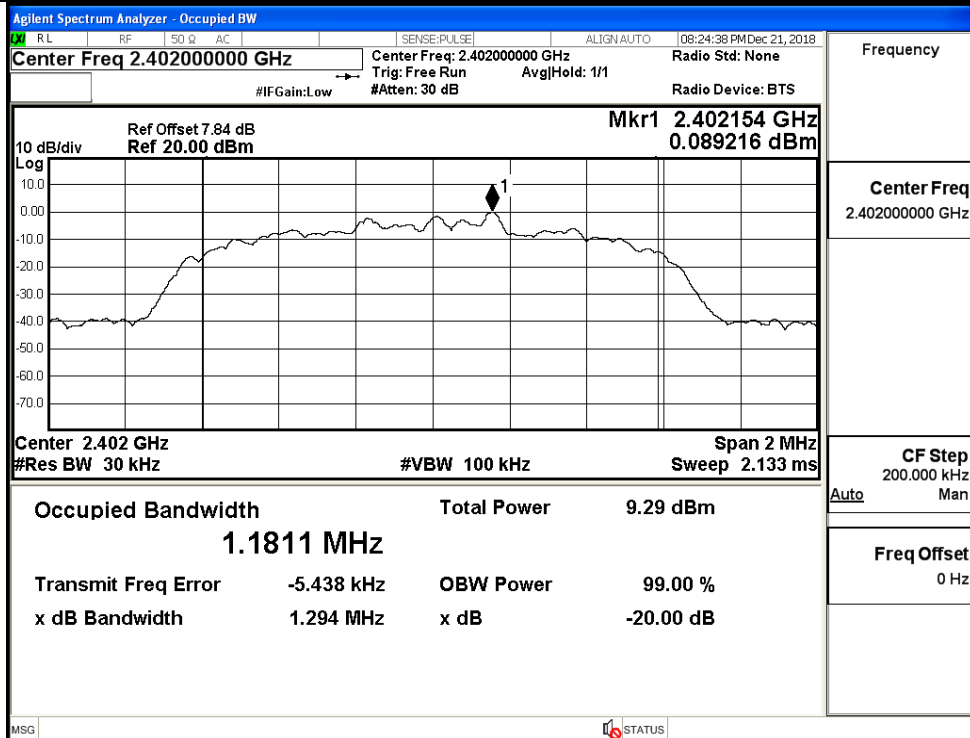
$\pi/4$ DQPSK/MCH



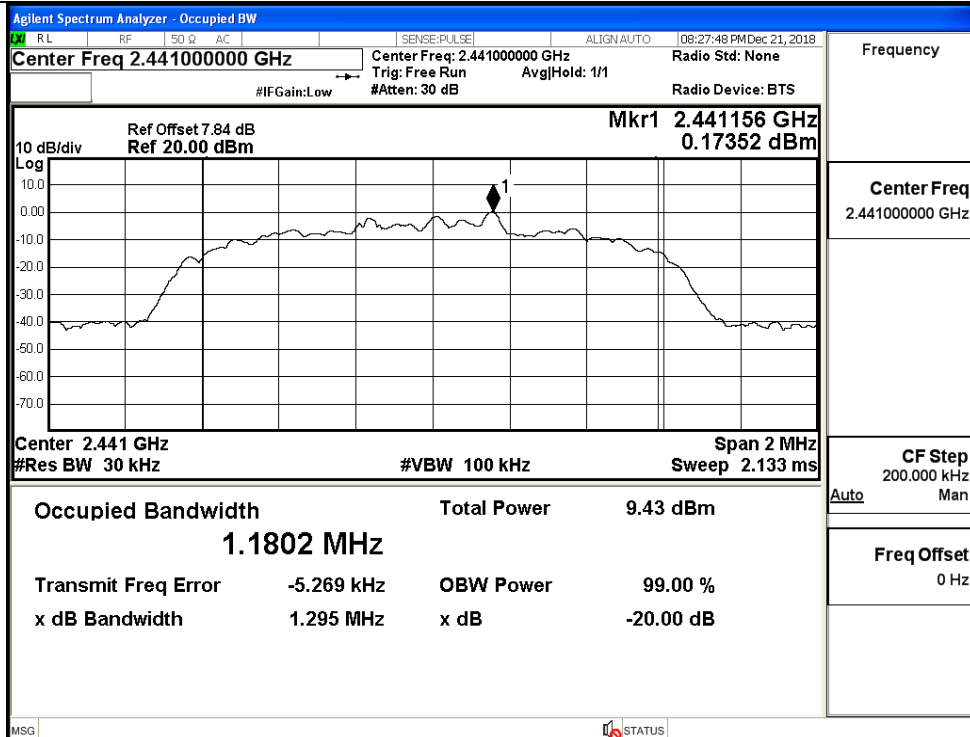
$\pi/4$ DQPSK/HCH



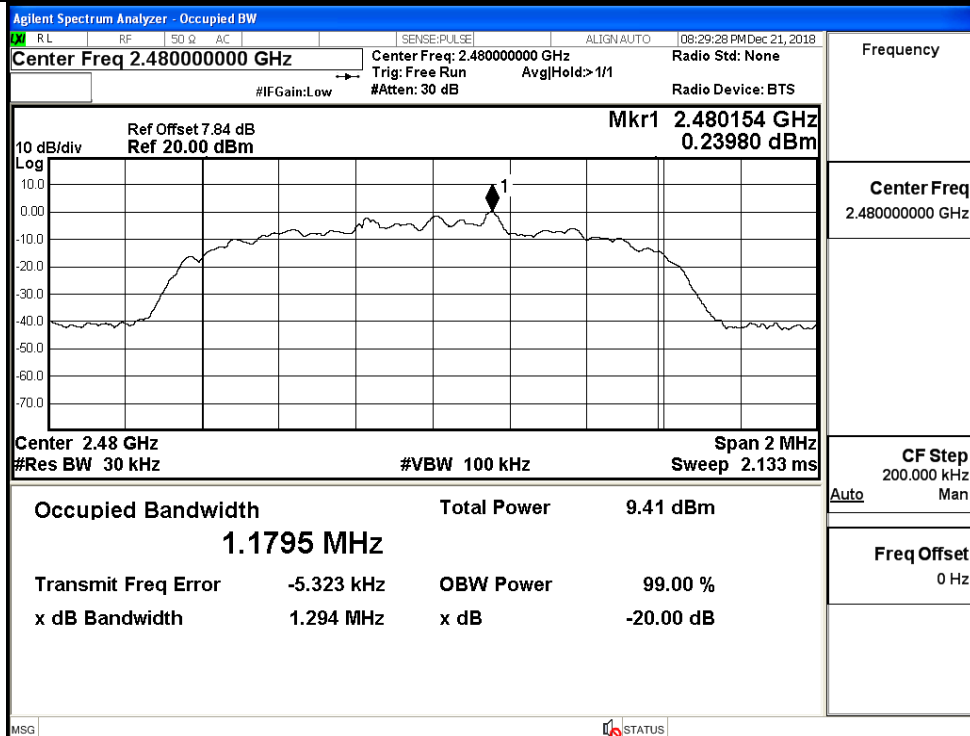
8DPSK/LCH



8DPSK/MCH



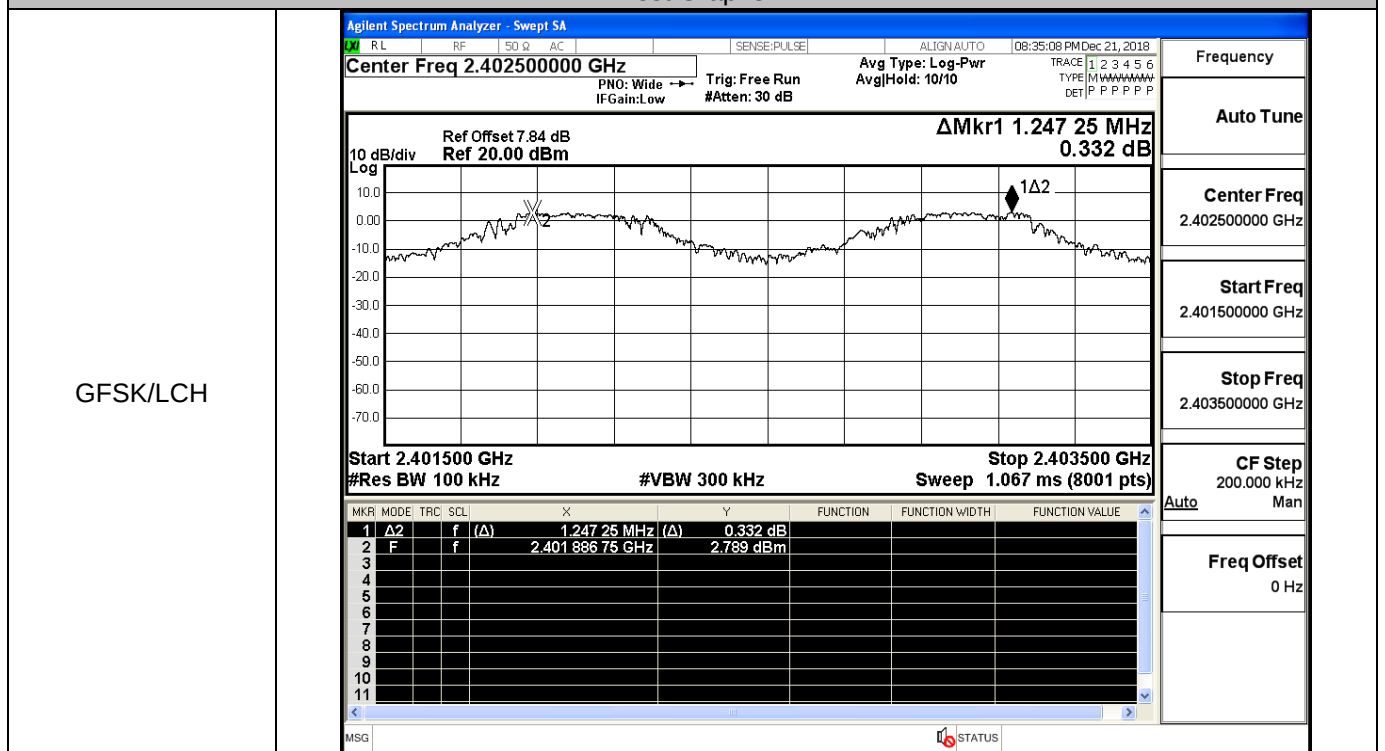
8DPSK/HCH



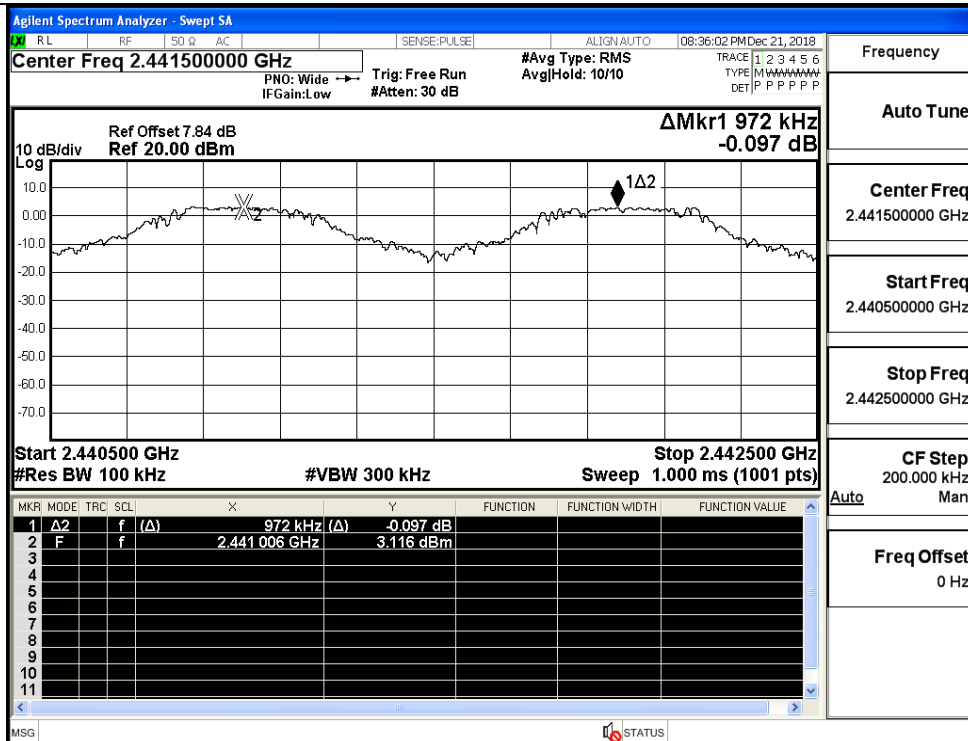
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.247	0.695	PASS
	MCH	0.972	0.695	PASS
	HCH	1.326	0.695	PASS
π /4DQPSK	LCH	1.008	0.861	PASS
	MCH	1.016	0.861	PASS
	HCH	0.990	0.861	PASS
8DPSK	LCH	0.980	0.863	PASS
	MCH	0.884	0.863	PASS
	HCH	0.878	0.863	PASS

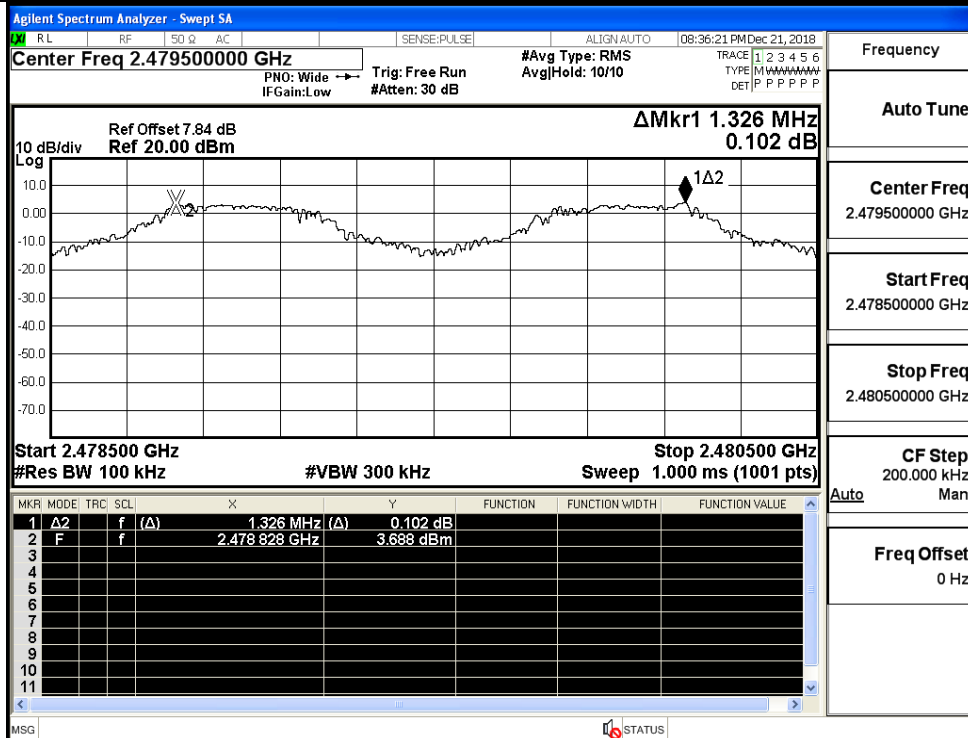
Test Graphs



GFSK/MCH

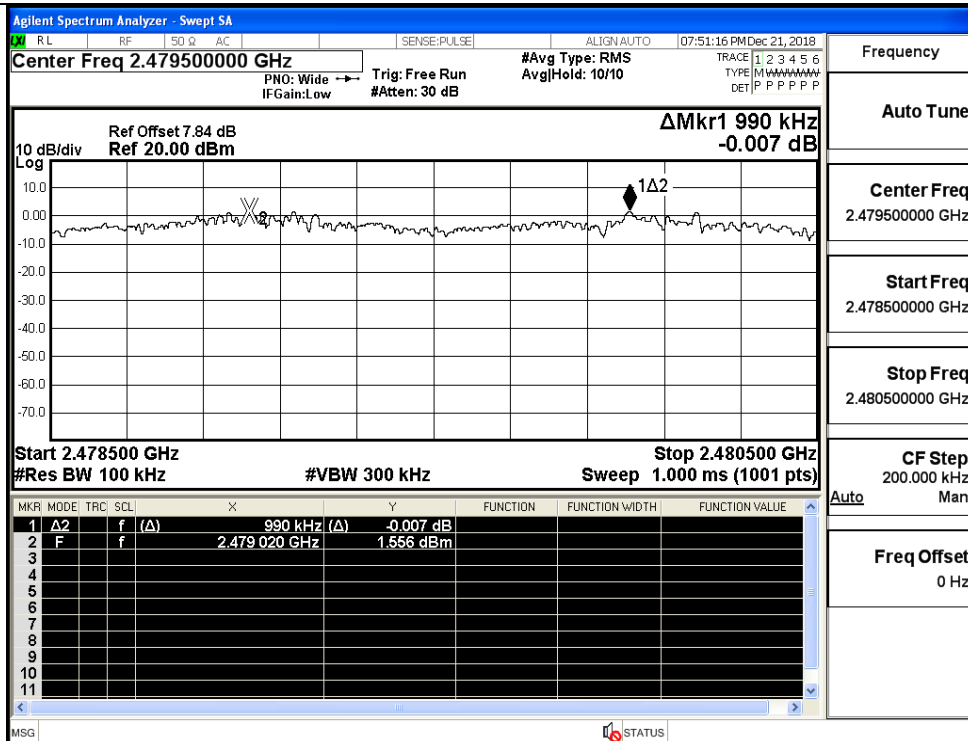


GFSK/HCH

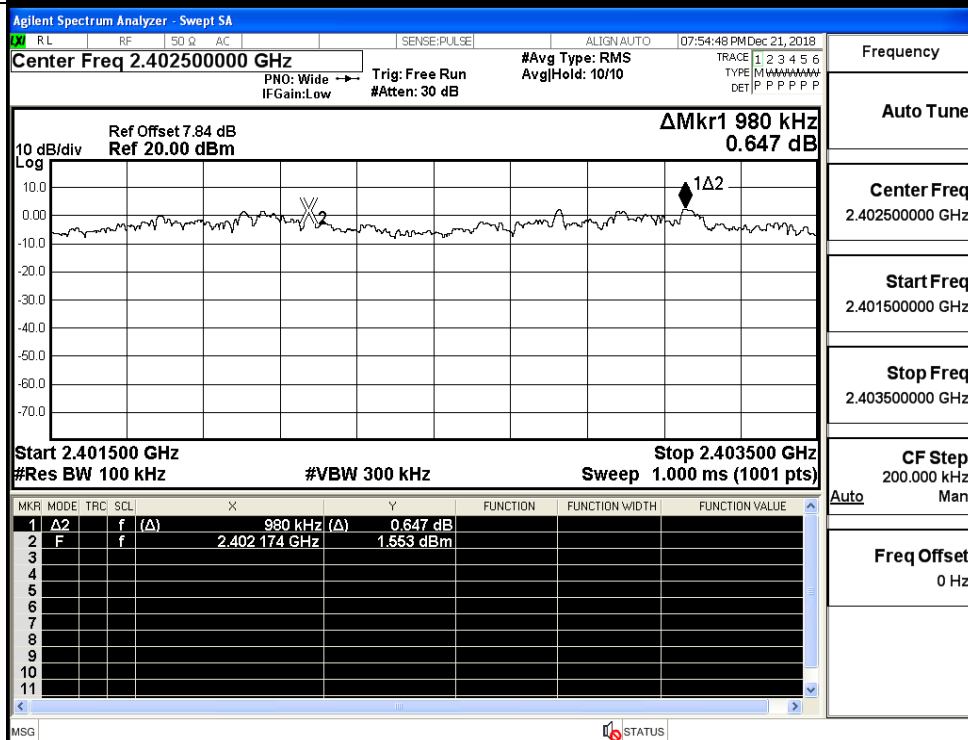


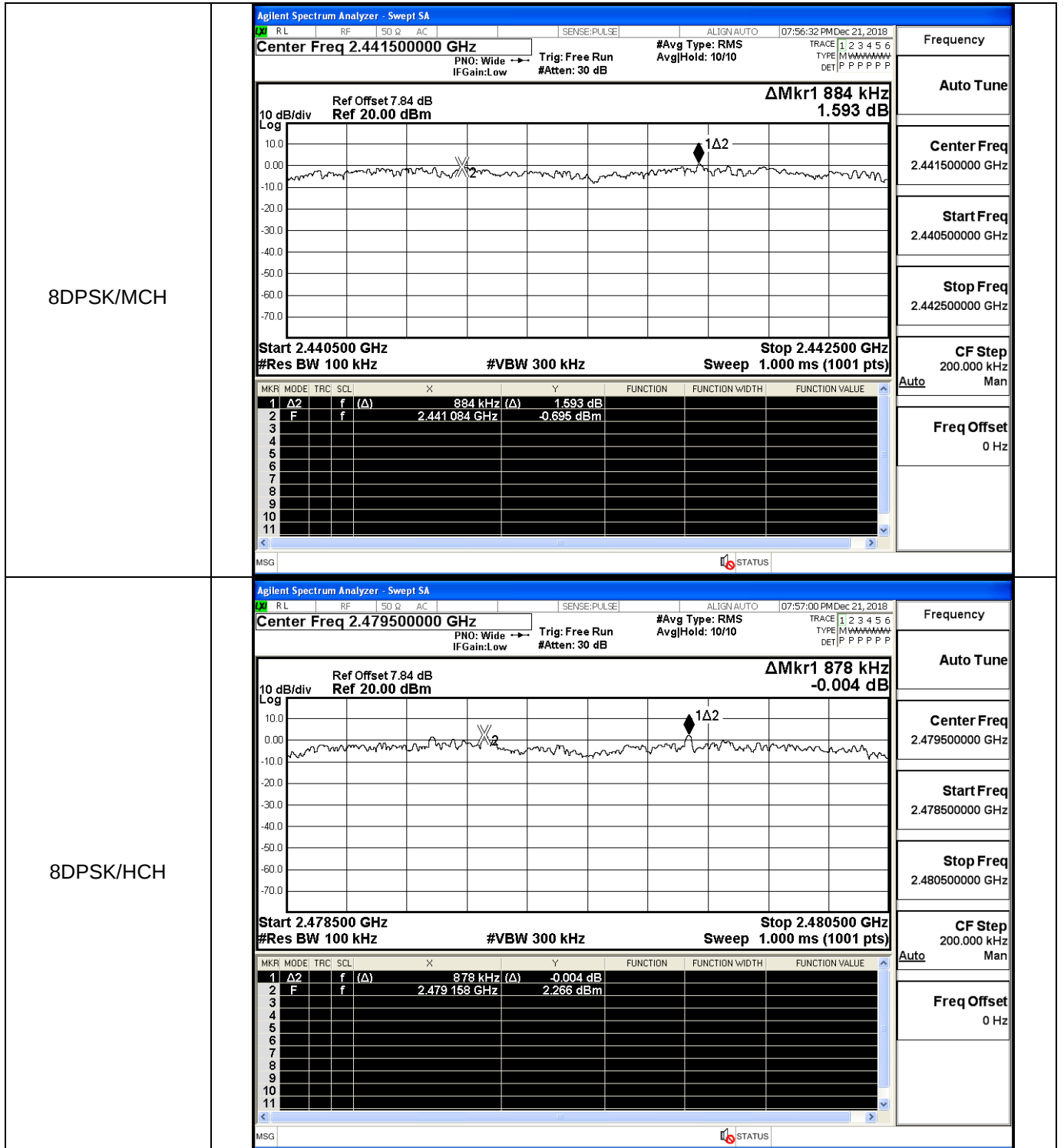
$\pi/4$ DQPSK/LCH	Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC SENSE:PULSE ALIGN: AUTO 07:48:51 PM Dec 21, 2018 Center Freq 2.402500000 GHz PNO: Wide $\rightarrow$ IF Gain: Low Trig: Free Run #Atten: 30 dB #Avg Type: RMS AvgHold: 10/10 TRACE 1 2 3 4 5 6 TYPE M W W W W W W W DET P P P P P P P 10 dB/div Log Ref Offset 7.84 dB Ref 20.00 dBm
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$\pi/4$ DQPSK/HCH



8DPSK/LCH



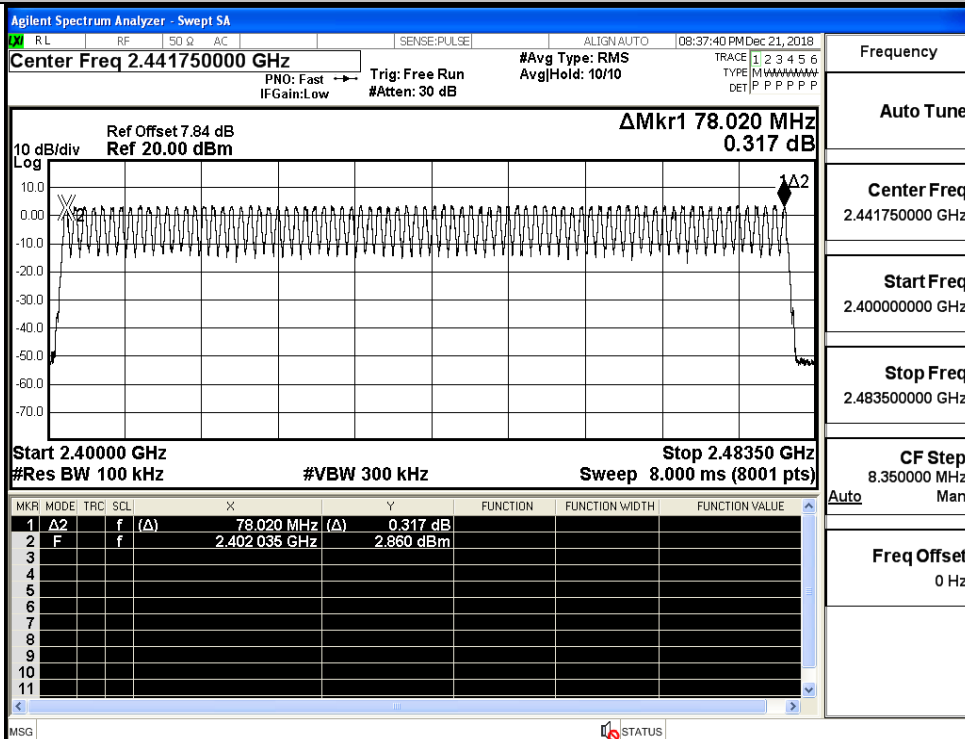


A.4 Hopping Channel Number

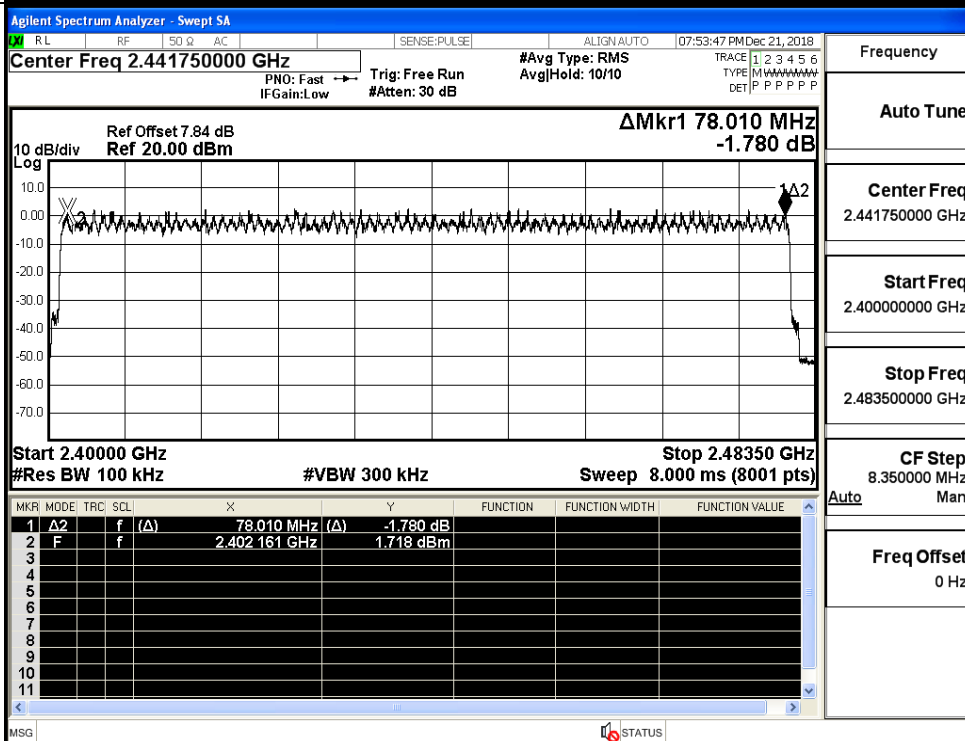
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

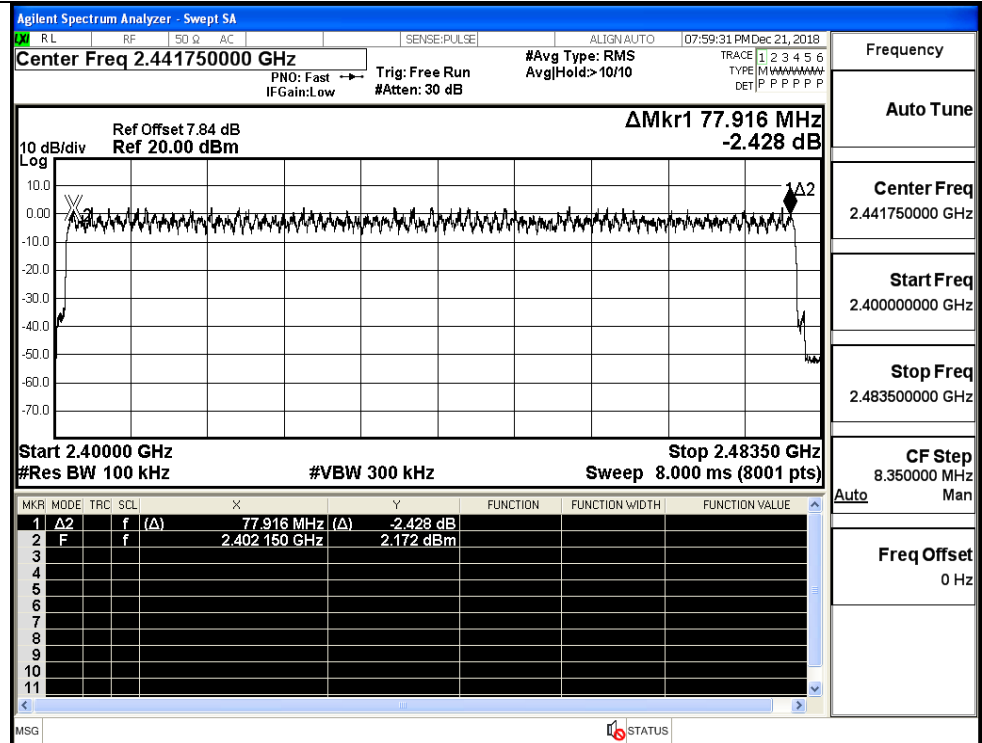
GFSK/Hop



$\pi/4$ DQPSK/Hop

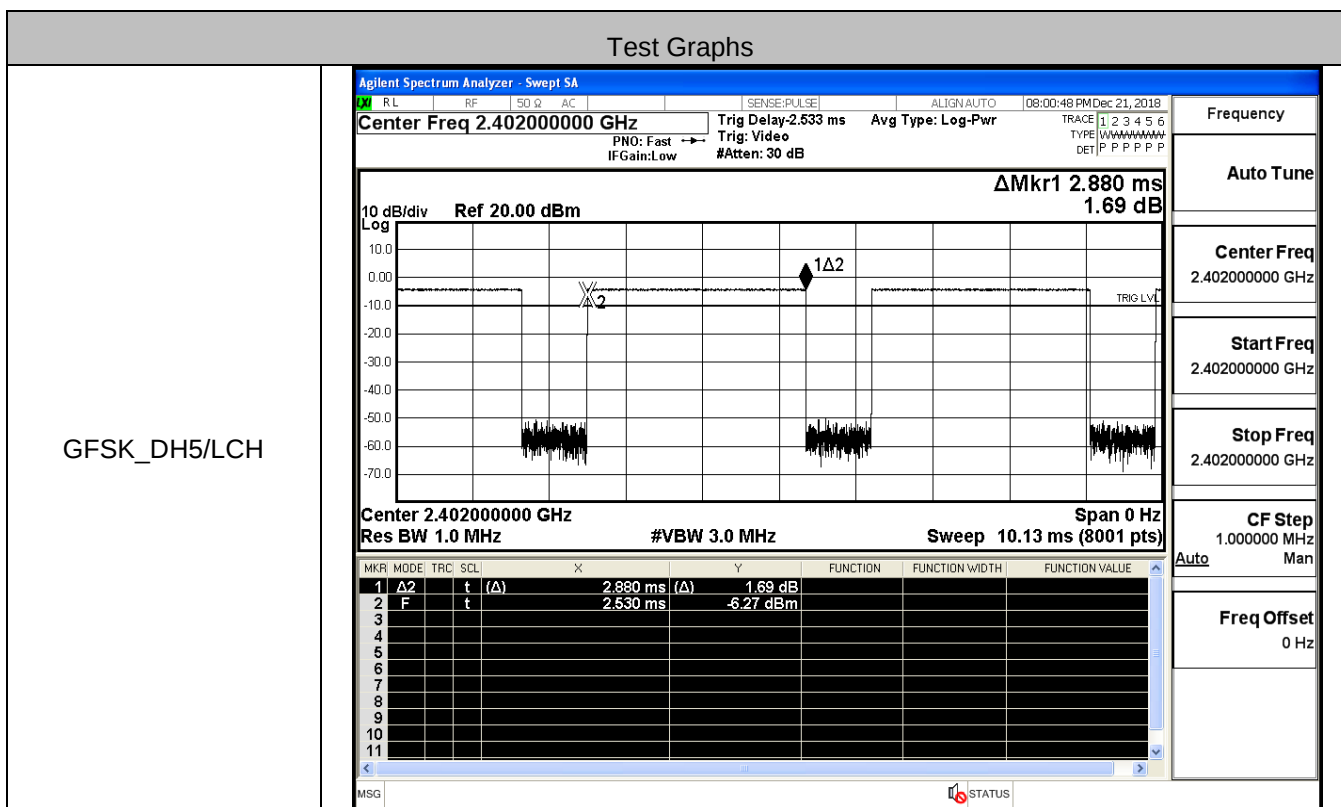


8DPSK/Hop

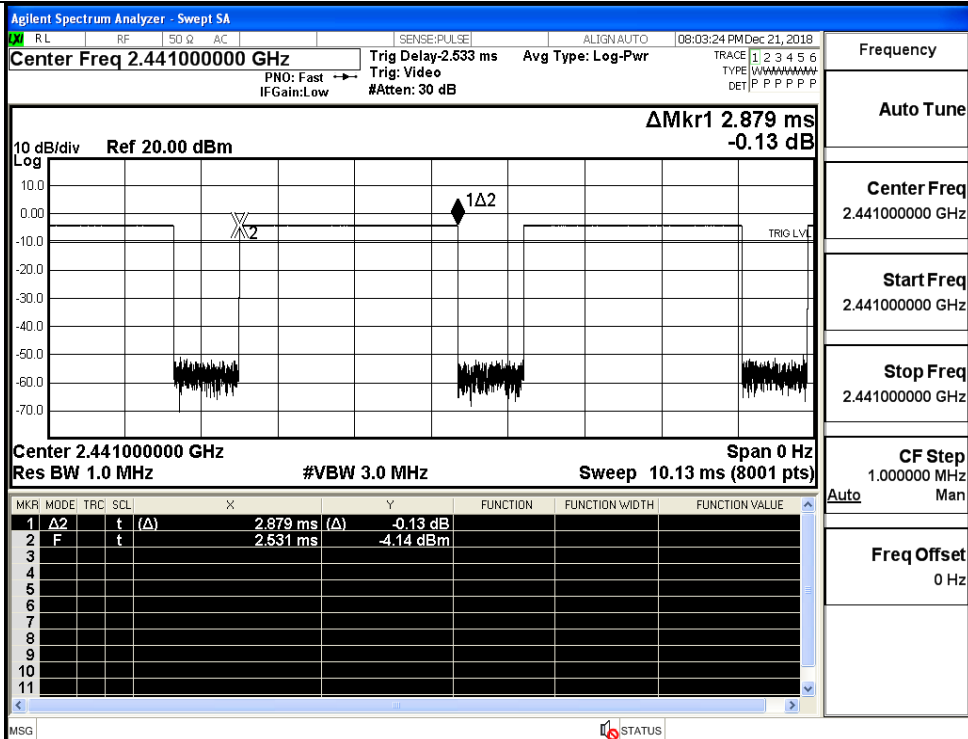


A.5 Dwell Time

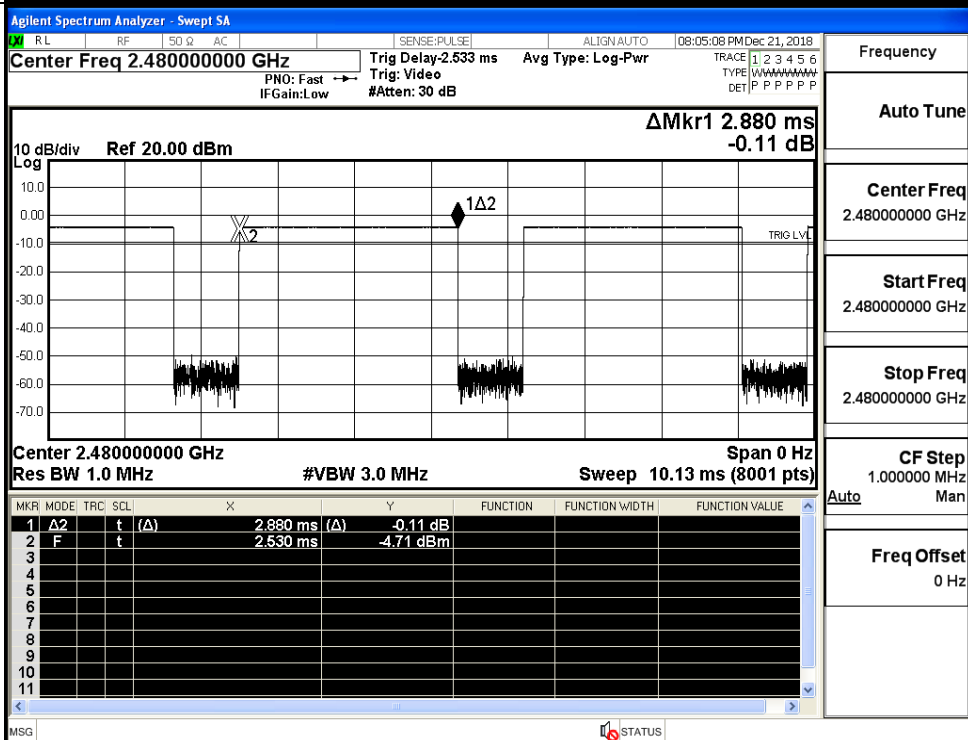
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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



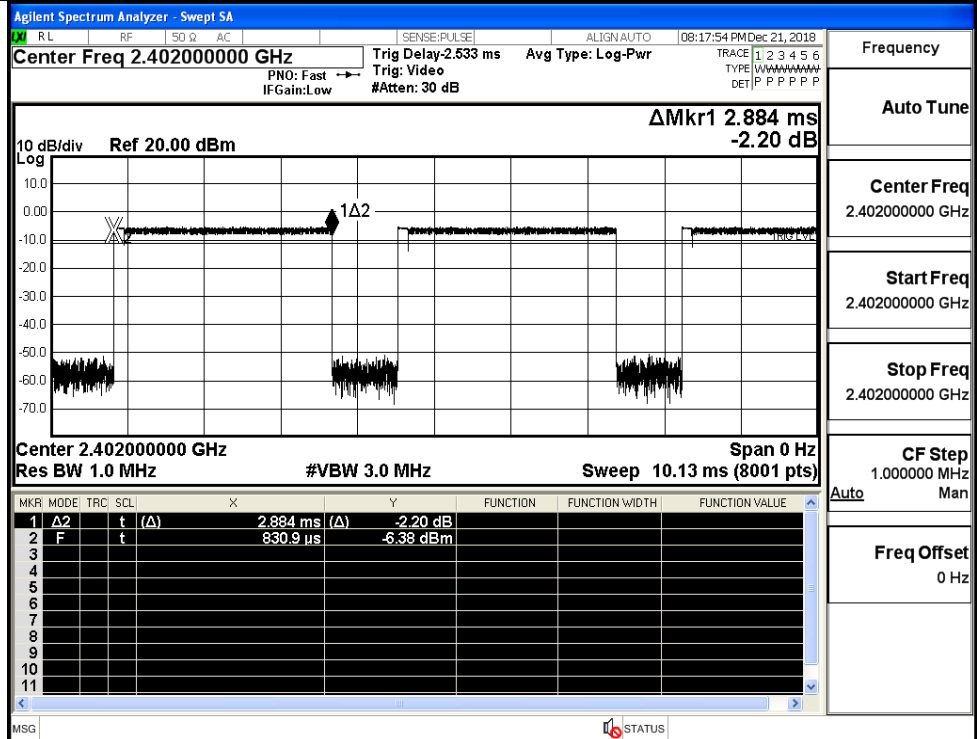
GFSK_DH5/MCH



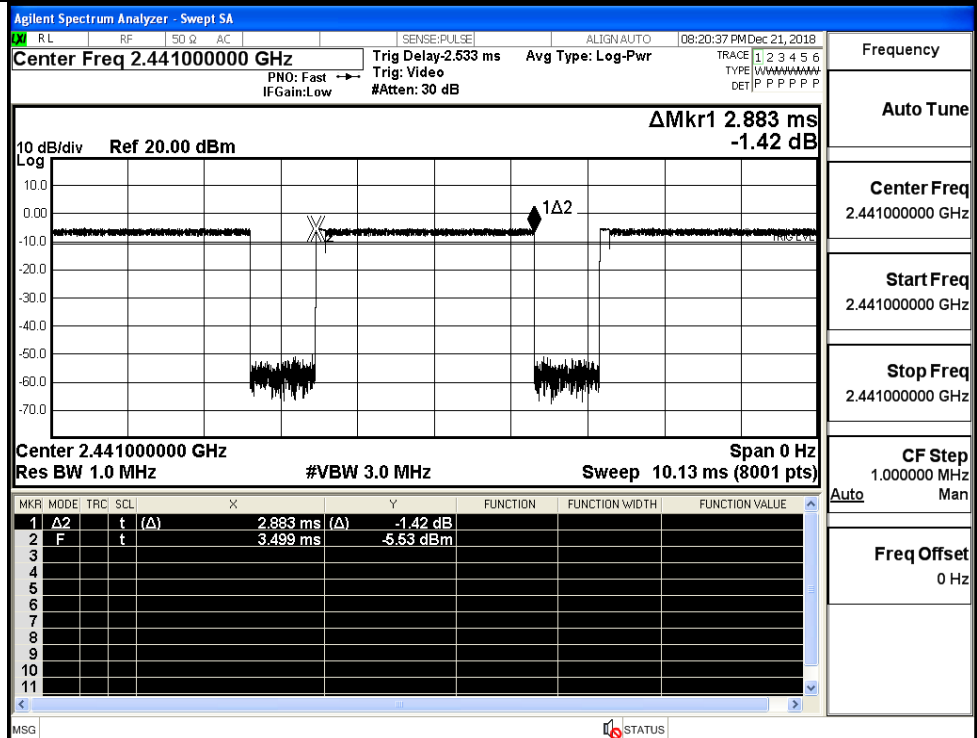
GFSK_DH5/HCH



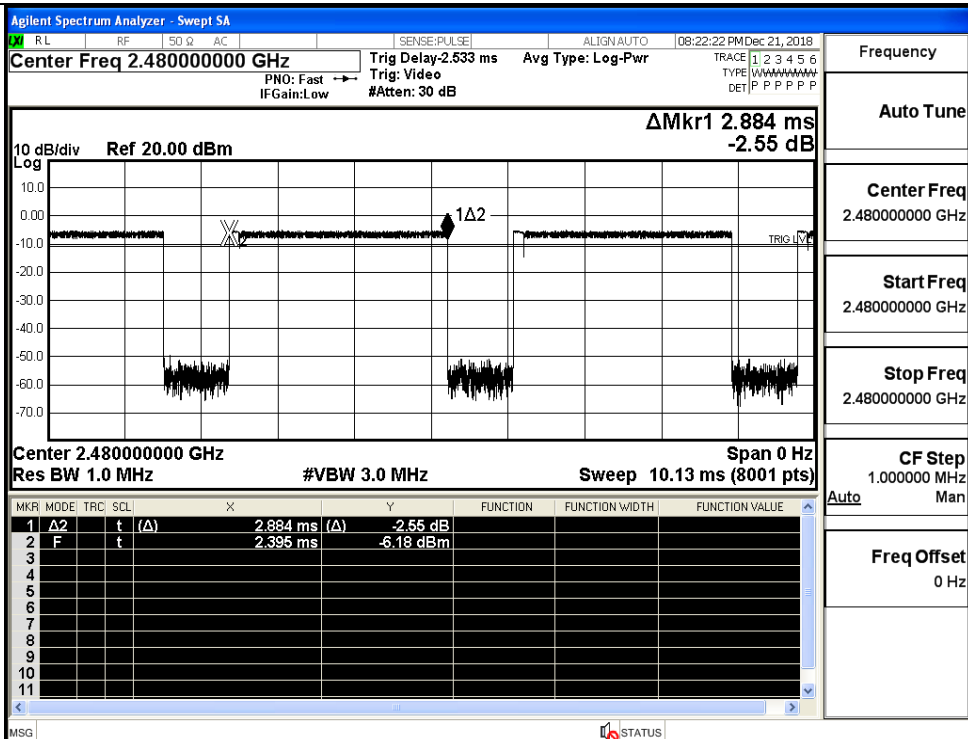
$\pi/4$ DQPSK
_2DH5/LCH



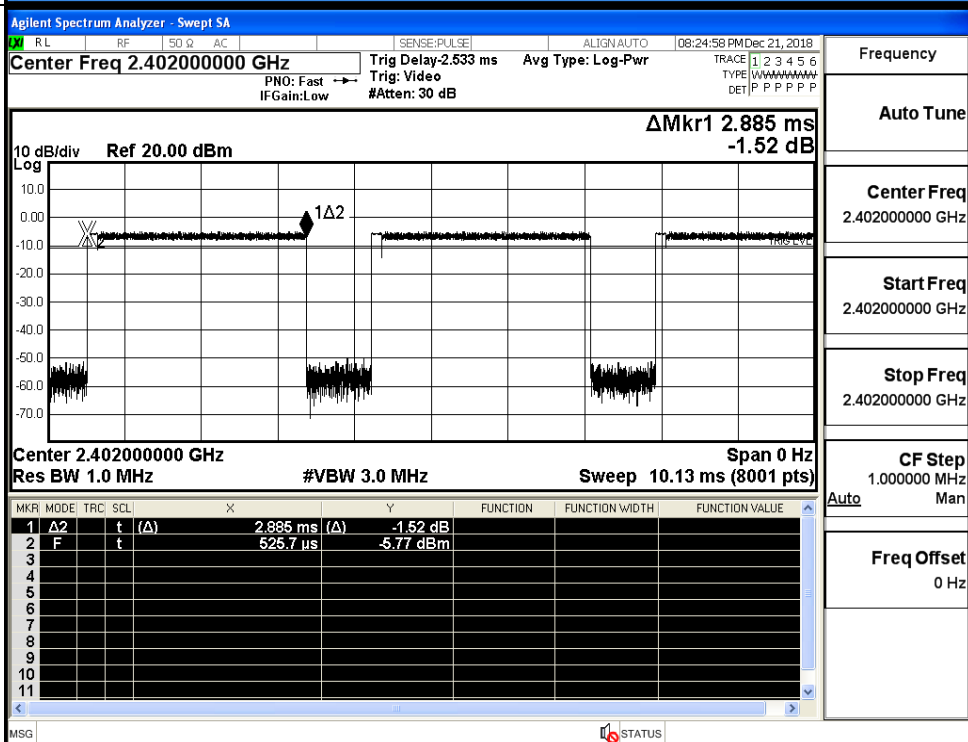
$\pi/4$ DQPSK
_2DH5/MCH



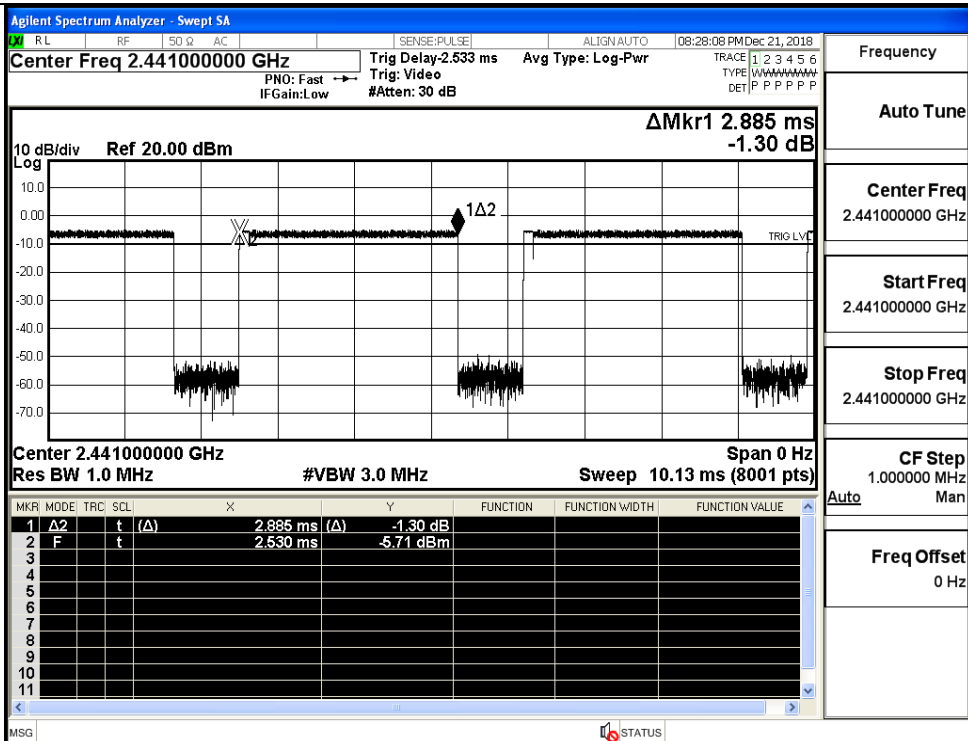
$\pi/4$ DQPSK
_2DH5/HCH



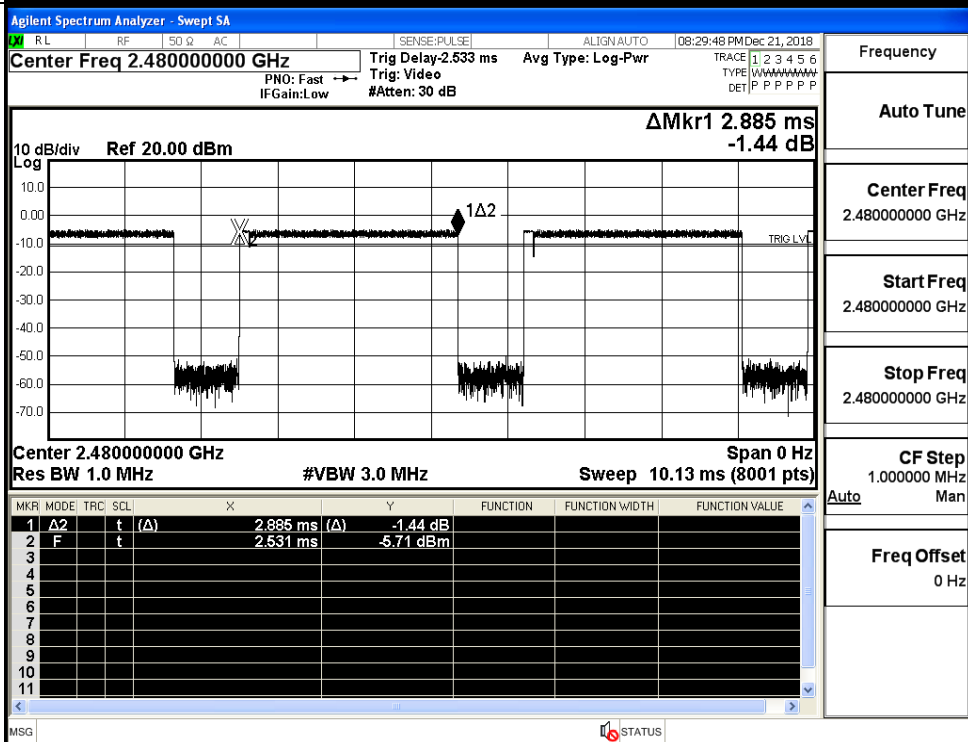
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

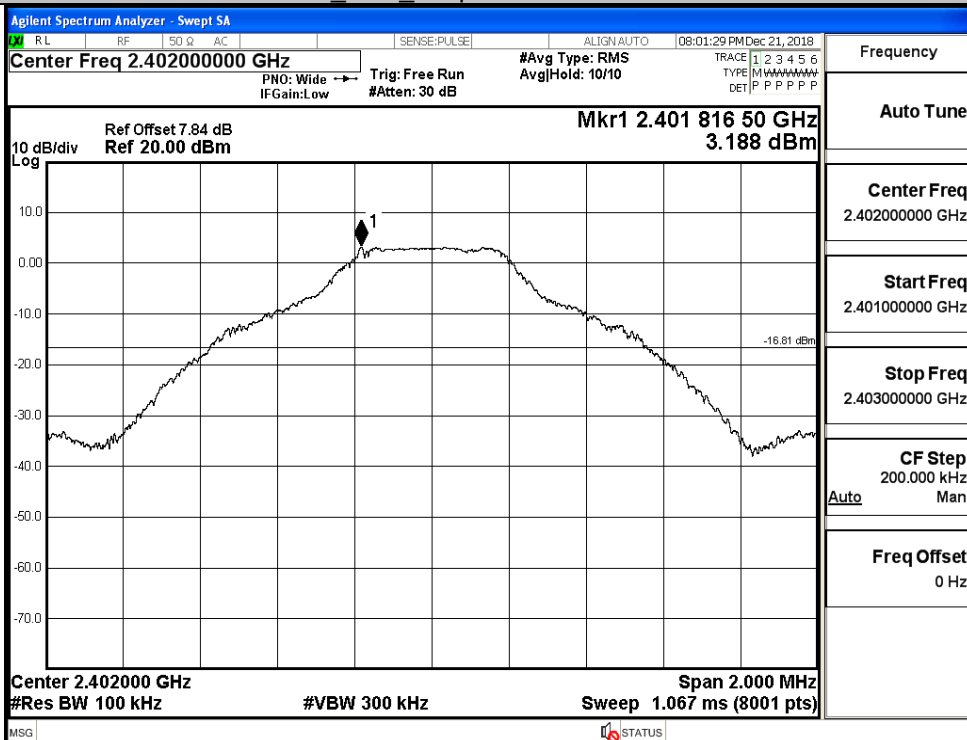


A.6 RF Conducted Spurious Emissions

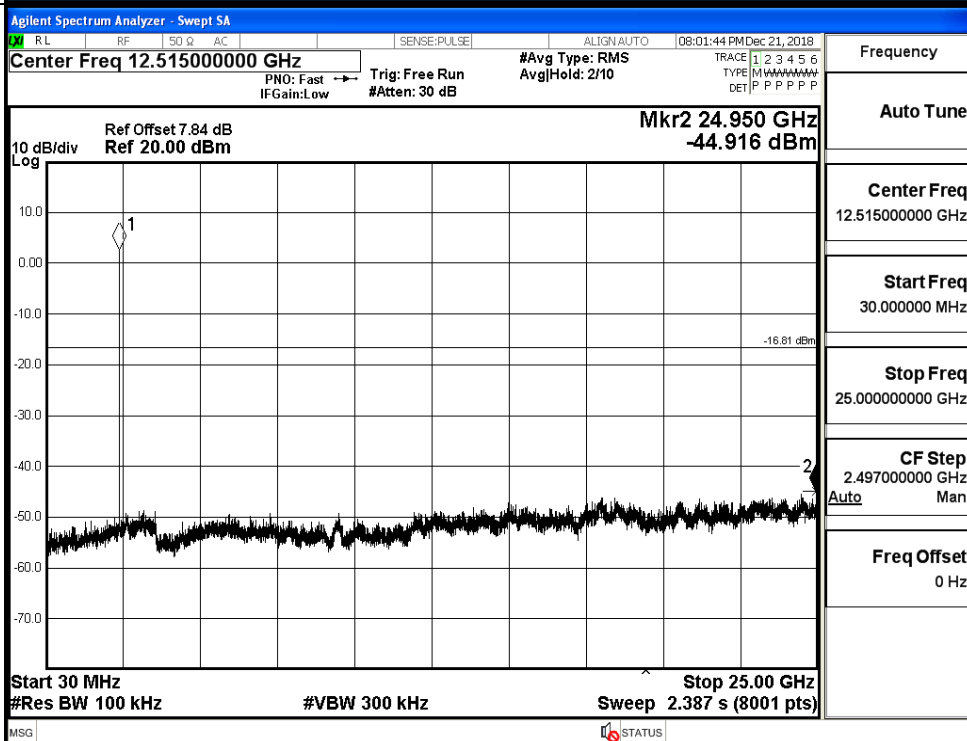
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.188	-44.916	-16.812	PASS
	MCH	3.801	-44.935	-16.199	PASS
	HCH	3.765	-45.051	-16.235	PASS
$\pi/4$ DQPSK	LCH	2.06	-44.292	-17.940	PASS
	MCH	2.133	-45.118	-17.867	PASS
	HCH	1.927	-44.778	-18.073	PASS
8DPSK	LCH	2.078	-45.196	-17.922	PASS
	MCH	2.317	-45.050	-17.683	PASS
	HCH	2.294	-44.546	-17.706	PASS

GFSK LCH Graphs

Pref

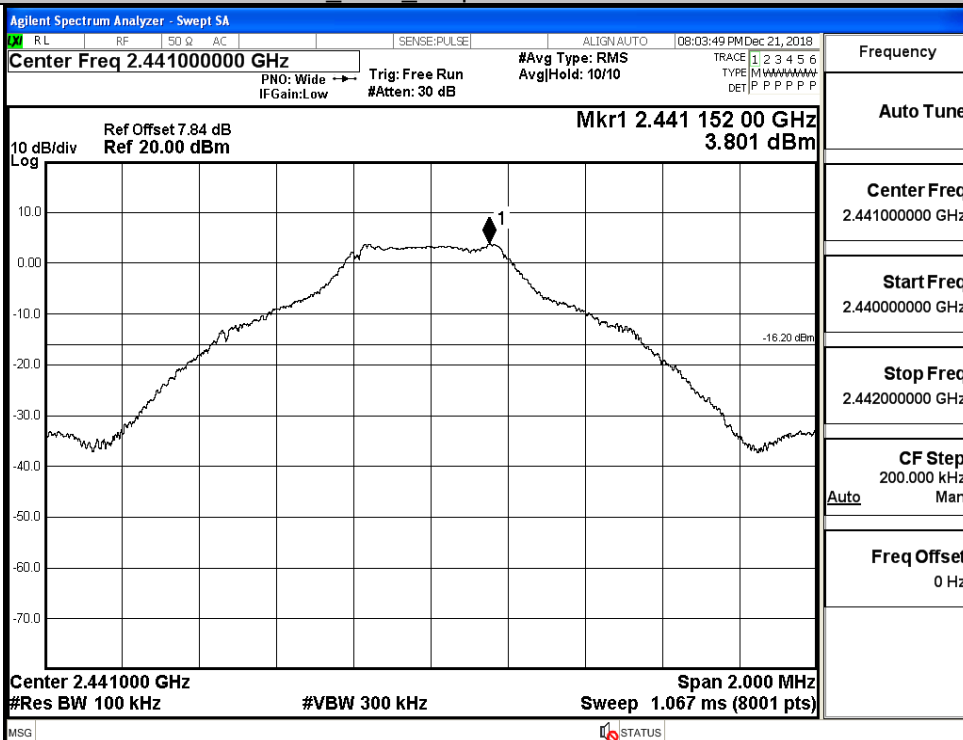


Puw

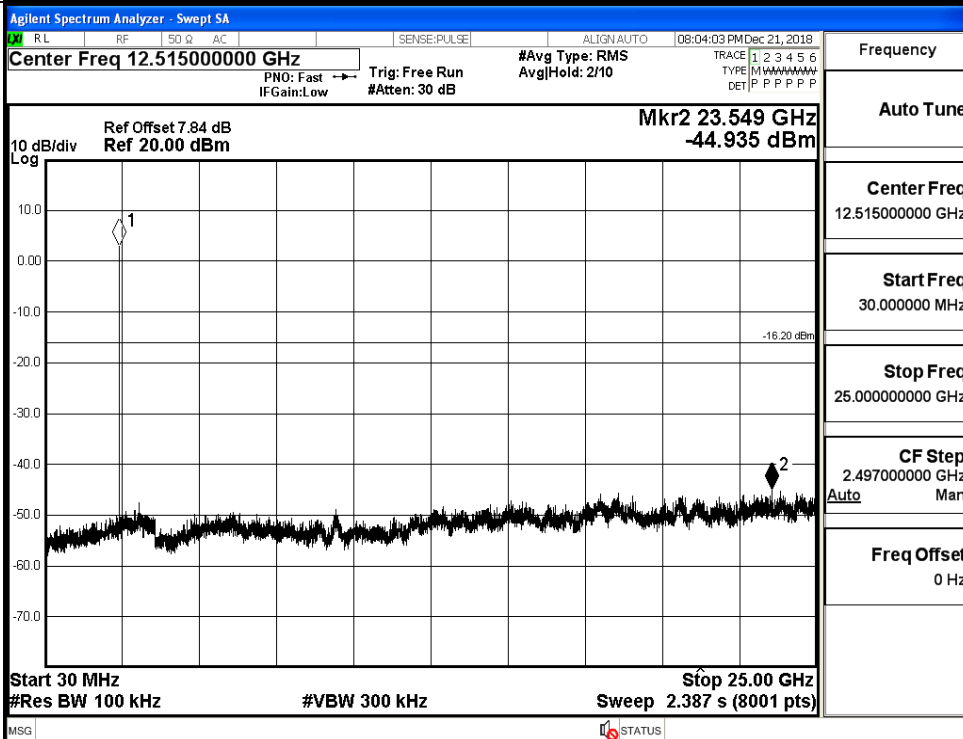


GFSK_MCH_Graphs

Pref

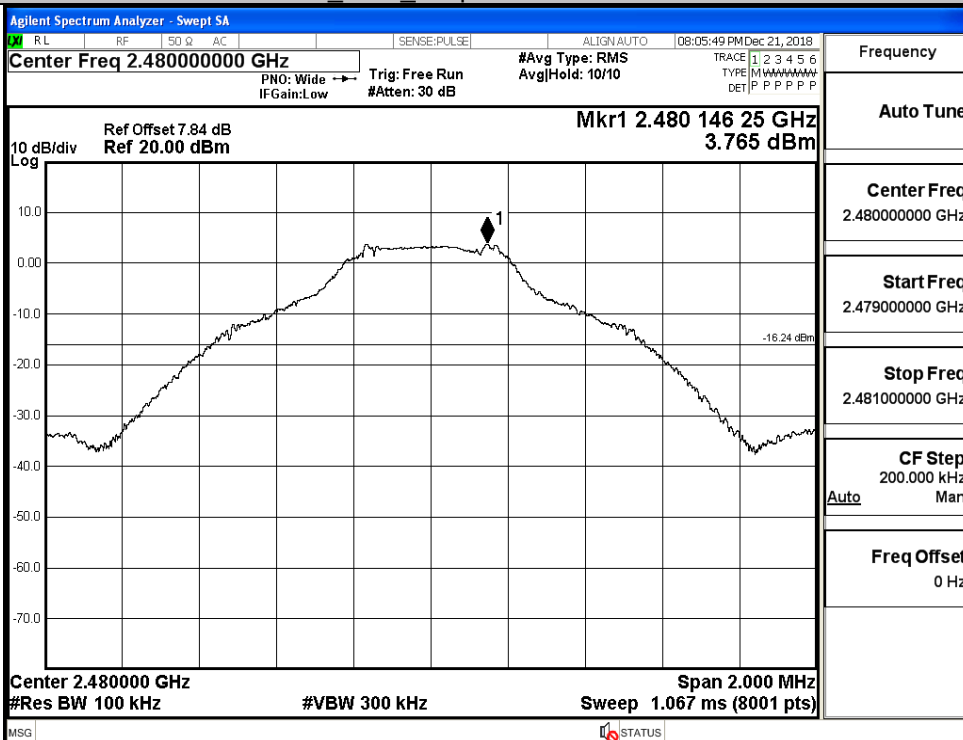


Puw

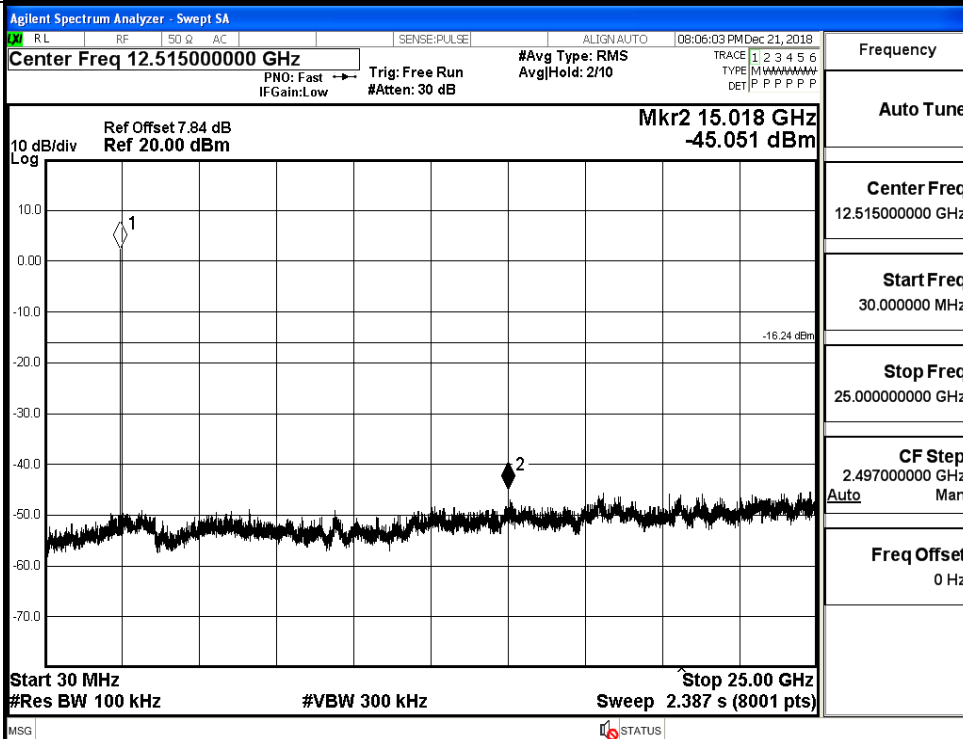


GFSK_HCH_Graphs

Pref

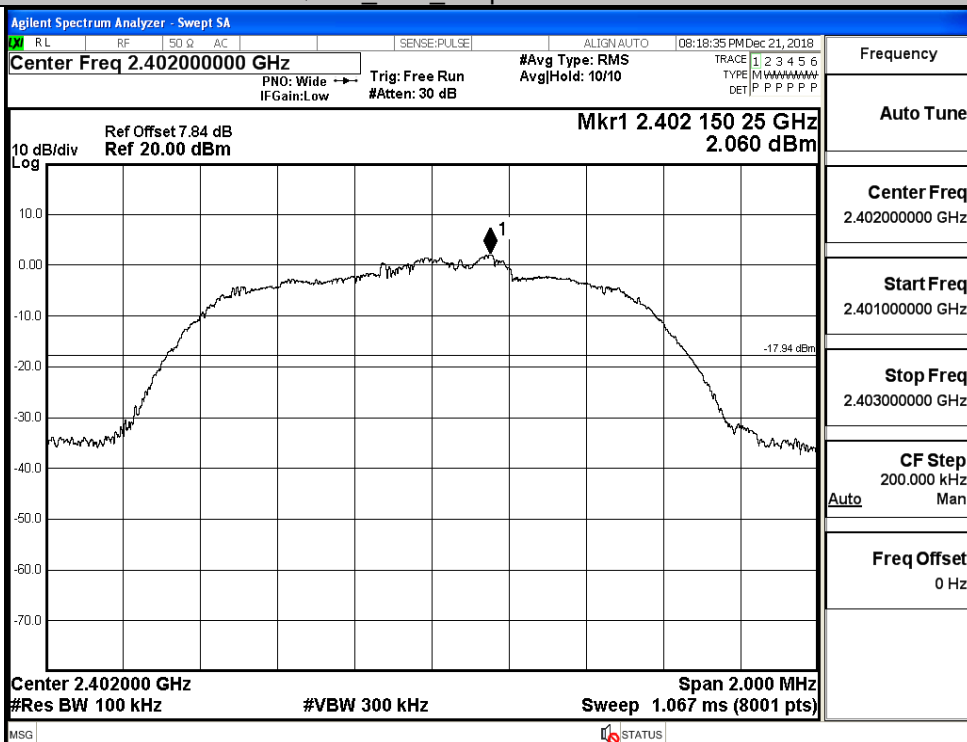


Puw

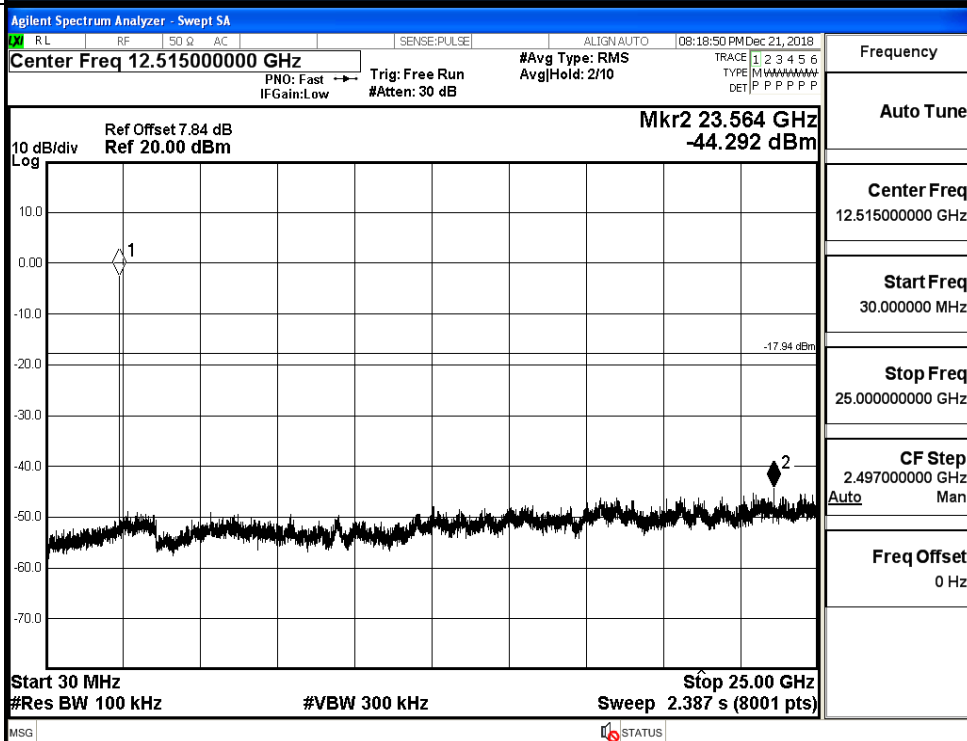


$\pi/4$ DQPSK LCH_Graphs

Pref

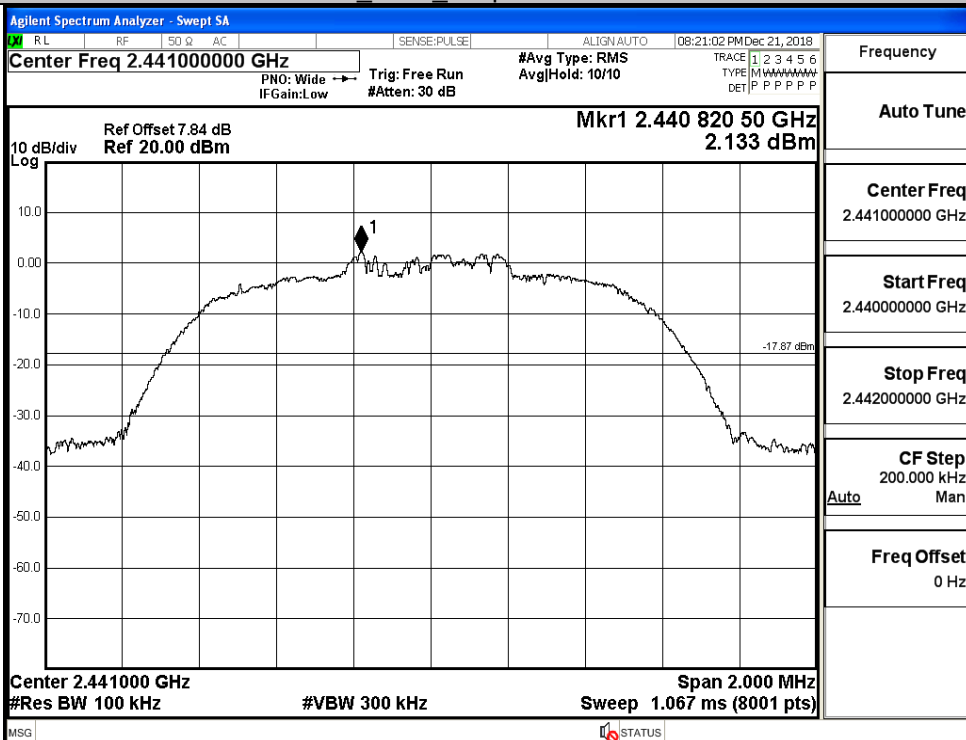


Puw

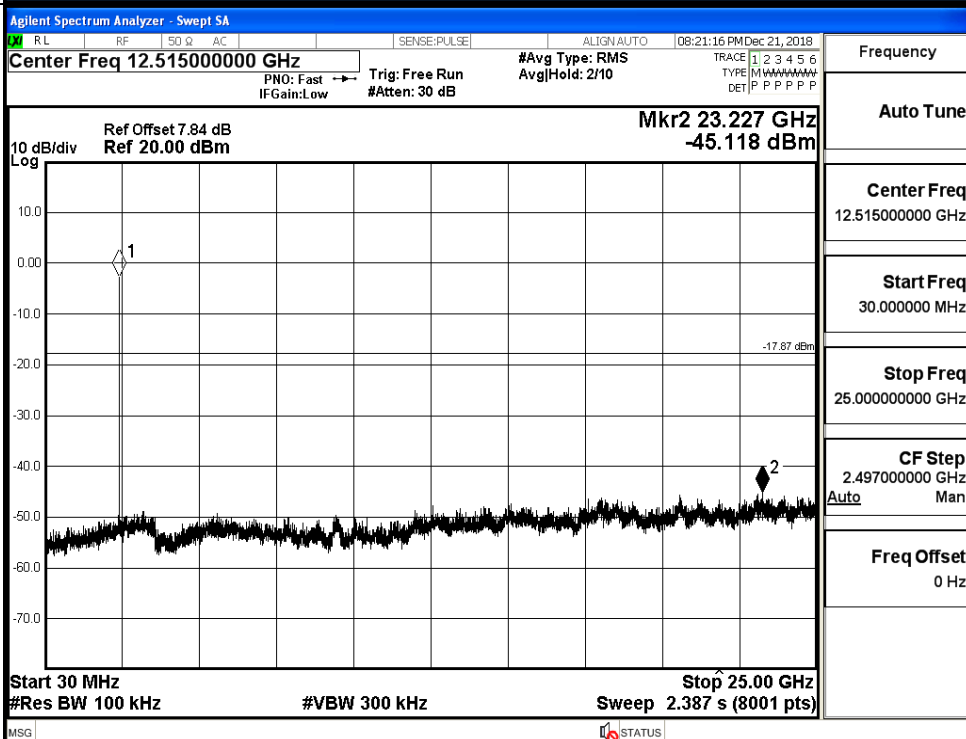


$\pi/4$ DQPSK_MCH_Graphs

Pref

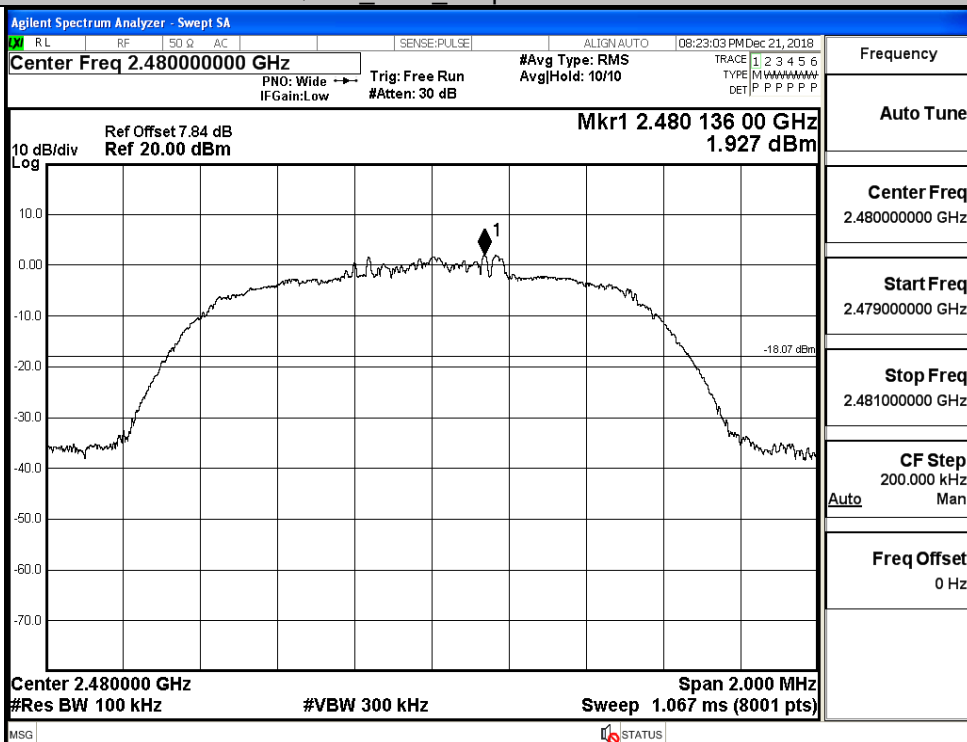


Puw

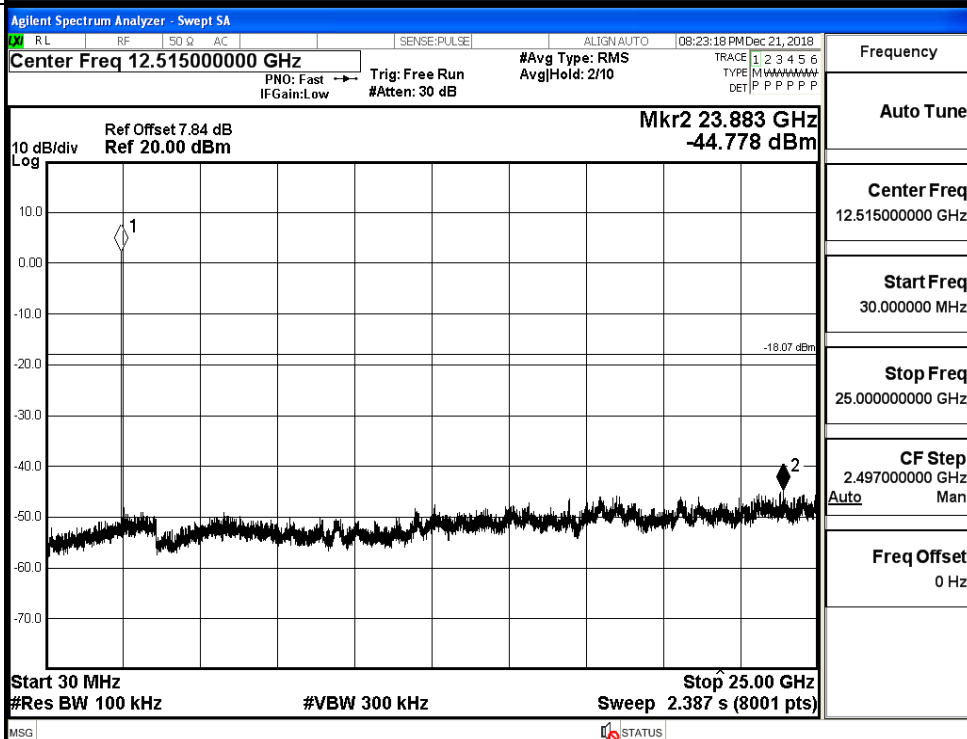


$\pi/4$ DQPSK_HCH_Graphs

Pref

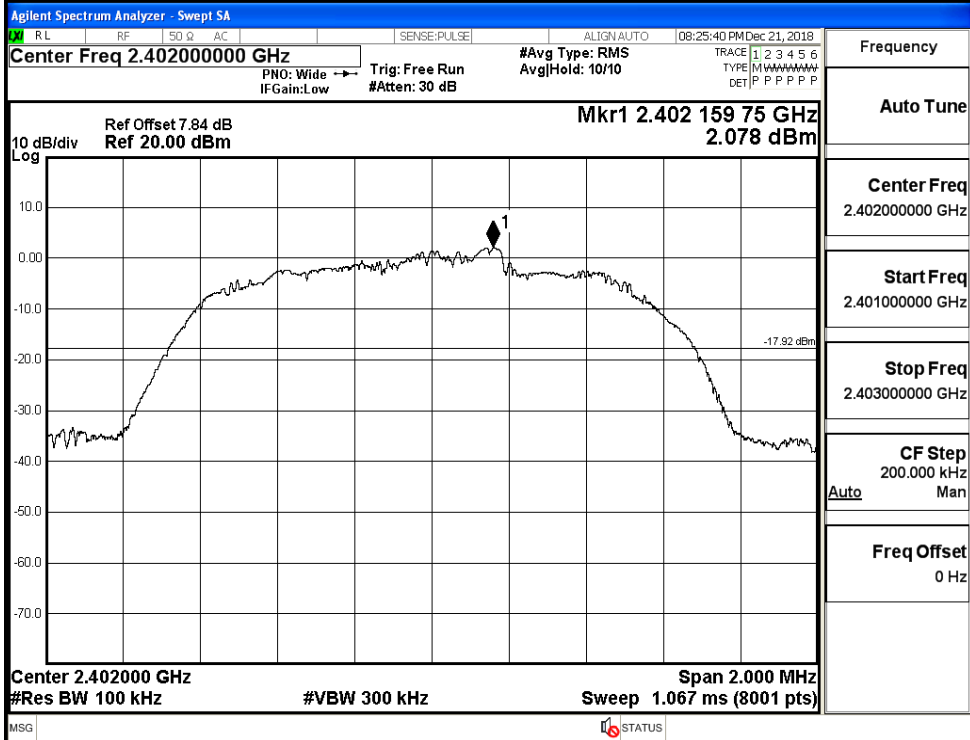


Puw

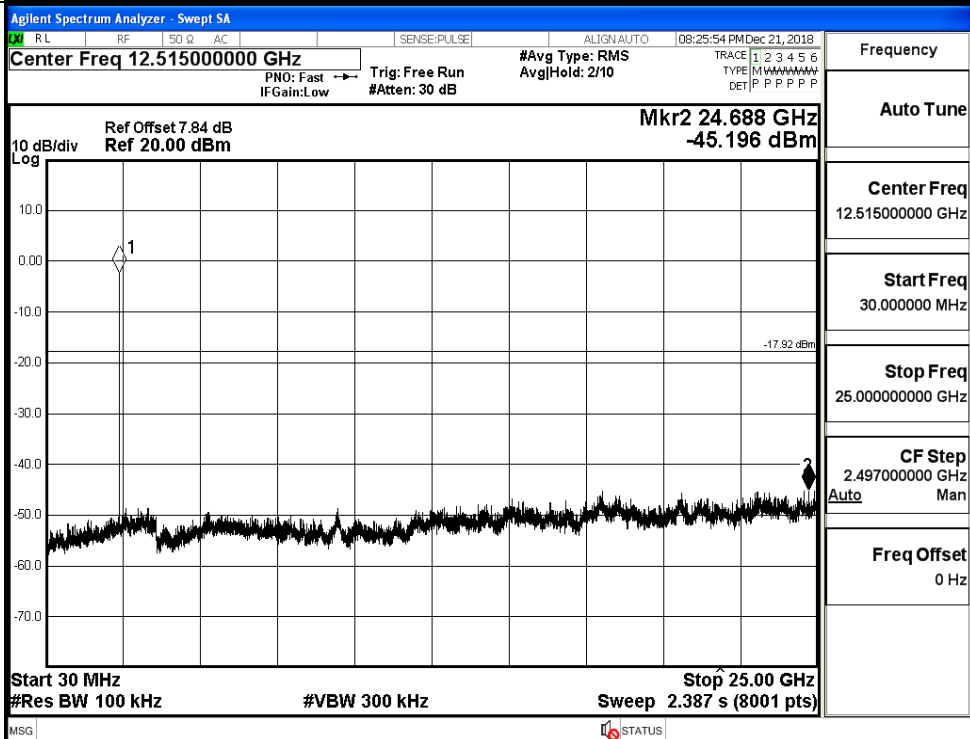


8DPSK_LCH_Graphs

Pref

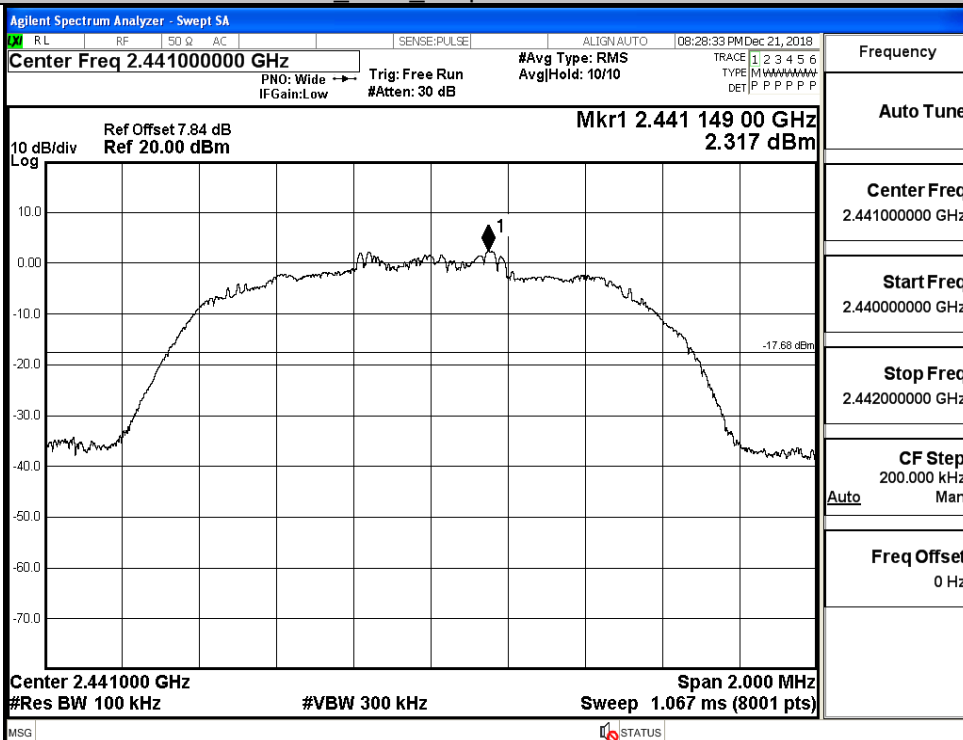


Puw

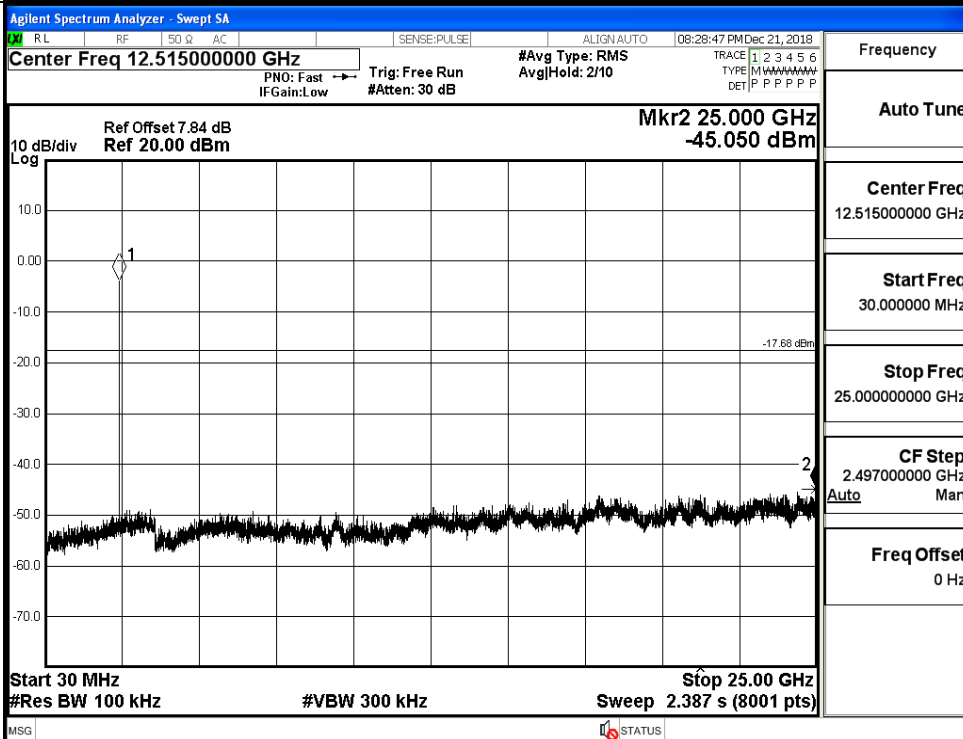


8DPSK_MCH_Graphs

Pref

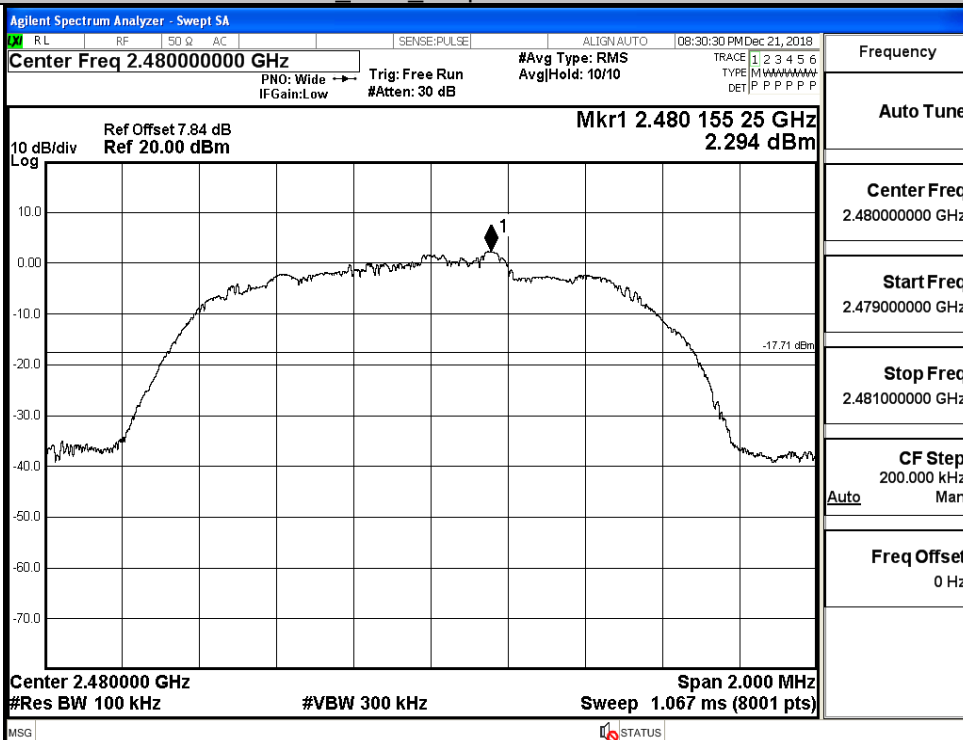


Puw

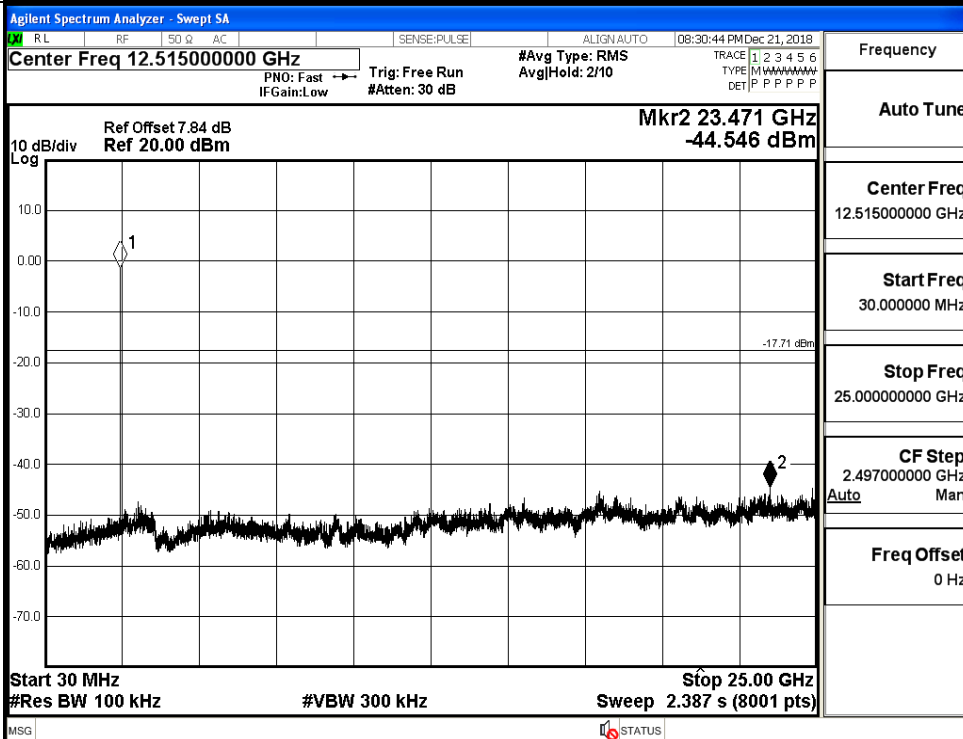


8DPSK_HCH_Graphs

Pref



Puw

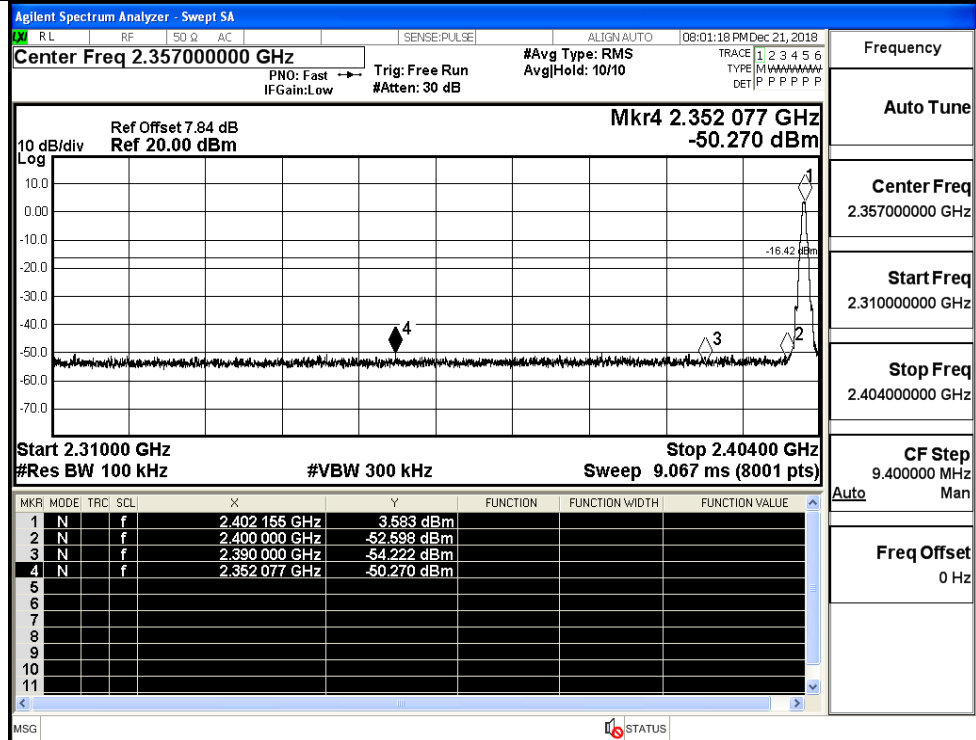


A.7 Band-edge for RF Conducted Emissions

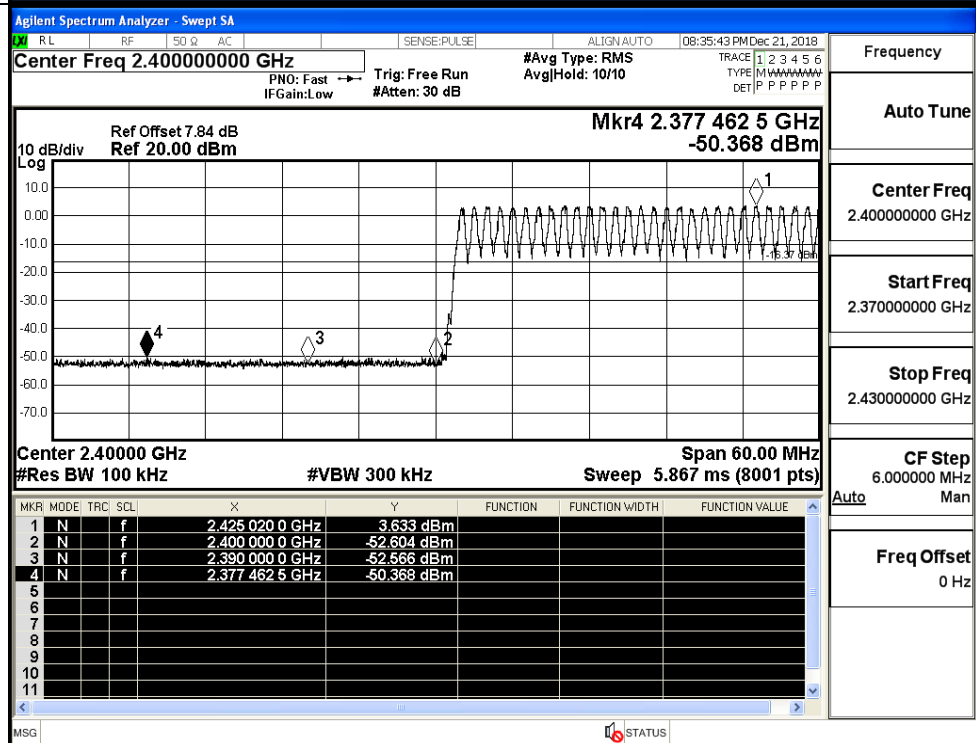
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	3.583	Off	-50.270	-16.42	PASS
			3.633	On	-50.368	-16.37	PASS
	HCH	2480	3.848	Off	-50.268	-16.15	PASS
			3.791	On	-49.545	-16.21	PASS
$\pi/4$ DQPSK	LCH	2402	1.811	Off	-50.496	-18.19	PASS
			2.283	On	-48.980	-17.72	PASS
	HCH	2480	2.402	Off	-50.240	-17.6	PASS
			2.401	On	-50.077	-17.6	PASS
8DPSK	LCH	2402	2.178	Off	-50.122	-17.82	PASS
			2.315	On	-49.424	-17.69	PASS
	HCH	2480	2.356	Off	-50.331	-17.64	PASS
			2.395	On	-49.281	-17.61	PASS

Test Graphs

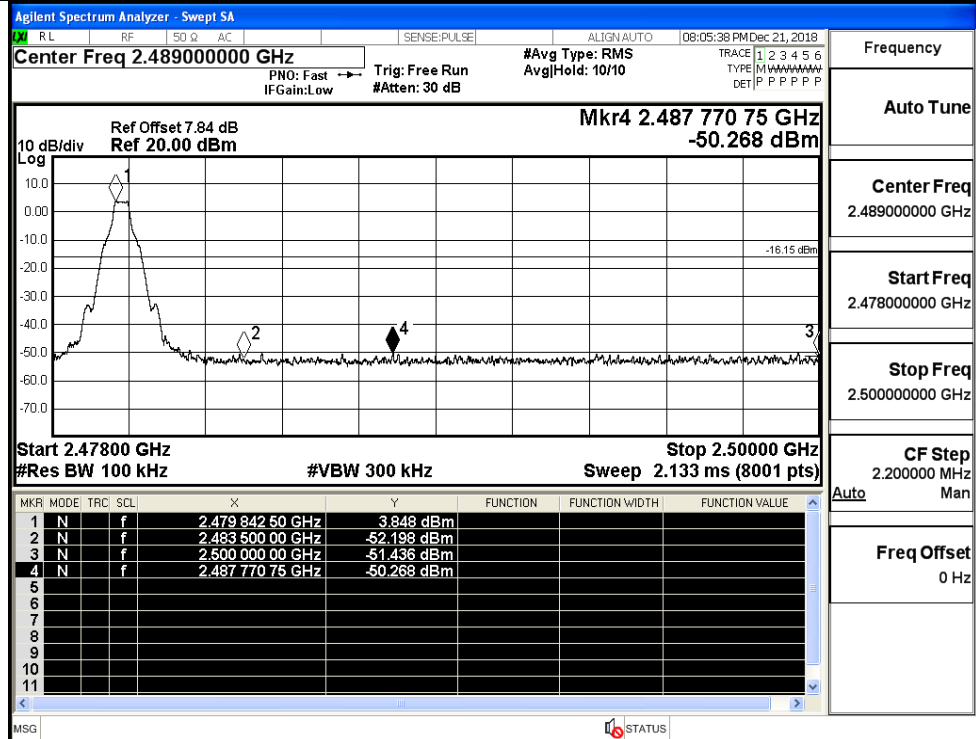
GFSK/LCH/No Hop



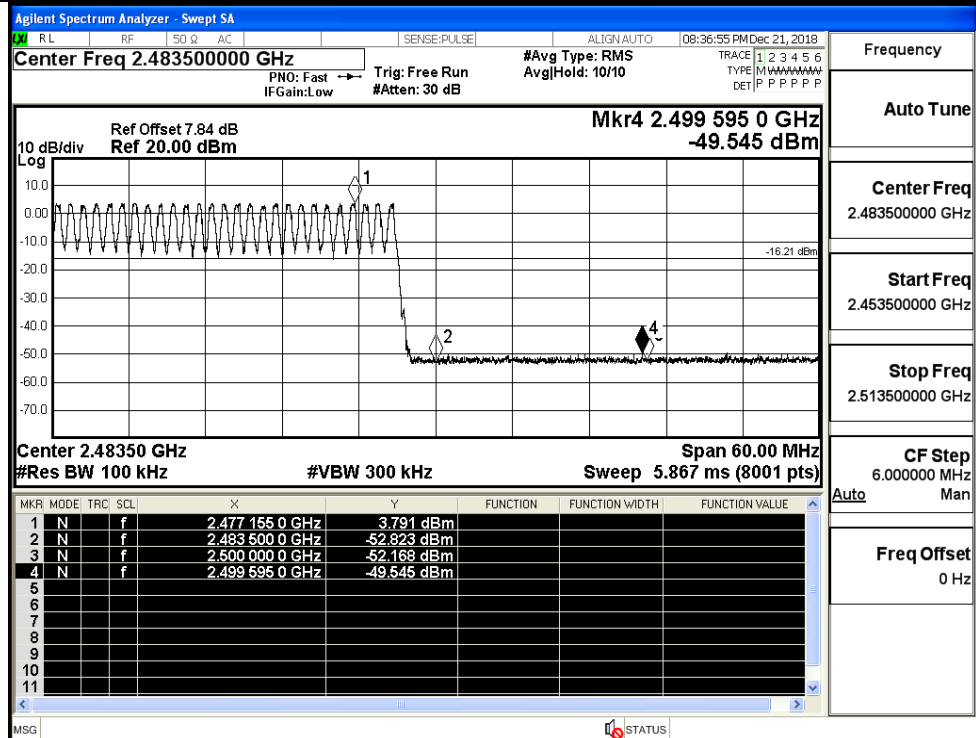
GFSK/LCH/Hop



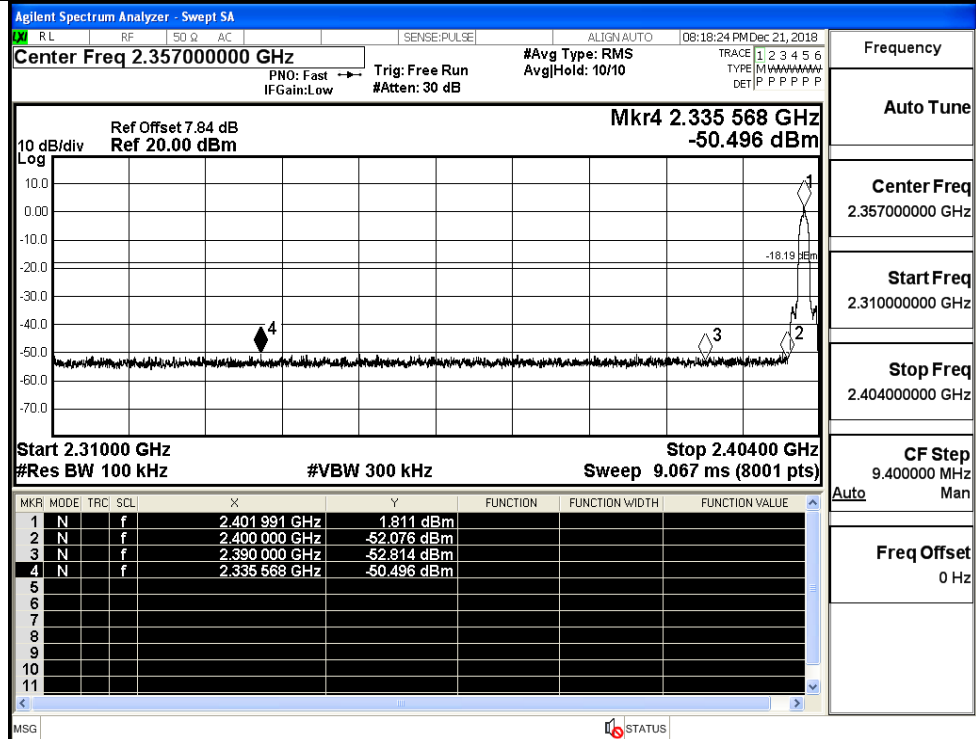
GFSK/HCH/No Hop



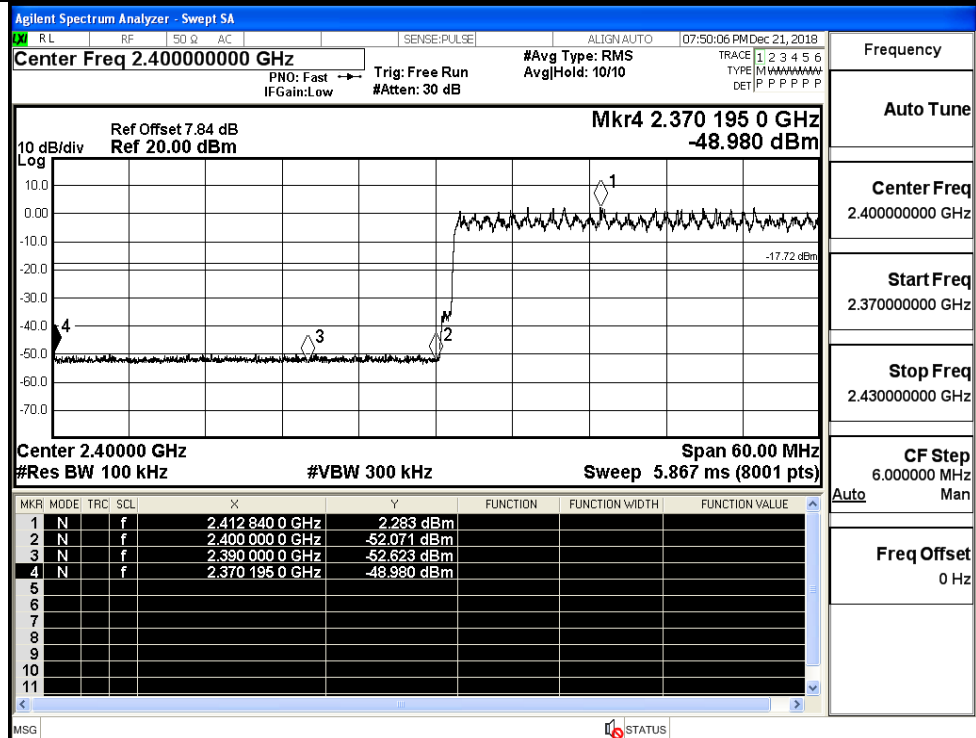
GFSK/HCH/Hop



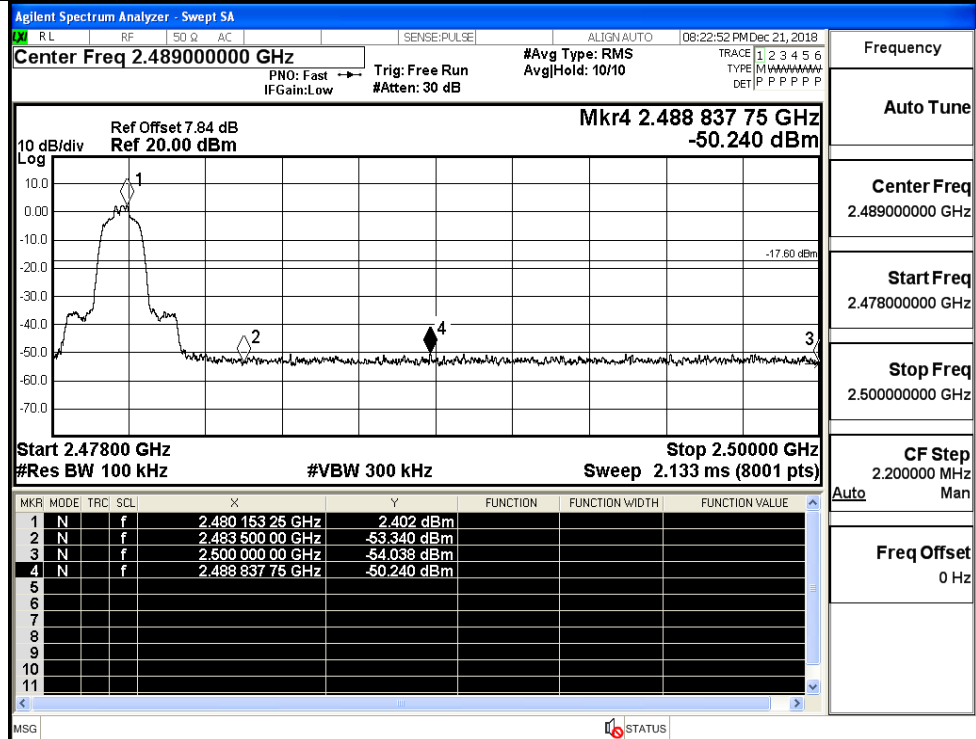
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

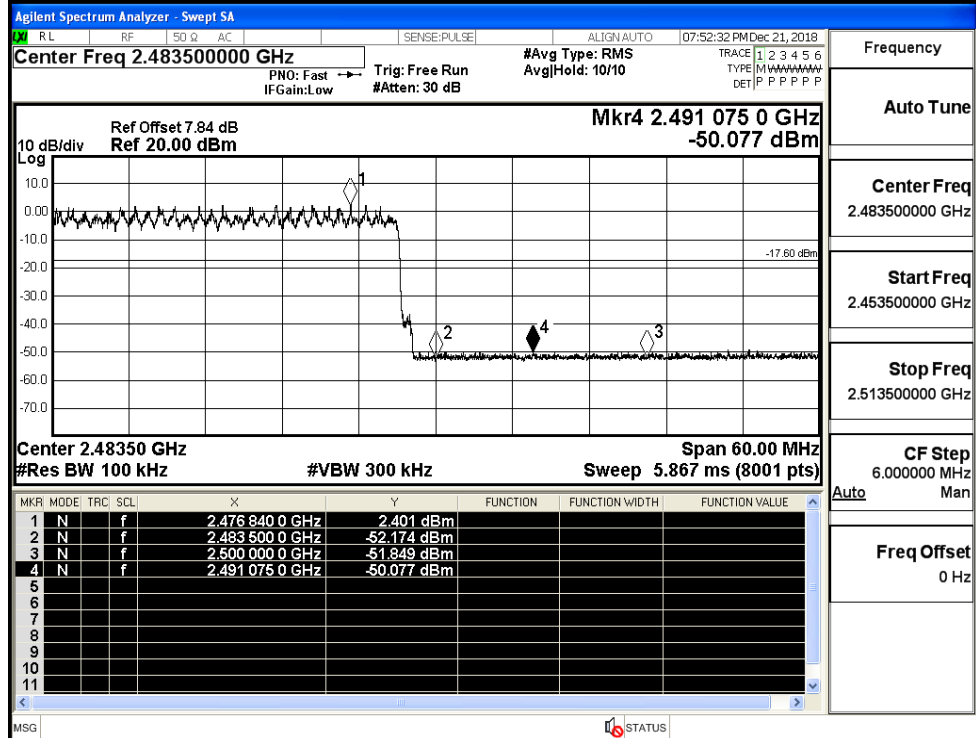
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

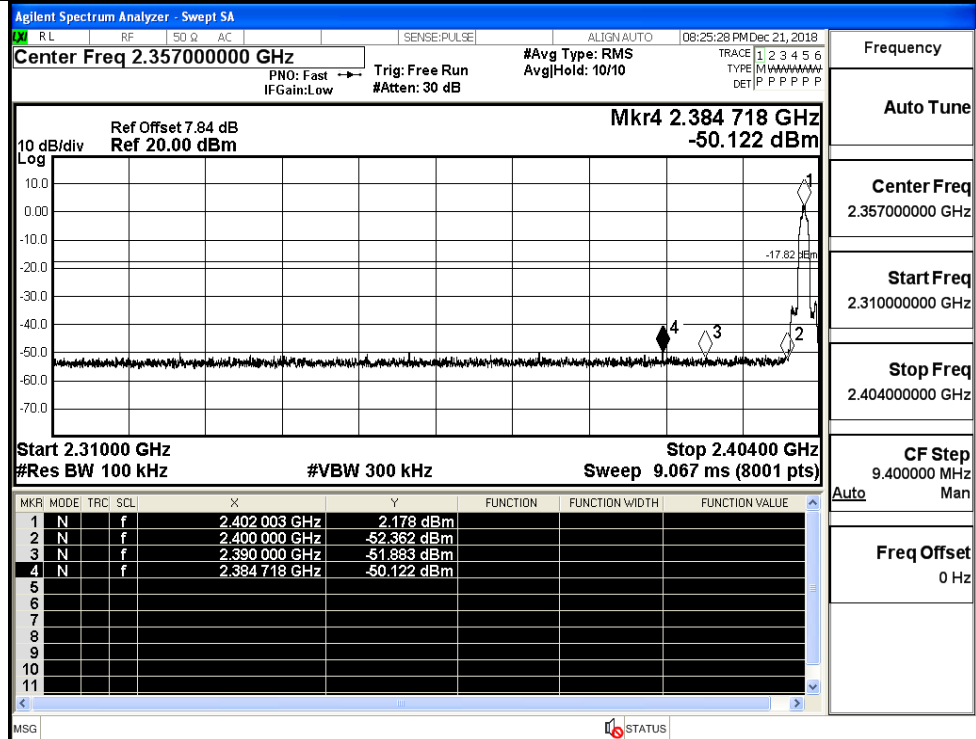
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH/No Hop



Frequency

Auto Tune

Center Freq
2.357000000 GHz

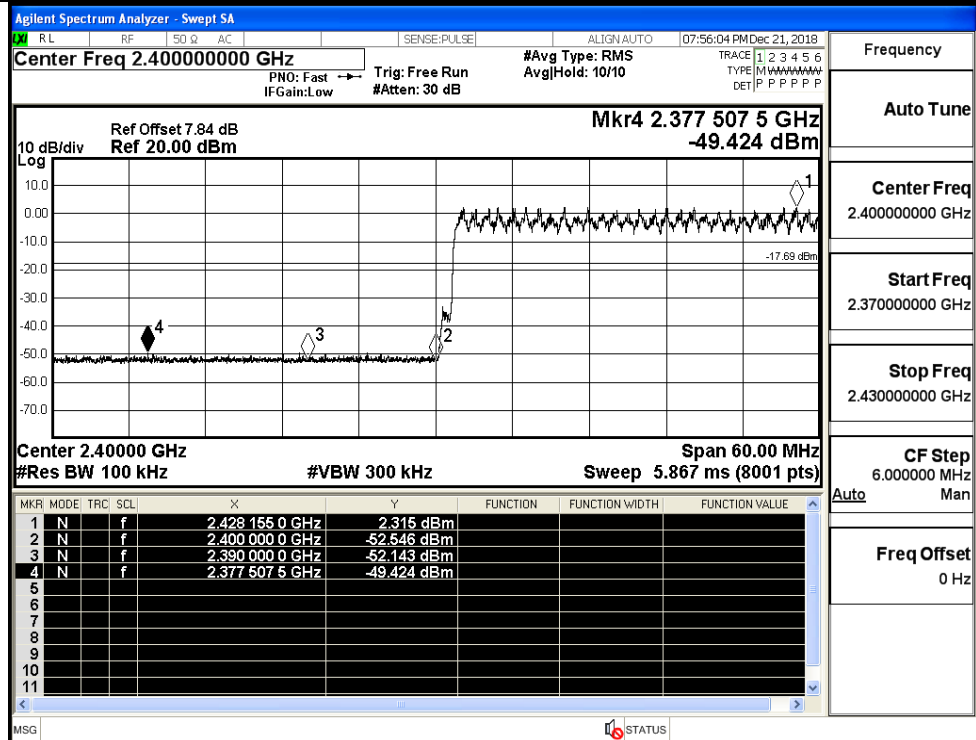
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

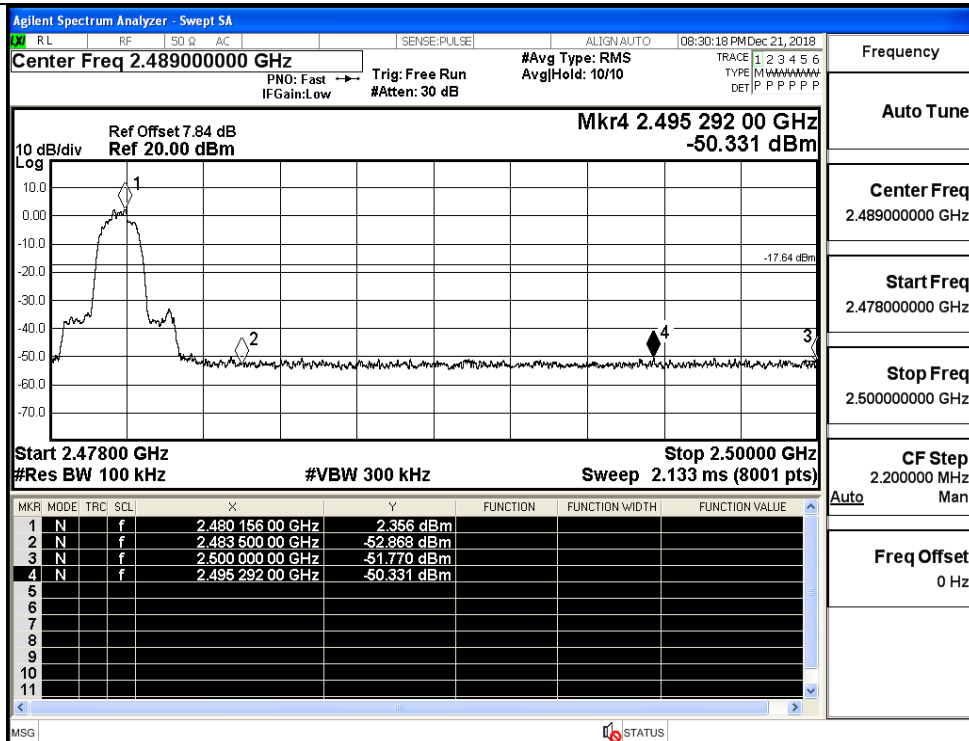
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

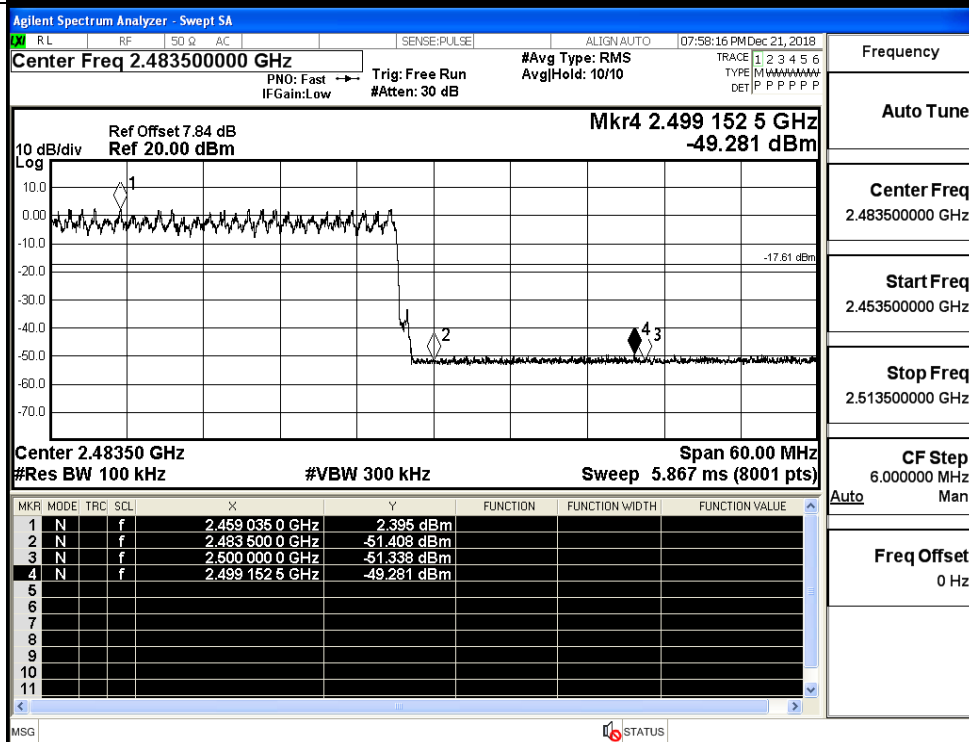
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

8DPSK/HCH/No Hop



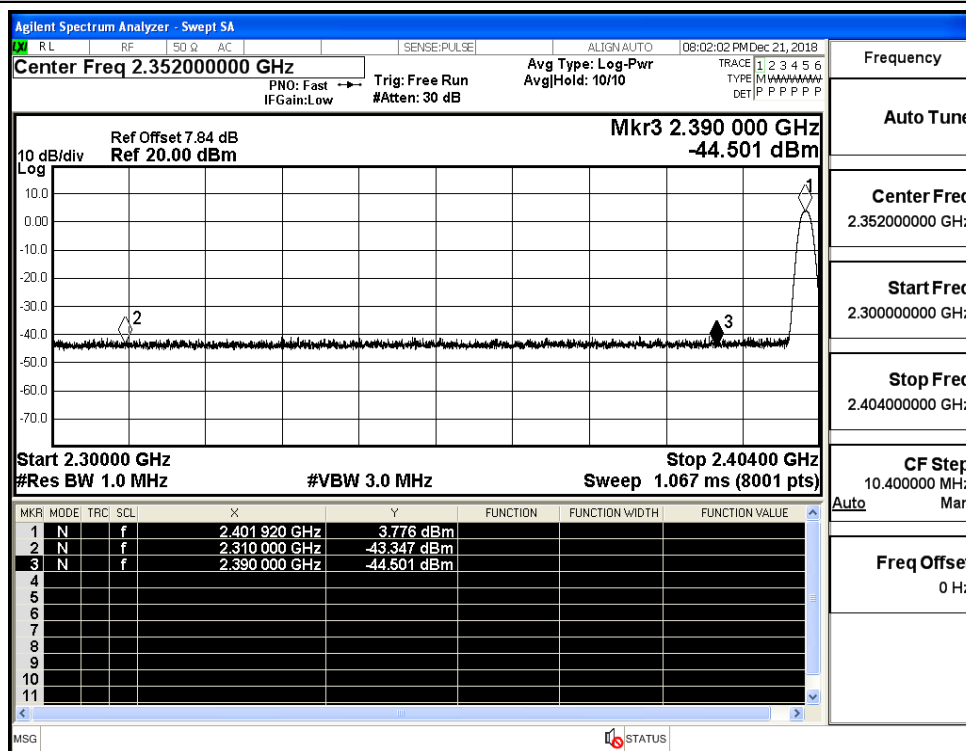
8DPSK/HCH/Hop



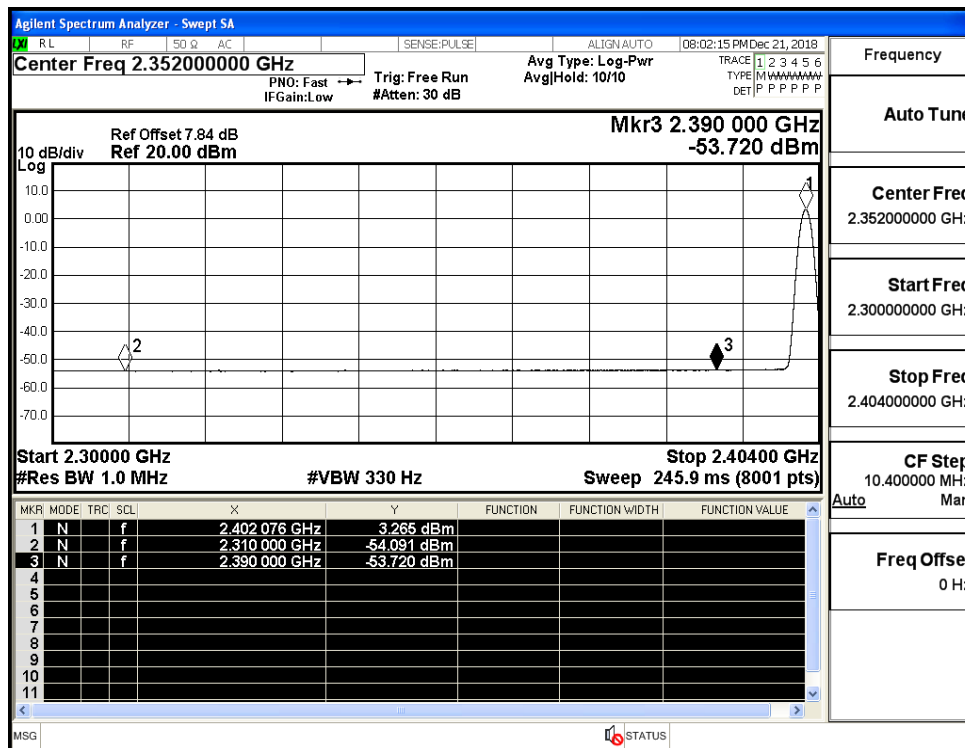
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.35	2.0	0	53.91	PEAK	74	PASS
	Off	2310.0	-54.09	2.0	0	43.17	AV	54	PASS
	Off	2390.0	-44.50	2.0	0	52.76	PEAK	74	PASS
	Off	2390.0	-53.72	2.0	0	43.54	AV	54	PASS
	Off	2483.5	-43.96	2.0	0	53.30	PEAK	74	PASS
	Off	2483.5	-53.11	2.0	0	44.15	AV	54	PASS
	Off	2500.0	-41.79	2.0	0	55.47	PEAK	74	PASS
	Off	2500.0	-53.33	2.0	0	43.93	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.33	2.0	0	52.93	PEAK	74	PASS
	Off	2310.0	-54.11	2.0	0	43.14	AV	54	PASS
	Off	2390.0	-42.95	2.0	0	54.31	PEAK	74	PASS
	Off	2390.0	-53.75	2.0	0	43.50	AV	54	PASS
	Off	2483.5	-42.24	2.0	0	55.02	PEAK	74	PASS
	Off	2483.5	-53.26	2.0	0	43.99	AV	54	PASS
	Off	2500.0	-43.35	2.0	0	53.90	PEAK	74	PASS
	Off	2500.0	-53.33	2.0	0	43.92	AV	54	PASS
8DPSK	Off	2310.0	-43.91	2.0	0	53.35	PEAK	74	PASS
	Off	2310.0	-54.07	2.0	0	43.19	AV	54	PASS
	Off	2390.0	-43.36	2.0	0	53.90	PEAK	74	PASS
	Off	2390.0	-53.78	2.0	0	43.48	AV	54	PASS
	Off	2483.5	-43.73	2.0	0	53.52	PEAK	74	PASS
	Off	2483.5	-53.26	2.0	0	44.00	AV	54	PASS
	Off	2500.0	-43.36	2.0	0	53.90	PEAK	74	PASS
	Off	2500.0	-53.37	2.0	0	43.89	AV	54	PASS

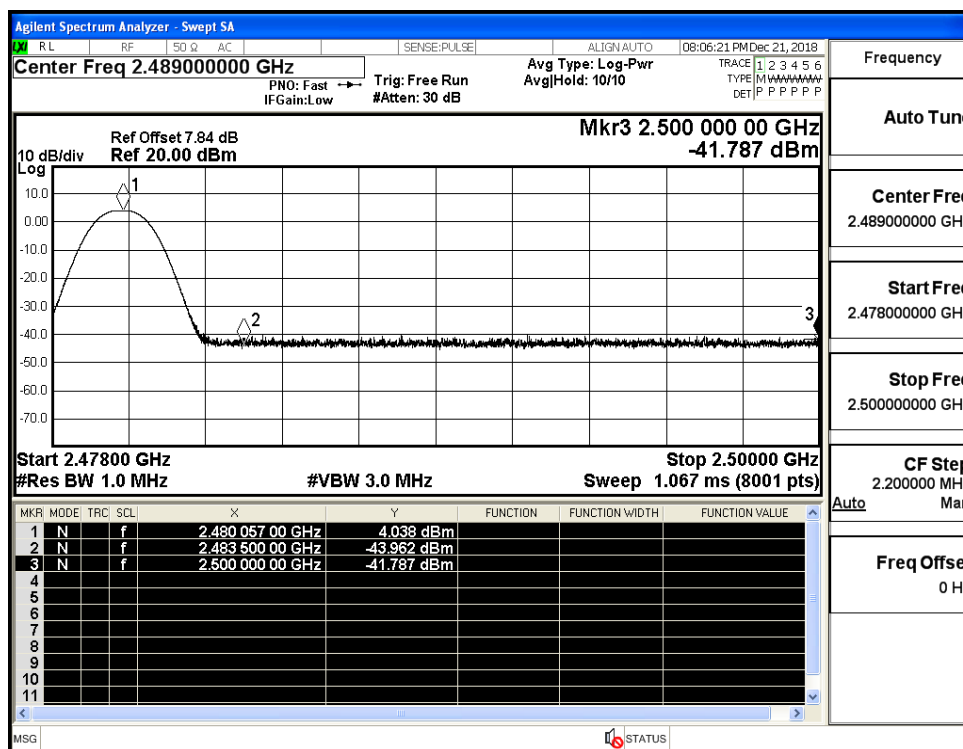
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



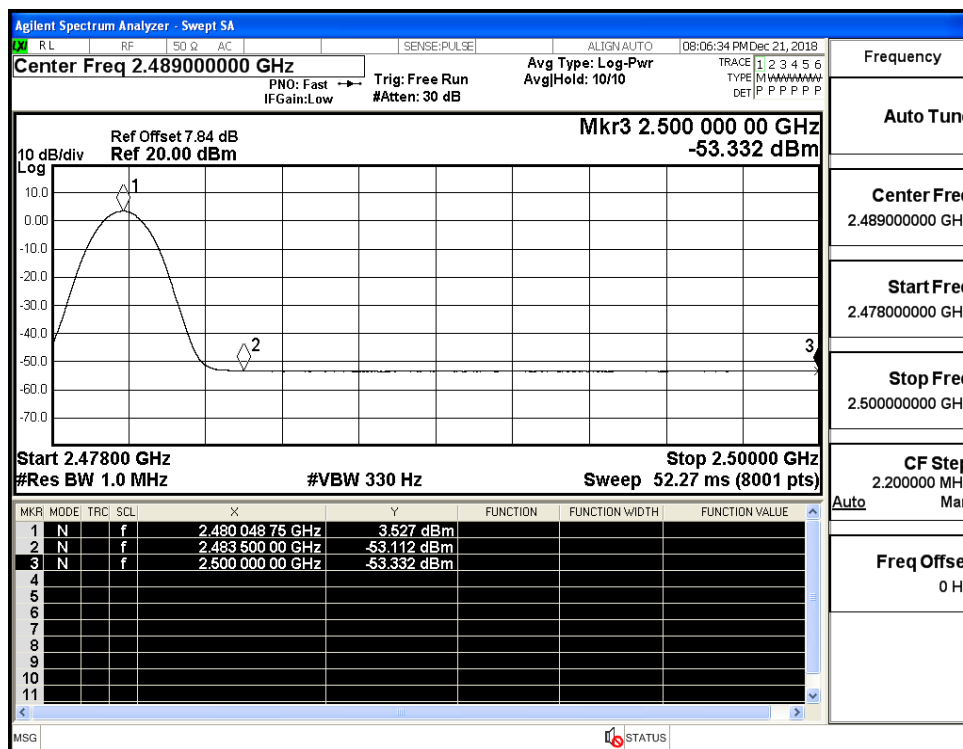
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



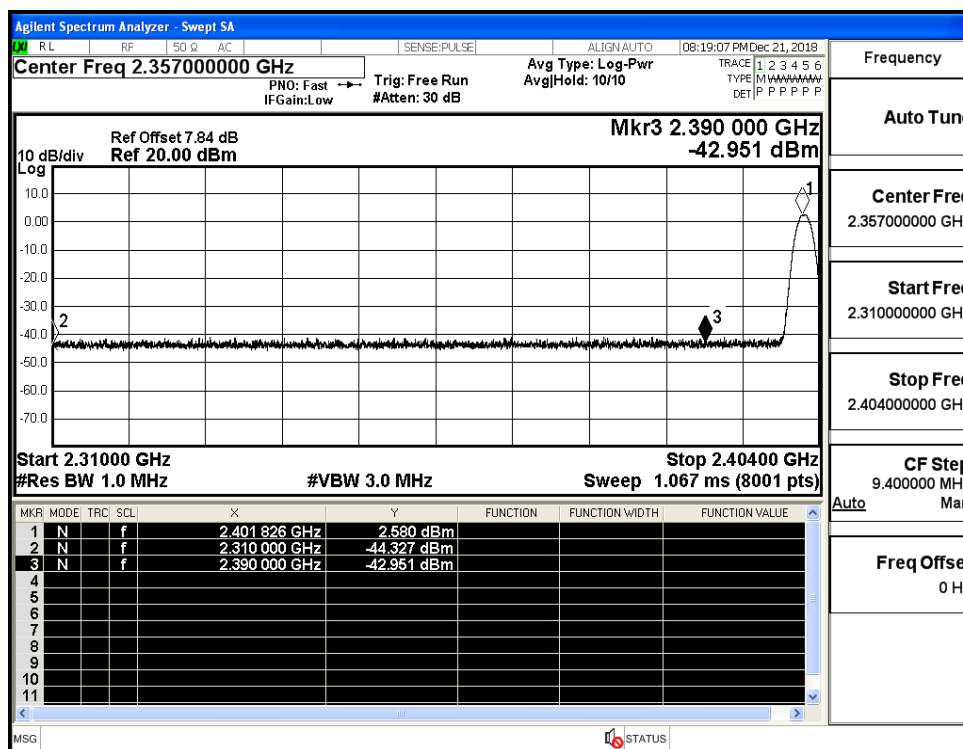
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



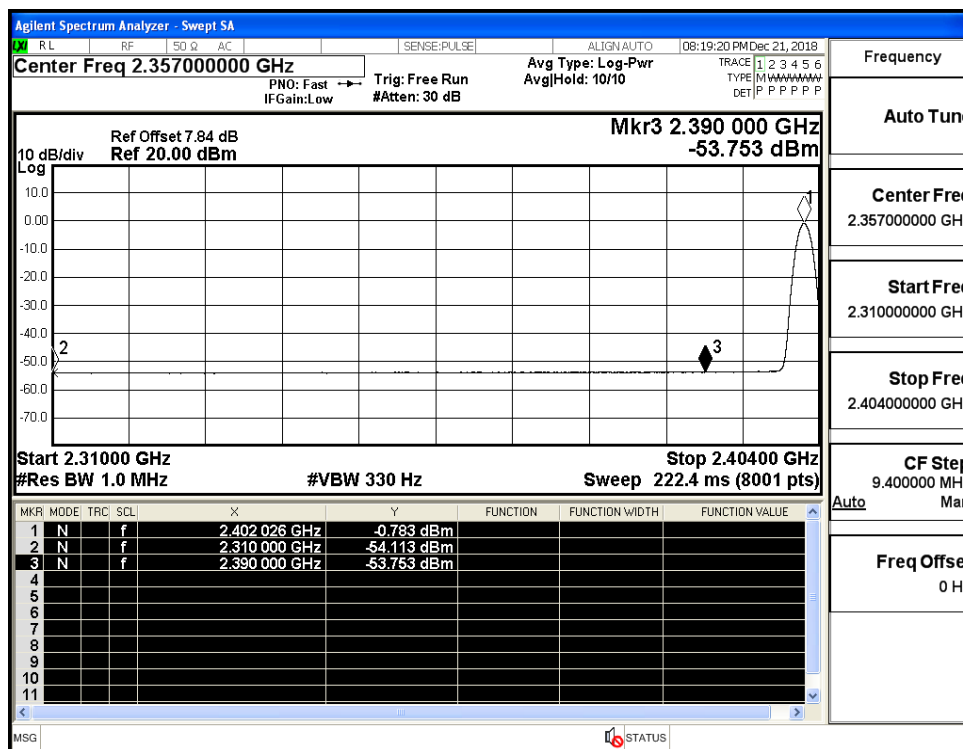
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



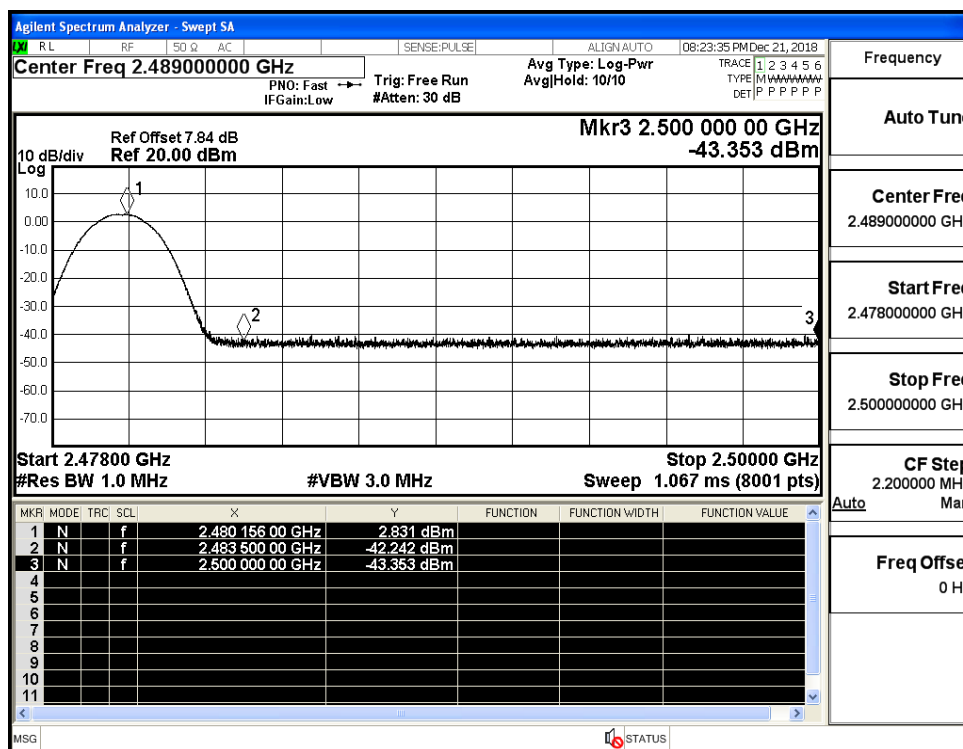
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



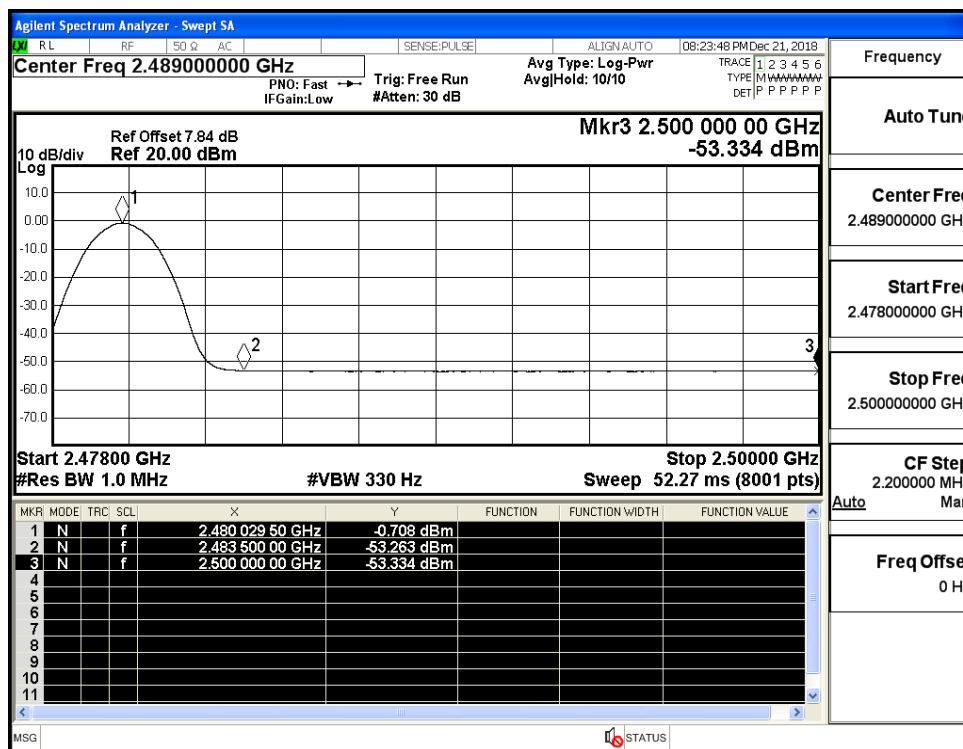
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



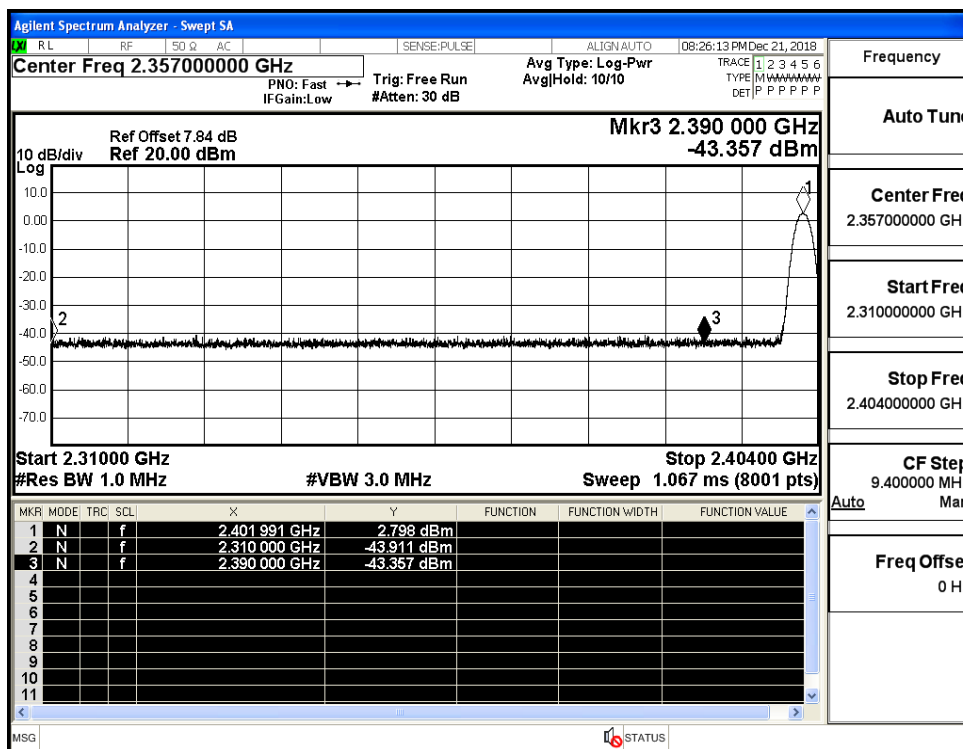
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



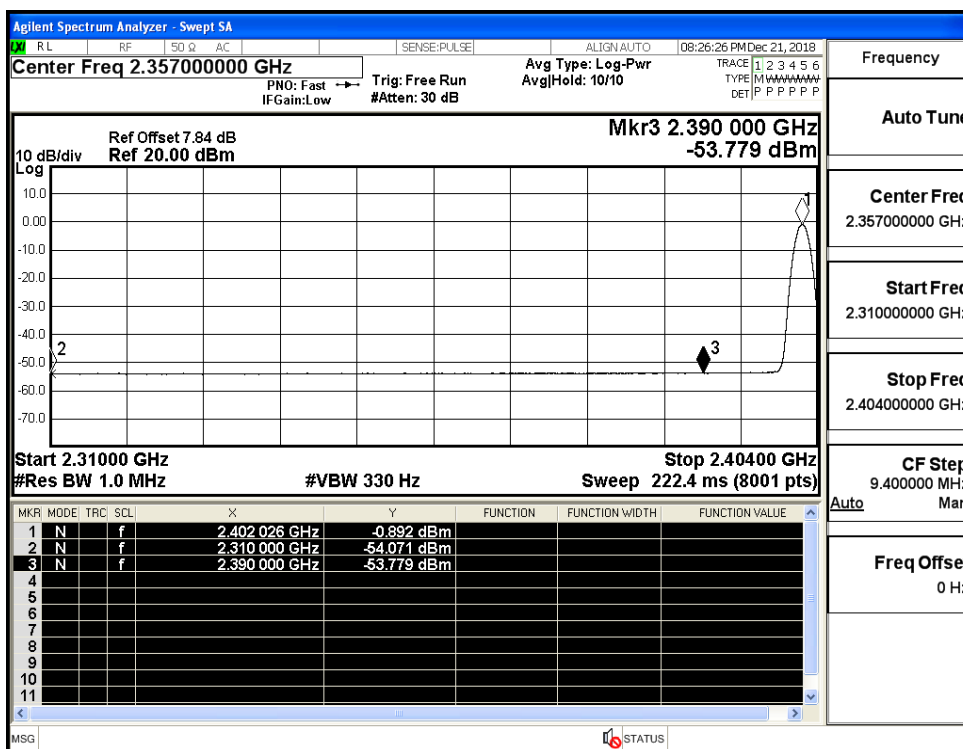
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



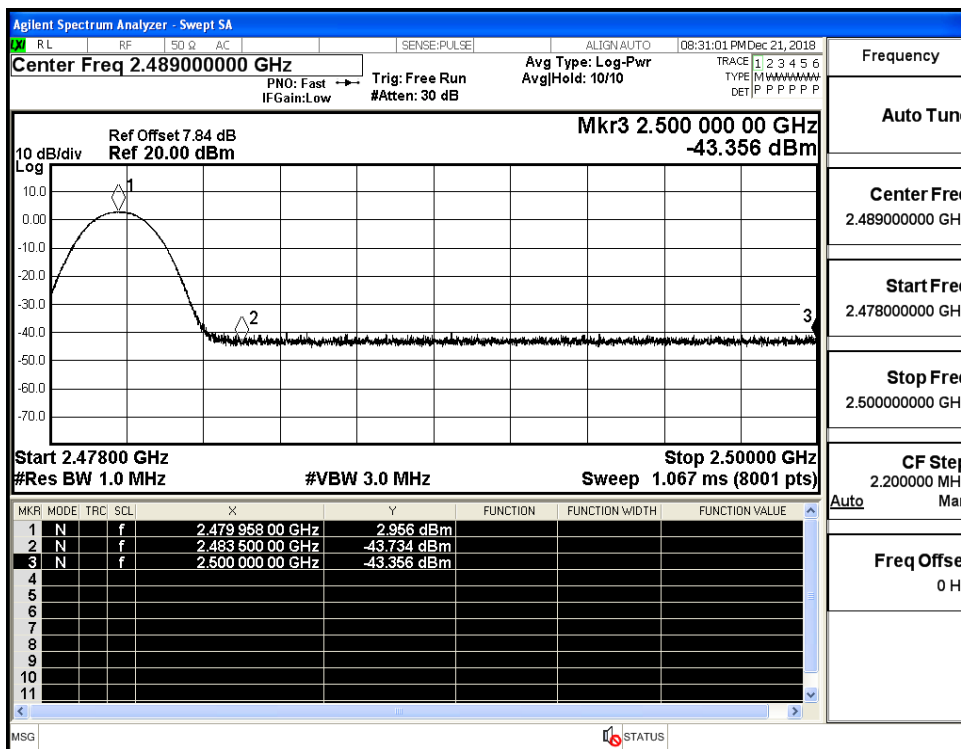
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

