

Appendix A

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

Product Name: BLUETOOTH SPEAKER

Trade Mark: N/A

Test Model: H3

Environmental Conditions

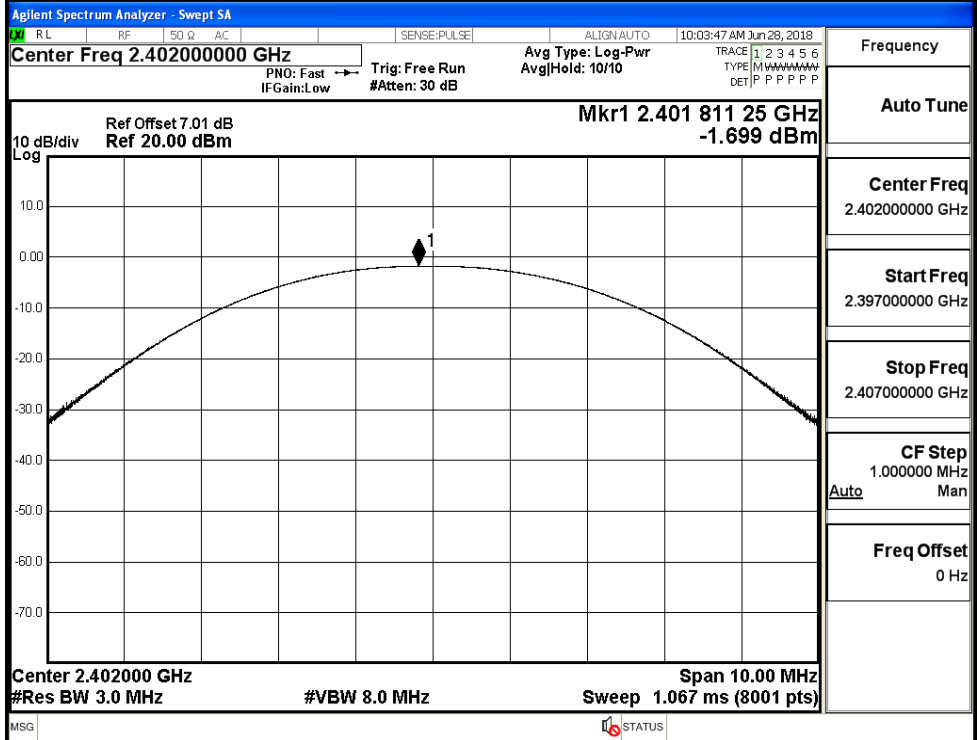
Temperature:	22.5 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Tom.Liu
Supervised by:	Jayden.Zhuo

A.1 Maxmum Conducted Peak Output Power

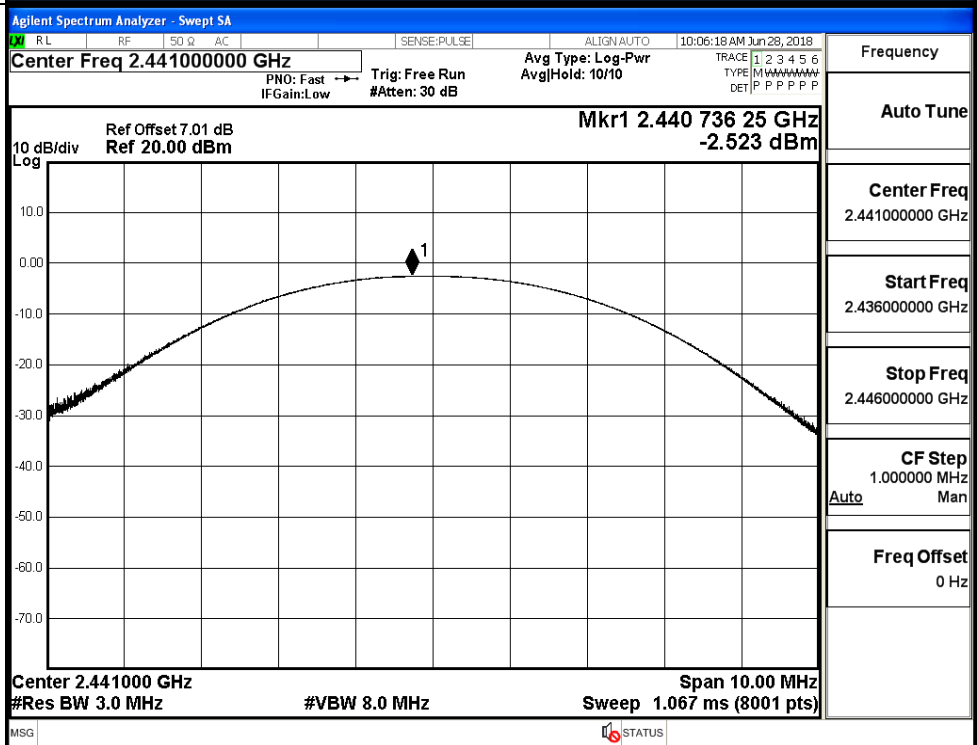
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.699	30	PASS
	MCH	-2.523	30	PASS
	HCH	-2.132	30	PASS
$\pi/4$ DQPSK	LCH	-1.324	21	PASS
	MCH	-1.470	21	PASS
	HCH	-1.068	21	PASS
8DPSK	LCH	-0.838	21	PASS
	MCH	-0.865	21	PASS
	HCH	-0.529	21	PASS

Test Graphs

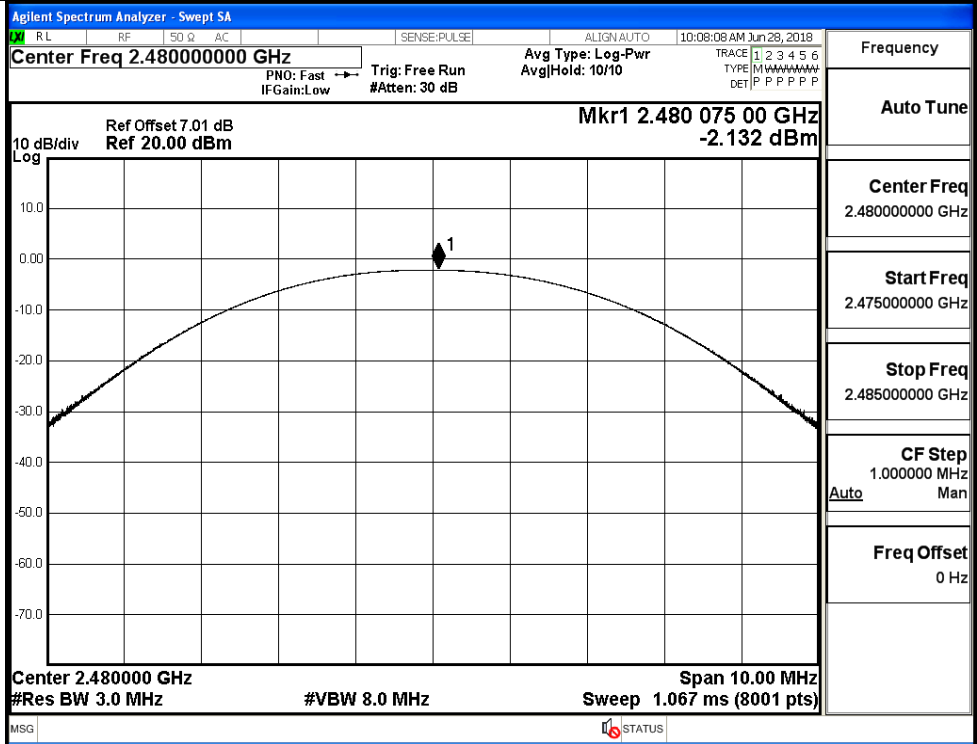
GFSK/LCH



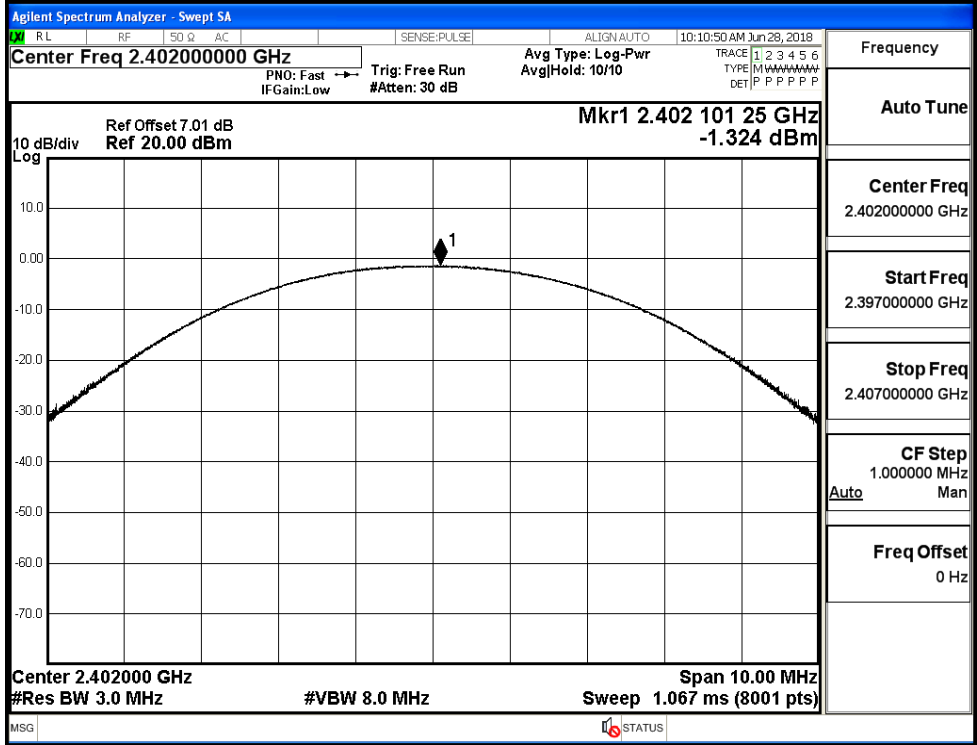
GFSK/MCH



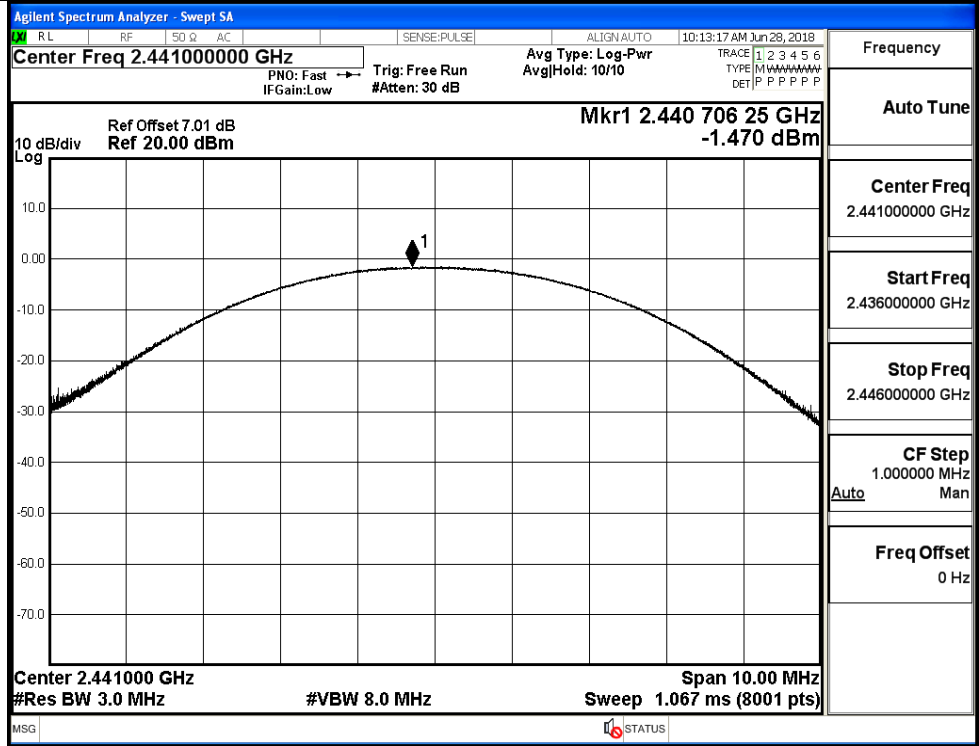
GFSK/HCH



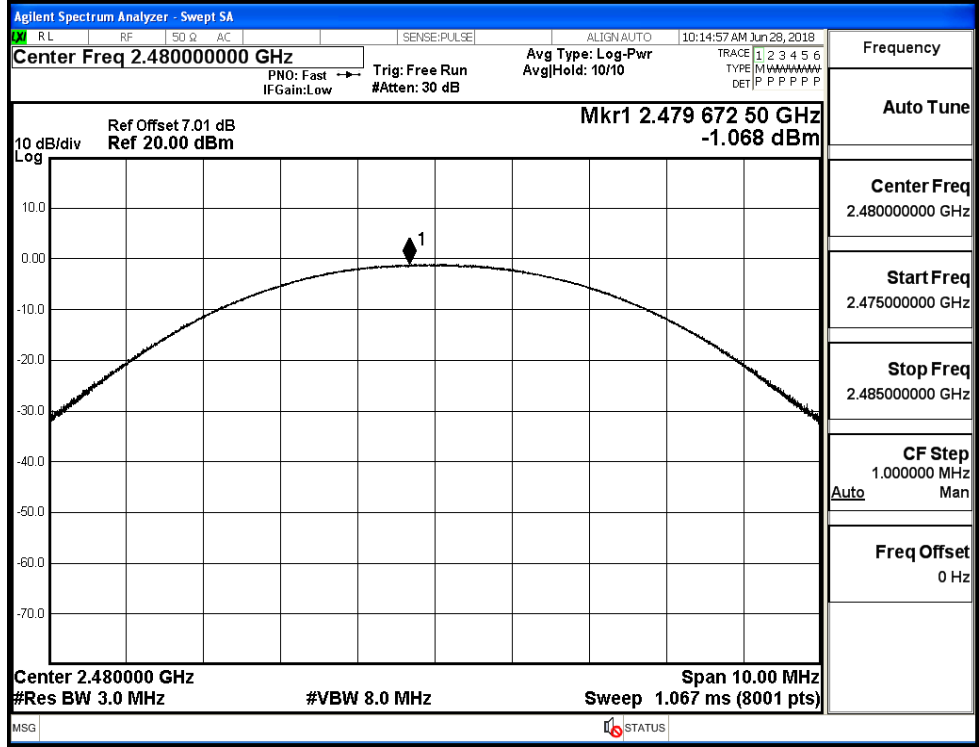
π /4DQPSK/LCH



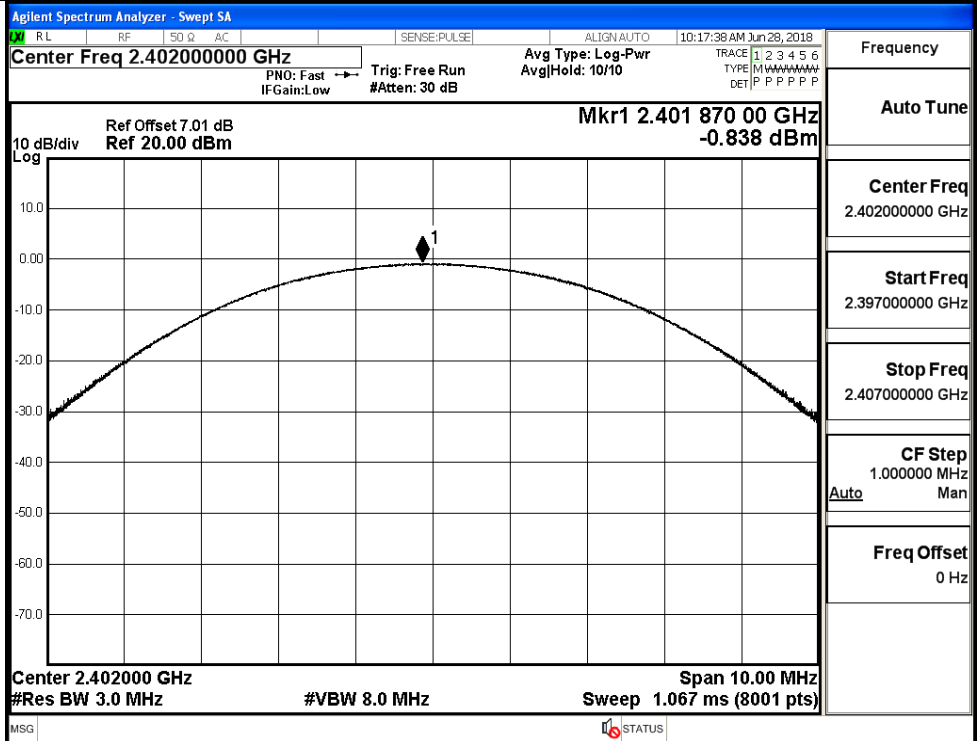
π /4DQPSK/MCH



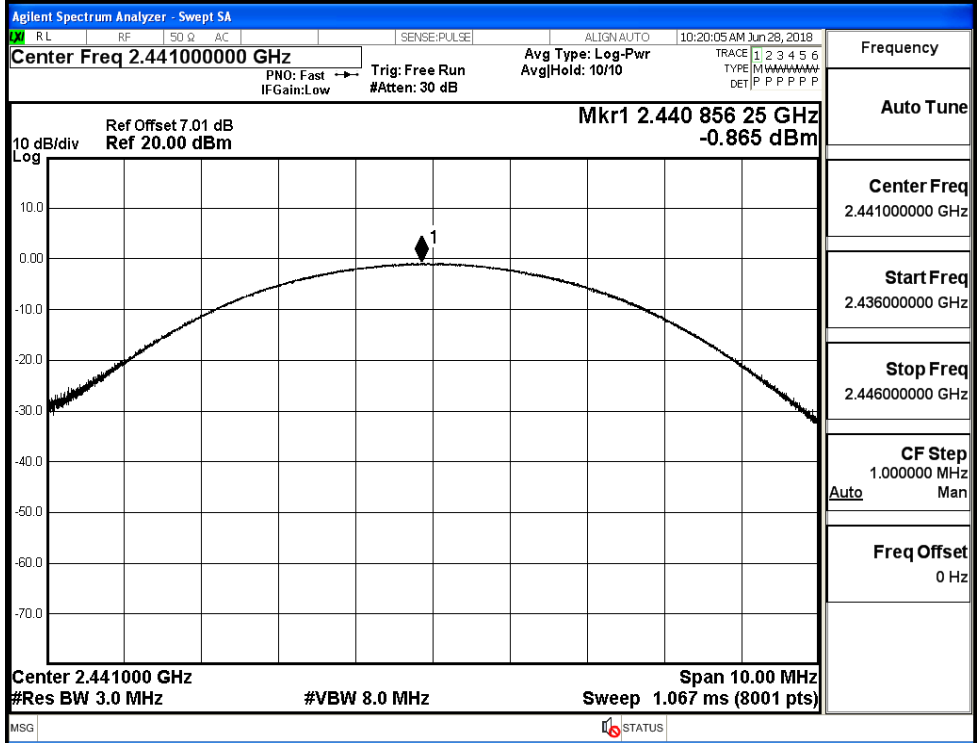
π /4DQPSK/HCH



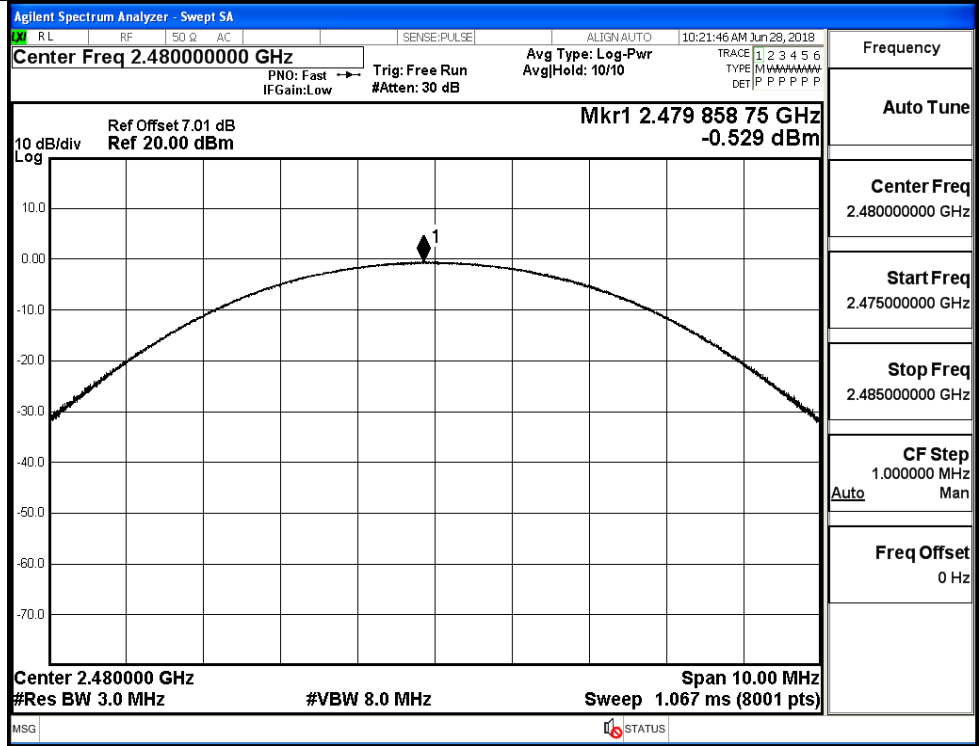
8DPSK/LCH



8DPSK/MCH

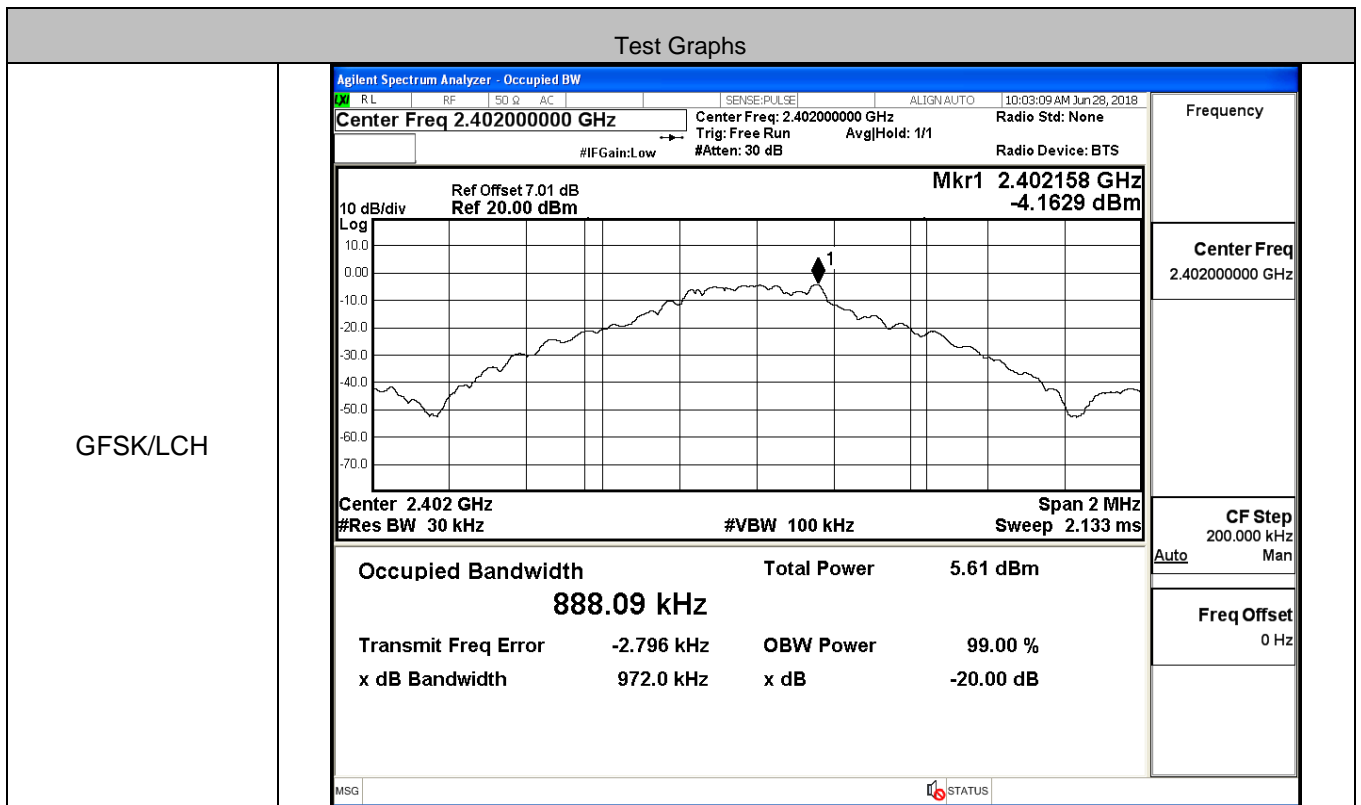


8DPSK/HCH

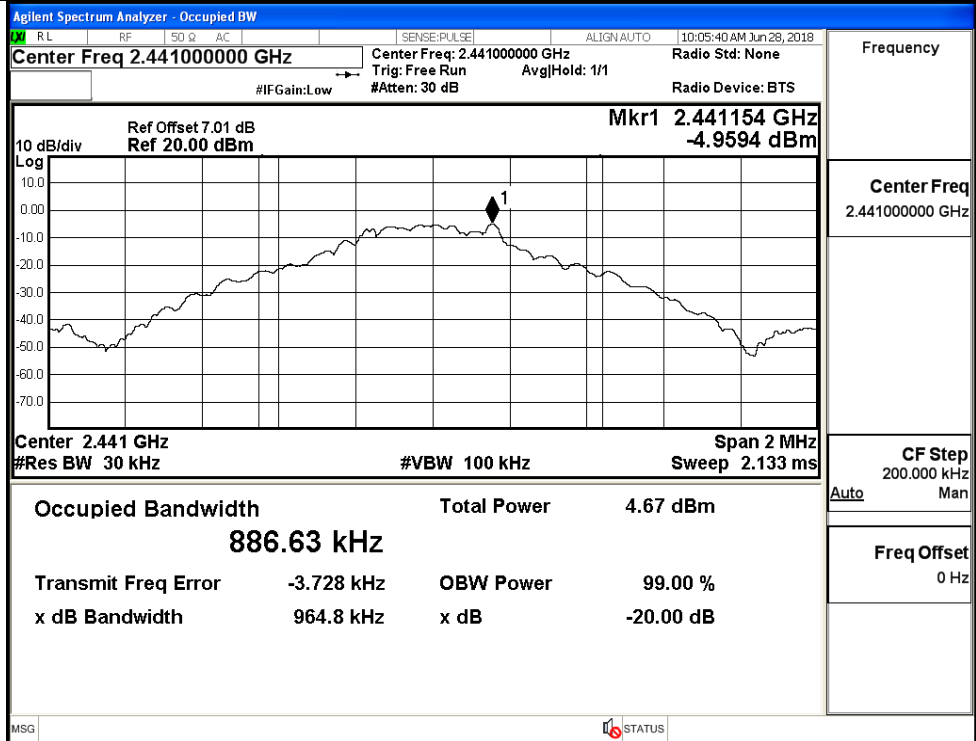


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9720	Not Specified	PASS
	MCH	0.9648	Not Specified	PASS
	HCH	0.9656	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.289	Not Specified	PASS
	MCH	1.287	Not Specified	PASS
	HCH	1.287	Not Specified	PASS
8DPSK	LCH	1.290	Not Specified	PASS
	MCH	1.290	Not Specified	PASS
	HCH	1.288	Not Specified	PASS

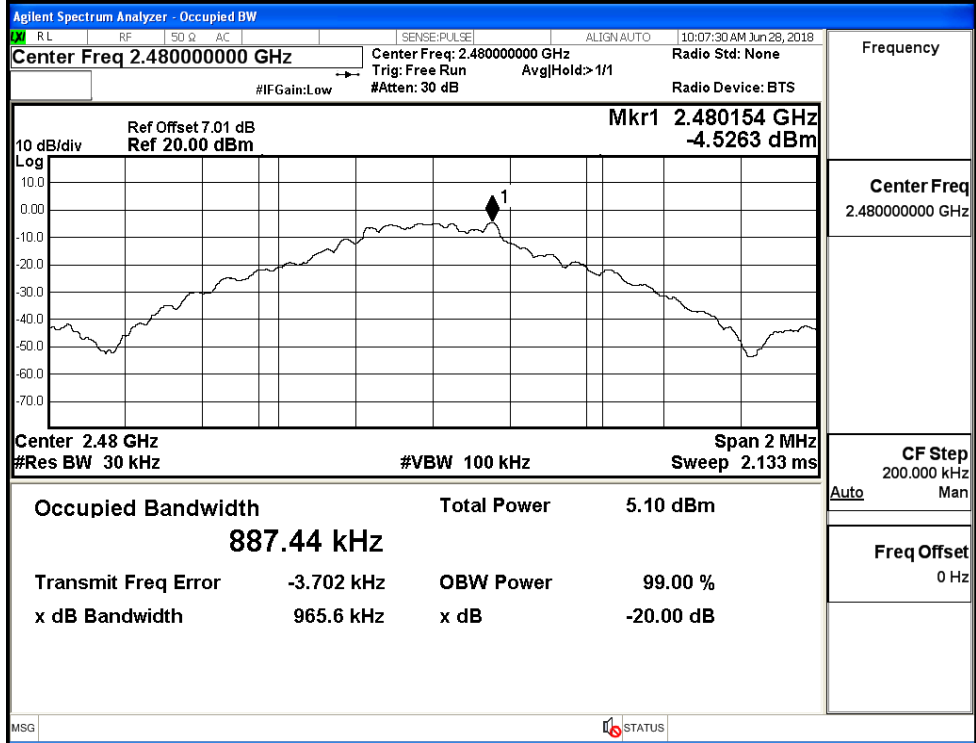


GFSK/MCH



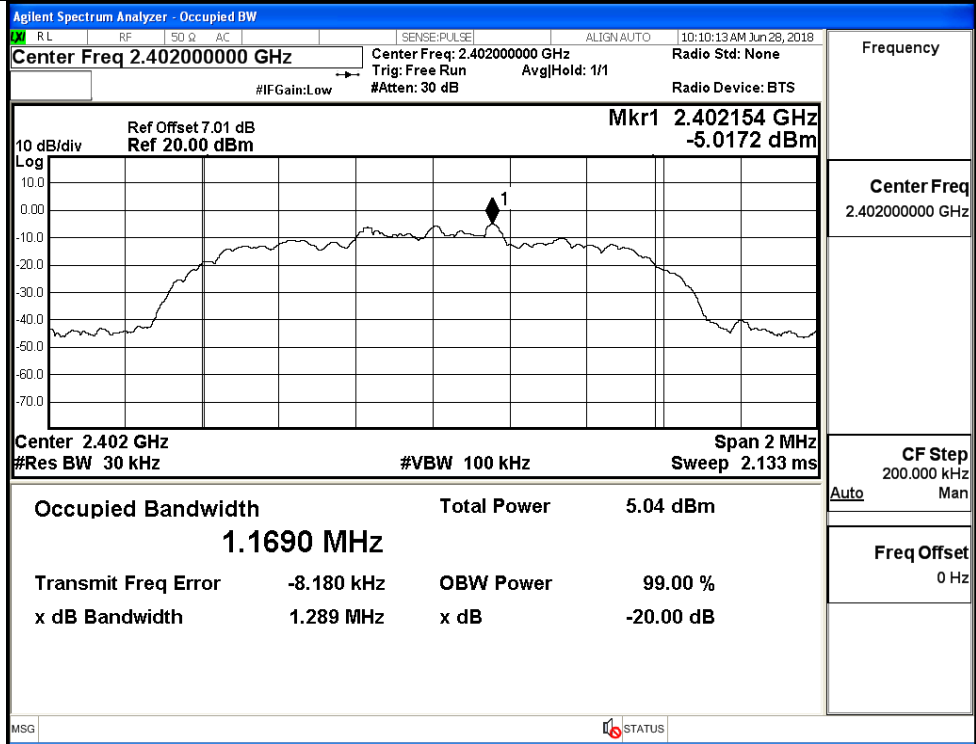
Frequency	2.44100000 GHz
Center Freq	2.44100000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

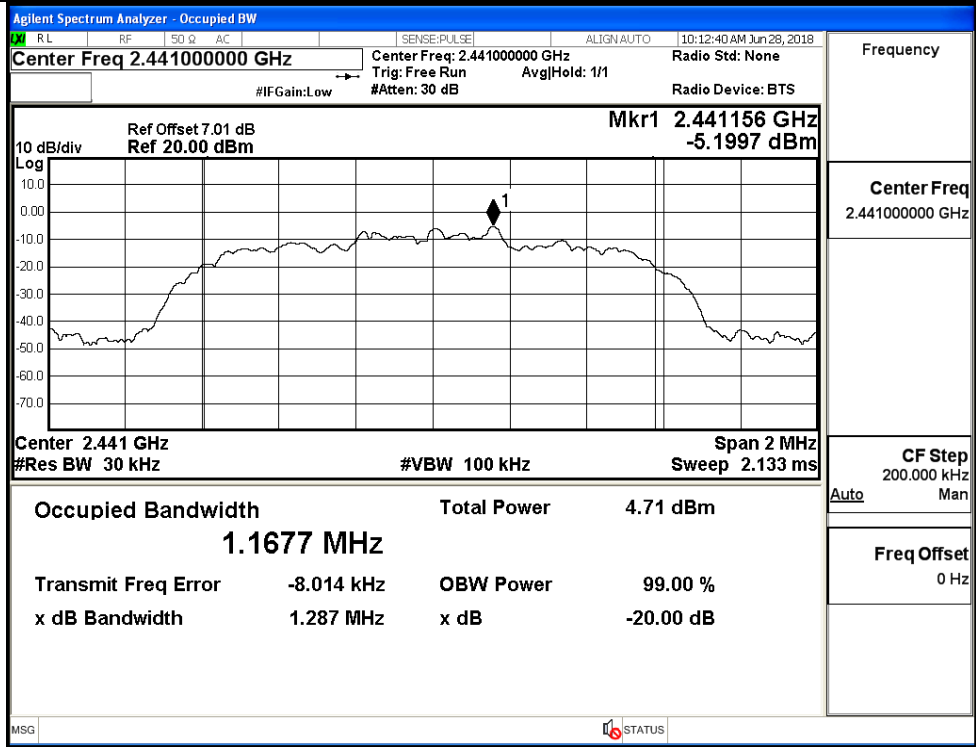


Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

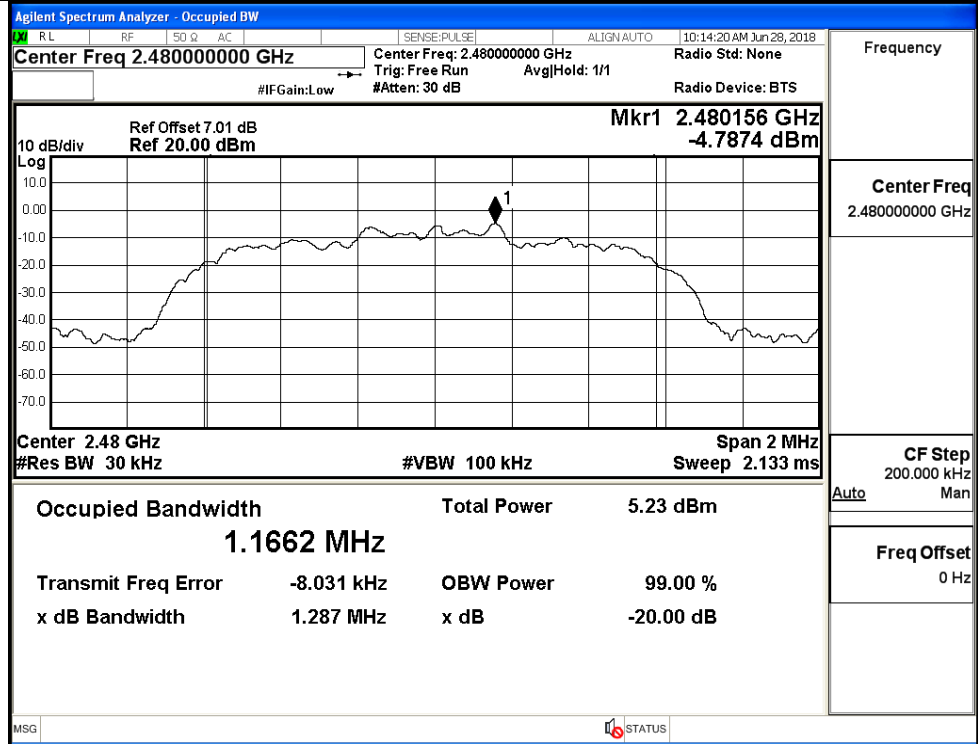
$\pi/4$ DQPSK/LCH



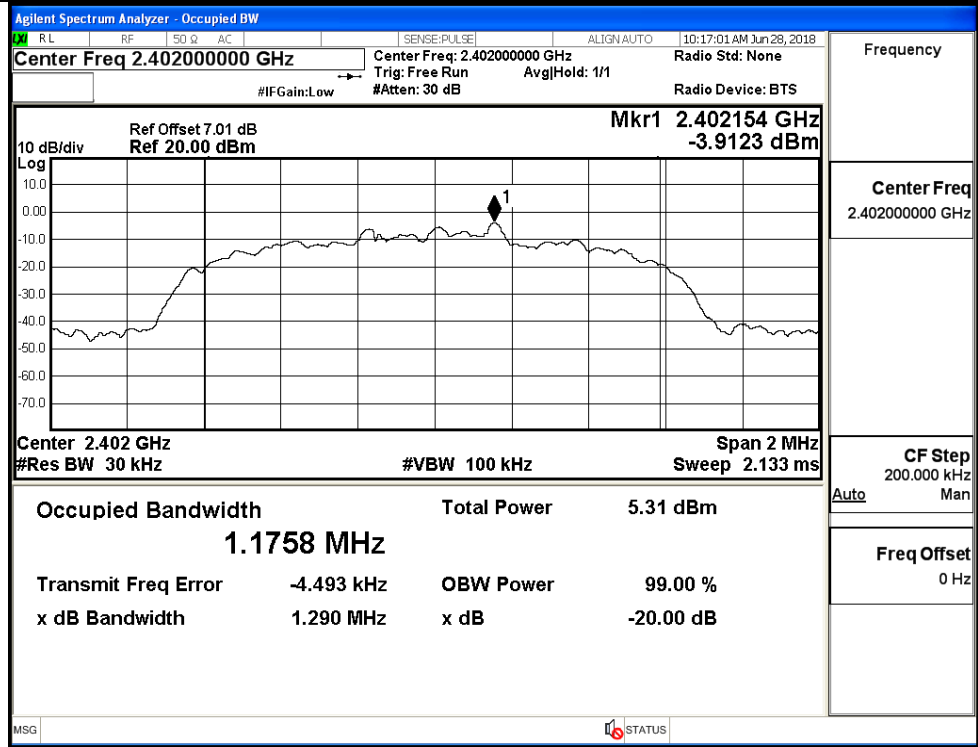
$\pi/4$ DQPSK/MCH



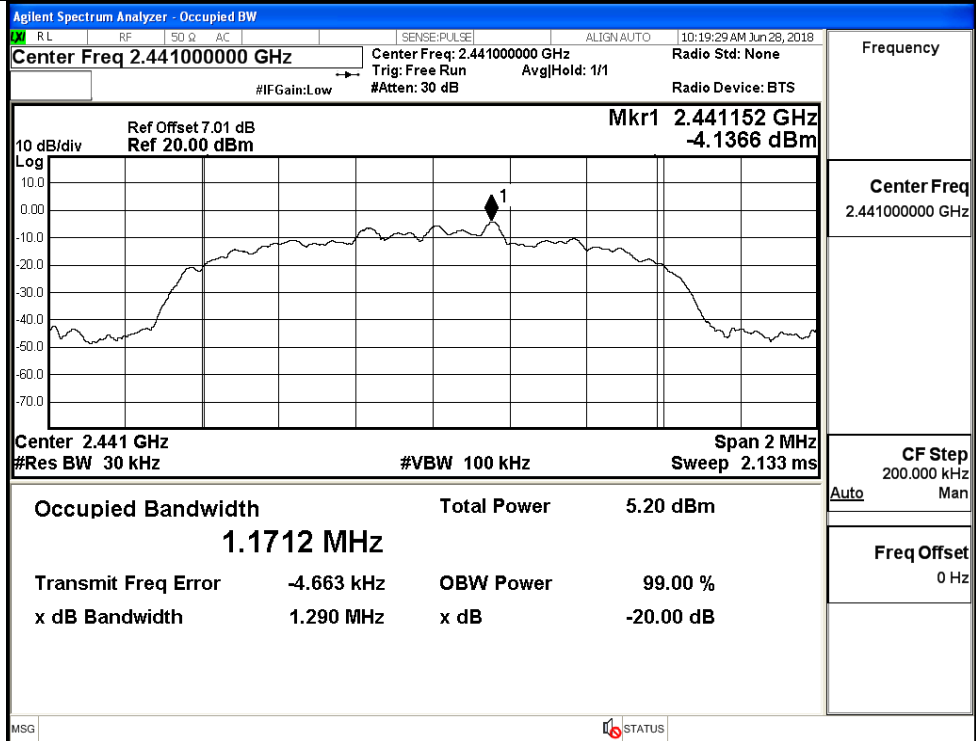
$\pi/4$ DQPSK/HCH



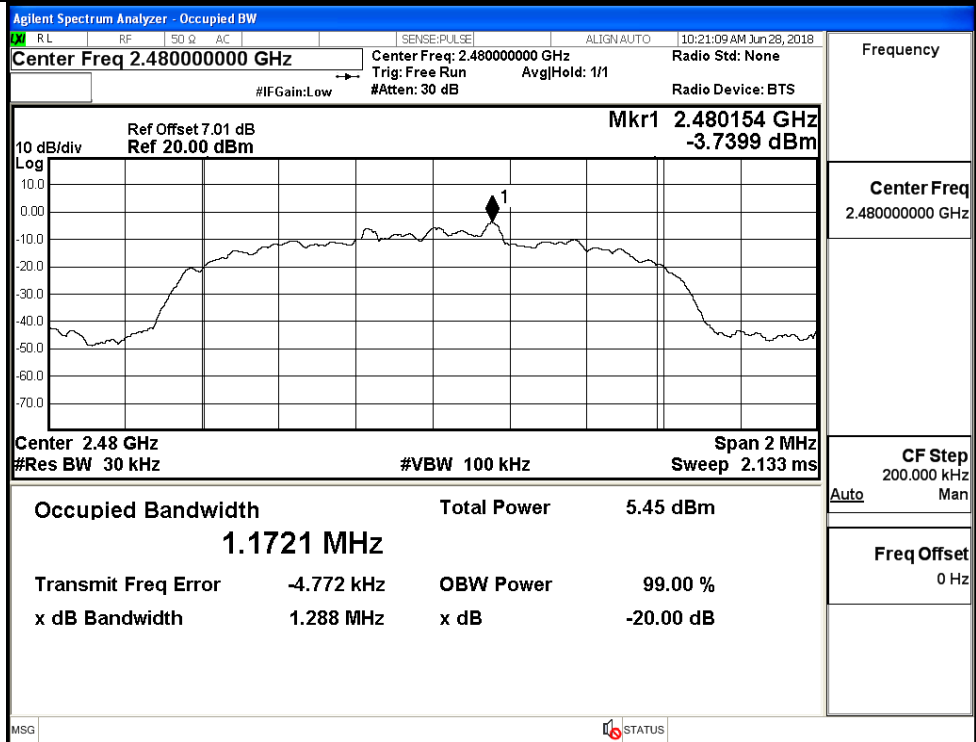
8DPSK/LCH



8DPSK/MCH

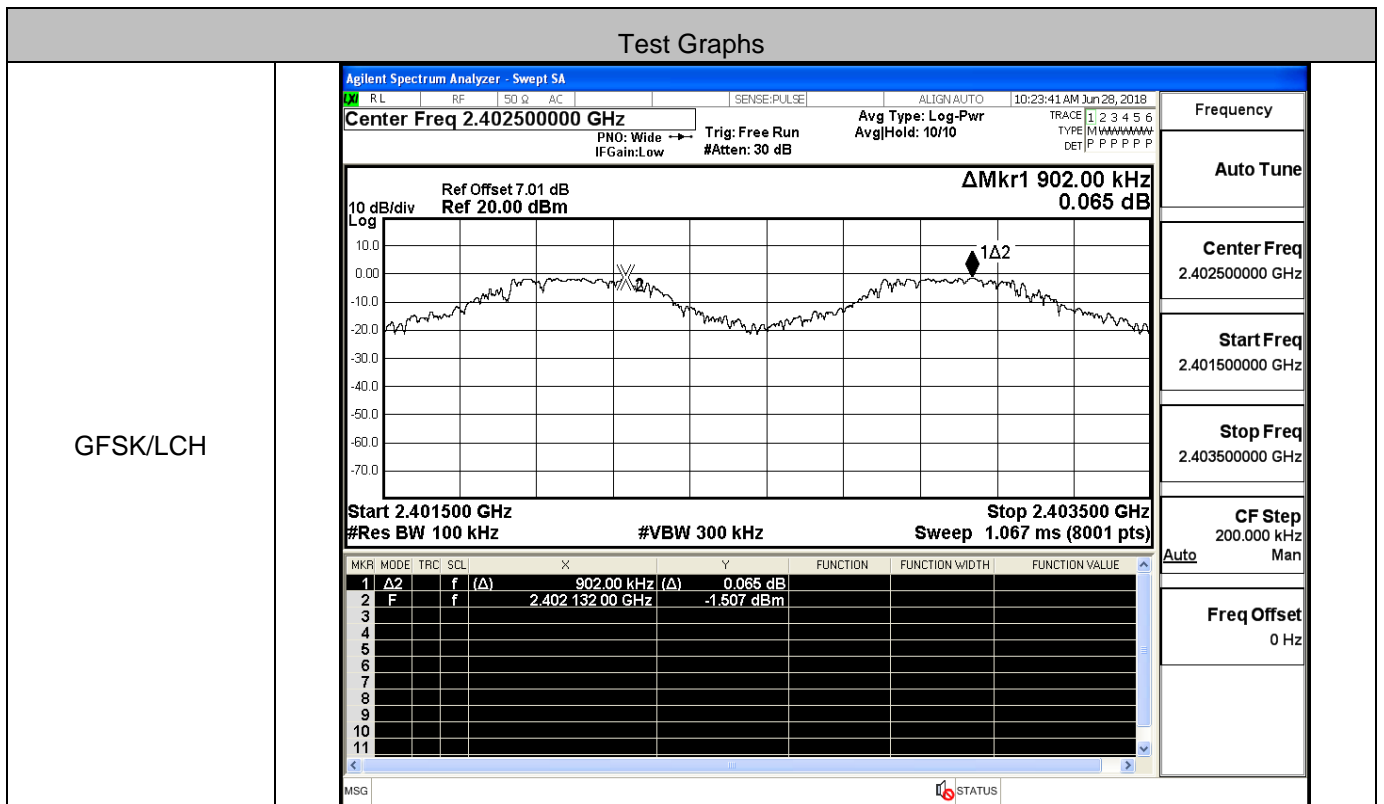


8DPSK/HCH

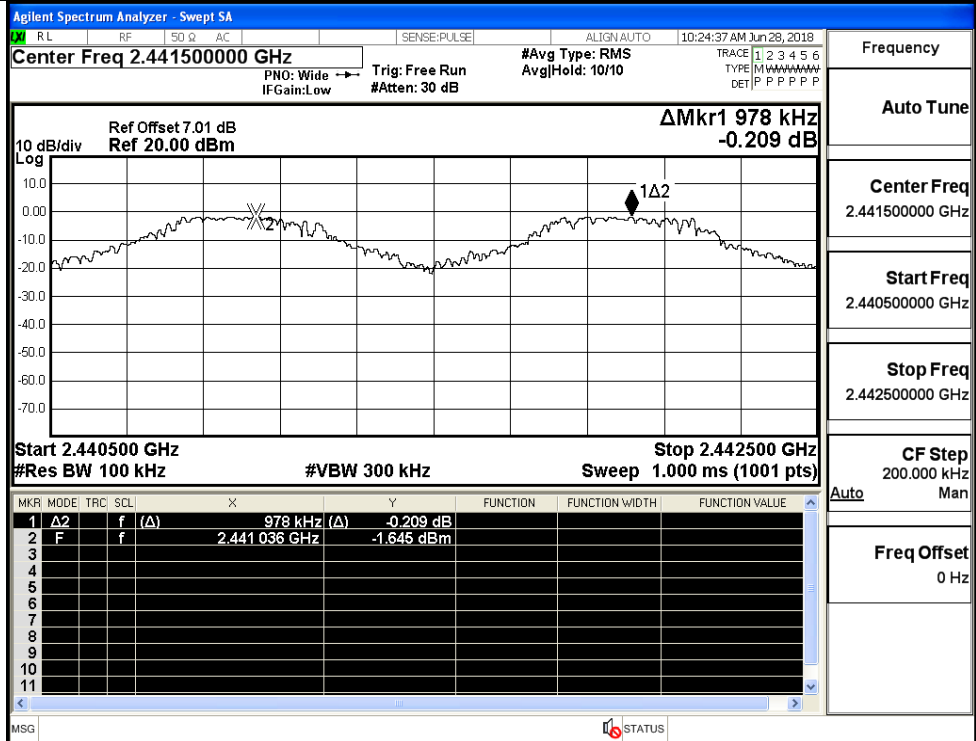


A.3 Carrier Frequency Separation

Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.902	0.648	PASS
	MCH	0.978	0.6432	PASS
	HCH	0.968	0.643	PASS
π/4DQPSK	LCH	0.884	0.859	PASS
	MCH	1.016	0.859	PASS
	HCH	1.288	0.859	PASS
8DPSK	LCH	1.268	0.860	PASS
	MCH	1.020	0.860	PASS
	HCH	1.002	0.860	PASS

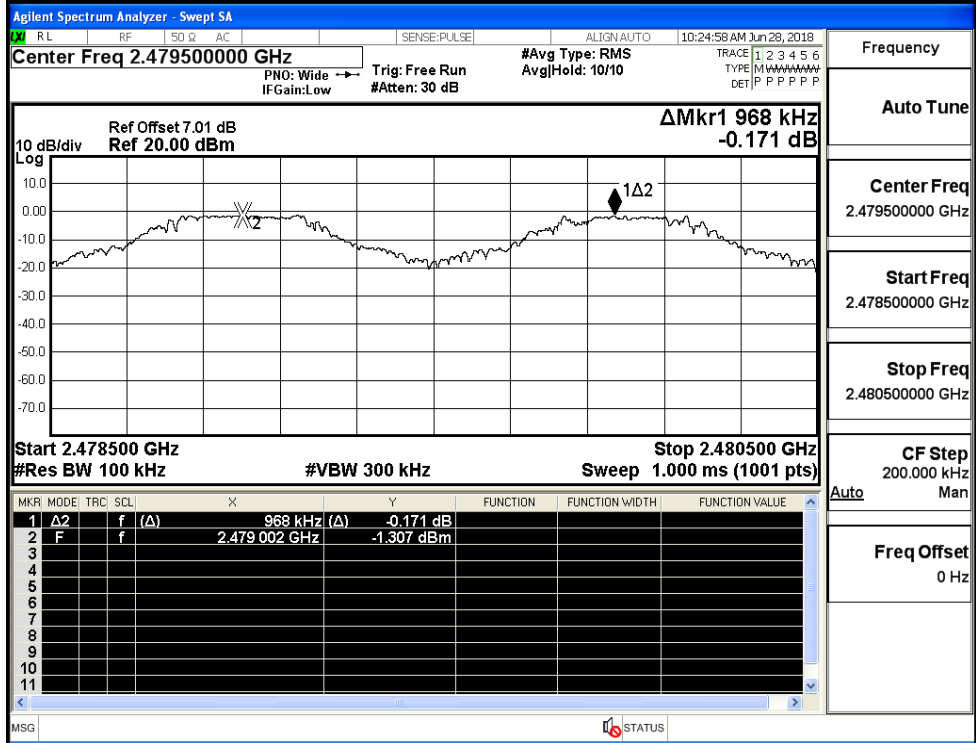


GFSK/MCH



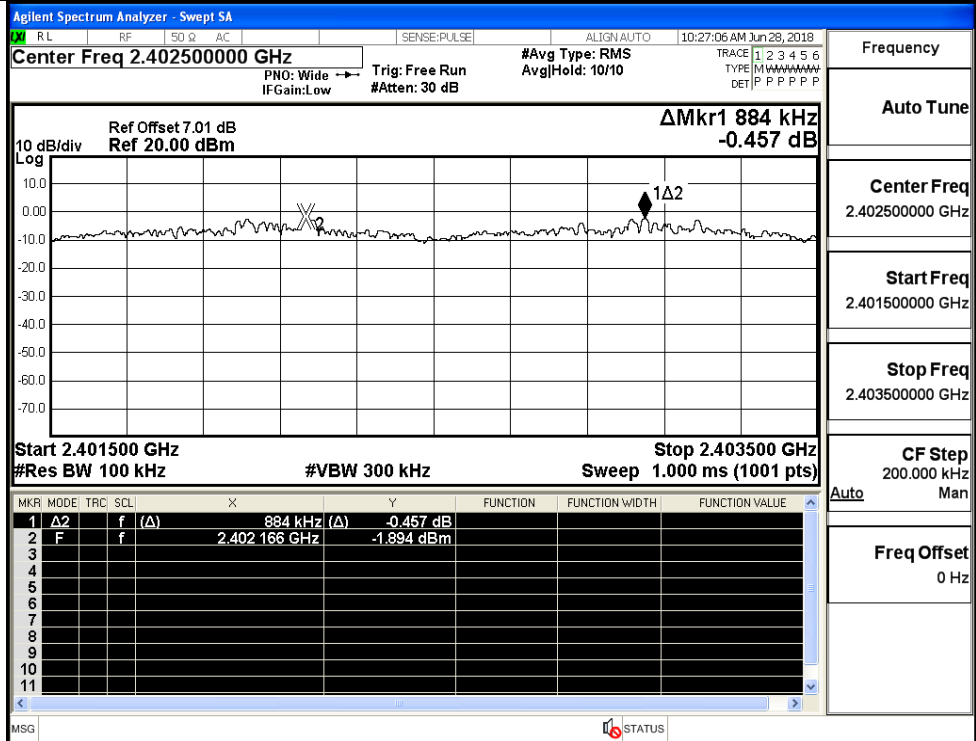
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

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

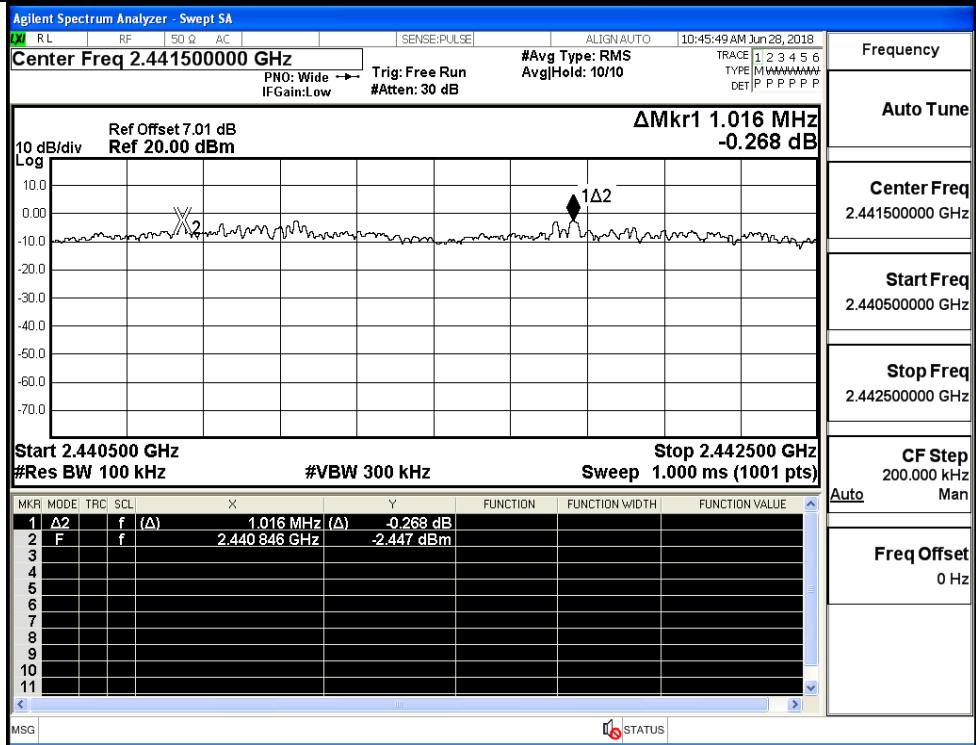
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

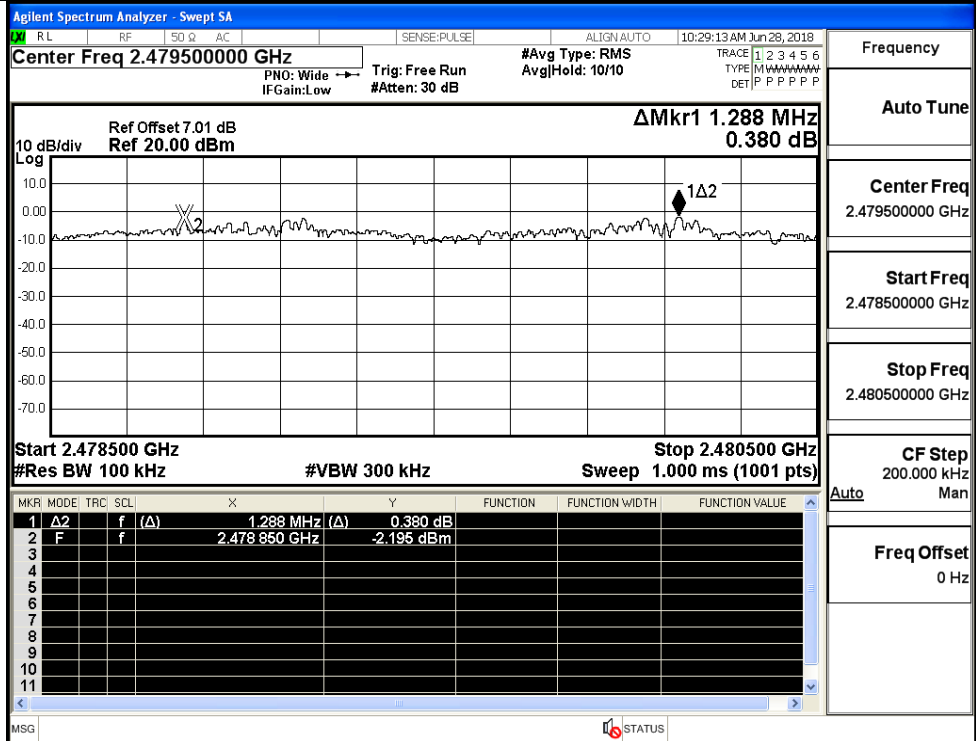
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Auto

Freq Offset
0 Hz

π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

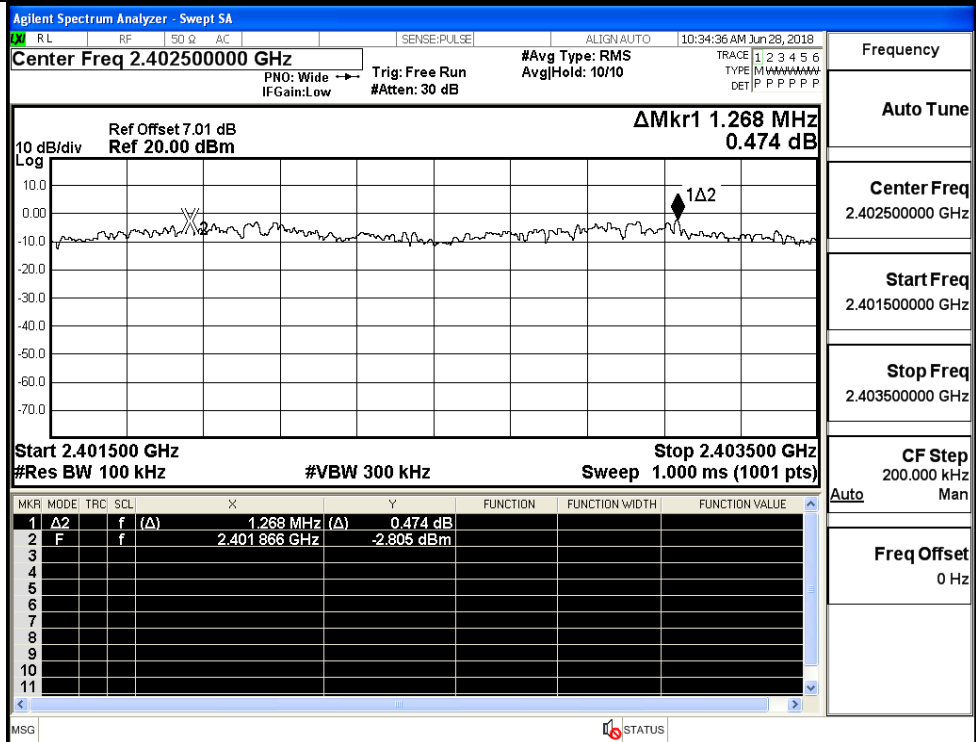
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

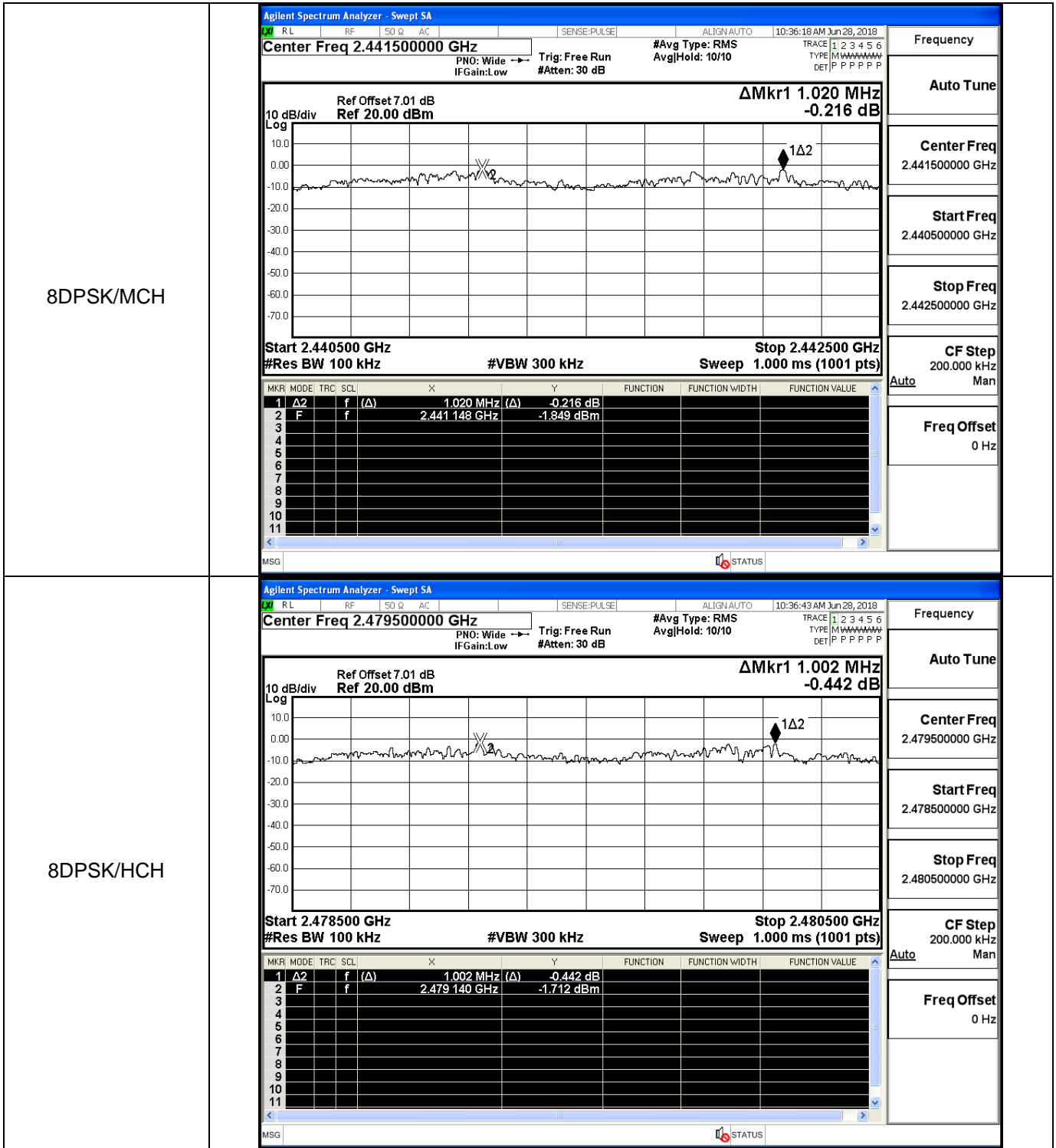
Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

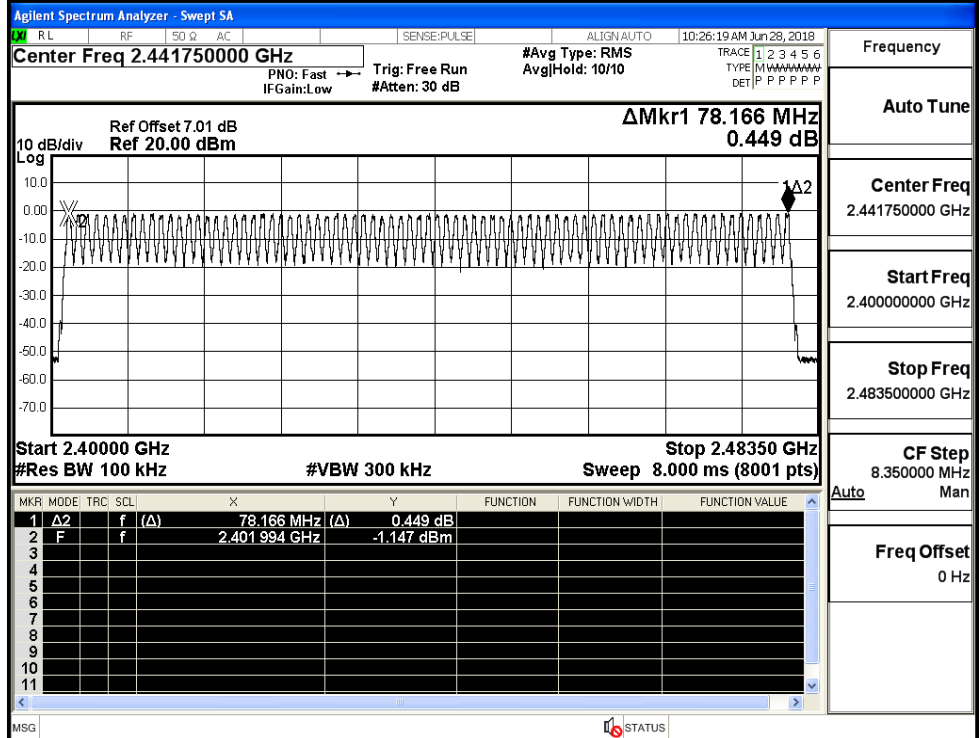


A.4 Hopping Channel Number

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

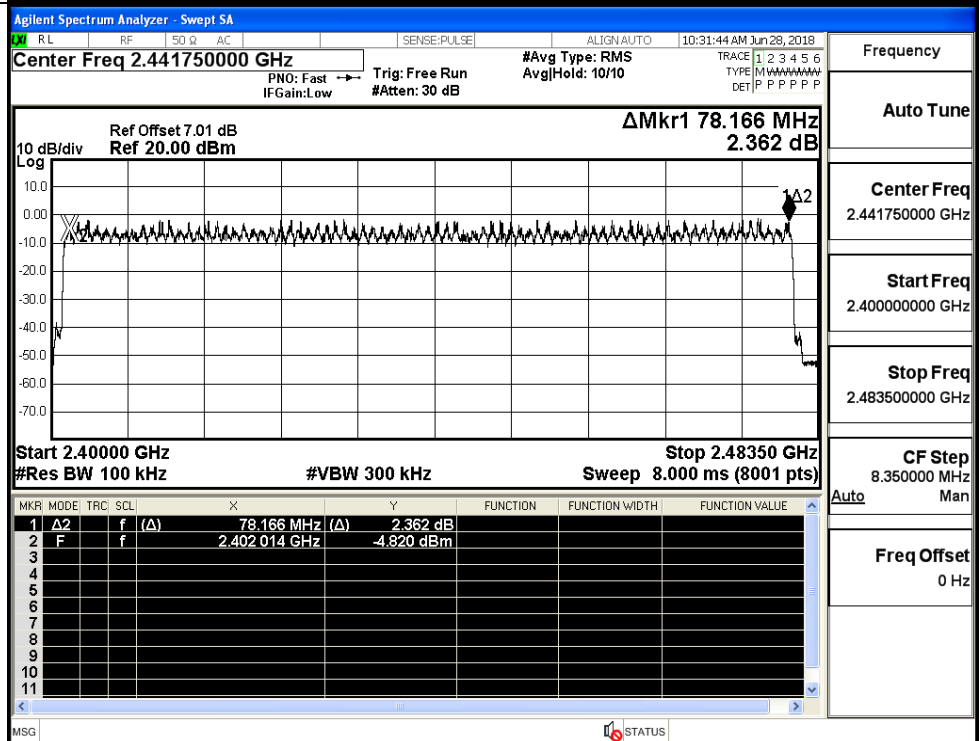
Test Graphs

GFSK/Hop



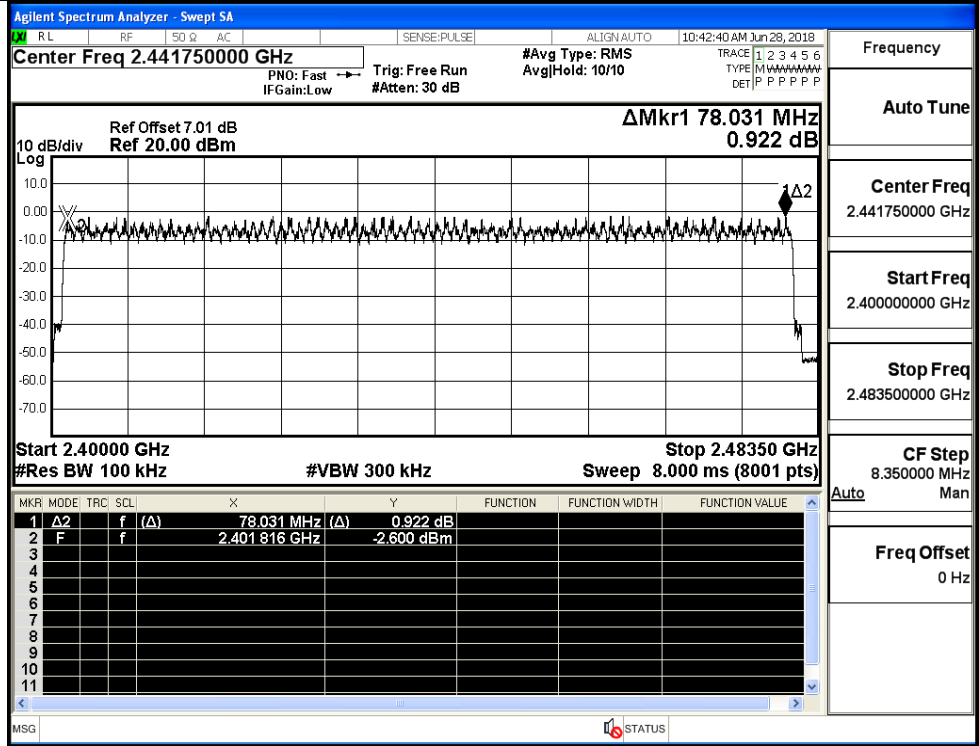
Frequency	
Auto Tune	
Center Freq	2.441750000 GHz
Start Freq	2.400000000 GHz
Stop Freq	2.483500000 GHz
CF Step	8.350000 MHz
Auto	Man
Freq Offset	0 Hz

π/4DQPSK/Hop



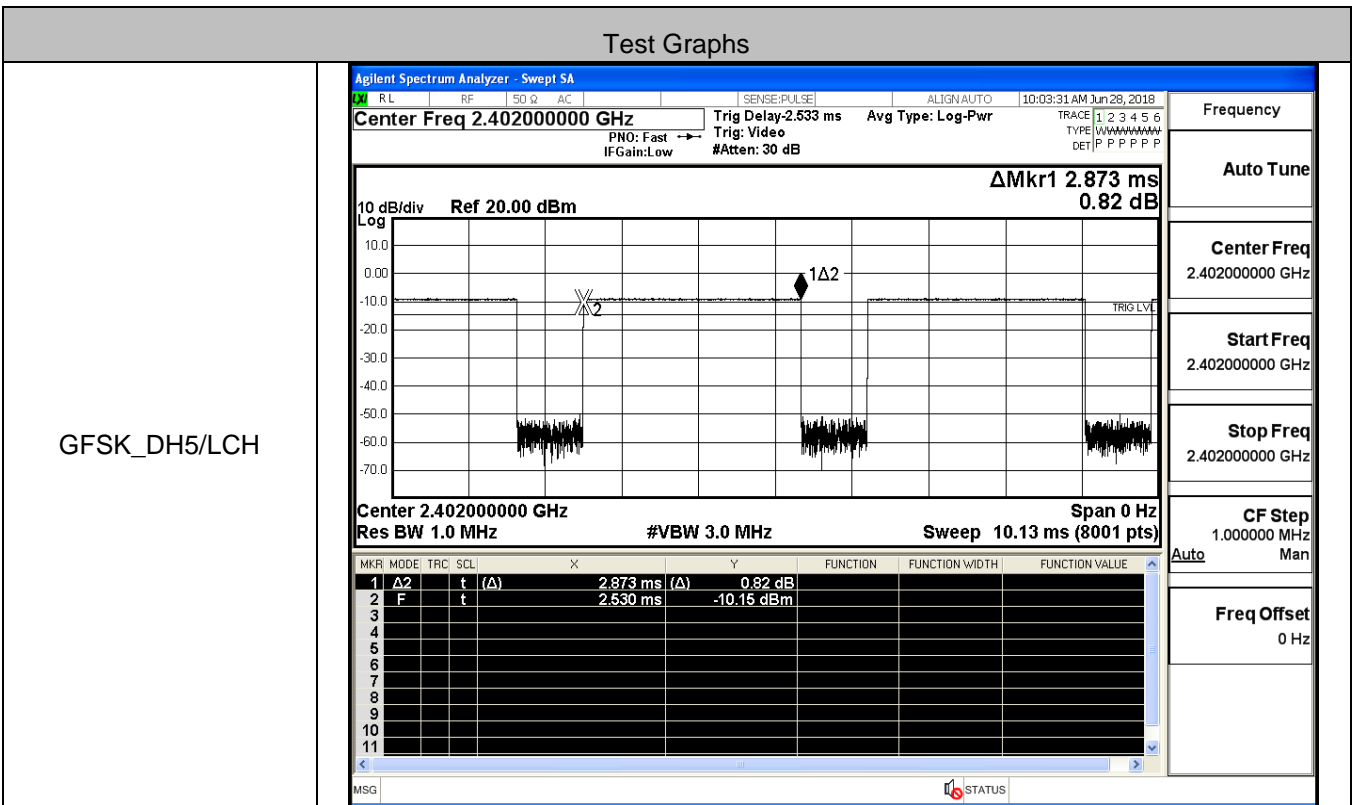
Frequency	
Auto Tune	
Center Freq	2.441750000 GHz
Start Freq	2.400000000 GHz
Stop Freq	2.483500000 GHz
CF Step	8.350000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/Hop

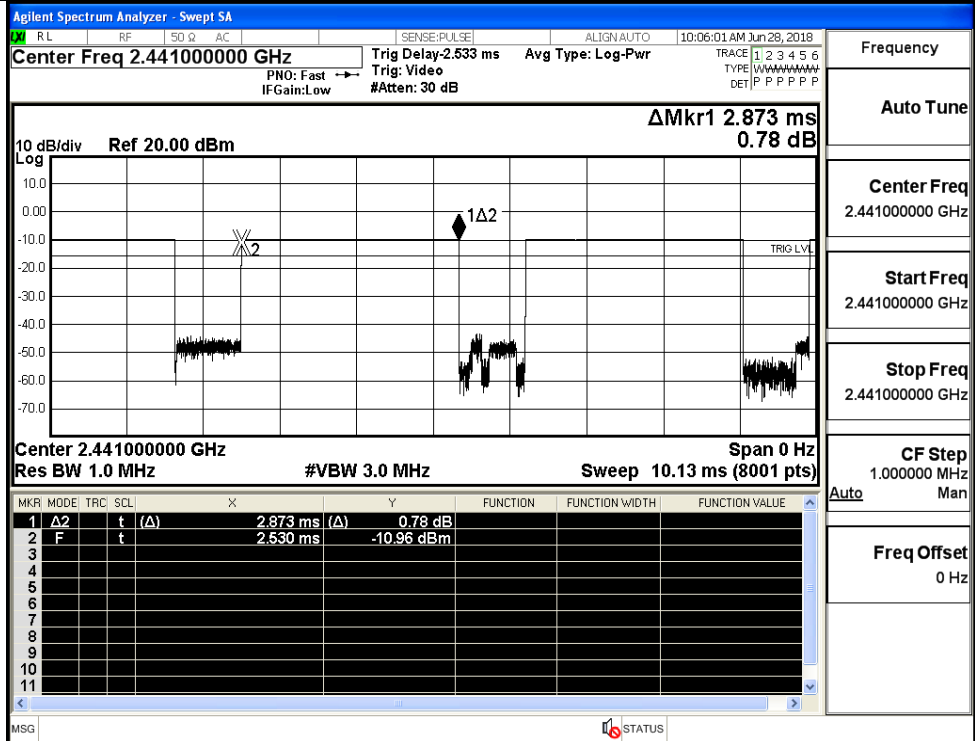


A.5 Dwell Time

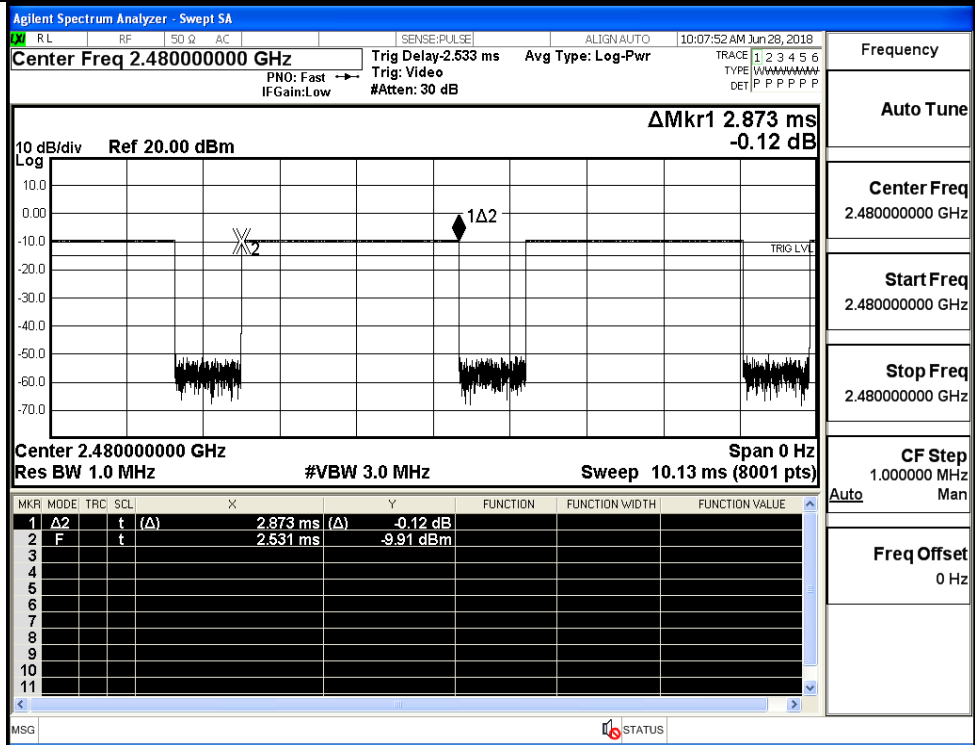
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.87	106.7	0.306	0.4	PASS
	DH5	MCH	2.87	106.7	0.306	0.4	PASS
	DH5	HCH	2.87	106.7	0.306	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.307	0.4	PASS
	3DH5	MCH	2.88	106.7	0.307	0.4	PASS
	3DH5	HCH	2.88	106.7	0.307	0.4	PASS



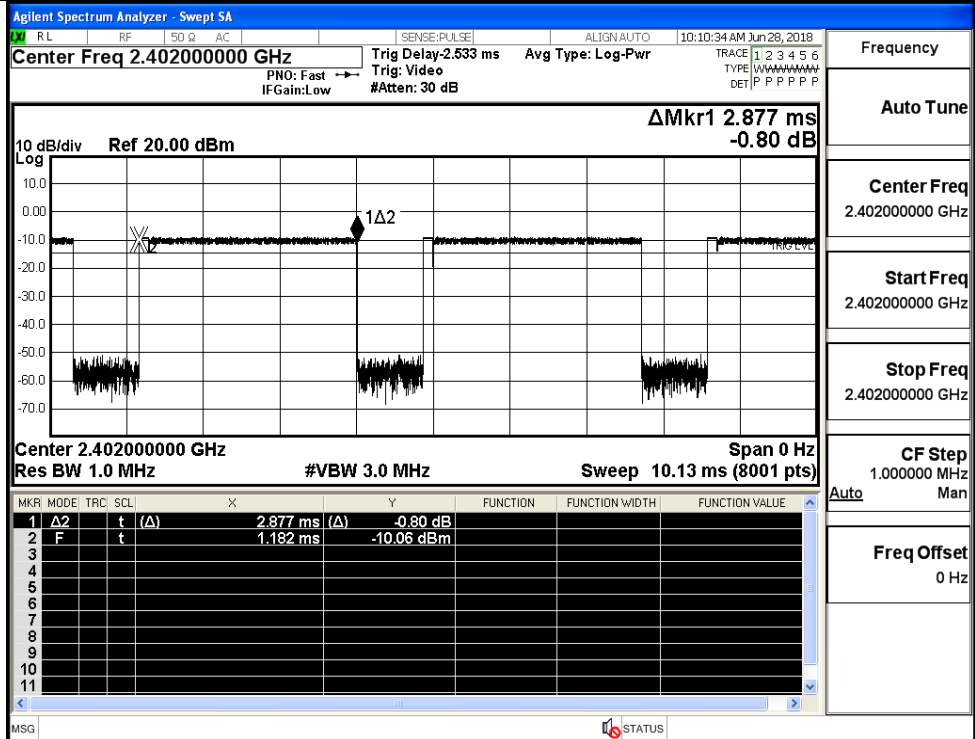
GFSK_DH5/MCH



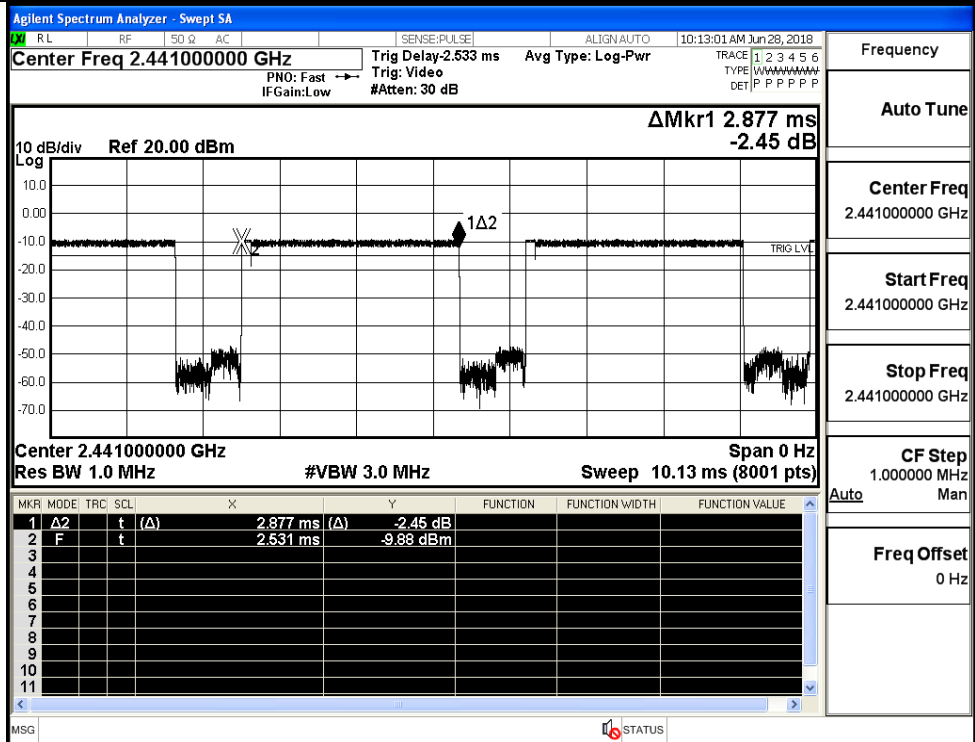
GFSK_DH5/HCH



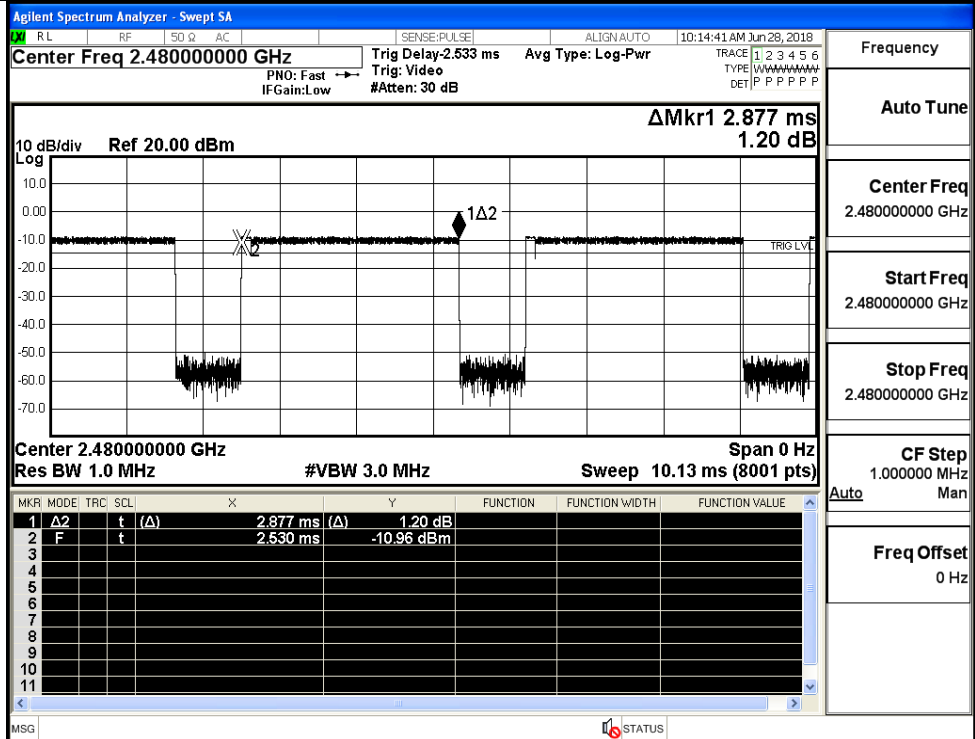
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

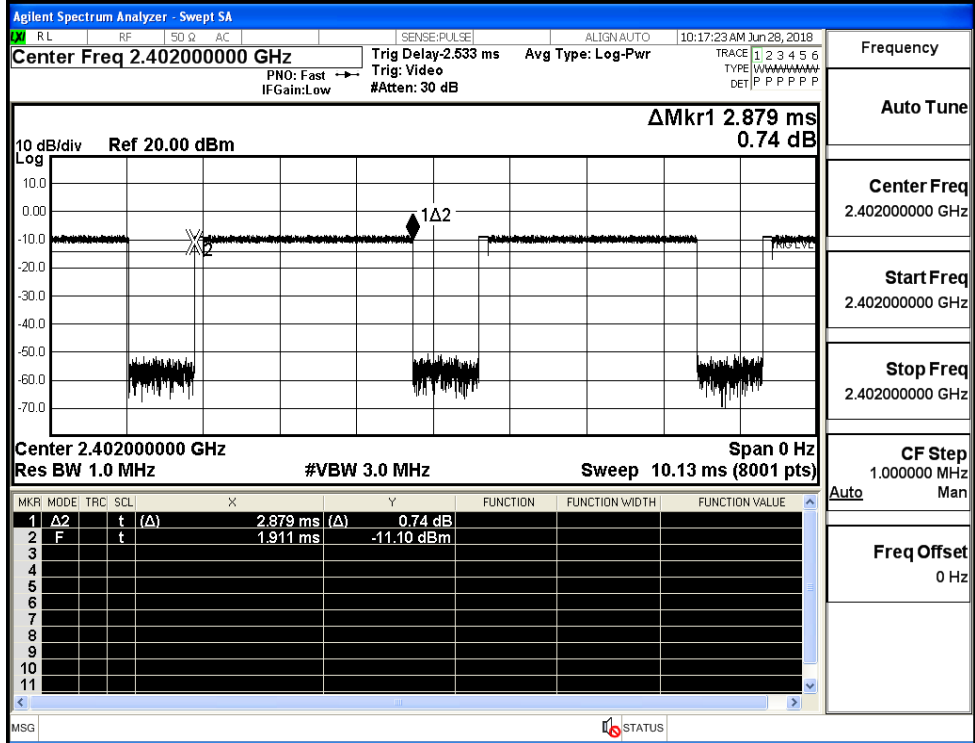


$\pi/4$ DQPSK
_2DH5/HCH



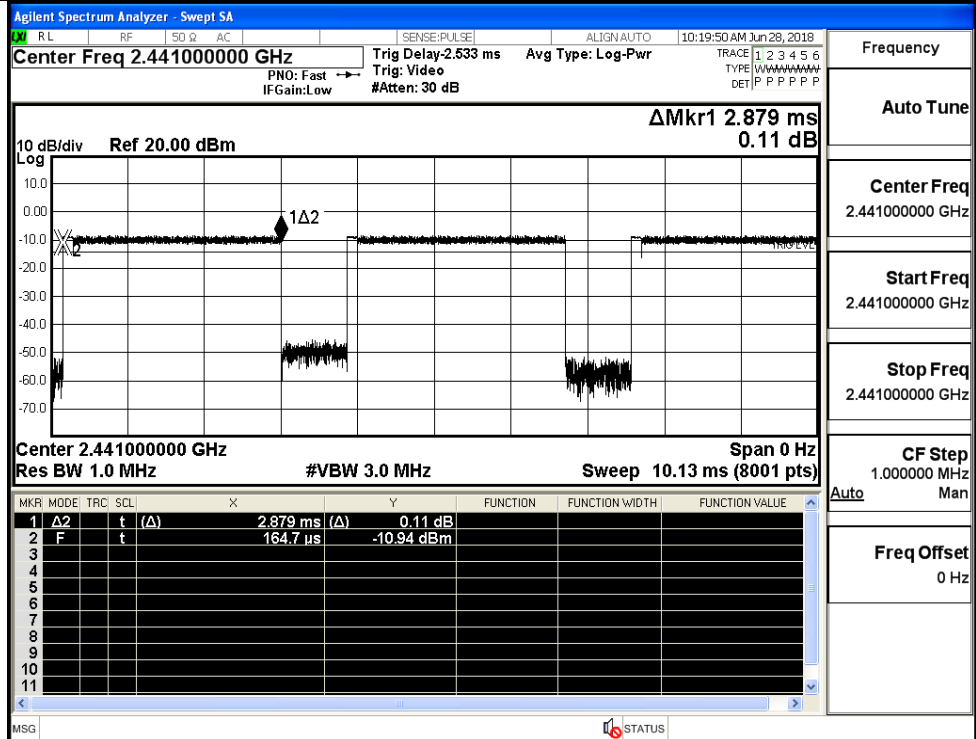
Frequency	2.480000000 GHz
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH



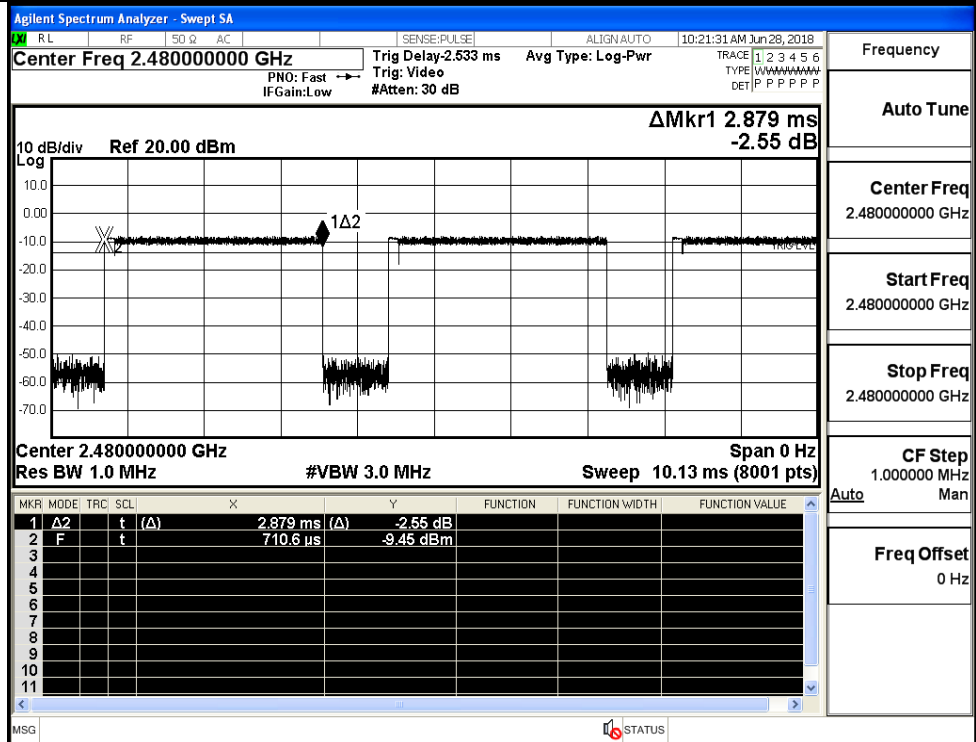
Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



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

8DPSK_3DH5/HCH

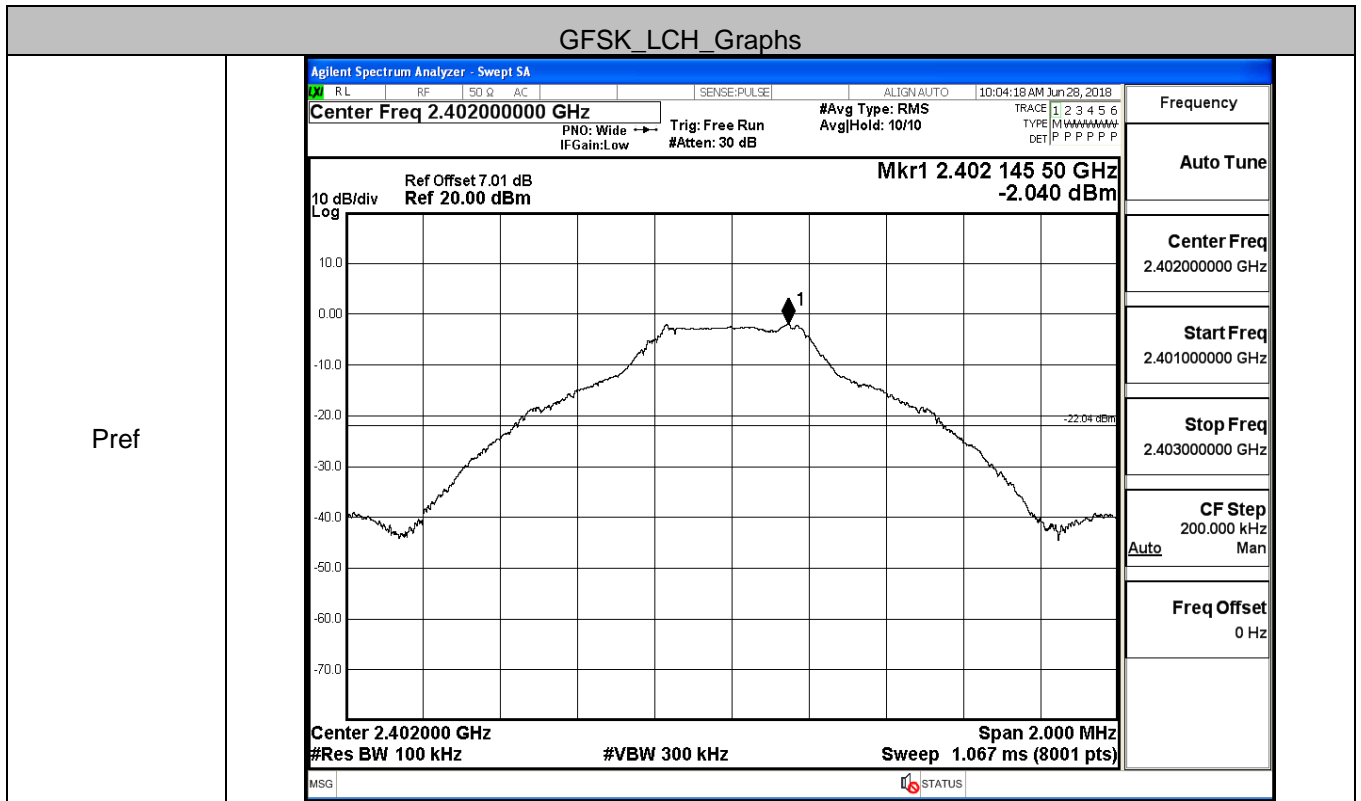


Frequency
 Auto Tune
 Center Freq 2.480000000 GHz
 Start Freq 2.480000000 GHz
 Stop Freq 2.480000000 GHz
 CF Step 1.000000 MHz
 Auto Man
 Freq Offset 0 Hz

A.6 RF Conducted Spurious Emissions

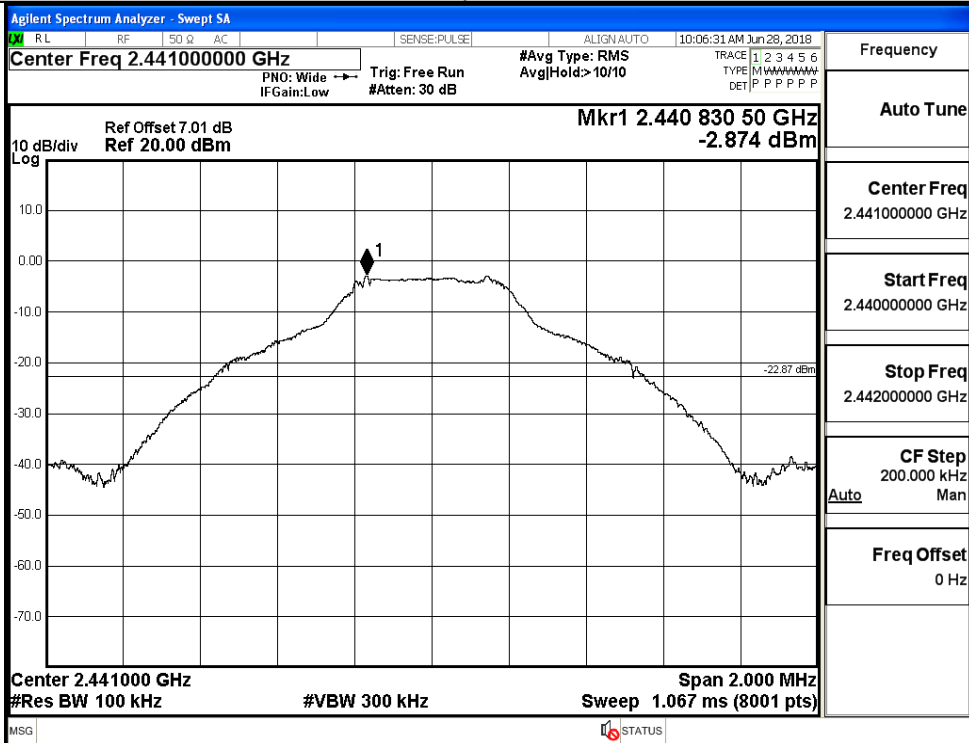
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.04	-45.475	-22.040	PASS
	MCH	-2.874	-46.069	-22.874	PASS
	HCH	-2.628	-45.164	-22.628	PASS
π /4DQPSK	LCH	-2.372	-45.392	-22.372	PASS
	MCH	-2.401	-45.946	-22.401	PASS
	HCH	-2.011	-45.742	-22.011	PASS
8DPSK	LCH	-1.817	-45.398	-21.817	PASS
	MCH	-2.131	-44.832	-22.131	PASS
	HCH	-1.647	-45.295	-21.647	PASS

GFSK_LCH_Graphs

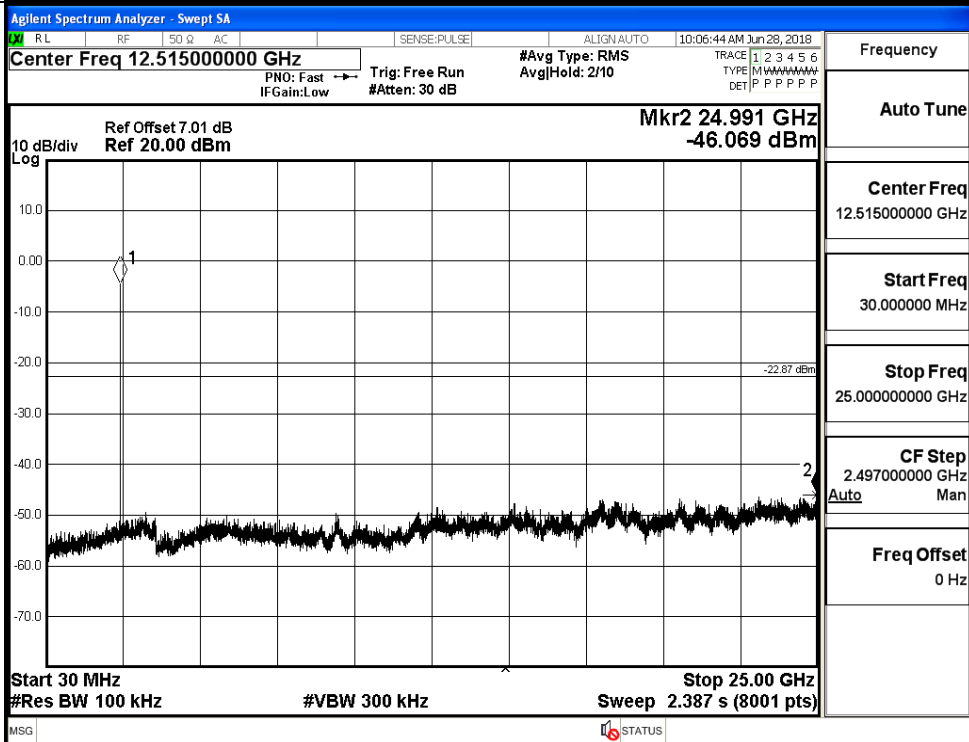


GFSK_MCH_Graphs

Pref

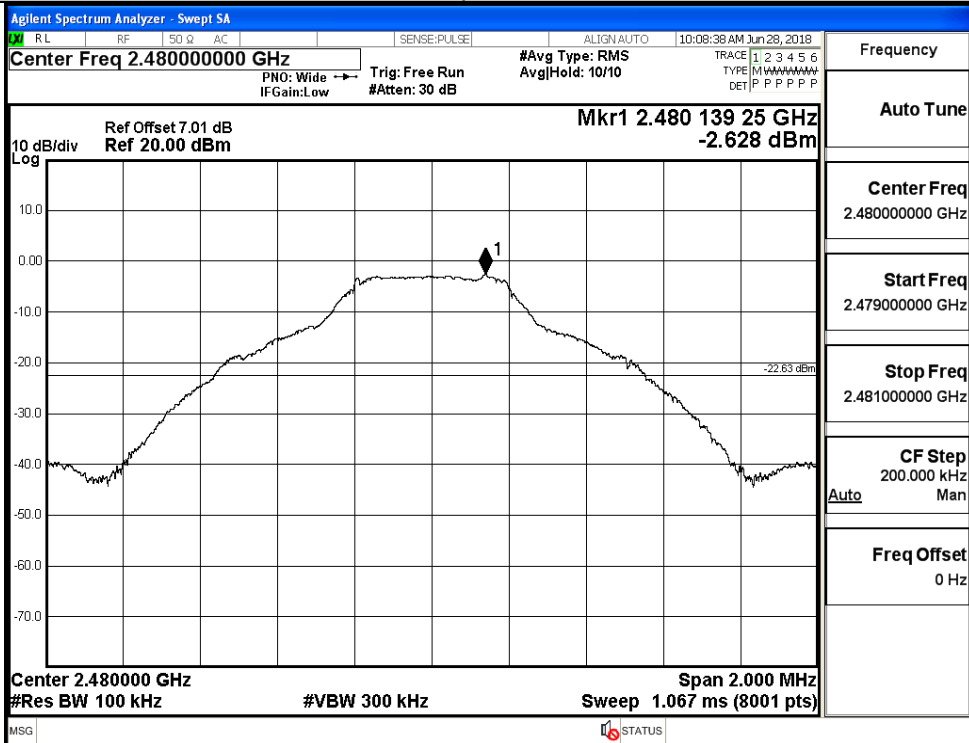


Puw

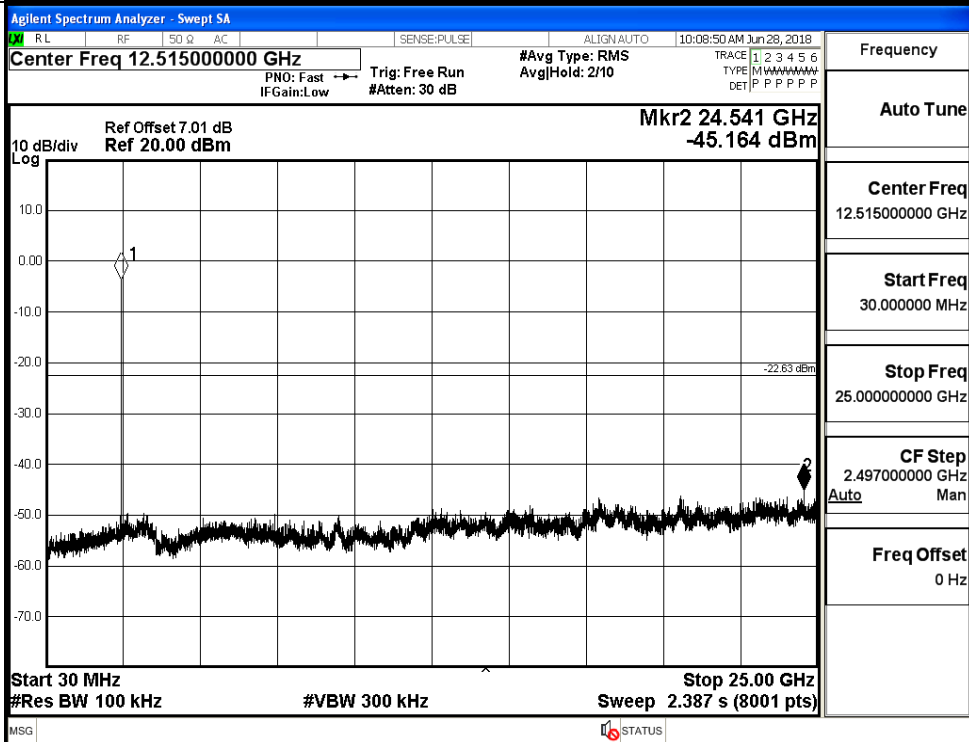


GFSK_HCH_Graphs

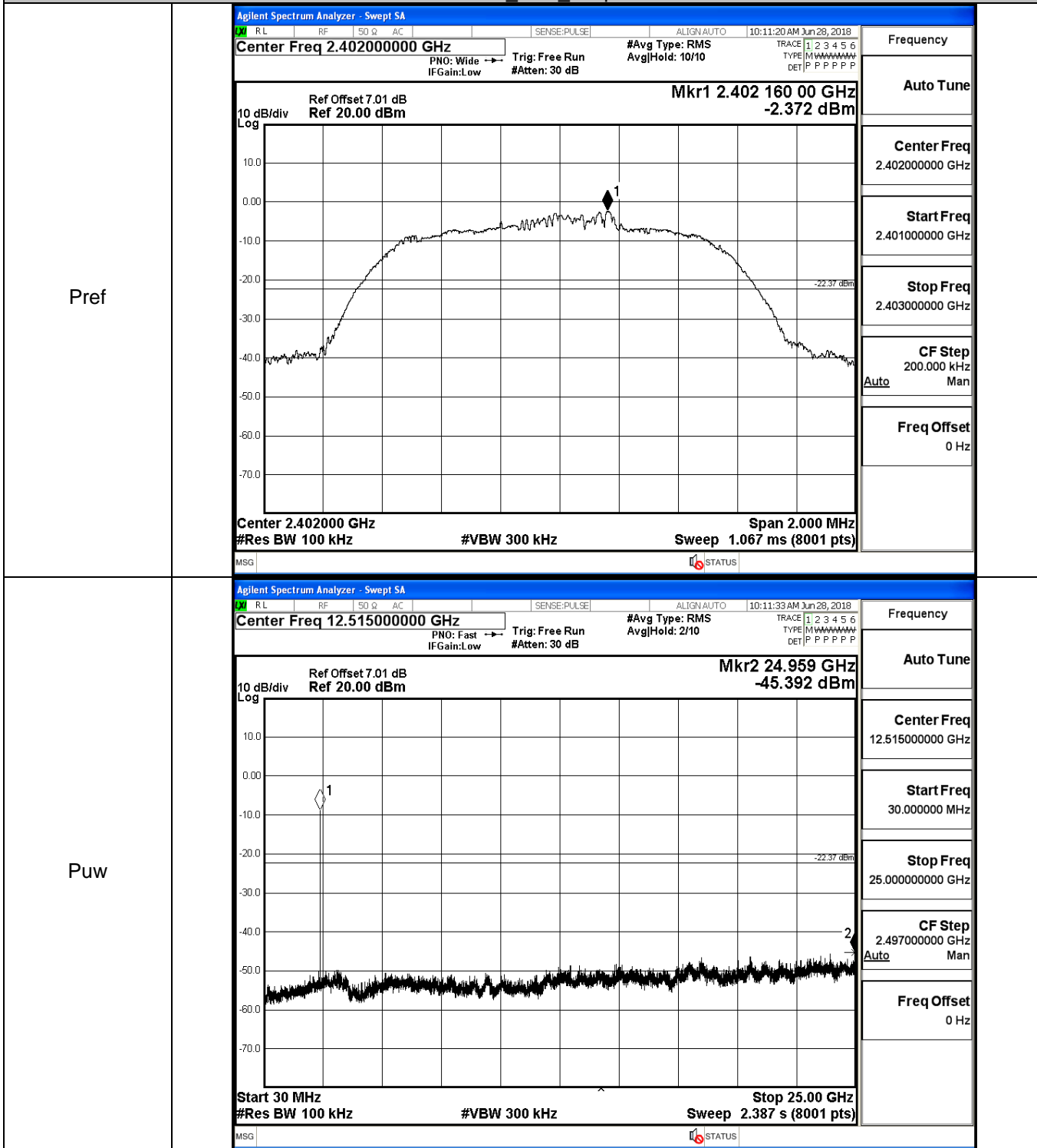
Pref



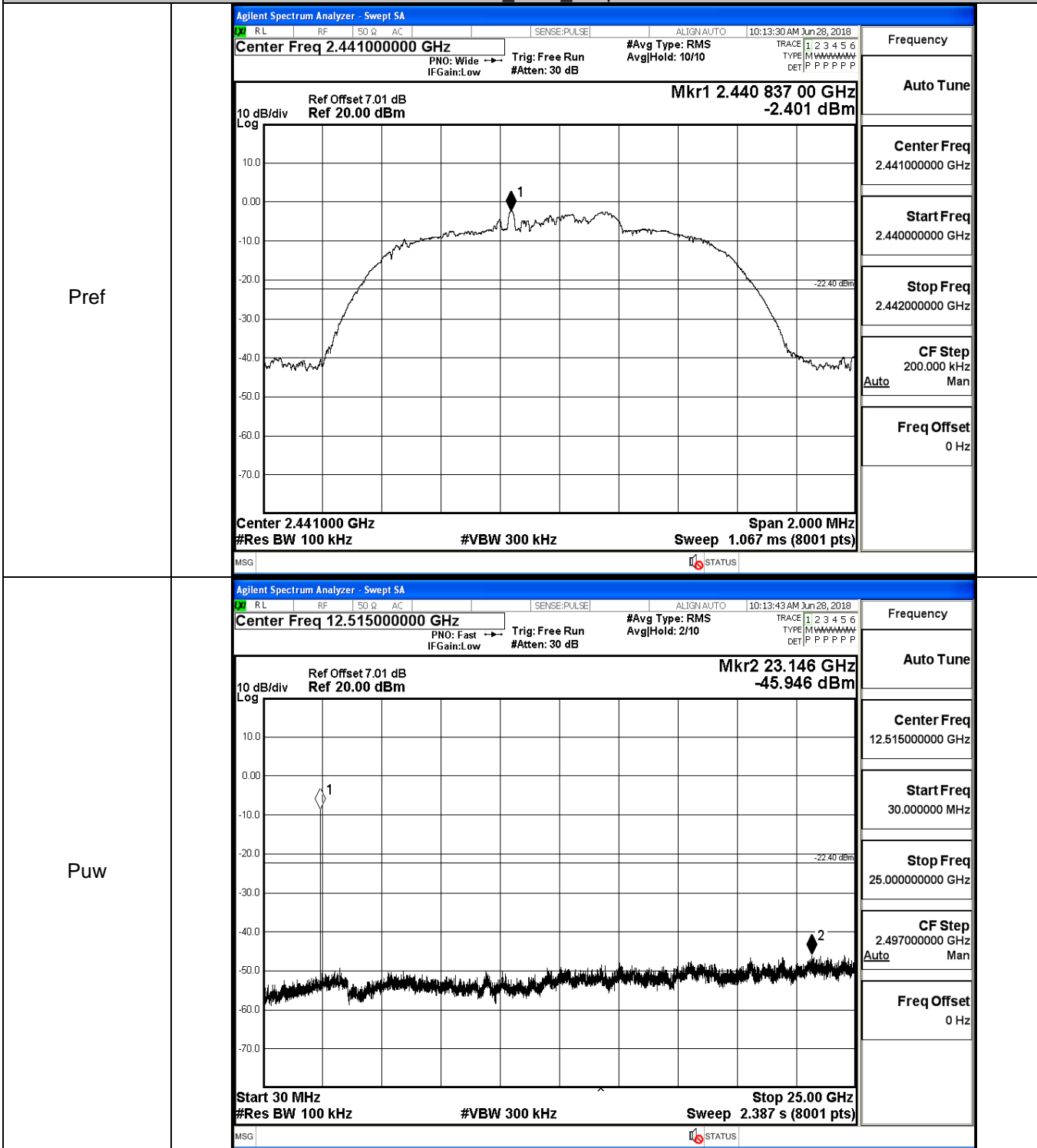
Puw



$\pi/4$ DQPSK_LCH_Graphs

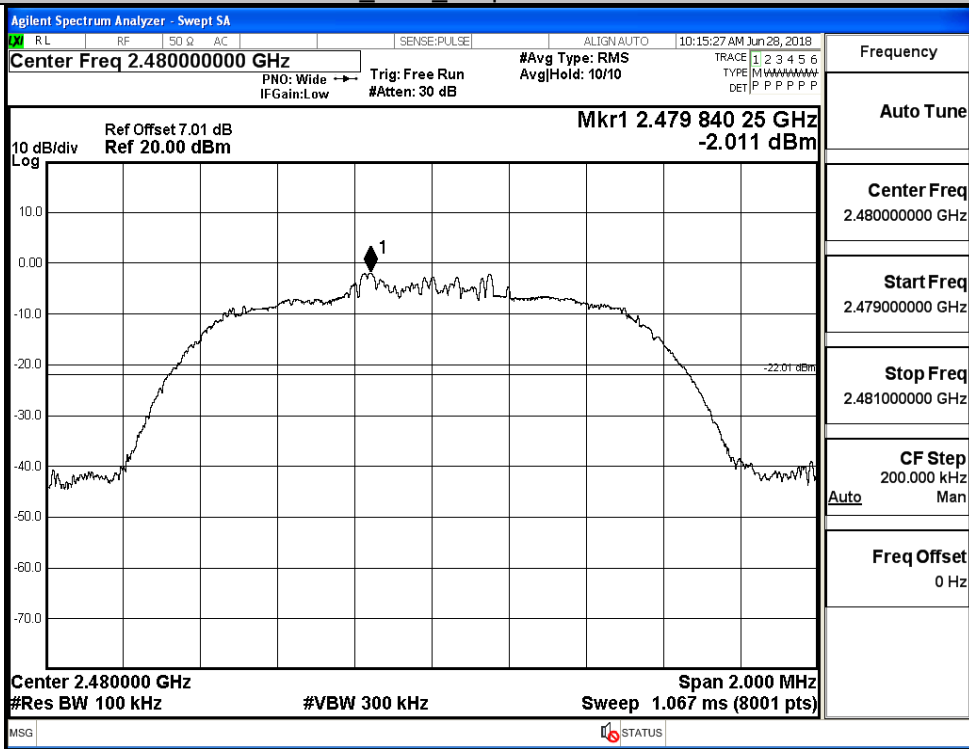


$\pi/4$ DQPSK_MCH_Graphs

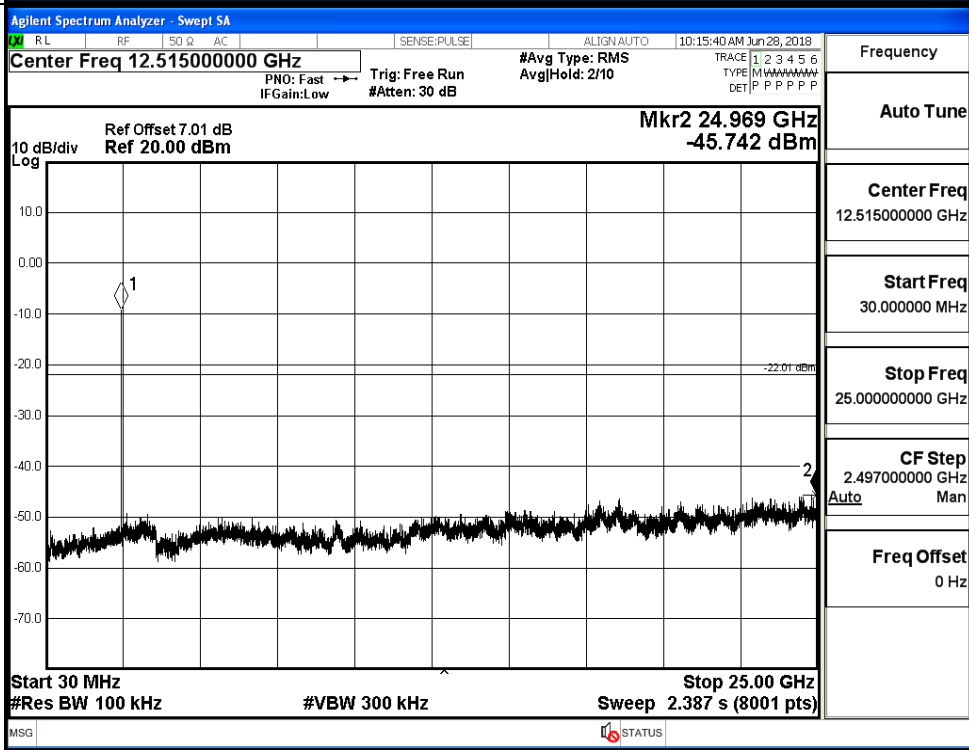


$\pi/4$ DQPSK_HCH_Graphs

Pref

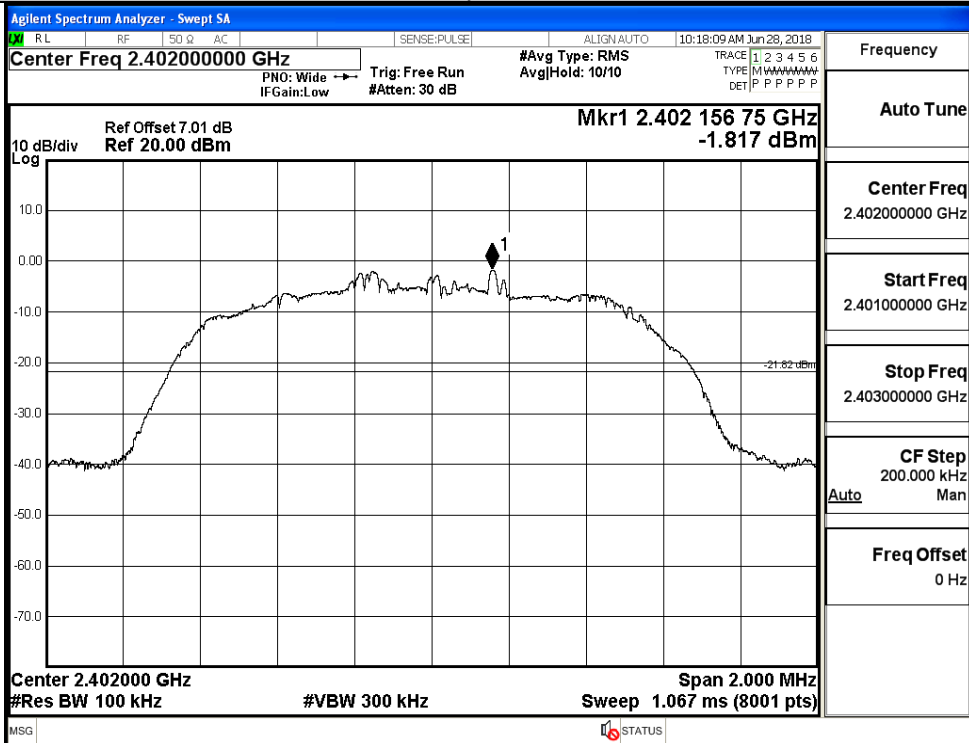


Puw

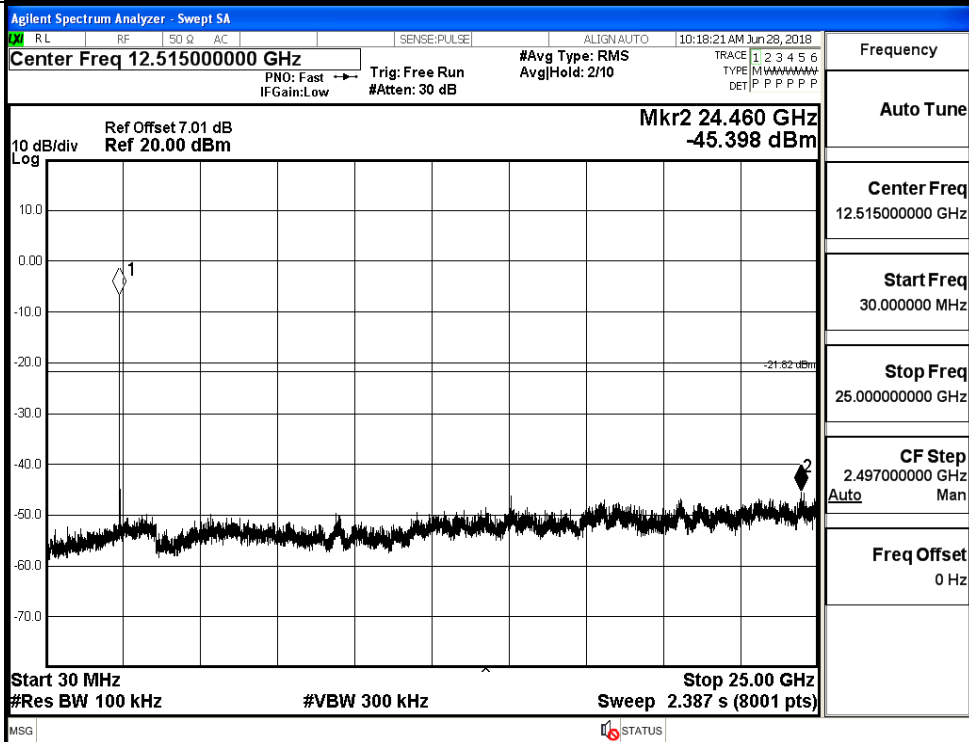


8DPSK_LCH_Graphs

Pref

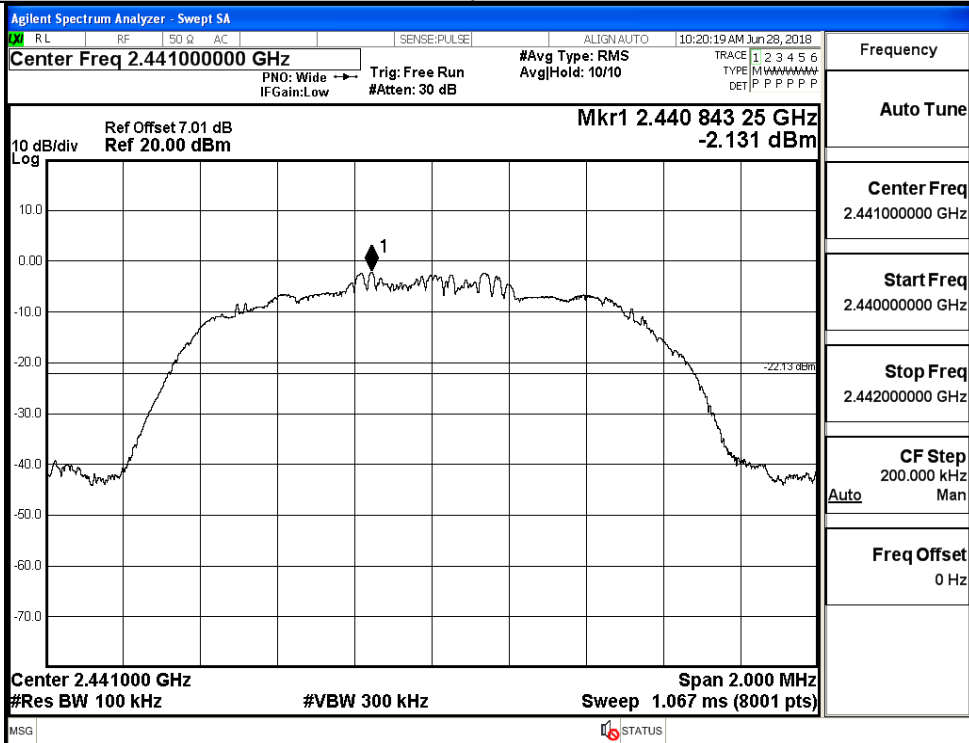


Puw

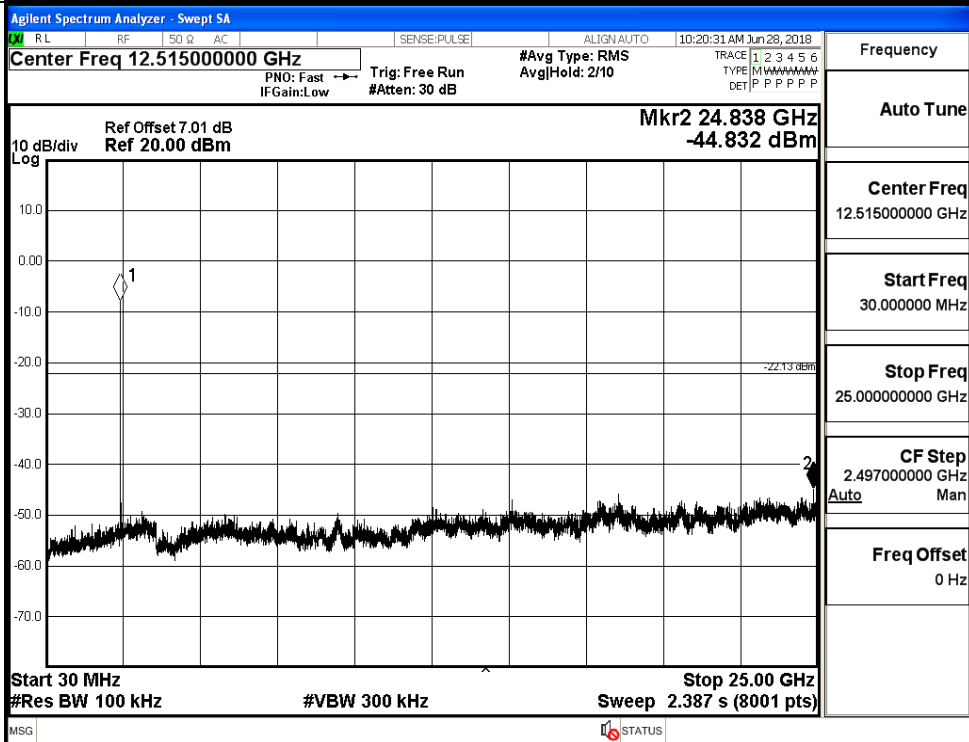


8DPSK_MCH_Graphs

Pref

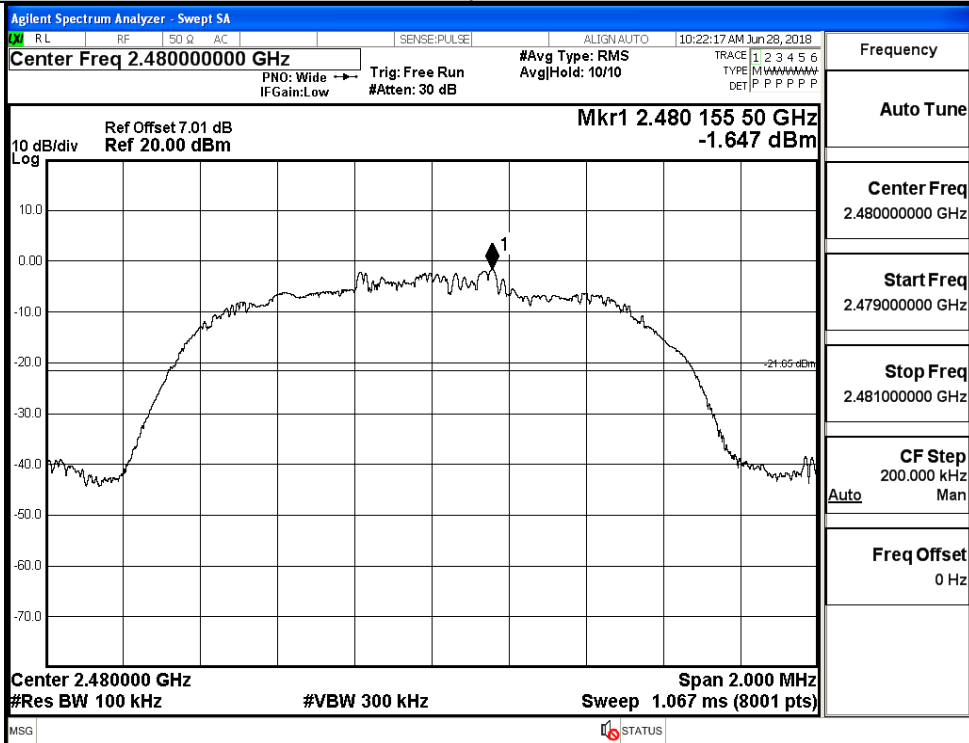


Puw

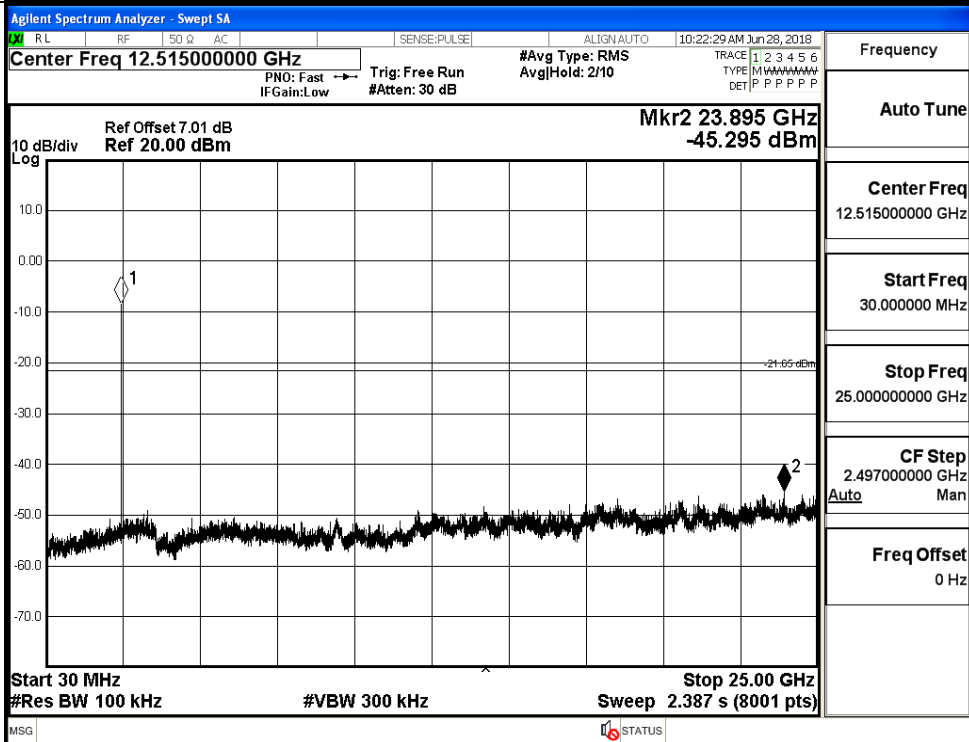


8DPSK_HCH_Graphs

Pref



Puw

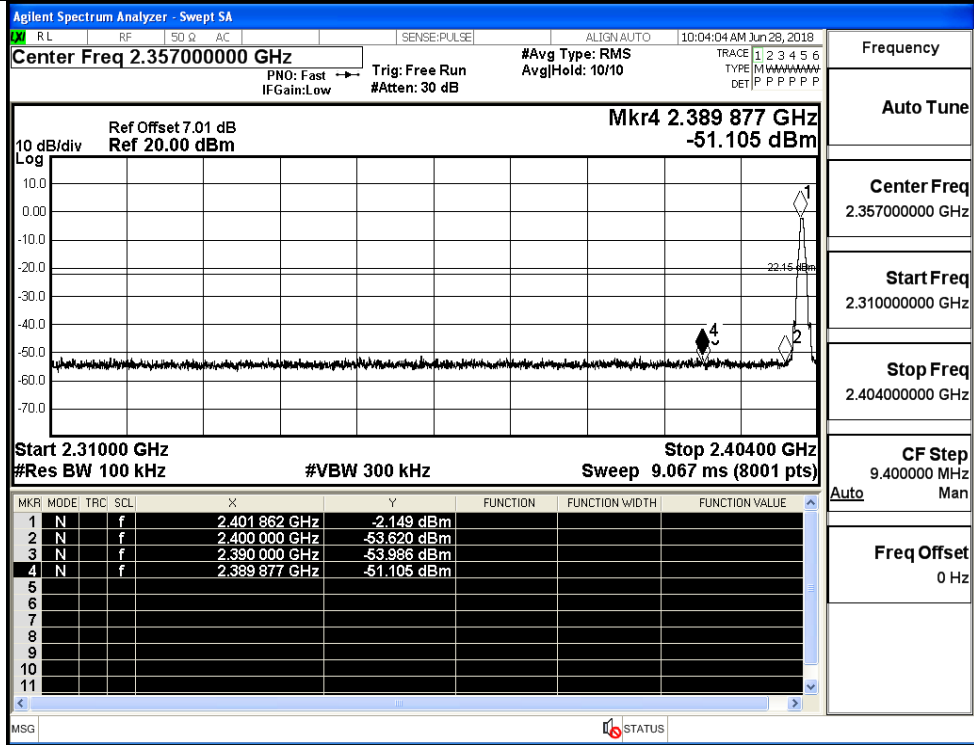


A.7 Band-edge for RF Conducted Emissions

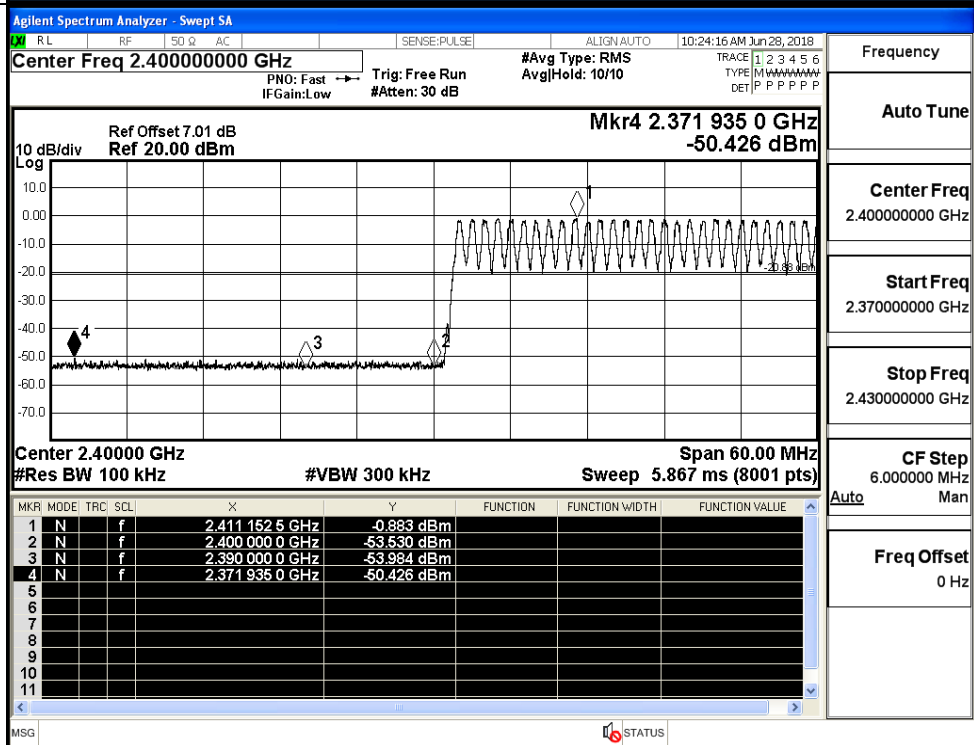
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	-2.149	Off	-51.105	-22.15	PASS
			-0.883	On	-50.426	-20.88	PASS
	HCH	2480	-2.527	Off	-50.999	-22.53	PASS
			-0.756	On	-50.715	-20.76	PASS
π/4DQPSK	LCH	2402	-2.280	Off	-51.604	-22.28	PASS
			-1.543	On	-50.649	-21.54	PASS
	HCH	2480	-2.169	Off	-50.891	-22.17	PASS
			-1.460	On	-50.311	-21.46	PASS
8DPSK	LCH	2402	-2.438	Off	-50.959	-22.44	PASS
			-1.590	On	-50.907	-21.59	PASS
	HCH	2480	-1.571	Off	-50.269	-21.57	PASS
			-1.525	On	-49.805	-21.53	PASS

Test Graphs

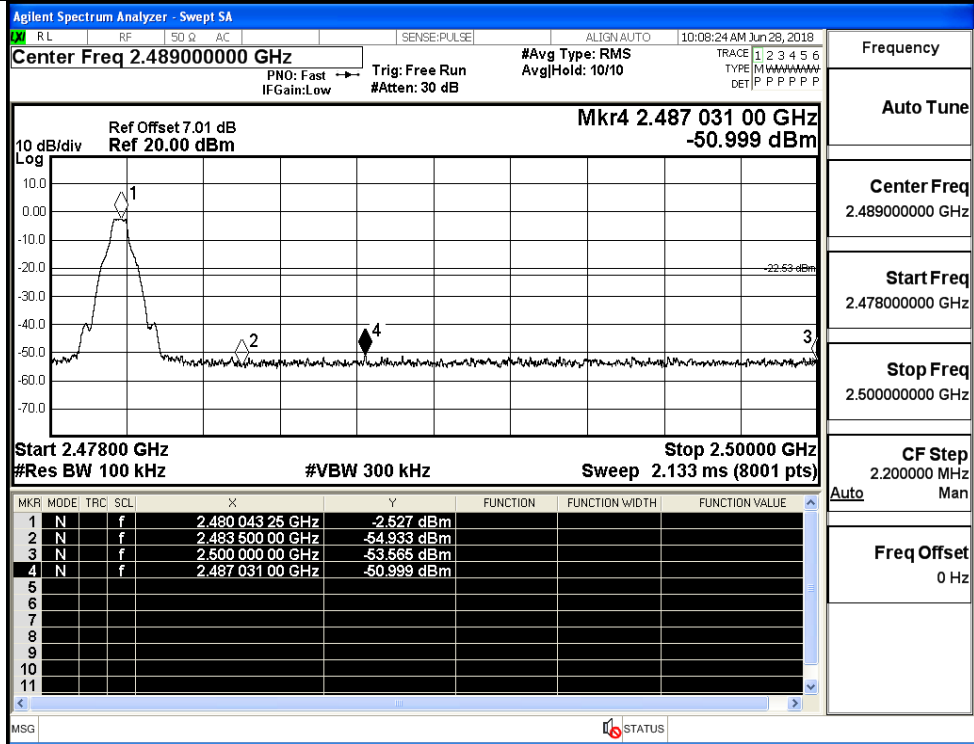
GFSK/LCH/No Hop



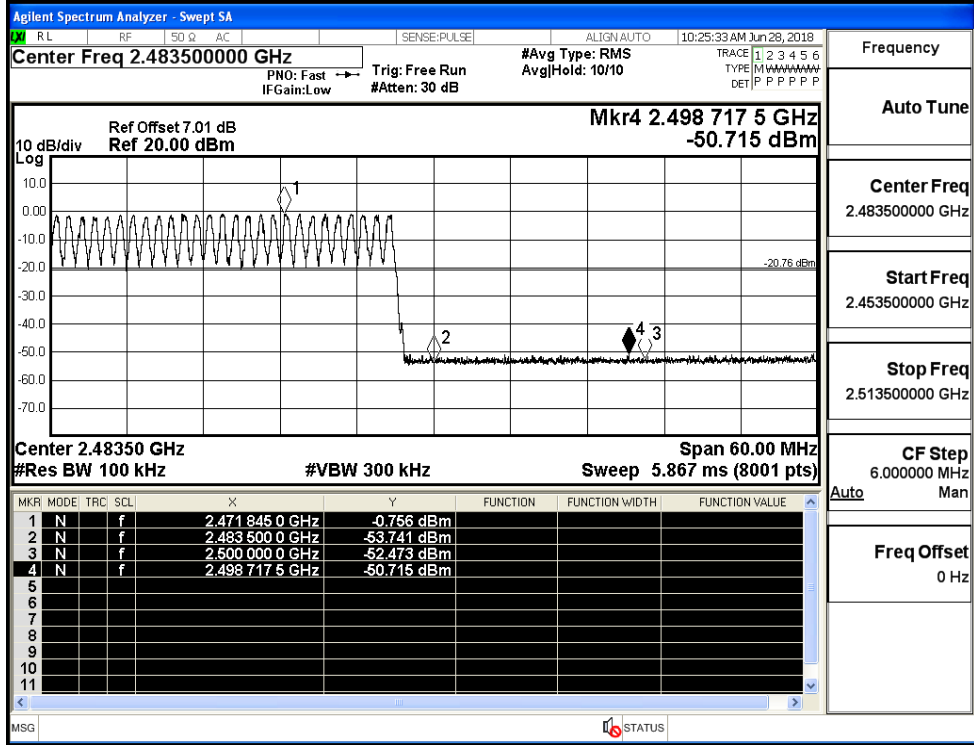
GFSK/LCH/Hop



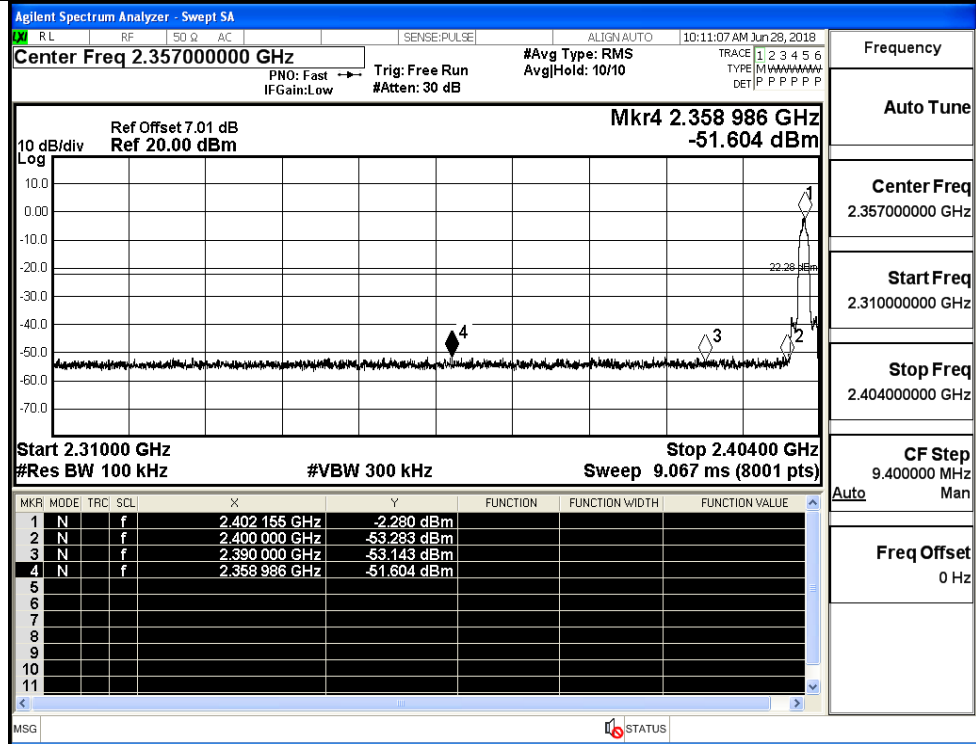
GFSK/HCH/No Hop



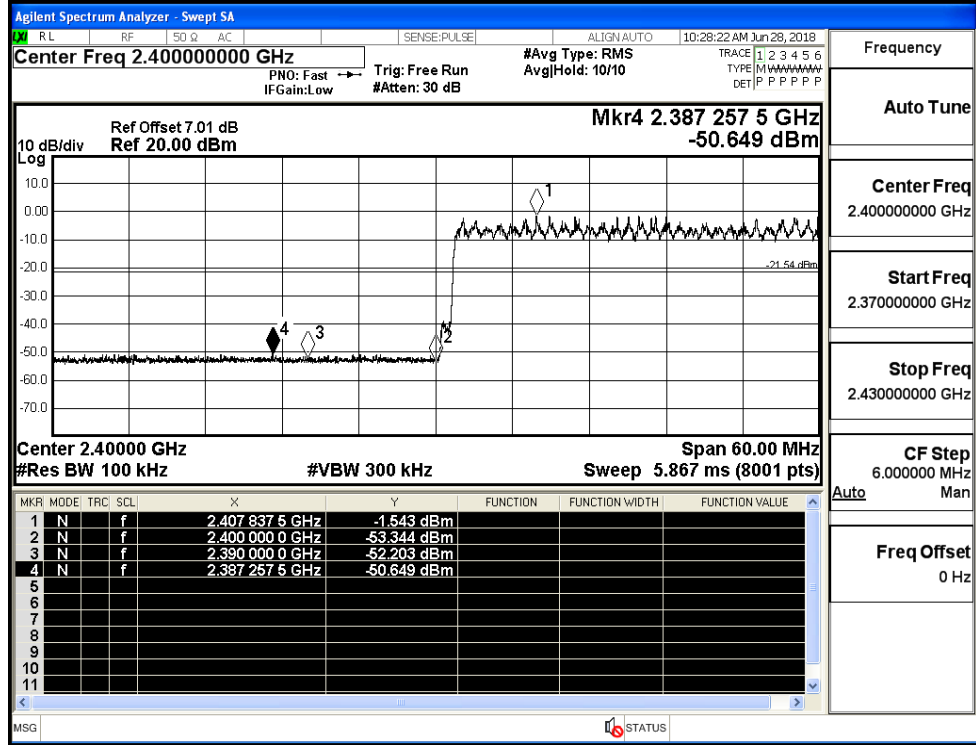
GFSK/HCH/Hop



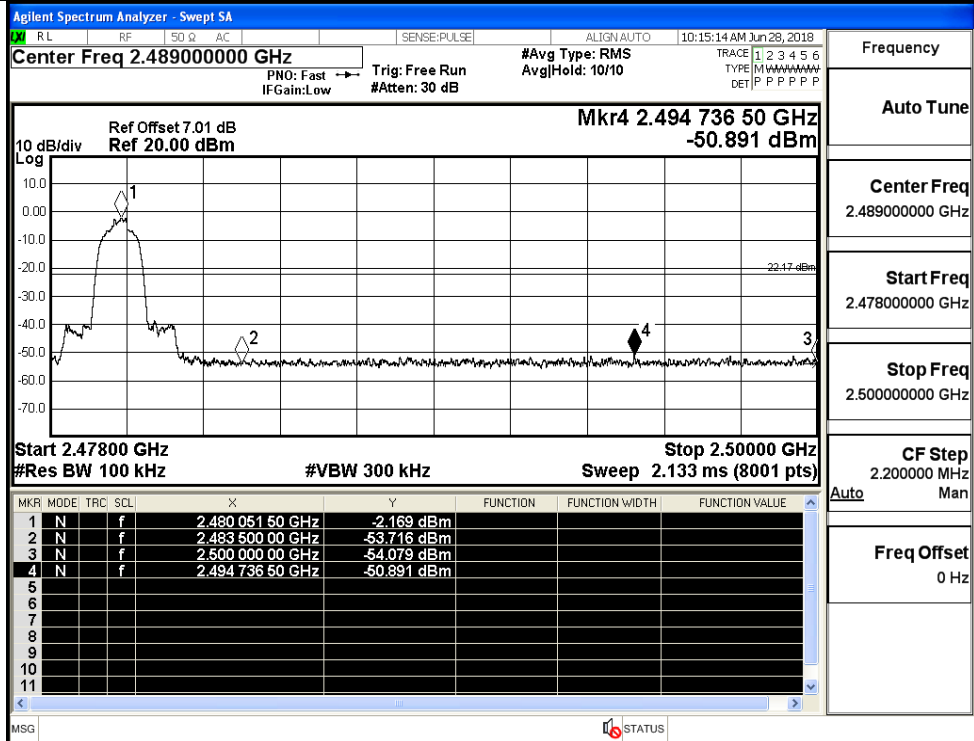
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop

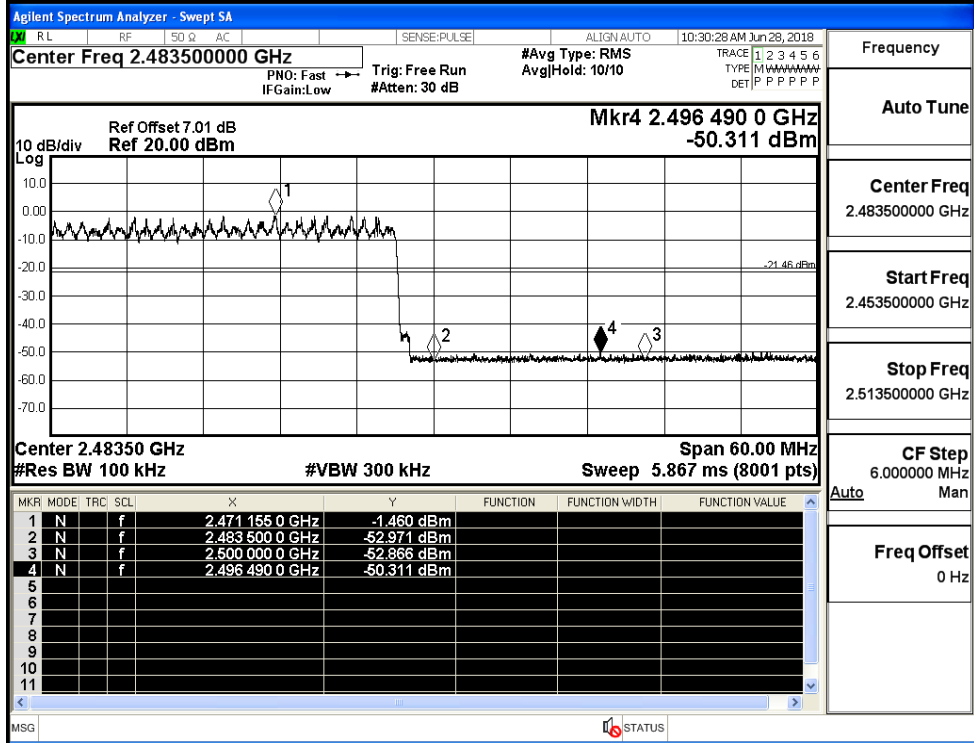


$\pi/4$ DQPSK/HCH/No
Hop



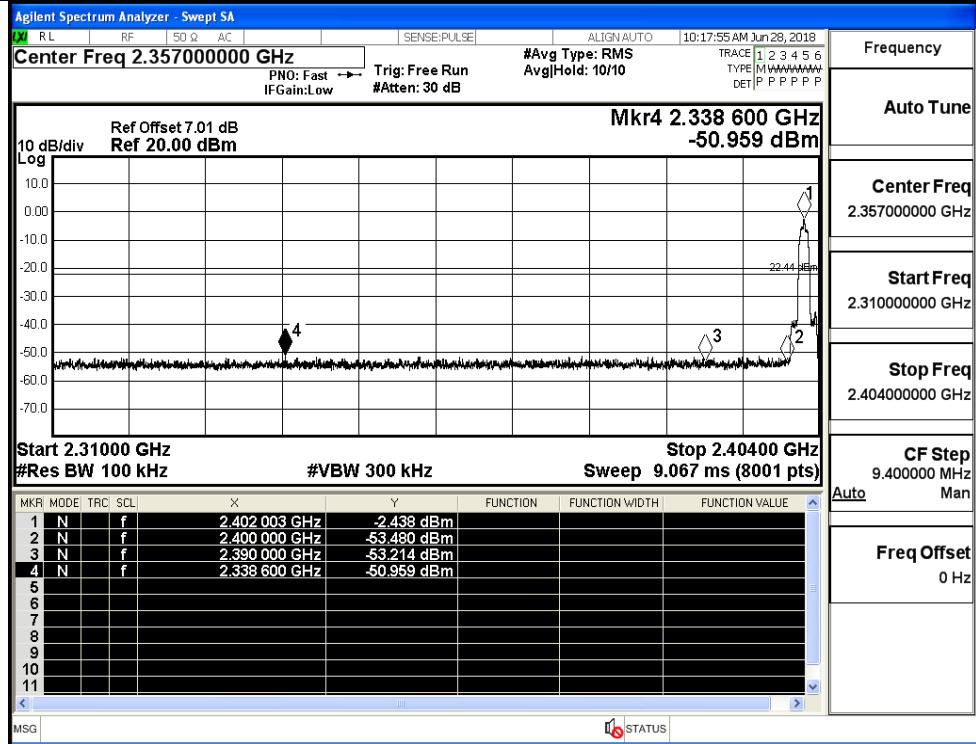
Frequency	
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH/Hop



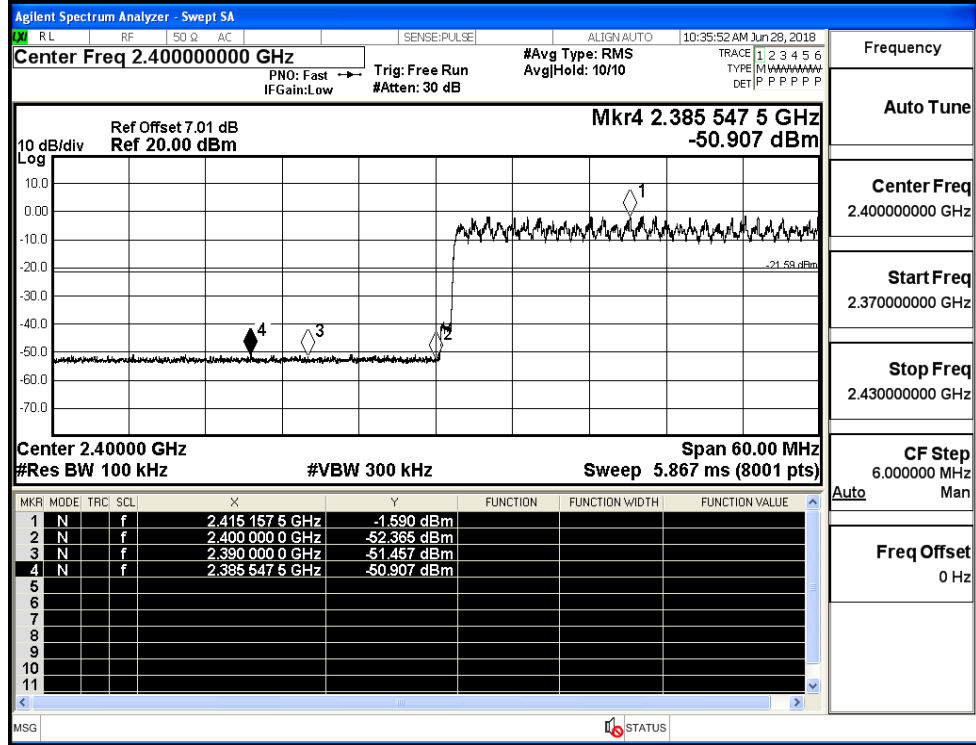
Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH/No Hop



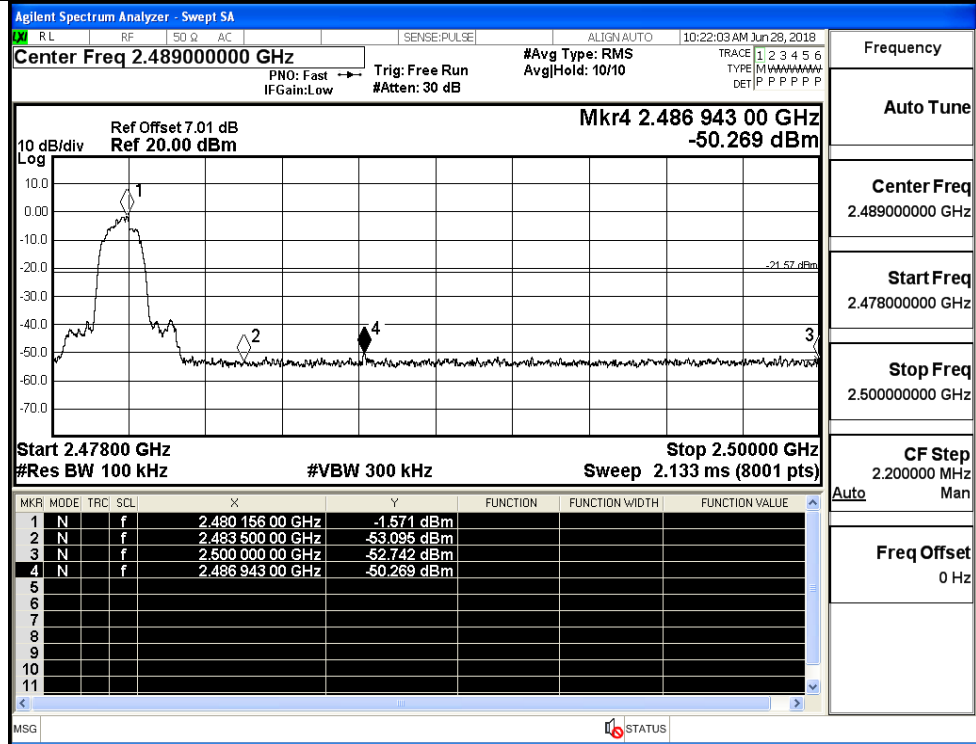
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

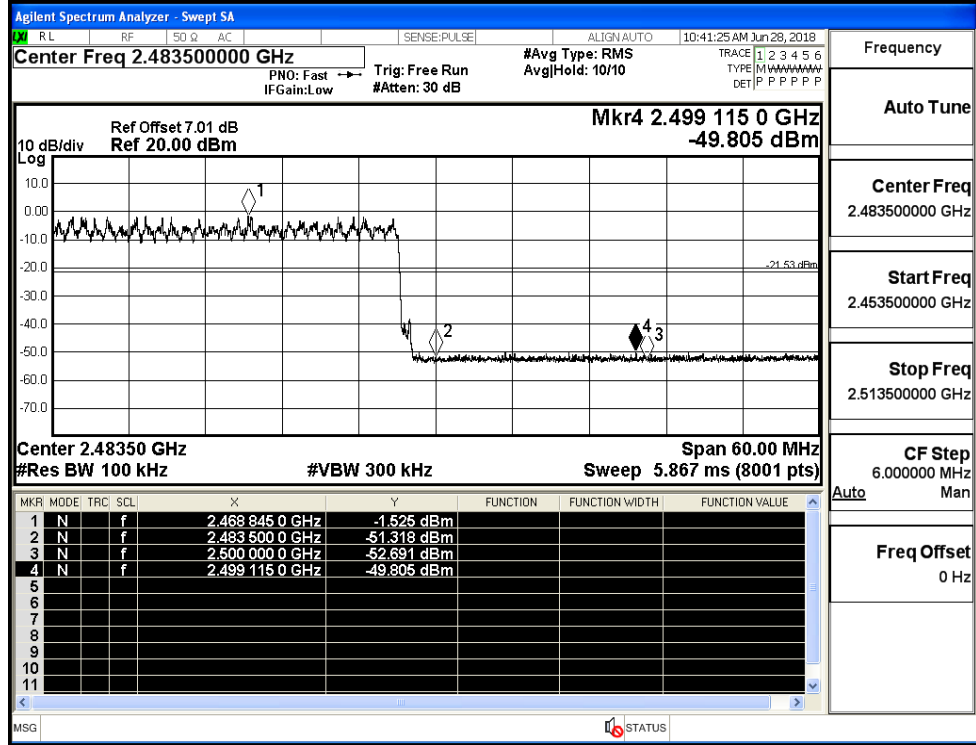
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

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

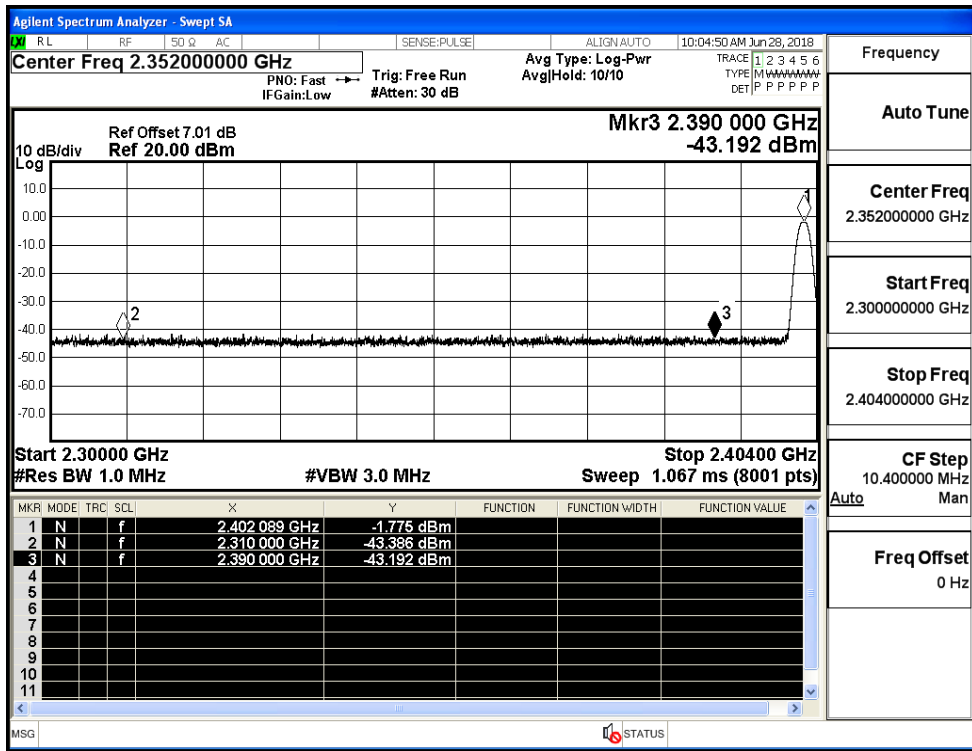
CF Step
6.000000 MHz

Freq Offset
0 Hz

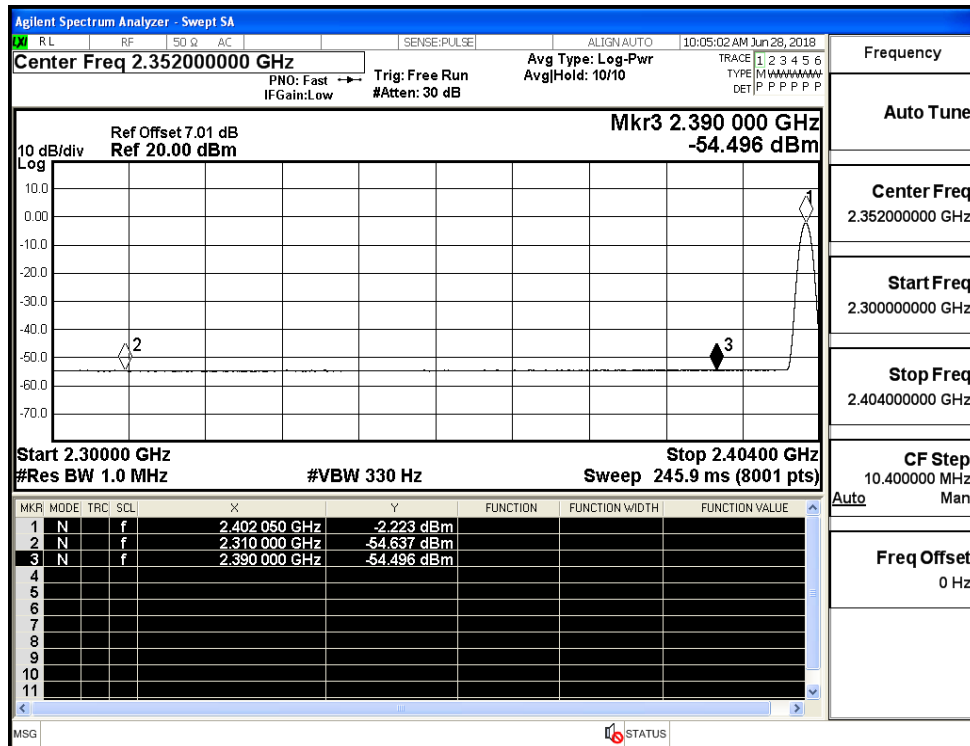
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.39	2.0	0	53.87	PEAK	74	PASS
	Off	2310.0	-54.64	2.0	0	42.62	AV	54	PASS
	Off	2390.0	-43.19	2.0	0	54.07	PEAK	74	PASS
	Off	2390.0	-54.50	2.0	0	42.76	AV	54	PASS
	Off	2483.5	-43.08	2.0	0	54.17	PEAK	74	PASS
	Off	2483.5	-54.28	2.0	0	42.98	AV	54	PASS
	Off	2500.0	-44.81	2.0	0	52.44	PEAK	74	PASS
	Off	2500.0	-54.12	2.0	0	43.14	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-45.21	2.0	0	52.05	PEAK	74	PASS
	Off	2310.0	-54.65	2.0	0	42.61	AV	54	PASS
	Off	2390.0	-44.05	2.0	0	53.21	PEAK	74	PASS
	Off	2390.0	-54.56	2.0	0	42.69	AV	54	PASS
	Off	2483.5	-43.74	2.0	0	53.52	PEAK	74	PASS
	Off	2483.5	-54.16	2.0	0	43.10	AV	54	PASS
	Off	2500.0	-44.43	2.0	0	52.82	PEAK	74	PASS
	Off	2500.0	-53.98	2.0	0	43.28	AV	54	PASS
8DPSK	Off	2310.0	-44.51	2.0	0	52.75	PEAK	74	PASS
	Off	2310.0	-54.68	2.0	0	42.58	AV	54	PASS
	Off	2390.0	-44.99	2.0	0	52.27	PEAK	74	PASS
	Off	2390.0	-54.50	2.0	0	42.76	AV	54	PASS
	Off	2483.5	-43.07	2.0	0	54.19	PEAK	74	PASS
	Off	2483.5	-54.17	2.0	0	43.09	AV	54	PASS
	Off	2500.0	-42.08	2.0	0	55.17	PEAK	74	PASS
	Off	2500.0	-54.14	2.0	0	43.12	AV	54	PASS

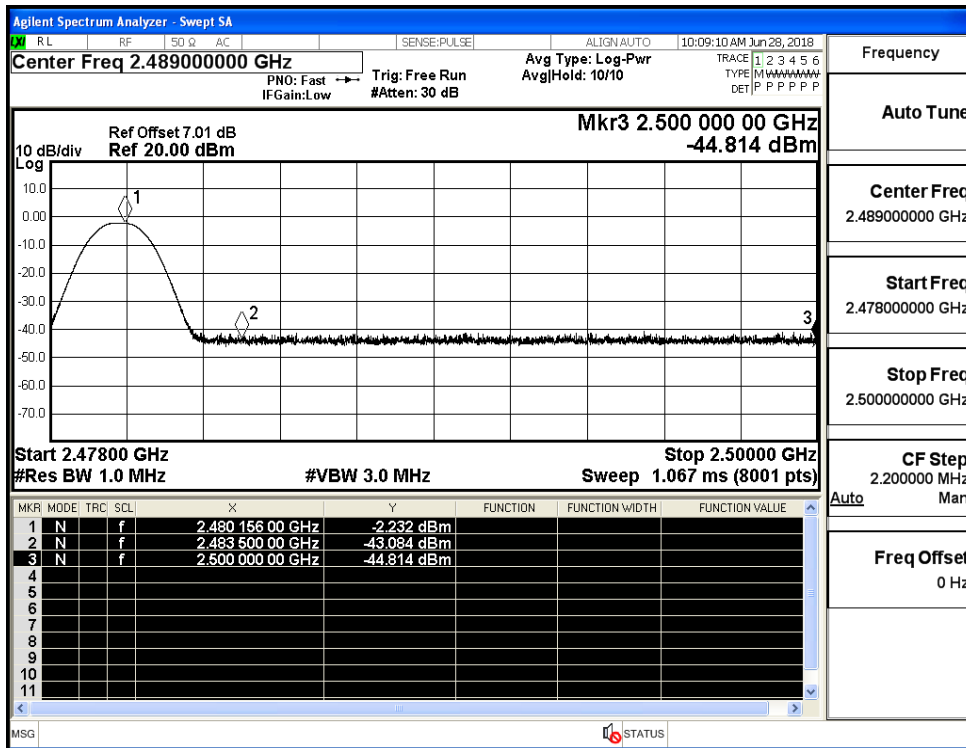
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



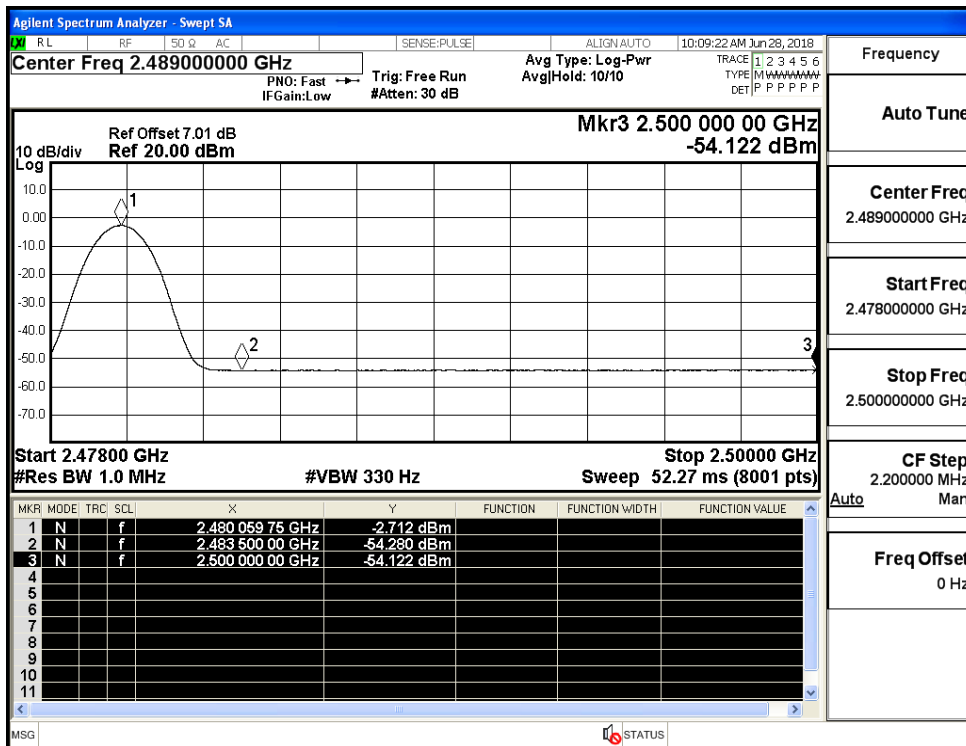
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



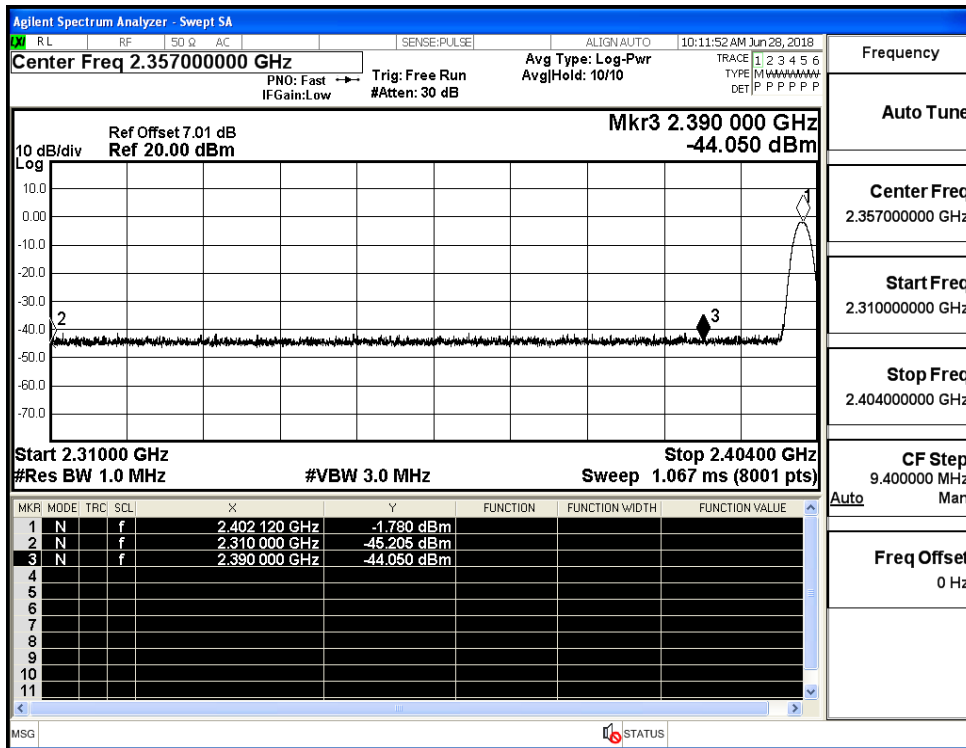
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



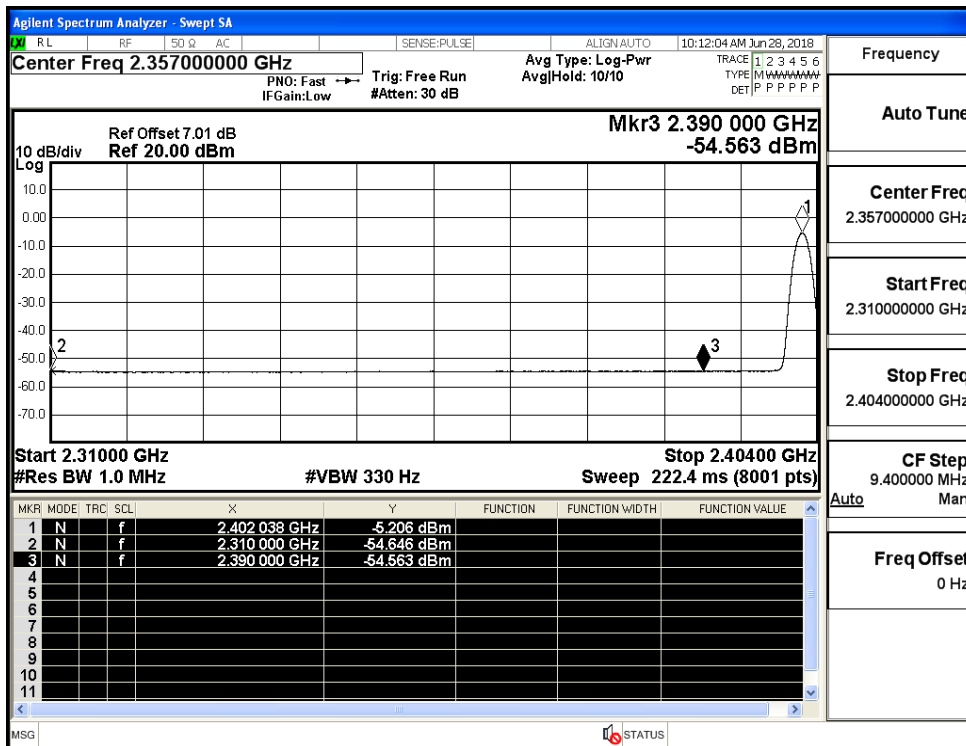
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



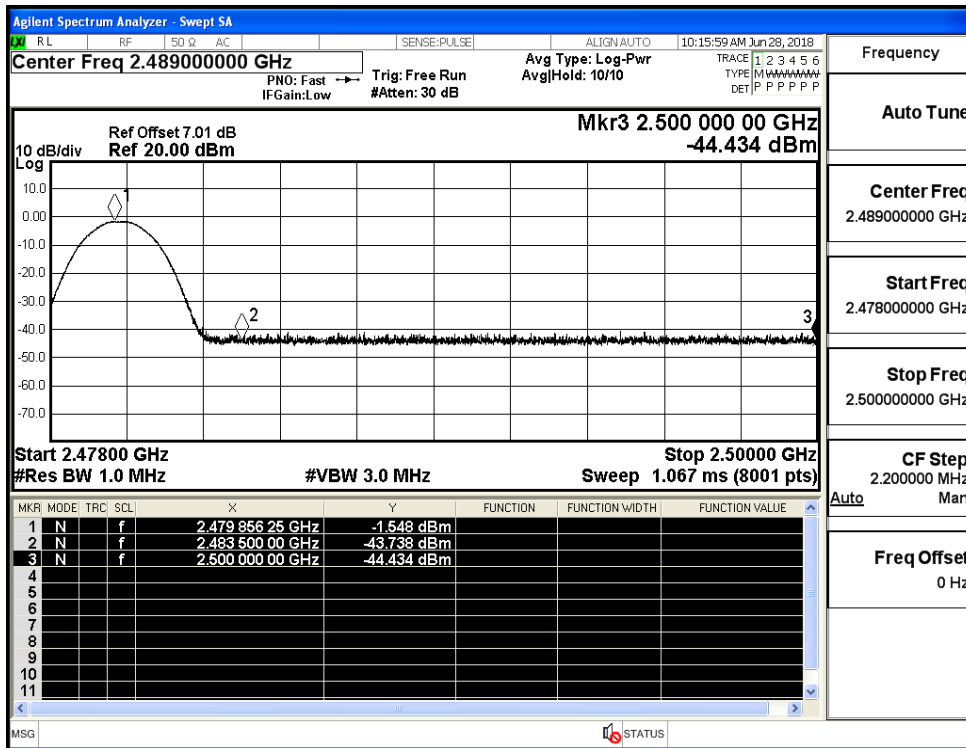
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



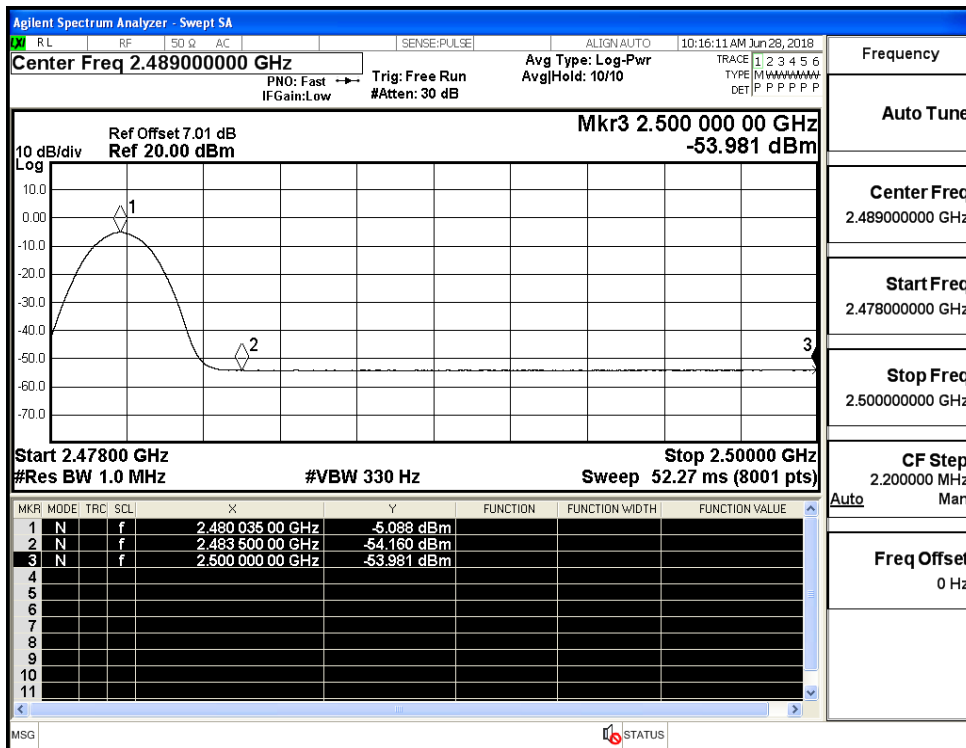
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



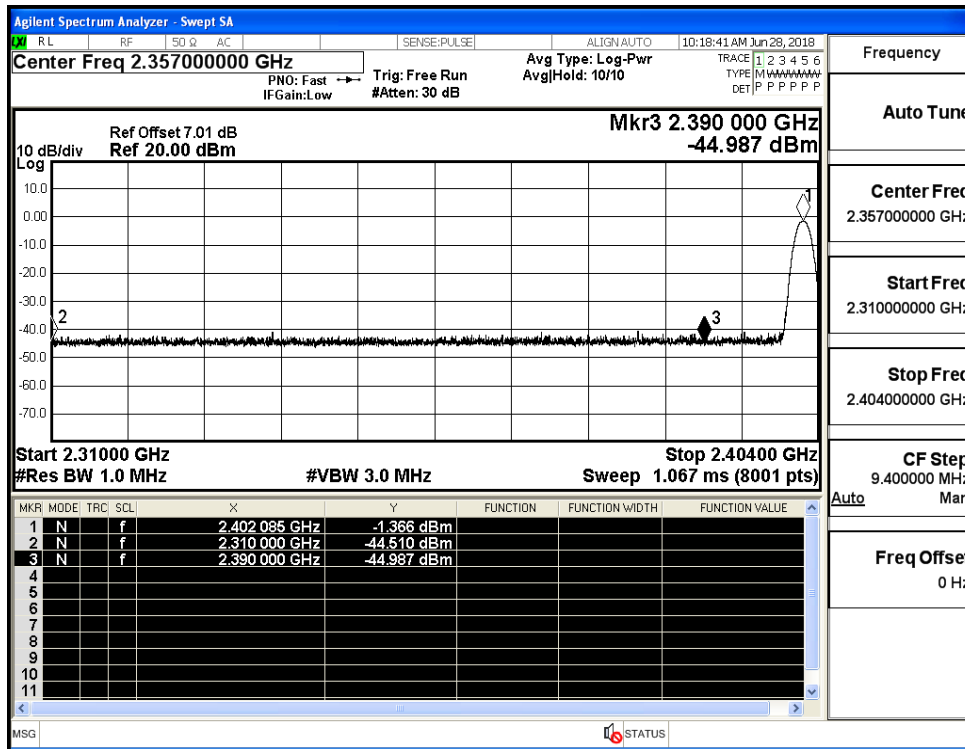
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



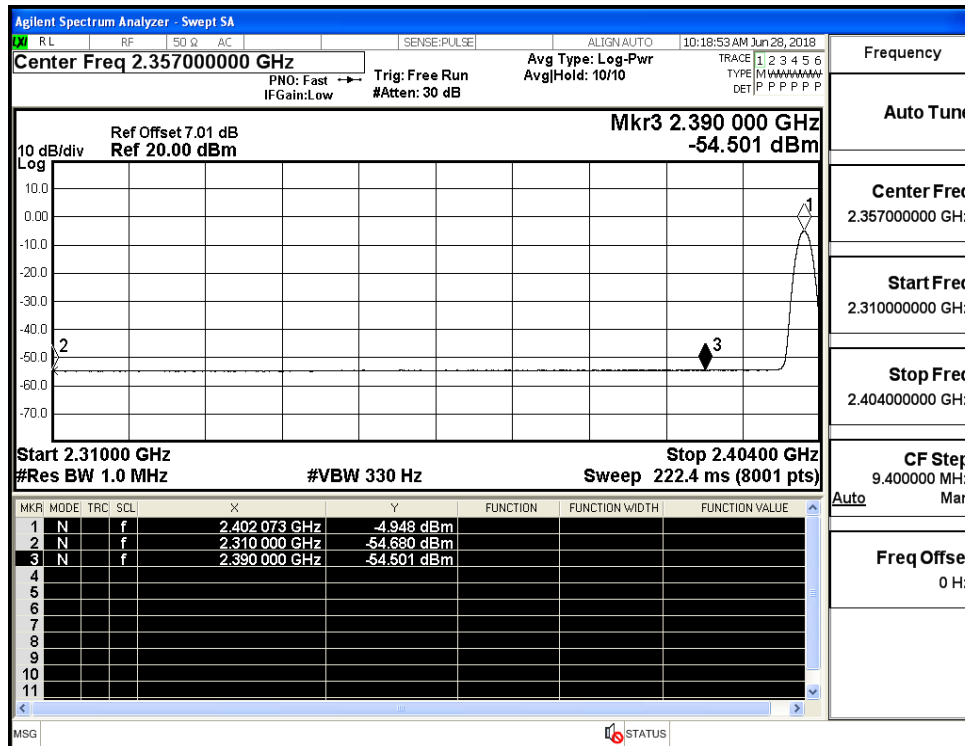
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



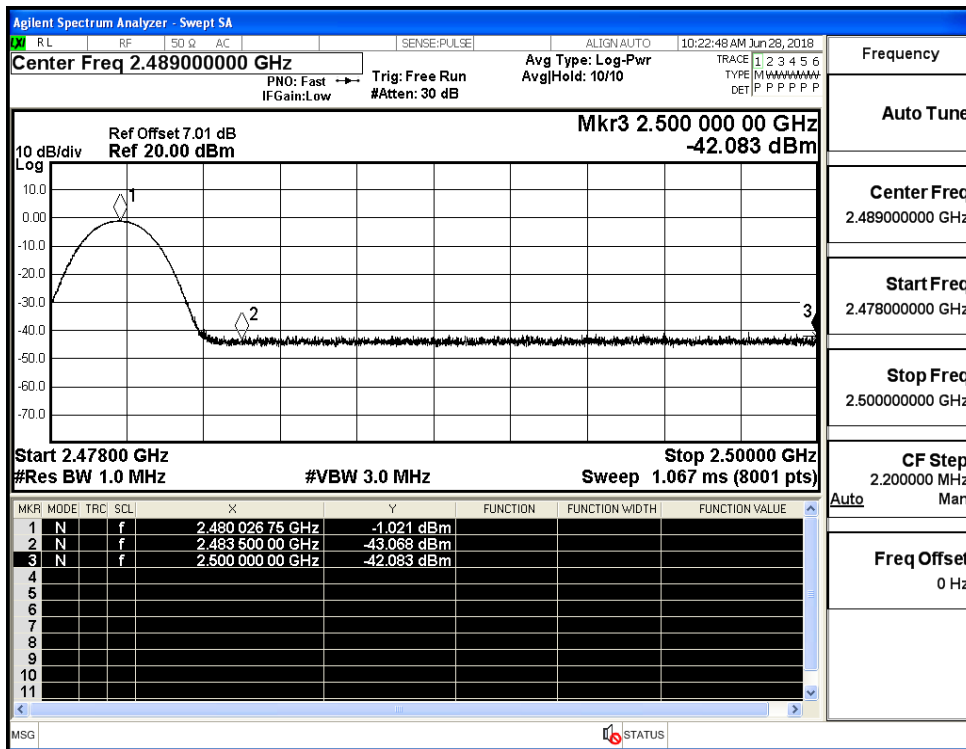
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

