

Appendix A

RF Test Data for BT V4.0 (BDR/EDR) (Conducted Measurement)

Product Name: LTE GSM/WCDMA Smartphone

Trade Mark: DOOGEE

Test Model: S80

Environmental Conditions

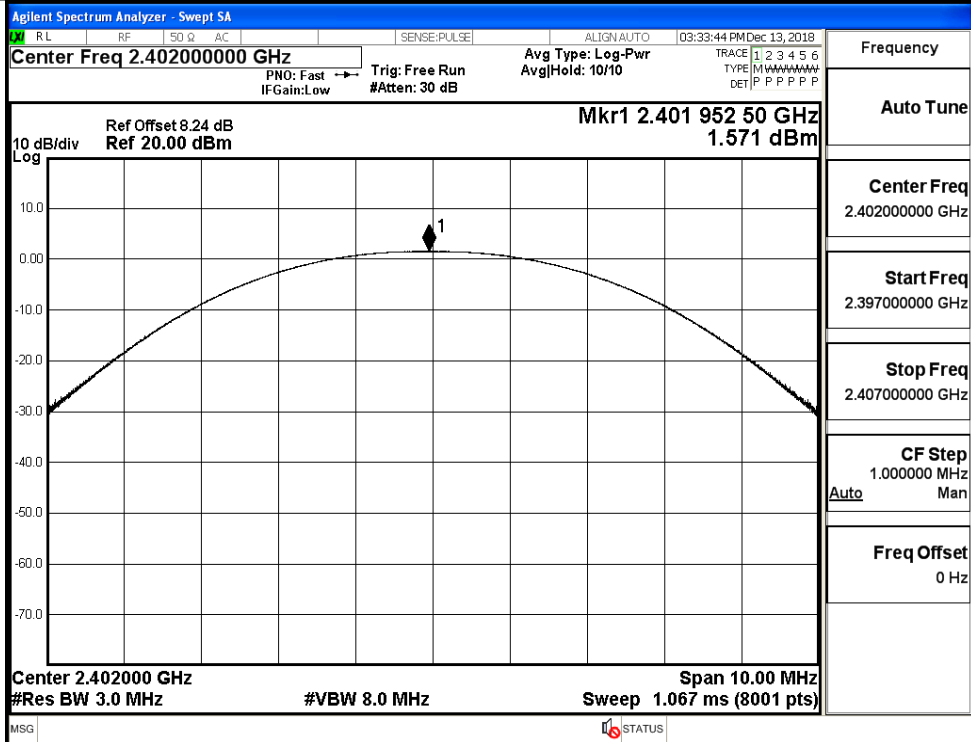
Temperature:	23.6 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	WANGCHUANG
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

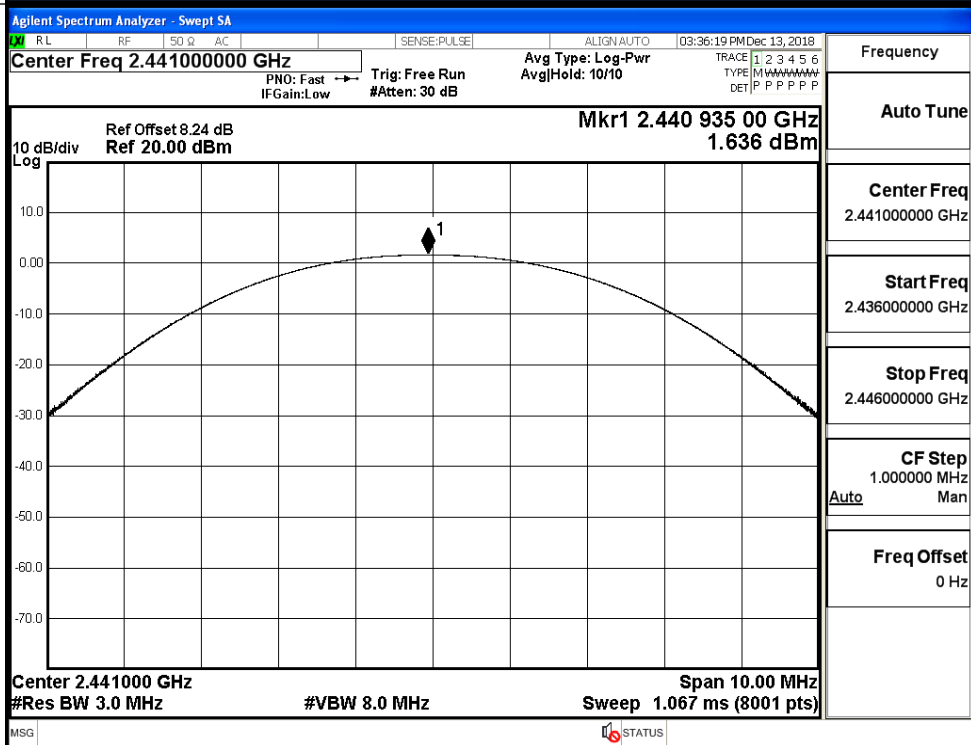
Mode	Channel.	Maximum Peak Output Power [dBm]	Maximum Average Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.571	0.032	30	PASS
	MCH	1.636	0.125	30	PASS
	HCH	1.504	0.202	30	PASS
$\pi/4$ DQPSK	LCH	0.665	-0.226	21	PASS
	MCH	0.767	-0.325	21	PASS
	HCH	0.661	-0.154	21	PASS
8DPSK	LCH	0.834	-0.523	21	PASS
	MCH	0.916	-0.321	21	PASS
	HCH	0.839	-0.154	21	PASS

Test Graphs

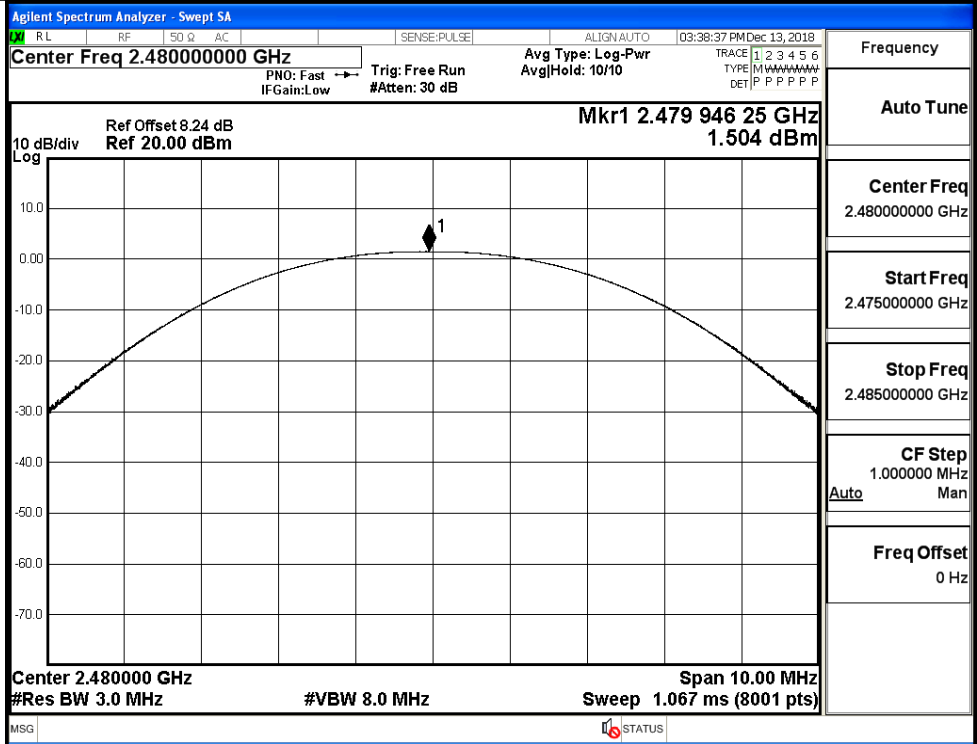
GFSK/LCH



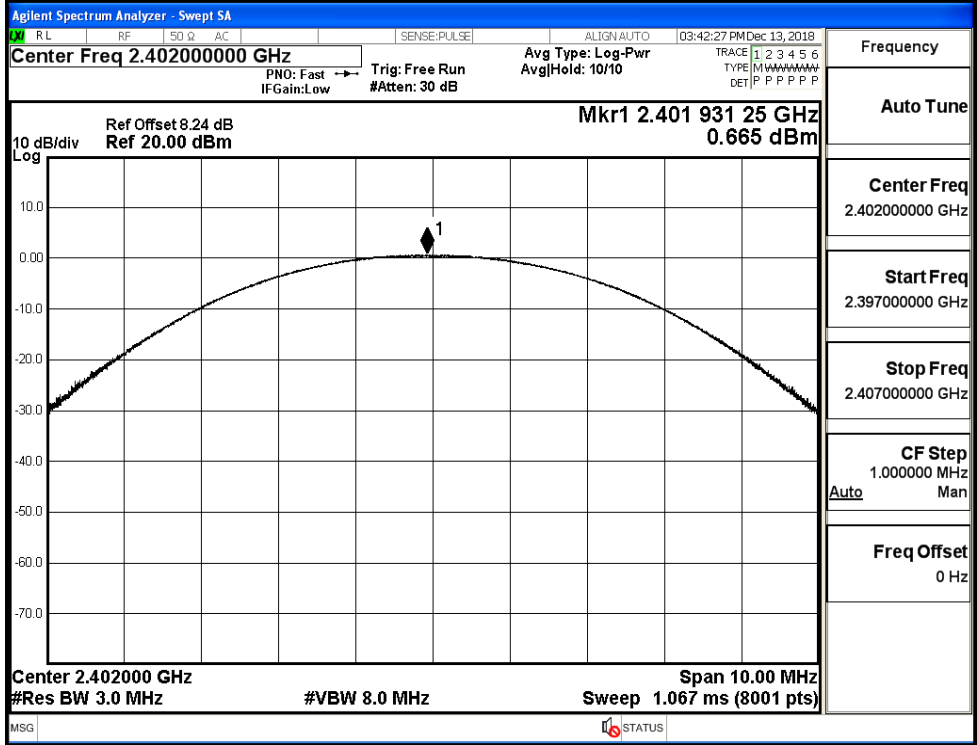
GFSK/MCH



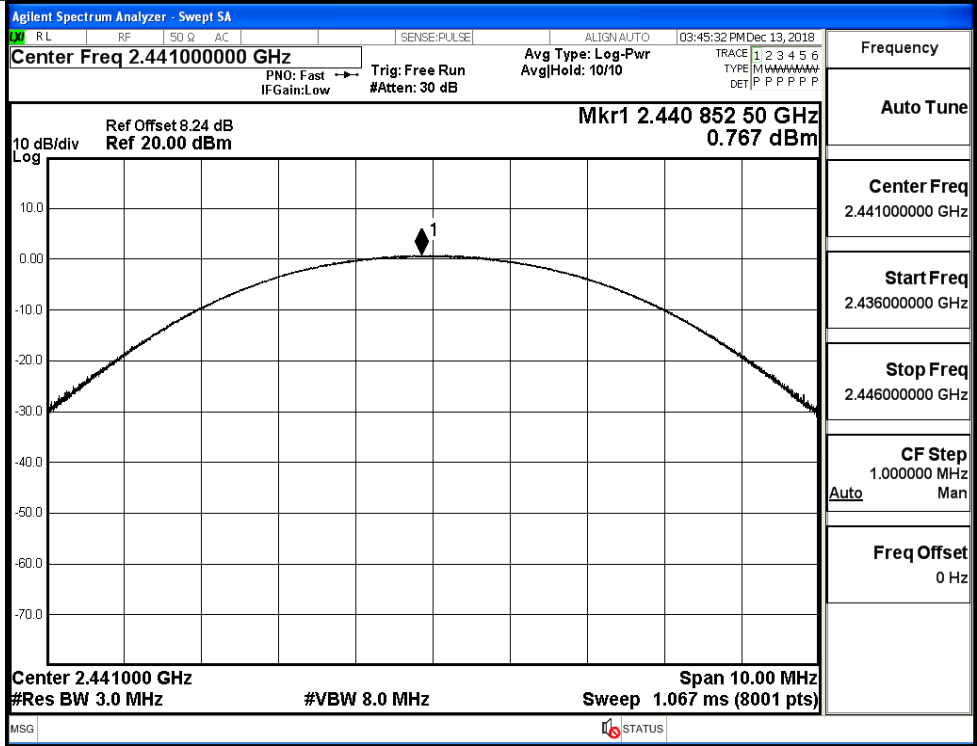
GFSK/HCH



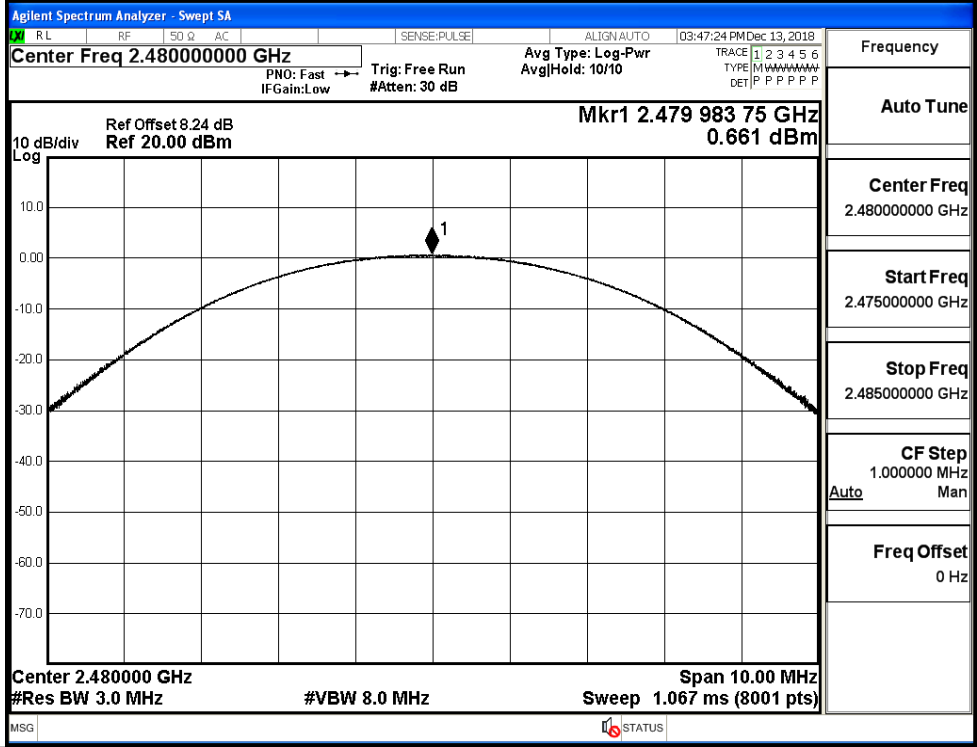
$\pi/4$ DQPSK/LCH



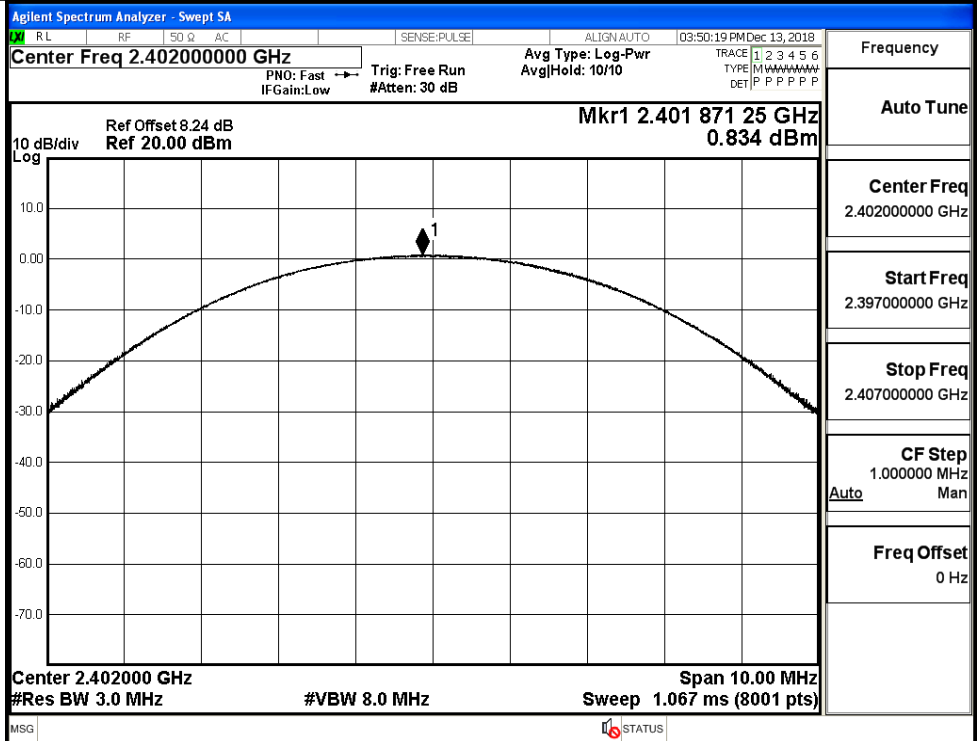
$\pi/4$ DQPSK/MCH



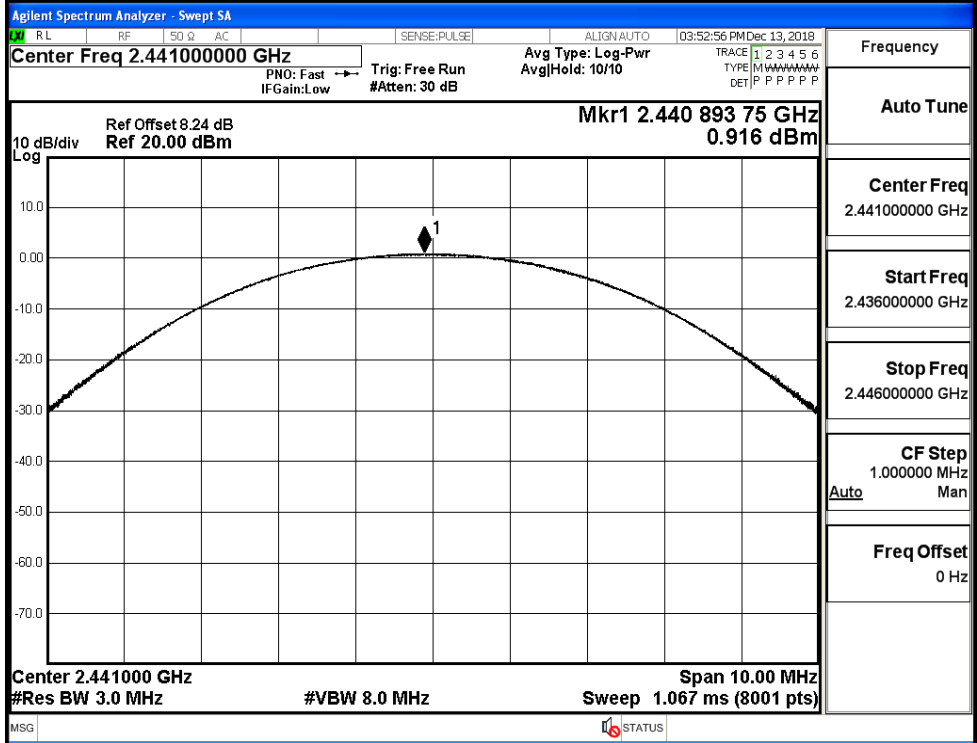
$\pi/4$ DQPSK/HCH



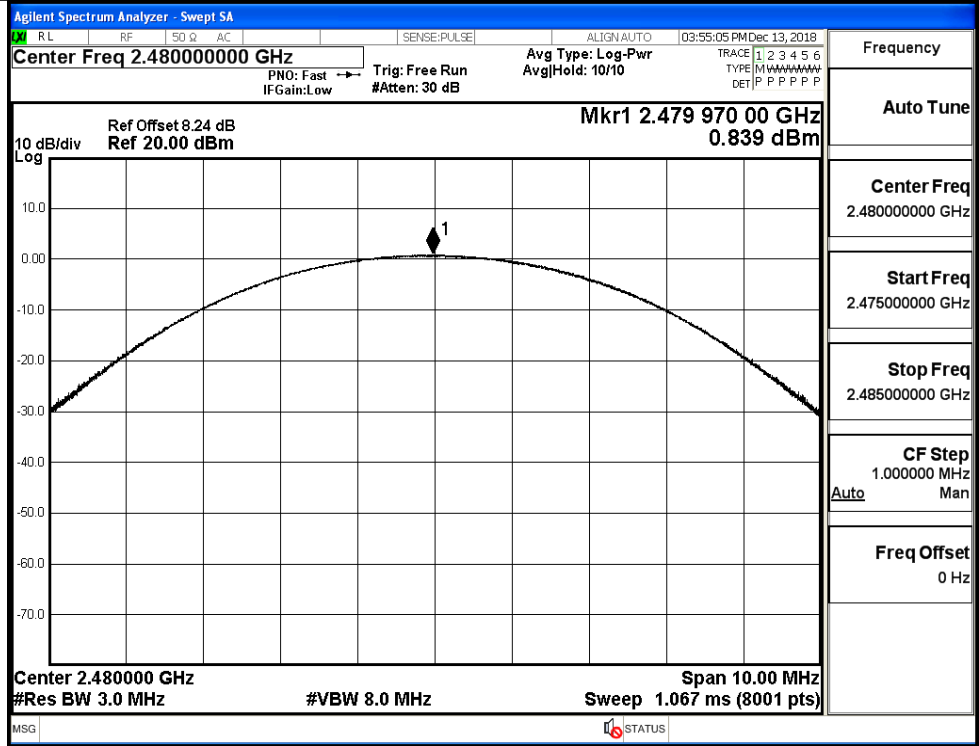
8DPSK/LCH



8DPSK/MCH

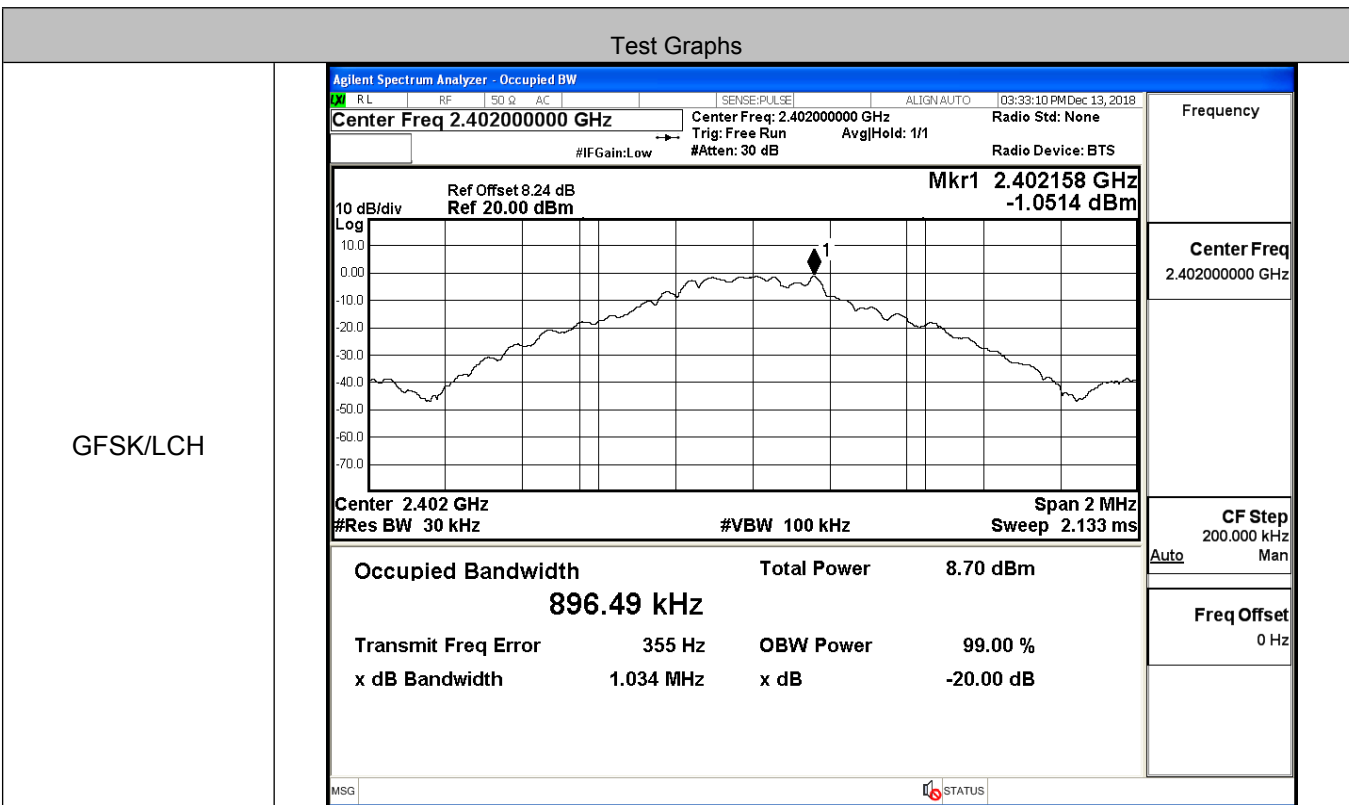


8DPSK/HCH

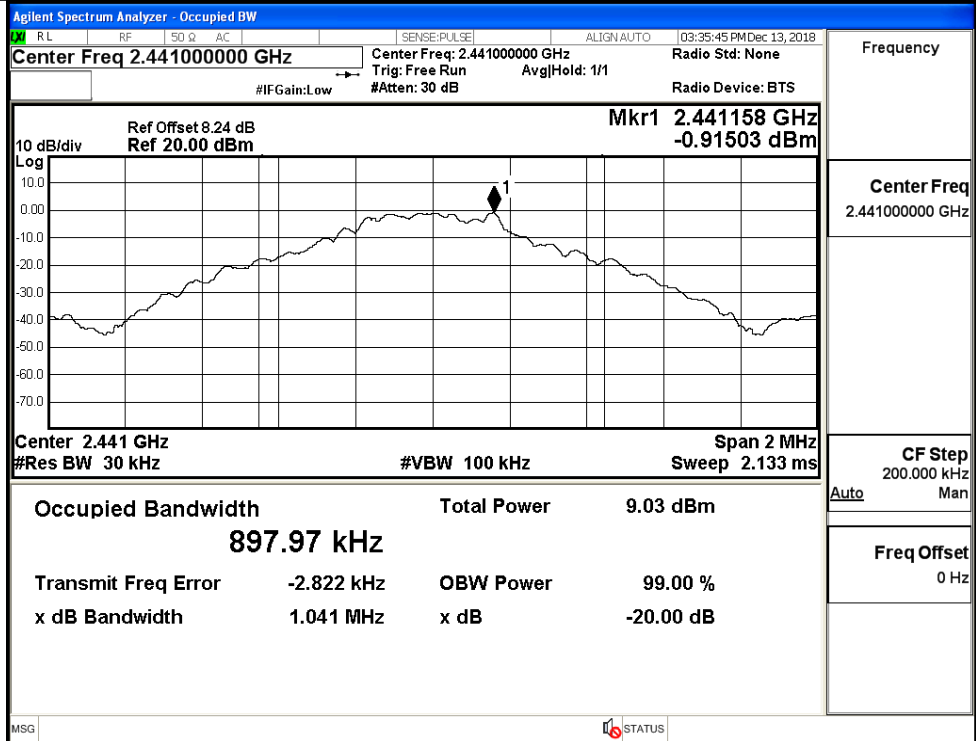


A.2 20dB Bandwidth

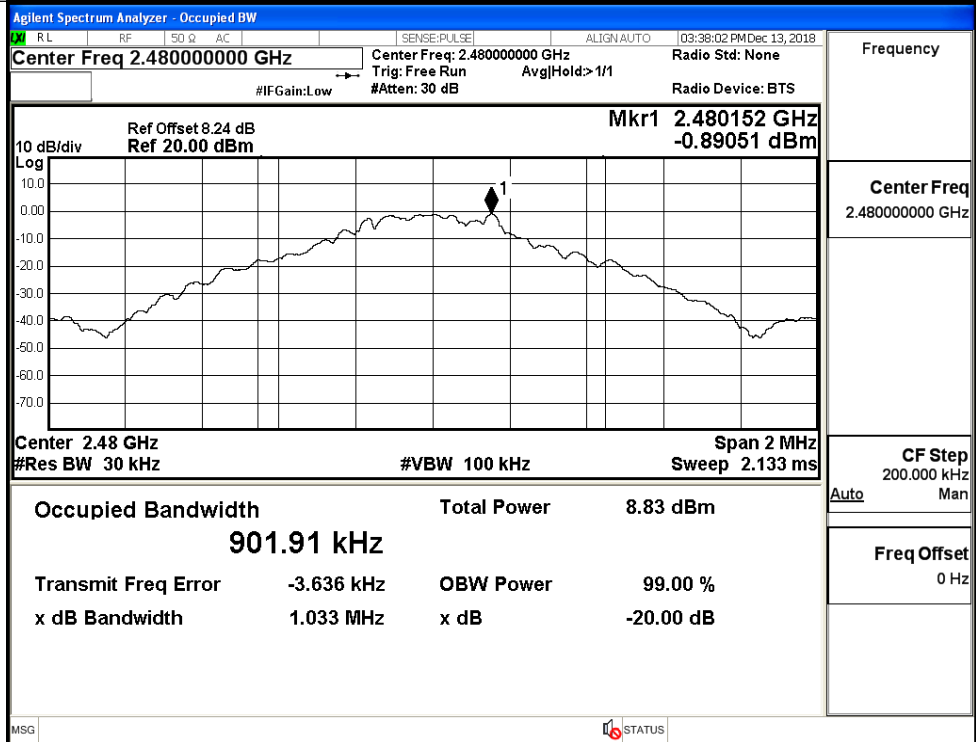
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.034	Not Specified	PASS
	MCH	1.041	Not Specified	PASS
	HCH	1.033	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.292	Not Specified	PASS
	MCH	1.320	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.294	Not Specified	PASS
	MCH	1.295	Not Specified	PASS
	HCH	1.294	Not Specified	PASS



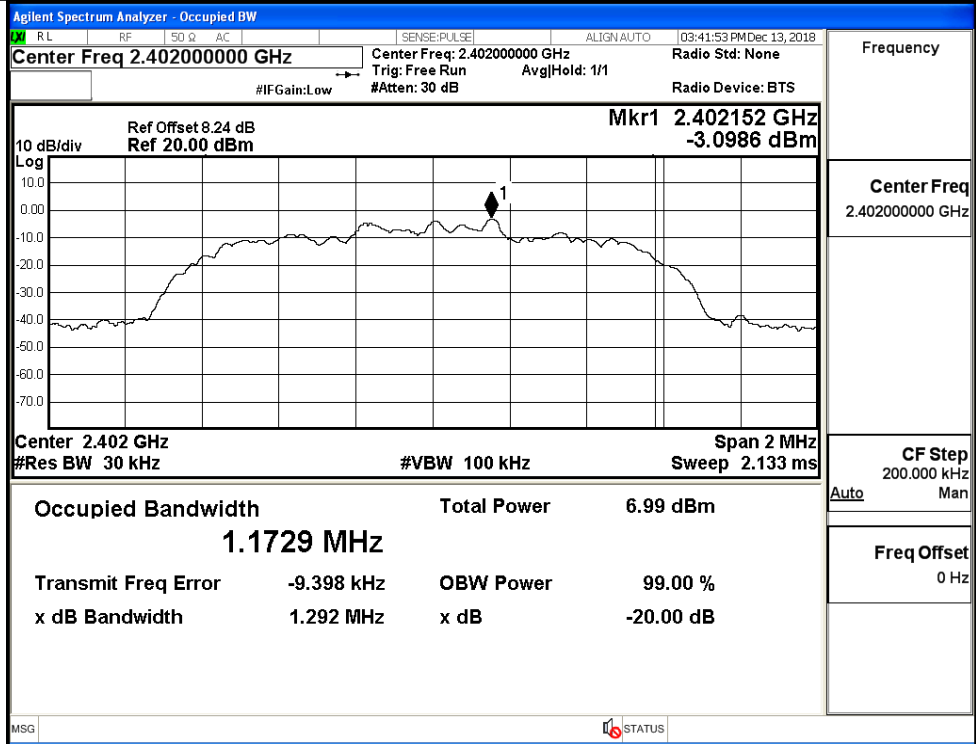
GFSK/MCH



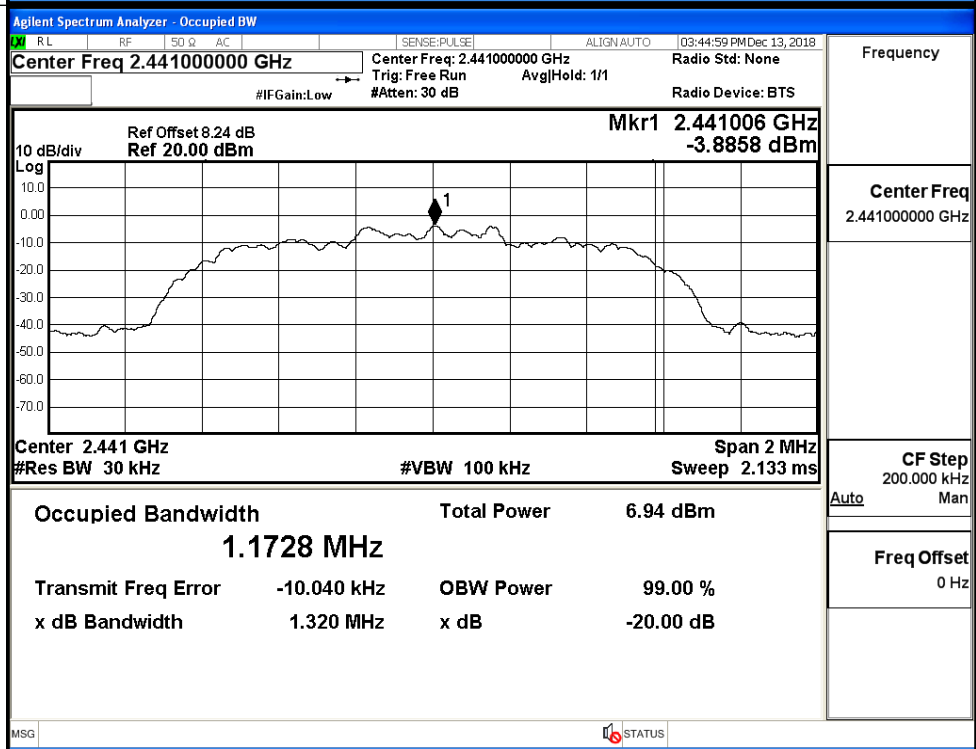
GFSK/HCH



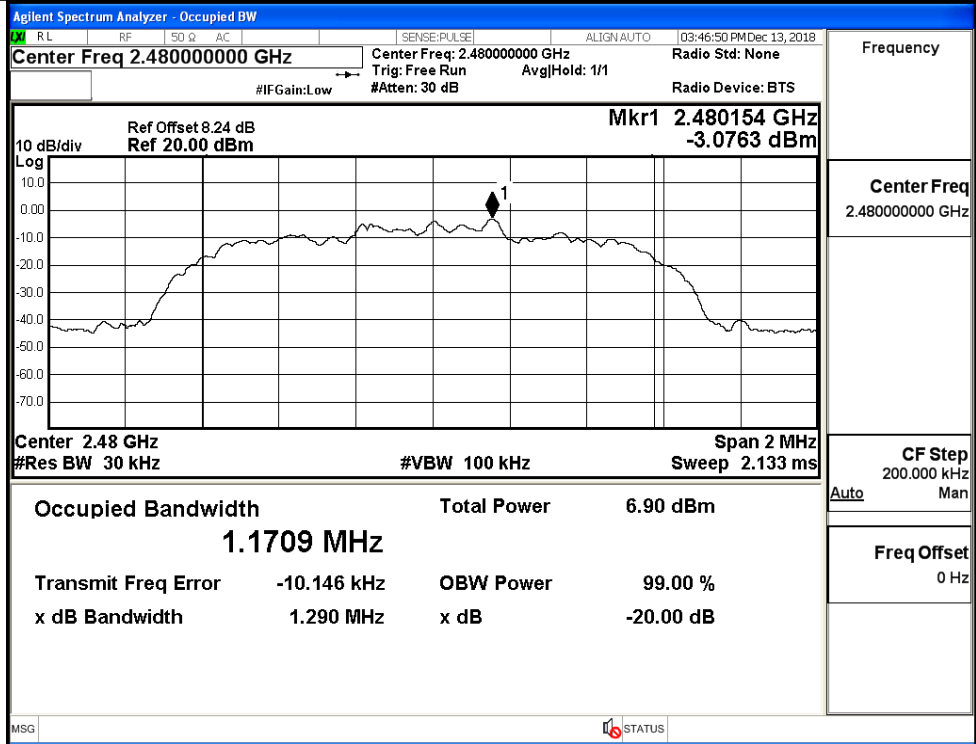
$\pi/4$ DQPSK/LCH



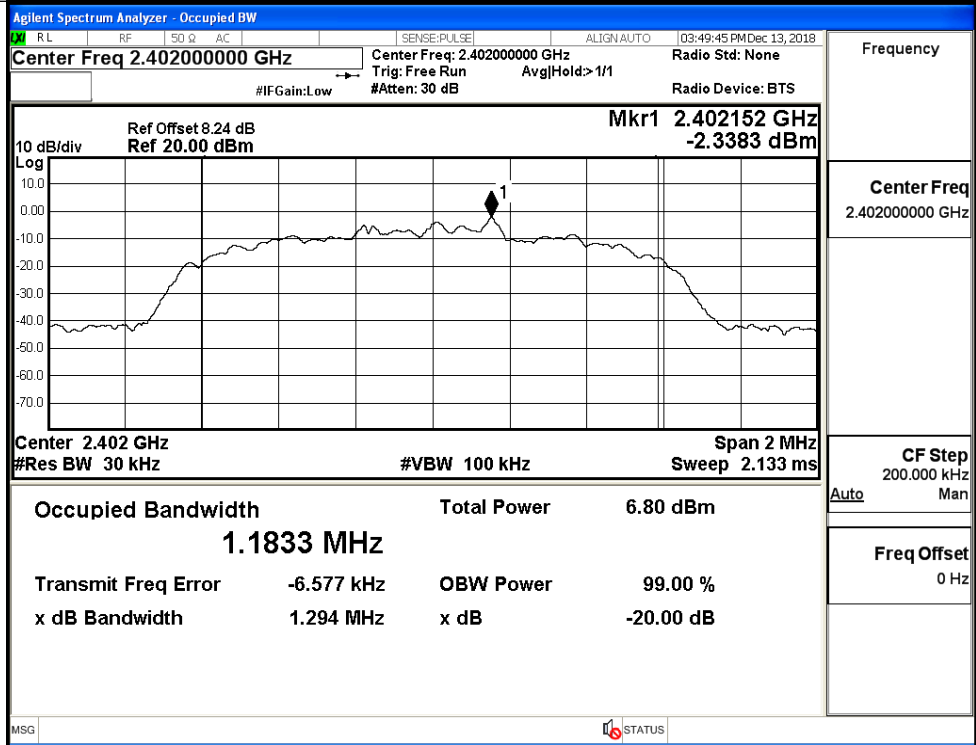
$\pi/4$ DQPSK/MCH



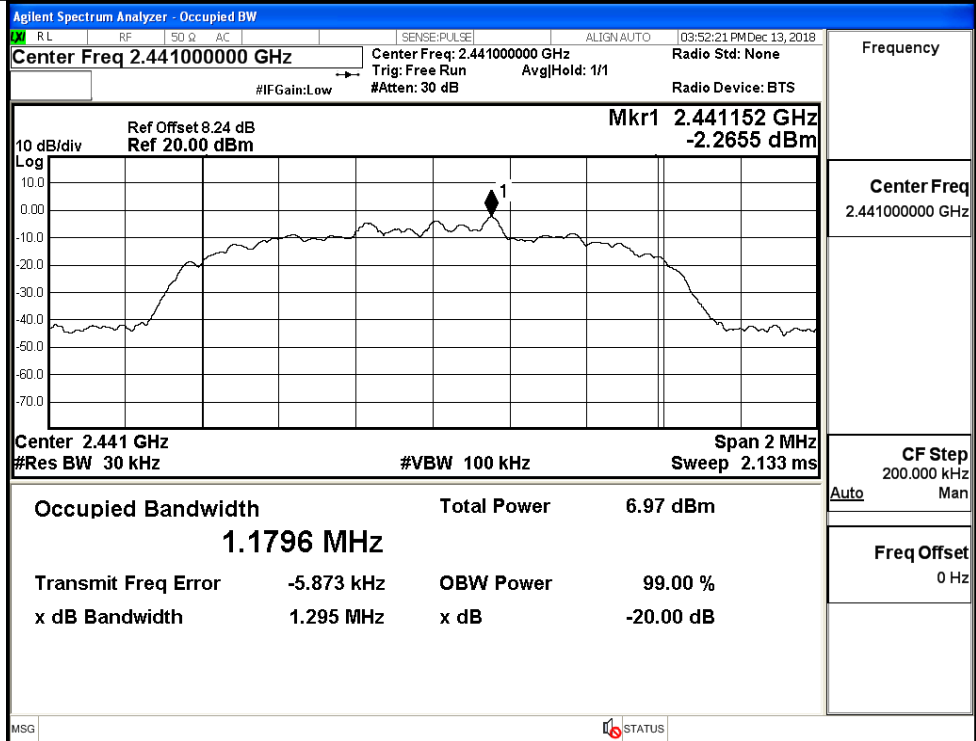
$\pi/4$ DQPSK/HCH



8DPSK/LCH

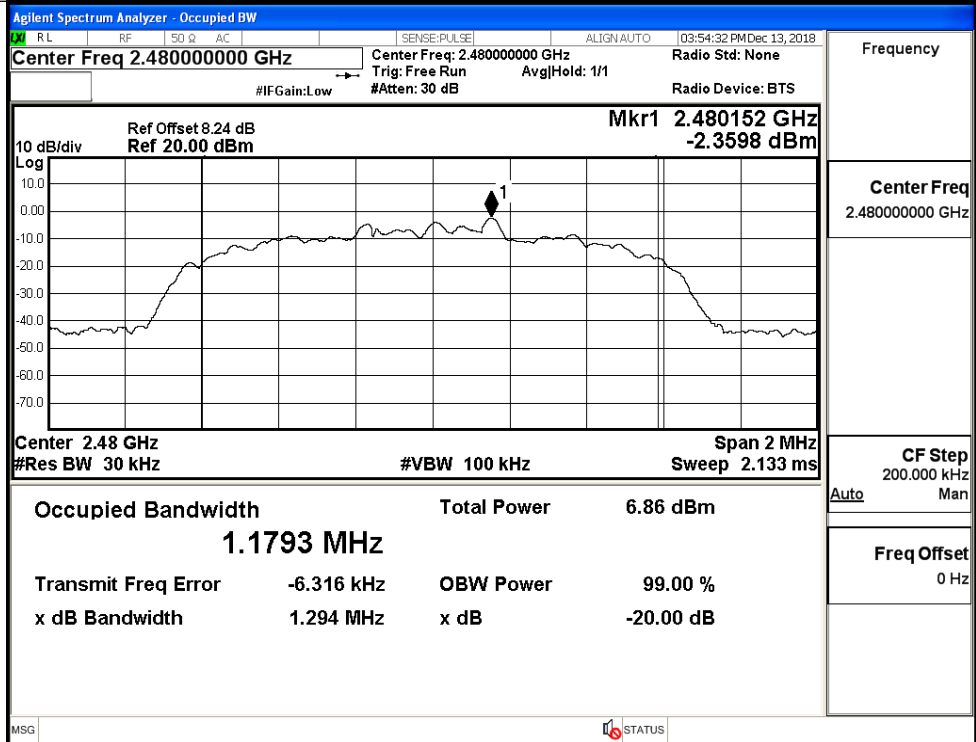


8DPSK/MCH



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

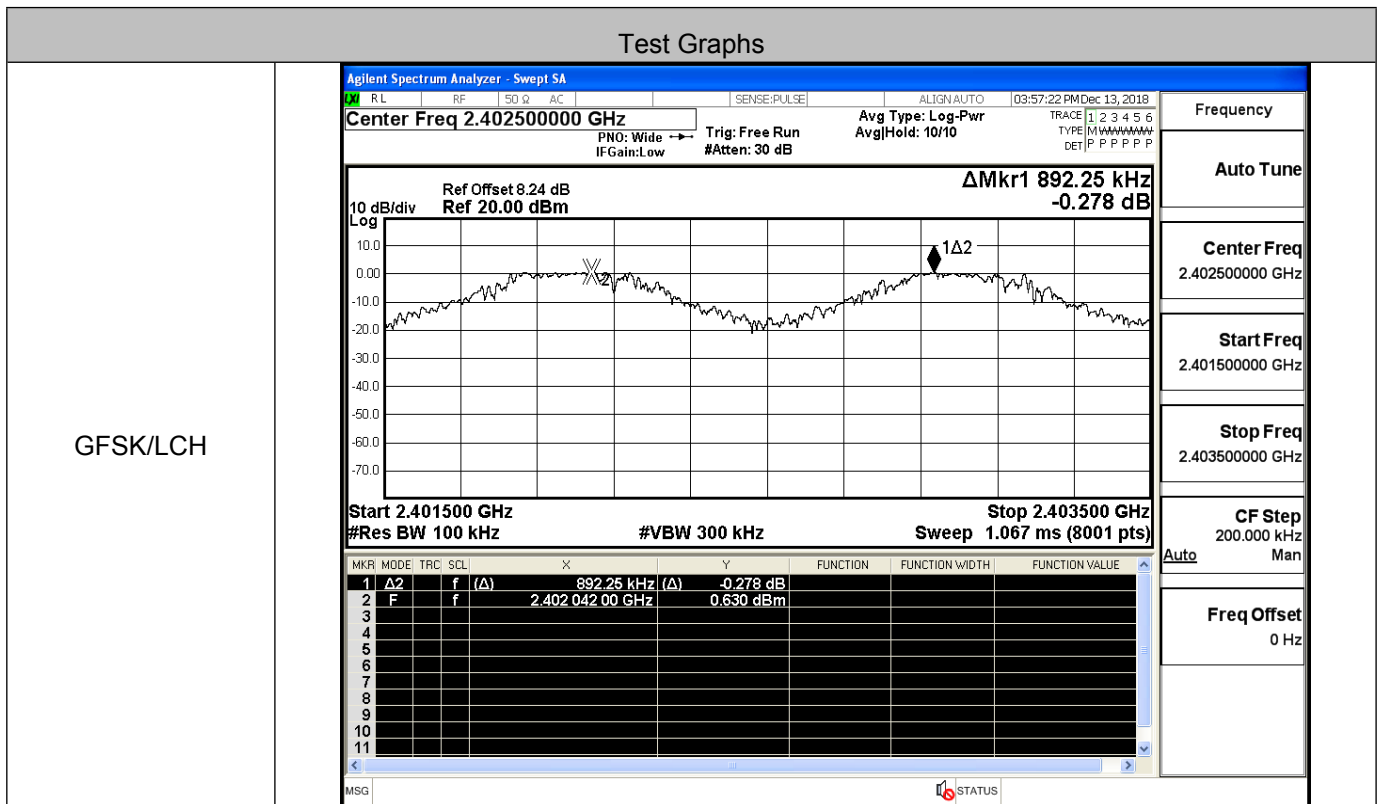
8DPSK/HCH



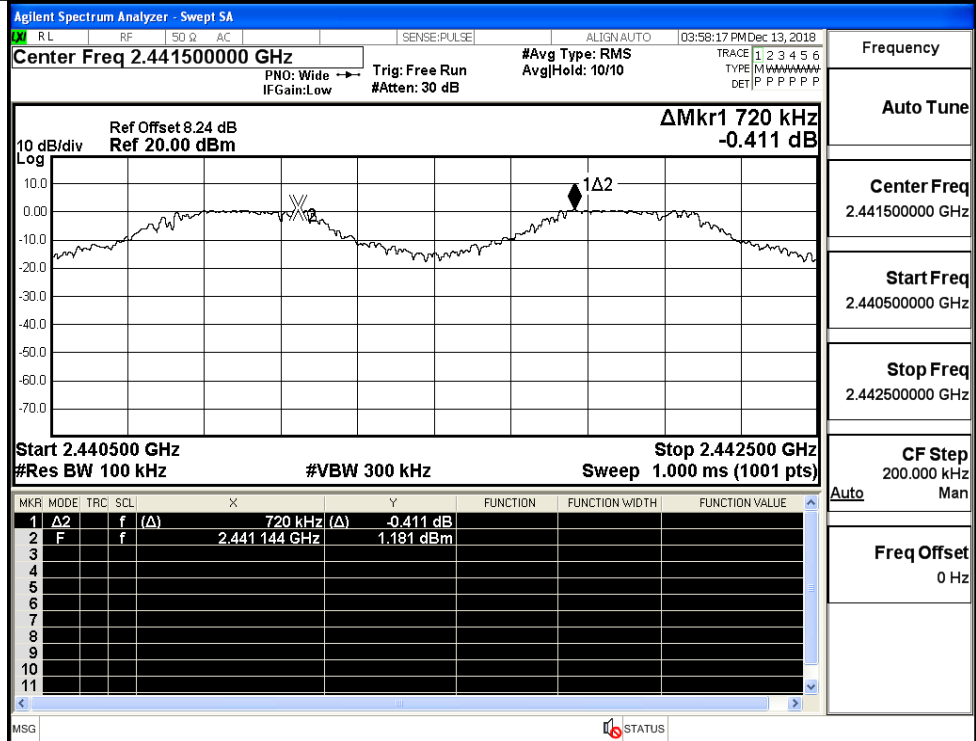
Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

A.3 Carrier Frequency Separation

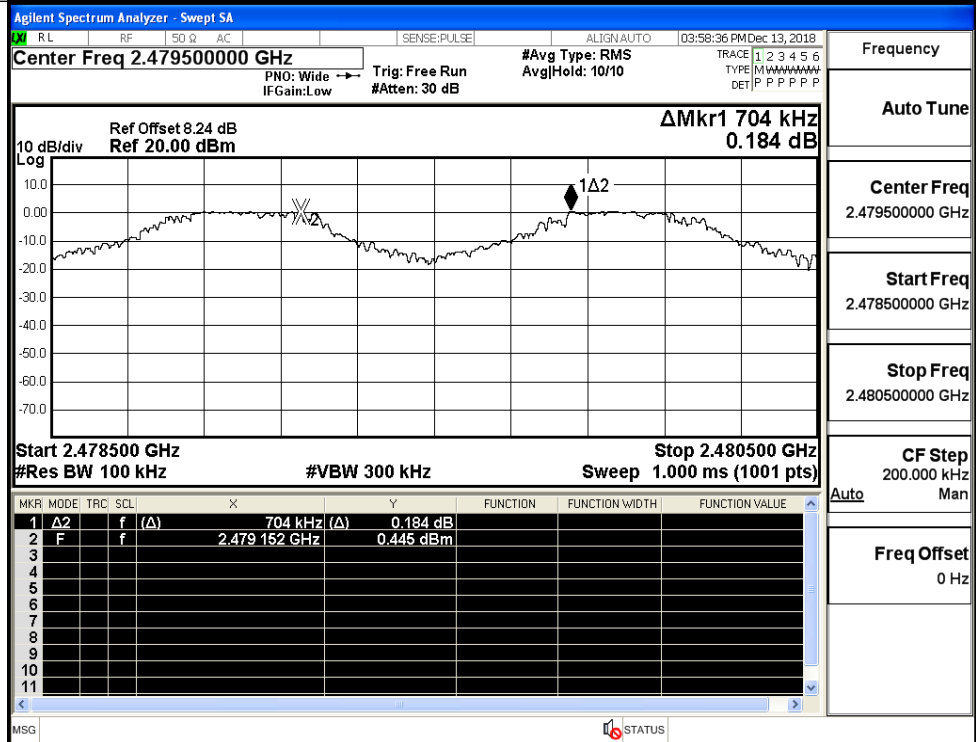
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.892	0.694	PASS
	MCH	0.720	0.694	PASS
	HCH	0.704	0.694	PASS
π/4DQPSK	LCH	1.014	0.880	PASS
	MCH	1.324	0.880	PASS
	HCH	1.018	0.880	PASS
8DPSK	LCH	1.256	0.863	PASS
	MCH	1.162	0.863	PASS
	HCH	1.114	0.863	PASS



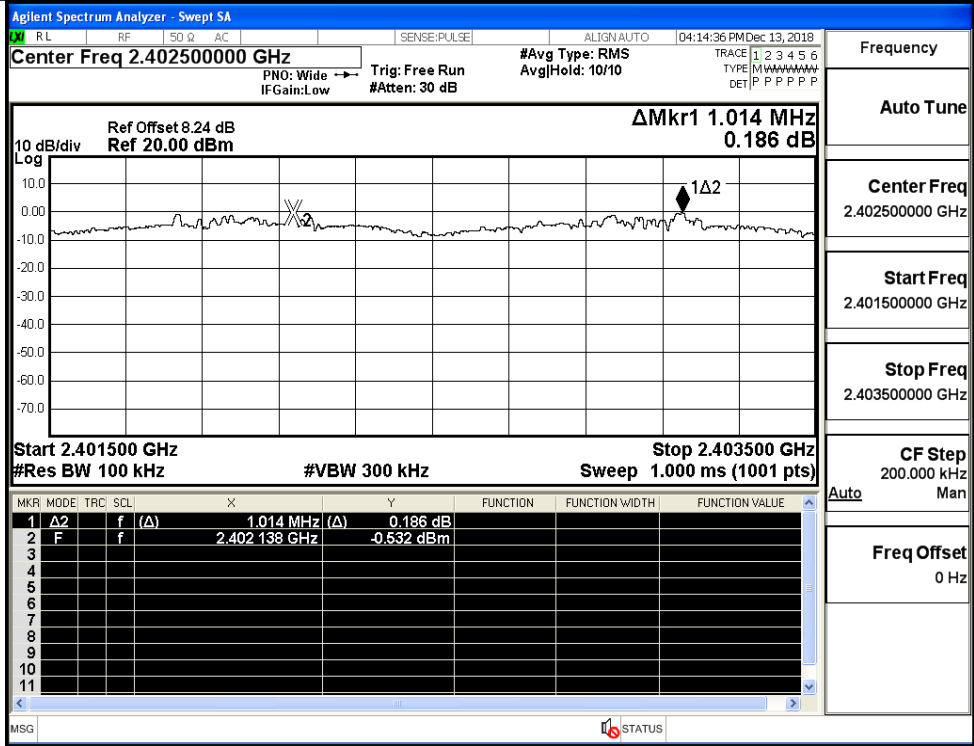
GFSK/MCH



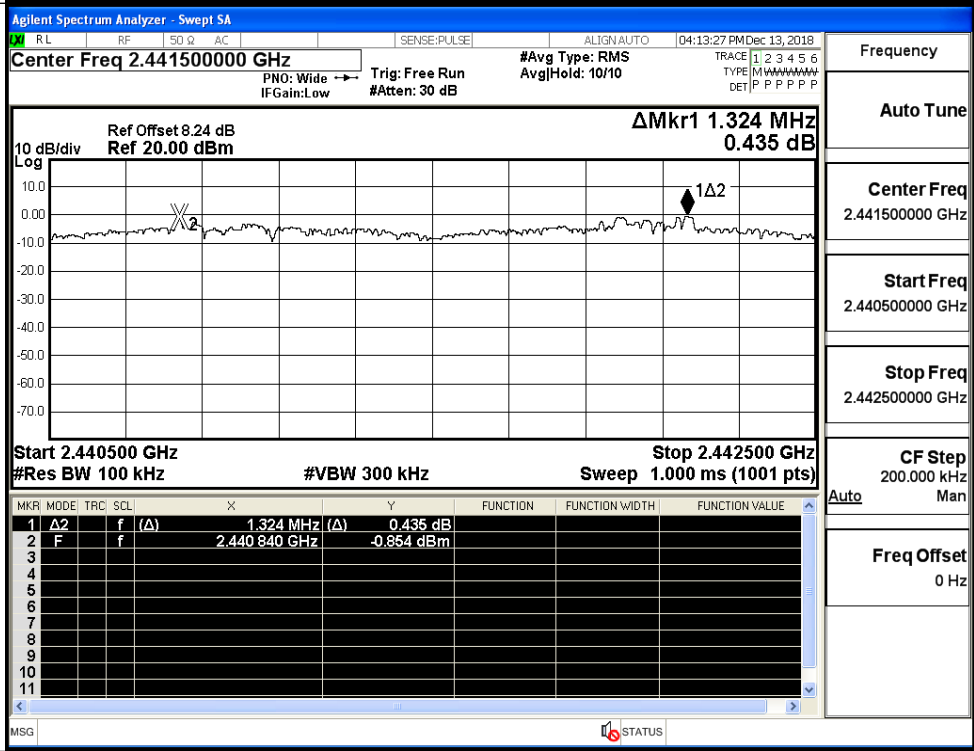
GFSK/HCH



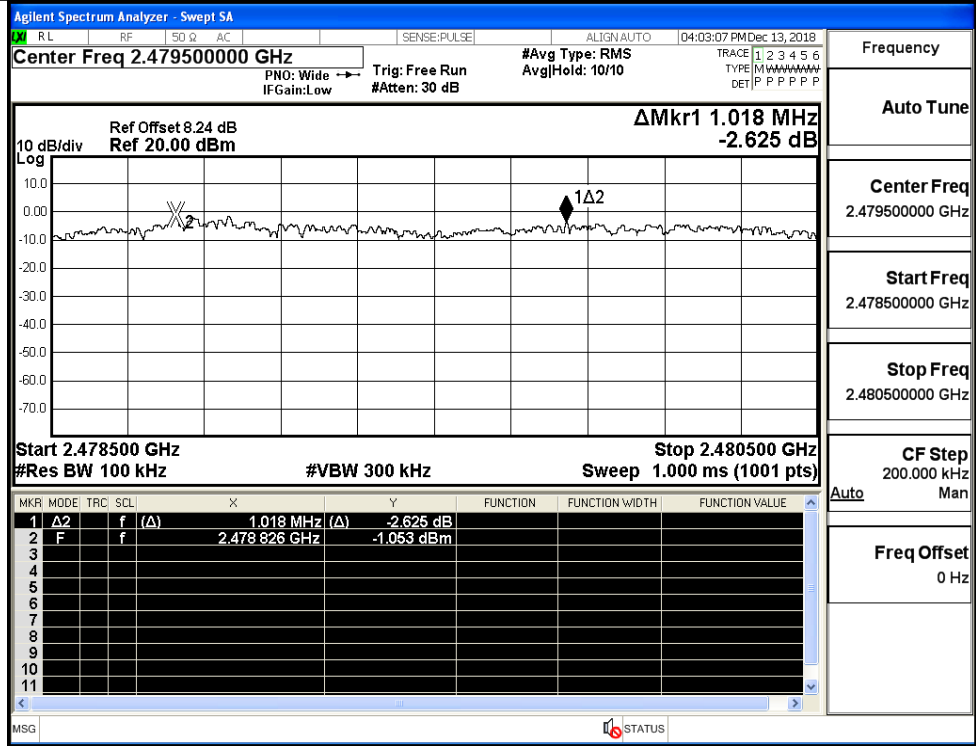
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

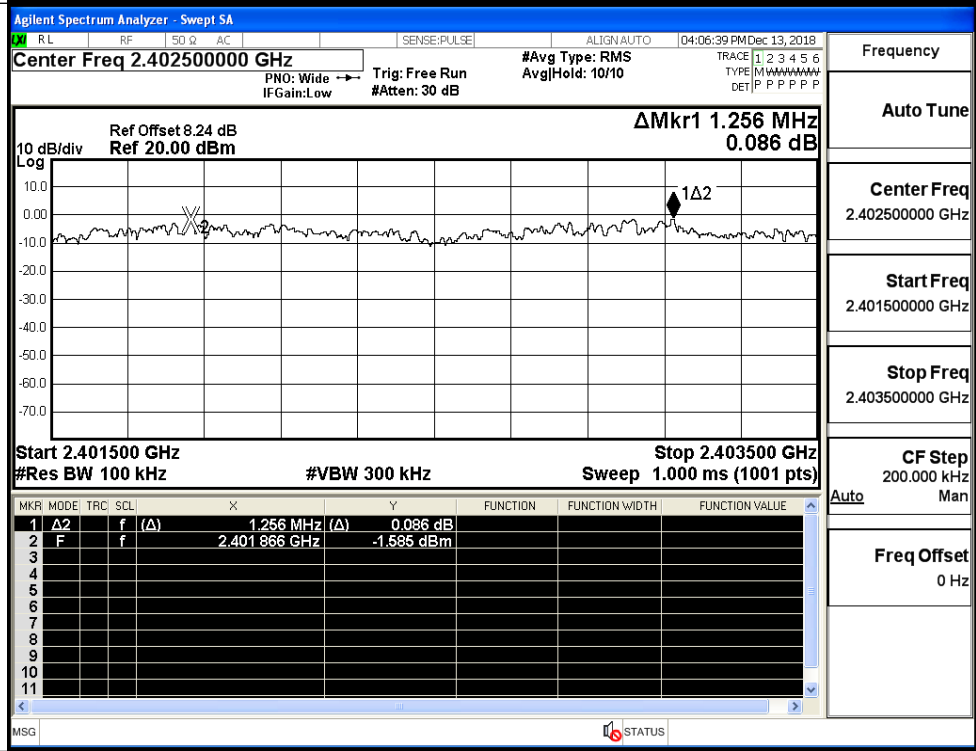


π/4DQPSK/HCH



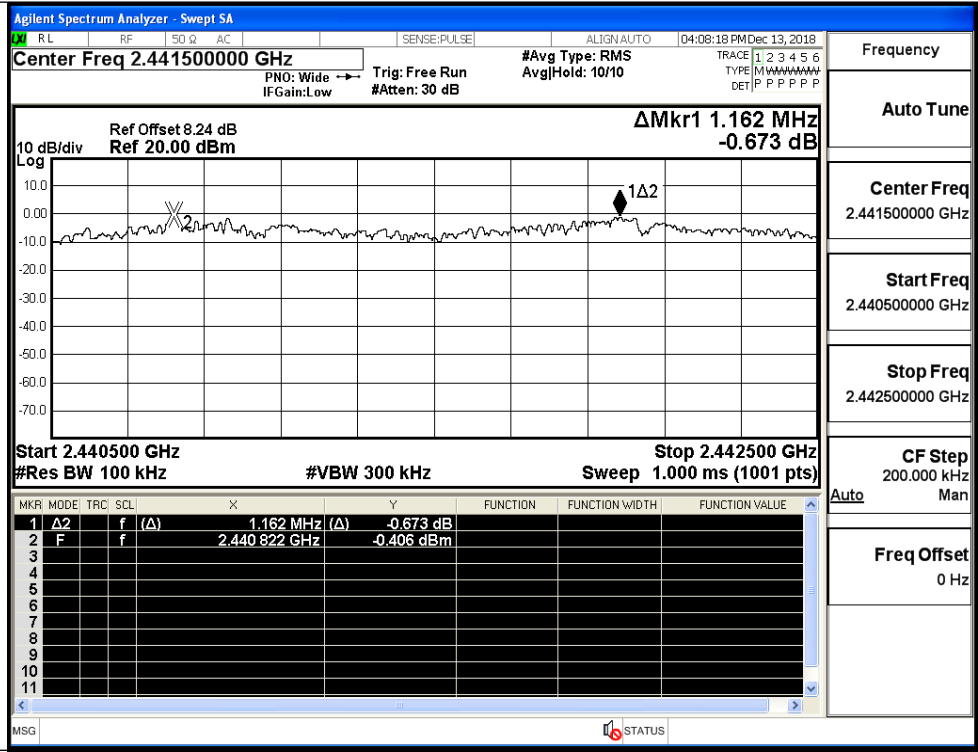
Frequency	2.479500000 GHz
Auto Tune	
Center Freq	2.479500000 GHz
Start Freq	2.478500000 GHz
Stop Freq	2.480500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/LCH

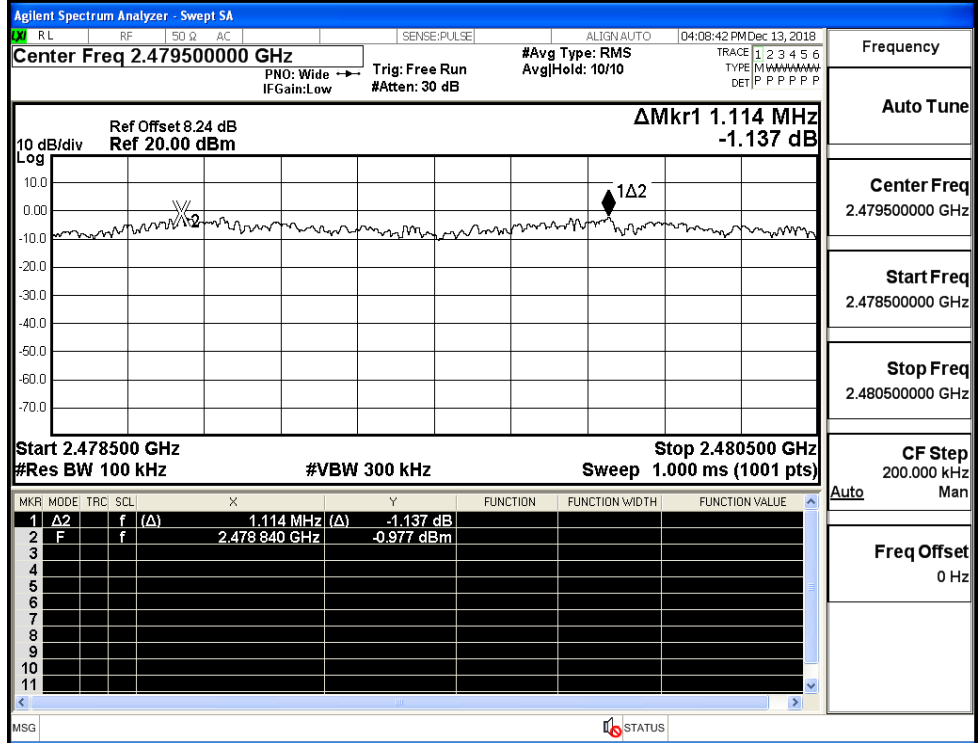


Frequency	2.402500000 GHz
Auto Tune	
Center Freq	2.402500000 GHz
Start Freq	2.401500000 GHz
Stop Freq	2.403500000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/MCH



8DPSK/HCH

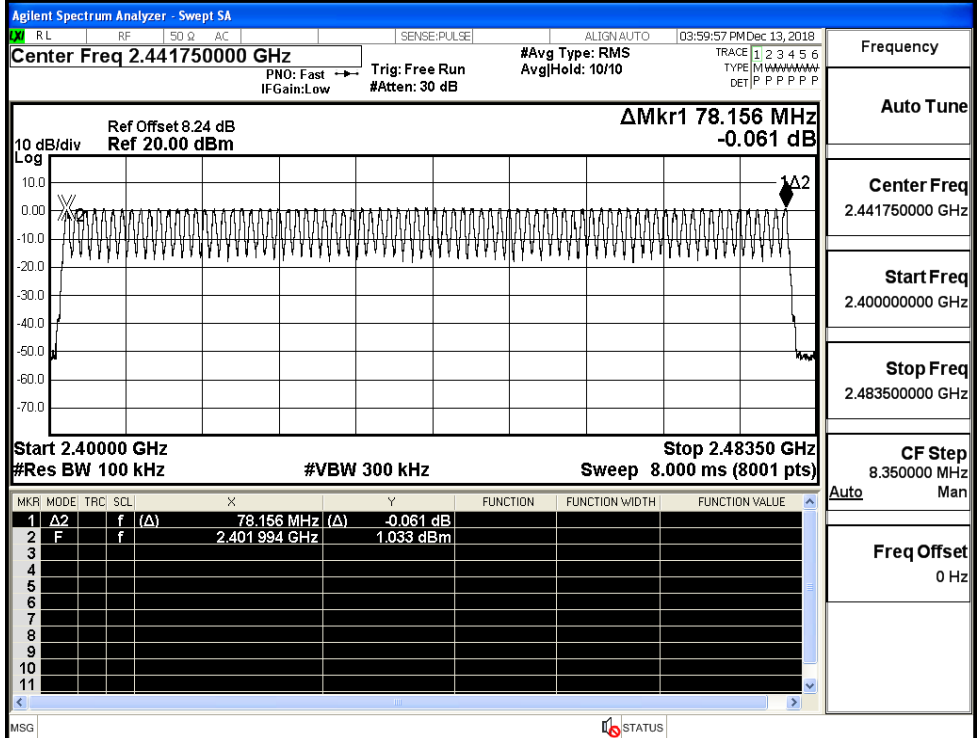


A.4 Hopping Channel Number

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

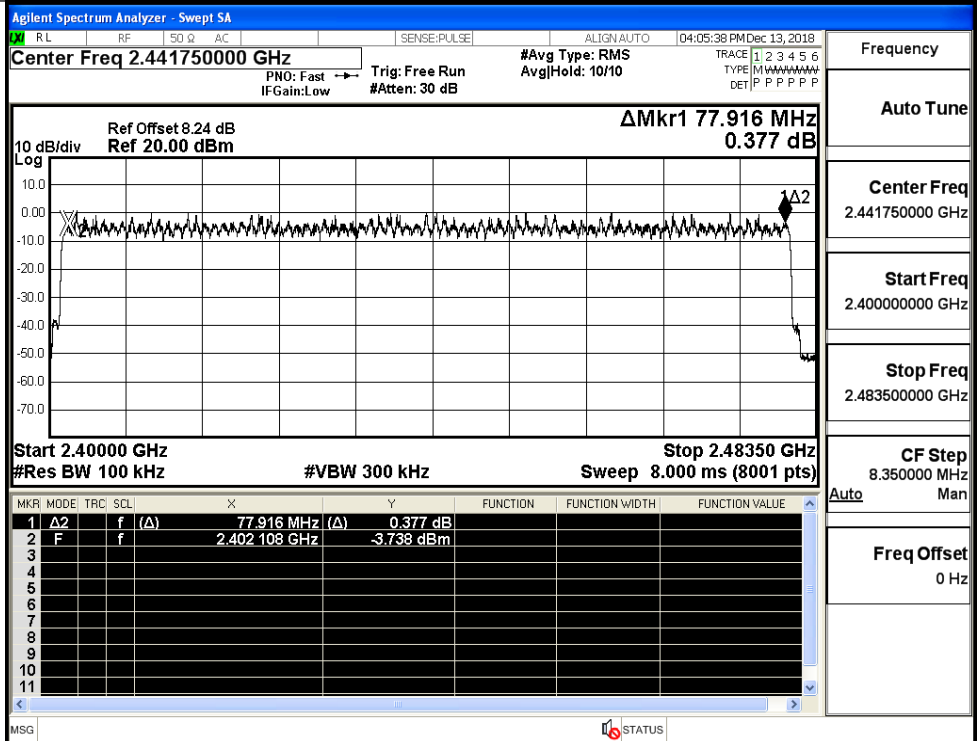
Test Graphs

GFSK/Hop



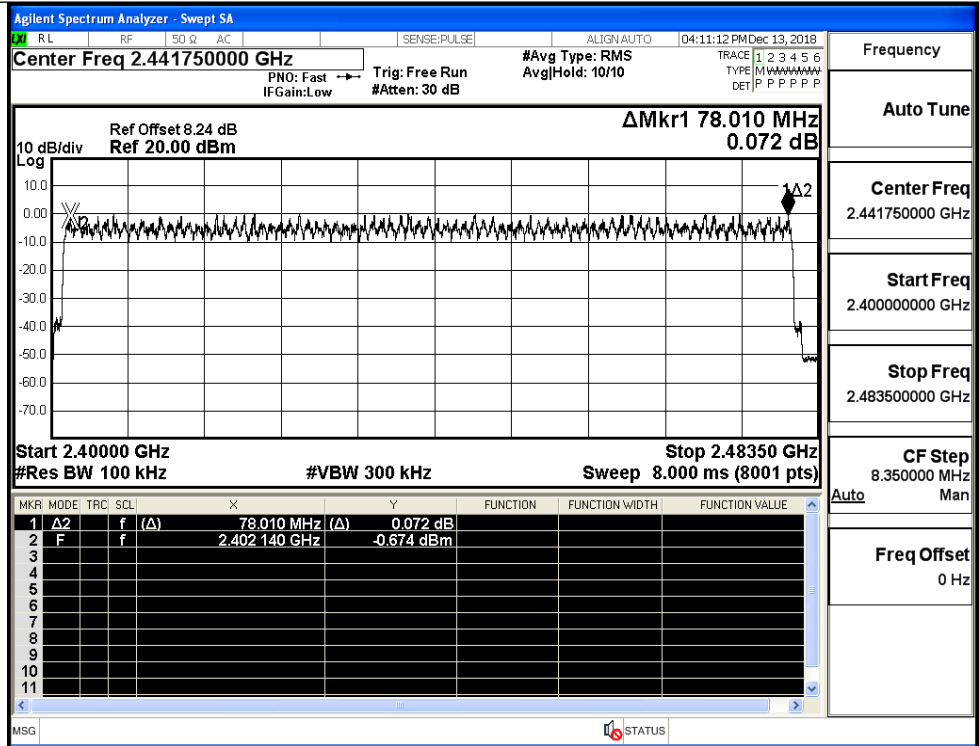
Frequency
Auto Tune
Center Freq 2.441750000 GHz
Start Freq 2.400000000 GHz
Stop Freq 2.483500000 GHz
CF Step 8.350000 MHz
Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK/Hop



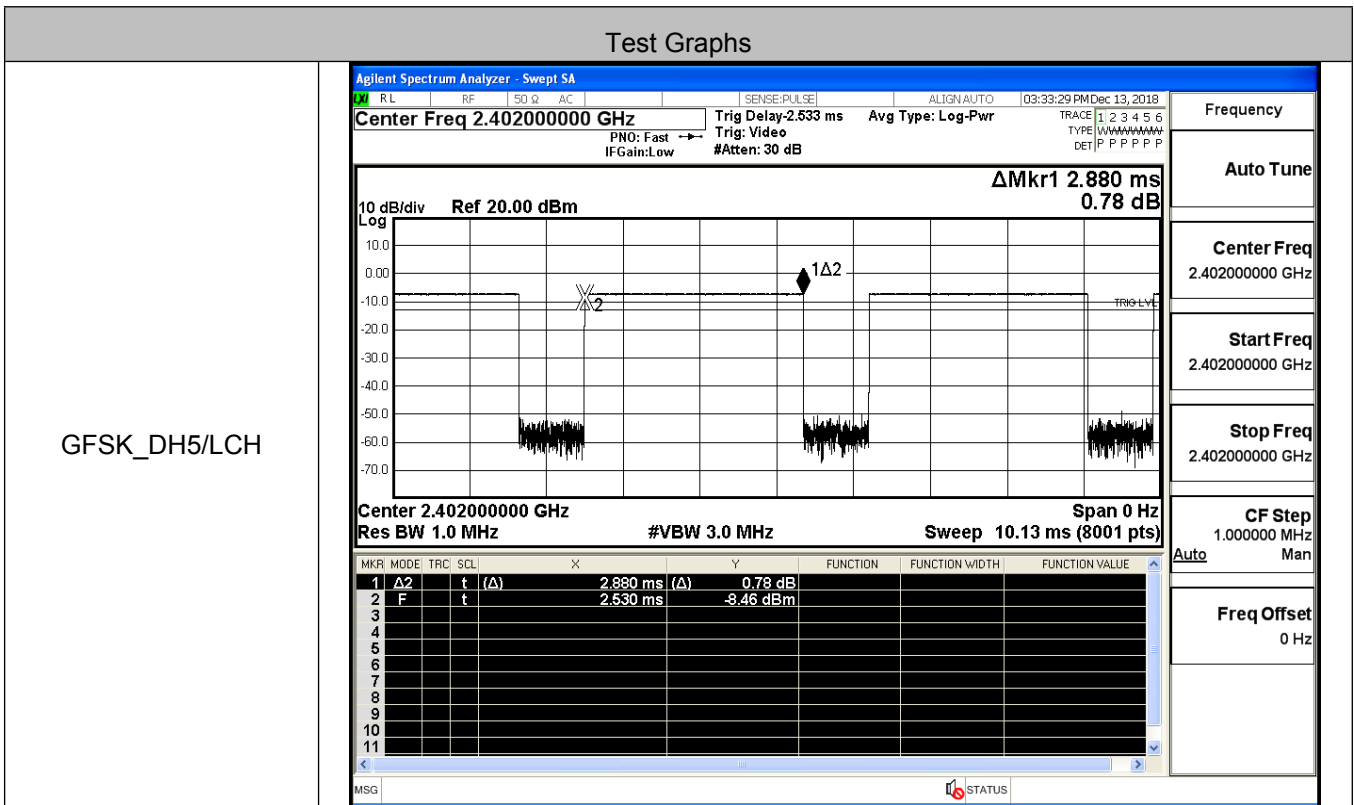
Frequency
Auto Tune
Center Freq 2.441750000 GHz
Start Freq 2.400000000 GHz
Stop Freq 2.483500000 GHz
CF Step 8.350000 MHz
Auto Man
Freq Offset 0 Hz

8DPSK/Hop

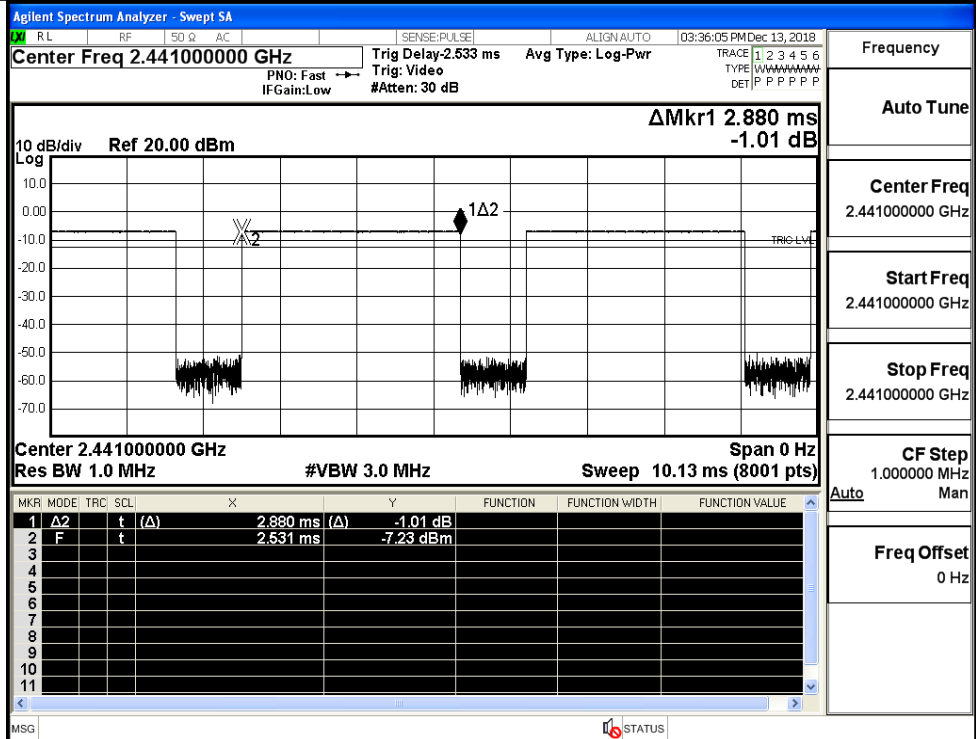


A.5 Dwell Time

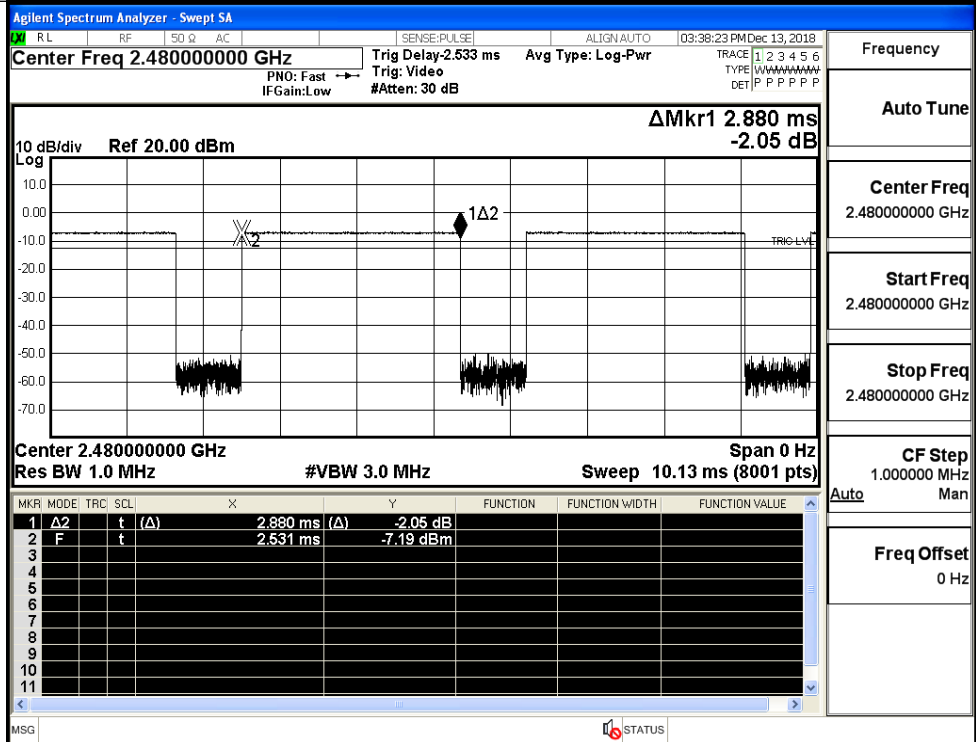
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS



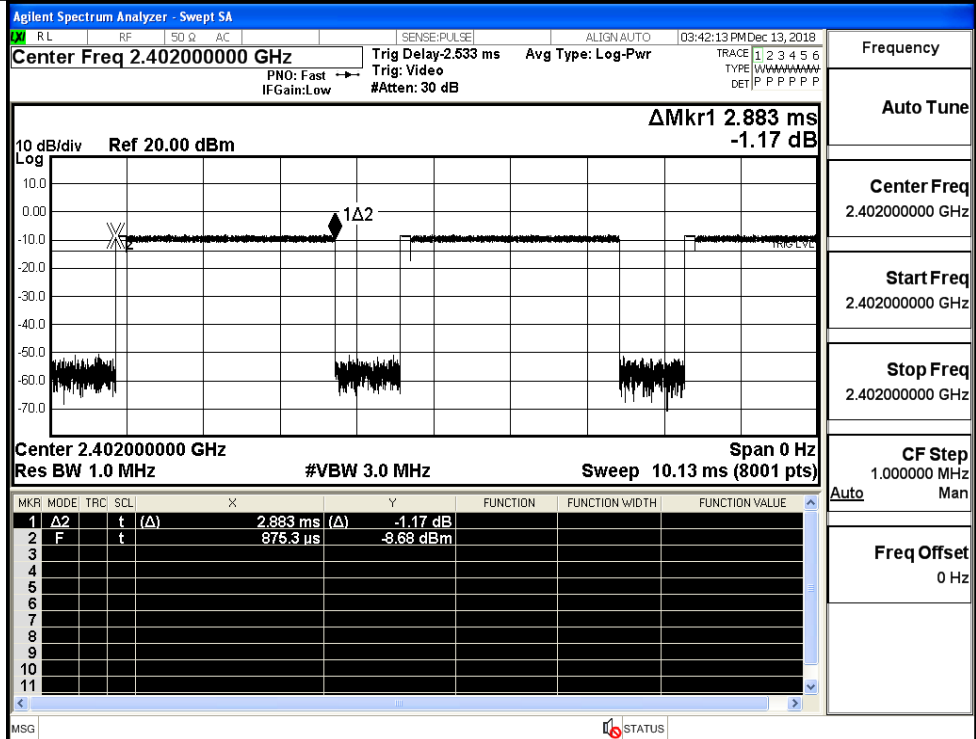
GFSK_DH5/MCH



GFSK_DH5/HCH

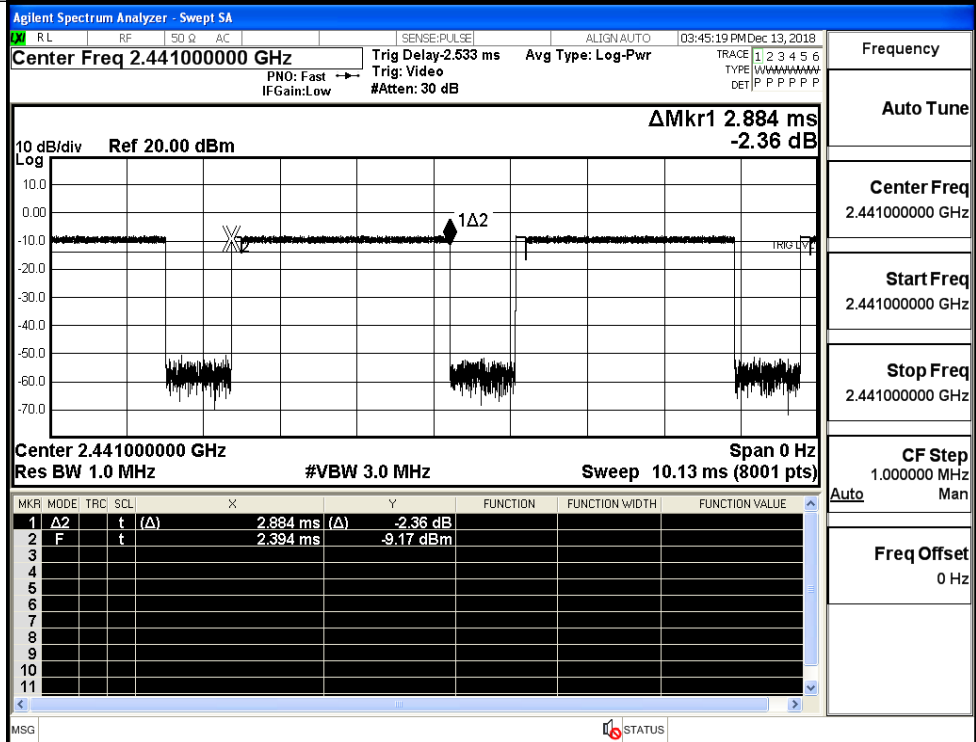


$\pi/4$ DQPSK
_2DH5/LCH



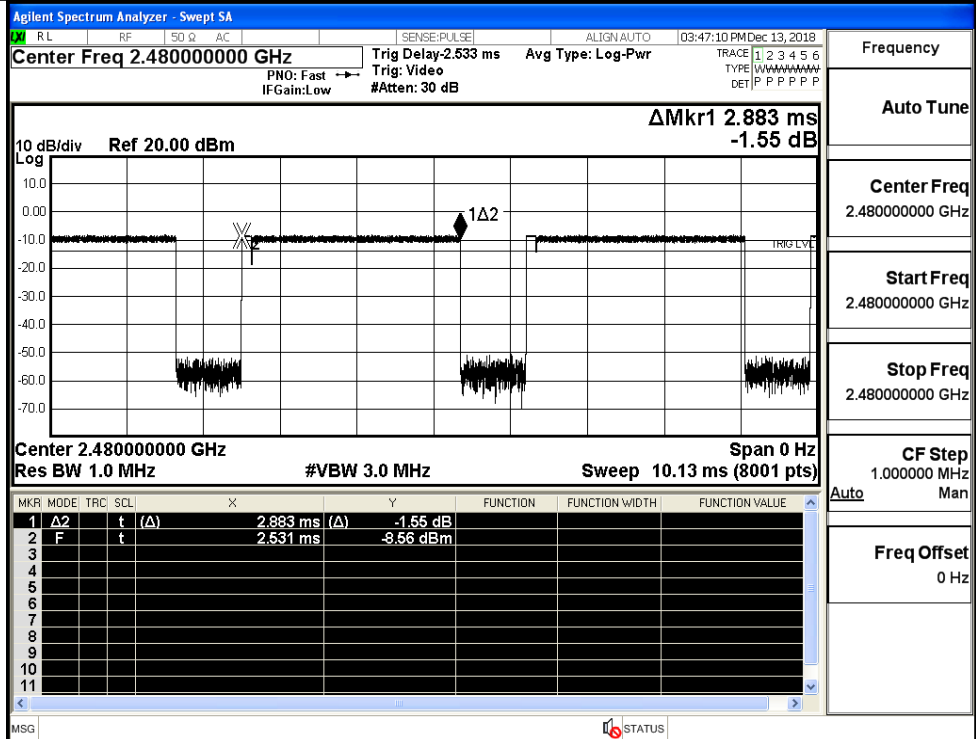
Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/MCH



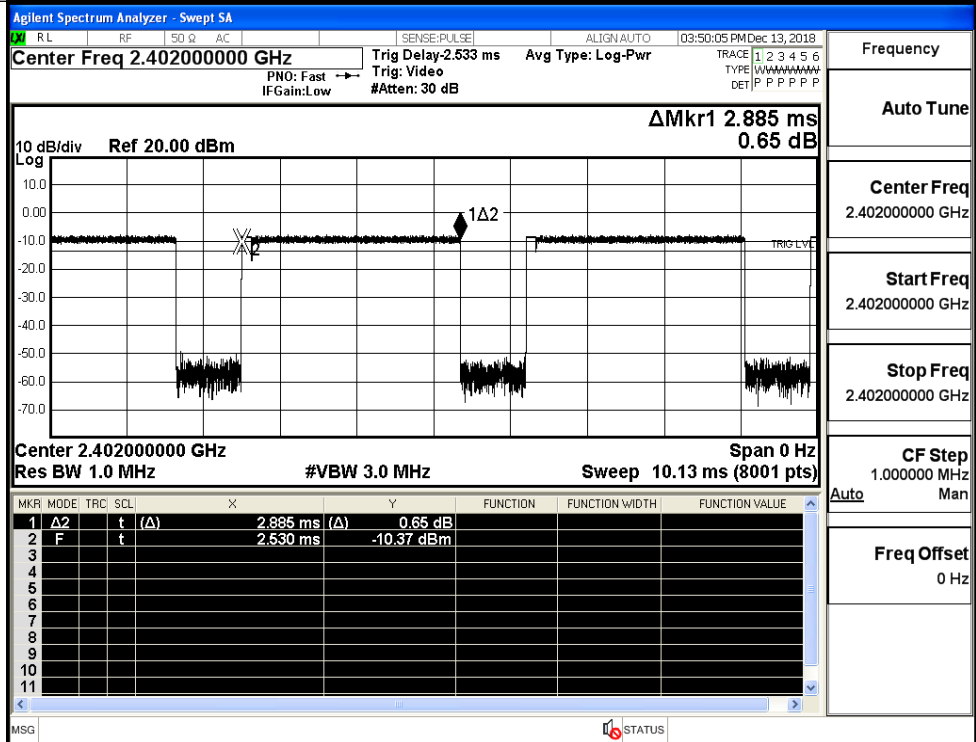
Frequency	2.441000000 GHz
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.441000000 GHz
Stop Freq	2.441000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK
_2DH5/HCH



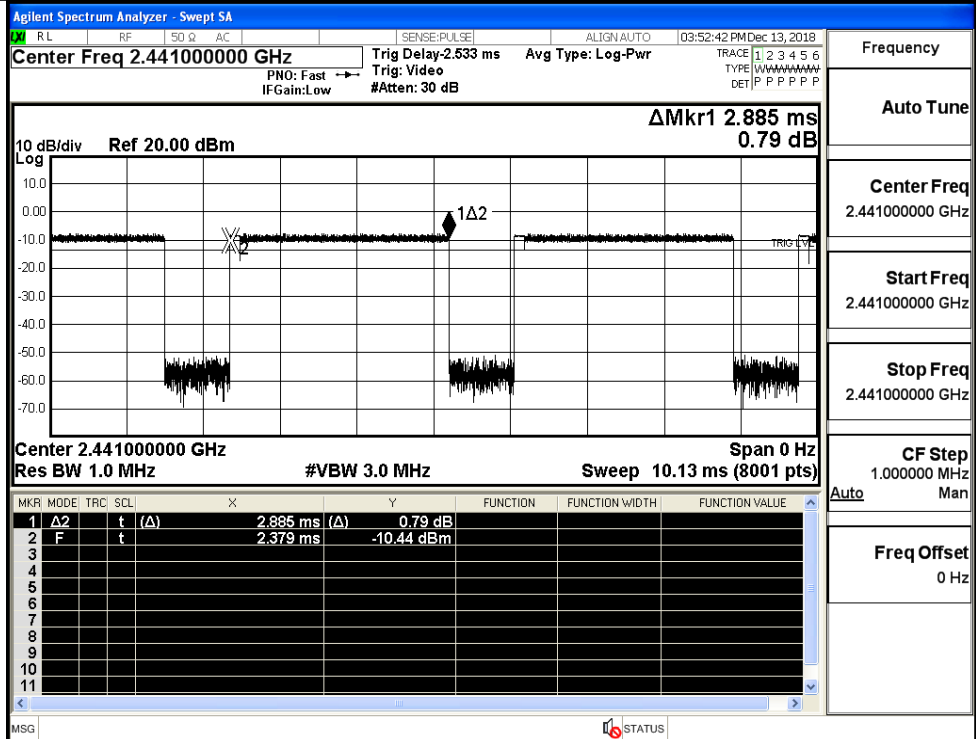
Frequency	2.480000000 GHz
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/LCH



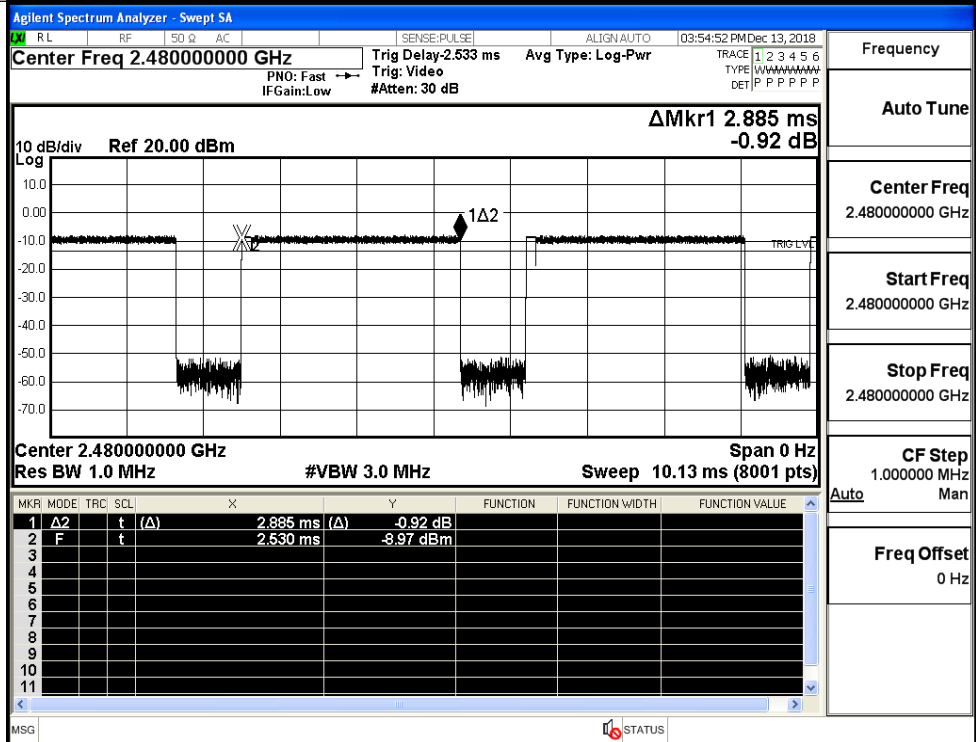
Frequency	2.402000000 GHz
Auto Tune	
Center Freq	2.402000000 GHz
Start Freq	2.402000000 GHz
Stop Freq	2.402000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

8DPSK_3DH5/MCH



Frequency	2.441000000 GHz
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

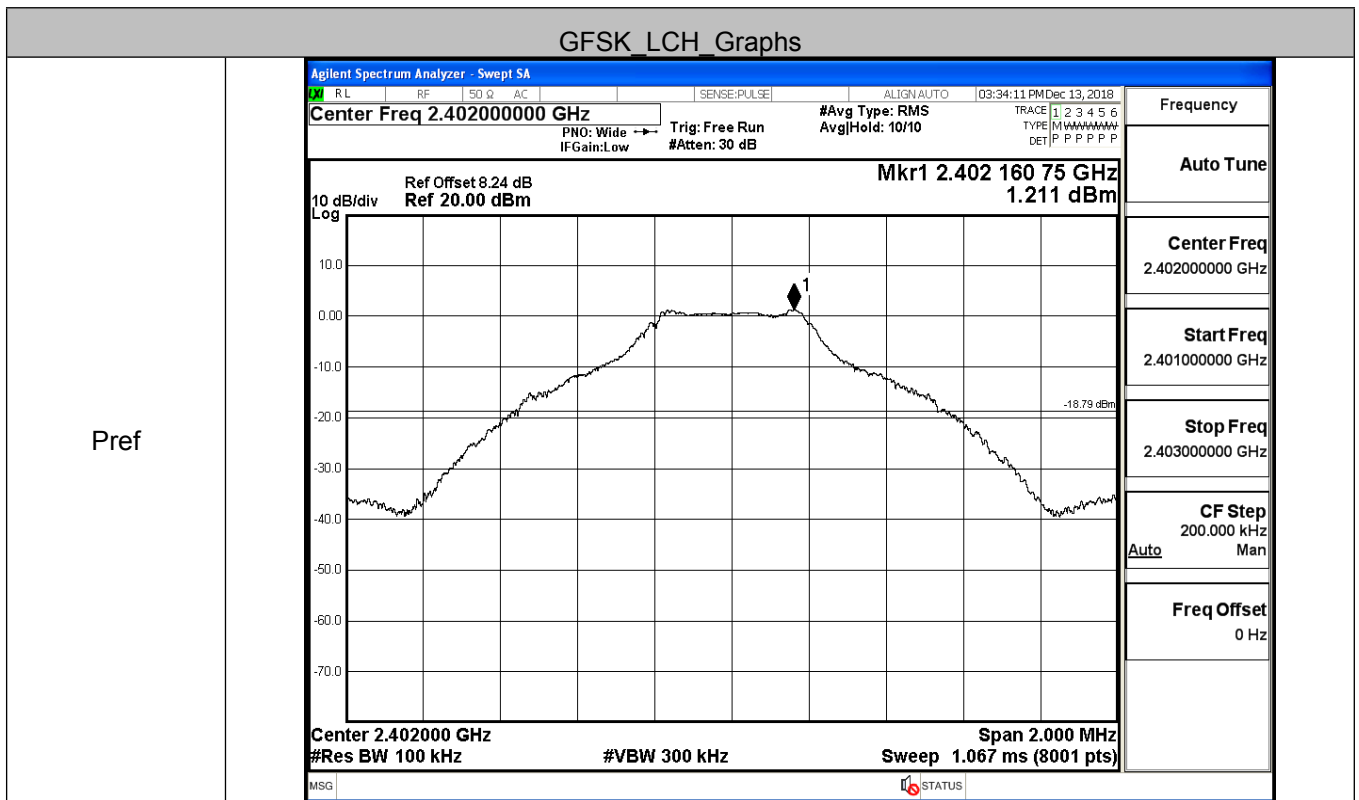


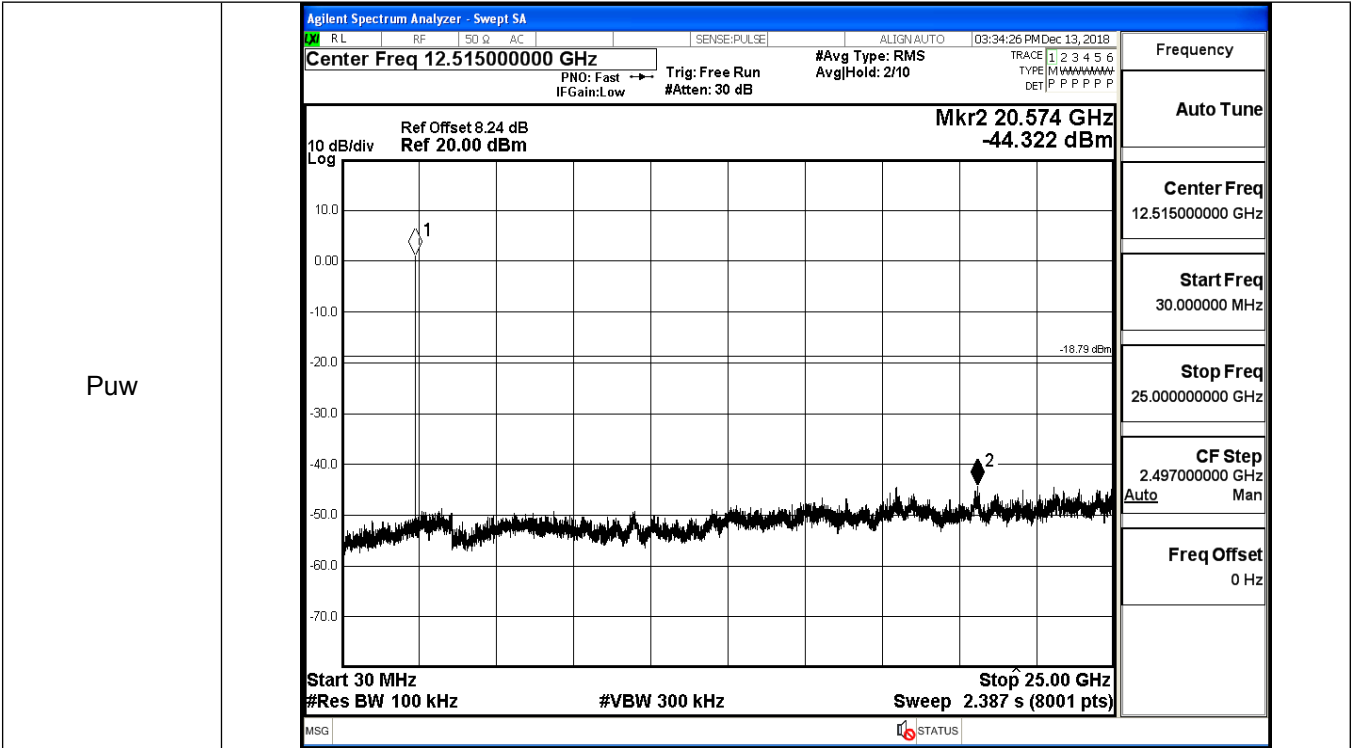
Frequency	2.480000000 GHz
Auto Tune	
Center Freq	2.480000000 GHz
Start Freq	2.480000000 GHz
Stop Freq	2.480000000 GHz
CF Step	1.000000 MHz
Auto	Man
Freq Offset	0 Hz

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.211	-44.322	-18.789	PASS
	MCH	1.242	-44.699	-18.758	PASS
	HCH	1.184	-44.502	-18.816	PASS
π/4DQPSK	LCH	-0.283	-44.761	-20.283	PASS
	MCH	-0.209	-44.566	-20.209	PASS
	HCH	-0.439	-43.848	-20.439	PASS
8DPSK	LCH	-0.356	-44.701	-20.356	PASS
	MCH	-0.934	-44.613	-20.934	PASS
	HCH	-0.274	-44.276	-20.274	PASS

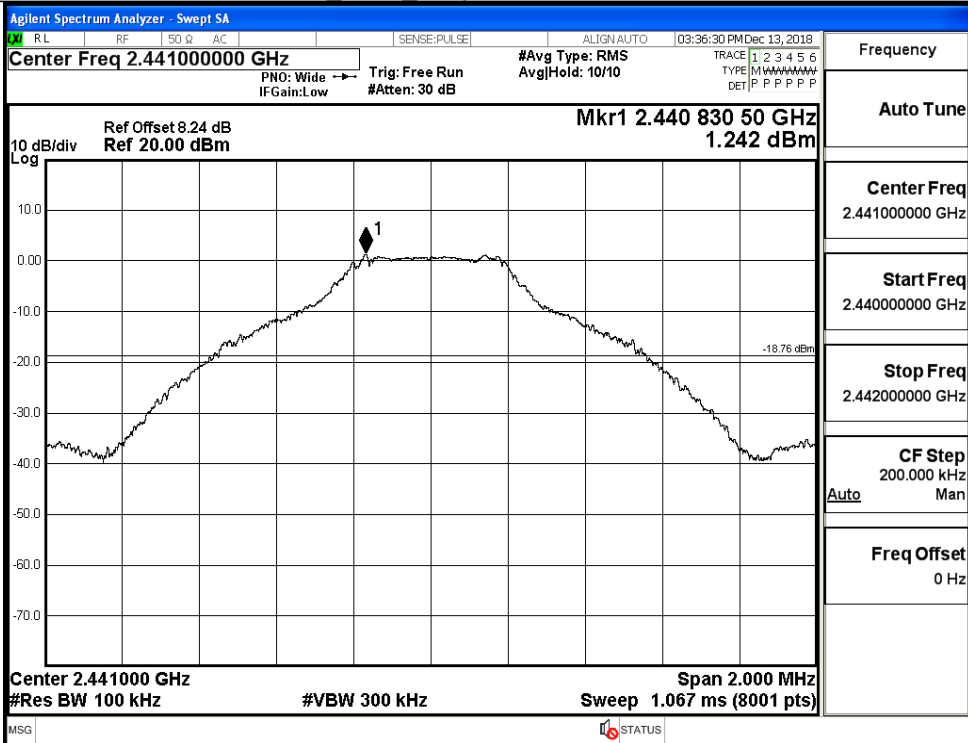
GFSK LCH Graphs



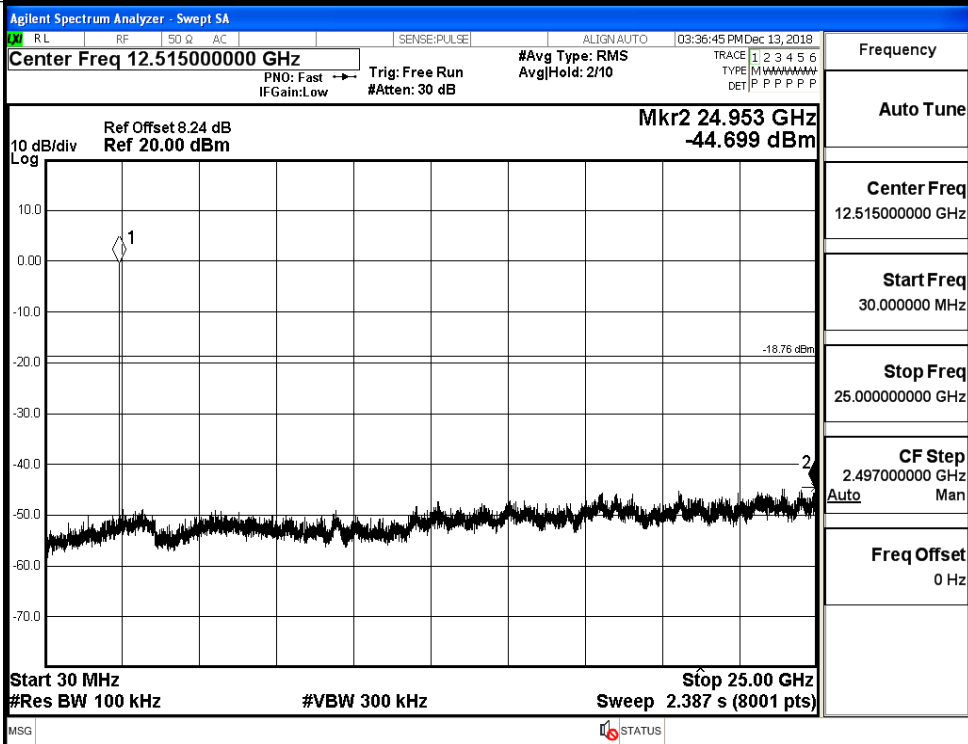


GFSK_MCH_Graphs

Pref

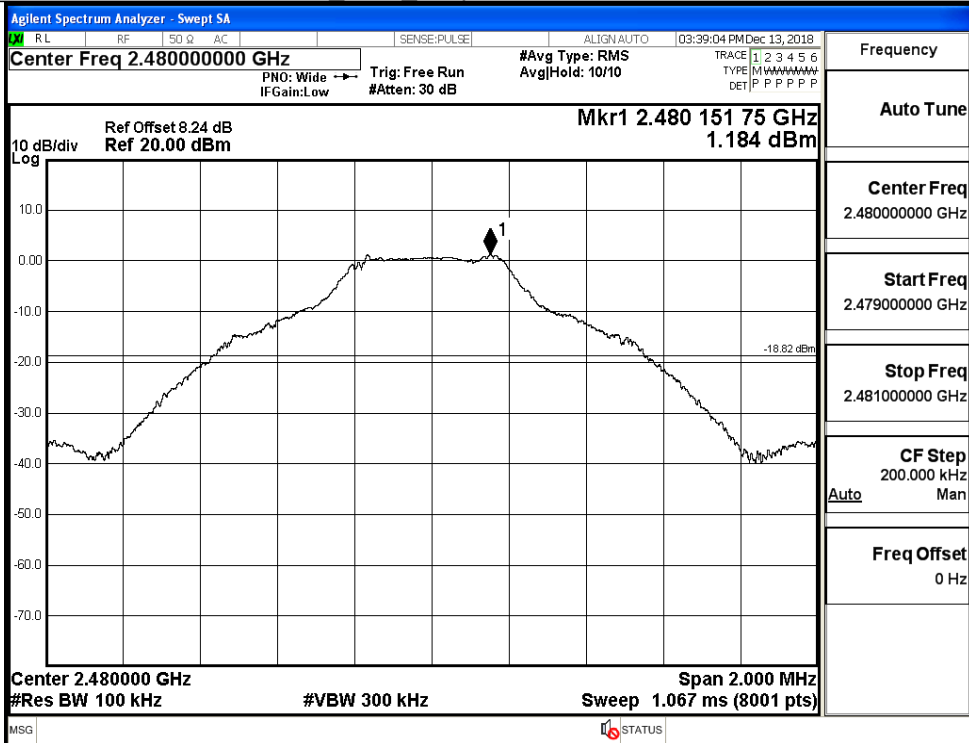


Puw

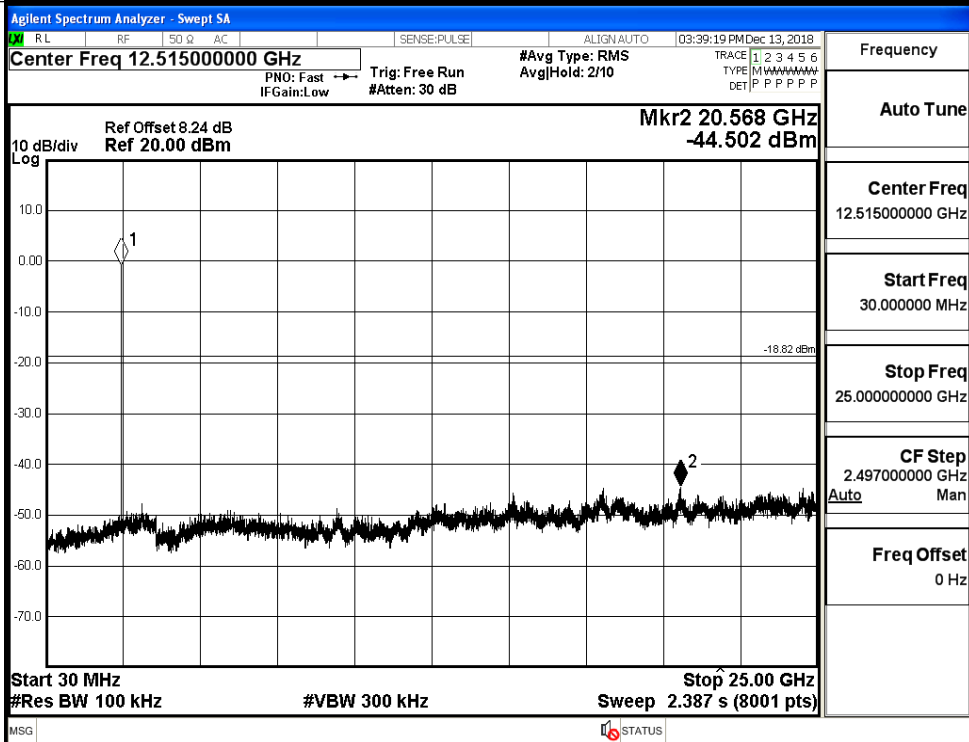


GFSK_HCH_Graphs

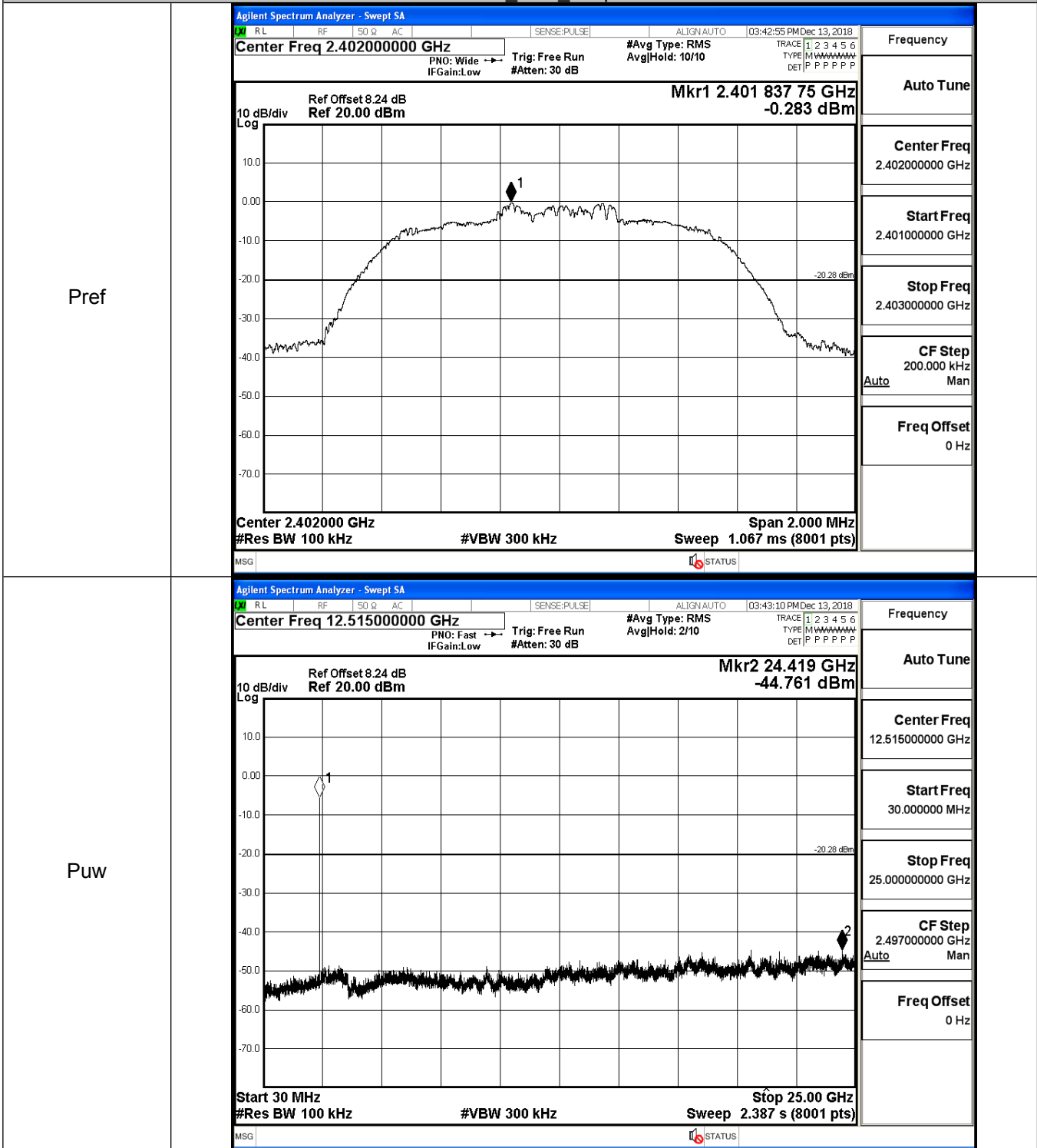
Pref



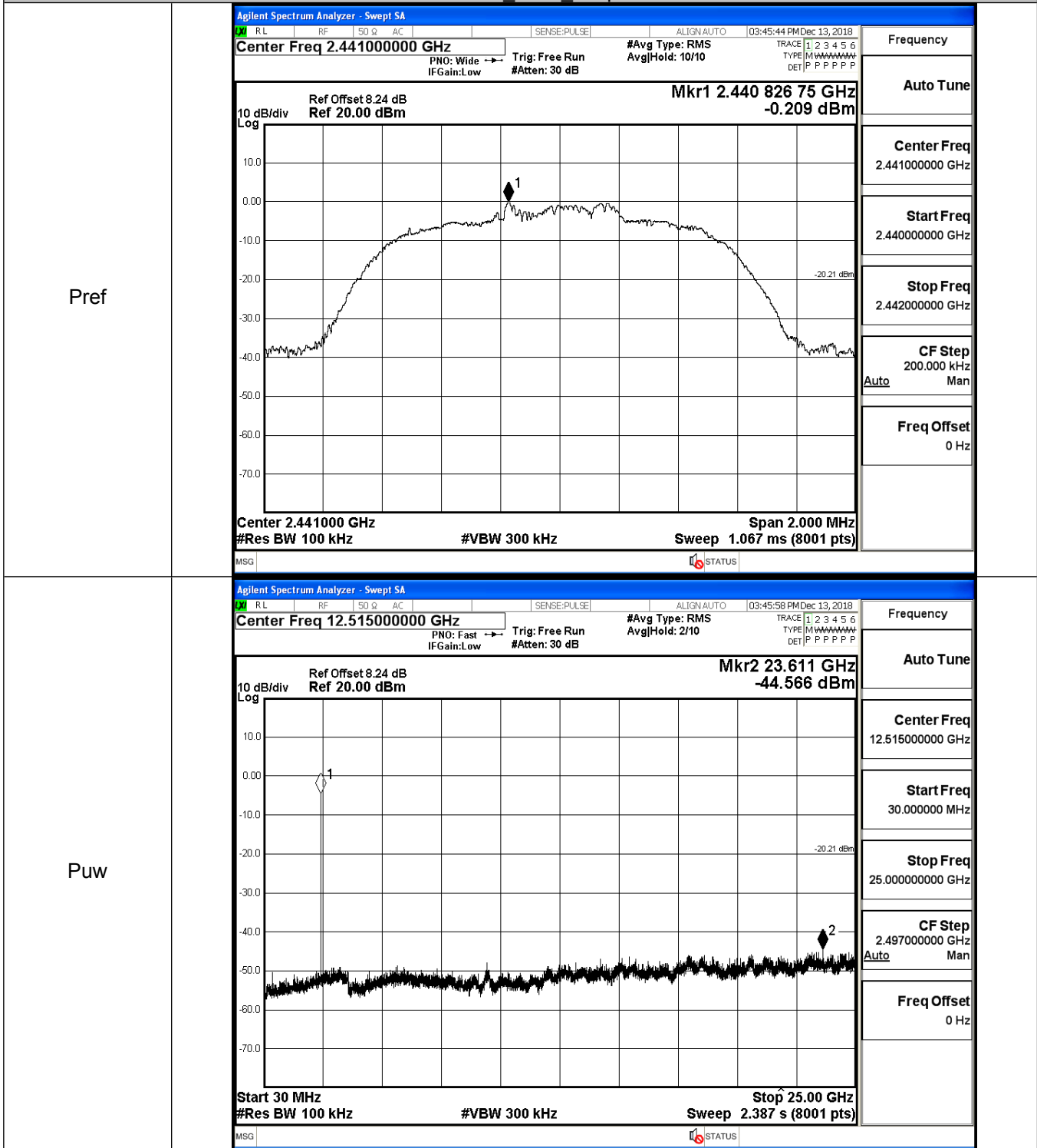
Puw



$\pi/4$ DQPSK_LCH_Graphs

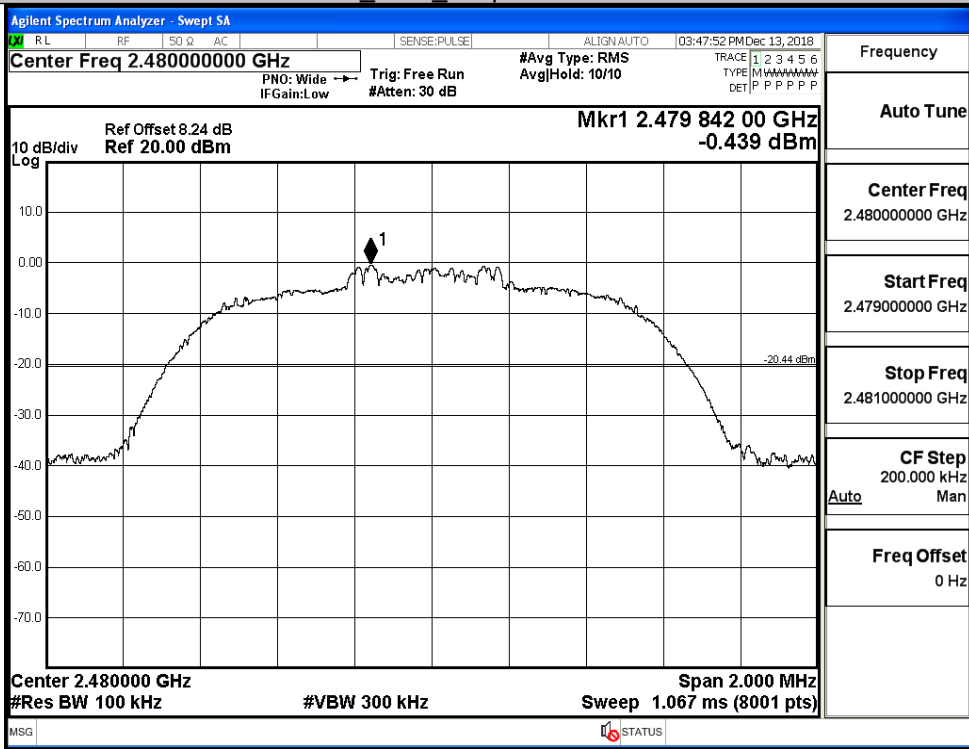


$\pi/4$ DQPSK_MCH_Graphs

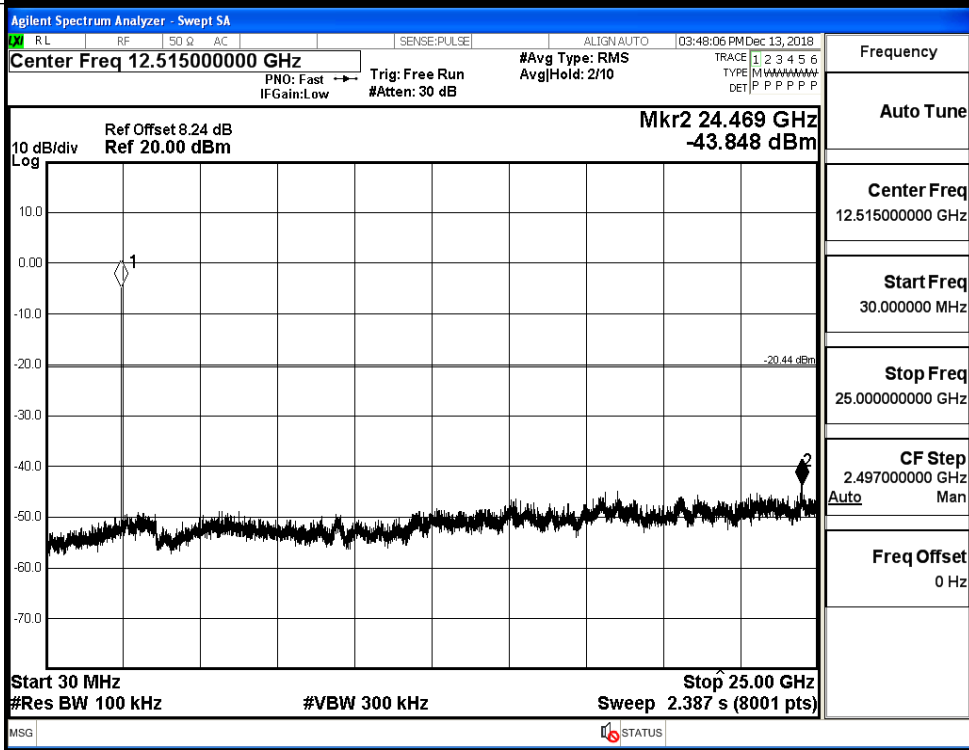


$\pi/4$ DQPSK_HCH_Graphs

Pref

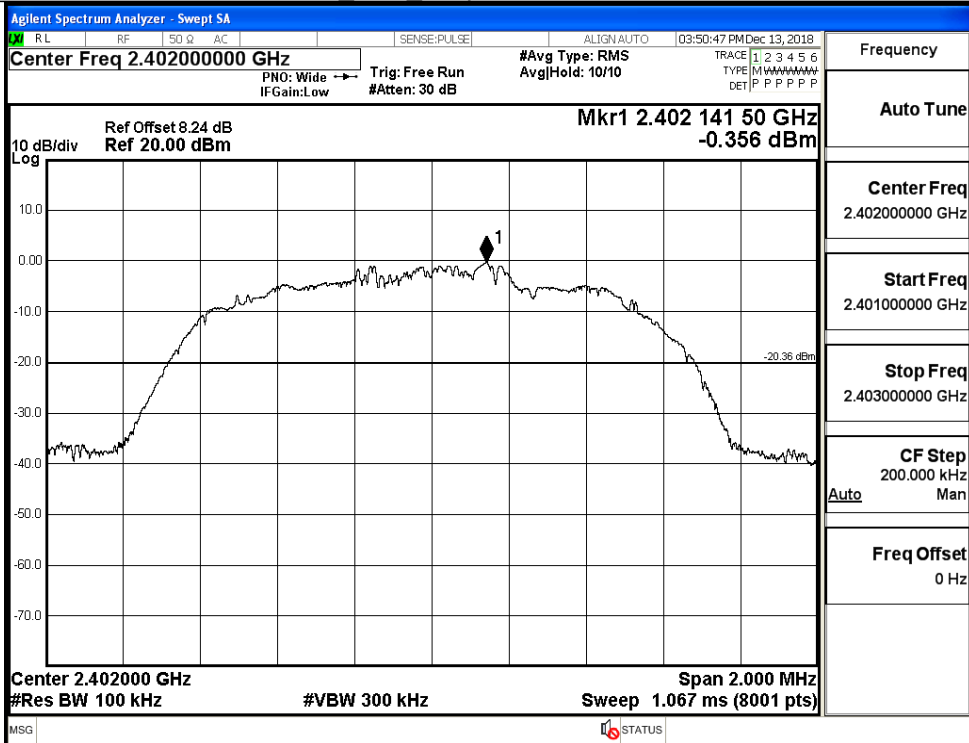


Puw

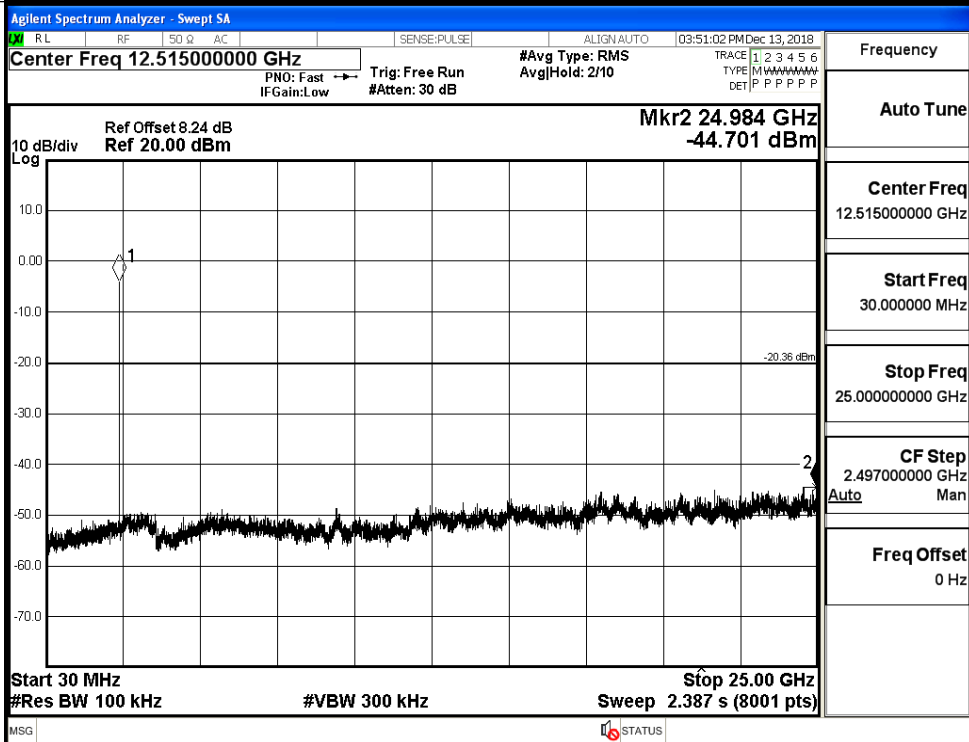


8DPSK_LCH_Graphs

Pref

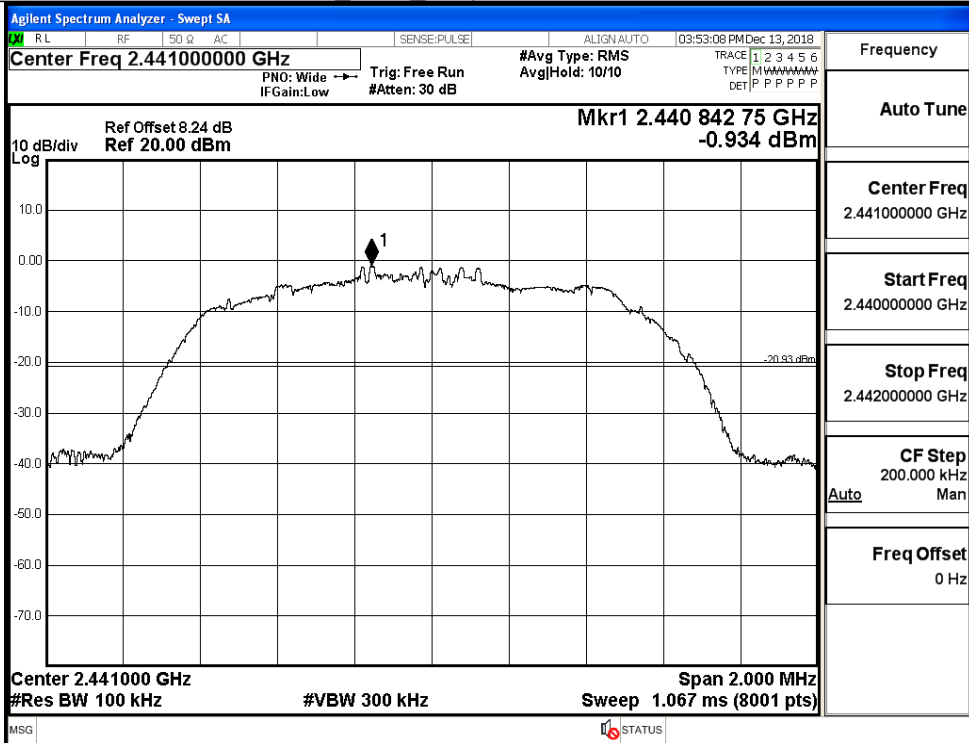


Puw

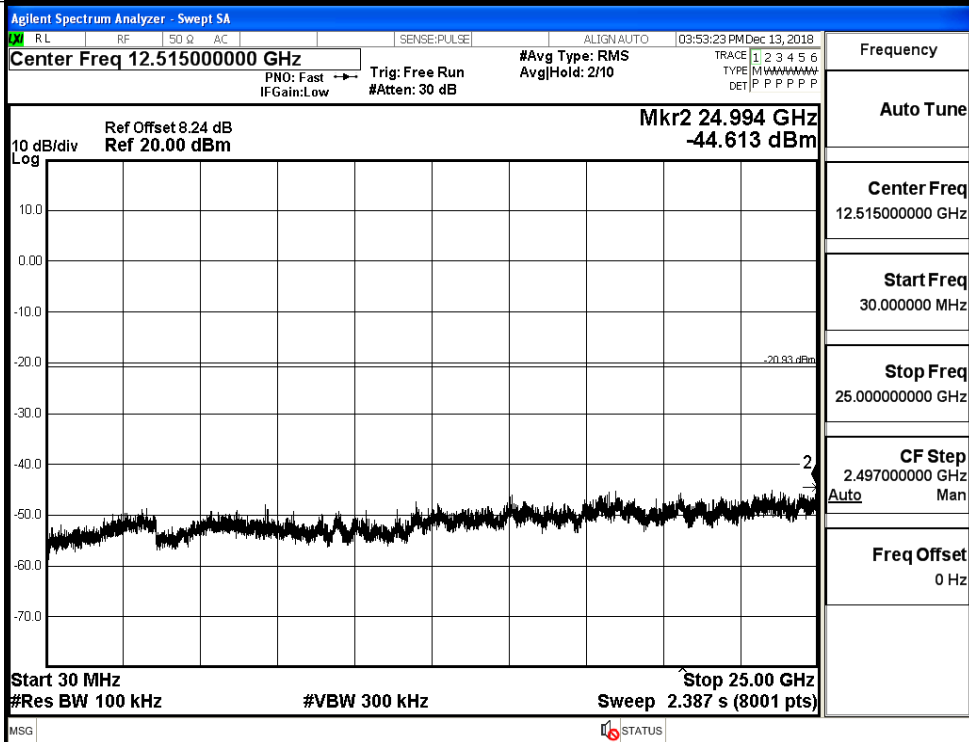


8DPSK_MCH_Graphs

Pref

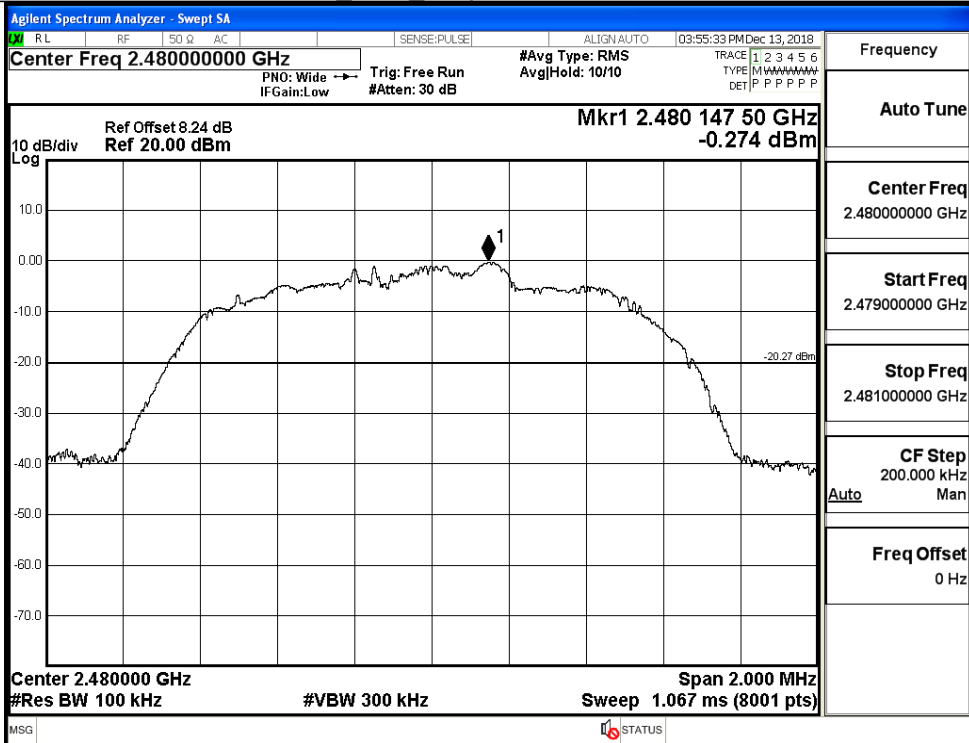


Puw

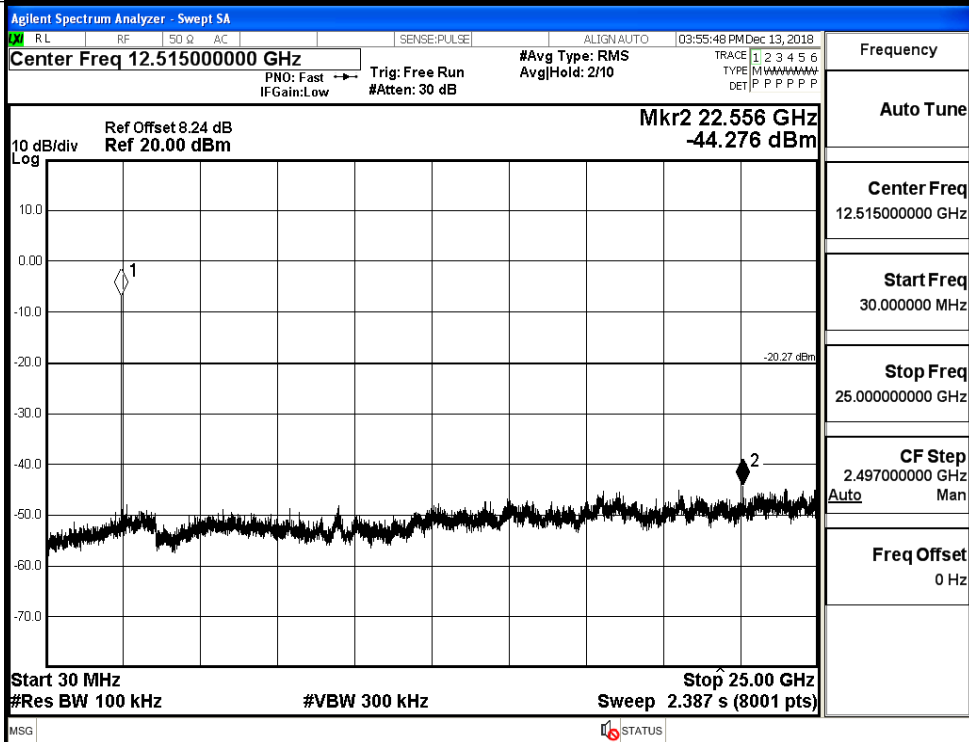


8DPSK_HCH_Graphs

Pref



Puw

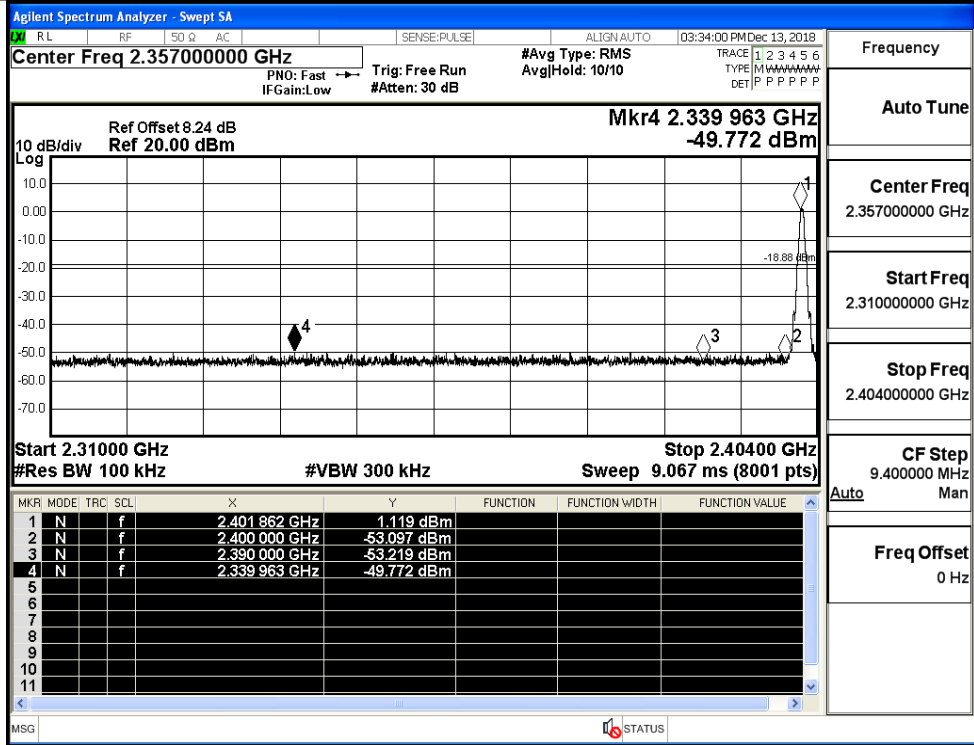


A.7 Band-edge for RF Conducted Emissions

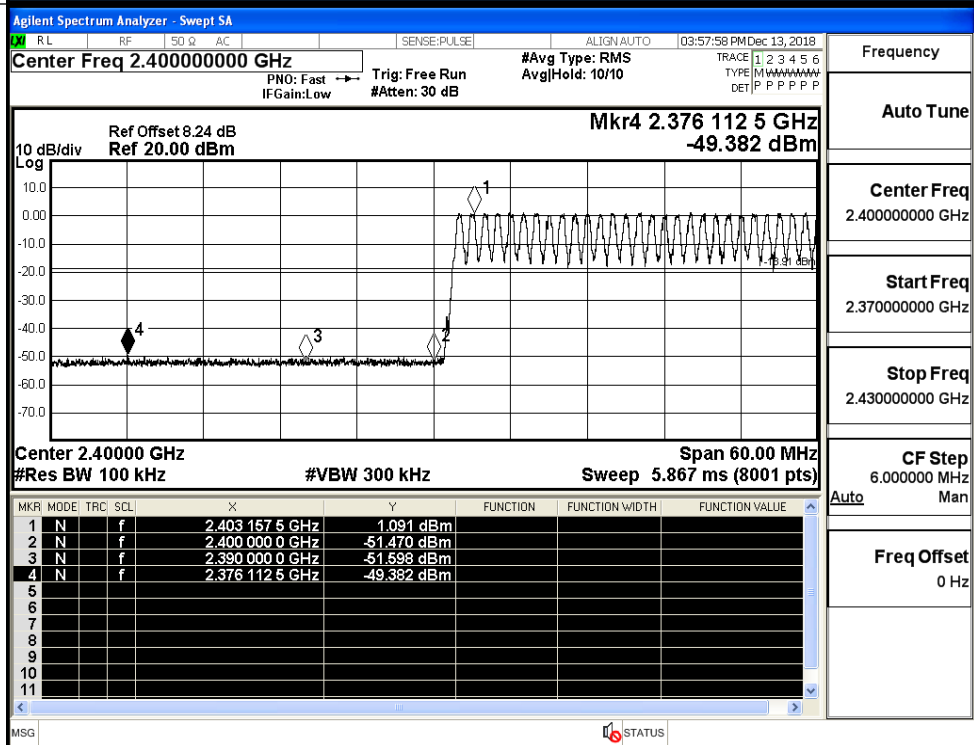
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	1.119	Off	-49.772	-18.88	PASS
			1.091	On	-49.382	-18.91	PASS
	HCH	2480	1.173	Off	-49.377	-18.83	PASS
			1.157	On	-49.426	-18.84	PASS
$\pi/4$ DQPSK	LCH	2402	-0.149	Off	-50.023	-20.15	PASS
			-0.223	On	-49.422	-20.22	PASS
	HCH	2480	-0.310	Off	-49.981	-20.31	PASS
			-0.129	On	-48.312	-20.13	PASS
8DPSK	LCH	2402	-2.087	Off	-49.331	-22.09	PASS
			-0.228	On	-48.377	-20.23	PASS
	HCH	2480	-0.262	Off	-50.023	-20.26	PASS
			-0.243	On	-49.347	-20.24	PASS

Test Graphs

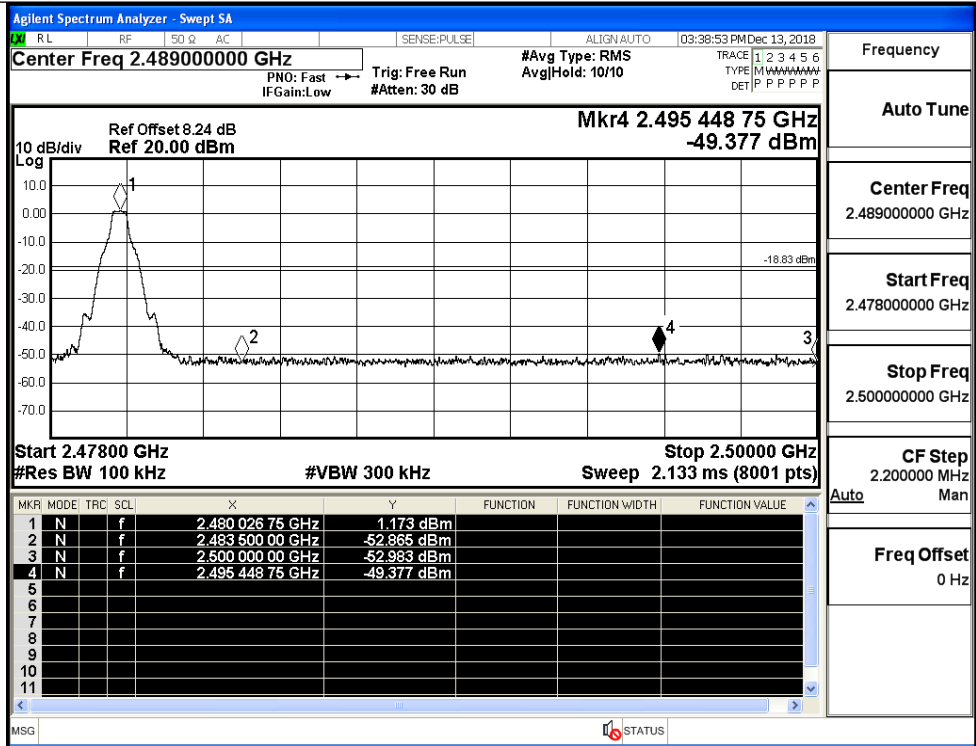
GFSK/LCH/No Hop



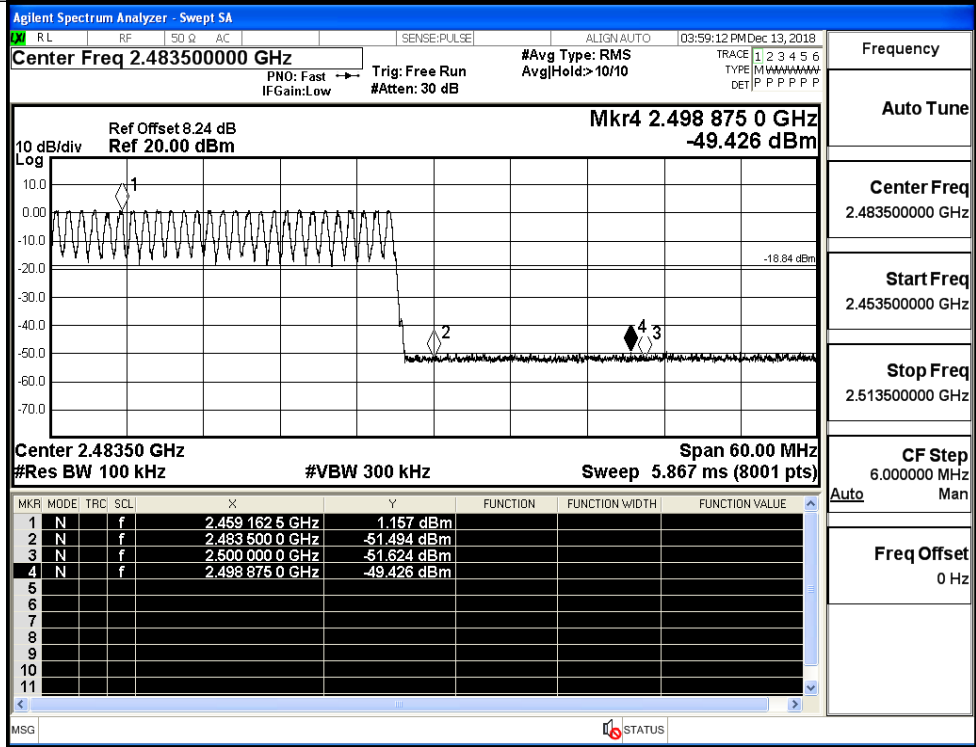
GFSK/LCH/Hop



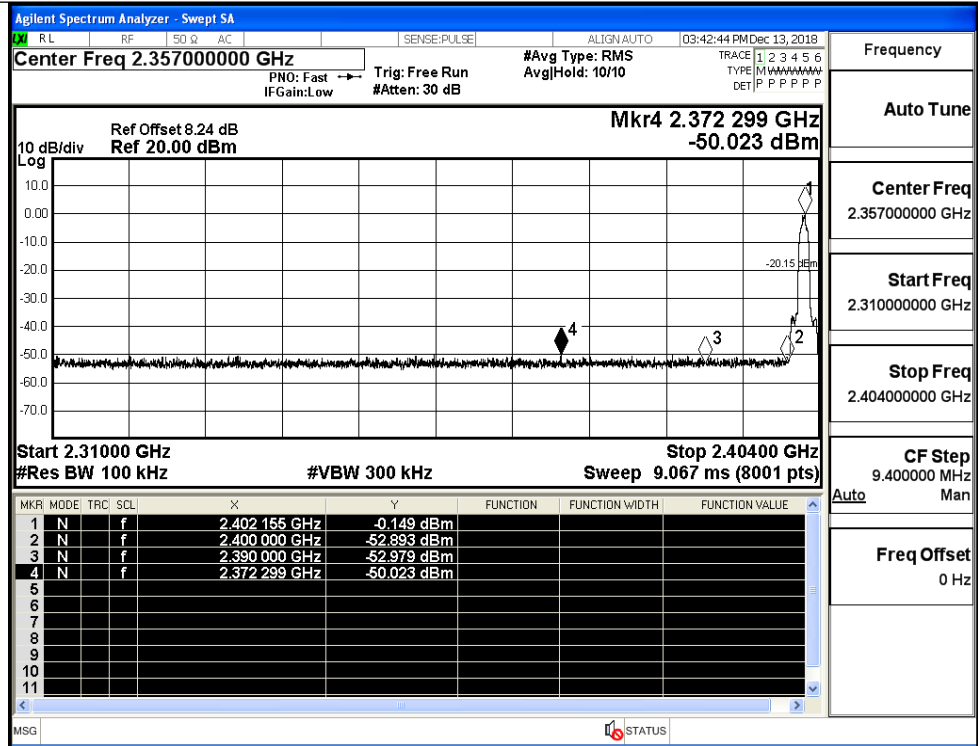
GFSK/HCH/No Hop



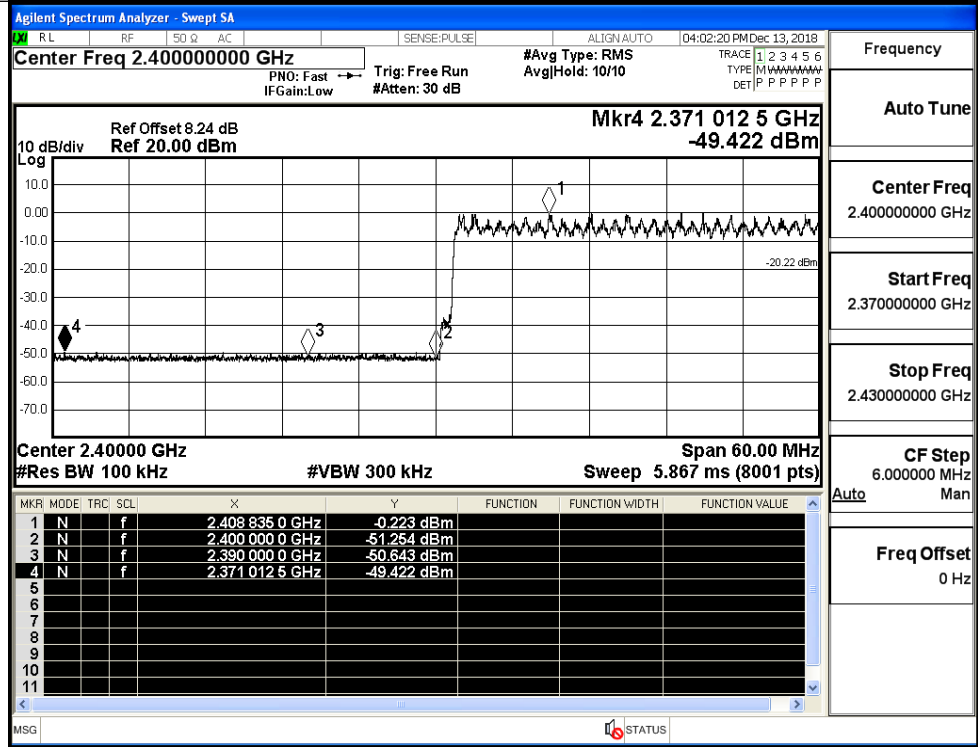
GFSK/HCH/Hop



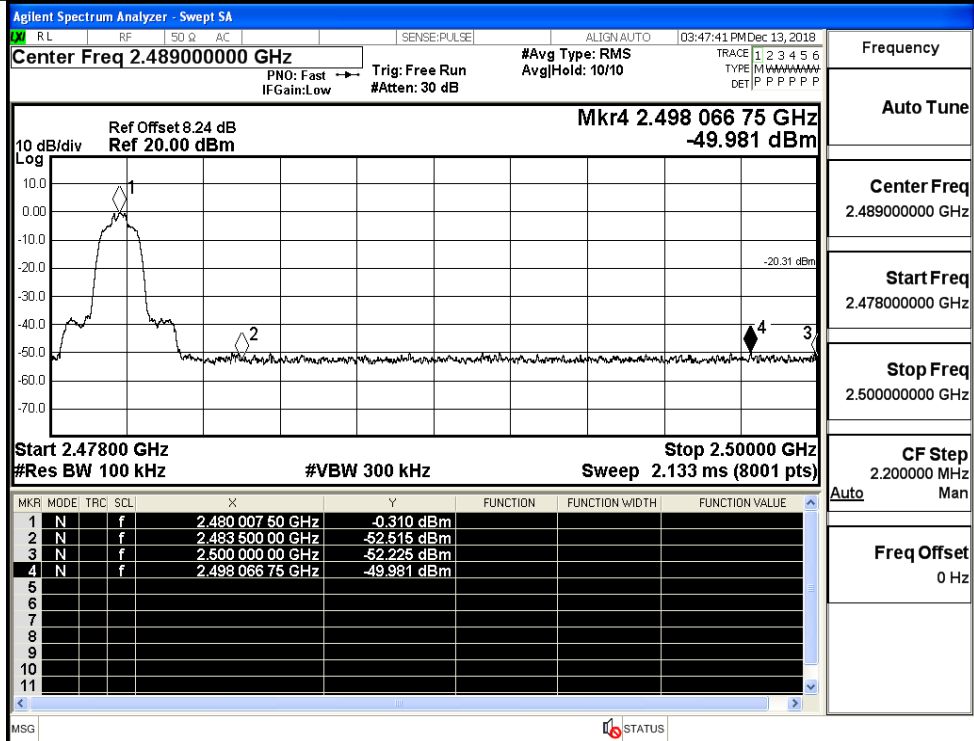
$\pi/4$ DQPSK/LCH/No Hop



$\pi/4$ DQPSK/LCH/Hop

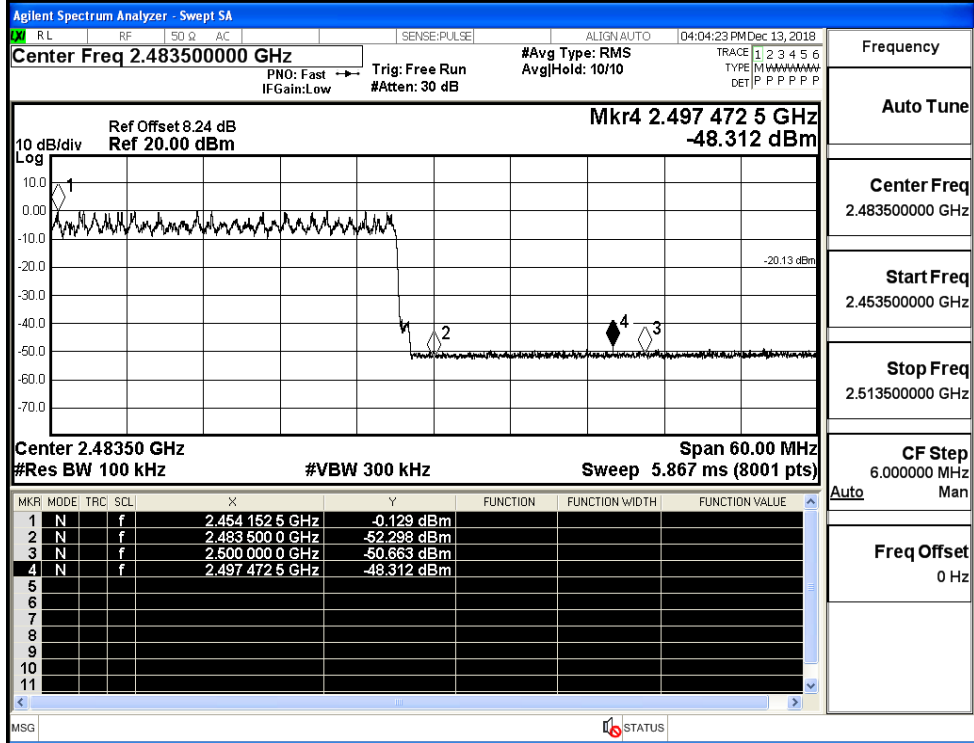


π /4DQPSK/HCH/No Hop



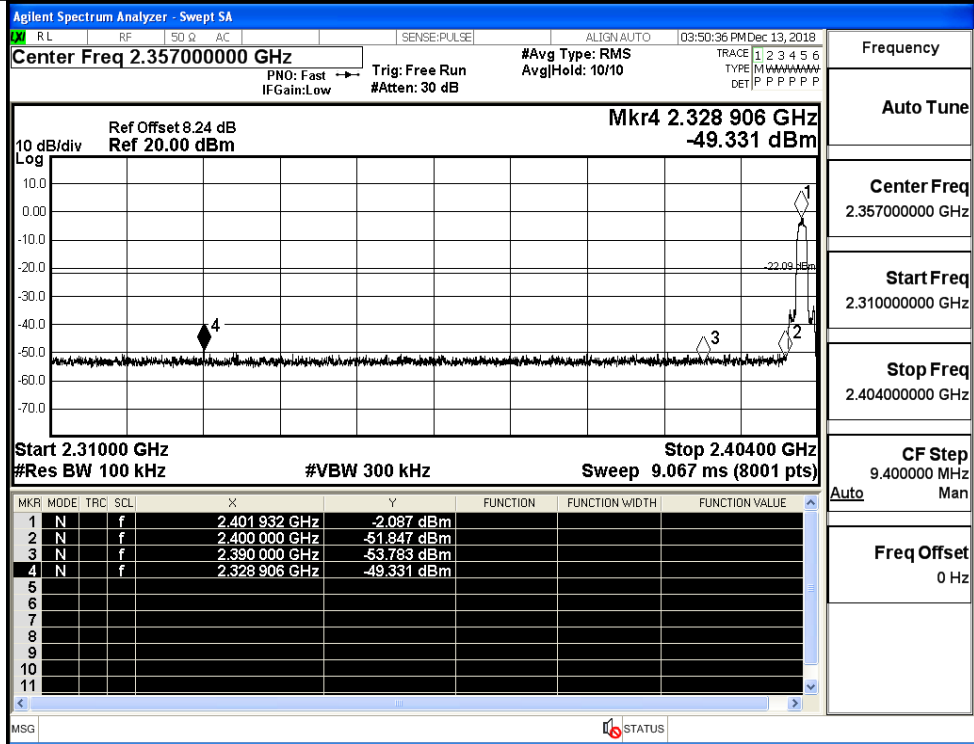
Frequency
Auto Tune
Center Freq 2.489000000 GHz
Start Freq 2.478000000 GHz
Stop Freq 2.500000000 GHz
CF Step 2.200000 MHz
Freq Offset 0 Hz

π /4DQPSK/HCH/Hop



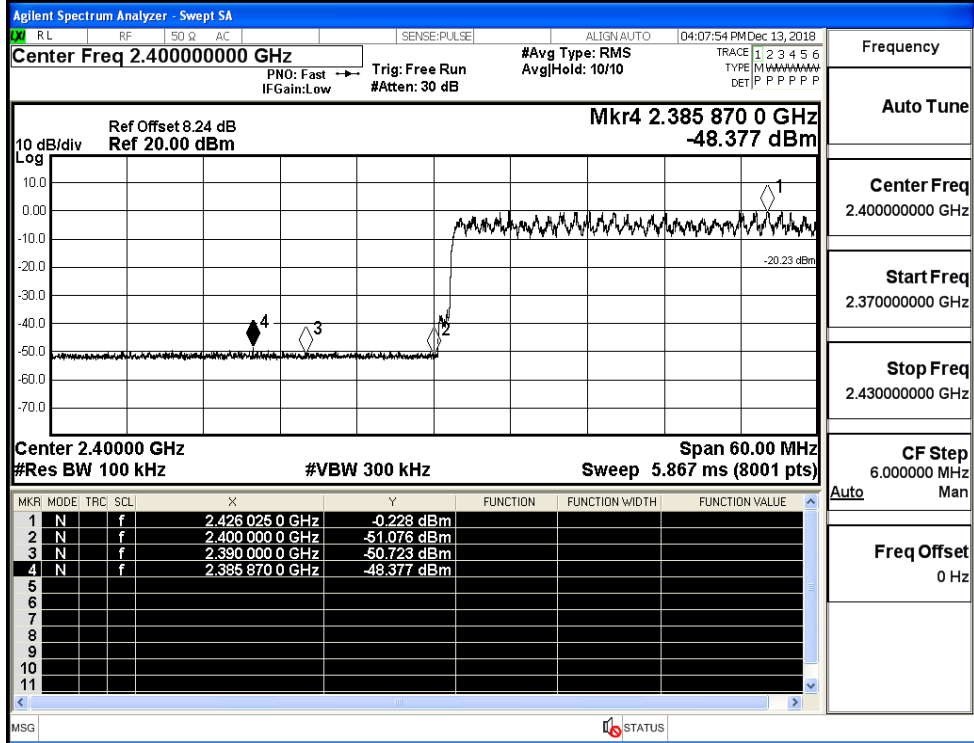
Frequency
Auto Tune
Center Freq 2.483500000 GHz
Start Freq 2.453500000 GHz
Stop Freq 2.513500000 GHz
CF Step 6.000000 MHz
Freq Offset 0 Hz

8DPSK/LCH/No Hop



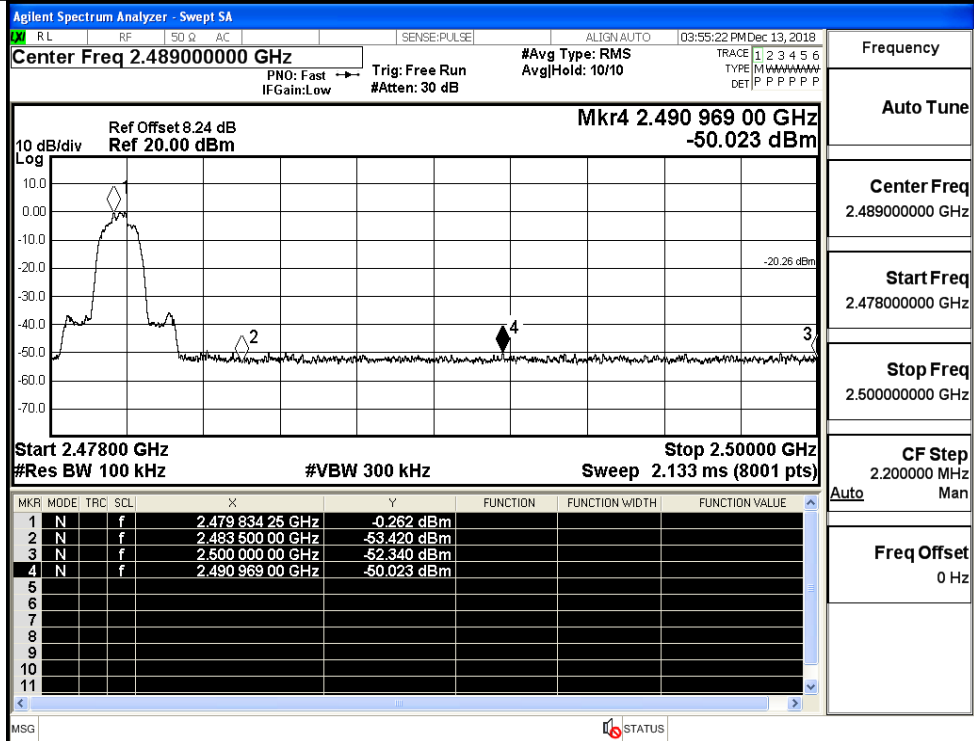
Frequency	2.357000000 GHz
Auto Tune	
Center Freq	2.357000000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.404000000 GHz
CF Step	9.400000 MHz
Freq Offset	0 Hz

8DPSK/LCH/Hop



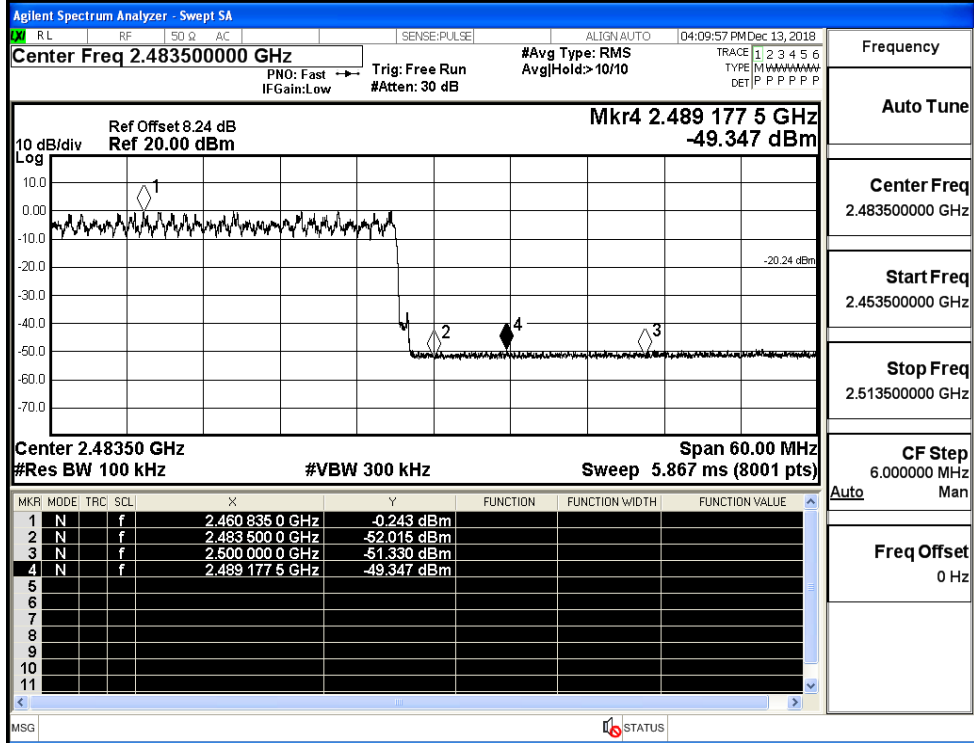
Frequency	2.400000000 GHz
Auto Tune	
Center Freq	2.400000000 GHz
Start Freq	2.370000000 GHz
Stop Freq	2.430000000 GHz
CF Step	6.000000 MHz
Freq Offset	0 Hz

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

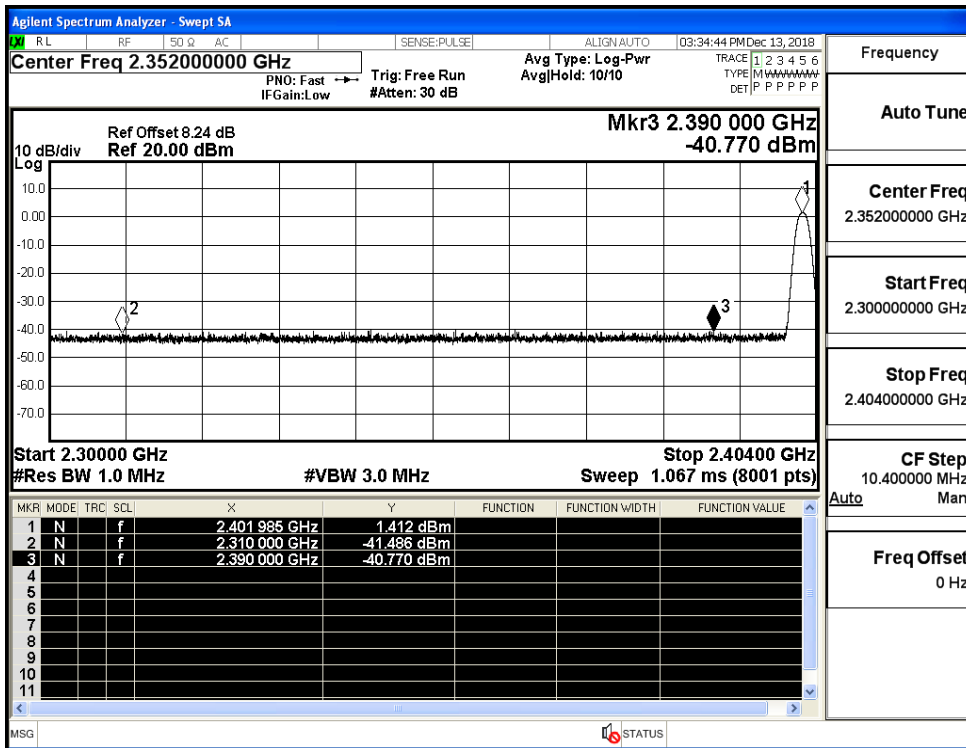


Frequency
Auto Tune
Center Freq 2.483500000 GHz
Start Freq 2.463500000 GHz
Stop Freq 2.513500000 GHz
CF Step 6.000000 MHz
Freq Offset 0 Hz

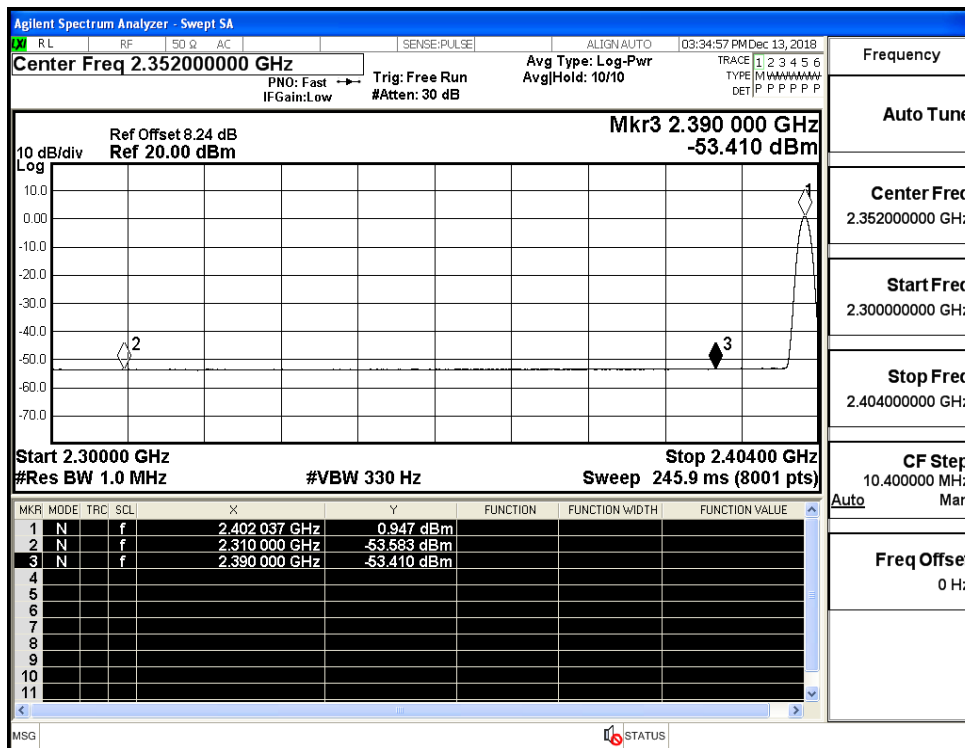
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-41.49	0.0	0	53.74	PEAK	74	PASS
	Off	2310.0	-53.58	0.0	0	41.65	AV	54	PASS
	Off	2390.0	-40.77	0.0	0	54.46	PEAK	74	PASS
	Off	2390.0	-53.41	0.0	0	41.82	AV	54	PASS
	Off	2483.5	-43.20	0.0	0	52.03	PEAK	74	PASS
	Off	2483.5	-53.07	0.0	0	42.16	AV	54	PASS
	Off	2500.0	-42.53	0.0	0	52.70	PEAK	74	PASS
	Off	2500.0	-52.91	0.0	0	42.32	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-41.79	0.0	0	53.44	PEAK	74	PASS
	Off	2310.0	-53.55	0.0	0	41.68	AV	54	PASS
	Off	2390.0	-43.06	0.0	0	52.17	PEAK	74	PASS
	Off	2390.0	-53.34	0.0	0	41.89	AV	54	PASS
	Off	2483.5	-42.46	0.0	0	52.77	PEAK	74	PASS
	Off	2483.5	-52.99	0.0	0	42.24	AV	54	PASS
	Off	2500.0	-42.53	0.0	0	52.70	PEAK	74	PASS
	Off	2500.0	-52.93	0.0	0	42.30	AV	54	PASS
8DPSK	Off	2310.0	-42.75	0.0	0	52.48	PEAK	74	PASS
	Off	2310.0	-53.65	0.0	0	41.58	AV	54	PASS
	Off	2390.0	-43.46	0.0	0	51.77	PEAK	74	PASS
	Off	2390.0	-53.33	0.0	0	41.90	AV	54	PASS
	Off	2483.5	-42.98	0.0	0	52.25	PEAK	74	PASS
	Off	2483.5	-52.93	0.0	0	42.30	AV	54	PASS
	Off	2500.0	-41.69	0.0	0	53.54	PEAK	74	PASS
	Off	2500.0	-52.98	0.0	0	42.25	AV	54	PASS

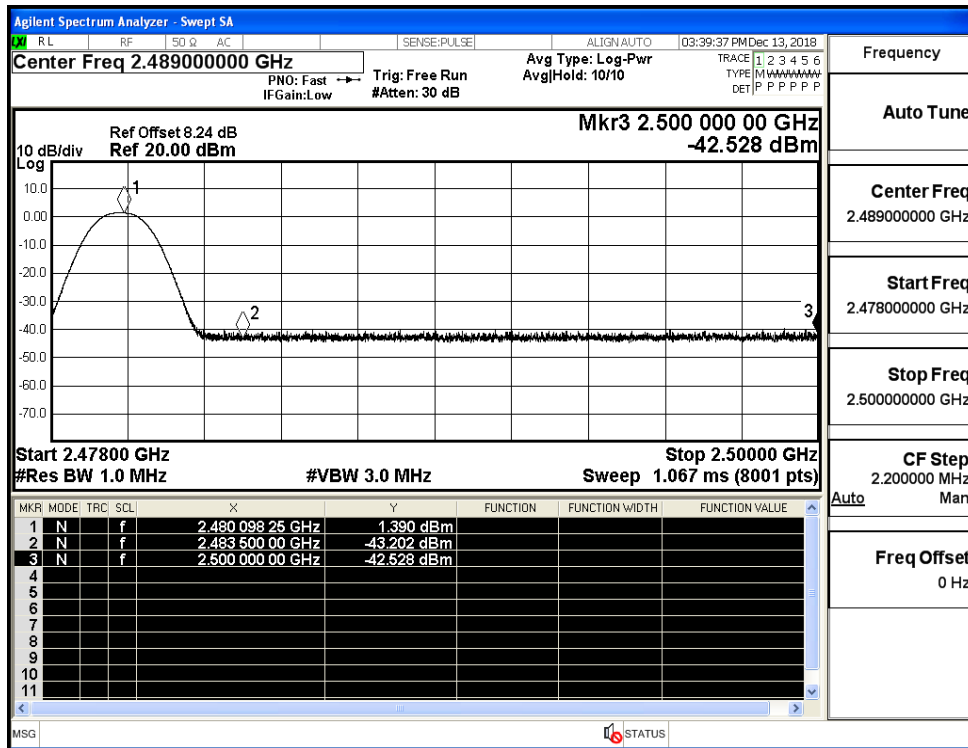
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



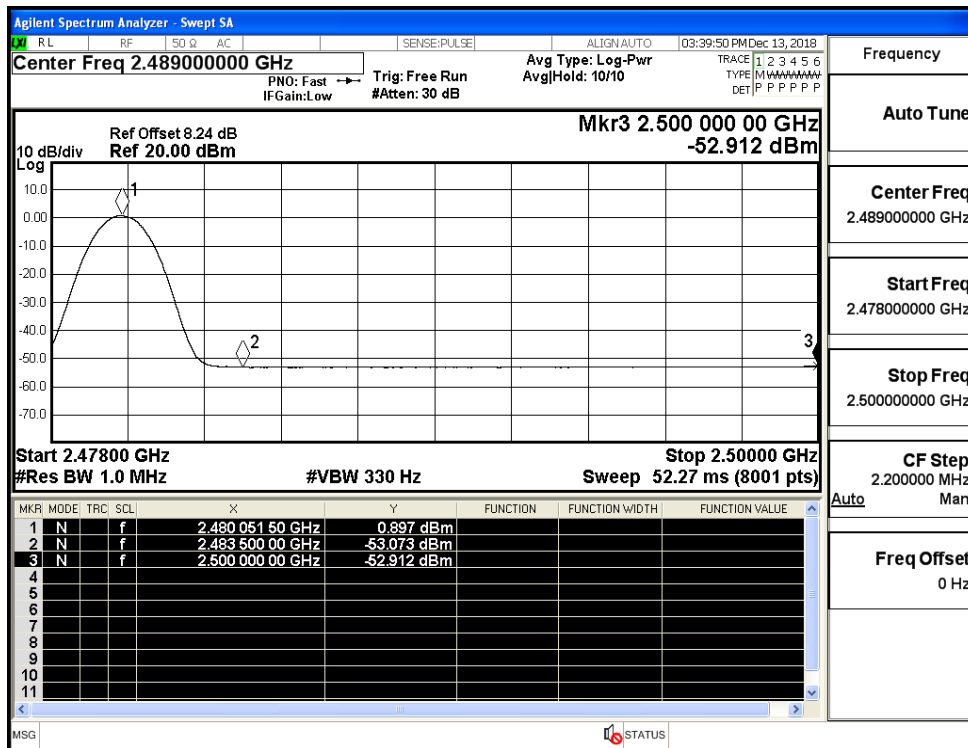
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



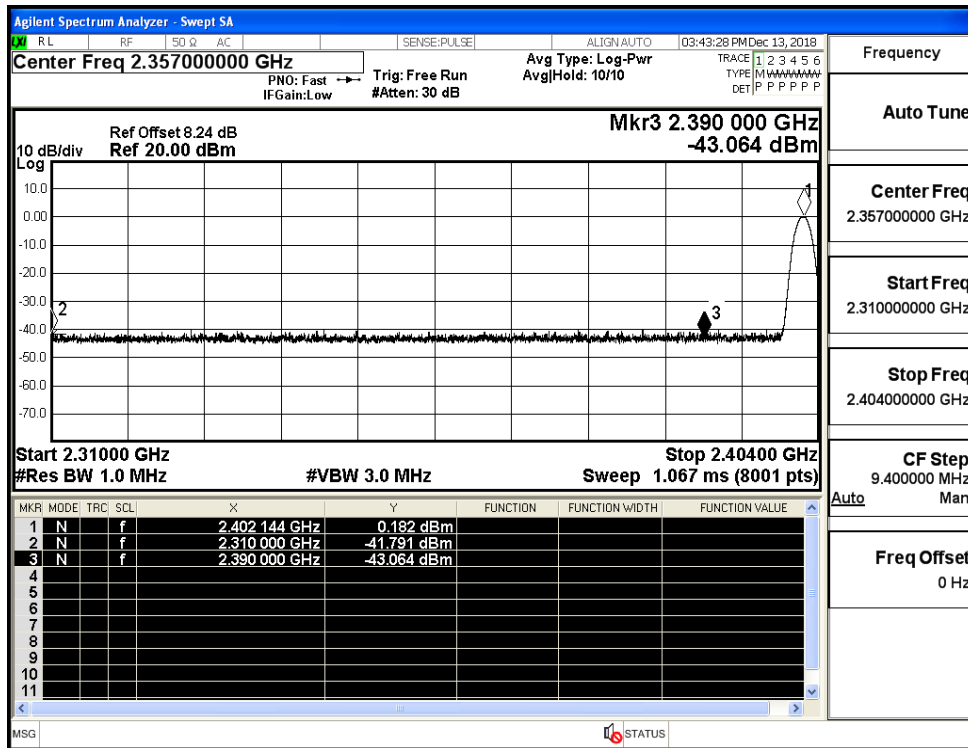
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



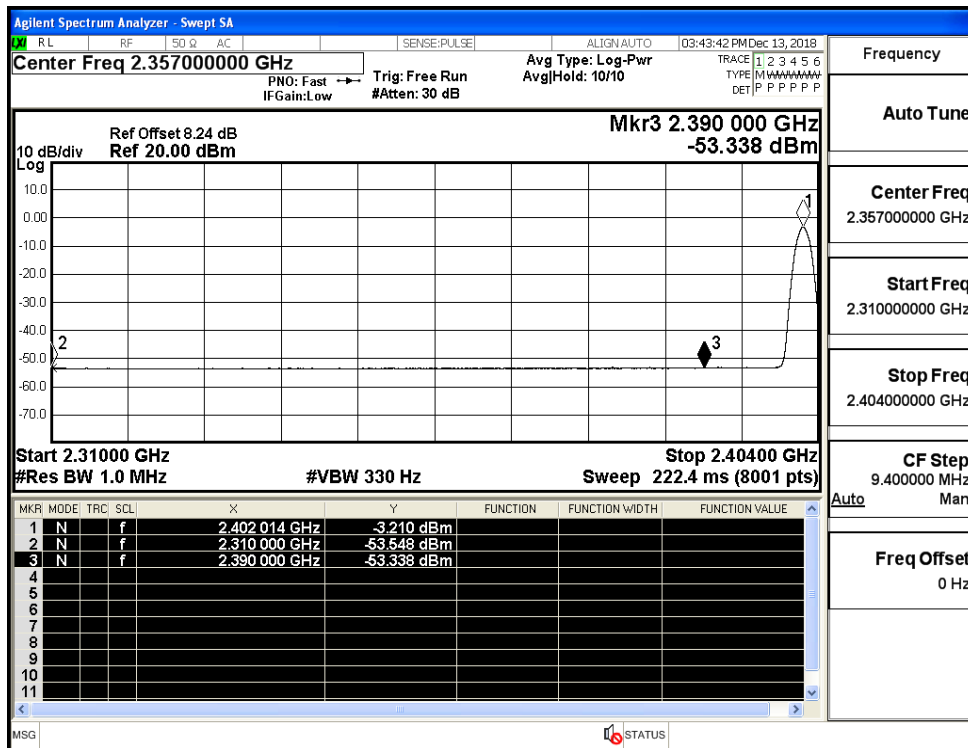
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



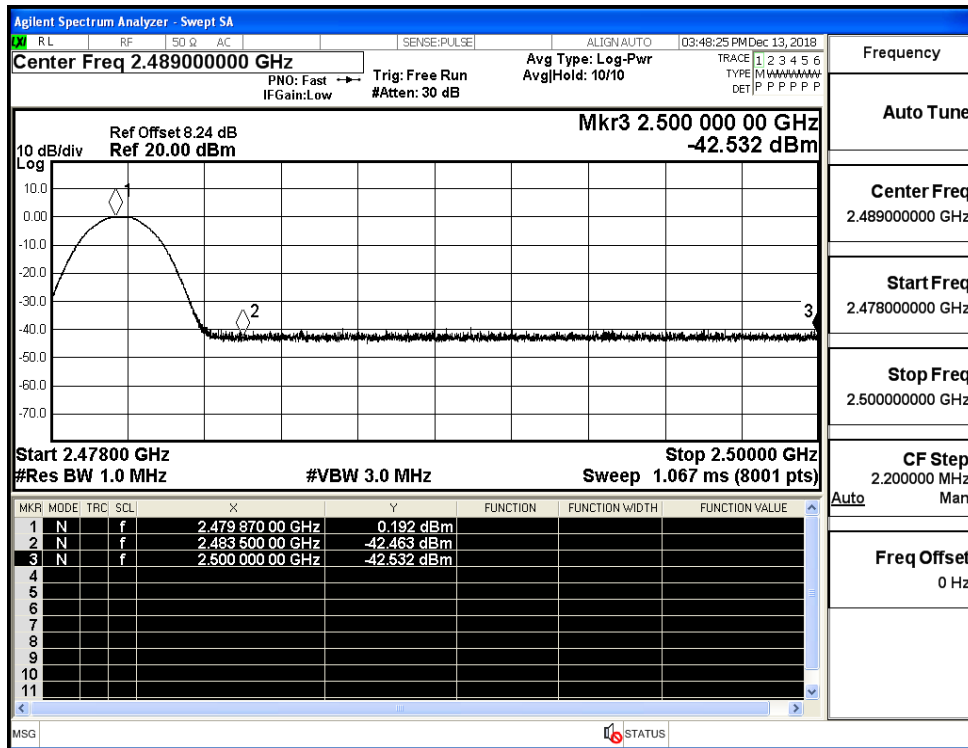
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



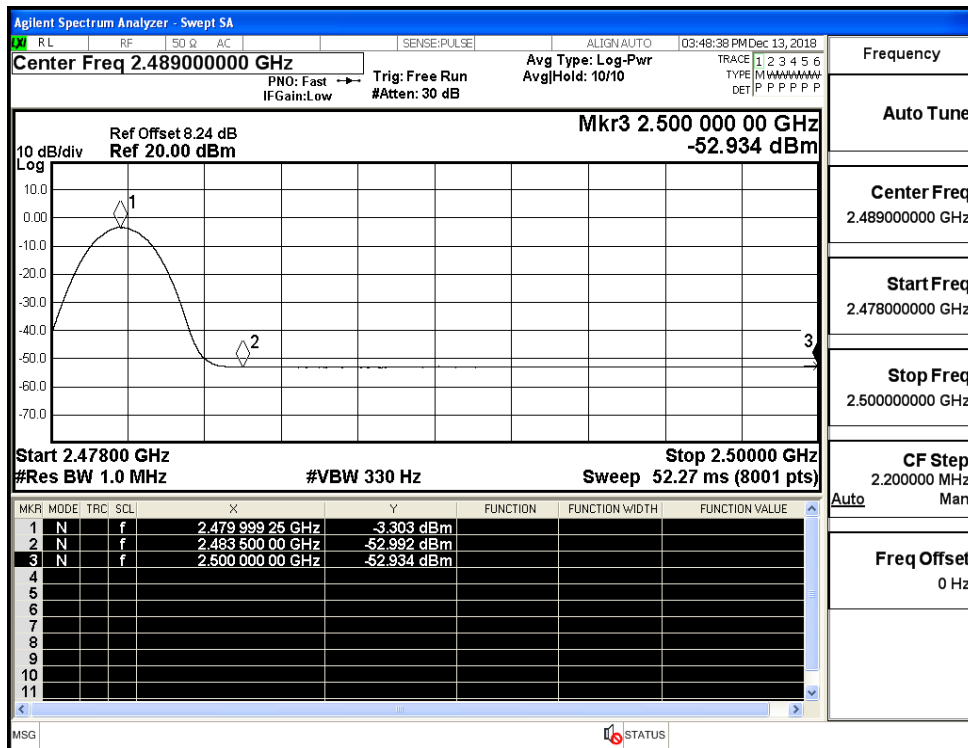
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



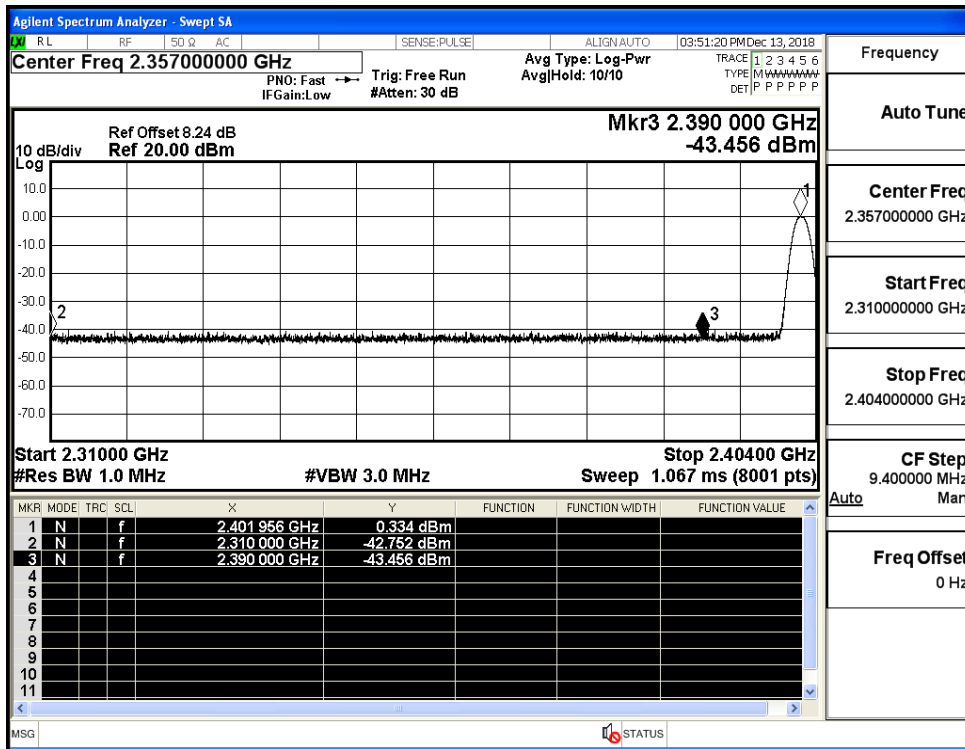
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



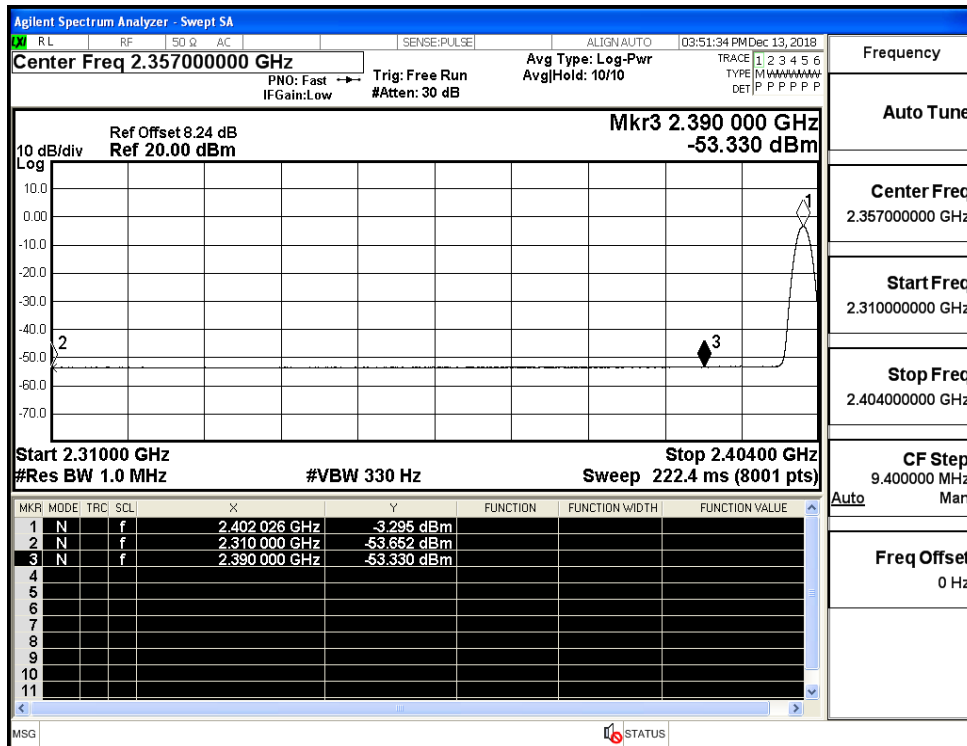
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



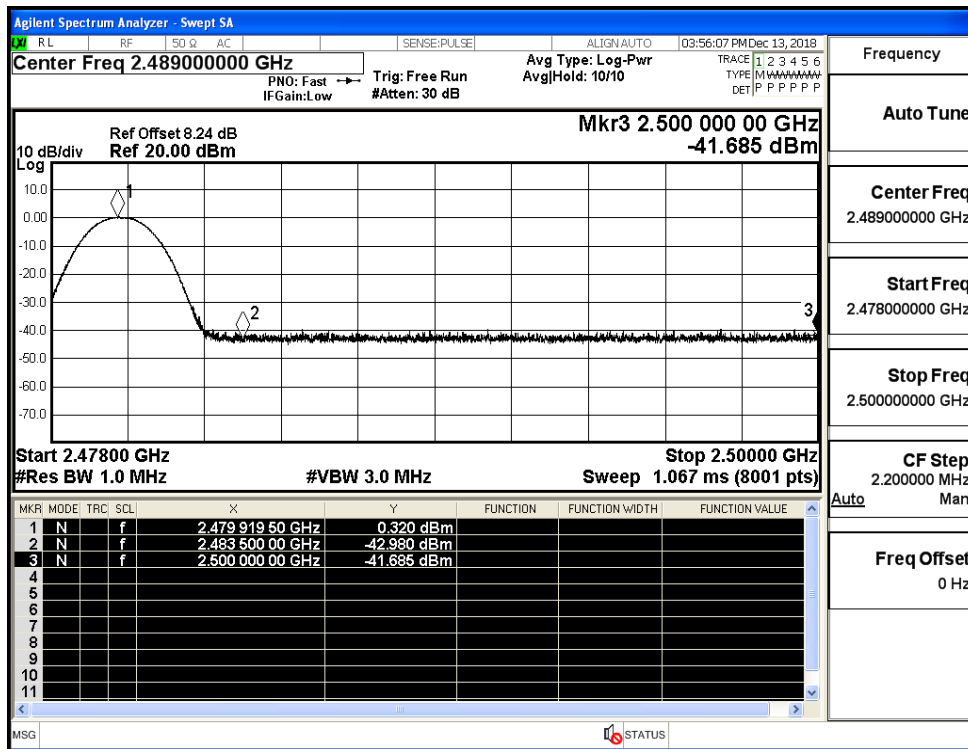
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

