

Appendix A

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

Product Name: Floor Bluetooth Speaker With LED Light and Wine Cooler

Trade Mark:  CRE-NORDIC 
Test Model: LUX-L1

Environmental Conditions

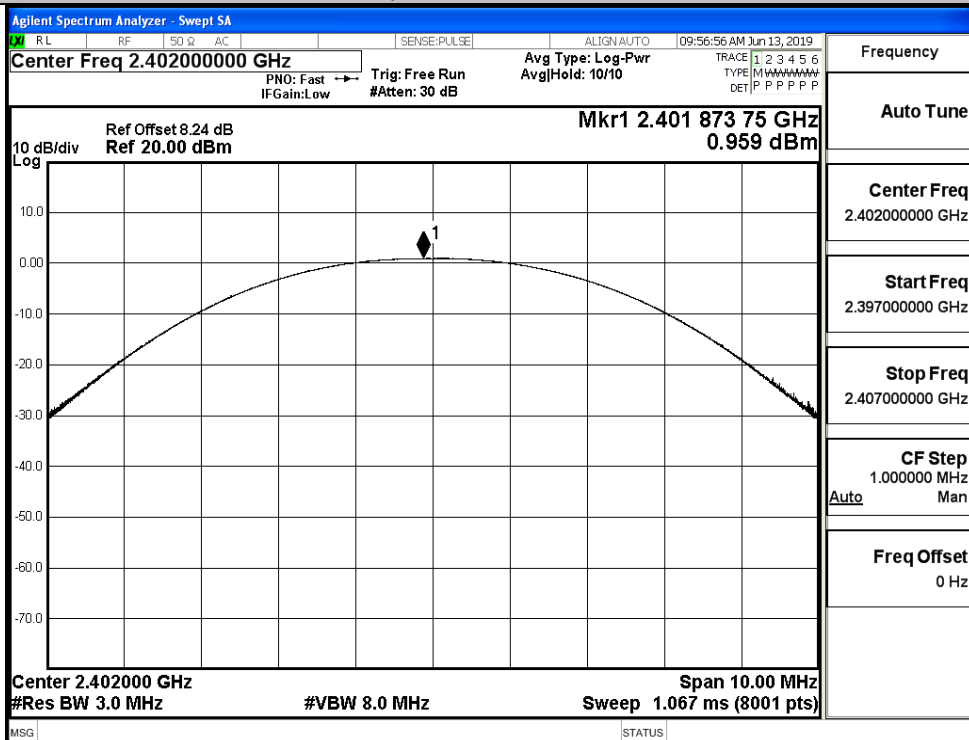
Temperature:	25.4 ° C
Relative Humidity:	52.8%
ATM Pressure:	100.0 kPa
Test Engineer:	JERRY.ZENG
Supervised by:	Tom.Liu

A.1 Maximum Conducted Peak Output Power

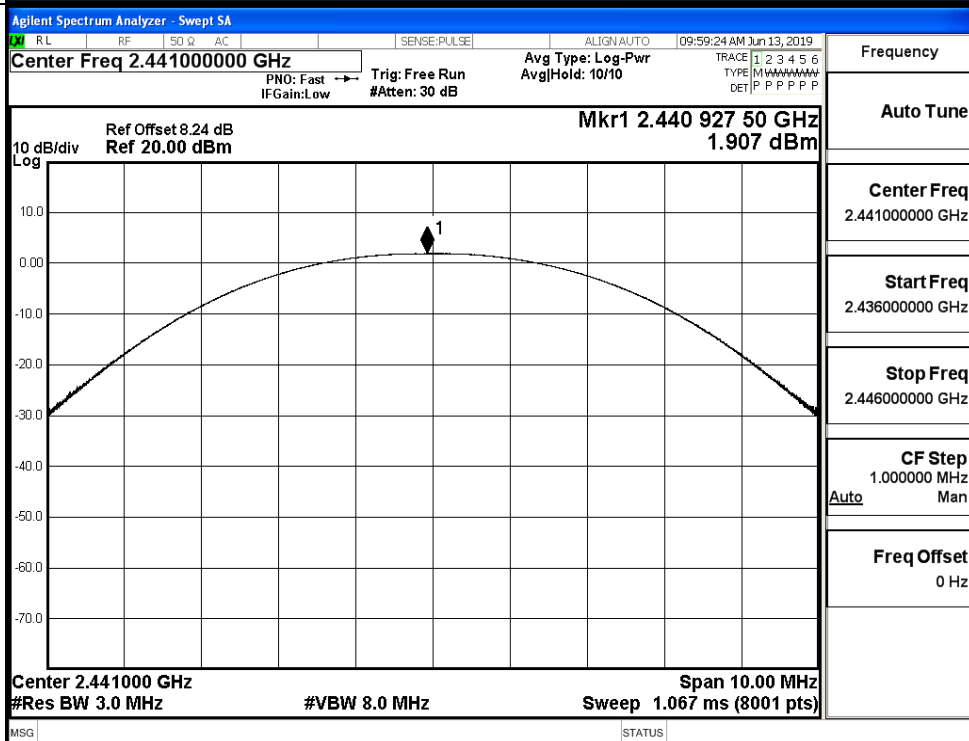
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.959	21	PASS
	MCH	1.907	21	PASS
	HCH	1.808	21	PASS
$\pi/4$ DQPSK	LCH	0.372	21	PASS
	MCH	1.354	21	PASS
	HCH	1.192	21	PASS
8DPSK	LCH	0.500	21	PASS
	MCH	1.423	21	PASS
	HCH	1.313	21	PASS

Test Graphs

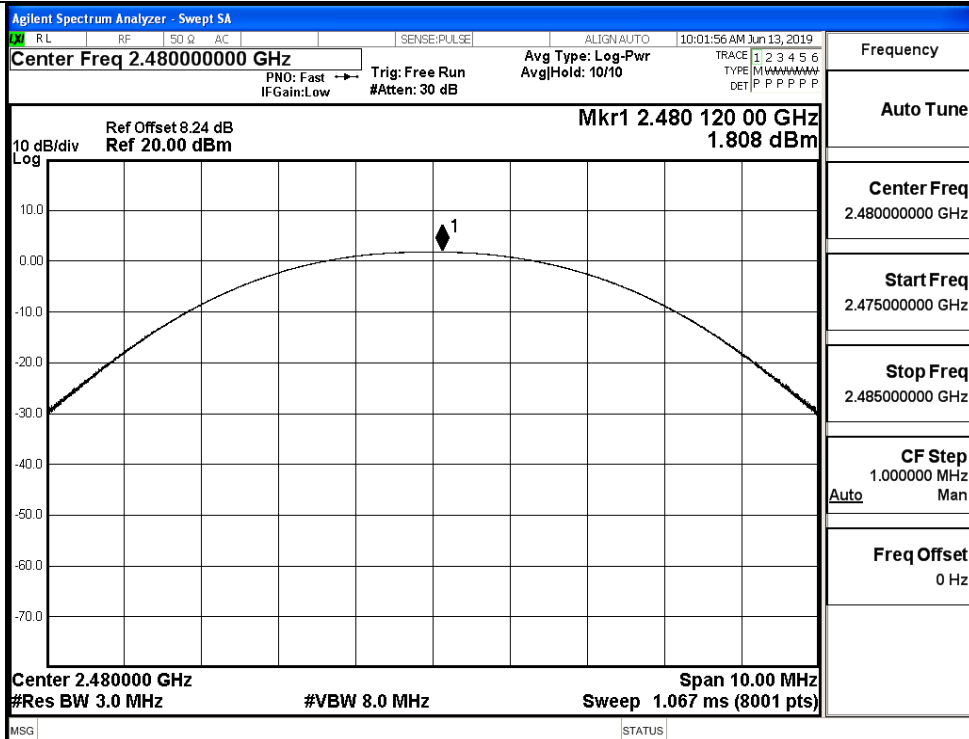
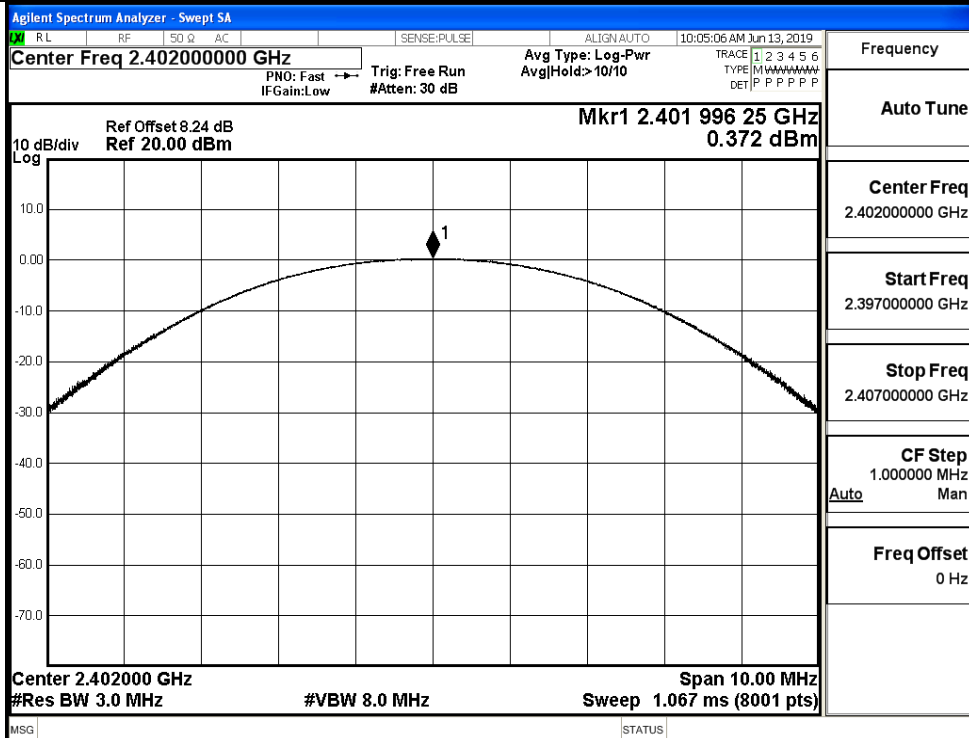
GFSK/LCH

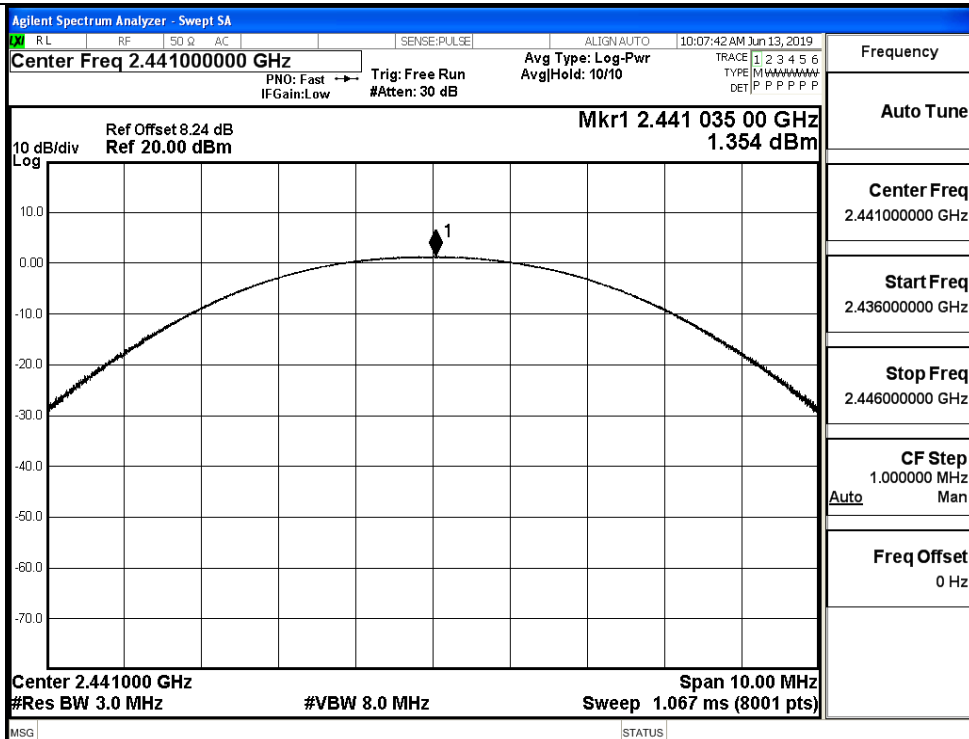
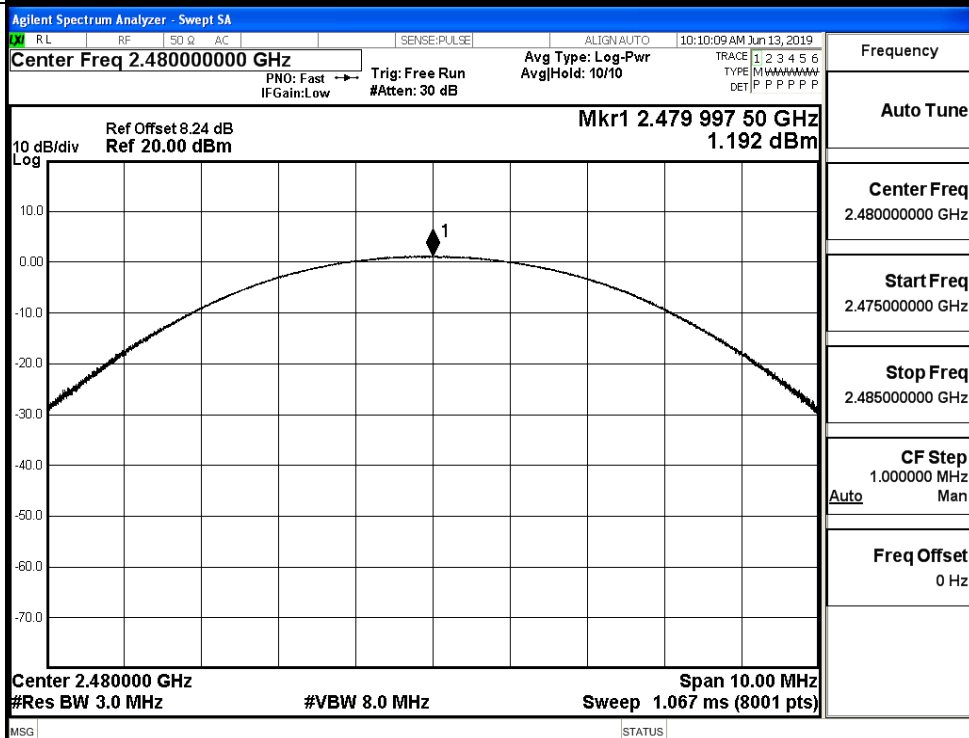


GFSK/MCH

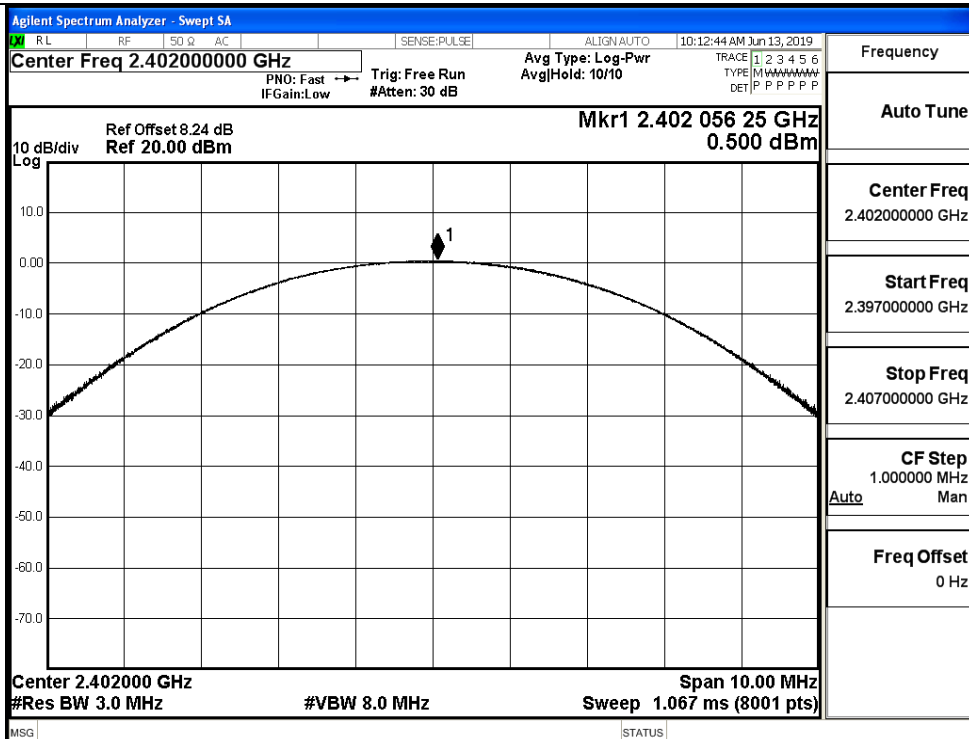


GFSK/HCH

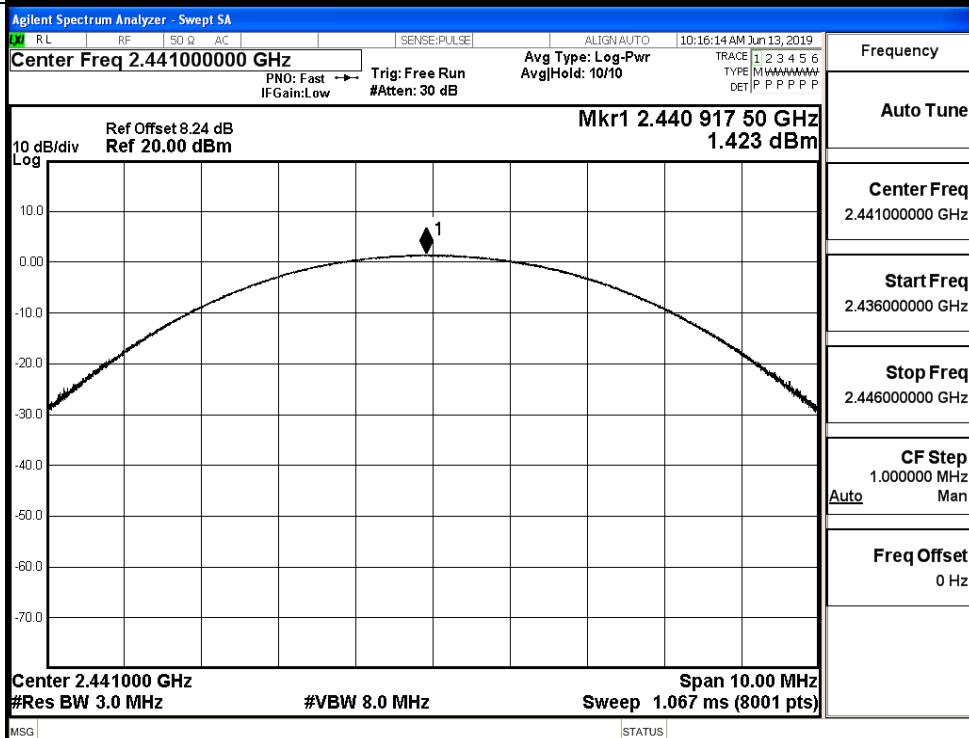
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

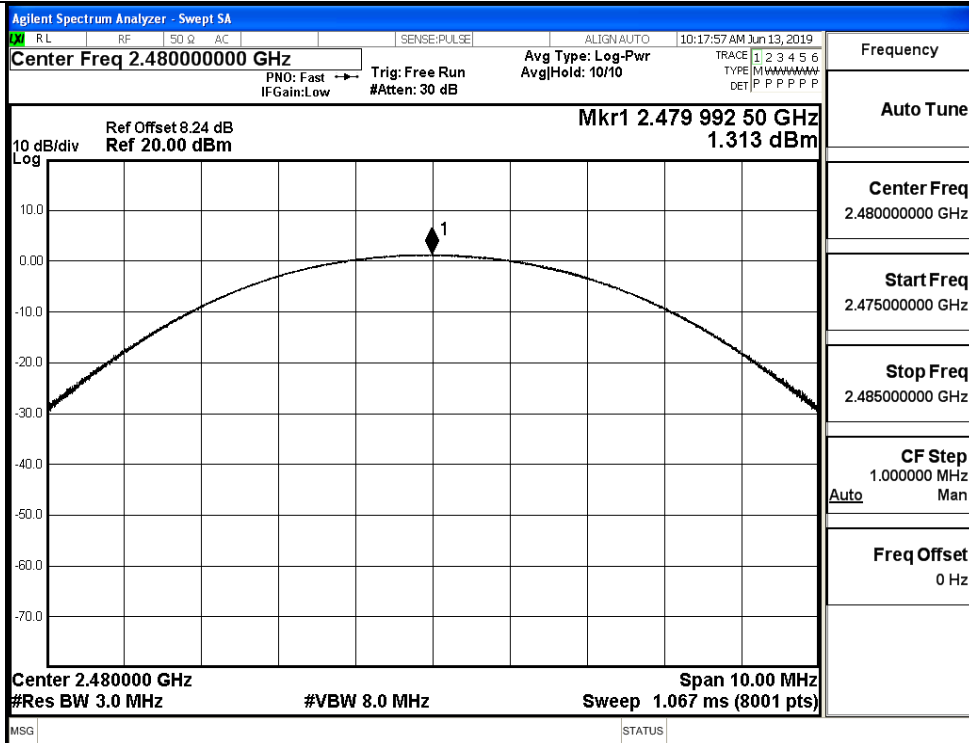
8DPSK/LCH



8DPSK/MCH



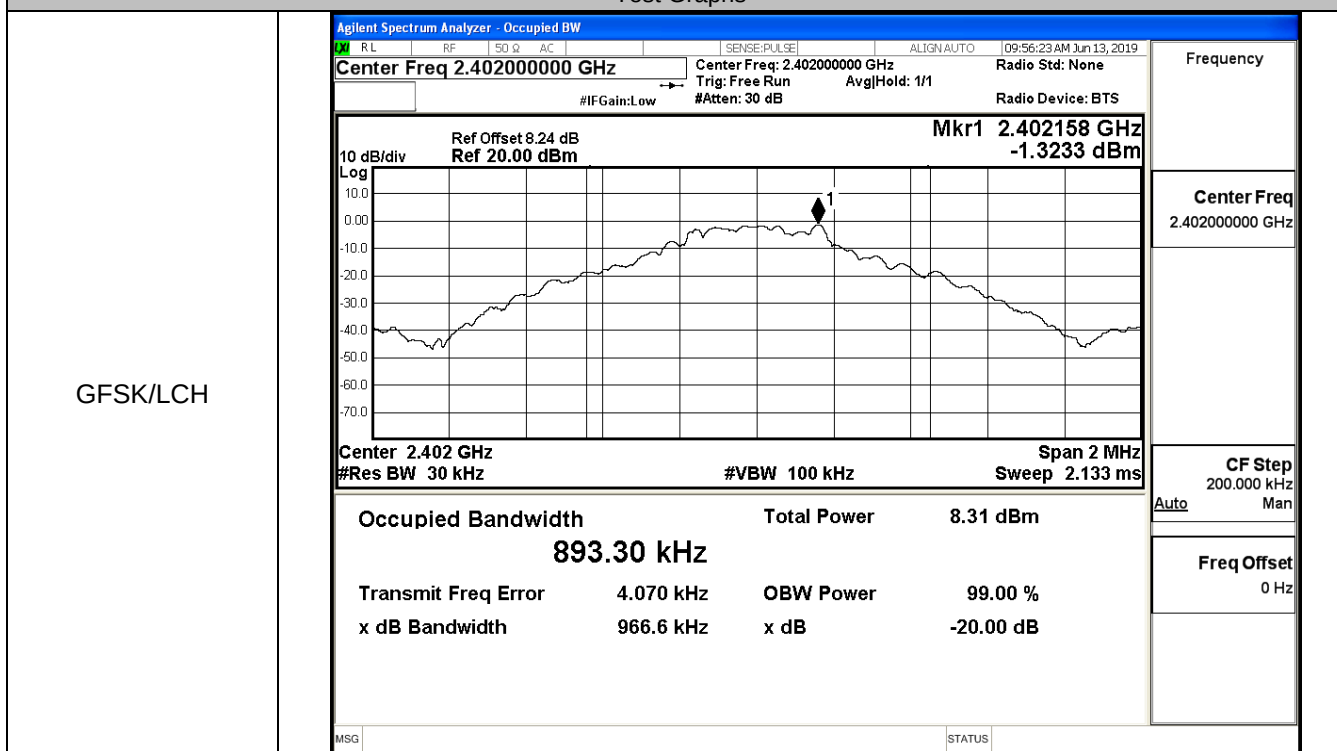
8DPSK/HCH



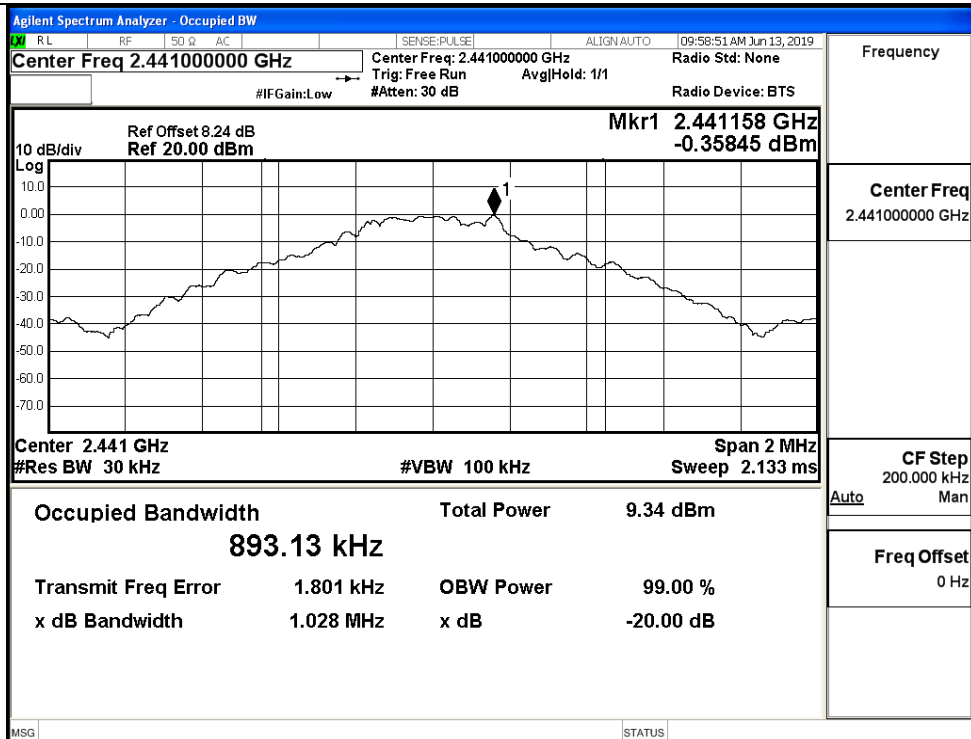
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9666	Not Specified	PASS
	MCH	1.028	Not Specified	PASS
	HCH	1.031	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.293	Not Specified	PASS
	MCH	1.311	Not Specified	PASS
	HCH	1.312	Not Specified	PASS
8DPSK	LCH	1.298	Not Specified	PASS
	MCH	1.297	Not Specified	PASS
	HCH	1.298	Not Specified	PASS

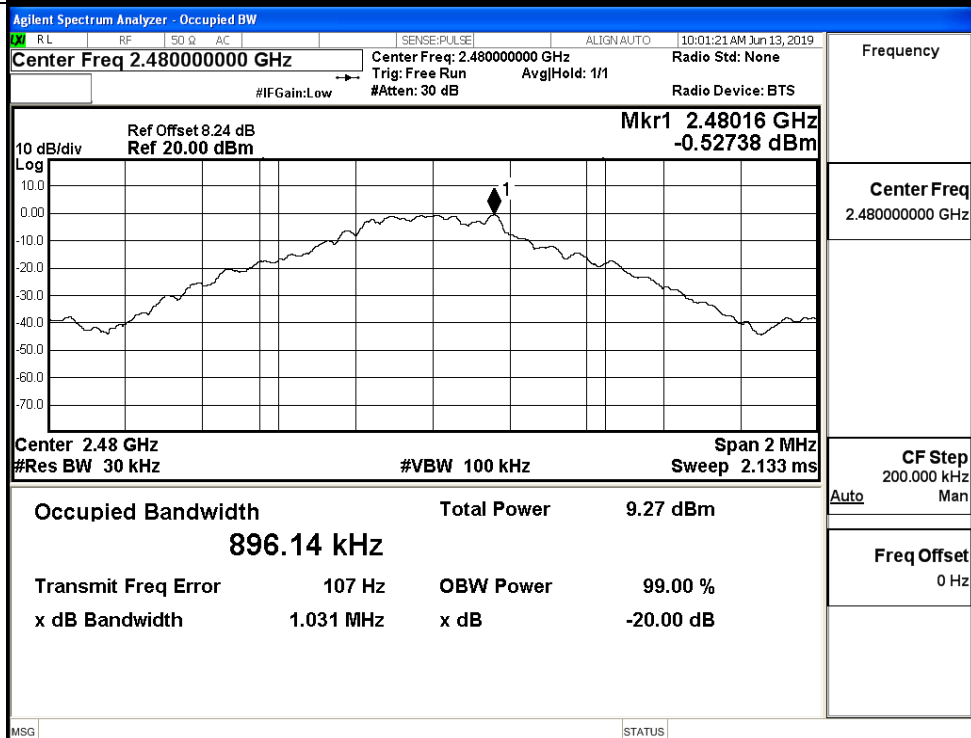
Test Graphs

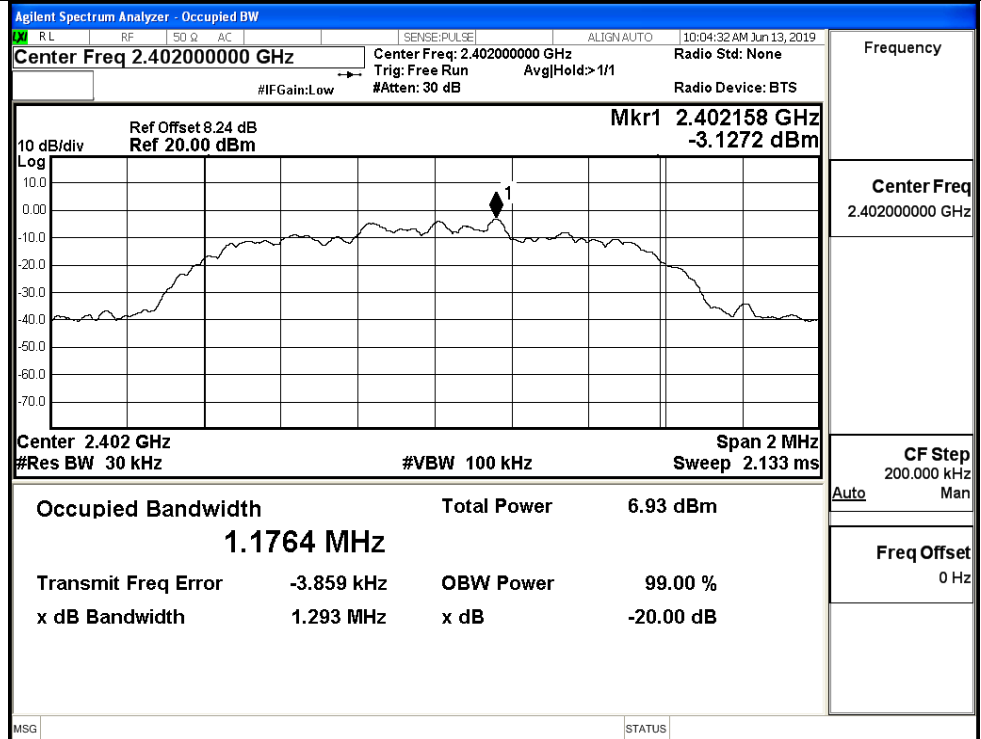
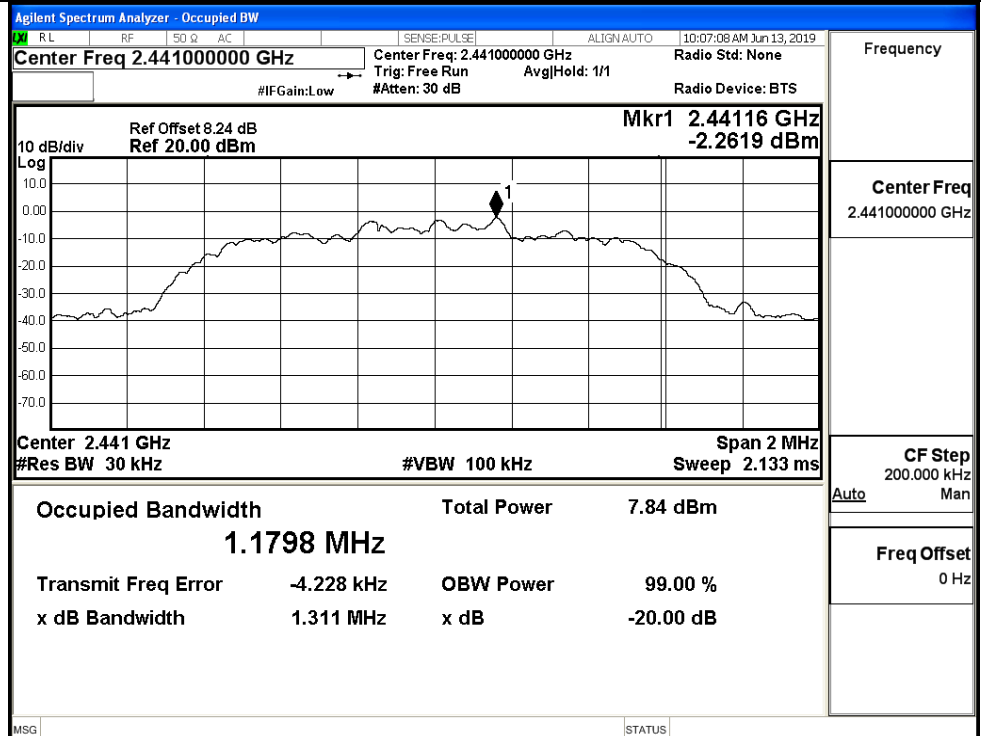


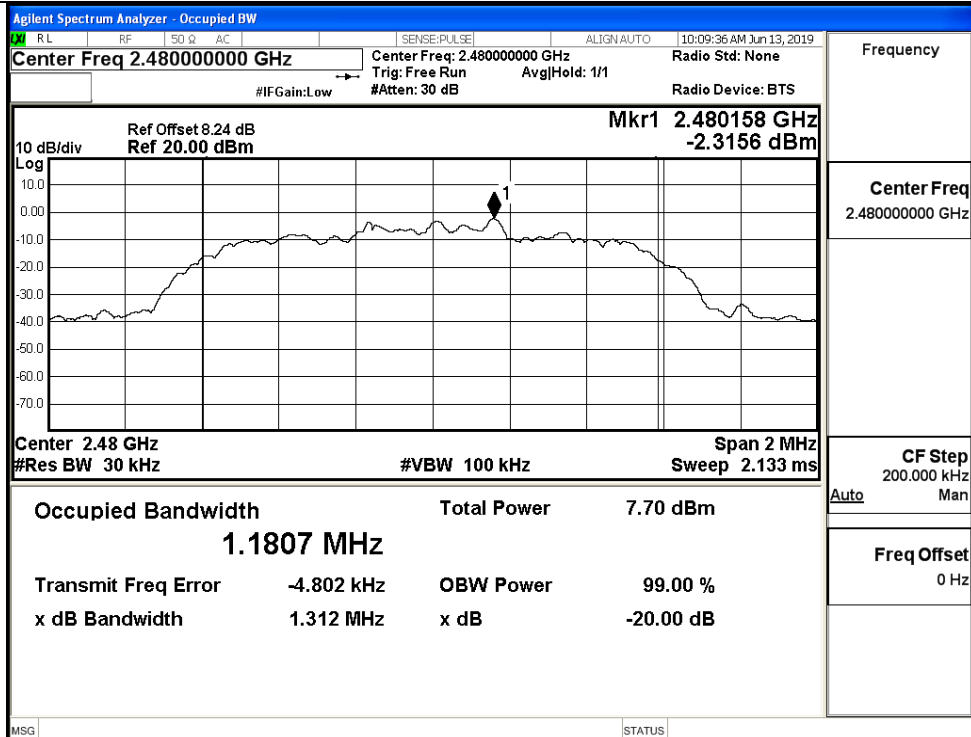
GFSK/MCH



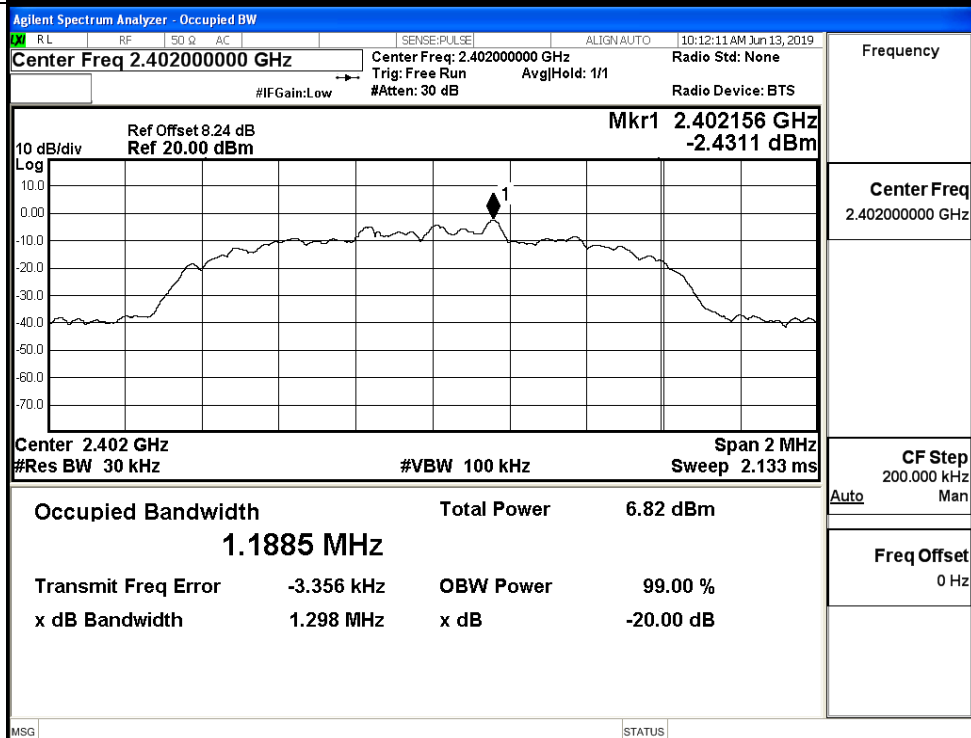
GFSK/HCH



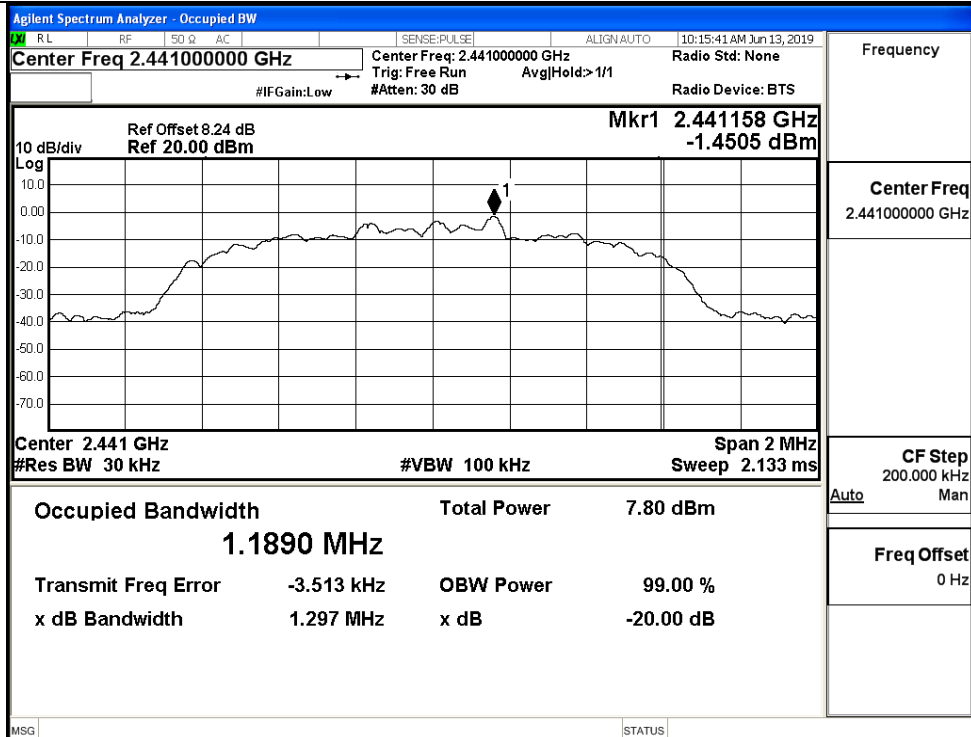
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

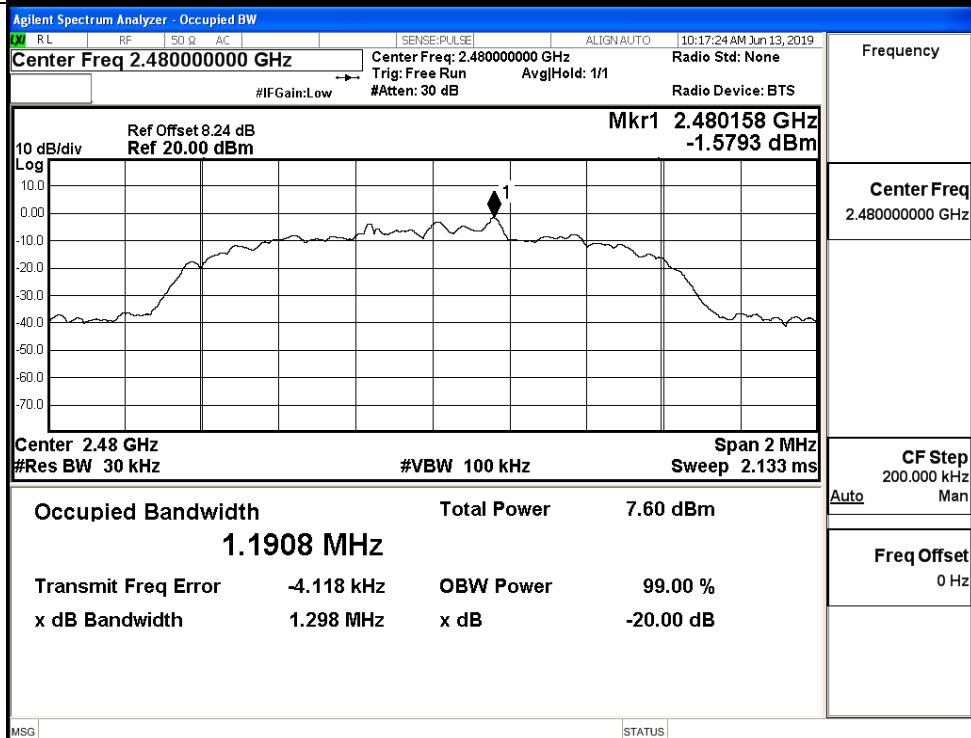
8DPSK/LCH



8DPSK/MCH



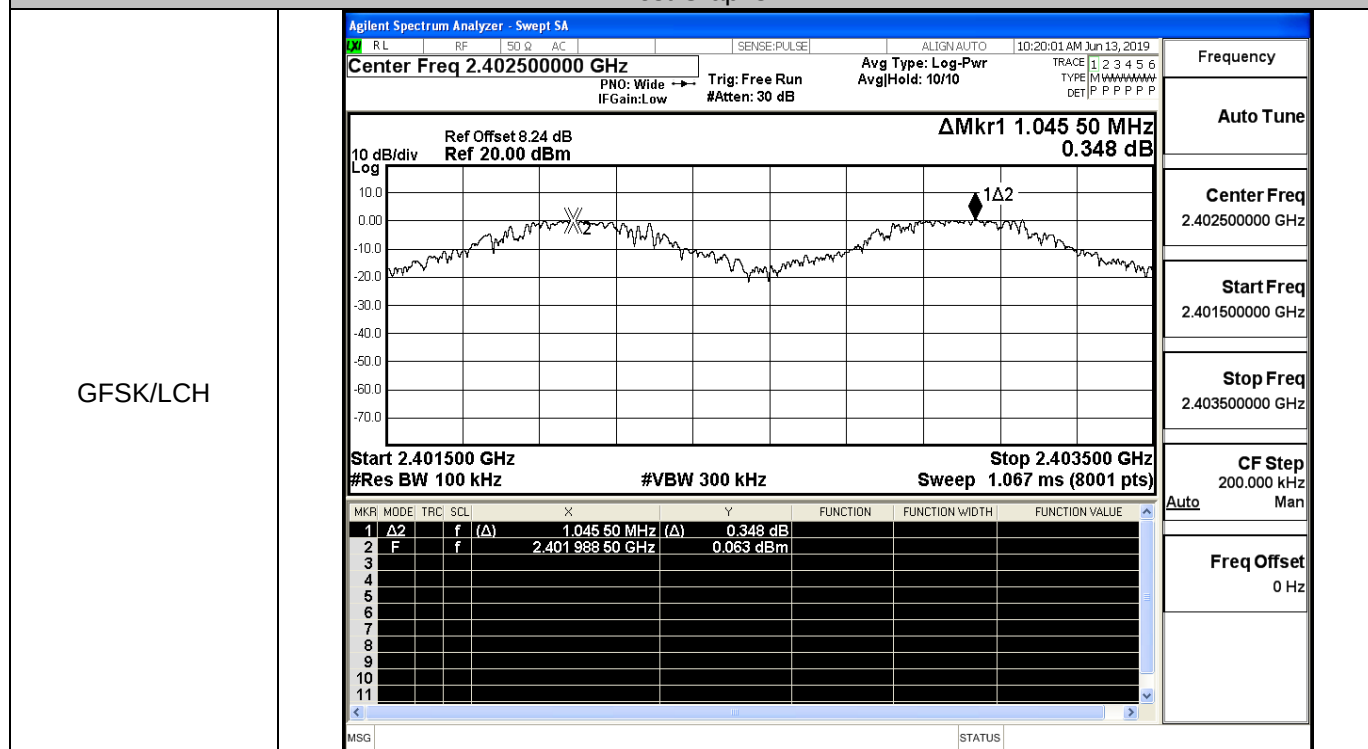
8DPSK/HCH



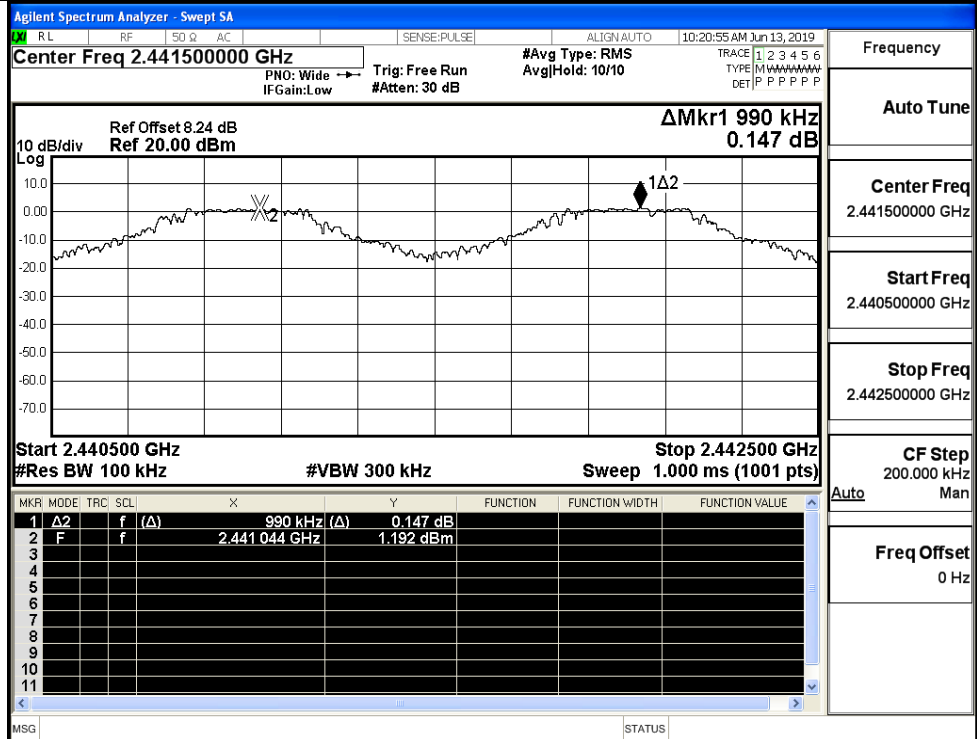
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.046	0.687	PASS
	MCH	0.990	0.687	PASS
	HCH	0.846	0.687	PASS
$\pi/4$ DQPSK	LCH	1.134	0.875	PASS
	MCH	1.026	0.875	PASS
	HCH	1.188	0.875	PASS
8DPSK	LCH	0.908	0.865	PASS
	MCH	0.966	0.865	PASS
	HCH	0.966	0.865	PASS

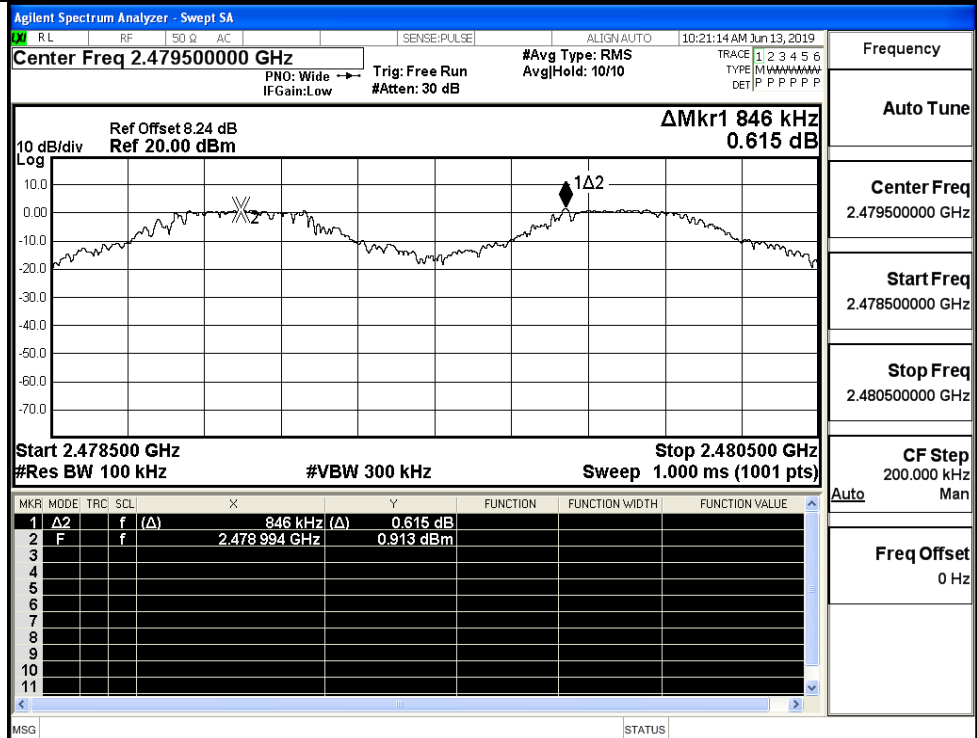
Test Graphs

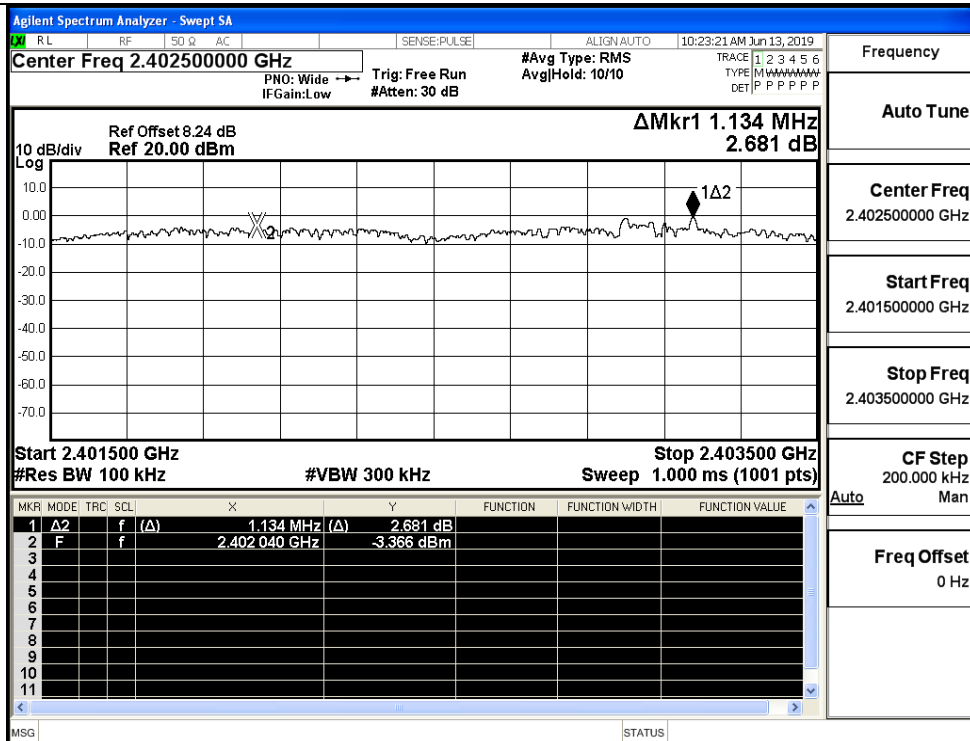
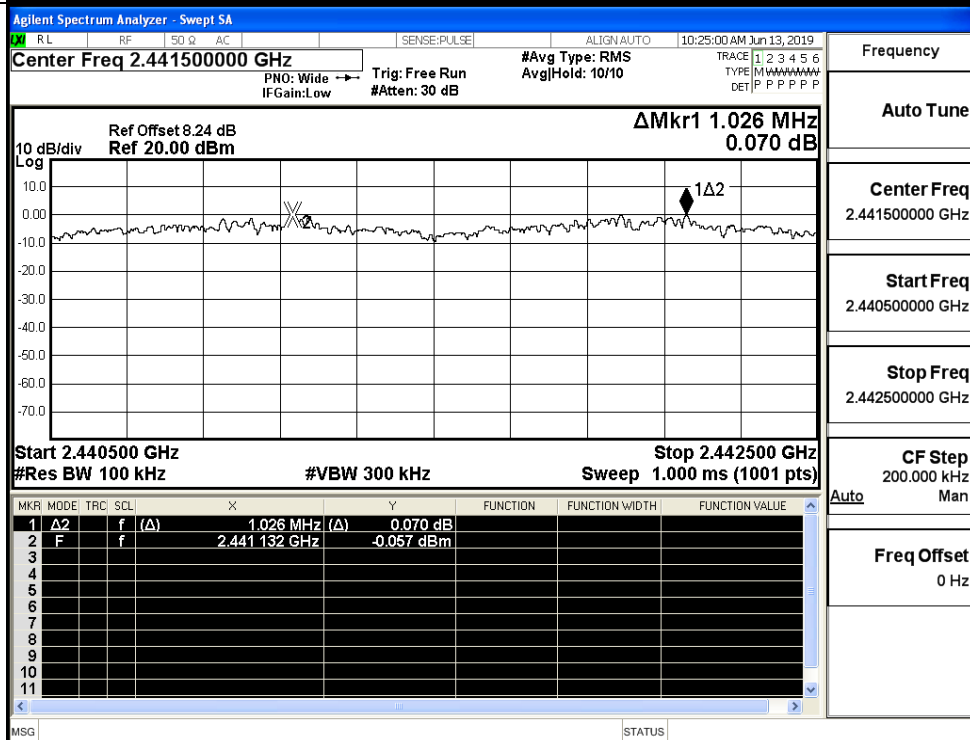


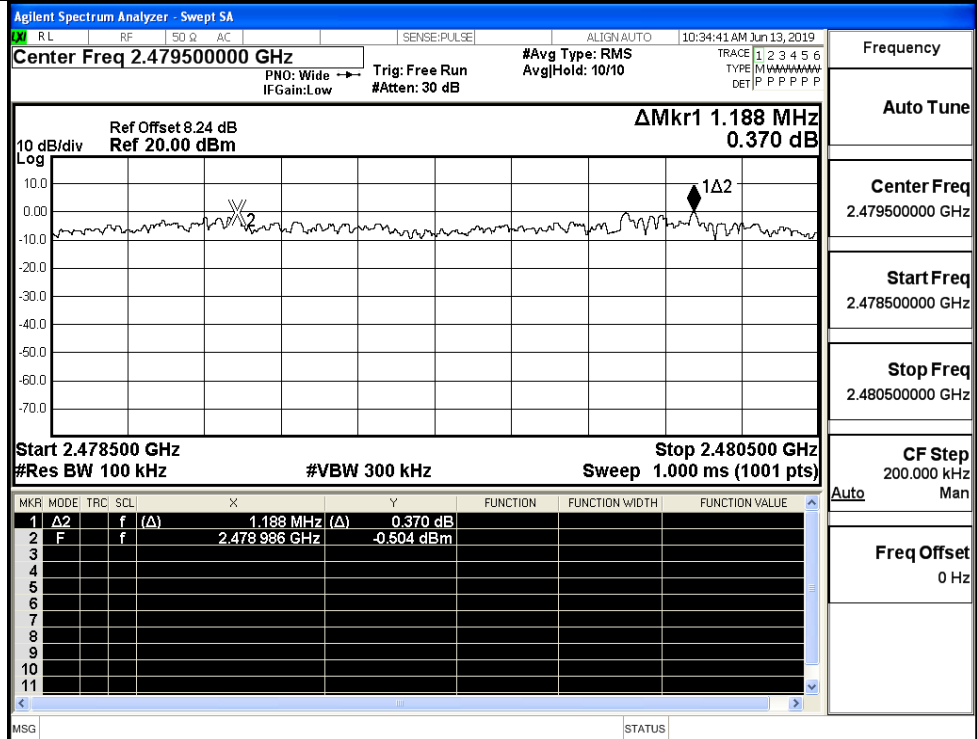
GFSK/MCH



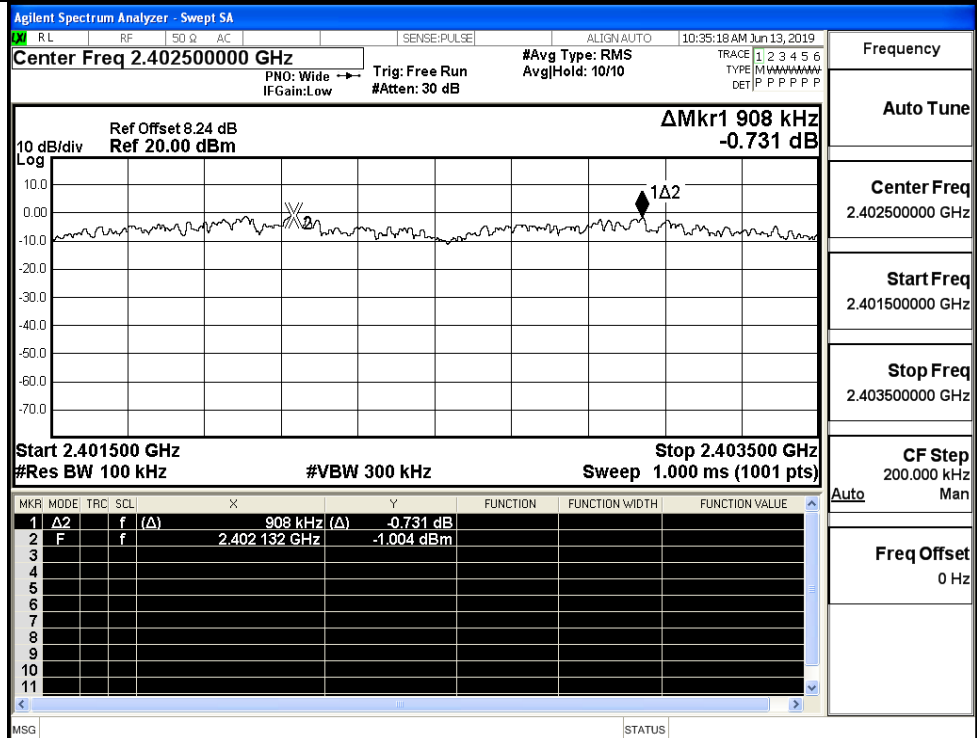
GFSK/HCH



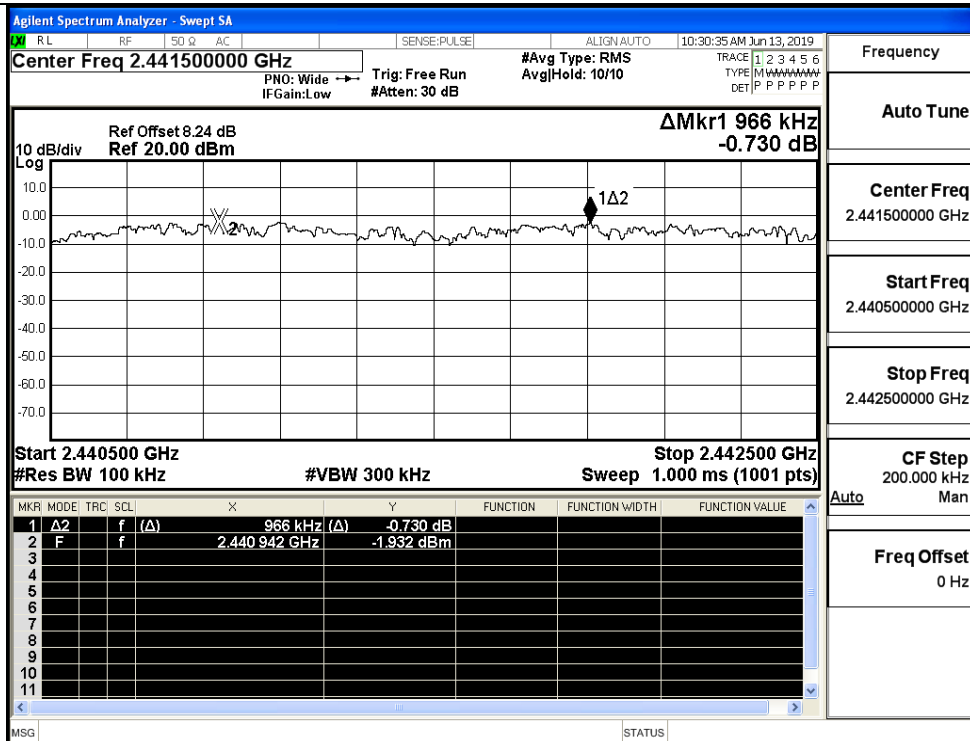
π /4DQPSK/LCH π /4DQPSK/MCH

$\pi/4$ DQPSK/HCH

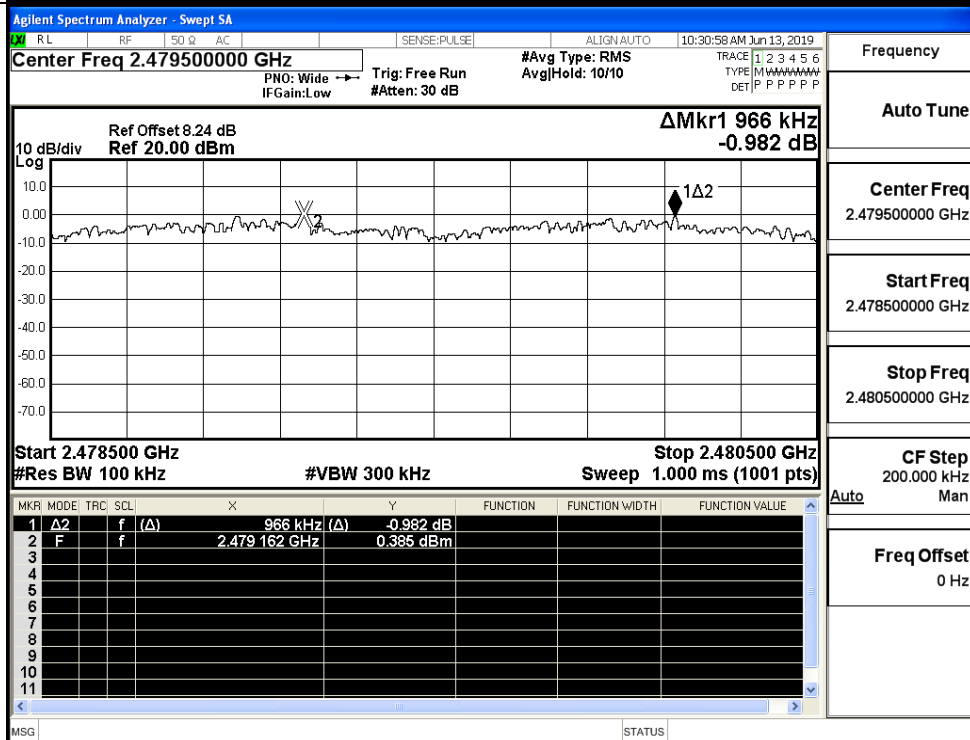
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

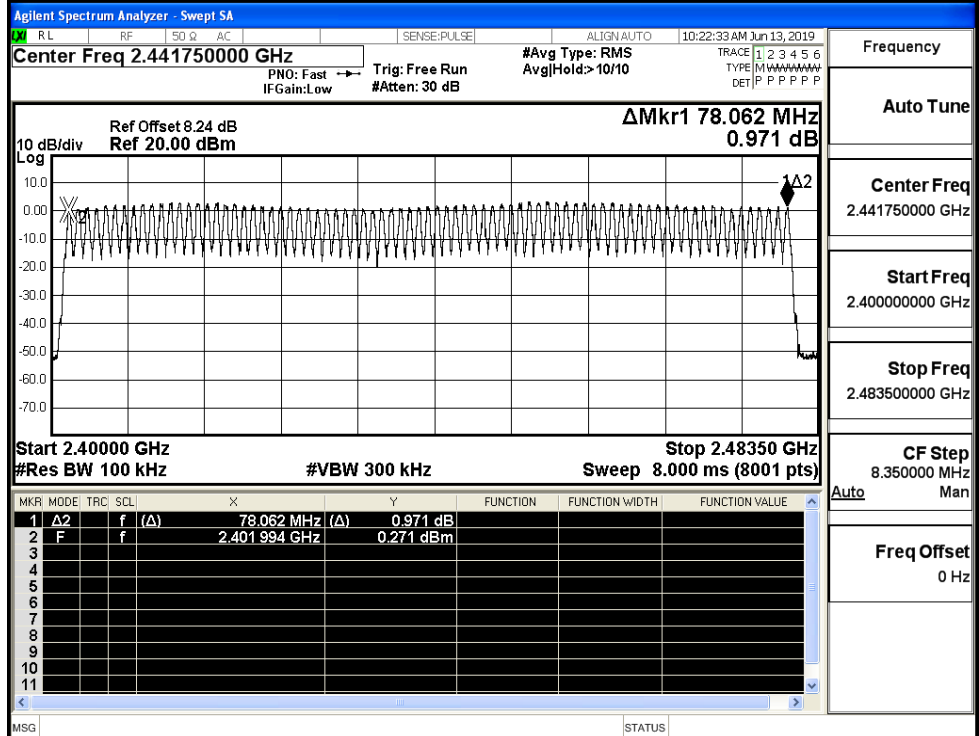
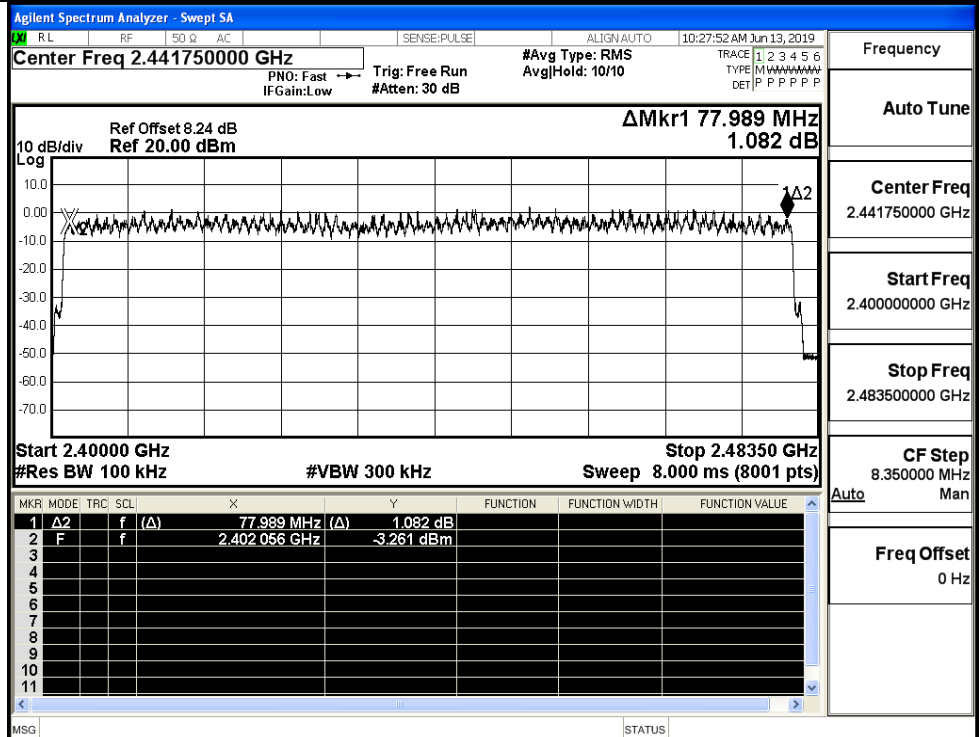


A.4 Hopping Channel Number

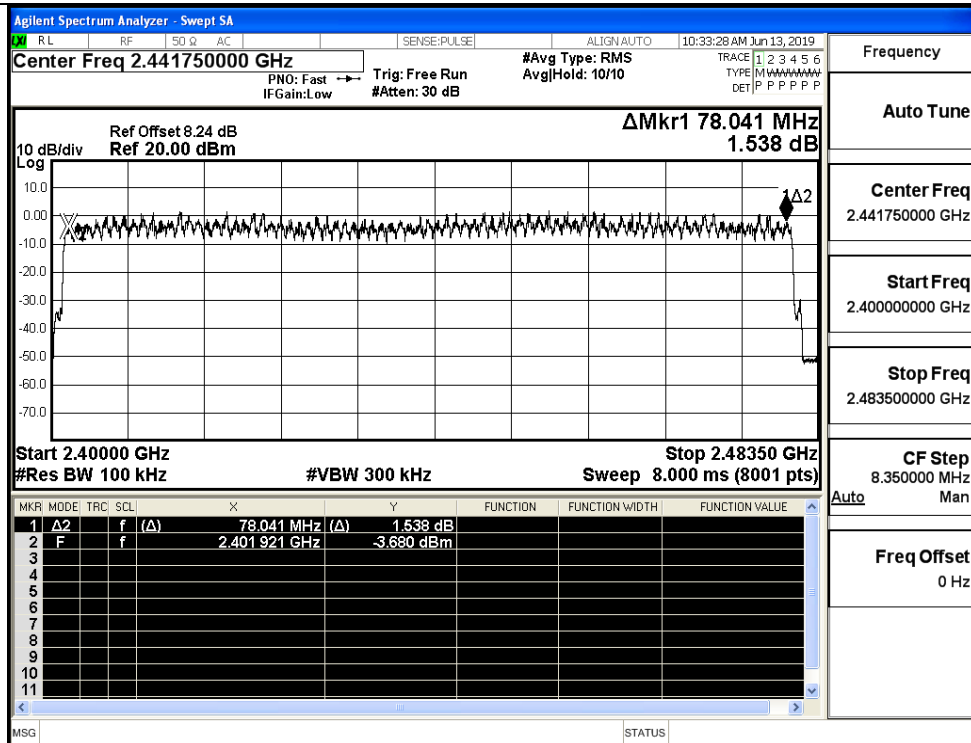
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

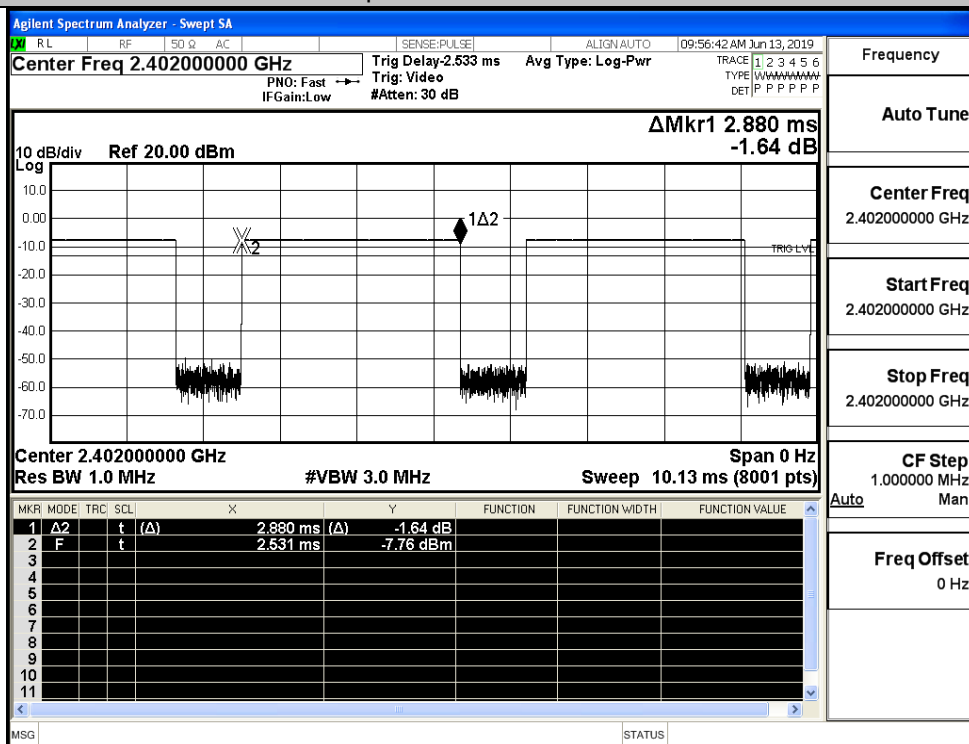


A.5 Dwell Time

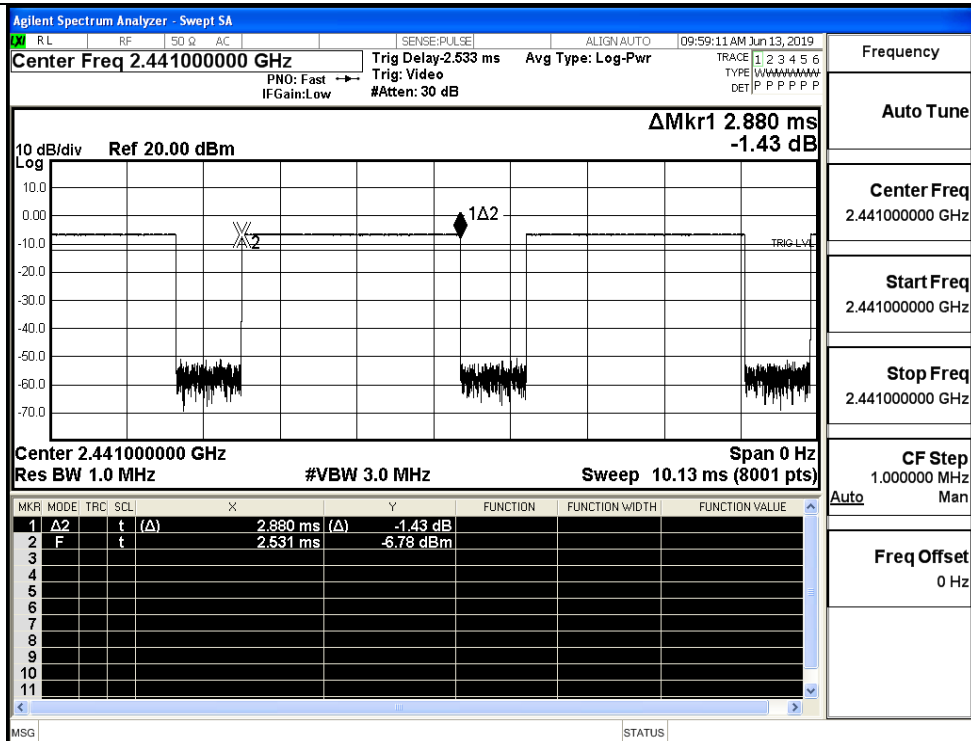
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

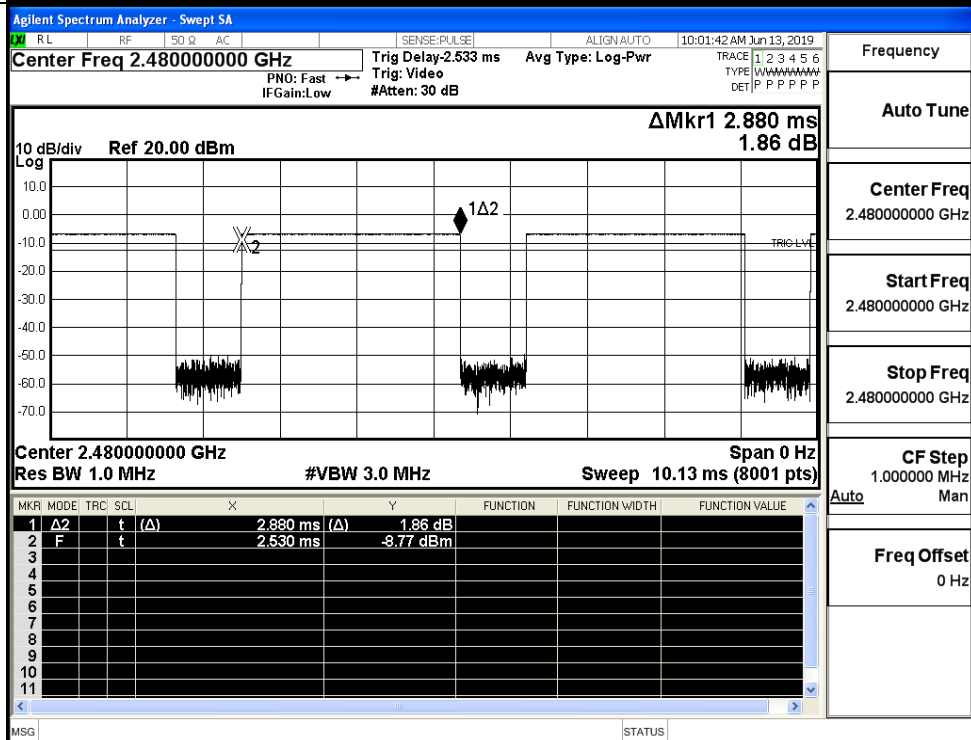
GFSK_DH5/LCH



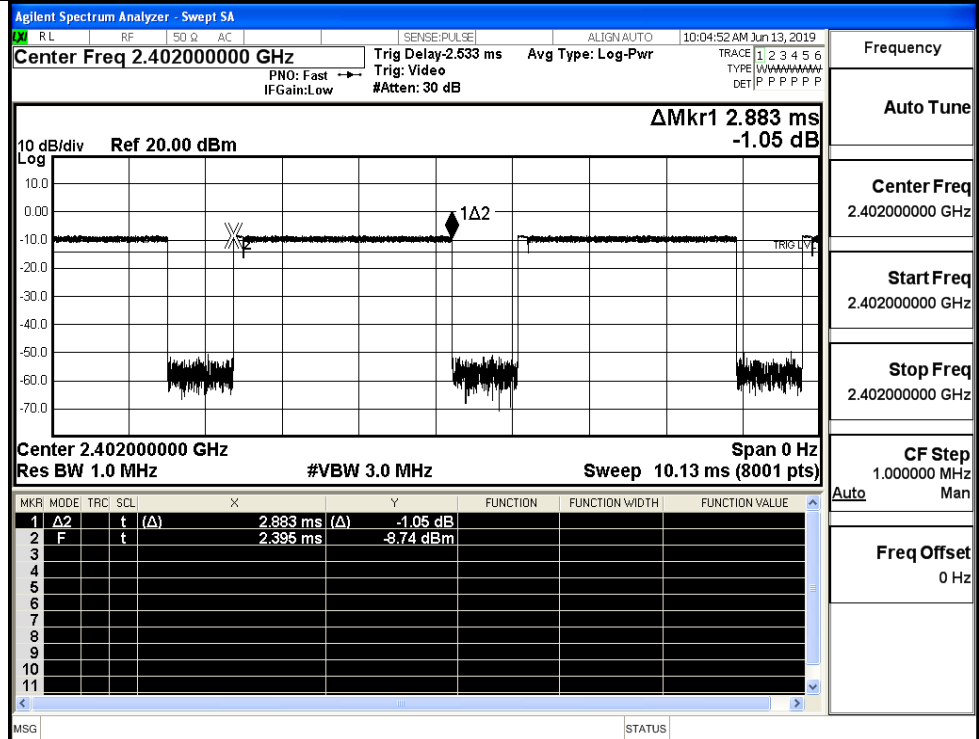
GFSK_DH5/MCH



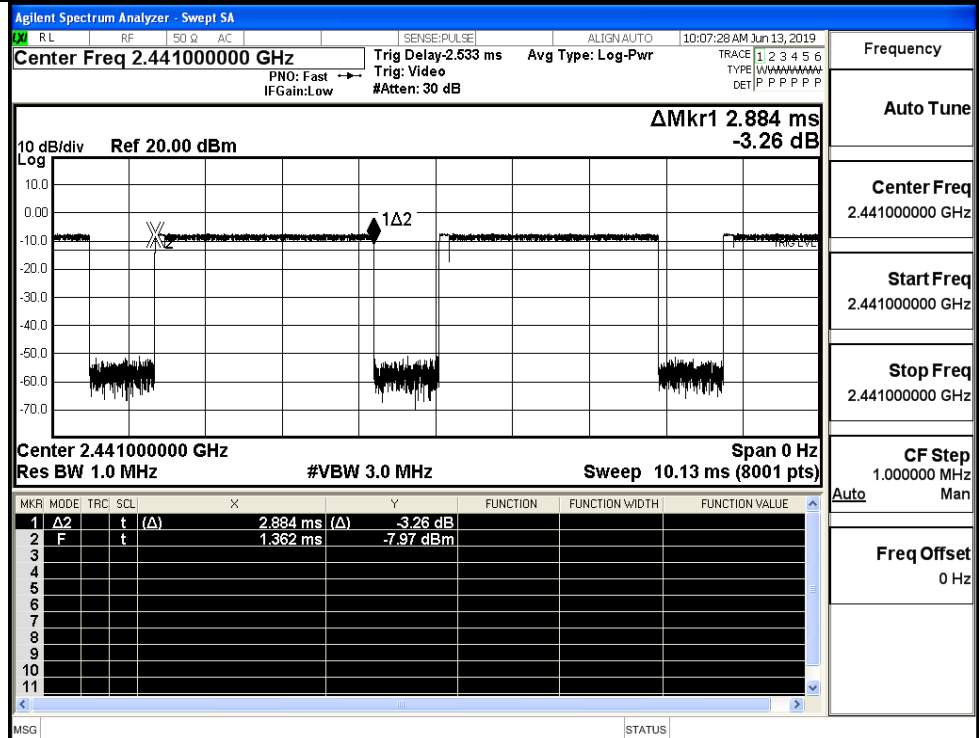
GFSK_DH5/HCH



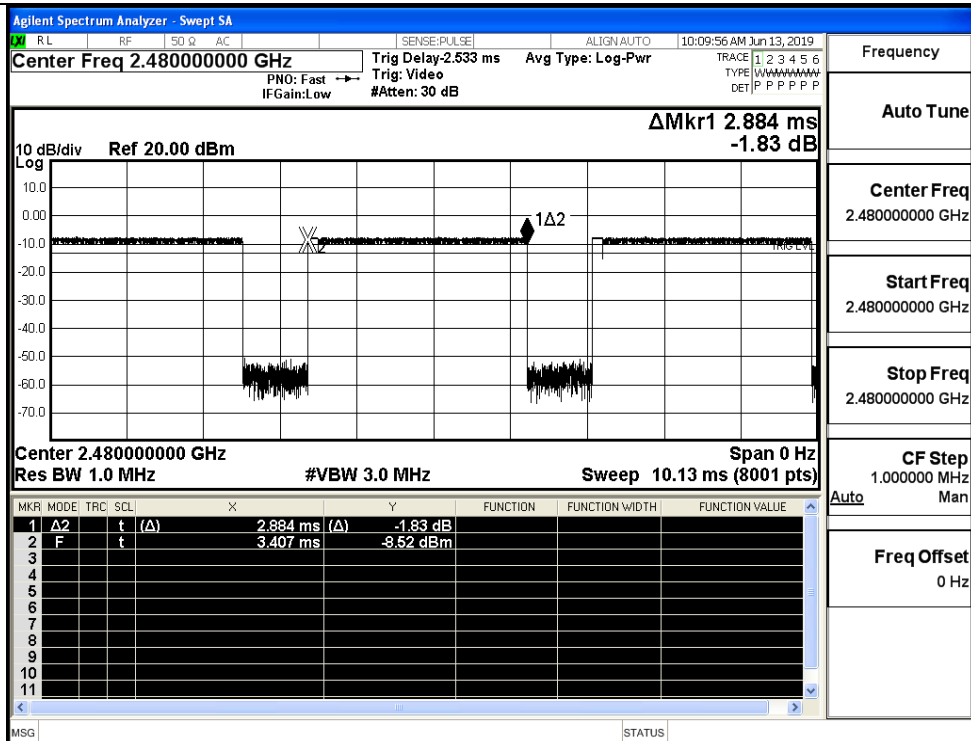
$\pi/4$ DQPSK
_2DH5/LCH



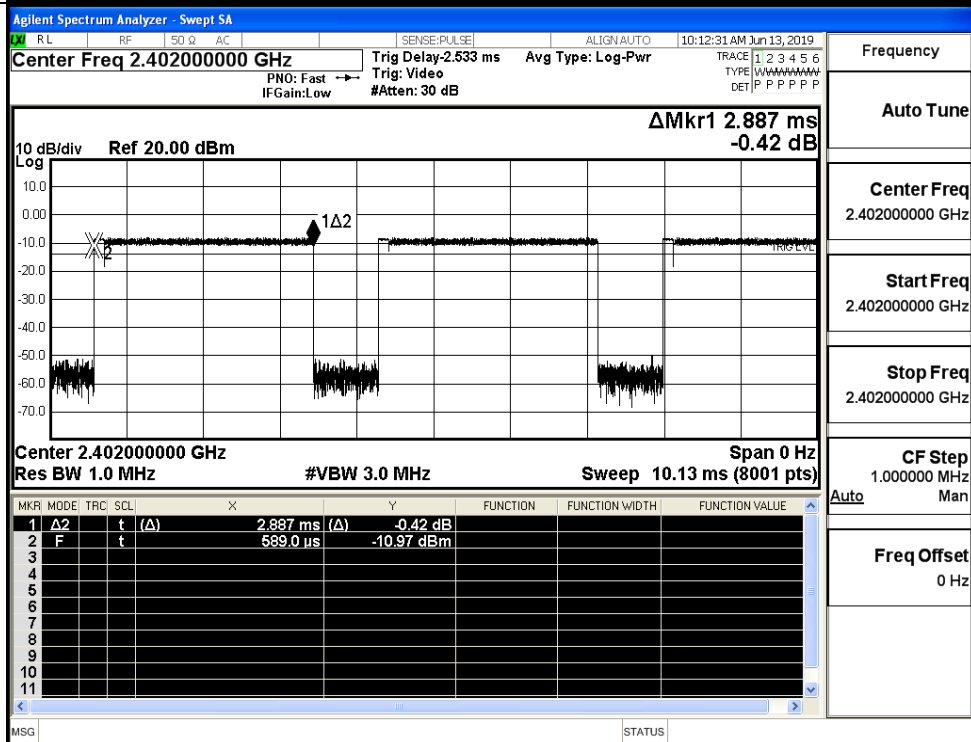
$\pi/4$ DQPSK
_2DH5/MCH



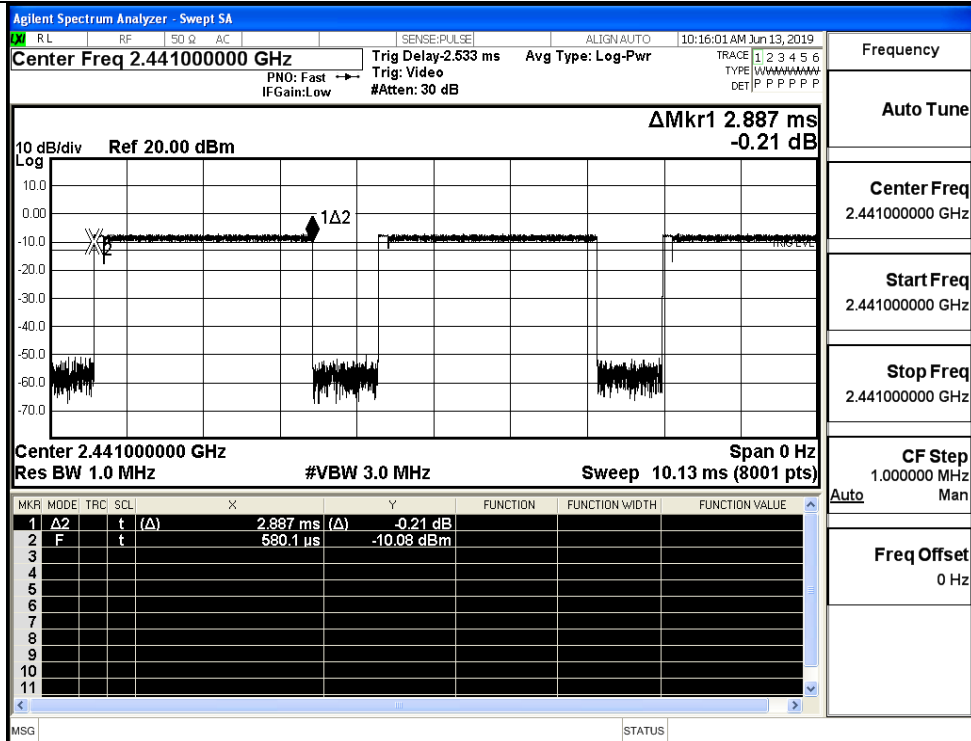
$\pi/4$ DQPSK
_2DH5/HCH



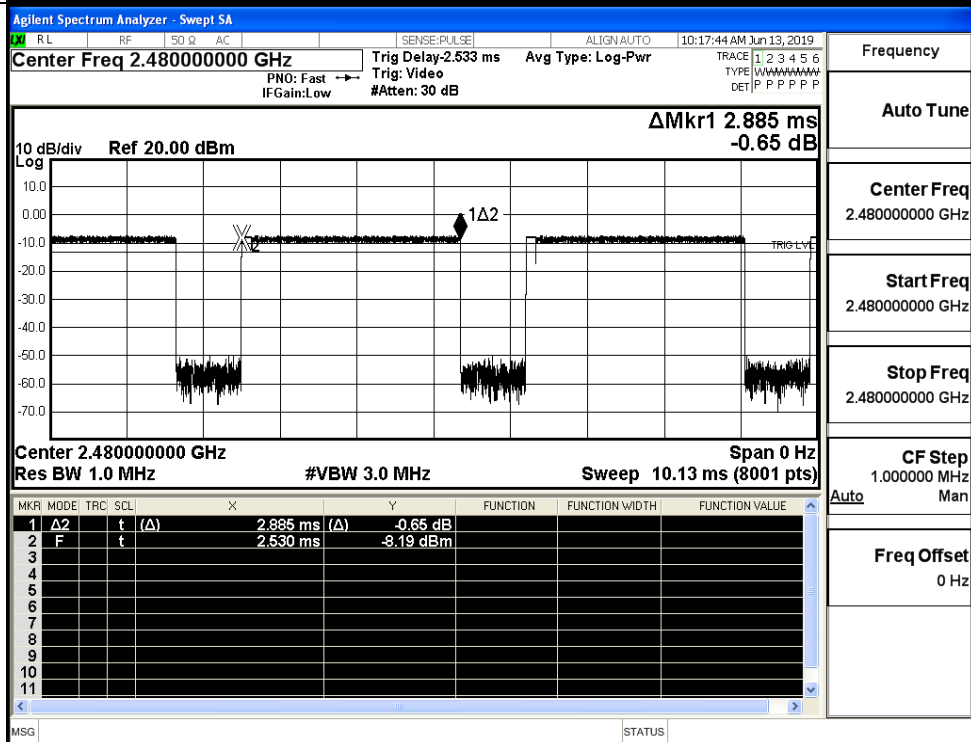
8DPSK _3DH5/LCH



8DPSK_3DH5/MCH



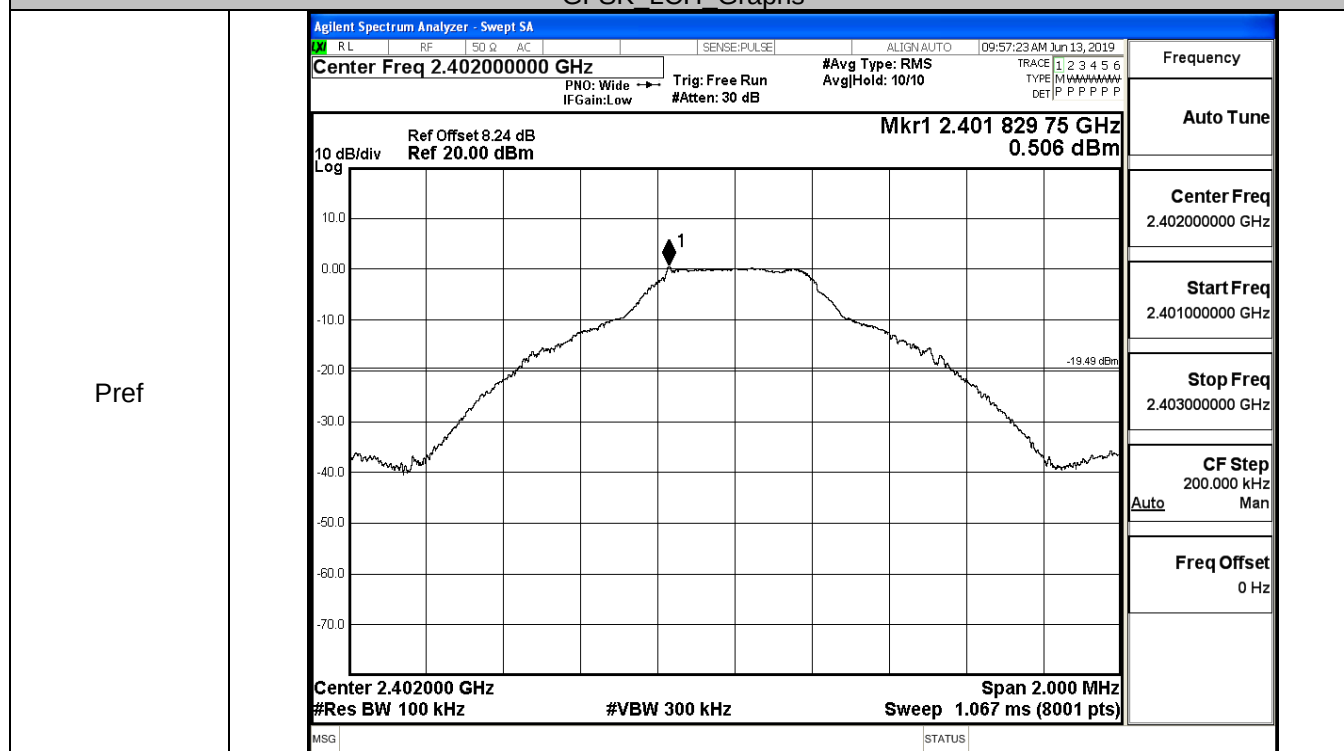
8DPSK_3DH5/HCH

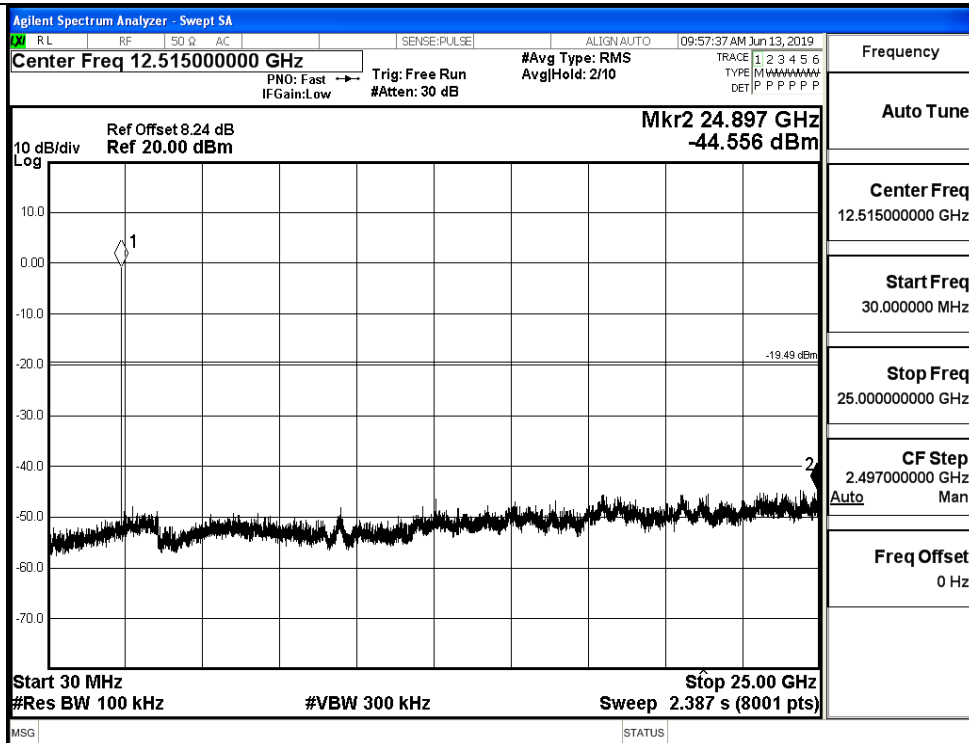


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.506	-44.556	-19.494	PASS
	MCH	1.727	-44.923	-18.273	PASS
	HCH	1.565	-43.782	-18.435	PASS
$\pi/4$ DQPSK	LCH	-0.49	-44.897	-20.490	PASS
	MCH	0.568	-44.591	-19.432	PASS
	HCH	0.455	-44.264	-19.545	PASS
8DPSK	LCH	-0.51	-44.822	-20.510	PASS
	MCH	0.539	-43.853	-19.461	PASS
	HCH	0.5	-44.608	-19.500	PASS

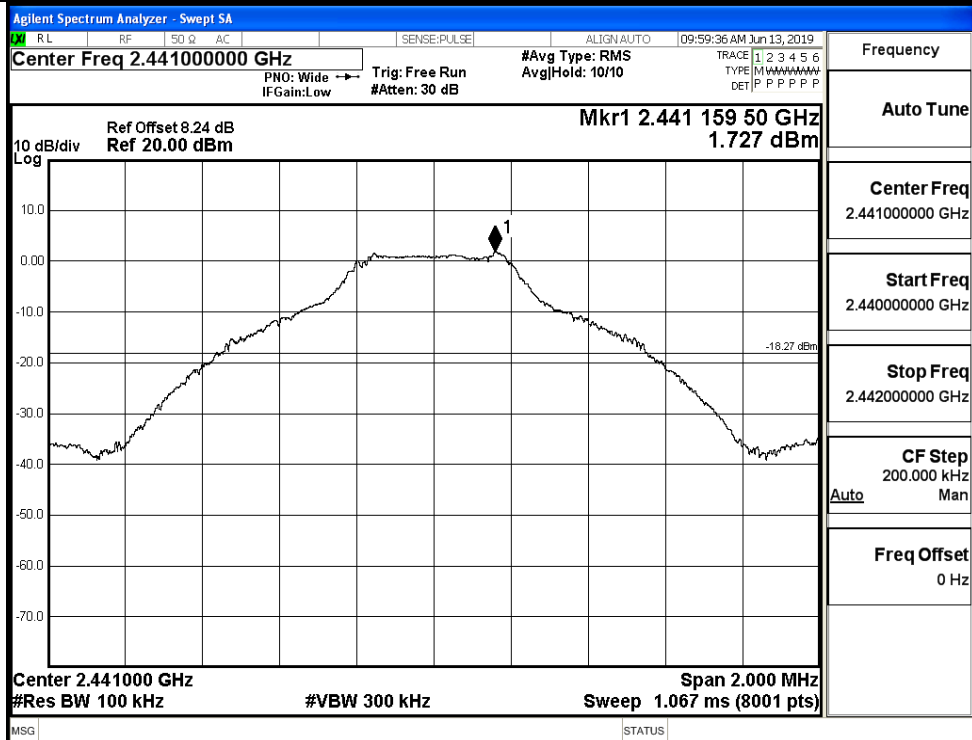
GFSK LCH Graphs



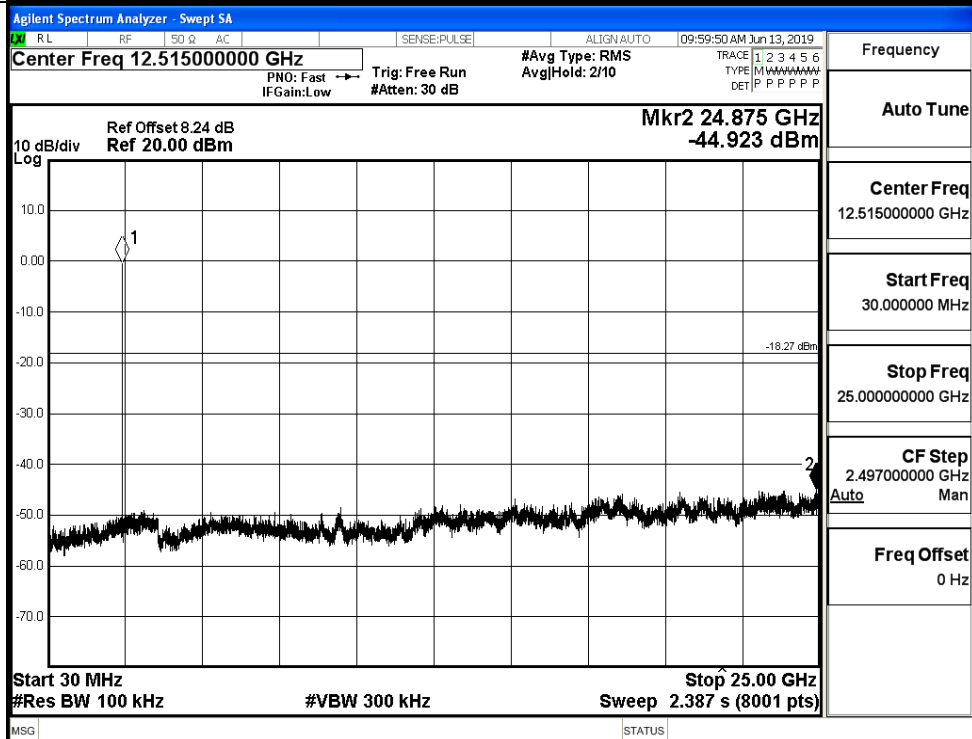


GFSK MCH Graphs

Pref

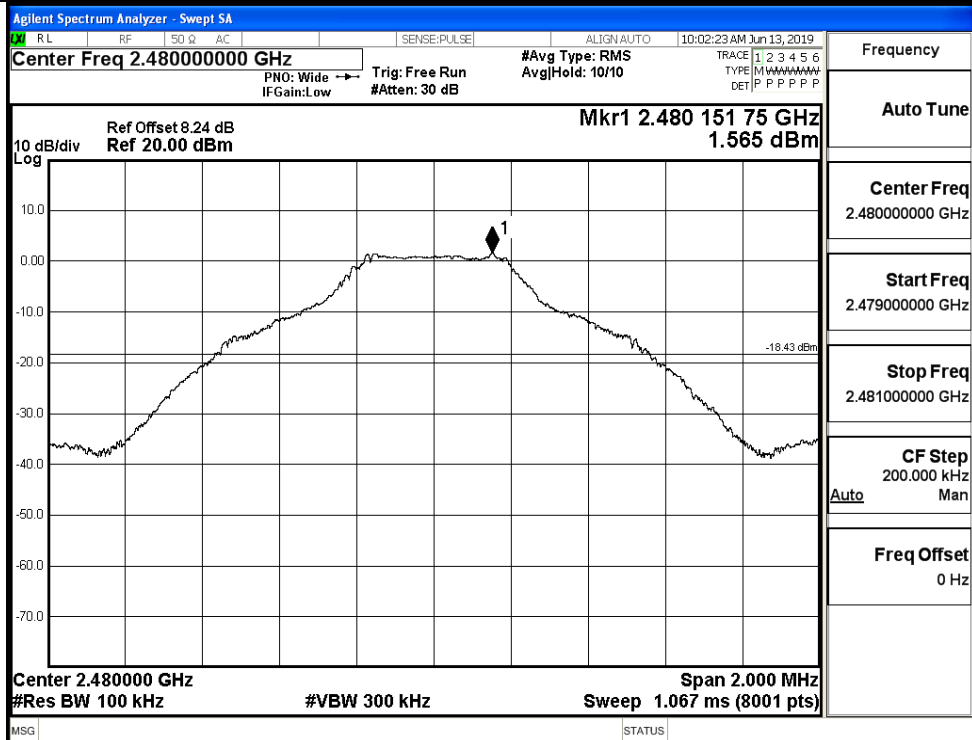


Puw

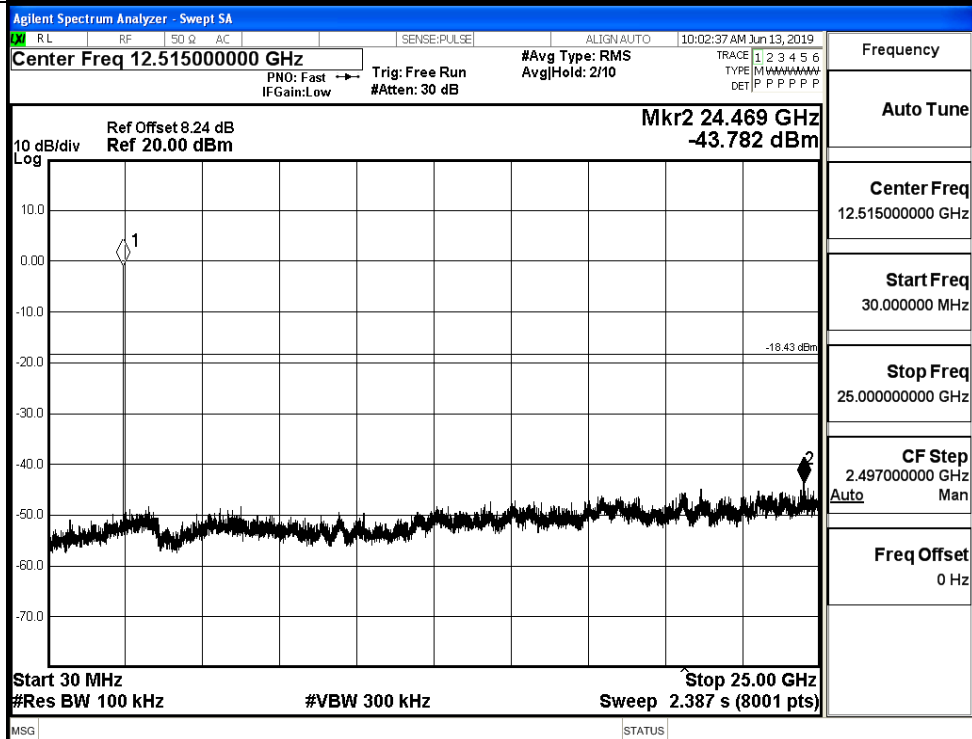


GFSK HCH Graphs

Pref

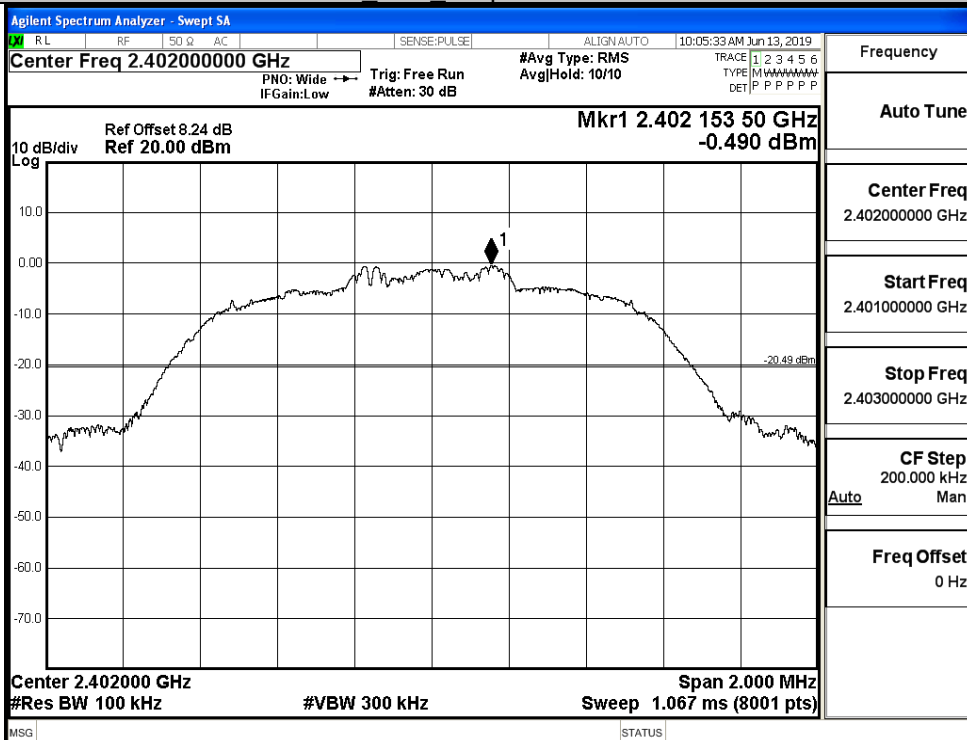


Puw

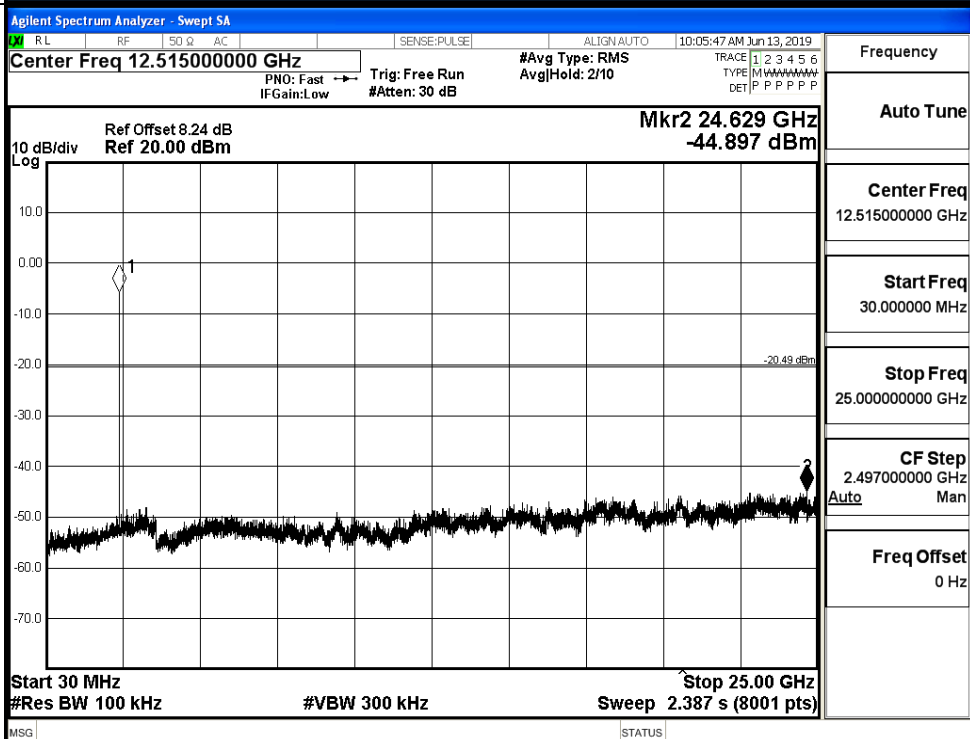


$\pi/4$ DQPSK LCH Graphs

Pref

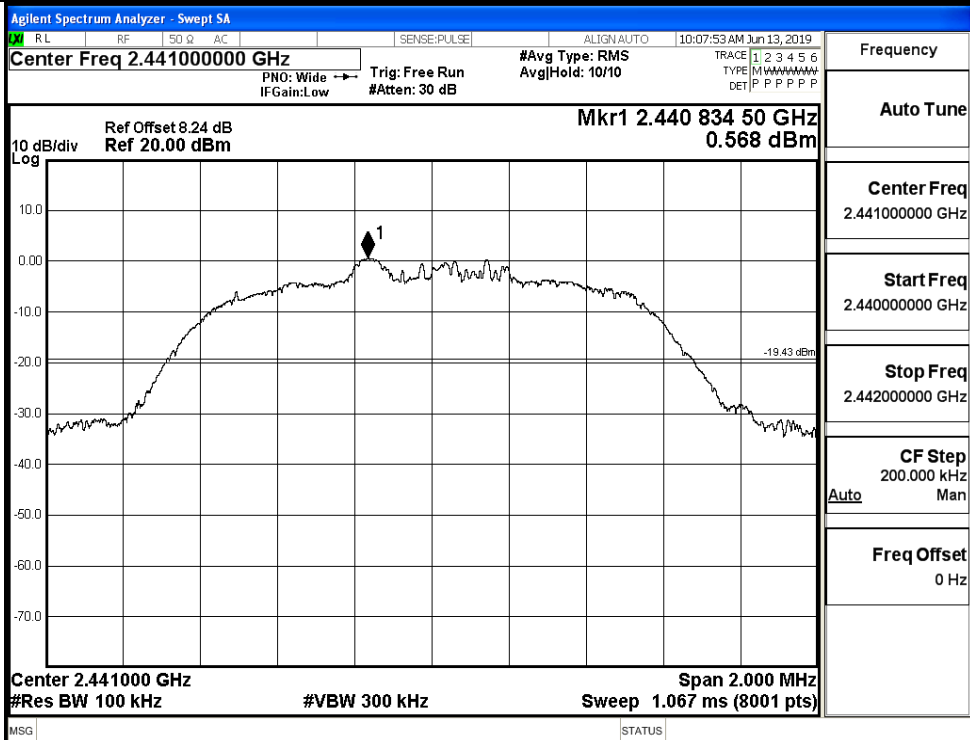


Puw

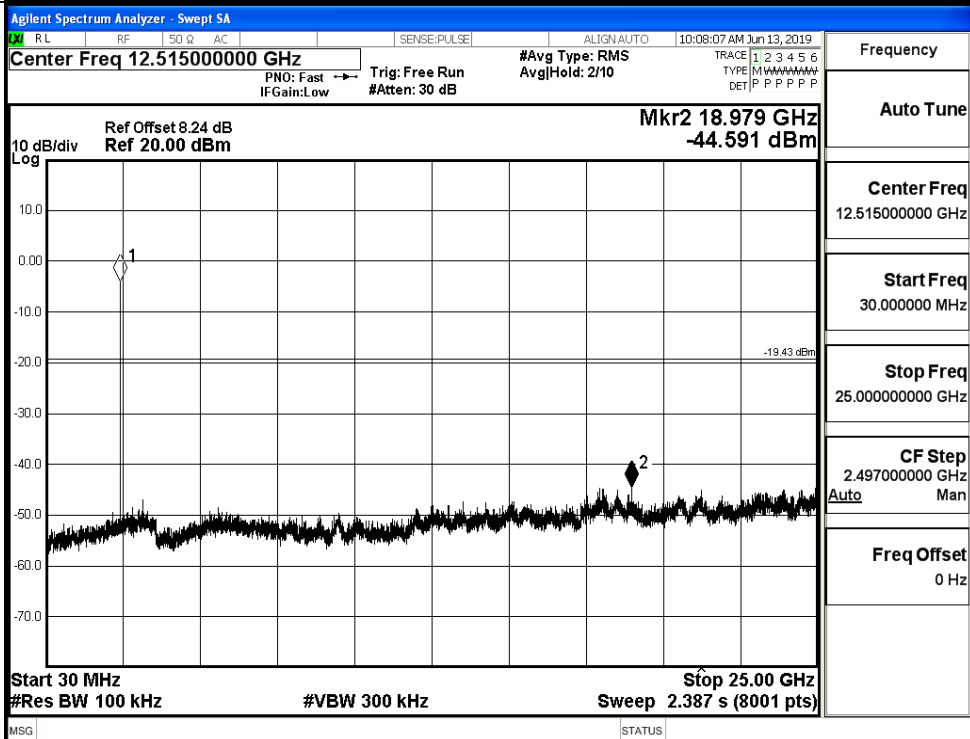


π /4DQPSK MCH Graphs

Pref

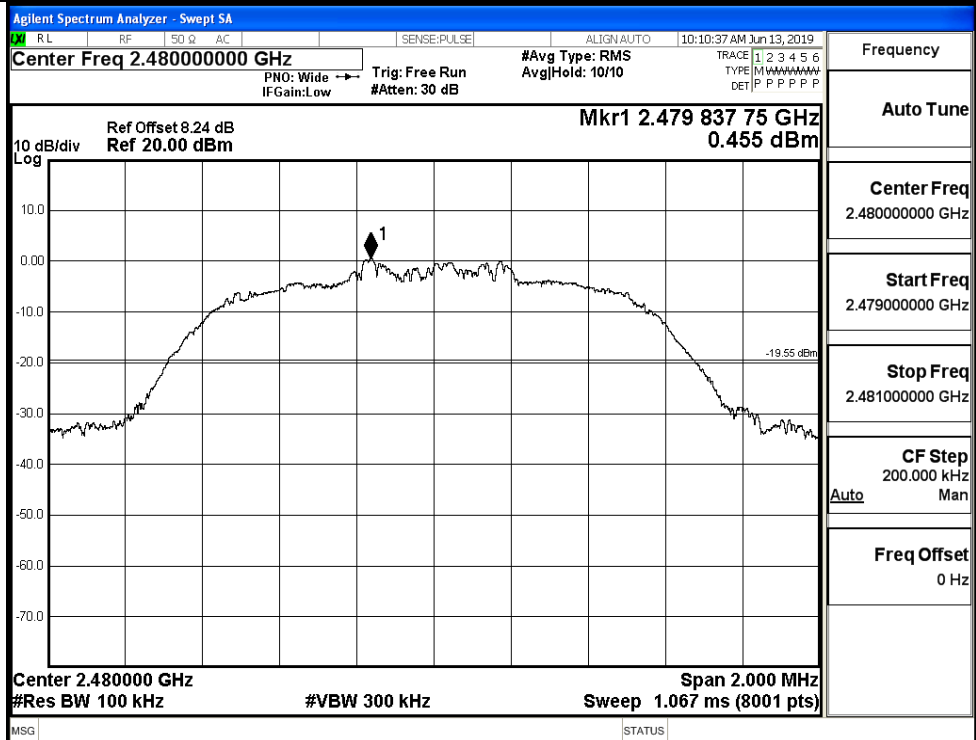


Puw

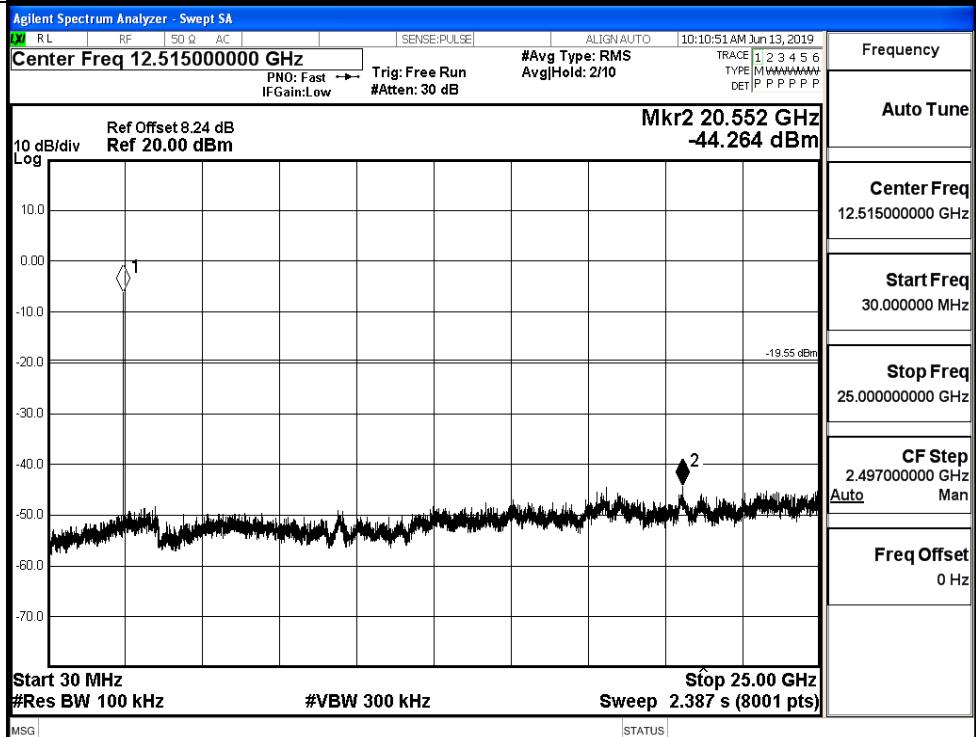


π /4DQPSK HCH Graphs

Pref

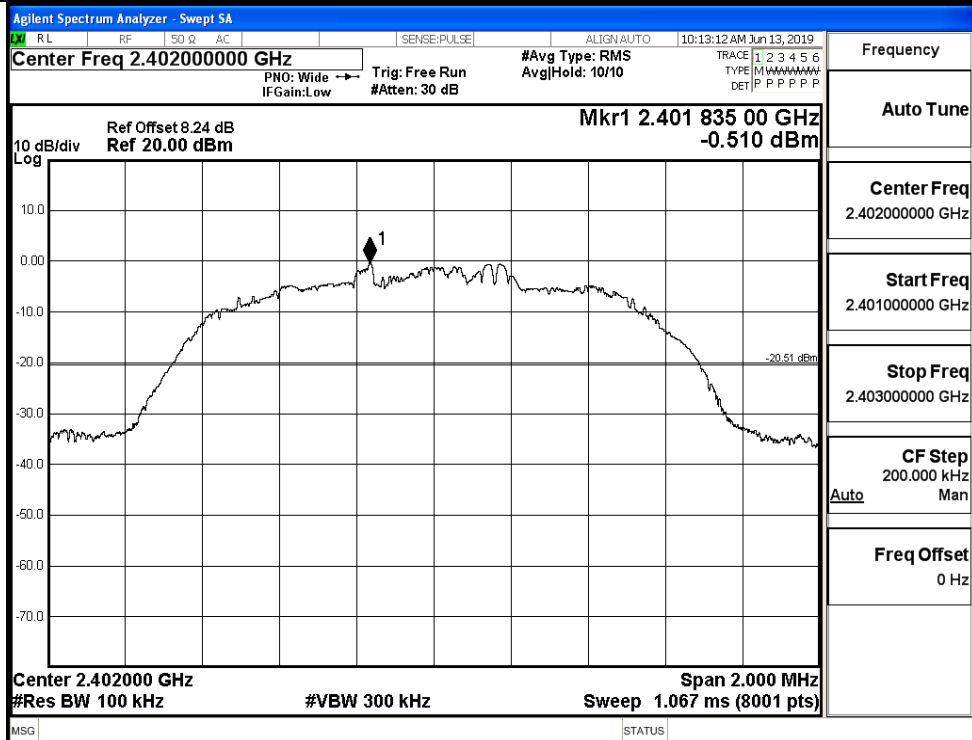


Puw

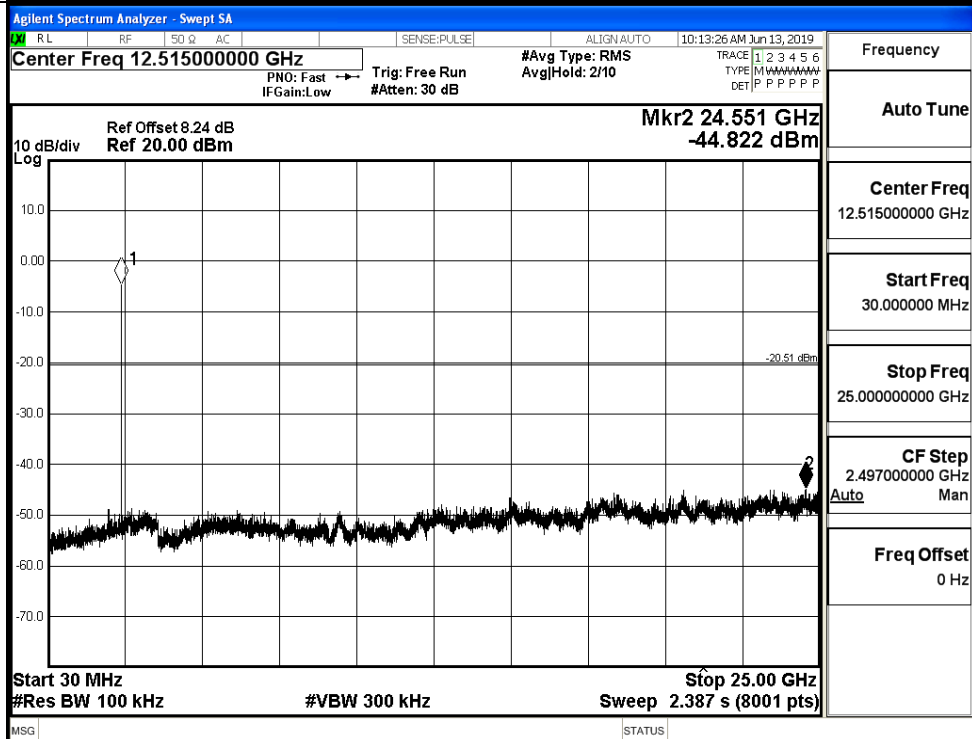


8DPSK_LCH_Graphs

Pref

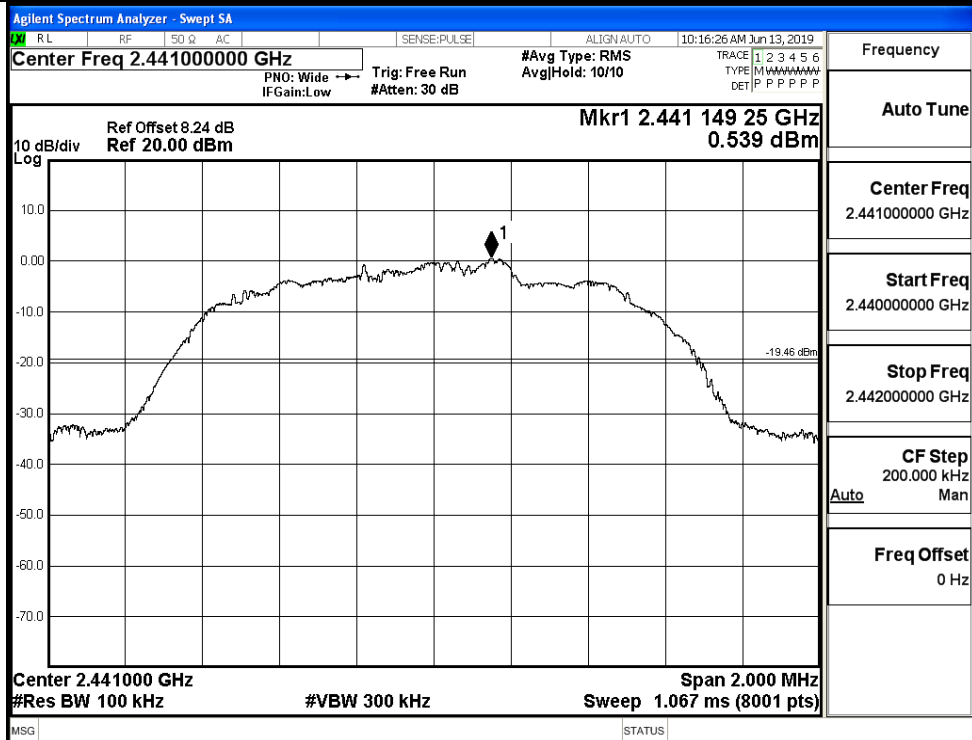


Puw

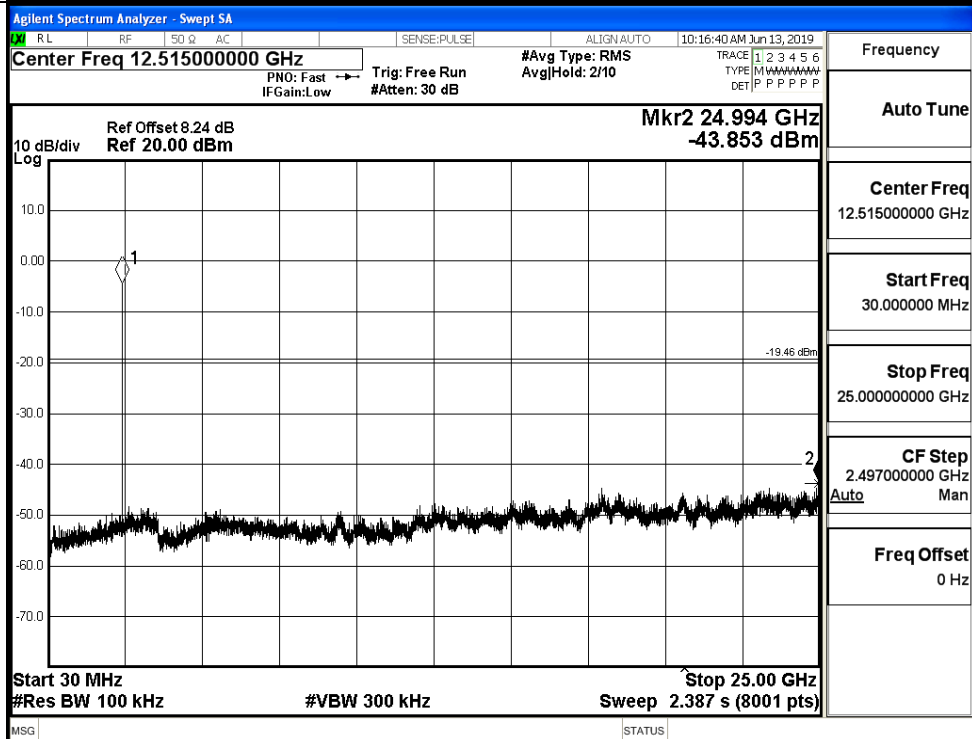


8DPSK MCH Graphs

Pref

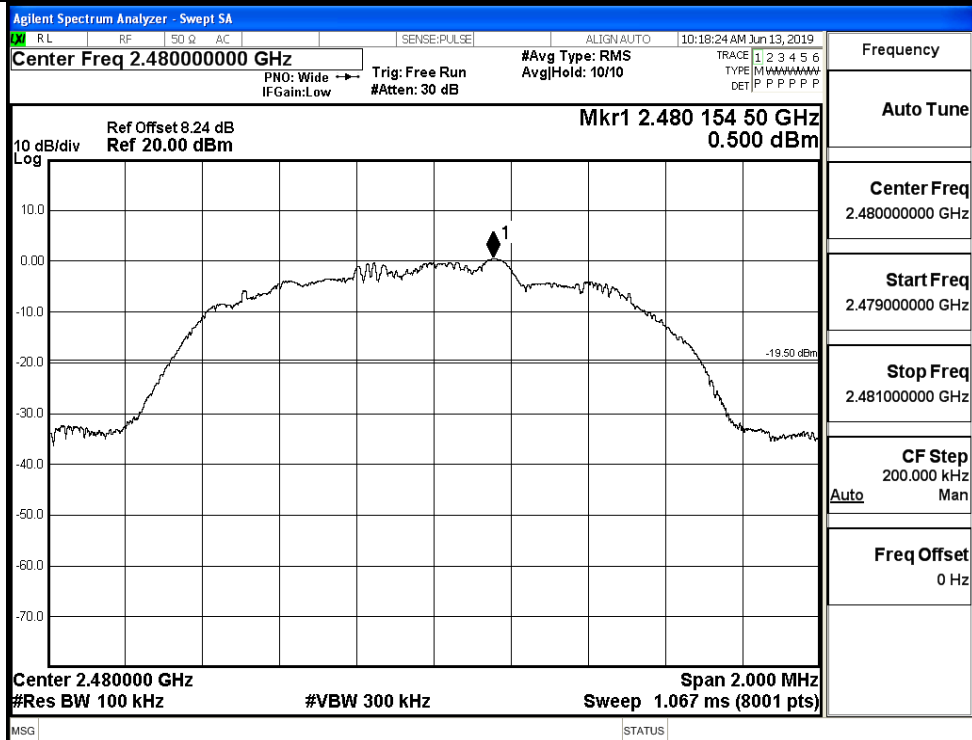


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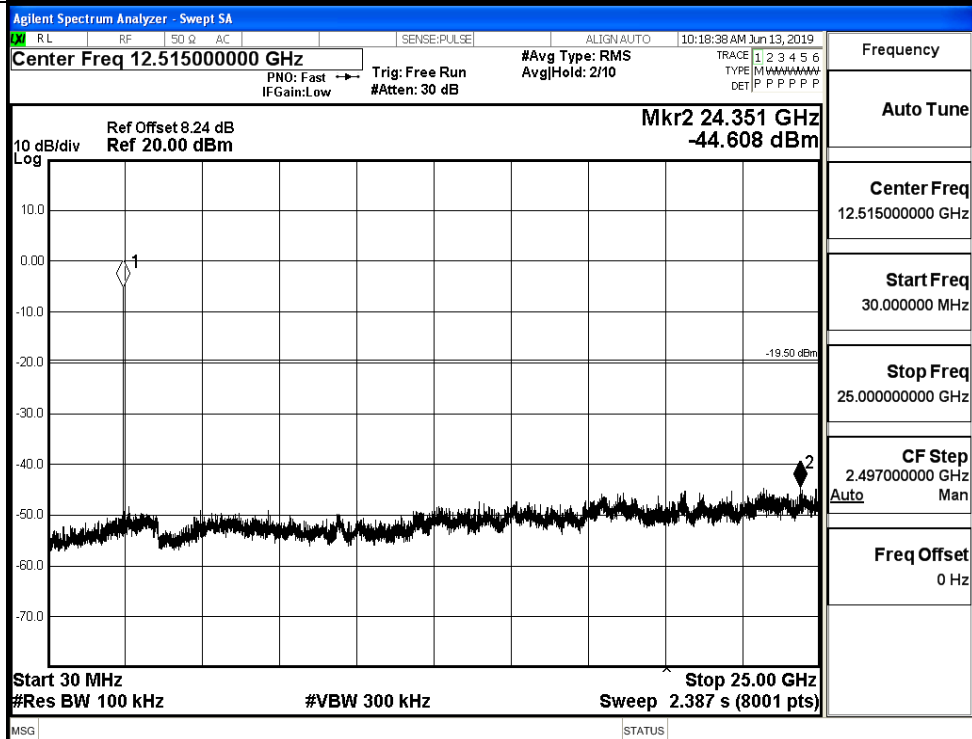


8DPSK_HCH Graphs

Pref



Puw

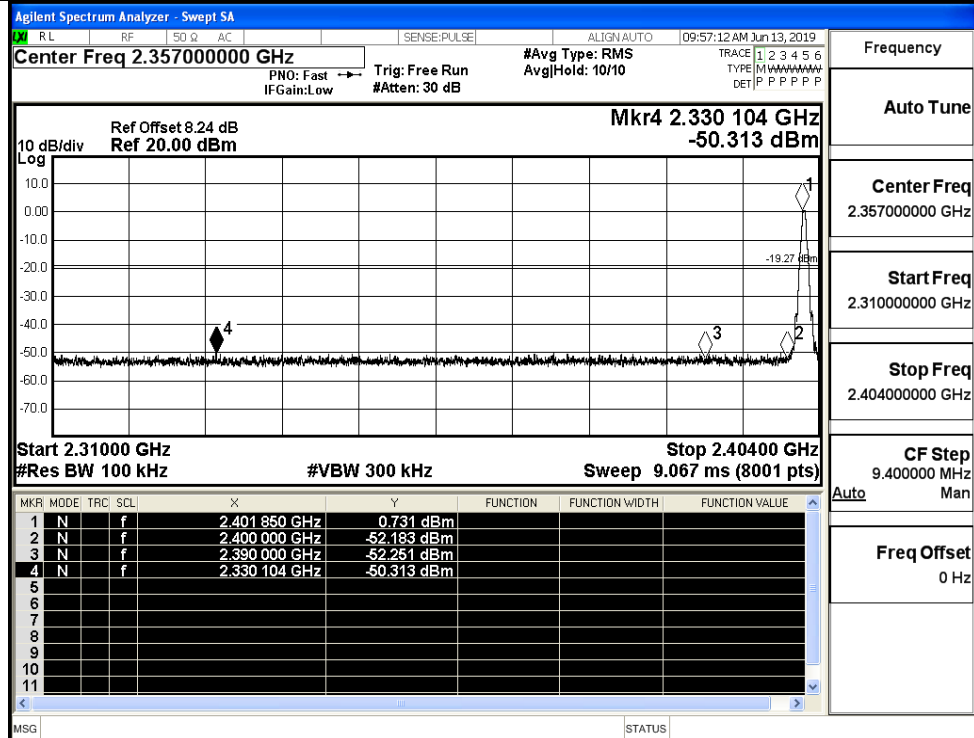


A.7 Band-edge for RF Conducted Emissions

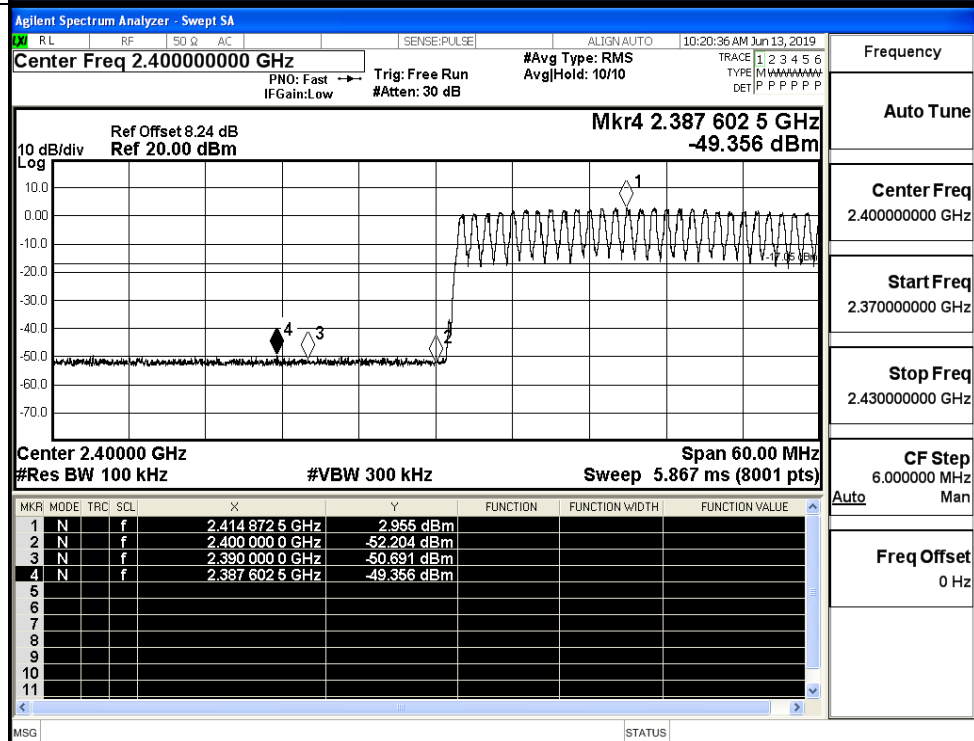
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.731	Off	-50.313	-19.27	PASS
			2.955	On	-49.356	-17.05	PASS
	HCH	2480	1.702	Off	-49.602	-18.3	PASS
			3.374	On	-49.402	-16.63	PASS
$\pi/4$ DQPSK	LCH	2402	-0.402	Off	-49.802	-20.4	PASS
			1.368	On	-49.362	-18.63	PASS
	HCH	2480	0.384	Off	-49.627	-19.62	PASS
			1.232	On	-49.193	-18.77	PASS
8DPSK	LCH	2402	-0.273	Off	-49.737	-20.27	PASS
			1.606	On	-49.608	-18.39	PASS
	HCH	2480	0.574	Off	-49.170	-19.43	PASS
			2.079	On	-49.195	-17.92	PASS

Test Graphs

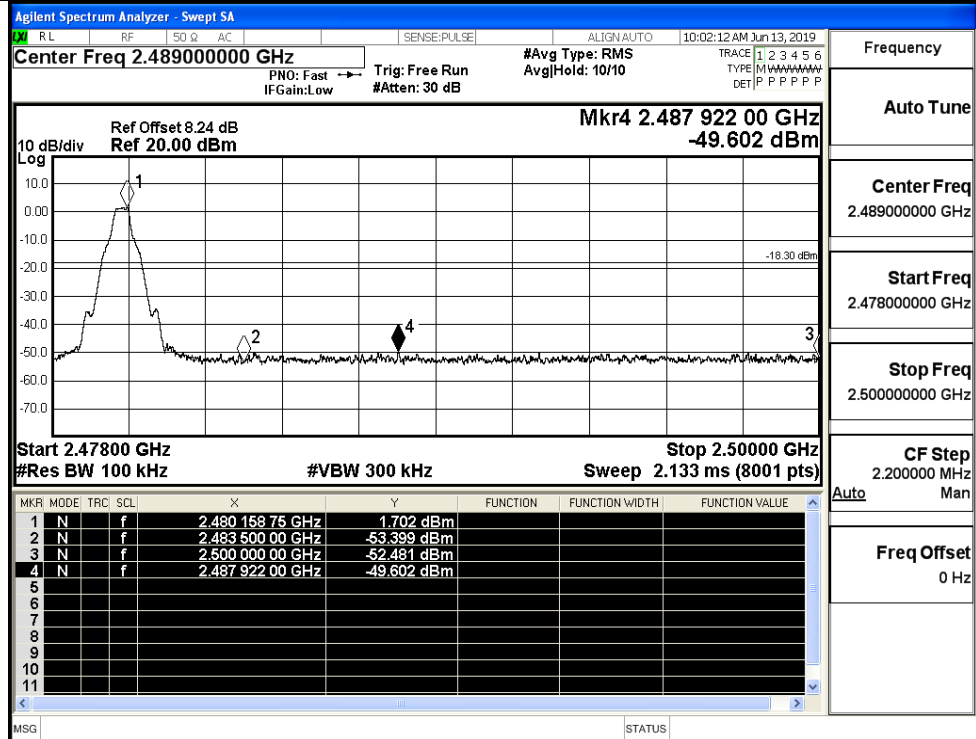
GFSK/LCH/No Hop



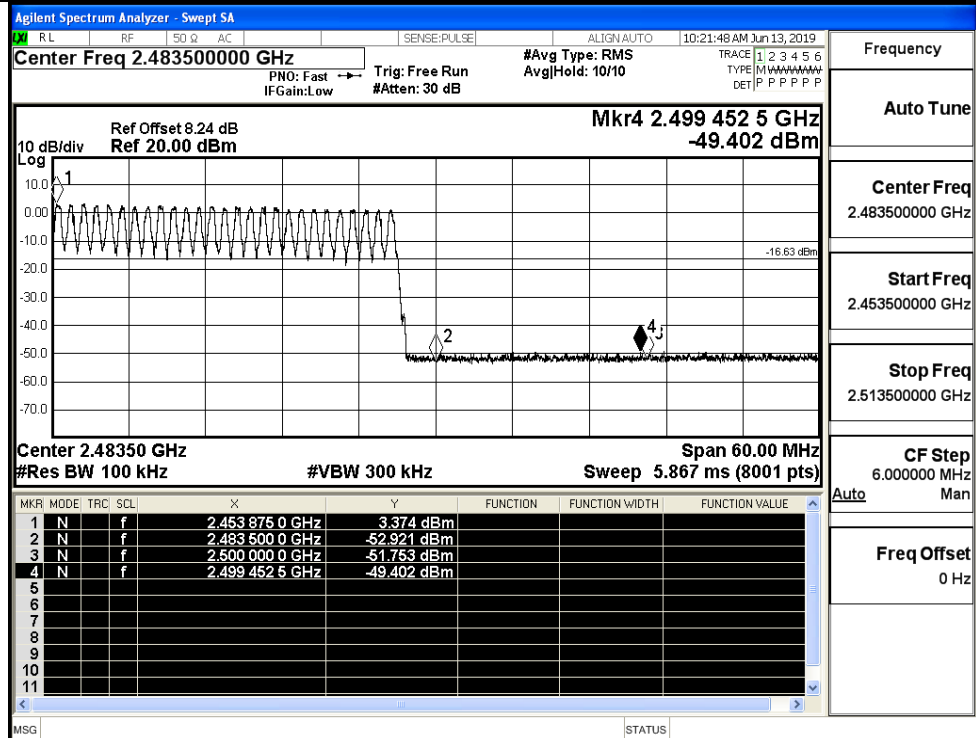
GFSK/LCH/Hop



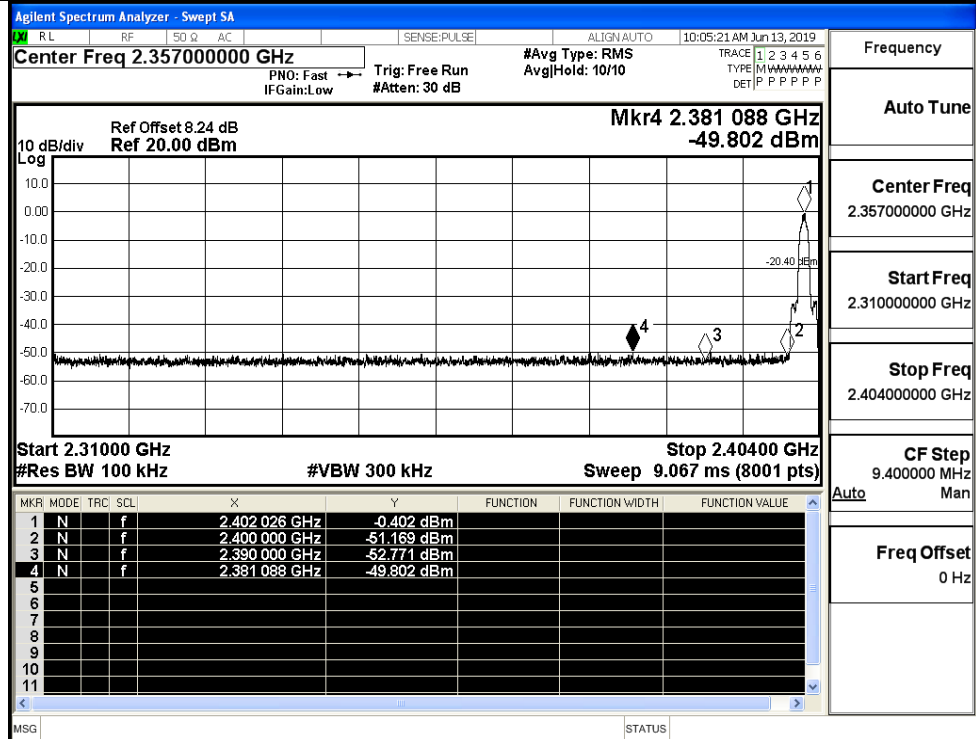
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

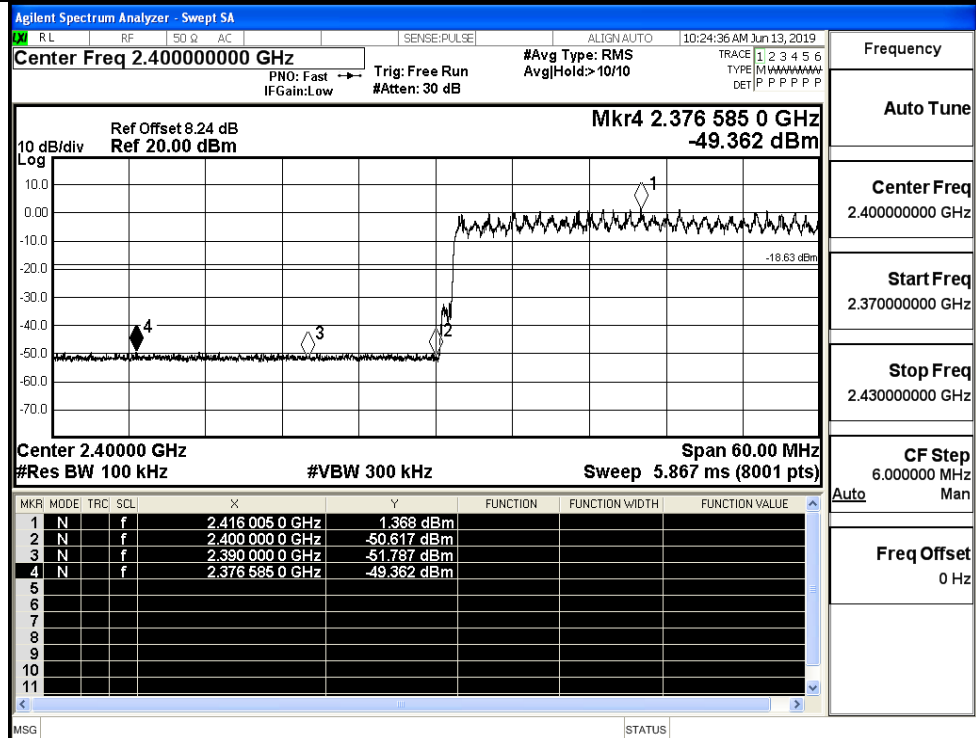
Start Freq
2.310000000 GHz

Stop Freq
2.404000000 GHz

CF Step
9.400000 MHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop



Frequency

Auto Tune

Center Freq
2.400000000 GHz

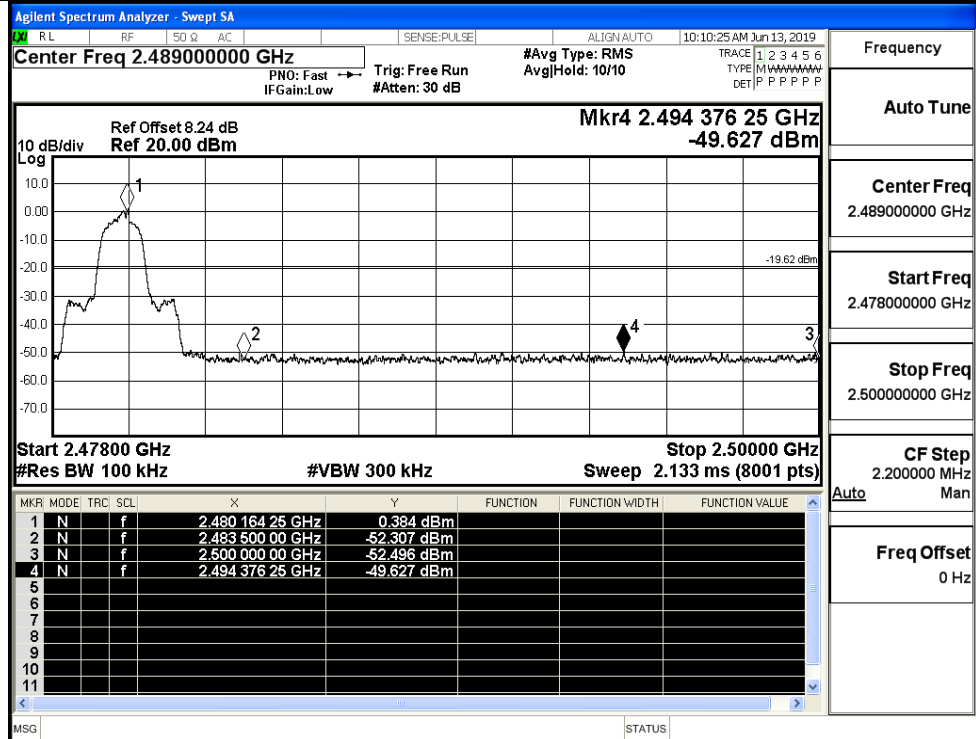
Start Freq
2.370000000 GHz

Stop Freq
2.430000000 GHz

CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

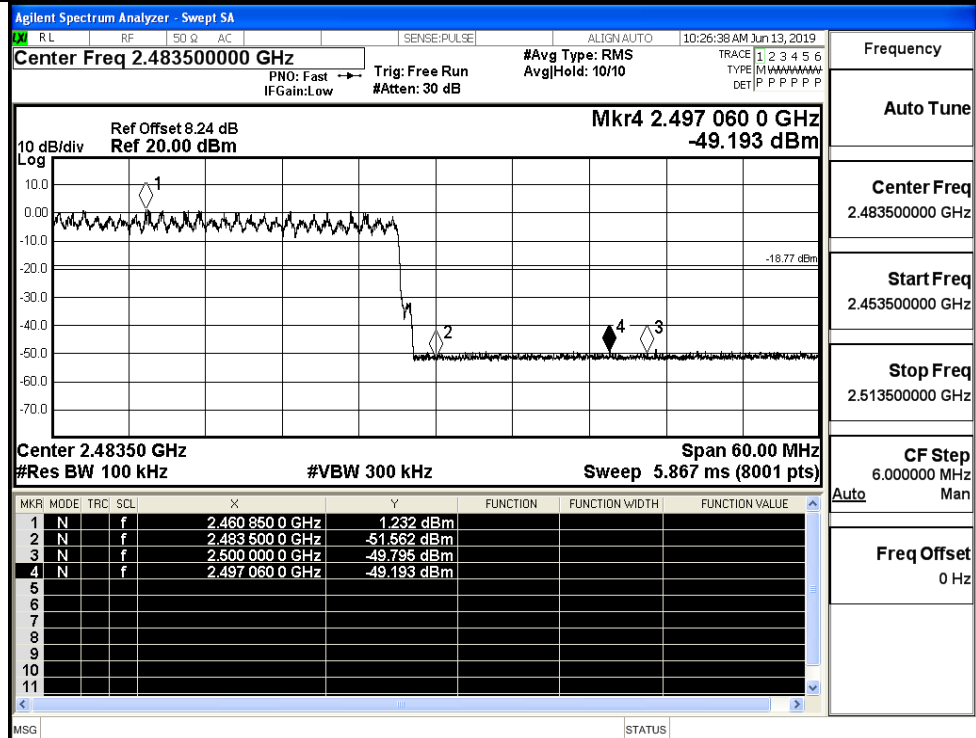
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH/Hop



Frequency

Auto Tune

Center Freq
2.483500000 GHz

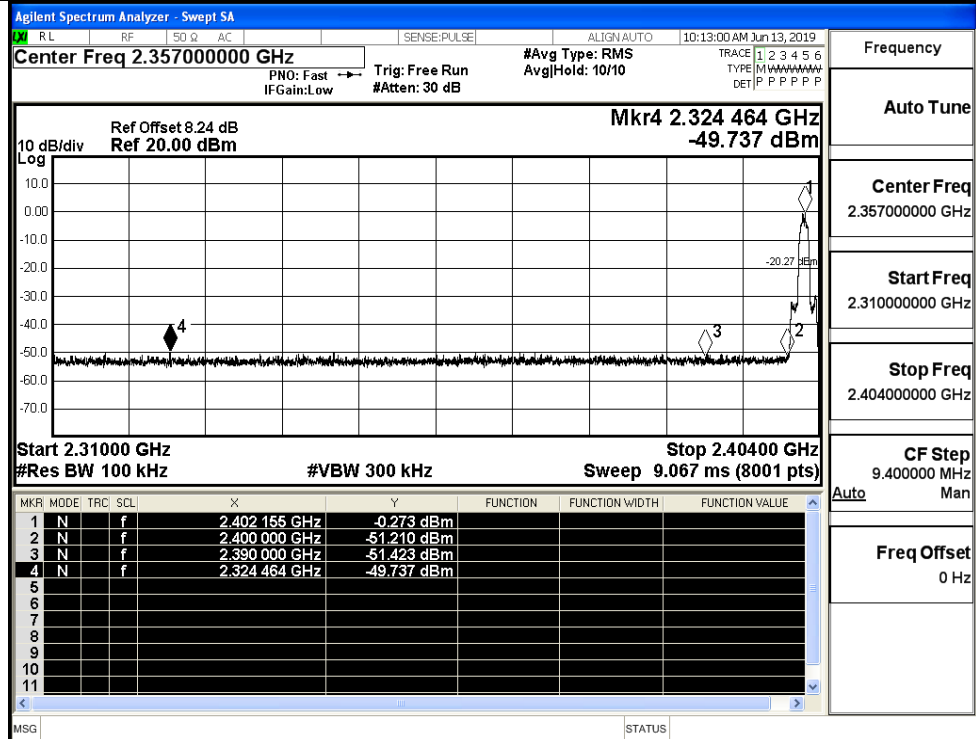
Start Freq
2.453500000 GHz

Stop Freq
2.513500000 GHz

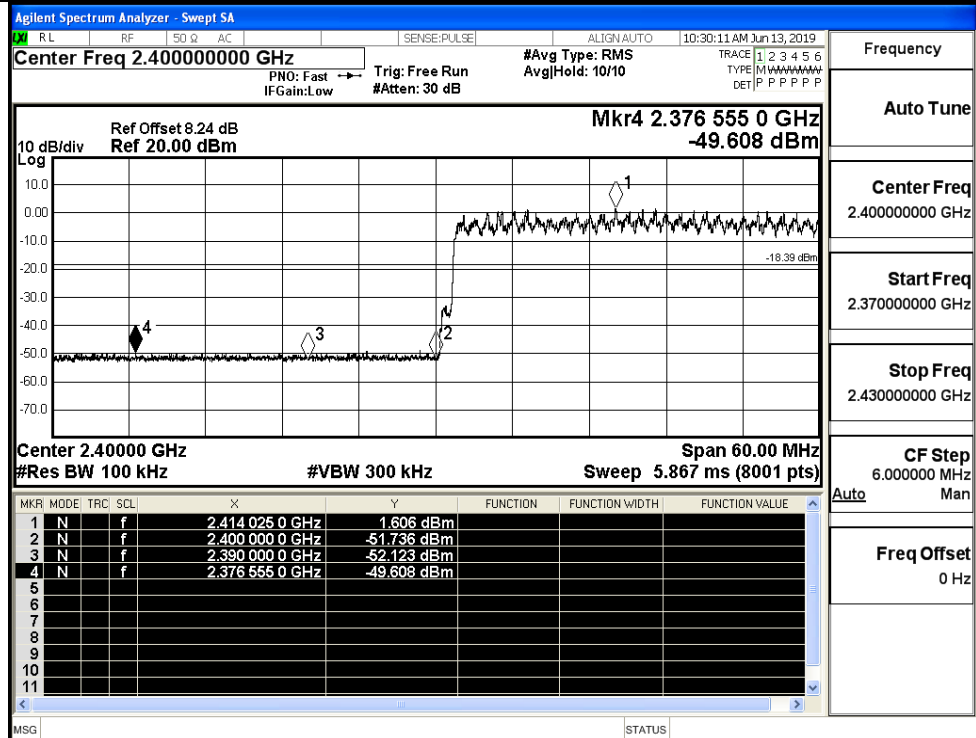
CF Step
6.000000 MHz

Freq Offset
0 Hz

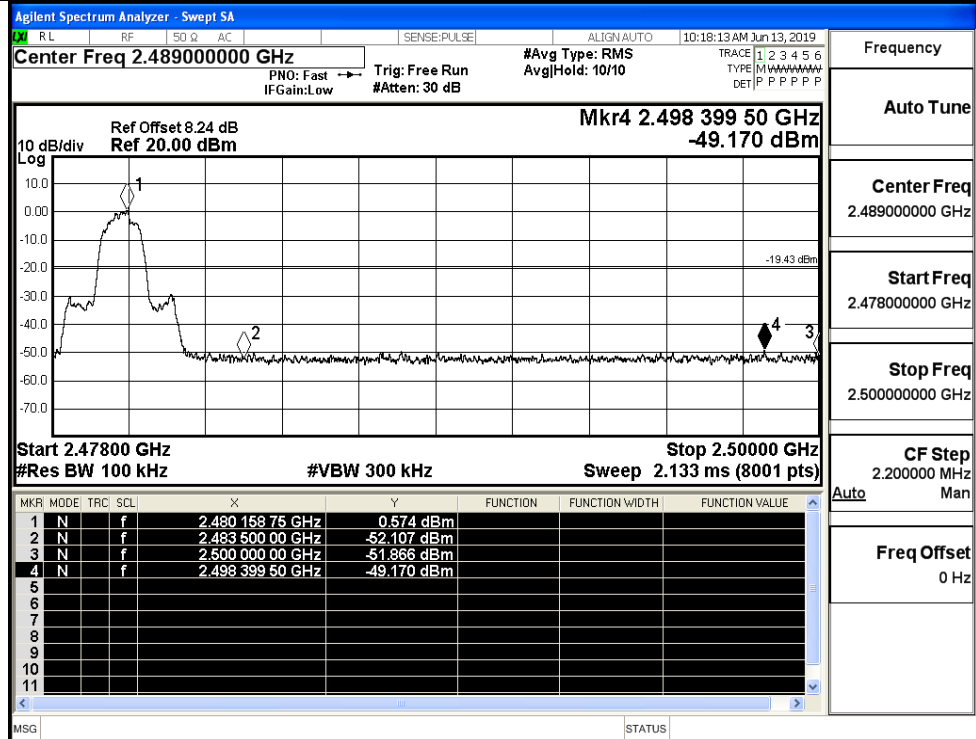
8DPSK/LCH/No Hop



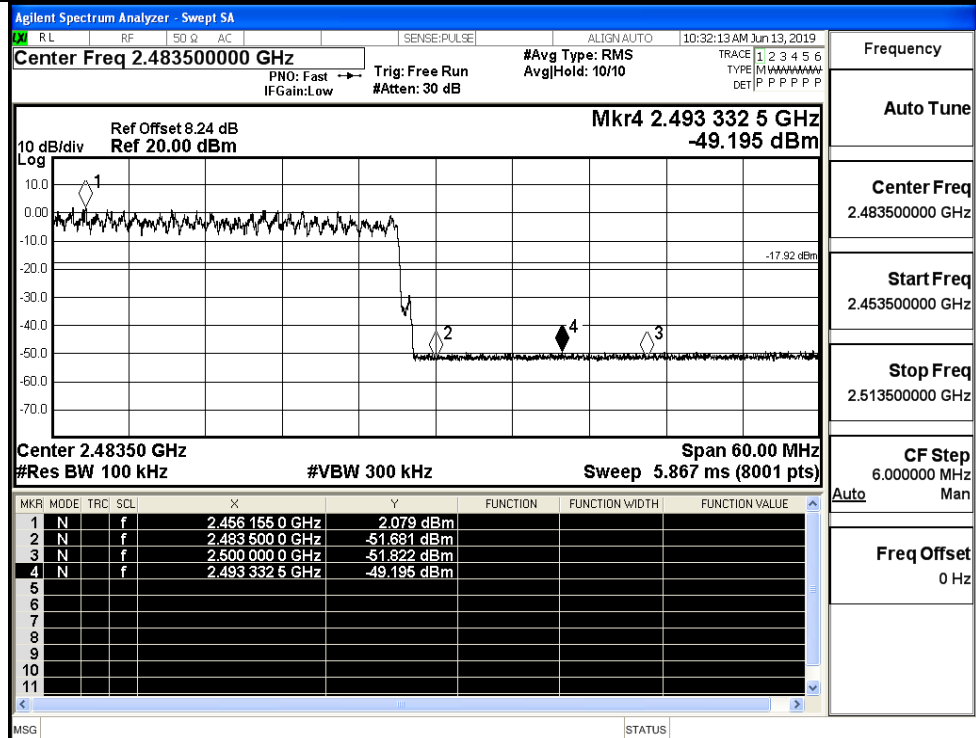
8DPSK/LCH/Hop



8DPSK/HCH/No Hop



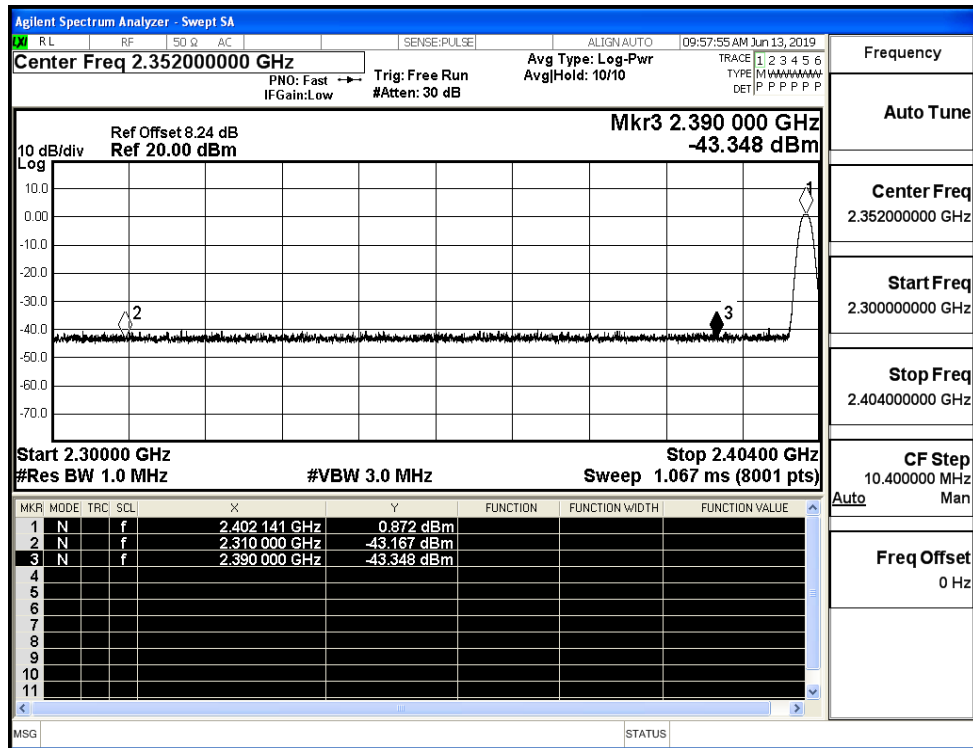
8DPSK/HCH/Hop



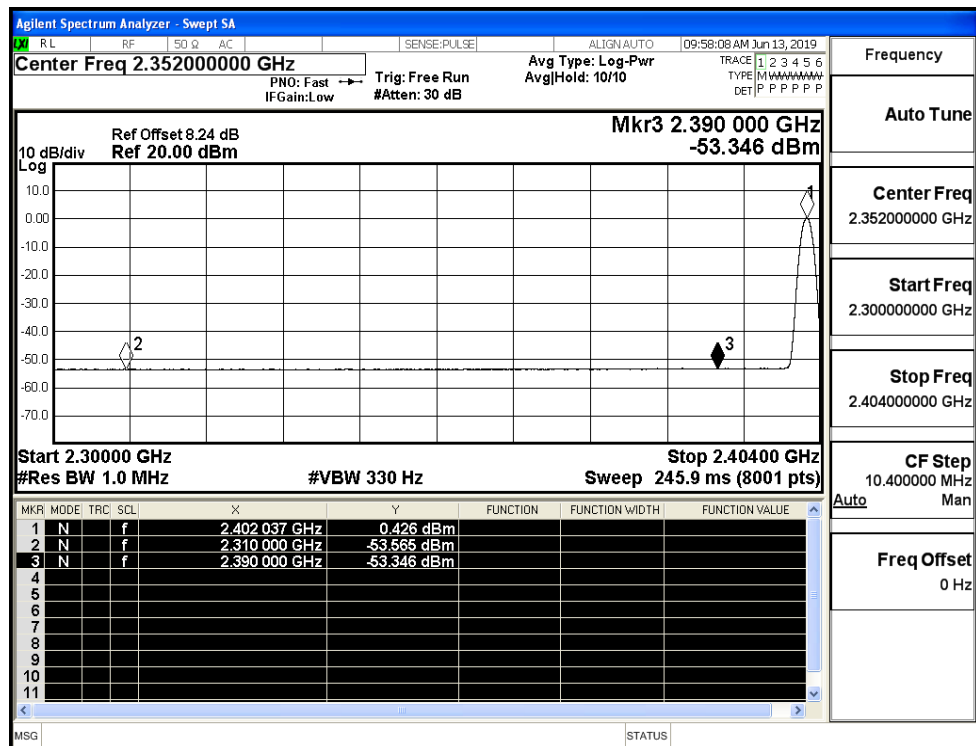
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.17	2.0	0	54.09	PEAK	74	PASS
	Off	2310.0	-53.57	2.0	0	43.69	AV	54	PASS
	Off	2390.0	-43.35	2.0	0	53.91	PEAK	74	PASS
	Off	2390.0	-53.35	2.0	0	43.91	AV	54	PASS
	Off	2483.5	-42.84	2.0	0	54.42	PEAK	74	PASS
	Off	2483.5	-52.90	2.0	0	44.36	AV	54	PASS
	Off	2500.0	-42.23	2.0	0	55.03	PEAK	74	PASS
	Off	2500.0	-52.94	2.0	0	44.31	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.54	2.0	0	53.72	PEAK	74	PASS
	Off	2310.0	-53.54	2.0	0	43.72	AV	54	PASS
	Off	2390.0	-41.92	2.0	0	55.34	PEAK	74	PASS
	Off	2390.0	-53.18	2.0	0	44.07	AV	54	PASS
	Off	2483.5	-42.54	2.0	0	54.72	PEAK	74	PASS
	Off	2483.5	-52.65	2.0	0	44.61	AV	54	PASS
	Off	2500.0	-41.25	2.0	0	56.01	PEAK	74	PASS
	Off	2500.0	-52.86	2.0	0	44.40	AV	54	PASS
8DPSK	Off	2310.0	-43.07	2.0	0	54.19	PEAK	74	PASS
	Off	2310.0	-53.50	2.0	0	43.76	AV	54	PASS
	Off	2390.0	-42.72	2.0	0	54.54	PEAK	74	PASS
	Off	2390.0	-53.15	2.0	0	44.11	AV	54	PASS
	Off	2483.5	-43.05	2.0	0	54.20	PEAK	74	PASS
	Off	2483.5	-52.80	2.0	0	44.46	AV	54	PASS
	Off	2500.0	-42.37	2.0	0	54.89	PEAK	74	PASS
	Off	2500.0	-52.88	2.0	0	44.38	AV	54	PASS

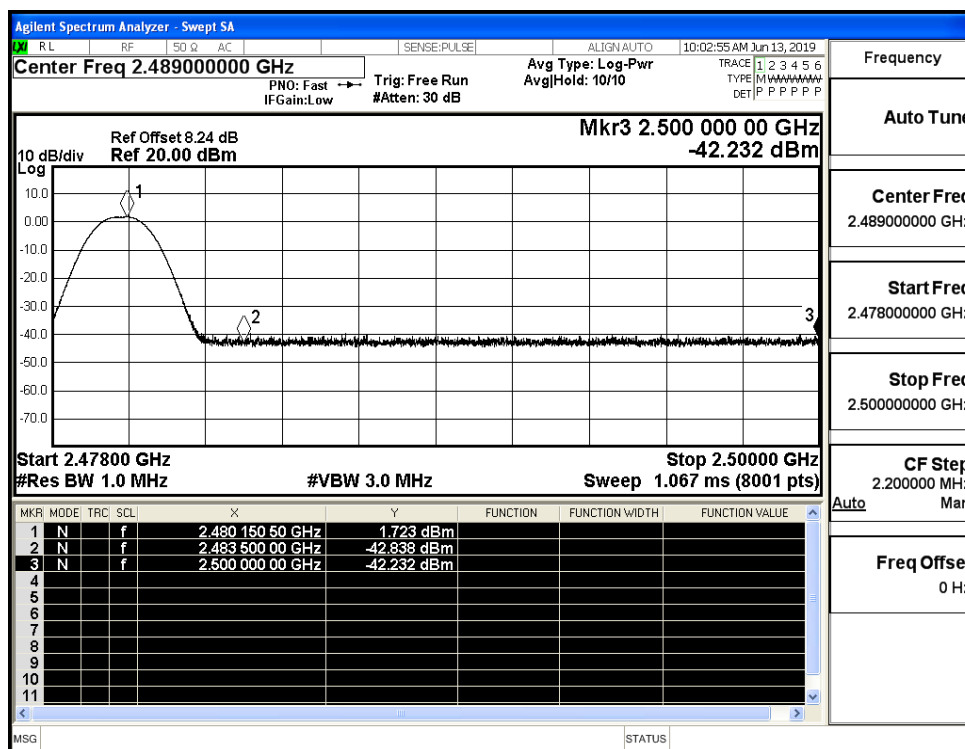
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



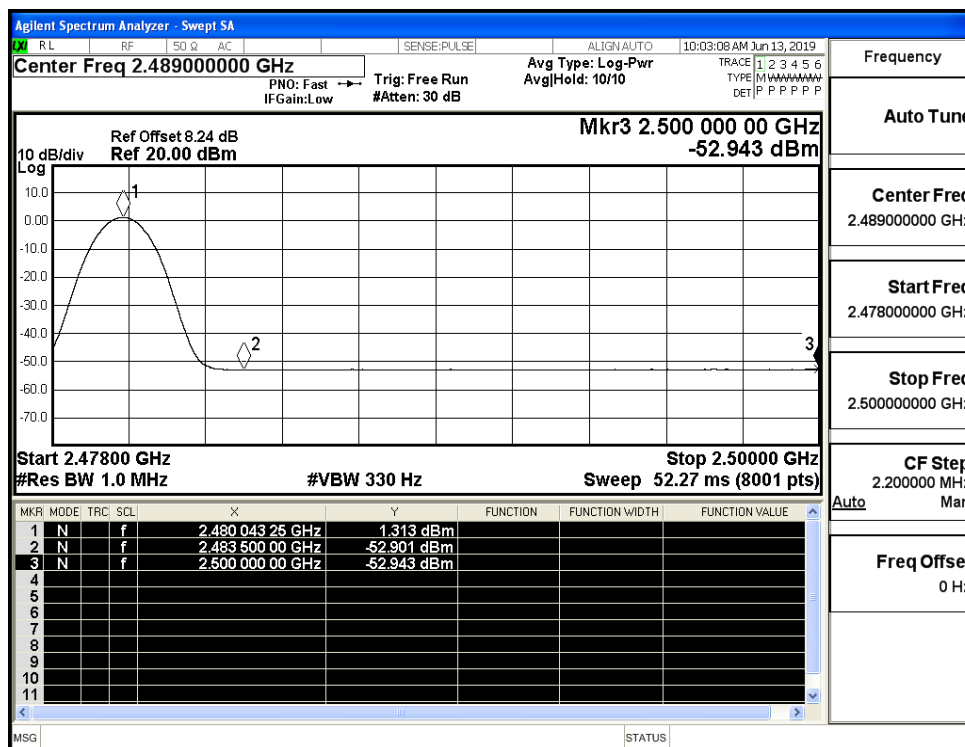
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

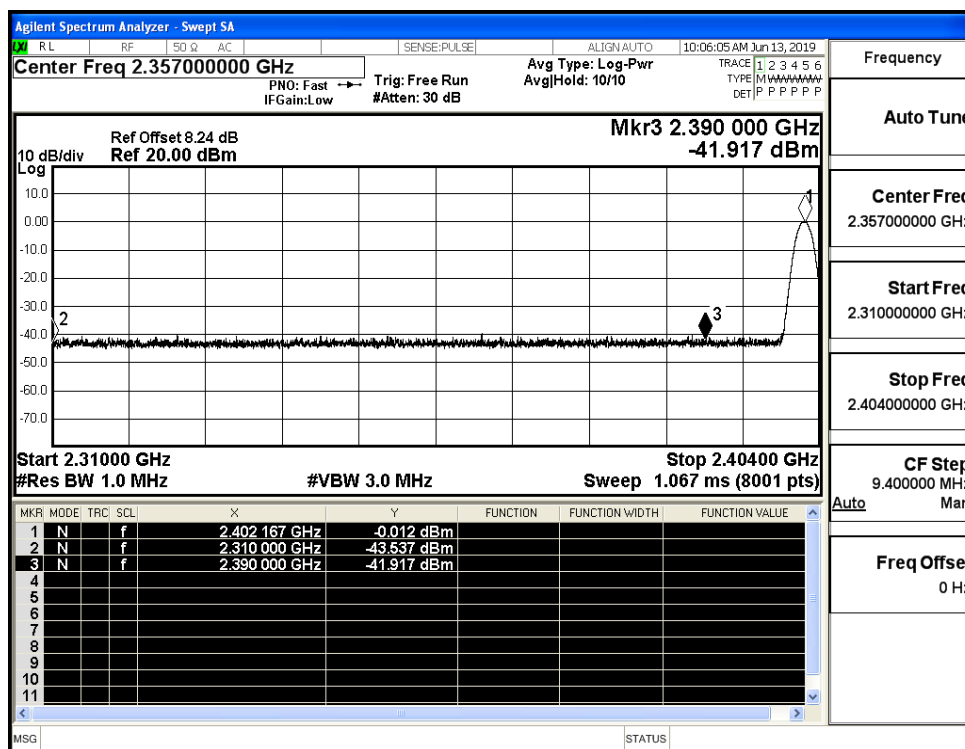
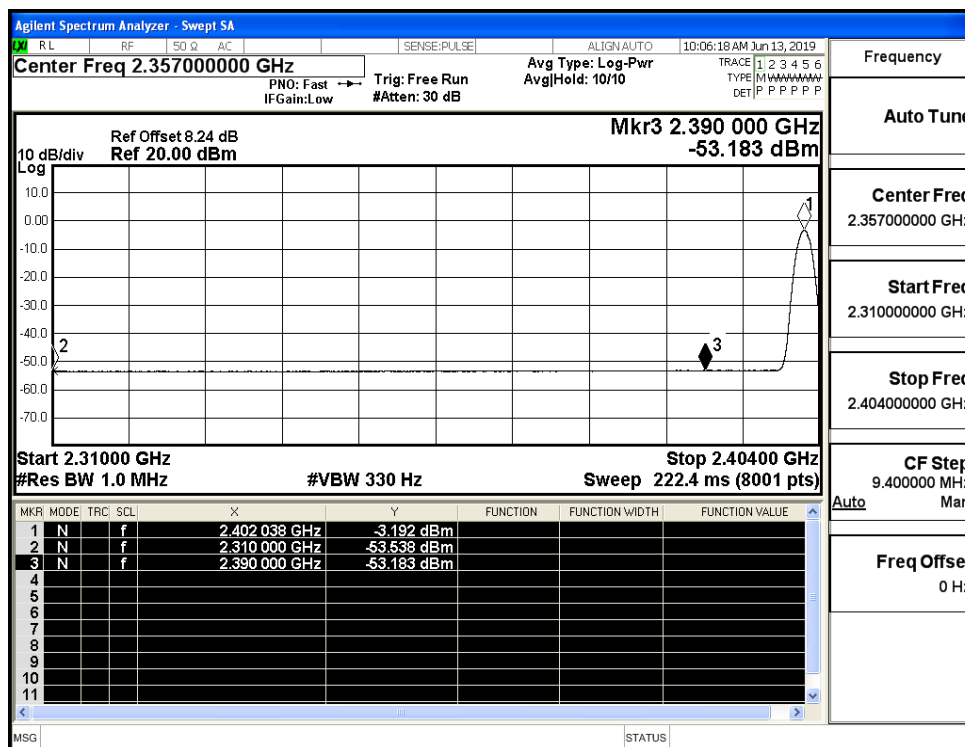


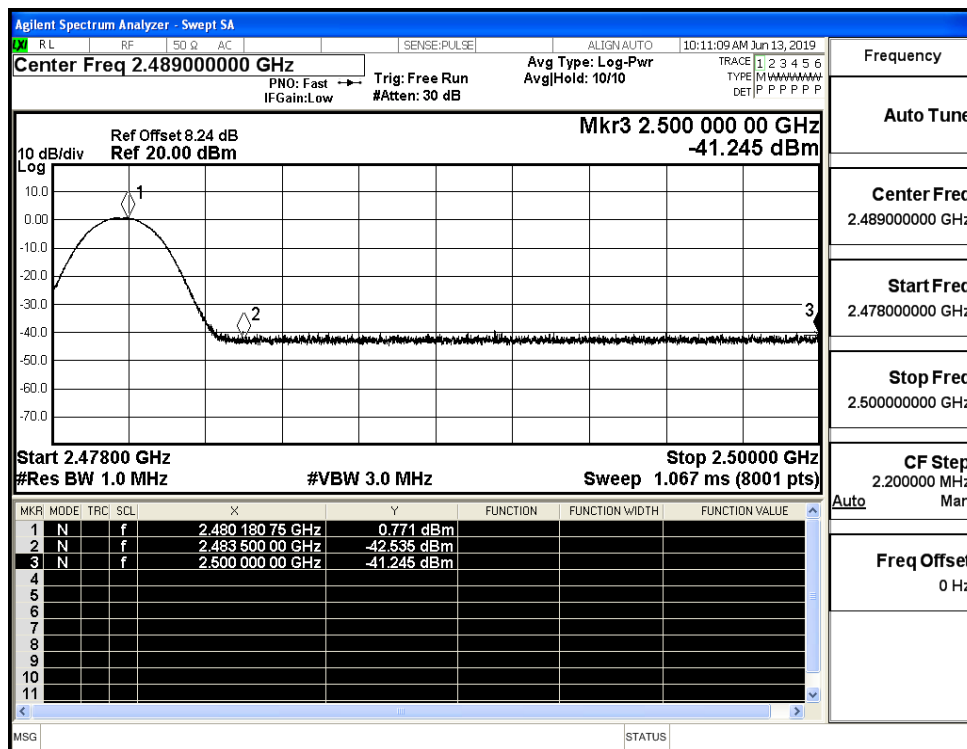
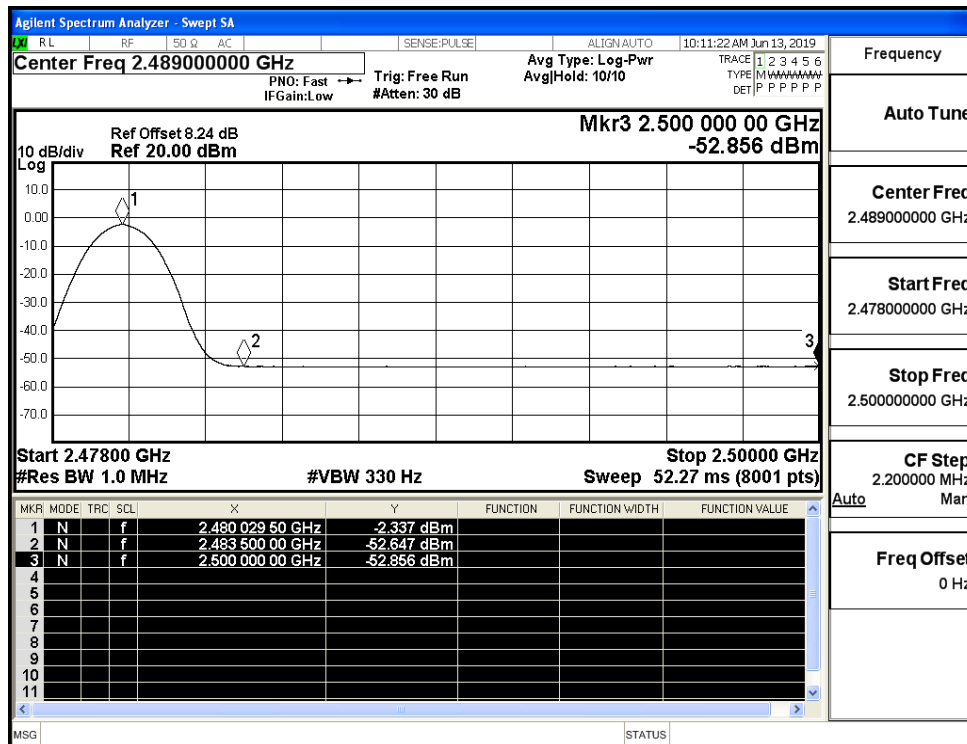
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



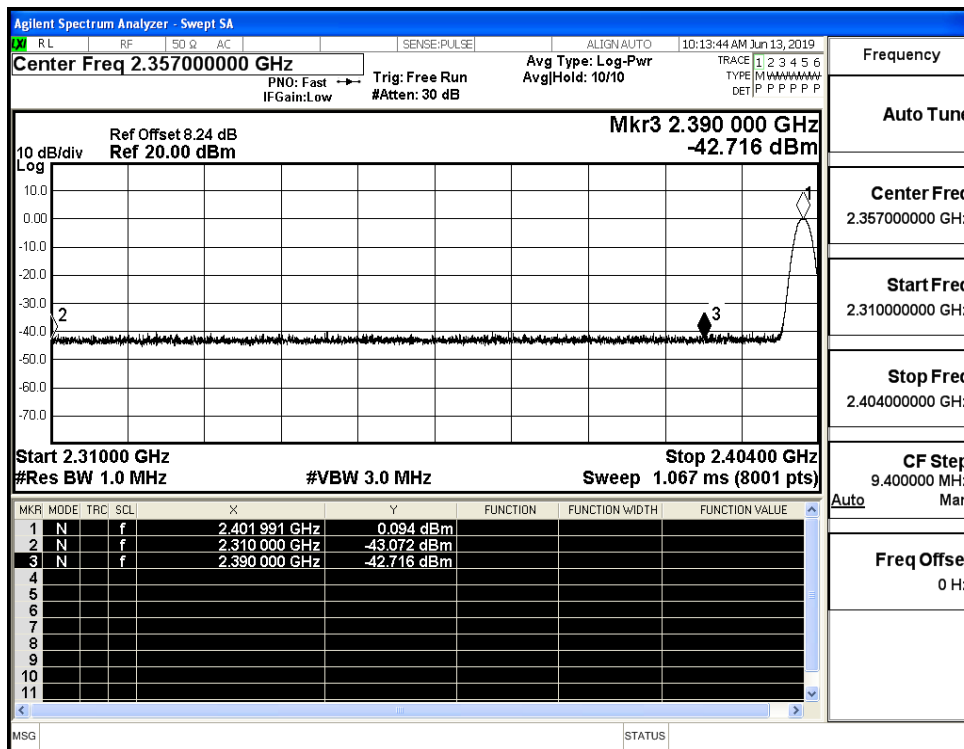
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



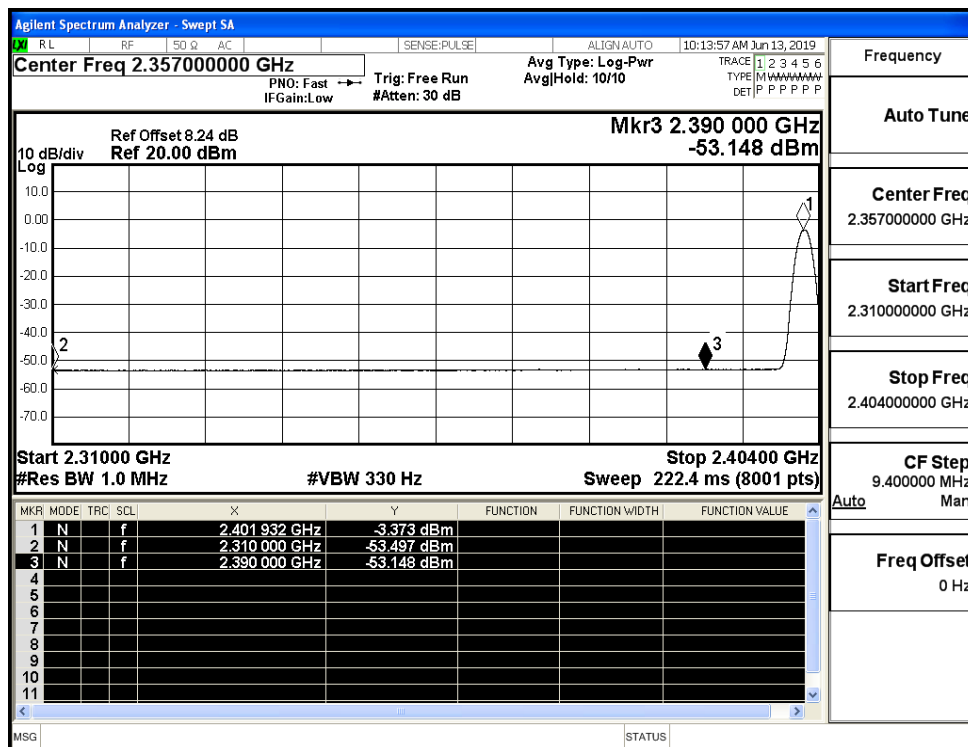
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

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

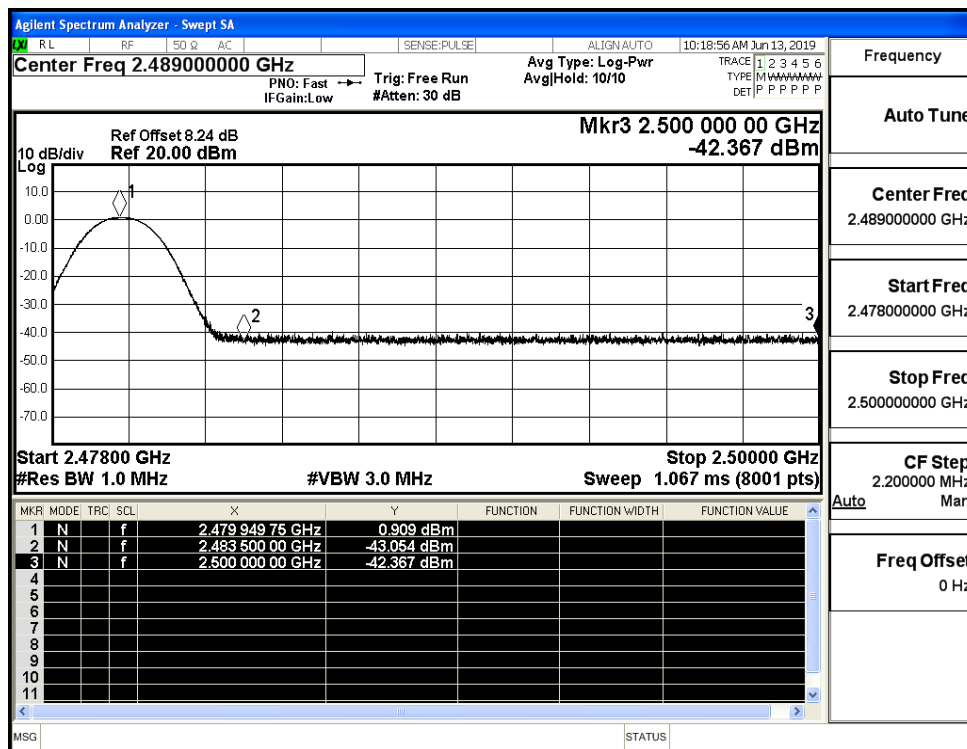
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



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)

