

Appendix A
RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)
Product Name: Bluetooth speaker
Trade Mark: N/A
Test Model: PM10

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Li Huan
Supervised by:	Tom Liu

A.1 Maximum Conducted Peak Output Power

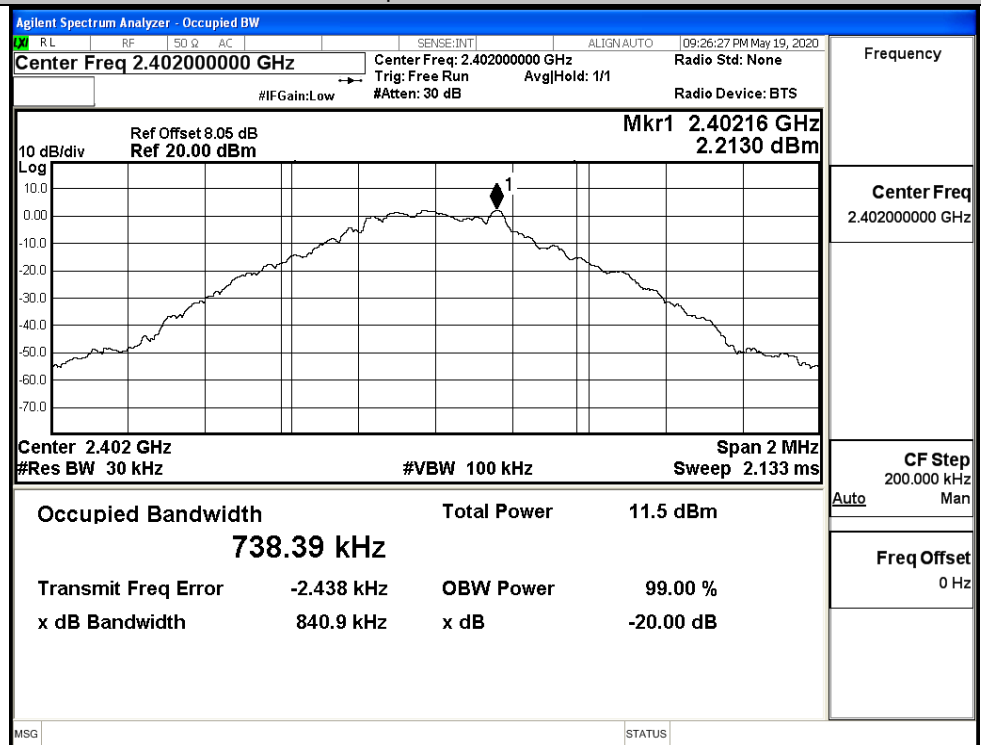
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.836	30	PASS
	MCH	5.364	30	PASS
	HCH	4.832	30	PASS
$\pi/4$ DQPSK	LCH	4.479	30	PASS
	MCH	5.577	30	PASS
	HCH	4.237	30	PASS

A.2 20dB Bandwidth

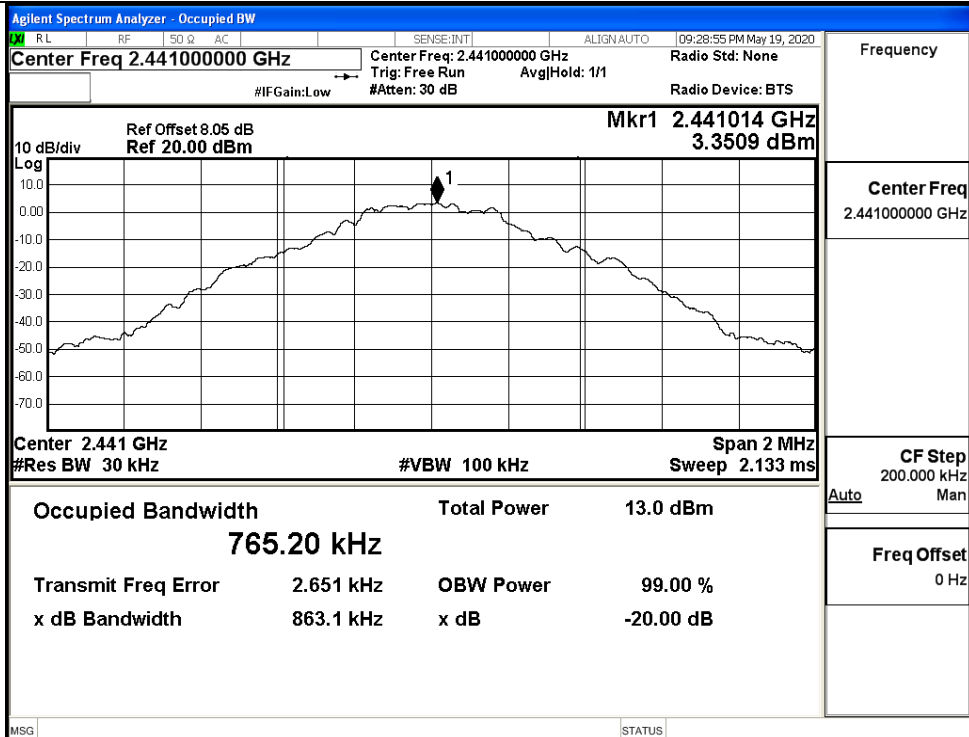
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.8409	Not Specified	PASS
	MCH	0.8631	Not Specified	PASS
	HCH	0.9274	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.277	Not Specified	PASS
	MCH	1.275	Not Specified	PASS
	HCH	1.278	Not Specified	PASS

Test Graphs

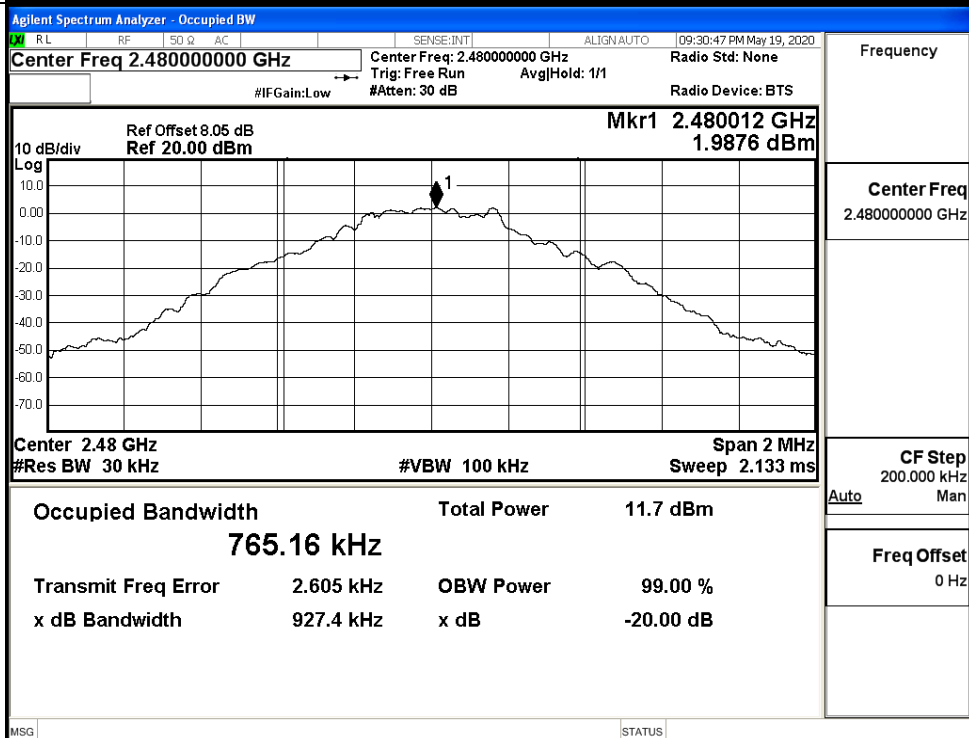
GFSK/LCH

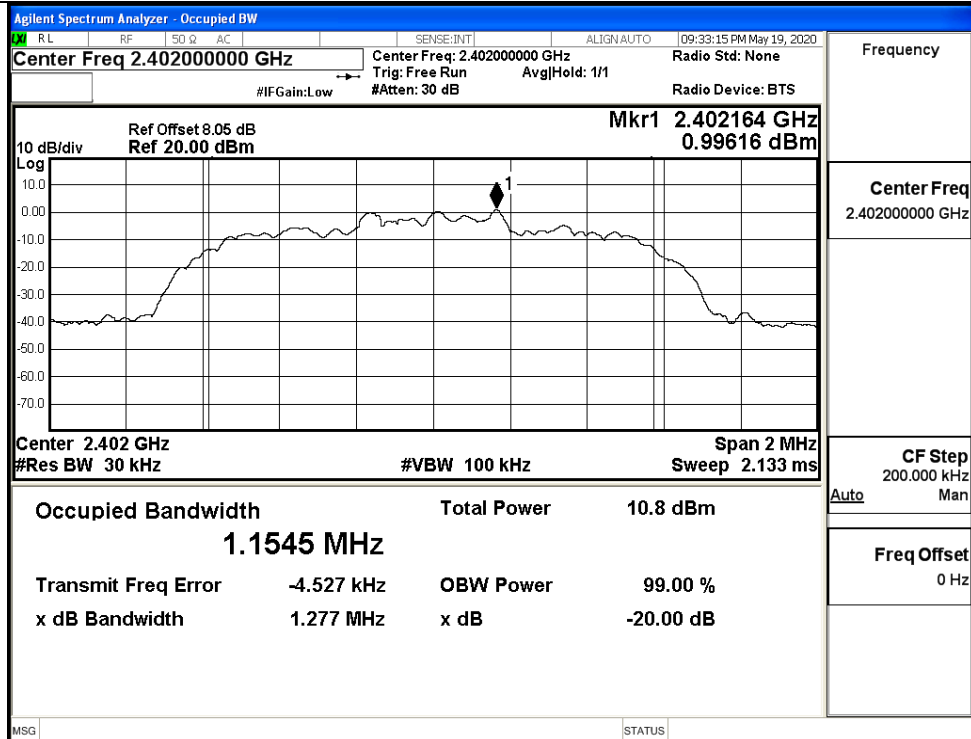
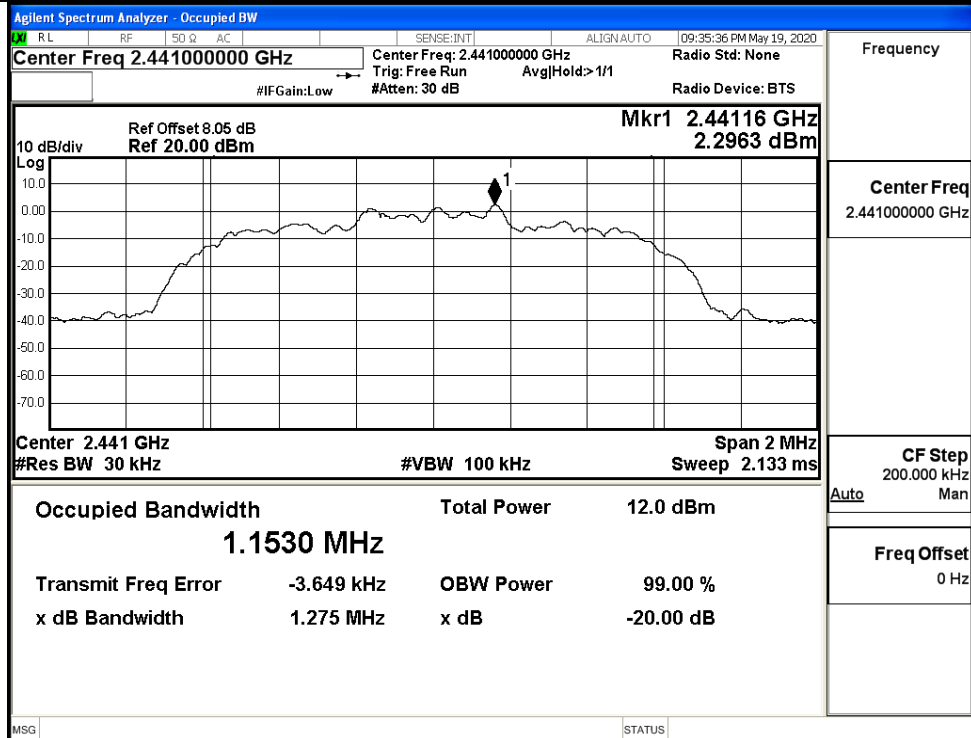


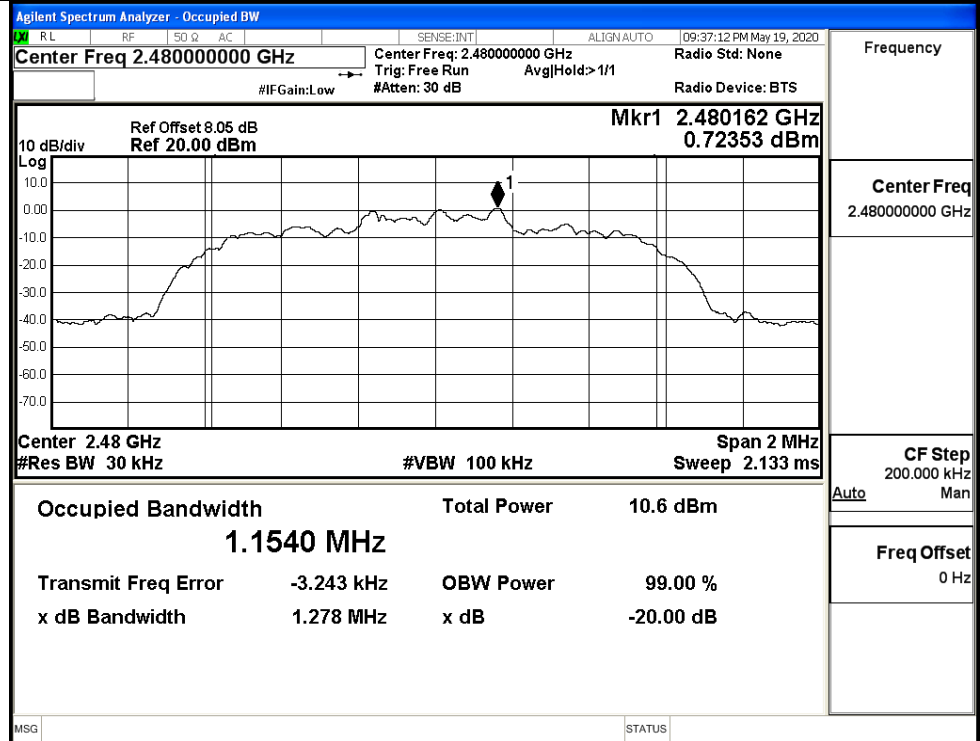
GFSK/MCH



GFSK/HCH



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

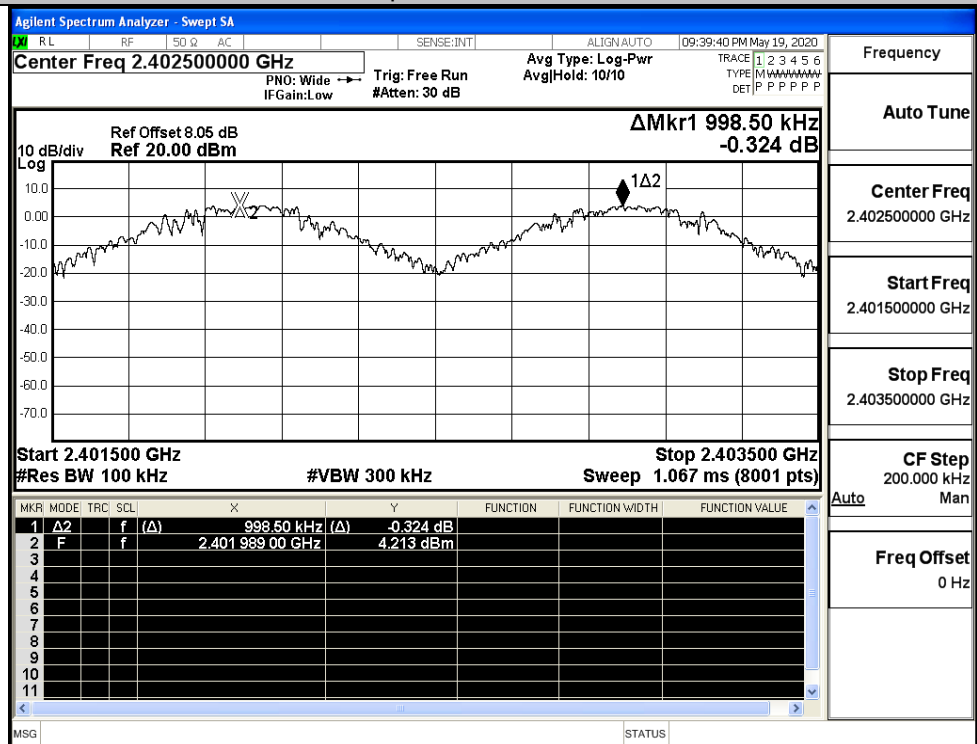
$\pi/4$ DQPSK/HCH

A.3 Carrier Frequency Separation

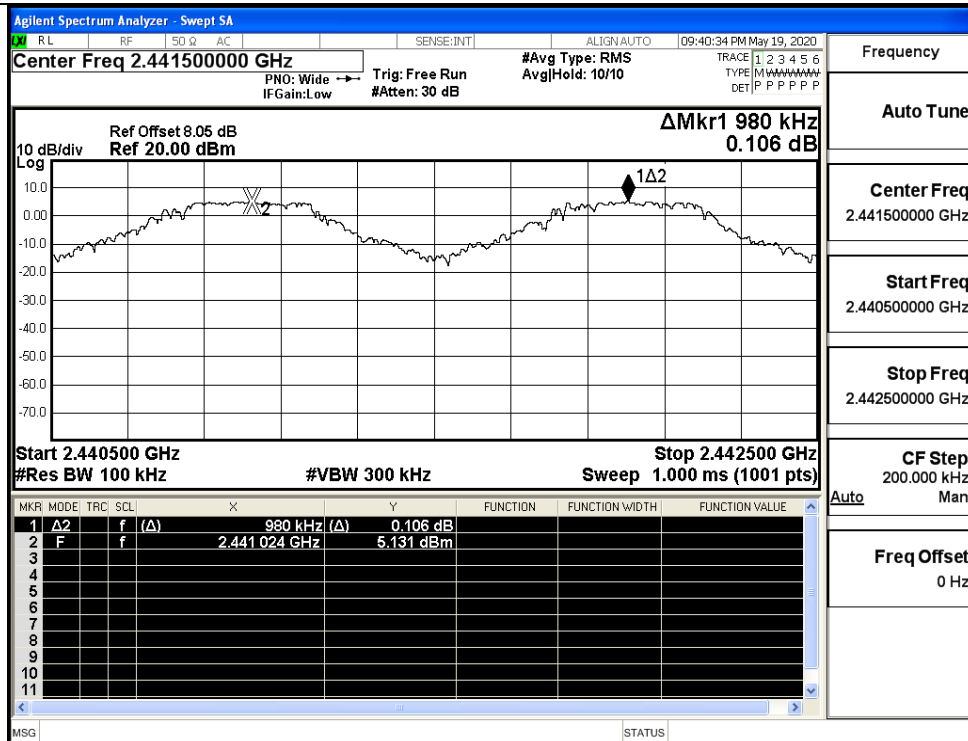
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.618	PASS
	MCH	0.980	0.618	PASS
	HCH	1.004	0.618	PASS
π /4DQPSK	LCH	1.314	0.852	PASS
	MCH	1.314	0.852	PASS
	HCH	1.302	0.852	PASS

Test Graphs

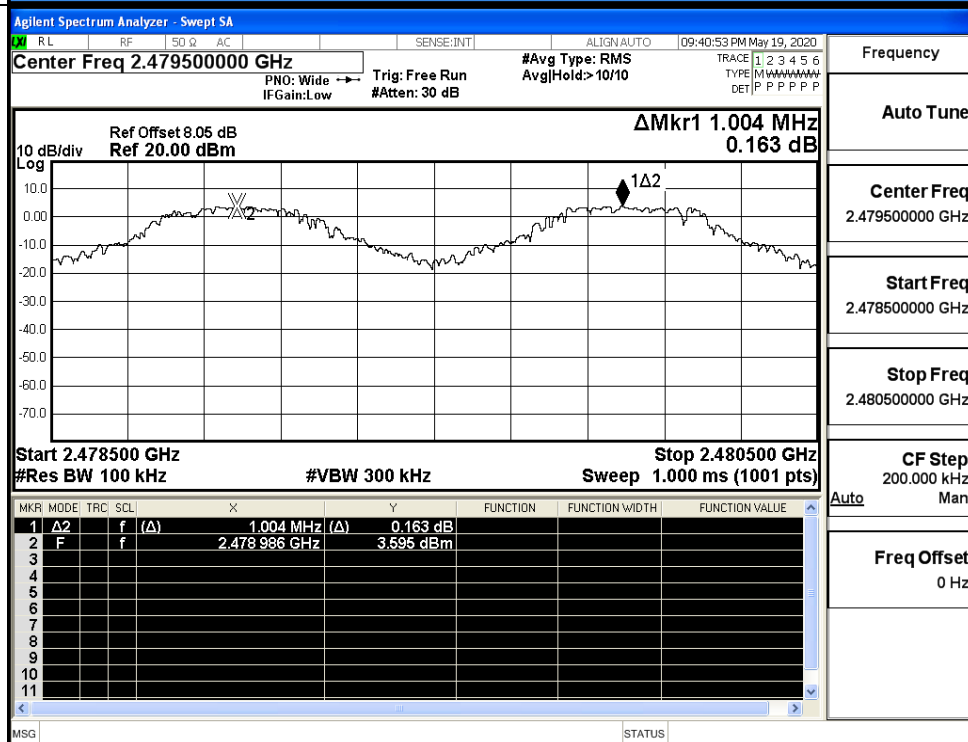
GFSK/LCH

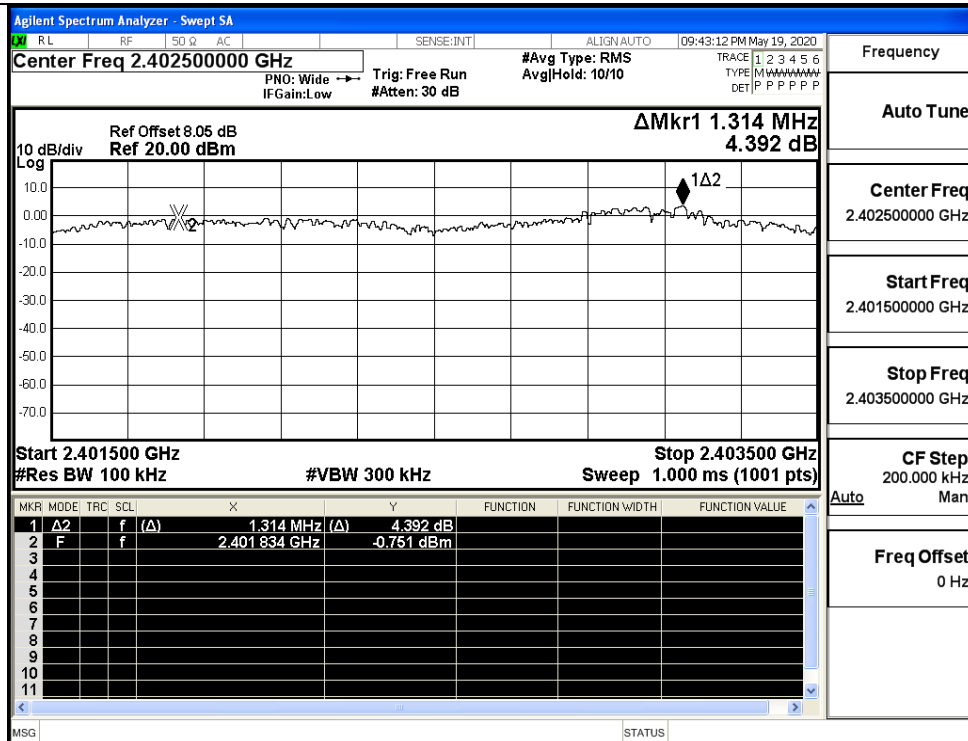


GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH

Frequency

Auto Tune

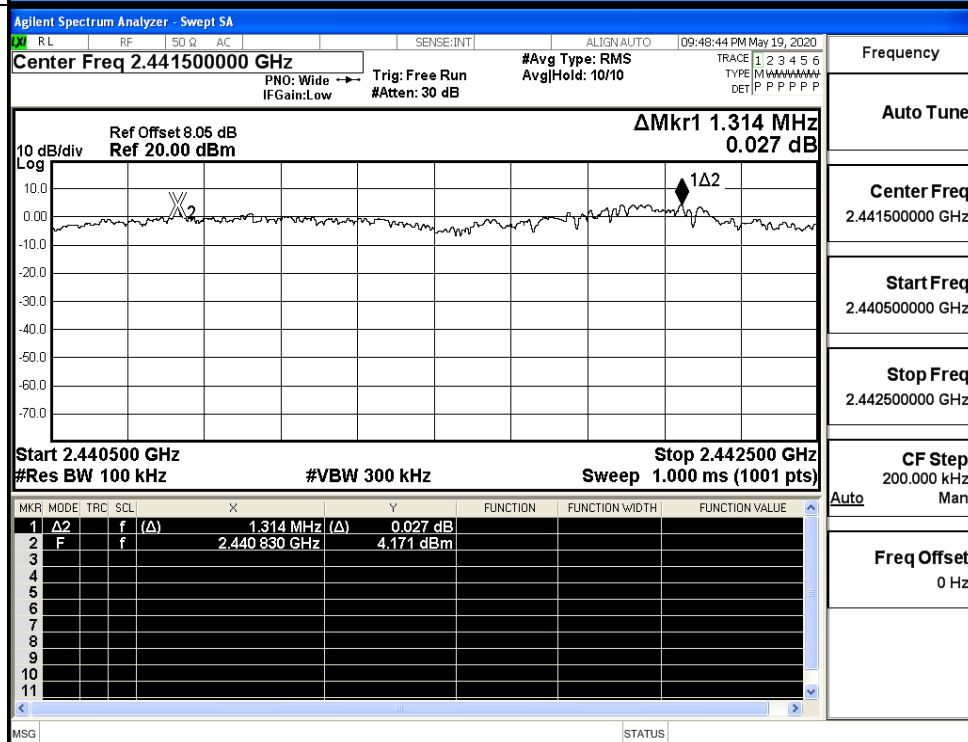
Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

 $\pi/4$ DQPSK/MCH

Frequency

Auto Tune

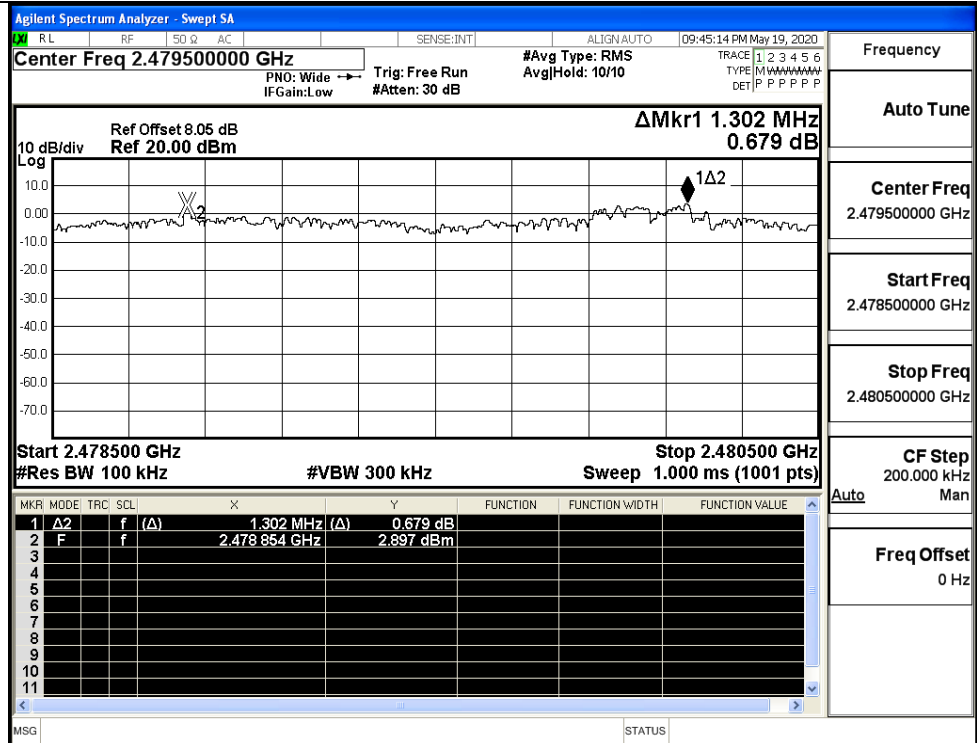
Center Freq
2.441500000 GHz

Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Man

Freq Offset
0 Hz

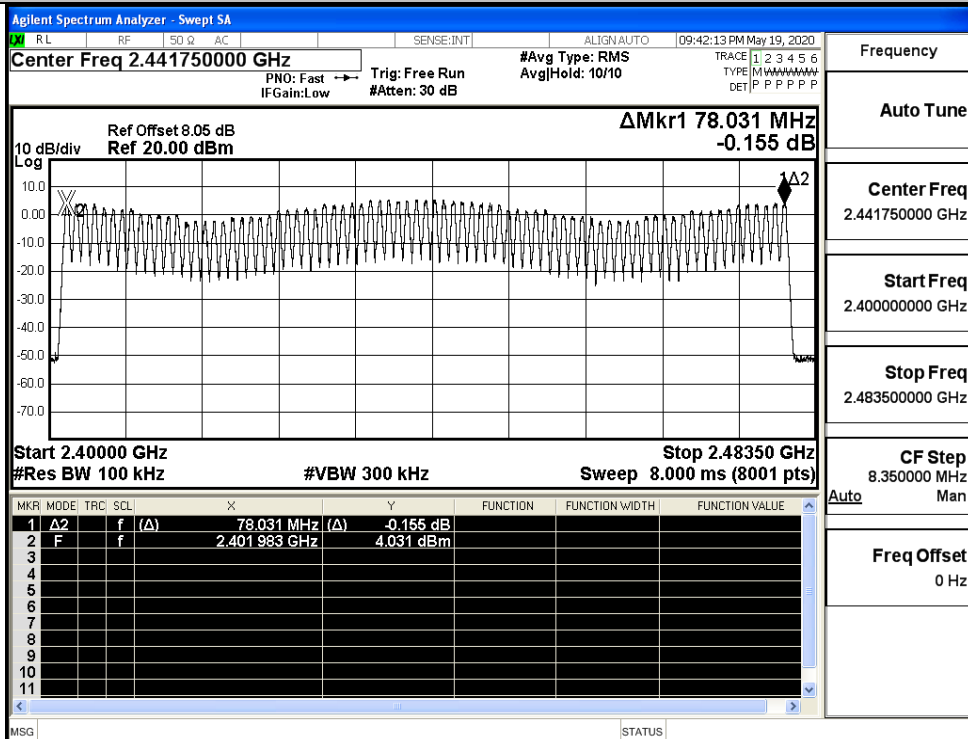
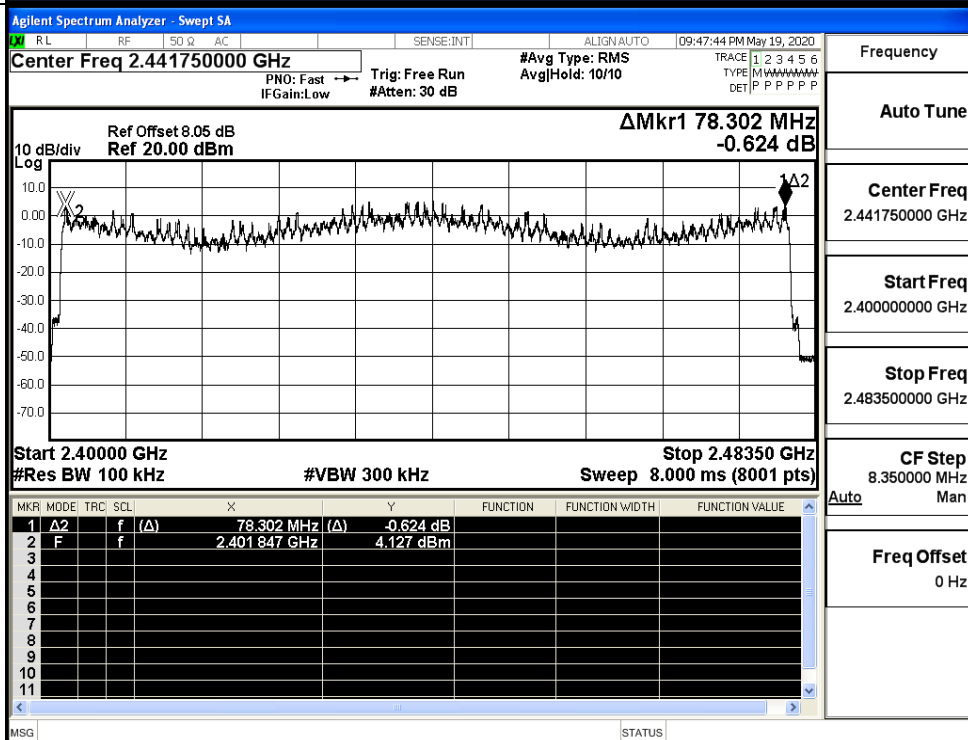
$\pi/4$ DQPSK/HCH

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

Test Graphs

GFSK/Hop

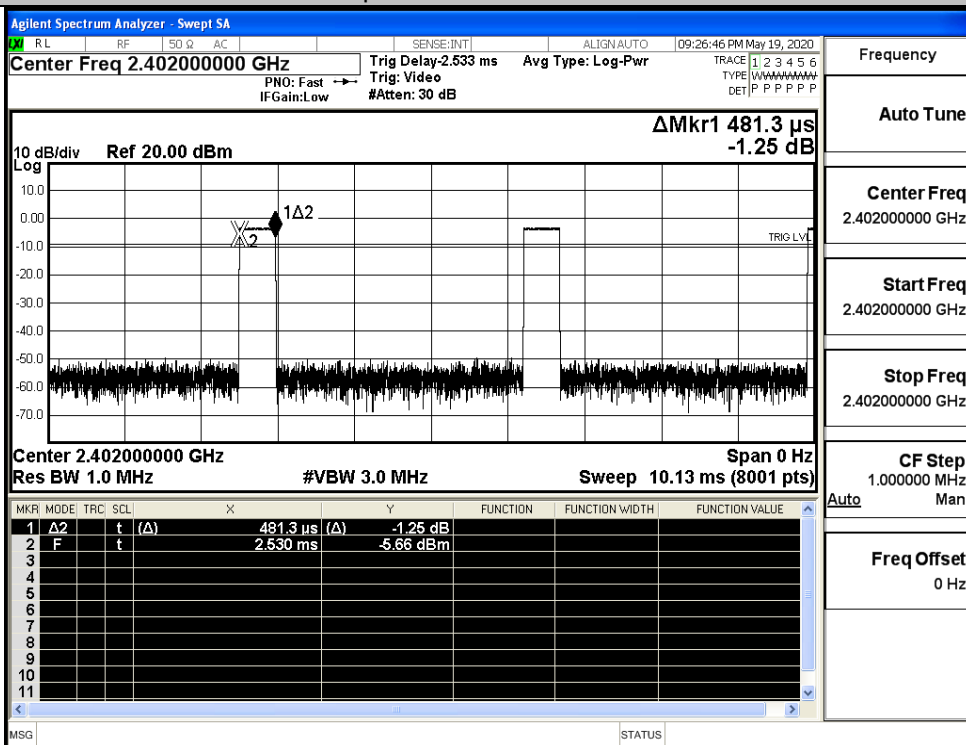
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

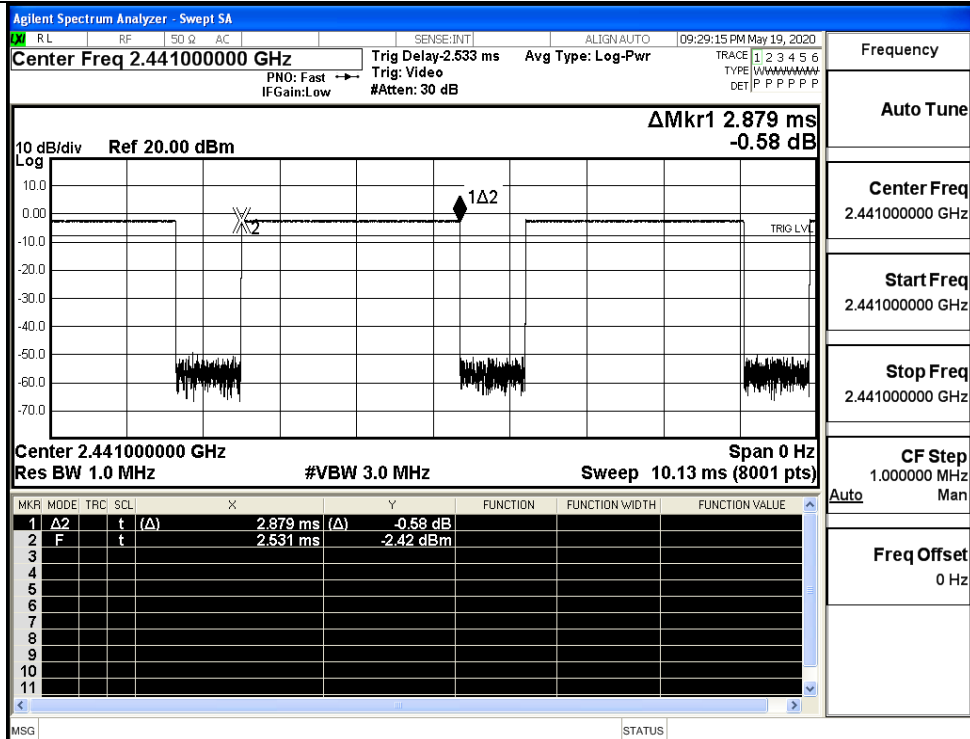
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.48	106.7	0.051	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.48	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS

Test Graphs

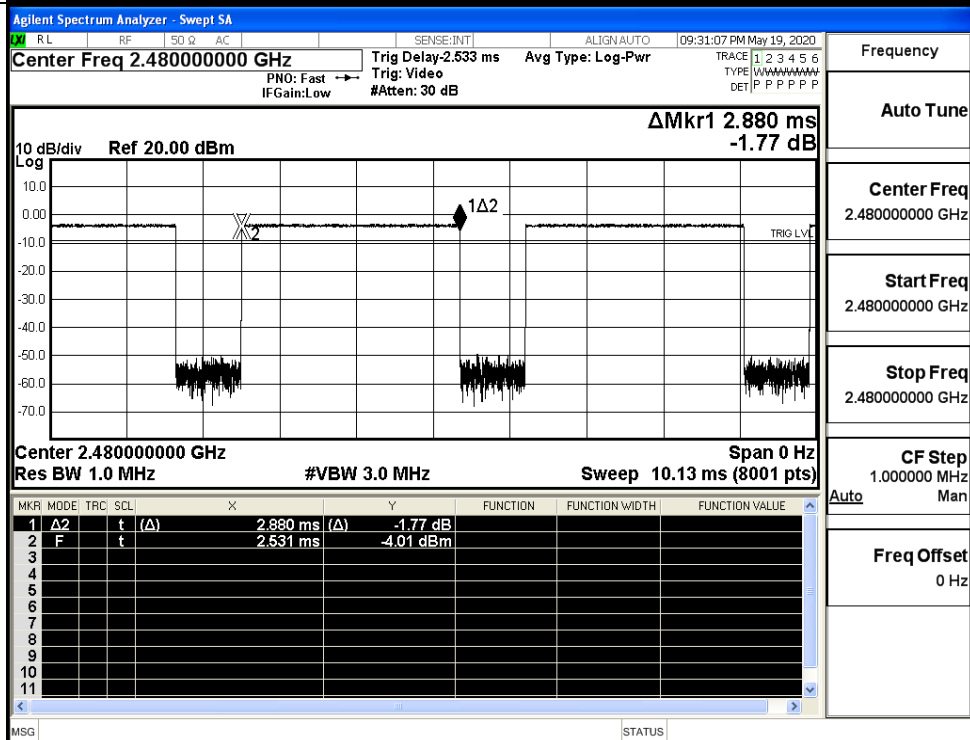
GFSK_DH5/LCH



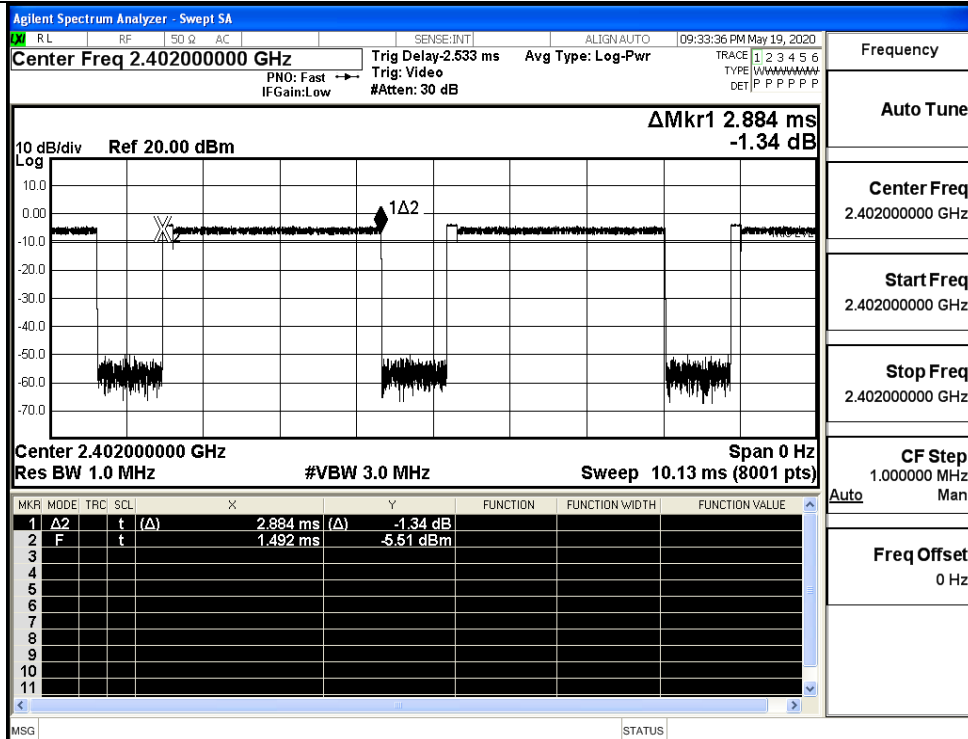
GFSK_DH5/MCH



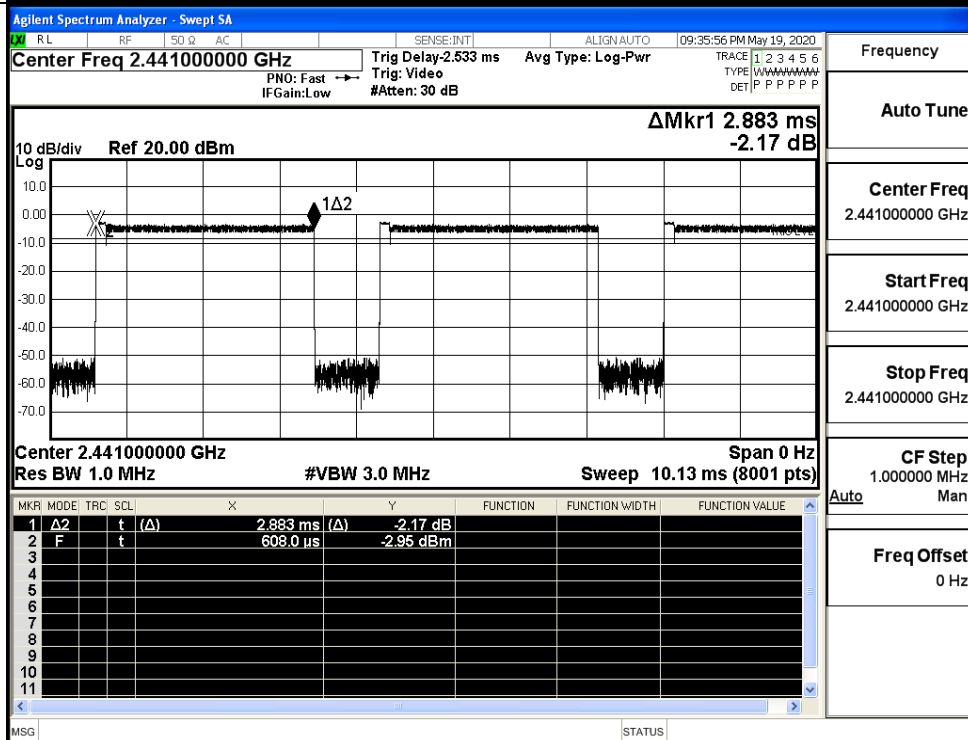
GFSK_DH5/HCH



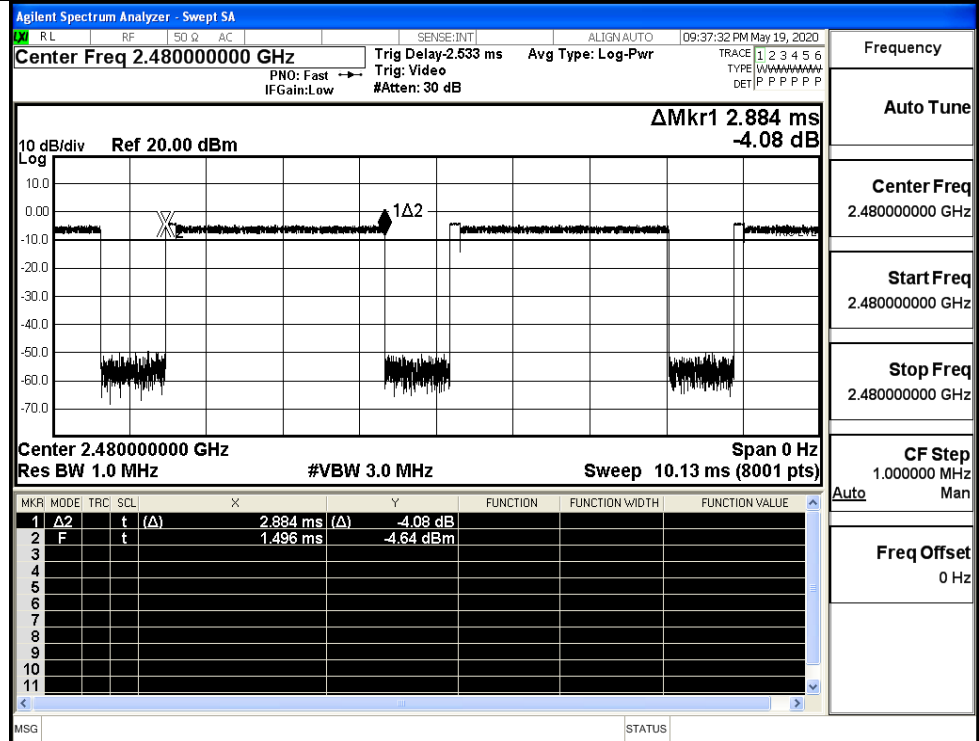
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



$\pi/4$ DQPSK
_2DH5/HCH

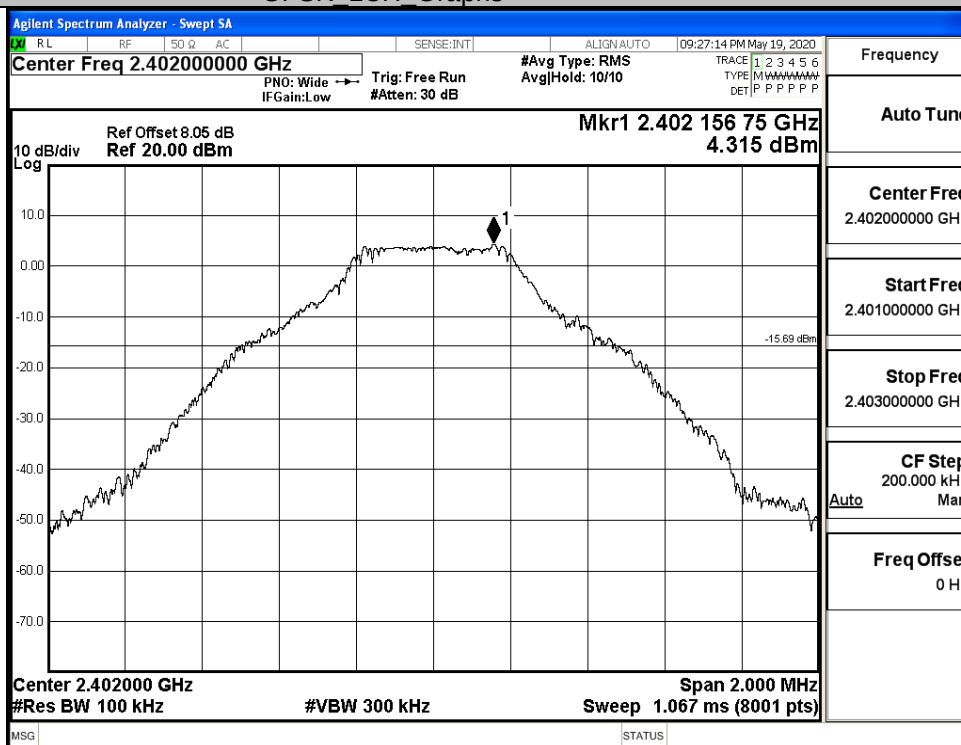


A.6 RF Conducted Spurious Emissions

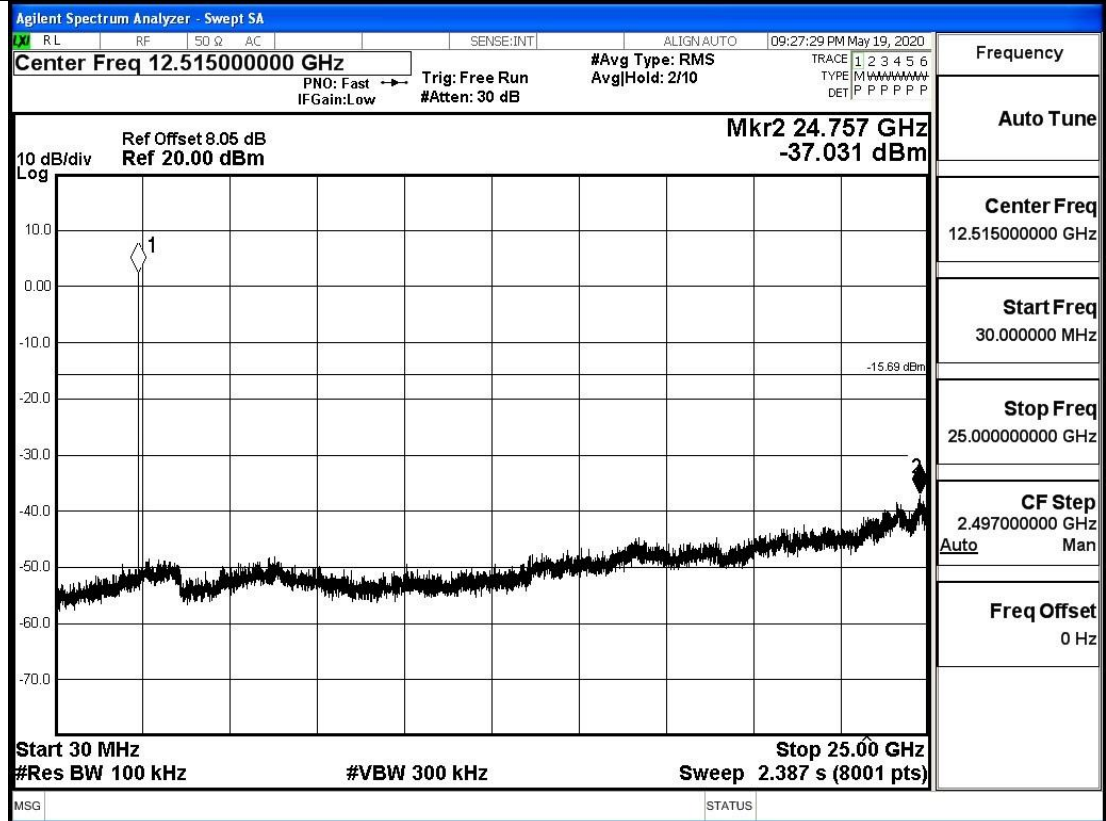
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.315	-37.031	-15.685	PASS
	MCH	5.624	-37.595	-14.376	PASS
	HCH	3.983	-37.209	-16.017	PASS
$\pi/4$ DQPSK	LCH	3.915	-38.523	-16.085	PASS
	MCH	4.93	-37.697	-15.070	PASS
	HCH	3.482	-37.851	-16.518	PASS

GFSK LCH Graphs

Pref

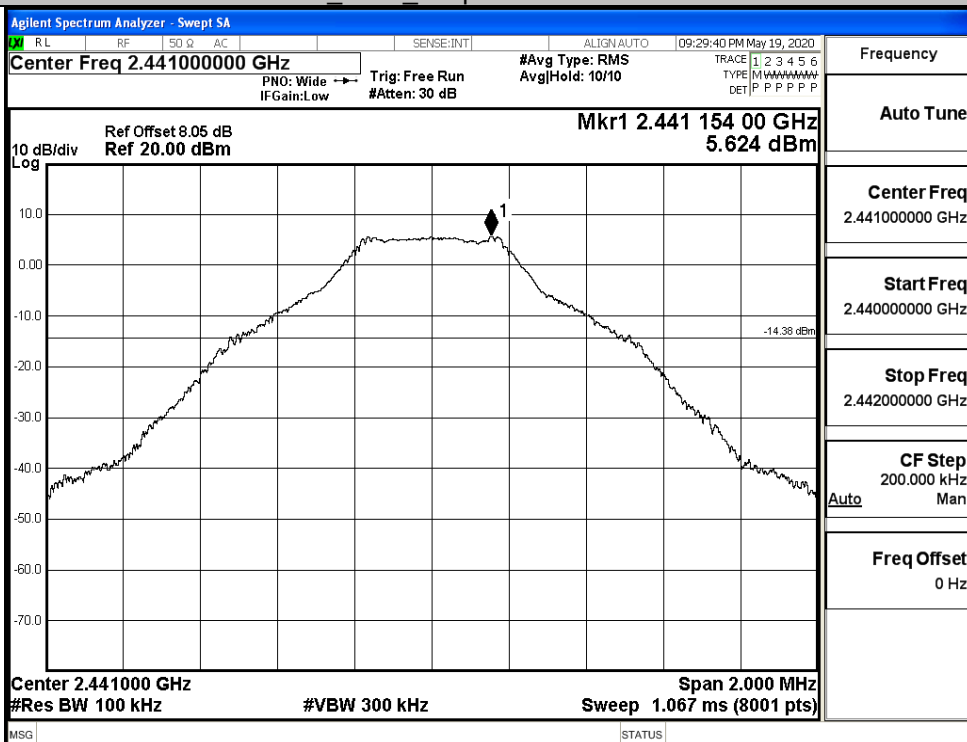


PuW

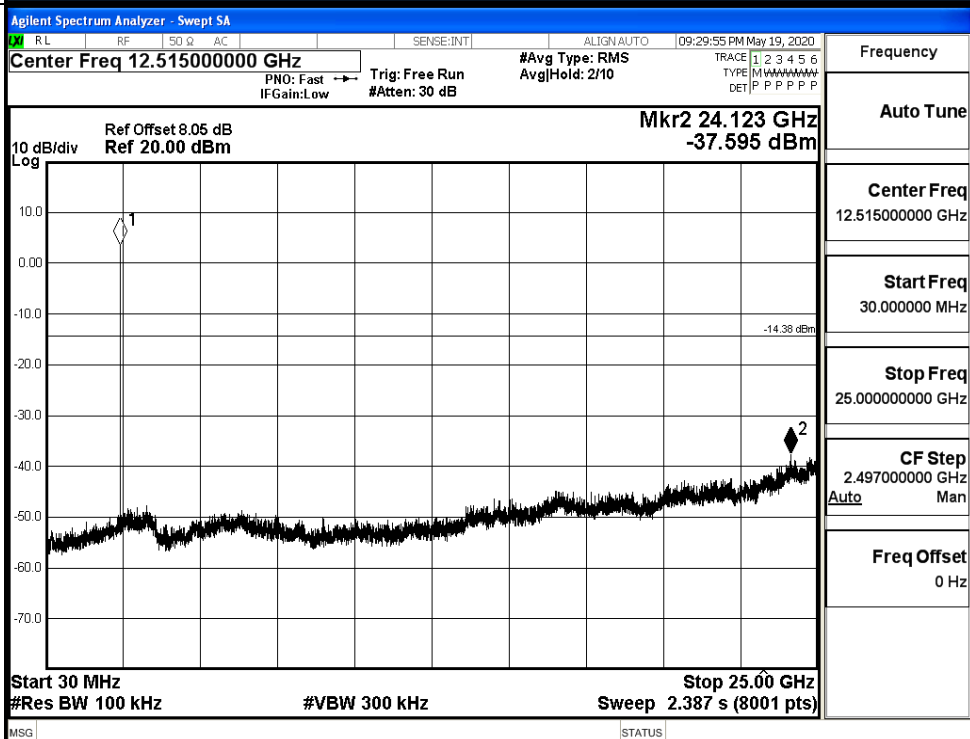


GFSK_MCH_Graphs

Pref

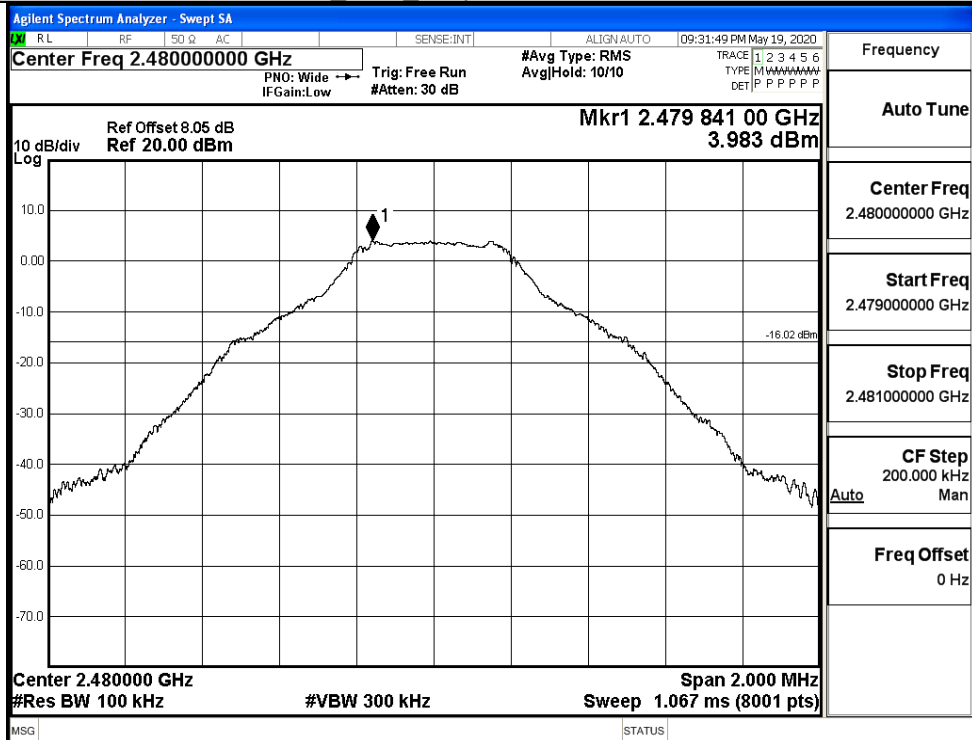


Puw

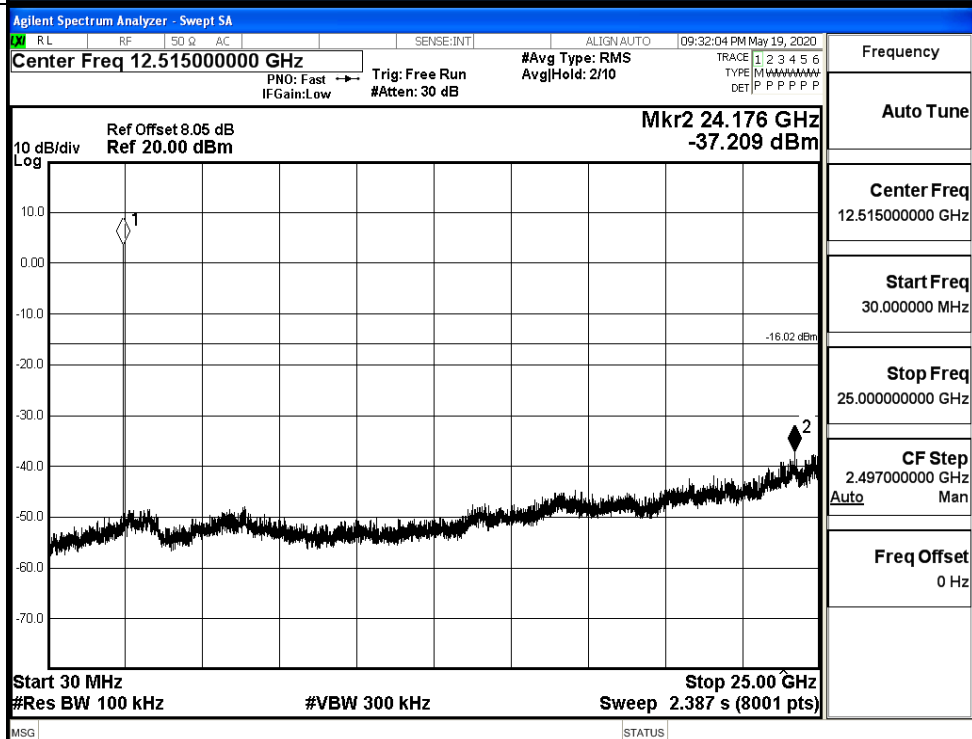


GFSK HCH_Graphs

Pref

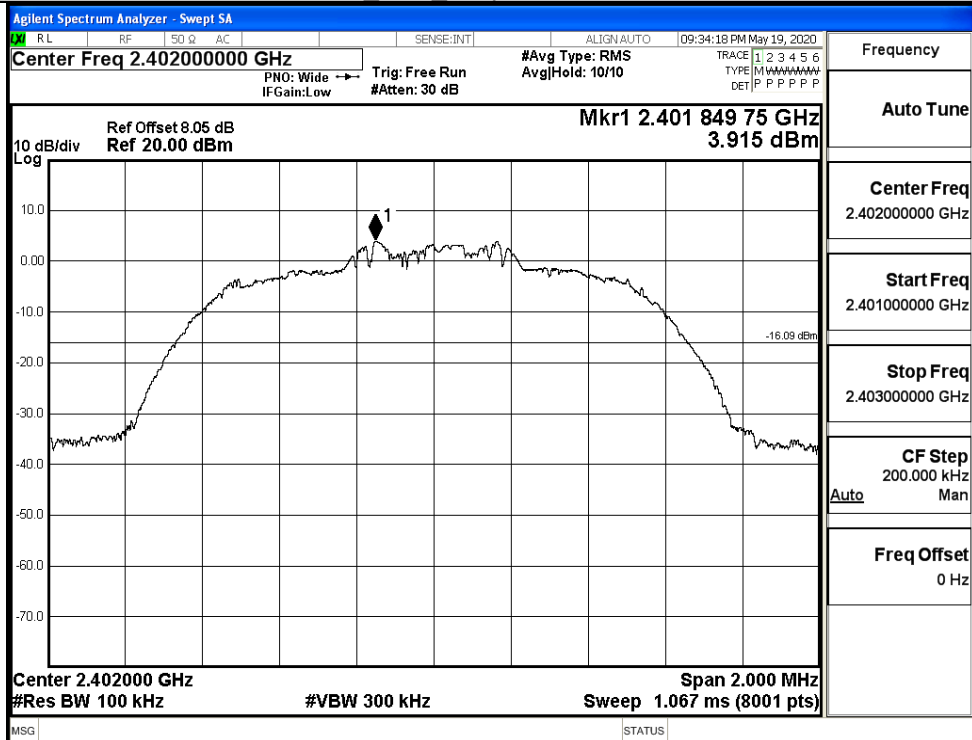


Puw

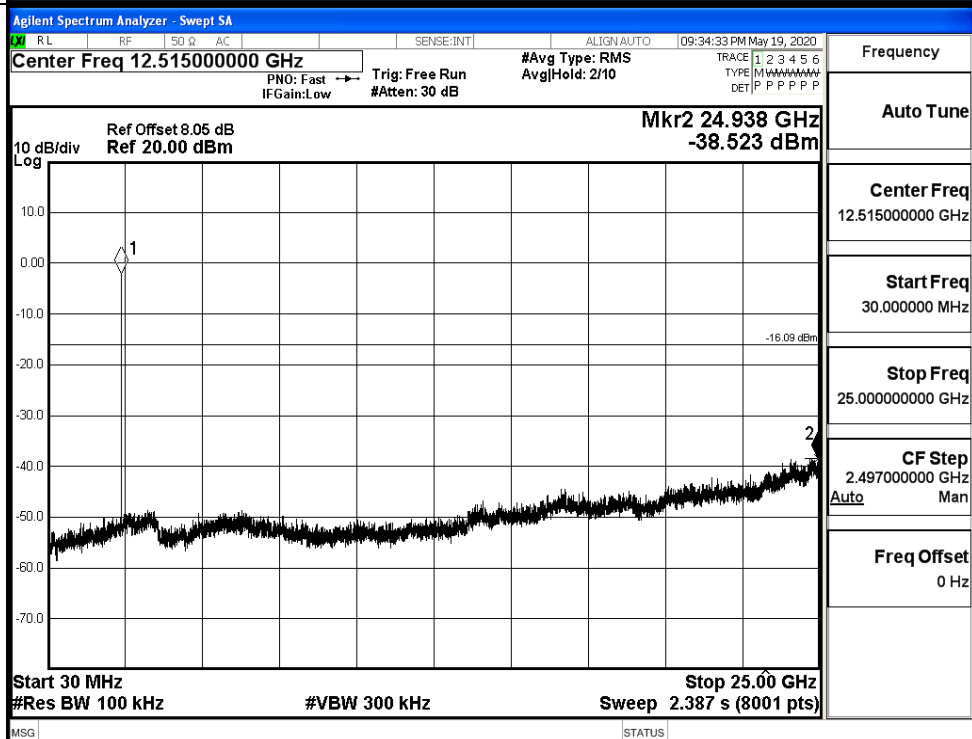


$\pi/4$ DQPSK_LCH_Graphs

Pref

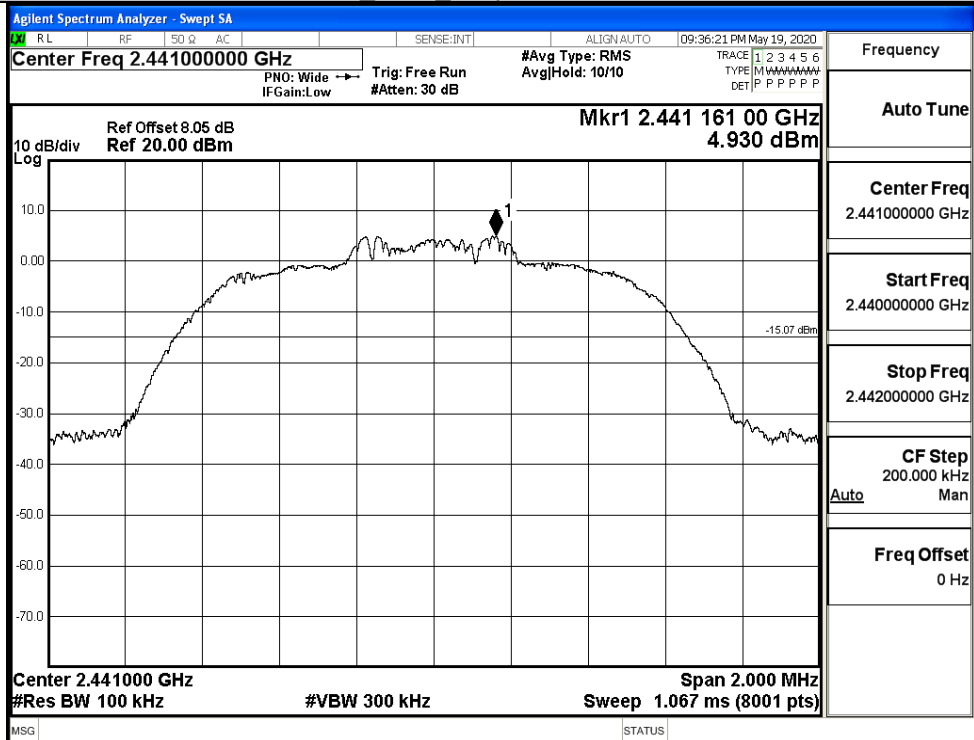


Puw

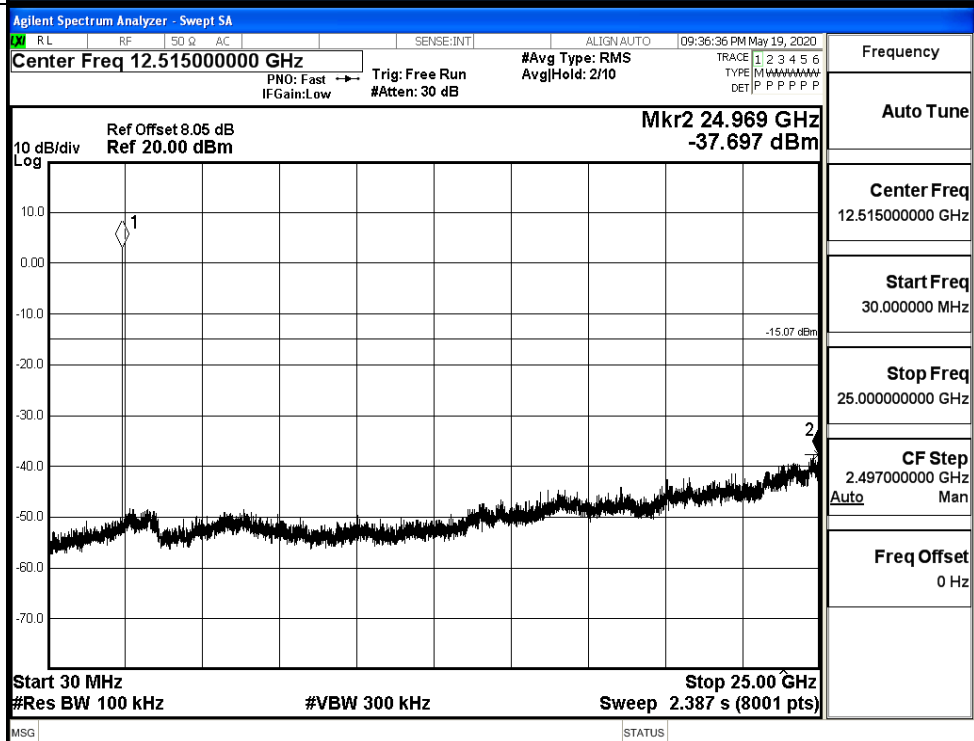


$\pi/4$ DQPSK_MCH_Graphs

Pref

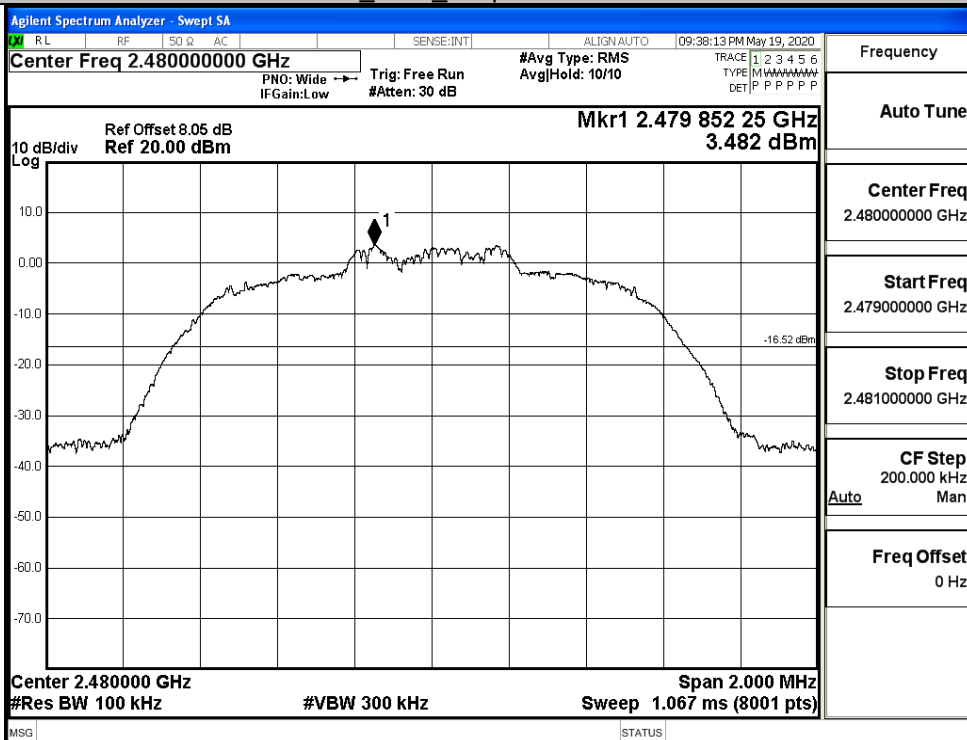


Puw

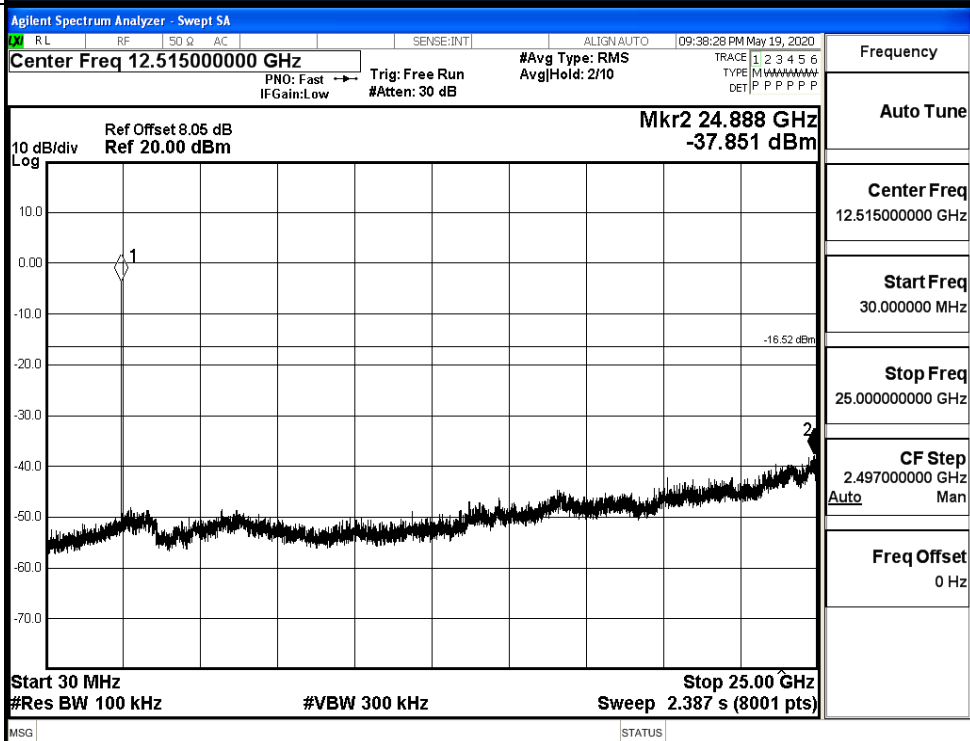


π /4DQPSK_HCH_Graphs

Pref



Puw

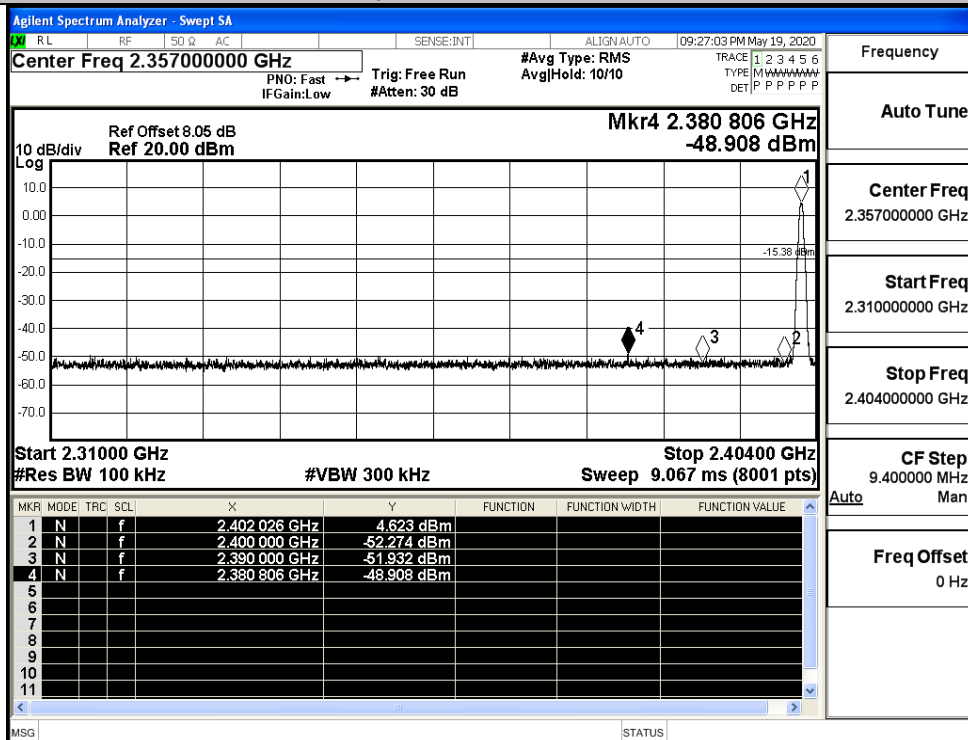


A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	4.623	Off	-48.908	-15.38	PASS
			4.305	On	-49.683	-15.7	PASS
	HCH	2480	4.239	Off	-49.328	-15.76	PASS
			4.070	On	-48.074	-15.93	PASS
$\pi/4$ DQPSK	LCH	2402	2.178	Off	-49.584	-17.82	PASS
			2.498	On	-49.074	-17.5	PASS
	HCH	2480	3.608	Off	-49.249	-16.39	PASS
			3.102	On	-48.513	-16.9	PASS

Test Graphs

GFSK/LCH/No Hop



Frequency

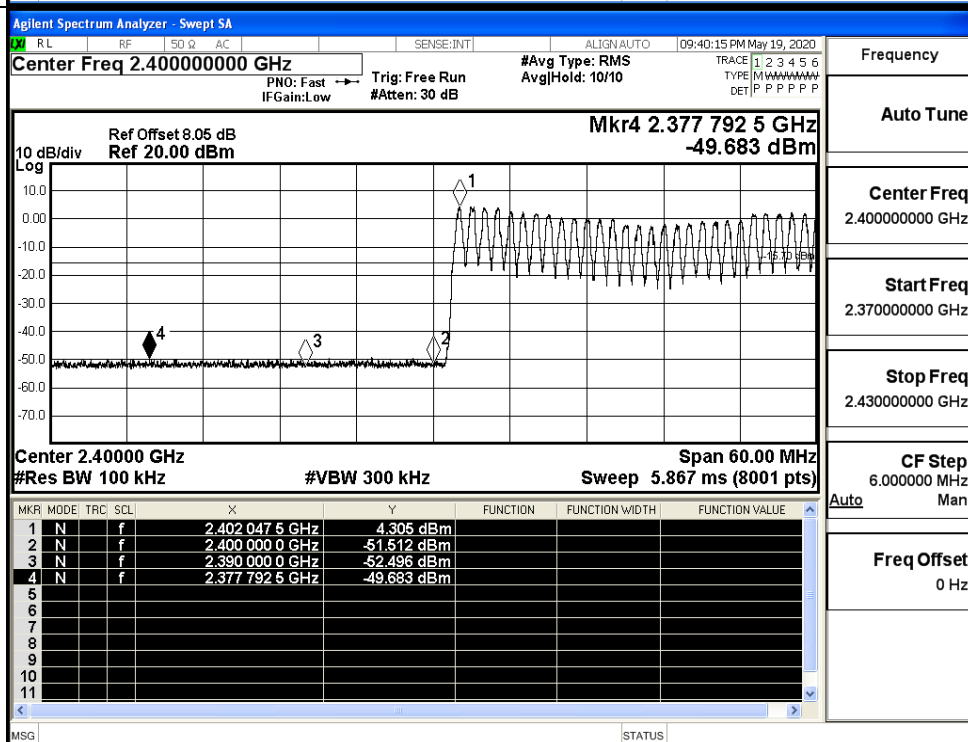
Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz

Auto

Freq Offset
0 Hz

GFSK/LCH/Hop



Frequency

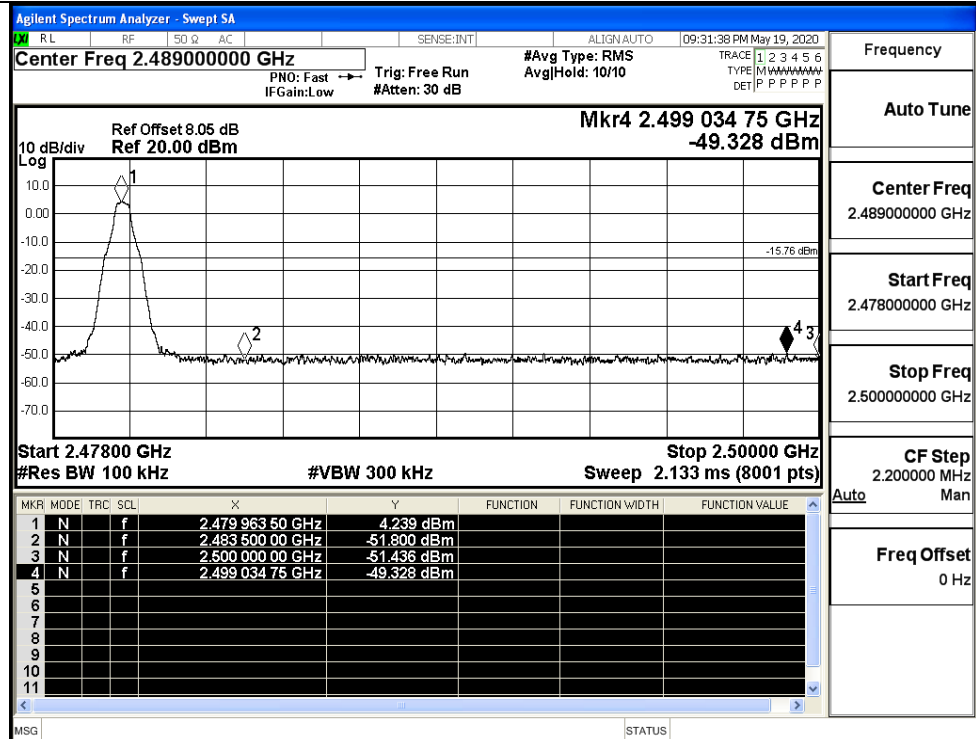
Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz

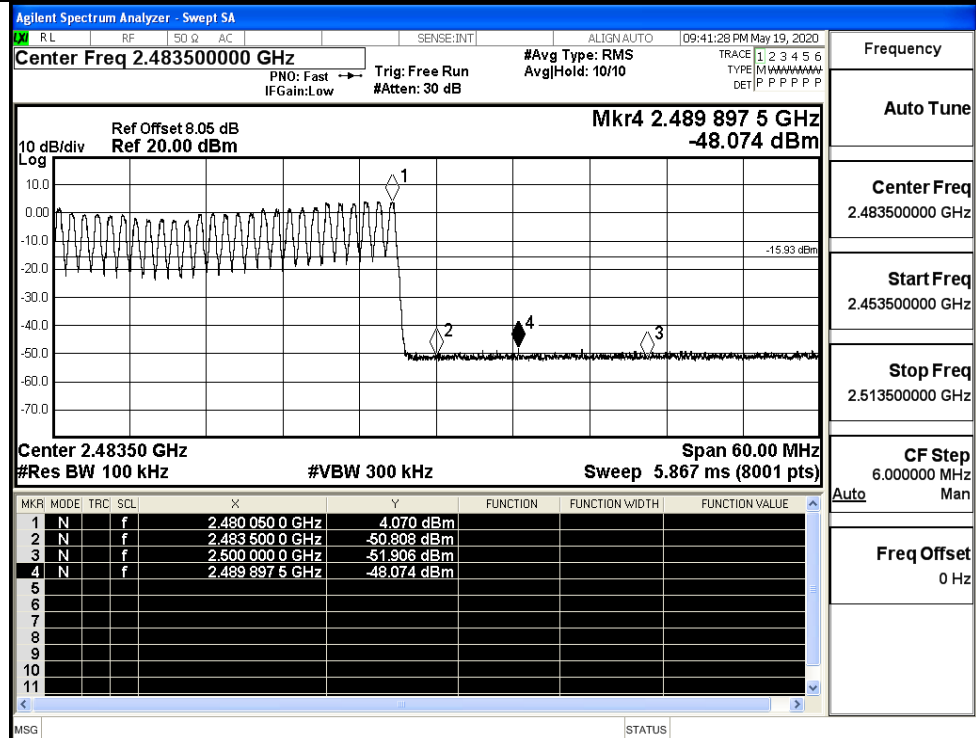
Auto

Freq Offset
0 Hz

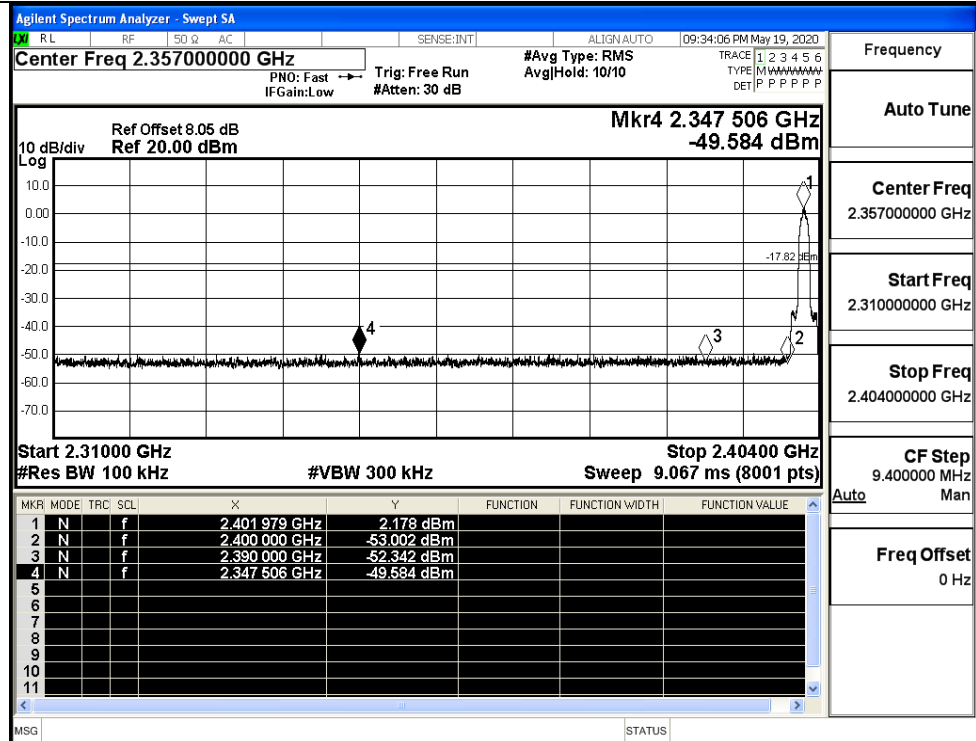
GFSK/HCH/No Hop



GFSK/HCH/Hop



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

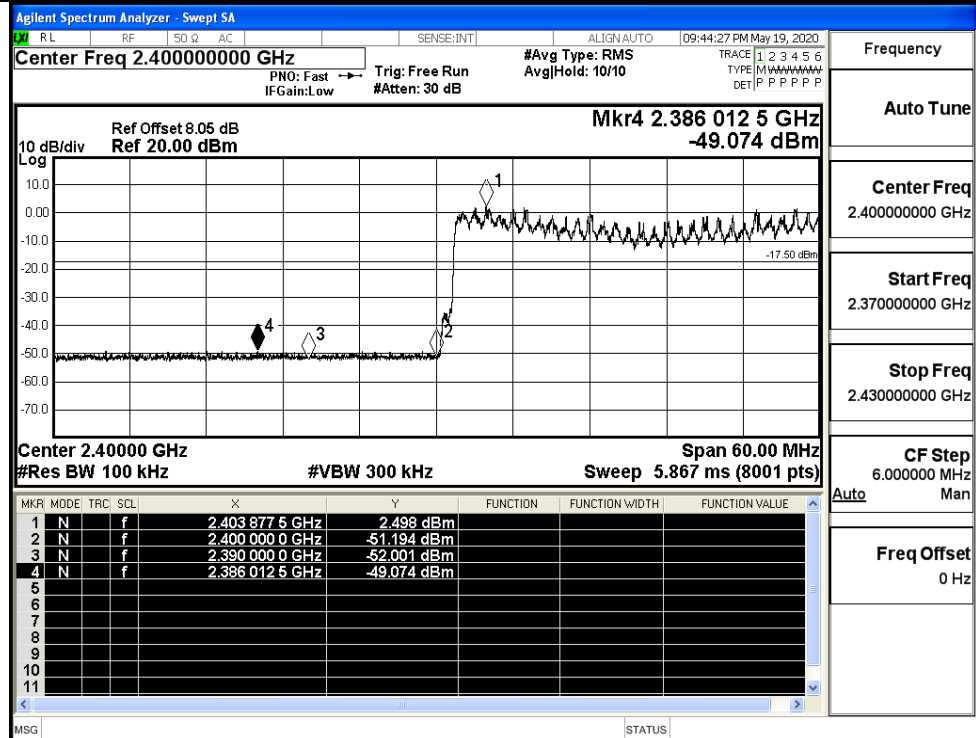


Frequency

Auto Tune

Center Freq
2.357000000 GHzStart Freq
2.310000000 GHzStop Freq
2.404000000 GHzCF Step
9.400000 MHz
Auto ManFreq Offset
0 Hz

$\pi/4$ DQPSK/LCH/Hop

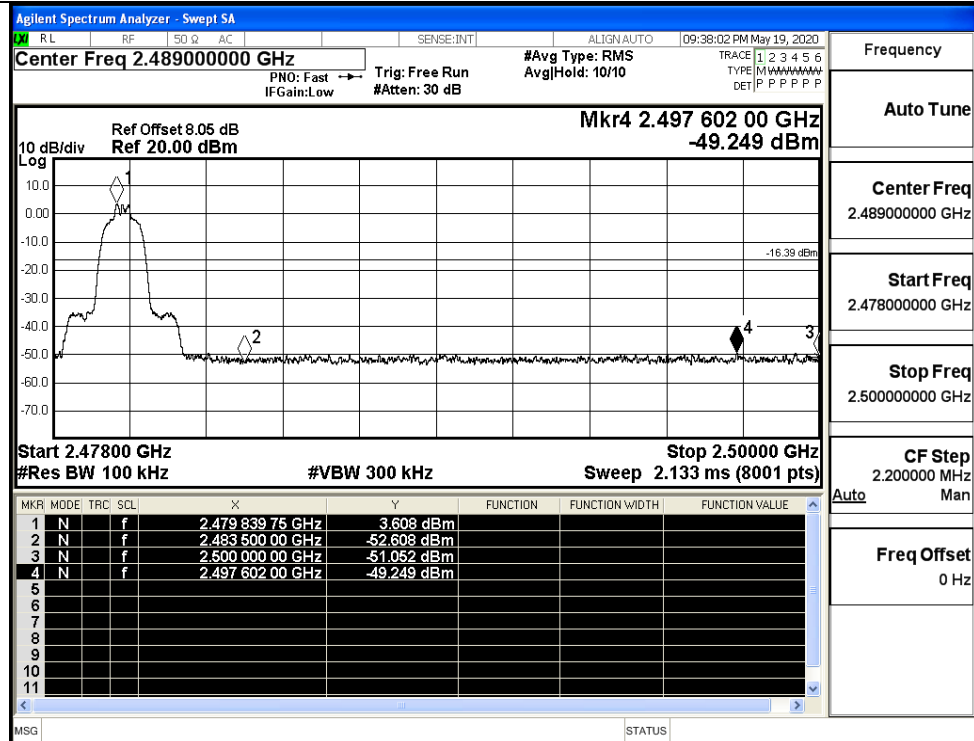


Frequency

Auto Tune

Center Freq
2.400000000 GHzStart Freq
2.370000000 GHzStop Freq
2.430000000 GHzCF Step
6.000000 MHz
Auto ManFreq Offset
0 Hz

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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

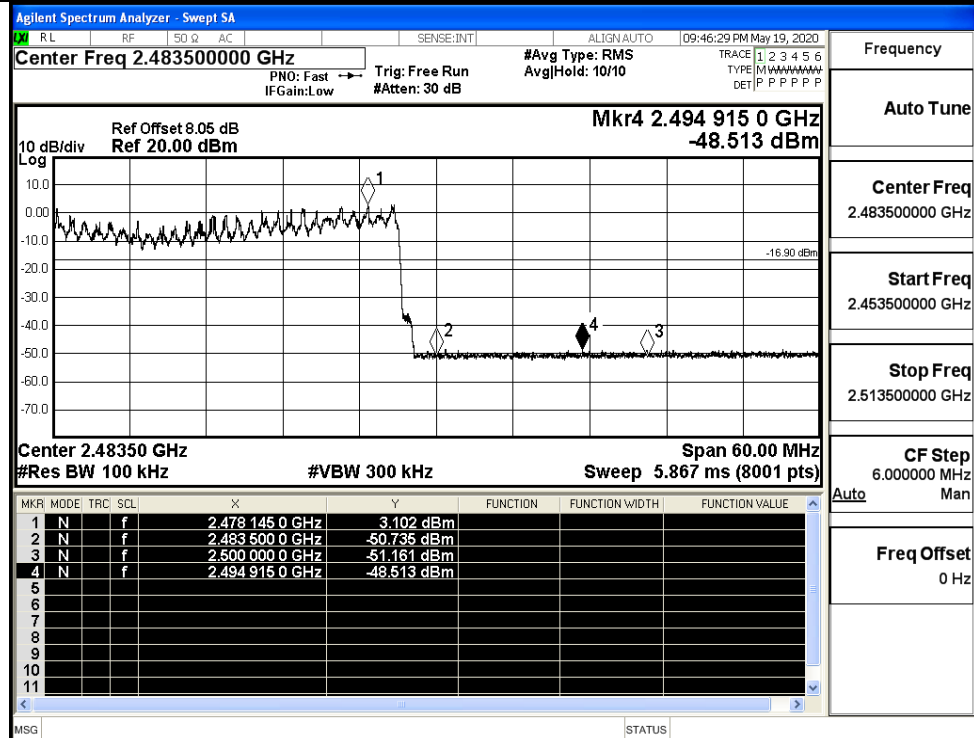
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz
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

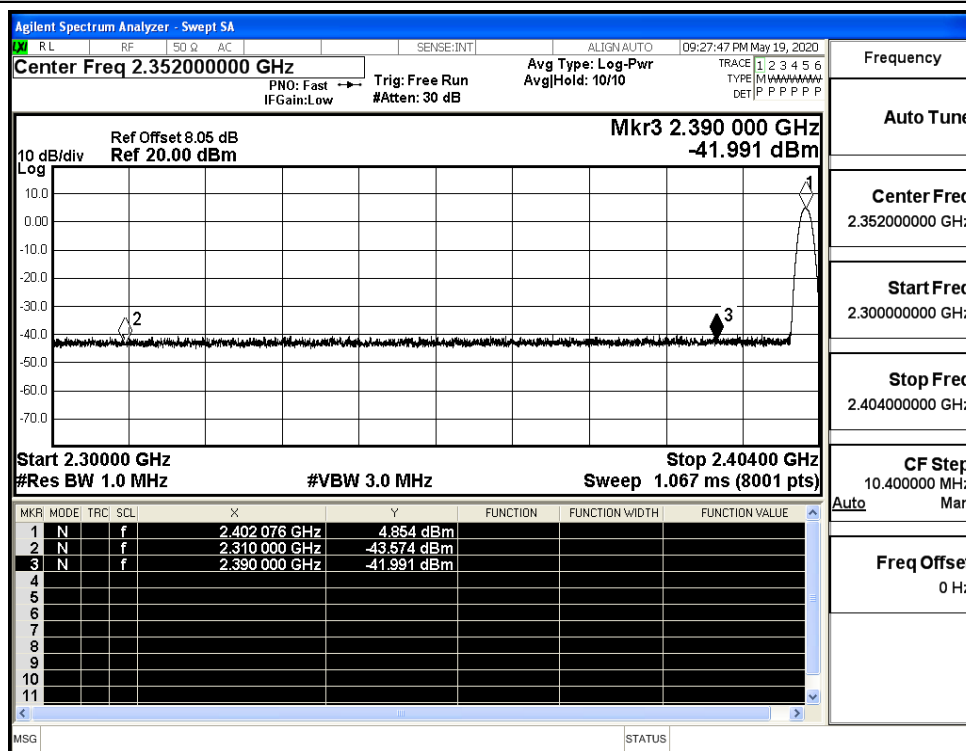
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

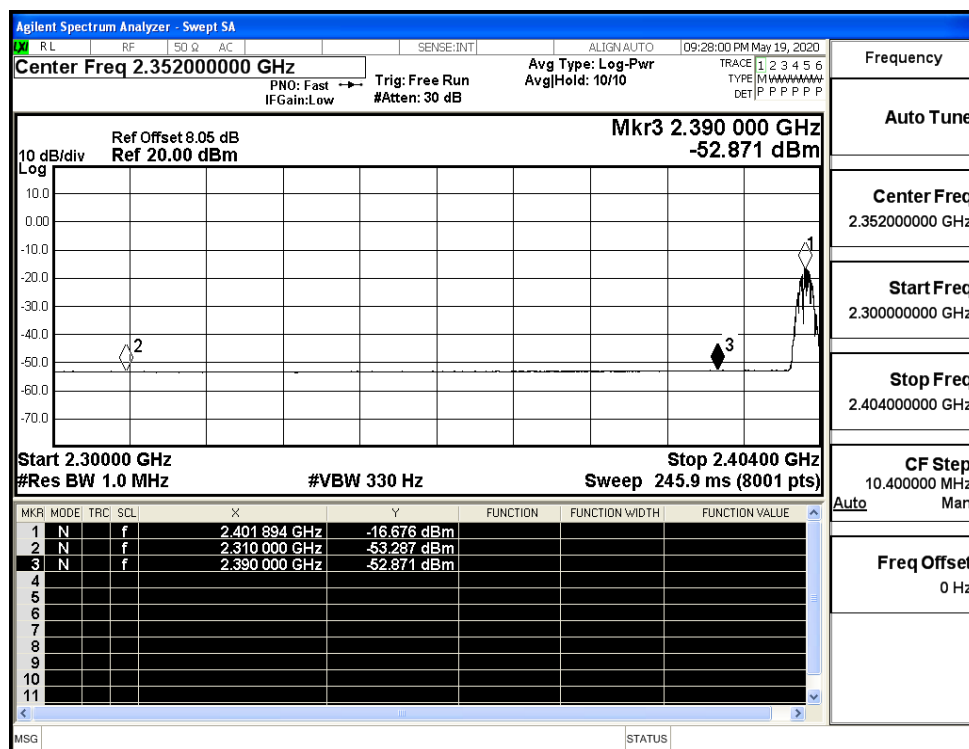
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-43.57	2.0	0	53.66	PEAK	74	PASS
	Off	2310.0	-53.29	2.0	0	43.94	AV	54	PASS
	Off	2390.0	-41.99	2.0	0	55.24	PEAK	74	PASS
	Off	2390.0	-52.87	2.0	0	44.36	AV	54	PASS
	Off	2483.5	-42.05	2.0	0	55.18	PEAK	74	PASS
	Off	2483.5	-52.37	2.0	0	44.86	AV	54	PASS
	Off	2500.0	-41.30	2.0	0	55.93	PEAK	74	PASS
	Off	2500.0	-52.29	2.0	0	44.94	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-43.21	2.0	0	54.02	PEAK	74	PASS
	Off	2310.0	-53.27	2.0	0	43.96	AV	54	PASS
	Off	2390.0	-40.85	2.0	0	56.38	PEAK	74	PASS
	Off	2390.0	-52.91	2.0	0	44.32	AV	54	PASS
	Off	2483.5	-41.66	2.0	0	55.57	PEAK	74	PASS
	Off	2483.5	-52.27	2.0	0	44.96	AV	54	PASS
	Off	2500.0	-42.32	2.0	0	54.91	PEAK	74	PASS
	Off	2500.0	-52.29	2.0	0	44.94	AV	54	PASS

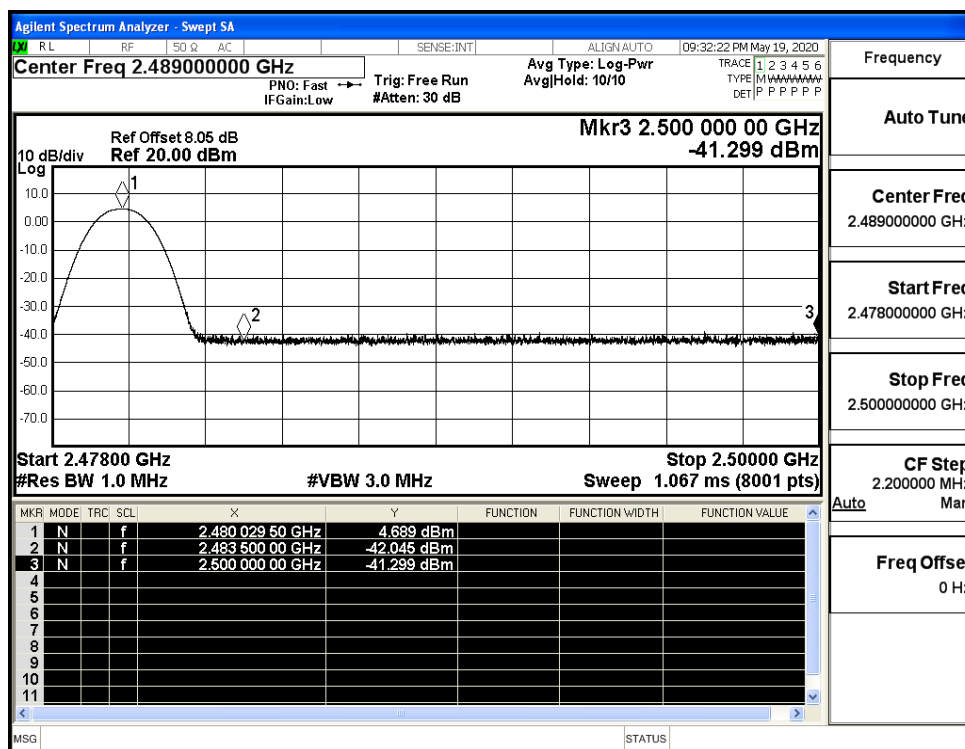
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



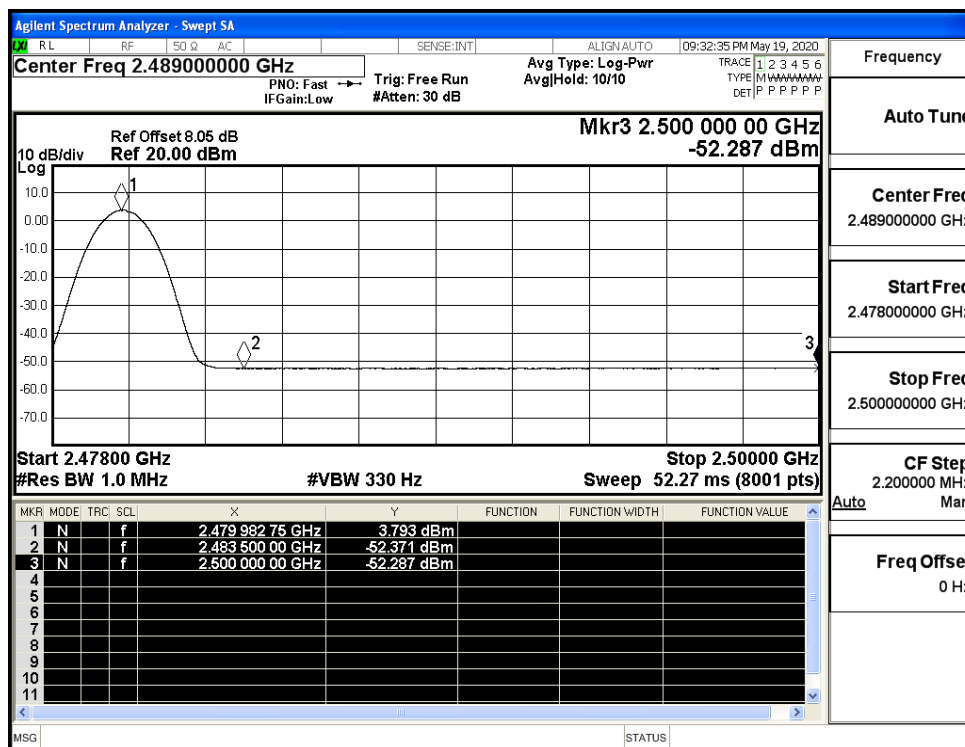
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

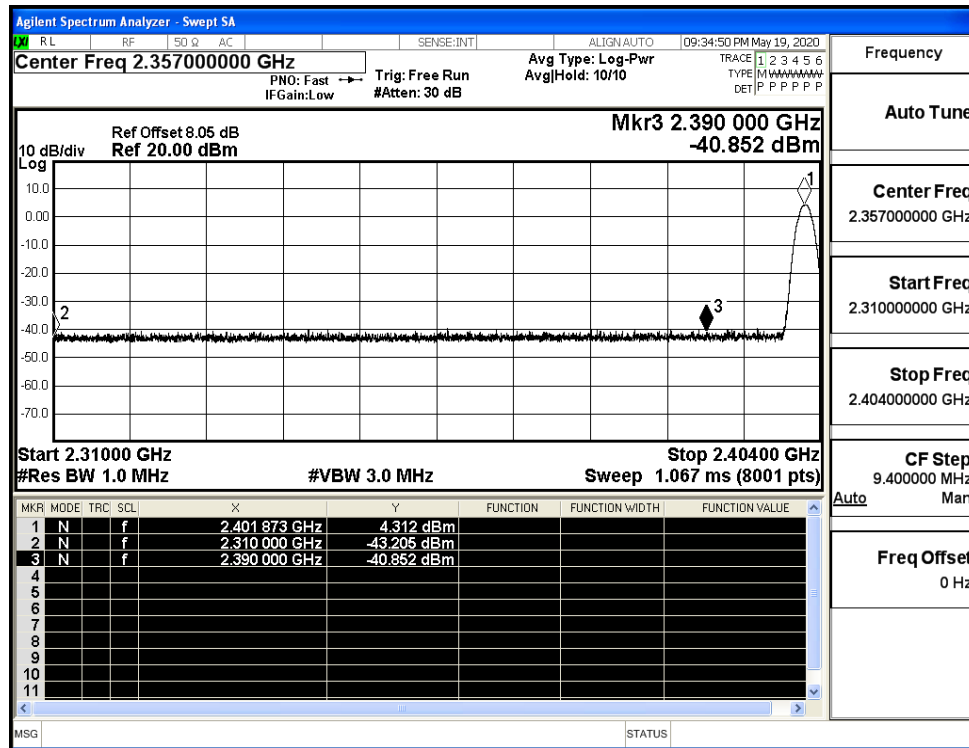
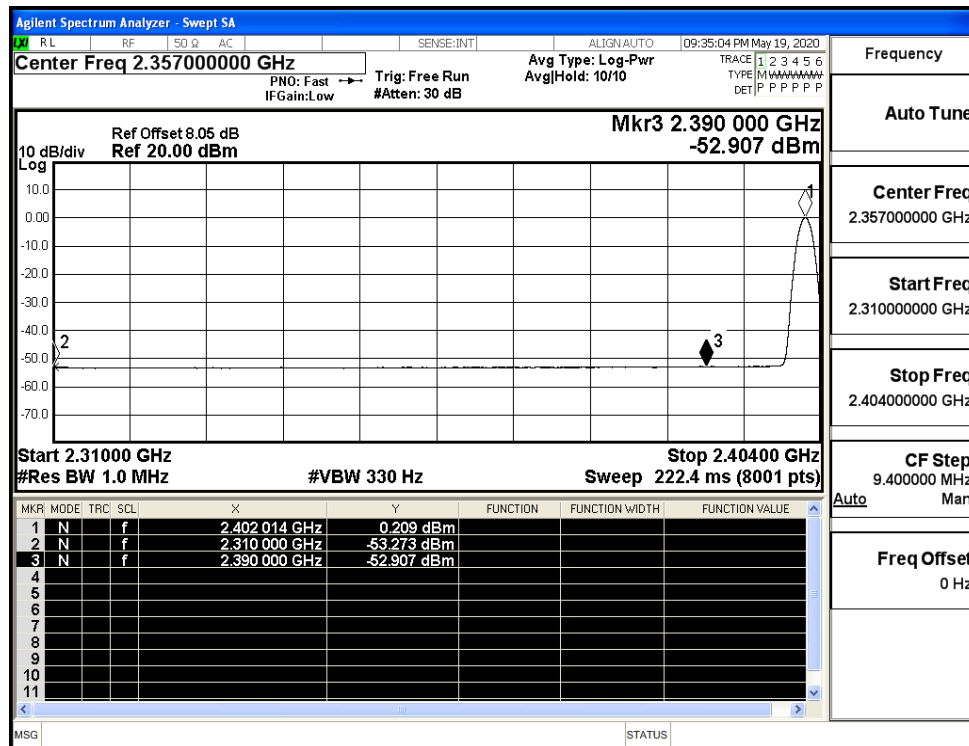


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

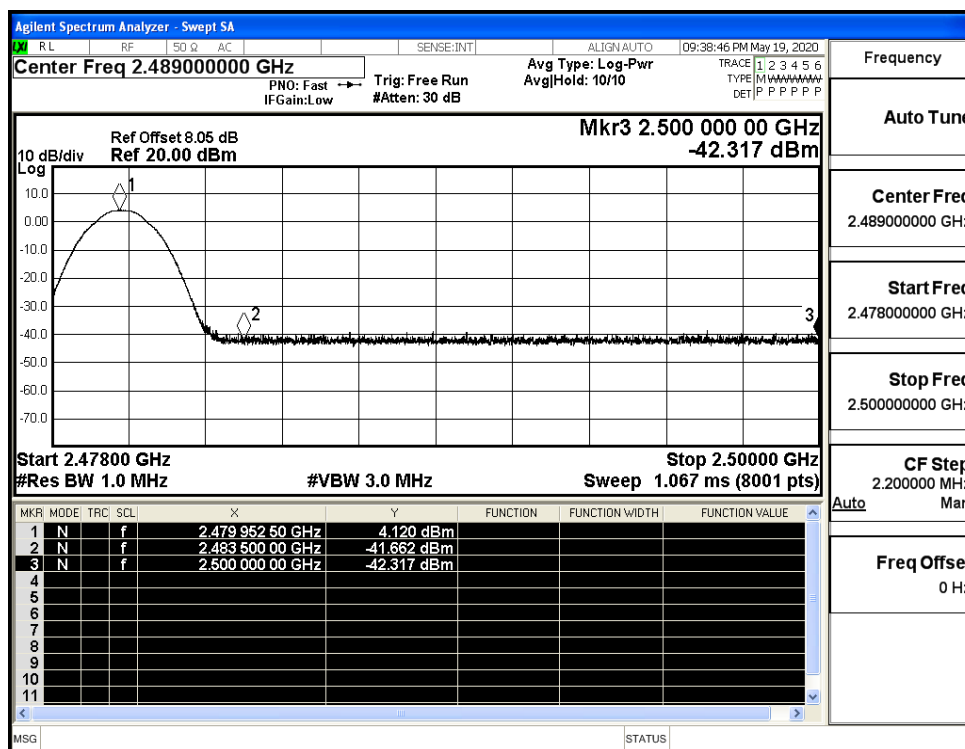


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



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)

