

Appendix A

RF Test Data for BT V4.1(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth speaker

Trade Mark: iDance

Test Model: Cyclone-400

Environmental Conditions

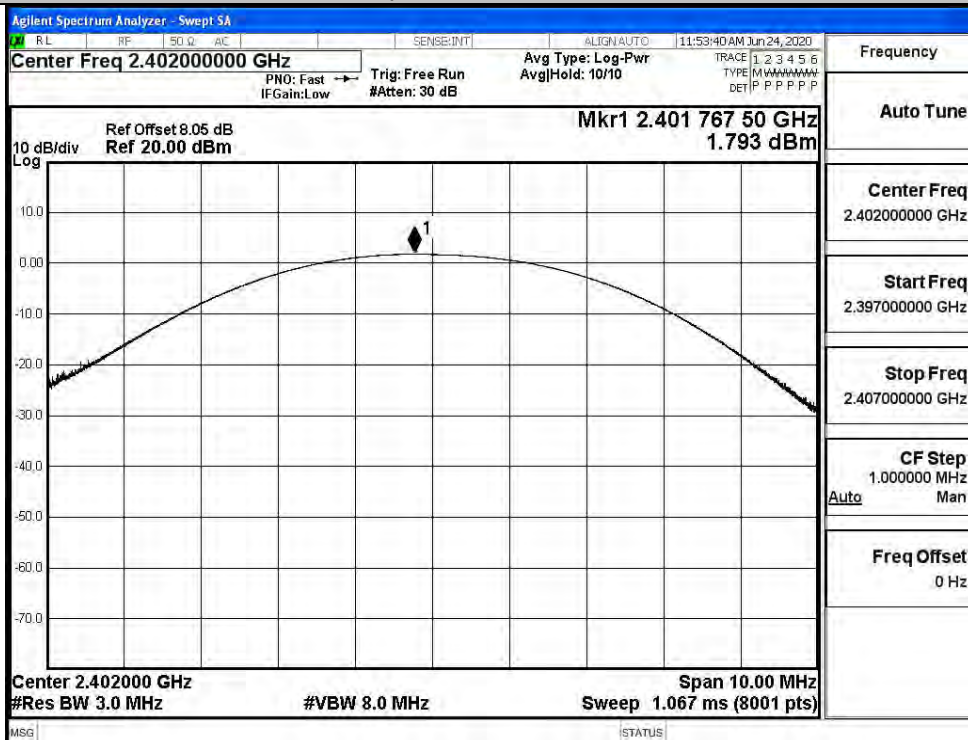
Temperature:	24.5° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

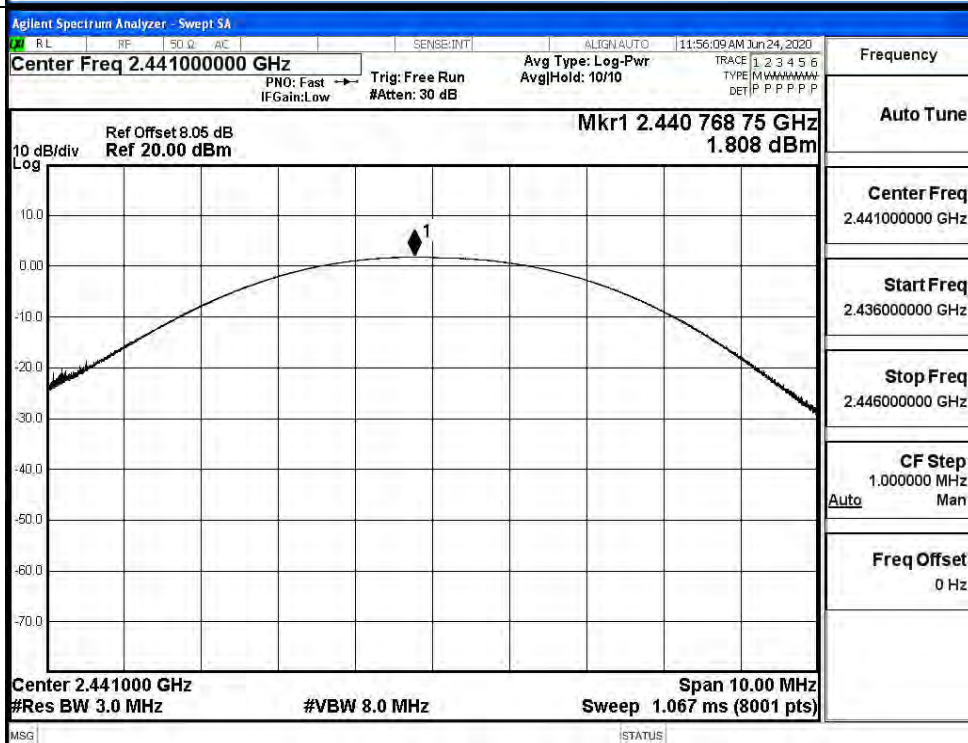
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.793	21	PASS
	MCH	1.808	21	PASS
	HCH	1.807	21	PASS
$\pi/4$ DQPSK	LCH	2.447	21	PASS
	MCH	0.382	21	PASS
	HCH	0.466	21	PASS

Test Graphs

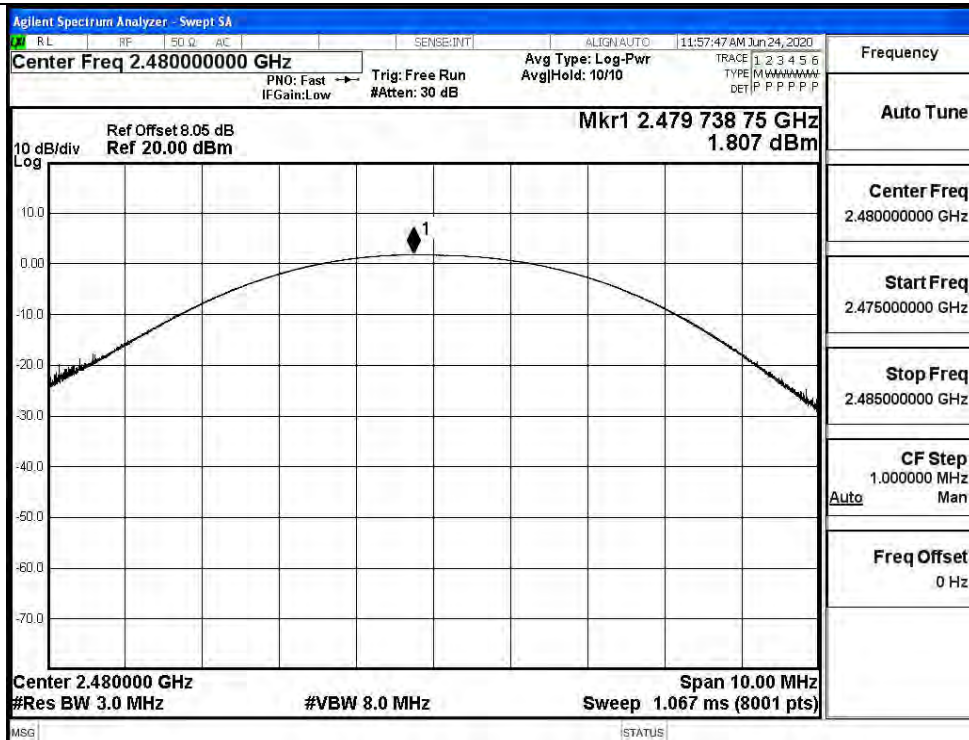
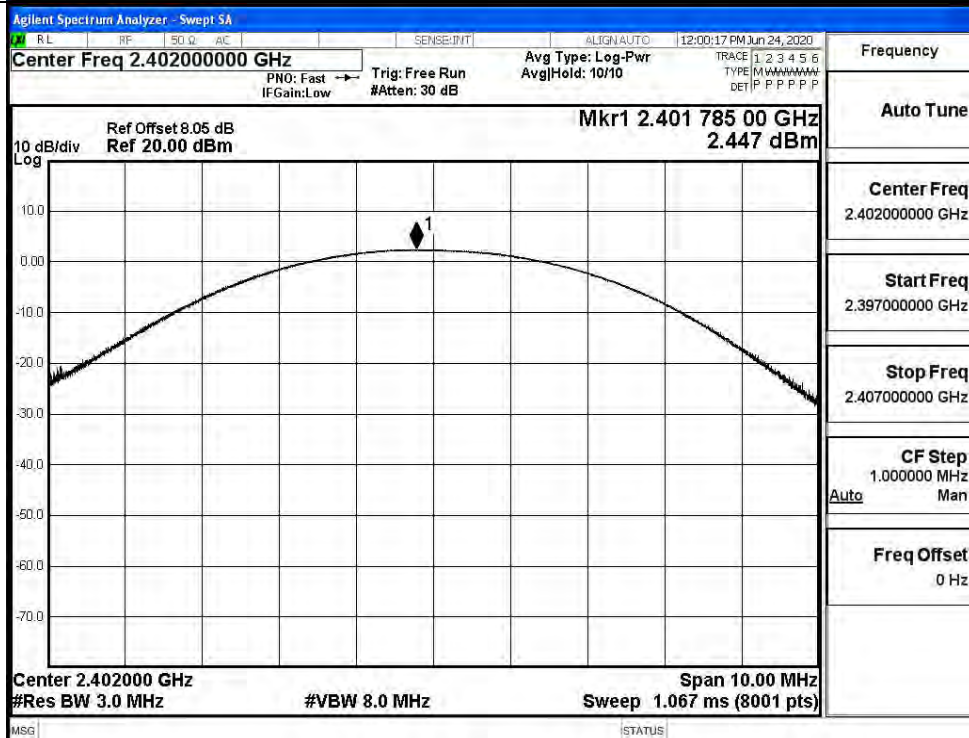
GFSK/LCH

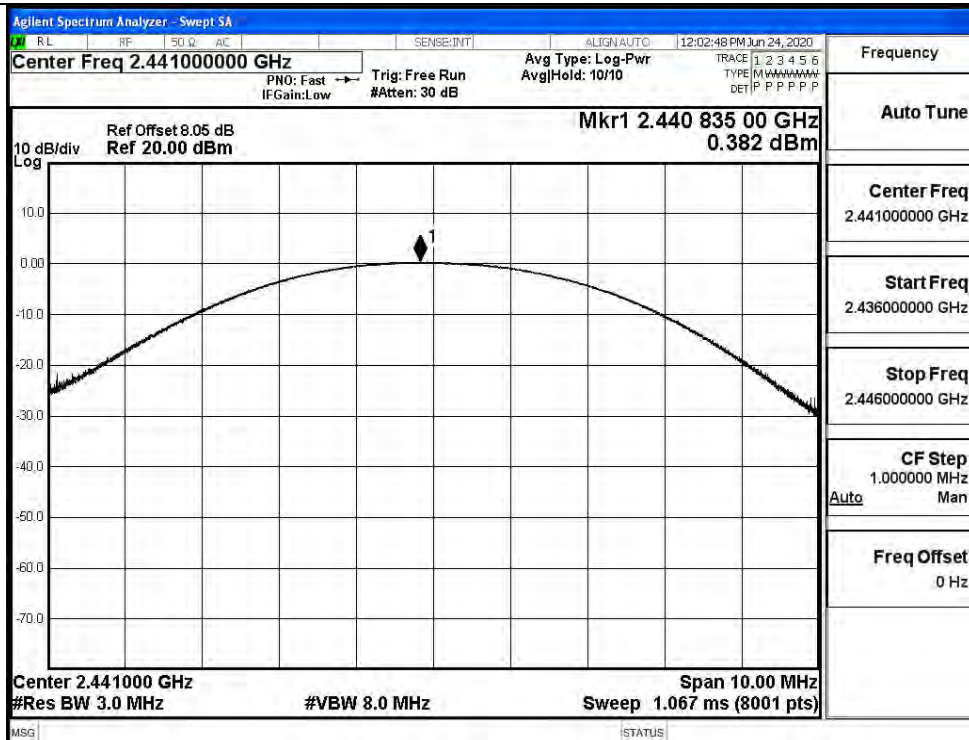
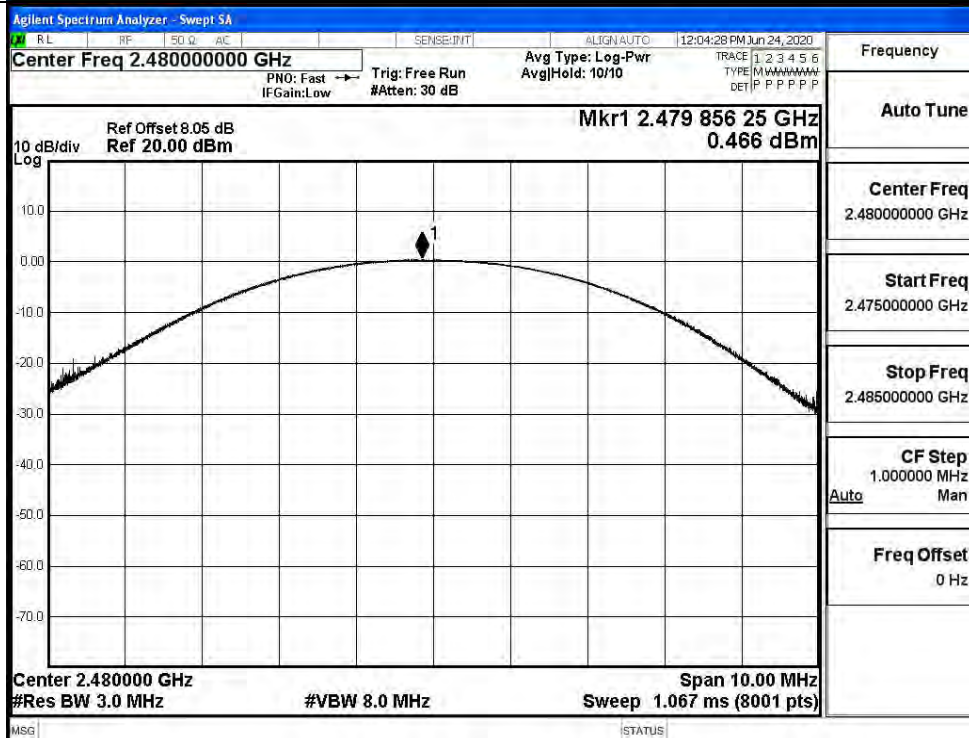


GFSK/MCH



GFSK/HCH

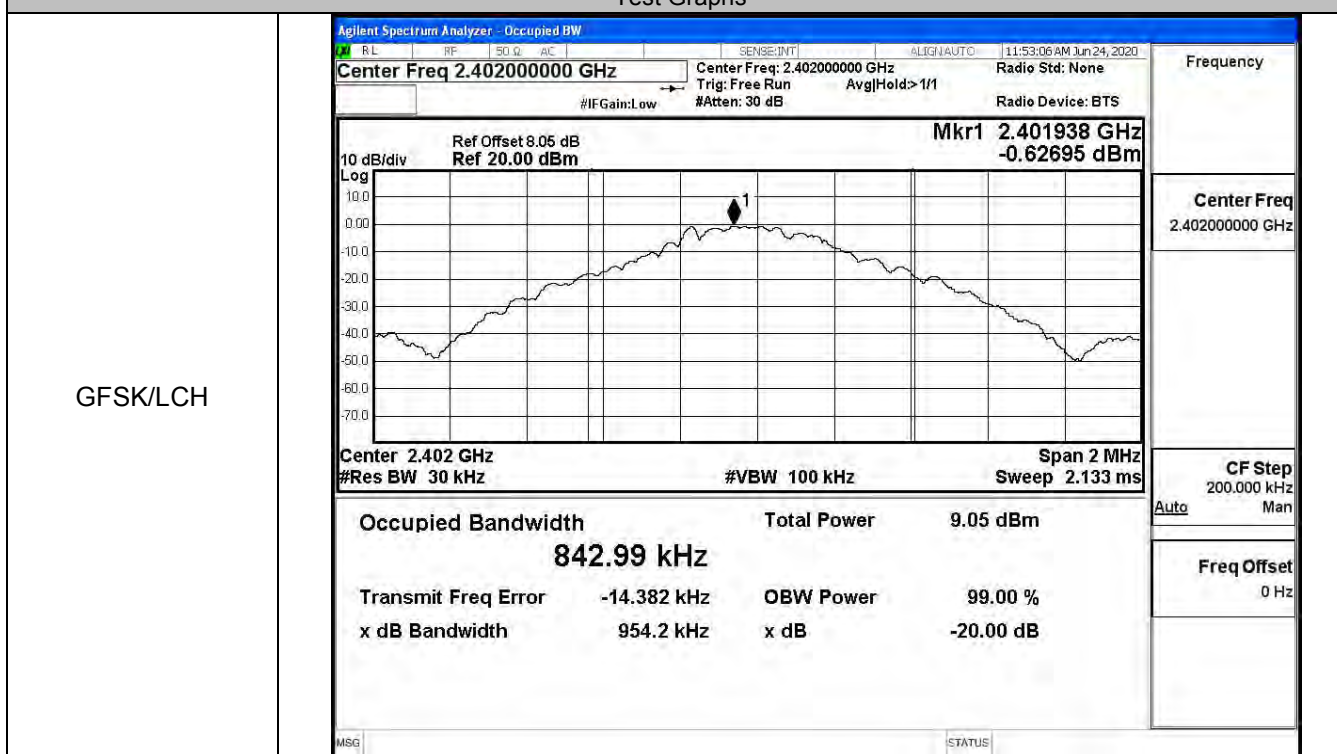
 π /4DQPSK/LCH

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

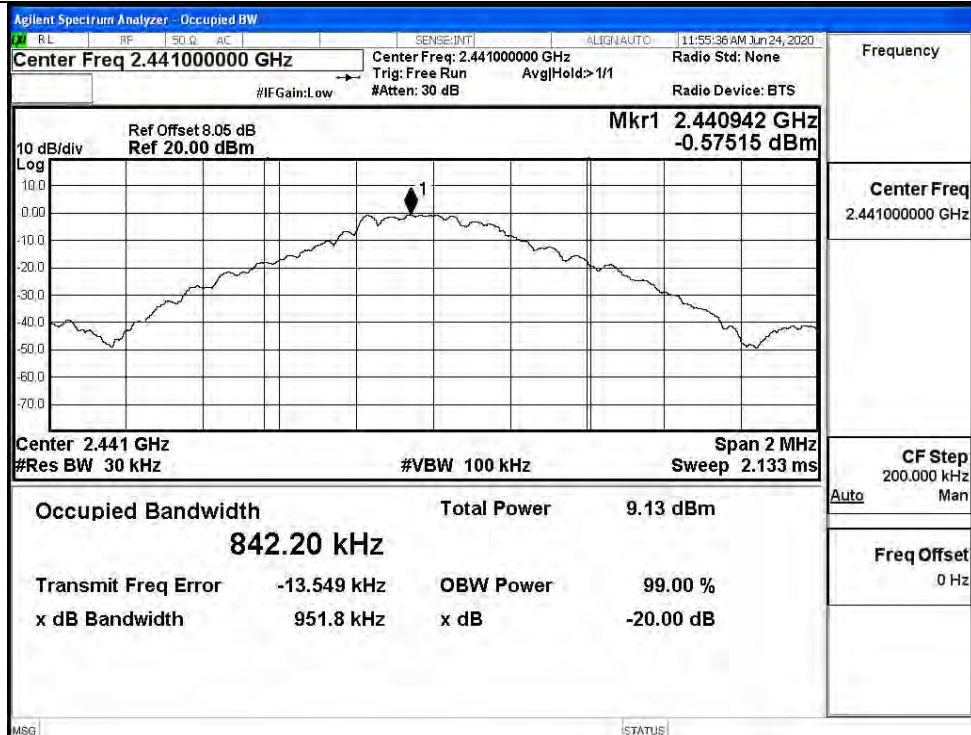
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9542	Not Specified	PASS
	MCH	0.9518	Not Specified	PASS
	HCH	0.9555	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.309	Not Specified	PASS
	MCH	1.314	Not Specified	PASS
	HCH	1.315	Not Specified	PASS

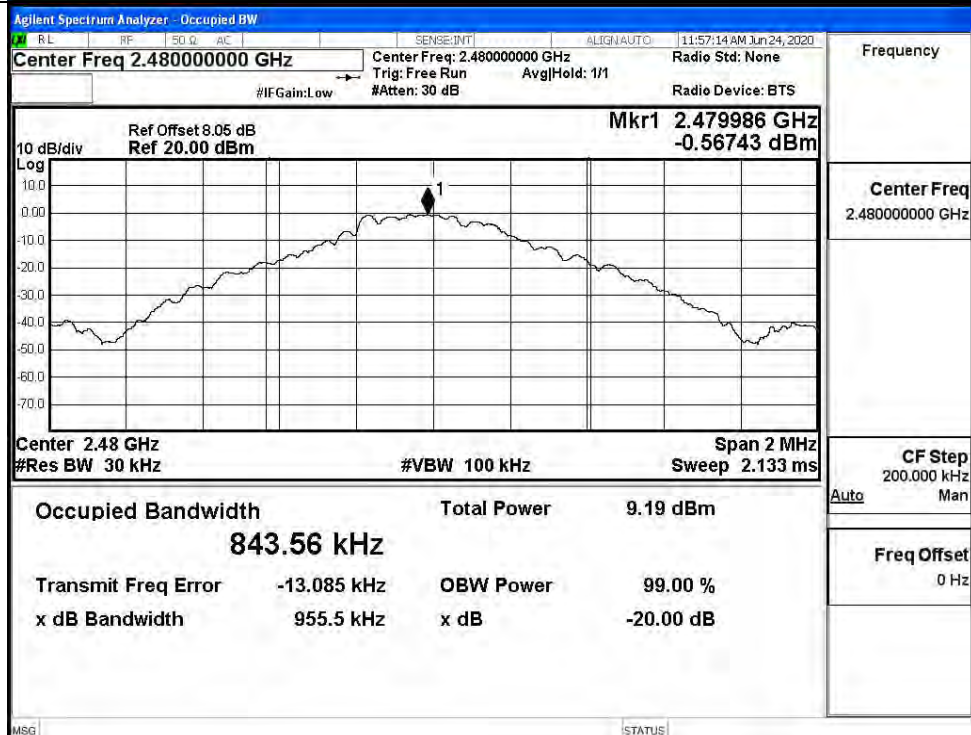
Test Graphs

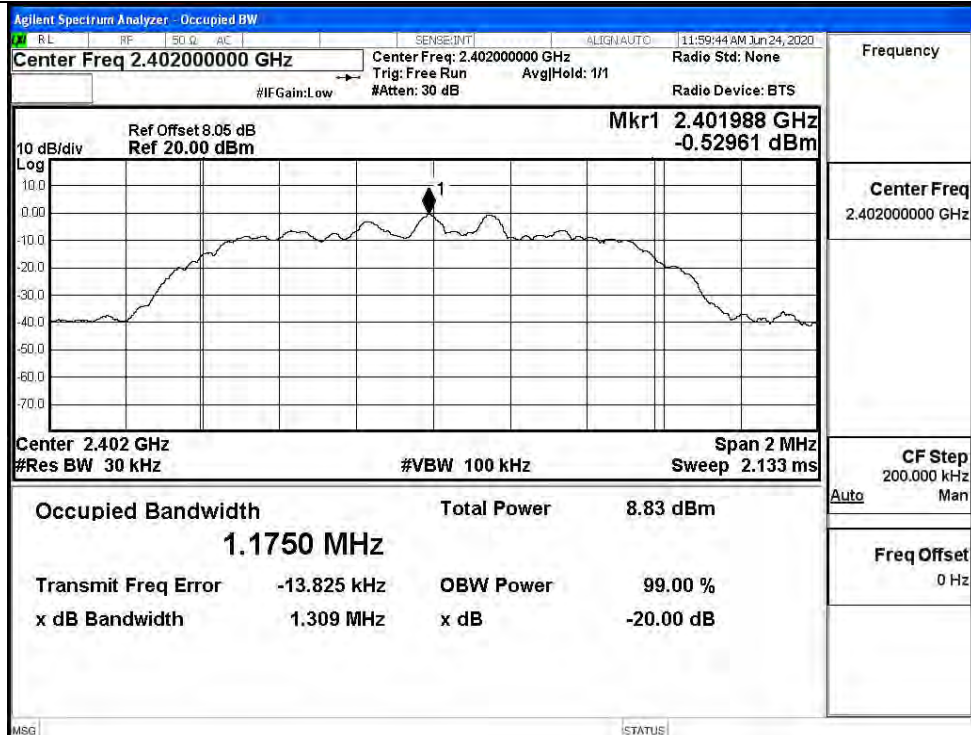
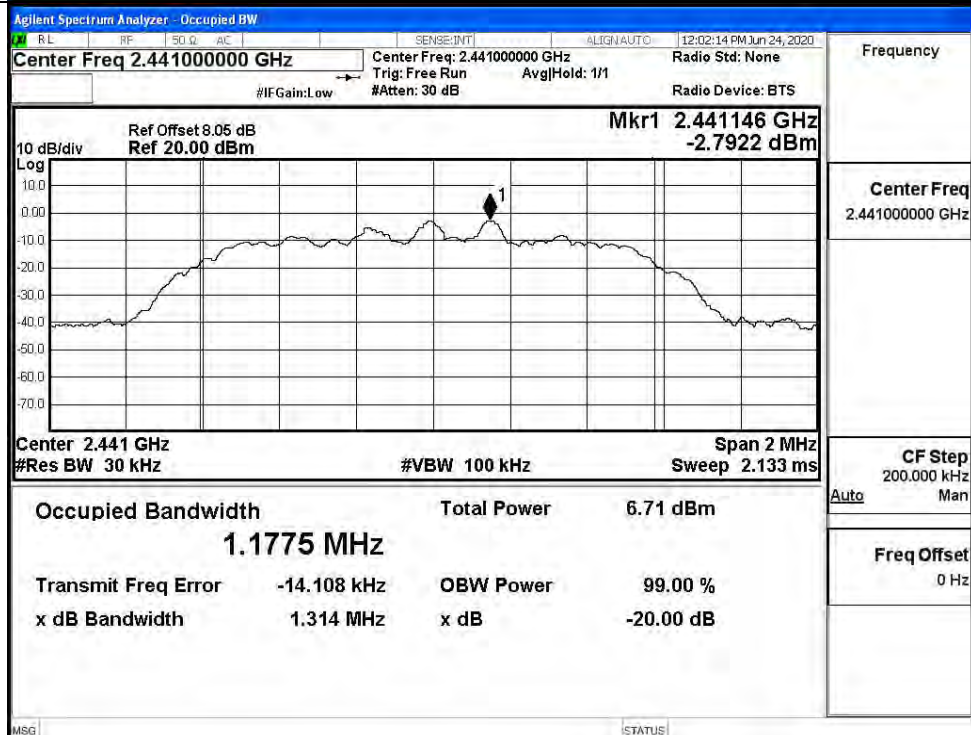


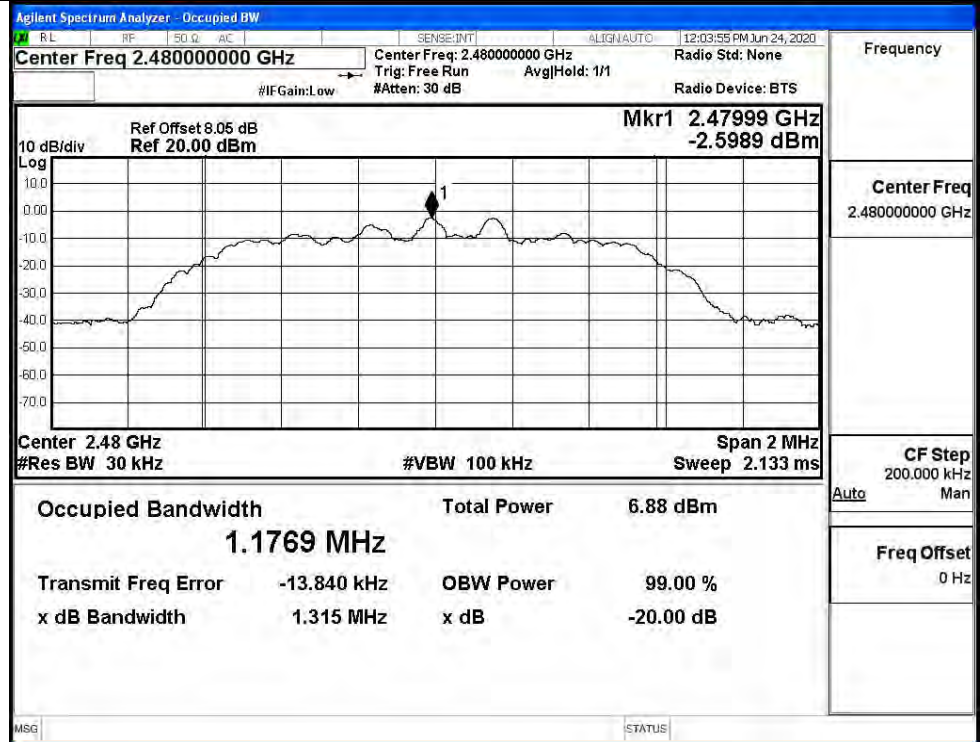
GFSK/MCH



GFSK/HCH



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

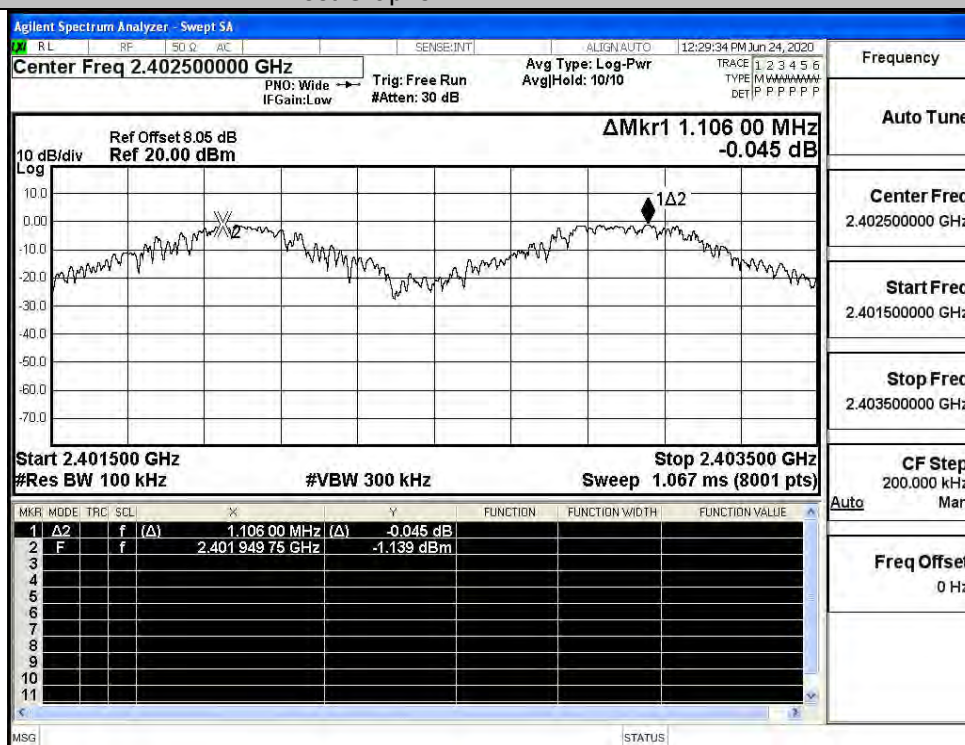
$\pi/4$ DQPSK/HCH

A.3 Carrier Frequency Separation

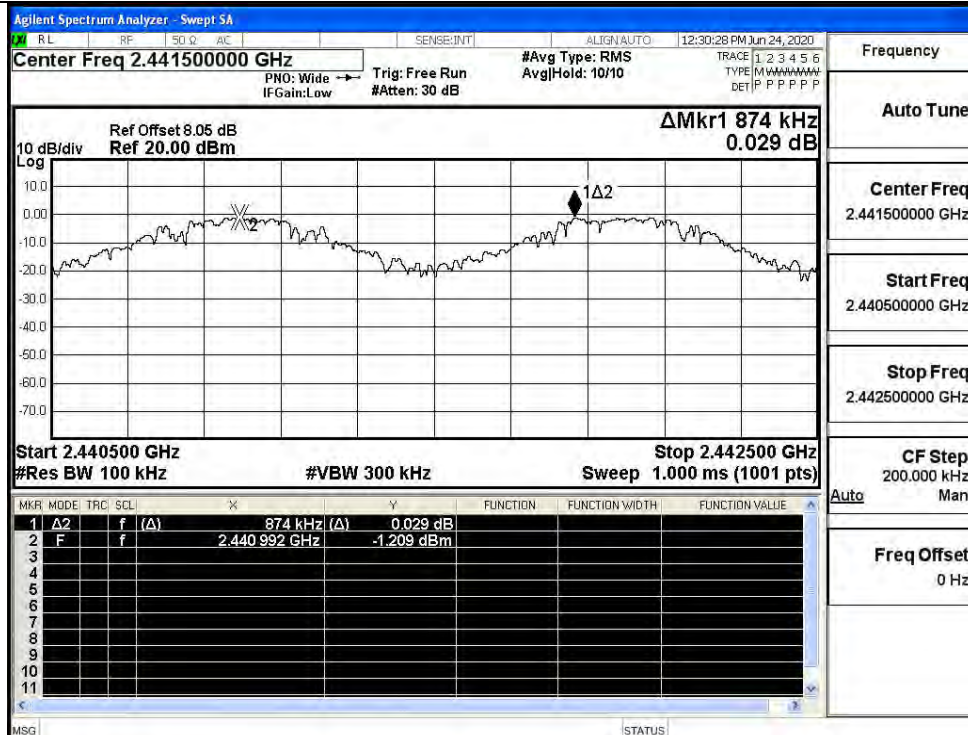
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.106	0.637	PASS
	MCH	0.874	0.637	PASS
	HCH	0.994	0.637	PASS
$\pi/4$ DQPSK	LCH	1.160	0.877	PASS
	MCH	1.012	0.877	PASS
	HCH	1.146	0.877	PASS

Test Graphs

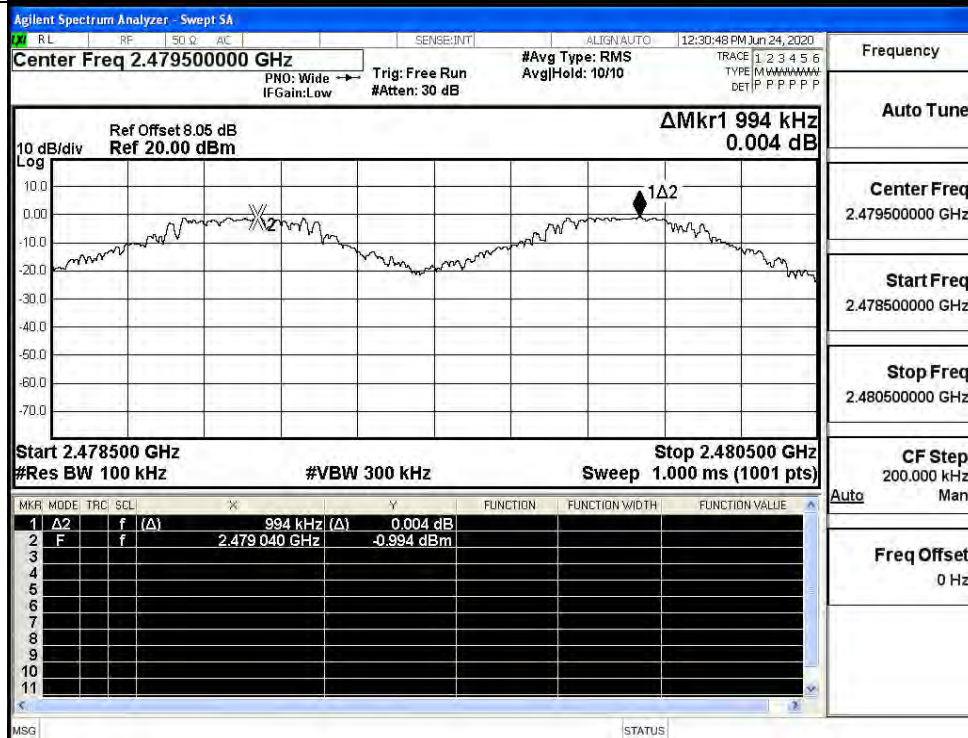
GFSK/LCH

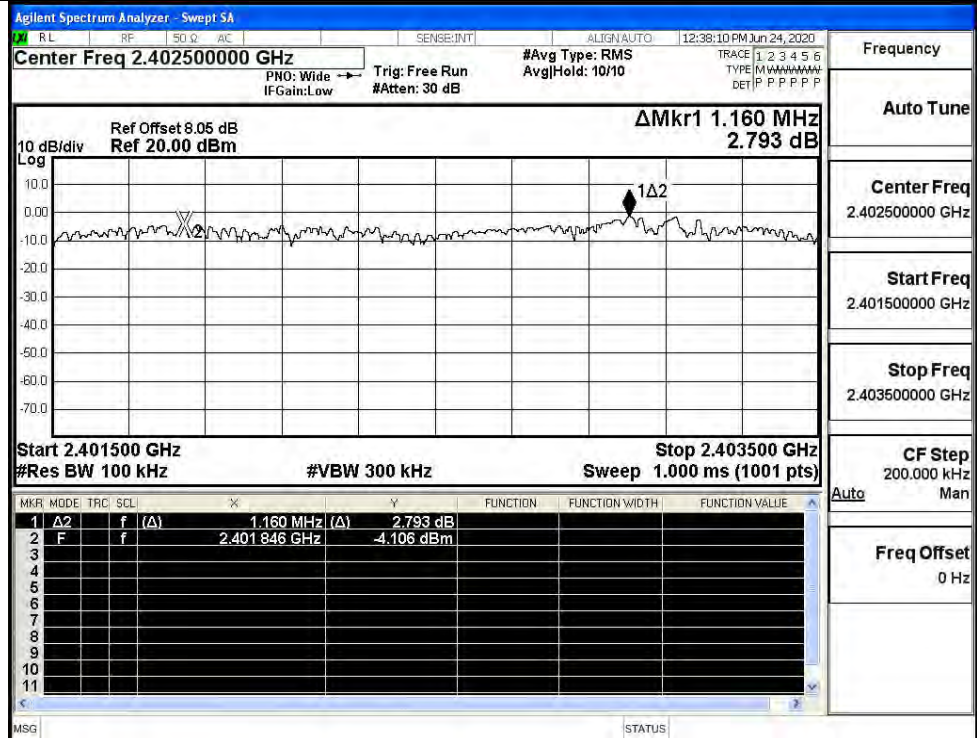
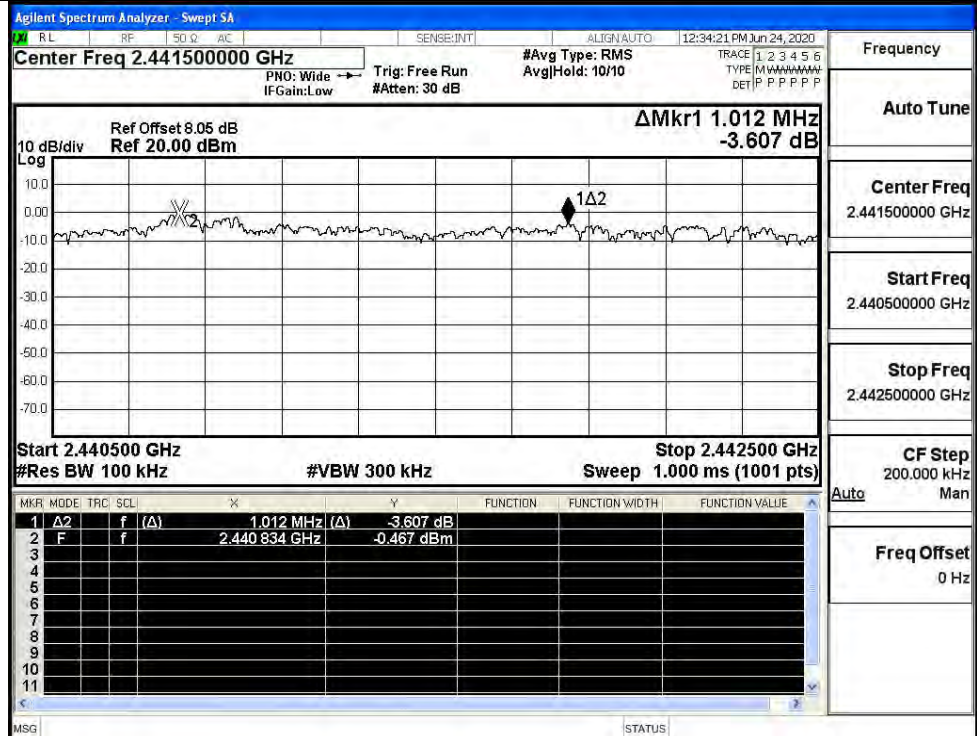


GFSK/MCH

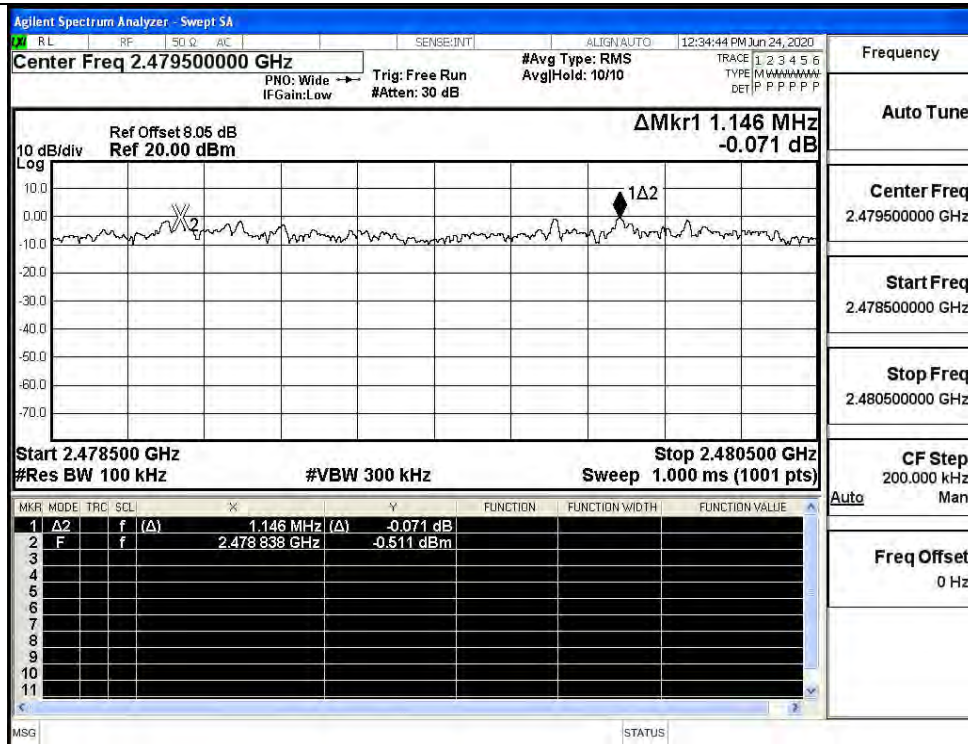


GFSK/HCH



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

$\pi/4$ DQPSK/HCH

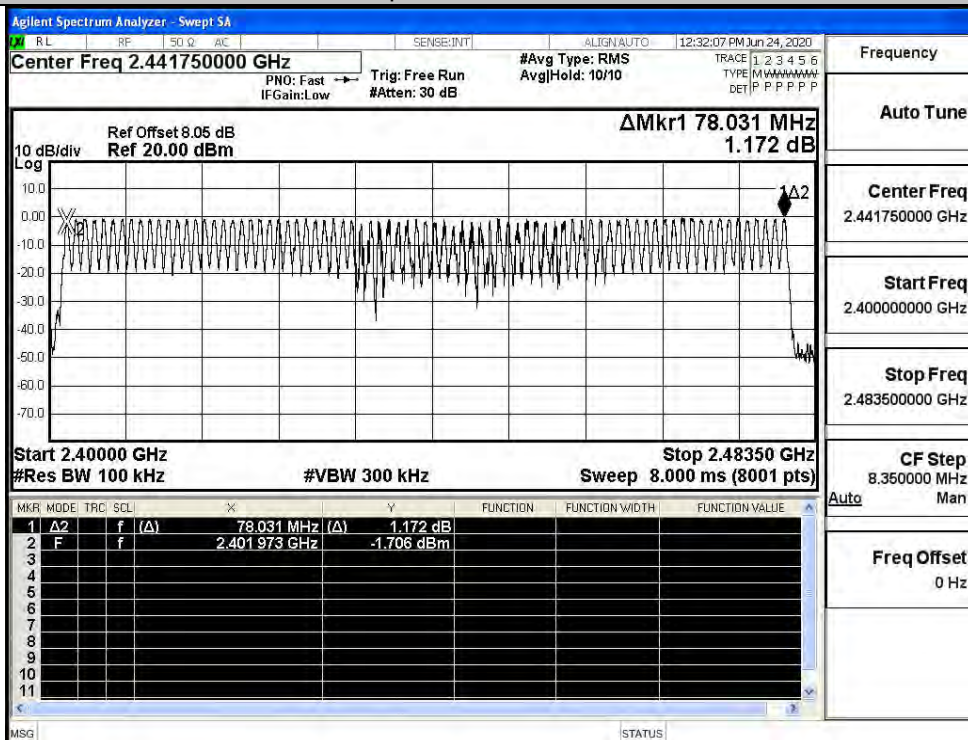
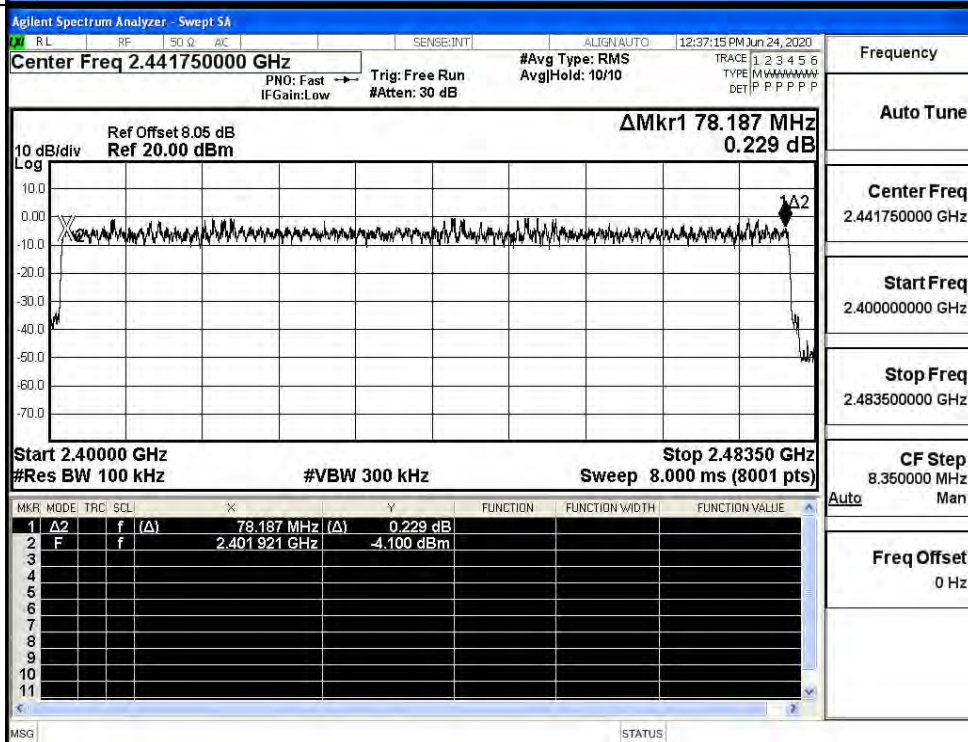


A.4 Hopping Channel Number

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

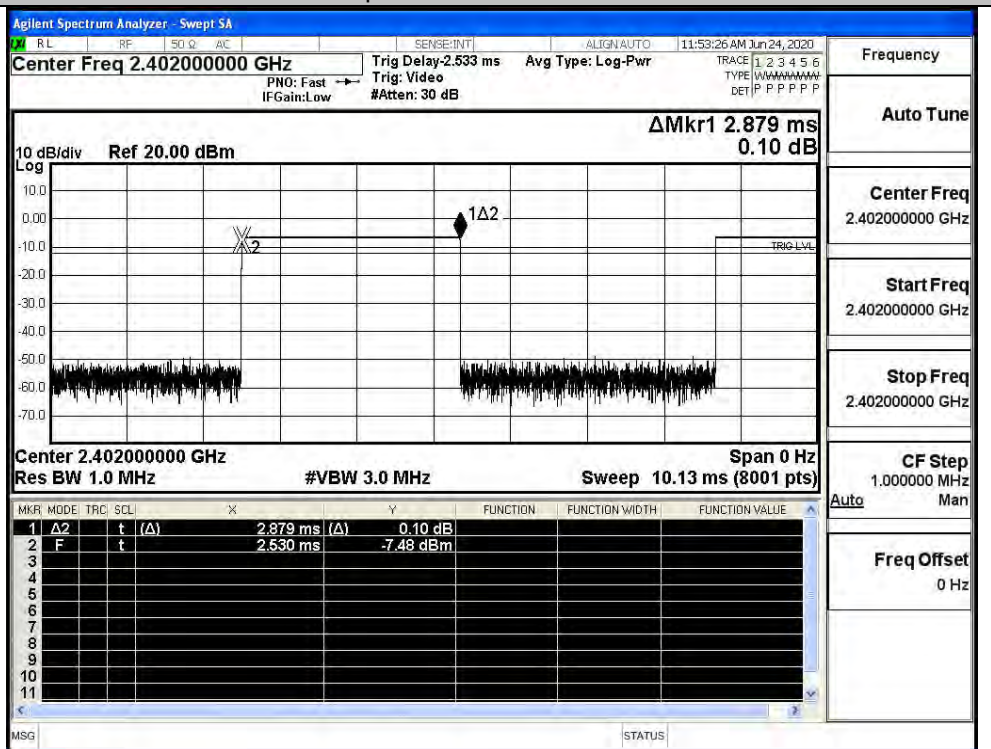
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

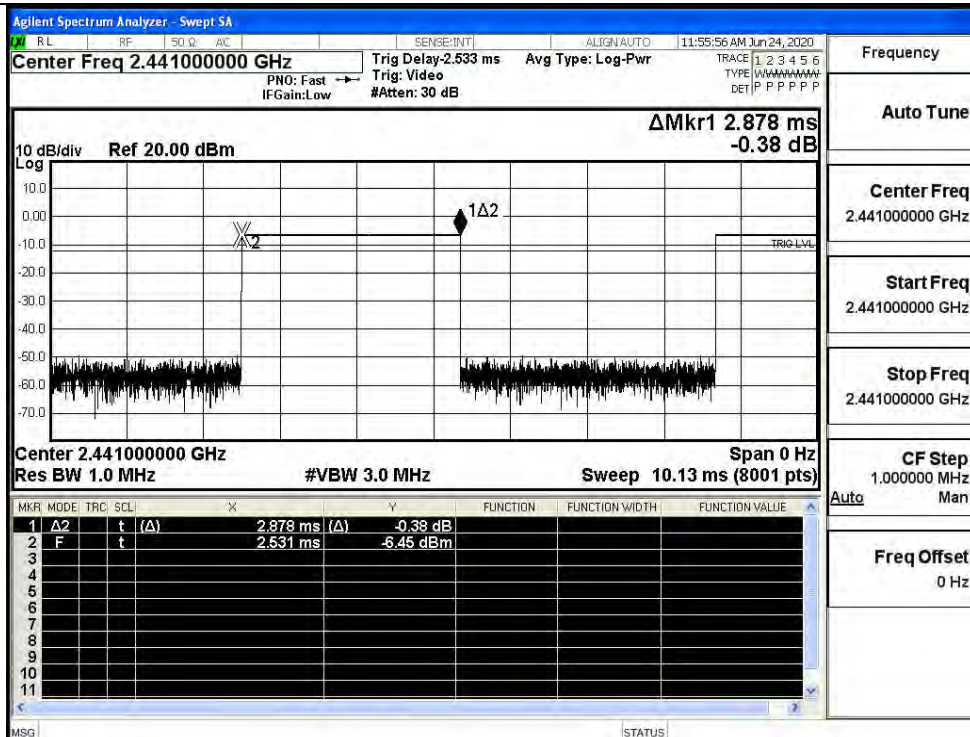
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.308	0.4	PASS
	2DH5	HCH	2.88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

Test Graphs

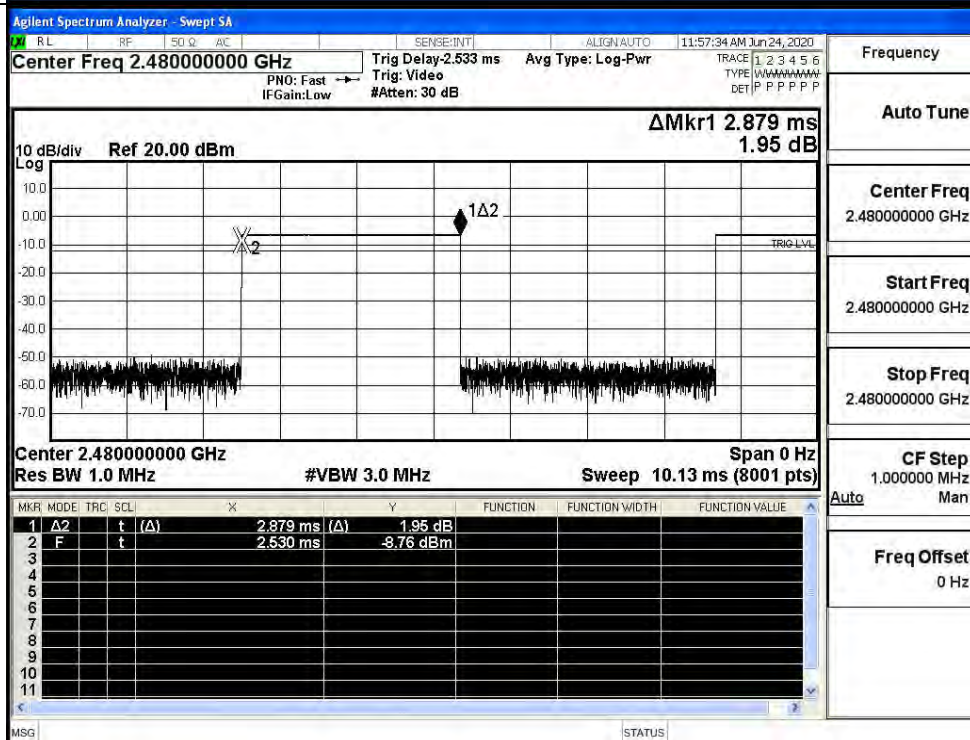
GFSK_DH5/LCH



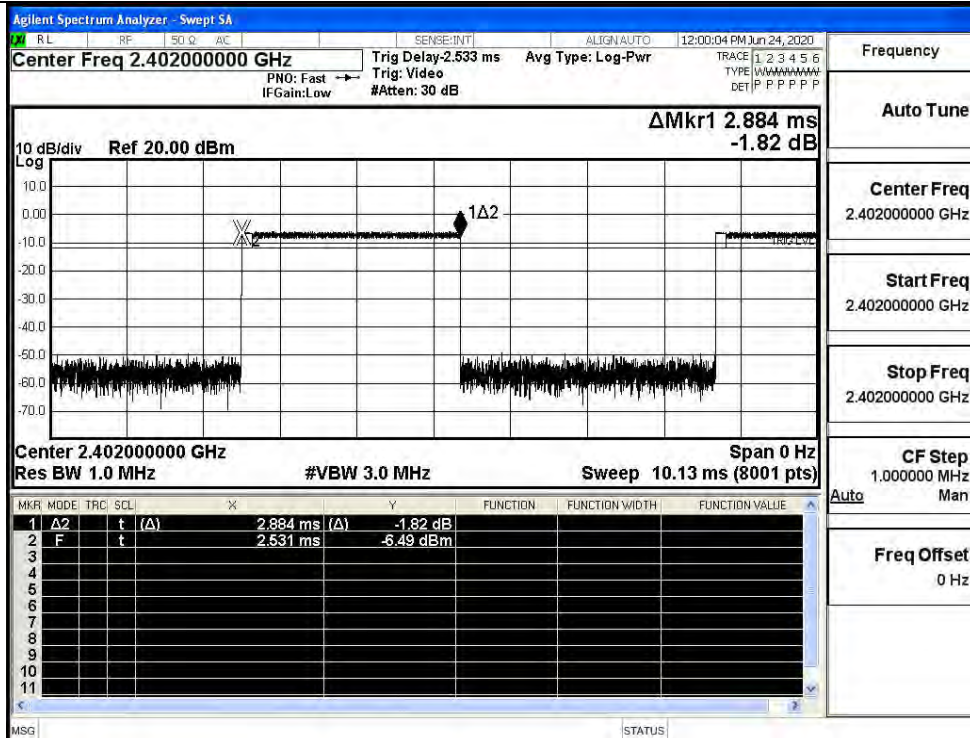
GFSK_DH5/MCH



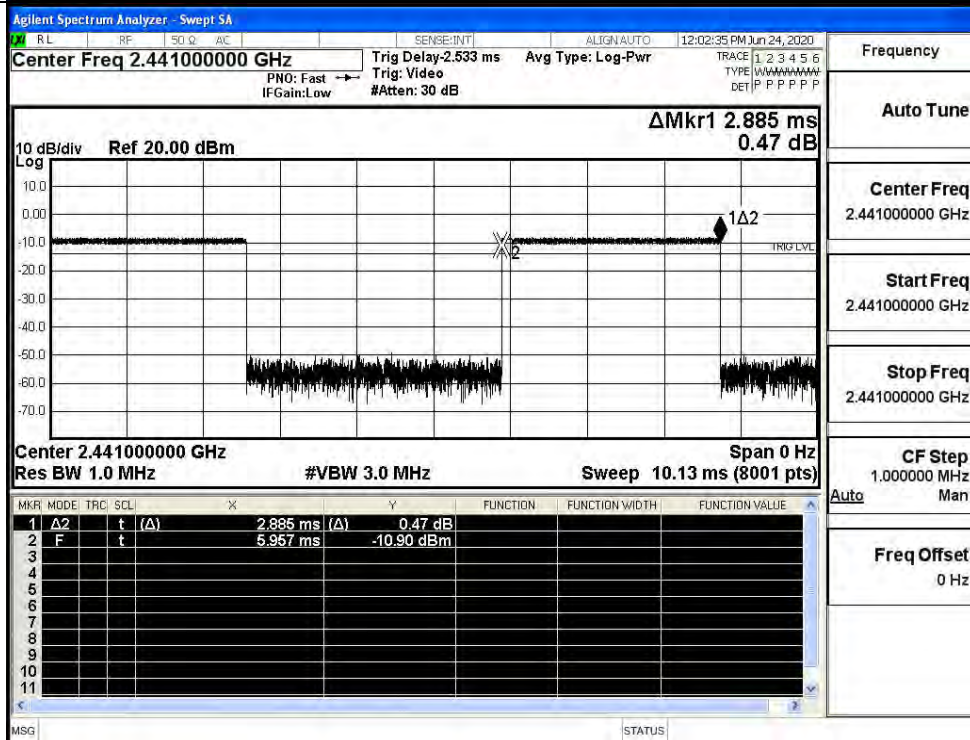
GFSK_DH5/HCH



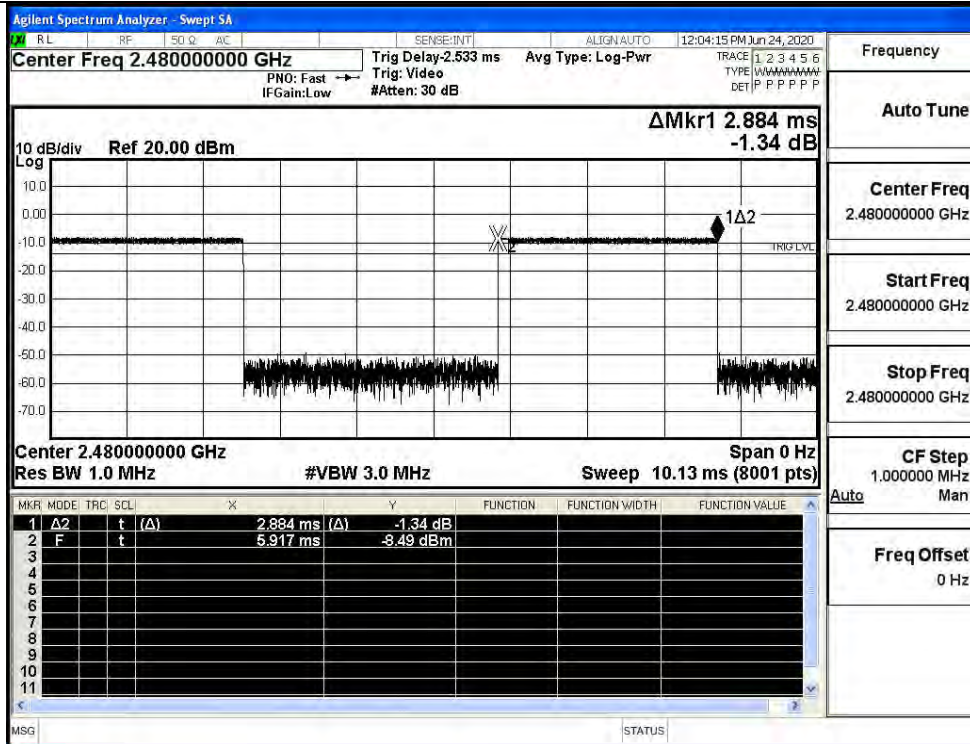
π /4DQPSK
_2DH5/LCH



π /4DQPSK
_2DH5/MCH



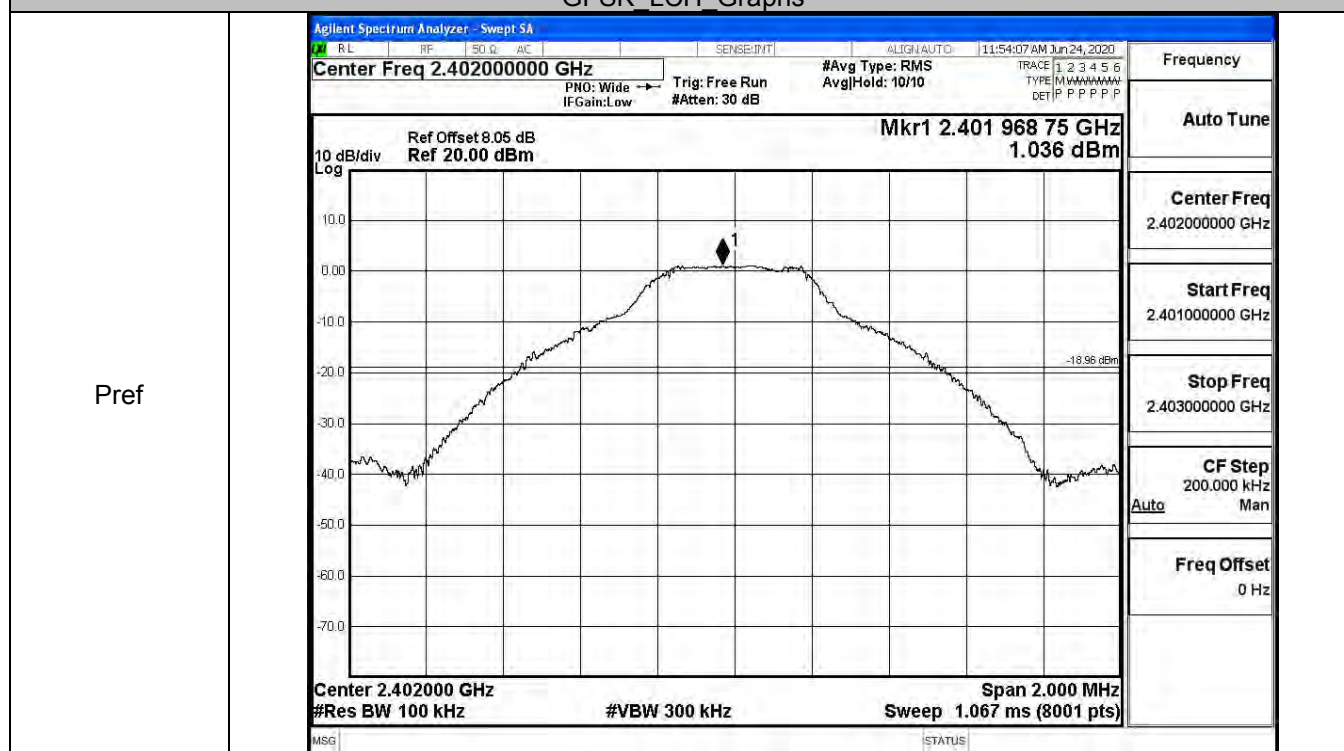
$\pi/4$ DQPSK
_2DH5/HCH



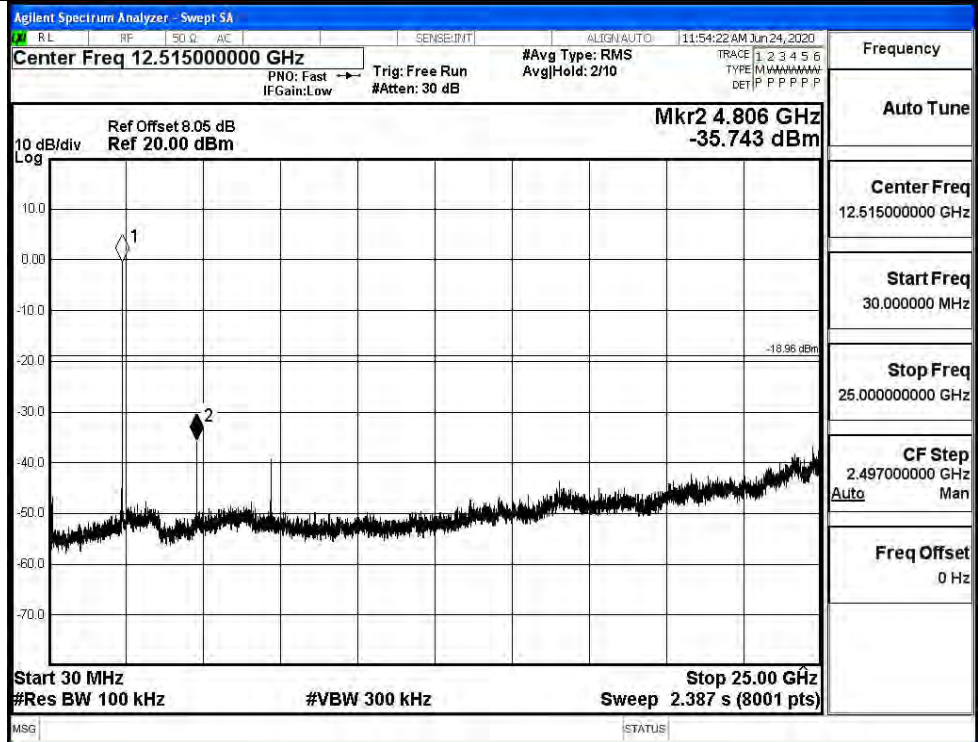
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.036	-35.743	-18.964	PASS
	MCH	-0.566	-36.490	-20.566	PASS
	HCH	1.076	-37.635	-18.924	PASS
$\pi/4$ DQPSK	LCH	-0.836	-38.128	-20.836	PASS
	MCH	-0.724	-37.822	-20.724	PASS
	HCH	-0.433	-38.184	-20.433	PASS

GFSK LCH Graphs

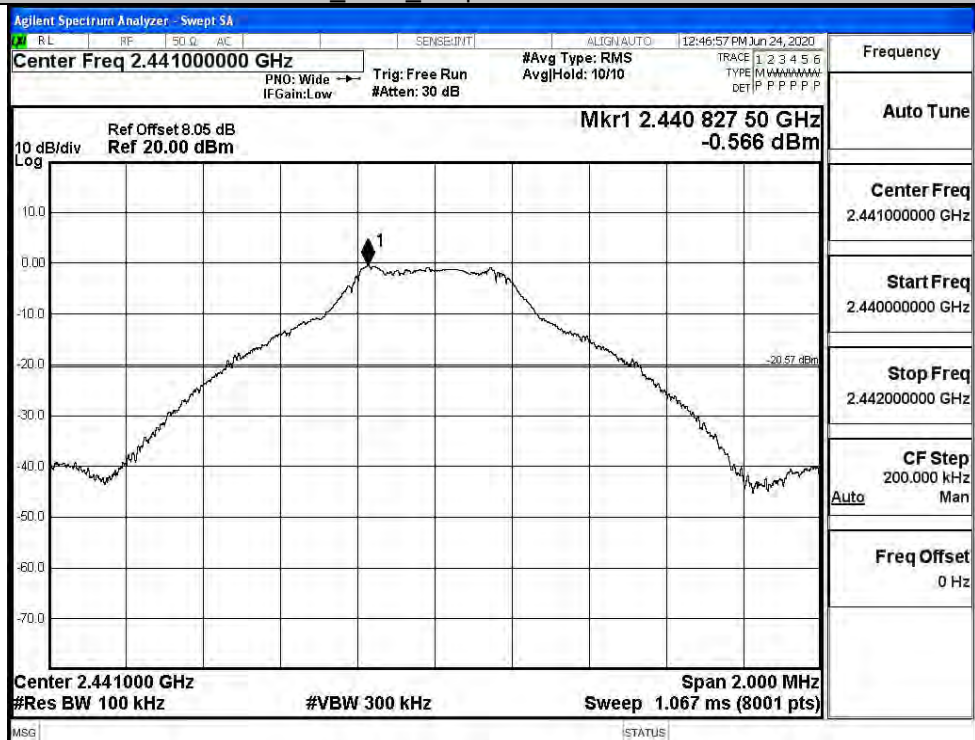


Puw

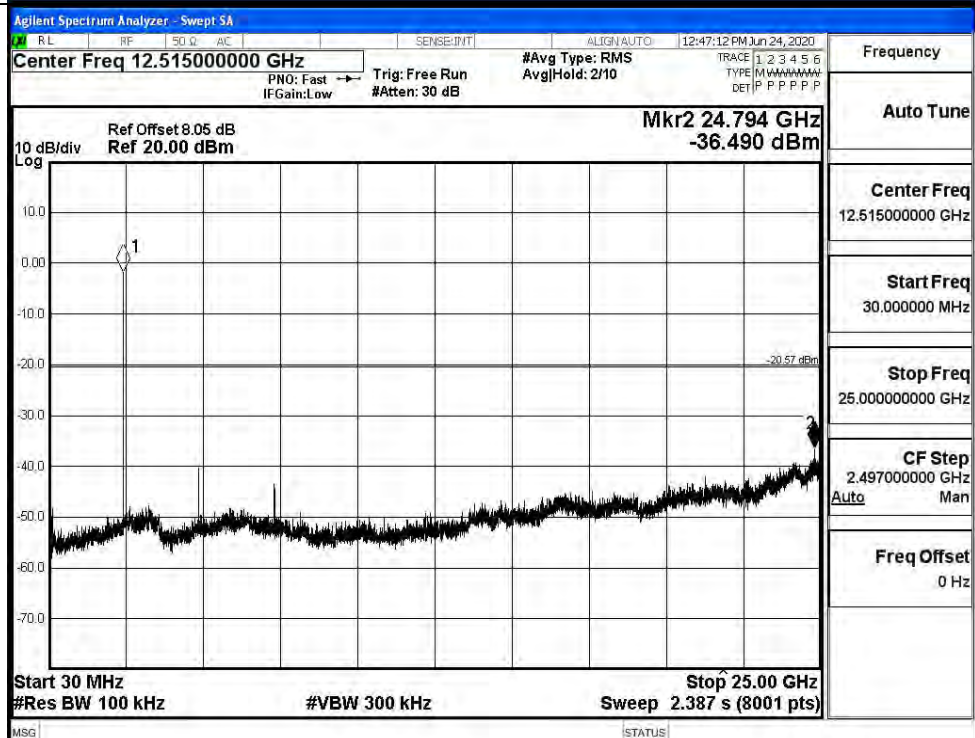


GFSK_MCH_Graphs

Pref

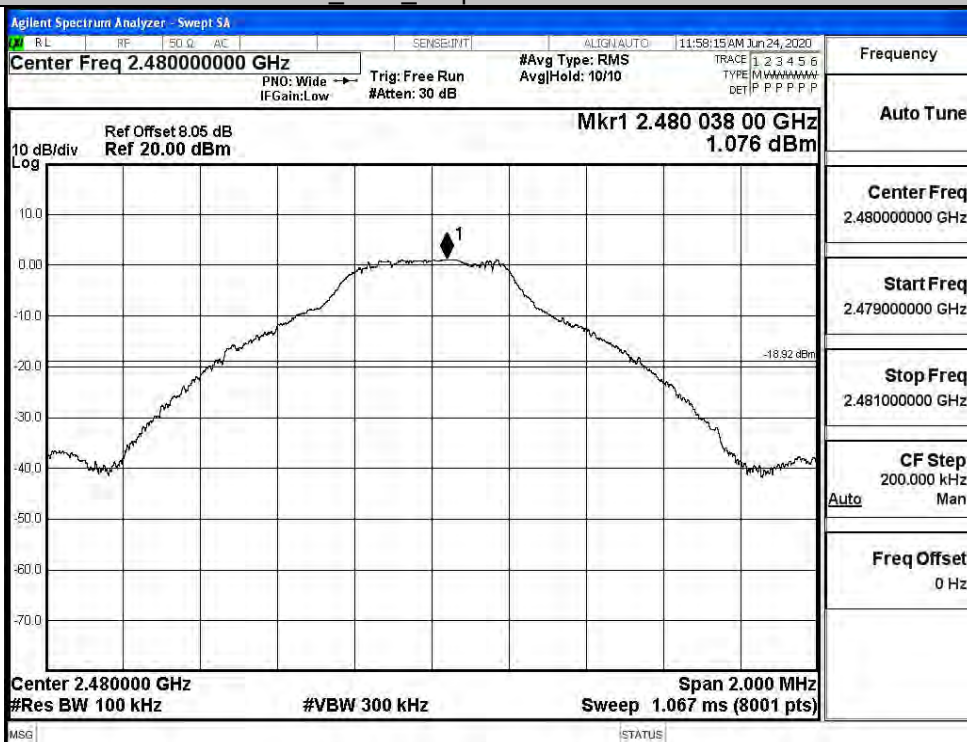


Puw

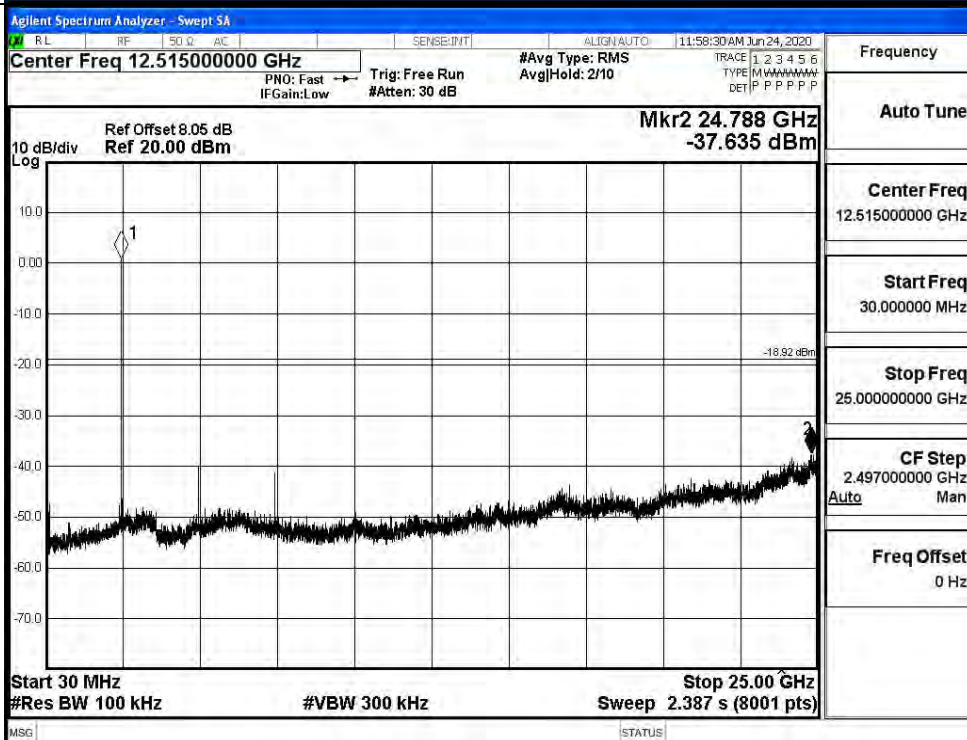


GFSK_HCH_Graphs

Pref

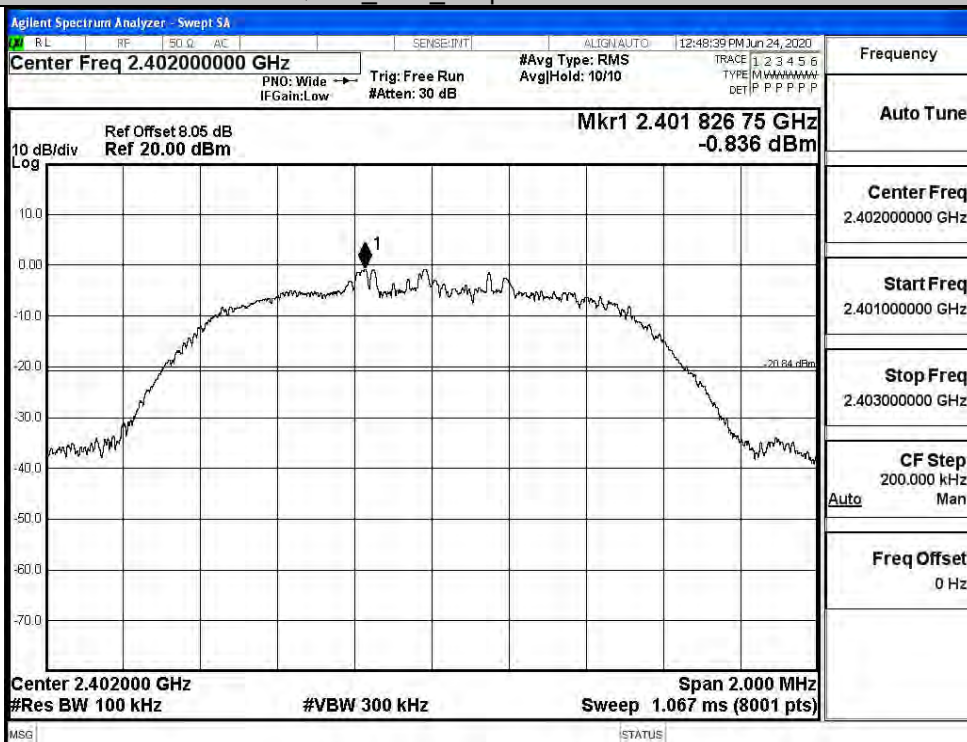


Puw

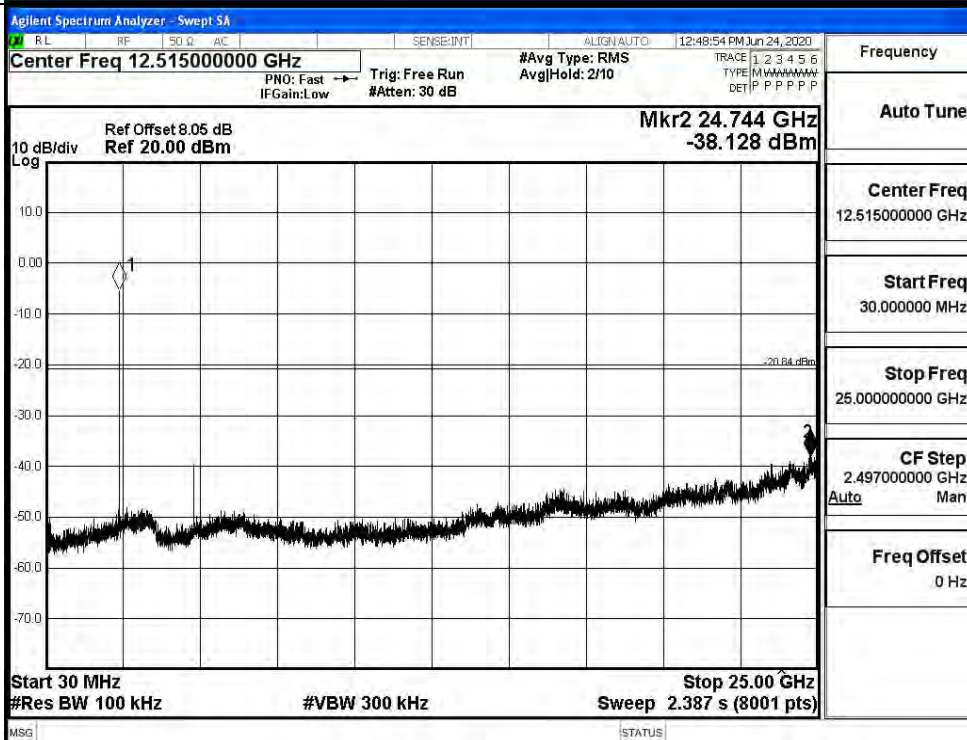


$\pi/4$ DQPSK_LCH_Graphs

Pref

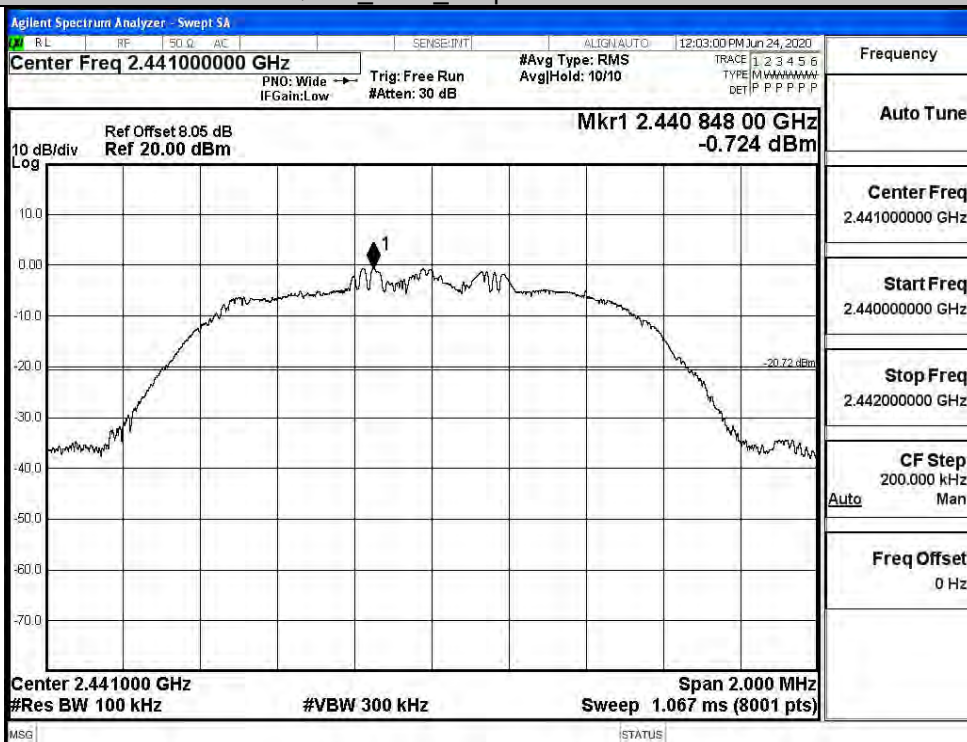


Puw

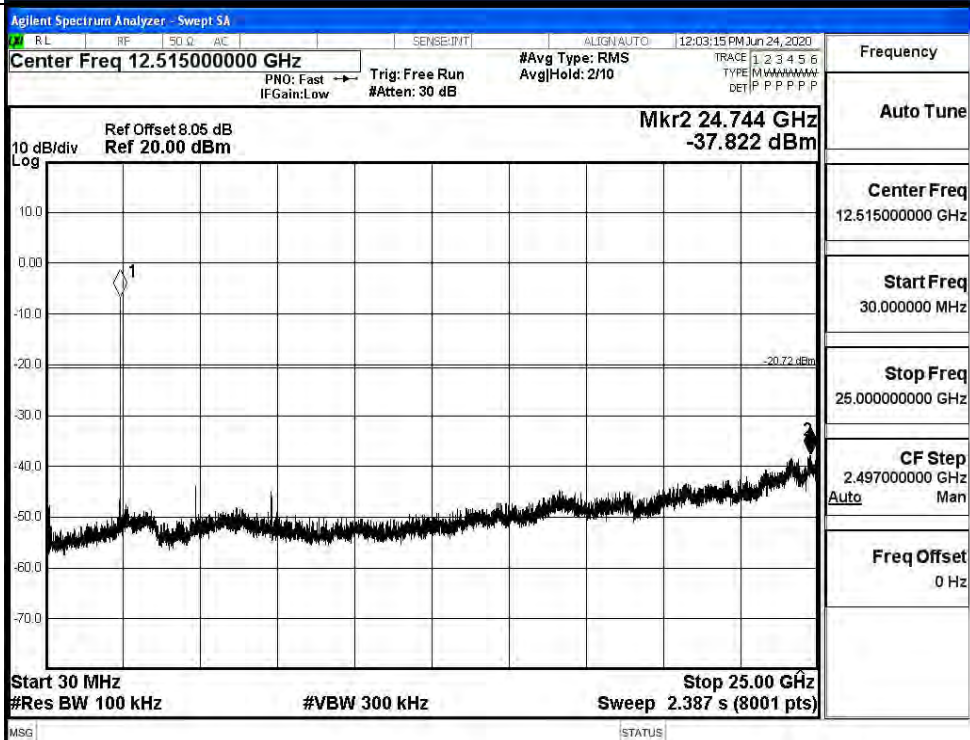


$\pi/4$ DQPSK_MCH_Graphs

Pref

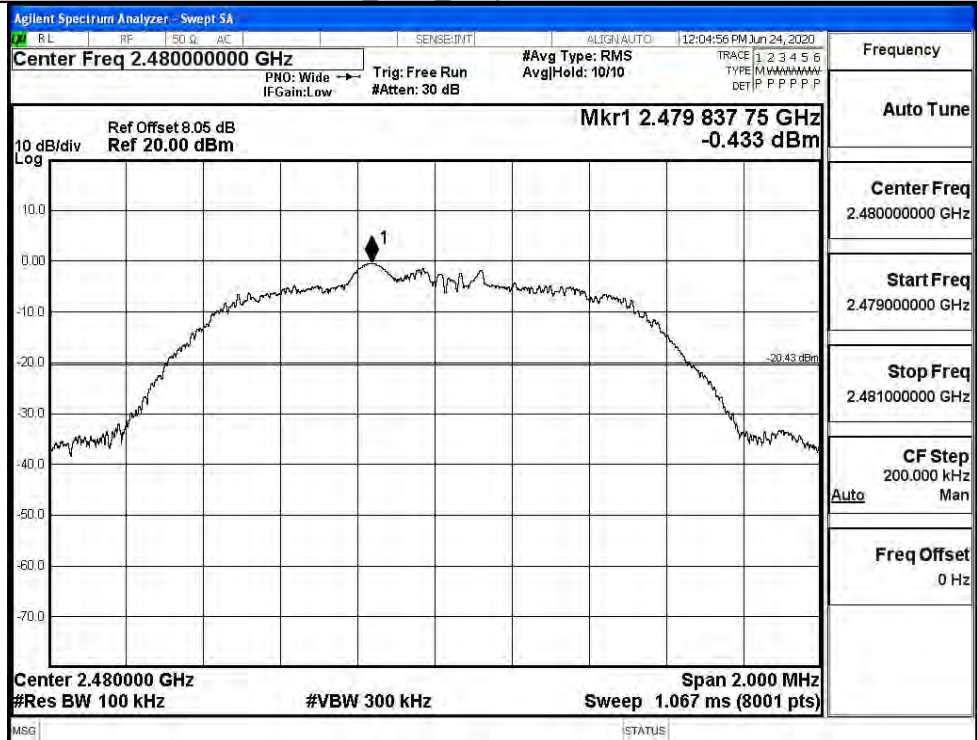


Puw



$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

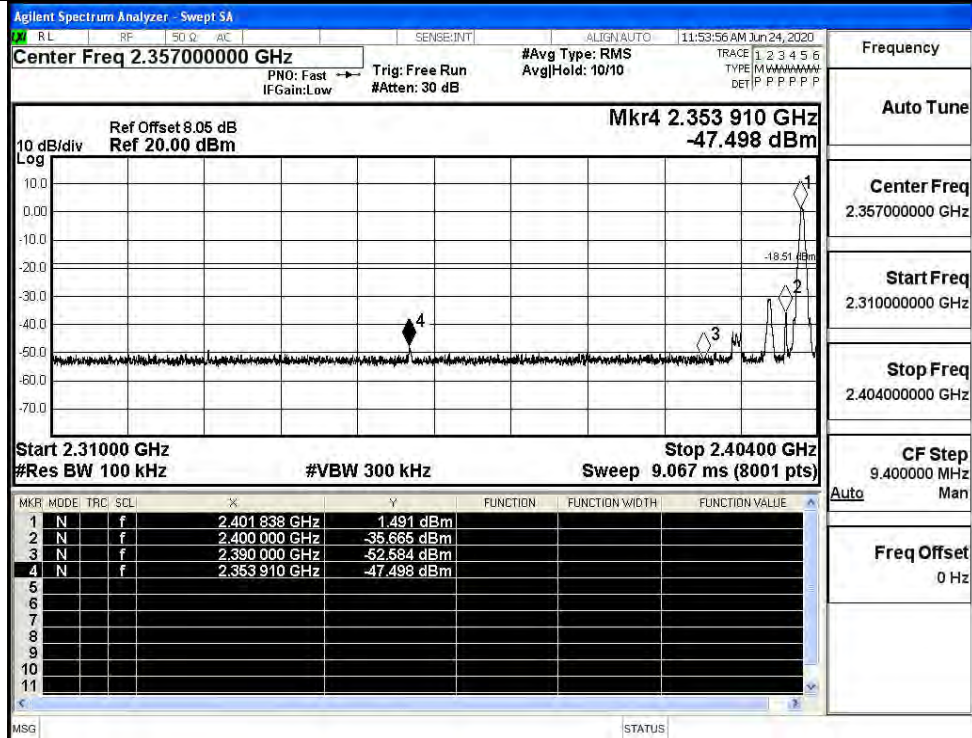


A.7 Band-edge for RF Conducted Emissions

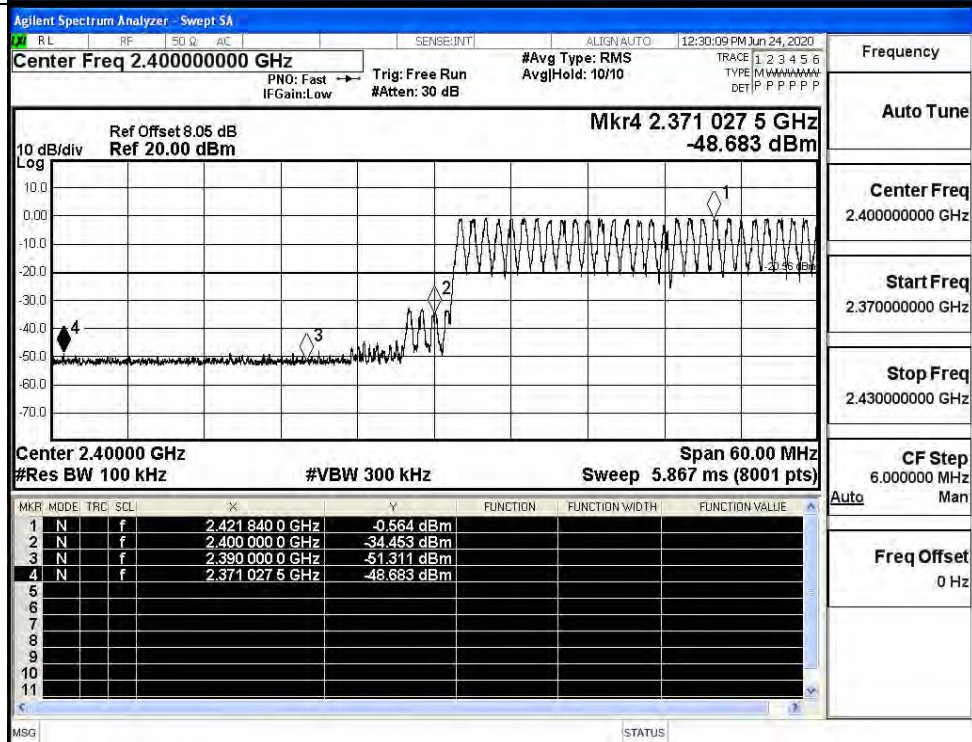
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	1.491	Off	-47.498	-18.51	PASS
			-0.564	On	-48.683	-20.56	PASS
	HCH	2480	1.488	Off	-41.496	-18.51	PASS
			-0.589	On	-44.091	-20.59	PASS
$\pi/4$ DQPSK	LCH	2402	-0.294	Off	-49.598	-20.29	PASS
			-0.515	On	-49.085	-20.52	PASS
	HCH	2480	-3.015	Off	-45.338	-23.02	PASS
			-0.442	On	-46.617	-20.44	PASS

Test Graphs

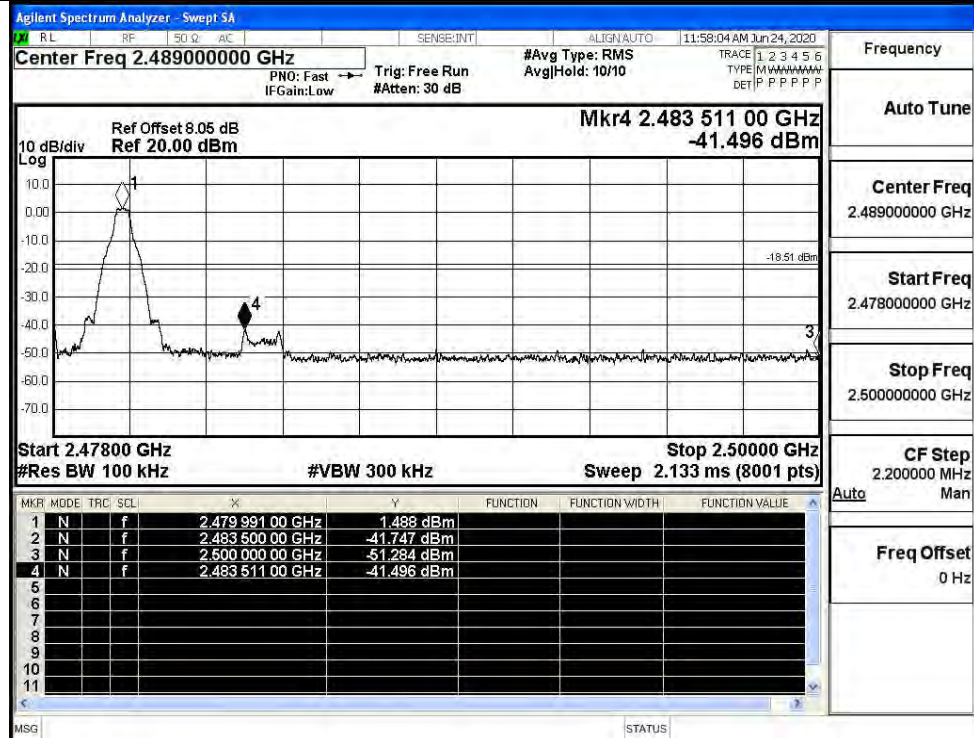
GFSK/LCH/No Hop



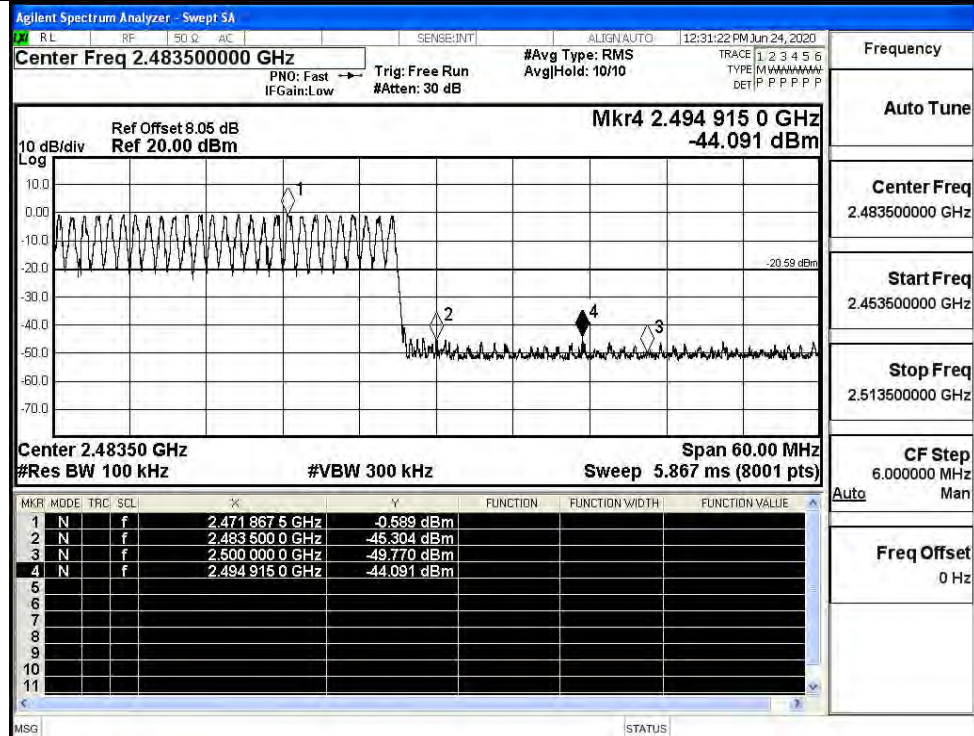
GFSK/LCH/Hop



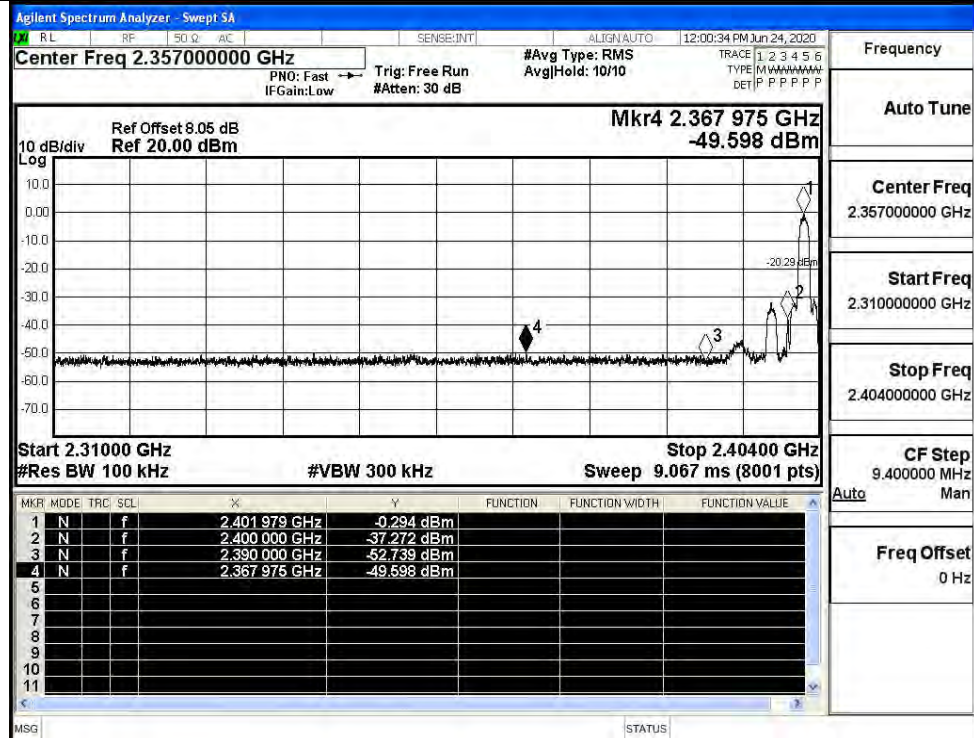
GFSK/HCH/No Hop



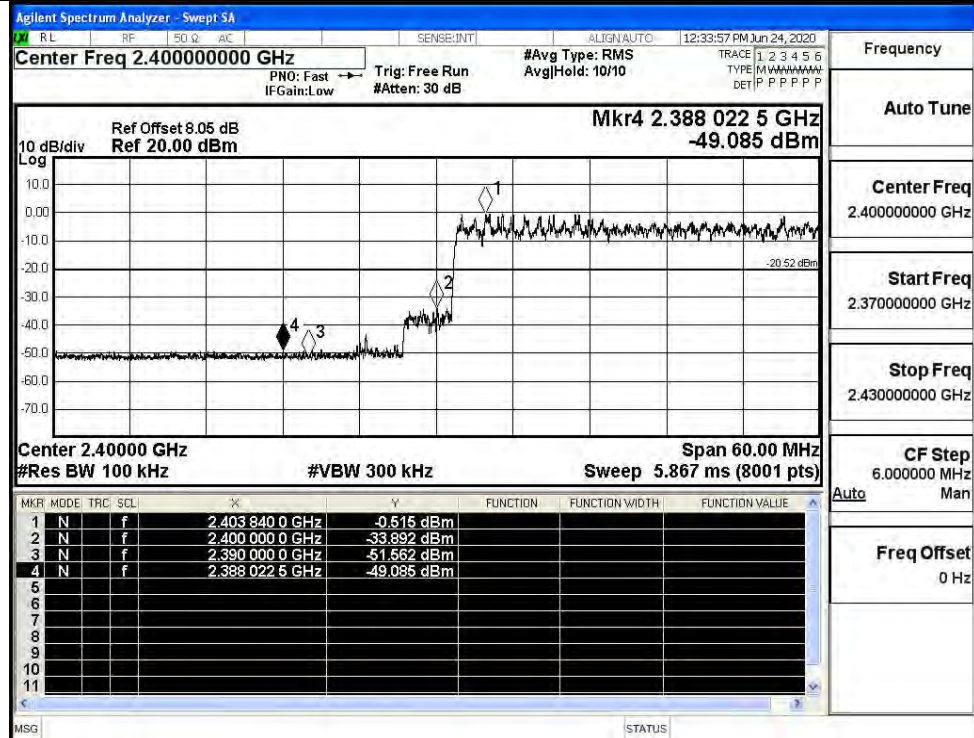
GFSK/HCH/Hop



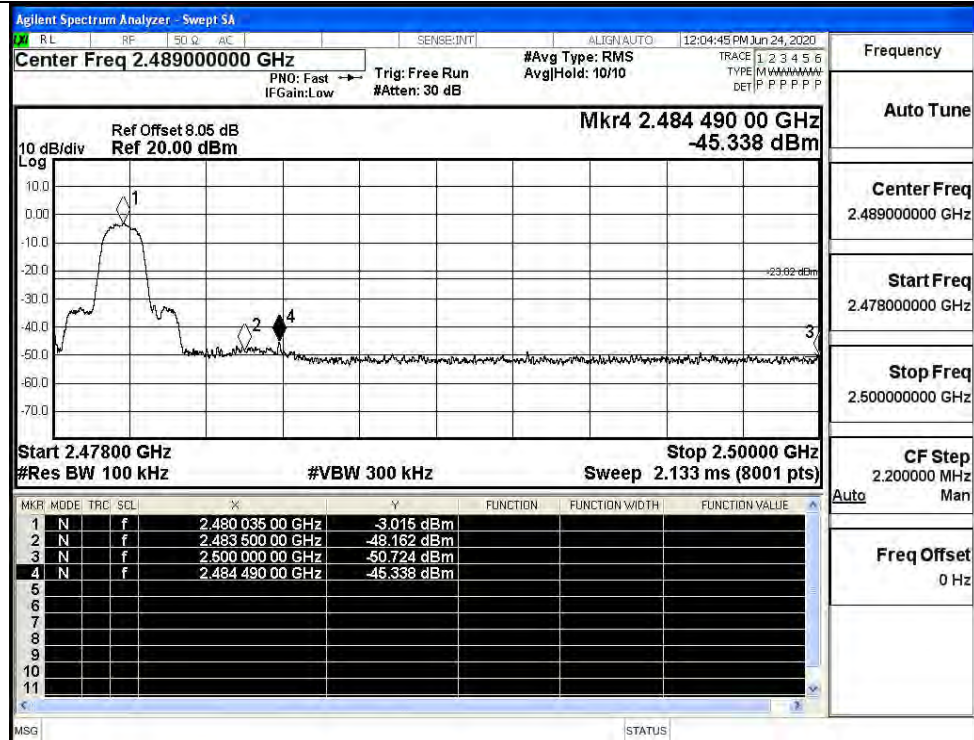
$\pi/4$ DQPSK/LCH/No
Hop



$\pi/4$ DQPSK/LCH/Hop



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



Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

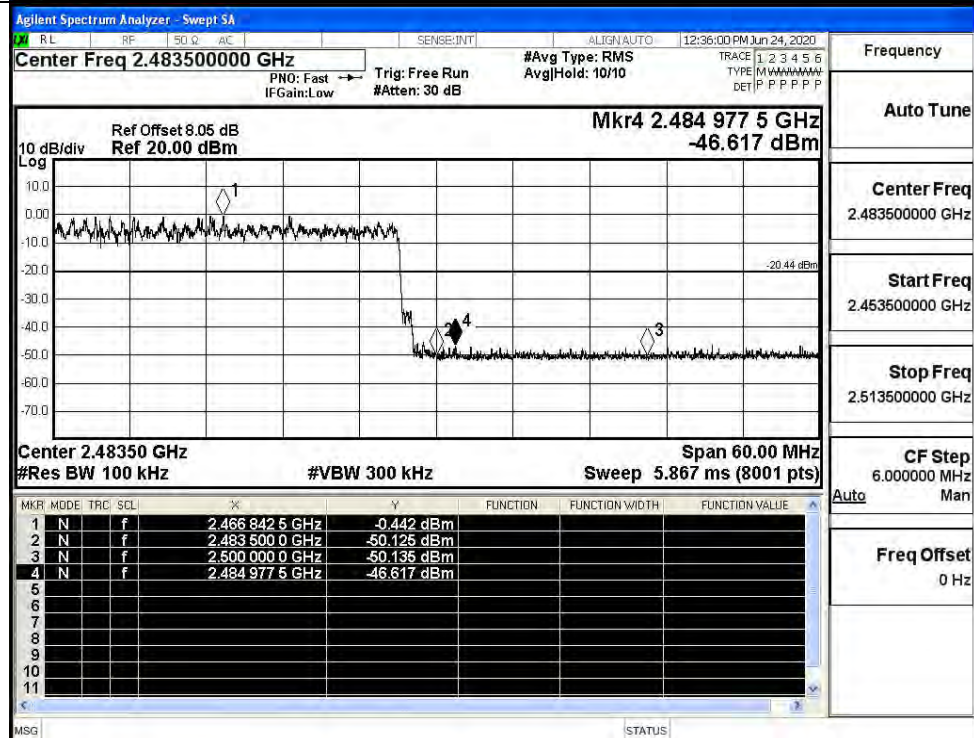
Stop Freq
2.500000000 GHz

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
2.463500000 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	-44.37	2.0	0	50.89	PEAK	74	PASS
	Off	2310.0	-53.26	2.0	0	41.99	AV	54	PASS
	Off	2390.0	-43.35	2.0	0	51.91	PEAK	74	PASS
	Off	2390.0	-52.96	2.0	0	42.30	AV	54	PASS
	Off	2483.5	-37.56	2.0	0	57.69	PEAK	74	PASS
	Off	2483.5	-45.49	2.0	0	49.77	AV	54	PASS
	Off	2500.0	-42.41	2.0	0	52.85	PEAK	74	PASS
	Off	2500.0	-52.28	2.0	0	42.98	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-44.01	2.0	0	51.25	PEAK	74	PASS
	Off	2310.0	-53.32	2.0	0	41.93	AV	54	PASS
	Off	2390.0	-43.46	2.0	0	51.79	PEAK	74	PASS
	Off	2390.0	-52.78	2.0	0	42.48	AV	54	PASS
	Off	2483.5	-39.14	2.0	0	56.12	PEAK	74	PASS
	Off	2483.5	-48.90	2.0	0	46.36	AV	54	PASS
	Off	2500.0	-41.14	2.0	0	54.12	PEAK	74	PASS
	Off	2500.0	-52.23	2.0	0	43.03	AV	54	PASS