

Appendix A

RF Test Data for BT V3.0(BDR/EDR) (Conducted Measurement)

Product Name: The treadmill

Trade Mark: IRUN

Test Model: A7S

Environmental Conditions

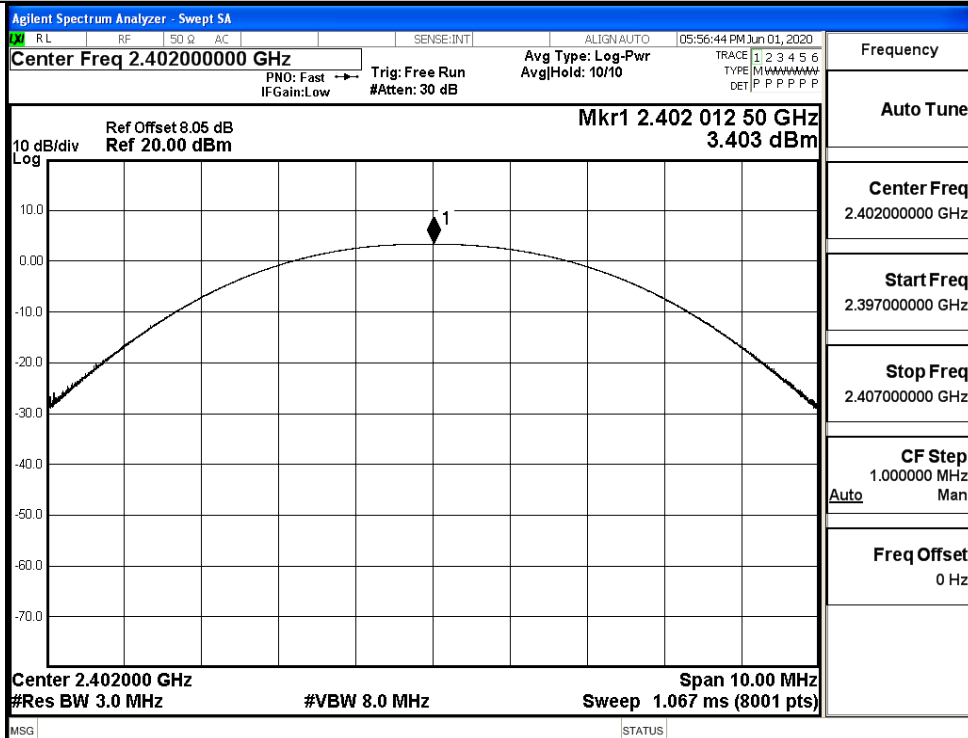
Temperature:	23.1 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	SCOUT WU
Supervised by:	Li Huan

A.1 Maximum Conducted Peak Output Power

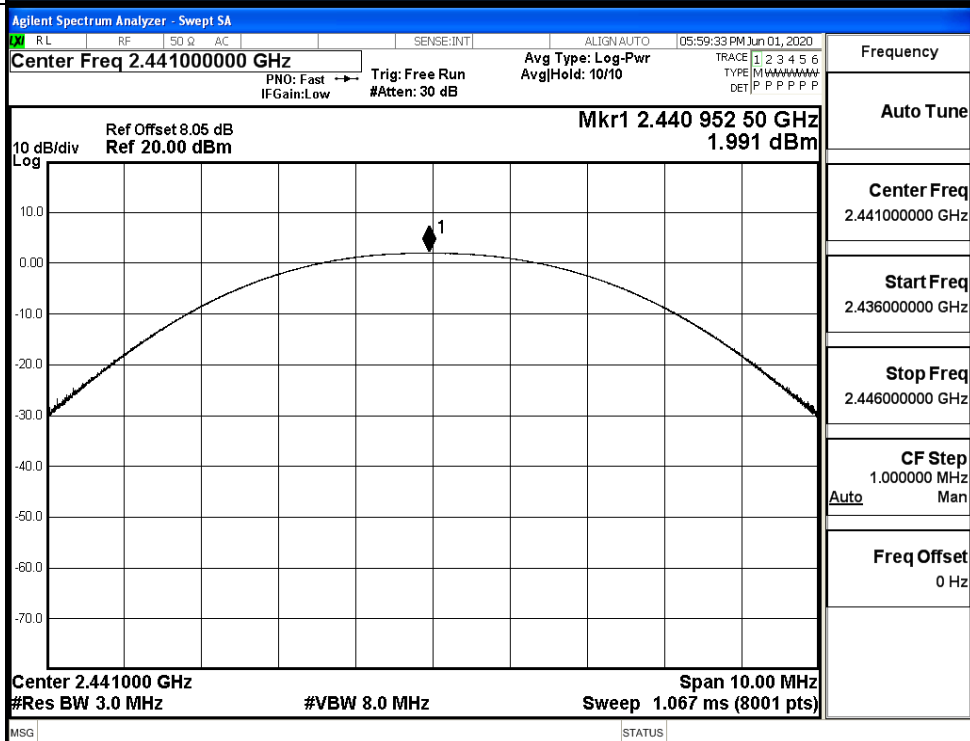
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.403	21	PASS
	MCH	1.991	21	PASS
	HCH	0.372	21	PASS
$\pi/4$ DQPSK	LCH	2.949	21	PASS
	MCH	1.429	21	PASS
	HCH	-0.289	21	PASS

Test Graphs

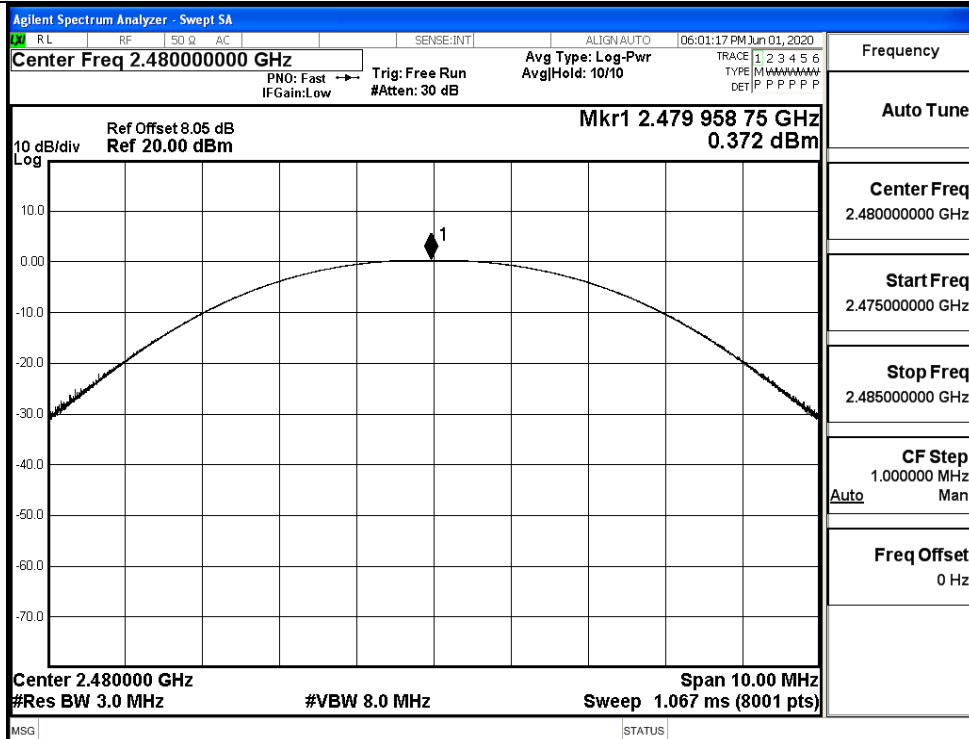
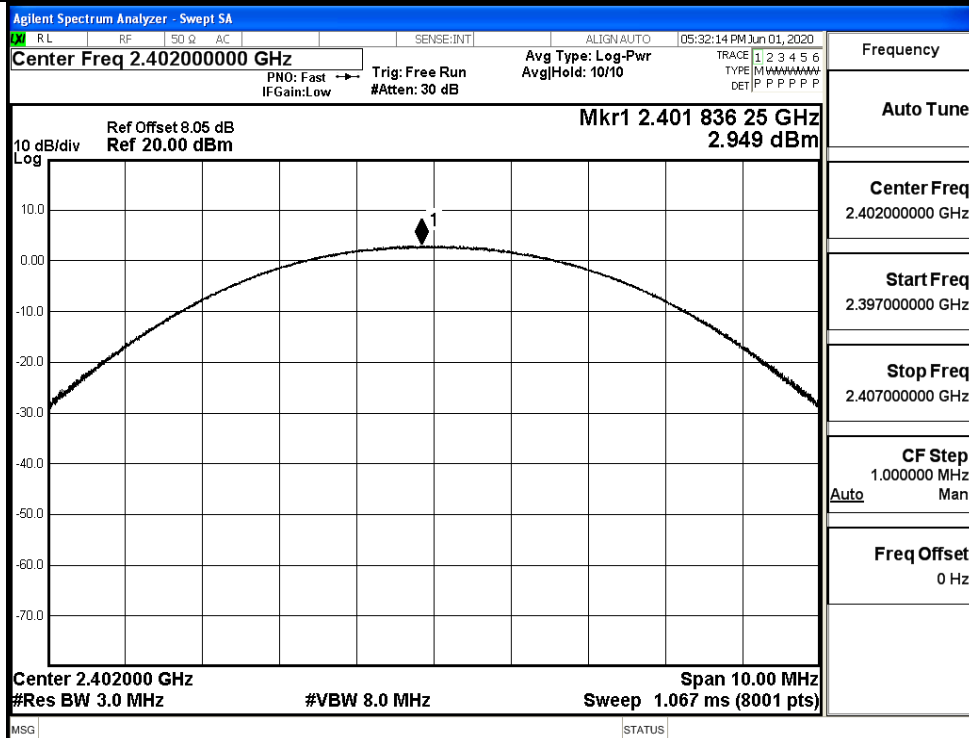
GFSK/LCH

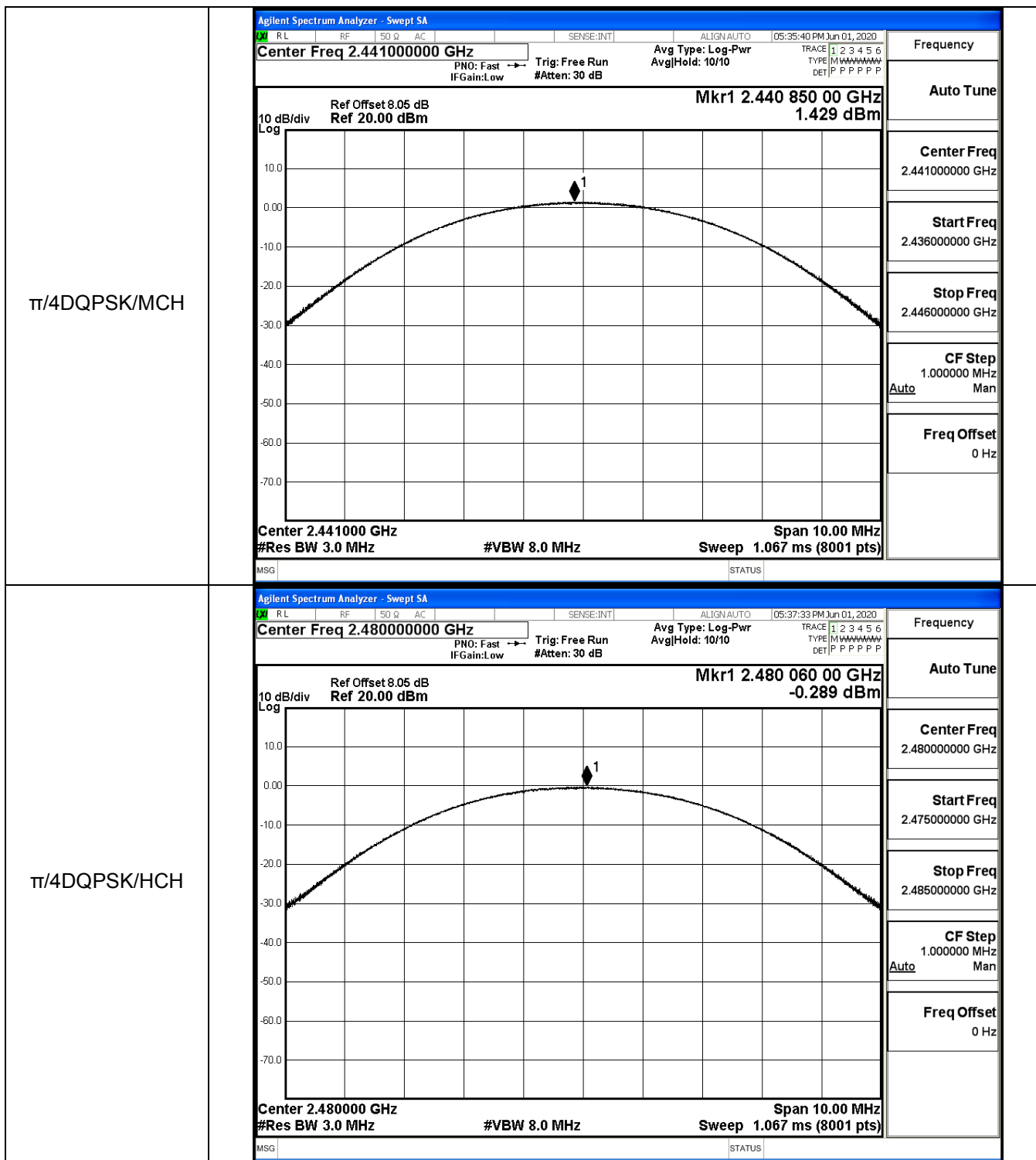


GFSK/MCH



GFSK/HCH

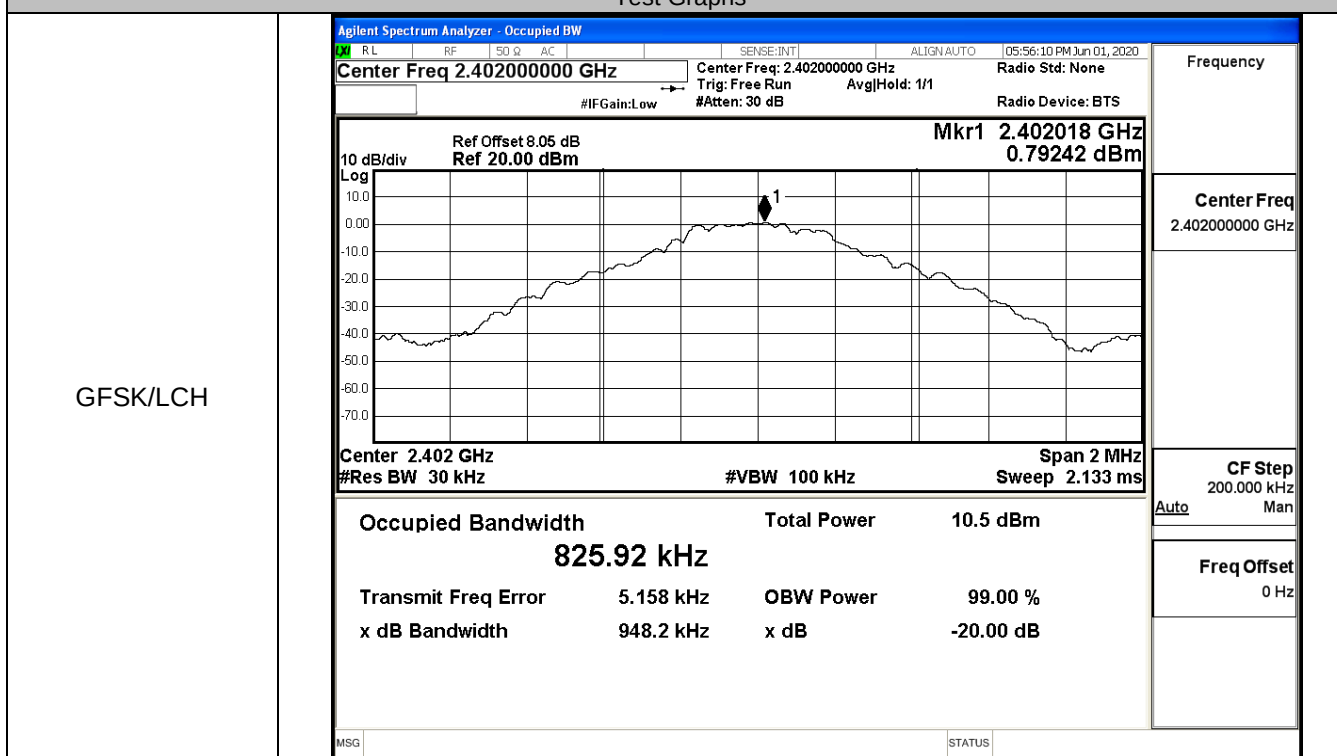
 π /4DQPSK/LCH



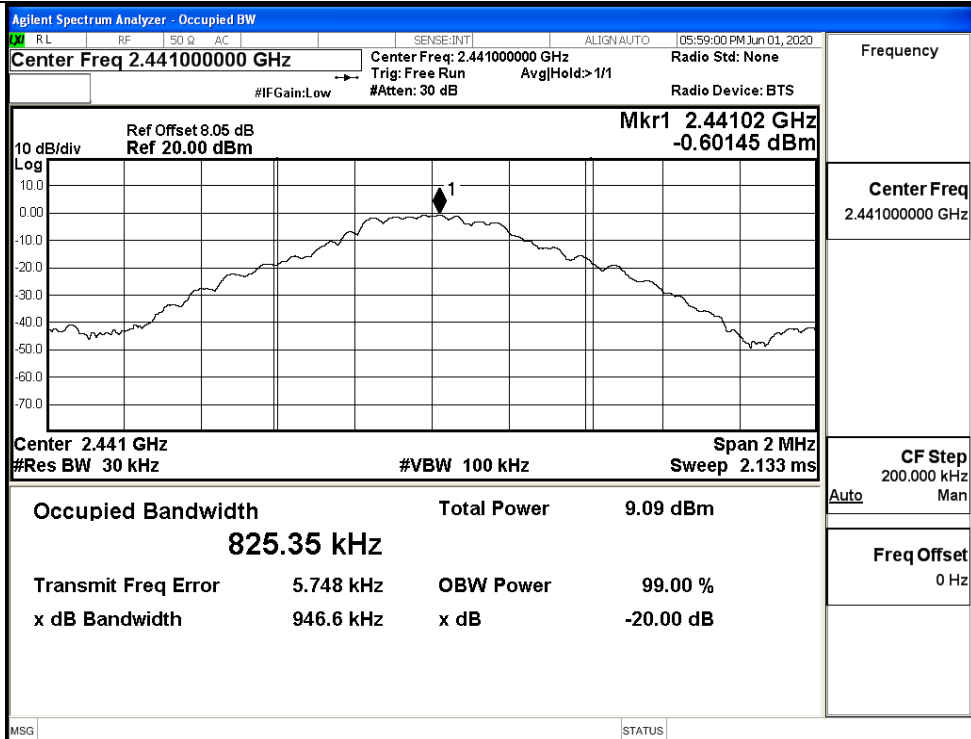
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9482	Not Specified	PASS
	MCH	0.9466	Not Specified	PASS
	HCH	0.9506	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.324	Not Specified	PASS
	MCH	1.323	Not Specified	PASS
	HCH	1.324	Not Specified	PASS

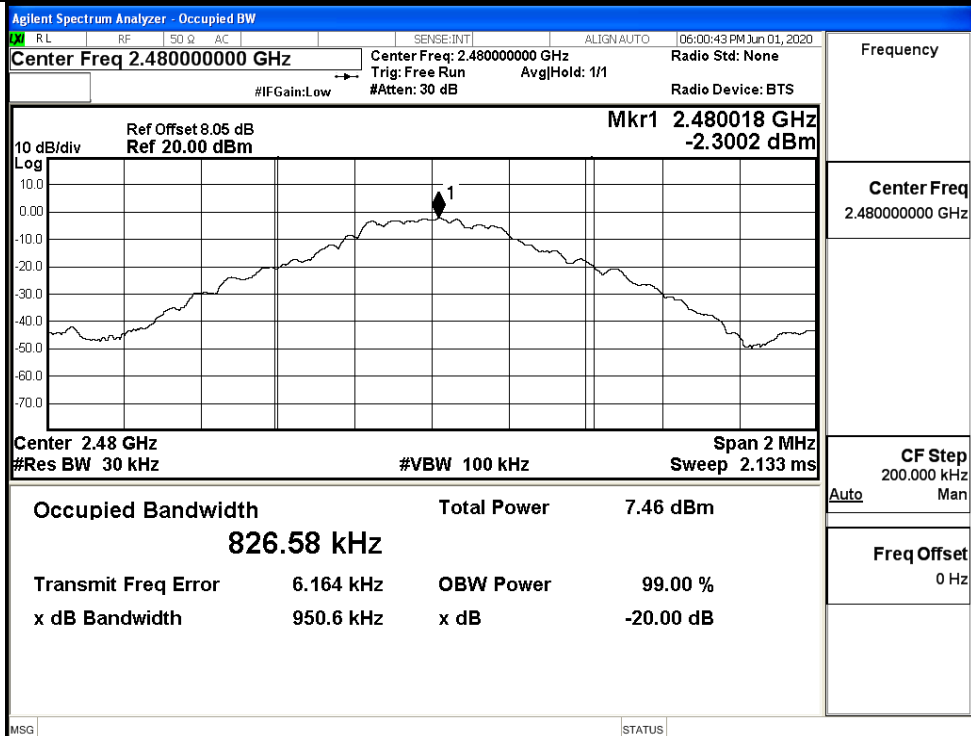
Test Graphs

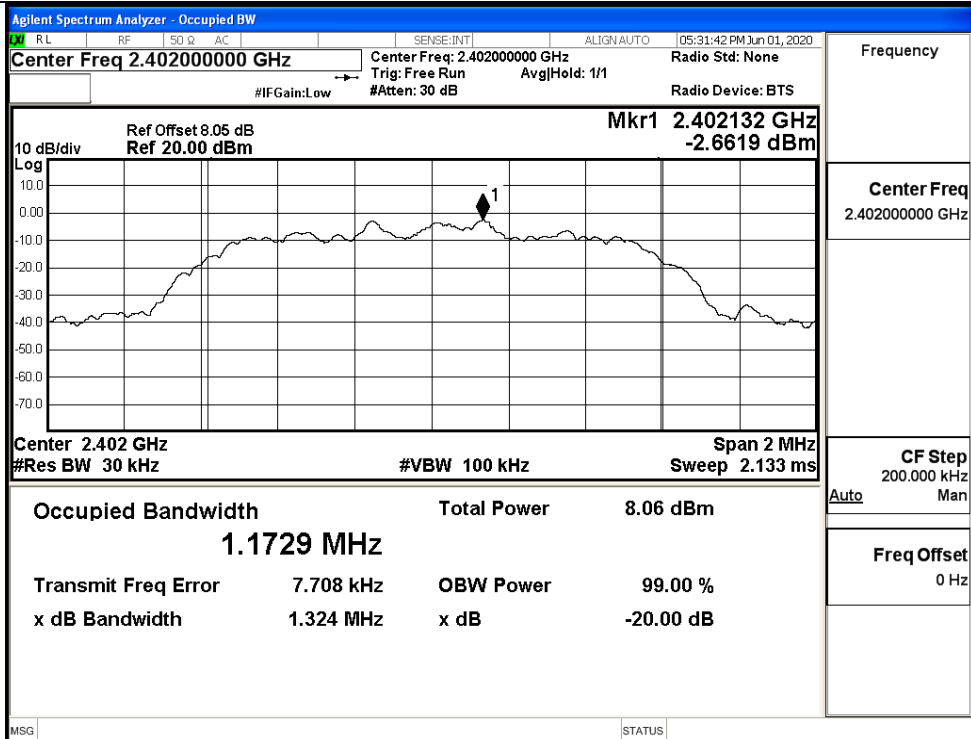
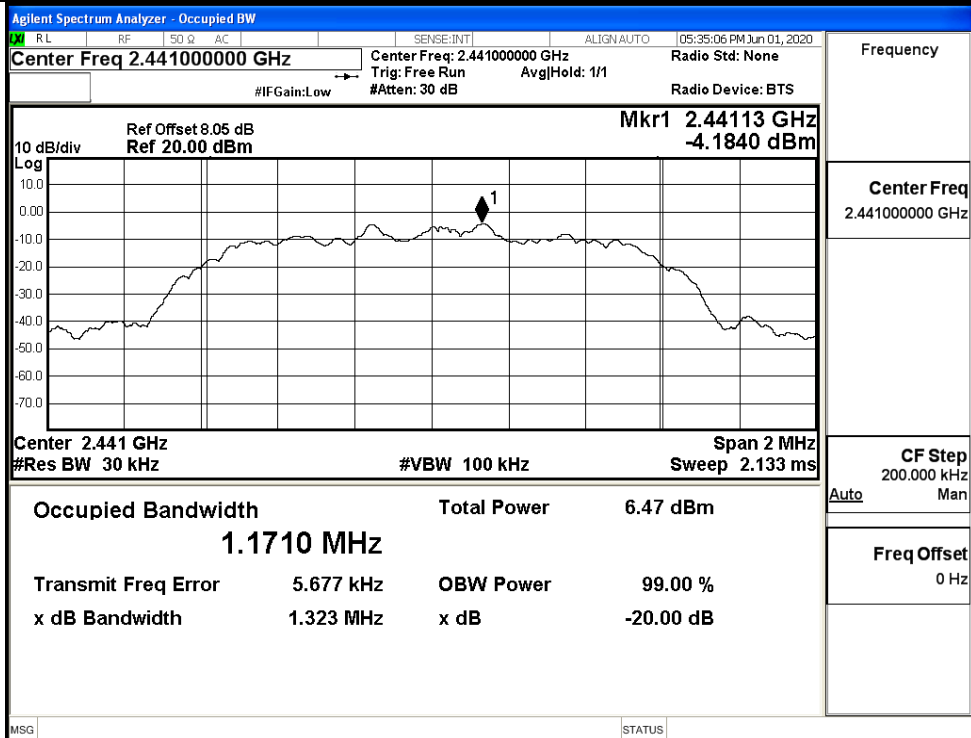


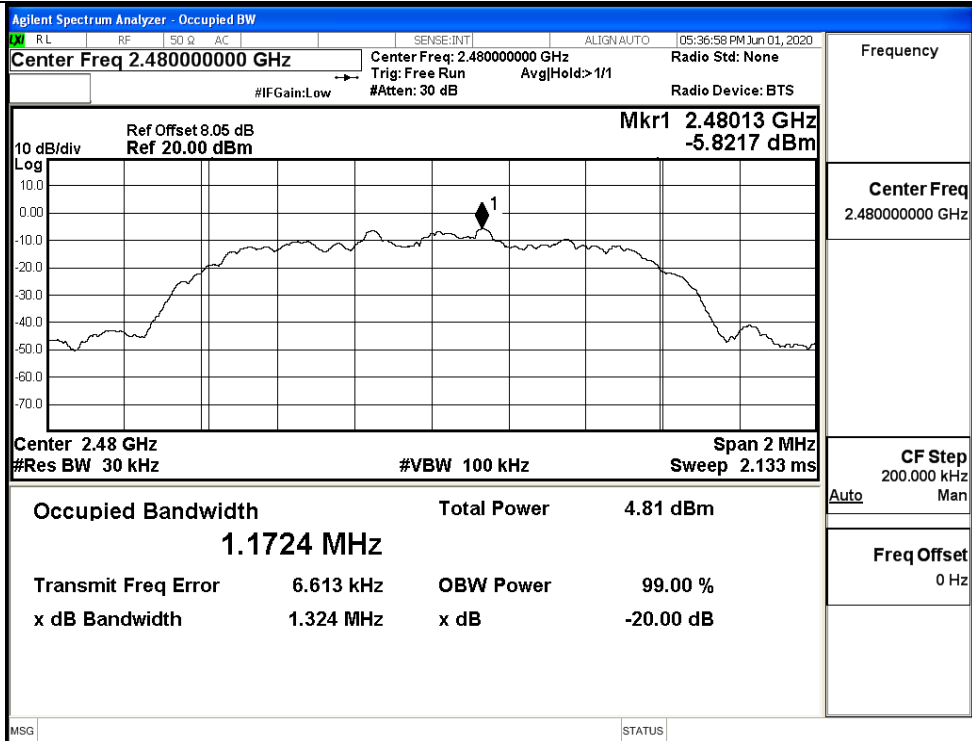
GFSK/MCH



GFSK/HCH



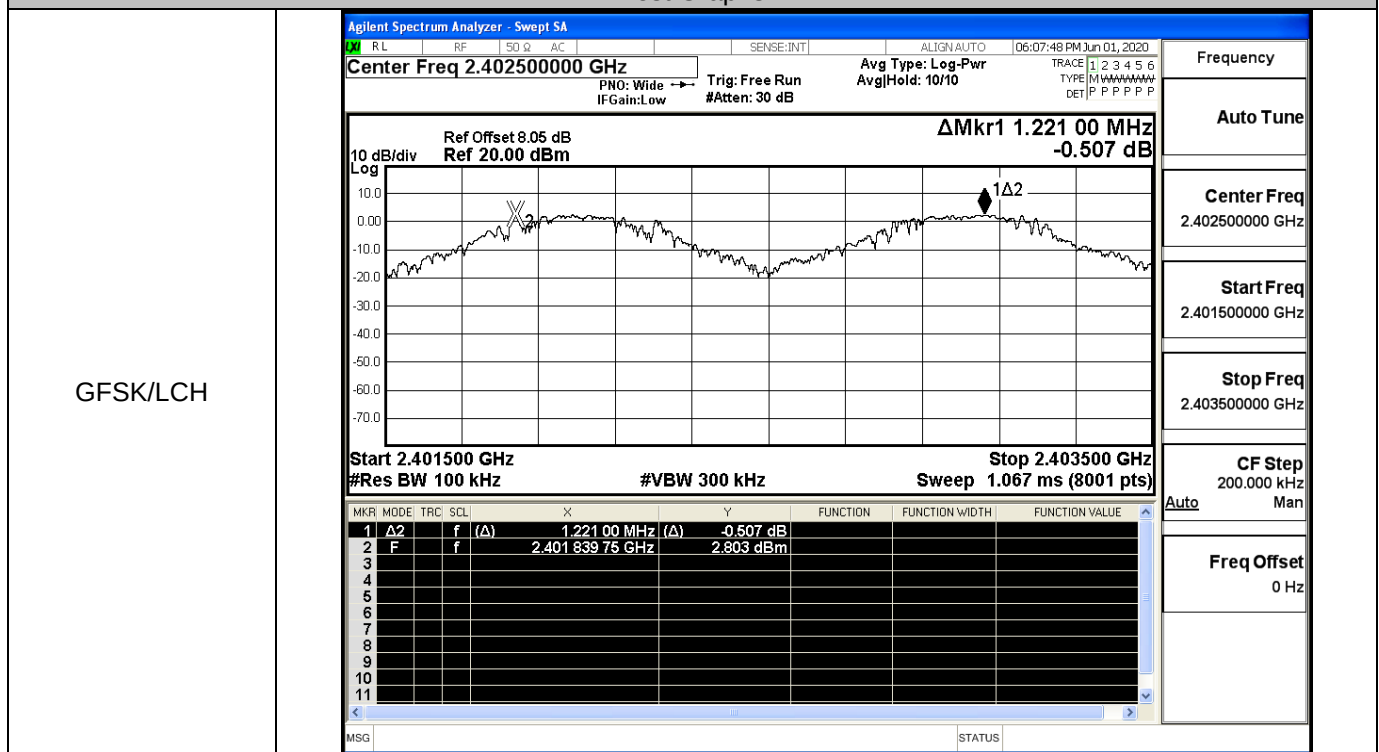
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

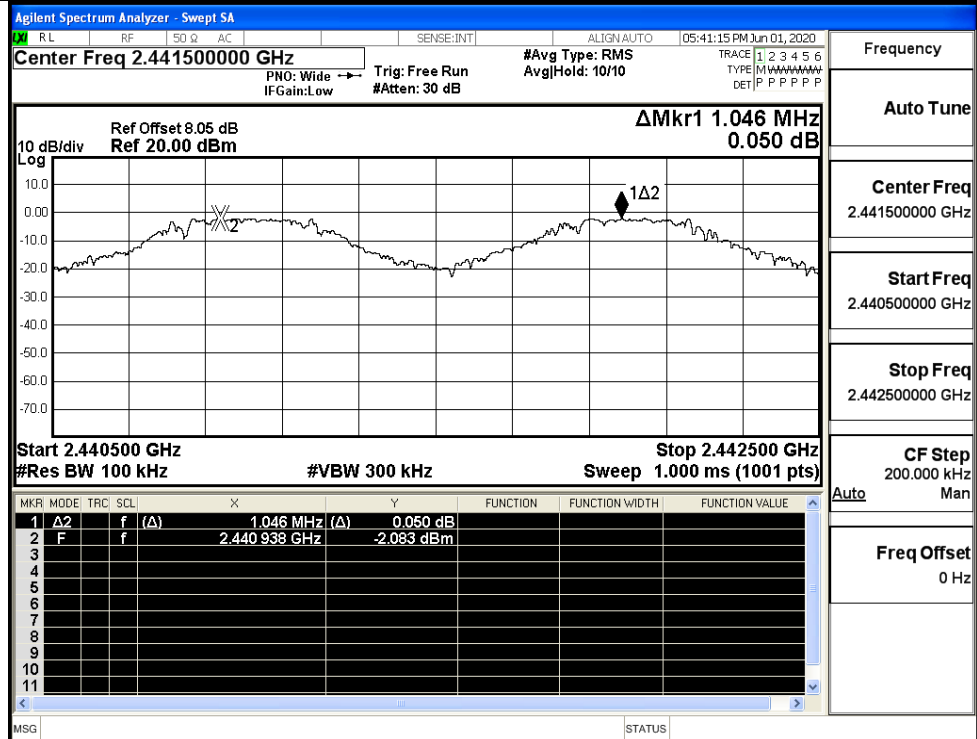
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.221	0.634	PASS
	MCH	1.046	0.622	PASS
	HCH	1.220	0.634	PASS
$\pi/4$ DQPSK	LCH	1.008	0.883	PASS
	MCH	1.042	0.883	PASS
	HCH	1.064	0.883	PASS

Test Graphs



GFSK/MCH



Frequency

Auto Tune

Center Freq

2.441500000 GHz

Start Freq

2.440500000 GHz

Stop Freq

2.442500000 GHz

CF Step

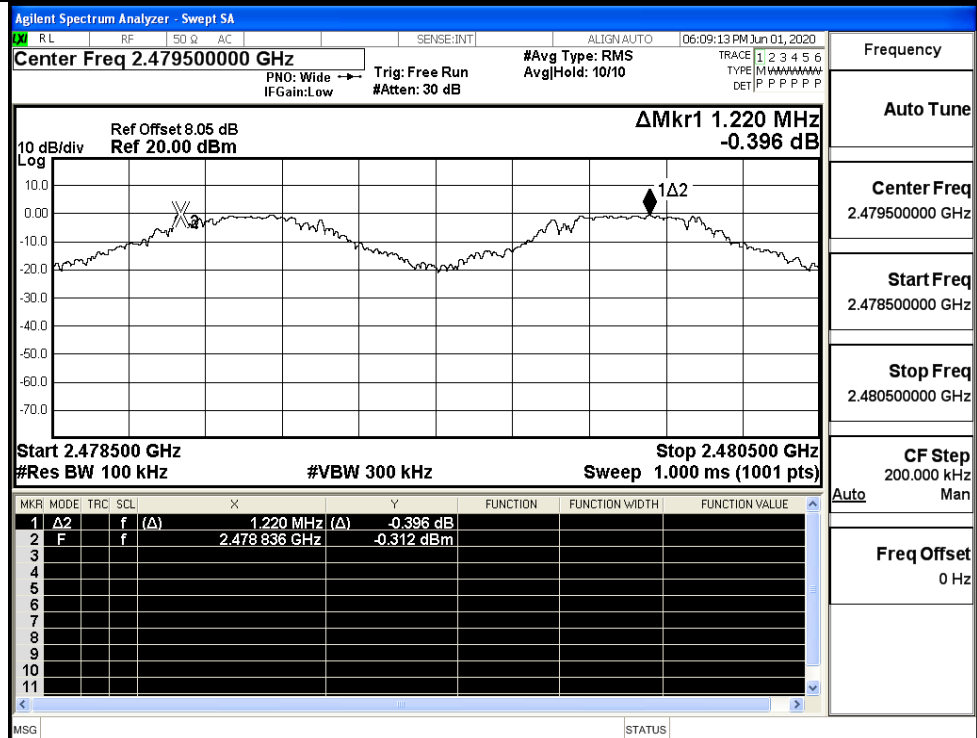
200.000 kHz

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

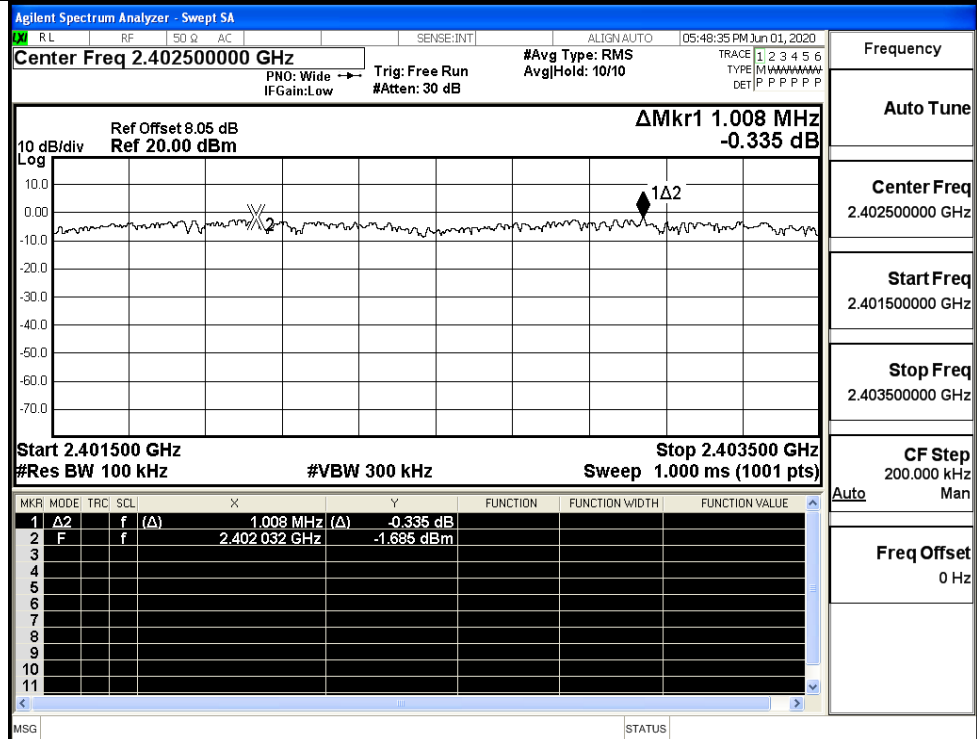
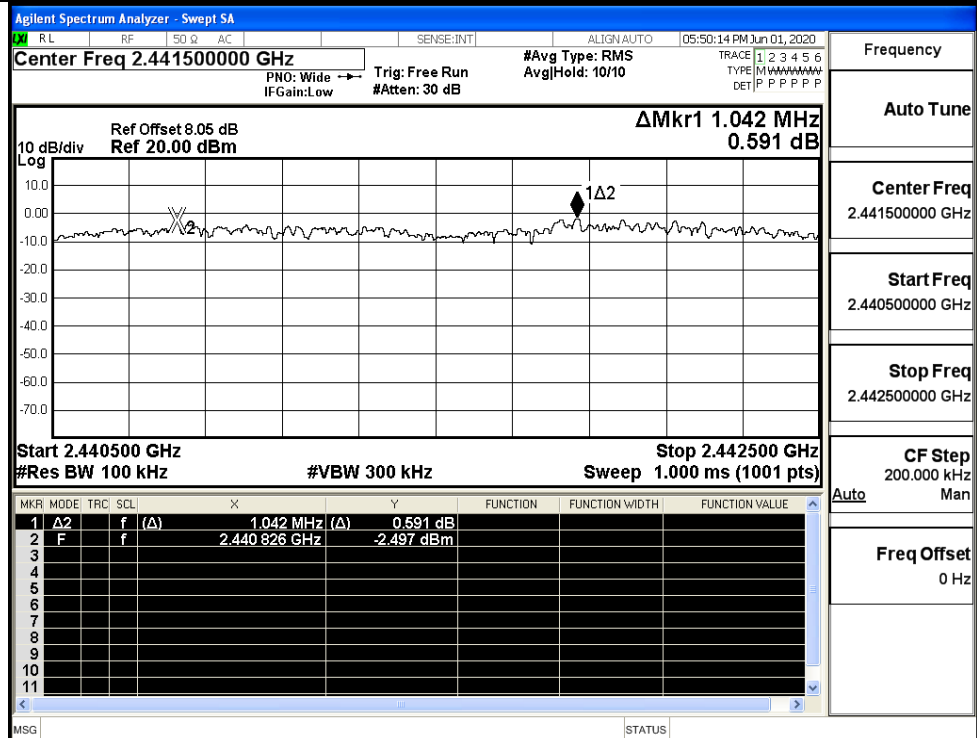
CF Step

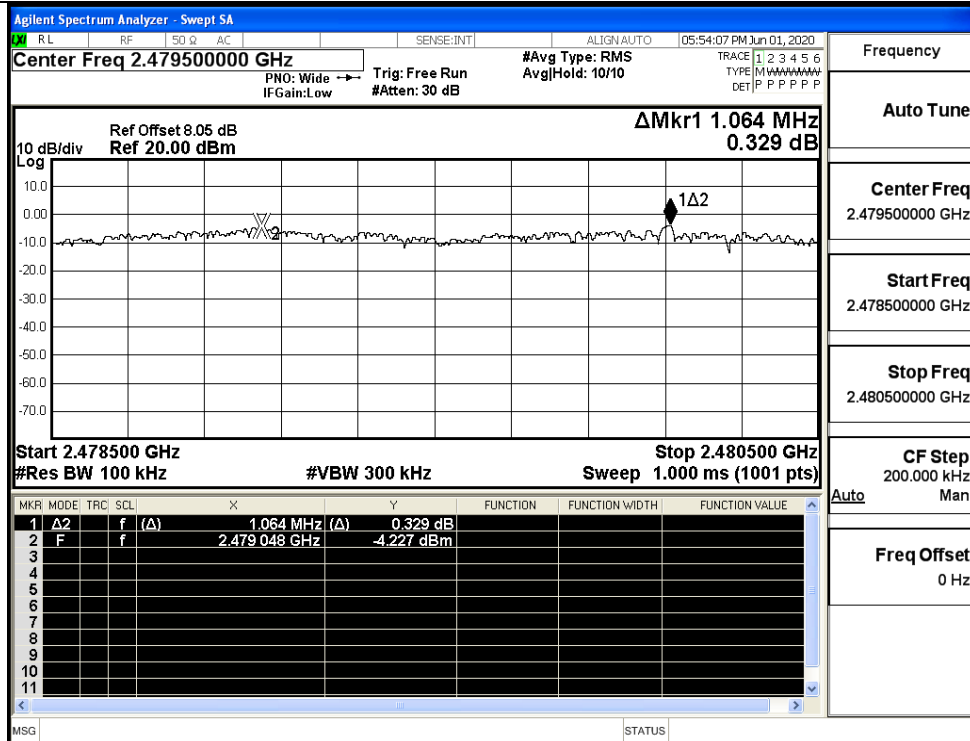
200.000 kHz

Auto Man

Freq Offset

0 Hz

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

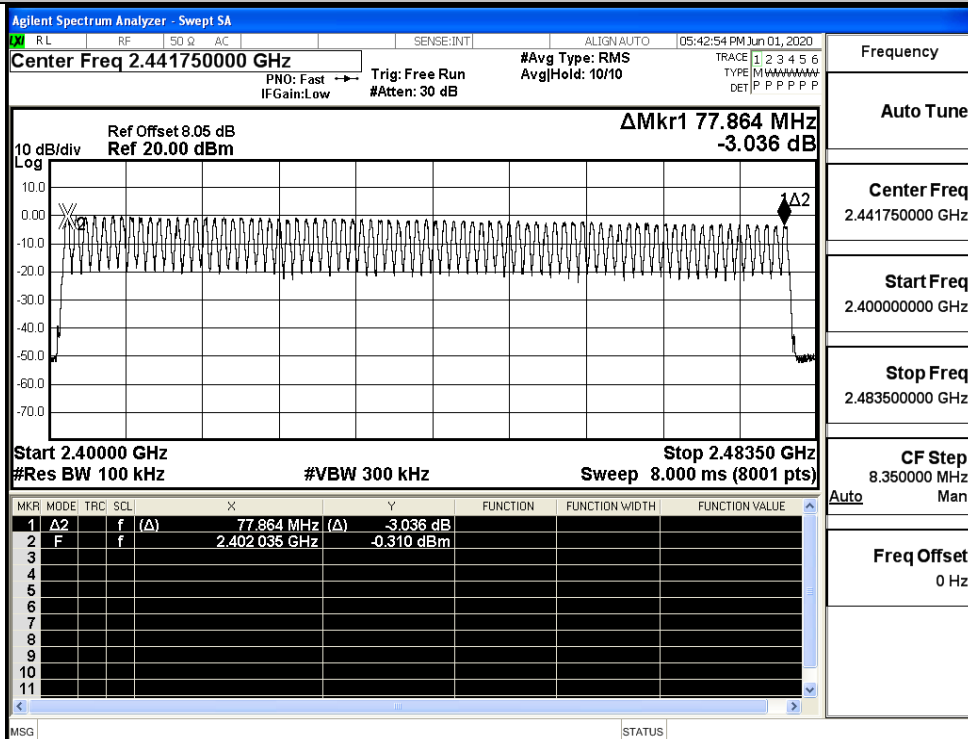
$\pi/4$ DQPSK/HCH

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



Frequency

Auto Tune

Center Freq

2.441750000 GHz

Start Freq

2.400000000 GHz

Stop Freq

2.483500000 GHz

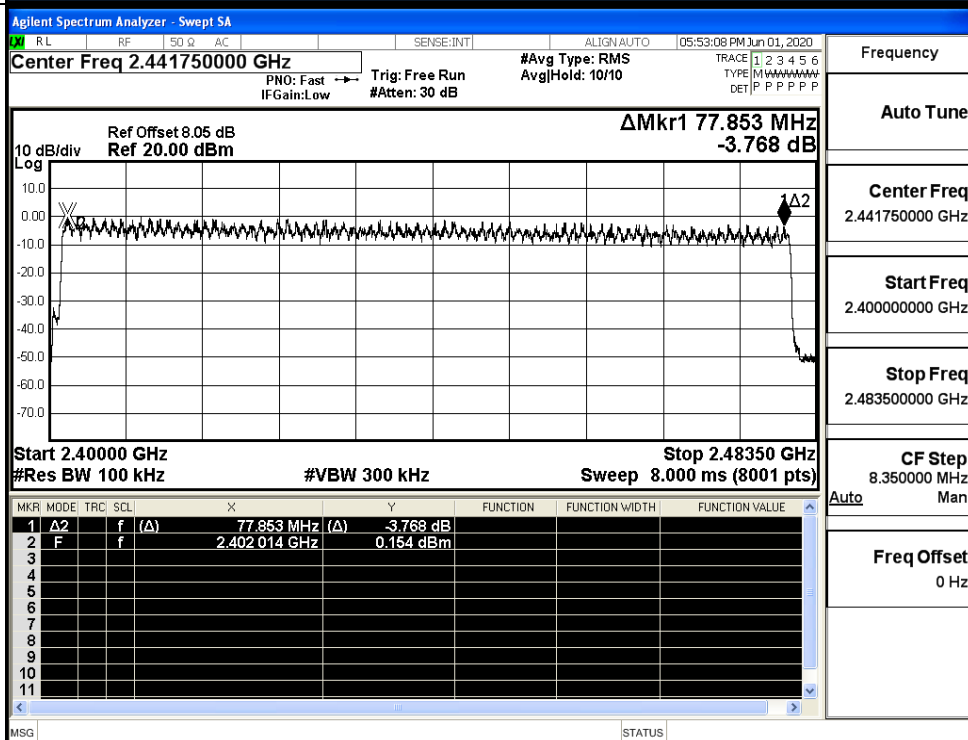
CF Step

8.350000 MHz

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

Man

Freq Offset

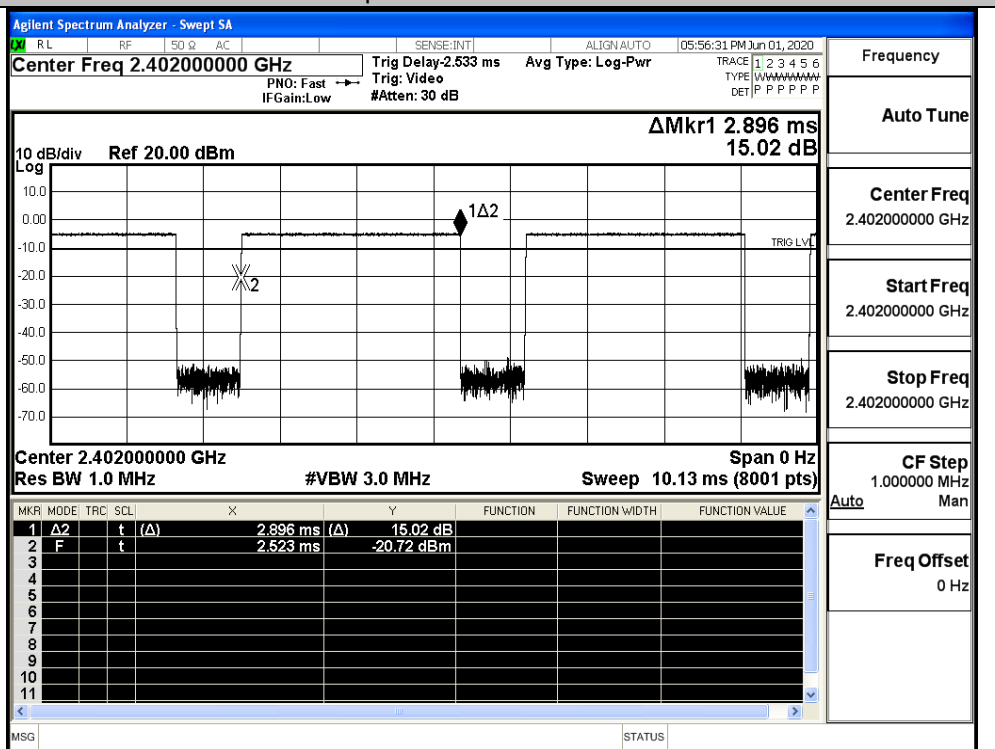
0 Hz

A.5 Dwell Time

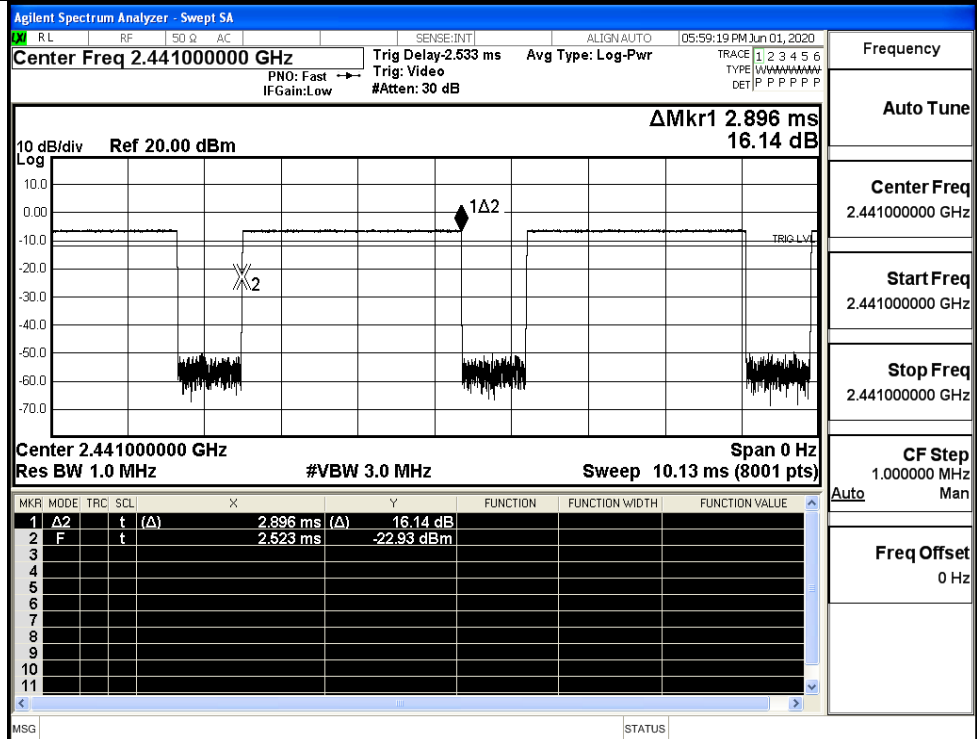
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	0.4	PASS

Test Graphs

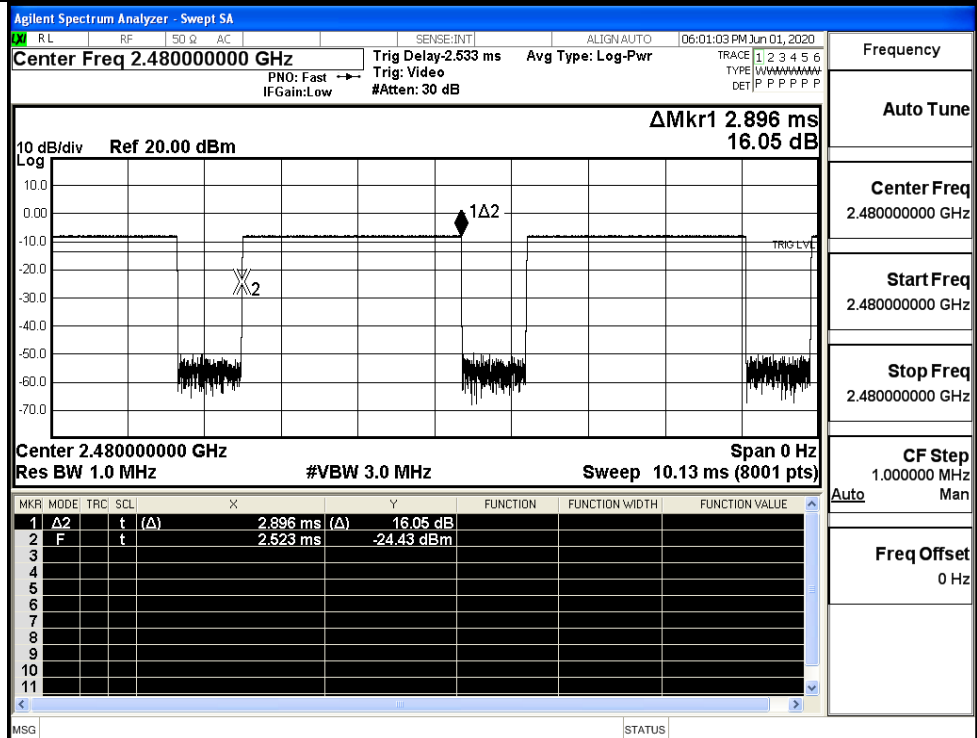
GFSK_DH5/LCH



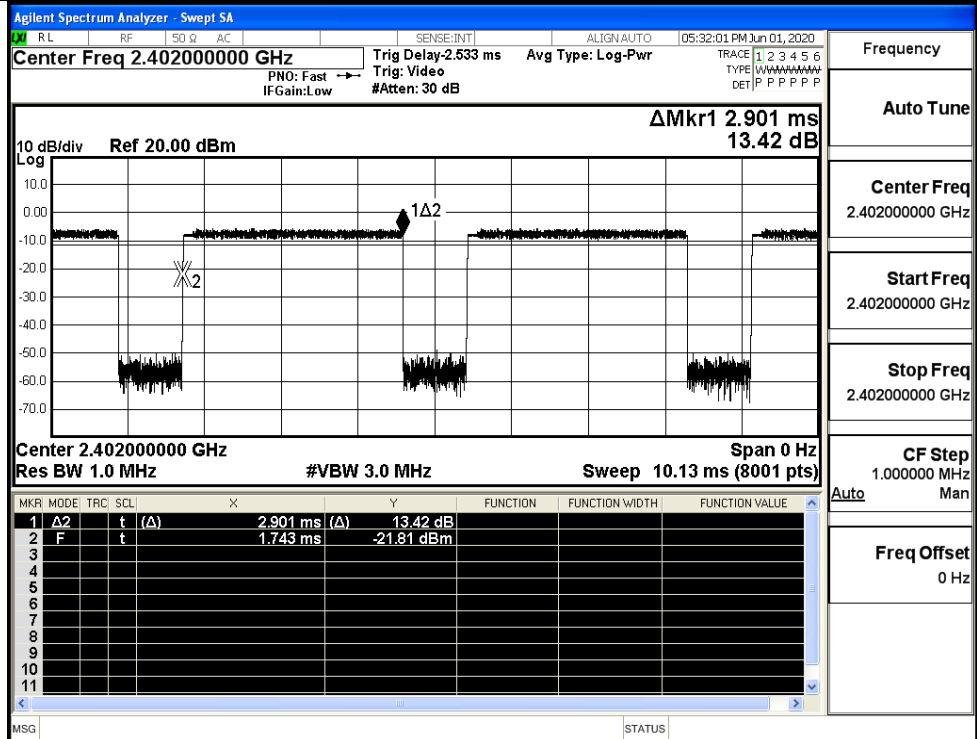
GFSK_DH5/MCH



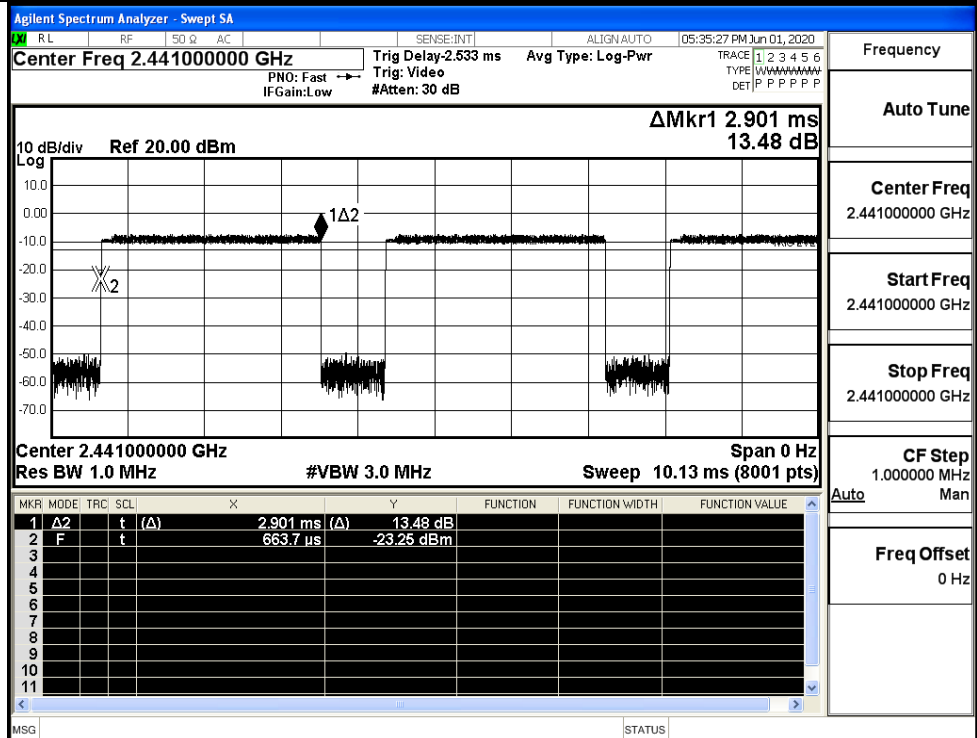
GFSK_DH5/HCH



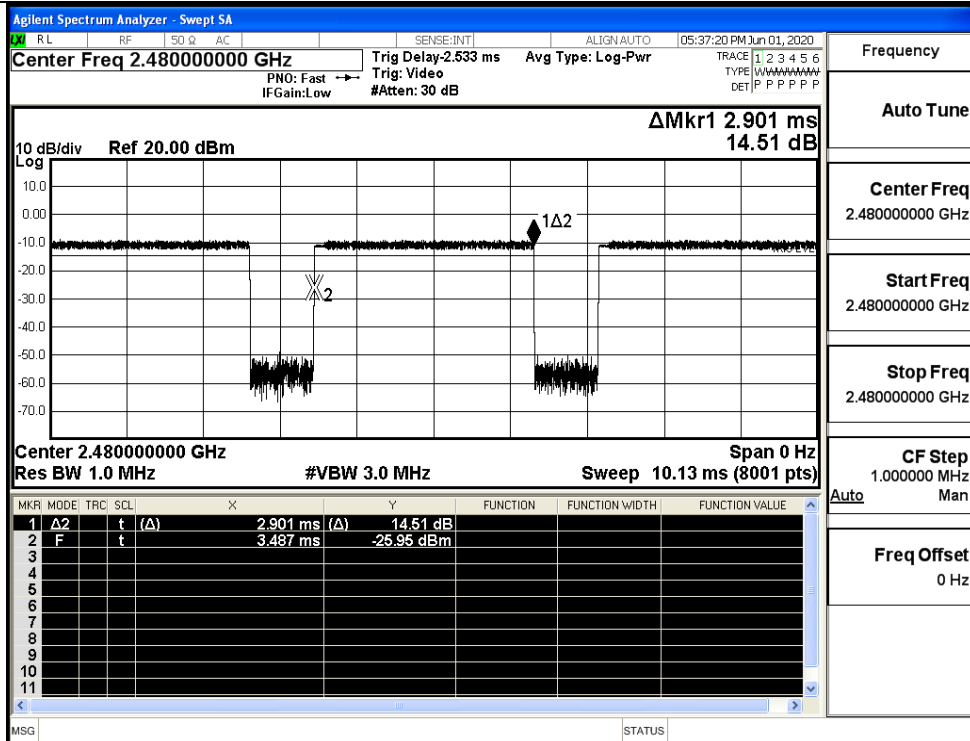
$\pi/4$ DQPSK
_2DH5/LCH



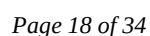
$\pi/4$ DQPSK
_2DH5/MCH



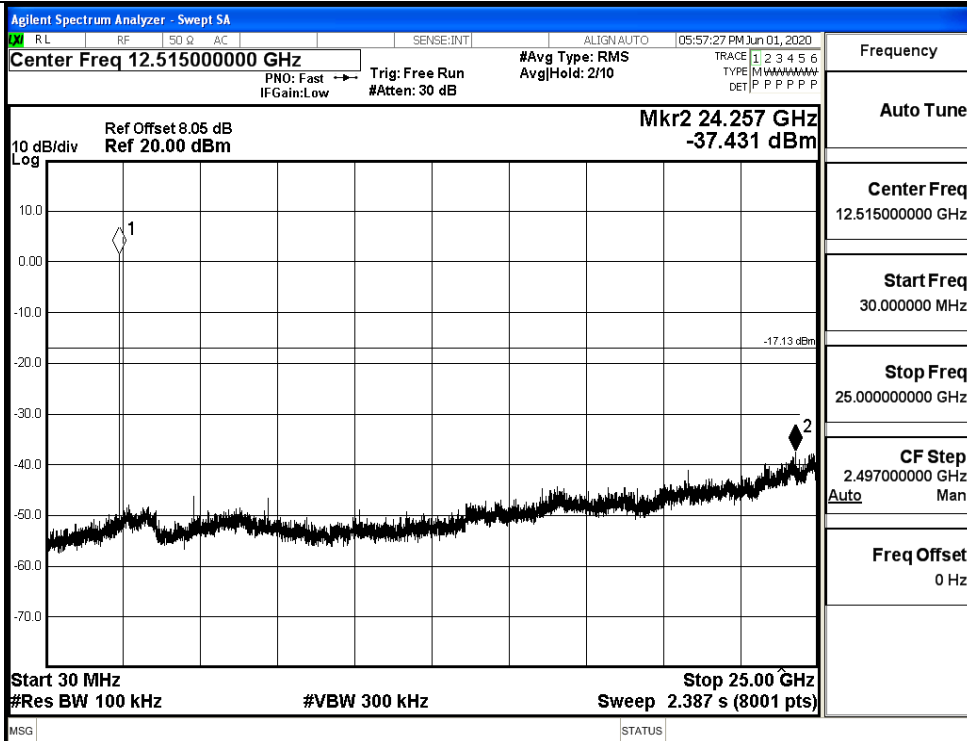
$\pi/4$ DQPSK
_2DH5/HCH



Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.867	-37.431	-17.133	PASS
	MCH	1.315	-37.089	-18.685	PASS
	HCH	-0.133	-37.101	-20.133	PASS
$\pi/4$ DQPSK	LCH	-0.142	-36.442	-20.142	PASS
	MCH	-1.575	-36.938	-21.575	PASS
	HCH	-3.513	-38.109	-23.513	PASS

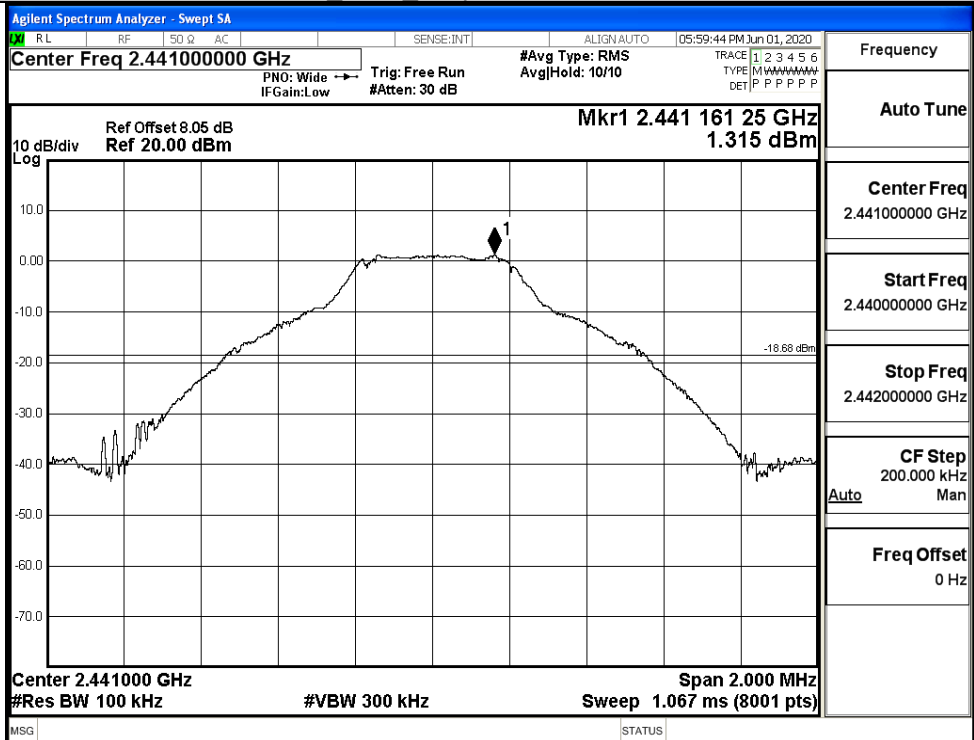


Puw

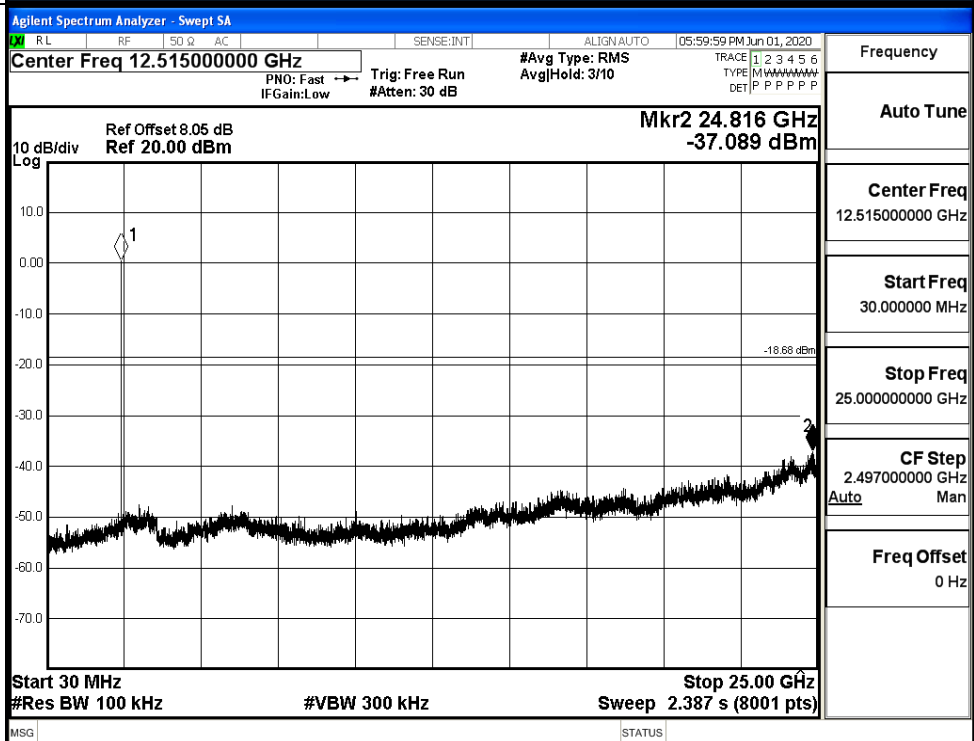


GFSK_MCH_Graphs

Pref

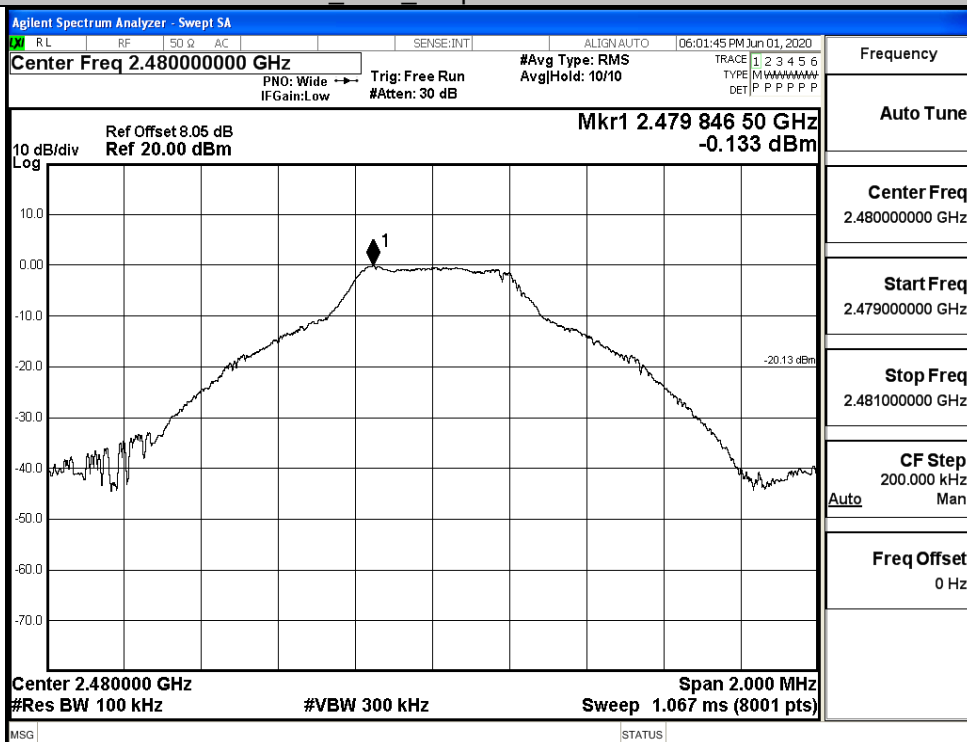


Puw

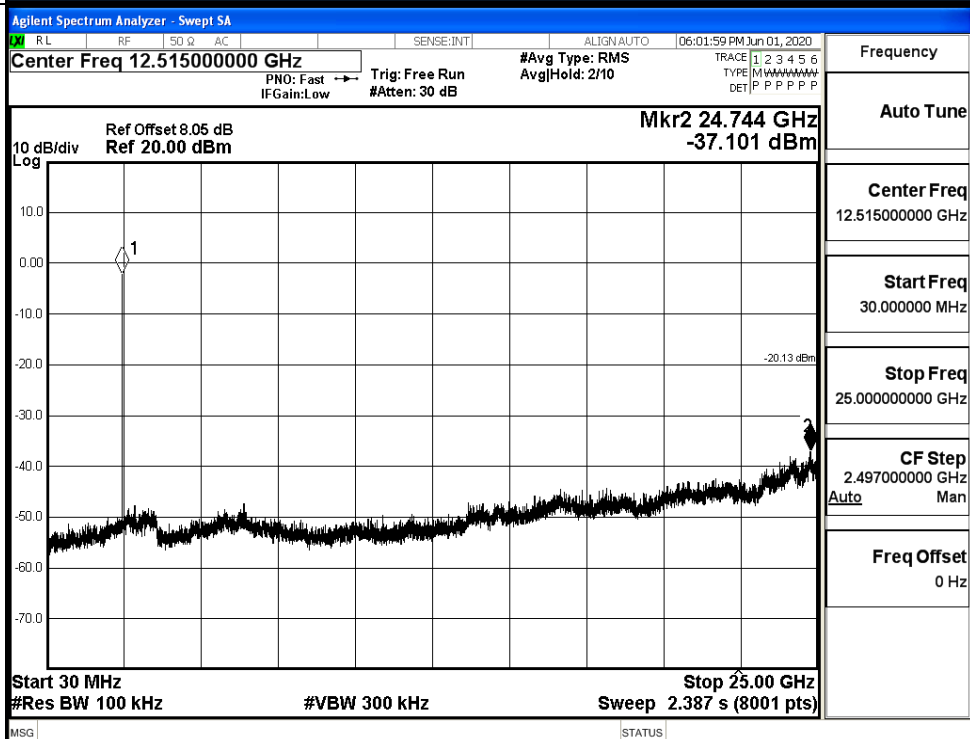


GFSK HCH_Graphs

Pref

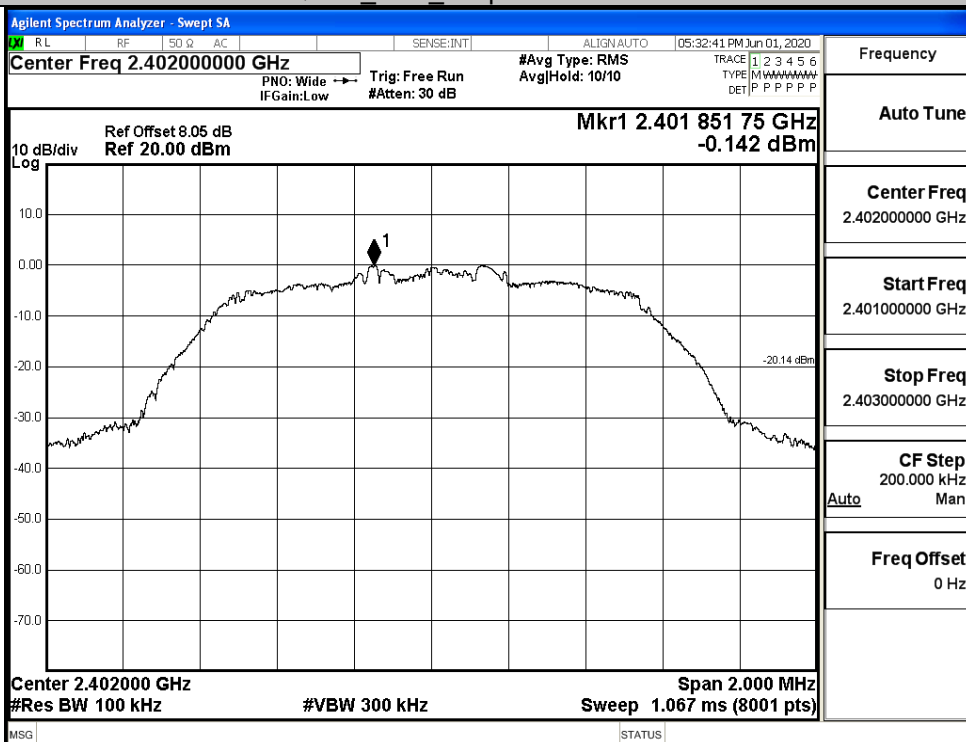


Puw

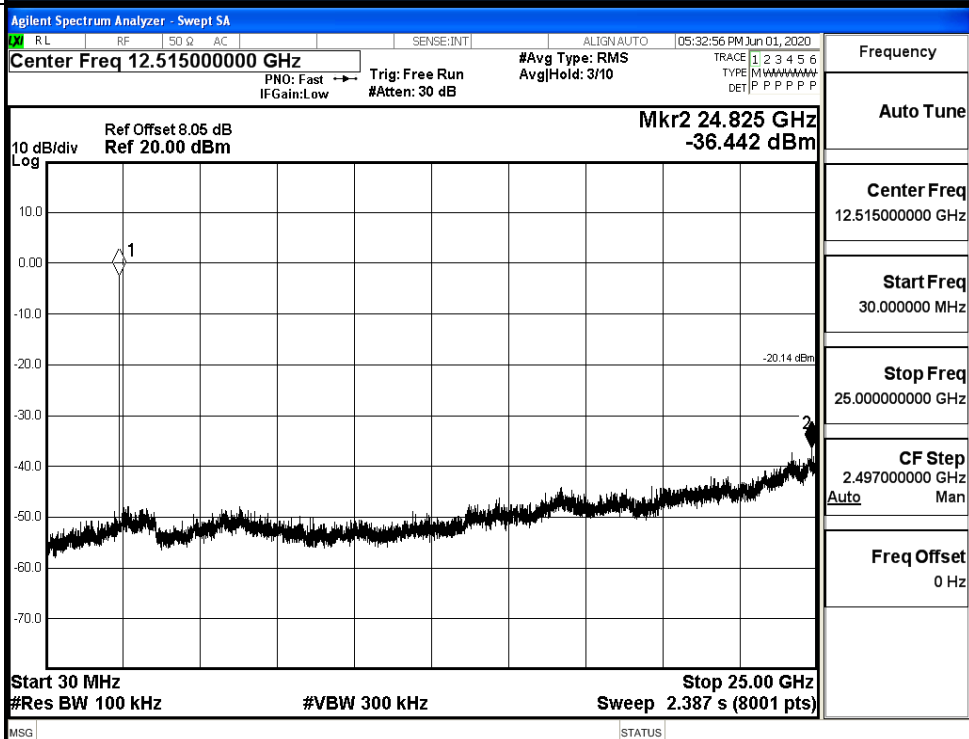


$\pi/4$ DQPSK_LCH_Graphs

Pref

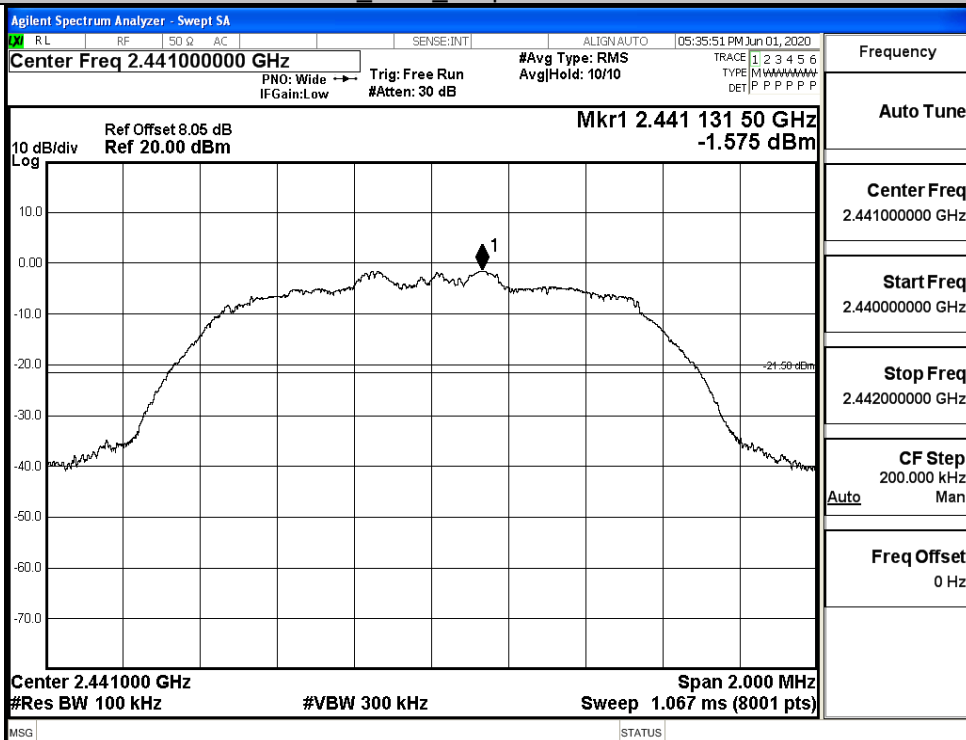


Puw

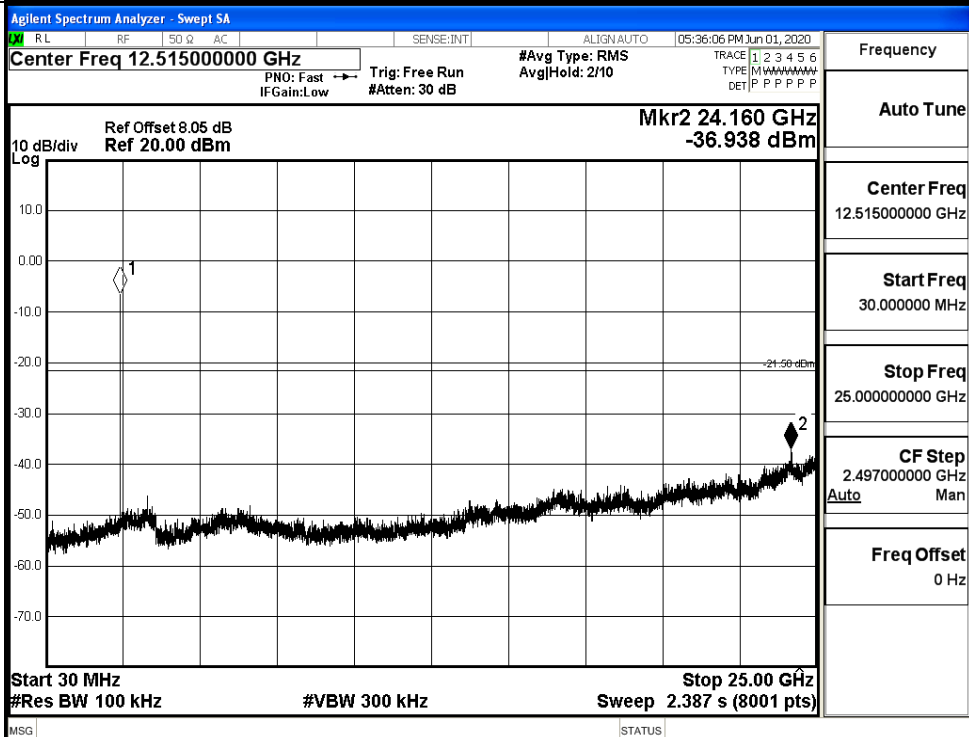


π /4DQPSK_MCH_Graphs

Pref

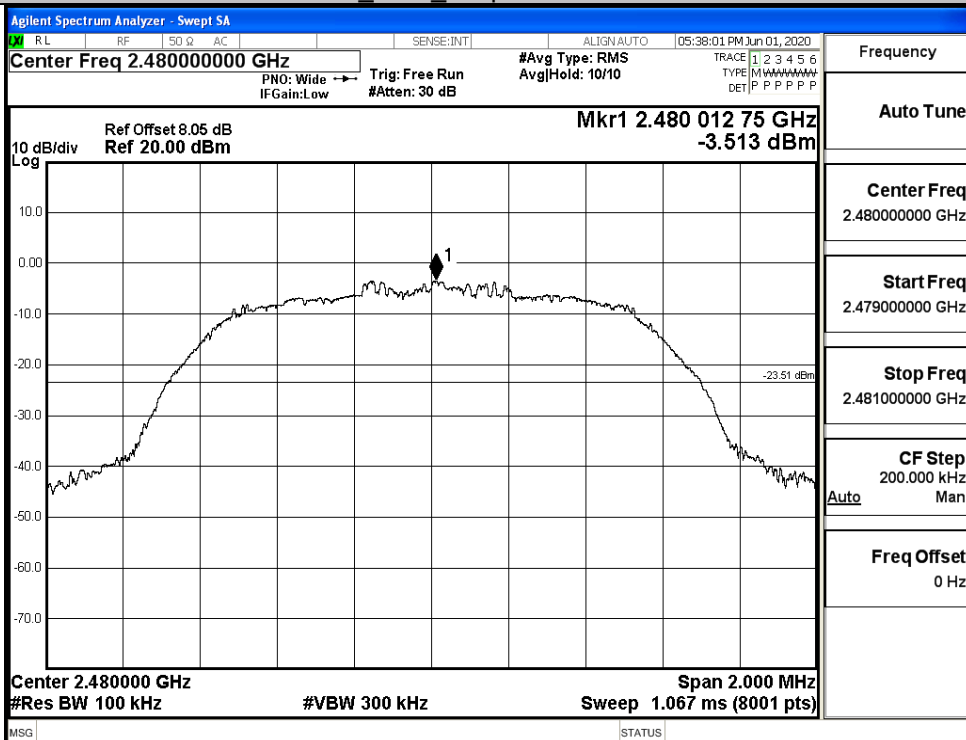


Puw

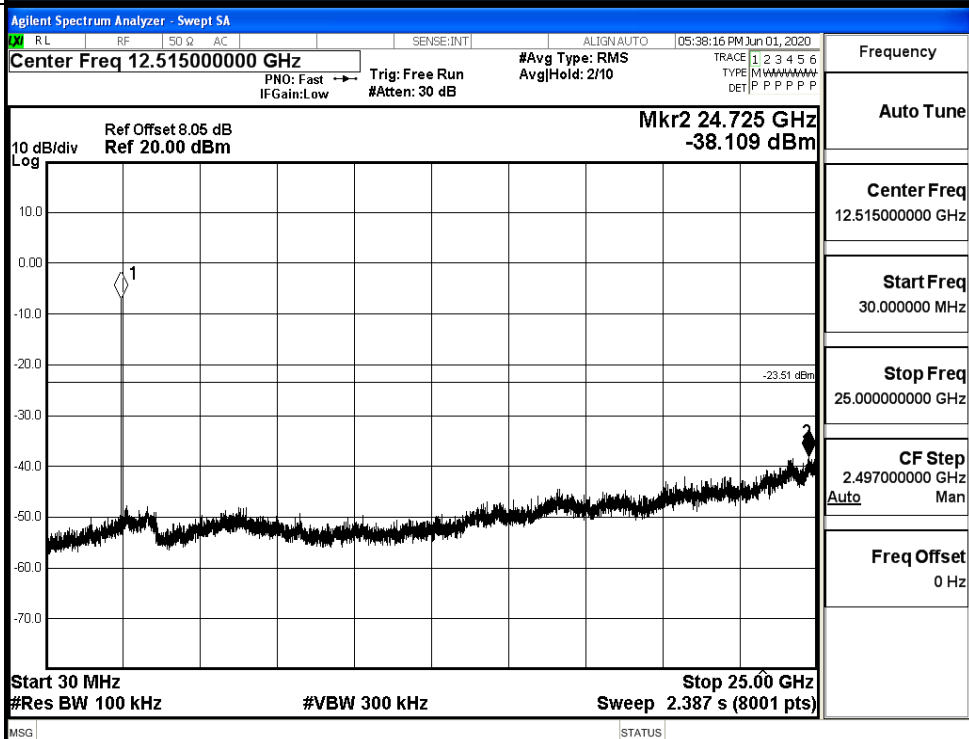


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

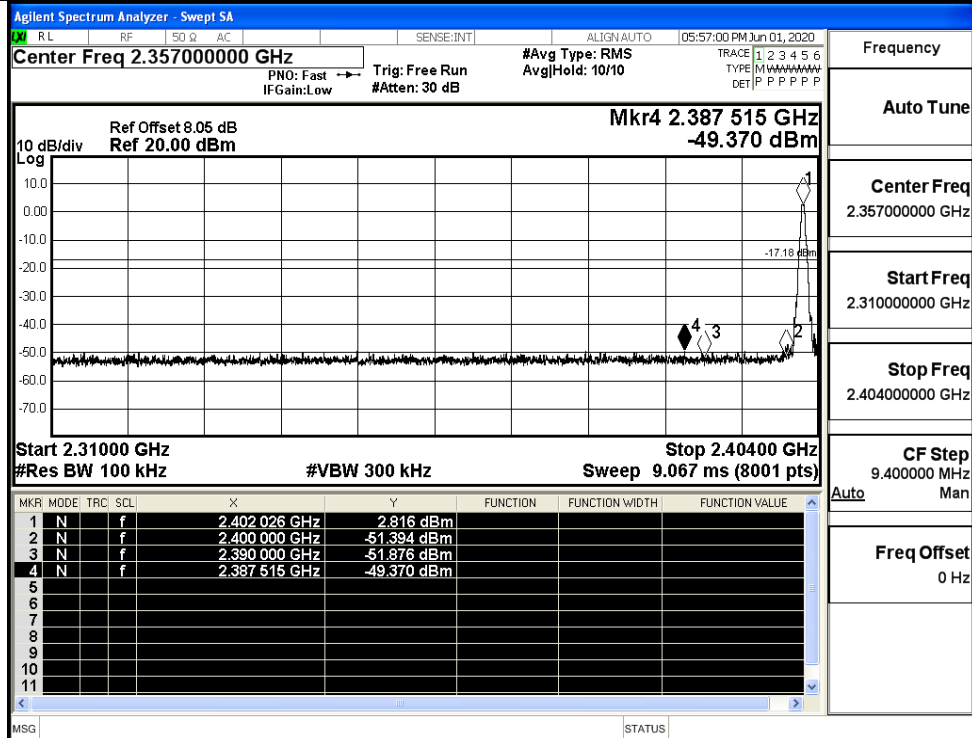


A.7 Band-edge for RF Conducted Emissions

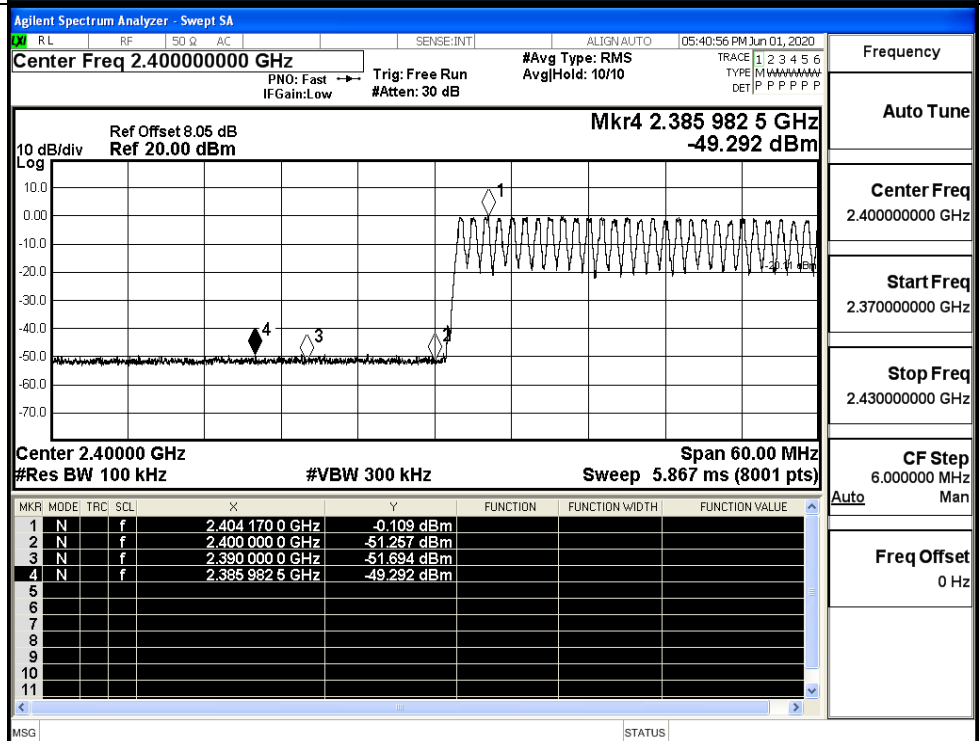
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.816	Off	-49.370	-17.18	PASS
			-0.109	On	-49.292	-20.11	PASS
	HCH	2480	-0.012	Off	-49.143	-20.01	PASS
			-2.300	On	-49.014	-22.3	PASS
$\pi/4$ DQPSK	LCH	2402	-0.013	Off	-49.261	-20.01	PASS
			-0.321	On	-48.797	-20.32	PASS
	HCH	2480	-2.927	Off	-48.713	-22.93	PASS
			-2.255	On	-48.439	-22.26	PASS

Test Graphs

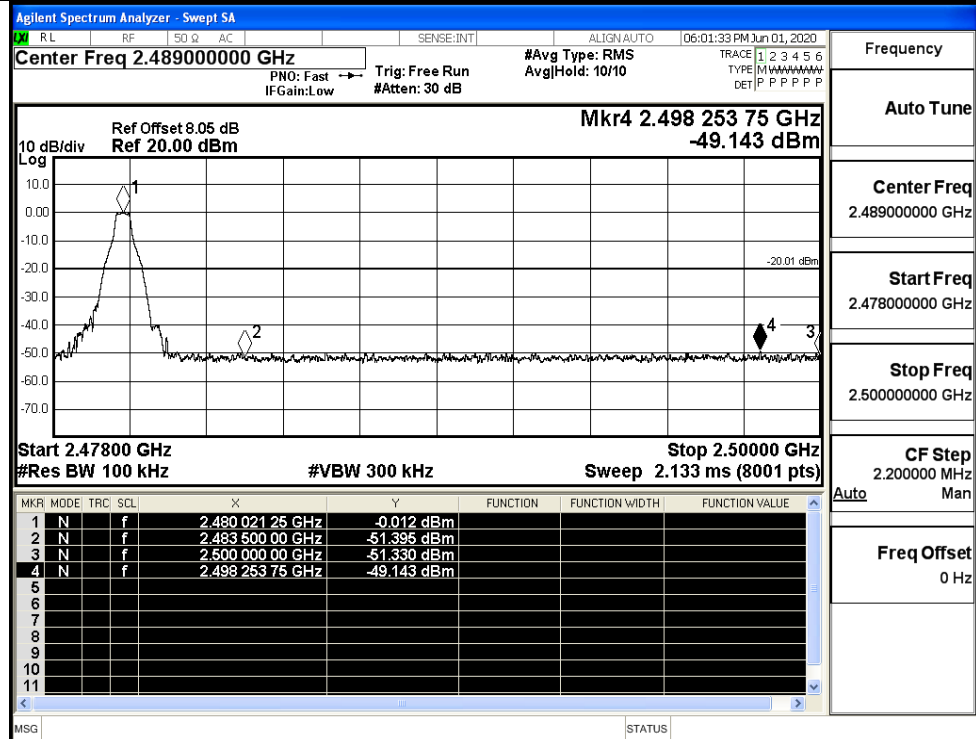
GFSK/LCH/No Hop



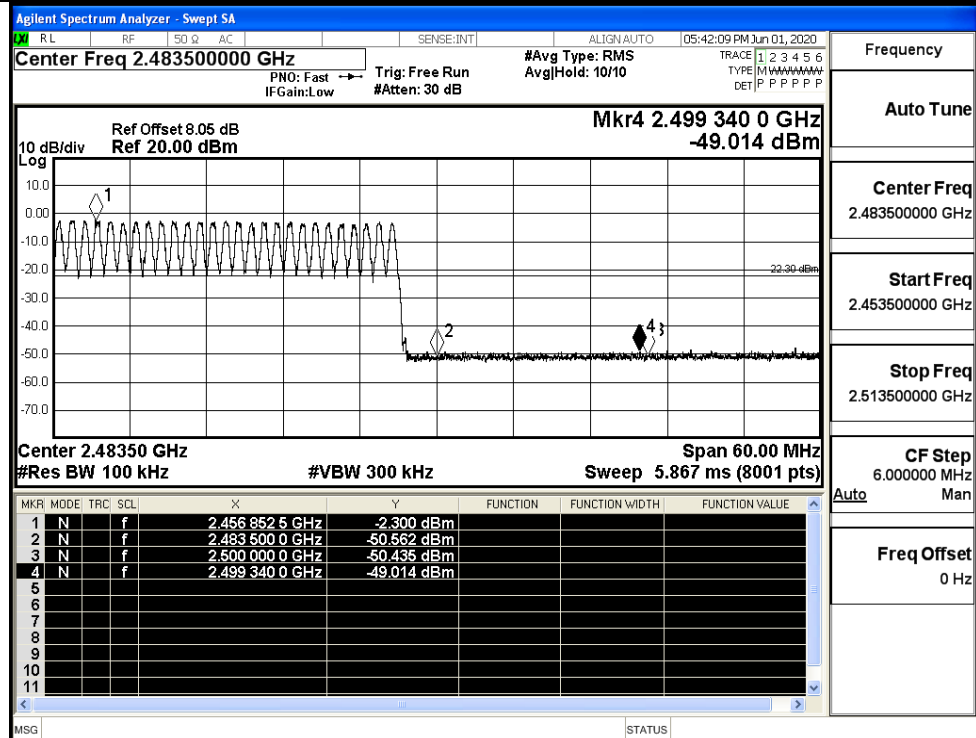
GFSK/LCH/Hop



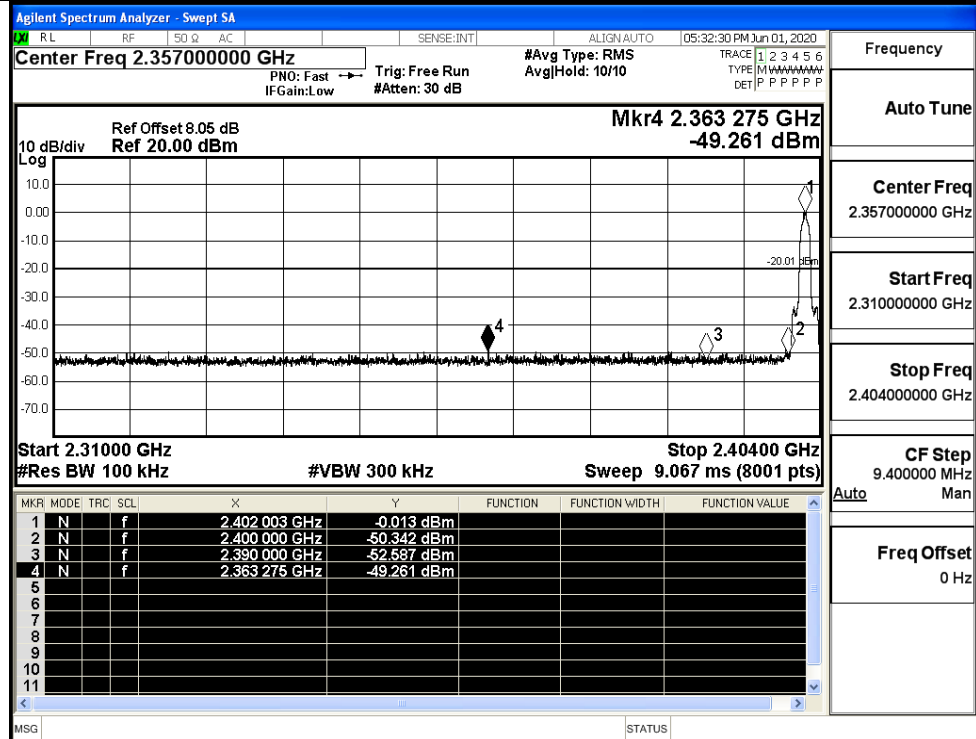
GFSK/HCH/No Hop



GFSK/HCH/Hop



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



Frequency

Auto Tune

Center Freq
2.357000000 GHz

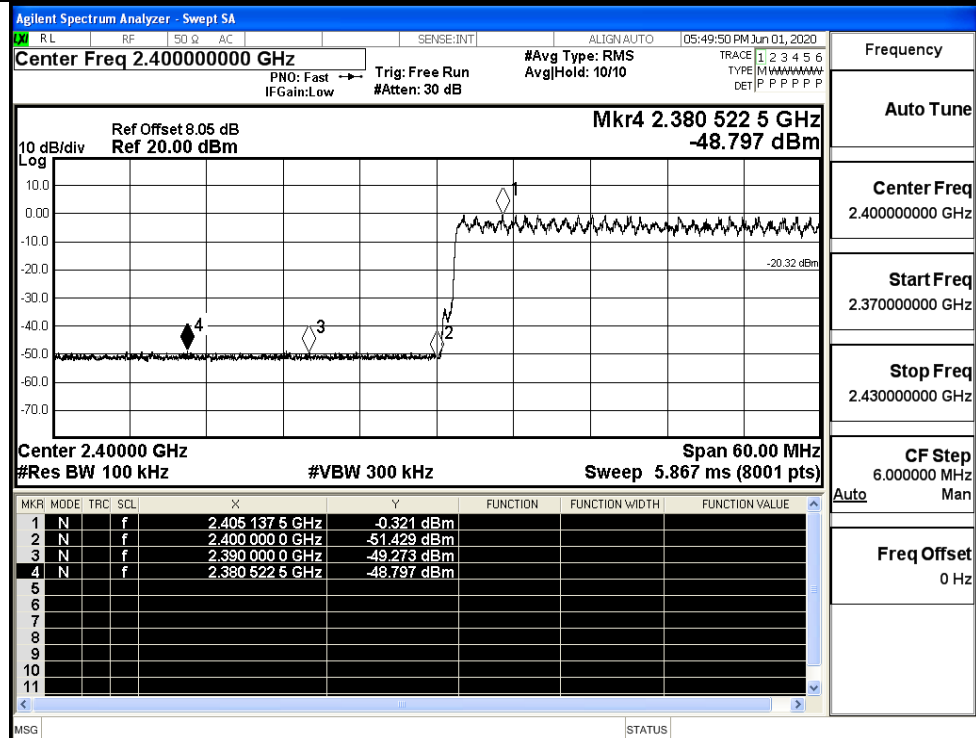
Start Freq
2.310000000 GHz

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

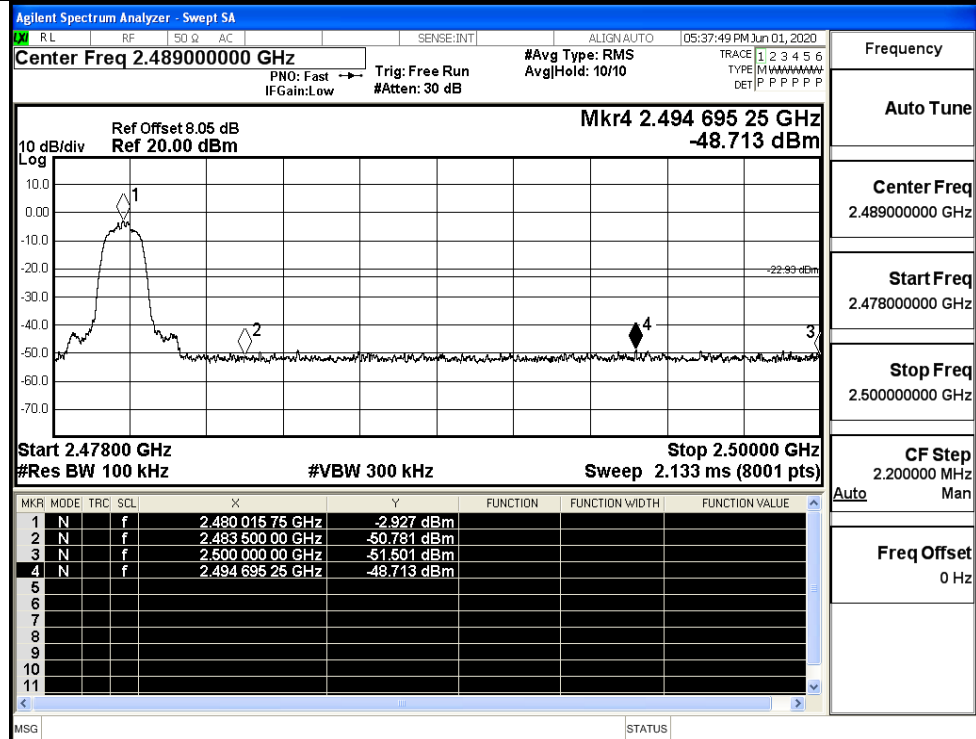
Start Freq
2.370000000 GHz

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

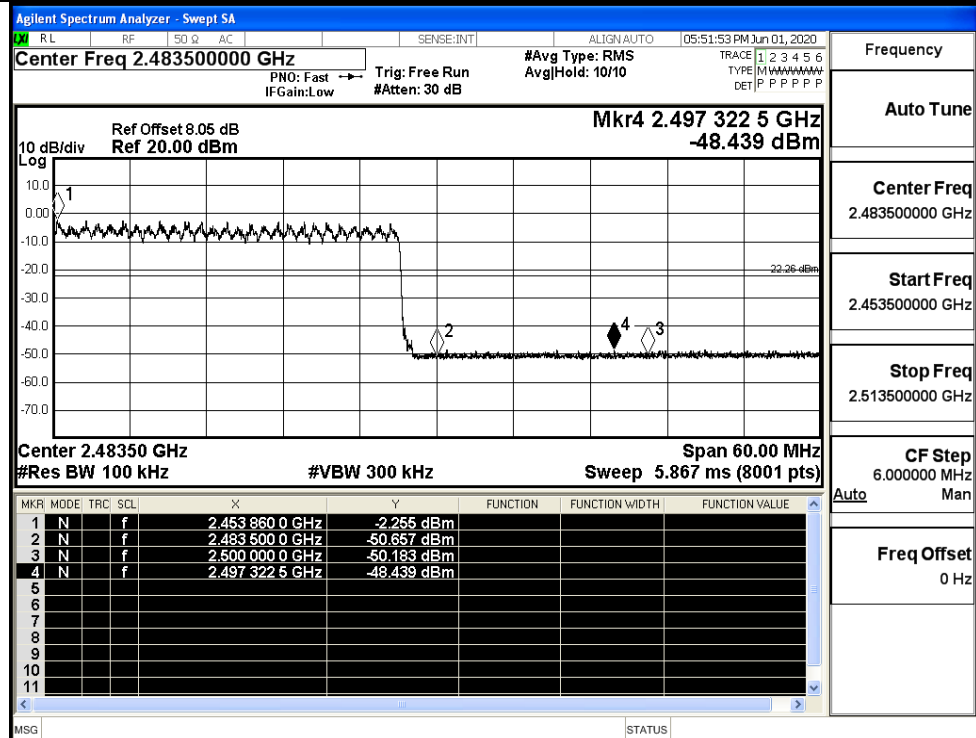
Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz
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

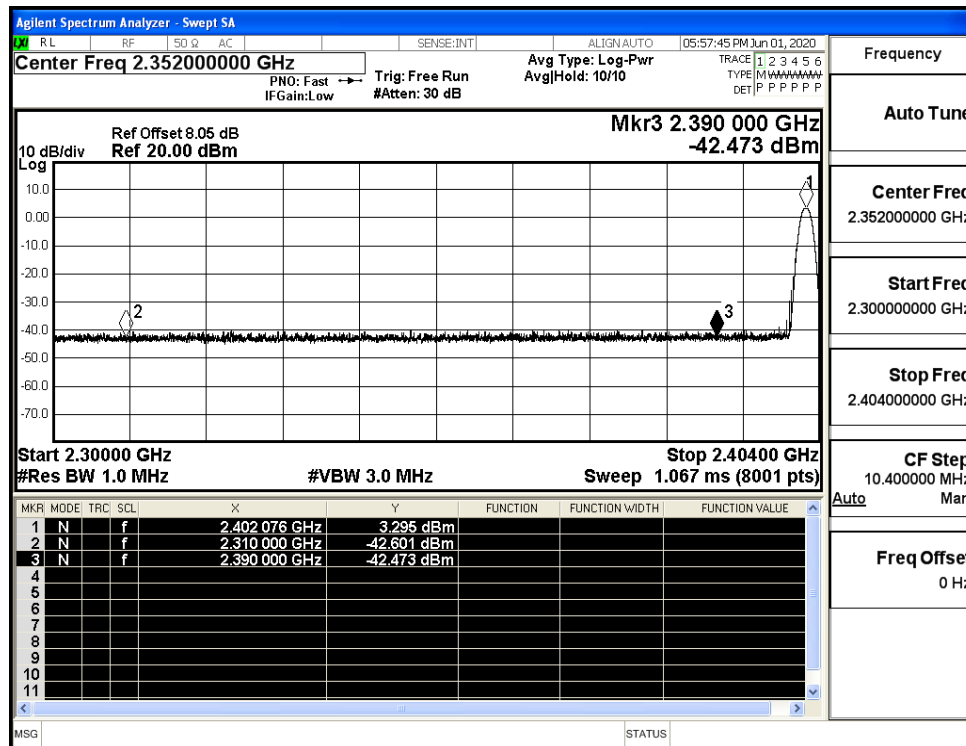
CF Step
6.000000 MHz
Auto Man

Freq Offset
0 Hz

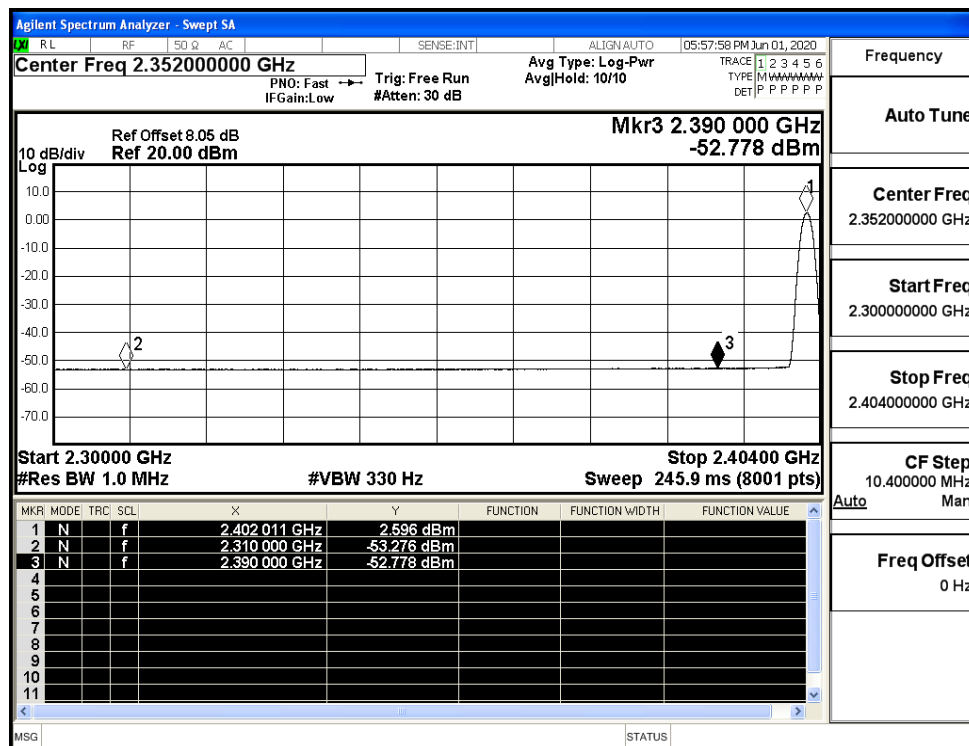
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-42.60	2.0	0	52.66	PEAK	74	PASS
	Off	2310.0	-53.28	2.0	0	41.98	AV	54	PASS
	Off	2390.0	-42.47	2.0	0	52.78	PEAK	74	PASS
	Off	2390.0	-52.78	2.0	0	42.48	AV	54	PASS
	Off	2483.5	-41.60	2.0	0	53.66	PEAK	74	PASS
	Off	2483.5	-52.26	2.0	0	43.00	AV	54	PASS
	Off	2500.0	-43.06	2.0	0	52.20	PEAK	74	PASS
	Off	2500.0	-52.20	2.0	0	43.06	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-42.76	2.0	0	52.50	PEAK	74	PASS
	Off	2310.0	-53.20	2.0	0	42.06	AV	54	PASS
	Off	2390.0	-41.43	2.0	0	53.83	PEAK	74	PASS
	Off	2390.0	-52.83	2.0	0	42.42	AV	54	PASS
	Off	2483.5	-42.58	2.0	0	52.68	PEAK	74	PASS
	Off	2483.5	-52.37	2.0	0	42.88	AV	54	PASS
	Off	2500.0	-41.71	2.0	0	53.55	PEAK	74	PASS
	Off	2500.0	-52.23	2.0	0	43.02	AV	54	PASS

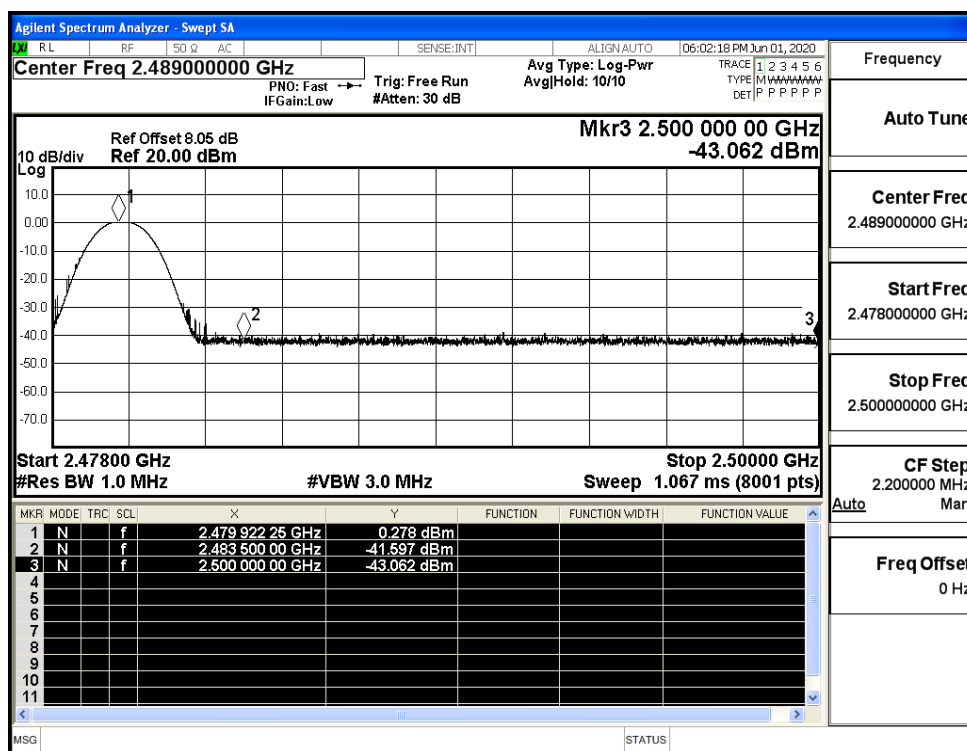
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



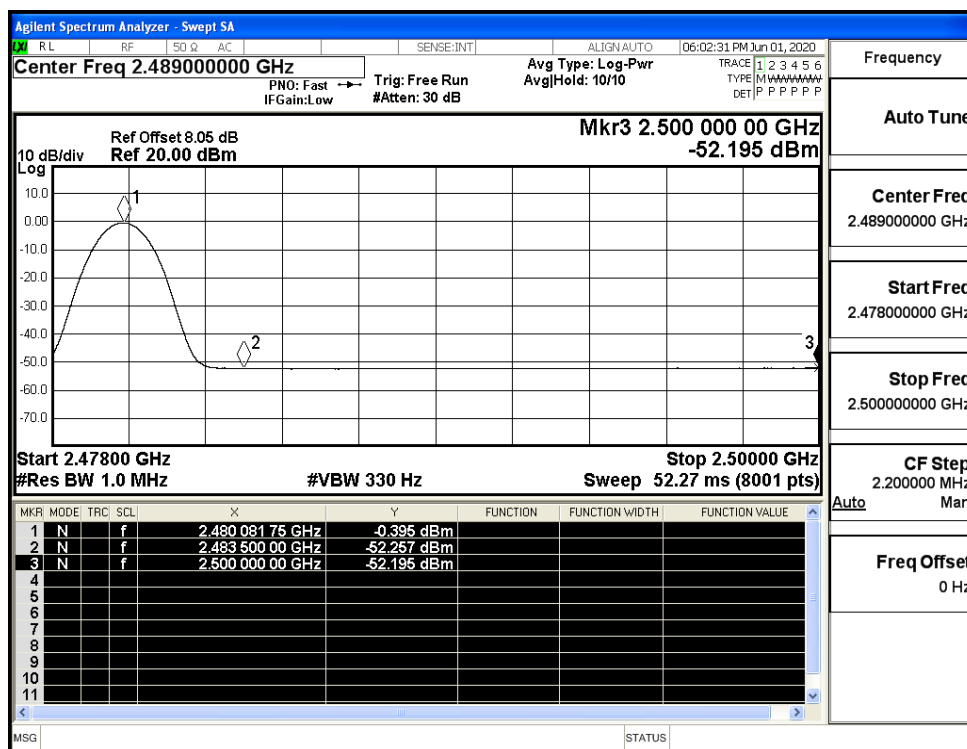
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

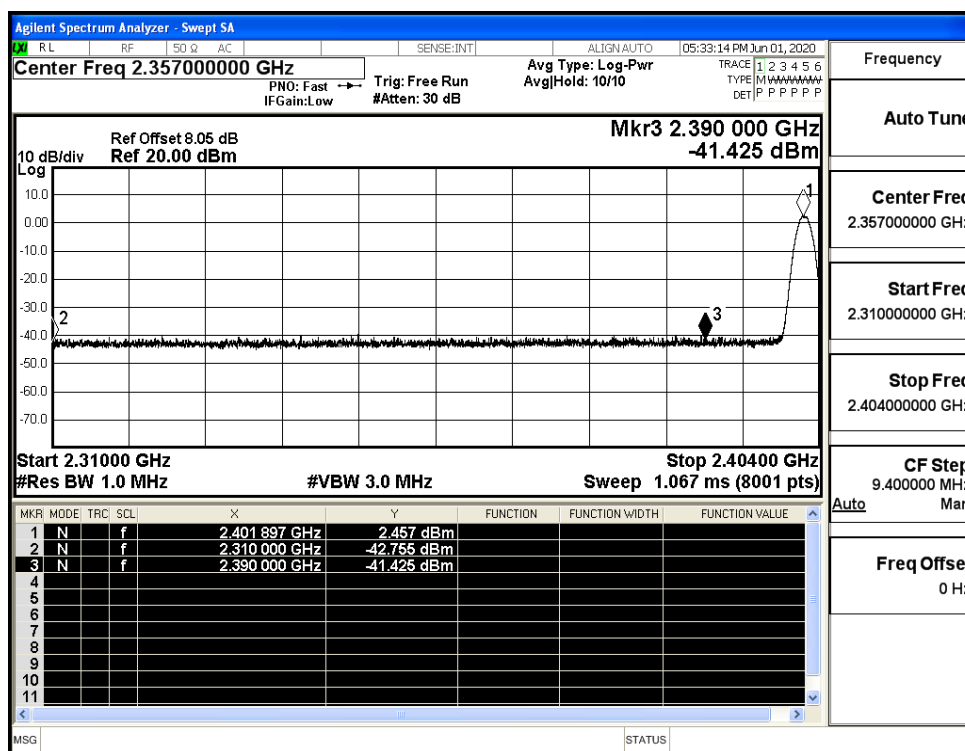
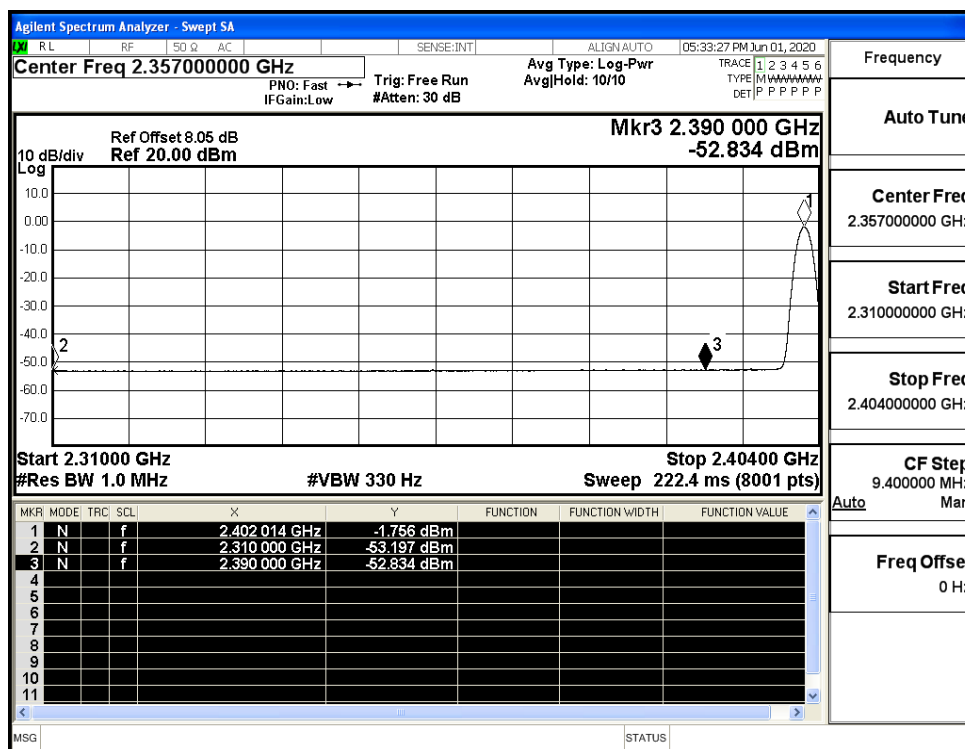


Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

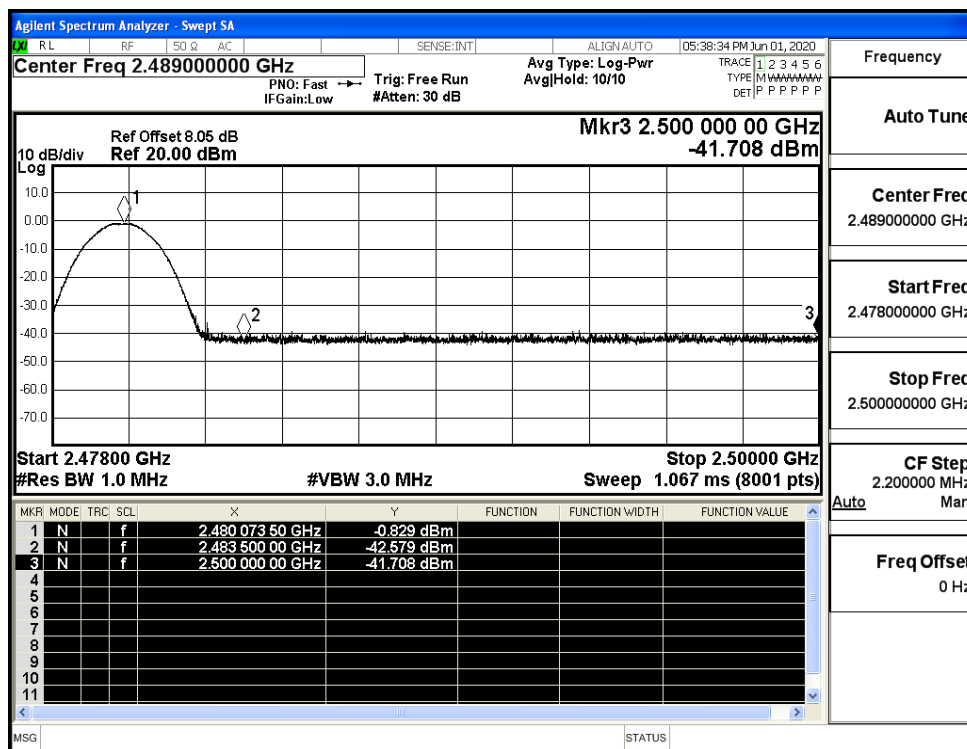


Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



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)

