Appendix A

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

Product Name: Wireless Charger Car Kit

Trade Mark: N/A

Test Model: FMT1200BT

Environmental Conditions

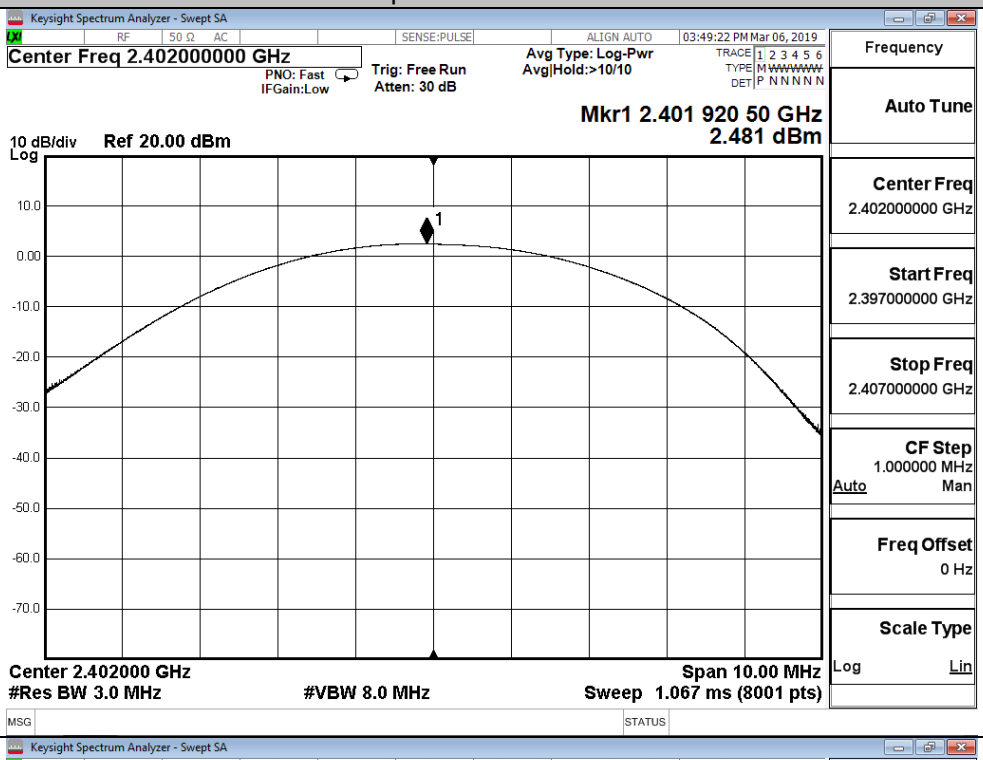
Temperature:	23.4 ° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Shane Wu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

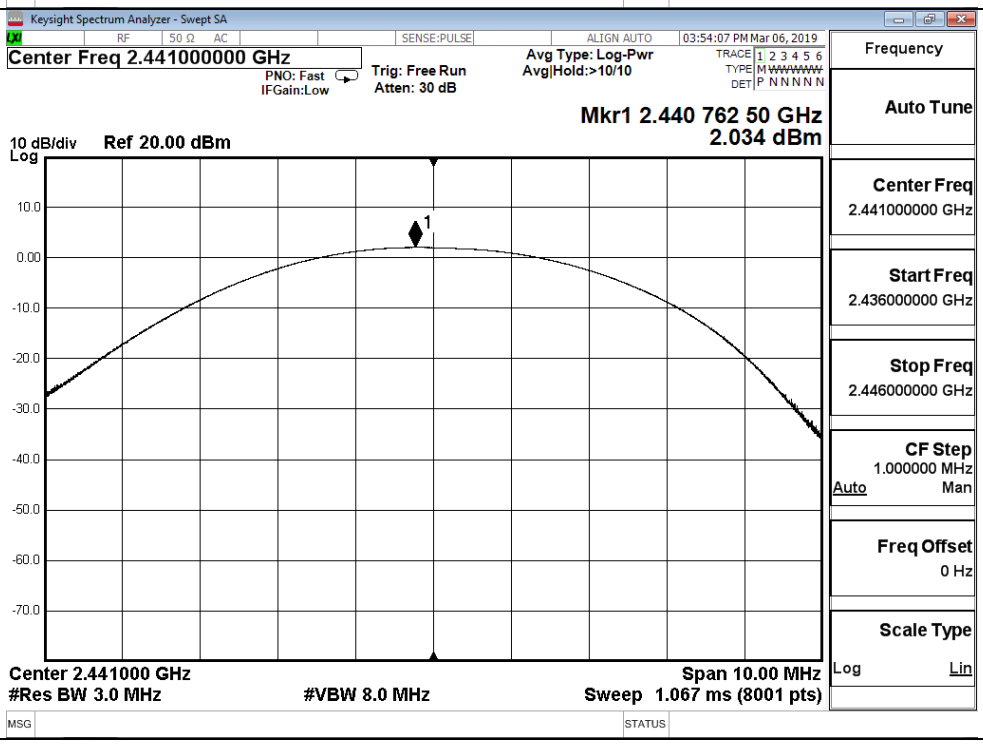
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.481	21	PASS
	MCH	2.034	21	PASS
	HCH	1.240	21	PASS
π/4DQPSK	LCH	2.958	21	PASS
	MCH	2.624	21	PASS
	HCH	1.865	21	PASS

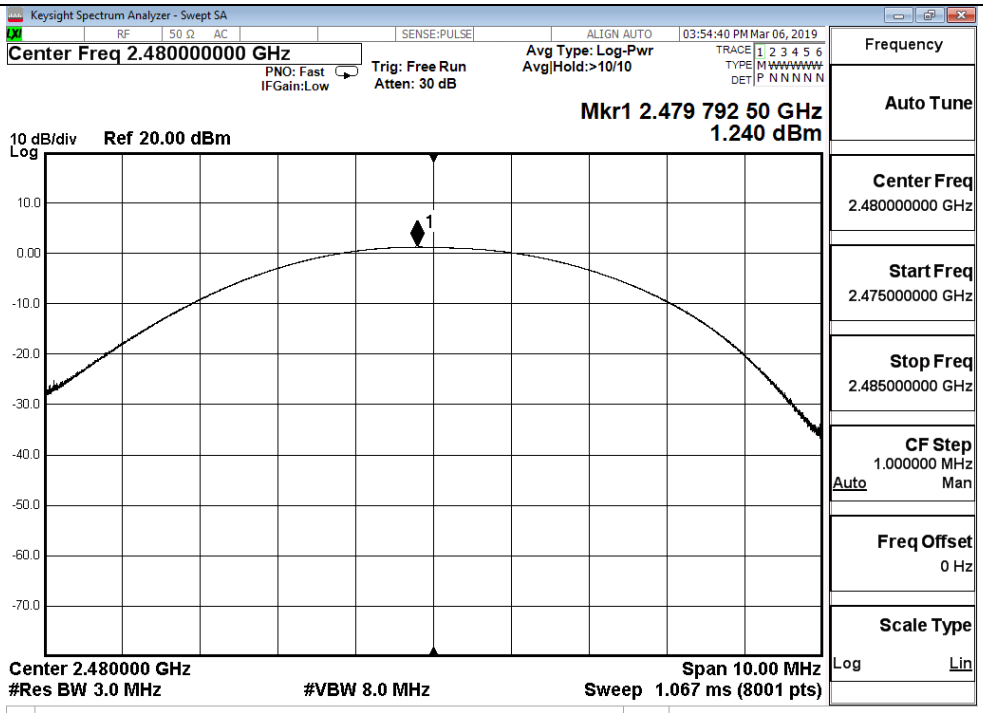
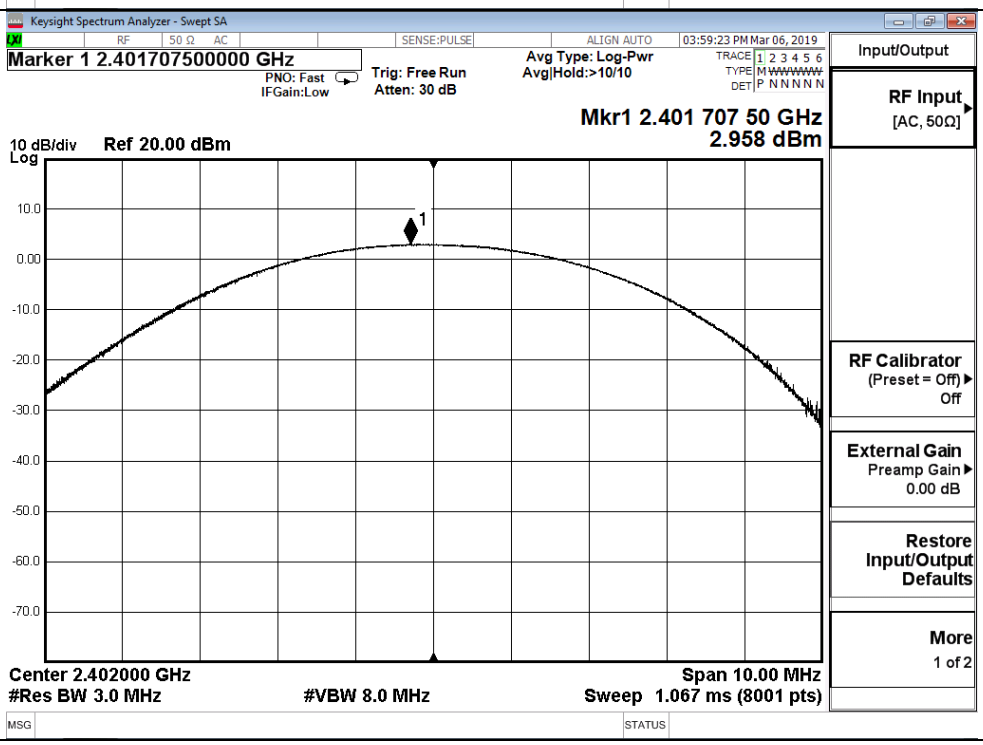
Test Graphs

GFSK/LCH

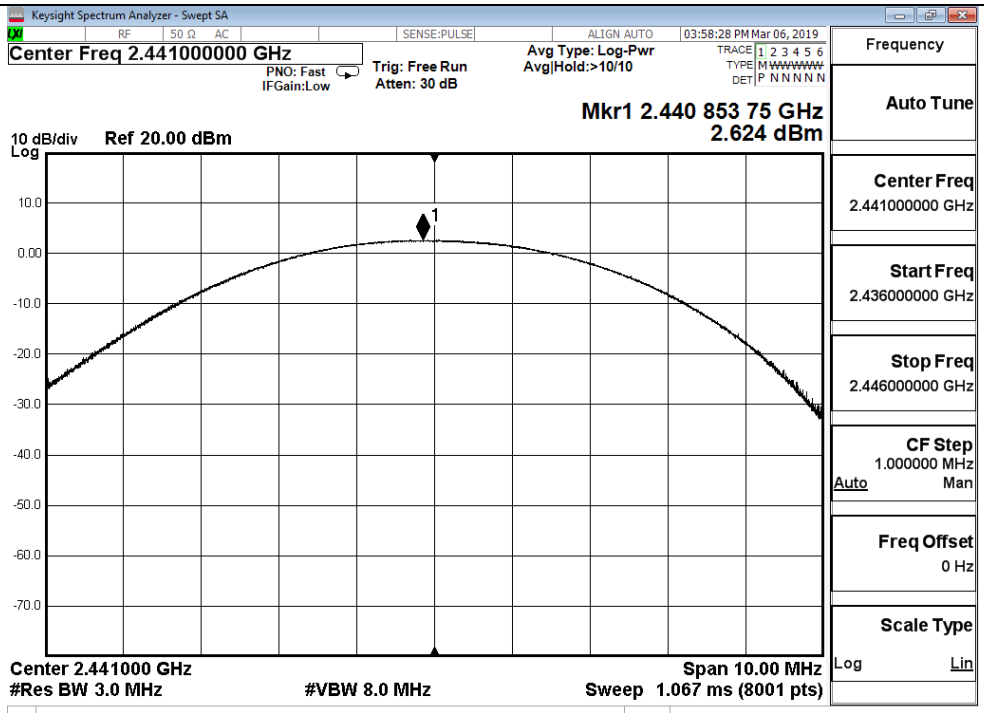


GFSK/MCH

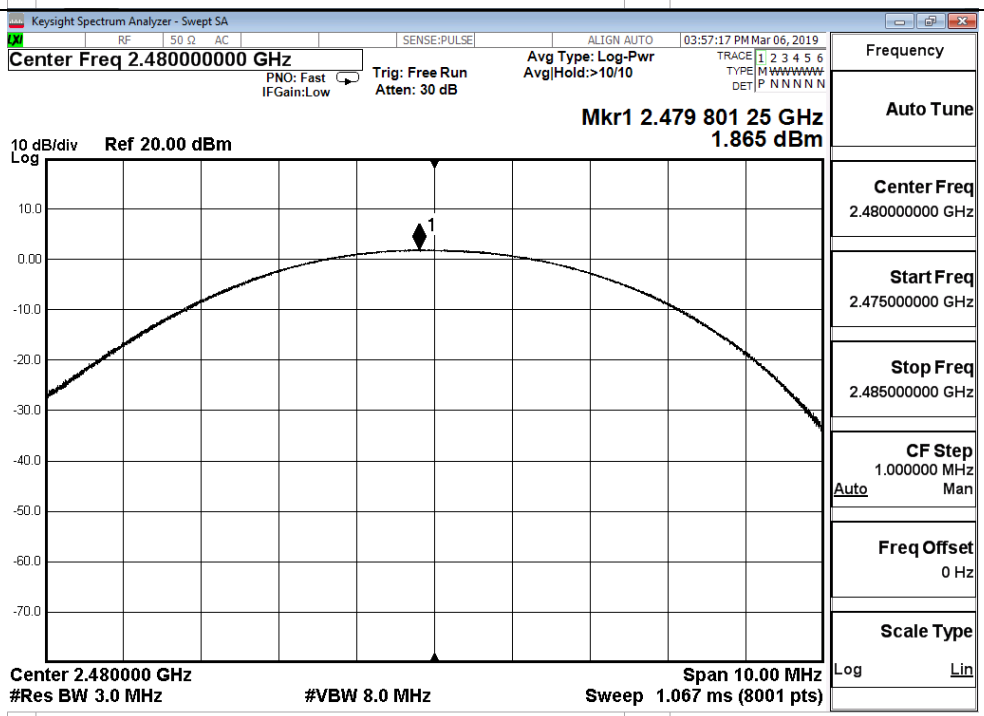


GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH

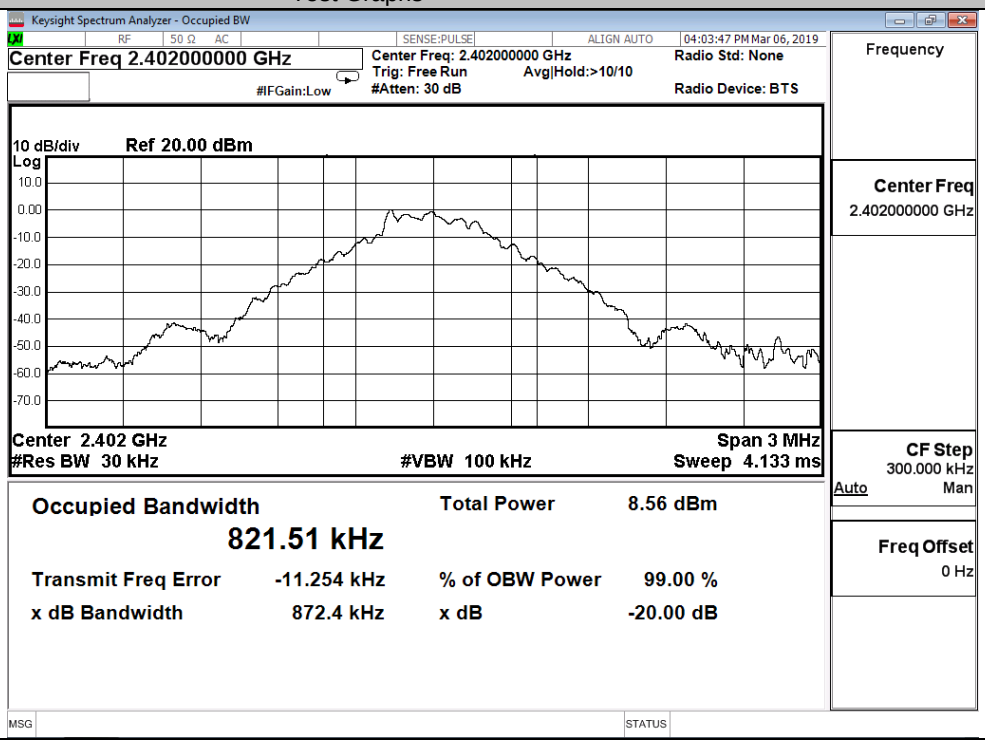


π/4DQPSK/HCH

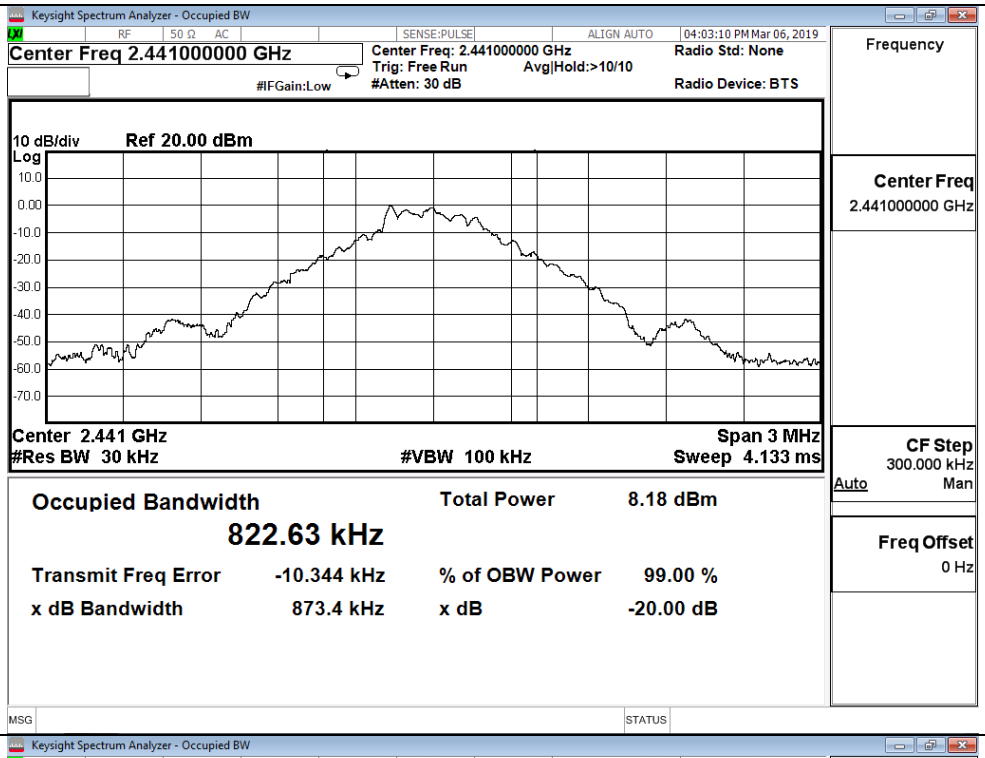


A.2 99% and 20dB Bandwidth

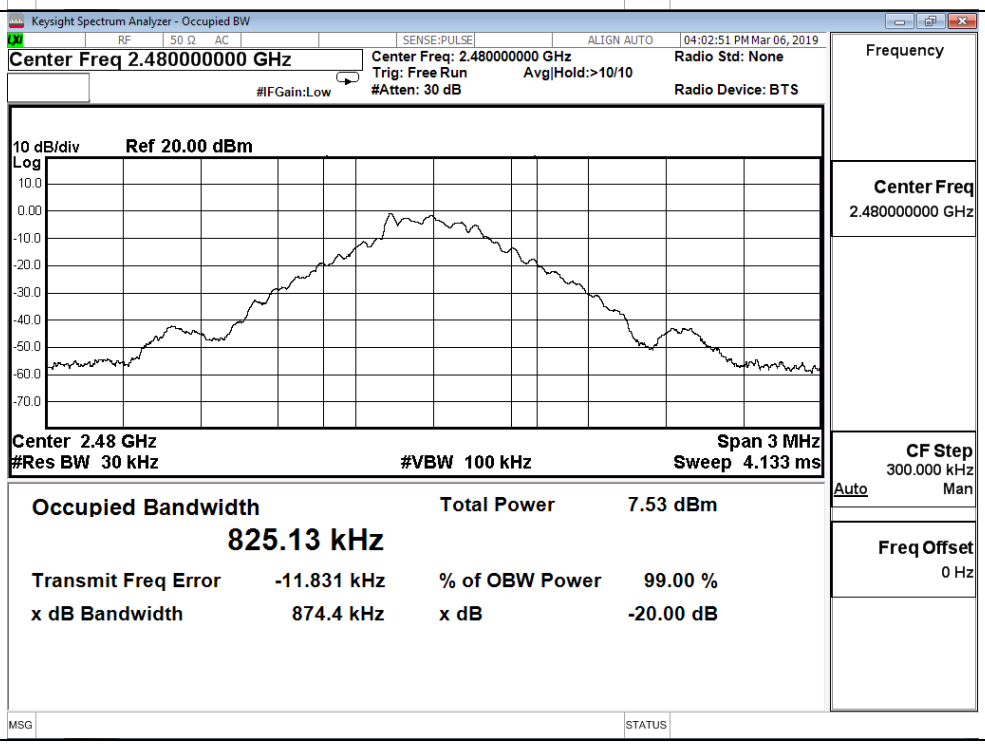
Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.82151	0.8724	Not Specified	PASS
	MCH	0.82263	0.8734	Not Specified	PASS
	HCH	0.82513	0.8744	Not Specified	PASS
π/4DQPSK	LCH	1.1503	1.250	Not Specified	PASS
	MCH	1.1723	1.228	Not Specified	PASS
	HCH	1.1709	1.231	Not Specified	PASS

Test Graphs	
GFSK/LCH	

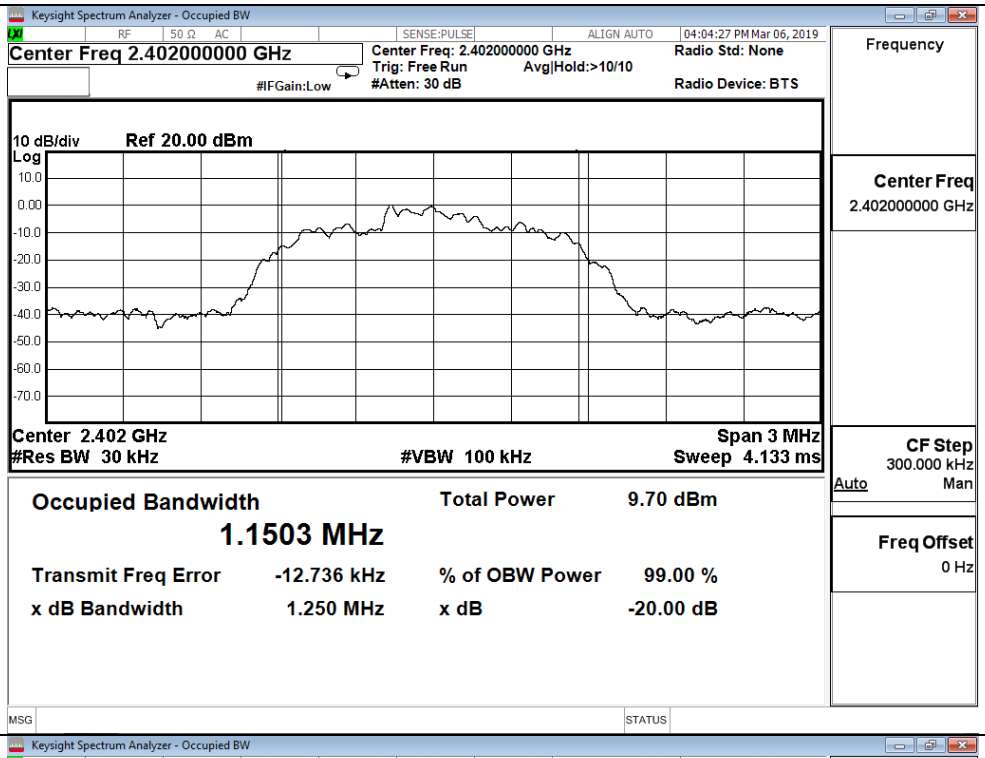
GFSK/MCH



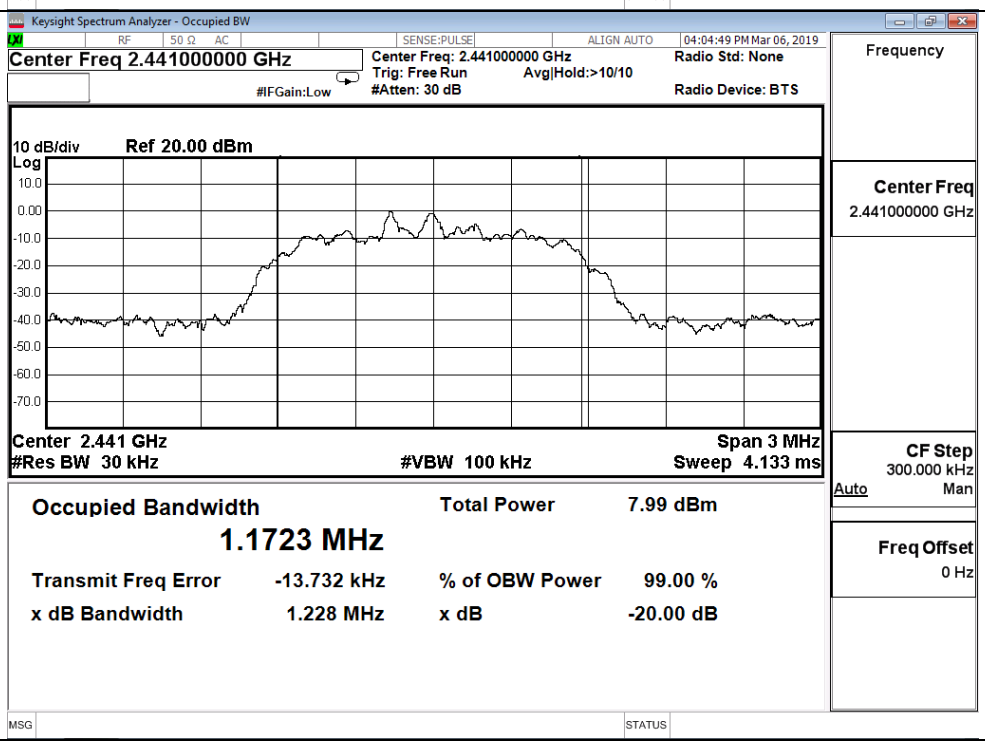
GFSK/HCH



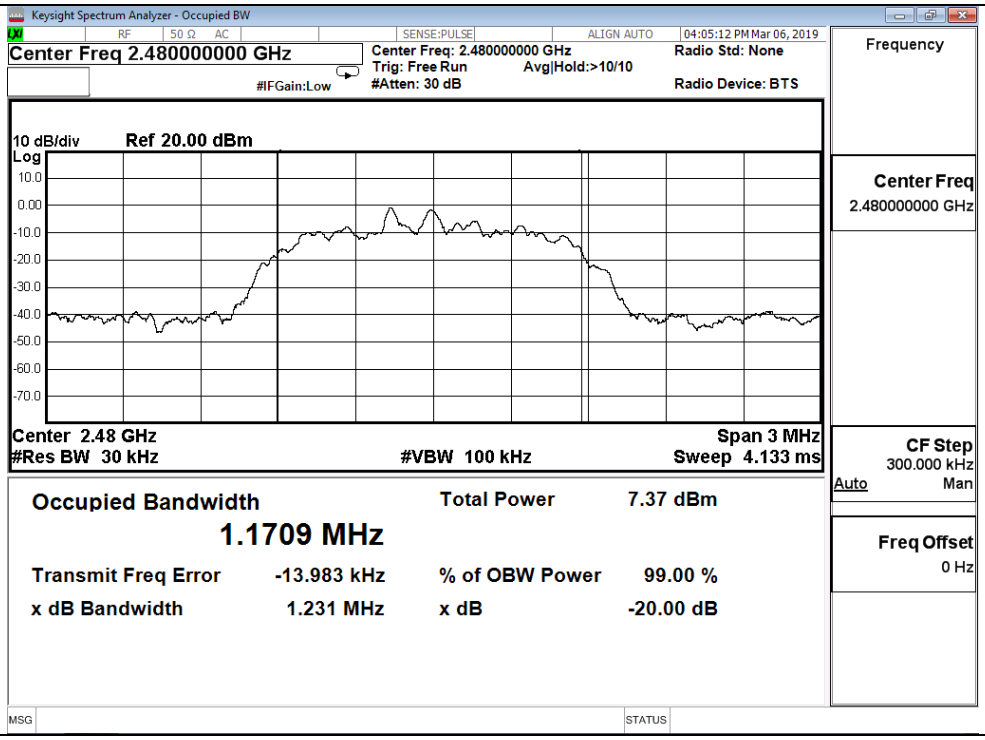
π/4DQPSK/LCH



π/4DQPSK/MCH

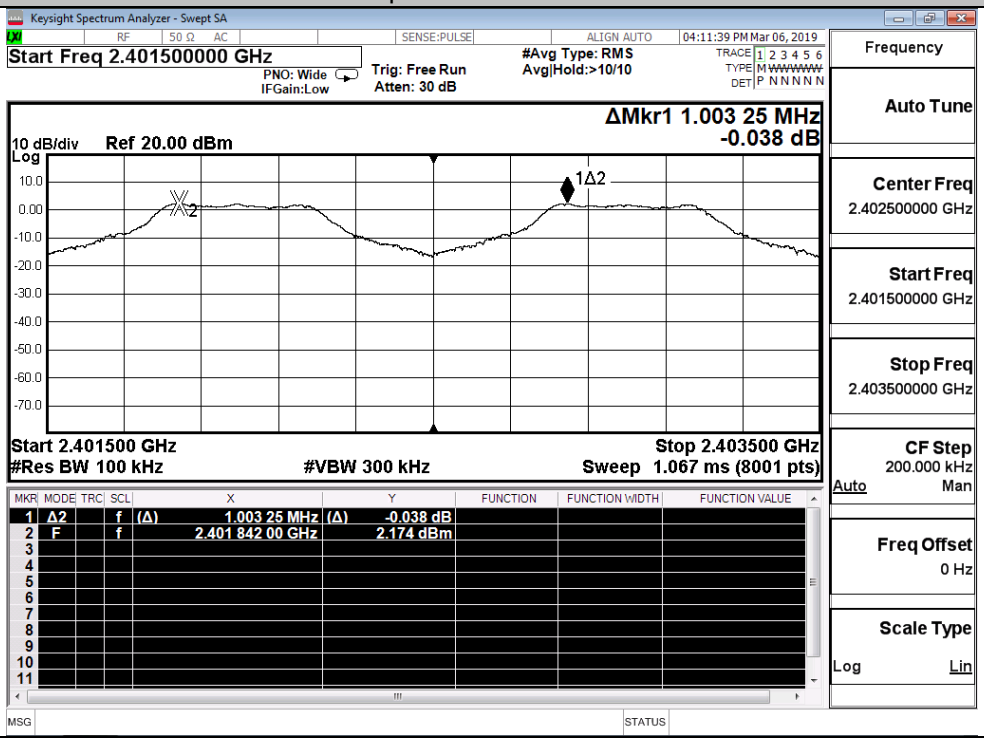


π/4DQPSK/HCH

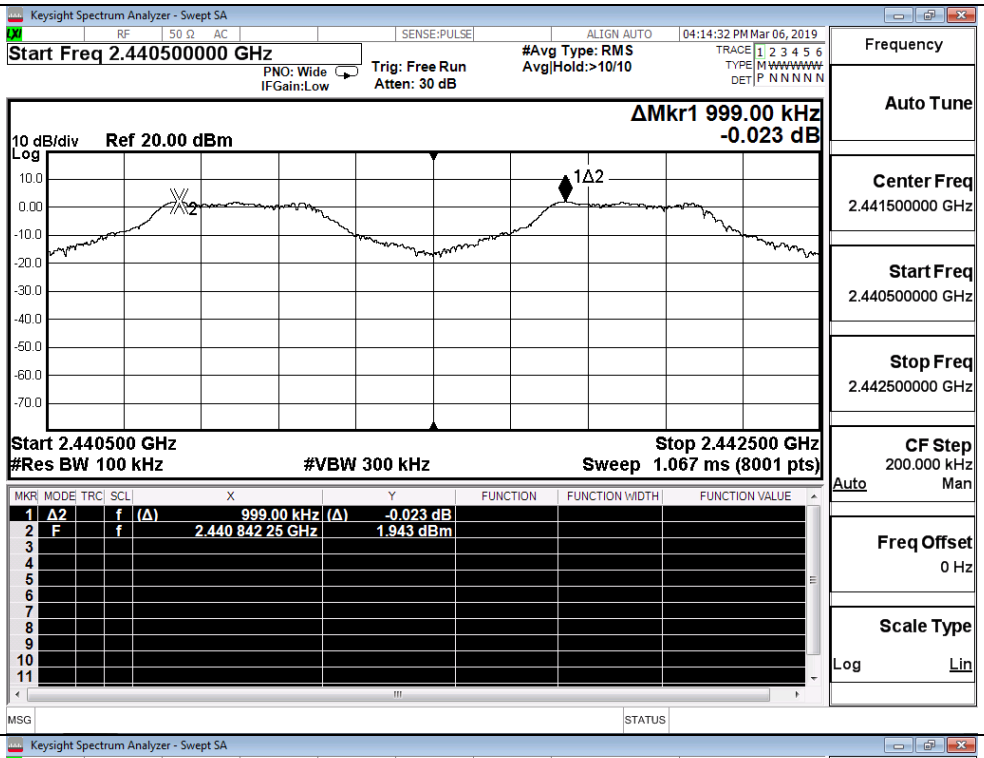

Keysight Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:PULSE
ALIGN AUTO
04:05:12 PM Mar 06, 2019
Center Freq 2.480000000 GHz
#IFGain:Low
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 4.133 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.1709 MHz
Total Power 7.37 dBm
Transmit Freq Error -13.983 kHz
% of OBW Power 99.00 %
x dB Bandwidth 1.231 MHz
x dB -20.00 dB
Freq Offset
0 Hz
MSG
STATUS

A.3 Carrier Frequency Separation

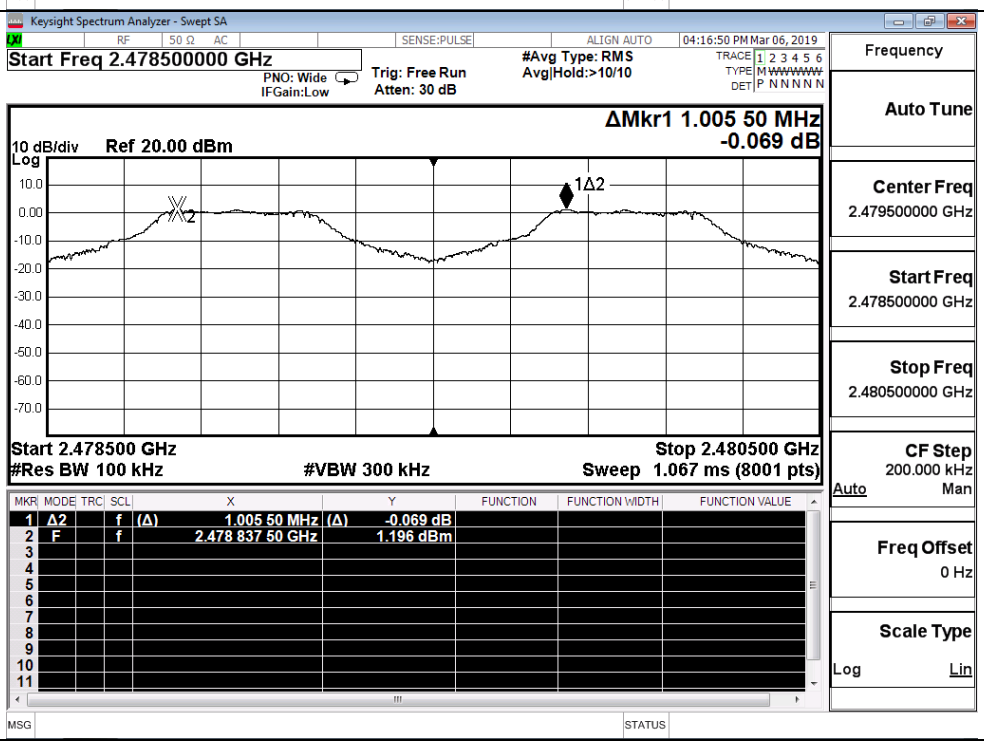
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.003	0.583	PASS
	MCH	0.999	0.583	PASS
	HCH	1.006	0.583	PASS
π/4DQPSK	LCH	0.998	0.833	PASS
	MCH	0.999	0.833	PASS
	HCH	1.000	0.833	PASS

Test Graphs	
GFSK/LCH	

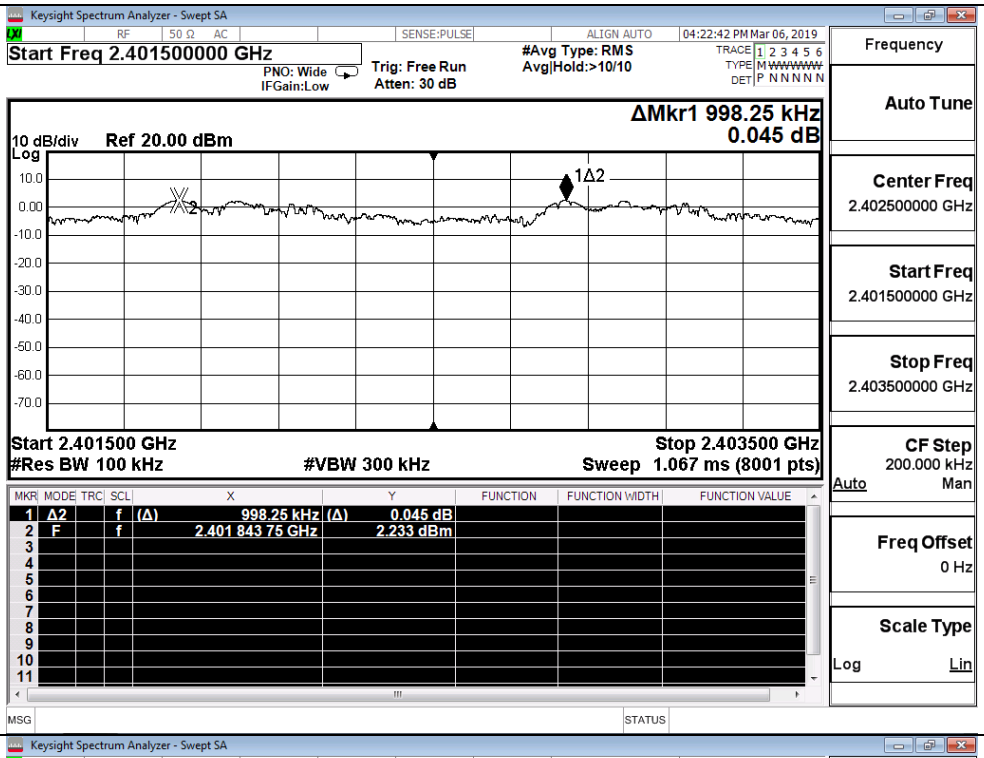
GFSK/MCH



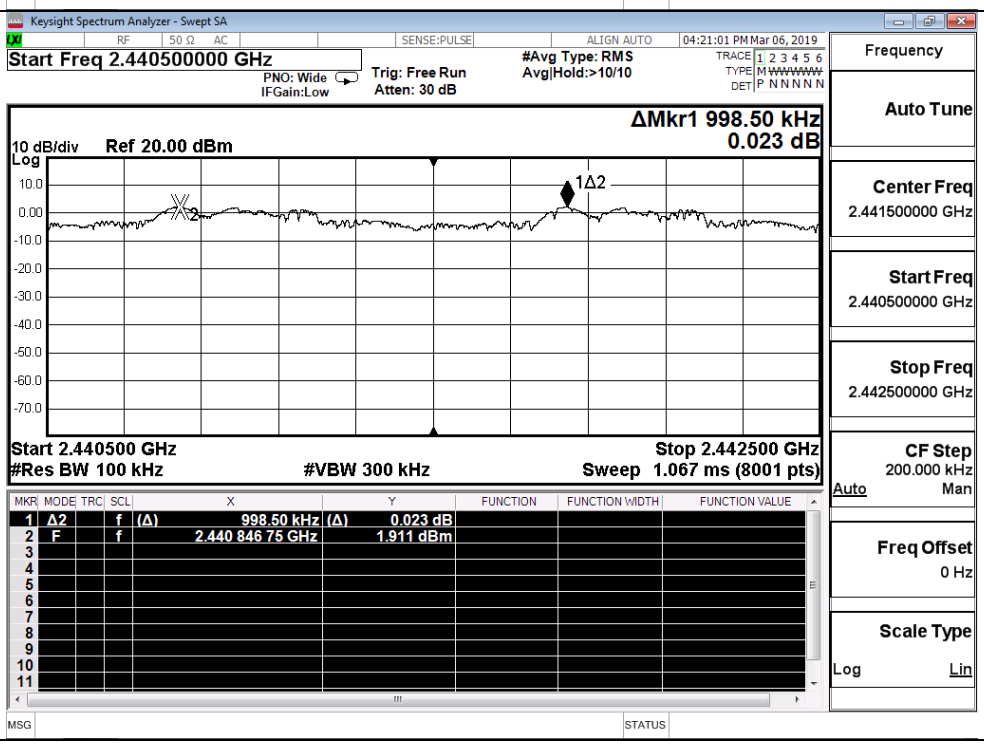
GFSK/HCH



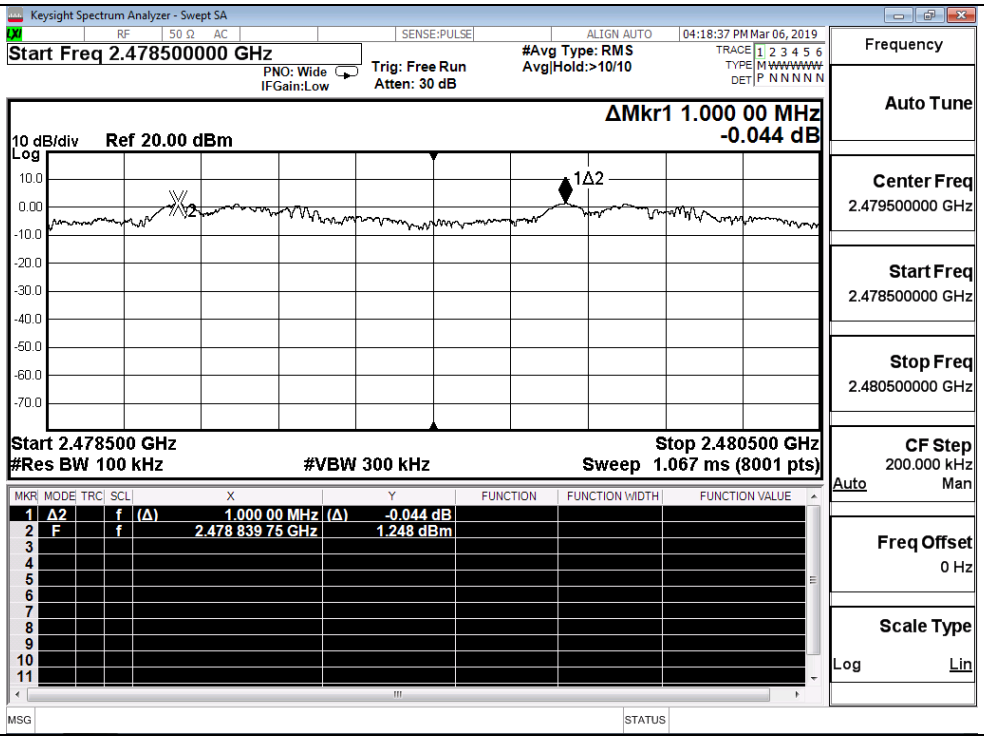
π/4DQPSK/LCH



π/4DQPSK/MCH

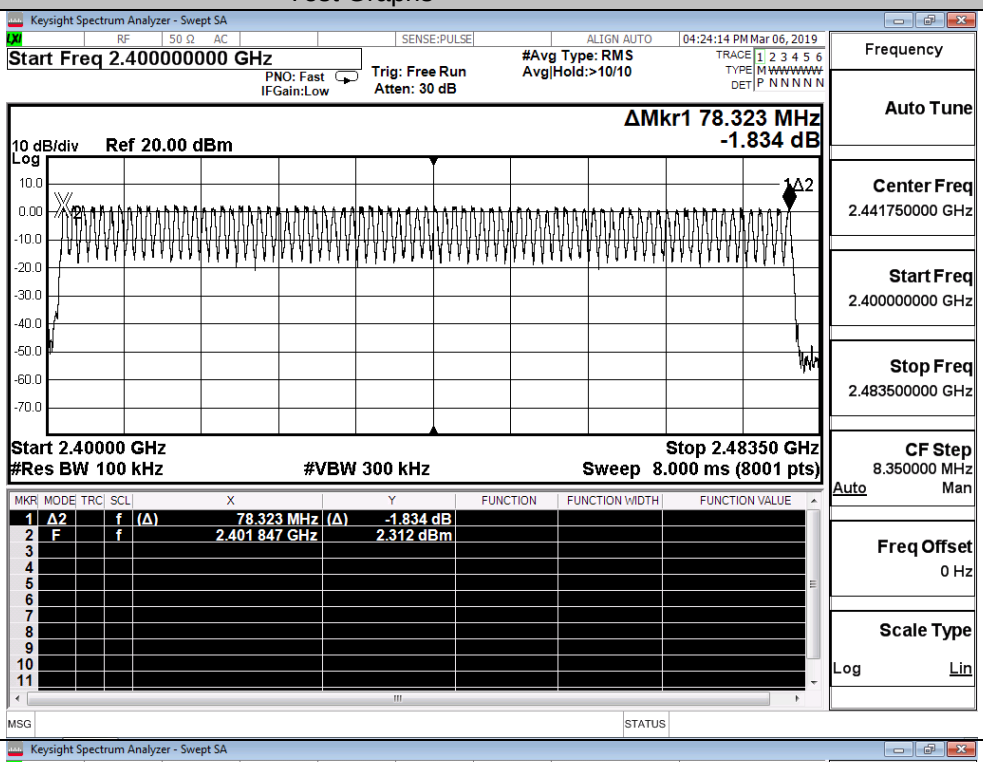
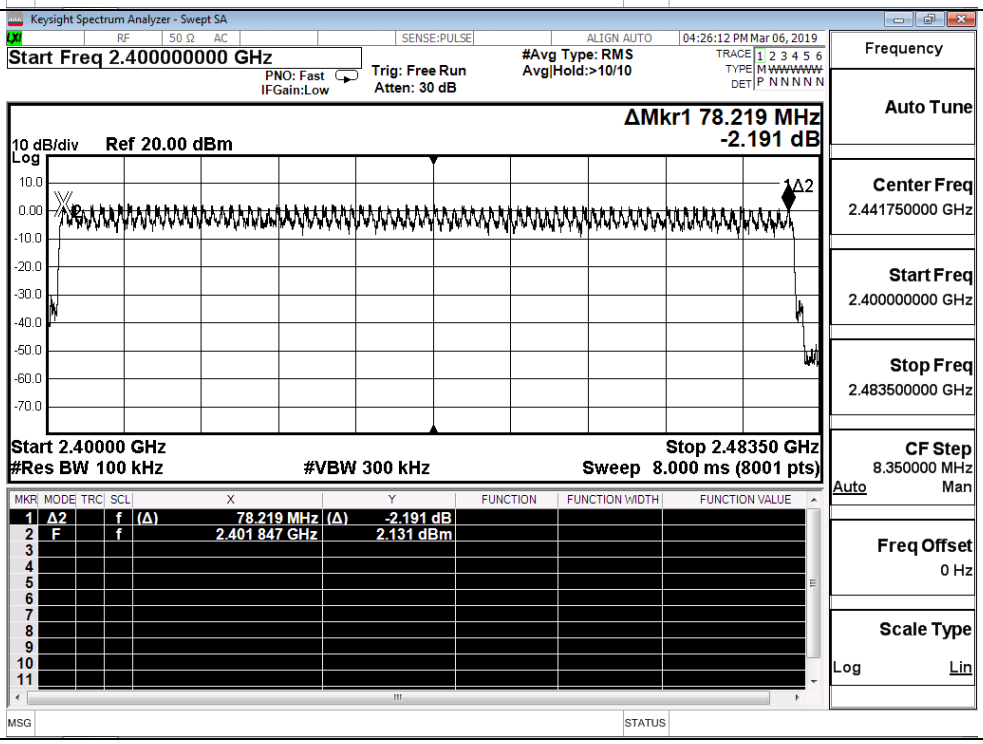


π/4DQPSK/HCH


Keysight Spectrum Analyzer - Swept SA
Start Freq 2.478500000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>10/10
04:18:37 PM Mar 06, 2019
ΔMkr1 1.000 00 MHz
-0.044 dB
10 dB/div Ref 20.00 dBm
Log
1Δ2
Start 2.478500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.480500 GHz
Sweep 1.067 ms (8001 pts)
1 Δ2 f (Δ) 1.000 00 MHz (Δ) -0.044 dB
2 F f 2.478 839 75 GHz 1.248 dBm
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
Scale Type
Log Lin

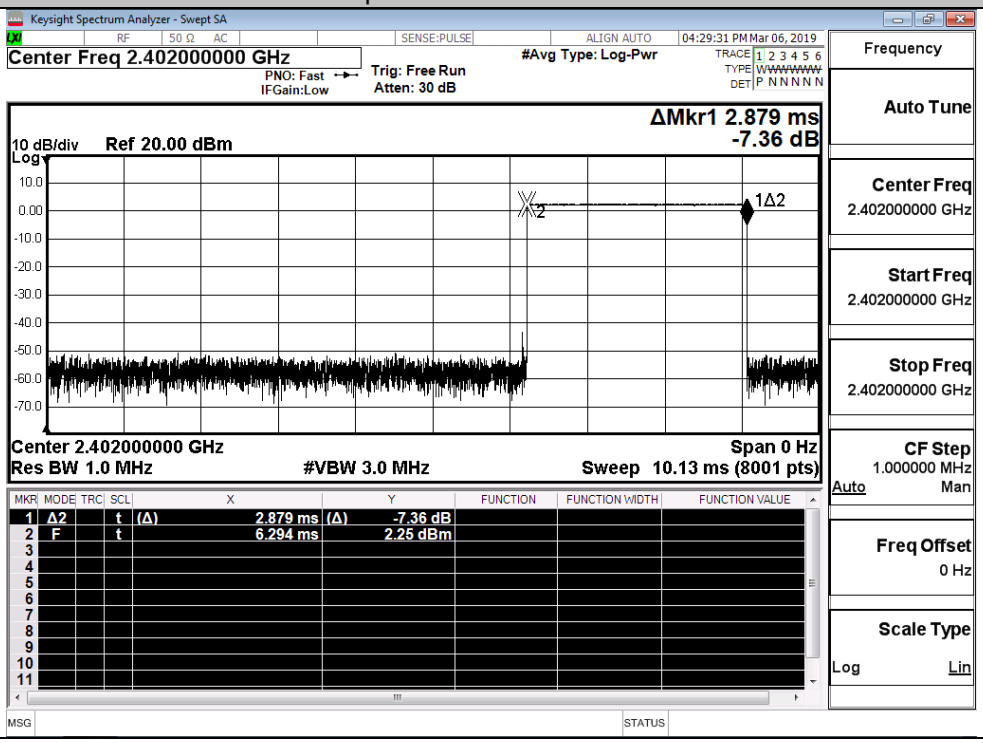
A.4 Hopping Channel Number

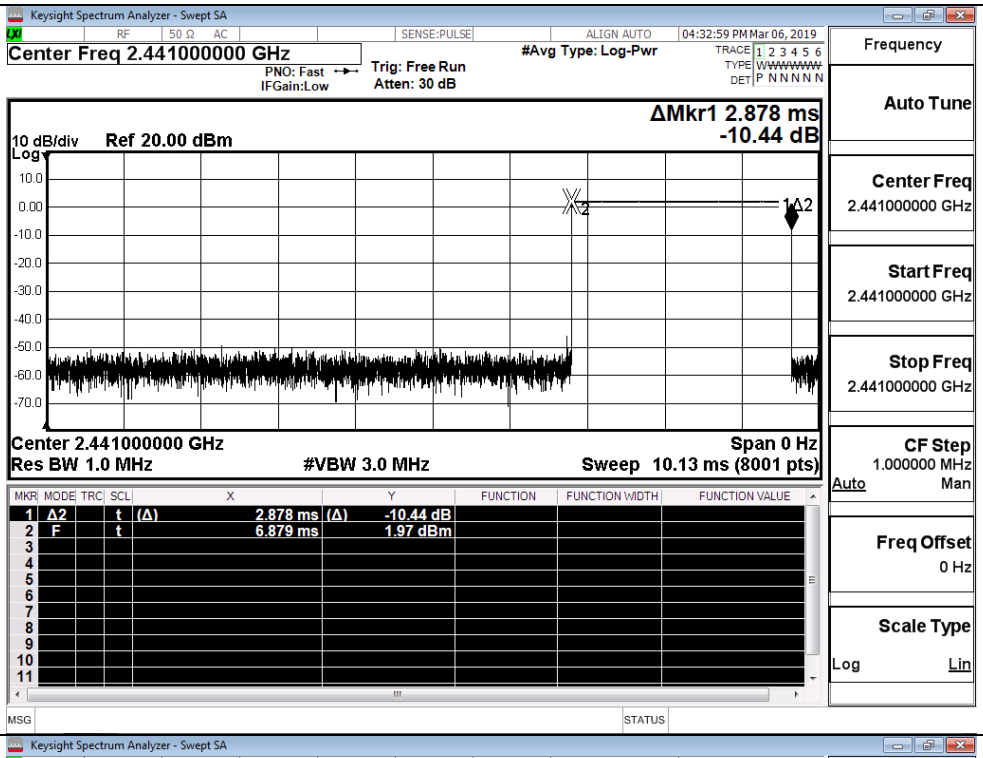
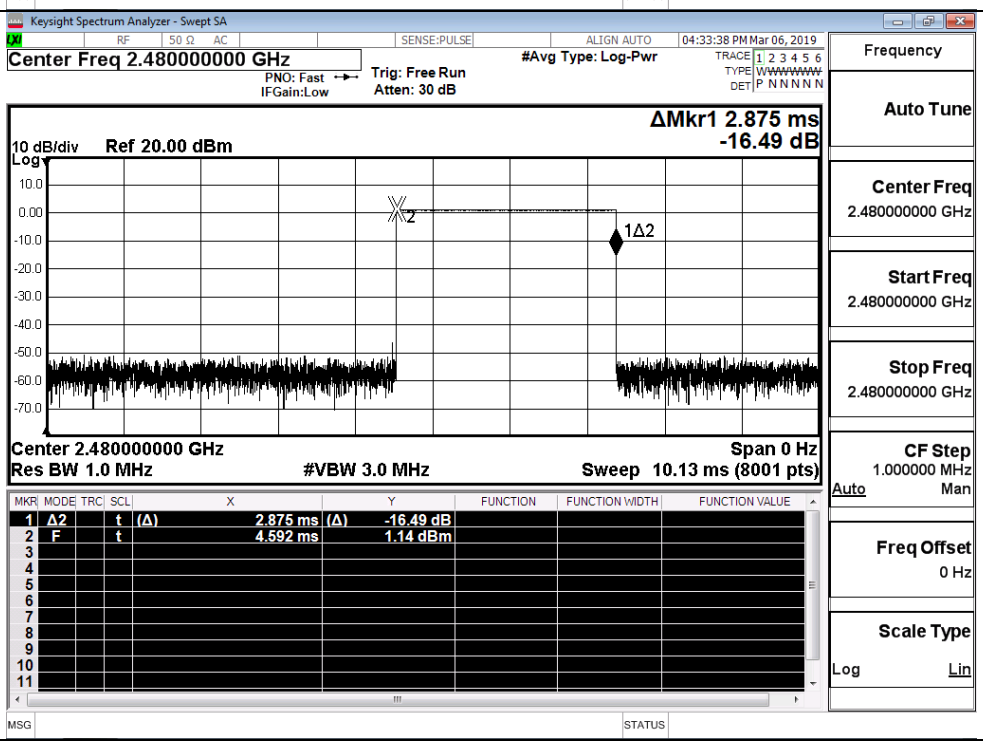
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS

Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

A.5 Dwell Time

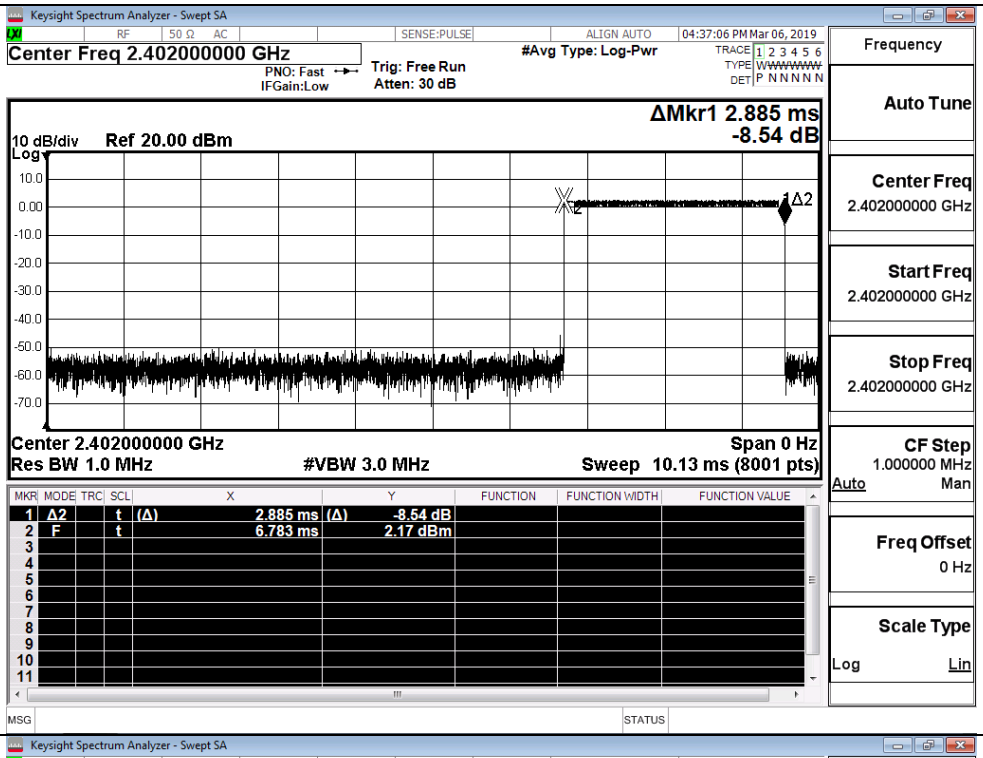
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.879	106.7	0.307	0.4	PASS
	DH5	MCH	2.878	106.7	0.307	0.4	PASS
	DH5	HCH	2.875	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.885	106.7	0.308	0.4	PASS
	2DH5	MCH	2.880	106.7	0.307	0.4	PASS
	2DH5	HCH	2.884	106.7	0.308	0.4	PASS

Test Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

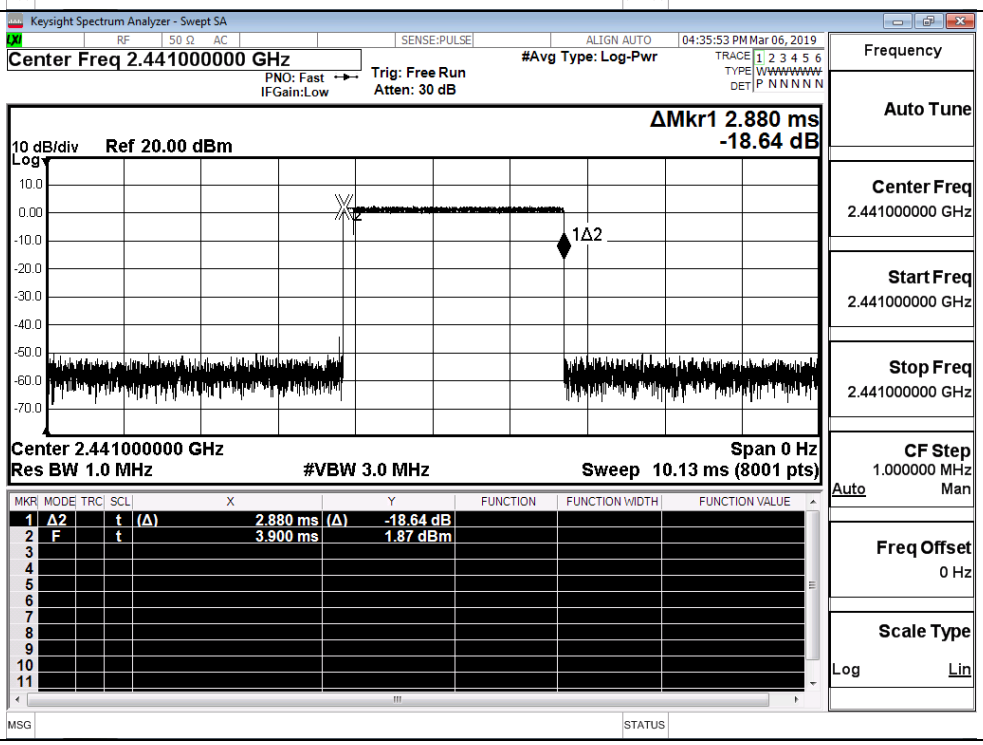
π/4DQPSK

_2DH5/LCH



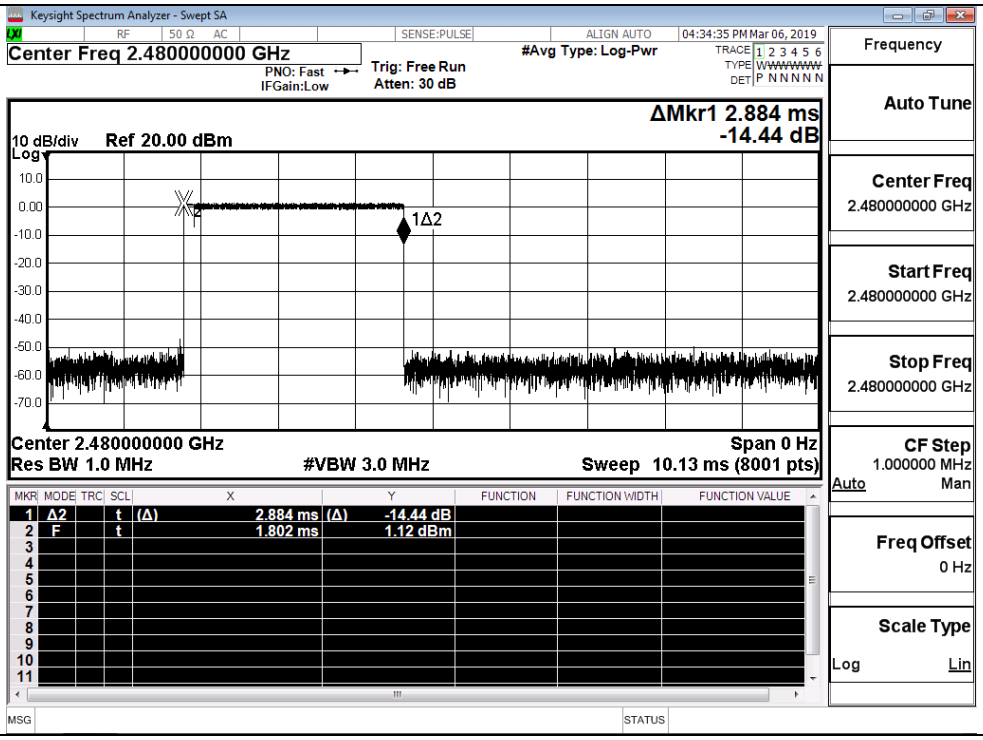
π/4DQPSK

_2DH5/MCH



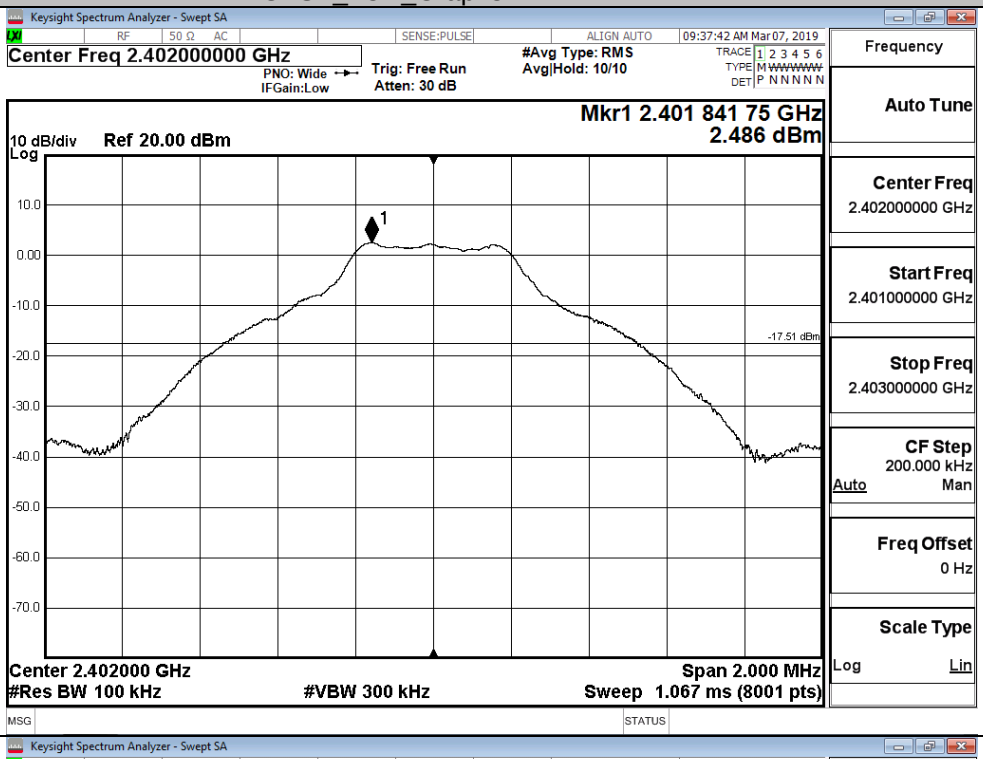
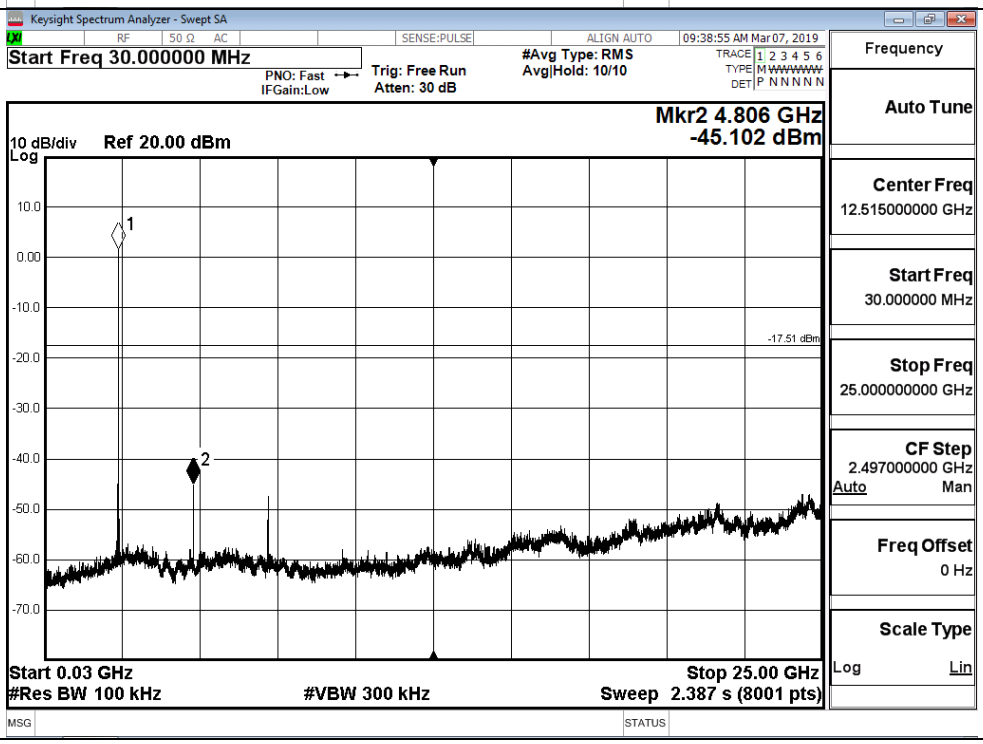
π/4DQPSK

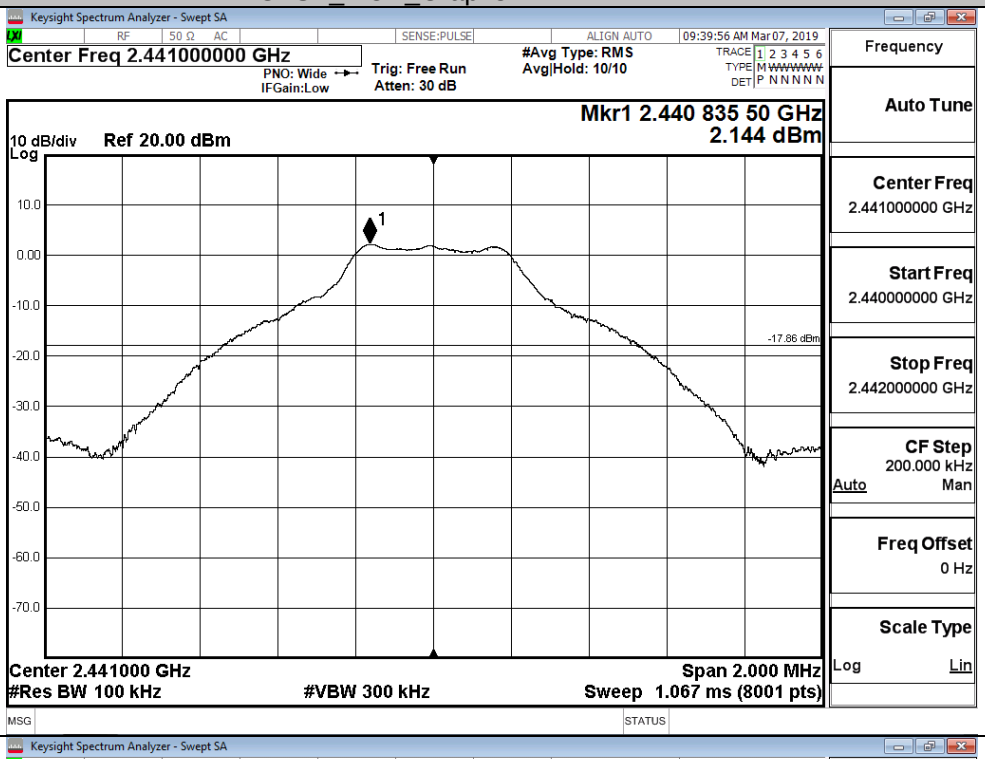
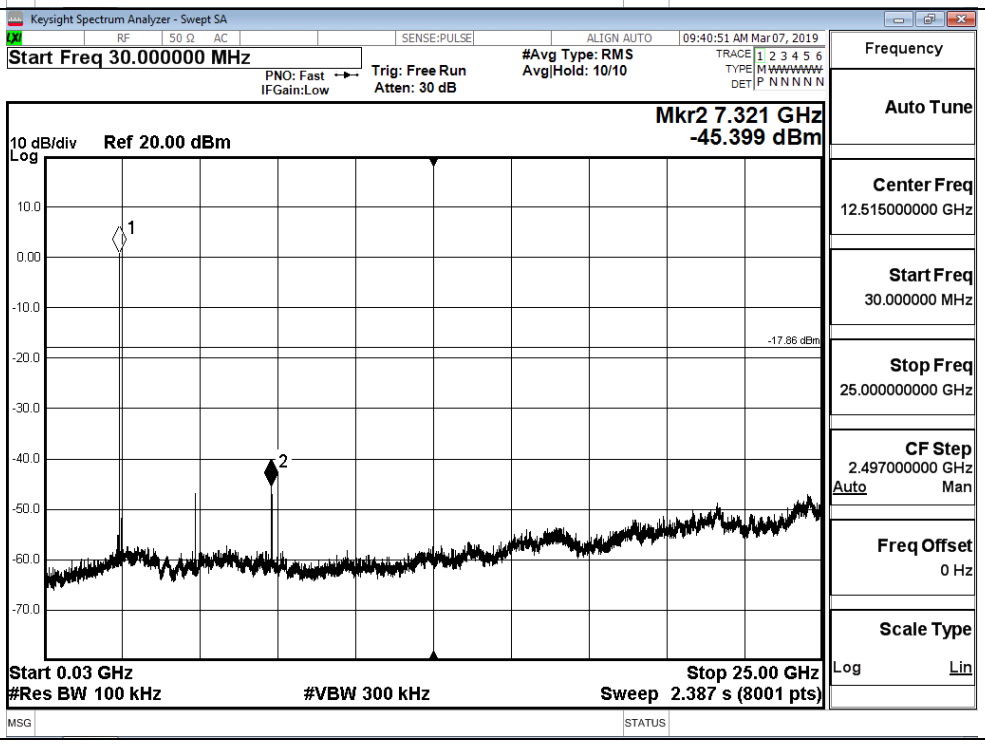
_2DH5/HCH

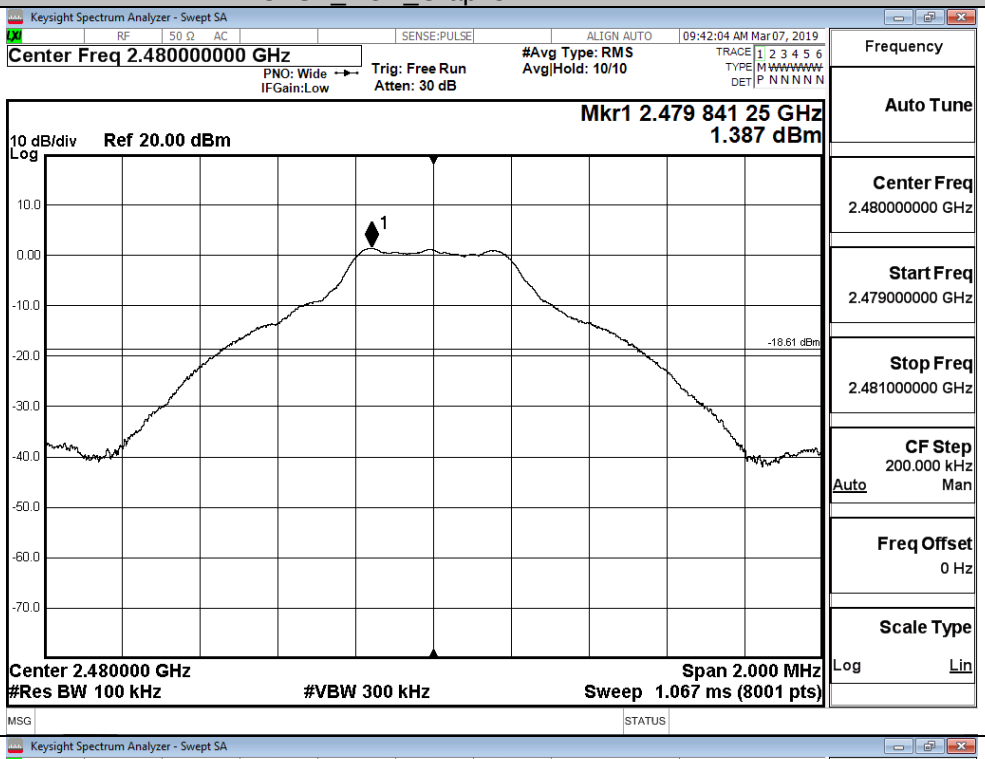
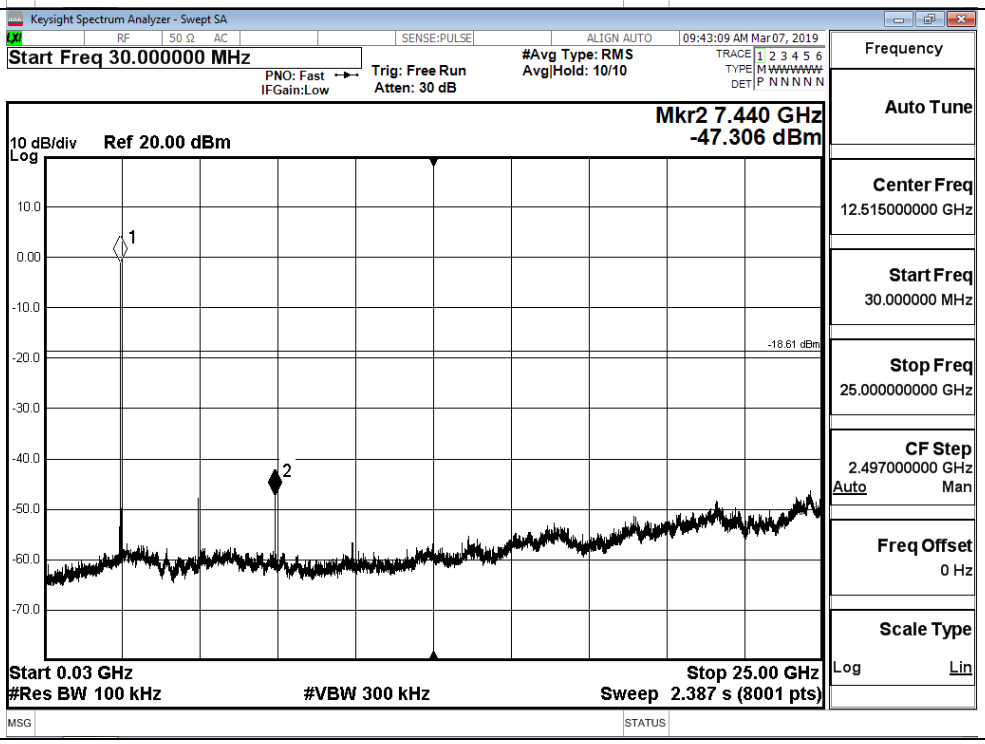


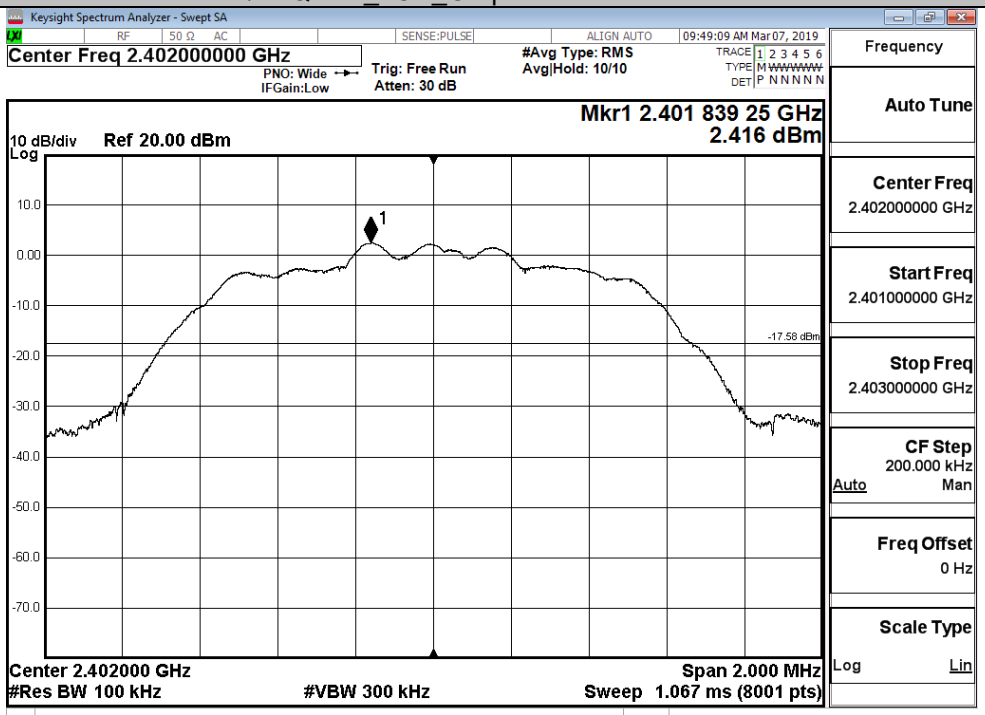
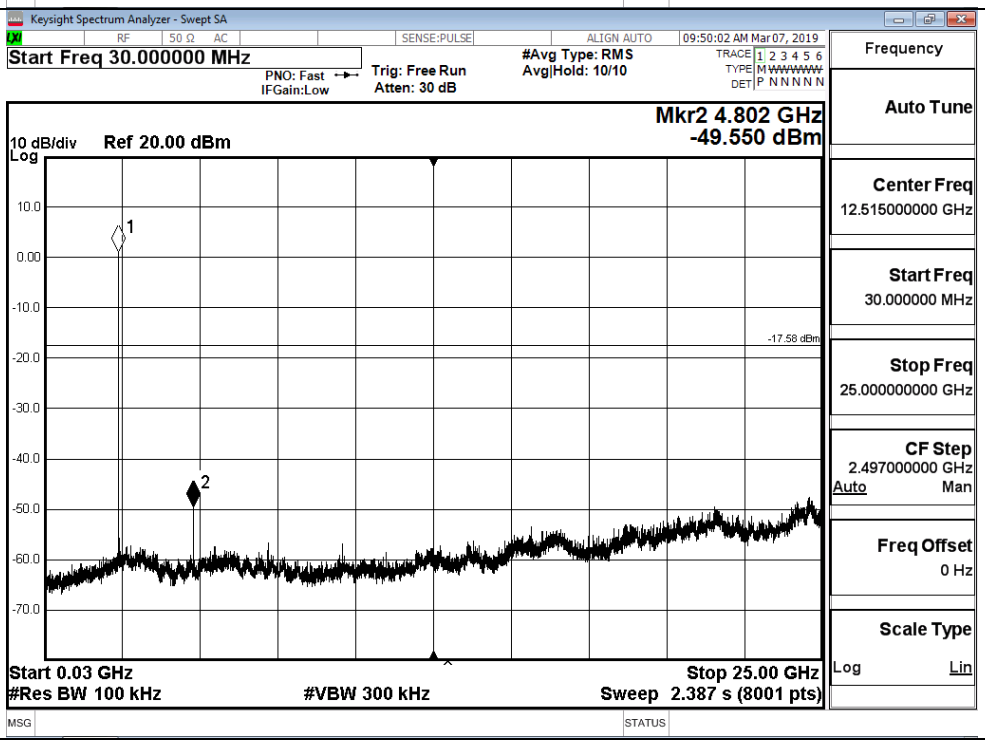
A.6 RF Conducted Spurious Emissions

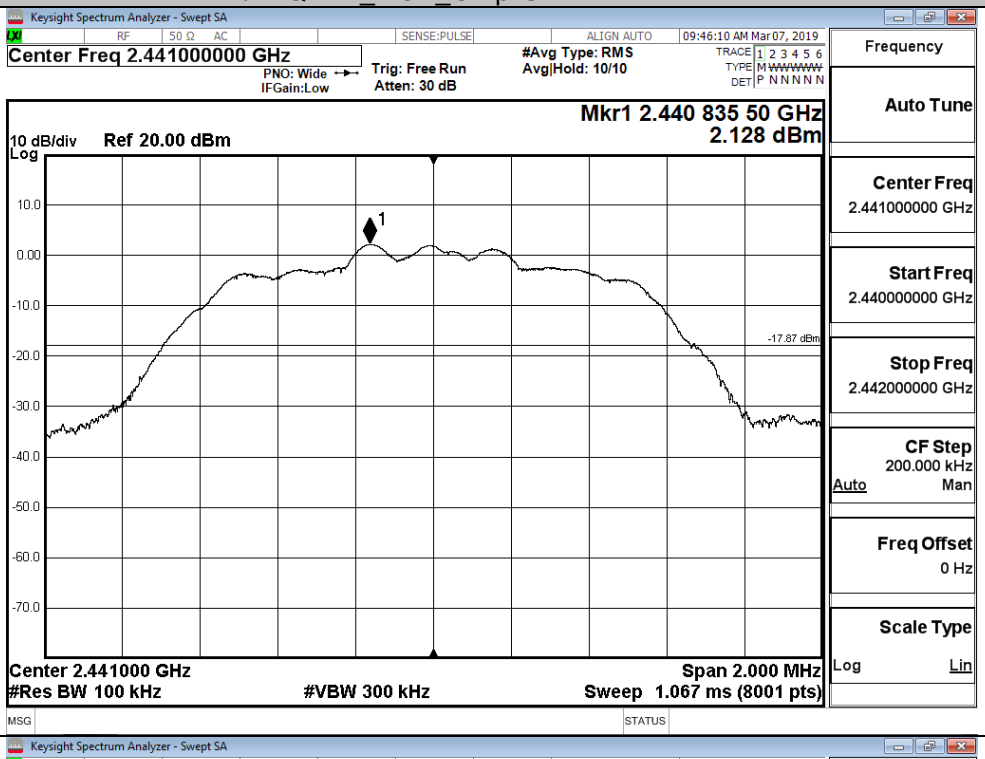
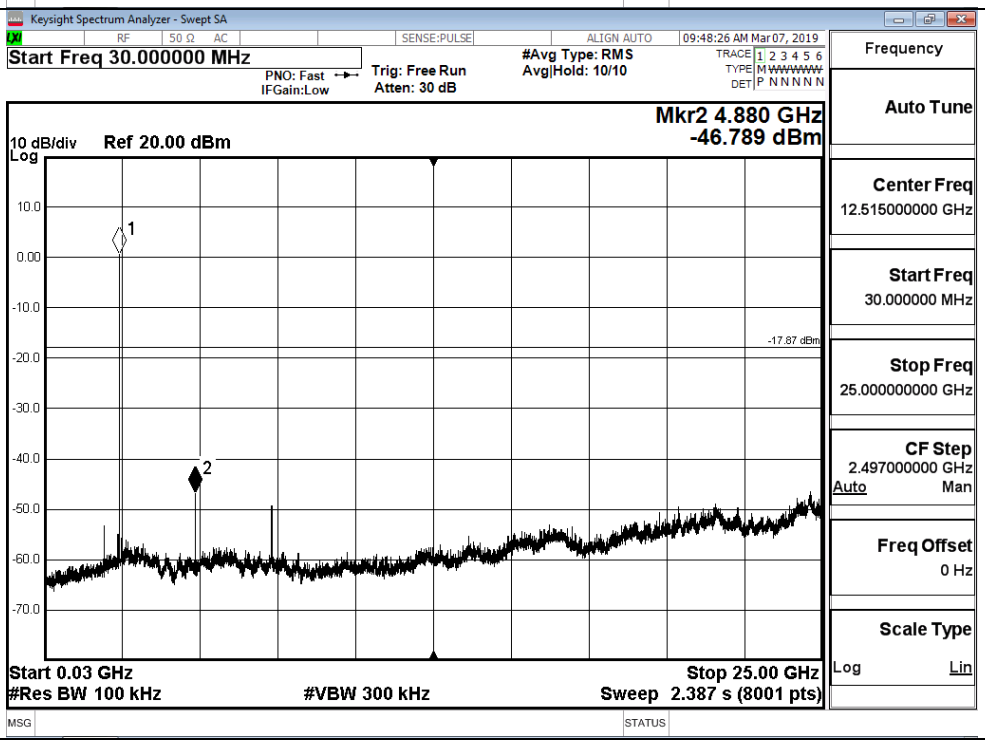
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.486	-45.102	-17.514	PASS
	MCH	2.144	-45.399	-17.856	PASS
	HCH	1.387	-47.306	-18.613	PASS
π/4DQPSK	LCH	2.416	-49.550	-17.584	PASS
	MCH	2.128	-46.789	-17.872	PASS
	HCH	1.253	-43.074	-18.747	PASS

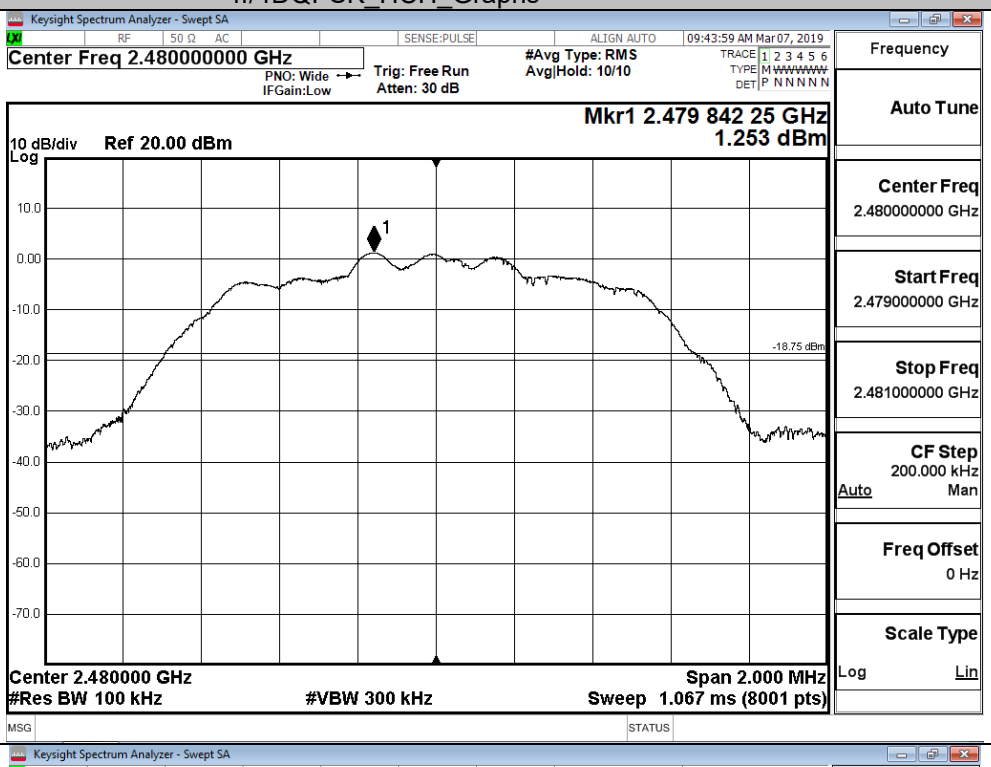
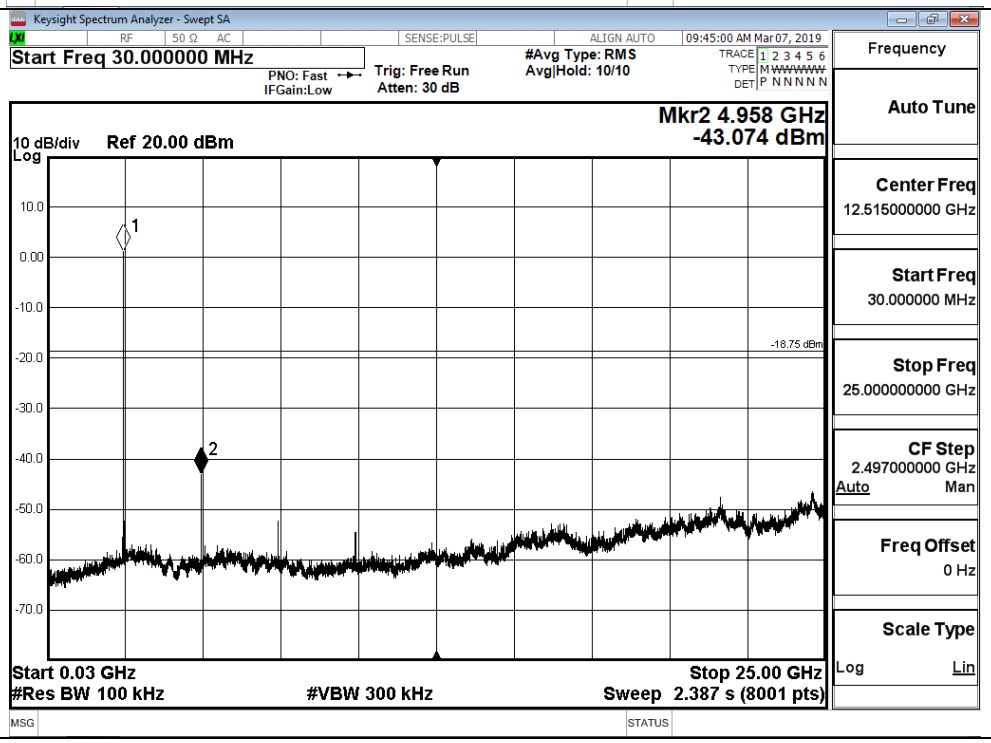
GFSK_LCH_Graphs	
Pref	
Puw	

GFSK_MCH_Graphs	
Pref	
Puw	

GFSK_HCH_Graphs	
Pref	
Puw	

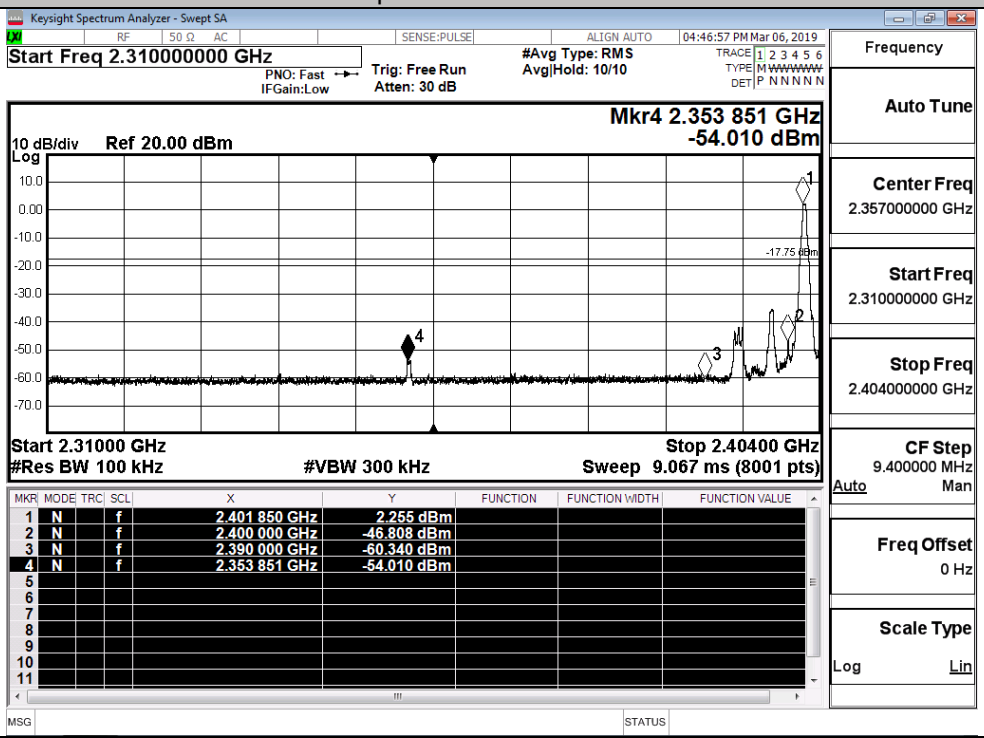
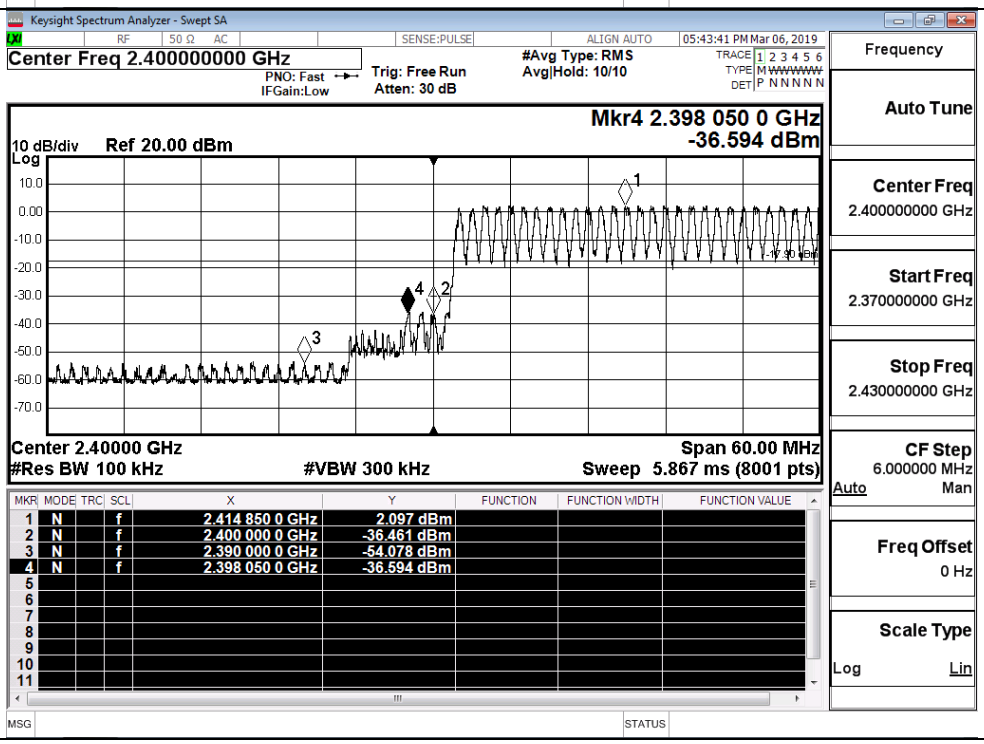
π/4DQPSK_LCH_Graphs	
Pref	
Puw	

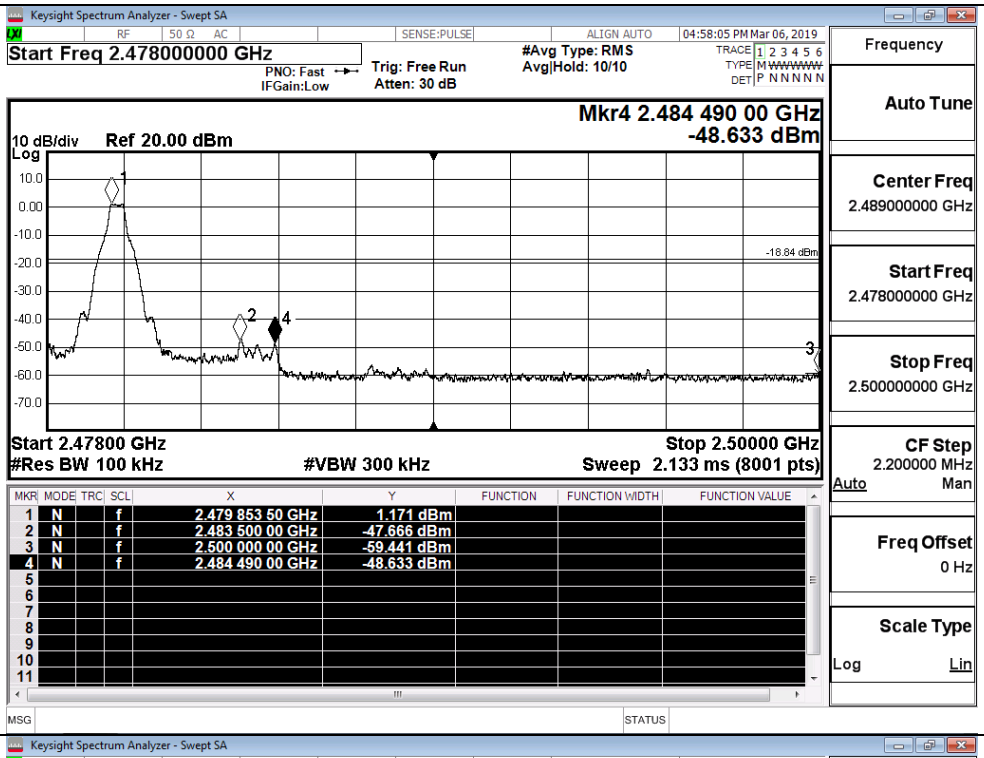
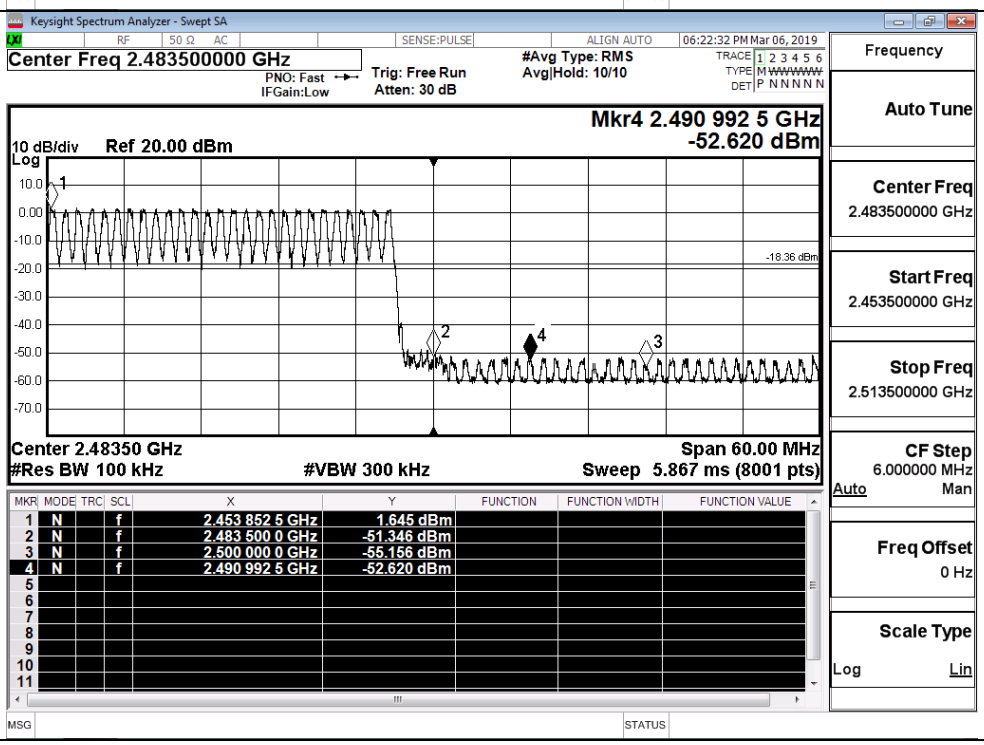
π/4DQPSK_MCH_Graphs	
Pref	
Puw	

π/4DQPSK_HCH_Graphs	
Pref	
Puw	

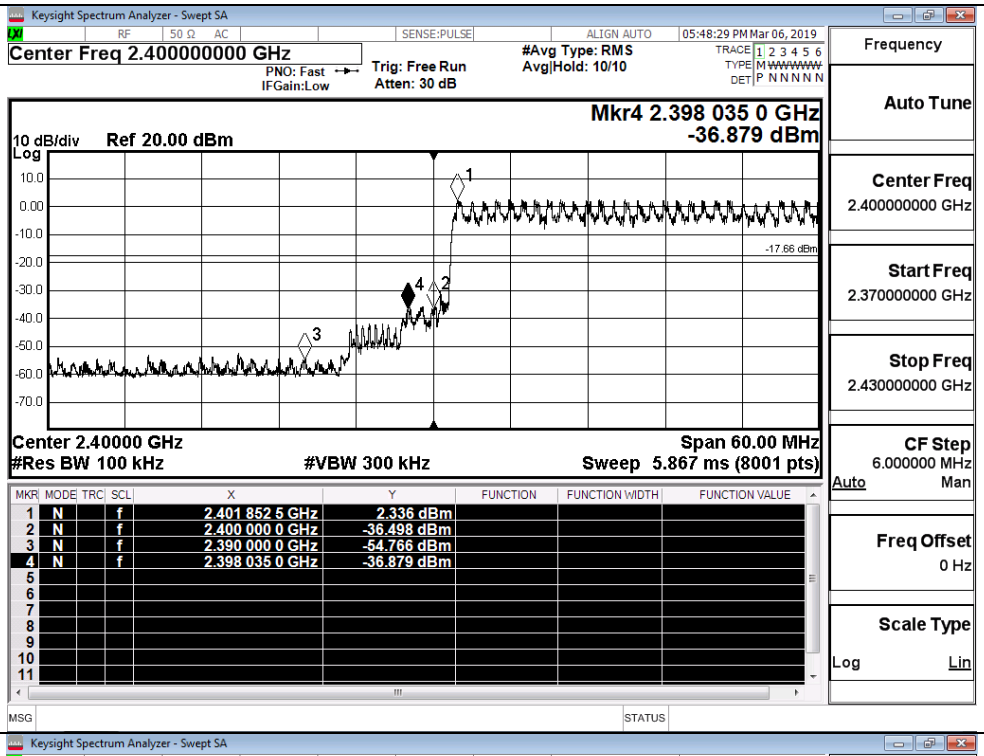
A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	2.255	Off	-54.010	-17.745	PASS
			2.097	On	-36.594	-17.903	PASS
	HCH	2480	1.171	Off	-48.633	-18.829	PASS
			1.645	On	-52.620	-18.355	PASS
π/4DQPSK	LCH	2402	2.336	Off	-36.879	-17.664	PASS
			2.319	On	-36.135	-17.681	PASS
	HCH	2480	1.164	Off	-48.820	-18.846	PASS
			1.418	On	-51.123	-18.582	PASS

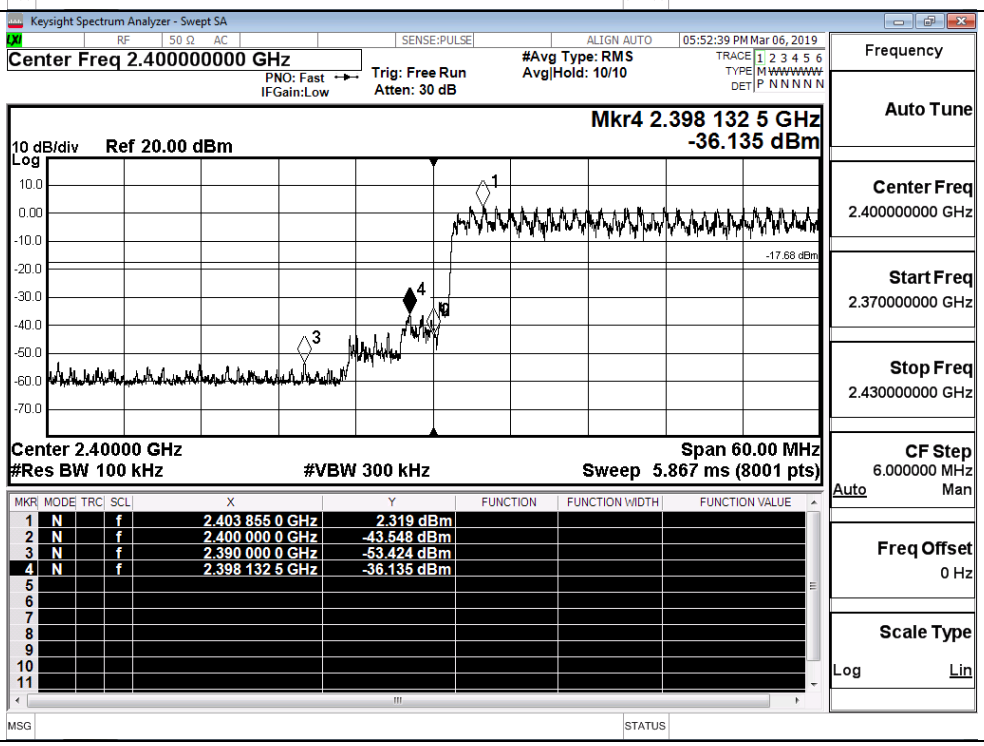
Test Graphs	
GFSK/LCH/No Hop	
GFSK/LCH/Hop	

GFSK/HCH/No Hop	
GFSK/HCH/Hop	

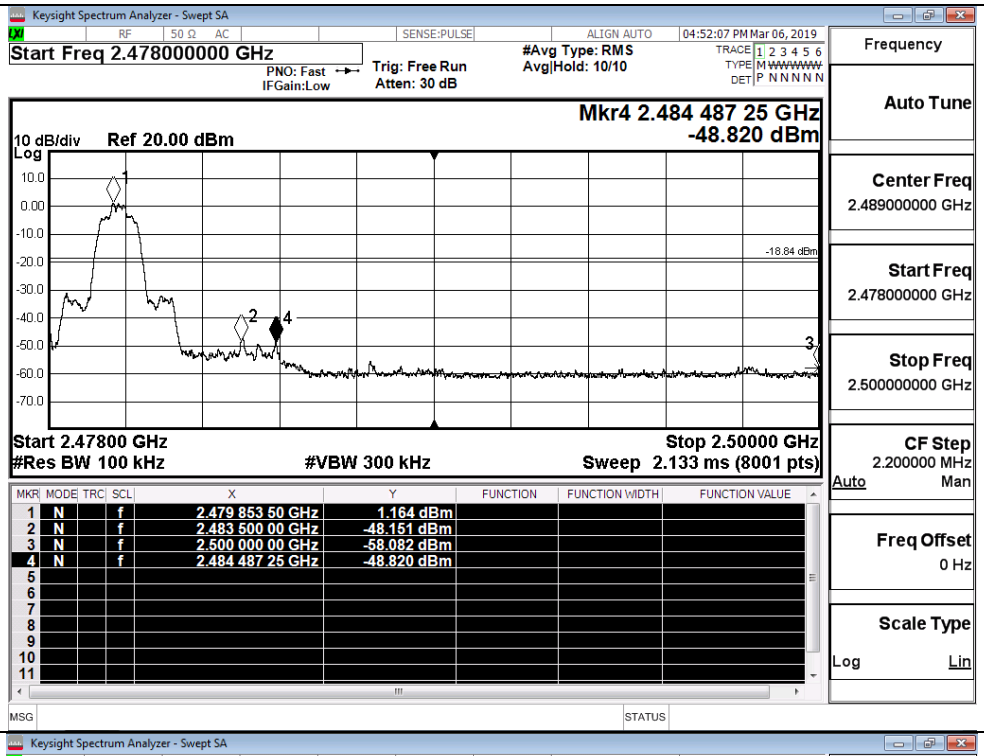
π/4DQPSK/LCH/No Hop



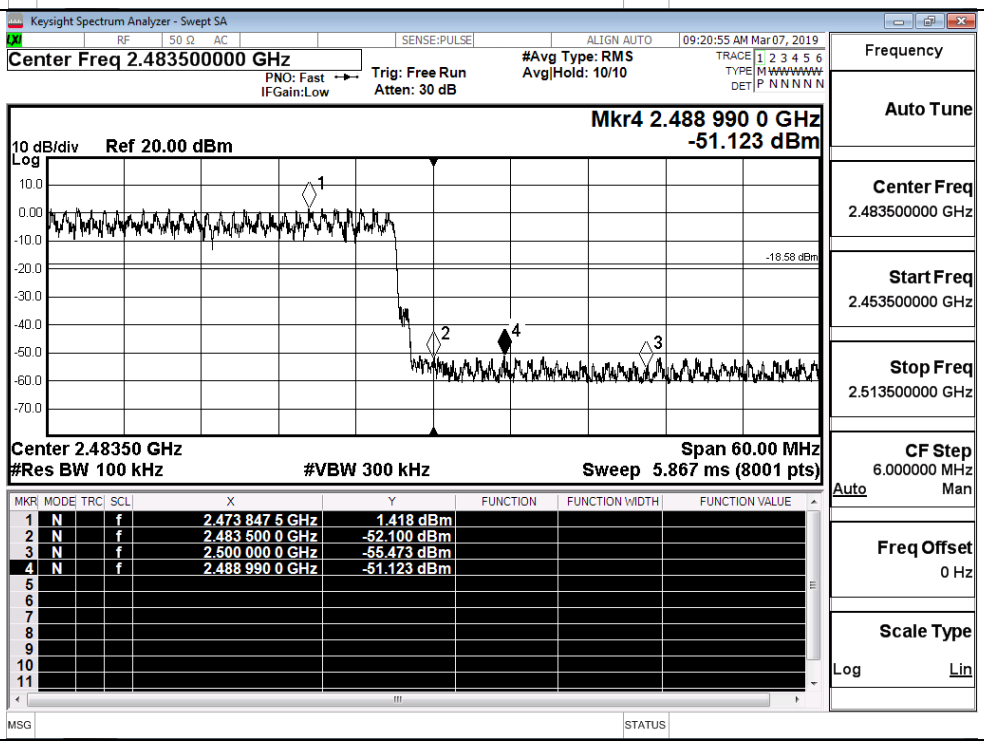
π/4DQPSK/LCH/Hop



π/4DQPSK/HCH/No Hop



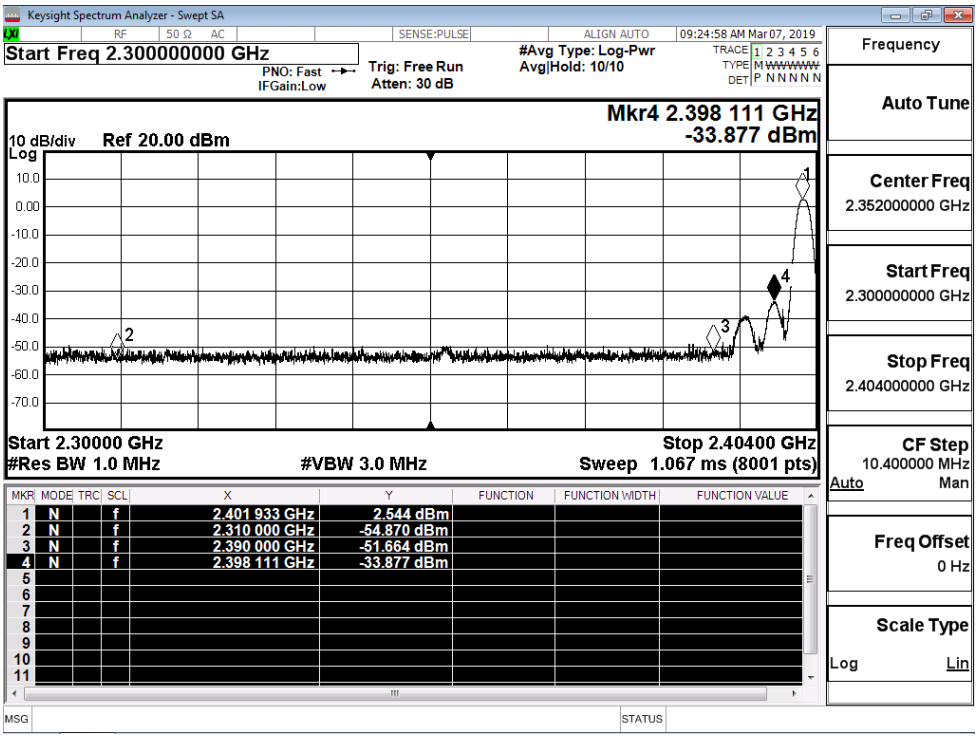
π/4DQPSK/HCH/Hop



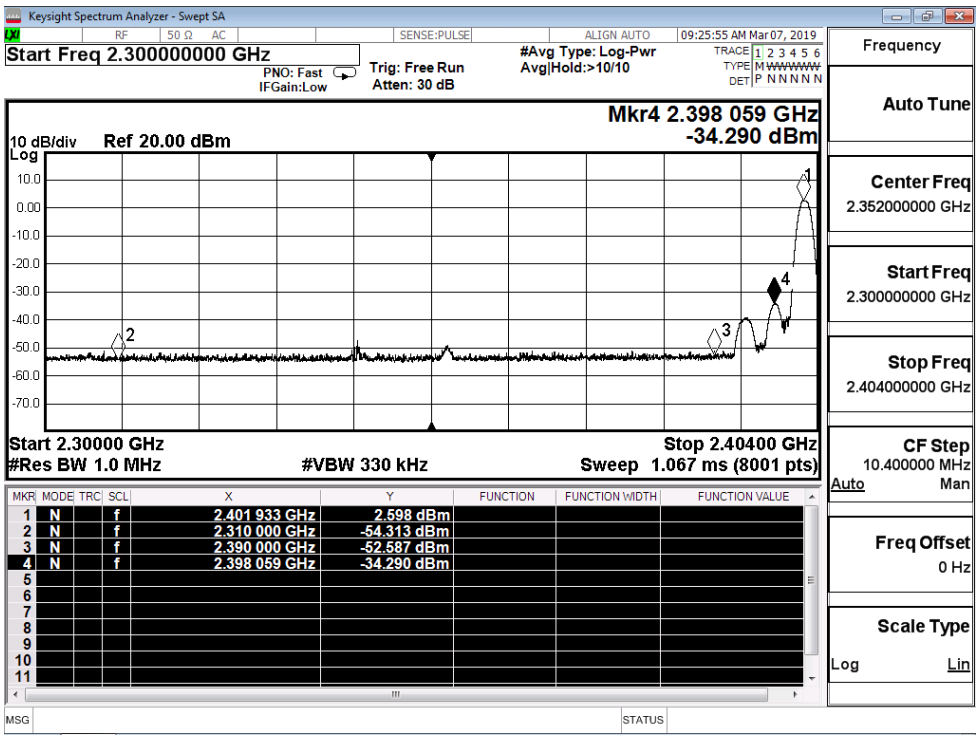
A.8 Restrict-band band-edge measurements

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-54.870	2.0	0	42.390	PEAK	74	PASS
	Off	2310.0	-54.313	2.0	0	42.947	AV	54	PASS
	Off	2390.0	-51.664	2.0	0	45.596	PEAK	74	PASS
	Off	2390.0	-52.587	2.0	0	44.673	AV	54	PASS
	Off	2483.5	-42.252	2.0	0	55.008	PEAK	74	PASS
	Off	2483.5	-44.317	2.0	0	52.943	AV	54	PASS
	Off	2500.0	-50.410	2.0	0	46.850	PEAK	74	PASS
	Off	2500.0	-53.666	2.0	0	43.594	AV	54	PASS
π/4DQPSK	Off	2310.0	-51.474	2.0	0	45.786	PEAK	74	PASS
	Off	2310.0	-54.628	2.0	0	42.632	AV	54	PASS
	Off	2390.0	-51.250	2.0	0	46.010	PEAK	74	PASS
	Off	2390.0	-52.898	2.0	0	44.362	AV	54	PASS
	Off	2483.5	-43.129	2.0	0	54.131	PEAK	74	PASS
	Off	2483.5	-45.062	2.0	0	52.198	AV	54	PASS
	Off	2500.0	-50.474	2.0	0	46.786	PEAK	74	PASS
	Off	2500.0	-54.561	2.0	0	42.699	AV	54	PASS

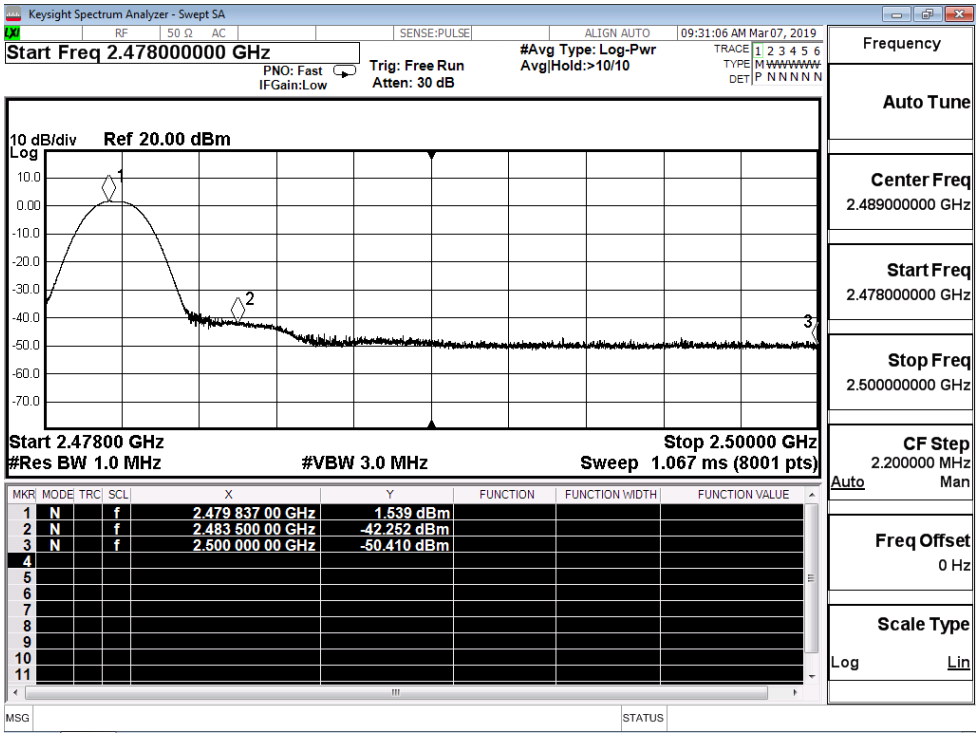
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



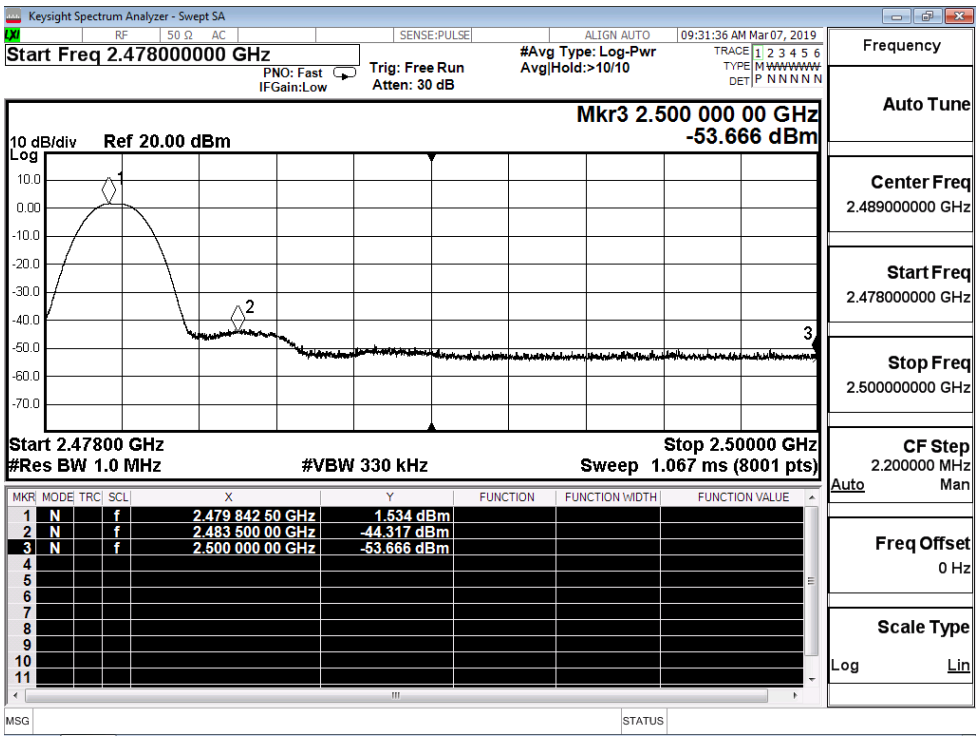
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



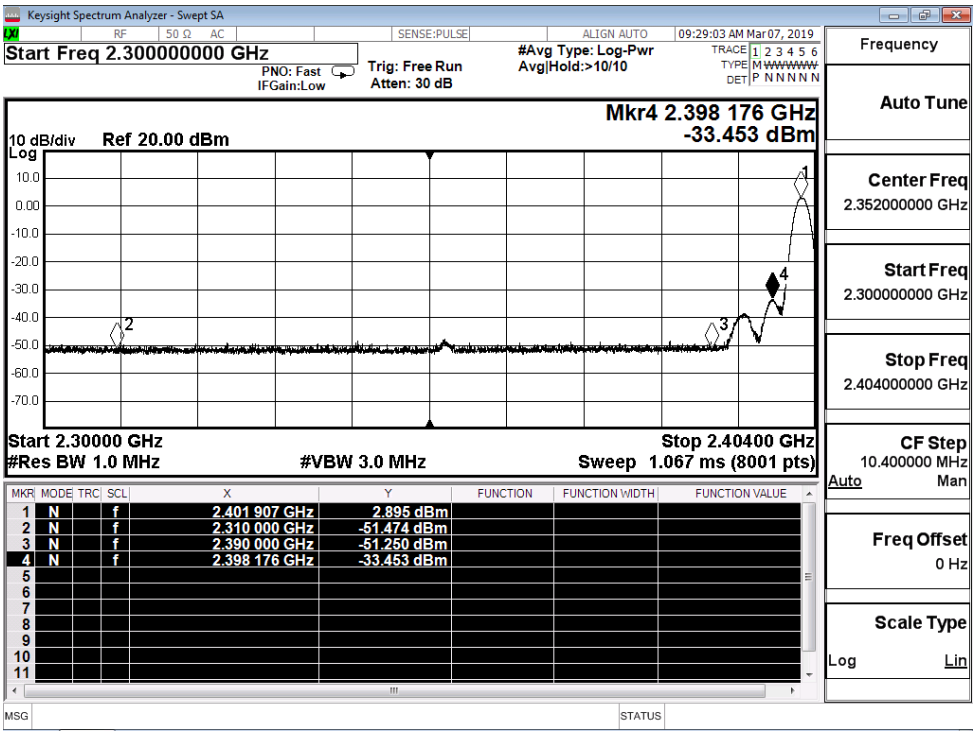
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



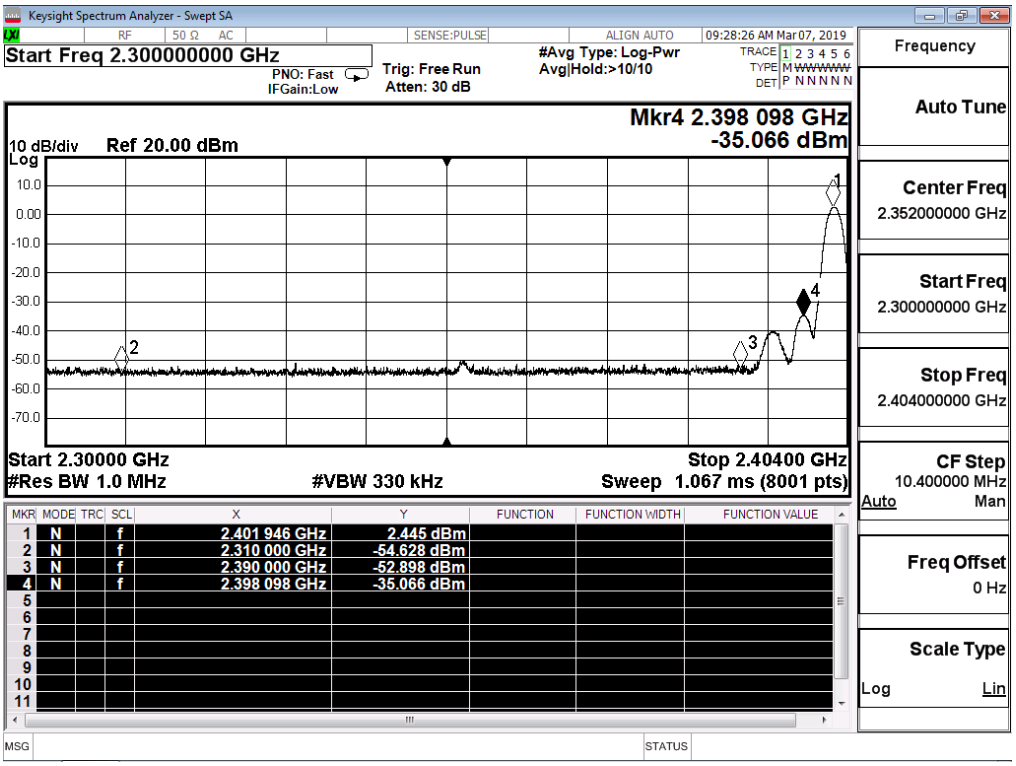
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



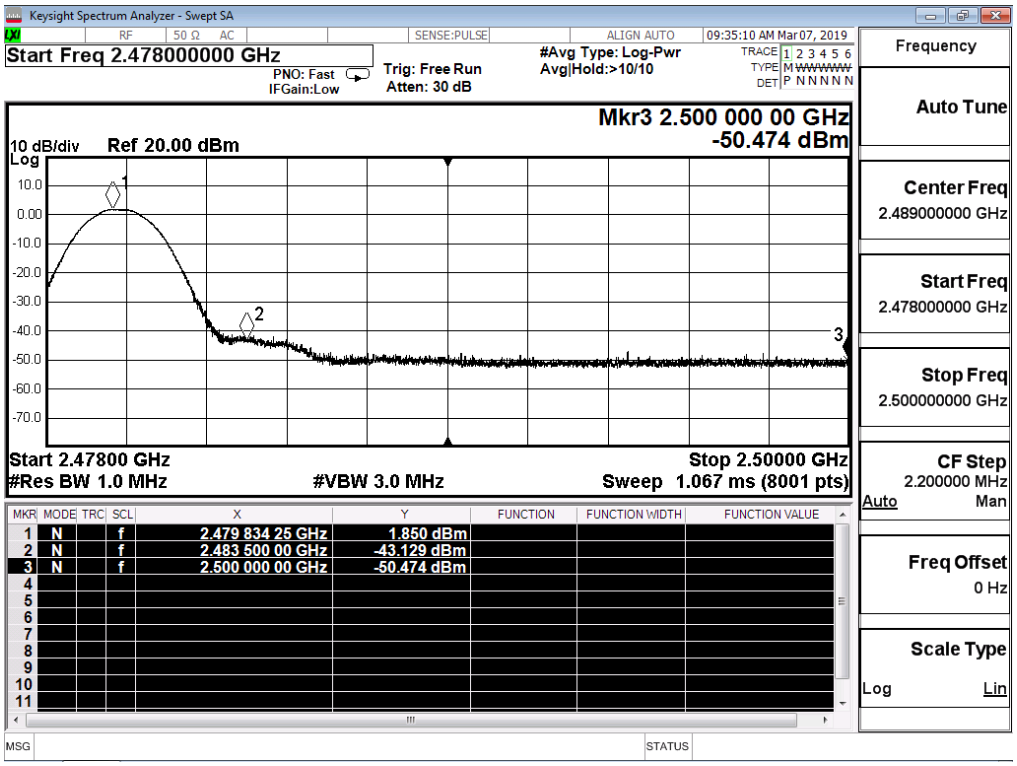
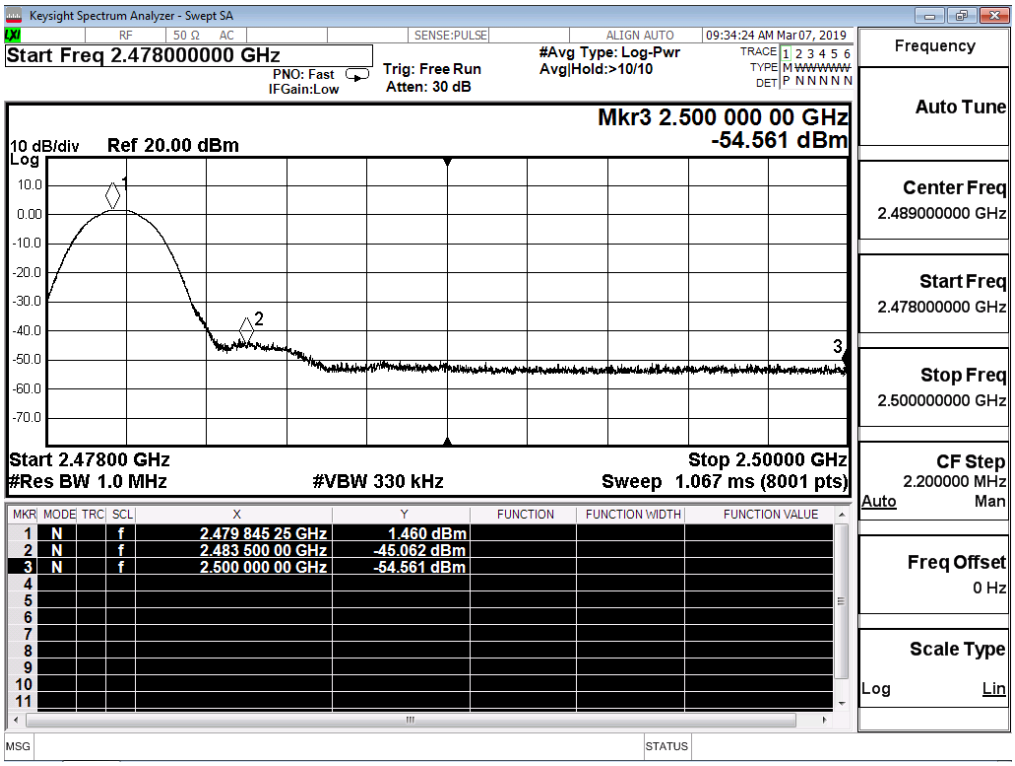
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_π/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)