Appendix A
RF Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth headset

Trade Mark: CDX

Test Model: D45

FCC ID: 2AQK8-D45

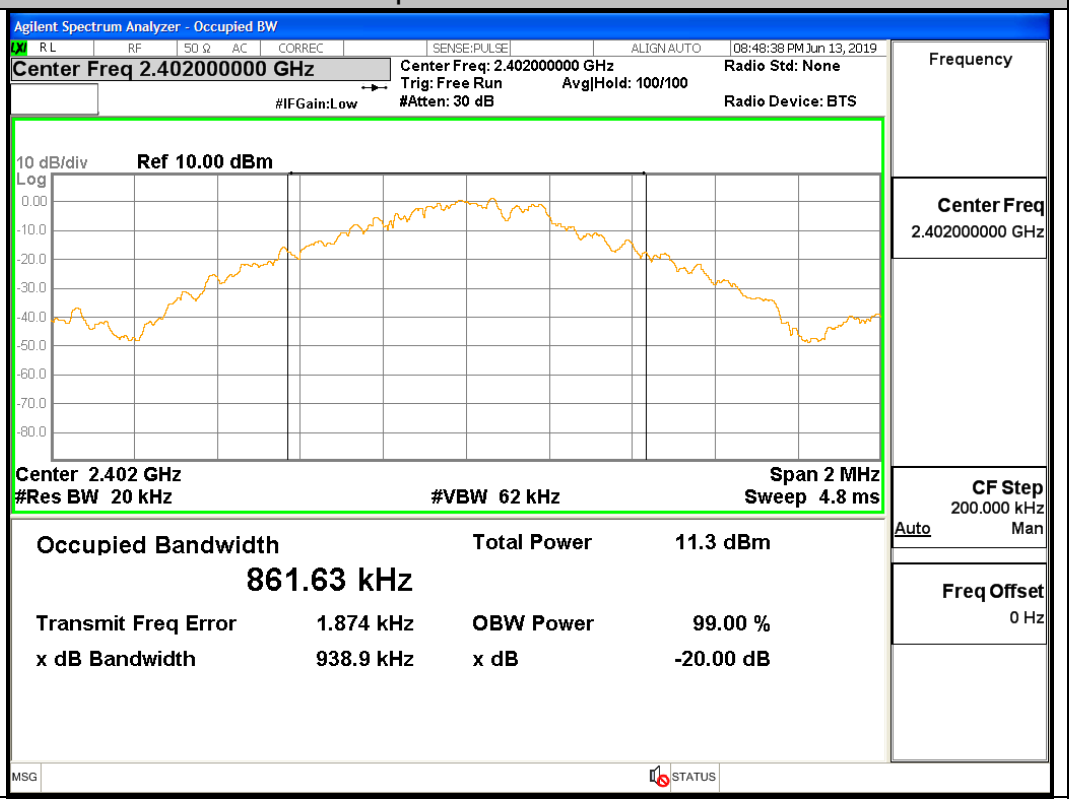
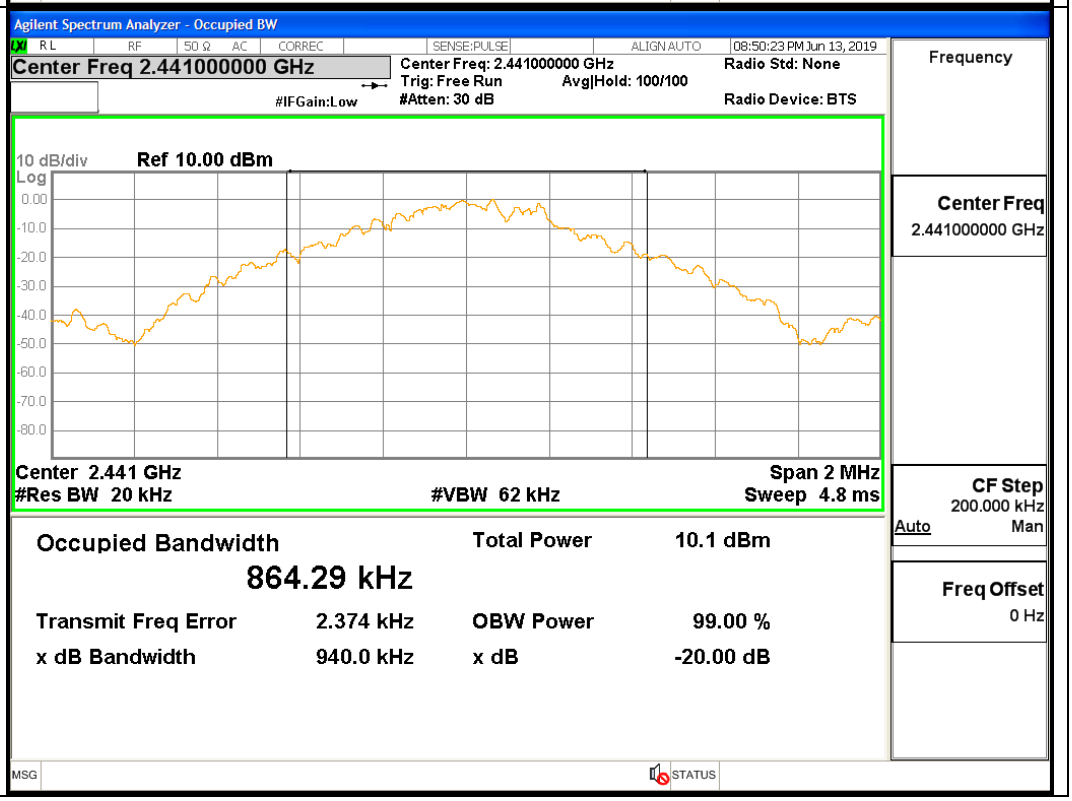
Environmental Conditions

Temperature:	23.3℃
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

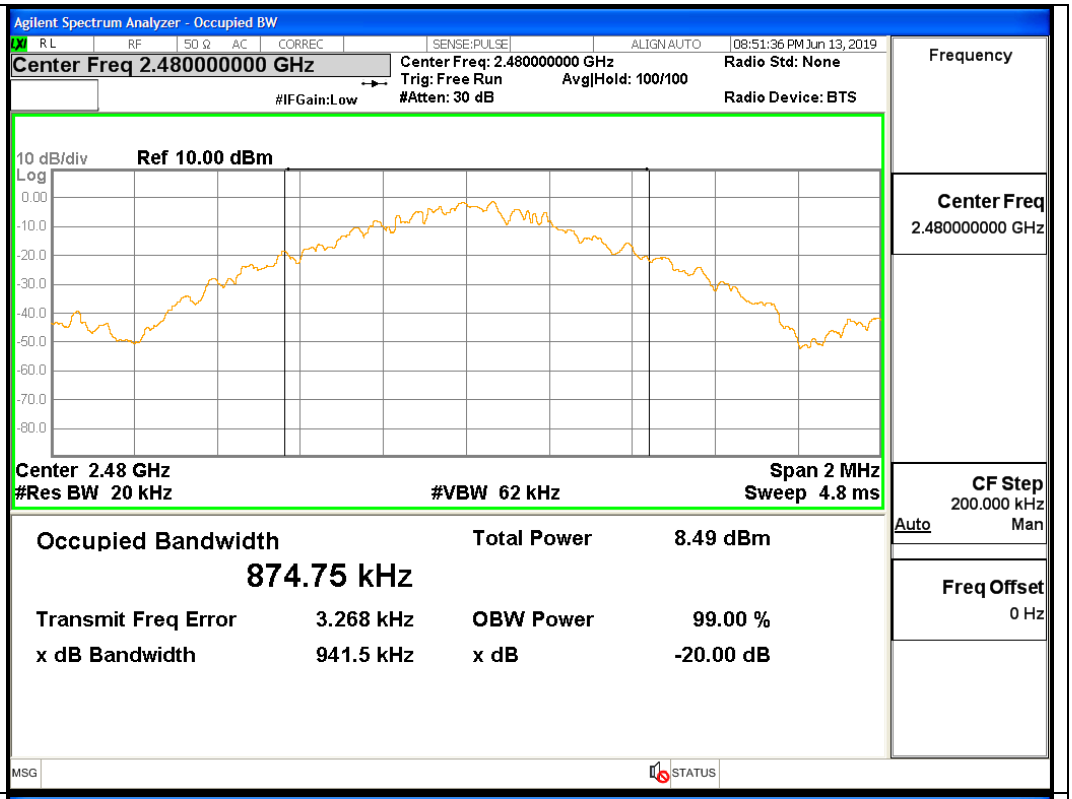
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.939	Not Specified	PASS
GFSK	MCH	0.940	Not Specified	PASS
GFSK	HCH	0.942	Not Specified	PASS
π/4DQPSK	LCH	1.334	Not Specified	PASS
π/4DQPSK	MCH	1.340	Not Specified	PASS
π/4DQPSK	HCH	1.333	Not Specified	PASS
8DPSK	LCH	1.326	Not Specified	PASS
8DPSK	MCH	1.336	Not Specified	PASS
8DPSK	HCH	1.330	Not Specified	PASS

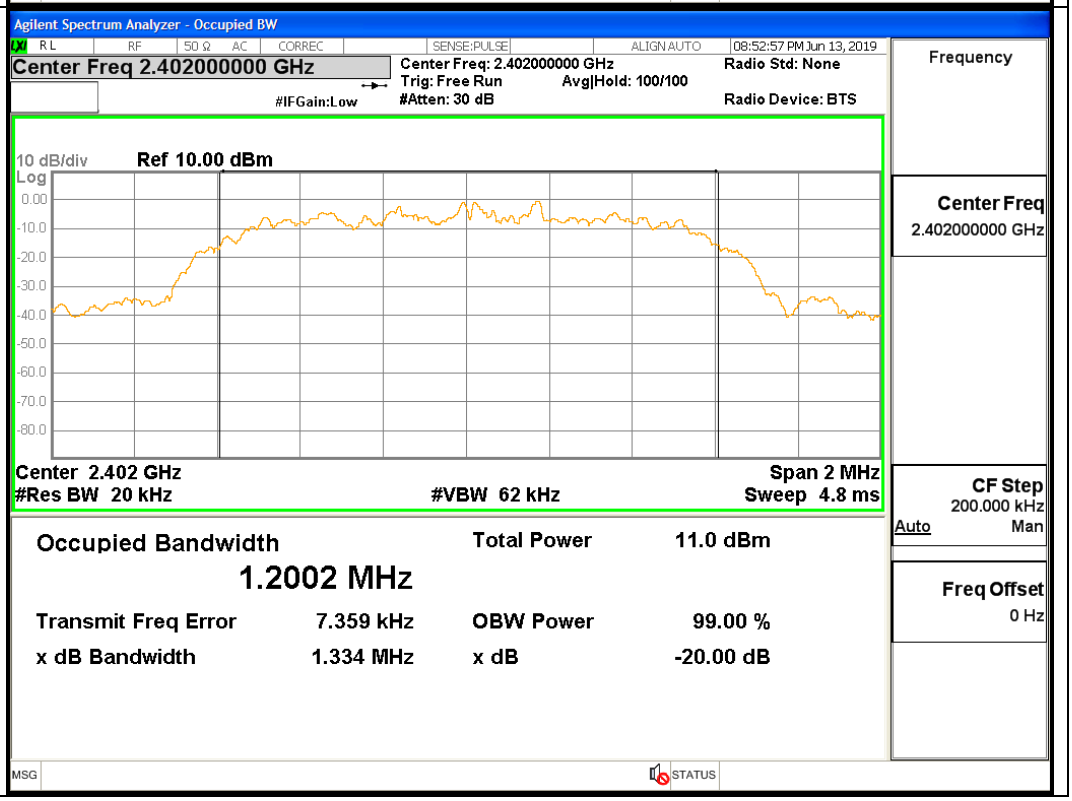
Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

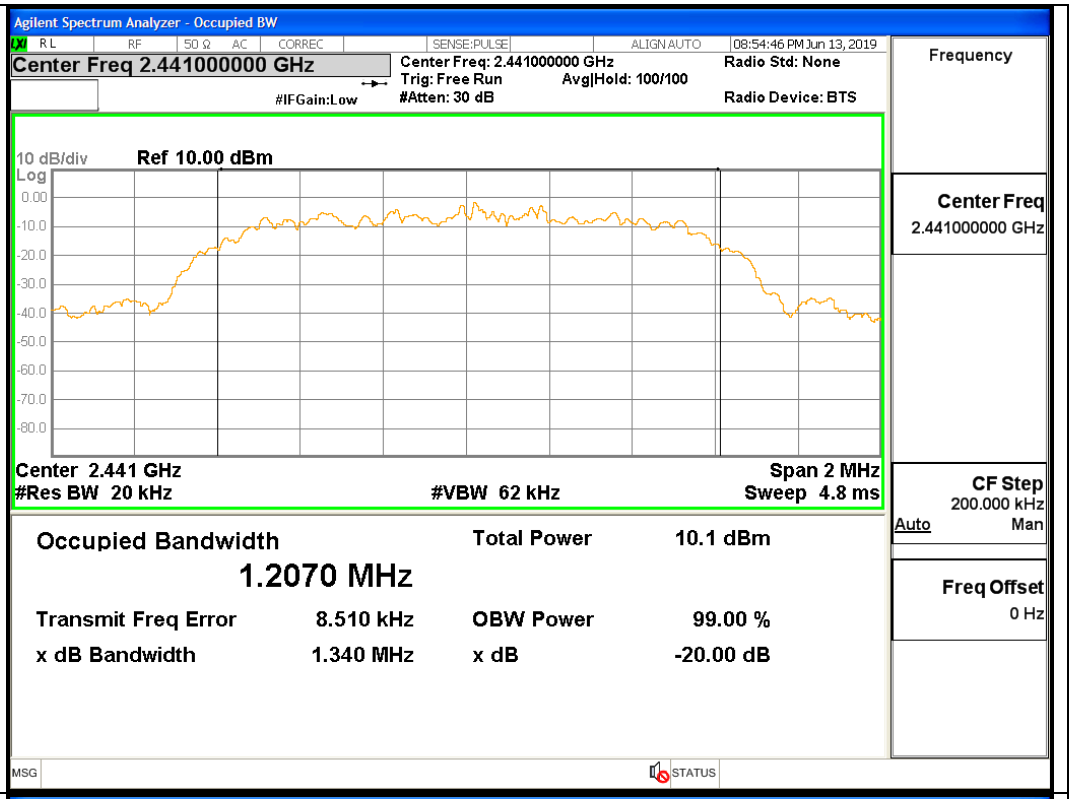
GFSK/HCH



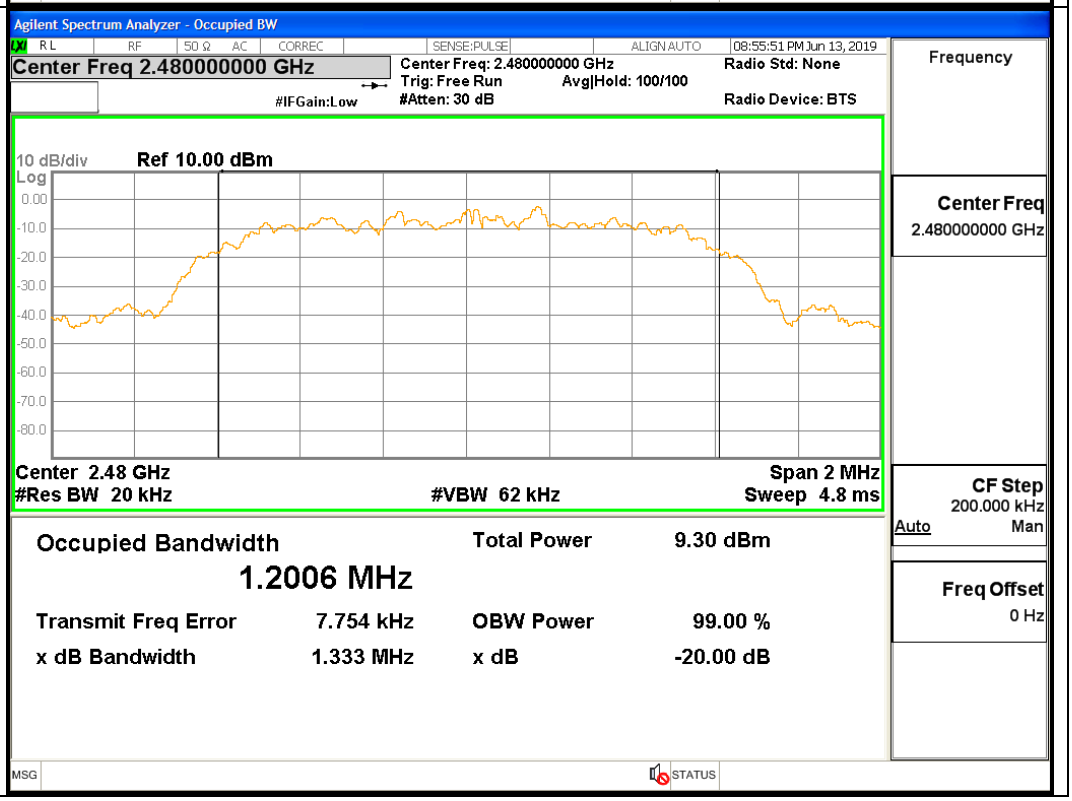
π/4DQPSK/LCH



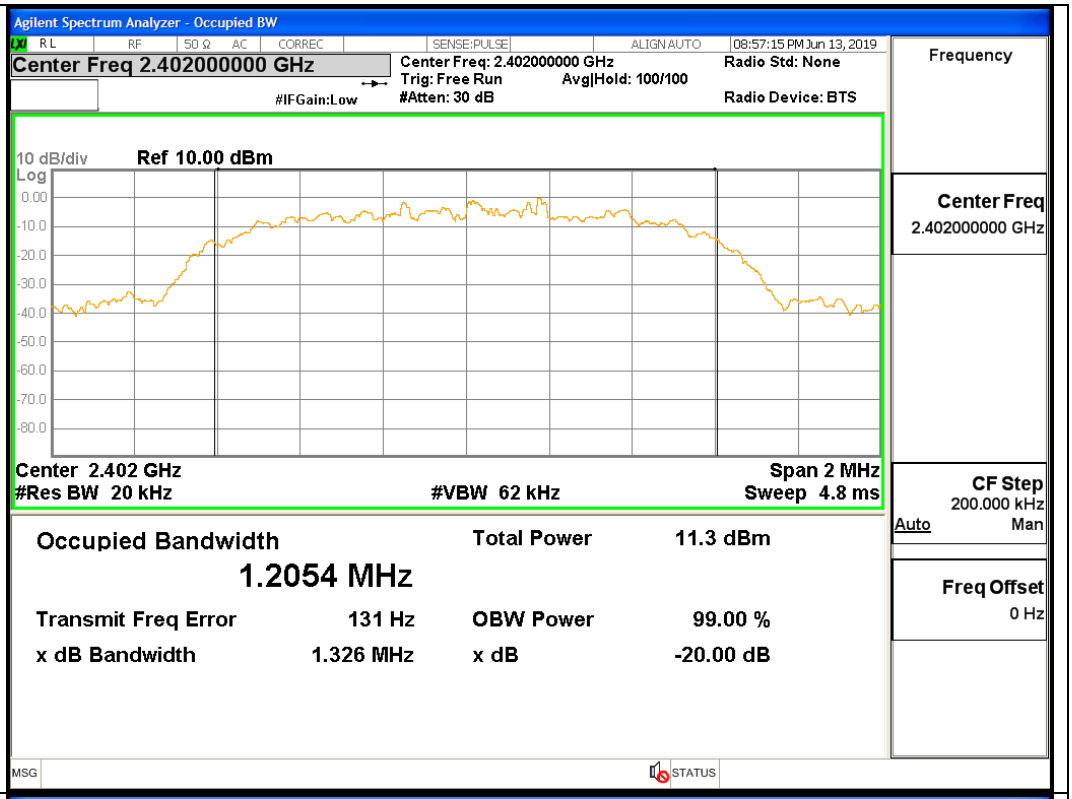
π/4DQPSK/MCH



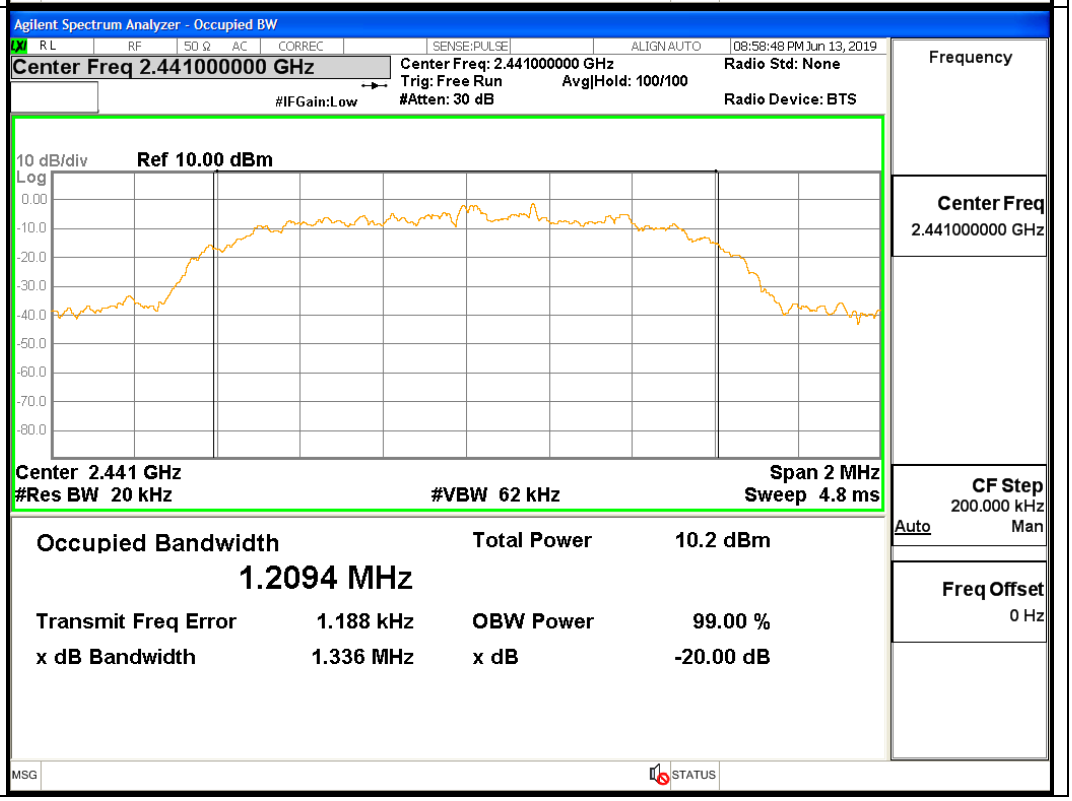
π/4DQPSK/HCH

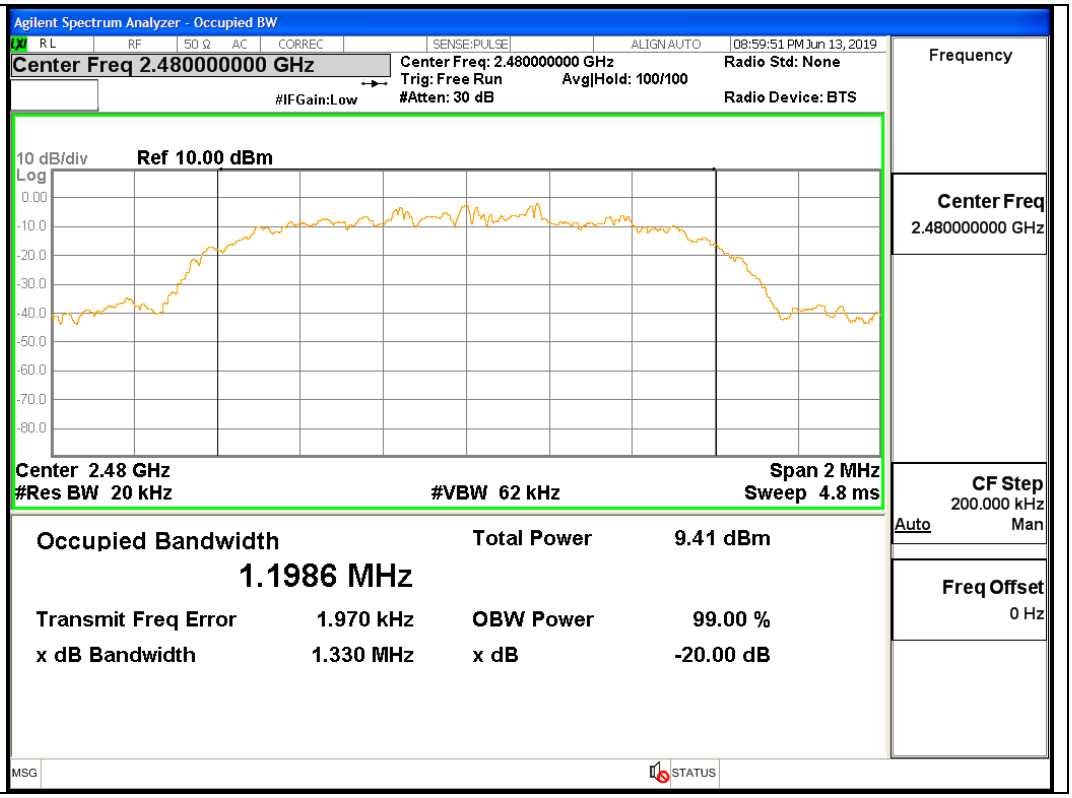


8DPSK/LCH



8DPSK/MCH



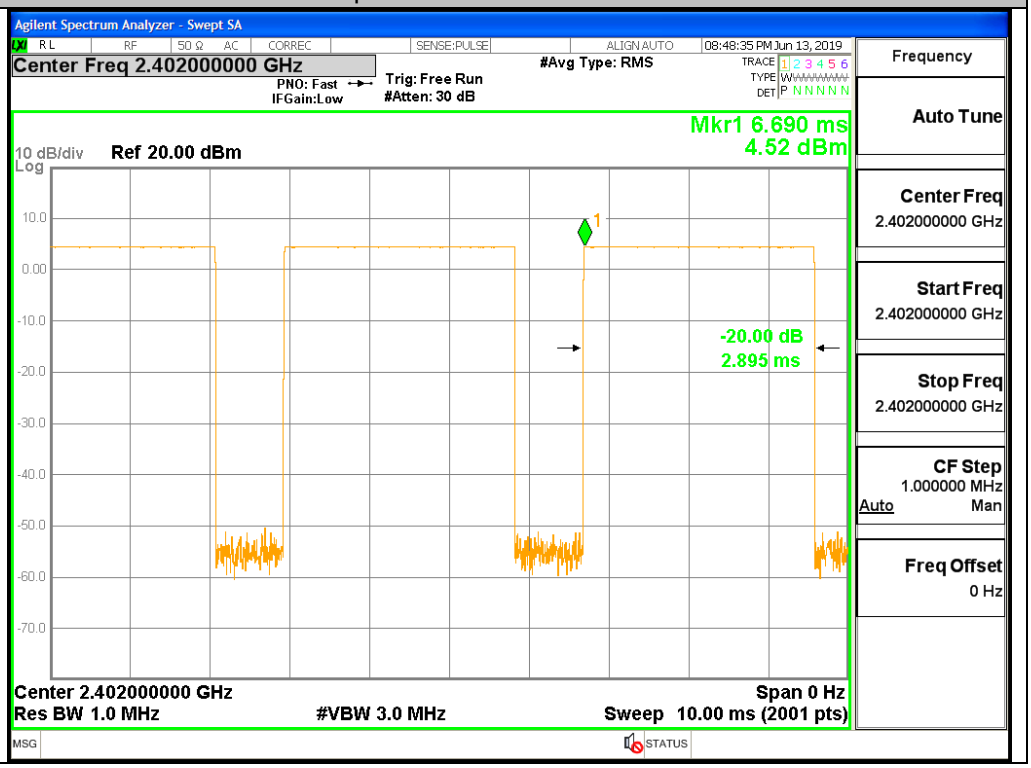
8DPSK/HCH	

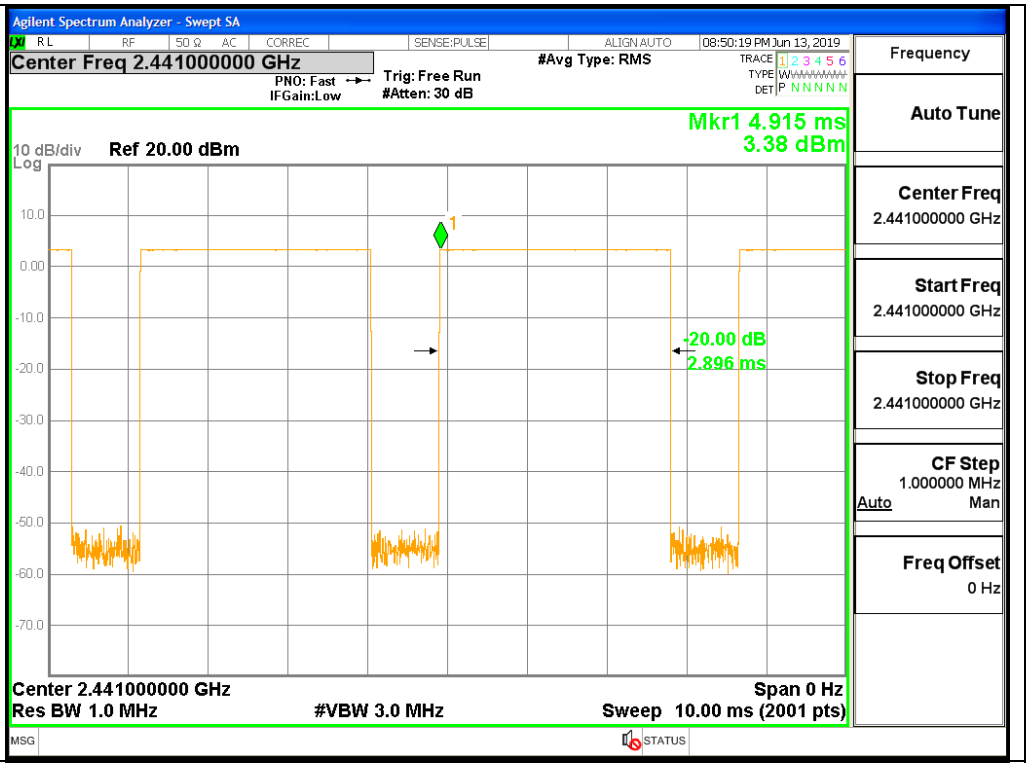
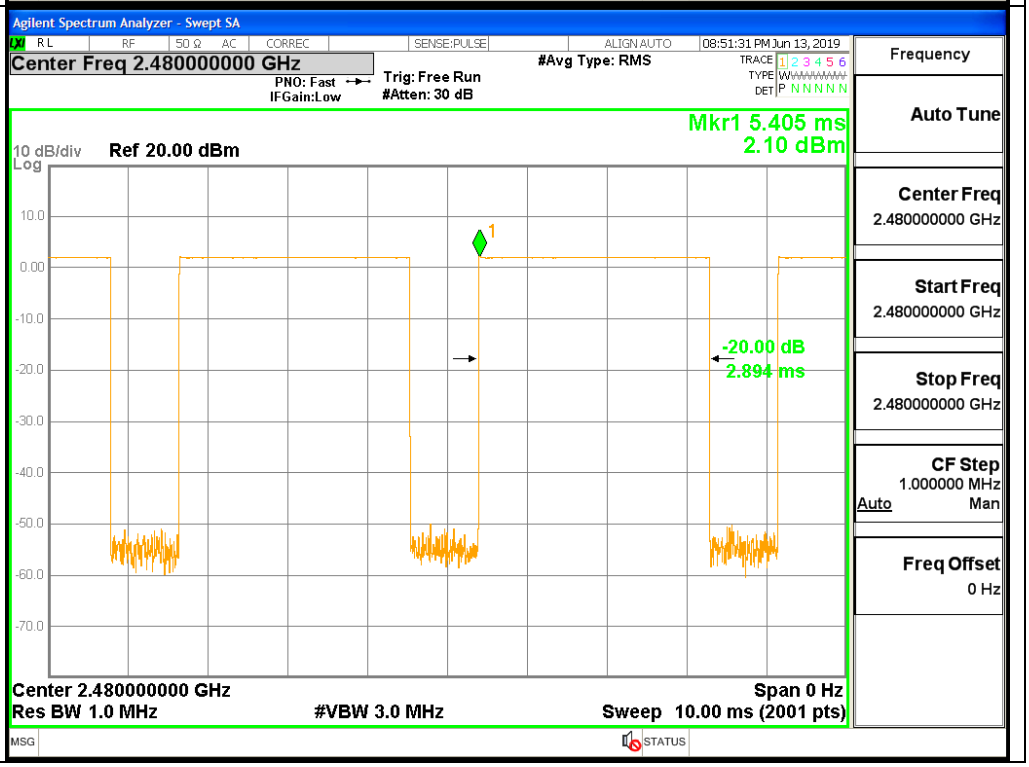
Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
CORREC
SENSE:PULSE
ALIGN AUTO
08:59:51 PM Jun 13, 2019
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 20 kHz
#VBW 62 kHz
Span 2 MHz
Sweep 4.8 ms
CF Step
200.000 kHz
Auto
Man
Occupied Bandwidth
1.1986 MHz
Total Power
9.41 dBm
Transmit Freq Error
1.970 kHz
OBW Power
99.00 %
x dB Bandwidth
1.330 MHz
x dB
-20.00 dB
Freq Offset
0 Hz
MSG
STATUS

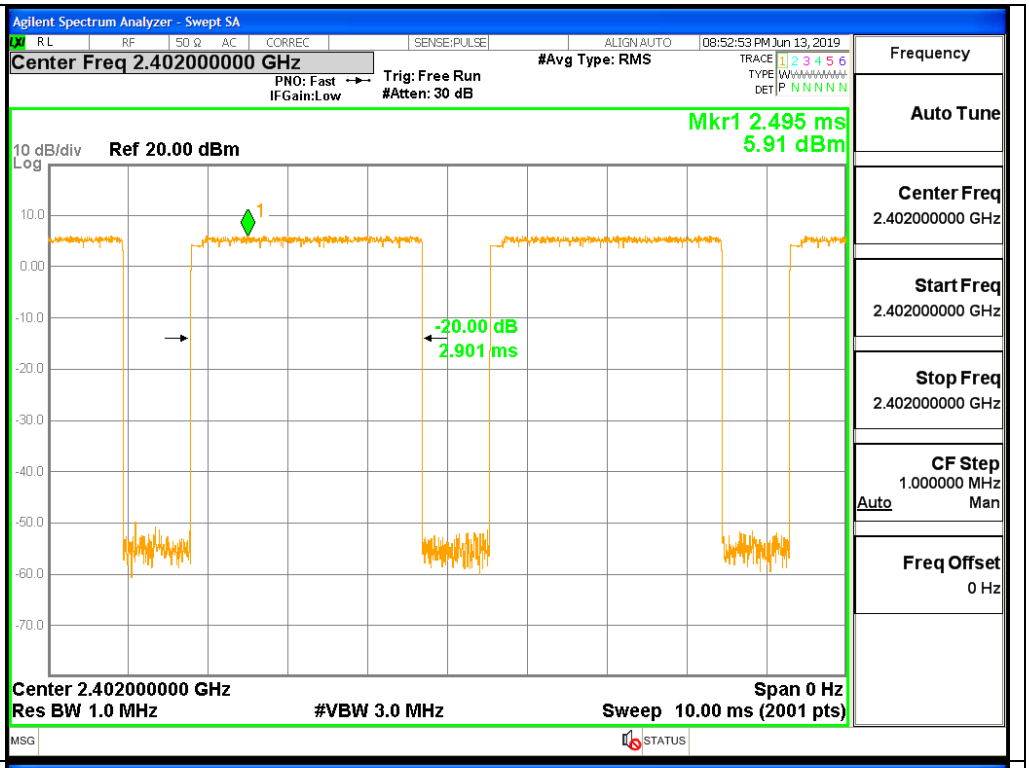
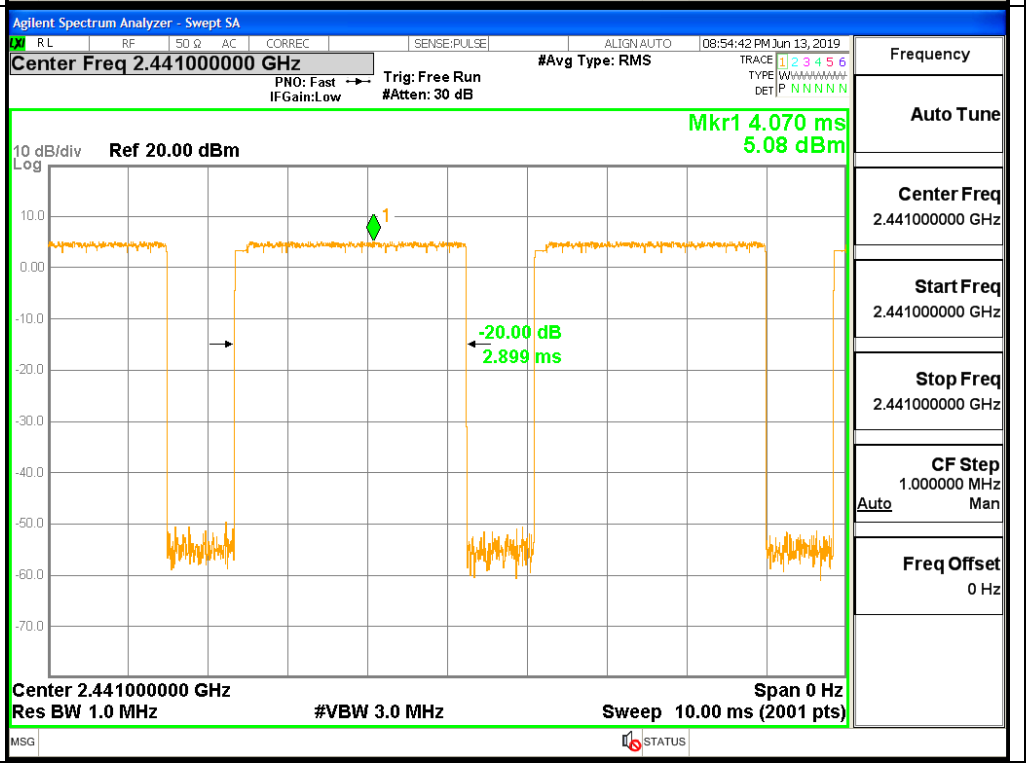
A.2 Dwell Time

Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002895	106.7	0.002895	0.4	PASS
GFSK	DH5	MCH	0.002896	106.7	0.002896	0.4	PASS
GFSK	DH5	HCH	0.002894	106.7	0.002894	0.4	PASS
π/4DQPSK	2DH5	LCH	0.002901	106.7	0.002901	0.4	PASS
π/4DQPSK	2DH5	MCH	0.002899	106.7	0.002899	0.4	PASS
π/4DQPSK	2DH5	HCH	0.002901	106.7	0.002901	0.4	PASS
8DPSK	3DH5	LCH	0.002900	106.7	0.002900	0.4	PASS
8DPSK	3DH5	MCH	0.002900	106.7	0.002900	0.4	PASS
8DPSK	3DH5	HCH	0.002900	106.7	0.002900	0.4	PASS

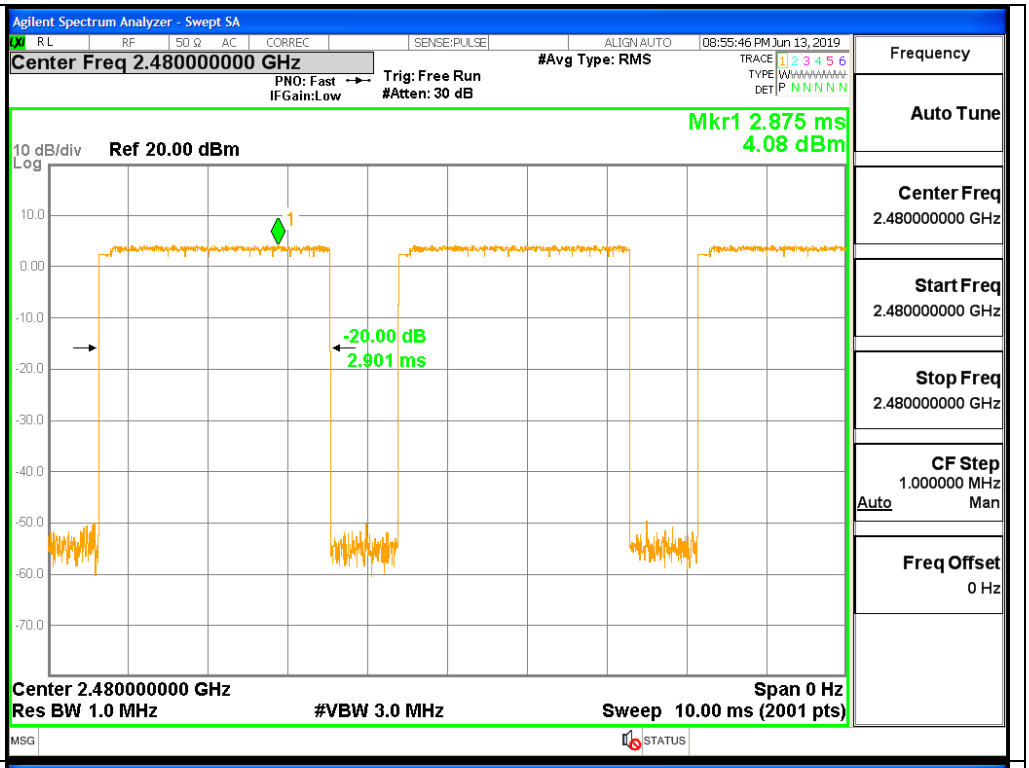
Test Graph

Graphs	
GFSK_DH5/LCH	

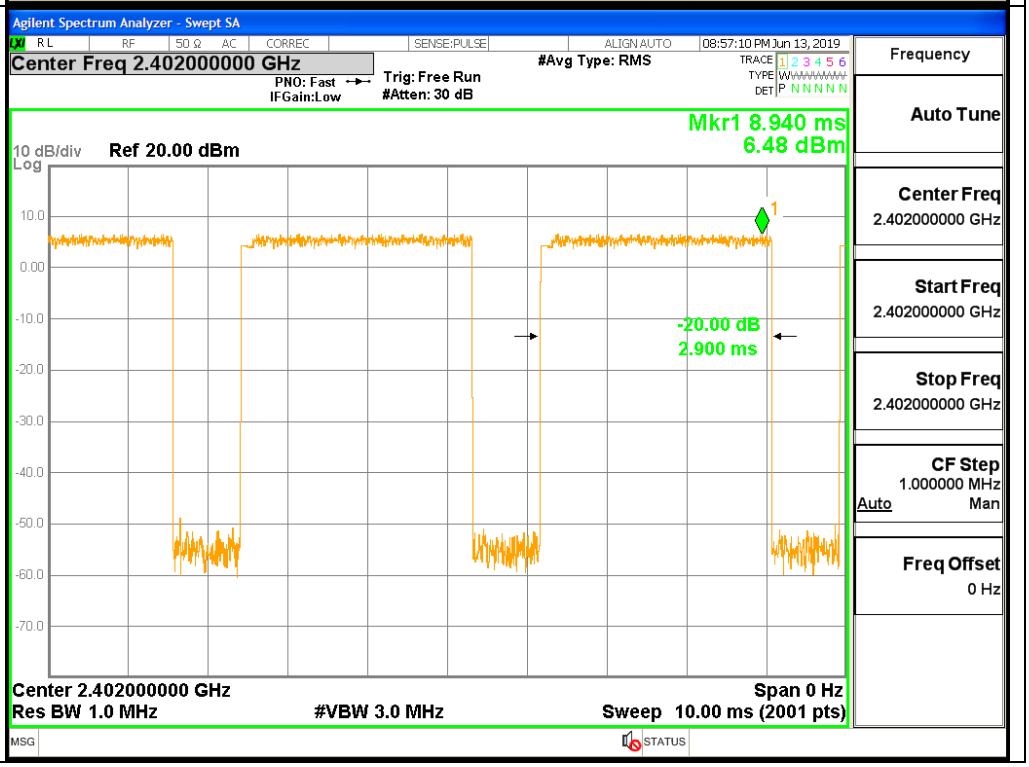
GFSK_DH5/MCH	
GFSK_DH5/HCH	

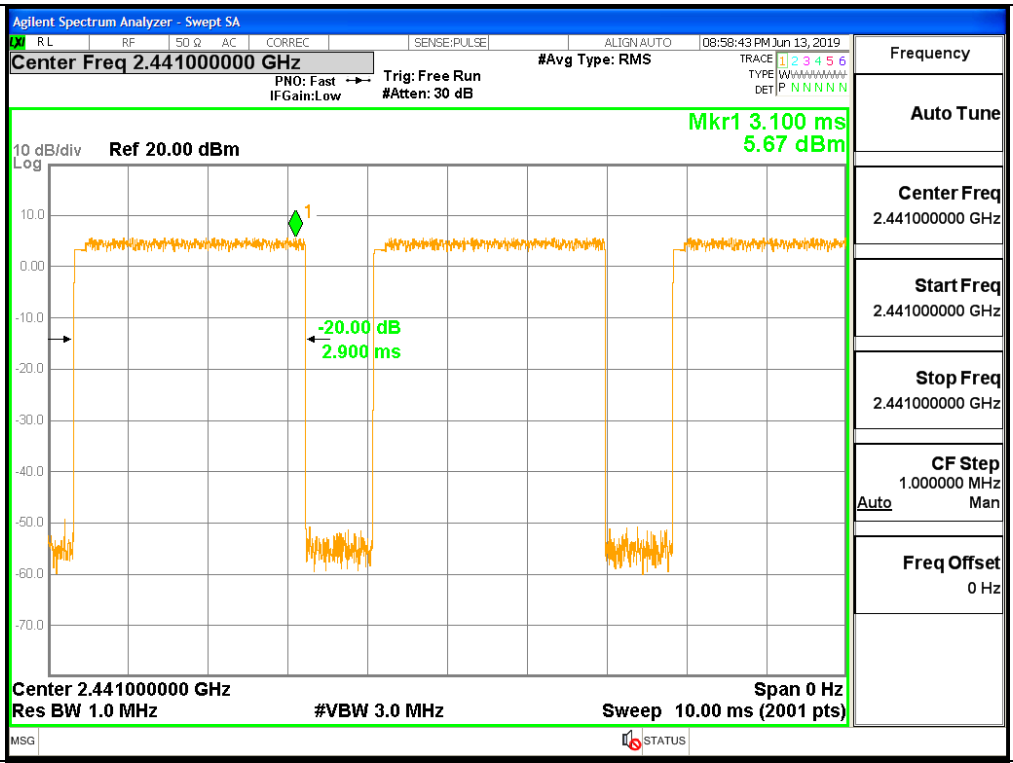
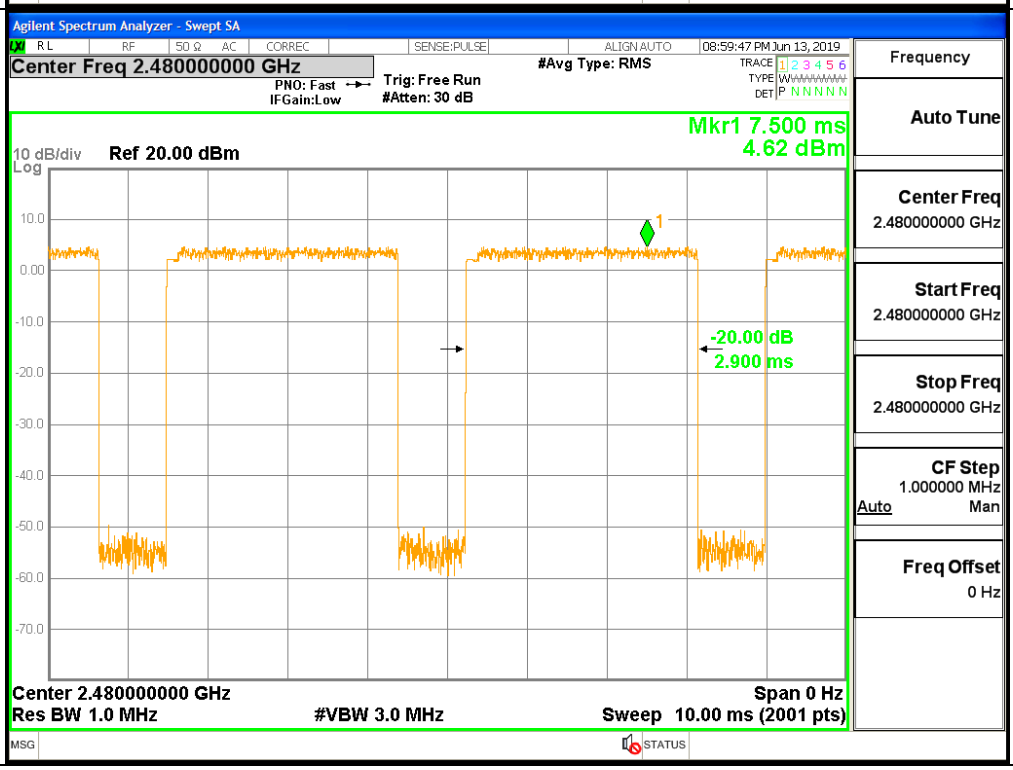
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

π/4DQPSK _2DH5/HCH



8DPSK _3DH5/LCH

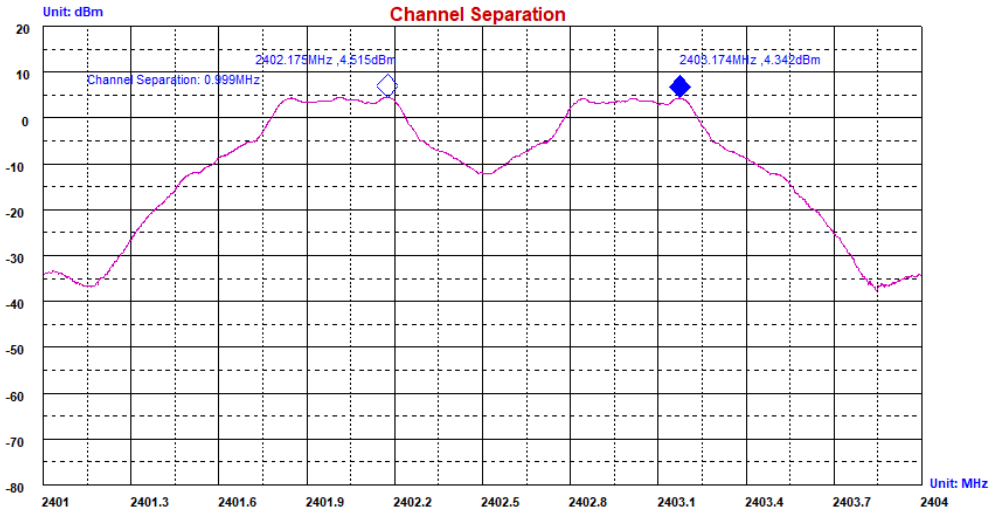
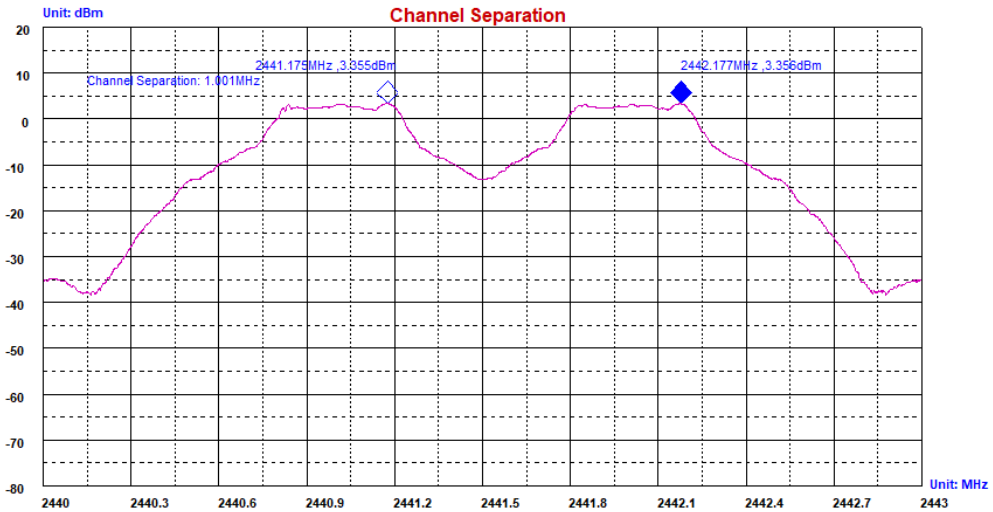


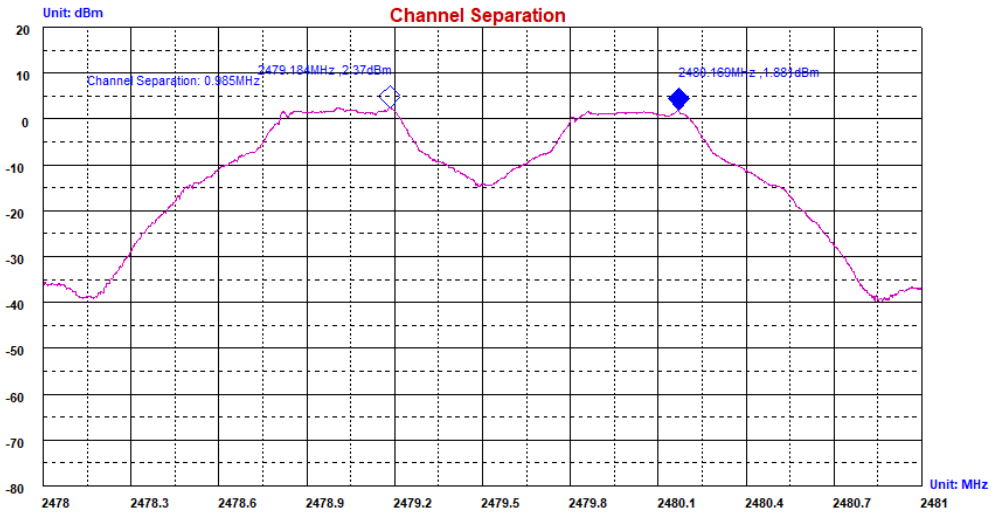
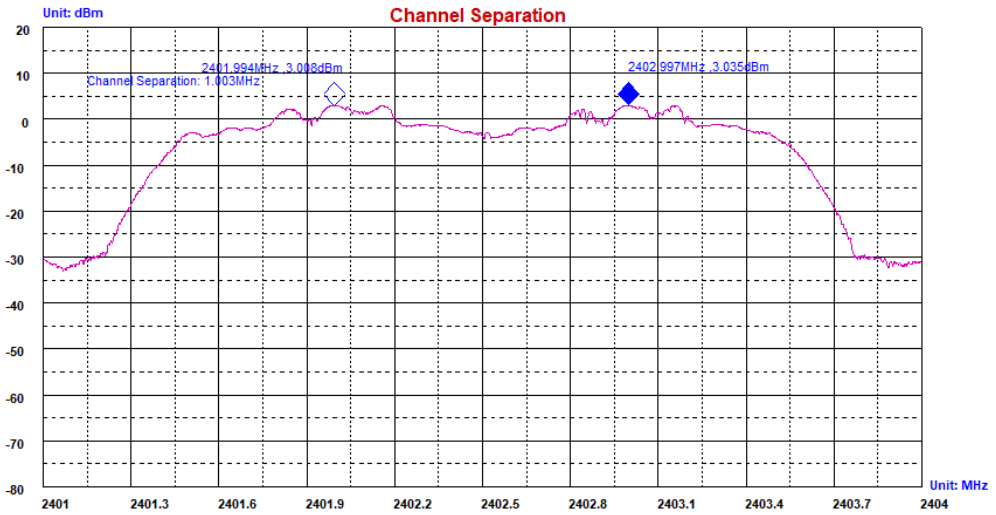
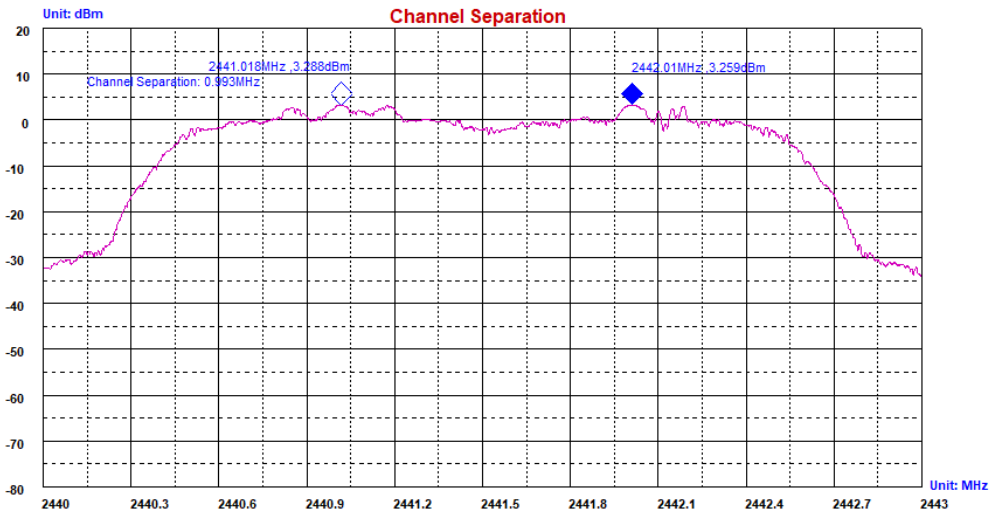
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

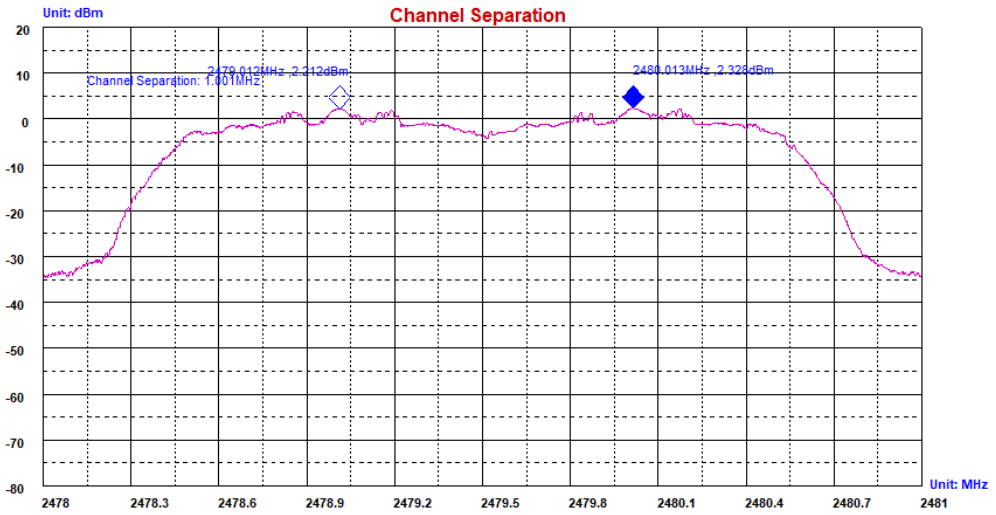
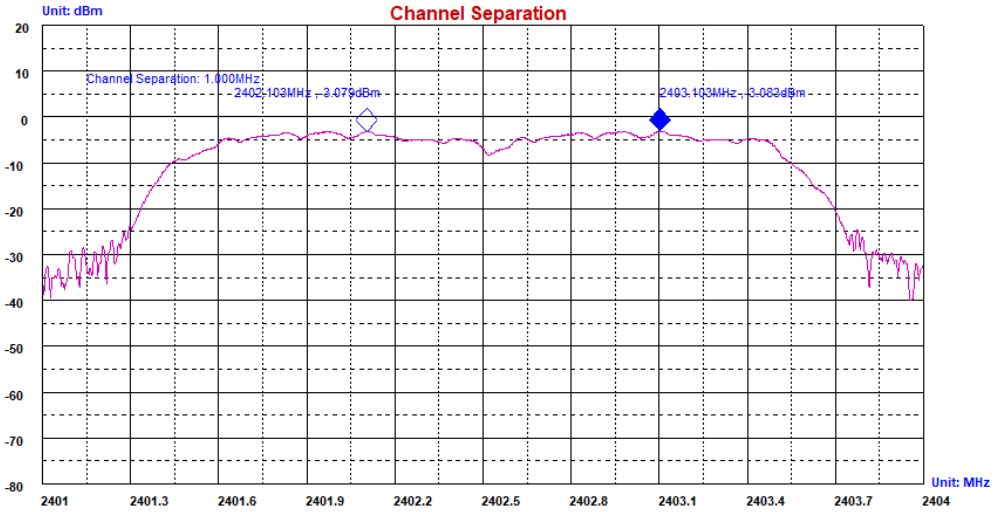
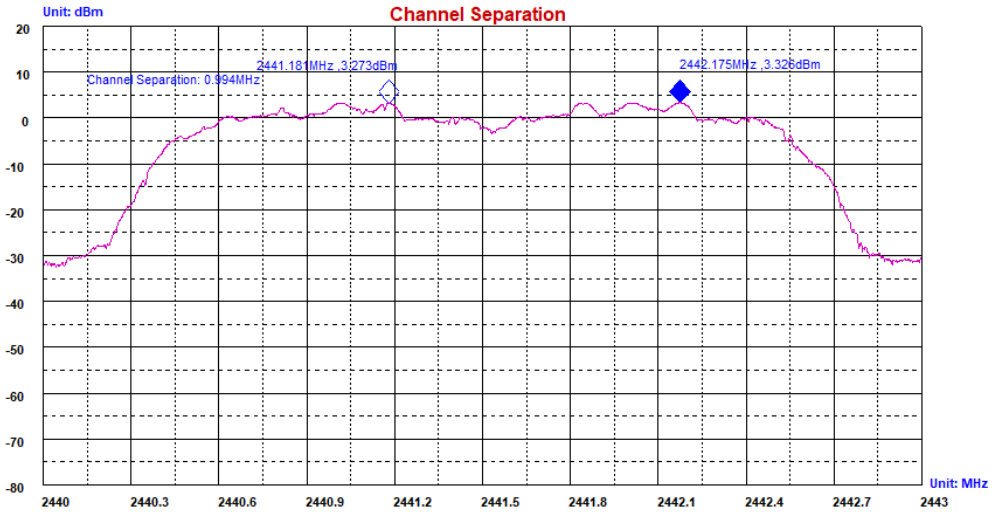
A.3 Carrier Frequency Separation

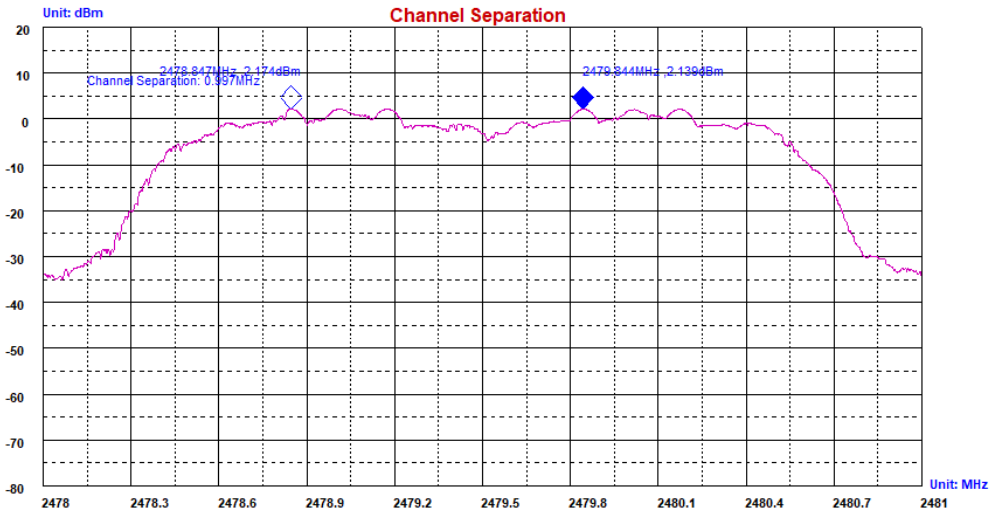
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.626	PASS
GFSK	MCH	1.001	0.628	PASS
GFSK	HCH	0.985	0.628	PASS
π/4DQPSK	LCH	1.003	0.889	PASS
π/4DQPSK	MCH	0.993	0.893	PASS
π/4DQPSK	HCH	1.001	0.889	PASS
8DPSK	LCH	1.000	0.884	PASS
8DPSK	MCH	0.994	0.889	PASS
8DPSK	HCH	0.997	0.887	PASS

Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	
π/4DQPSK/MCH	

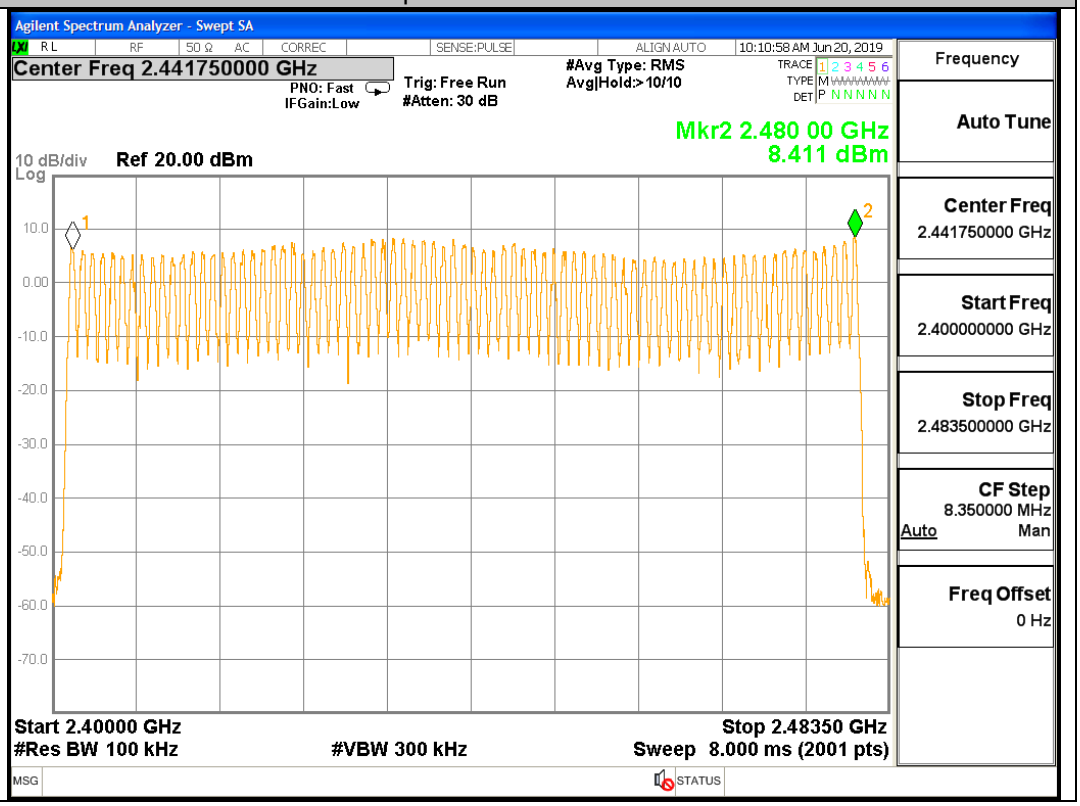
π/4DQPSK/HCH	
8DPSK/LCH	
8DPSK/MCH	

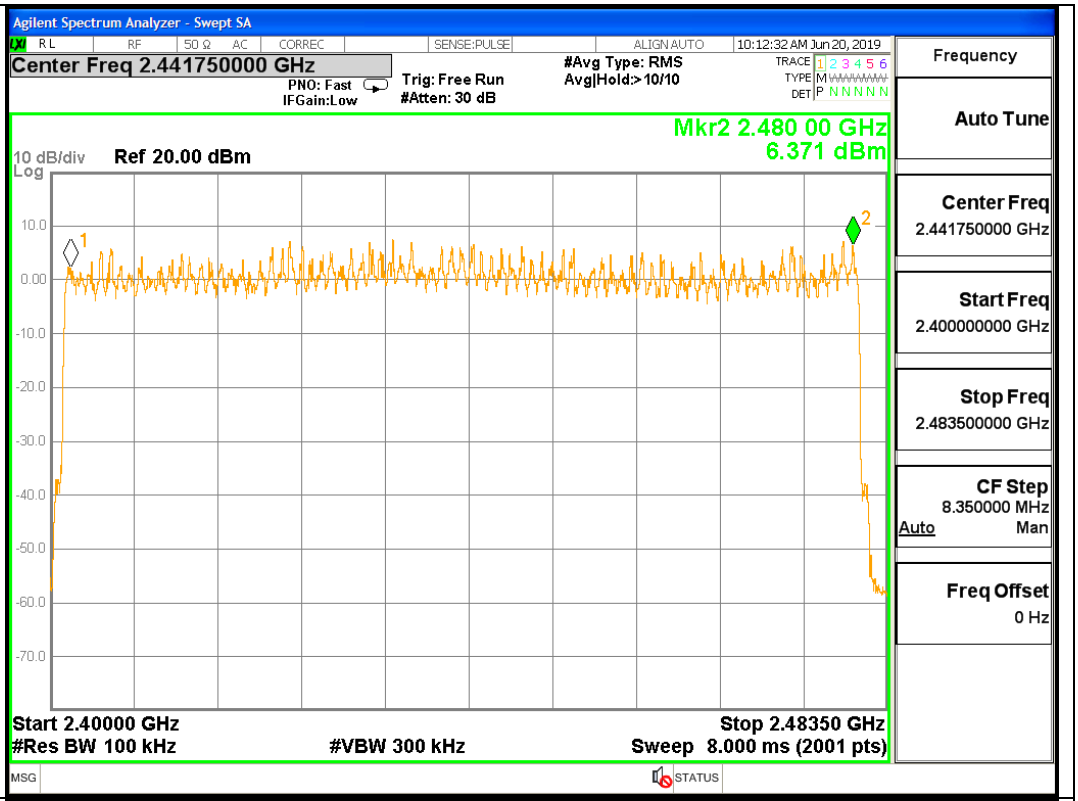
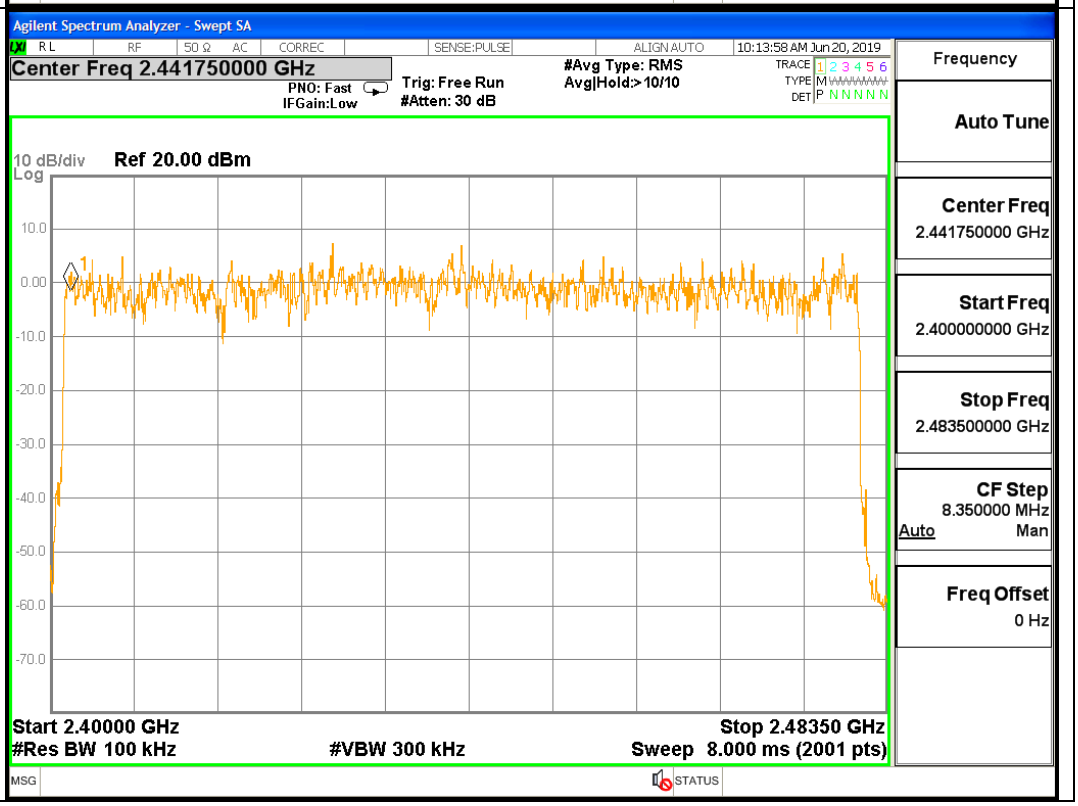
8DPSK/HCH	 Channel Separation Unit: dBm 2478.847MHz -2.174dBm Channel Separation: 0.997MHz 2479.844MHz -2.139dBm 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 2478 2478.3 2478.6 2478.9 2479.2 2479.5 2479.8 2480.1 2480.4 2480.7 2481 Unit: MHz

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
8DPSK	Hop	79	>=15	PASS

Test Graph

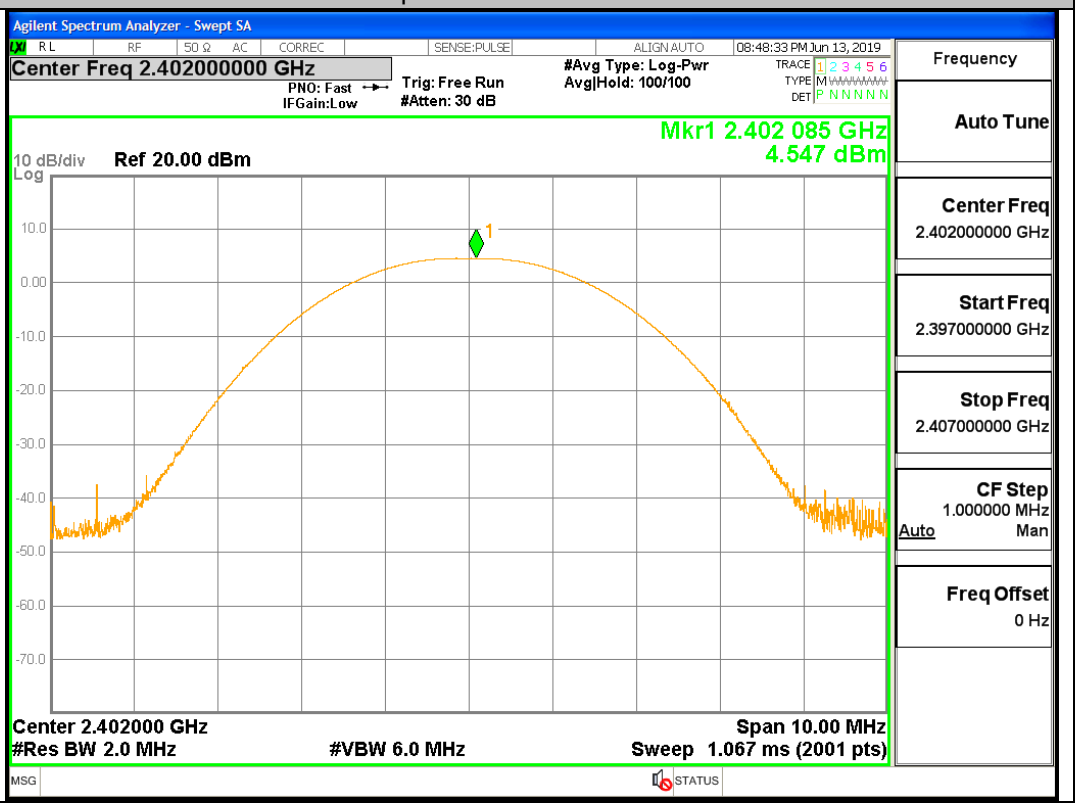
Graphs	
GFSK/Hop	

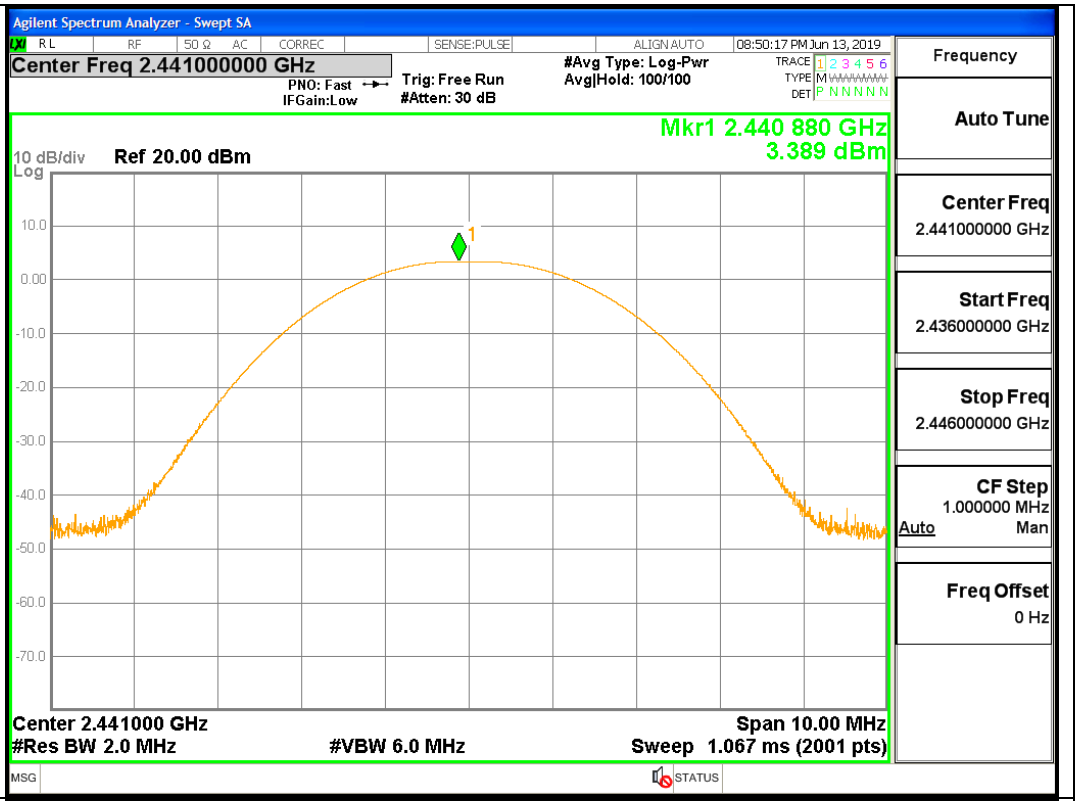
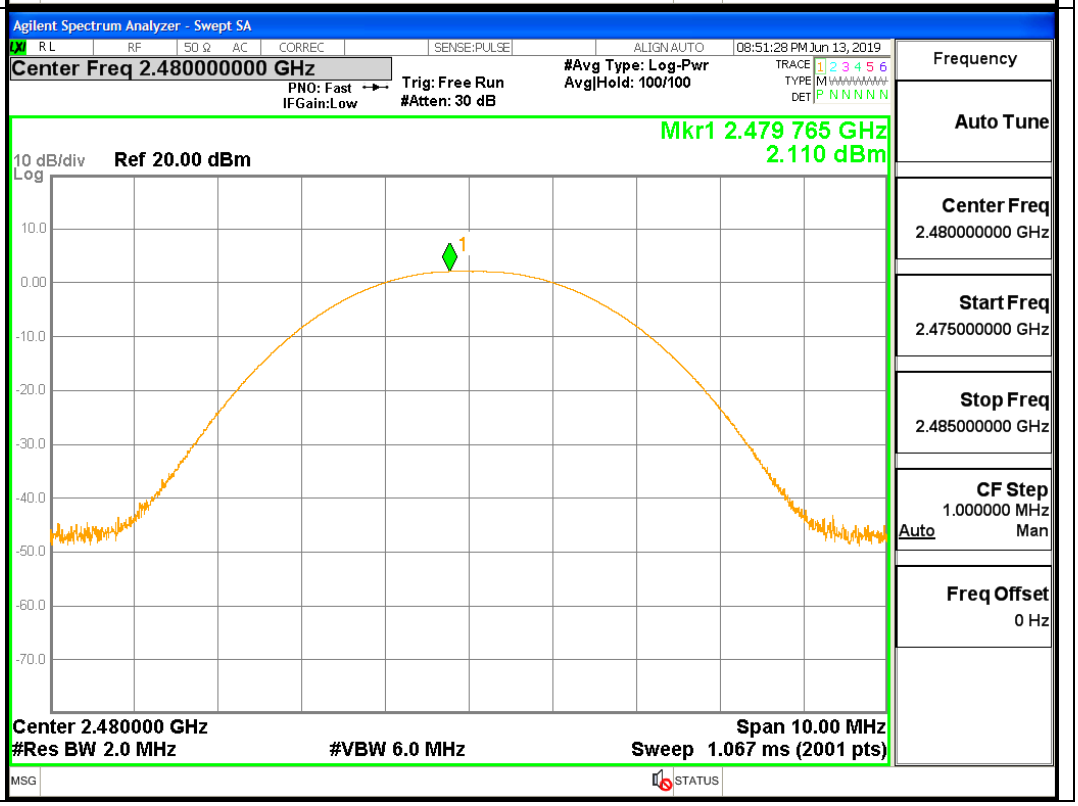
π/4DQPSK/Hop	
8DPSK/Hop	

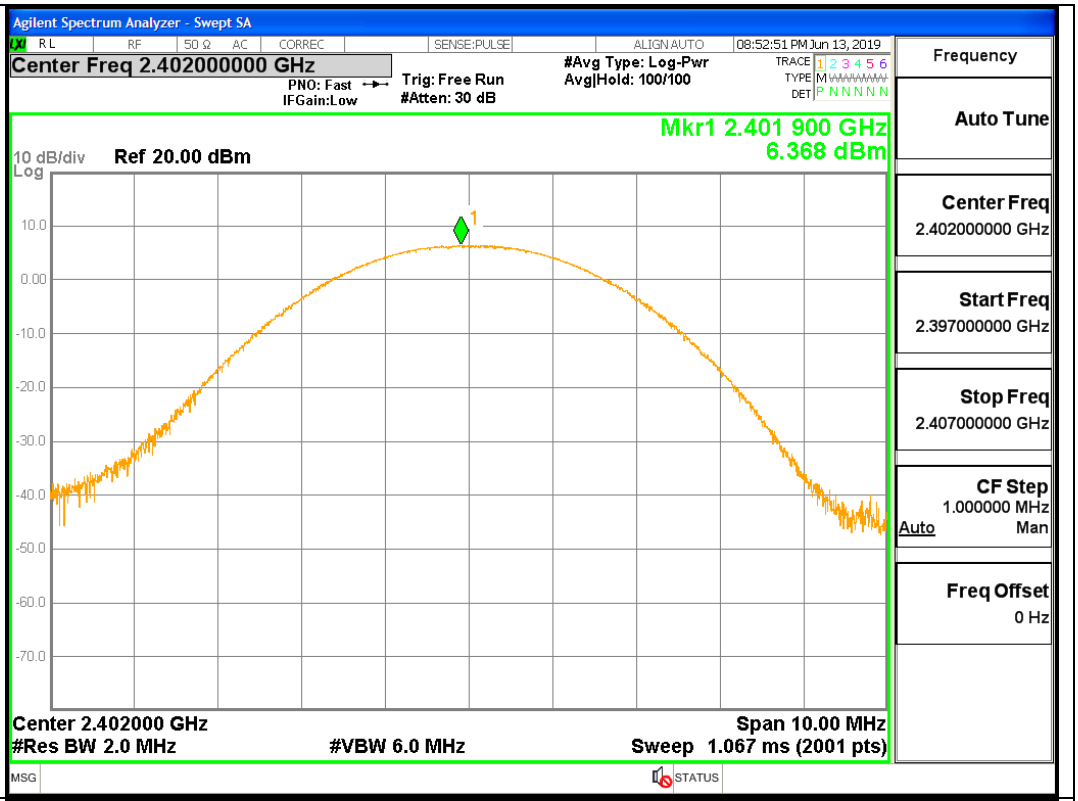
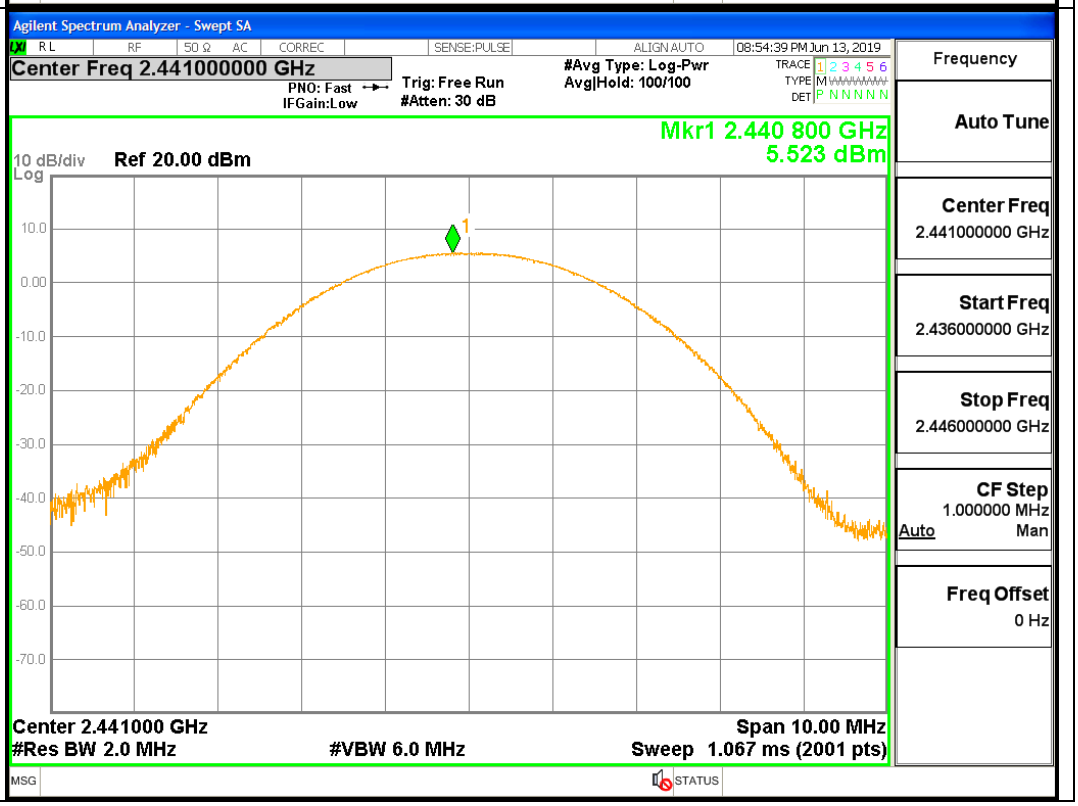
A.5 Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.547	21	PASS
GFSK	MCH	3.389	21	PASS
GFSK	HCH	2.110	21	PASS
π/4DQPSK	LCH	6.368	21	PASS
π/4DQPSK	MCH	5.523	21	PASS
π/4DQPSK	HCH	4.504	21	PASS
8DPSK	LCH	6.894	21	PASS
8DPSK	MCH	6.108	21	PASS
8DPSK	HCH	5.072	21	PASS

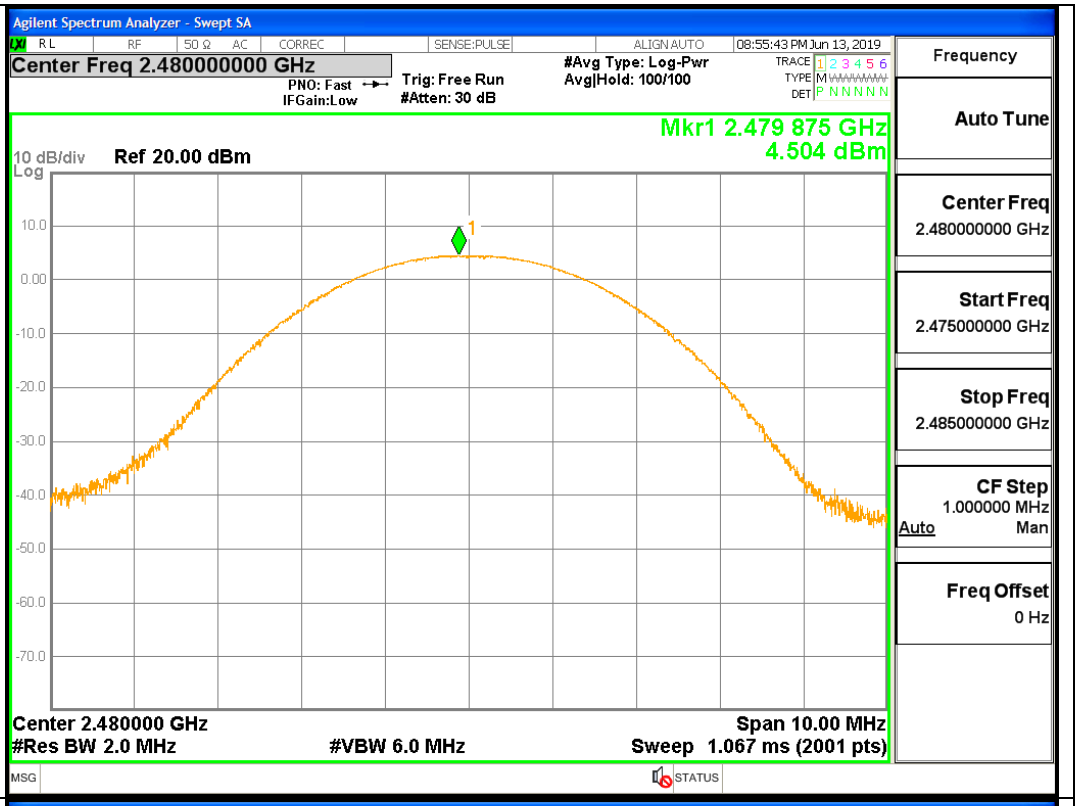
Test Graph

Graphs	
GFSK/LCH	

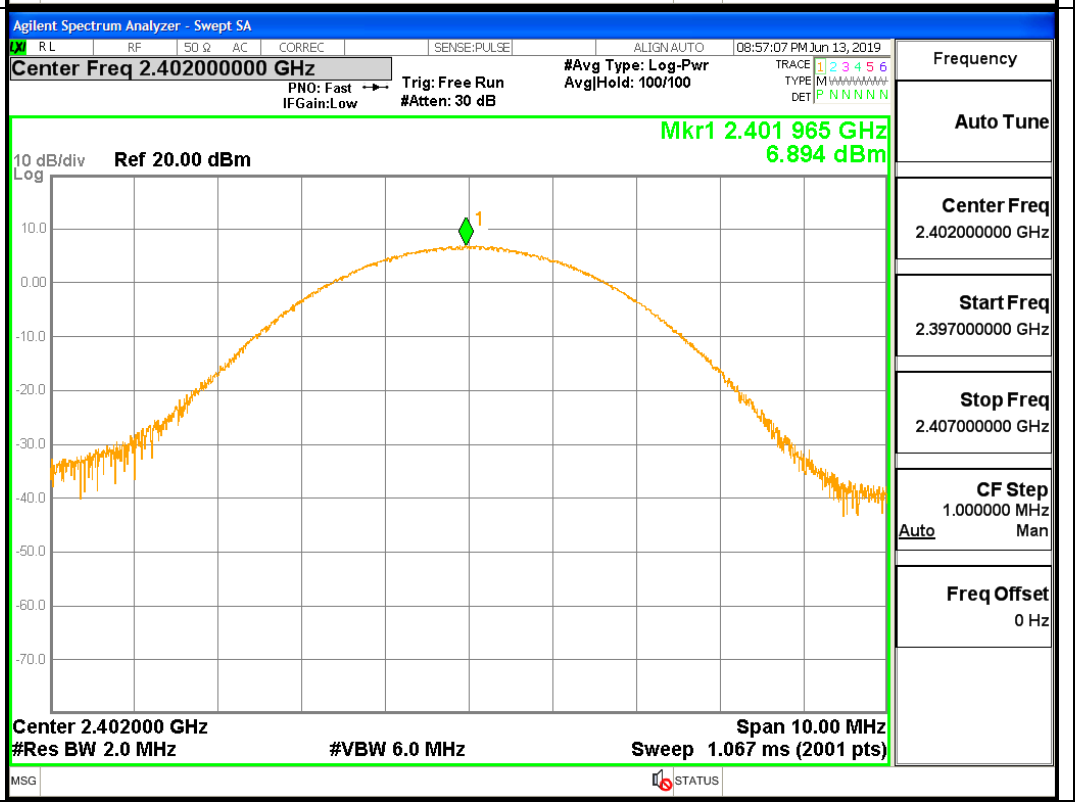
GFSK/MCH	
GFSK/HCH	

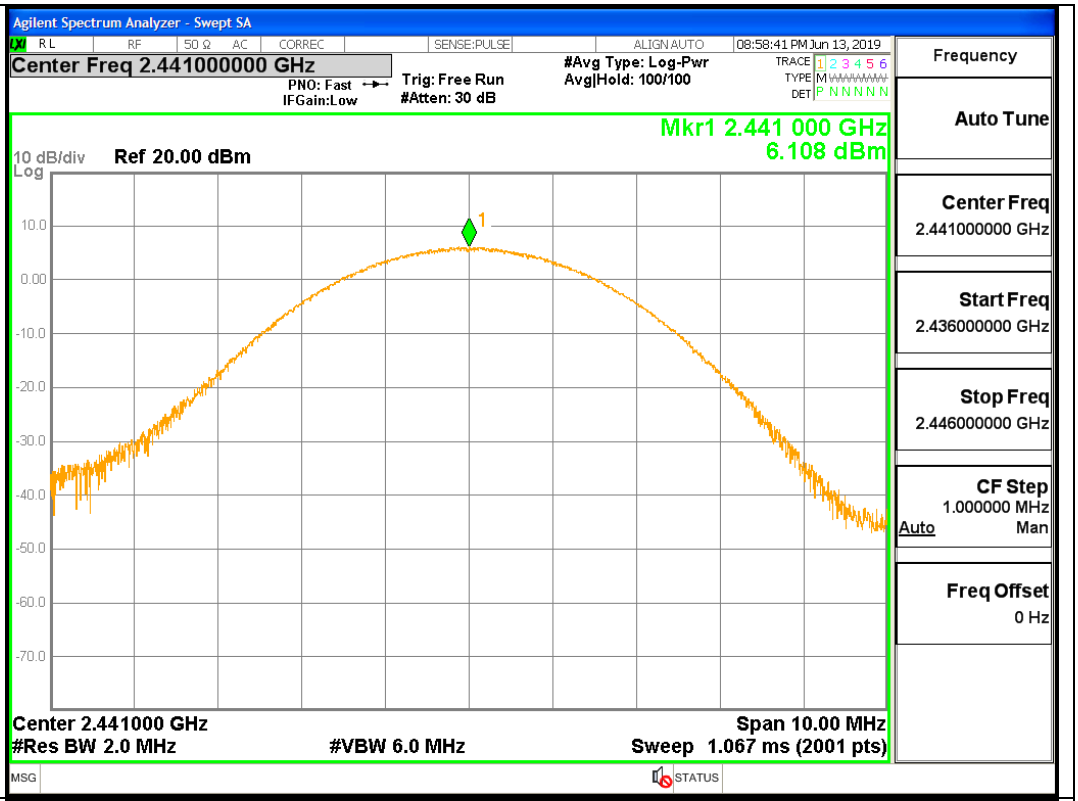
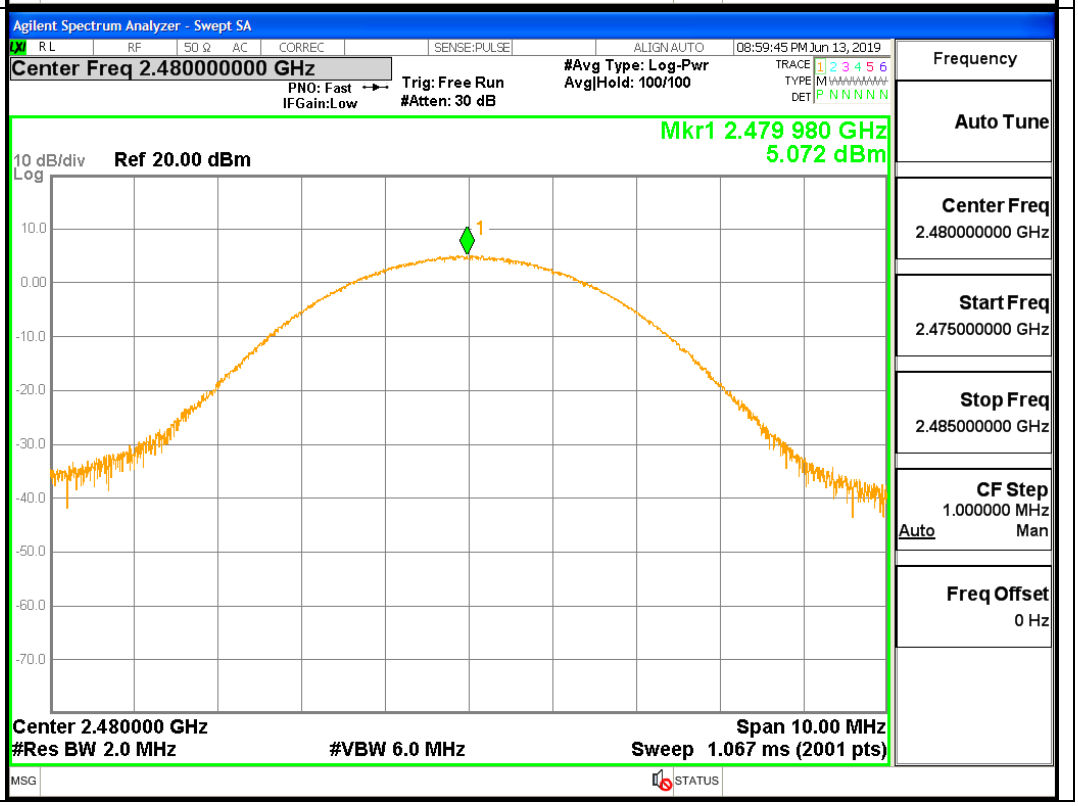
π/4DQPSK/LCH	
π/4DQPSK/MCH	

π/4DQPSK/HCH



8DPSK/LCH

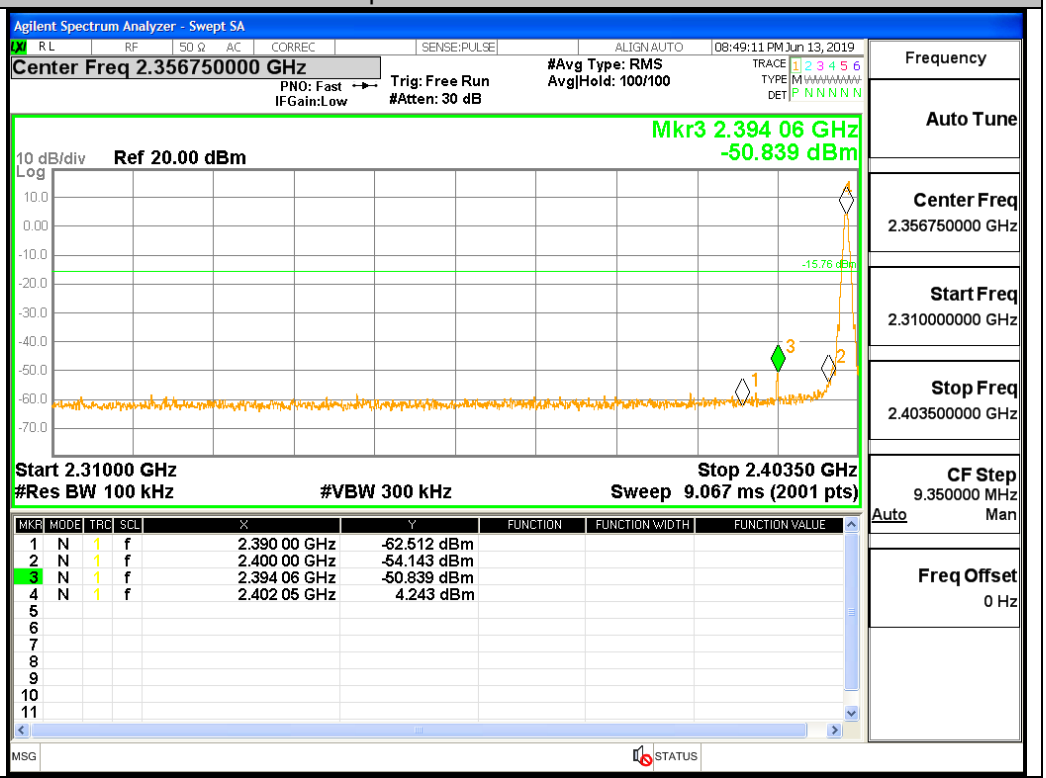
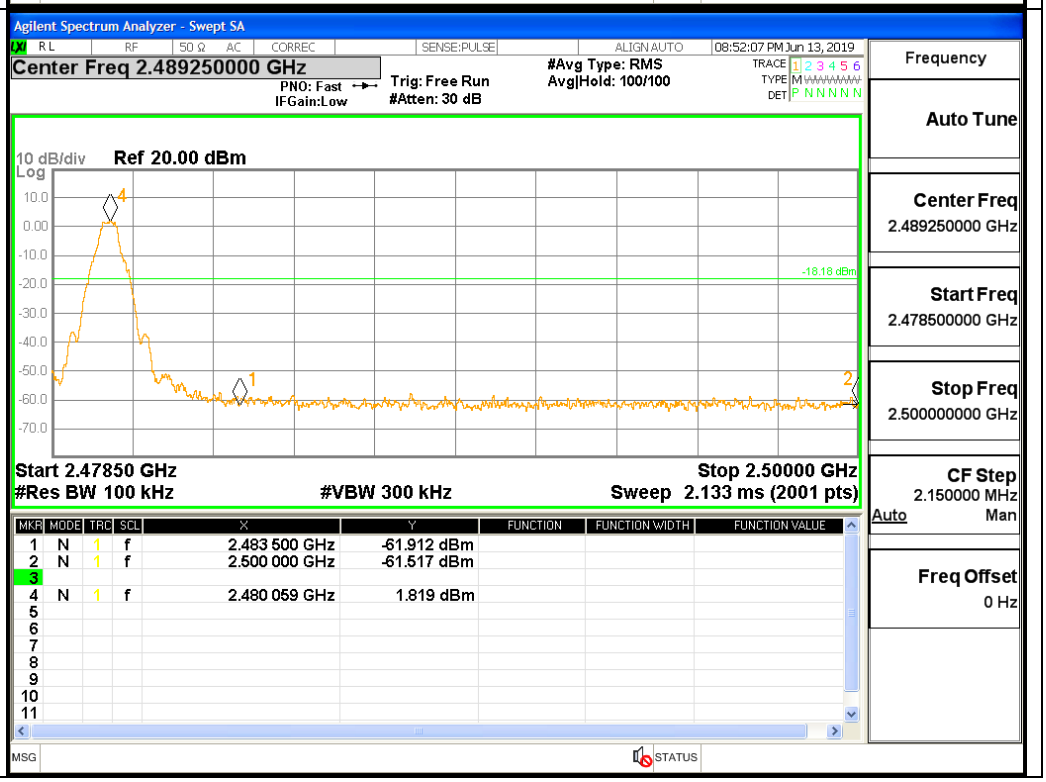


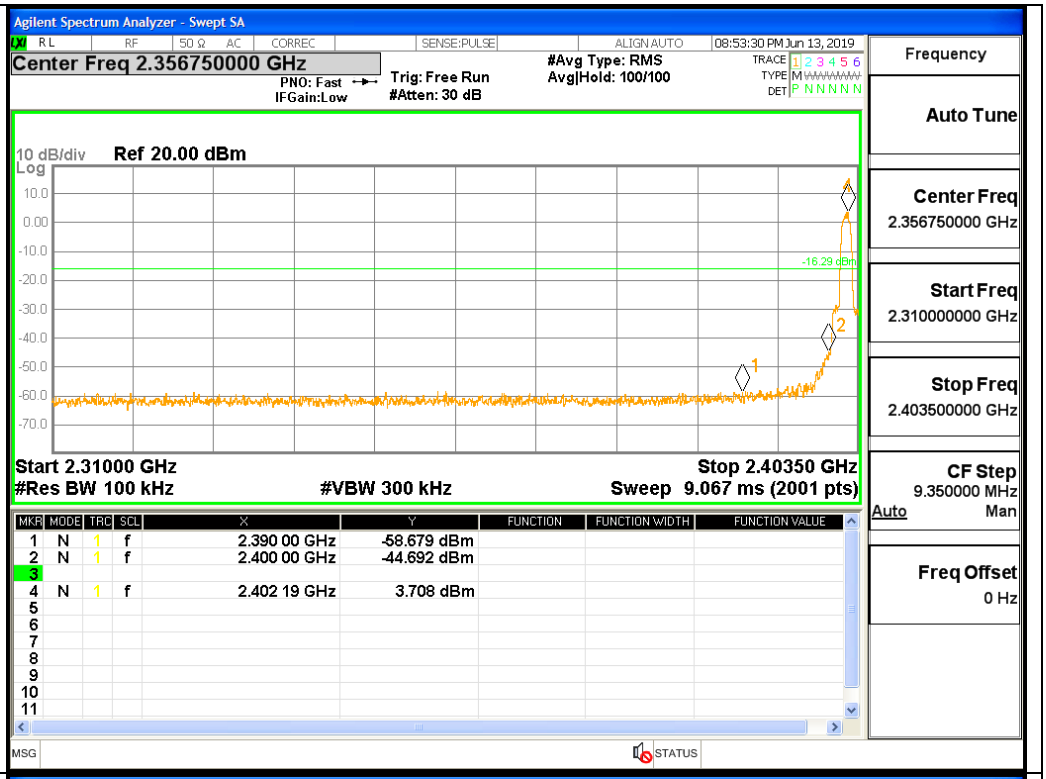
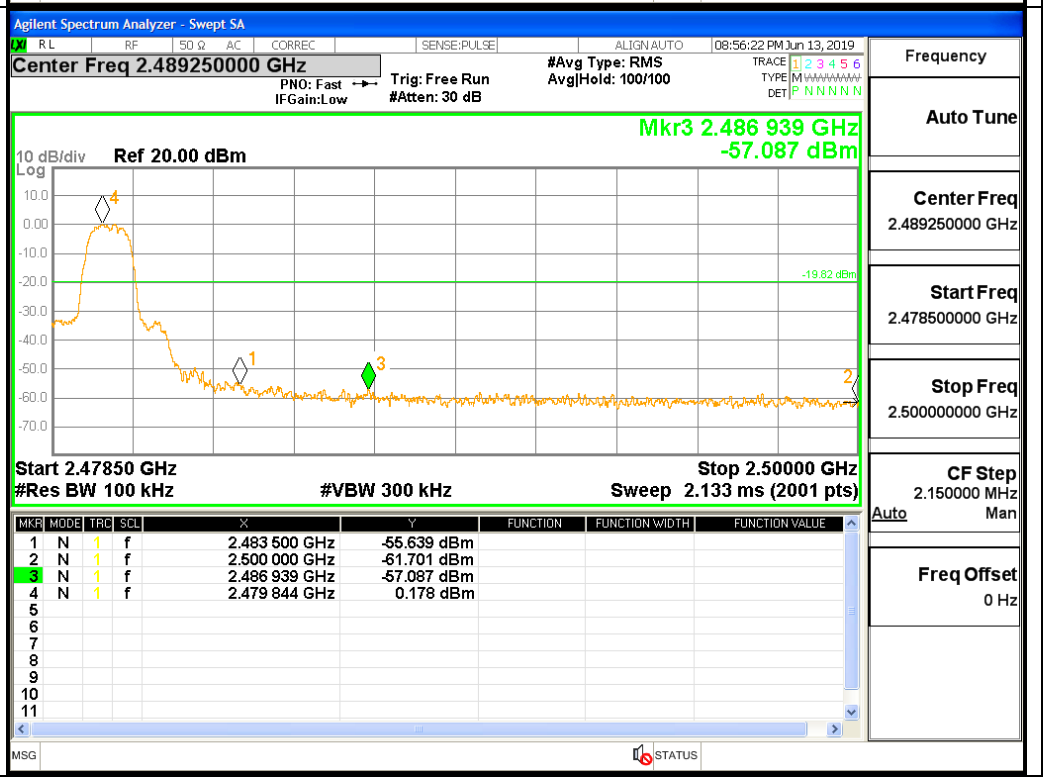
8DPSK/MCH	
8DPSK/HCH	

A.6 Band-edge for RF Conducted Emissions

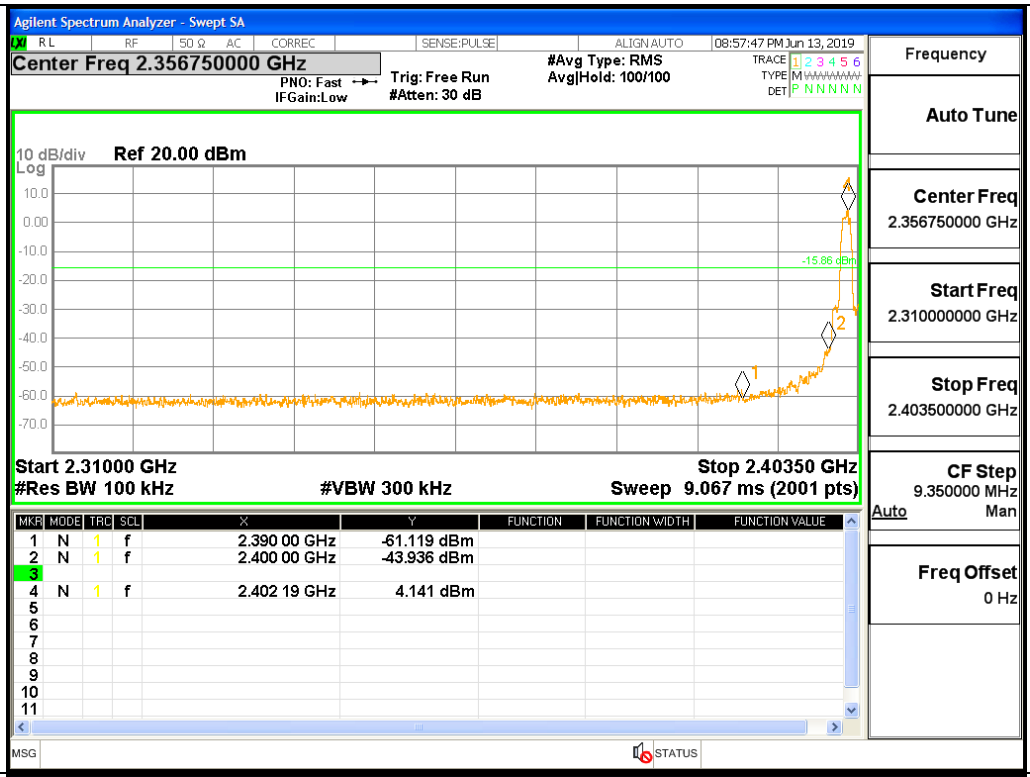
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak (dBm)	Upper limit (dBm)	Conclusion
1DH5	2402	2394.057	4.243	-50.839	-15.757	Pass
1DH5	2480	2500	1.819	-61.52	-18.181	Pass
2DH5	2402	2400	3.708	-44.69	-16.292	Pass
2DH5	2480	2483.5	0.178	-55.64	-19.822	Pass
3DH5	2402	2400	4.141	-43.94	-15.859	Pass
3DH5	2480	2484.38	2.185	-50.019	-17.815	Pass
1DH5-Hopping	2402	2400	7.507	-59.31	-12.493	Pass
1DH5-Hopping	2480	2500	8.02	-59.01	-11.98	Pass
2DH5-Hopping	2402	2400	6.116	-57.06	-13.884	Pass
2DH5-Hopping	2480	2483.5	7.553	-58.94	-12.447	Pass
3DH5-Hopping	2402	2400	7.564	-57.01	-12.436	Pass
3DH5-Hopping	2480	2483.5	6.348	-57.91	-13.652	Pass

Test Graph

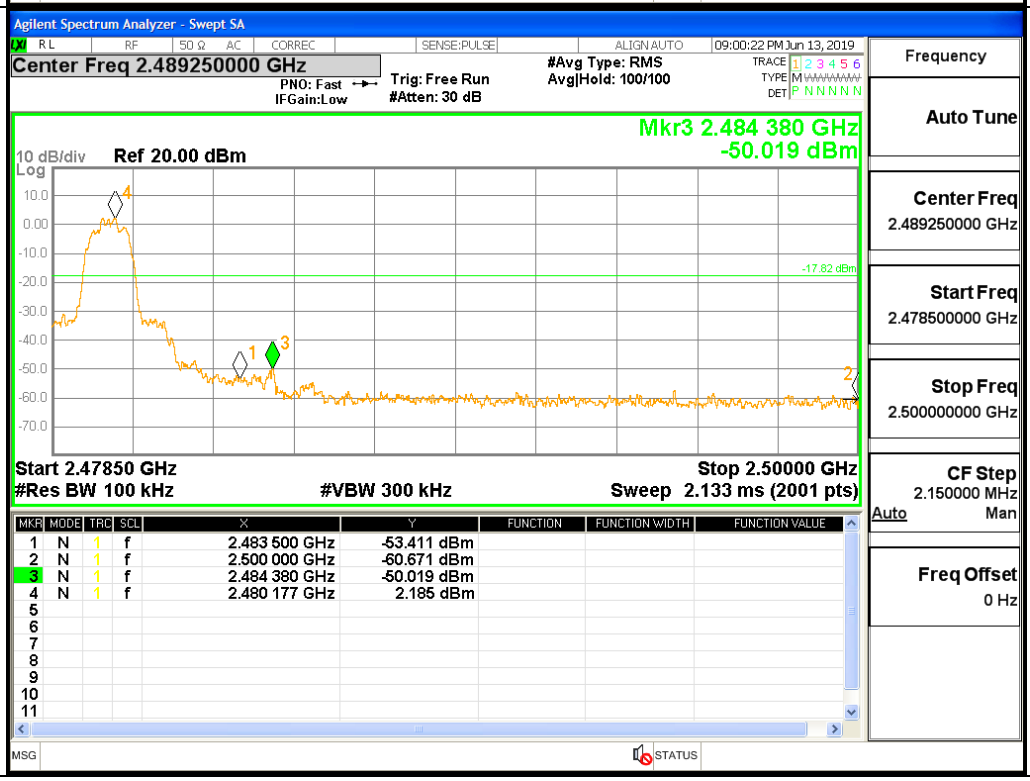
Graphs	
GFSK/LCH/No Hop	
GFSK/HCH/No Hop	

π /4DQPSK/LCH/No Hop	
π /4DQPSK/HCH/No Hop	

8DPSK/LCH/No Hop

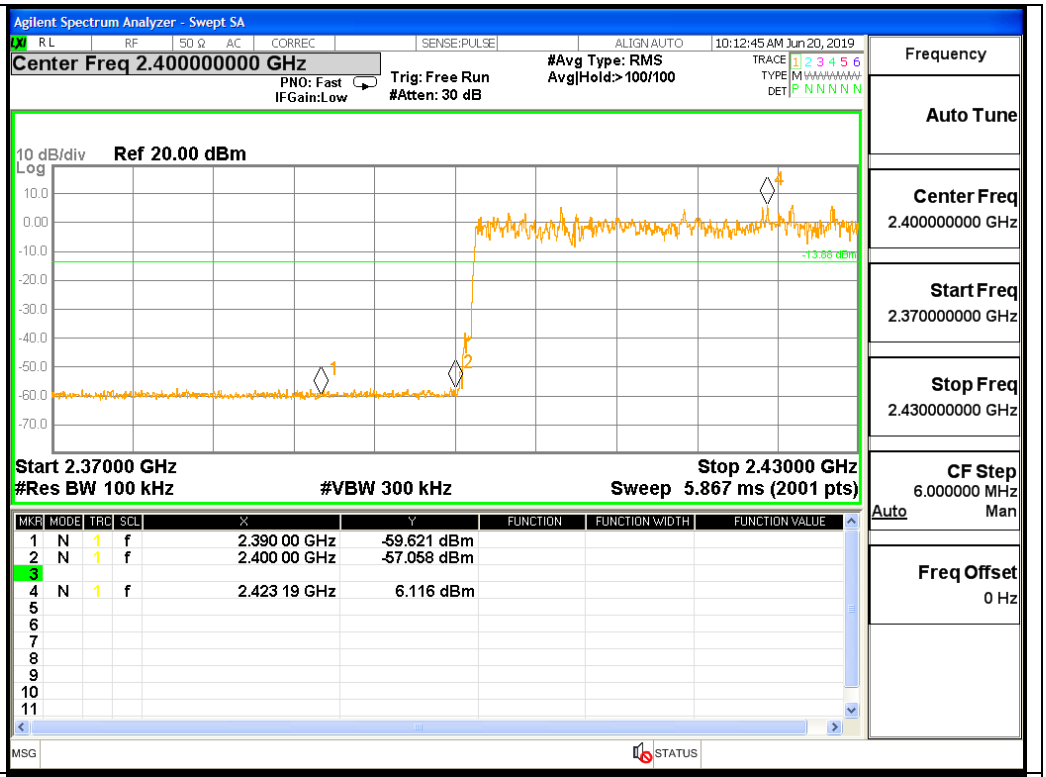


8DPSK/HCH/No Hop



GFSK/LCH/Hop	
GFSK/HCH/Hop	

π /4DQPSK/LCH/Hop



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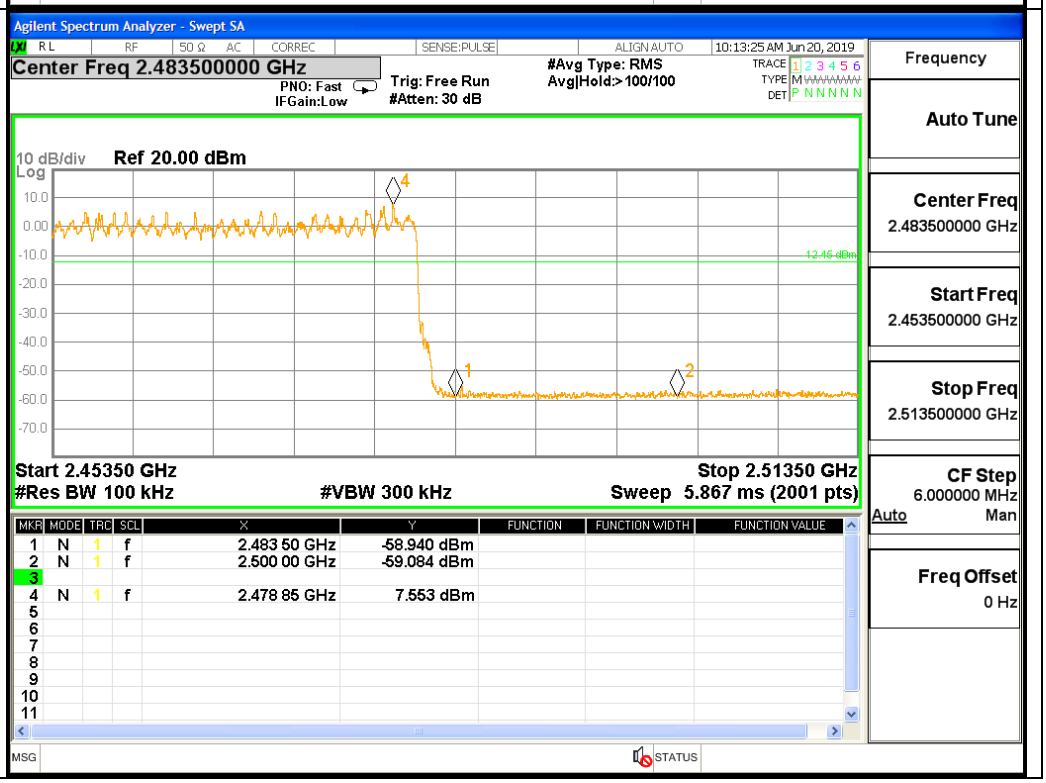
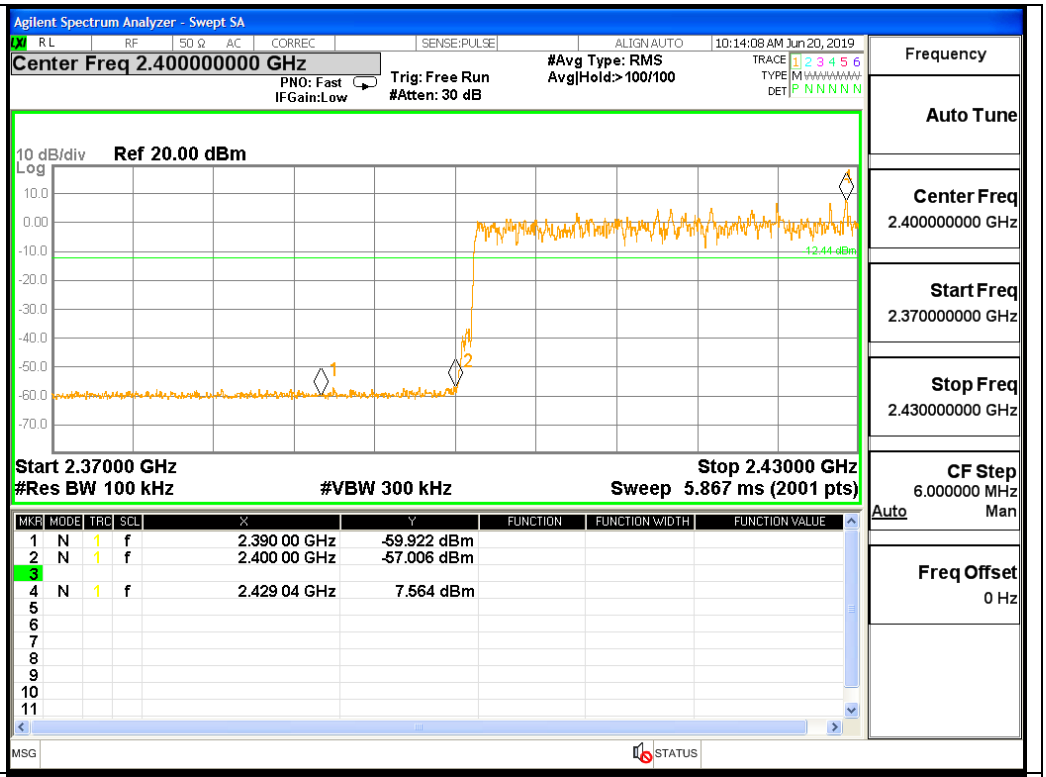


8DPSK/LCH/Hop



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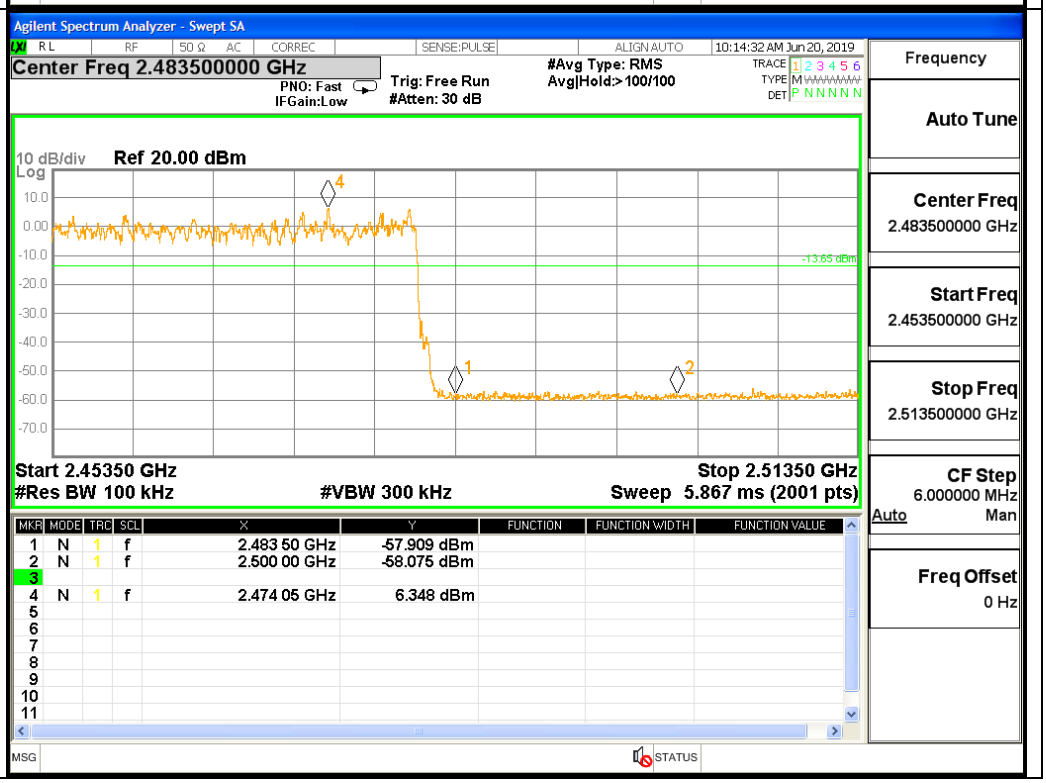
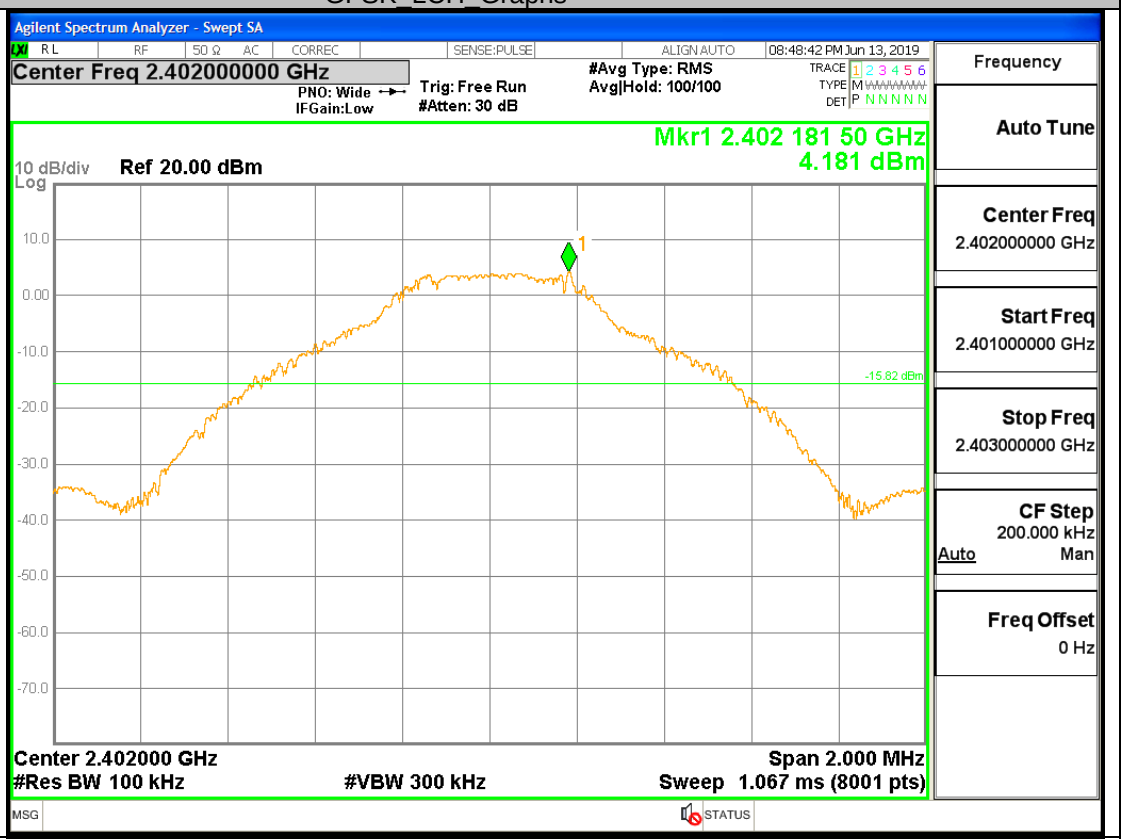
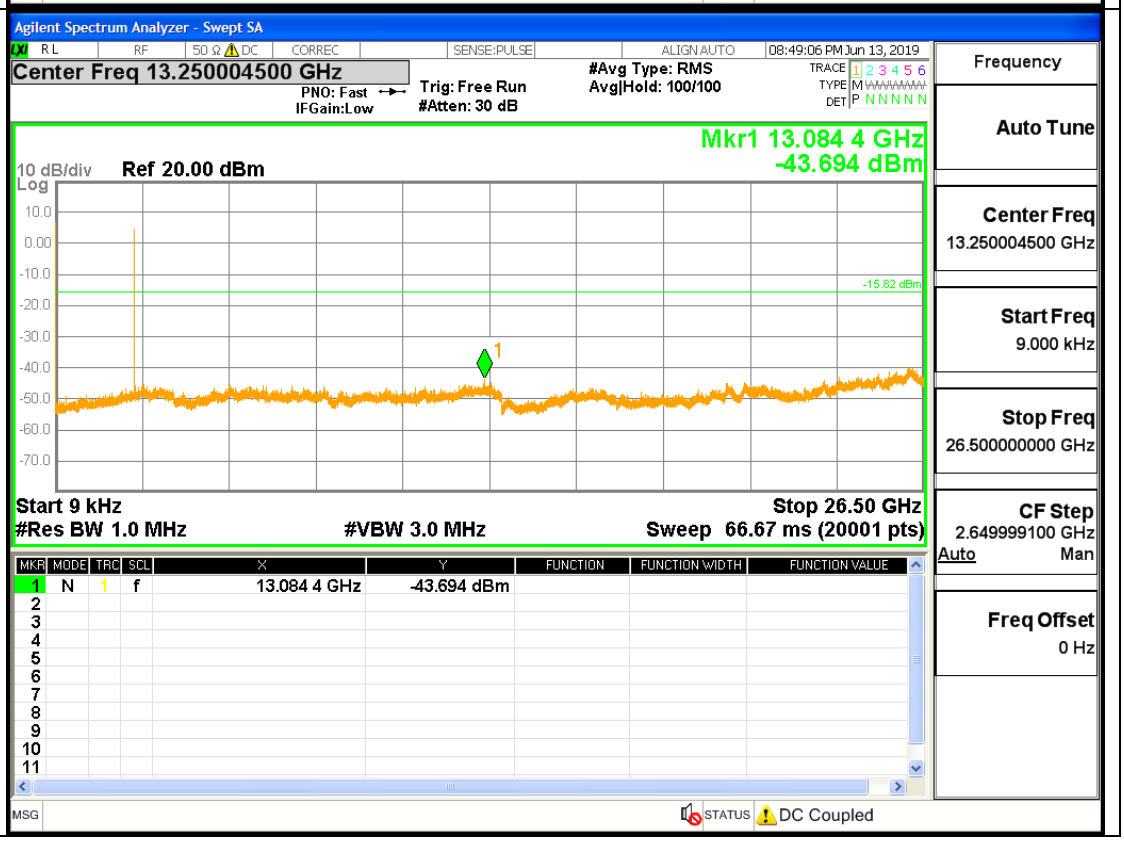
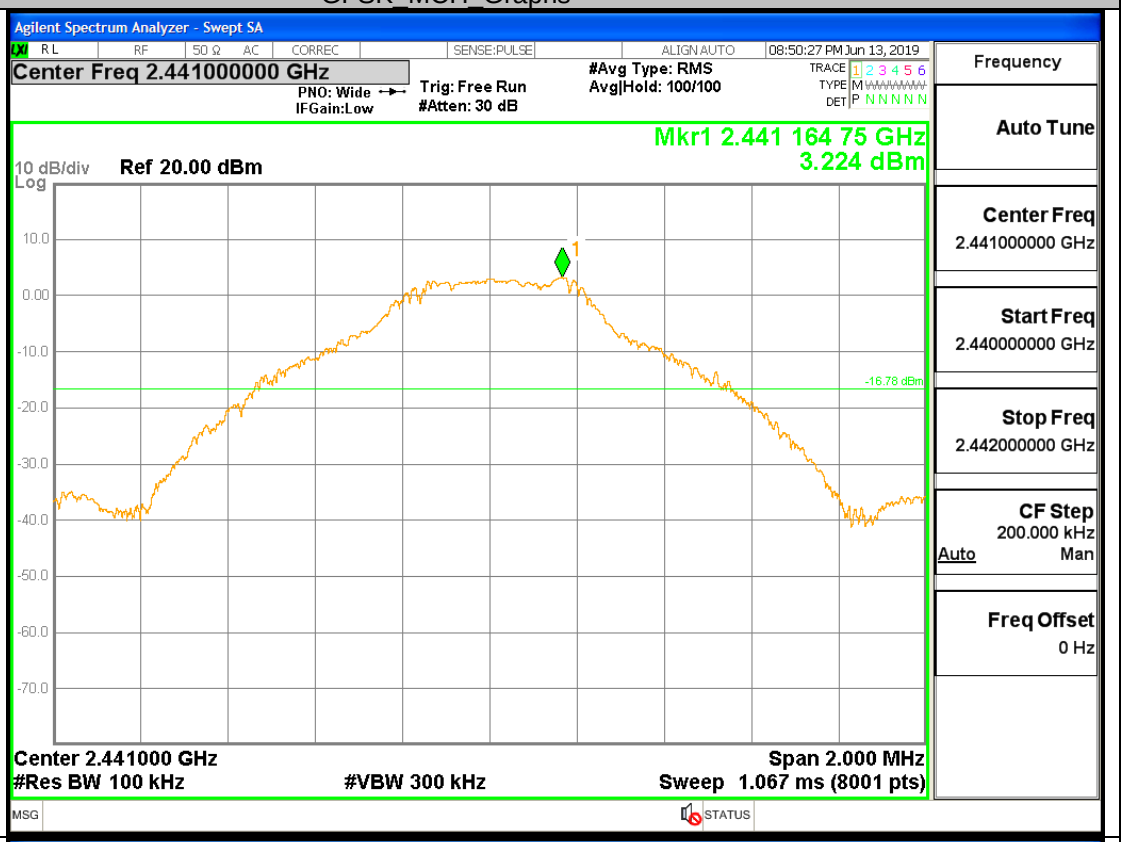
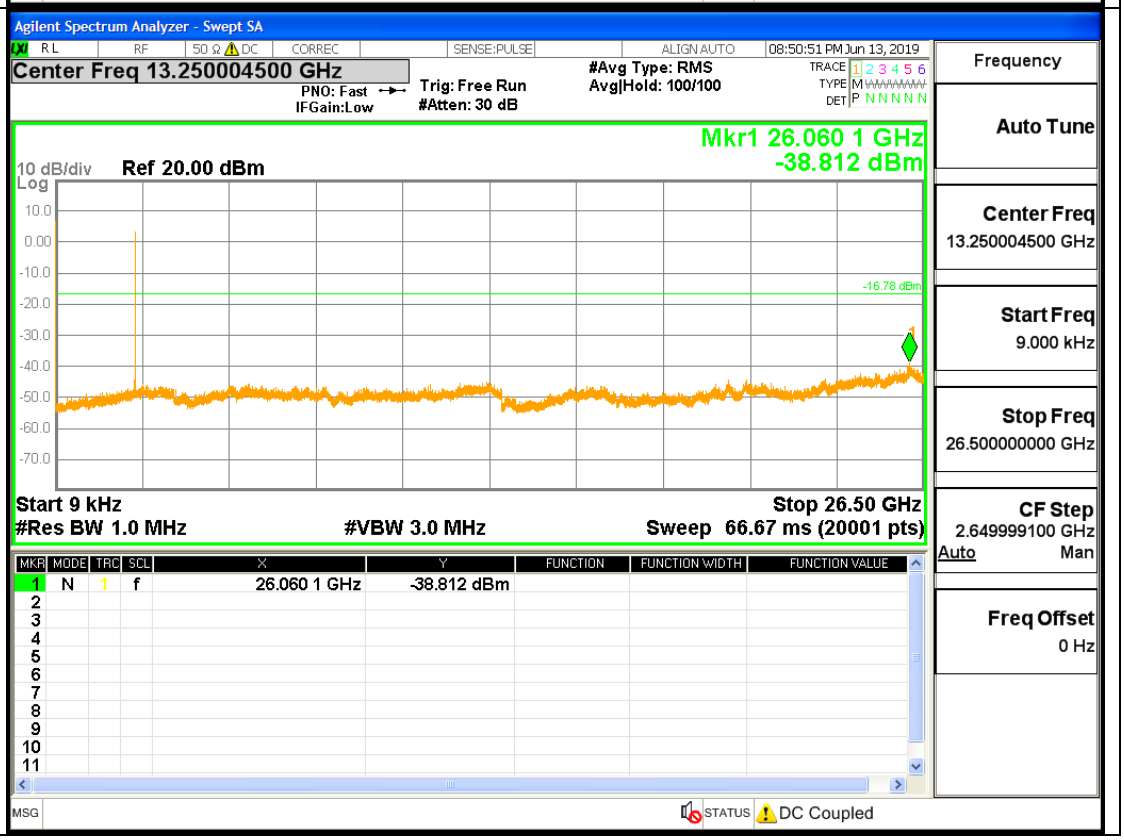
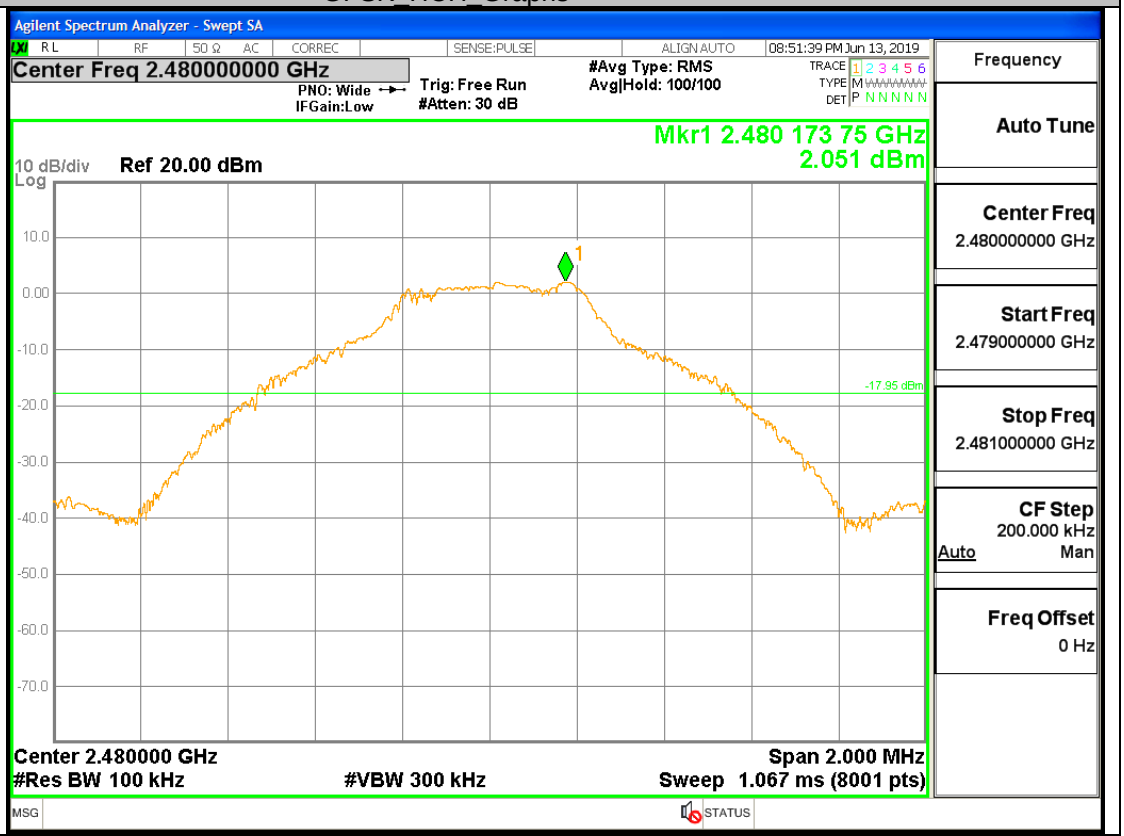
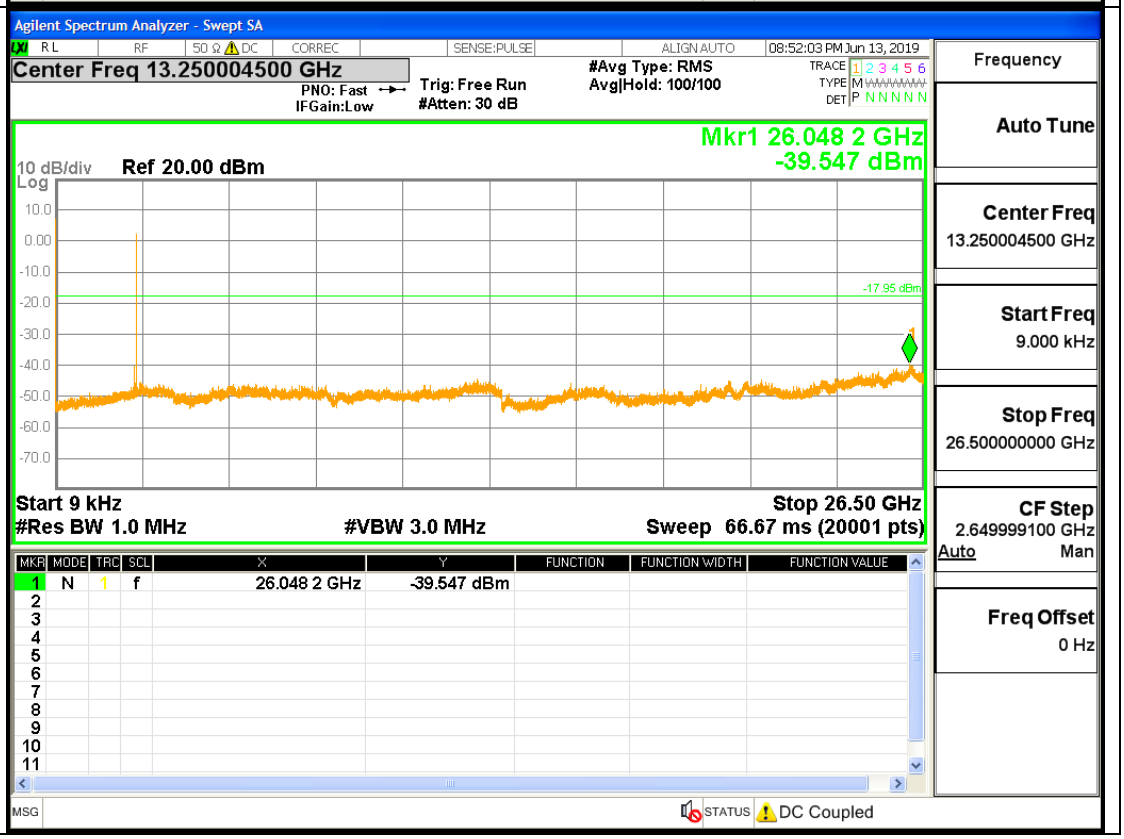


A.7 RF Conducted Spurious Emissions

Test Graph

GFSK_LCH_Graphs	
Pref	
Puw	

GFSK_MCH_Graphs	
Pref	
Puw	

GFSK_HCH_Graphs	
Pref	
Puw	

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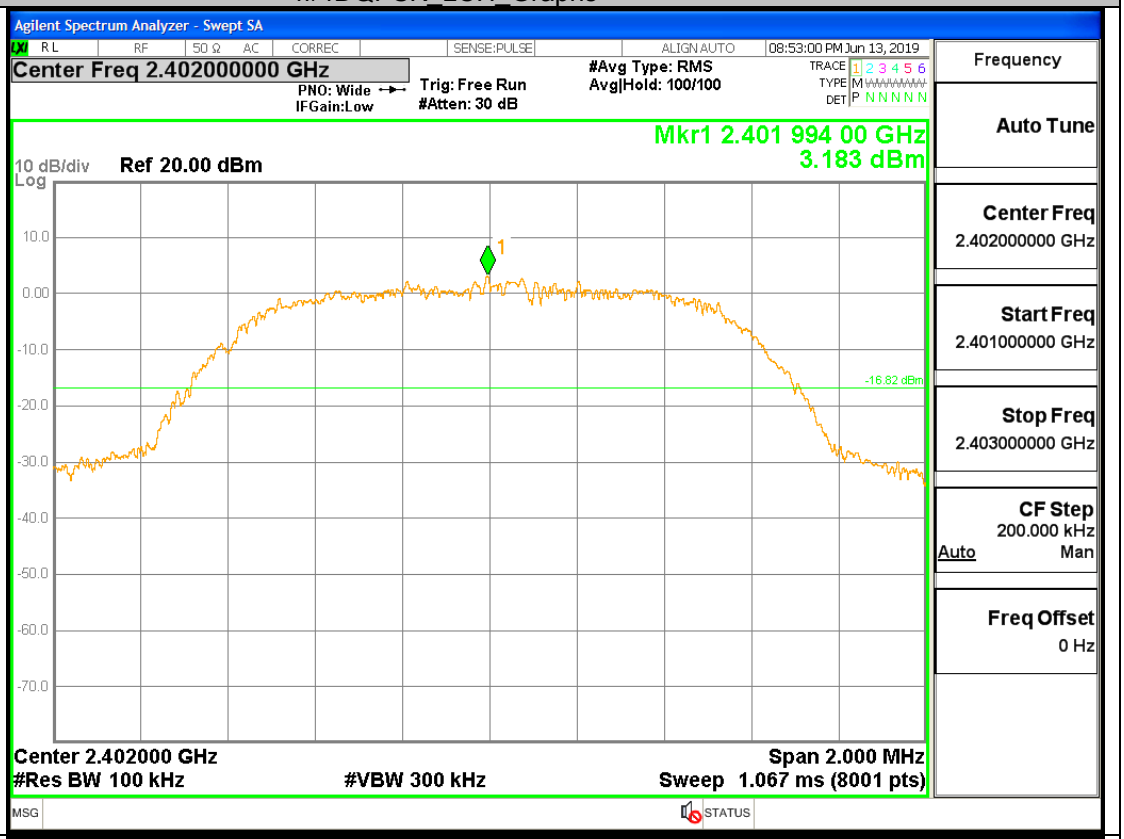
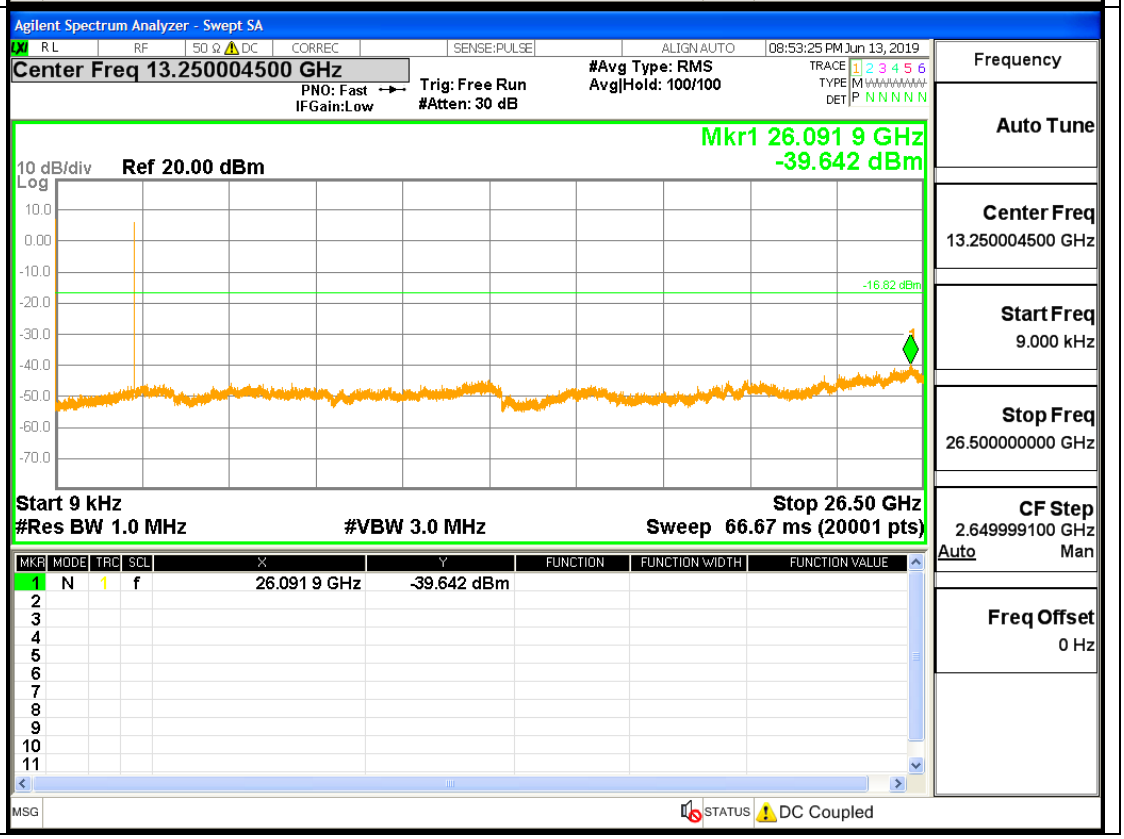
Pref	
Puw	

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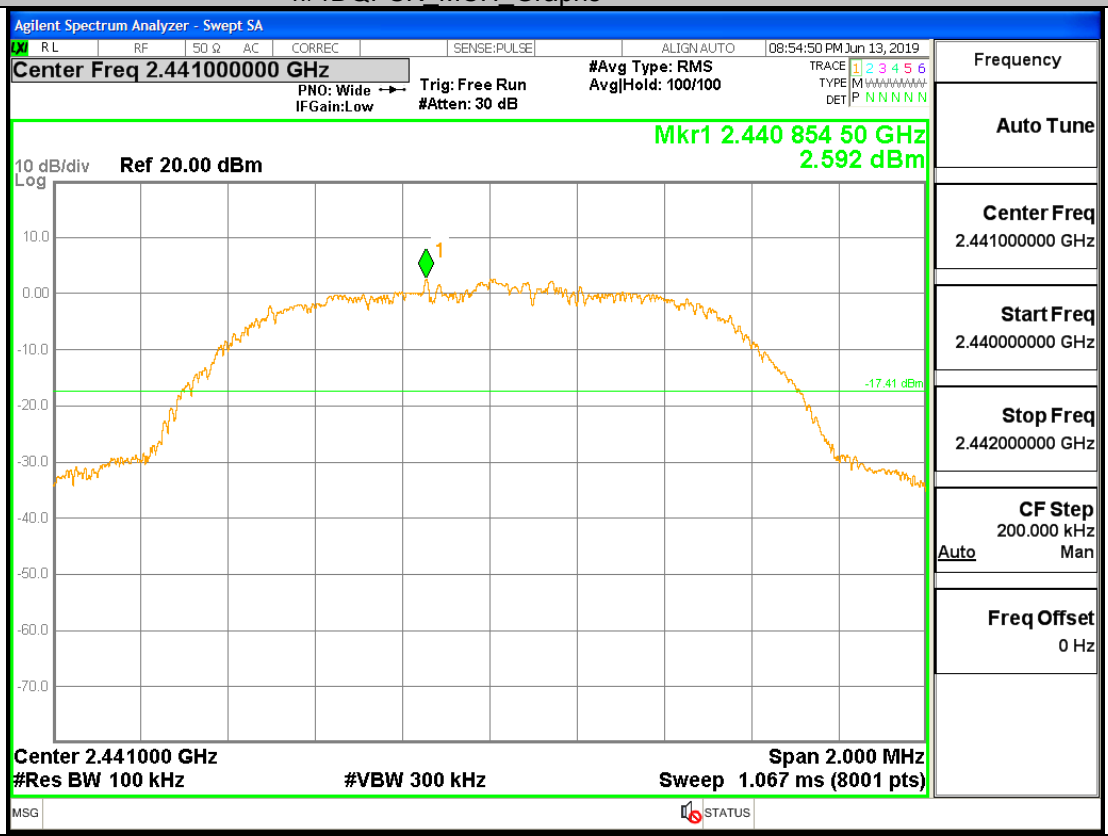
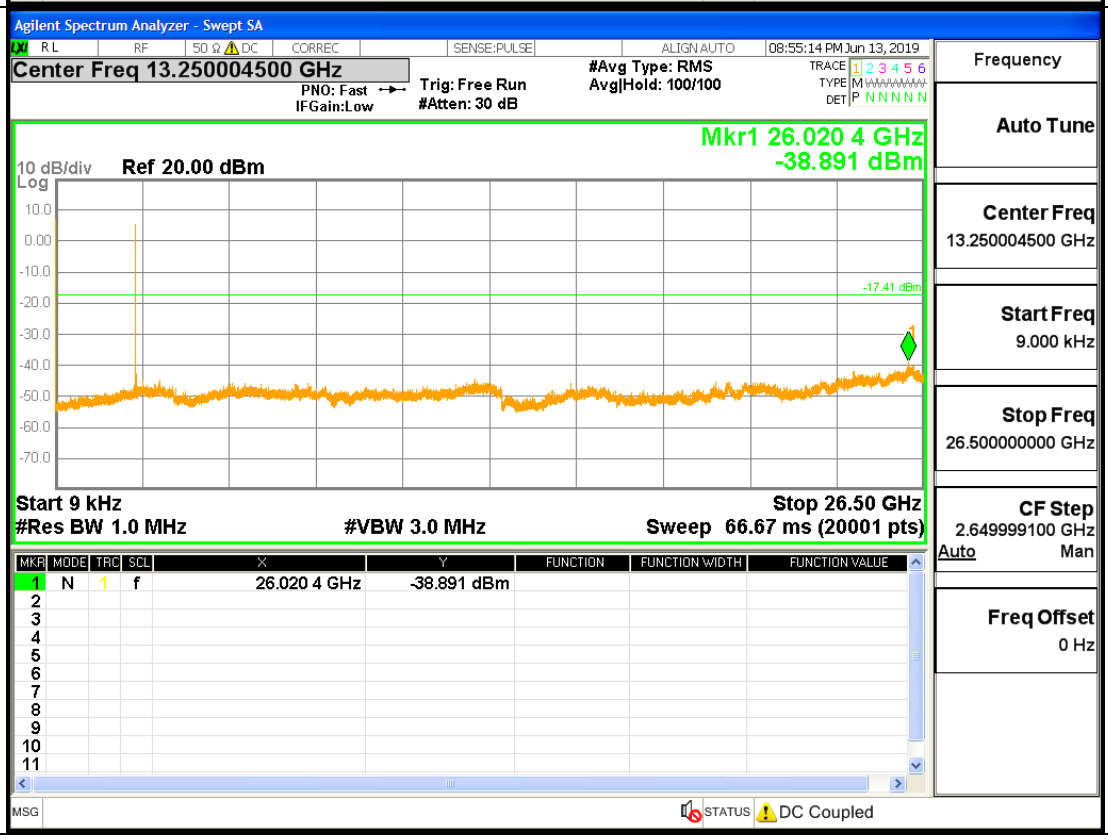
Pref	
Puw	

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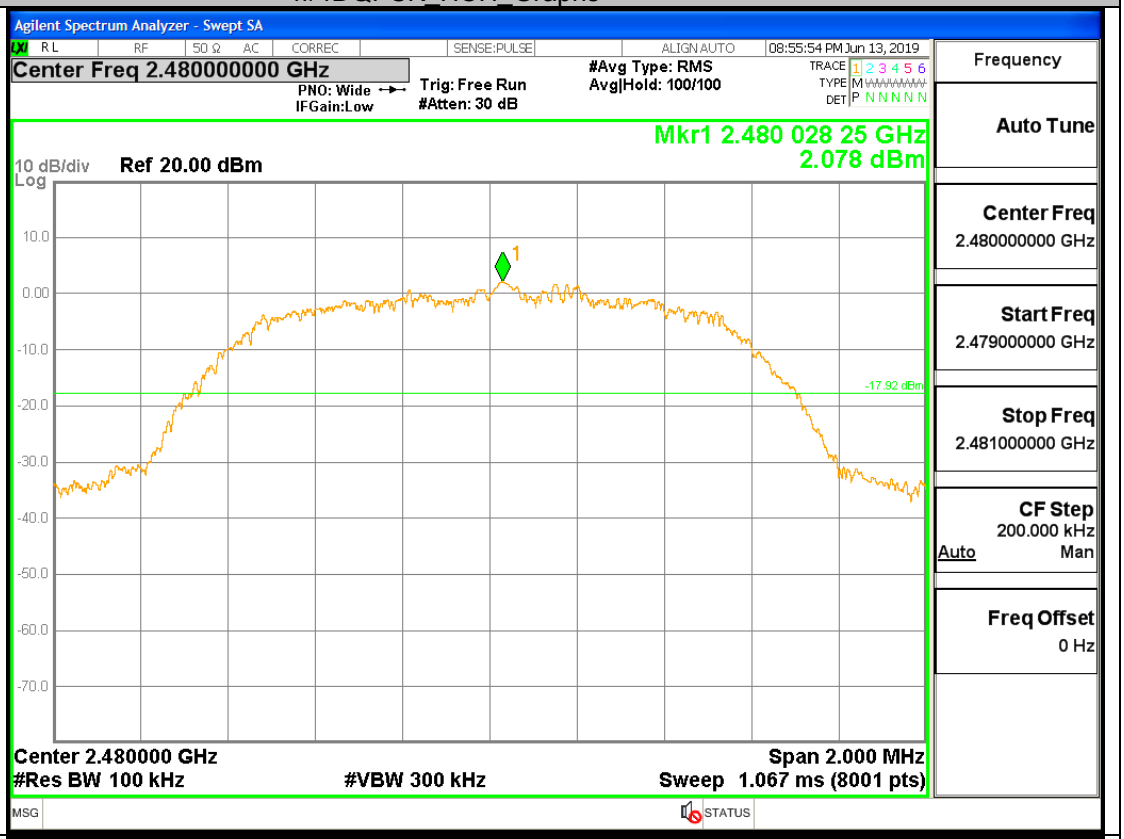
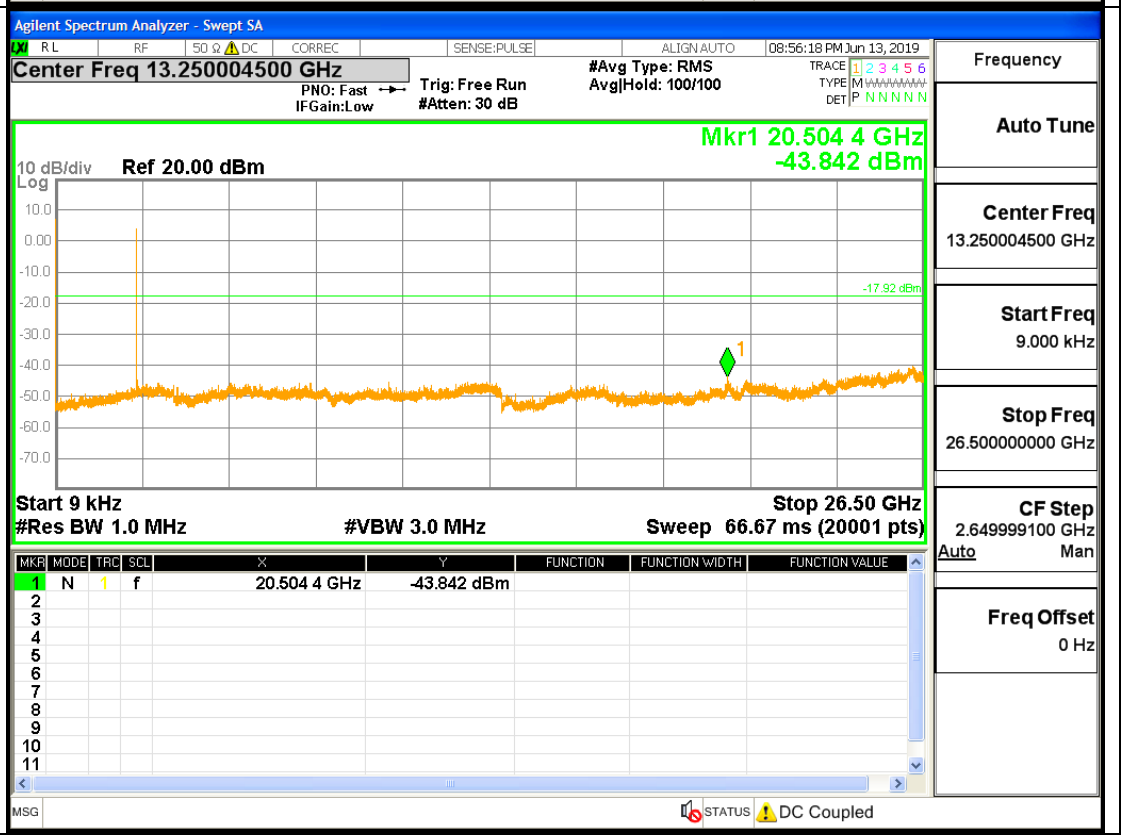
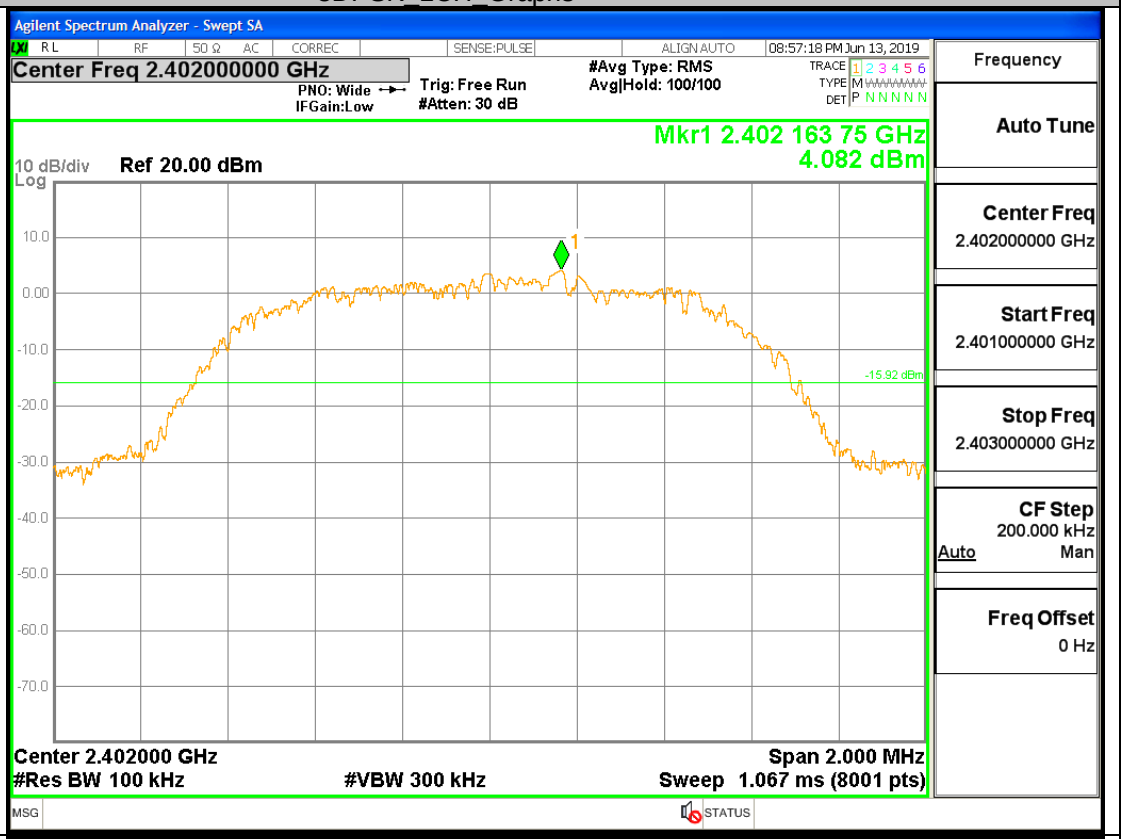
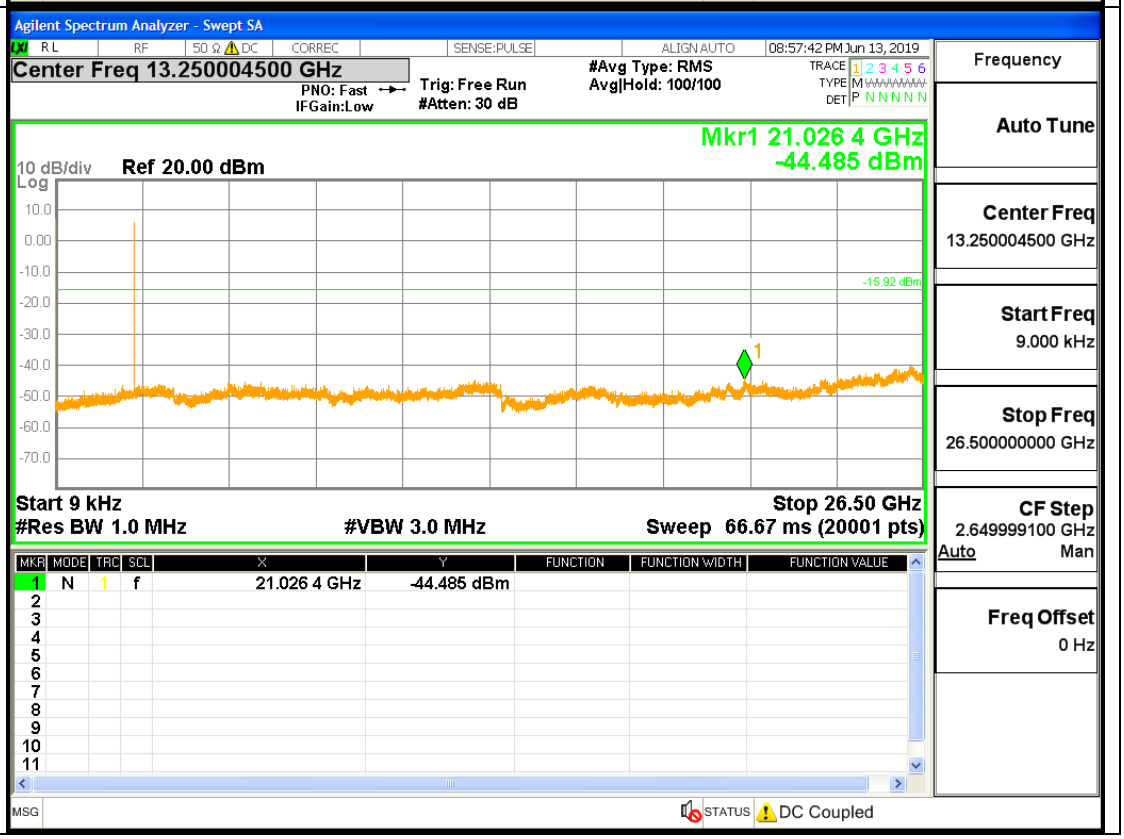
Pref	
Puw	

8DPSK_LCH_Graphs	
Pref	
Puw	

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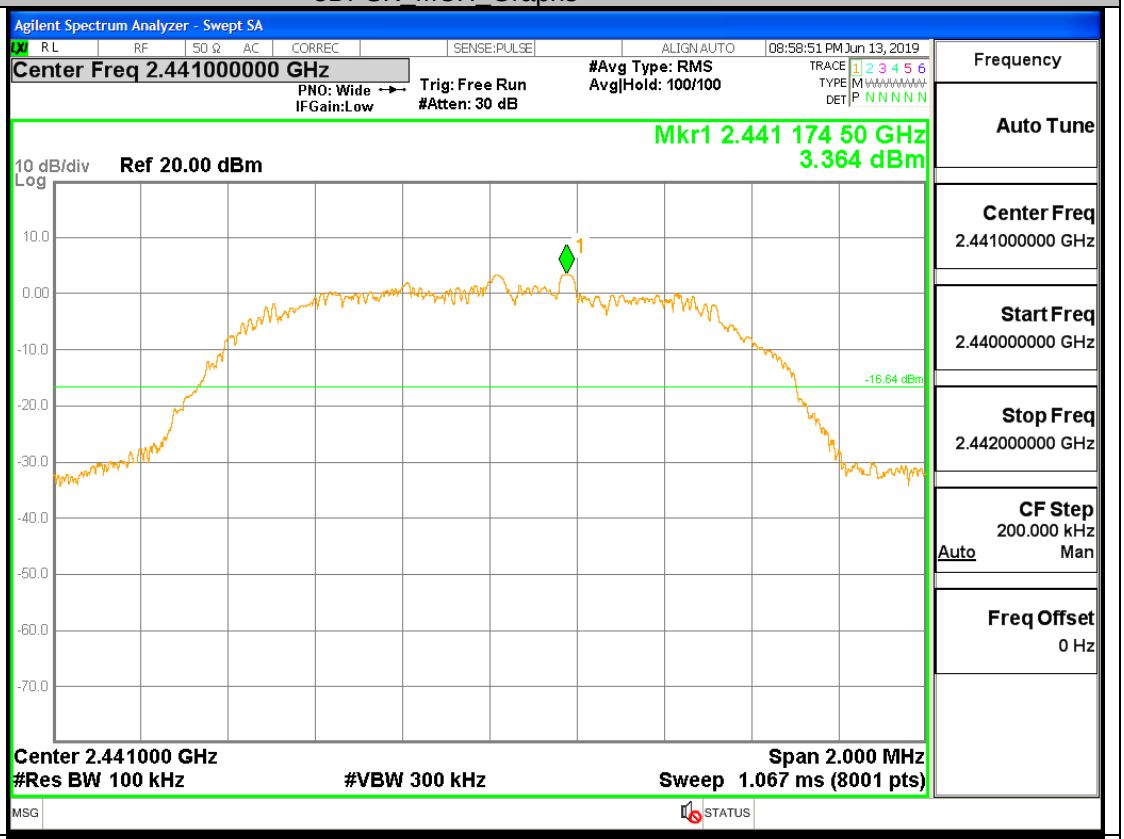
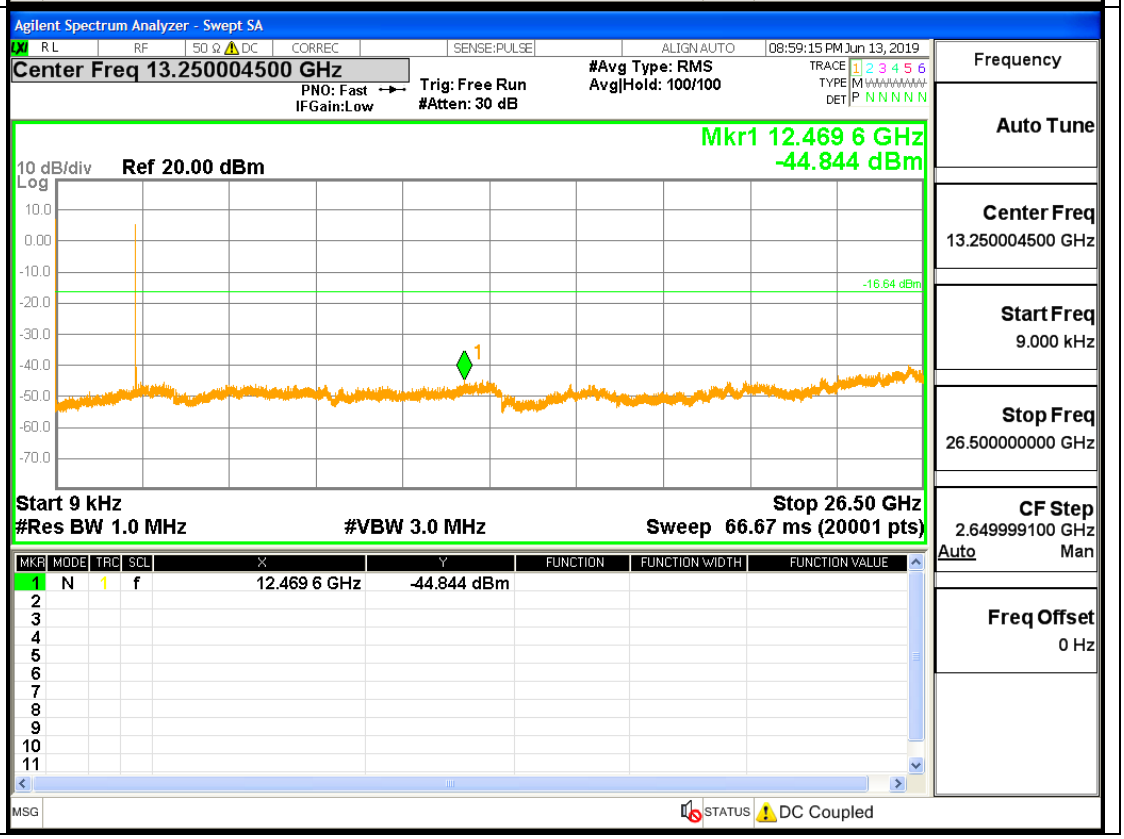
Pref	
Puw	

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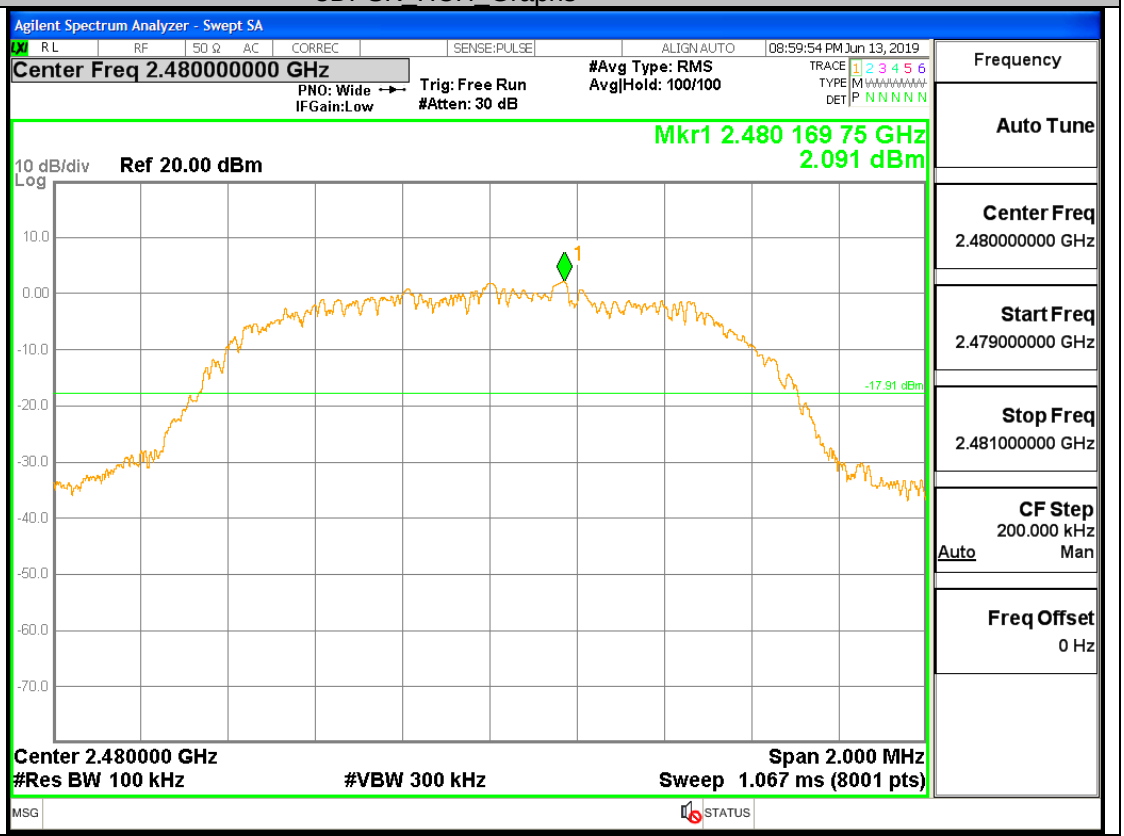
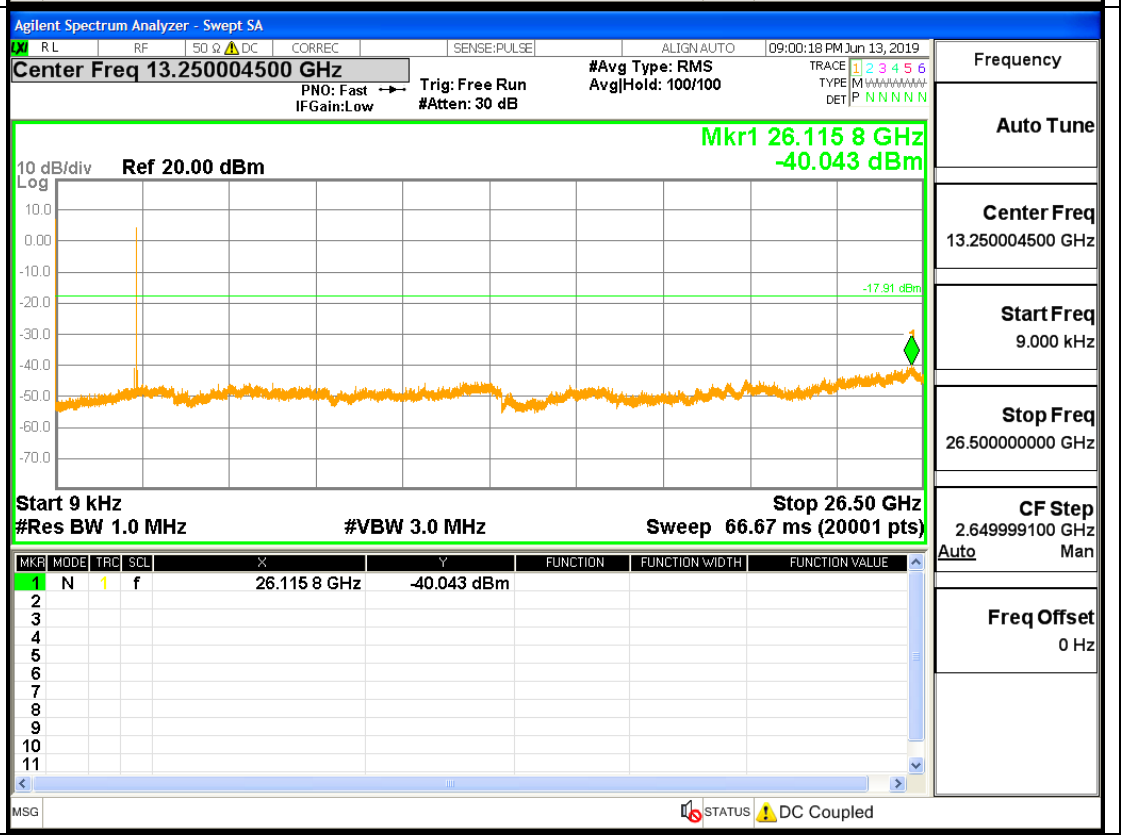
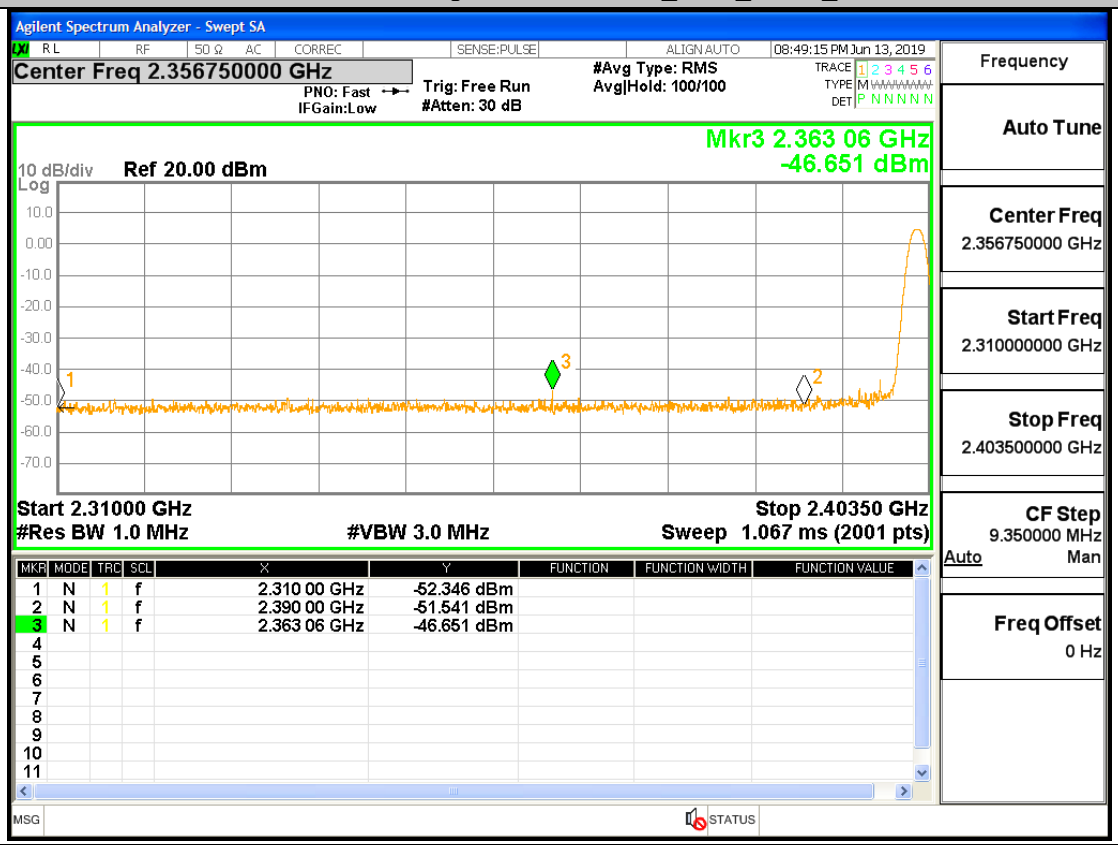
Pref	
Puw	

A.8 Restrict-band band-edge measurements

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2363.06	2.00	0.00	-46.65	50.55	74	Pass
1DH5	2480	2483.50	2.00	0.00	-49.01	48.19	74	Pass
2DH5	2402	2310.00	2.00	0.00	-50.49	46.71	74	Pass
2DH5	2480	2483.50	2.00	0.00	-44.09	53.11	74	Pass
3DH5	2402	2390.00	2.00	0.00	-51.15	46.05	74	Pass
3DH5	2480	2483.50	2.00	0.00	-40.44	56.76	74	Pass

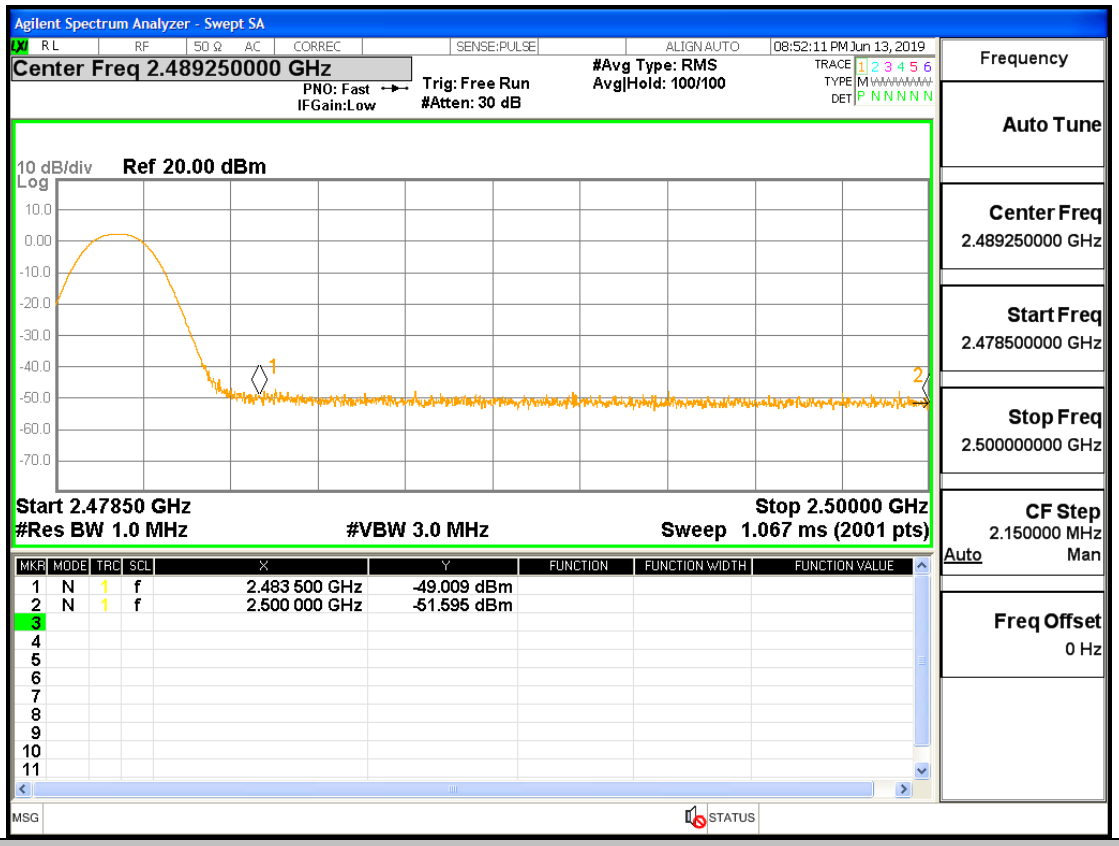
Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-58.60	38.60	54	Pass
1DH5	2480	2483.50	2.00	0.00	-55.62	41.58	54	Pass
2DH5	2402	2390.00	2.00	0.00	-58.16	39.04	54	Pass
2DH5	2480	2483.50	2.00	0.00	-52.55	44.65	54	Pass
3DH5	2402	2390.00	2.00	0.00	-58.08	39.12	54	Pass
3DH5	2480	2483.50	2.00	0.00	-50.69	46.51	54	Pass

Restrict-band band-edge measurements_2402_PEAK_DH5



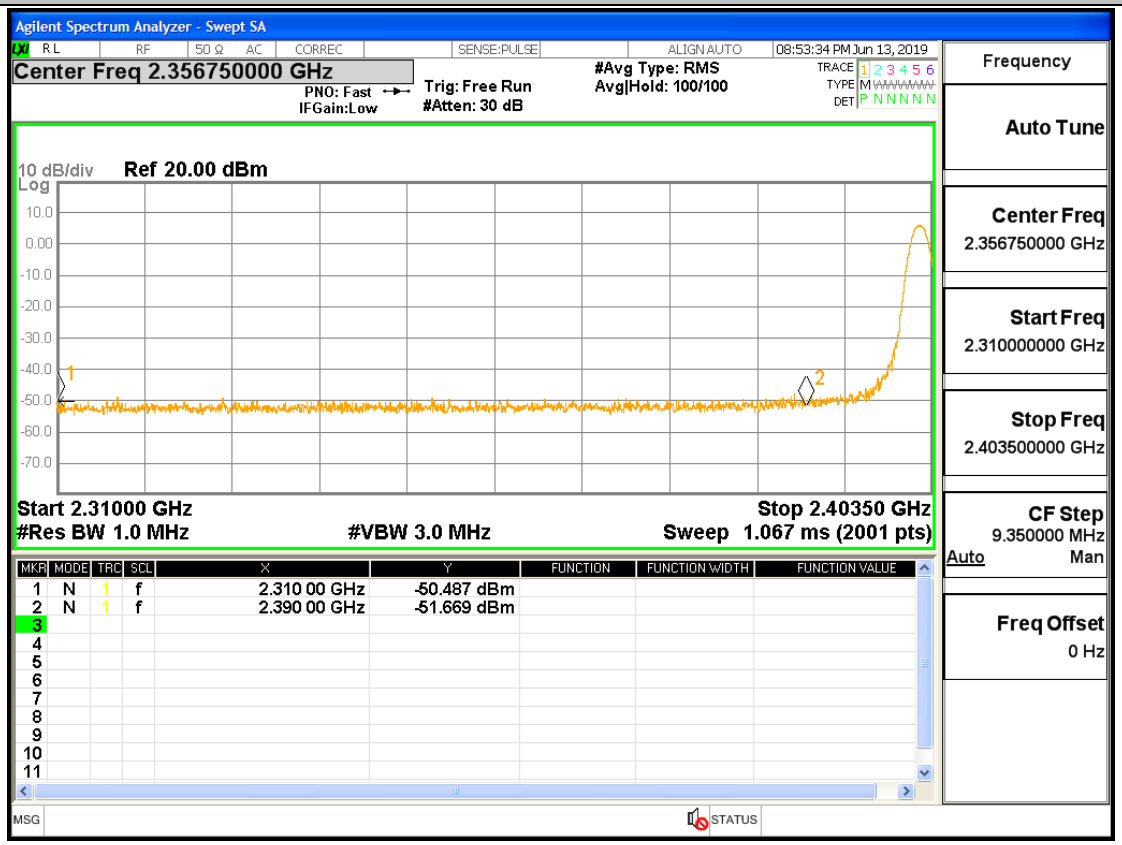
Restrict-band band-edge measurements_2402_AV_DH5

Restrict-band band-edge measurements_2480_PEAK_DH5

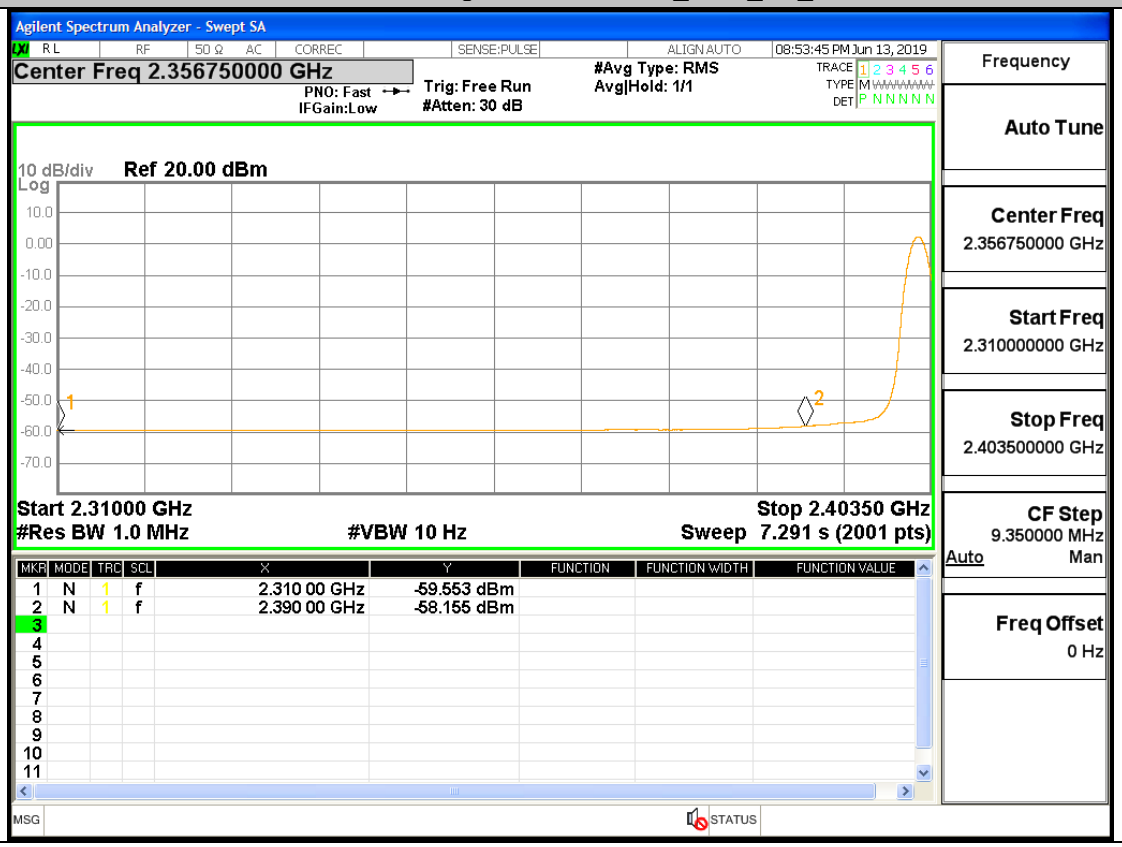


Restrict-band band-edge measurements_2480_AV_DH5

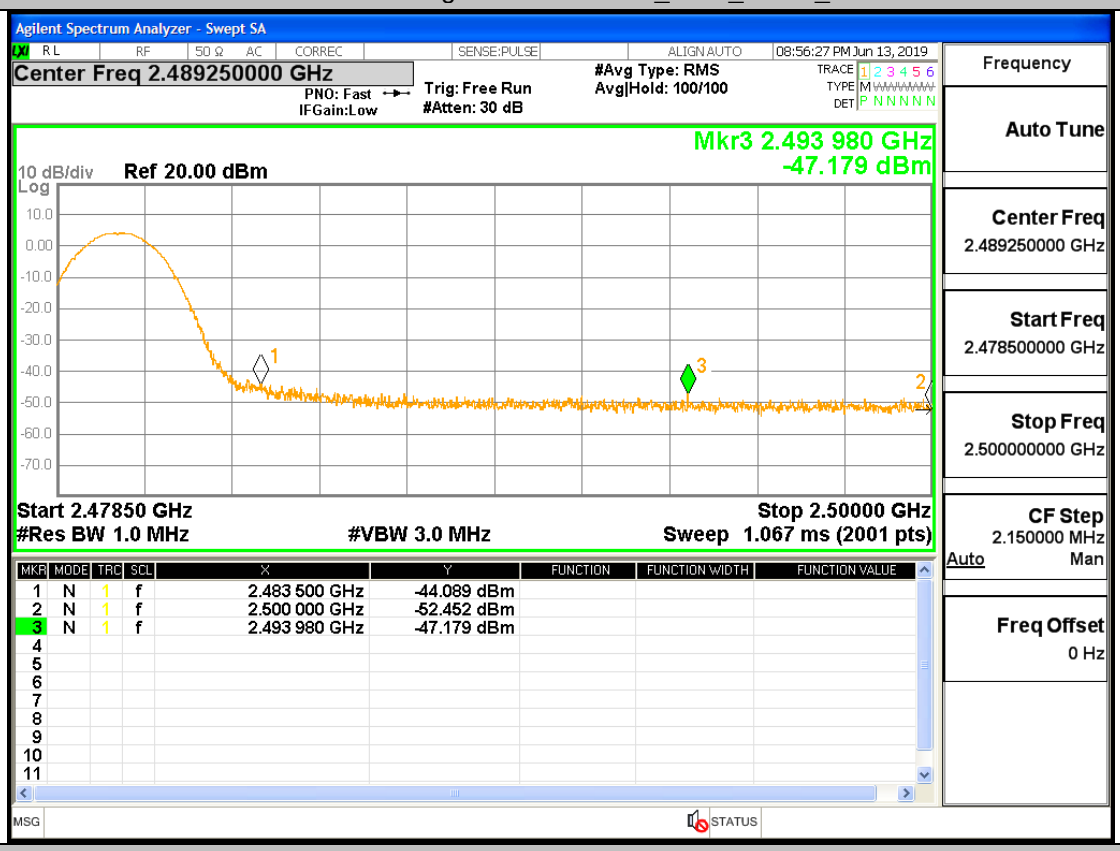
Restrict-band band-edge measurements_2402_PEAK_2DH5



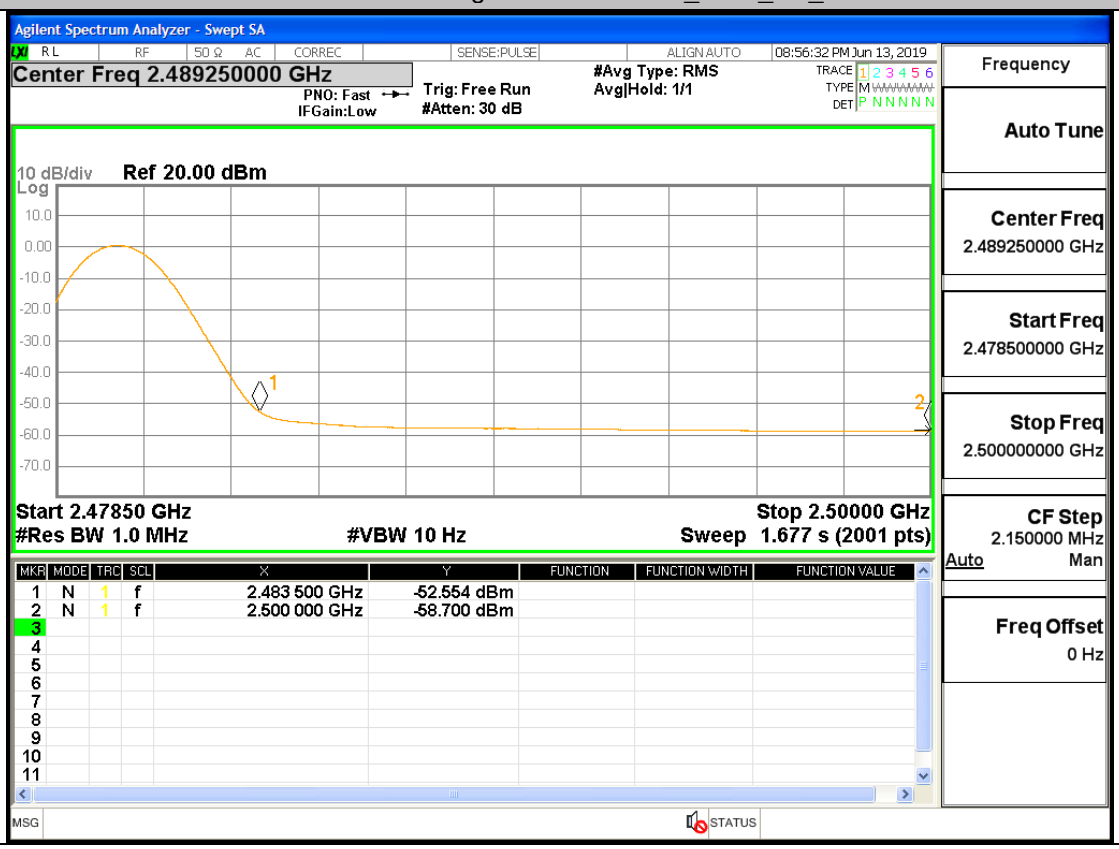
Restrict-band band-edge measurements_2402_AV_2DH5



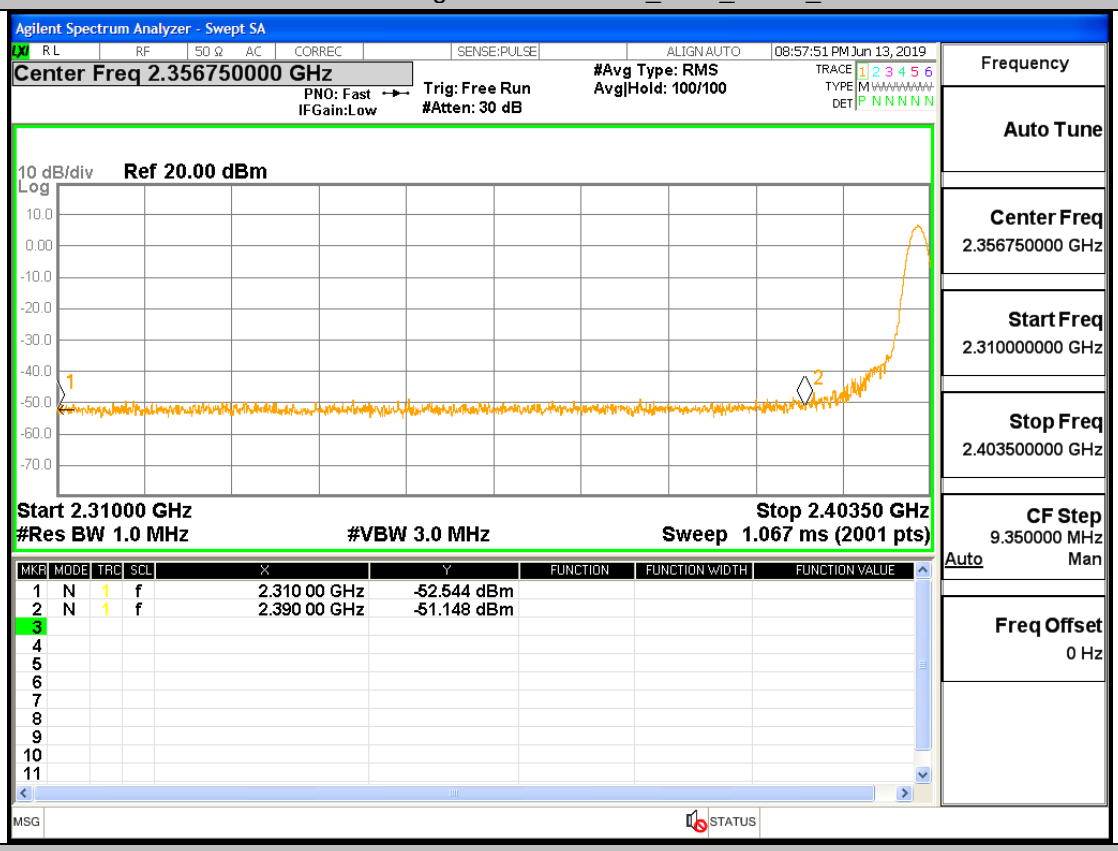
Restrict-band band-edge measurements_2480_PEAK_2DH5



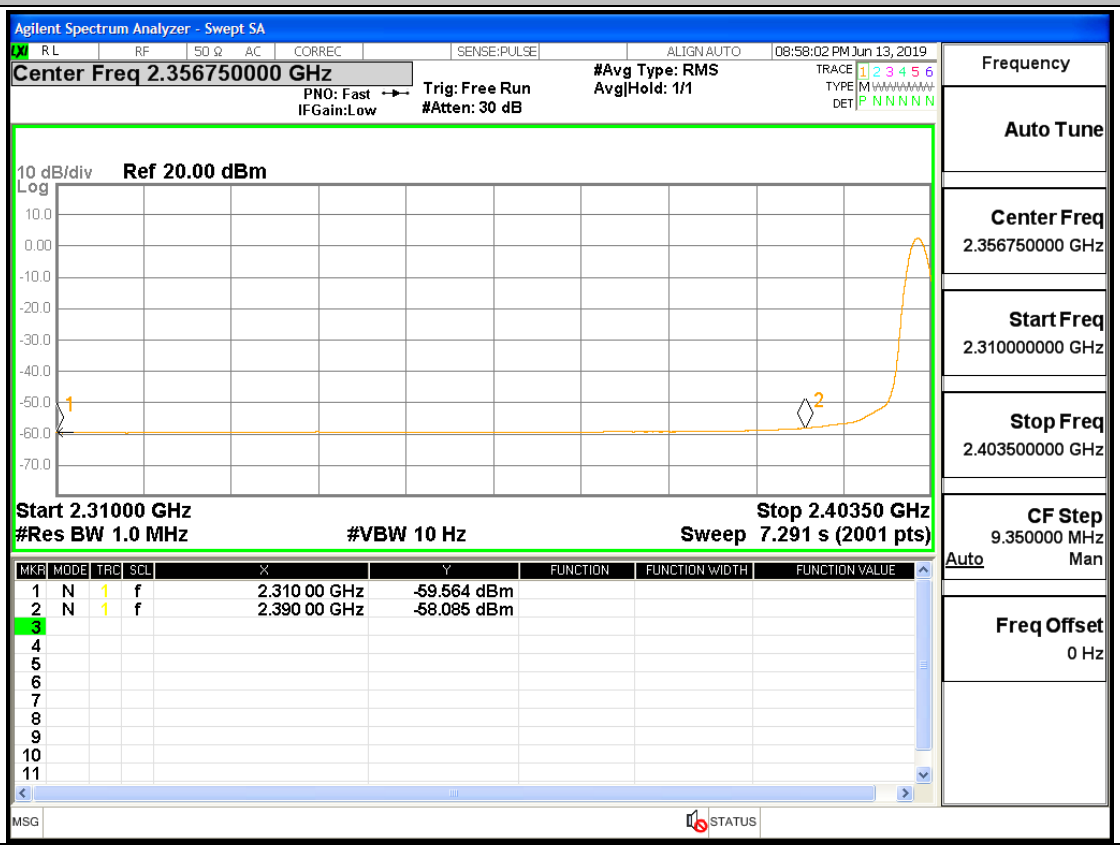
Restrict-band band-edge measurements_2480_AV_2DH5



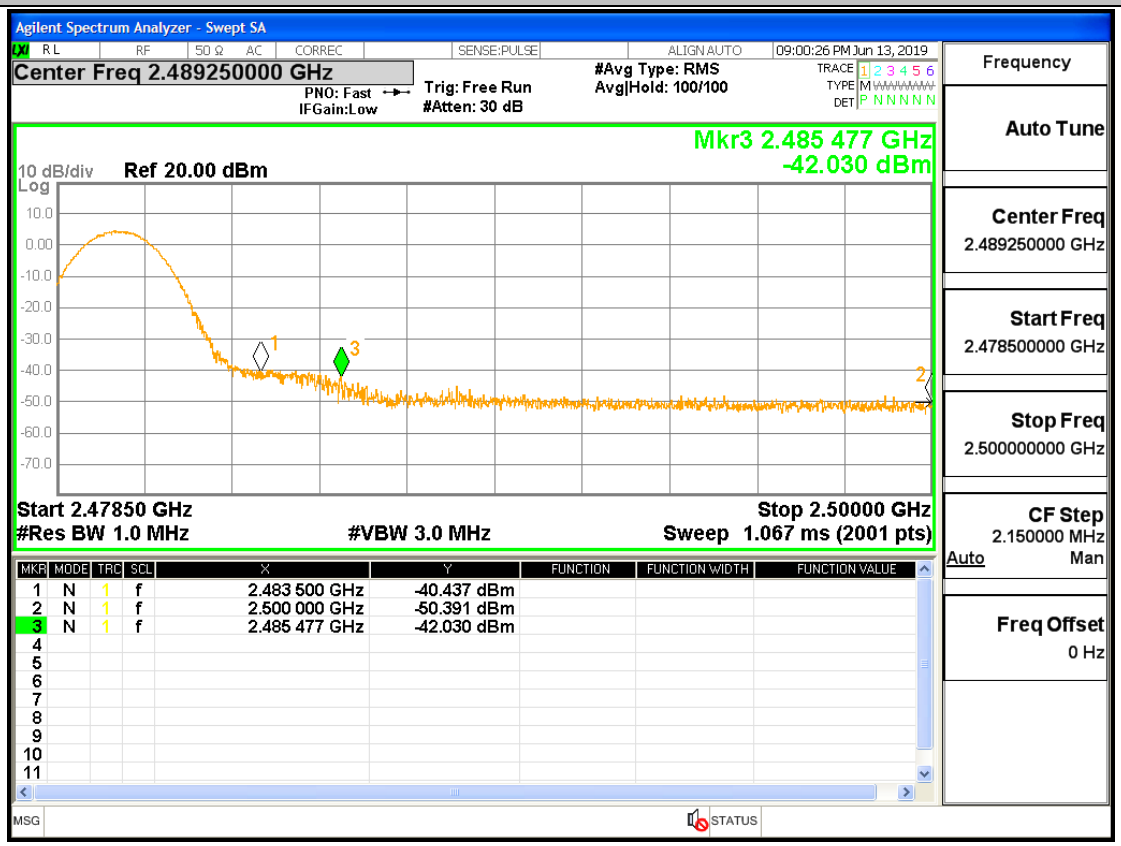
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5