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

Product Name: Wattbike Performance Touchscreen
Trade Mark: WattbikePT1

Test Model: 80-000

FCC ID: 2AVJT-80-000

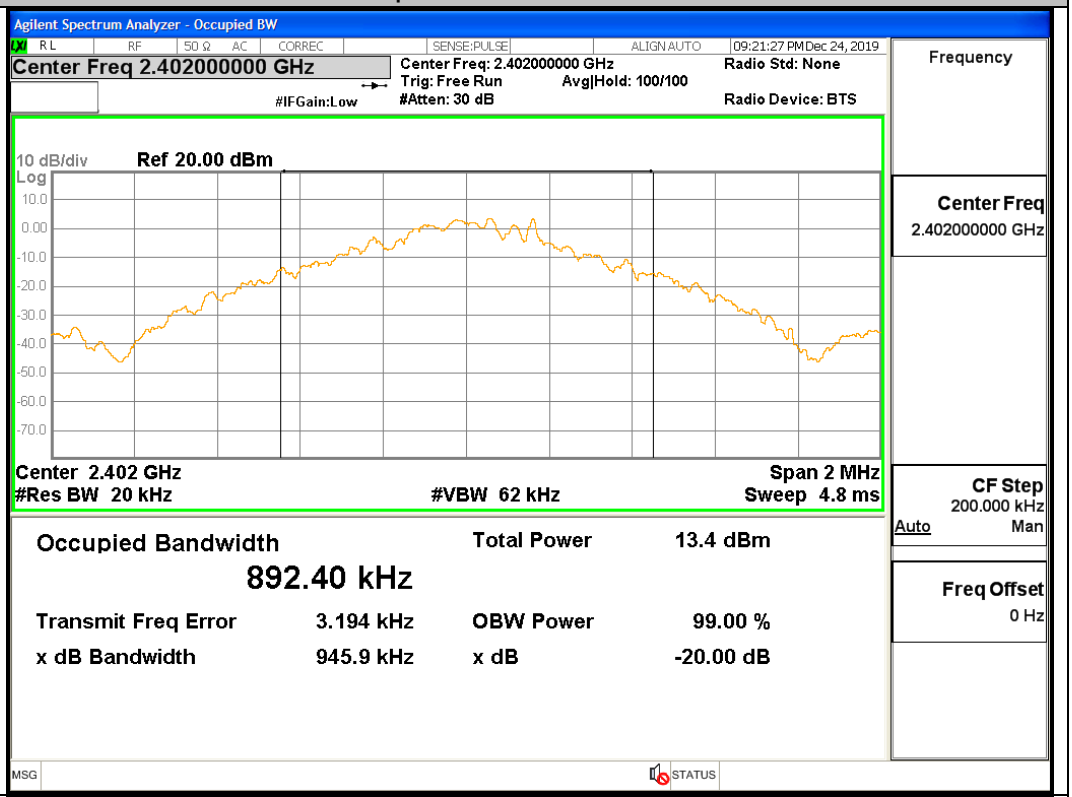
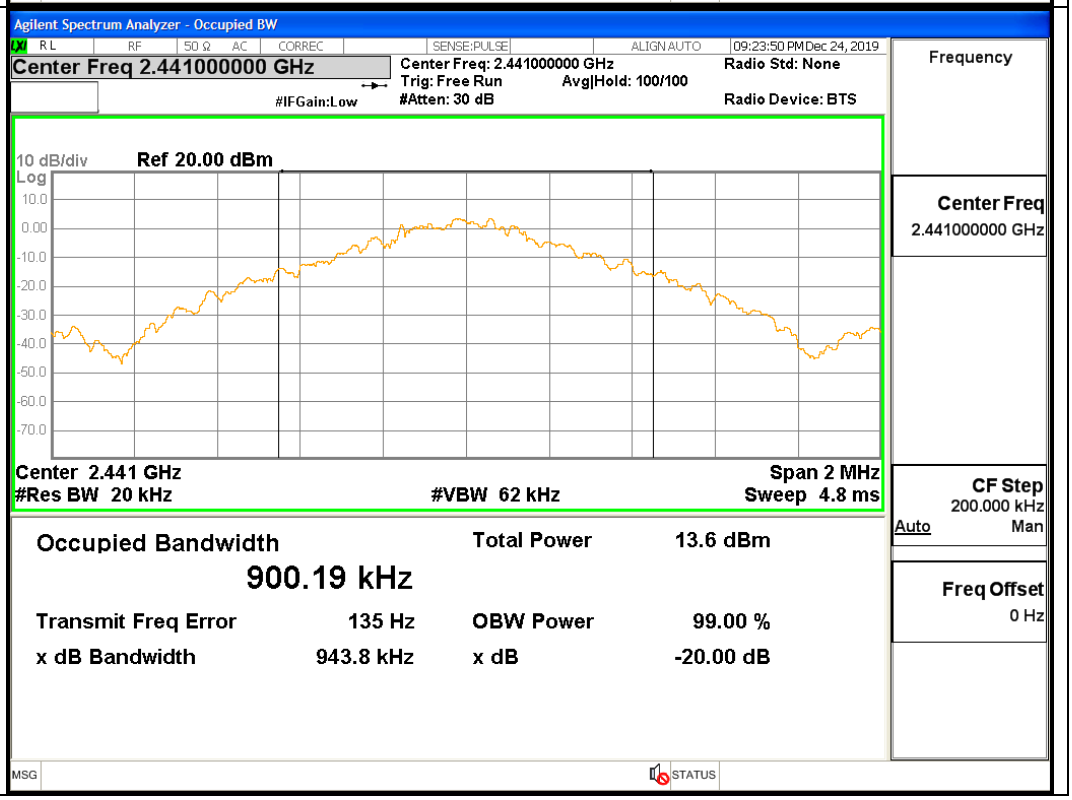
Environmental Conditions

Temperature:	22.8° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu
NOTE	Chipset/Module: MT6625L

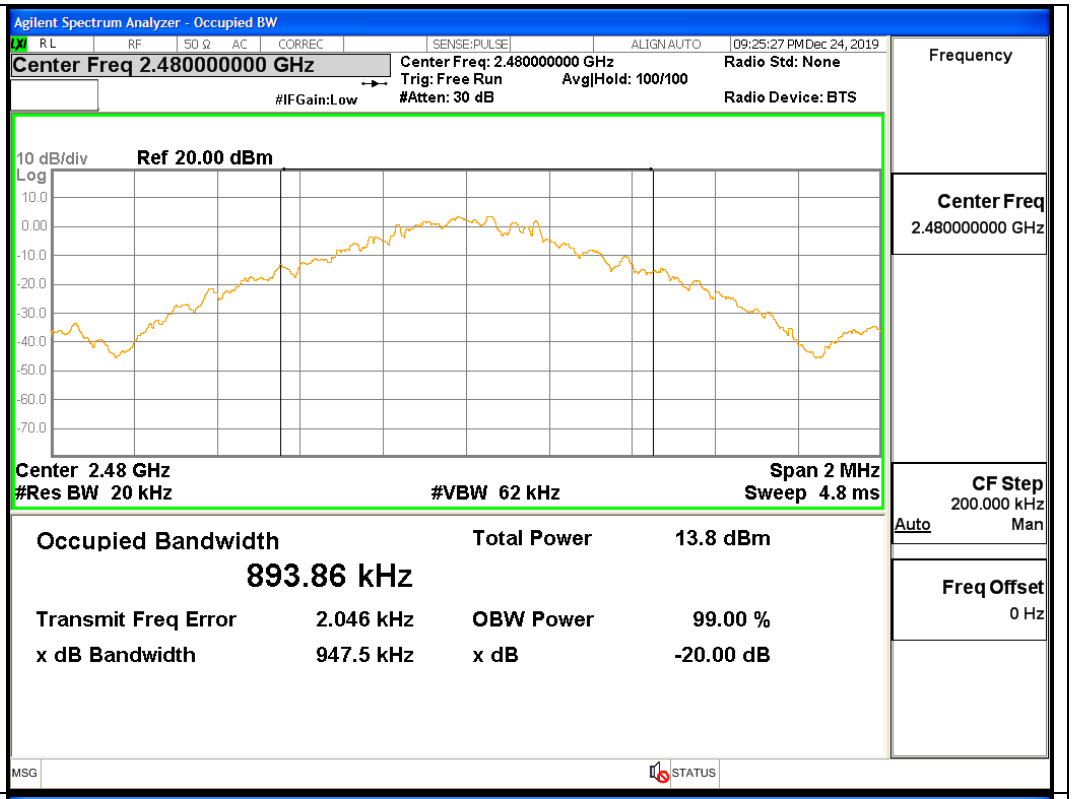
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.946	Not Specified	PASS
GFSK	MCH	0.944	Not Specified	PASS
GFSK	HCH	0.948	Not Specified	PASS
π/4DQPSK	LCH	1.310	Not Specified	PASS
π/4DQPSK	MCH	1.316	Not Specified	PASS
π/4DQPSK	HCH	1.311	Not Specified	PASS
8DPSK	LCH	1.267	Not Specified	PASS
8DPSK	MCH	1.299	Not Specified	PASS
8DPSK	HCH	1.270	Not Specified	PASS

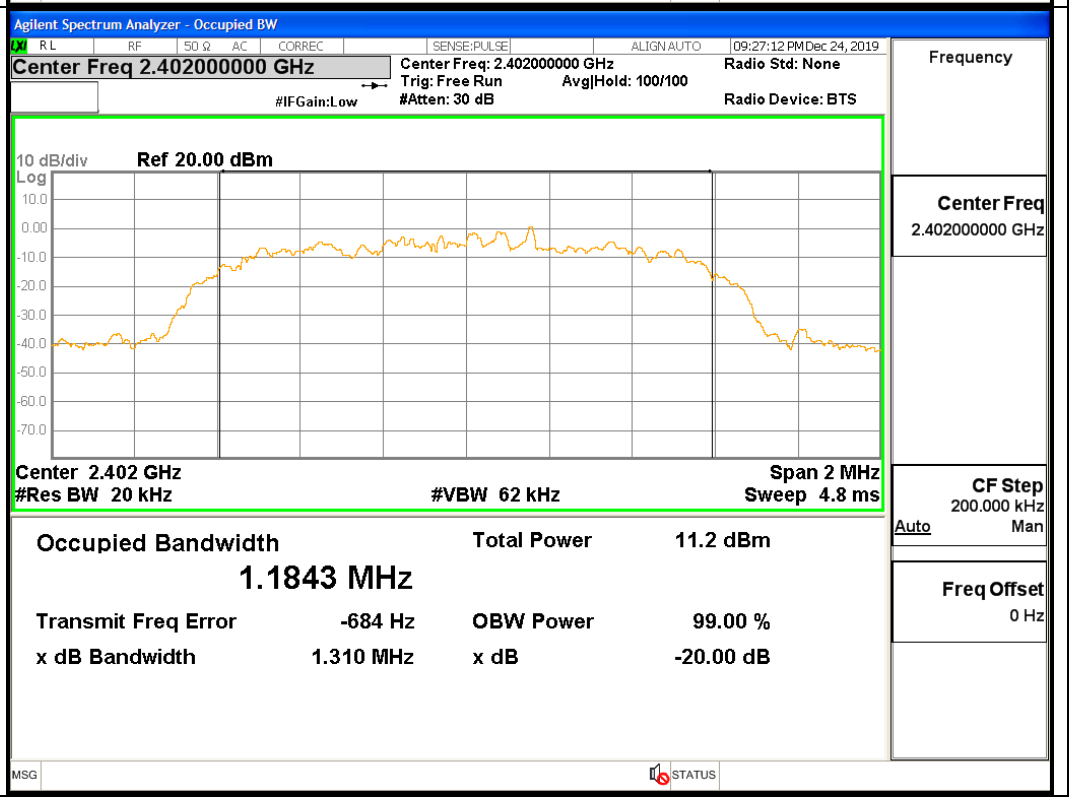
Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

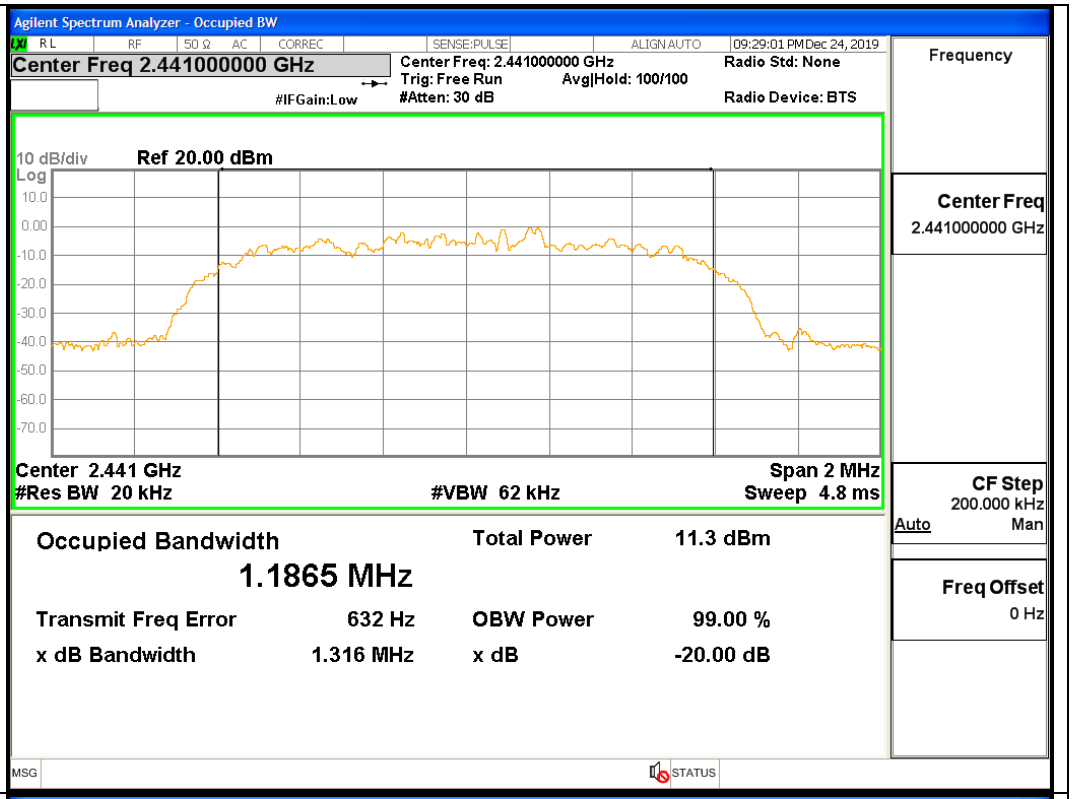
GFSK/HCH



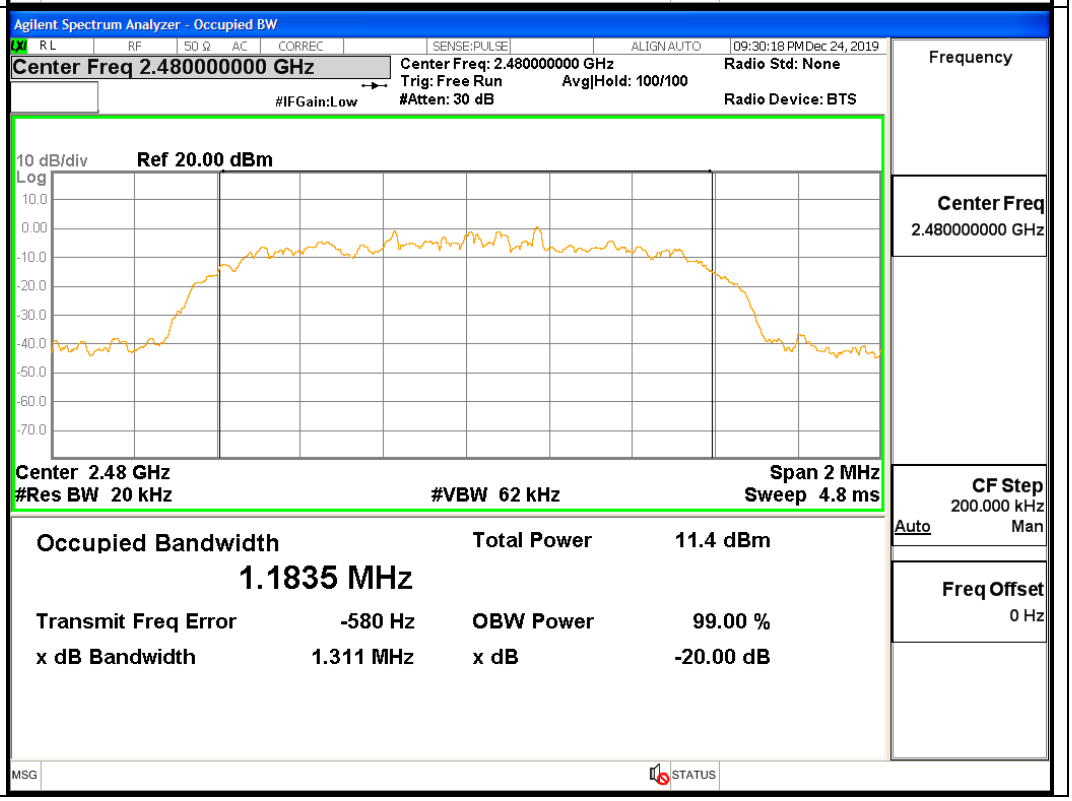
π/4DQPSK/LCH



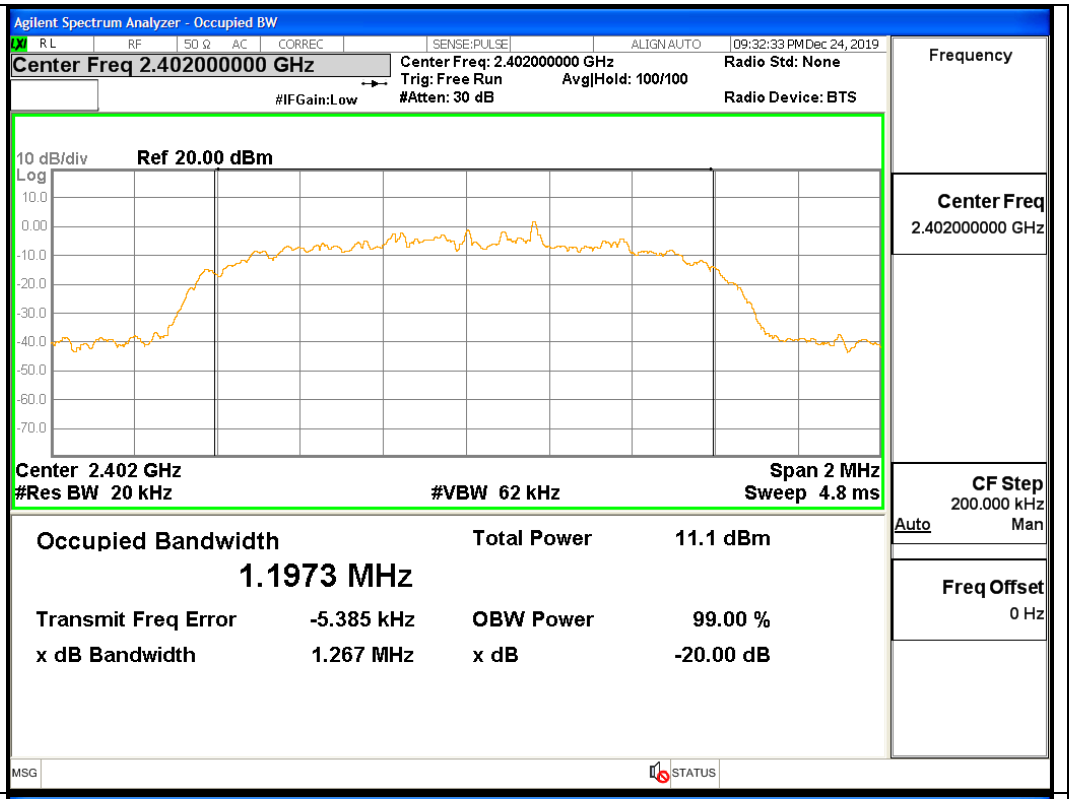
π/4DQPSK/MCH



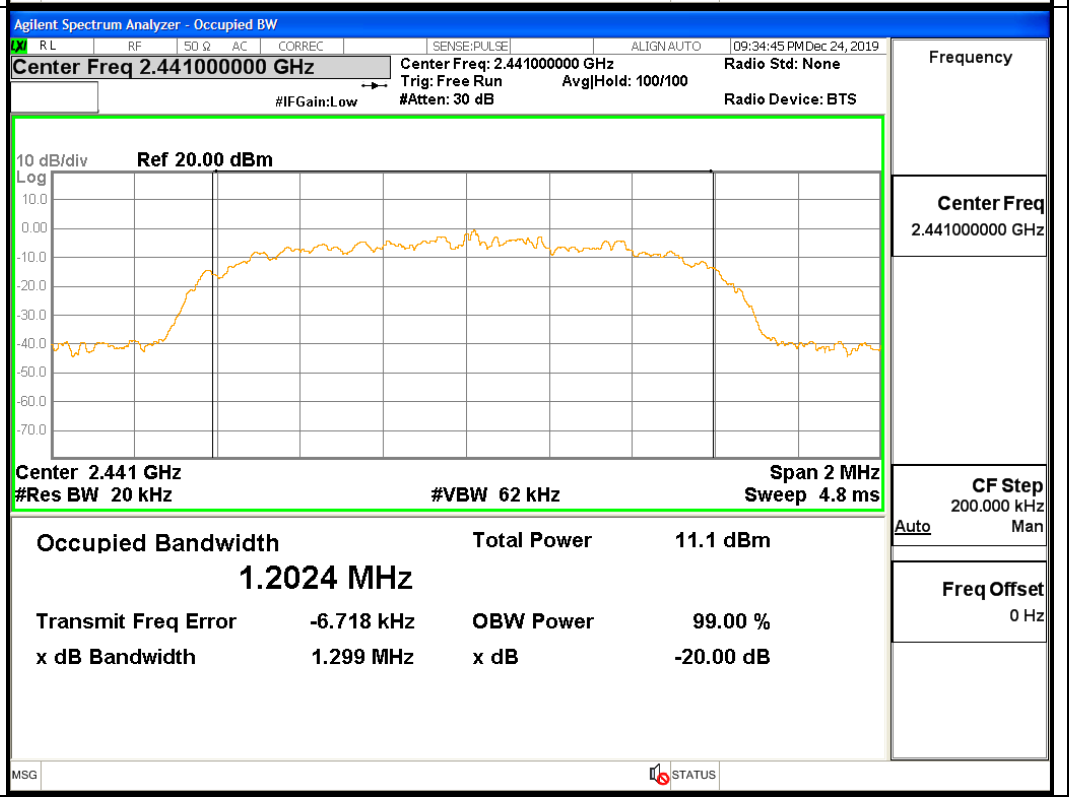
π/4DQPSK/HCH

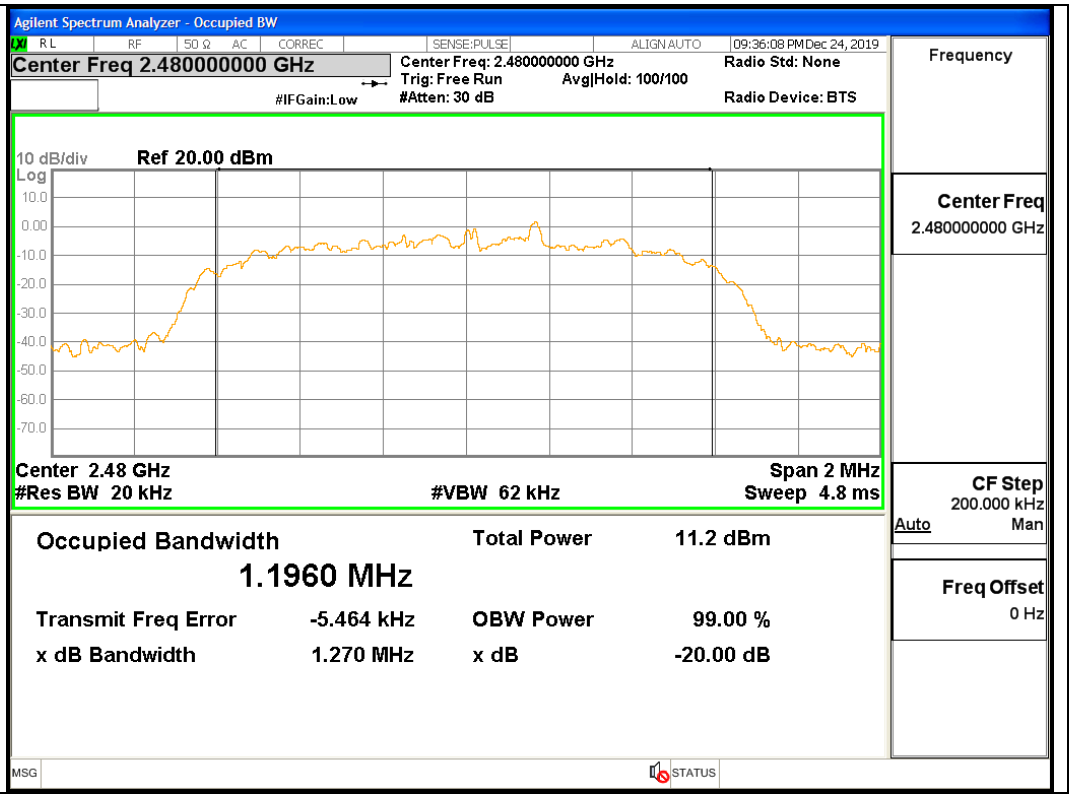


8DPSK/LCH



8DPSK/MCH



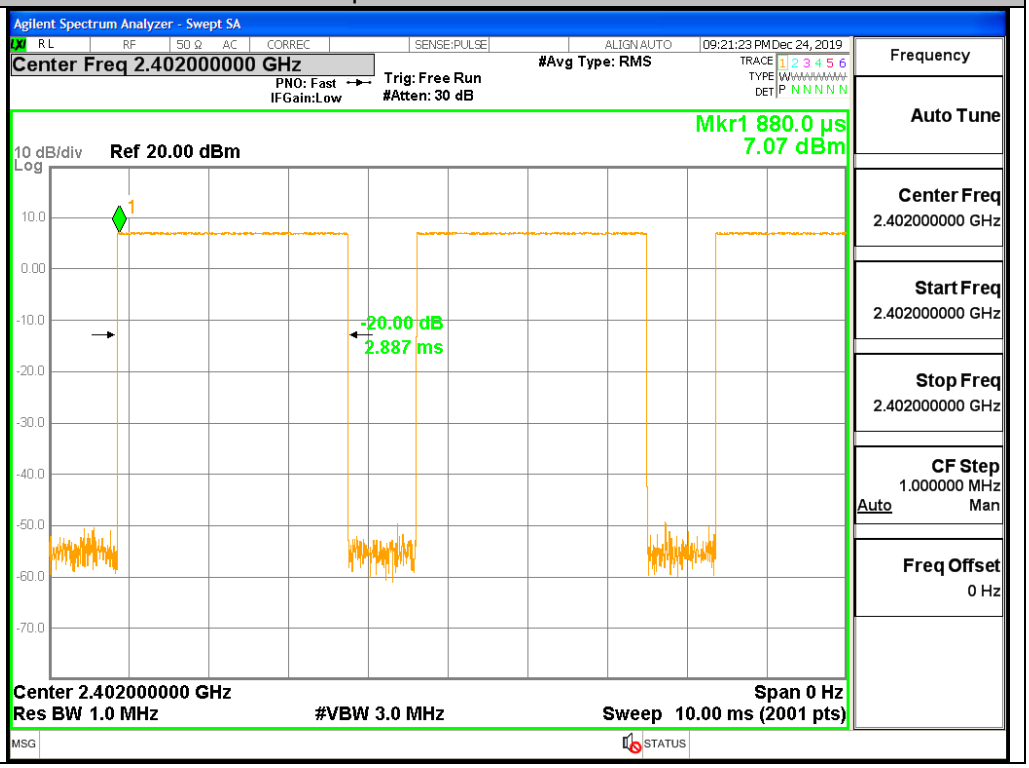
8DPSK/HCH	

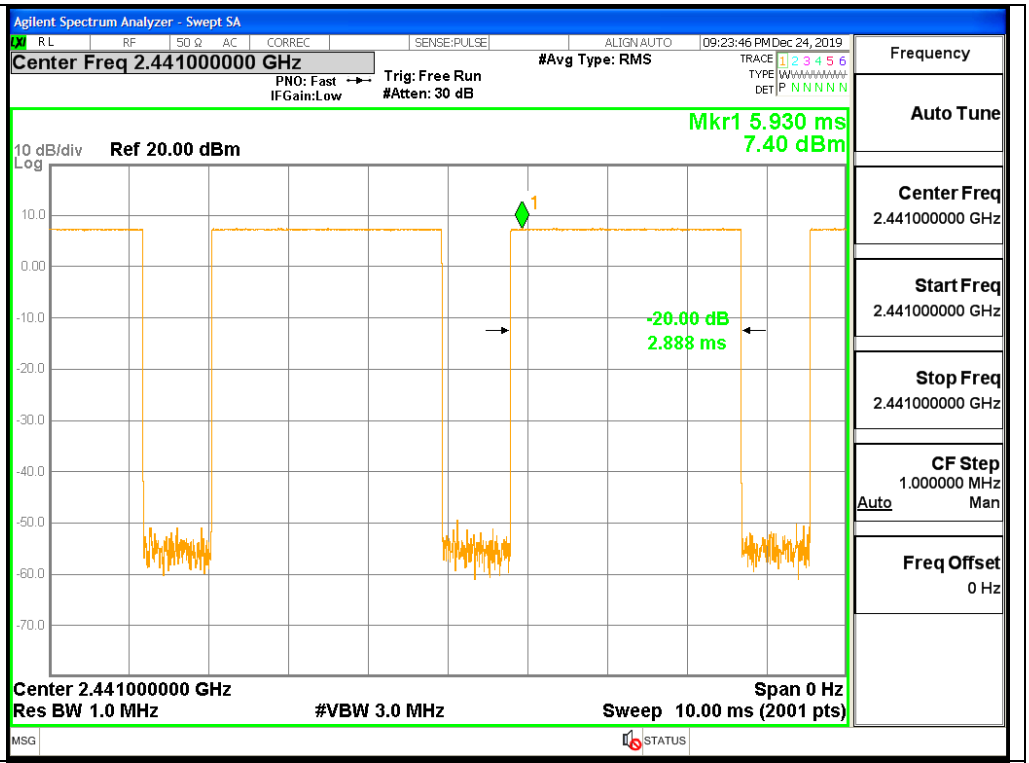
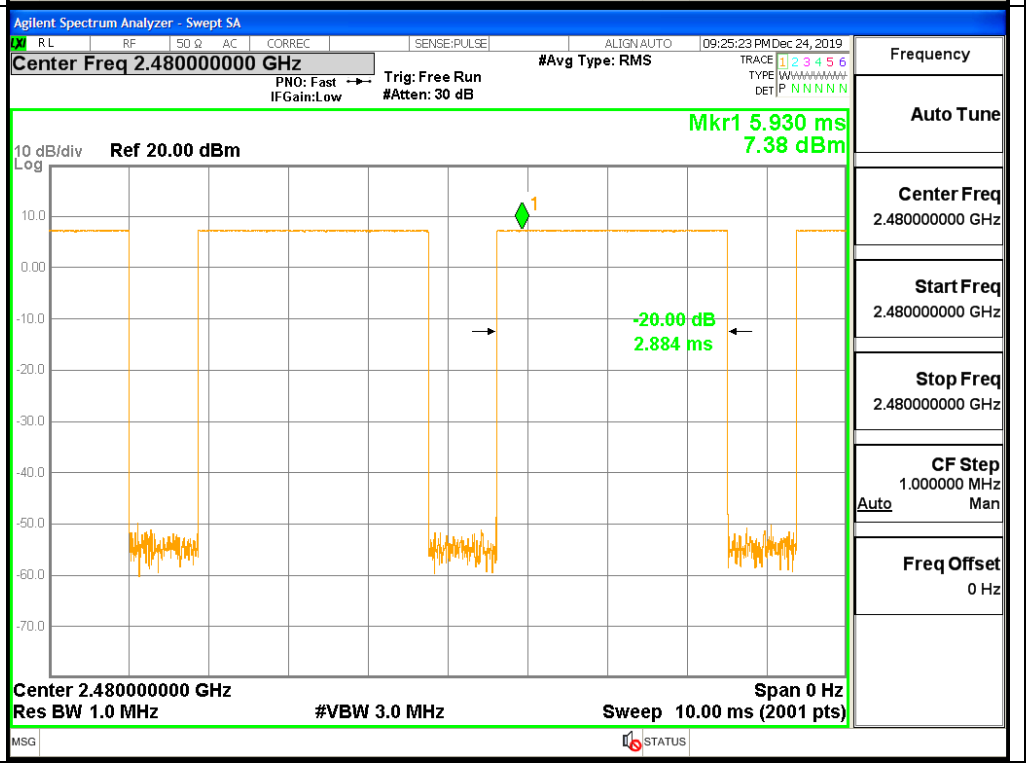
Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
CORREC
SENSE:PULSE
ALIGN AUTO
09:36:08 PM Dec 24, 2019
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Ref 20.00 dBm
Log
10.0
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 20 kHz
#VBW 62 kHz
Span 2 MHz
Sweep 4.8 ms
CF Step
200.000 kHz
Auto
Man
Occupied Bandwidth
1.1960 MHz
Total Power
11.2 dBm
Freq Offset
0 Hz
Transmit Freq Error
-5.464 kHz
OBW Power
99.00 %
x dB Bandwidth
1.270 MHz
x dB
-20.00 dB
MSG
STATUS

A.2 Dwell Time

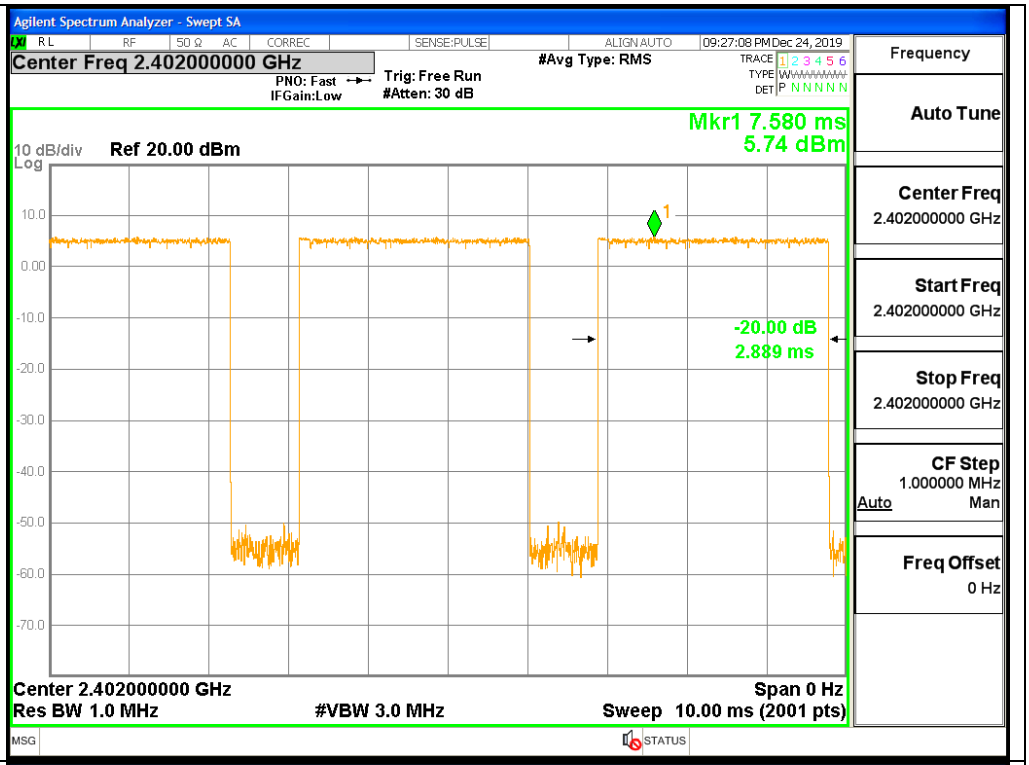
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002887	106.7	0.308039	0.4	PASS
GFSK	DH5	MCH	0.002888	106.7	0.308161	0.4	PASS
GFSK	DH5	HCH	0.002884	106.7	0.307718	0.4	PASS
π/4DQPSK	2DH5	LCH	0.002889	106.7	0.308226	0.4	PASS
π/4DQPSK	2DH5	MCH	0.00289	106.7	0.308312	0.4	PASS
π/4DQPSK	2DH5	HCH	0.002889	106.7	0.308209	0.4	PASS
8DPSK	3DH5	LCH	0.002893	106.7	0.308708	0.4	PASS
8DPSK	3DH5	MCH	0.002892	106.7	0.308536	0.4	PASS
8DPSK	3DH5	HCH	0.002893	106.7	0.308719	0.4	PASS

Test Graph

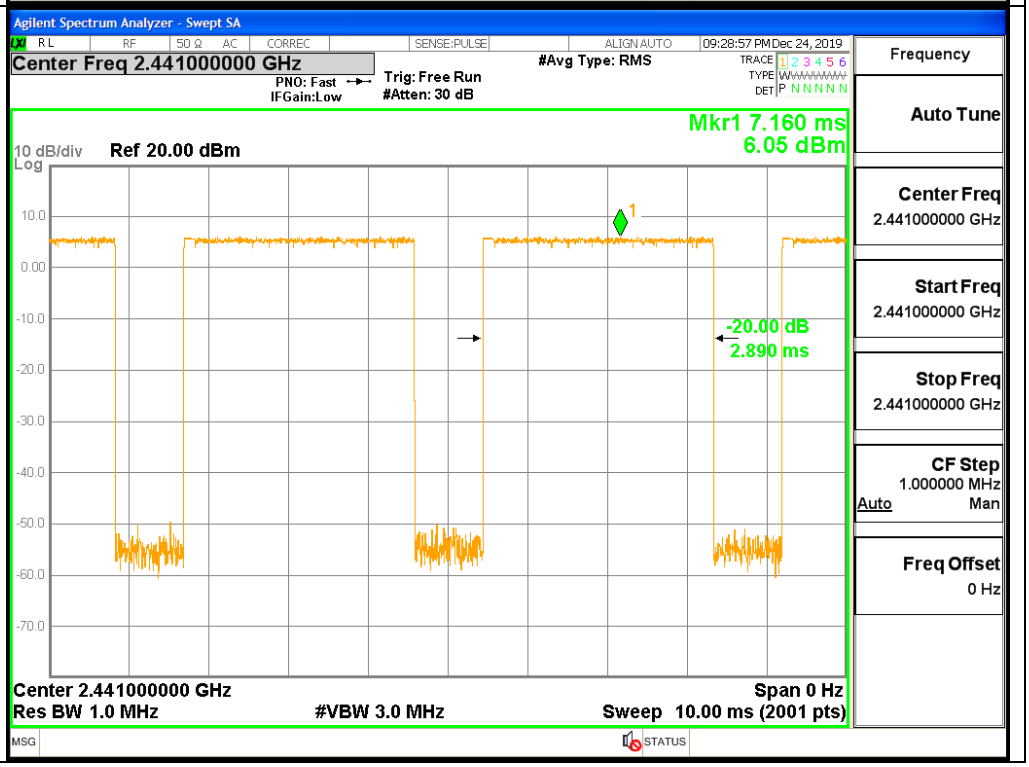
Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

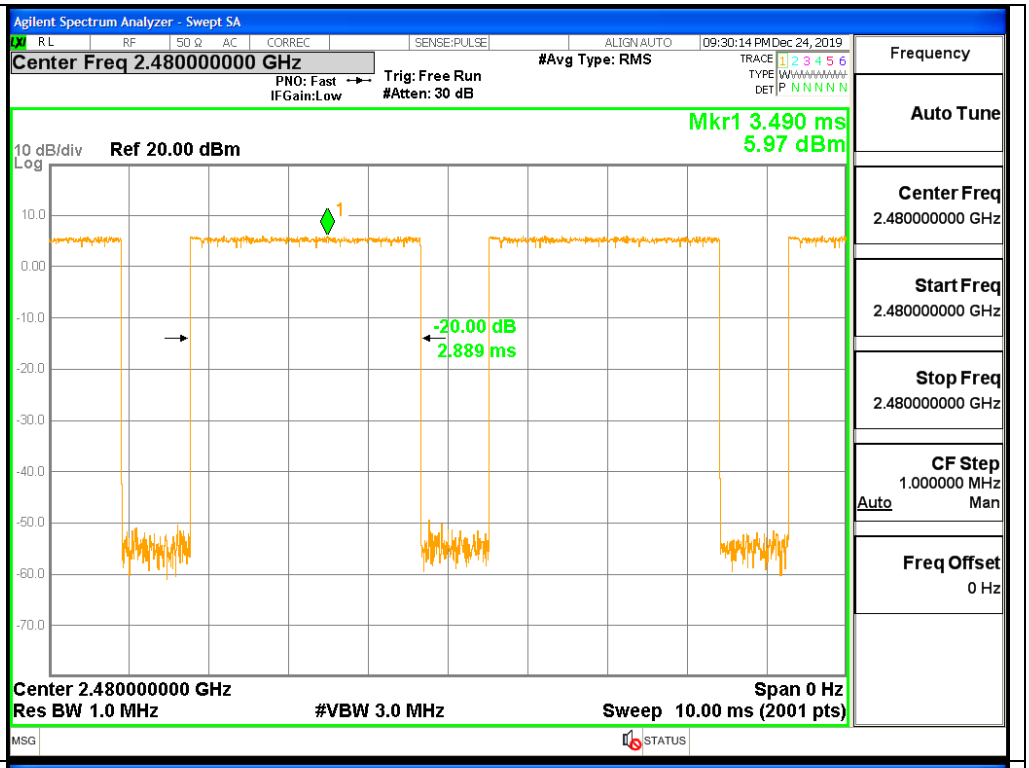
π/4DQPSK
_2DH5/LCH



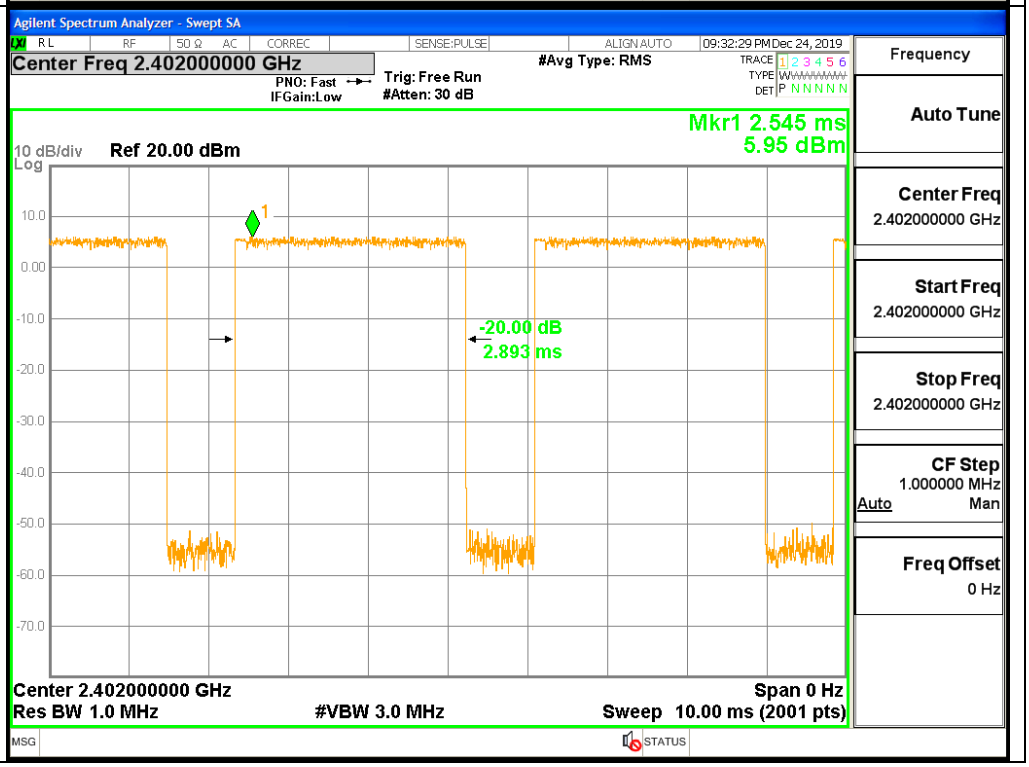
π/4DQPSK
_2DH5/MCH

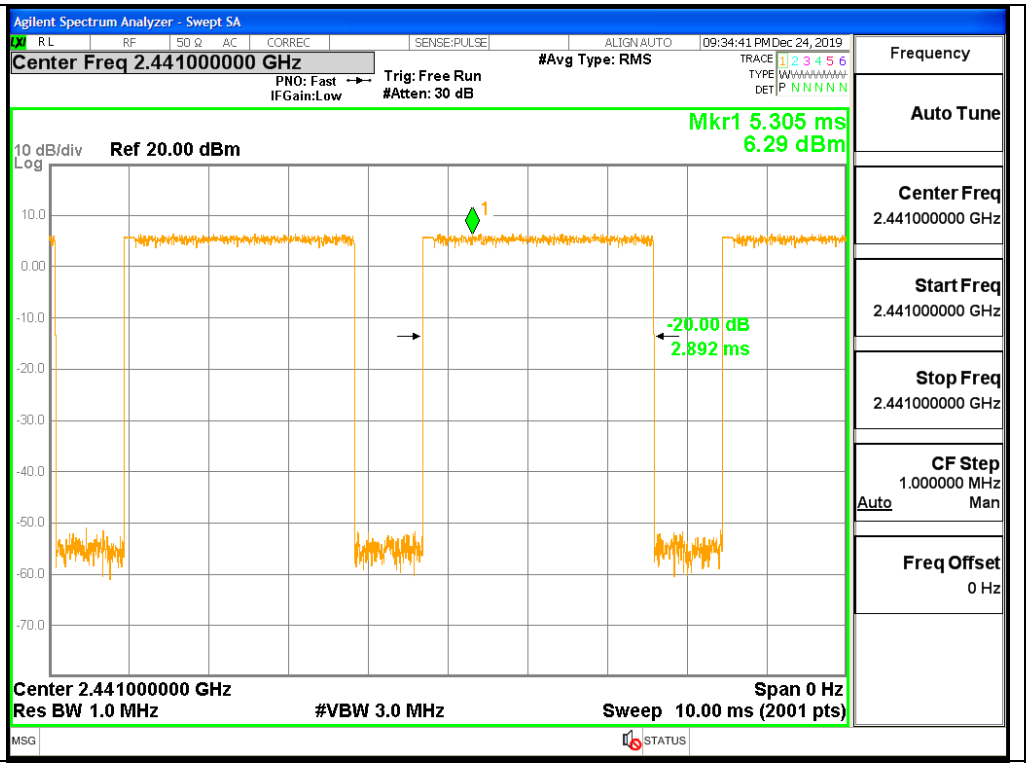
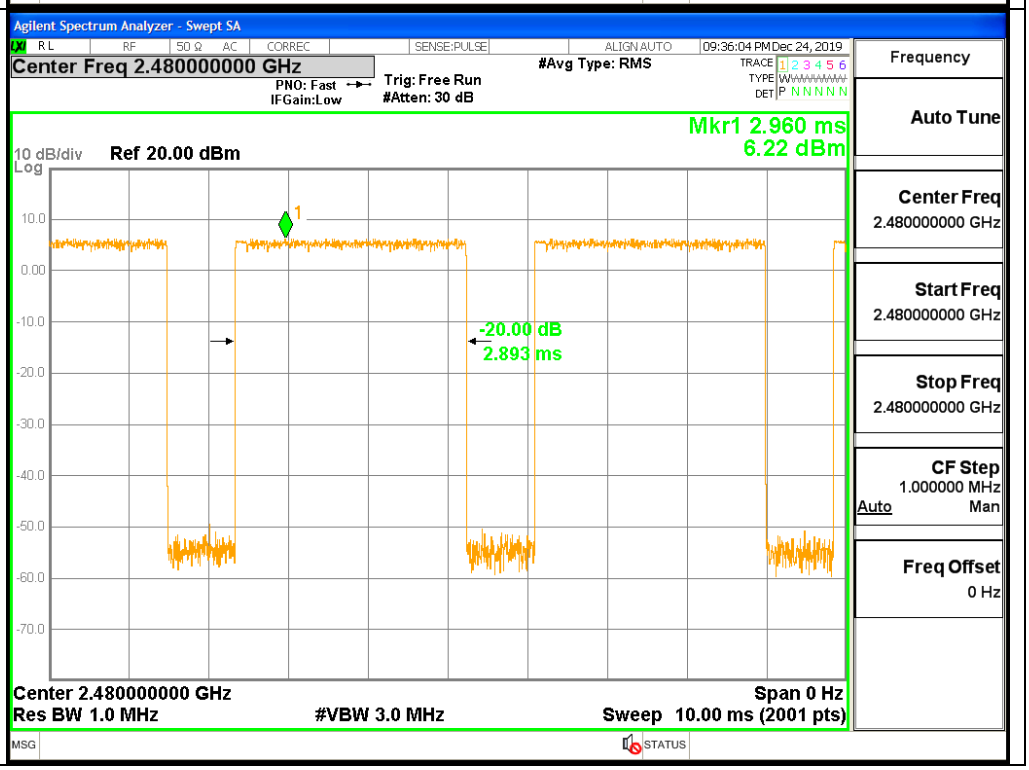


π/4DQPSK _2DH5/HCH



8DPSK _3DH5/LCH

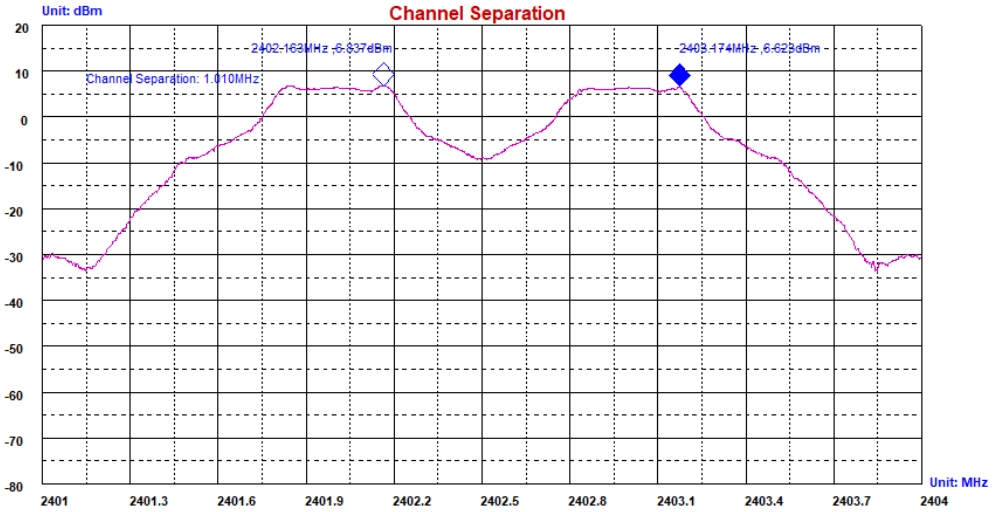
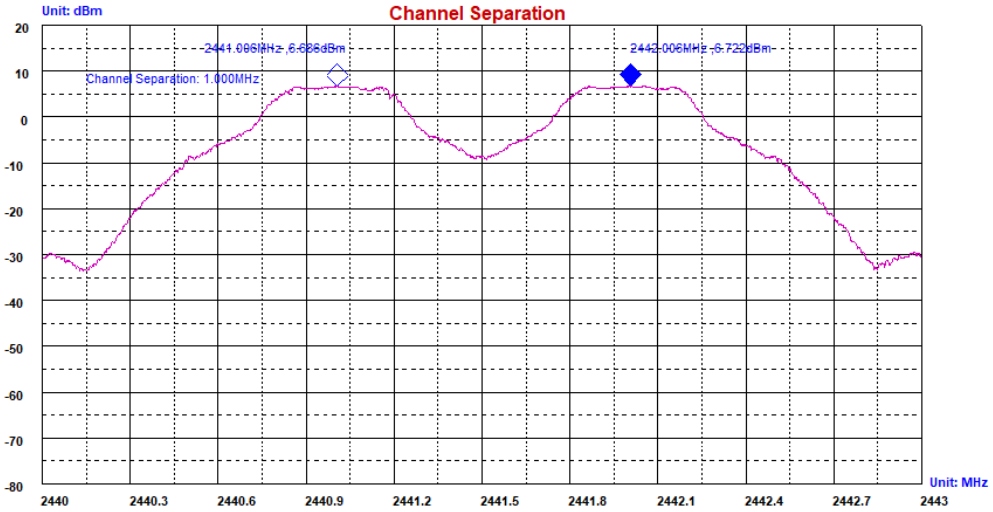
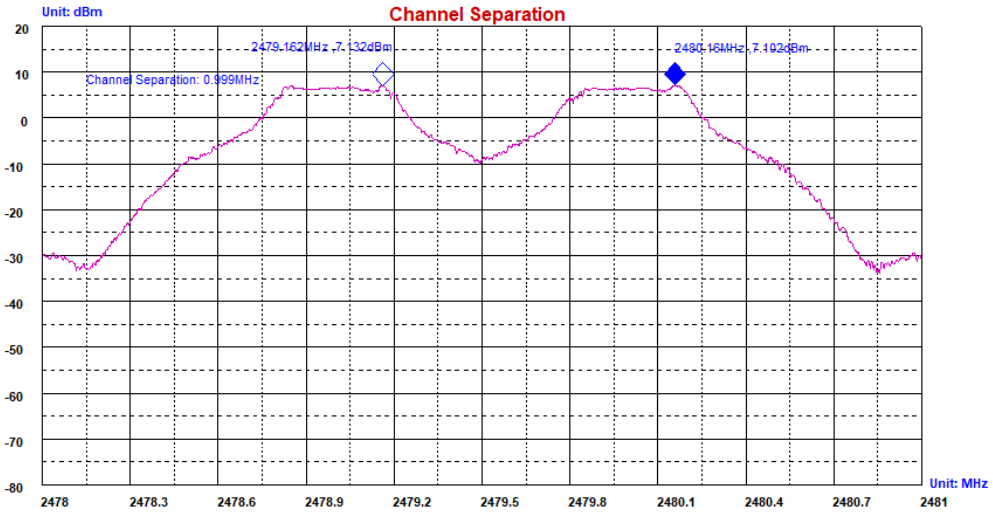


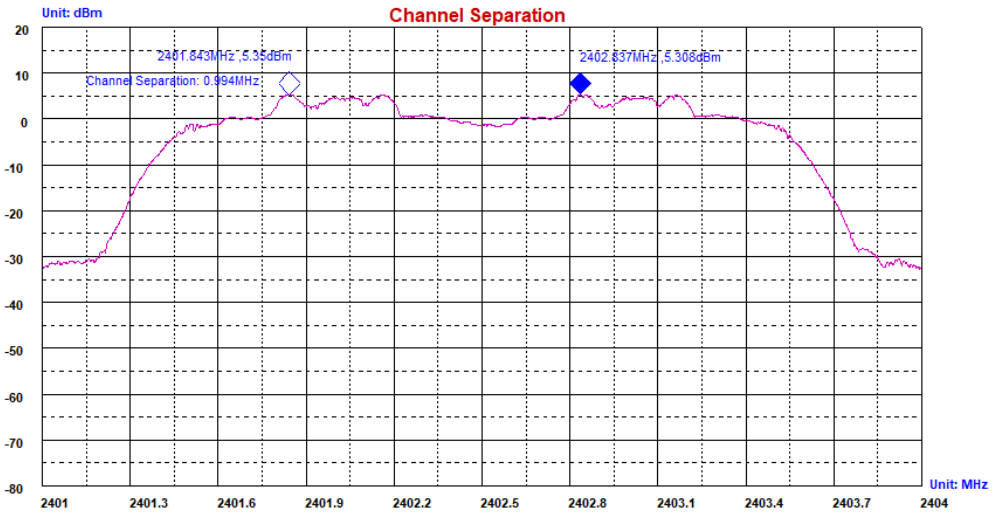
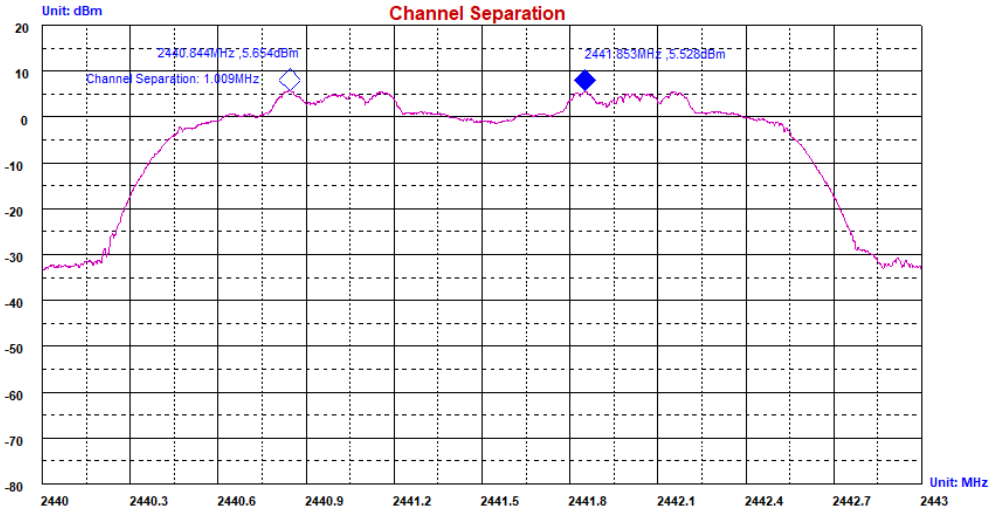
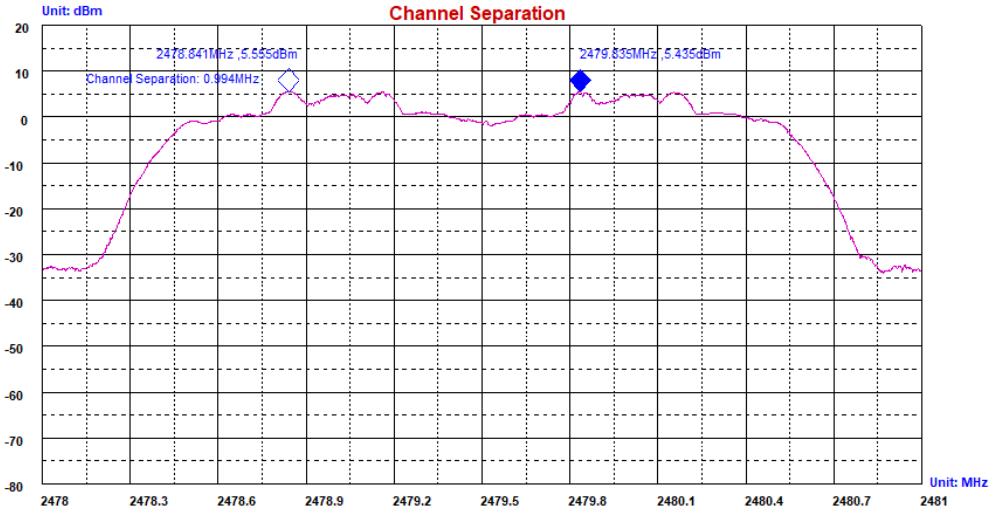
8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

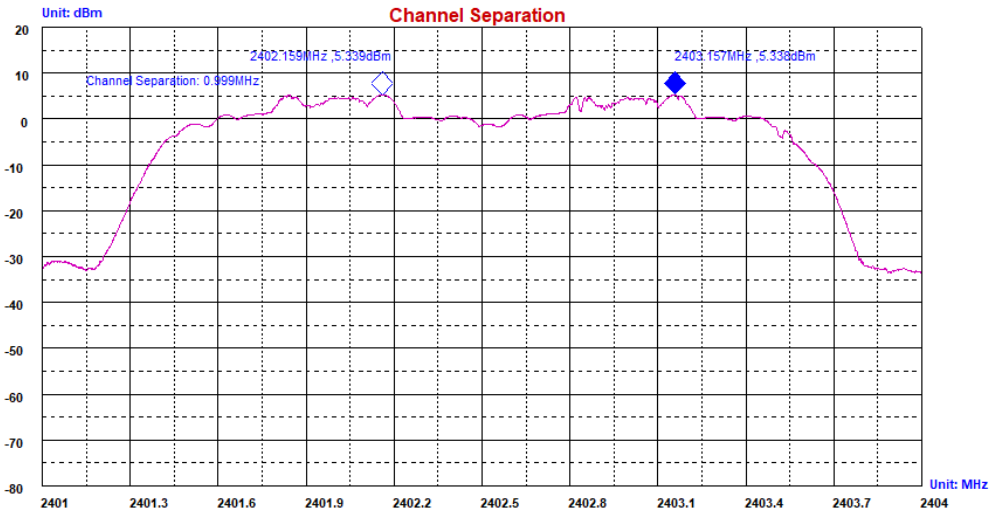
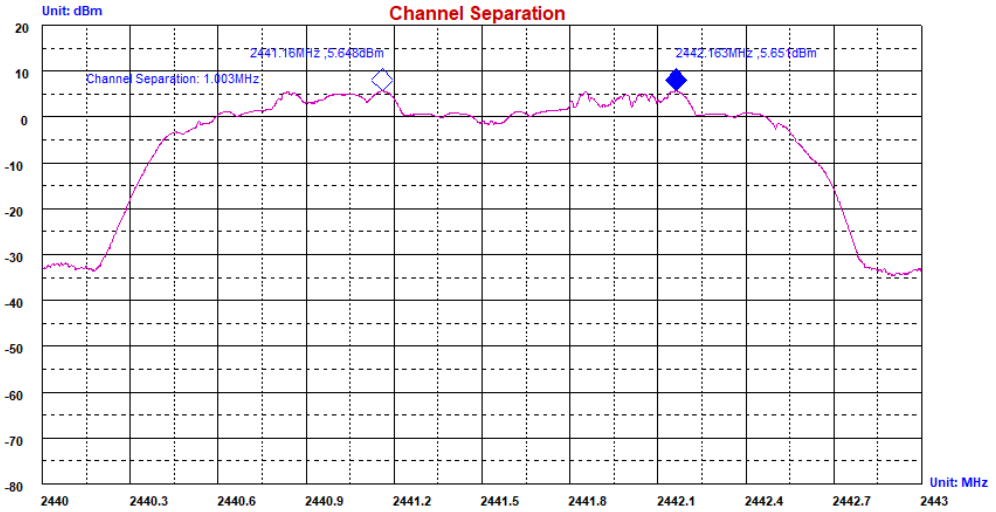
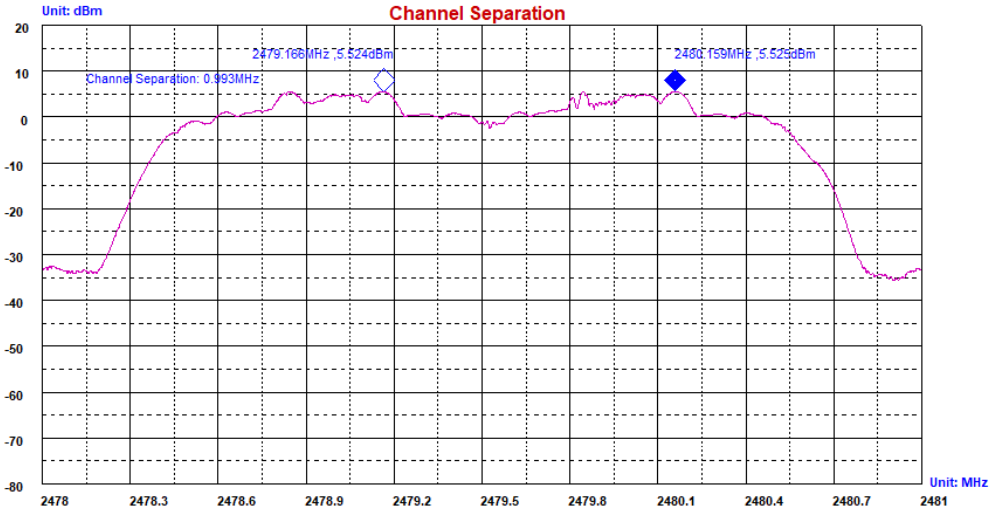
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.010	0.631	PASS
GFSK	MCH	1.000	0.629	PASS
GFSK	HCH	0.999	0.631	PASS
π/4DQPSK	LCH	0.994	0.873	PASS
π/4DQPSK	MCH	1.009	0.877	PASS
π/4DQPSK	HCH	0.994	0.874	PASS
8DPSK	LCH	0.999	0.845	PASS
8DPSK	MCH	1.003	0.866	PASS
8DPSK	HCH	0.993	0.847	PASS

Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	
GFSK/HCH	

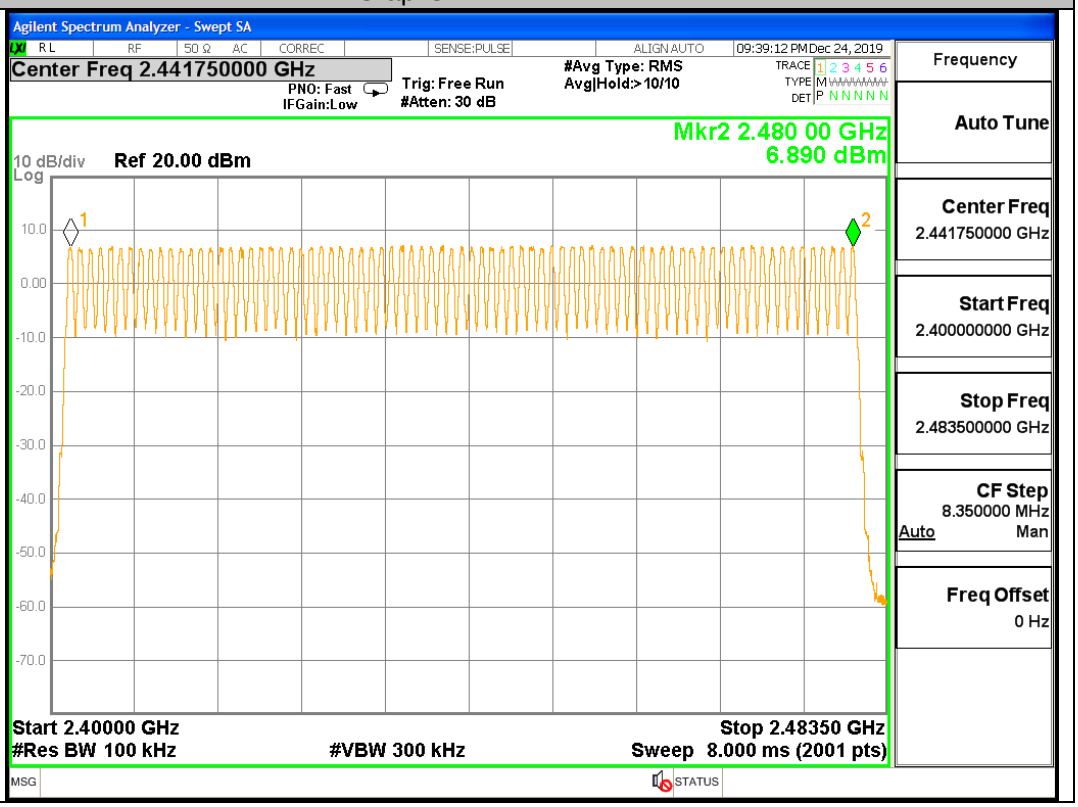
π/4DQPSK/LCH	
π/4DQPSK/MCH	
π/4DQPSK/HCH	

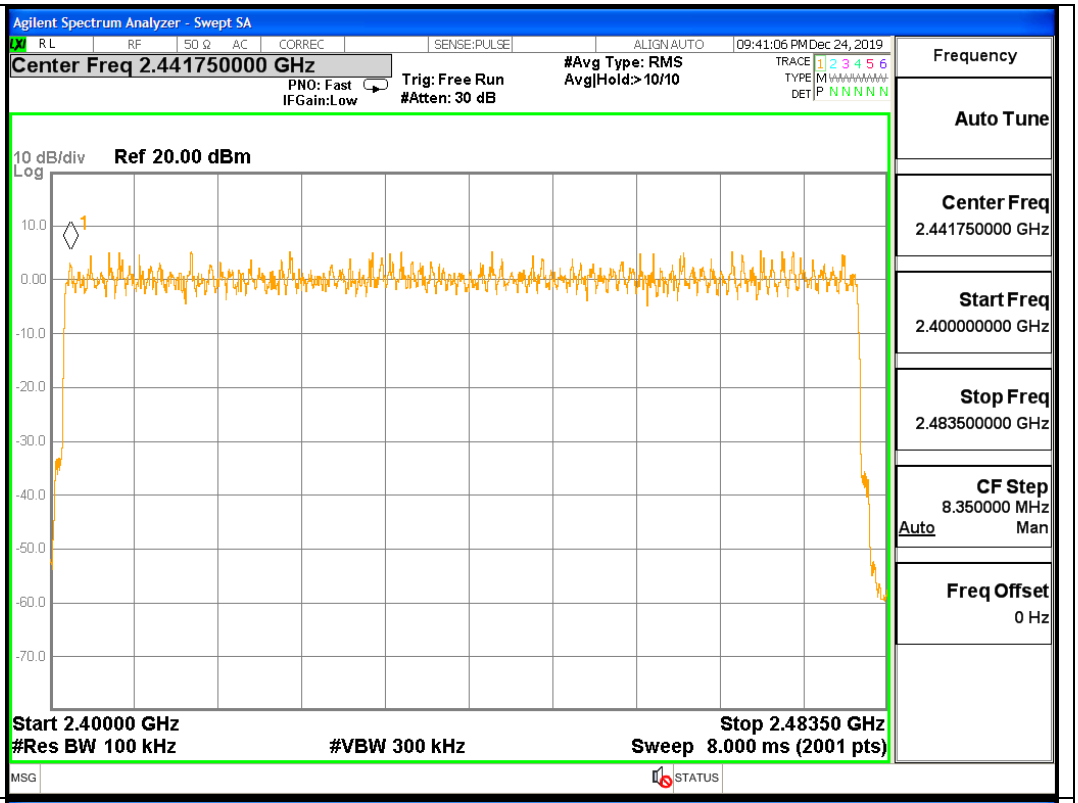
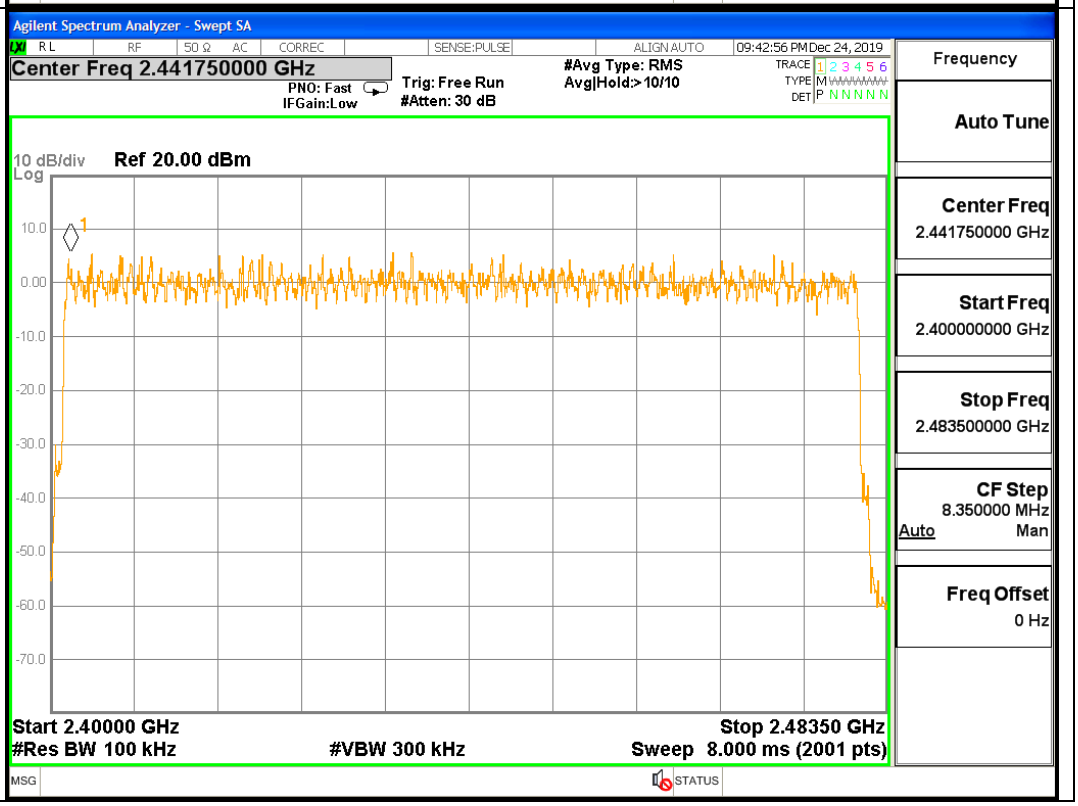
8DPSK/LCH	
8DPSK/MCH	
8DPSK/HCH	

A.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

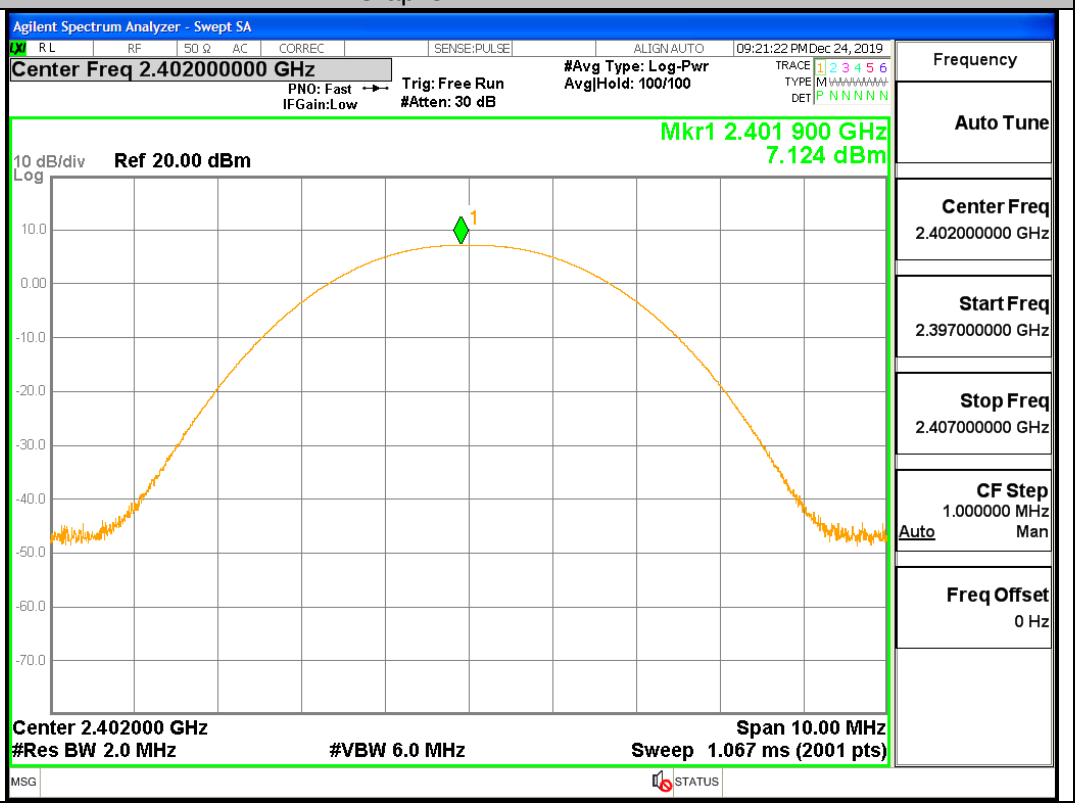
Graphs	
GFSK/Hop	

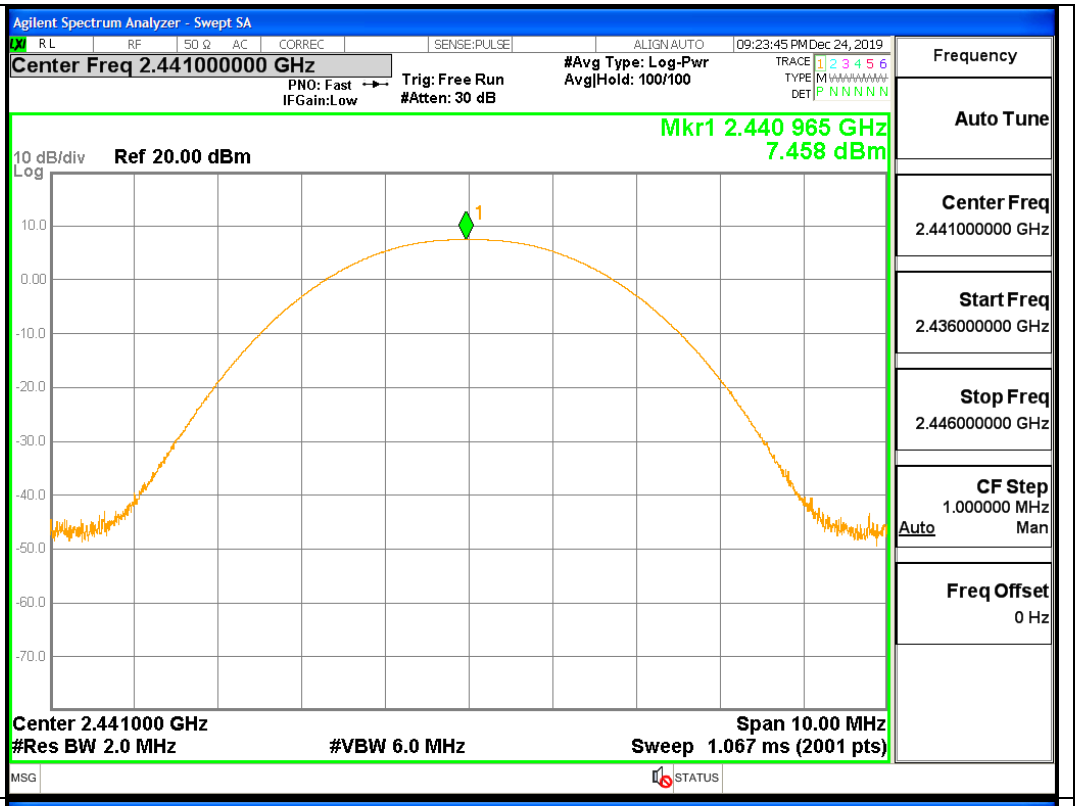
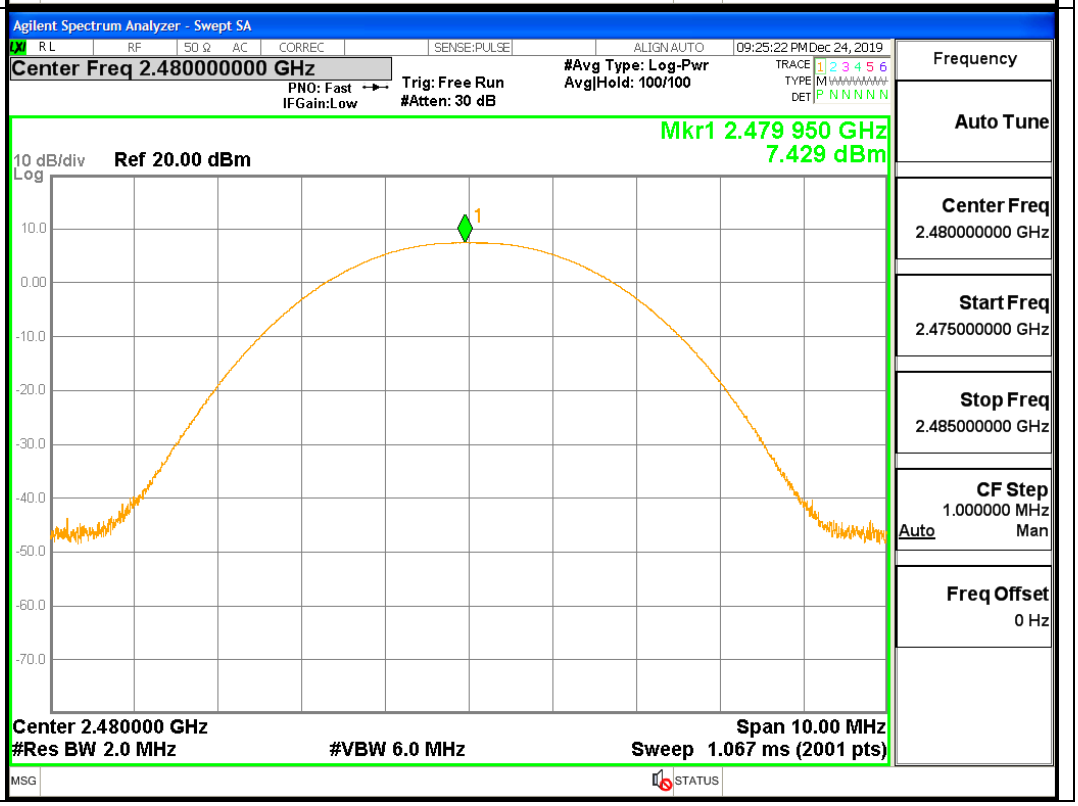
π/4DQPSK/Hop	
8DPSK/Hop	

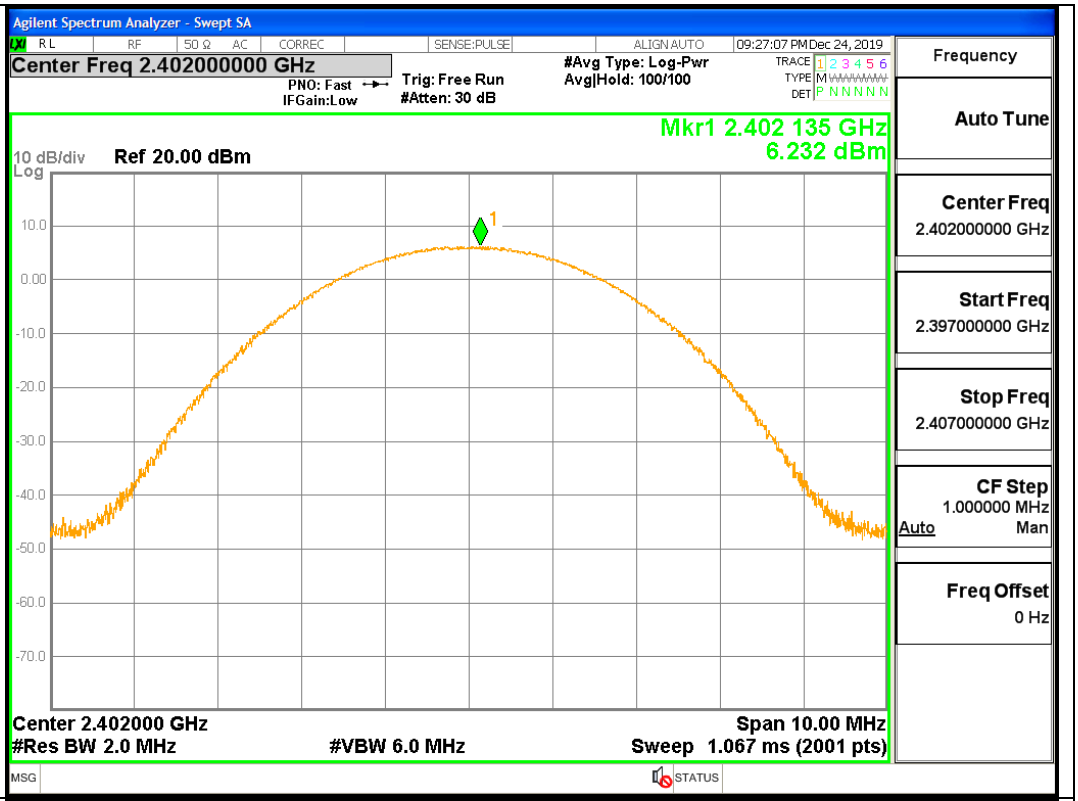
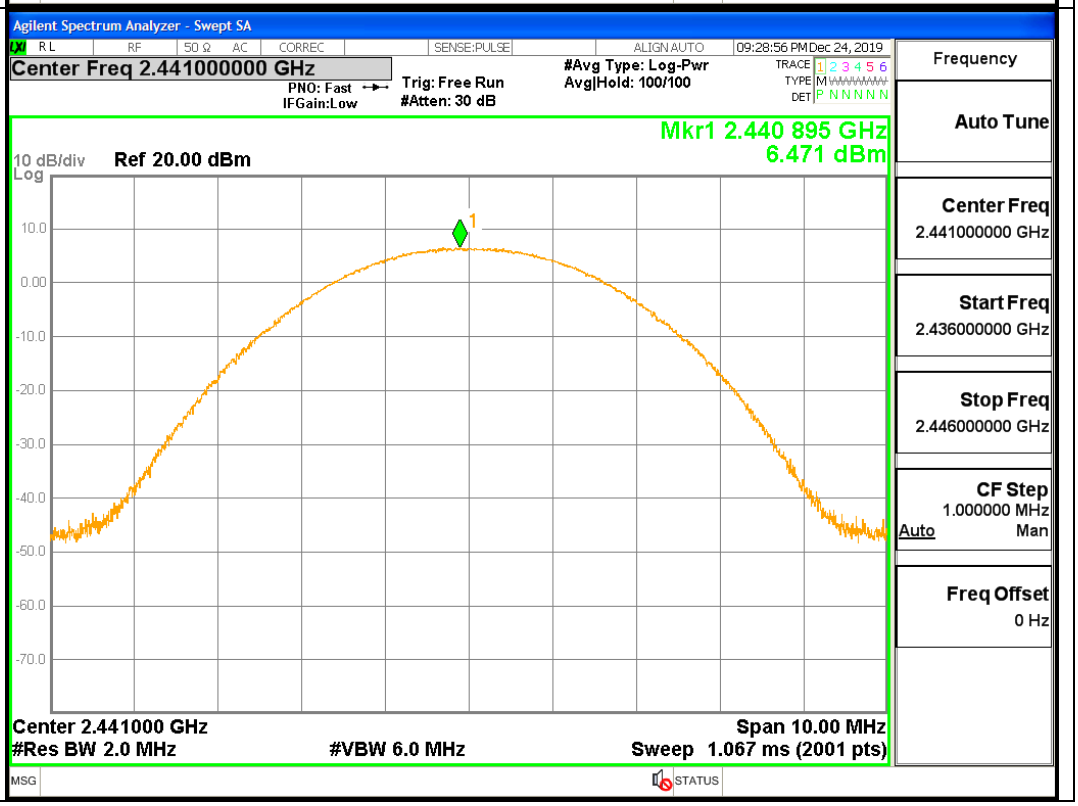
A.5 Conducted Peak Output Power

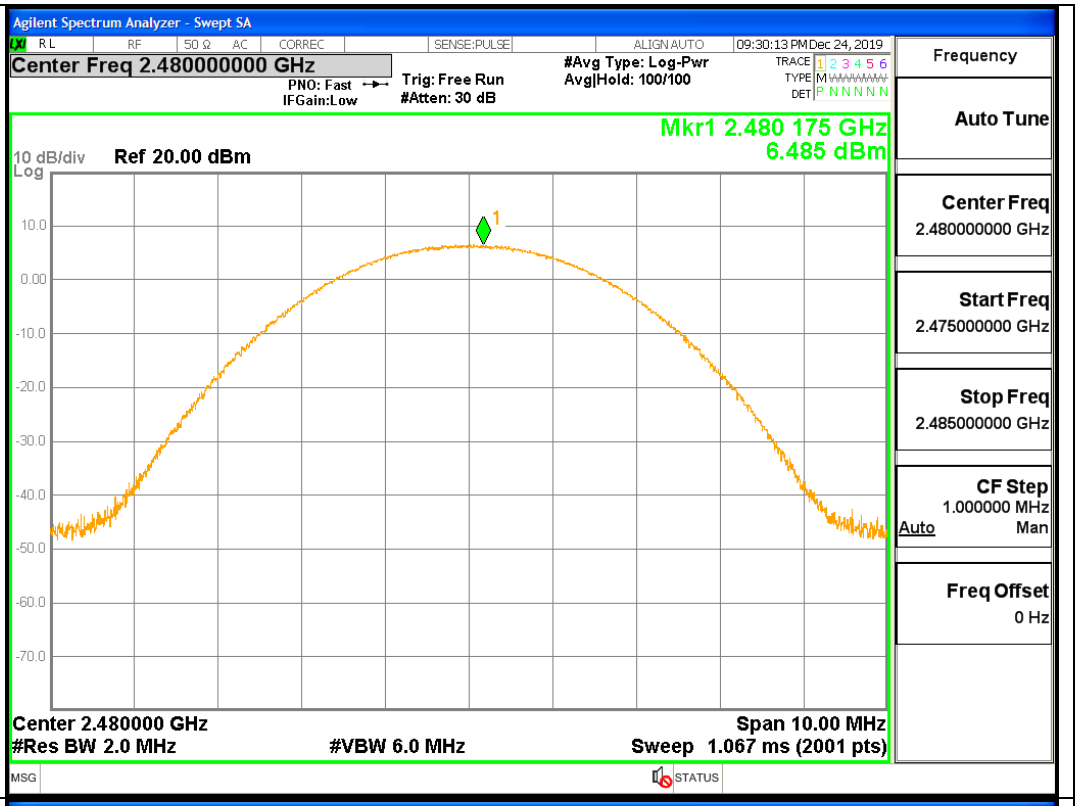
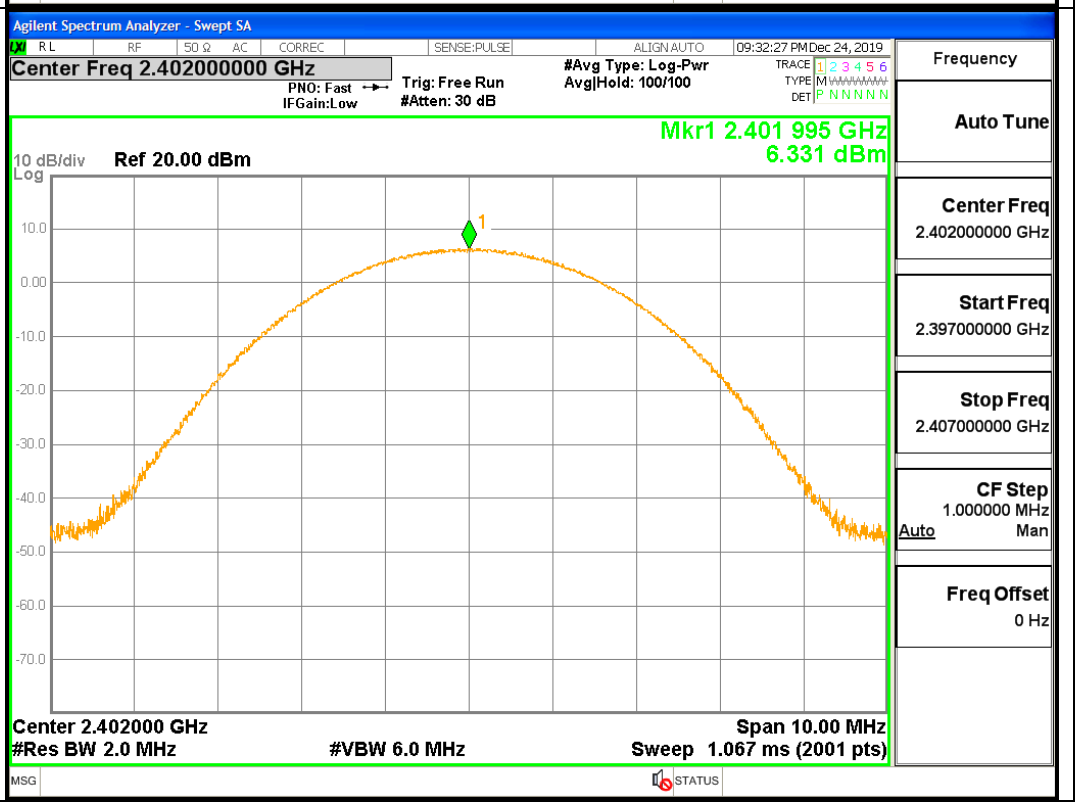
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	7.124	21	PASS
GFSK	MCH	7.458	21	PASS
GFSK	HCH	7.429	21	PASS
π/4DQPSK	LCH	6.232	21	PASS
π/4DQPSK	MCH	6.471	21	PASS
π/4DQPSK	HCH	6.485	21	PASS
8DPSK	LCH	6.331	21	PASS
8DPSK	MCH	6.677	21	PASS
8DPSK	HCH	6.605	21	PASS

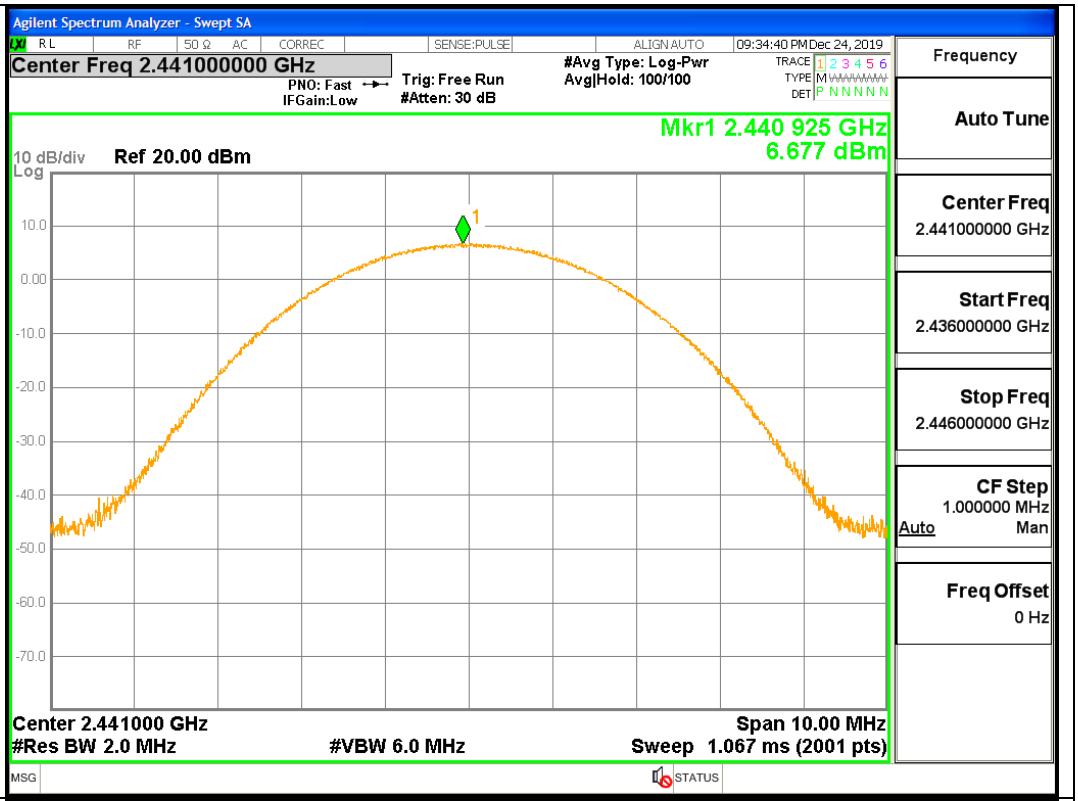
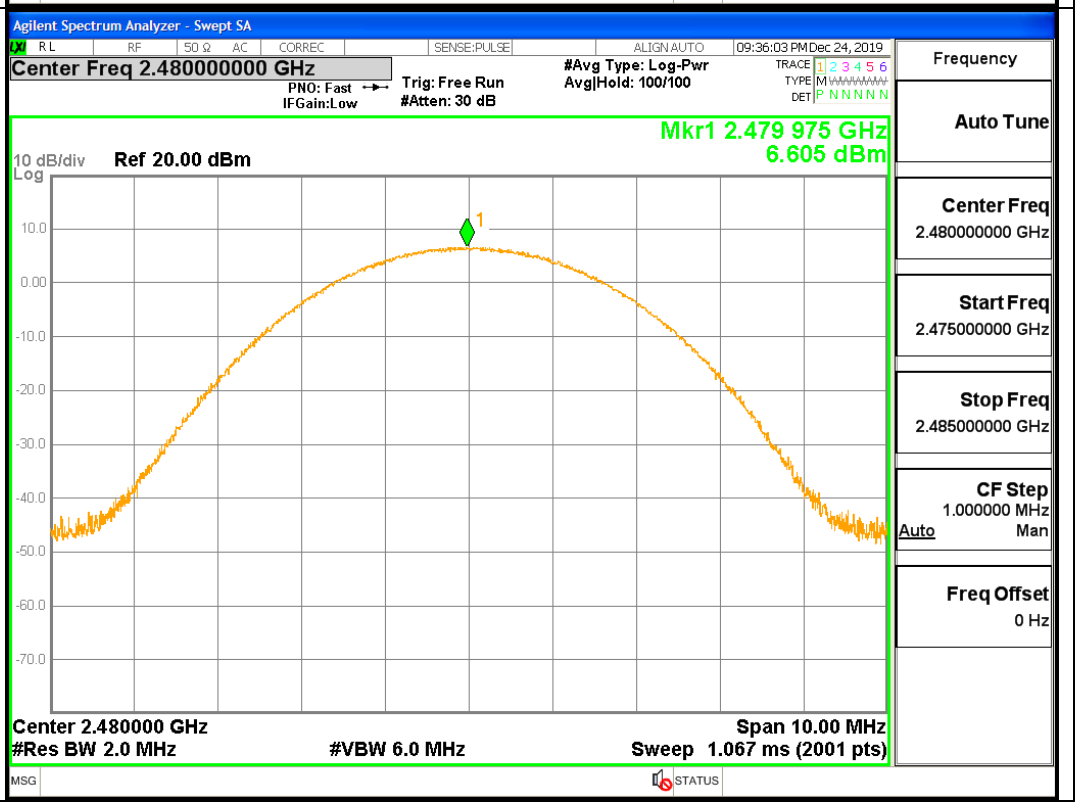
Test Graph

Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

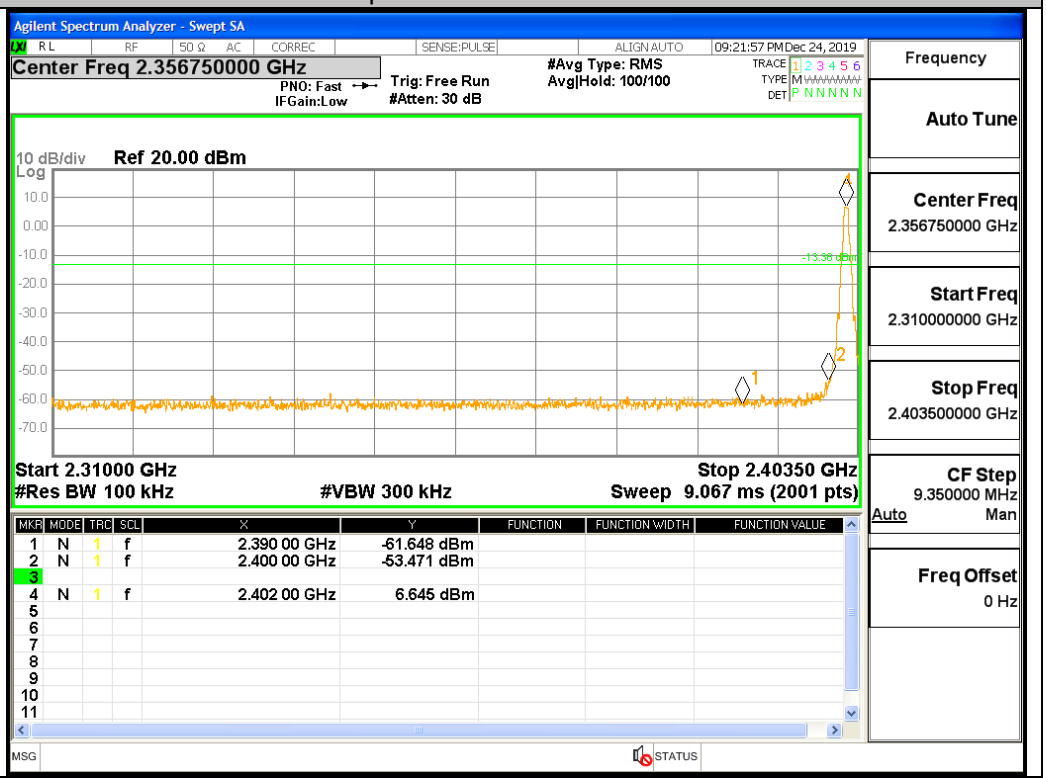
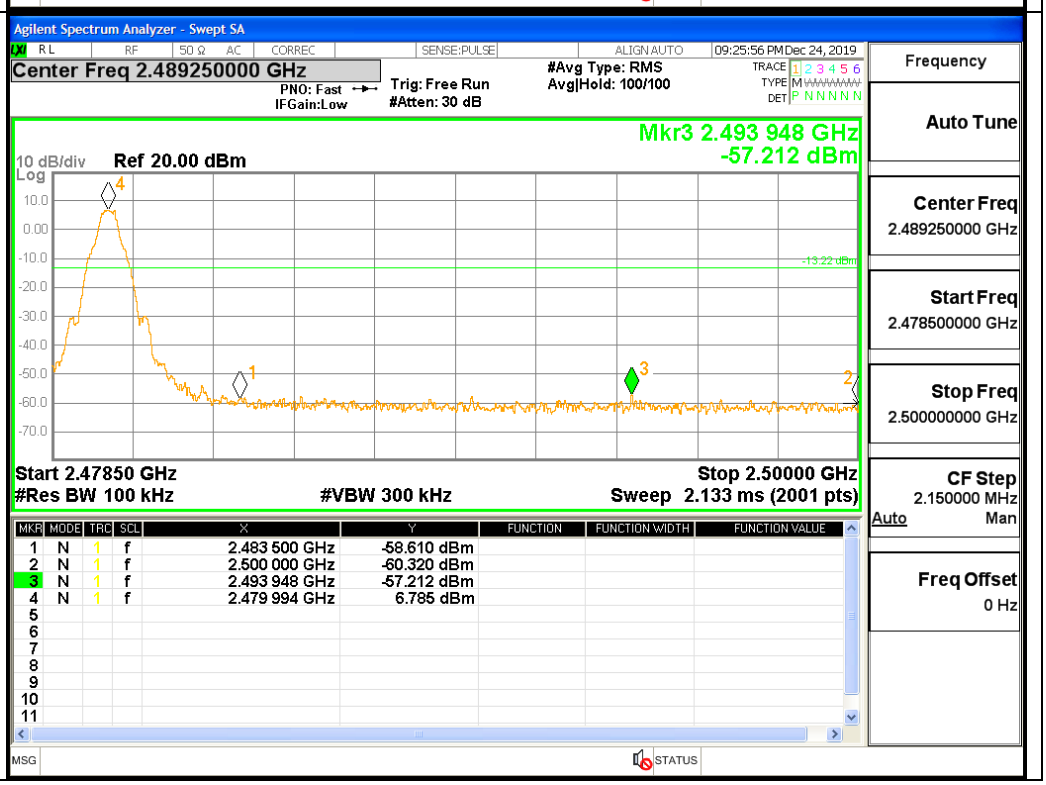
π/4DQPSK/HCH	
8DPSK/LCH	

8DPSK/MCH	
8DPSK/HCH	

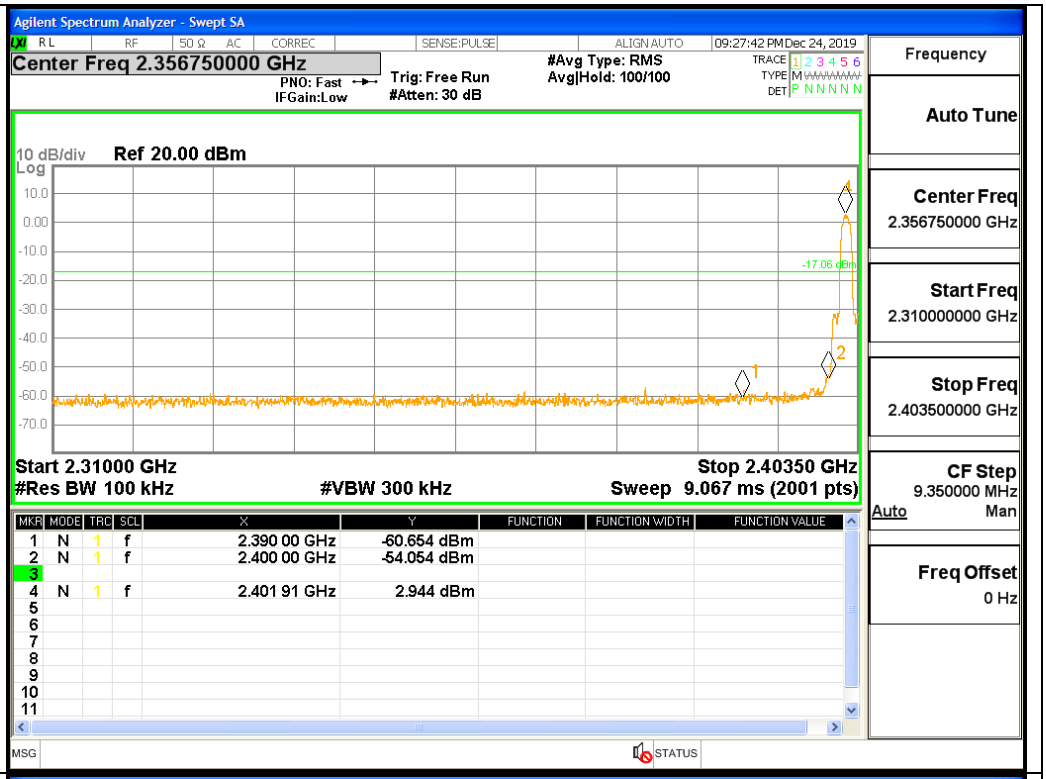
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	6.645	-53.47	-13.355	Pass
1DH5	2480	2493.948	6.785	-57.212	-13.215	Pass
2DH5	2402	2400	2.944	-54.05	-17.056	Pass
2DH5	2480	2484.337	5.057	-56.764	-14.943	Pass
3DH5	2402	2400	5.291	-53.72	-14.709	Pass
3DH5	2480	2483.886	4.656	-56.066	-15.344	Pass
1DH5-Hopping	2402	2400	6.97	-56.81	-13.03	Pass
1DH5-Hopping	2480	2483.5	7.119	-56.84	-12.881	Pass
2DH5-Hopping	2402	2400	5.461	-55.23	-14.539	Pass
2DH5-Hopping	2480	2483.5	5.605	-58.88	-14.395	Pass
3DH5-Hopping	2402	2400	5.339	-55.7	-14.661	Pass
3DH5-Hopping	2480	2483.5	5.631	-58.18	-14.369	Pass

Test Graph

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

π/4DQPSK/LCH/No Hop



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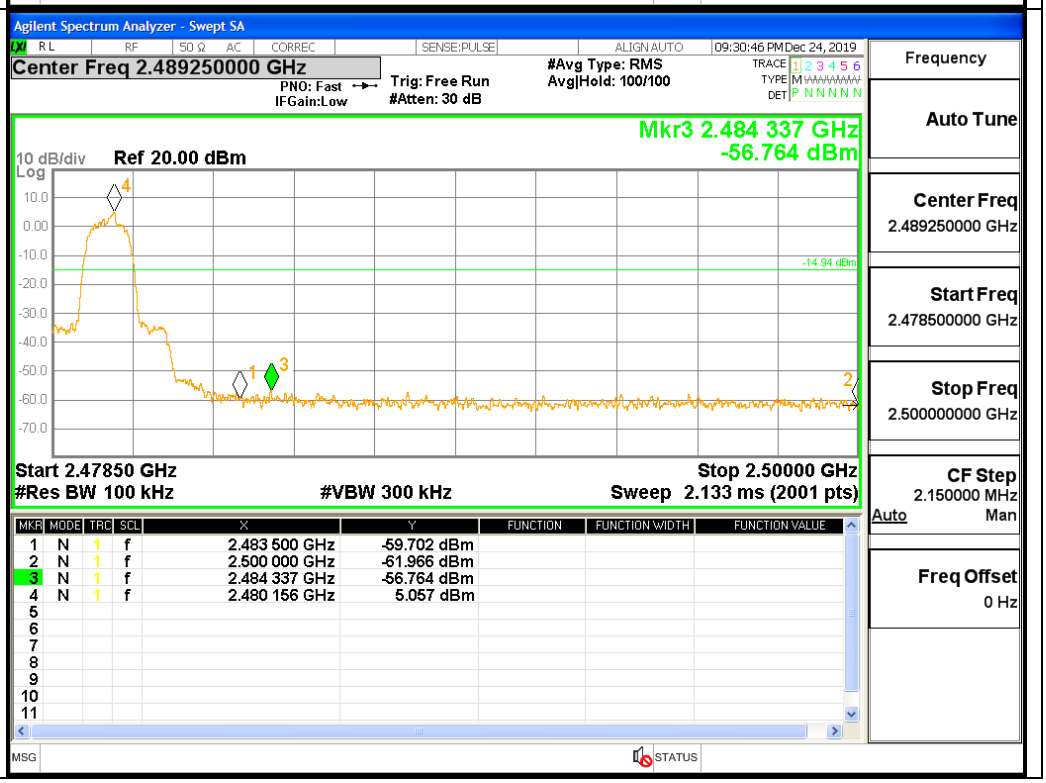
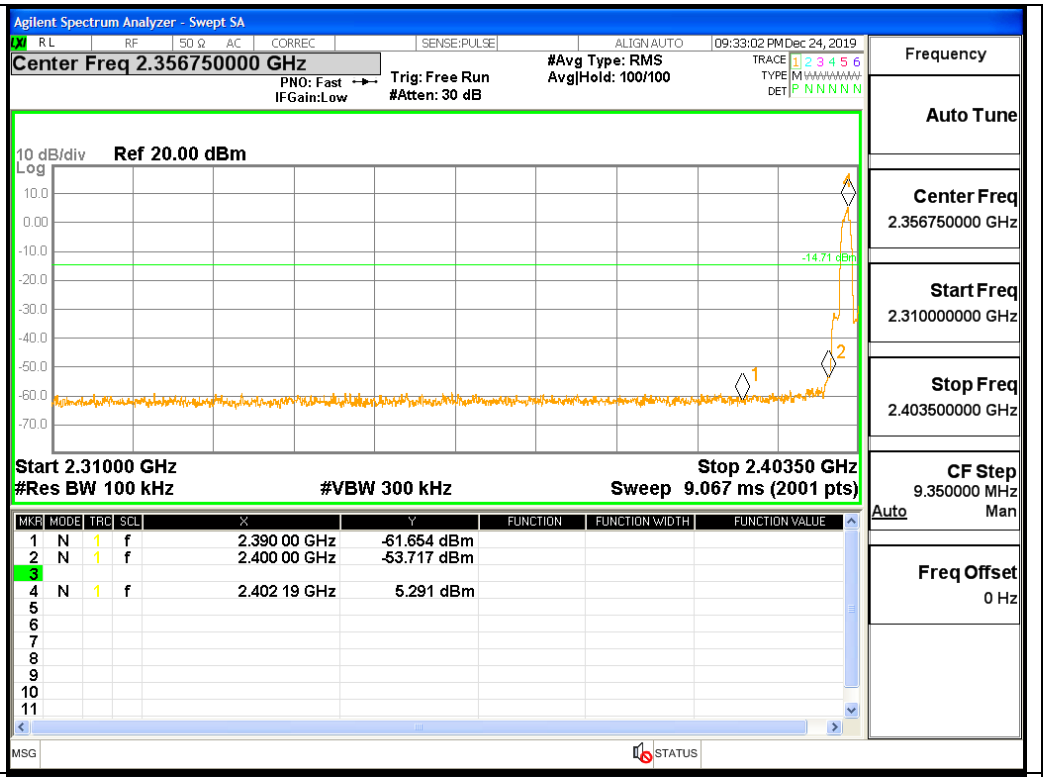


8DPSK/LCH/No Hop



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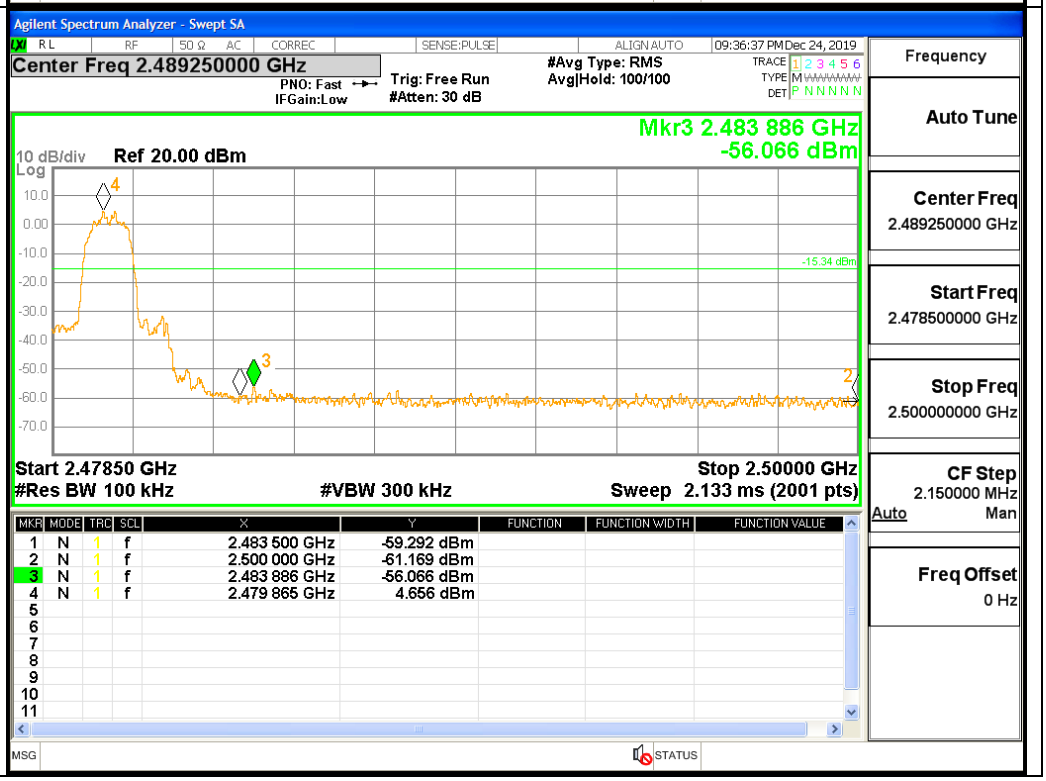
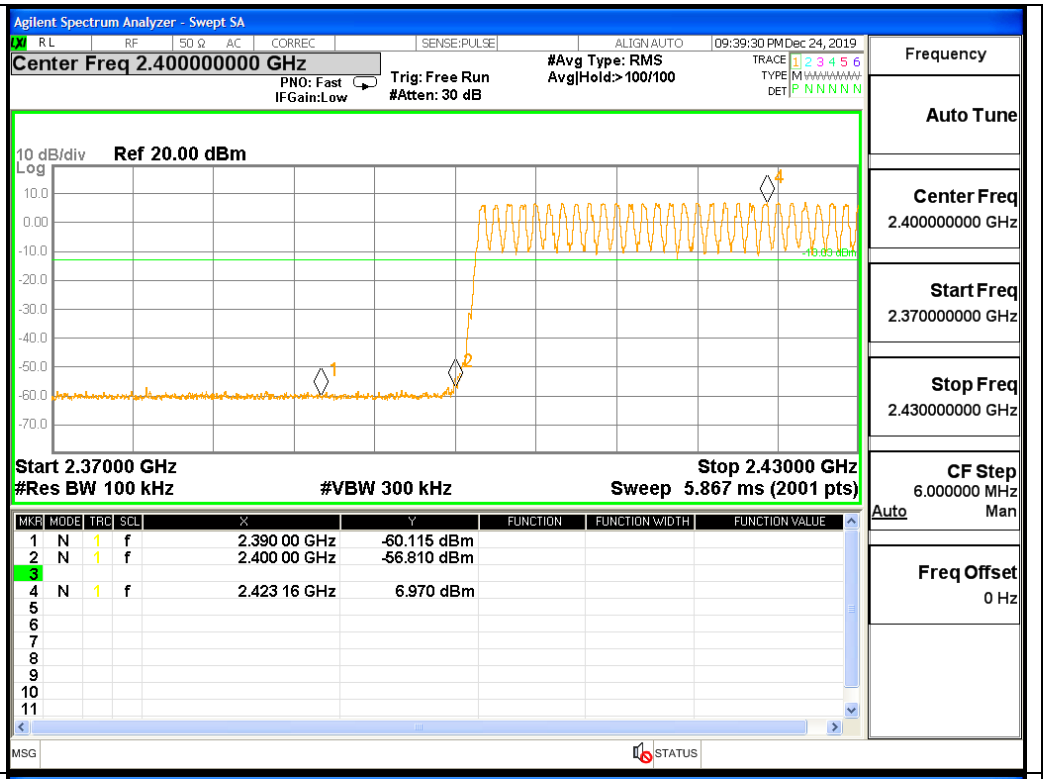
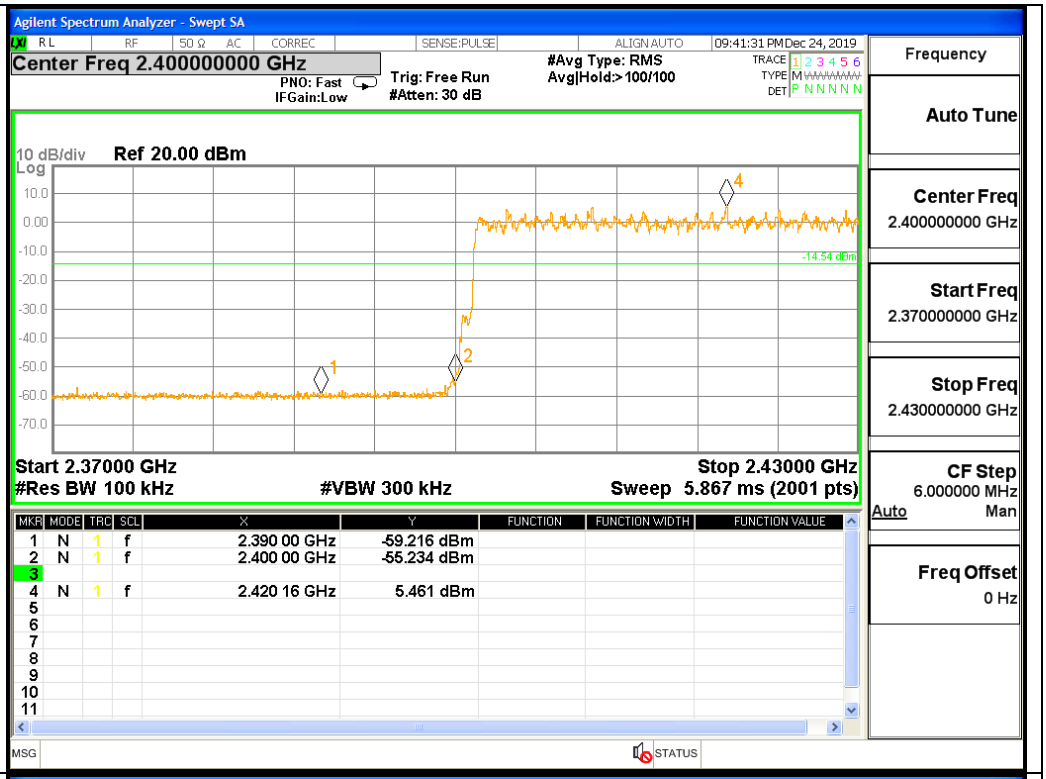


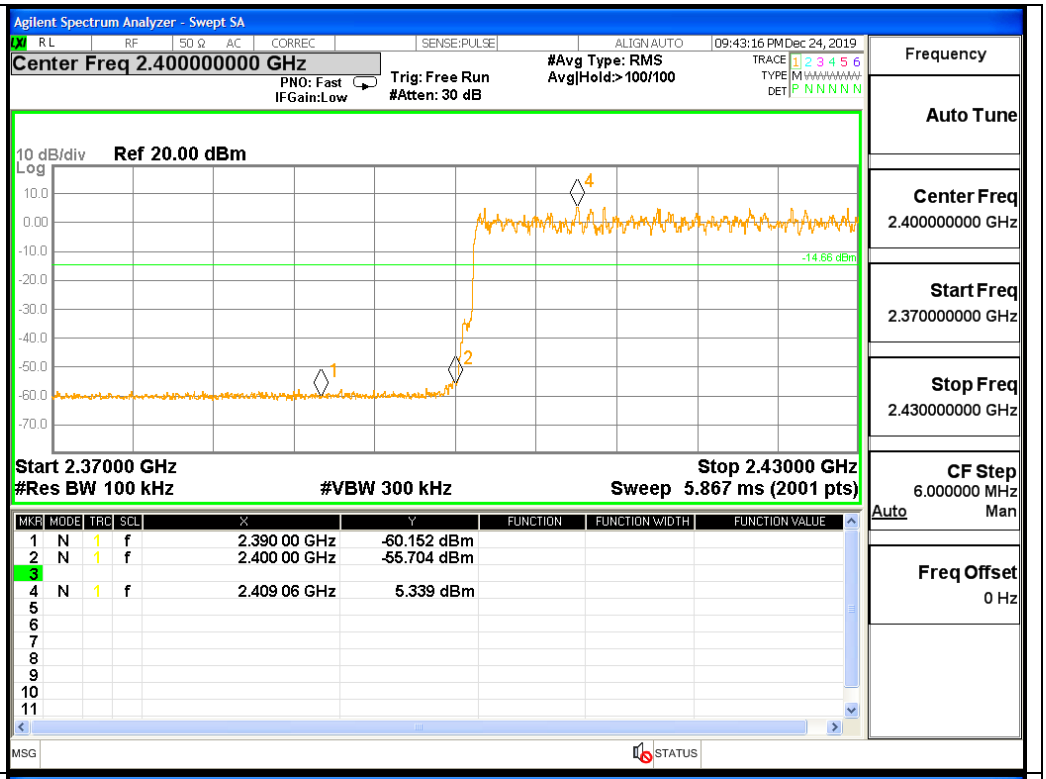
GFSK/LCH/Hop	
GFSK/HCH/Hop	

π/4DQPSK/LCH/Hop

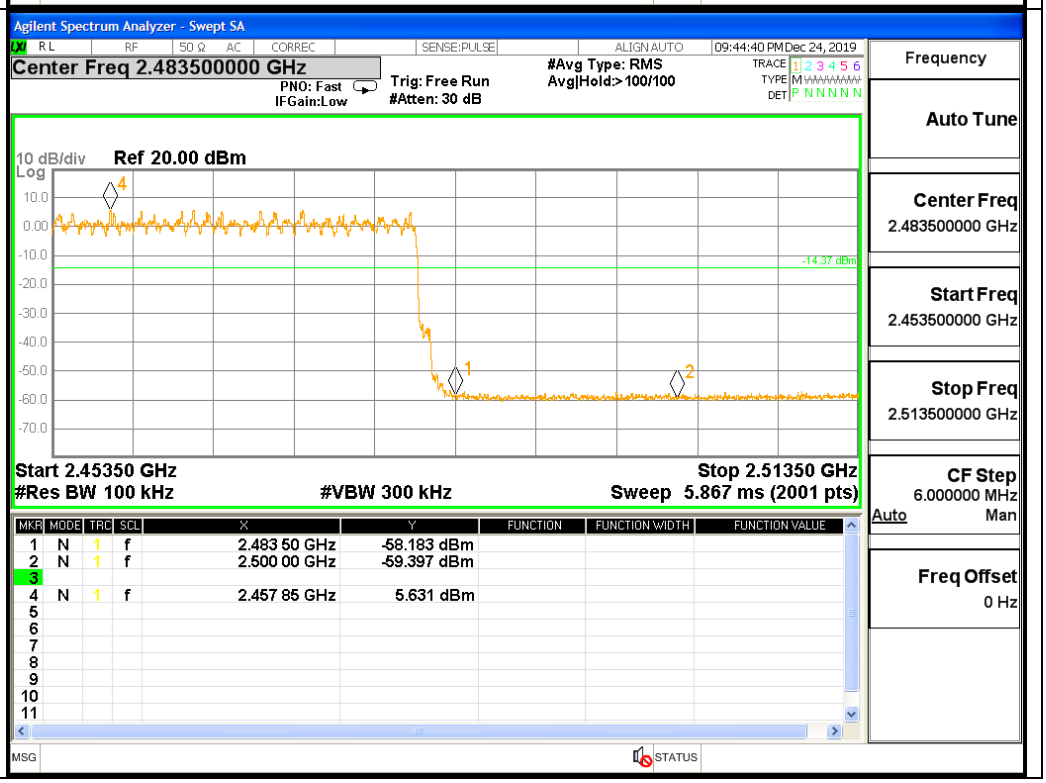


π /4DQPSK/HCH/Hop

8DPSK/LCH/Hop



8DPSK/HCH/Hop



A.7 RF Conducted Spurious Emissions

Test Graph

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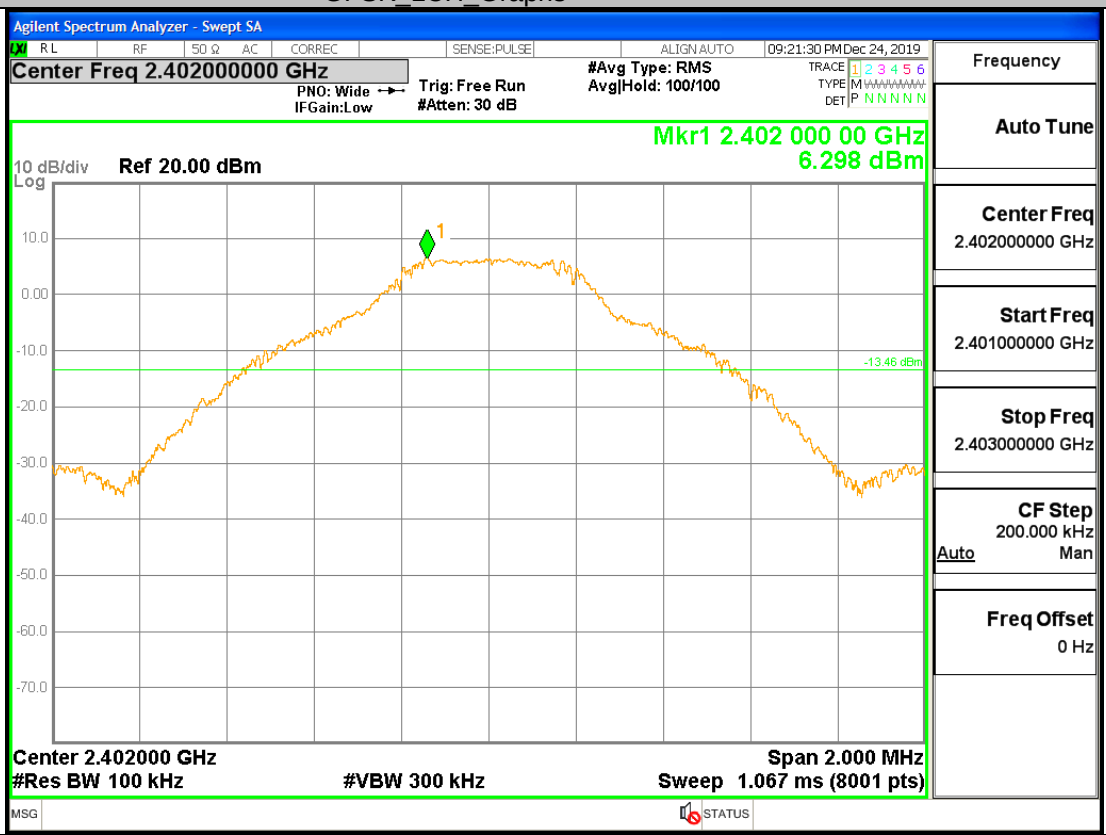
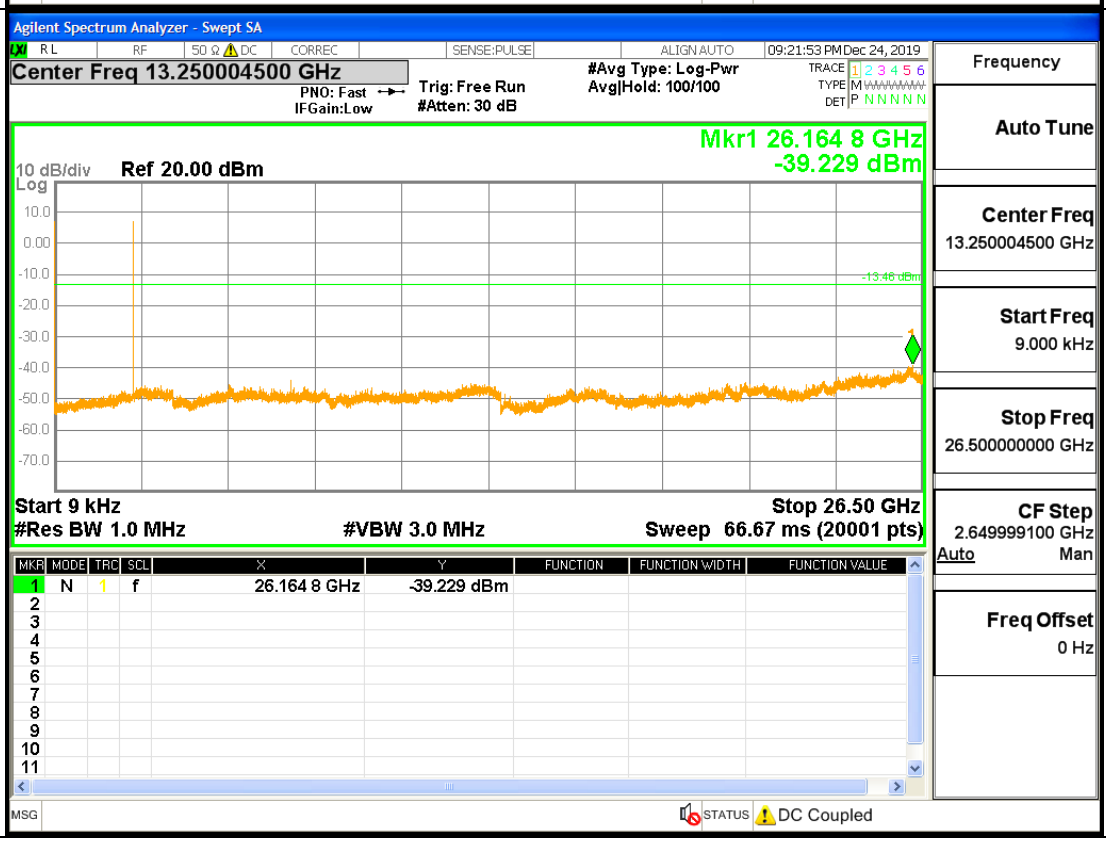
Pref	
Puw	

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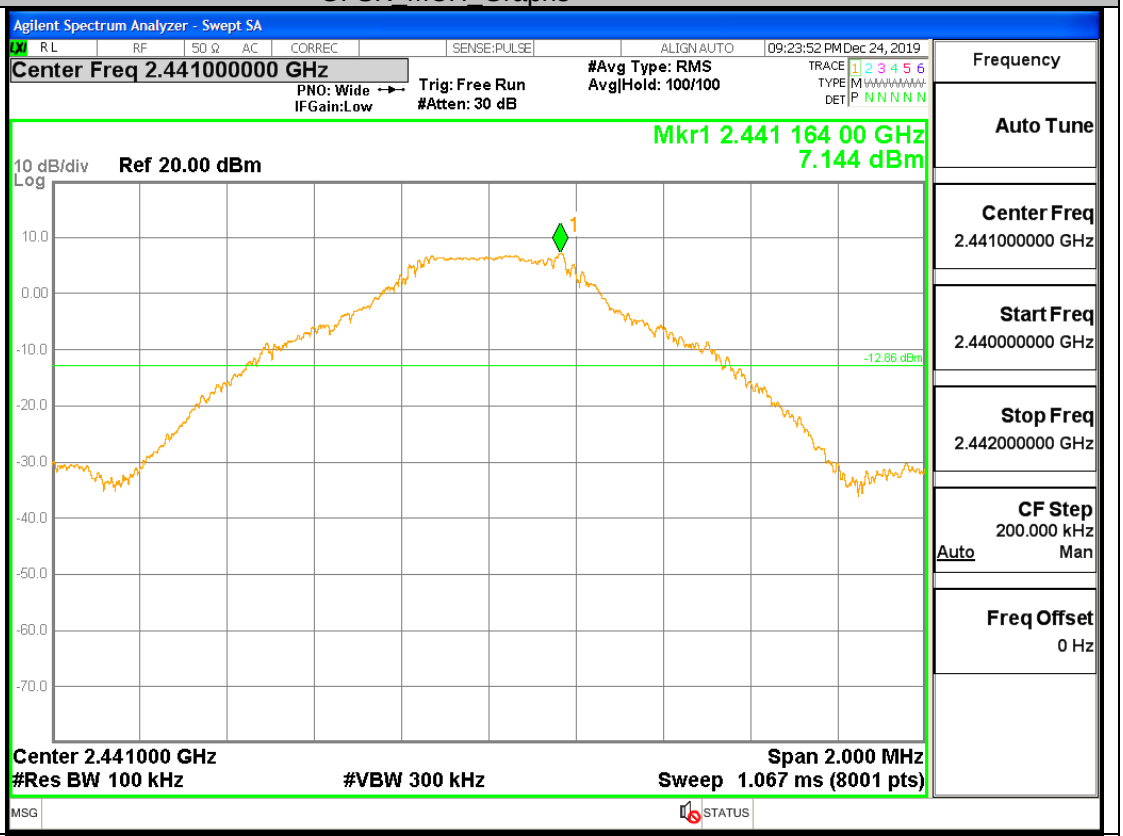
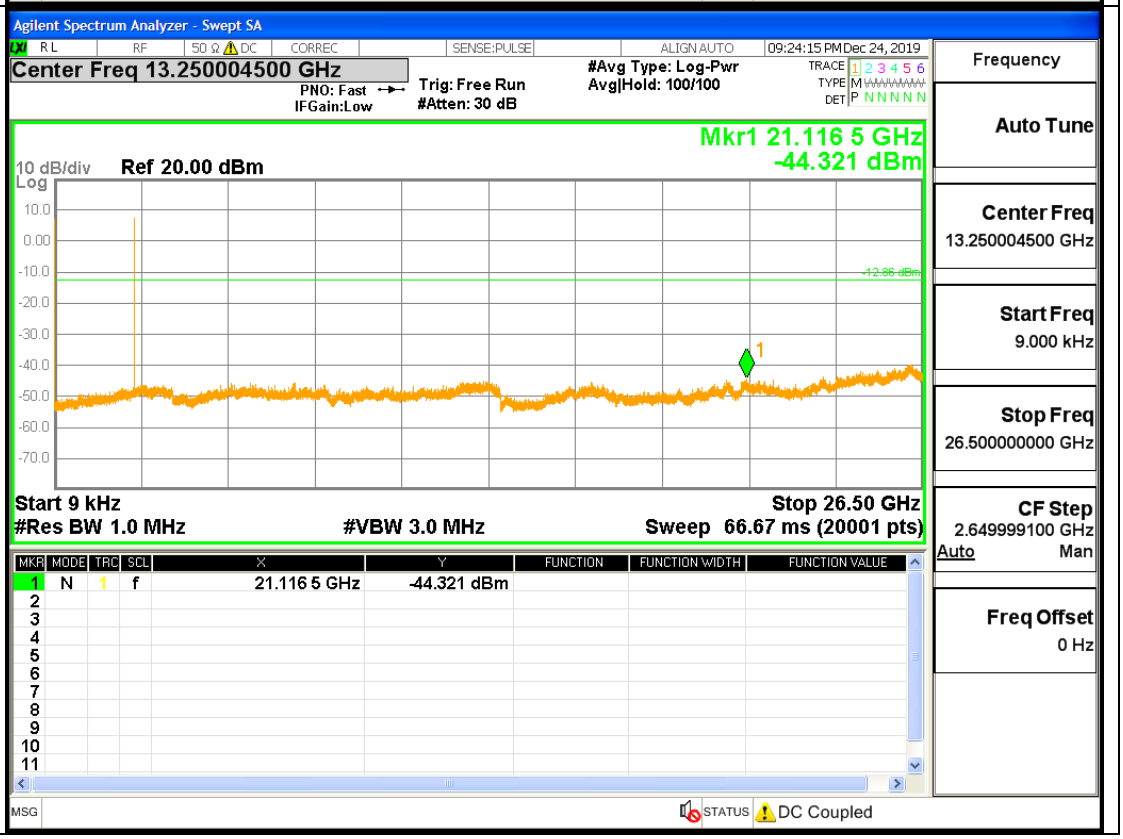
Pref	
Puw	

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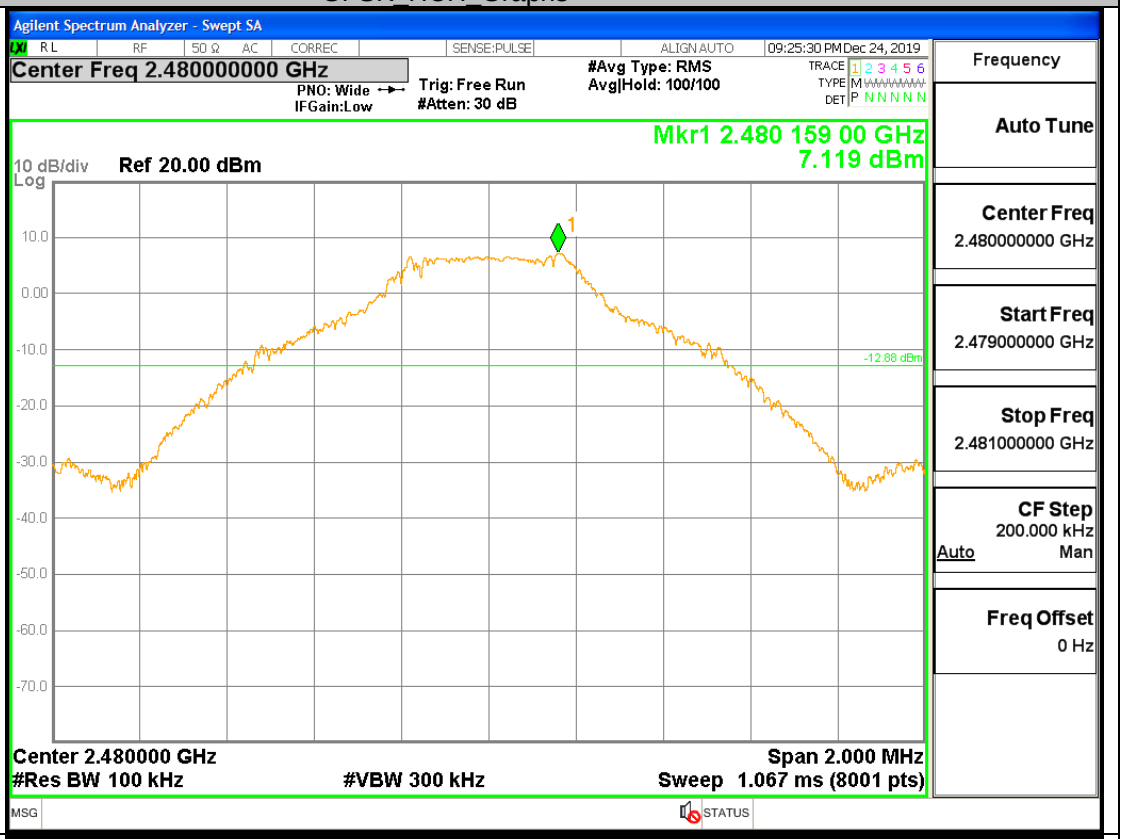
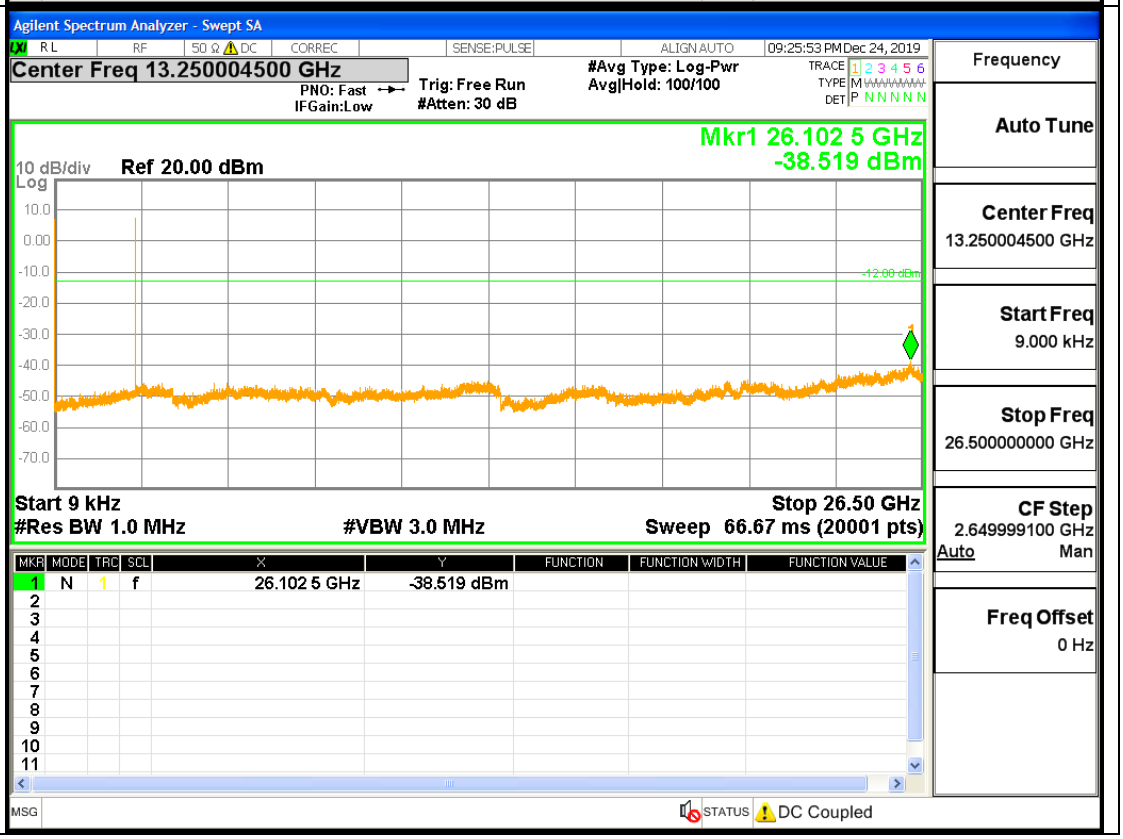
Pref	
Puw	

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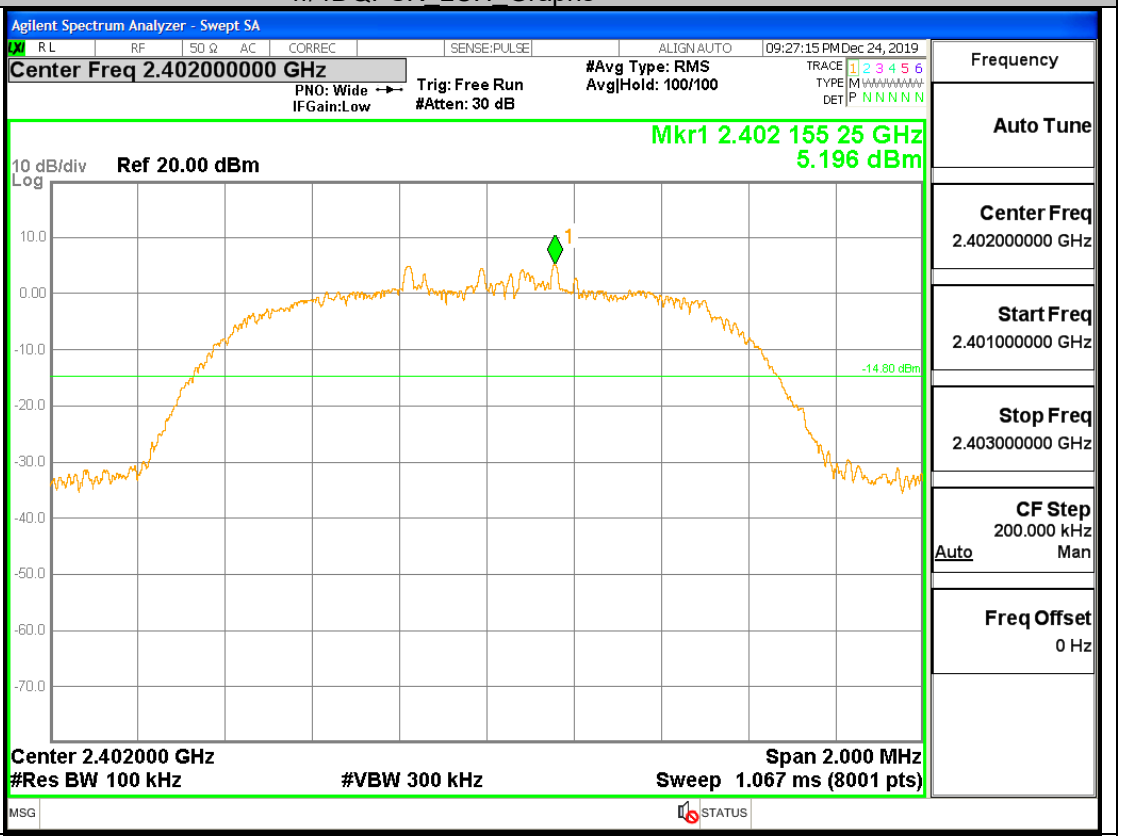
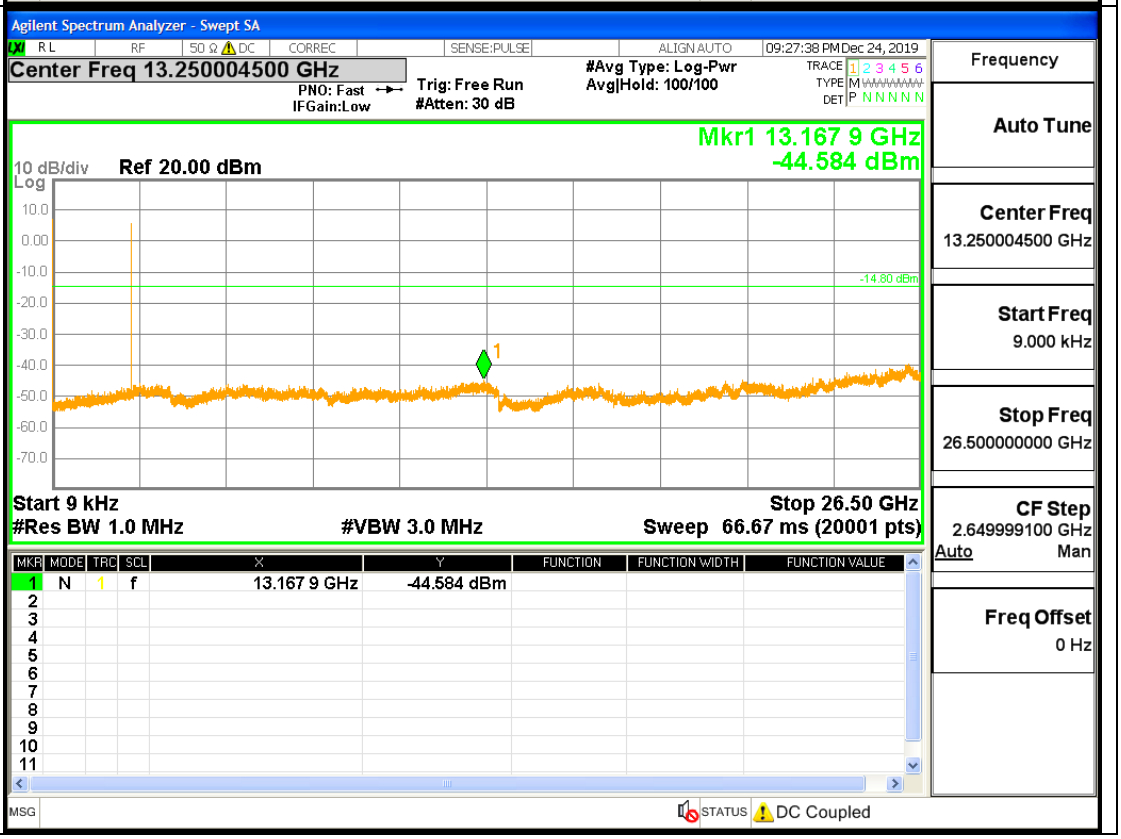
Pref	
Puw	

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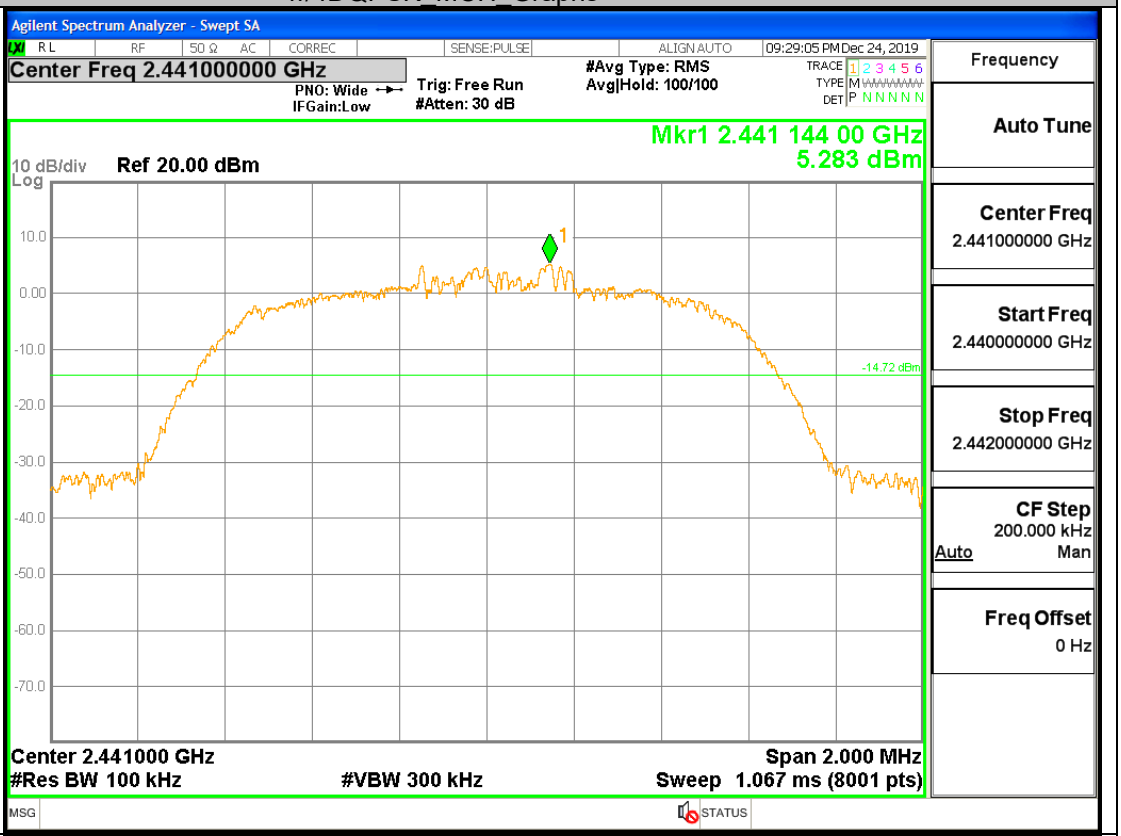
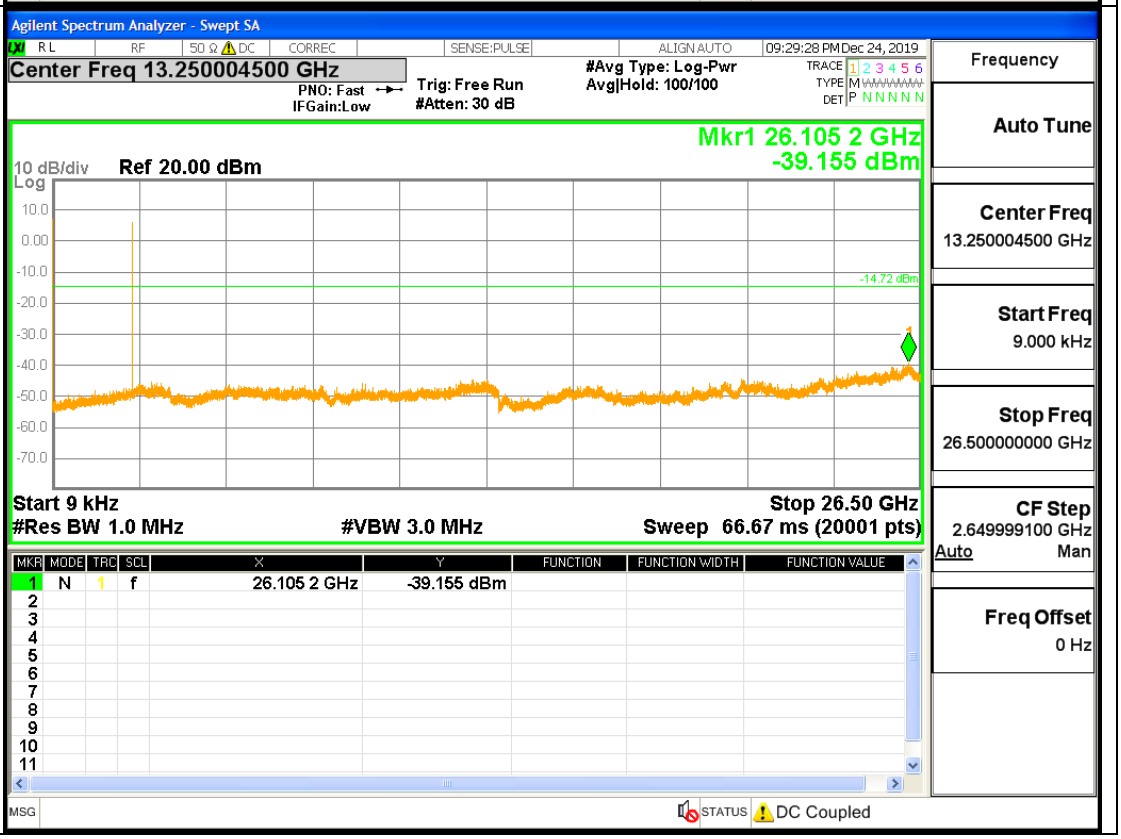
Pref	
Puw	

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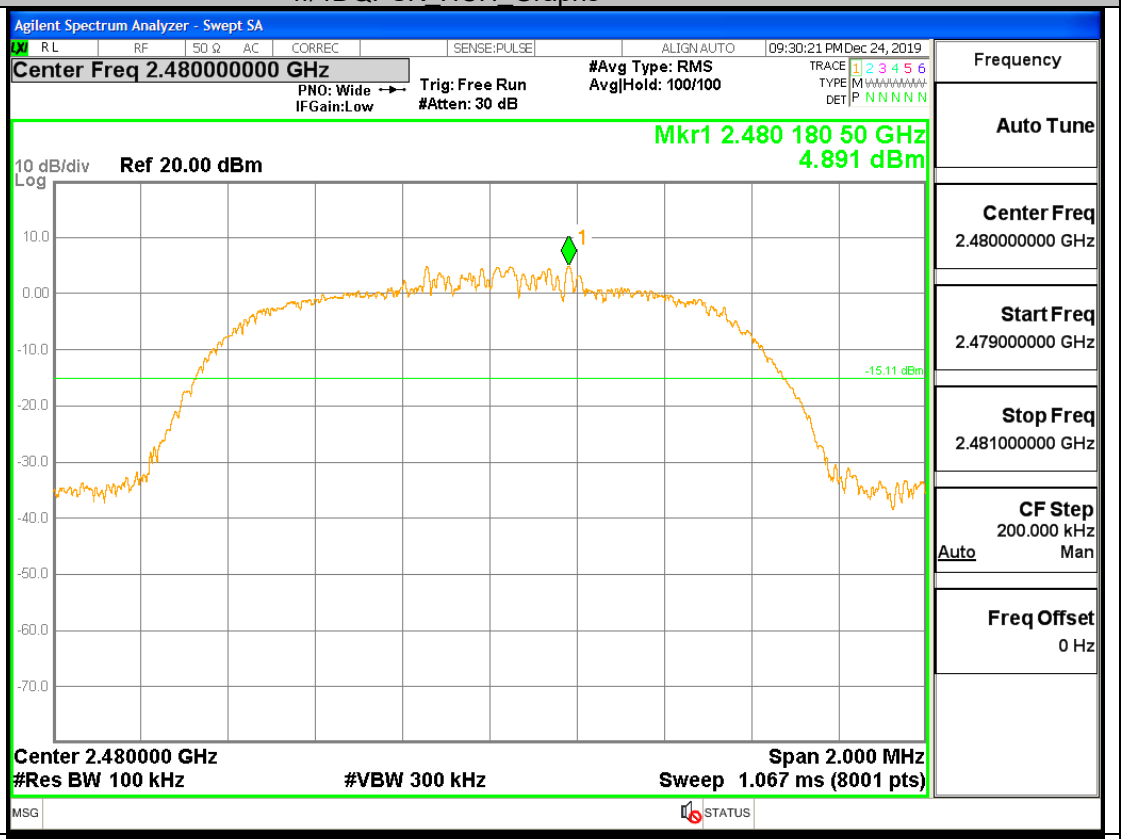
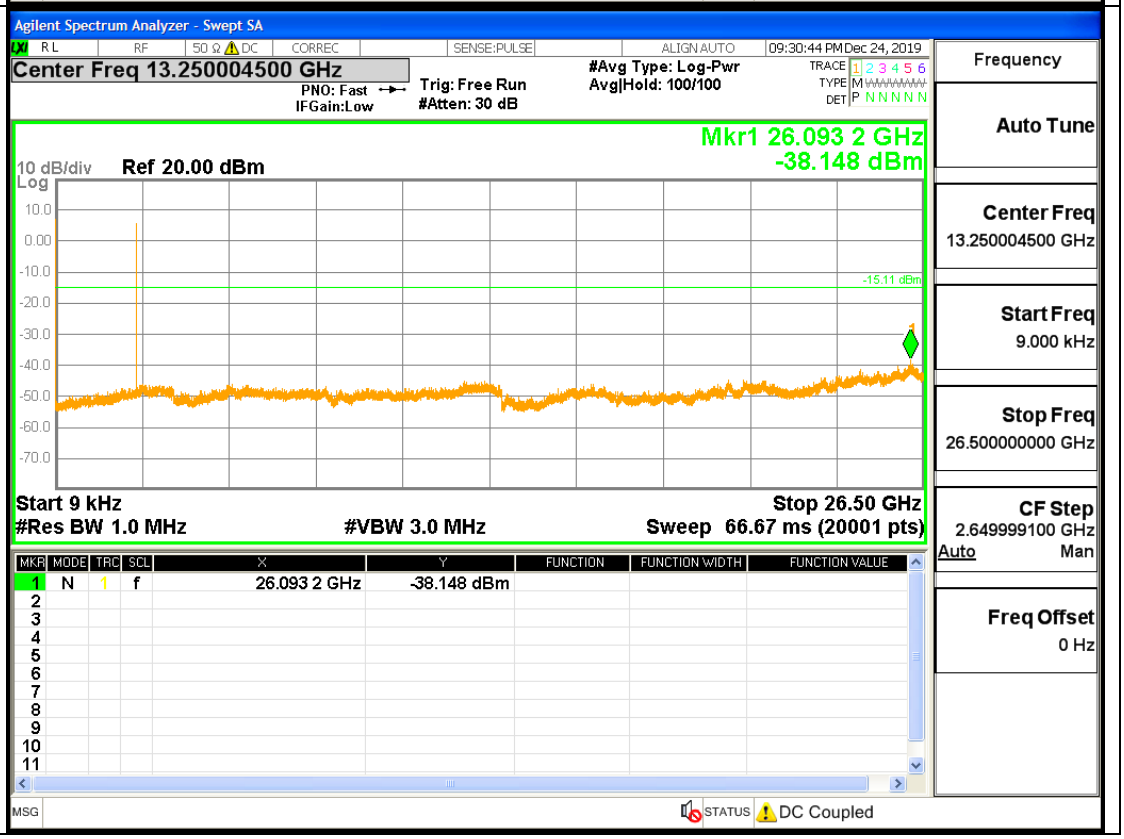
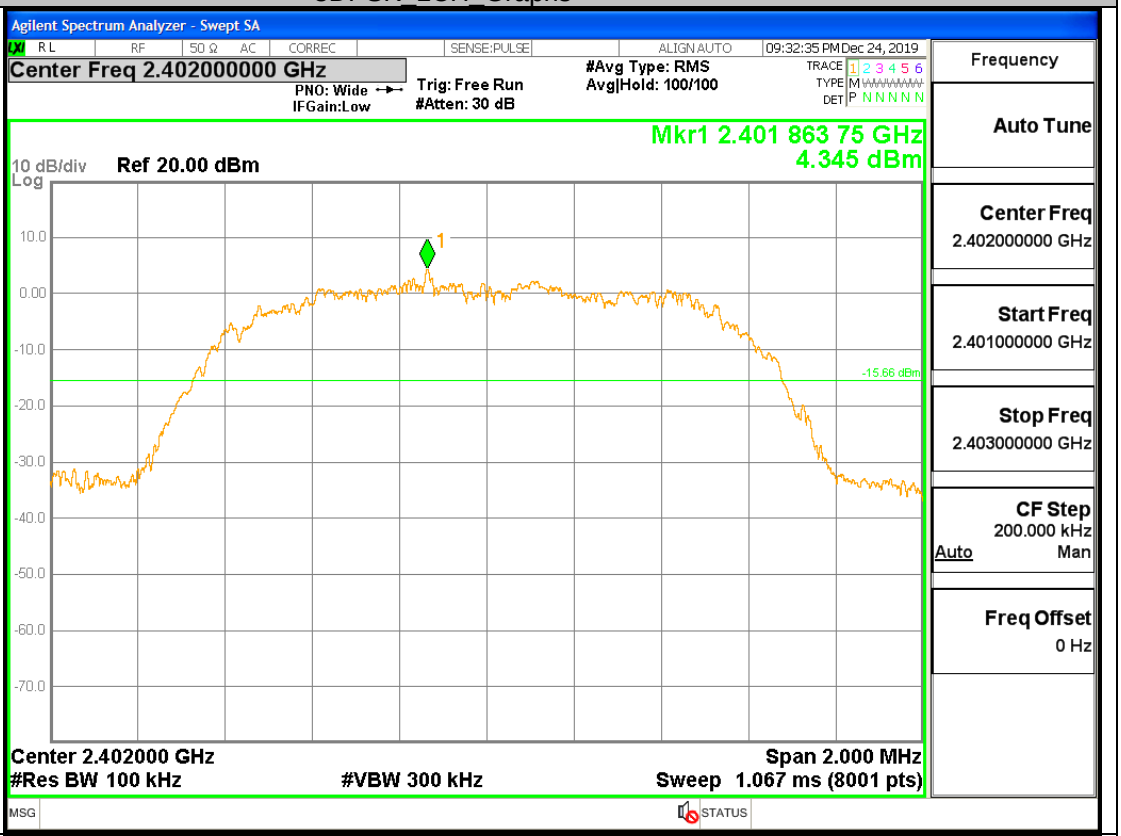
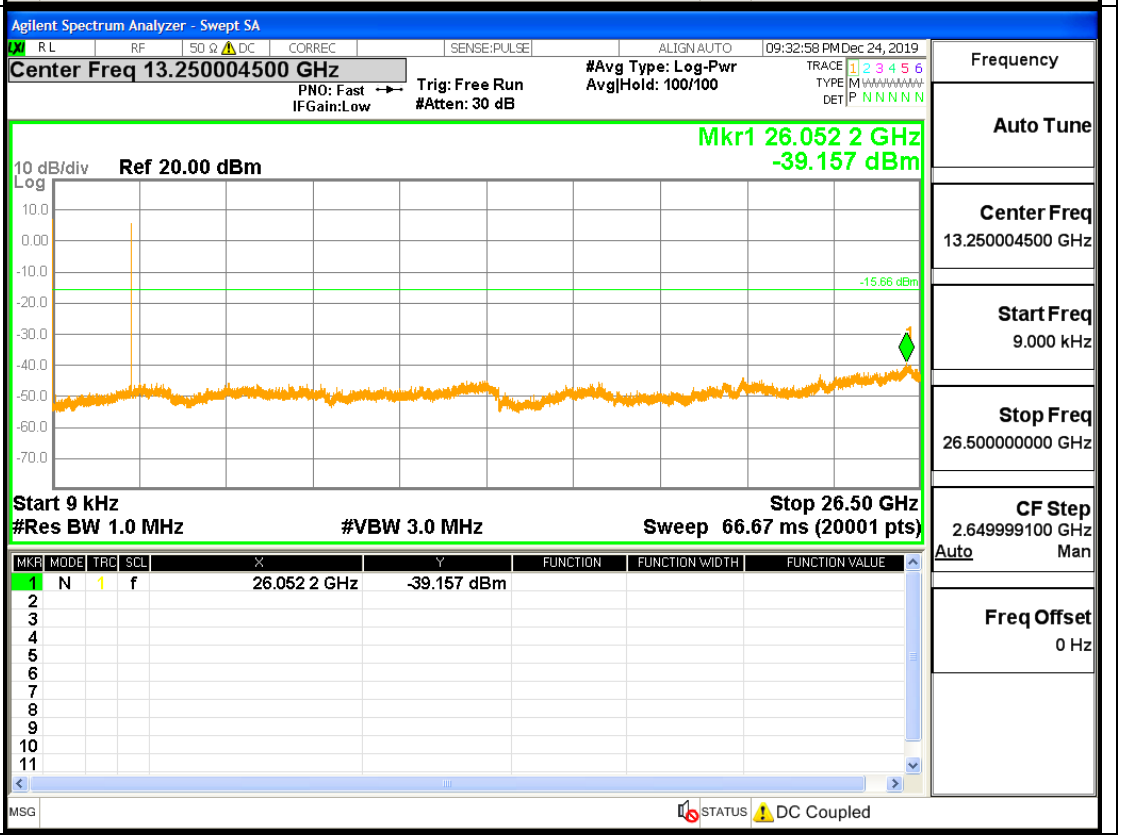
Pref	
Puw	

8DPSK_LCH_Graphs	
Pref	
Puw	

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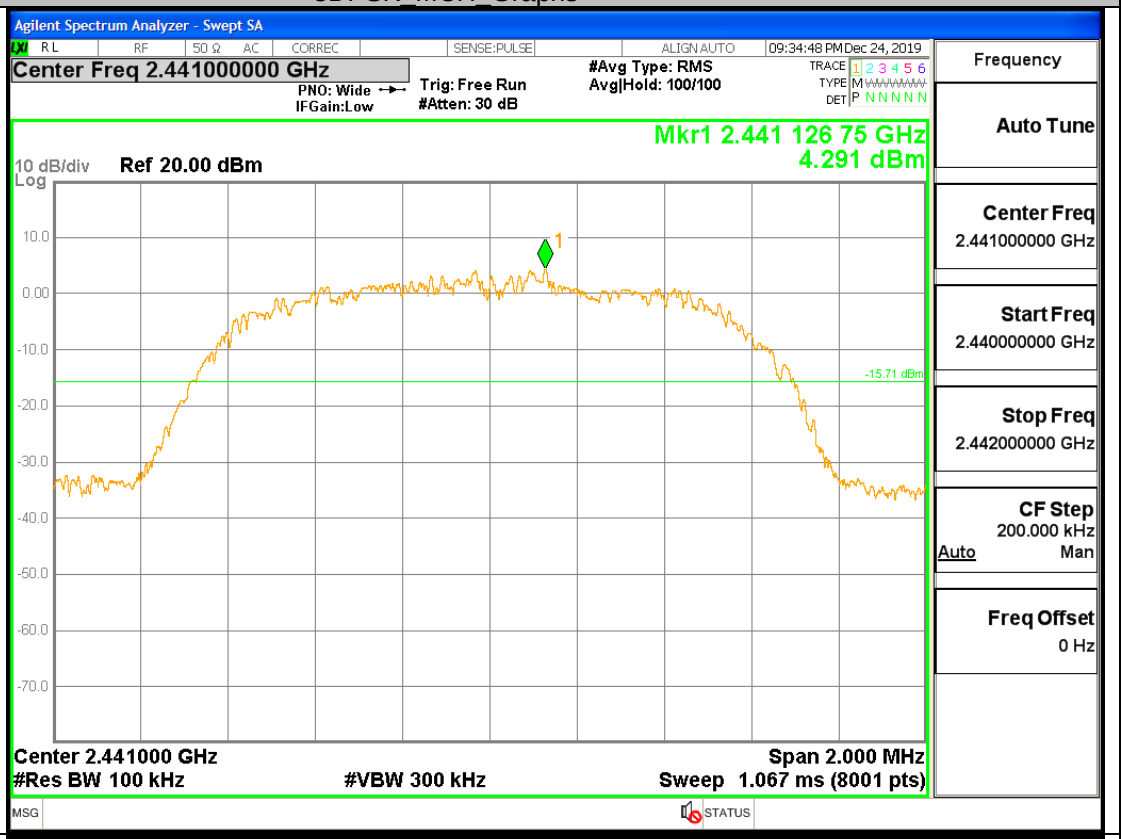
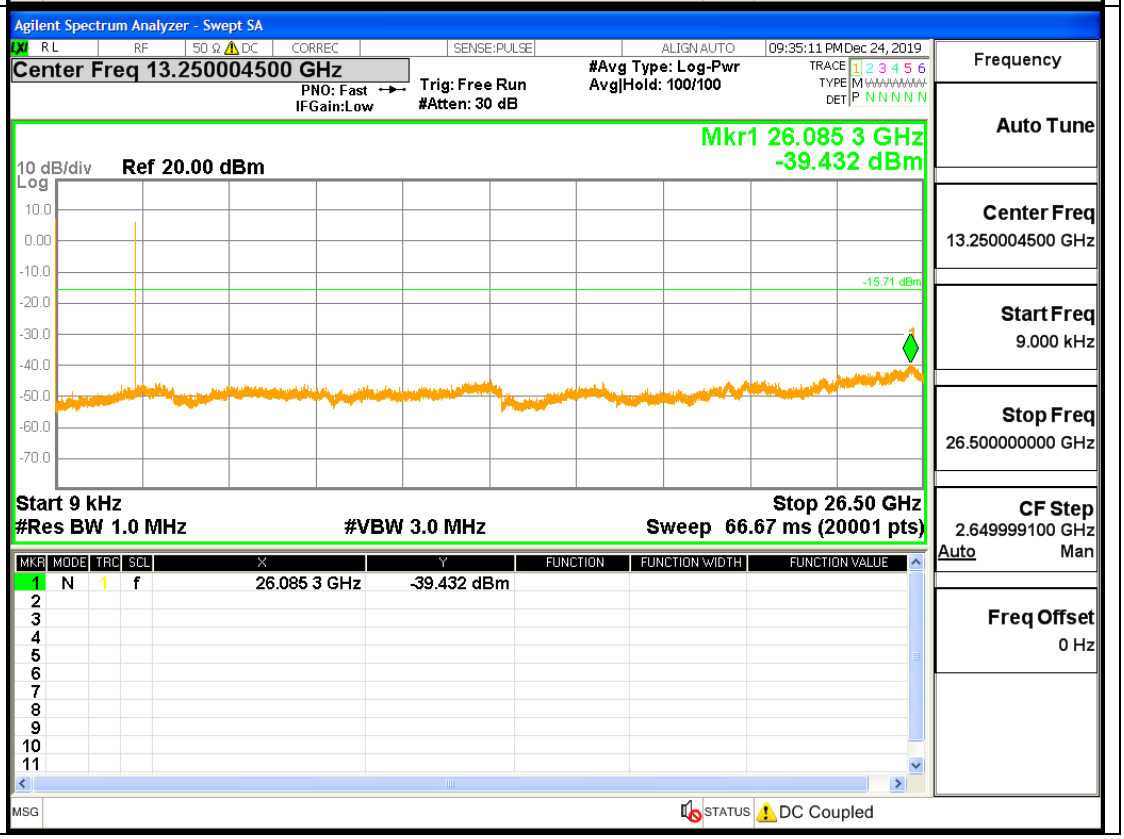
Pref	
Puw	

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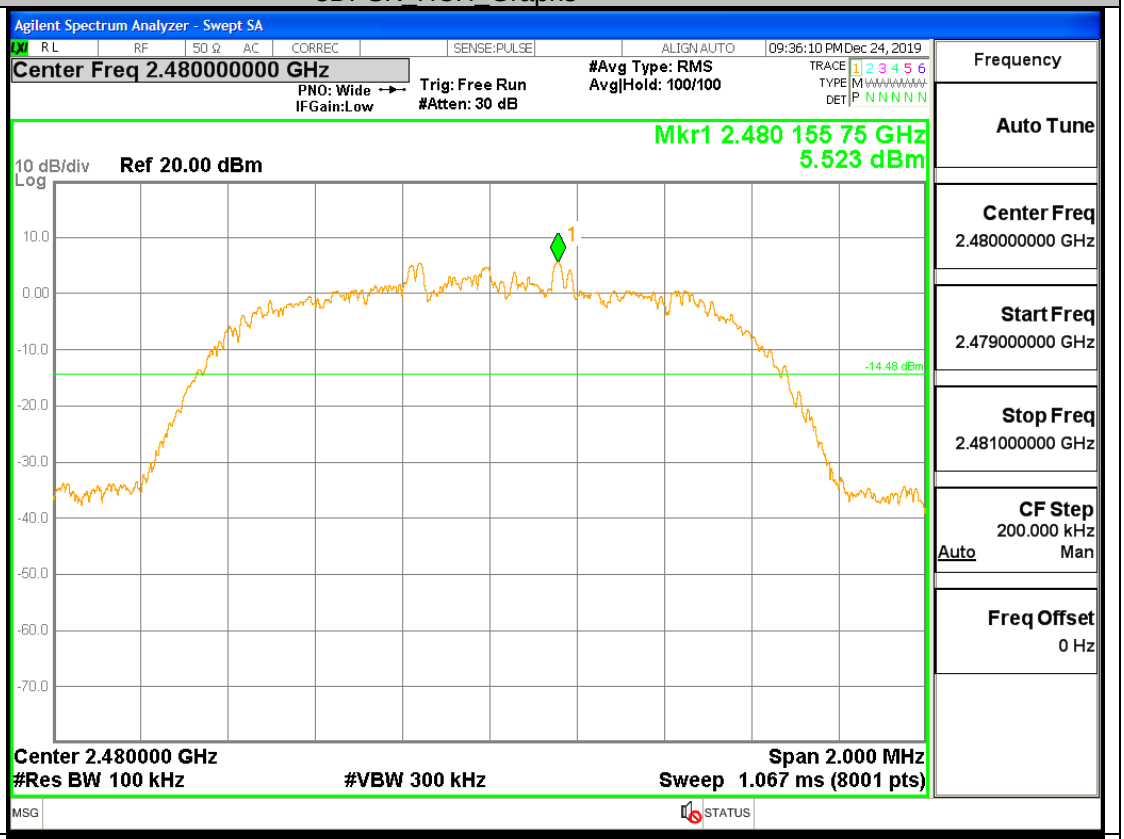
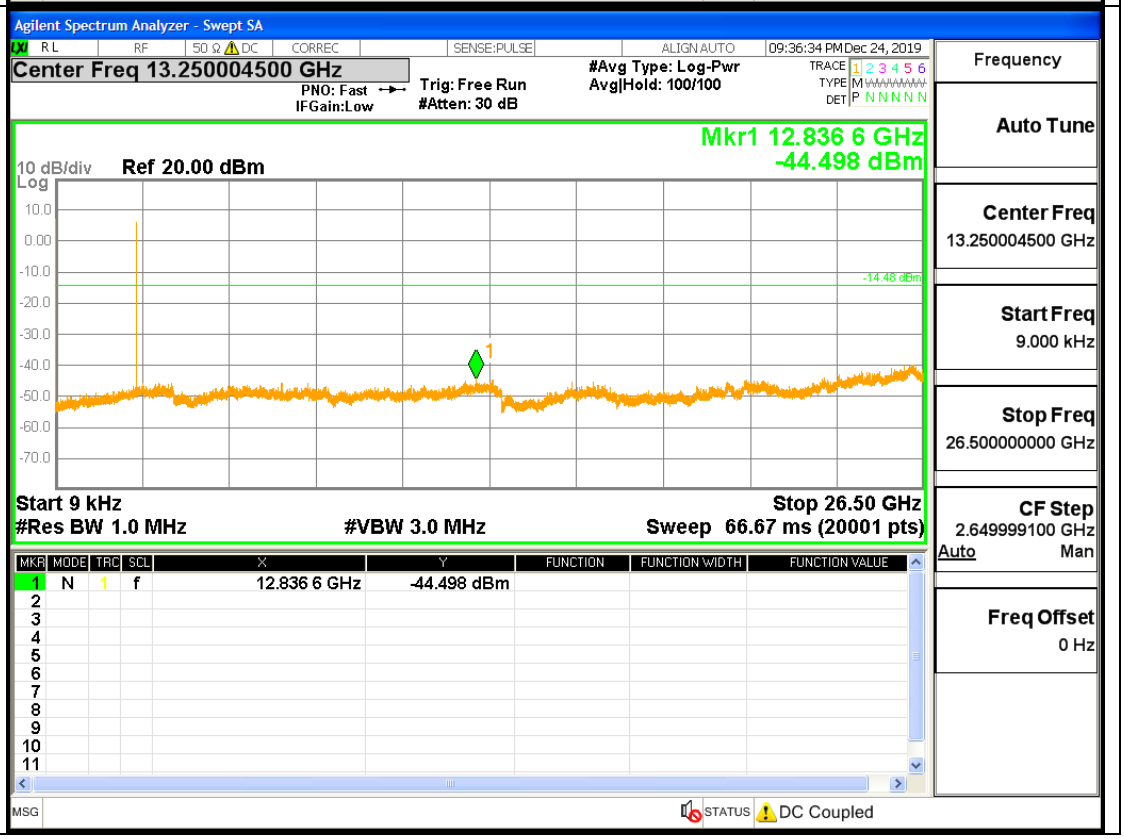
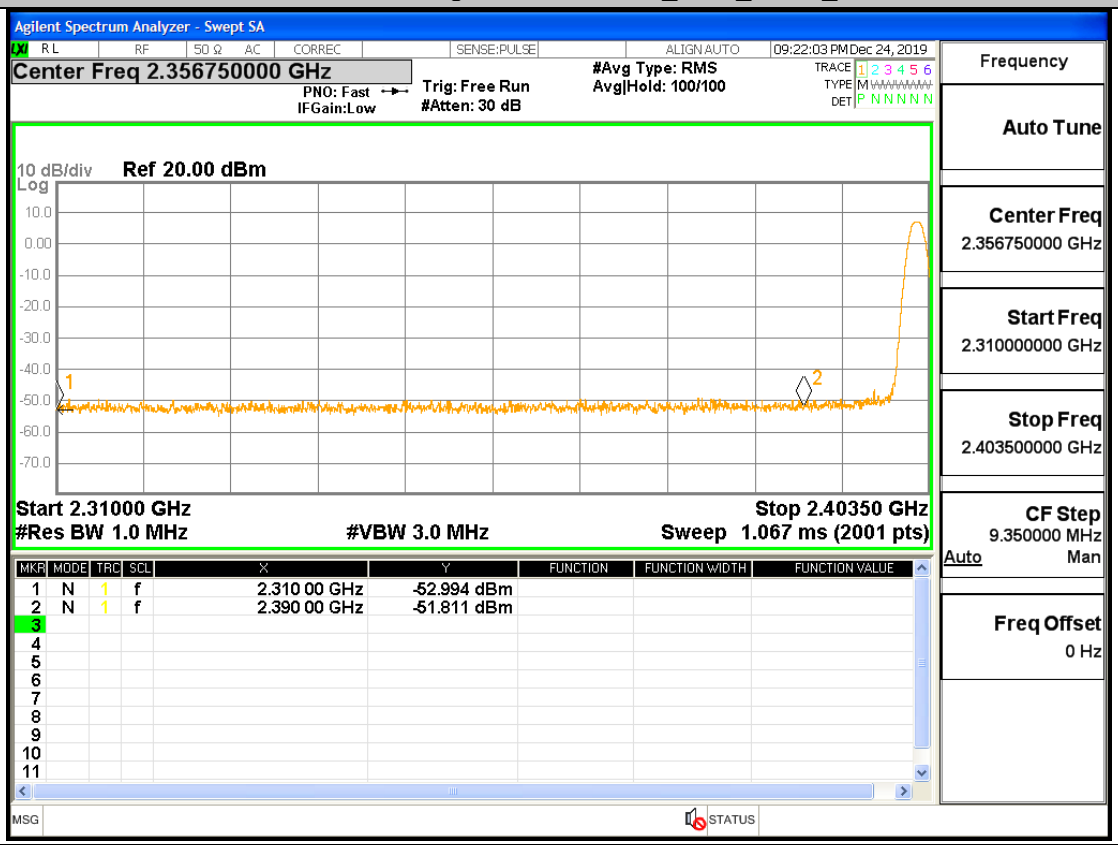
Pref	
Puw	

A.8 Restrict-band band-edge measurements

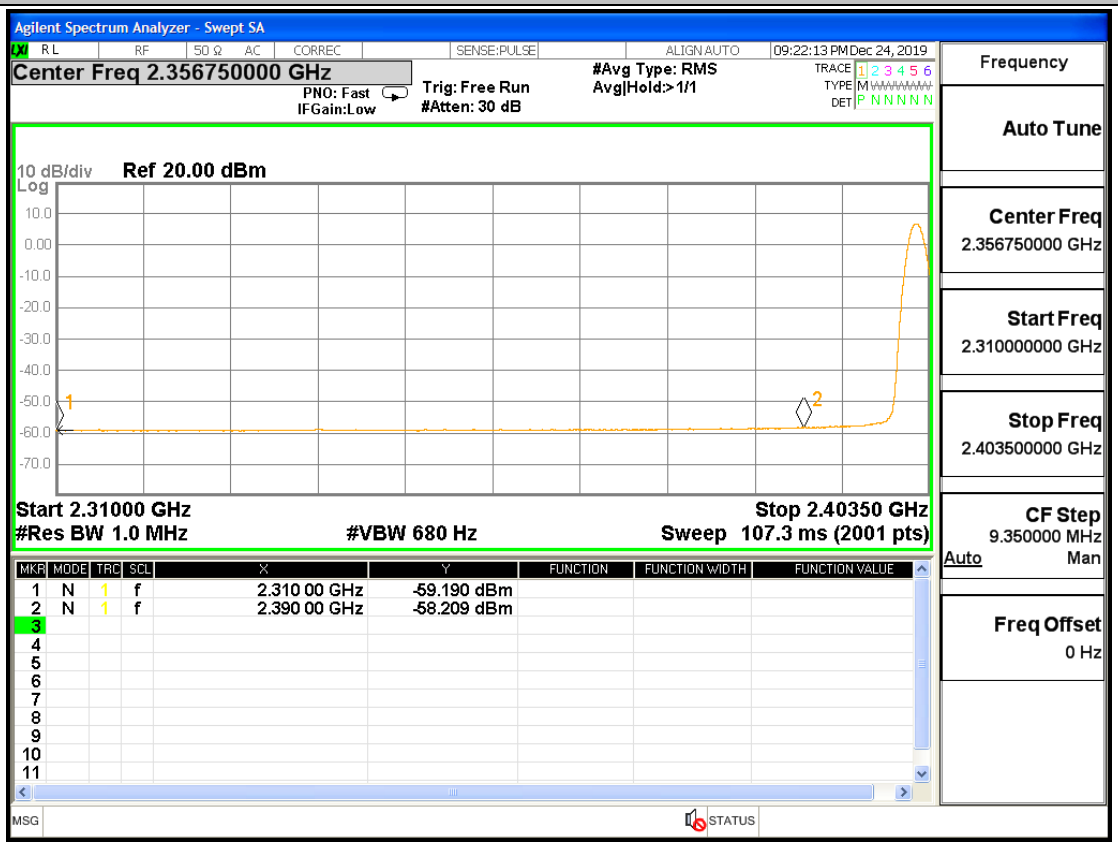
Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390	2.00	0.00	-51.811	45.389	74	Pass
1DH5	2480	2483.5	2.00	0.00	-49.998	47.202	74	Pass
2DH5	2402	2390	2.00	0.00	-51.872	45.328	74	Pass
2DH5	2480	2483.5	2.00	0.00	-50.321	46.879	74	Pass
3DH5	2402	2390	2.00	0.00	-50.94	46.26	74	Pass
3DH5	2480	2483.5	2.00	0.00	-49.996	47.204	74	Pass

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390	2.00	0.00	-58.209	38.991	54	Pass
1DH5	2480	2483.5	2.00	0.00	-50.007	47.193	54	Pass
2DH5	2402	2390	2.00	0.00	-58.448	38.752	54	Pass
2DH5	2480	2483.5	2.00	0.00	-50.243	46.957	54	Pass
3DH5	2402	2390	2.00	0.00	-58.225	38.975	54	Pass
3DH5	2480	2483.5	2.00	0.00	-50.132	47.068	54	Pass

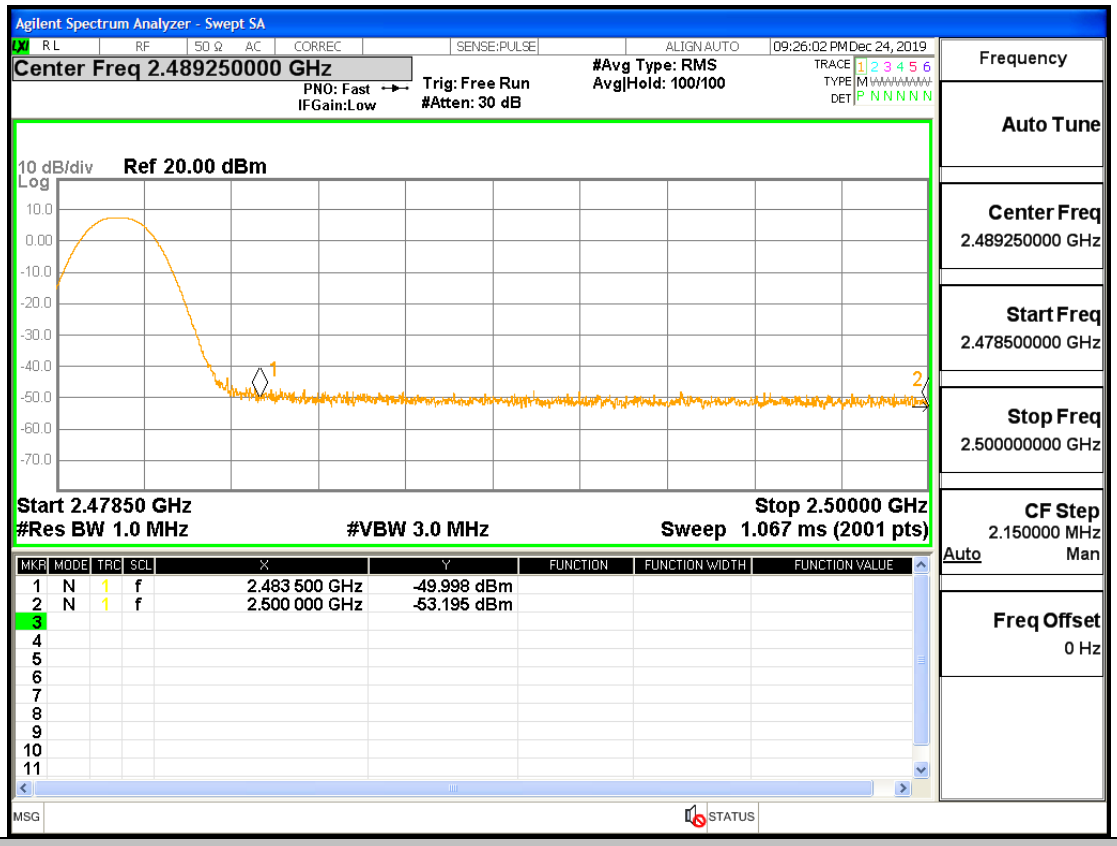
Restrict-band band-edge measurements_2402_PEAK_DH5



Restrict-band band-edge measurements_2402_AV_DH5

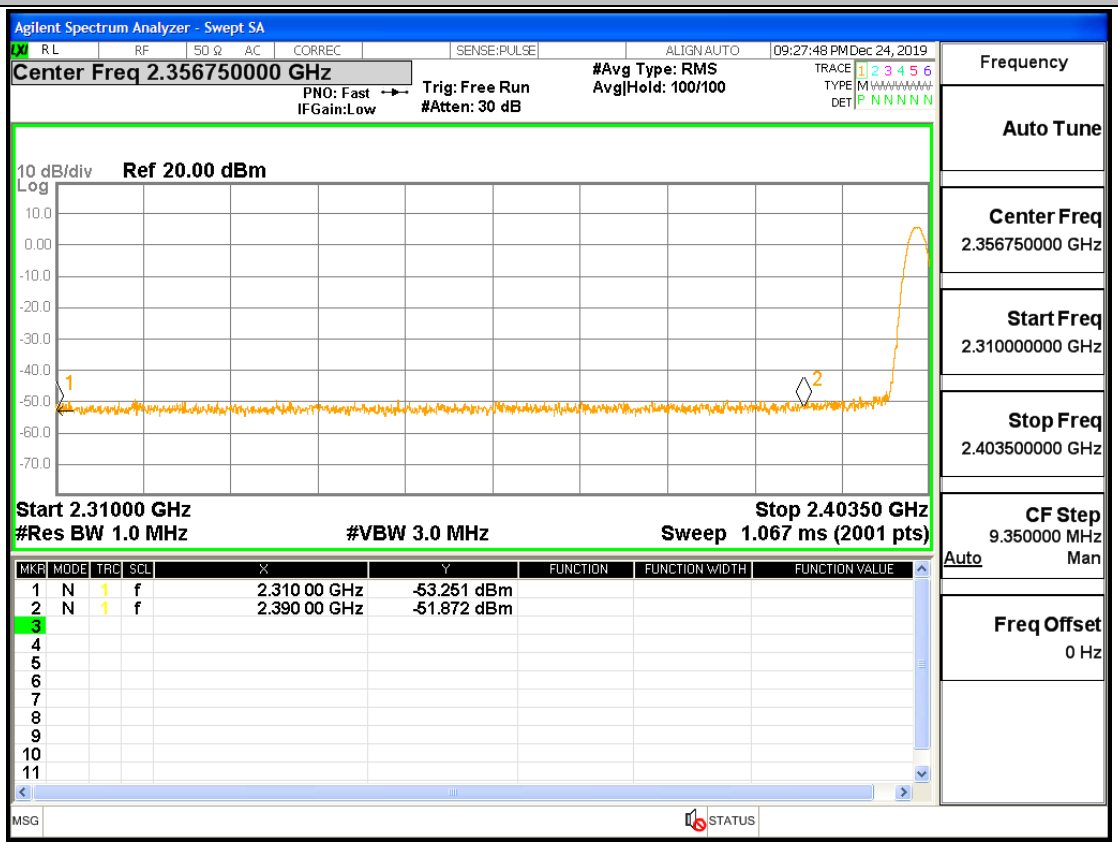


Restrict-band band-edge measurements_2480_PEAK_DH5

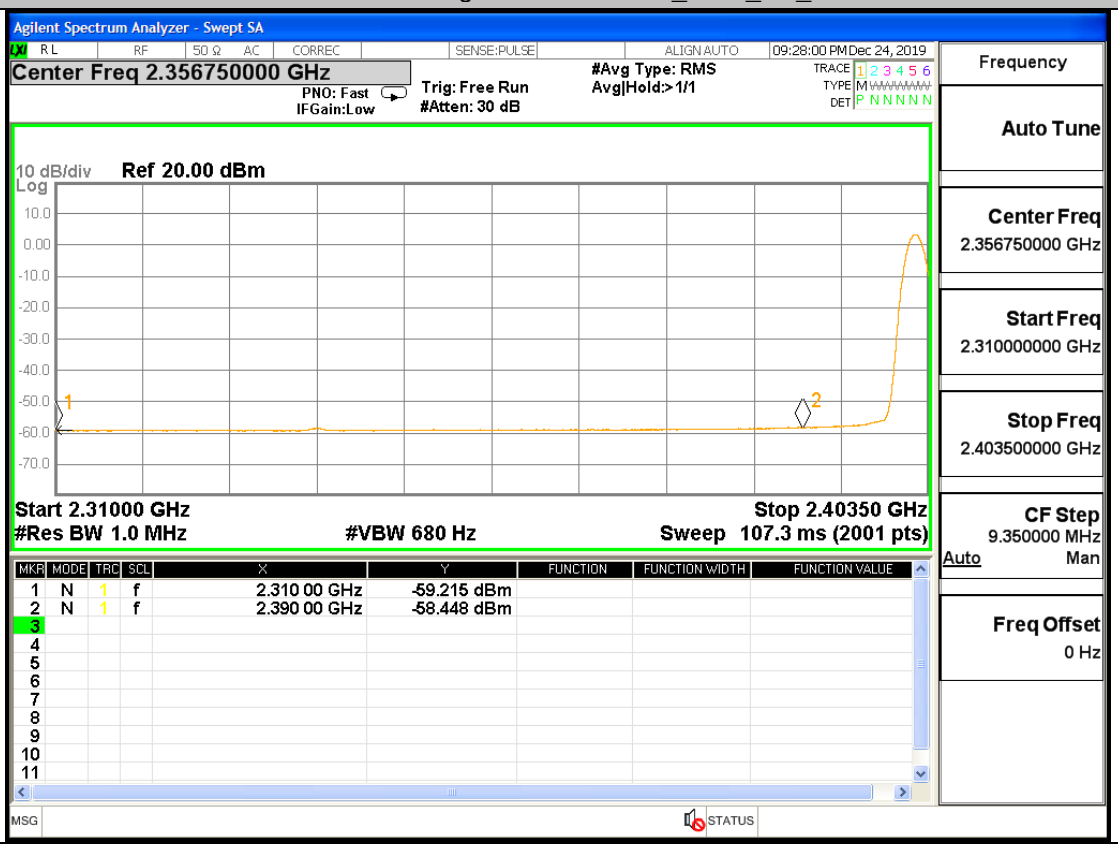


Restrict-band band-edge measurements_2480_AV_DH5

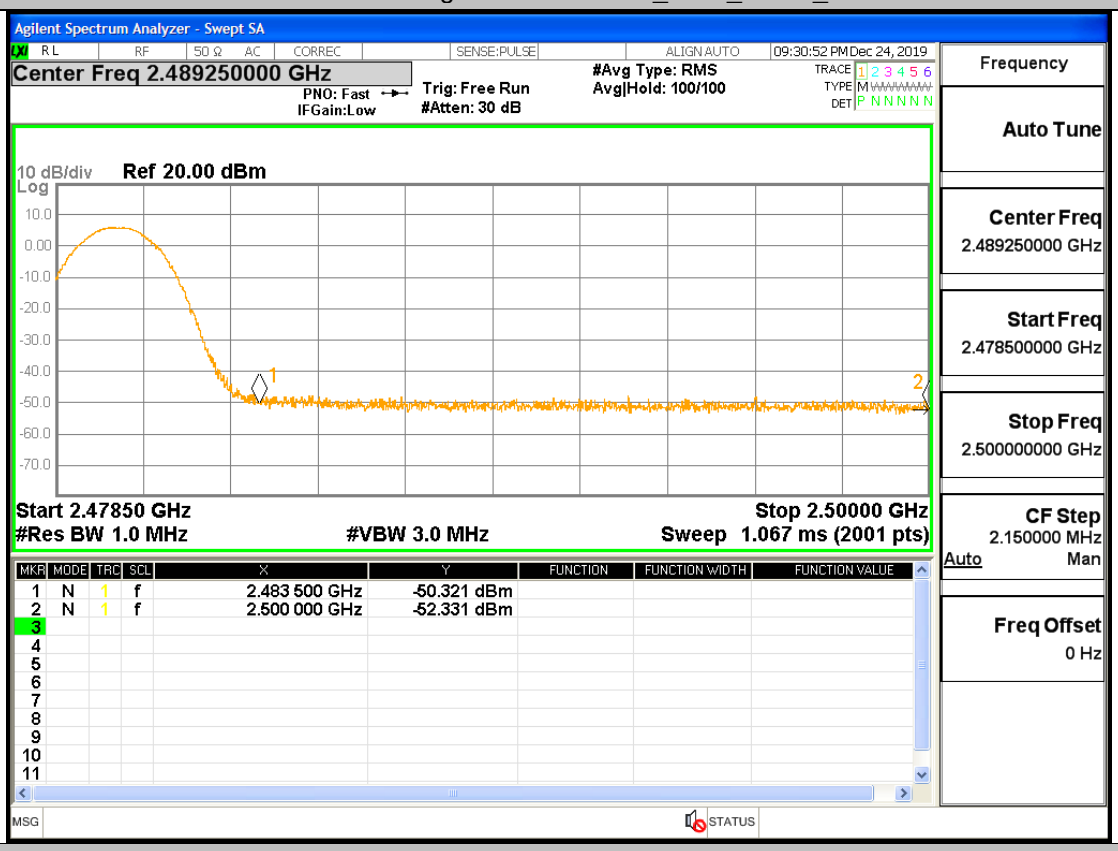
Restrict-band band-edge measurements_2402_PEAK_2DH5



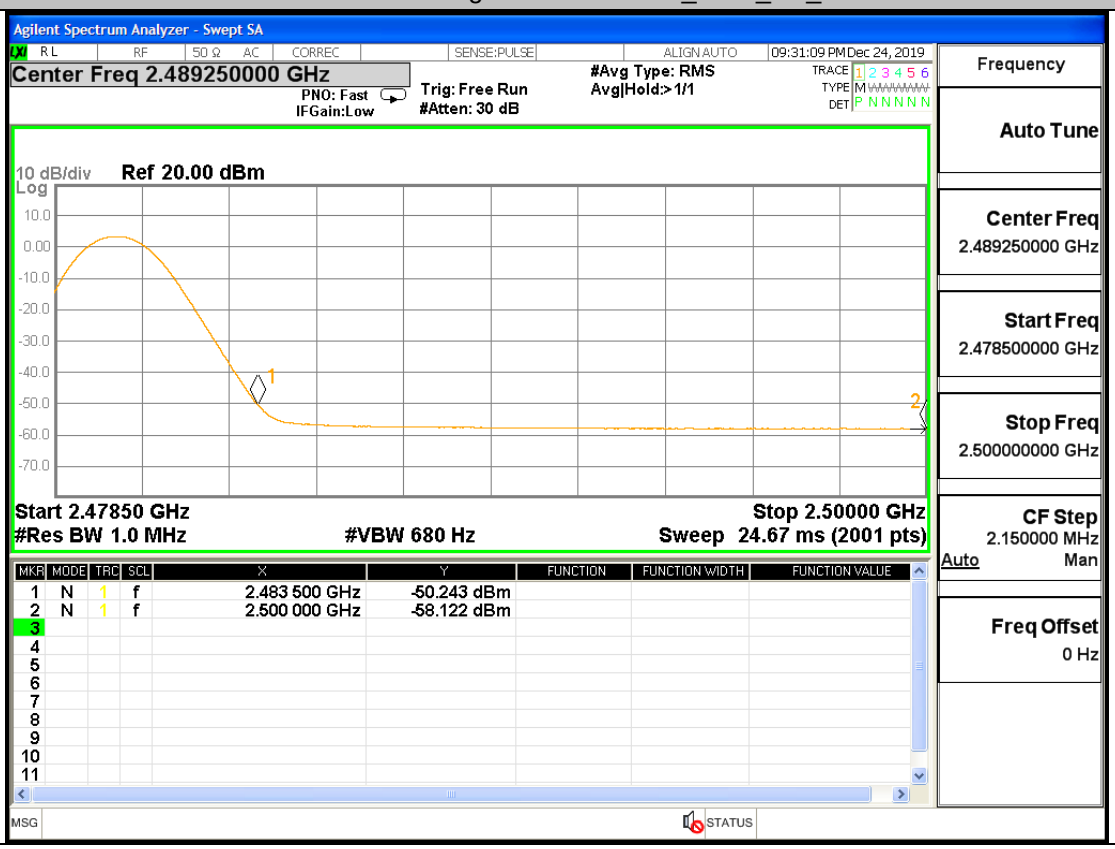
Restrict-band band-edge measurements_2402_AV_2DH5



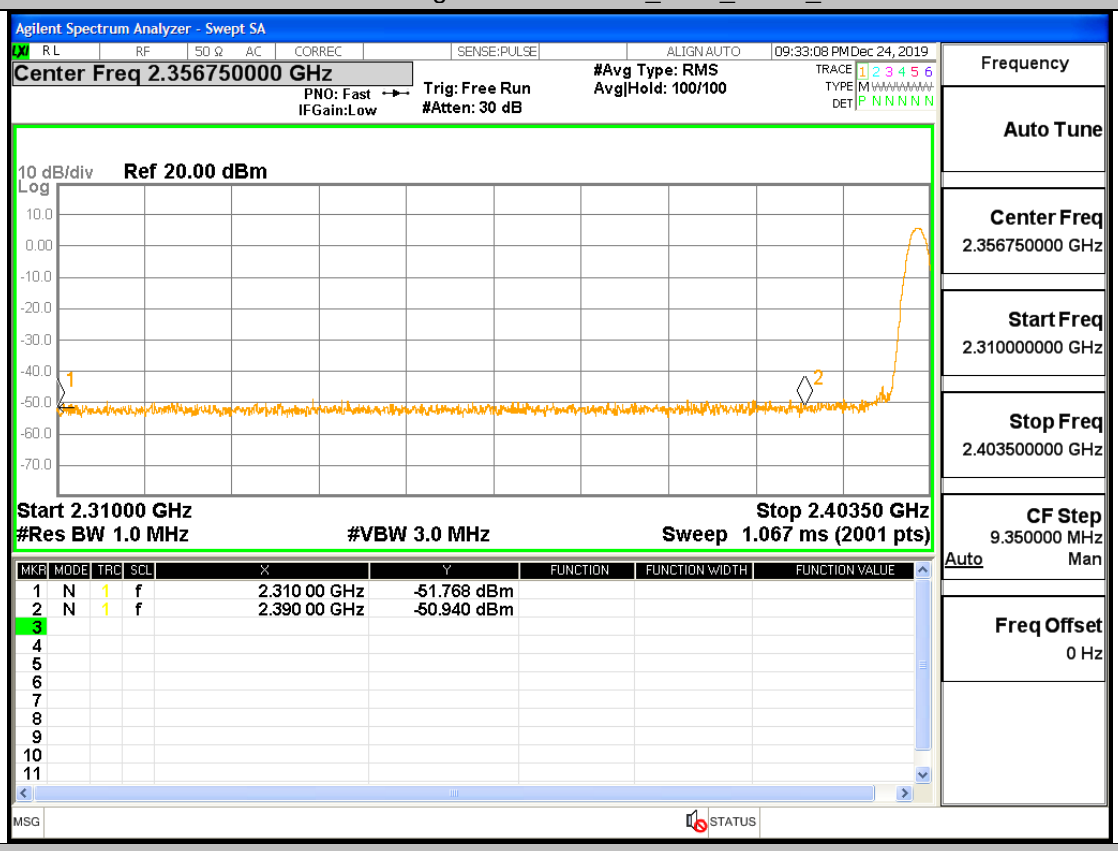
Restrict-band band-edge measurements_2480_PEAK_2DH5



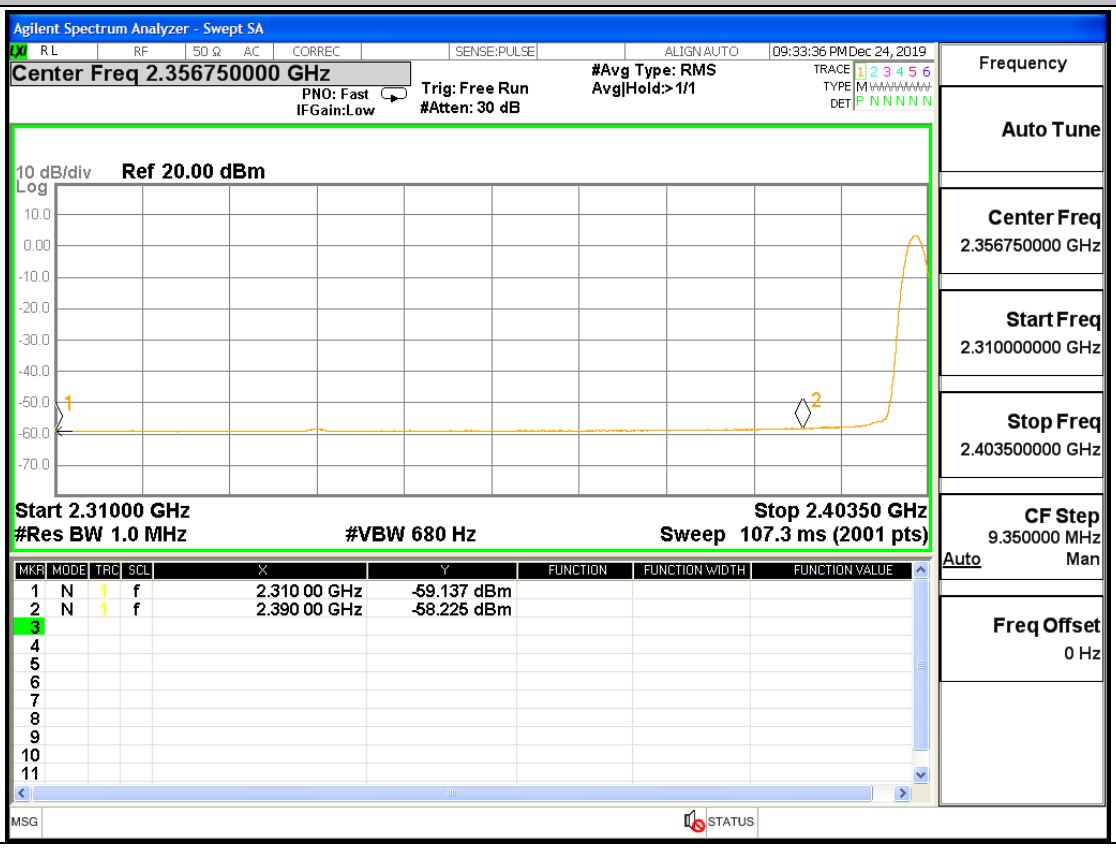
Restrict-band band-edge measurements_2480_AV_2DH5



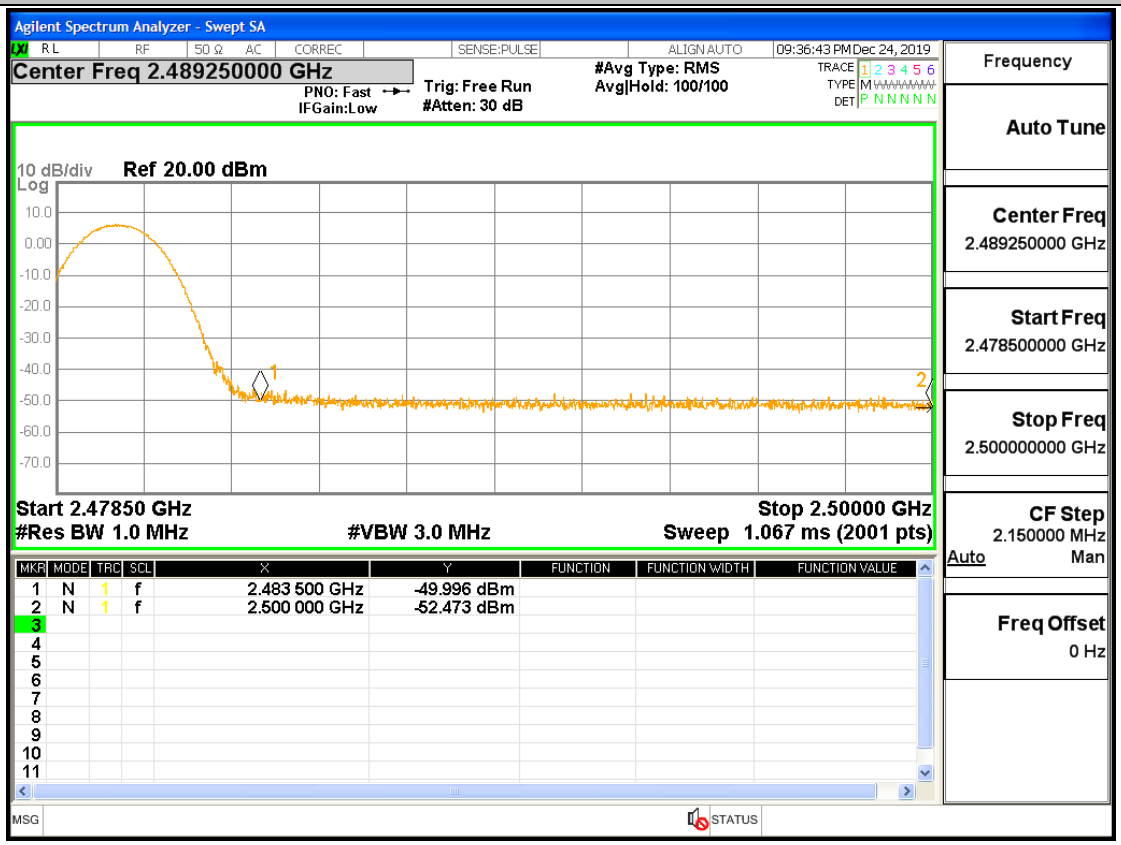
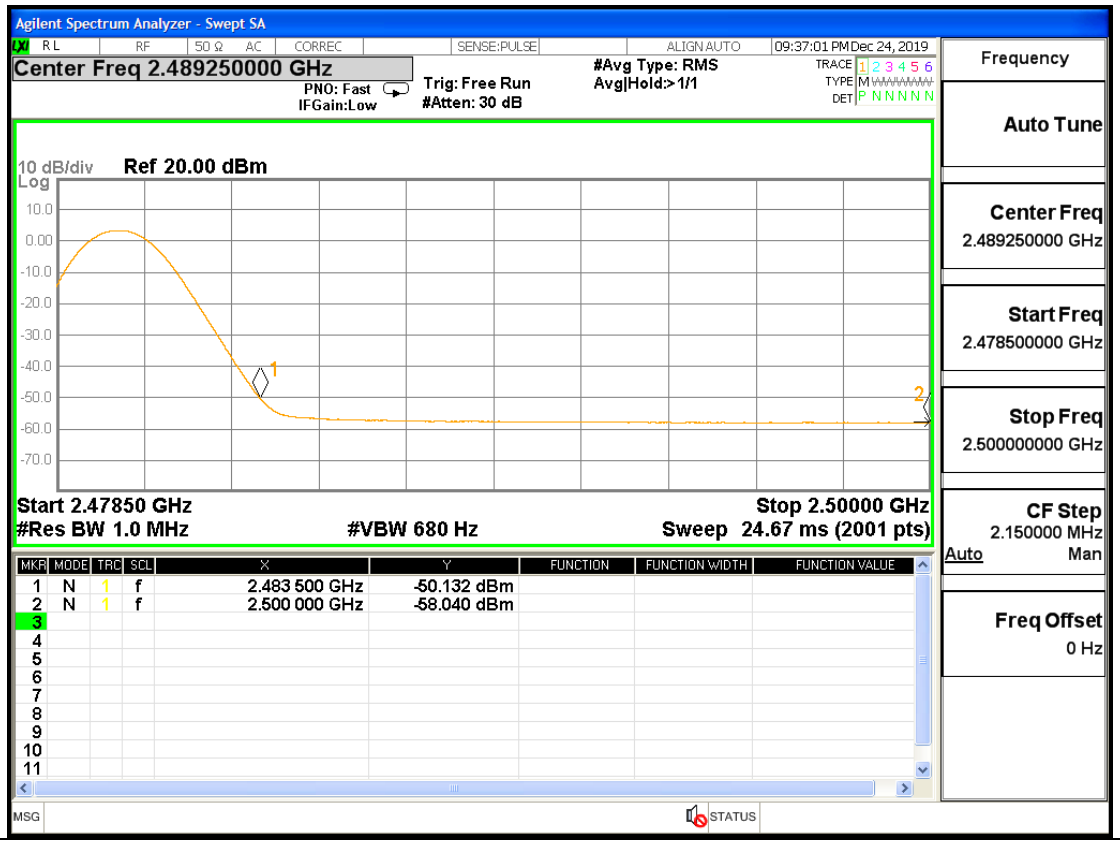
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5