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

Product Name: Bluetooth Headphones

Trade Mark: Vivitar

Test Model: V50018BT

FCC ID: 2AL9B-V50018BT

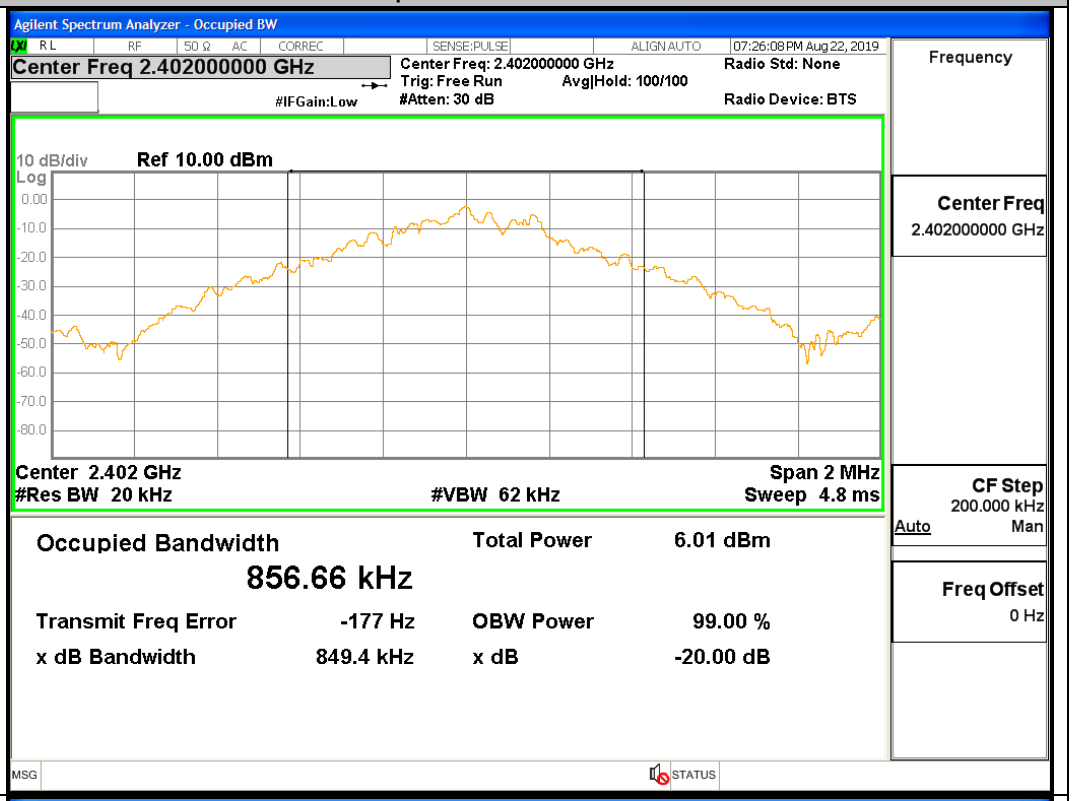
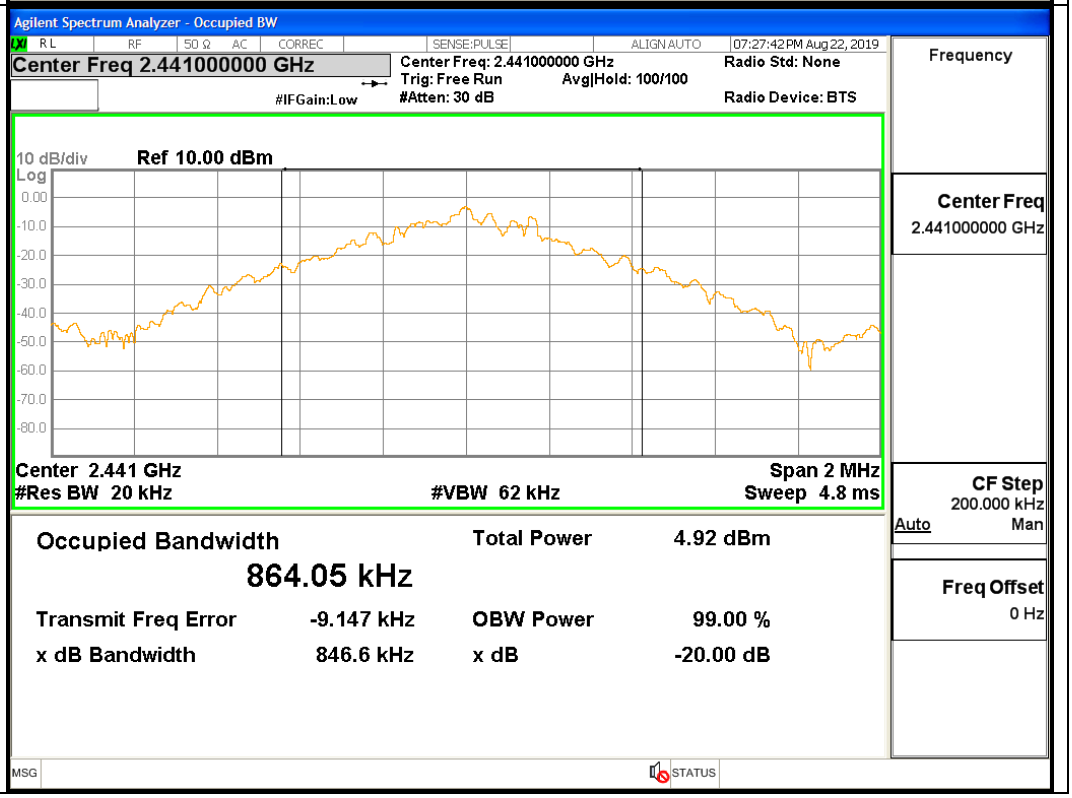
Environmental Conditions

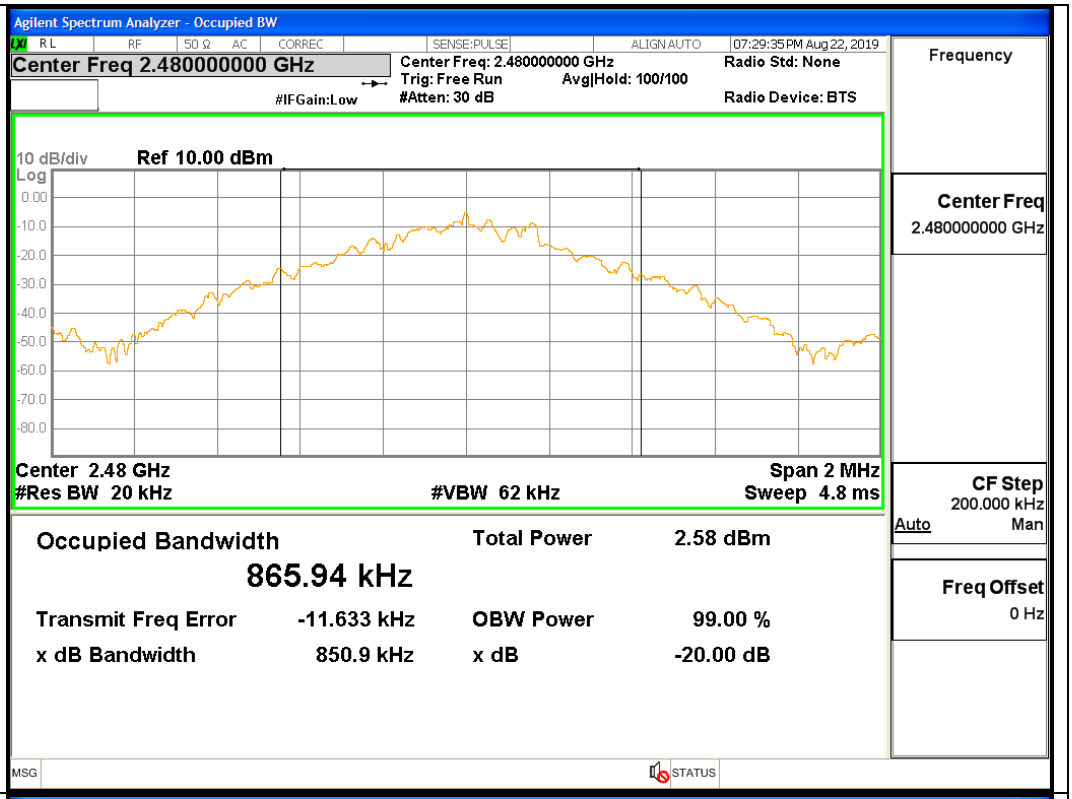
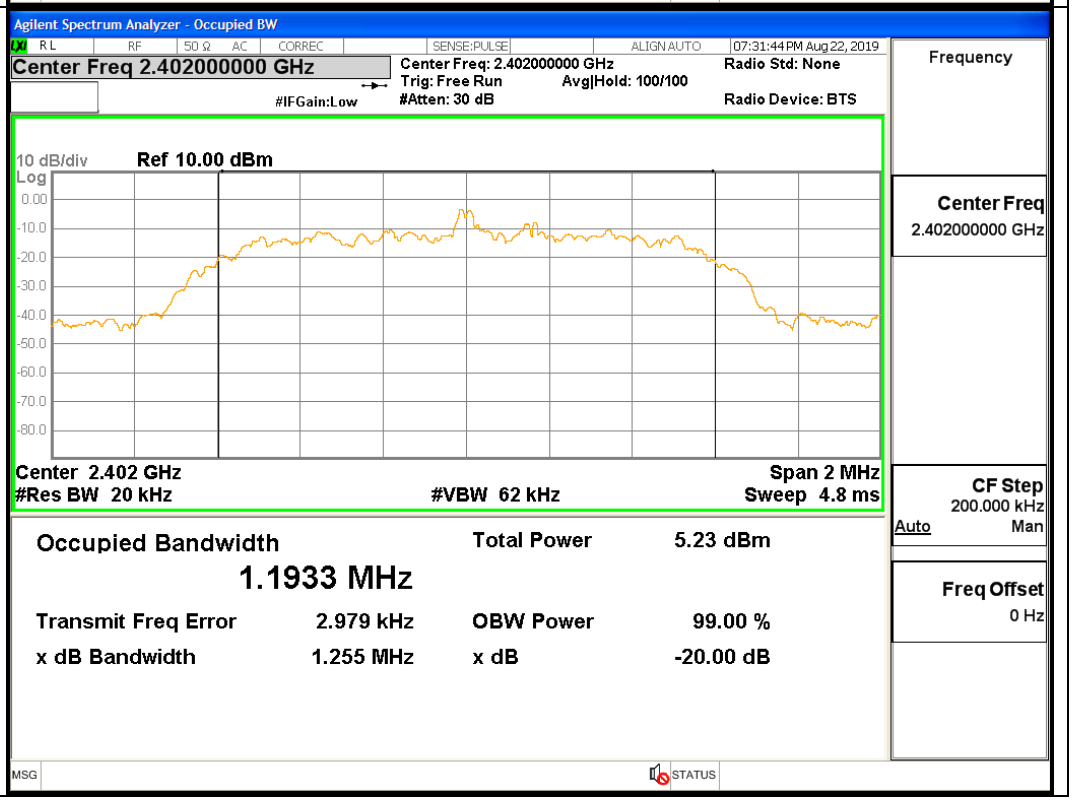
Temperature:	24.7° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

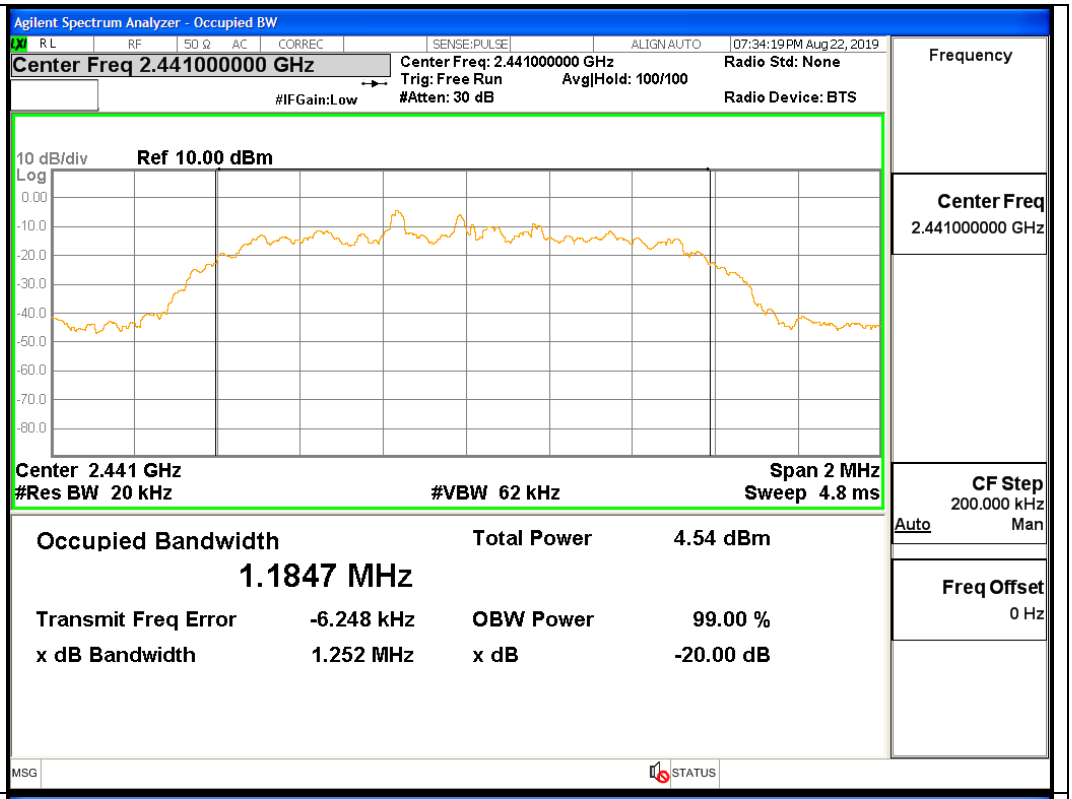
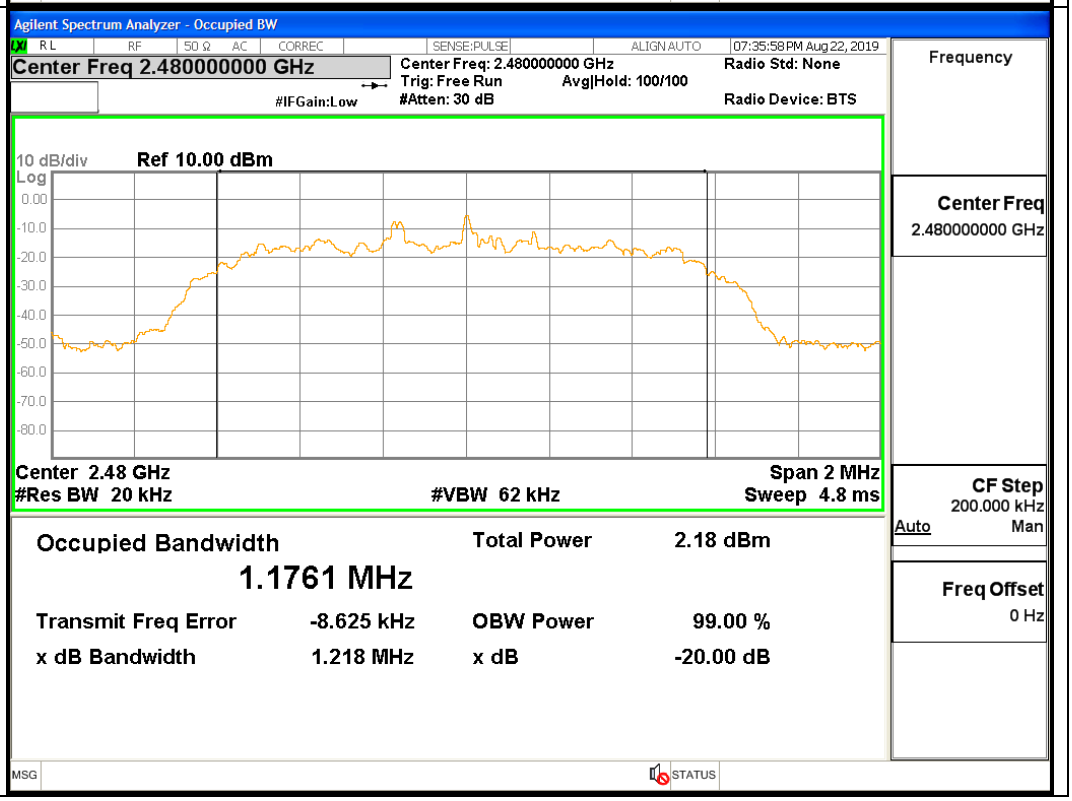
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.849	Not Specified	PASS
GFSK	MCH	0.847	Not Specified	PASS
GFSK	HCH	0.851	Not Specified	PASS
π/4DQPSK	LCH	1.255	Not Specified	PASS
π/4DQPSK	MCH	1.252	Not Specified	PASS
π/4DQPSK	HCH	1.218	Not Specified	PASS

Test Graph

Graphs	
GFSK/LCH	
GFSK/MCH	

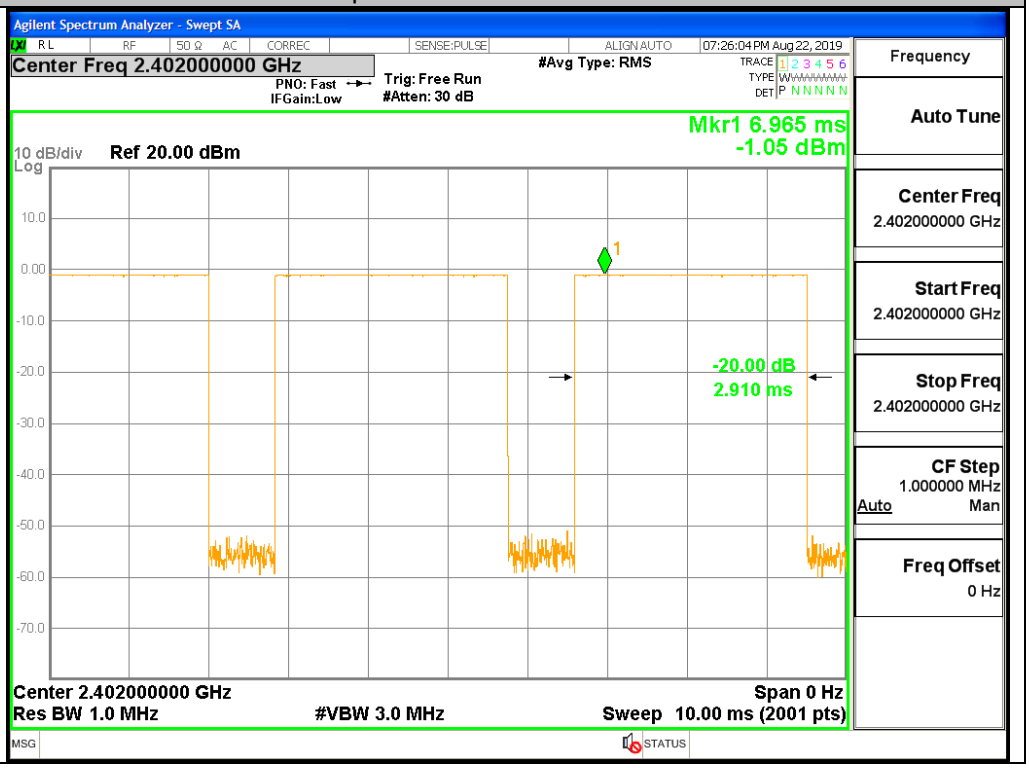
GFSK/HCH	
π/4DQPSK/LCH	

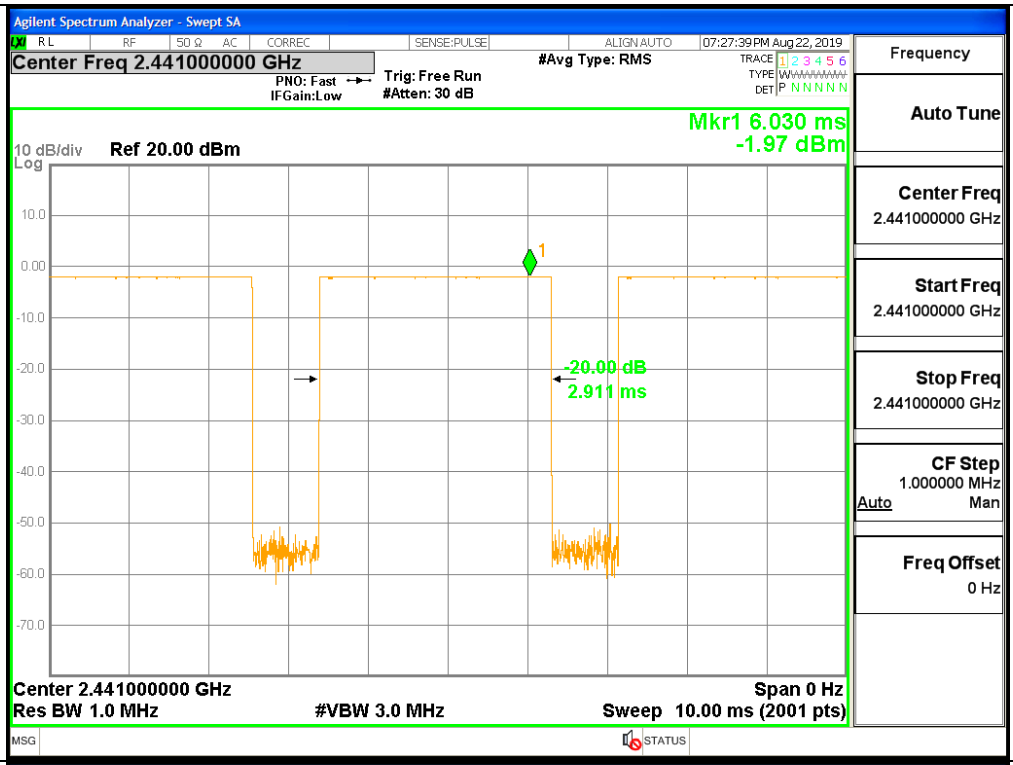
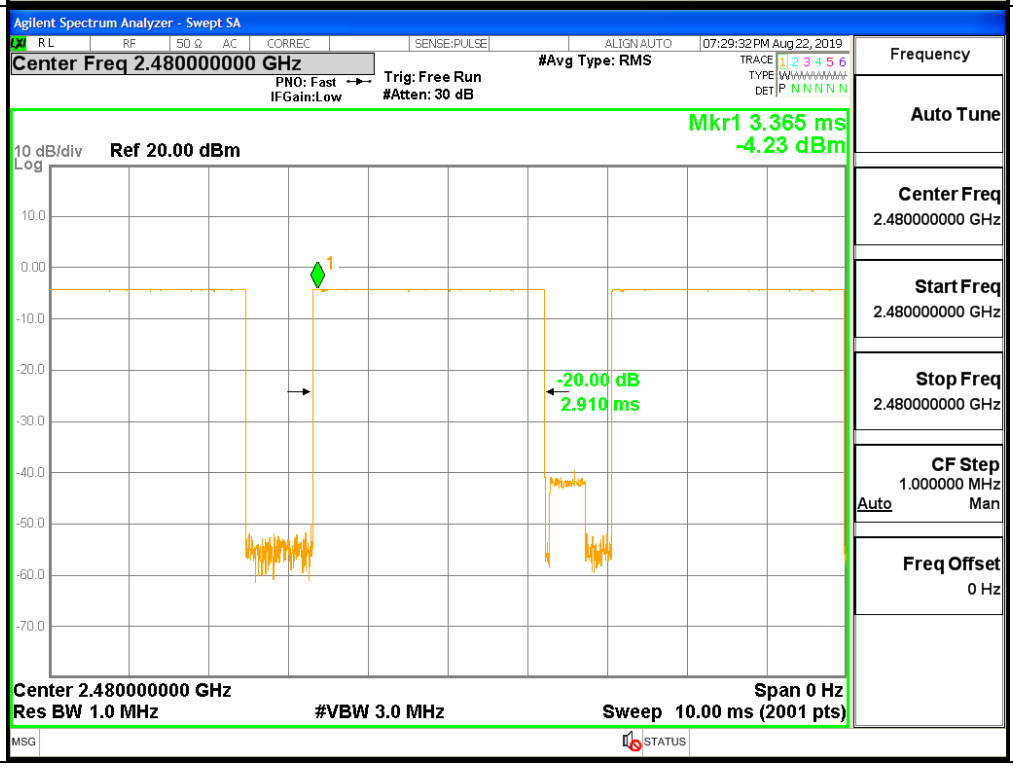
π/4DQPSK/MCH	
π/4DQPSK/HCH	

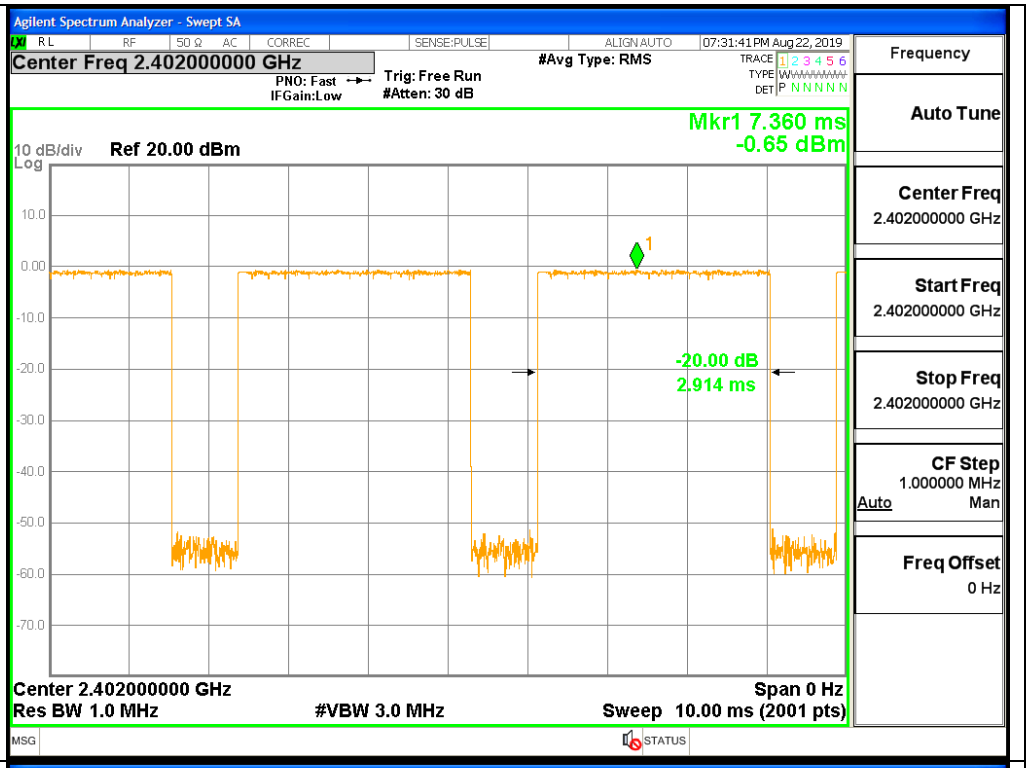
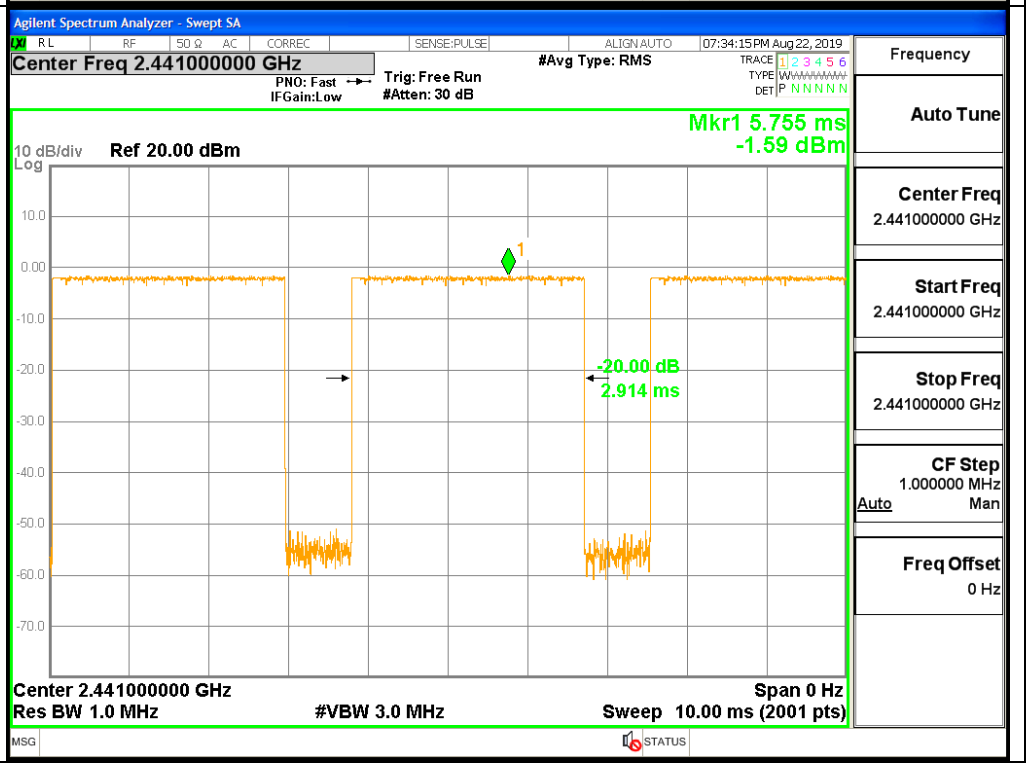
A.2 Dwell Time

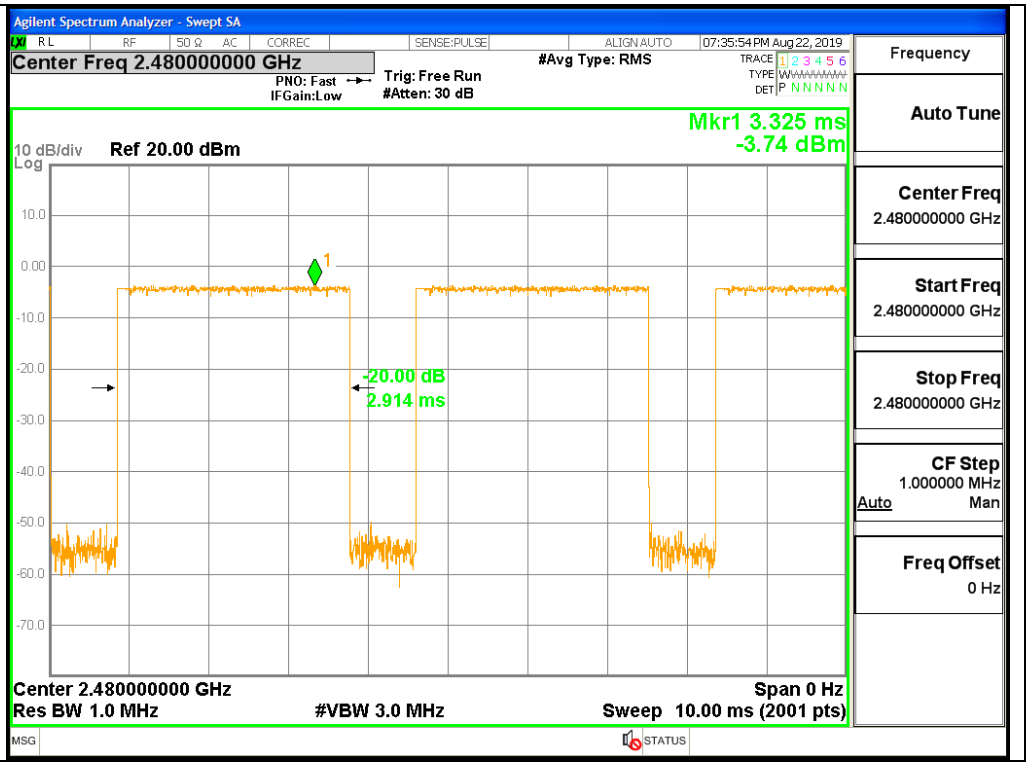
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002910	106.7	0.310451	0.4	PASS
GFSK	DH5	MCH	0.002911	106.7	0.310604	0.4	PASS
GFSK	DH5	HCH	0.002910	106.7	0.310462	0.4	PASS
π/4DQPSK	2DH5	LCH	0.002914	106.7	0.310958	0.4	PASS
π/4DQPSK	2DH5	MCH	0.002914	106.7	0.310973	0.4	PASS
π/4DQPSK	2DH5	HCH	0.002914	106.7	0.310975	0.4	PASS

Test Graph

Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

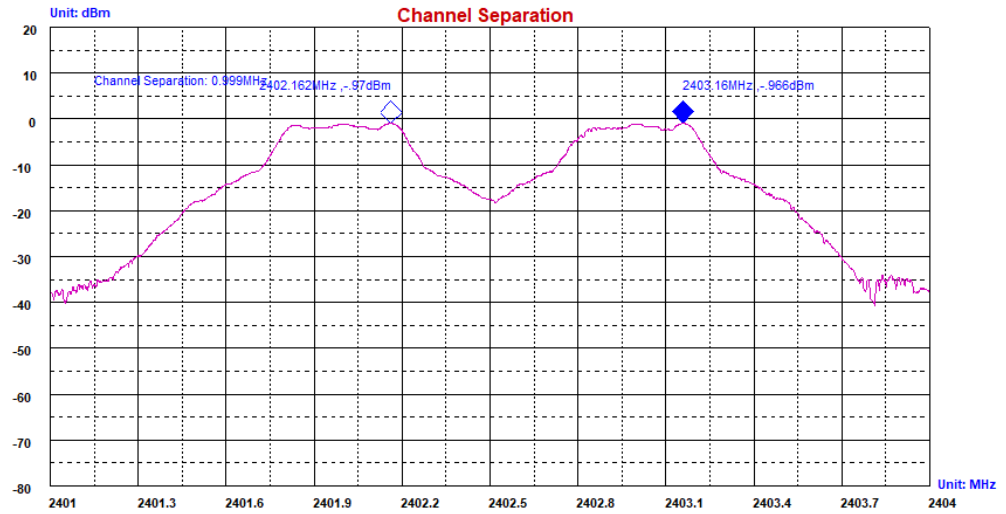
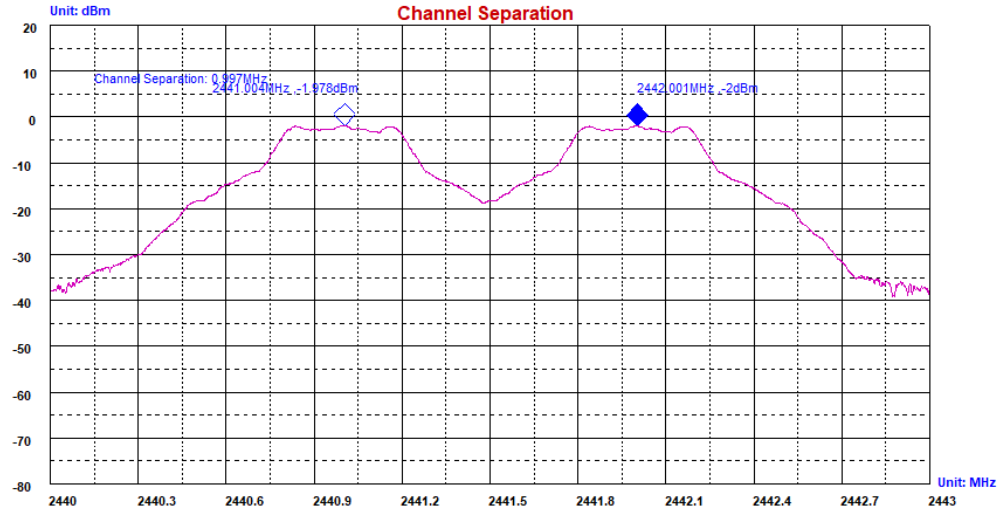
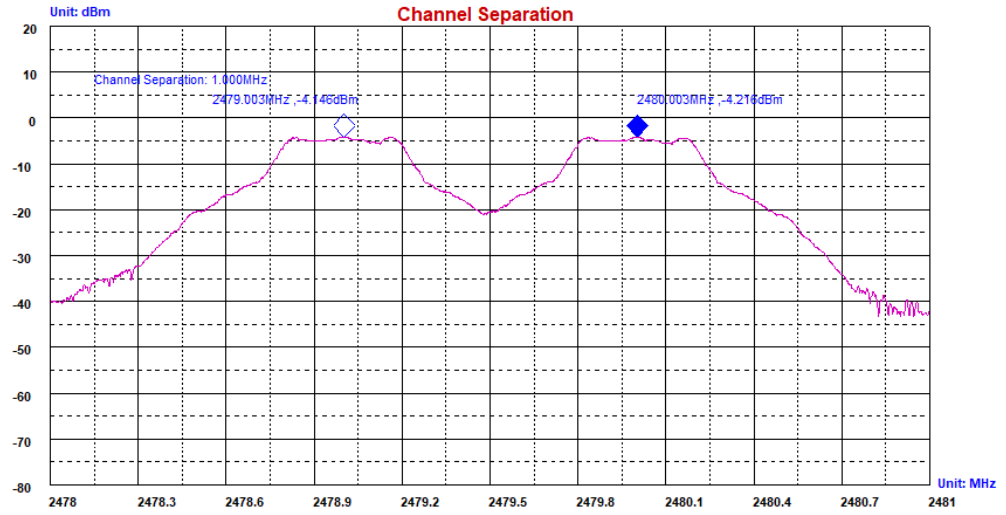
π/4DQPSK _2DH5/LCH	
π/4DQPSK _2DH5/MCH	

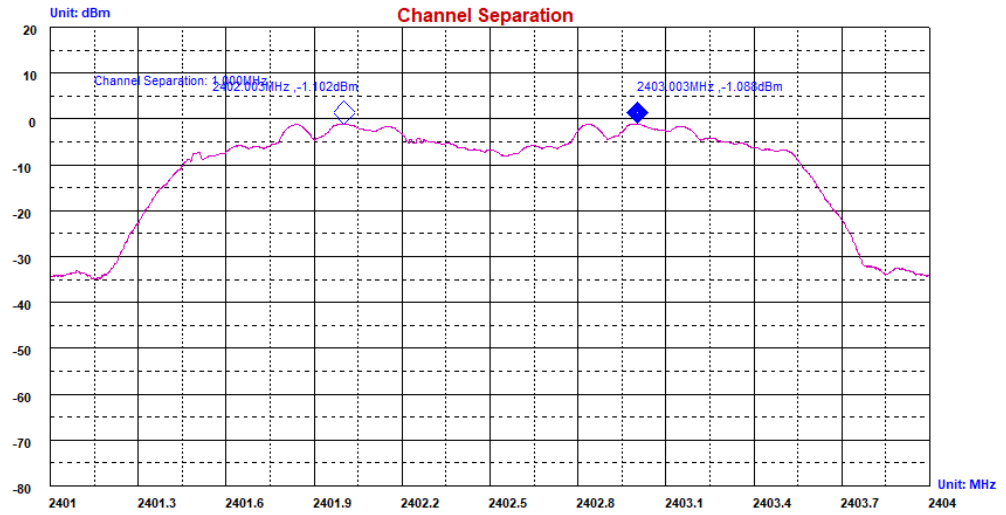
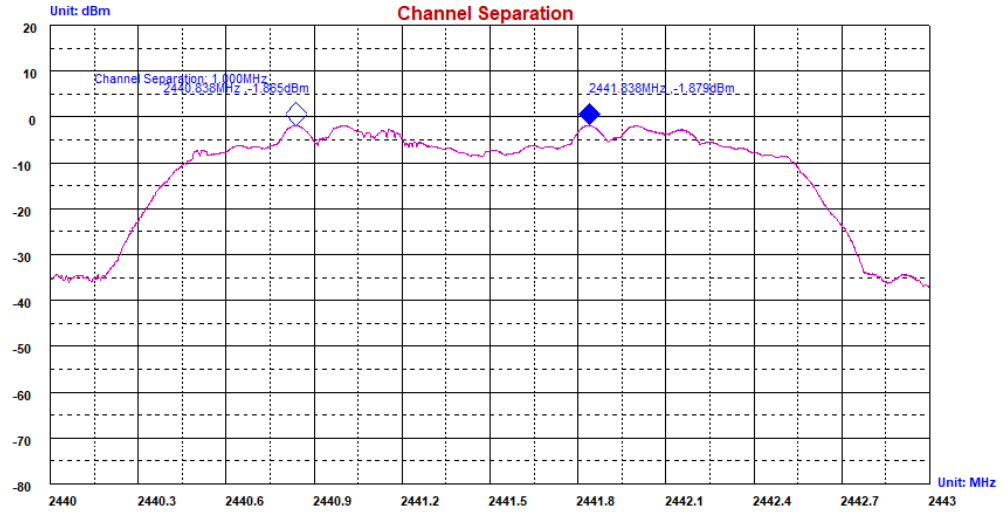
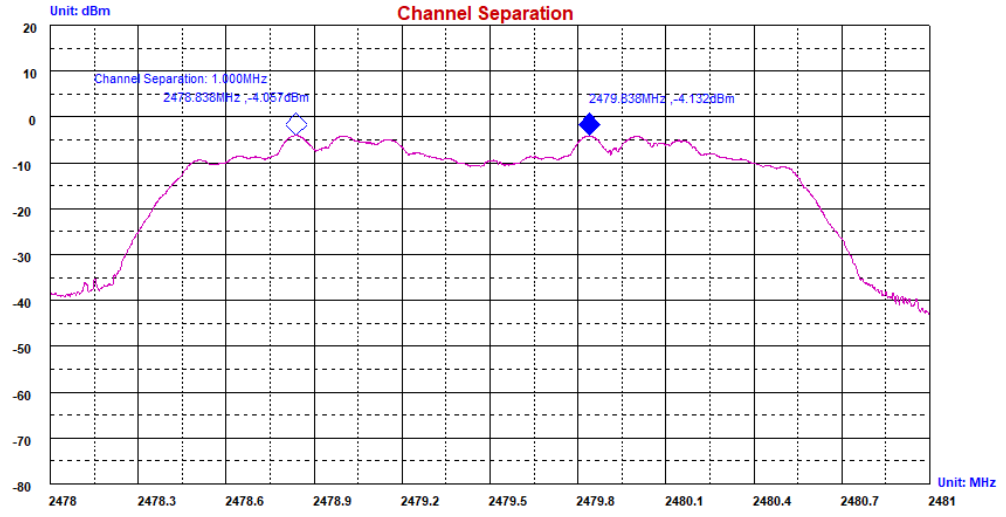
π/4DQPSK _2DH5/HCH	

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.566	PASS
GFSK	MCH	0.997	0.565	PASS
GFSK	HCH	1.000	0.567	PASS
π/4DQPSK	LCH	1.000	0.837	PASS
π/4DQPSK	MCH	1.000	0.835	PASS
π/4DQPSK	HCH	1.000	0.812	PASS

Test Graph

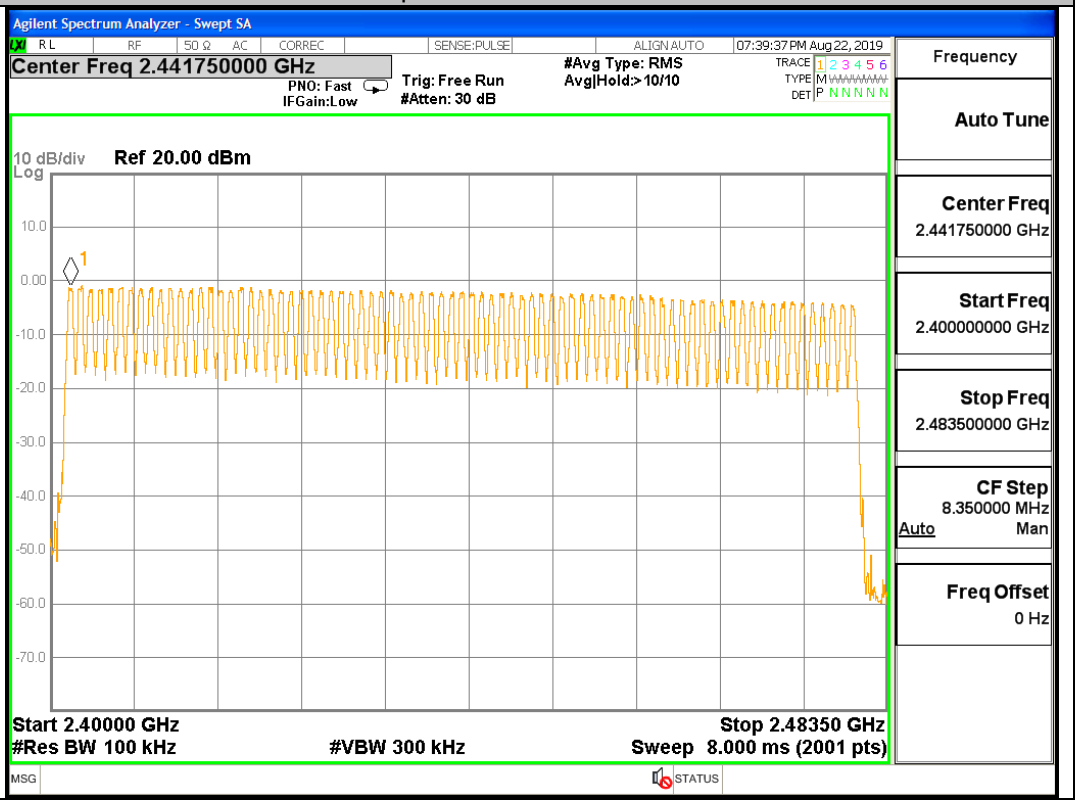
Graphs	
GFSK/LCH	
GFSK/MCH	
GFSK/HCH	

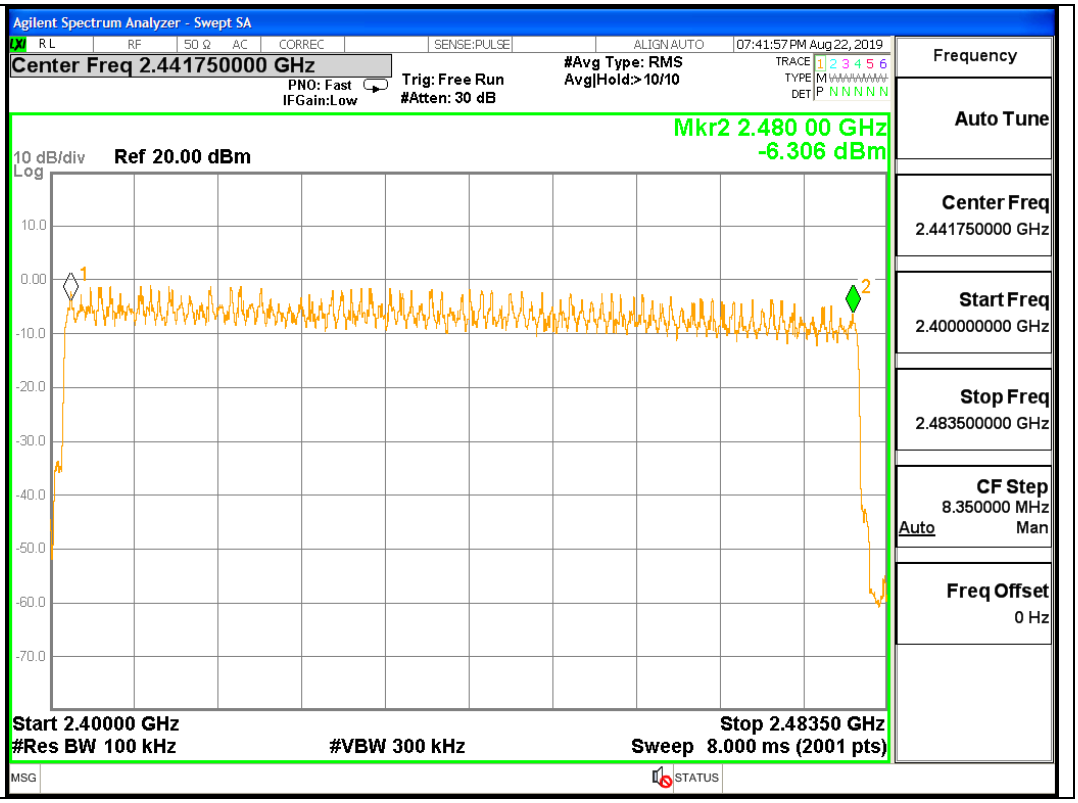
π/4DQPSK/LCH	
π/4DQPSK/MCH	
π/4DQPSK/HCH	

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

Test Graph

Graphs	
GFSK/Hop	

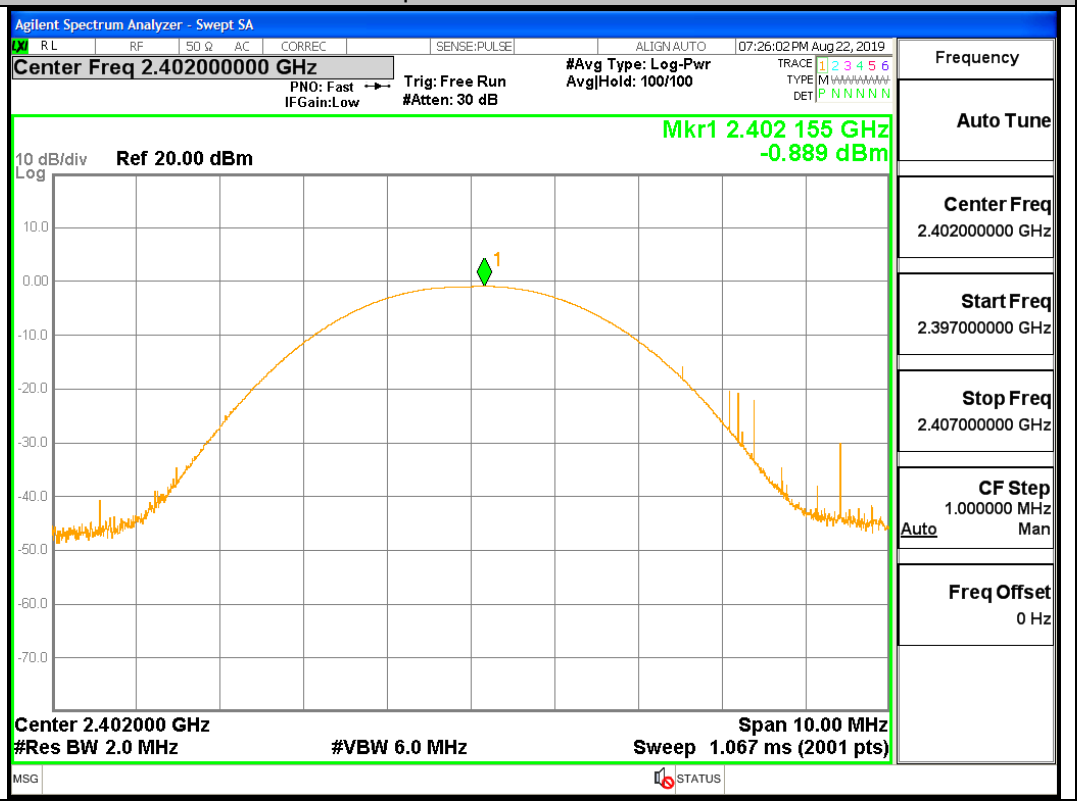
π/4DQPSK/Hop	

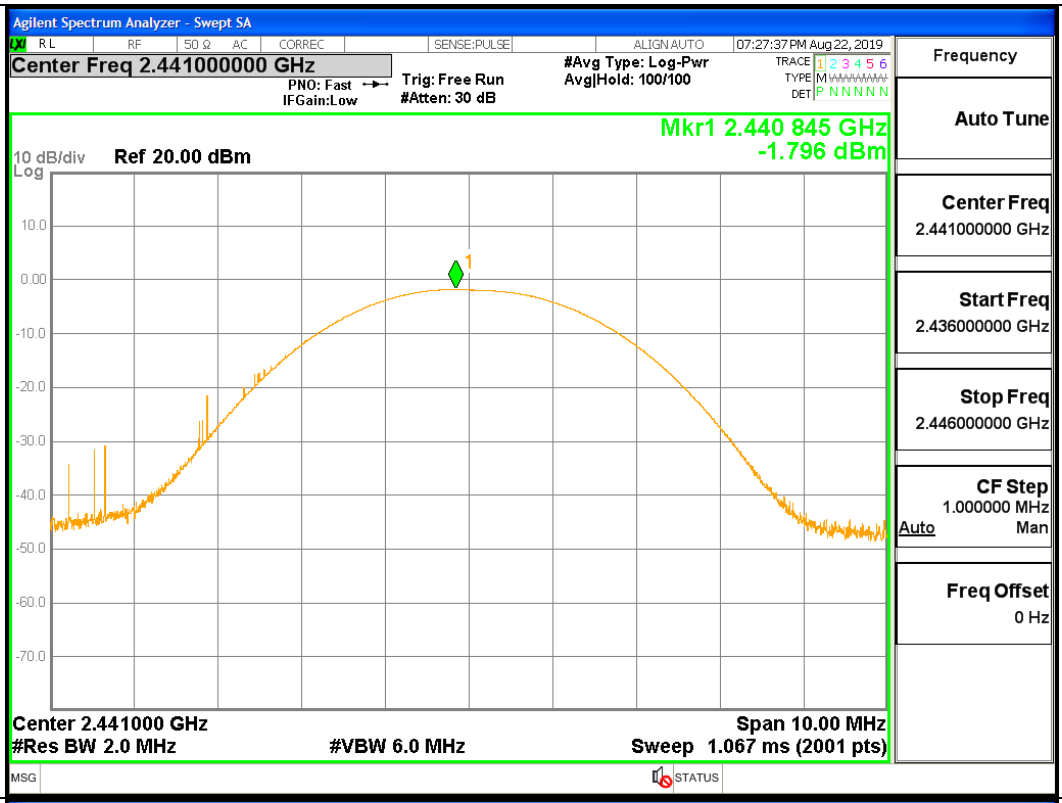
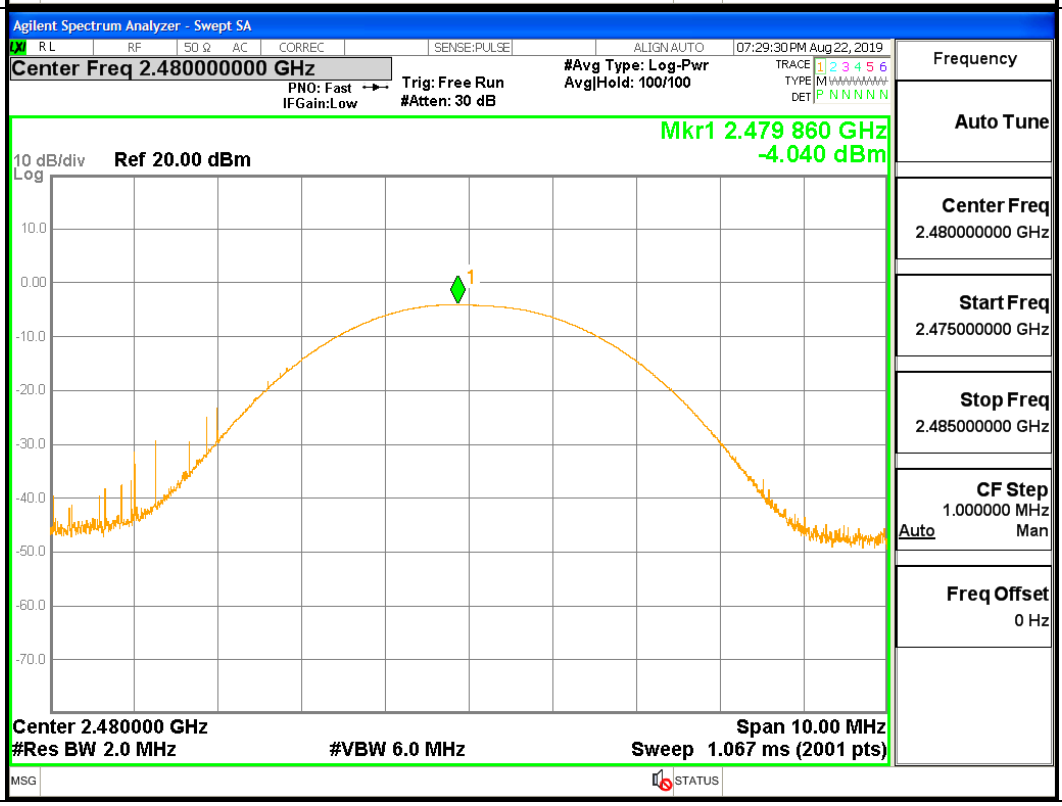
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
CORREC
SENSE:PULSE
ALIGN AUTO
07:41:57 PM Aug 22, 2019
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold:>10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr2 2.480 00 GHz
-6.306 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (2001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.441750000 GHz
Start Freq
2.400000000 GHz
Stop Freq
2.483500000 GHz
CF Step
8.350000 MHz
Auto
Man
Freq Offset
0 Hz

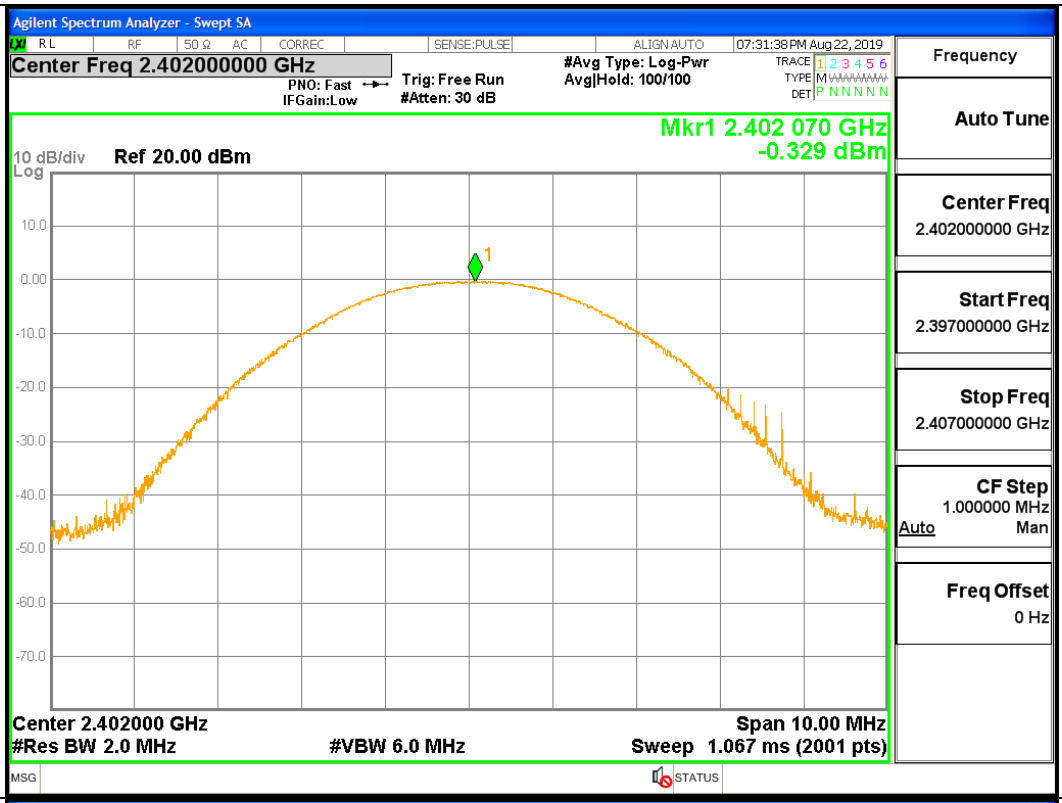
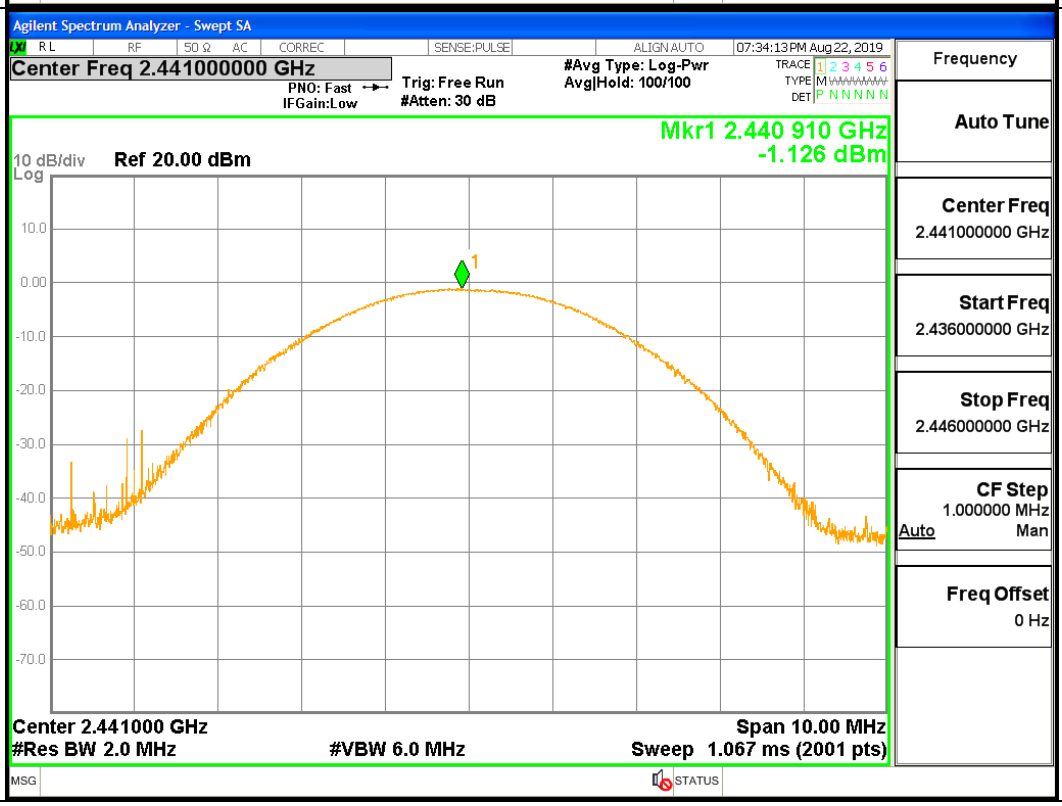
A.5 Conducted Peak Output Power

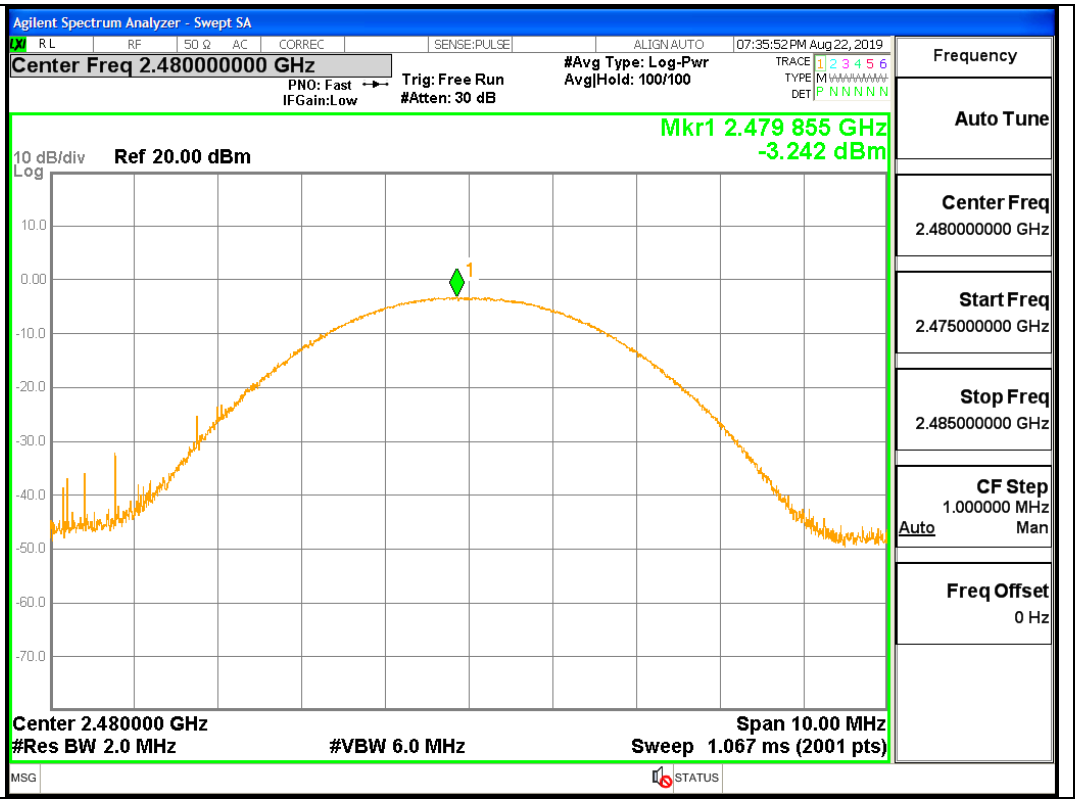
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.889	21	PASS
GFSK	MCH	-1.796	21	PASS
GFSK	HCH	-4.040	21	PASS
π/4DQPSK	LCH	-0.329	21	PASS
π/4DQPSK	MCH	-1.126	21	PASS
π/4DQPSK	HCH	-3.242	21	PASS

Test Graph

Graphs	
GFSK/LCH	

GFSK/MCH	
GFSK/HCH	

π/4DQPSK/LCH	
π/4DQPSK/MCH	

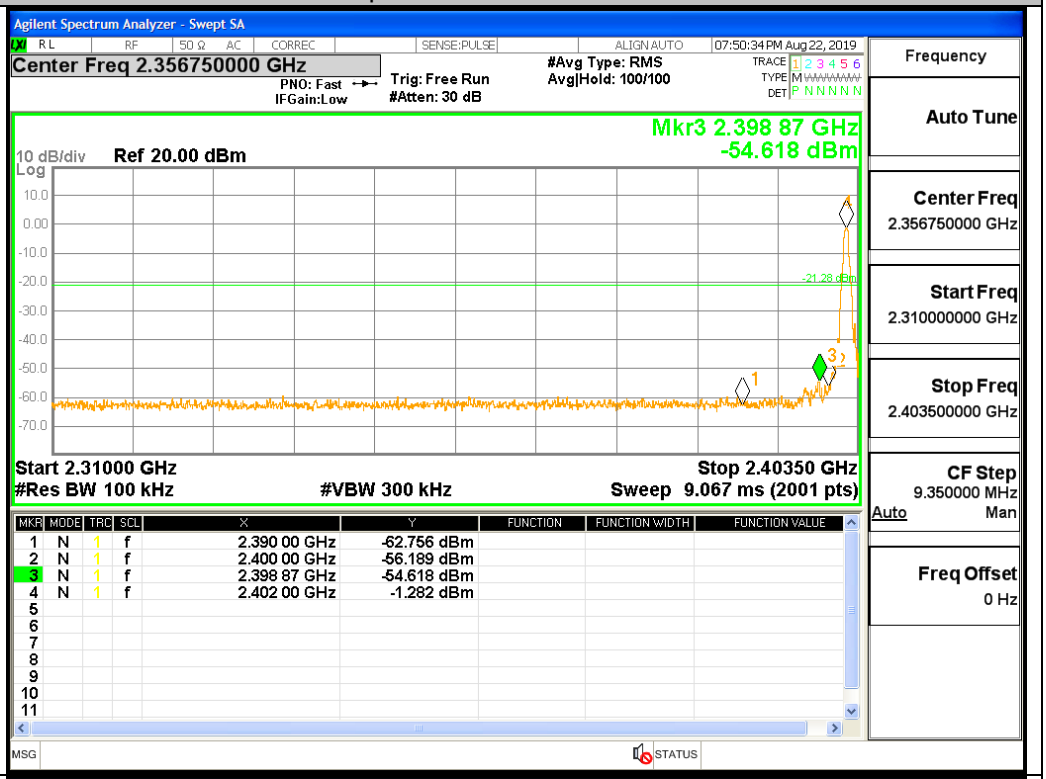
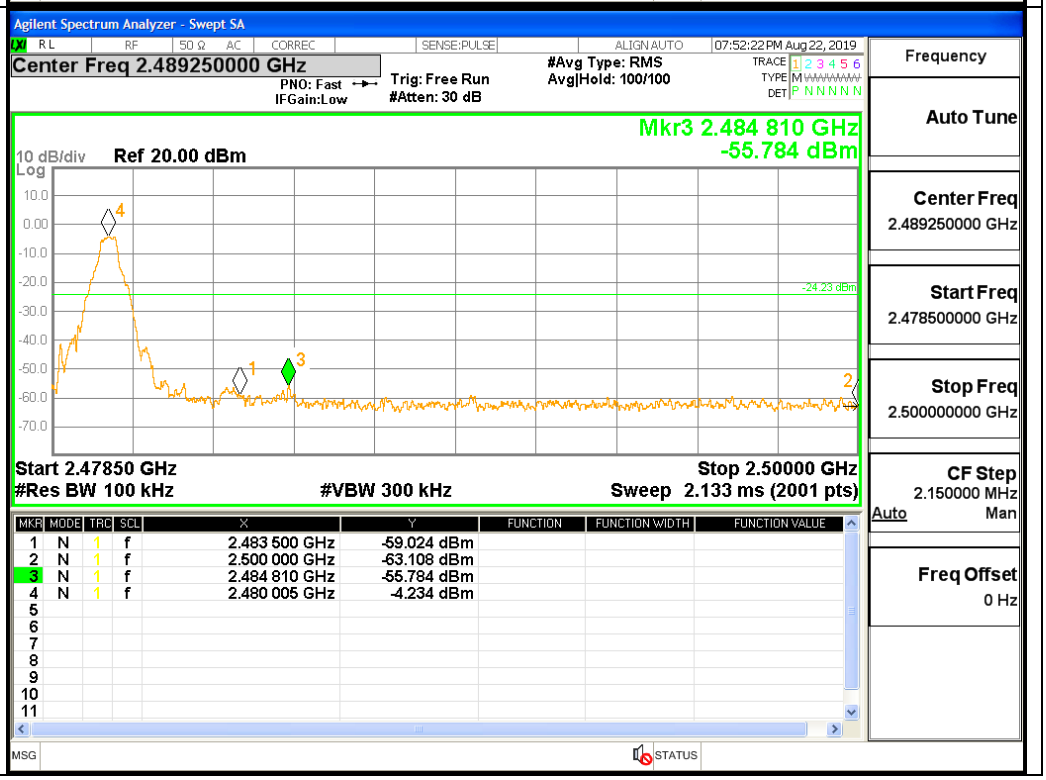
π/4DQPSK/HCH	

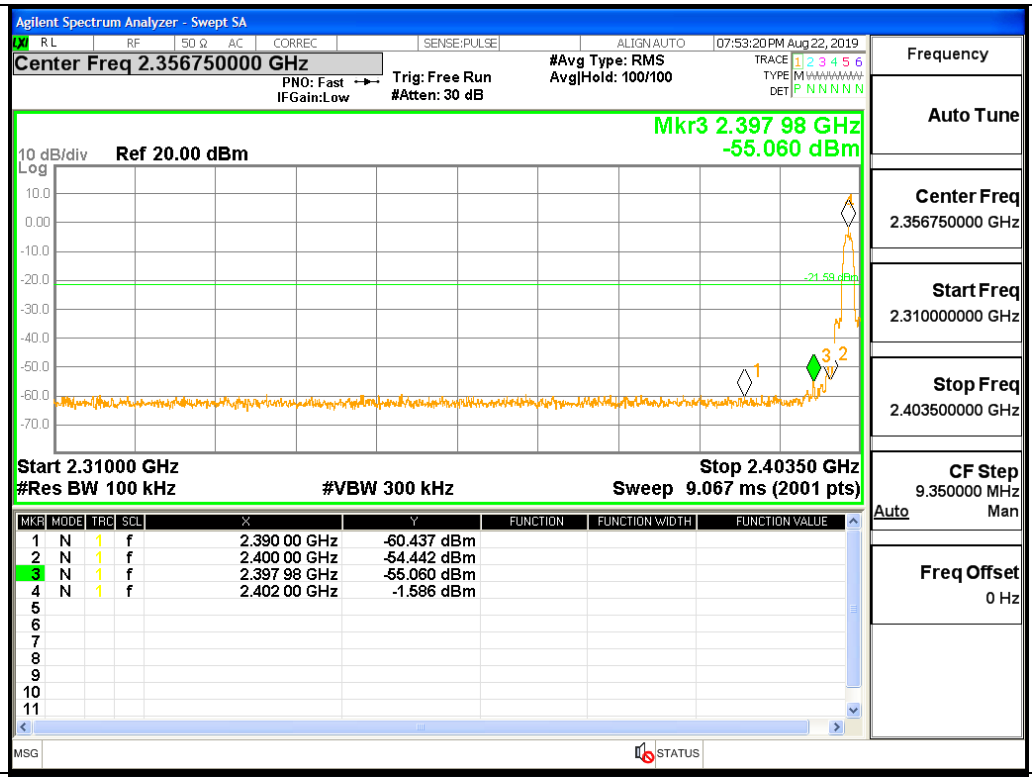
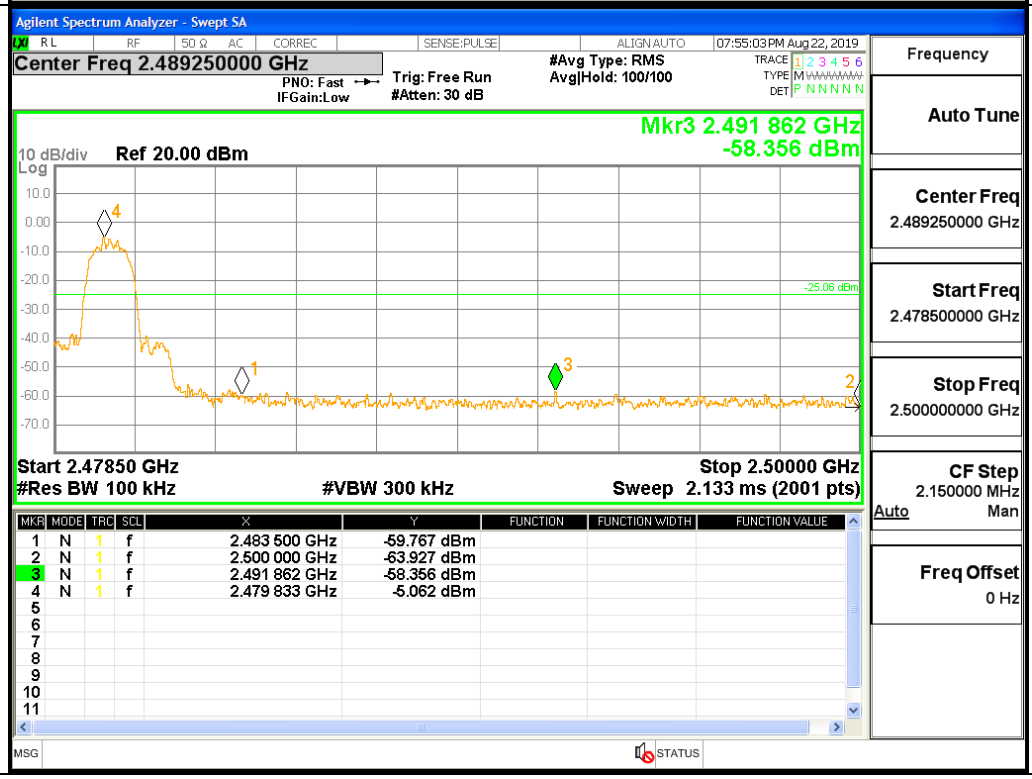
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
CORREC
SENSE:PULSE
ALIGN AUTO
07:35:52 PM Aug 22, 2019
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: Log-Pwr
Avg|Hold: 100/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.479 855 GHz
-3.242 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.480000 GHz
#Res BW 2.0 MHz
#VBW 6.0 MHz
Span 10.00 MHz
Sweep 1.067 ms (2001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.485000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

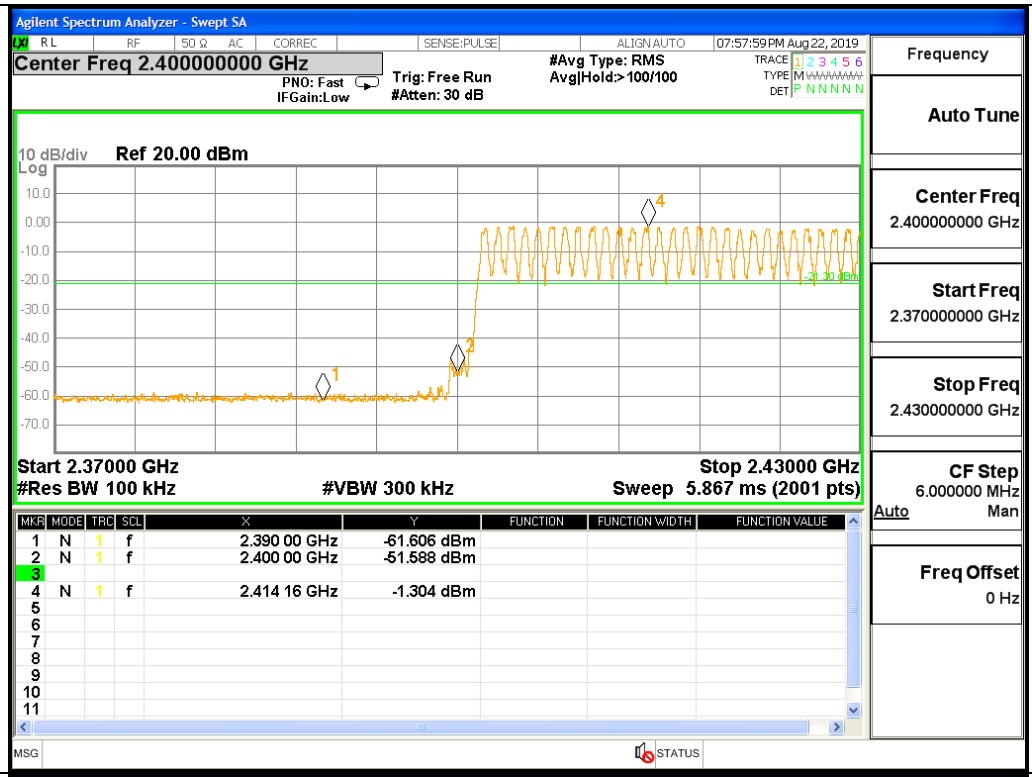
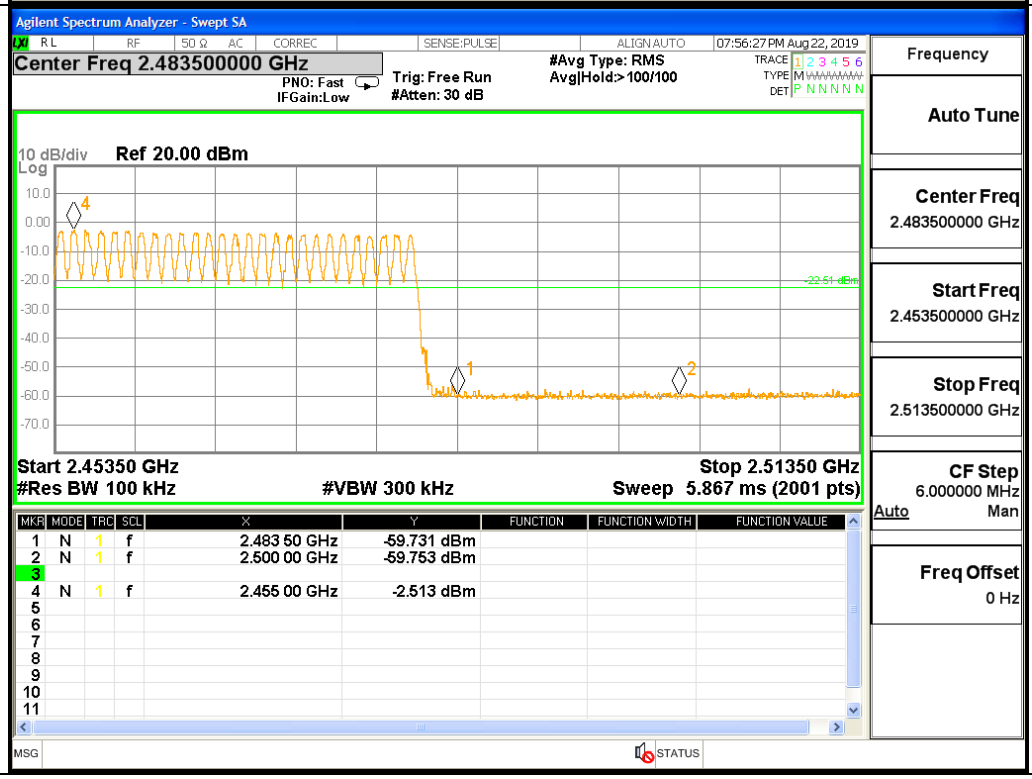
A.6 Band-edge for RF Conducted Emissions

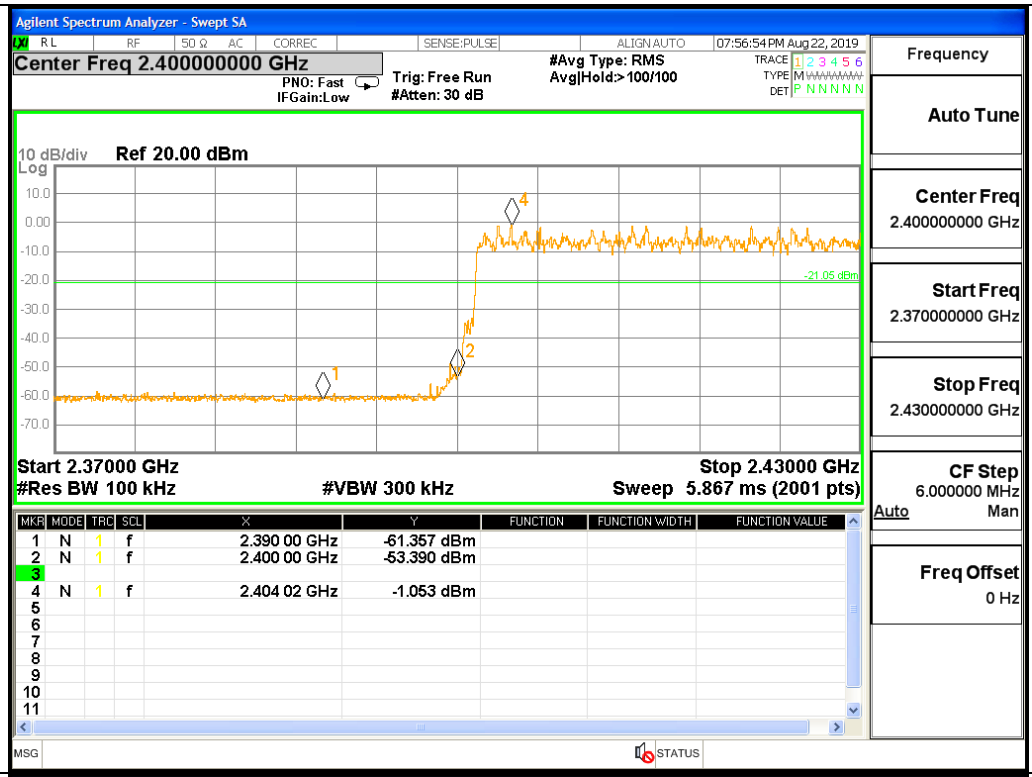
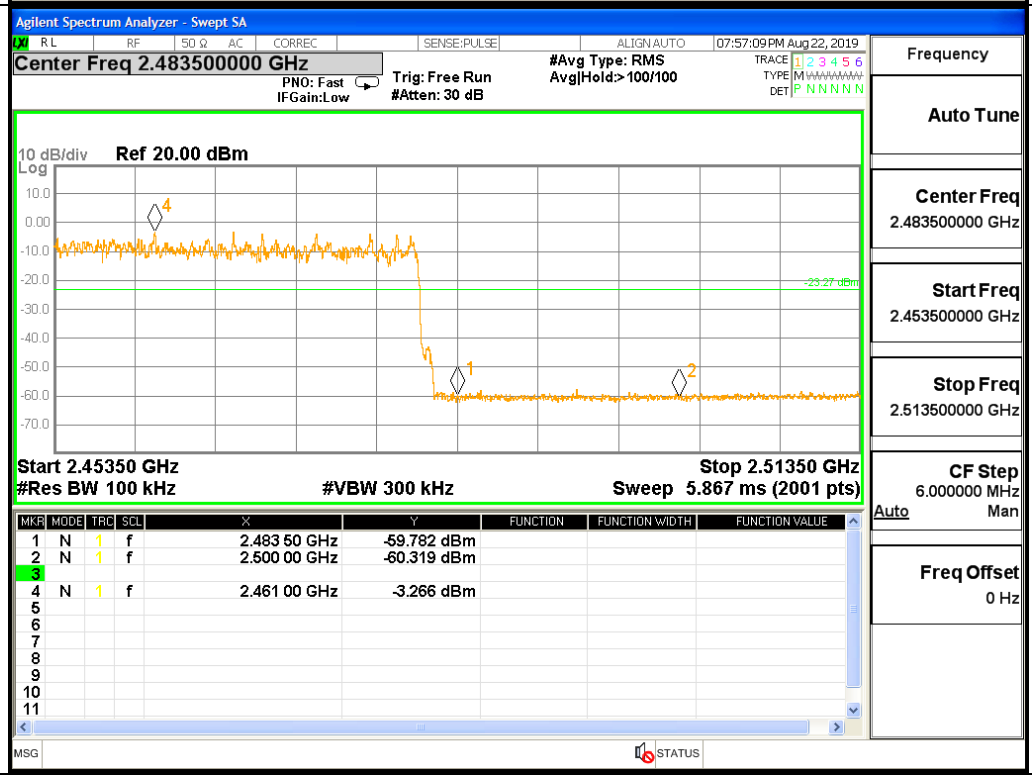
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2398.872	-1.282	-54.618	-21.282	Pass
1DH5	2480	2484.81	-4.234	-55.784	-24.234	Pass
2DH5	2402	2400	-1.586	-54.44	-21.586	Pass
2DH5	2480	2491.862	-5.062	-58.356	-25.062	Pass
1DH5-Hopping	2402	2400	-1.304	-51.59	-21.304	Pass
1DH5-Hopping	2480	2483.5	-2.513	-59.73	-22.513	Pass
2DH5-Hopping	2402	2400	-1.053	-53.39	-21.053	Pass
2DH5-Hopping	2480	2483.5	-3.266	-59.78	-23.266	Pass

Test Graph

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

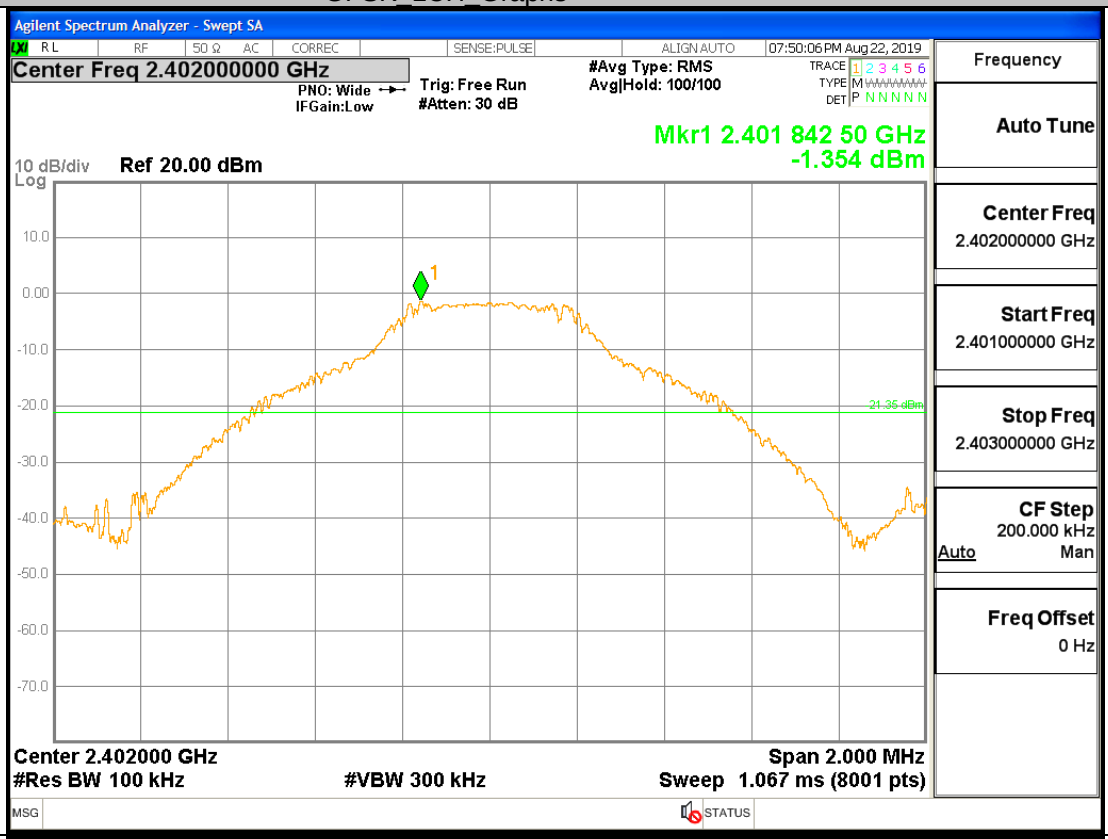
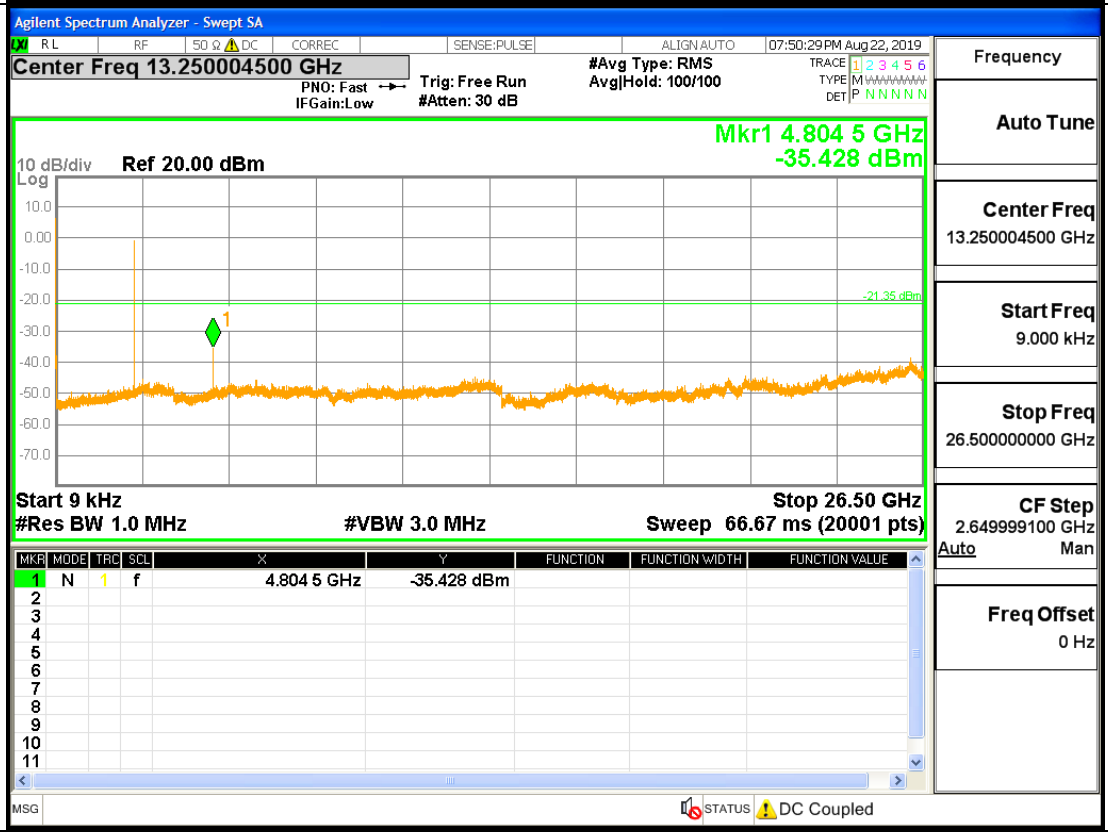
π/4DQPSK/LCH/No Hop	
π/4DQPSK/HCH/No Hop	

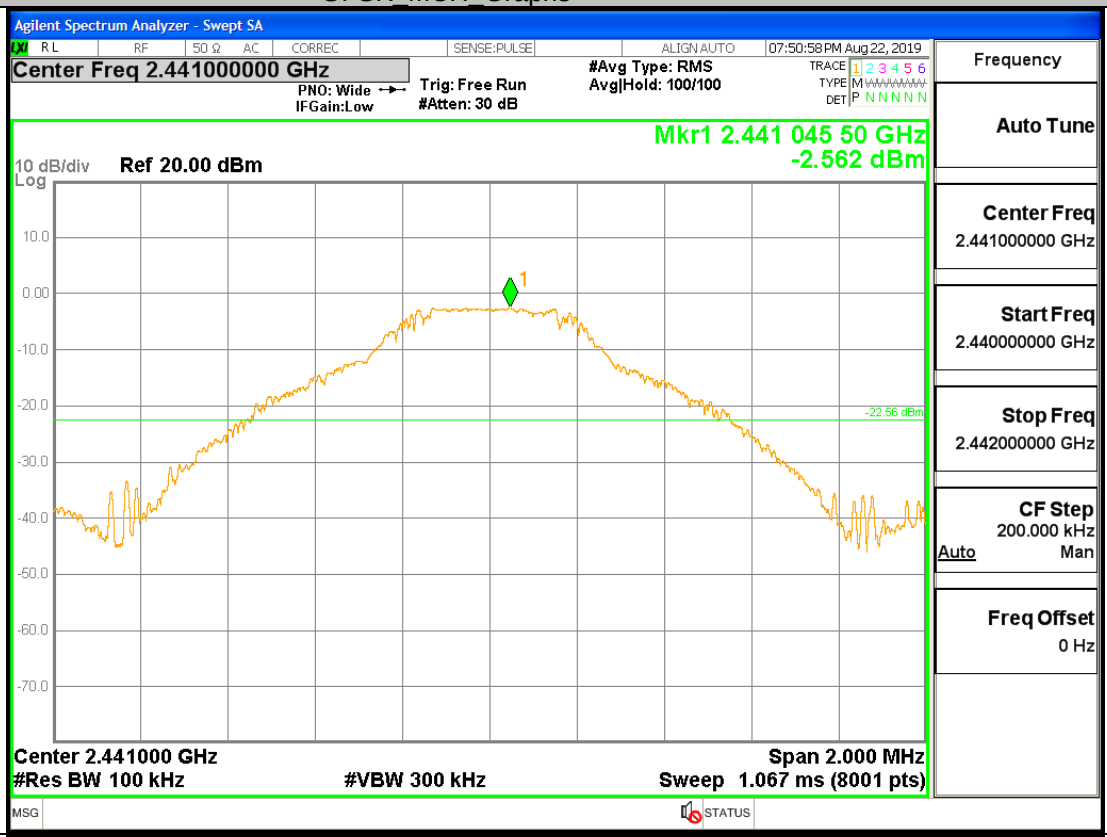
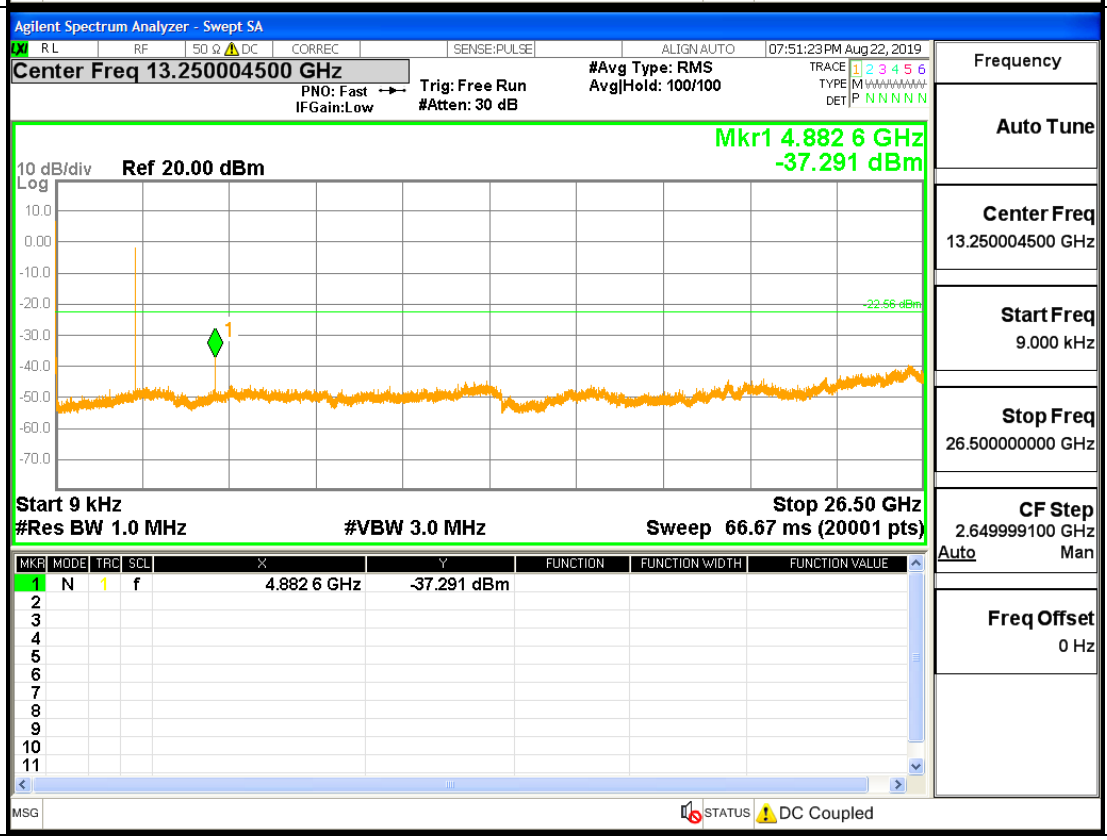
GFSK/LCH/Hop	
GFSK/HCH/Hop	

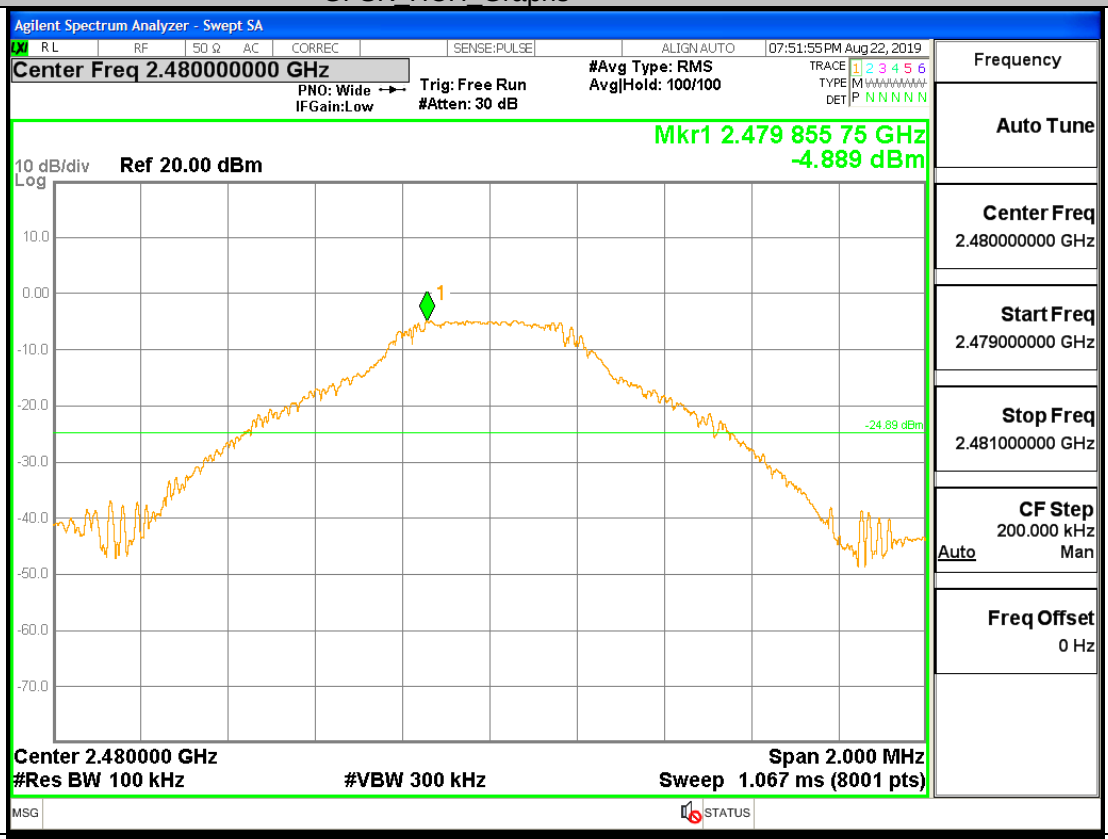
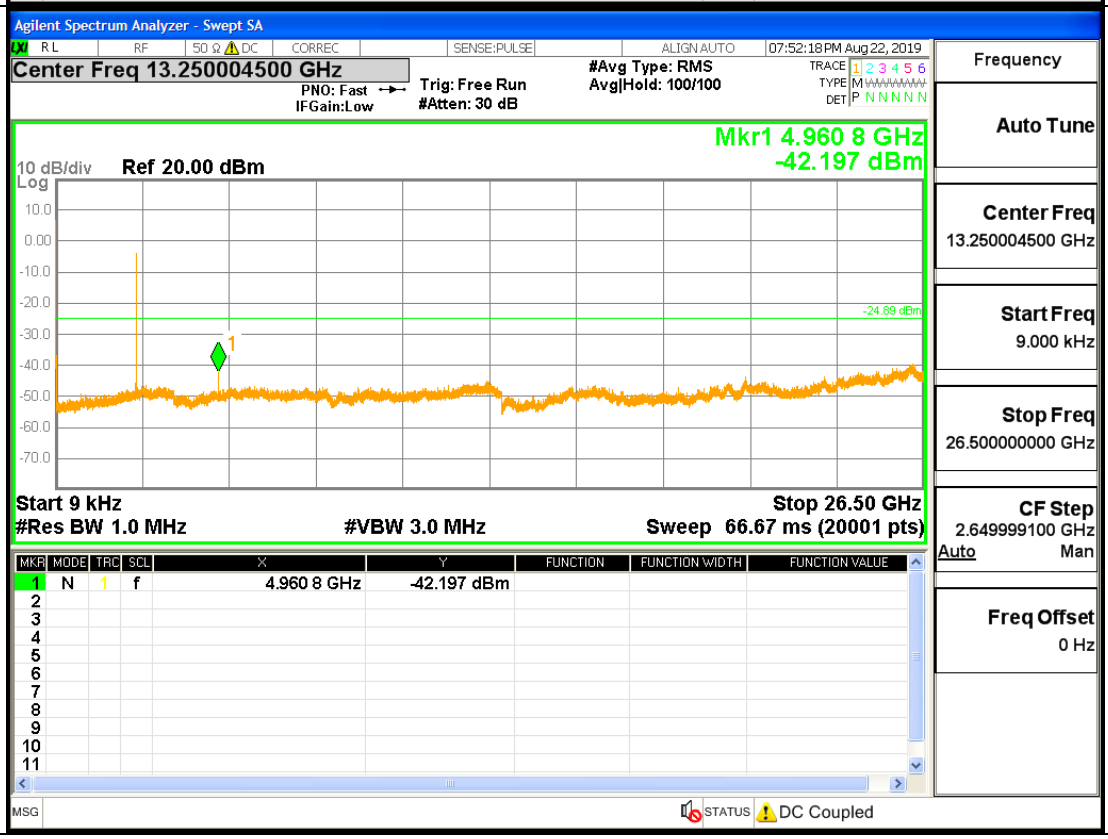
π/4DQPSK/LCH/Hop	
π /4DQPSK/HCH/Hop	

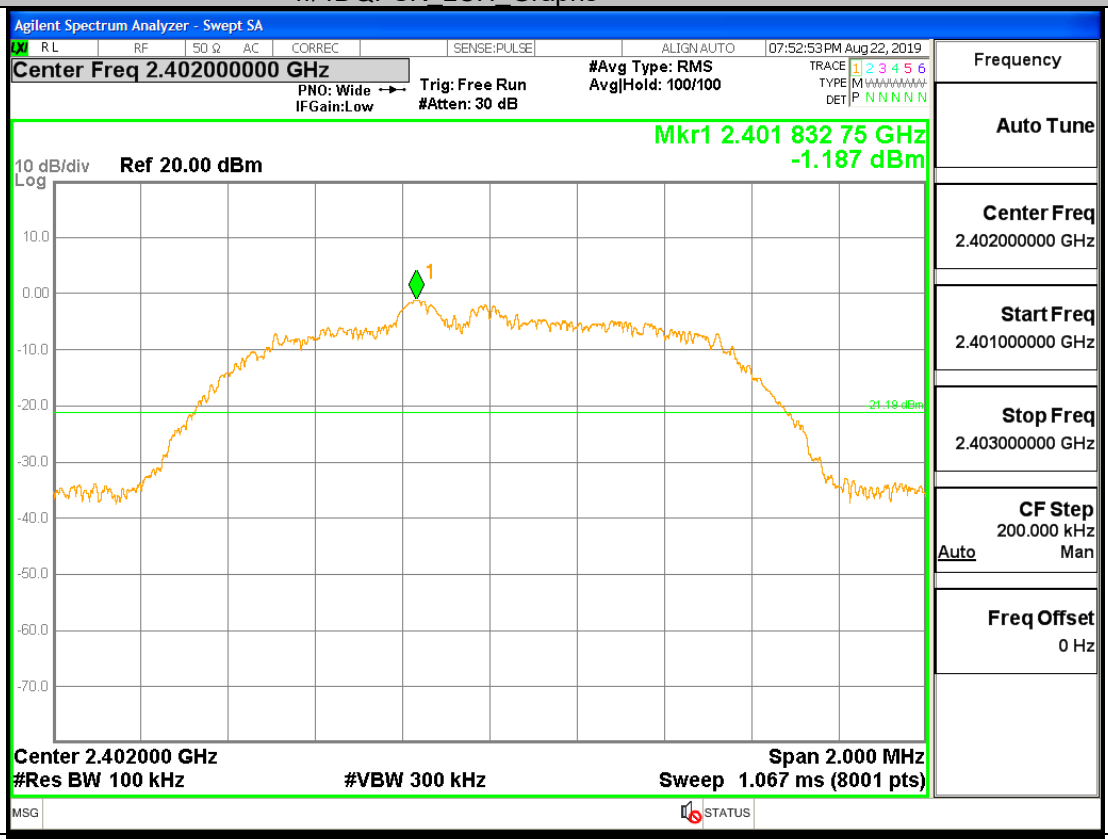
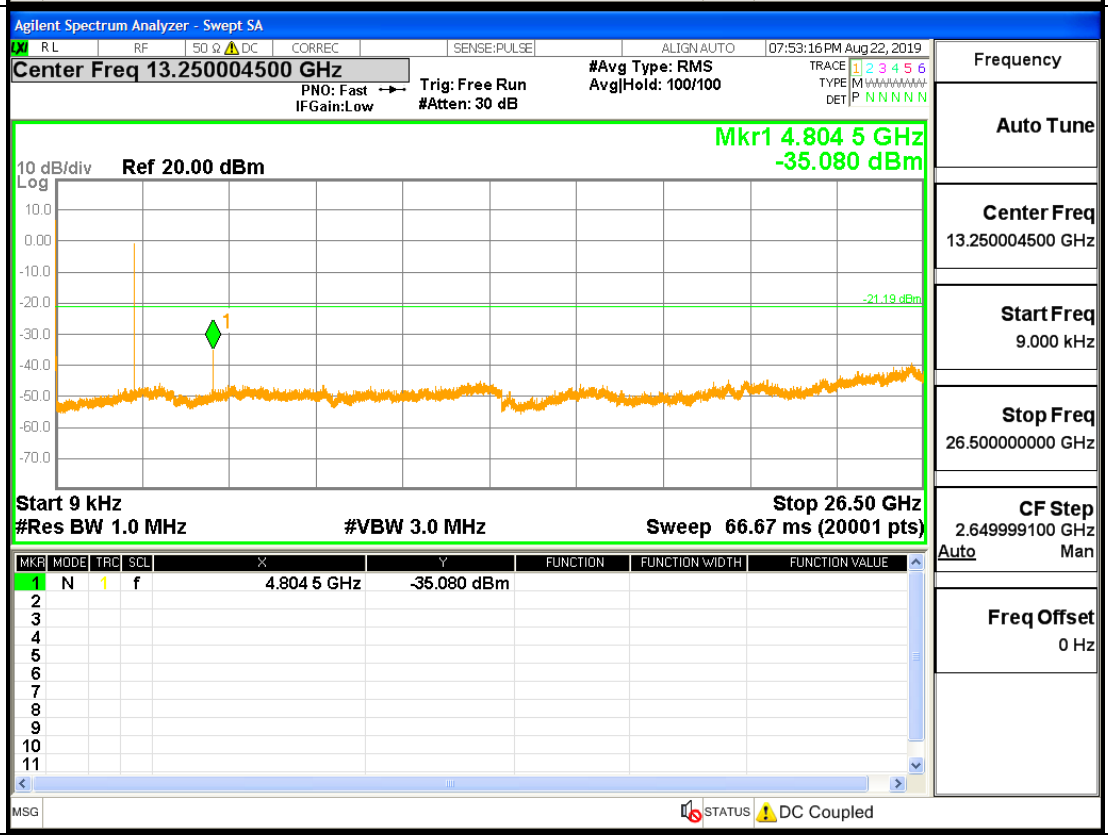
A.7 RF Conducted Spurious Emissions

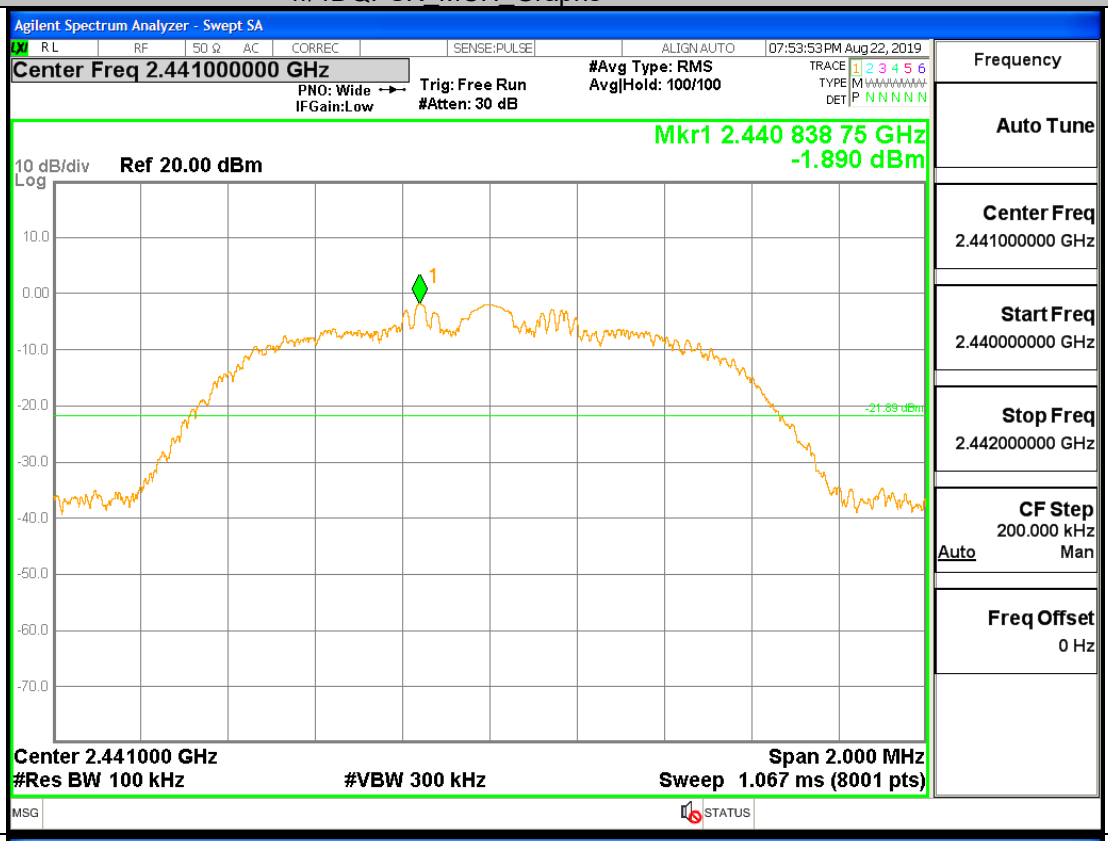
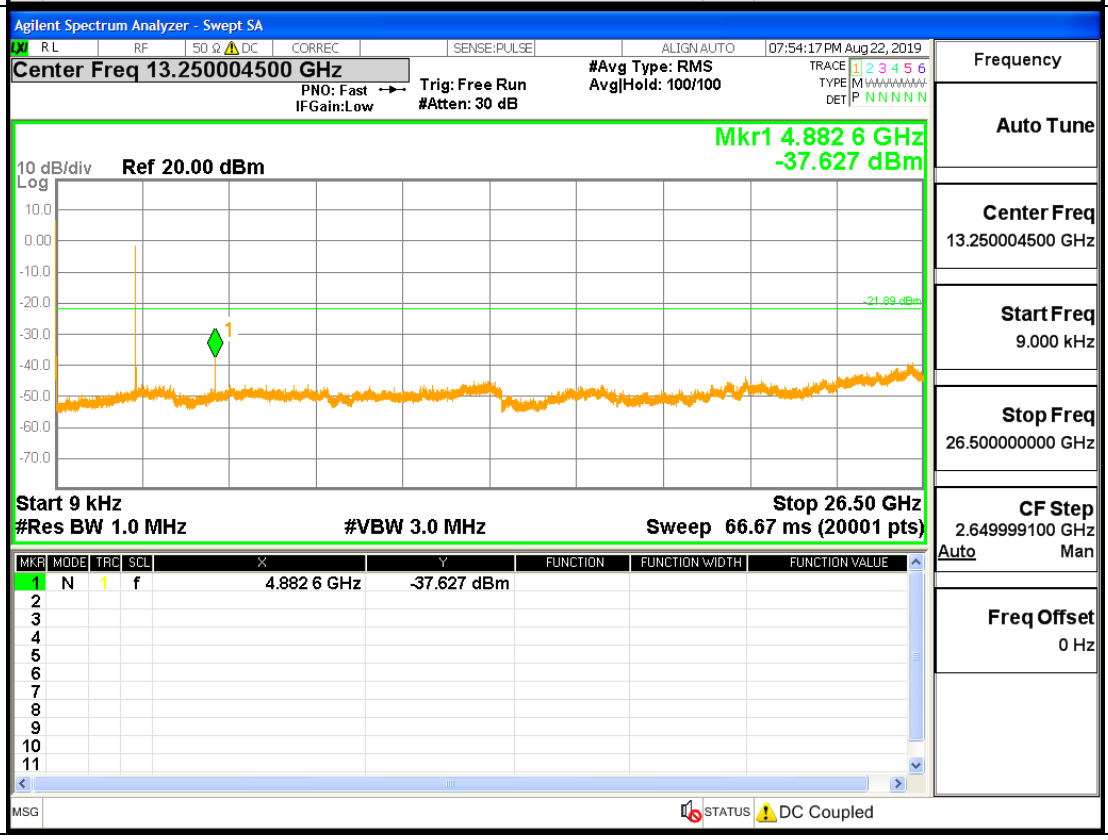
Test Graph

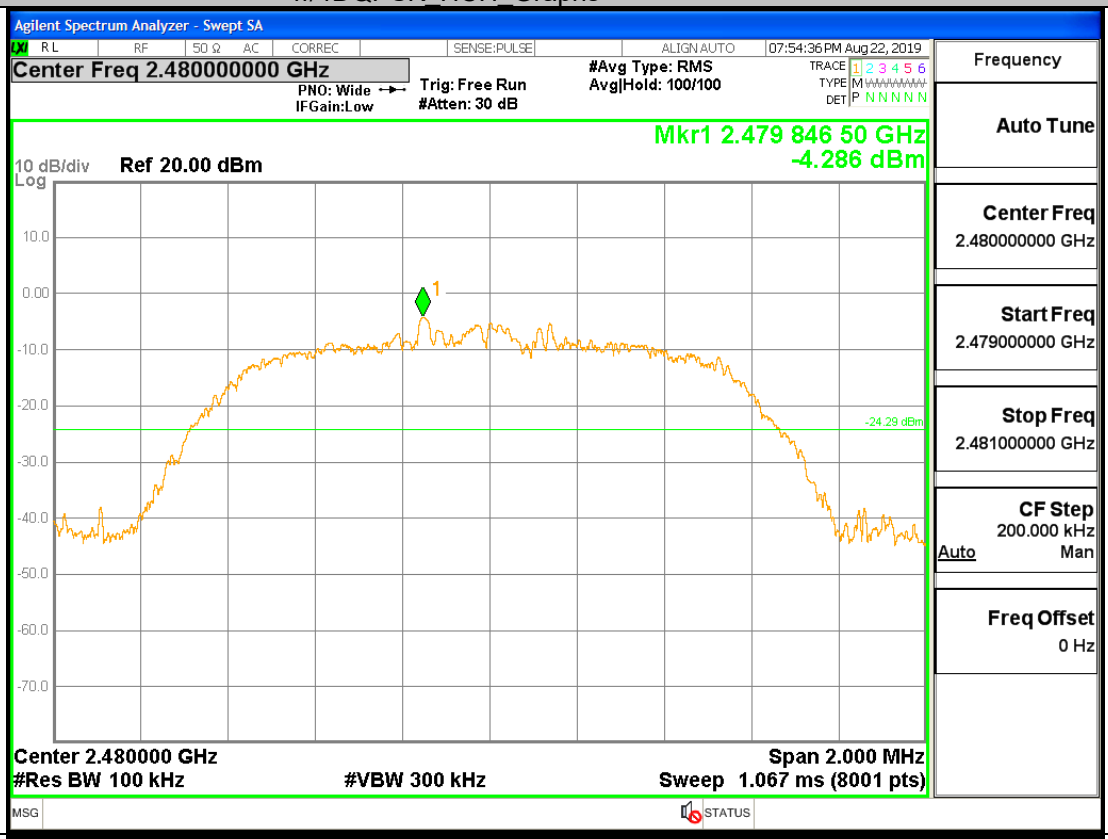
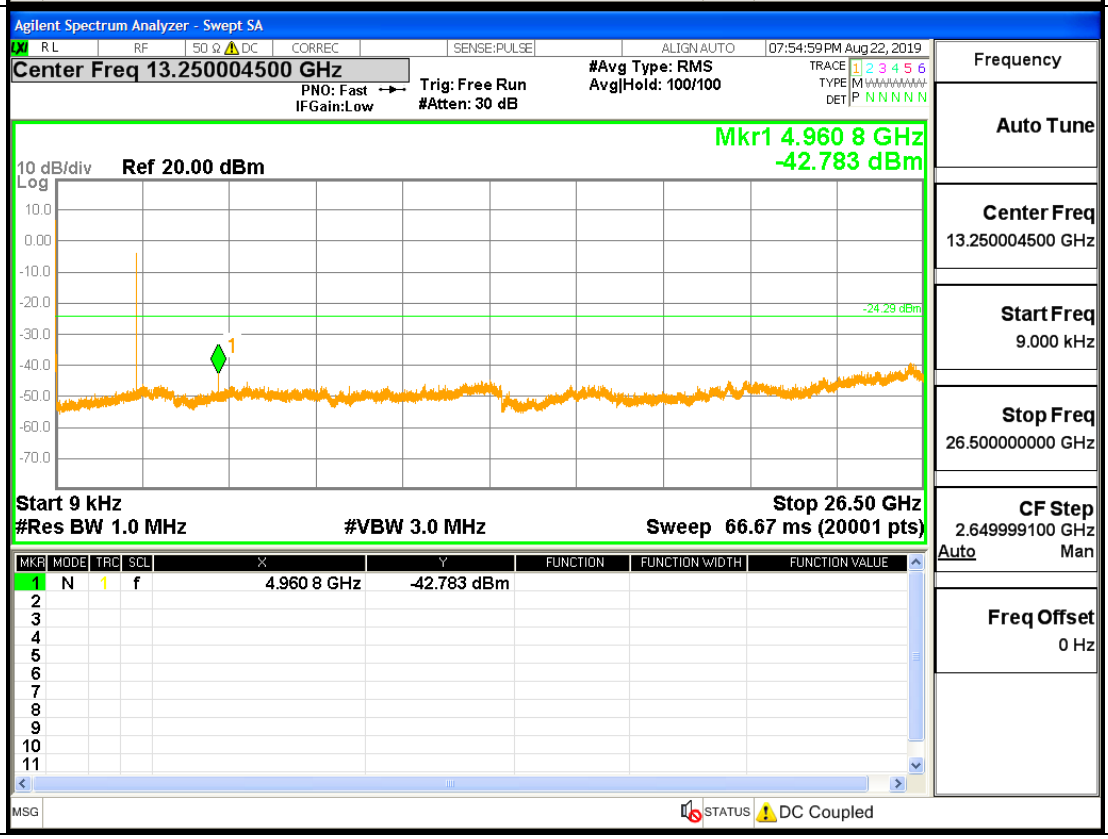
GFSK_LCH_Graphs	
Pref	
Puw	

GFSK_MCH_Graphs	
Pref	
Puw	

GFSK_HCH_Graphs	
Pref	
Puw	

π/4DQPSK_LCH_Graphs	
Pref	
Puw	

π/4DQPSK_MCH_Graphs	
Pref	
Puw	

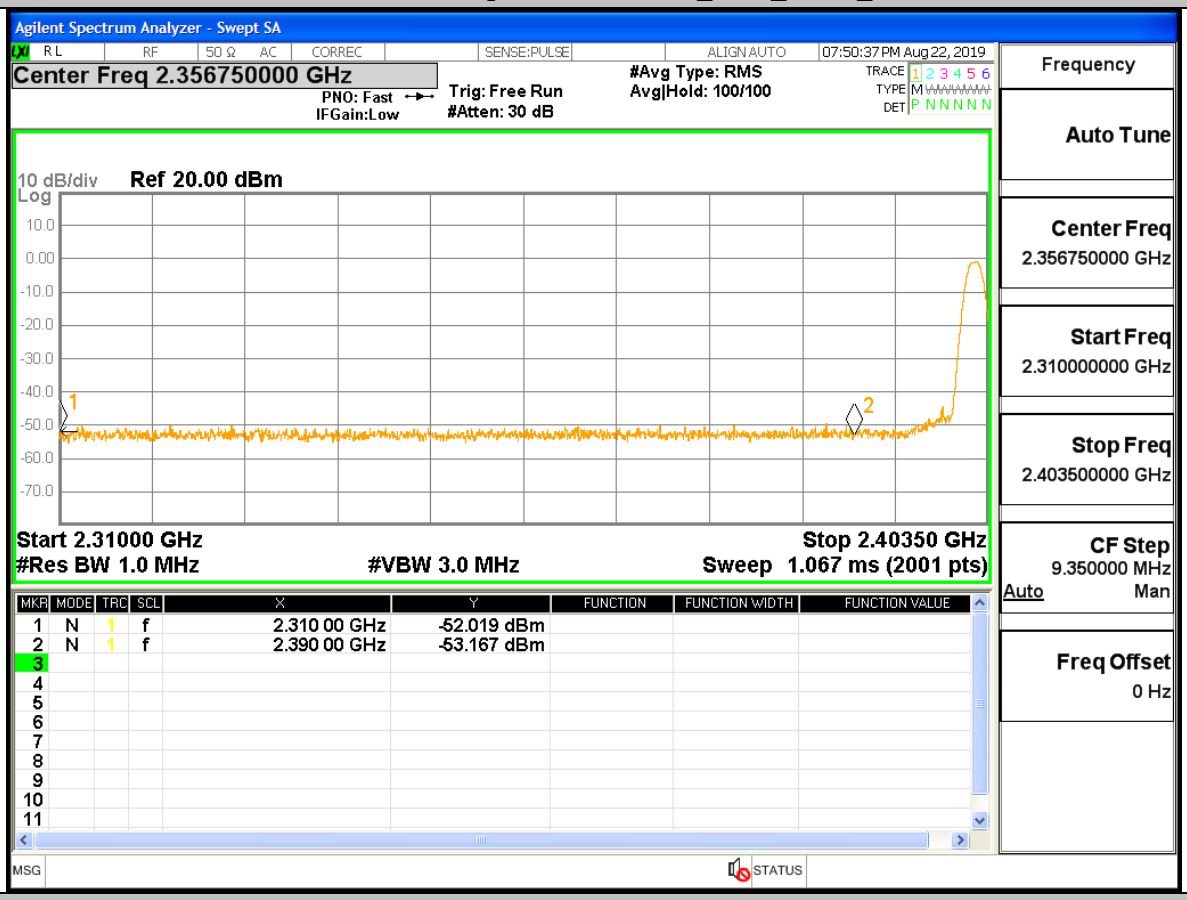
π/4DQPSK_HCH_Graphs	
Pref	
Puw	

A.8 Restrict-band band-edge measurements

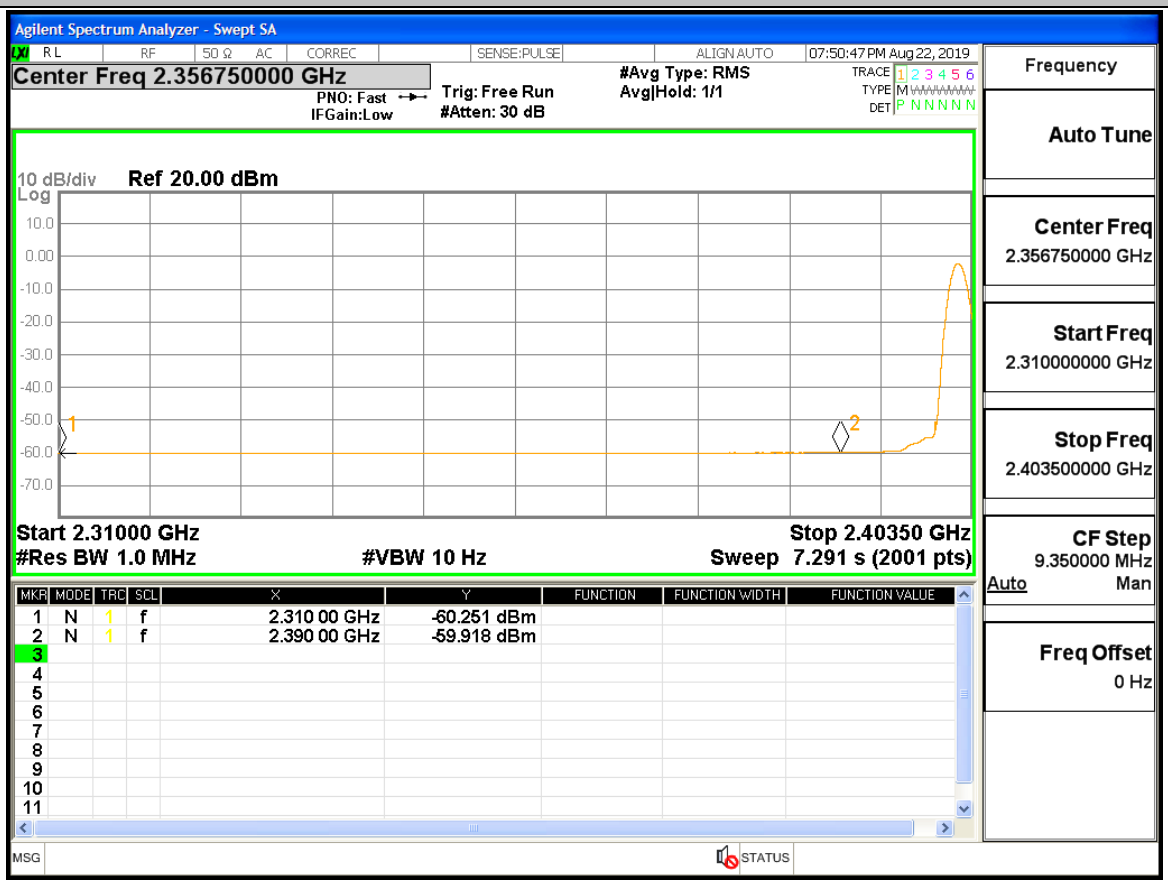
Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2310.00	2.00	0.00	-52.02	45.18	74	Pass
1DH5	2480	2483.50	2.00	0.00	-49.73	47.47	74	Pass
2DH5	2402	2310.00	2.00	0.00	-52.35	44.85	74	Pass
2DH5	2480	2483.50	2.00	0.00	-49.44	47.76	74	Pass

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2310.00	2.00	0.00	-59.92	37.28	54	Pass
1DH5	2480	2483.50	2.00	0.00	-56.88	40.32	54	Pass
2DH5	2402	2310.00	2.00	0.00	-59.90	37.30	54	Pass
2DH5	2480	2483.50	2.00	0.00	-57.18	40.02	54	Pass

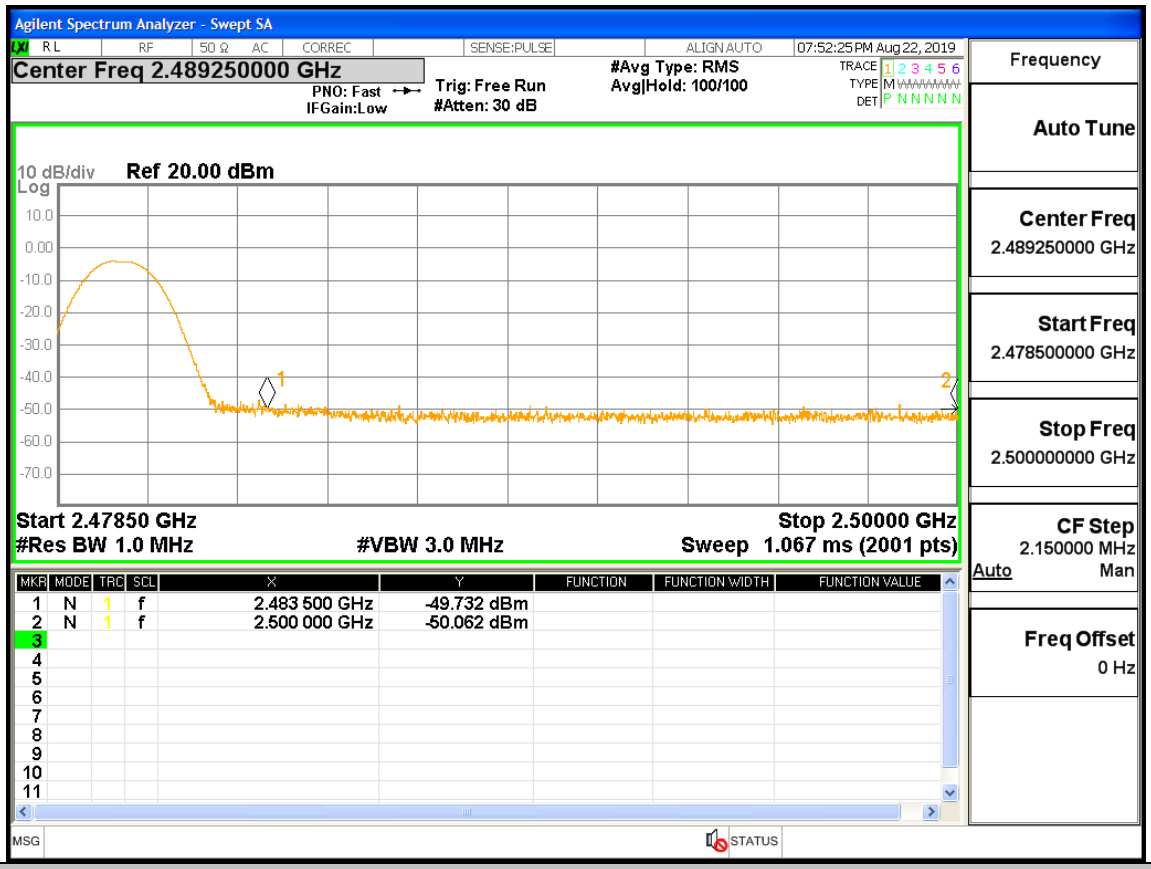
Restrict-band band-edge measurements_2402_PEAK_DH5



Restrict-band band-edge measurements_2402_AV_DH5

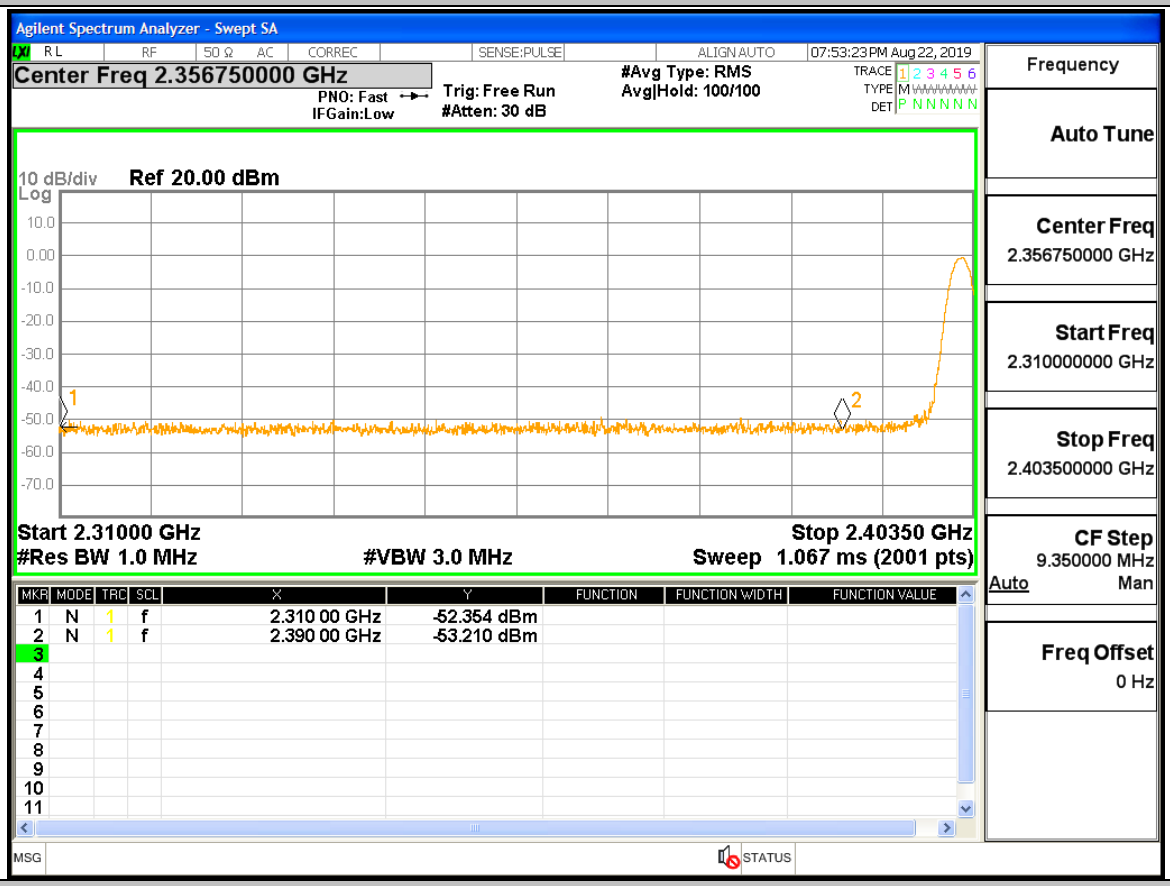


Restrict-band band-edge measurements_2480_PEAK_DH5

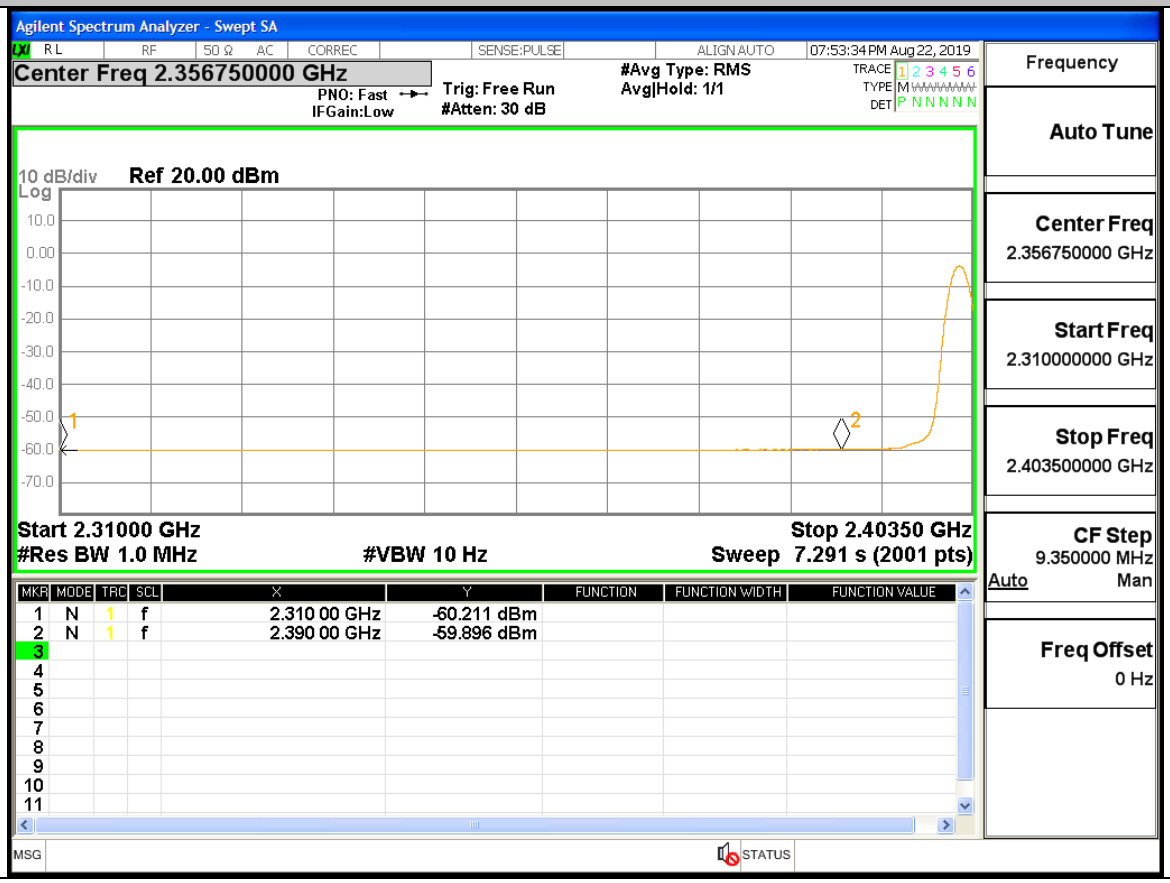


Restrict-band band-edge measurements_2480_AV_DH5

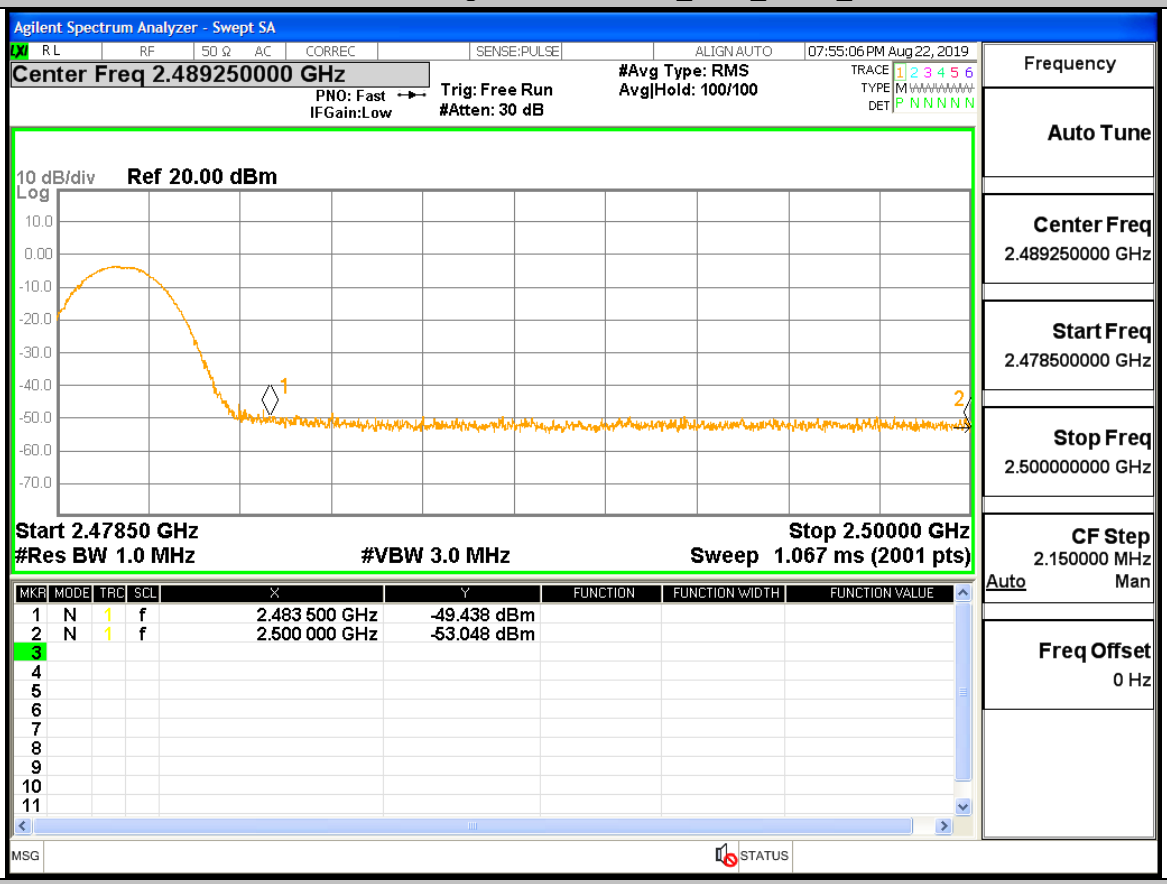
Restrict-band band-edge measurements_2402_PEAK_2DH5



Restrict-band band-edge measurements_2402_AV_2DH5



Restrict-band band-edge measurements_2480_PEAK_2DH5



Restrict-band band-edge measurements_2480_AV_2DH5