

Appendix A

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

Product Name: Bluetooth headset

Trade Mark: munash,kendir

Test Model: M6

FCC ID: 2ASN9-M6

Environmental Conditions

Temperature:	22.7 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

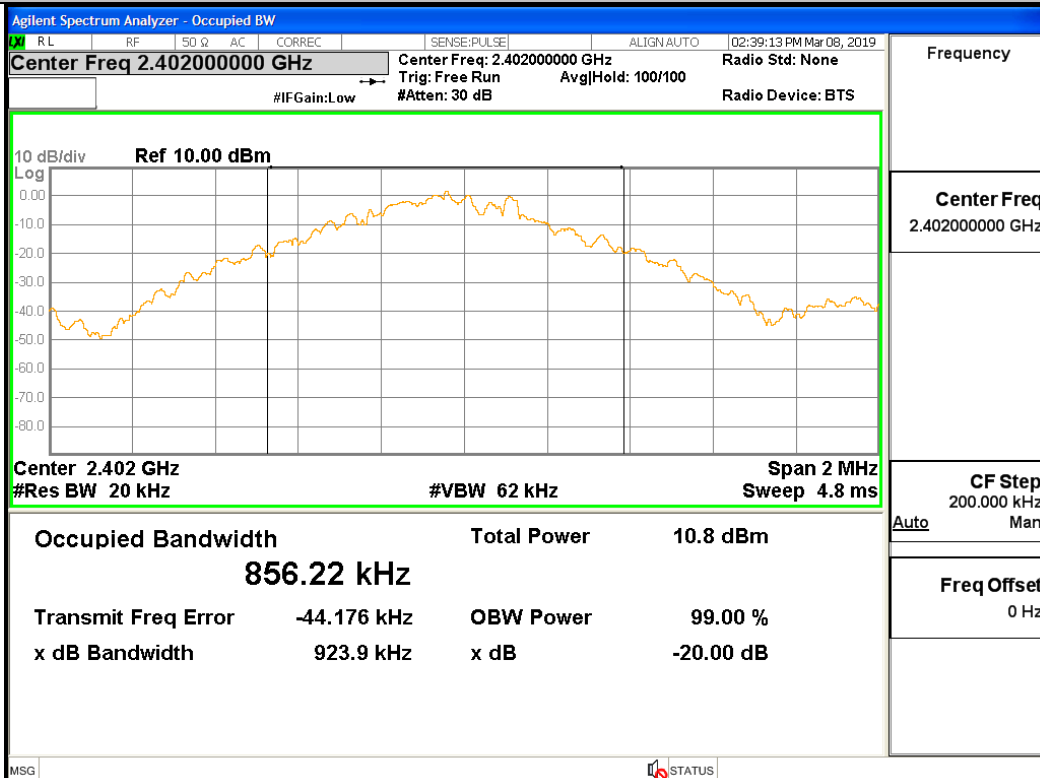
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.924	Not Specified	PASS
GFSK	MCH	0.857	Not Specified	PASS
GFSK	HCH	0.859	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.204	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.201	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.229	Not Specified	PASS
8DPSK	LCH	1.241	Not Specified	PASS
8DPSK	MCH	1.272	Not Specified	PASS
8DPSK	HCH	1.264	Not Specified	PASS

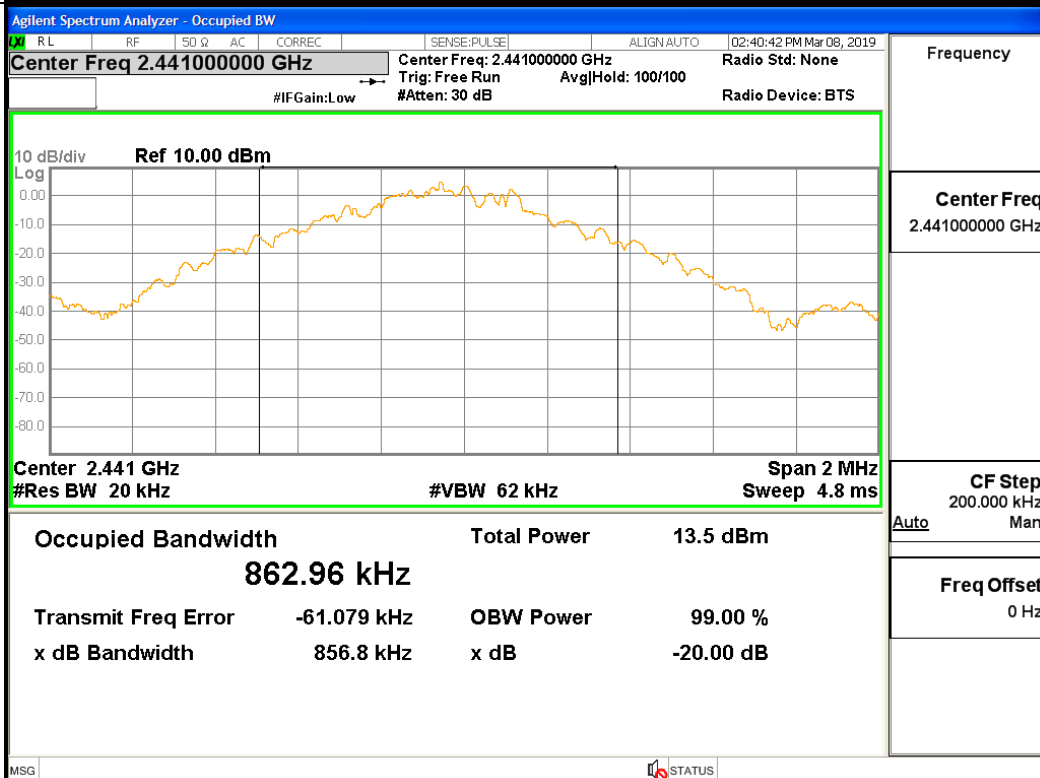
Test Graph

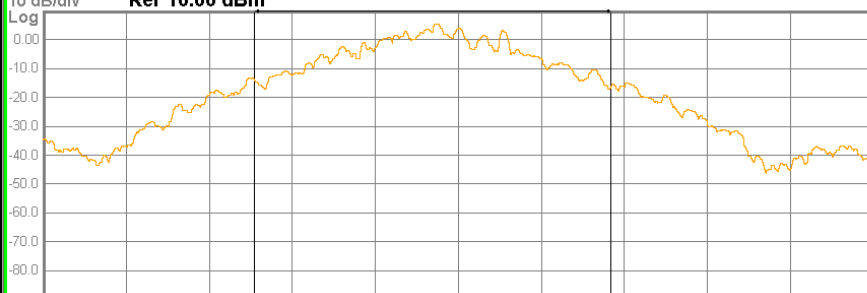
Graphs

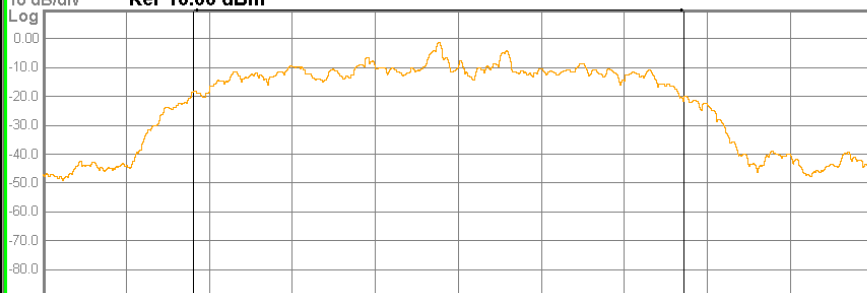
GFSK/LCH



GFSK/MCH



GFSK/HCH	Agilent Spectrum Analyzer - Occupied BW				SENSE:PULSE				ALIGN AUTO		02:42:28 PM Mar 08, 2019		Frequency					
	Center Freq 2.480000000 GHz				Center Freq: 2.480000000 GHz				Radio Std: None				Center Freq 2.480000000 GHz					
	#IFGain:Low				#Atten: 30 dB				AvgHold: 100/100		Radio Device: BTS							
																		
	Center 2.48 GHz				#Res BW 20 kHz				#VBW 62 kHz				Span 2 MHz		CF Step 200.000 kHz			
												Sweep 4.8 ms		Auto				
Occupied Bandwidth												Total Power		14.2 dBm				
856.22 kHz																		
Transmit Freq Error												-61.988 kHz		OBW Power		99.00 %		Freq Offset 0 Hz
x dB Bandwidth												859.3 kHz		x dB		-20.00 dB		
MSG												STATUS						

π/4DQPSK/LCH	Agilent Spectrum Analyzer - Occupied BW				SENSE:PULSE				ALIGN AUTO		02:43:52 PM Mar 08, 2019		Frequency					
	Center Freq 2.402000000 GHz				Center Freq: 2.402000000 GHz				Radio Std: None				Center Freq 2.402000000 GHz					
	#IFGain:Low				#Atten: 30 dB				AvgHold: 100/100		Radio Device: BTS							
																		
	Center 2.402 GHz				#Res BW 20 kHz				#VBW 62 kHz				Span 2 MHz		CF Step 200.000 kHz			
												Sweep 4.8 ms		Auto				
Occupied Bandwidth												Total Power		6.88 dBm				
1.1766 MHz																		
Transmit Freq Error												-46.420 kHz		OBW Power		99.00 %		Freq Offset 0 Hz
x dB Bandwidth												1.204 MHz		x dB		-20.00 dB		
MSG												STATUS						

Center Freq 2.402000000 GHz

Center Freq: 2.402000000 GHz

Radio Std: None

#IFGain:Low

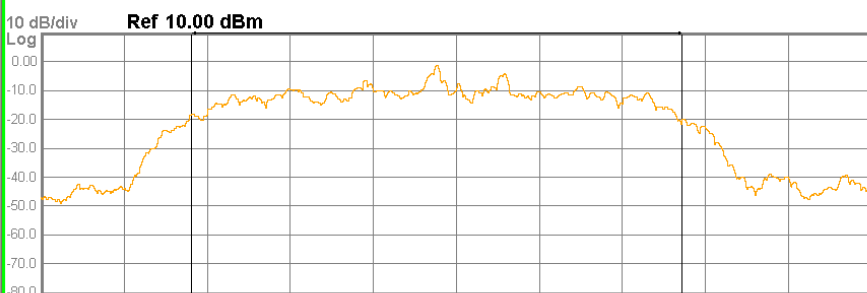
#Atten: 30 dB

AvgHold: 100/100

Radio Device: BTS

10 dB/div

Ref 10.00 dBm



Center 2.402 GHz

#Res BW 20 kHz

#VBW 62 kHz

Span 2 MHz

Sweep 4.8 ms

Occupied Bandwidth

1.1766 MHz

Total Power

6.88 dBm

Transmit Freq Error

-46.420 kHz

OBW Power

99.00 %

x dB Bandwidth

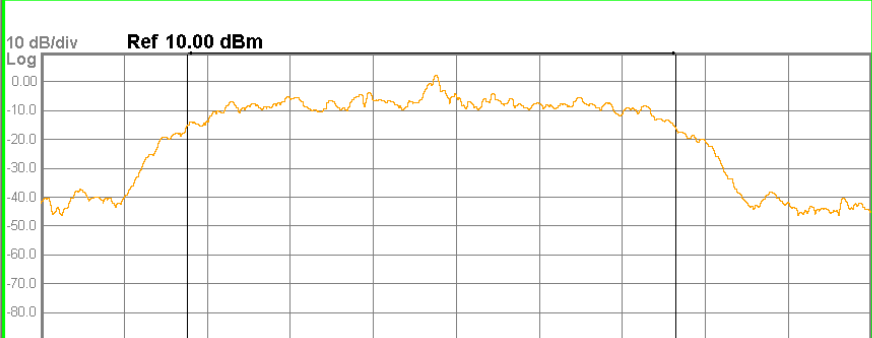
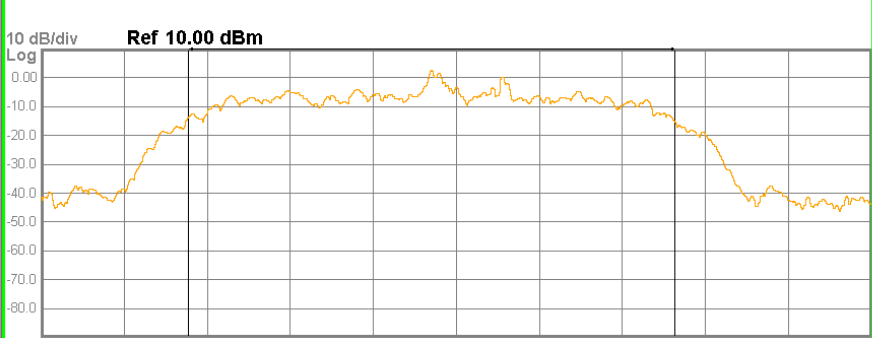
1.204 MHz

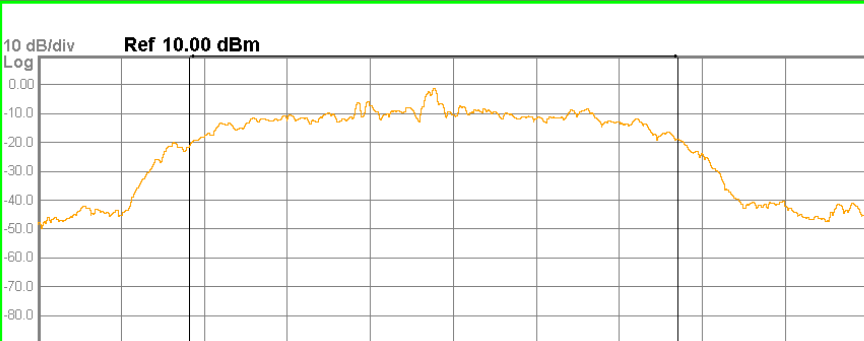
x dB

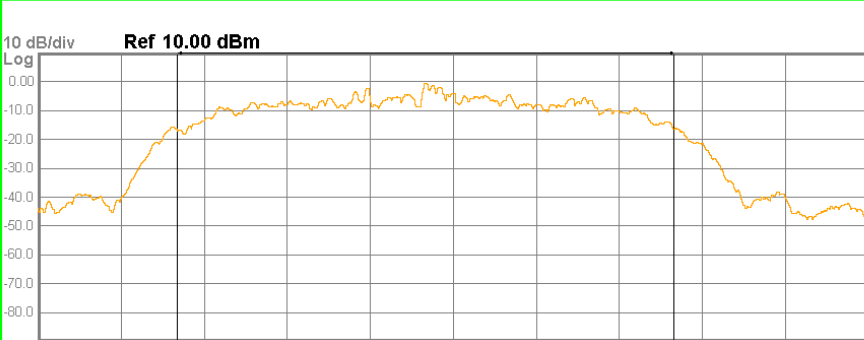
-20.00 dB

MSG

STATUS

π/4DQPSK/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN AUTO 02:45:36 PM Mar 08, 2019 Center Freq 2.441000000 GHz Center Freq: 2.441000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Trig: Free Run AvgHold: 100/100 Radio Device: BTS  10 dB/div Ref 10.00 dBm Center 2.441 GHz Span 2 MHz #Res BW 20 kHz #VBW 62 kHz Sweep 4.8 ms Occupied Bandwidth 1.1764 MHz Total Power 10.3 dBm Transmit Freq Error -58.957 kHz OBW Power 99.00 % x dB Bandwidth 1.201 MHz x dB -20.00 dB MSG STATUS	Frequency Center Freq 2.441000000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz
π/4DQPSK/HCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN AUTO 02:47:03 PM Mar 08, 2019 Center Freq 2.480000000 GHz Center Freq: 2.480000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Trig: Free Run AvgHold: 100/100 Radio Device: BTS  10 dB/div Ref 10.00 dBm Center 2.48 GHz Span 2 MHz #Res BW 20 kHz #VBW 62 kHz Sweep 4.8 ms Occupied Bandwidth 1.1723 MHz Total Power 11.2 dBm Transmit Freq Error -59.731 kHz OBW Power 99.00 % x dB Bandwidth 1.229 MHz x dB -20.00 dB MSG STATUS	Frequency Center Freq 2.480000000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz

8DPSK/LCH	Agilent Spectrum Analyzer - Occupied BW										Frequency				
	RL RF 50 Ω AC CORREC				SENSE:PULSE		ALIGN:AUTO		02:49:58 PM Mar 08, 2019		Center Freq 2.402000000 GHz				
	Center Freq 2.402000000 GHz				Center Freq: 2.402000000 GHz		Trig: Free Run		Avg/Hold: 100/100		Radio Std: None				
	#IFGain:Low				#Atten: 30 dB						Radio Device: BTS				
											CF Step 200.000 kHz				
Center 2.402 GHz										Span 2 MHz		Auto			
#Res BW 20 kHz										#VBW 62 kHz		Man			
Sweep 4.8 ms															
Occupied Bandwidth										Total Power		7.03 dBm			
1.1731 MHz															
Transmit Freq Error										-47.253 kHz		OBW Power		99.00 %	
x dB Bandwidth										1.241 MHz		x dB		-20.00 dB	
MSG										STATUS					

8DPSK/MCH	Agilent Spectrum Analyzer - Occupied BW										Frequency				
	RL RF 50 Ω AC CORREC				SENSE:PULSE		ALIGN:AUTO		02:51:53 PM Mar 08, 2019		Center Freq 2.441000000 GHz				
	Center Freq 2.441000000 GHz				Center Freq: 2.441000000 GHz		Trig: Free Run		Avg/Hold: 100/100		Radio Std: None				
	#IFGain:Low				#Atten: 30 dB						Radio Device: BTS				
											CF Step 200.000 kHz				
Center 2.441 GHz										Span 2 MHz		Auto			
#Res BW 20 kHz										#VBW 62 kHz		Man			
Sweep 4.8 ms															
Occupied Bandwidth										Total Power		10.2 dBm			
1.1902 MHz															
Transmit Freq Error										-65.364 kHz		OBW Power		99.00 %	
x dB Bandwidth										1.272 MHz		x dB		-20.00 dB	
MSG										STATUS					

Center Freq 2.441000000 GHz

Center Freq: 2.441000000 GHz

Trig: Free Run

Avg/Hold: 100/100

Radio Std: None

#IFGain:Low

#Atten: 30 dB

Radio Device: BTS

10 dB/div

Ref 10.00 dBm

Center 2.441 GHz

#Res BW 20 kHz

#VBW 62 kHz

Span 2 MHz

Sweep 4.8 ms

Occupied Bandwidth

1.1902 MHz

Total Power

10.2 dBm

Transmit Freq Error

-65.364 kHz

OBW Power

99.00 %

x dB Bandwidth

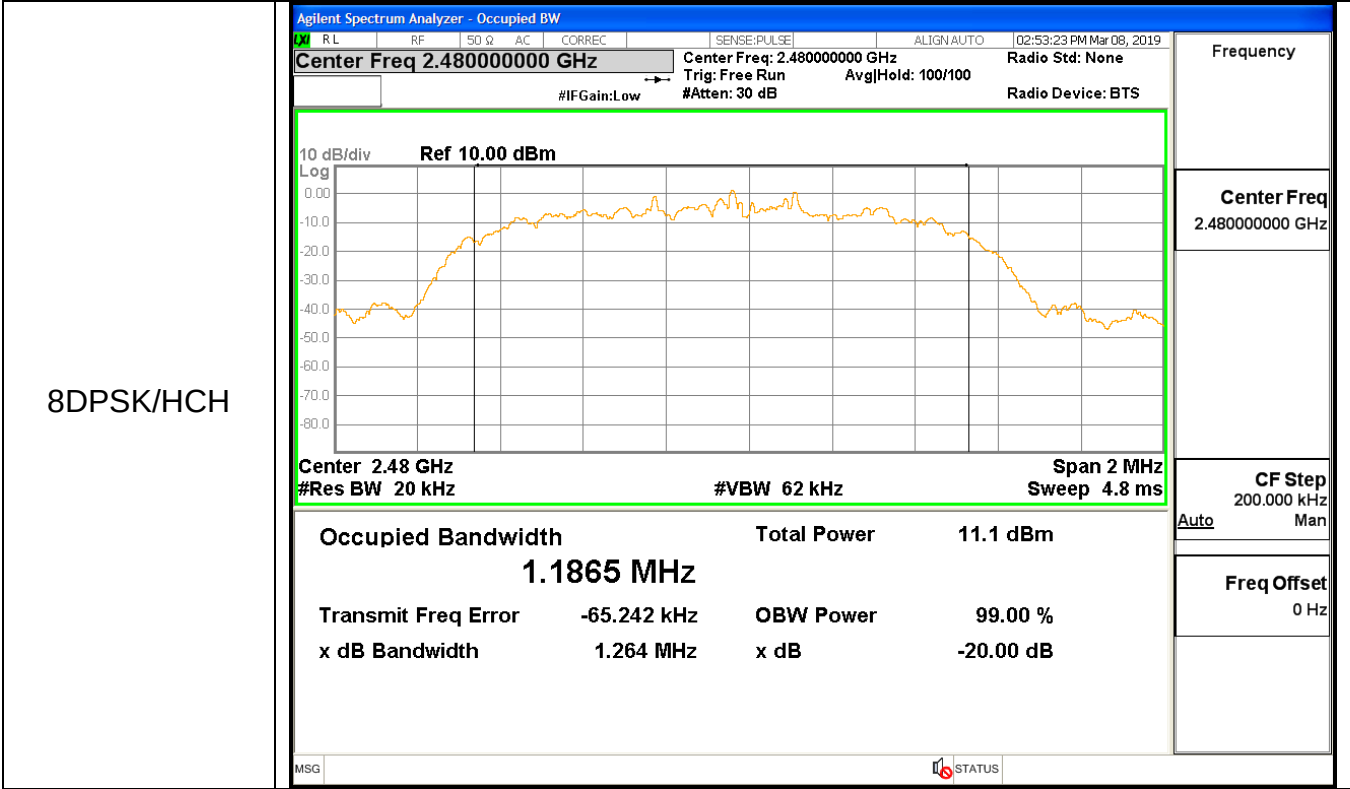
1.272 MHz

x dB

-20.00 dB

MSG

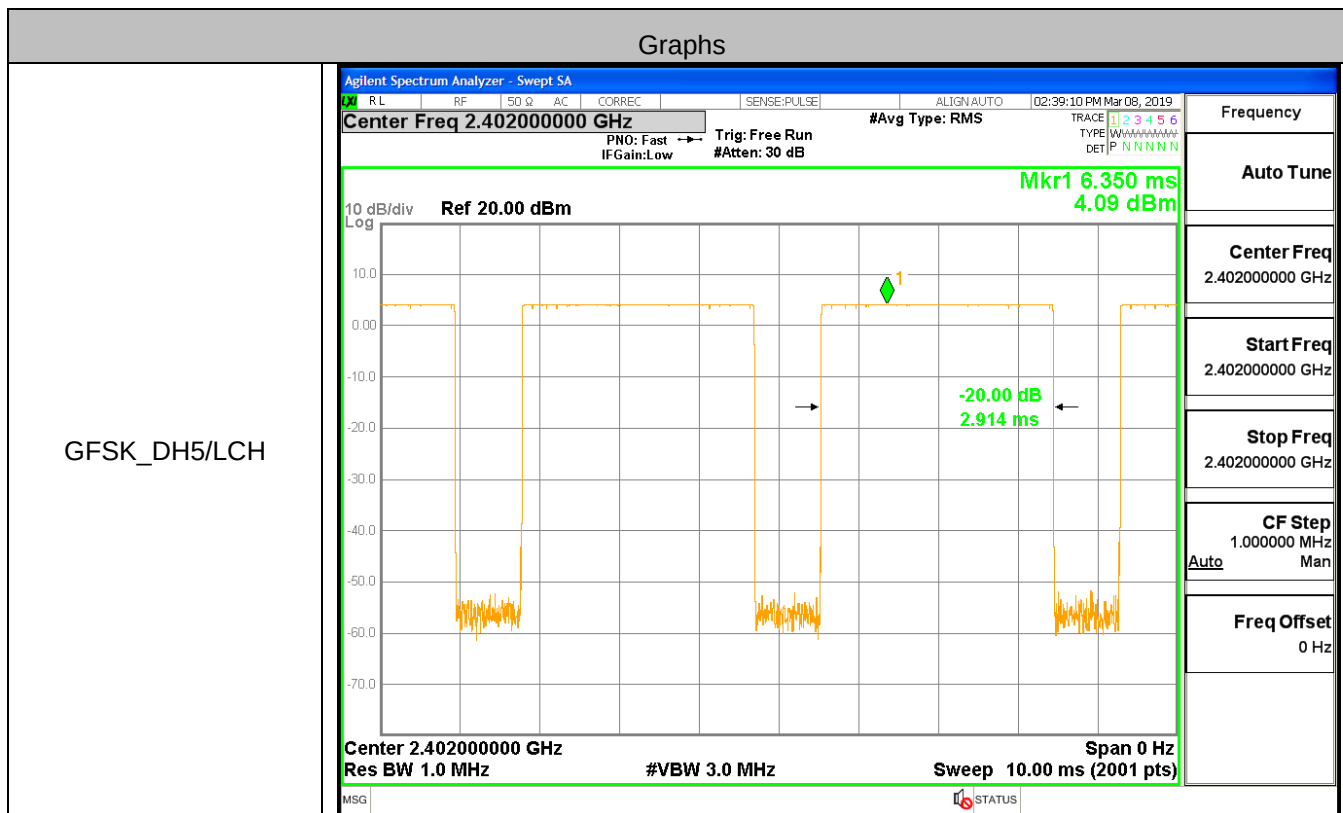
STATUS

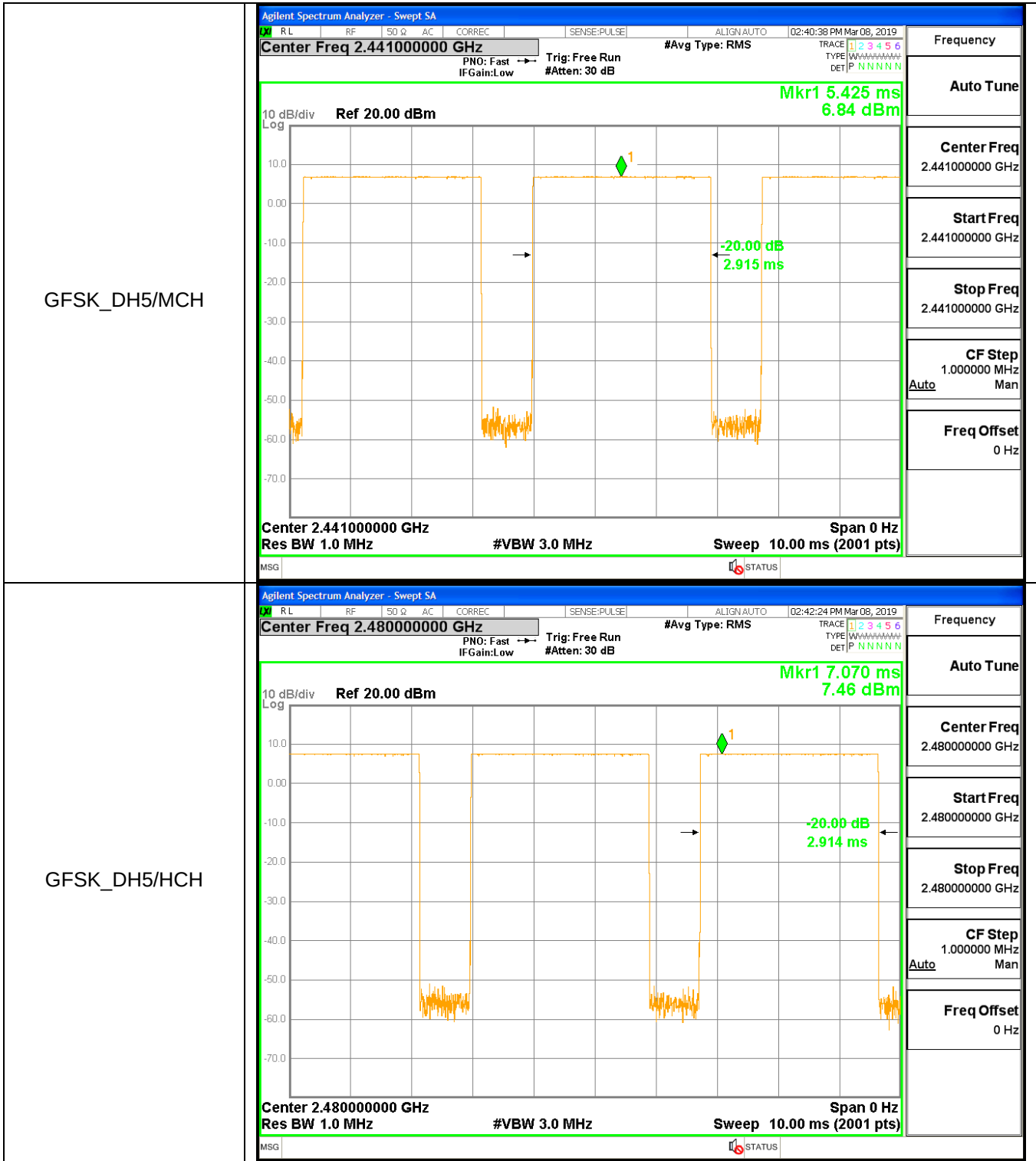


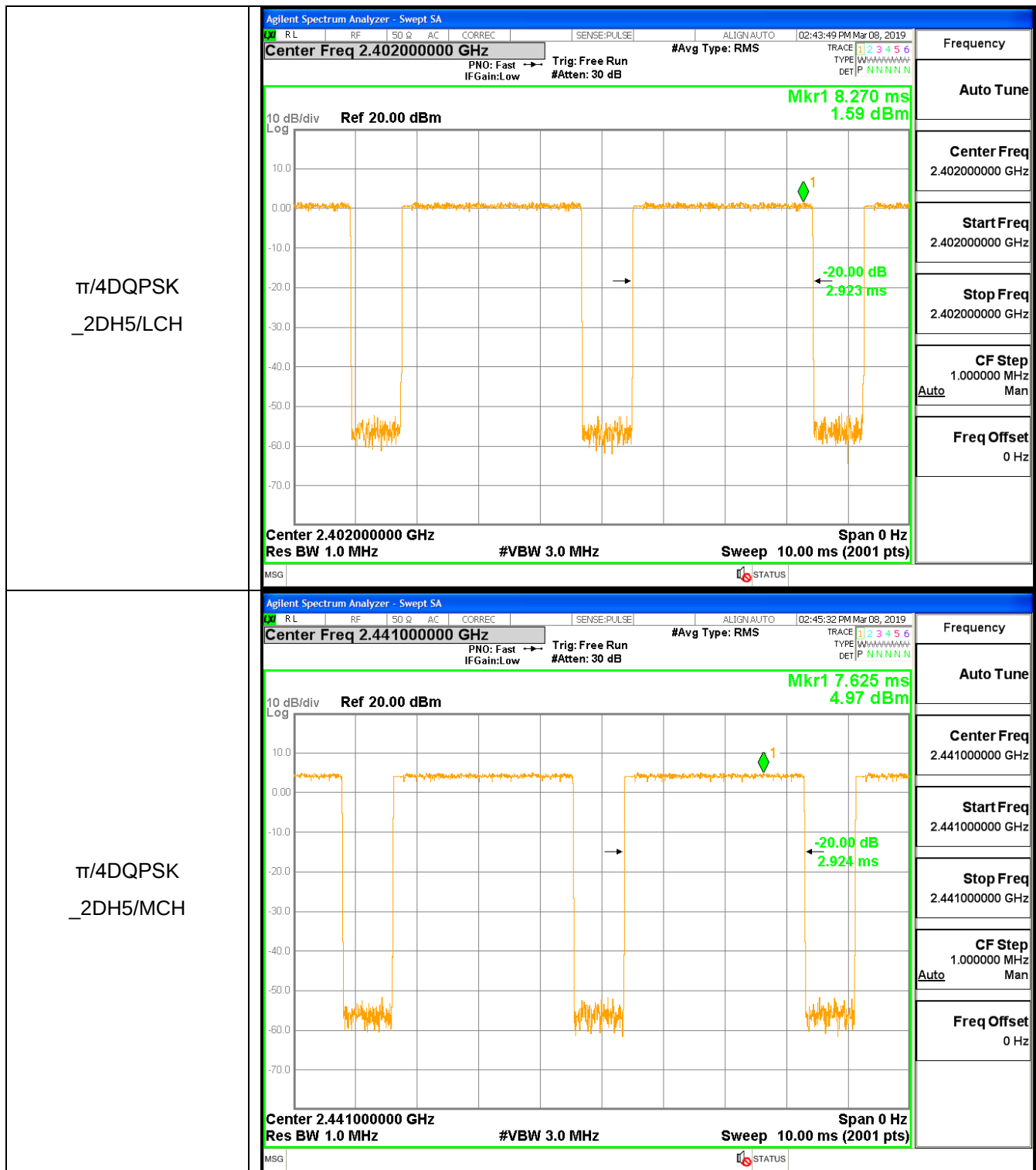
A.2 Dwell Time

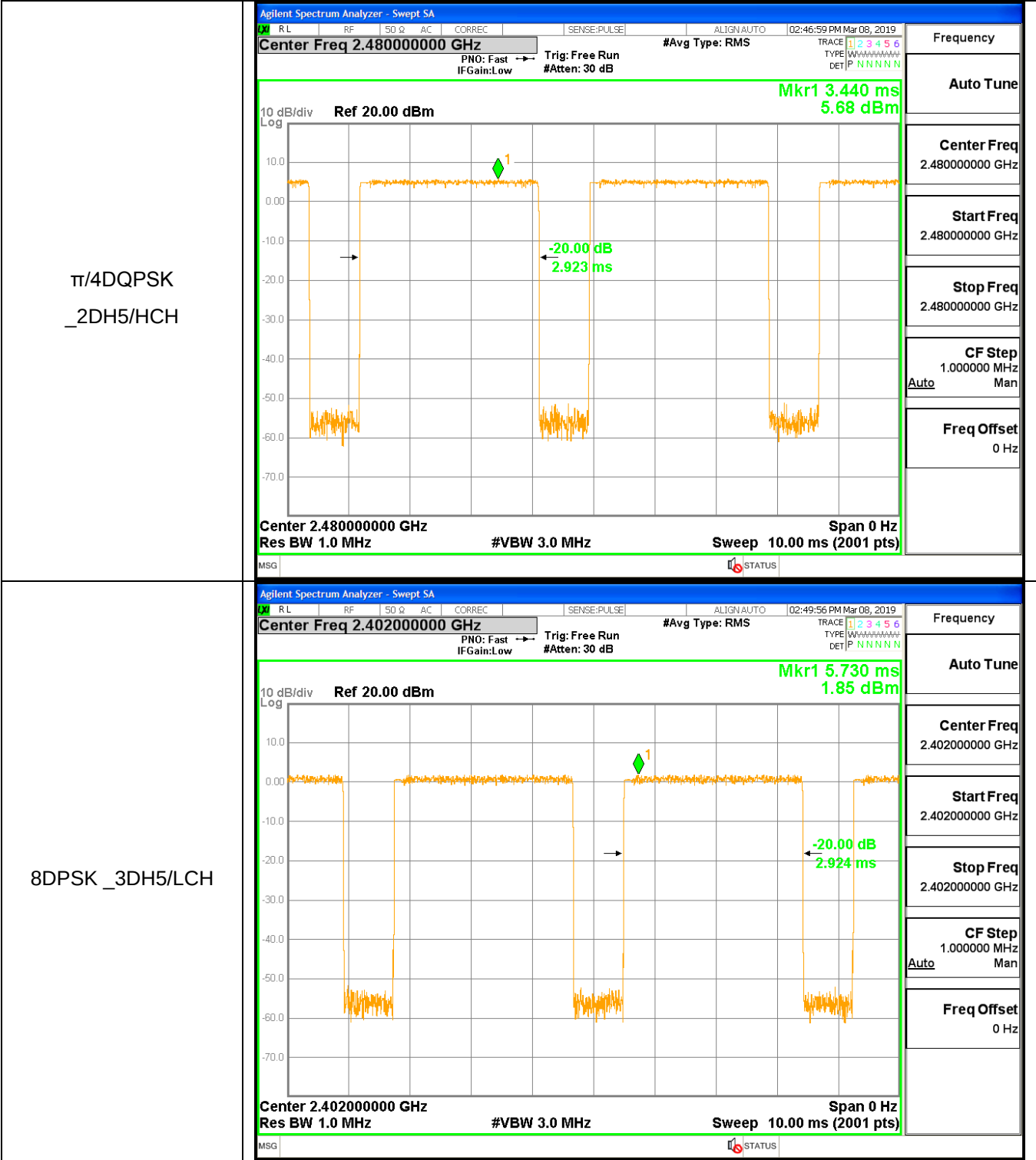
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002914	106.7	0.310901	0.4	PASS
GFSK	DH5	MCH	0.002915	106.7	0.310979	0.4	PASS
GFSK	DH5	HCH	0.002914	106.7	0.31097	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002923	106.7	0.311918	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002924	106.7	0.311955	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002923	106.7	0.311921	0.4	PASS
8DPSK	3DH5	LCH	0.002924	106.7	0.311959	0.4	PASS
8DPSK	3DH5	MCH	0.002924	106.7	0.311983	0.4	PASS
8DPSK	3DH5	HCH	0.002924	106.7	0.311986	0.4	PASS

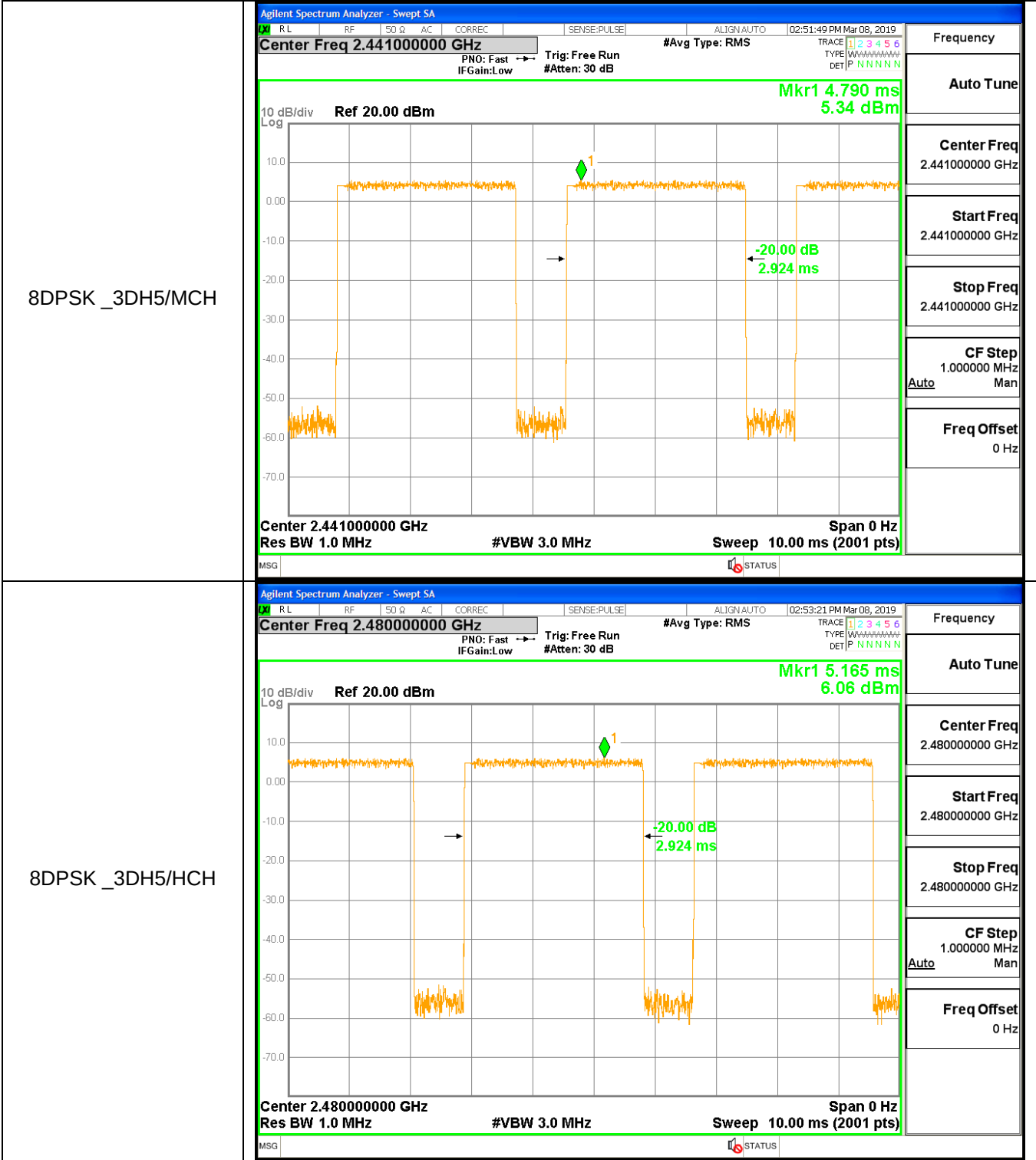
Test Graph









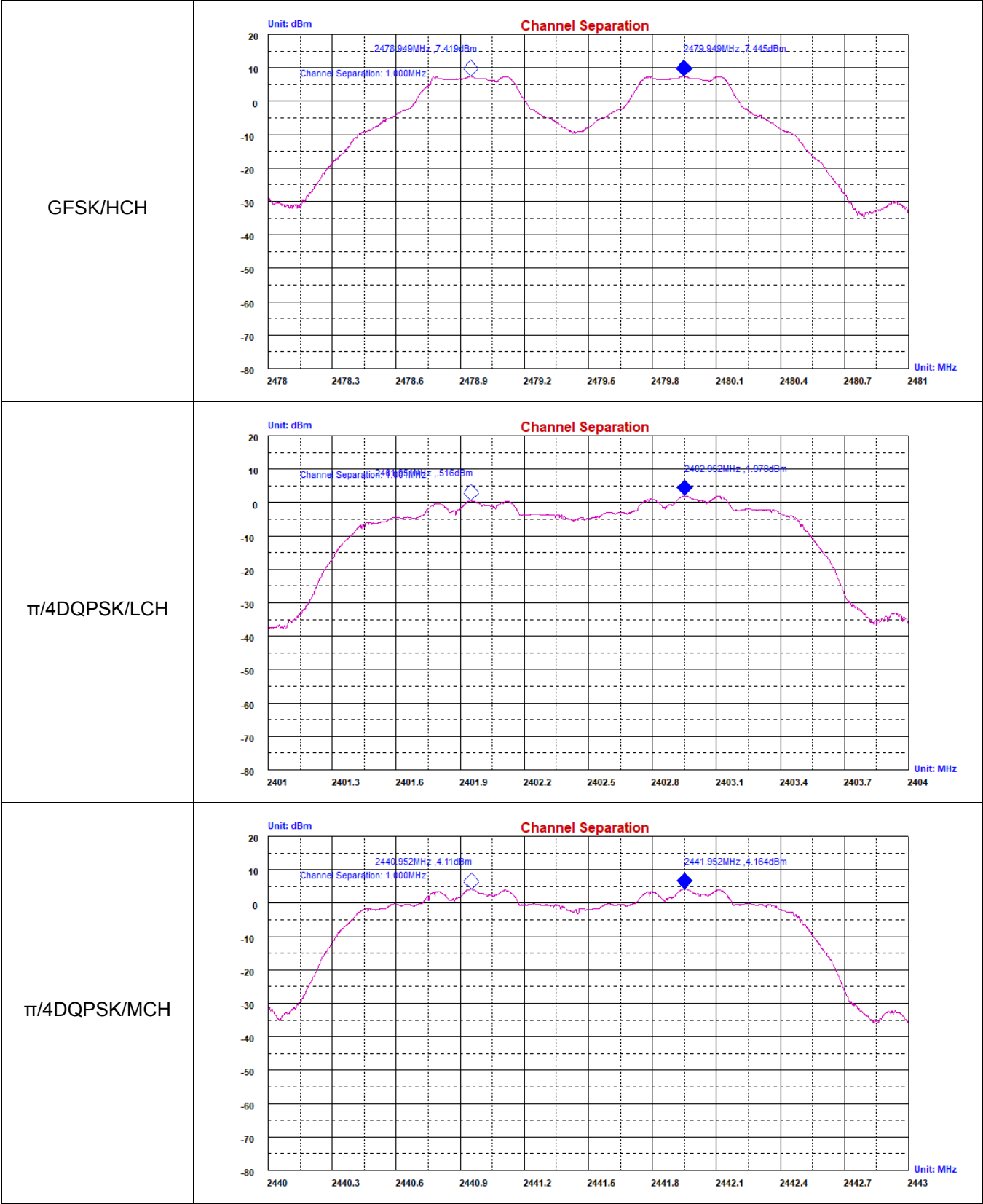


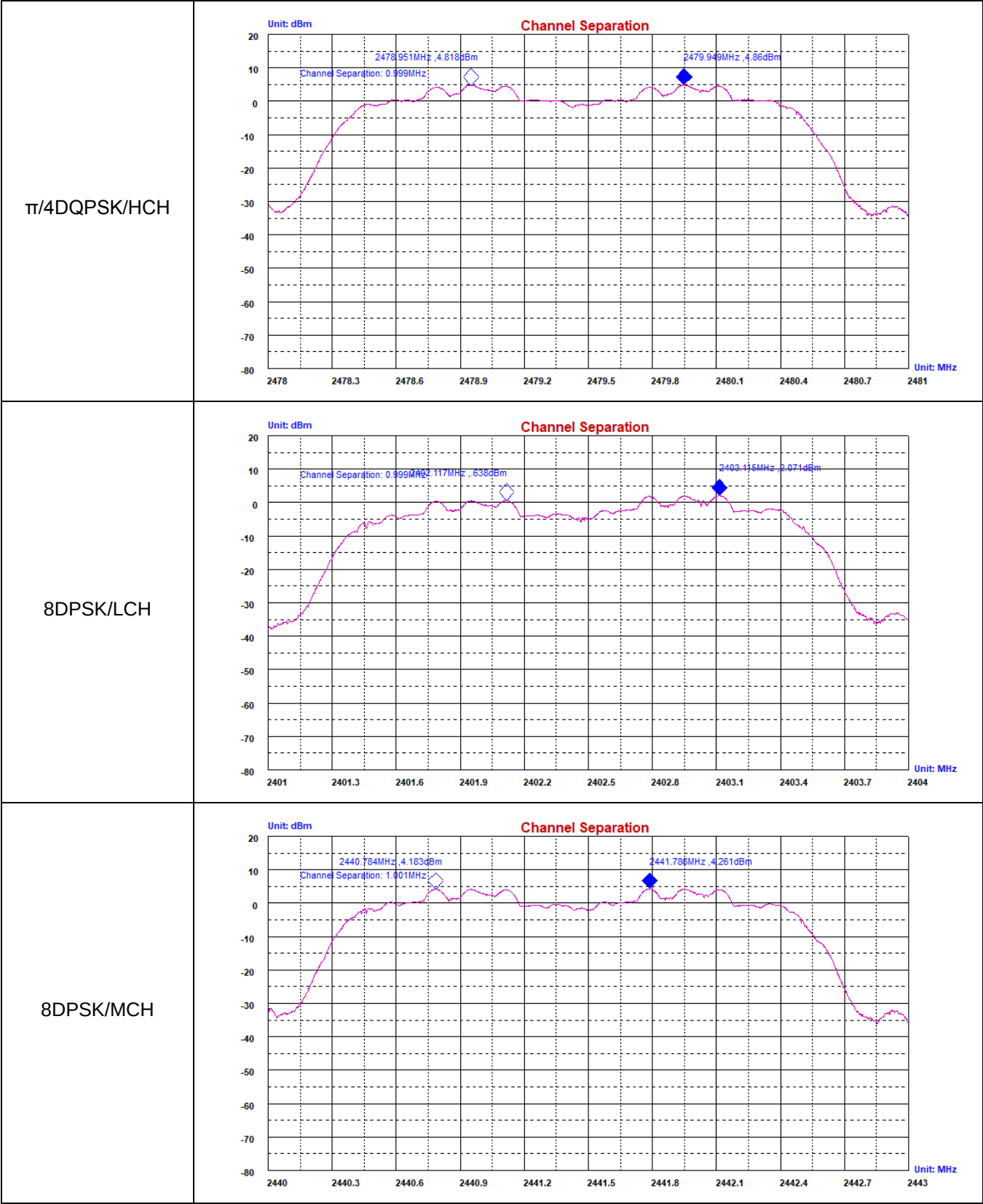
A.3 Carrier Frequency Separation

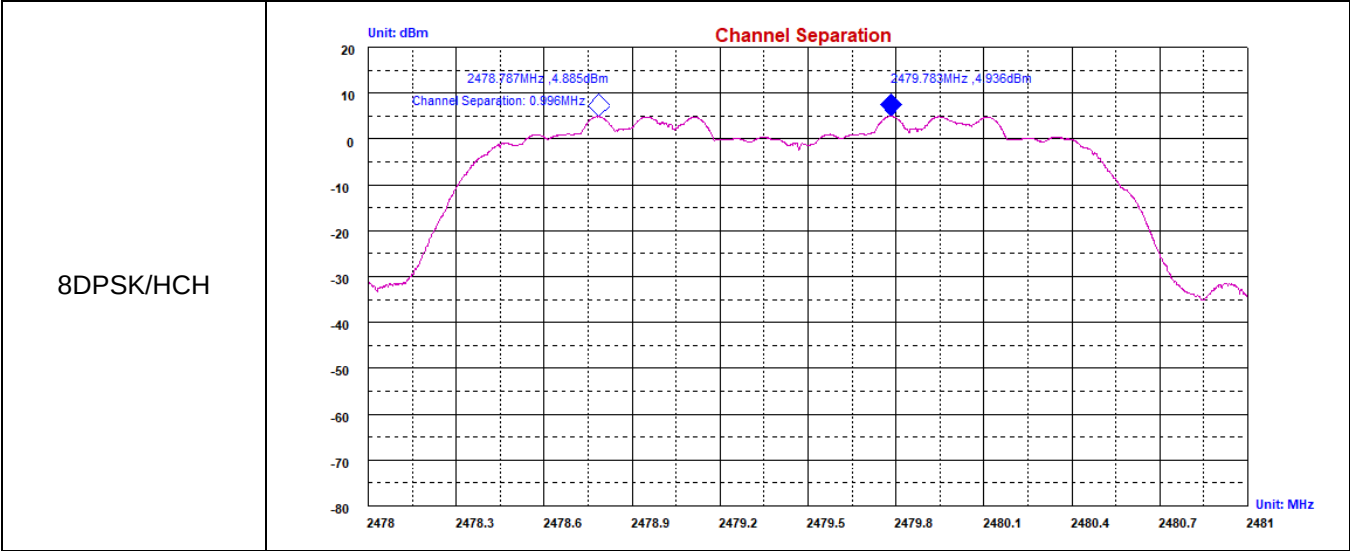
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.616	PASS
GFSK	MCH	1.001	0.571	PASS
GFSK	HCH	1.000	0.573	PASS
$\pi/4$ DQPSK	LCH	1.001	0.803	PASS
$\pi/4$ DQPSK	MCH	1.000	0.801	PASS
$\pi/4$ DQPSK	HCH	0.999	0.819	PASS
8DPSK	LCH	0.999	0.827	PASS
8DPSK	MCH	1.001	0.848	PASS
8DPSK	HCH	0.996	0.843	PASS

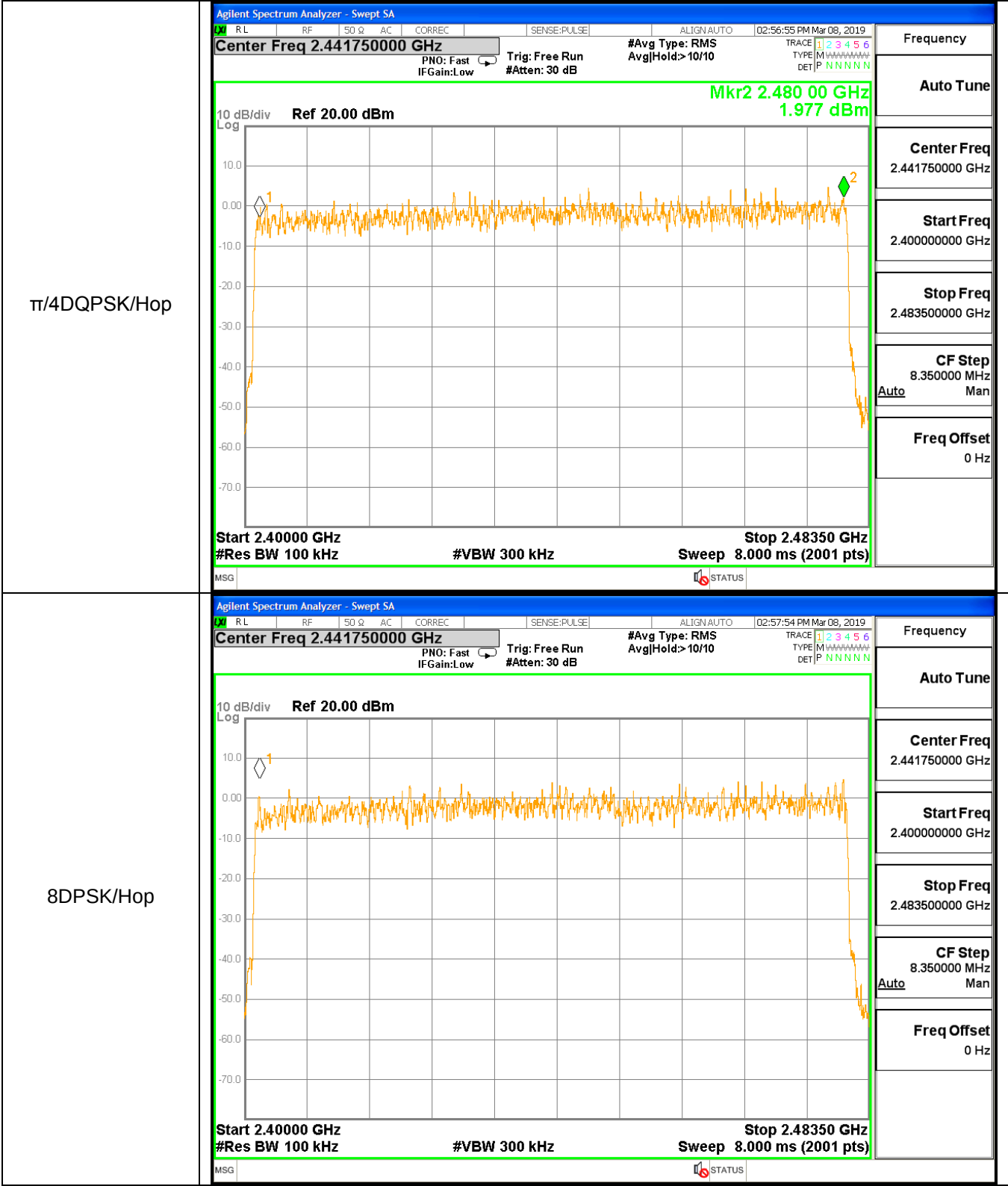
Test Graph







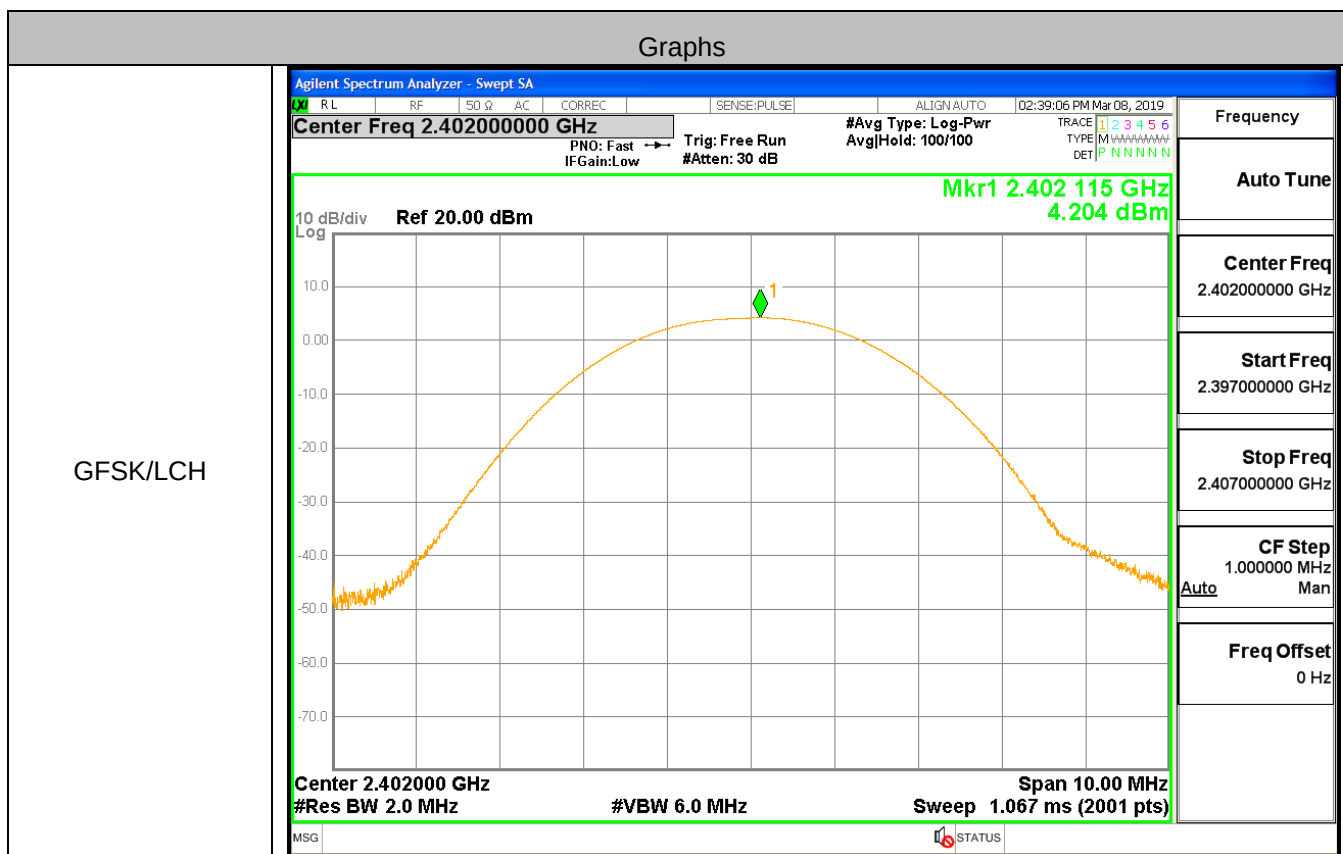


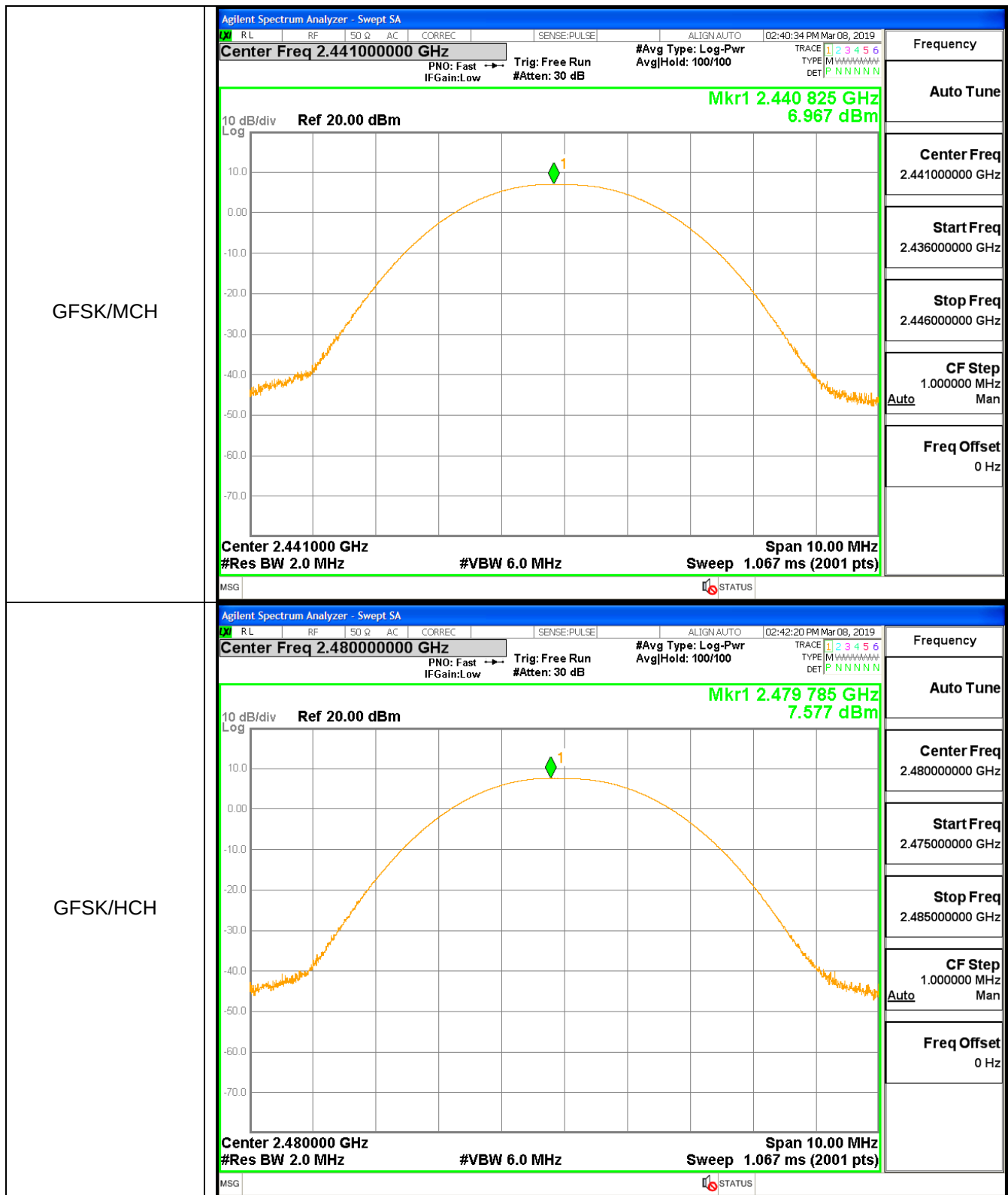


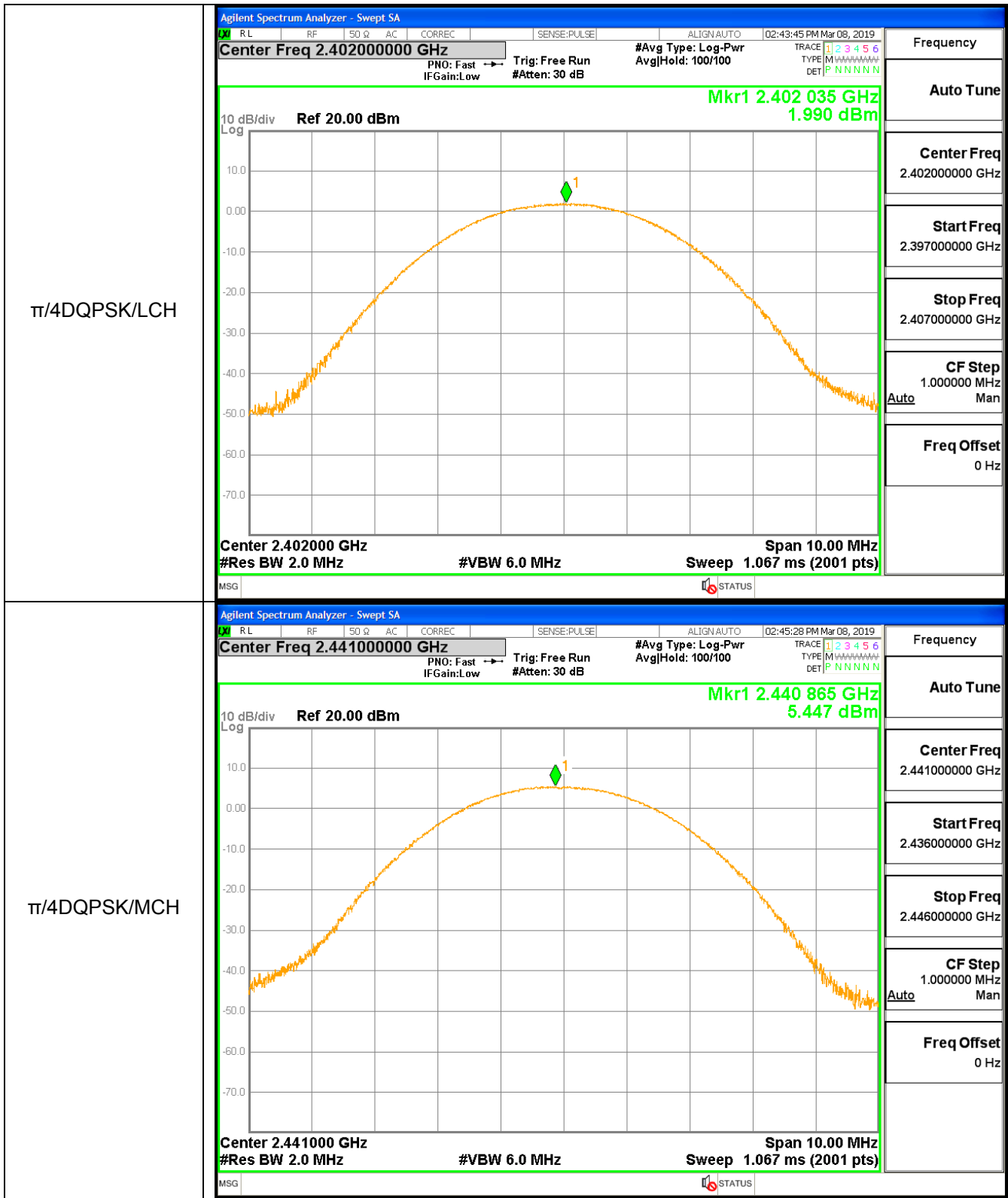
A.5 Conducted Peak Output Power

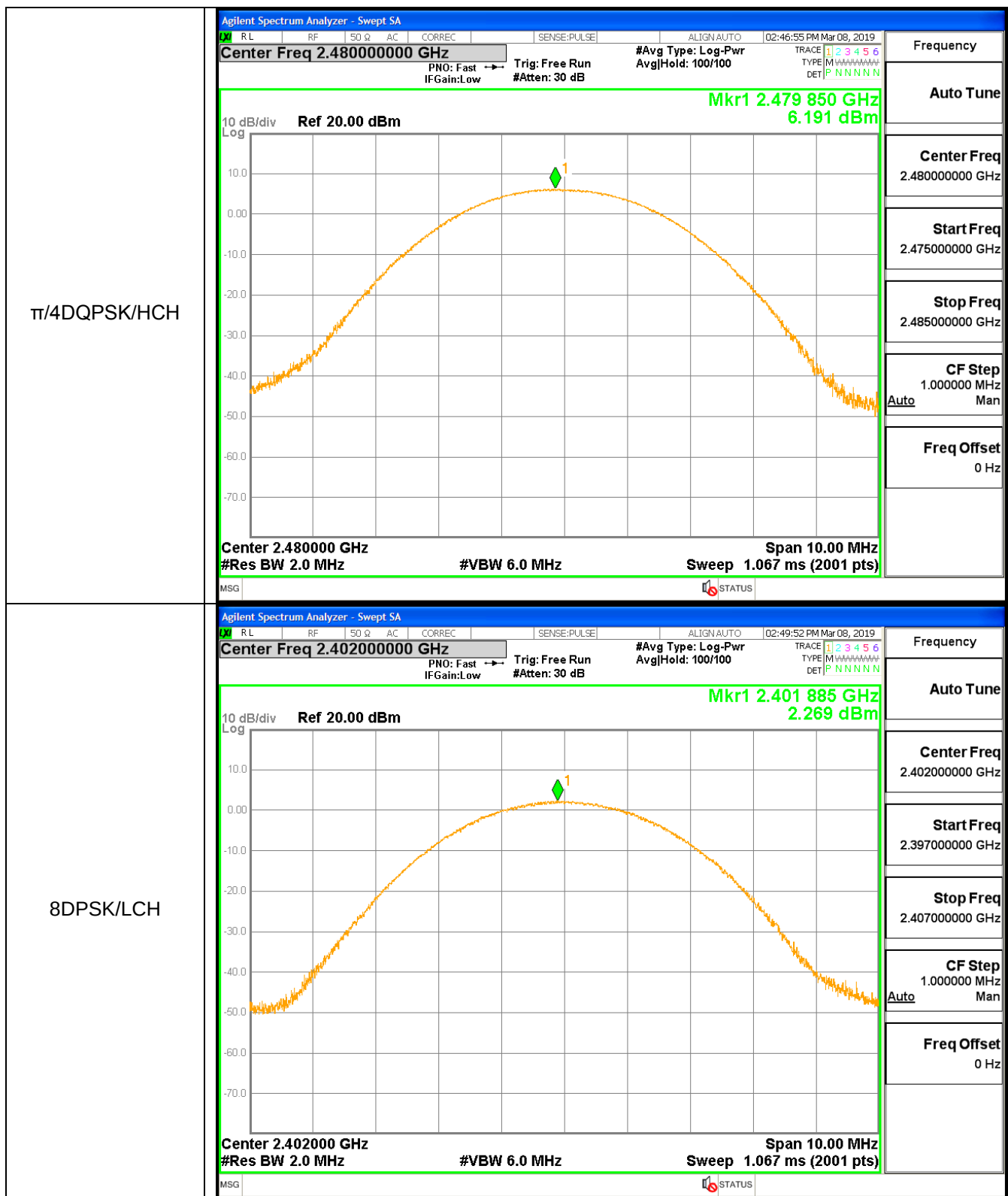
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.204	21	PASS
GFSK	MCH	6.967	21	PASS
GFSK	HCH	7.577	21	PASS
$\pi/4$ DQPSK	LCH	1.990	21	PASS
$\pi/4$ DQPSK	MCH	5.447	21	PASS
$\pi/4$ DQPSK	HCH	6.191	21	PASS
8DPSK	LCH	2.269	21	PASS
8DPSK	MCH	5.817	21	PASS
8DPSK	HCH	6.491	21	PASS

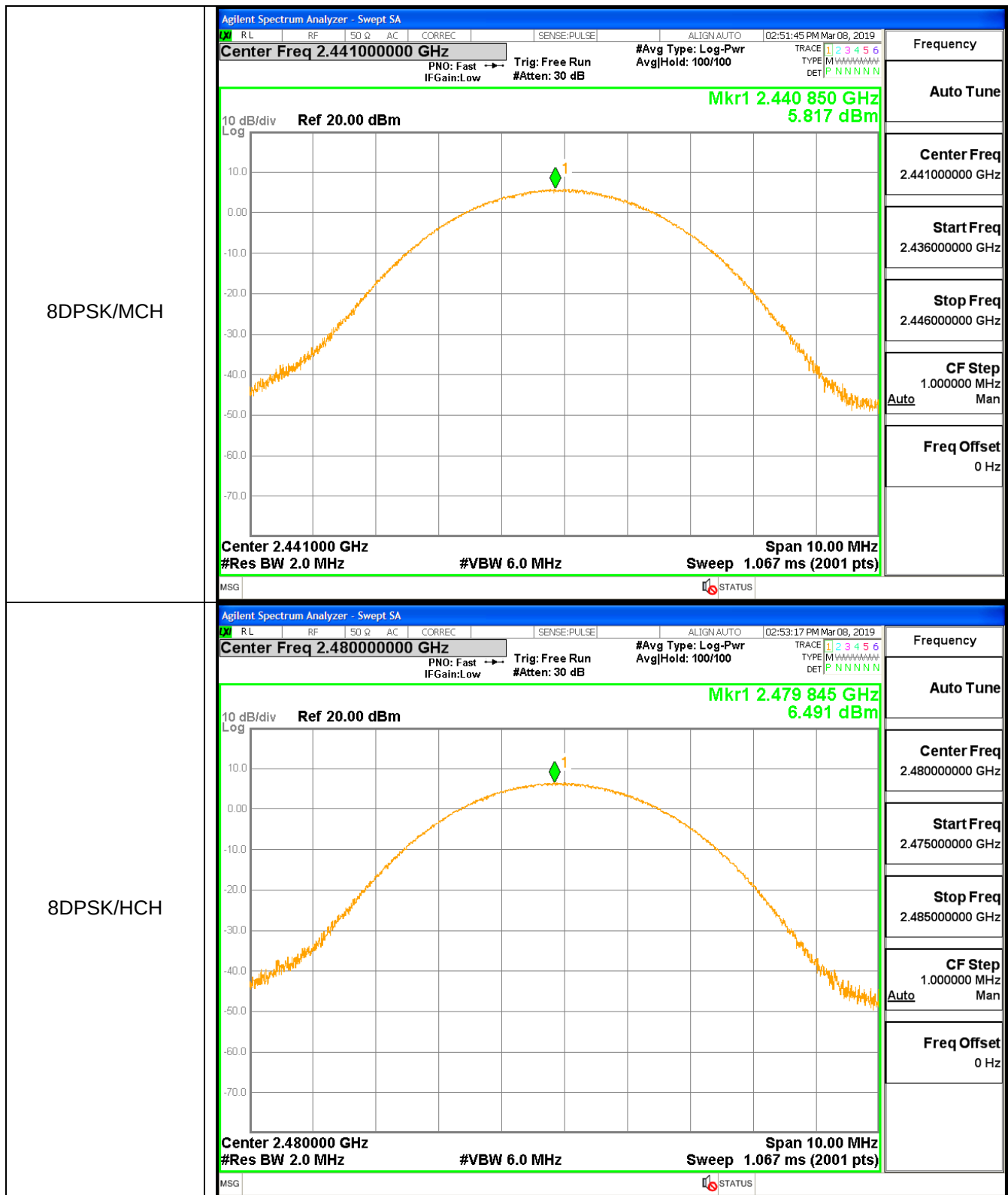
Test Graph











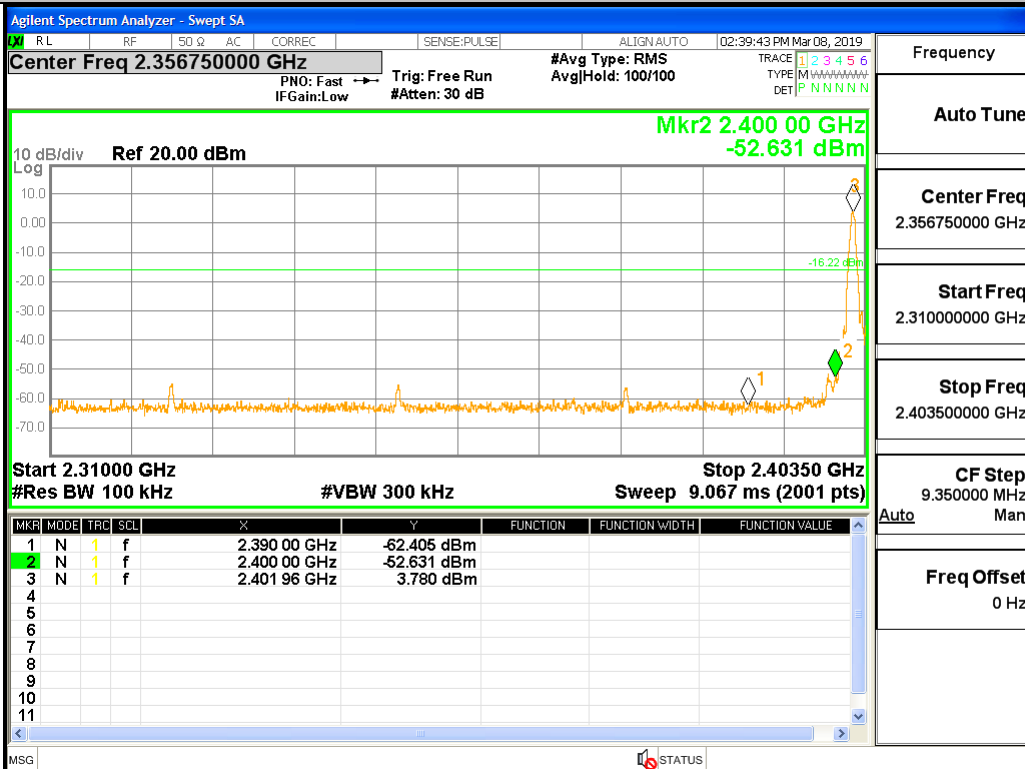
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2390	3.78	-62.40	-16.22	Pass
1DH5	2402	2400	3.78	-52.63	-16.22	Pass
1DH5-Hopping	2402	2390	3.47	-56.33	-16.53	Pass
1DH5-Hopping	2402	2400	3.47	-55.54	-16.53	Pass
1DH5	2480	2483.5	7.25	-58.12	-12.75	Pass
1DH5	2480	2500	7.25	-63.31	-12.75	Pass
1DH5-Hopping	2480	2483.5	4.45	-60.31	-15.55	Pass
1DH5-Hopping	2480	2500	4.45	-48.16	-15.55	Pass
2DH5	2402	2390	0.51	-62.90	-19.49	Pass
2DH5	2402	2400	0.51	-50.91	-19.49	Pass
2DH5-Hopping	2480	2390	4.56	-56.21	-15.44	Pass
2DH5-Hopping	2480	2400	4.56	-54.15	-15.44	Pass
2DH5	2480	2483.5	4.44	-61.58	-15.56	Pass
2DH5	2480	2500	4.44	-62.82	-15.56	Pass
2DH5-Hopping	2402	2390	2.92	-59.92	-17.08	Pass
2DH5-Hopping	2402	2400	2.92	-56.58	-17.08	Pass
3DH5	2402	2390	0.58	-63.56	-19.42	Pass
3DH5	2402	2400	0.58	-50.29	-19.42	Pass
3DH5-Hopping	2402	2390	3.01	-57.58	-16.99	Pass
3DH5-Hopping	2402	2400	3.01	-55.47	-16.99	Pass
3DH5	2480	2483.5	4.74	-58.47	-15.26	Pass
3DH5	2480	2500	4.74	-64.17	-15.26	Pass
3DH5-Hopping	2480	2483.5	4.56	-55.95	-15.44	Pass
3DH5-Hopping	2480	2500	4.56	-51.23	-15.44	Pass

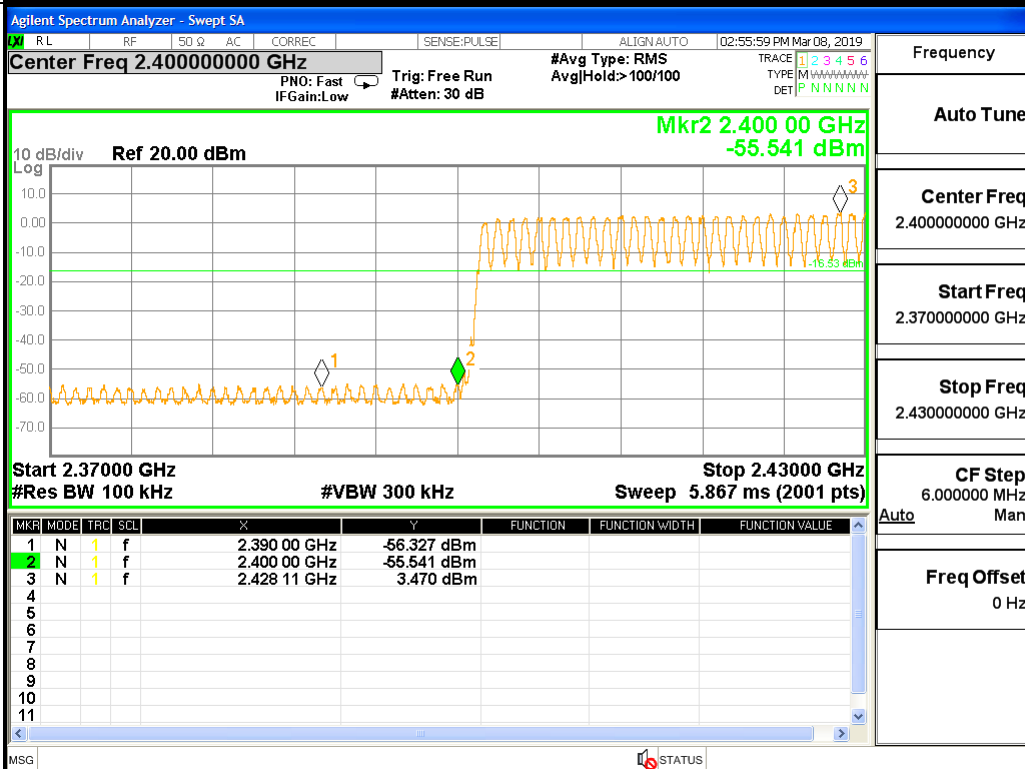
Test Graph

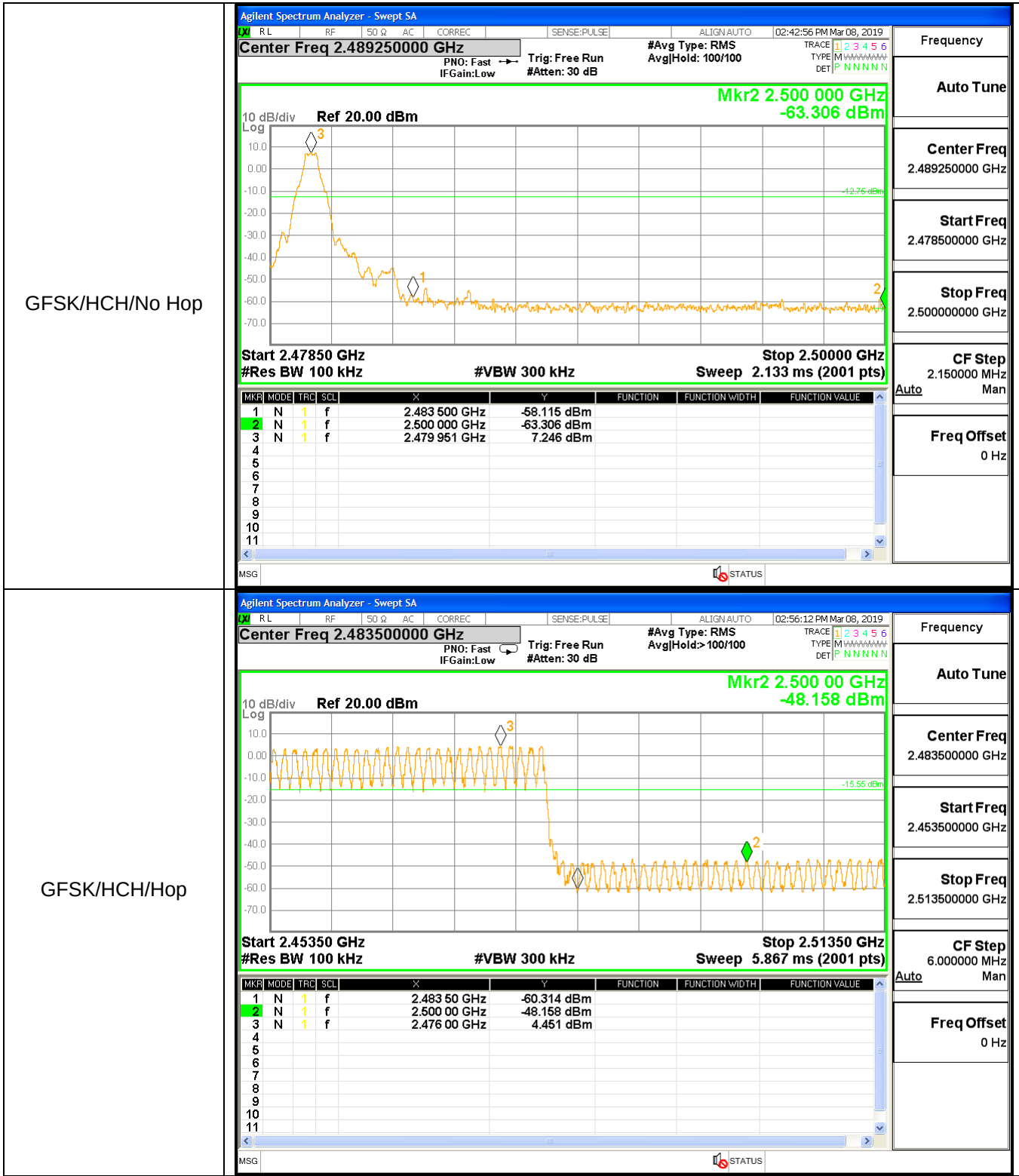
Graphs

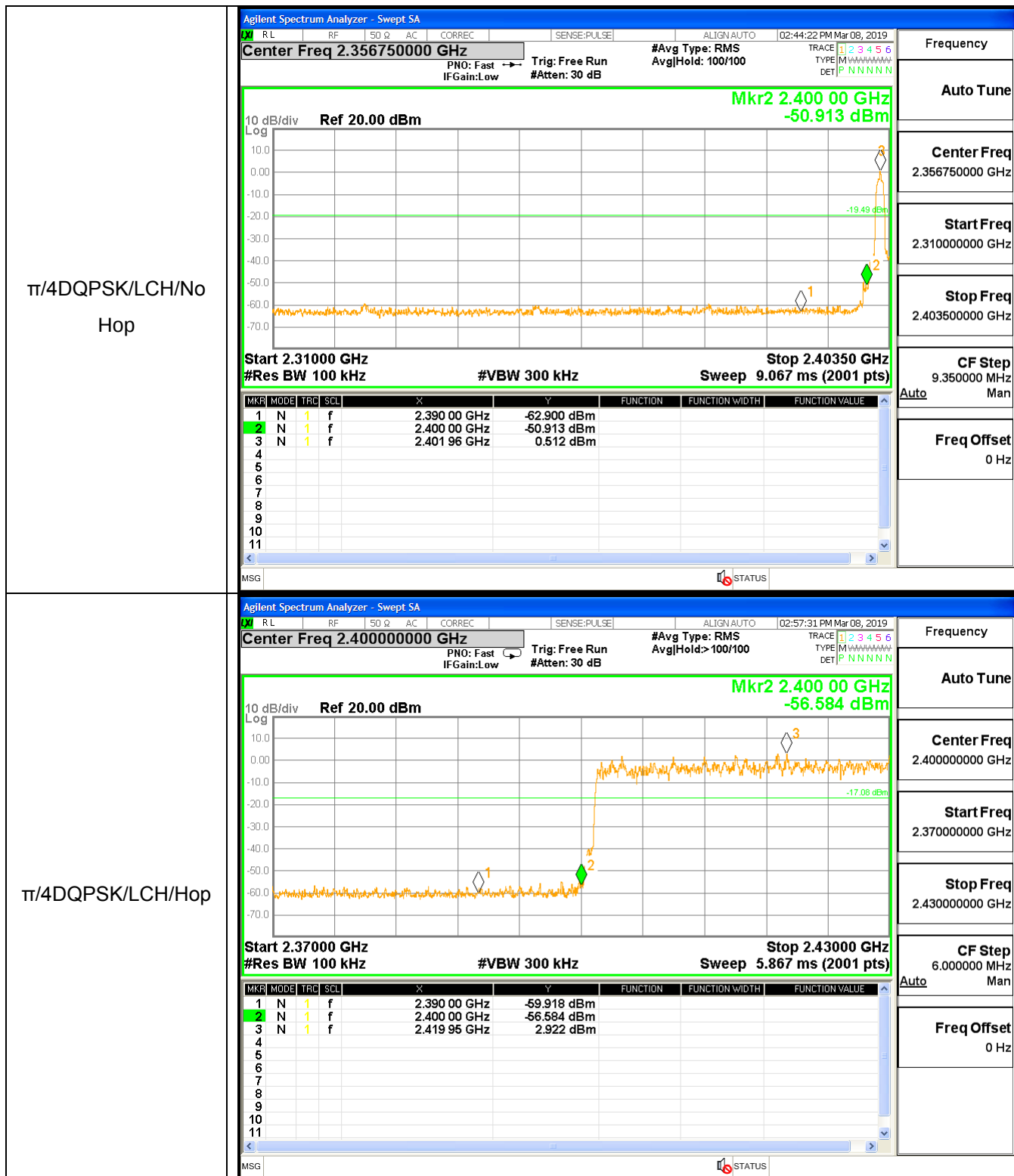
GFSK/LCH/No Hop



GFSK/LCH/Hop







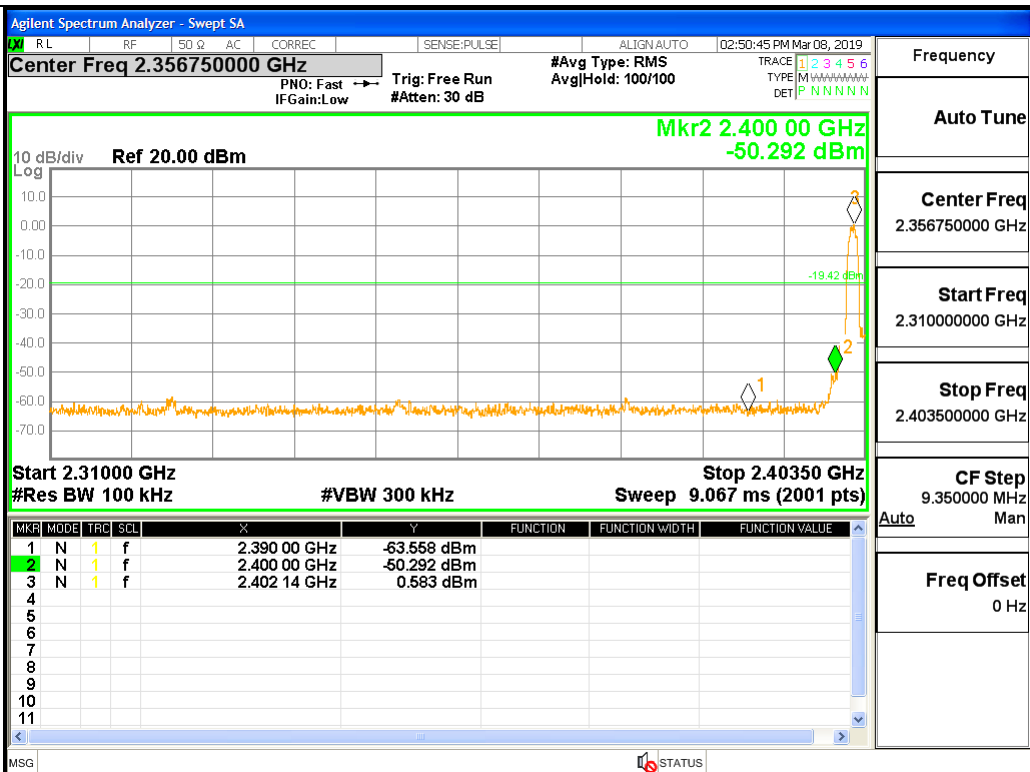
$\pi/4$ DQPSK/HCH/No
Hop

MkP	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.483 500 GHz	-61.578 dBm			
2	N	1	f	2.500 000 GHz	-62.821 dBm			
3	N	1	f	2.480 113 GHz	4.436 dBm			

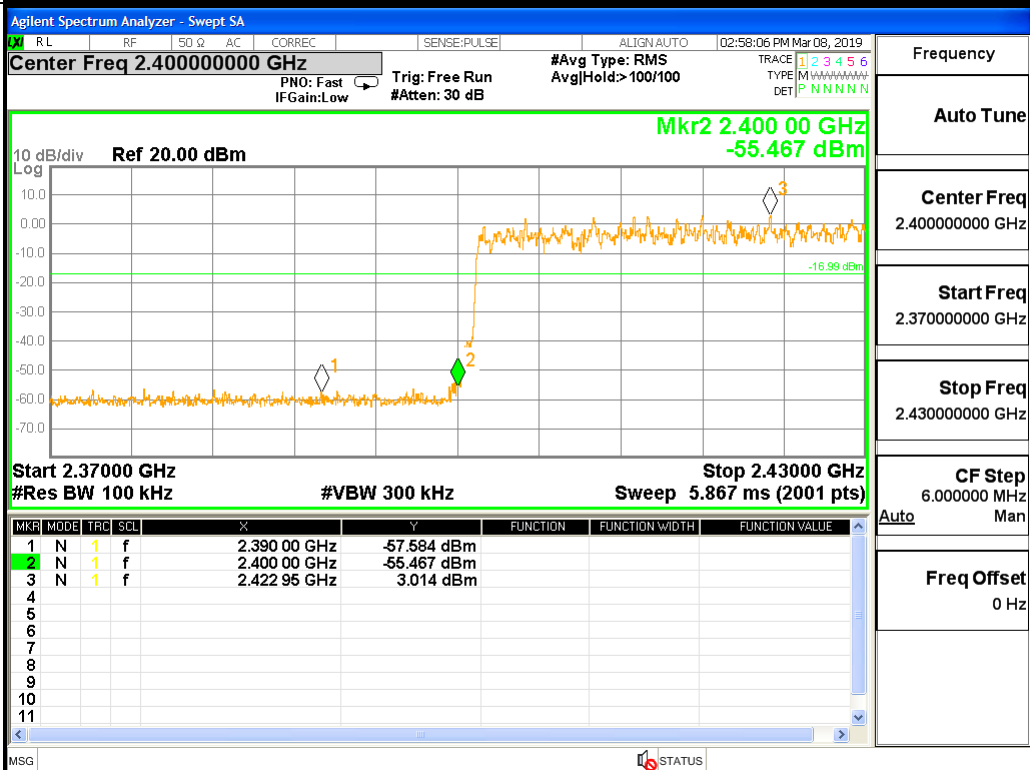
$\pi/4$ DQPSK/HCH/Hop

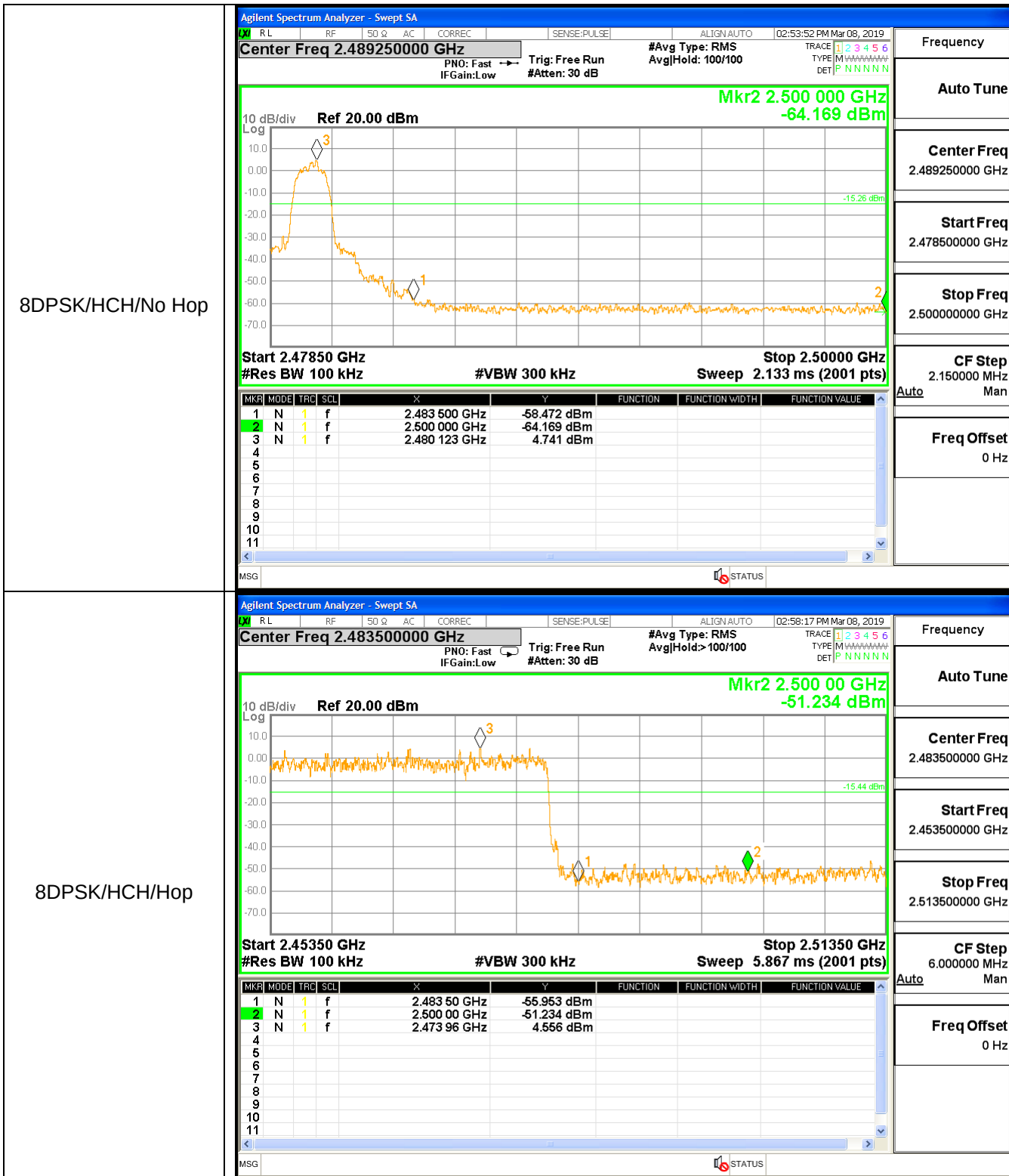
MkP	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.483 50 GHz	-54.714 dBm			
2	N	1	f	2.500 00 GHz	-53.036 dBm			
3	N	1	f	2.471 95 GHz	4.562 dBm			

8DPSK/LCH/No Hop

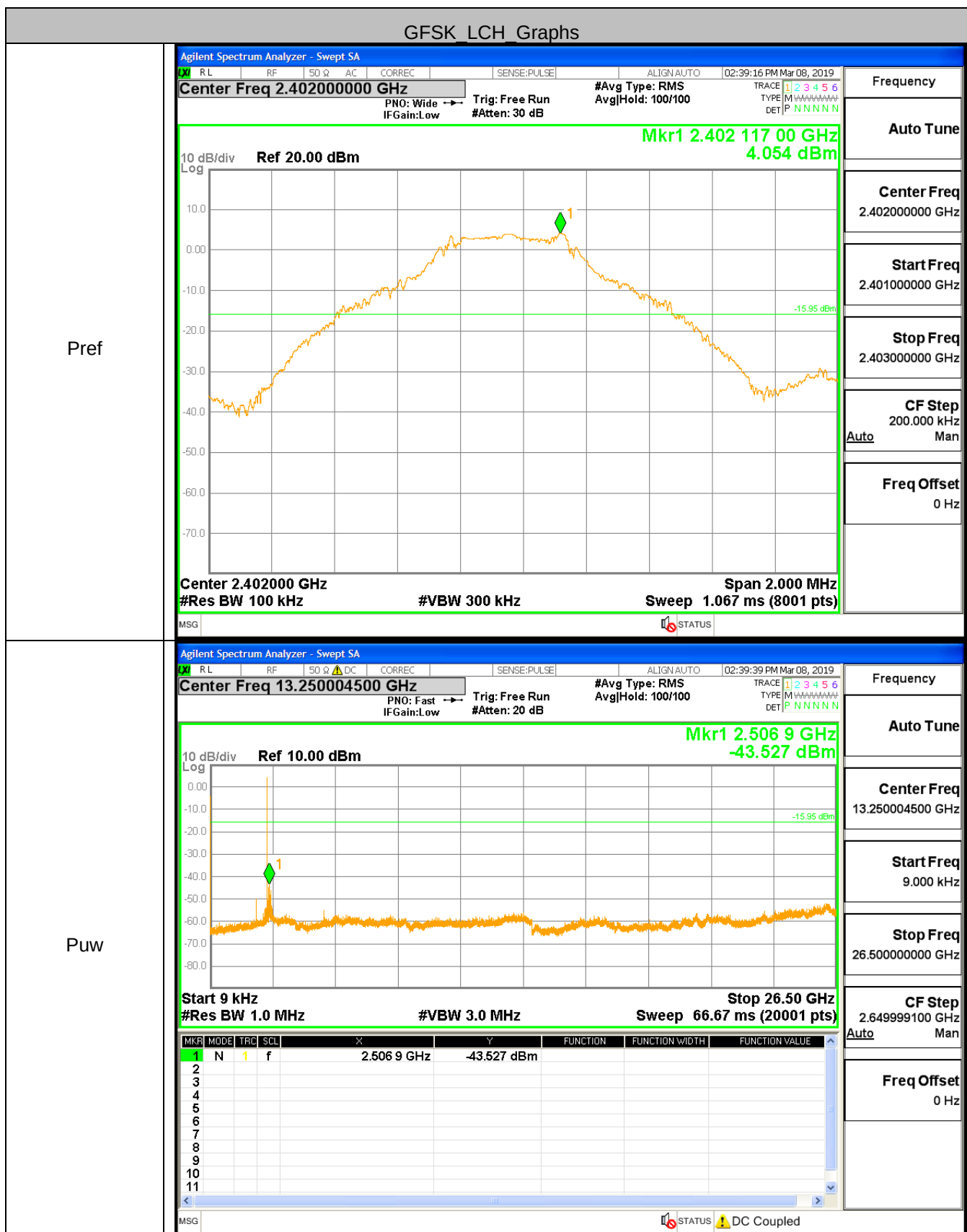


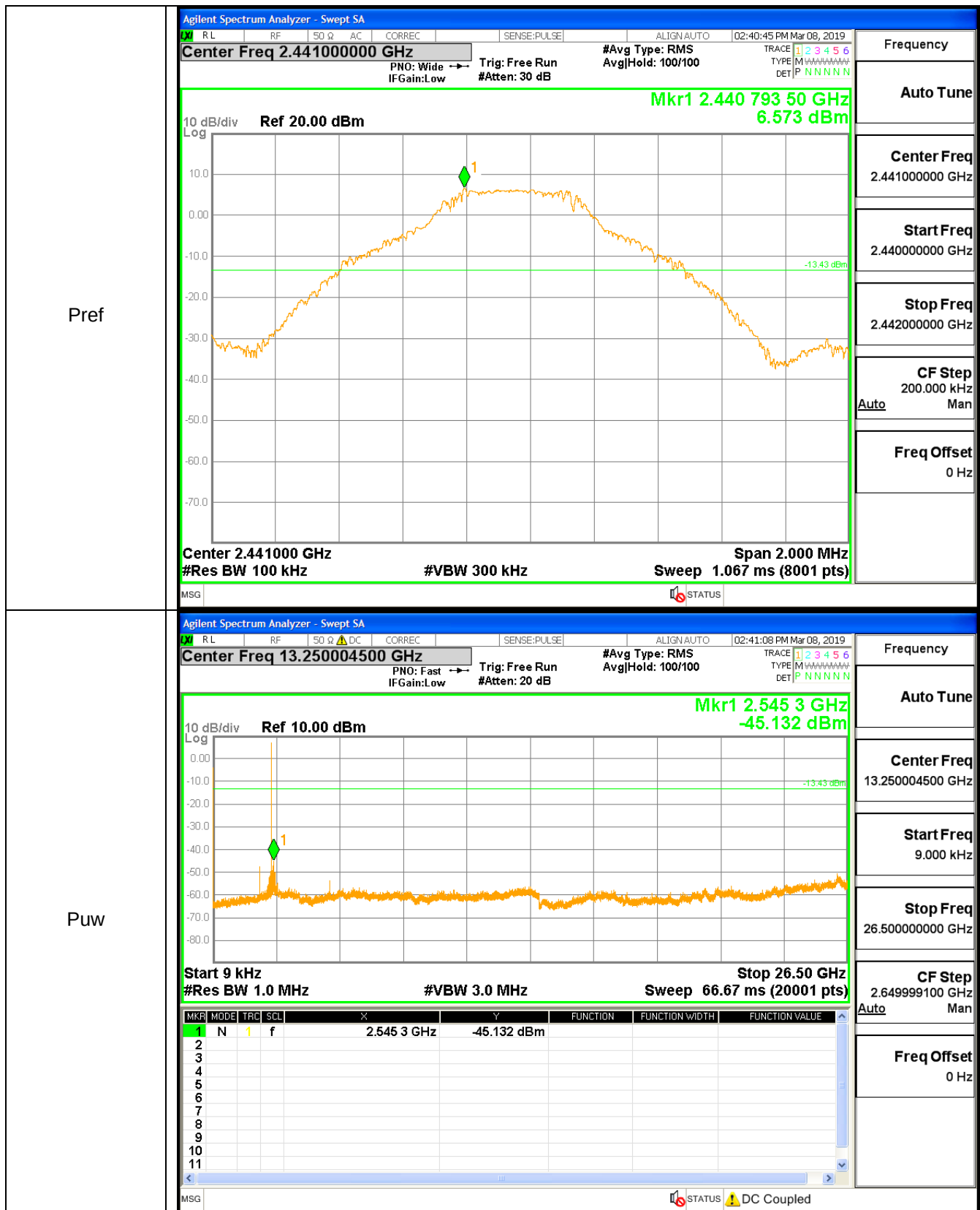
8DPSK/LCH/Hop





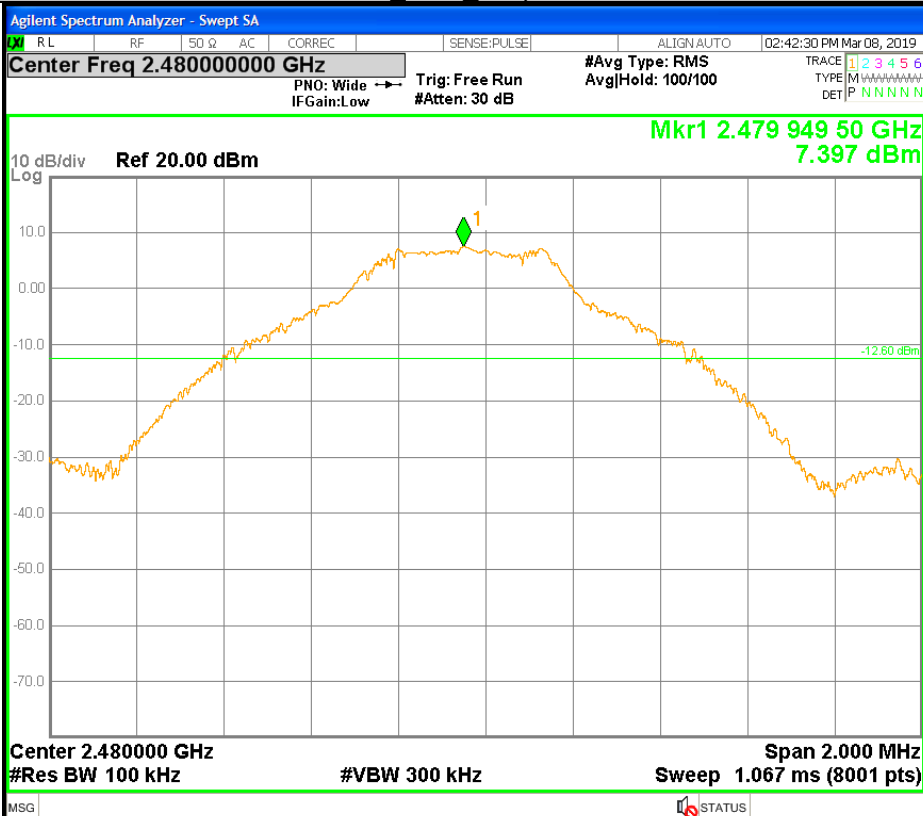
A.7 RF Conducted Spurious Emissions Test Graph



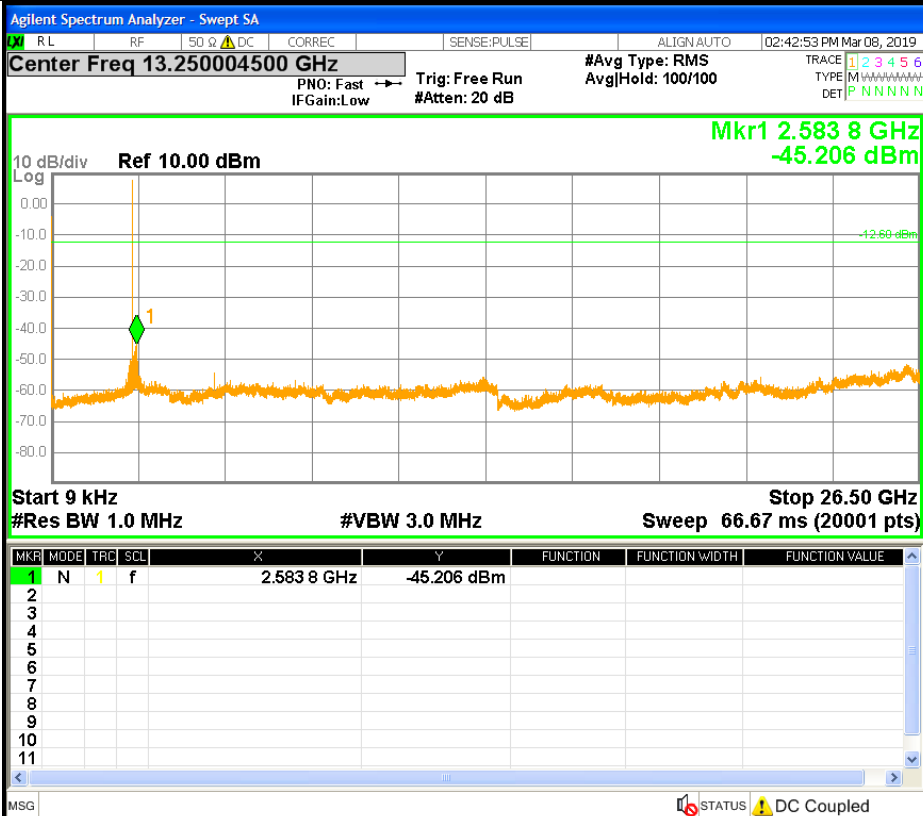


GFSK HCH Graphs

Pref

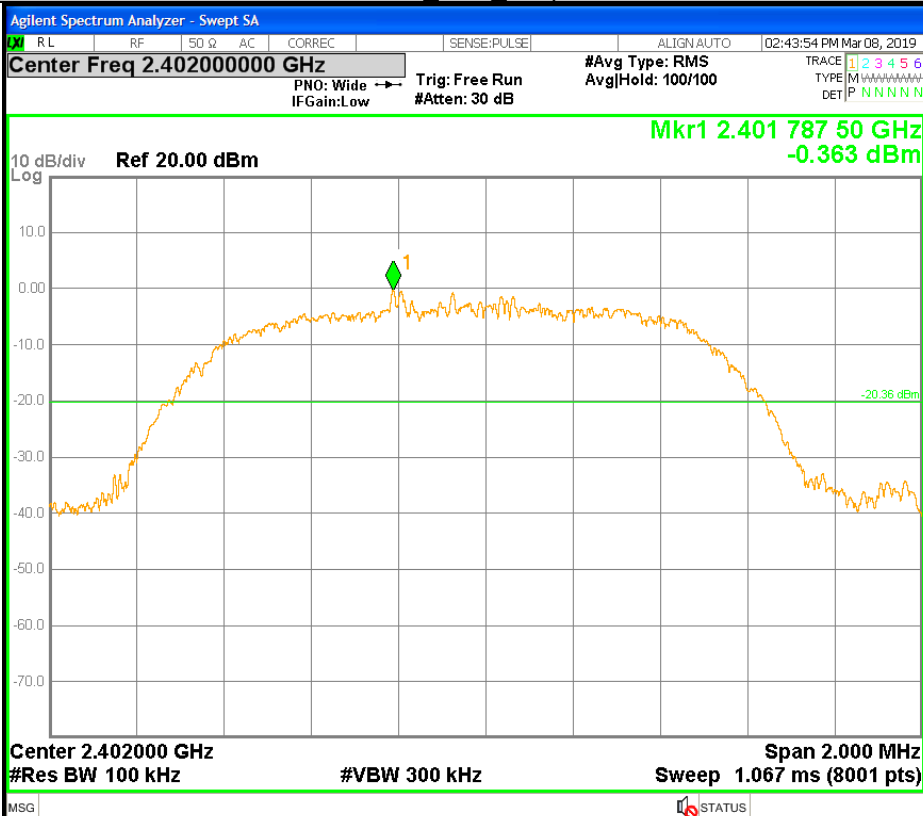


Puw

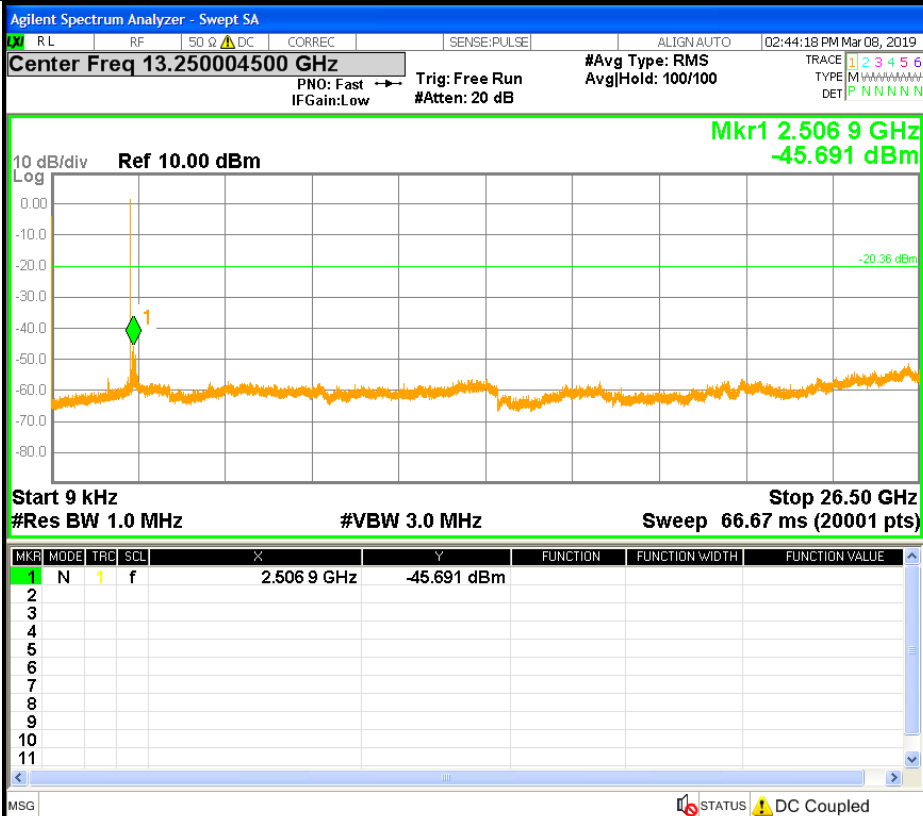


$\pi/4$ DQPSK LCH Graphs

Pref

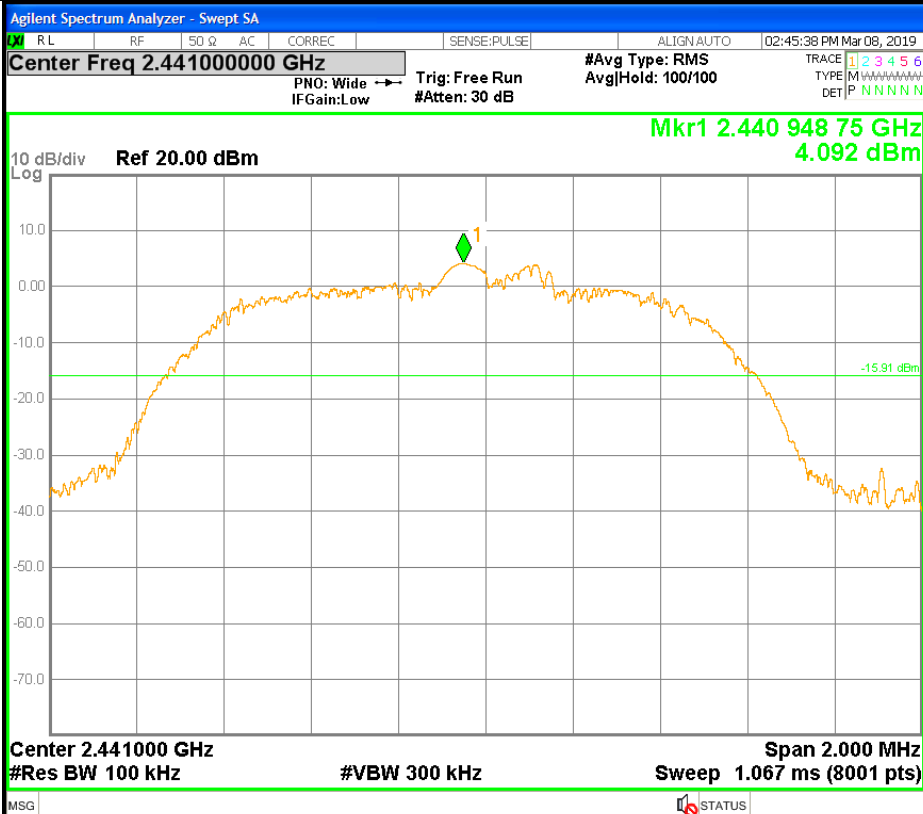


Puw

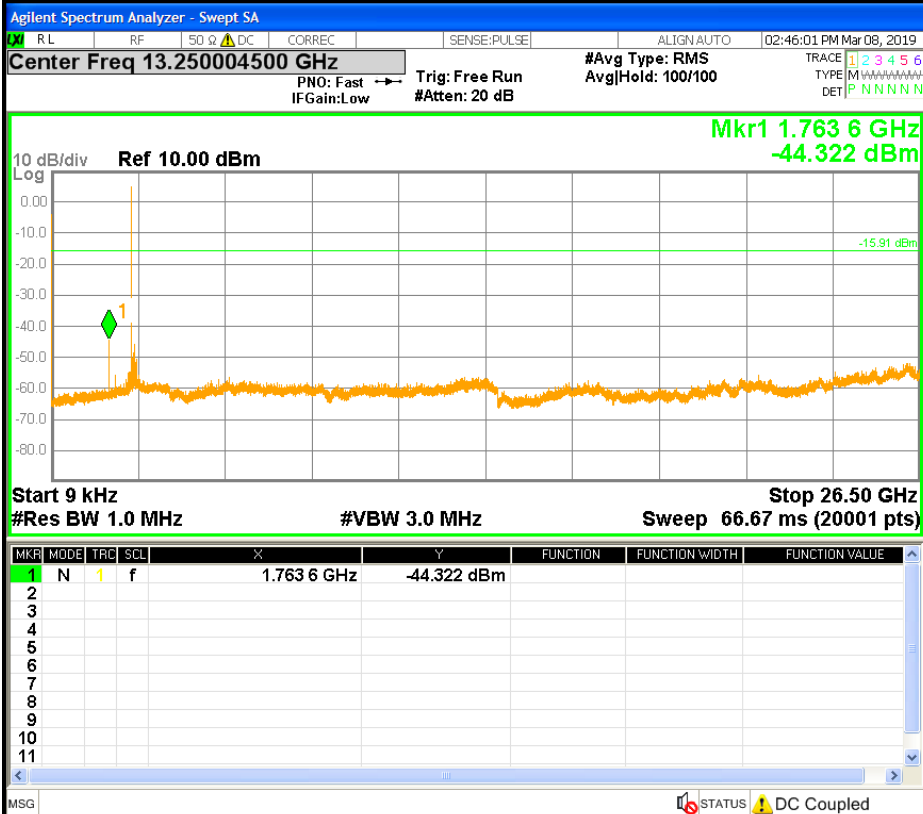


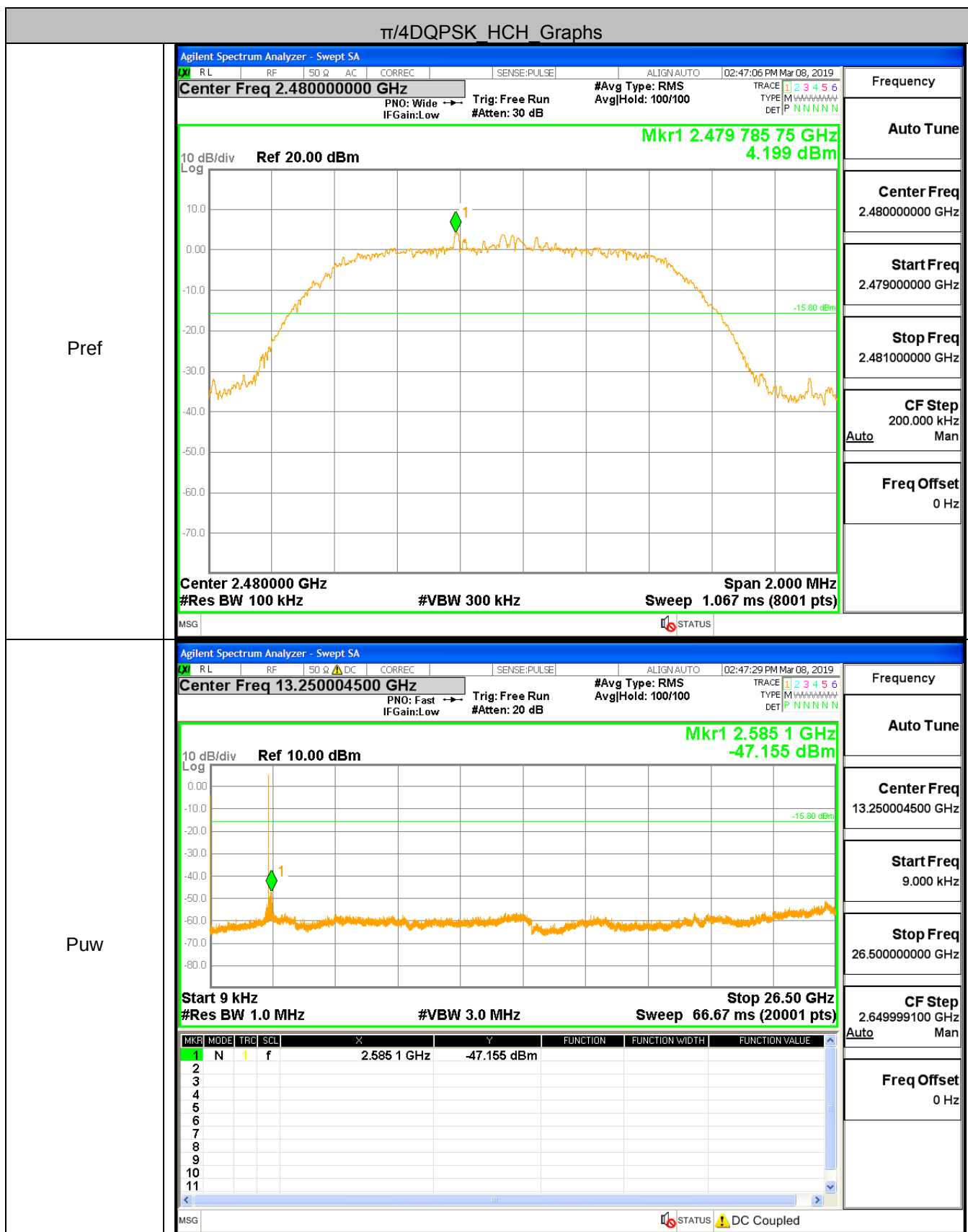
$\pi/4$ DQPSK MCH Graphs

Pref



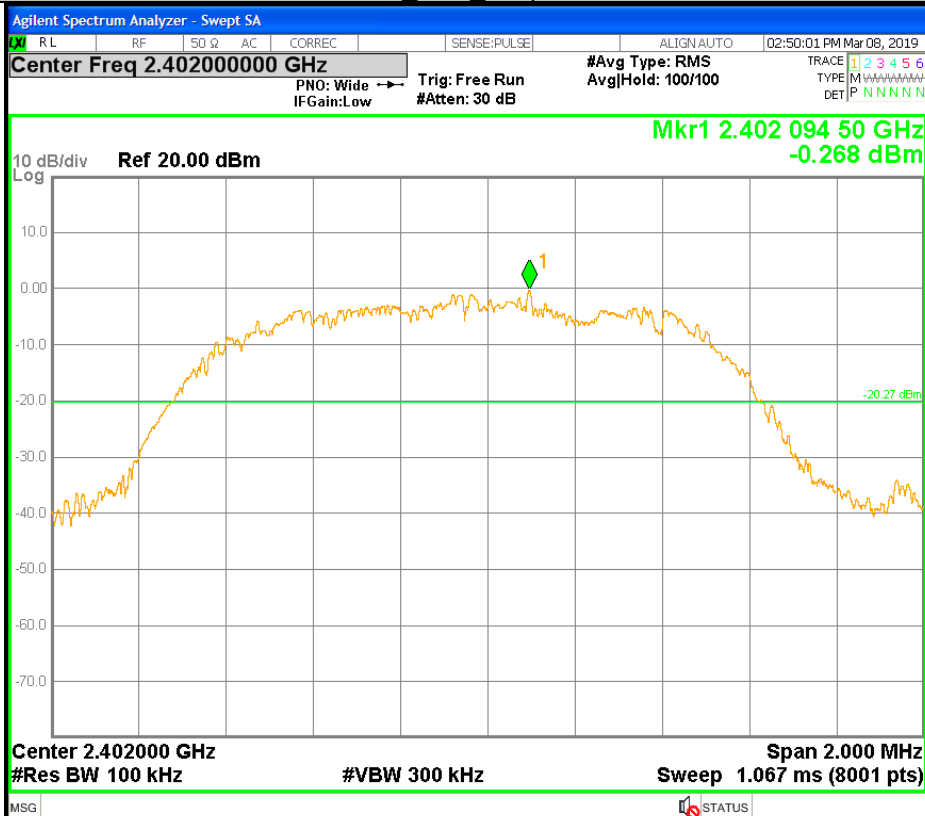
Puw



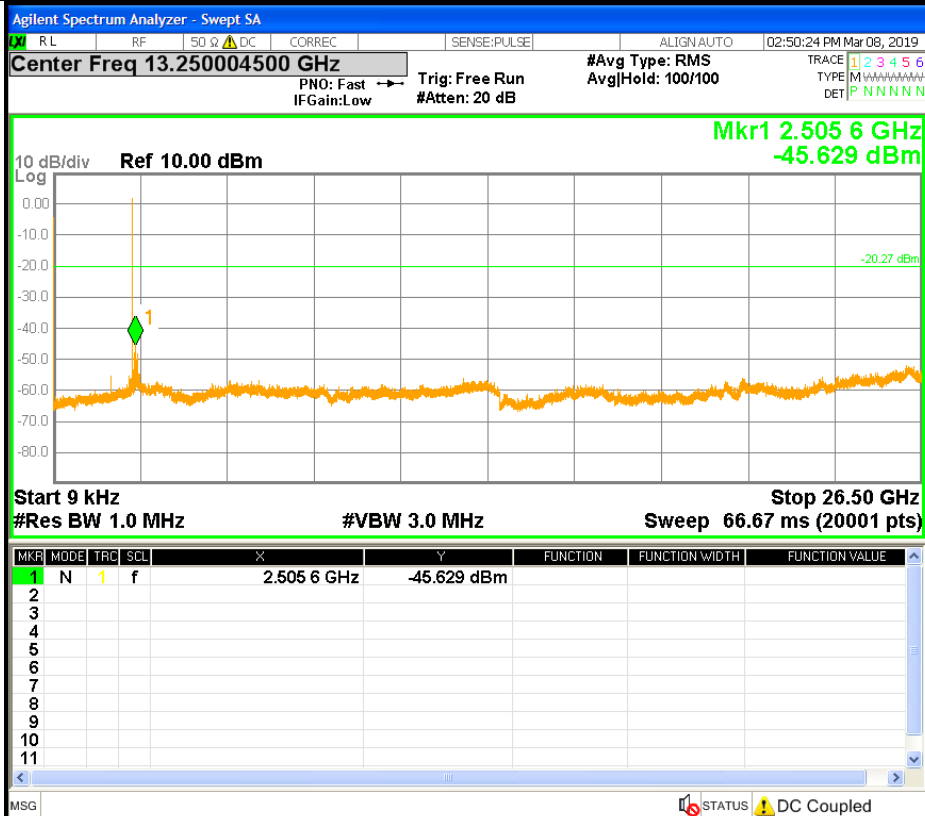


8DPSK LCH Graphs

Pref

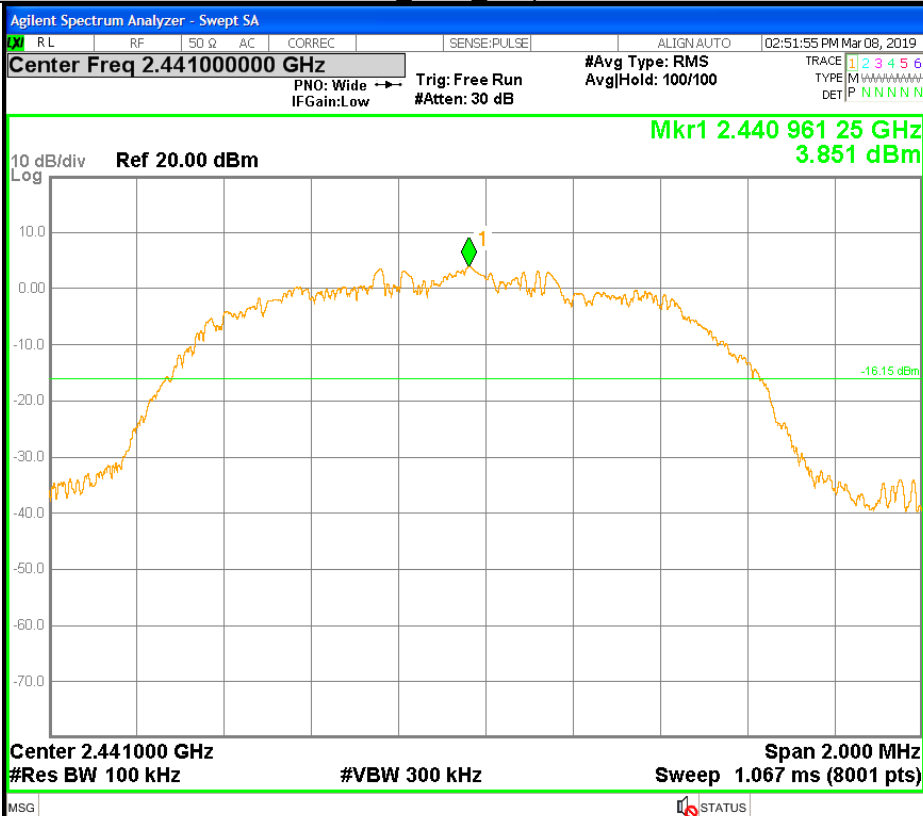


Puw

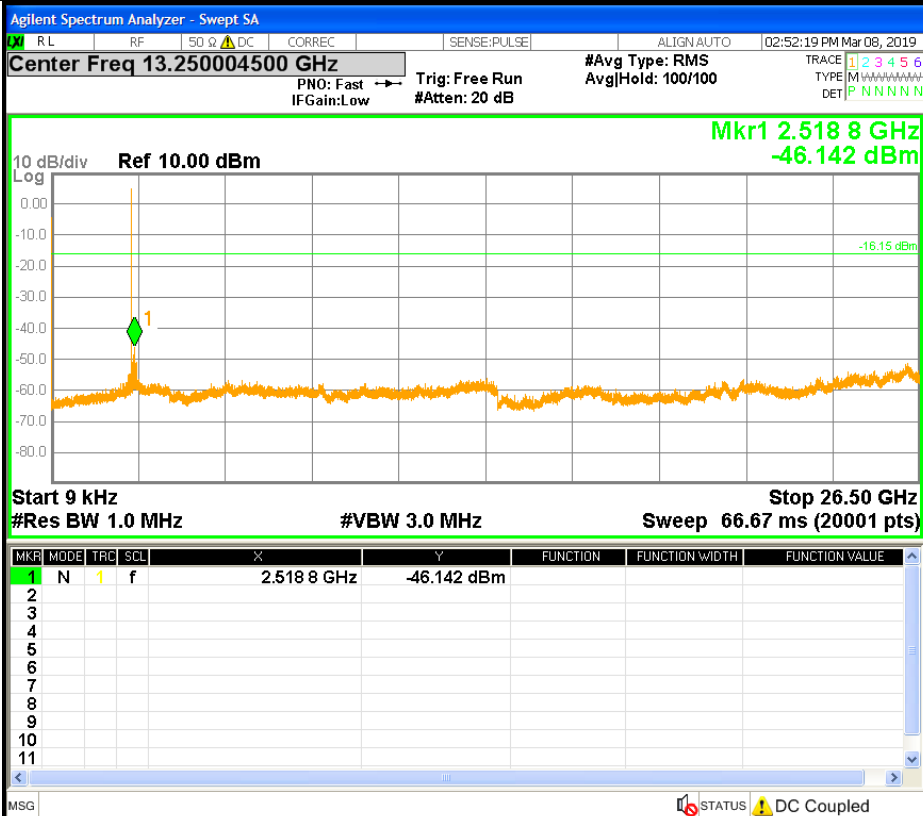


8DPSK MCH Graphs

Pref

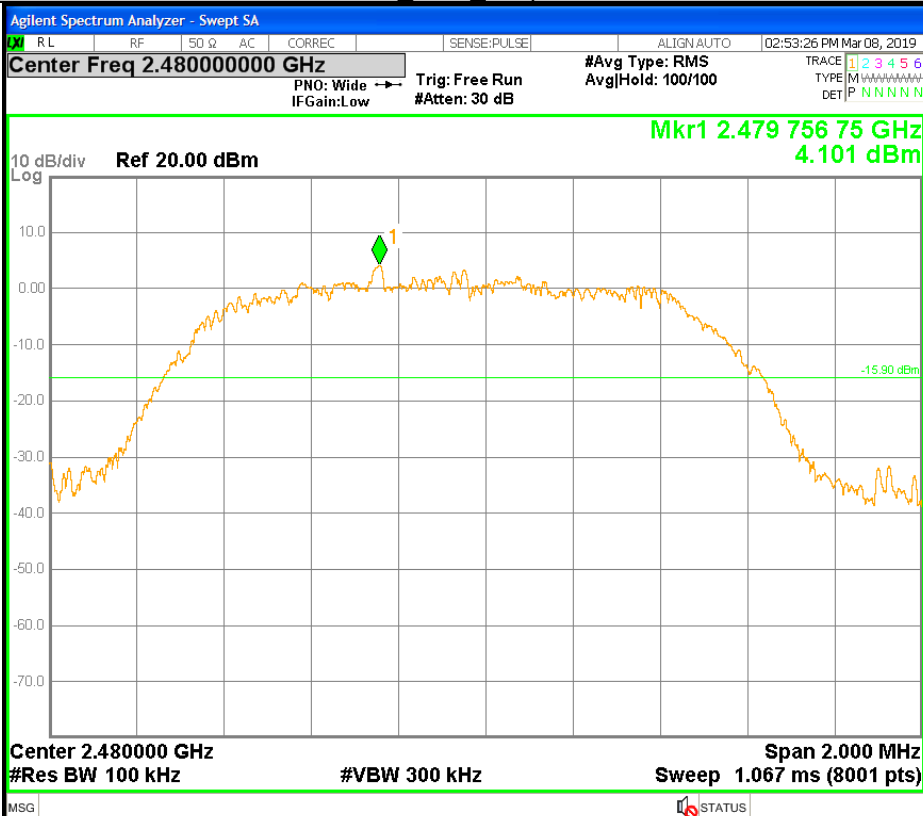


Puw

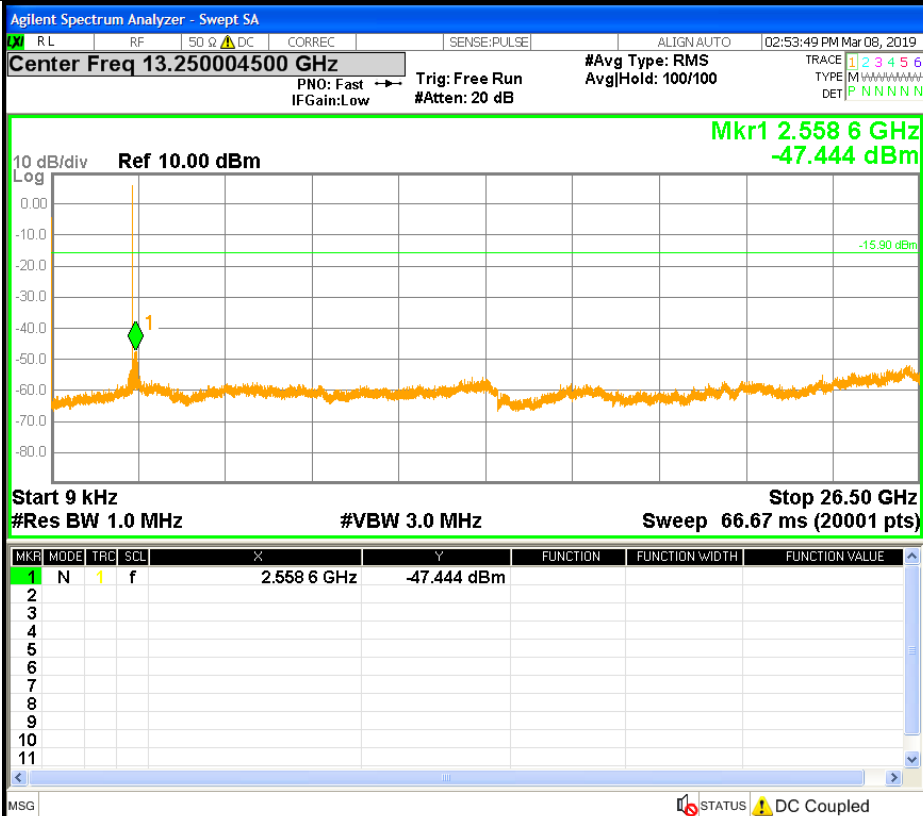


8DPSK HCH Graphs

Pref



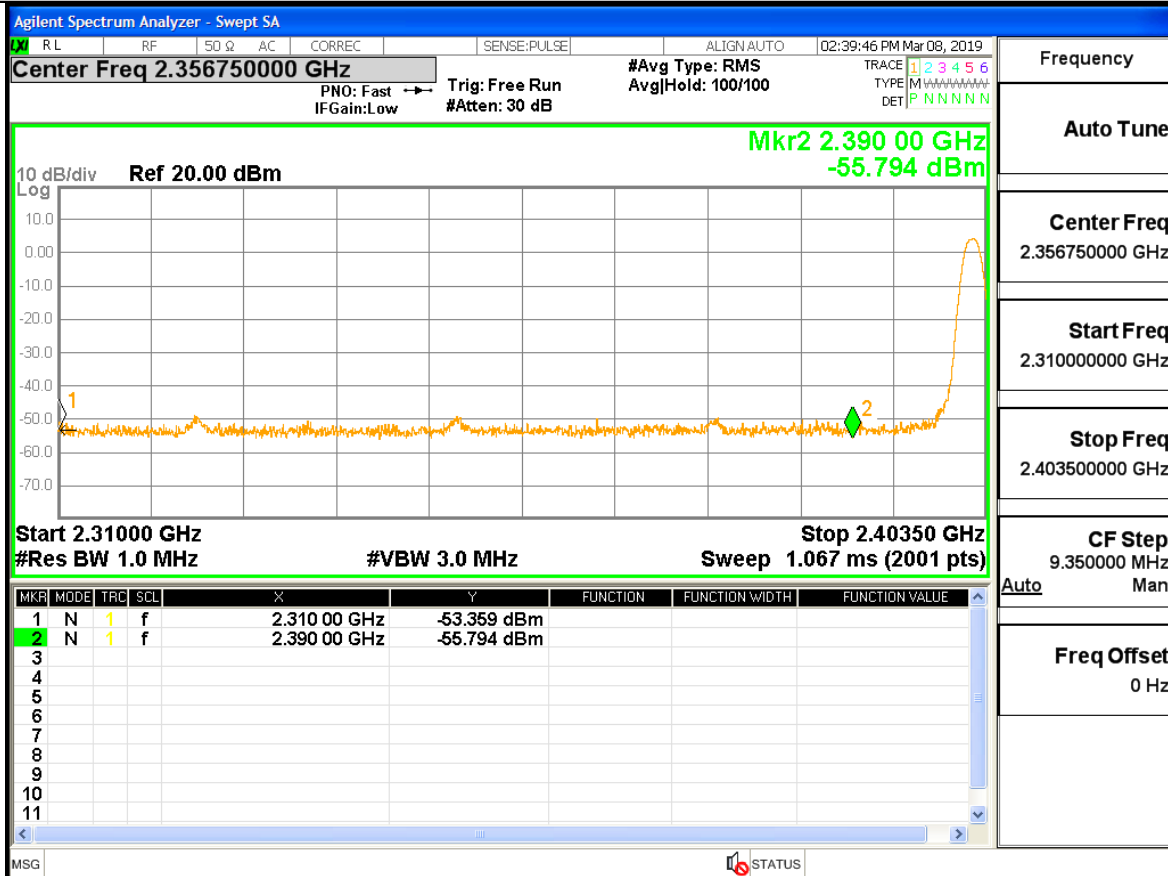
Puw



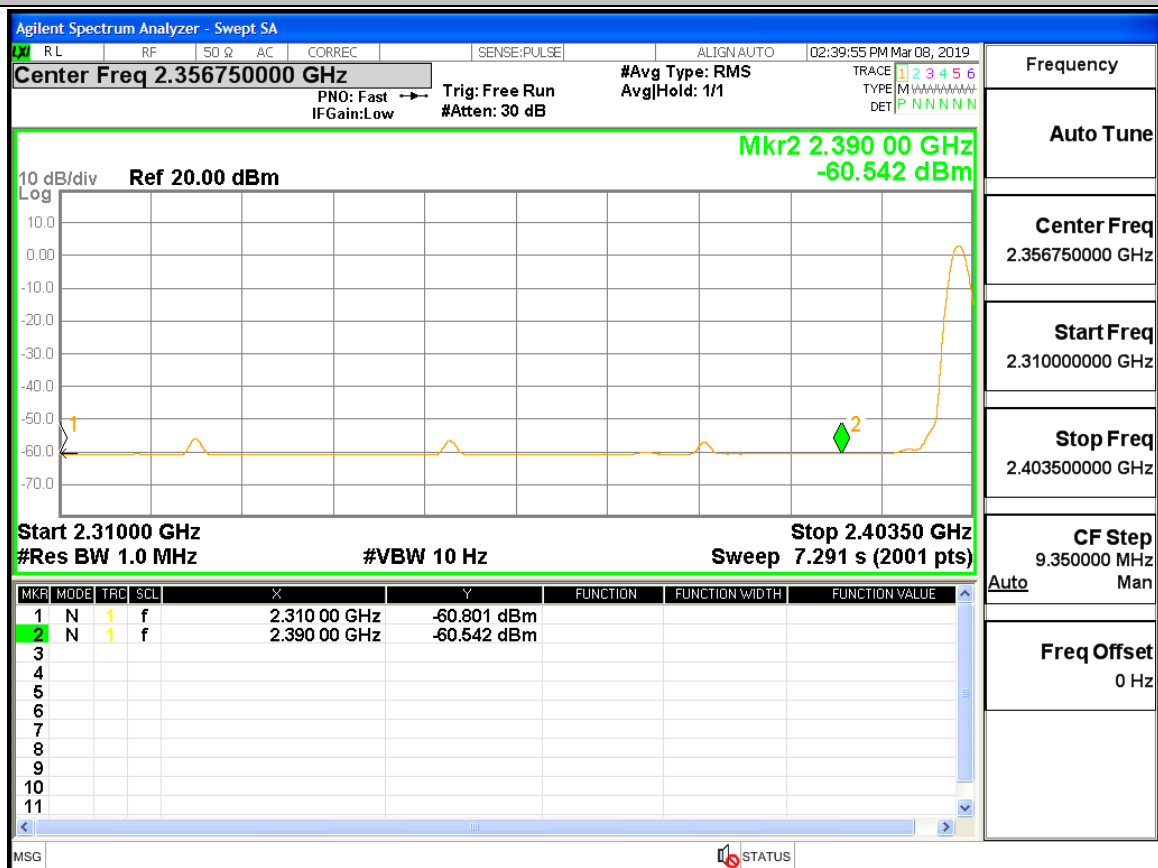
A.8 Restrict-band band-edge measurements

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2310	2.00	0.00	-53.36	43.84	74	-60.8	36.4	54	Pass
1DH5	2402	2390	2.00	0.00	-55.79	41.41	74	-60.54	36.66	54	Pass
1DH5	2480	2483.5	2.00	0.00	-44.88	52.32	74	-50.54	46.66	54	Pass
1DH5	2480	2500	2.00	0.00	-52.8	44.4	74	-59.78	37.42	54	Pass
2DH5	2402	2310	2.00	0.00	-53.97	43.23	74	-60.85	36.35	54	Pass
2DH5	2402	2390	2.00	0.00	-52.08	45.12	74	-60.57	36.63	54	Pass
2DH5	2480	2483.5	2.00	0.00	-46.52	50.68	74	-53.26	43.94	54	Pass
2DH5	2480	2500	2.00	0.00	-52.44	44.76	74	-59.81	37.39	54	Pass
3DH5	2402	2310	2.00	0.00	-53.51	43.69	74	-60.86	36.34	54	Pass
3DH5	2402	2390	2.00	0.00	-52.52	44.68	74	-60.57	36.63	54	Pass
3DH5	2480	2483.5	2.00	0.00	-46.98	50.22	74	-53.22	43.98	54	Pass
3DH5	2480	2500	2.00	0.00	-50.88	46.32	74	-59.88	37.32	54	Pass

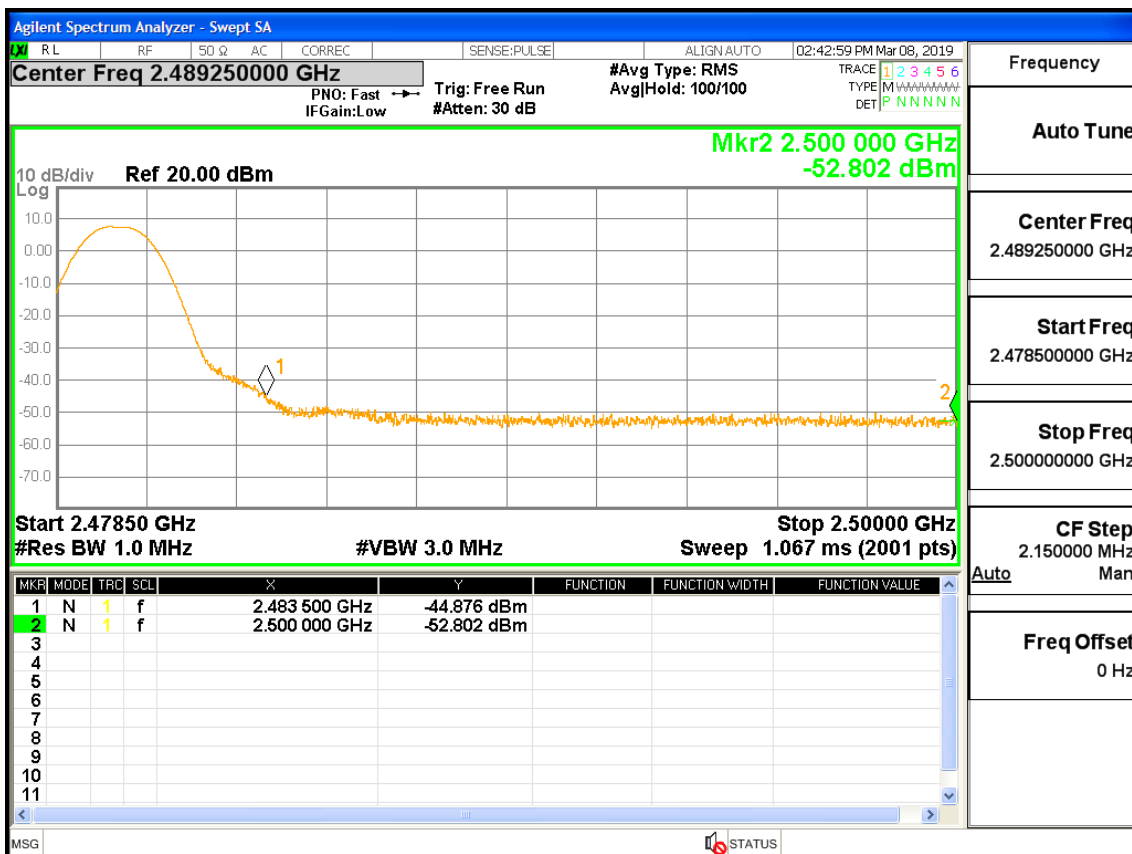
Restrict-band band-edge measurements_2402_PEAK_DH5



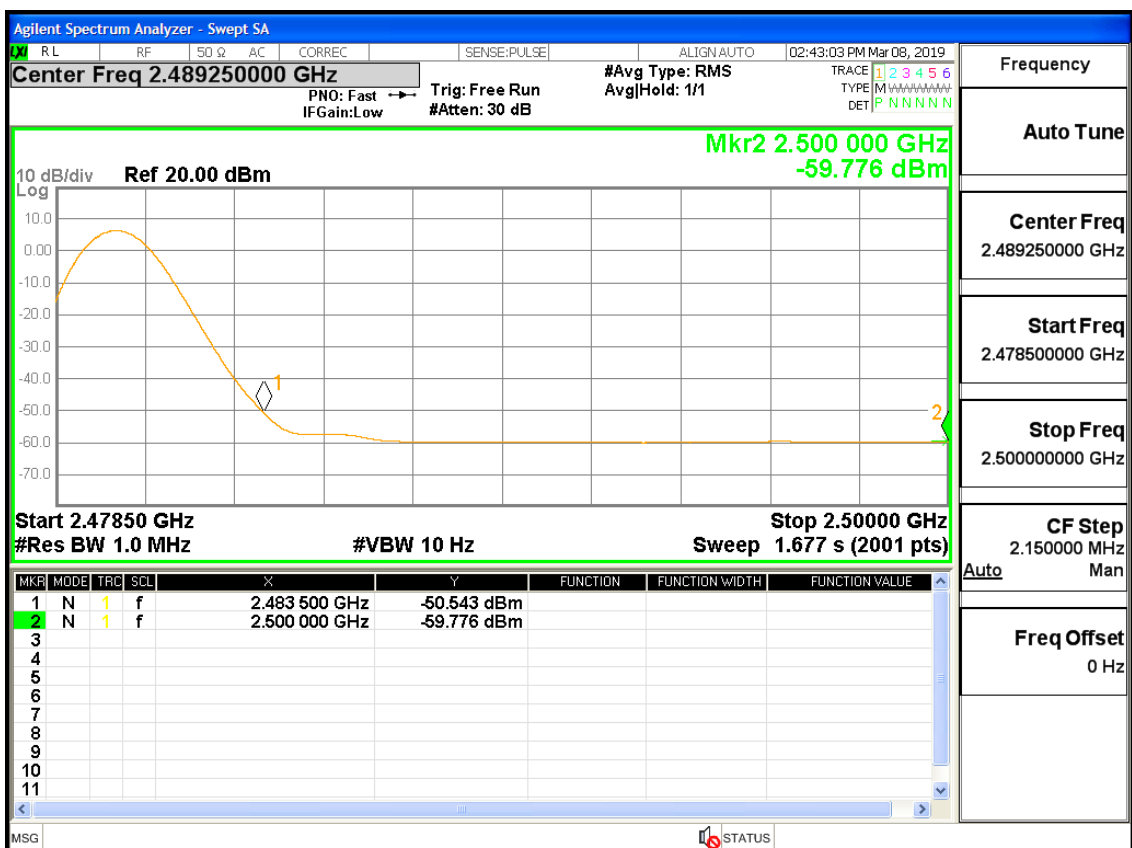
Restrict-band band-edge measurements_2402_AV_DH5



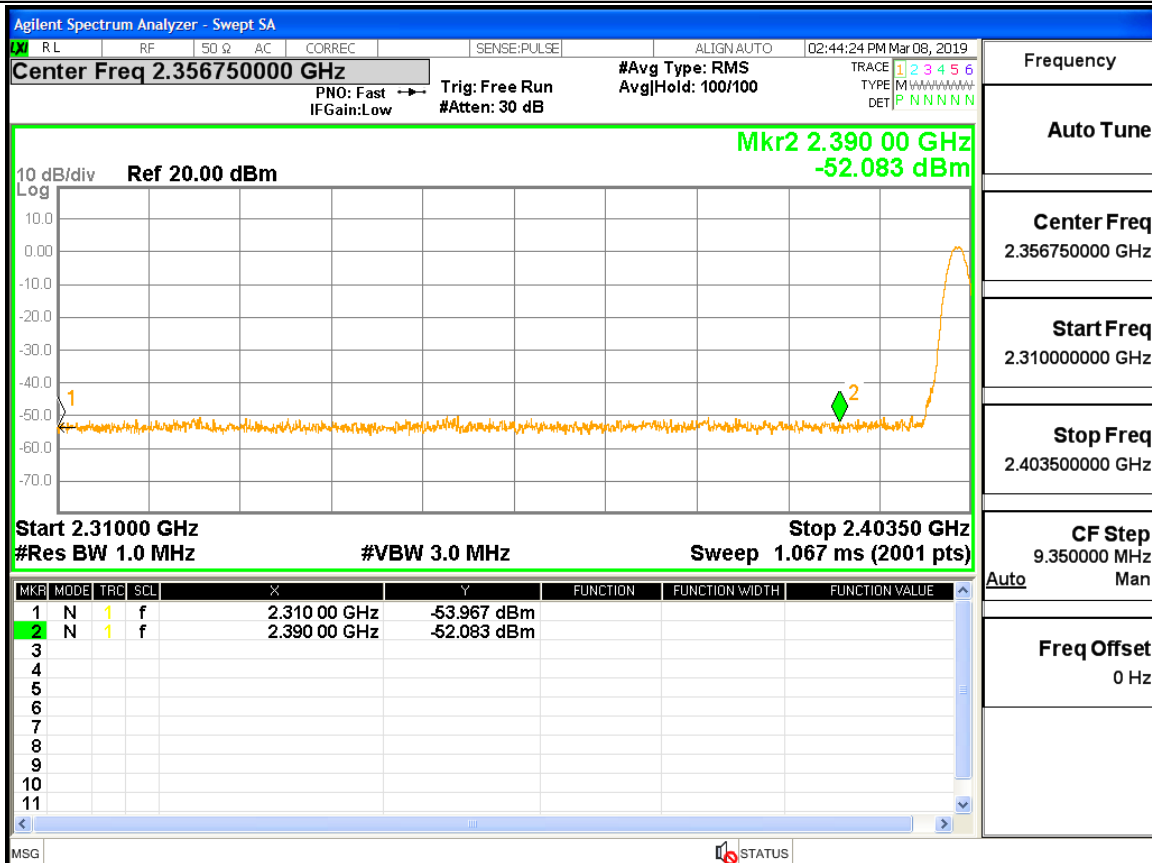
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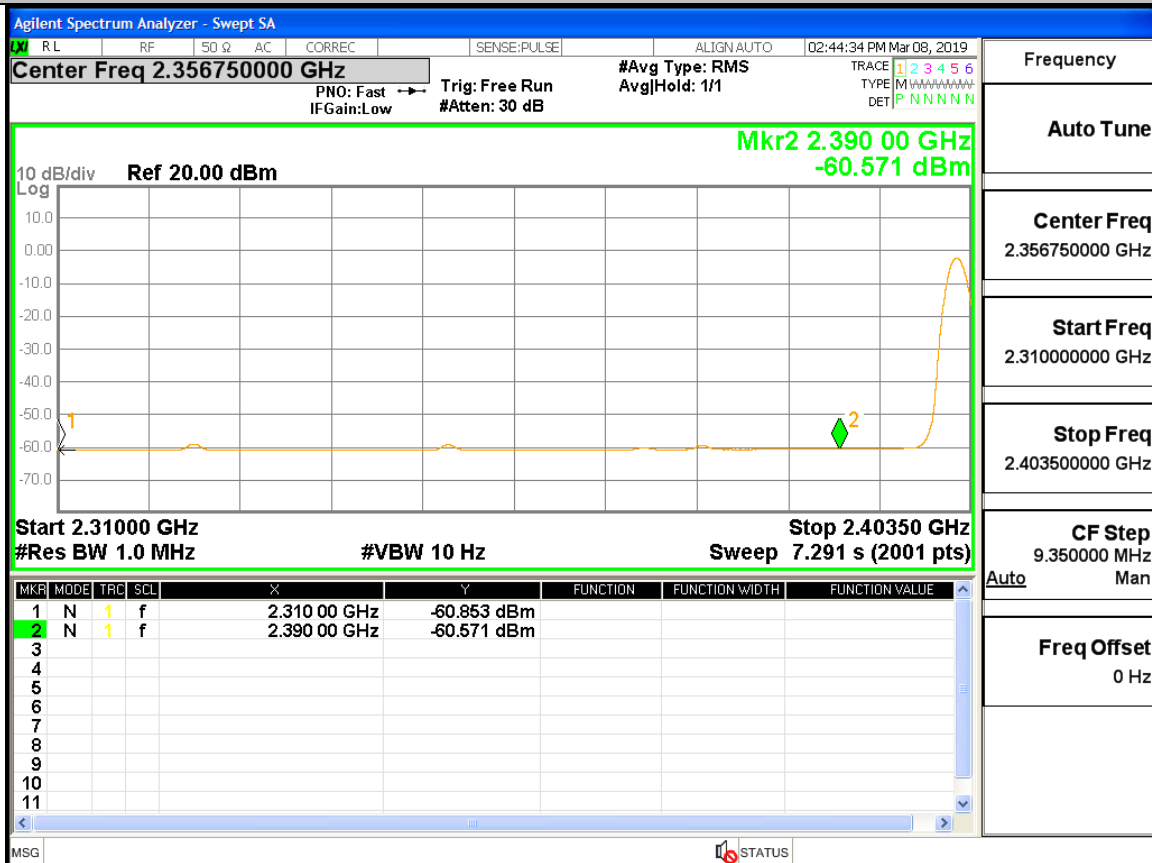
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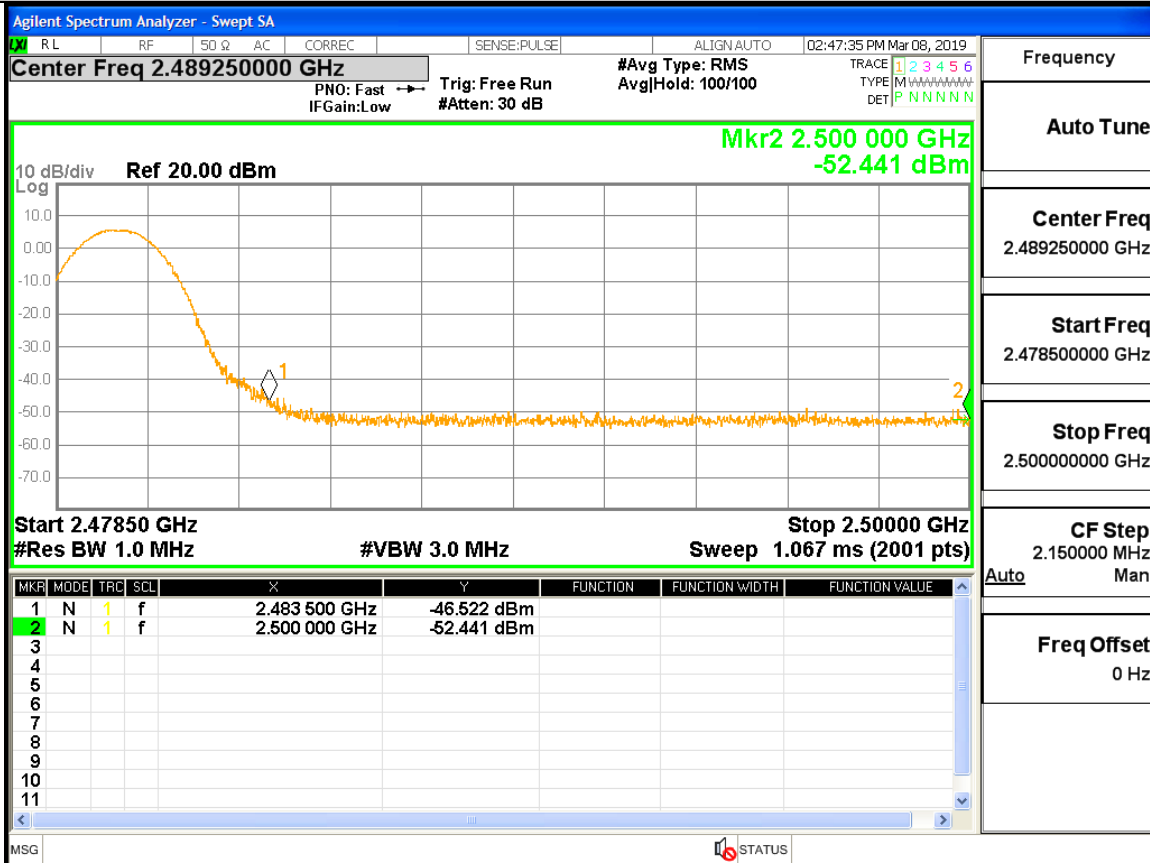
Restrict-band band-edge measurements 2402 PEAK 2DH5



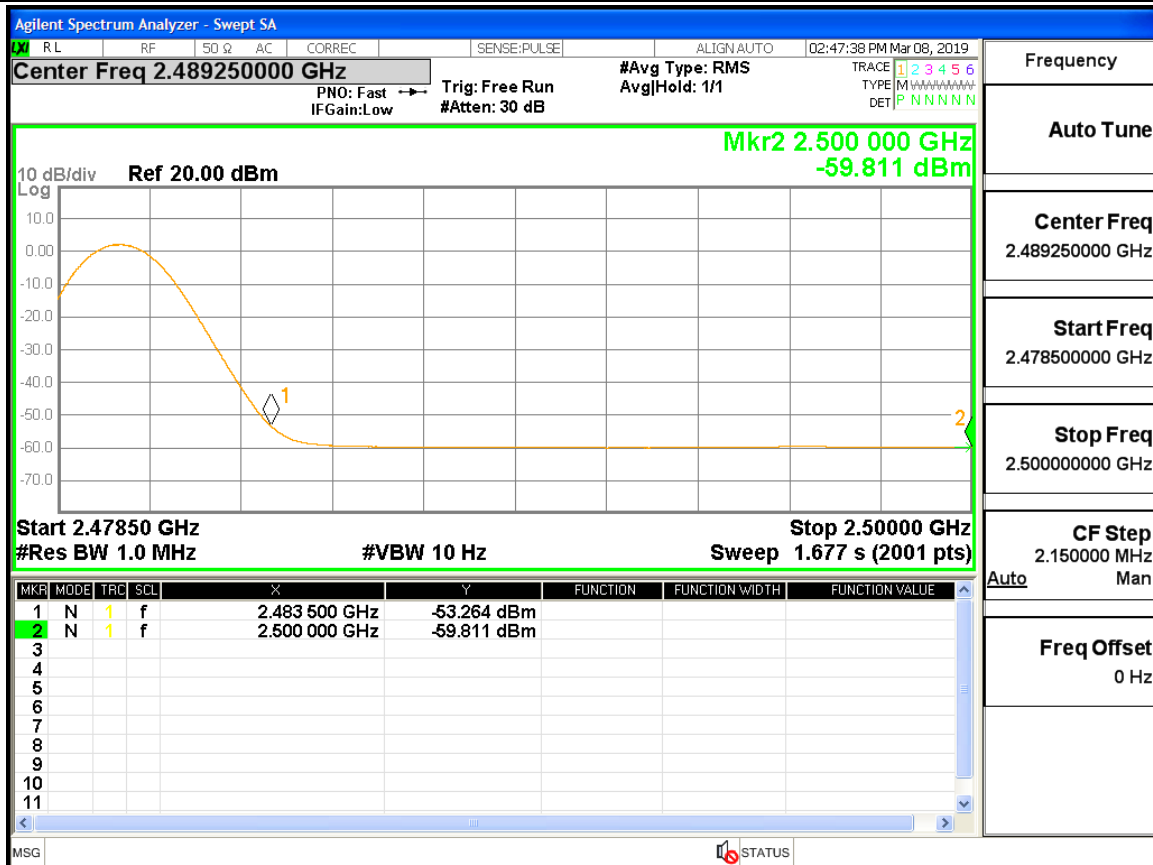
Restrict-band band-edge measurements 2402 AV 2DH5



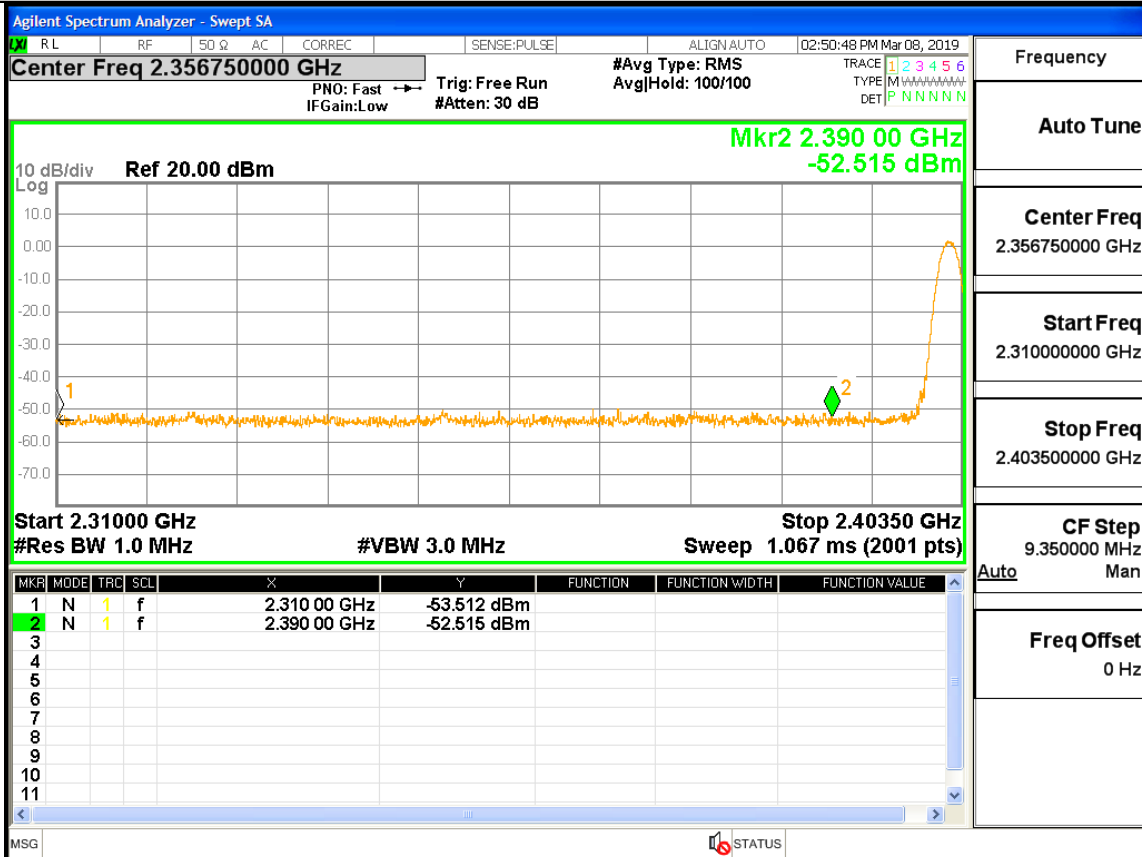
Restrict-band band-edge measurements_2480_PEAK_2DH5



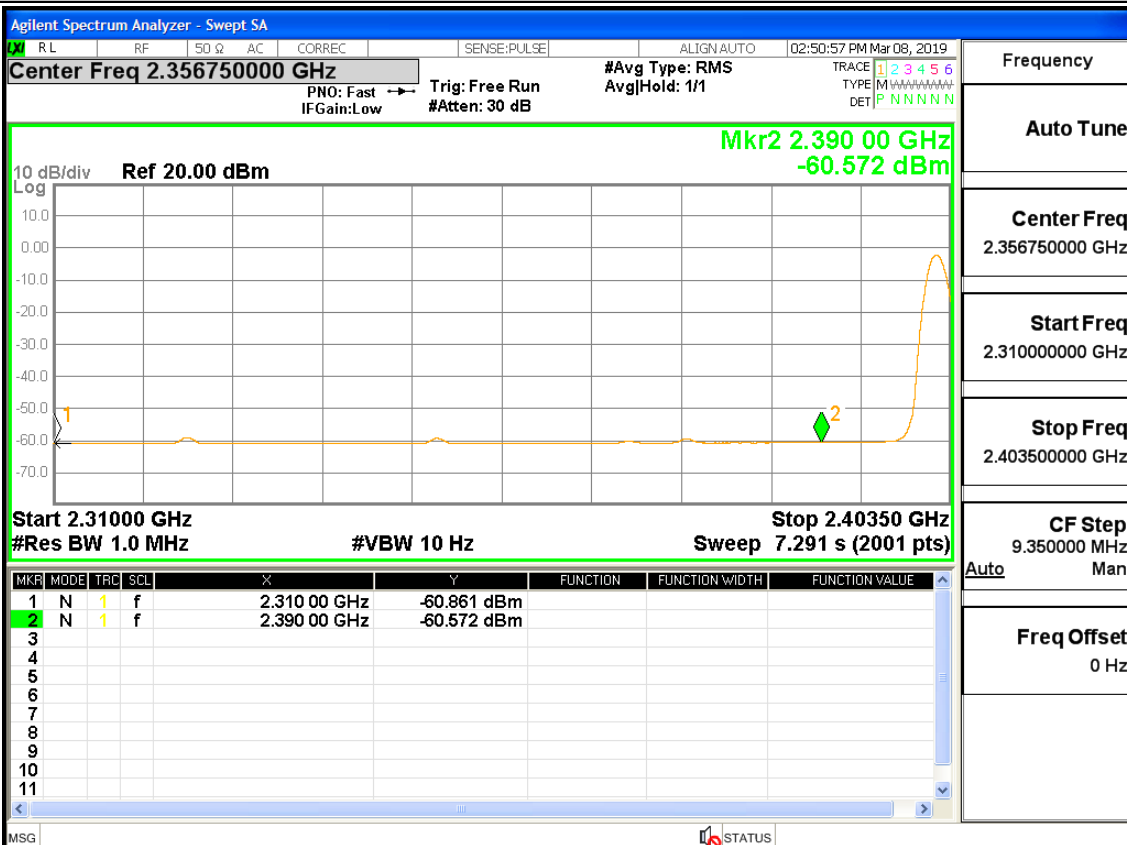
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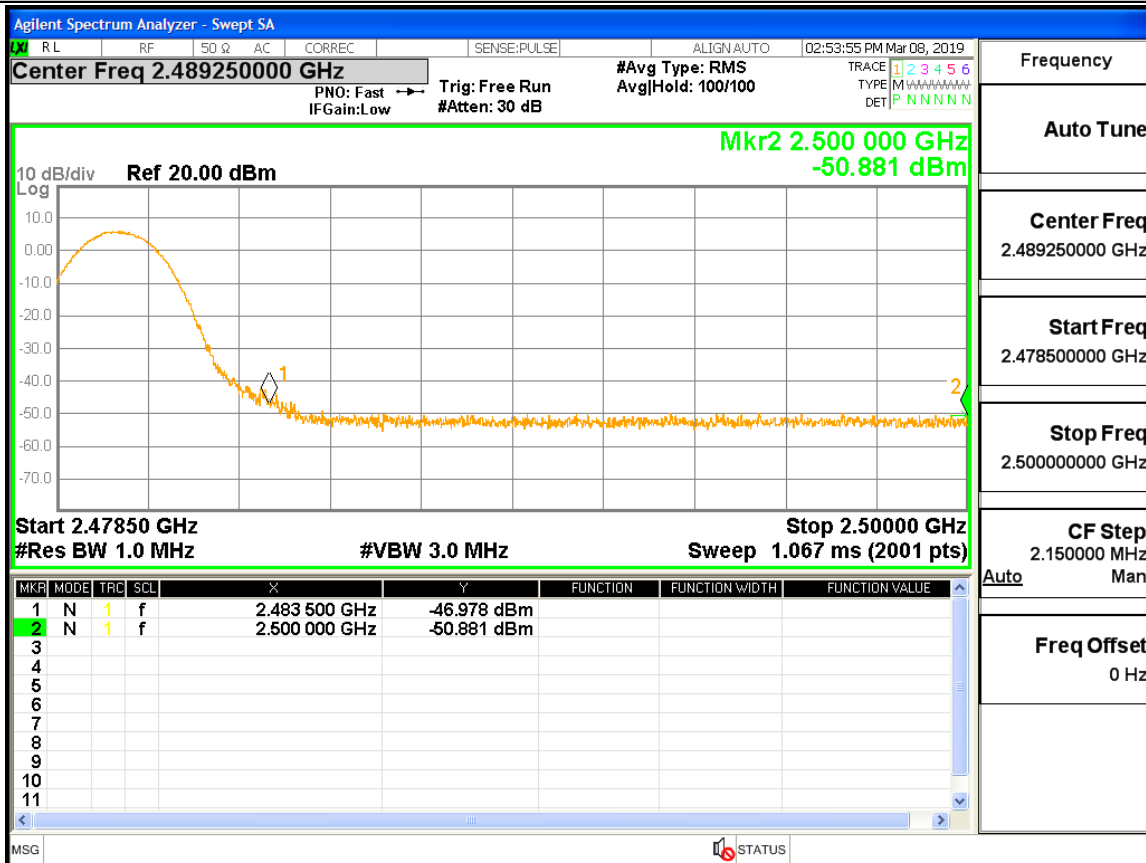
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

