

Appendix A

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

Product Name: Bluetooth Headset

Trade Mark: GoodLark

Test Model: GT100

FCC ID: 2ASKNGT100

Environmental Conditions

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

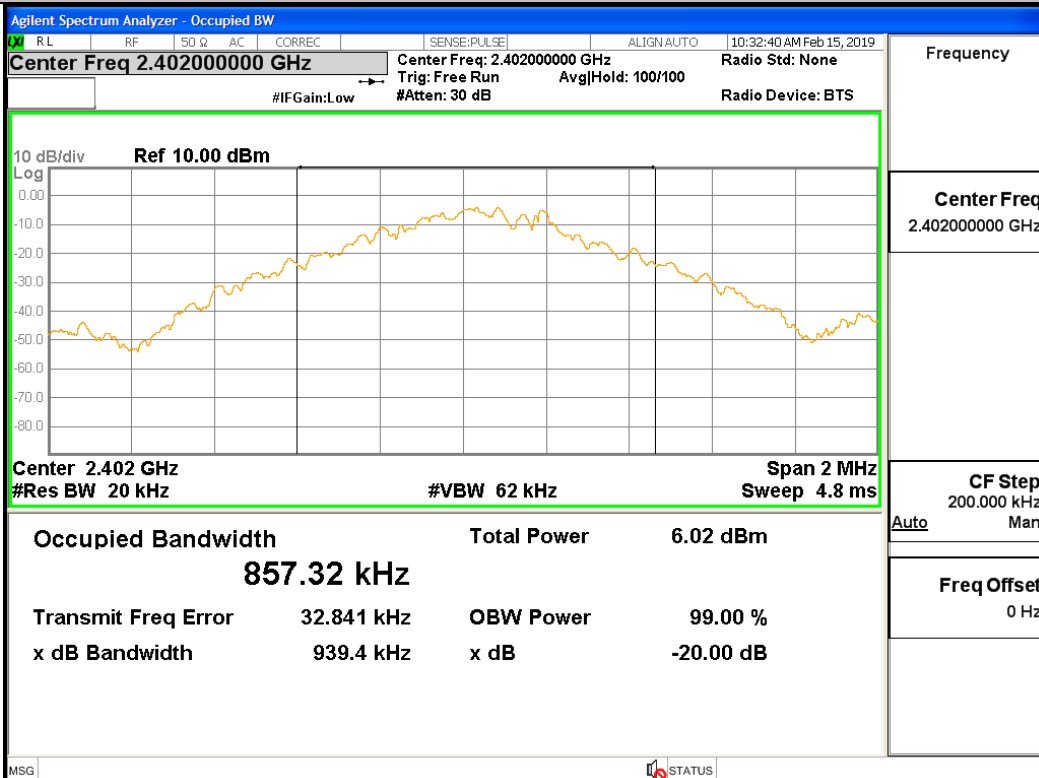
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.939	Not Specified	PASS
GFSK	MCH	0.944	Not Specified	PASS
GFSK	HCH	0.939	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.228	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.227	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.236	Not Specified	PASS
8DPSK	LCH	1.253	Not Specified	PASS
8DPSK	MCH	1.254	Not Specified	PASS
8DPSK	HCH	1.258	Not Specified	PASS

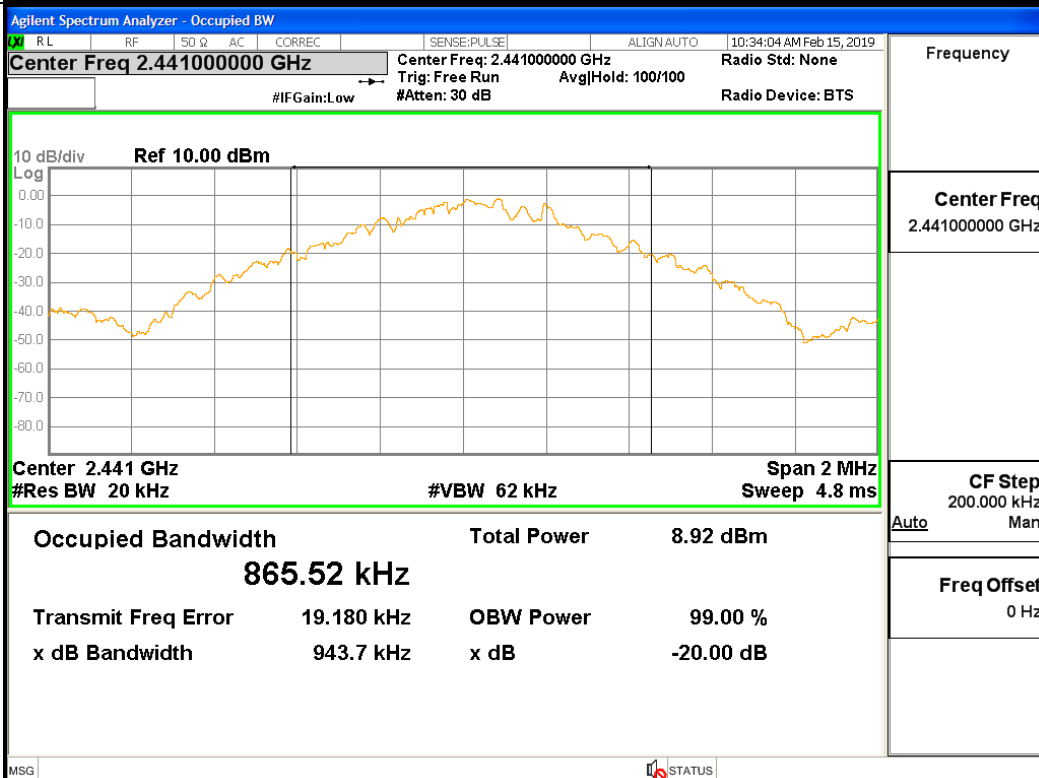
Test Graph

Graphs

GFSK/LCH



GFSK/MCH



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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

1.1805 MHz

Total Power

2.02 dBm

Transmit Freq Error

33.071 kHz

OBW Power

99.00 %

x dB Bandwidth

1.228 MHz

x dB

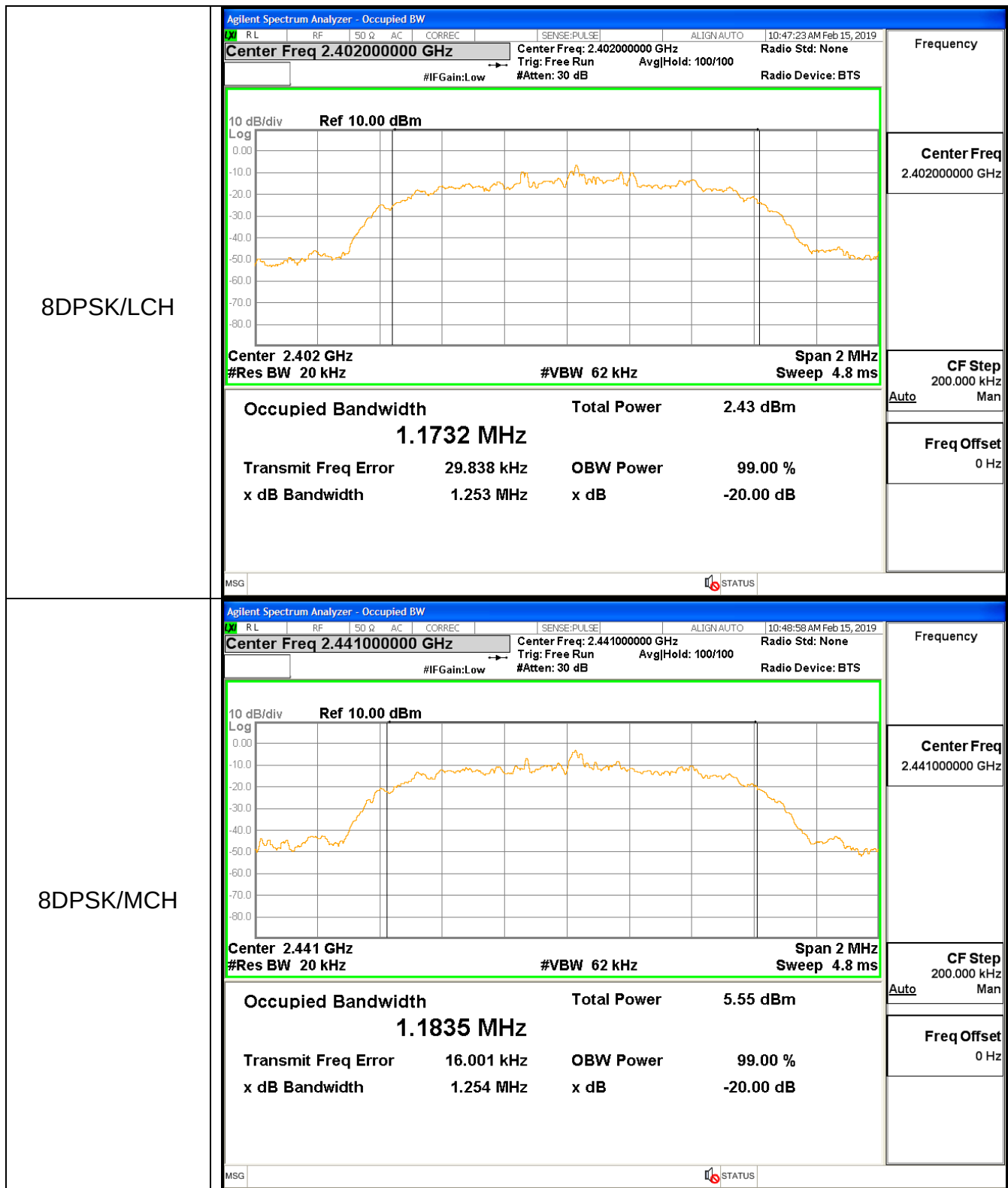
-20.00 dB

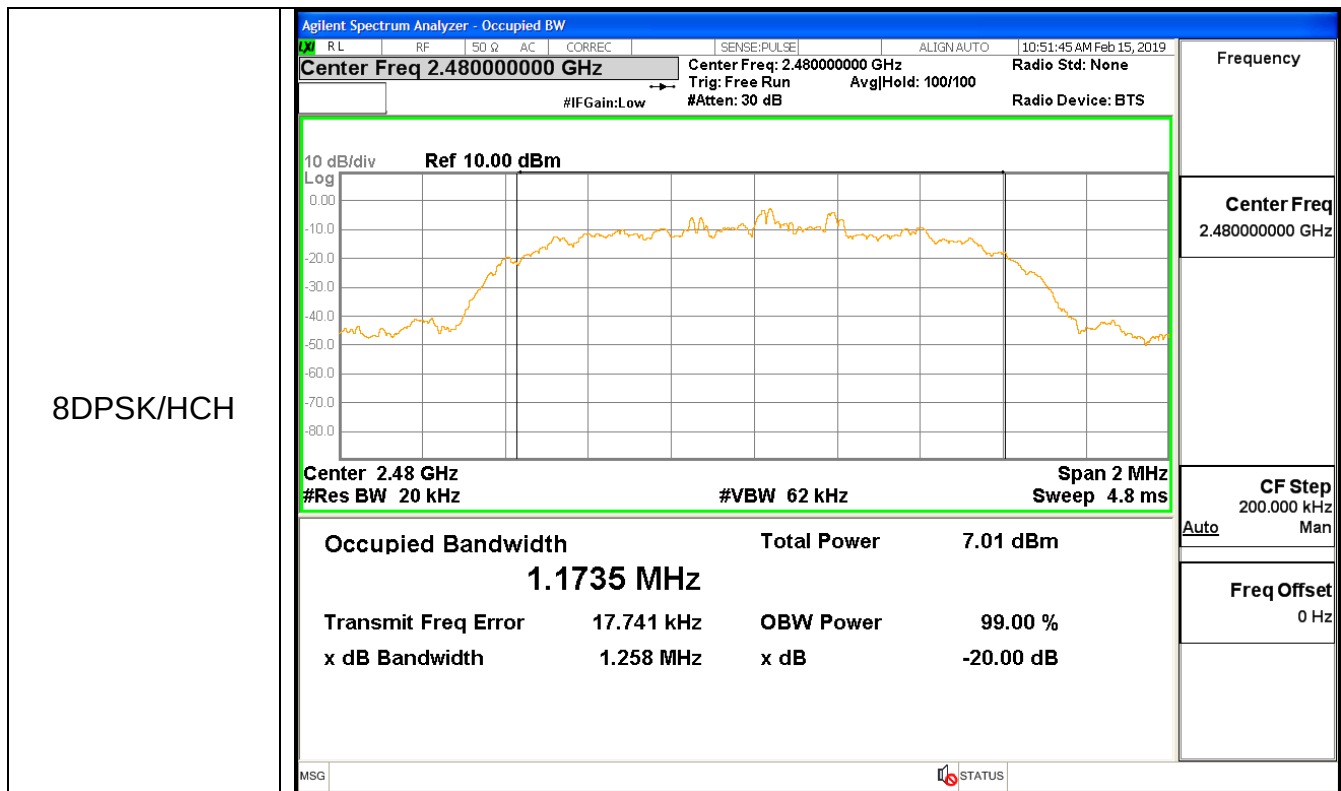
MSG

STATUS

Agilent Spectrum Analyzer - Occupied BW			
☒ R L	RF	50 Ω AC CORREC	SENSE:PULSE ALIGN:AUTO 10:44:42 AM Feb 15, 2019
Center Freq 2.441000000 GHz		Center Freq: 2.441000000 GHz Trig: Free Run Avg/Hold: 100/100	Radio Std: None Radio Device: BTS
#IFGain:Low		#Atten: 30 dB	
10 dB/div Ref 10.00 dBm The plot shows a signal centered at 2.441 GHz with a bandwidth of approximately 1.17 MHz. The y-axis ranges from -80.0 to 10.0 dBm.			
Center 2.441 GHz #Res BW 20 kHz		#VBW 62 kHz	Span 2 MHz Sweep 4.8 ms
Occupied Bandwidth		Total Power	5.67 dBm
1.1715 MHz			
Transmit Freq Error	21.112 kHz	OBW Power	99.00 %
x dB Bandwidth	1.227 MHz	x dB	-20.00 dB
MSG		STATUS	

Agilent Spectrum Analyzer - Occupied BW			
☒ R L	RF	50 Ω AC CORREC	SENSE:PULSE ALIGN:AUTO 10:45:42 AM Feb 15, 2019
Center Freq 2.480000000 GHz		Center Freq: 2.480000000 GHz Trig: Free Run Avg/Hold: 100/100	Radio Std: None Radio Device: BTS
#IFGain:Low		#Atten: 30 dB	
10 dB/div Ref 10.00 dBm The plot shows a signal centered at 2.480 GHz with a bandwidth of approximately 1.18 MHz. The y-axis ranges from -80.0 to 10.0 dBm.			
Center 2.48 GHz #Res BW 20 kHz		#VBW 62 kHz	Span 2 MHz Sweep 4.8 ms
Occupied Bandwidth		Total Power	6.51 dBm
1.1754 MHz			
Transmit Freq Error	21.552 kHz	OBW Power	99.00 %
x dB Bandwidth	1.236 MHz	x dB	-20.00 dB
MSG		STATUS	

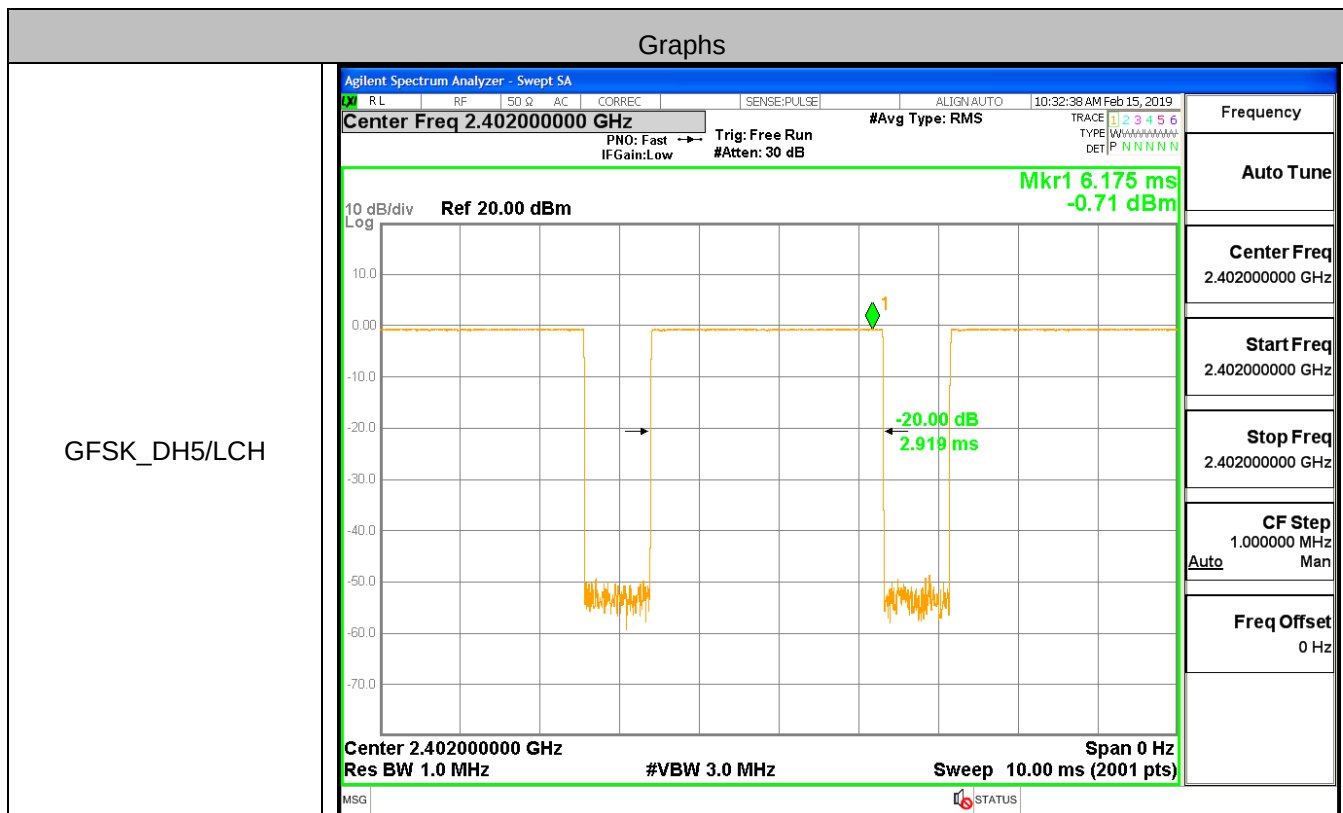


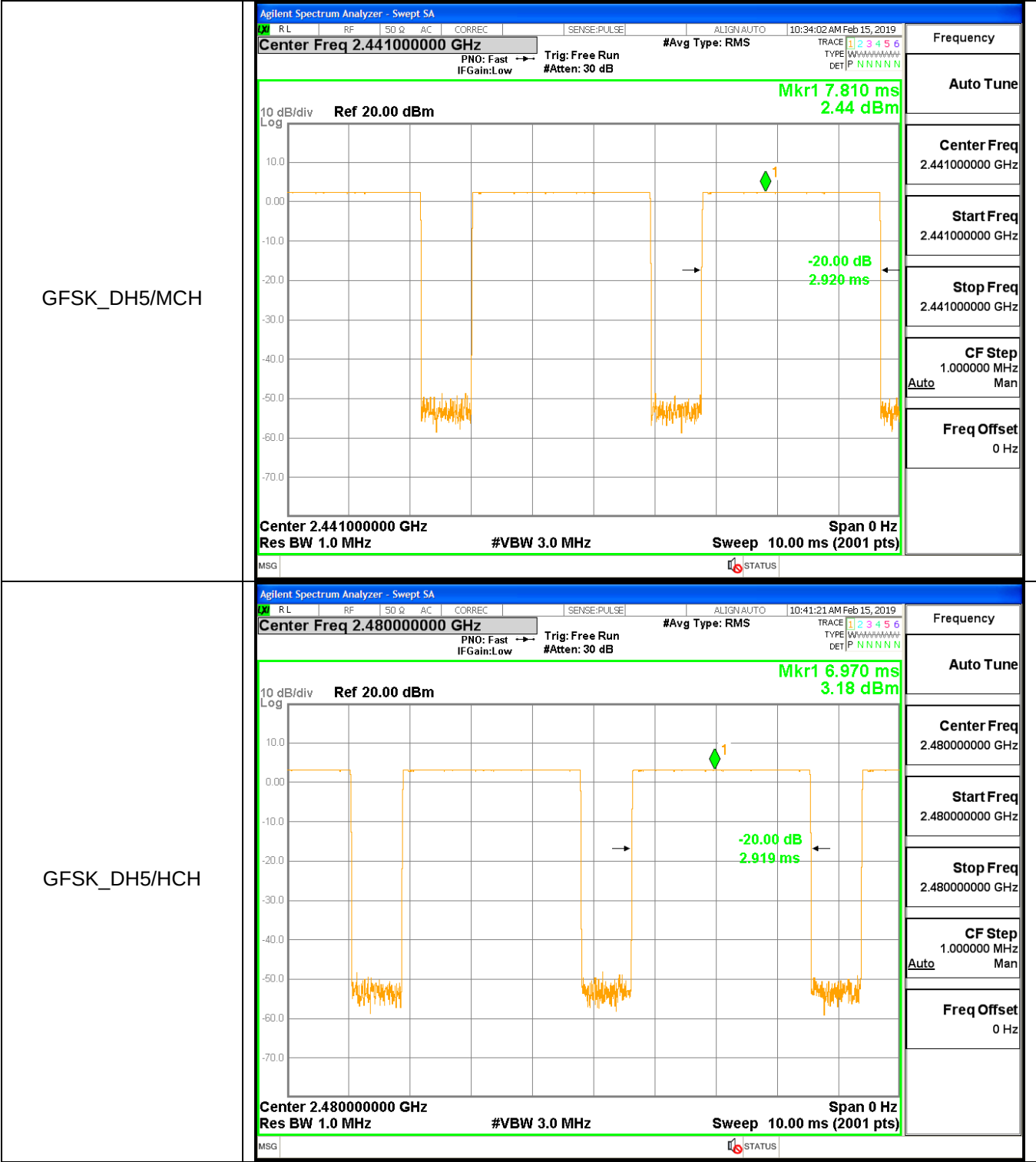


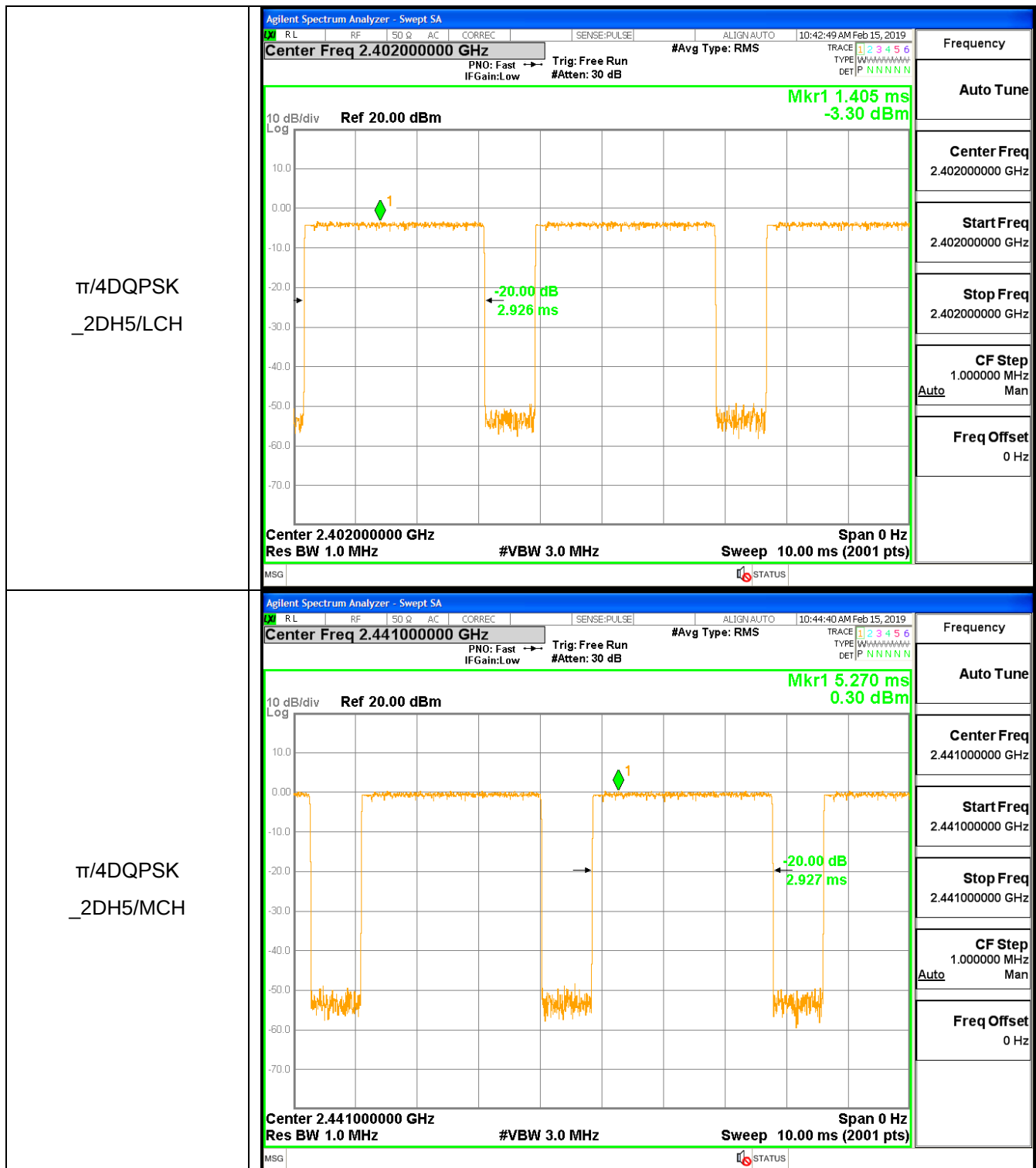
A.2 Dwell Time

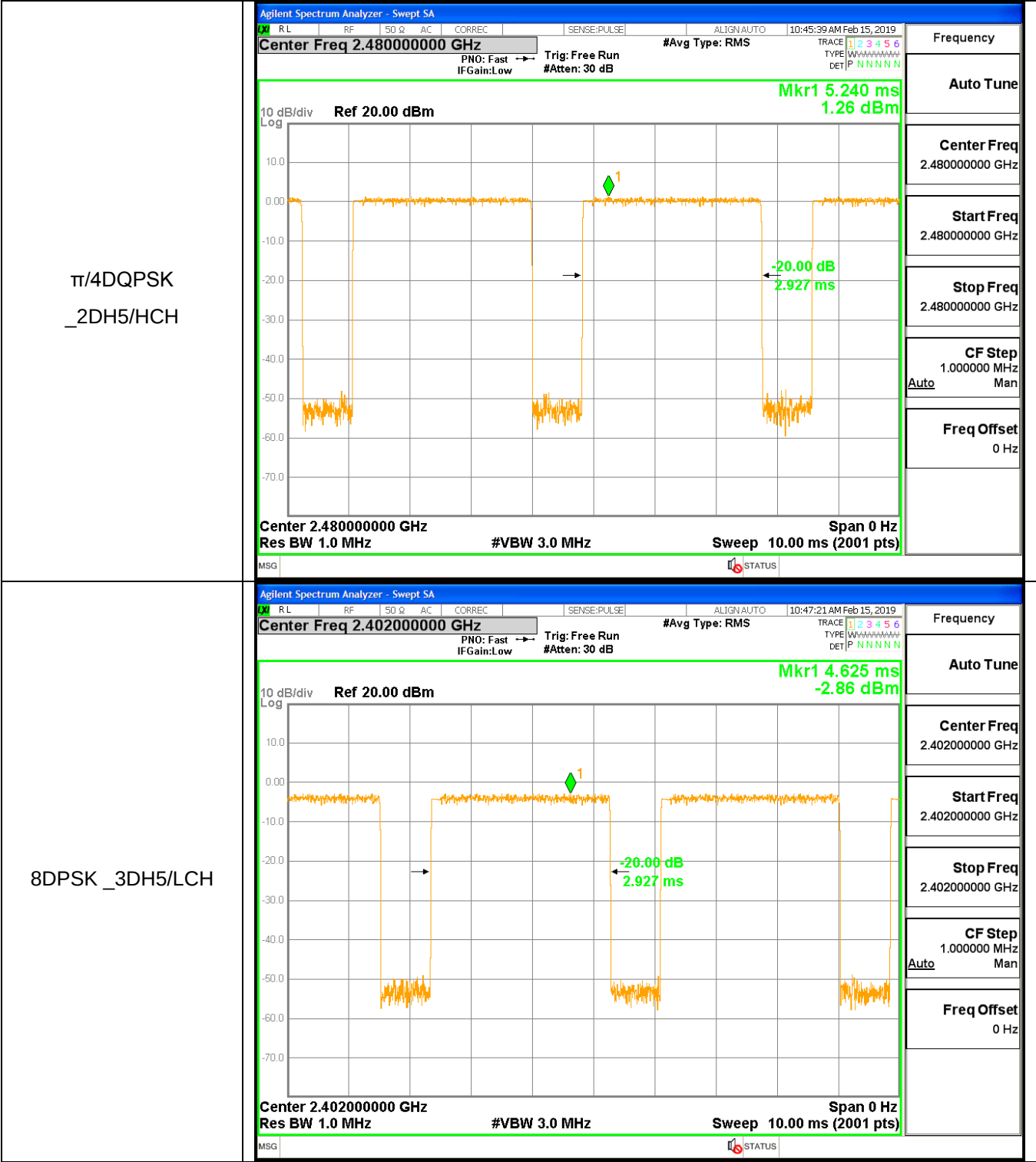
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002918506	106.7	0.311404547	0.4	PASS
GFSK	DH5	MCH	0.002920427	106.7	0.311609604	0.4	PASS
GFSK	DH5	HCH	0.002919184	106.7	0.311476948	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002926442	106.7	0.312251389	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002927057	106.7	0.312316935	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002927068	106.7	0.31231815	0.4	PASS
8DPSK	3DH5	LCH	0.00292731	106.7	0.312344015	0.4	PASS
8DPSK	3DH5	MCH	0.00292755	106.7	0.312369565	0.4	PASS
8DPSK	3DH5	HCH	0.002927053	106.7	0.312316514	0.4	PASS

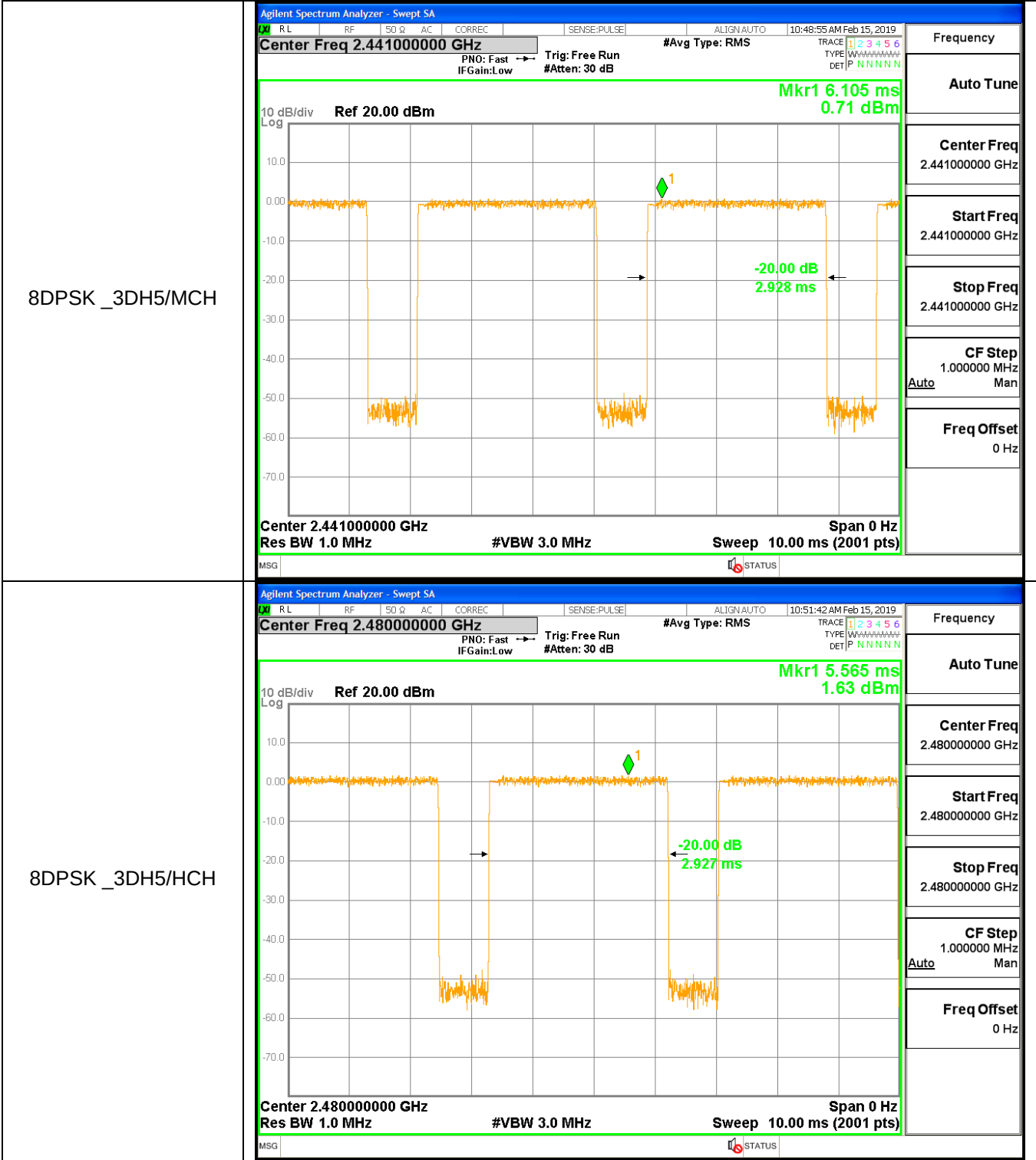
Test Graph







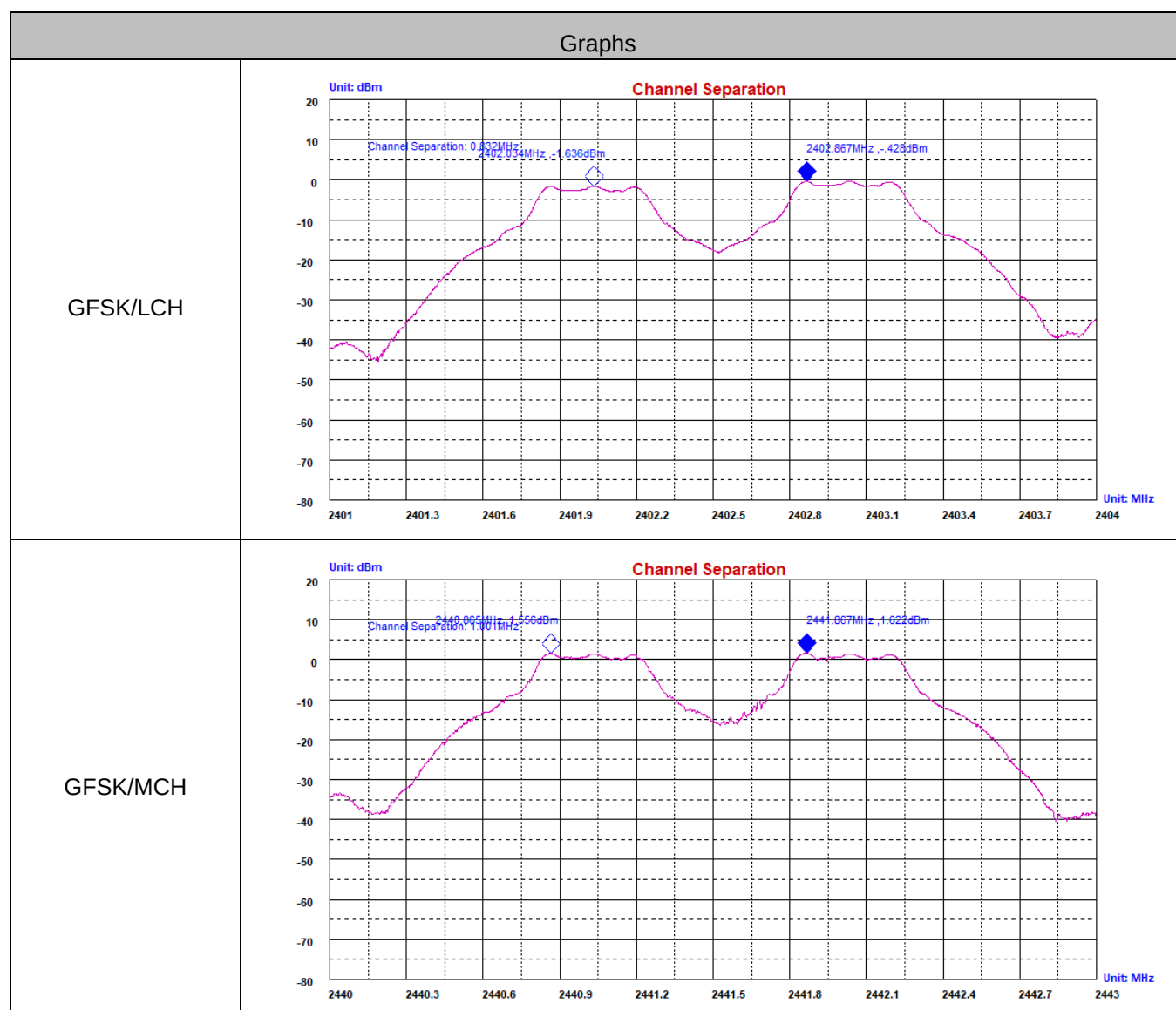


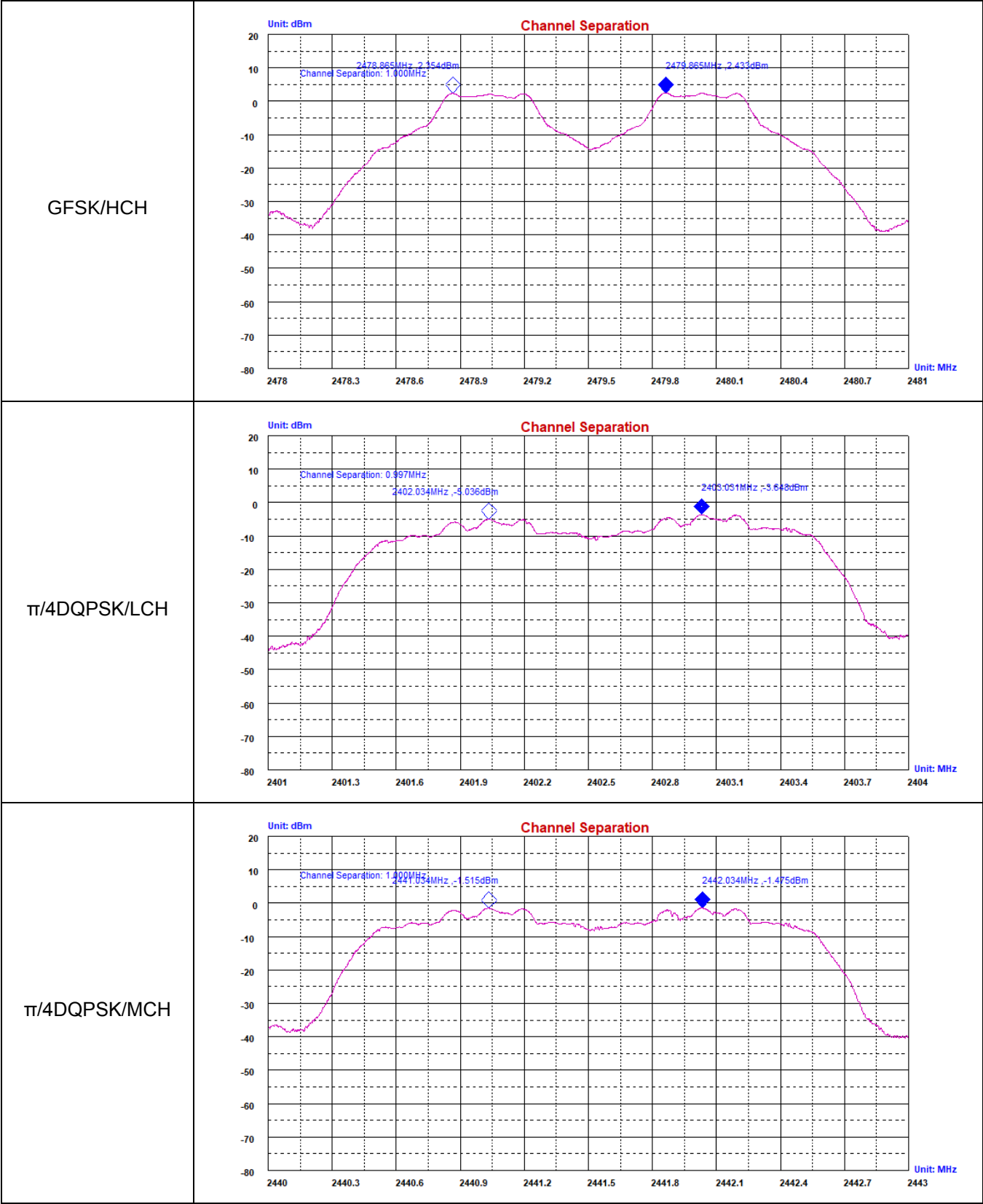


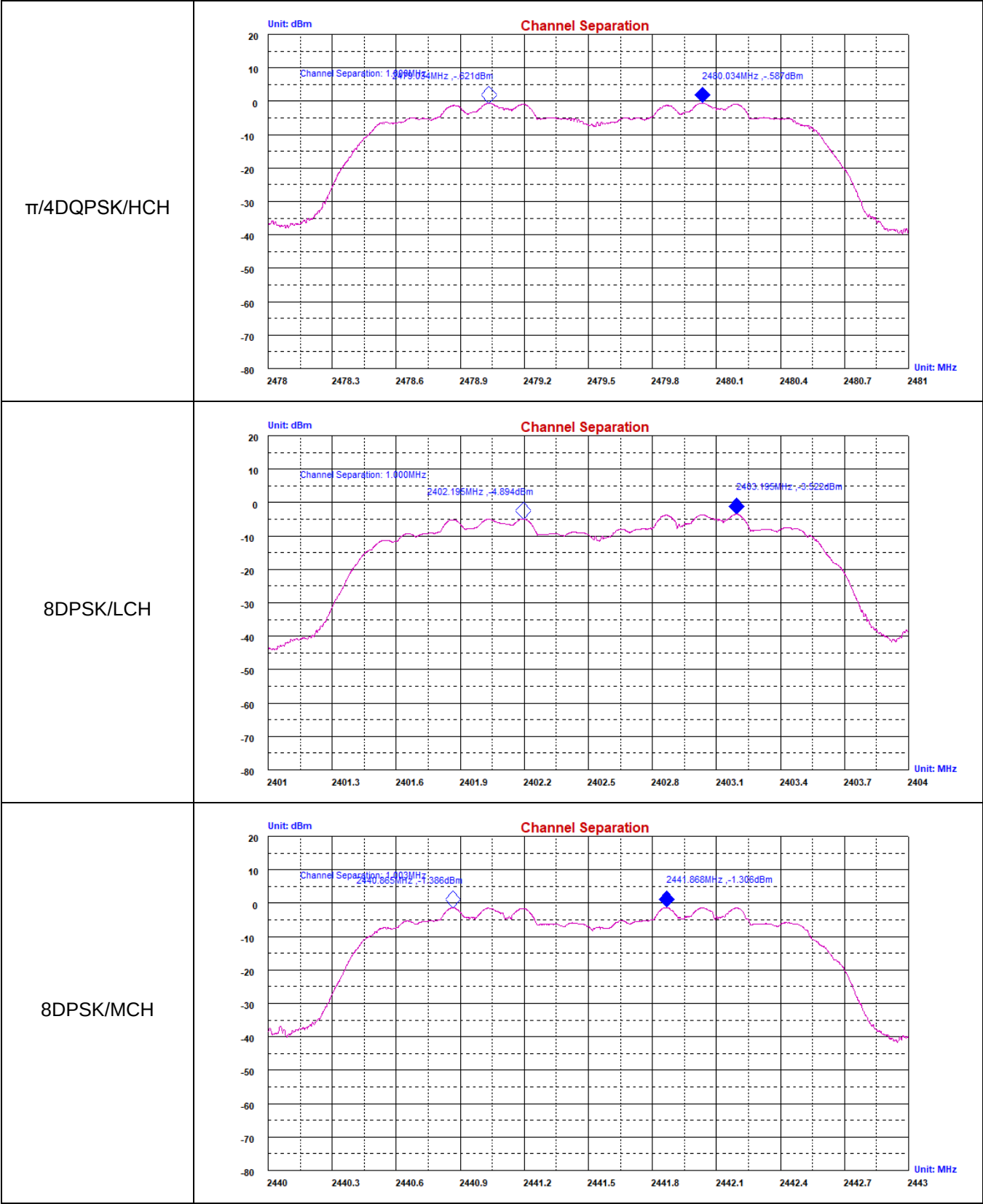
A.3 Carrier Frequency Separation

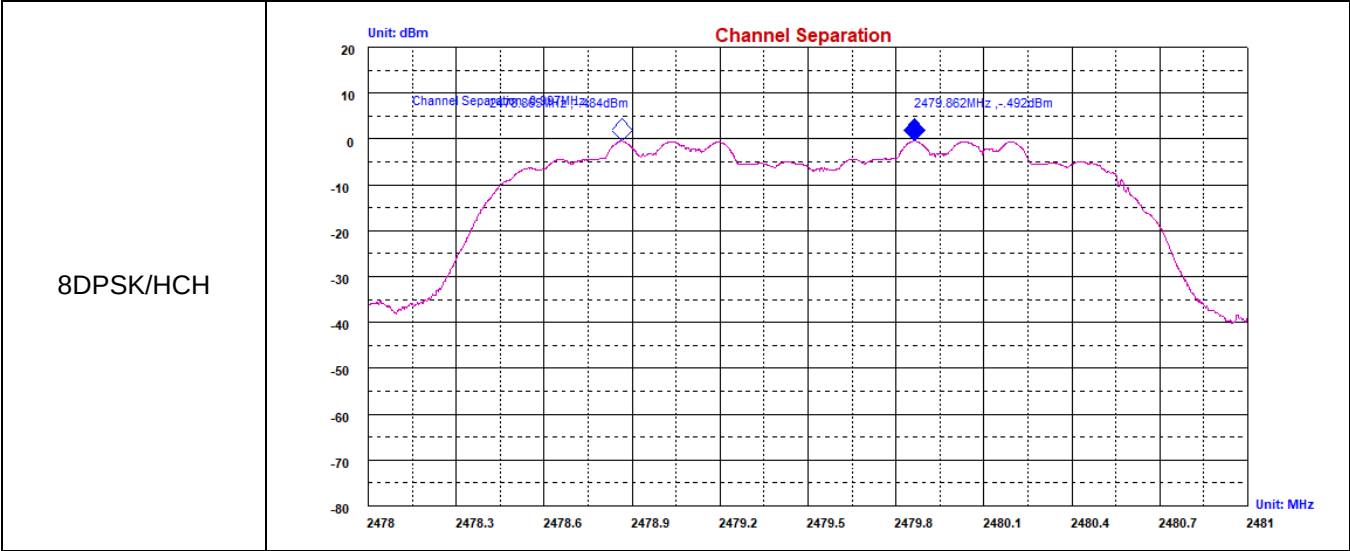
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.832	0.626	PASS
GFSK	MCH	1.001	0.629	PASS
GFSK	HCH	1.000	0.626	PASS
$\pi/4$ DQPSK	LCH	0.997	0.819	PASS
$\pi/4$ DQPSK	MCH	1.000	0.818	PASS
$\pi/4$ DQPSK	HCH	1.000	0.824	PASS
8DPSK	LCH	1.000	0.835	PASS
8DPSK	MCH	1.003	0.836	PASS
8DPSK	HCH	0.997	0.839	PASS

Test Graph





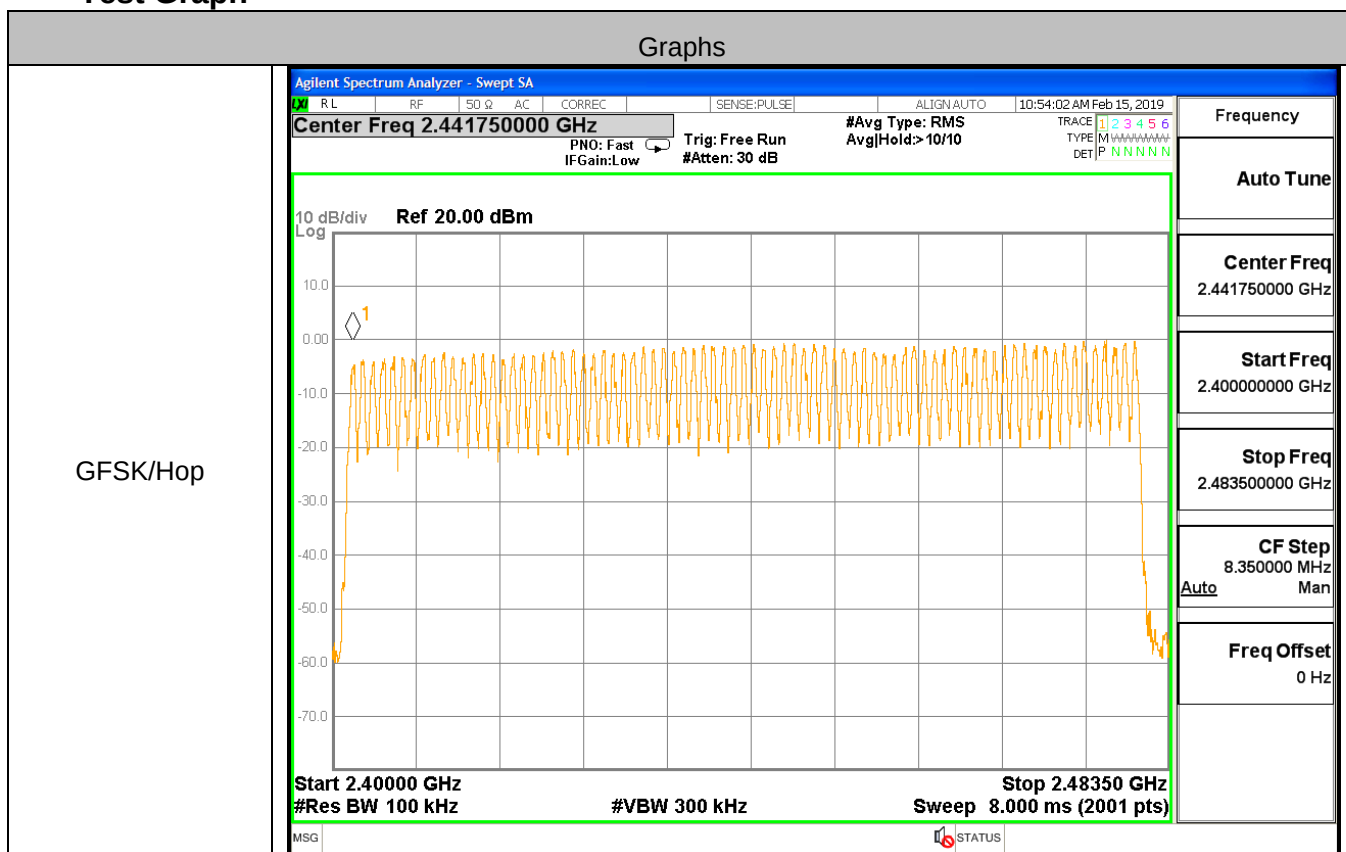


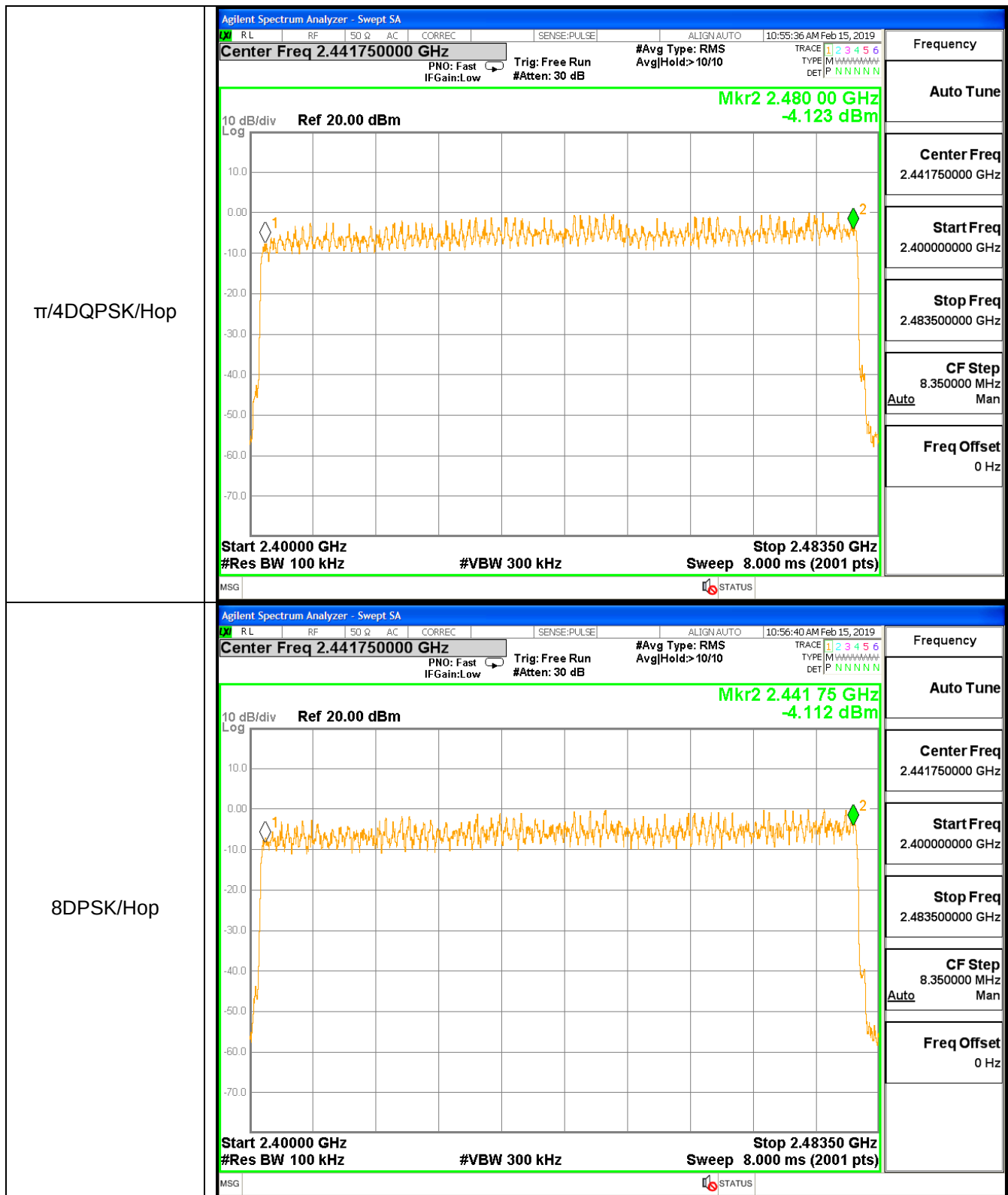


A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel[N]	Limit[N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graph



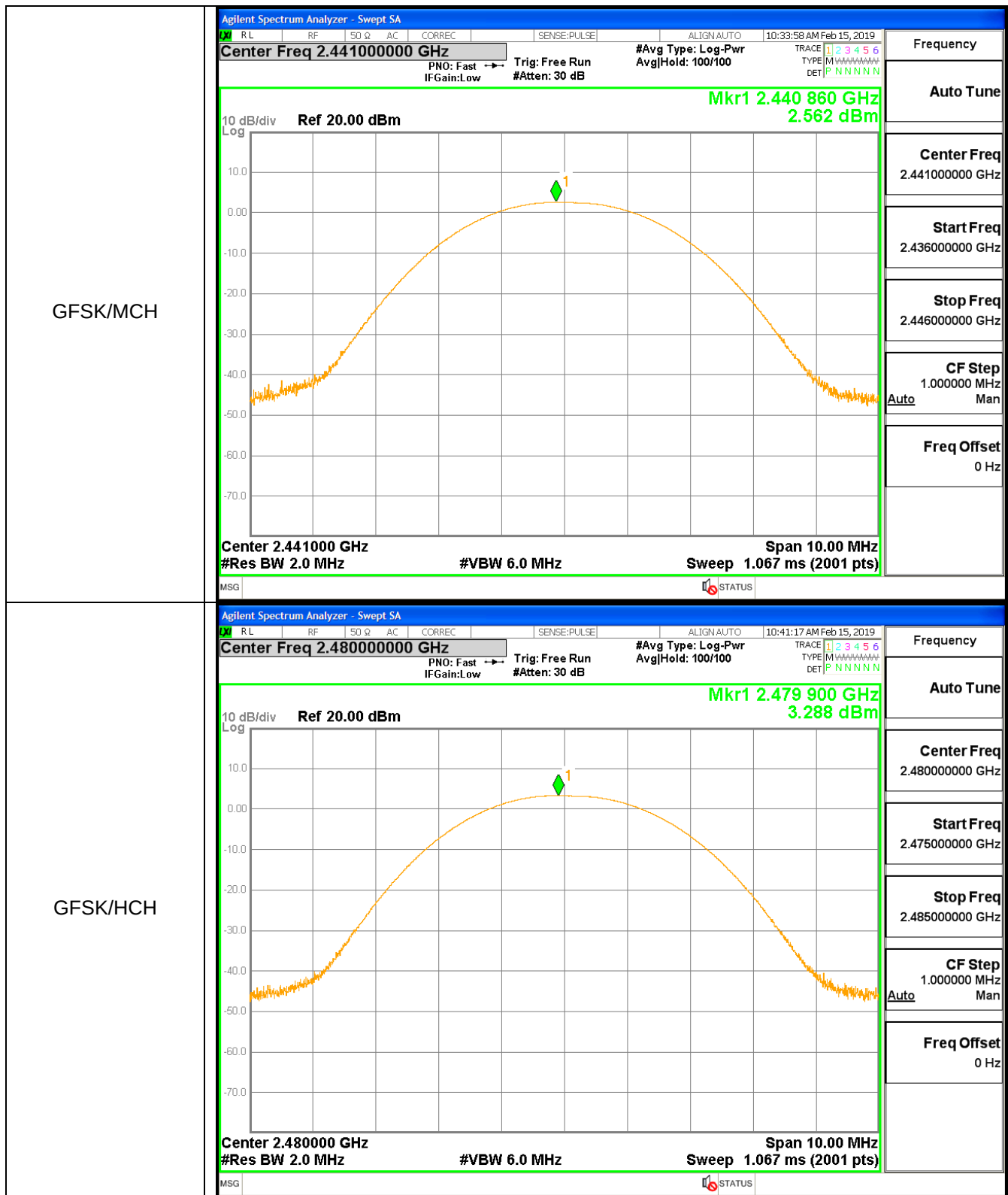


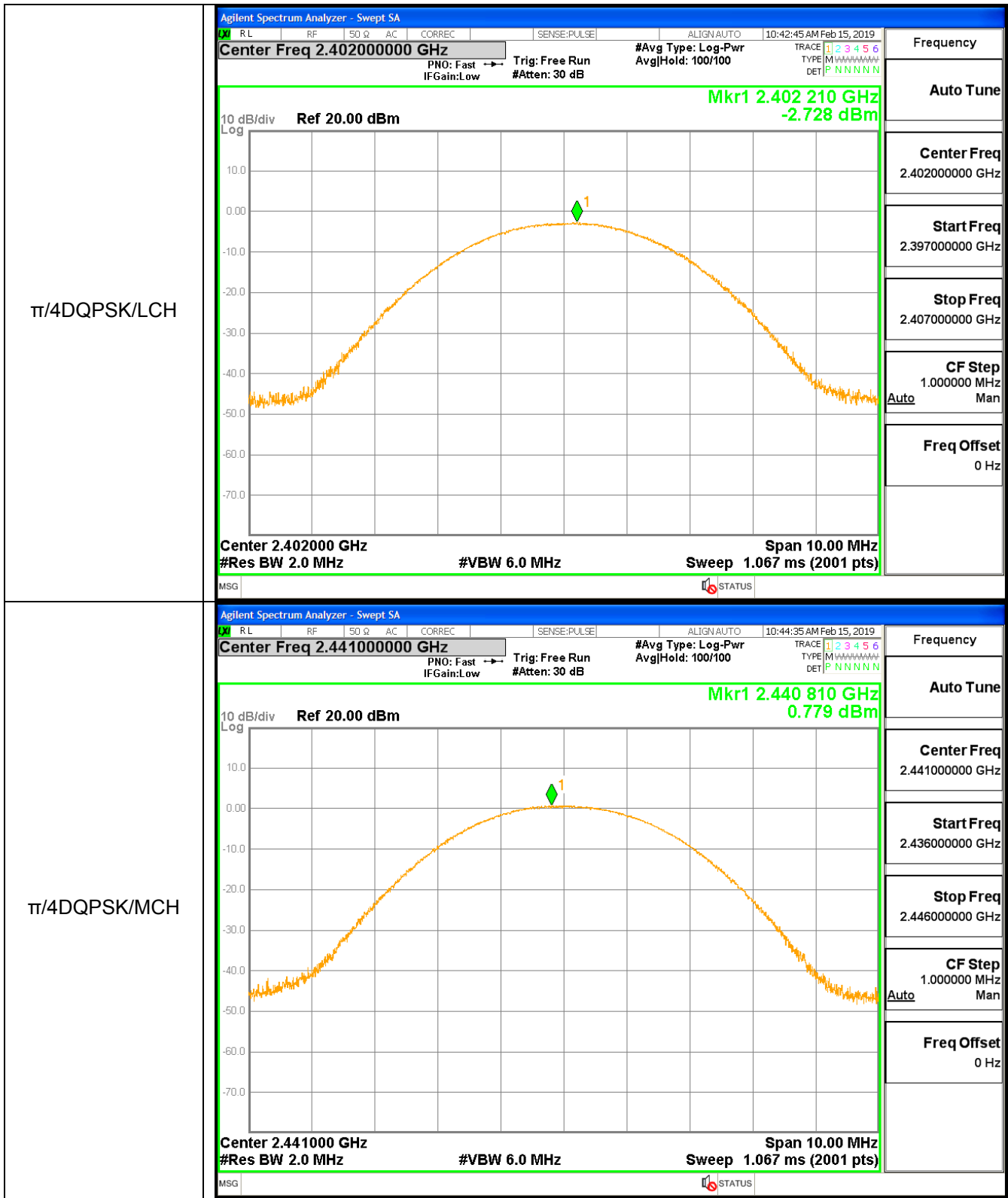
A.5 Conducted Peak Output Power

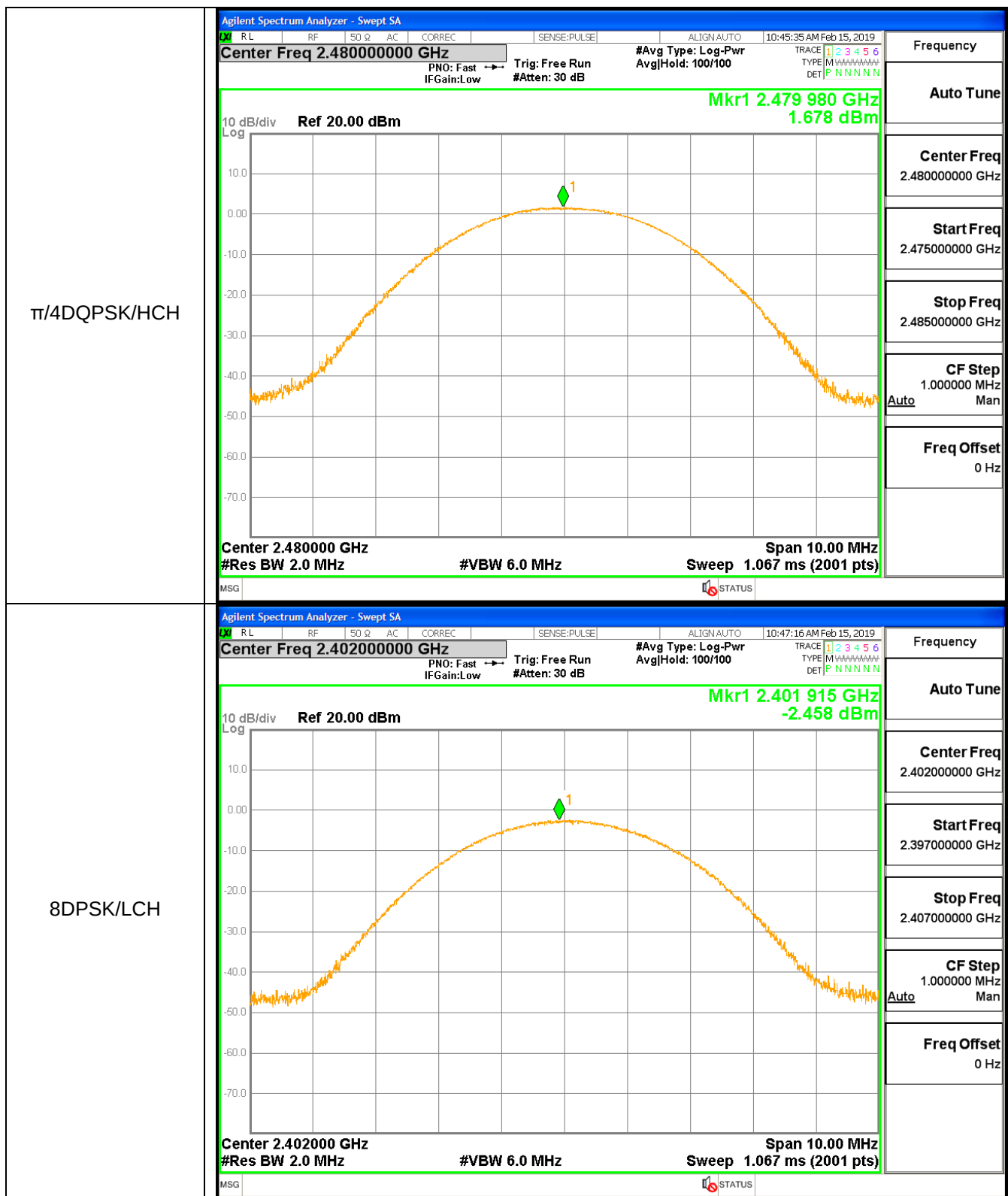
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.464	21	PASS
GFSK	MCH	2.562	21	PASS
GFSK	HCH	3.288	21	PASS
$\pi/4$ DQPSK	LCH	-2.728	21	PASS
$\pi/4$ DQPSK	MCH	0.779	21	PASS
$\pi/4$ DQPSK	HCH	1.678	21	PASS
8DPSK	LCH	-2.458	21	PASS
8DPSK	MCH	1.159	21	PASS
8DPSK	HCH	2.083	21	PASS

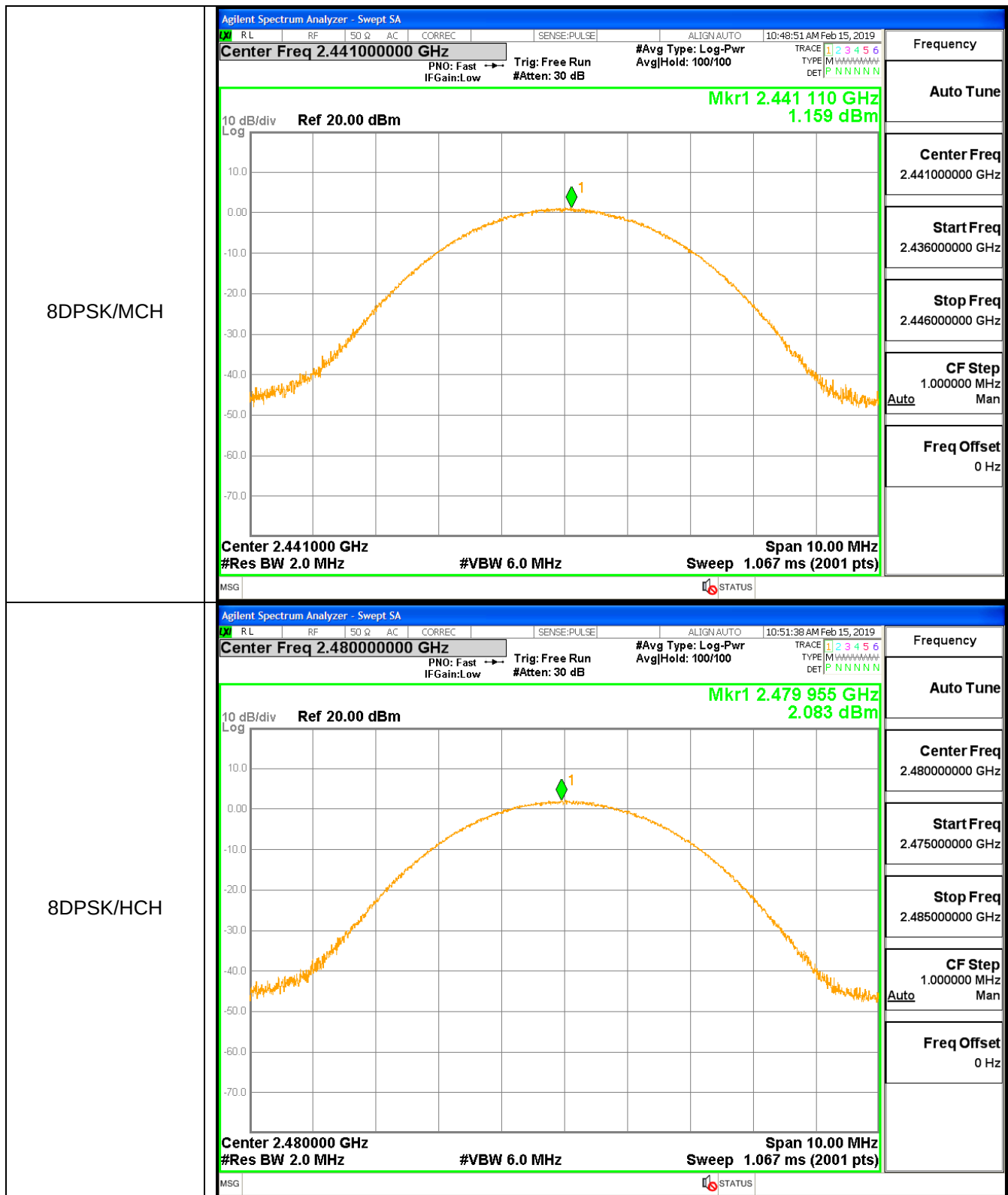
Test Graph











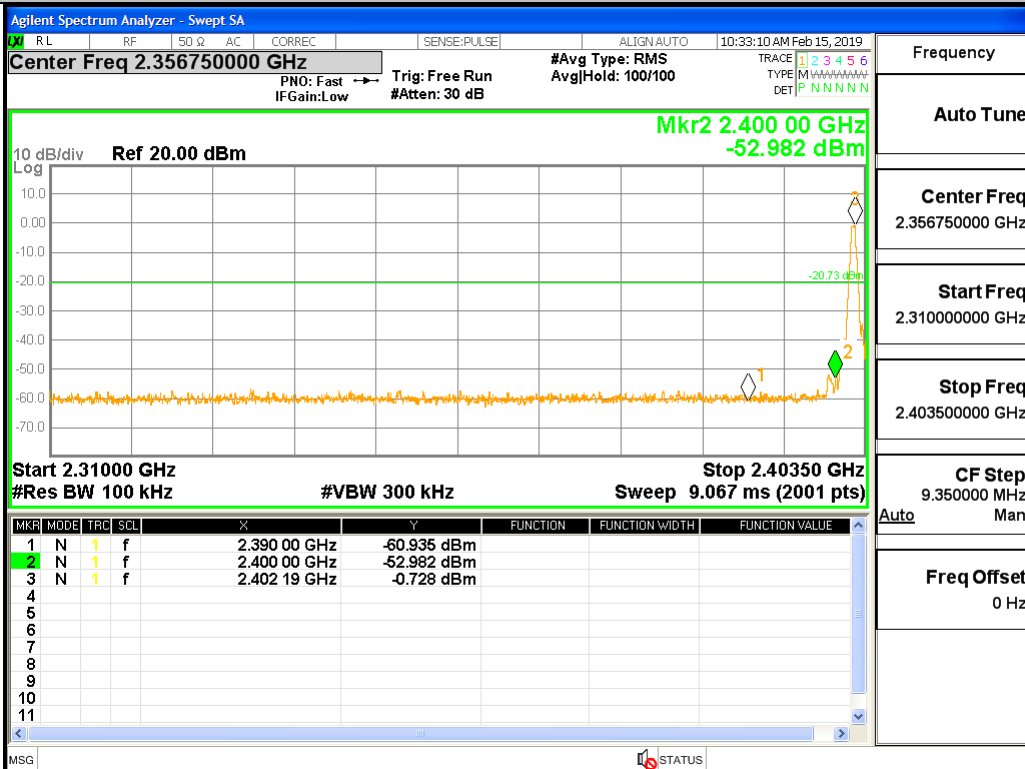
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2390	-0.73	-60.94	-20.73	Pass
1DH5	2402	2400	-0.73	-52.98	-20.73	Pass
1DH5-Hopping	2402	2390	-2.15	-58.34	-22.15	Pass
1DH5-Hopping	2402	2400	-2.15	-59.49	-22.15	Pass
1DH5	2480	2483.5	2.55	-59.16	-17.45	Pass
1DH5	2480	2500	2.55	-57.69	-17.45	Pass
1DH5-Hopping	2480	2483.5	0.05	-58.75	-19.95	Pass
1DH5-Hopping	2480	2500	0.05	-54.25	-19.95	Pass
2DH5	2402	2390	-6.89	-61.78	-26.89	Pass
2DH5	2402	2400	-6.89	-56.47	-26.89	Pass
2DH5-Hopping	2480	2483.5	-0.65	-58.16	-20.65	Pass
2DH5-Hopping	2480	2500	-0.65	-58.41	-20.65	Pass
2DH5	2480	2483.5	-2.51	-58.33	-22.51	Pass
2DH5	2480	2500	-2.51	-59.95	-22.51	Pass
2DH5-Hopping	2402	2390	-1.51	-58.66	-21.51	Pass
2DH5-Hopping	2402	2400	-1.51	-58.55	-21.51	Pass
3DH5	2402	2390	-4.15	-58.9	-24.15	Pass
3DH5	2402	2400	-4.15	-56.94	-24.15	Pass
3DH5-Hopping	2402	2390	-1.39	-59.09	-21.39	Pass
3DH5-Hopping	2402	2400	-1.39	-58.9	-21.39	Pass
3DH5	2480	2483.5	0.12	-59.3	-19.88	Pass
3DH5	2480	2500	0.12	-58.59	-19.88	Pass
3DH5-Hopping	2480	2483.5	0.09	-57.96	-19.91	Pass
3DH5-Hopping	2480	2500	0.09	-55.21	-19.91	Pass

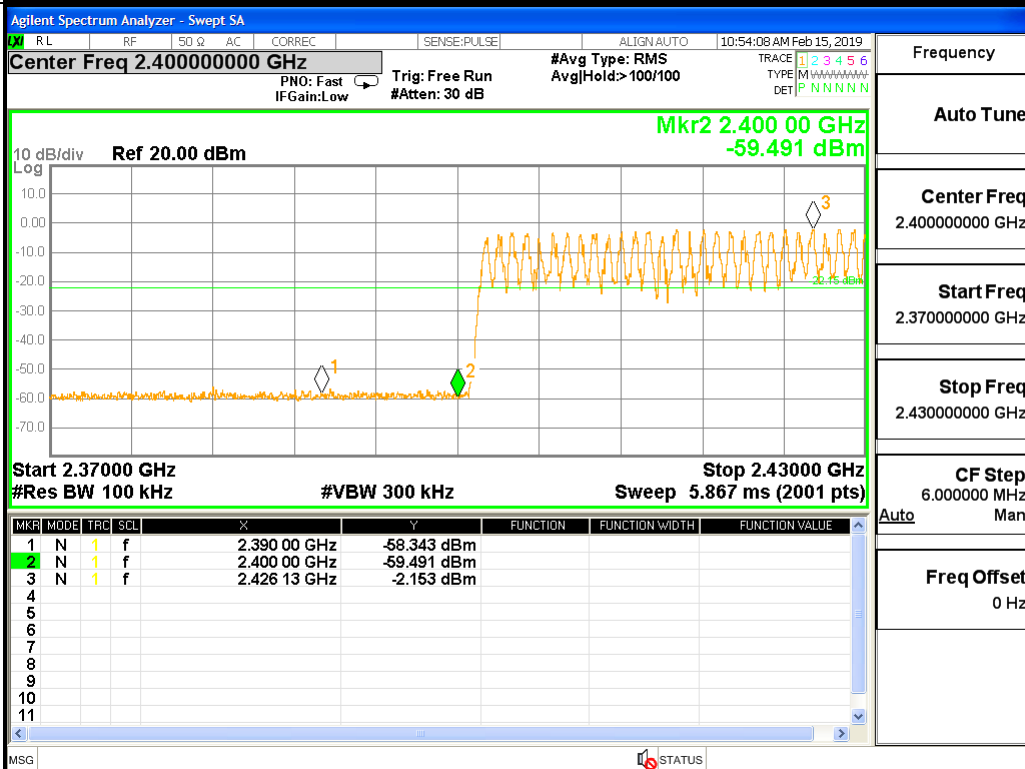
Test Graph

Graphs

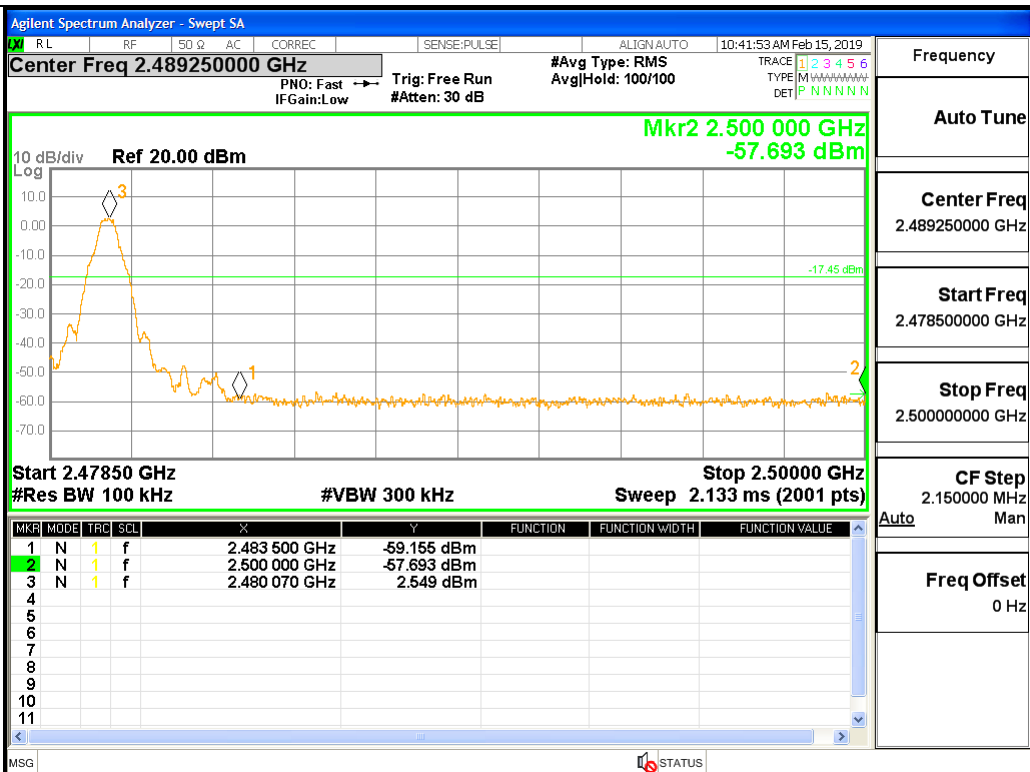
GFSK/LCH/No Hop



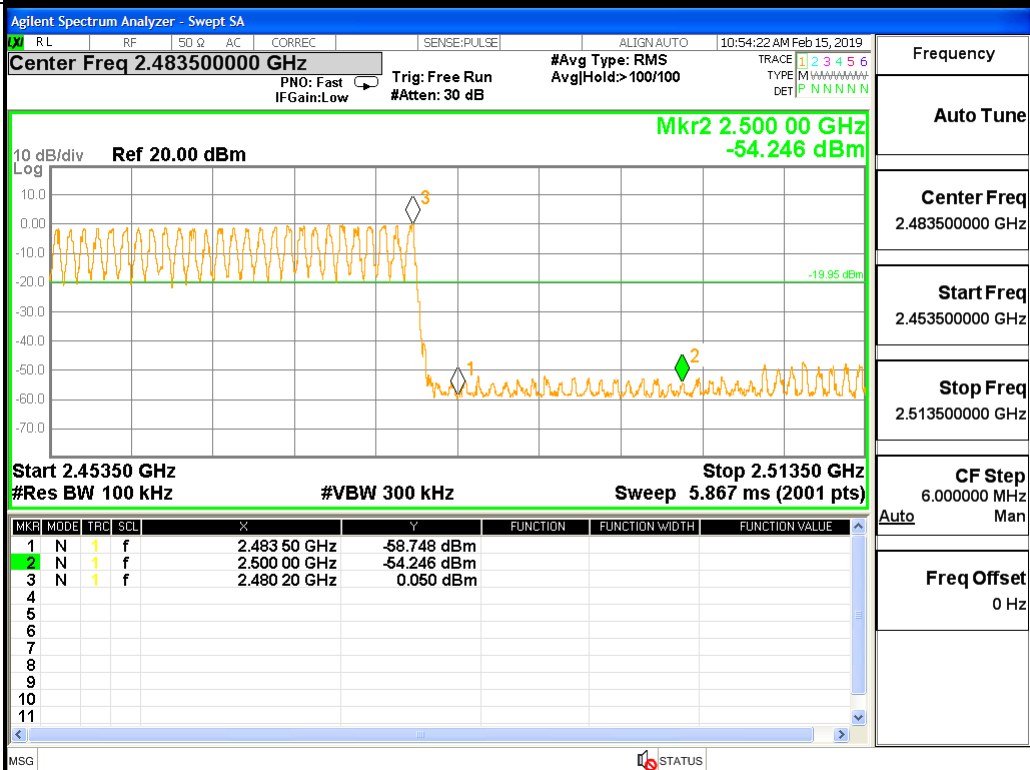
GFSK/LCH/Hop



GFSK/HCH/No Hop

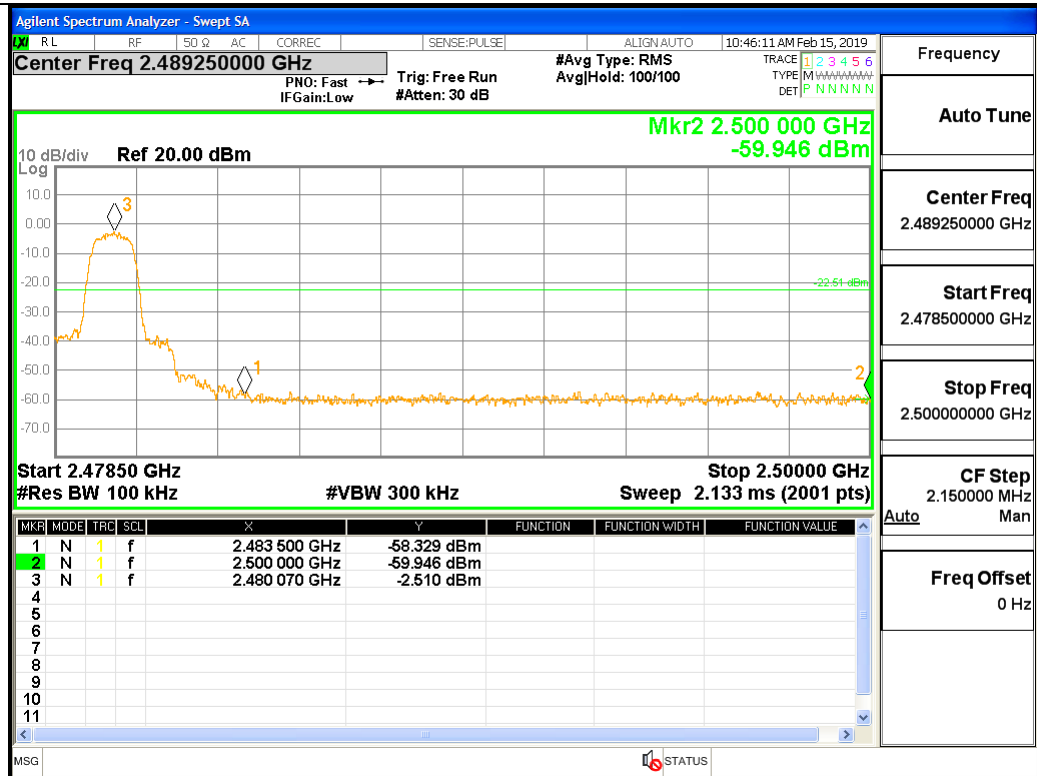


GFSK/HCH/Hop

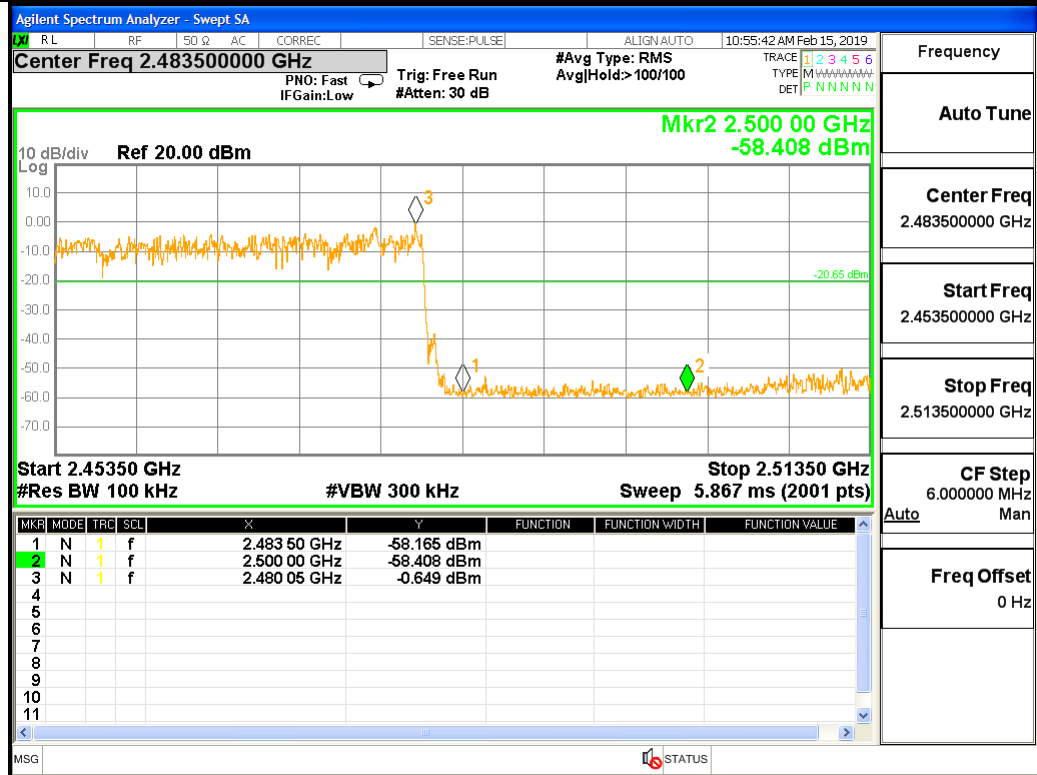


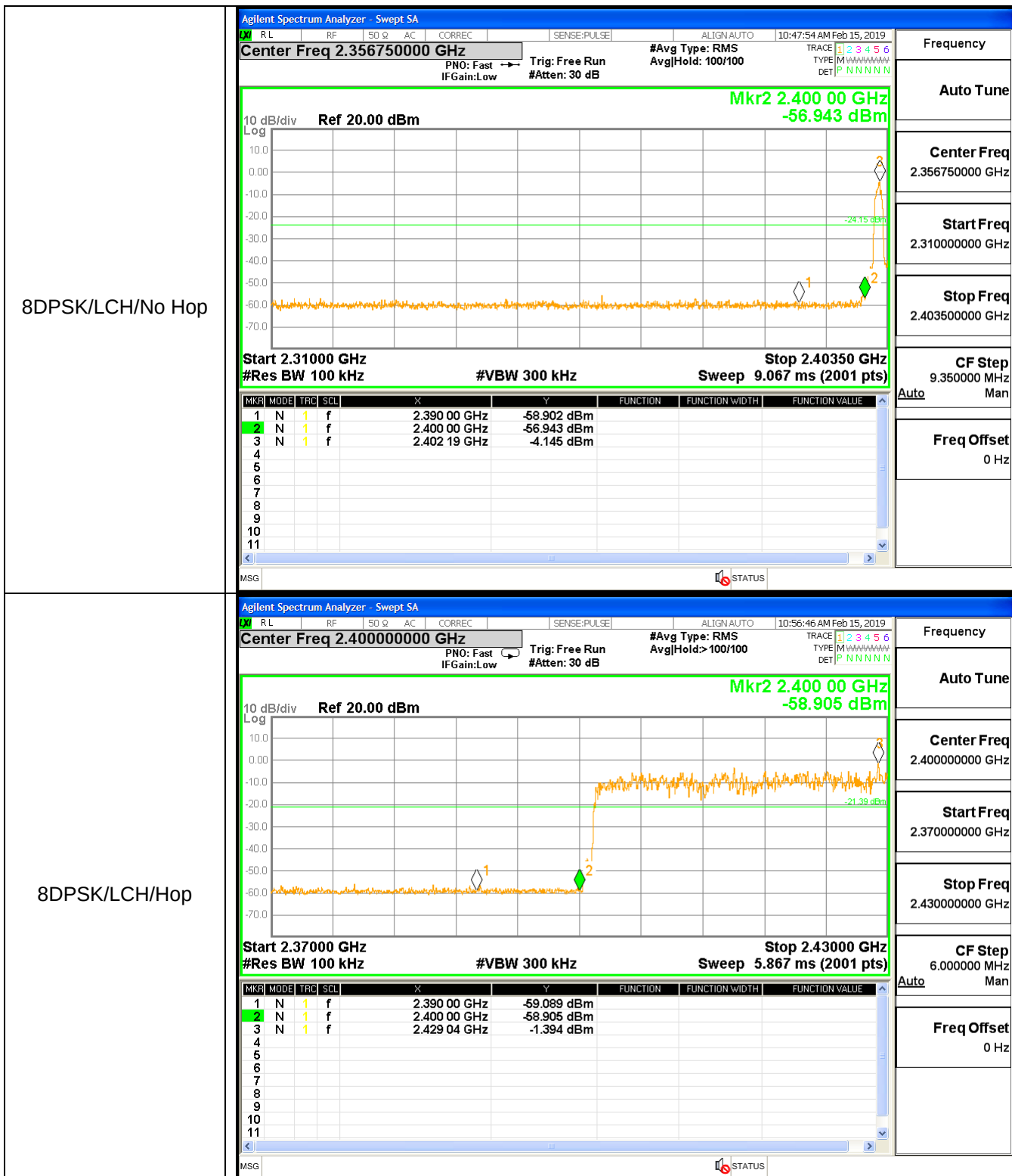


$\pi/4$ DQPSK/HCH/No
Hop

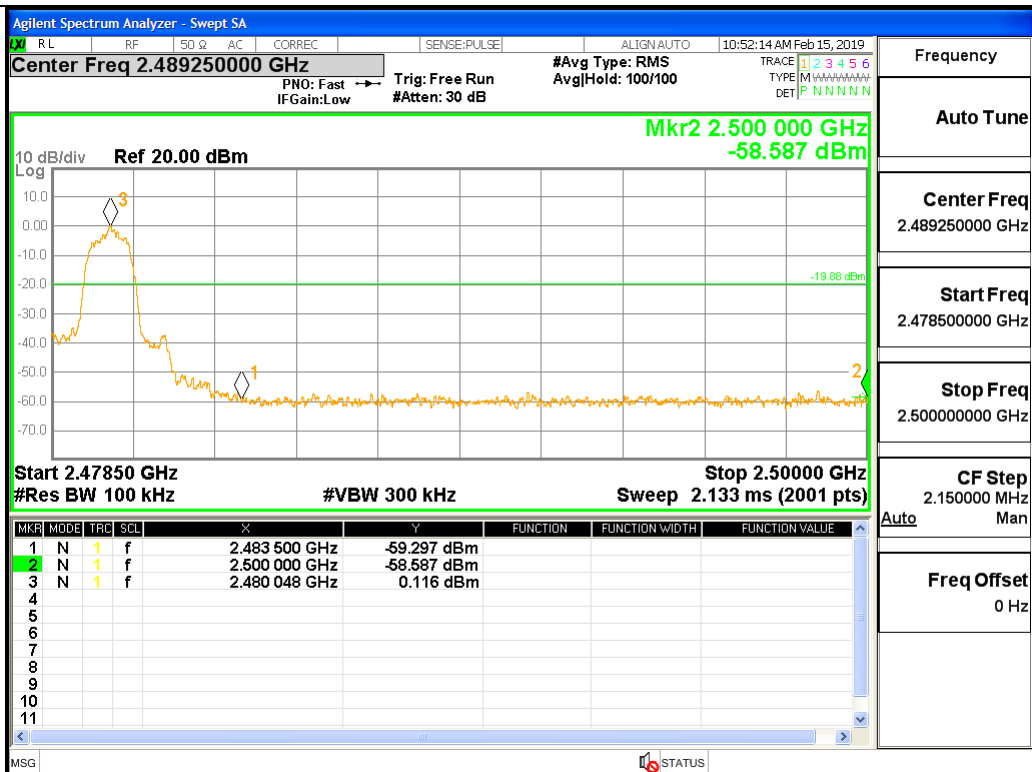


$\pi/4$ DQPSK/HCH/Hop

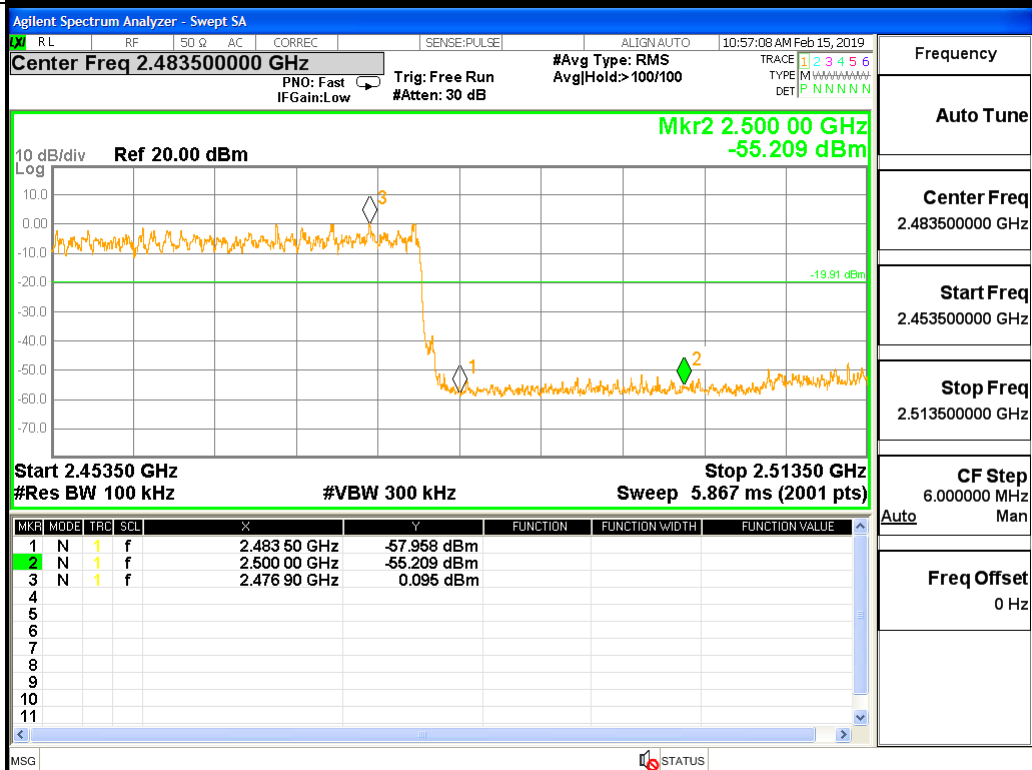




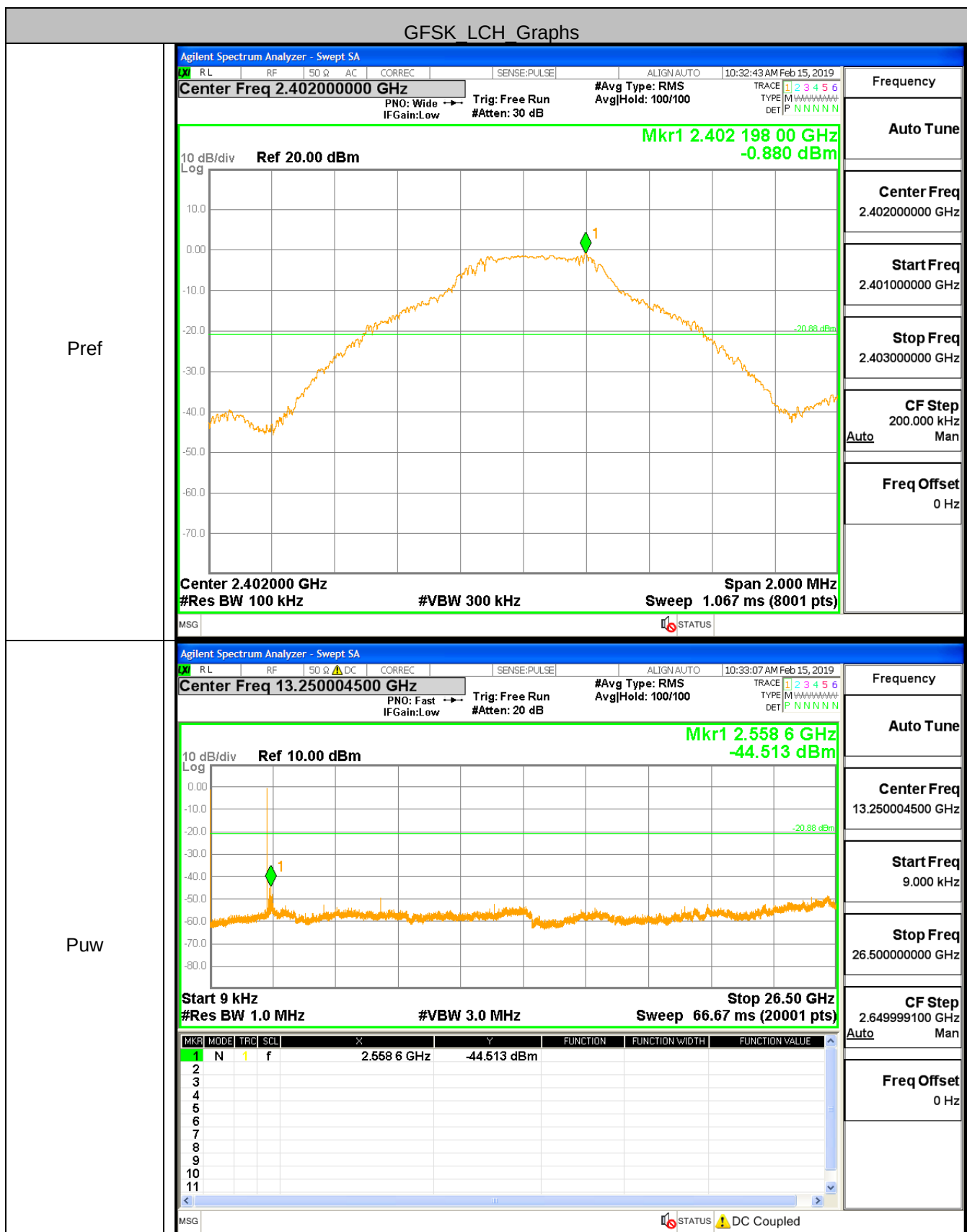
8DPSK/HCH/No Hop

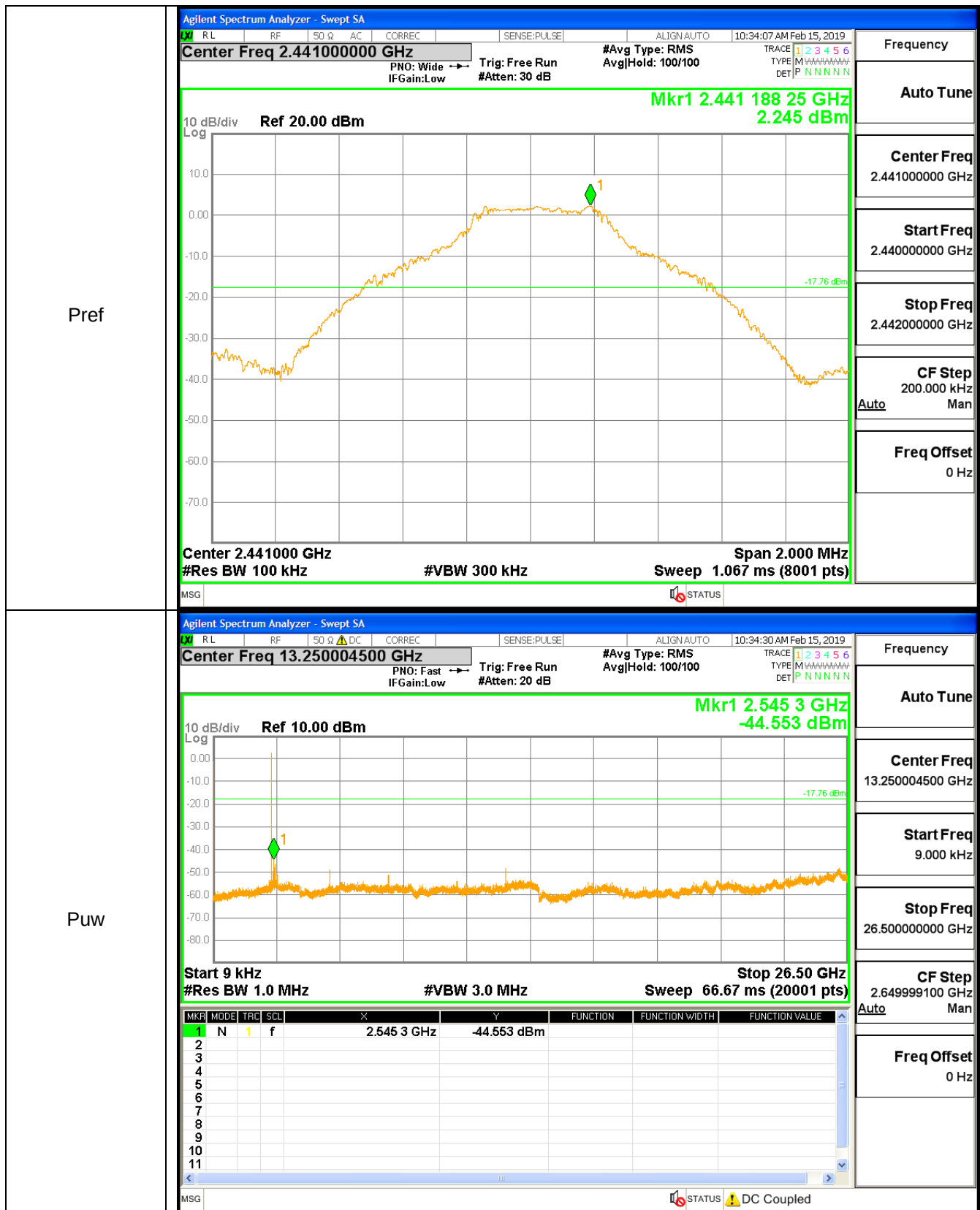


8DPSK/HCH/Hop



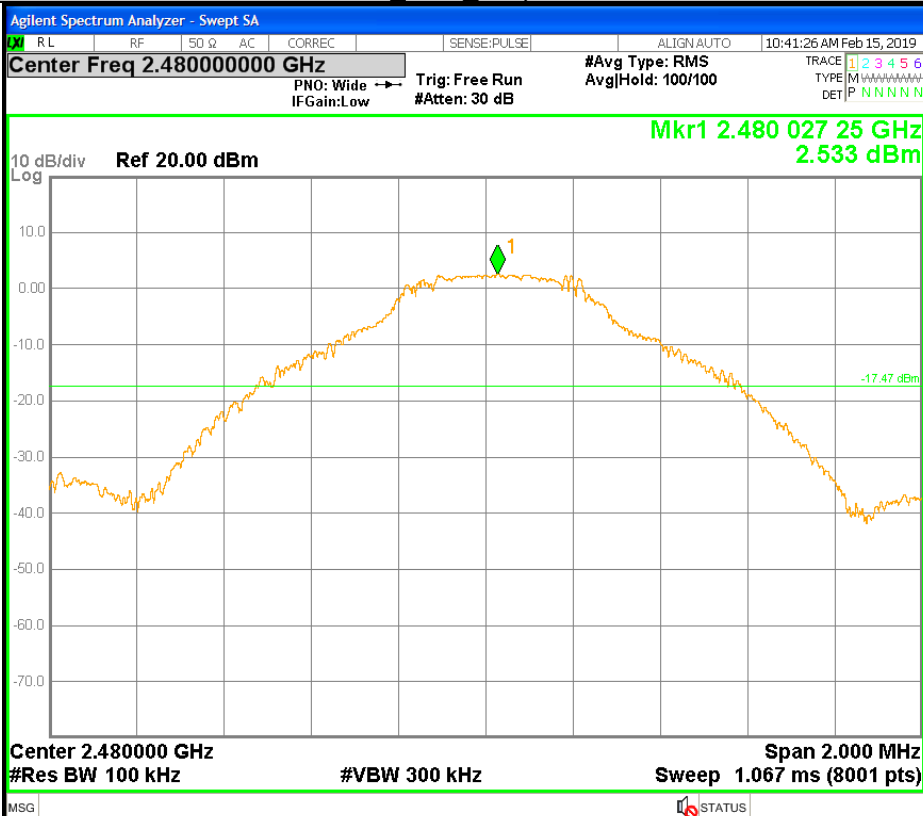
A.7 RF Conducted Spurious Emissions Test Graph



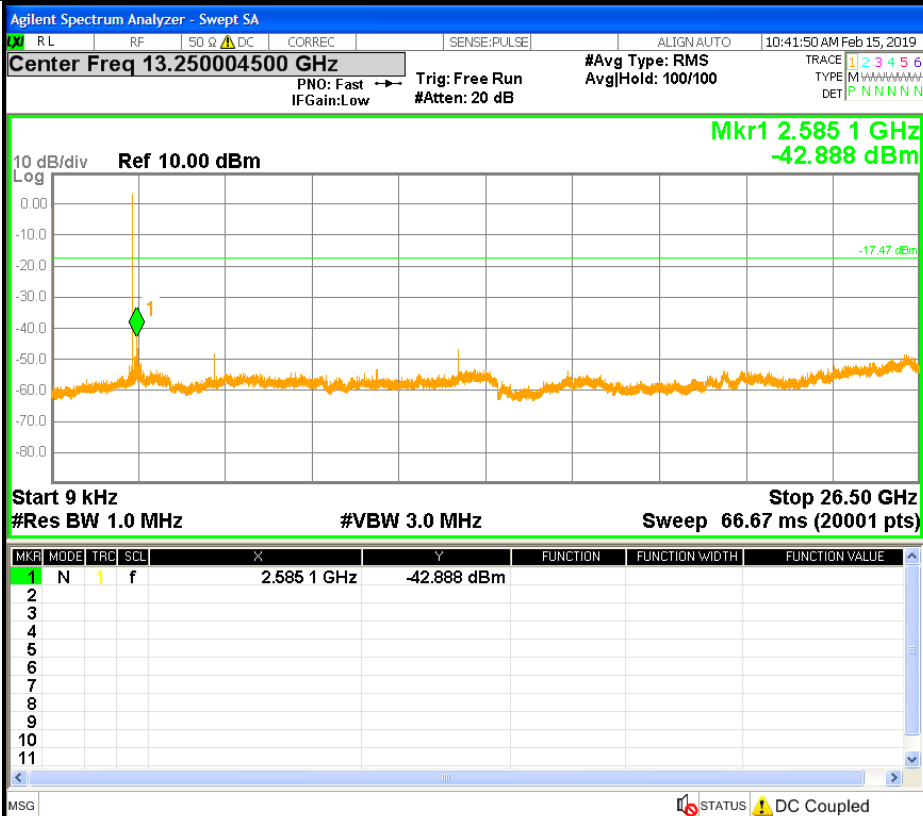


GFSK HCH Graphs

Pref

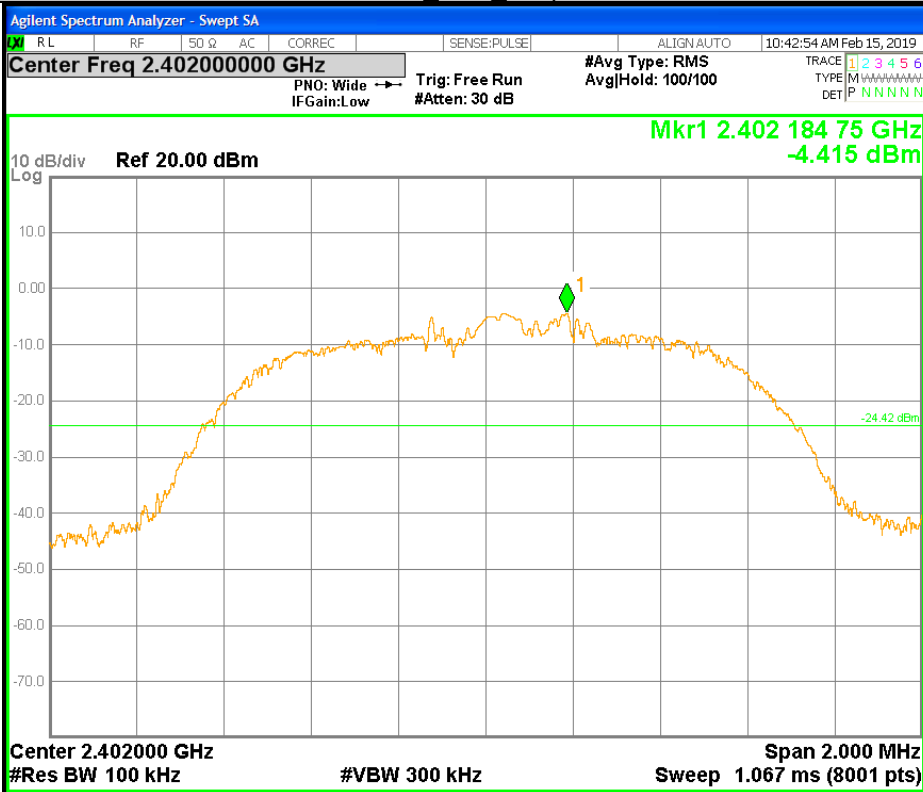


Puw

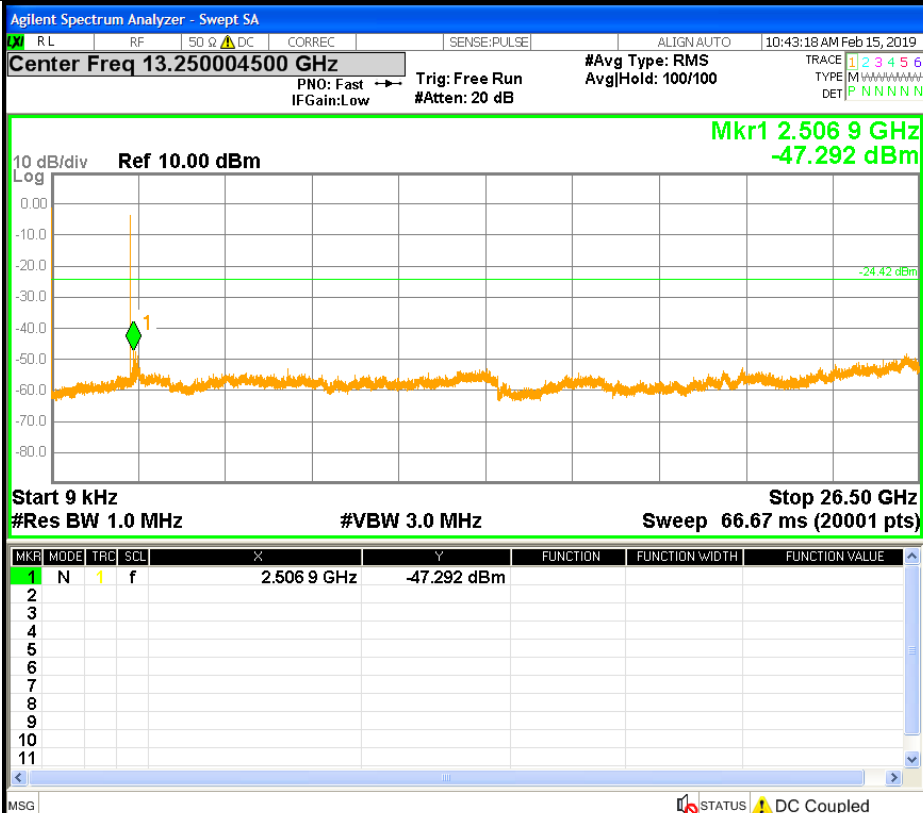


$\pi/4$ DQPSK LCH Graphs

Pref

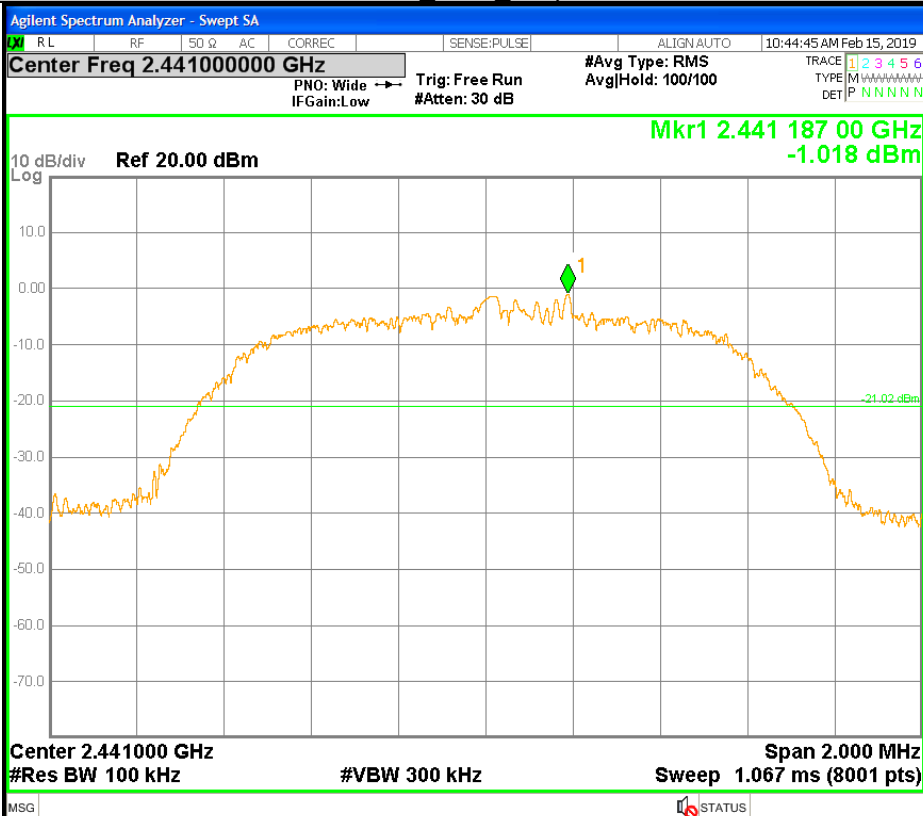


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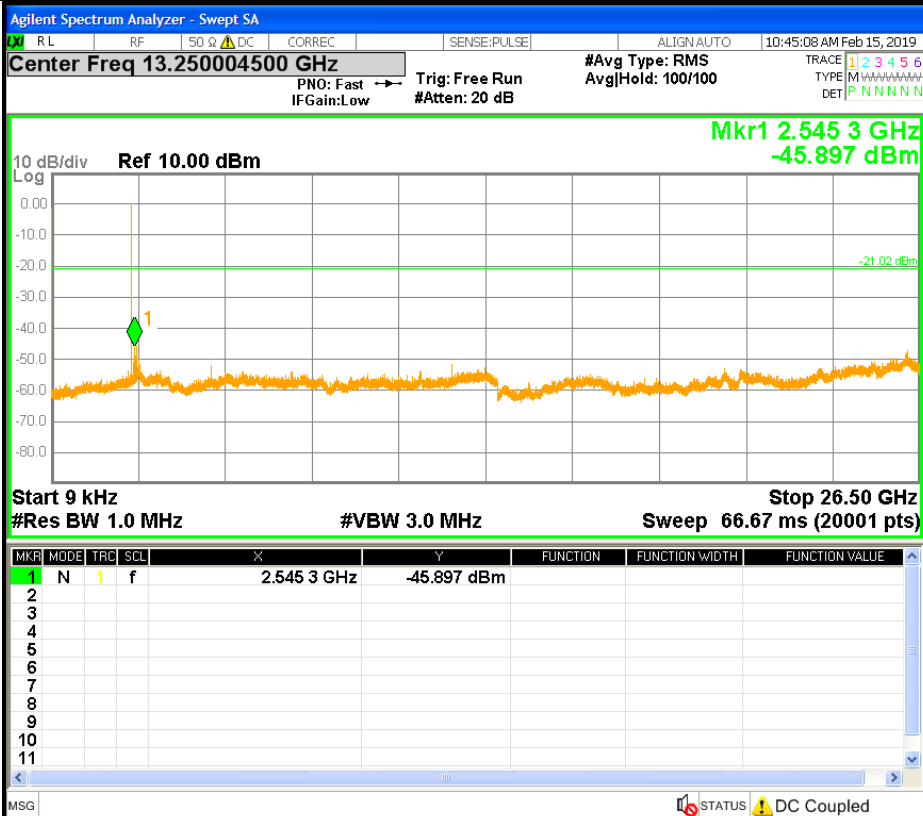


$\pi/4$ DQPSK MCH Graphs

Pref

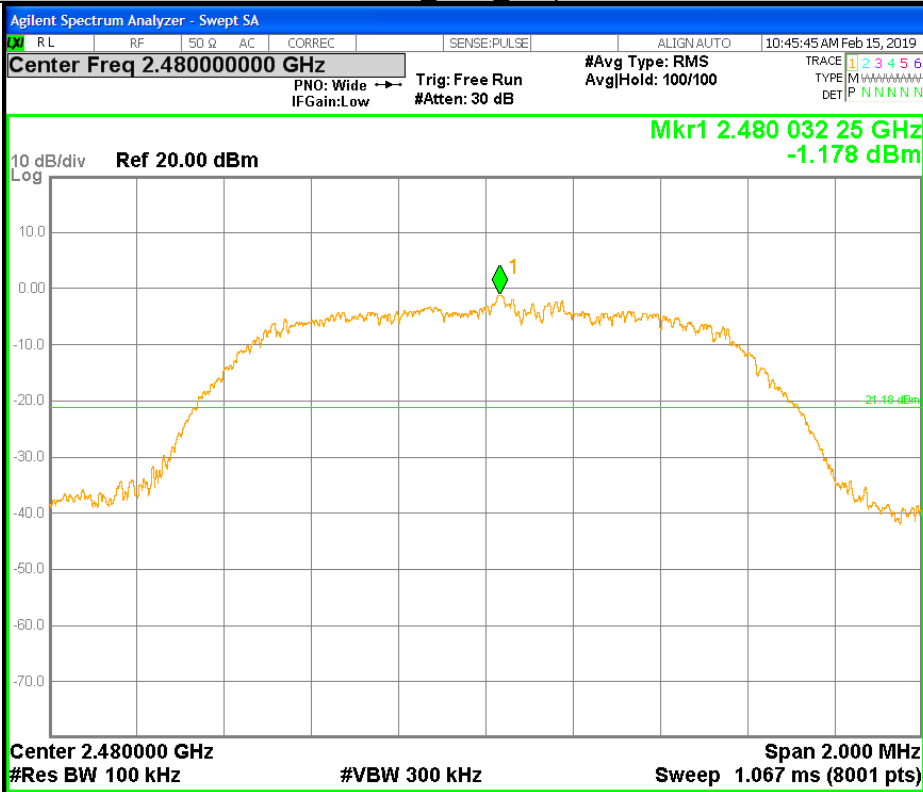


Puw

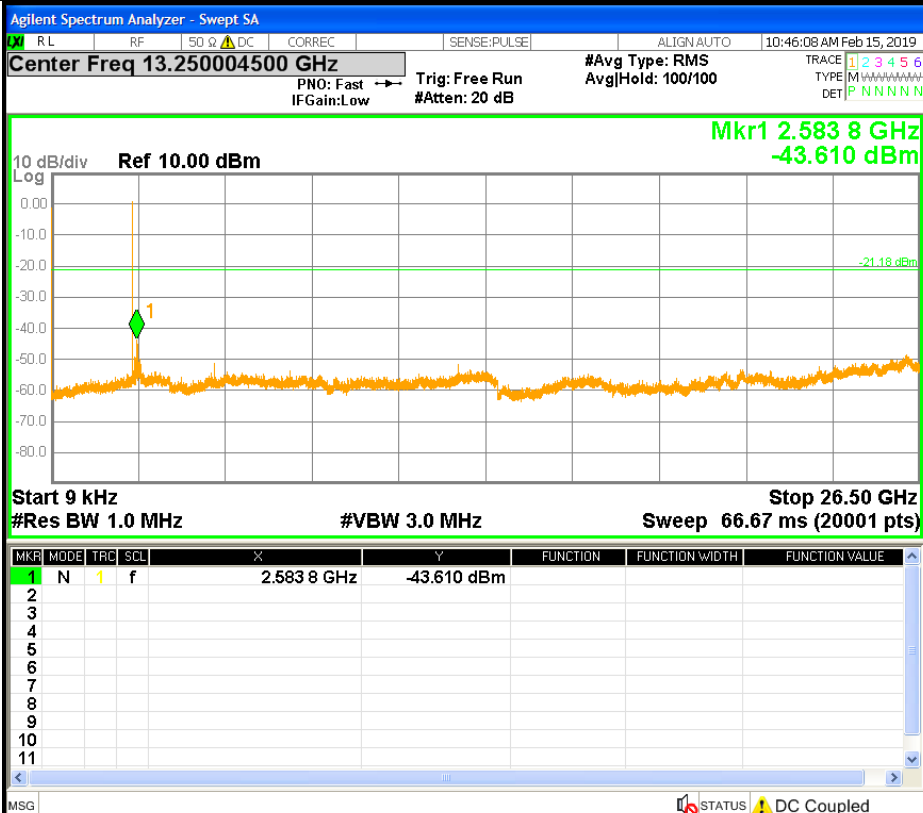


$\pi/4$ DQPSK HCH Graphs

Pref

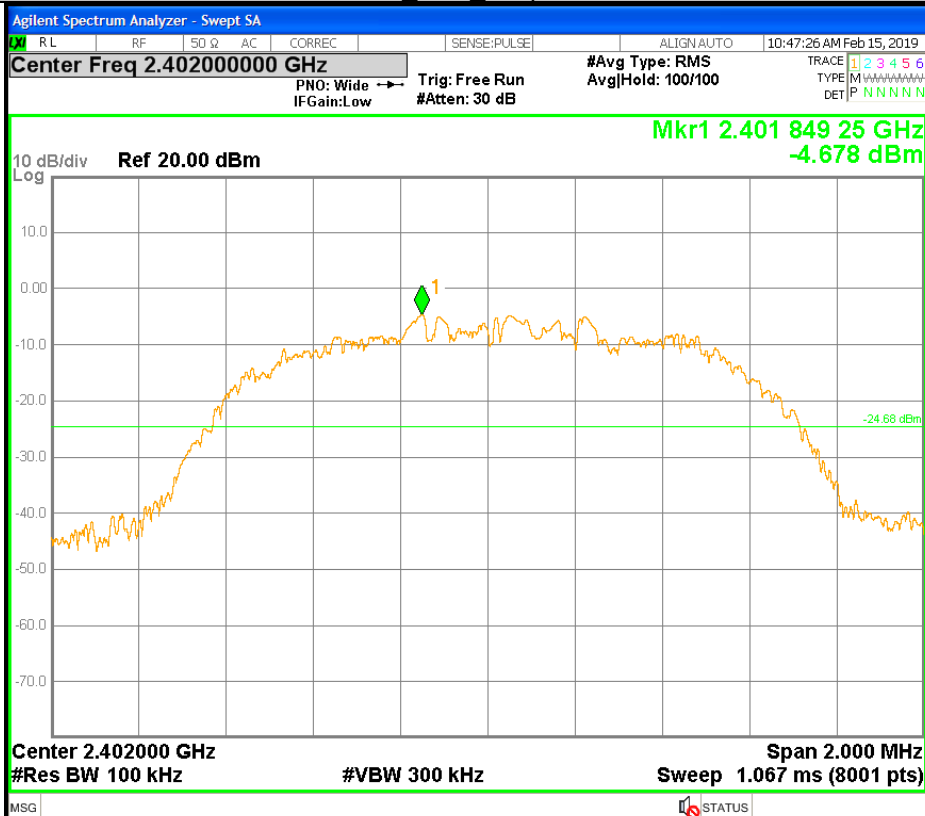


Puw

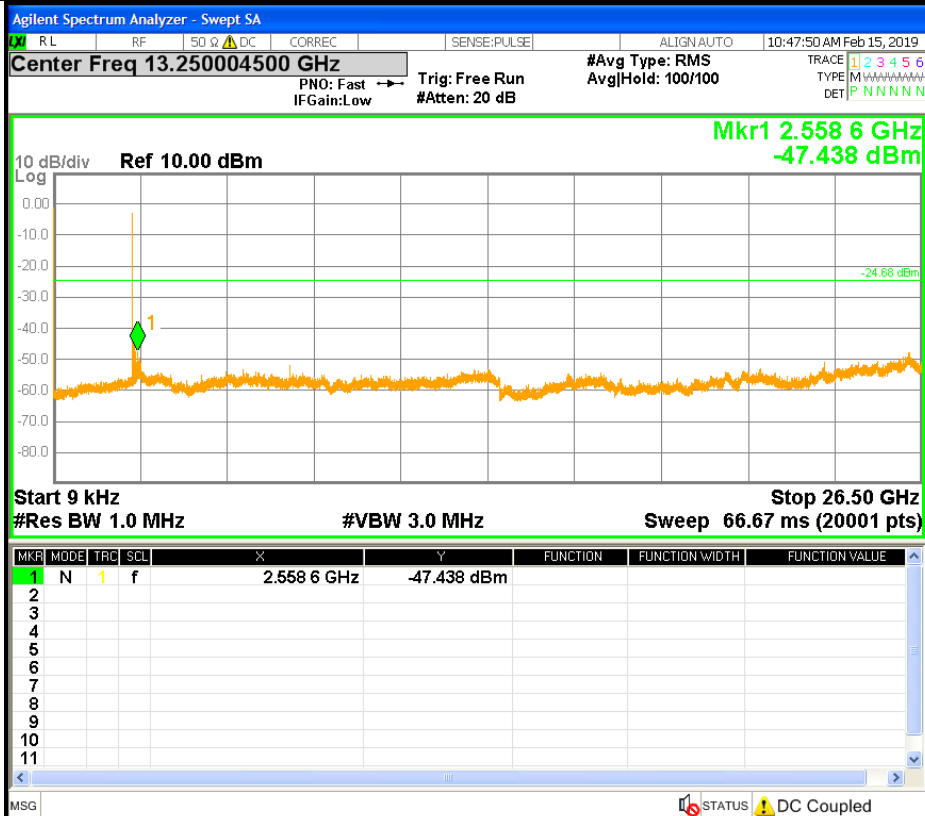


8DPSK LCH Graphs

Pref

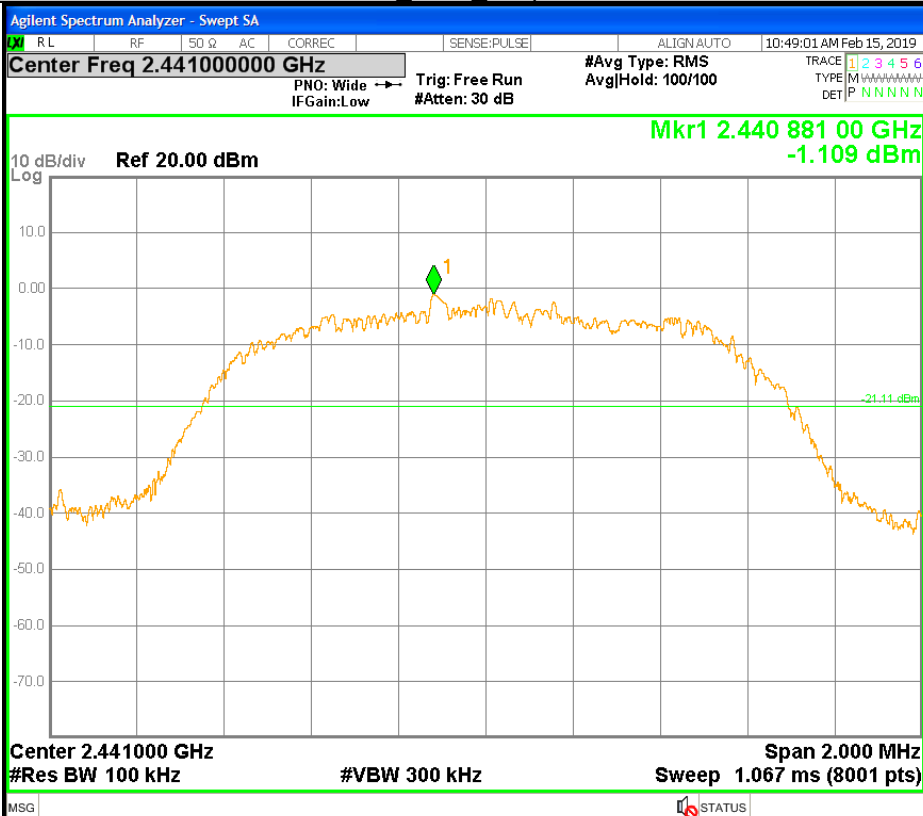


Puw

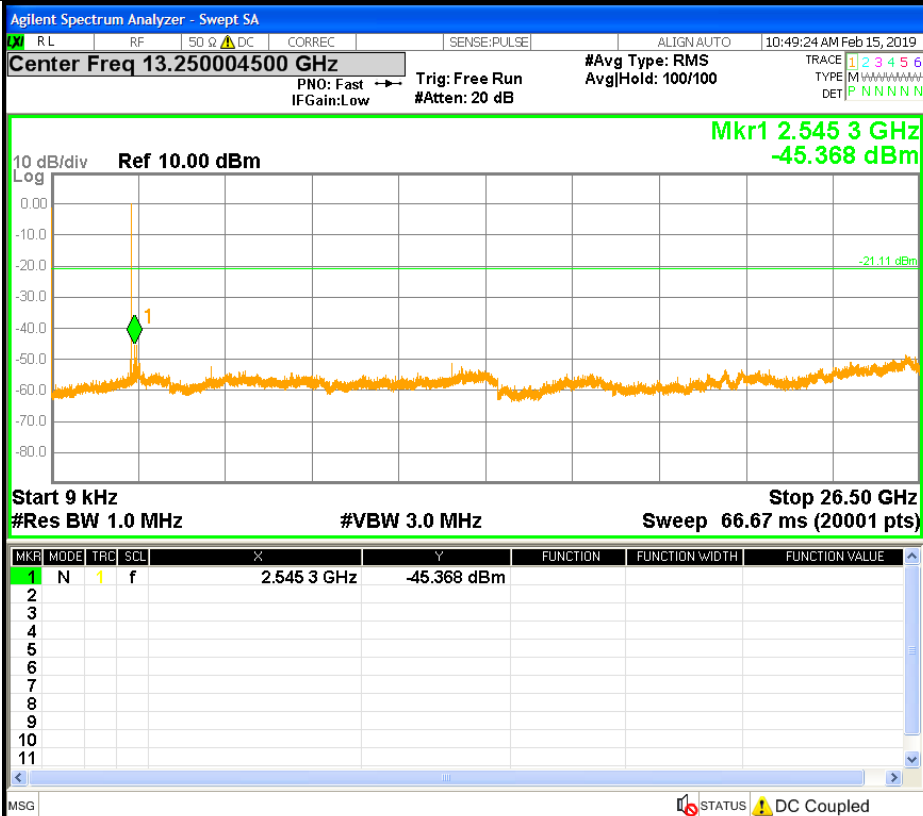


8DPSK MCH Graphs

Pref

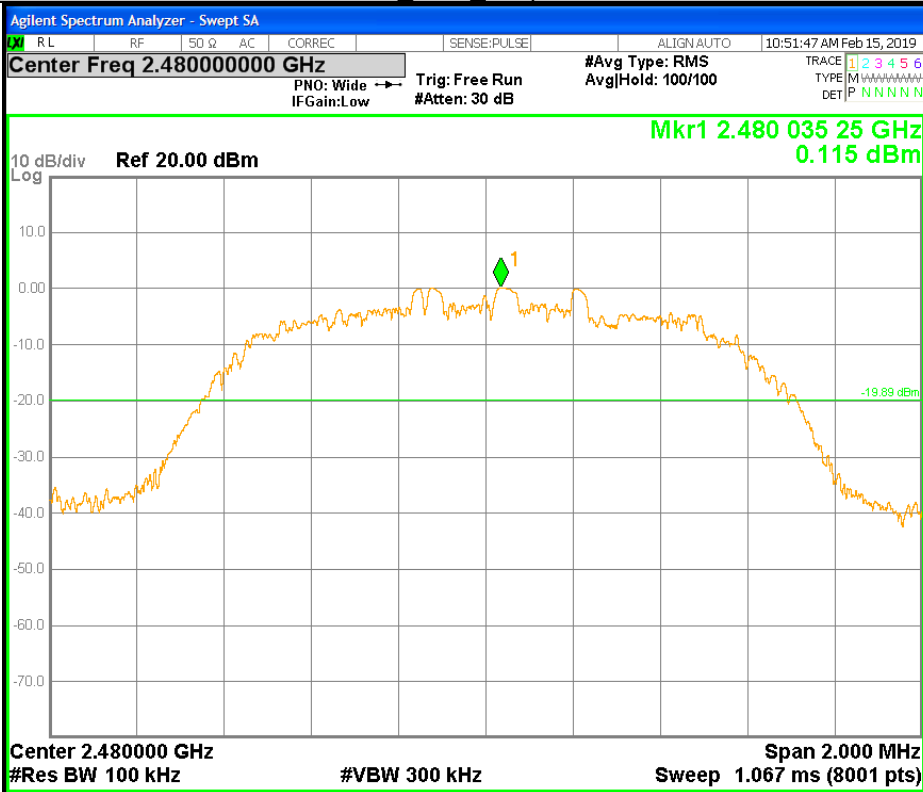


Puw



8DPSK HCH Graphs

Pref



Frequency

Auto Tune

Center Freq
2.480000000 GHz

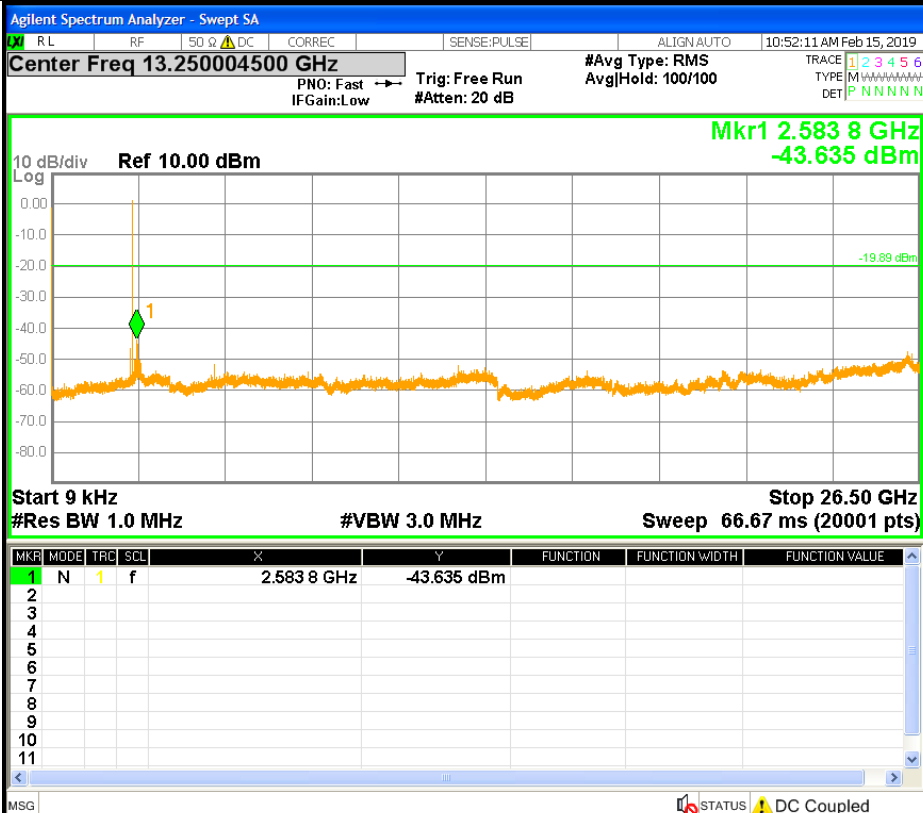
Start Freq
2.479000000 GHz

Stop Freq
2.481000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Puw



Frequency

Auto Tune

Center Freq
13.250004500 GHz

Start Freq
9.000 kHz

Stop Freq
26.500000000 GHz

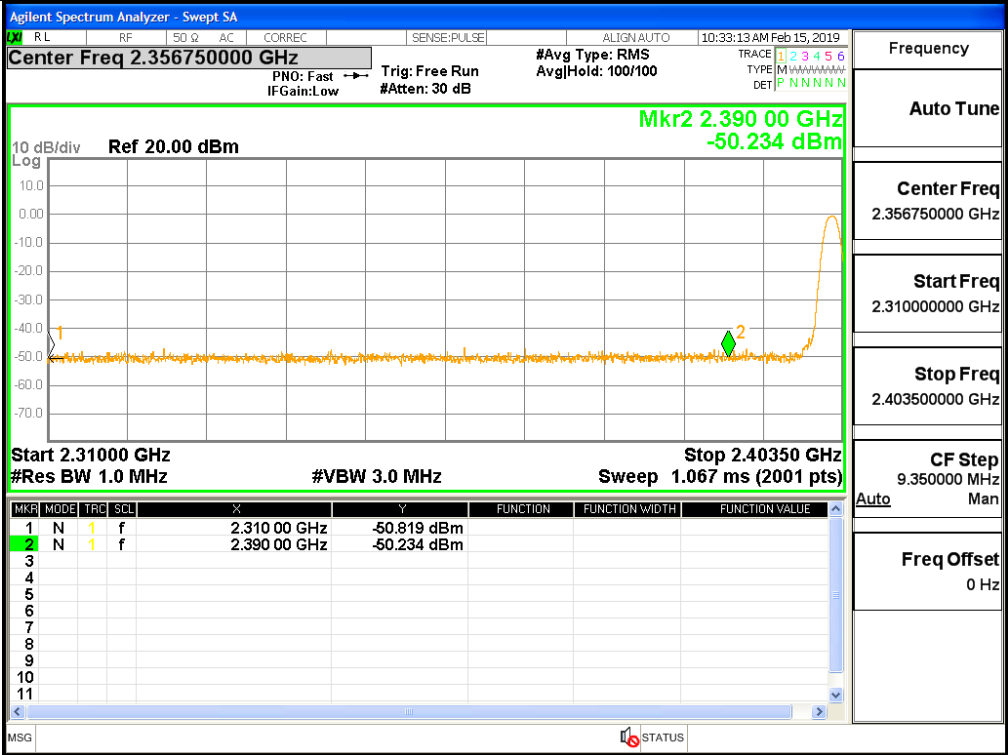
CF Step
2.649999100 GHz
Auto Man

Freq Offset
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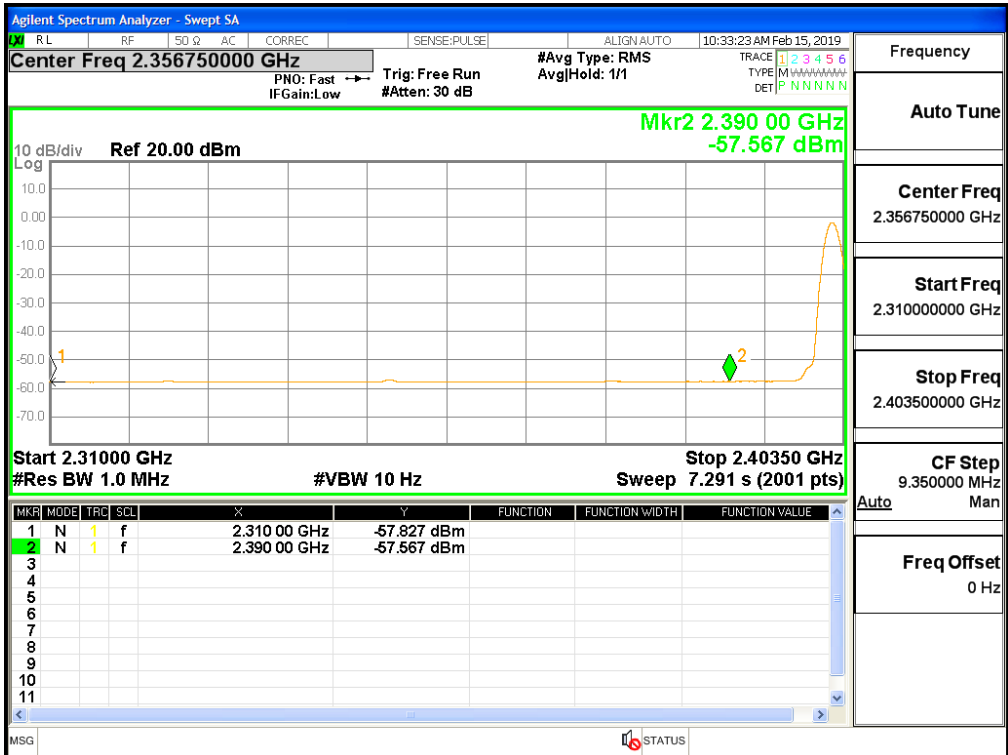
A.8 Restrict-band band-edge measurements

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	-50.82	46.98	74.00	-57.83	38.66	54	Pass
1DH5	2402	2390	2.00	0.00	-50.23	44.88	74.00	-57.57	38.7	54	Pass
1DH5	2480	2483.5	2.00	0.00	-47.20	52.06	74.00	-53.34	46.7	54	Pass
1DH5	2480	2500	2.00	0.00	-51.52	46.34	74.00	-57.00	39.22	54	Pass
2DH5	2402	2310	2.00	0.00	-50.45	45.46	74.00	-57.91	38.42	54	Pass
2DH5	2402	2390	2.00	0.00	-48.17	46.04	74.00	-57.60	38.65	54	Pass
2DH5	2480	2483.5	2.00	0.00	-48.37	48.40	74.00	-54.35	42.92	54	Pass
2DH5	2480	2500	2.00	0.00	-49.79	46.82	74.00	-57.02	39.18	54	Pass
3DH5	2402	2310	2.00	0.00	-50.75	43.97	74.00	-57.87	38.39	54	Pass
3DH5	2402	2390	2.00	0.00	-50.60	45.69	74.00	-57.56	38.63	54	Pass
3DH5	2480	2483.5	2.00	0.00	-46.95	49.62	74.00	-54.42	43.04	54	Pass
3DH5	2480	2500	2.00	0.00	-49.26	46.38	74.00	-57.03	39.15	54	Pass

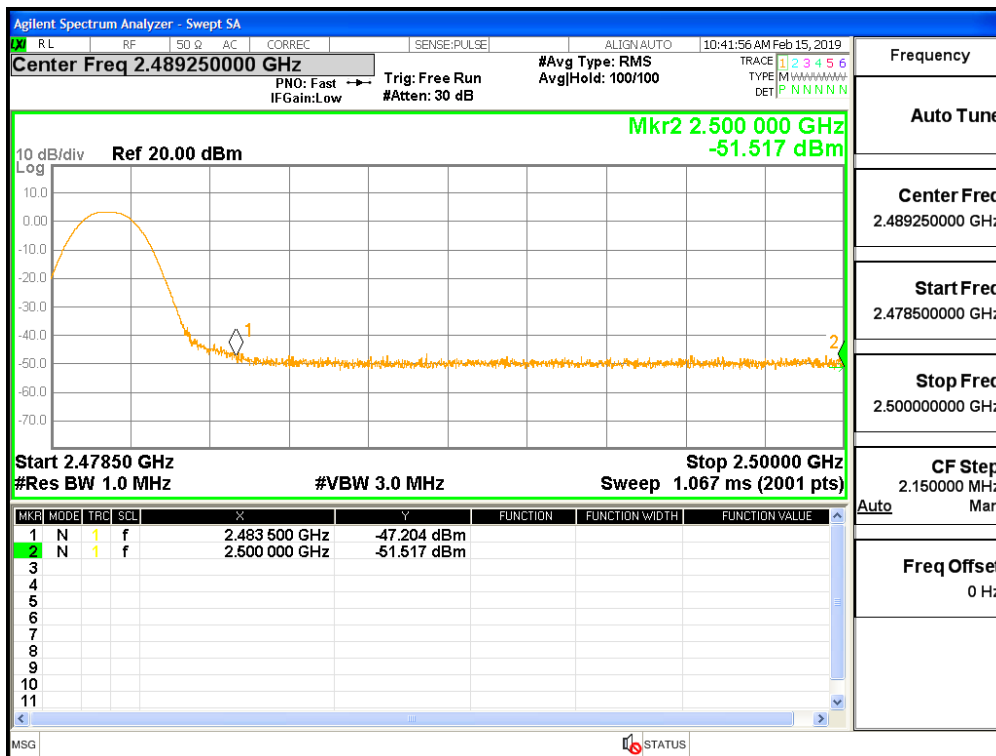
Restrict-band band-edge measurements_2402_PEAK_DH5



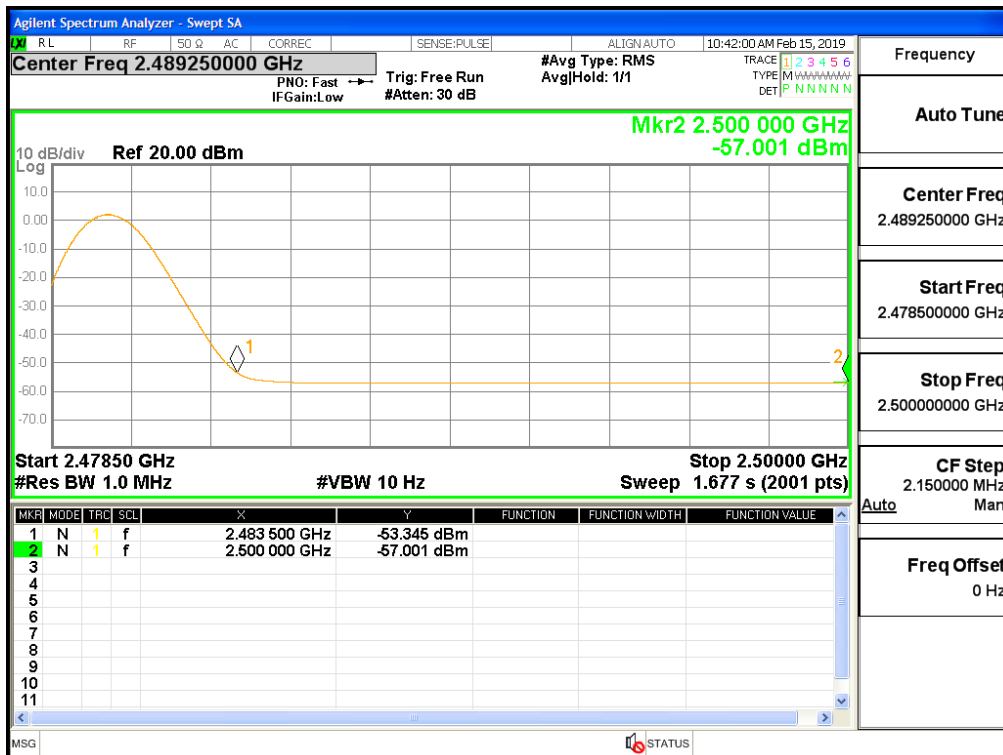
Restrict-band band-edge measurements_2402_AV_DH5



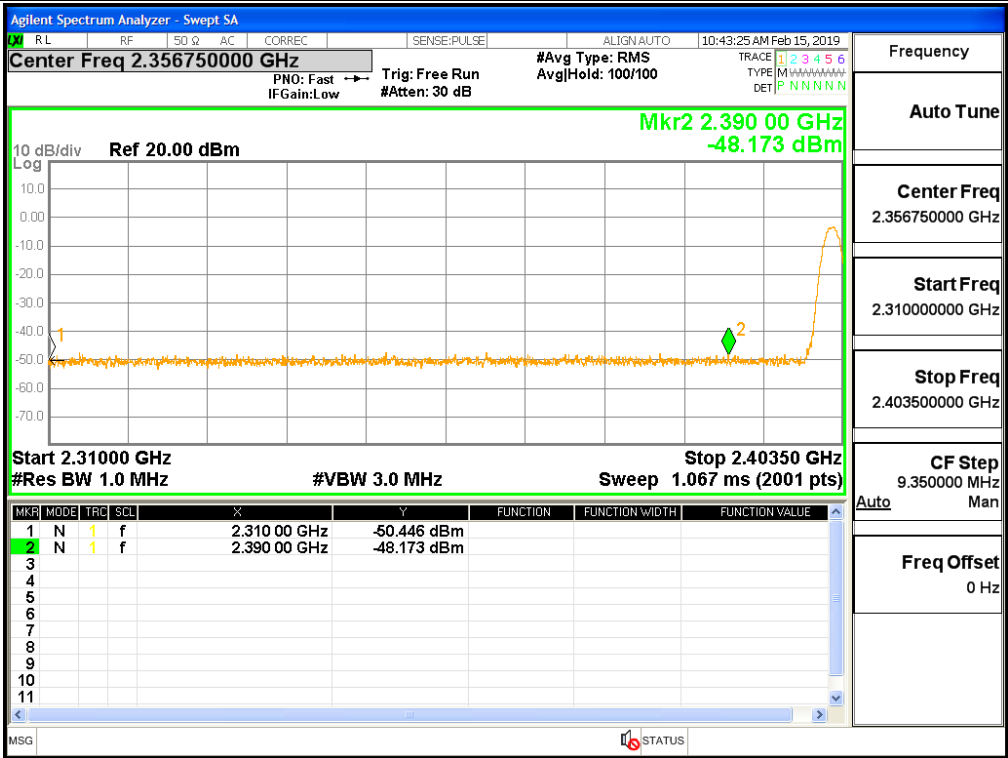
Restrict-band band-edge measurements_2480_PEAK_DH5



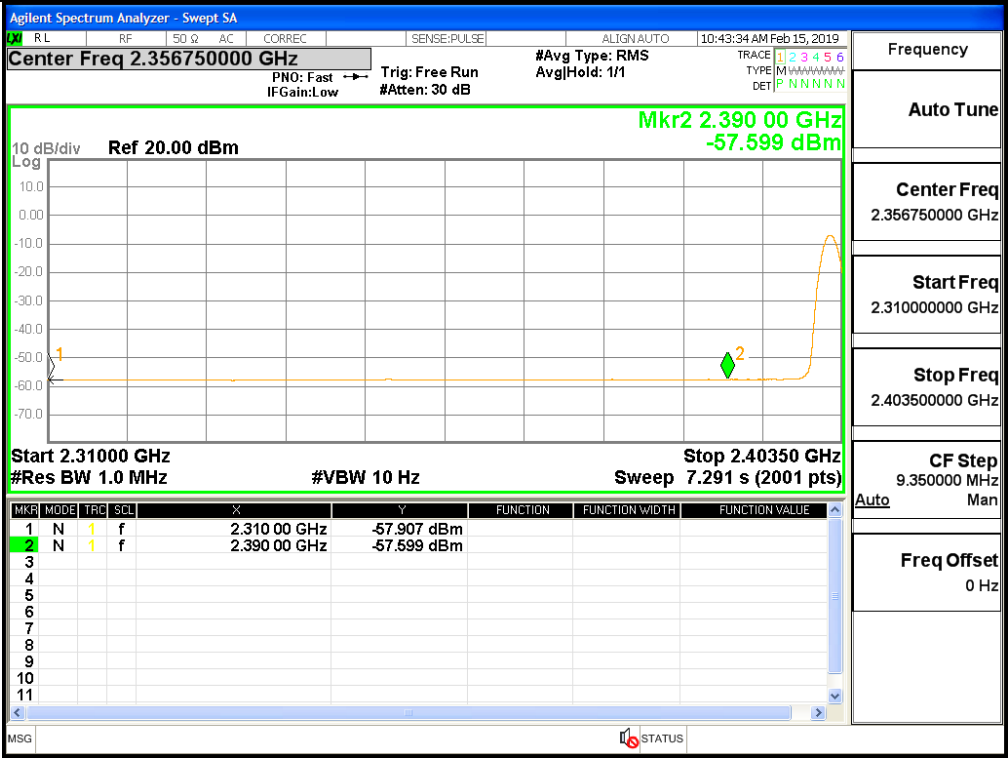
Restrict-band band-edge measurements_2480_AV_DH5



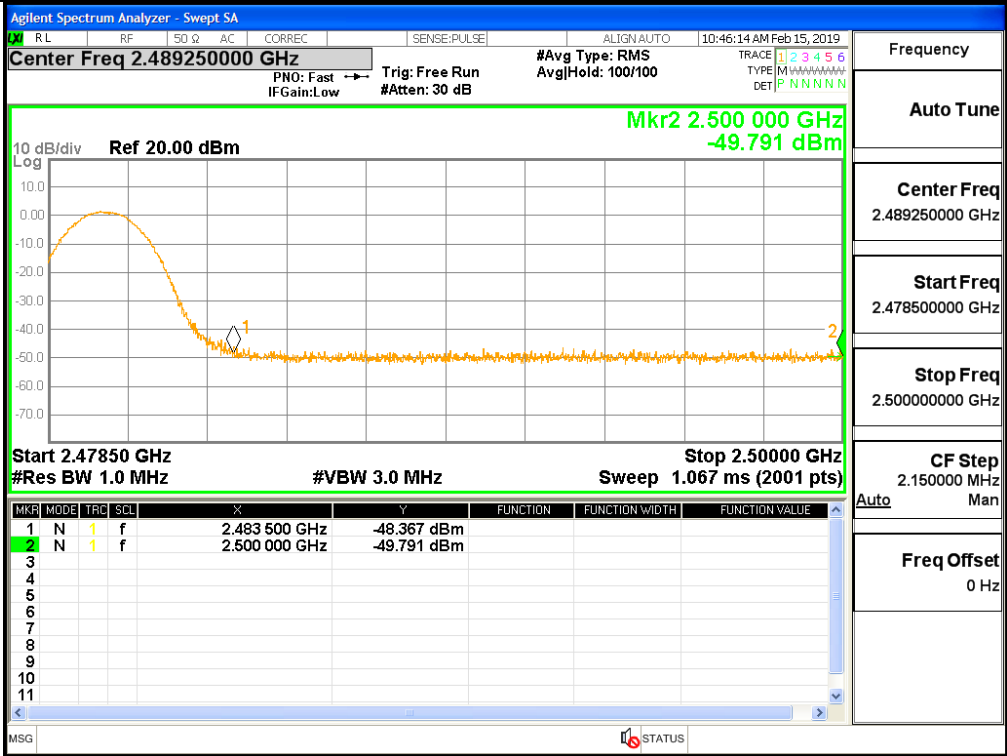
Restrict-band band-edge measurements_2402_PEAK_2DH5



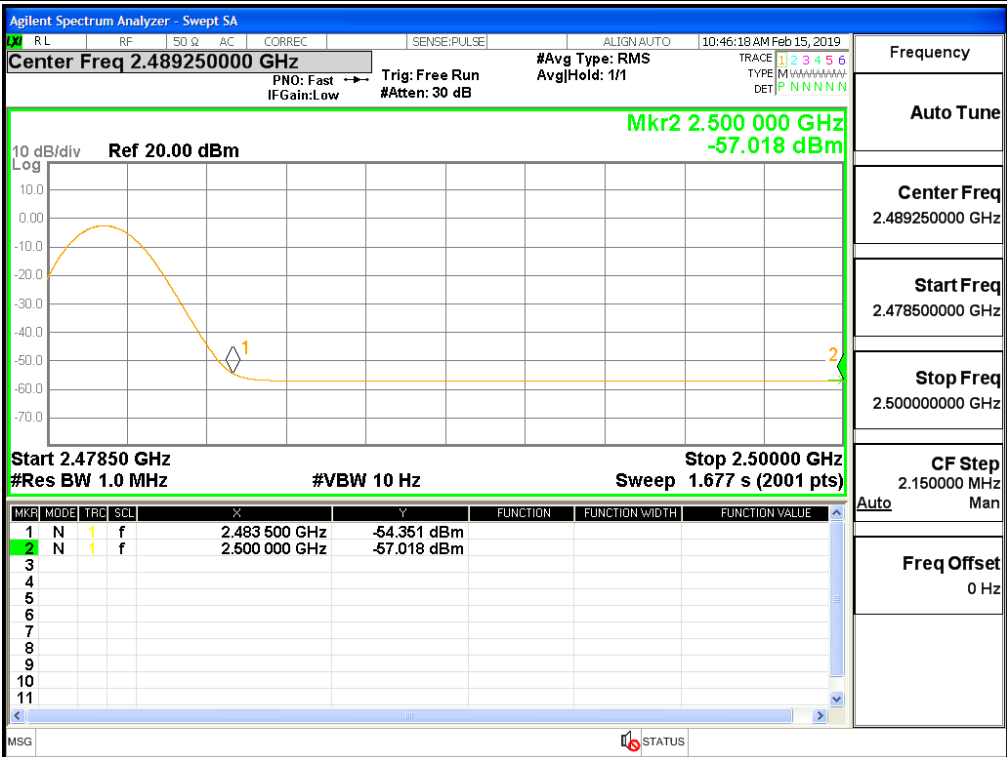
Restrict-band band-edge measurements_2402_AV_2DH5



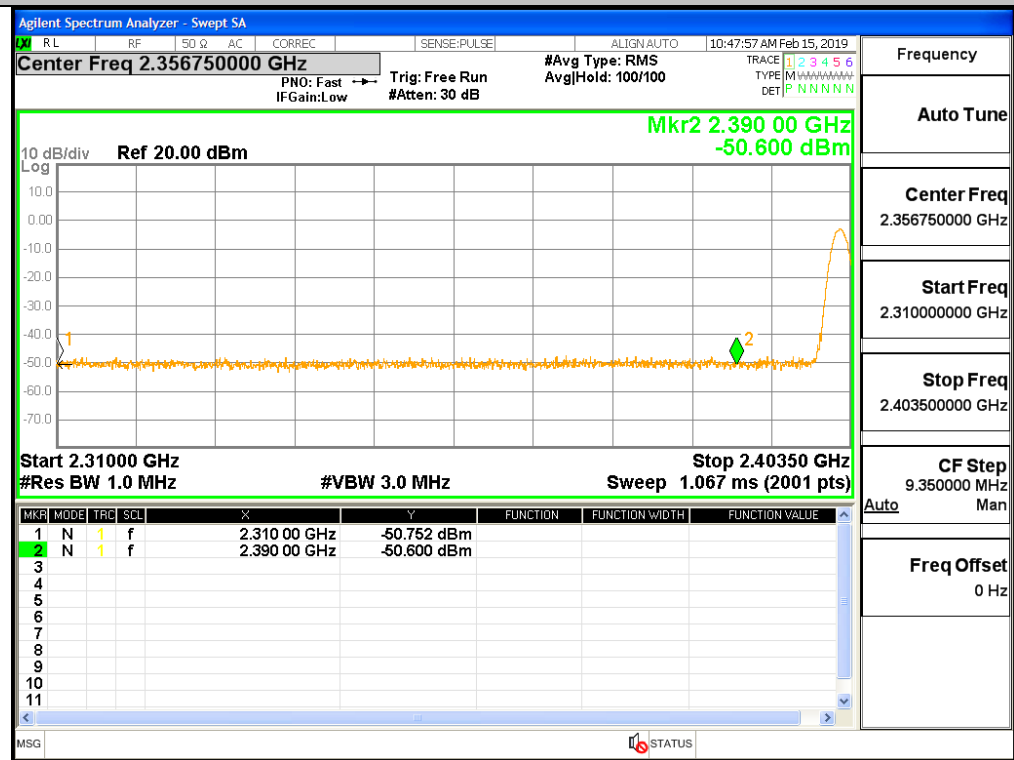
Restrict-band band-edge measurements_2480_PEAK_2DH5



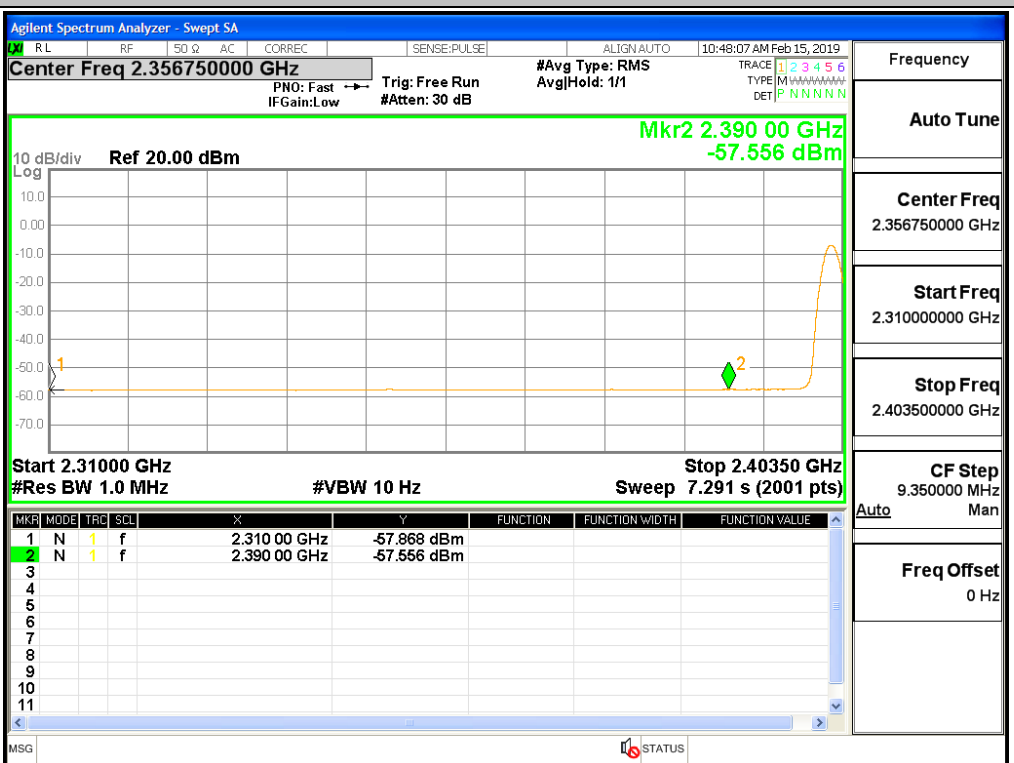
Restrict-band band-edge measurements_2480_AV_2DH5



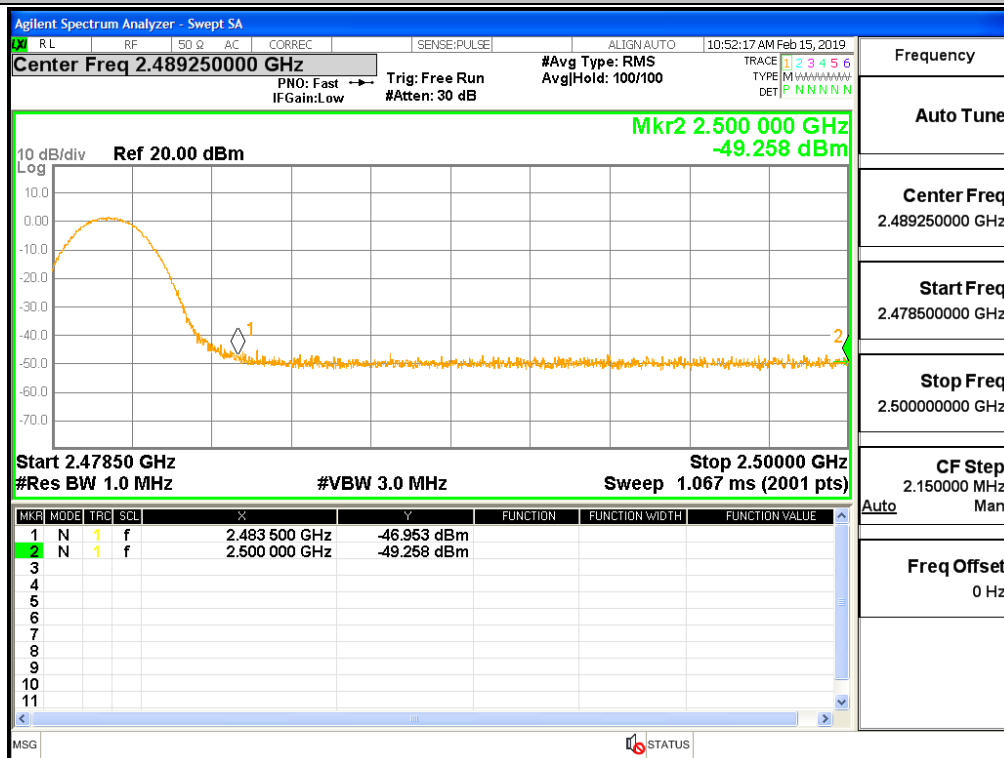
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

