

Appendix A

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

Product Name: Bluetooth headset

Trade Mark: CDX

Test Model: D42

FCC ID: 2AQK8-D42

Environmental Conditions

Temperature:	23.5 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

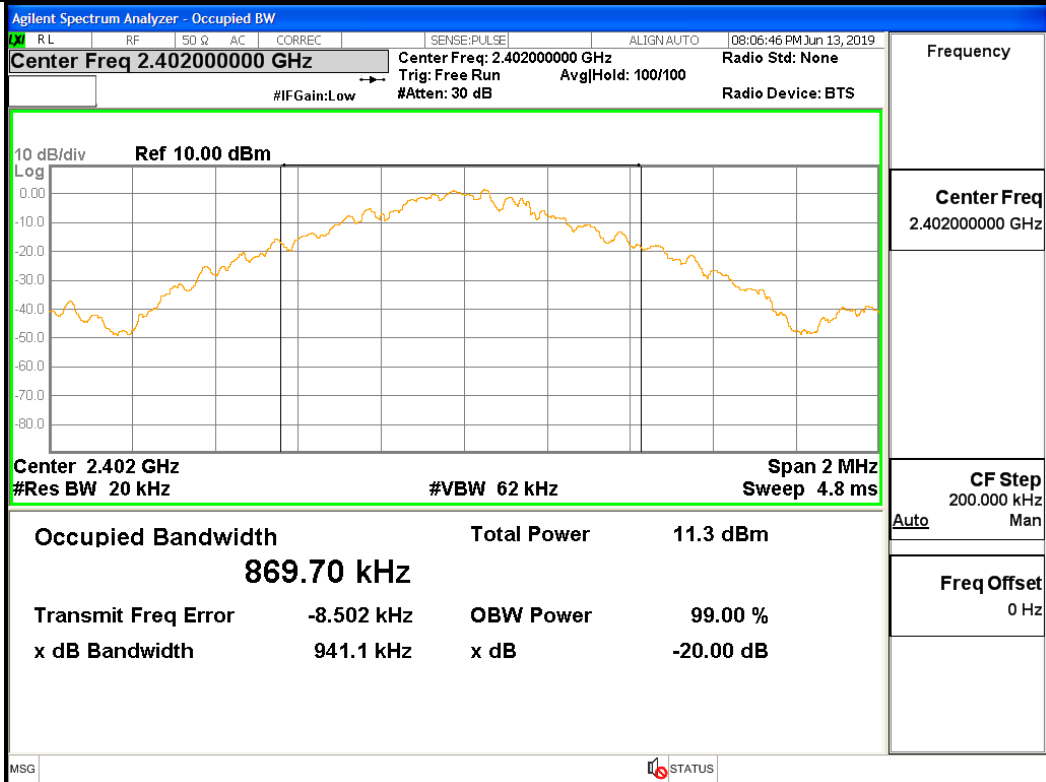
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.941	Not Specified	PASS
GFSK	MCH	0.938	Not Specified	PASS
GFSK	HCH	0.940	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.324	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.332	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.328	Not Specified	PASS
8DPSK	LCH	1.328	Not Specified	PASS
8DPSK	MCH	1.331	Not Specified	PASS
8DPSK	HCH	1.332	Not Specified	PASS

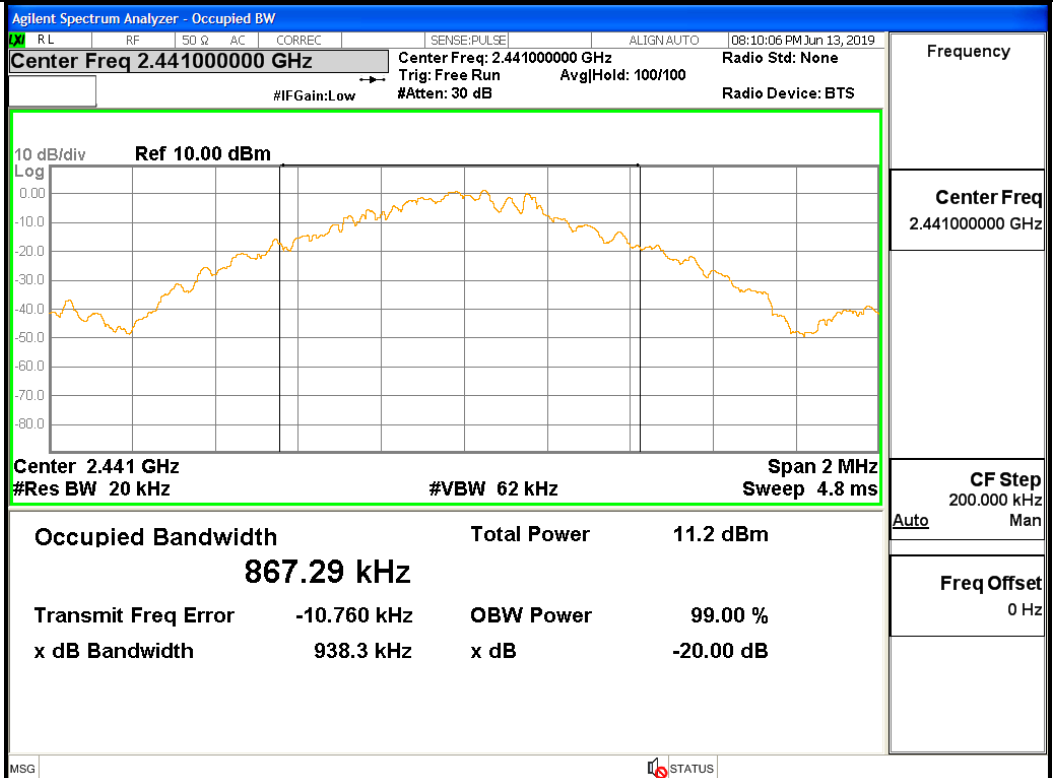
Test Graph

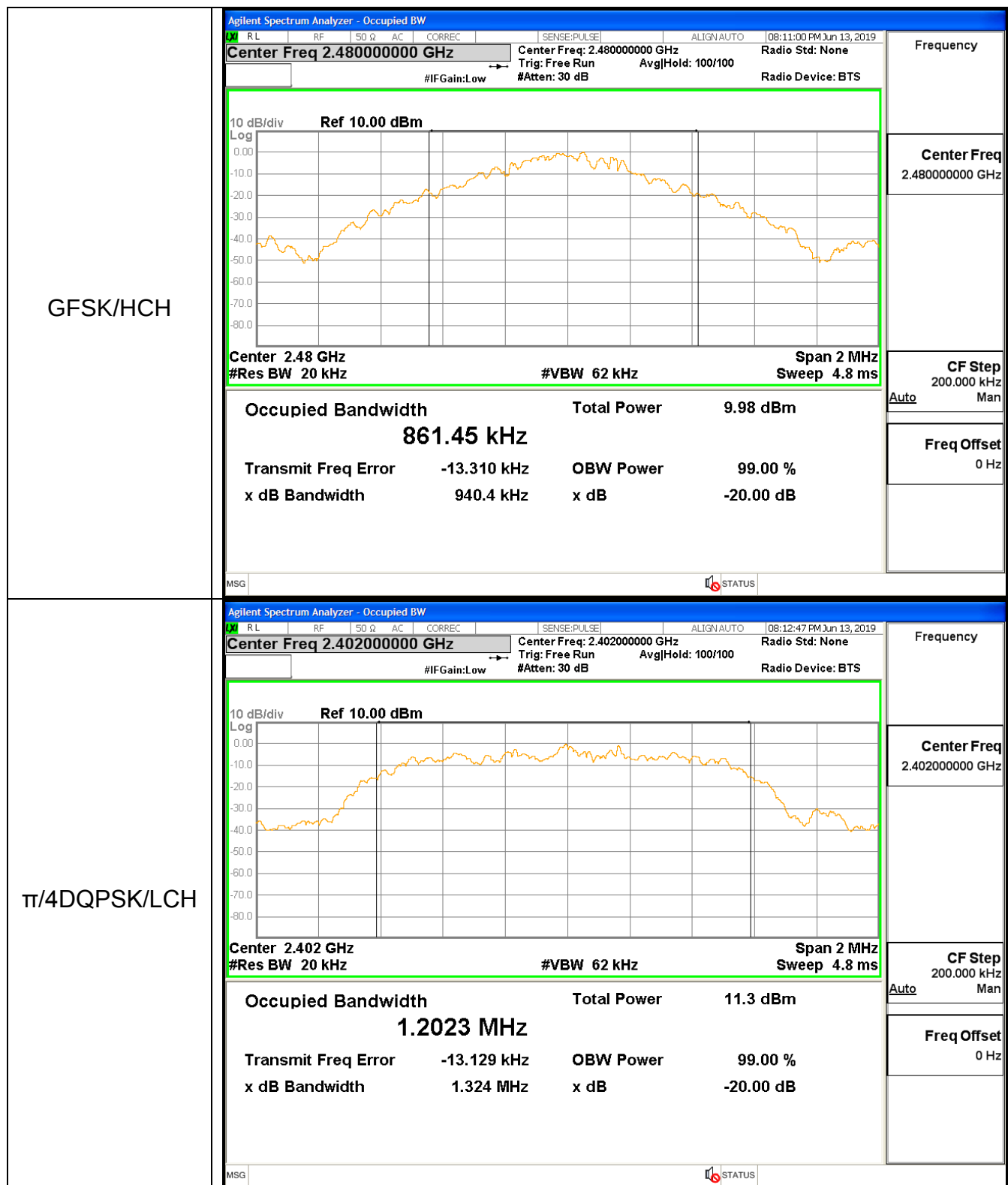
Graphs

GFSK/LCH

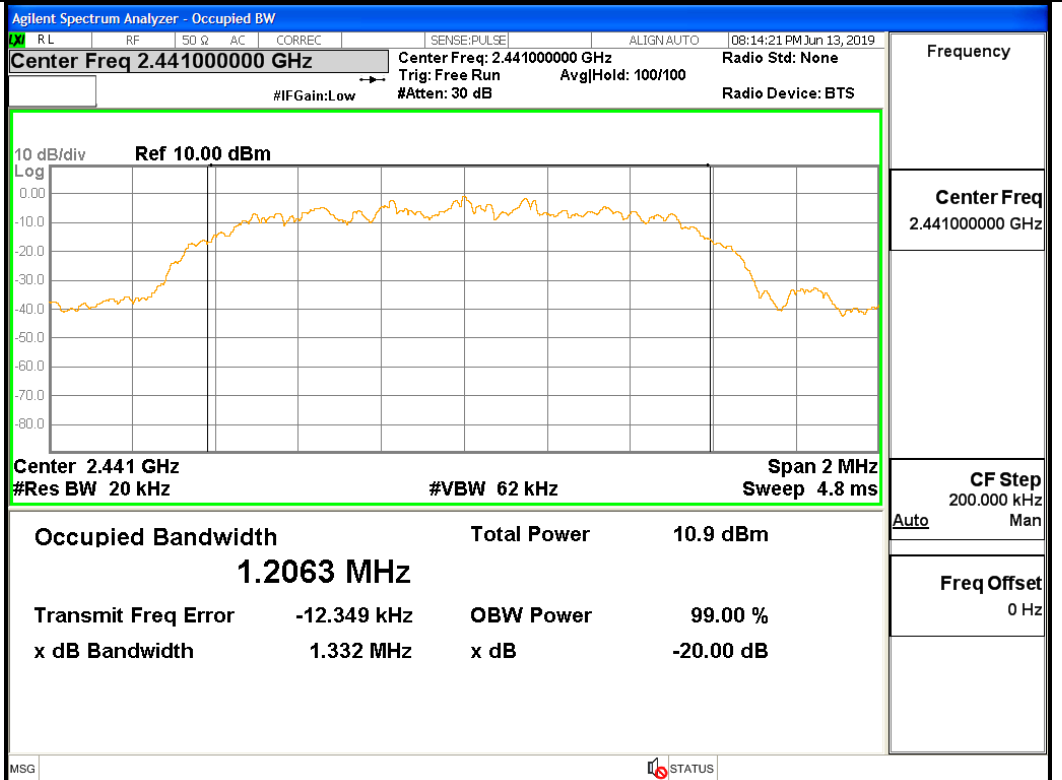


GFSK/MCH

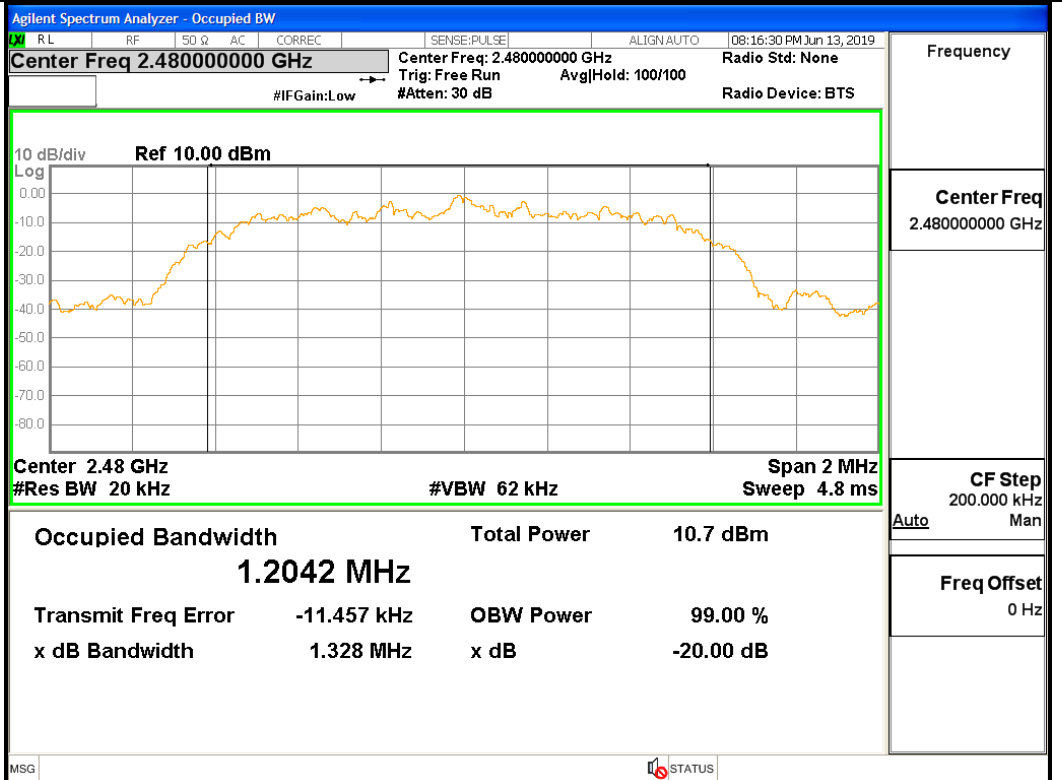




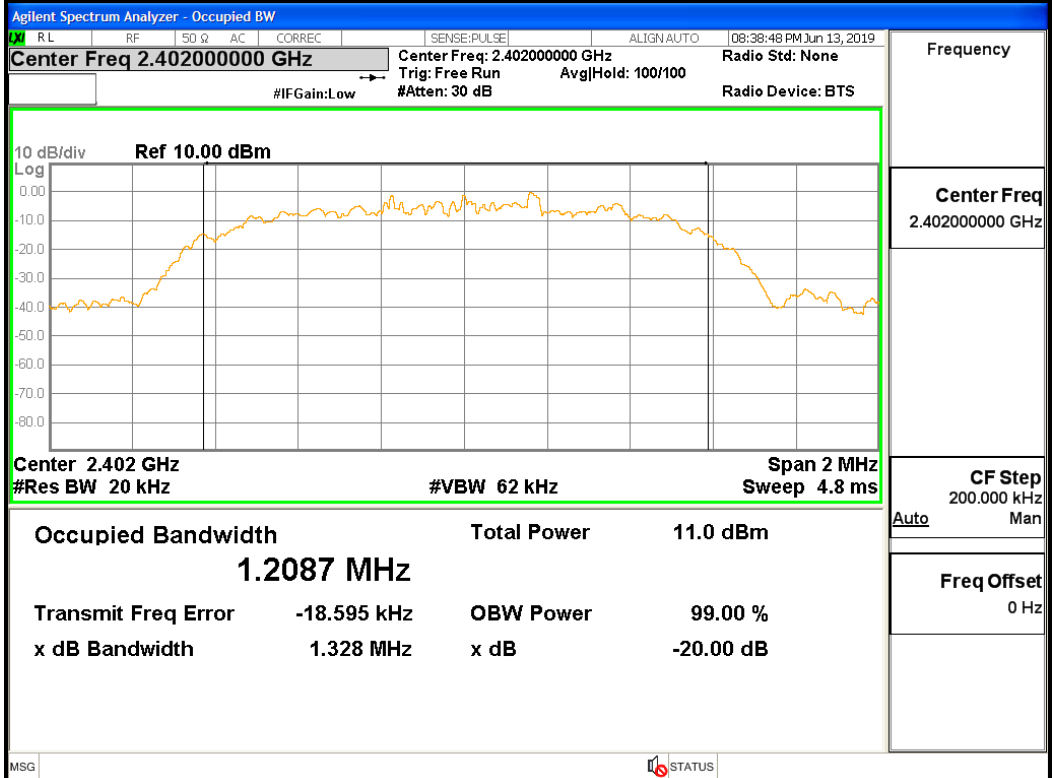
$\pi/4$ DQPSK/MCH



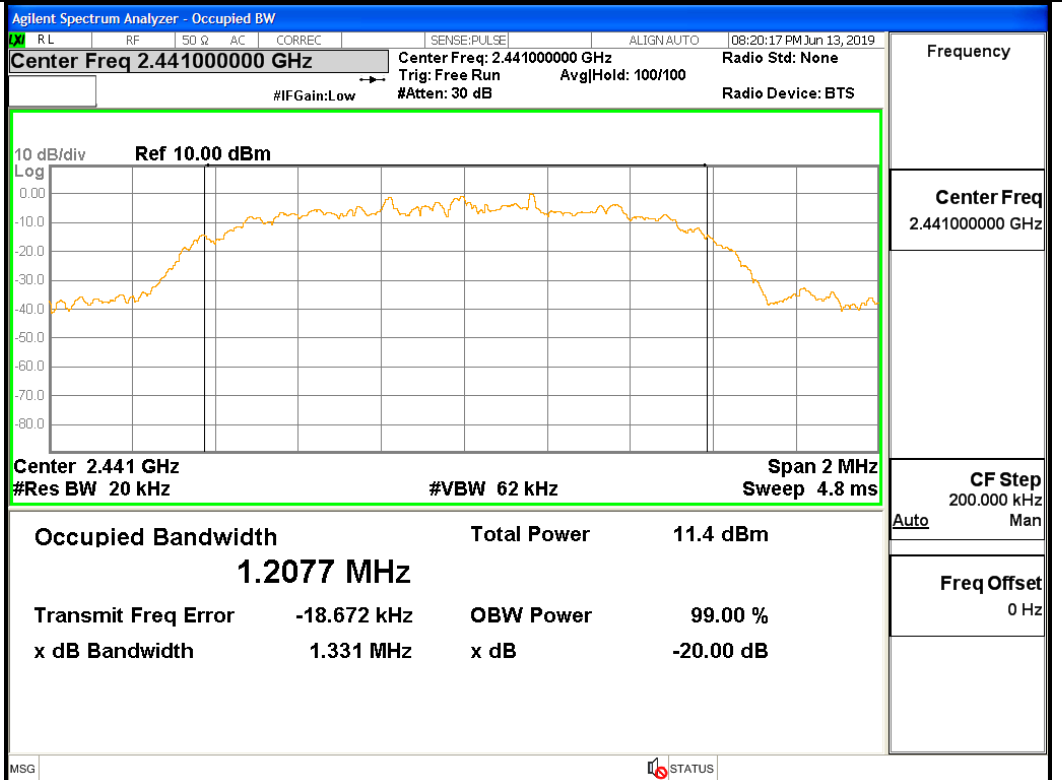
$\pi/4$ DQPSK/HCH



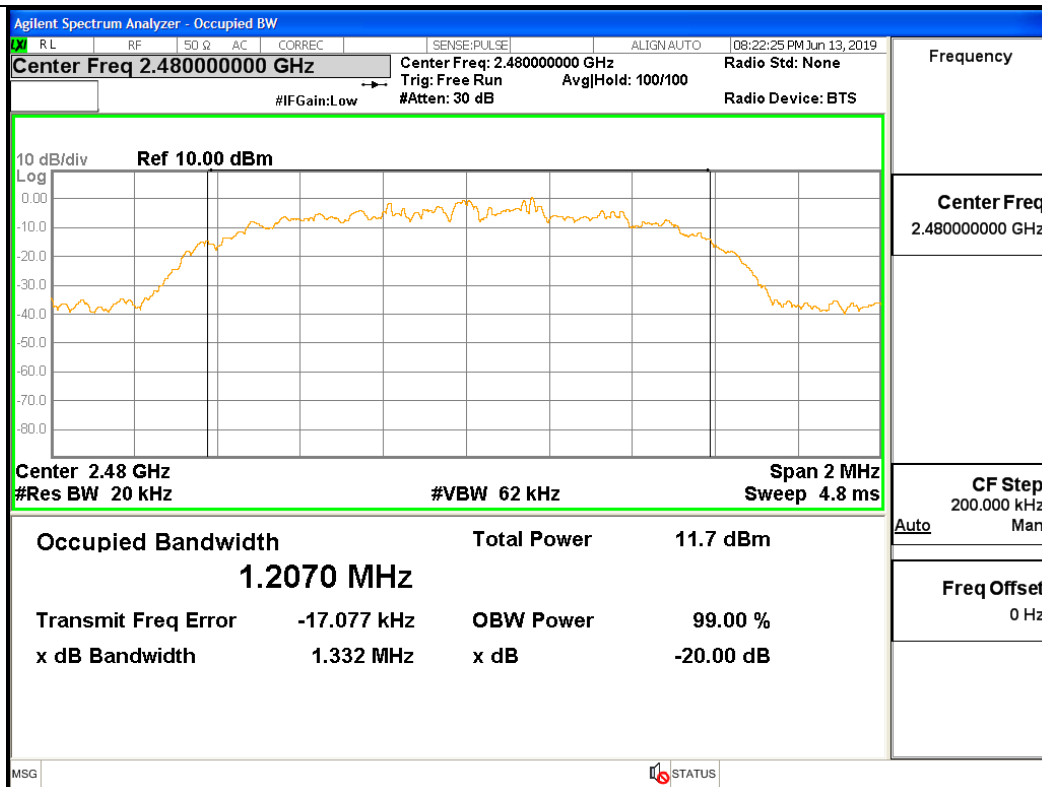
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



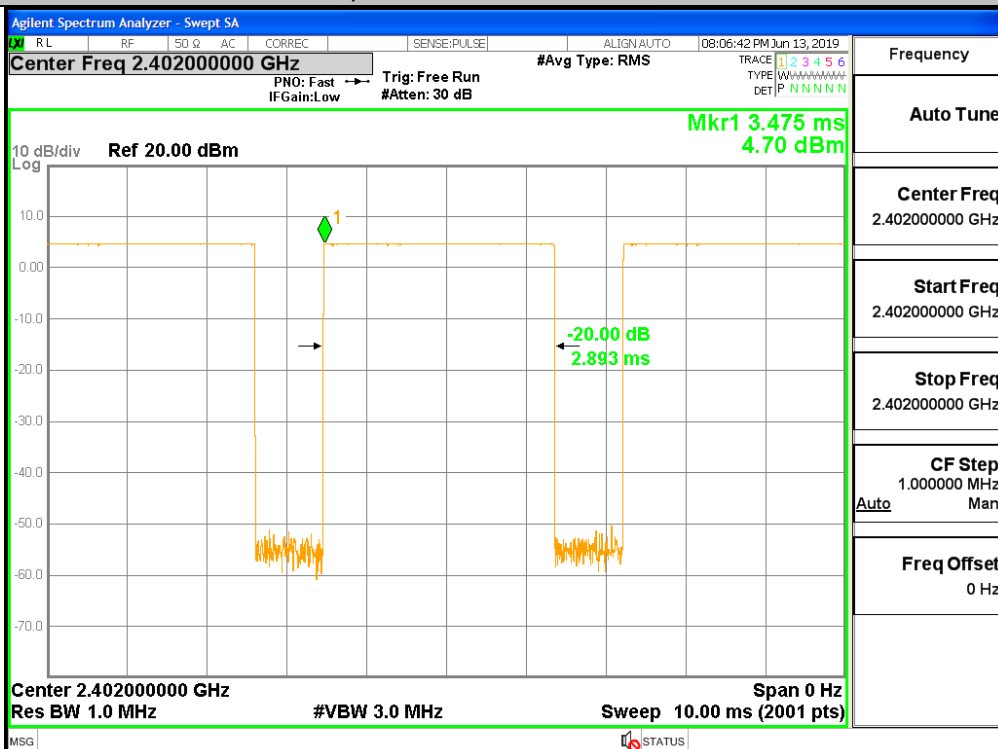
A.2 Dwell Time

Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002893	106.7	0.308717	0.4	PASS
GFSK	DH5	MCH	0.002895	106.7	0.308929	0.4	PASS
GFSK	DH5	HCH	0.002893	106.7	0.308730	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002901	106.7	0.309542	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002899	106.7	0.309274	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002899	106.7	0.309291	0.4	PASS
8DPSK	3DH5	LCH	0.002892	106.7	0.308606	0.4	PASS
8DPSK	3DH5	MCH	0.002900	106.7	0.309444	0.4	PASS
8DPSK	3DH5	HCH	0.002902	106.7	0.309614	0.4	PASS

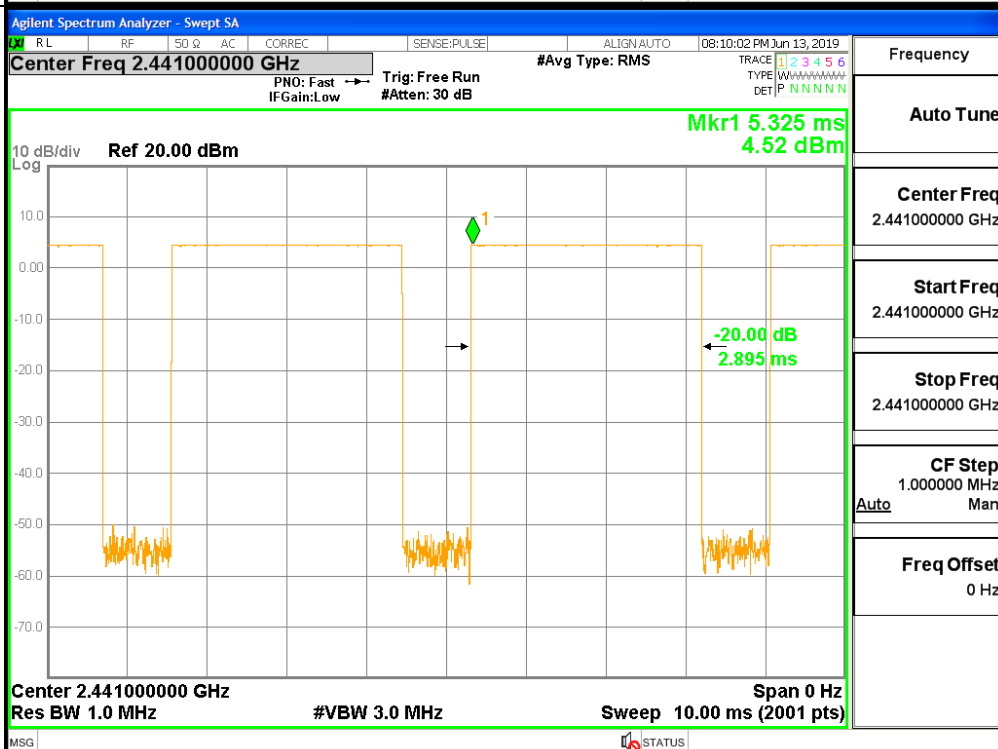
Test Graph

Graphs

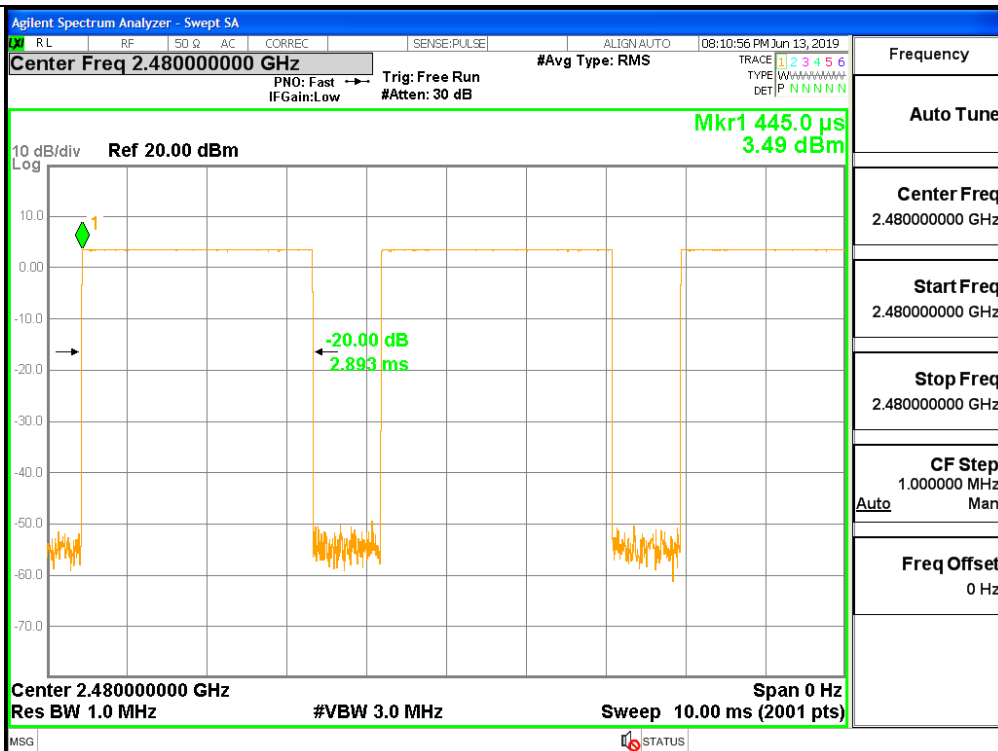
GFSK_DH5/LCH



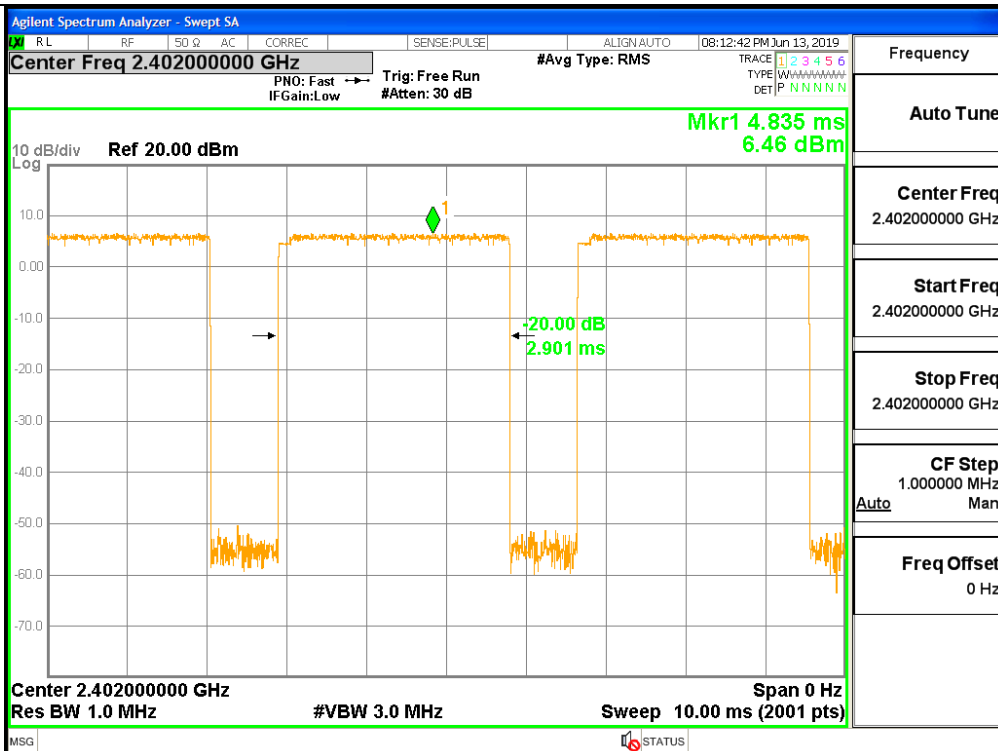
GFSK_DH5/MCH



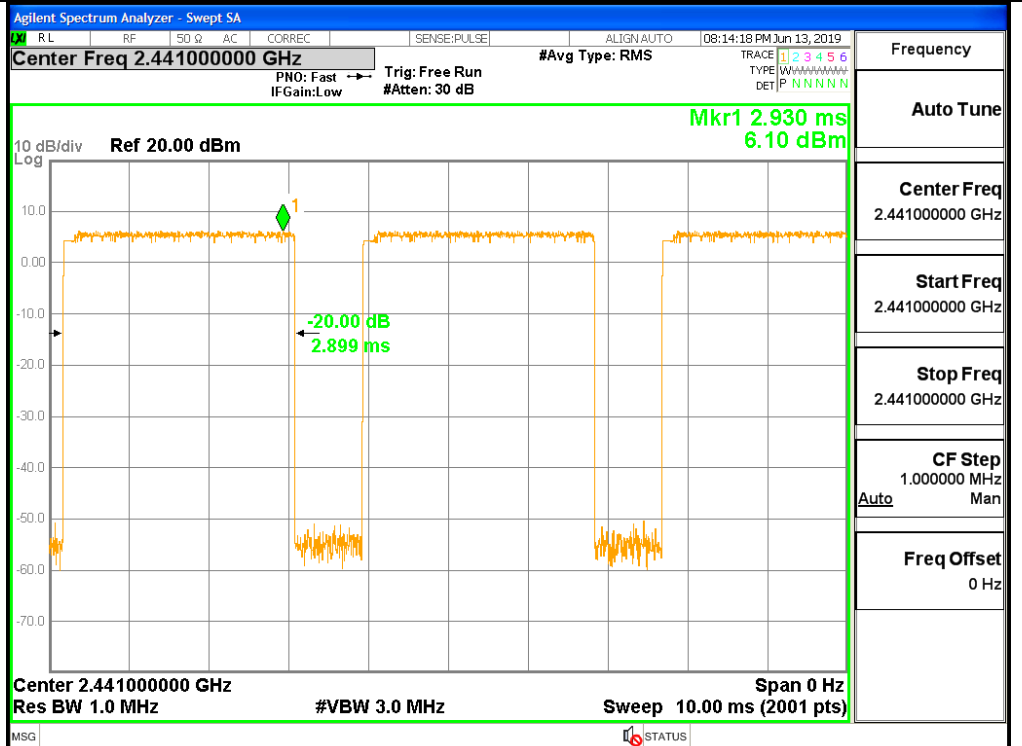
GFSK_DH5/HCH



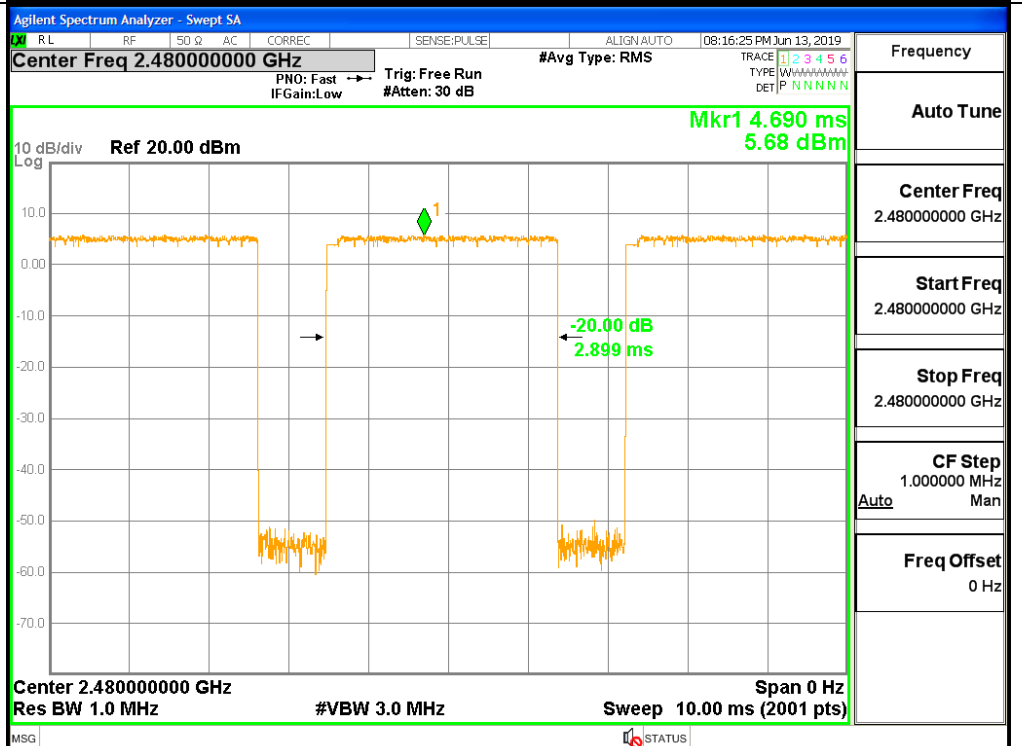
$\pi/4$ DQPSK
_2DH5/LCH

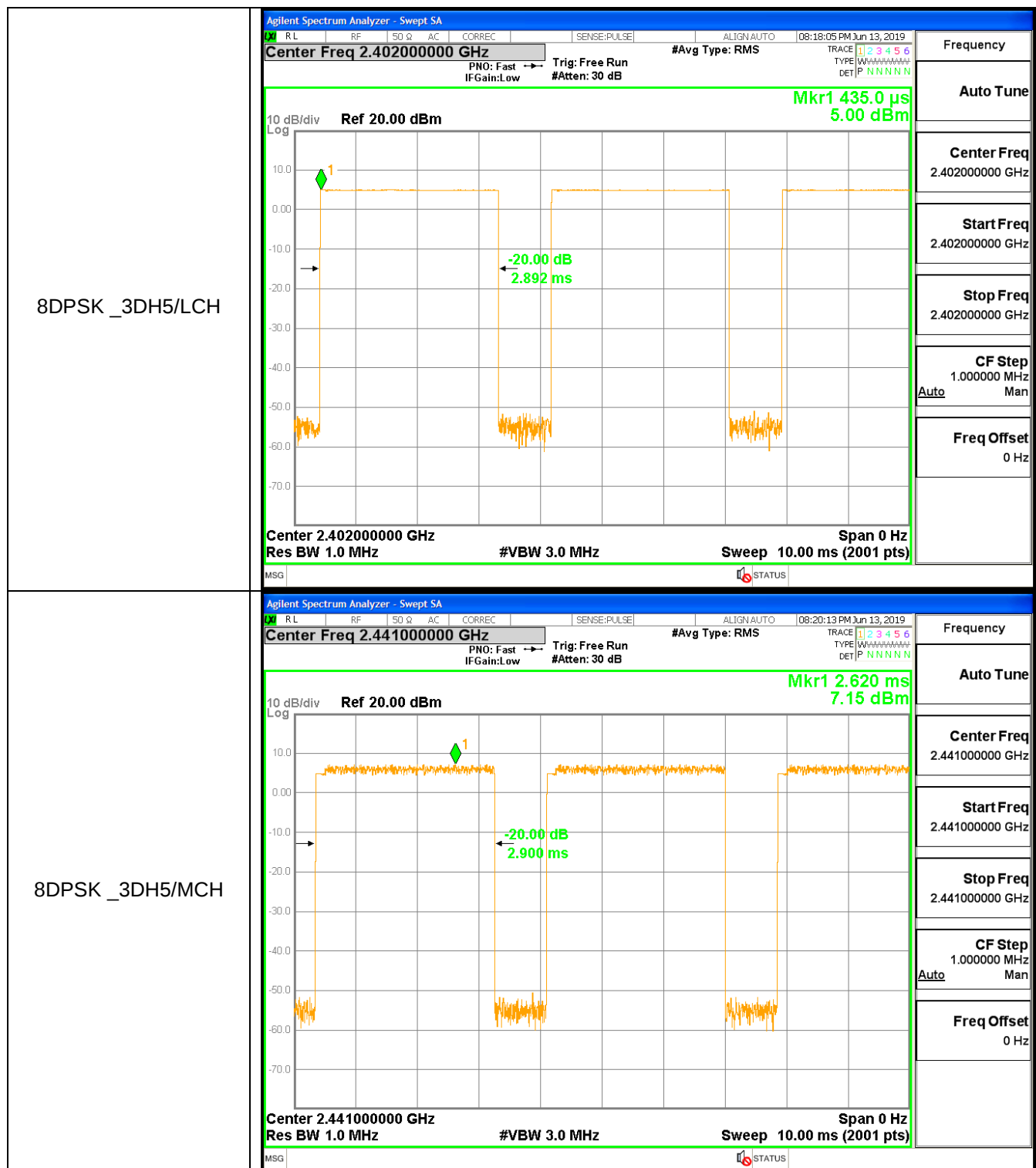


$\pi/4$ DQPSK
_2DH5/MCH

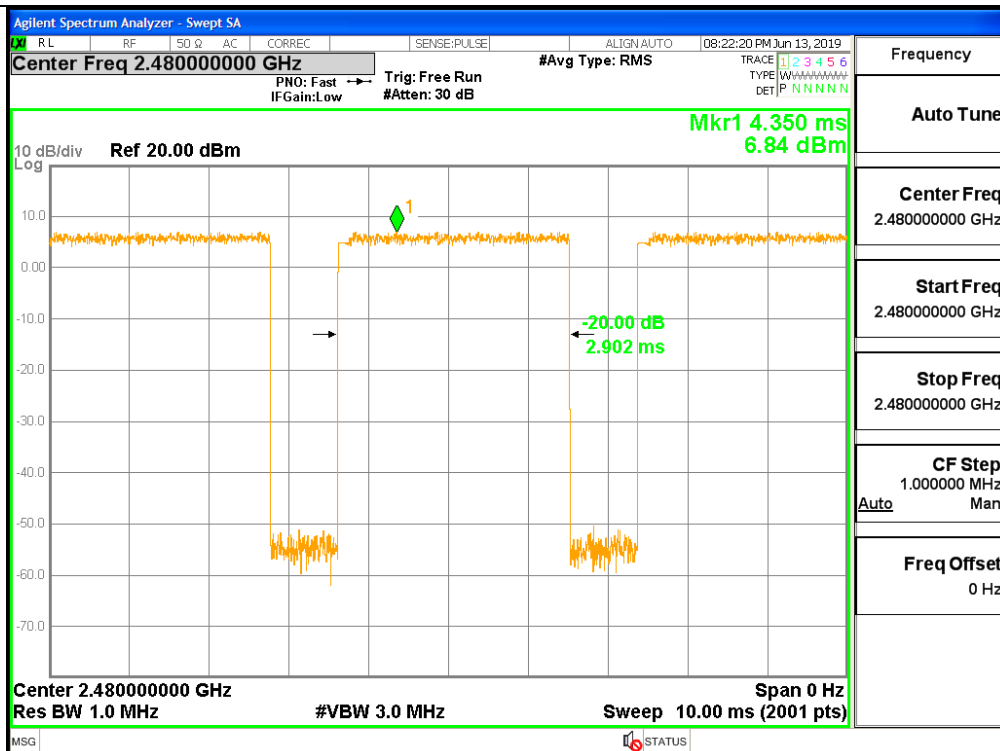


$\pi/4$ DQPSK
_2DH5/HCH





8DPSK_3DH5/HCH

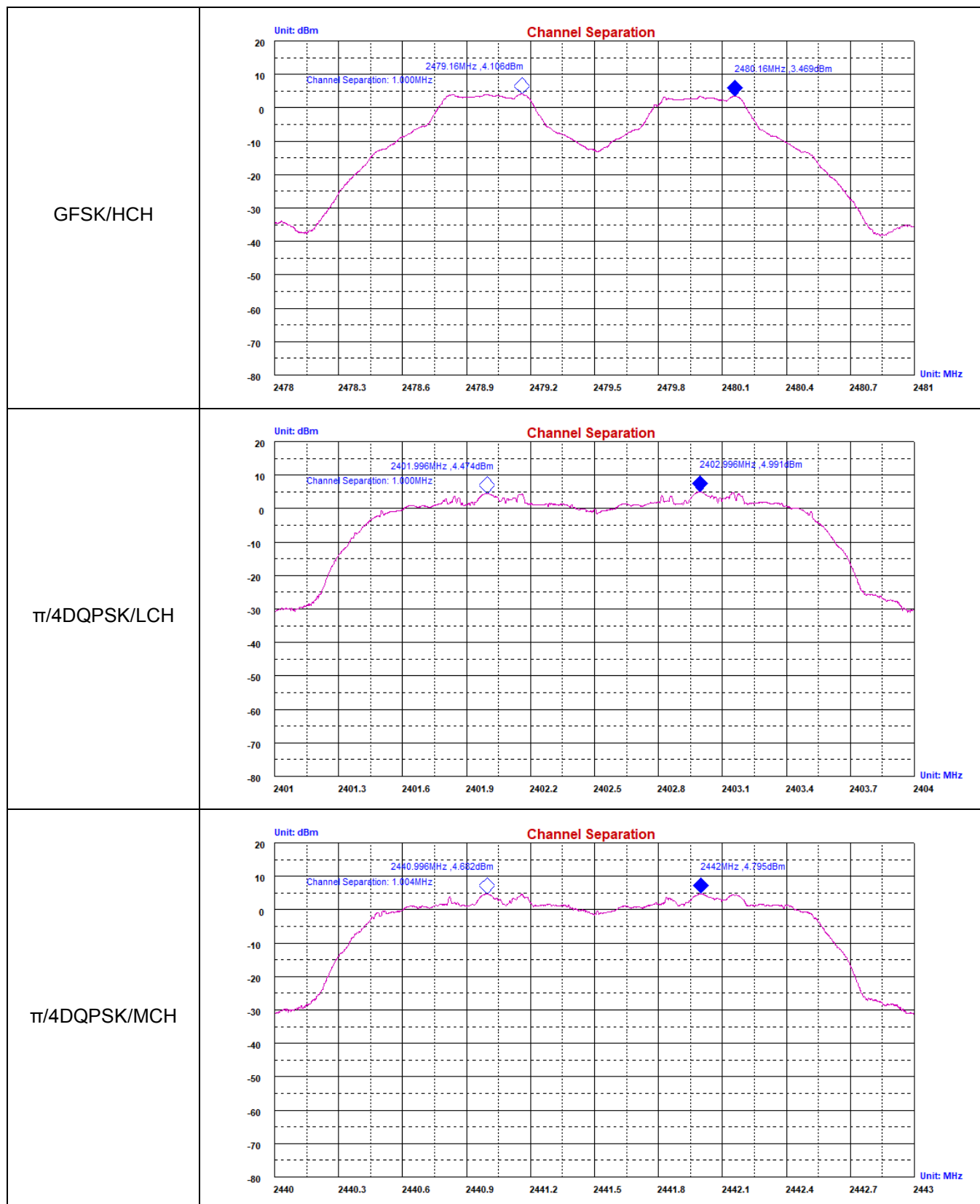


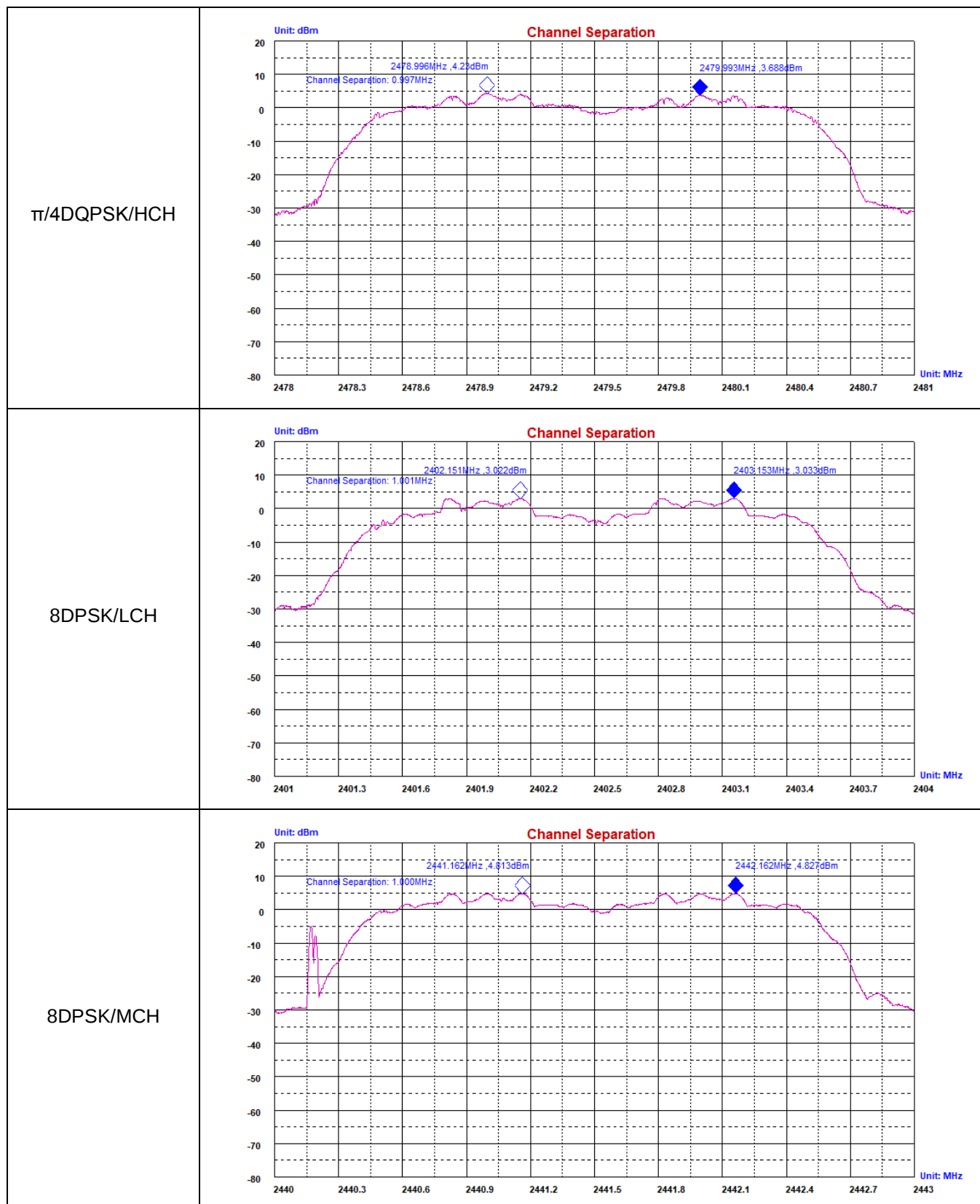
A.3 Carrier Frequency Separation

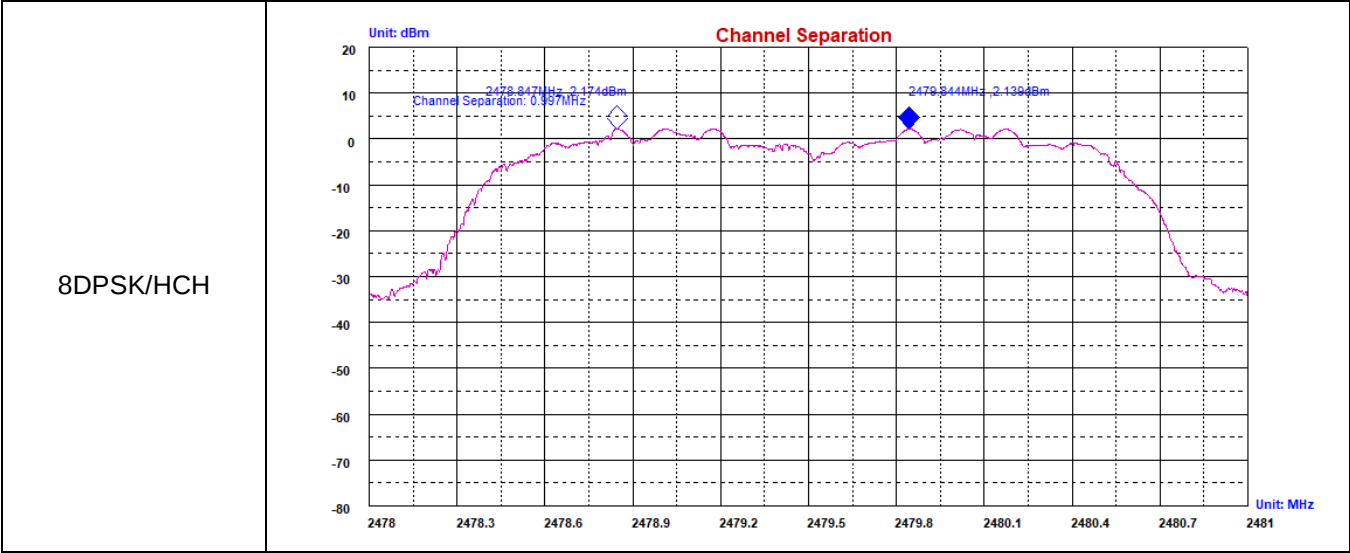
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.627	PASS
GFSK	MCH	1.000	0.625	PASS
GFSK	HCH	1.000	0.627	PASS
$\pi/4$ DQPSK	LCH	1.000	0.883	PASS
$\pi/4$ DQPSK	MCH	1.004	0.888	PASS
$\pi/4$ DQPSK	HCH	0.997	0.885	PASS
8DPSK	LCH	1.001	0.853	PASS
8DPSK	MCH	1.000	0.887	PASS
8DPSK	HCH	0.997	0.888	PASS

Test Graph





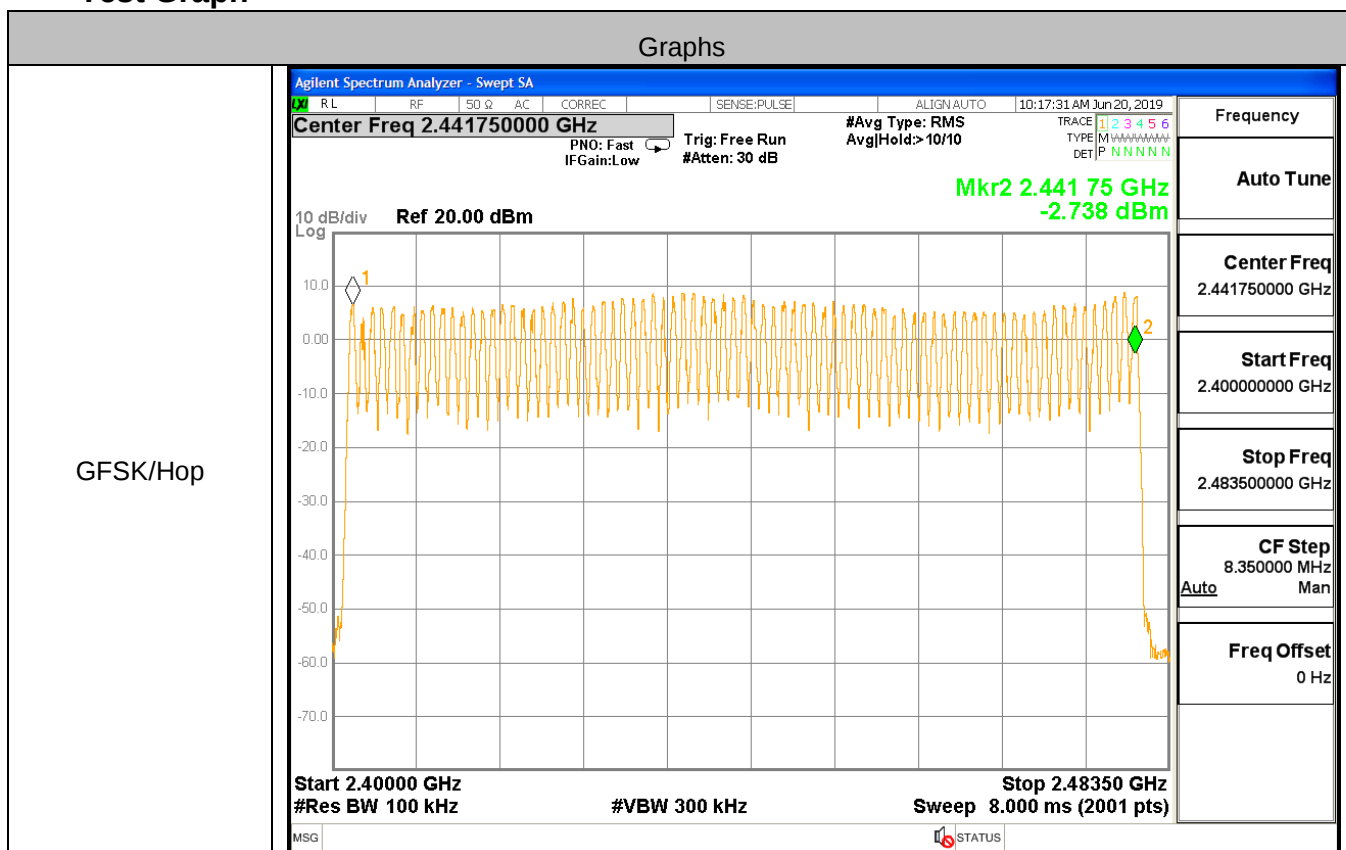


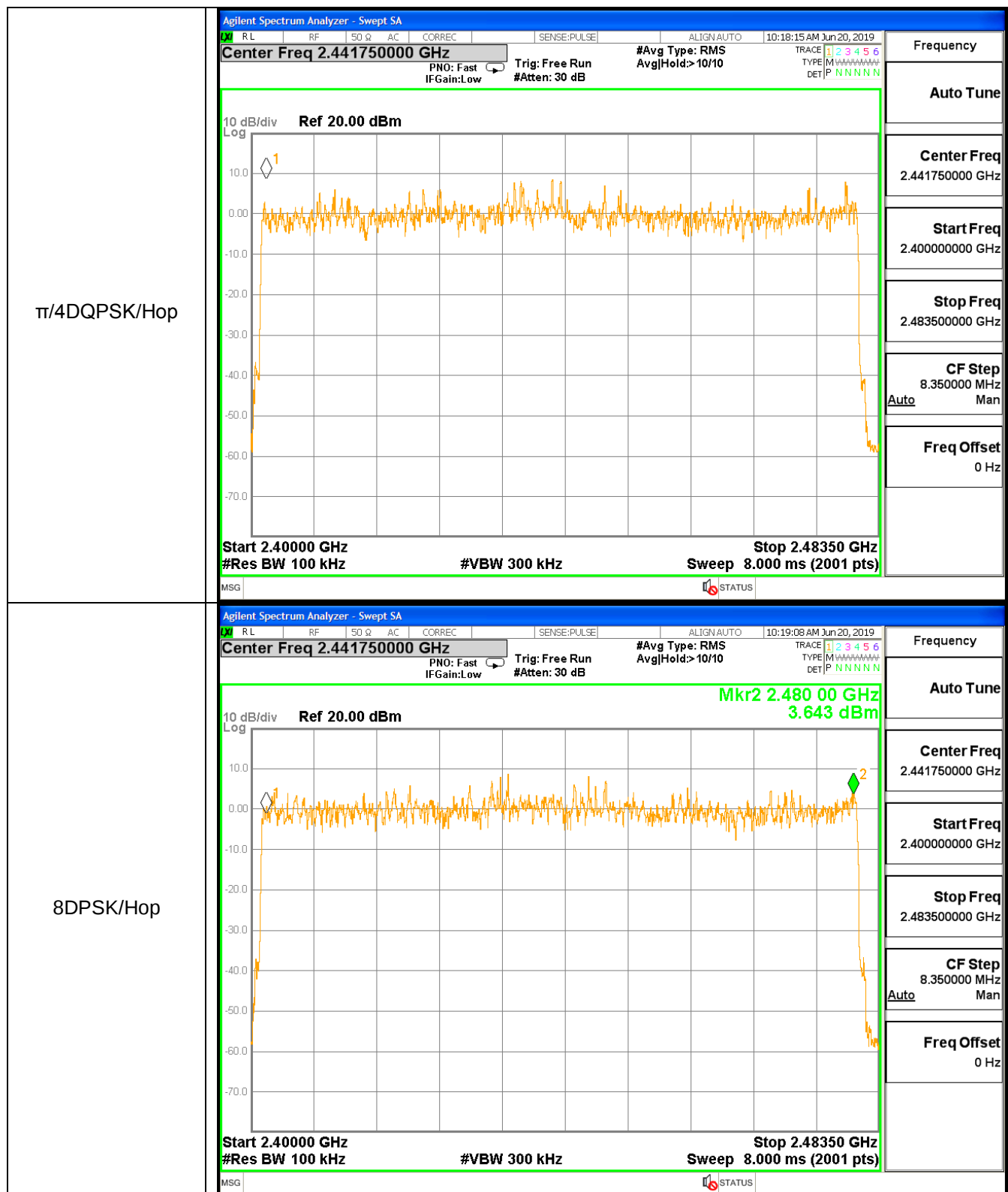


A.4 Hopping Channel Number

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

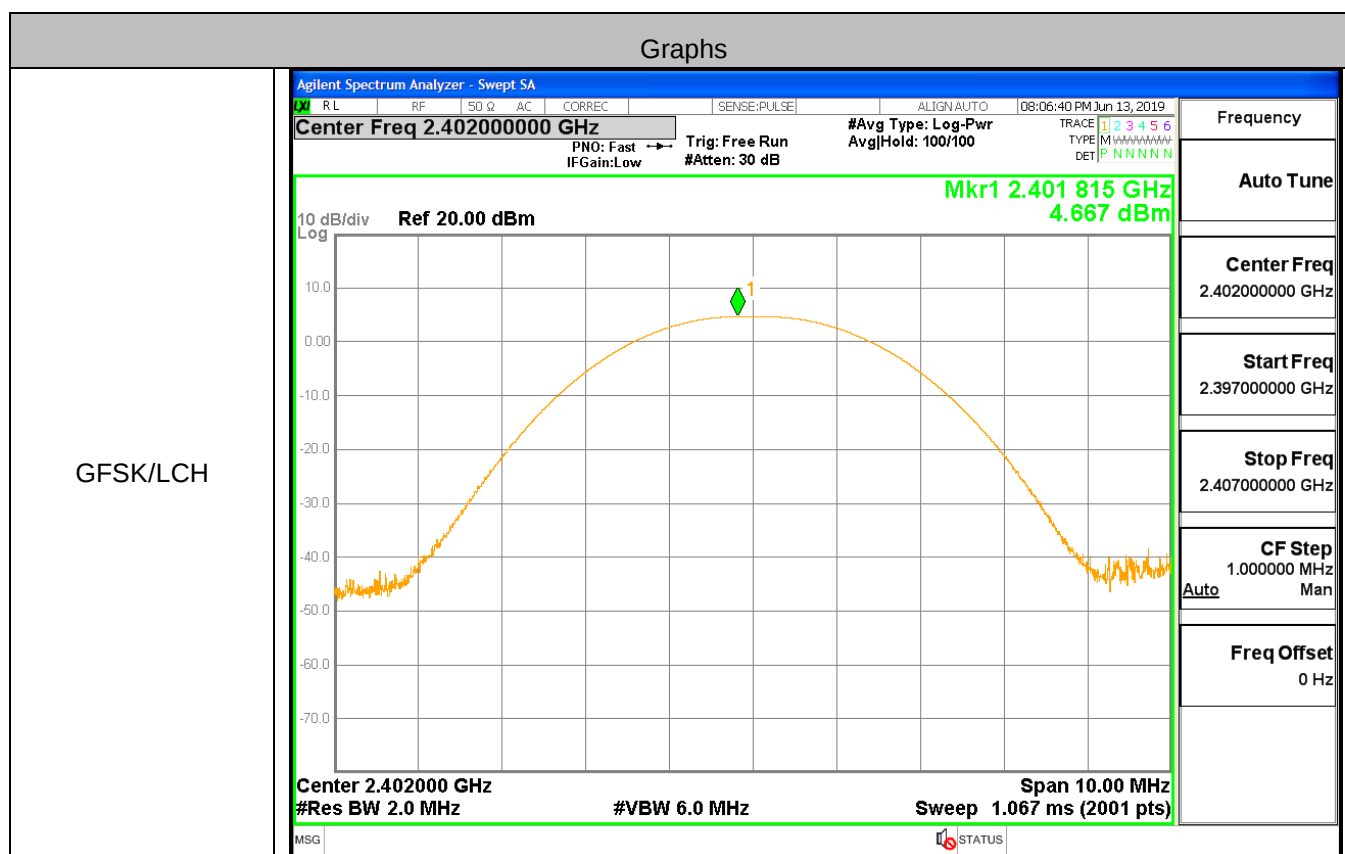


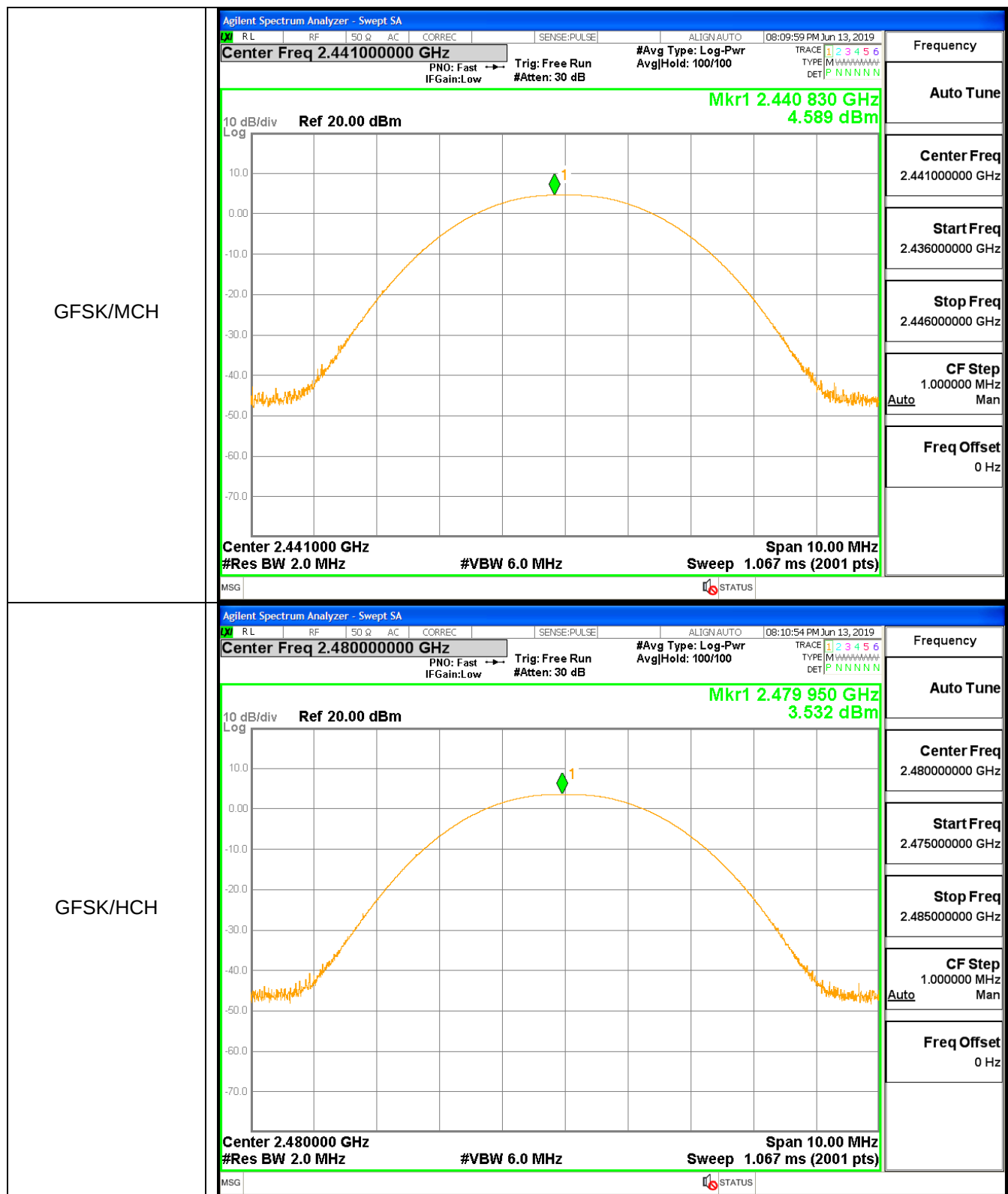


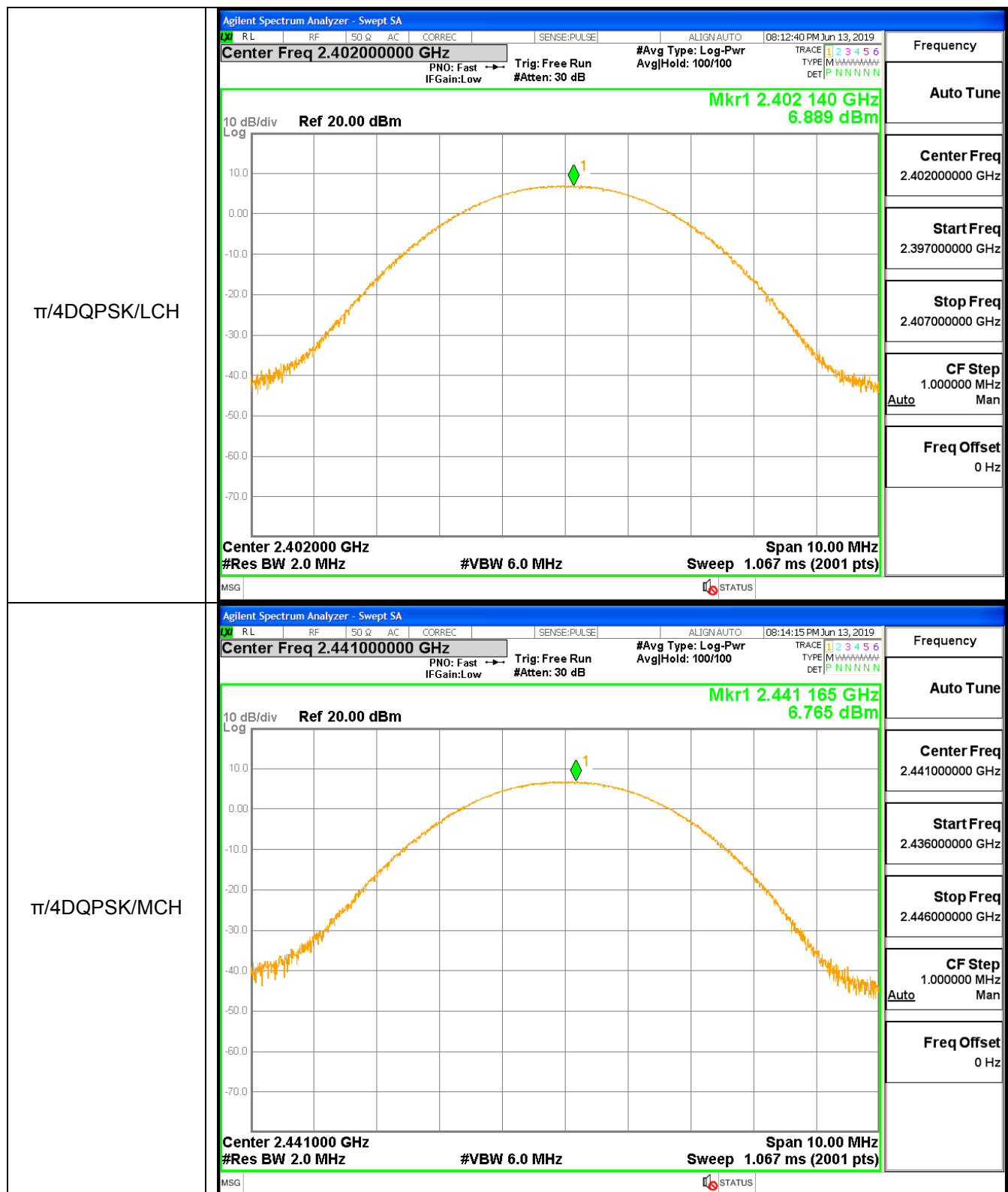
A.5 Conducted Peak Output Power

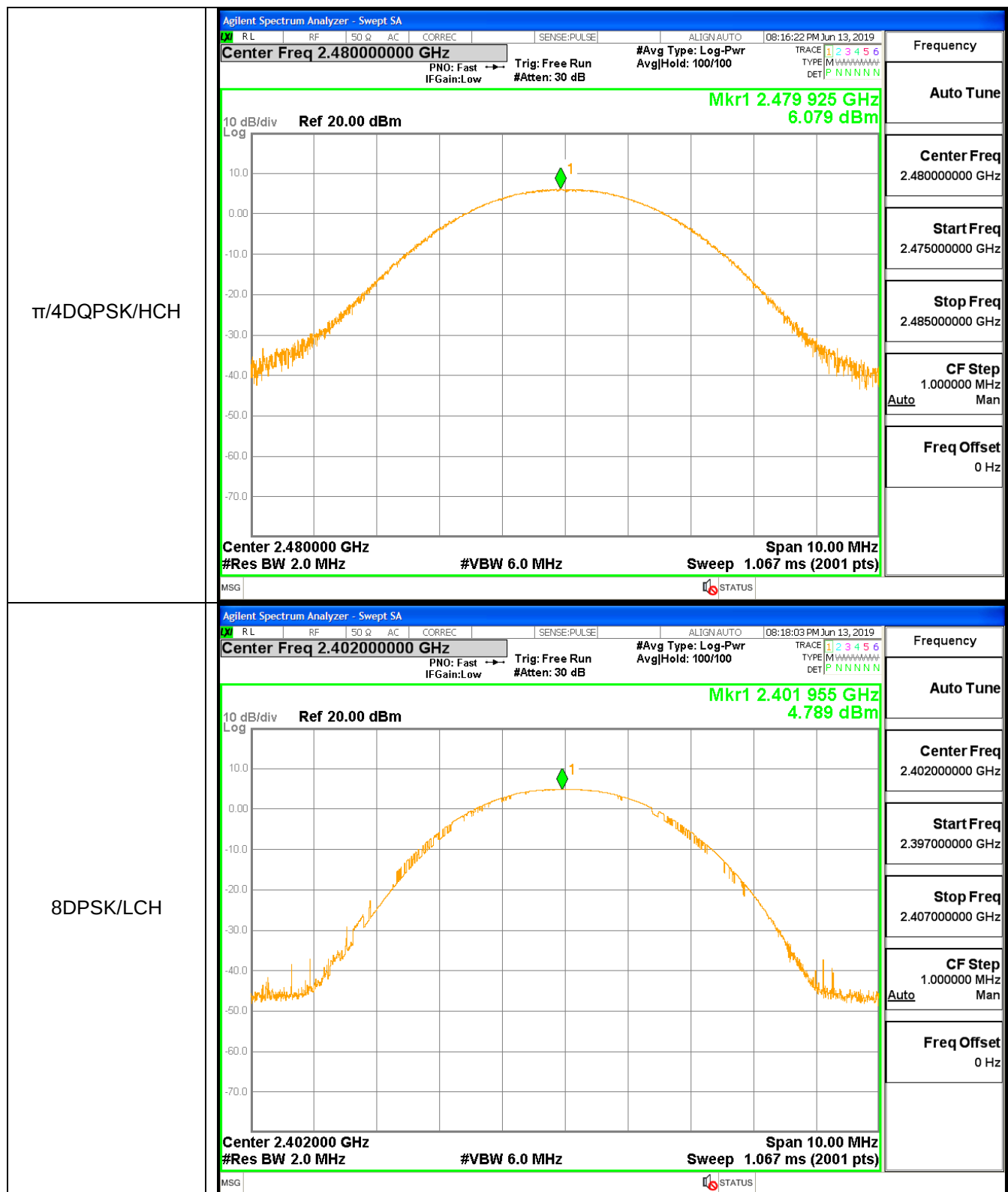
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.667	21	PASS
GFSK	MCH	4.589	21	PASS
GFSK	HCH	3.532	21	PASS
$\pi/4$ DQPSK	LCH	6.889	21	PASS
$\pi/4$ DQPSK	MCH	6.765	21	PASS
$\pi/4$ DQPSK	HCH	6.079	21	PASS
8DPSK	LCH	4.789	21	PASS
8DPSK	MCH	7.334	21	PASS
8DPSK	HCH	7.273	21	PASS

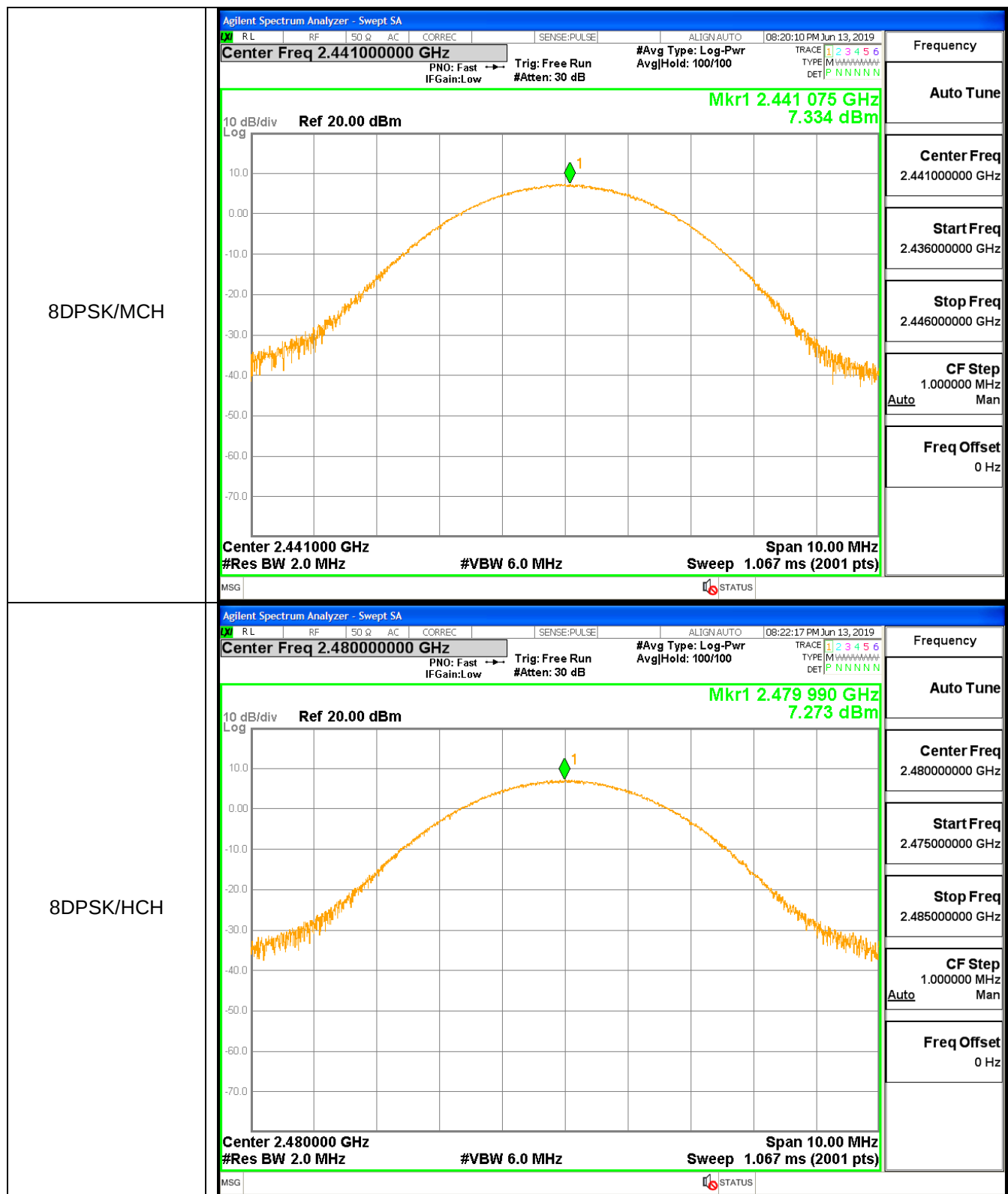
Test Graph











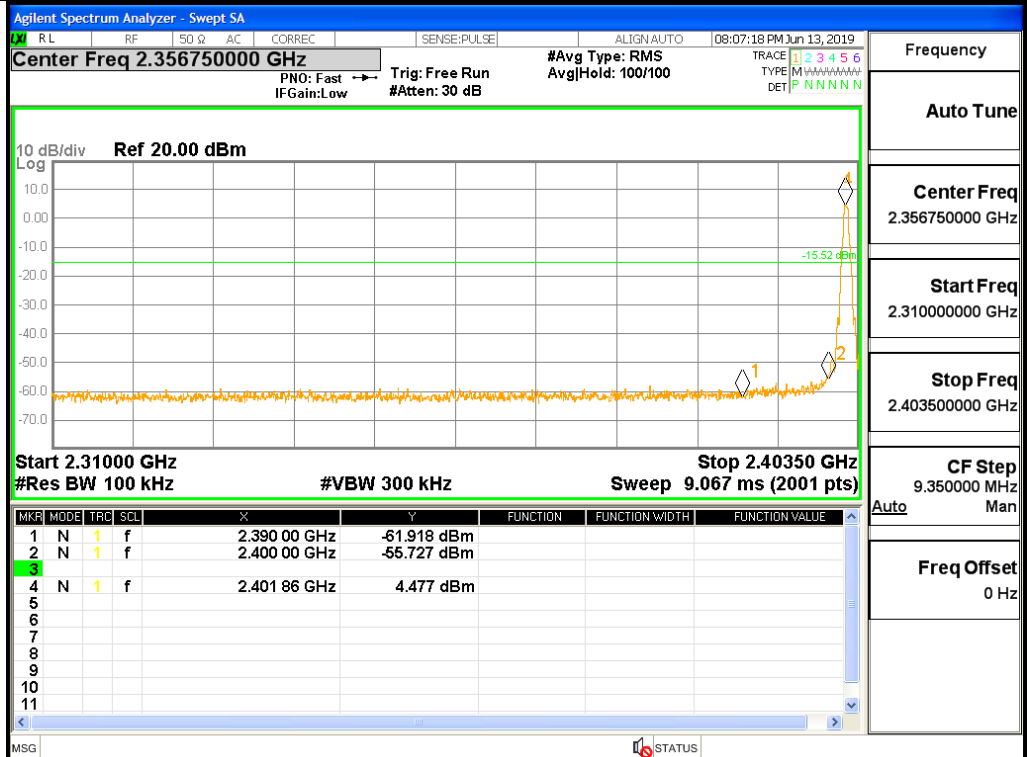
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	4.477	-55.73	-15.523	Pass
1DH5	2480	2488.035	2.756	-52.884	-17.244	Pass
2DH5	2402	2400	4.296	-46.8	-15.704	Pass
2DH5	2480	2483.5	2.316	-49.19	-17.684	Pass
3DH5	2402	2400	5.121	-43.56	-14.879	Pass
3DH5	2480	2483.5	5.147	-44.61	-14.853	Pass
1DH5-Hopping	2402	2400	7.94	-58.83	-12.06	Pass
1DH5-Hopping	2480	2483.5	8.718	-59.1	-11.282	Pass
2DH5-Hopping	2402	2400	4.943	-58.23	-15.057	Pass
2DH5-Hopping	2480	2483.5	5.819	-58.11	-14.181	Pass
3DH5-Hopping	2402	2400	4.118	-57.82	-15.882	Pass
3DH5-Hopping	2480	2483.5	5.731	-58.1	-14.269	Pass

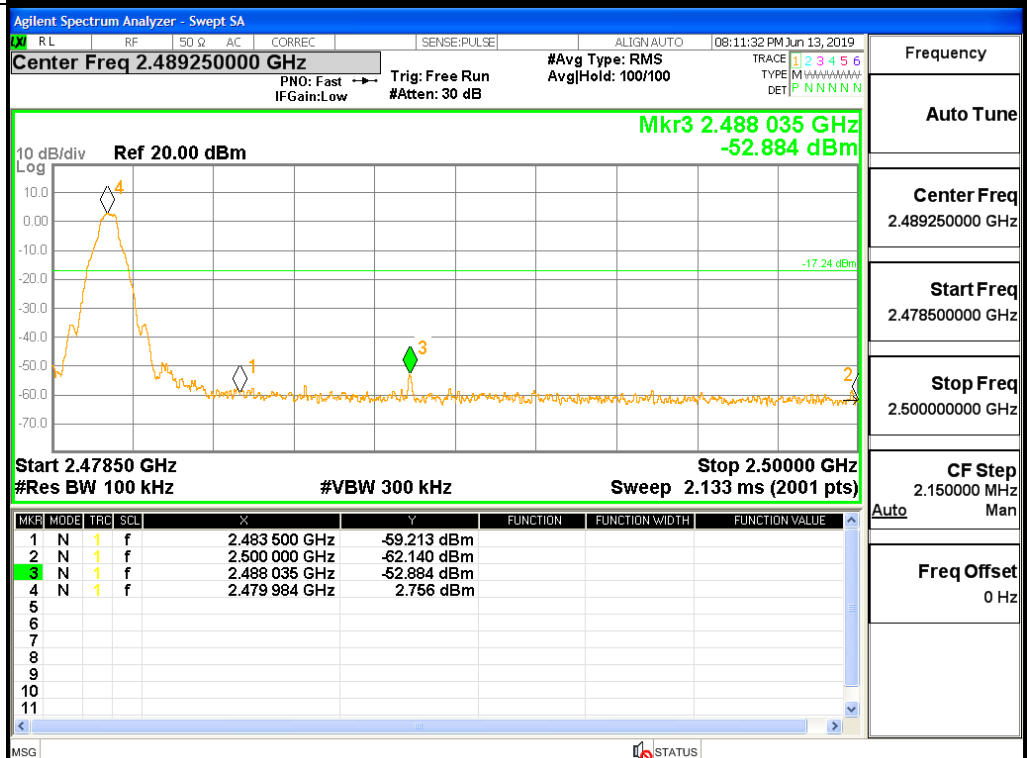
Test Graph

Graphs

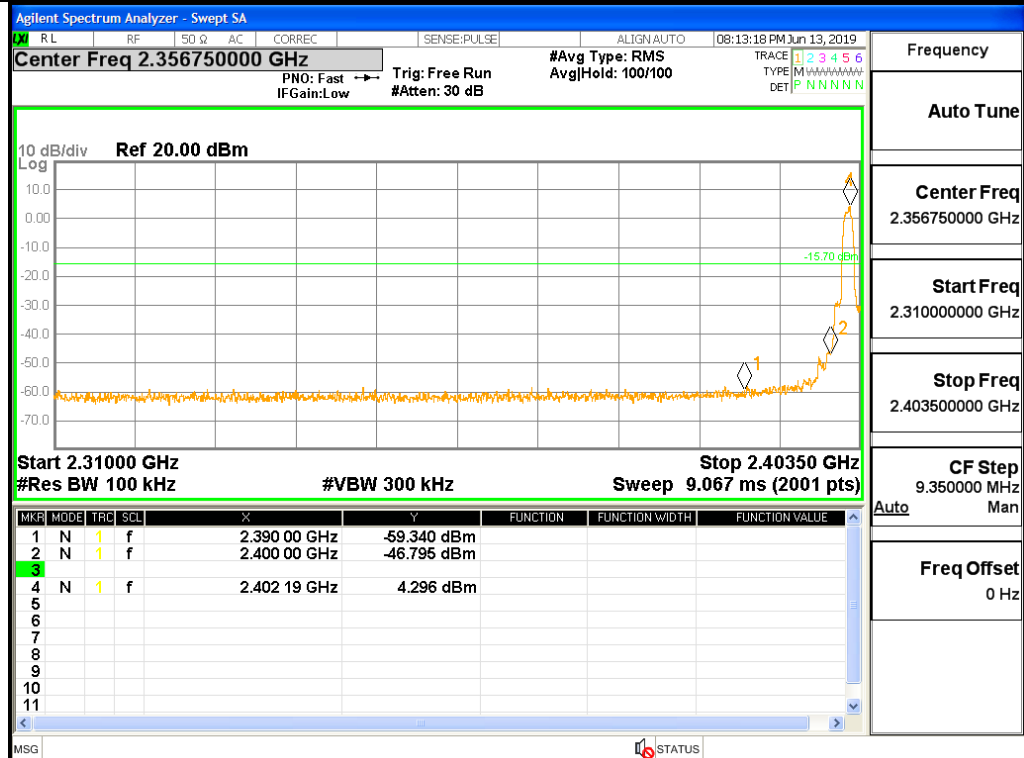
GFSK/LCH/No Hop



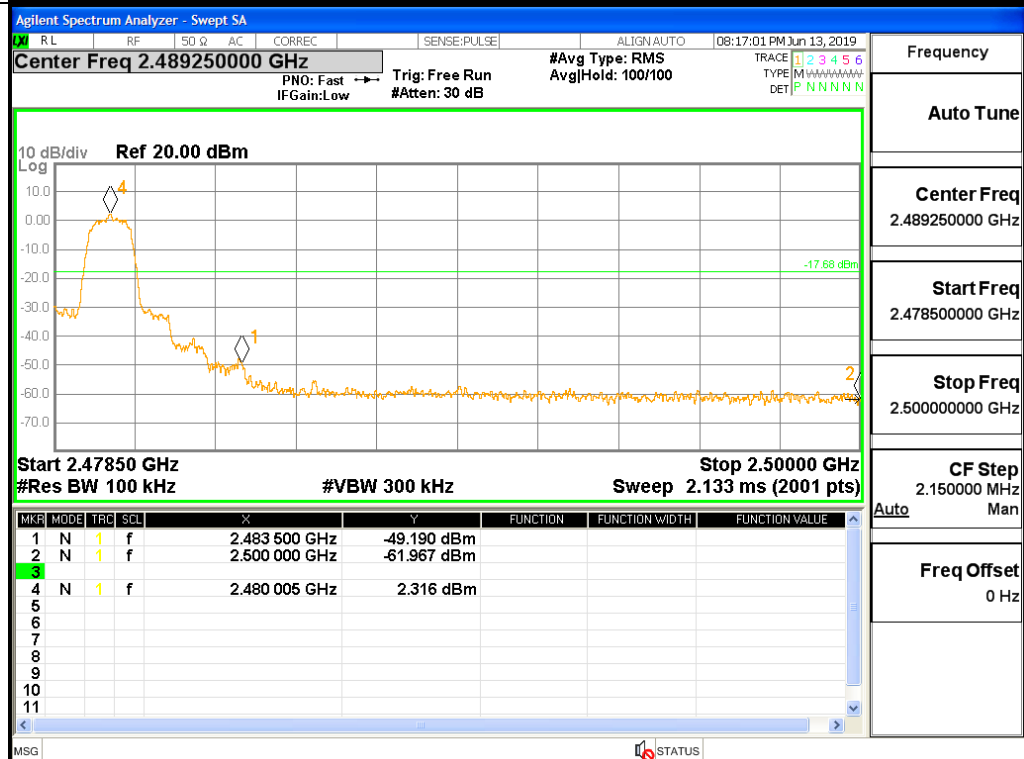
GFSK/HCH/No Hop



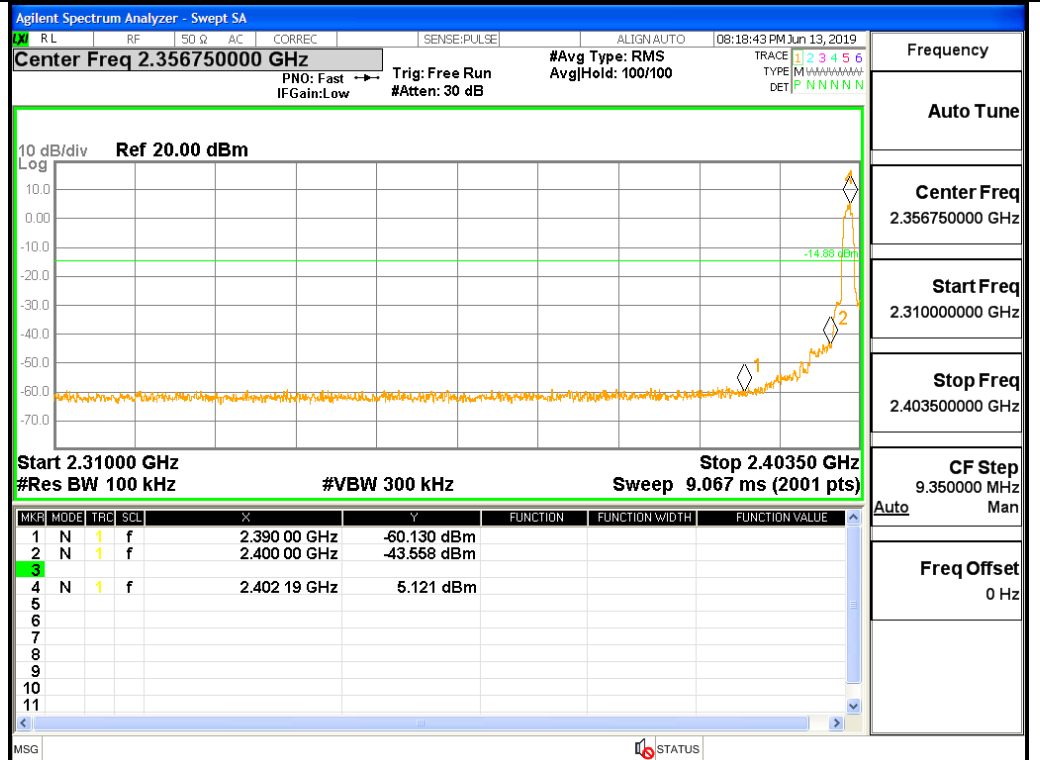
π /4DQPSK/LCH/No
Hop



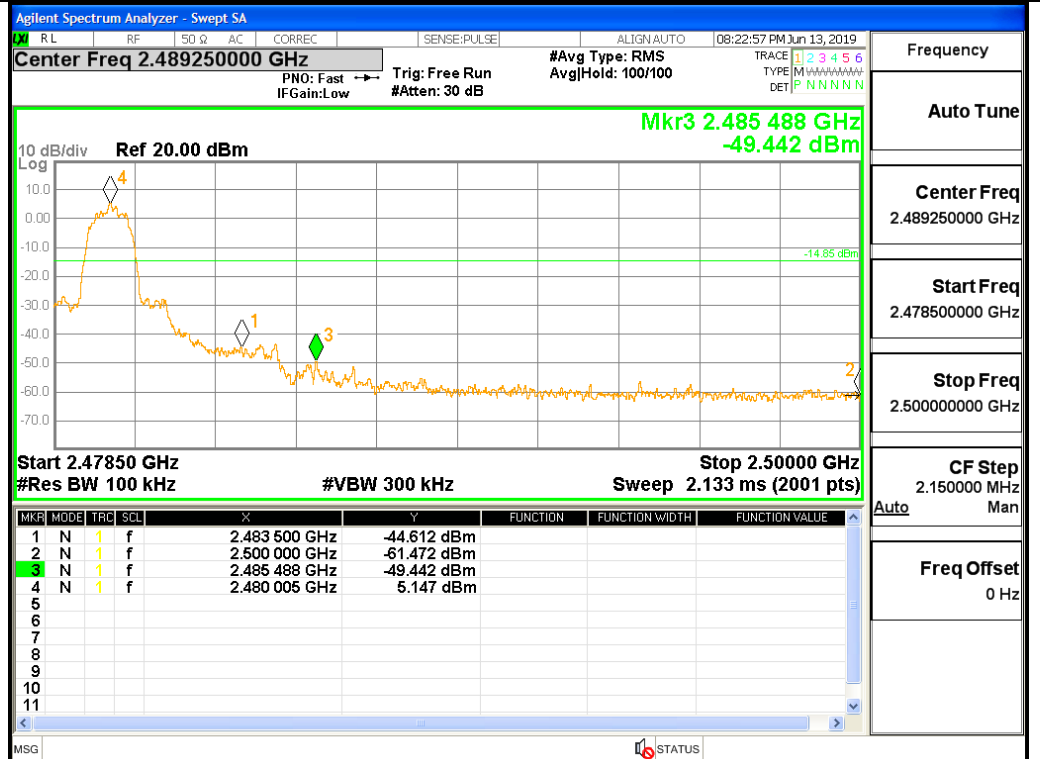
π /4DQPSK/HCH/No
Hop



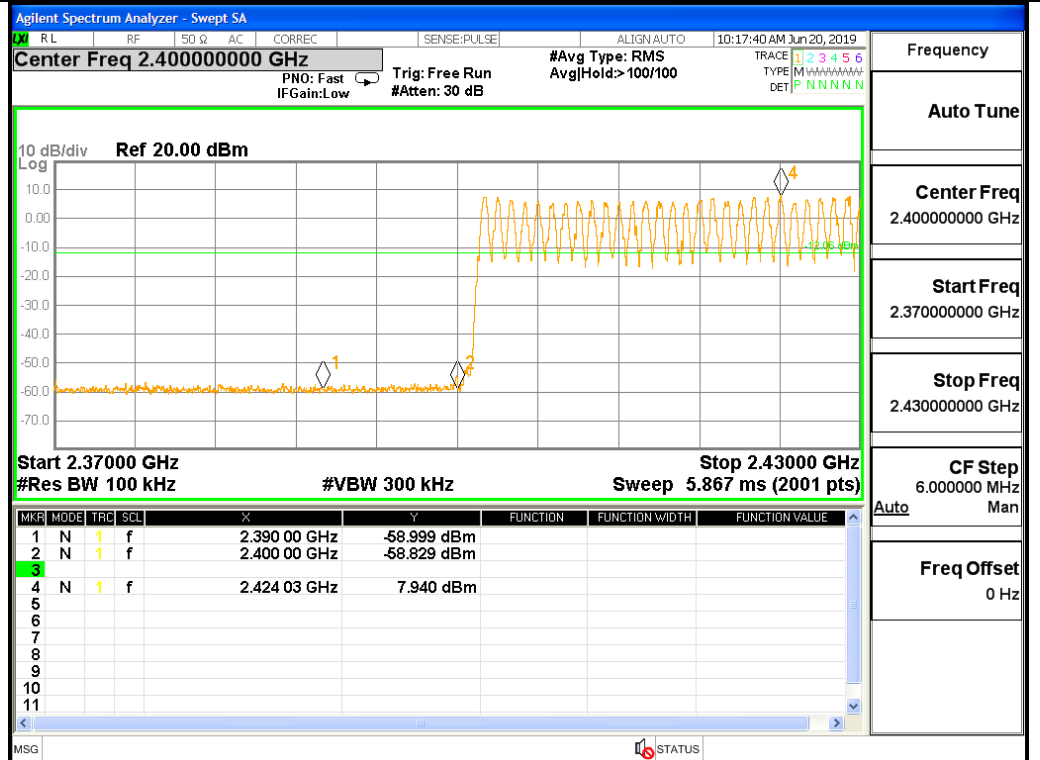
8DPSK/LCH/No Hop



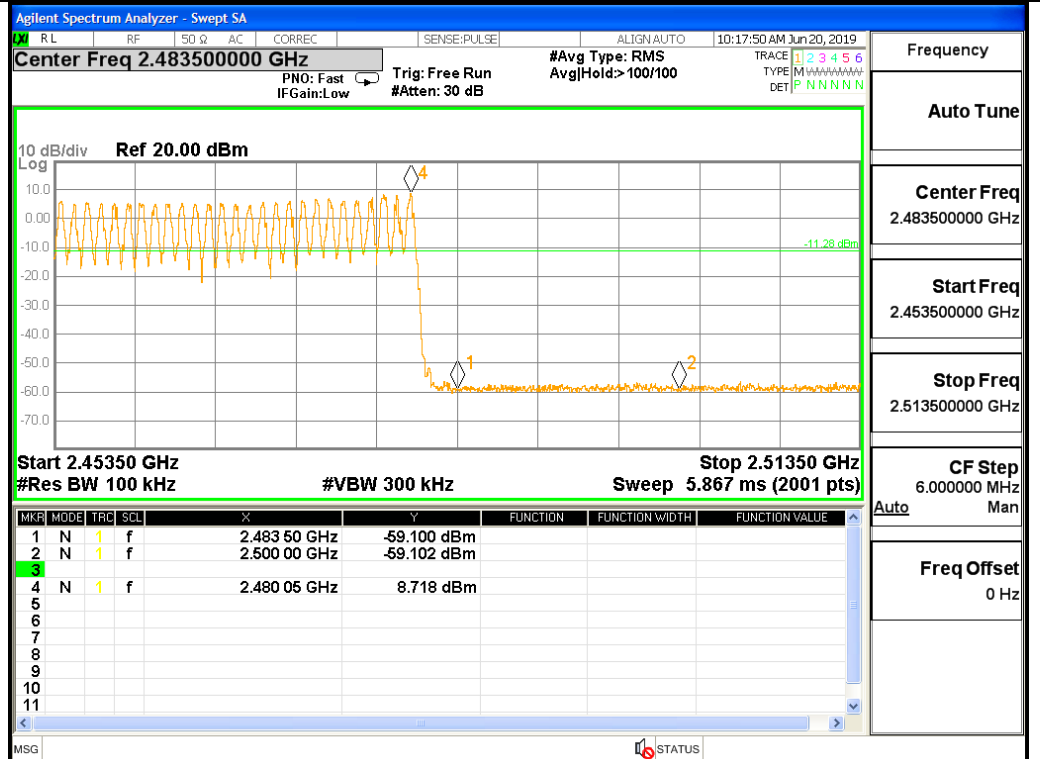
8DPSK/HCH/No Hop



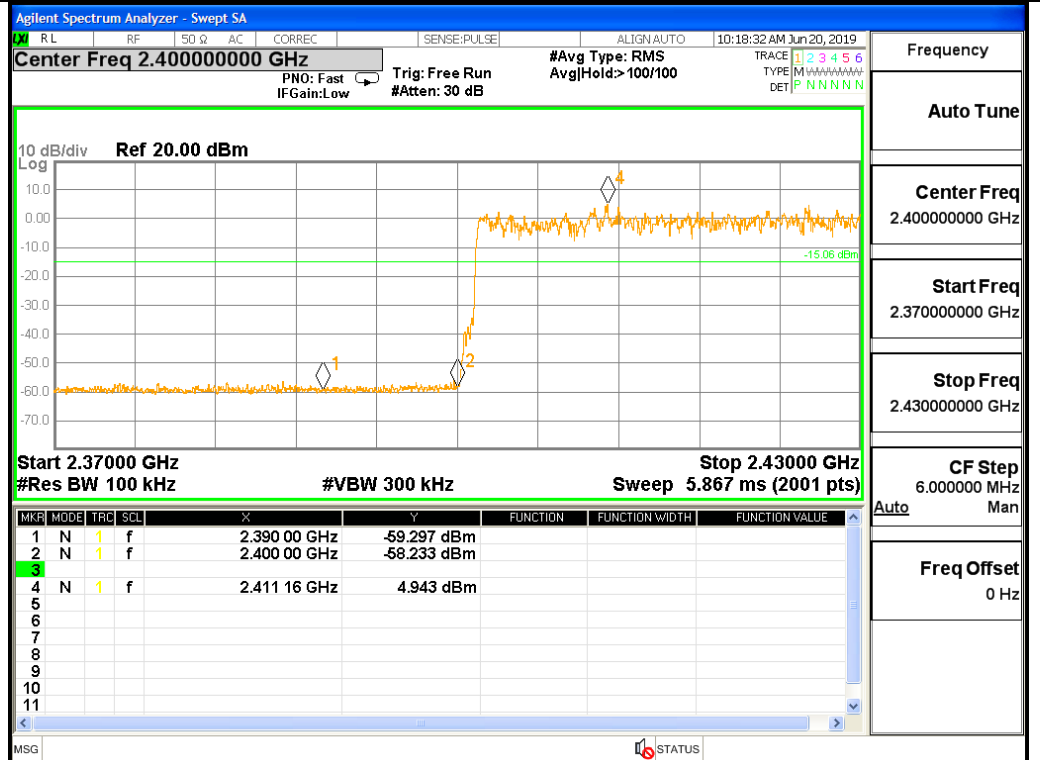
GFSK/LCH/Hop



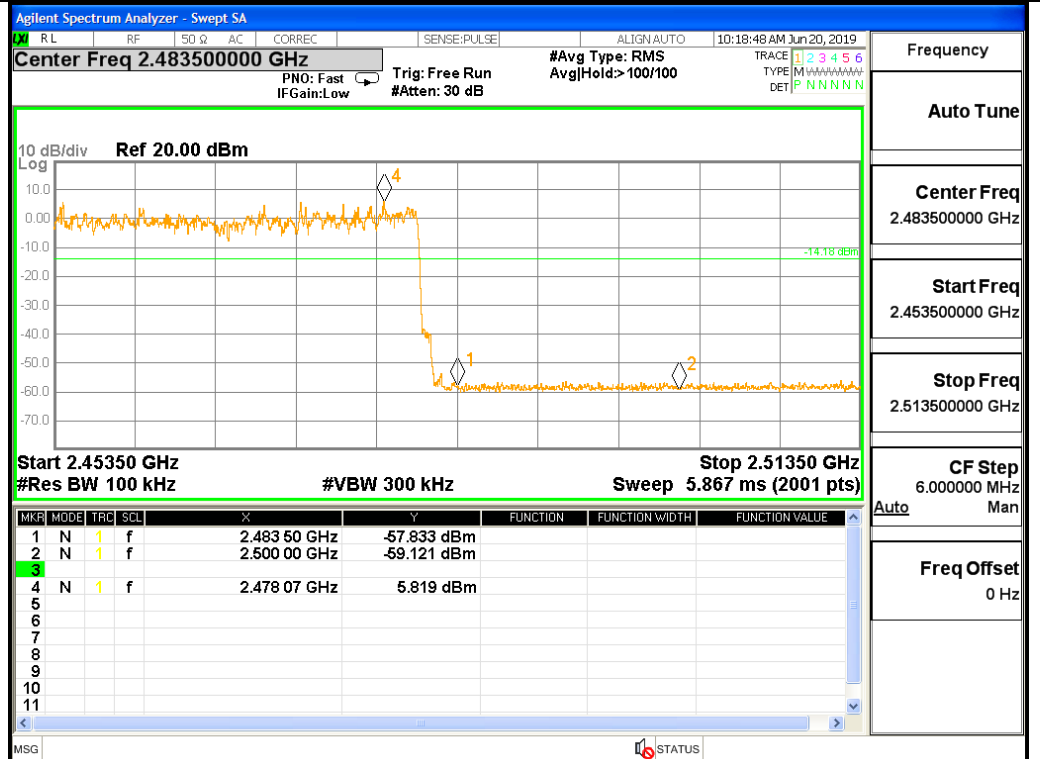
GFSK/HCH/Hop



π /4DQPSK/LCH/Hop



π /4DQPSK/HCH/Hop



8DPSK/LCH/Hop

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40000000 GHz

Start 2.37000 GHz Stop 2.43000 GHz

#Res BW 100 kHz #VBW 300 kHz Sweep 5.867 ms (2001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.390 00 GHz	-60.066 dBm			
2	N	1	f	2.400 00 GHz	-57.821 dBm			
3	N	1	f	2.413 05 GHz	4.118 dBm			

8DPSK/HCH/Hop

Agilent Spectrum Analyzer - Swept SA

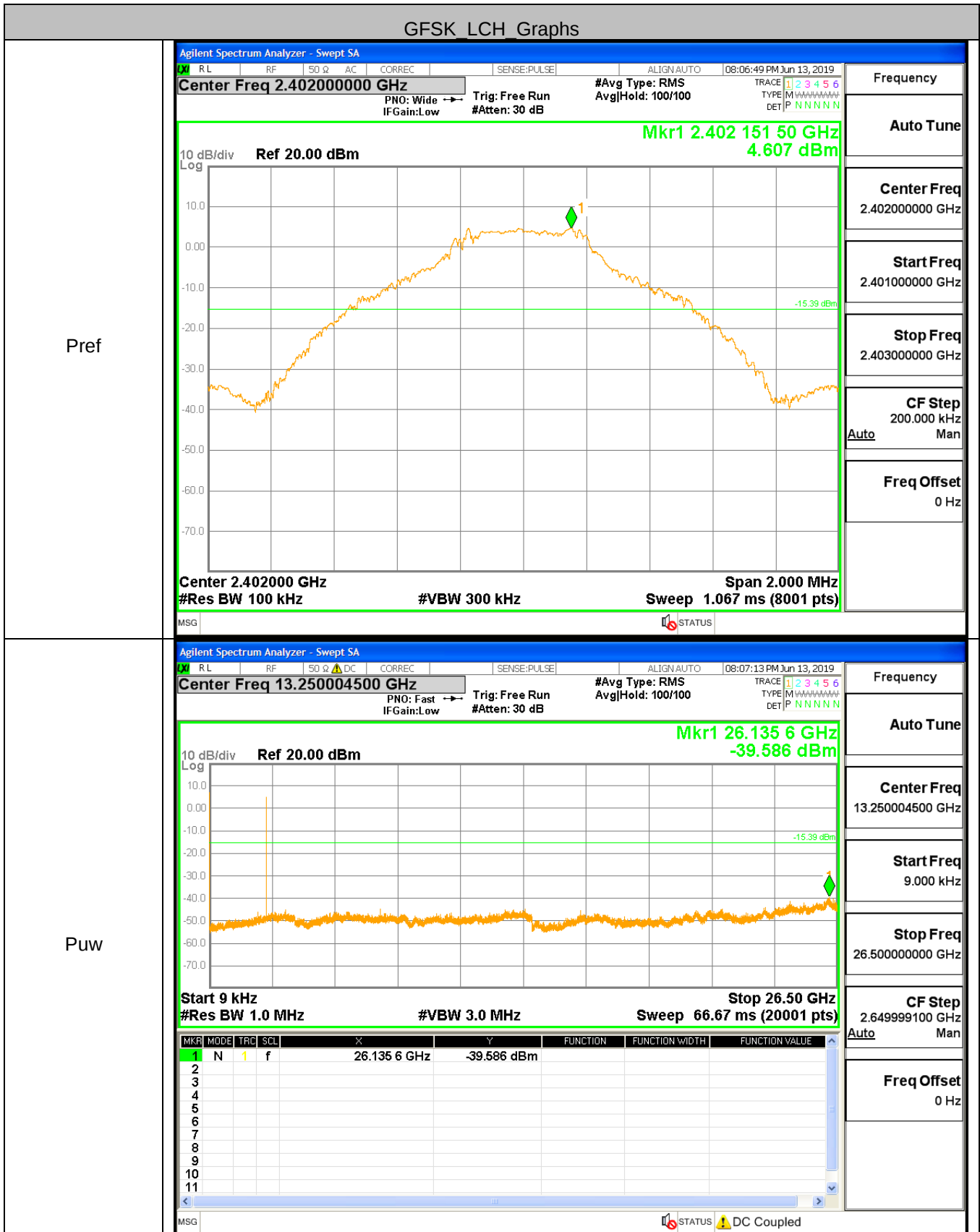
Center Freq 2.48350000 GHz

Start 2.45350 GHz Stop 2.51350 GHz

#Res BW 100 kHz #VBW 300 kHz Sweep 5.867 ms (2001 pts)

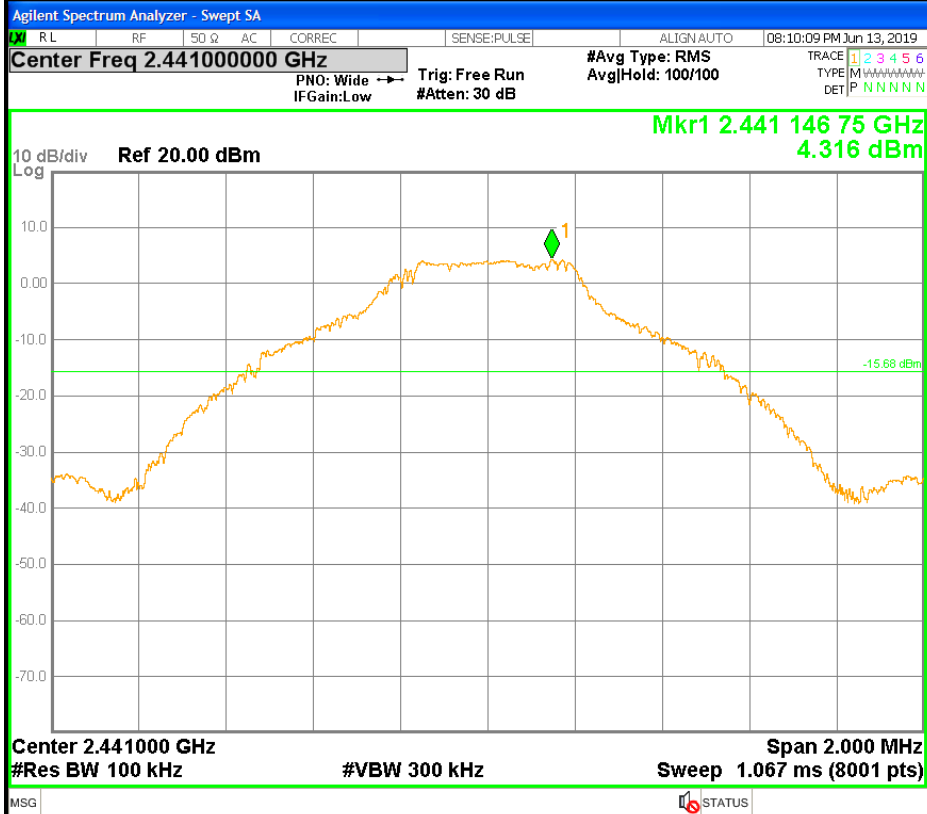
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.483 50 GHz	-58.095 dBm			
2	N	1	f	2.500 00 GHz	-58.876 dBm			
3	N	1	f	2.473 15 GHz	5.731 dBm			

A.7 RF Conducted Spurious Emissions Test Graph



GFSK MCH Graphs

Pref



Frequency

Auto Tune

Center Freq
2.441000000 GHz

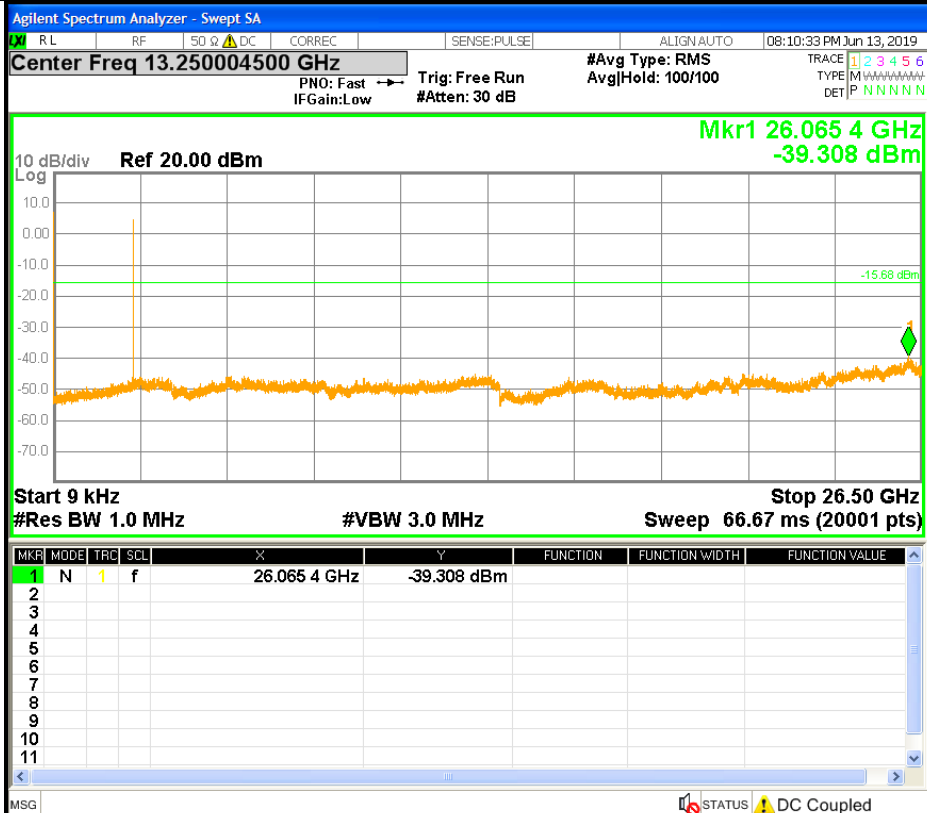
Start Freq
2.440000000 GHz

Stop Freq
2.442000000 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

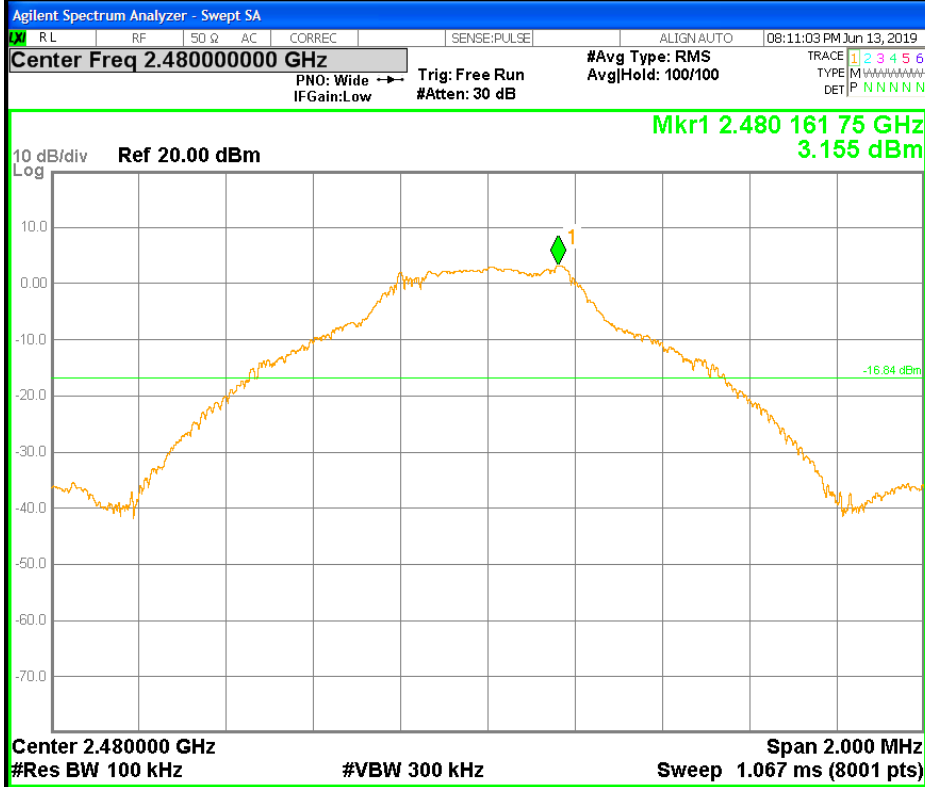
Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

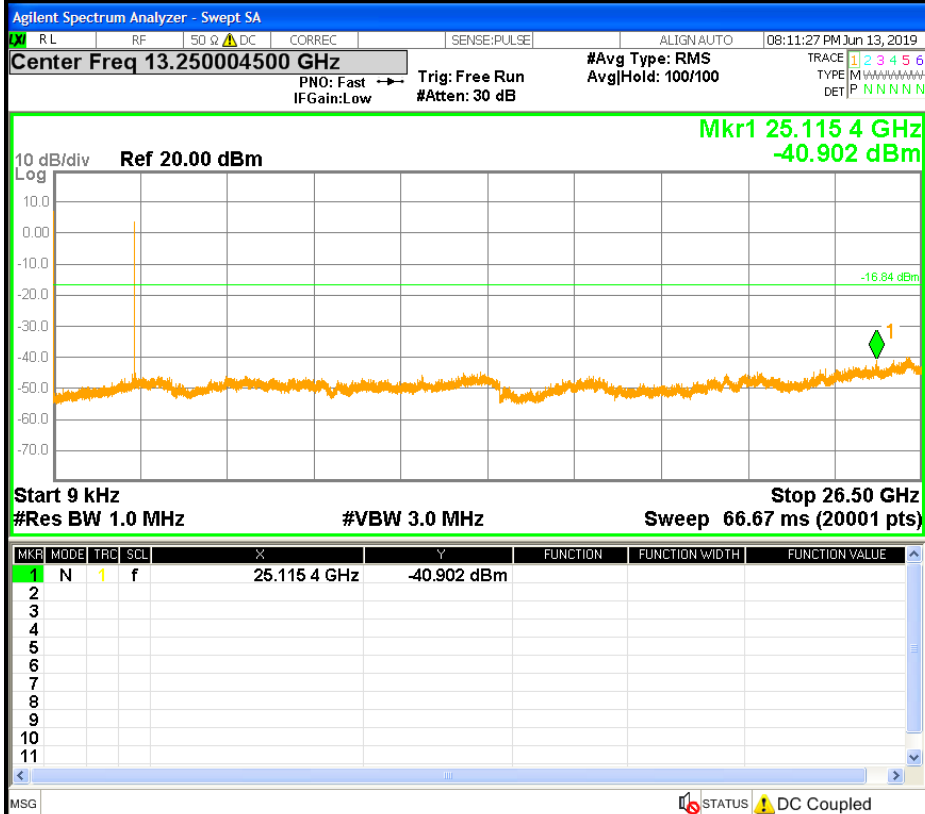
Freq Offset
0 Hz

GFSK HCH Graphs

Pref

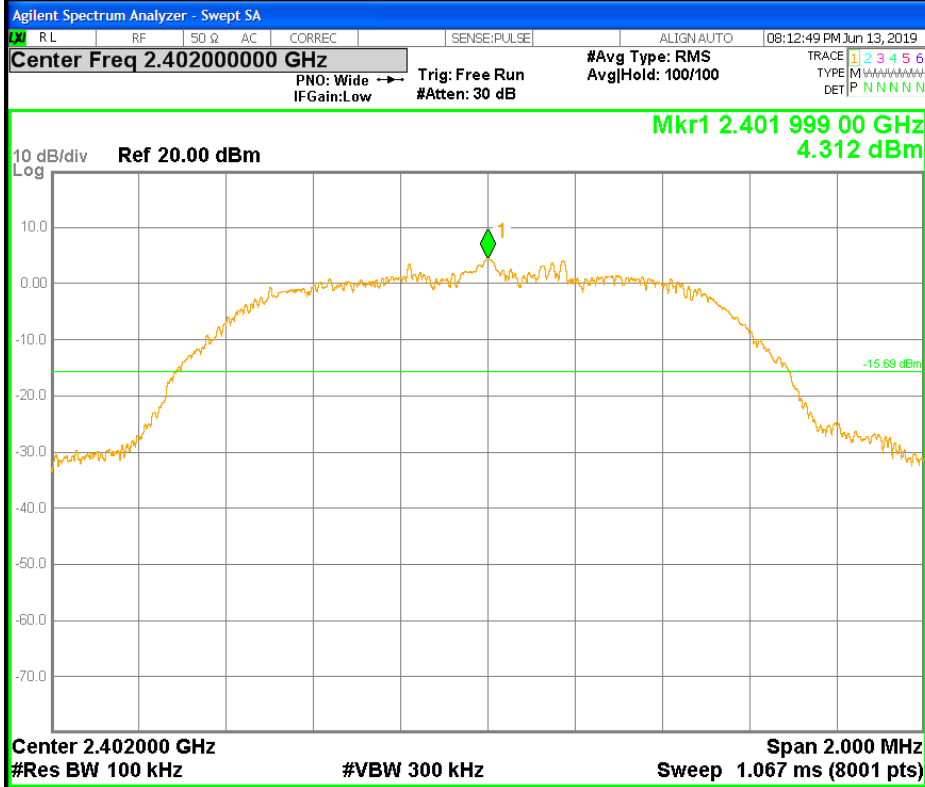


Puw



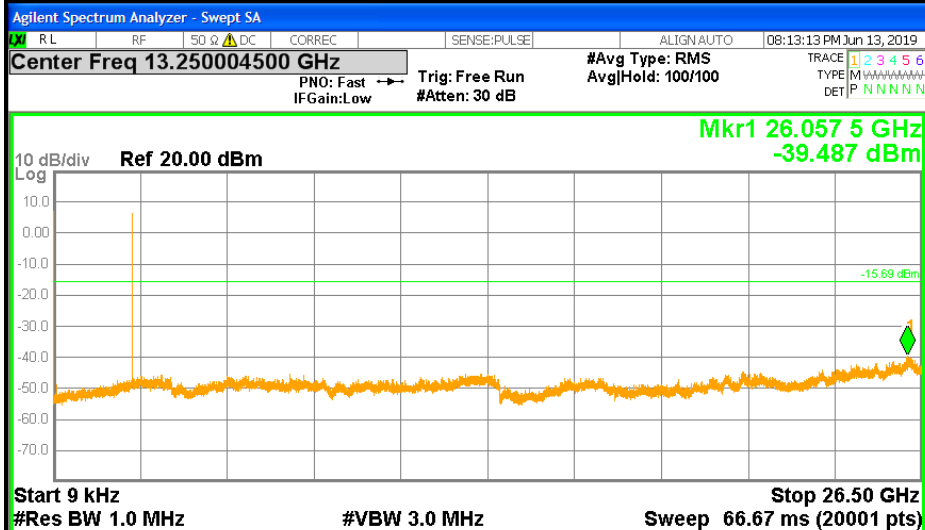
$\pi/4$ DQPSK LCH Graphs

Pref



Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw

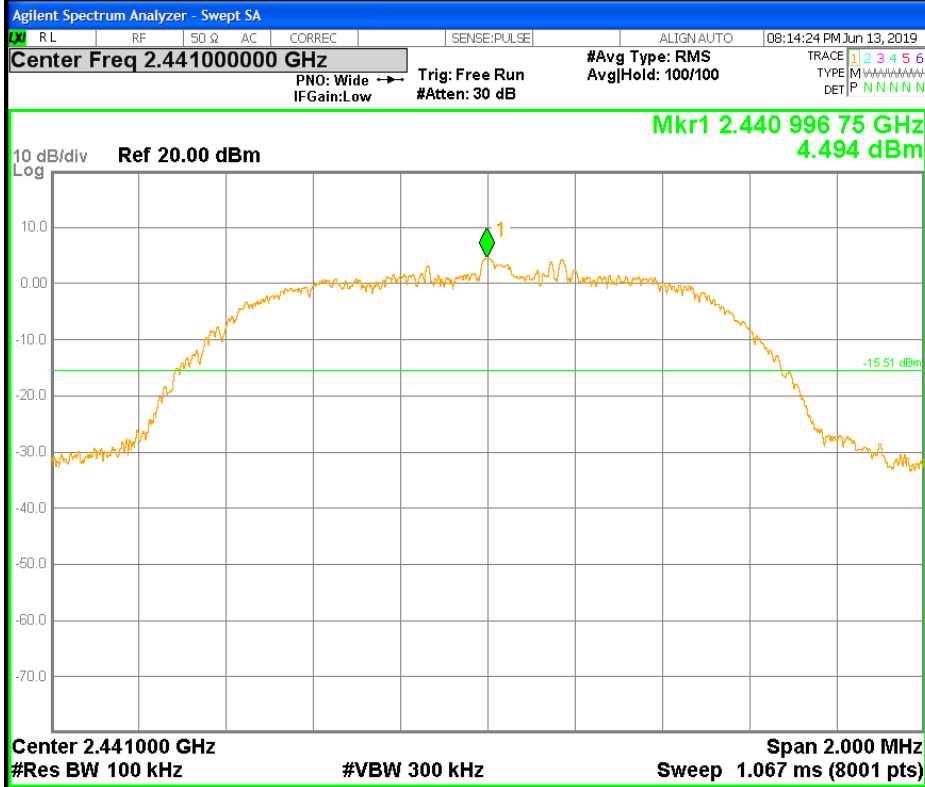


Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	26.057 5 GHz	-39.487 dBm			
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

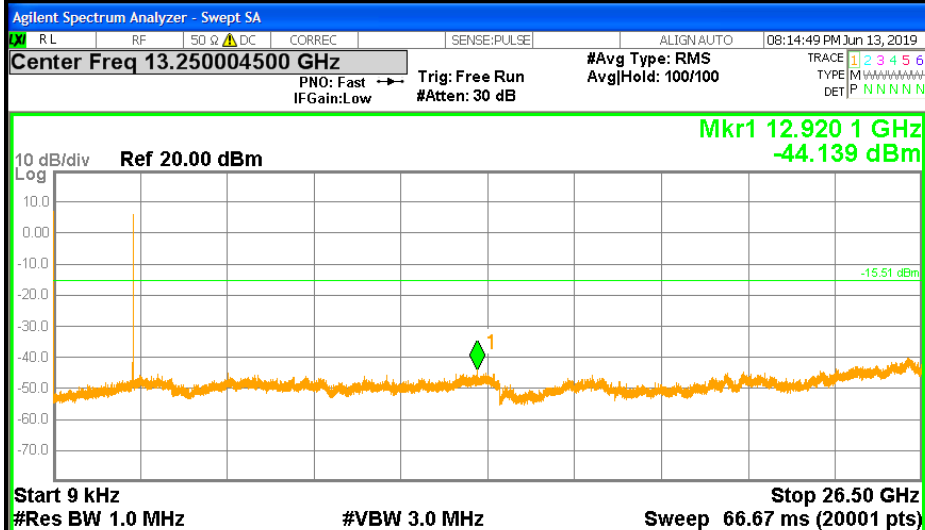
$\pi/4$ DQPSK MCH Graphs

Pref



Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw

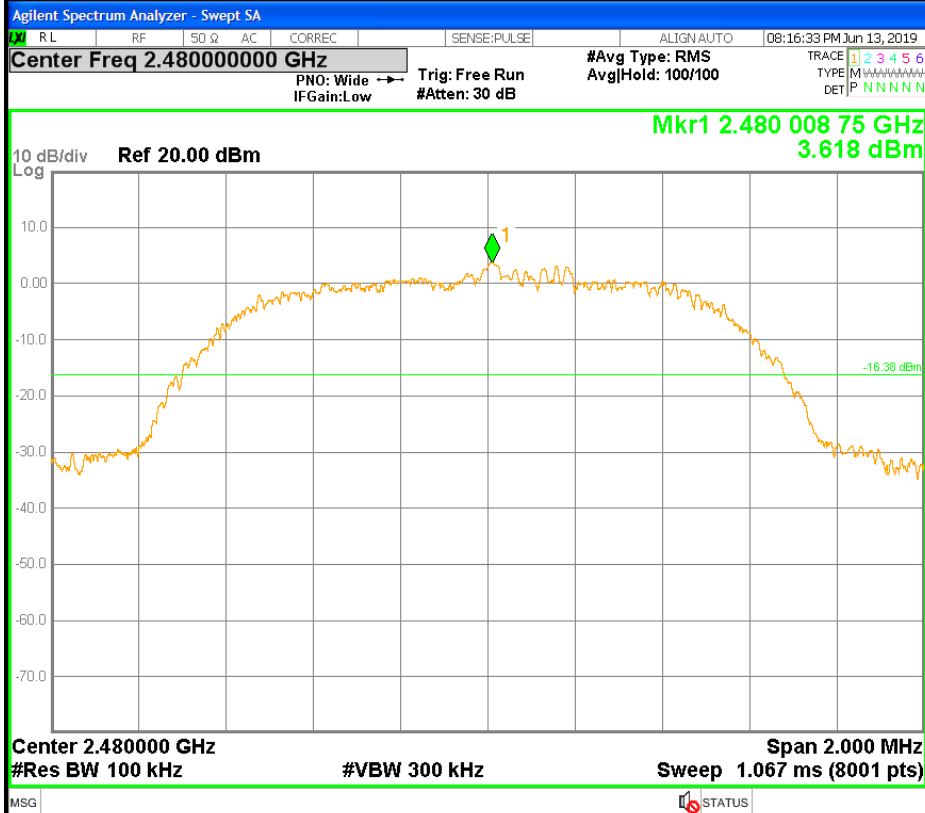


Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

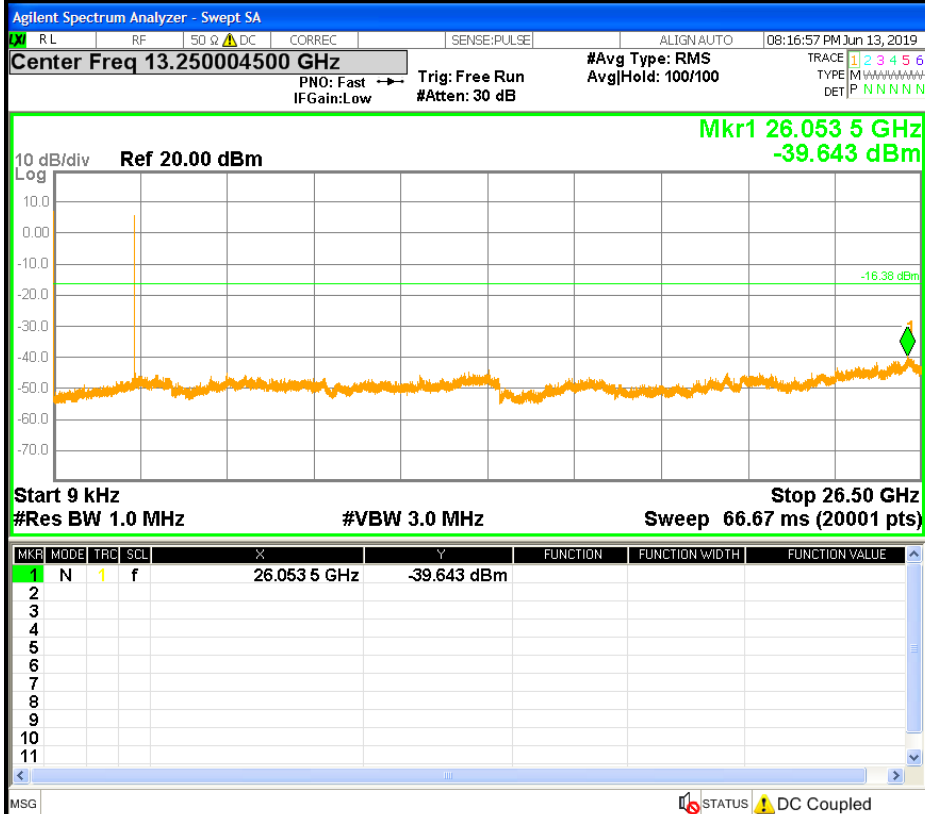
MR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	12.920 1 GHz	-44.139 dBm			
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

$\pi/4$ DQPSK HCH Graphs

Pref

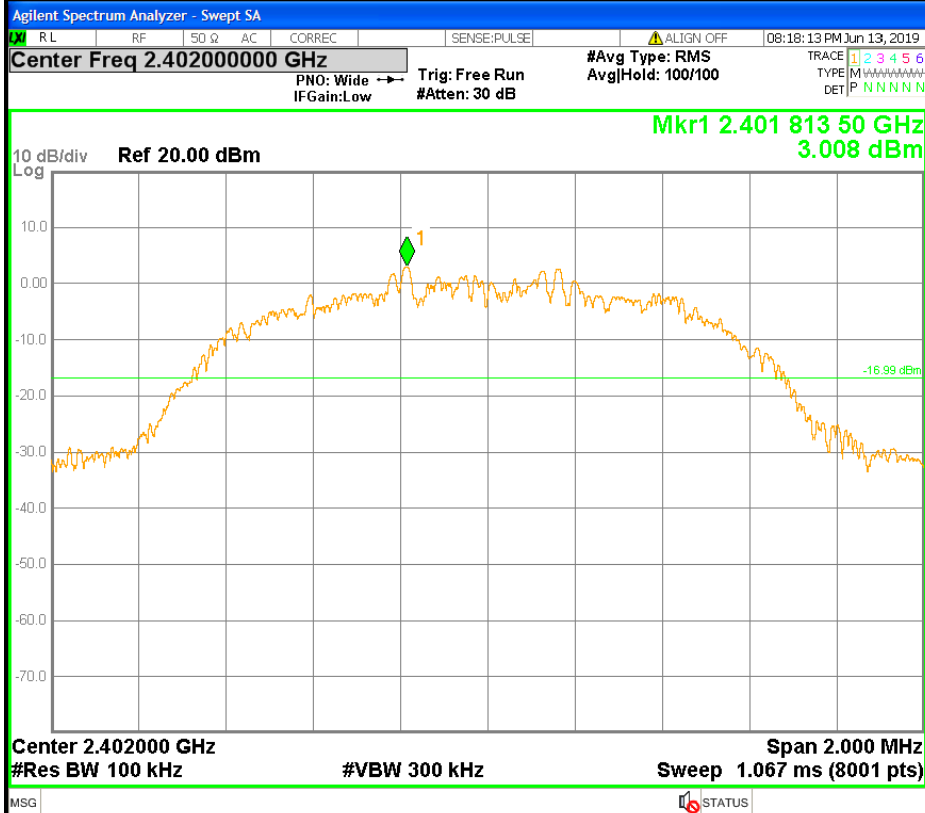


Puw

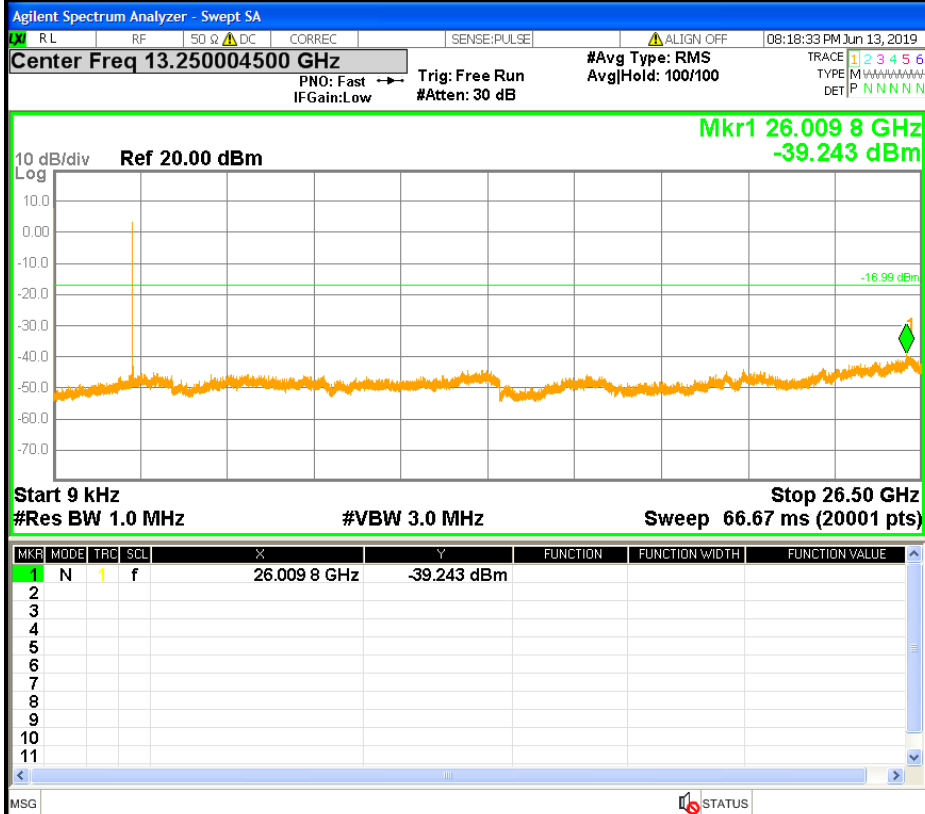


8DPSK LCH Graphs

Pref

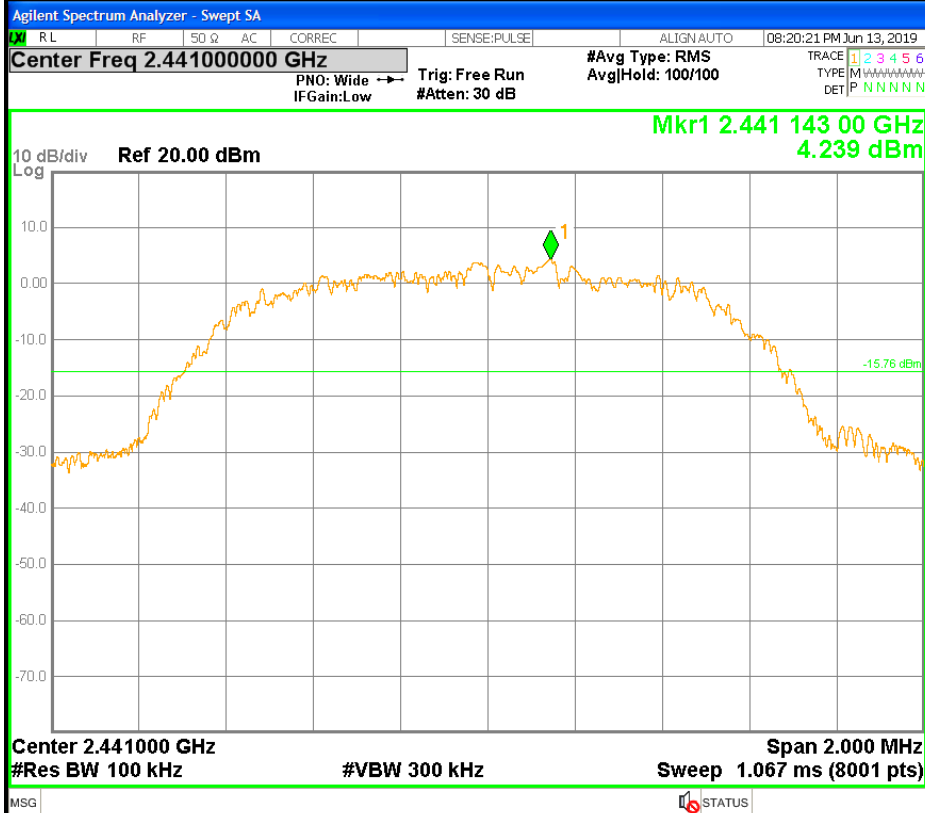


Puw

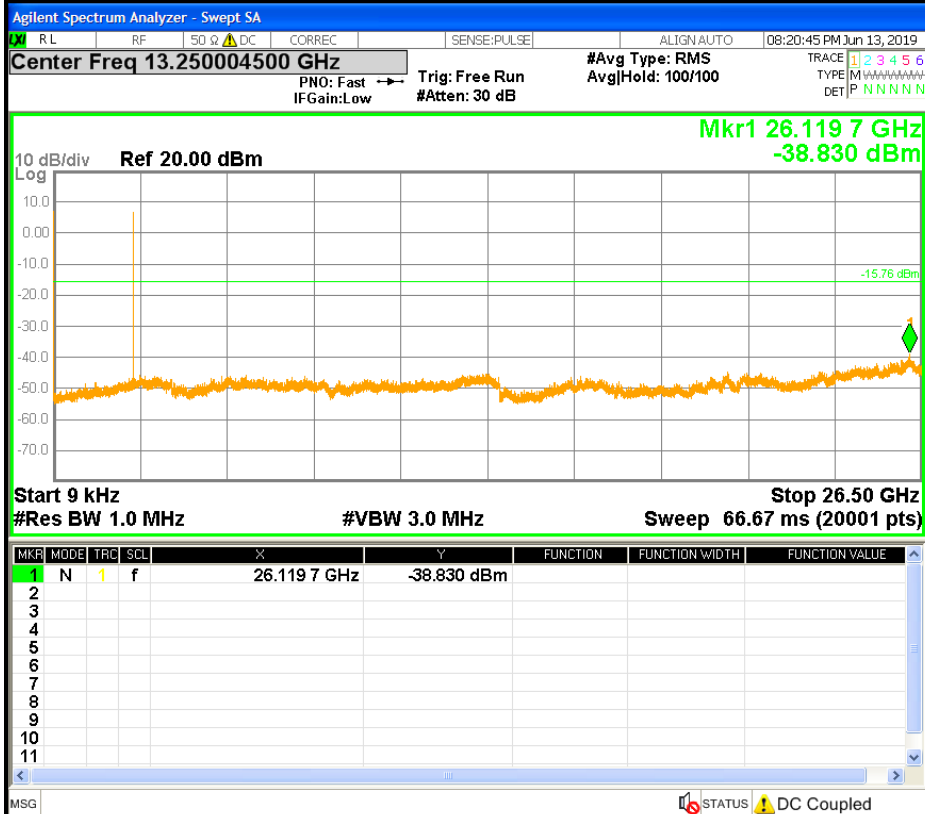


8DPSK MCH Graphs

Pref

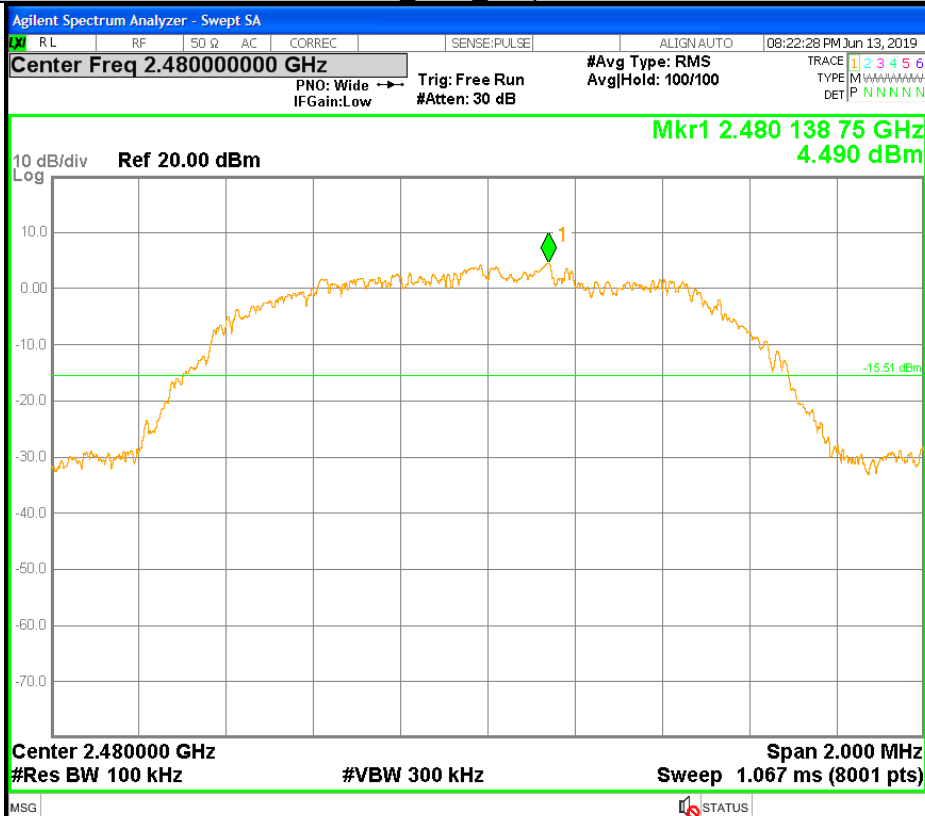


Puw



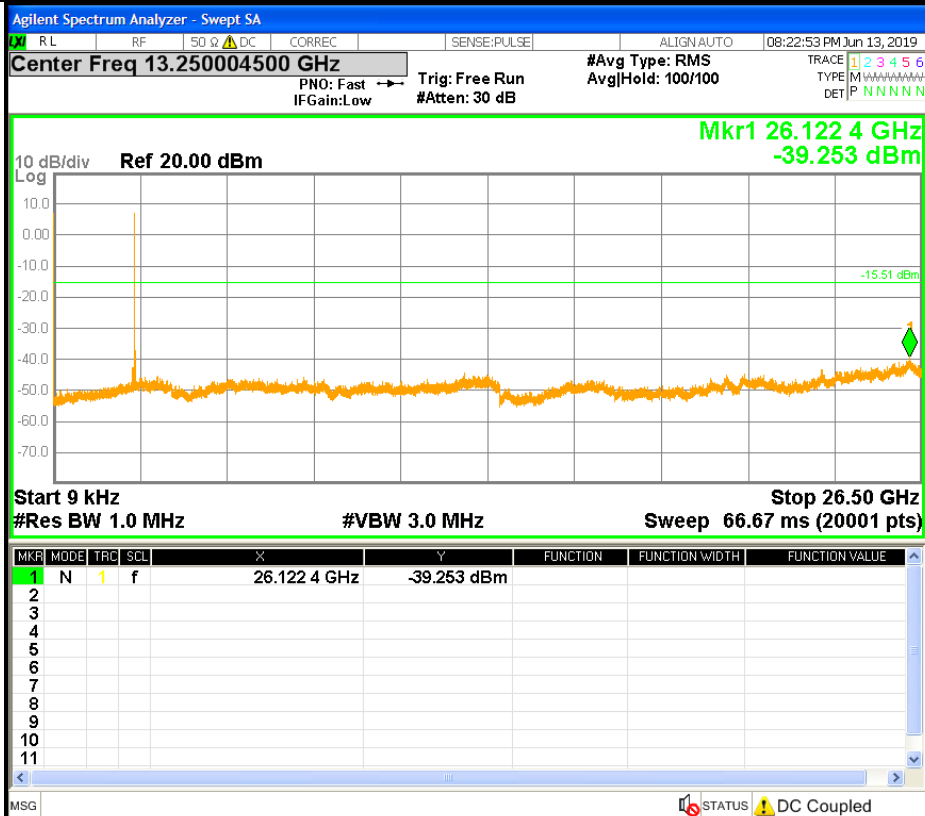
8DPSK HCH Graphs

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



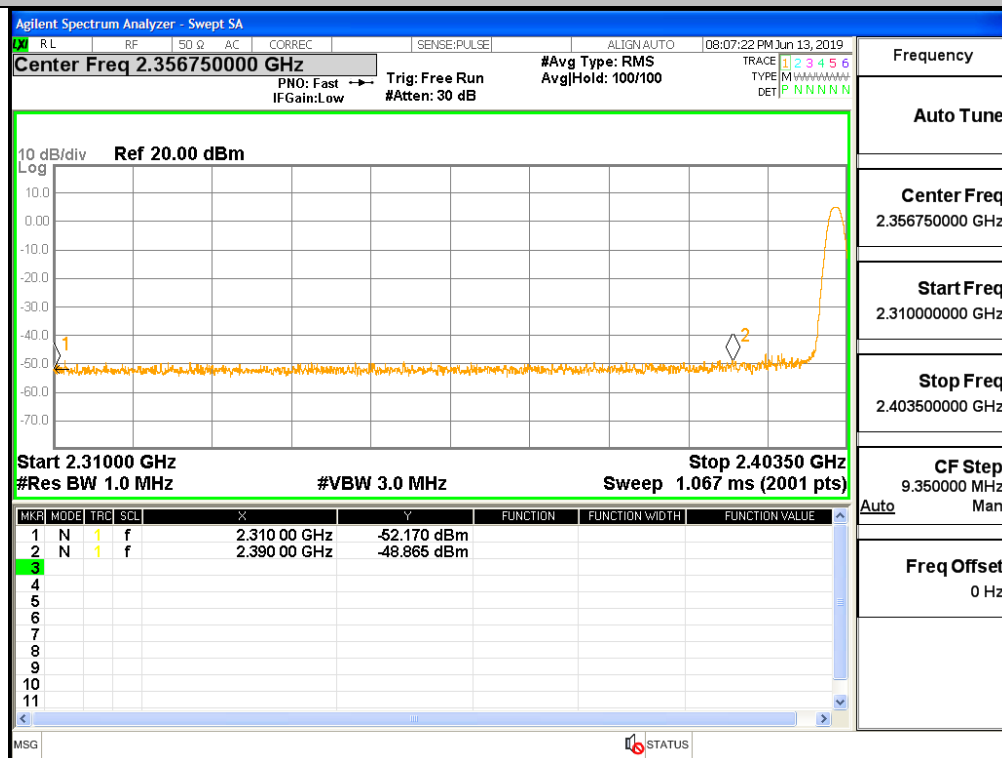
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

A.8 Restrict-band band-edge measurements

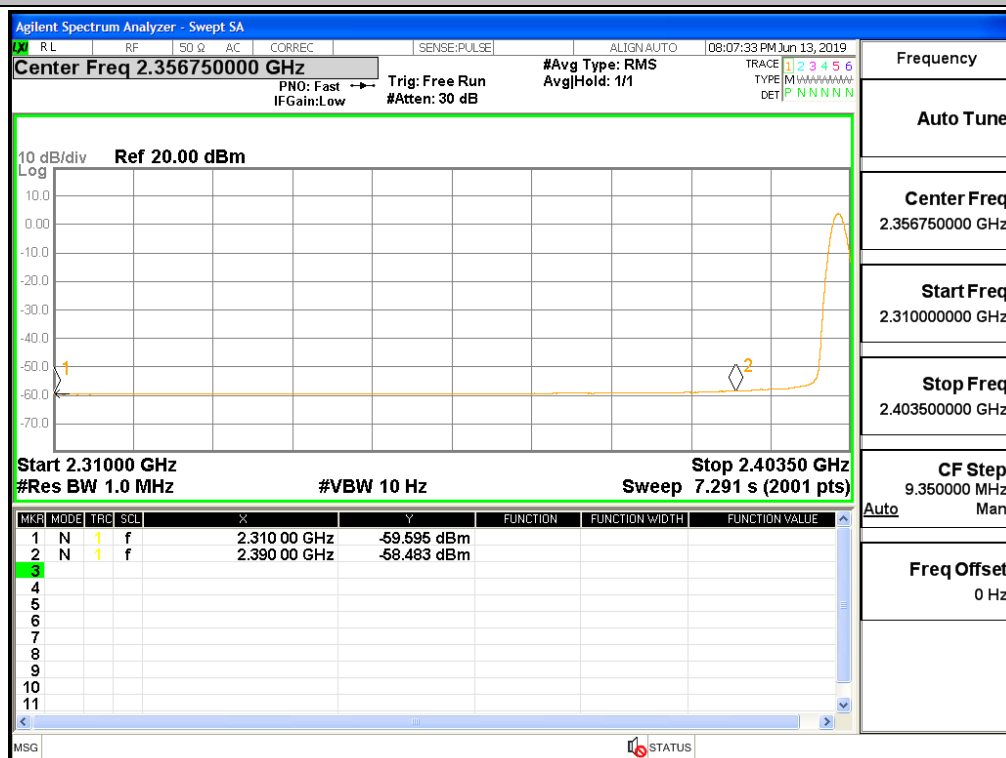
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-48.86	48.34	74	Pass
1DH5	2480	2492.48	2.00	0.00	-46.91	50.29	74	Pass
2DH5	2402	2390.00	2.00	0.00	-50.69	46.51	74	Pass
2DH5	2480	2483.50	2.00	0.00	-36.79	60.41	74	Pass
3DH5	2402	2390.00	2.00	0.00	-50.81	46.39	74	Pass
3DH5	2480	2487.79	2.00	0.00	-45.60	51.61	74	Pass

Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-58.48	38.72	54	Pass
1DH5	2480	2483.50	2.00	0.00	-54.77	42.43	54	Pass
2DH5	2402	2390.00	2.00	0.00	-58.00	39.20	54	Pass
2DH5	2480	2483.50	2.00	0.00	-49.40	47.80	54	Pass
3DH5	2402	2390.00	2.00	0.00	-57.87	39.33	54	Pass
3DH5	2480	2483.50	2.00	0.00	-54.85	42.35	54	Pass

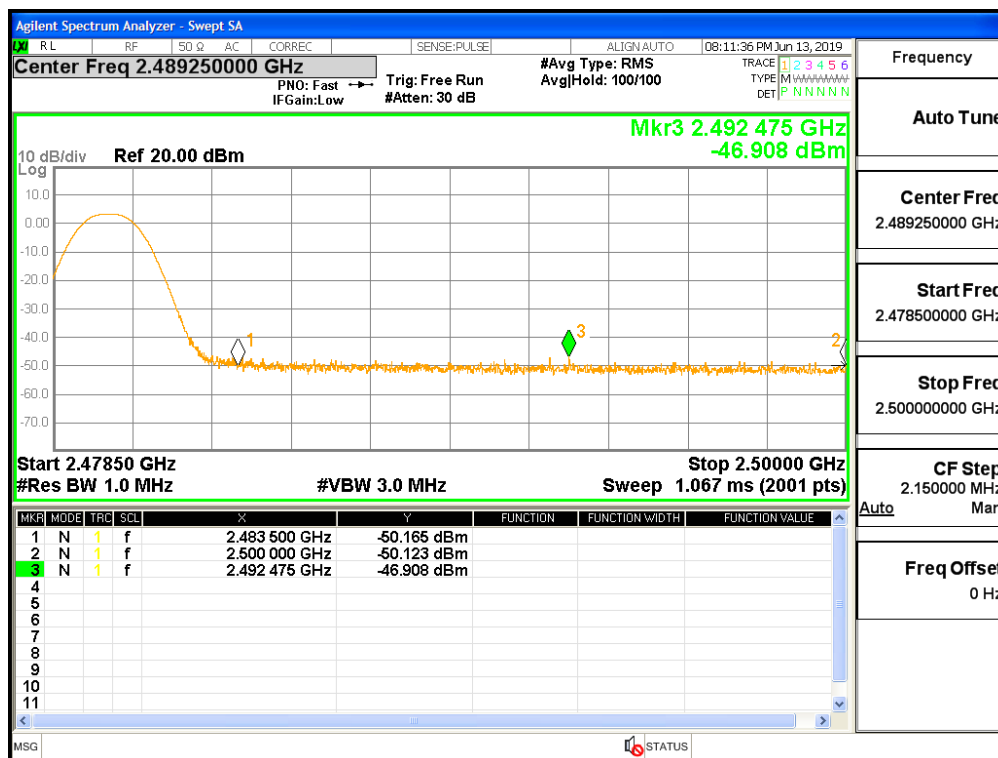
Restrict-band band-edge measurements_2402_PEAK_DH5



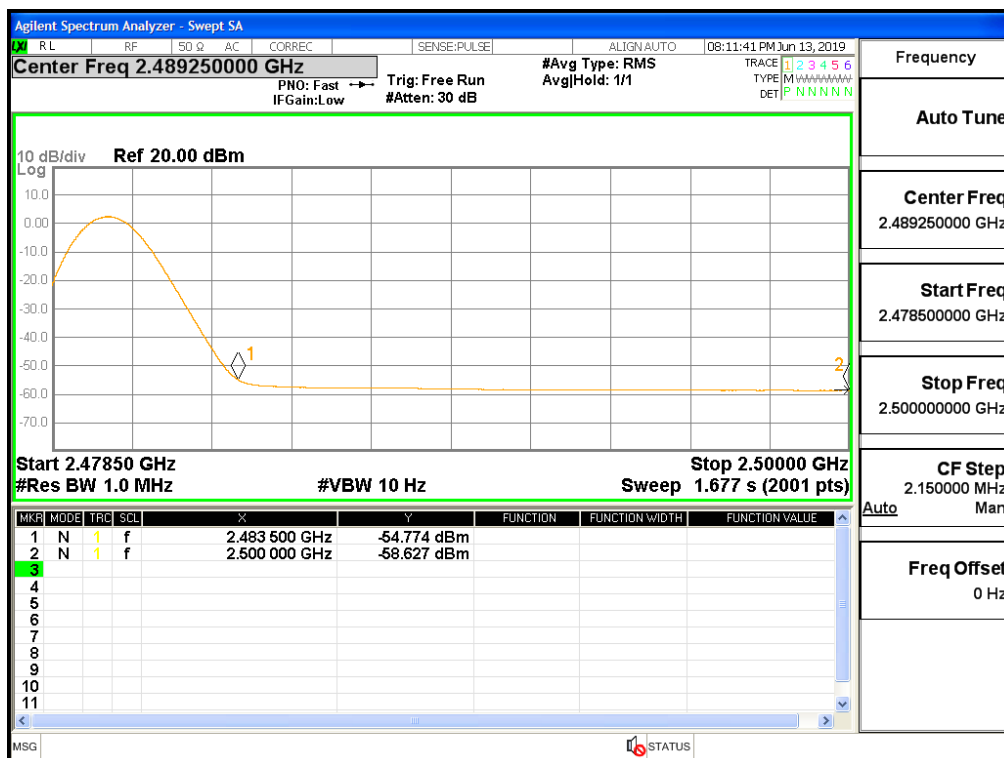
Restrict-band band-edge measurements_2402_AV_DH5



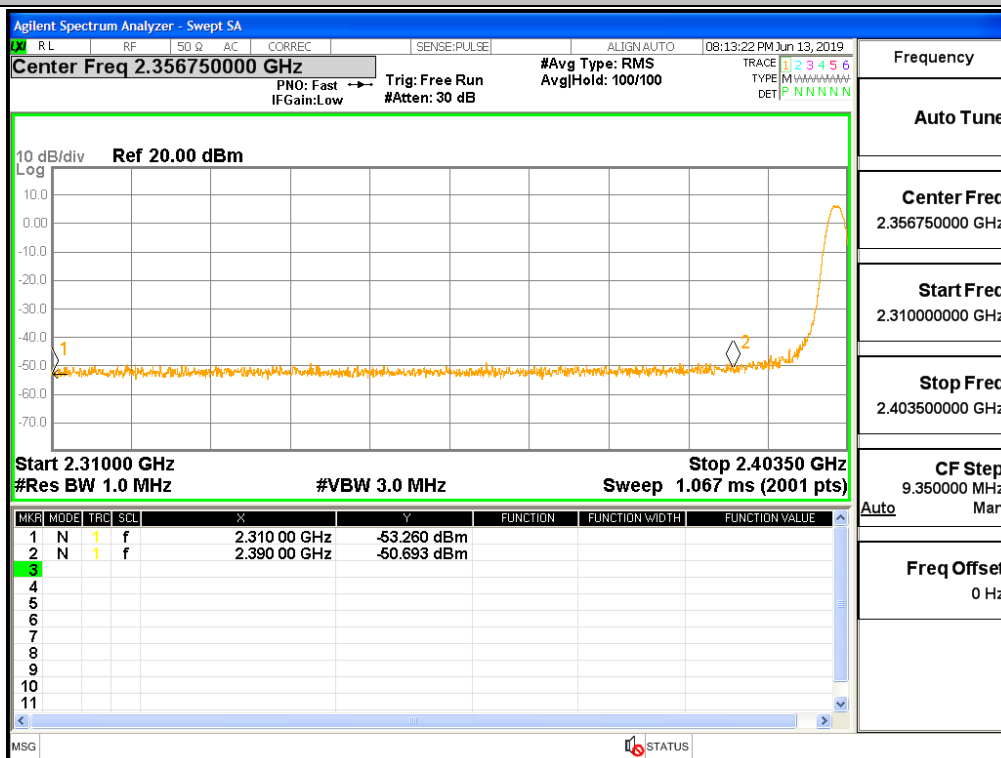
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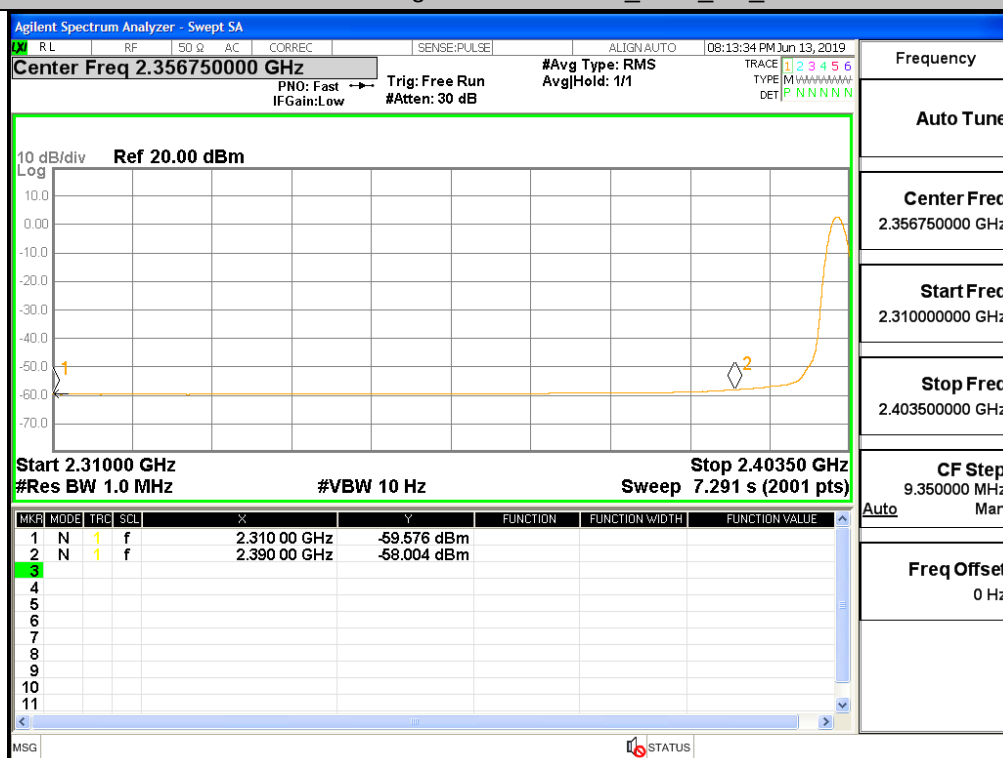
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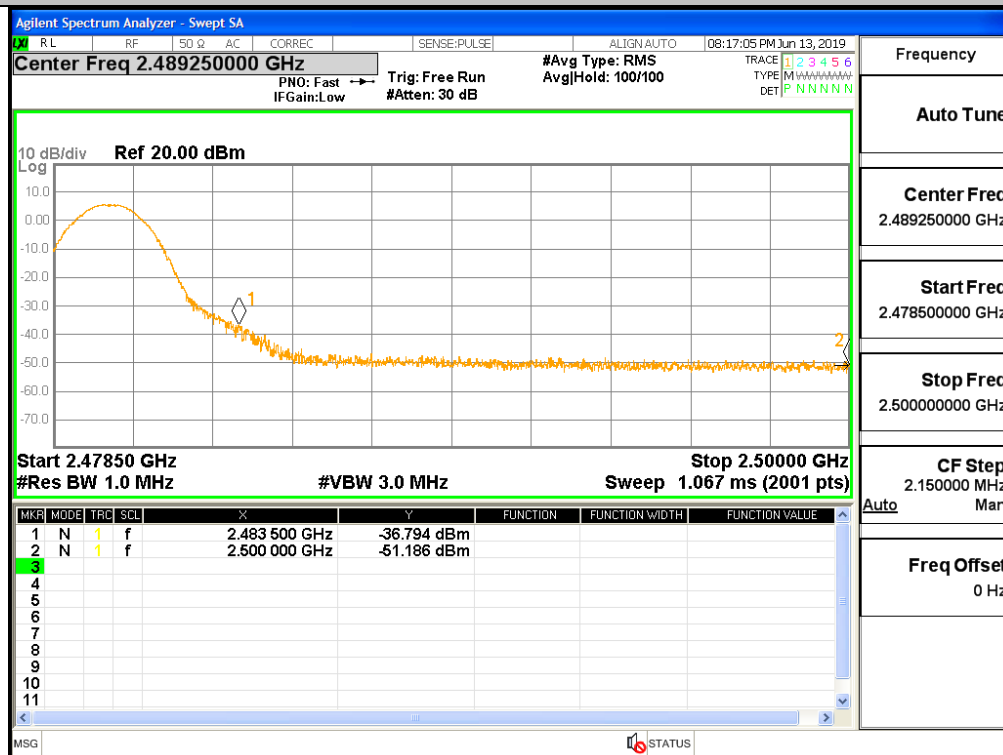
Restrict-band band-edge measurements_2402_PEAK_2DH5



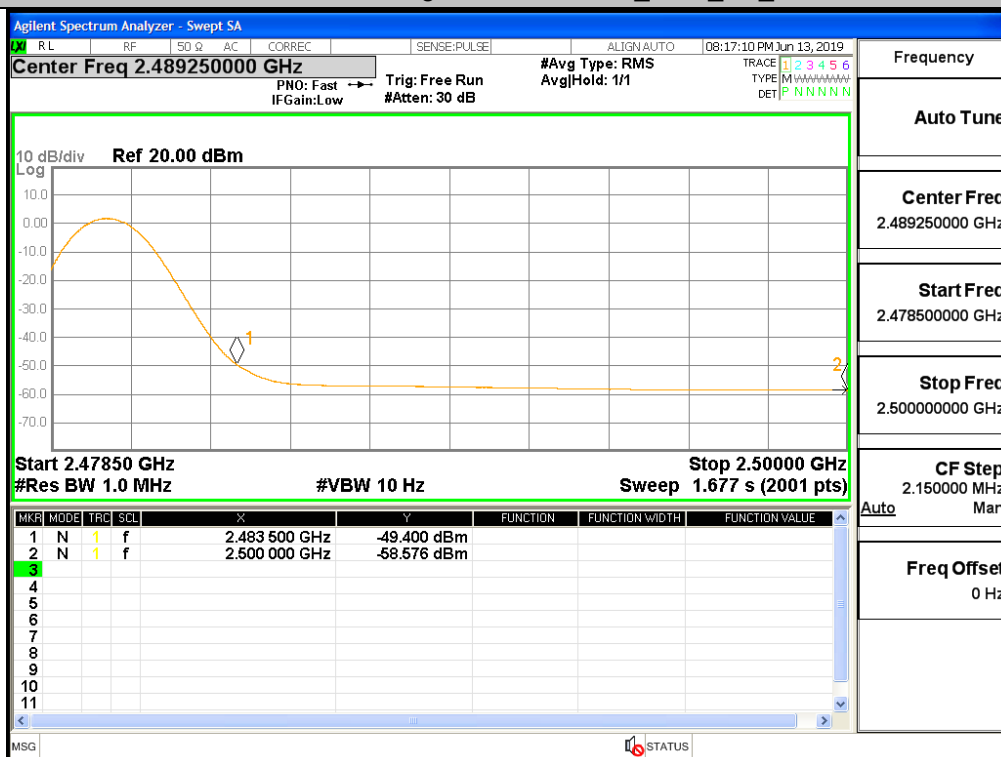
Restrict-band band-edge measurements_2402_AV_2DH5



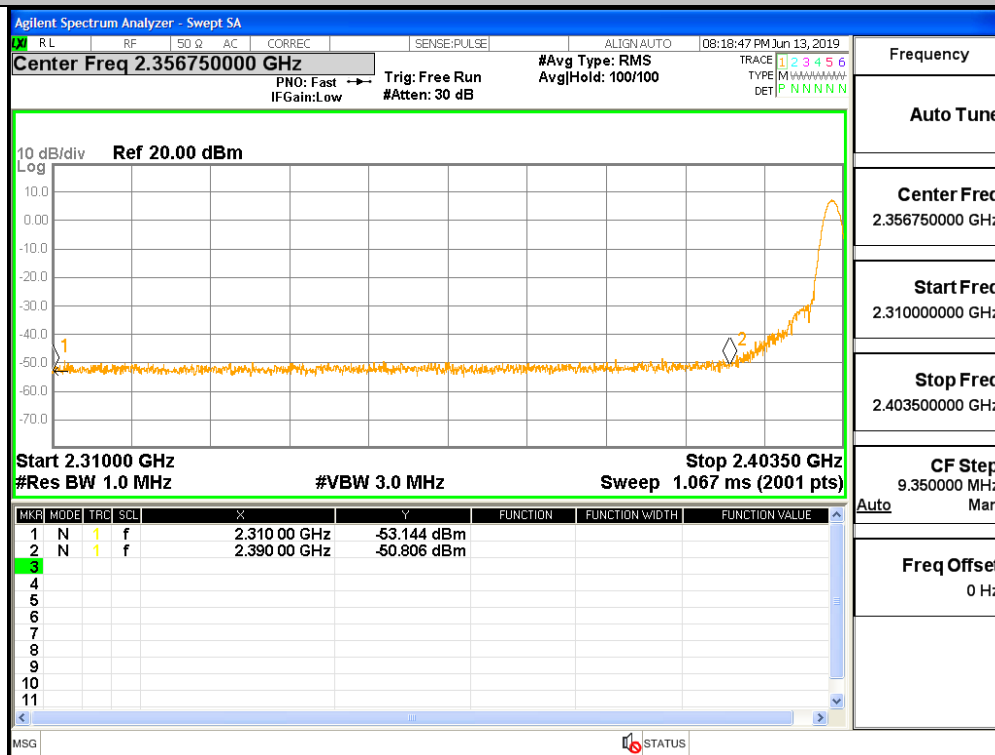
Restrict-band band-edge measurements_2480_PEAK_2DH5



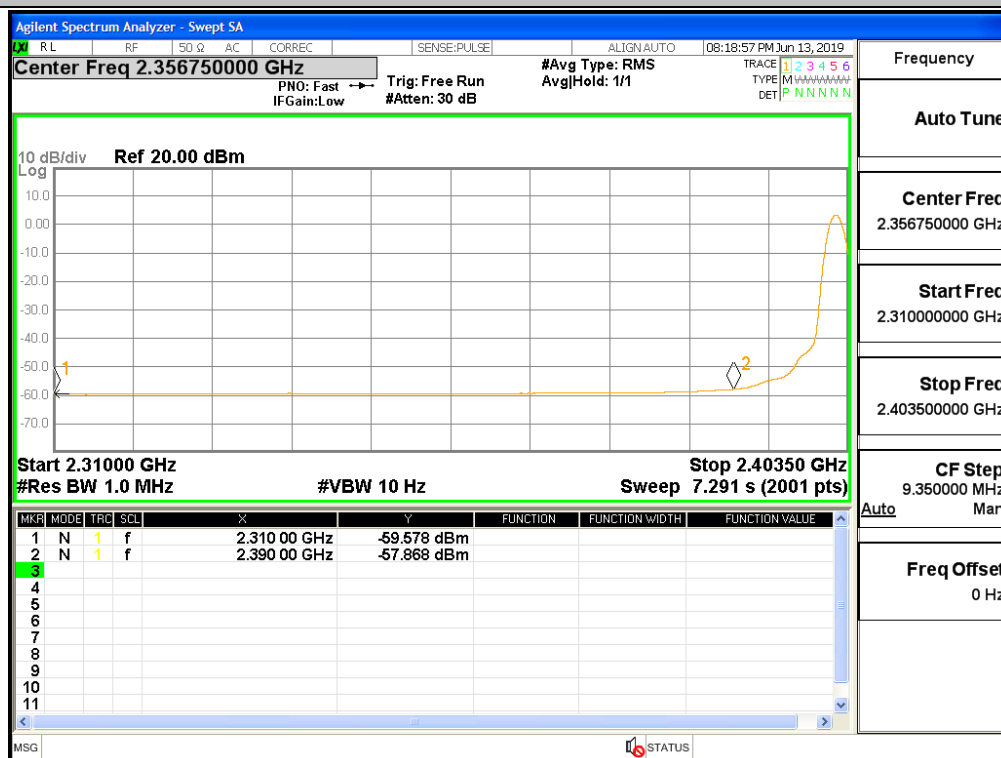
Restrict-band band-edge measurements_2480_AV_2DH5



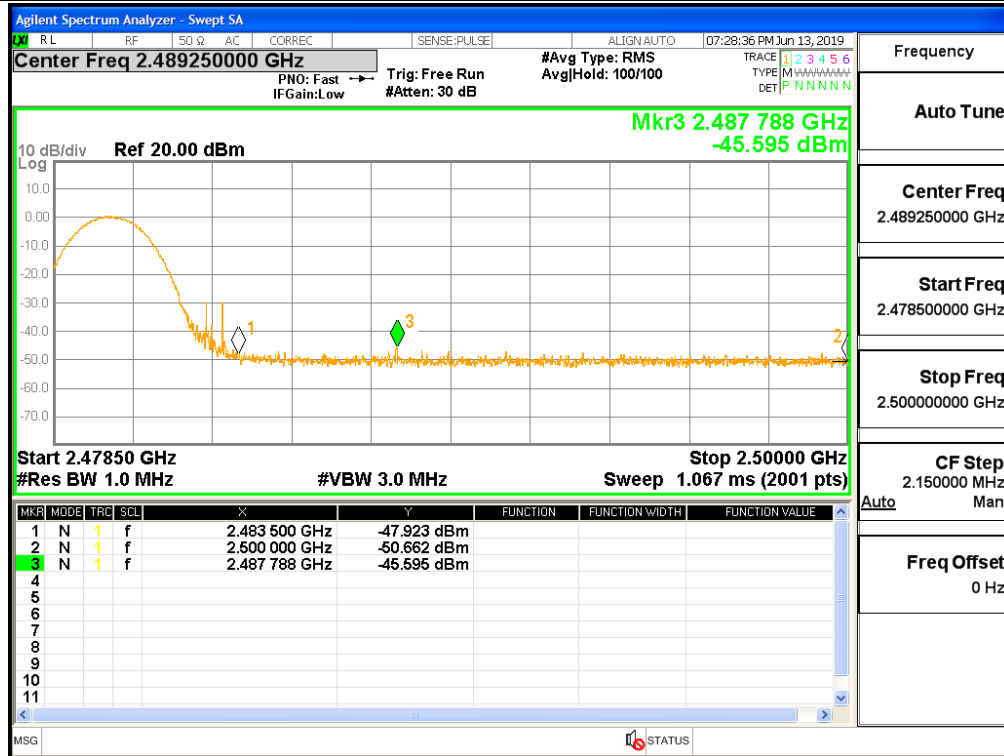
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

