

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

Product Name: Bluetooth earbuds

Trade Mark: N/A

Test Model: D05

FCC ID: 2AJN6-D05

Environmental Conditions

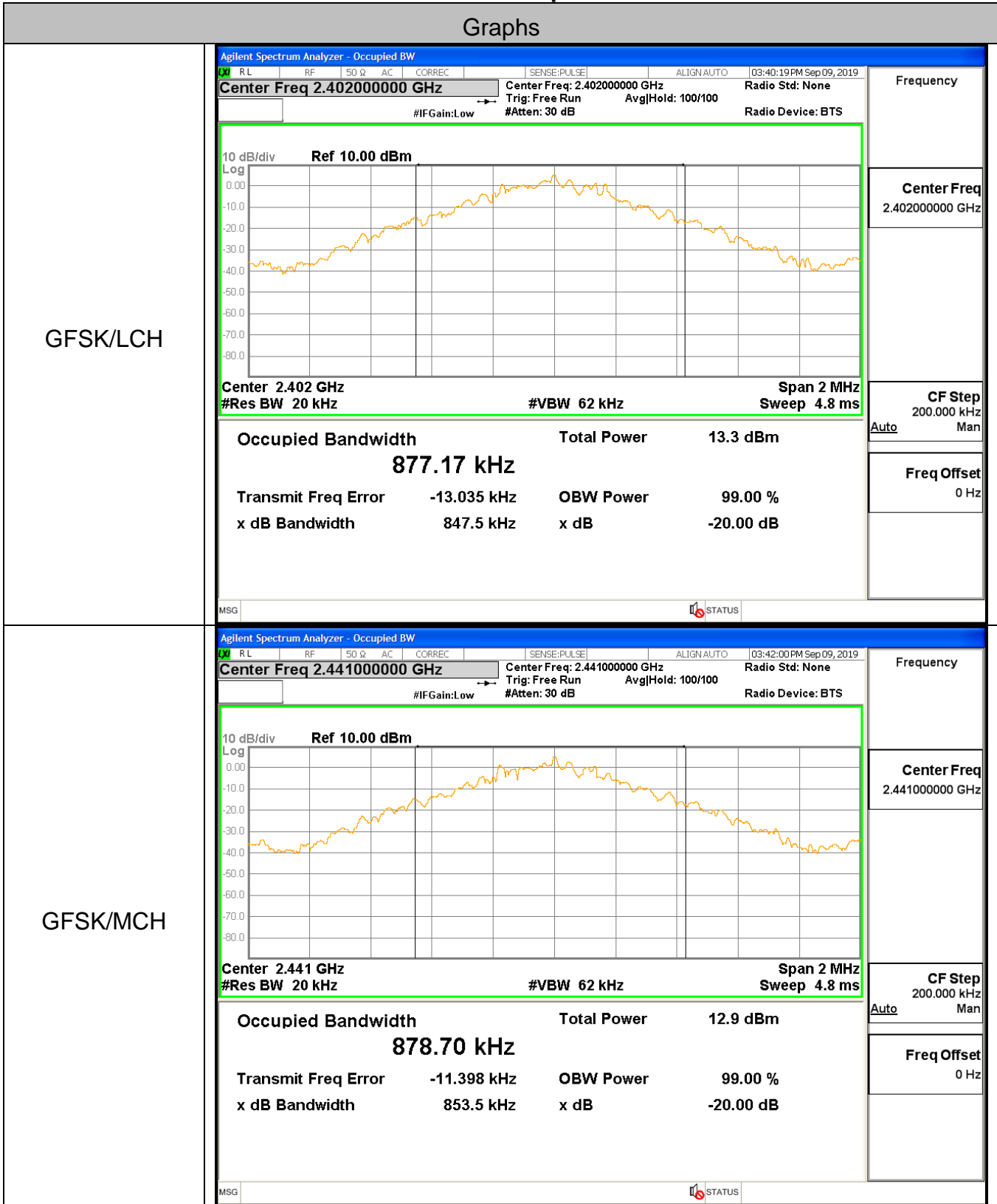
Temperature:	22.7° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

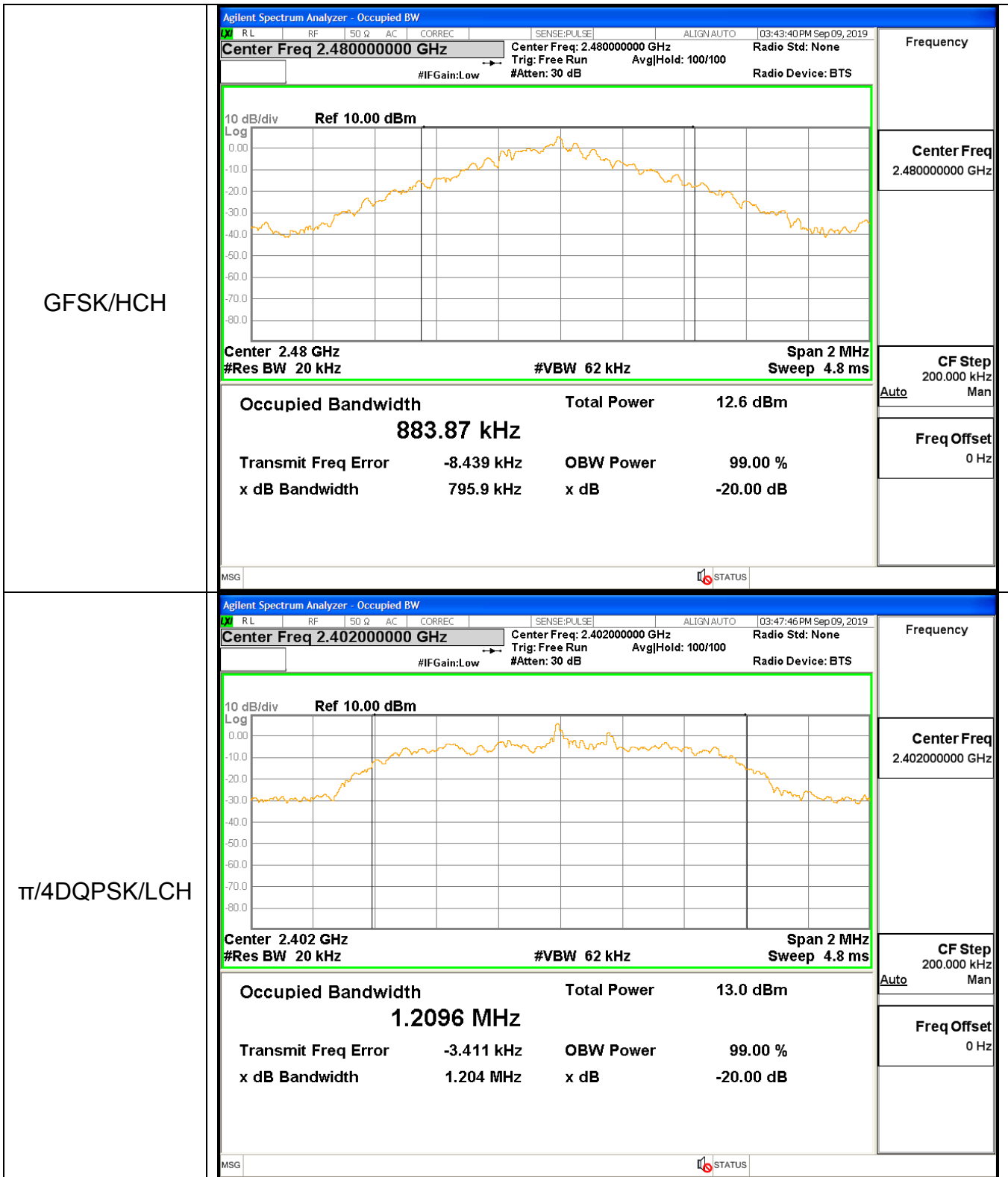
A.1 20 dB Bandwidth

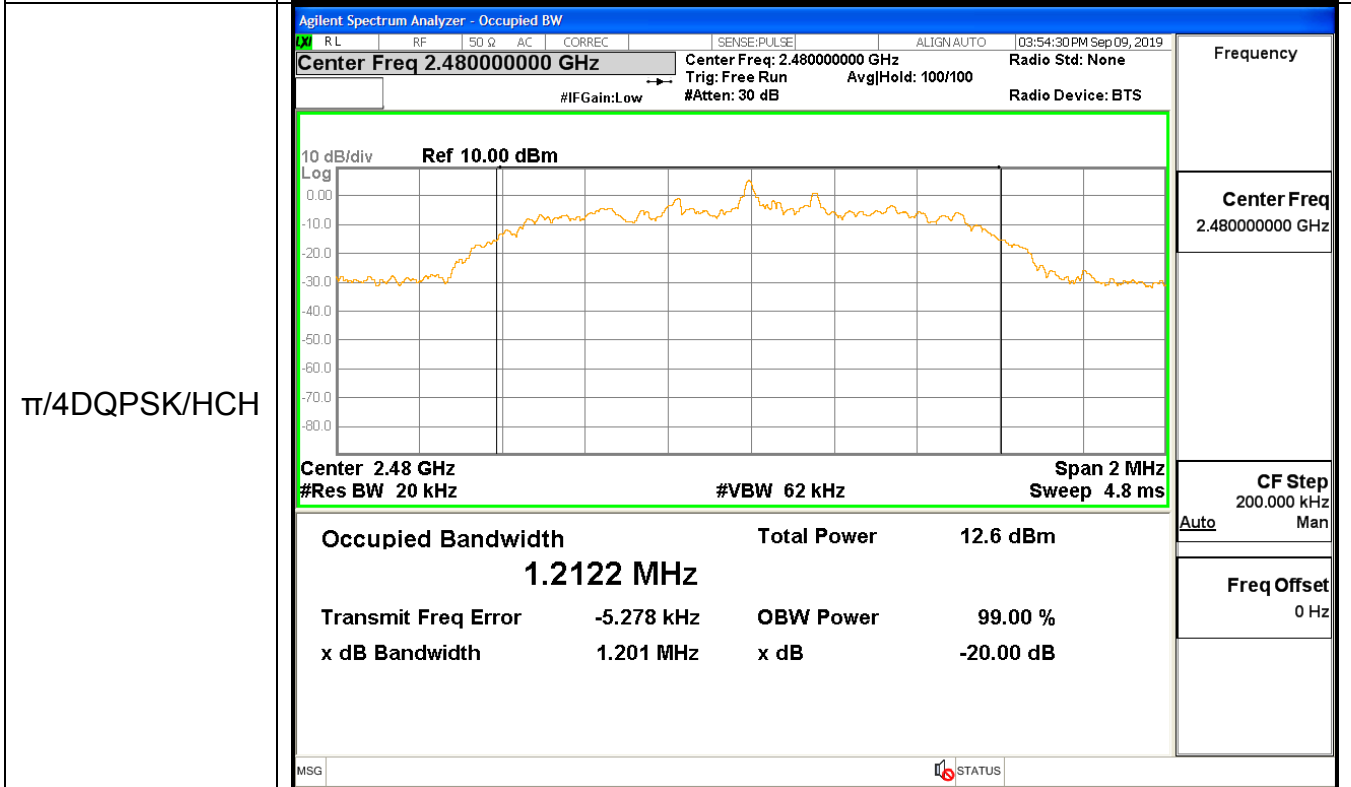
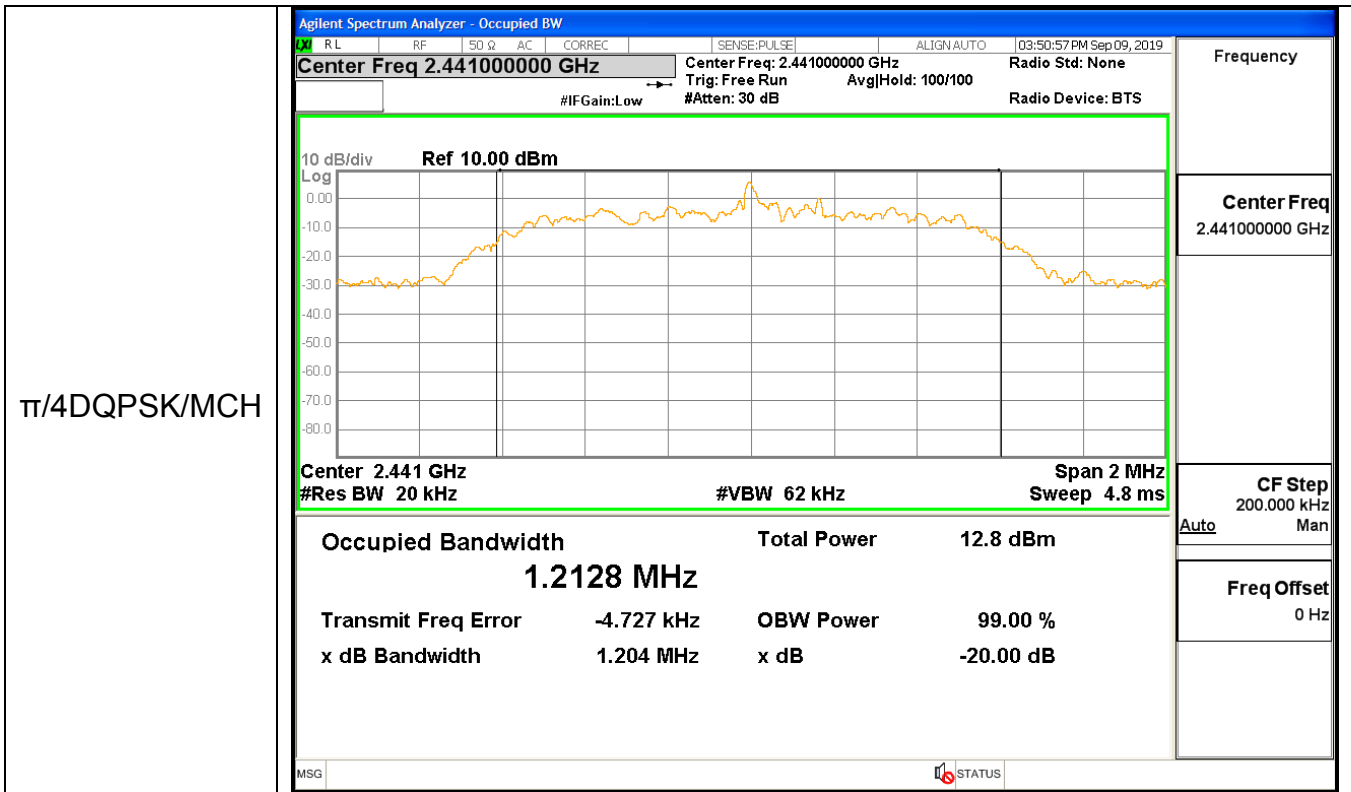
Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.848	Not Specified	PASS
GFSK	MCH	0.853	Not Specified	PASS
GFSK	HCH	0.796	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.204	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.204	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.201	Not Specified	PASS
8DPSK	LCH	1.246	Not Specified	PASS
8DPSK	MCH	1.245	Not Specified	PASS
8DPSK	HCH	1.332	Not Specified	PASS

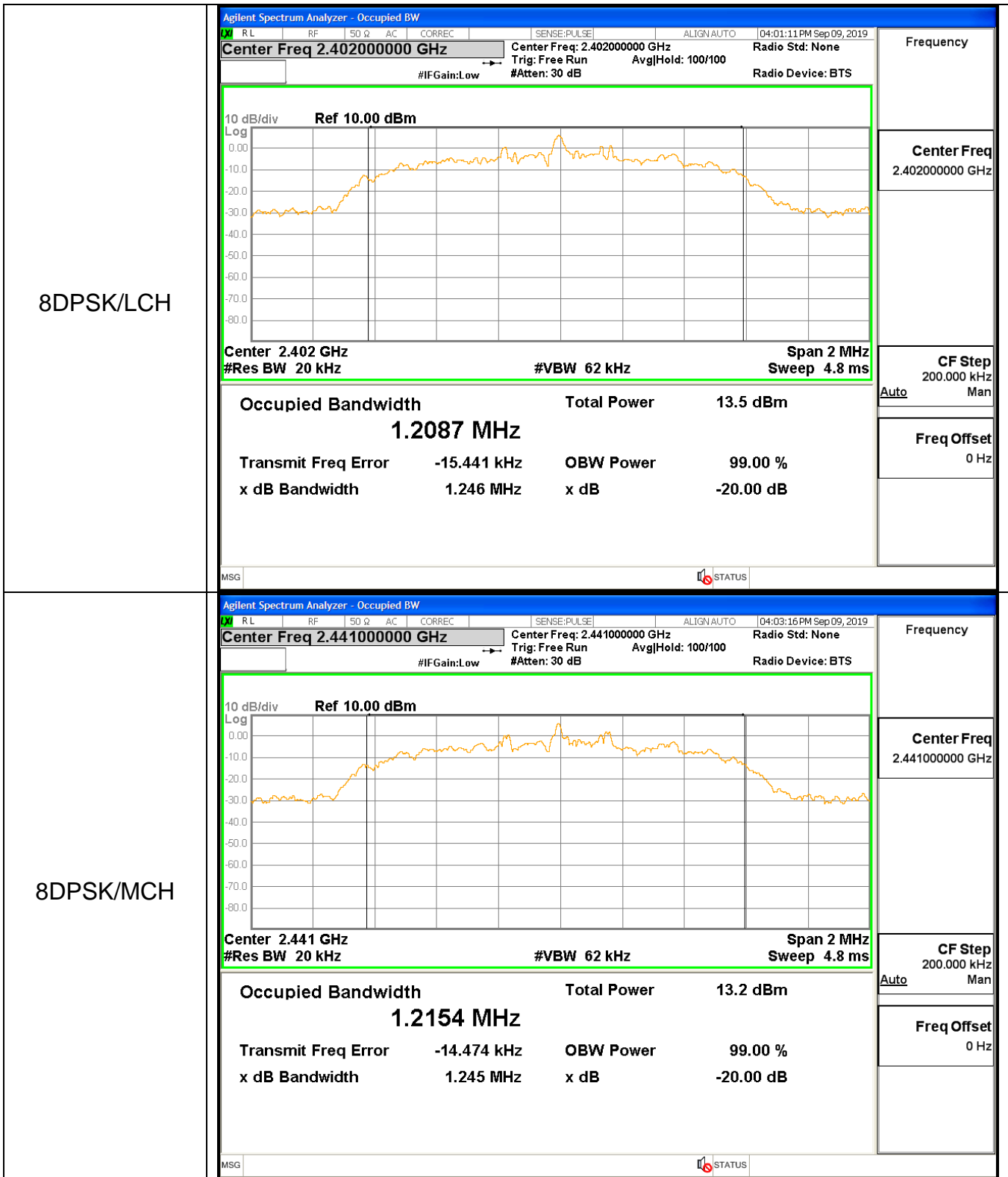
Test Graph

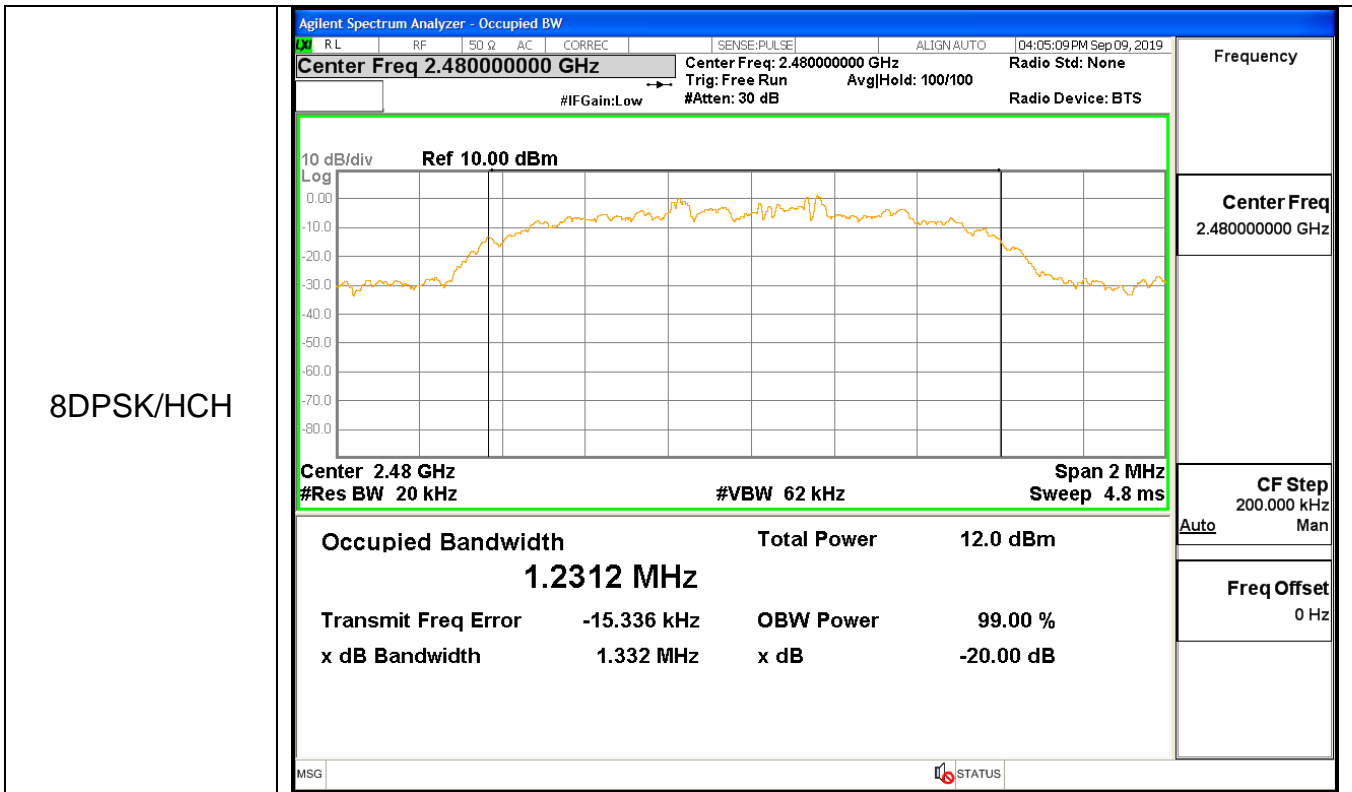
Graphs







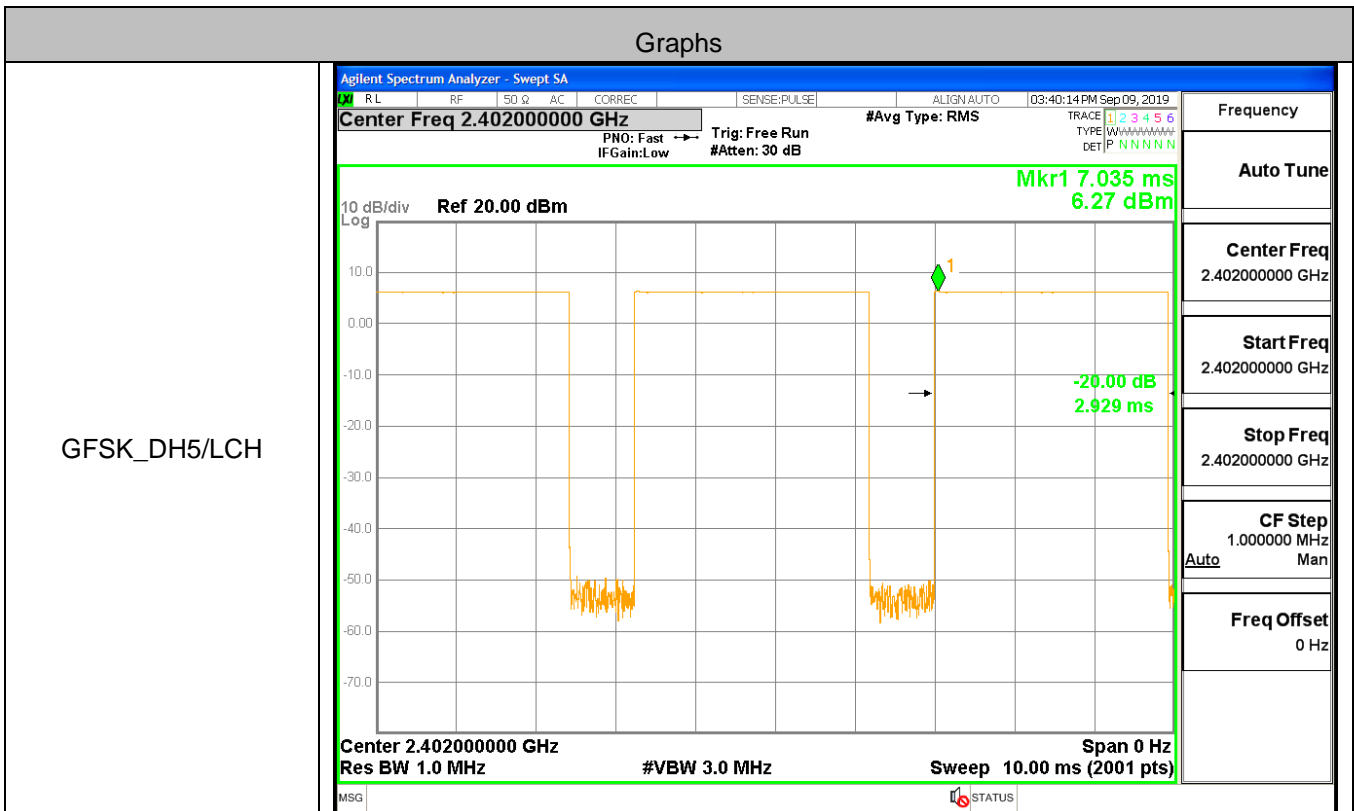


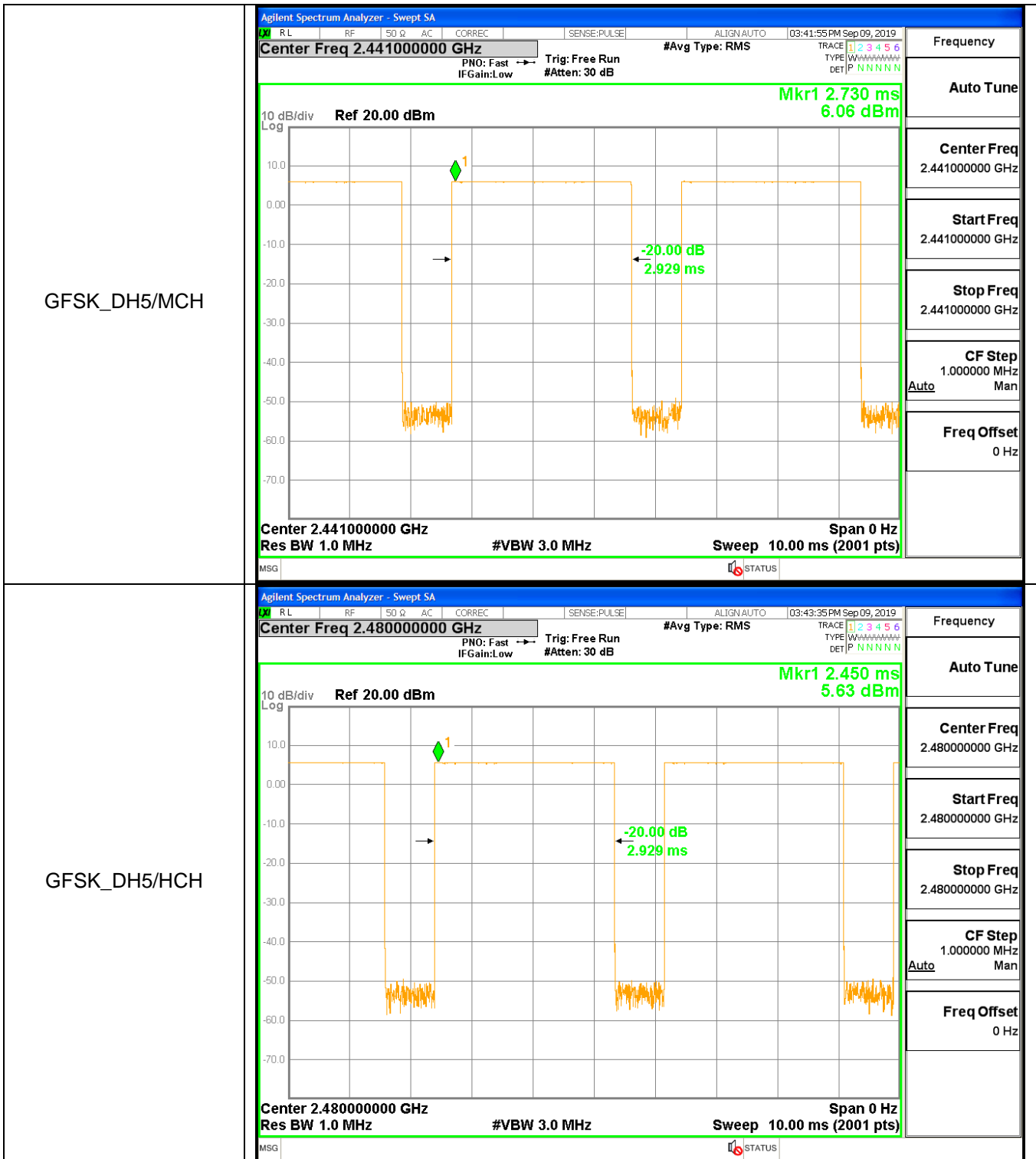


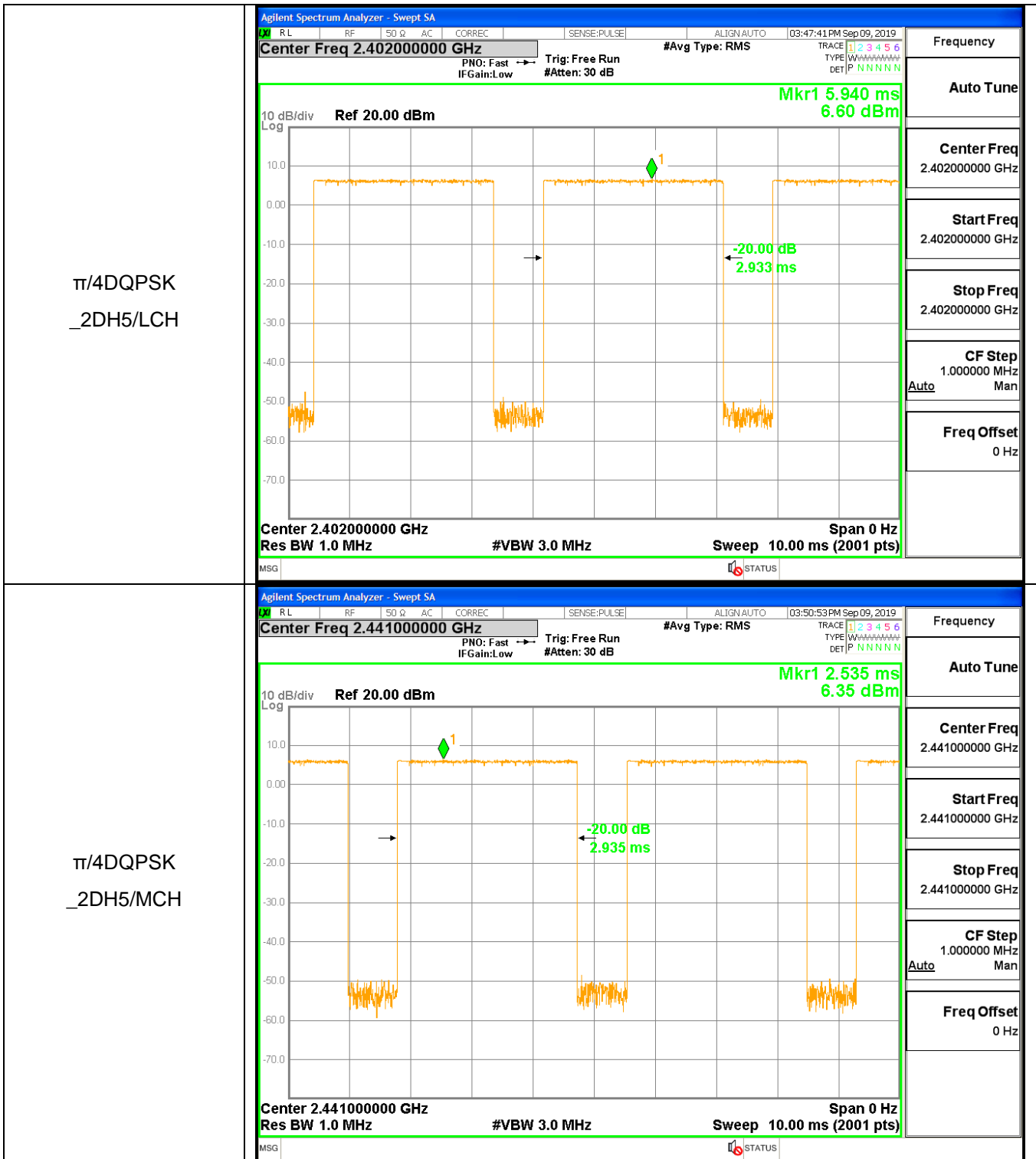
A.2 Dwell Time

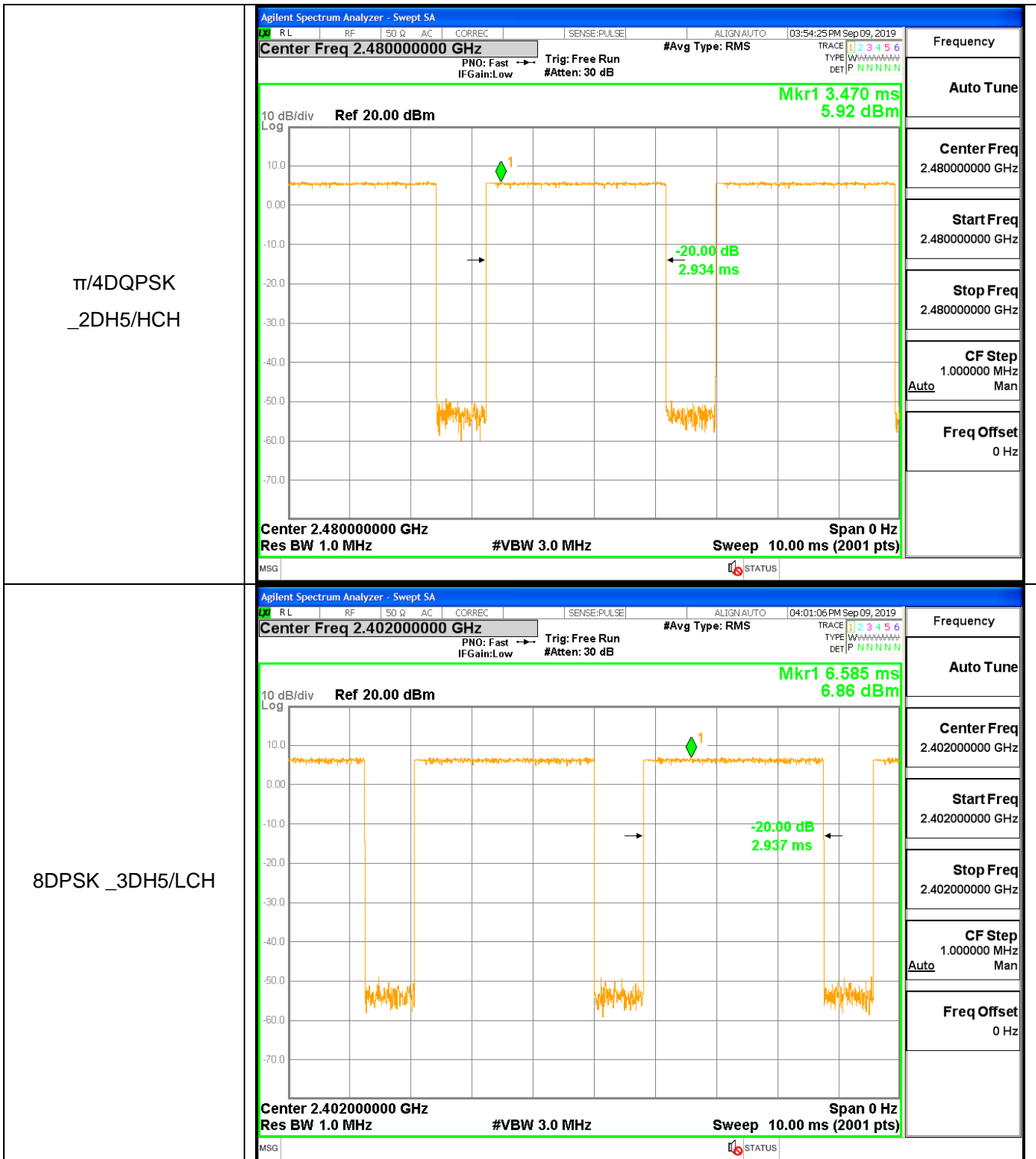
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002929	106.7	0.312485	0.4	PASS
GFSK	DH5	MCH	0.002929	106.7	0.312478	0.4	PASS
GFSK	DH5	HCH	0.002929	106.7	0.312488	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002933	106.7	0.312974	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002935	106.7	0.313149	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002934	106.7	0.313034	0.4	PASS
8DPSK	3DH5	LCH	0.002937	106.7	0.313326	0.4	PASS
8DPSK	3DH5	MCH	0.002938	106.7	0.313482	0.4	PASS
8DPSK	3DH5	HCH	0.002938	106.7	0.313494	0.4	PASS

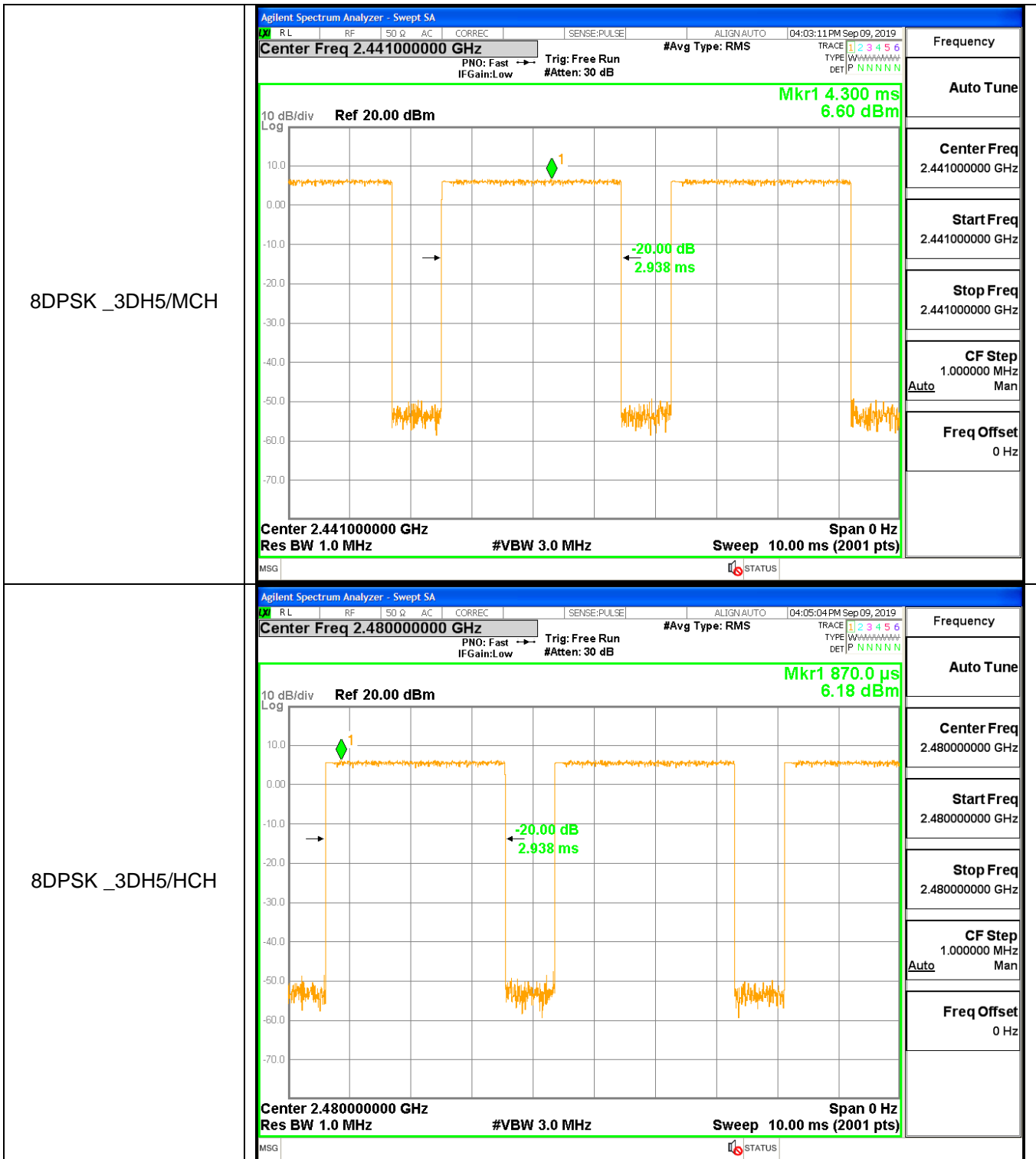
Test Graph







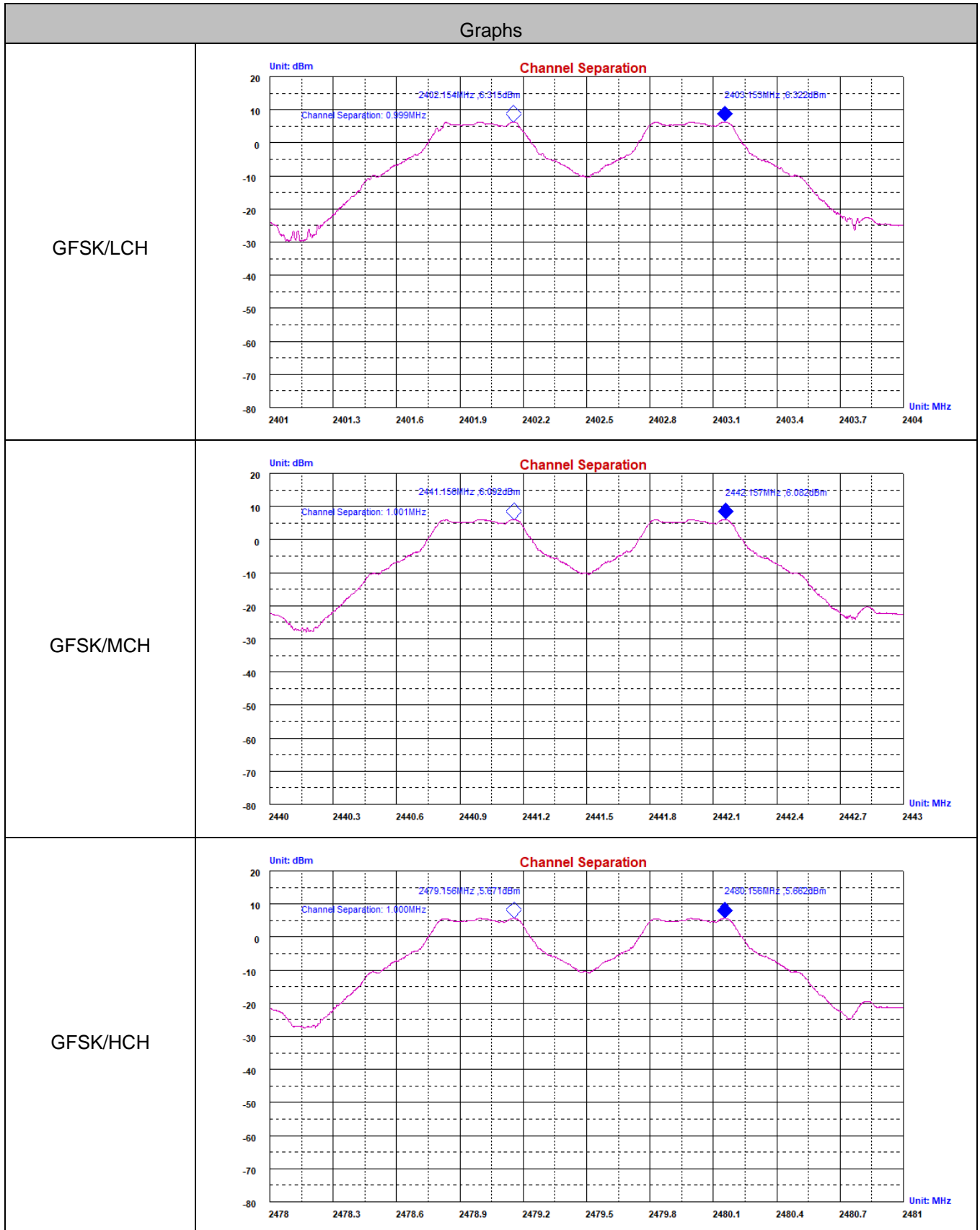


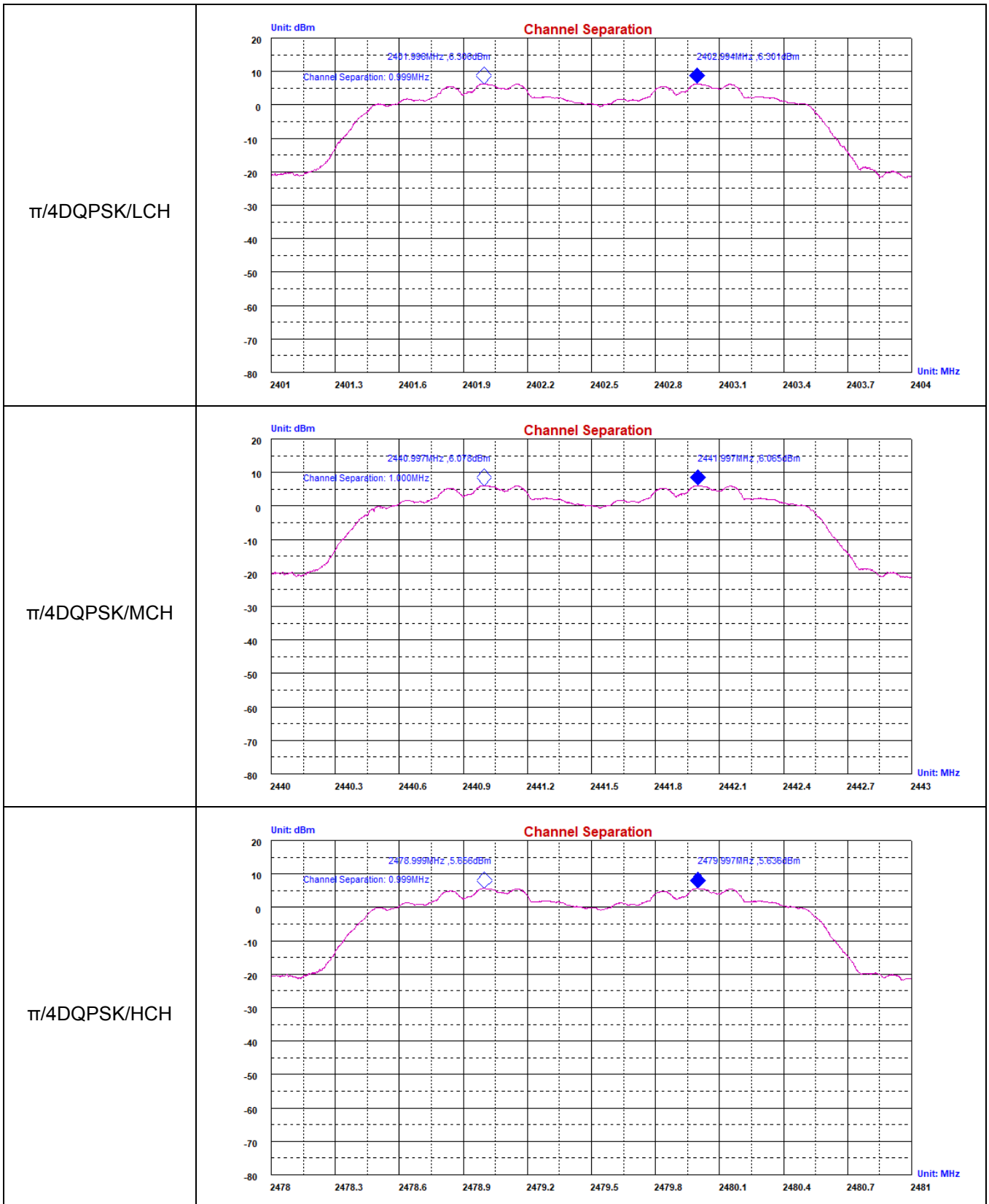


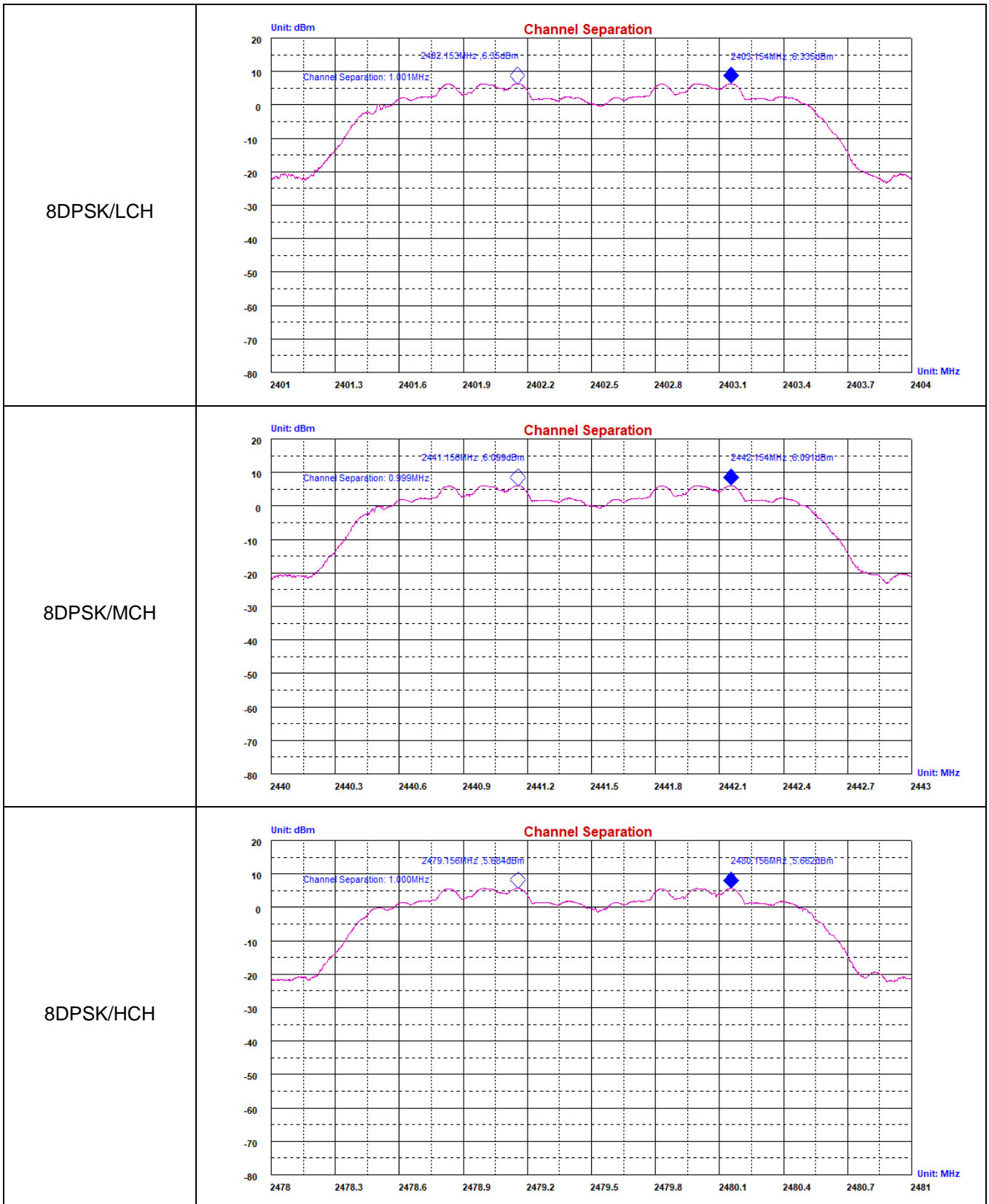
A.3 Carrier Frequency Separation

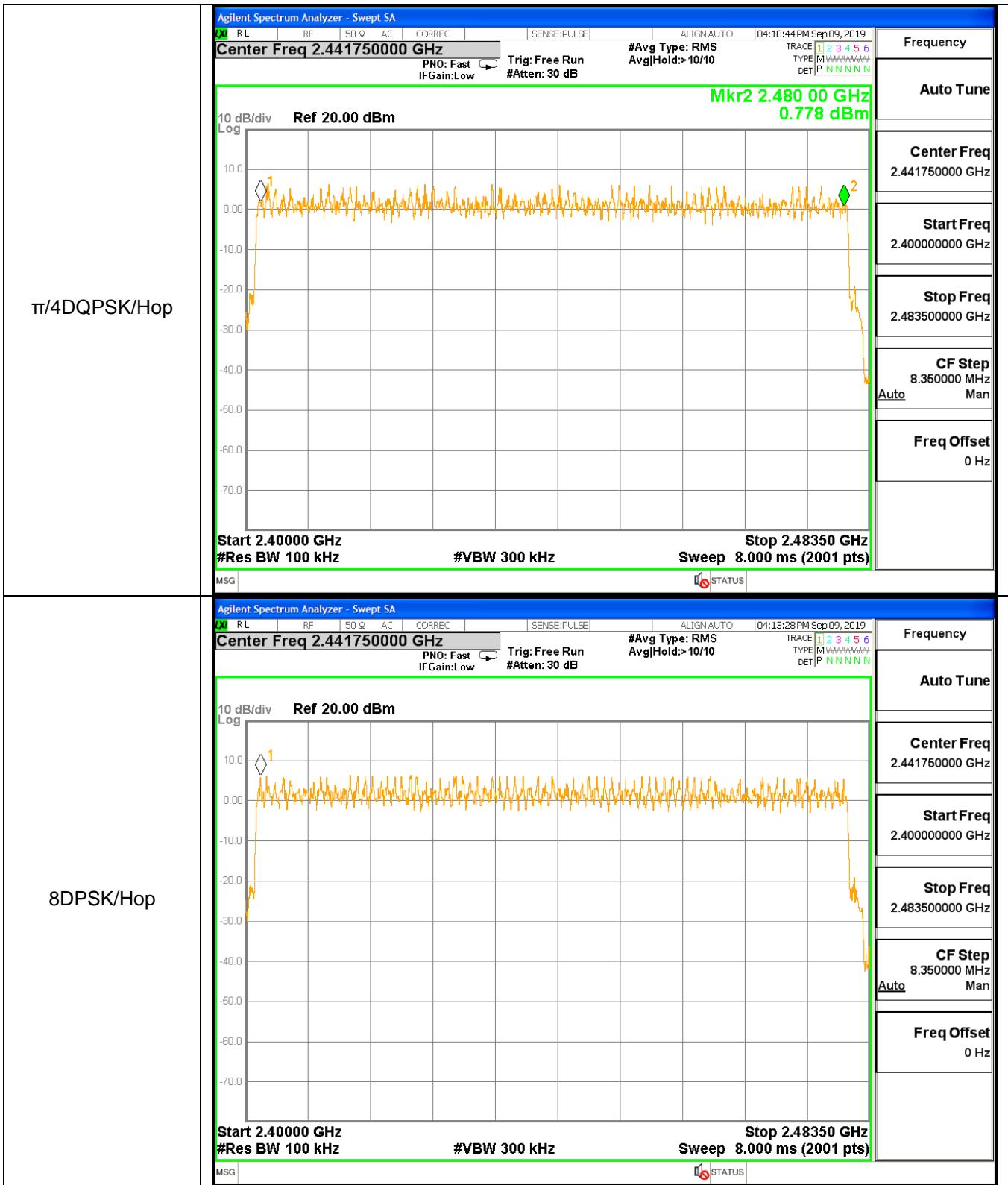
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.565	PASS
GFSK	MCH	1.001	0.569	PASS
GFSK	HCH	1.000	0.531	PASS
$\pi/4$ DQPSK	LCH	0.999	0.803	PASS
$\pi/4$ DQPSK	MCH	1.000	0.803	PASS
$\pi/4$ DQPSK	HCH	0.999	0.801	PASS
8DPSK	LCH	1.001	0.831	PASS
8DPSK	MCH	0.999	0.830	PASS
8DPSK	HCH	1.000	0.888	PASS

Test Graph





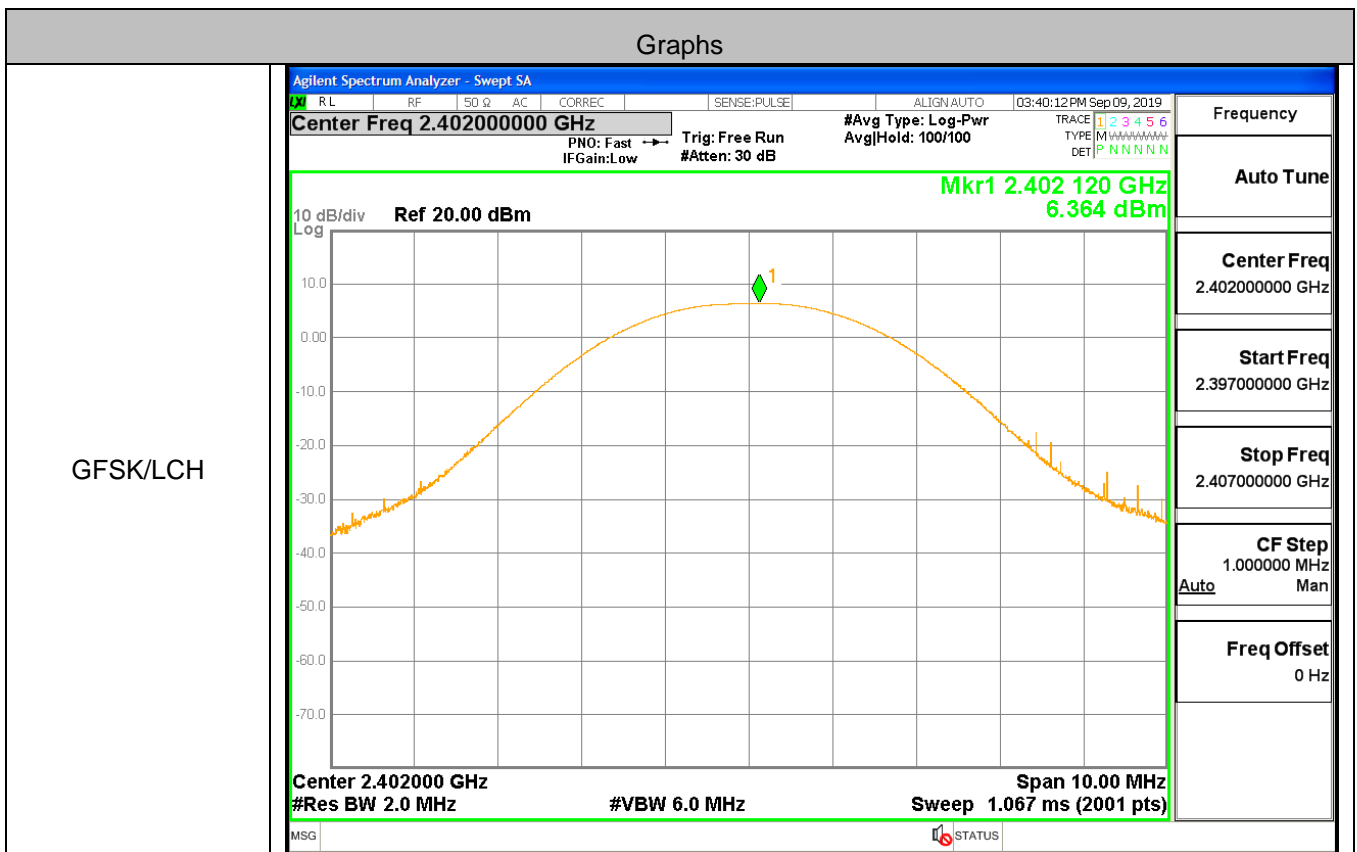


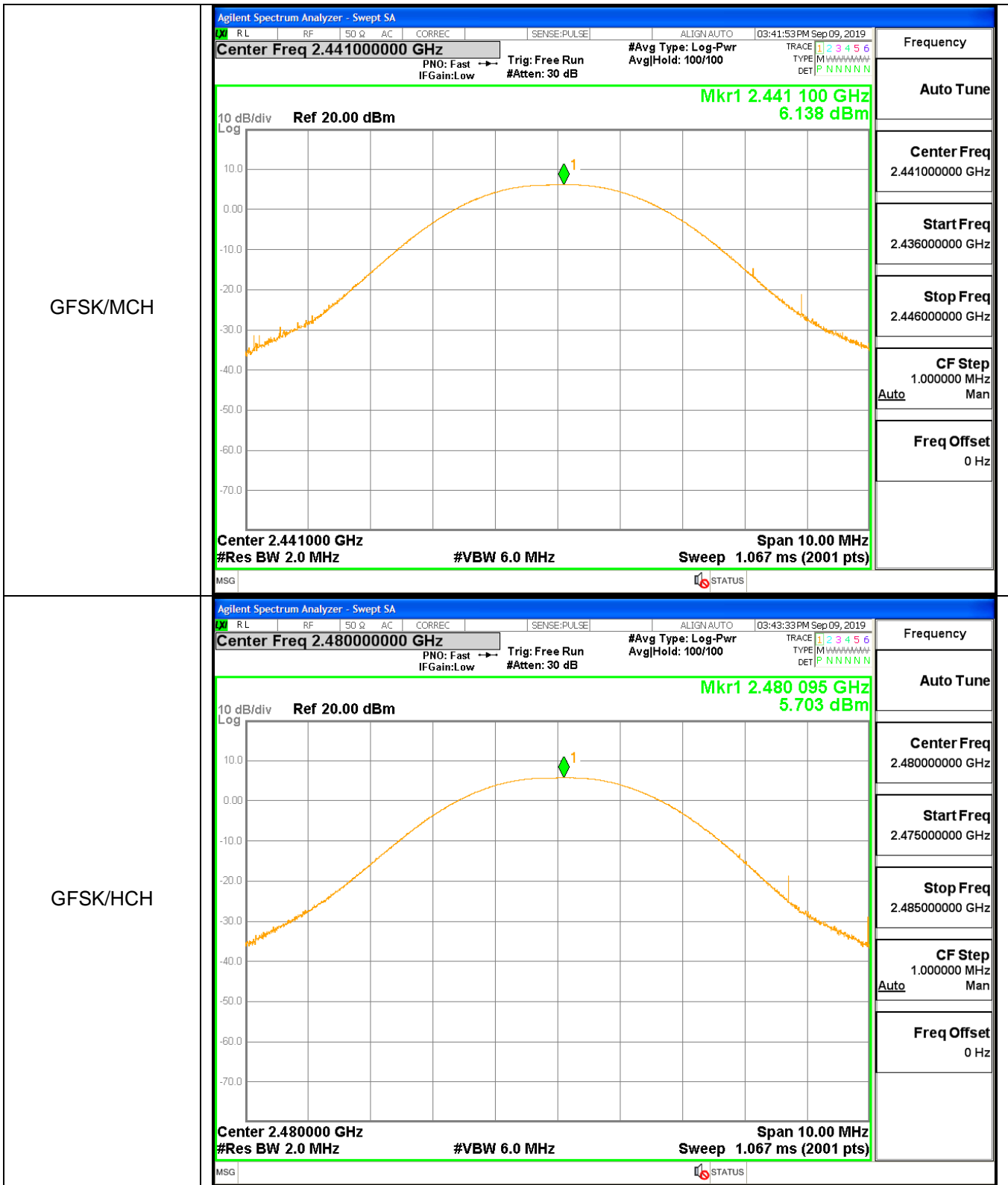


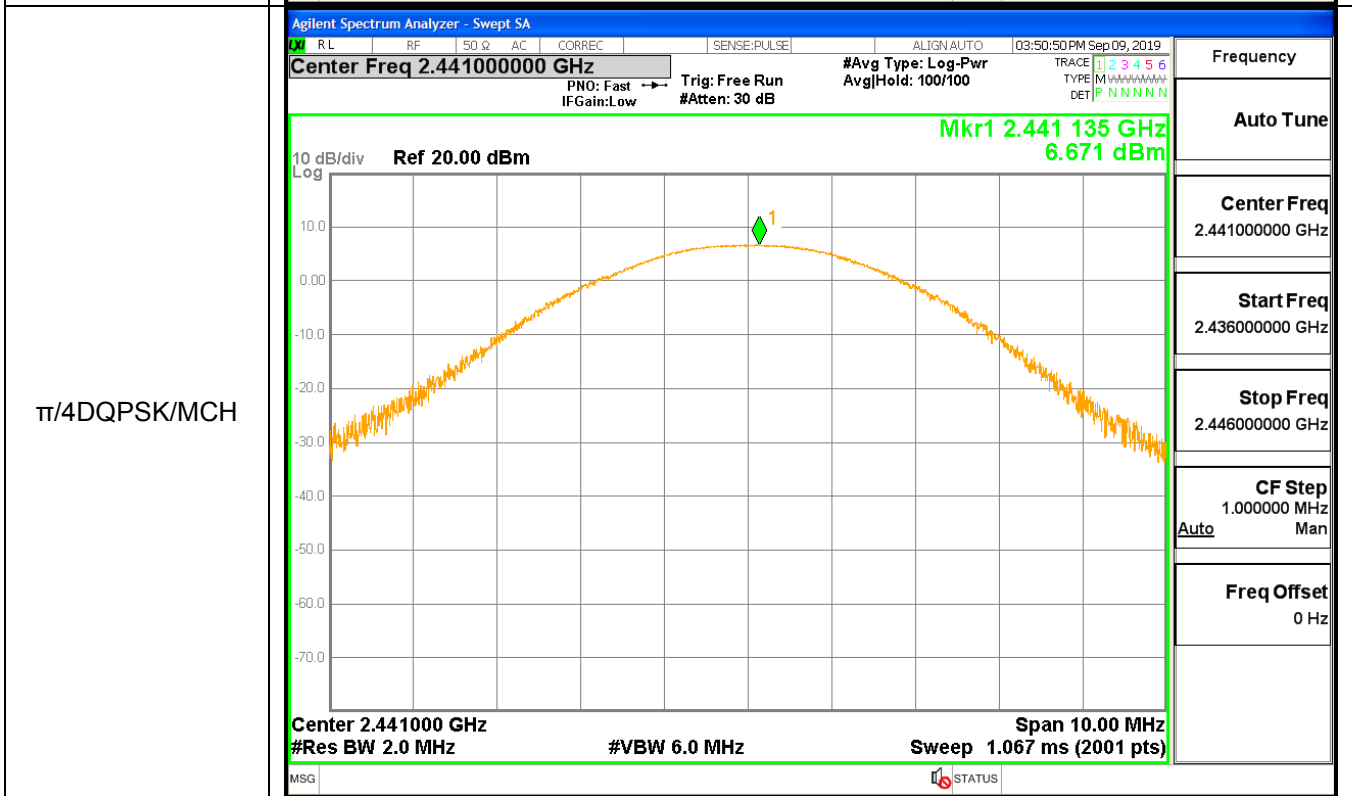
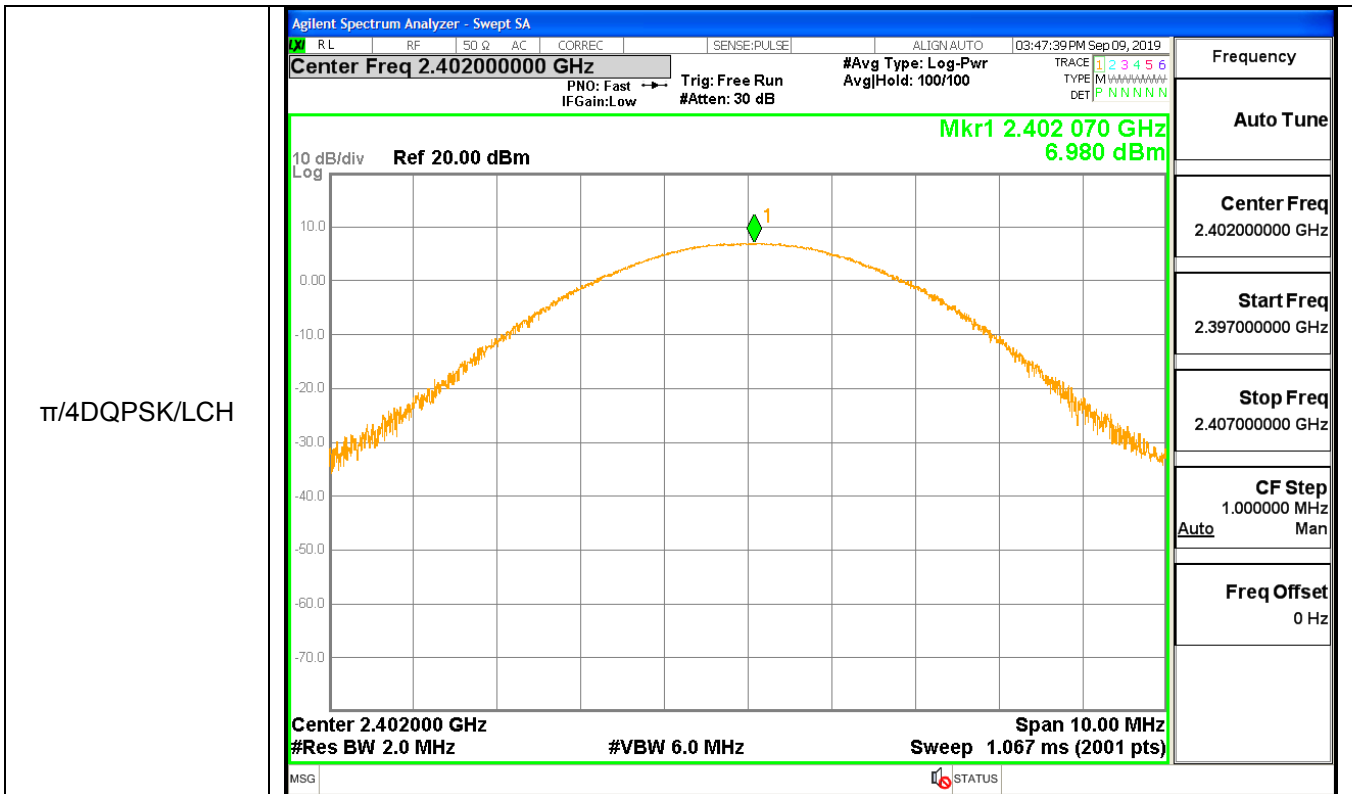
A.5 Conducted Peak Output Power

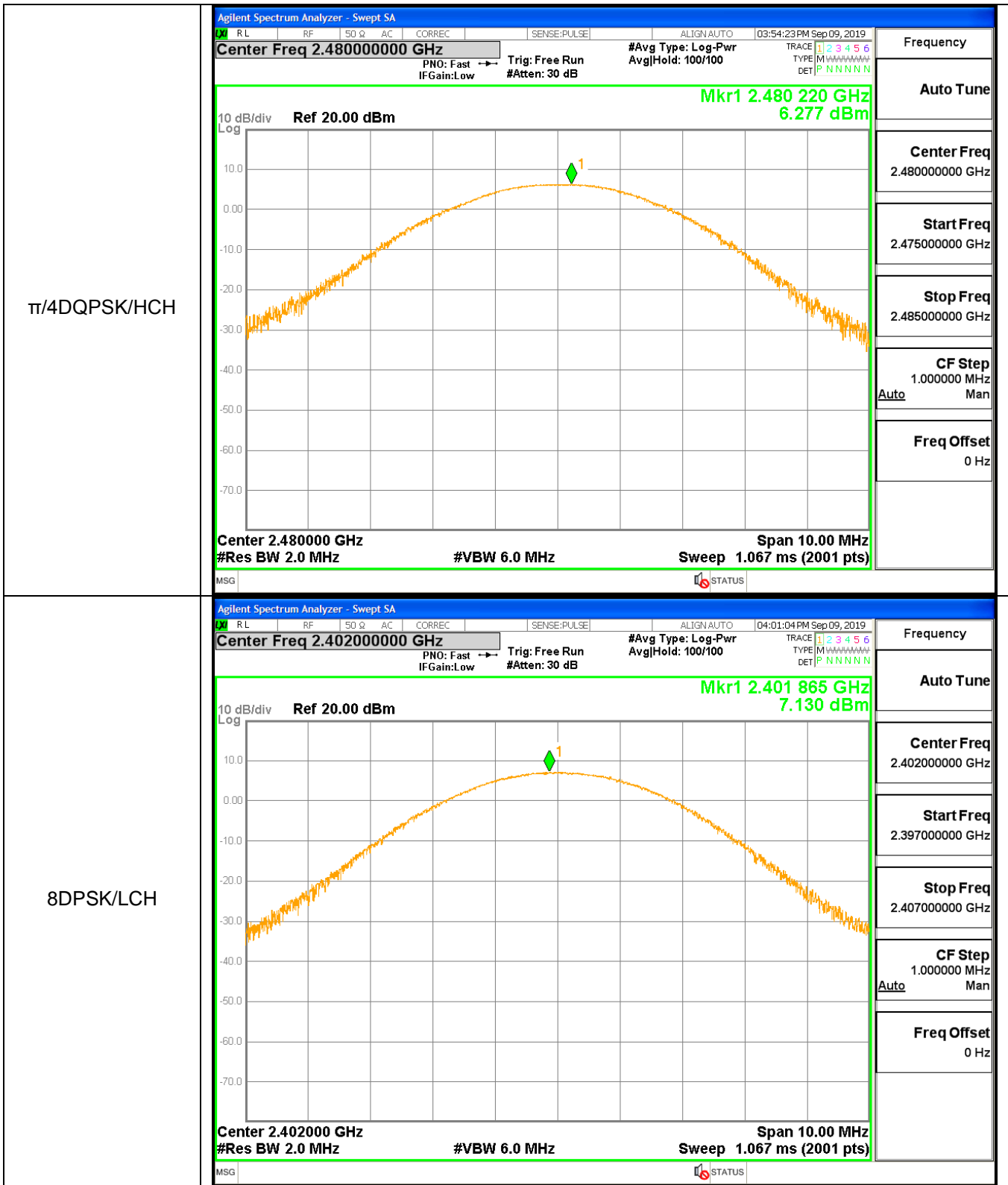
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.364	21	PASS
GFSK	MCH	6.138	21	PASS
GFSK	HCH	5.703	21	PASS
$\pi/4$ DQPSK	LCH	6.980	21	PASS
$\pi/4$ DQPSK	MCH	6.671	21	PASS
$\pi/4$ DQPSK	HCH	6.277	21	PASS
8DPSK	LCH	7.130	21	PASS
8DPSK	MCH	6.837	21	PASS
8DPSK	HCH	6.439	21	PASS

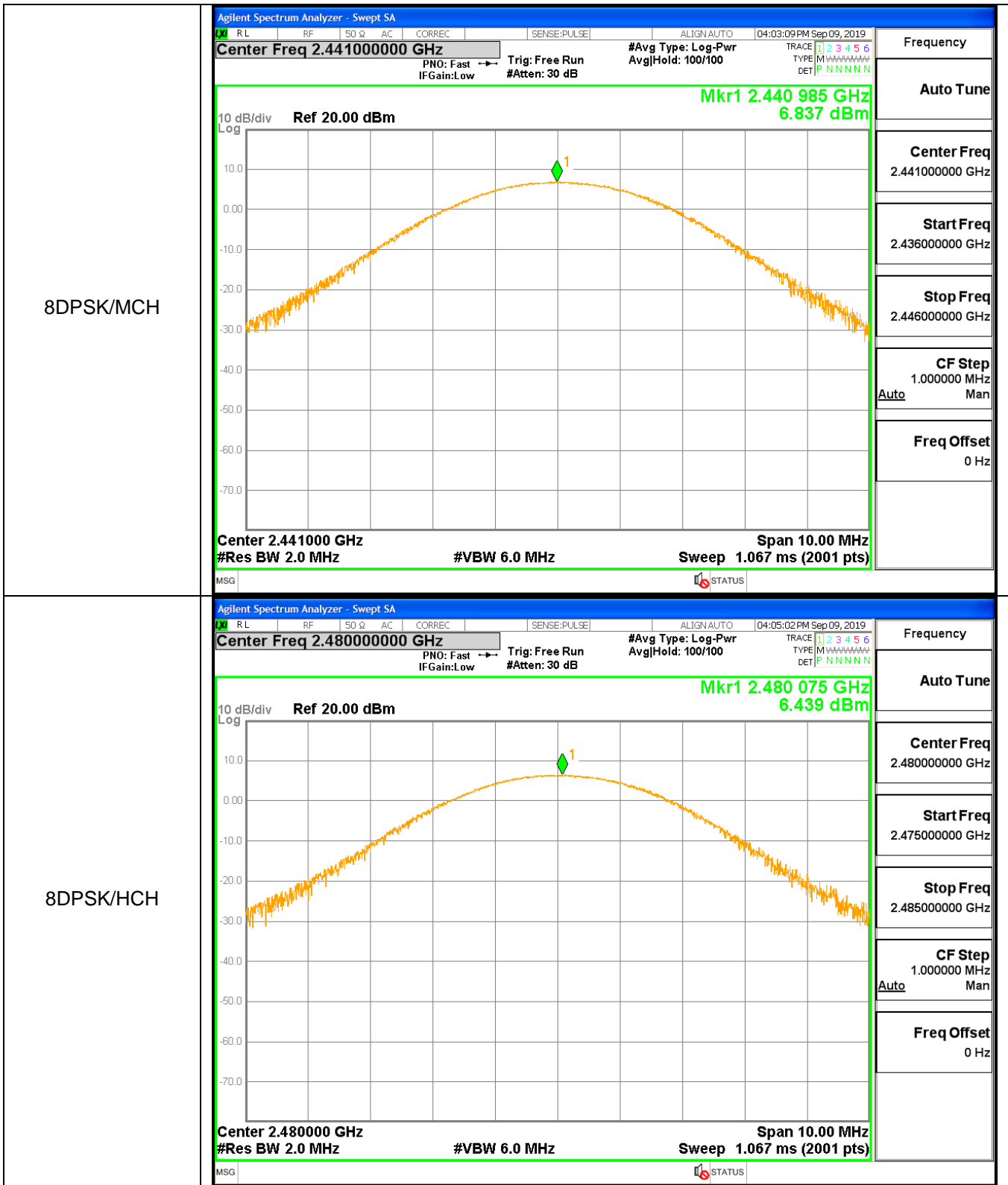
Test Graph









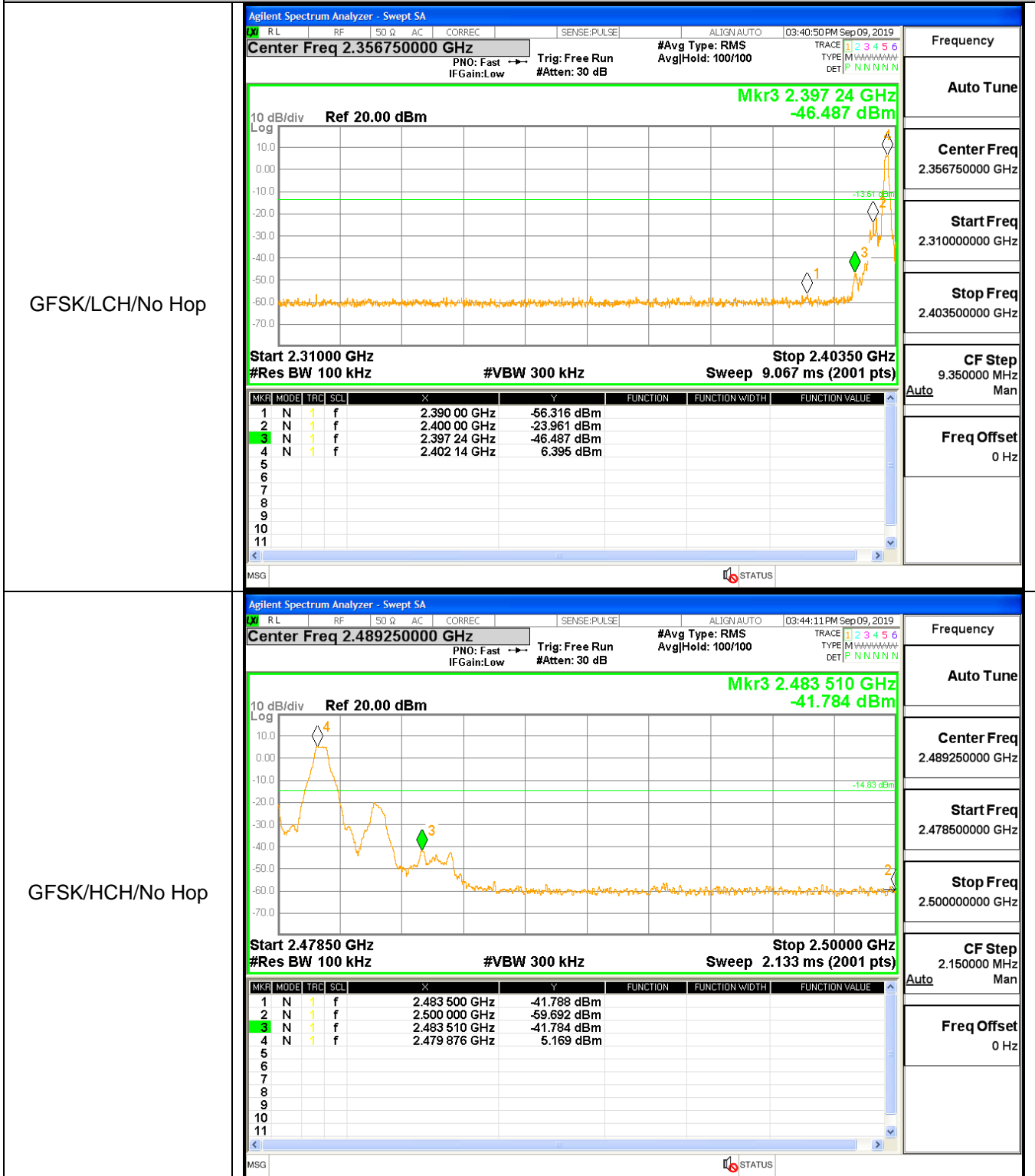


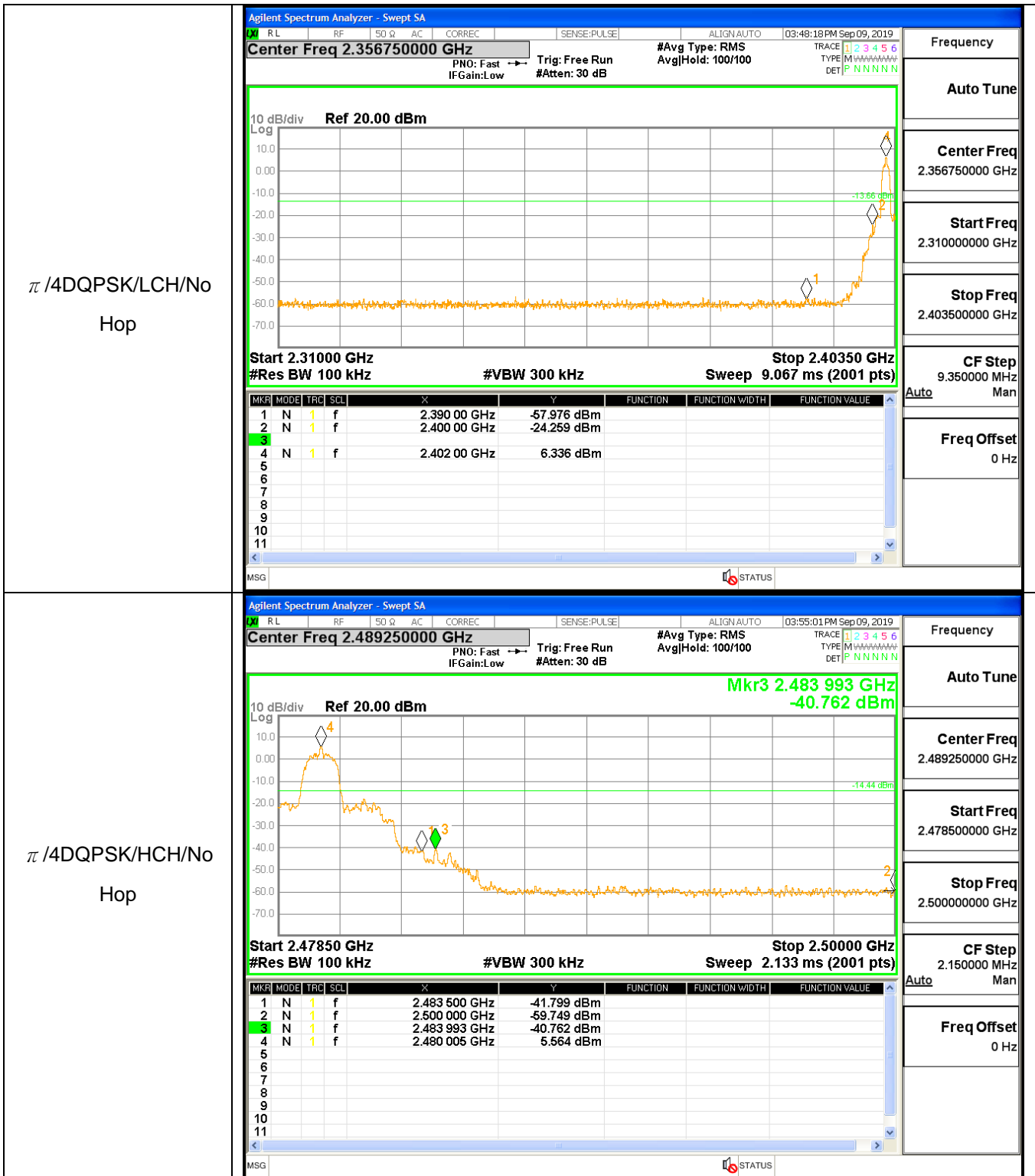
A.6 Band-edge for RF Conducted Emissions

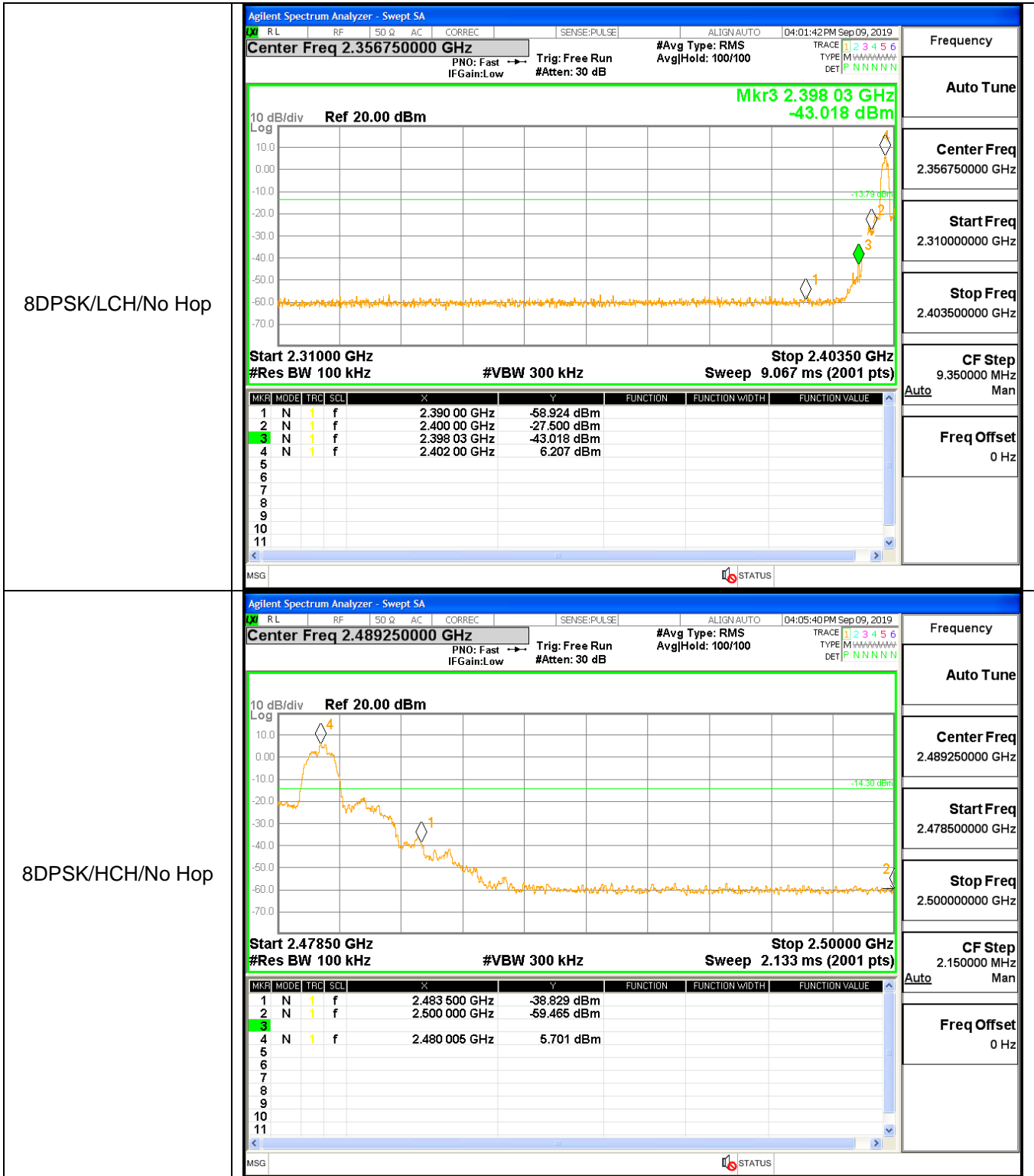
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	6.395	-23.96	-13.605	Pass
1DH5	2480	2483.51	5.169	-41.784	-14.831	Pass
2DH5	2402	2400	6.336	-24.26	-13.664	Pass
2DH5	2480	2483.993	5.564	-40.762	-14.436	Pass
3DH5	2402	2400	6.207	-27.5	-13.793	Pass
3DH5	2480	2483.5	5.701	-38.83	-14.299	Pass
1DH5-Hopping	2402	2400	6.381	-24.038	-13.619	Pass
1DH5-Hopping	2480	2483.5	5.994	-41.677	-14.006	Pass
2DH5-Hopping	2402	2400	6.300	-24.03	-13.700	Pass
2DH5-Hopping	2480	2483.5	5.784	-40.12	-14.216	Pass
3DH5-Hopping	2402	2400	6.323	-28.4	-13.677	Pass
3DH5-Hopping	2480	2483.5	5.943	-42.01	-14.057	Pass

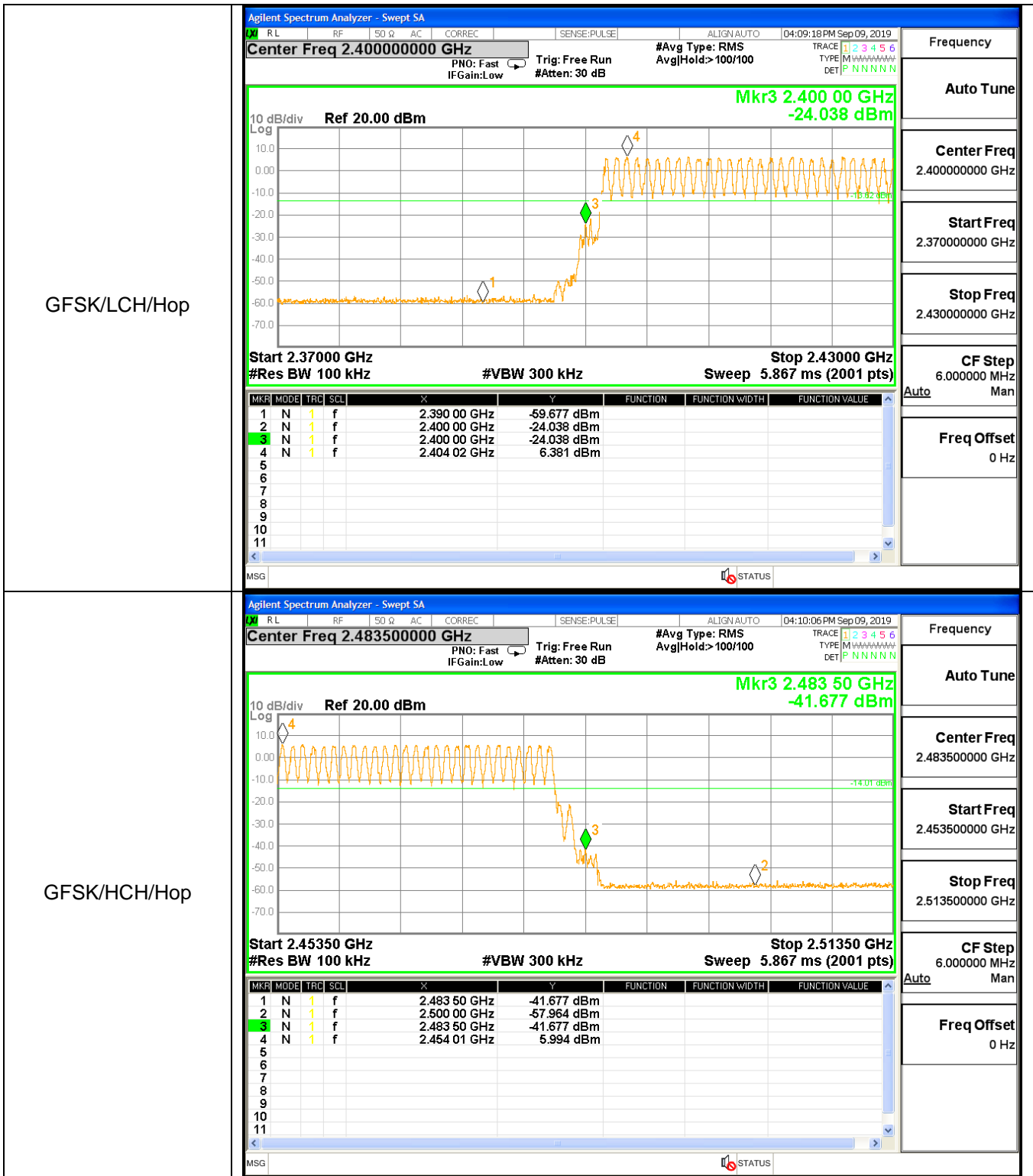
Test Graph

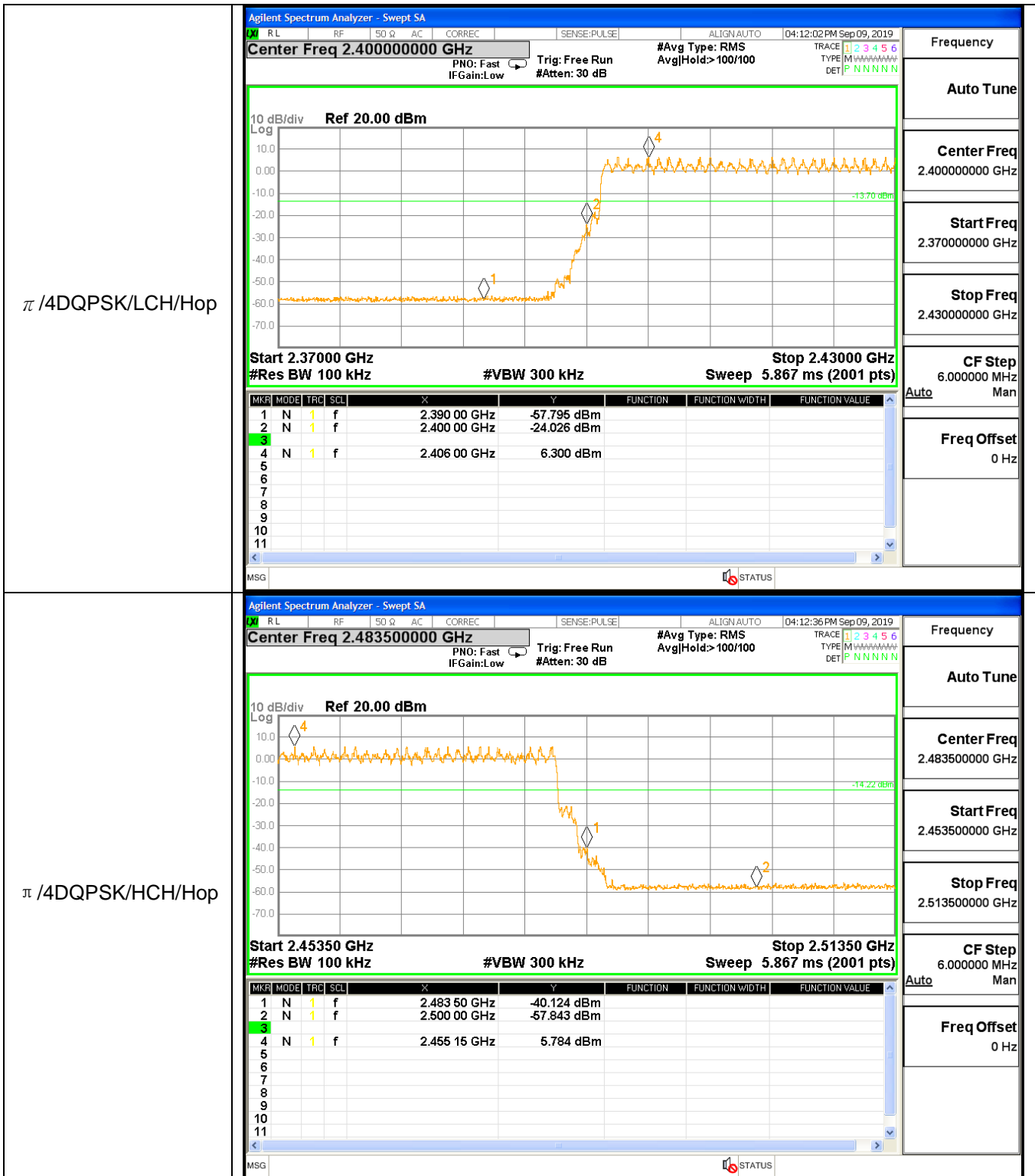
Graphs



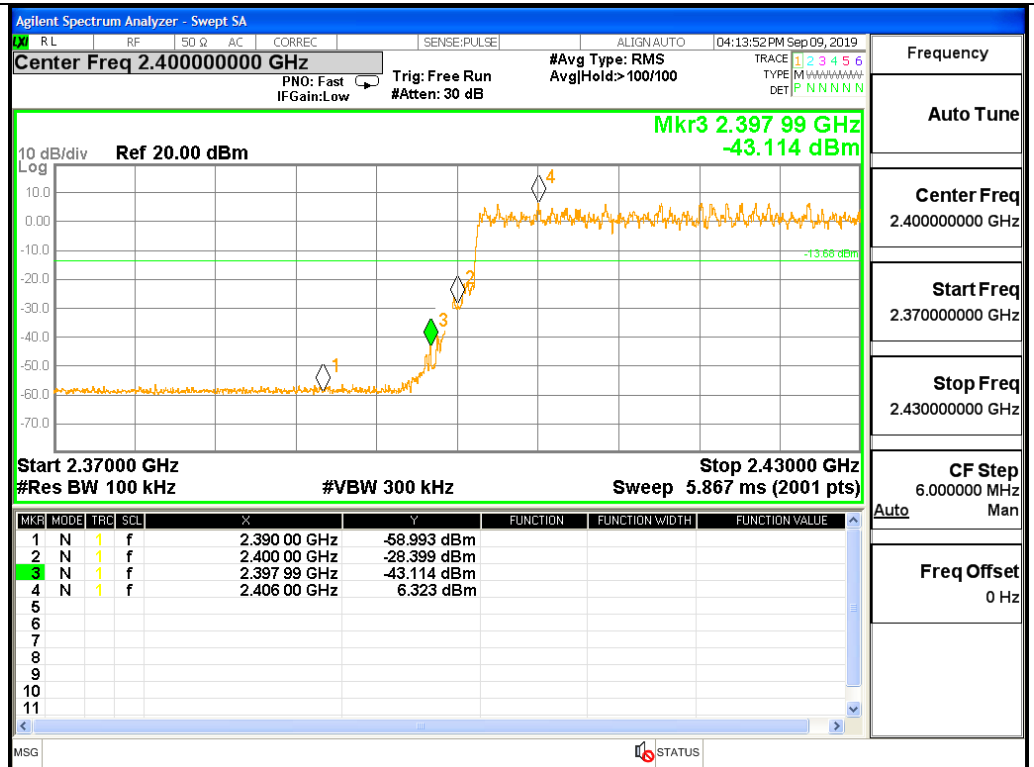






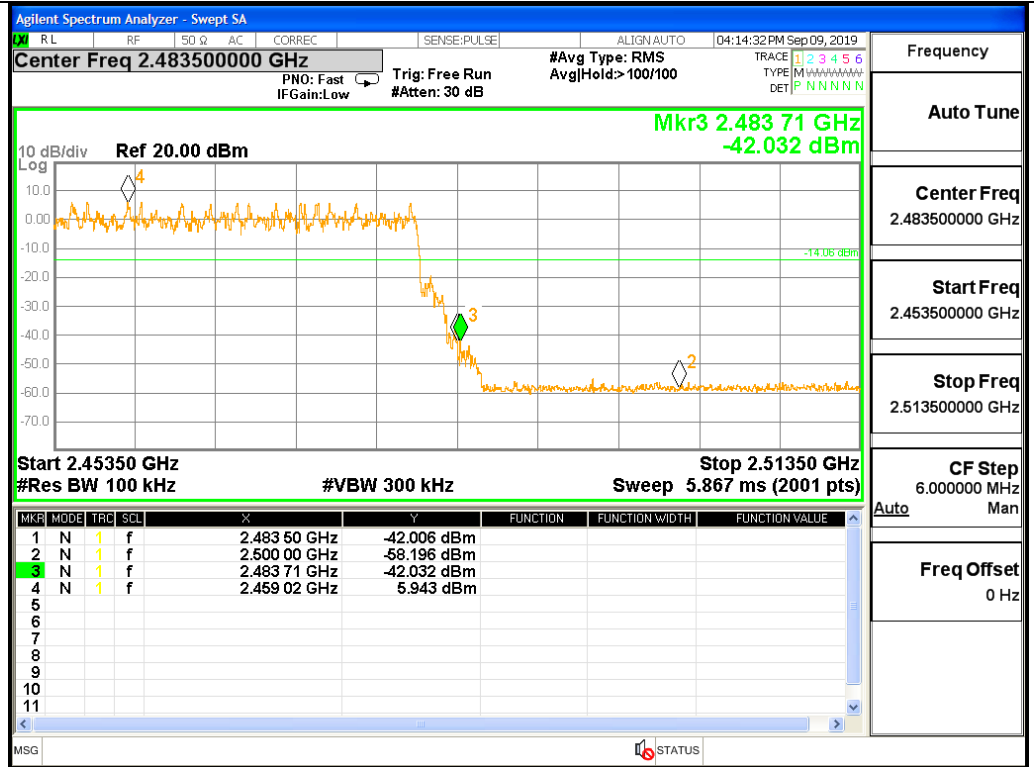


8DPSK/LCH/Hop



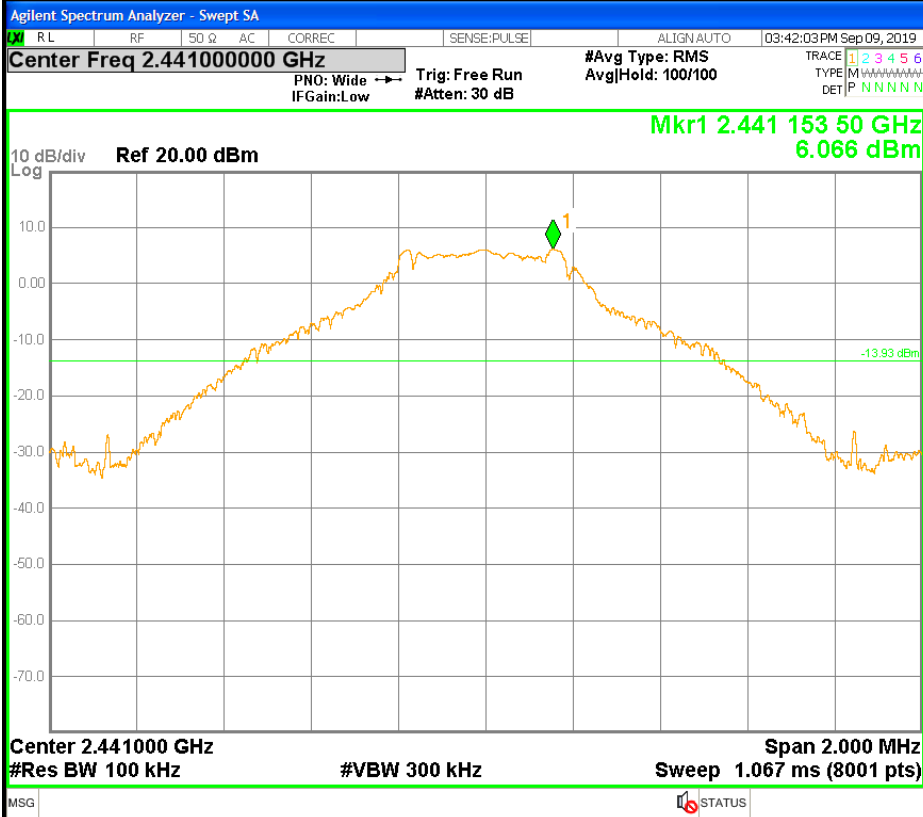
V

8DPSK/HCH/Hop



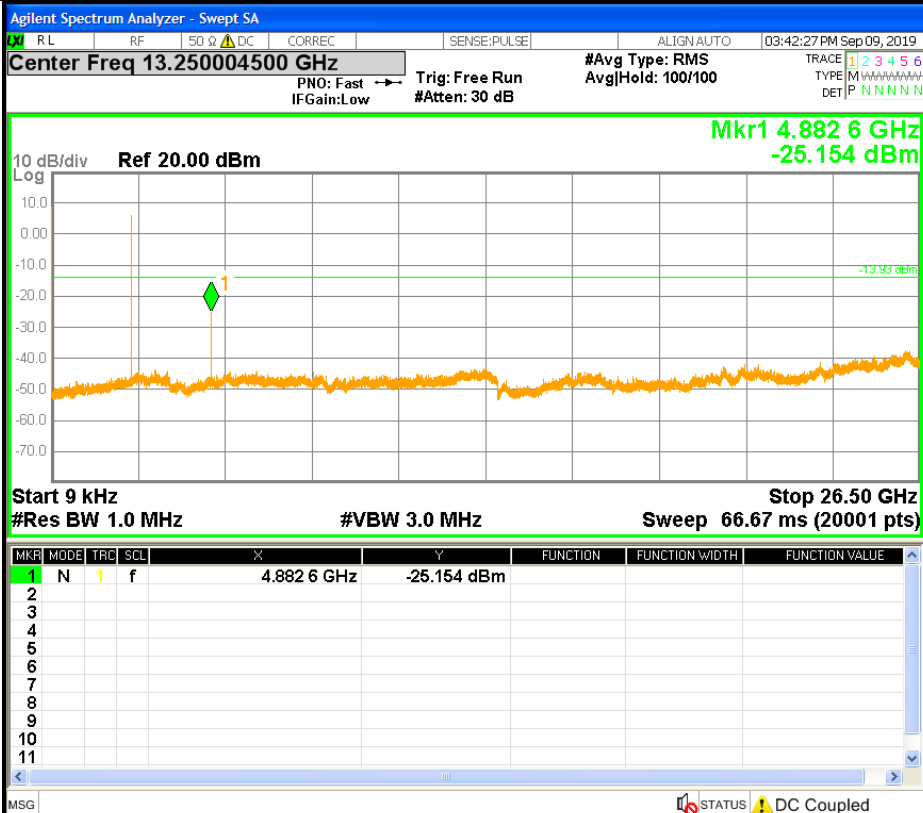
GFSK_MCH_Graphs

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

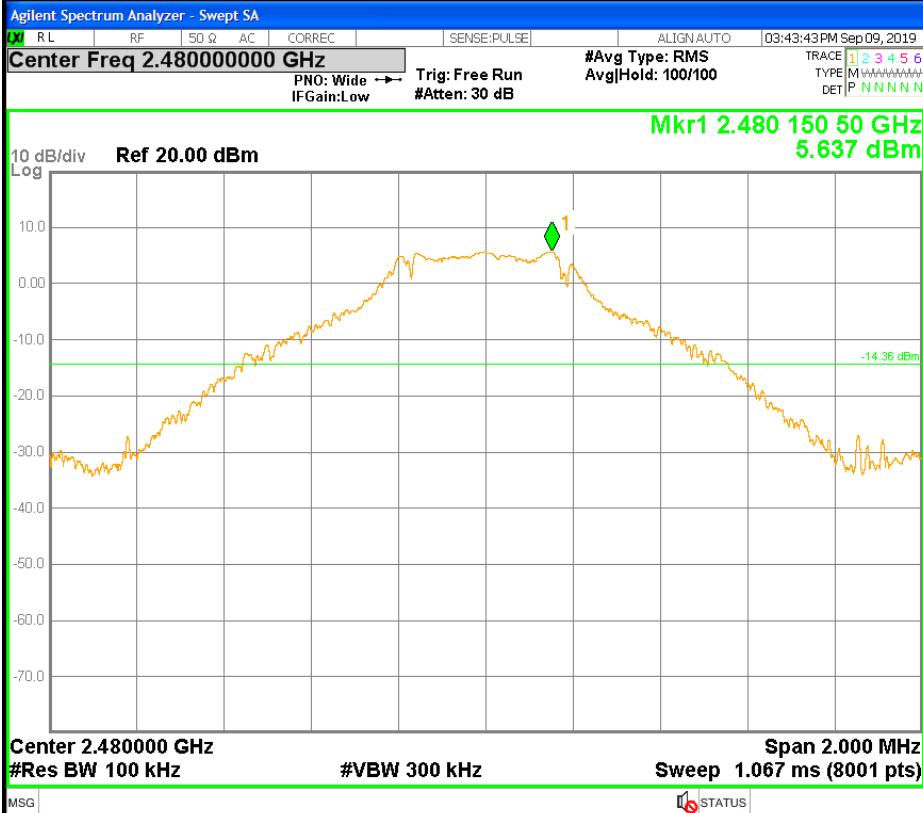
Puw



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

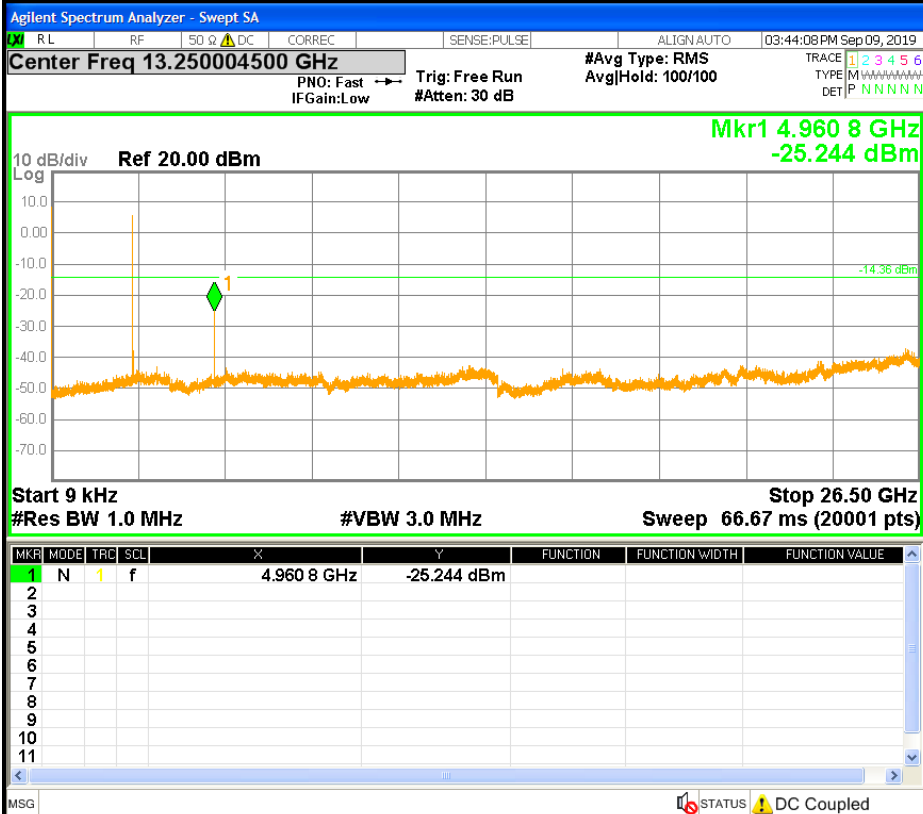
GFSK_HCH_Graphs

Pref



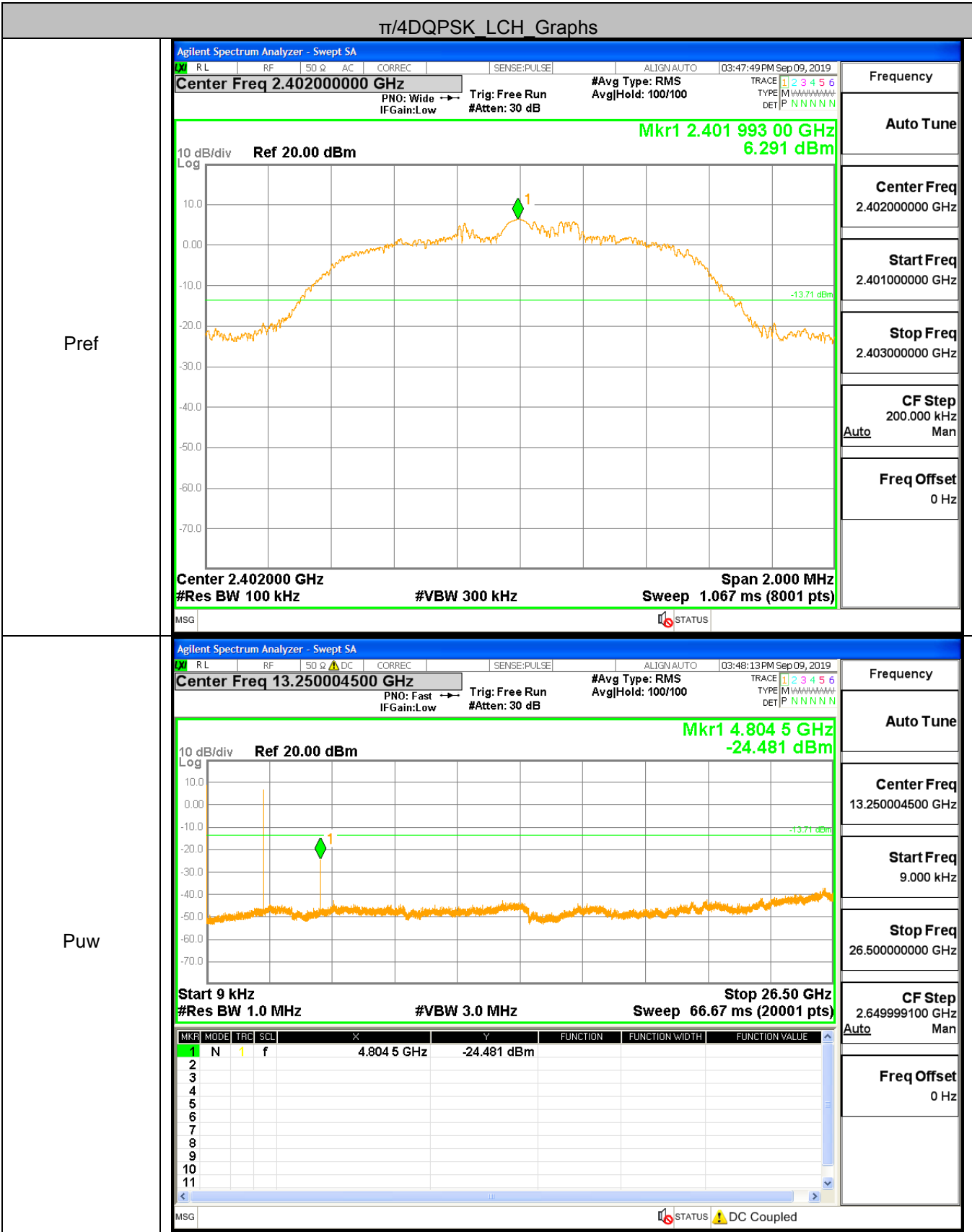
Frequency
Auto Tune
Center Freq 2.48000000 GHz
Start Freq 2.479000000 GHz
Stop Freq 2.481000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw

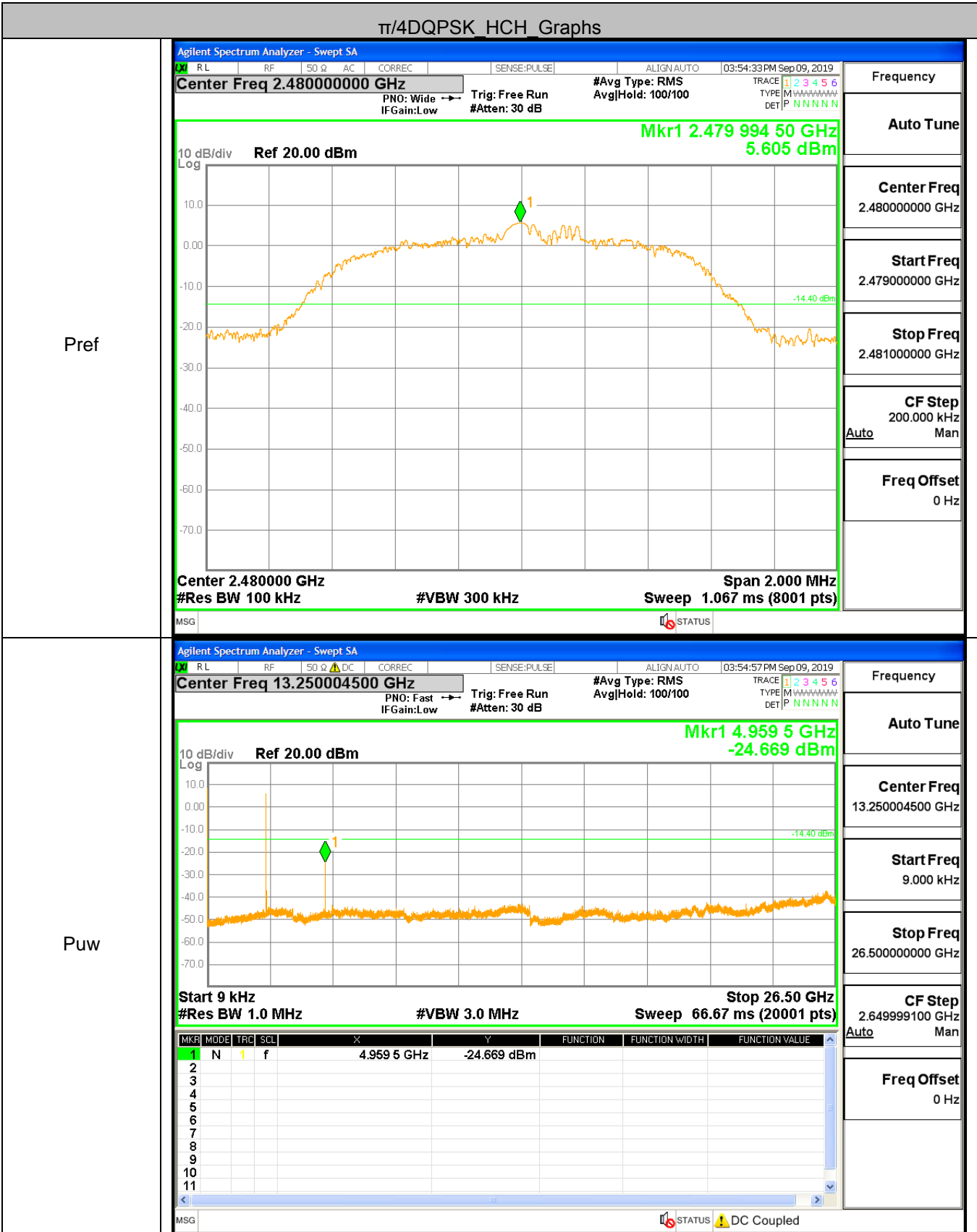


Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK LCH Graphs



$\pi/4$ DQPSK HCH Graphs



Pref

Puw

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

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

Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN:AUTO 03:54:33 PM Sep 09, 2019

Center Freq 2.48000000 GHz PNO: Wide Trig: Free Run #Avg Type: RMS
IFGain:Low #Atten: 30 dB AvgHold: 100/100

10 dB/div Ref 20.00 dBm Log

Mkr1 2.479 994 50 GHz
5.605 dBm

Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts)

MSG STATUS

Agilent Spectrum Analyzer - Swept SA

RL RF 50 Ω DC CORREC SENSE:PULSE ALIGN:AUTO 03:54:57 PM Sep 09, 2019

Center Freq 13.250004500 GHz PNO: Fast Trig: Free Run #Avg Type: RMS
IFGain:Low #Atten: 30 dB AvgHold: 100/100

10 dB/div Ref 20.00 dBm Log

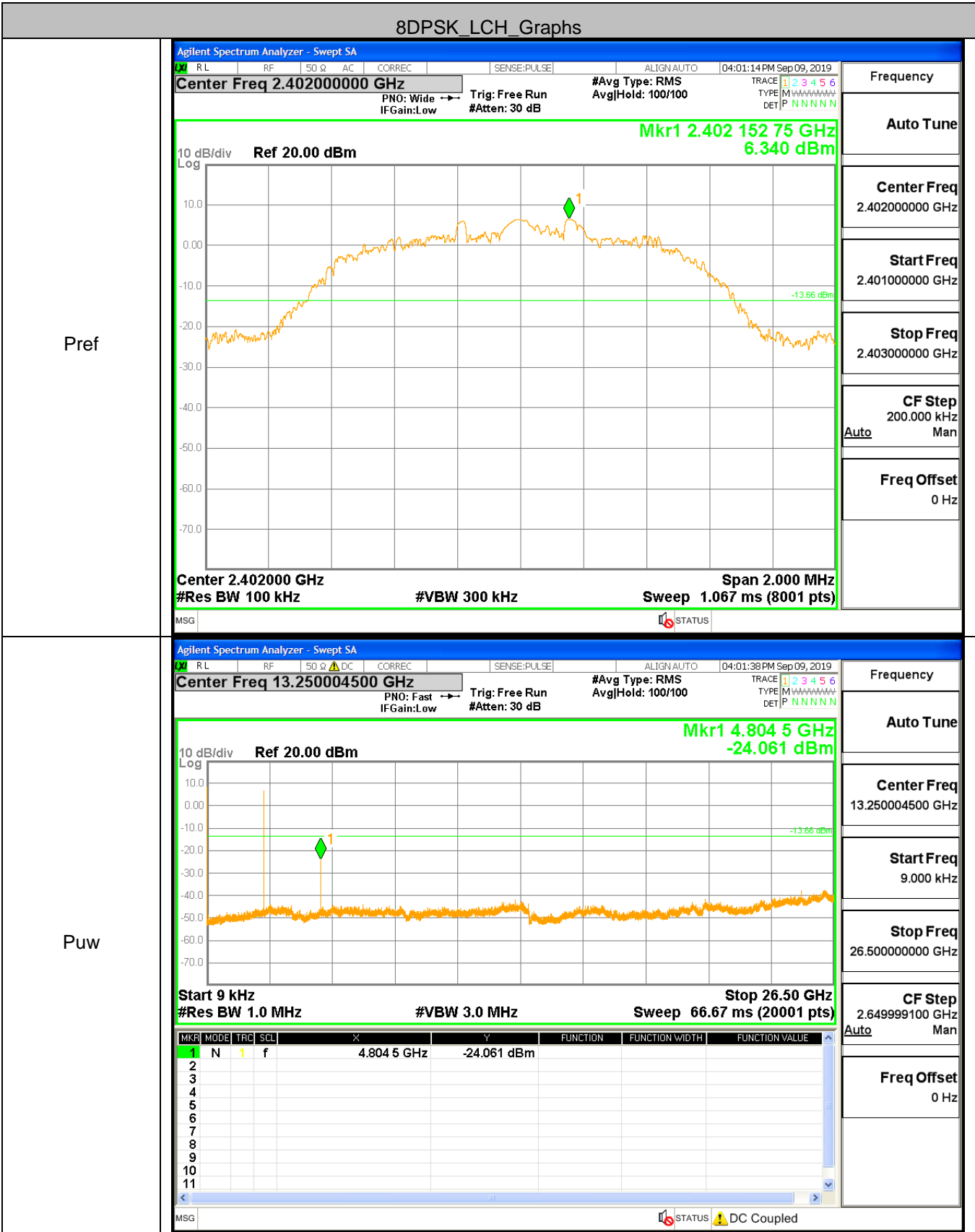
Mkr1 4.959 5 GHz
-24.669 dBm

Start 9 kHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 66.67 ms (20001 pts)

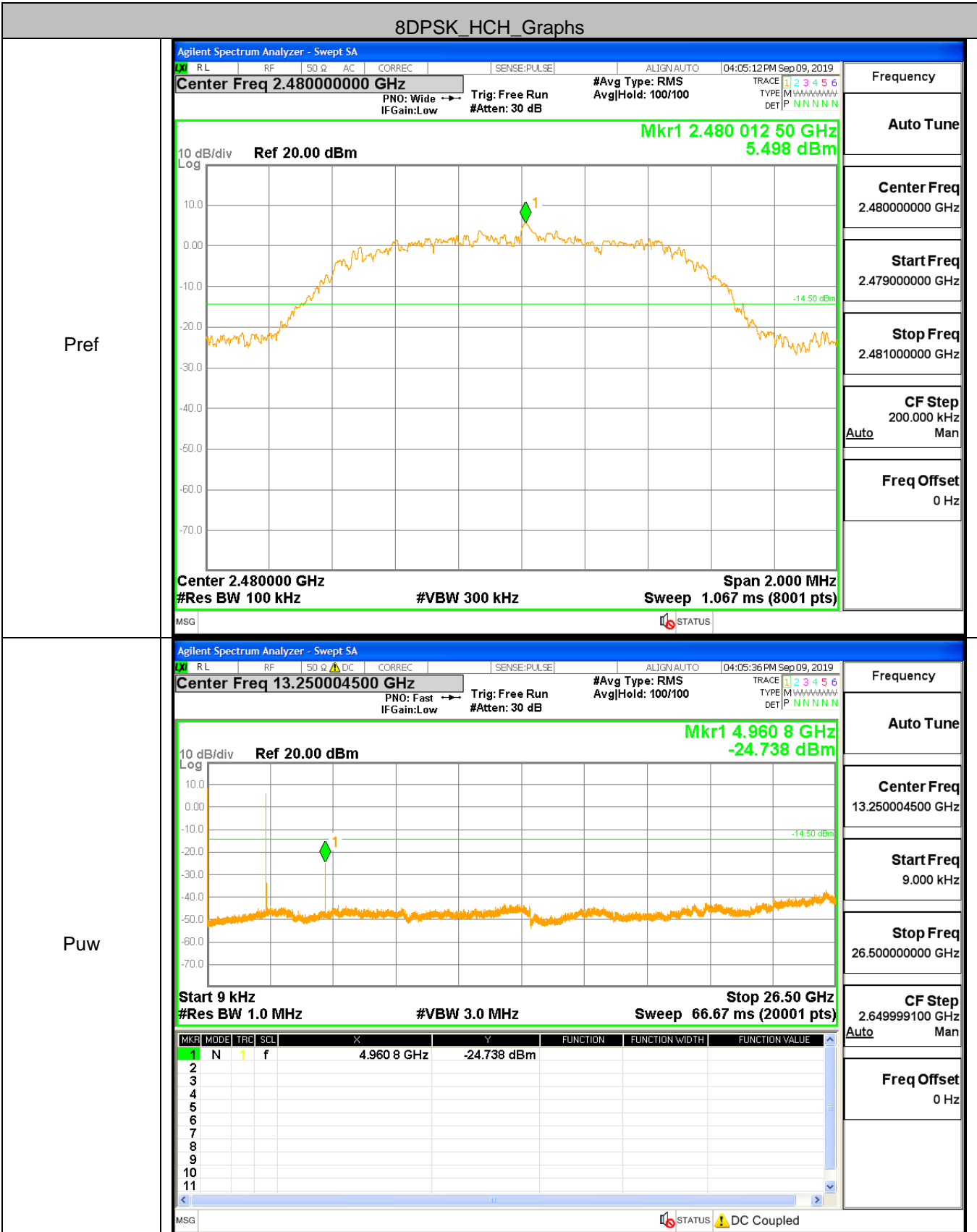
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	4.959 5 GHz	-24.669 dBm			
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS DC Coupled

8DPSK_LCH_Graphs



8DPSK_HCH_Graphs

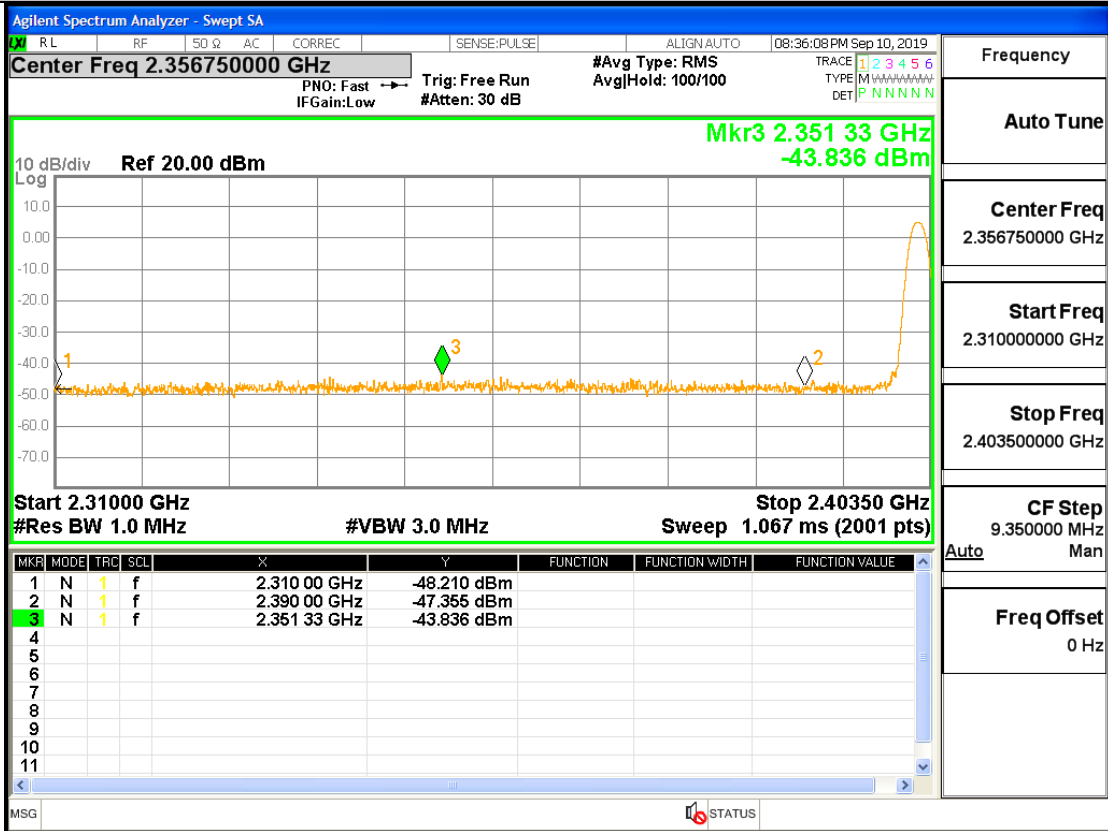


A.8 Restrict-band band-edge measurements

Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2351.33	2.00	0.00	-43.84	53.36	74	Pass
1DH5	2480	2483.50	2.00	0.00	-44.73	52.47	74	Pass
2DH5	2402	2380.92	2.00	0.00	-44.41	52.79	74	Pass
2DH5	2480	2483.50	2.00	0.00	-47.04	50.16	74	Pass
3DH5	2402	2390.00	2.00	0.00	-47.62	49.58	74	Pass
3DH5	2480	2483.50	2.00	0.00	-46.84	50.36	74	Pass

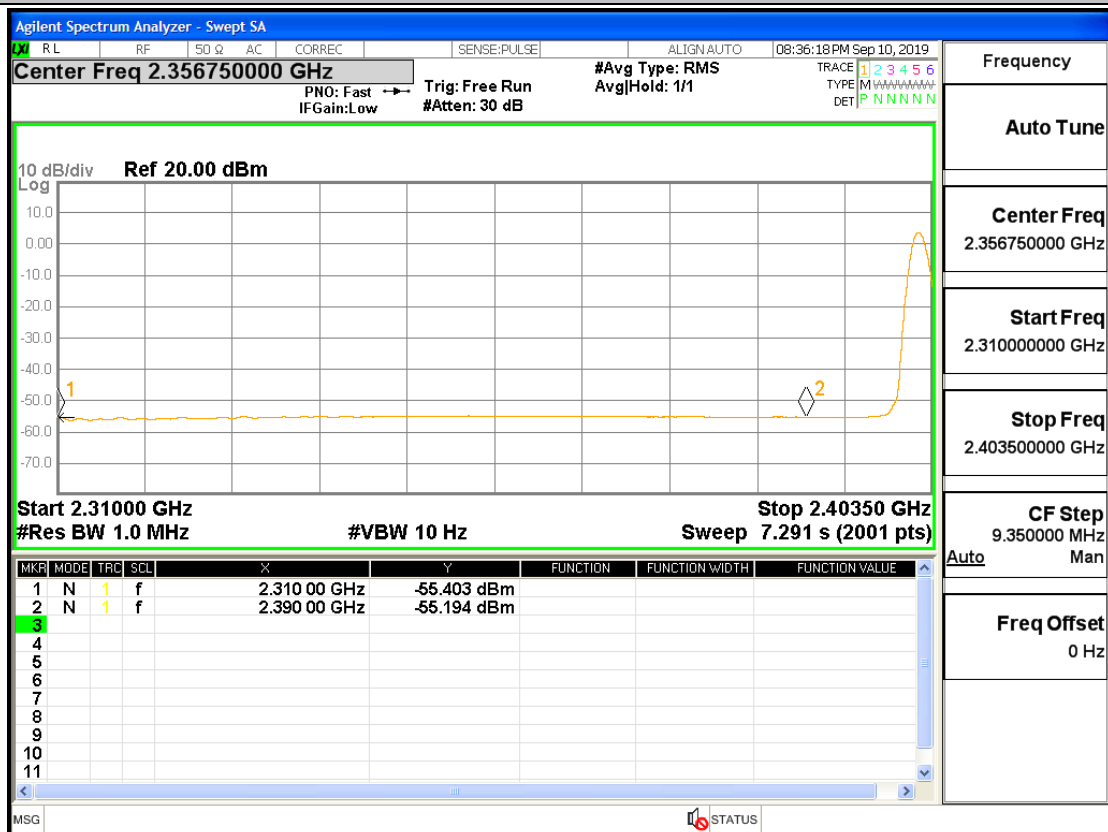
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2351.33	2.00	0.00	-55.19	42.01	54	Pass
1DH5	2480	2483.50	2.00	0.00	-52.78	44.42	54	Pass
2DH5	2402	2380.92	2.00	0.00	-55.60	41.60	54	Pass
2DH5	2480	2483.50	2.00	0.00	-52.72	44.48	54	Pass
3DH5	2402	2390.00	2.00	0.00	-55.58	41.62	54	Pass
3DH5	2480	2483.50	2.00	0.00	-52.72	44.48	54	Pass

Restrict-band band-edge measurements_2402_PEAK_DH5



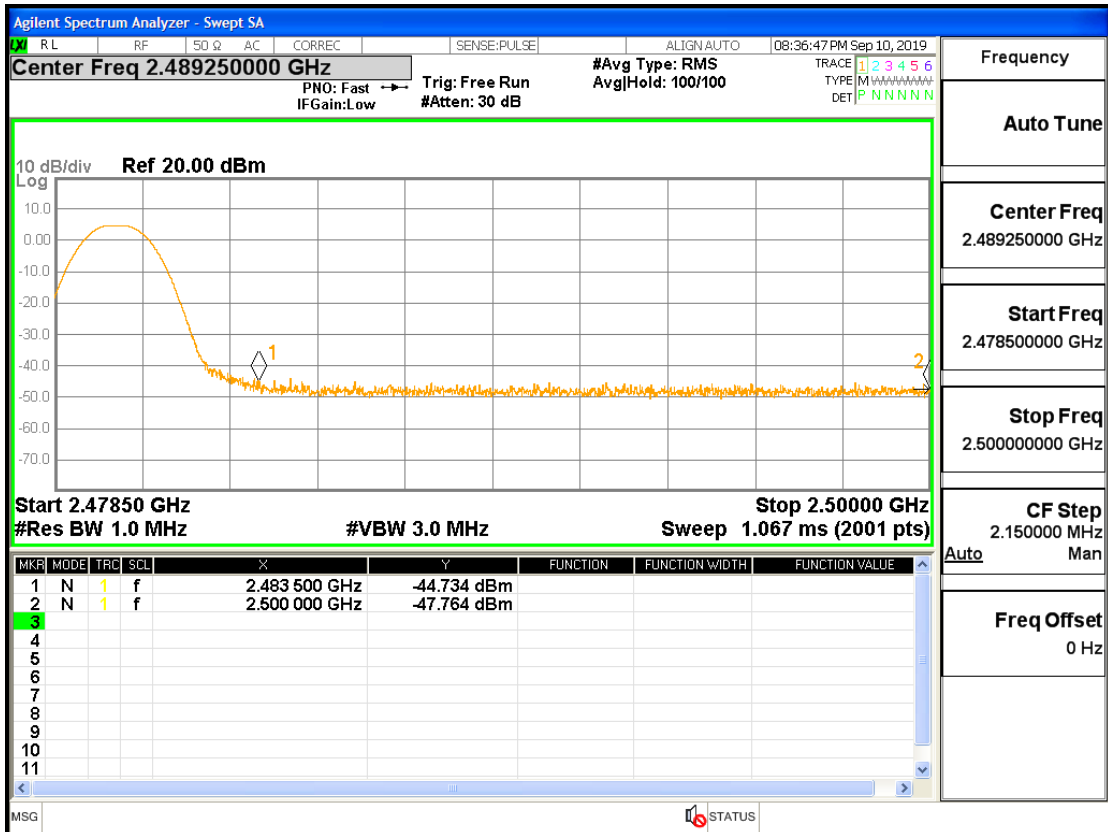
Frequency	
Auto Tune	
Center Freq	2.356750000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.403500000 GHz
CF Step	9.350000 MHz
Auto	Man
Freq Offset	0 Hz

Restrict-band band-edge measurements_2402_AV_DH5

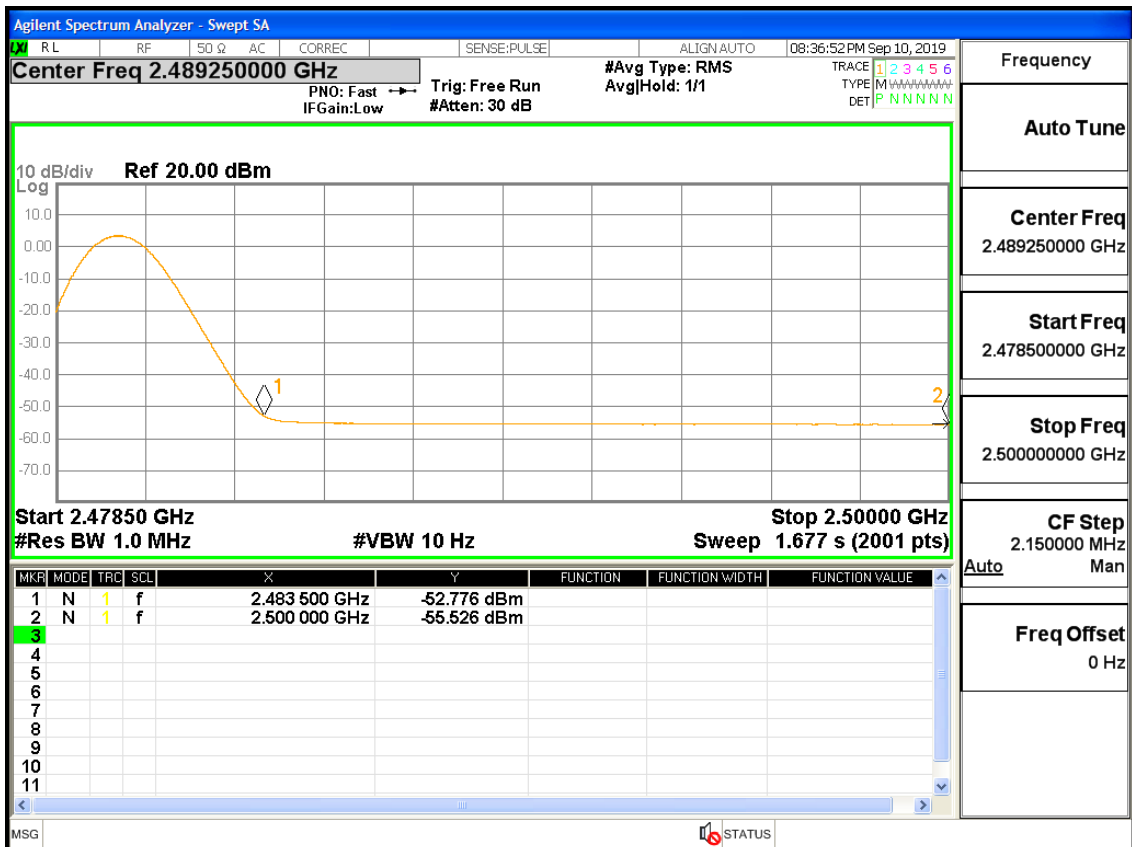


Frequency	
Auto Tune	
Center Freq	2.356750000 GHz
Start Freq	2.310000000 GHz
Stop Freq	2.403500000 GHz
CF Step	9.350000 MHz
Auto	Man
Freq Offset	0 Hz

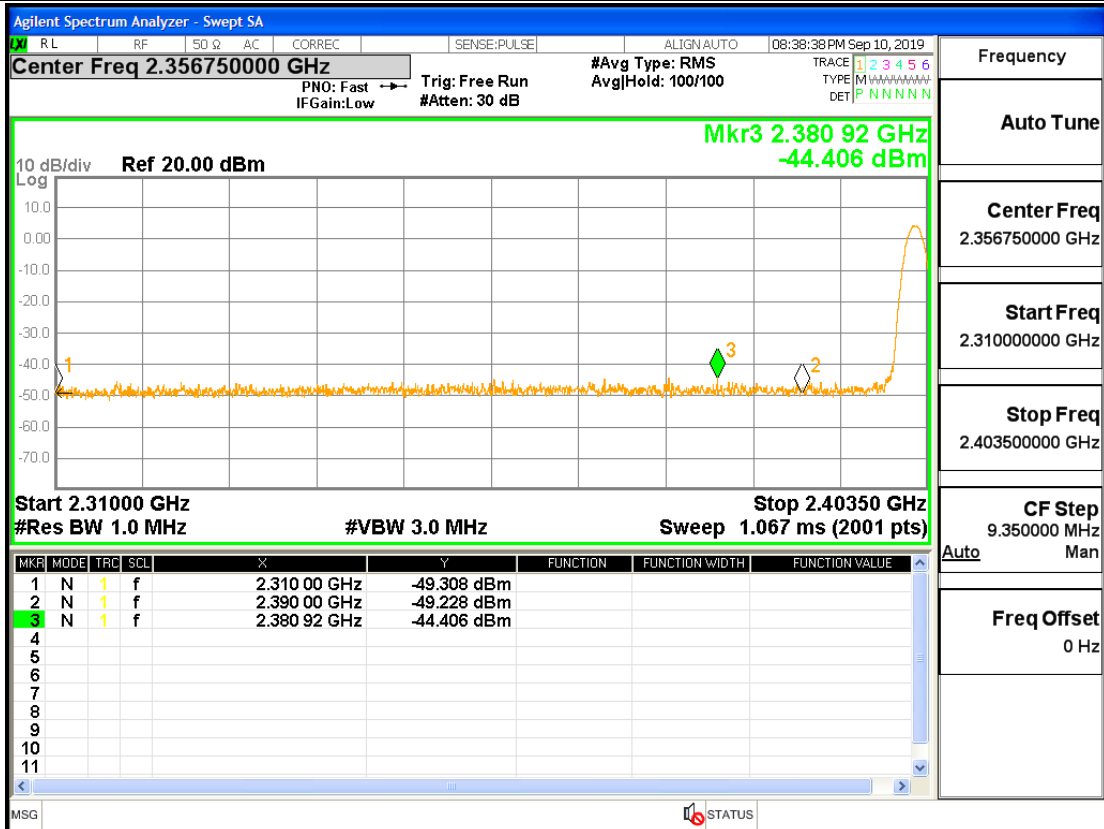
Restrict-band band-edge measurements_2480_PEAK_DH5



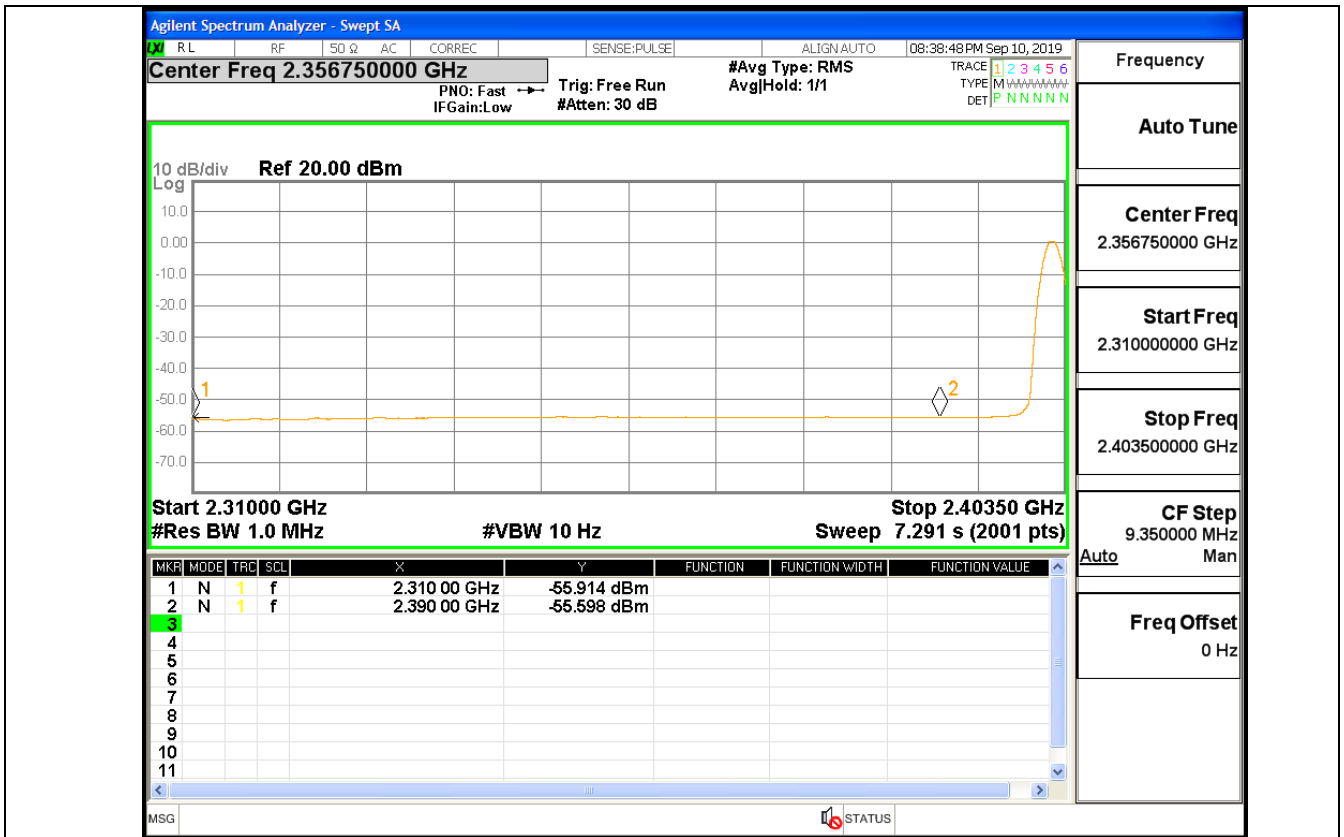
Restrict-band band-edge measurements_2480_AV_DH5



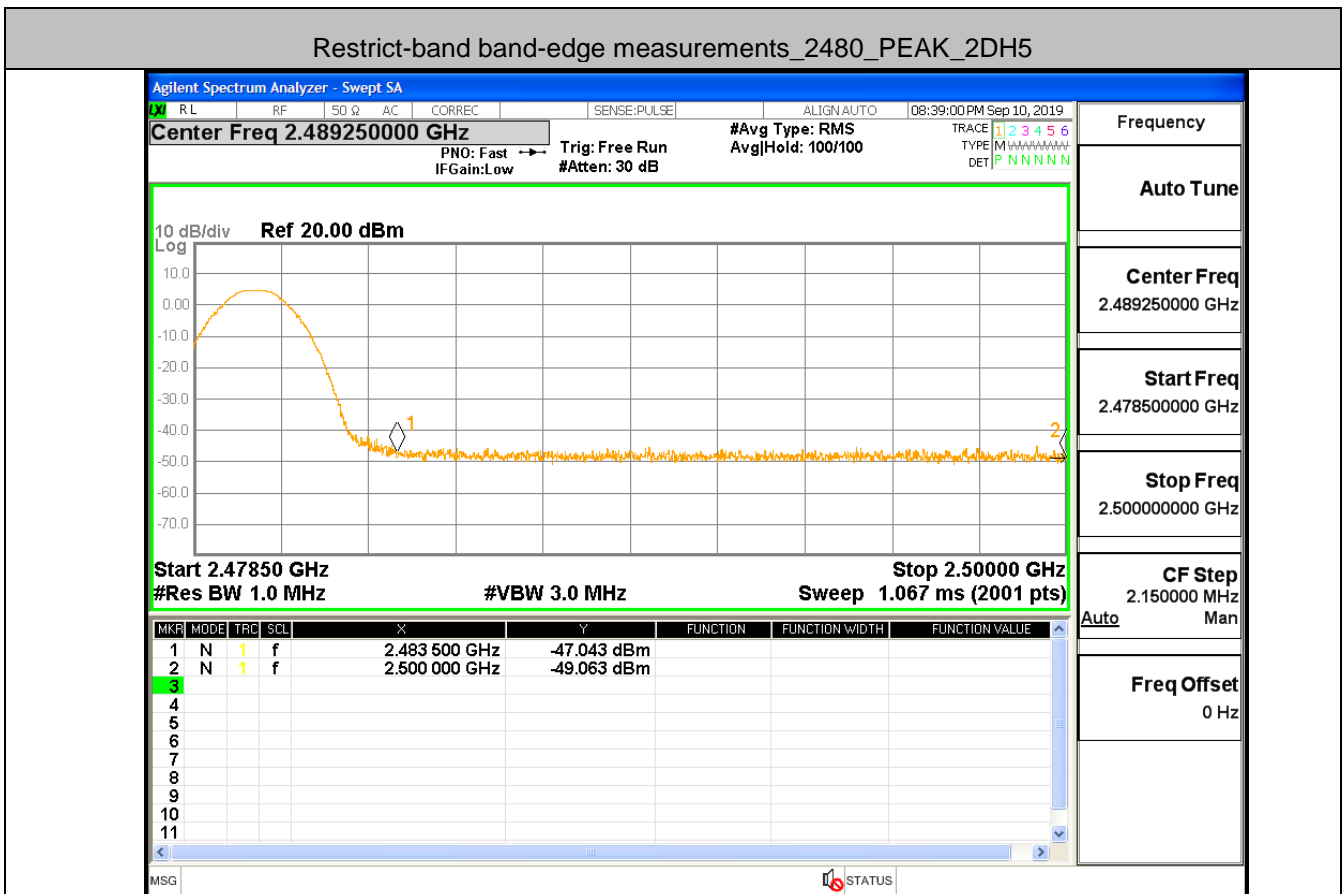
Restrict-band band-edge measurements_2402_PEAK_2DH5



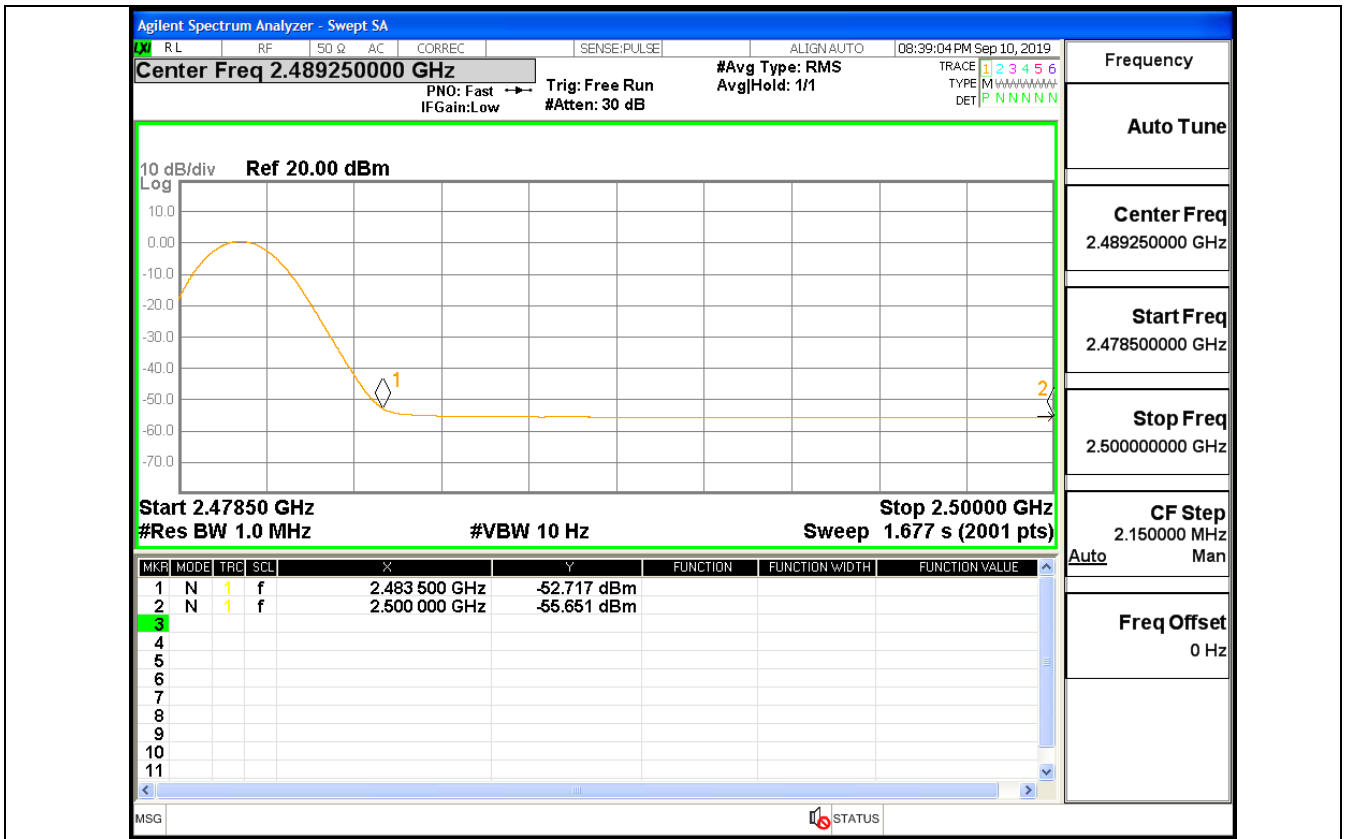
Restrict-band band-edge measurements_2402_AV_2DH5



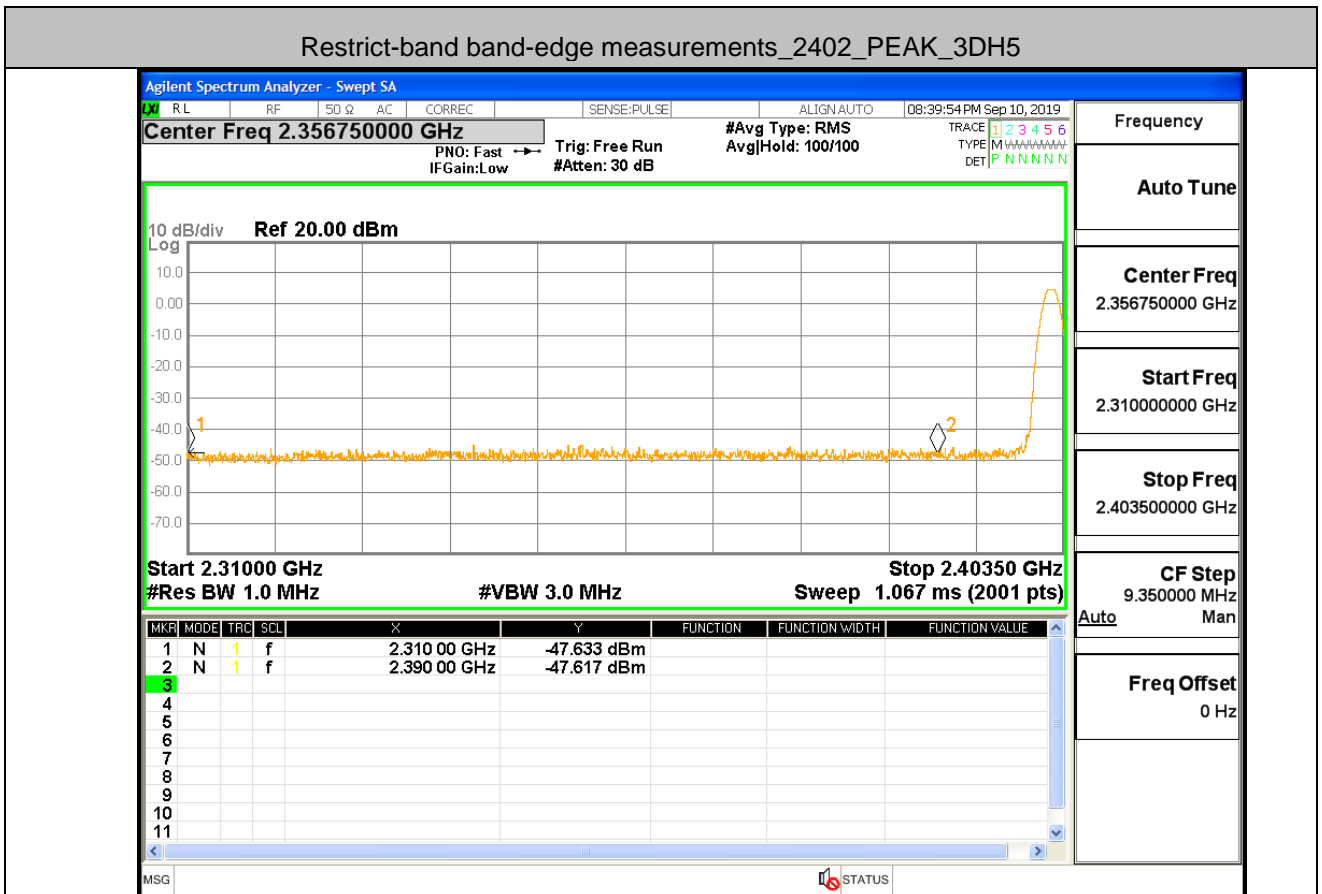
Restrict-band band-edge measurements_2480_PEAK_2DH5



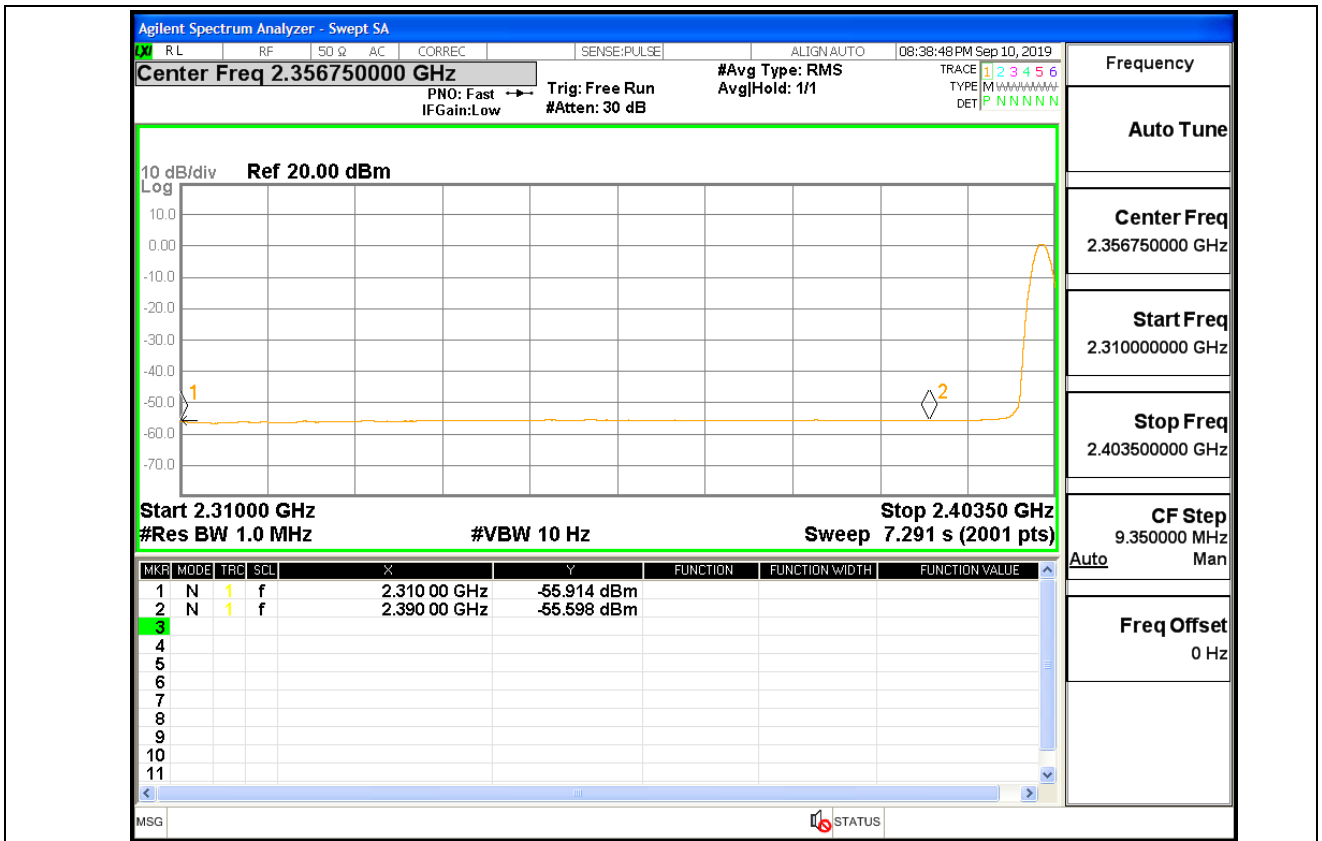
Restrict-band band-edge measurements_2480_AV_2DH5



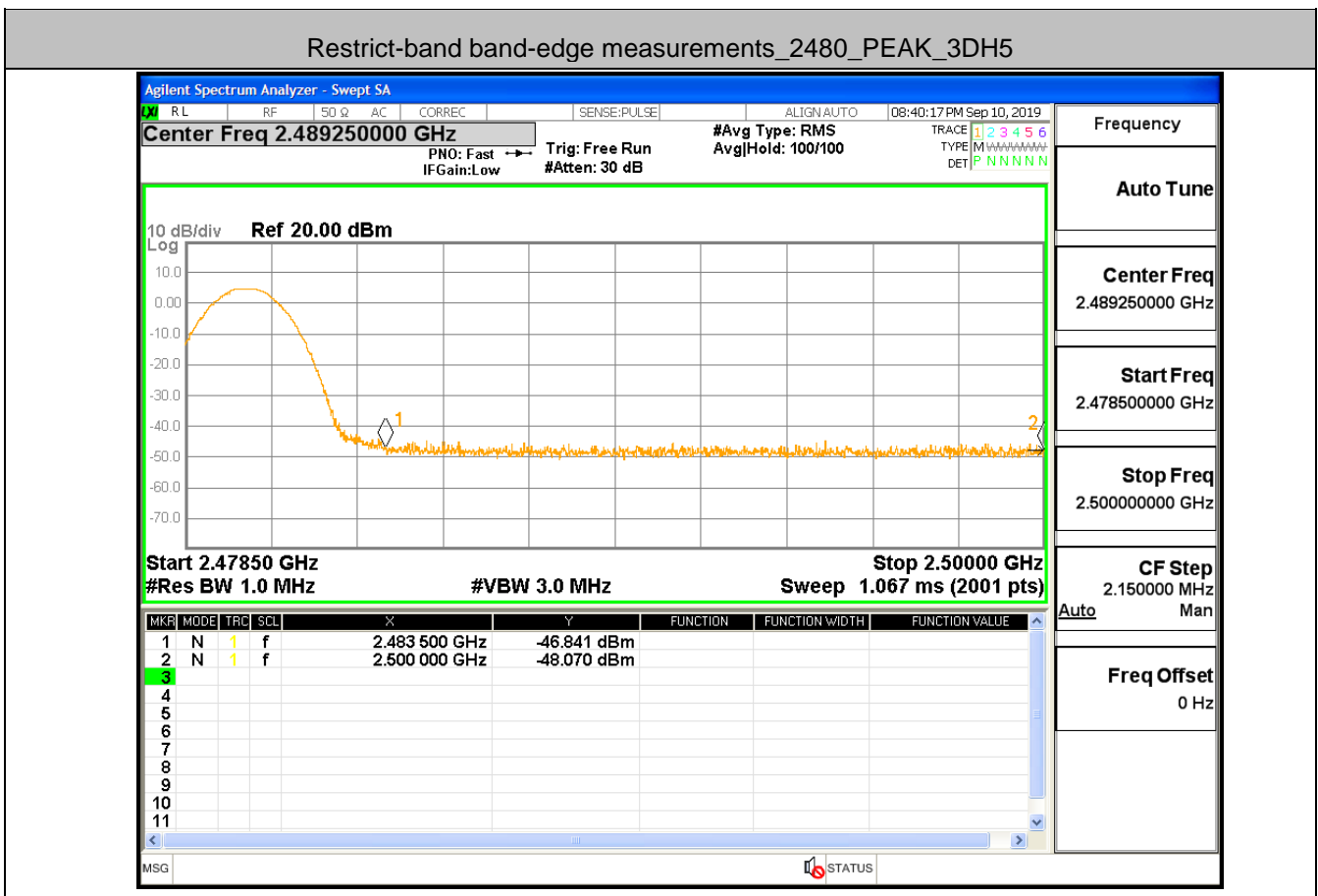
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5



Frequency
Auto Tune
Center Freq 2.489250000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.500000000 GHz
CF Step 2.150000 MHz Auto Man
Freq Offset 0 Hz