

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

**Product Name: 4G Mobile phone**

**Trade Mark: NYX Mobile**

**Test Model: Nickel**

**FCC ID: YPVITALCOMNICKEL**

**Environmental Conditions**

Temperature:	22.5° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

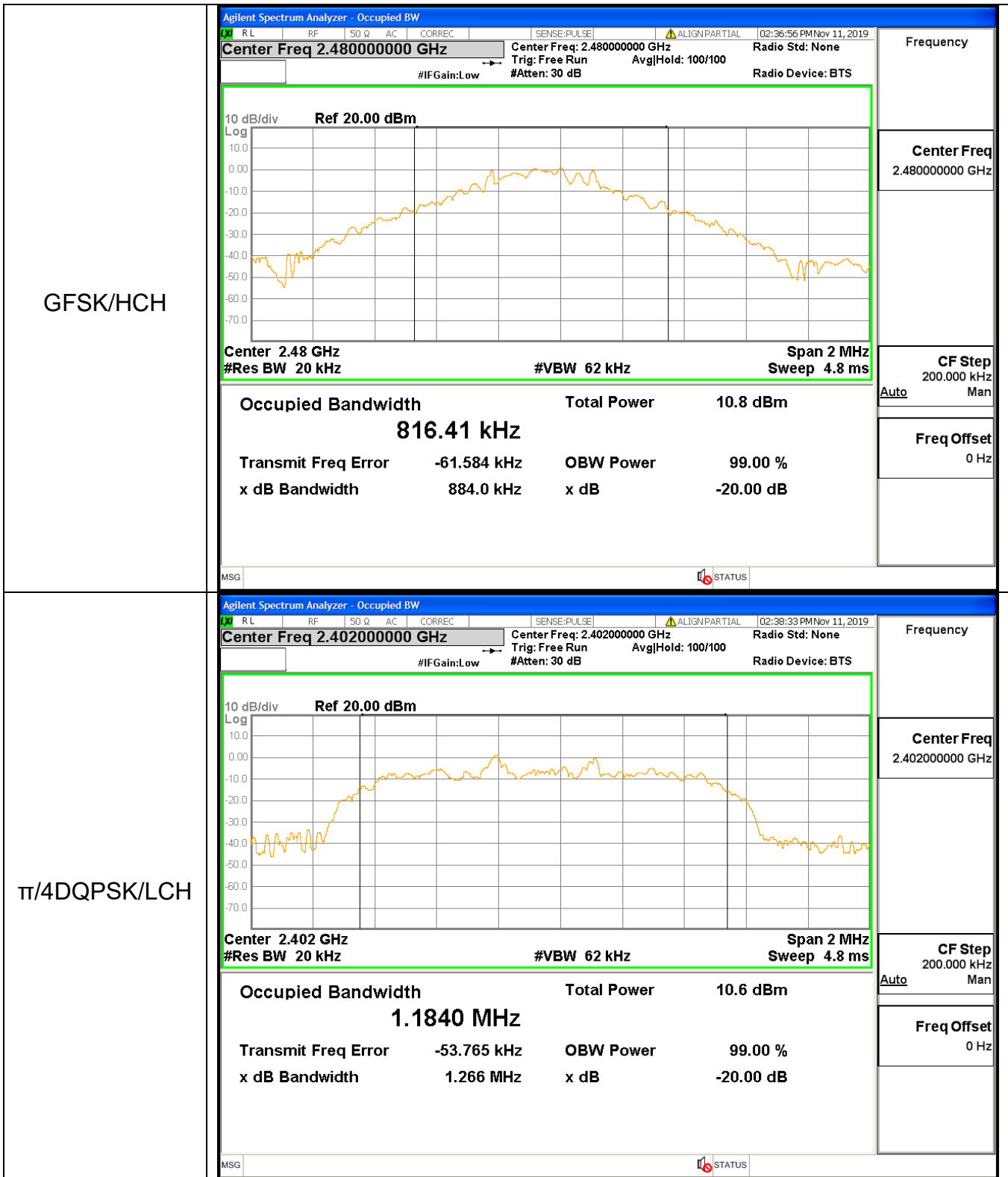
**A.1 20 dB Bandwidth**

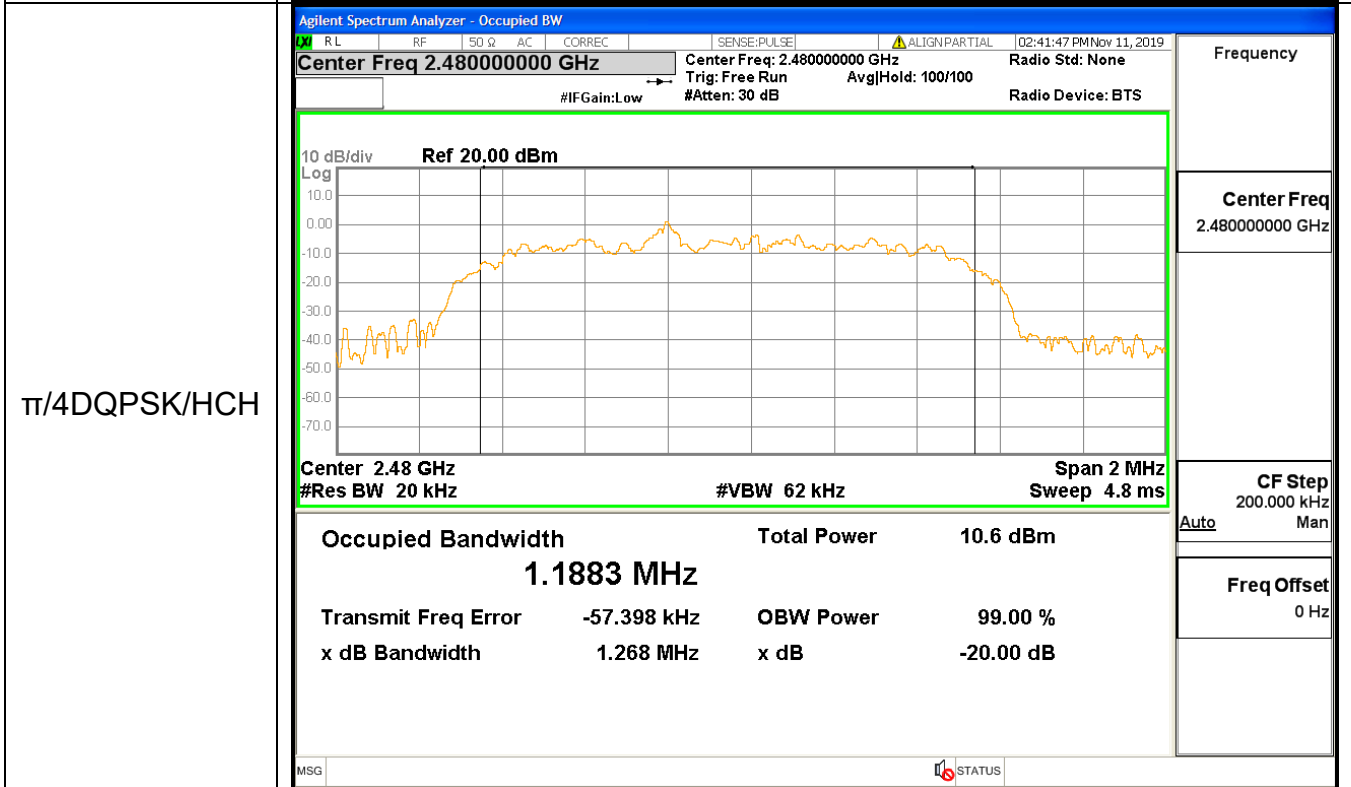
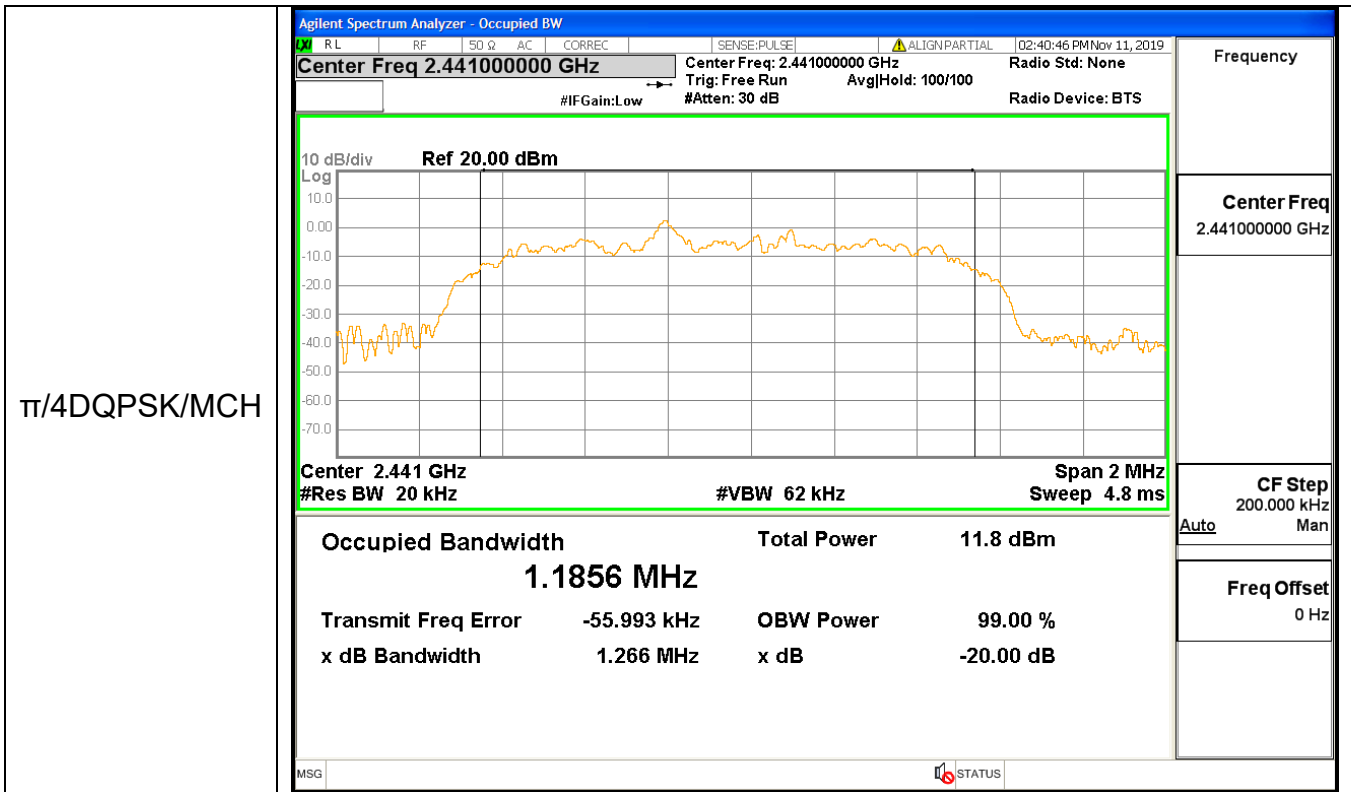
Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.856	Not Specified	PASS
GFSK	MCH	0.883	Not Specified	PASS
GFSK	HCH	0.884	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.266	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.266	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.268	Not Specified	PASS
8DPSK	LCH	1.309	Not Specified	PASS
8DPSK	MCH	1.270	Not Specified	PASS
8DPSK	HCH	1.264	Not Specified	PASS

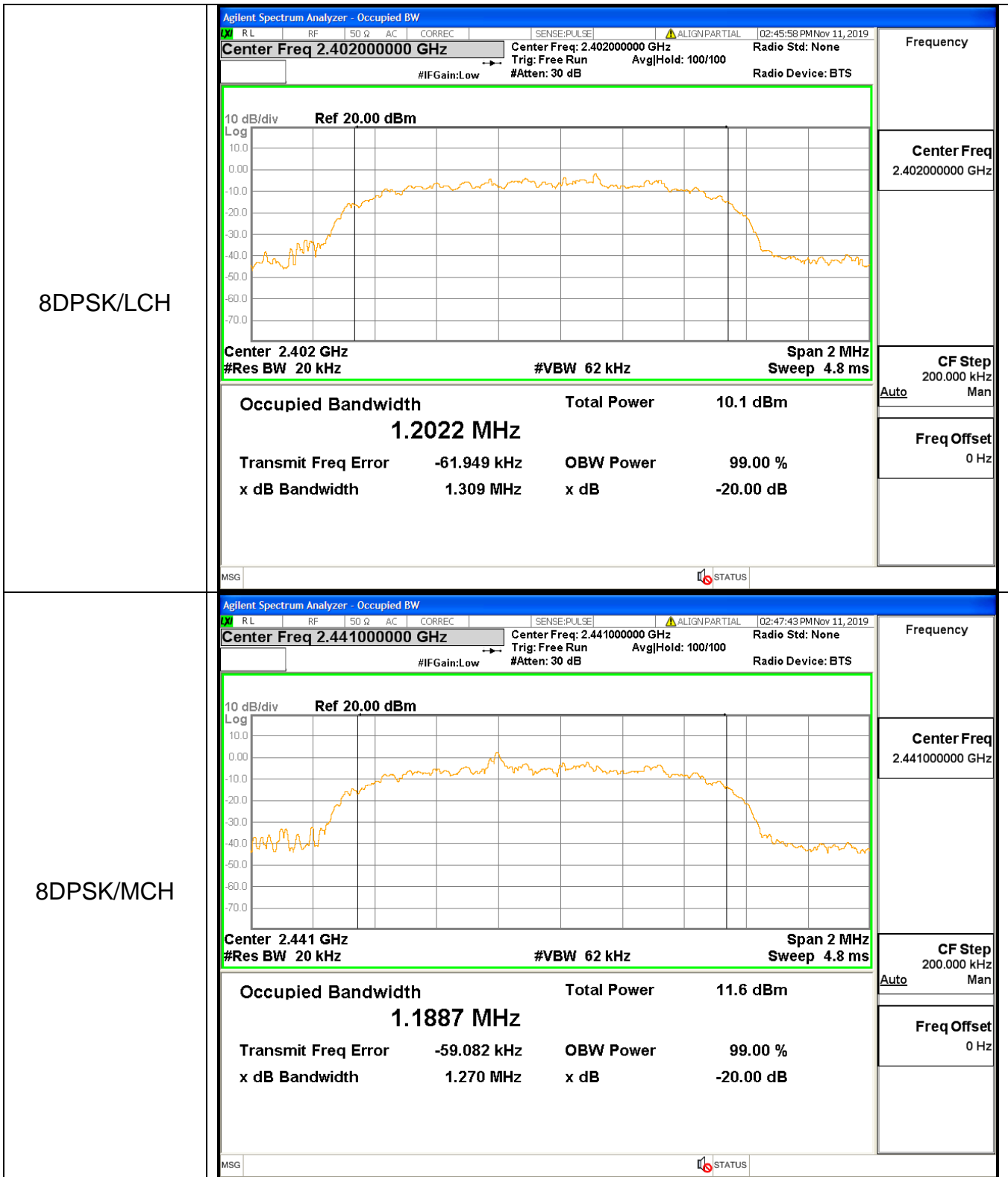
### Test Graph

#### Graphs

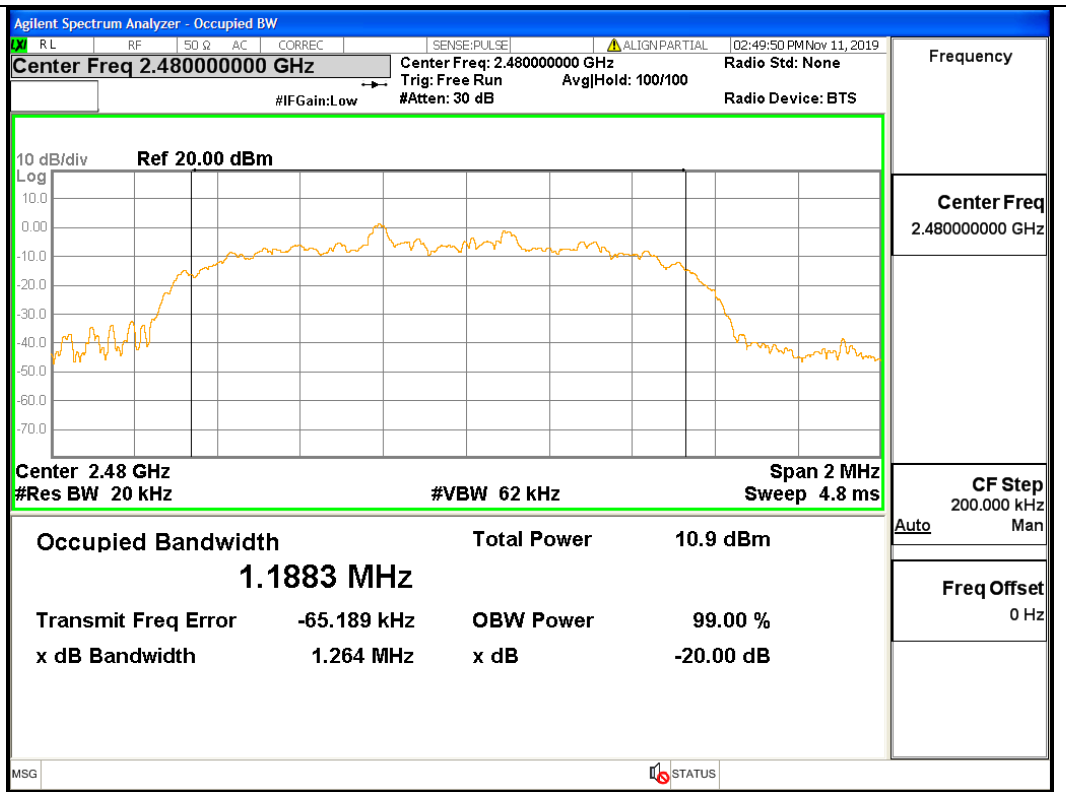
GFSK/LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;"> <input checked="" type="checkbox"/> RL    <input type="checkbox"/> RF    50 Ω    AC    CORREC    SENSE:PULSE    <input type="checkbox"/> ALIGNPARTIAL    02:33:00 PM Nov 11, 2019                 </p> <p style="font-size: small; margin: 0;"> <b>Center Freq 2.40200000 GHz</b>    Center Freq: 2.402000000 GHz    Radio Std: None                      Trig: Free Run    Avg Hold: 100/100                      #IFGain:Low    #Atten: 30 dB    Radio Device: BTS                 </p> </div>	Frequency																		
		Center Freq 2.40200000 GHz																		
	Center 2.402 GHz    #Res BW 20 kHz    #VBW 62 kHz    Span 2 MHz    Sweep 4.8 ms	CF Step 200.000 kHz <small>Auto Man</small>																		
	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">10.9 dBm</td> </tr> <tr> <td style="text-align: center;"><b>804.90 kHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-56.339 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>856.2 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td></td> <td></td> <td>-20.00 dB</td> </tr> </table>	Occupied Bandwidth	Total Power	10.9 dBm	<b>804.90 kHz</b>			Transmit Freq Error	-56.339 kHz	OBW Power	x dB Bandwidth	856.2 kHz	x dB			99.00 %			-20.00 dB	Freq Offset 0 Hz
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	MSG <input type="checkbox"/> STATUS																			
GFSK/MCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <p style="font-size: x-small; margin: 0;"> <input checked="" type="checkbox"/> RL    <input type="checkbox"/> RF    50 Ω    AC    CORREC    SENSE:PULSE    <input type="checkbox"/> ALIGNPARTIAL    02:35:38 PM Nov 11, 2019                 </p> <p style="font-size: small; margin: 0;"> <b>Center Freq 2.441000000 GHz</b>    Center Freq: 2.441000000 GHz    Radio Std: None                      Trig: Free Run    Avg Hold: 100/100                      #IFGain:Low    #Atten: 30 dB    Radio Device: BTS                 </p> </div>	Frequency																		
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	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Occupied Bandwidth</td> <td style="width: 33%;">Total Power</td> <td style="width: 33%;">12.0 dBm</td> </tr> <tr> <td style="text-align: center;"><b>808.13 kHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-55.526 kHz</td> <td>OBW Power</td> </tr> <tr> <td>x dB Bandwidth</td> <td>883.0 kHz</td> <td>x dB</td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td></td> <td></td> <td>-20.00 dB</td> </tr> </table>	Occupied Bandwidth	Total Power	12.0 dBm	<b>808.13 kHz</b>			Transmit Freq Error	-55.526 kHz	OBW Power	x dB Bandwidth	883.0 kHz	x dB			99.00 %			-20.00 dB	Freq Offset 0 Hz
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	MSG <input type="checkbox"/> STATUS																			







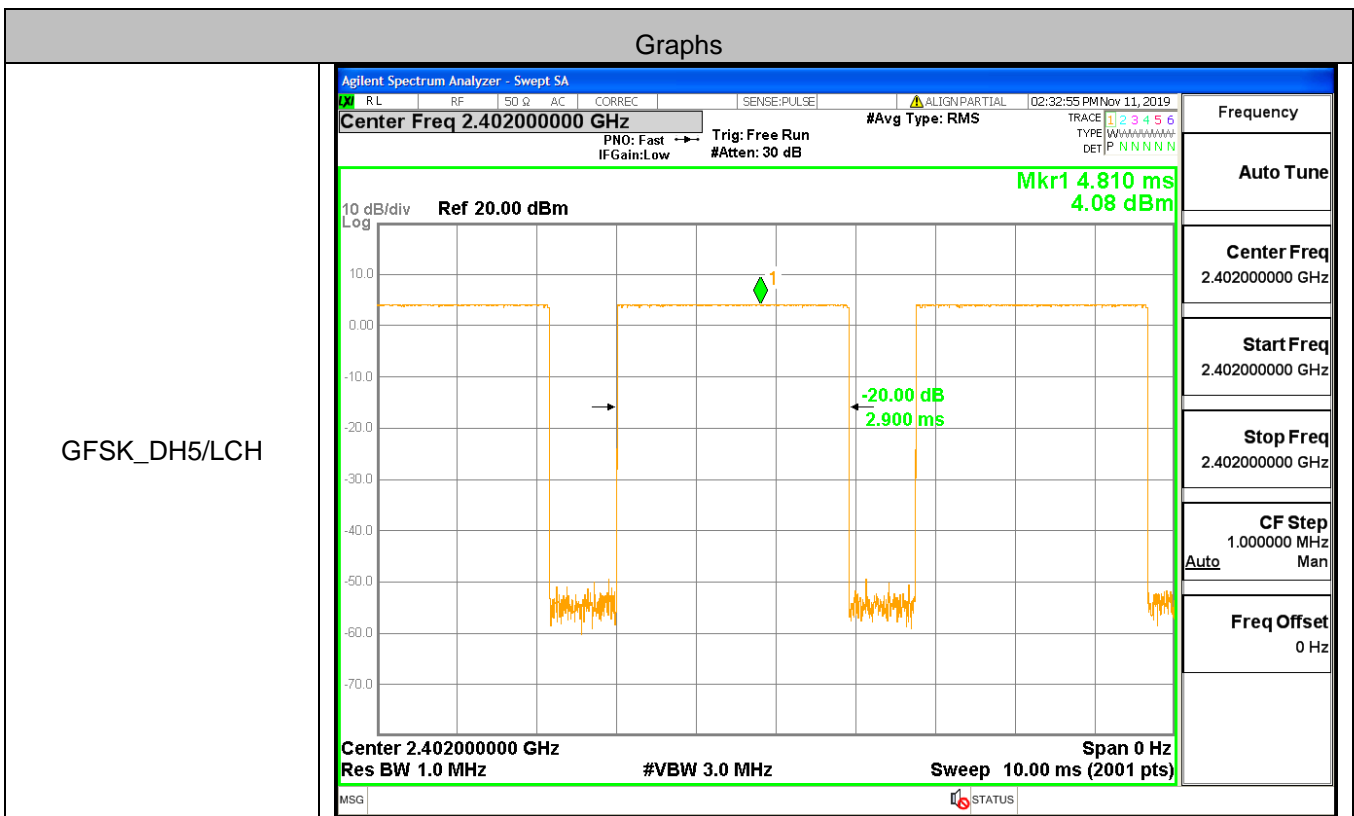
8DPSK/HCH

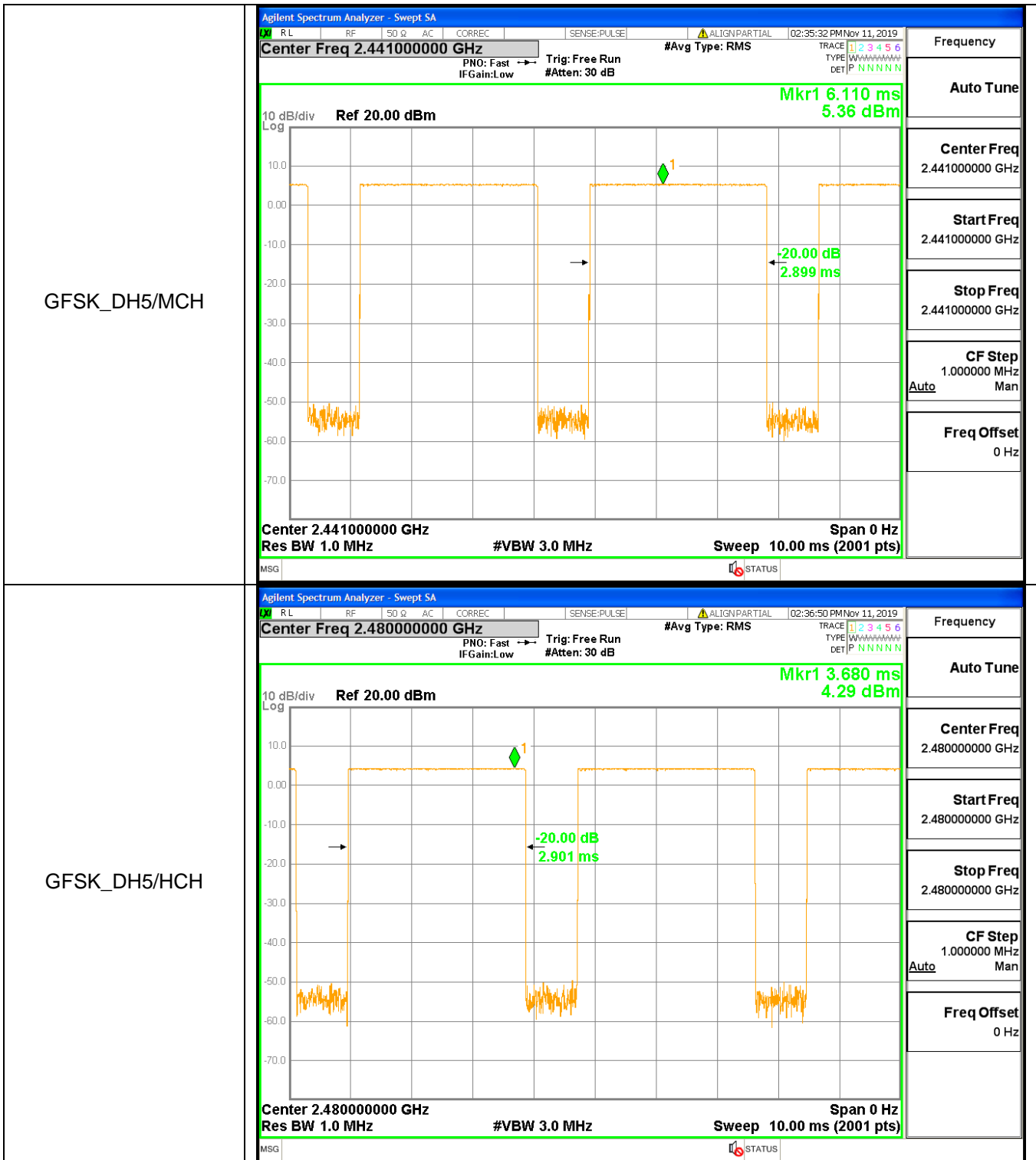


### A.2 Dwell Time

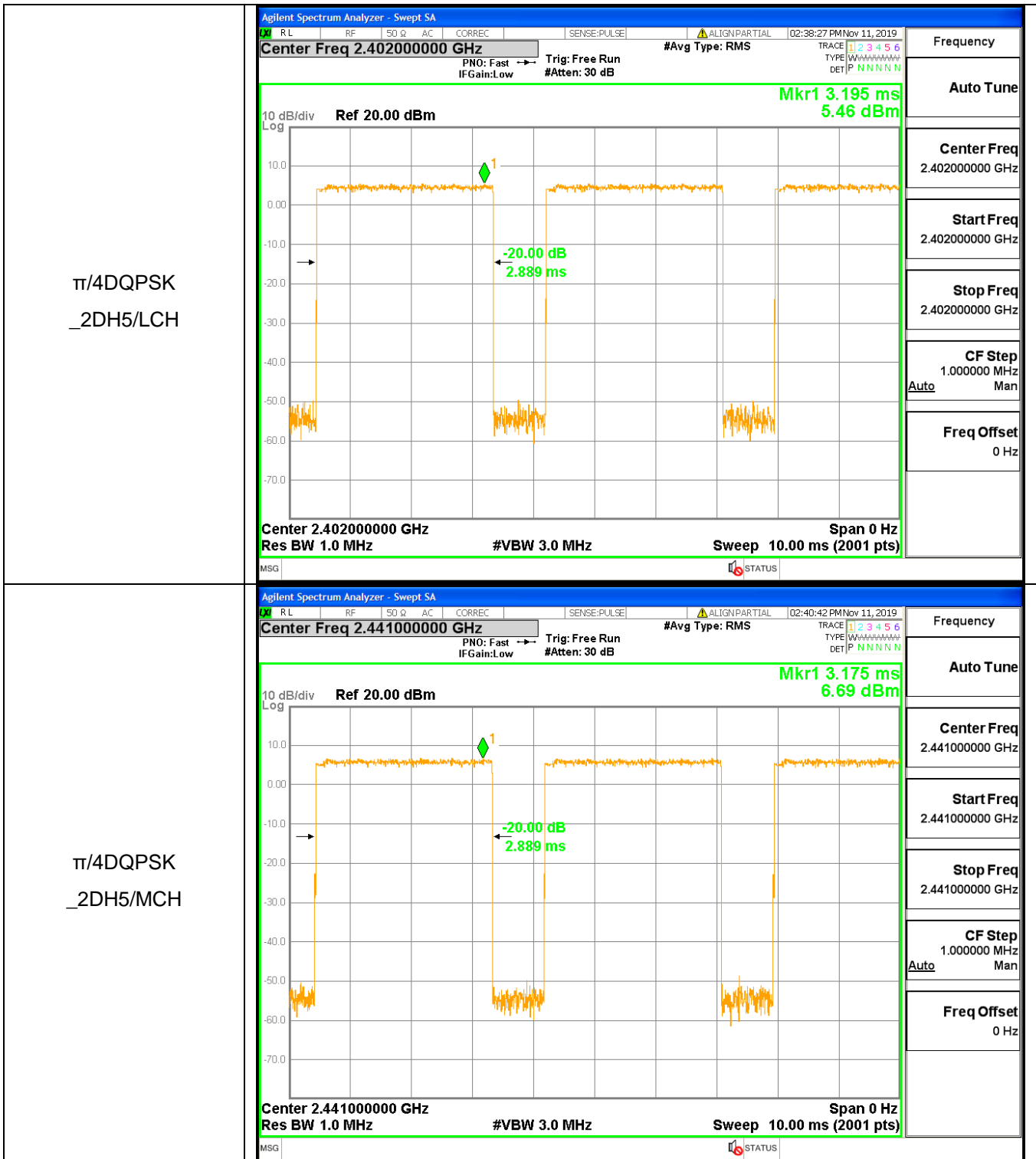
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002900	106.7	0.3094	0.4	PASS
GFSK	DH5	MCH	0.002899	106.7	0.3094	0.4	PASS
GFSK	DH5	HCH	0.002901	106.7	0.3095	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002889	106.7	0.3083	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002889	106.7	0.3083	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002890	106.7	0.3084	0.4	PASS
8DPSK	3DH5	LCH	0.002889	106.7	0.3083	0.4	PASS
8DPSK	3DH5	MCH	0.002890	106.7	0.3083	0.4	PASS
8DPSK	3DH5	HCH	0.002890	106.7	0.3083	0.4	PASS

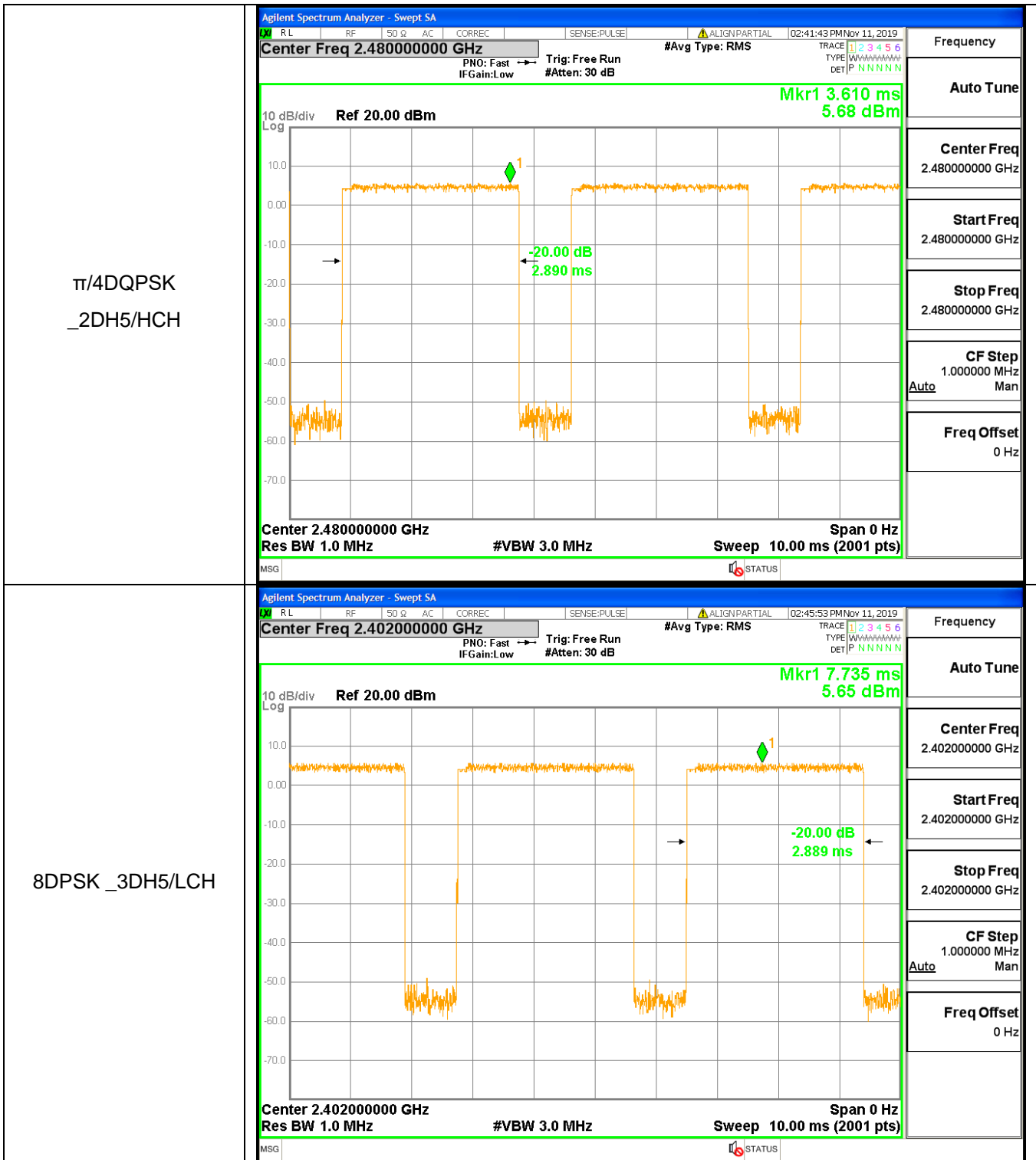
Test Graph

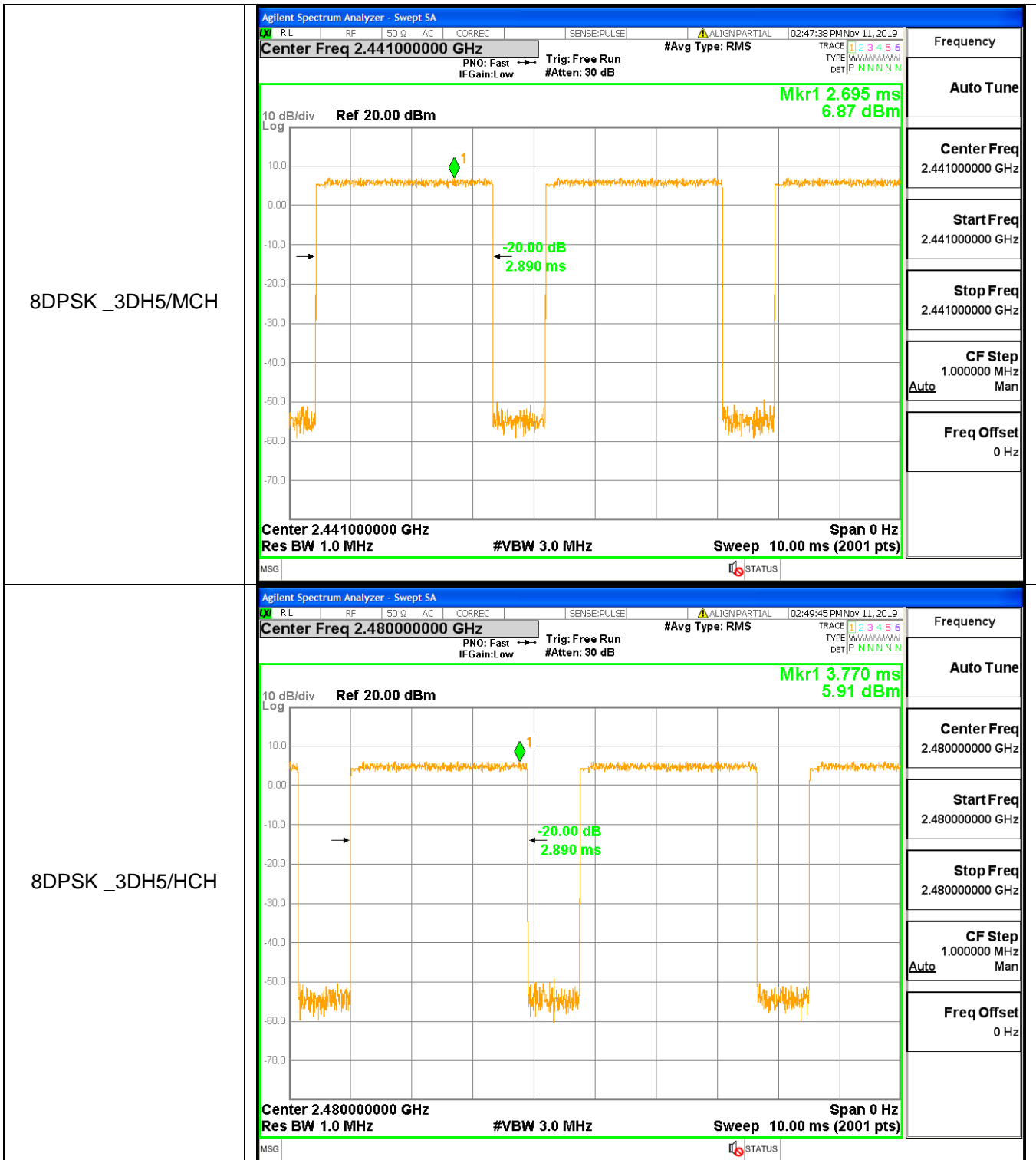








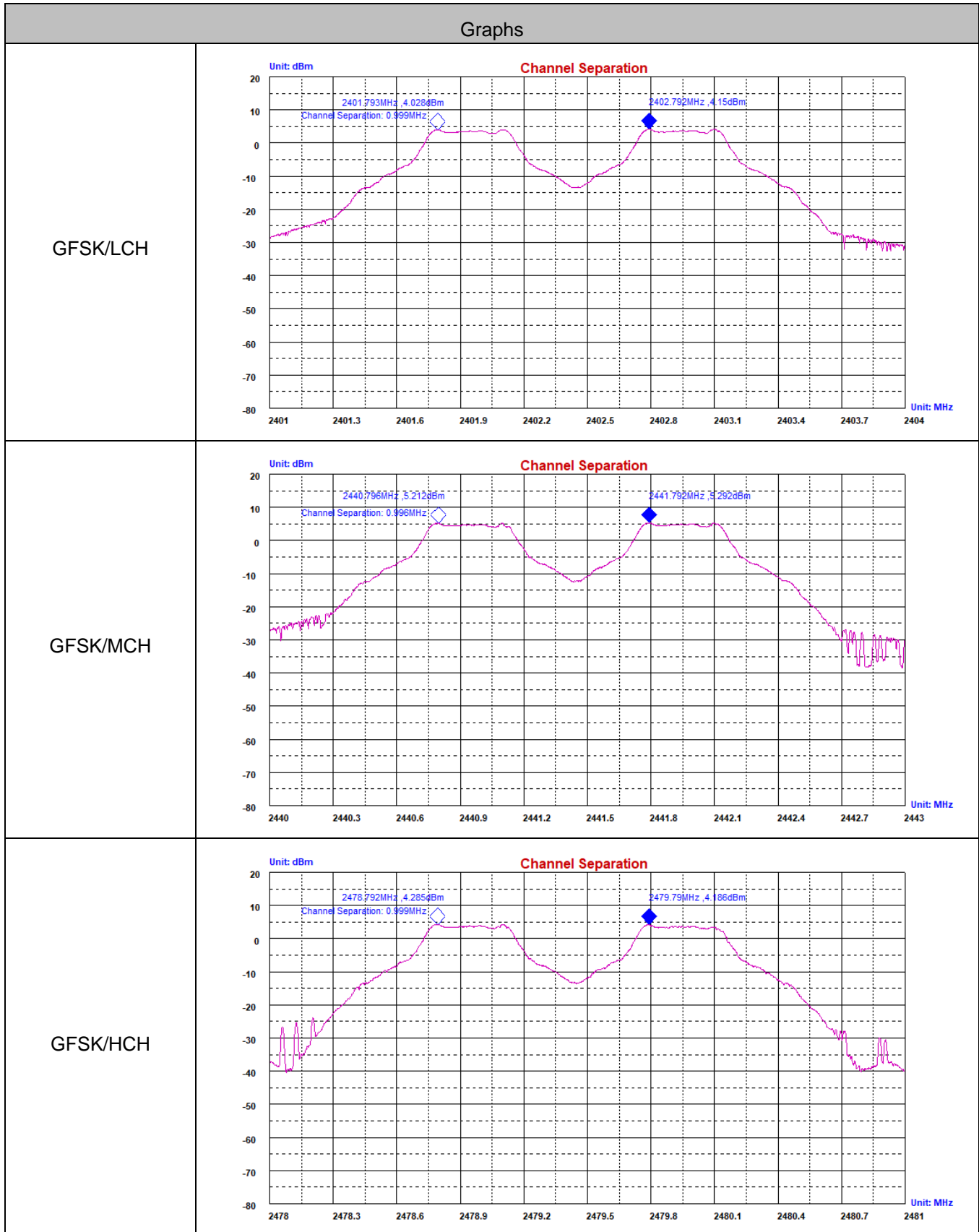


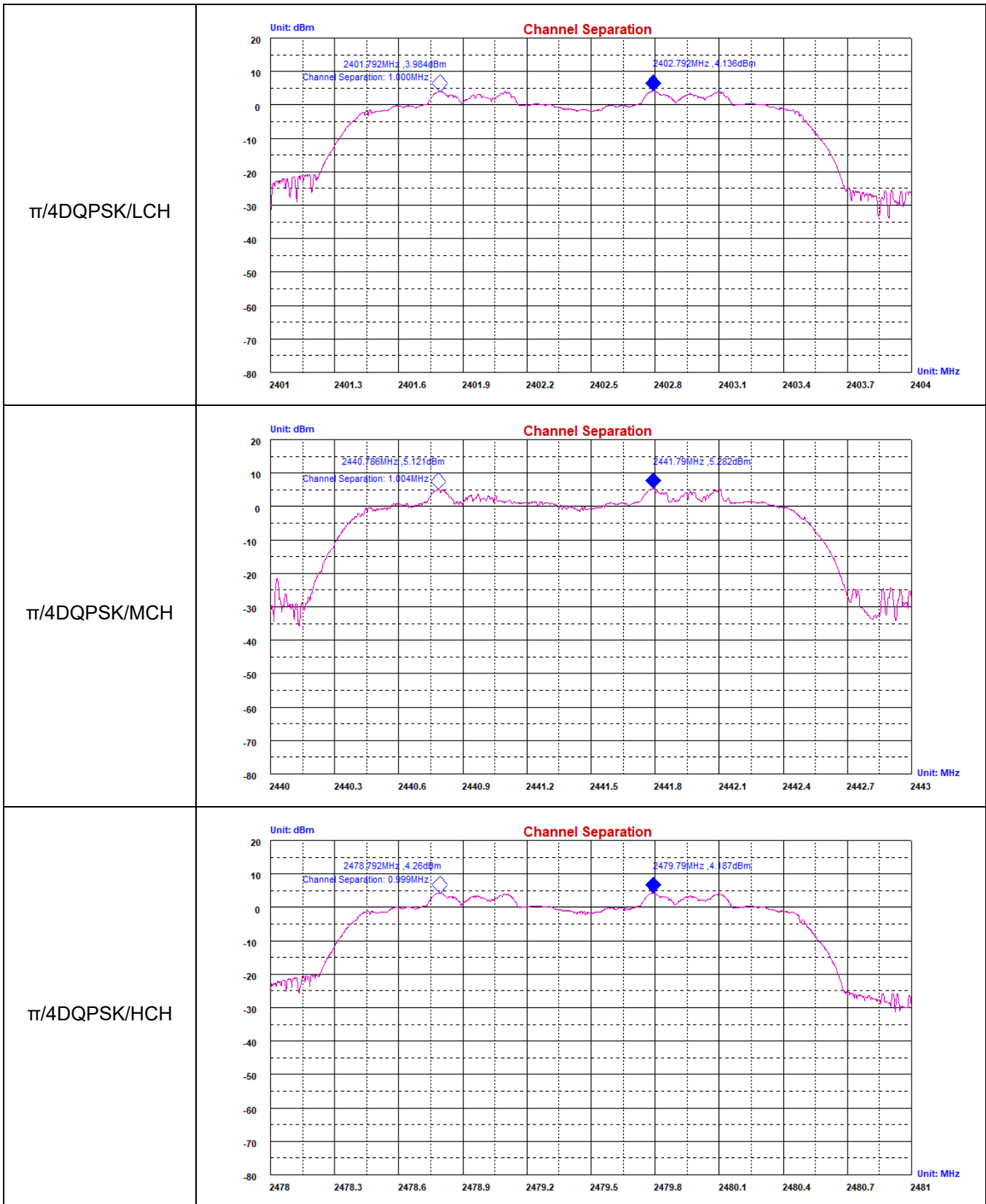


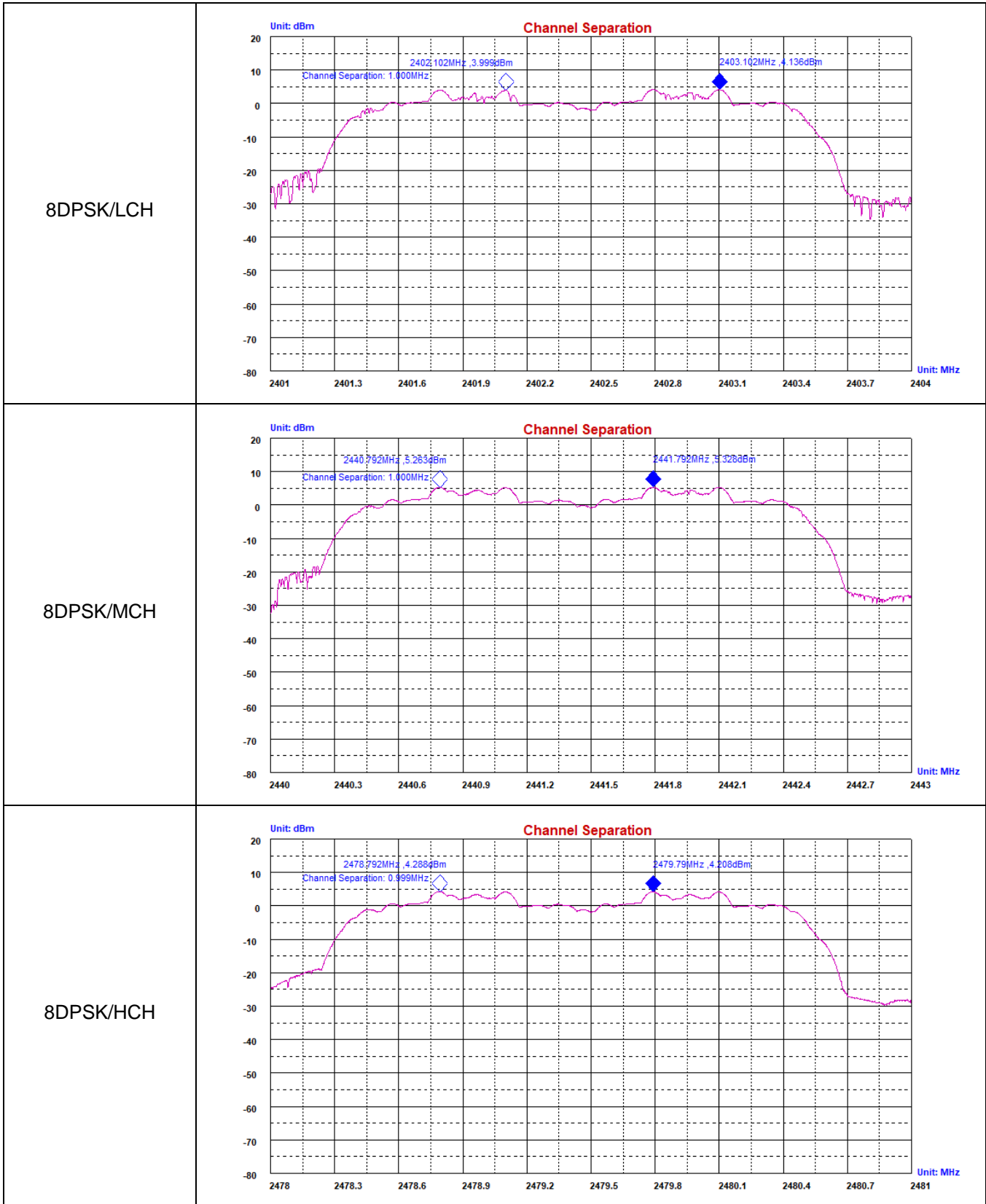
### A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.571	PASS
GFSK	MCH	0.996	0.589	PASS
GFSK	HCH	0.999	0.589	PASS
$\pi/4$ DQPSK	LCH	1.000	0.844	PASS
$\pi/4$ DQPSK	MCH	1.004	0.844	PASS
$\pi/4$ DQPSK	HCH	0.999	0.845	PASS
8DPSK	LCH	1.000	0.873	PASS
8DPSK	MCH	1.000	0.843	PASS
8DPSK	HCH	0.999	0.843	PASS

### Test Graph



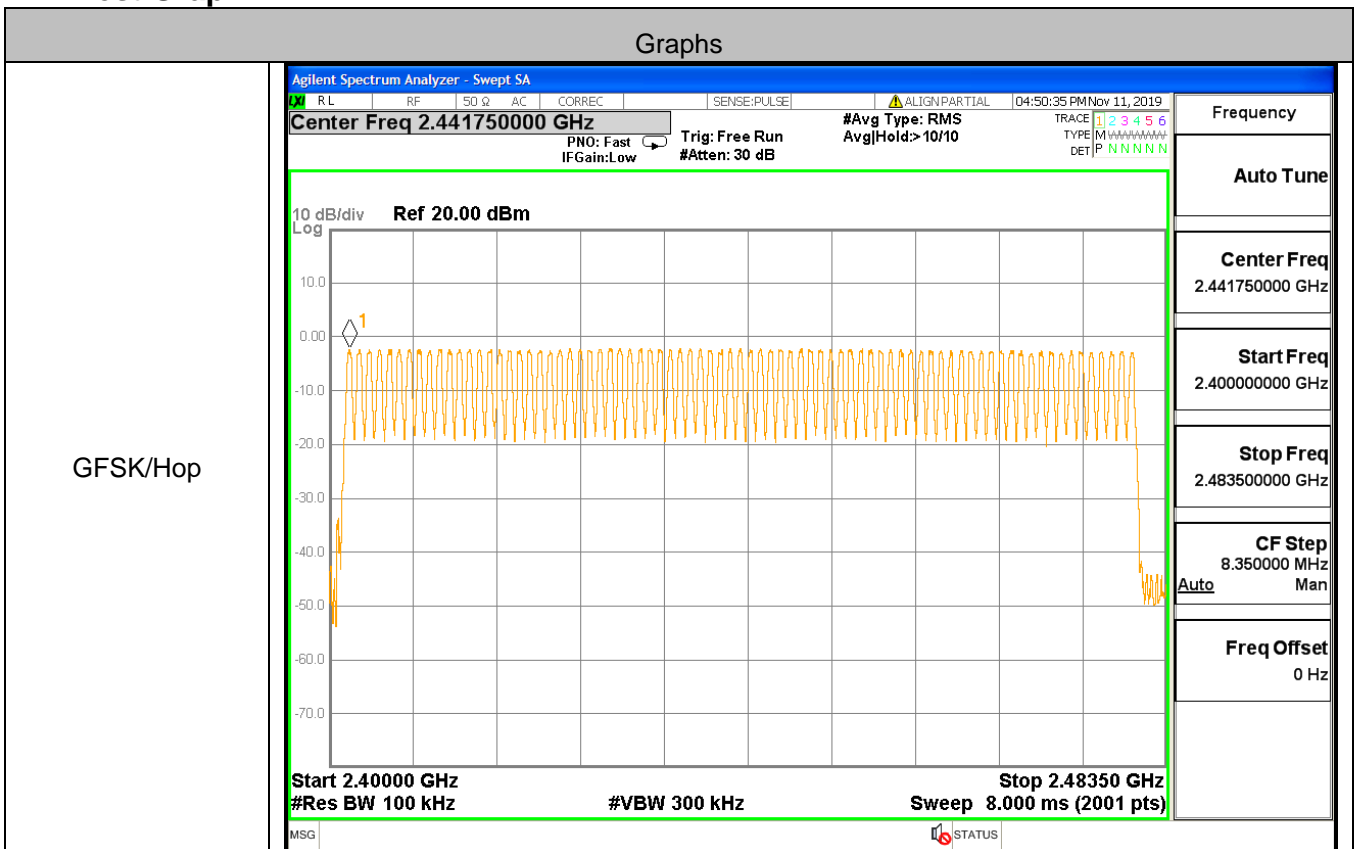




### A.4 Hopping Channel Number

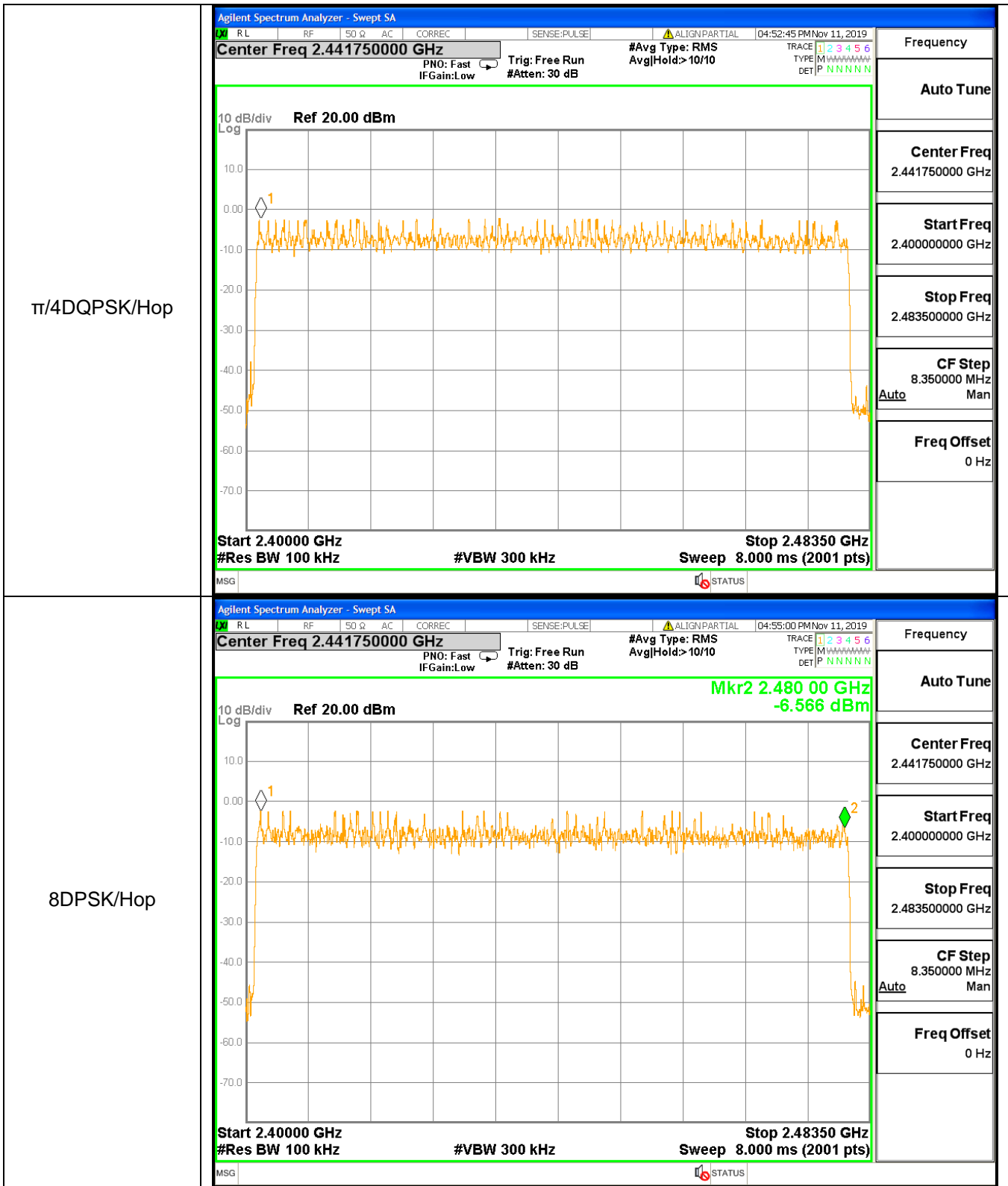
Mode	Channel.	Number of Hopping Channel[N]	Limit[N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

### Test Graph



GFSK/Hop

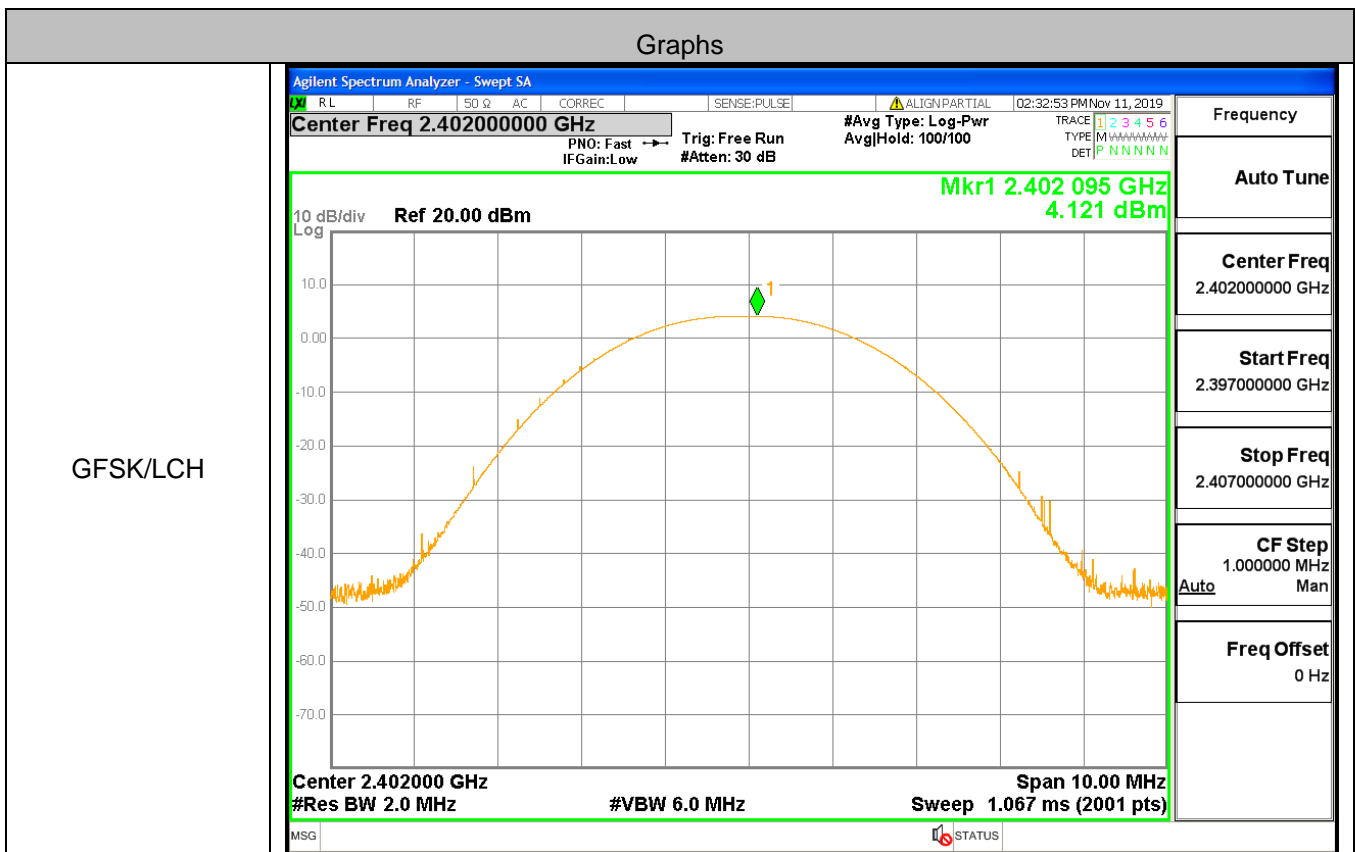


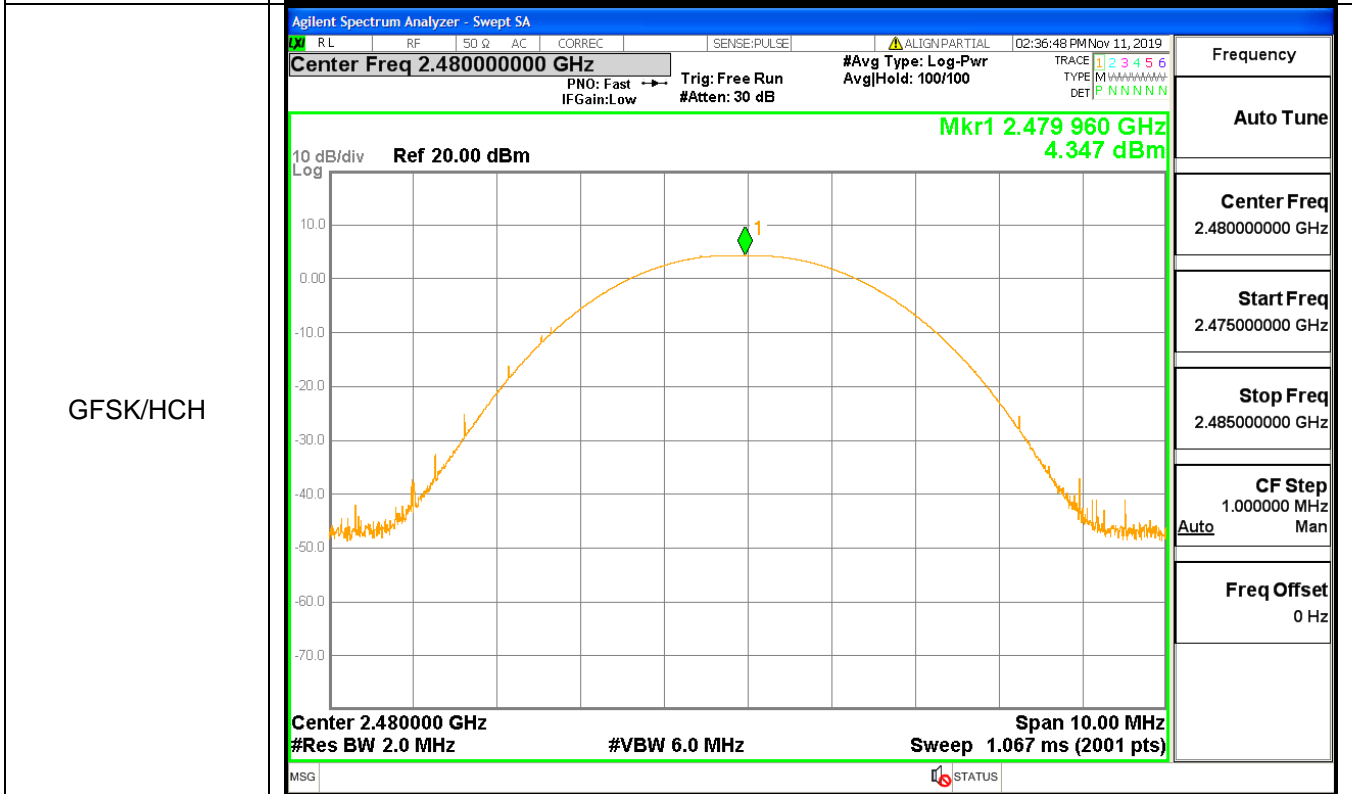
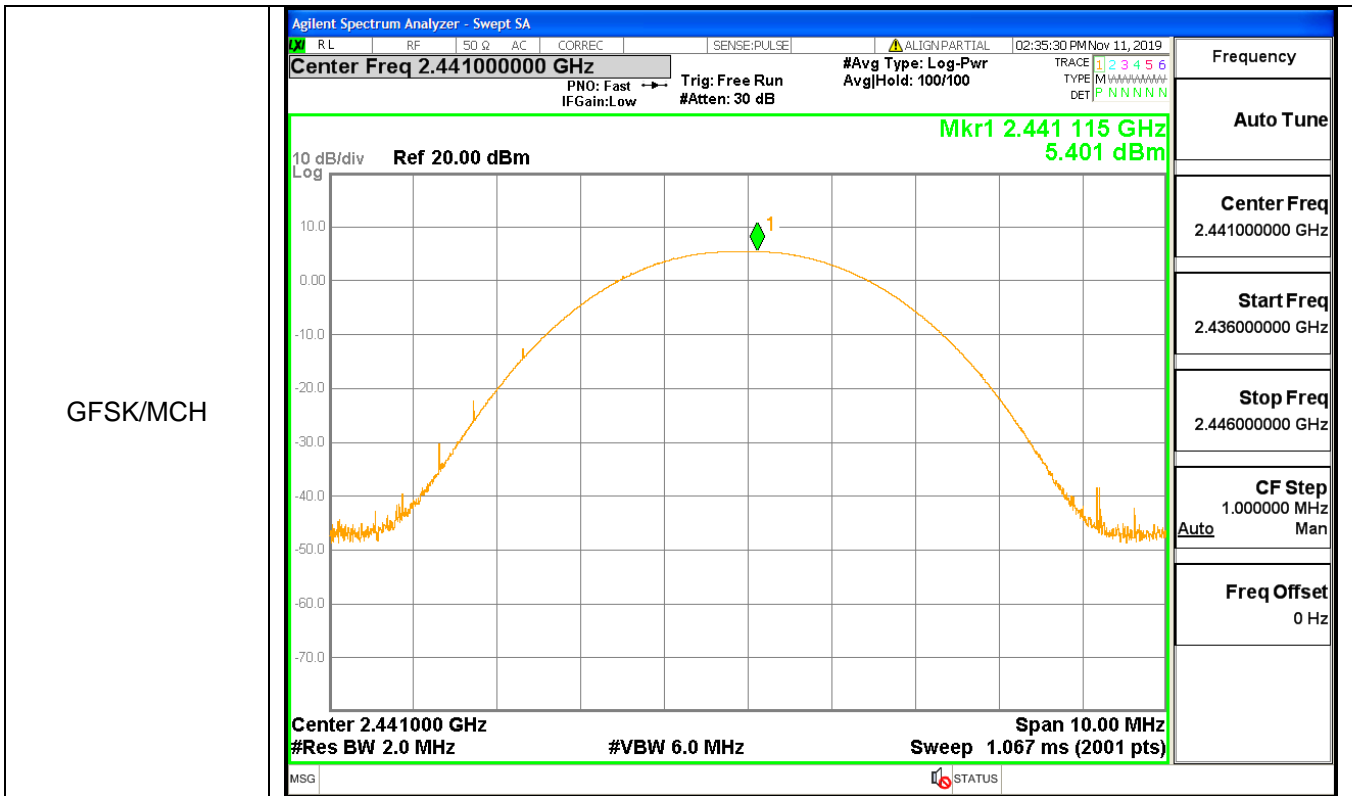


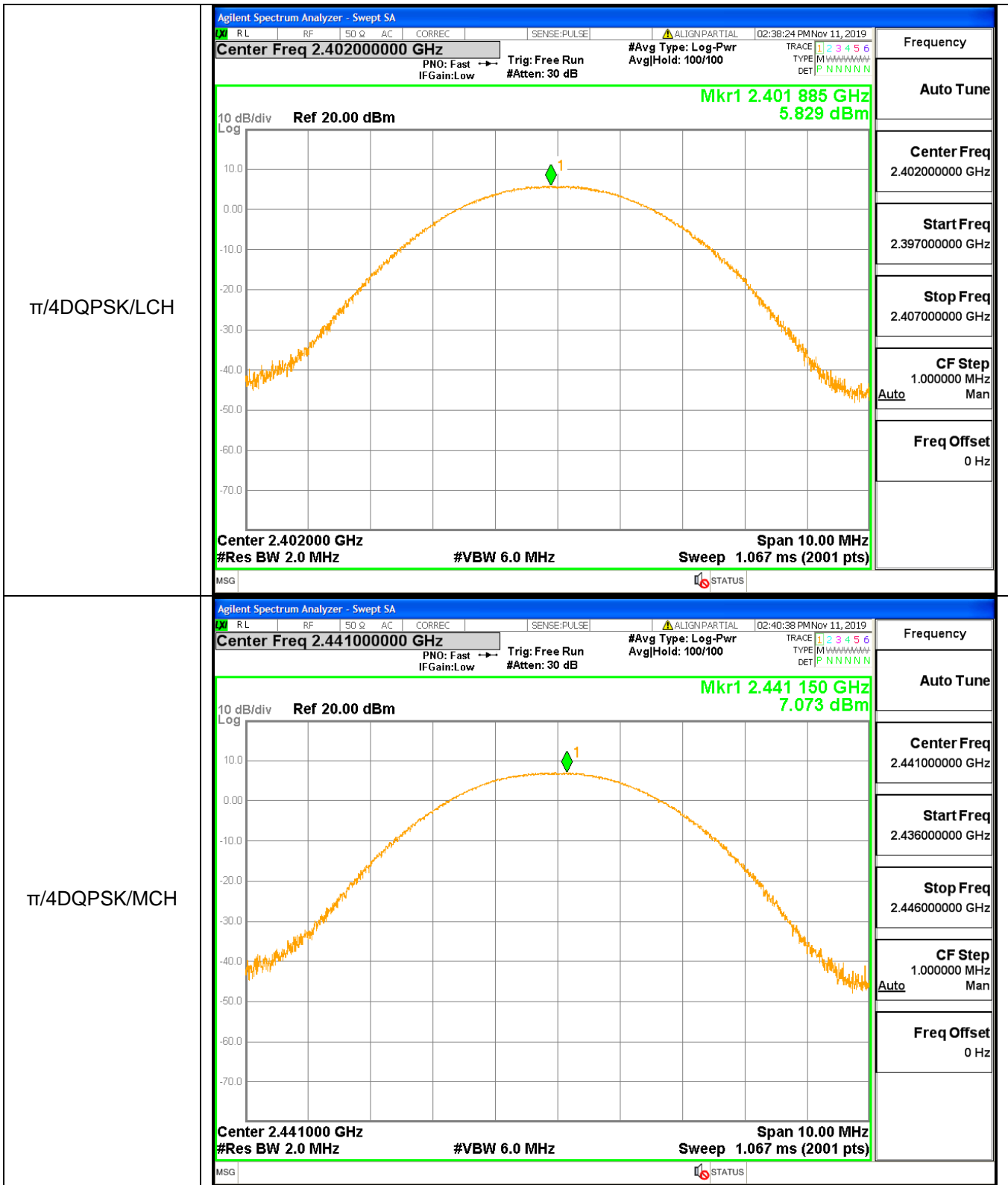
### A.5 Conducted Peak Output Power

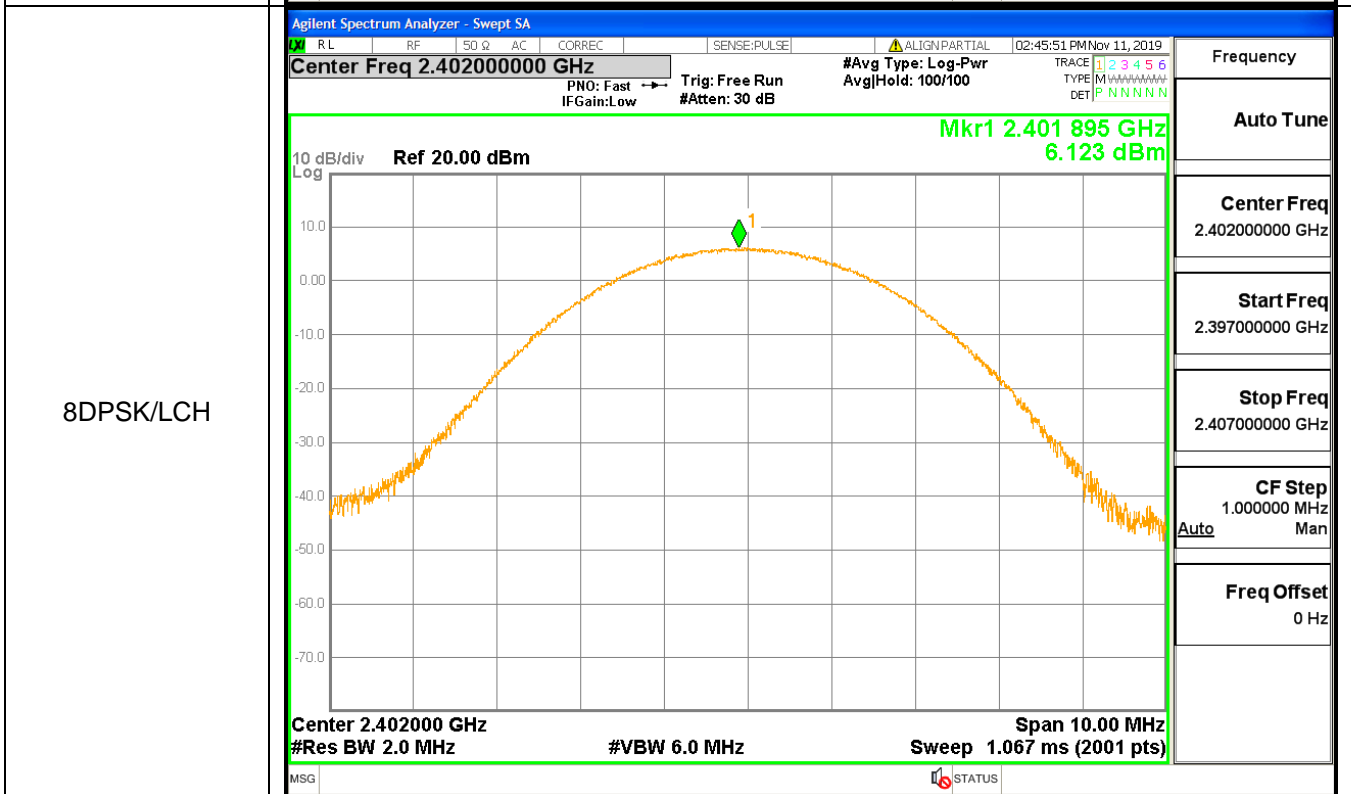
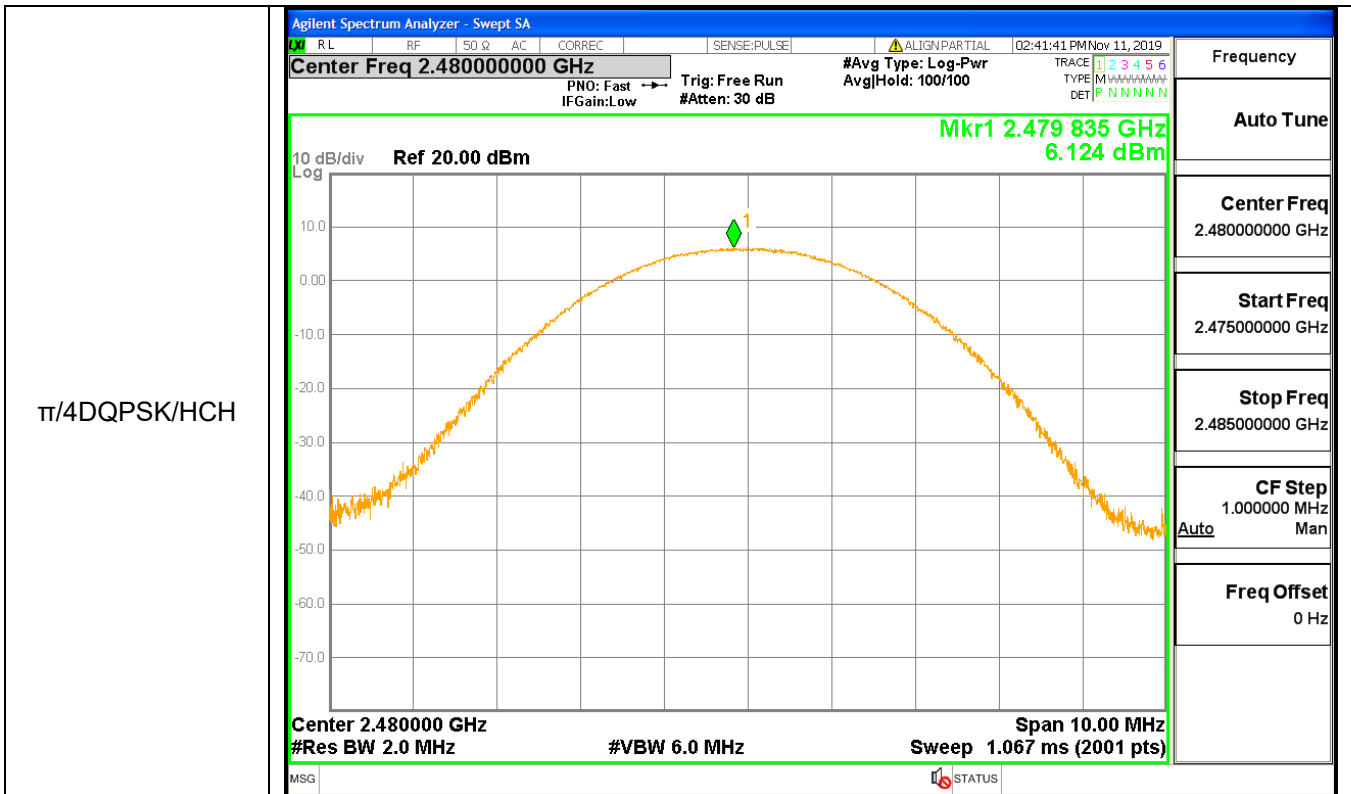
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.121	21	PASS
GFSK	MCH	5.401	21	PASS
GFSK	HCH	4.347	21	PASS
$\pi/4$ DQPSK	LCH	5.829	21	PASS
$\pi/4$ DQPSK	MCH	7.073	21	PASS
$\pi/4$ DQPSK	HCH	6.124	21	PASS
8DPSK	LCH	6.123	21	PASS
8DPSK	MCH	7.322	21	PASS
8DPSK	HCH	6.407	21	PASS

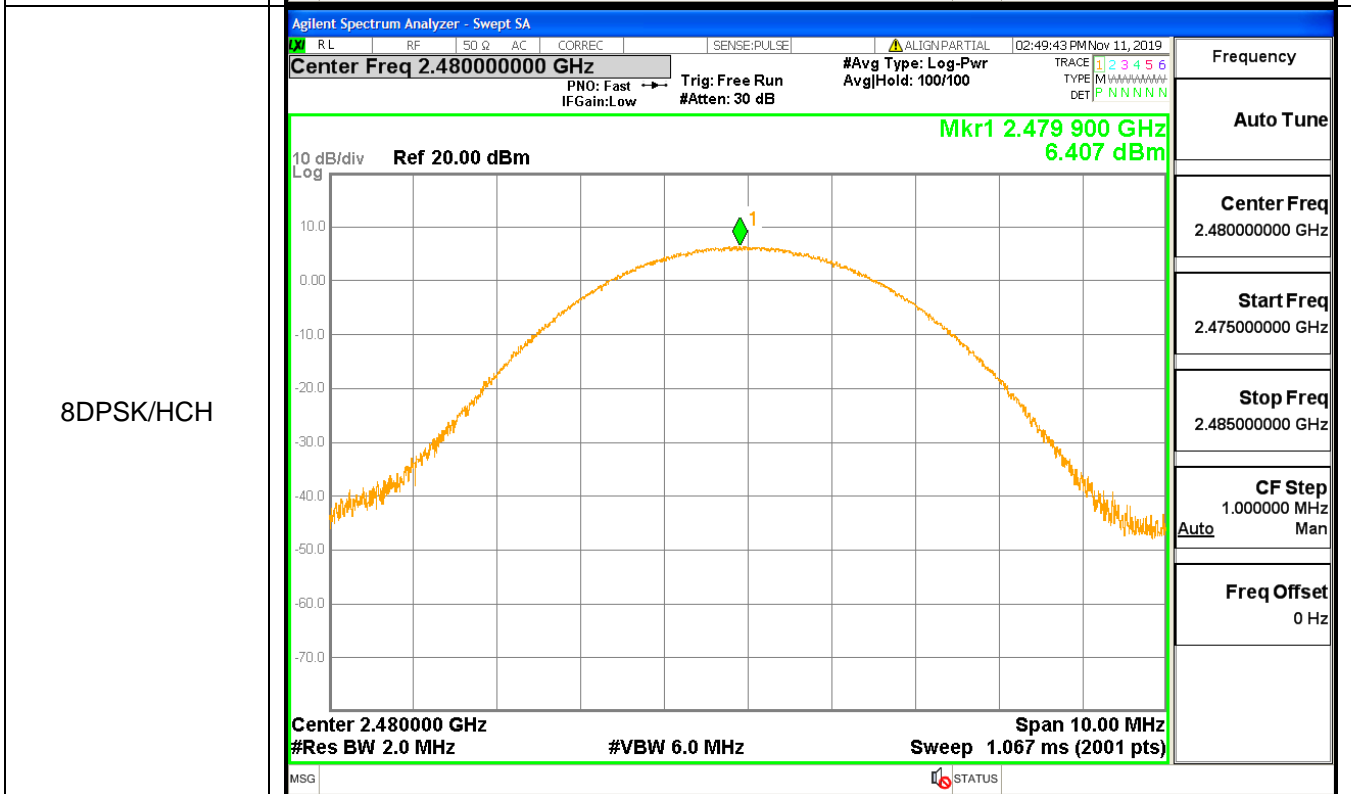
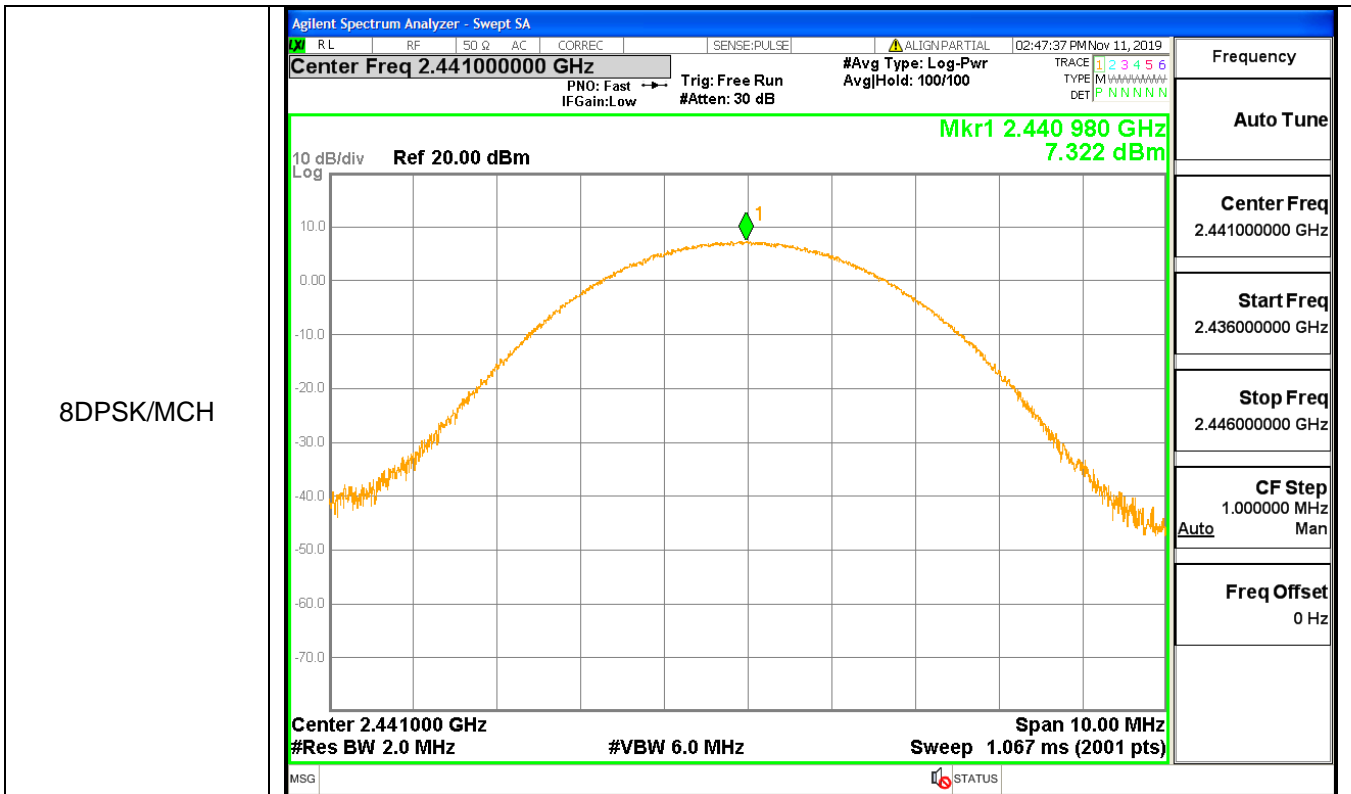
### Test Graph









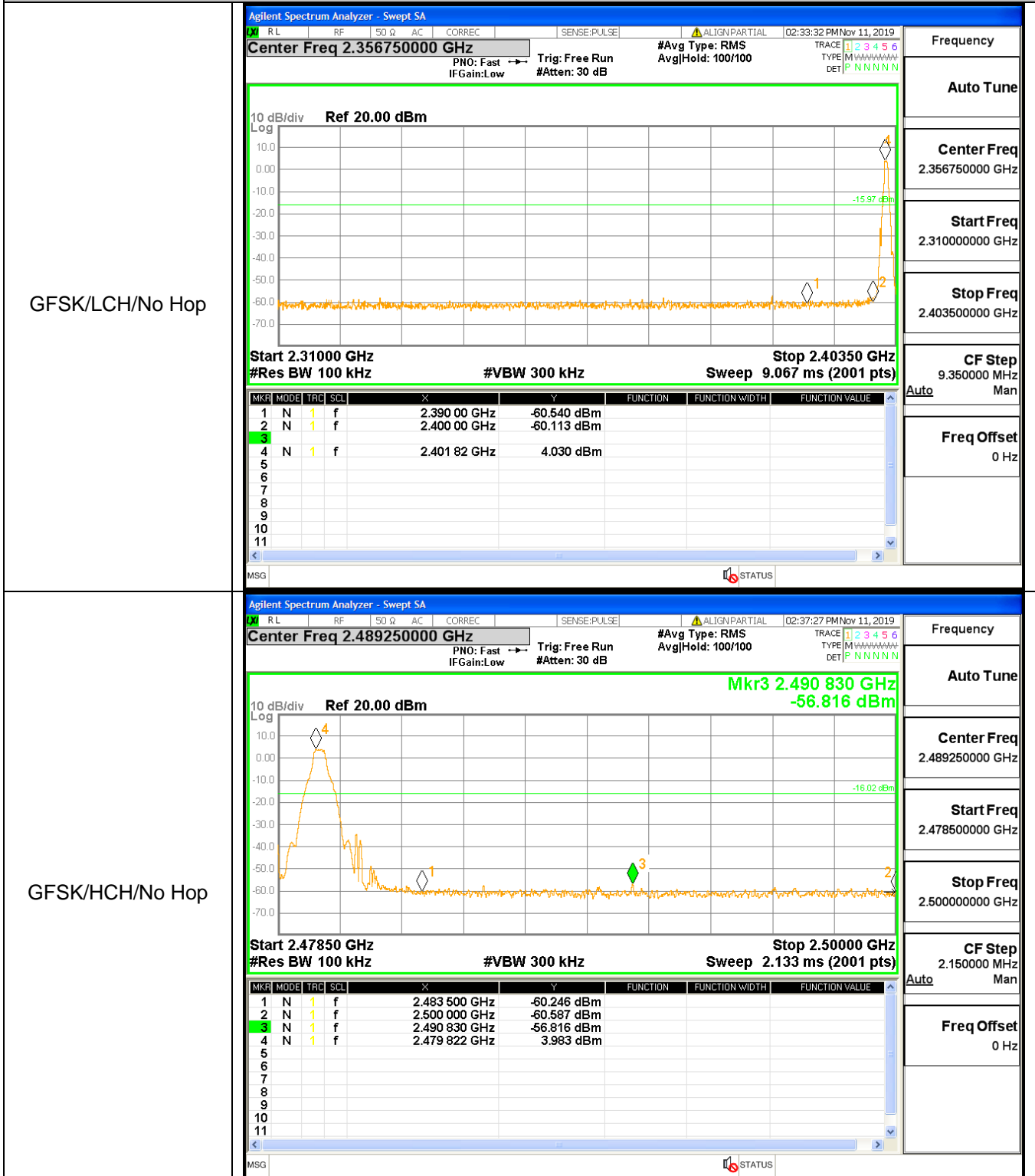


### A.6 Band-edge for RF Conducted Emissions

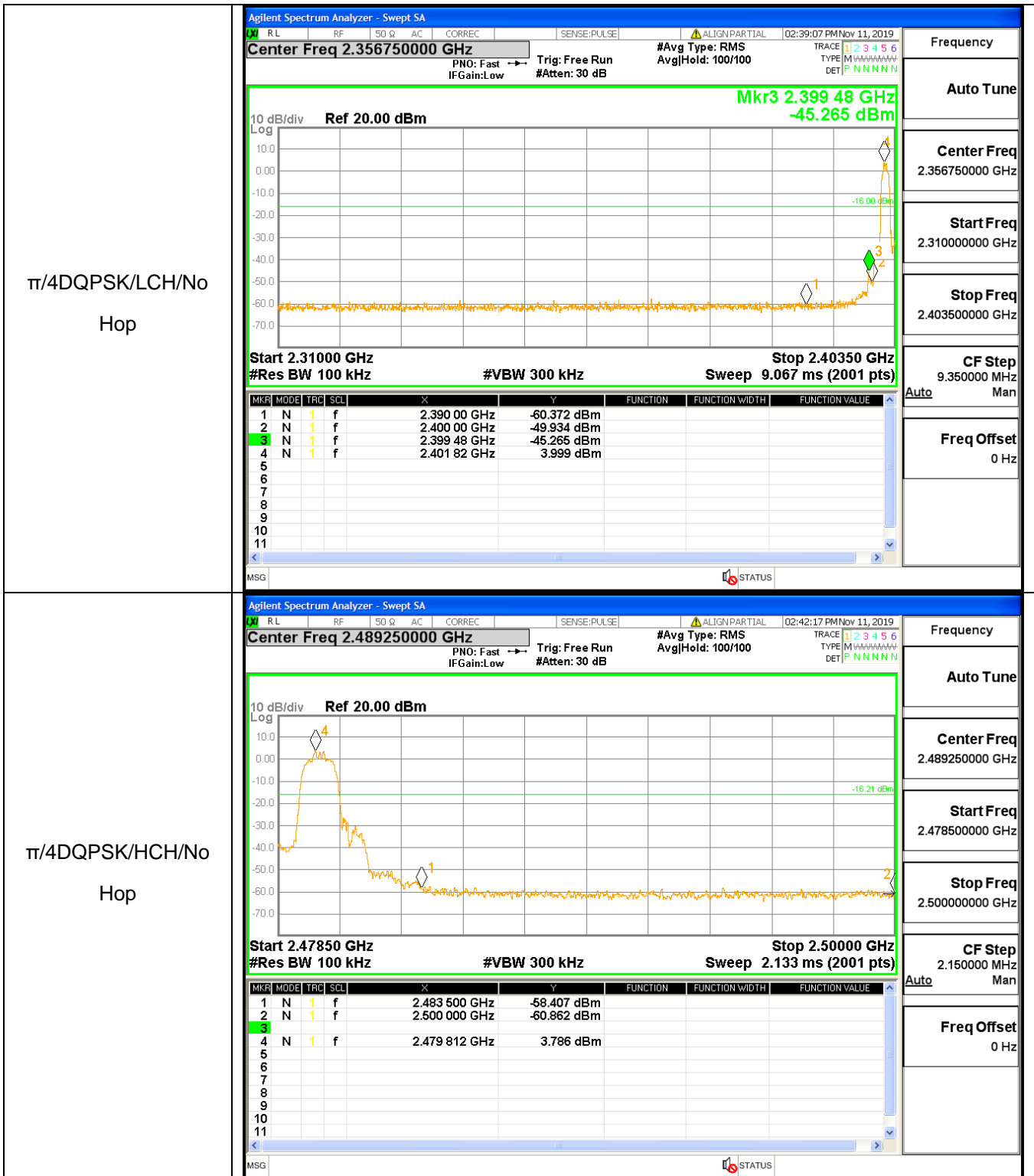
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	4.030	-60.110	-15.970	Pass
1DH5	2480	2490.83	3.983	-56.816	-16.017	Pass
2DH5	2402	2399.48	3.999	-45.265	-16.001	Pass
2DH5	2480	2483.5	3.786	-58.410	-16.214	Pass
3DH5	2402	2399.48	3.985	-44.853	-16.015	Pass
3DH5	2480	2483.5	4.197	-56.450	-15.803	Pass
1DH5-Hopping	2402	2398.74	-2.302	-41.737	-22.302	Pass
1DH5-Hopping	2480	2483.5	-2.416	-45.670	-22.416	Pass
2DH5-Hopping	2402	2399.85	-2.346	-38.819	-22.346	Pass
2DH5-Hopping	2480	2483.5	-2.438	-47.340	-22.438	Pass
3DH5-Hopping	2402	2400	-2.306	-39.210	-22.306	Pass
3DH5-Hopping	2480	2483.5	-2.432	-46.400	-22.432	Pass

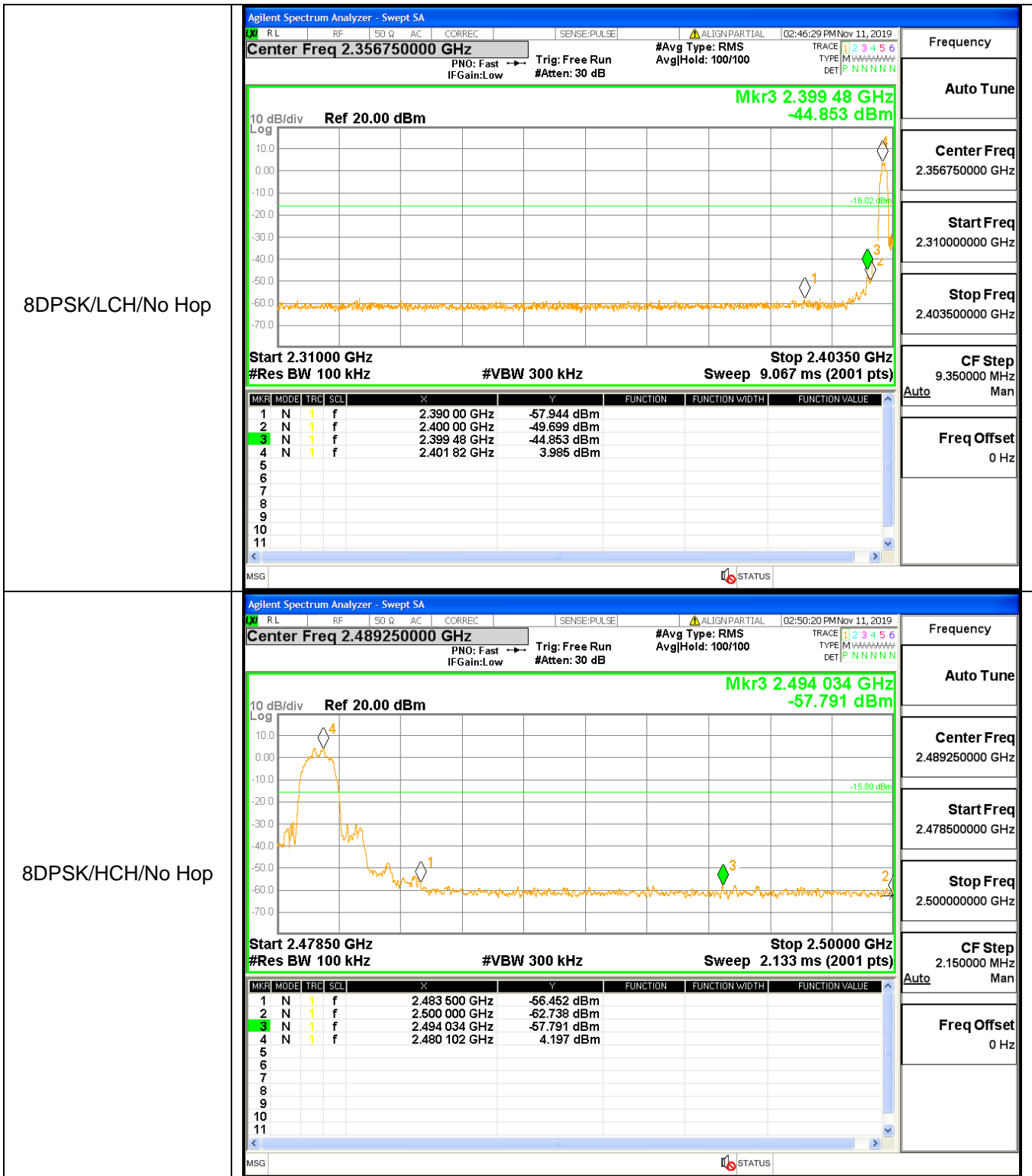
### Test Graph

#### Graphs

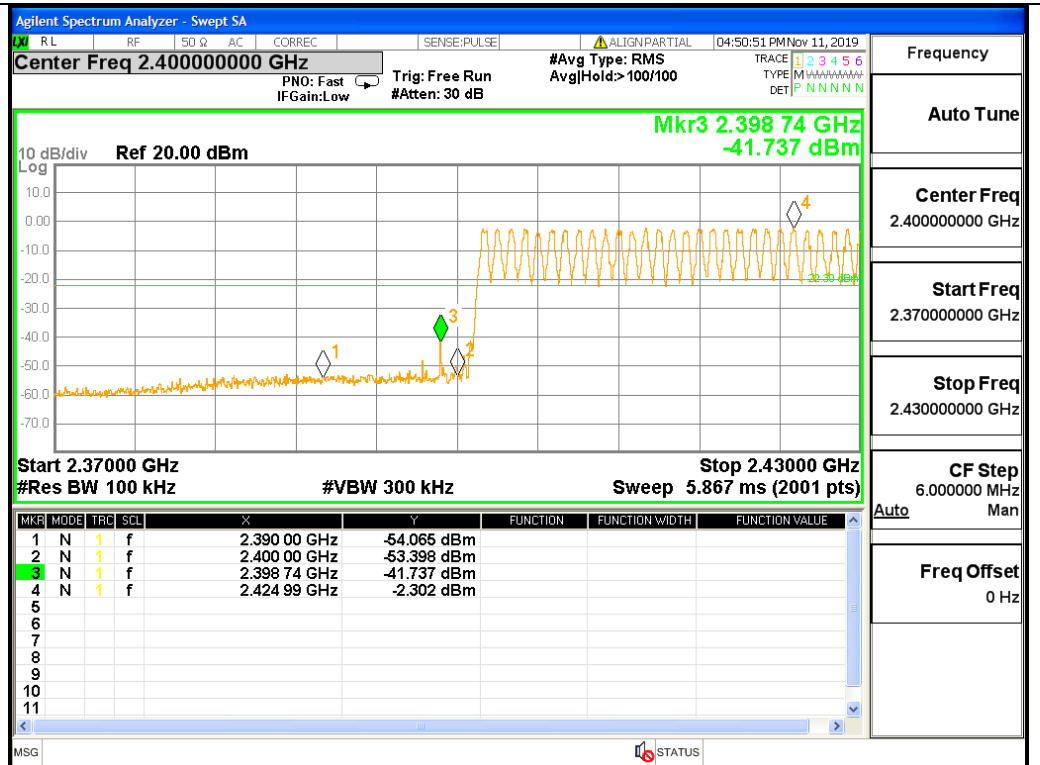




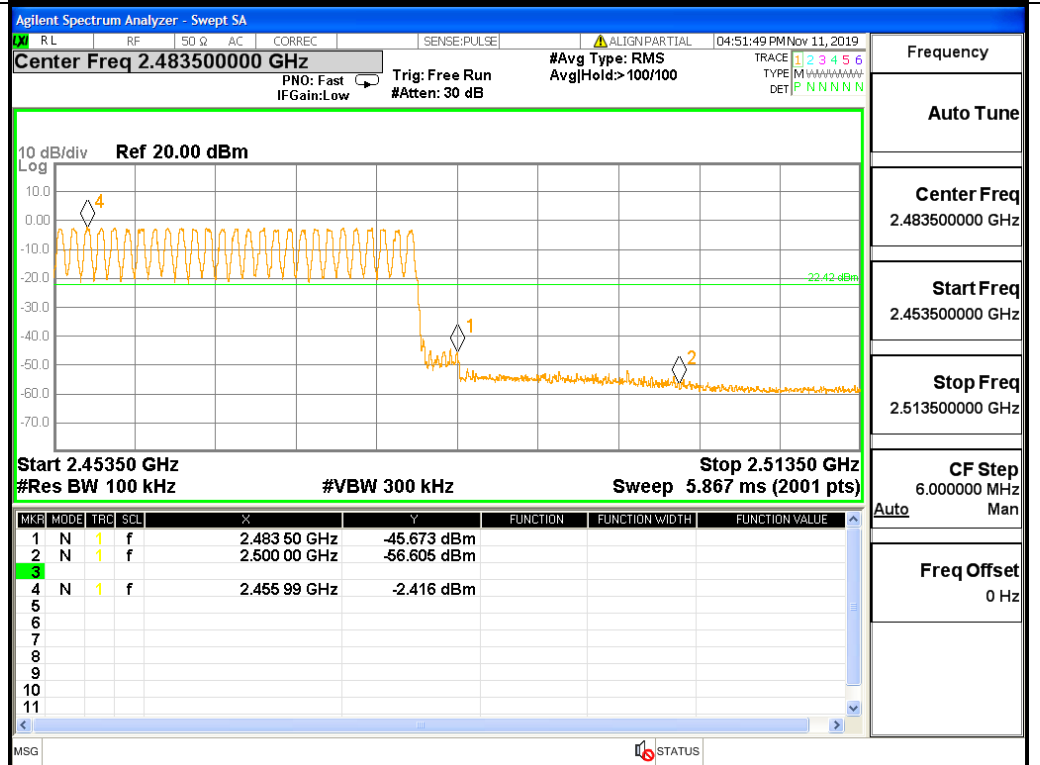


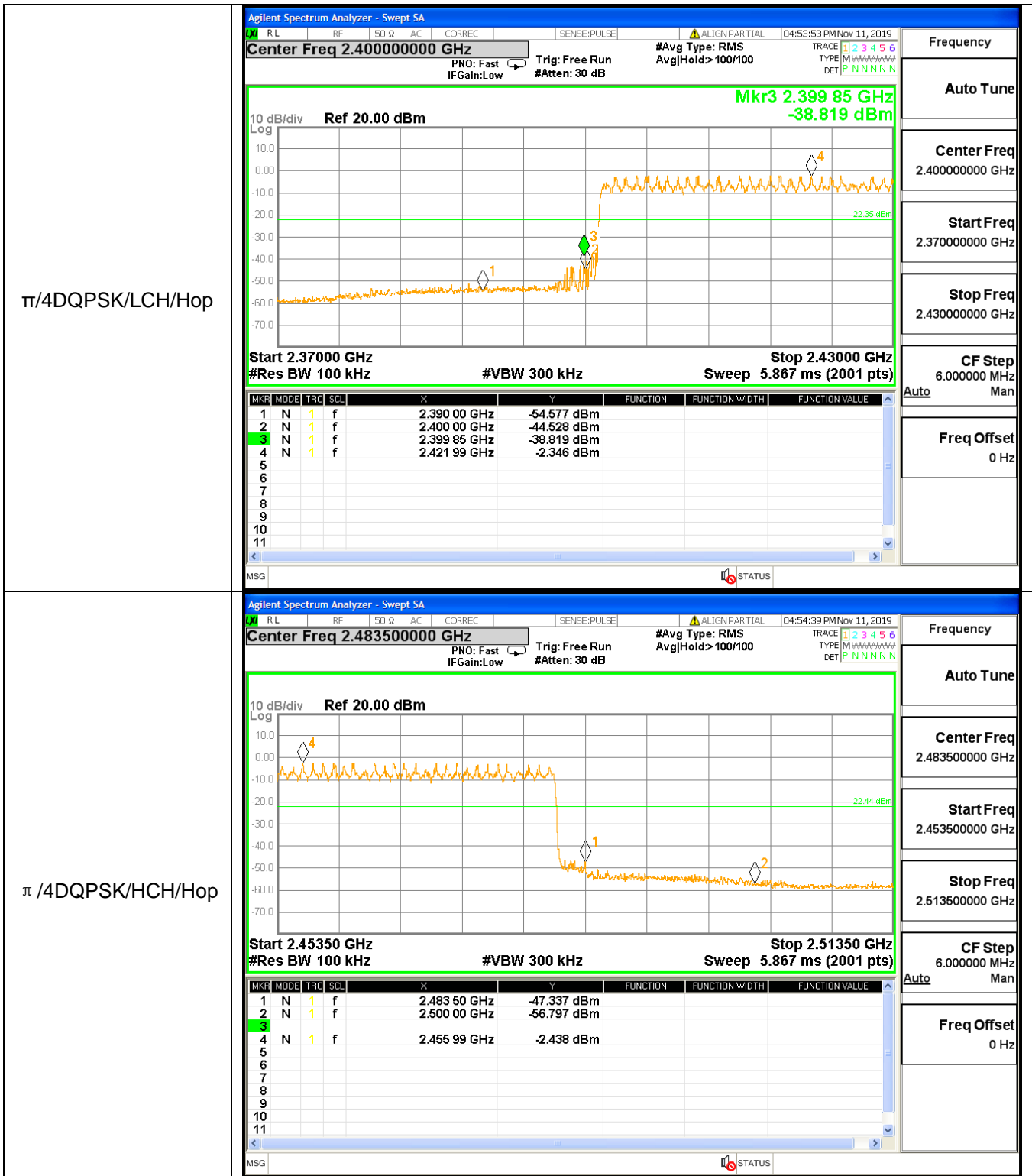


GFSK/LCH/Hop

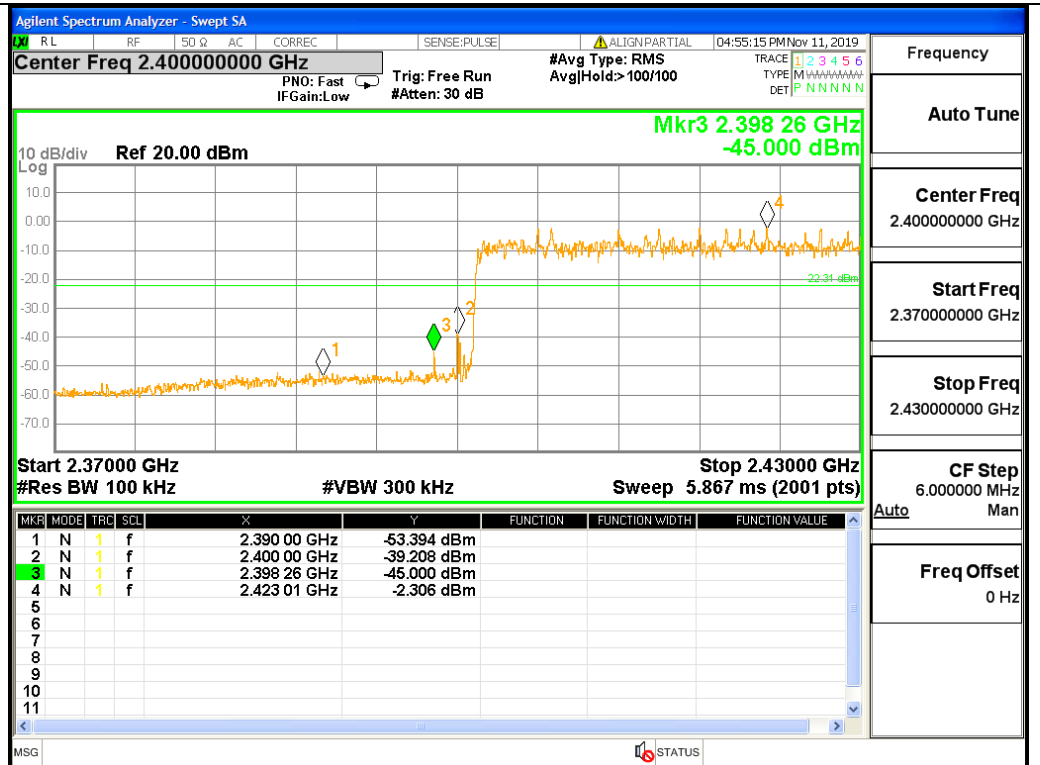


GFSK/HCH/Hop

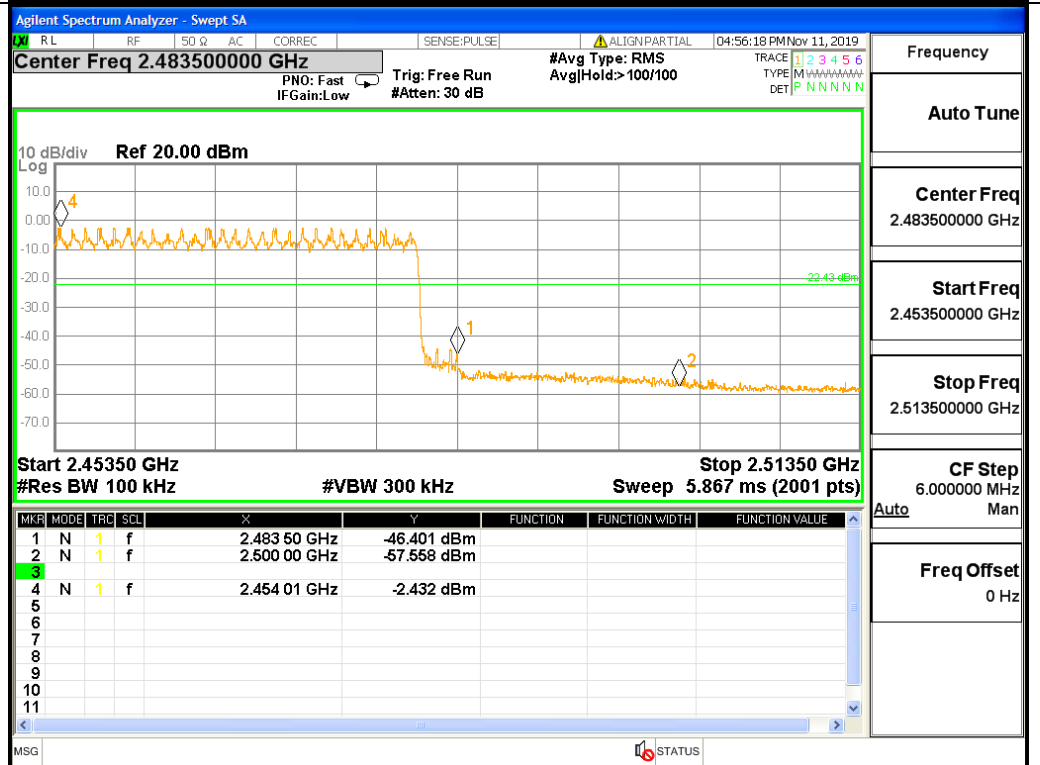




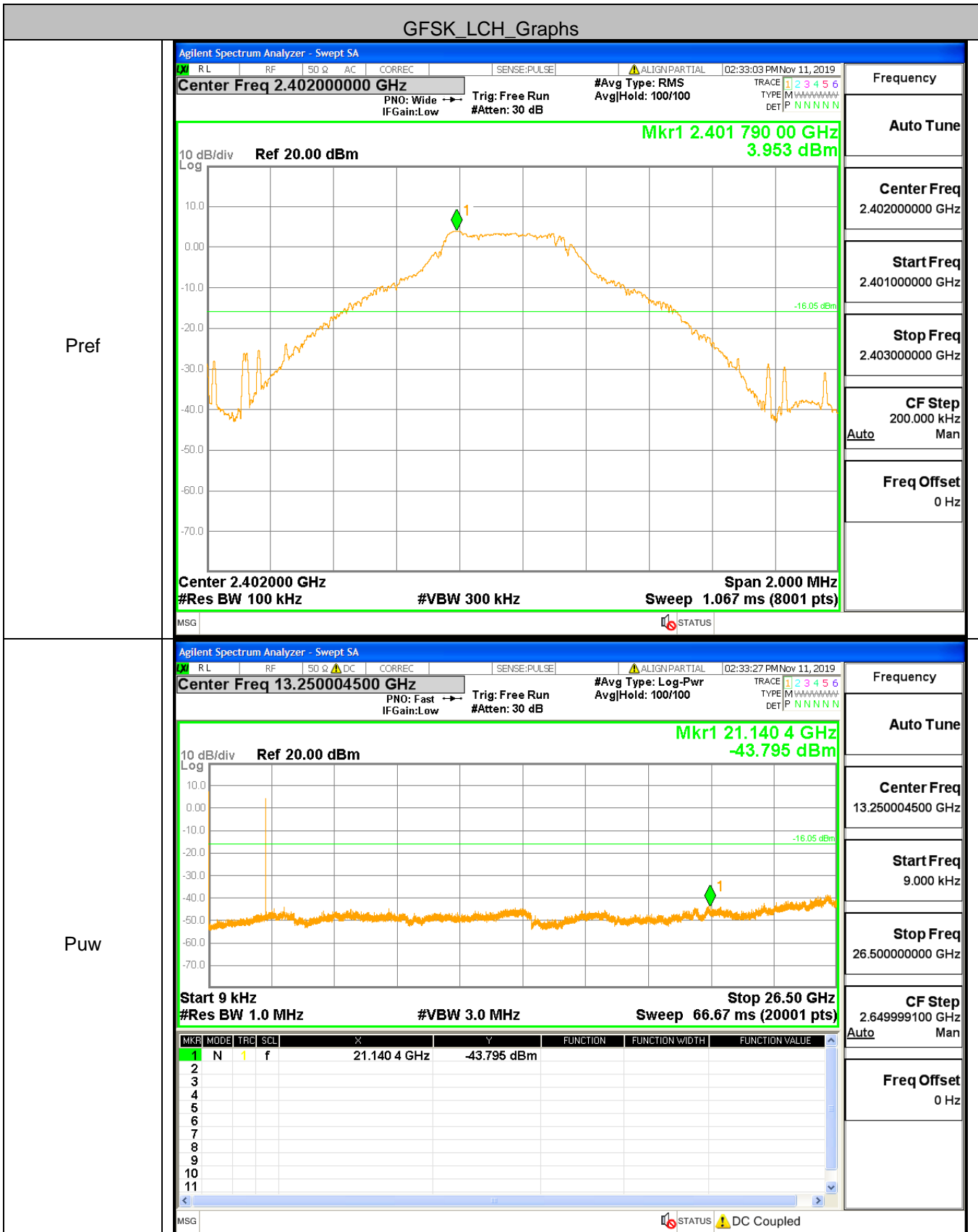
8DPSK/LCH/Hop



8DPSK/HCH/Hop

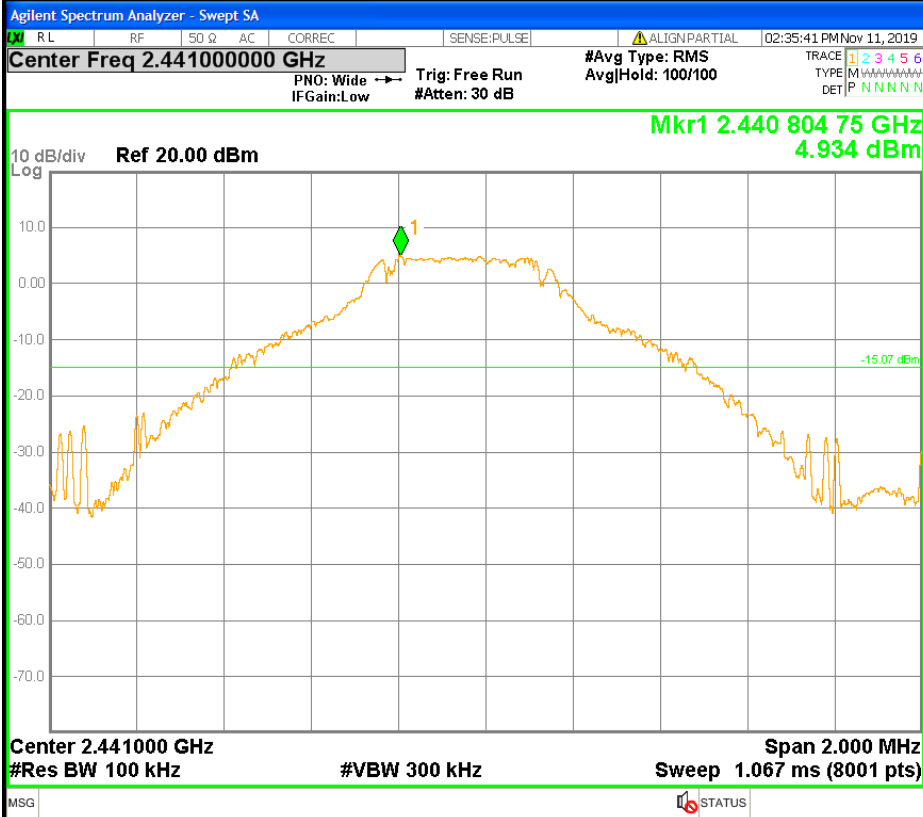


### A.7 RF Conducted Spurious Emissions Test Graph



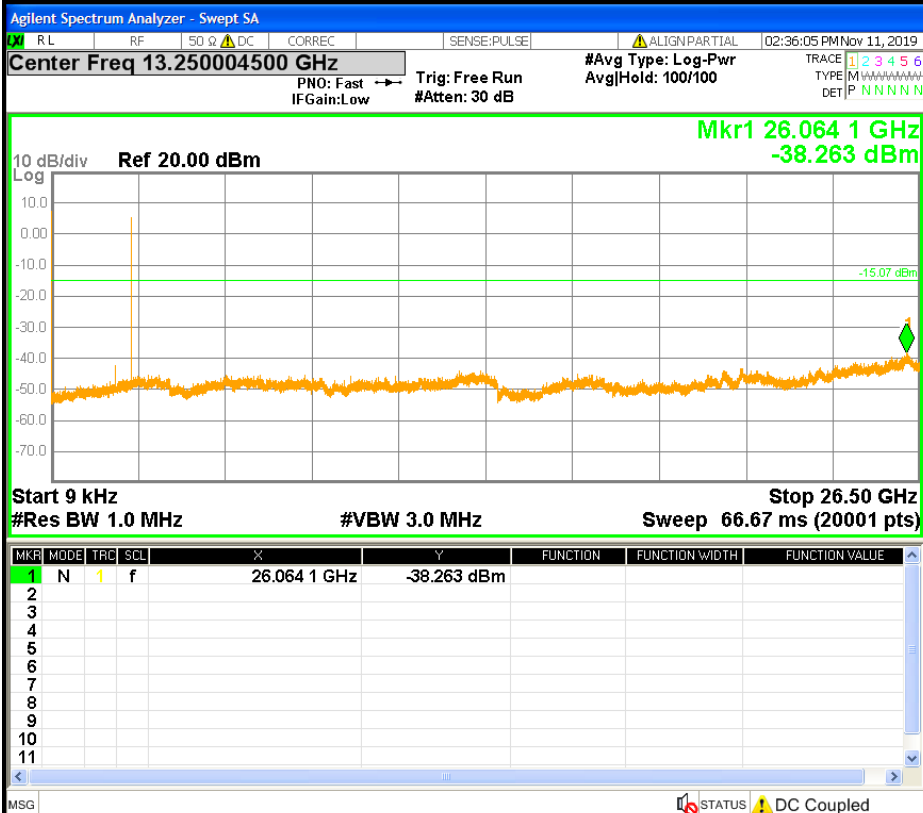
GFSK\_MCH\_Graphs

Pref



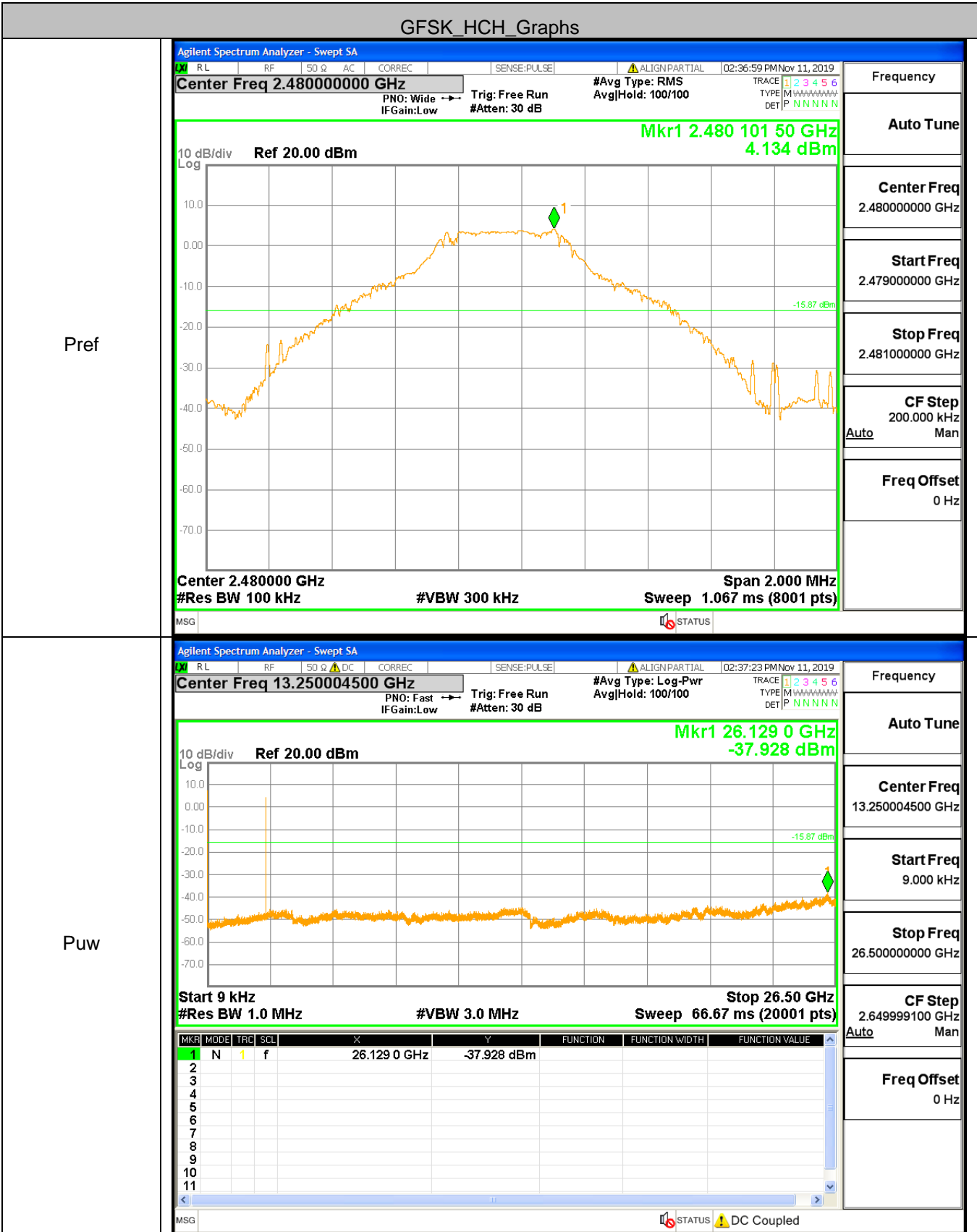
Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw



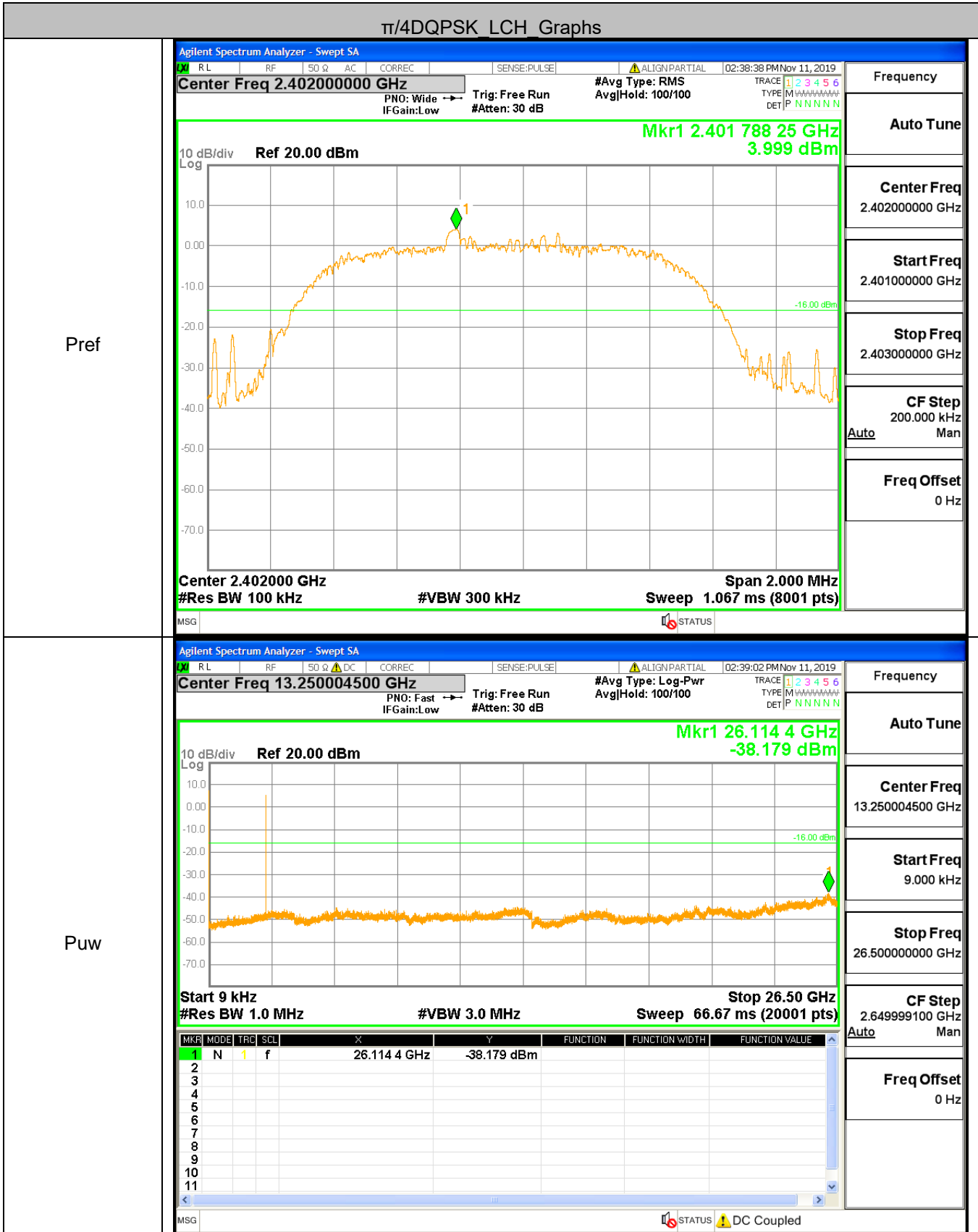
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

GFSK\_HCH\_Graphs

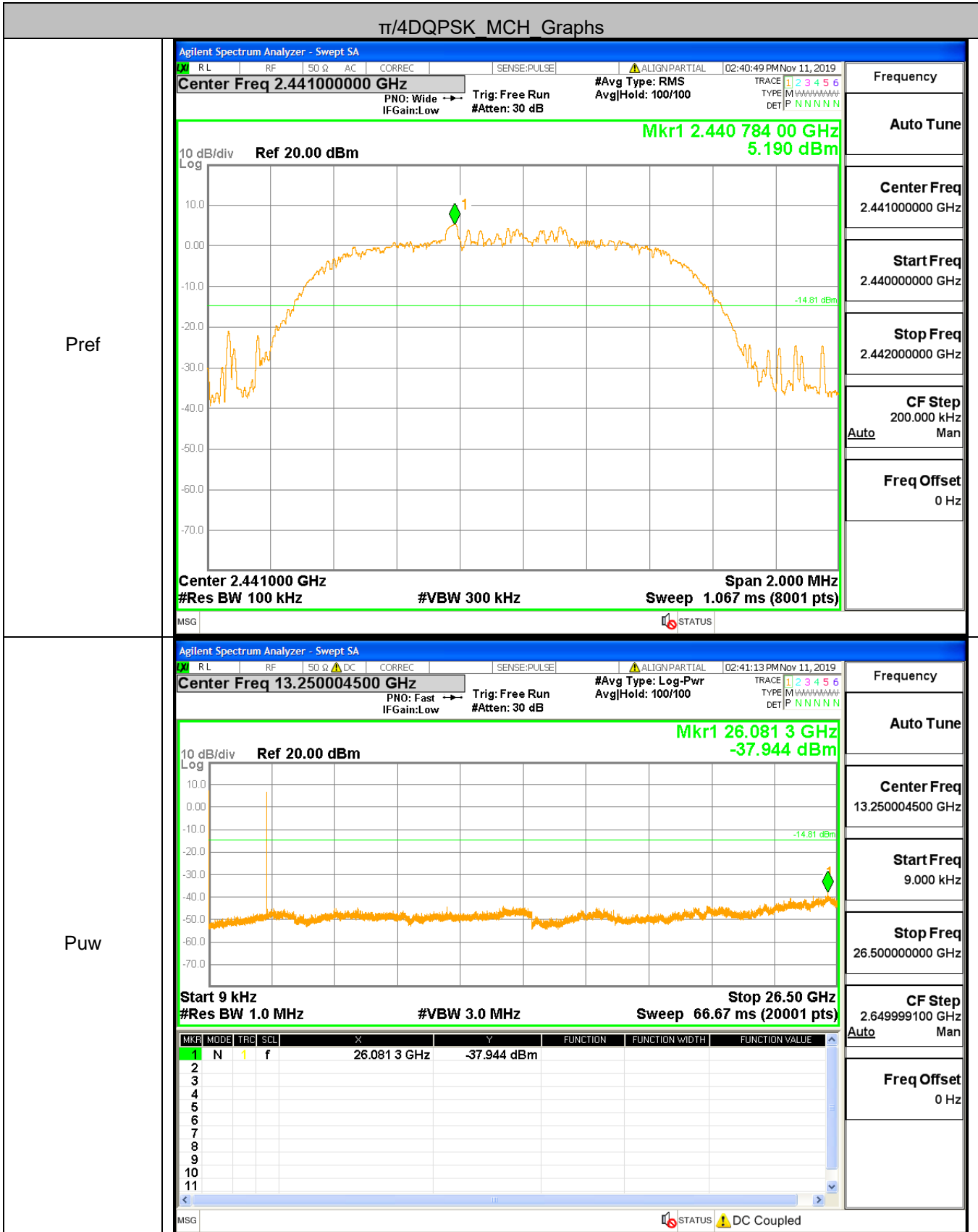




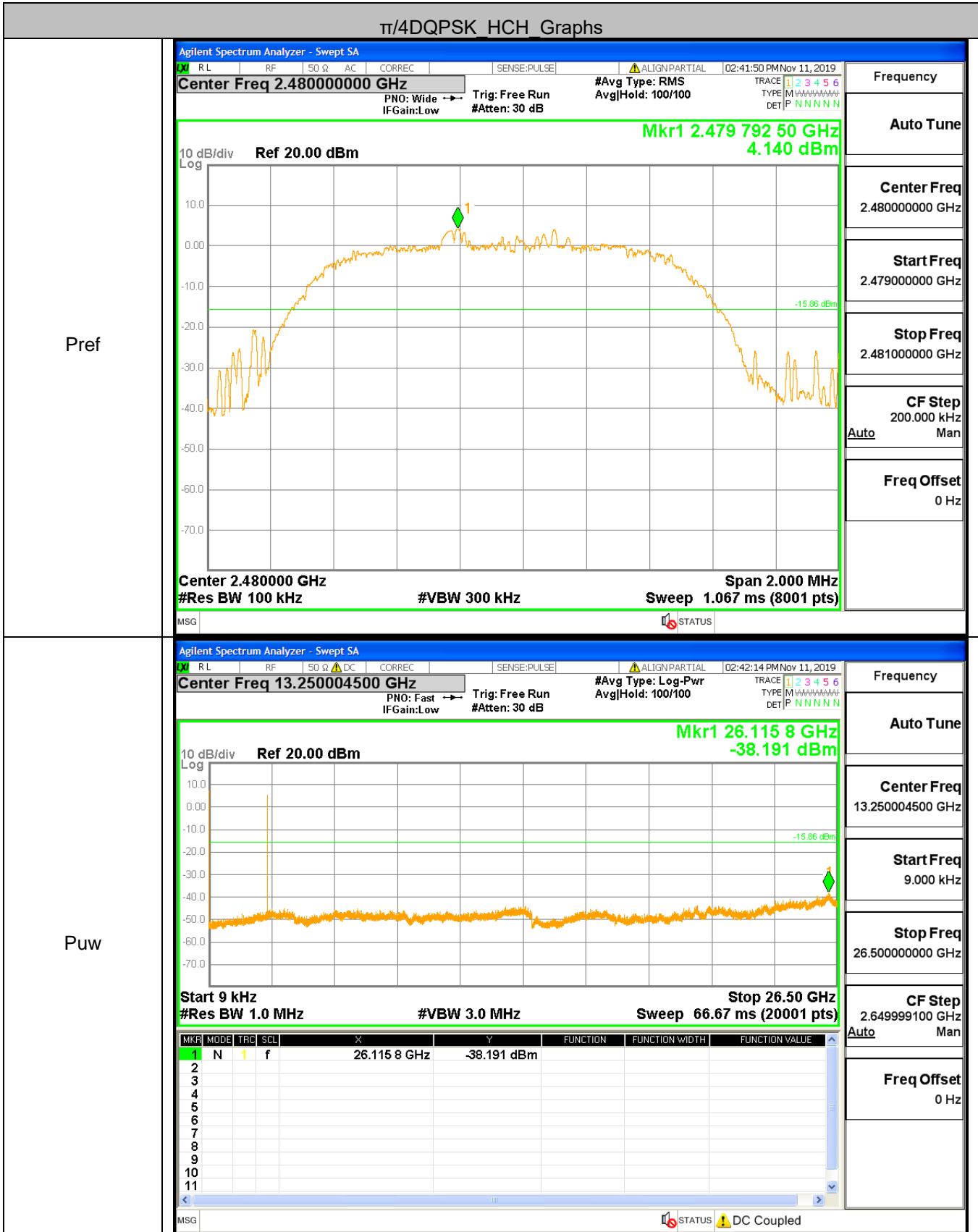
$\pi/4$ DQPSK LCH Graphs



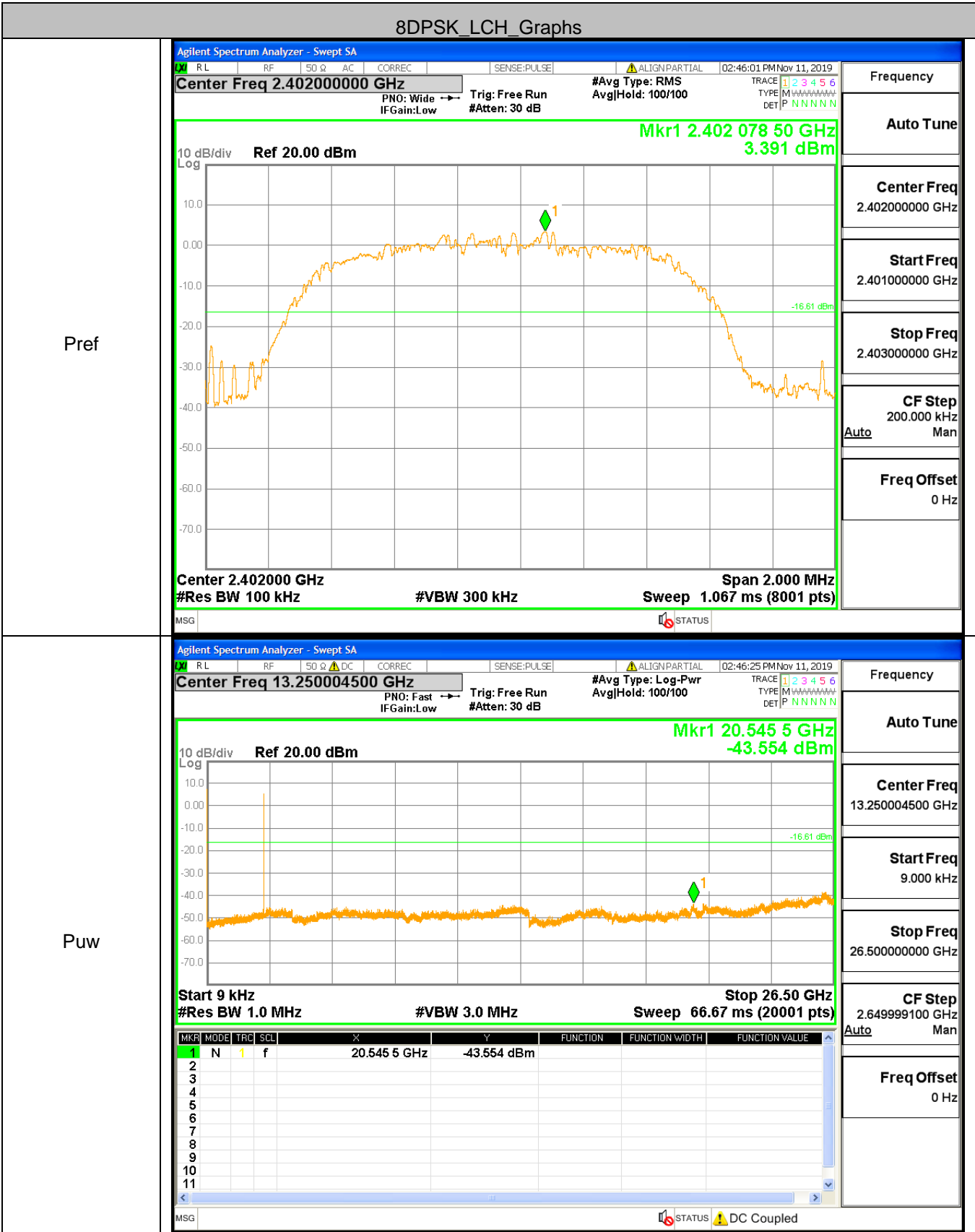
$\pi/4$ DQPSK MCH Graphs



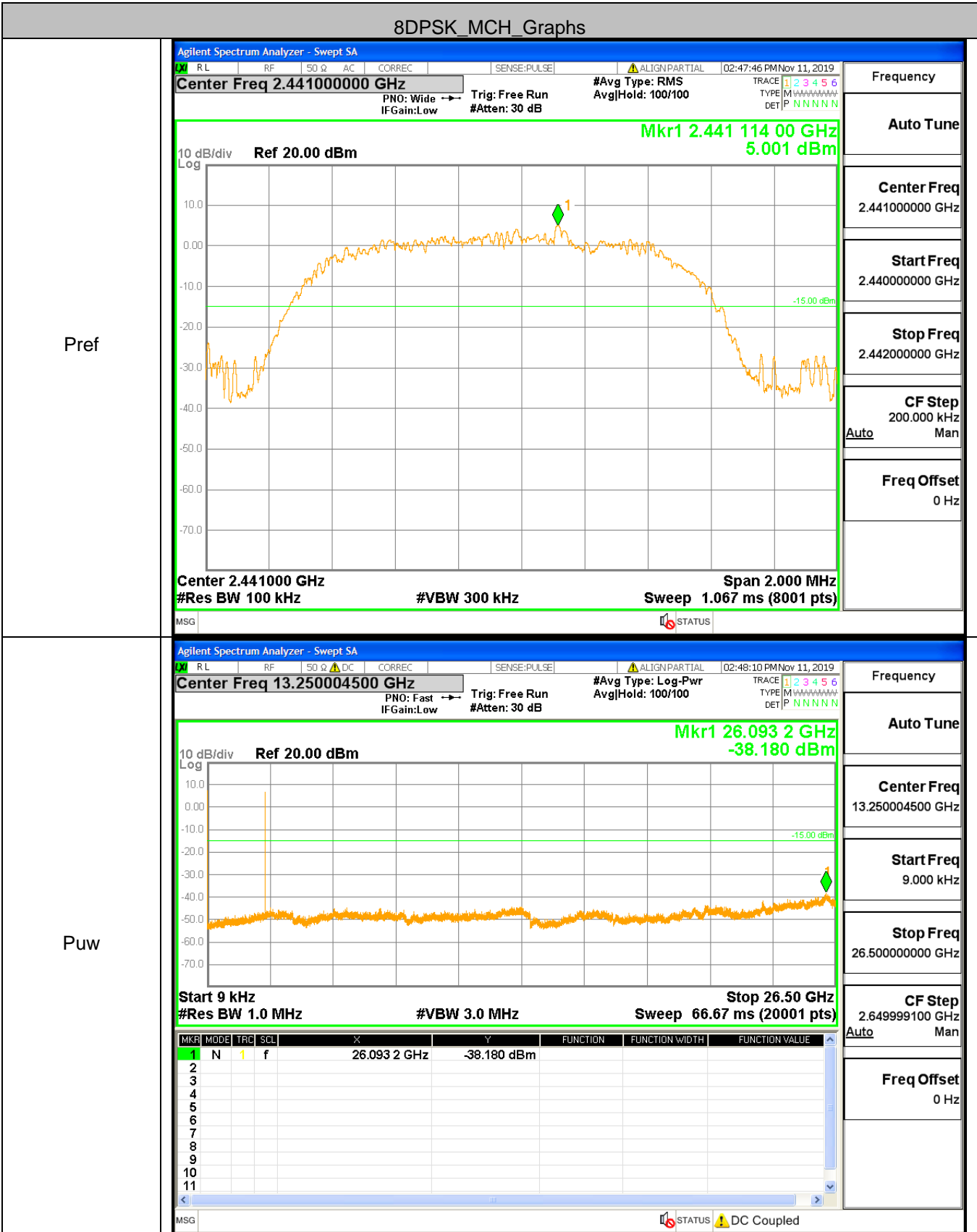
$\pi/4$ DQPSK HCH Graphs



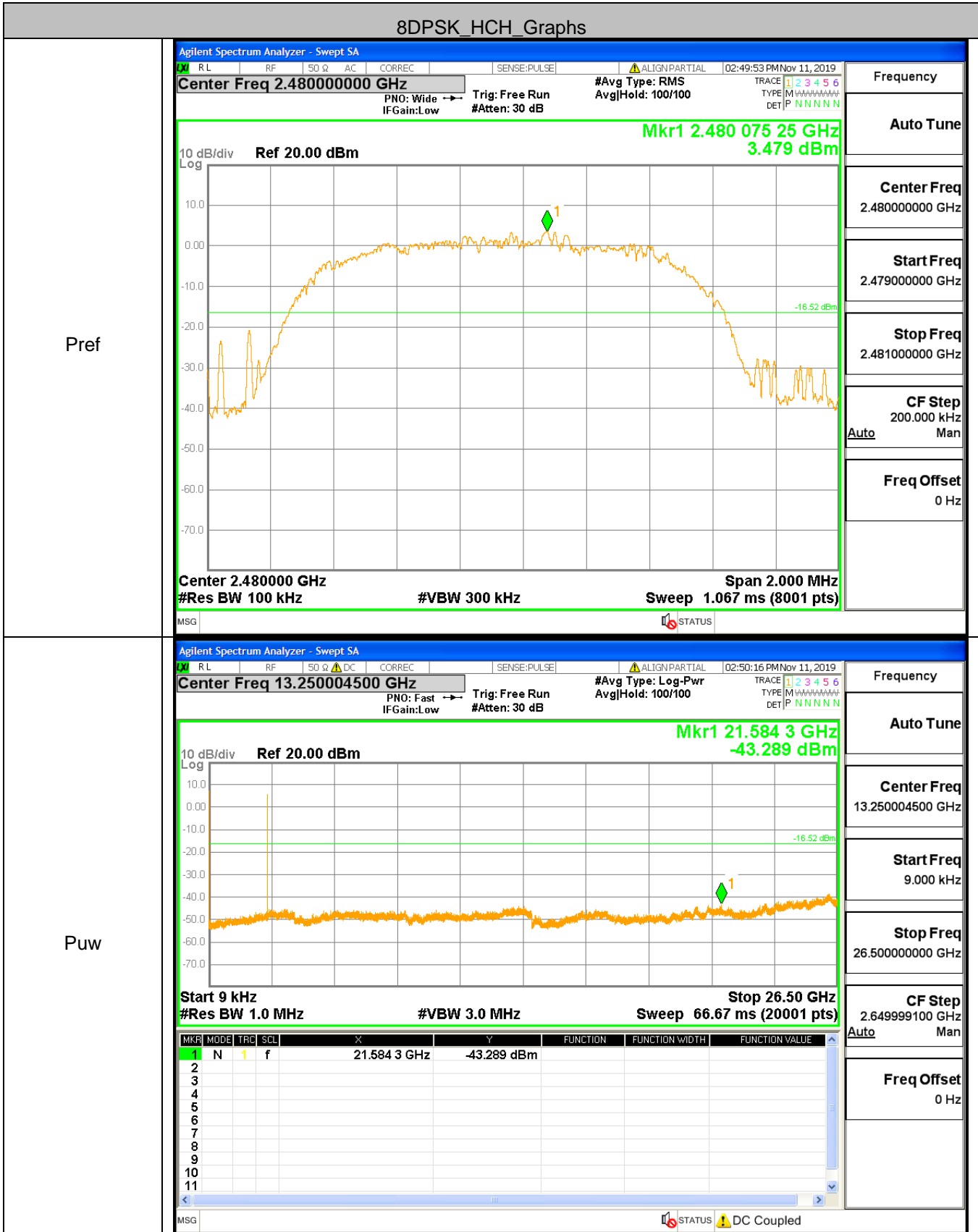
8DPSK\_LCH\_Graphs



8DPSK\_MCH\_Graphs



8DPSK\_HCH\_Graphs

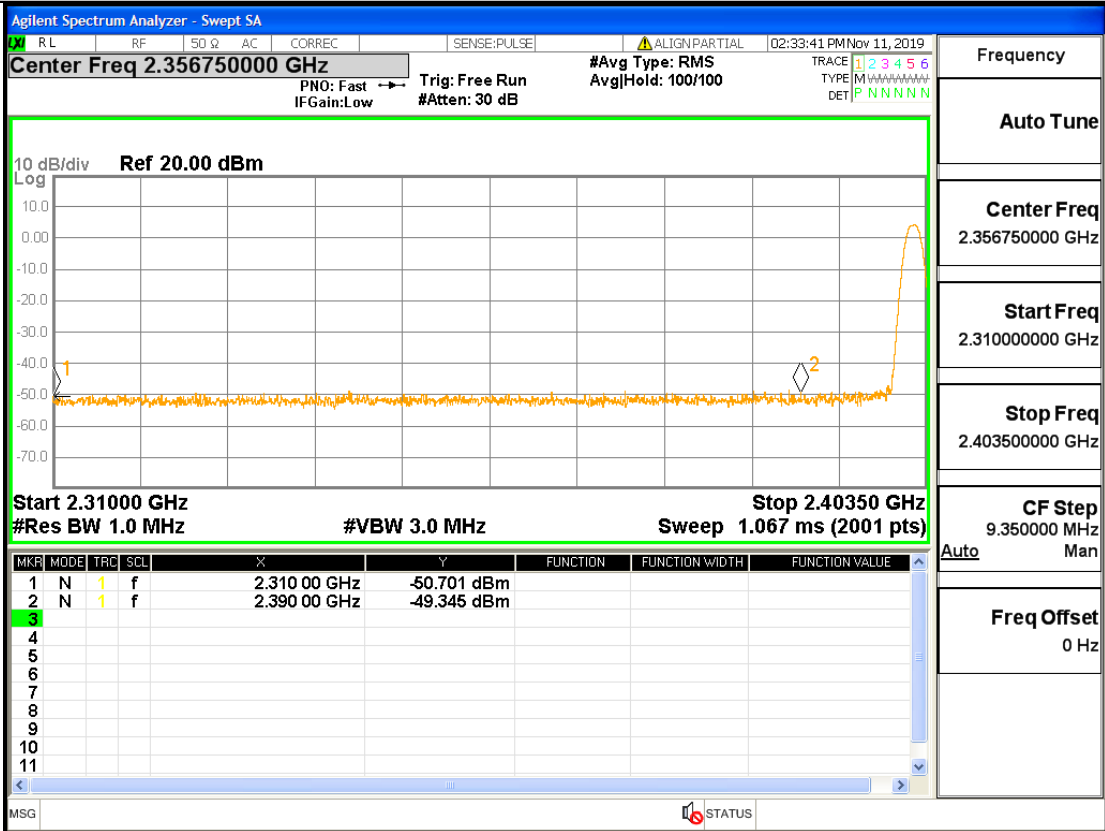


### A.8 Restrict-band band-edge measurements

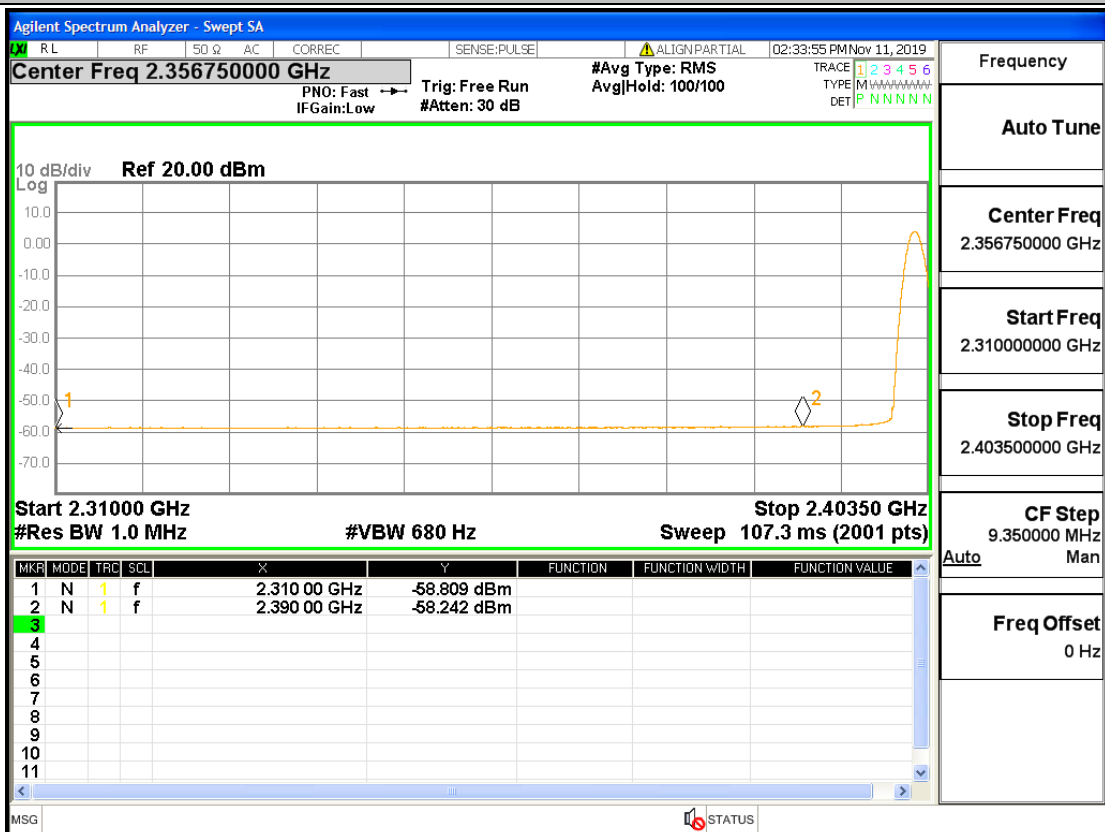
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390	2.10	0.00	-49.34	47.96	74	Pass
1DH5	2480	2484.251	2.10	0.00	-46.34	50.96	74	Pass
2DH5	2402	2390	2.10	0.00	-50.48	46.82	74	Pass
2DH5	2480	2484.477	2.10	0.00	-45.436	51.86	74	Pass
3DH5	2402	2390	2.10	0.00	-50.34	46.96	74	Pass
3DH5	2480	2483.5	2.10	0.00	-47.51	49.79	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	2.10	0.00	-58.24	39.06	54	Pass
1DH5	2480	2484.251	2.10	0.00	-53.10	44.20	54	Pass
2DH5	2402	2390	2.10	0.00	-58.30	39.00	54	Pass
2DH5	2480	2484.477	2.10	0.00	-50.78	46.52	54	Pass
3DH5	2402	2390	2.10	0.00	-58.29	39.01	54	Pass
3DH5	2480	2483.5	2.10	0.00	-50.75	46.55	54	Pass

Restrict-band band-edge measurements\_2402\_PEAK\_DH5

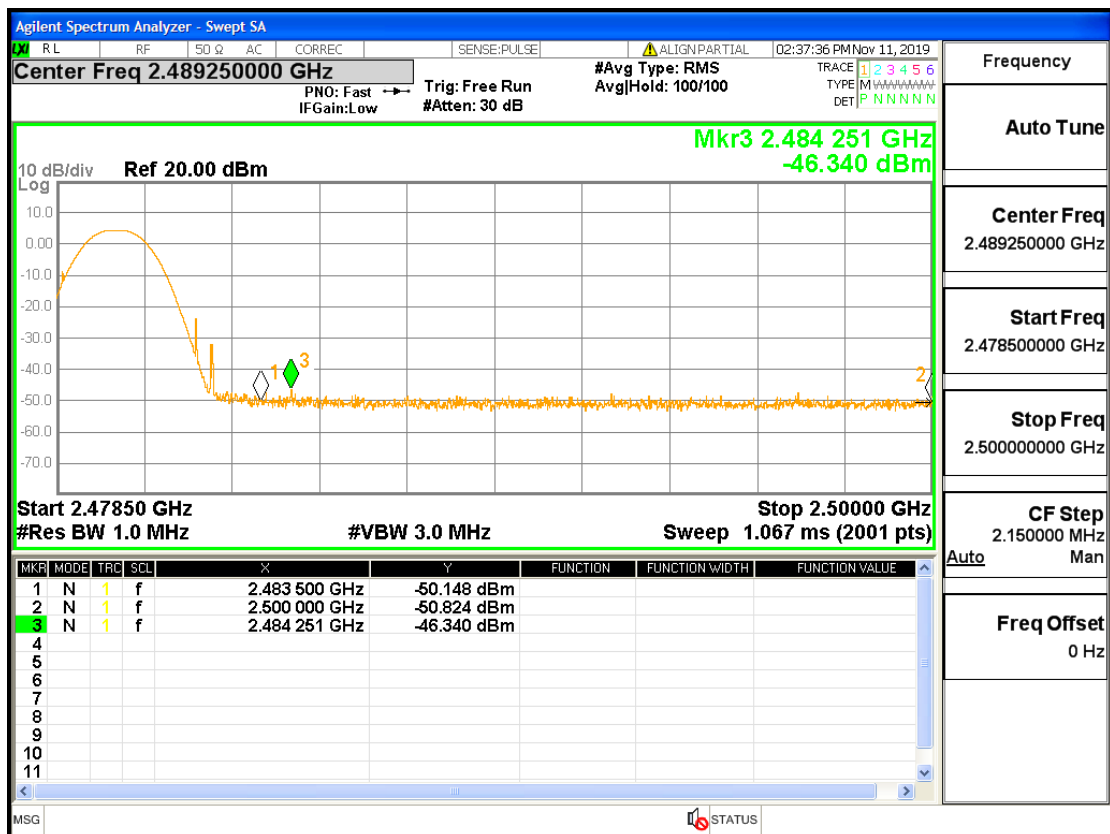


Restrict-band band-edge measurements\_2402\_AV\_DH5

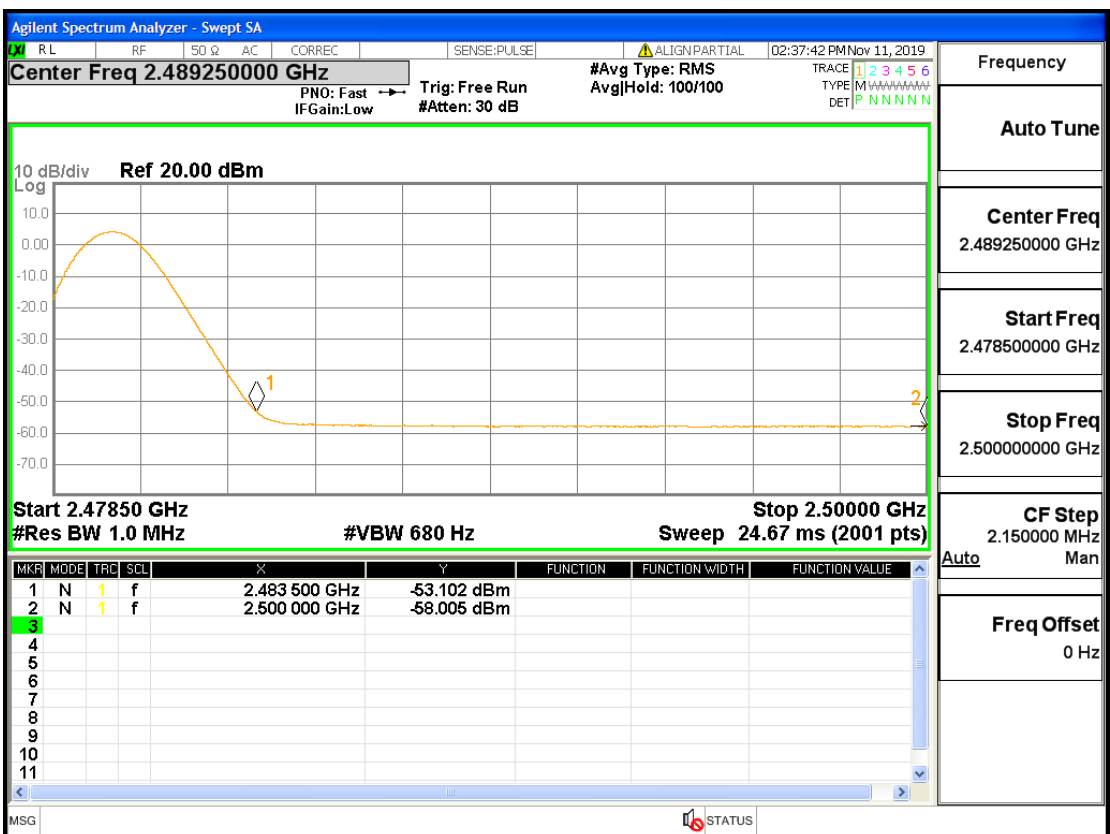




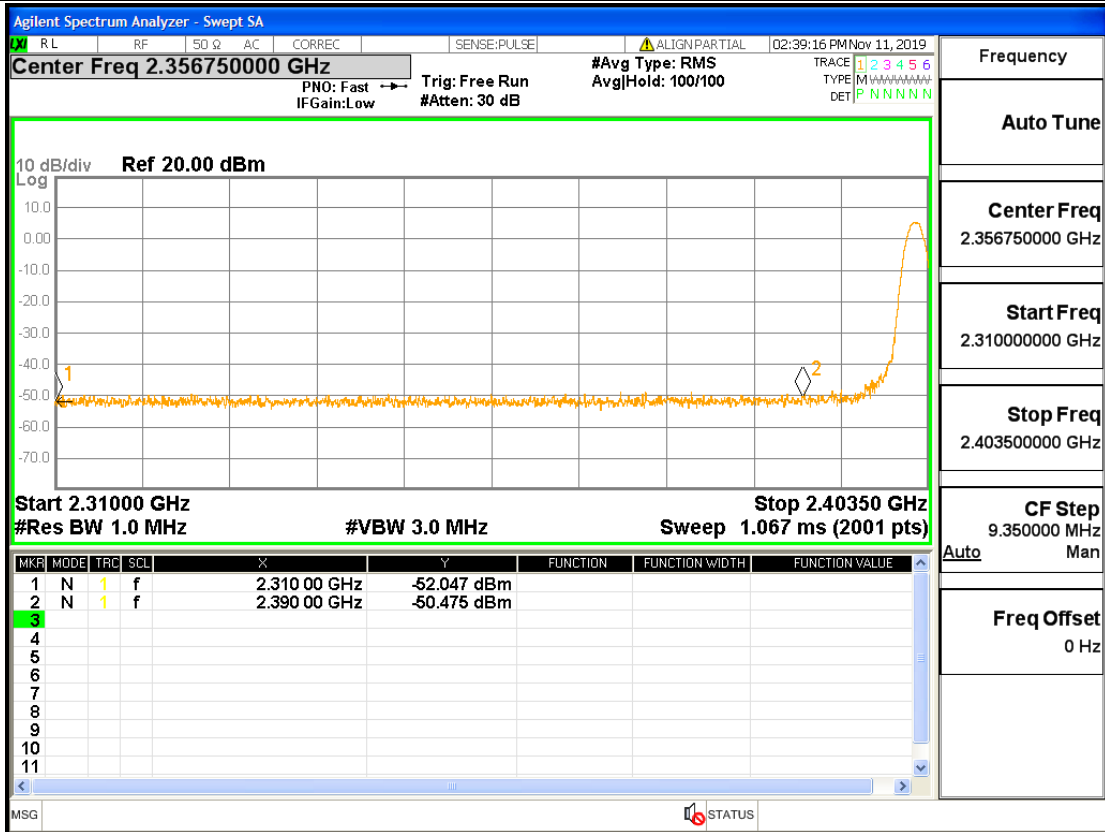
Restrict-band band-edge measurements\_2480\_PEAK\_DH5



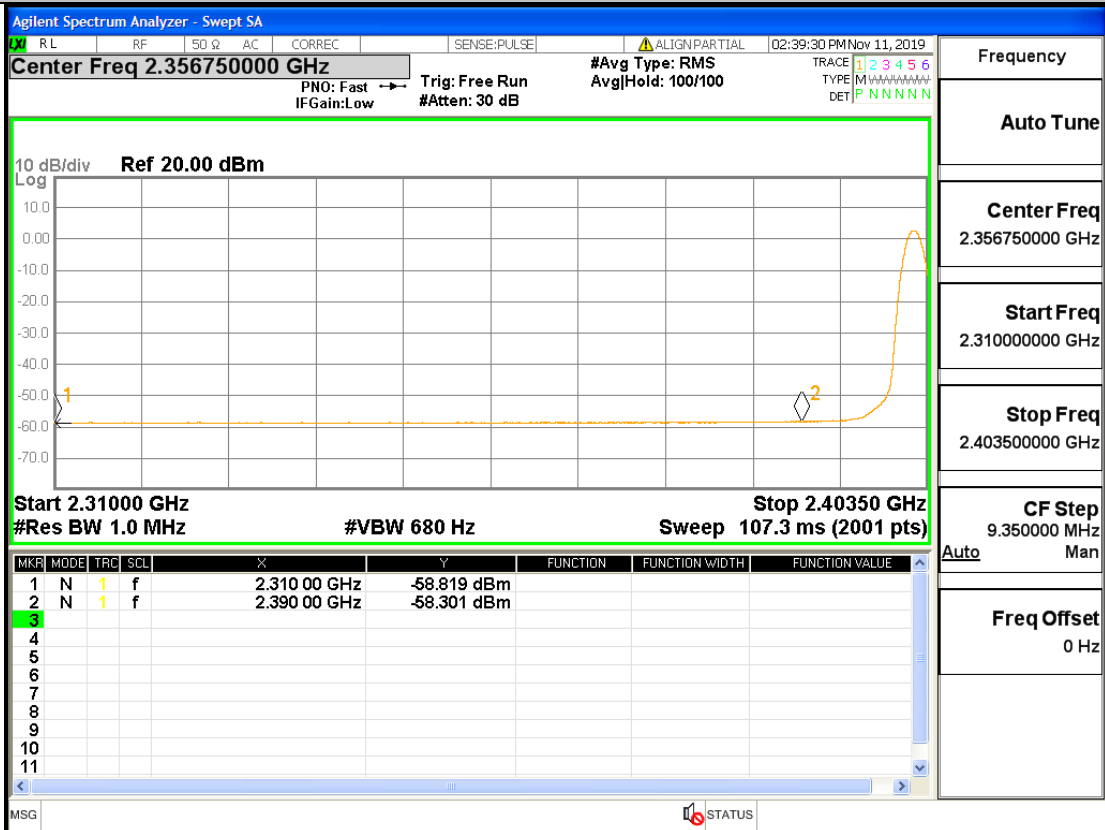
Restrict-band band-edge measurements\_2480\_AV\_DH5



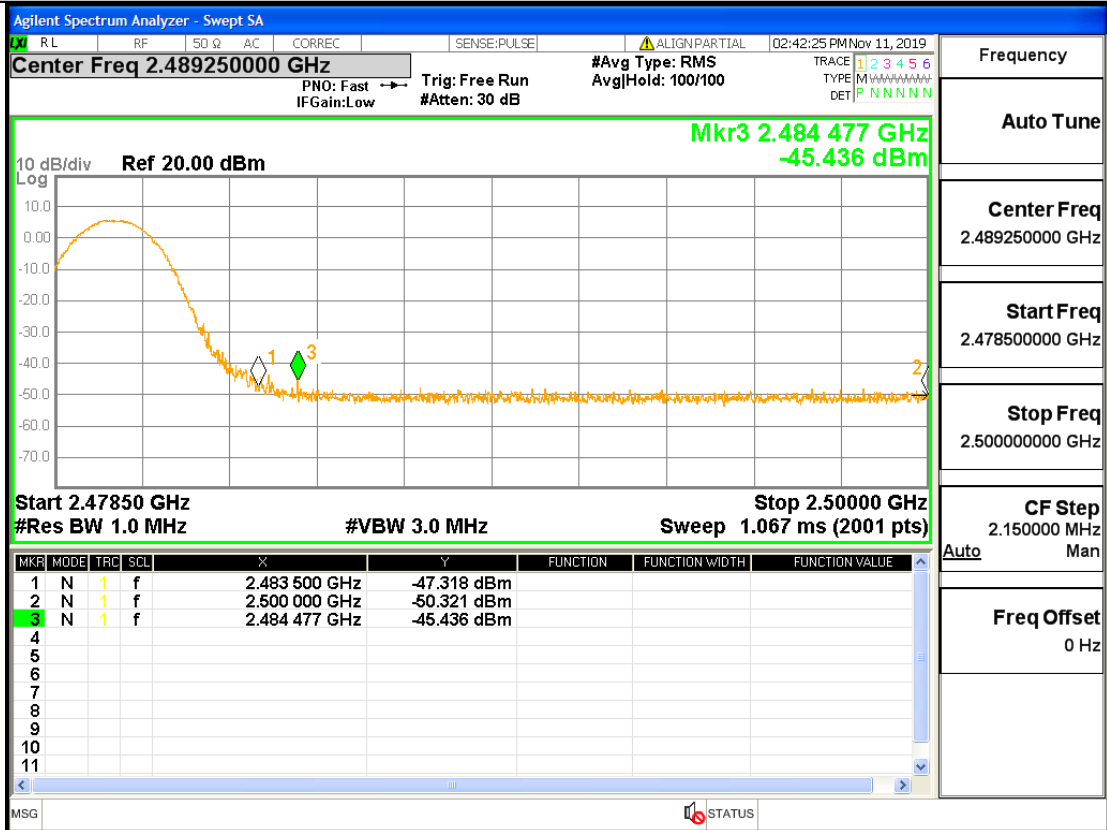
Restrict-band band-edge measurements\_2402\_PEAK\_2DH5



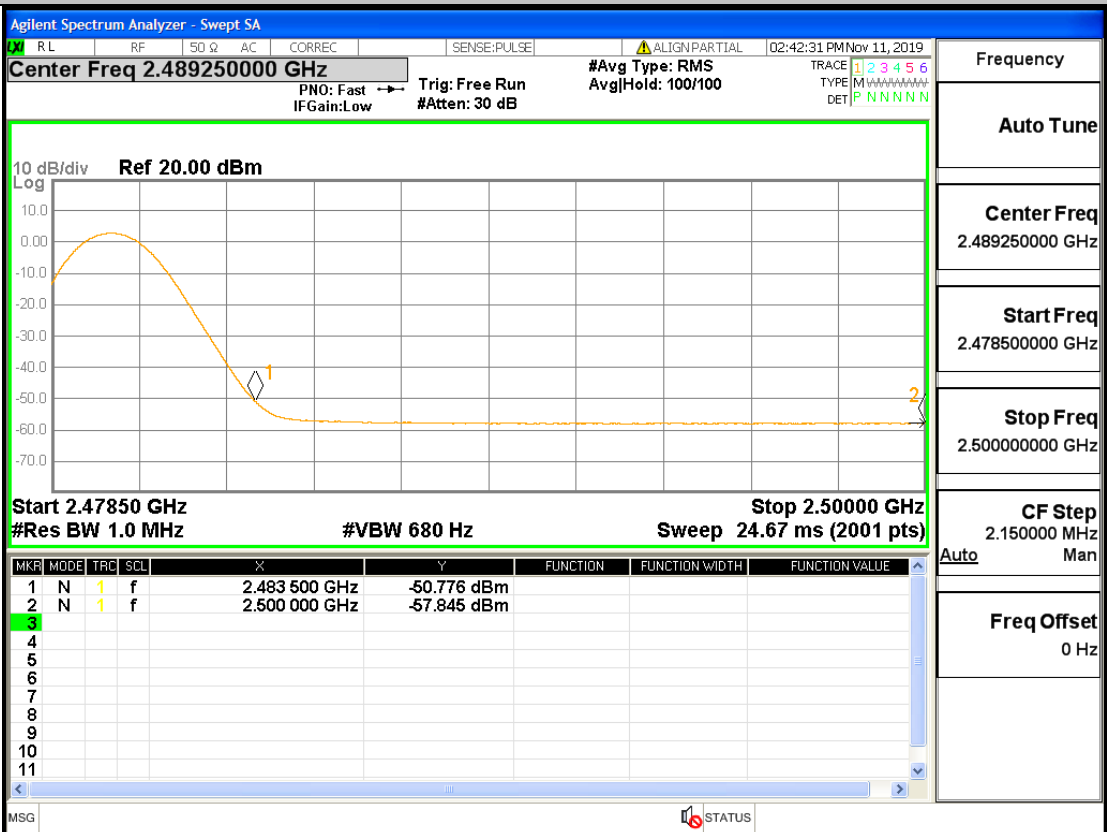
Restrict-band band-edge measurements\_2402\_AV\_2DH5



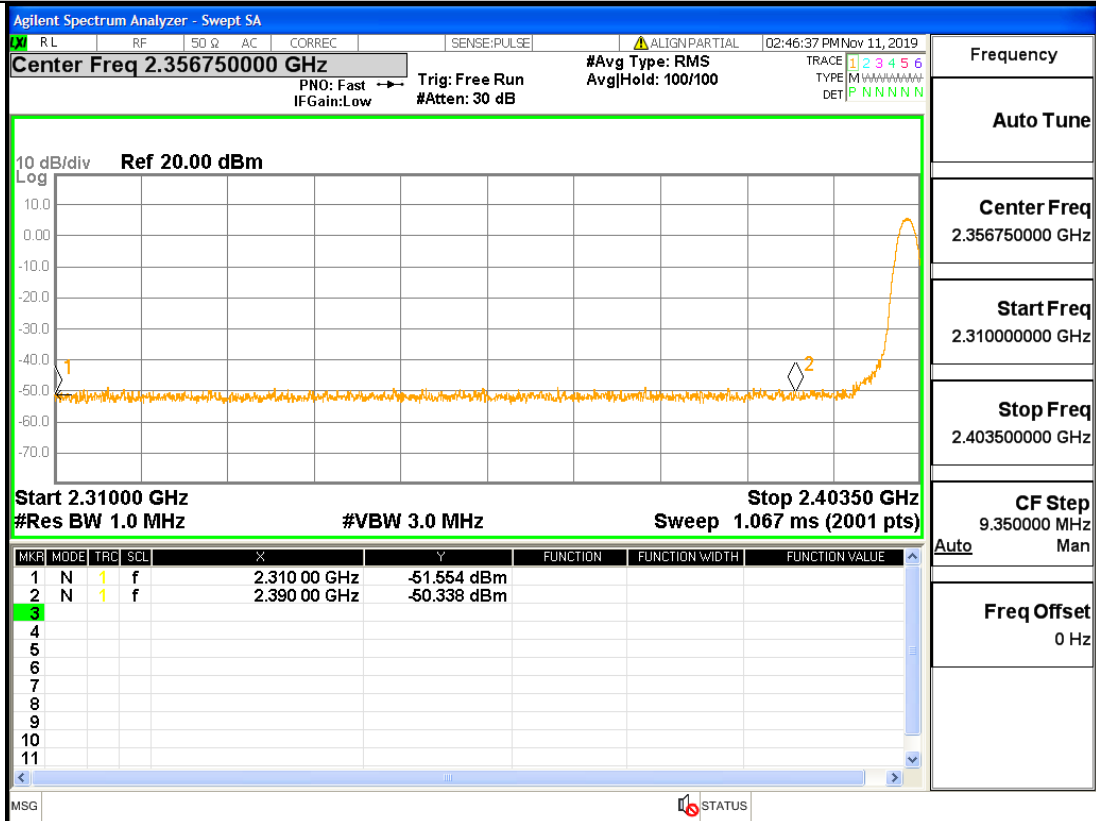
Restrict-band band-edge measurements\_2480\_PEAK\_2DH5



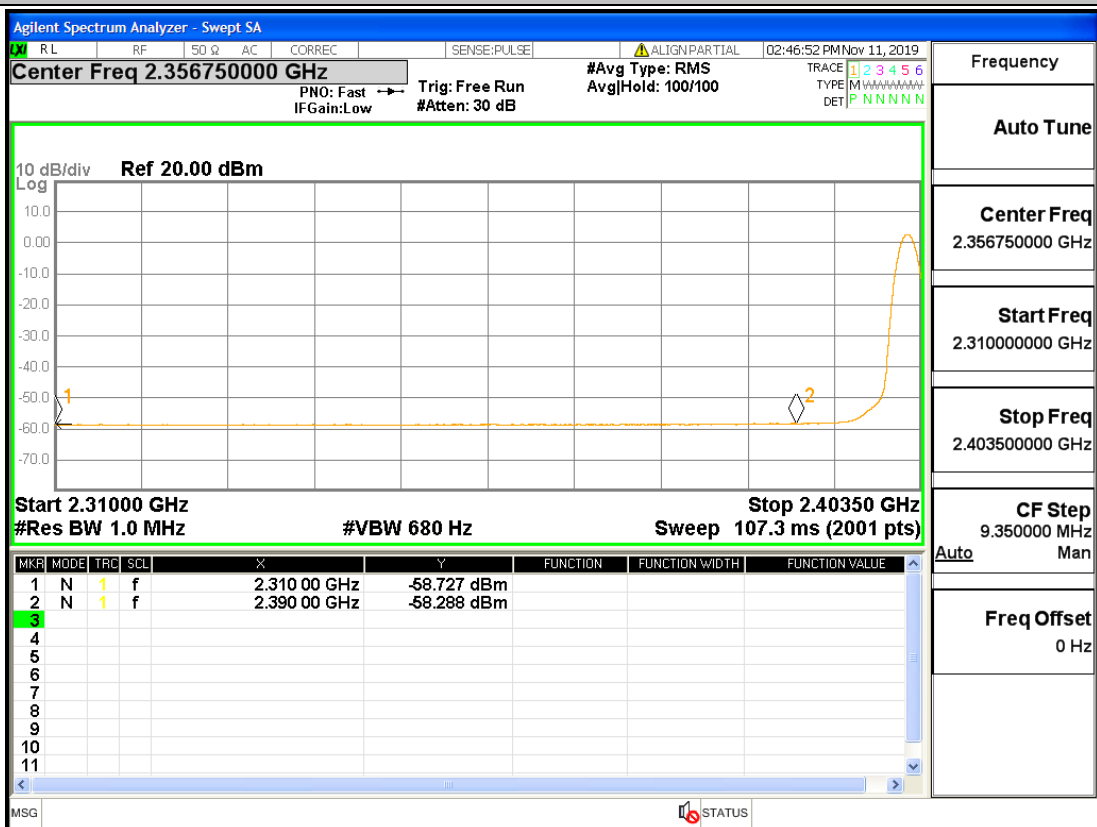
Restrict-band band-edge measurements\_2480\_AV\_2DH5



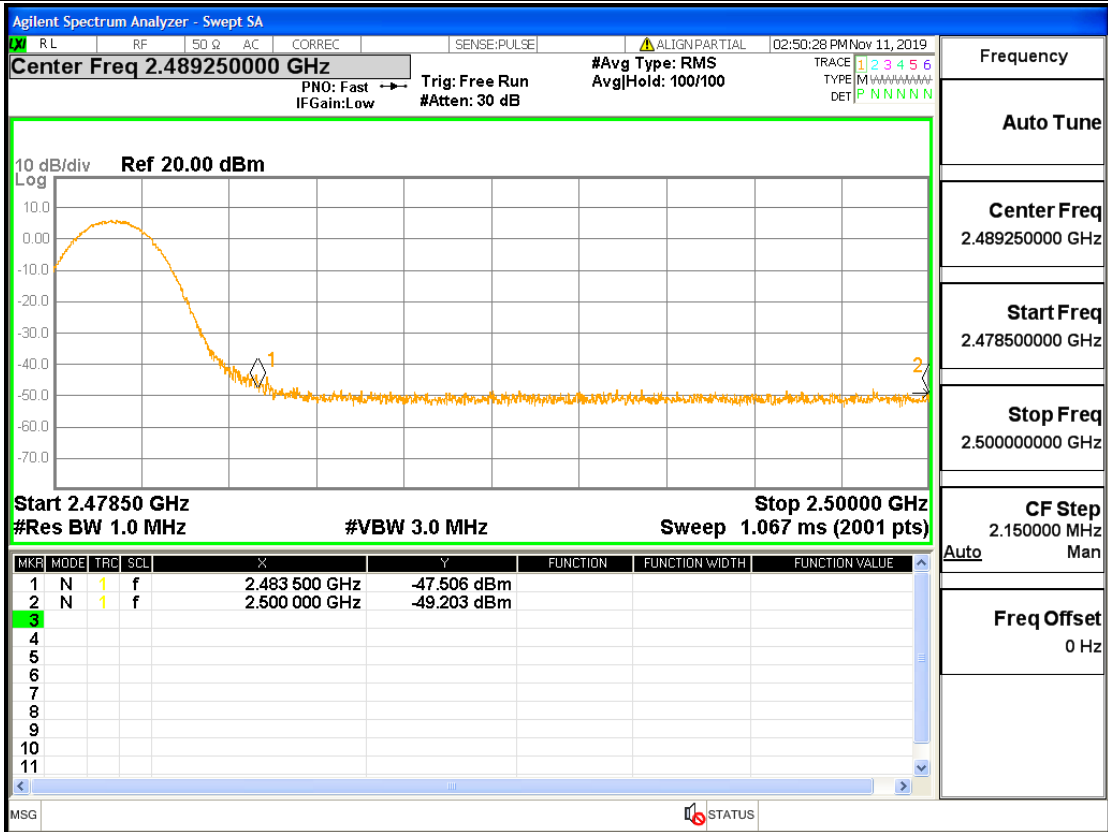
Restrict-band band-edge measurements\_2402\_PEAK\_3DH5



Restrict-band band-edge measurements\_2402\_AV\_3DH5



Restrict-band band-edge measurements\_2480\_PEAK\_3DH5



Restrict-band band-edge measurements\_2480\_AV\_3DH5

