

**Appendix A**  
**RF Test Data for BT(BDR/EDR) (Conducted Measurement)**  
**Product Name: Bluetooth Speaker**  
**Trade Mark: N/A**  
**Test Model: B107**  
**FCC ID: 2ATOY-B107**

**Environmental Conditions**

Temperature:	23.3 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

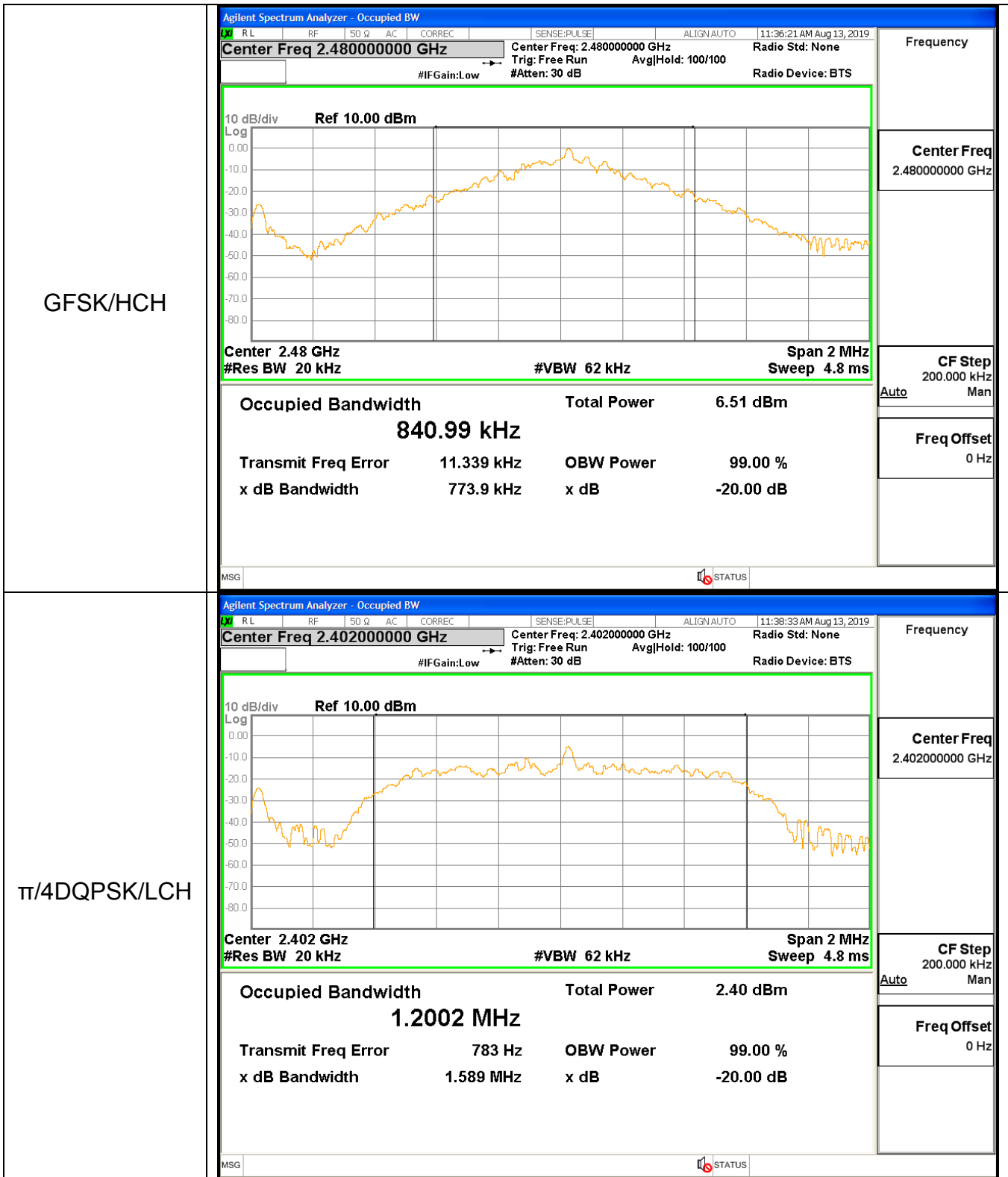
**A.1 20 dB Bandwidth**

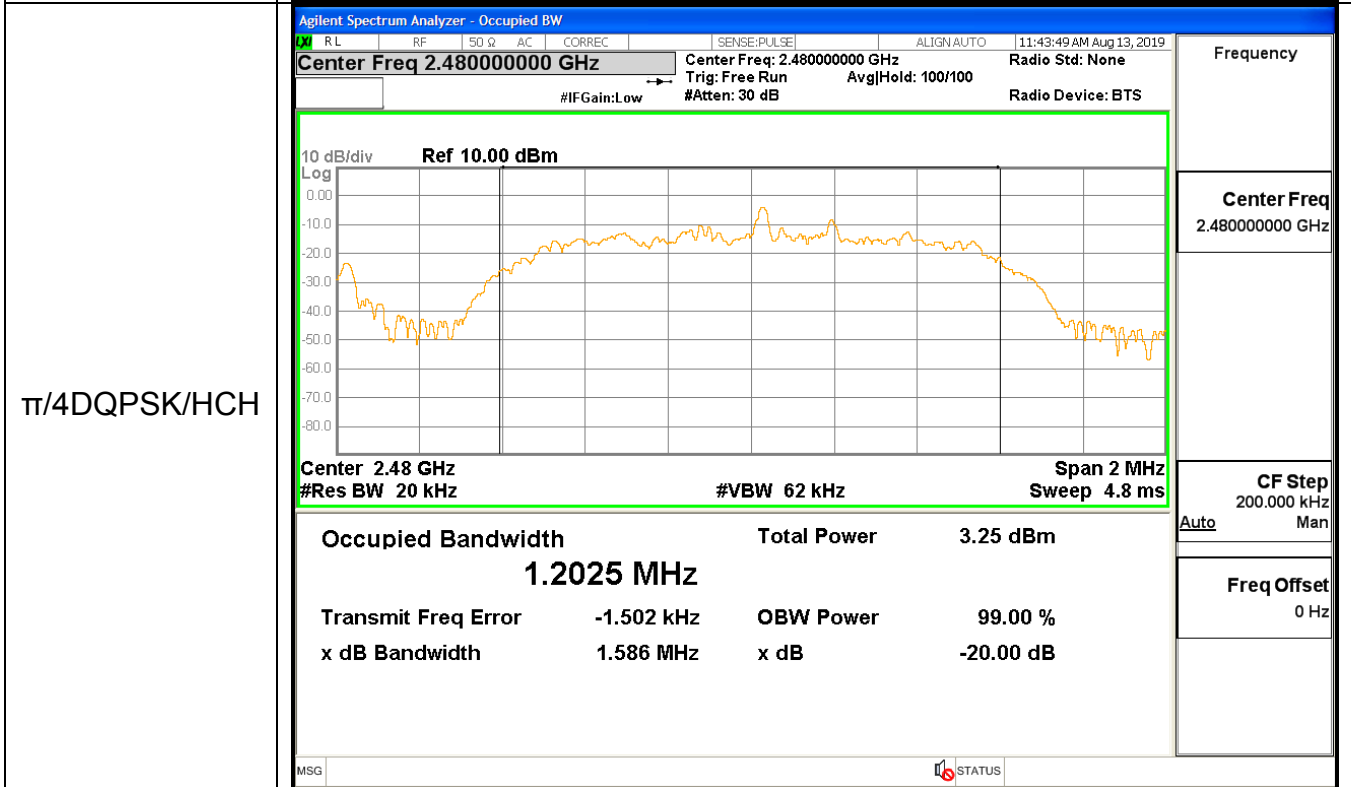
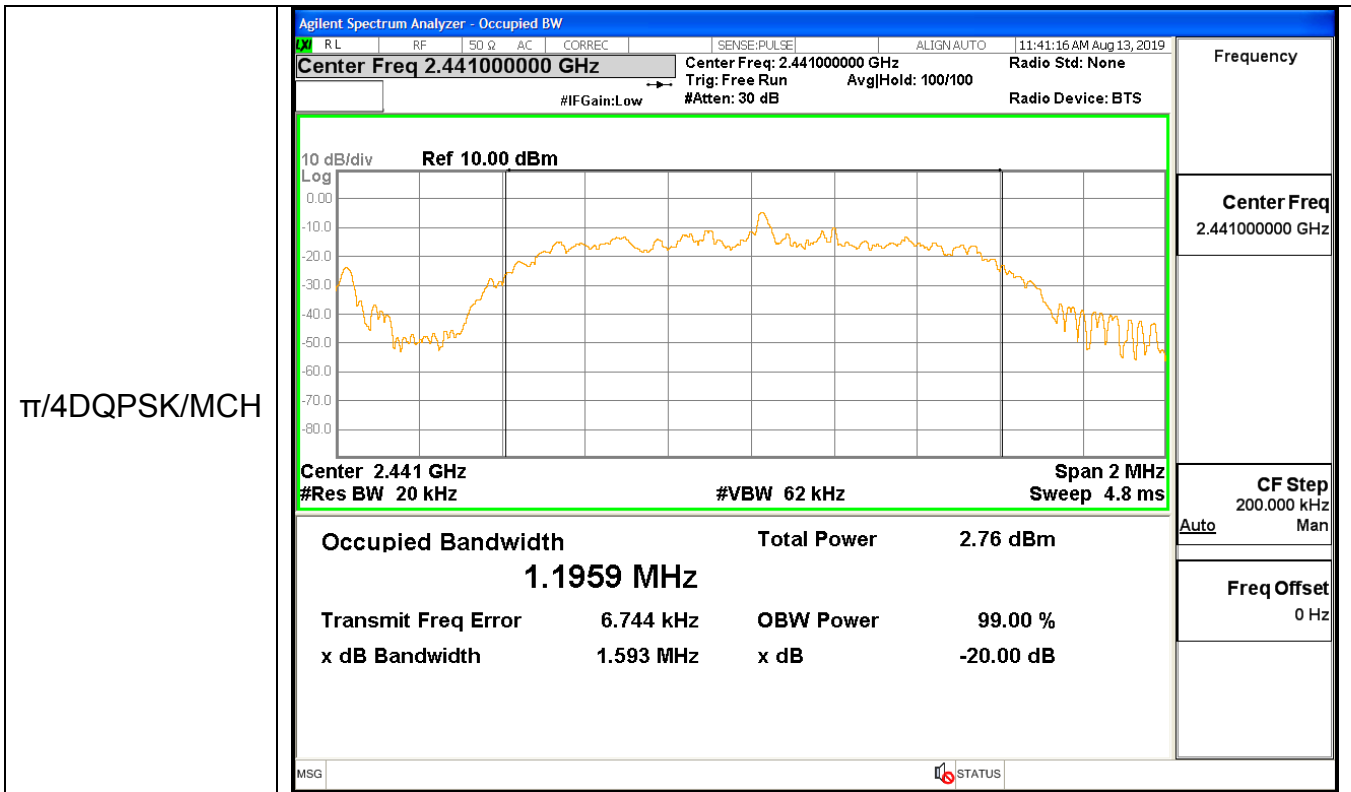
Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.835	Not Specified	PASS
GFSK	MCH	0.793	Not Specified	PASS
GFSK	HCH	0.774	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.589	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.593	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.586	Not Specified	PASS
8DPSK	LCH	1.593	Not Specified	PASS
8DPSK	MCH	1.602	Not Specified	PASS
8DPSK	HCH	1.601	Not Specified	PASS

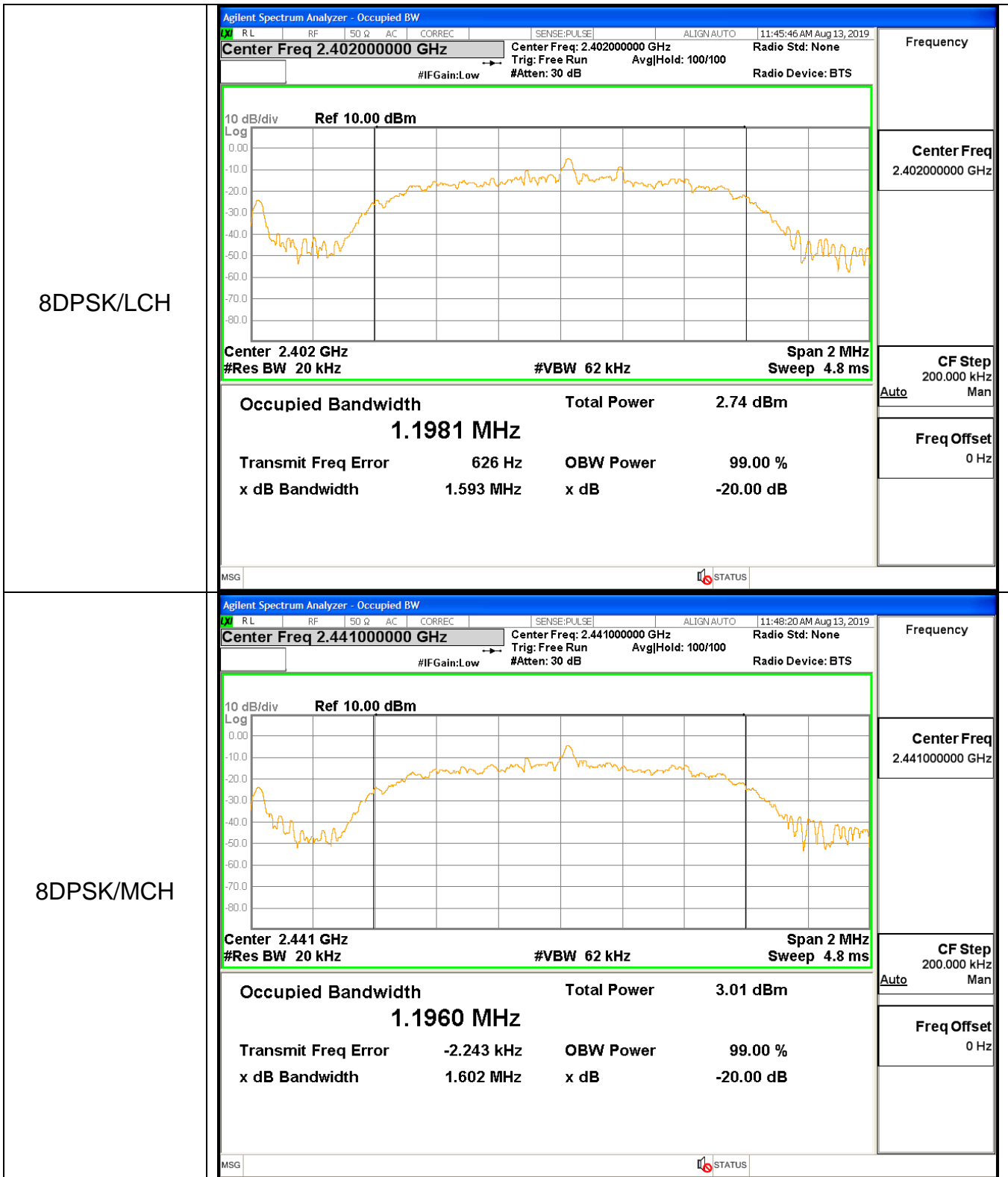
### Test Graph

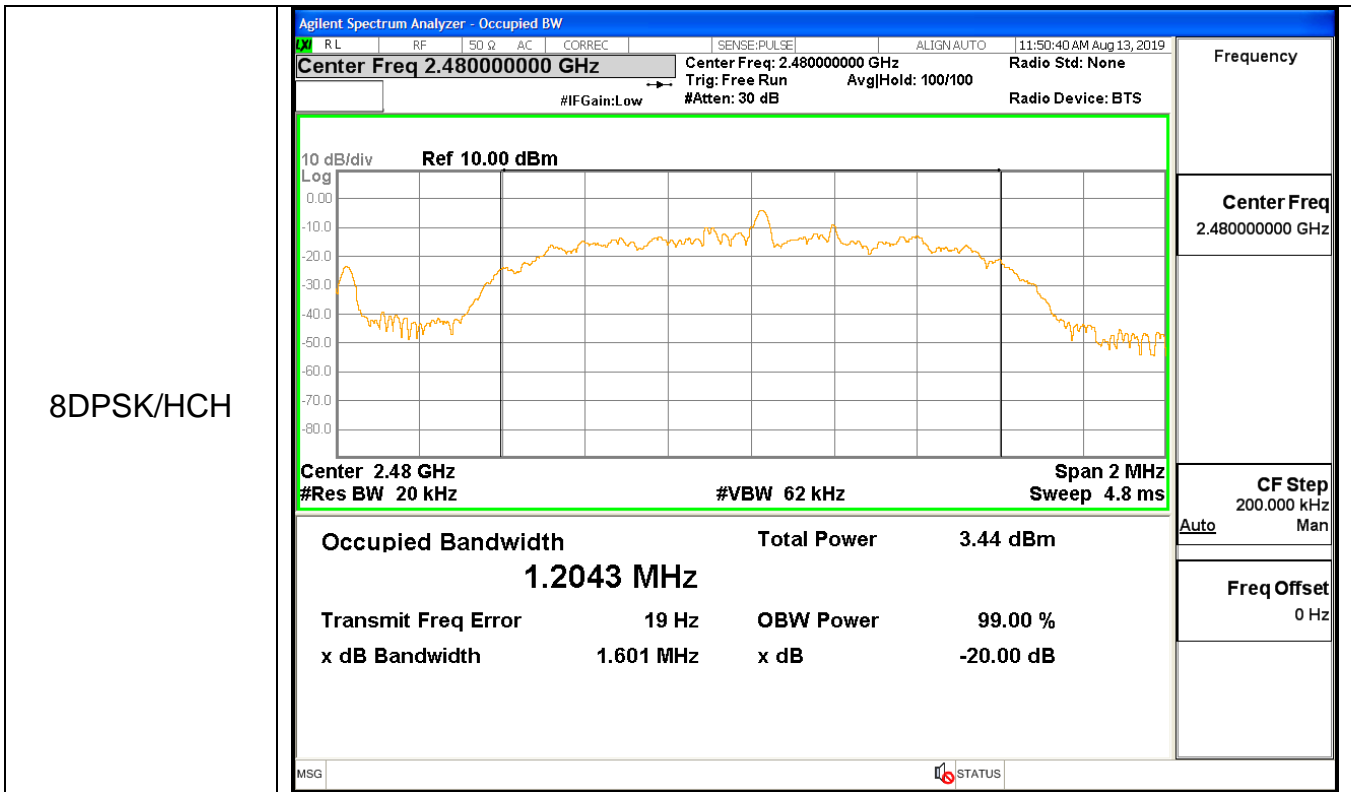
#### Graphs

GFSK/LCH	<div style="border: 1px solid black; padding: 5px;"> <p style="font-size: small; margin: 0;">Agilent Spectrum Analyzer - Occupied BW</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/> RL</td> <td style="width: 15%;"><input type="checkbox"/> RF</td> <td style="width: 15%;"><input type="checkbox"/> 50 Ω</td> <td style="width: 15%;"><input type="checkbox"/> AC</td> <td style="width: 15%;"><input type="checkbox"/> CORREC</td> <td style="width: 15%;"><input type="checkbox"/> SENSE:PULSE</td> <td style="width: 15%;"><input type="checkbox"/> ALIGN:AUTO</td> <td style="width: 15%;">11:31:35 AM Aug 13, 2019</td> </tr> </table> <p style="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 style="border: 1px solid green; padding: 5px; margin: 5px 0;"> </div> <p style="font-size: x-small; margin: 0;">Center 2.402 GHz      #Res BW 20 kHz      #VBW 62 kHz      Span 2 MHz      Sweep 4.8 ms</p> <table style="width: 100%; font-size: x-small; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>Occupied Bandwidth</b></td> <td style="width: 33%;"><b>Total Power</b></td> <td style="width: 33%;"><b>5.95 dBm</b></td> </tr> <tr> <td style="text-align: center;"><b>883.92 kHz</b></td> <td></td> <td></td> </tr> <tr> <td><b>Transmit Freq Error</b></td> <td>38.039 kHz</td> <td><b>OBW Power</b></td> </tr> <tr> <td></td> <td></td> <td>99.00 %</td> </tr> <tr> <td><b>x dB Bandwidth</b></td> <td>835.2 kHz</td> <td><b>x dB</b></td> </tr> <tr> <td></td> <td></td> <td>-20.00 dB</td> </tr> </table> <table style="width: 100%; font-size: x-small; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 60%;"></td> <td style="width: 40%;"><b>Frequency</b></td> </tr> <tr> <td></td> <td><b>Center Freq</b> 2.40200000 GHz</td> </tr> <tr> <td></td> <td><b>CF Step</b> 200.000 kHz</td> </tr> <tr> <td></td> <td>Auto      Man</td> </tr> <tr> <td></td> <td><b>Freq Offset</b> 0 Hz</td> </tr> </table> <p style="font-size: x-small; margin: 0;">MSG      <input type="checkbox"/> STATUS</p> </div>	<input checked="" type="checkbox"/> RL	<input type="checkbox"/> RF	<input type="checkbox"/> 50 Ω	<input type="checkbox"/> AC	<input type="checkbox"/> CORREC	<input type="checkbox"/> SENSE:PULSE	<input type="checkbox"/> ALIGN:AUTO	11:31:35 AM Aug 13, 2019	<b>Occupied Bandwidth</b>	<b>Total Power</b>	<b>5.95 dBm</b>	<b>883.92 kHz</b>			<b>Transmit Freq Error</b>	38.039 kHz	<b>OBW Power</b>			99.00 %	<b>x dB Bandwidth</b>	835.2 kHz	<b>x dB</b>			-20.00 dB		<b>Frequency</b>		<b>Center Freq</b> 2.40200000 GHz		<b>CF Step</b> 200.000 kHz		Auto      Man		<b>Freq Offset</b> 0 Hz
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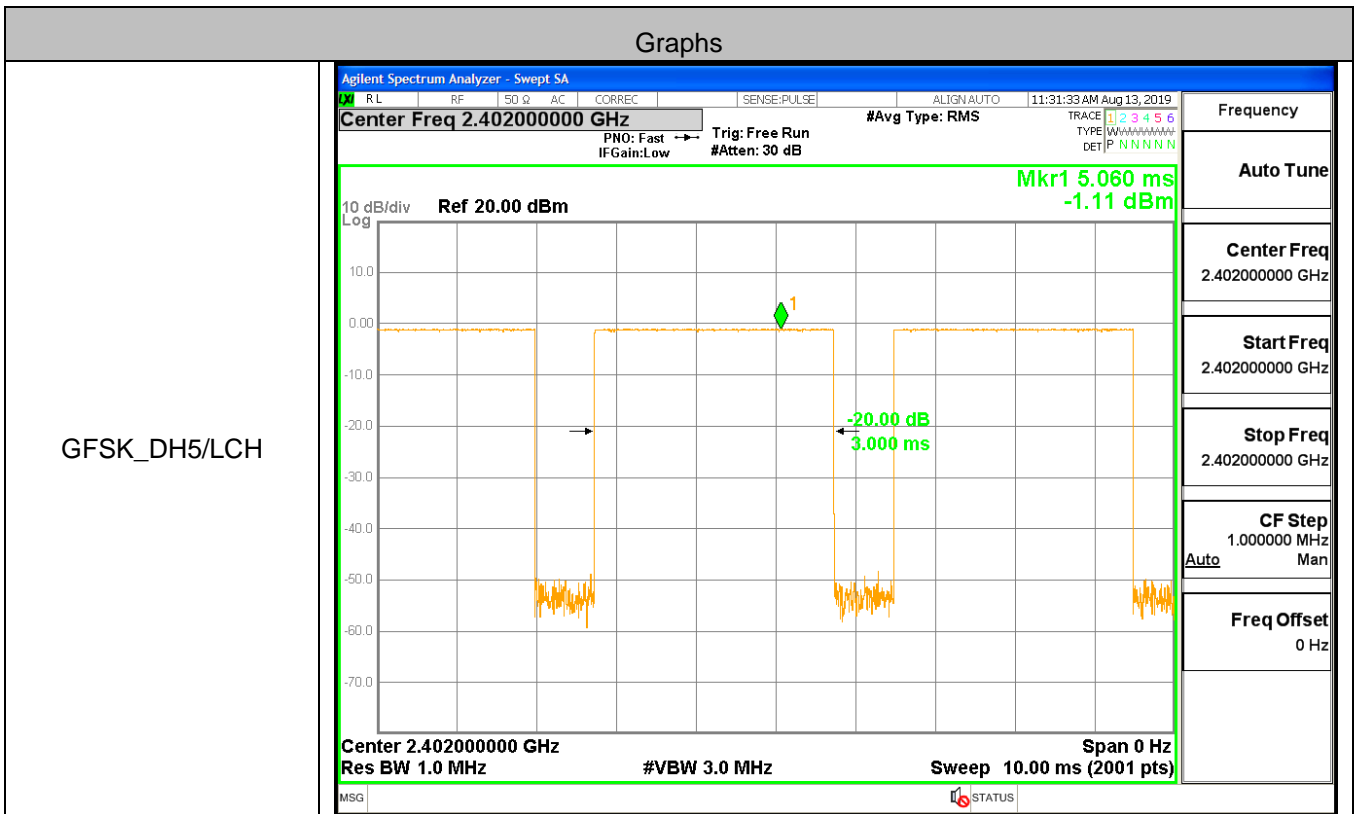


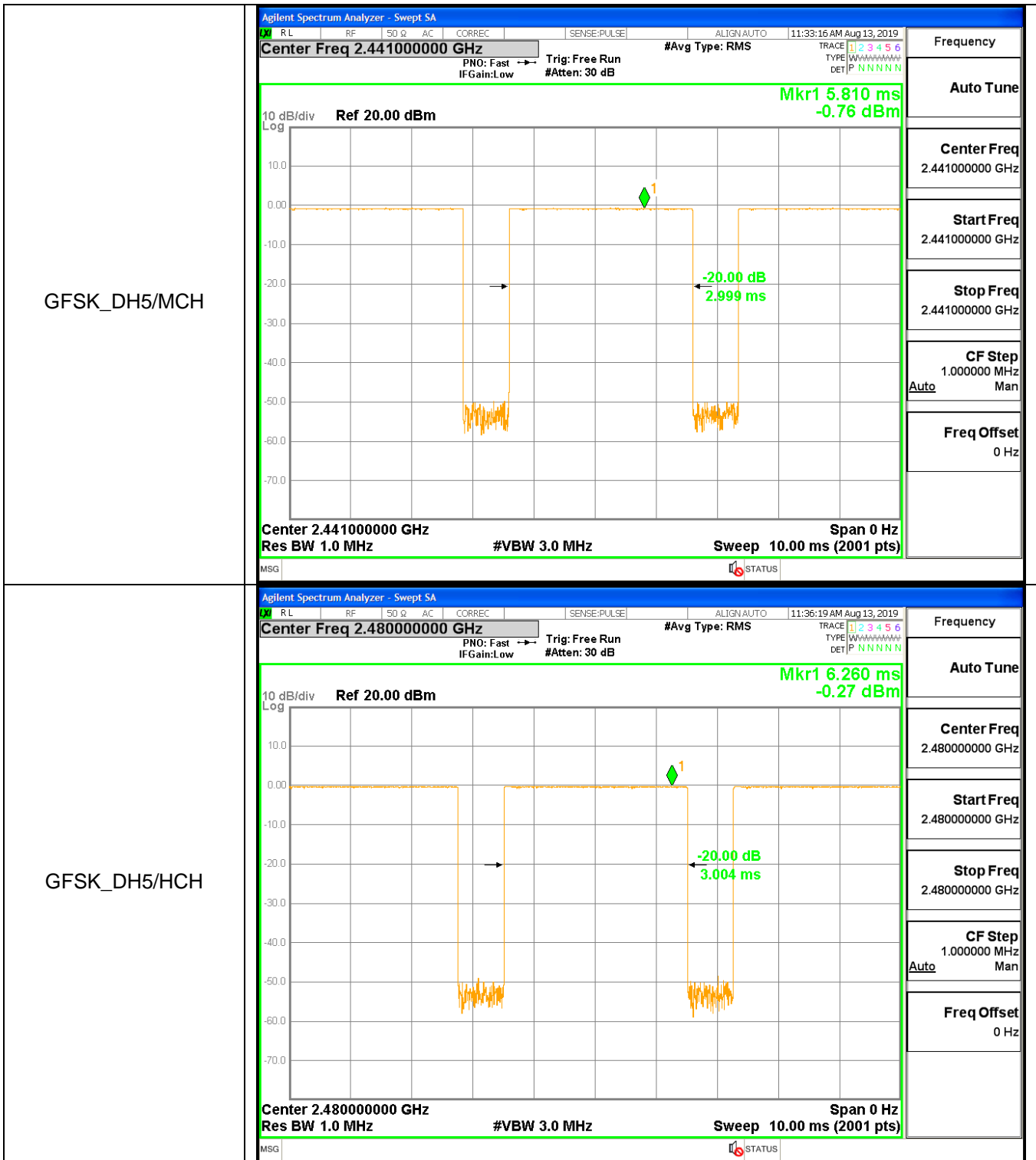


### A.2 Dwell Time

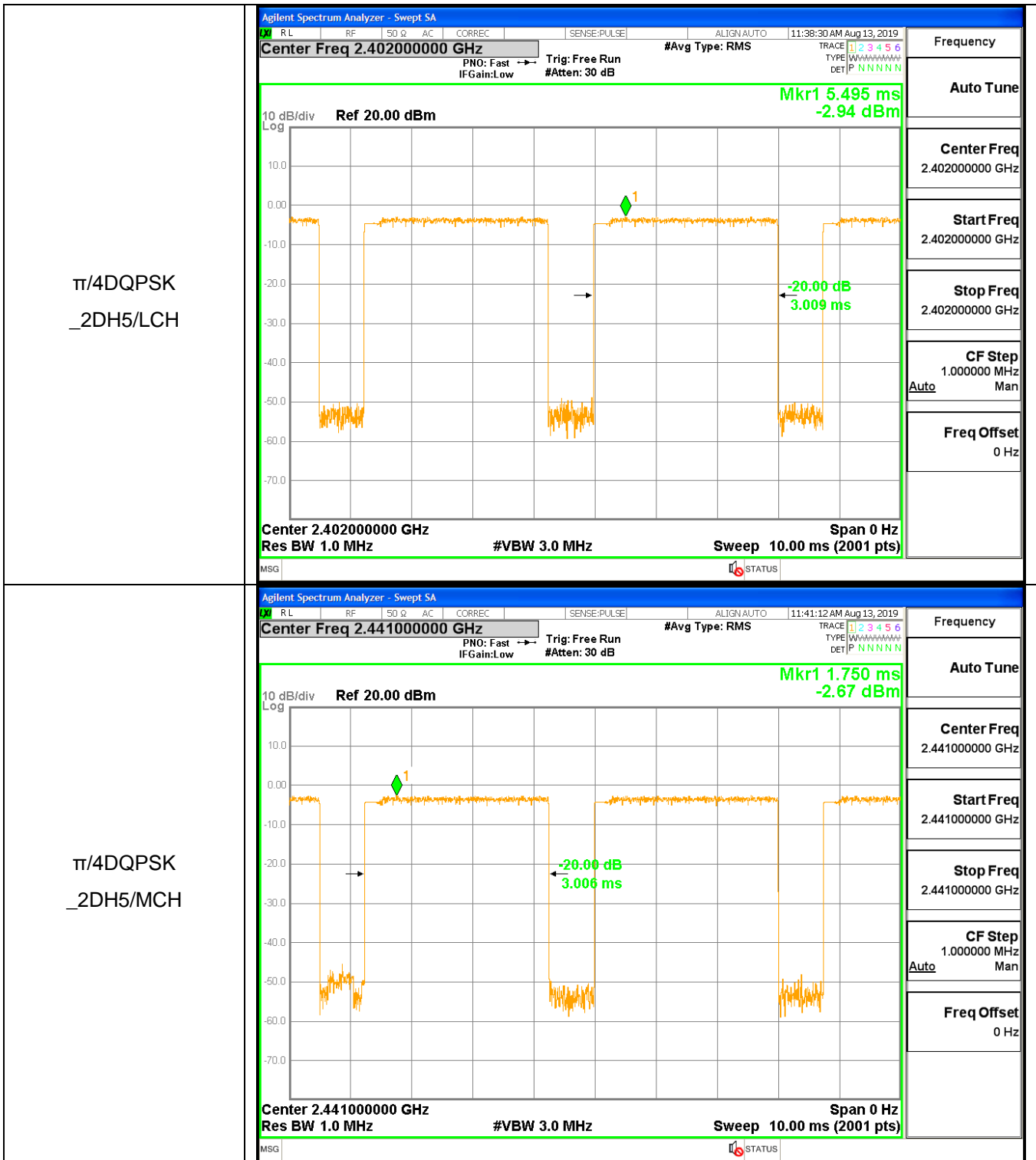
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.003000	106.7	0.320092	0.4	PASS
GFSK	DH5	MCH	0.002999	106.7	0.319999	0.4	PASS
GFSK	DH5	HCH	0.003004	106.7	0.320507	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.003009	106.7	0.321017	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.003006	106.7	0.320788	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.003009	106.7	0.321024	0.4	PASS
8DPSK	3DH5	LCH	0.00301	106.7	0.321123	0.4	PASS
8DPSK	3DH5	MCH	0.003008	106.7	0.320996	0.4	PASS
8DPSK	3DH5	HCH	0.003009	106.7	0.321026	0.4	PASS

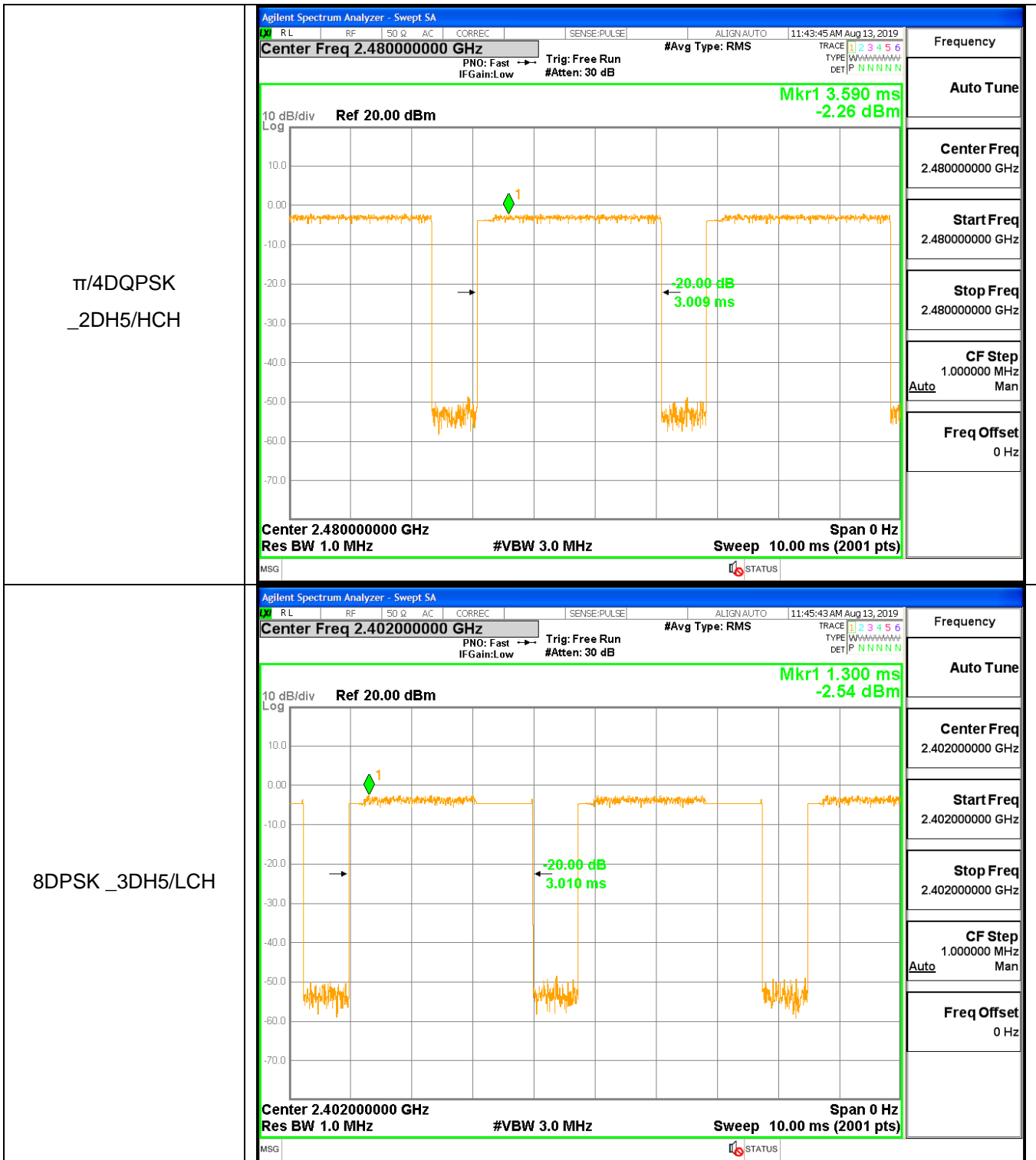
Test Graph

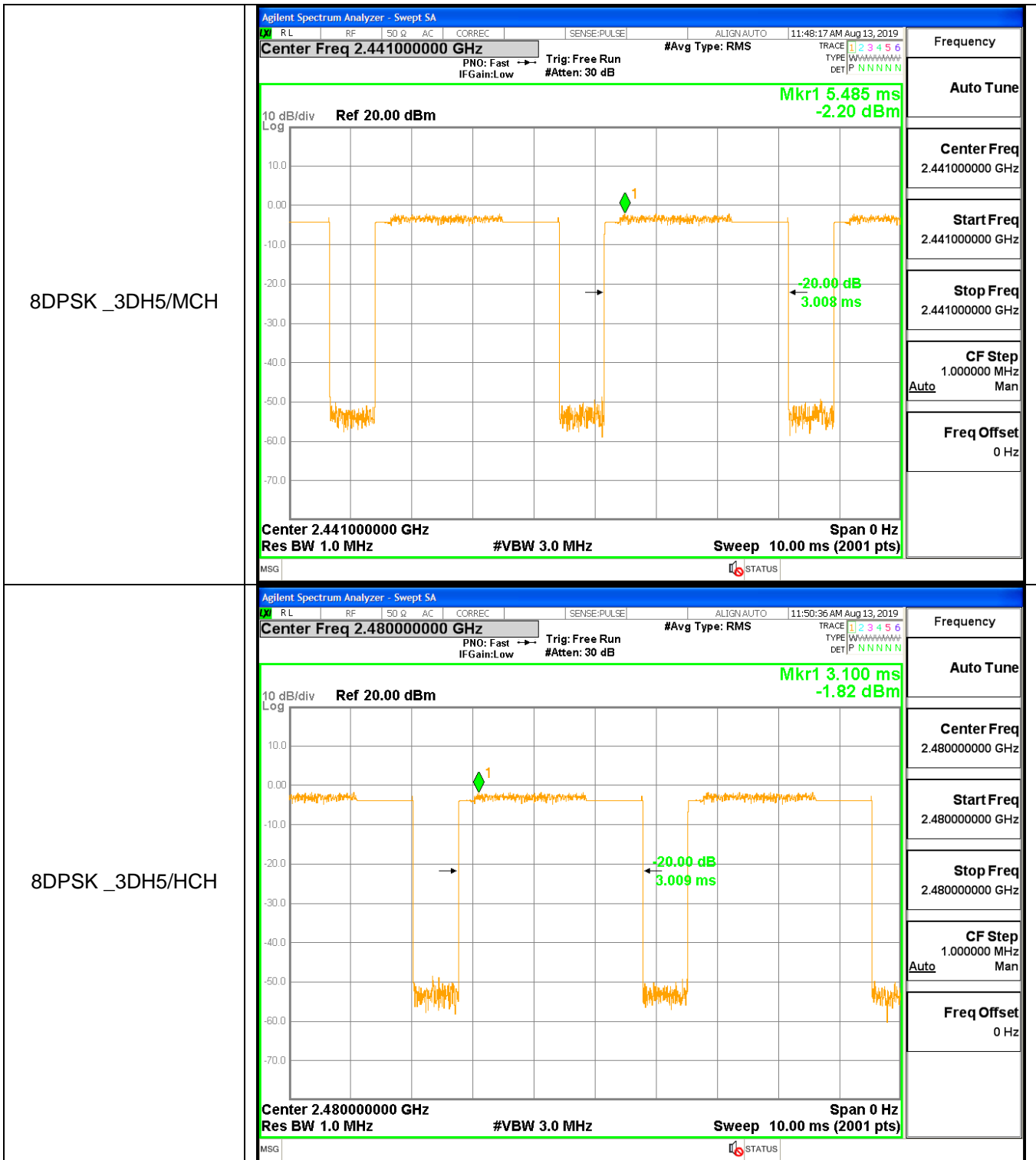








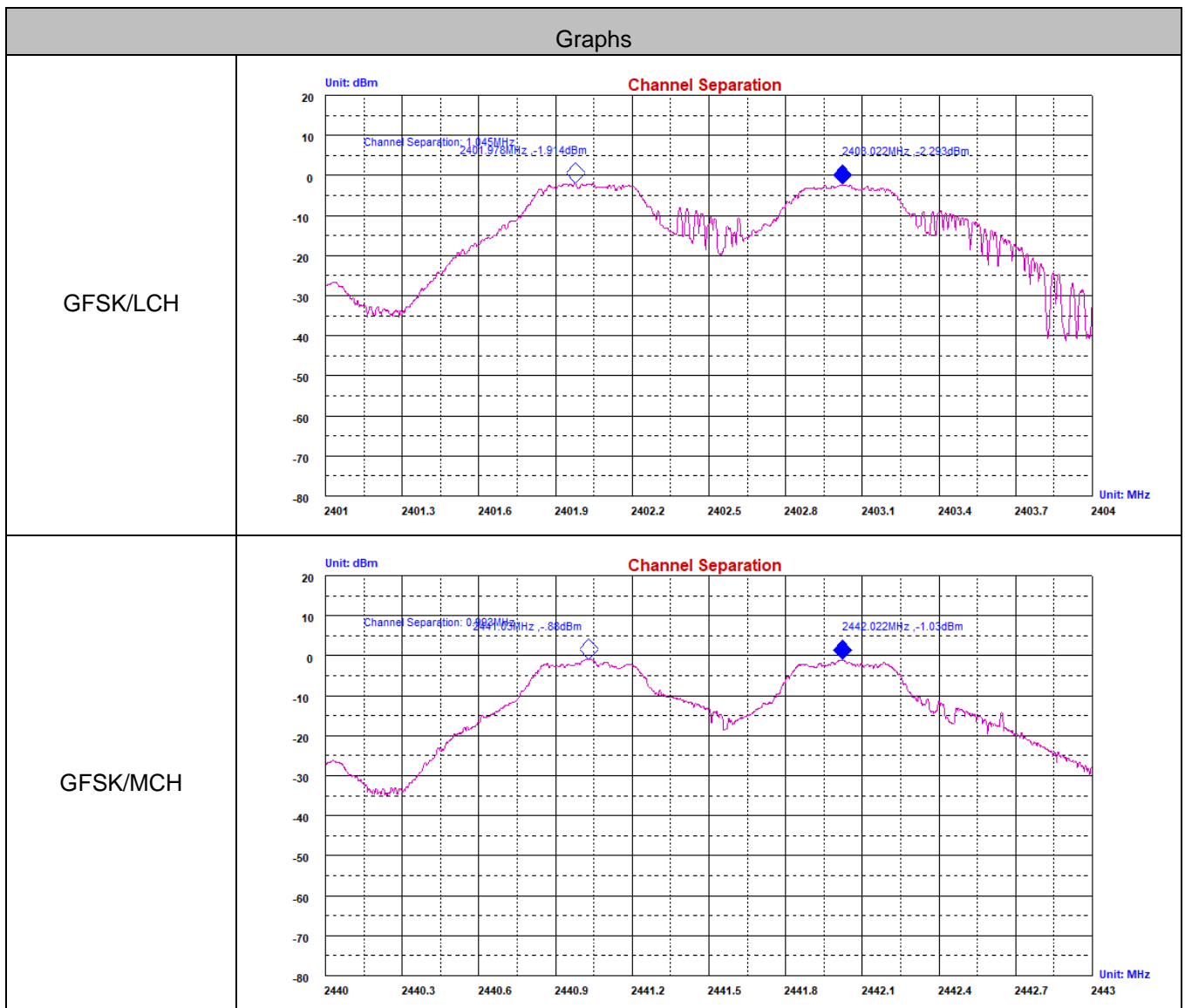


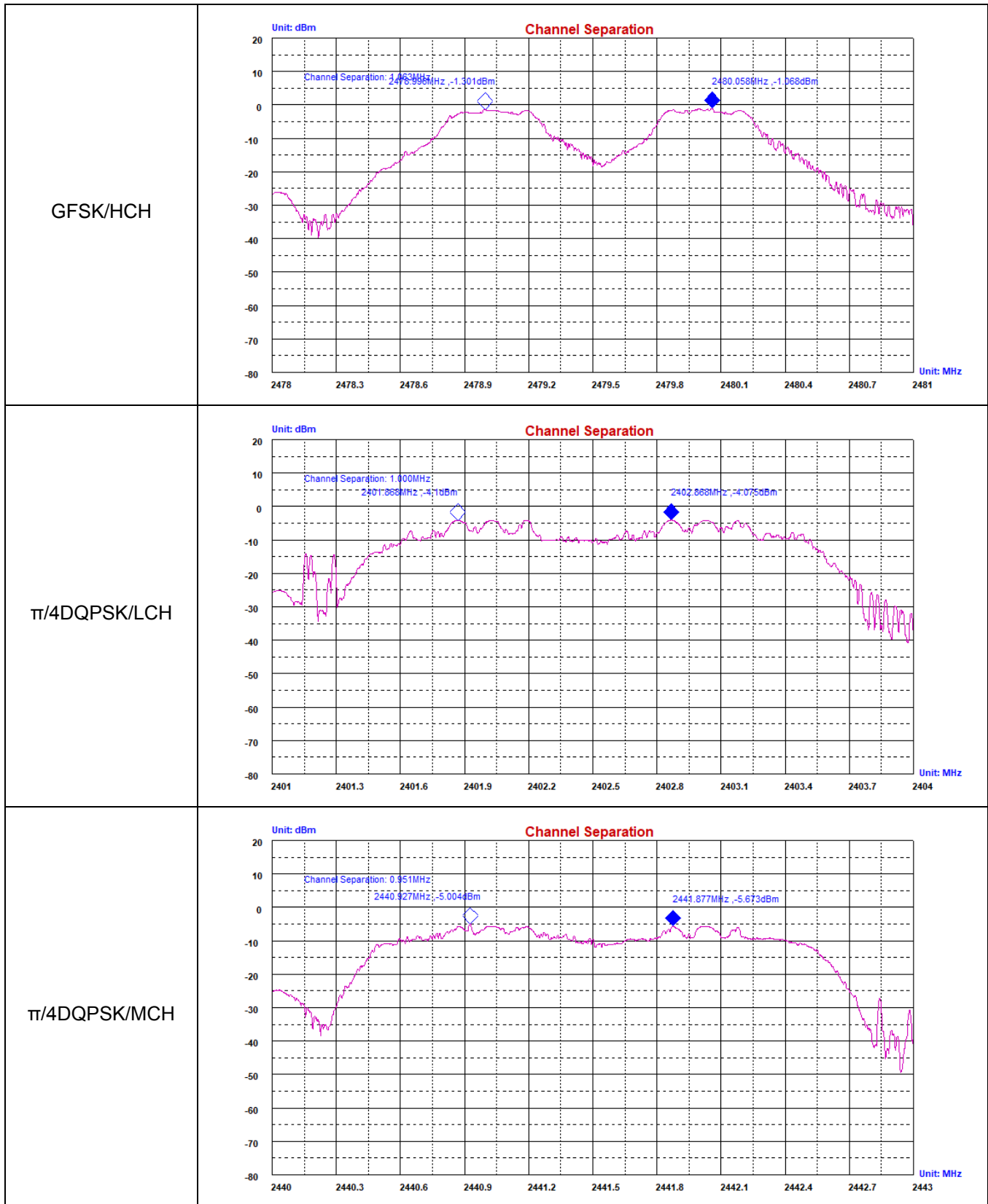


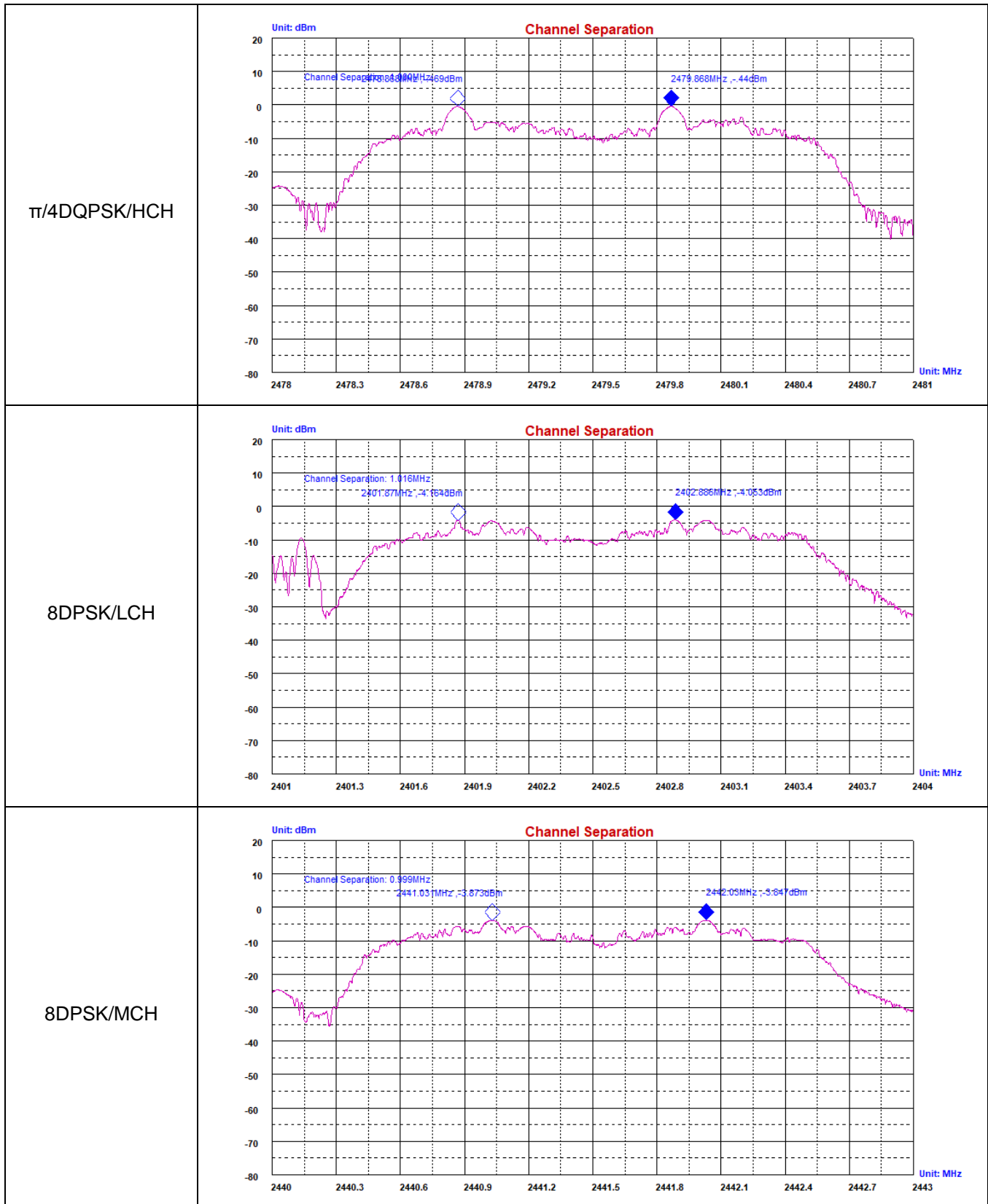
### A.3 Carrier Frequency Separation

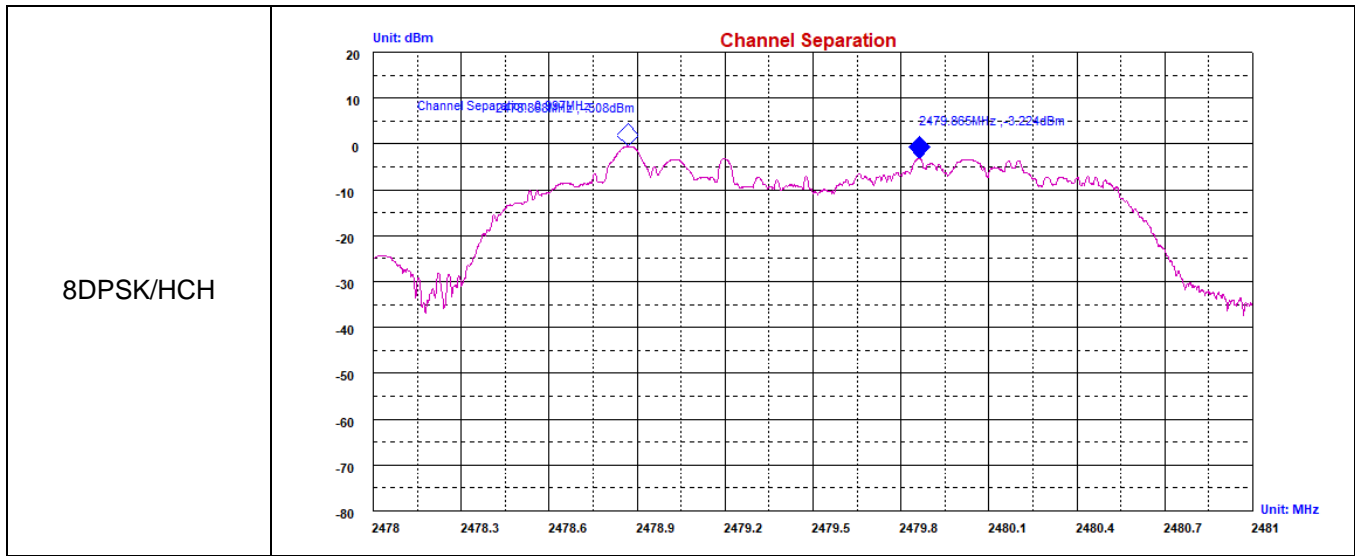
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.045	0.623	PASS
GFSK	MCH	0.993	0.625	PASS
GFSK	HCH	1.063	0.626	PASS
$\pi/4$ DQPSK	LCH	0.712	0.828	PASS
$\pi/4$ DQPSK	MCH	1.000	0.823	PASS
$\pi/4$ DQPSK	HCH	1.000	0.857	PASS
8DPSK	LCH	1.016	0.834	PASS
8DPSK	MCH	0.999	0.841	PASS
8DPSK	HCH	0.997	0.836	PASS

### Test Graph





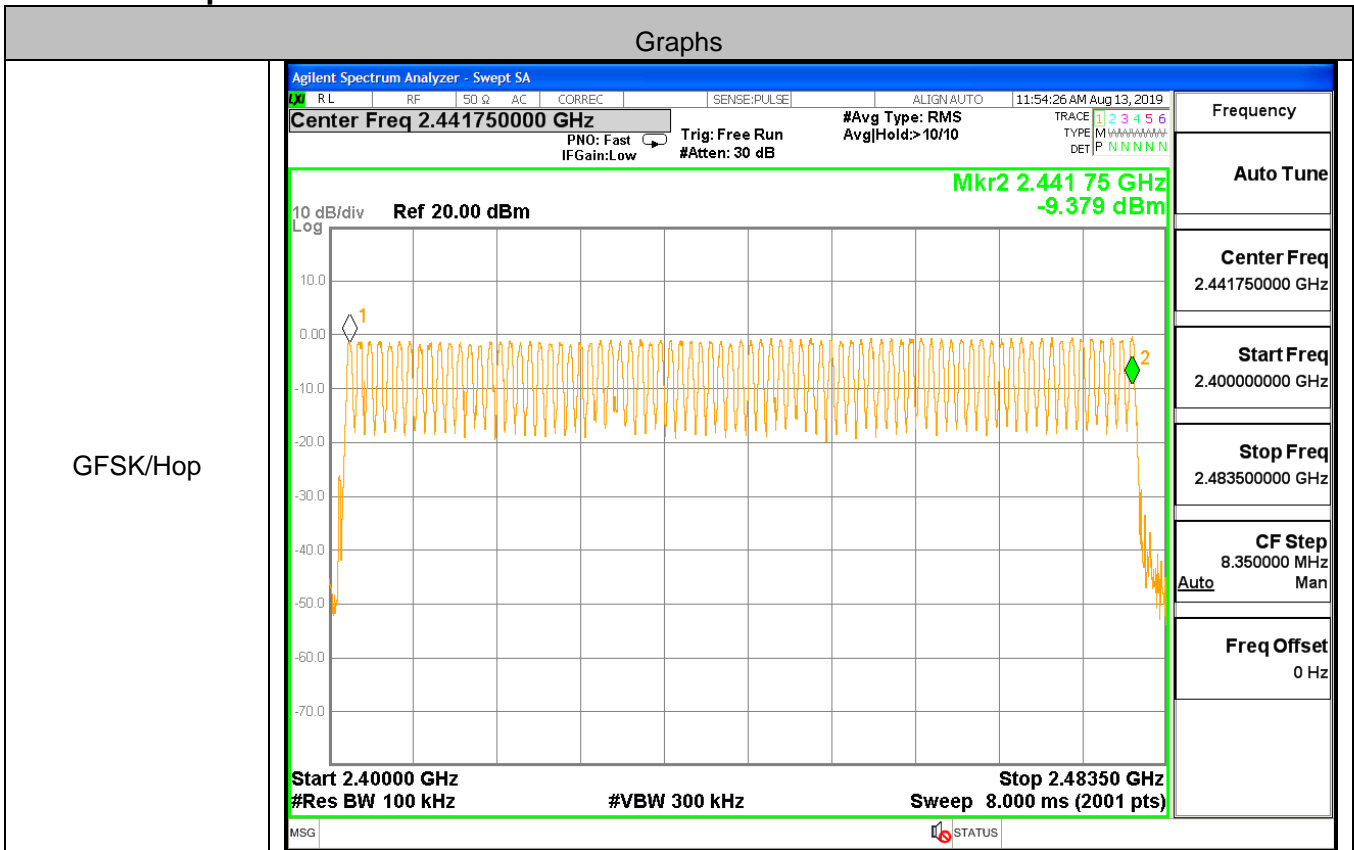




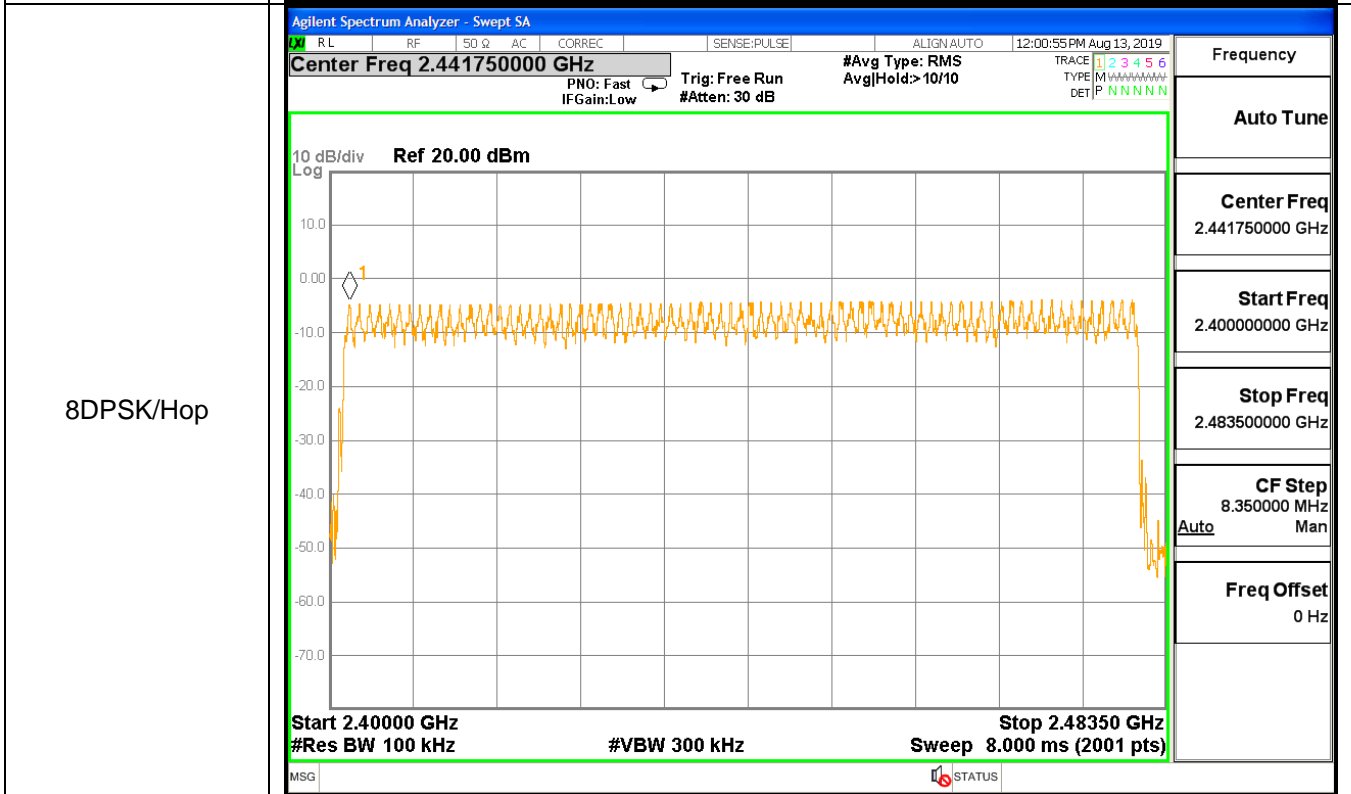
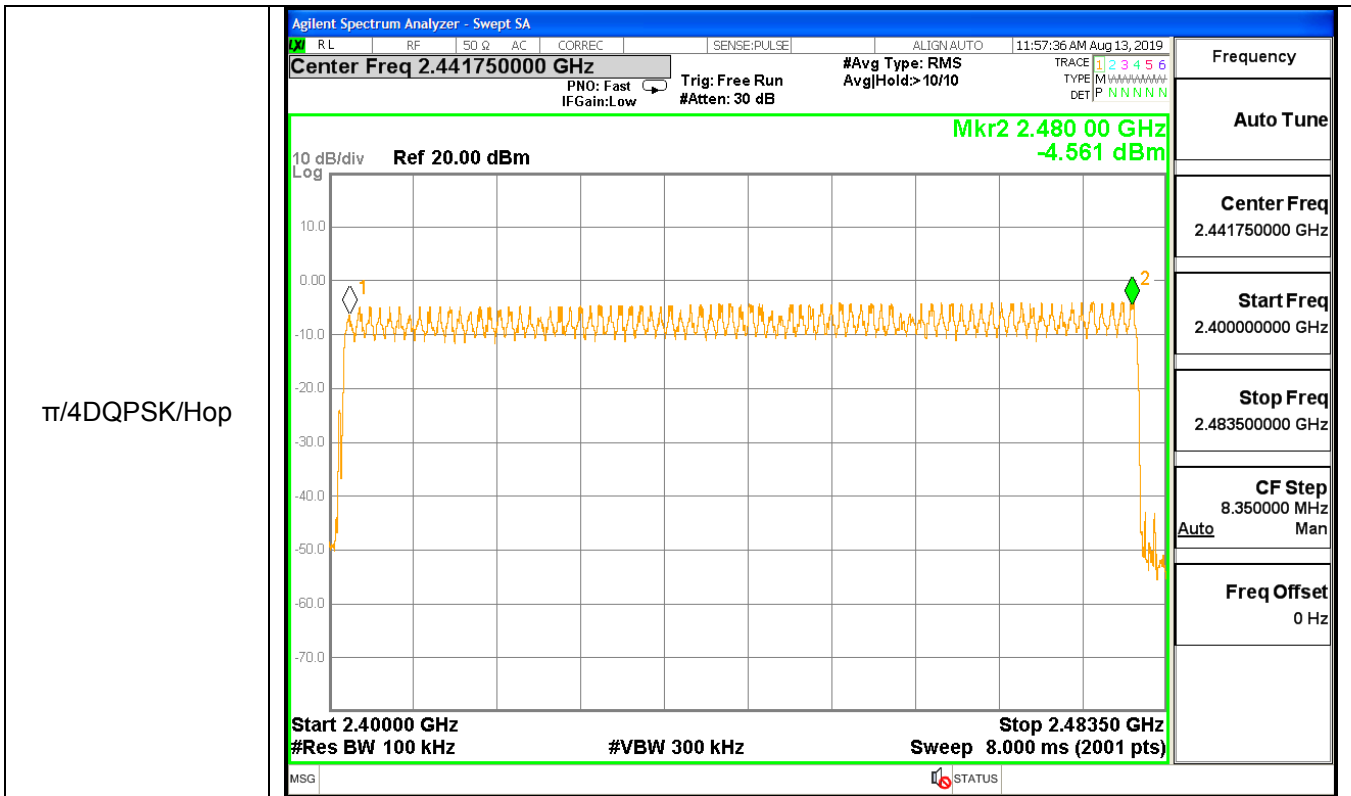
### A.4 Hopping Channel Number

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



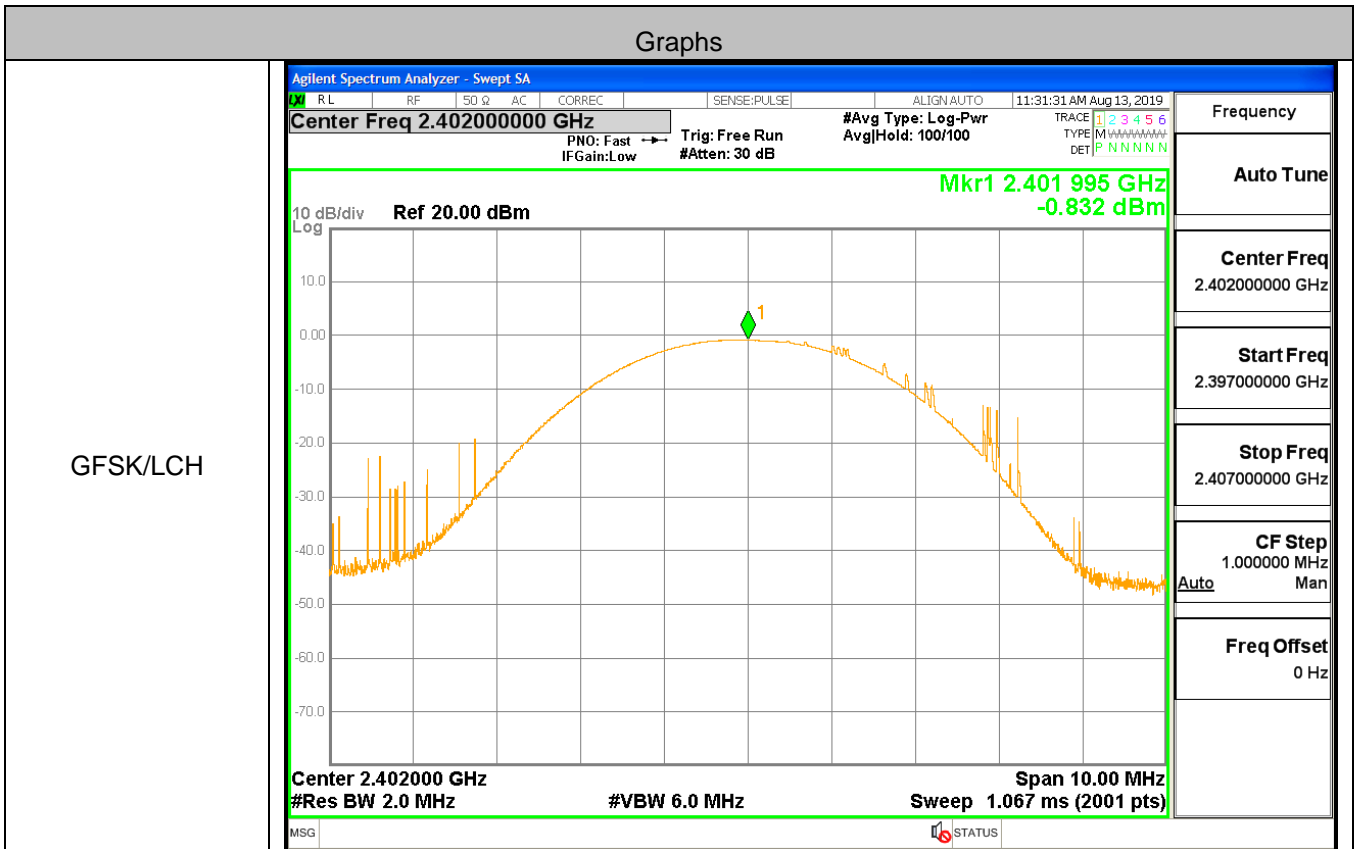


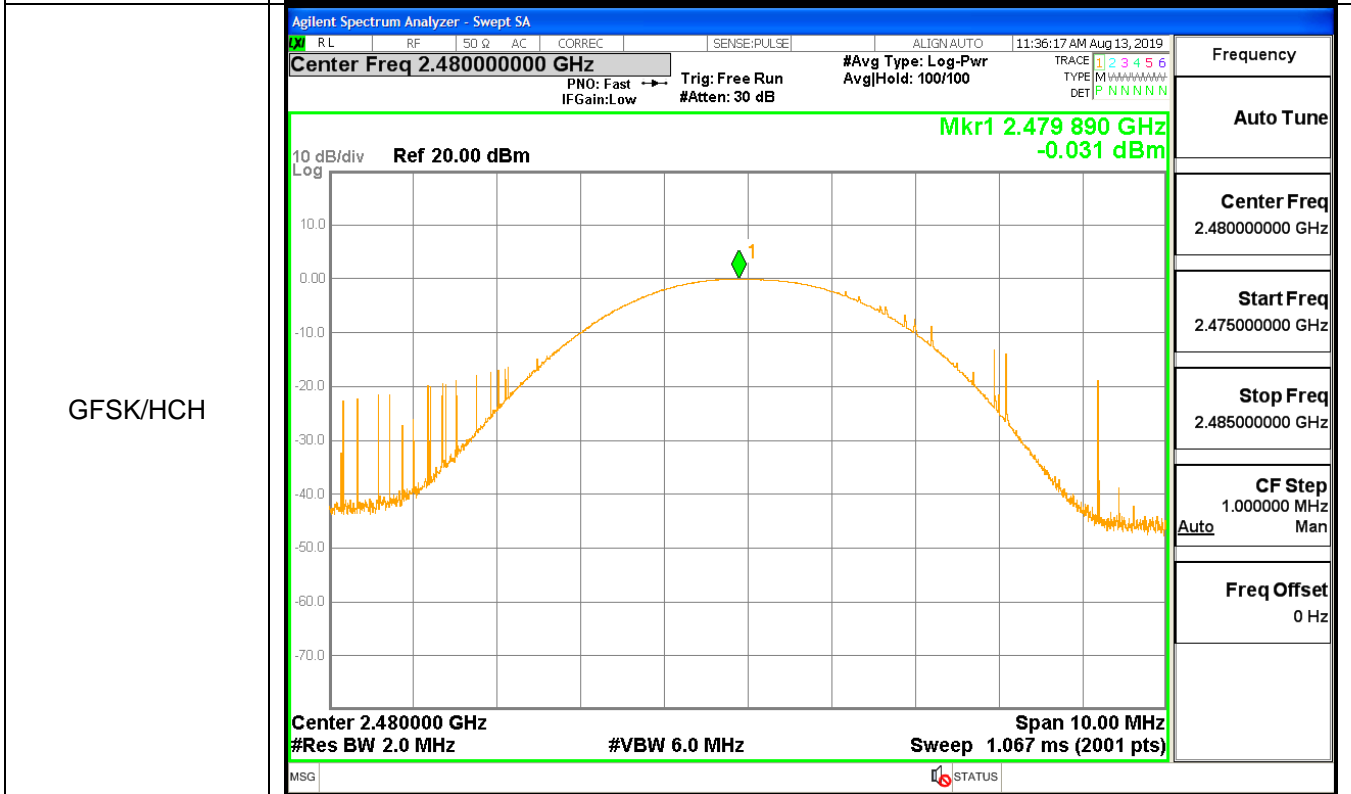
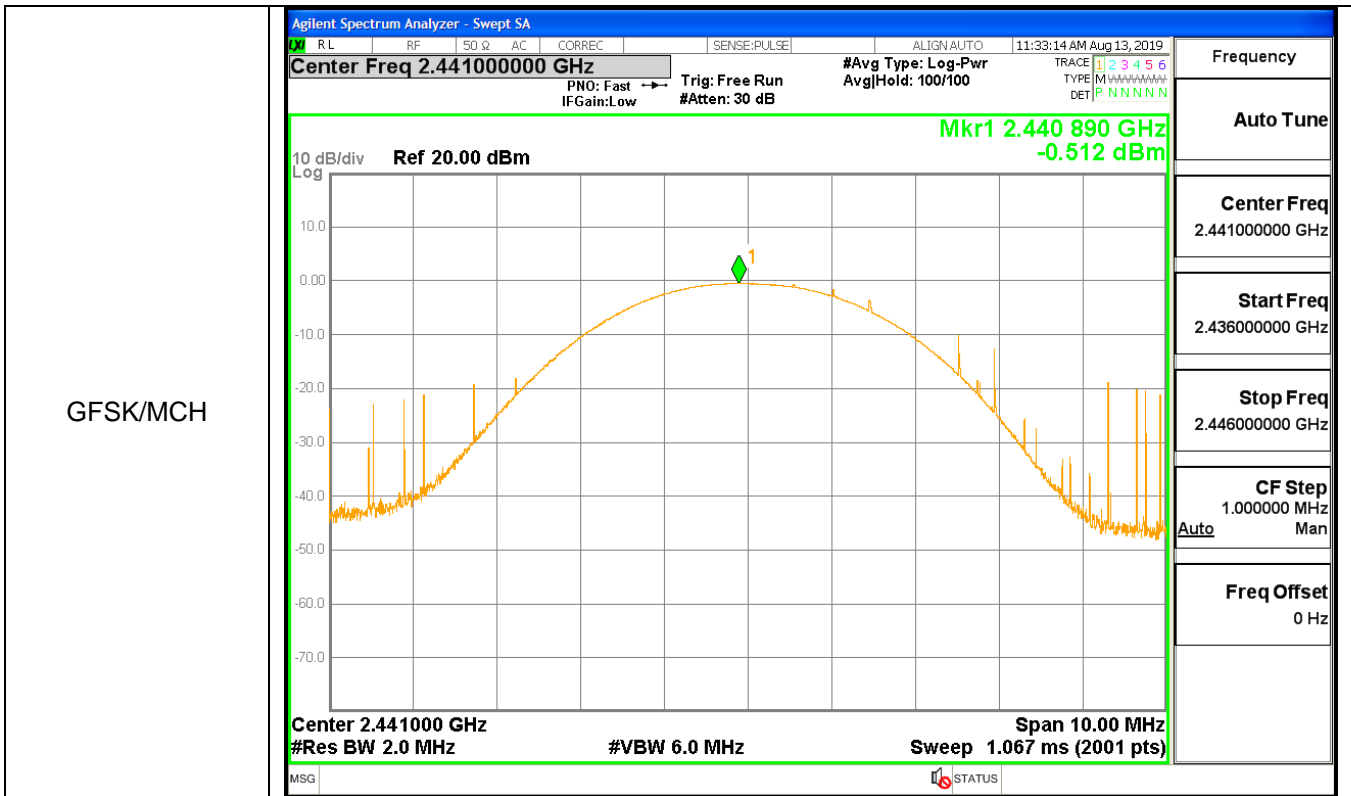


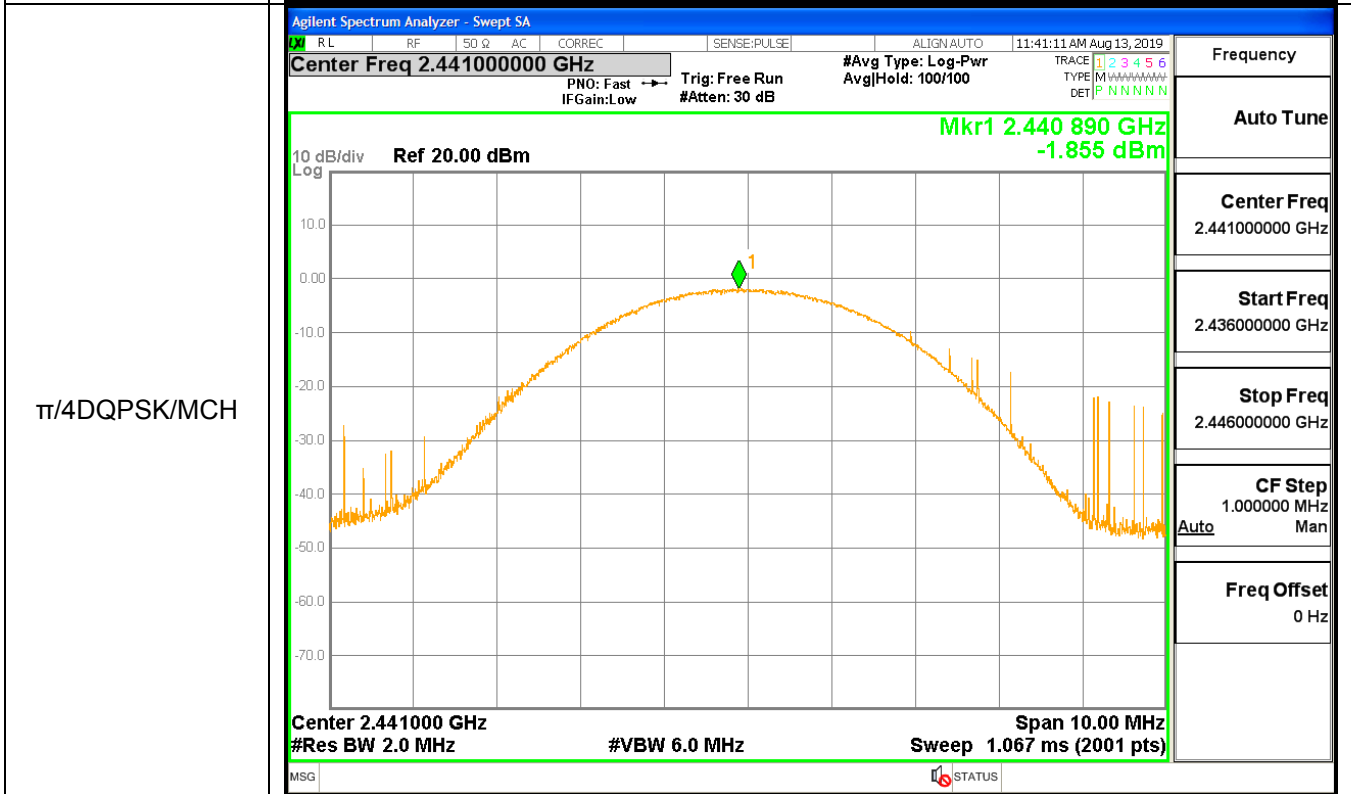
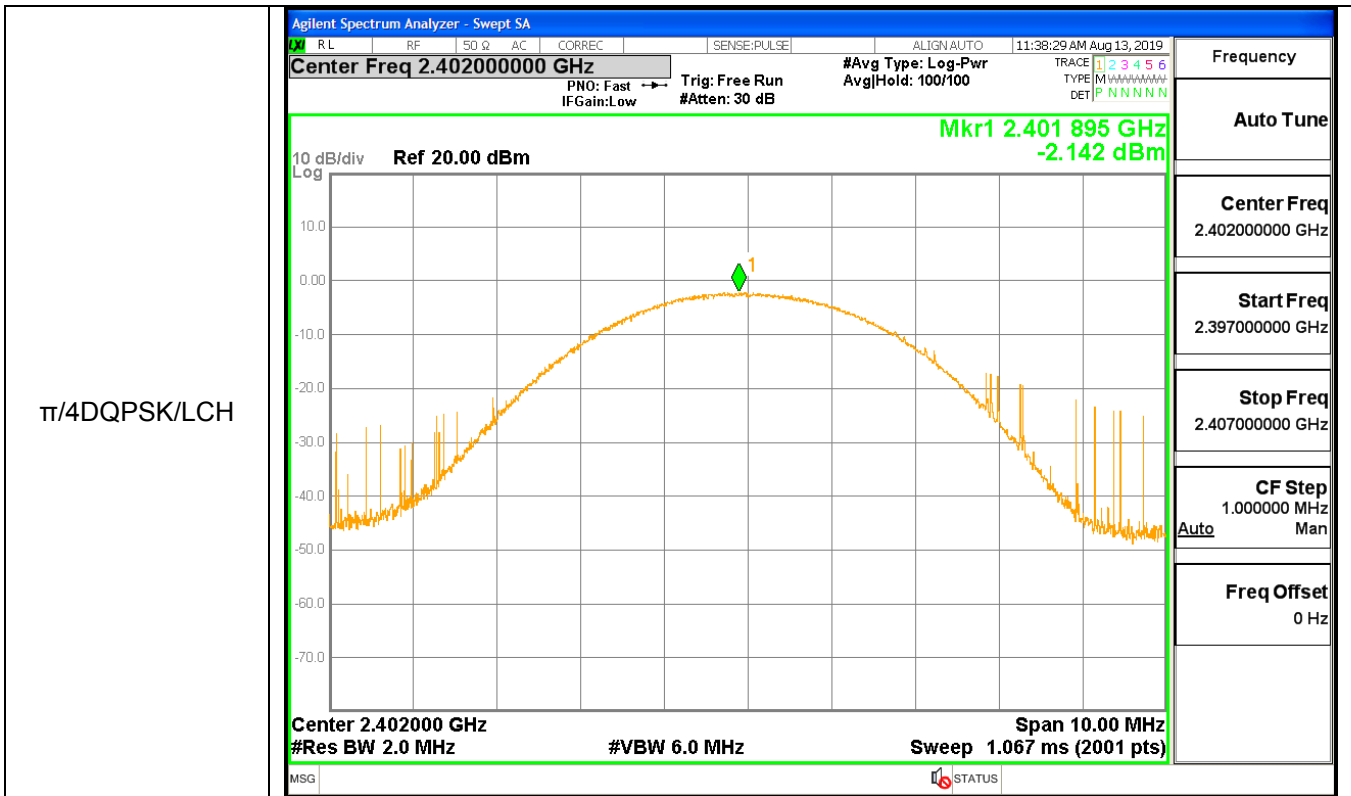
### A.5 Conducted Peak Output Power

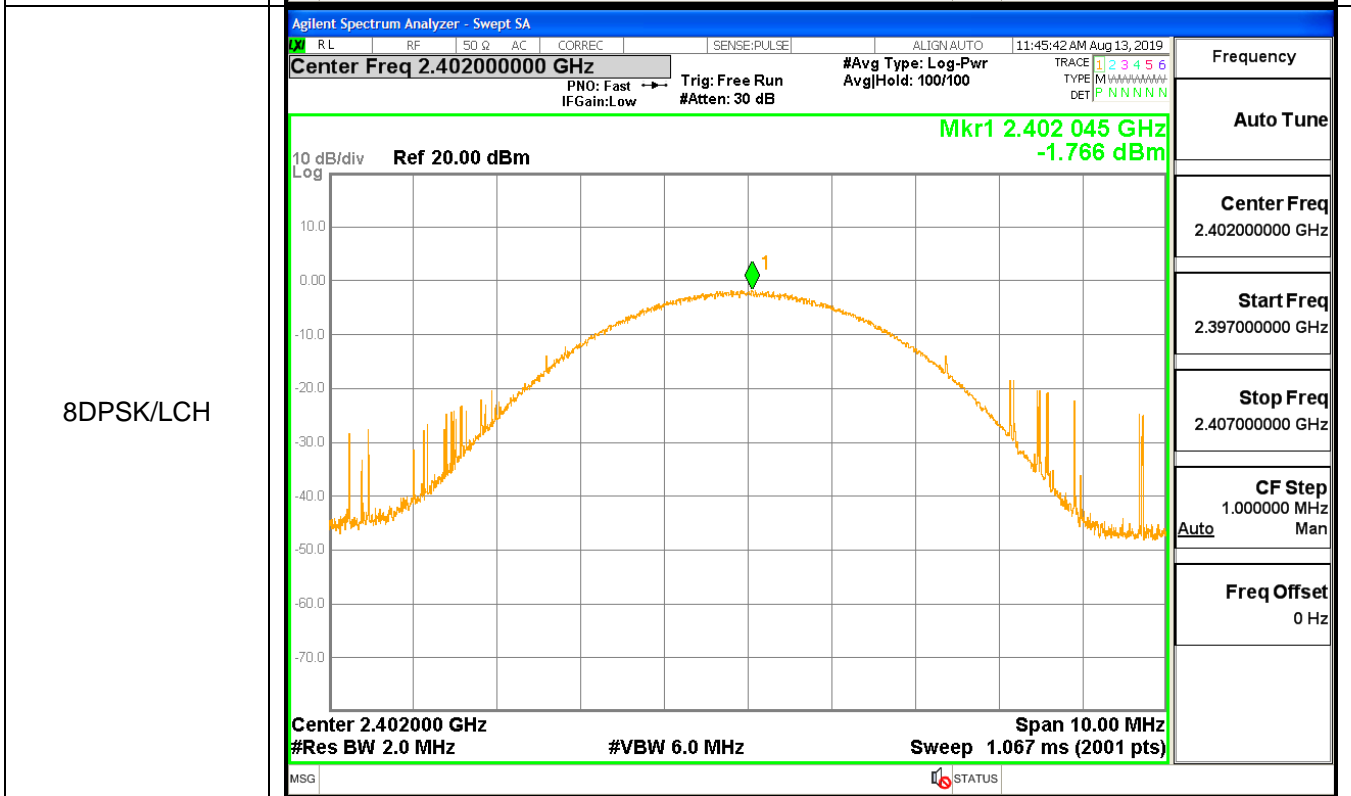
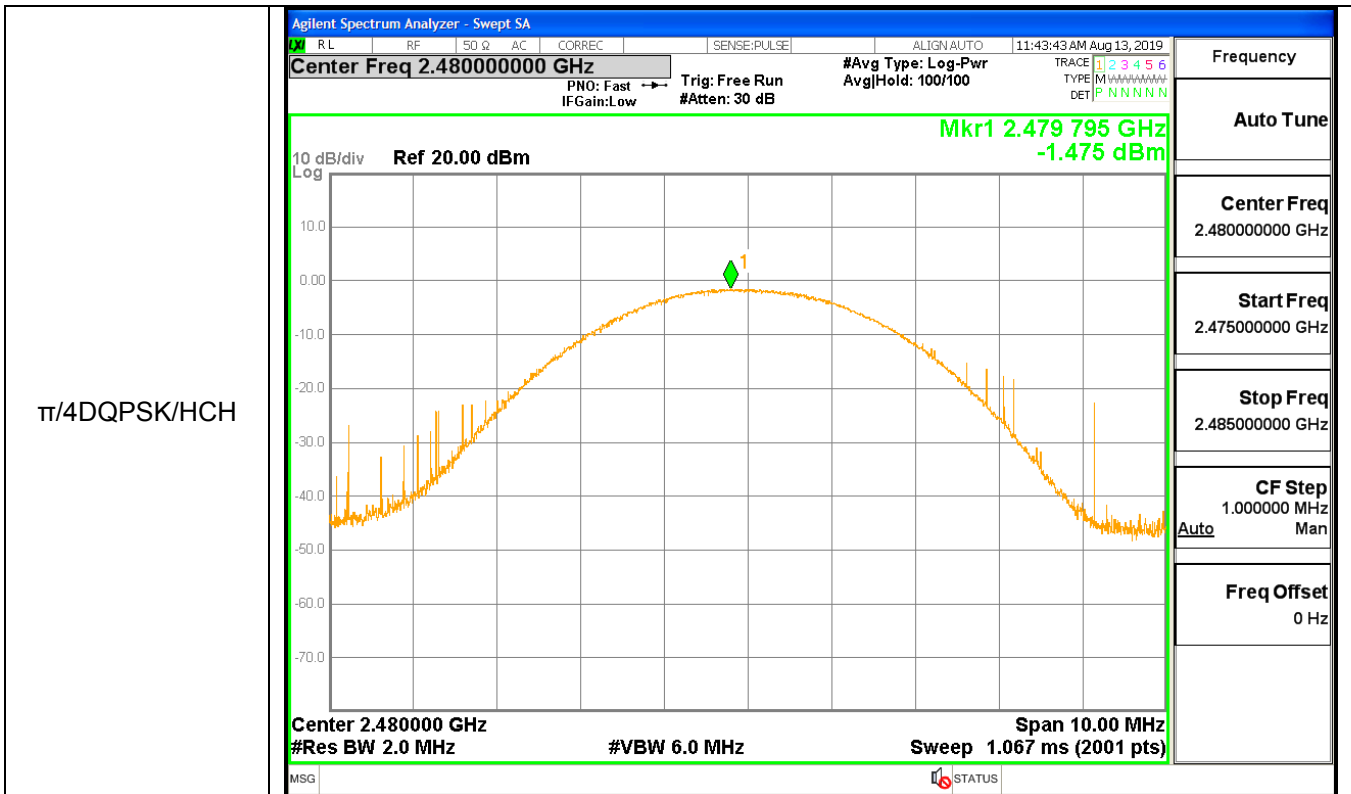
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.832	21	PASS
GFSK	MCH	-0.512	21	PASS
GFSK	HCH	-0.031	21	PASS
$\pi/4$ DQPSK	LCH	-2.142	21	PASS
$\pi/4$ DQPSK	MCH	-1.855	21	PASS
$\pi/4$ DQPSK	HCH	-1.475	21	PASS
8DPSK	LCH	-1.766	21	PASS
8DPSK	MCH	-1.426	21	PASS
8DPSK	HCH	-1.114	21	PASS

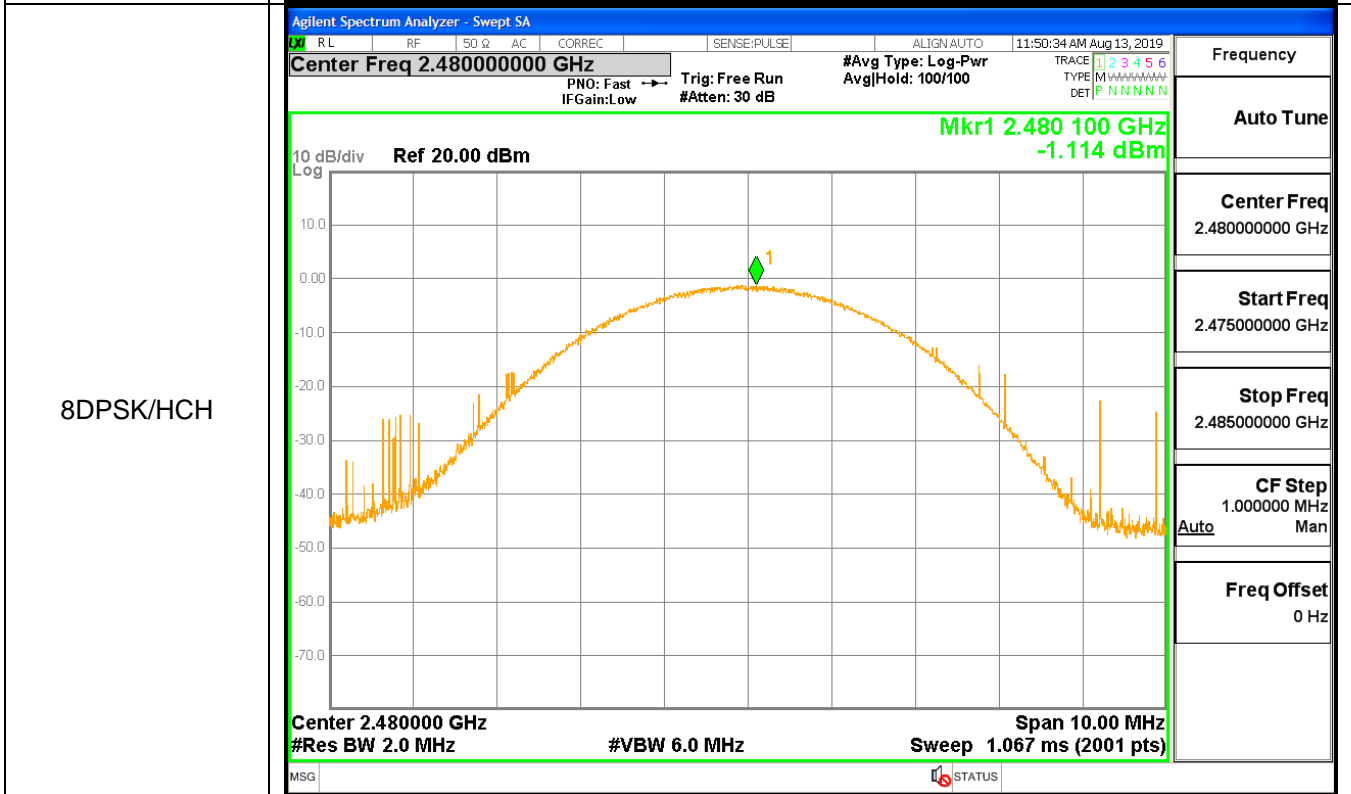
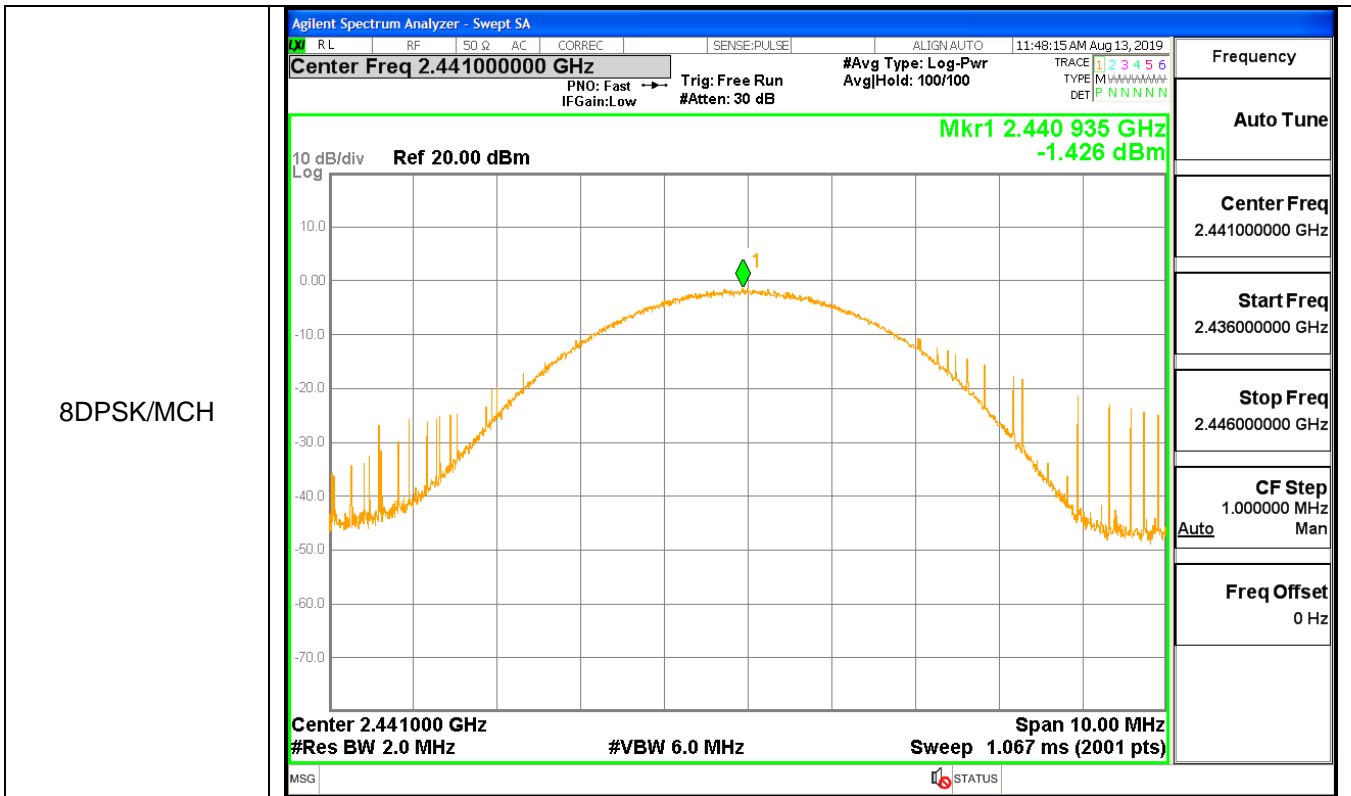
### Test Graph









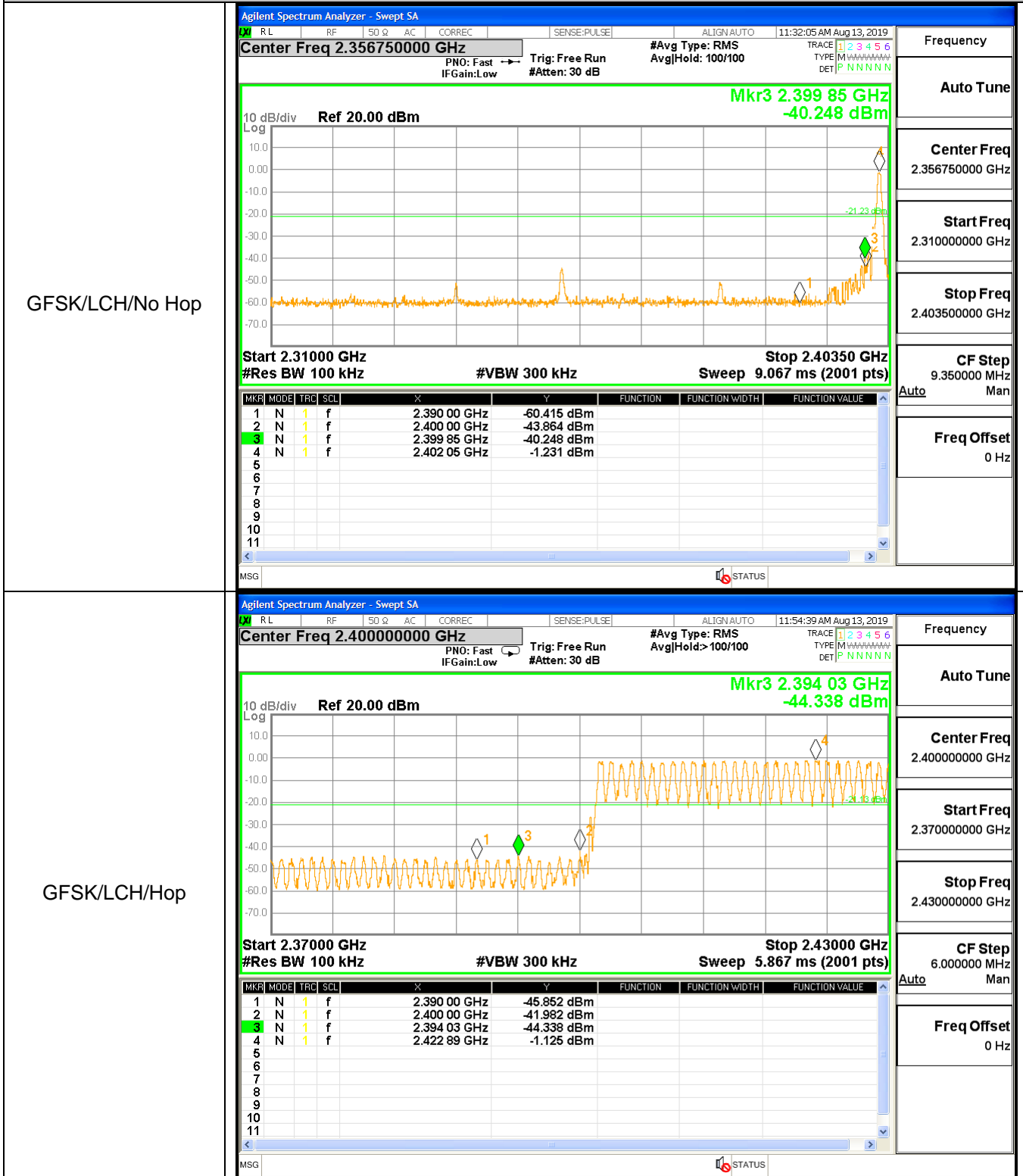


**A.6 Band-edge for RF Conducted Emissions**

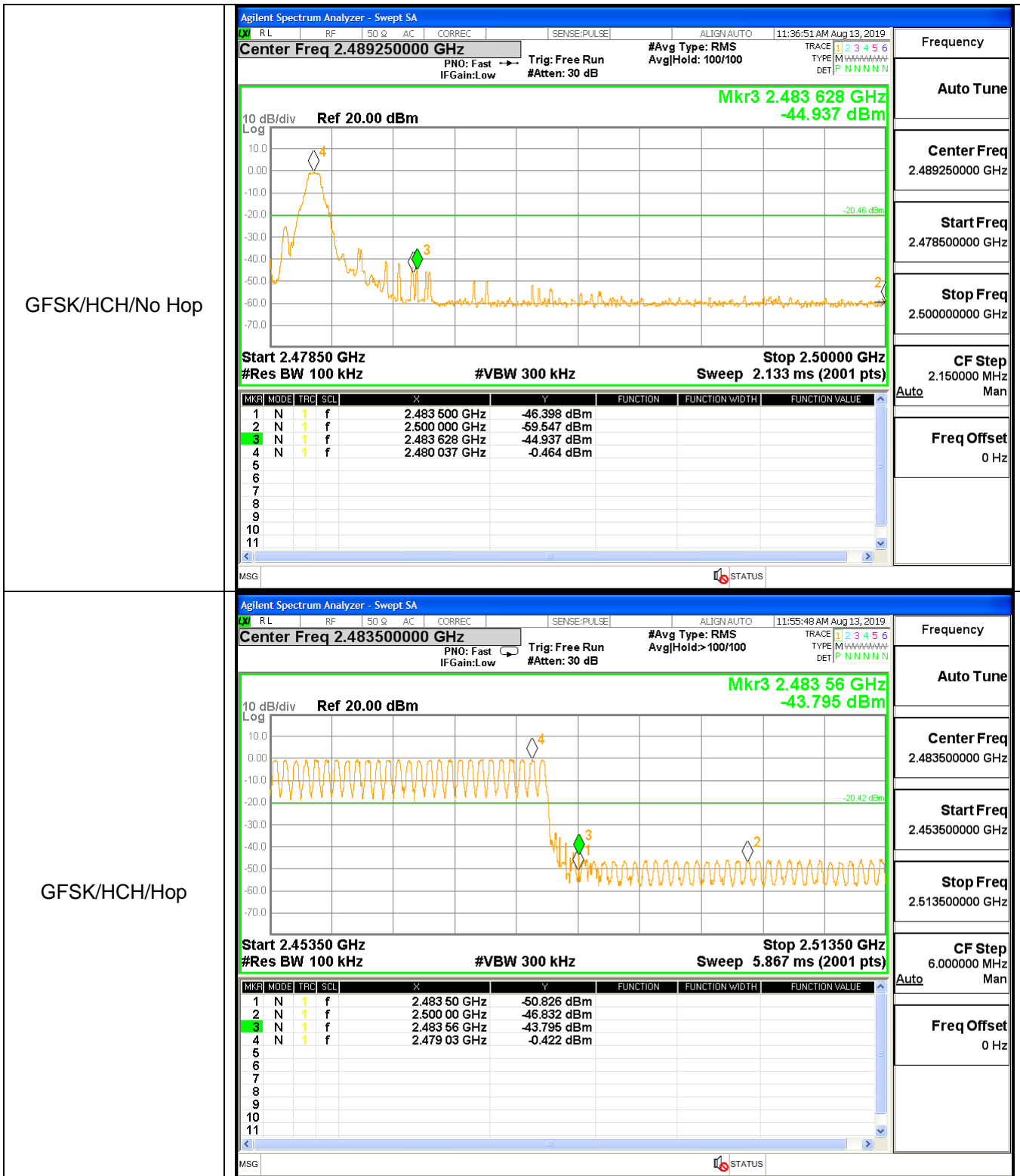
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2399.854	-1.231	-40.248	-21.231	Pass
1DH5	2480	2483.628	-0.464	-44.937	-20.464	Pass
2DH5	2402	2400	-4.928	-44.94	-24.928	Pass
2DH5	2480	2483.735	-3.996	-48.808	-23.996	Pass
3DH5	2402	2399.76	-4.826	-43.777	-24.826	Pass
3DH5	2480	2483.51	-4.01	-47.362	-24.01	Pass
1DH5-Hopping	2402	2400	-1.125	-41.98	-21.125	Pass
1DH5-Hopping	2480	2483.56	-0.422	-43.795	-20.422	Pass
2DH5-Hopping	2402	2393.04	-4.655	-48.401	-24.655	Pass
2DH5-Hopping	2480	2488.03	-4.036	-49.021	-24.036	Pass
3DH5-Hopping	2402	2399.76	-4.513	-44.074	-24.513	Pass
3DH5-Hopping	2480	2483.71	-3.953	-47.103	-23.953	Pass

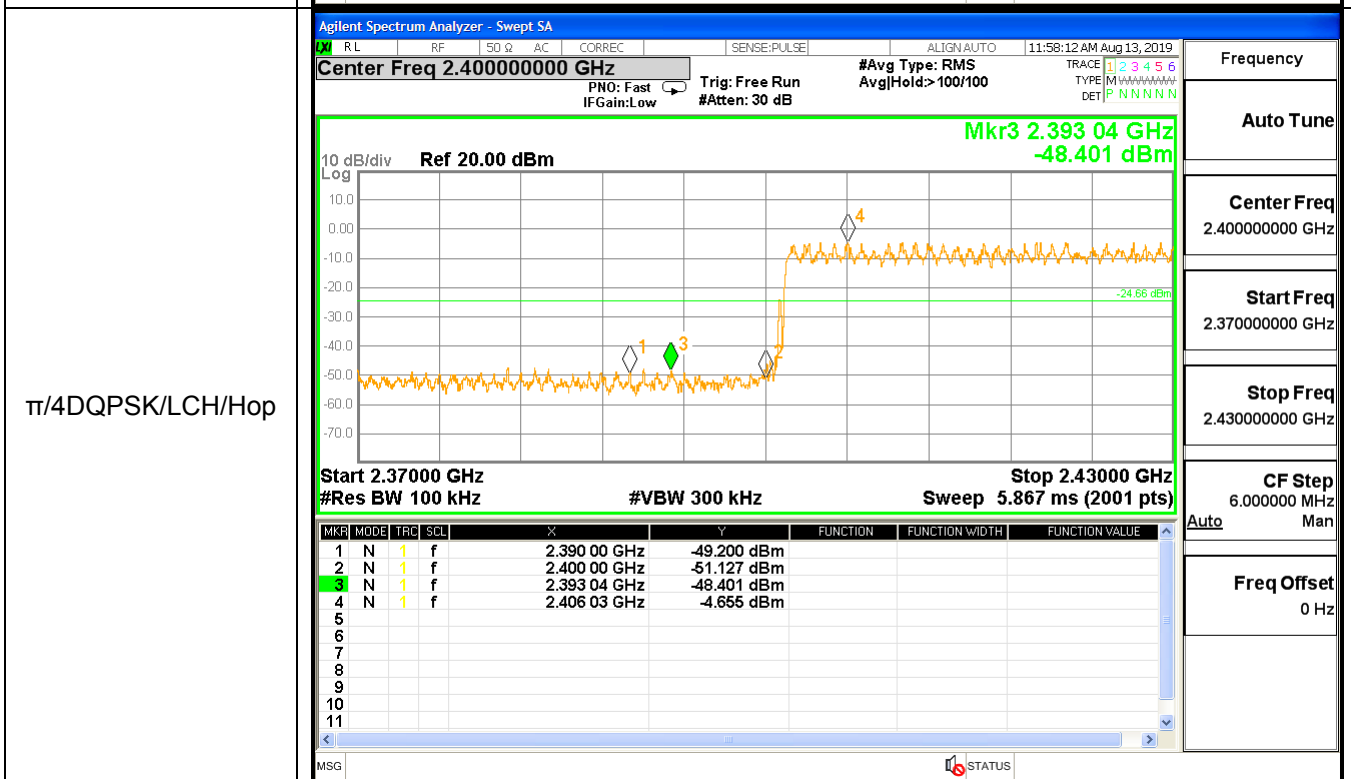
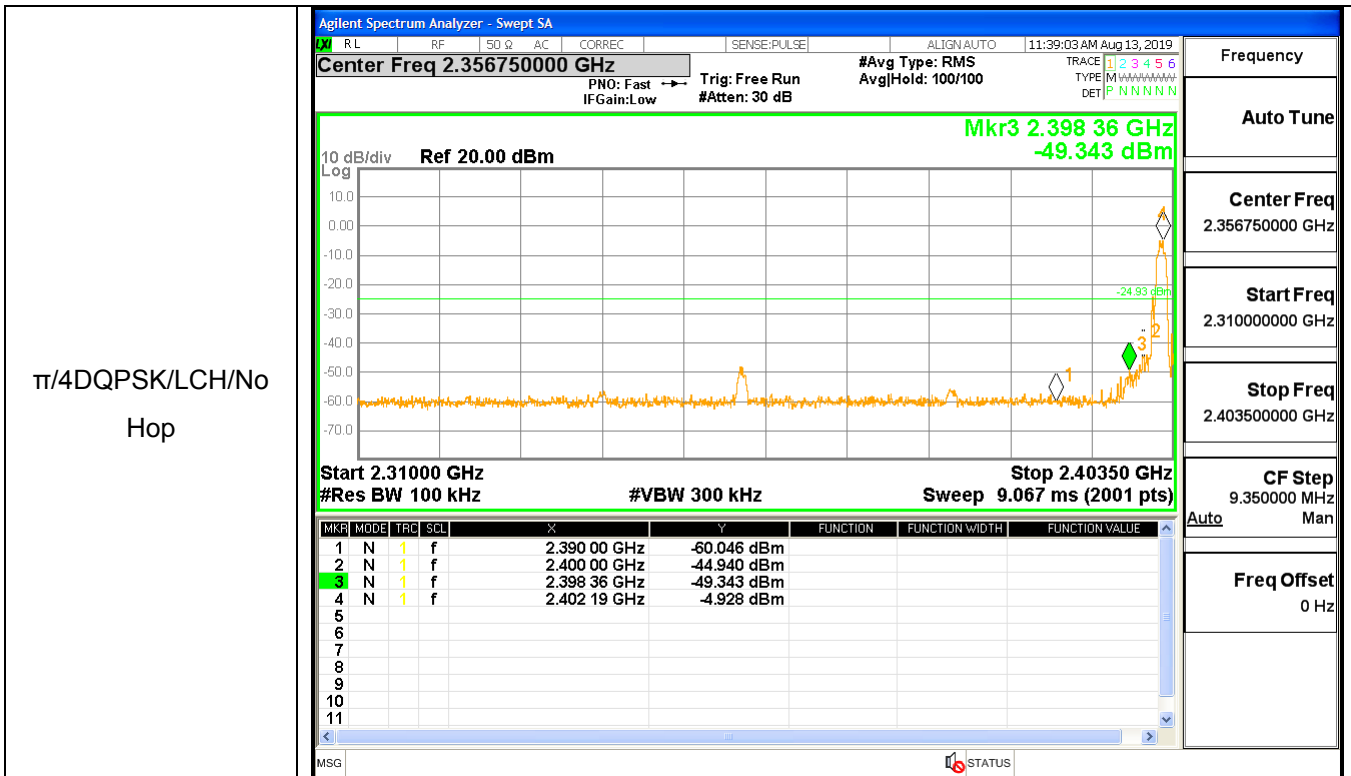
### Test Graph

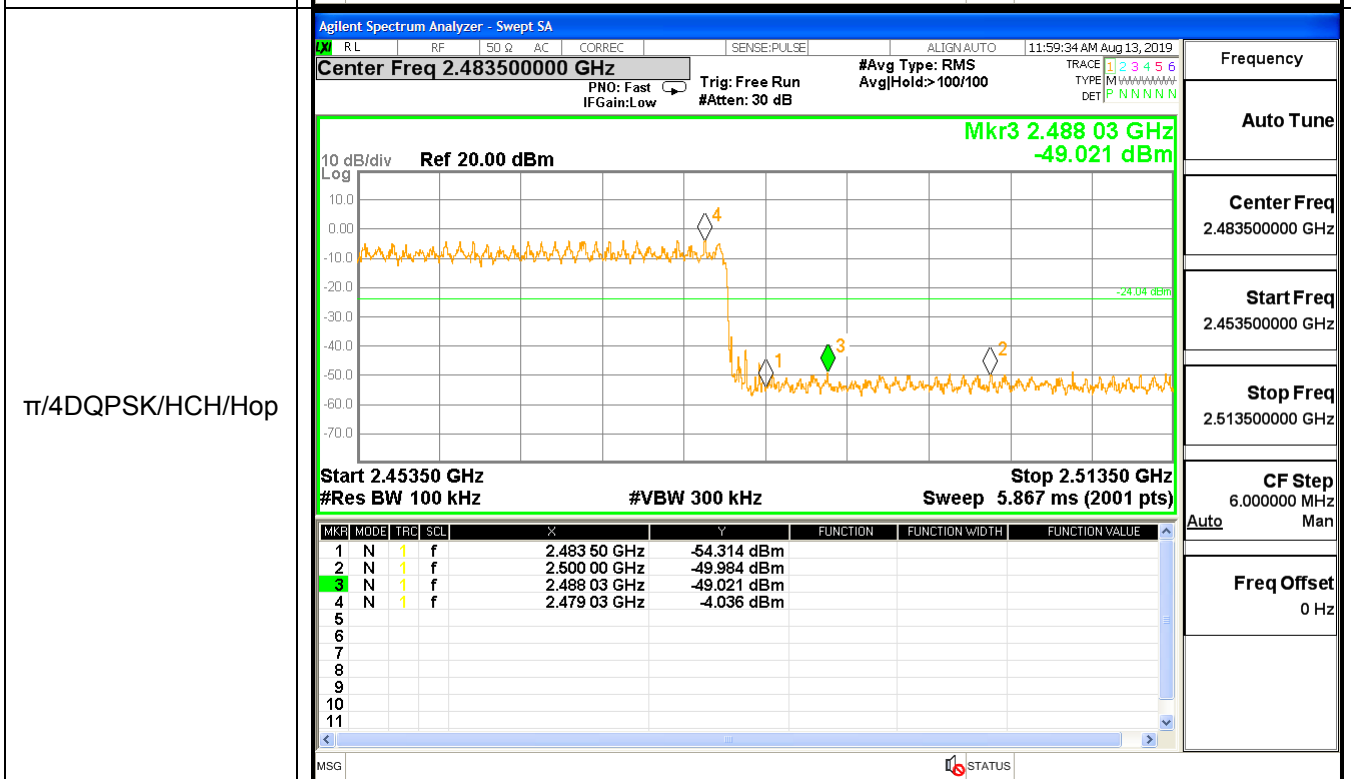
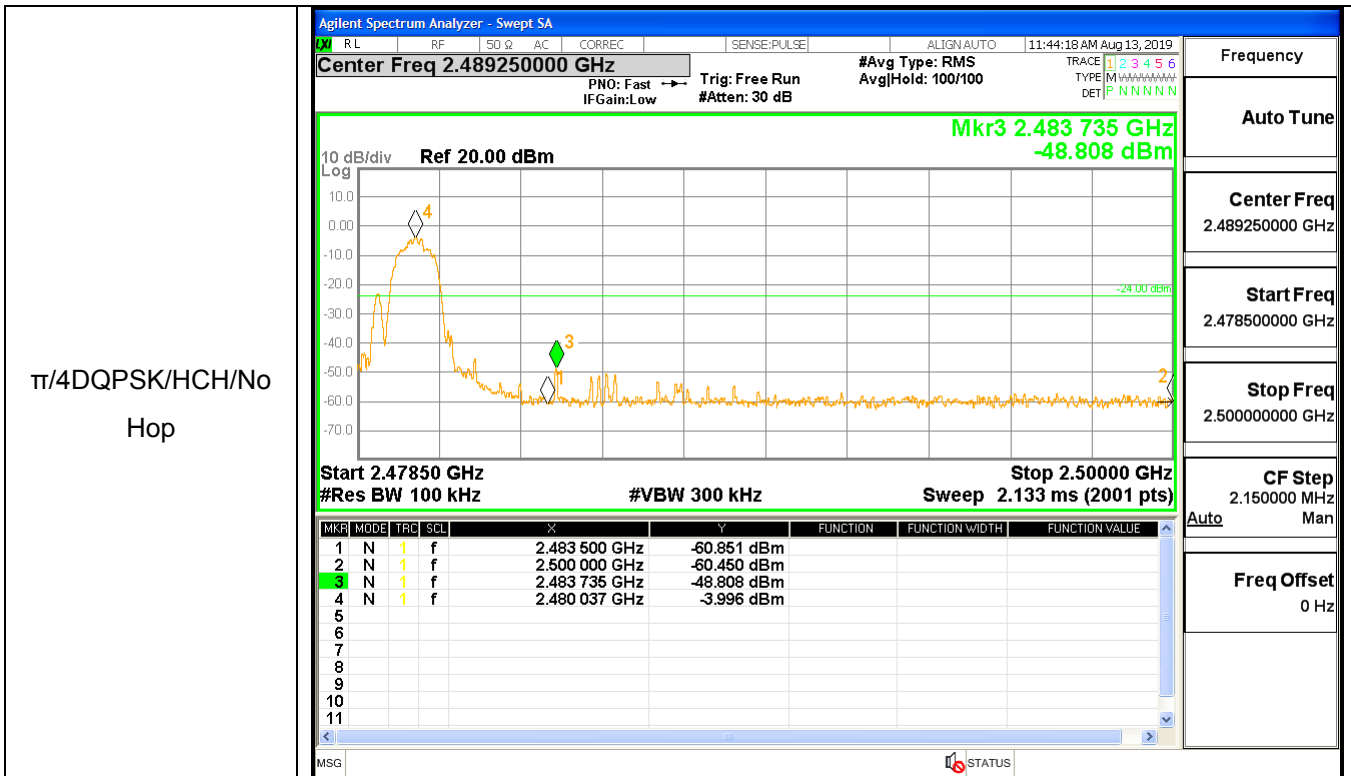
#### Graphs

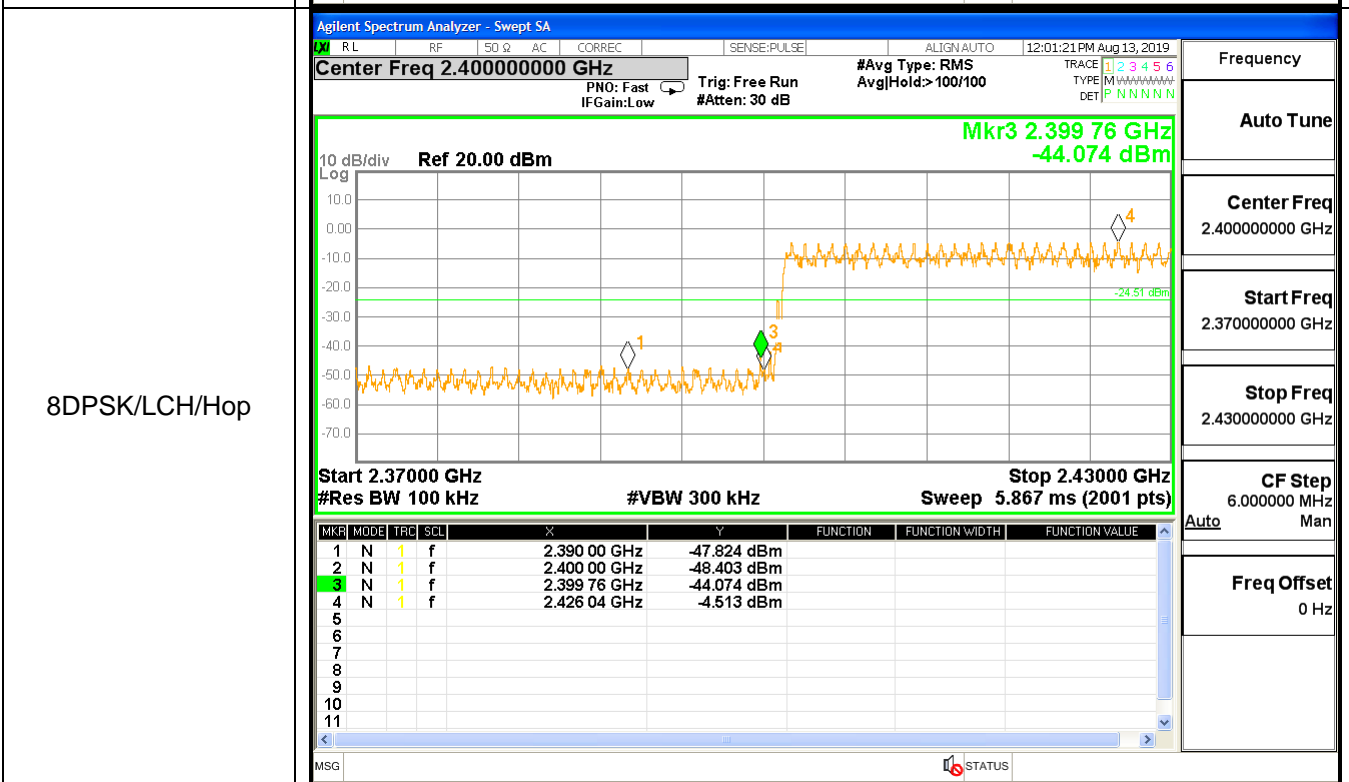
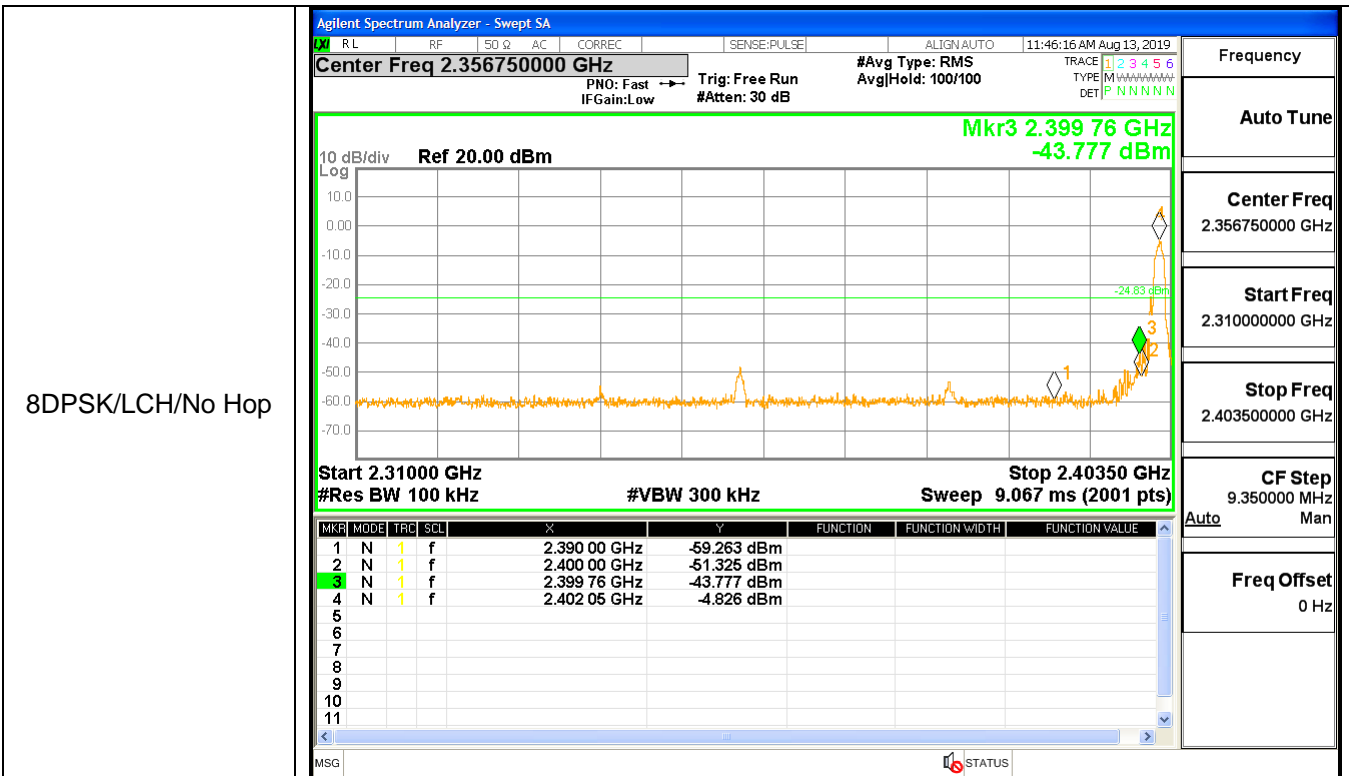


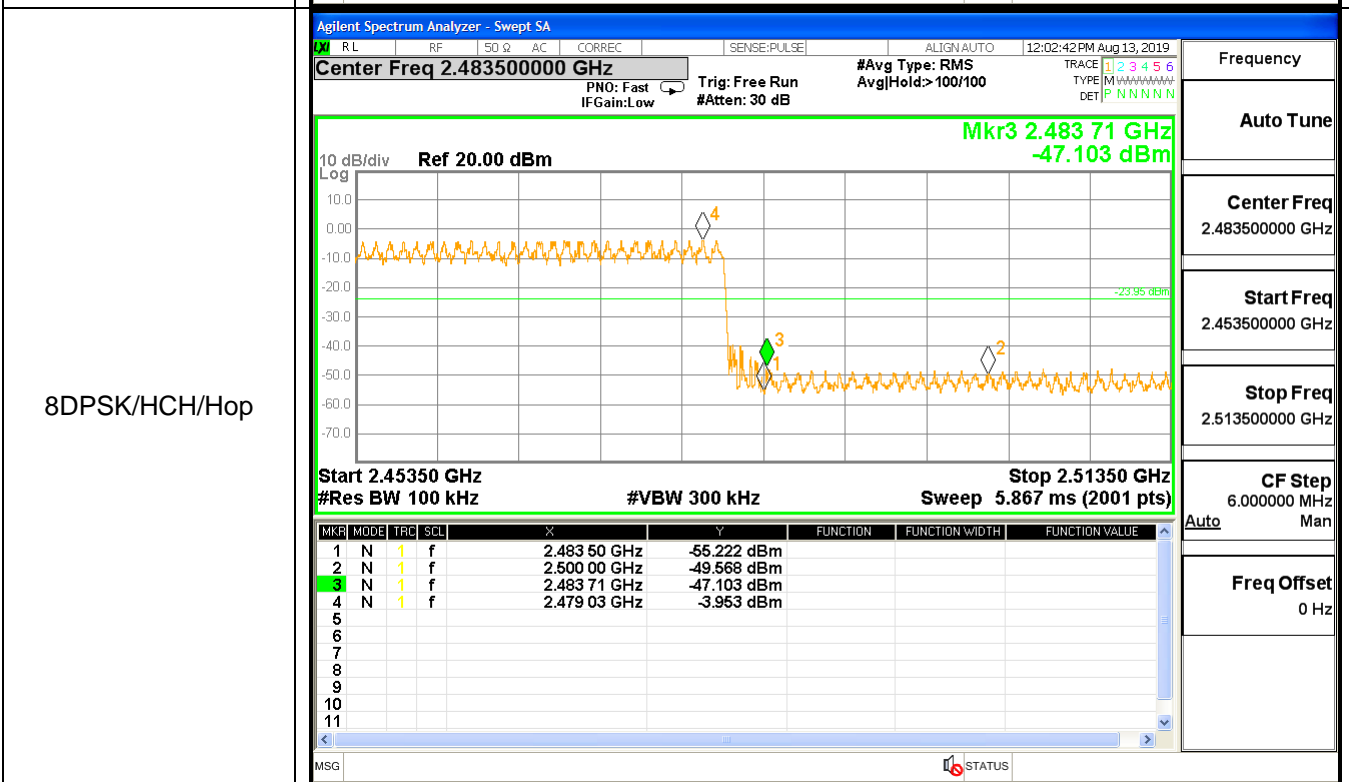
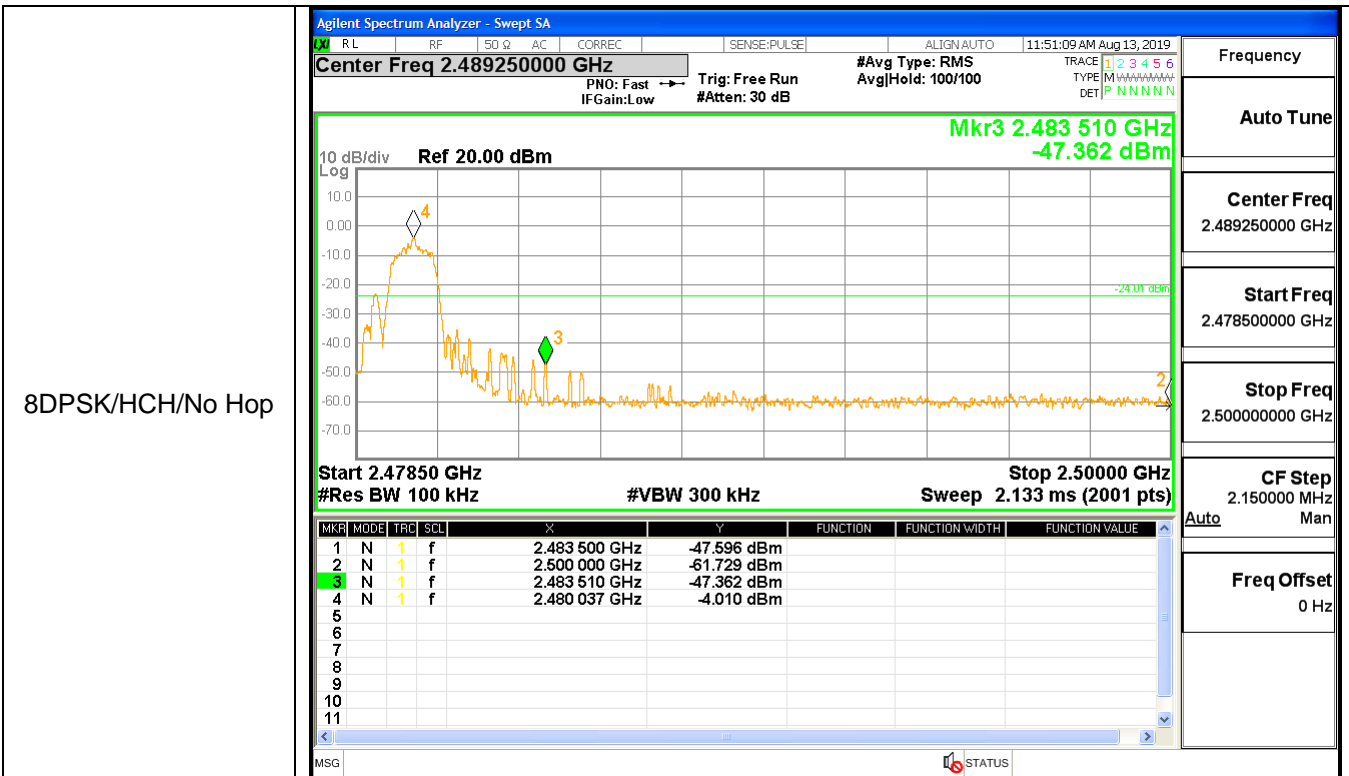




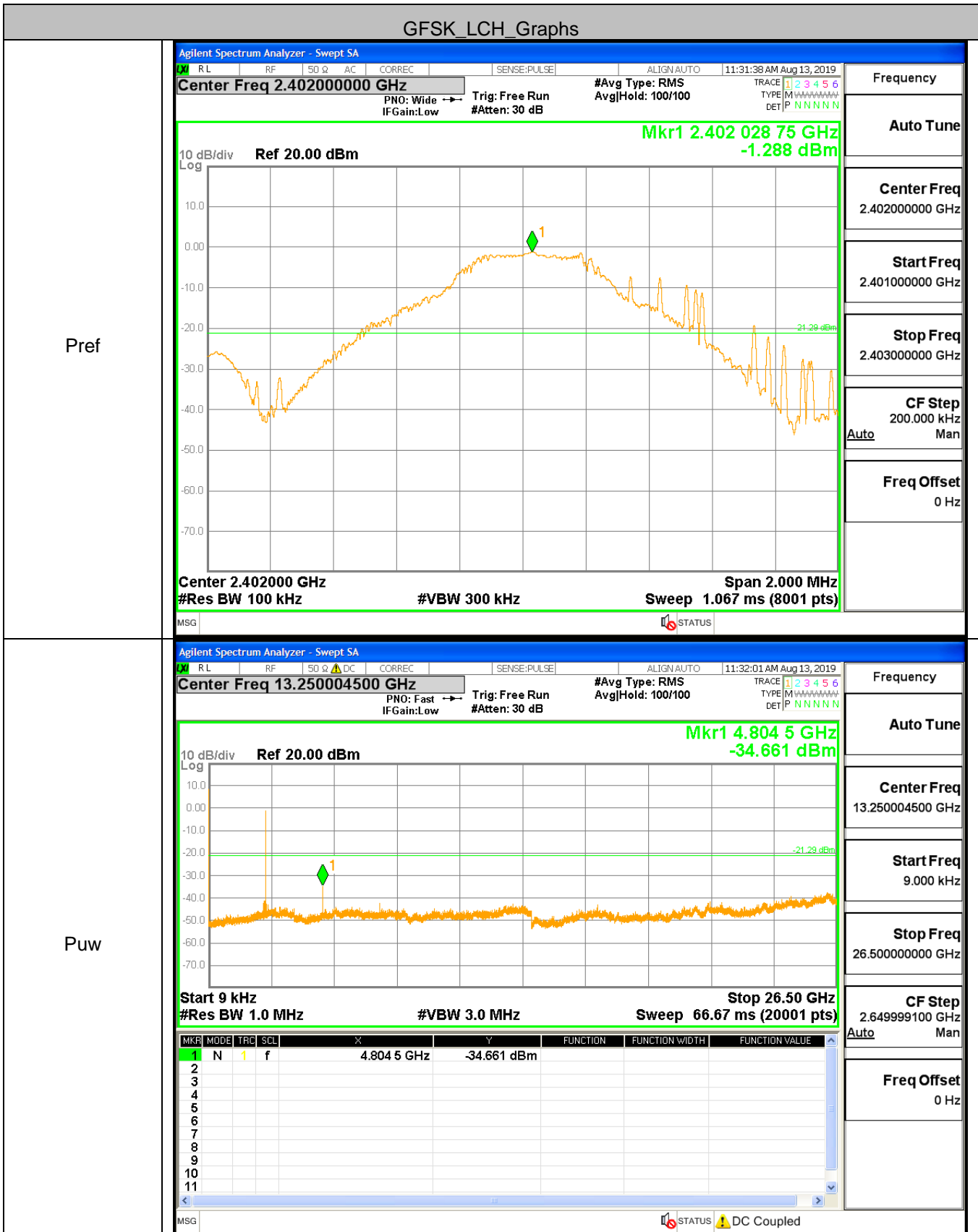




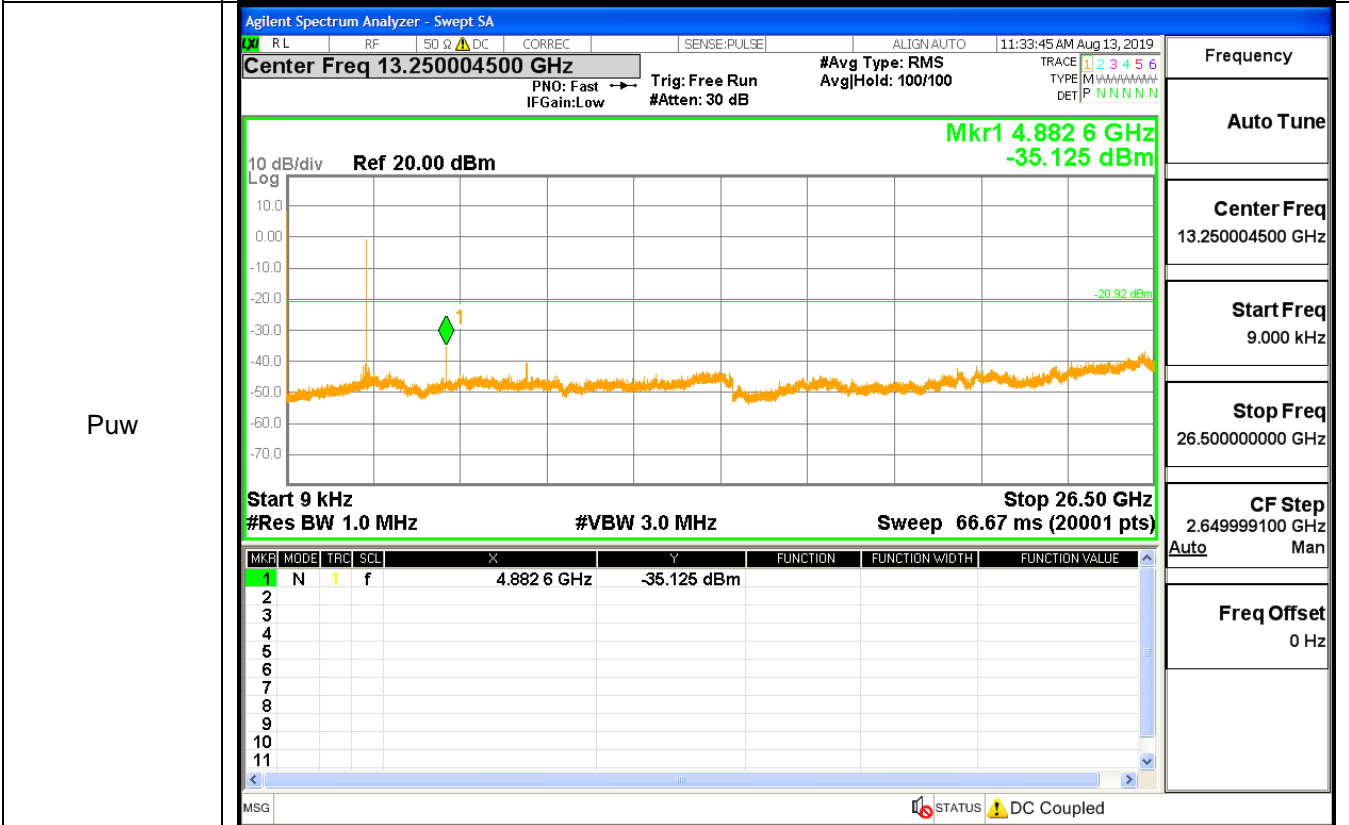
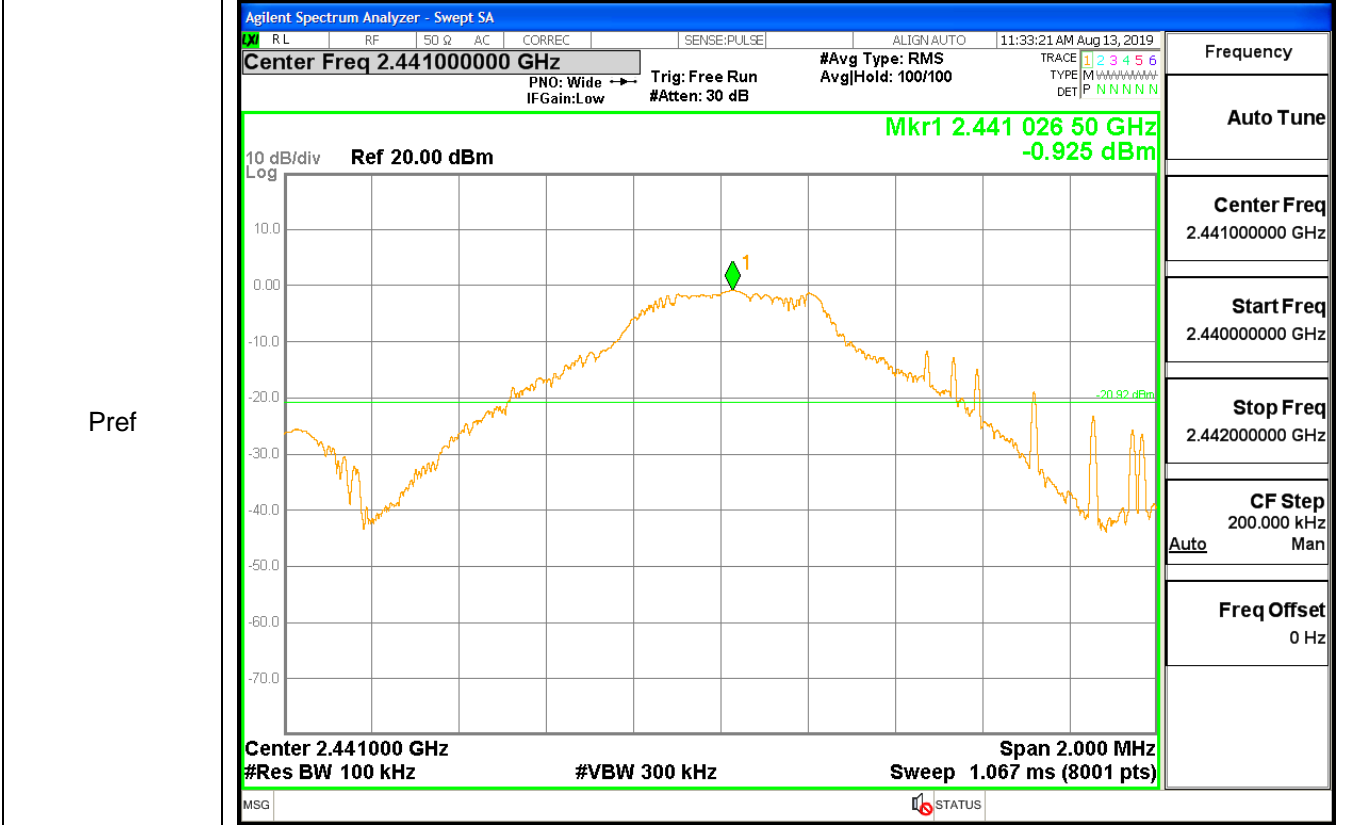




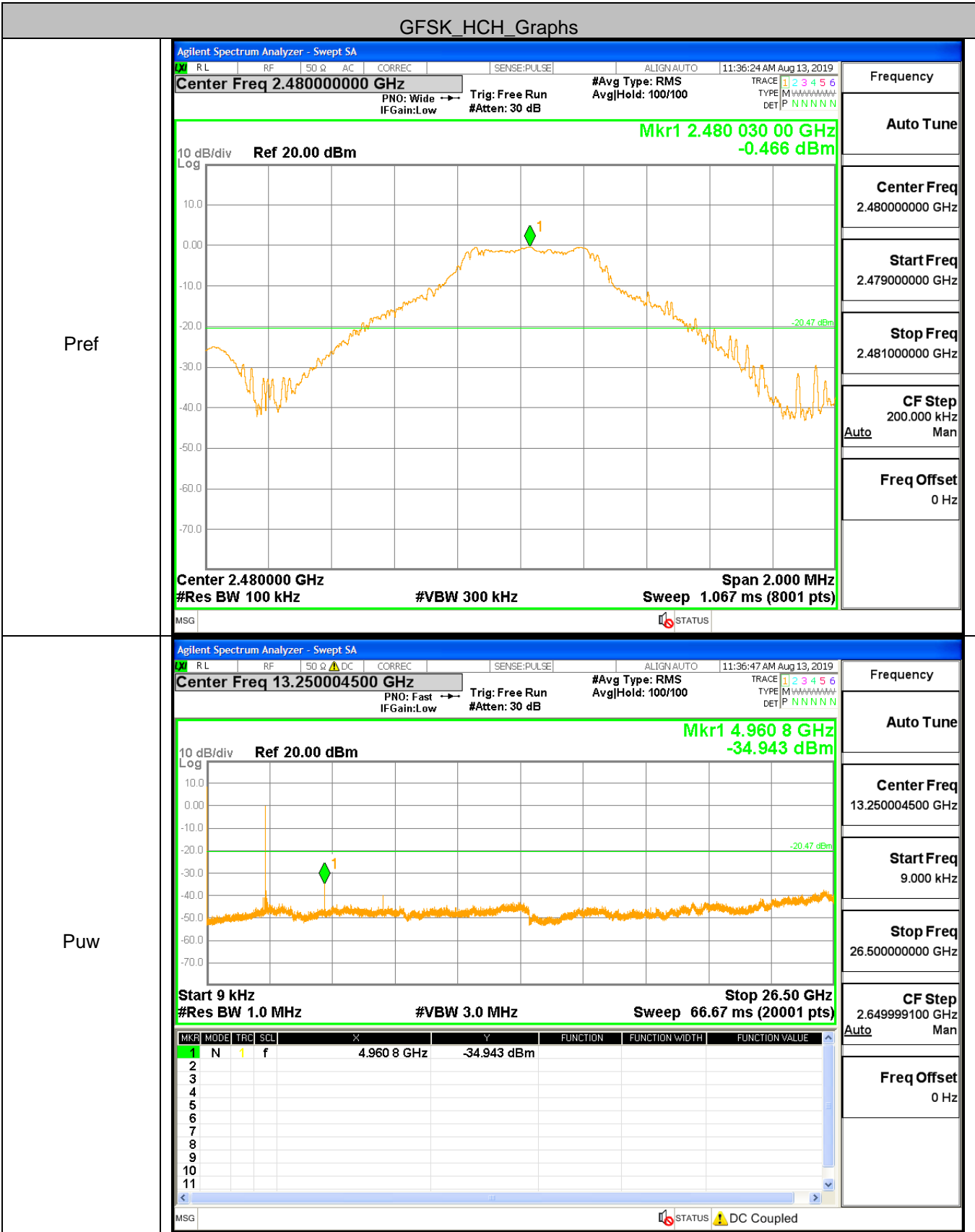
### A.7 RF Conducted Spurious Emissions Test Graph



GFSK\_MCH\_Graphs

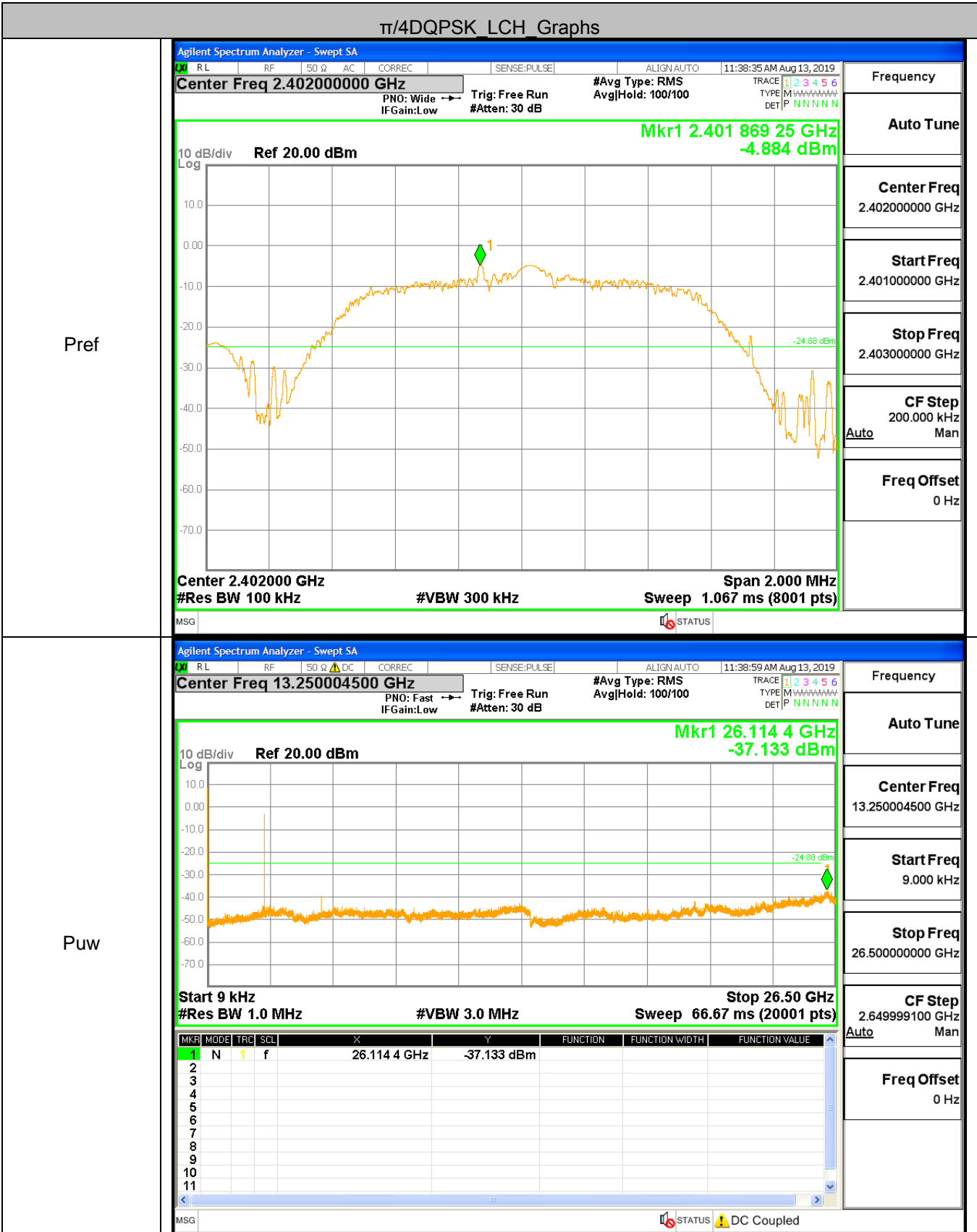


GFSK\_HCH\_Graphs

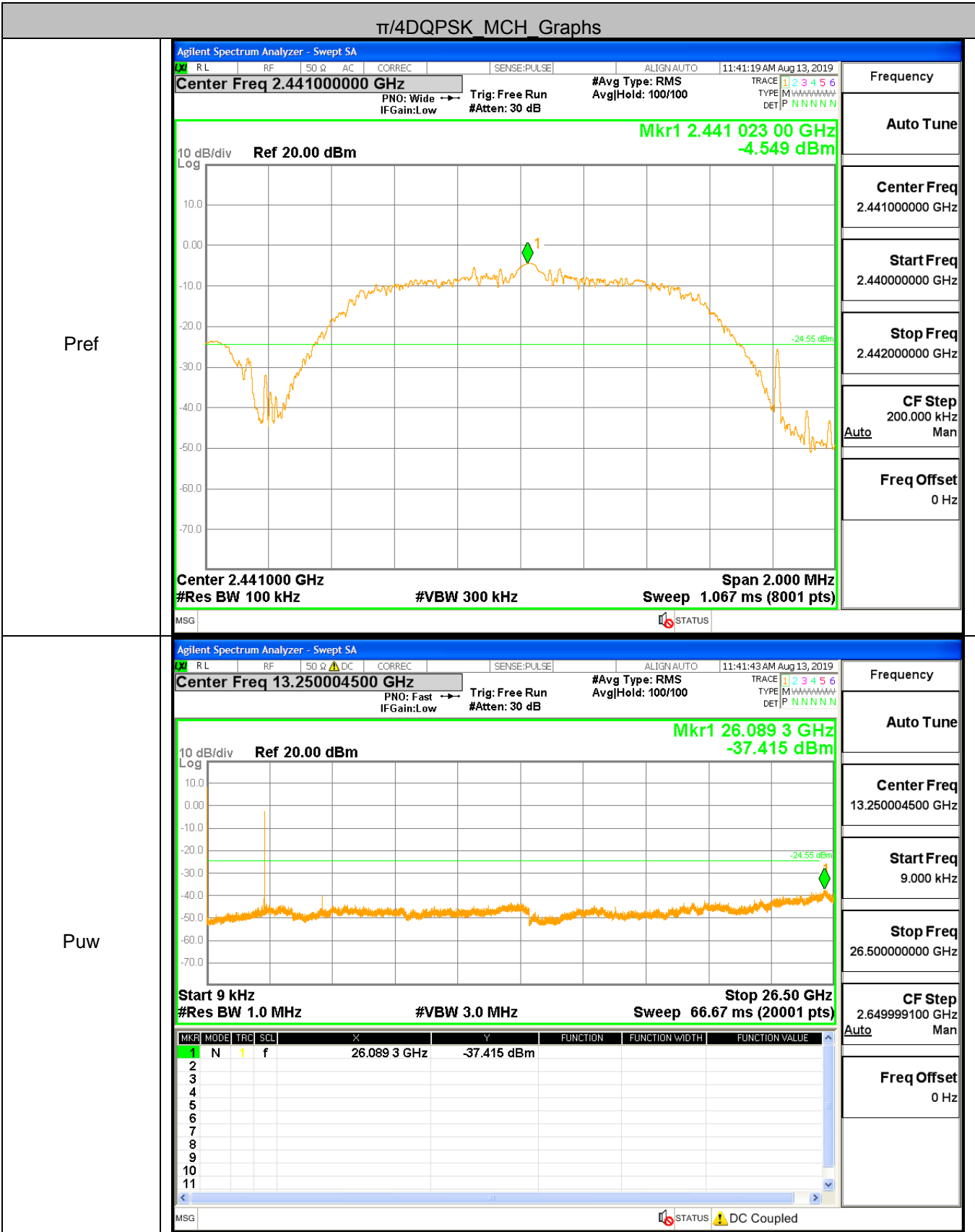




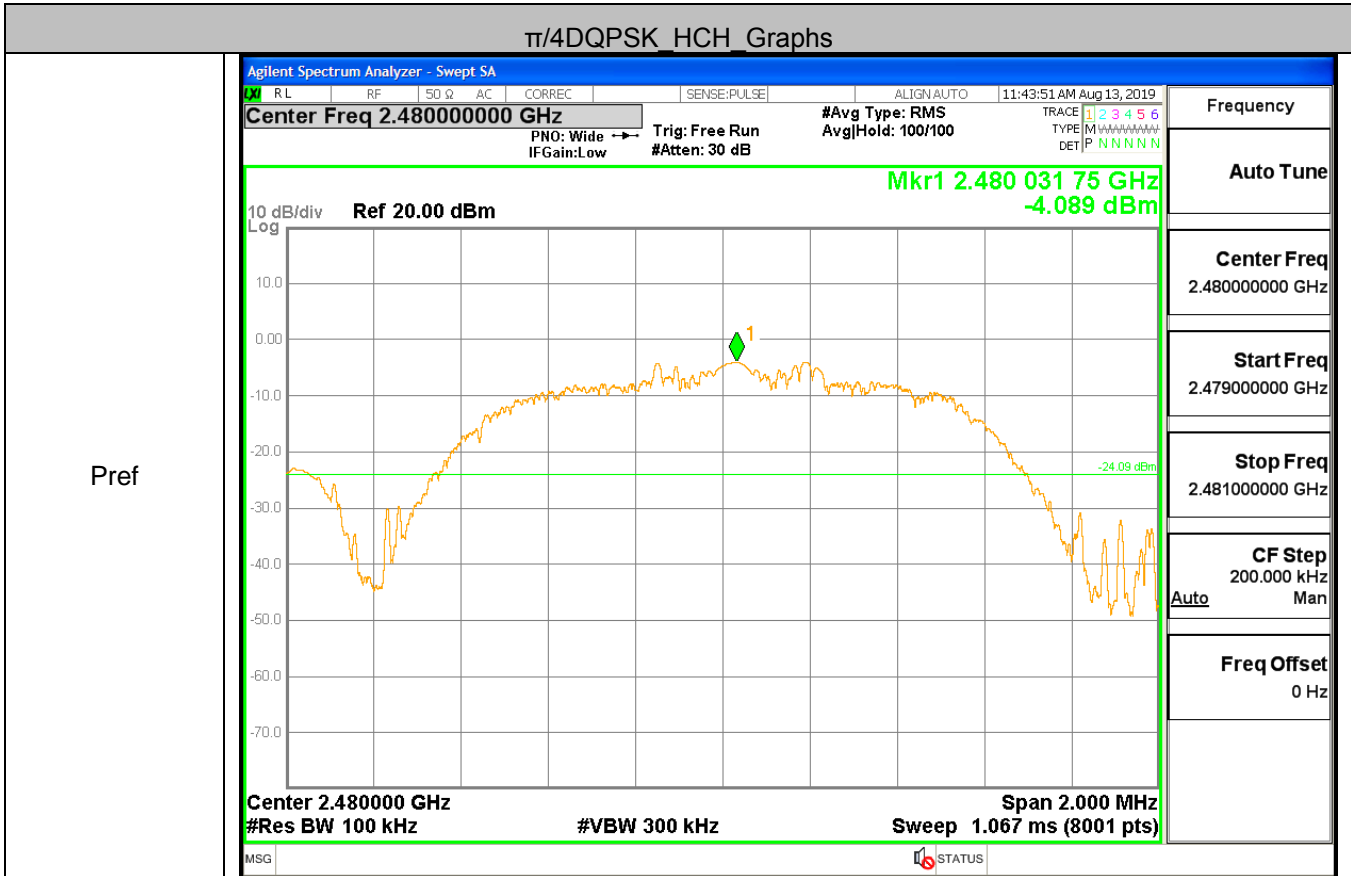
$\pi/4$ DQPSK LCH Graphs



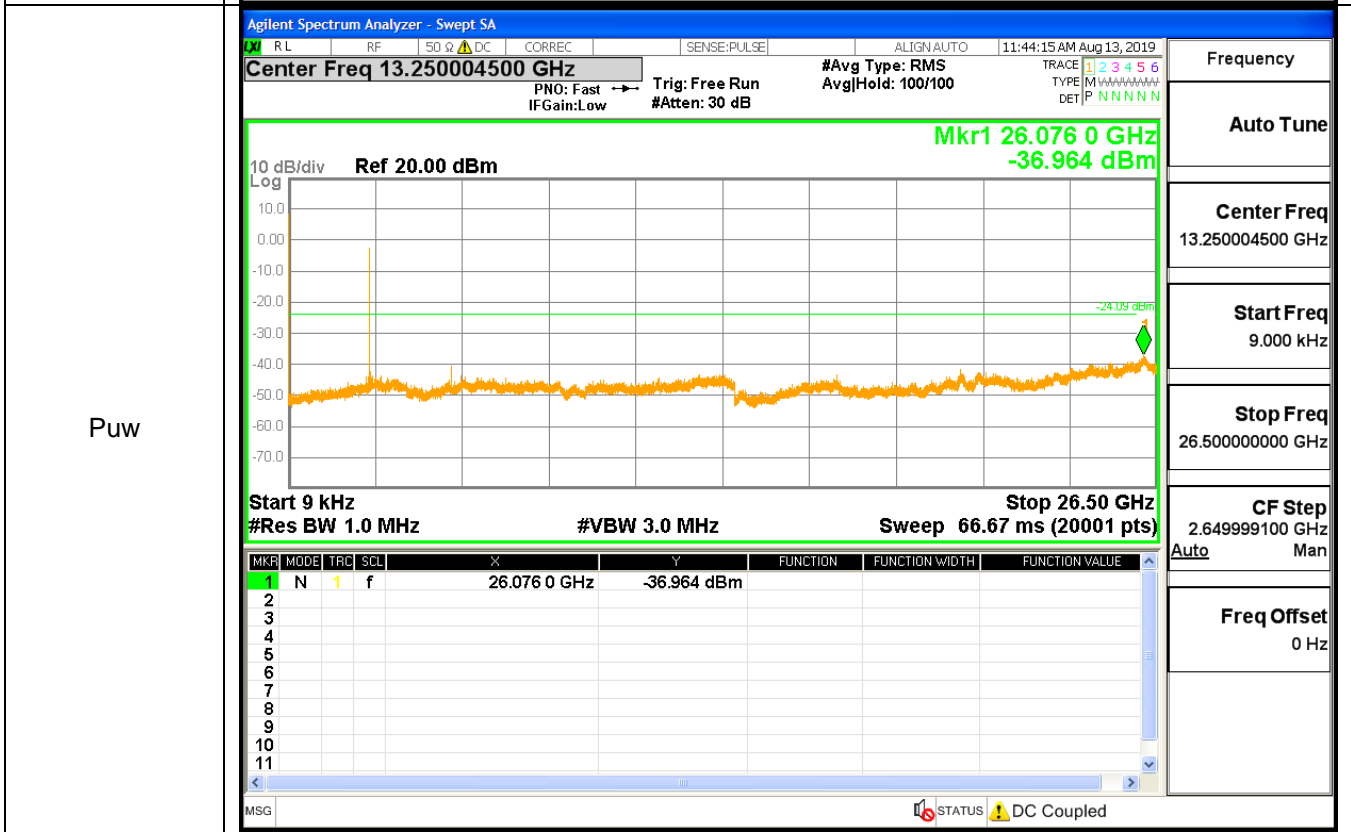
π/4DQPSK MCH Graphs



$\pi/4$ DQPSK HCH Graphs

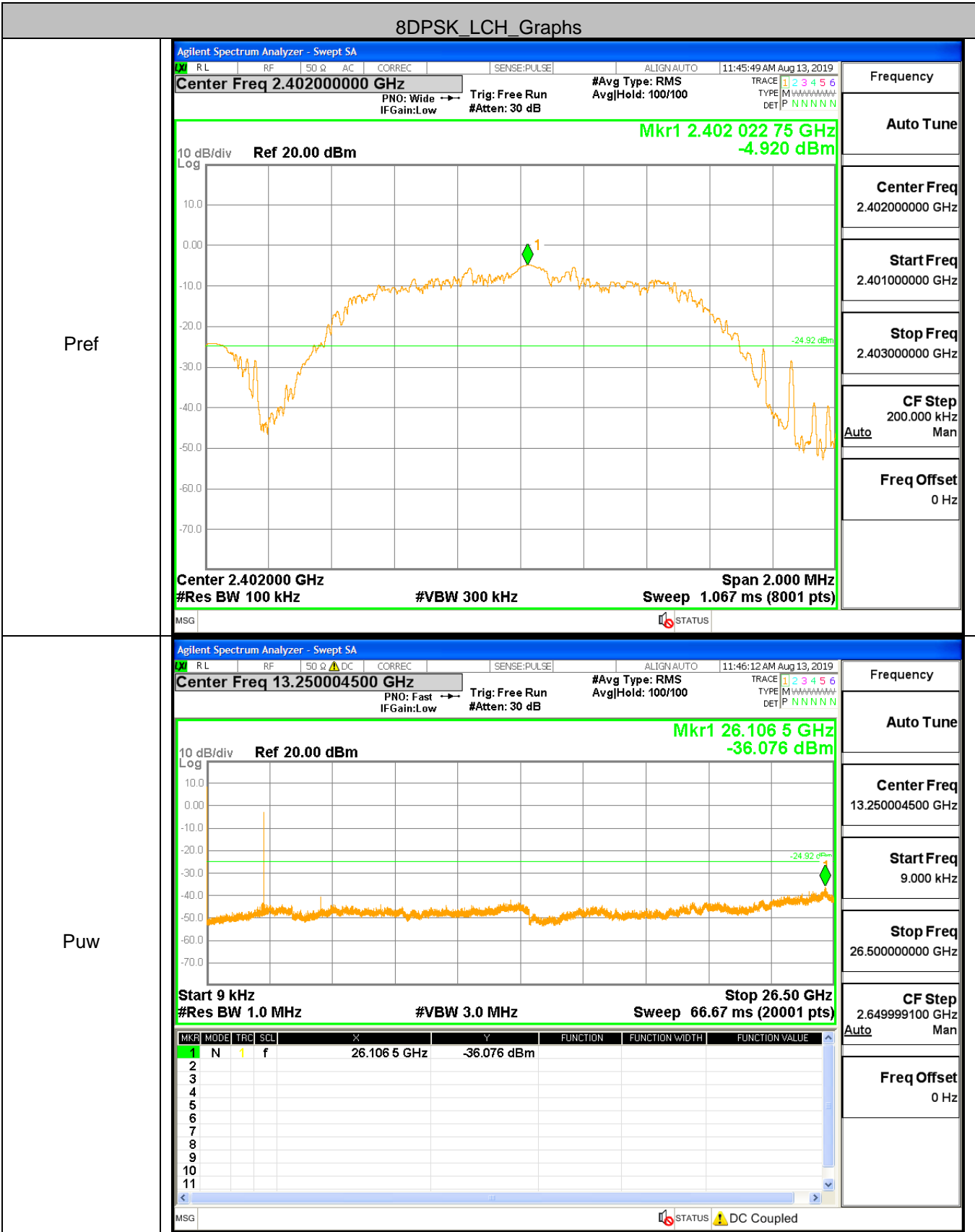


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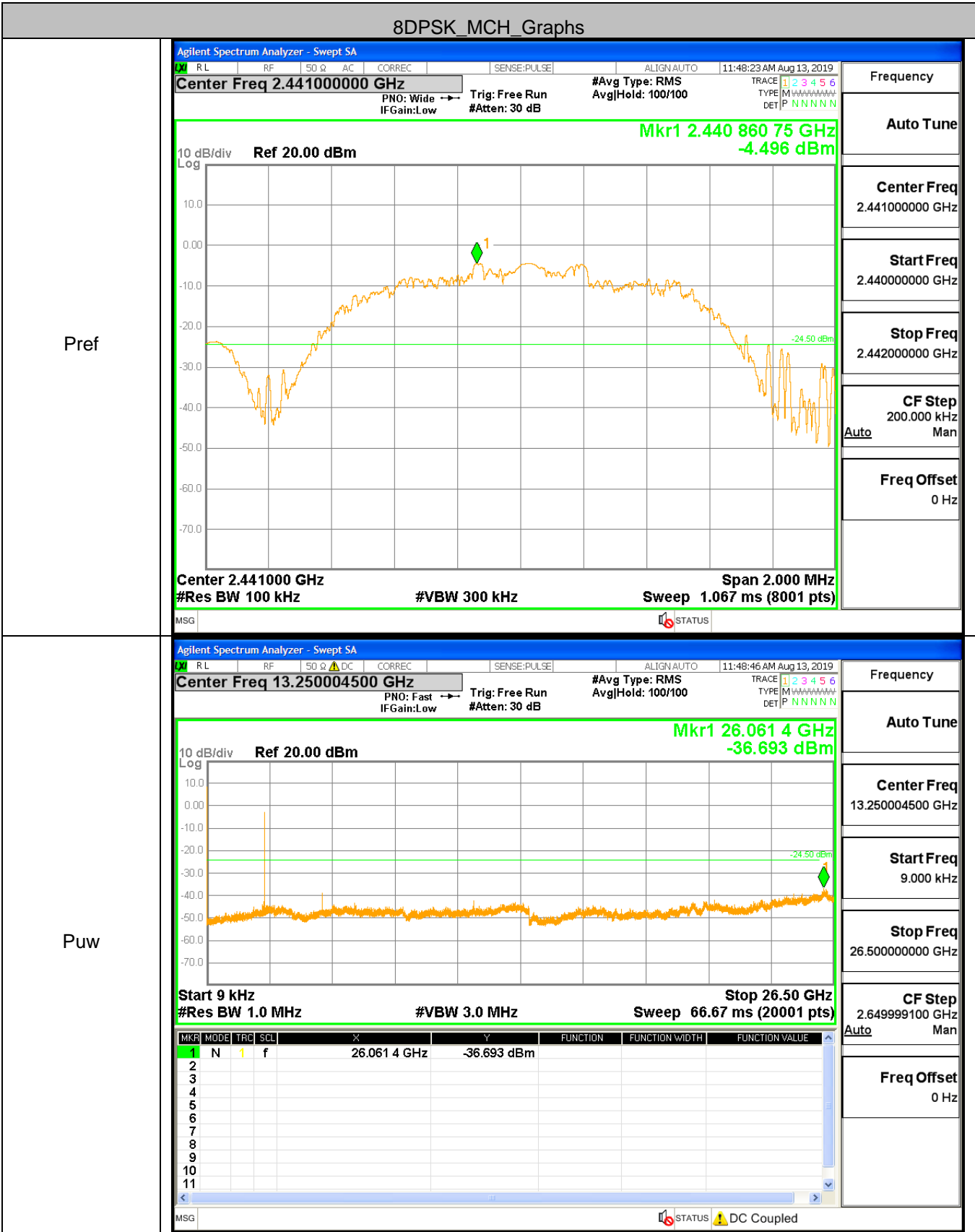


Puw

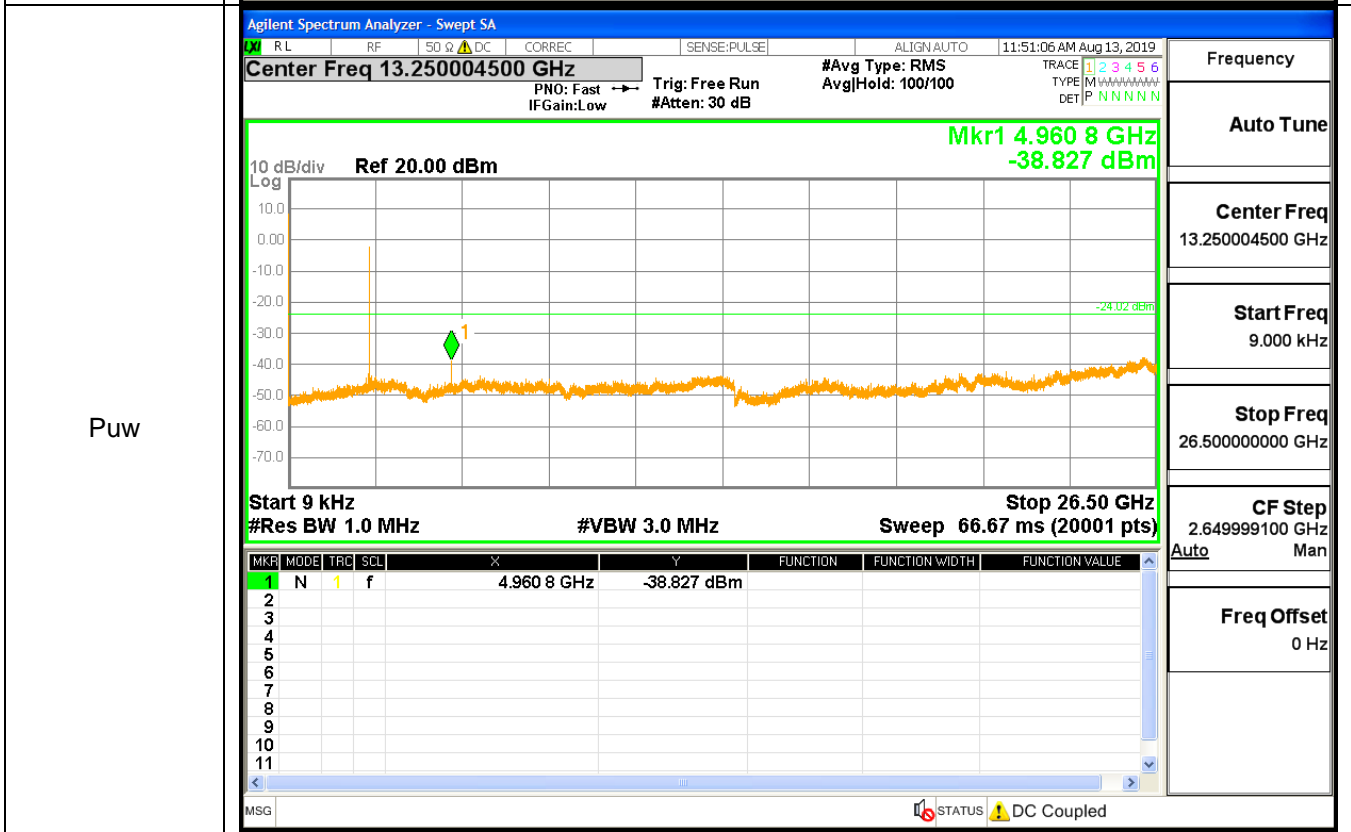
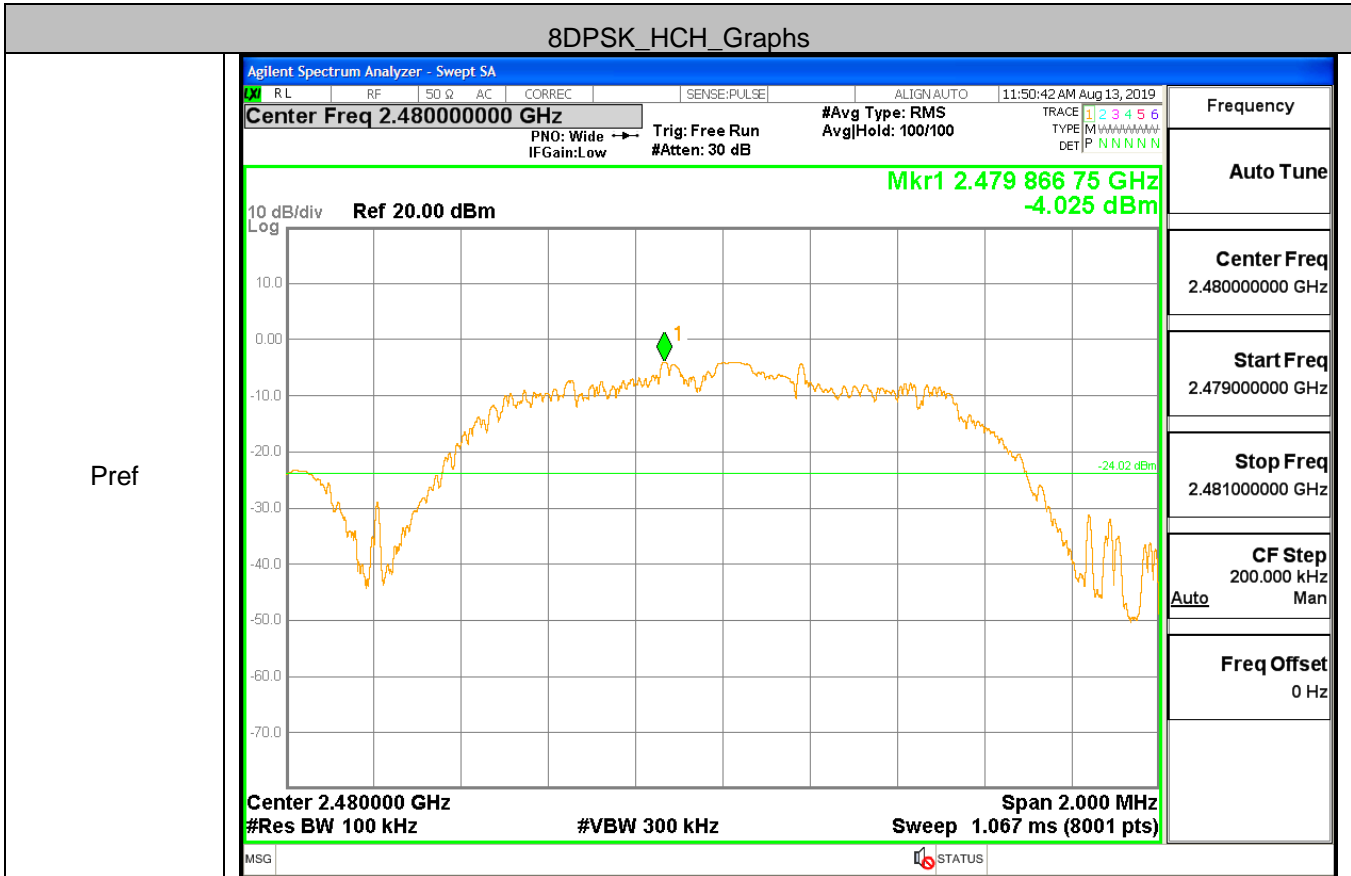
8DPSK\_LCH\_Graphs



8DPSK\_MCH\_Graphs



8DPSK\_HCH\_Graphs

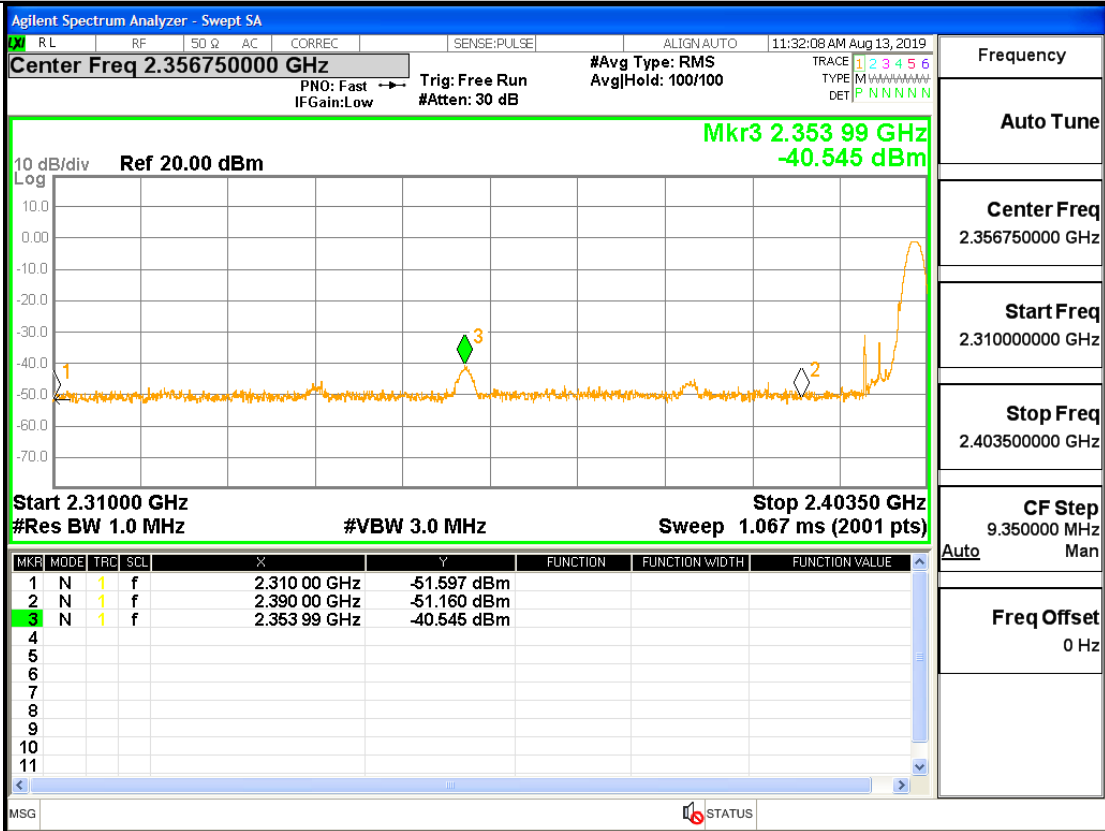


### A.8 Restrict-band band-edge measurements

Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2353.99	2.00	0.00	-40.55	56.66	74	Pass
1DH5	2480	2483.93	2.00	0.00	-25.31	71.89	74	Pass
2DH5	2402	2353.71	2.00	0.00	-43.35	53.85	74	Pass
2DH5	2480	2483.99	2.00	0.00	-29.16	68.04	74	Pass
3DH5	2402	2353.80	2.00	0.00	-43.30	53.90	74	Pass
3DH5	2480	2483.57	2.00	0.00	-28.06	69.14	74	Pass

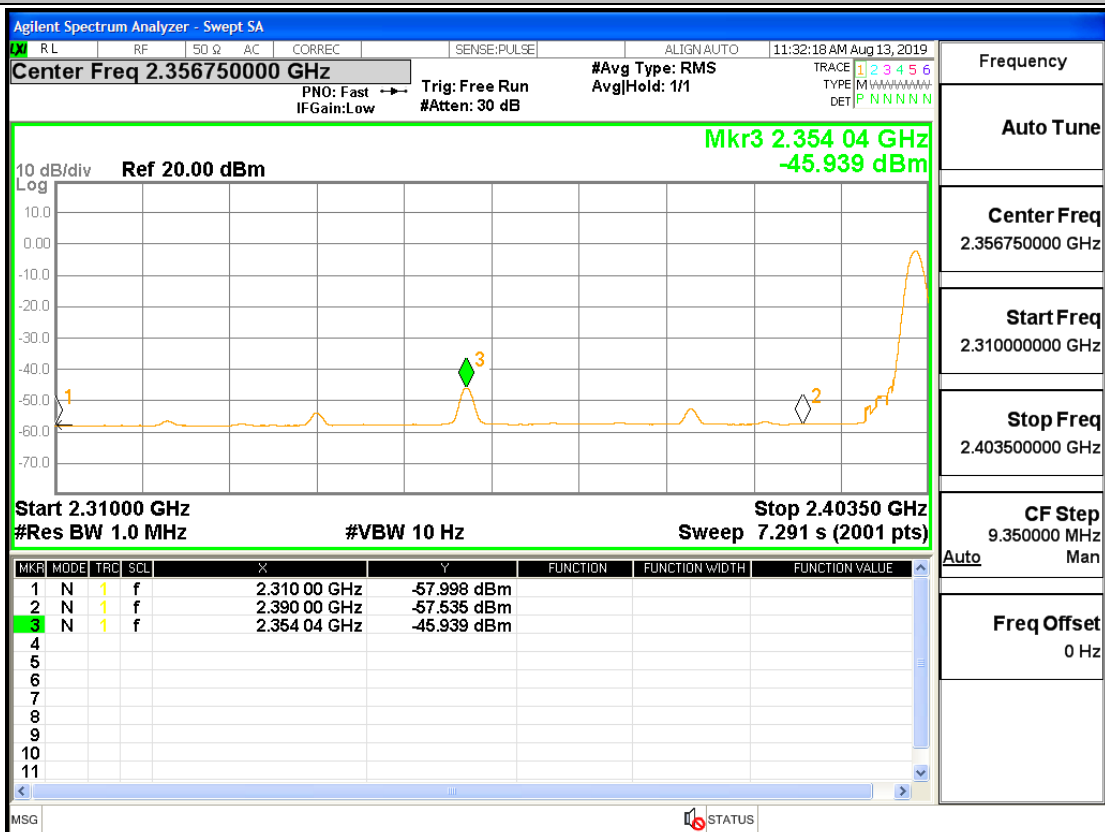
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402.00	2353.99	2.00	0.00	-45.94	51.26	54	Pass
1DH5	2480.00	2483.93	2.00	0.00	-47.15	50.05	54	Pass
2DH5	2402.00	2353.71	2.00	0.00	-49.73	47.47	54	Pass
2DH5	2480.00	2483.99	2.00	0.00	-51.76	45.44	54	Pass
3DH5	2402.00	2353.80	2.00	0.00	-49.85	47.35	54	Pass
3DH5	2480.00	2483.57	2.00	0.00	-55.69	41.51	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 Man
Freq Offset 0 Hz

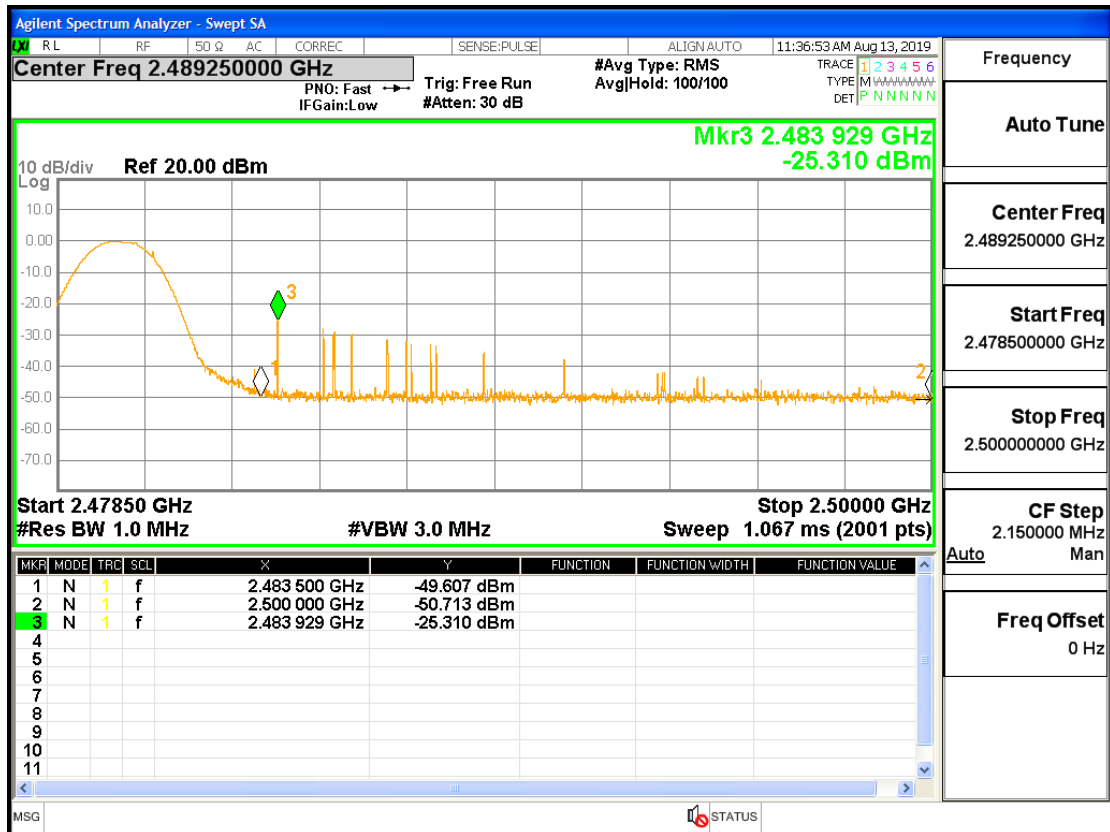
Restrict-band band-edge measurements\_2402\_AV\_DH5



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



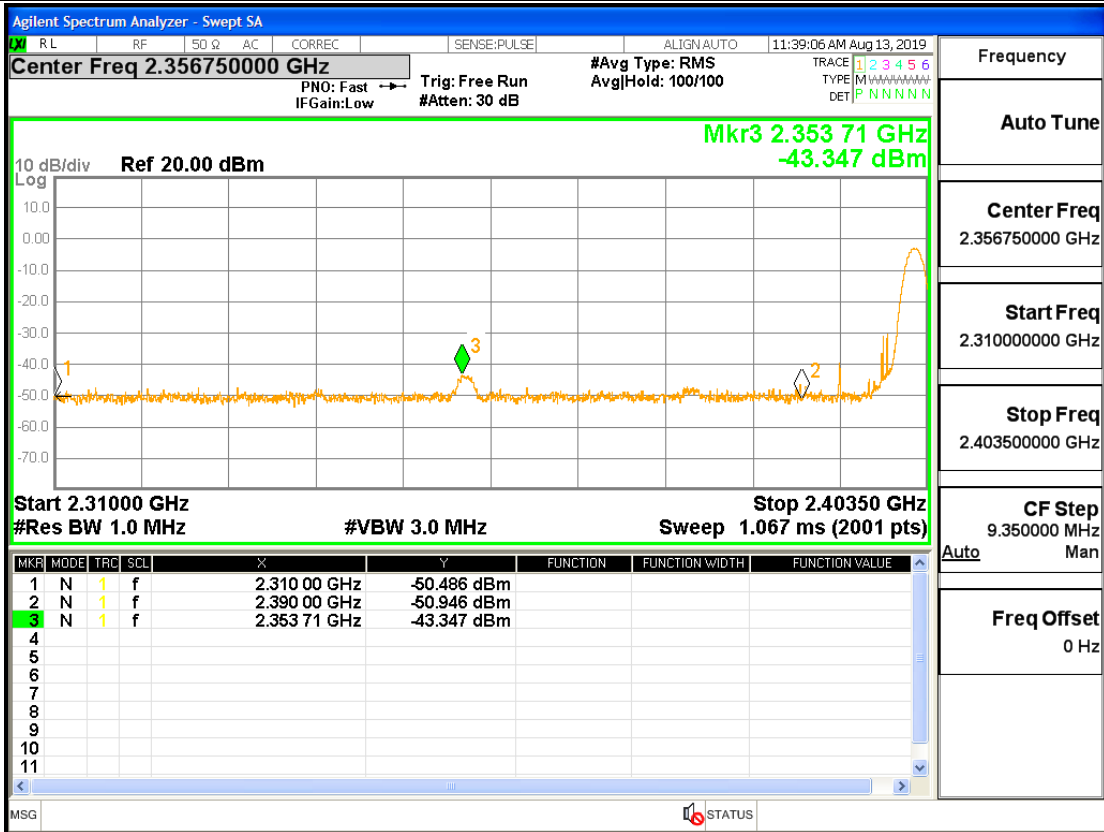
Restrict-band band-edge measurements\_2480\_PEAK\_DH5



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

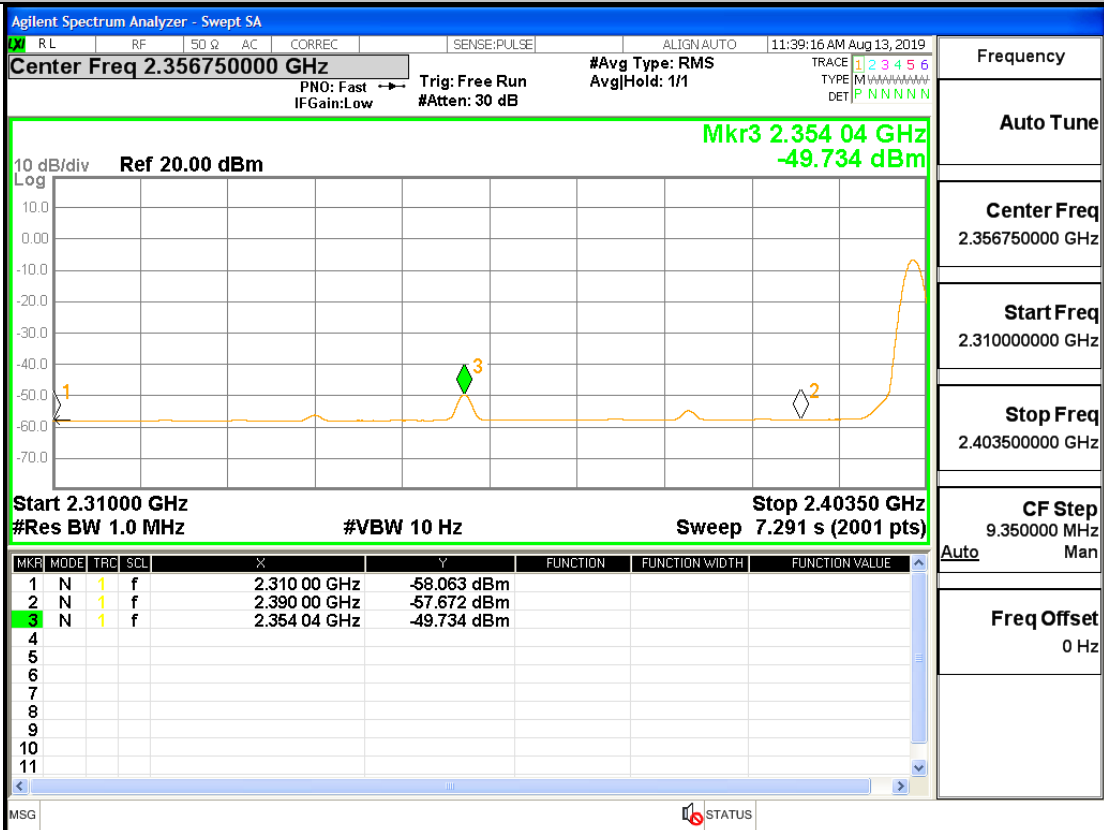


Restrict-band band-edge measurements\_2402\_PEAK\_2DH5



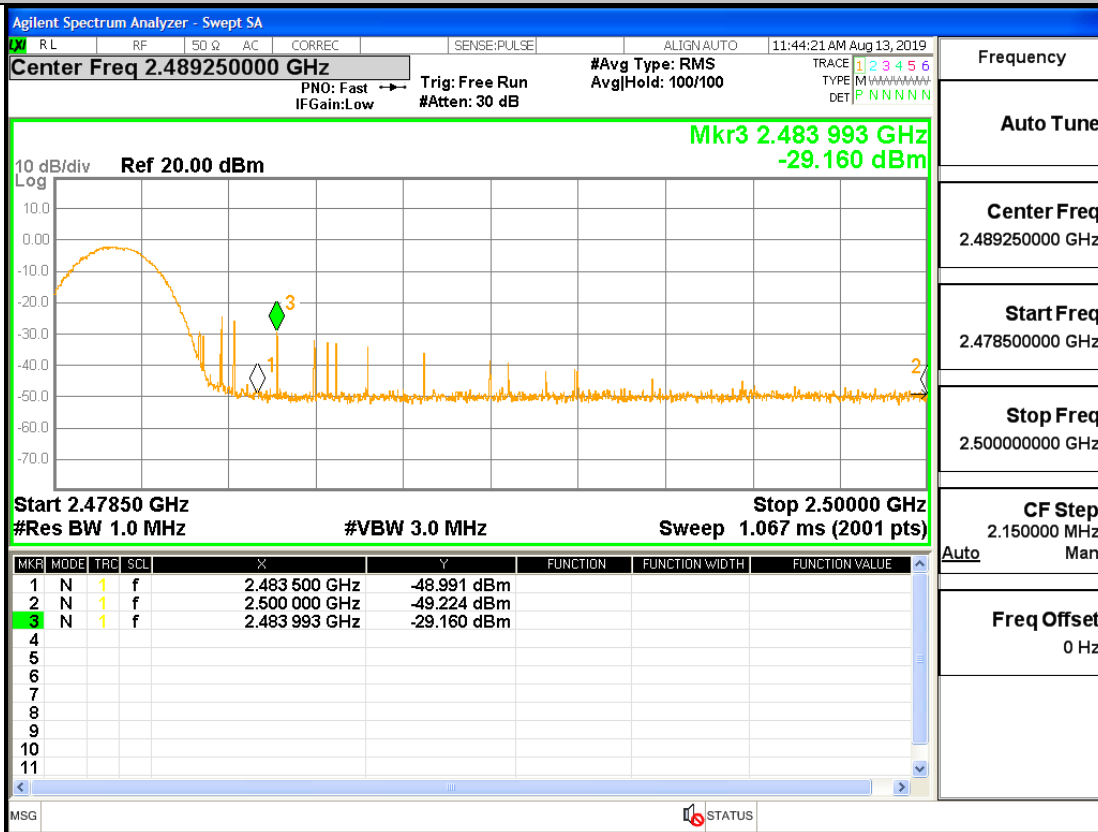
Frequency
Auto Tune
Center Freq 2.356750000 GHz
Start Freq 2.310000000 GHz
Stop Freq 2.403500000 GHz
CF Step 9.350000 MHz
Freq Offset 0 Hz

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



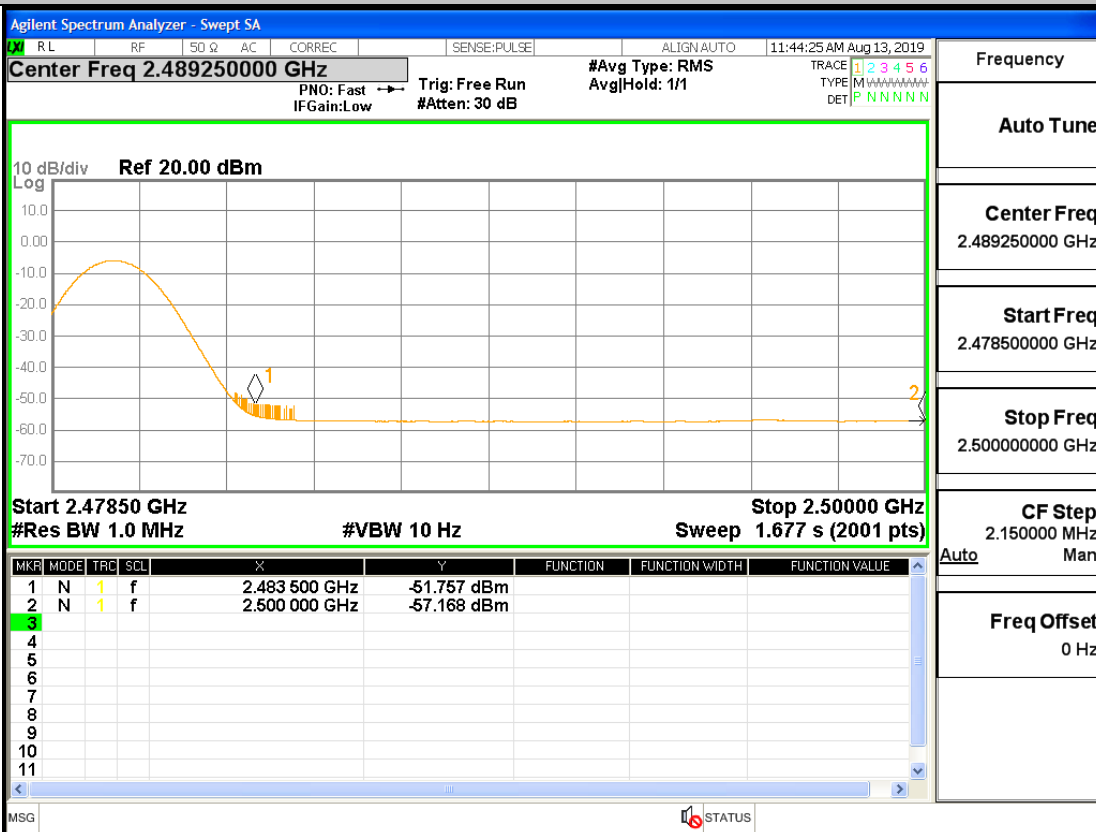
Frequency
Auto Tune
Center Freq 2.356750000 GHz
Start Freq 2.310000000 GHz
Stop Freq 2.403500000 GHz
CF Step 9.350000 MHz
Freq Offset 0 Hz

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



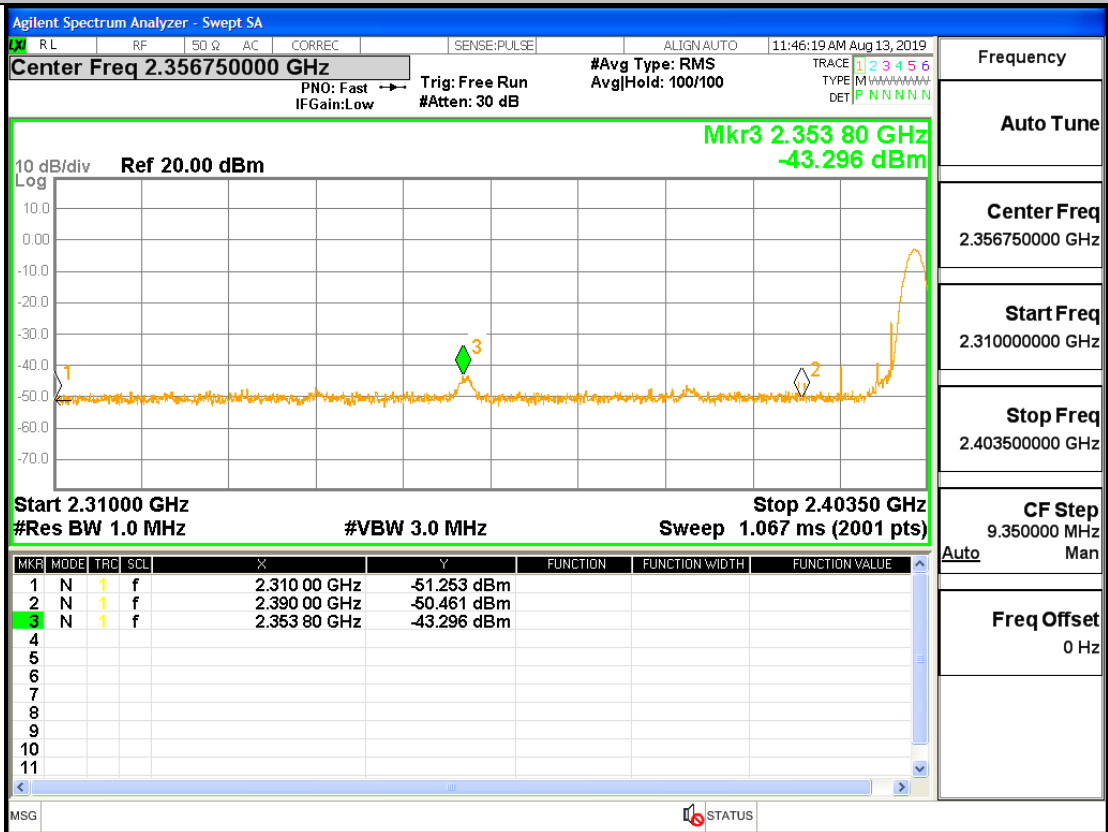
Frequency
Auto Tune
Center Freq 2.489250000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.500000000 GHz
CF Step 2.150000 MHz Auto Man
Freq Offset 0 Hz

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

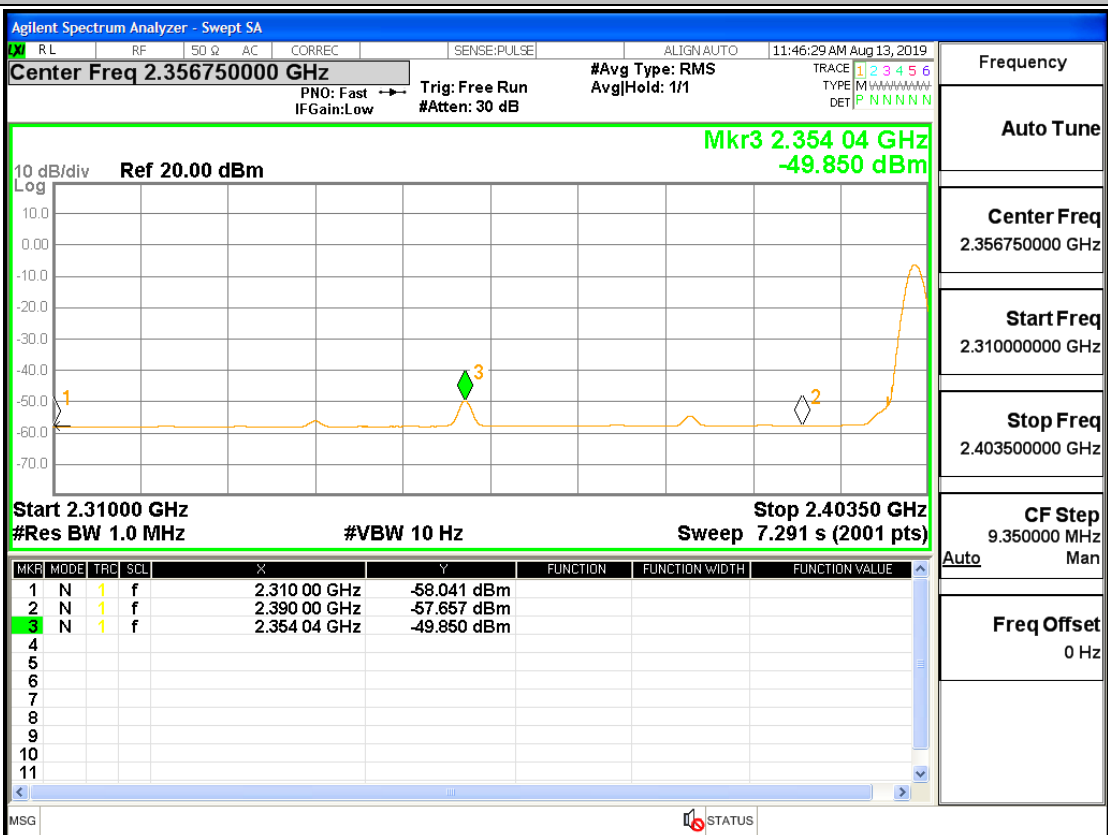


Frequency
Auto Tune
Center Freq 2.489250000 GHz
Start Freq 2.478500000 GHz
Stop Freq 2.500000000 GHz
CF Step 2.150000 MHz Auto Man
Freq Offset 0 Hz

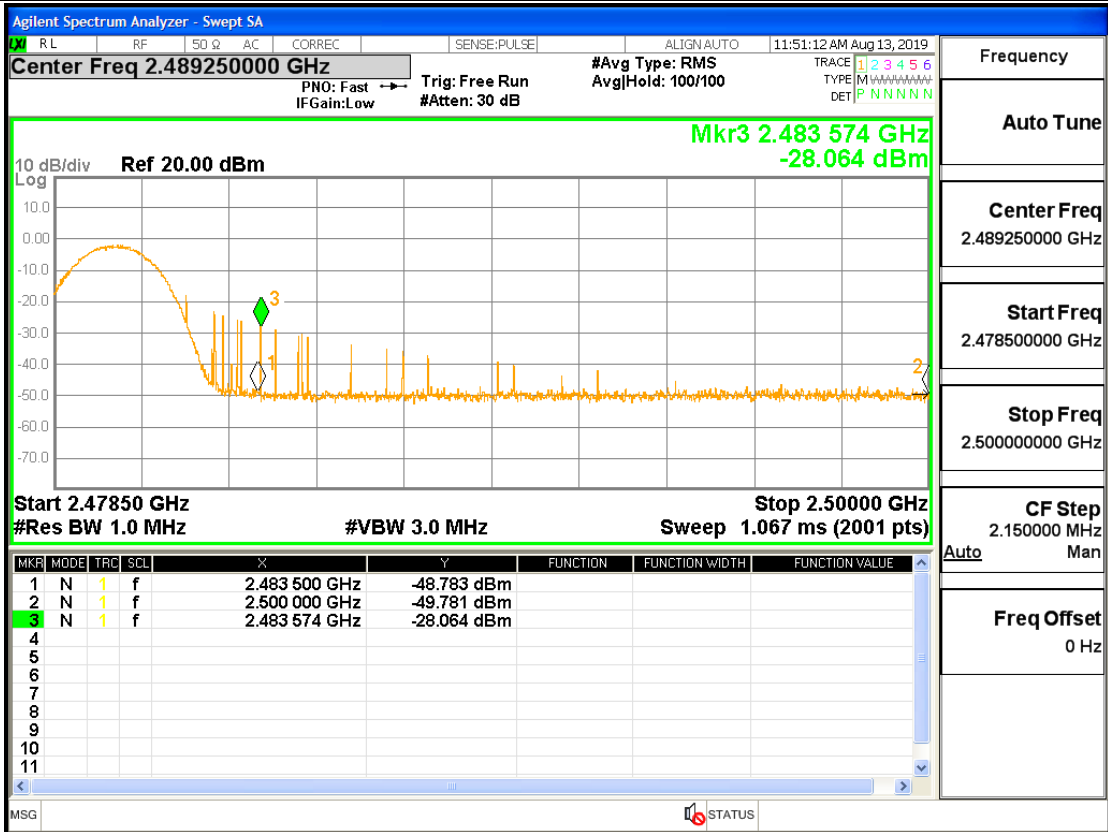
Restrict-band band-edge measurements\_2402\_PEAK\_3DH5



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



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



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

