

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

**Product Name: Bluetooth Headphones**

**Trade Mark: Muze, Vivitar**

**Test Model: MUZ4001**

**FCC ID: 2AL9B-MUZ4001**

**Environmental Conditions**

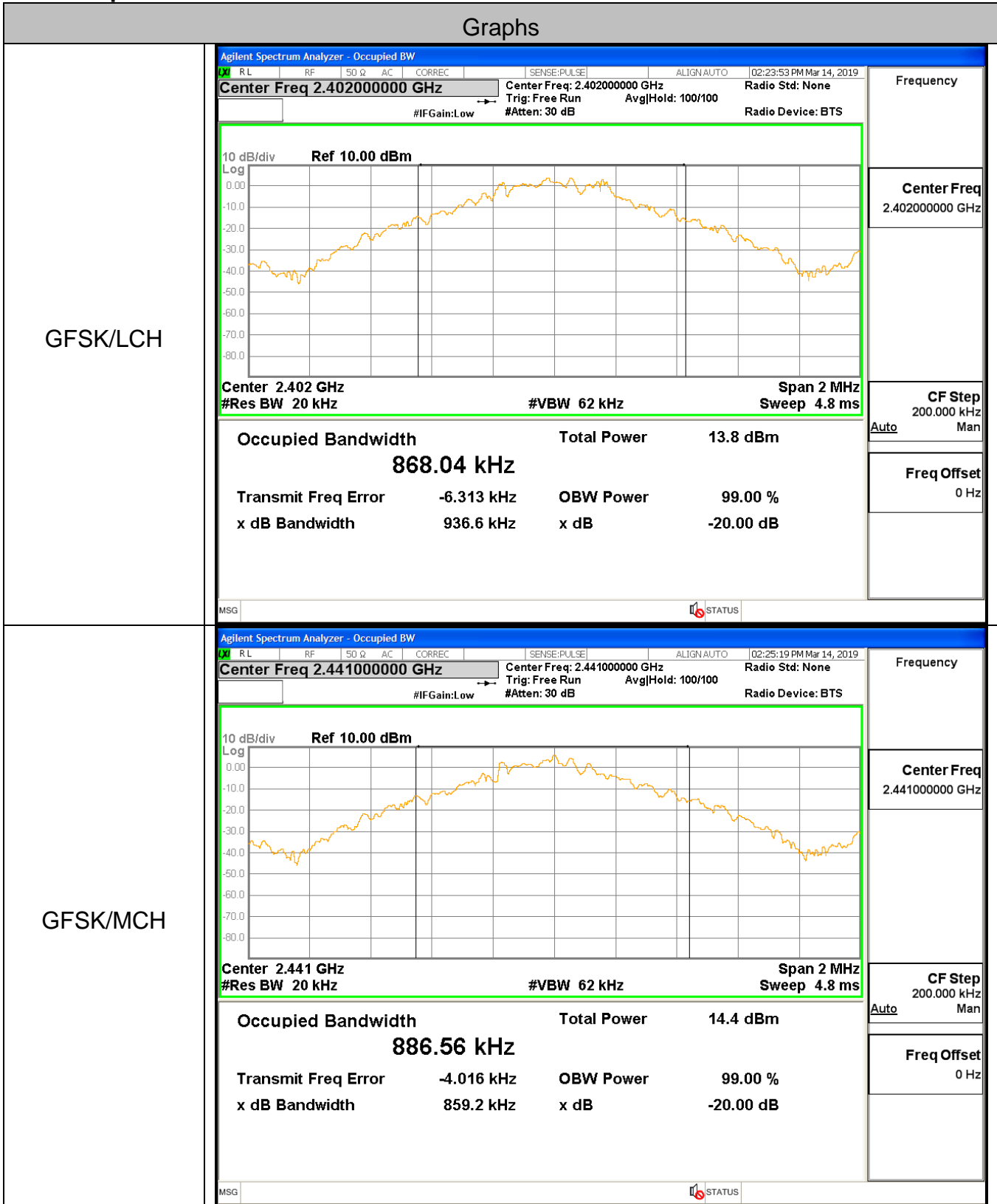
Temperature:	22.5 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

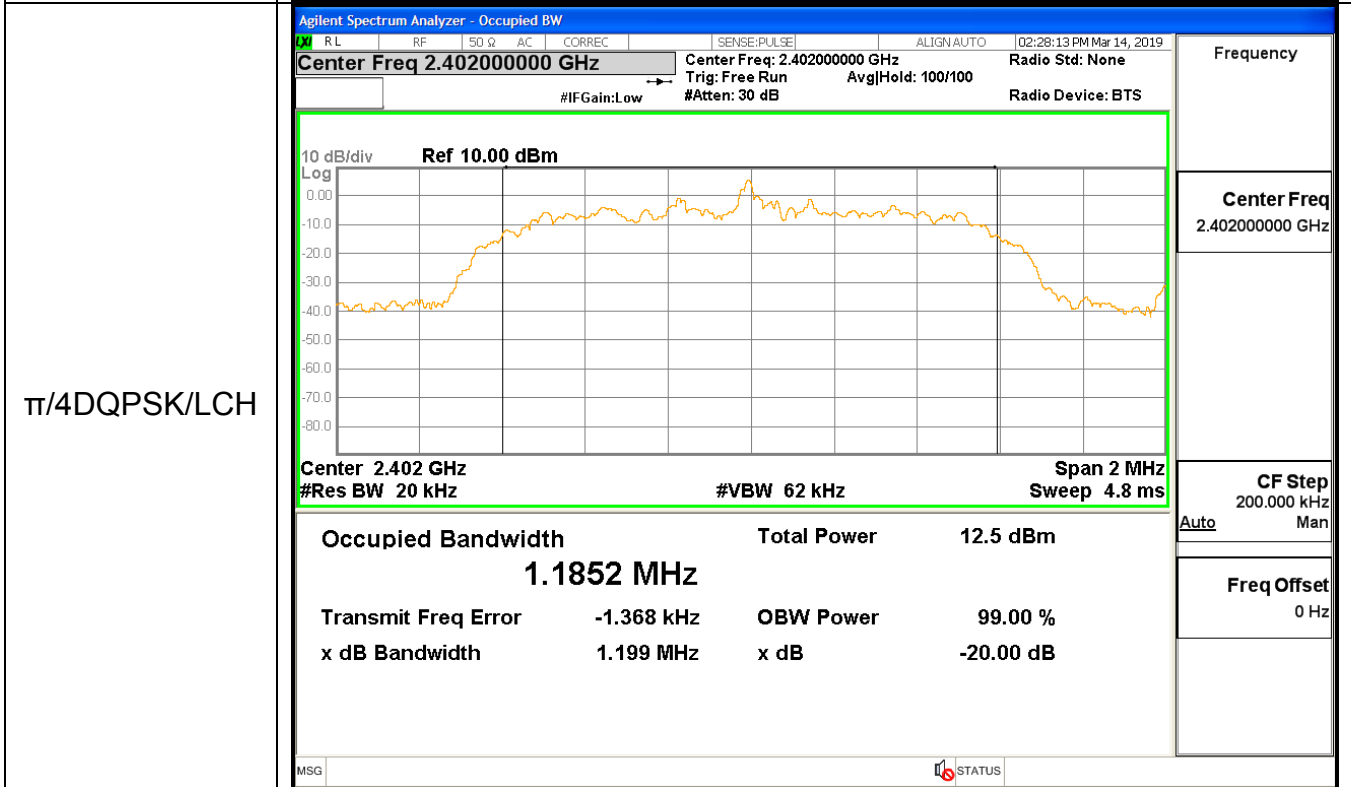
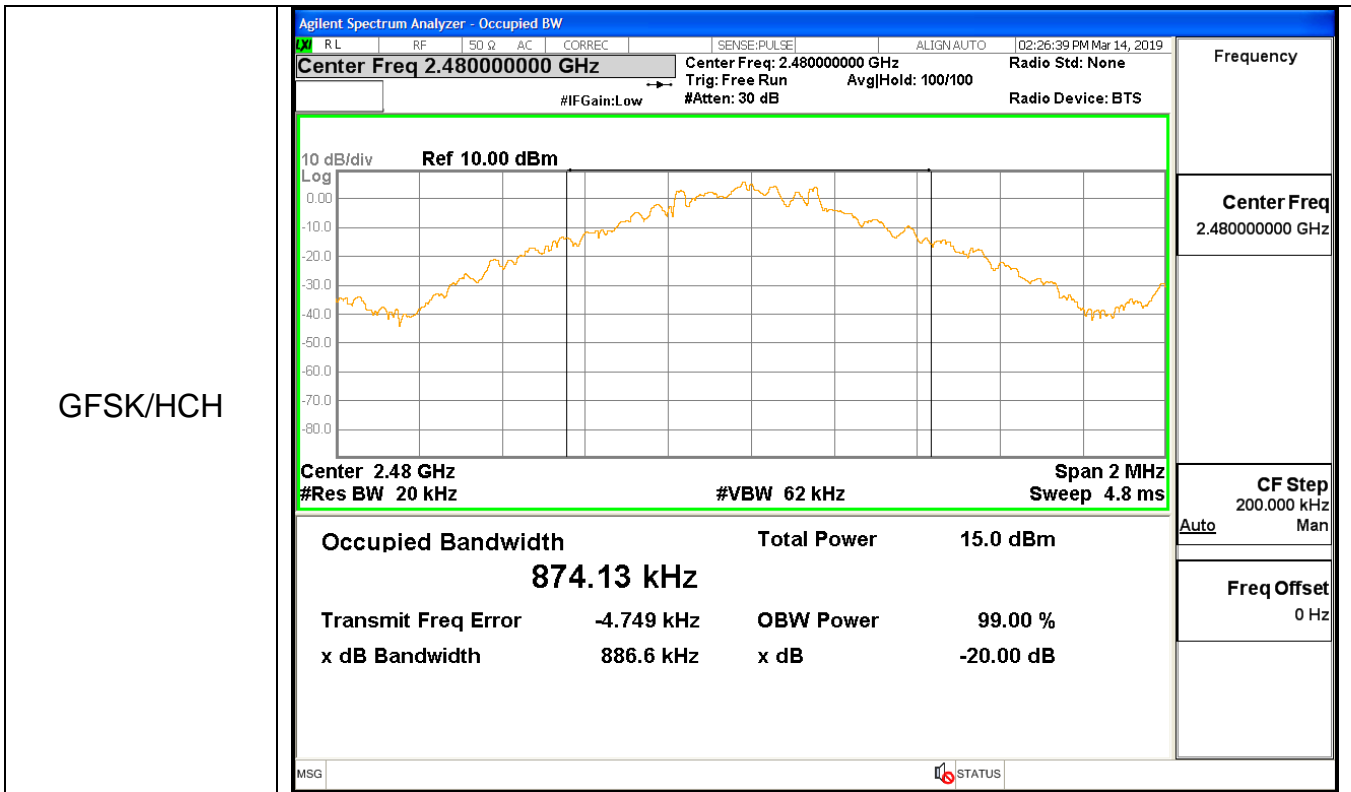
**A.1 20 dB Bandwidth**

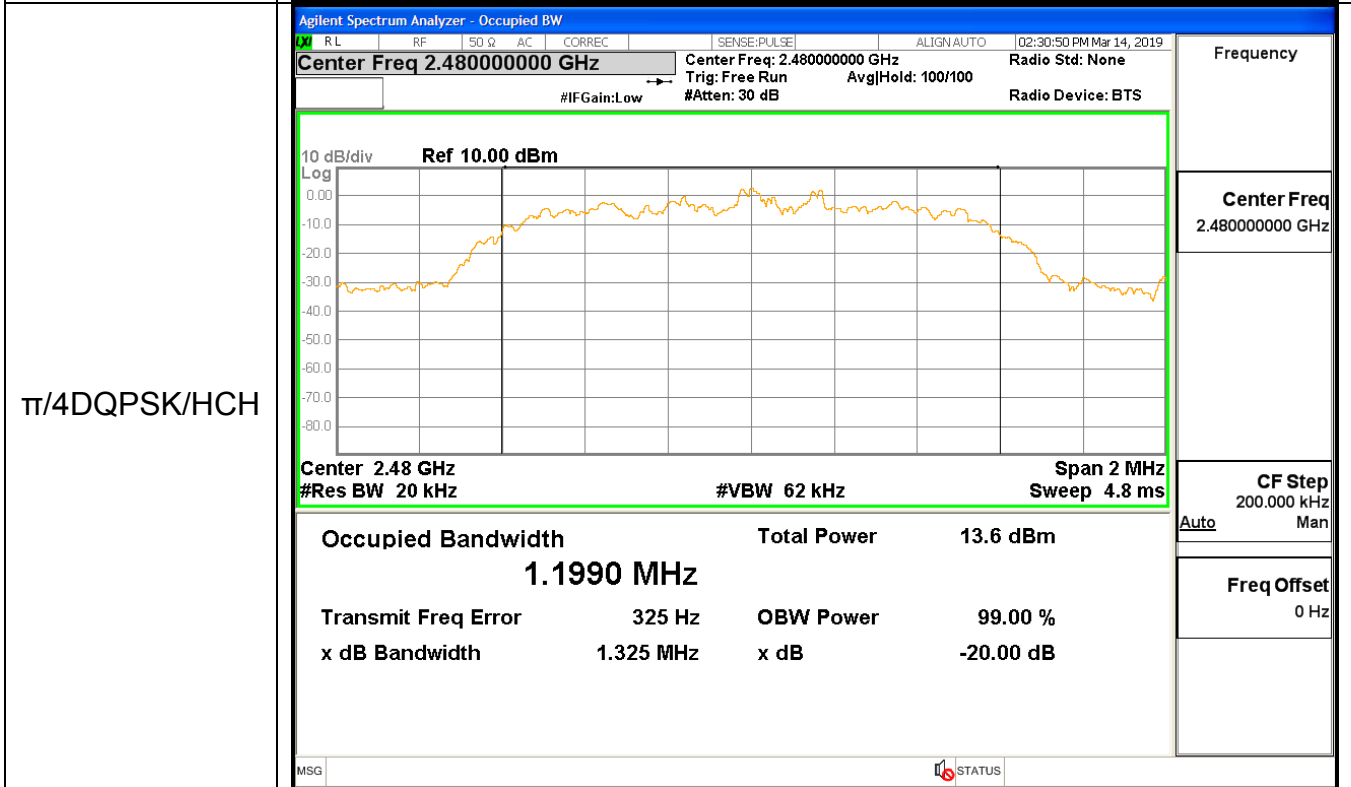
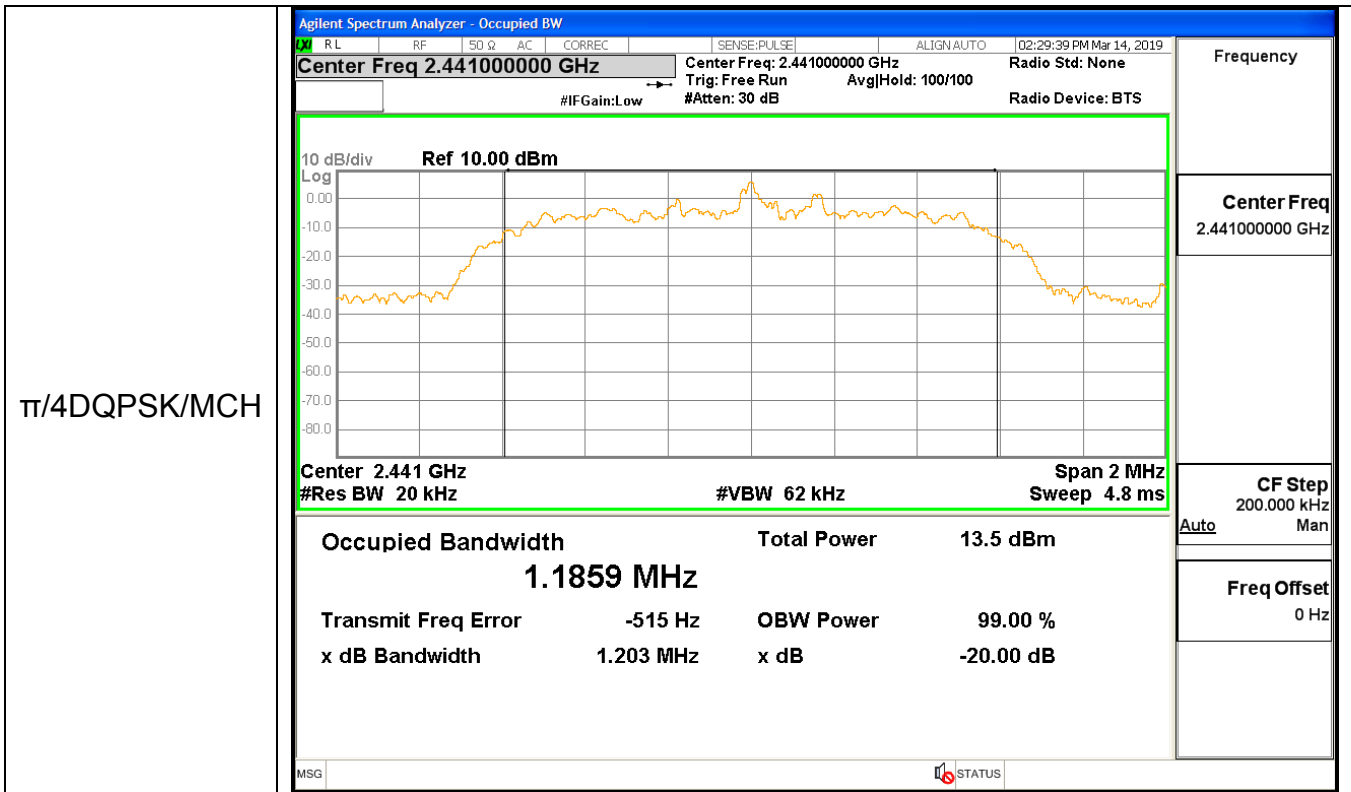
Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.937	Not Specified	PASS
GFSK	MCH	0.859	Not Specified	PASS
GFSK	HCH	0.887	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.199	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.203	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.325	Not Specified	PASS
8DPSK	LCH	1.236	Not Specified	PASS
8DPSK	MCH	1.239	Not Specified	PASS
8DPSK	HCH	1.242	Not Specified	PASS

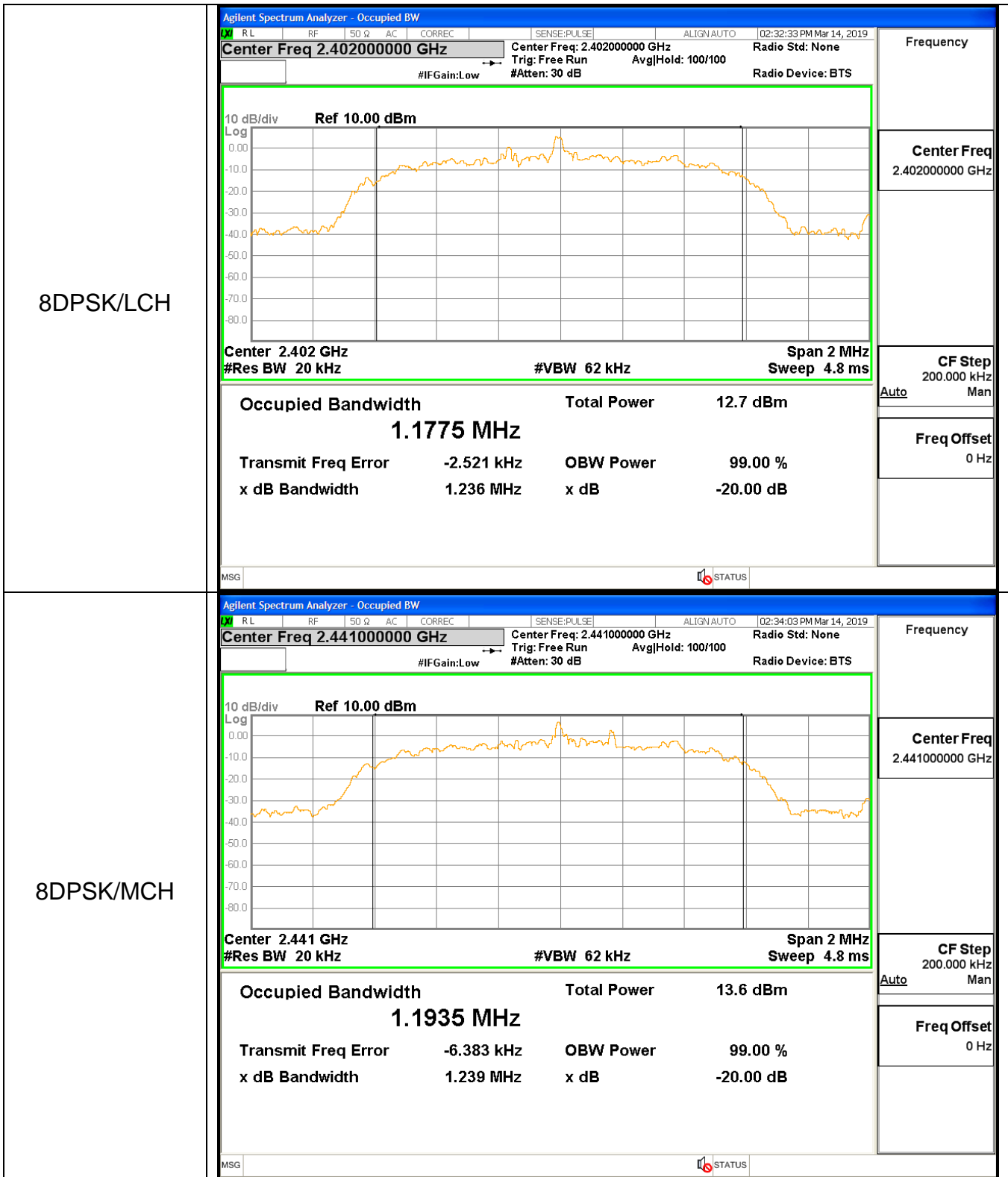
Test Graph

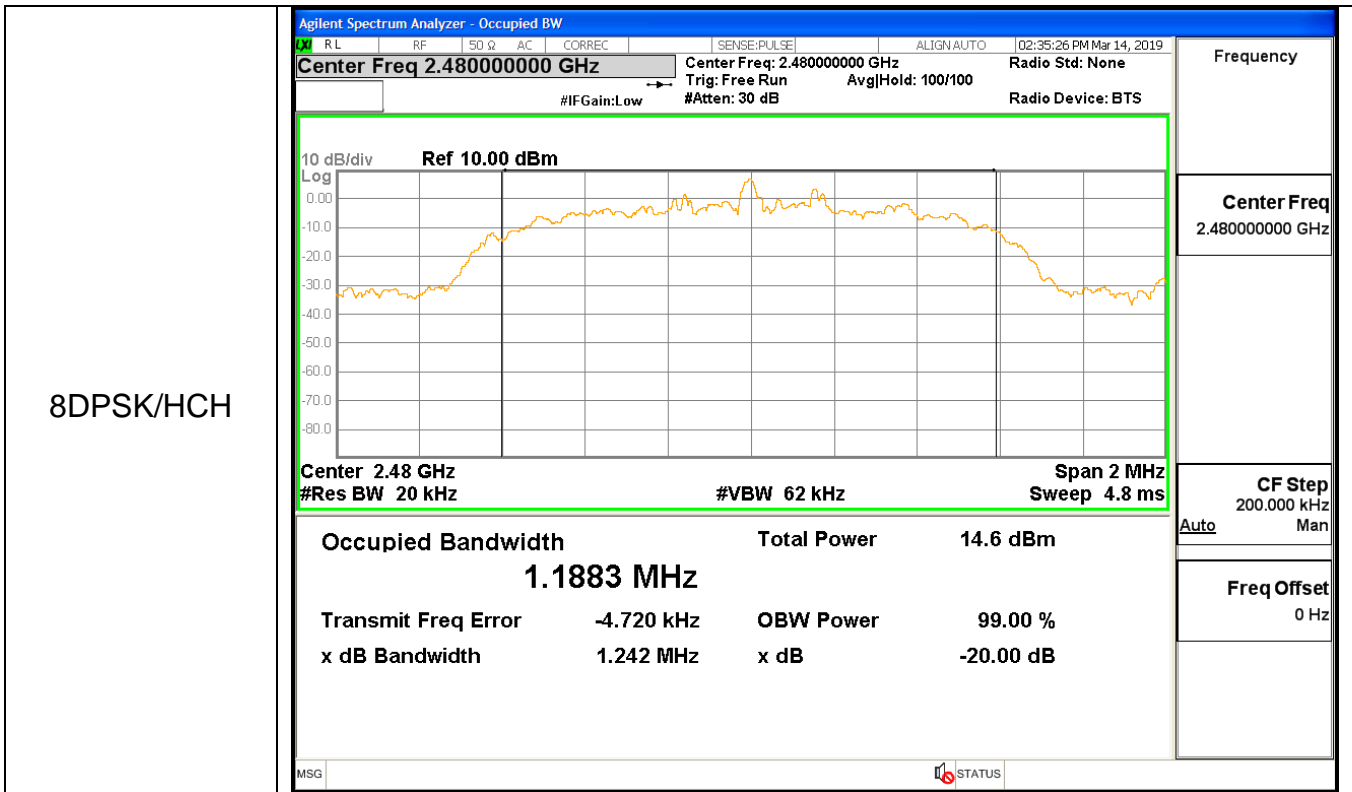
Graphs







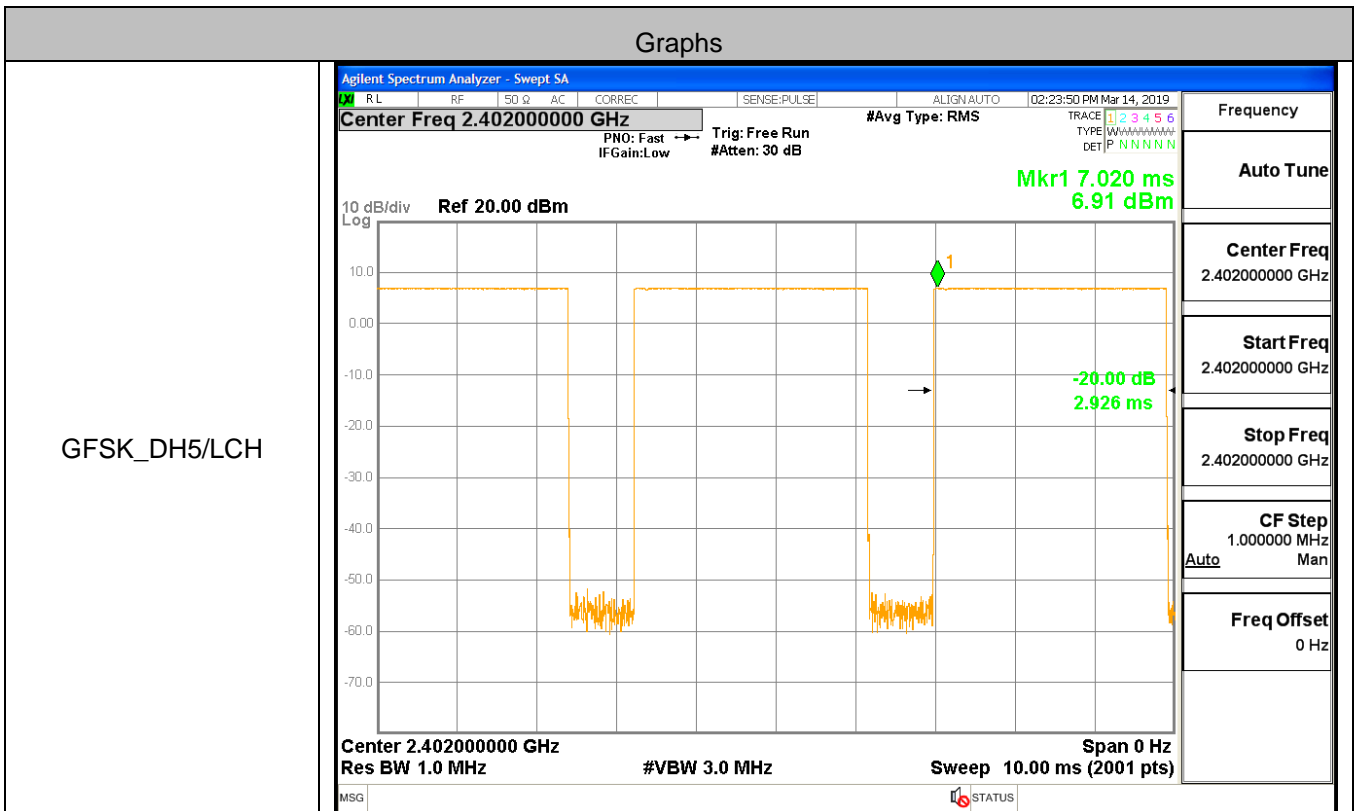


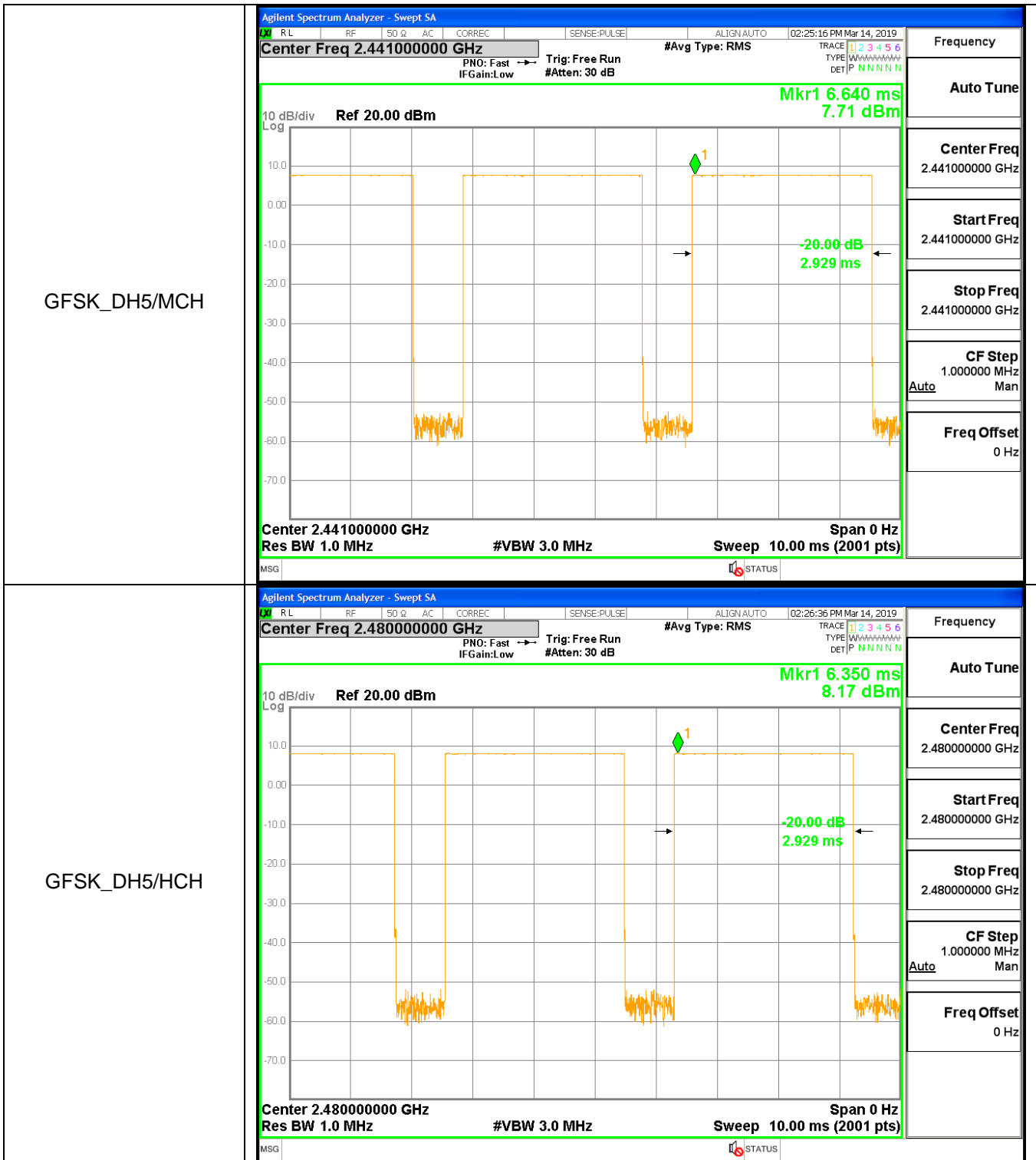


### A.2 Dwell Time

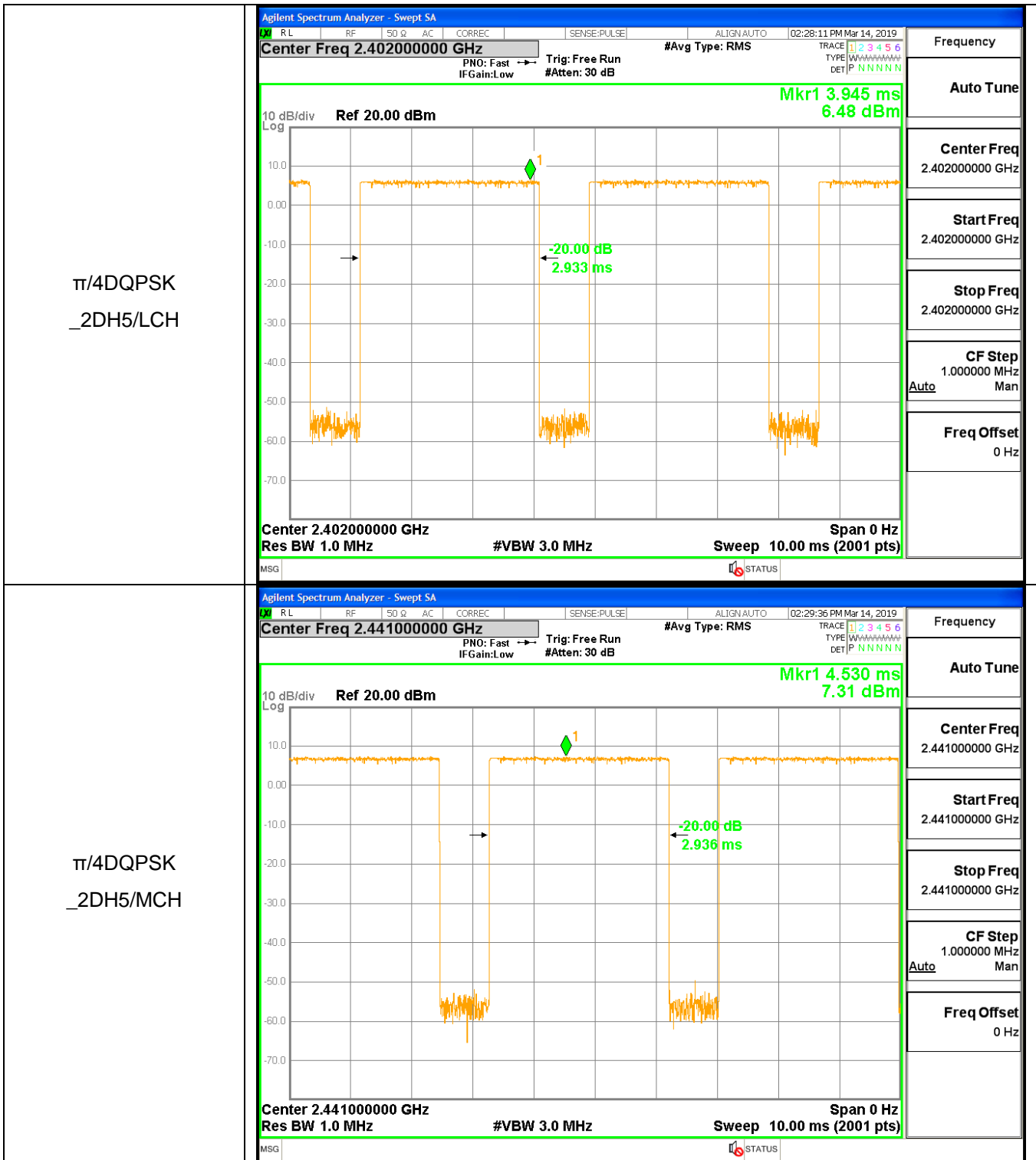
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002926	106.7	0.312195	0.4	PASS
GFSK	DH5	MCH	0.002929	106.7	0.312485	0.4	PASS
GFSK	DH5	HCH	0.002929	106.7	0.312488	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002933	106.7	0.312953	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002936	106.7	0.313289	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002933	106.7	0.312966	0.4	PASS
8DPSK	3DH5	LCH	0.002934	106.7	0.313076	0.4	PASS
8DPSK	3DH5	MCH	0.002937	106.7	0.313326	0.4	PASS
8DPSK	3DH5	HCH	0.002936	106.7	0.313249	0.4	PASS

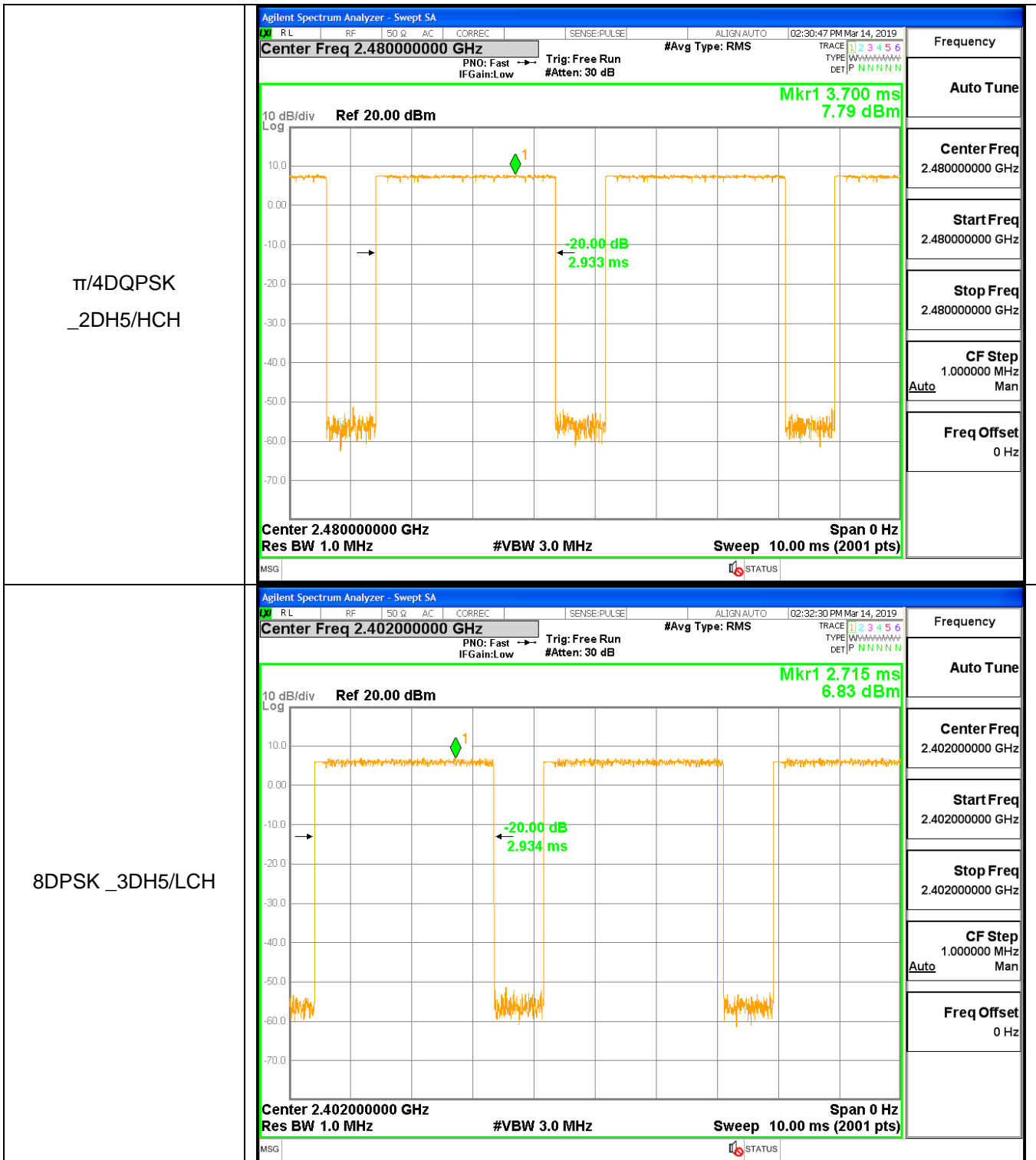
### Test Graph

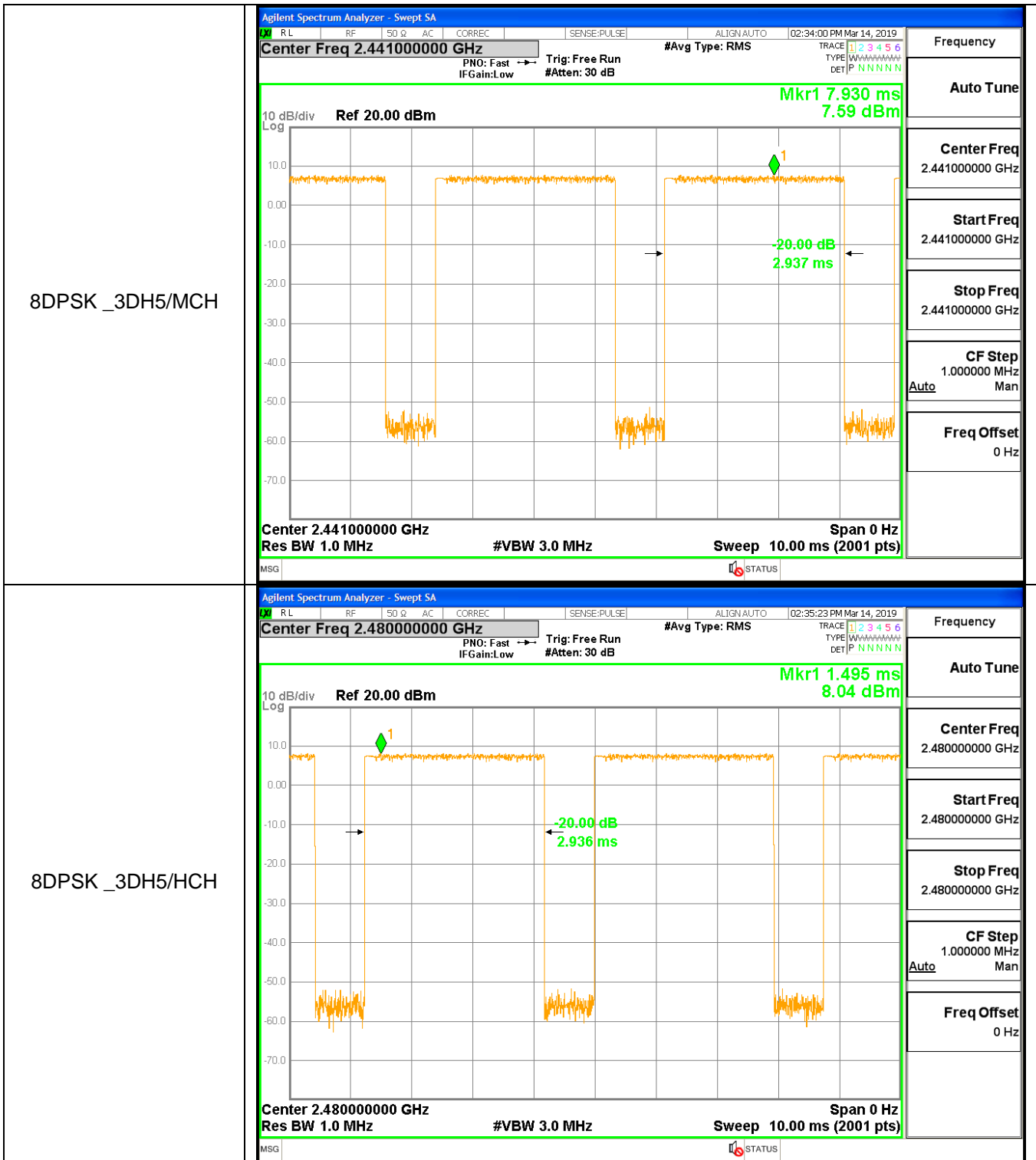








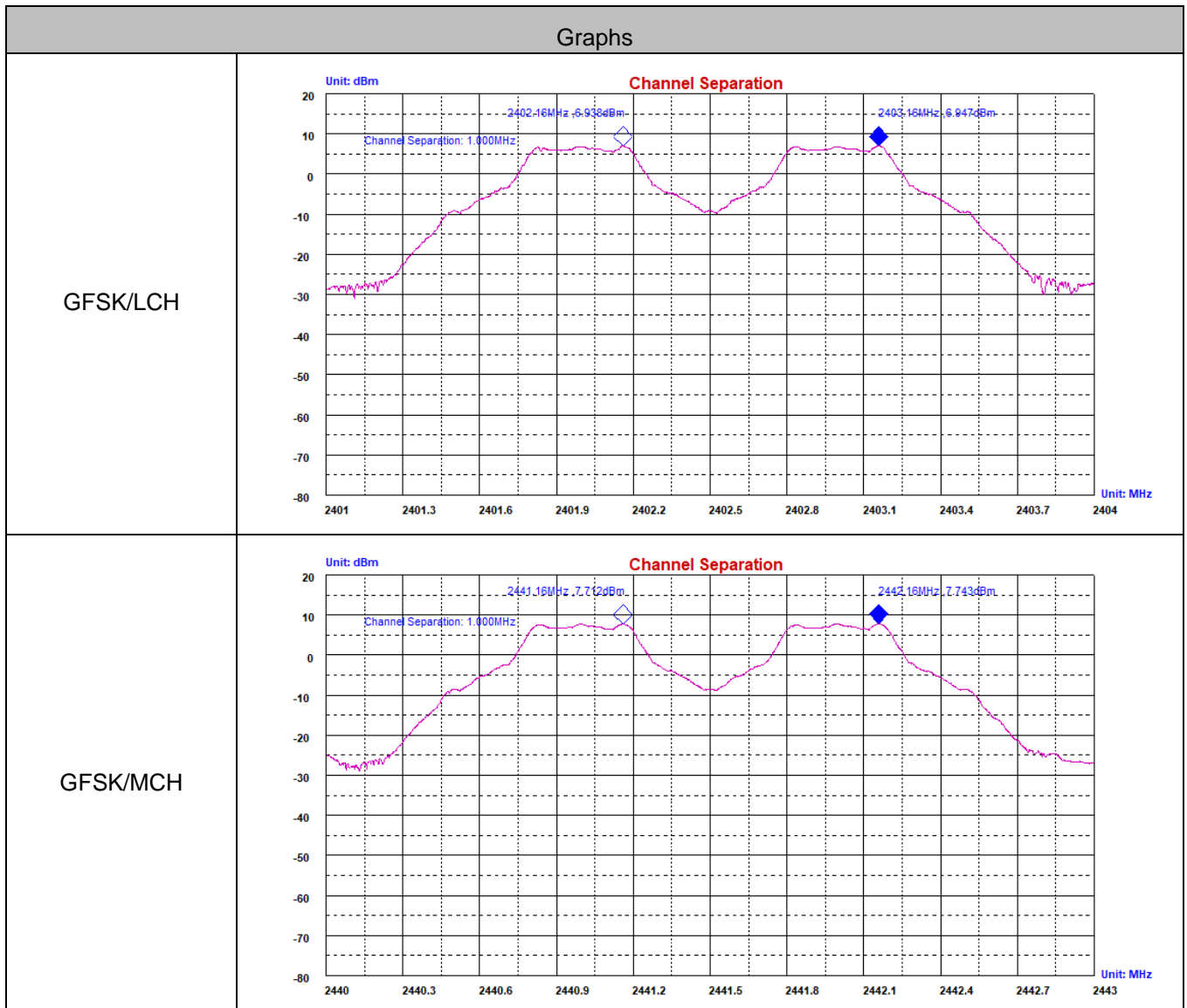


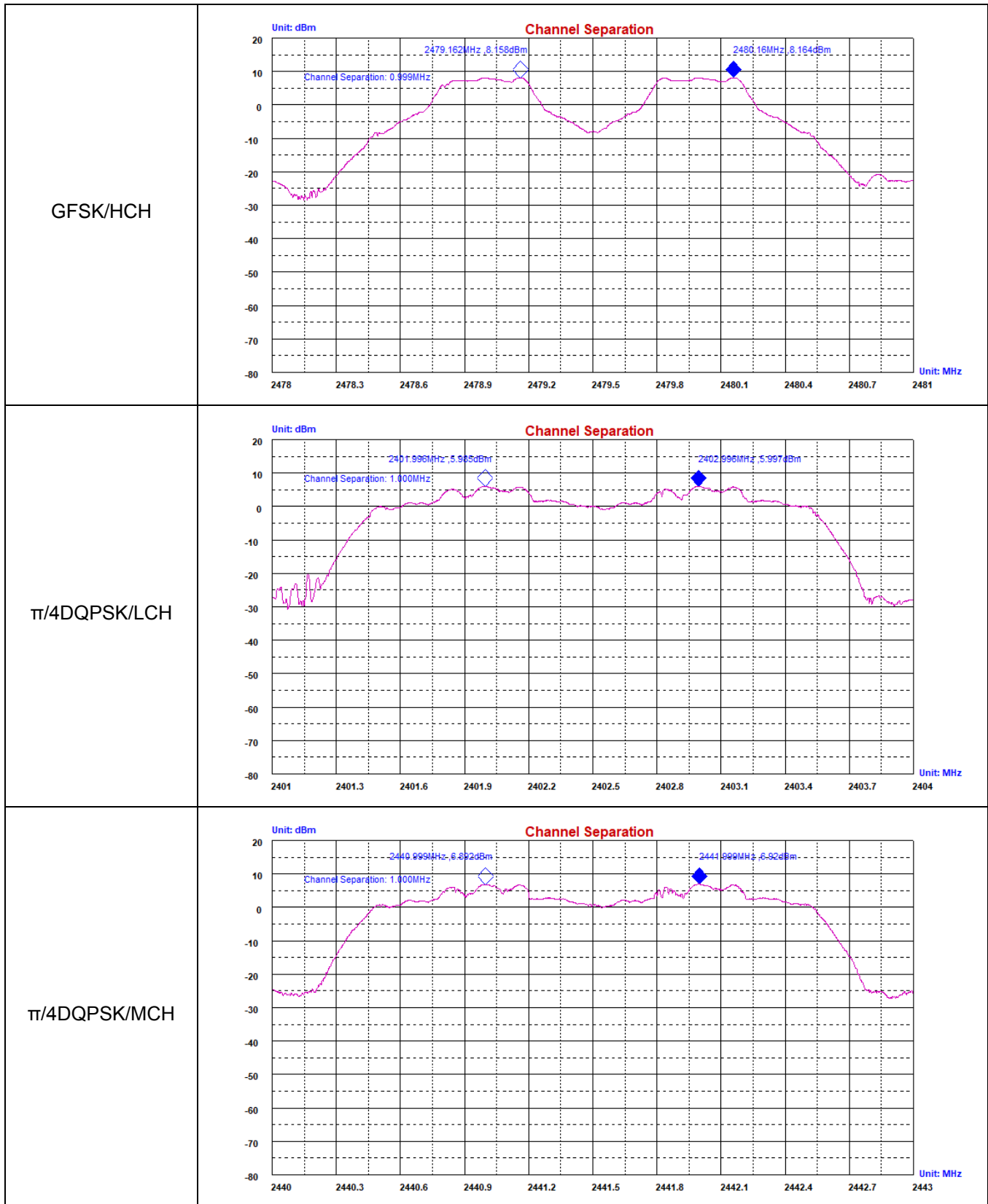


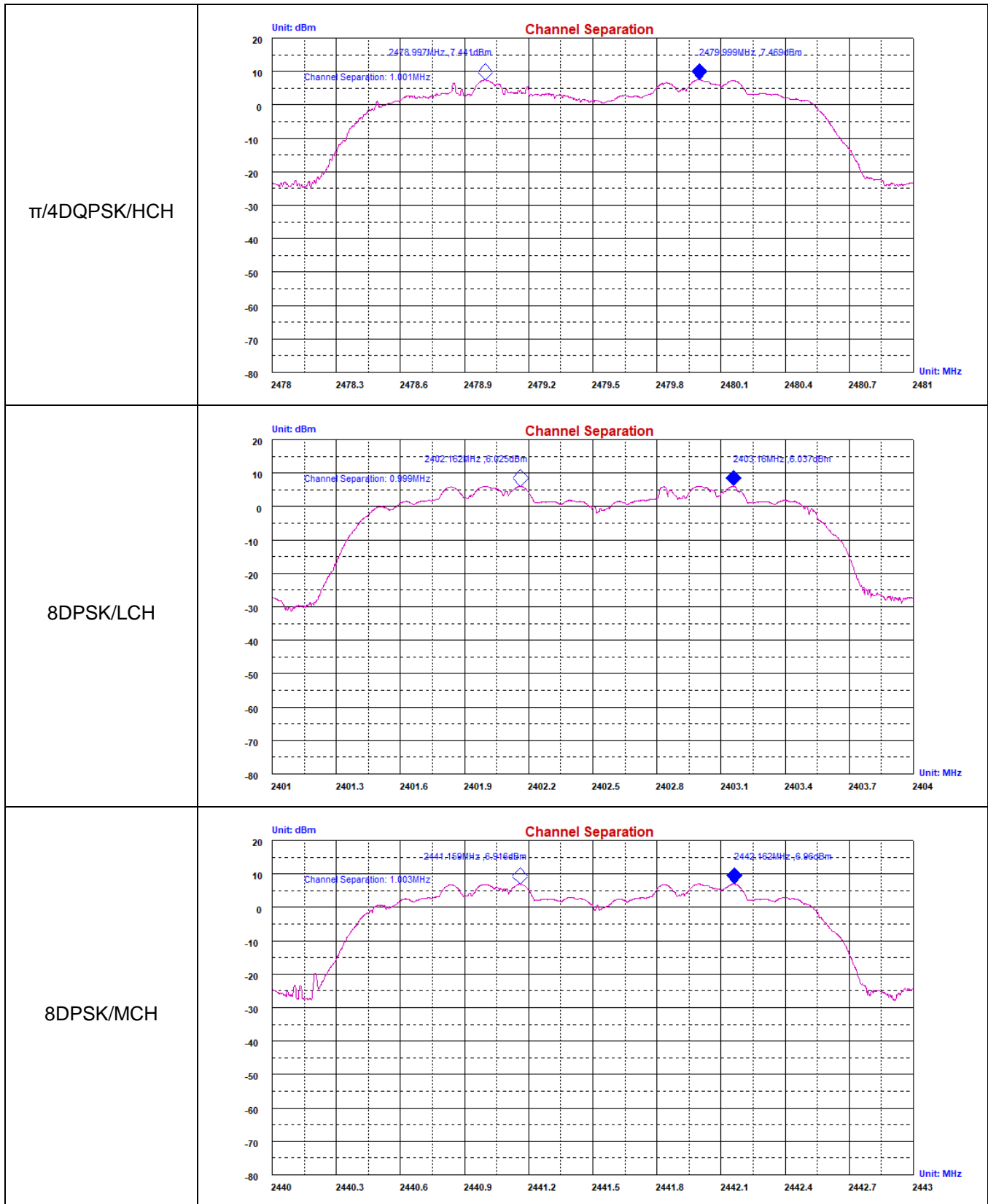
### A.3 Carrier Frequency Separation

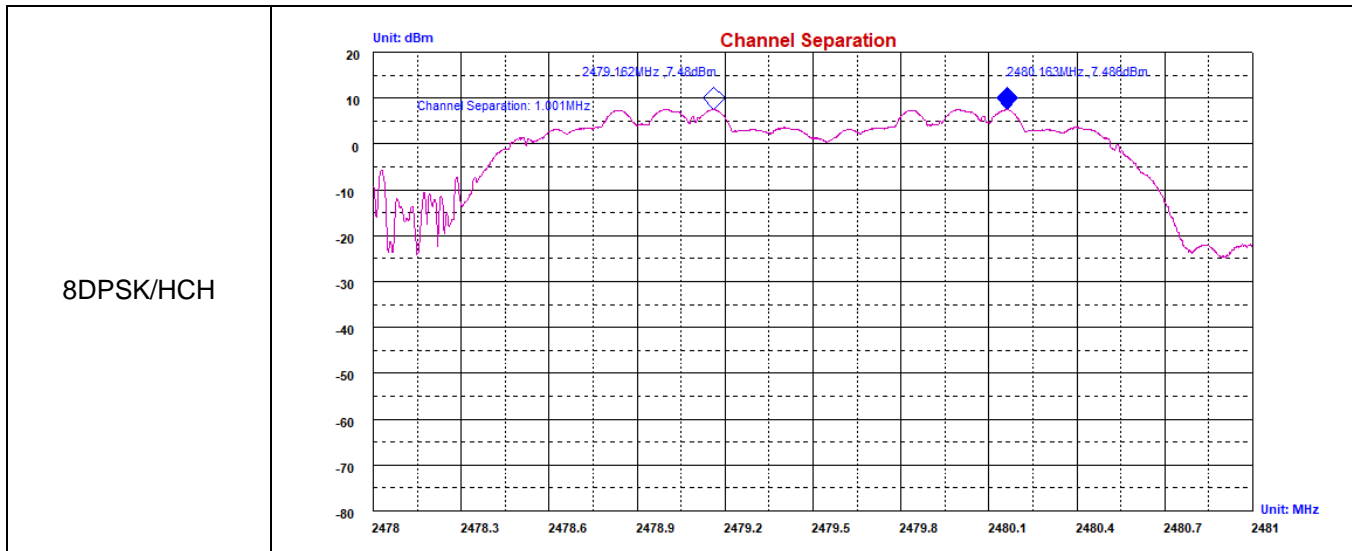
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.000	0.625	PASS
GFSK	MCH	1.000	0.573	PASS
GFSK	HCH	0.999	0.591	PASS
$\pi/4$ DQPSK	LCH	1.000	0.799	PASS
$\pi/4$ DQPSK	MCH	1.000	0.802	PASS
$\pi/4$ DQPSK	HCH	1.001	0.883	PASS
8DPSK	LCH	0.999	0.824	PASS
8DPSK	MCH	1.003	0.826	PASS
8DPSK	HCH	1.001	0.828	PASS

### Test Graph





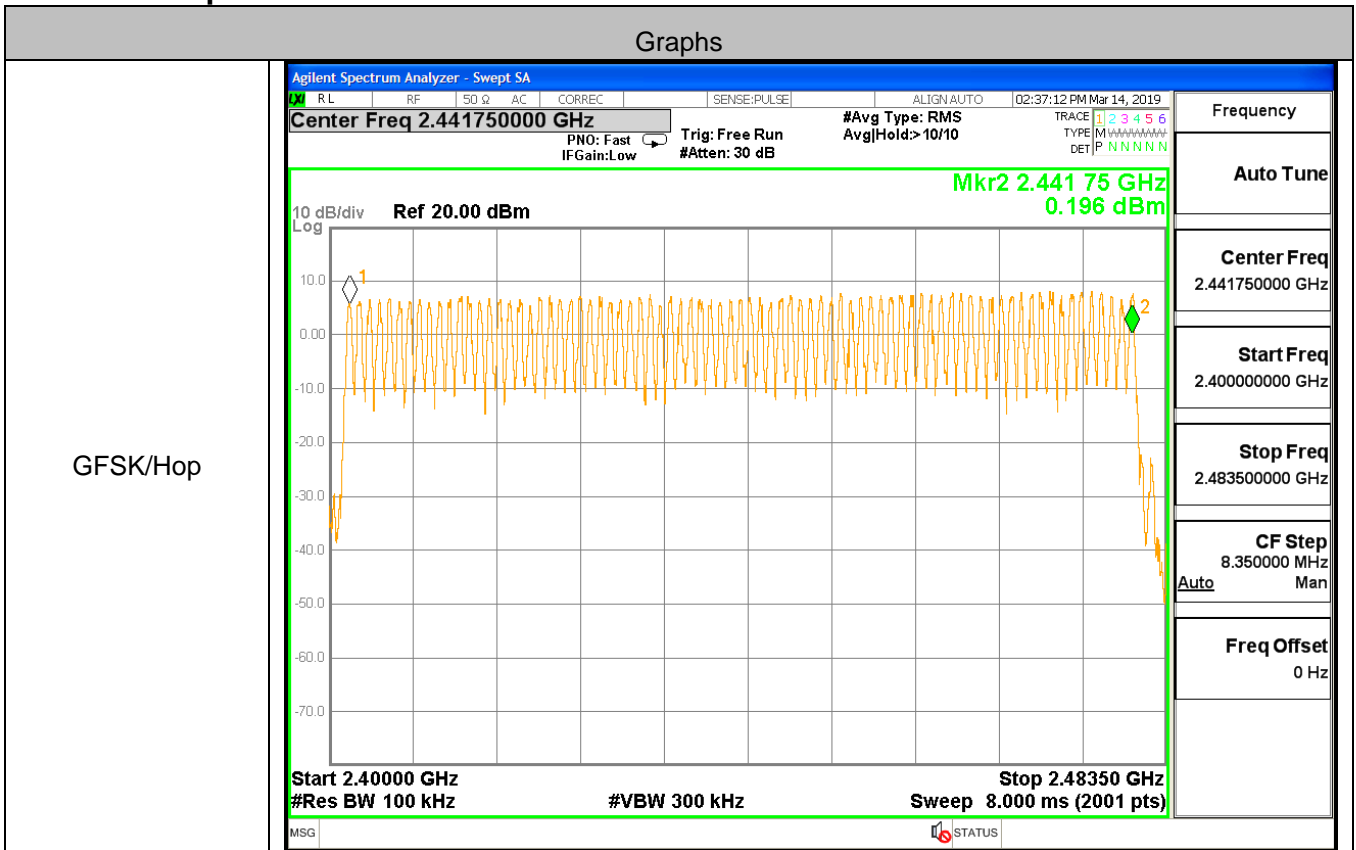




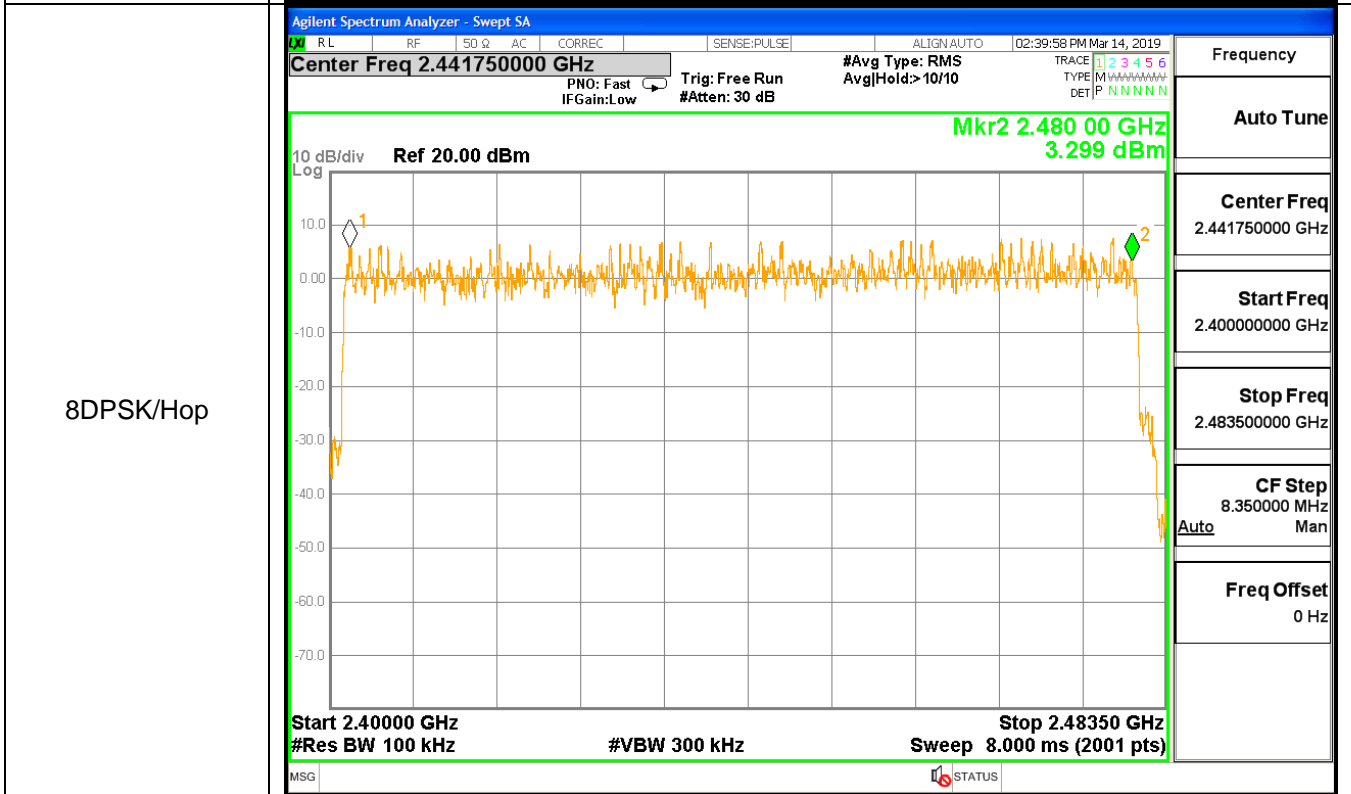
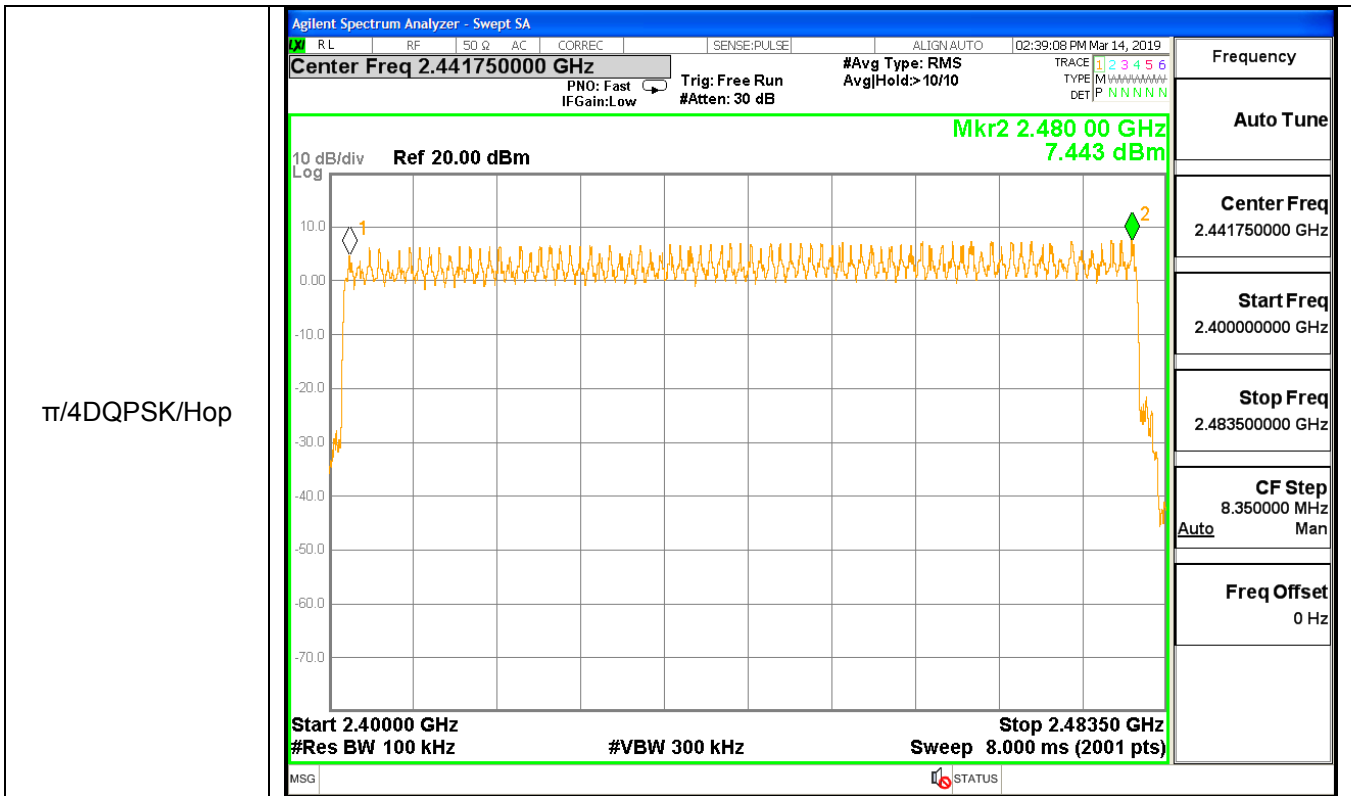
### A.4 Hopping Channel Number

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



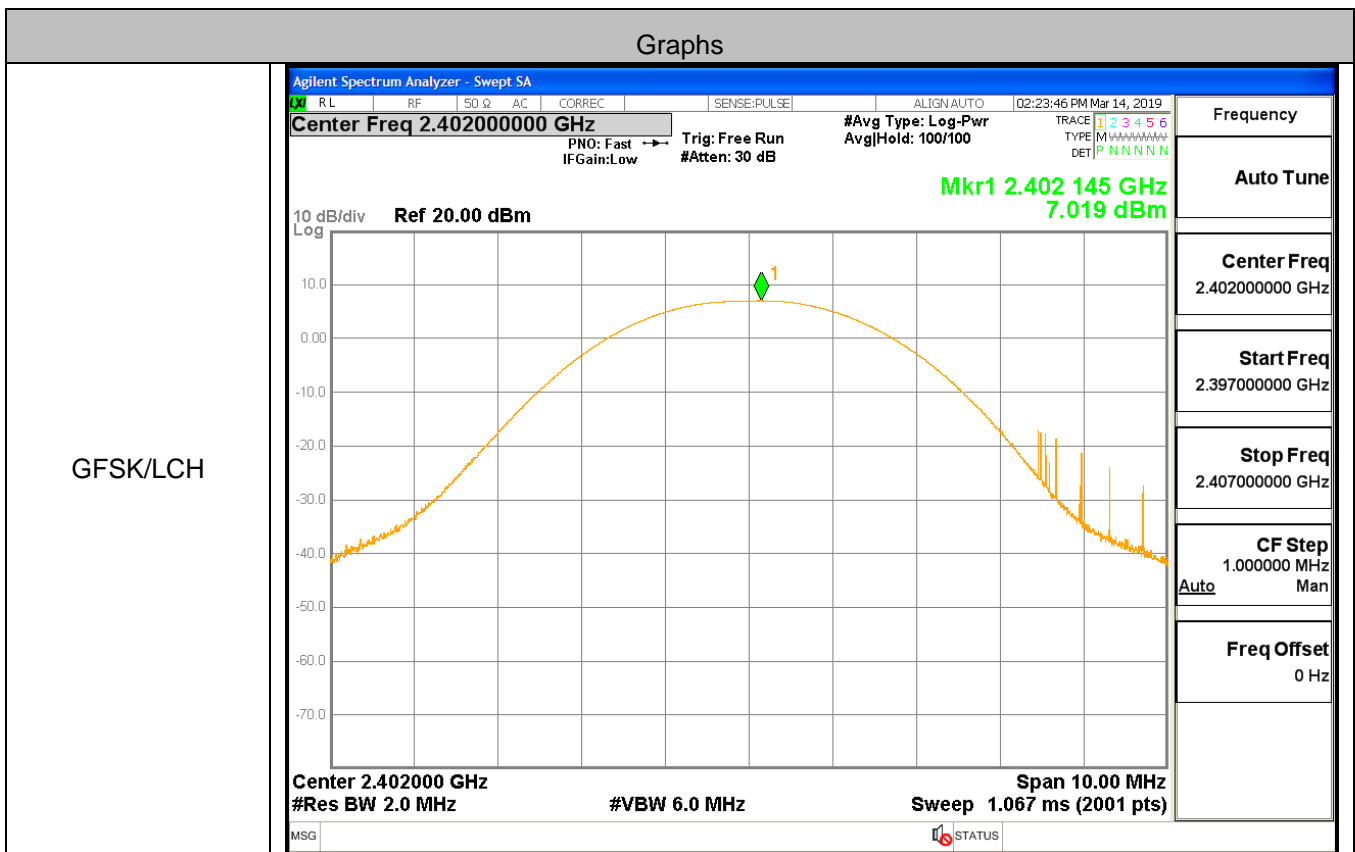


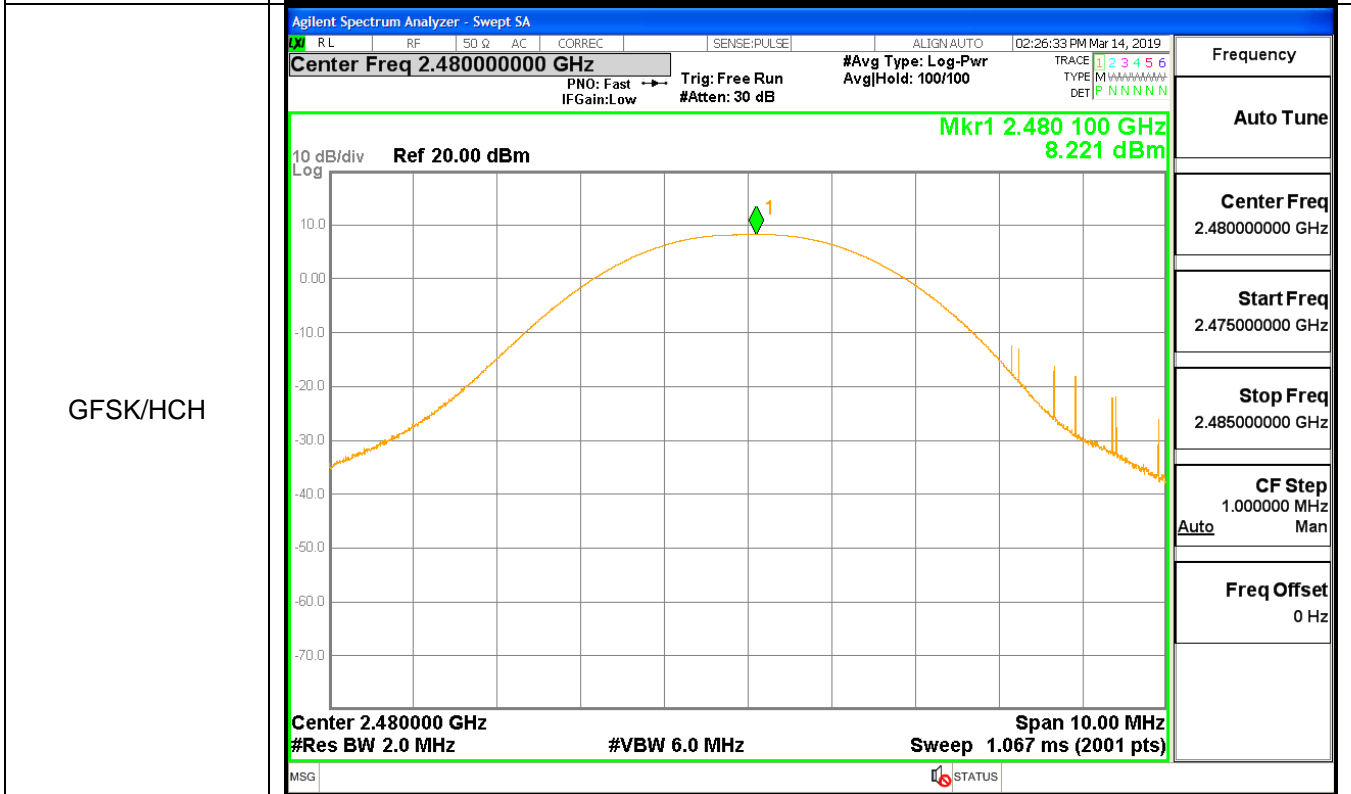
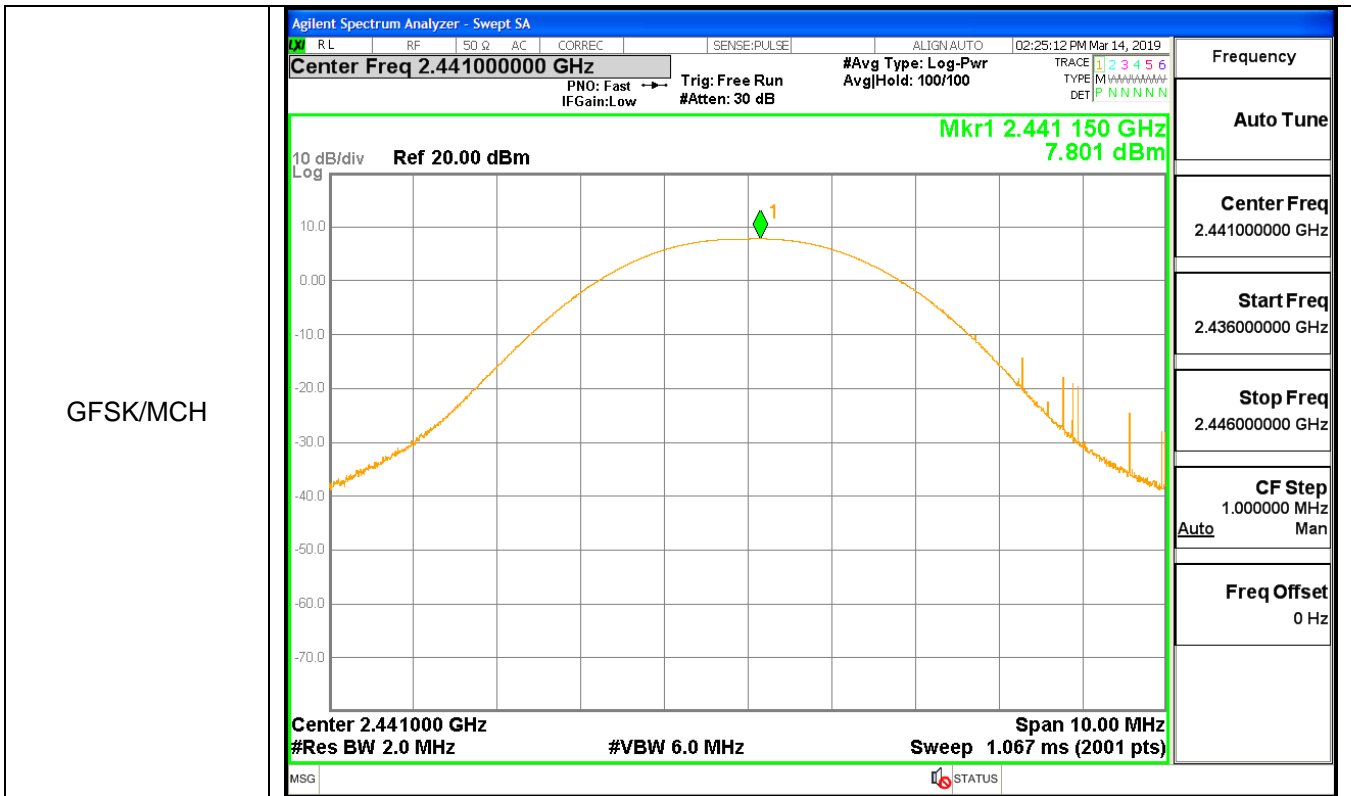


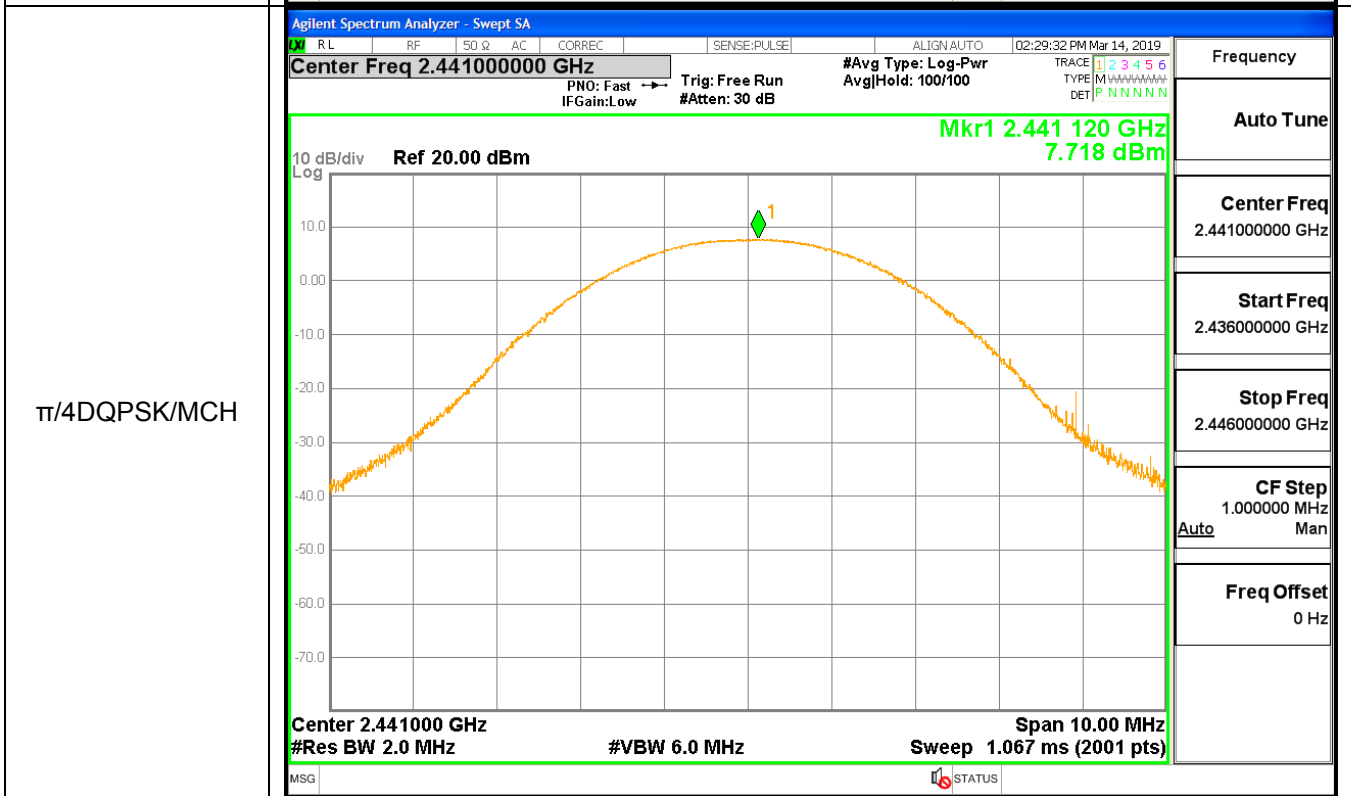
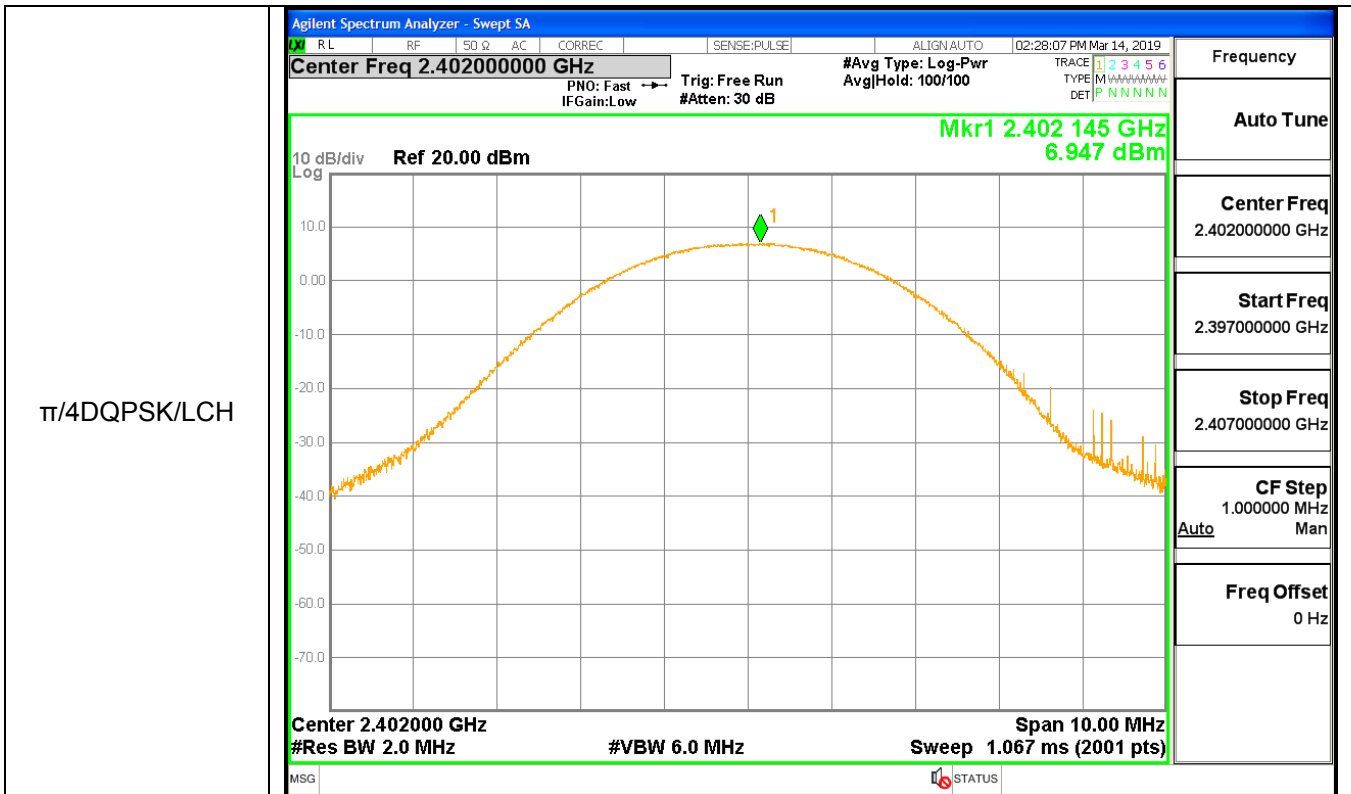
### A.5 Conducted Peak Output Power

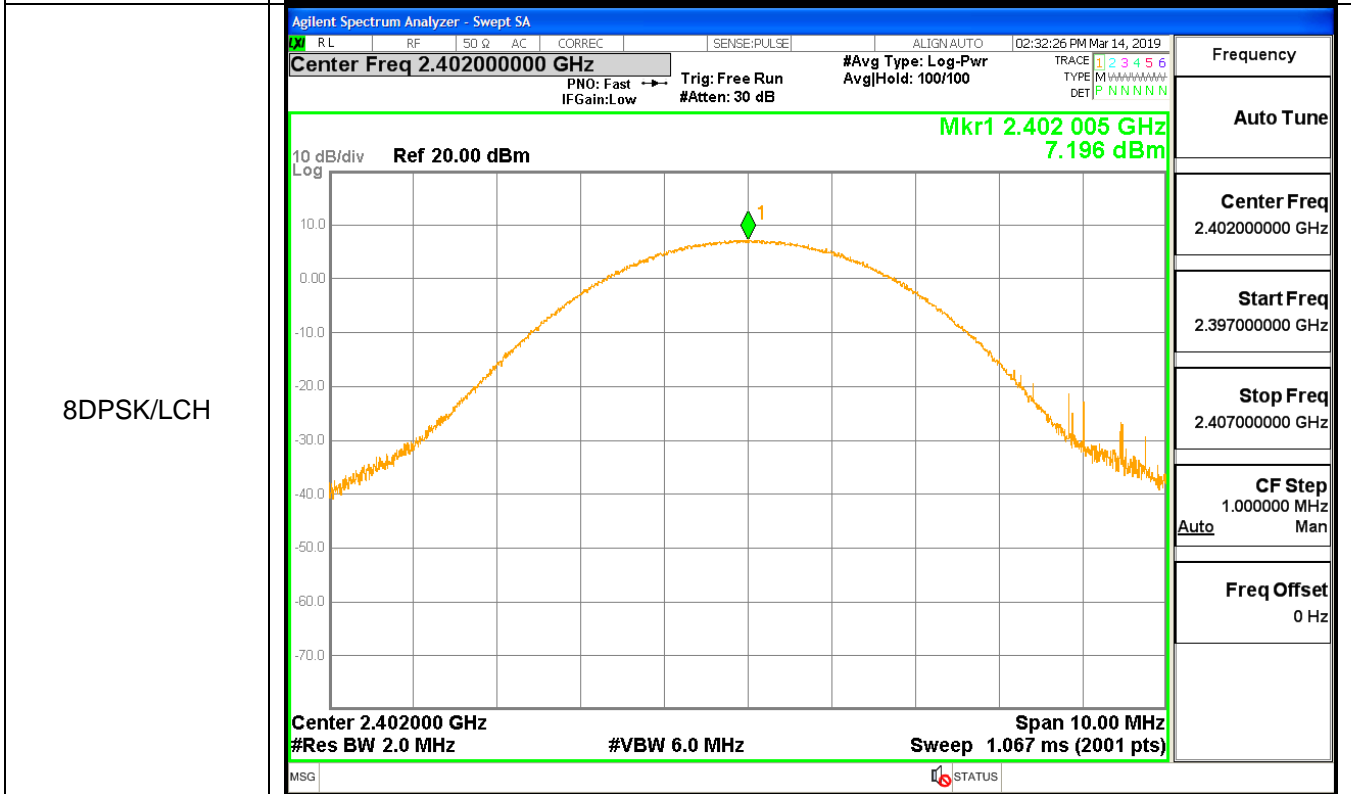
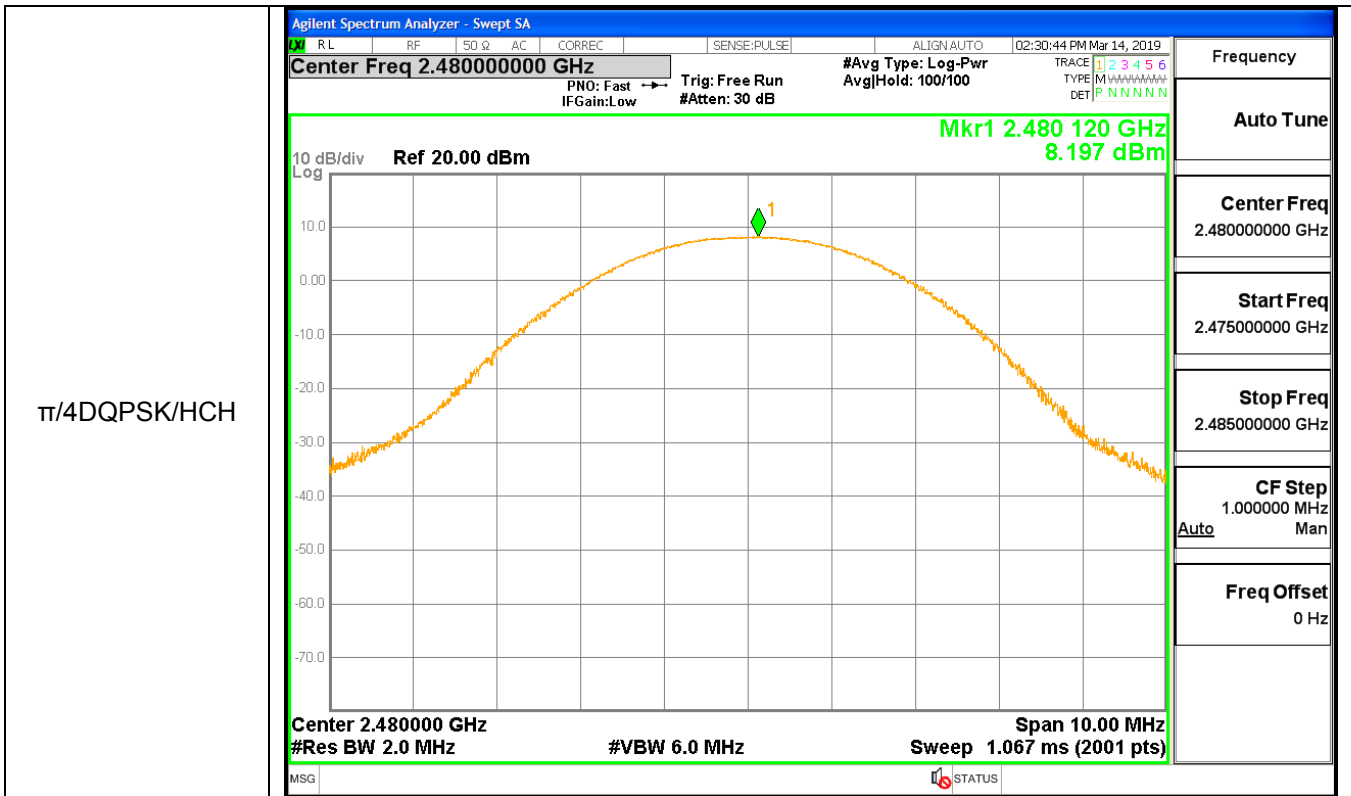
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	7.019	21	PASS
GFSK	MCH	7.801	21	PASS
GFSK	HCH	8.221	21	PASS
$\pi/4$ DQPSK	LCH	6.947	21	PASS
$\pi/4$ DQPSK	MCH	7.718	21	PASS
$\pi/4$ DQPSK	HCH	8.197	21	PASS
8DPSK	LCH	7.196	21	PASS
8DPSK	MCH	7.925	21	PASS
8DPSK	HCH	8.315	21	PASS

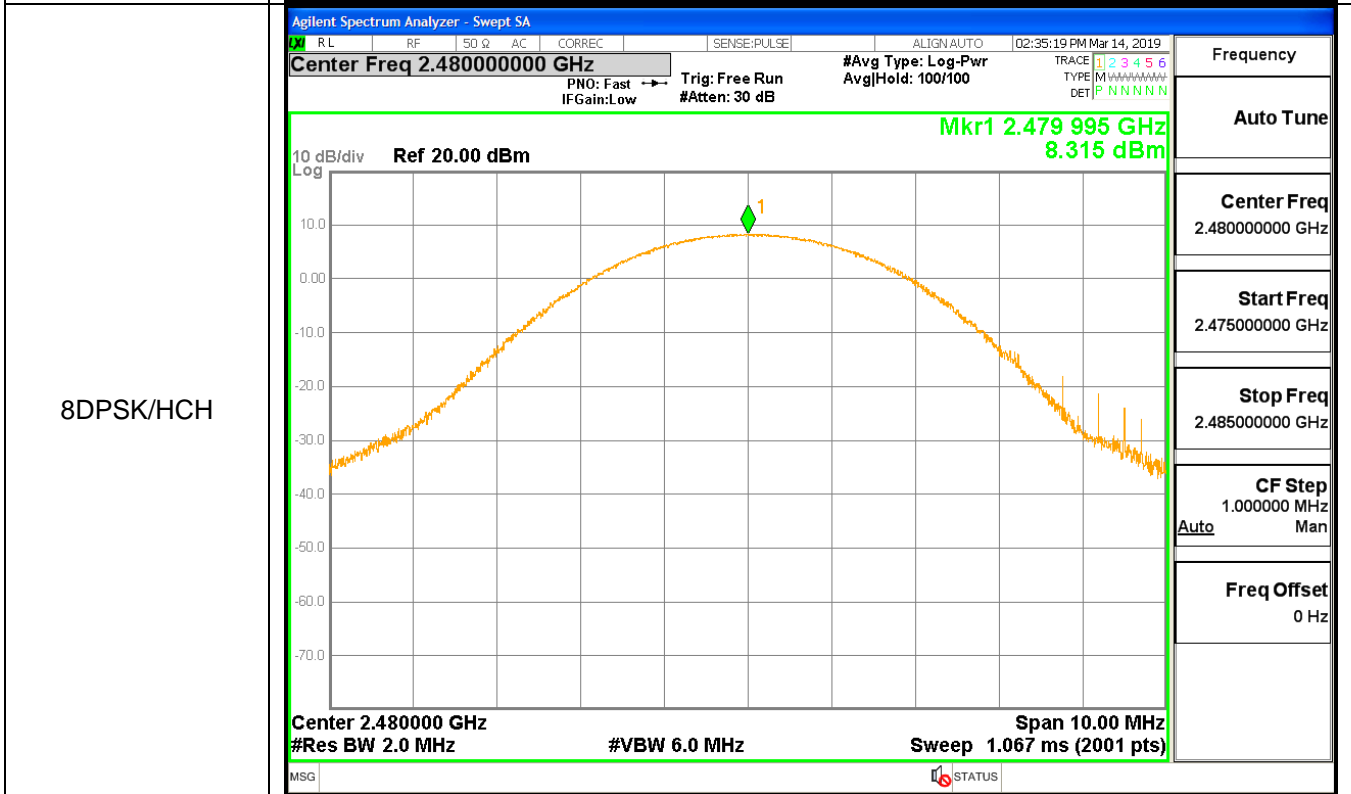
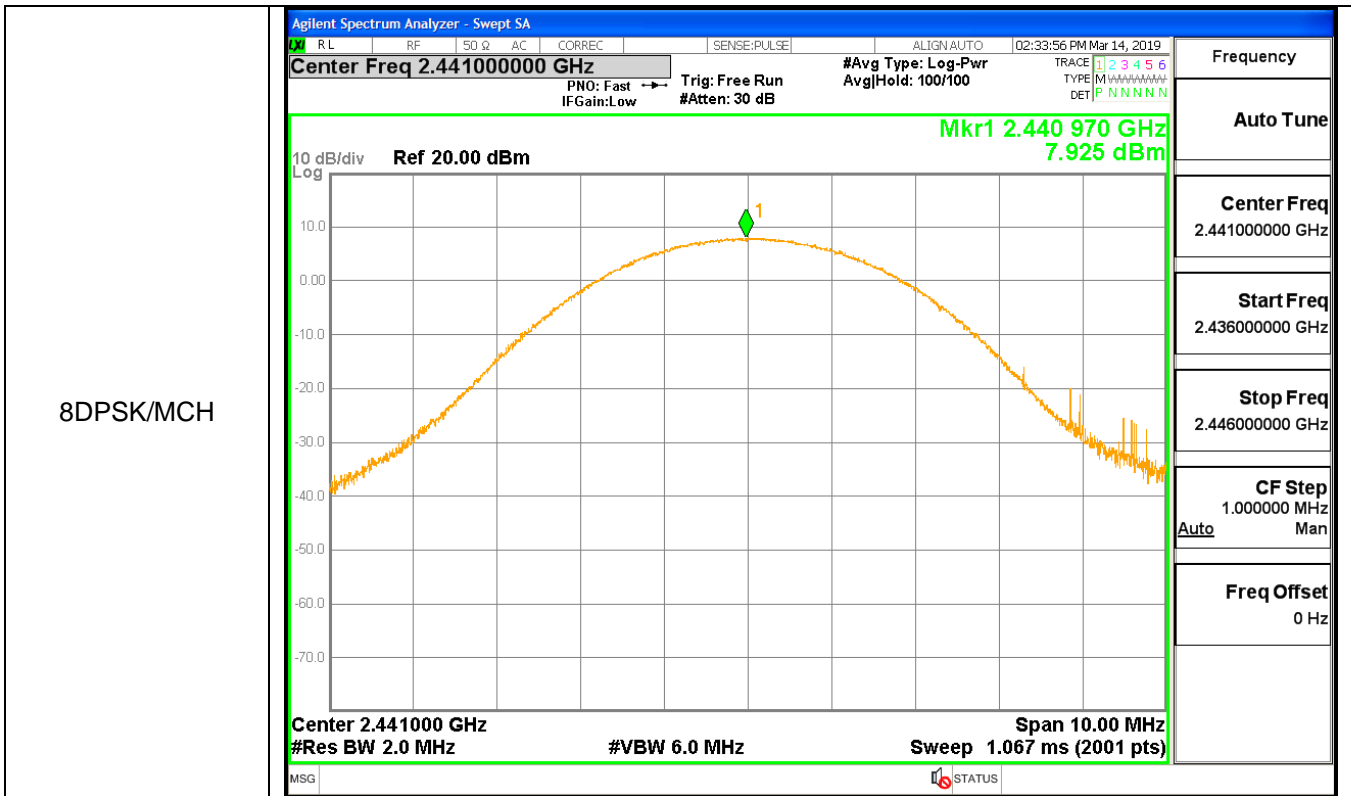
### Test Graph











**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	6.65	-60.28	-13.36	Pass
1DH5	2402	2400	6.65	-31.95	-13.36	Pass
1DH5-Hopping	2402	2390	7.41	-61.37	-12.59	Pass
1DH5-Hopping	2402	2400	7.41	-28.64	-12.59	Pass
1DH5	2480	2483.5	8.19	-38.10	-11.82	Pass
1DH5	2480	2500	8.19	-62.54	-11.82	Pass
1DH5-Hopping	2480	2483.5	8.06	-39.43	-11.94	Pass
1DH5-Hopping	2480	2500	8.06	-60.94	-11.94	Pass
2DH5	2402	2390	2.91	-63.66	-17.09	Pass
2DH5	2402	2400	2.91	-27.30	-17.09	Pass
2DH5-Hopping	2480	2483.5	7.51	-44.30	-12.49	Pass
2DH5-Hopping	2480	2500	7.51	-60.18	-12.49	Pass
2DH5	2480	2483.5	7.51	-44.32	-12.49	Pass
2DH5	2480	2500	7.51	-62.30	-12.49	Pass
2DH5-Hopping	2402	2390	6.16	-62.01	-13.84	Pass
2DH5-Hopping	2402	2400	6.16	-36.50	-13.84	Pass
3DH5	2402	2390	4.75	-63.06	-15.25	Pass
3DH5	2402	2400	4.75	-31.26	-15.25	Pass
3DH5-Hopping	2402	2390	6.06	-61.55	-13.94	Pass
3DH5-Hopping	2402	2400	6.06	-35.02	-13.94	Pass
3DH5	2480	2483.5	7.54	-41.50	-12.47	Pass
3DH5	2480	2500	7.54	-61.97	-12.47	Pass
3DH5-Hopping	2480	2483.5	7.51	-40.88	-12.49	Pass
3DH5-Hopping	2480	2500	7.51	-60.85	-12.49	Pass

### Test Graph

#### Graphs

GFSK/LCH/No Hop

**Agilent Spectrum Analyzer - Swept SA**  
 Center Freq **2.356750000 GHz**  
 #Avg Type: RMS AvgHold: 100/100  
 PNO: Fast IFGain: Low Trig: Free Run #Atten: 30 dB

10 dB/div Ref 20.00 dBm  
 Mkr2 2.400 00 GHz -31.947 dBm

Start 2.310000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.403500 GHz Sweep 9.067 ms (2001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.390 00 GHz	-60.276 dBm			
2	N	1	f	2.400 00 GHz	-31.947 dBm			
3	N	1	f	2.402 19 GHz	6.645 dBm			

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

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GFSK/LCH/Hop

**Agilent Spectrum Analyzer - Swept SA**  
 Center Freq **2.400000000 GHz**  
 #Avg Type: RMS AvgHold: 100/100  
 PNO: Fast IFGain: Low Trig: Free Run #Atten: 30 dB

10 dB/div Ref 20.00 dBm  
 Mkr2 2.400 00 GHz -28.642 dBm

Start 2.370000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.430000 GHz 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	-61.370 dBm			
2	N	1	f	2.400 00 GHz	-28.642 dBm			
3	N	1	f	2.428 17 GHz	7.412 dBm			

Frequency

Auto Tune

Center Freq  
2.400000000 GHz

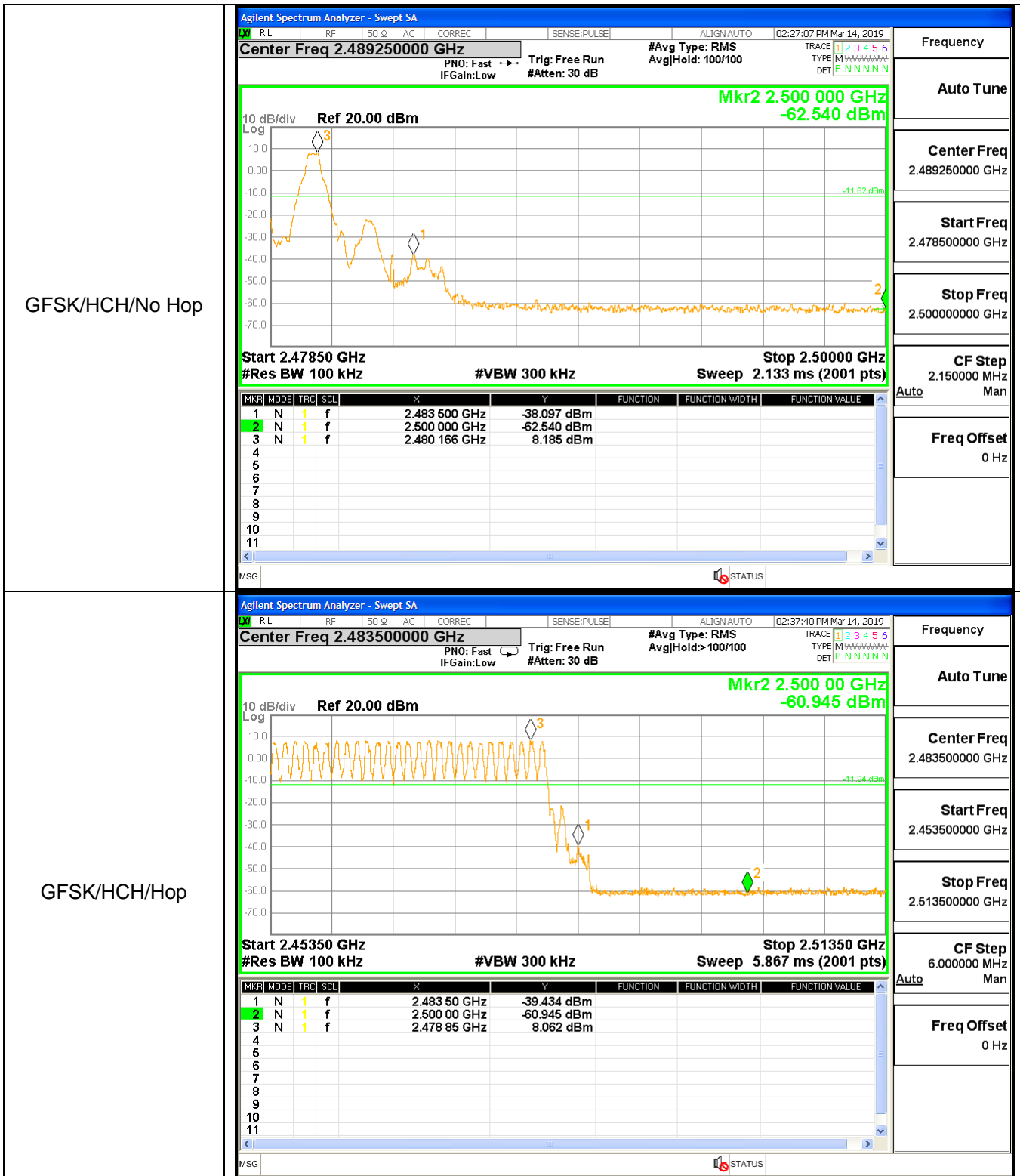
Start Freq  
2.370000000 GHz

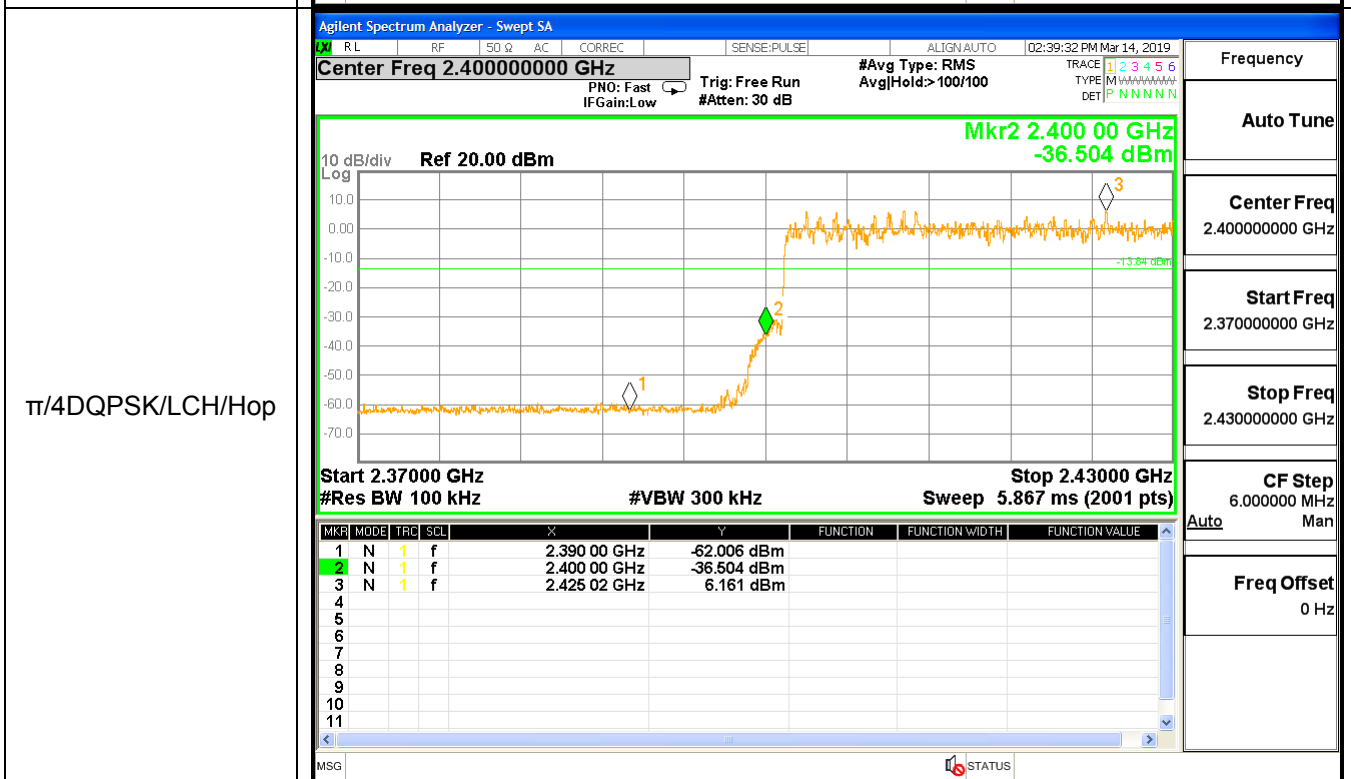
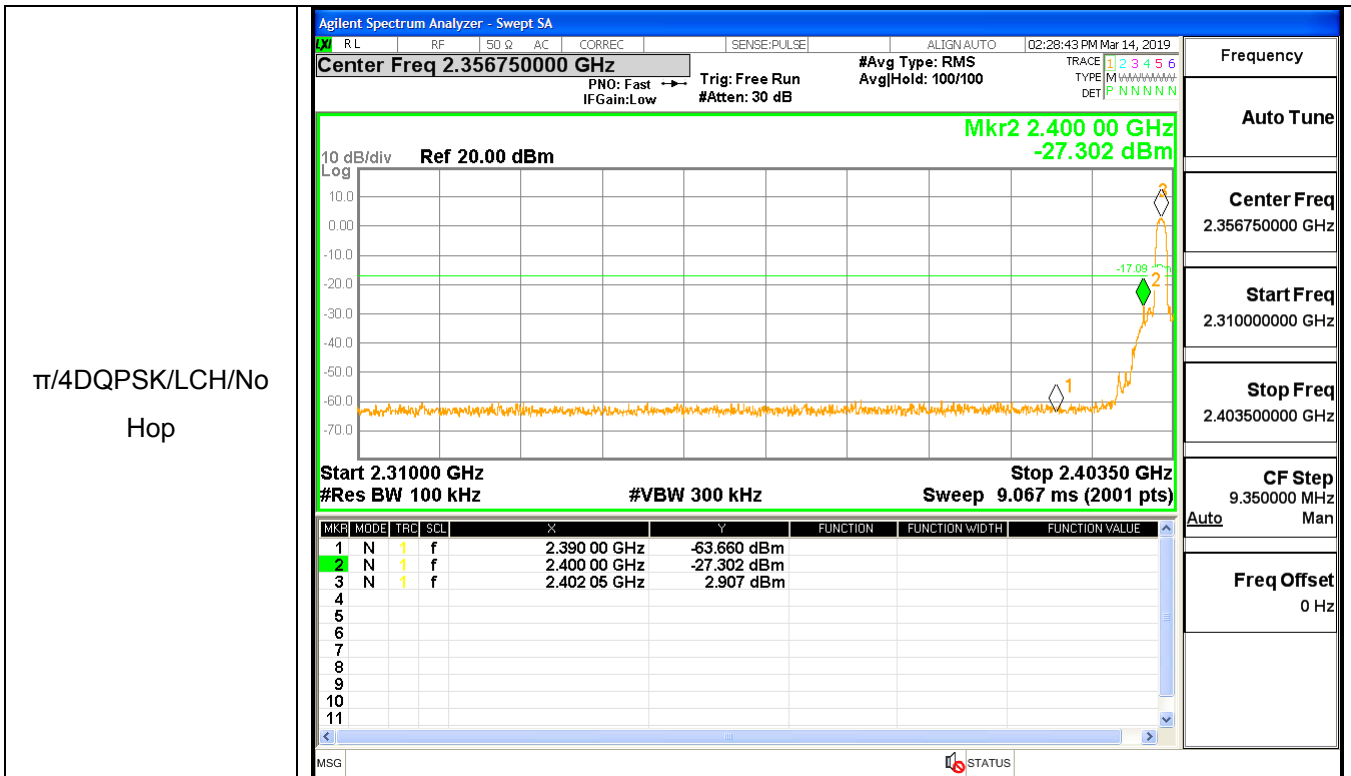
Stop Freq  
2.430000000 GHz

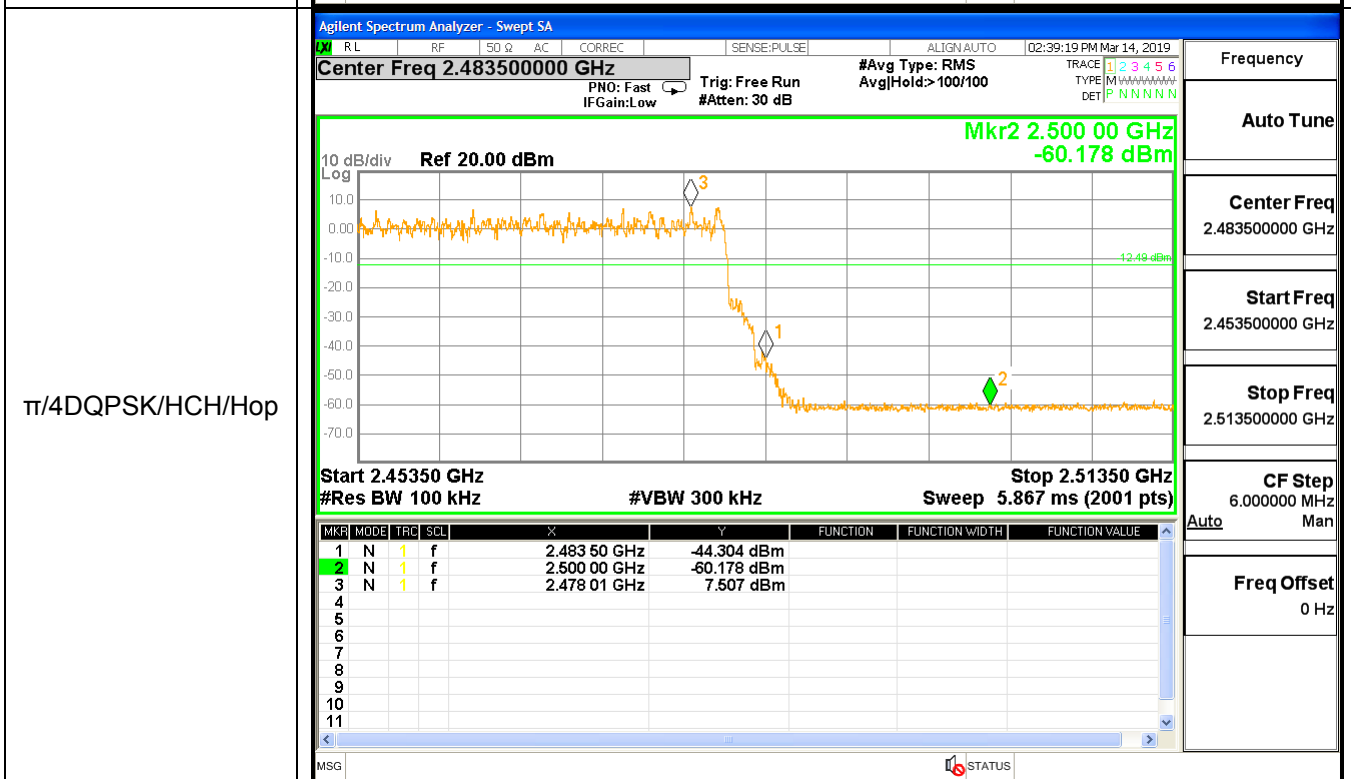
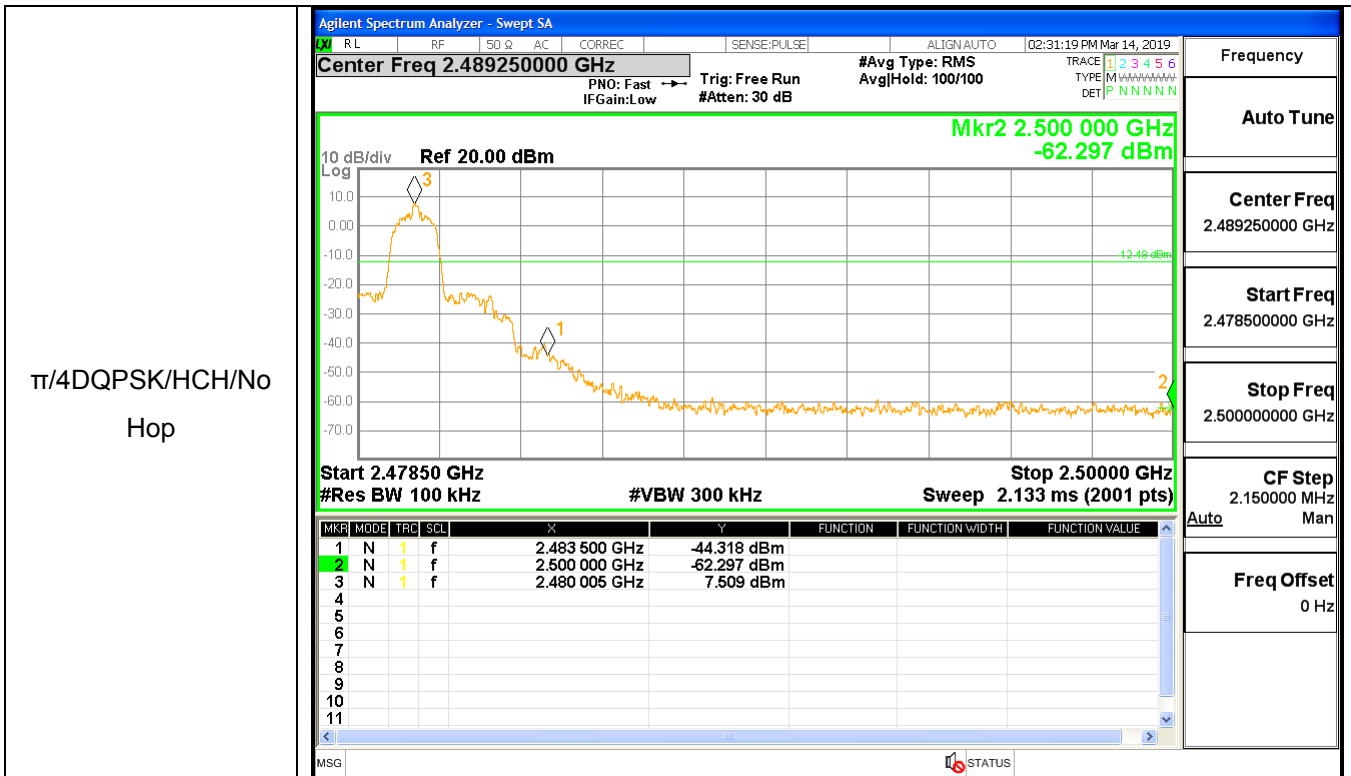
CF Step  
6.000000 MHz  
Auto Man

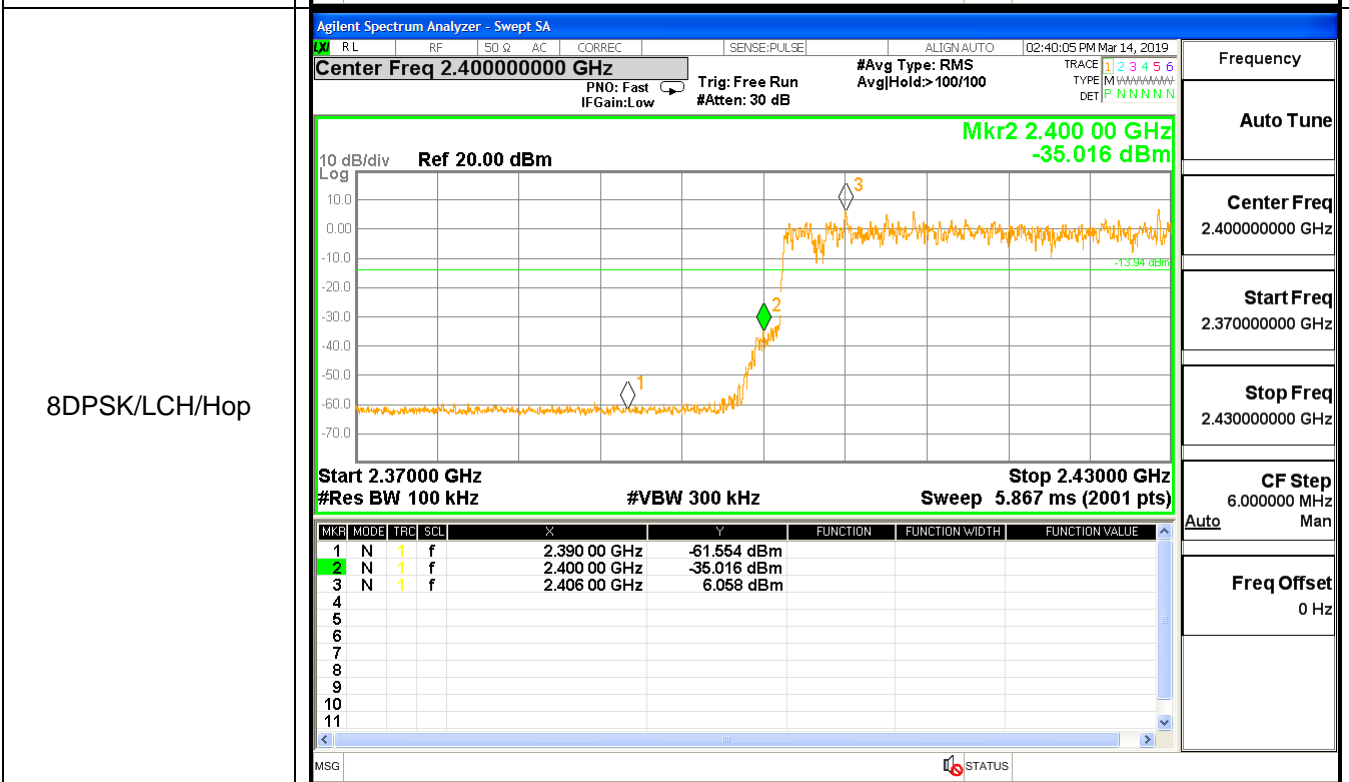
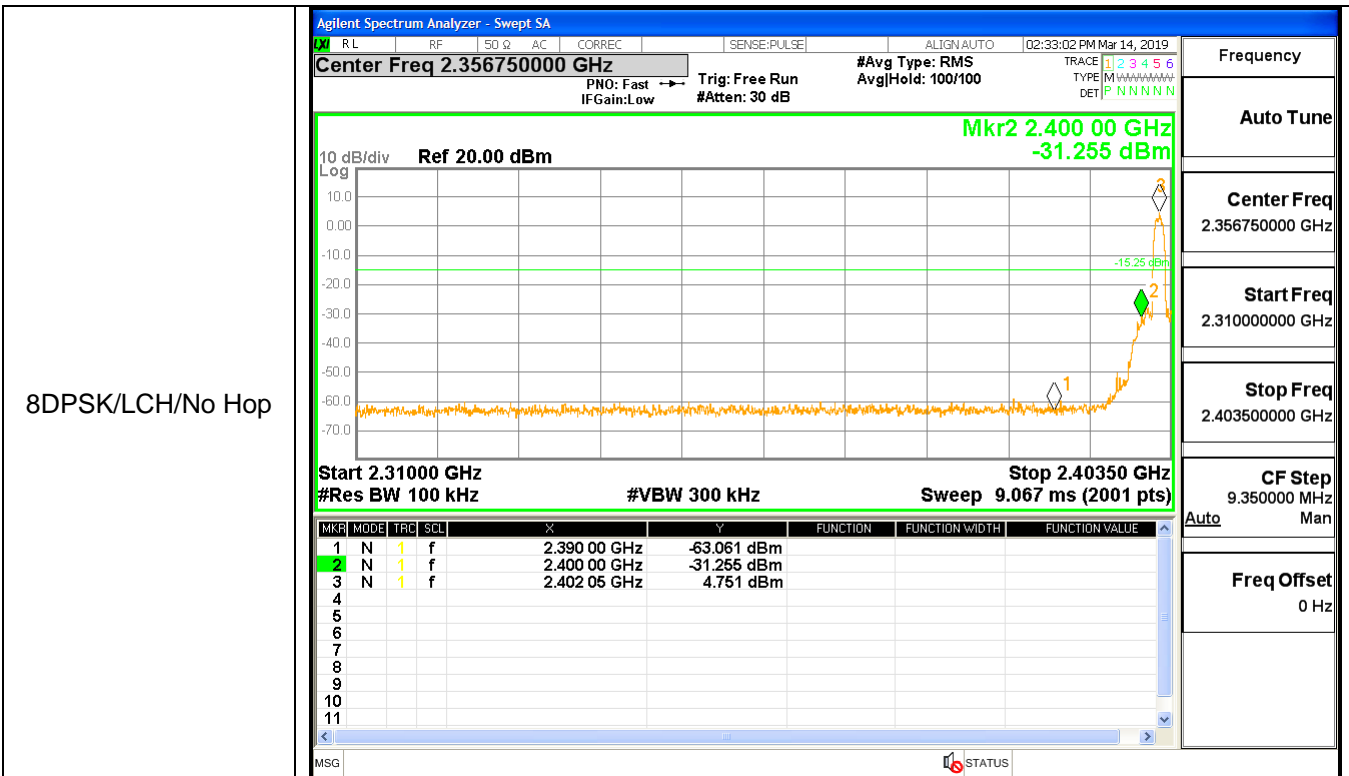
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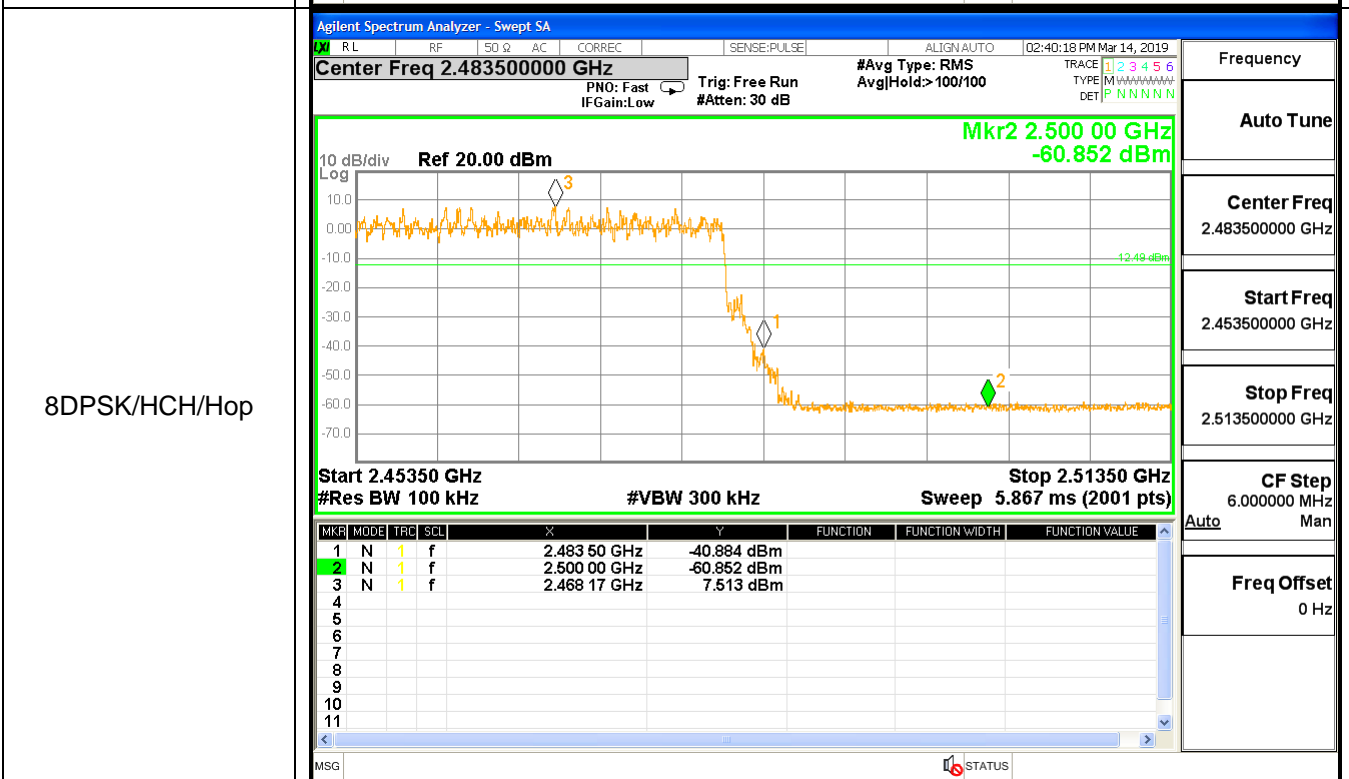
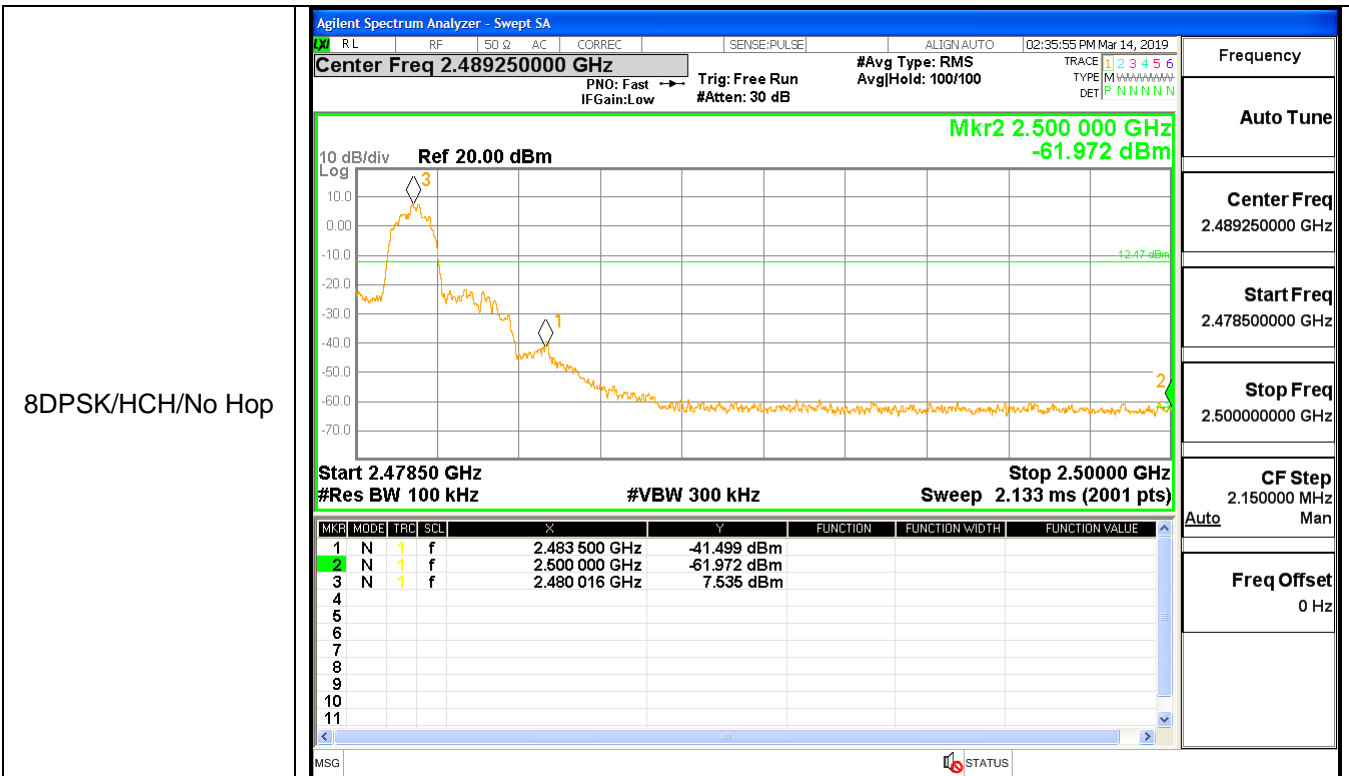




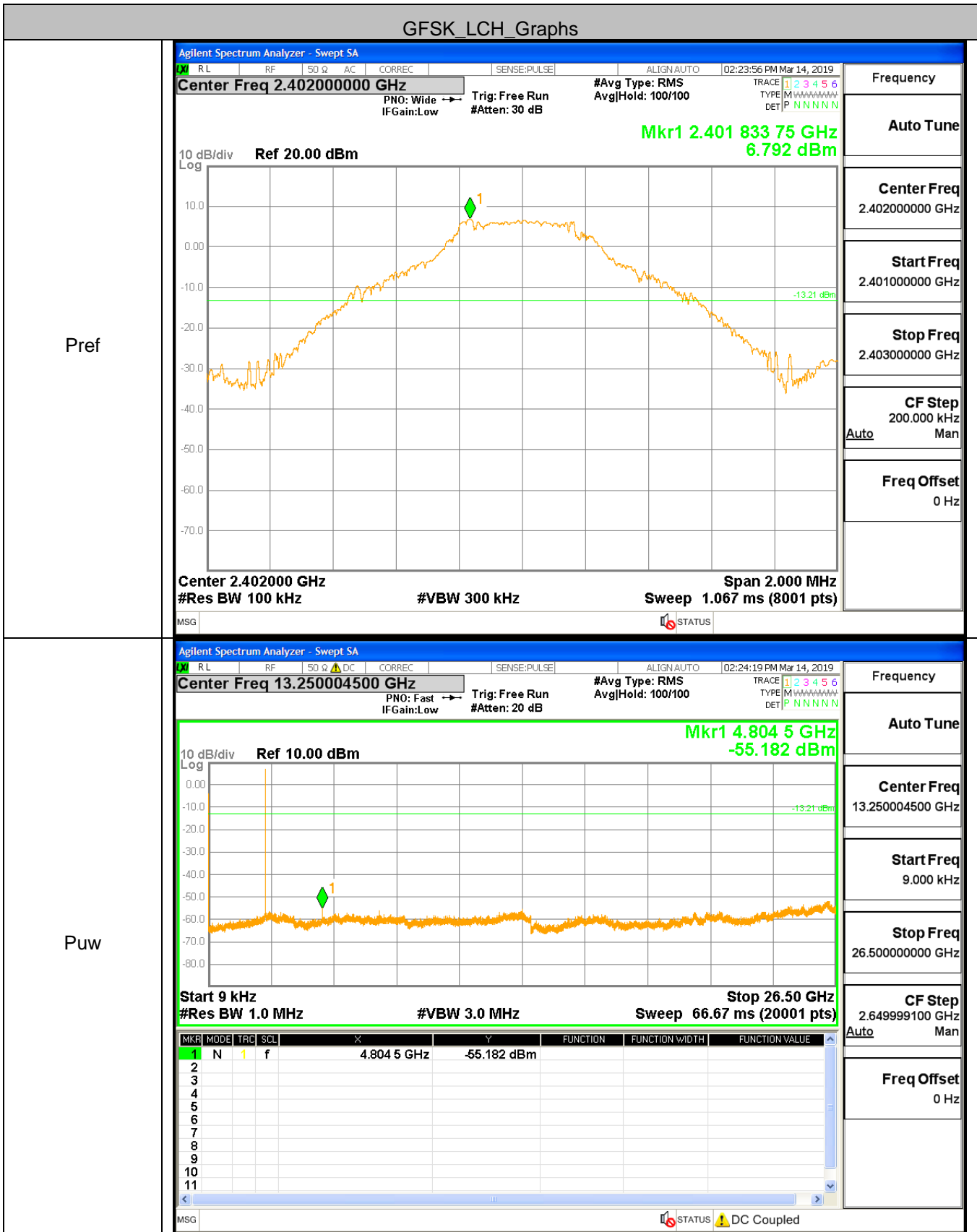


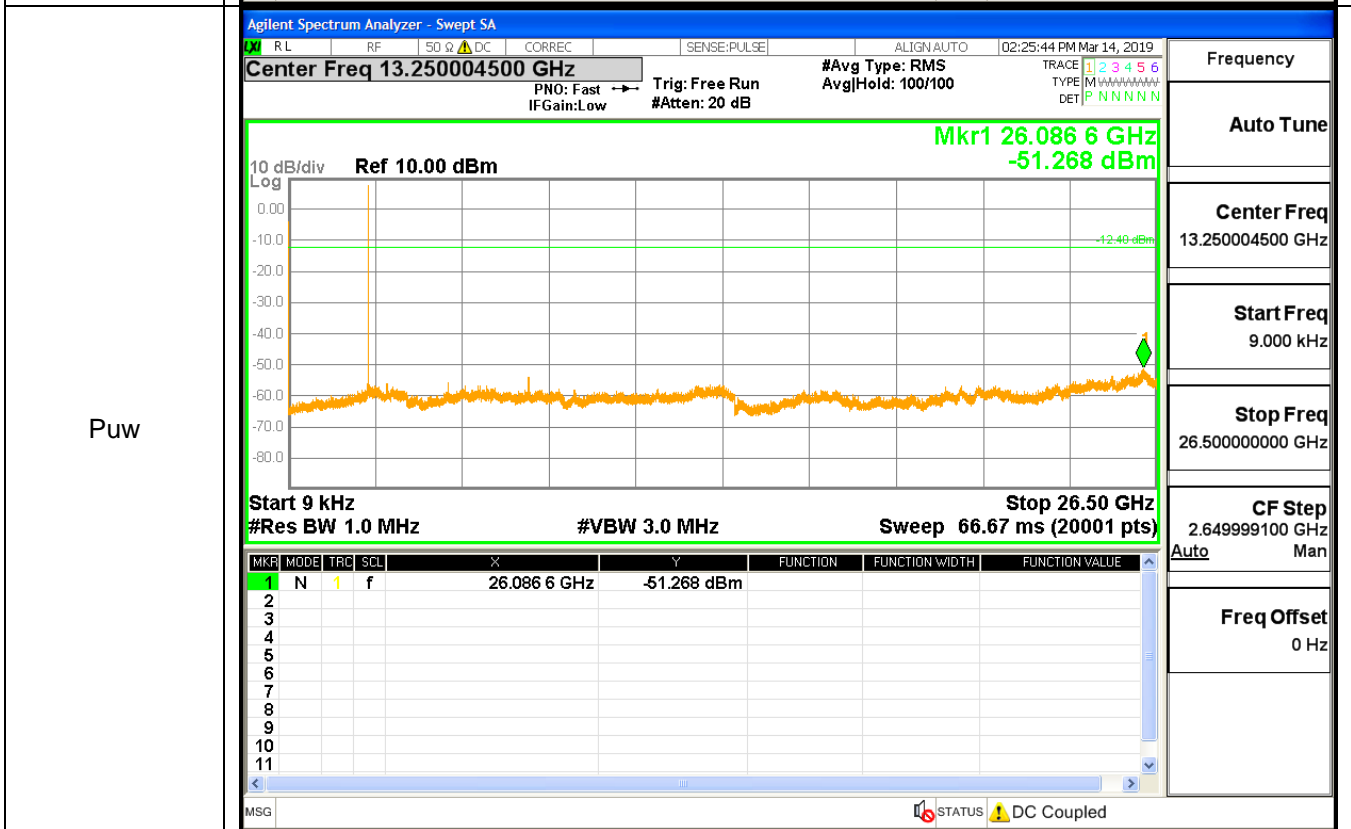
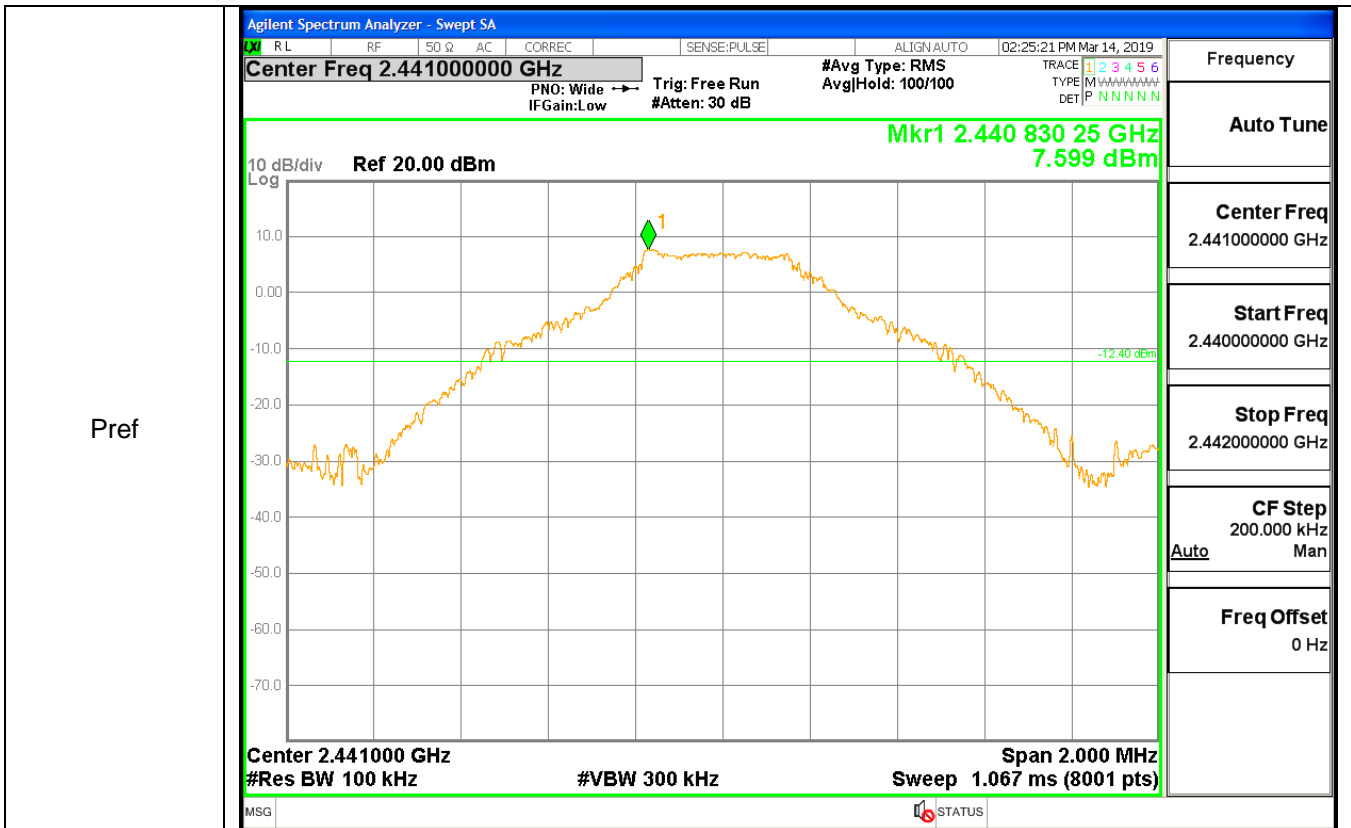




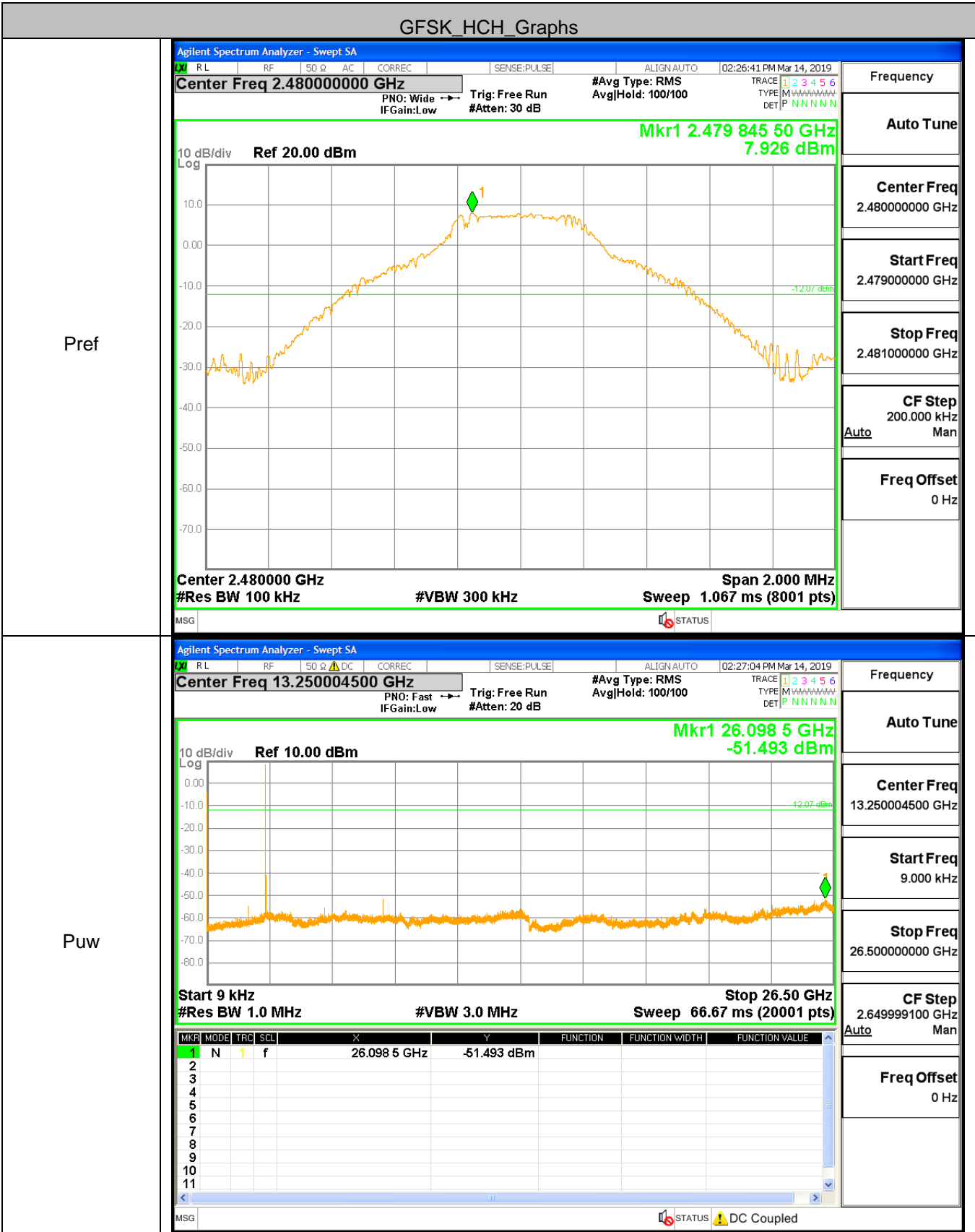


### A.7 RF Conducted Spurious Emissions Test Graph



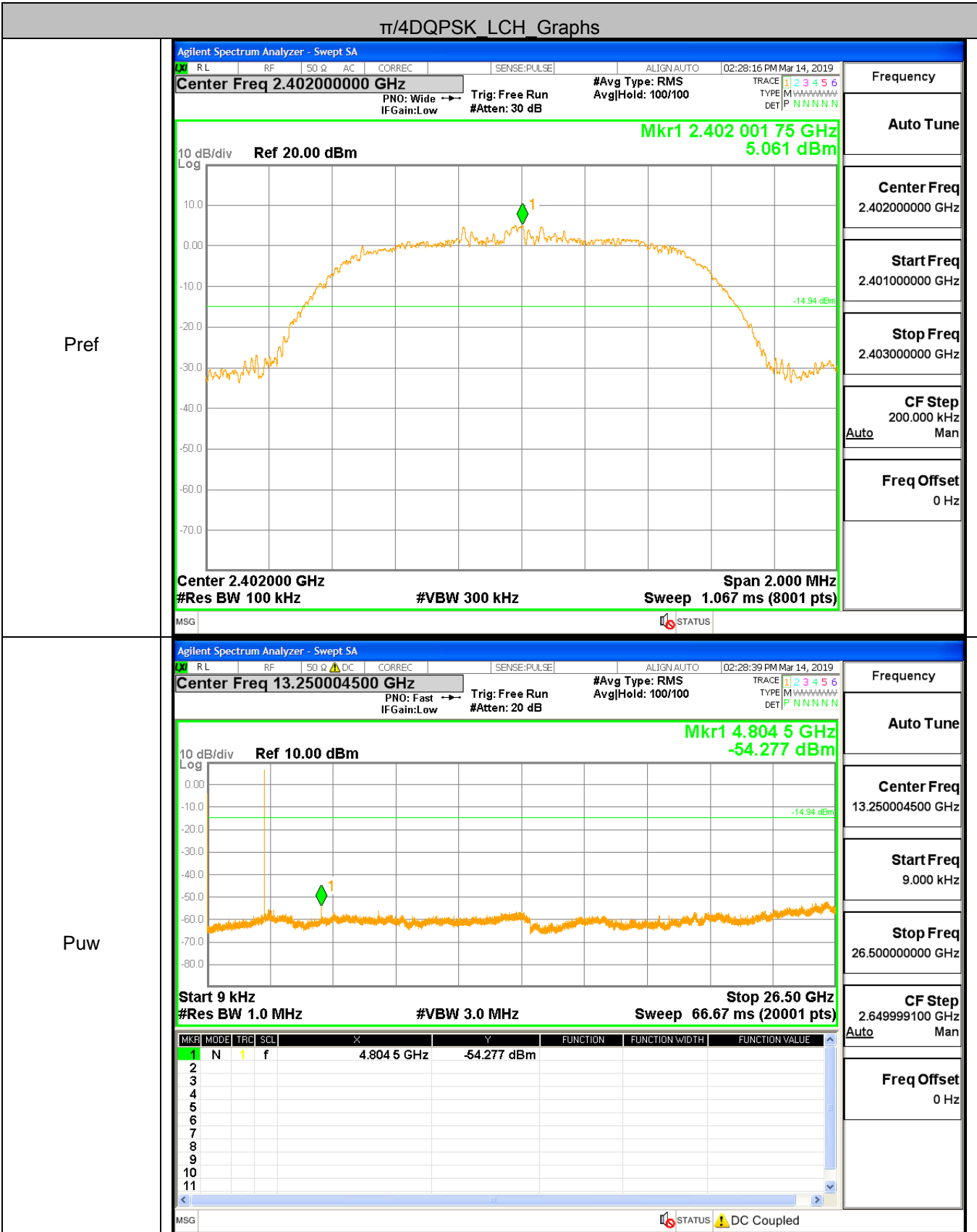


GFSK\_HCH\_Graphs

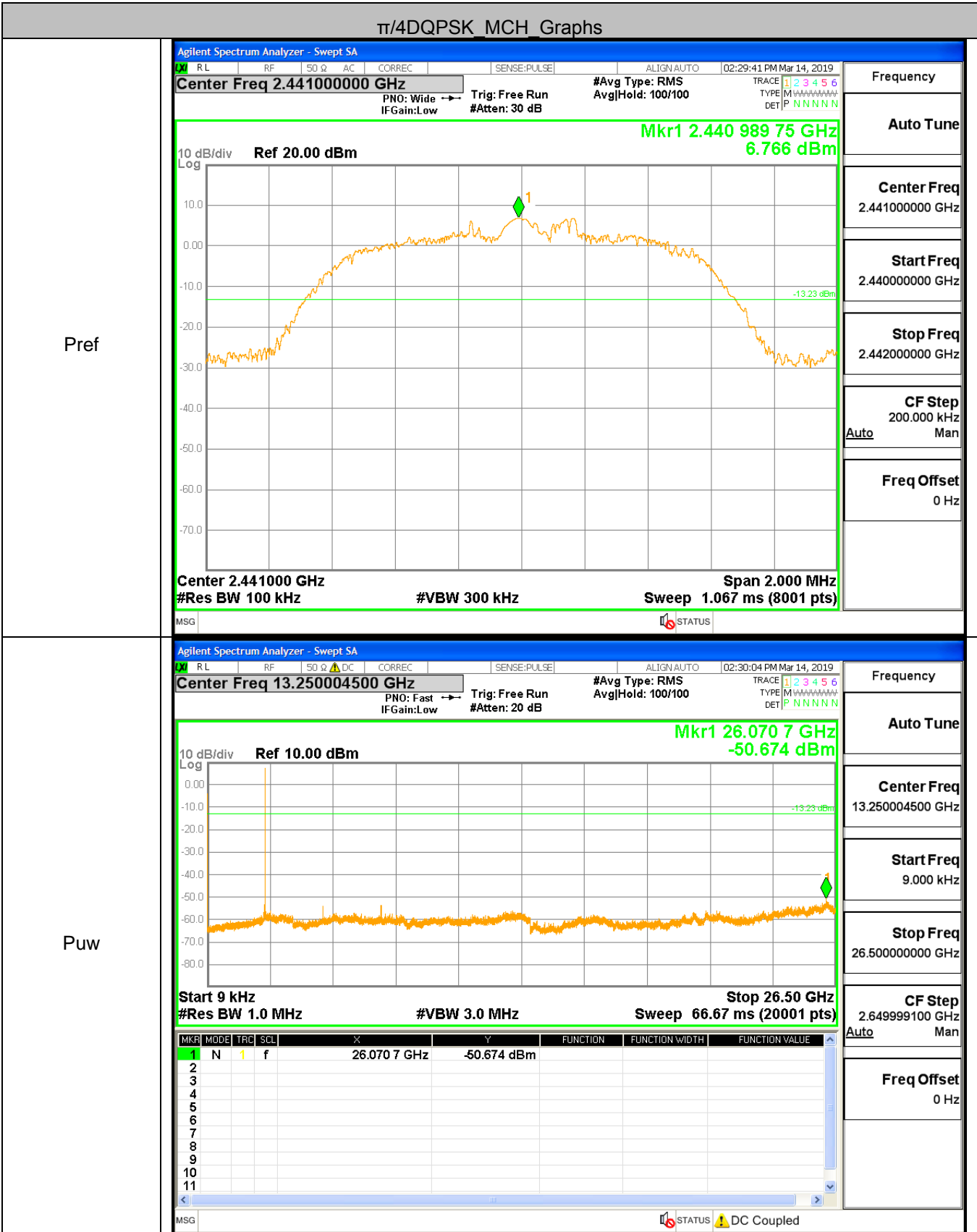




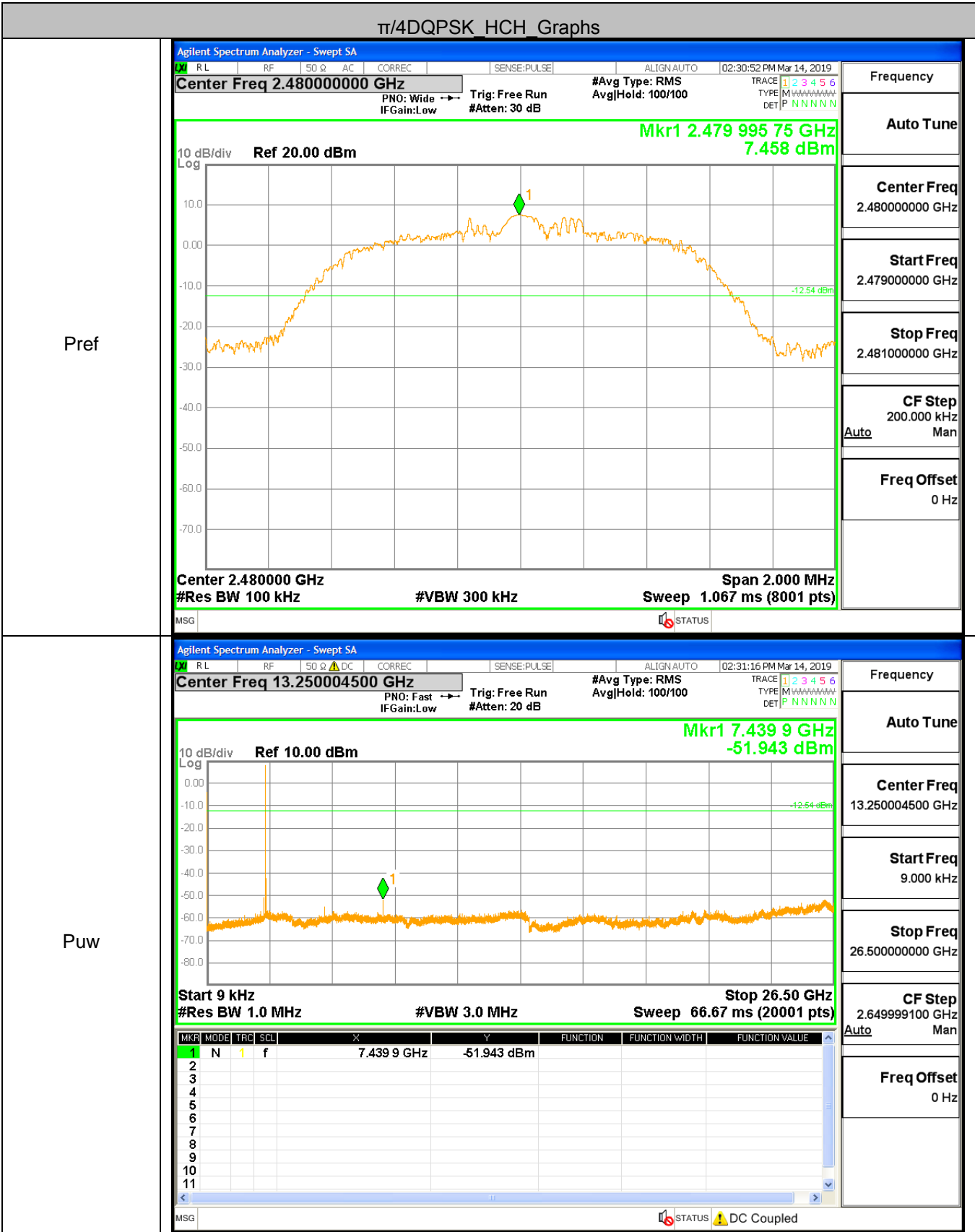
$\pi$ /4DQPSK LCH Graphs



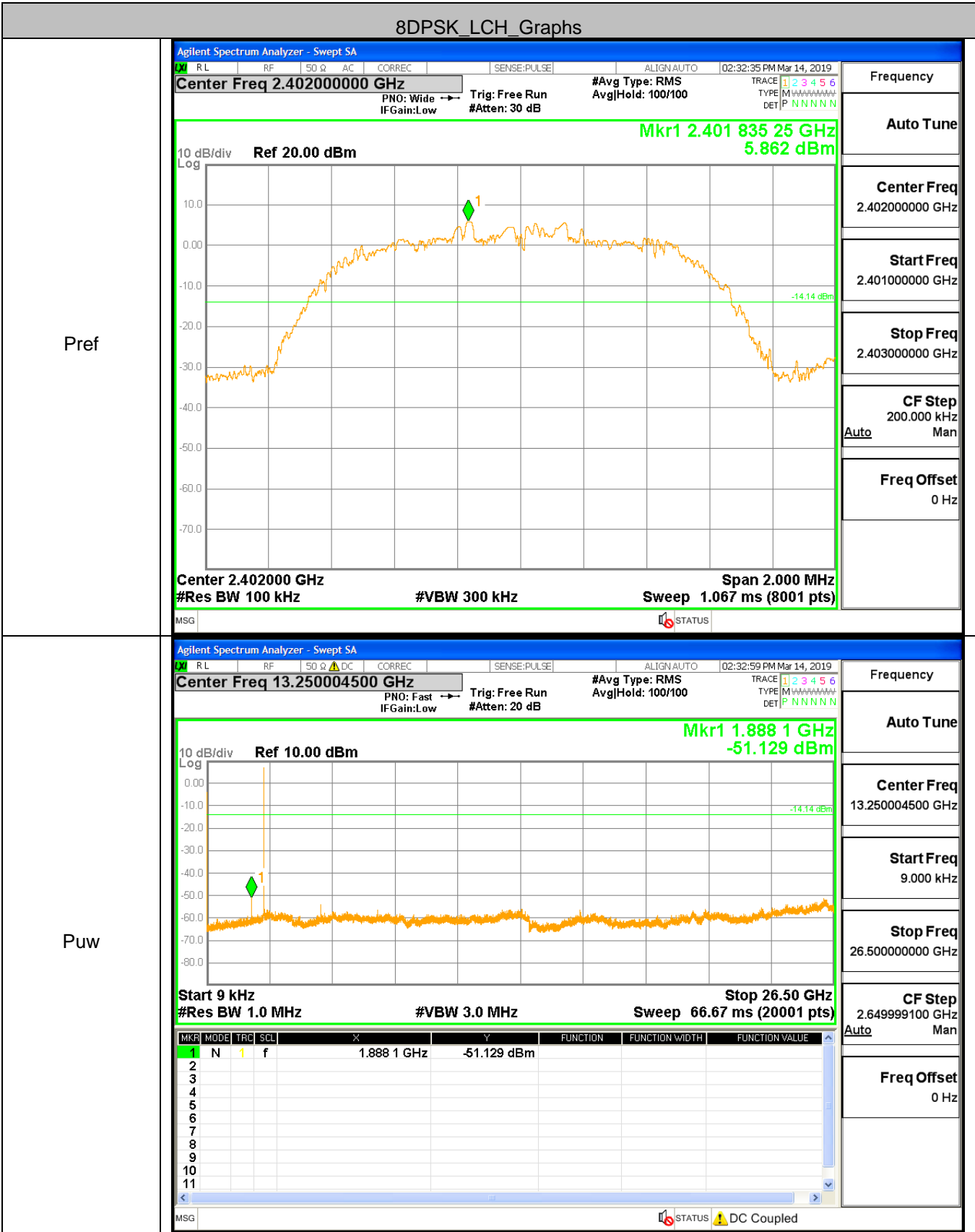
$\pi/4$ DQPSK MCH Graphs



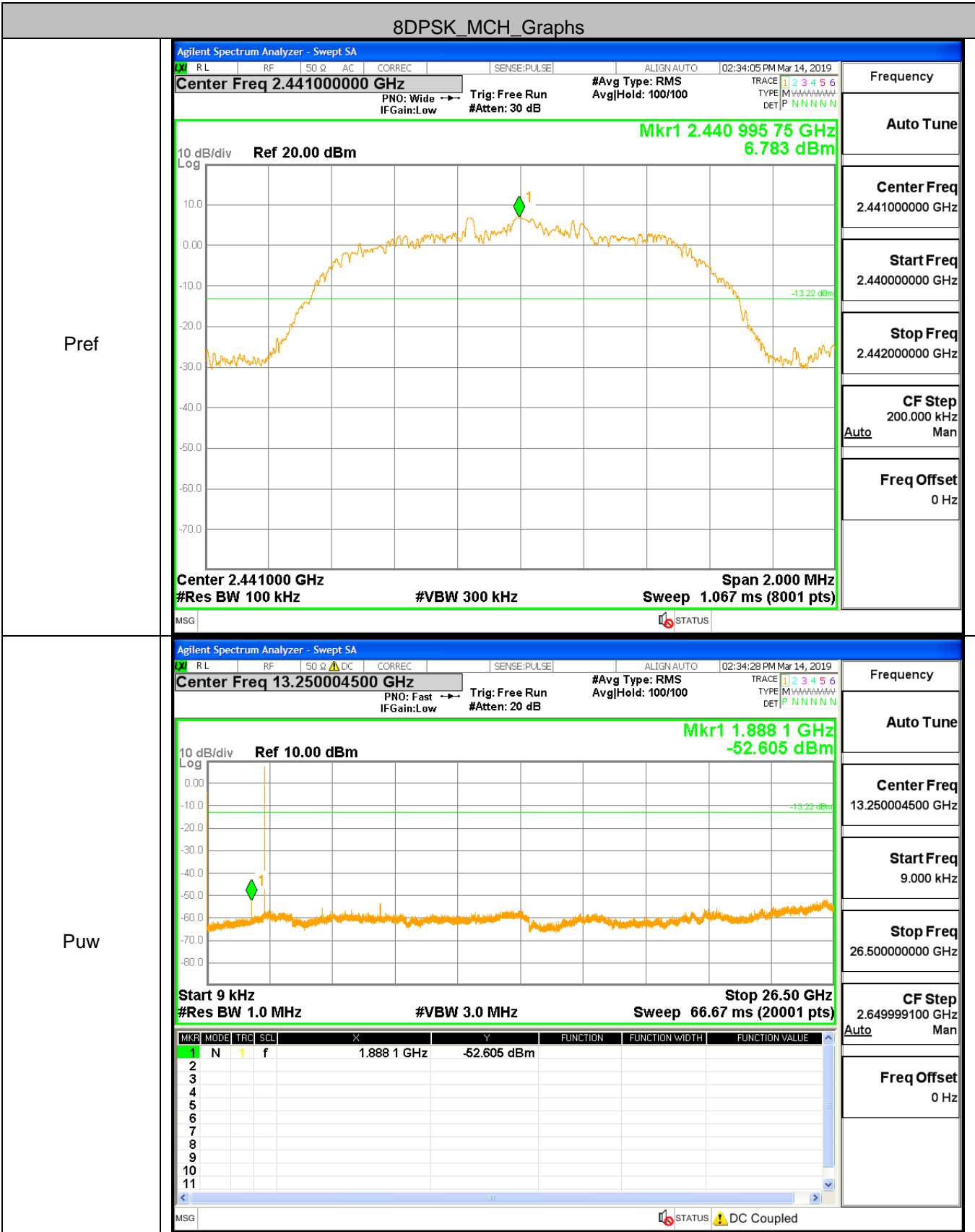
$\pi/4$ DQPSK HCH Graphs



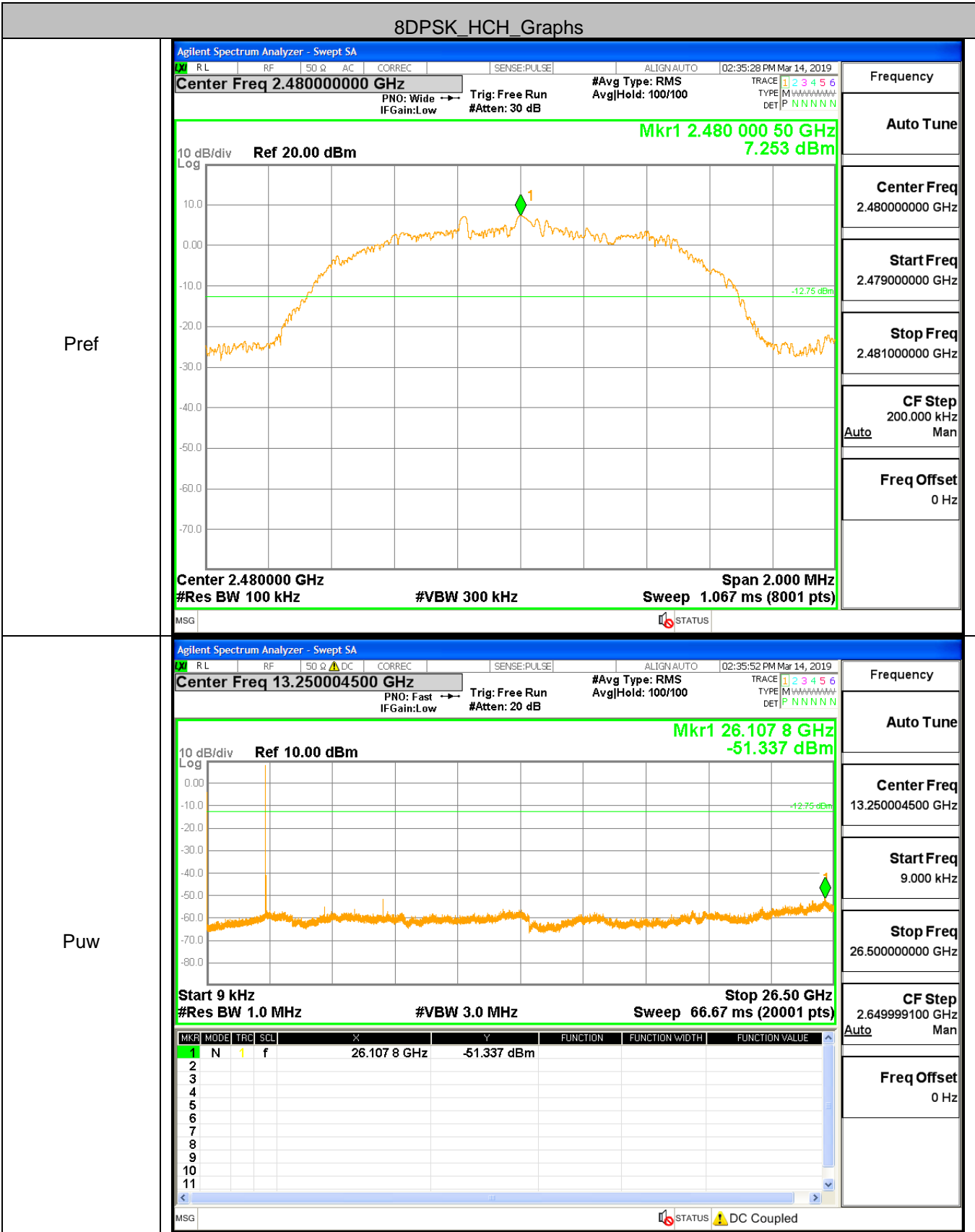
8DPSK\_LCH\_Graphs



8DPSK\_MCH\_Graphs



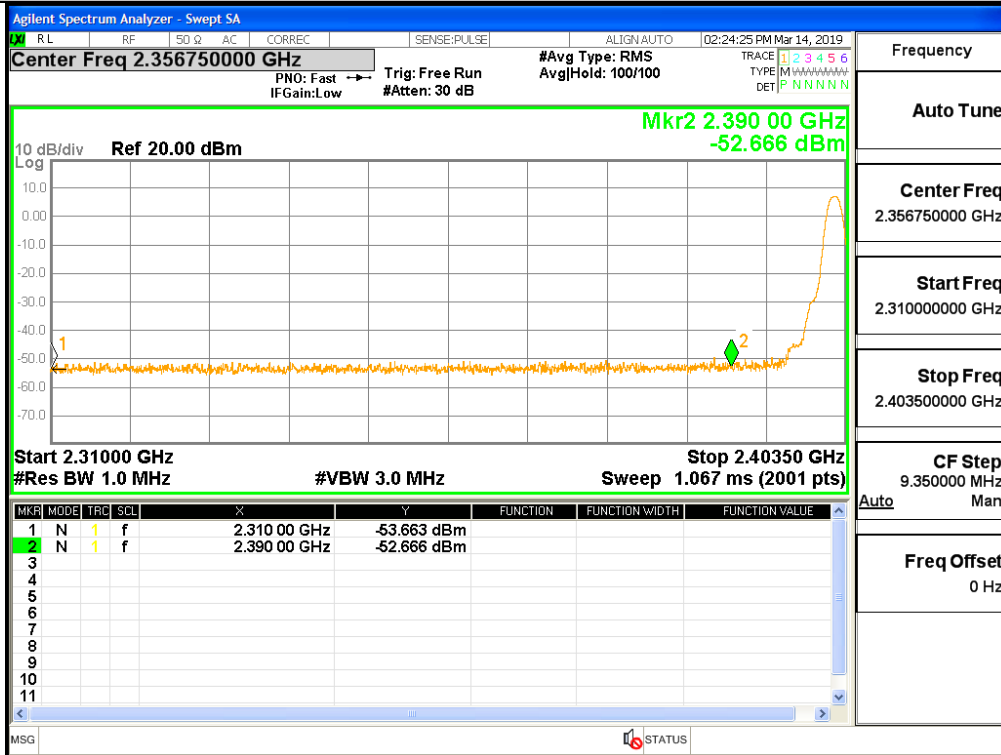
8DPSK\_HCH\_Graphs



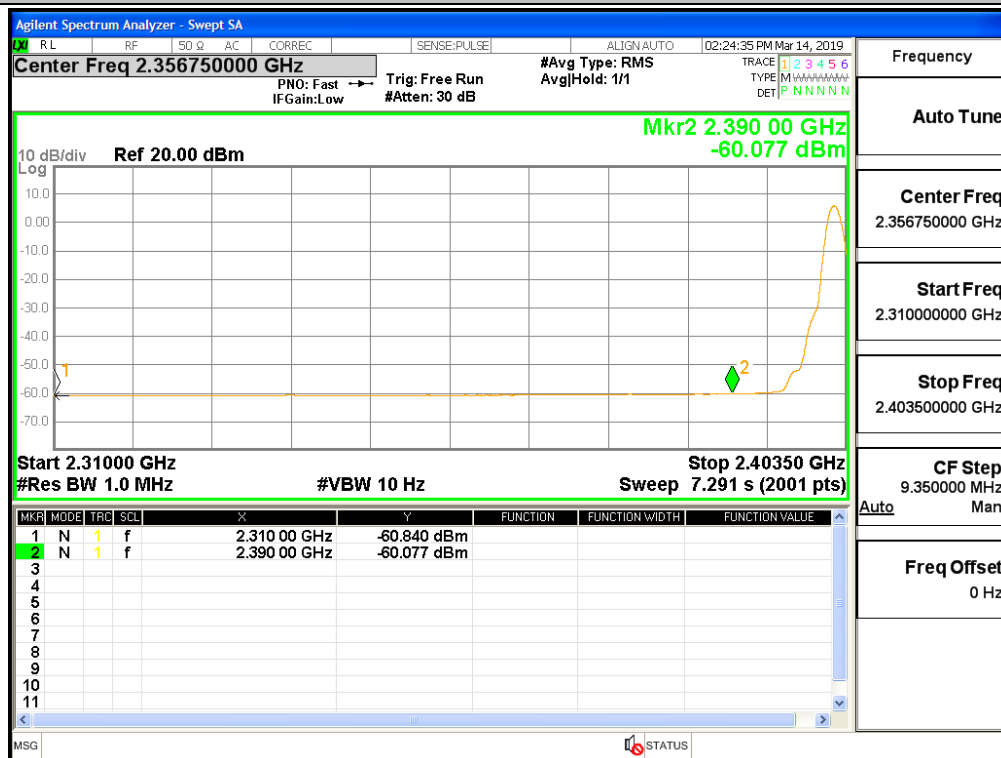
### A.8 Restrict-band band-edge measurements

Type	Carrier Frequency (MHz)	Frequency(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	-53.66	46.98	74	-60.84	38.66	54	Pass
1DH5	2402	2390	2.00	0.00	-52.67	44.88	74	-60.08	38.7	54	Pass
1DH5	2480	2483.5	2.00	0.00	-34.11	52.06	74	-38.76	46.7	54	Pass
1DH5	2480	2500	2.00	0.00	-53.35	46.34	74	-59.77	39.22	54	Pass
2DH5	2402	2310	2.00	0.00	-54.75	45.46	74	-60.8	38.42	54	Pass
2DH5	2402	2390	2.00	0.00	-53.02	46.04	74	-60.21	38.65	54	Pass
2DH5	2480	2483.5	2.00	0.00	-34.72	48.4	74	-39.9	42.92	54	Pass
2DH5	2480	2500	2.00	0.00	-53.16	46.82	74	-59.8	39.18	54	Pass
3DH5	2402	2310	2.00	0.00	-54.53	43.97	74	-60.86	38.39	54	Pass
3DH5	2402	2390	2.00	0.00	-52.62	45.69	74	-60.25	38.63	54	Pass
3DH5	2480	2483.5	2.00	0.00	-31.43	49.62	74	-39.94	43.04	54	Pass
3DH5	2480	2500	2.00	0.00	-53.35	46.38	74	-59.83	39.15	54	Pass

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

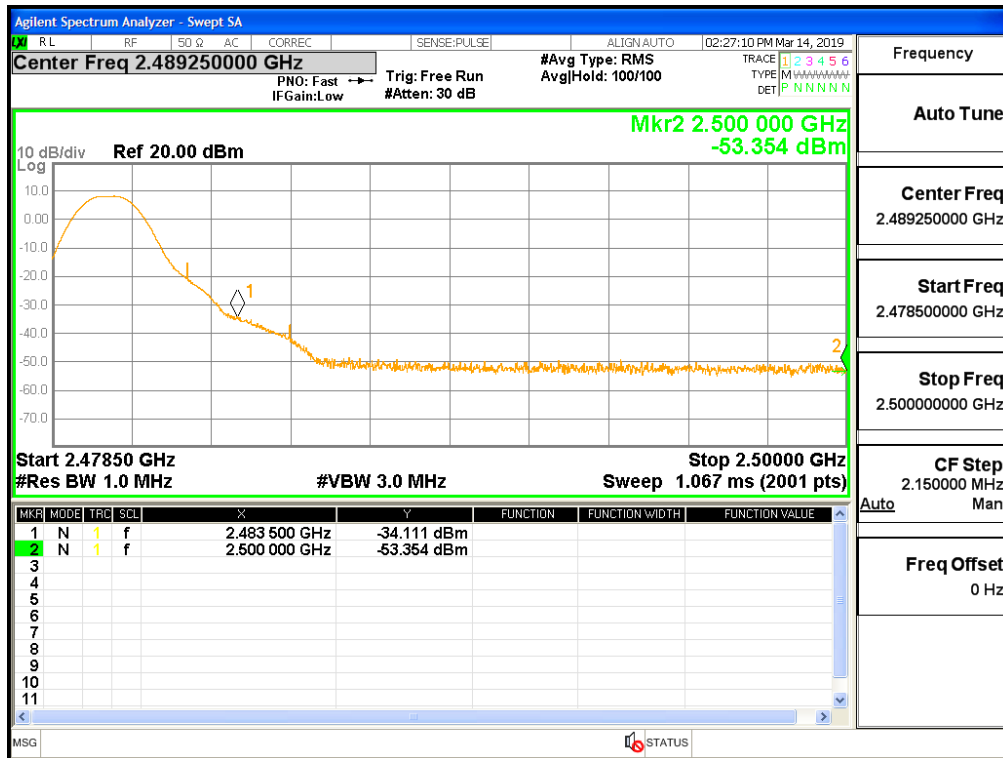


Restrict-band band-edge measurements\_2402\_AV\_DH5

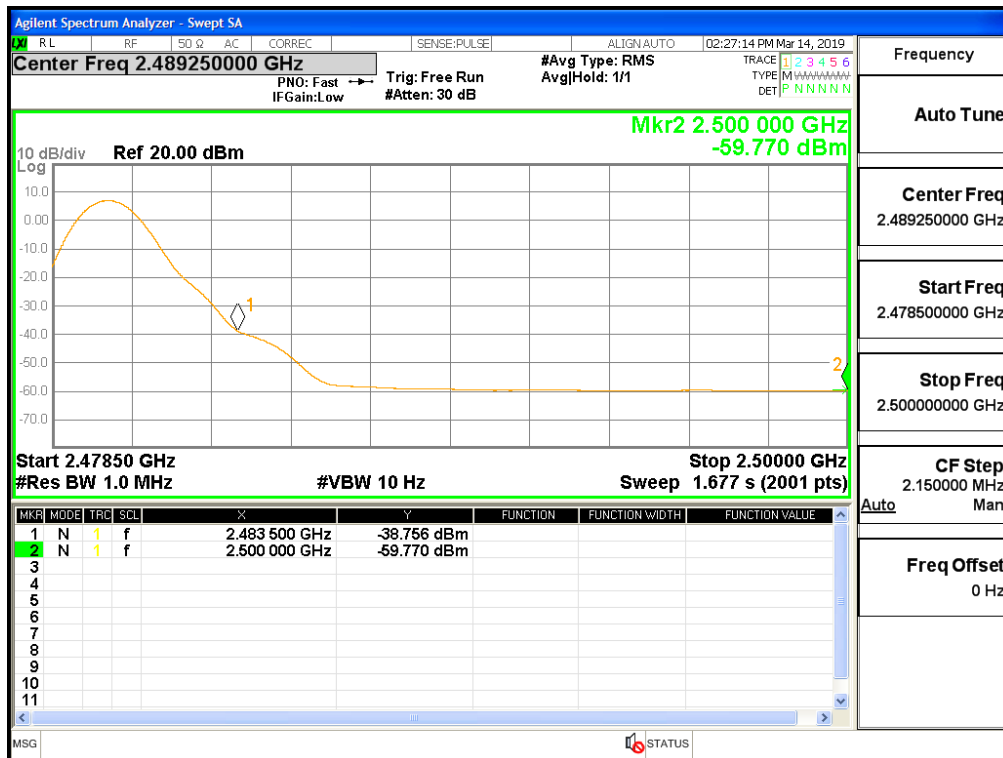




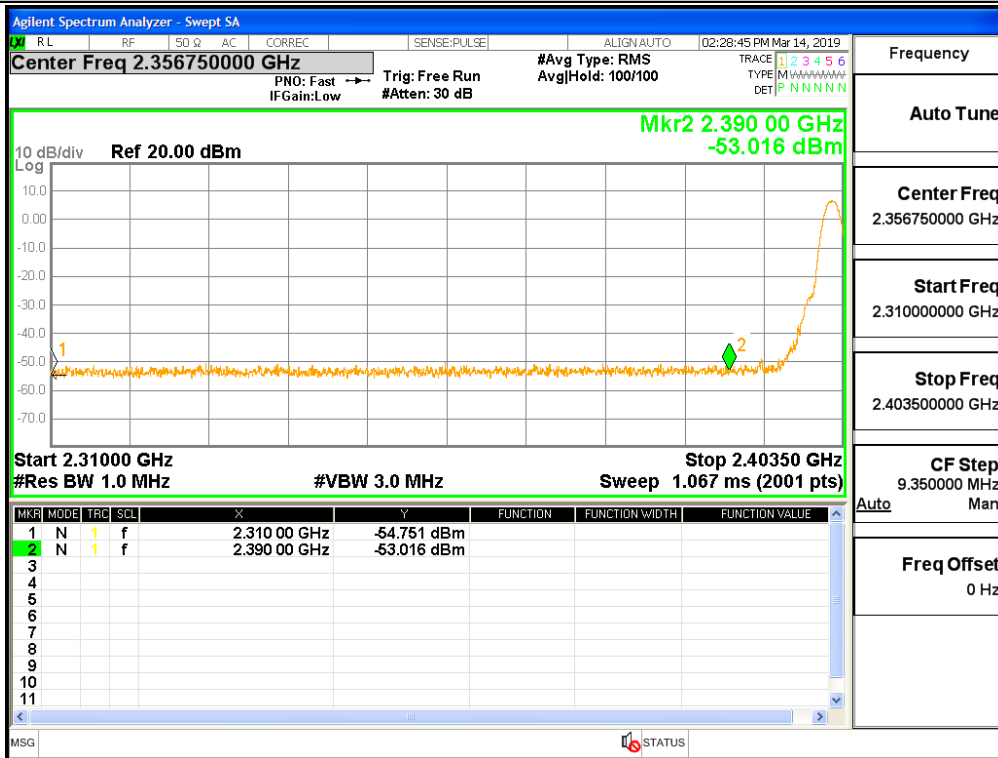
Restrict-band band-edge measurements\_2480\_PEAK\_DH5



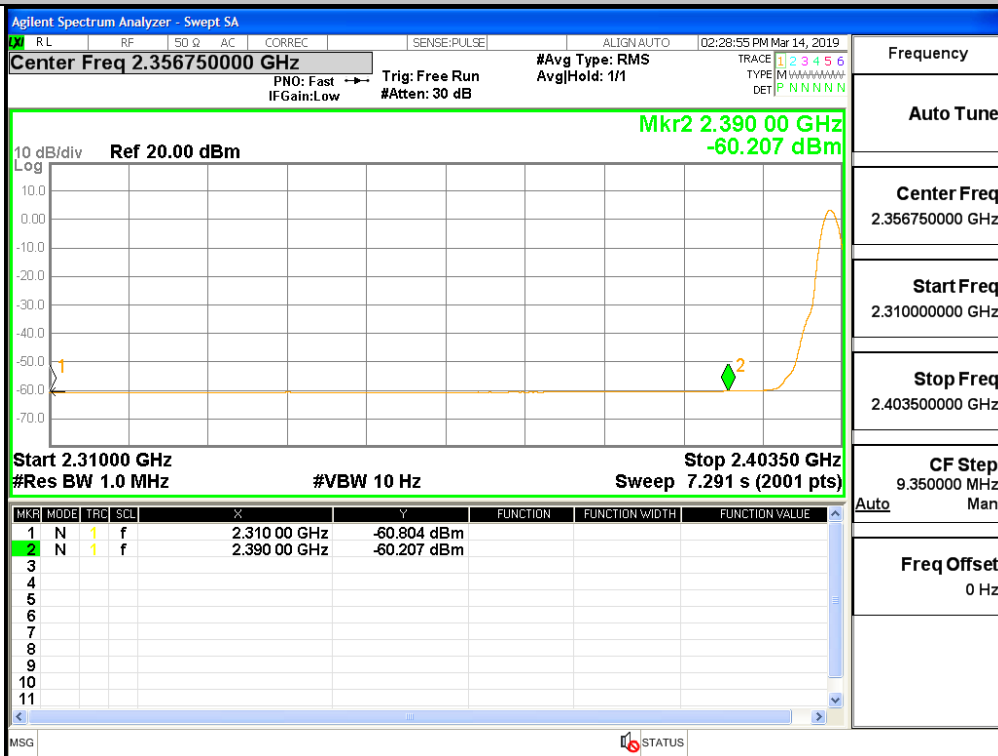
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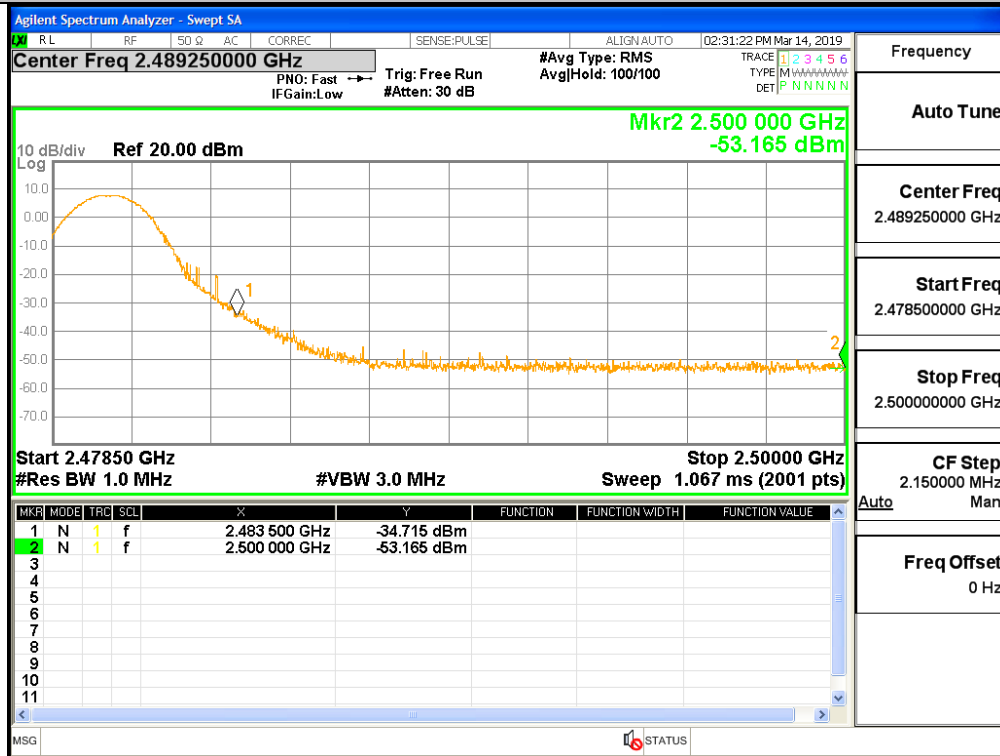
Restrict-band band-edge measurements\_2402\_PEAK\_2DH5



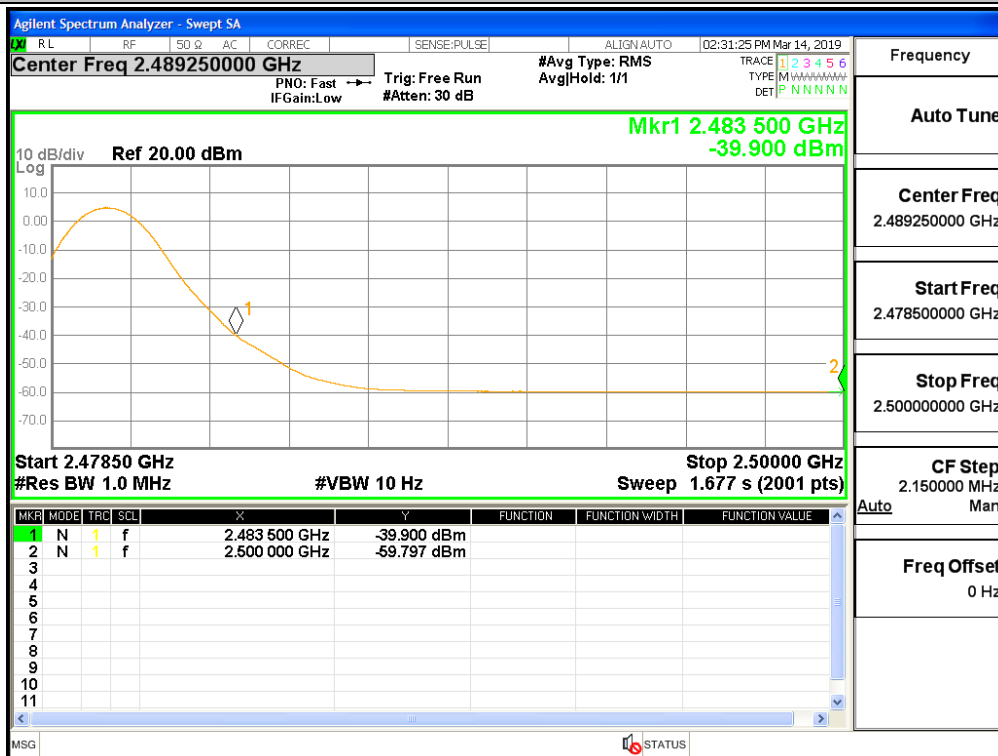
Restrict-band band-edge measurements\_2402\_AV\_2DH5



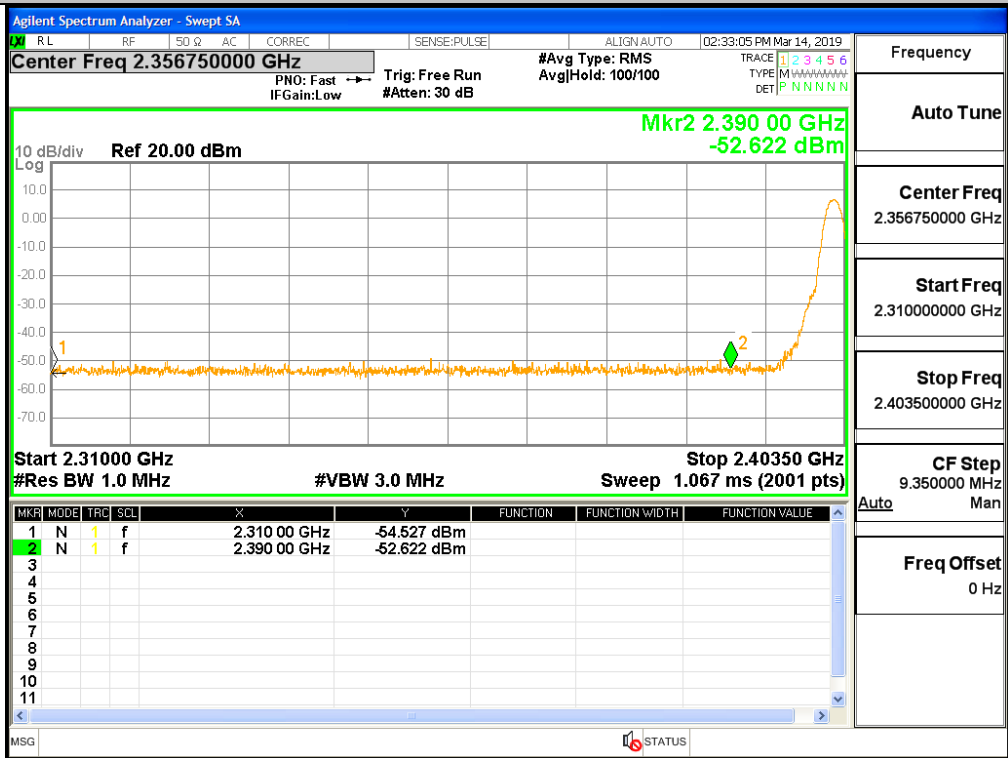
Restrict-band band-edge measurements\_2480\_PEAK\_2DH5



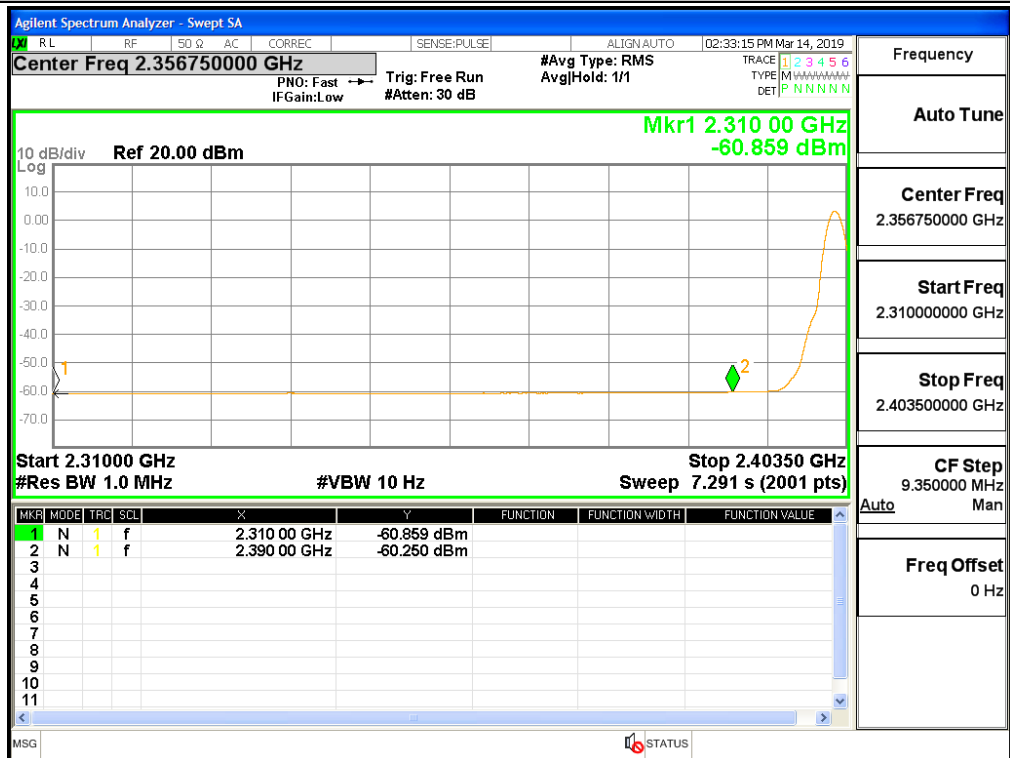
Restrict-band band-edge measurements\_2480\_AV\_2DH5



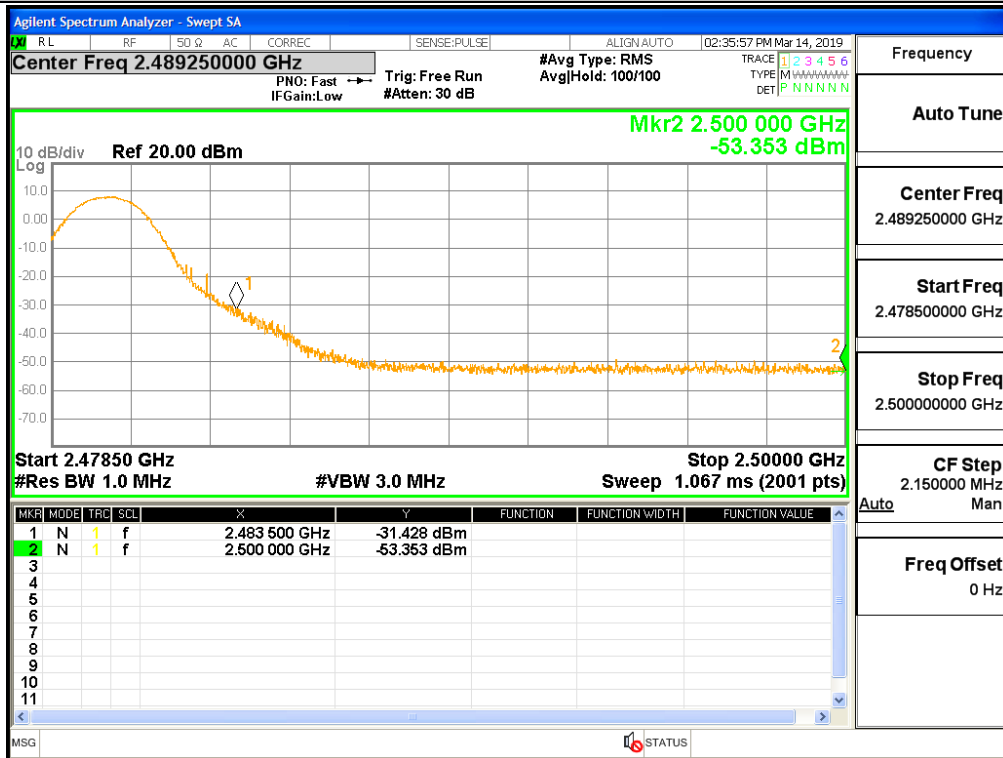
Restrict-band band-edge measurements\_2402\_PEAK\_3DH5



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



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



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

