

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

Product Name: Bluetooth Earphones

Trade Mark: Altec Lansing

Test Model: MZX890L

FCC ID: 2AL9B-MZX890L

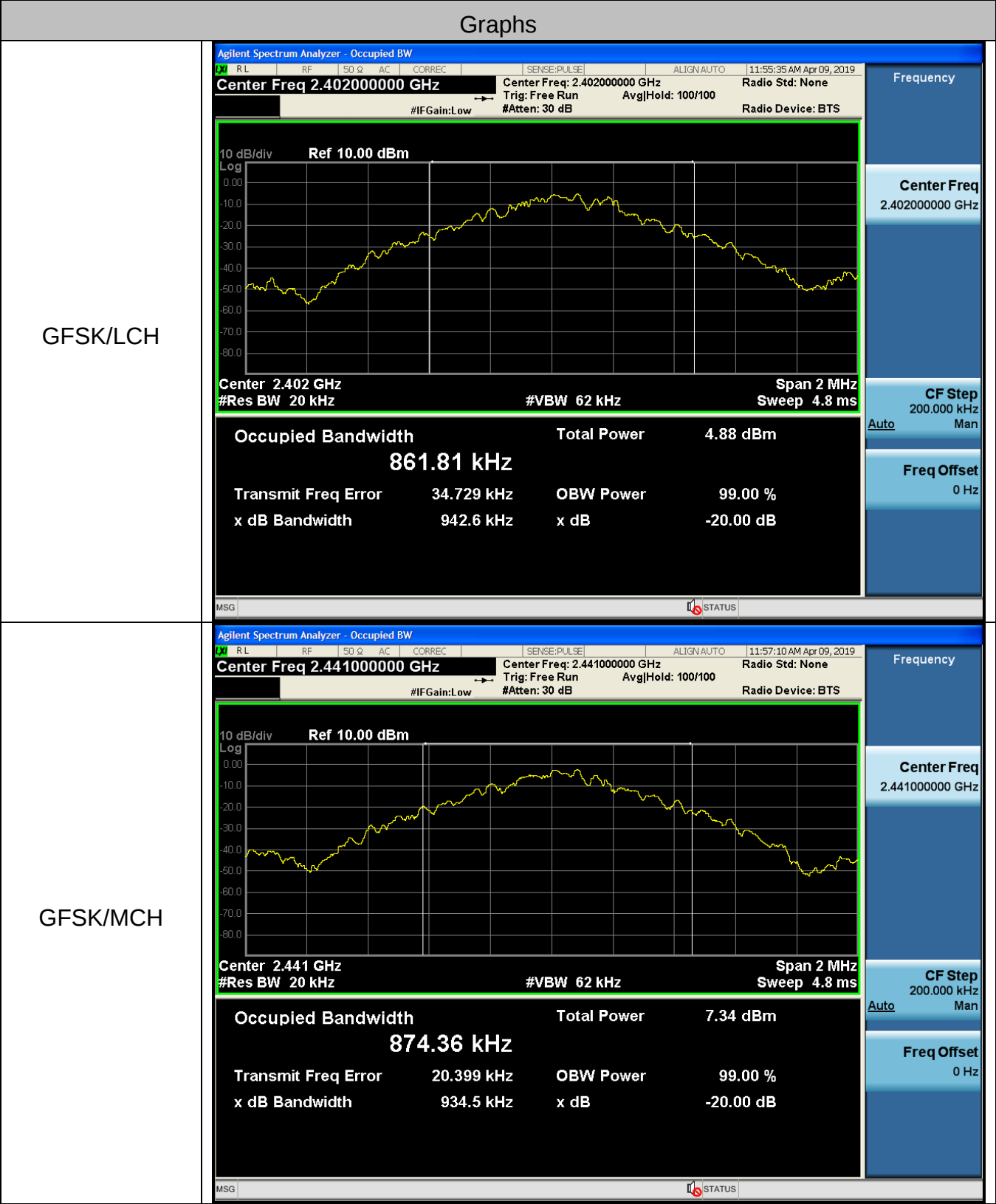
Environmental Conditions

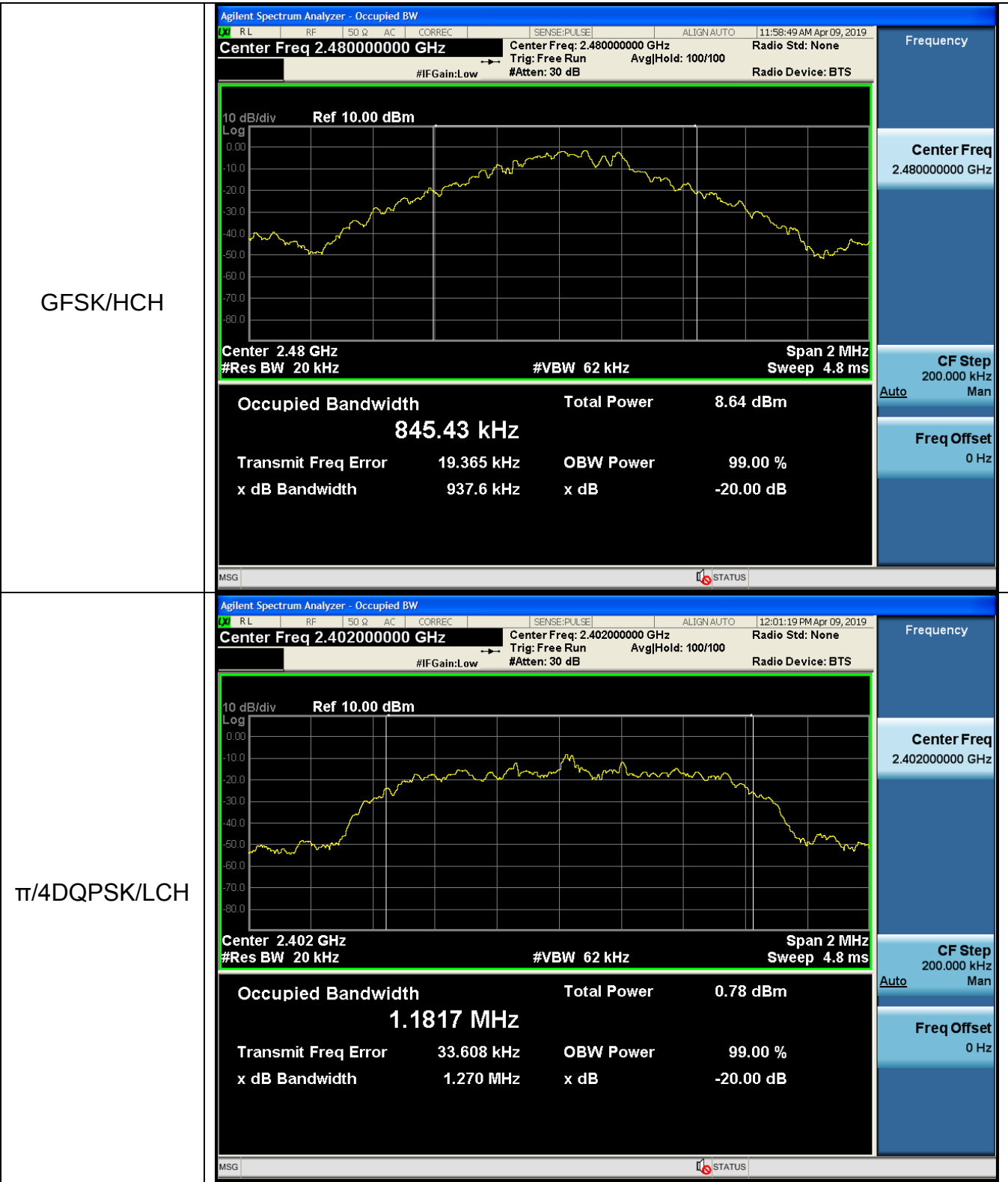
Temperature:	25.5℃
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

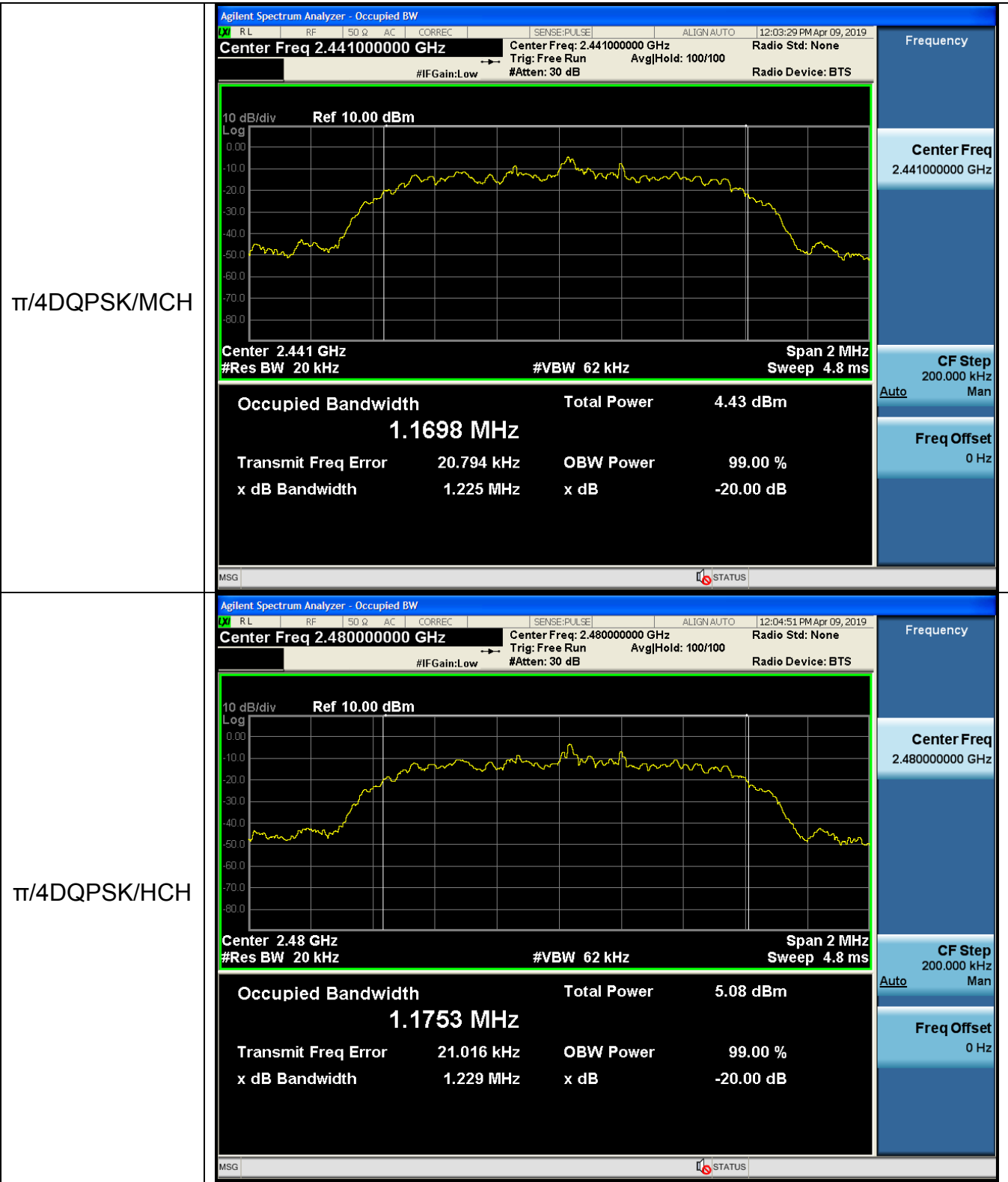
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.943	Not Specified	PASS
GFSK	MCH	0.934	Not Specified	PASS
GFSK	HCH	0.938	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.270	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.225	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.229	Not Specified	PASS

Test Graph



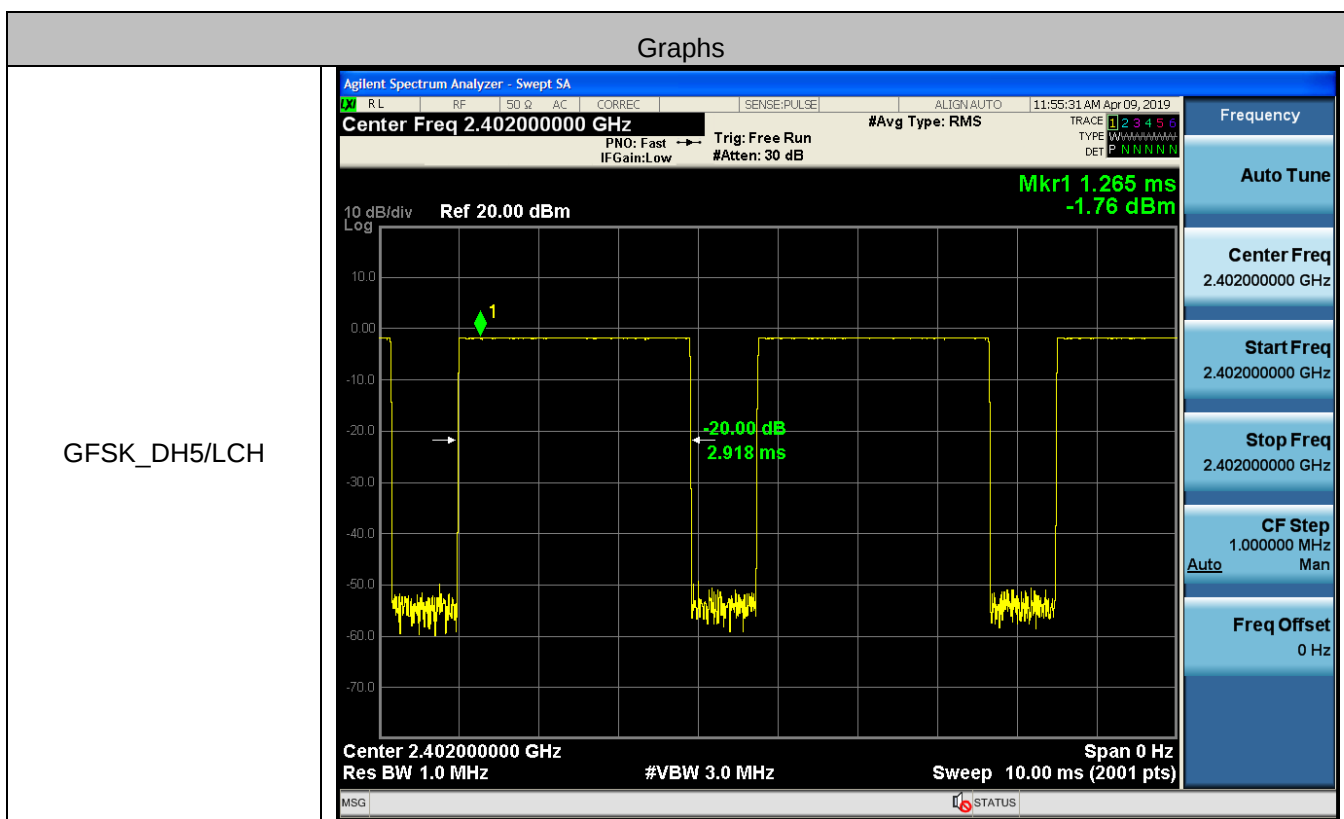


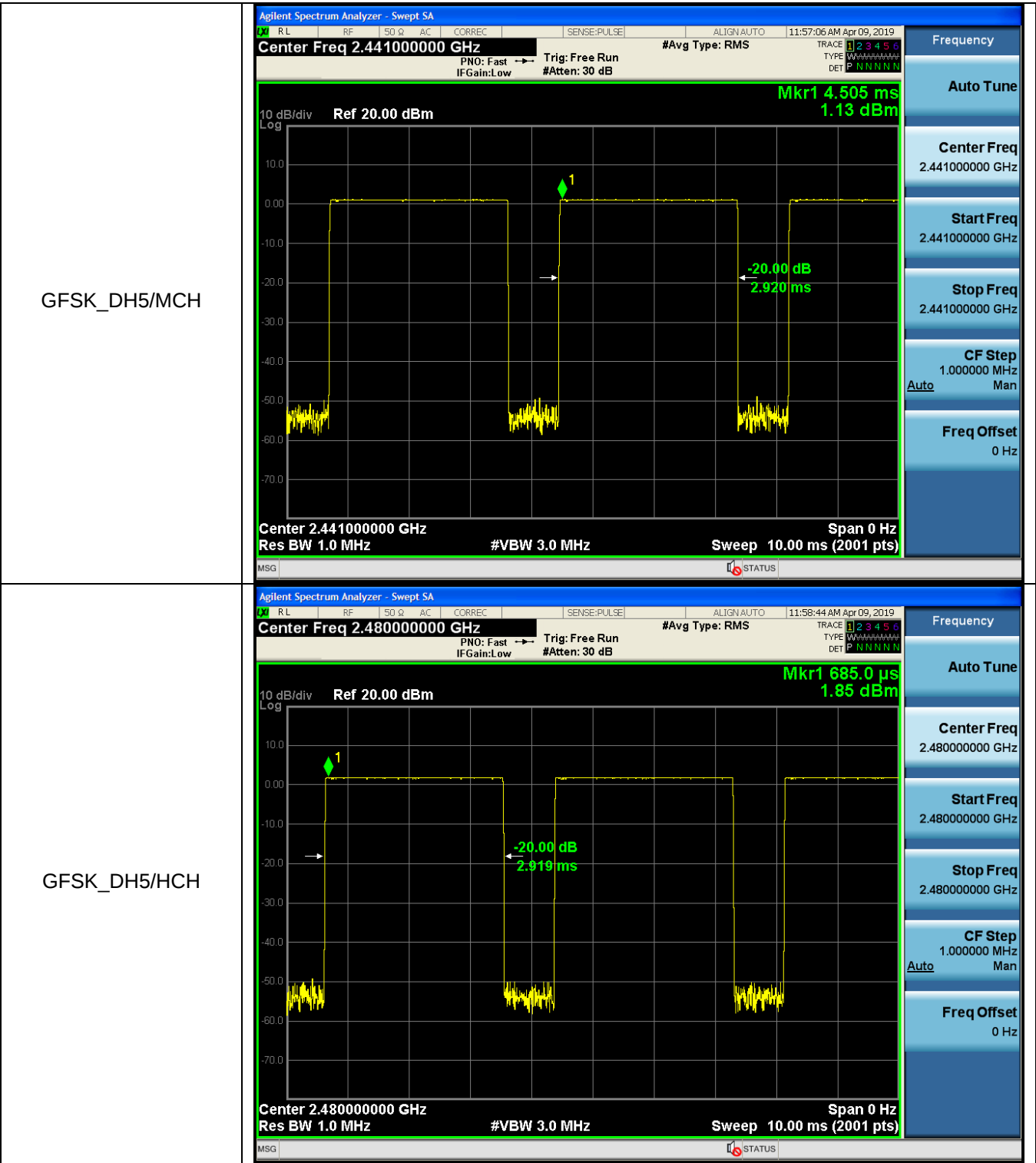


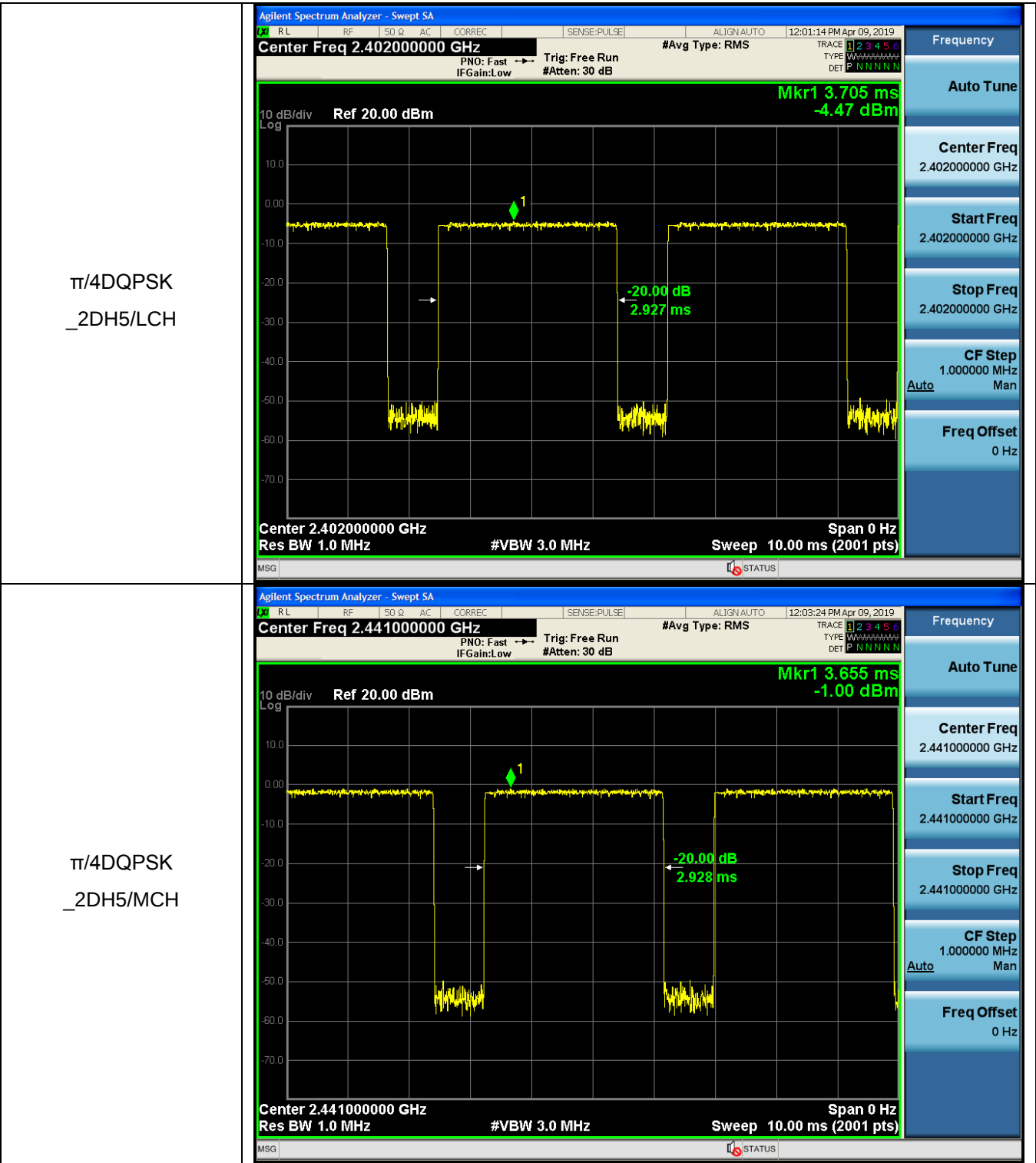
A.2 Dwell Time

Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002918	106.7	0.311401	0.4	PASS
GFSK	DH5	MCH	0.002920	106.7	0.311563	0.4	PASS
GFSK	DH5	HCH	0.002919	106.7	0.311430	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002927	106.7	0.312309	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002928	106.7	0.312368	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002927	106.7	0.312320	0.4	PASS

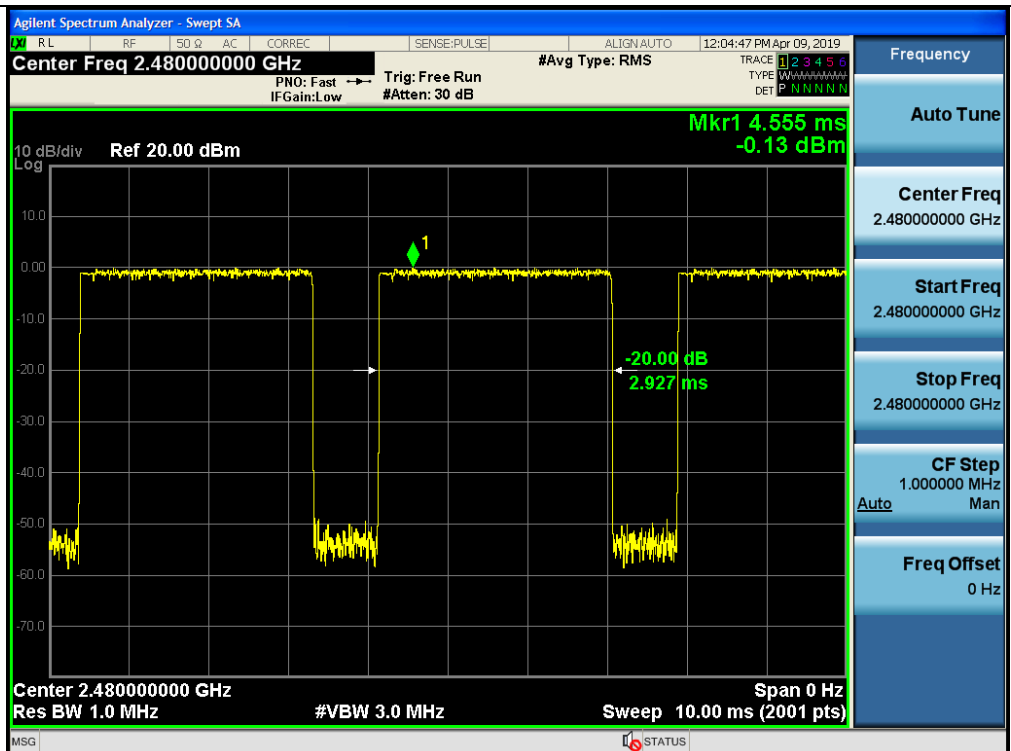
Test Graph







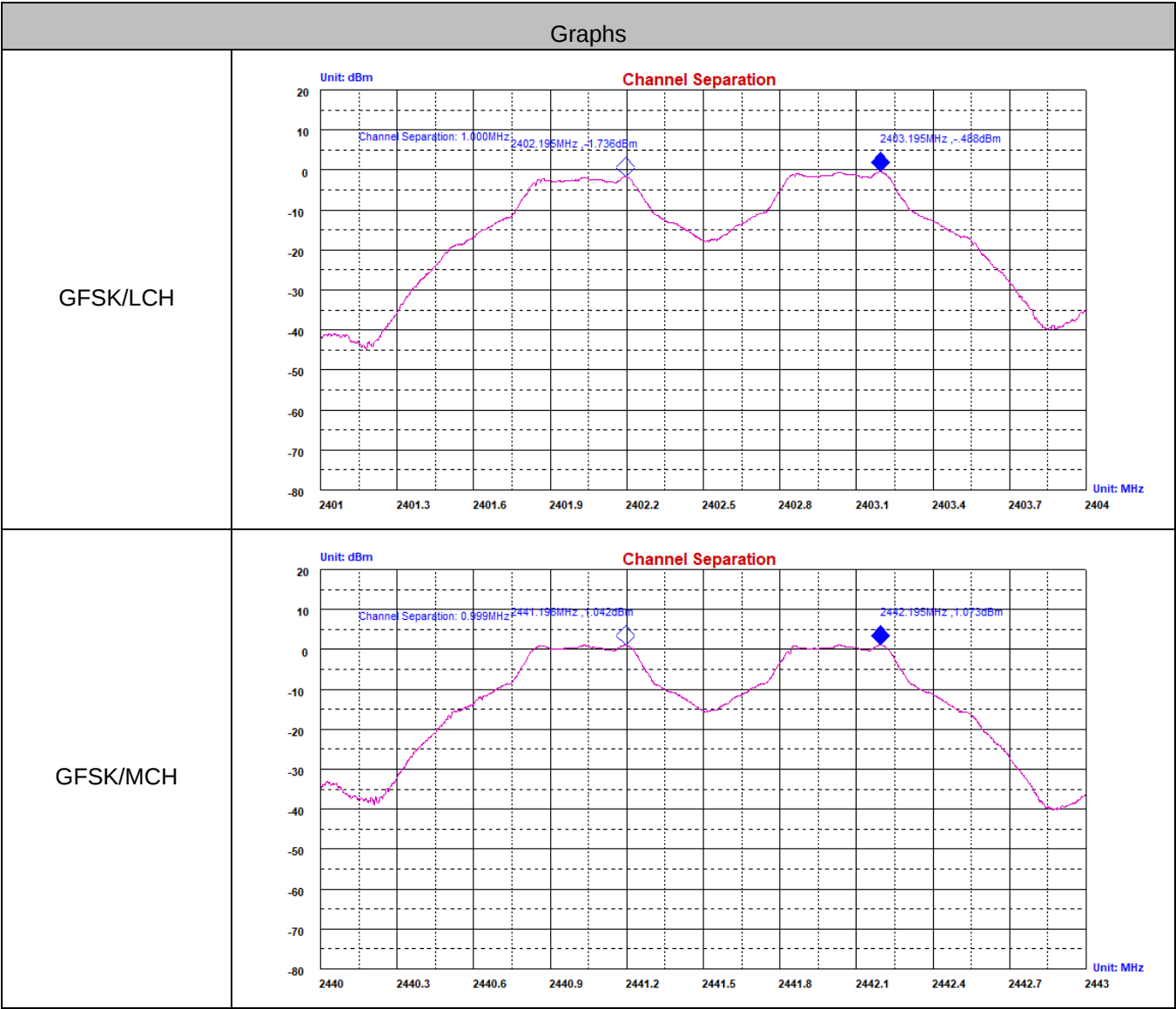
π/4DQPSK
_2DH5/HCH

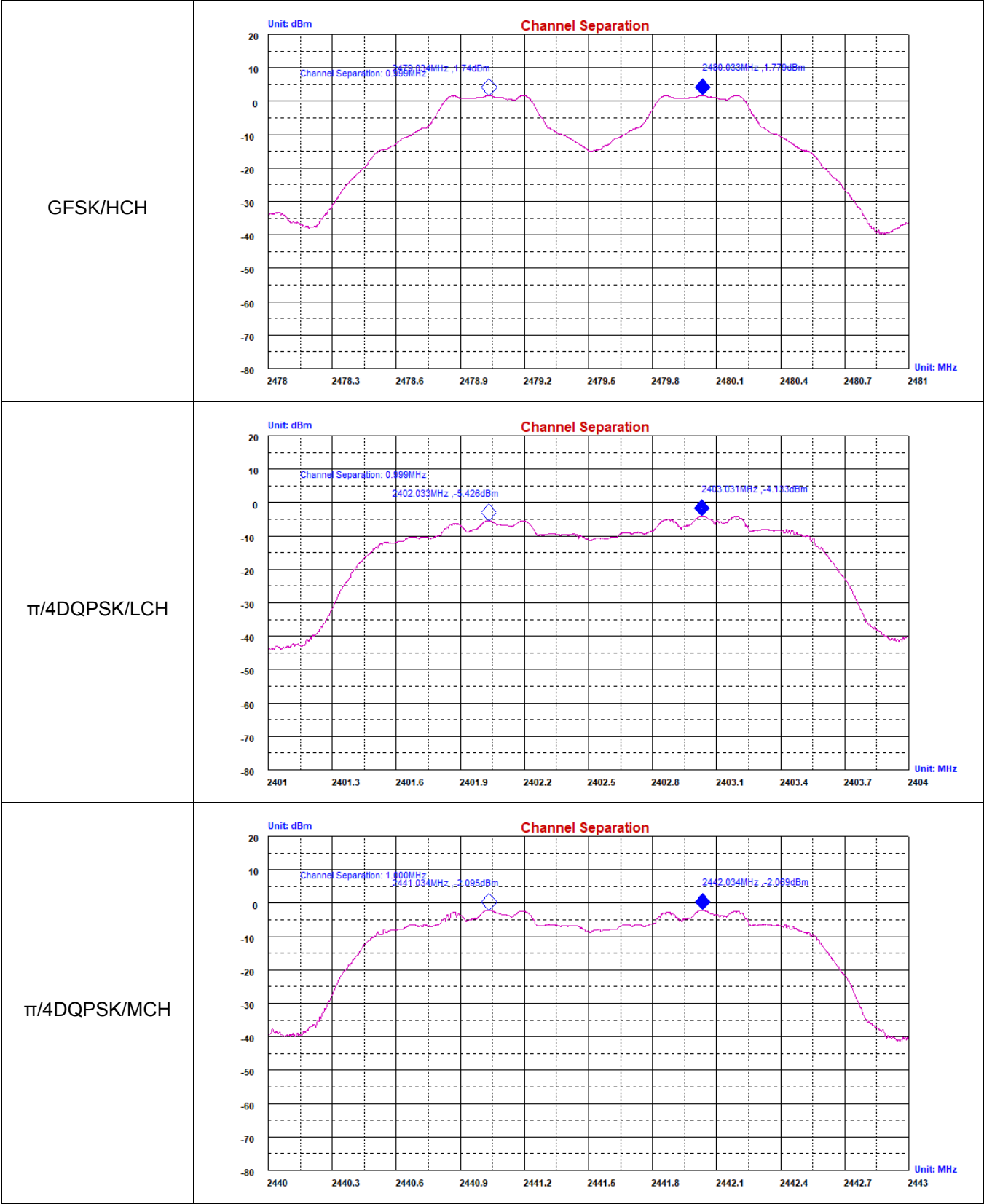


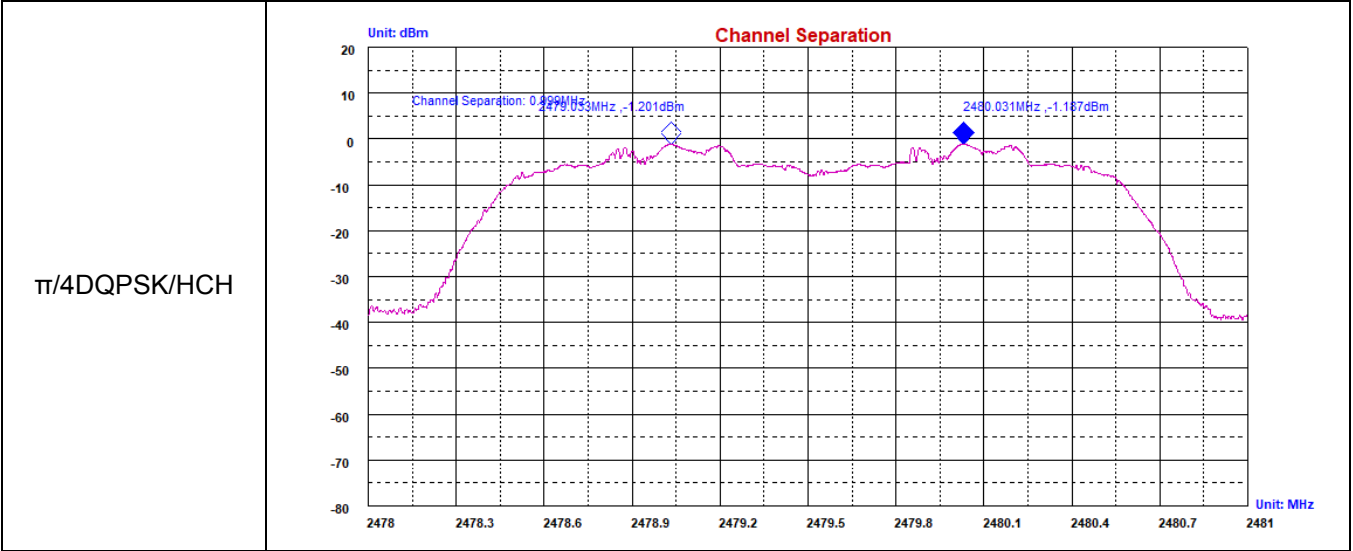
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.000	0.629	PASS
GFSK	MCH	0.999	0.623	PASS
GFSK	HCH	0.999	0.625	PASS
π /4DQPSK	LCH	0.999	0.847	PASS
π /4DQPSK	MCH	1.000	0.817	PASS
π /4DQPSK	HCH	0.999	0.819	PASS

Test Graph



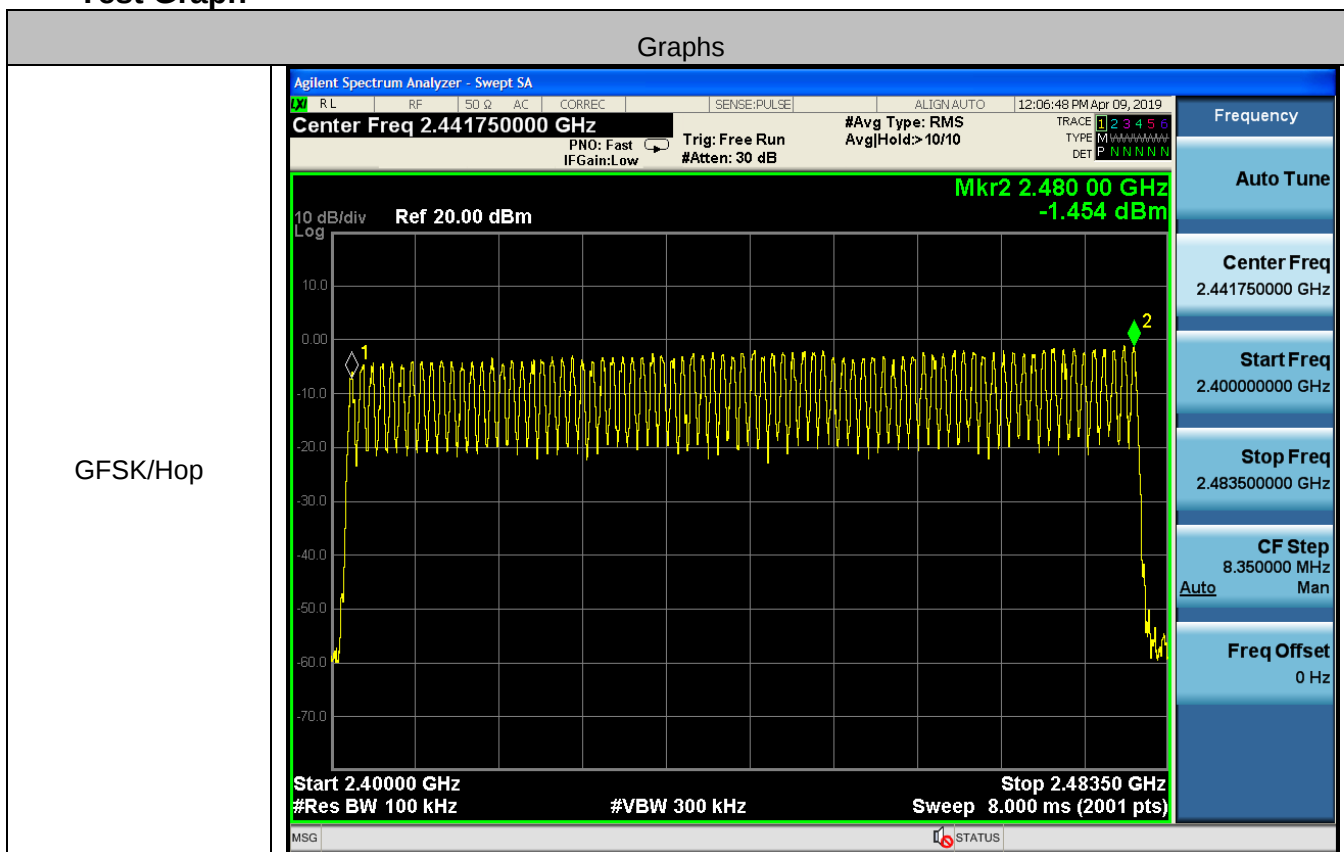




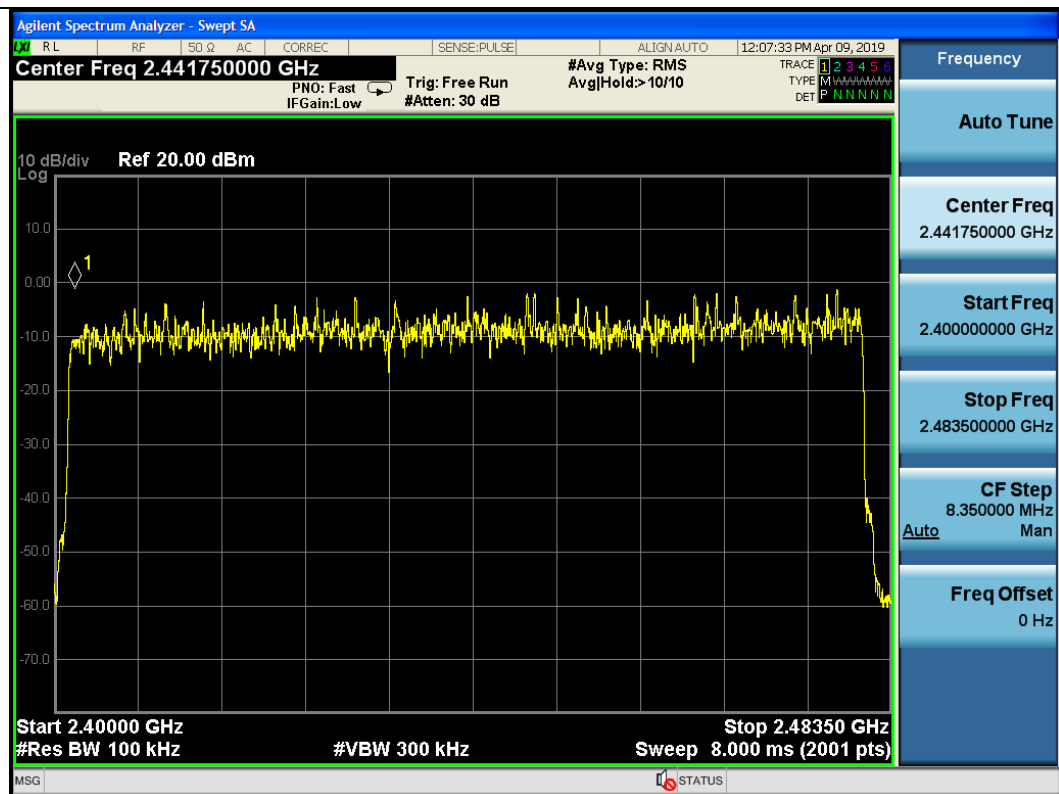
A.4 Hopping Channel Number

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

Test Graph



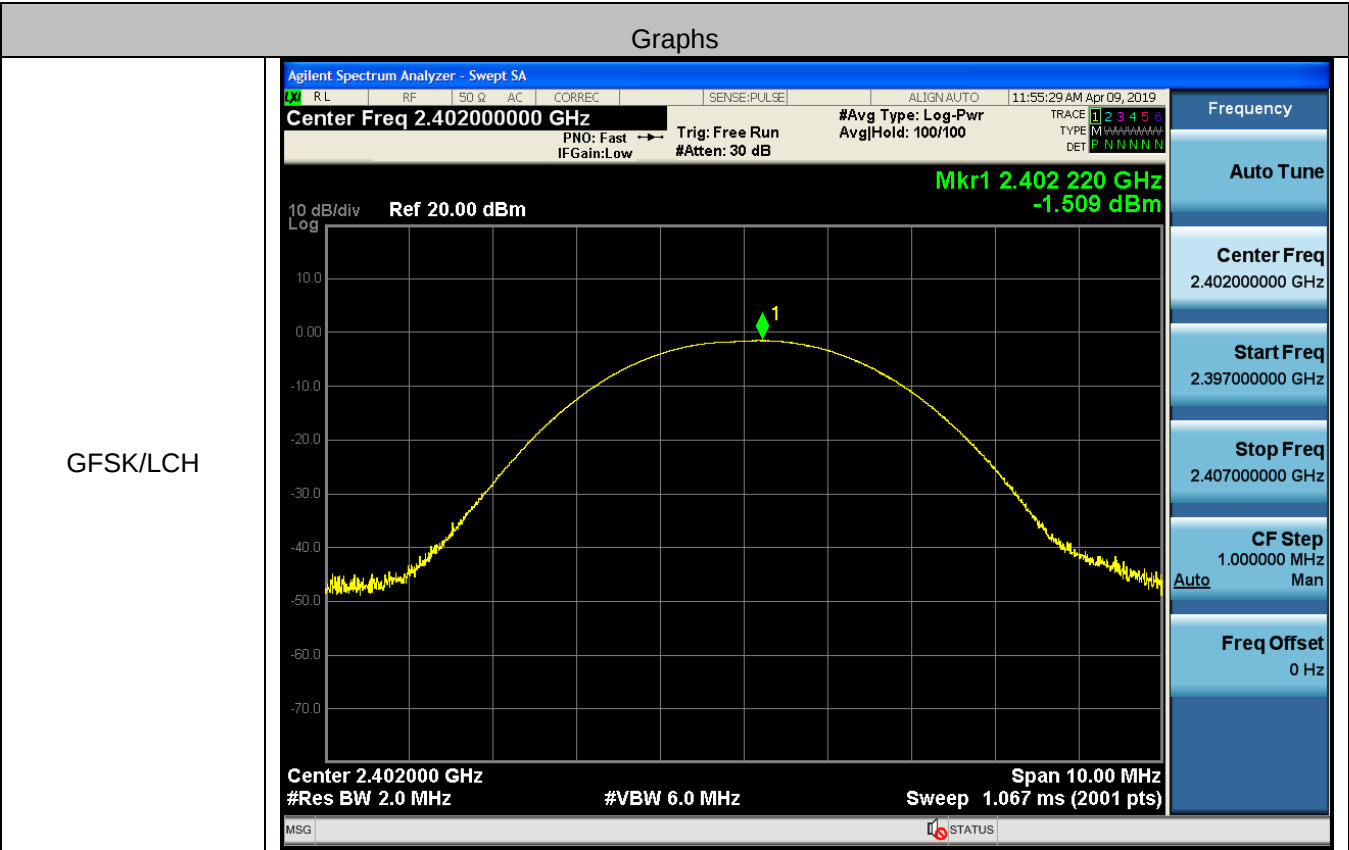
$\pi/4$ DQPSK/Hop

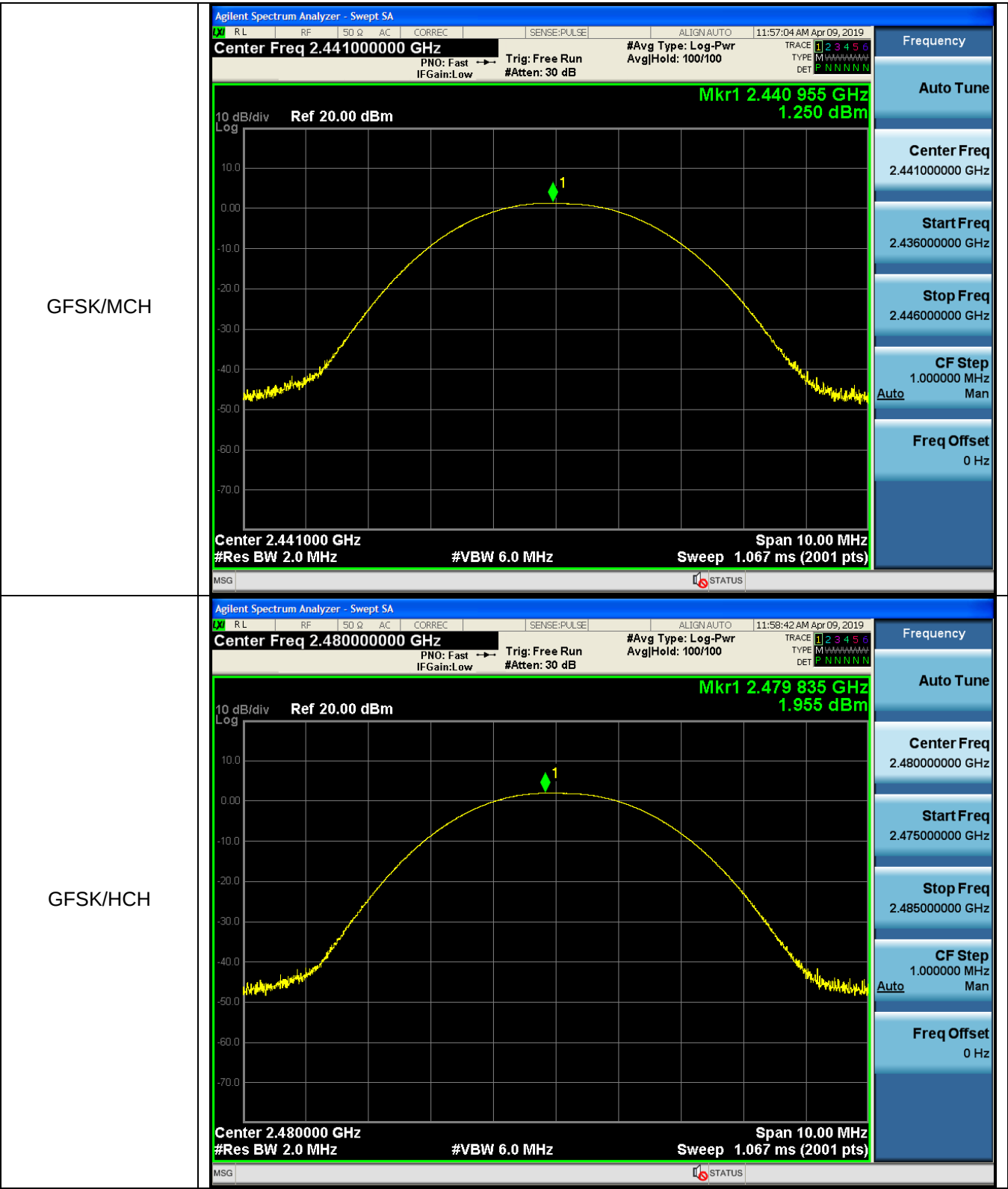


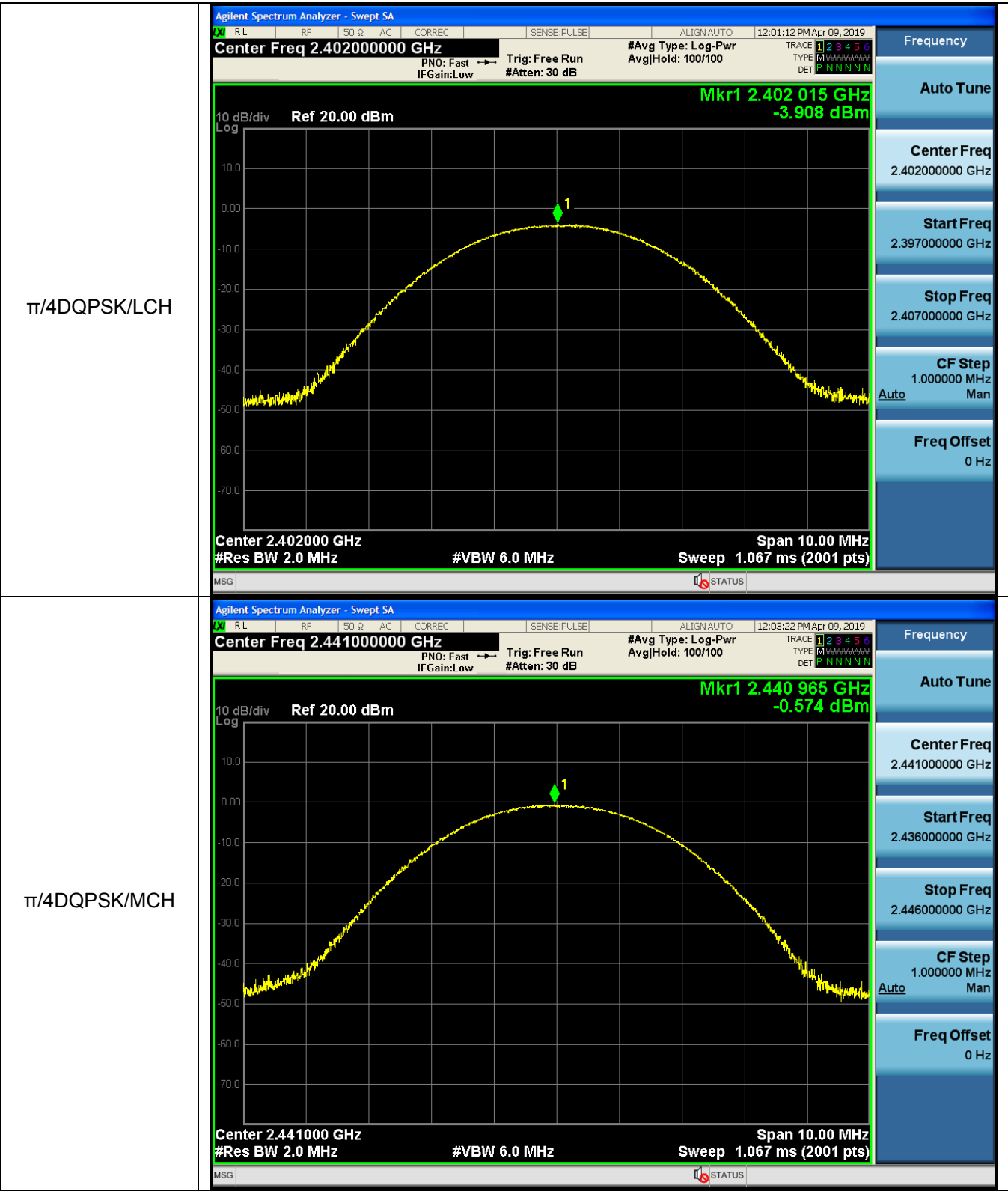
A.5 Conducted Peak Output Power

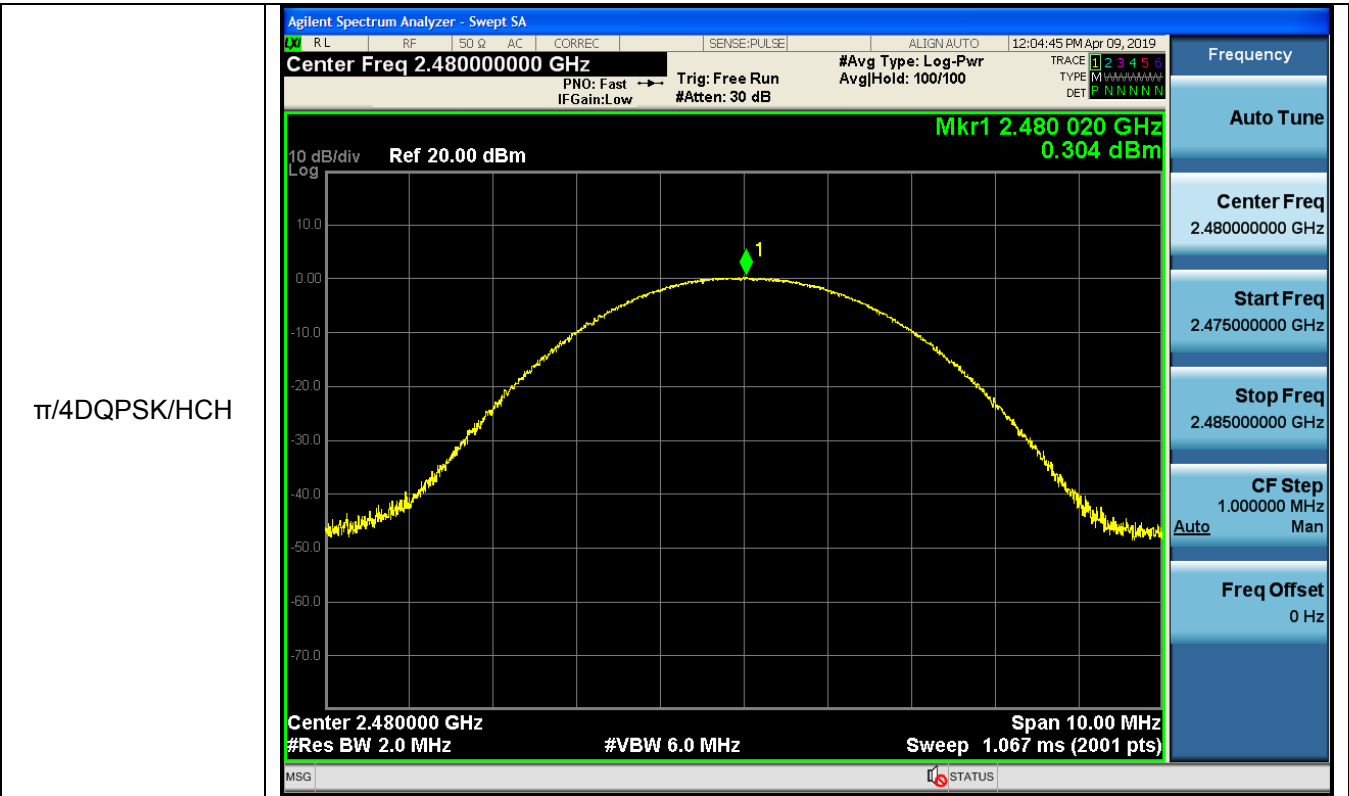
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.509	21	PASS
GFSK	MCH	1.250	21	PASS
GFSK	HCH	1.955	21	PASS
$\pi/4$ DQPSK	LCH	-3.908	21	PASS
$\pi/4$ DQPSK	MCH	-0.574	21	PASS
$\pi/4$ DQPSK	HCH	0.304	21	PASS

Test Graph









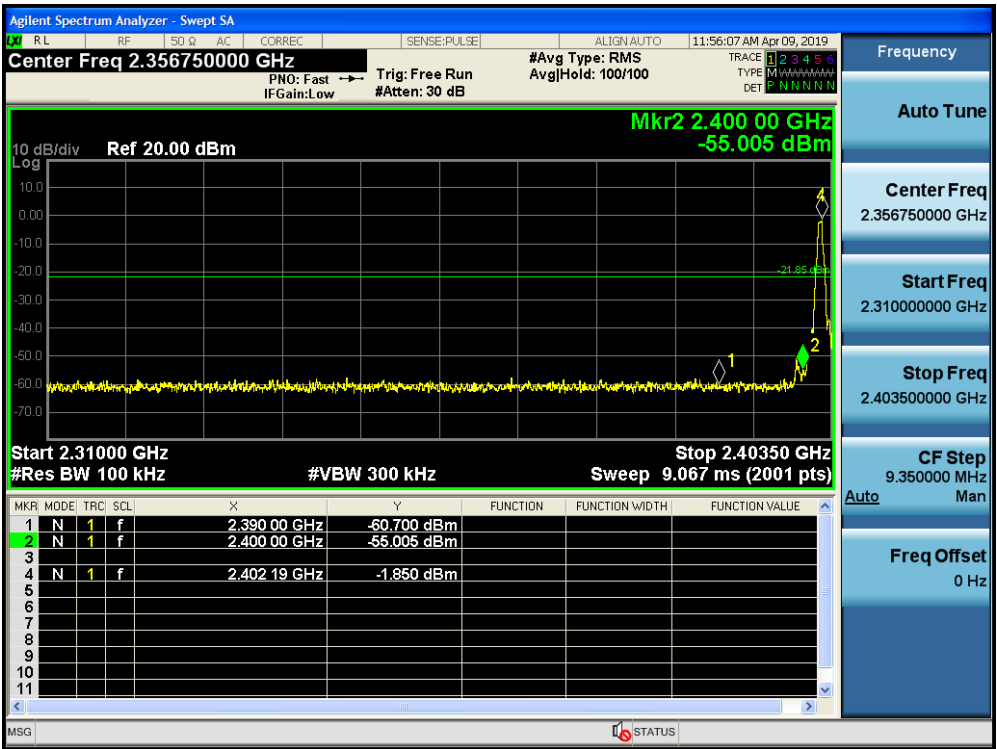
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2390	-1.850	-60.70	-21.850	Pass
1DH5	2402	2400	-1.850	-55.00	-21.850	Pass
1DH5	2480	2483.5	1.487	-60.75	-18.513	Pass
1DH5	2480	2500	1.487	-59.87	-18.513	Pass
2DH5	2402	2390	-5.385	-59.50	-25.385	Pass
2DH5	2402	2400	-5.385	-57.01	-25.385	Pass
2DH5	2480	2483.5	-1.190	-60.17	-21.190	Pass
2DH5	2480	2500	-1.190	-60.48	-21.190	Pass
1DH5-Hopping	2402	2390	-3.266	-60.32	-23.266	Pass
1DH5-Hopping	2402	2400	-3.266	-59.96	-23.266	Pass
1DH5-Hopping	2480	2483.5	-1.547	-59.82	-21.547	Pass
1DH5-Hopping	2480	2500	-1.547	-56.58	-21.547	Pass
2DH5-Hopping	2402	2390	-4.459	-58.49	-24.459	Pass
2DH5-Hopping	2402	2400	-4.459	-55.81	-24.459	Pass
2DH5-Hopping	2480	2483.5	-1.093	-56.34	-21.093	Pass
2DH5-Hopping	2480	2500	-1.093	-56.78	-21.093	Pass

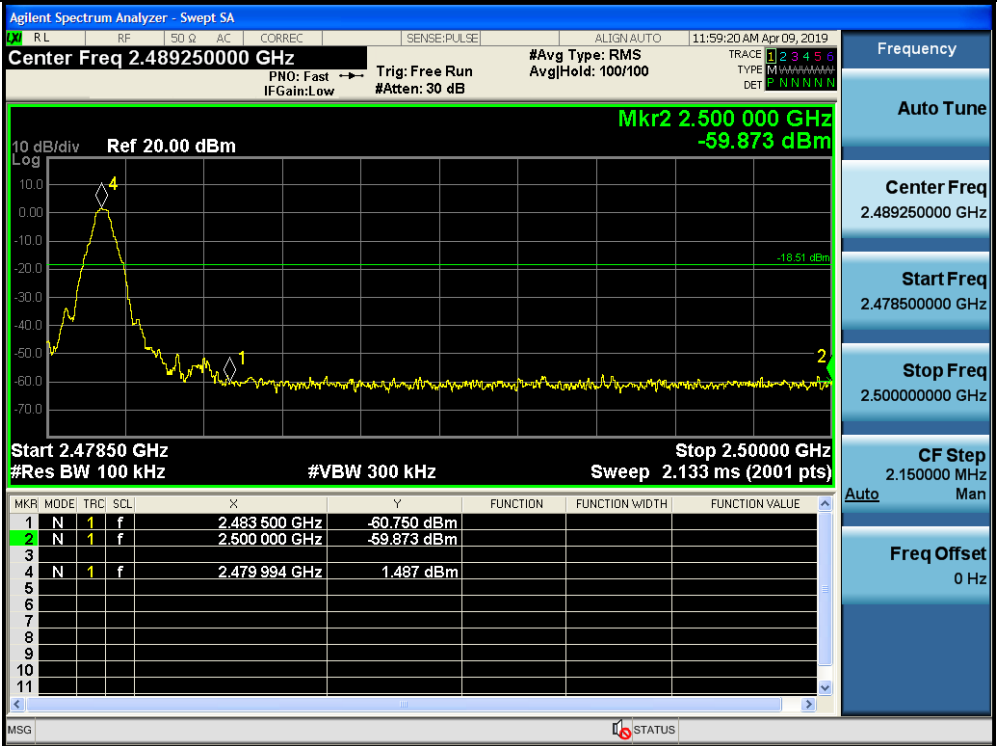
Test Graph

Graphs

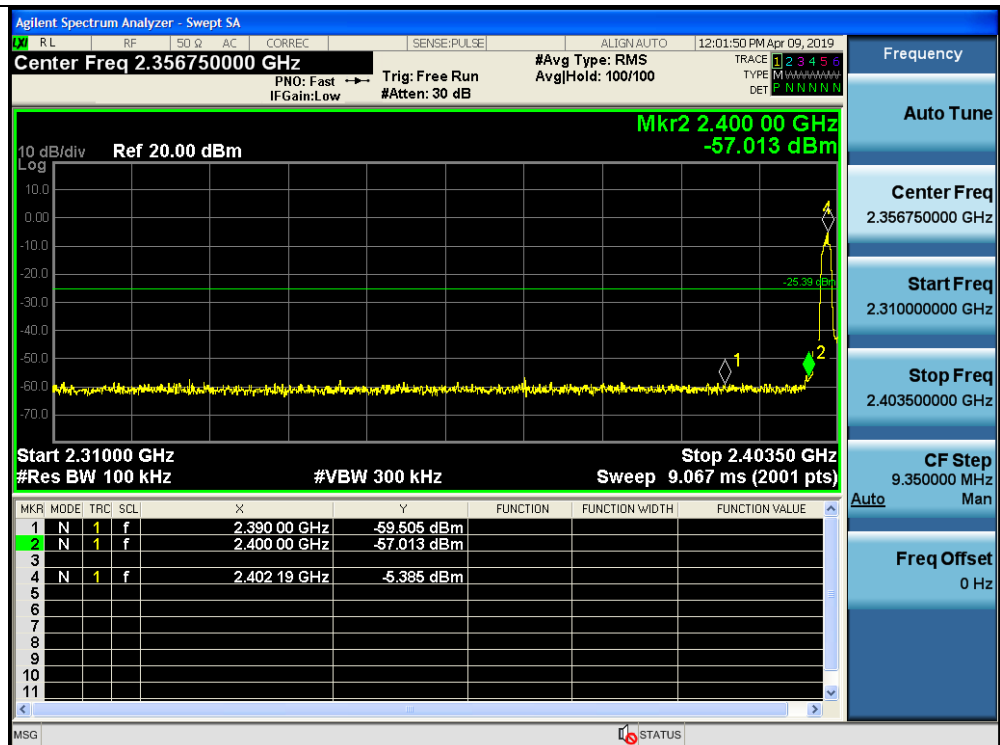
GFSK/LCH/No Hop



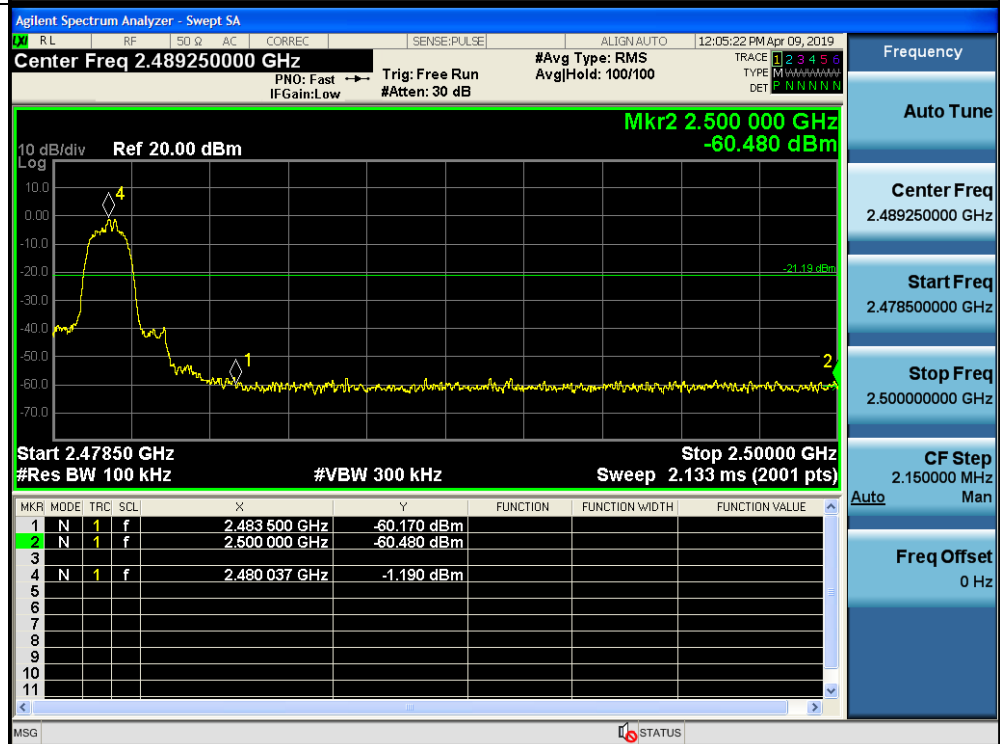
GFSK/HCH/No Hop



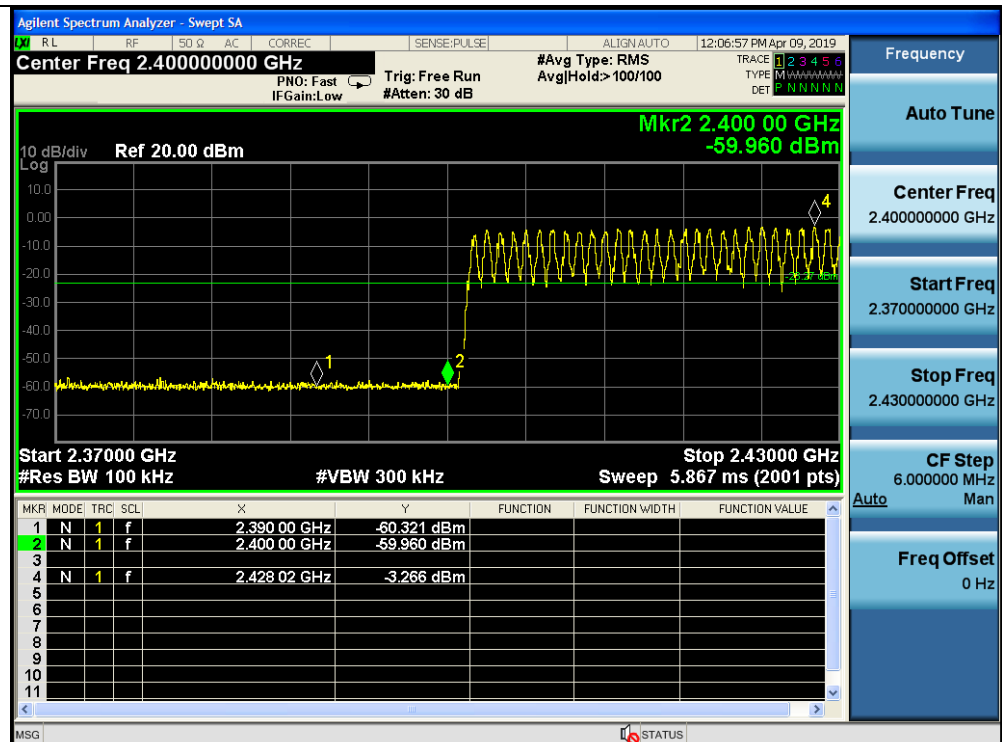
π /4DQPSK/LCH/No
Hop



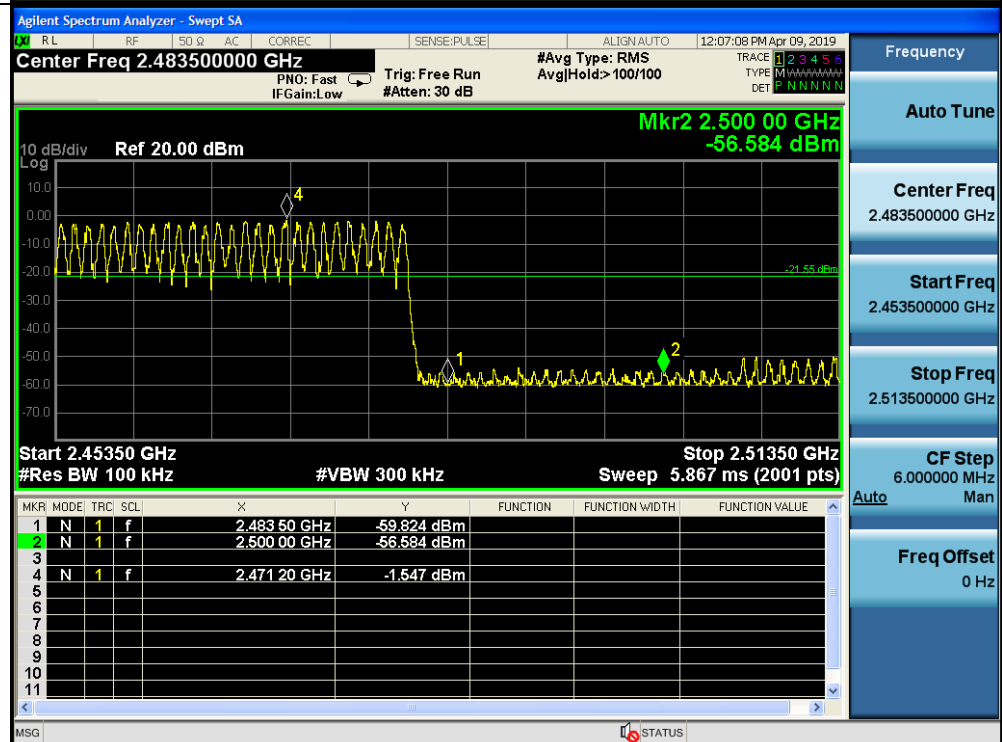
π /4DQPSK/HCH/No
Hop



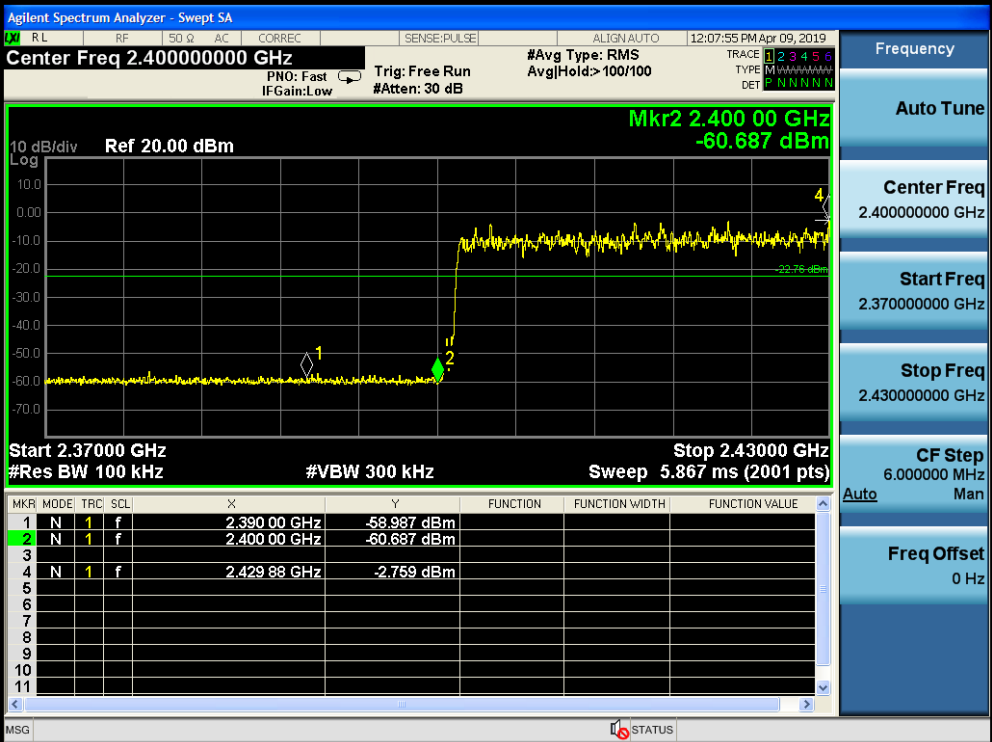
GFSK/LCH/Hop



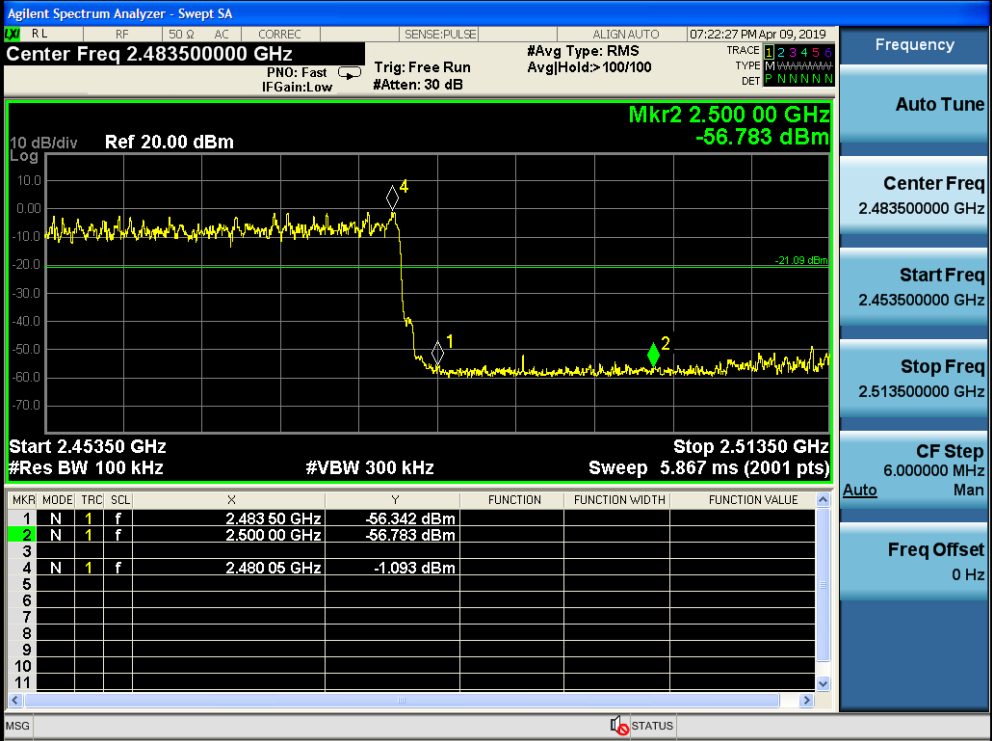
GFSK/HCH/Hop



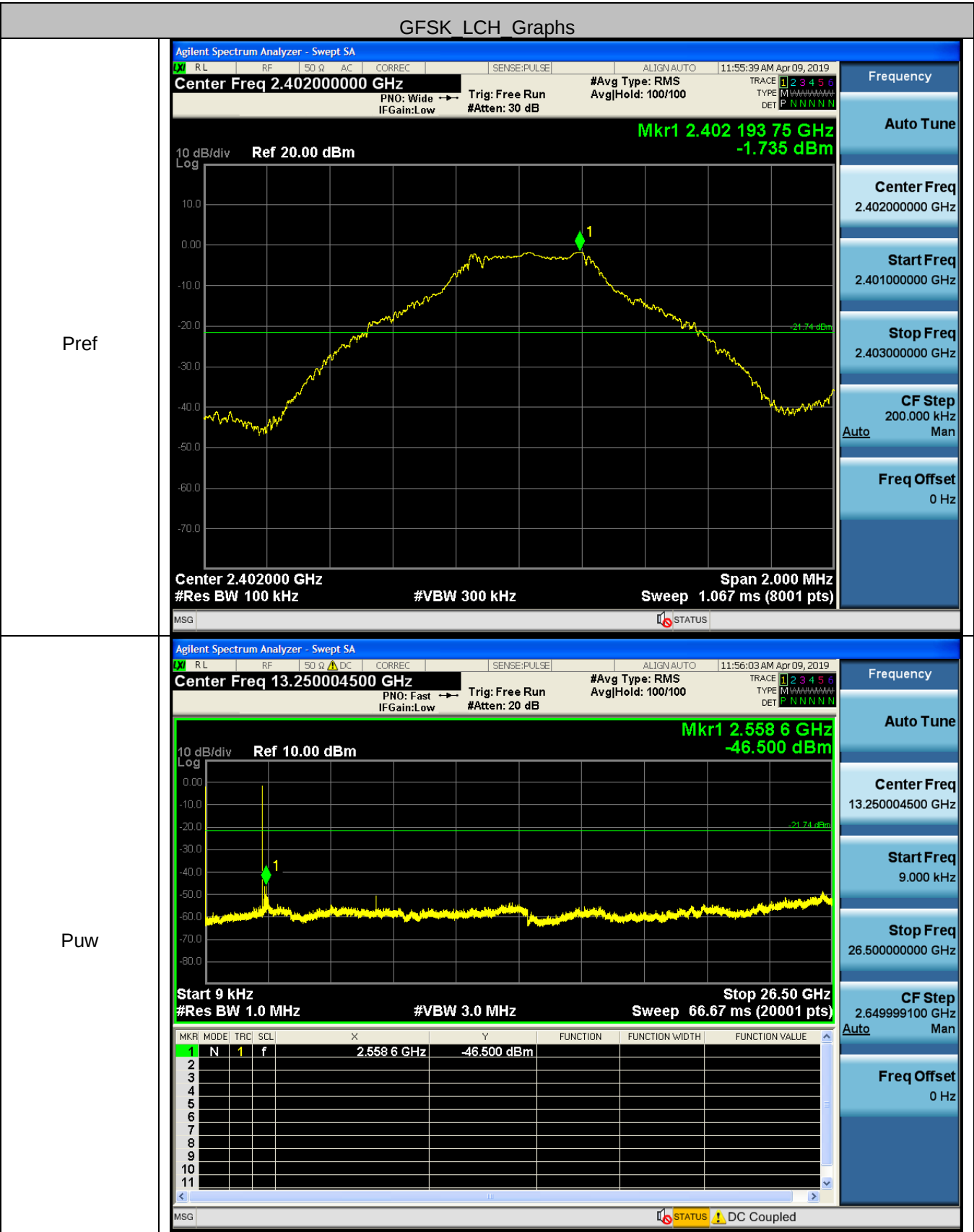
π /4DQPSK/LCH/Hop

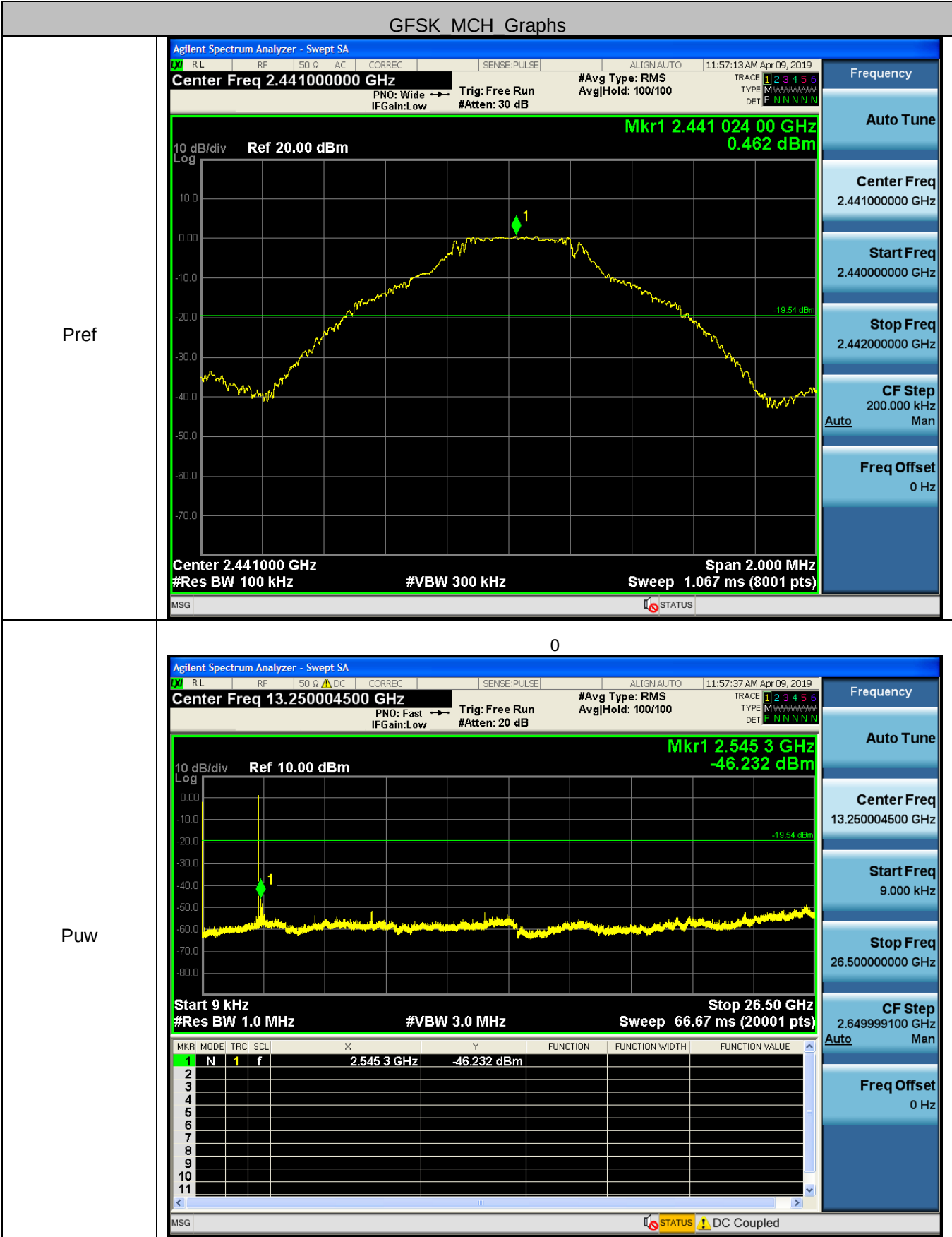


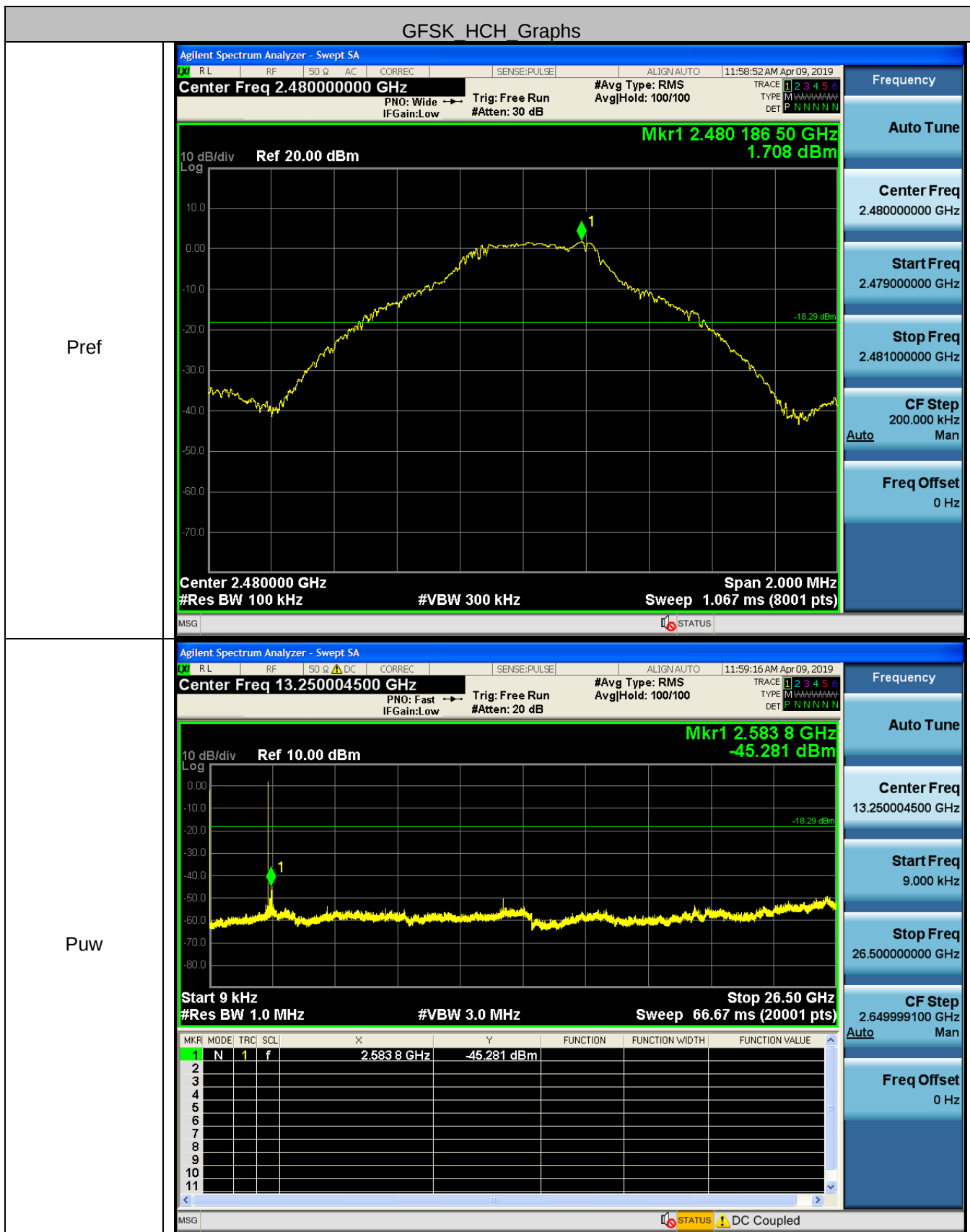
π /4DQPSK/HCH/Hop

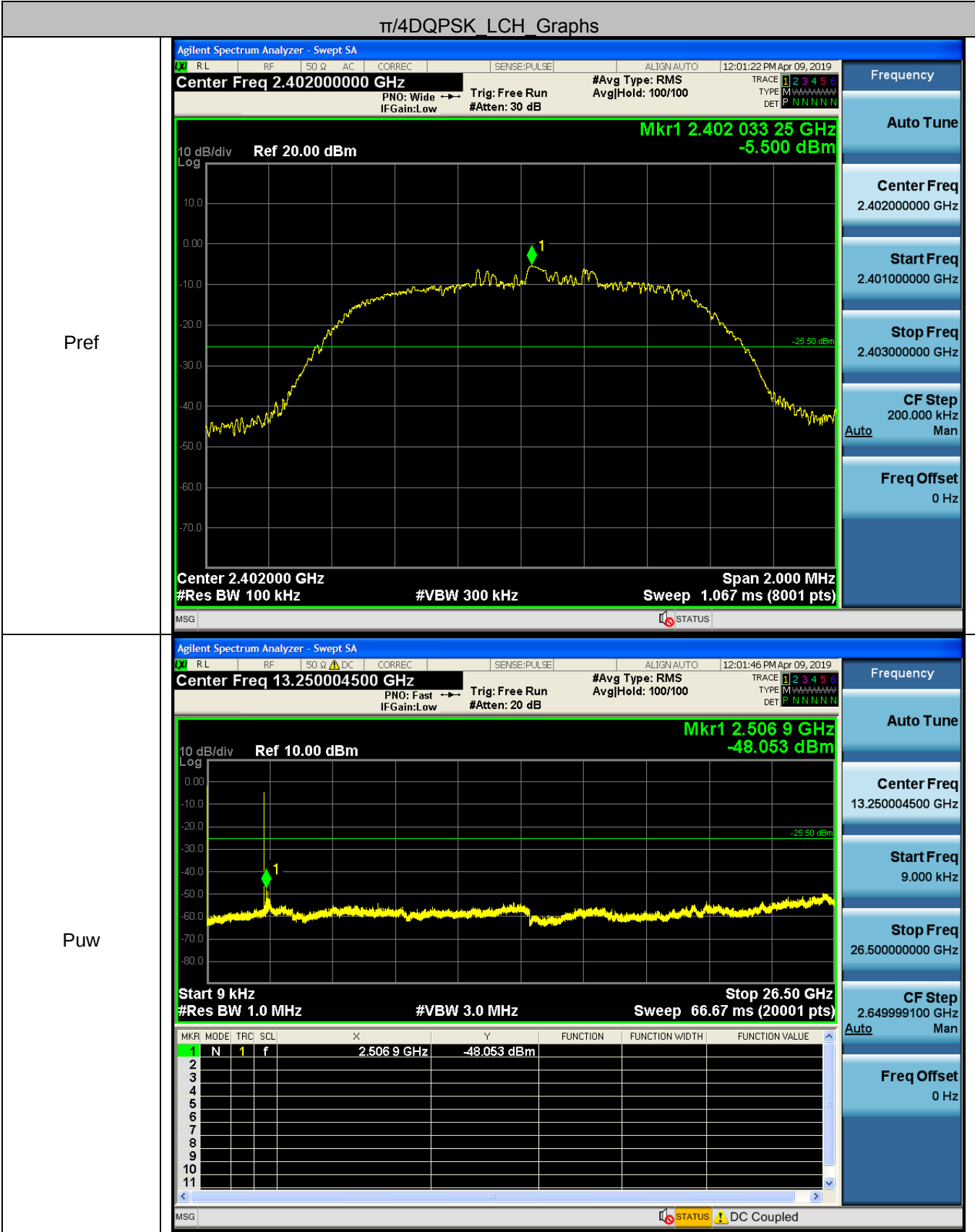


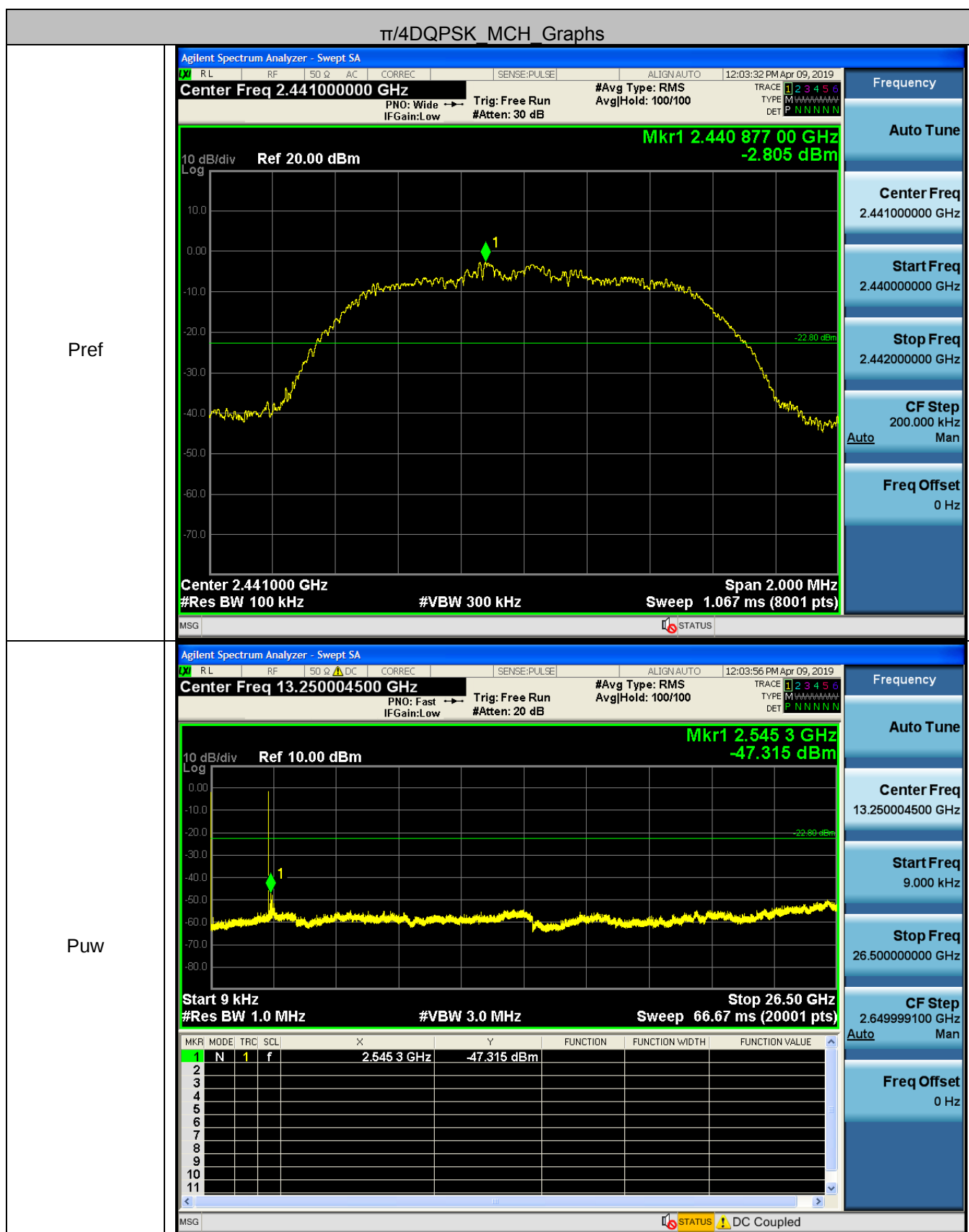
A.7 RF Conducted Spurious Emissions
Test Graph

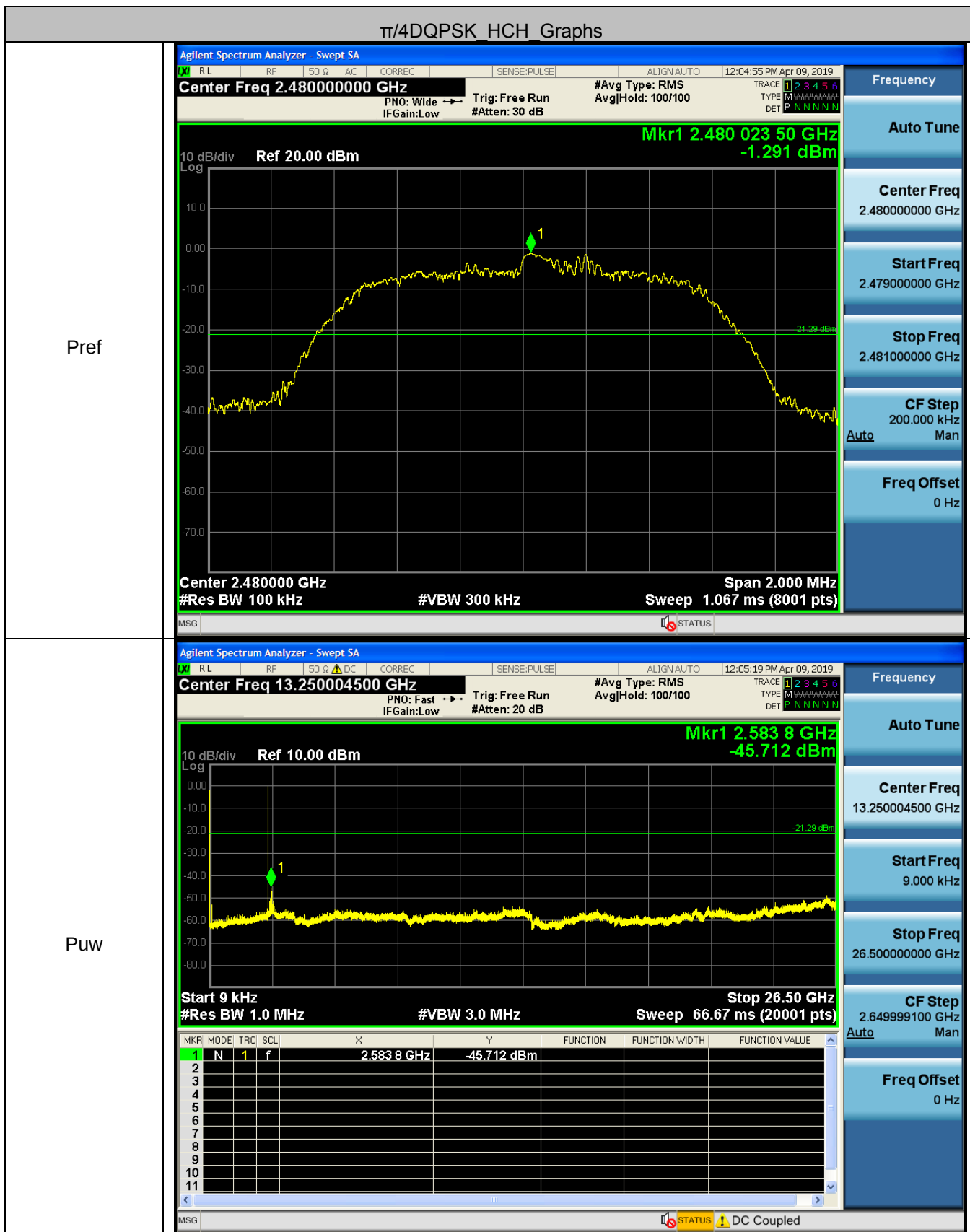








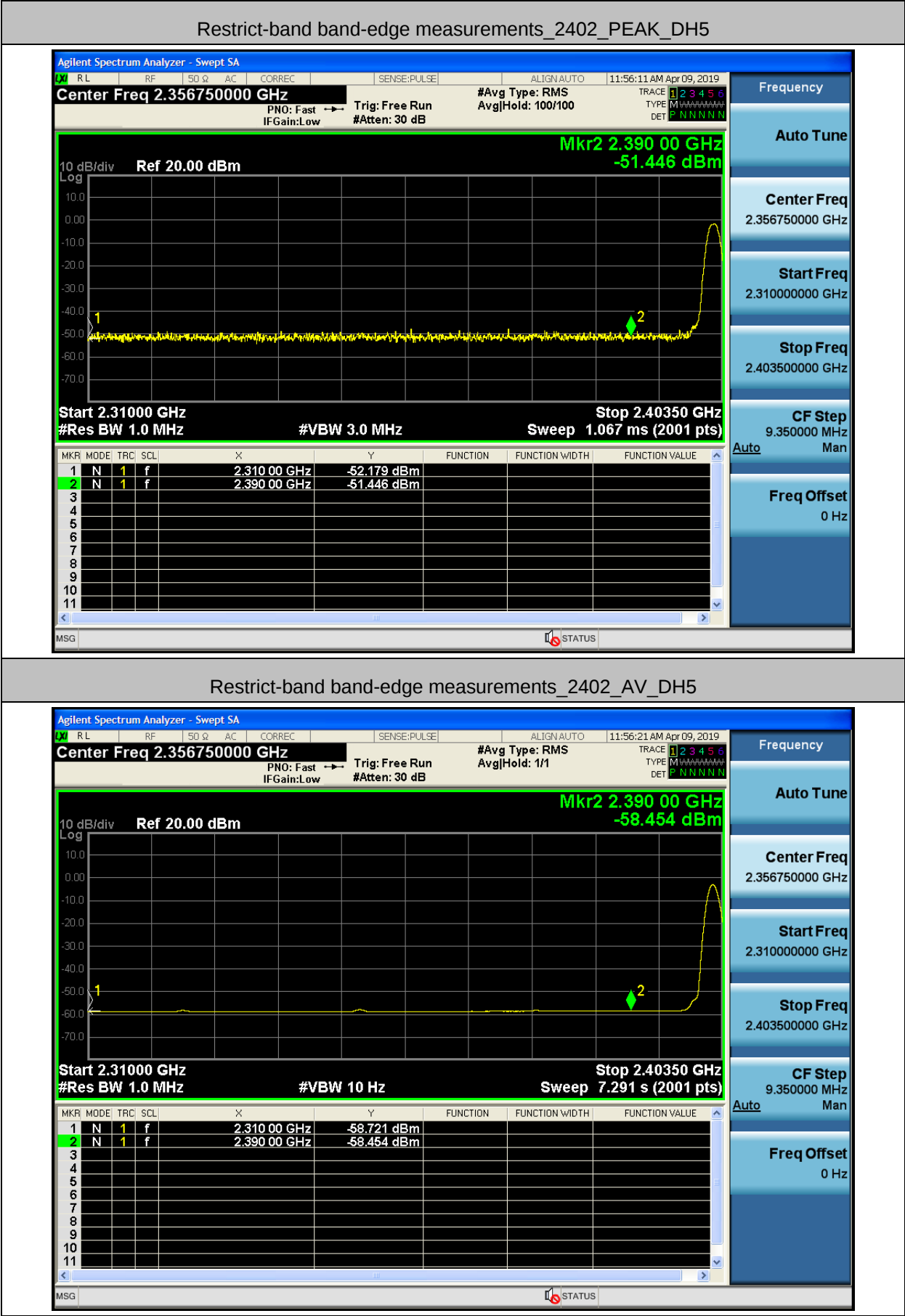




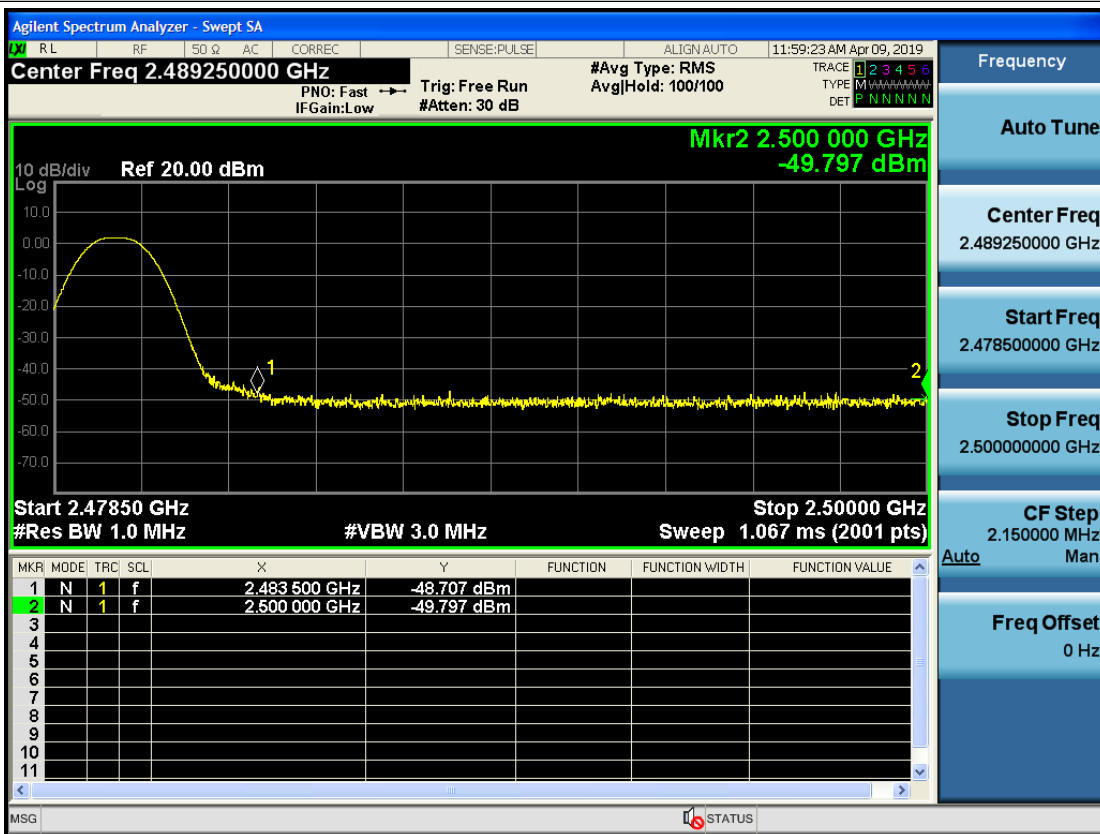
A.8 Restrict-band measurements

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	-52.18	45.02	74	-58.72	38.48	38.42	Pass
1DH5	2402	2390	2.00	0.00	-51.45	45.75	74	-58.45	38.75	38.85	Pass
1DH5	2480	2483.5	2.00	0.00	-48.71	48.49	74	-54.48	42.72	45.33	Pass
1DH5	2480	2500	2.00	0.00	-49.80	47.40	74	-57.92	39.28	39.58	Pass
2DH5	2402	2310	2.00	0.00	-49.94	47.26	74	-58.72	38.48	38.45	Pass
2DH5	2402	2390	2.00	0.00	-50.24	46.96	74	-58.49	38.71	38.79	Pass
2DH5	2480	2483.5	2.00	0.00	-49.57	47.63	74	-55.54	41.66	43.37	Pass
2DH5	2480	2500	2.00	0.00	-52.29	44.91	74	-57.90	39.30	39.36	Pass

Test Graph



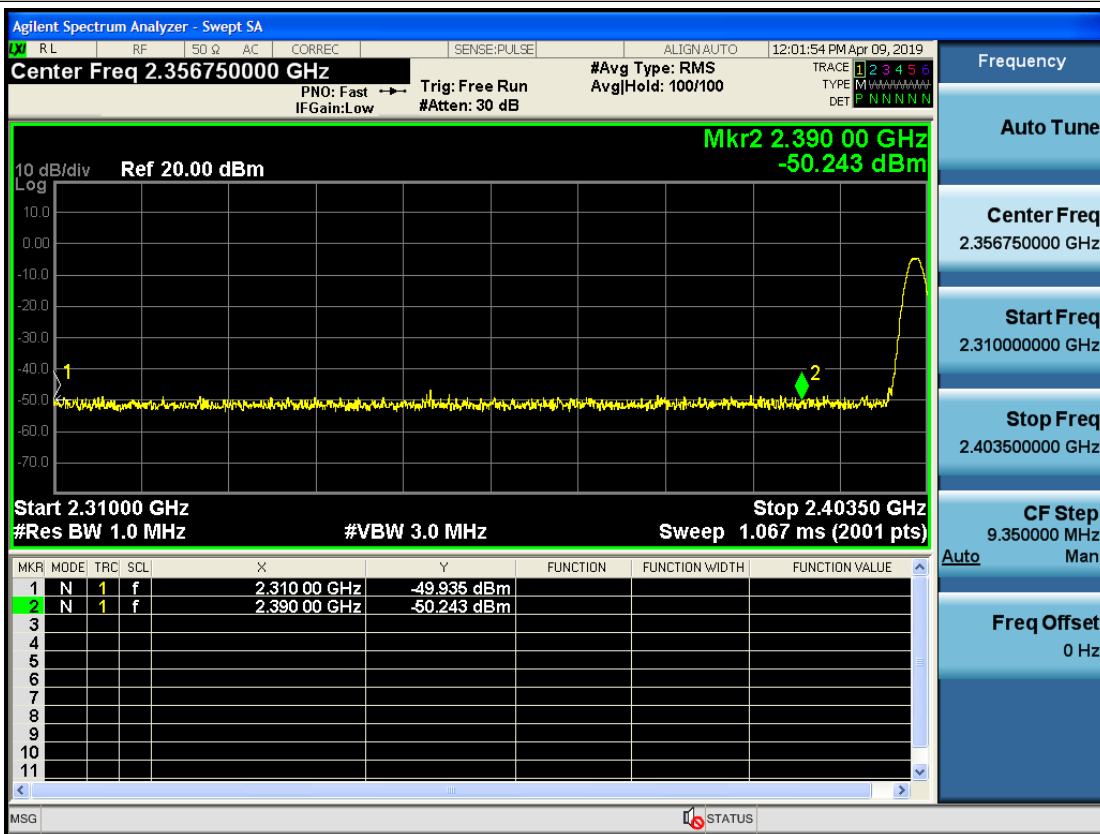
Restrict-band band-edge measurements 2480 PEAK DH5



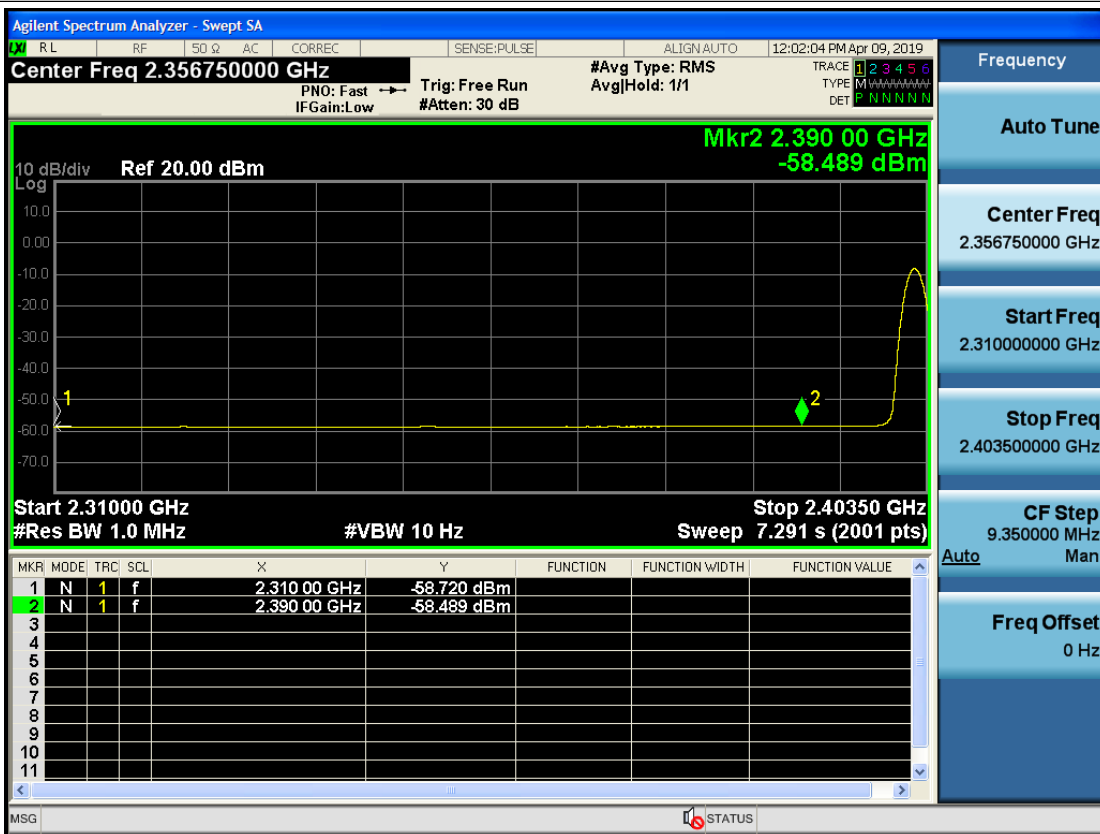
Restrict-band band-edge measurements 2480 AV DH5



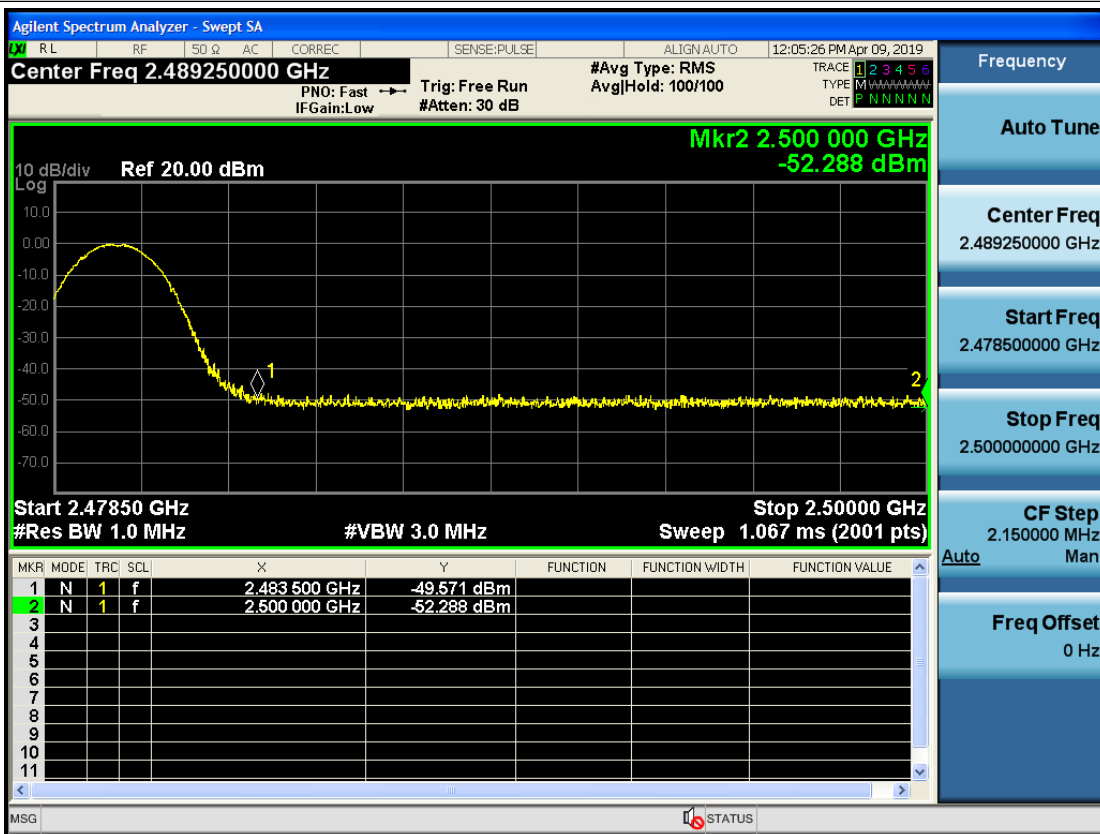
Restrict-band band-edge measurements 2402 PEAK 2DH5



Restrict-band band-edge measurements_2402_AV_2DH5



Restrict-band band-edge measurements 2480 PEAK 2DH5



Restrict-band band-edge measurements_2480_AV_2DH5

