

Appendix A

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

Product Name: Bluetooth headset

Trade Mark: CDX

Test Model: D45

FCC ID: 2AQK8-D45

Environmental Conditions

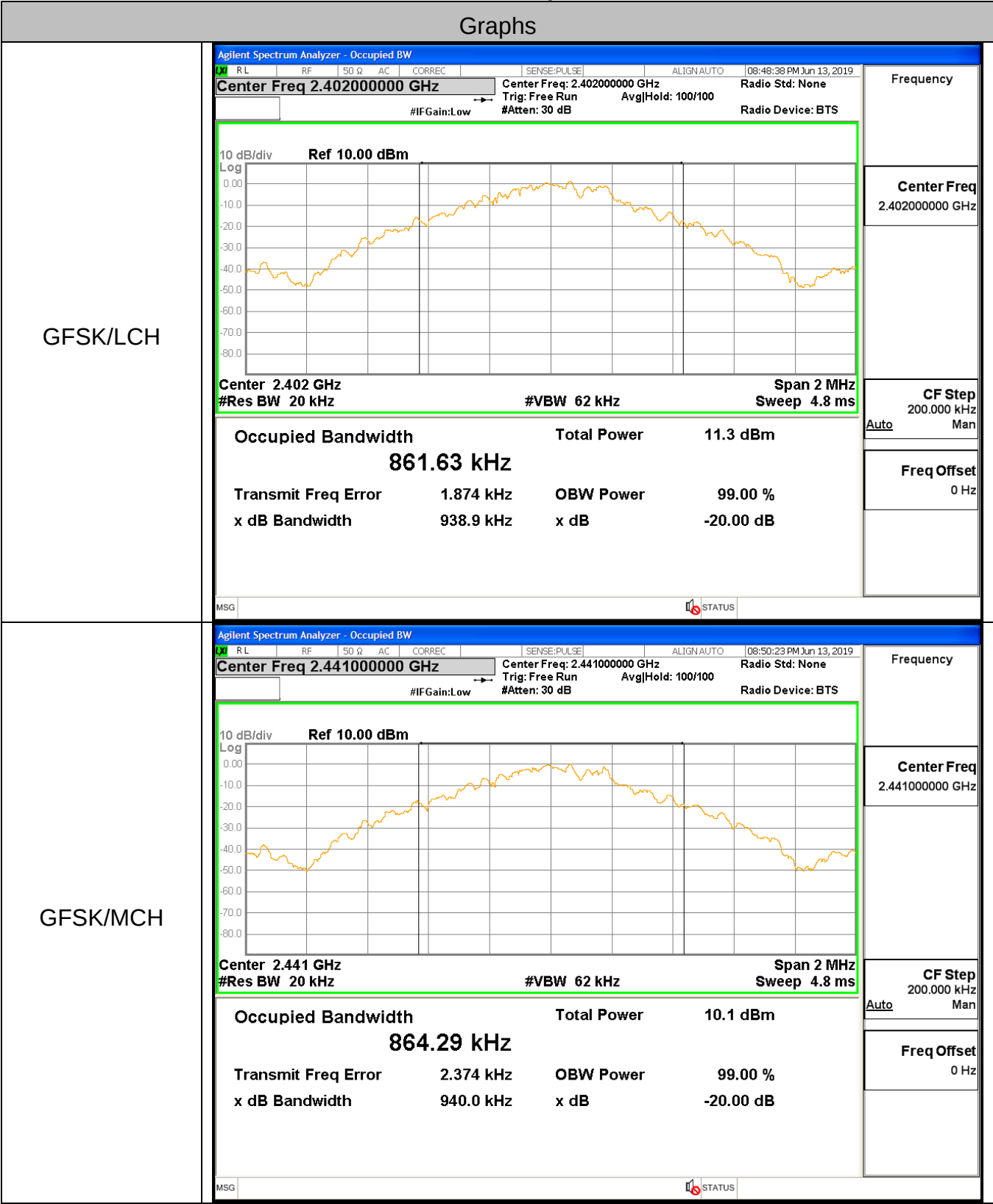
Temperature:	23.3℃
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

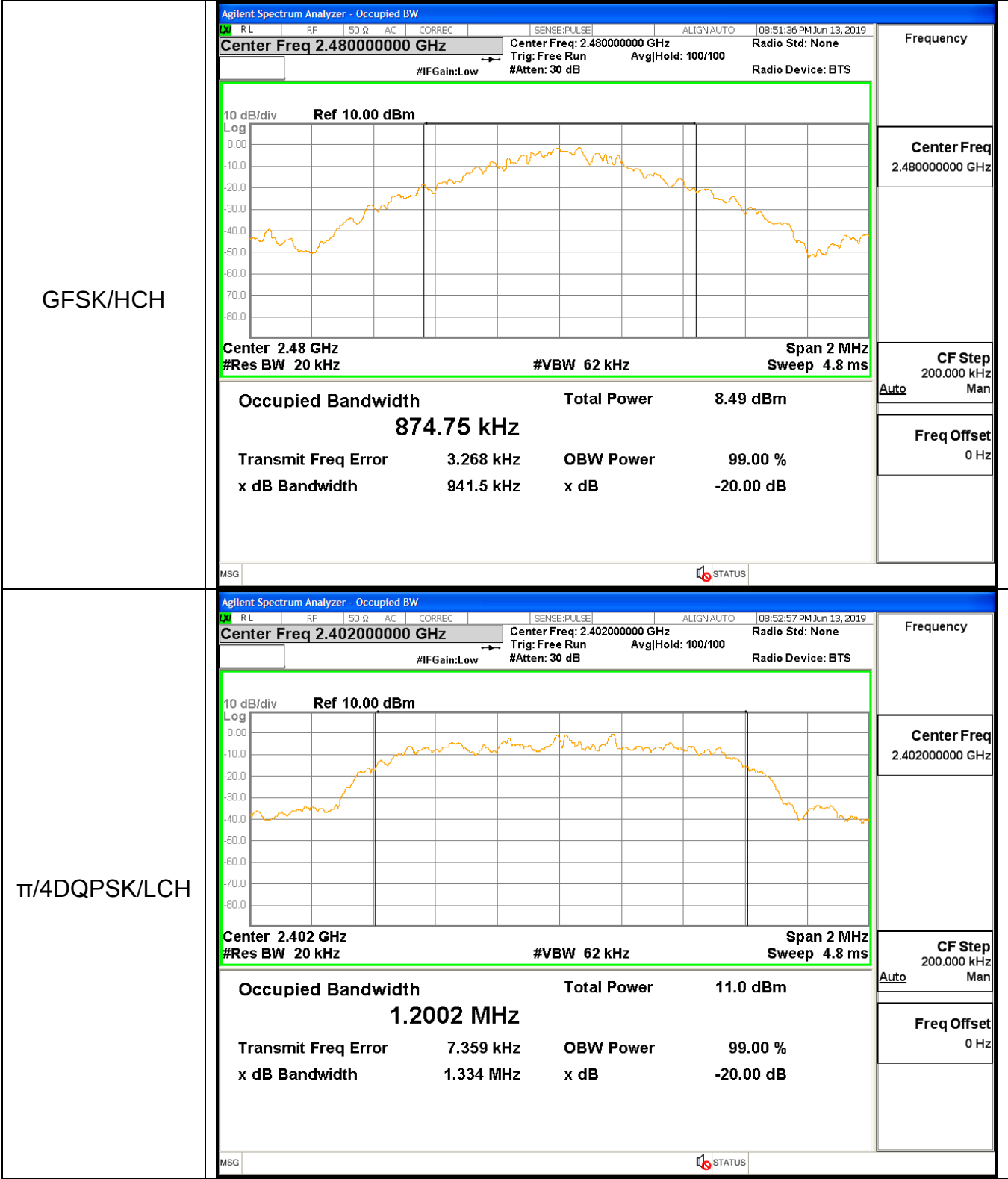
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.939	Not Specified	PASS
GFSK	MCH	0.940	Not Specified	PASS
GFSK	HCH	0.942	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.334	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.340	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.333	Not Specified	PASS
8DPSK	LCH	1.326	Not Specified	PASS
8DPSK	MCH	1.336	Not Specified	PASS
8DPSK	HCH	1.330	Not Specified	PASS

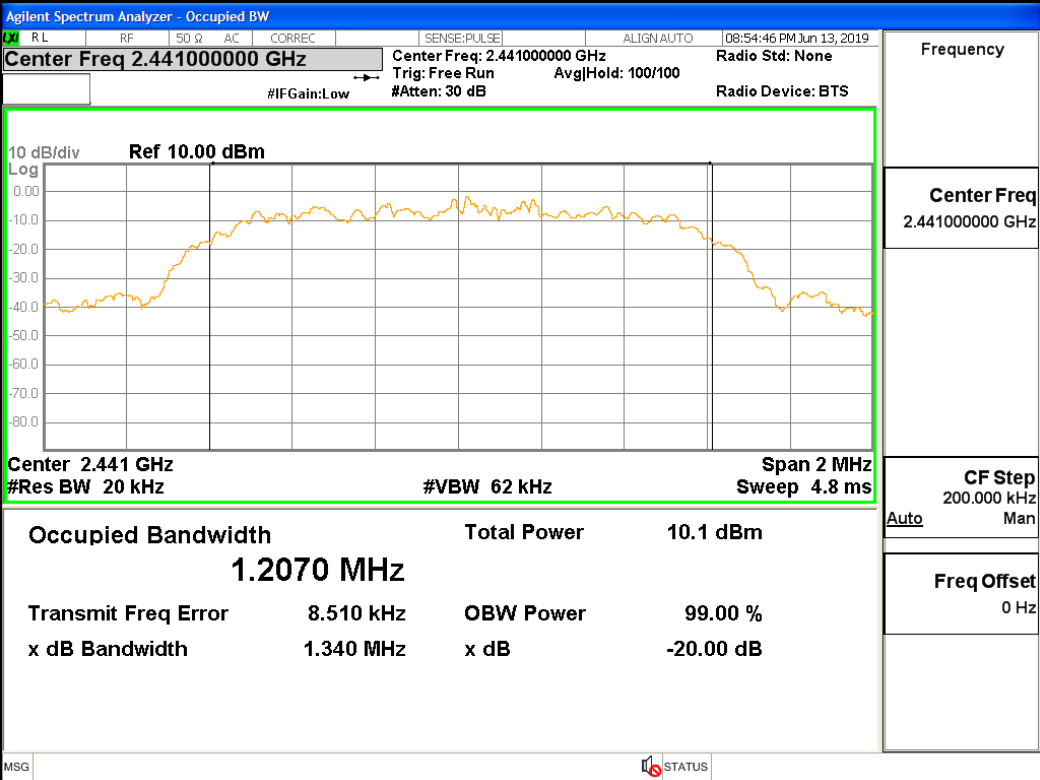
Test Graph

Graphs

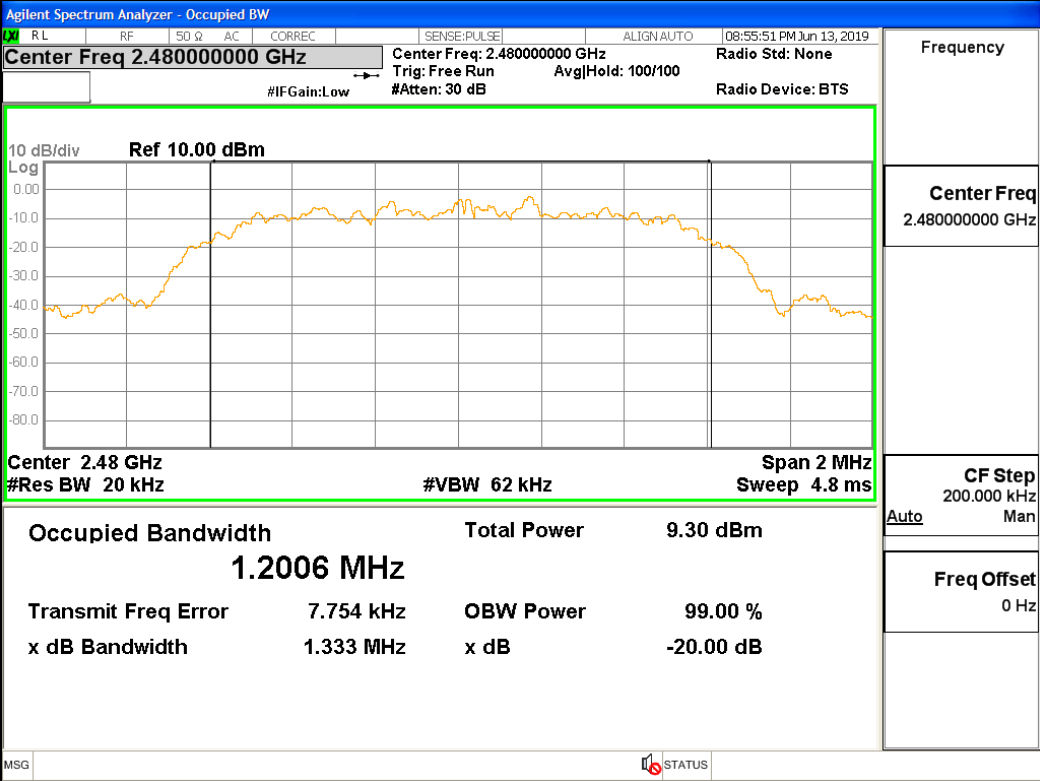


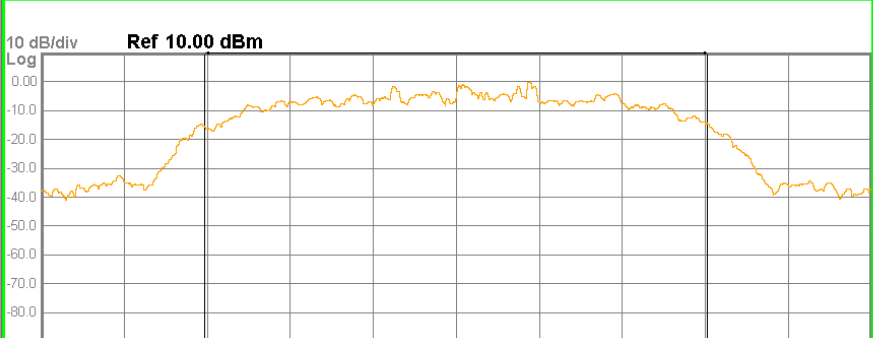
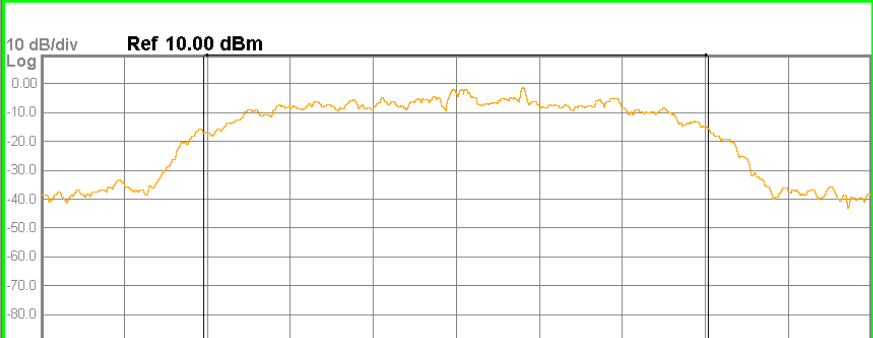


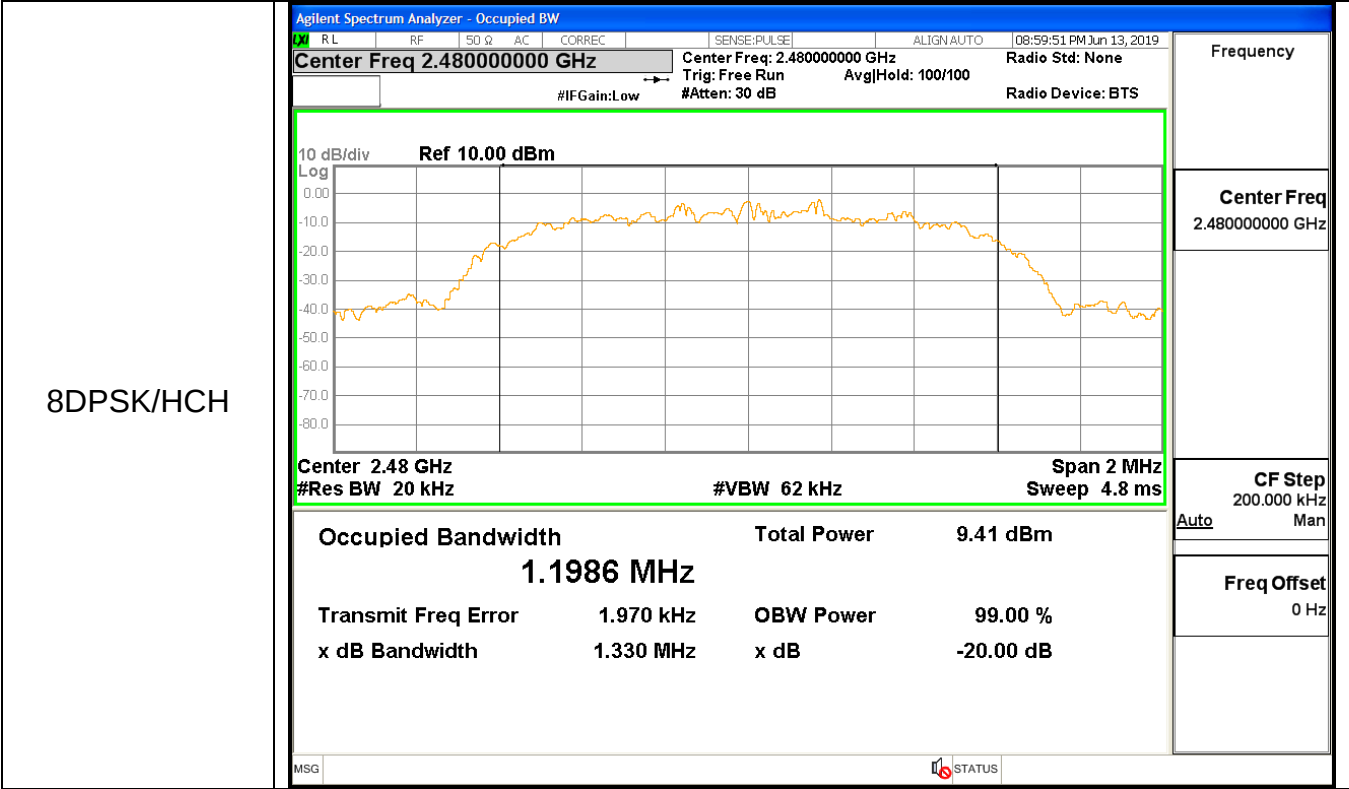
π /4DQPSK/MCH



π /4DQPSK/HCH



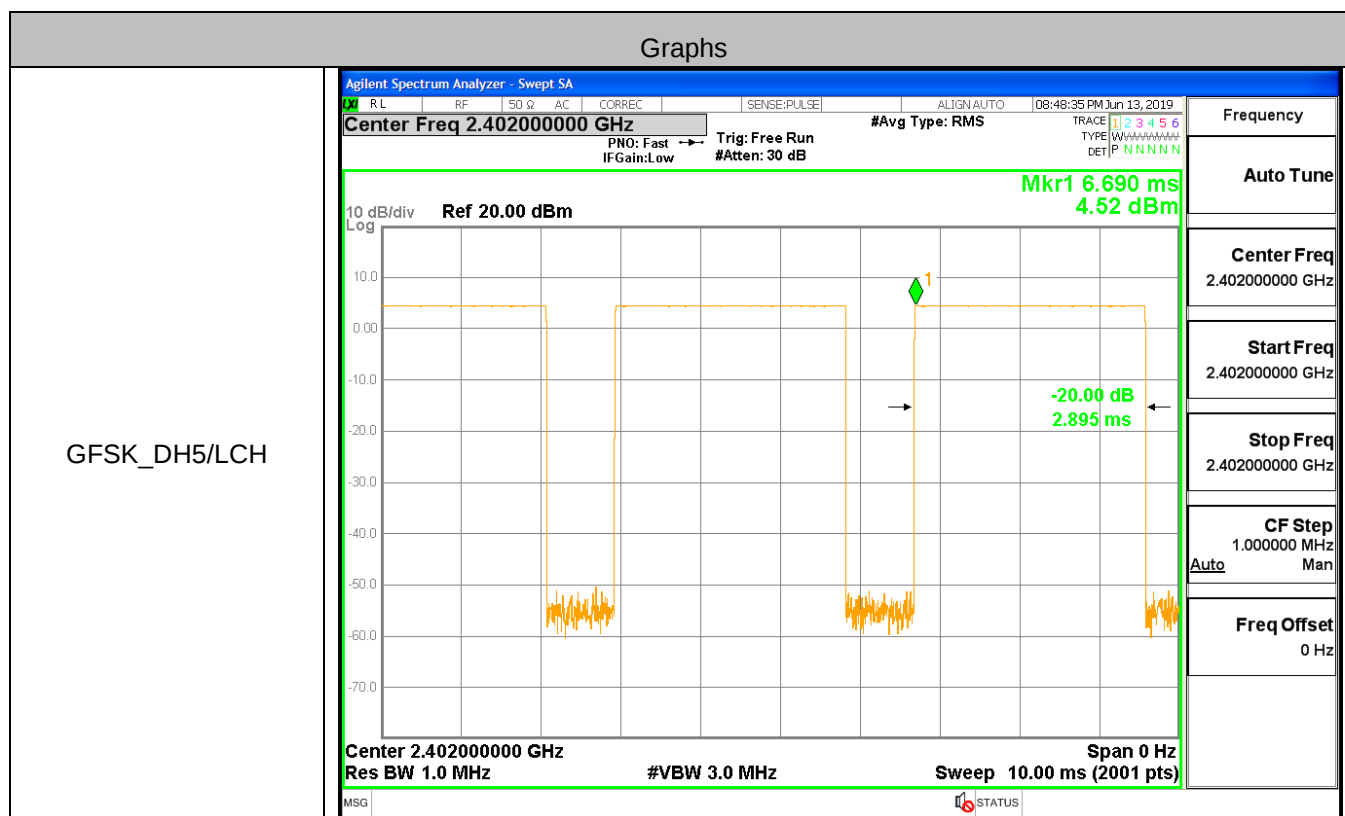
8DPSK/LCH	Agilent Spectrum Analyzer - Occupied BW RLRF50 ΩACCORRECSENSE:PULSEALIGN: AUTO08:57:15 PM Jun 13, 2019 Center Freq 2.402000000 GHzCenter Freq: 2.402000000 GHzRadio Std: None #IFGain:Low#Atten: 30 dBAvgHold: 100/100Radio Device: BTS										Frequency
											Center Freq 2.402000000 GHz
	Center 2.402 GHzSpan 2 MHz #Res BW 20 kHz#VBW 62 kHzSweep 4.8 ms Occupied Bandwidth1.2054 MHzTotal Power11.3 dBm Transmit Freq Error131 HzOBW Power99.00 % x dB Bandwidth1.326 MHzx dB-20.00 dB										CF Step 200.000 kHz AutoMan
	MSGSTATUS										Freq Offset 0 Hz
8DPSK/MCH	Agilent Spectrum Analyzer - Occupied BW RLRF50 ΩACCORRECSENSE:PULSEALIGN: AUTO08:58:48 PM Jun 13, 2019 Center Freq 2.441000000 GHzCenter Freq: 2.441000000 GHzRadio Std: None #IFGain:Low#Atten: 30 dBAvgHold: 100/100Radio Device: BTS										Frequency
											Center Freq 2.441000000 GHz
	Center 2.441 GHzSpan 2 MHz #Res BW 20 kHz#VBW 62 kHzSweep 4.8 ms Occupied Bandwidth1.2094 MHzTotal Power10.2 dBm Transmit Freq Error1.188 kHzOBW Power99.00 % x dB Bandwidth1.336 MHzx dB-20.00 dB										CF Step 200.000 kHz AutoMan
	MSGSTATUS										Freq Offset 0 Hz

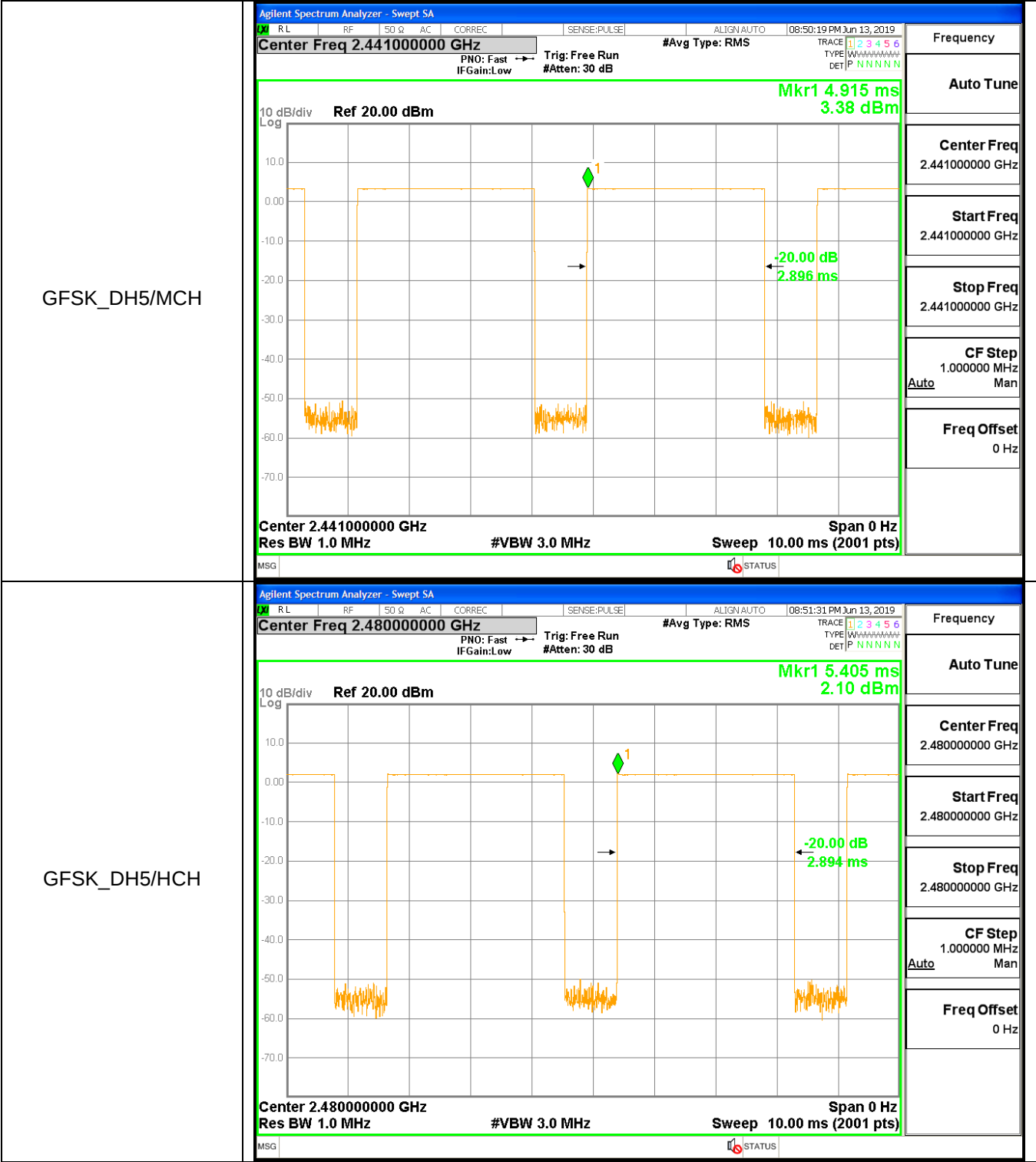


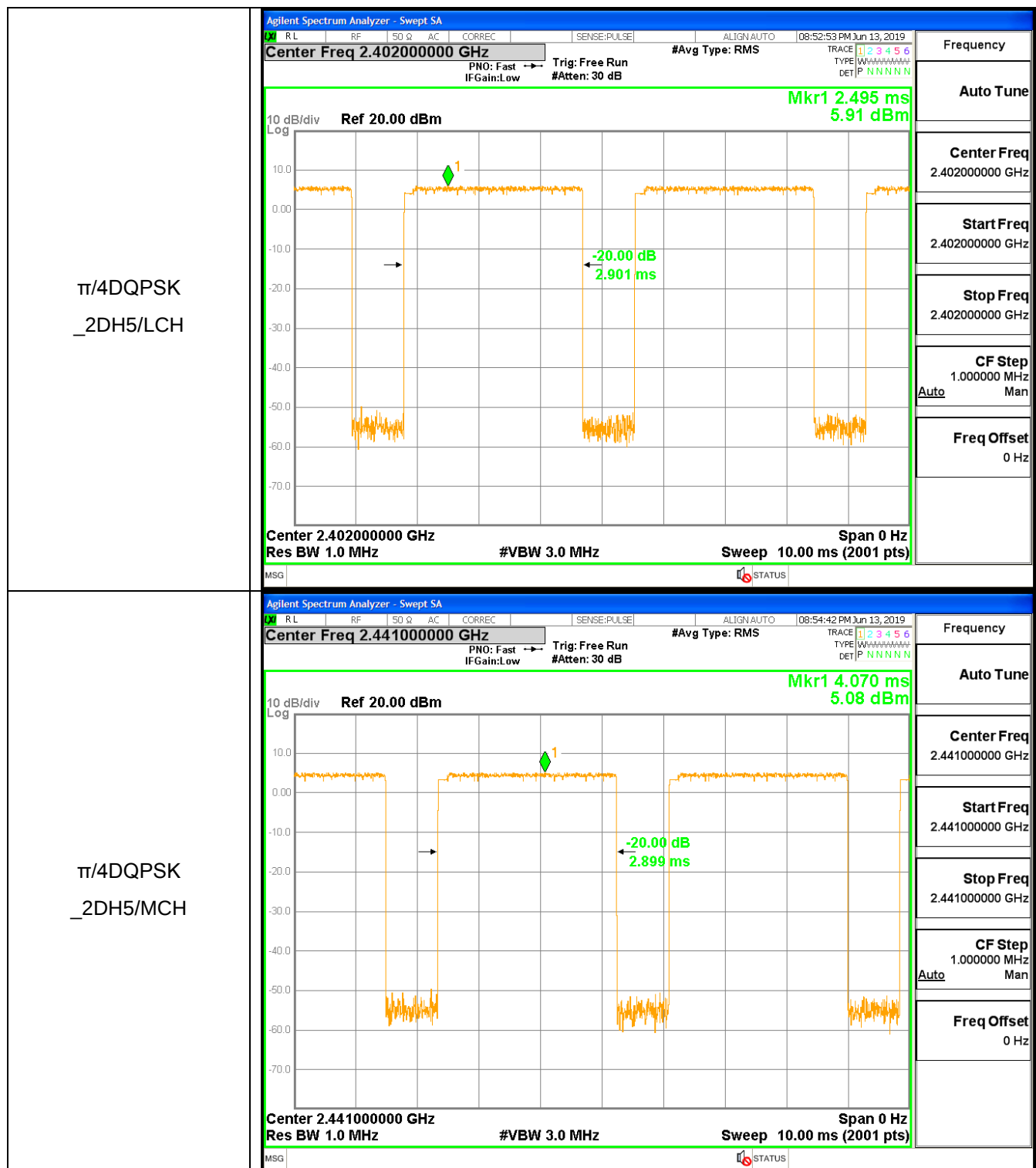
A.2 Dwell Time

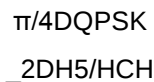
Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002895	106.7	0.002895	0.4	PASS
GFSK	DH5	MCH	0.002896	106.7	0.002896	0.4	PASS
GFSK	DH5	HCH	0.002894	106.7	0.002894	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002901	106.7	0.002901	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002899	106.7	0.002899	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002901	106.7	0.002901	0.4	PASS
8DPSK	3DH5	LCH	0.002900	106.7	0.002900	0.4	PASS
8DPSK	3DH5	MCH	0.002900	106.7	0.002900	0.4	PASS
8DPSK	3DH5	HCH	0.002900	106.7	0.002900	0.4	PASS

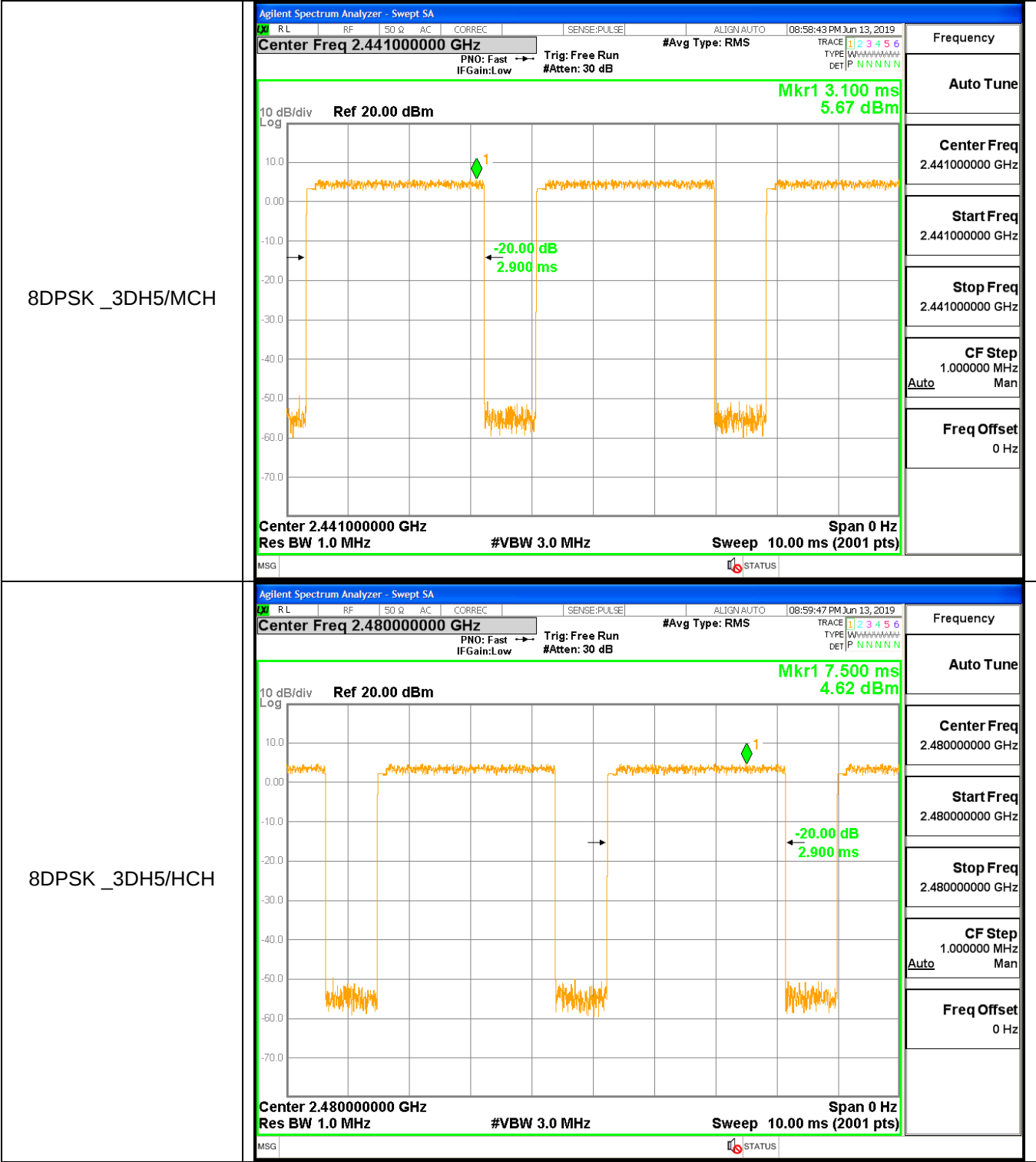
Test Graph







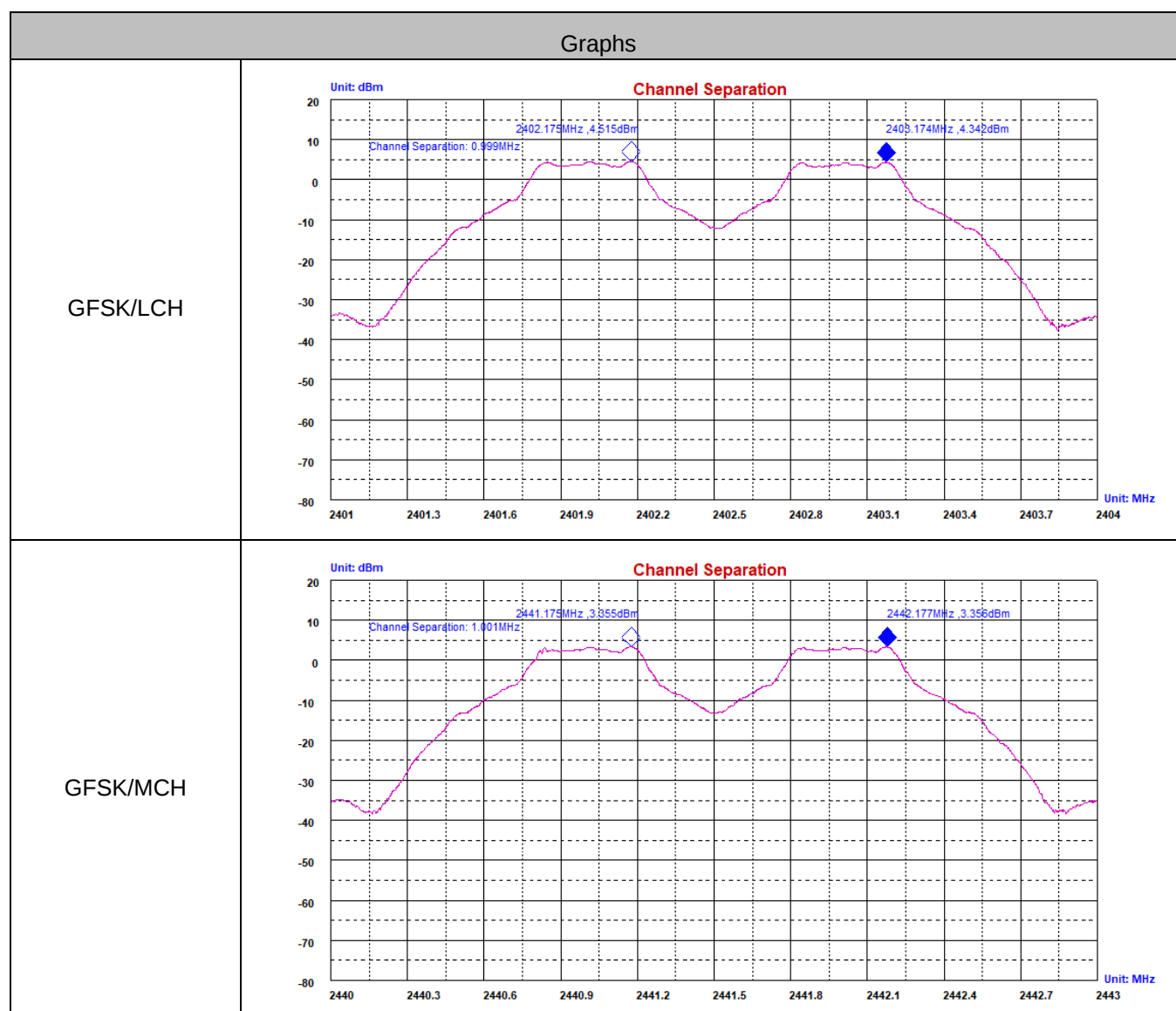


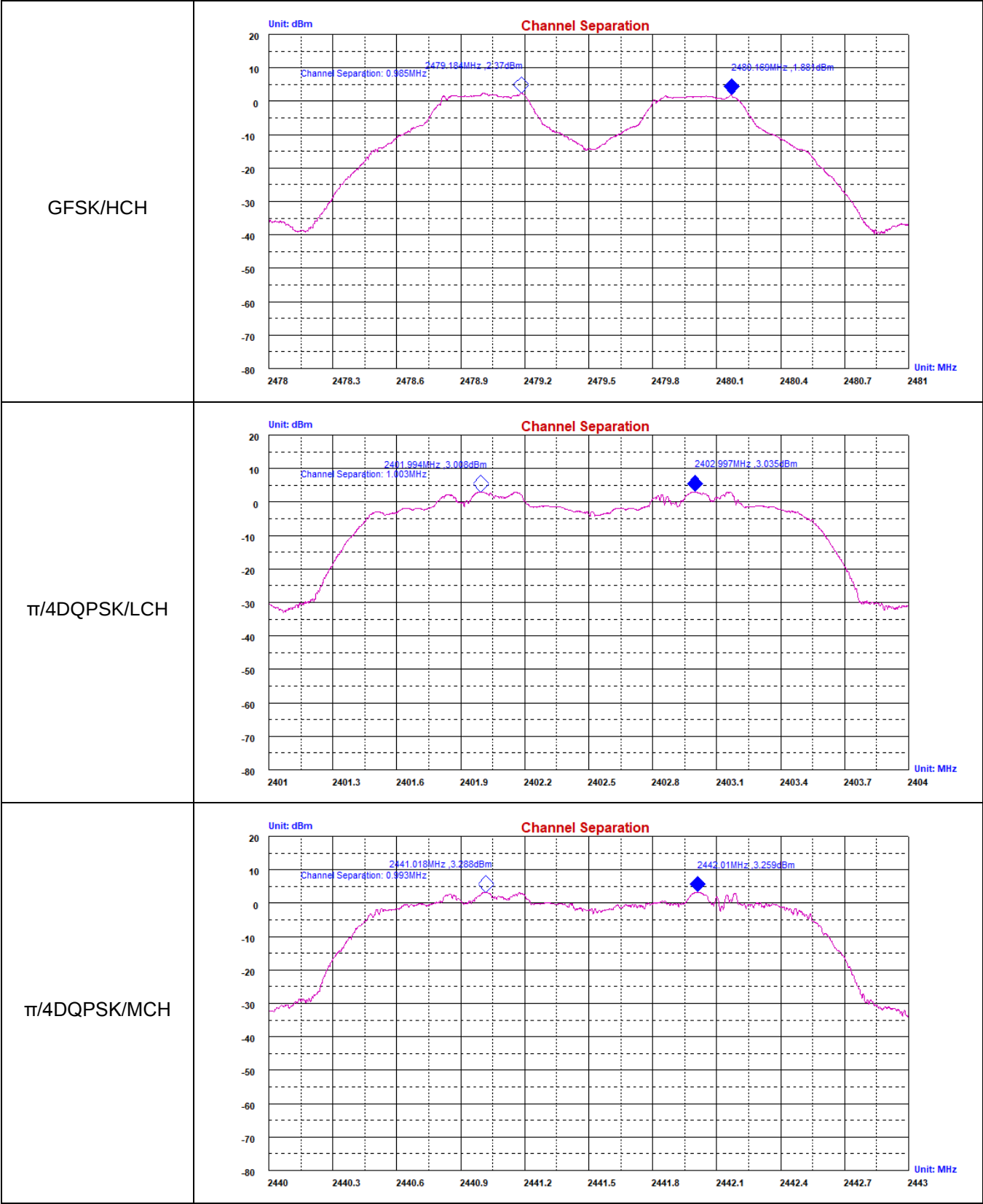


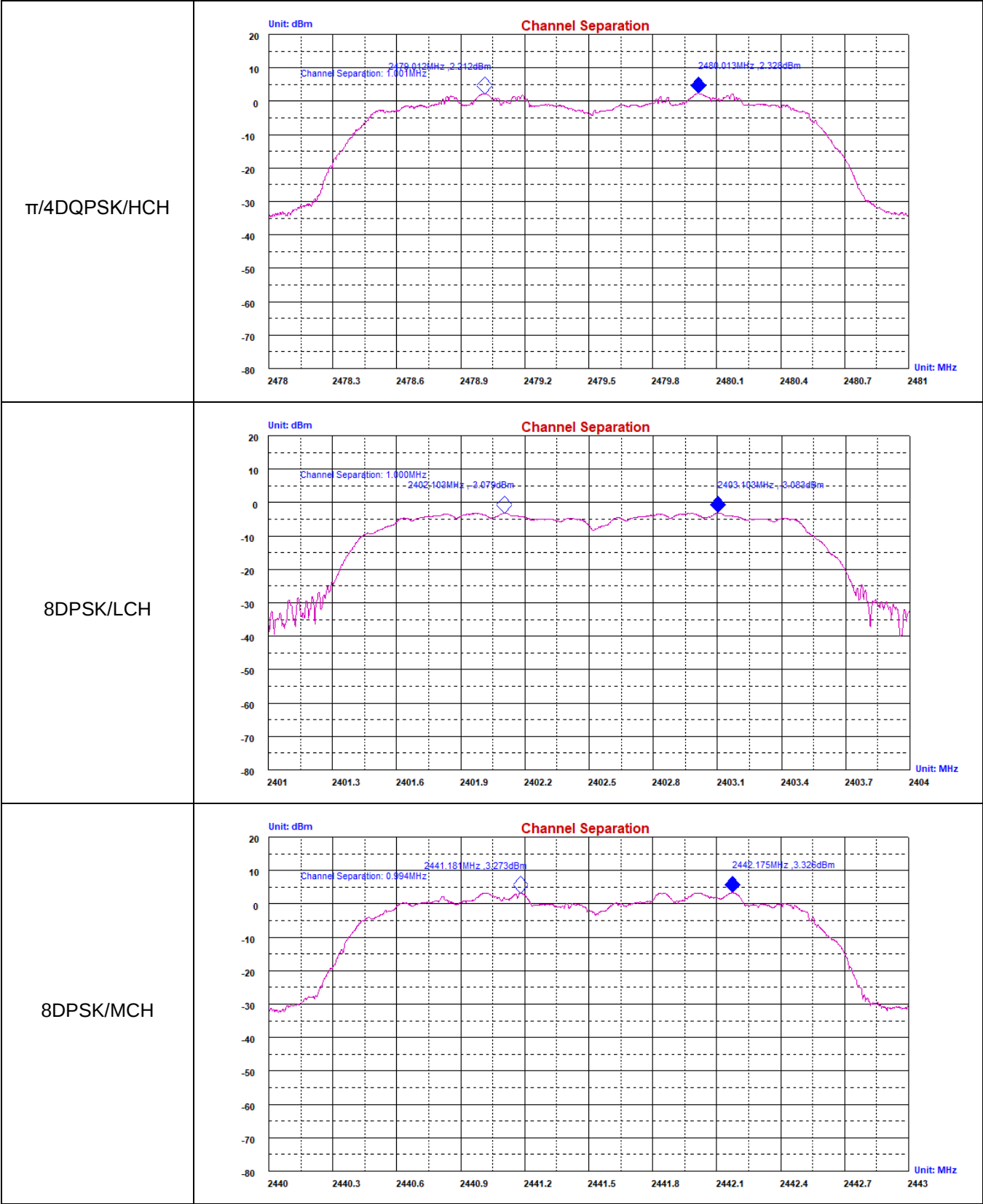
A.3 Carrier Frequency Separation

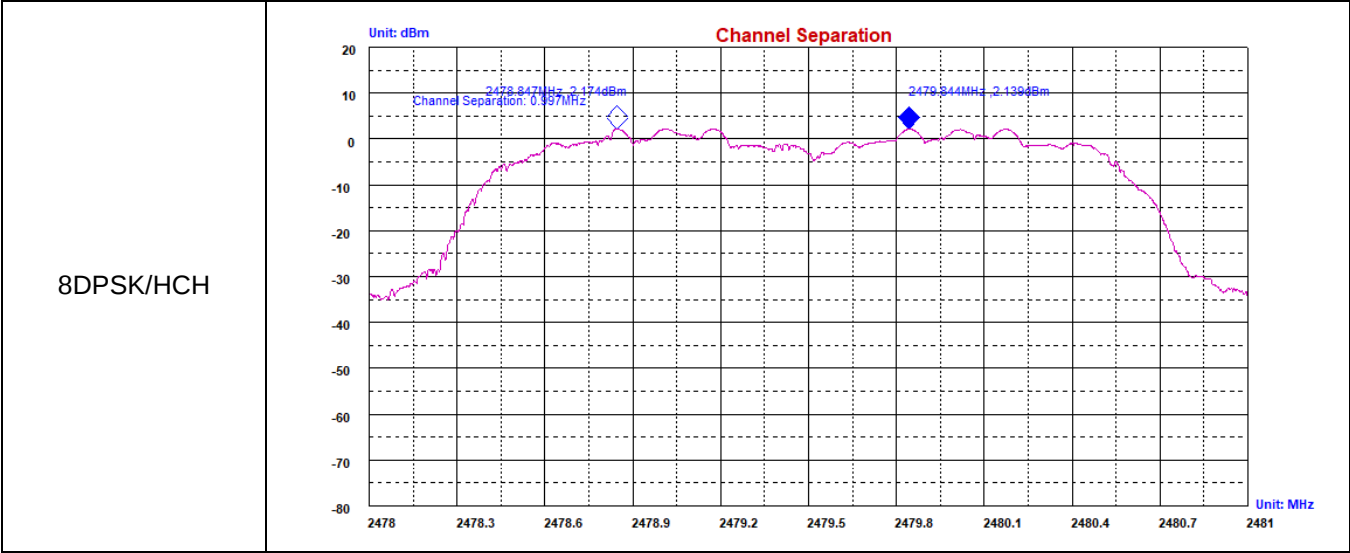
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.626	PASS
GFSK	MCH	1.001	0.628	PASS
GFSK	HCH	0.985	0.628	PASS
$\pi/4$ DQPSK	LCH	1.003	0.889	PASS
$\pi/4$ DQPSK	MCH	0.993	0.893	PASS
$\pi/4$ DQPSK	HCH	1.001	0.889	PASS
8DPSK	LCH	1.000	0.884	PASS
8DPSK	MCH	0.994	0.889	PASS
8DPSK	HCH	0.997	0.887	PASS

Test Graph





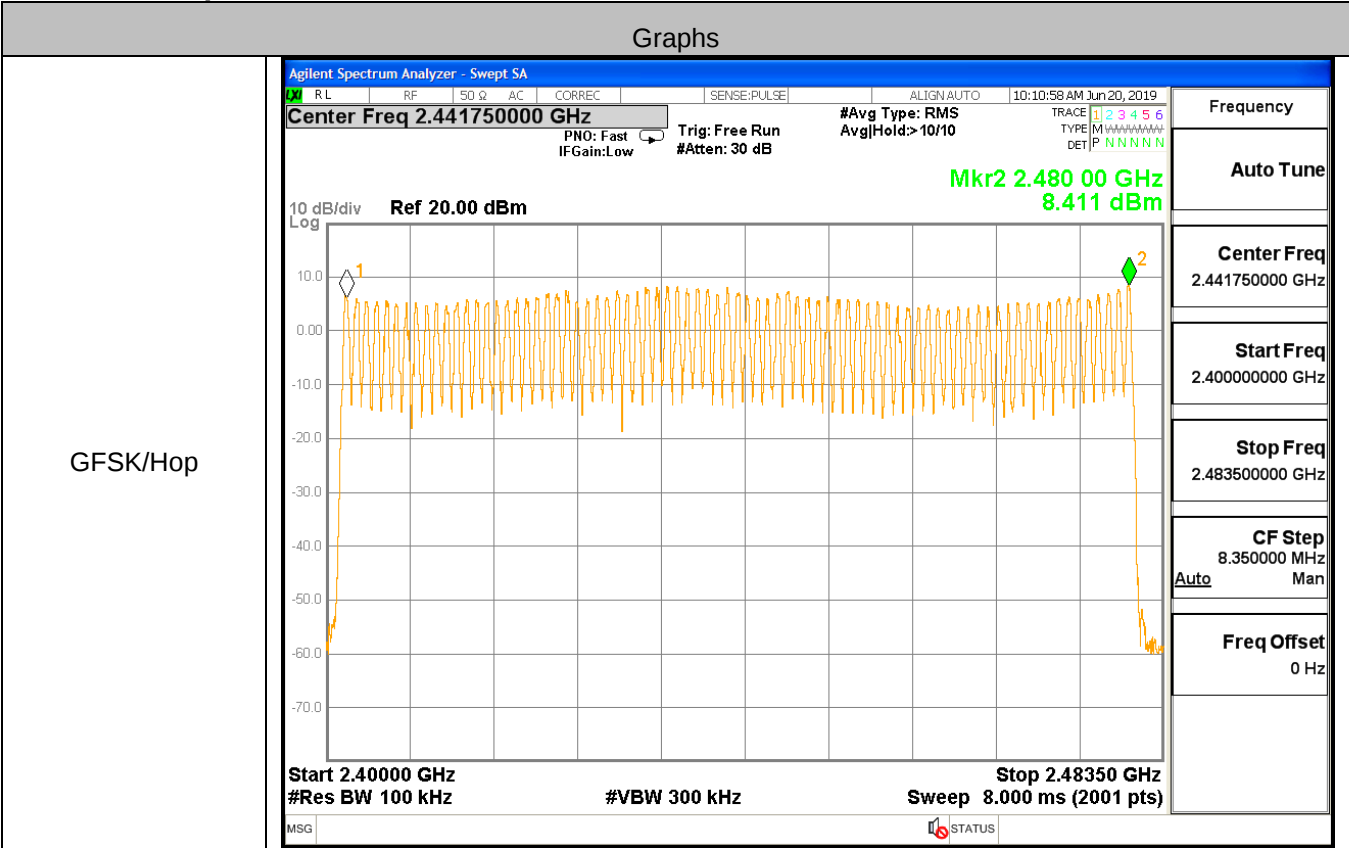




A.4 Hopping Channel Number

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

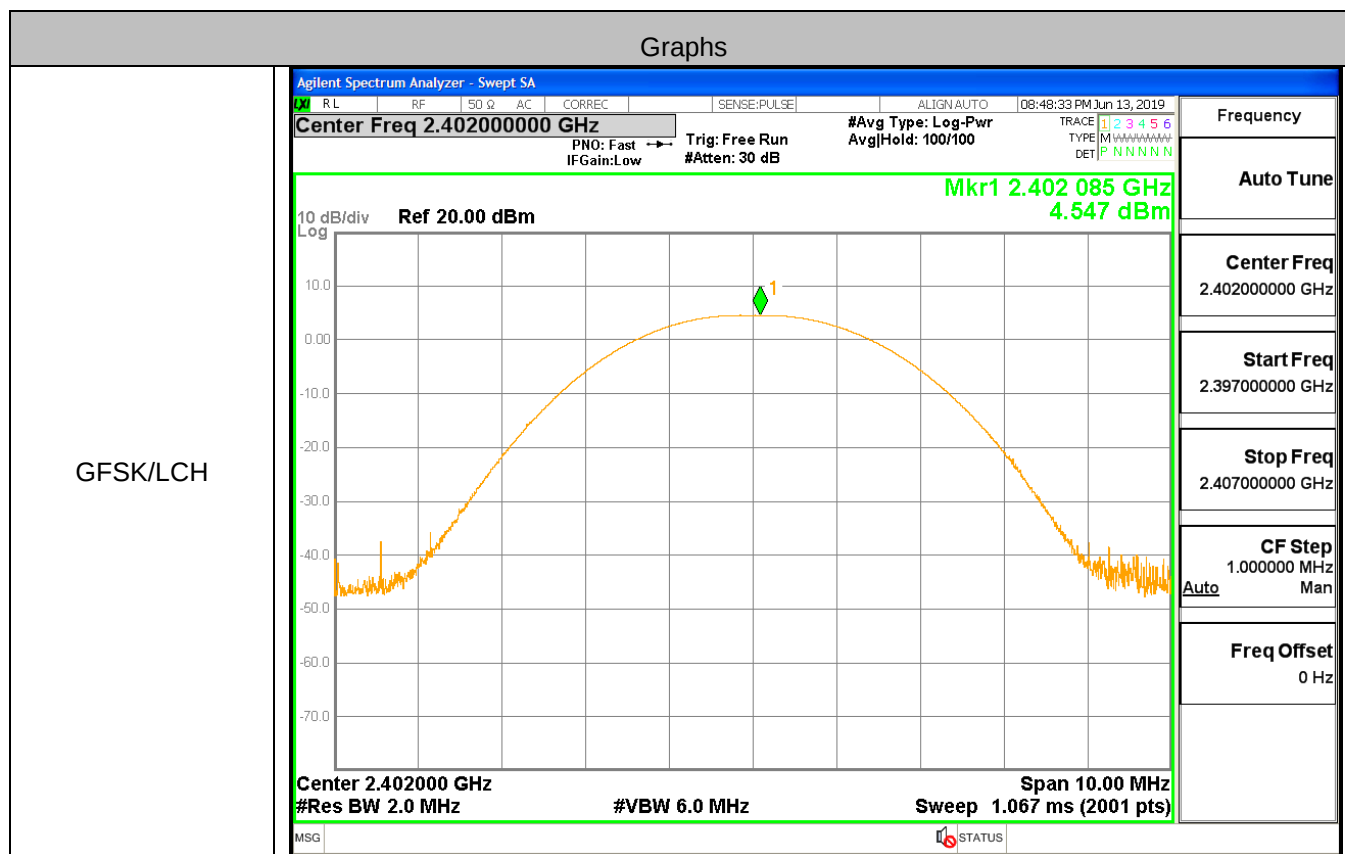


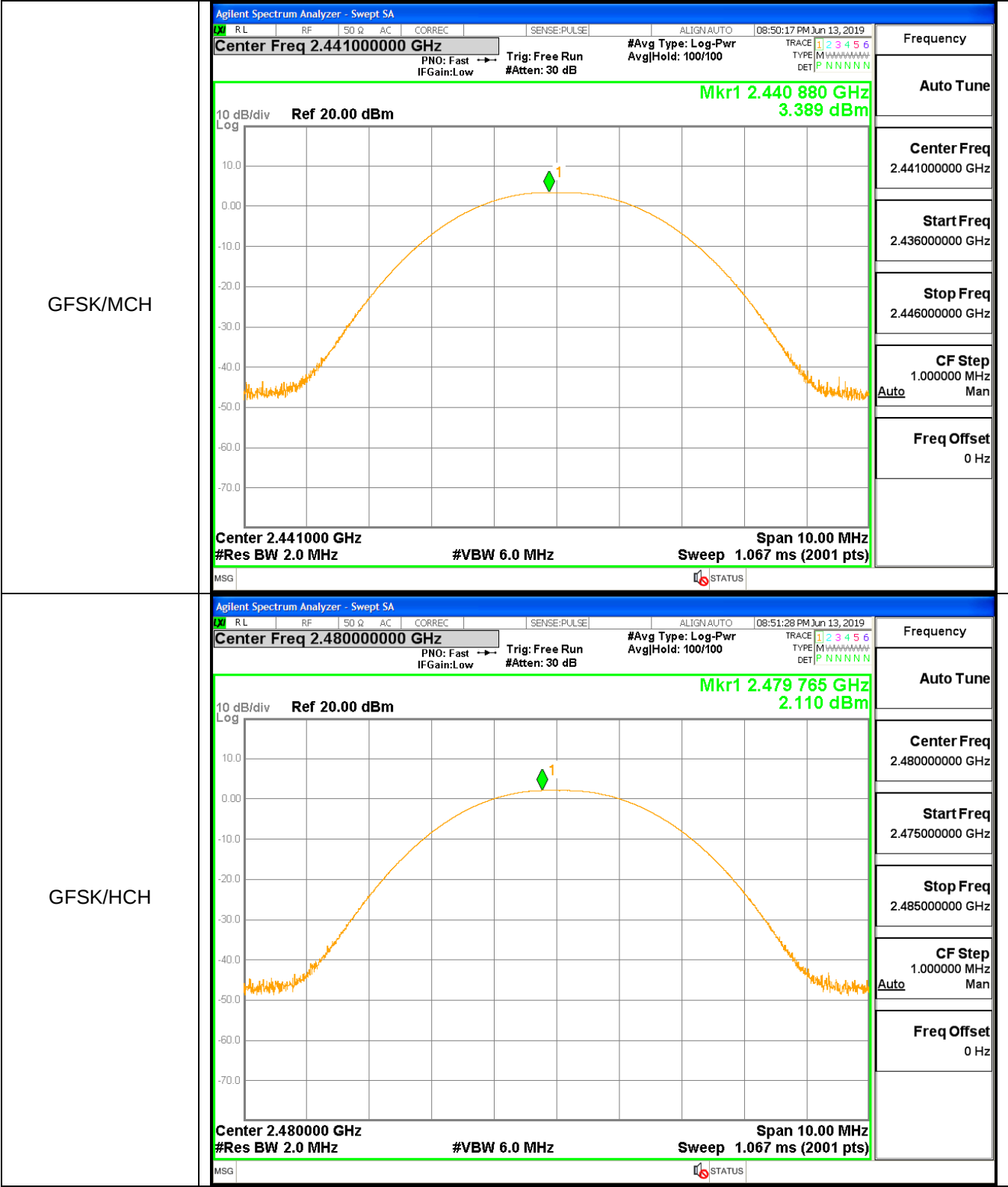


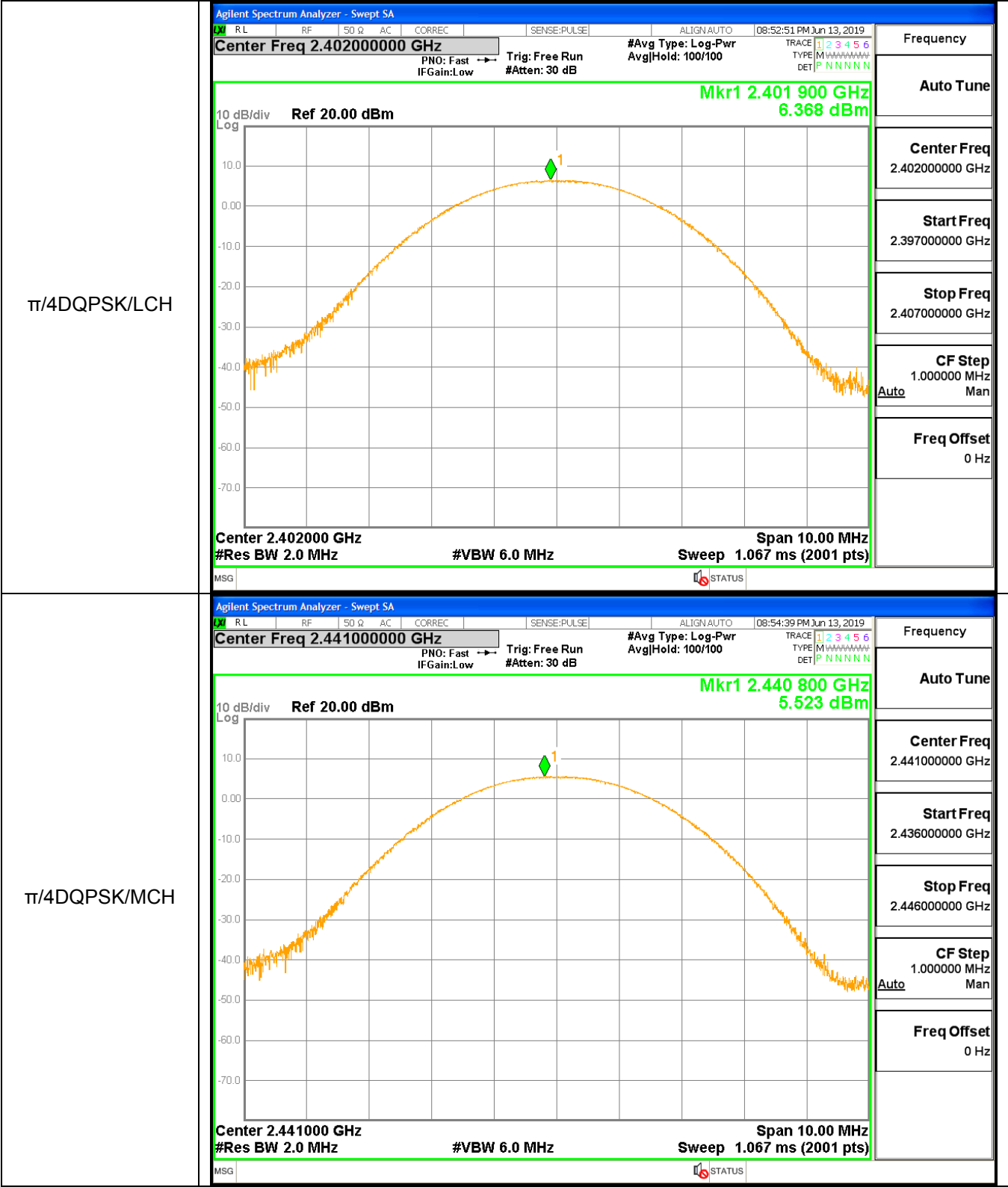
A.5 Conducted Peak Output Power

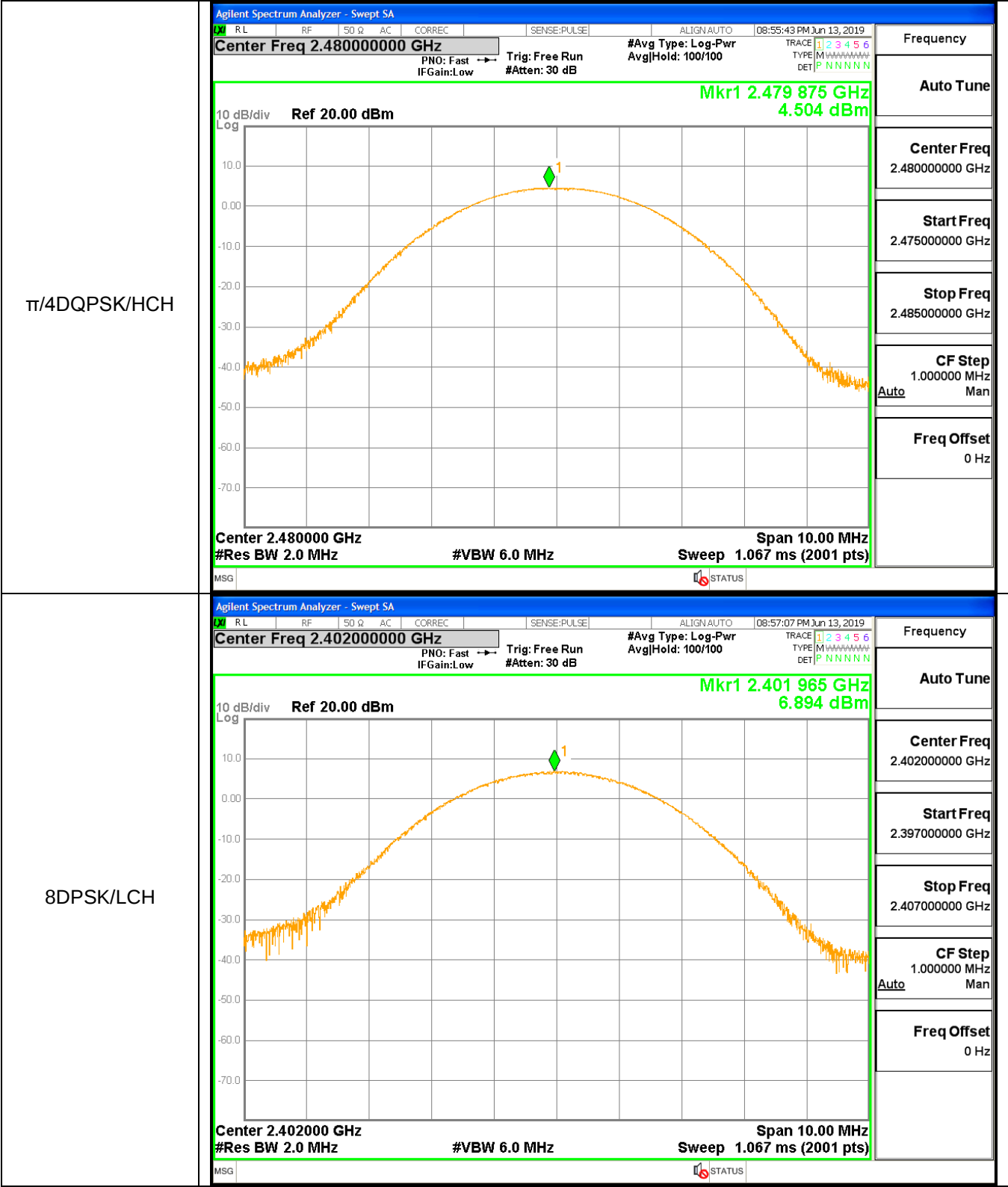
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.547	21	PASS
GFSK	MCH	3.389	21	PASS
GFSK	HCH	2.110	21	PASS
$\pi/4$ DQPSK	LCH	6.368	21	PASS
$\pi/4$ DQPSK	MCH	5.523	21	PASS
$\pi/4$ DQPSK	HCH	4.504	21	PASS
8DPSK	LCH	6.894	21	PASS
8DPSK	MCH	6.108	21	PASS
8DPSK	HCH	5.072	21	PASS

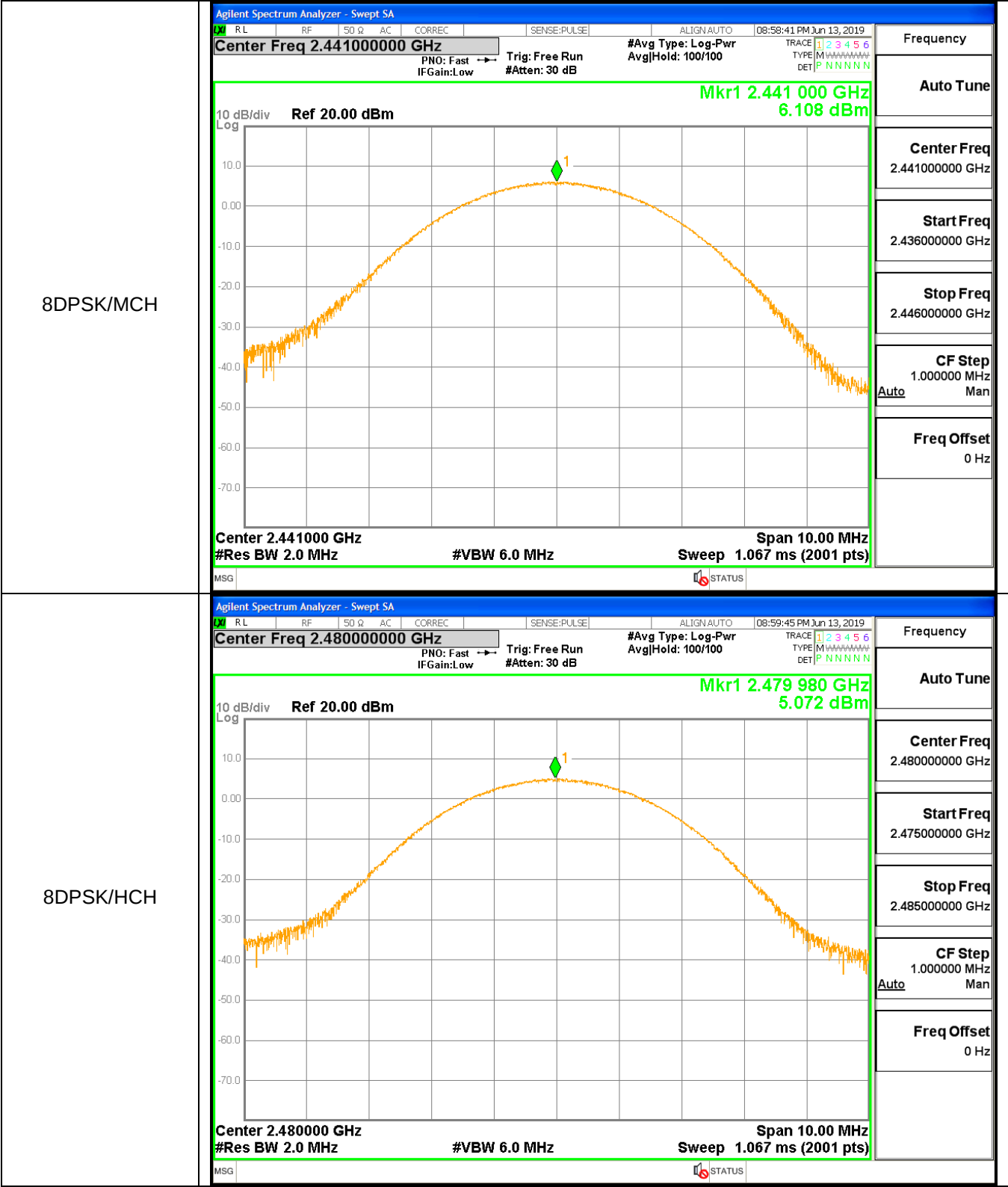
Test Graph









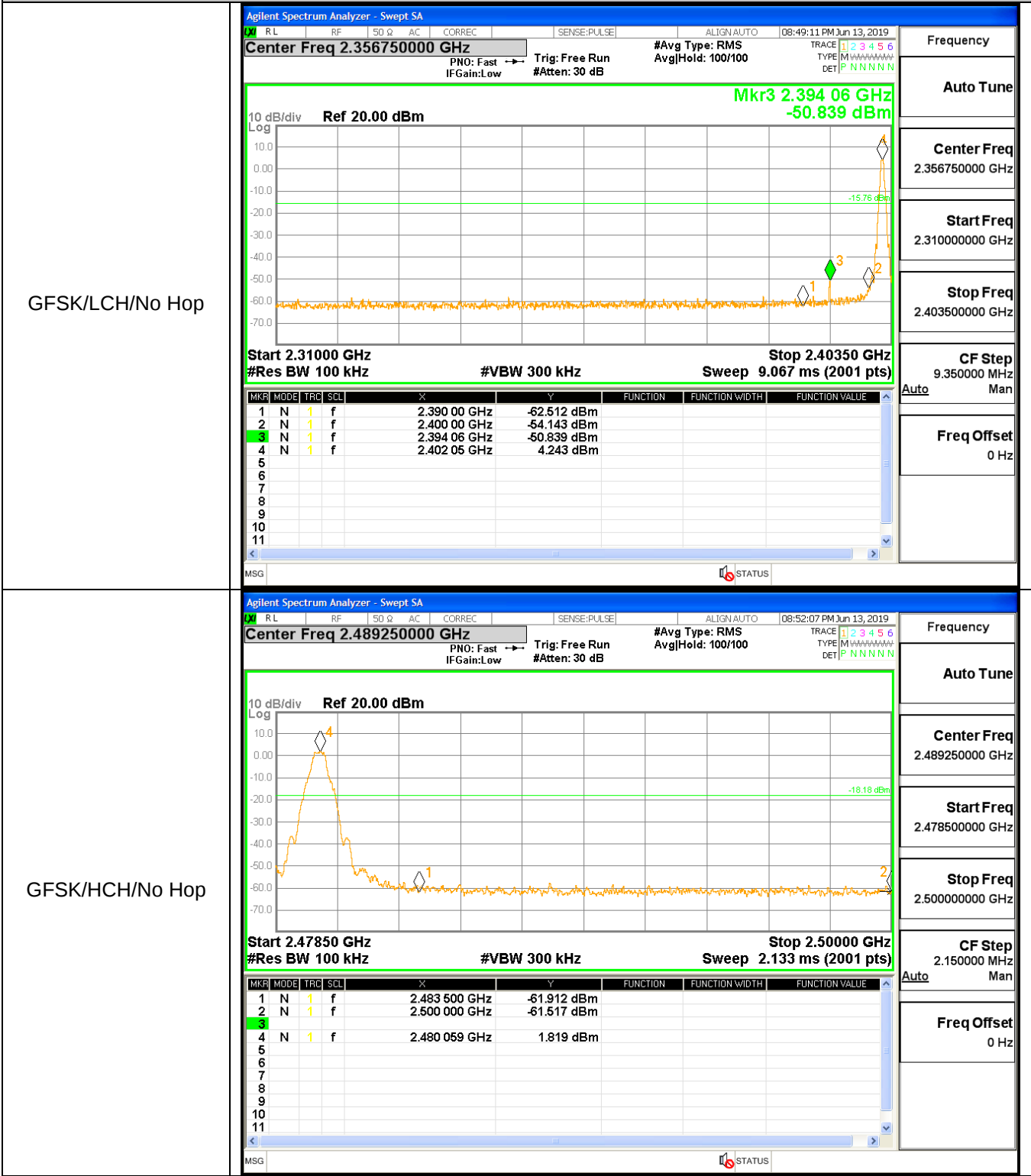


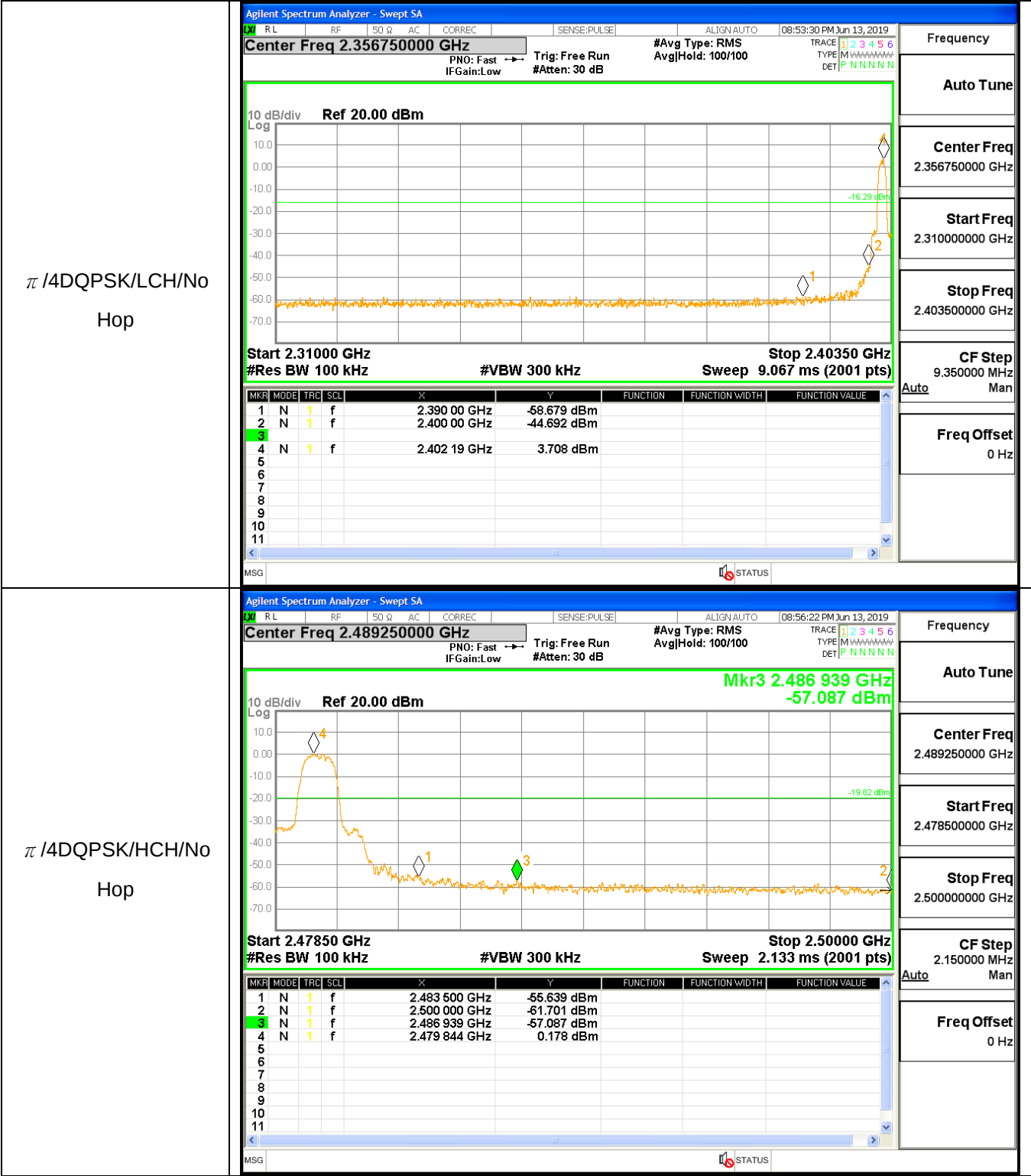
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak (dBm)	Upper limit (dBm)	Conclusion
1DH5	2402	2394.057	4.243	-50.839	-15.757	Pass
1DH5	2480	2500	1.819	-61.52	-18.181	Pass
2DH5	2402	2400	3.708	-44.69	-16.292	Pass
2DH5	2480	2483.5	0.178	-55.64	-19.822	Pass
3DH5	2402	2400	4.141	-43.94	-15.859	Pass
3DH5	2480	2484.38	2.185	-50.019	-17.815	Pass
1DH5-Hopping	2402	2400	7.507	-59.31	-12.493	Pass
1DH5-Hopping	2480	2500	8.02	-59.01	-11.98	Pass
2DH5-Hopping	2402	2400	6.116	-57.06	-13.884	Pass
2DH5-Hopping	2480	2483.5	7.553	-58.94	-12.447	Pass
3DH5-Hopping	2402	2400	7.564	-57.01	-12.436	Pass
3DH5-Hopping	2480	2483.5	6.348	-57.91	-13.652	Pass

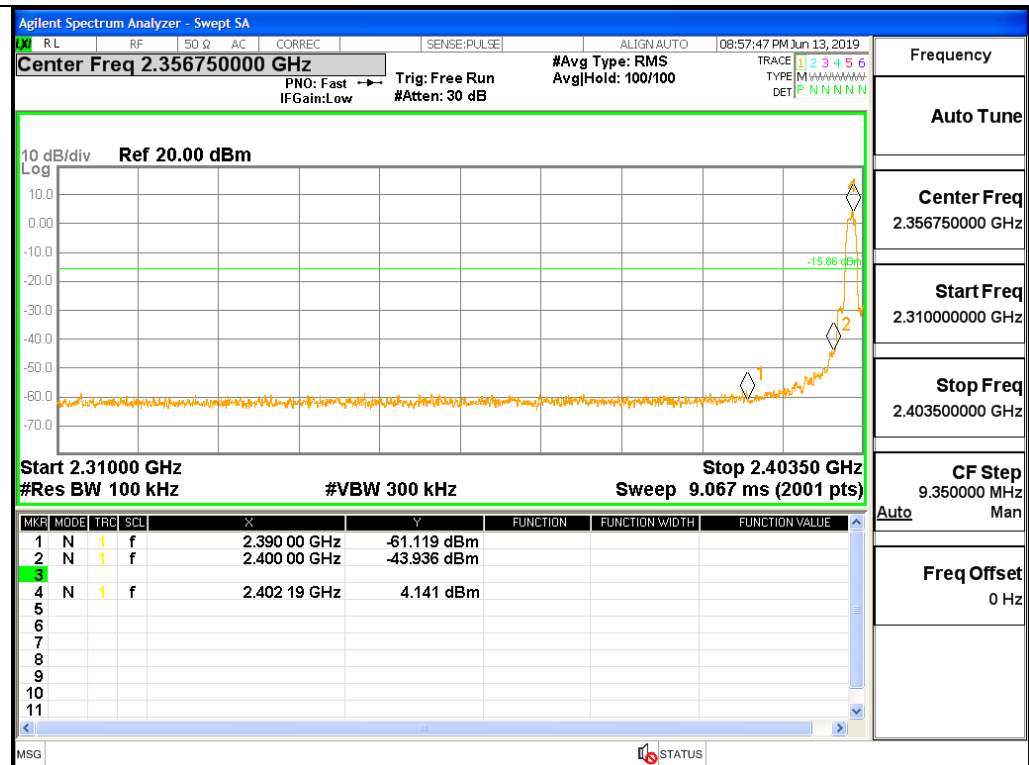
Test Graph

Graphs

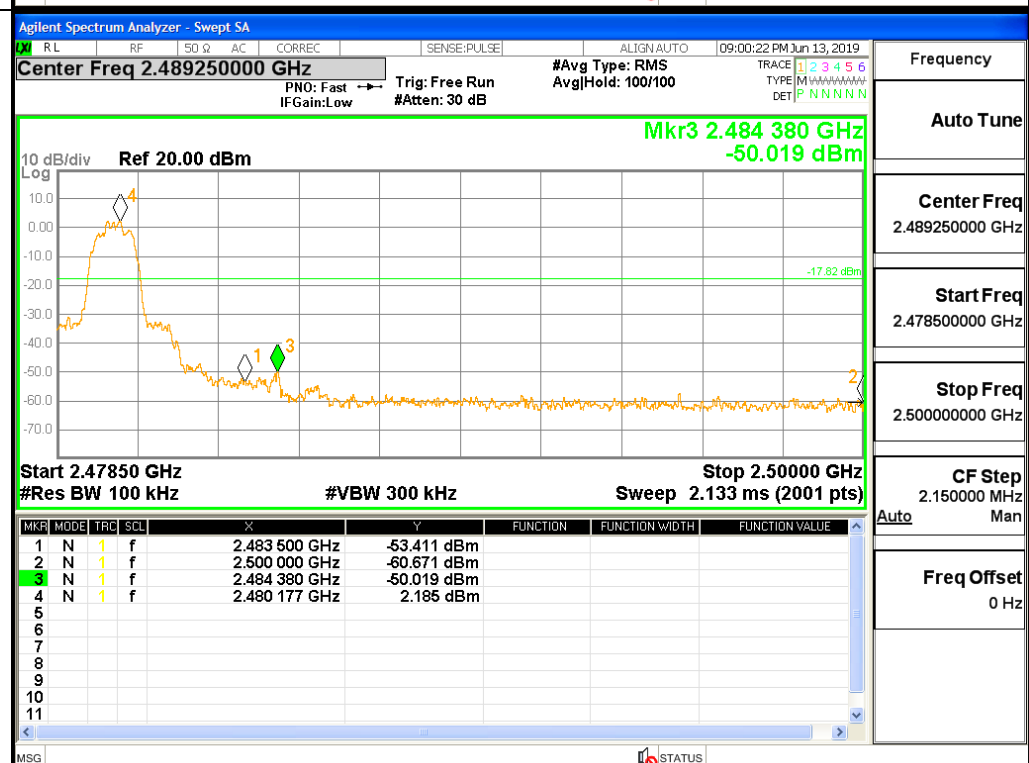




8DPSK/LCH/No Hop



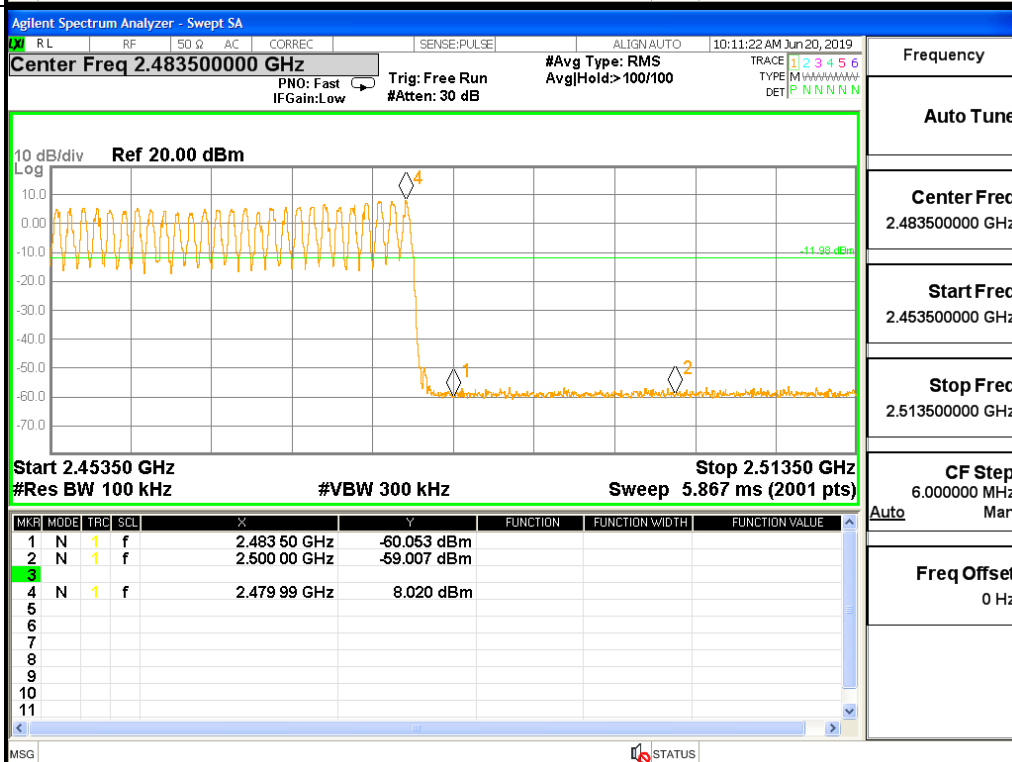
8DPSK/HCH/No Hop



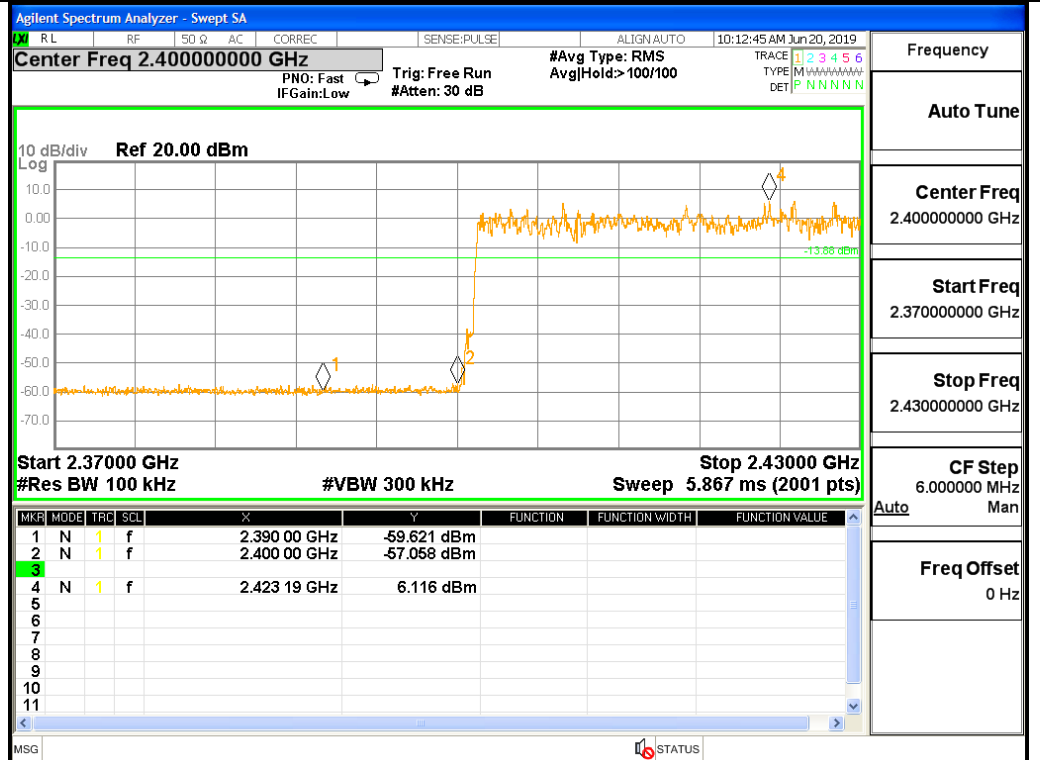
GFSK/LCH/Hop



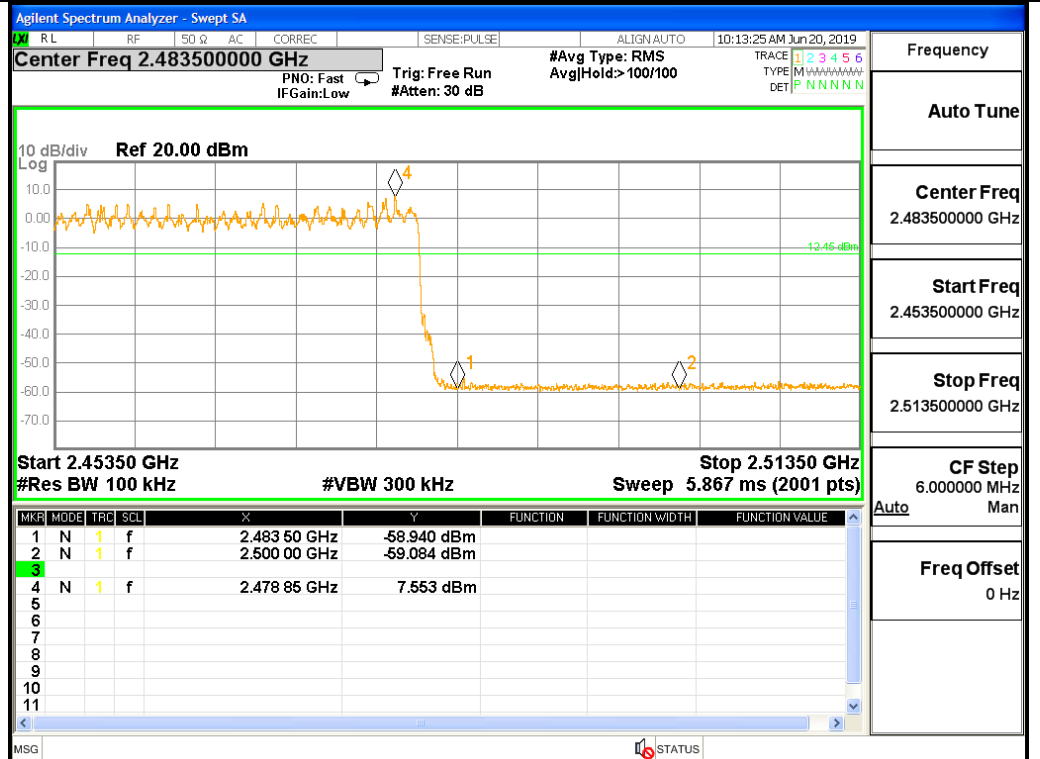
GFSK/HCH/Hop

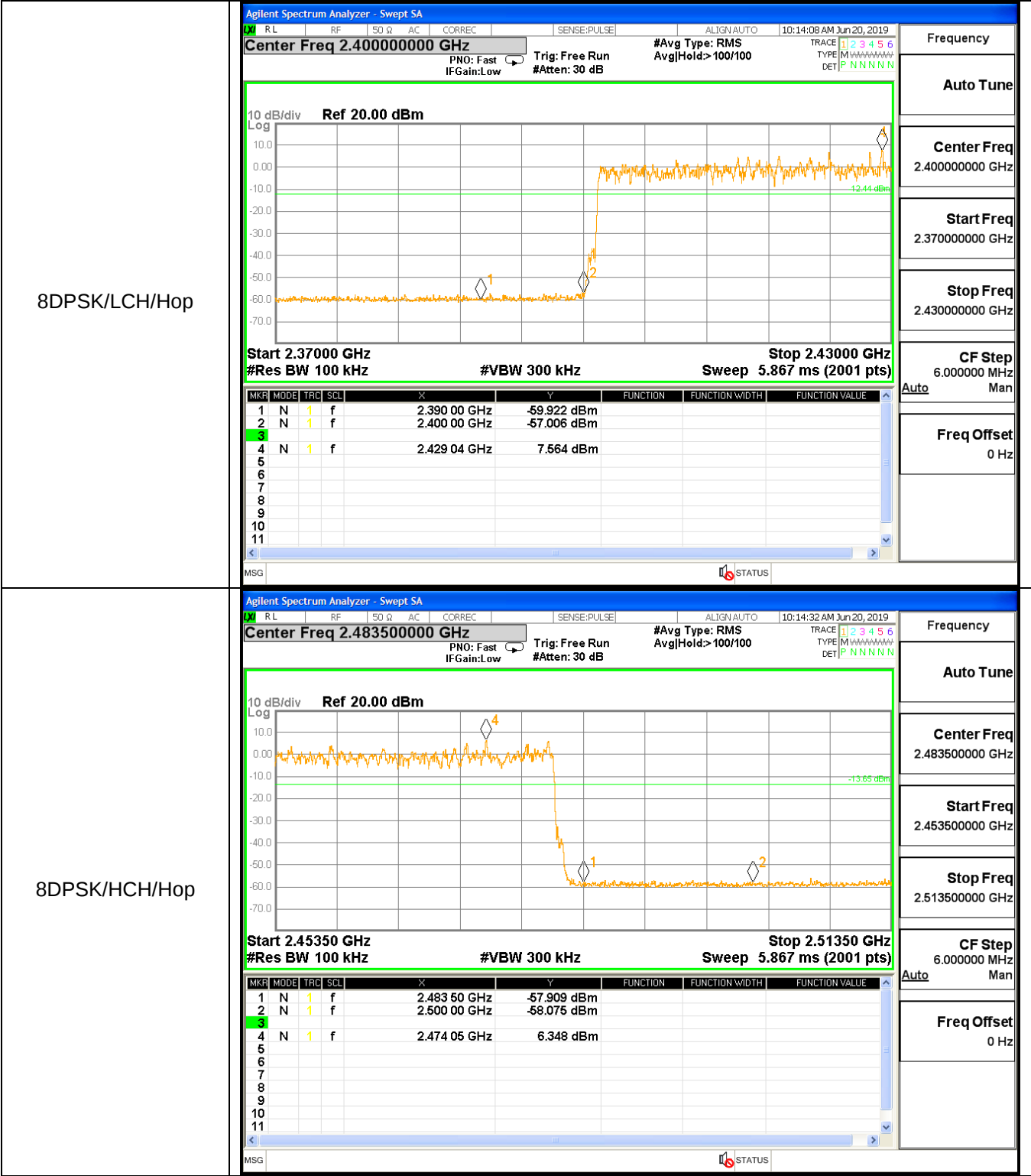


π /4DQPSK/LCH/Hop



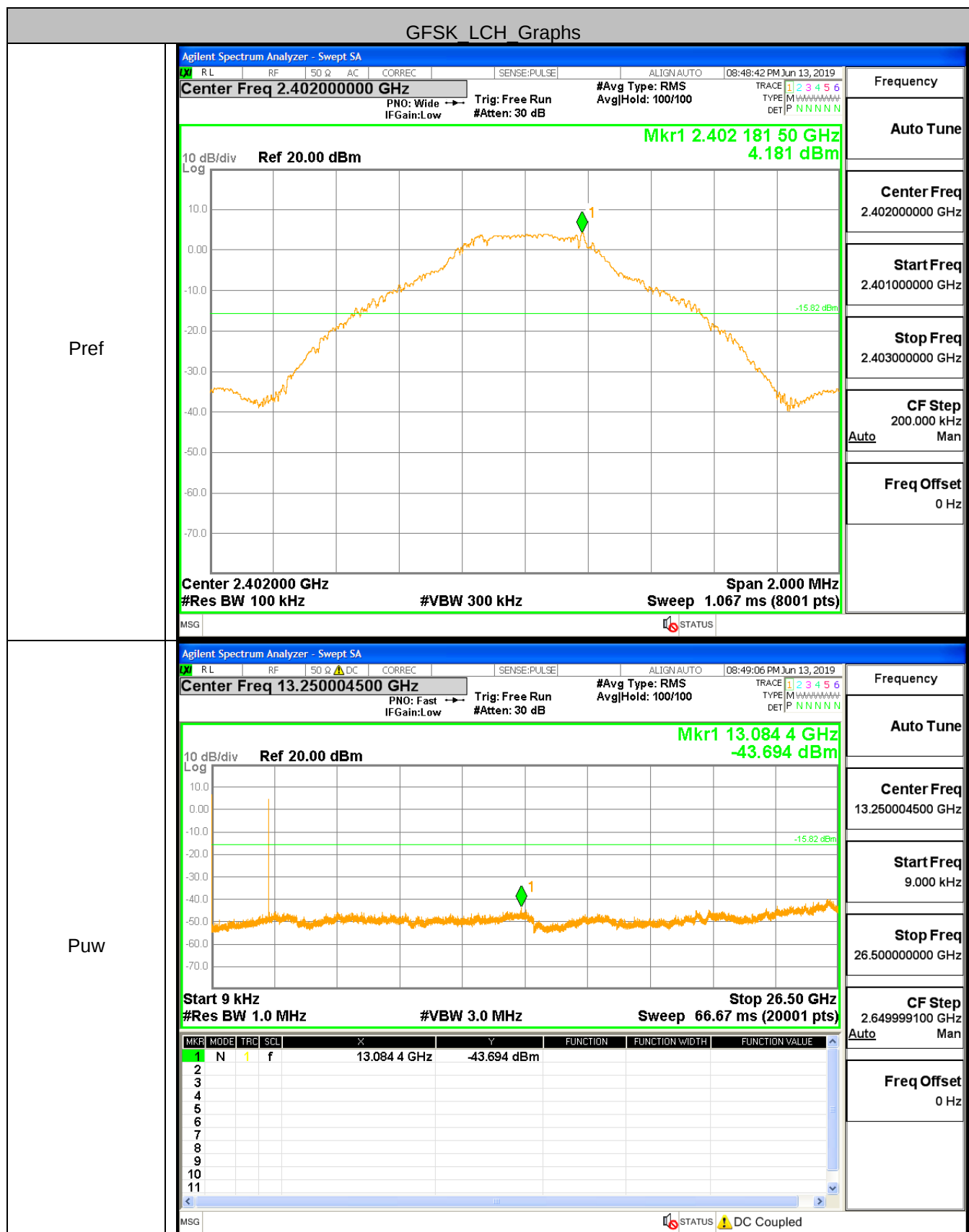
π /4DQPSK/HCH/Hop



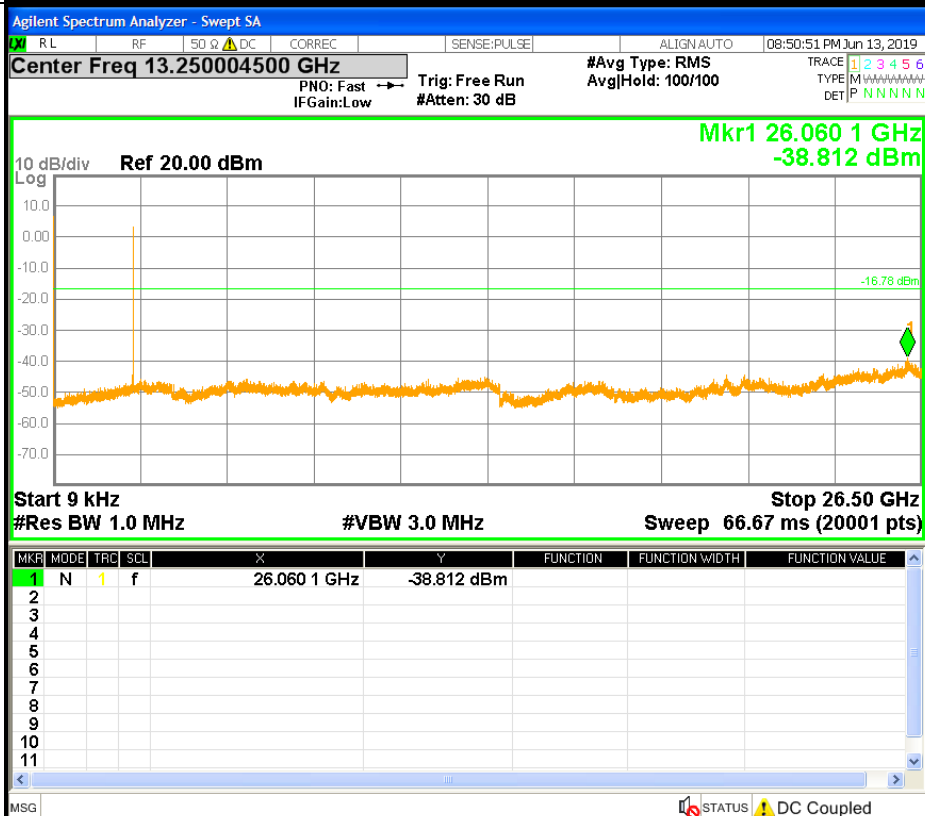
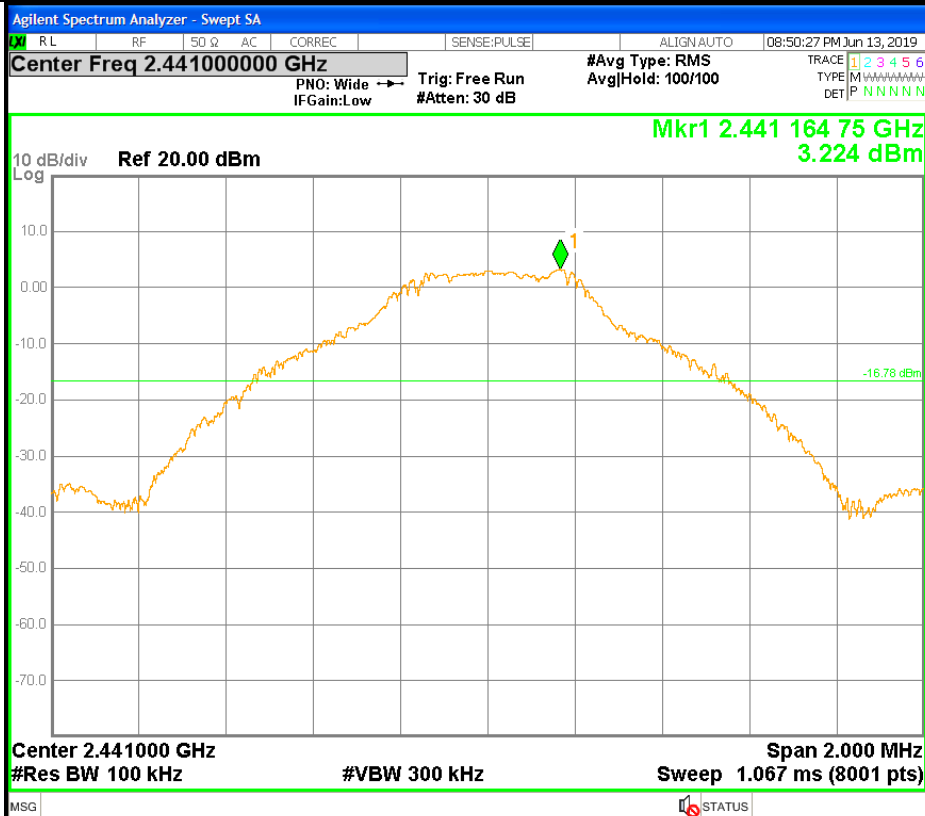


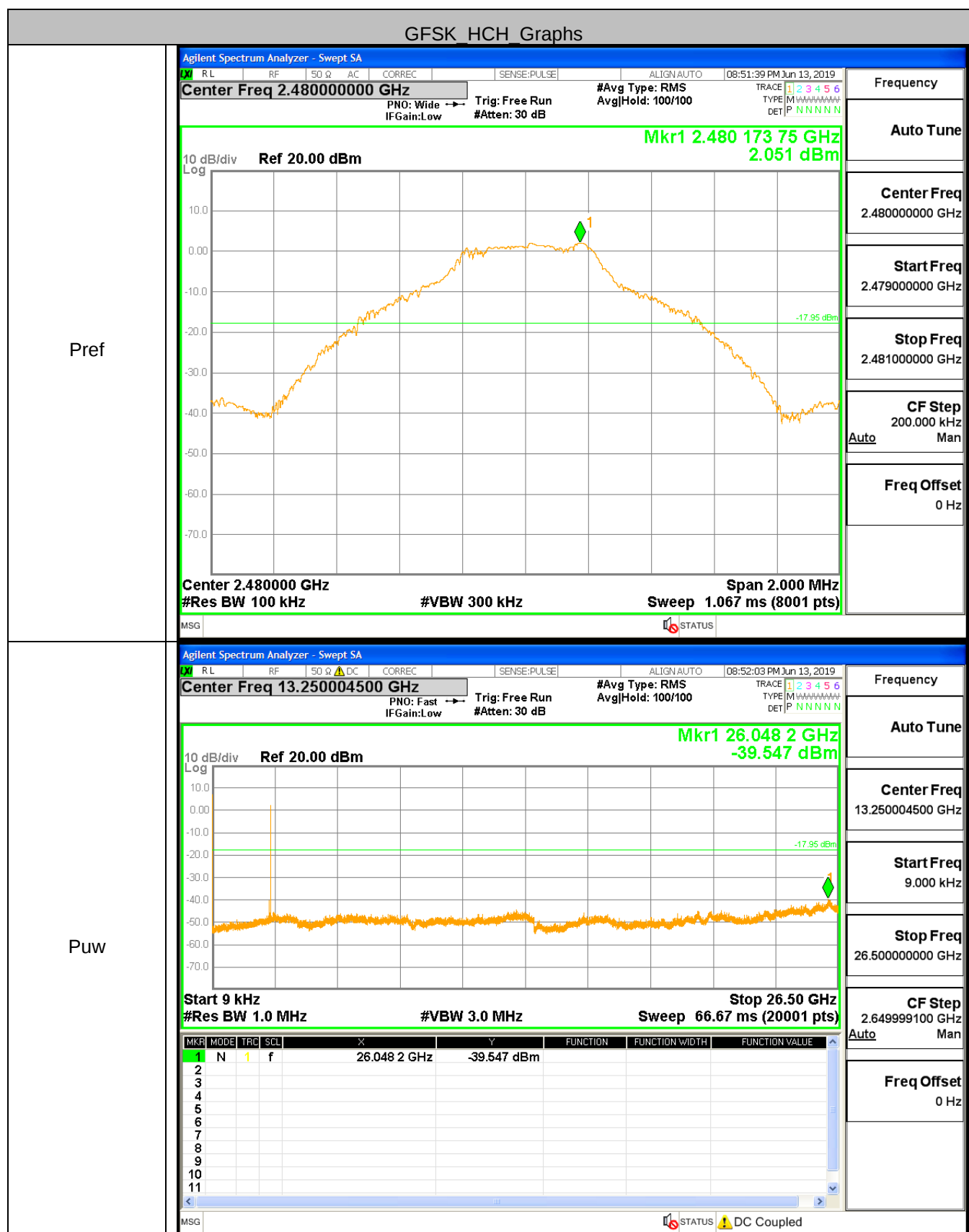
A.7 RF Conducted Spurious Emissions

Test Graph



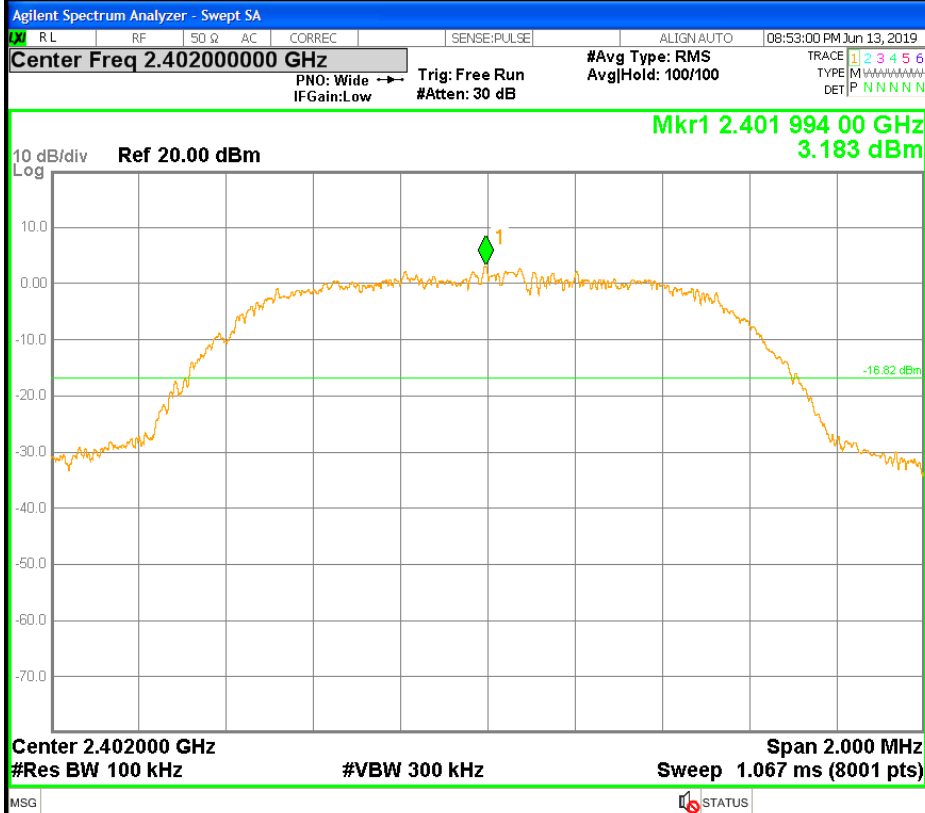
GFSK MCH Graphs





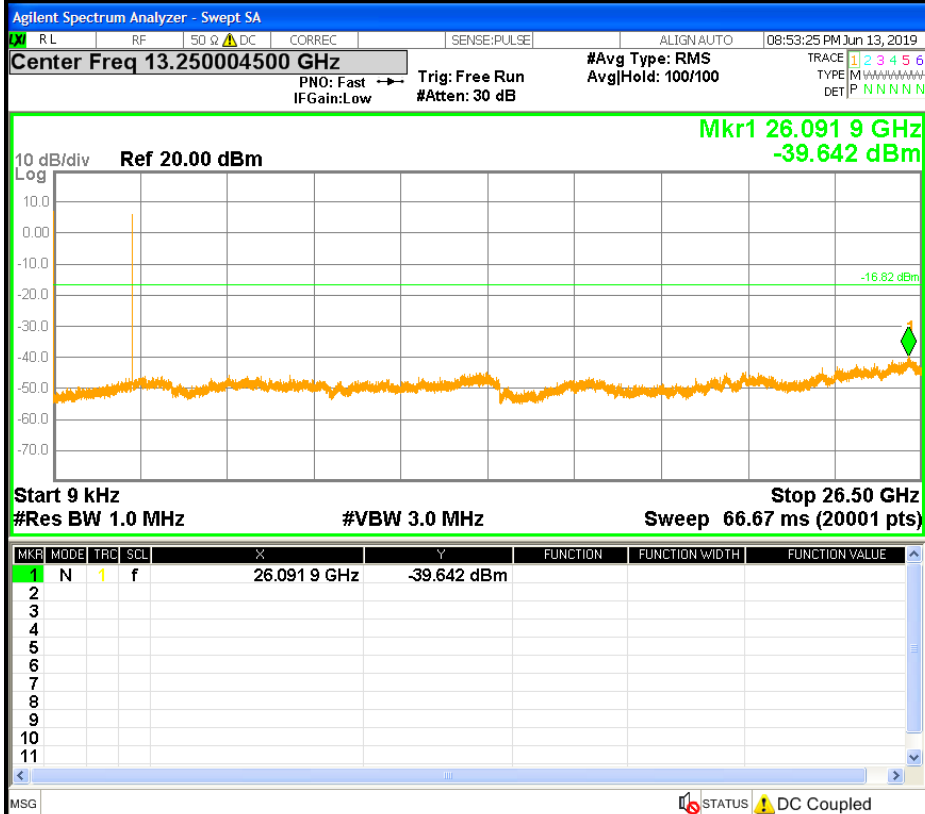
$\pi/4$ DQPSK LCH Graphs

Pref



Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

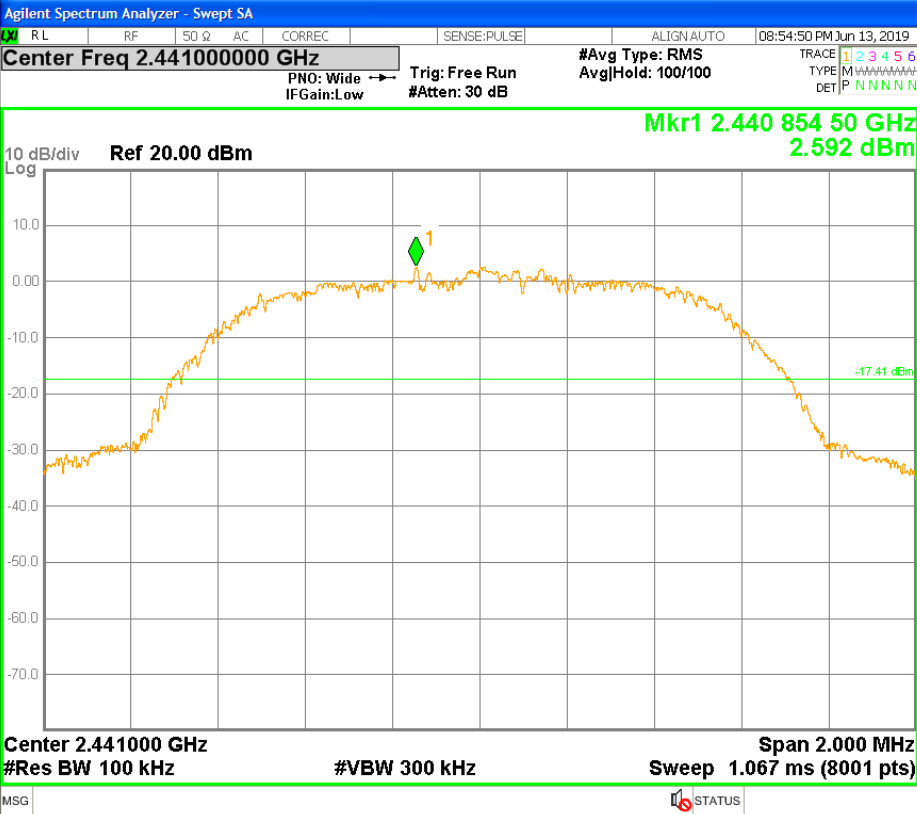
Puw



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 MCH Graphs

Pref



Frequency

Auto Tune

Center Freq
2.441000000 GHz

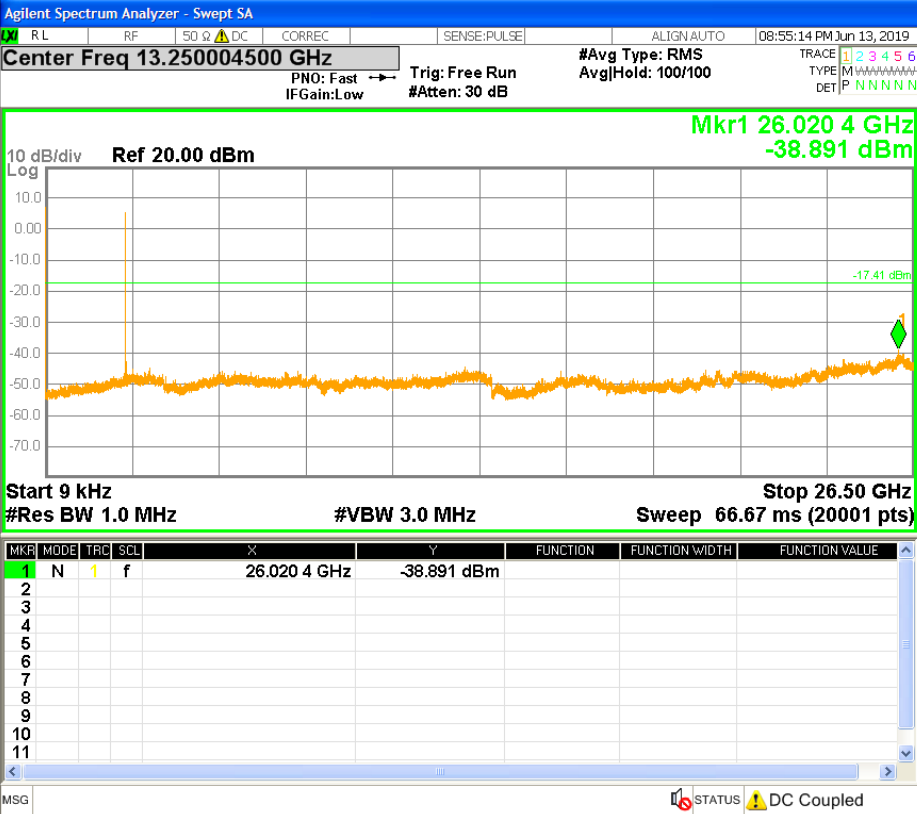
Start Freq
2.440000000 GHz

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

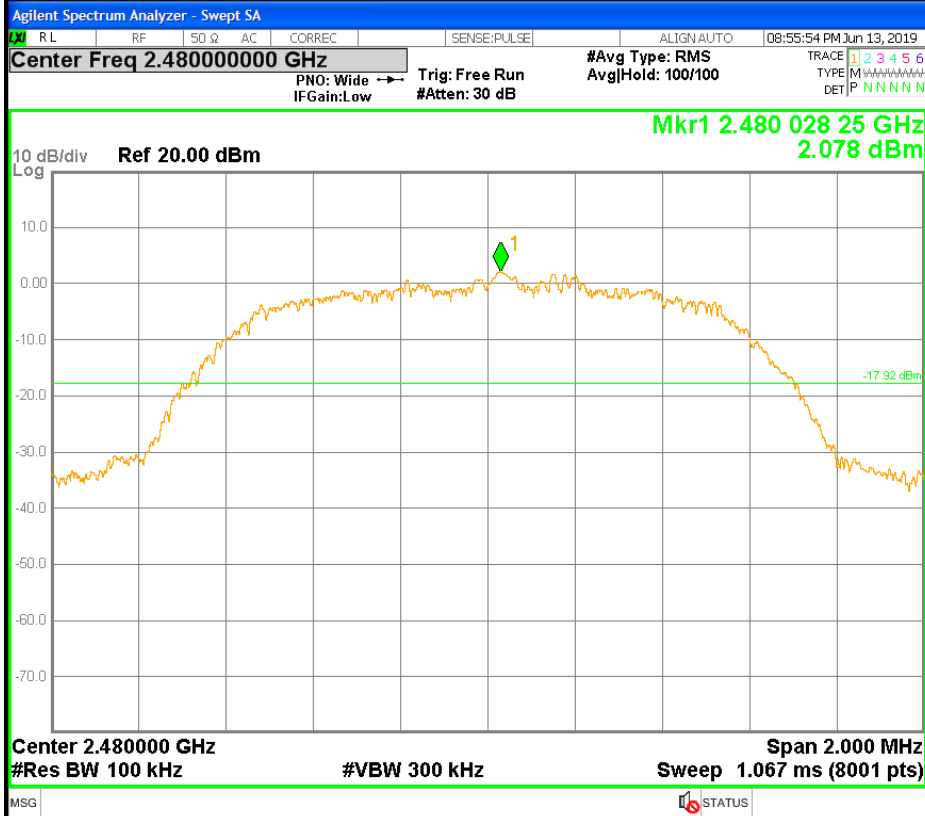
Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

Freq Offset
0 Hz

$\pi/4$ DQPSK HCH Graphs

Pref



Frequency

Auto Tune

Center Freq
2.480000000 GHz

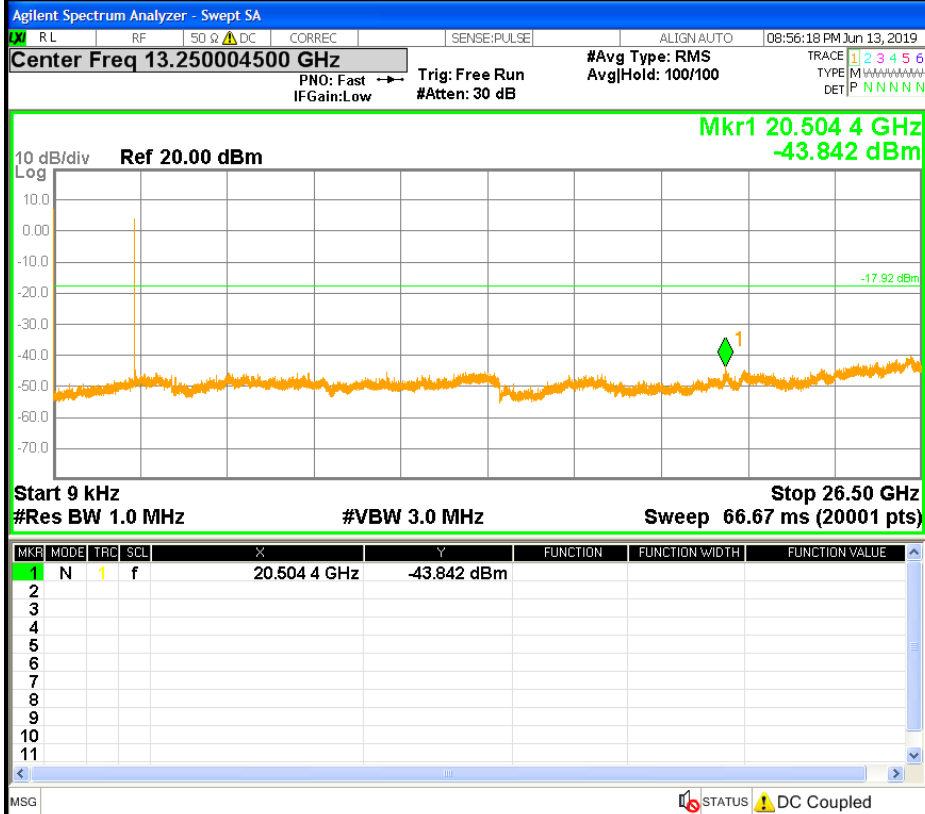
Start Freq
2.479000000 GHz

Stop Freq
2.481000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Puw



Frequency

Auto Tune

Center Freq
13.250004500 GHz

Start Freq
9.000 kHz

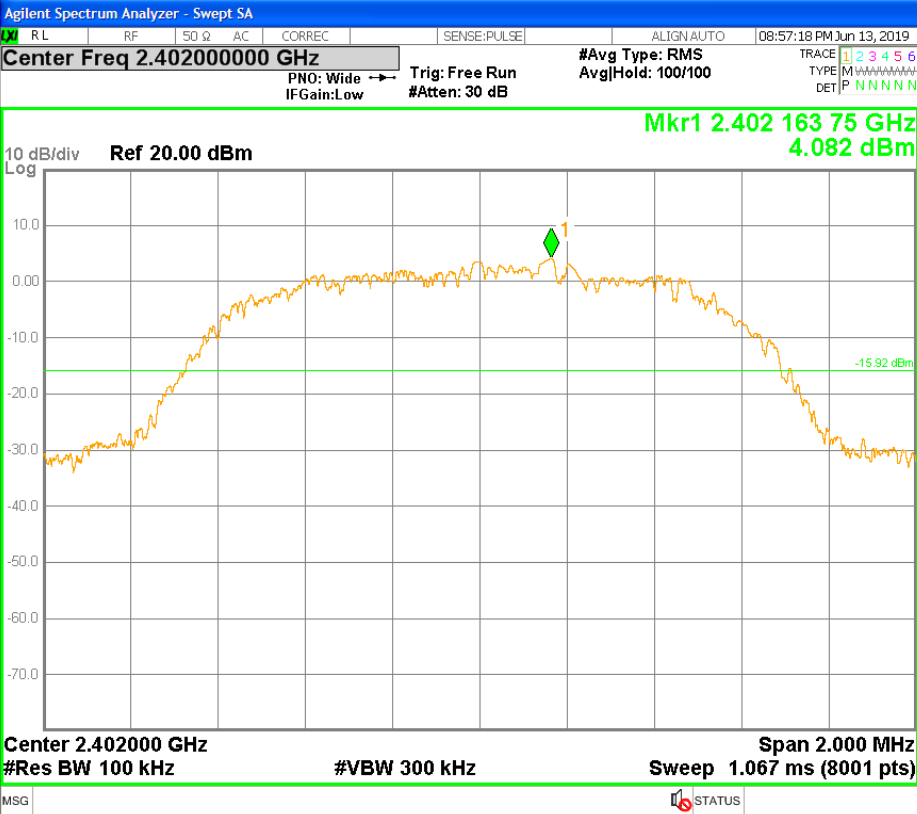
Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

Freq Offset
0 Hz

8DPSK LCH Graphs

Pref



Frequency

Auto Tune

Center Freq
2.402000000 GHz

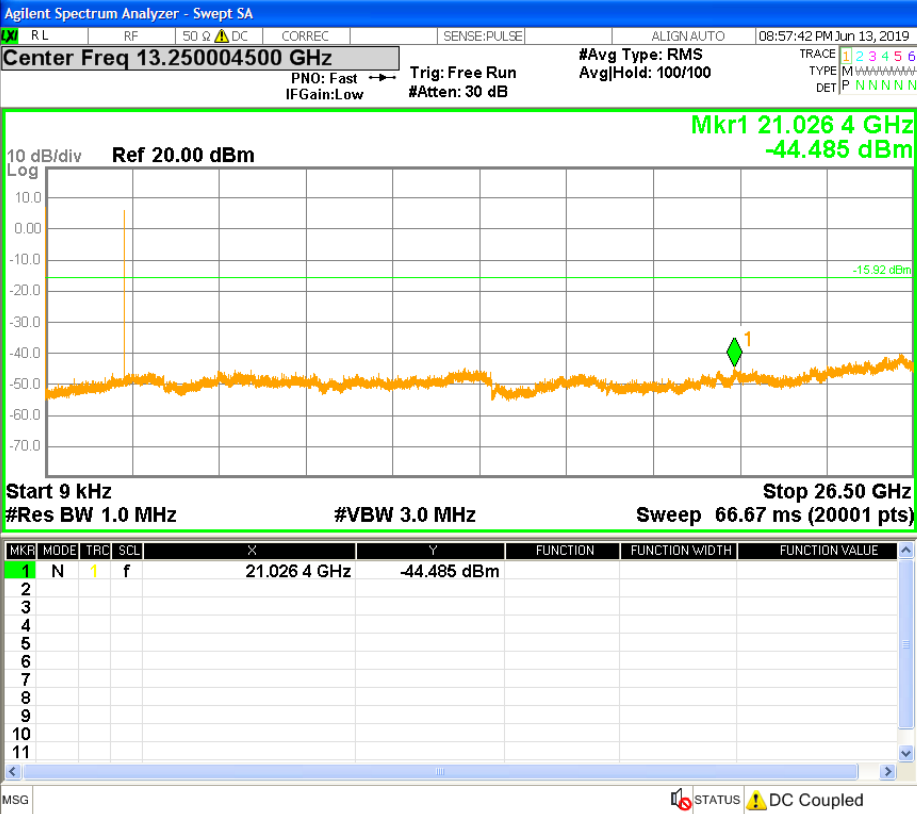
Start Freq
2.401000000 GHz

Stop Freq
2.403000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Puw



Frequency

Auto Tune

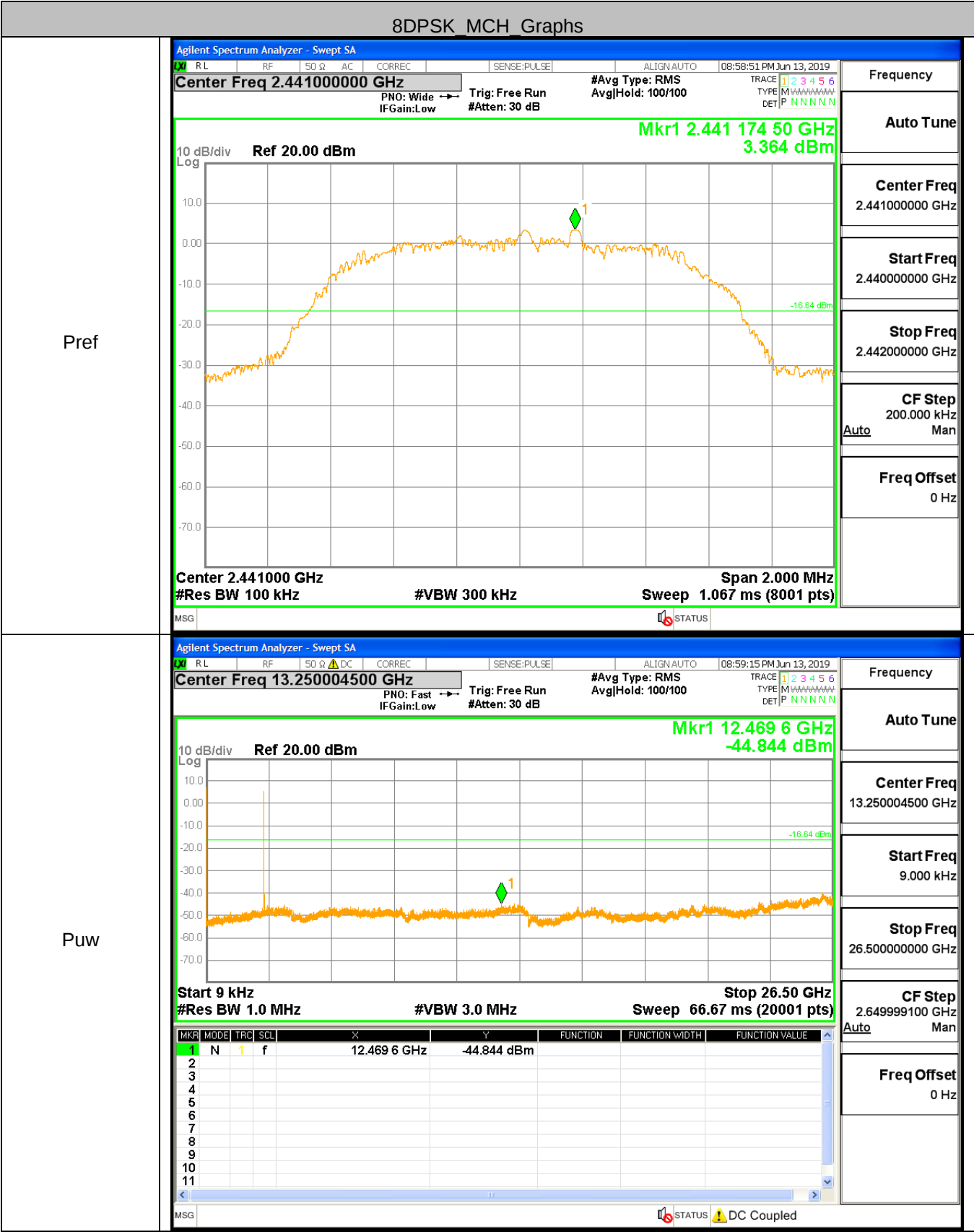
Center Freq
13.250004500 GHz

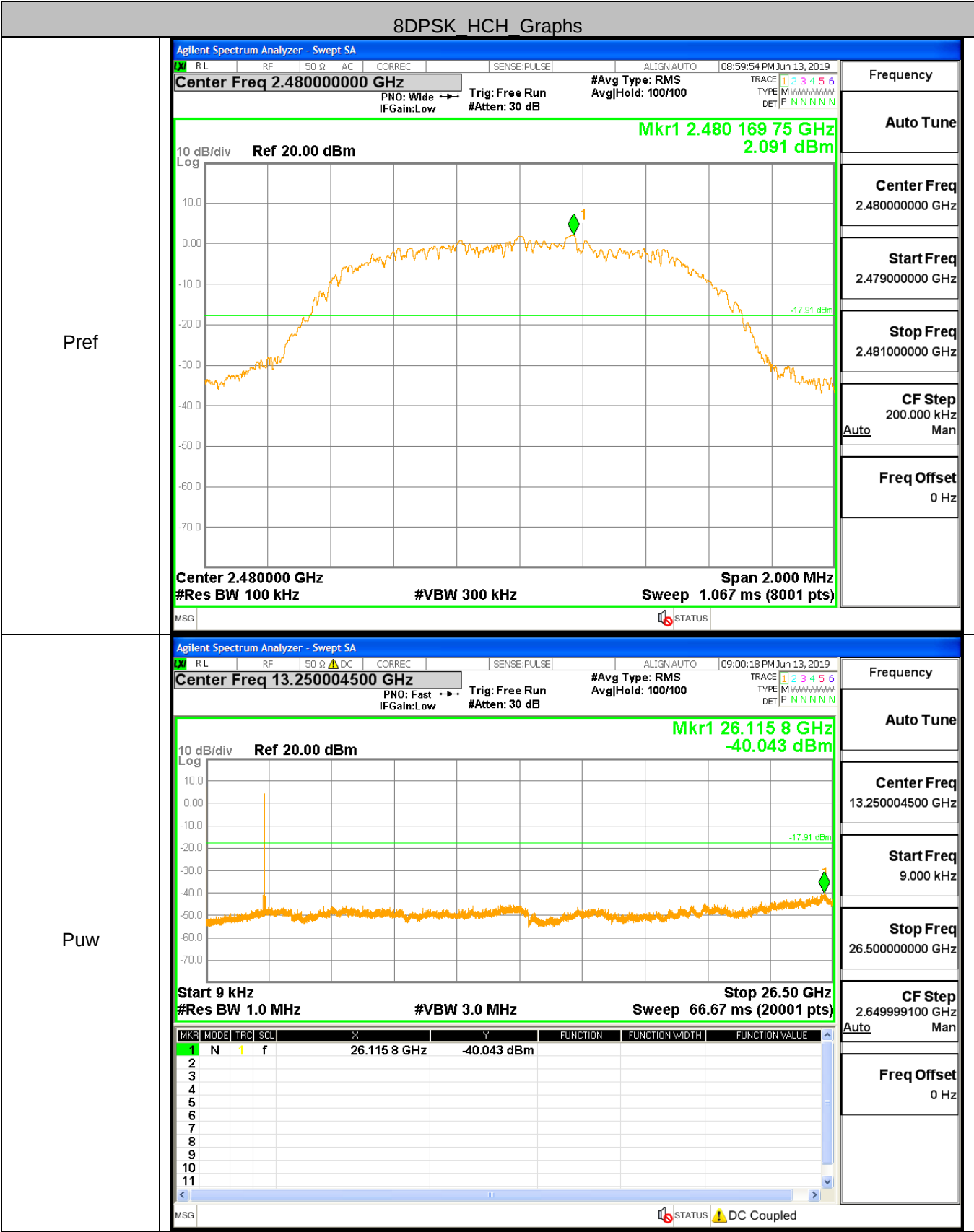
Start Freq
9.000 kHz

Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

Freq Offset
0 Hz



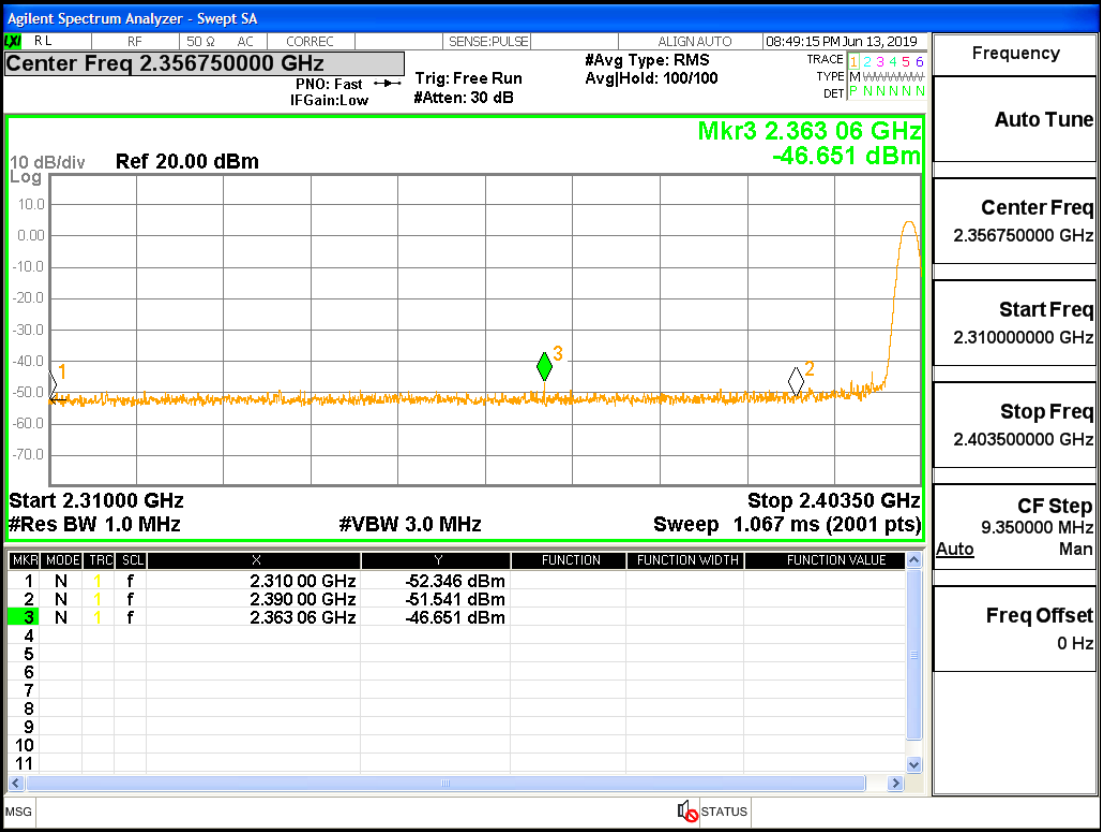


A.8 Restrict-band band-edge measurements

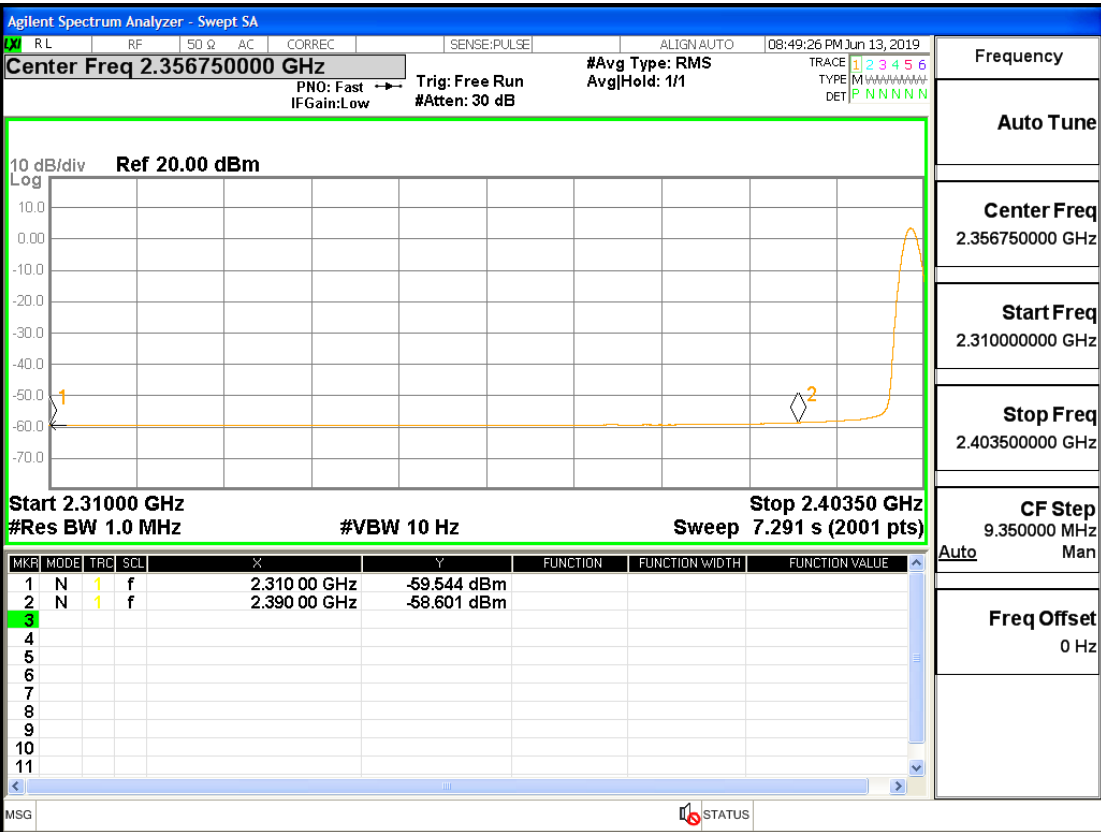
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2363.06	2.00	0.00	-46.65	50.55	74	Pass
1DH5	2480	2483.50	2.00	0.00	-49.01	48.19	74	Pass
2DH5	2402	2310.00	2.00	0.00	-50.49	46.71	74	Pass
2DH5	2480	2483.50	2.00	0.00	-44.09	53.11	74	Pass
3DH5	2402	2390.00	2.00	0.00	-51.15	46.05	74	Pass
3DH5	2480	2483.50	2.00	0.00	-40.44	56.76	74	Pass

Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-58.60	38.60	54	Pass
1DH5	2480	2483.50	2.00	0.00	-55.62	41.58	54	Pass
2DH5	2402	2390.00	2.00	0.00	-58.16	39.04	54	Pass
2DH5	2480	2483.50	2.00	0.00	-52.55	44.65	54	Pass
3DH5	2402	2390.00	2.00	0.00	-58.08	39.12	54	Pass
3DH5	2480	2483.50	2.00	0.00	-50.69	46.51	54	Pass

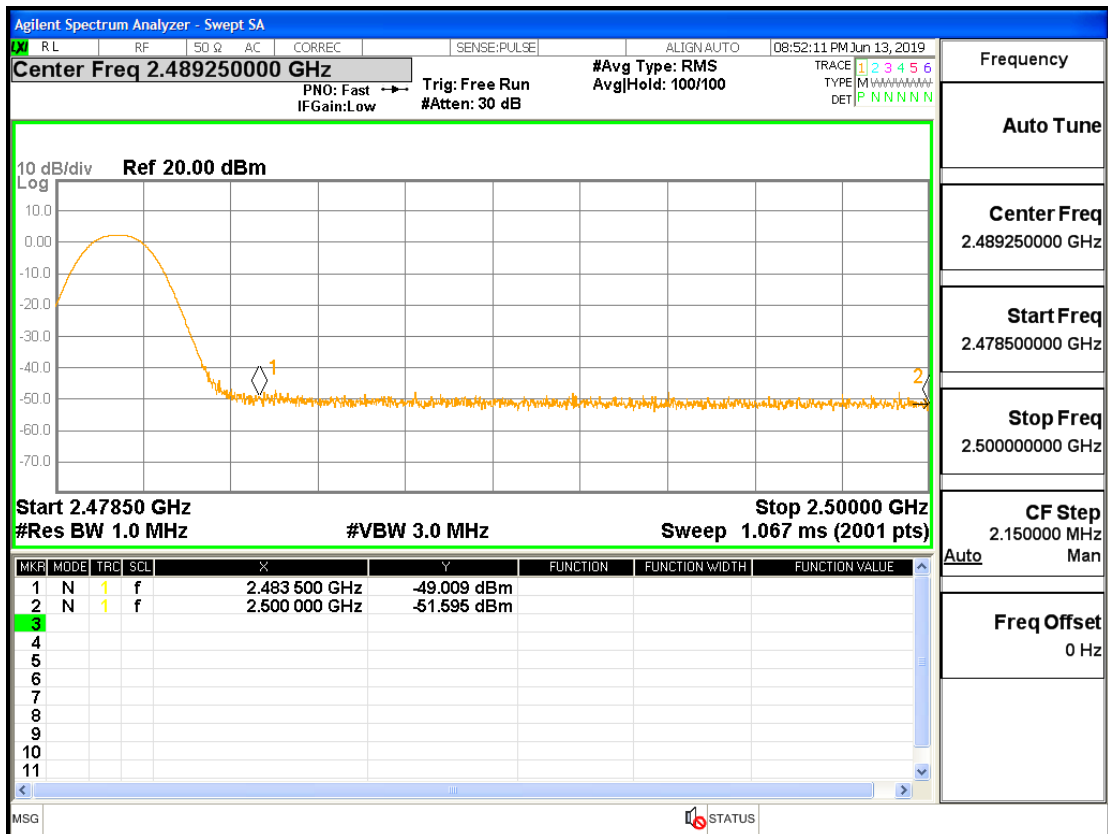
Restrict-band band-edge measurements_2402_PEAK_DH5



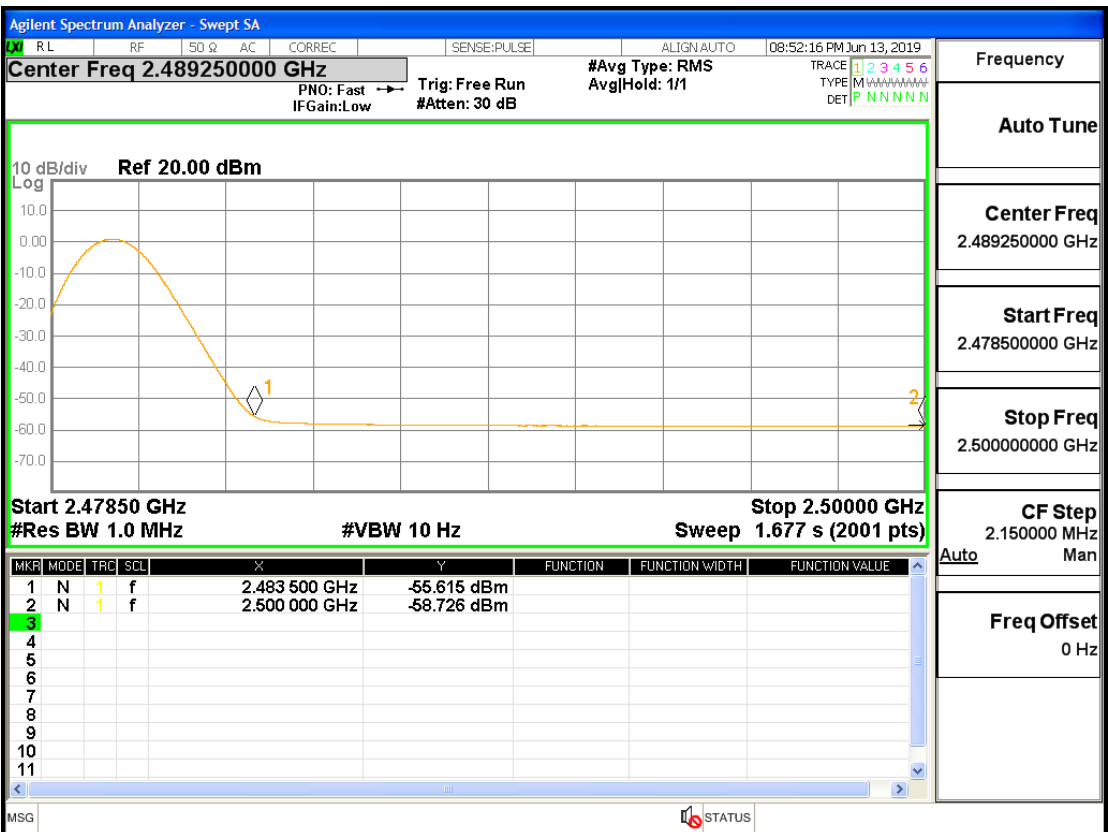
Restrict-band band-edge measurements_2402_AV_DH5



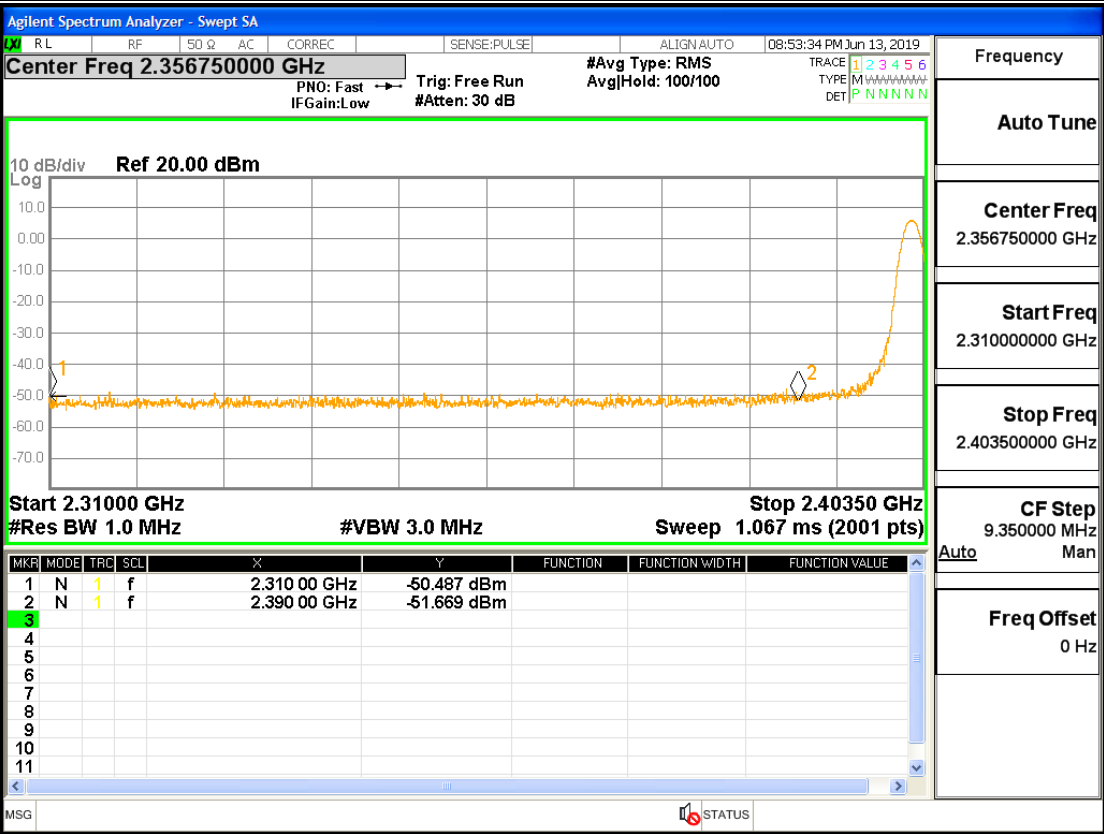
Restrict-band band-edge measurements_2480_PEAK_DH5



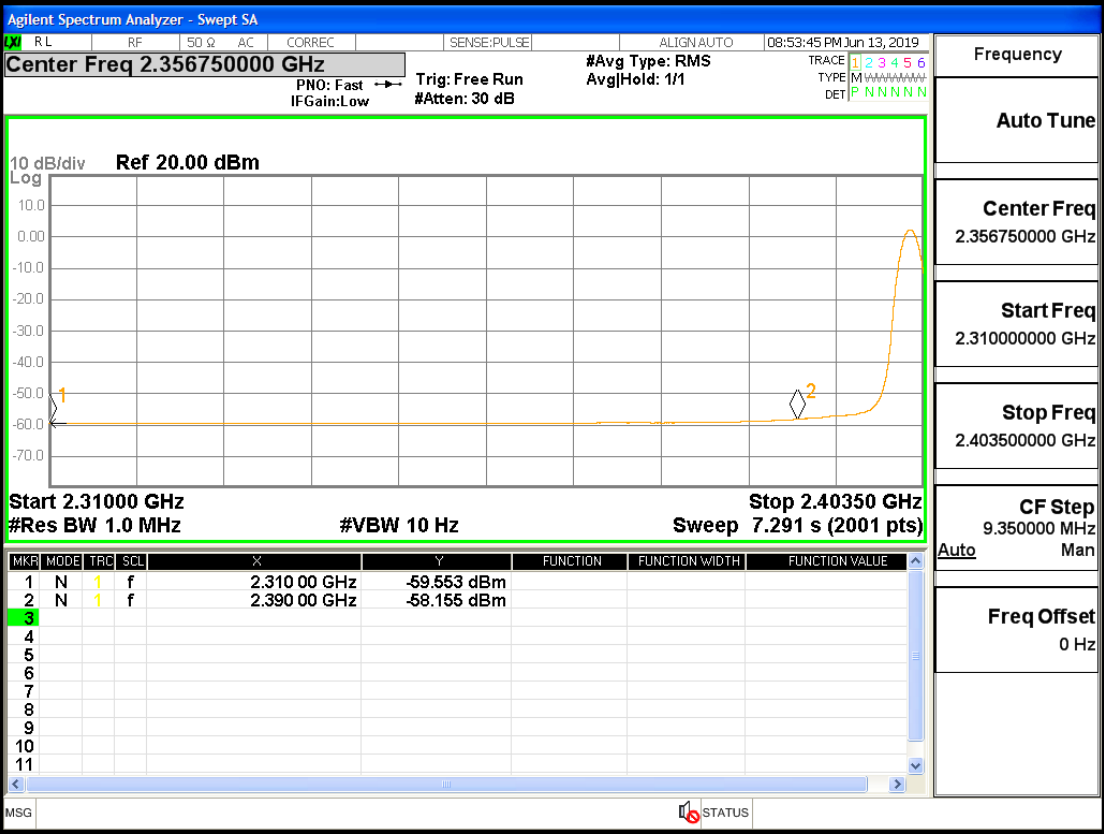
Restrict-band band-edge measurements_2480_AV_DH5



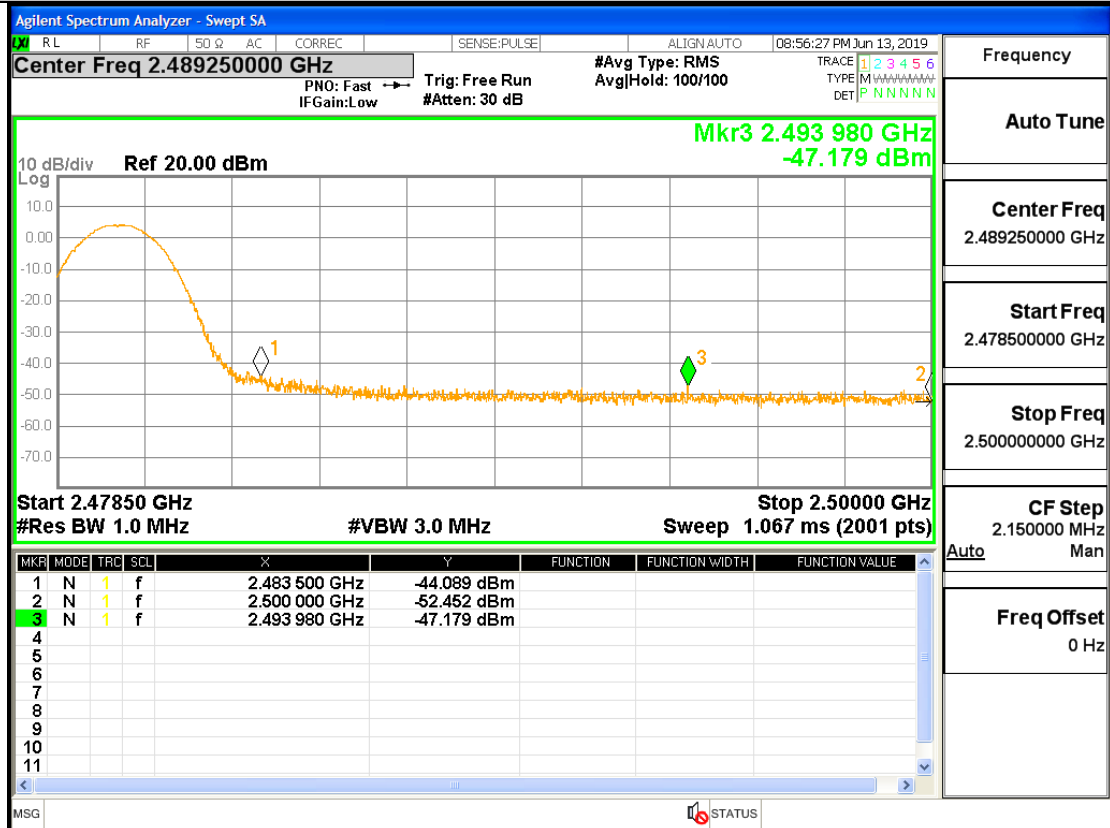
Restrict-band band-edge measurements_2402_PEAK_2DH5



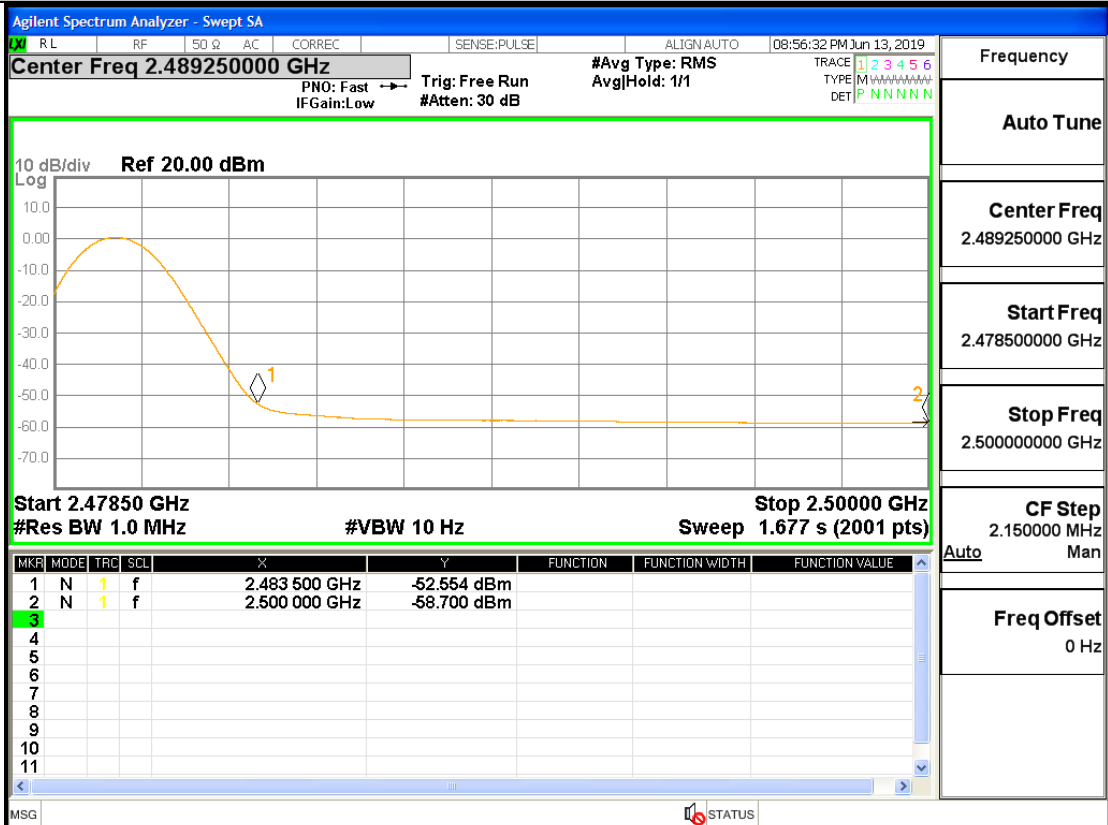
Restrict-band band-edge measurements_2402_AV_2DH5



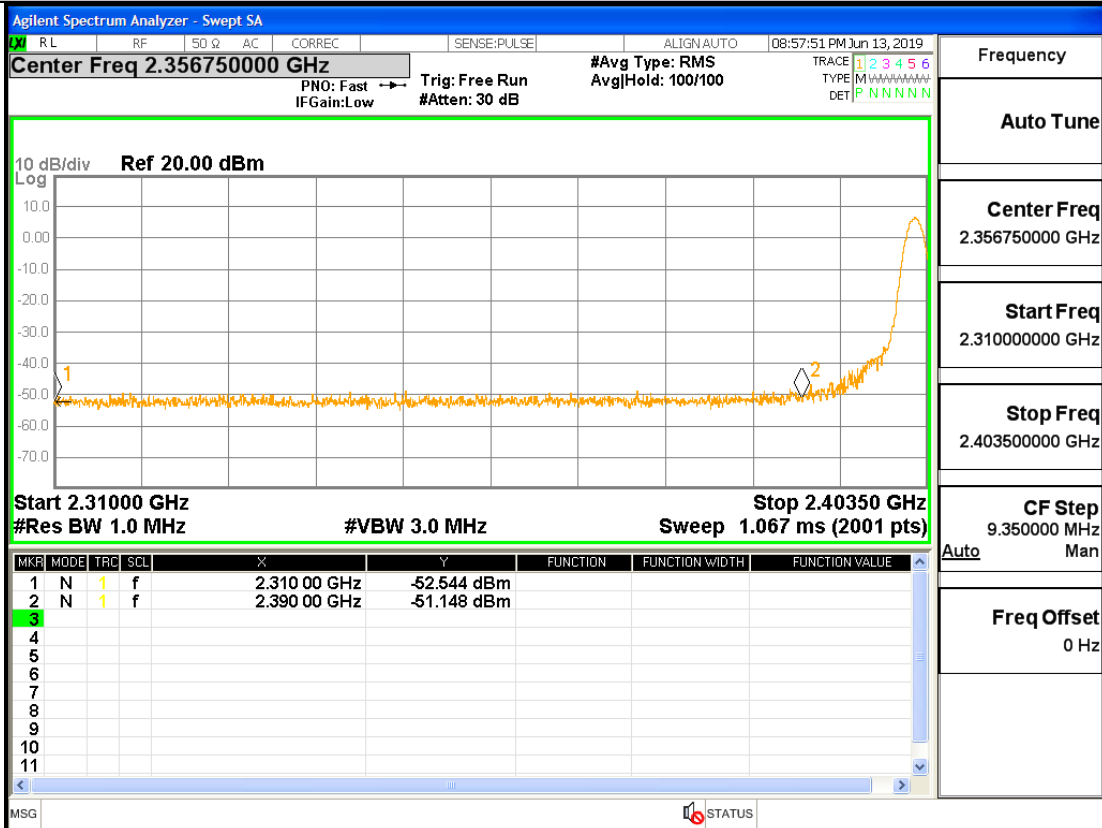
Restrict-band band-edge measurements_2480_PEAK_2DH5



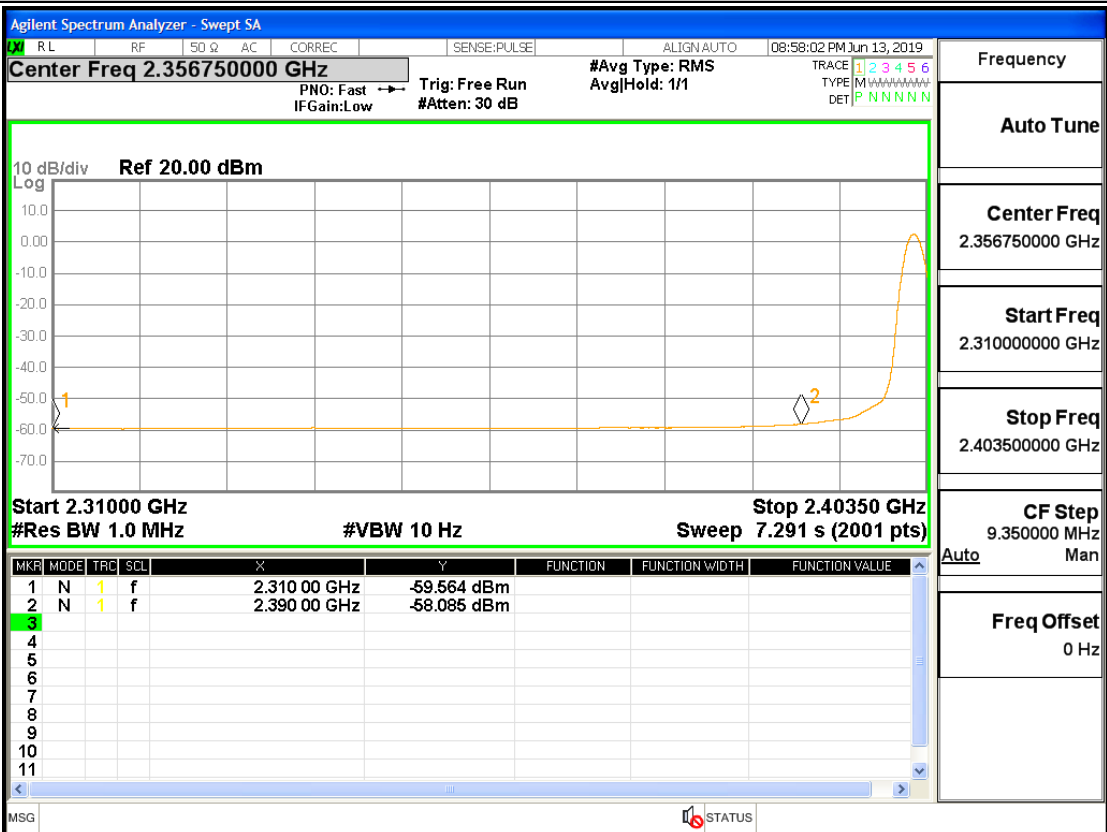
Restrict-band band-edge measurements_2480_AV_2DH5



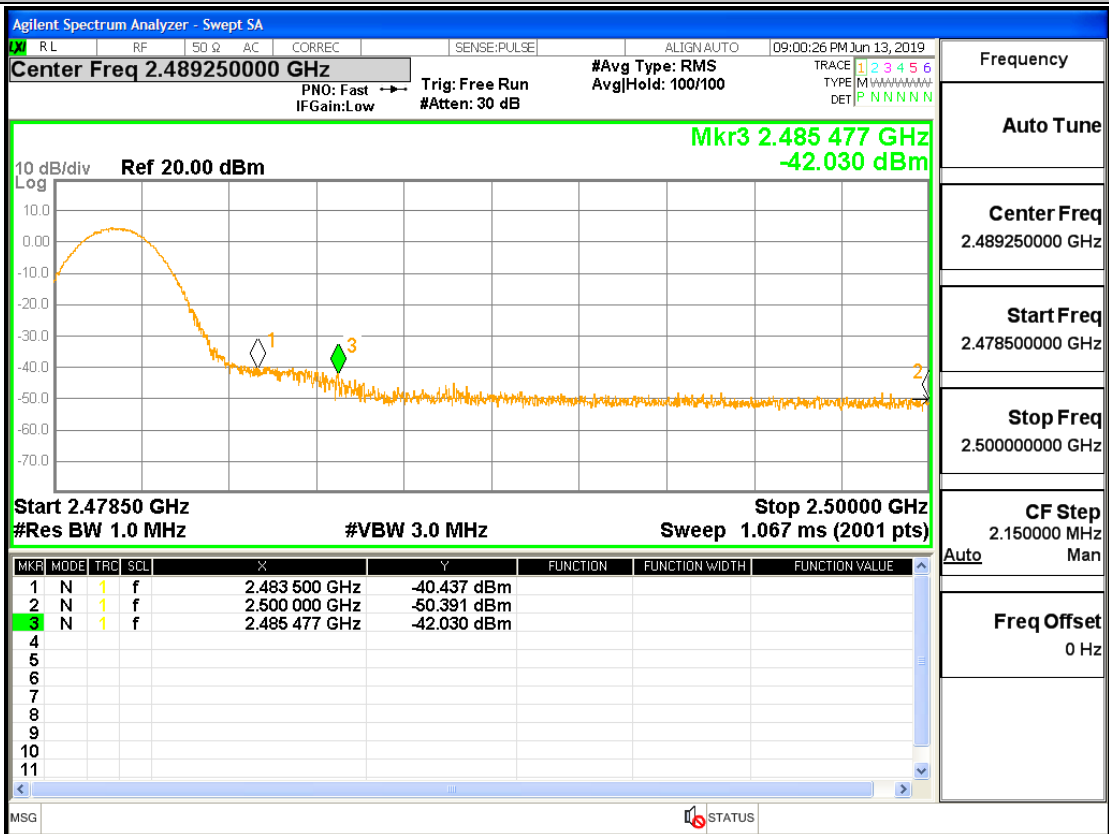
Restrict-band band-edge measurements 2402 PEAK 3DH5



Restrict-band band-edge measurements 2402 AV 3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

