

Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Sport Headset

Trade Mark: AWEI

Test Model: A880BL

Environmental Conditions

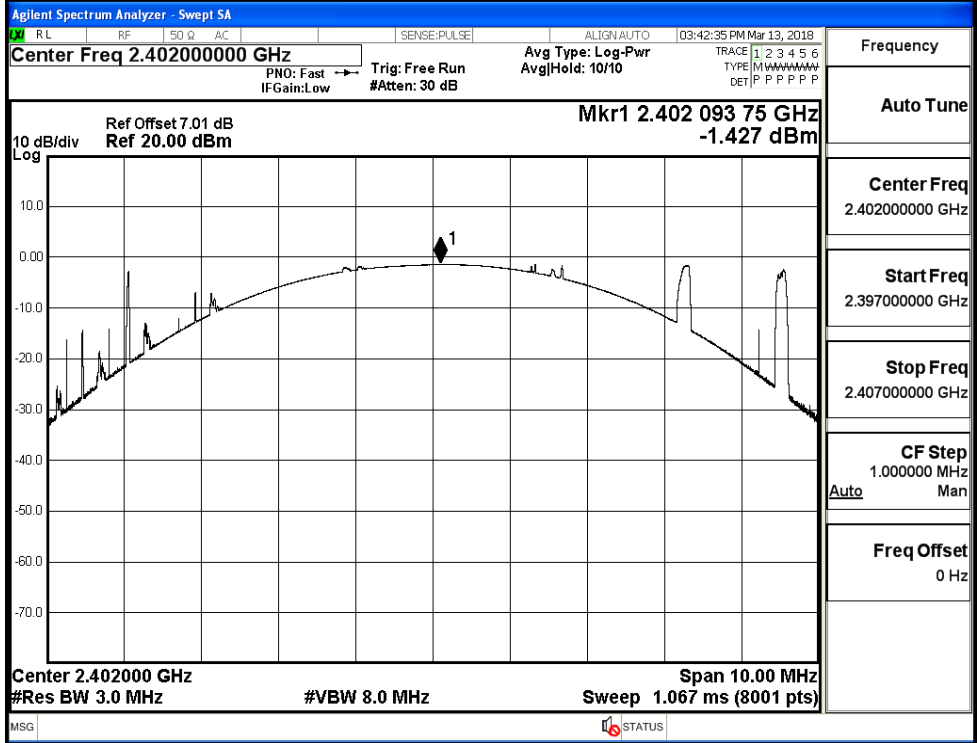
| | |
|--------------------|-------------|
| Temperature: | 21.3 ° C |
| Relative Humidity: | 52.8% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Ryan.Hu |
| Supervised by: | Jayden Zhuo |

A.1 Maxmum Conducted Peak Output Power

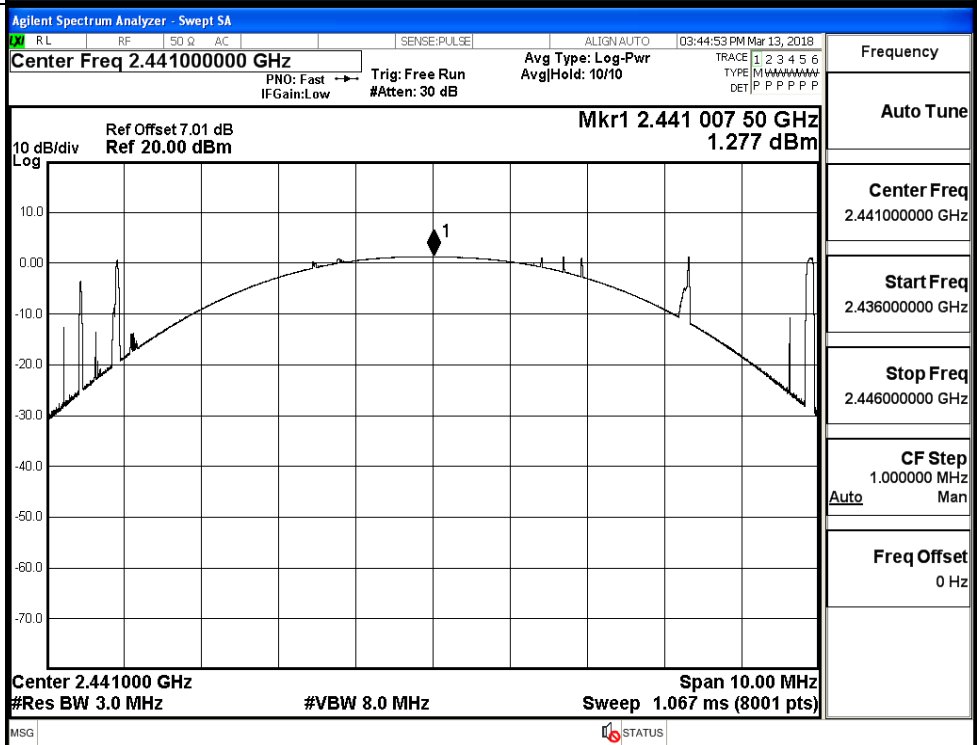
| Mode | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK | LCH | -1.427 | 30 | PASS |
| | MCH | 1.277 | 30 | PASS |
| | HCH | 2.733 | 30 | PASS |
| $\pi/4$ DQPSK | LCH | -3.532 | 21 | PASS |
| | MCH | 0.313 | 21 | PASS |
| | HCH | 2.037 | 21 | PASS |
| 8DPSK | LCH | -3.223 | 21 | PASS |
| | MCH | 0.516 | 21 | PASS |
| | HCH | 2.207 | 21 | PASS |

Test Graphs

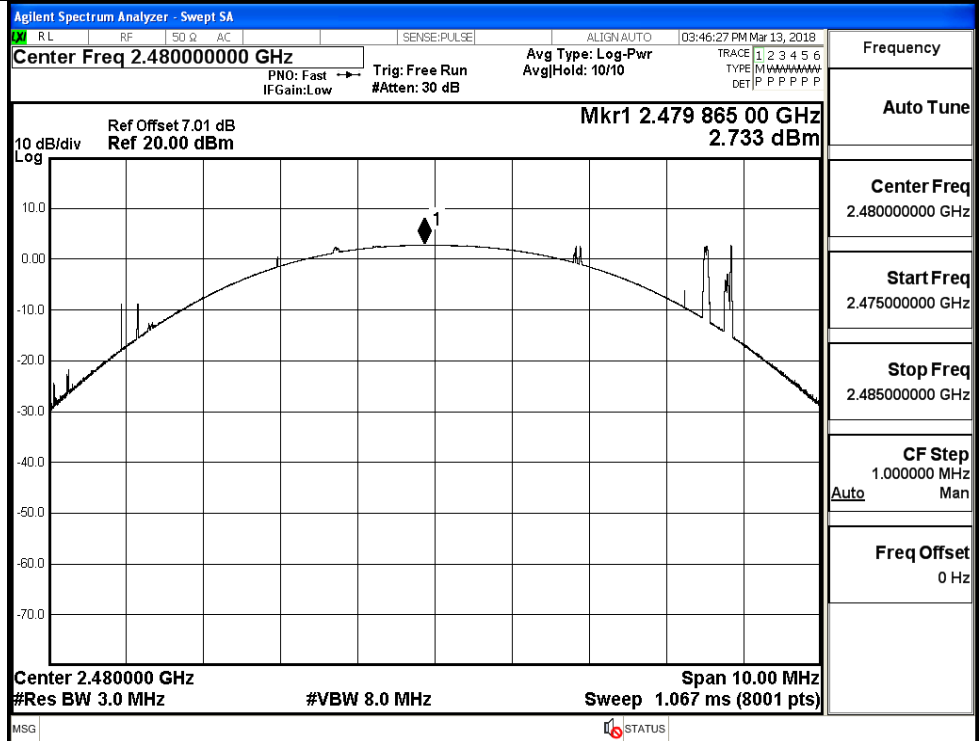
GFSK/LCH



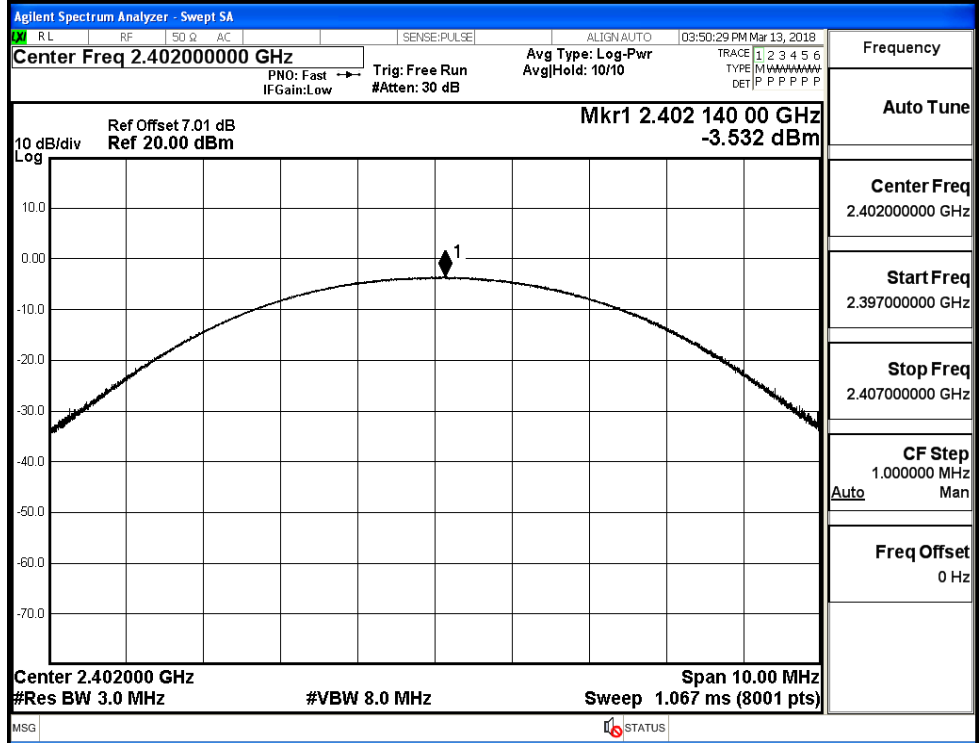
GFSK/MCH



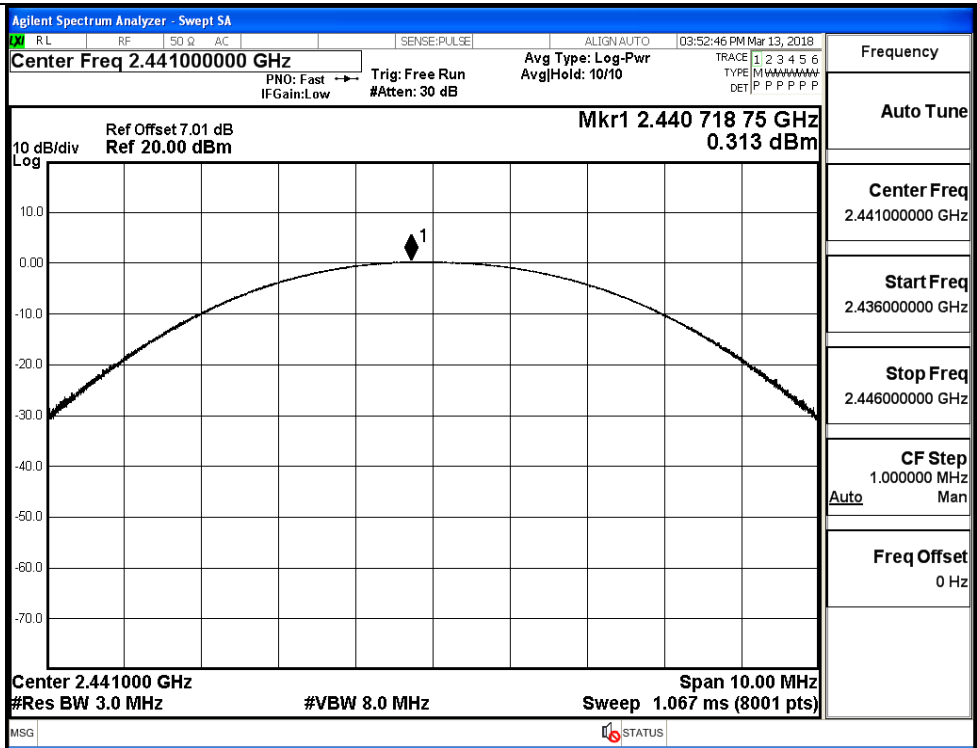
GFSK/HCH



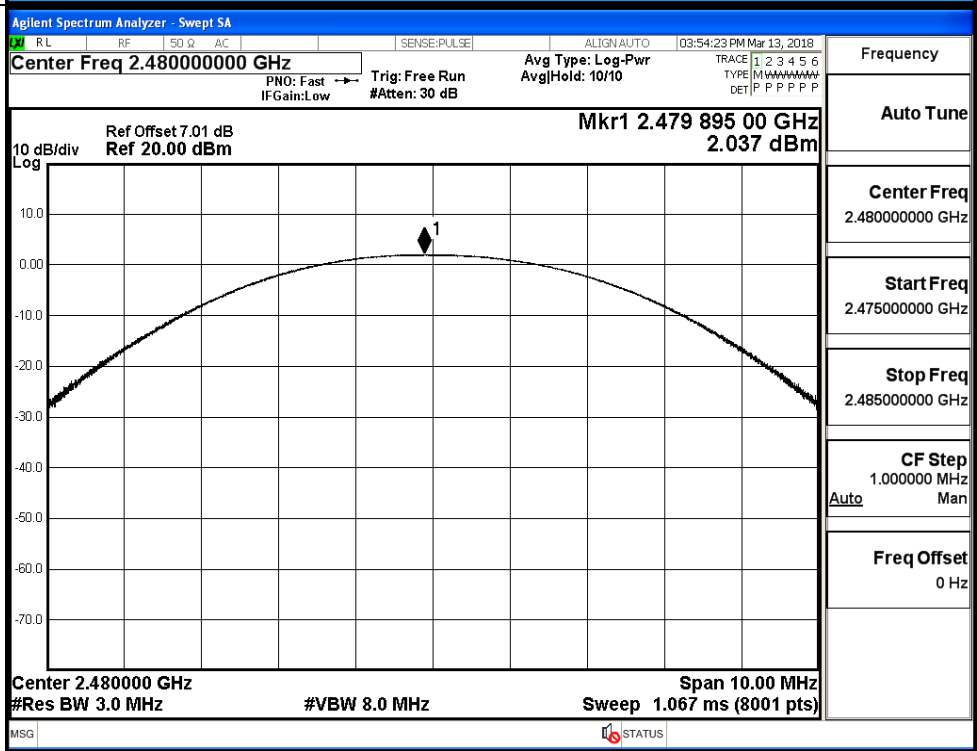
$\pi/4$ DQPSK/LCH



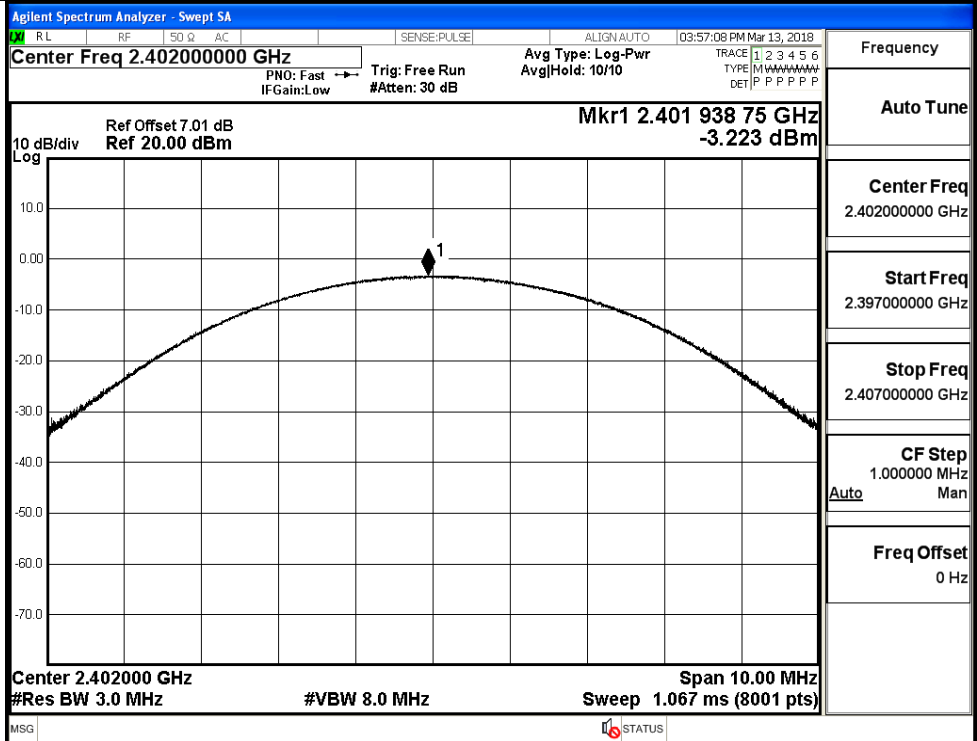
π /4DQPSK/MCH



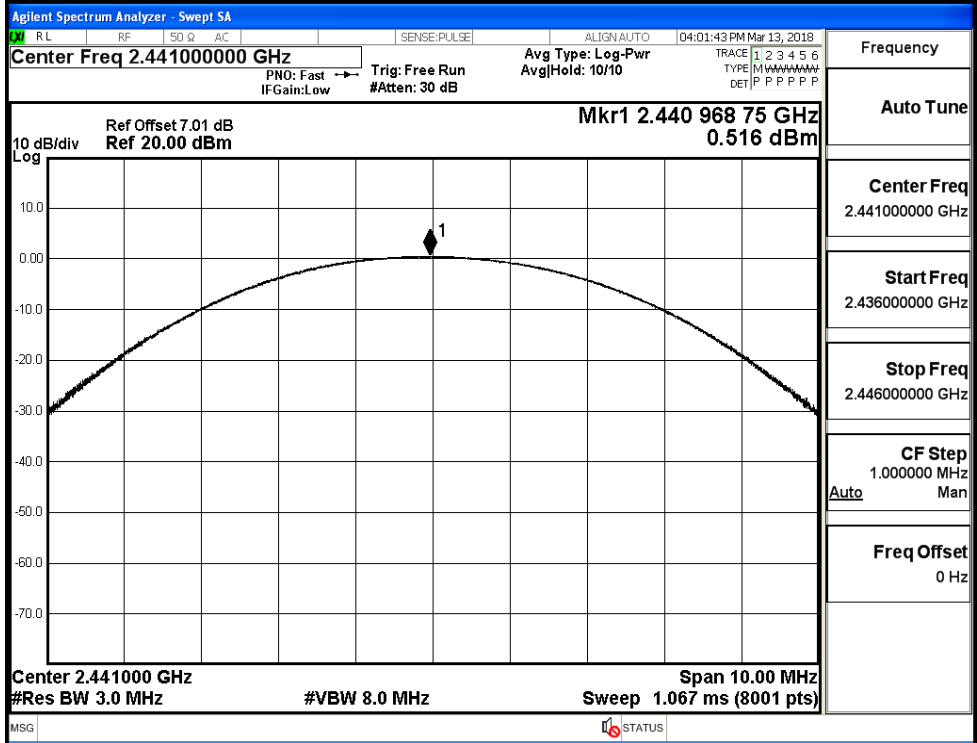
π /4DQPSK/HCH



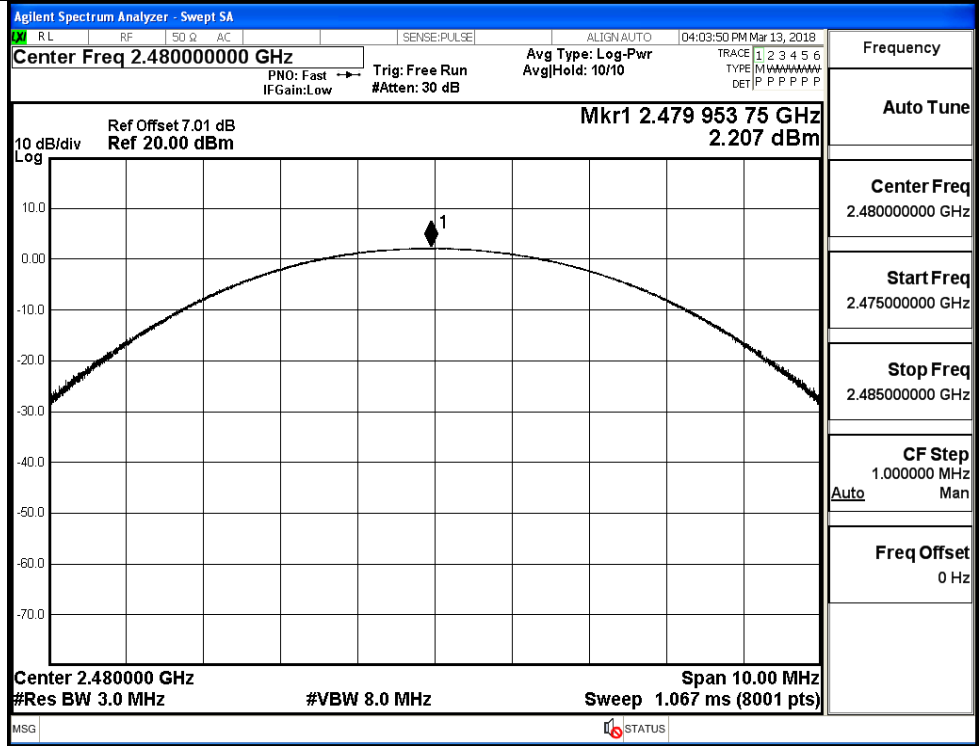
8DPSK/LCH



8DPSK/MCH

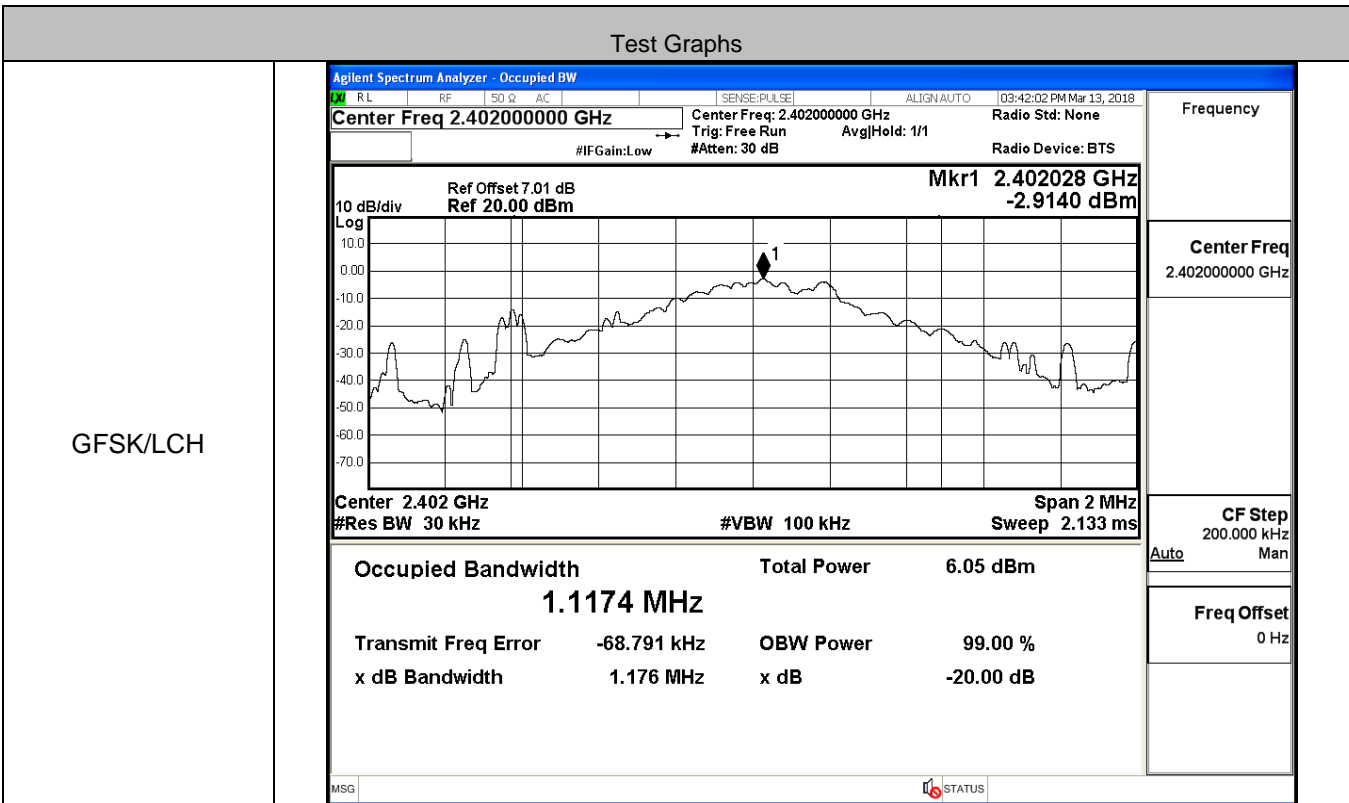


8DPSK/HCH

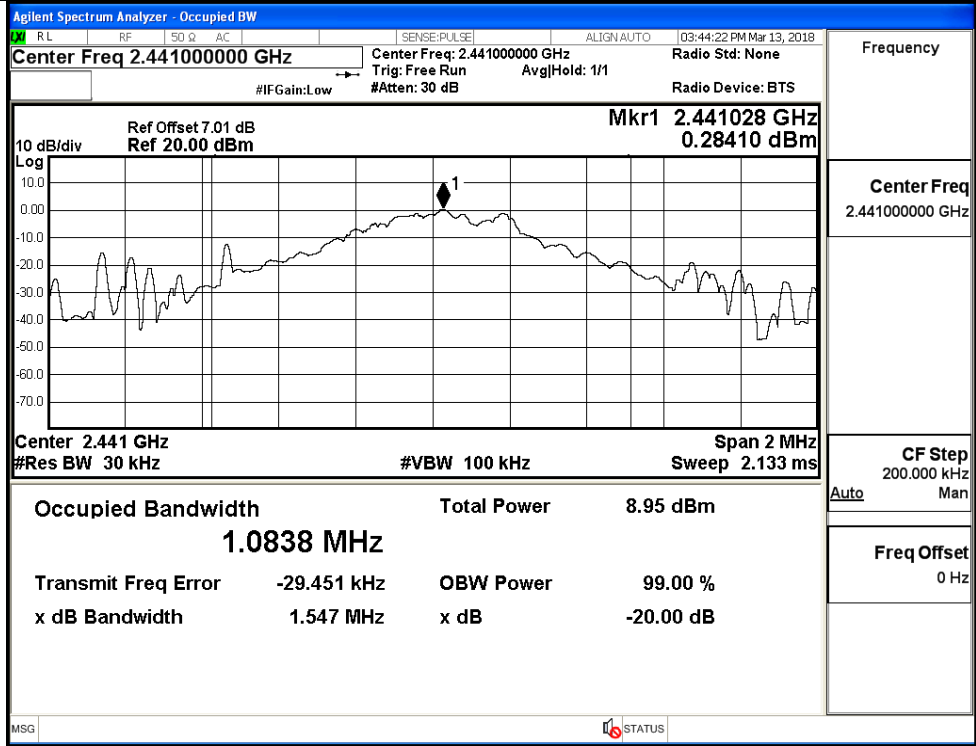


A.2 20dB Bandwidth

| Mode | Channel. | 20dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK | LCH | 1.176 | Not Specified | PASS |
| | MCH | 1.547 | Not Specified | PASS |
| | HCH | 1.402 | Not Specified | PASS |
| $\pi/4$ DQPSK | LCH | 1.258 | Not Specified | PASS |
| | MCH | 1.230 | Not Specified | PASS |
| | HCH | 1.233 | Not Specified | PASS |
| 8DPSK | LCH | 1.275 | Not Specified | PASS |
| | MCH | 1.261 | Not Specified | PASS |
| | HCH | 1.264 | Not Specified | PASS |

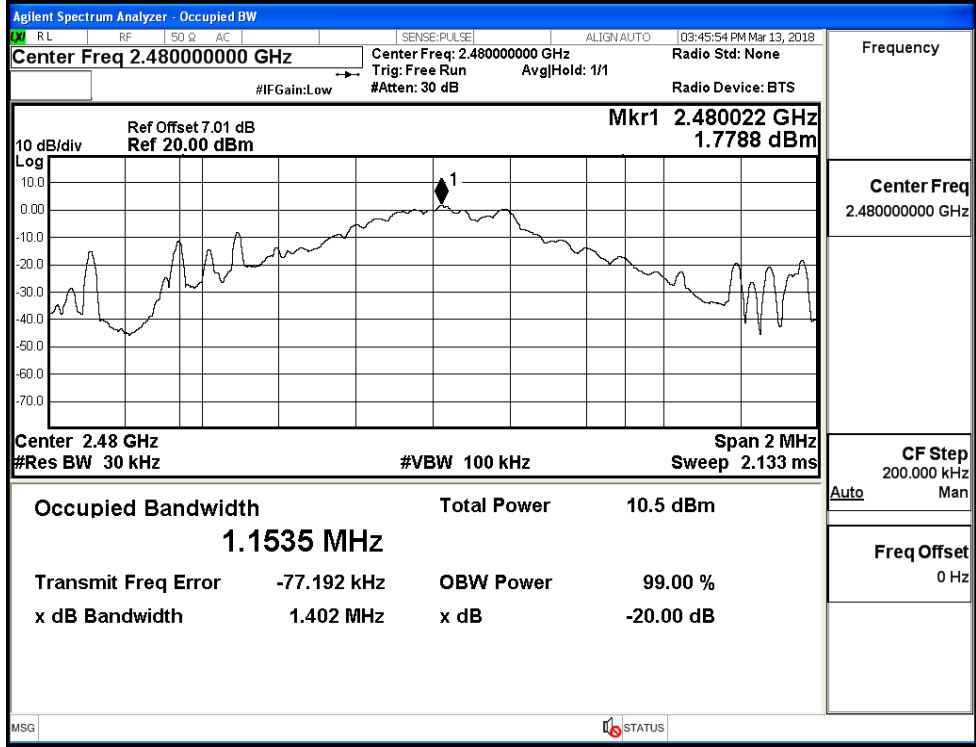


GFSK/MCH



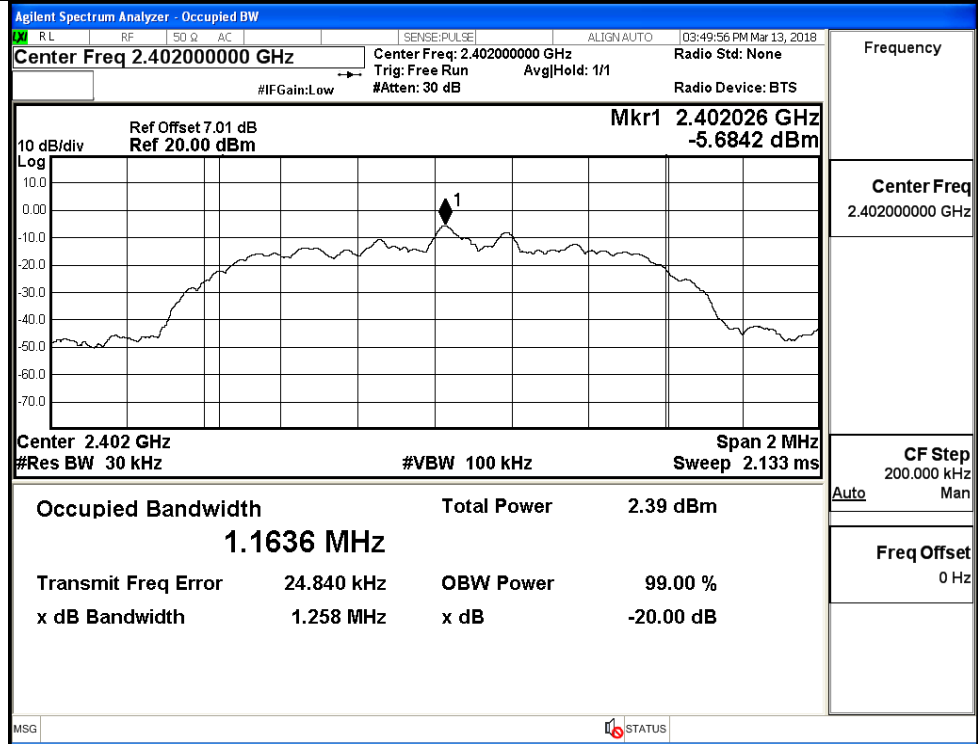
| | |
|-------------|----------------|
| Frequency | 2.44100000 GHz |
| Center Freq | 2.44100000 GHz |
| CF Step | 200.000 kHz |
| Auto | Man |
| Freq Offset | 0 Hz |

GFSK/HCH



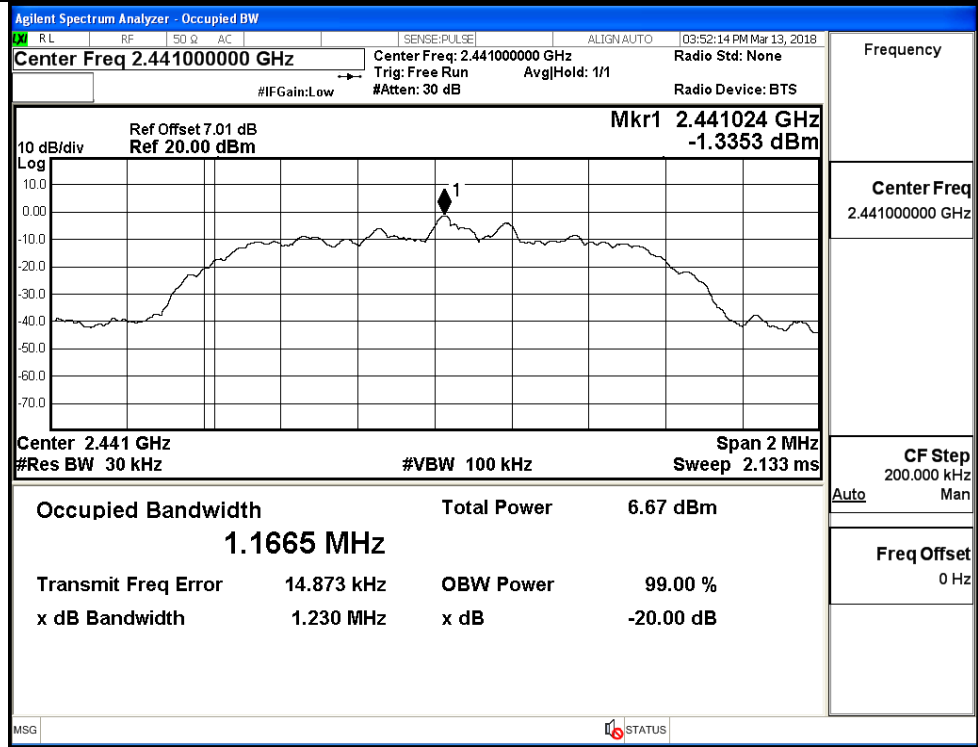
| | |
|-------------|----------------|
| Frequency | 2.48000000 GHz |
| Center Freq | 2.48000000 GHz |
| CF Step | 200.000 kHz |
| Auto | Man |
| Freq Offset | 0 Hz |

$\pi/4$ DQPSK/LCH



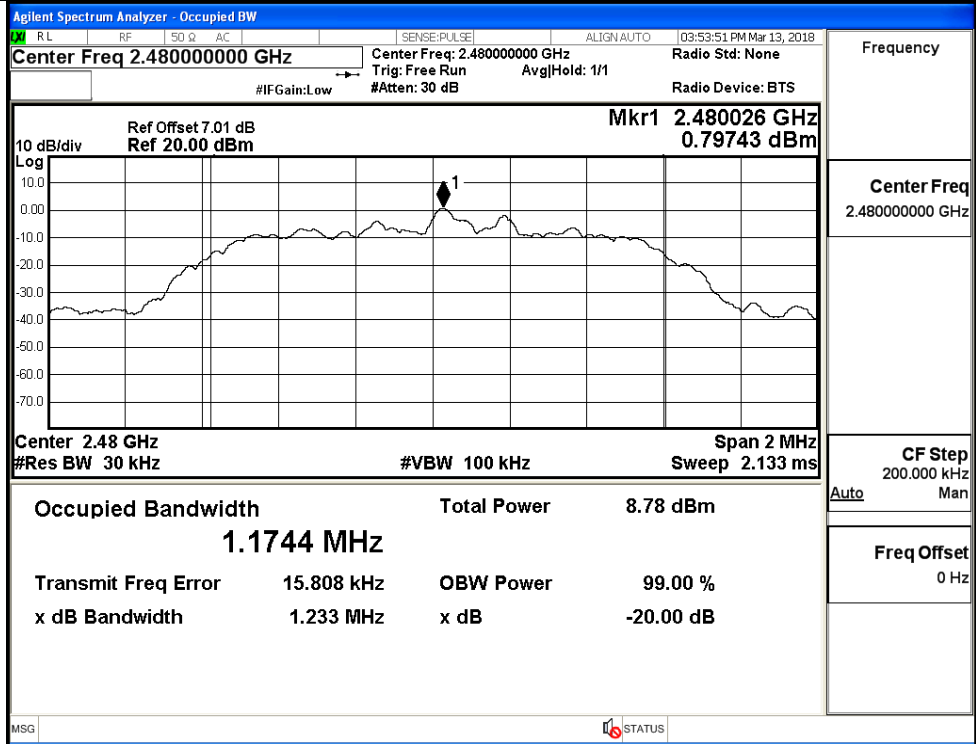
| | |
|-------------|----------------|
| Frequency | 2.40200000 GHz |
| Center Freq | 2.40200000 GHz |
| CF Step | 200.000 kHz |
| Auto | Man |
| Freq Offset | 0 Hz |

$\pi/4$ DQPSK/MCH

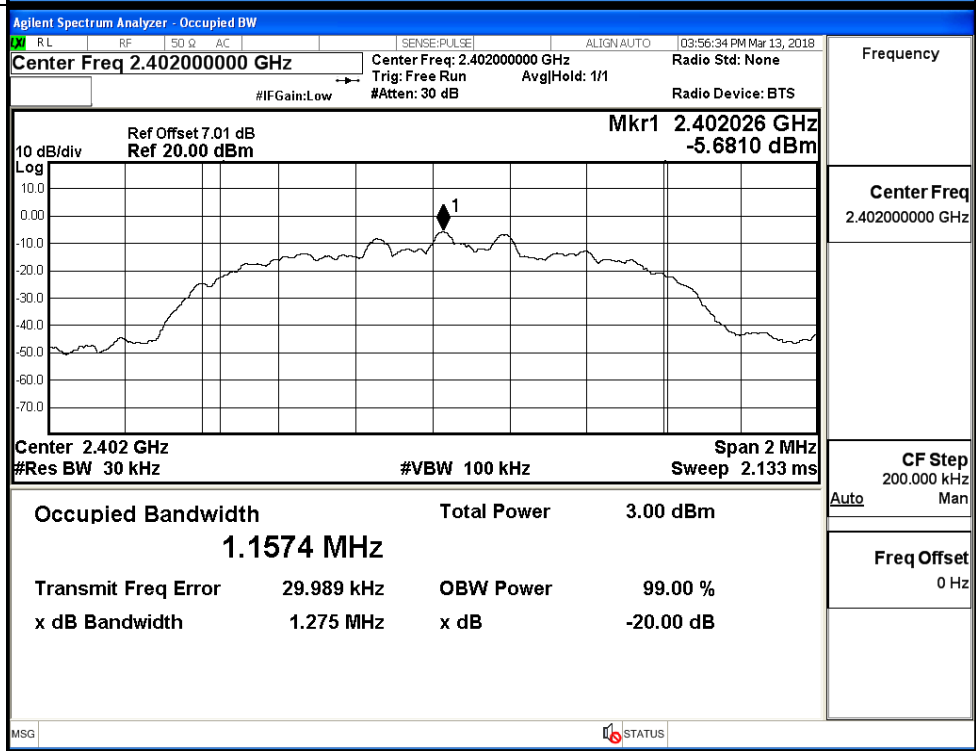


| | |
|-------------|----------------|
| Frequency | 2.44100000 GHz |
| Center Freq | 2.44100000 GHz |
| CF Step | 200.000 kHz |
| Auto | Man |
| Freq Offset | 0 Hz |

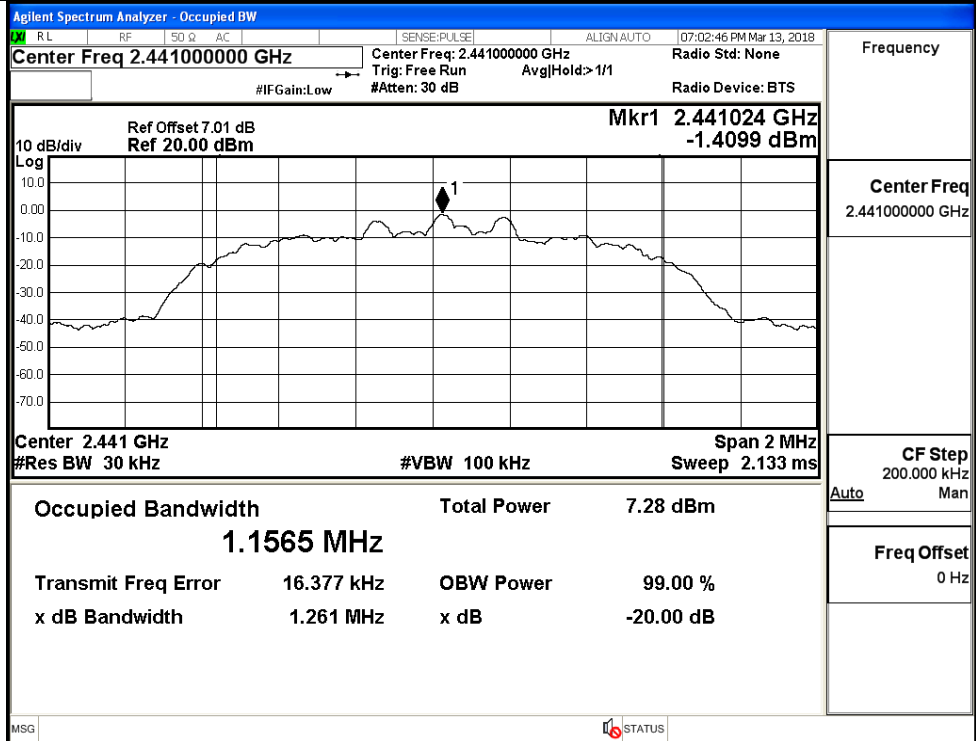
$\pi/4$ DQPSK/HCH



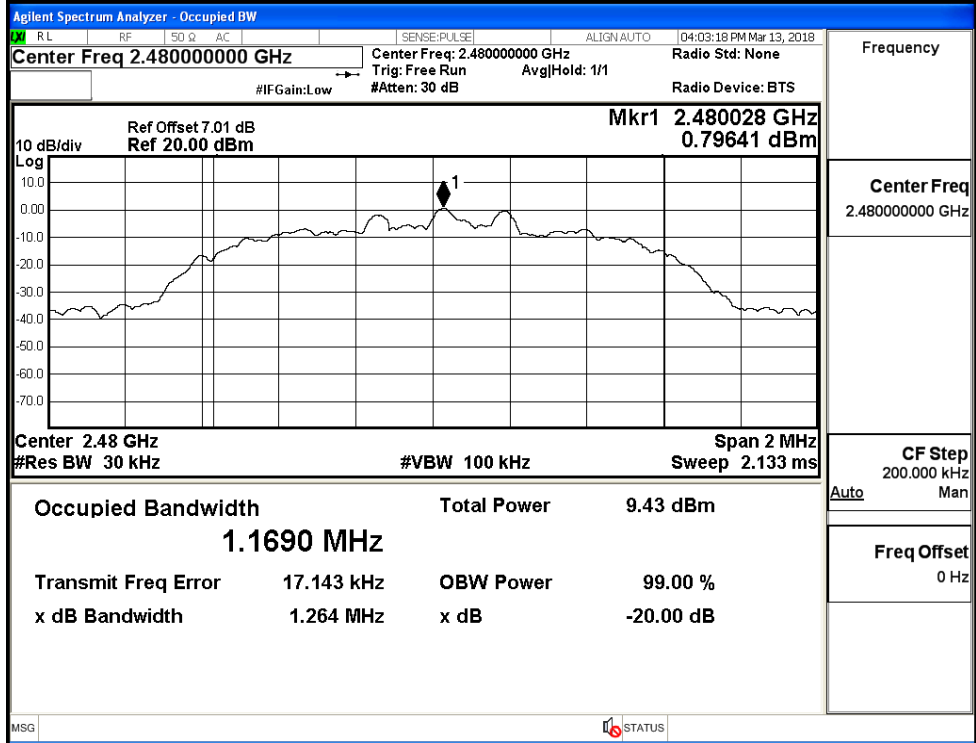
8DPSK/LCH



8DPSK/MCH

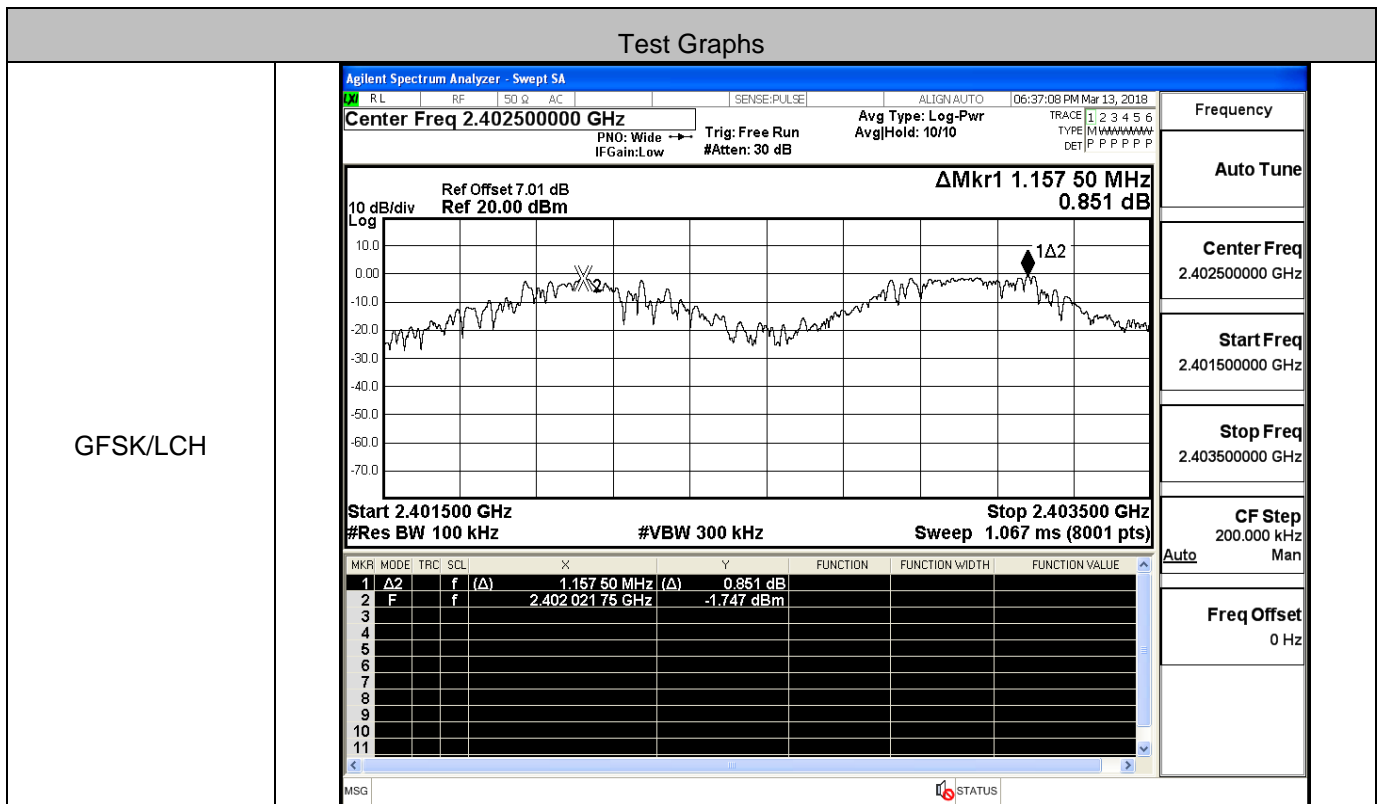


8DPSK/HCH

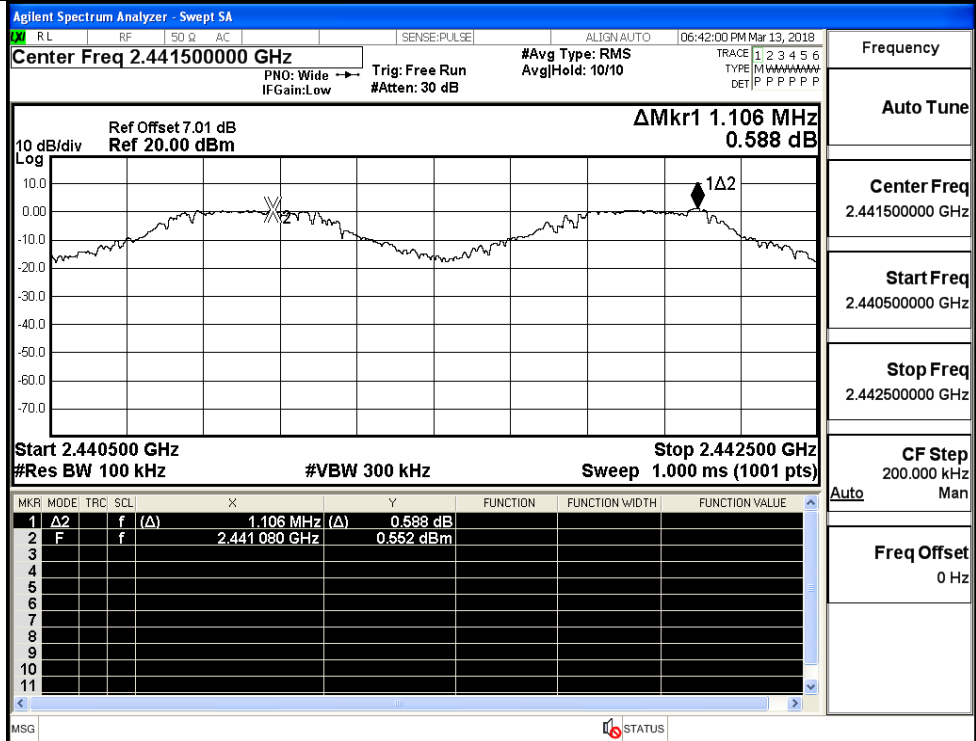


A.3 Carrier Frequency Separation

| Mode | Channel | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|----------|---------|------------------------------------|-------------|---------|
| GFSK | LCH | 1.158 | 0.784 | PASS |
| | MCH | 1.106 | 1.031 | PASS |
| | HCH | 1.046 | 0.935 | PASS |
| π/4DQPSK | LCH | 0.976 | 0.839 | PASS |
| | MCH | 0.880 | 0.820 | PASS |
| | HCH | 0.850 | 0.822 | PASS |
| 8DPSK | LCH | 0.940 | 0.850 | PASS |
| | MCH | 0.996 | 0.841 | PASS |
| | HCH | 1.050 | 0.843 | PASS |

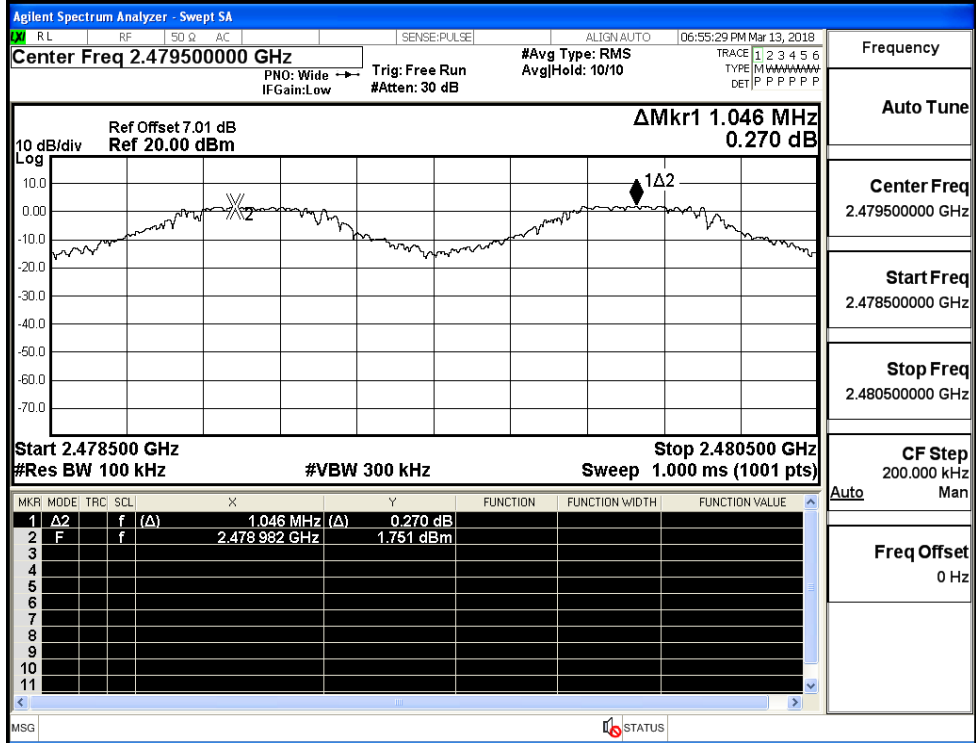


GFSK/MCH



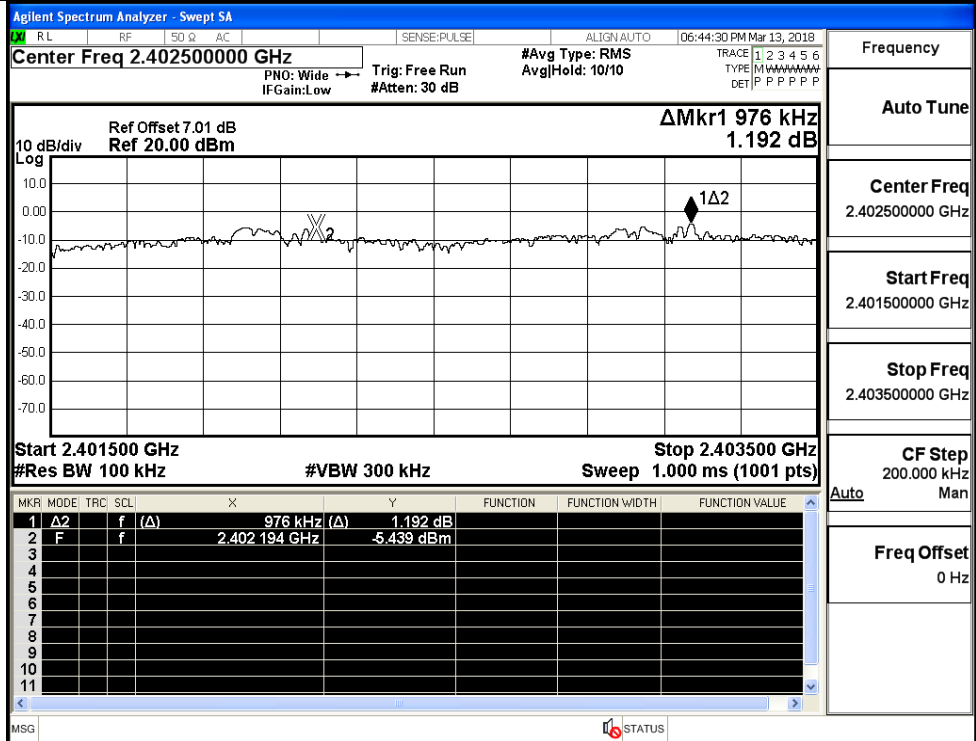
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

GFSK/HCH

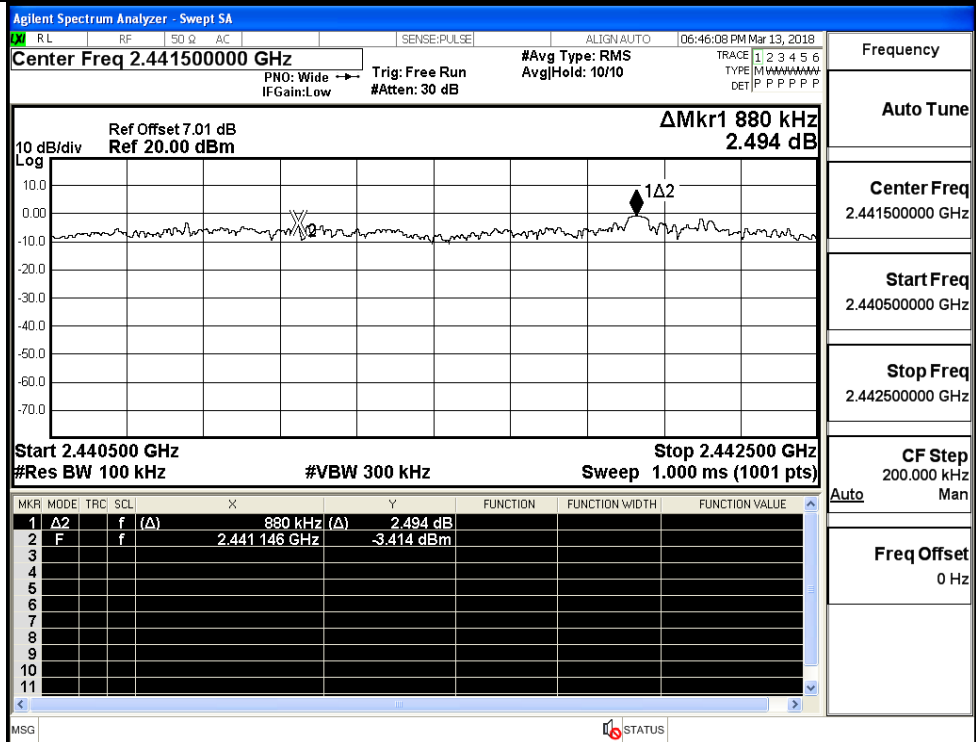


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

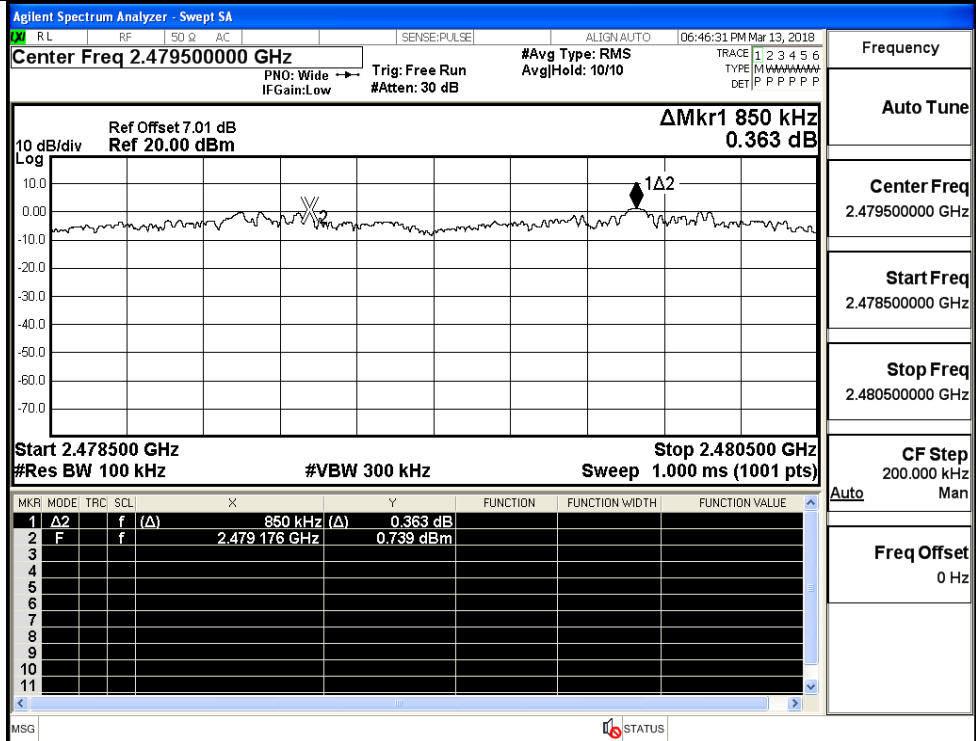
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

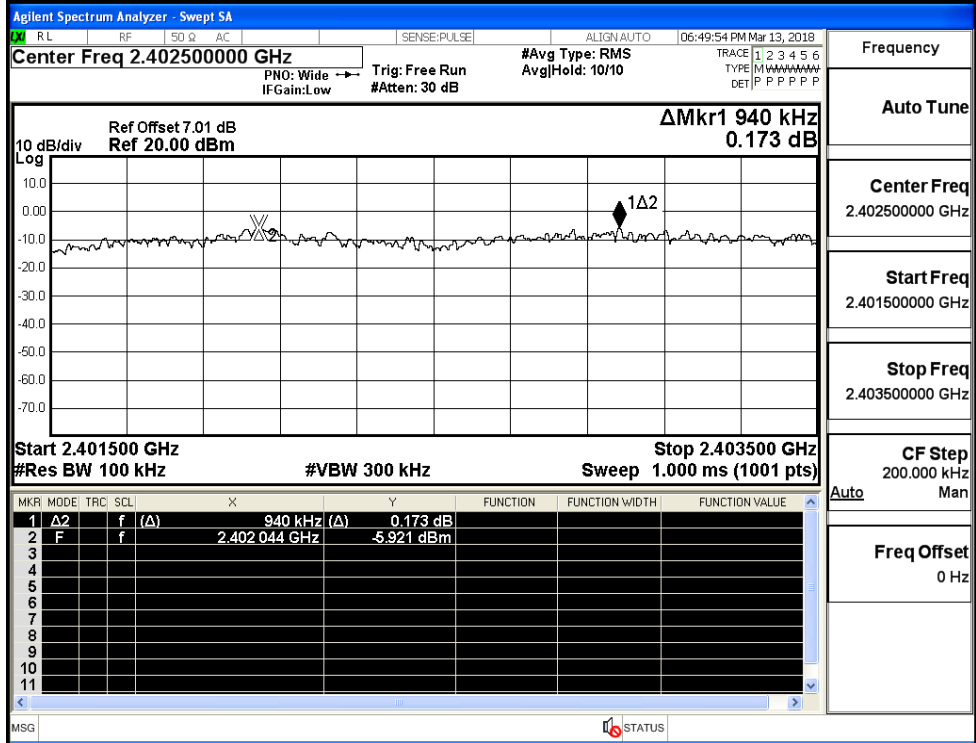


π/4DQPSK/HCH

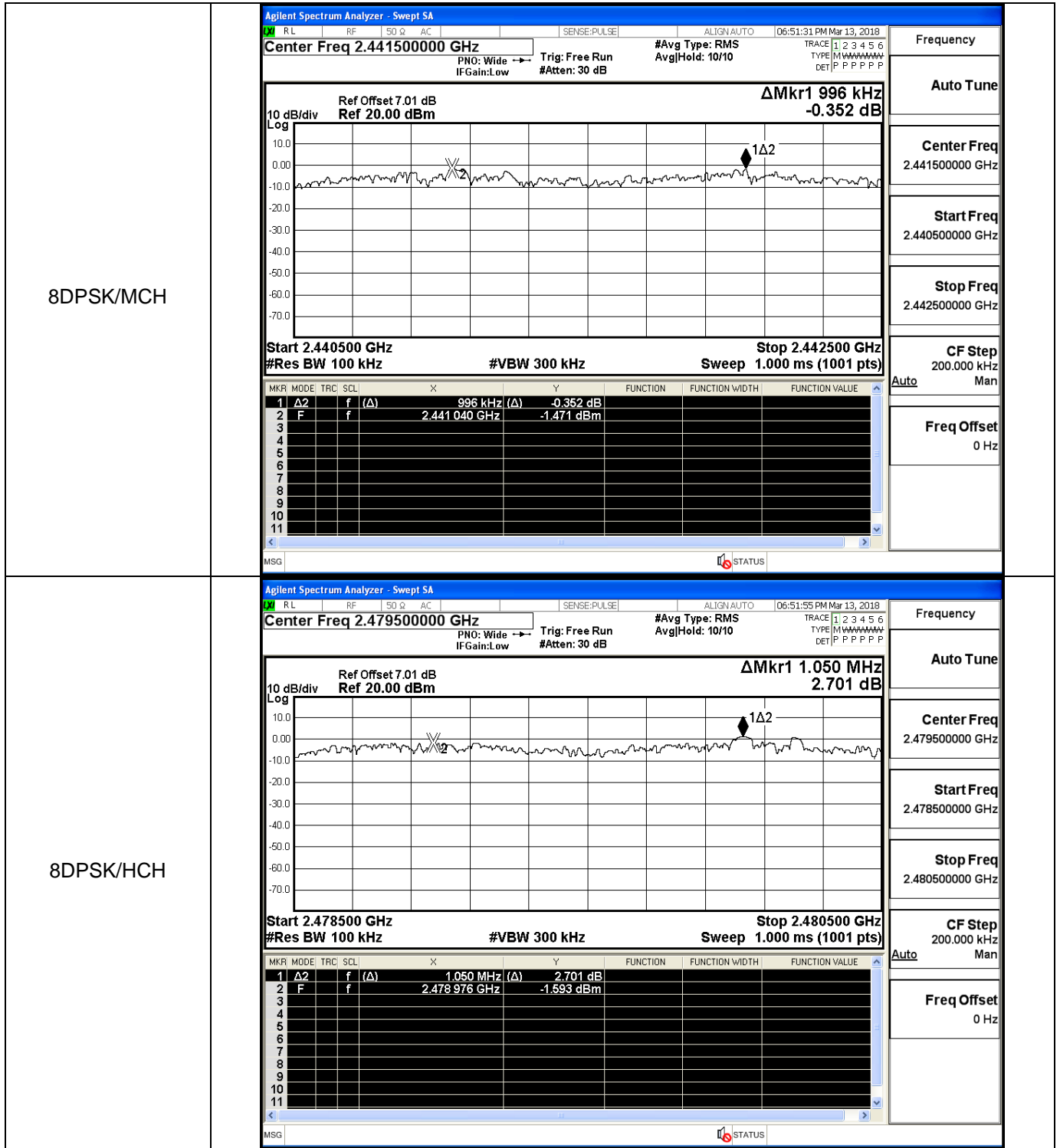


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH



Frequency
Auto Tune
Center Freq
2.402500000 GHz
Start Freq
2.401500000 GHz
Stop Freq
2.403500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

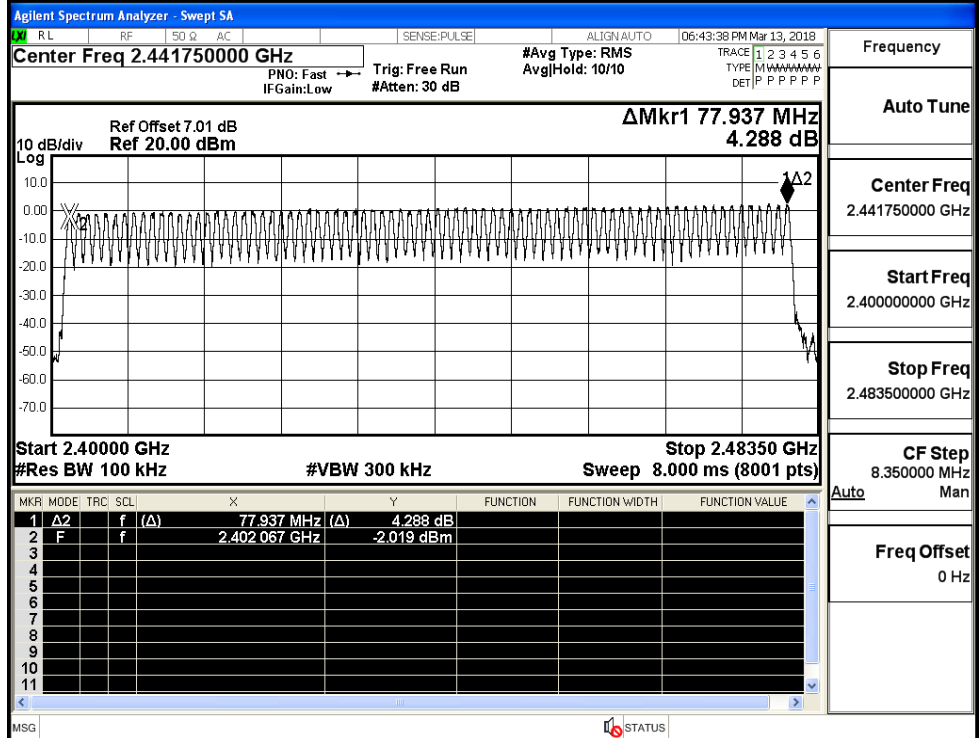


A.4 Hopping Channel Number

| 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 |

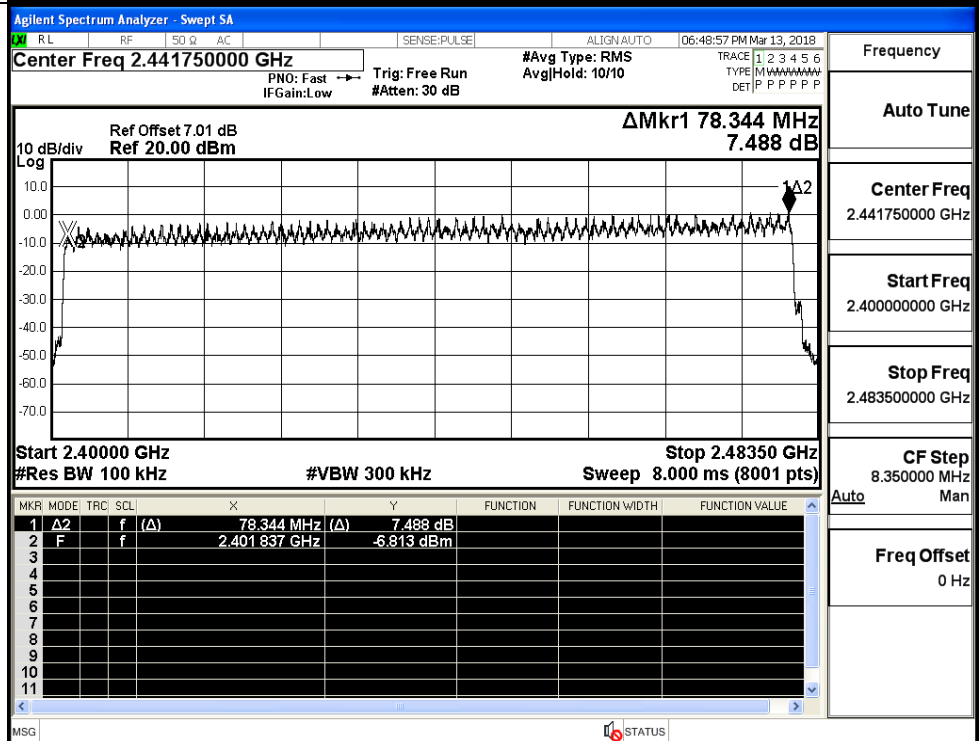
Test Graphs

GFSK/Hop



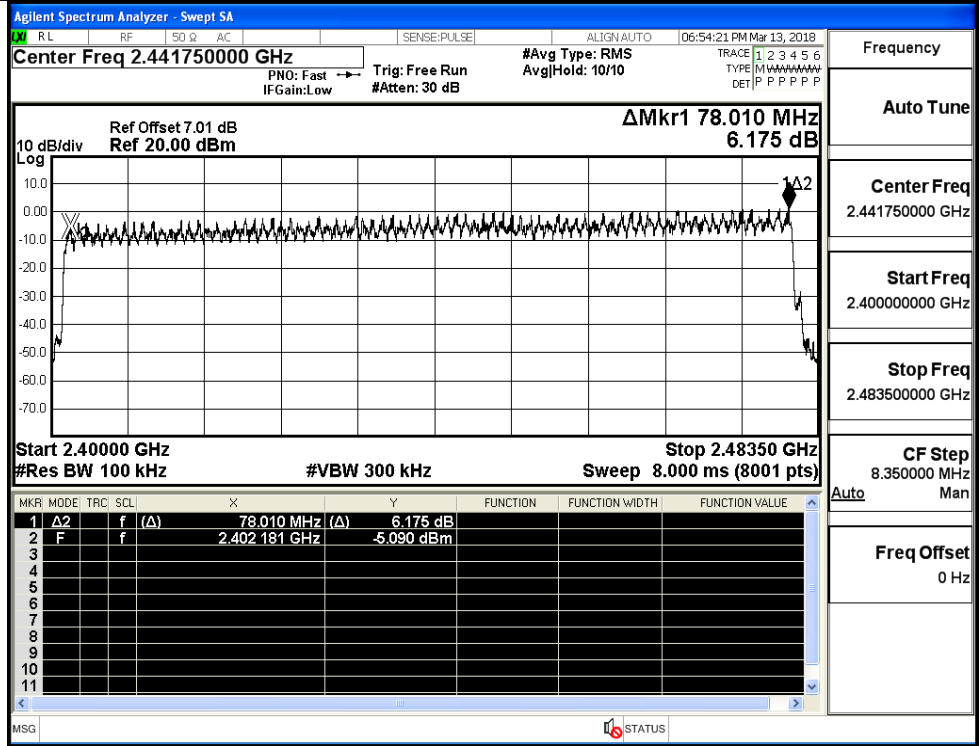
| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.441750000 GHz |
| Start Freq | 2.400000000 GHz |
| Stop Freq | 2.483500000 GHz |
| CF Step | 8.350000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

$\pi/4$ DQPSK/Hop



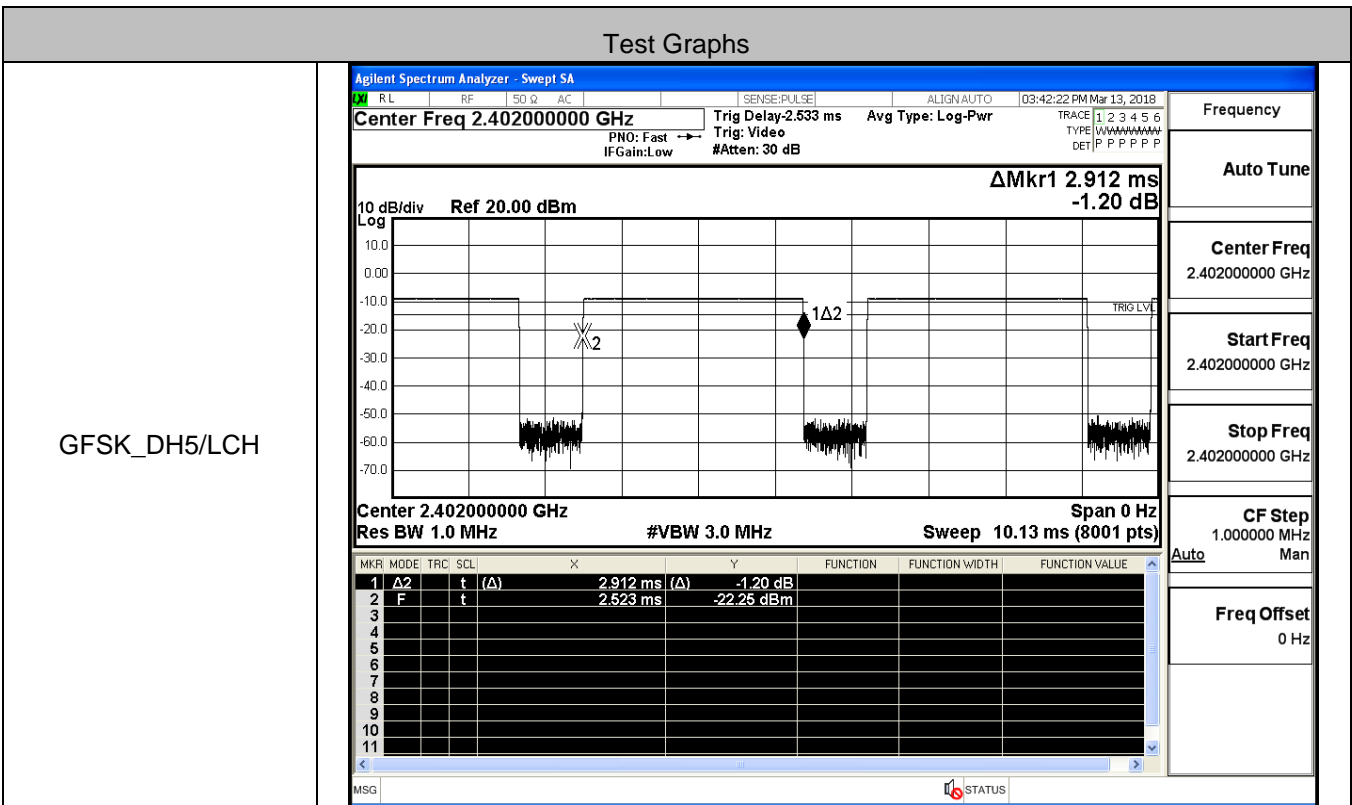
| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.441750000 GHz |
| Start Freq | 2.400000000 GHz |
| Stop Freq | 2.483500000 GHz |
| CF Step | 8.350000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

8DPSK/Hop

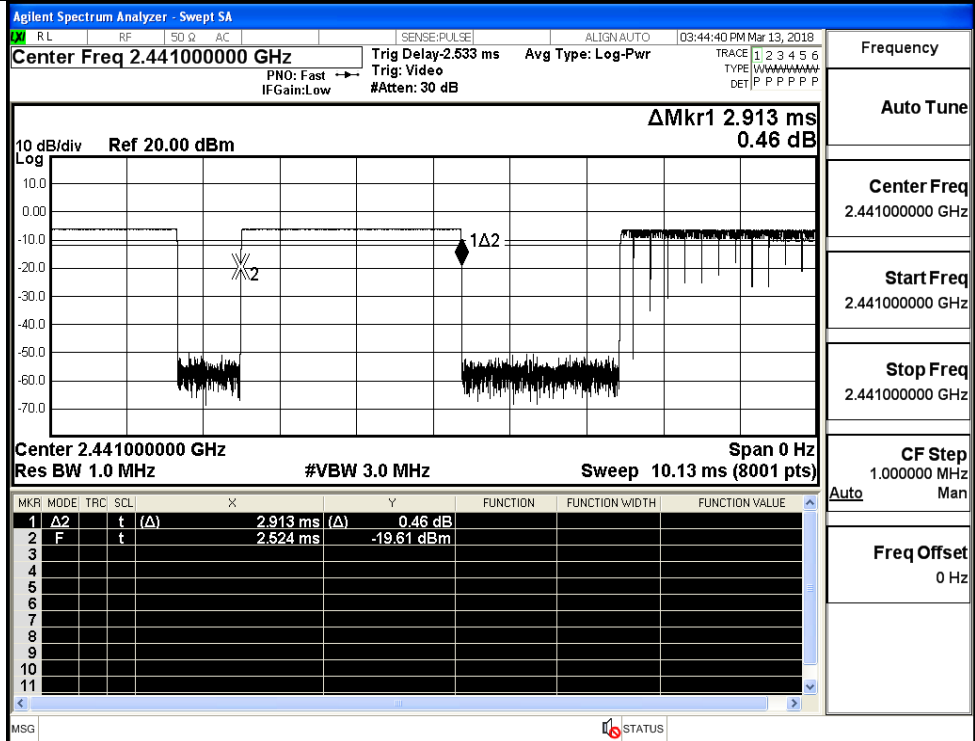


A.5 Dwell Time

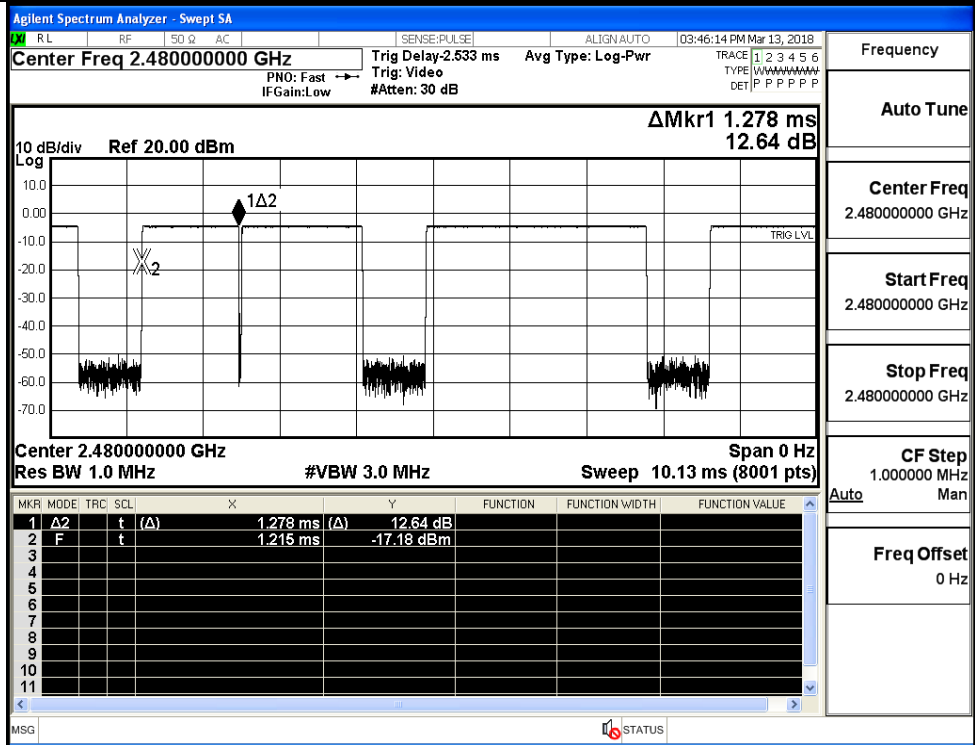
| Mode | Packet | Channel | Burst Width [ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|----------|--------|---------|-------------------------|--------------------|---------------|-----------|---------|
| GFSK | DH5 | LCH | 2.91 | 106.7 | 0.31 | 0.4 | PASS |
| | DH5 | MCH | 2.91 | 106.7 | 0.31 | 0.4 | PASS |
| | DH5 | HCH | 1.28 | 106.7 | 0.137 | 0.4 | PASS |
| π/4DQPSK | 2DH5 | LCH | 2.91 | 106.7 | 0.312 | 0.4 | PASS |
| | 2DH5 | MCH | 2.91 | 106.7 | 0.312 | 0.4 | PASS |
| | 2DH5 | HCH | 1.28 | 106.7 | 0.312 | 0.4 | PASS |
| 8DPSK | 3DH5 | LCH | 2.91 | 106.7 | 0.312 | 0.4 | PASS |
| | 3DH5 | MCH | 2.91 | 106.7 | 0.312 | 0.4 | PASS |
| | 3DH5 | HCH | 1.28 | 106.7 | 0.312 | 0.4 | PASS |



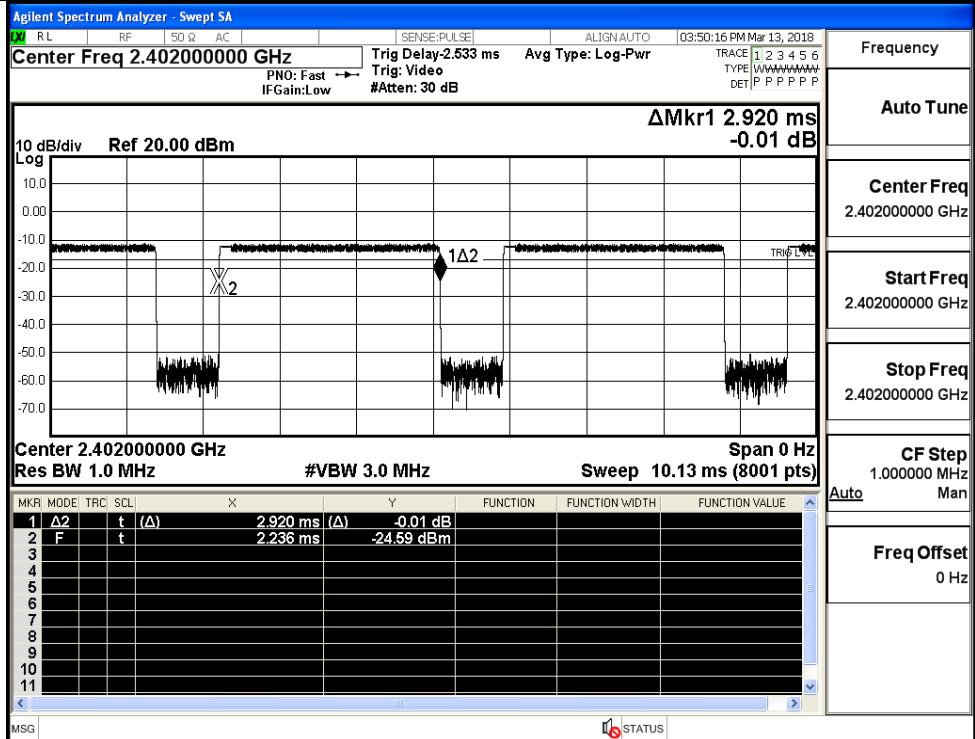
GFSK_DH5/MCH



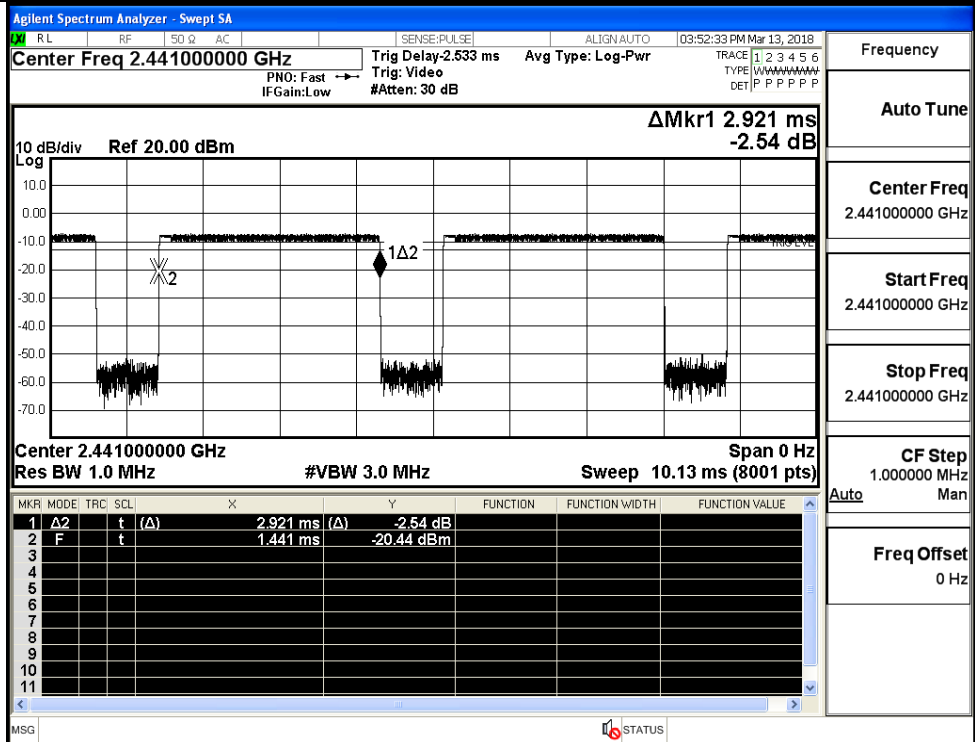
GFSK_DH5/HCH



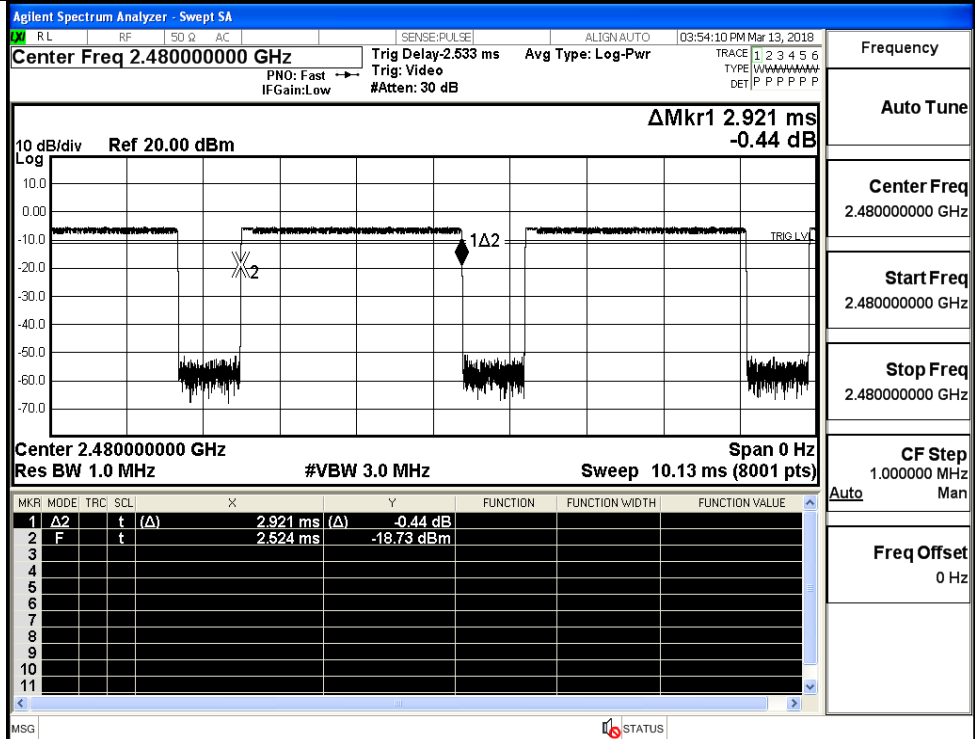
$\pi/4$ DQPSK
_2DH5/LCH



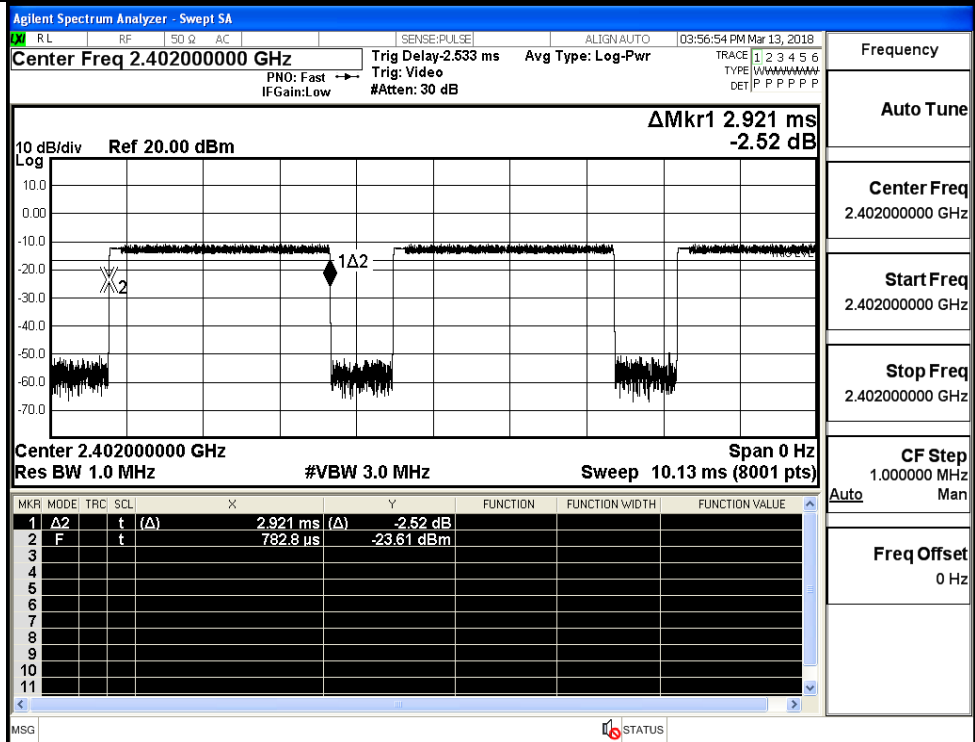
$\pi/4$ DQPSK
_2DH5/MCH



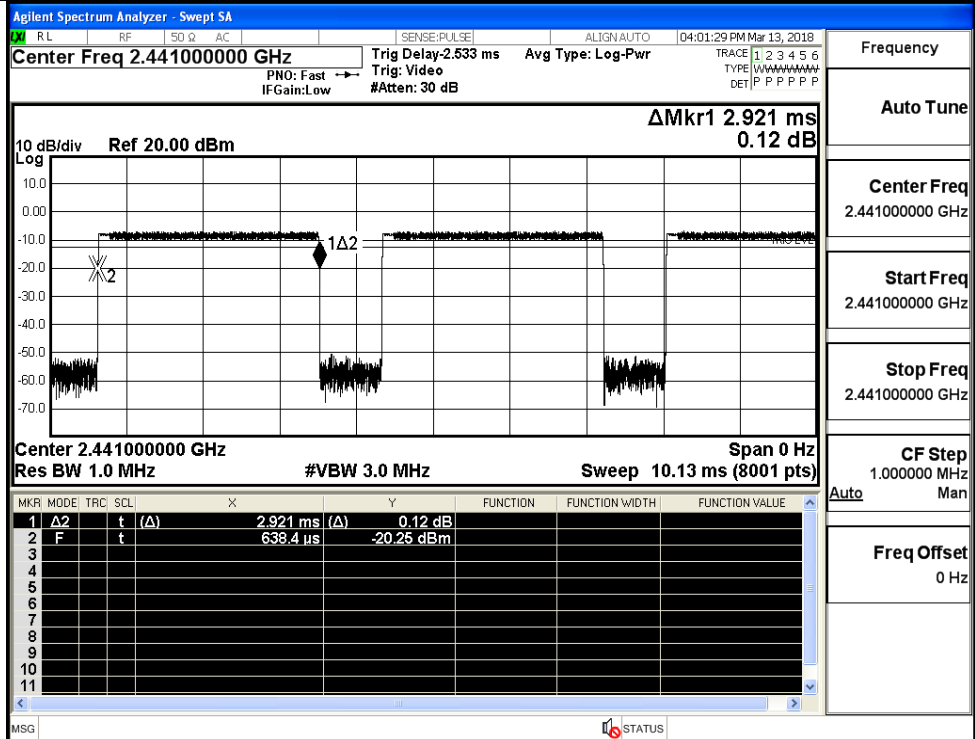
$\pi/4$ DQPSK
_2DH5/HCH



8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



Frequency

Auto Tune

Center Freq 2.441000000 GHz

Start Freq 2.441000000 GHz

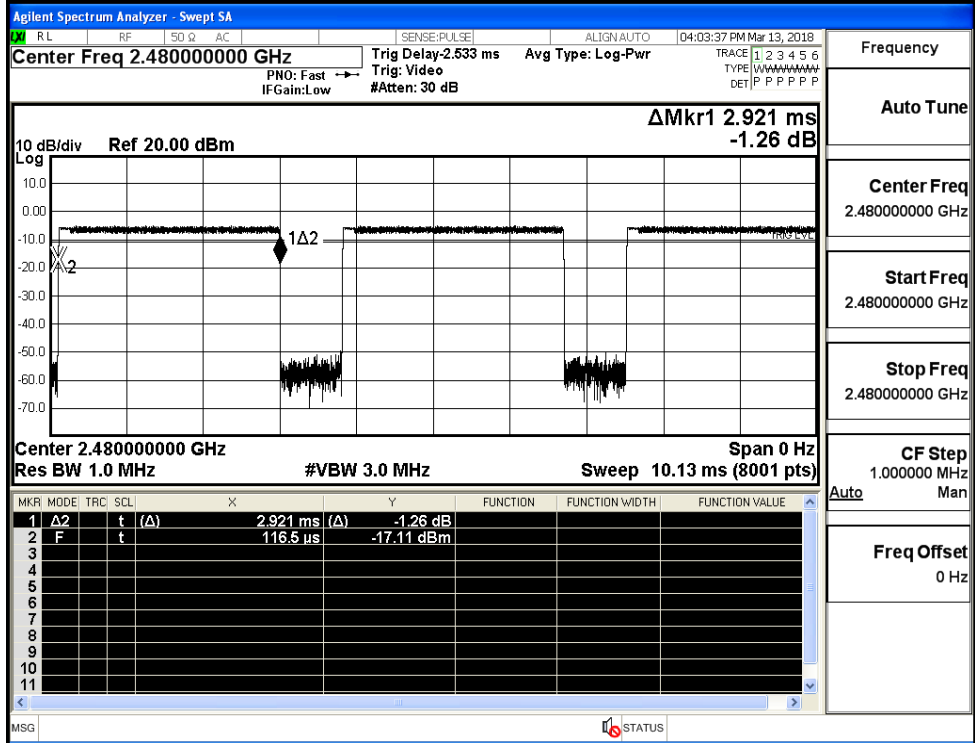
Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Auto Man

Freq Offset 0 Hz

8DPSK_3DH5/HCH



Frequency

Auto Tune

Center Freq 2.480000000 GHz

Start Freq 2.480000000 GHz

Stop Freq 2.480000000 GHz

CF Step 1.000000 MHz

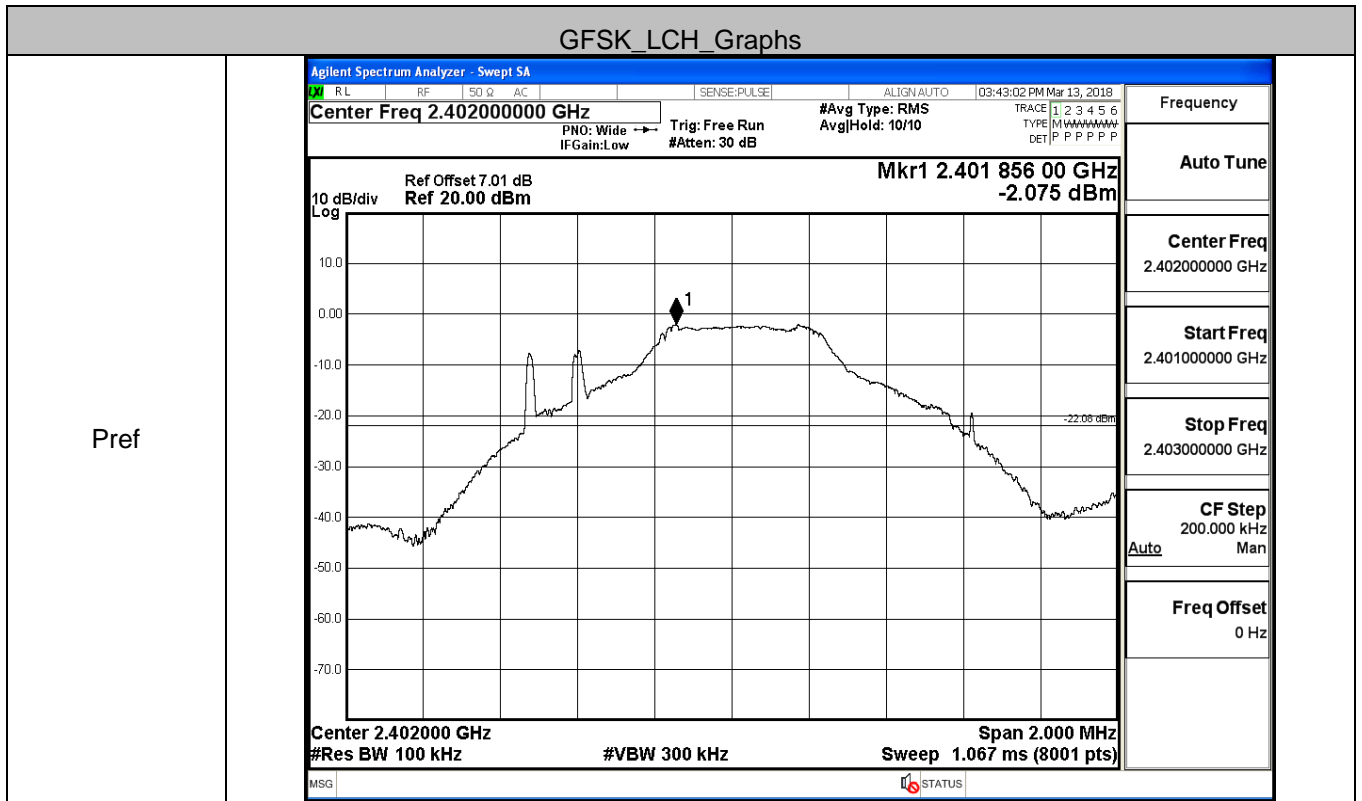
Auto Man

Freq Offset 0 Hz

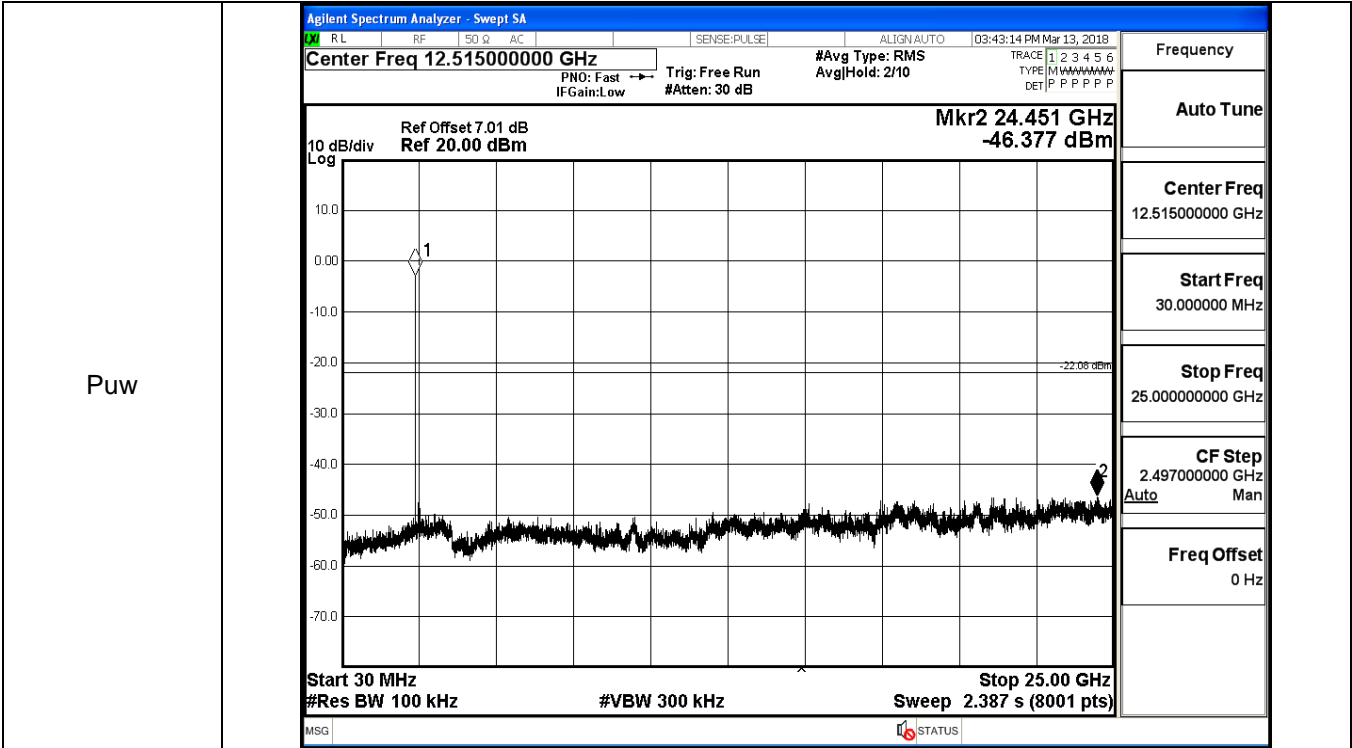
A.6 RF Conducted Spurious Emissions

| Mode | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK | LCH | -2.075 | -46.377 | -22.075 | PASS |
| | MCH | 0.918 | -46.332 | -19.082 | PASS |
| | HCH | 2.562 | -45.753 | -17.438 | PASS |
| π /4DQPSK | LCH | -5.267 | -44.975 | -25.267 | PASS |
| | MCH | -0.892 | -45.257 | -20.892 | PASS |
| | HCH | 1.189 | -44.934 | -18.811 | PASS |
| 8DPSK | LCH | -5.102 | -45.873 | -25.102 | PASS |
| | MCH | -0.798 | -39.377 | -20.798 | PASS |
| | HCH | 1.171 | -45.828 | -18.829 | PASS |

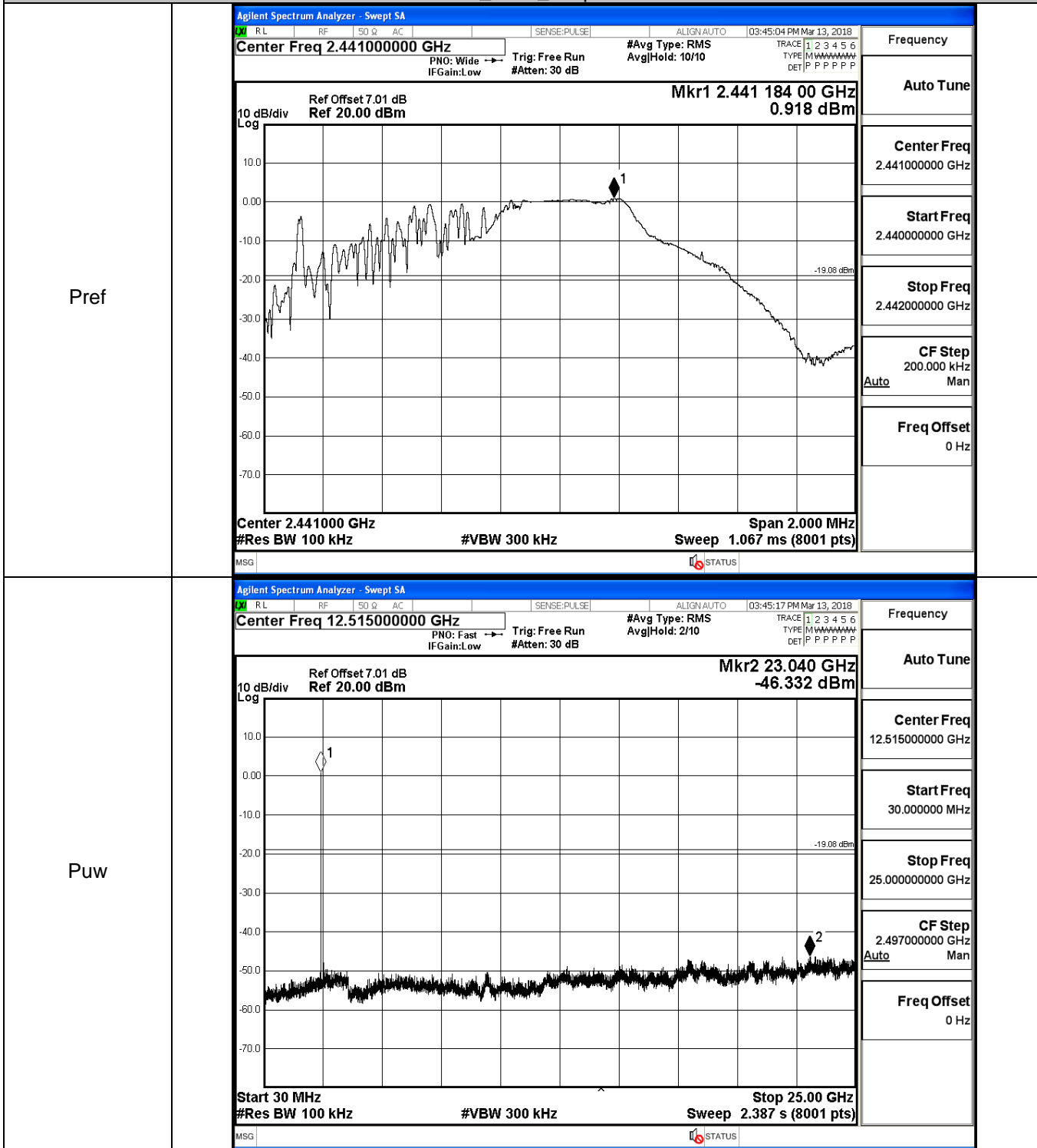
GFSK_LCH_Graphs



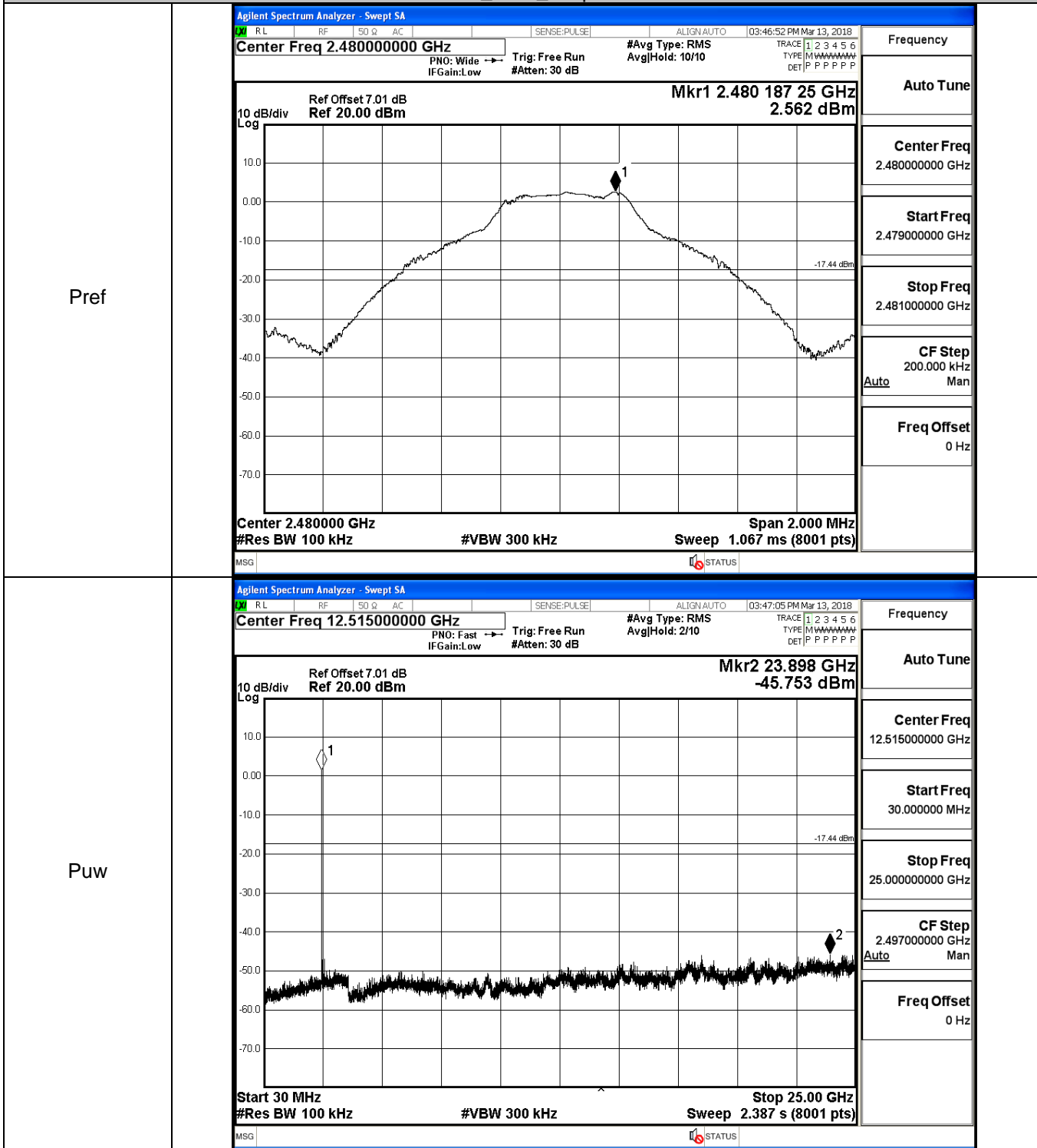
Pref



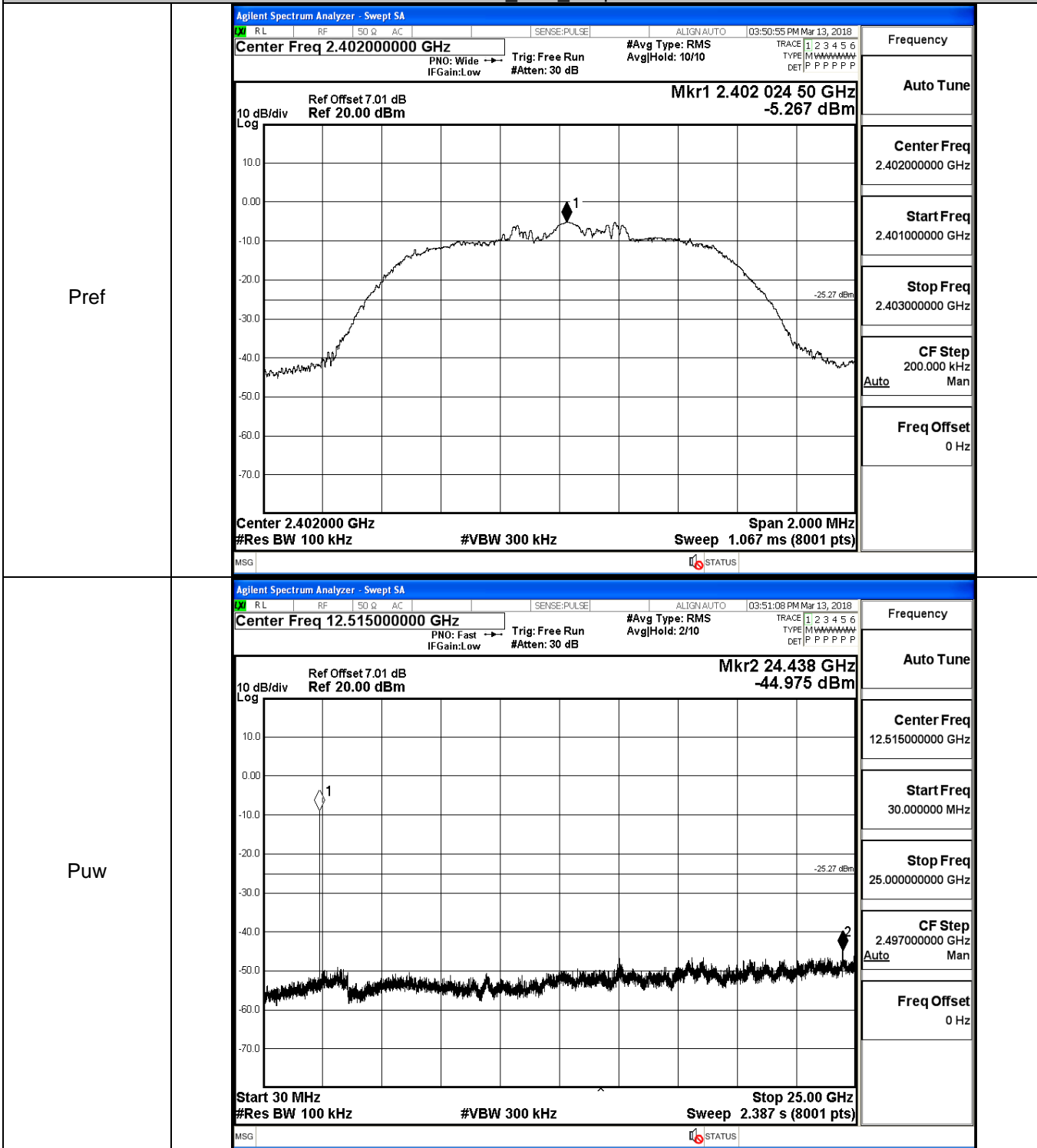
GFSK_MCH_Graphs



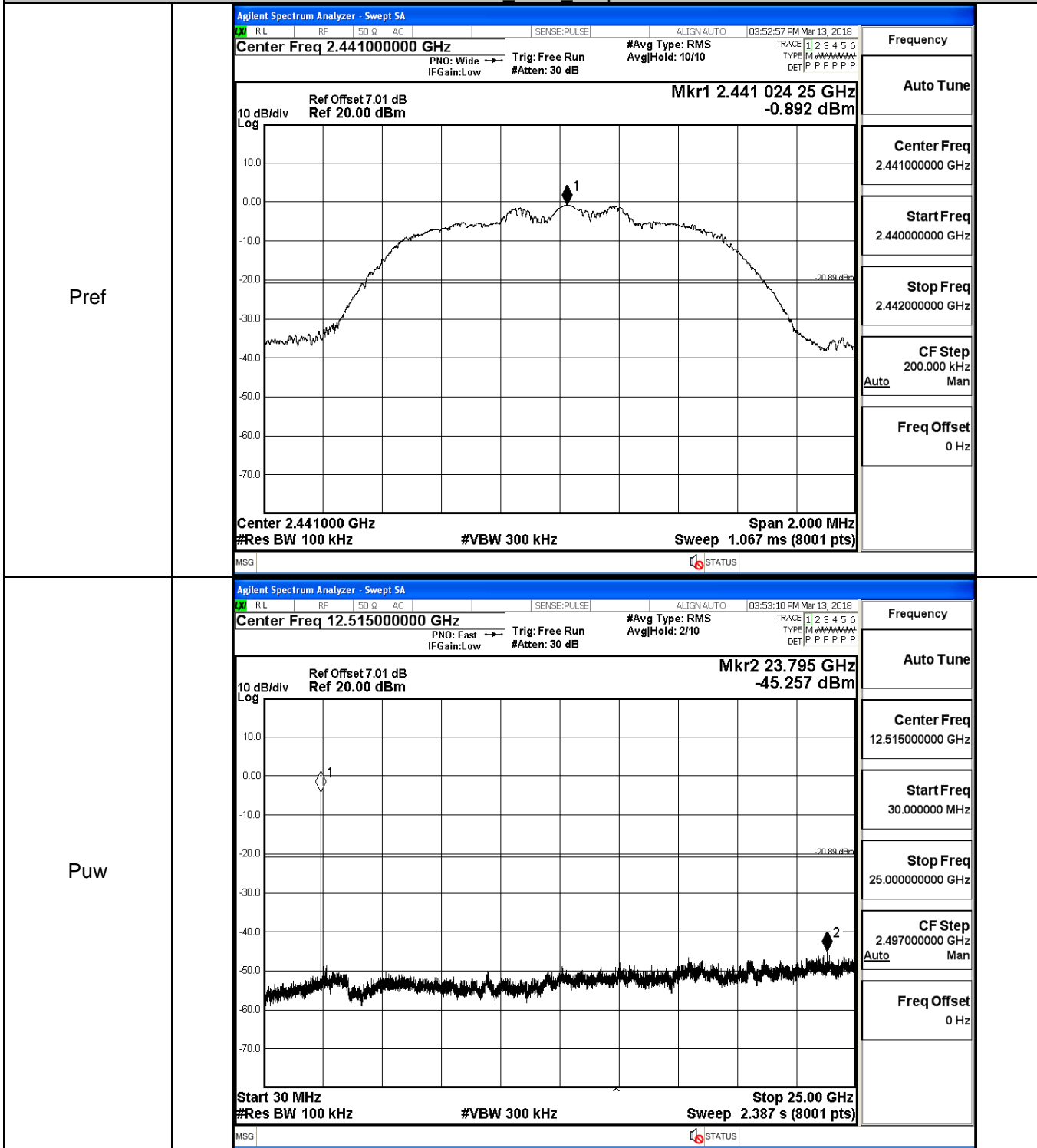
GFSK_HCH_Graphs



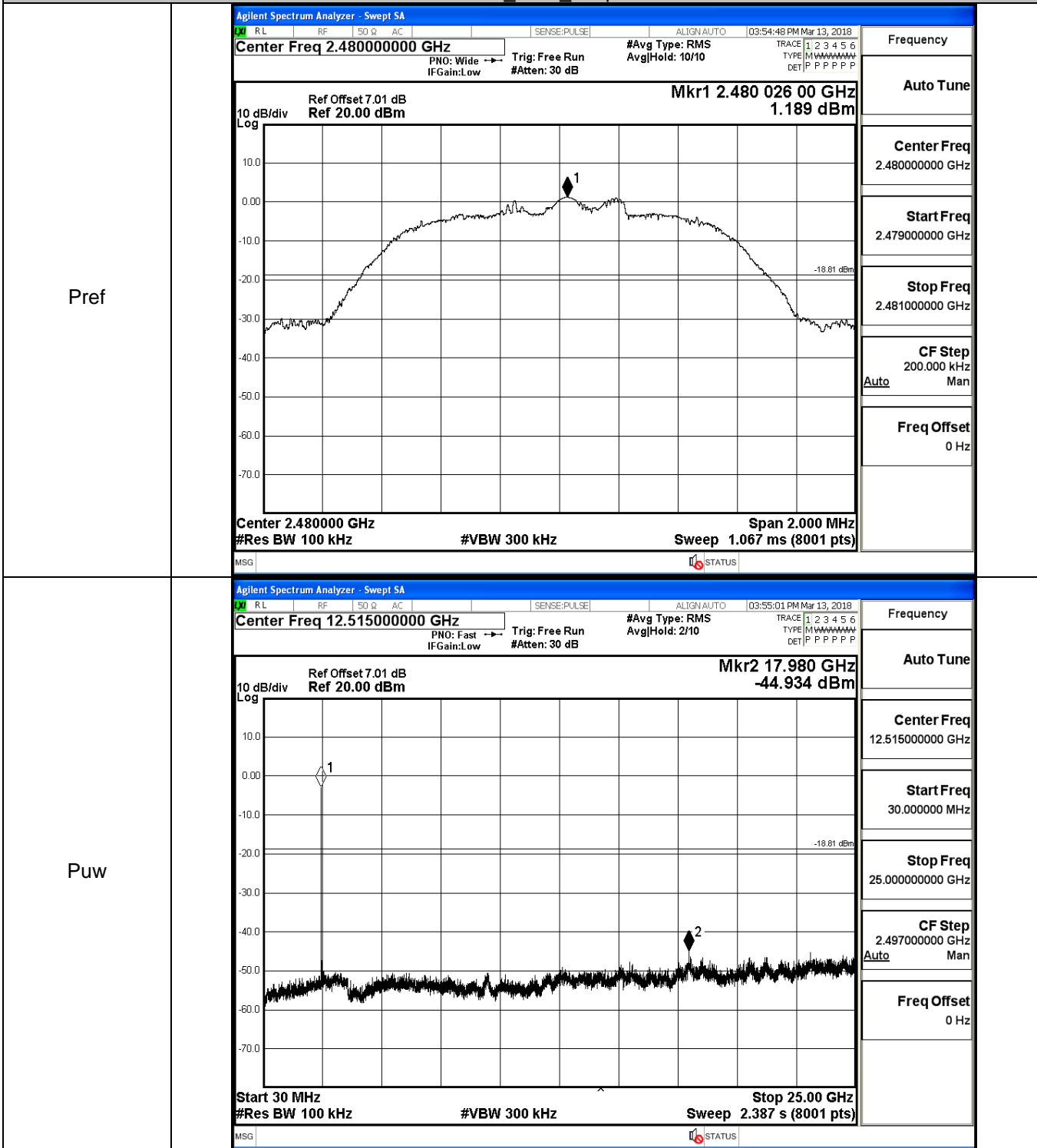
$\pi/4$ DQPSK_LCH_Graphs



π /4DQPSK_MCH_Graphs

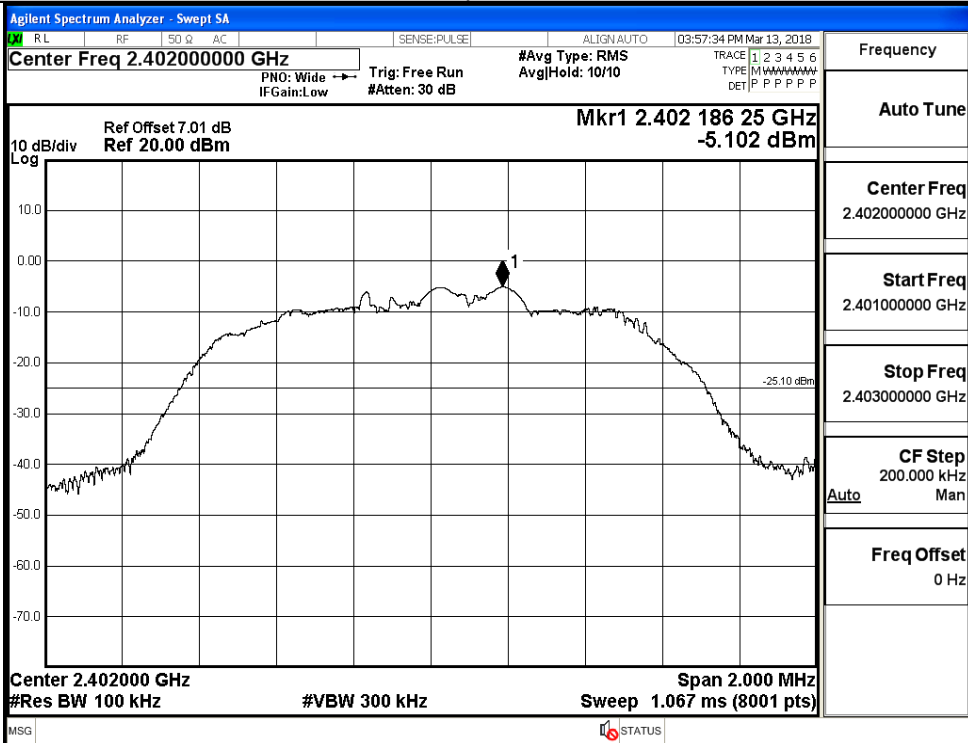


$\pi/4$ DQPSK_HCH_Graphs

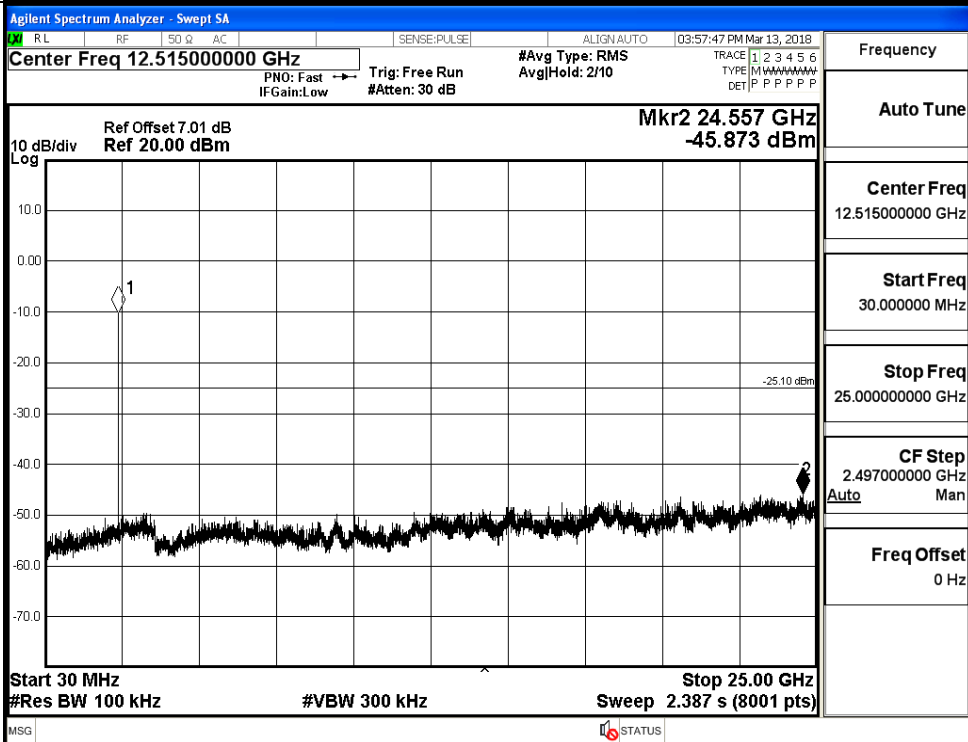


8DPSK_LCH_Graphs

Pref

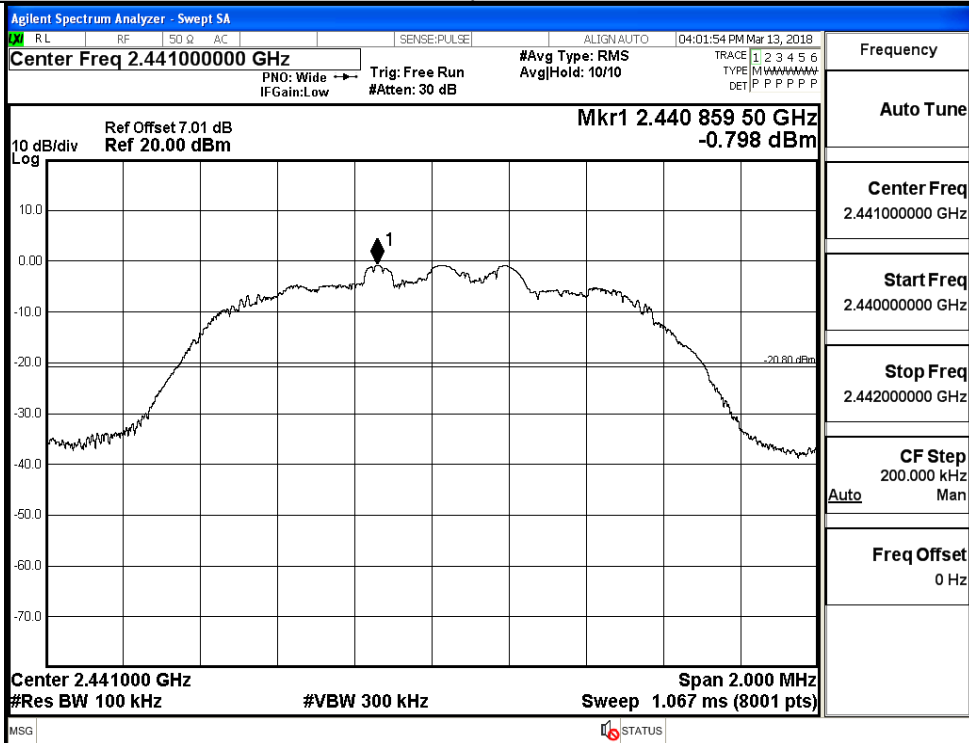


Puw

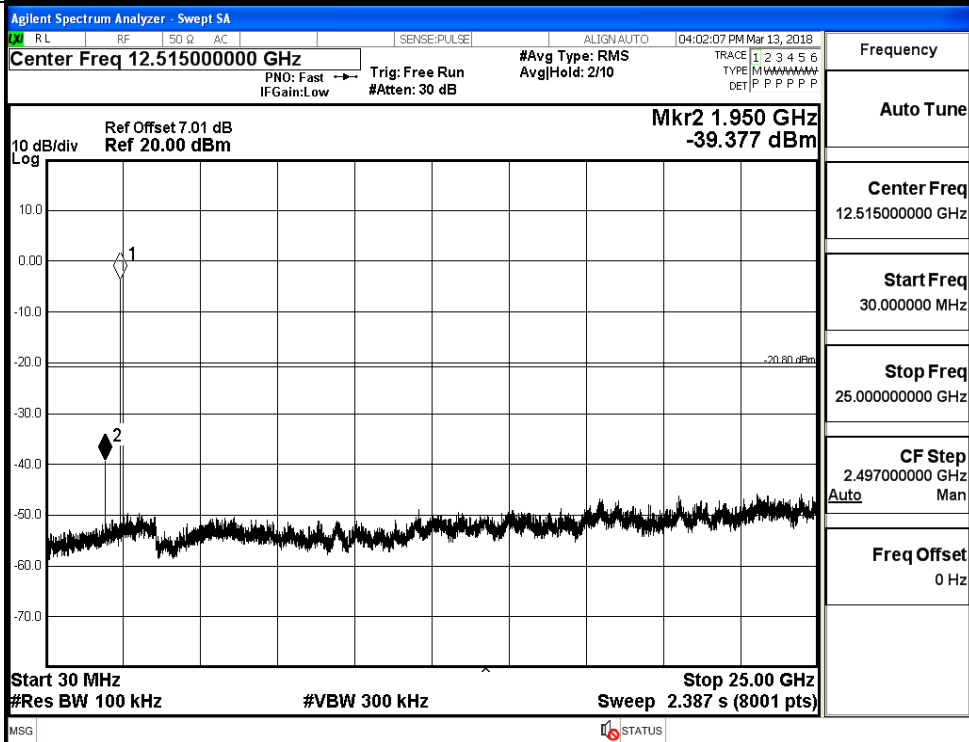


8DPSK_MCH_Graphs

Pref

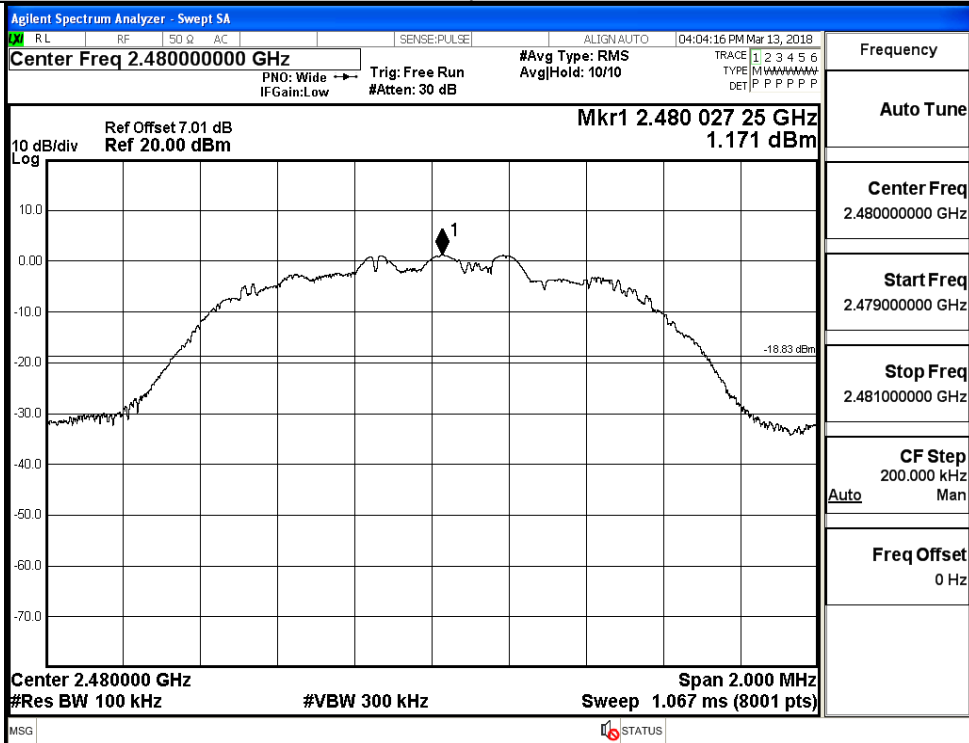


Puw

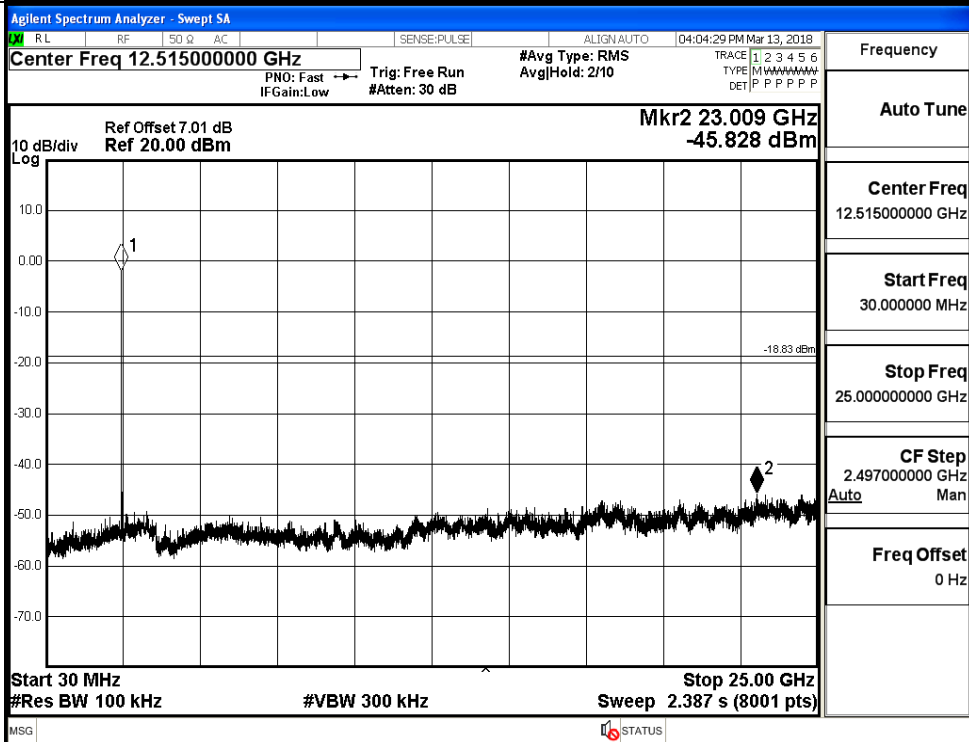


8DPSK_HCH_Graphs

Pref



Puw

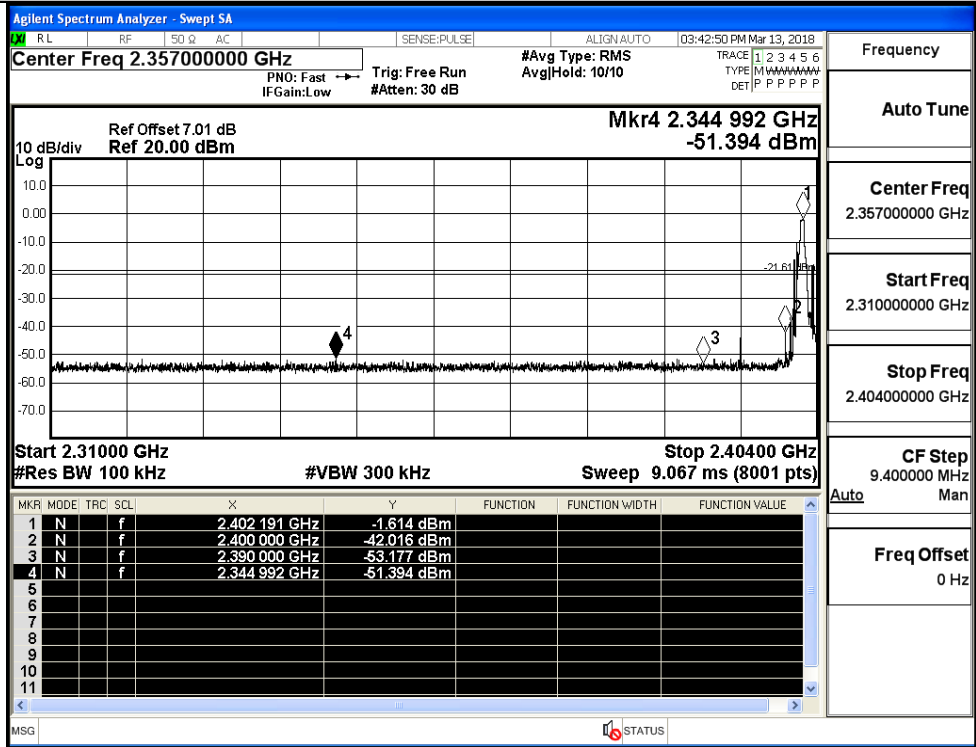


A.7 Band-edge for RF Conducted Emissions

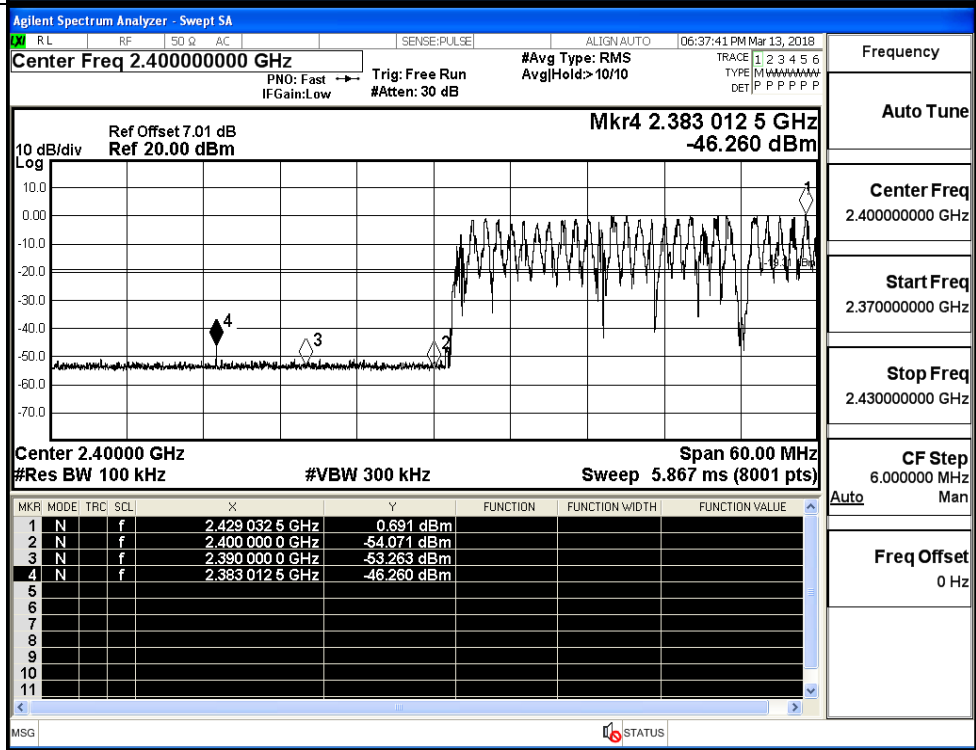
| Mode | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK | LCH | 2402 | -1.614 | Off | -51.394 | -21.61 | PASS |
| | | | 0.691 | On | -46.260 | -19.31 | PASS |
| | HCH | 2480 | 2.622 | Off | -51.330 | -17.38 | PASS |
| | | | 2.413 | On | -48.184 | -17.59 | PASS |
| $\pi/4$ DQPSK | LCH | 2402 | -5.225 | Off | -50.879 | -25.23 | PASS |
| | | | -2.065 | On | -50.685 | -22.07 | PASS |
| | HCH | 2480 | 1.035 | Off | -51.114 | -18.97 | PASS |
| | | | 0.933 | On | -49.603 | -19.07 | PASS |
| 8DPSK | LCH | 2402 | -5.286 | Off | -50.077 | -25.29 | PASS |
| | | | -1.730 | On | -50.395 | -21.73 | PASS |
| | HCH | 2480 | 1.263 | Off | -50.430 | -18.74 | PASS |
| | | | 1.107 | On | -49.435 | -18.89 | PASS |

Test Graphs

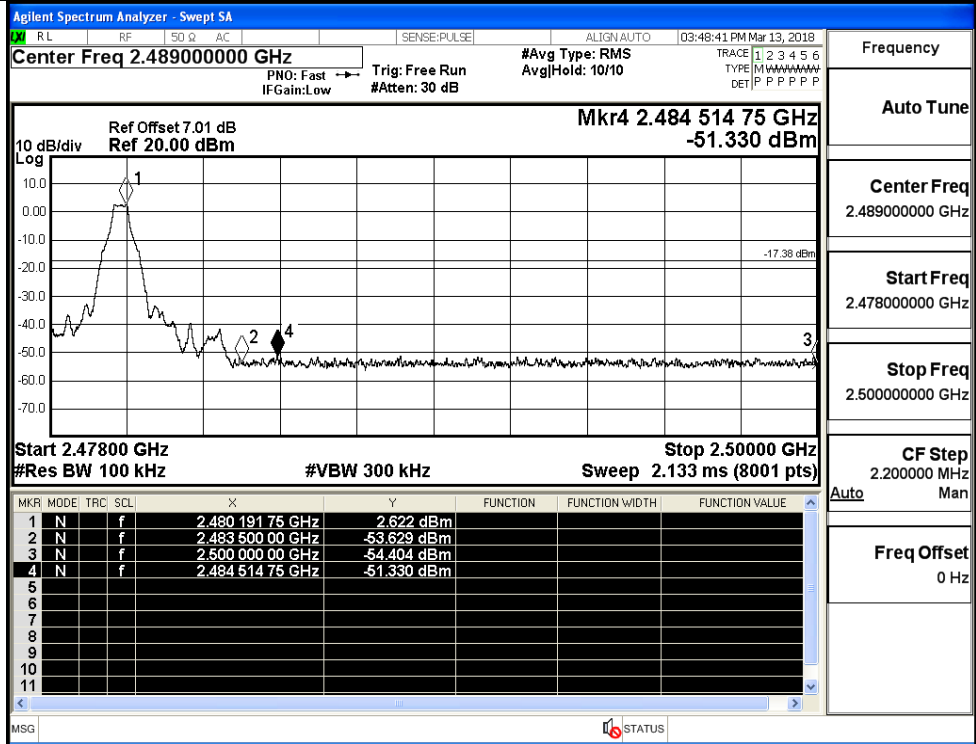
GFSK/LCH/No Hop



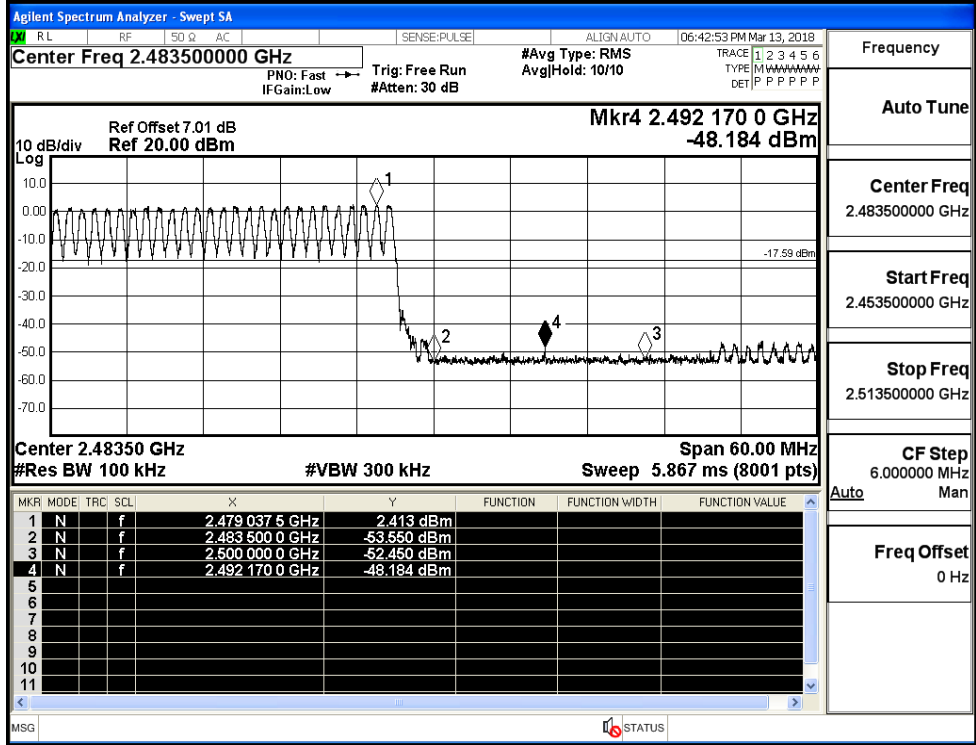
GFSK/LCH/Hop



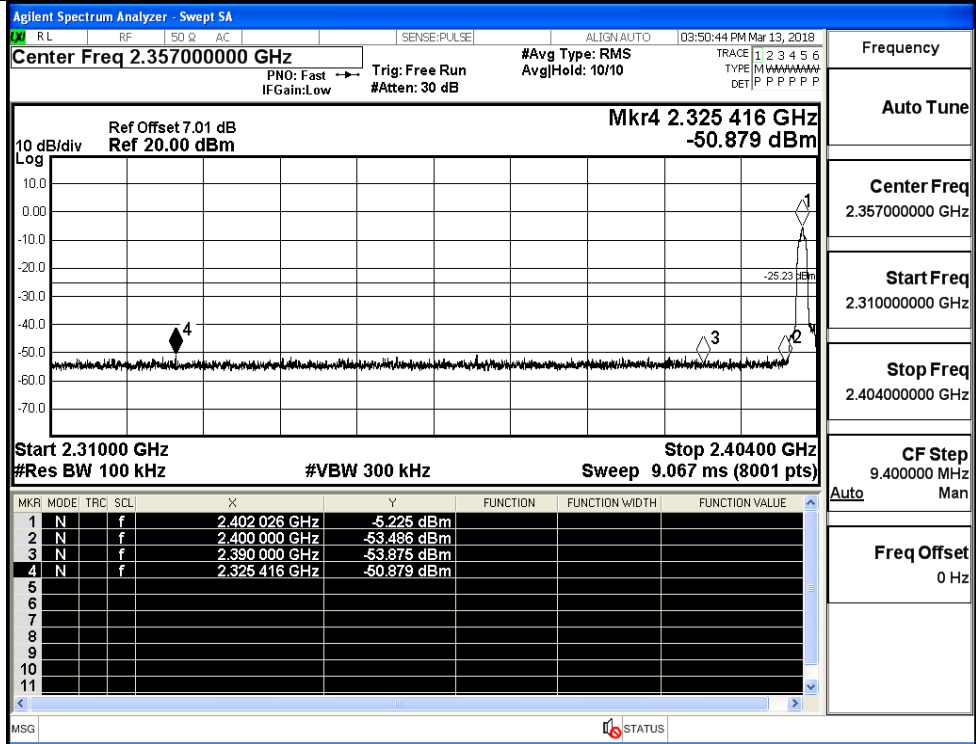
GFSK/HCH/No Hop



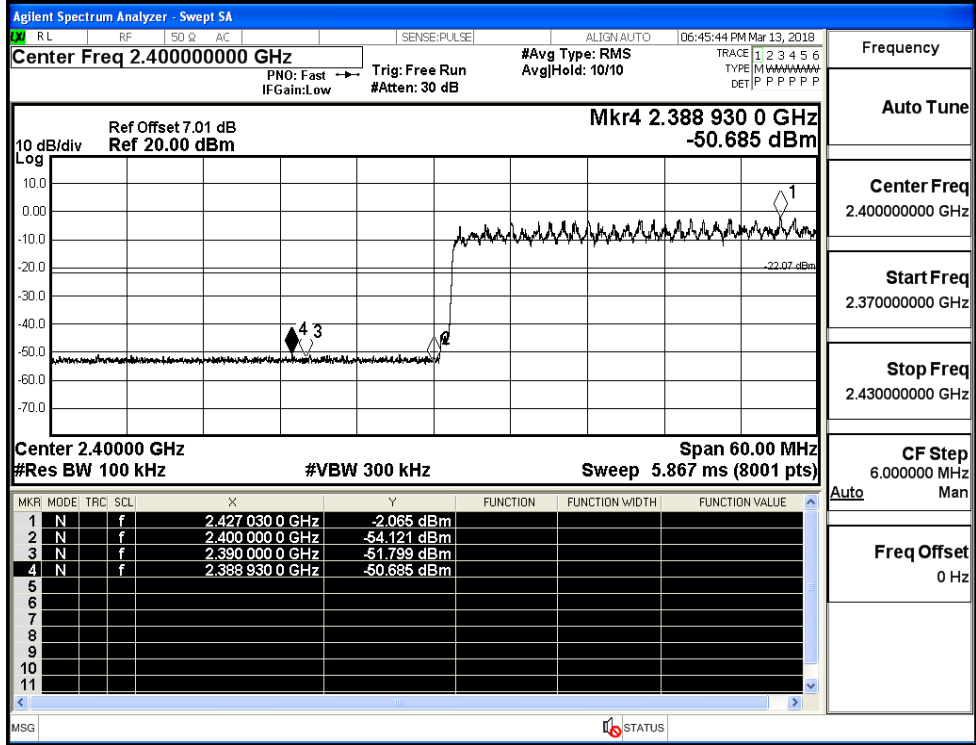
GFSK/HCH/Hop



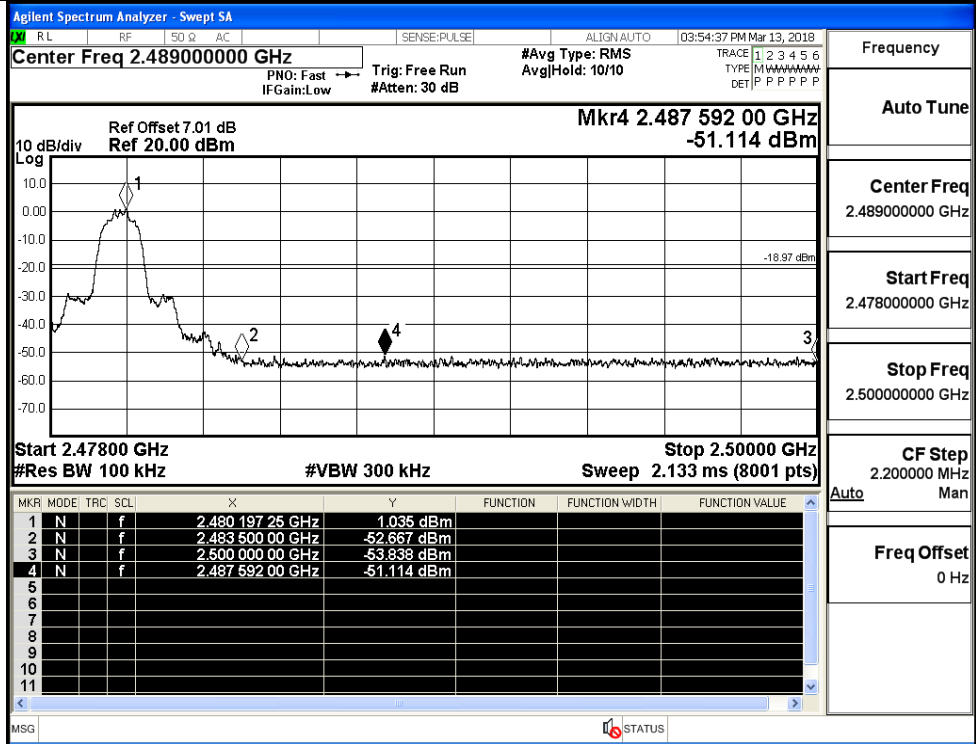
$\pi/4$ DQPSK/LCH/No Hop



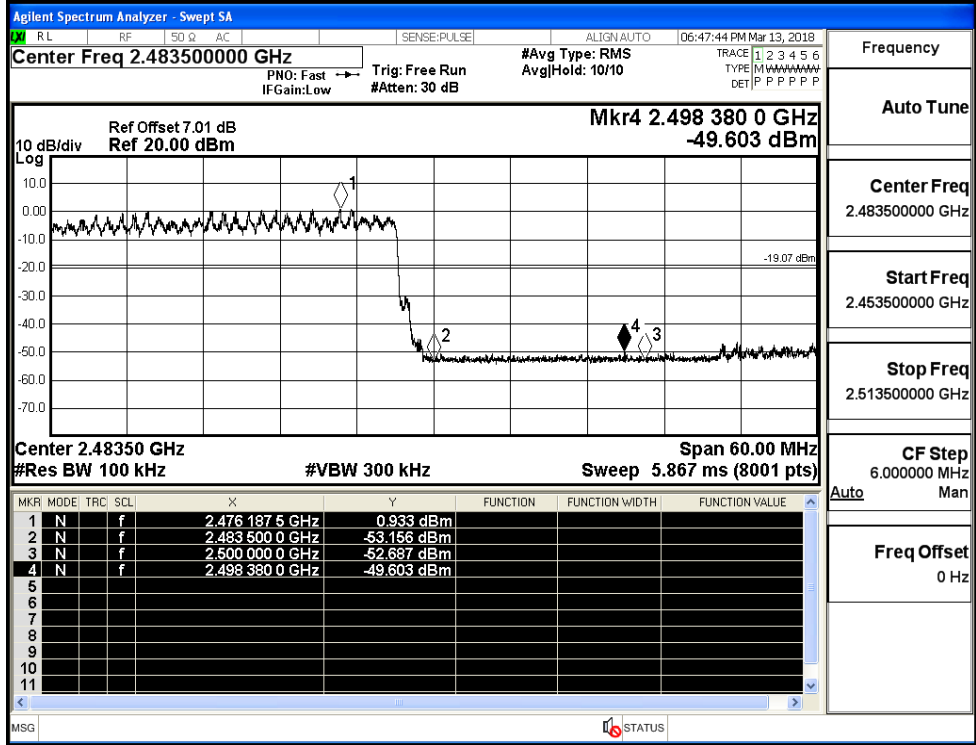
$\pi/4$ DQPSK/LCH/Hop



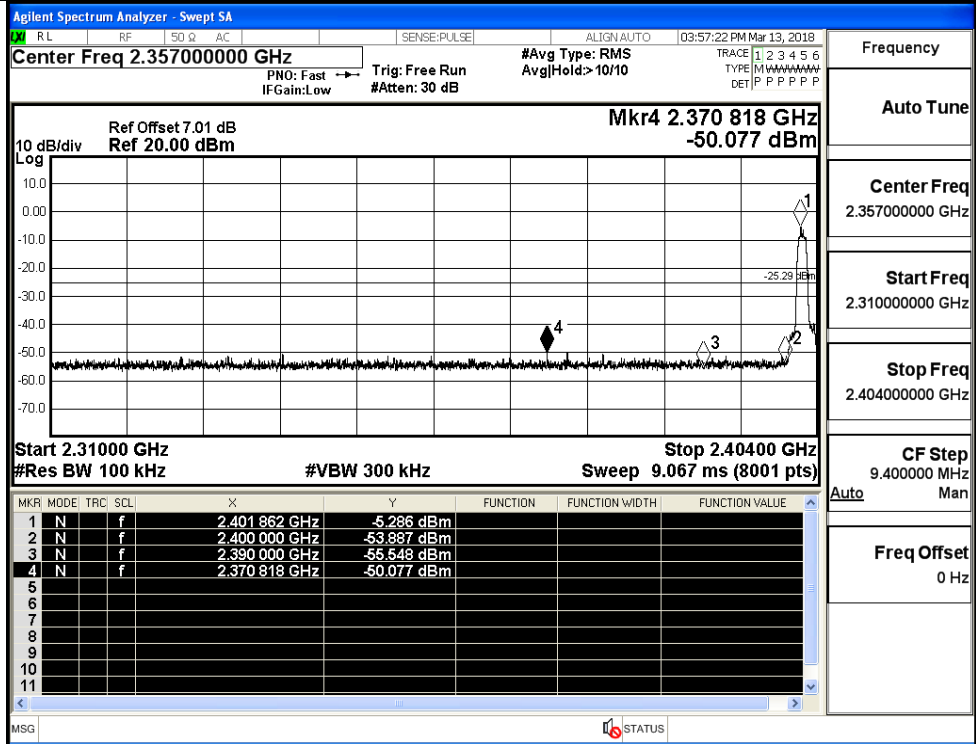
π /4DQPSK/HCH/No
Hop



π /4DQPSK/HCH/Hop

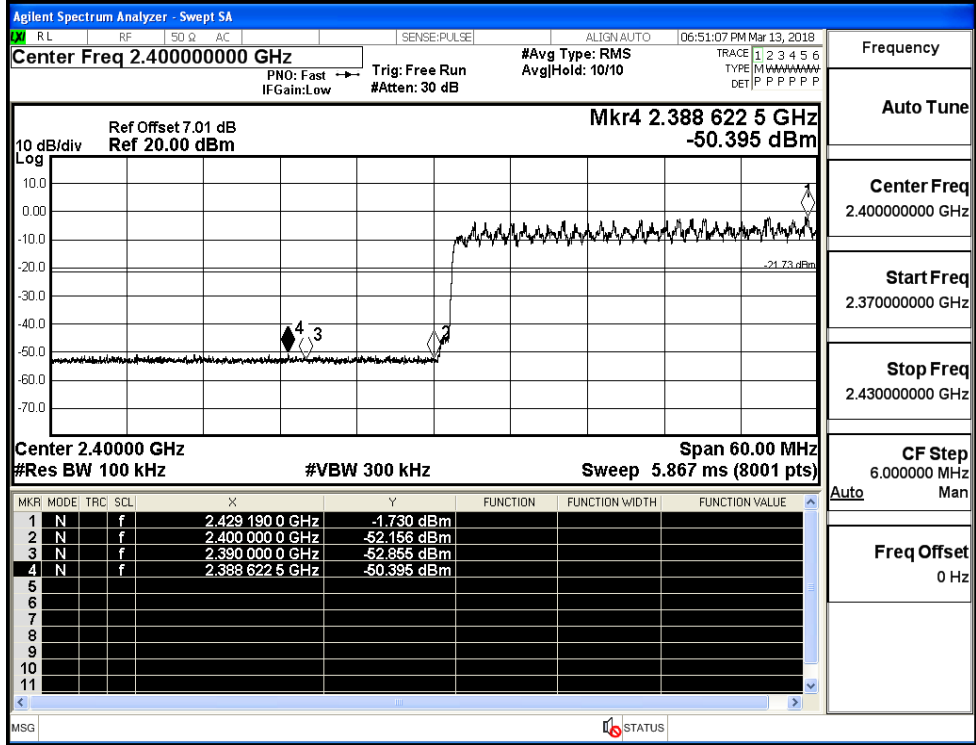


8DPSK/LCH/No Hop



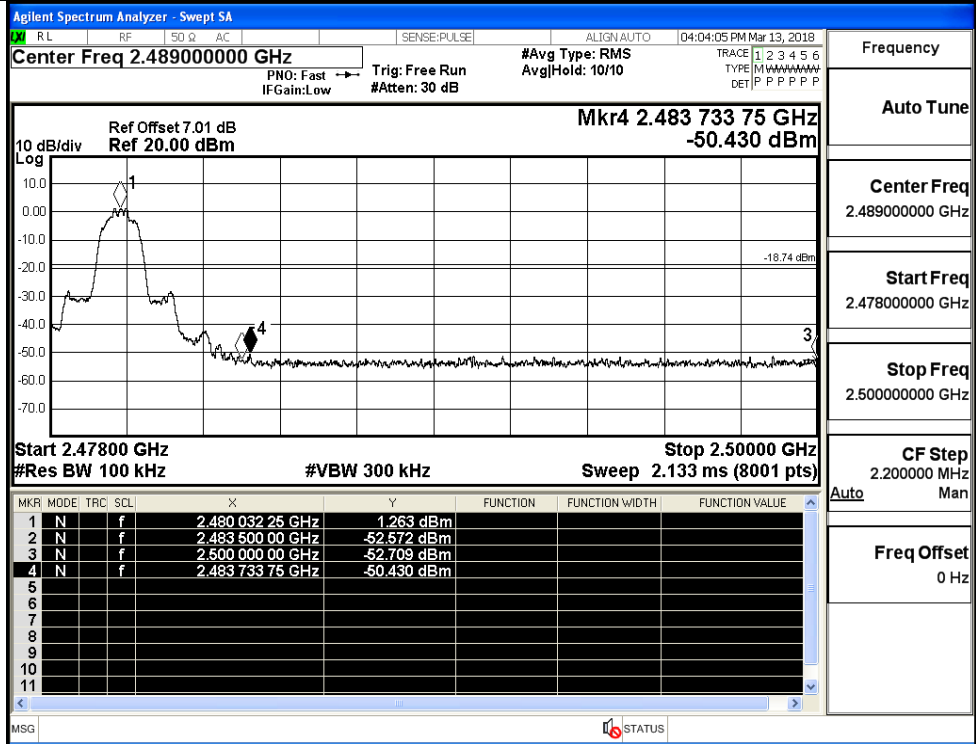
Frequency
Auto Tune
Center Freq
2.357000000 GHz
Start Freq
2.310000000 GHz
Stop Freq
2.404000000 GHz
CF Step
9.400000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/LCH/Hop



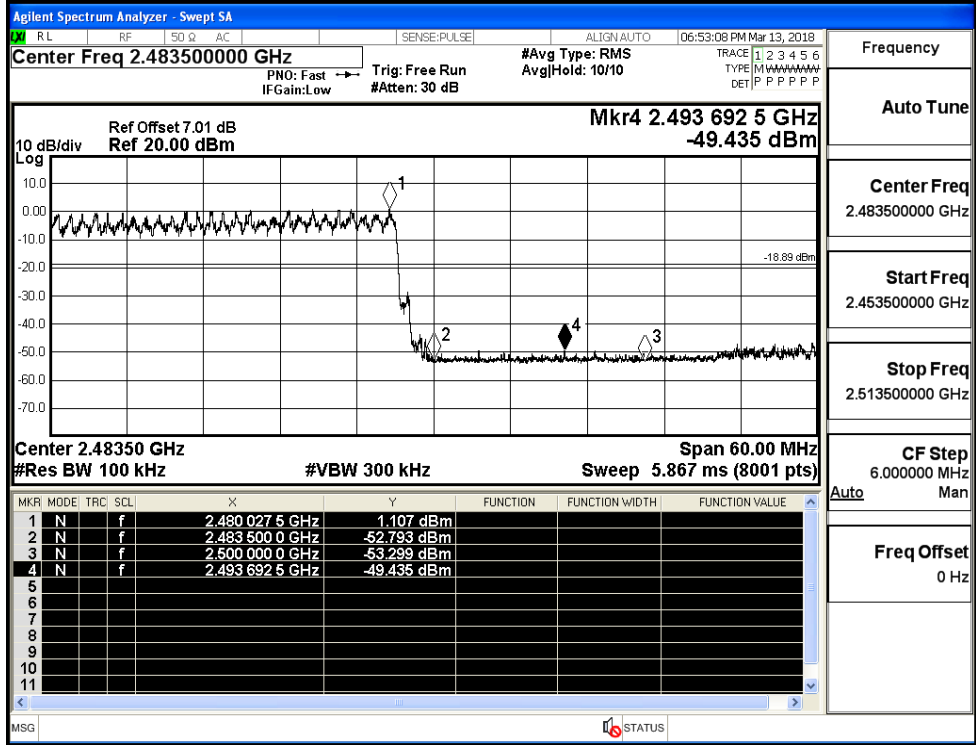
Frequency
Auto Tune
Center Freq
2.400000000 GHz
Start Freq
2.370000000 GHz
Stop Freq
2.430000000 GHz
CF Step
6.000000 MHz
Auto Man
Freq Offset
0 Hz

8DPSK/HCH/No Hop



| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.489000000 GHz |
| Start Freq | 2.478000000 GHz |
| Stop Freq | 2.500000000 GHz |
| CF Step | 2.200000 MHz |
| Freq Offset | 0 Hz |

8DPSK/HCH/Hop

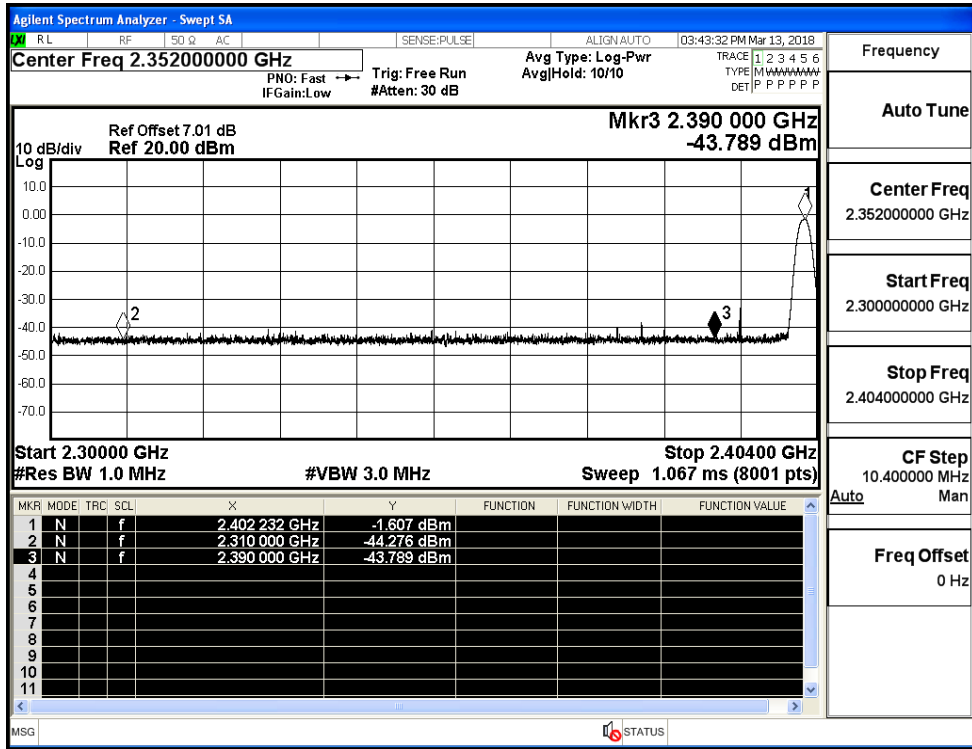


| | |
|-------------|-----------------|
| Frequency | |
| Auto Tune | |
| Center Freq | 2.483500000 GHz |
| Start Freq | 2.453500000 GHz |
| Stop Freq | 2.513500000 GHz |
| CF Step | 6.000000 MHz |
| Freq Offset | 0 Hz |

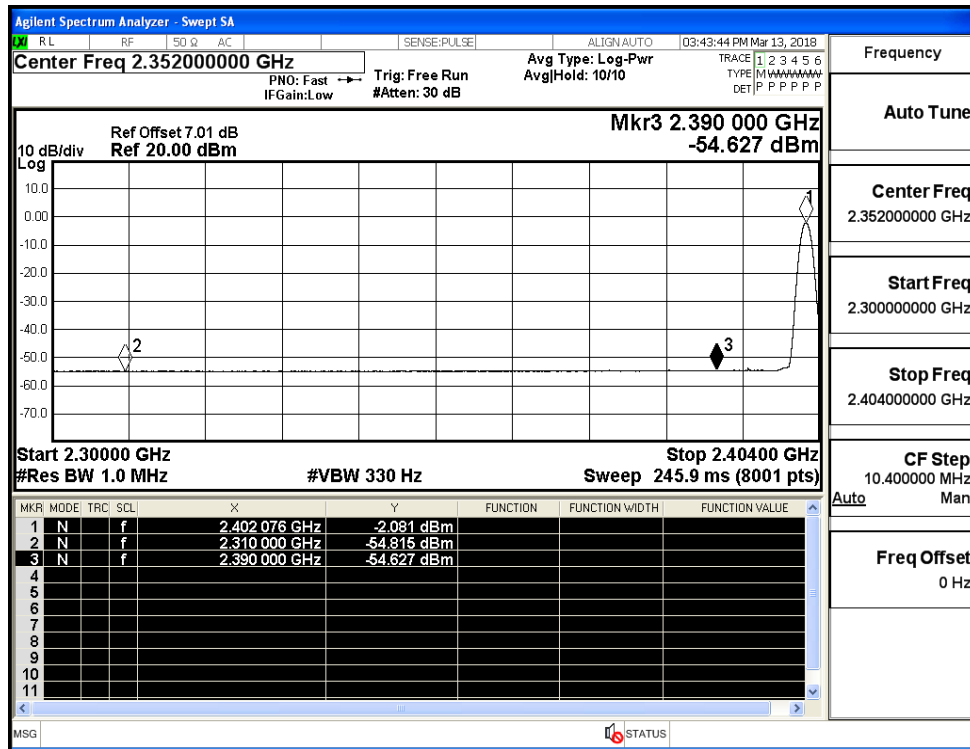
A.8 Restrict-band band-edge measurements

| Test Mode | Hopping | Freq. | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK | Off | 2310.0 | -44.28 | 2.0 | 0 | 50.98 | PEAK | 74 | PASS |
| | Off | 2310.0 | -54.82 | 2.0 | 0 | 40.44 | AV | 54 | PASS |
| | Off | 2390.0 | -43.79 | 2.0 | 0 | 51.47 | PEAK | 74 | PASS |
| | Off | 2390.0 | -54.63 | 2.0 | 0 | 40.63 | AV | 54 | PASS |
| | Off | 2483.5 | -41.70 | 2.0 | 0 | 53.56 | PEAK | 74 | PASS |
| | Off | 2483.5 | -51.24 | 2.0 | 0 | 44.02 | AV | 54 | PASS |
| | Off | 2500.0 | -44.37 | 2.0 | 0 | 50.89 | PEAK | 74 | PASS |
| | Off | 2500.0 | -54.20 | 2.0 | 0 | 41.06 | AV | 54 | PASS |
| $\pi/4$ DQPSK | Off | 2310.0 | -44.68 | 2.0 | 0 | 50.58 | PEAK | 74 | PASS |
| | Off | 2310.0 | -54.94 | 2.0 | 0 | 40.31 | AV | 54 | PASS |
| | Off | 2390.0 | -44.81 | 2.0 | 0 | 50.45 | PEAK | 74 | PASS |
| | Off | 2390.0 | -54.62 | 2.0 | 0 | 40.64 | AV | 54 | PASS |
| | Off | 2483.5 | -41.83 | 2.0 | 0 | 53.43 | PEAK | 74 | PASS |
| | Off | 2483.5 | -52.76 | 2.0 | 0 | 42.50 | AV | 54 | PASS |
| | Off | 2500.0 | -43.46 | 2.0 | 0 | 51.80 | PEAK | 74 | PASS |
| | Off | 2500.0 | -54.10 | 2.0 | 0 | 41.16 | AV | 54 | PASS |
| 8DPSK | Off | 2310.0 | -44.28 | 2.0 | 0 | 50.98 | PEAK | 74 | PASS |
| | Off | 2310.0 | -54.88 | 2.0 | 0 | 40.38 | AV | 54 | PASS |
| | Off | 2390.0 | -44.13 | 2.0 | 0 | 51.12 | PEAK | 74 | PASS |
| | Off | 2390.0 | -54.66 | 2.0 | 0 | 40.60 | AV | 54 | PASS |
| | Off | 2483.5 | -40.92 | 2.0 | 0 | 54.34 | PEAK | 74 | PASS |
| | Off | 2483.5 | -52.84 | 2.0 | 0 | 42.42 | AV | 54 | PASS |
| | Off | 2500.0 | -43.21 | 2.0 | 0 | 52.05 | PEAK | 74 | PASS |
| | Off | 2500.0 | -54.23 | 2.0 | 0 | 41.03 | AV | 54 | PASS |

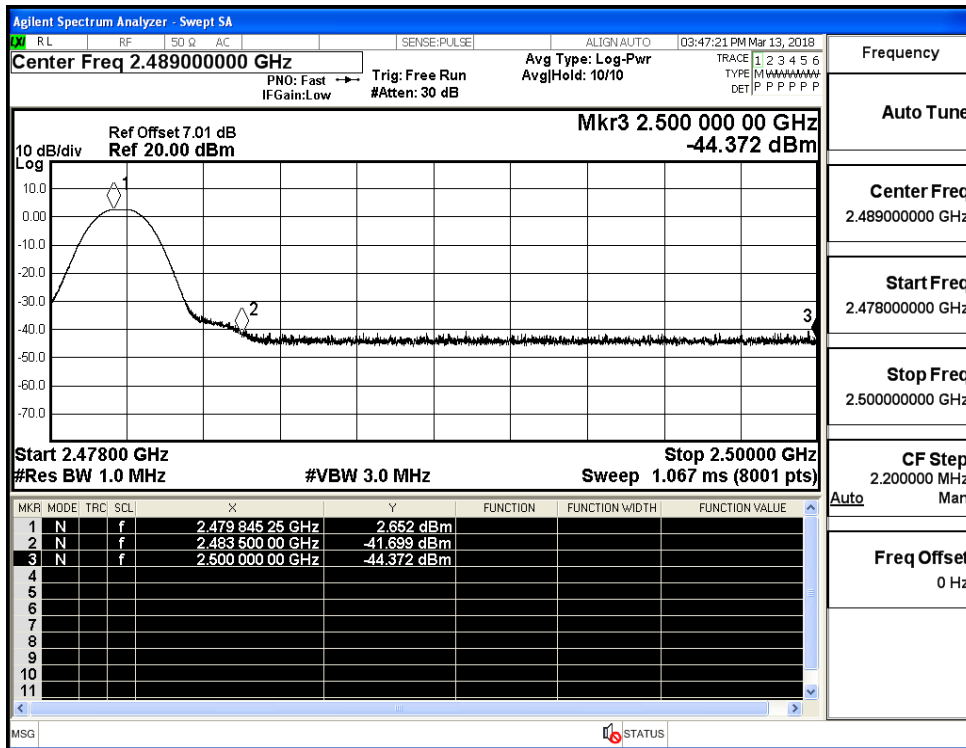
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



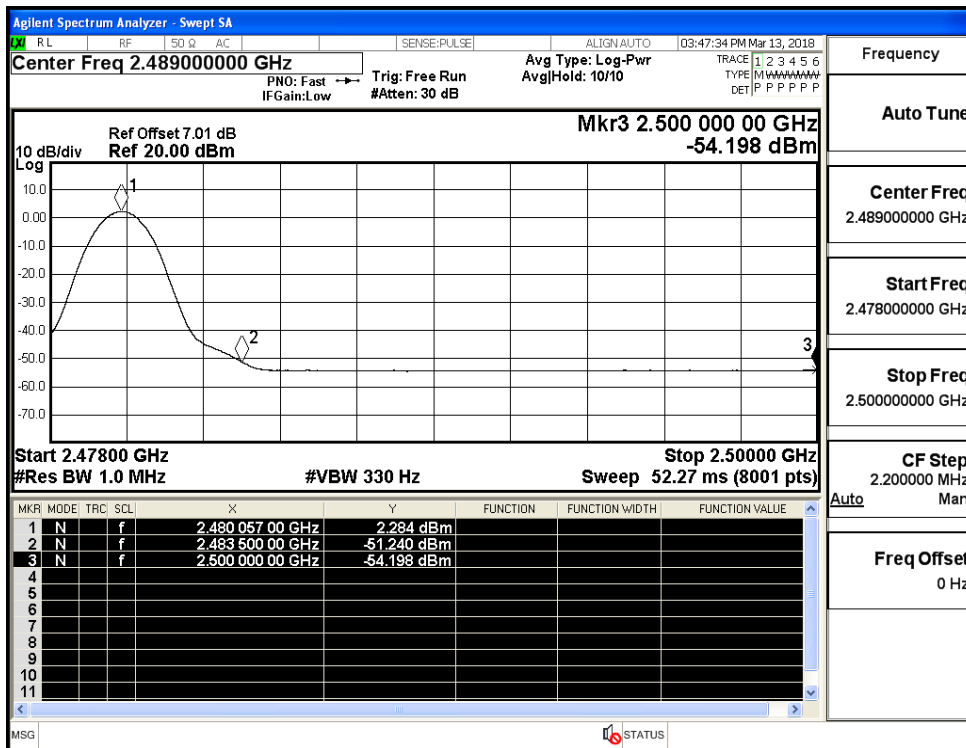
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



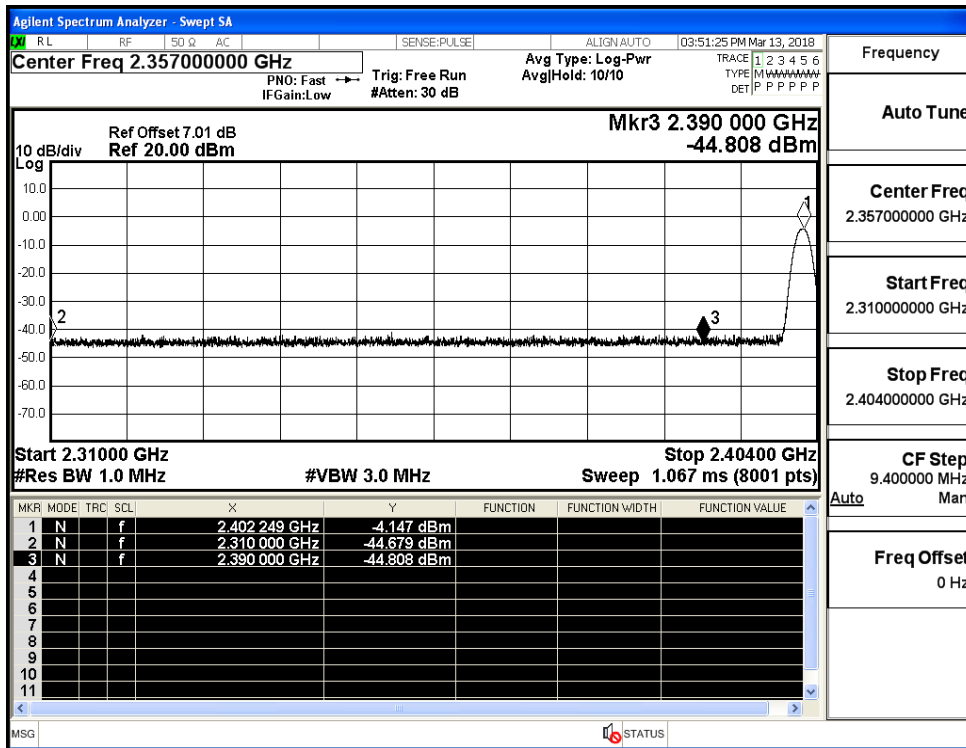
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)



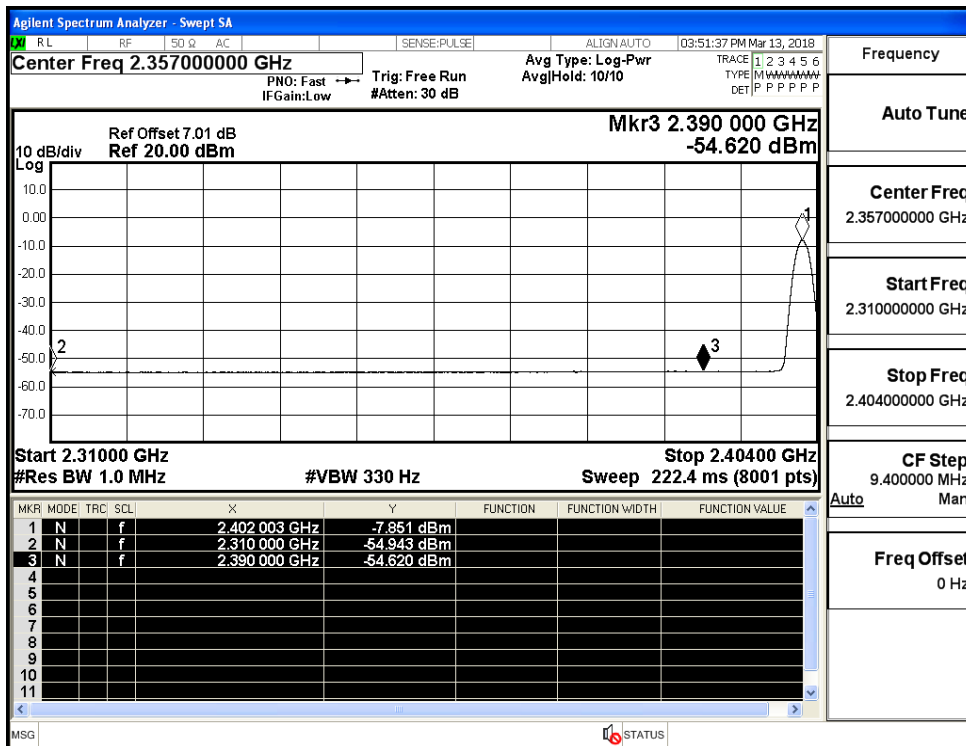
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



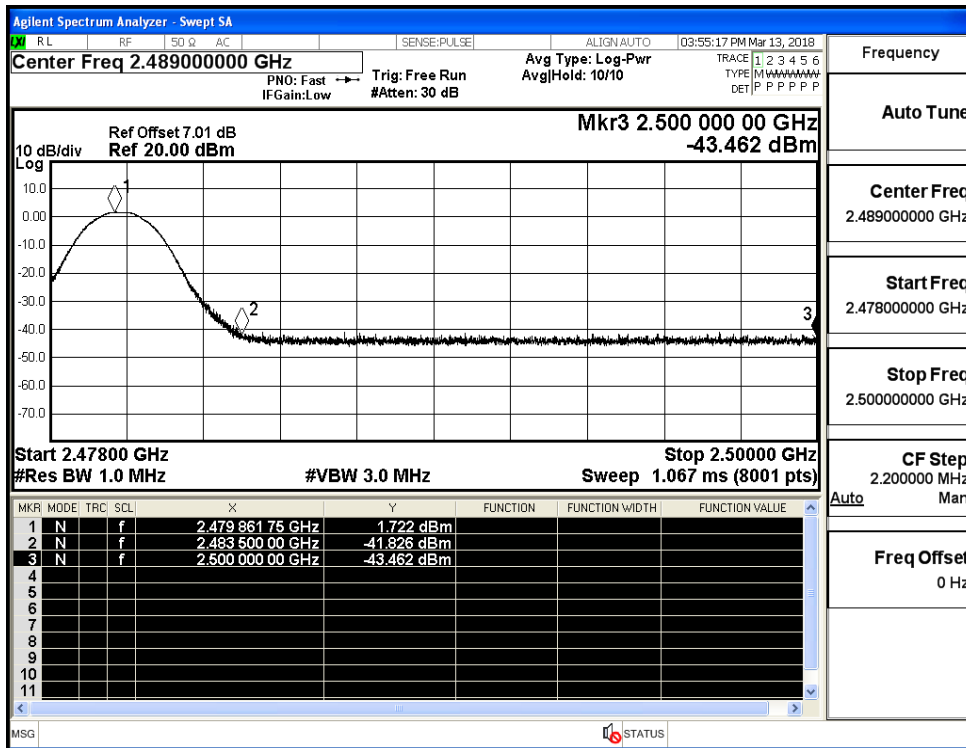
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)



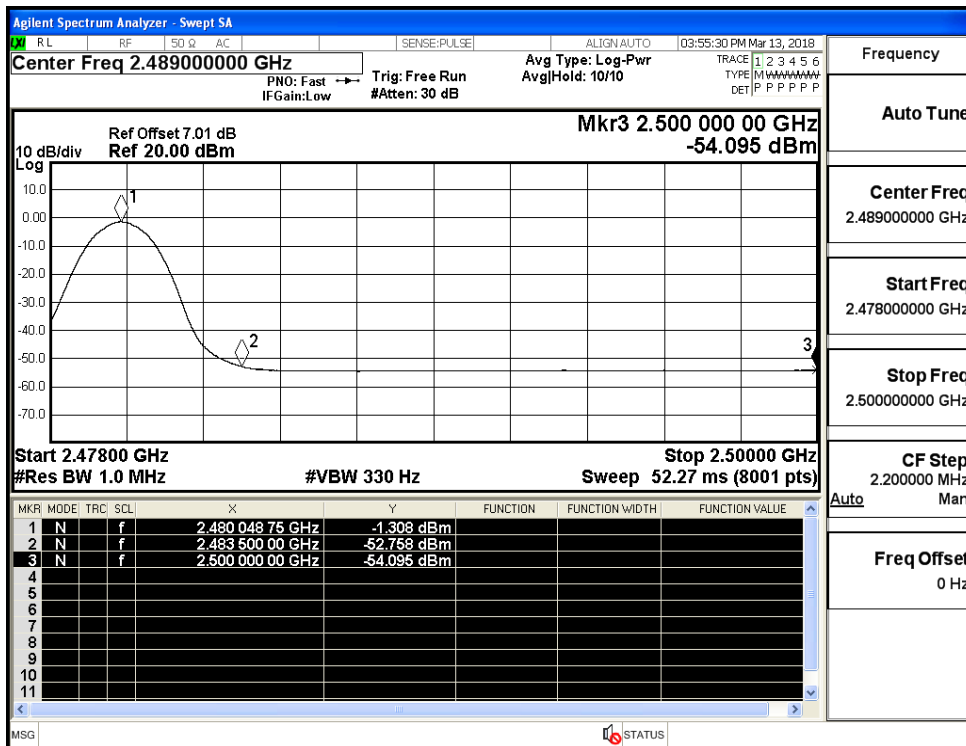
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)



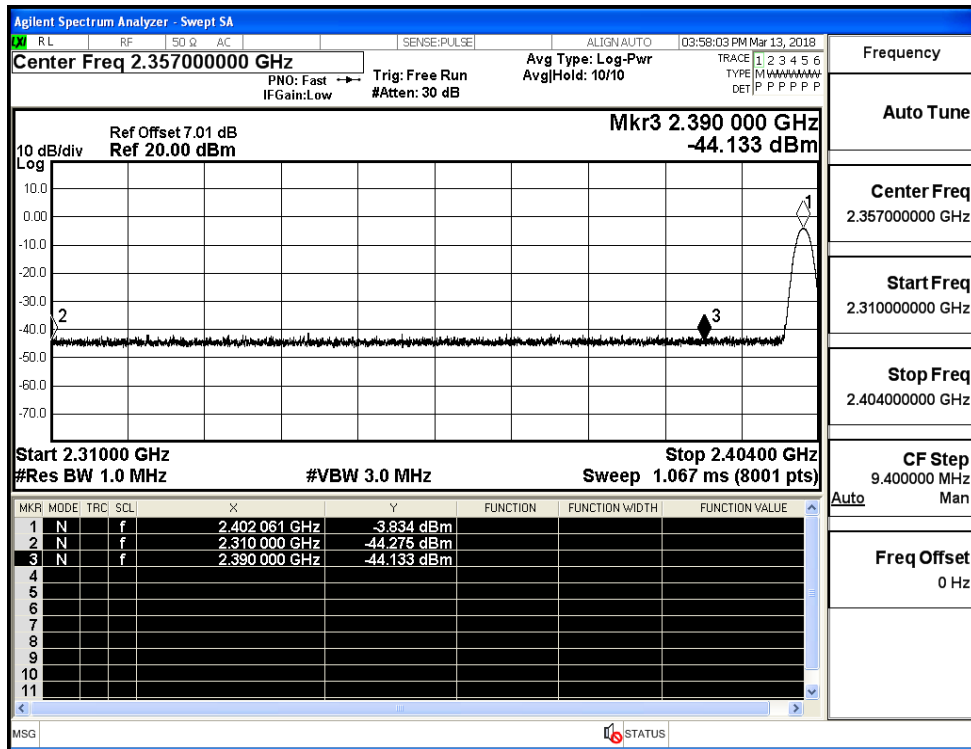
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



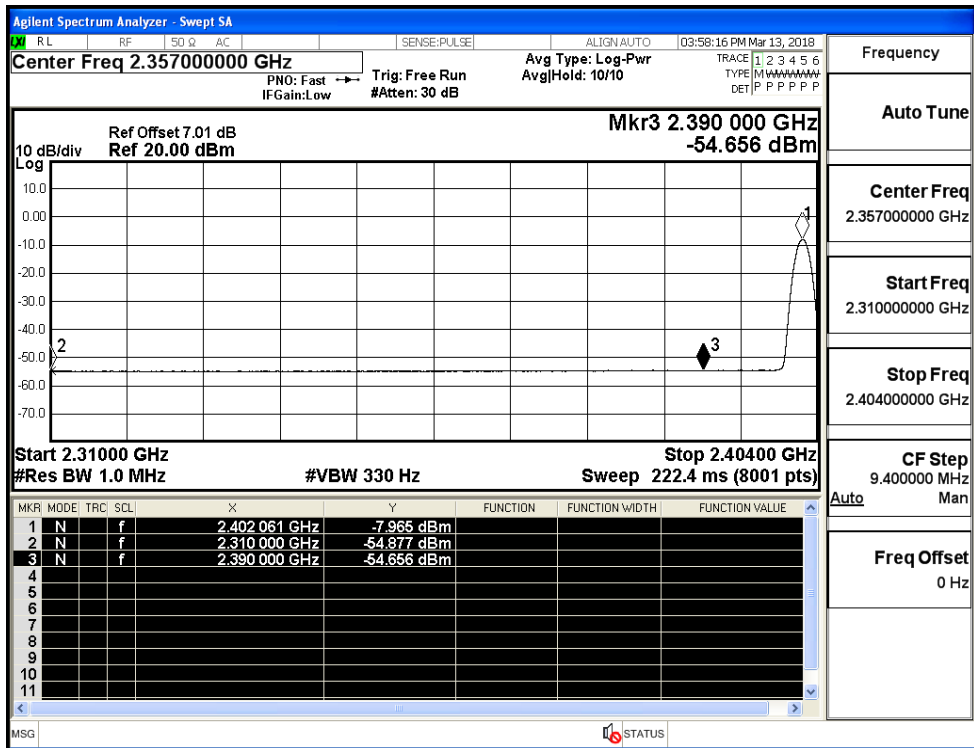
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



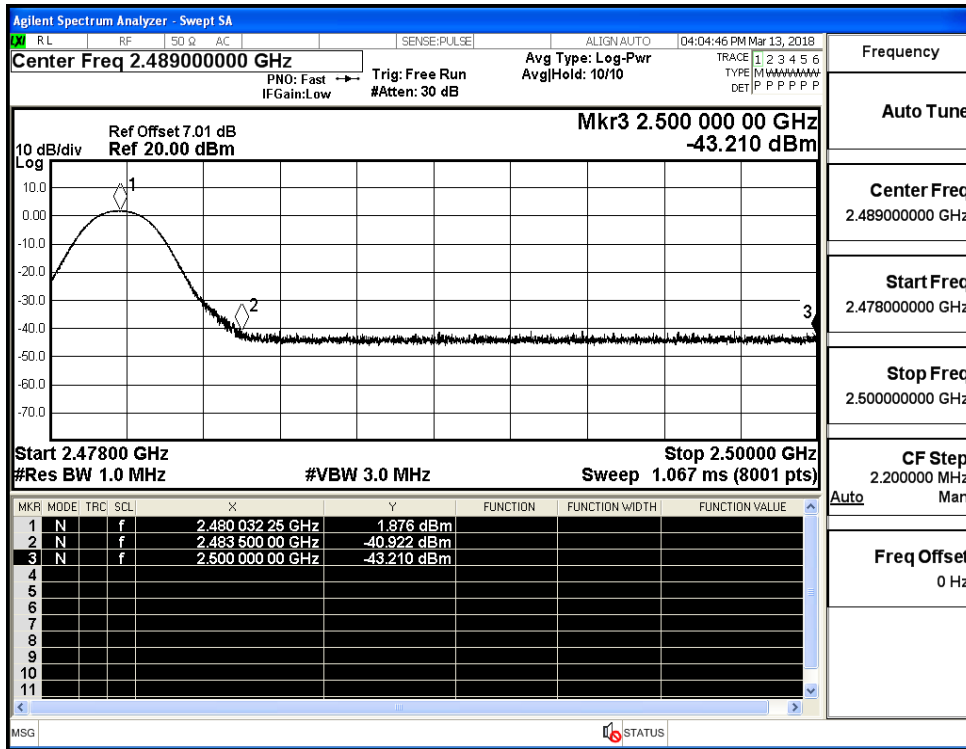
Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

