

Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: SPEAKER

Test Model: AL-500

Environmental Conditions

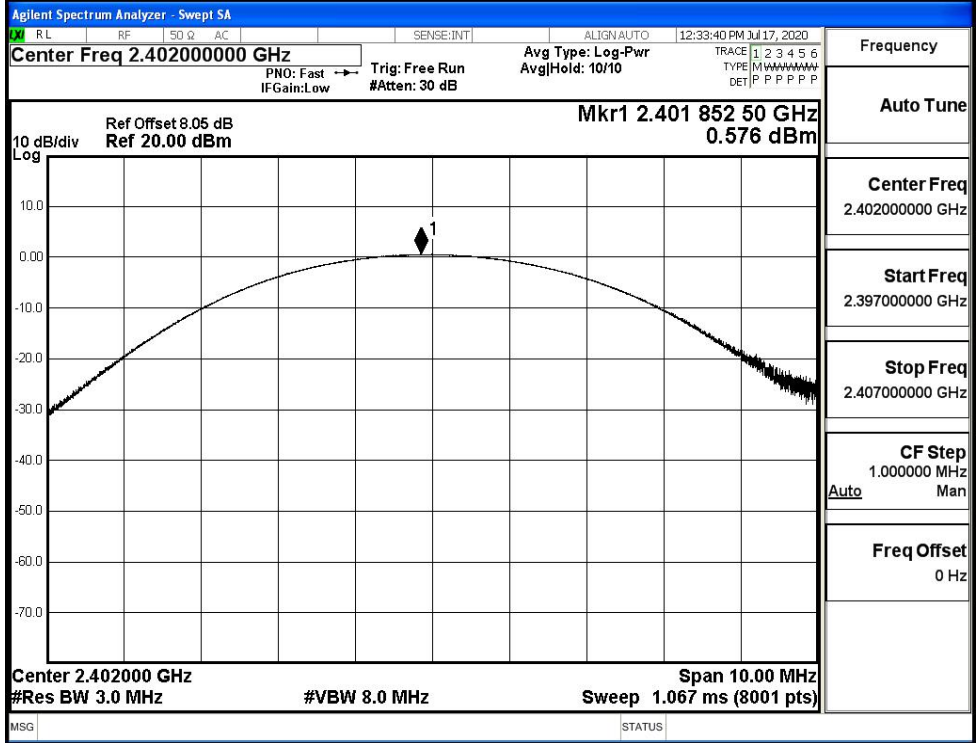
| | |
|--------------------|-----------|
| Temperature: | 25.3 ° C |
| Relative Humidity: | 52.6% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Carl Fu |
| Supervised by: | Li HUAN |

A.1 Maxmum Conducted Peak Output Power

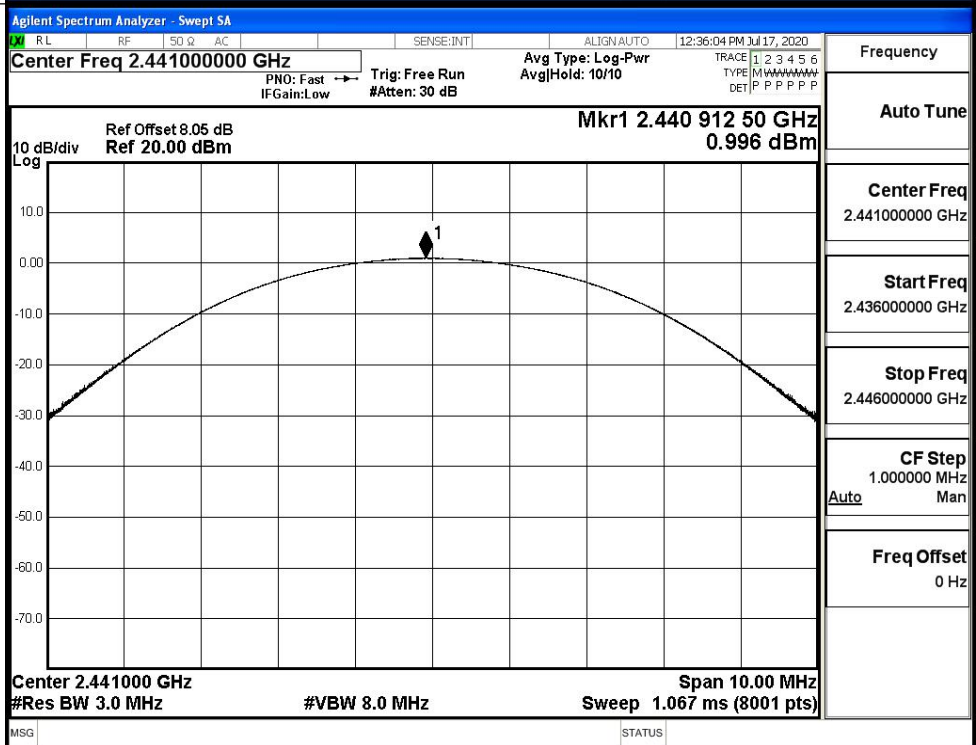
| Mode | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK | LCH | 0.576 | 21 | PASS |
| | MCH | 0.996 | 21 | PASS |
| | HCH | 0.222 | 21 | PASS |
| $\pi/4$ DQPSK | LCH | 0.026 | 21 | PASS |
| | MCH | 0.742 | 21 | PASS |
| | HCH | -0.535 | 21 | PASS |
| 8DPSK | LCH | -0.144 | 21 | PASS |
| | MCH | 0.782 | 21 | PASS |
| | HCH | -0.548 | 21 | PASS |

Test Graphs

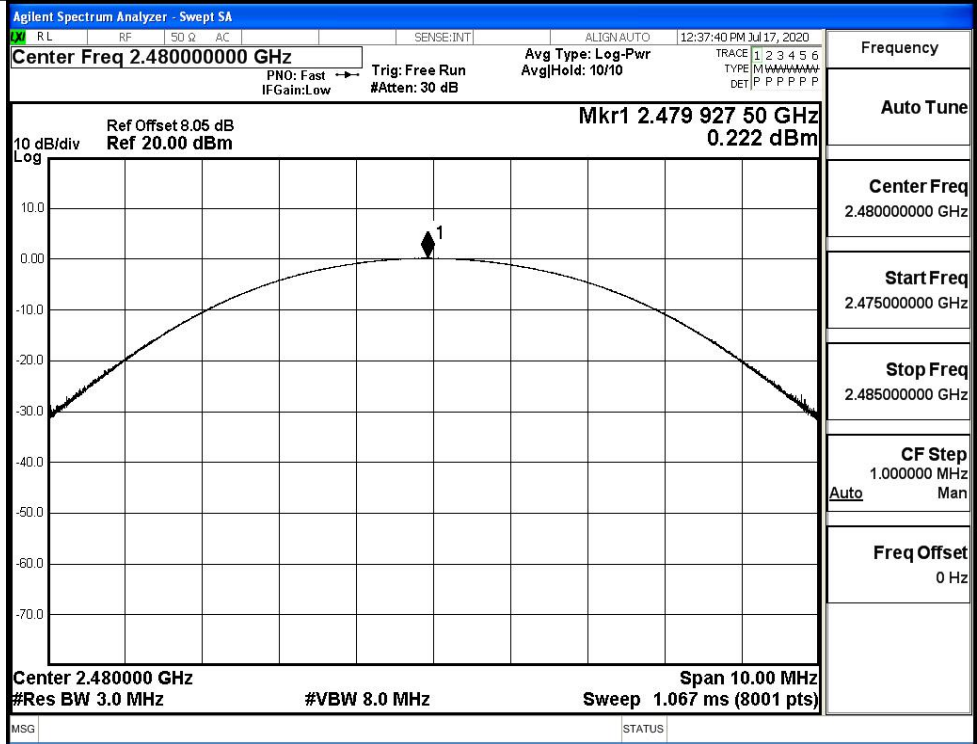
GFSK/LCH



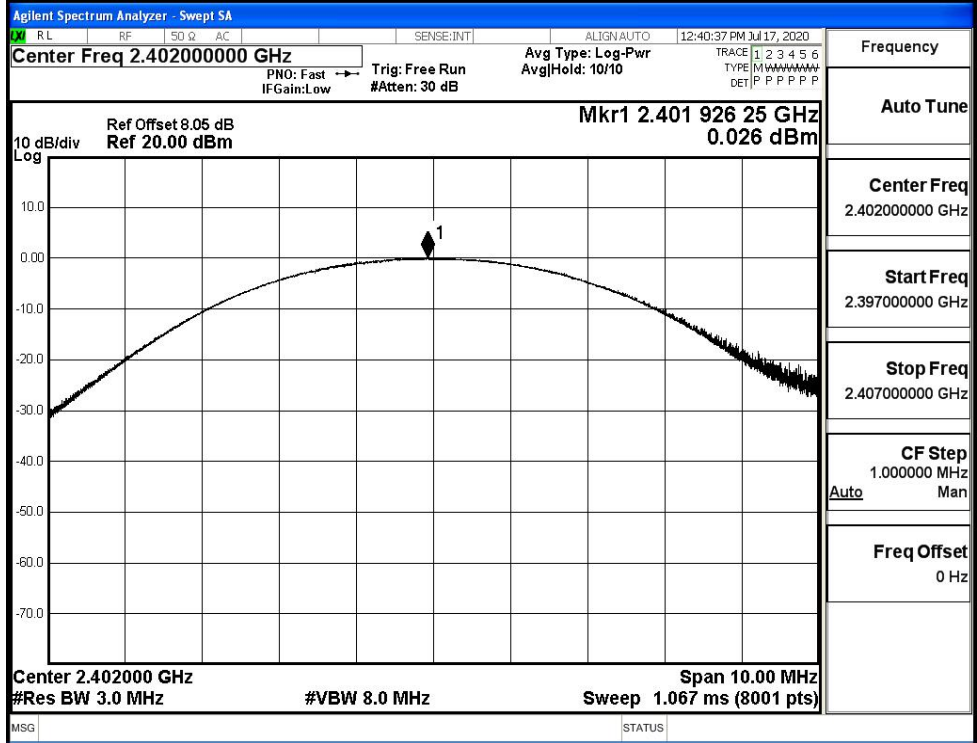
GFSK/MCH



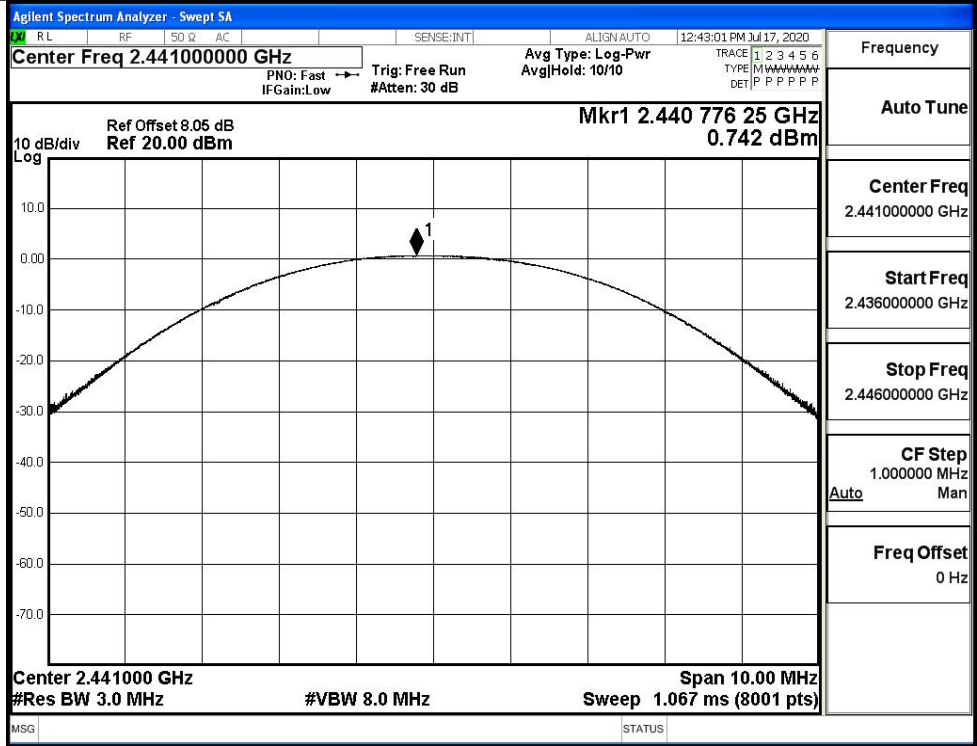
GFSK/HCH



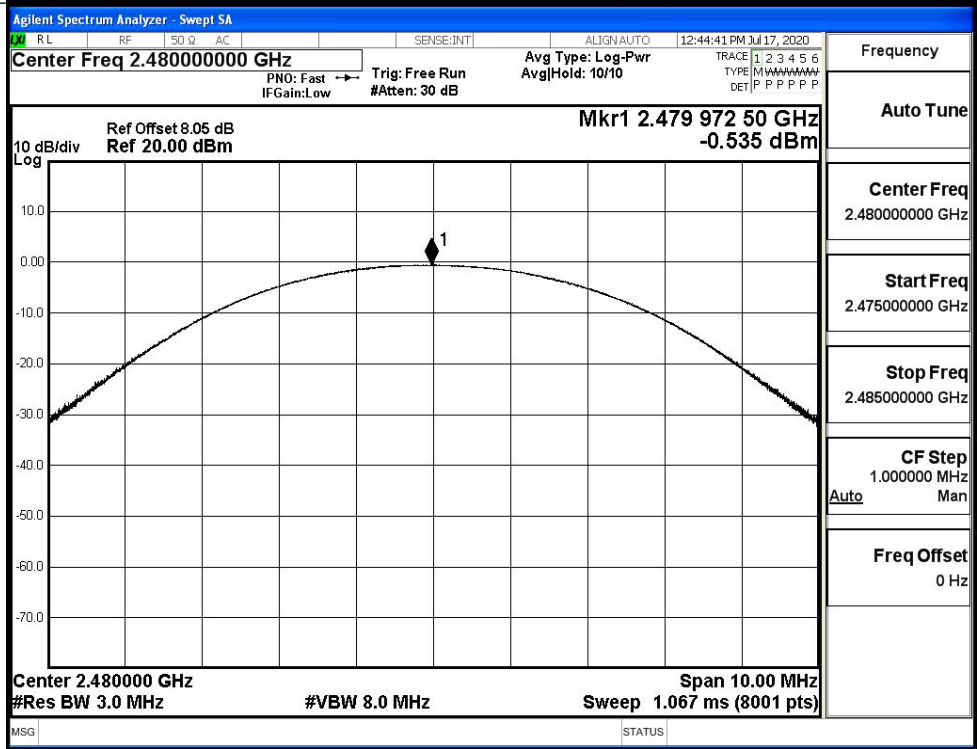
$\pi/4$ DQPSK/LCH



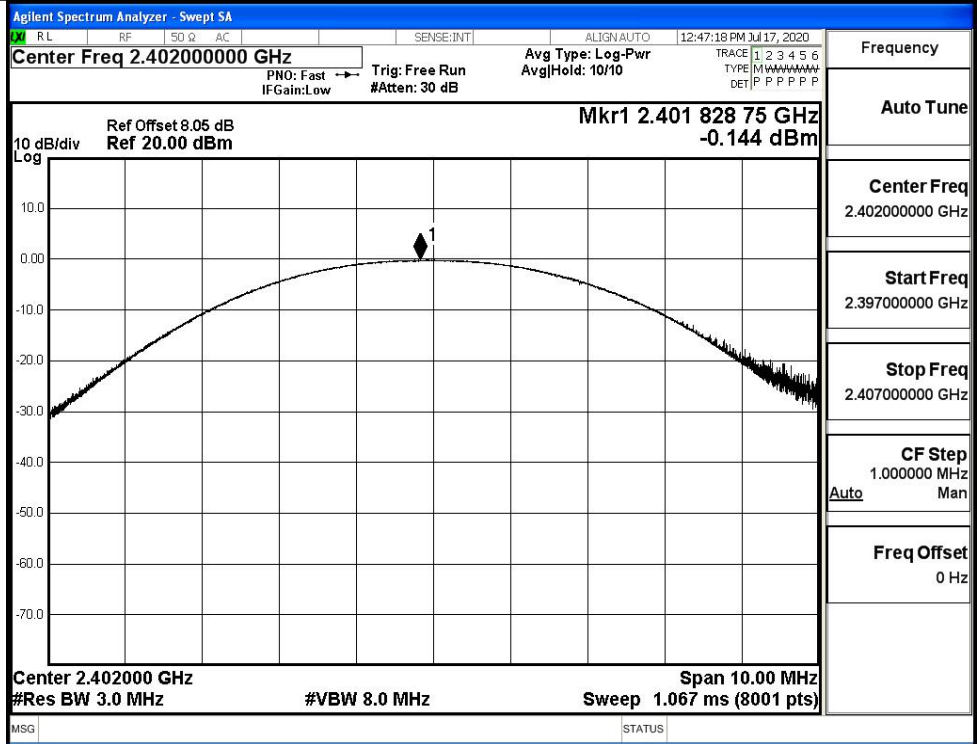
π /4DQPSK/MCH



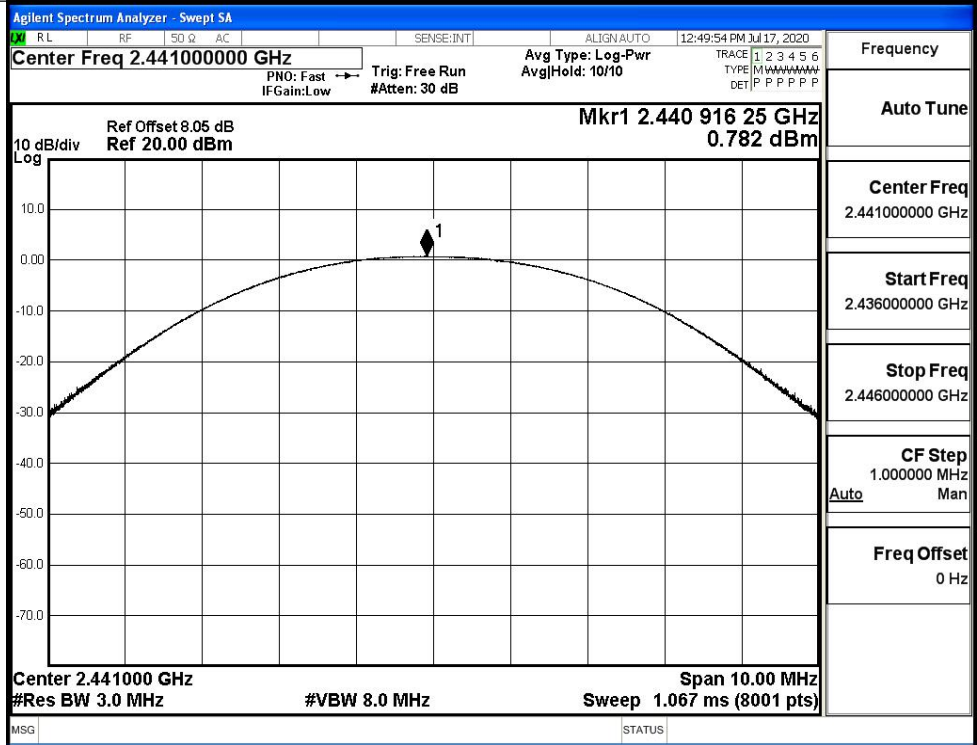
π /4DQPSK/HCH



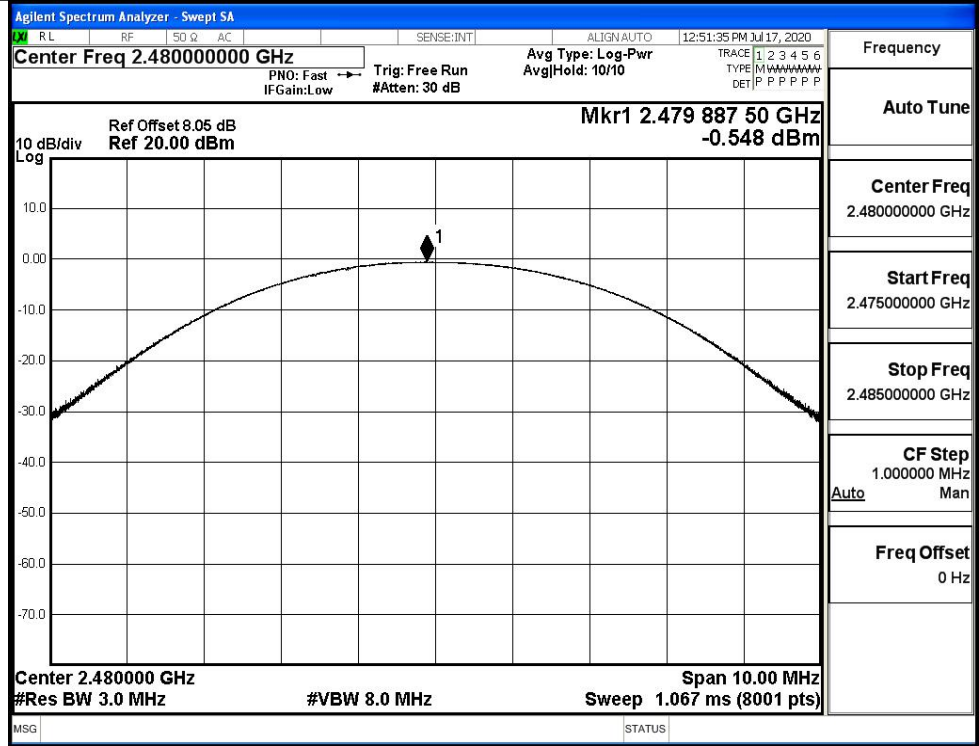
8DPSK/LCH



8DPSK/MCH

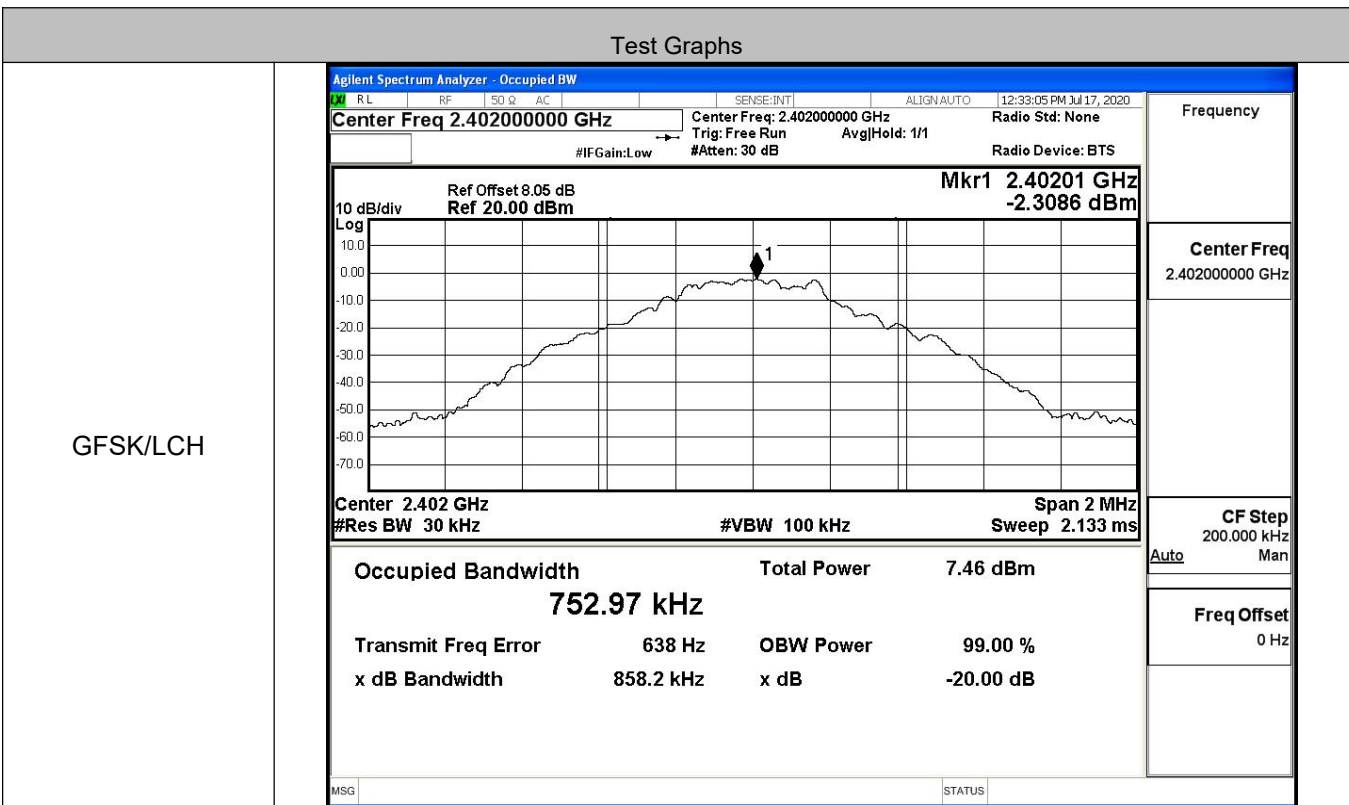


8DPSK/HCH

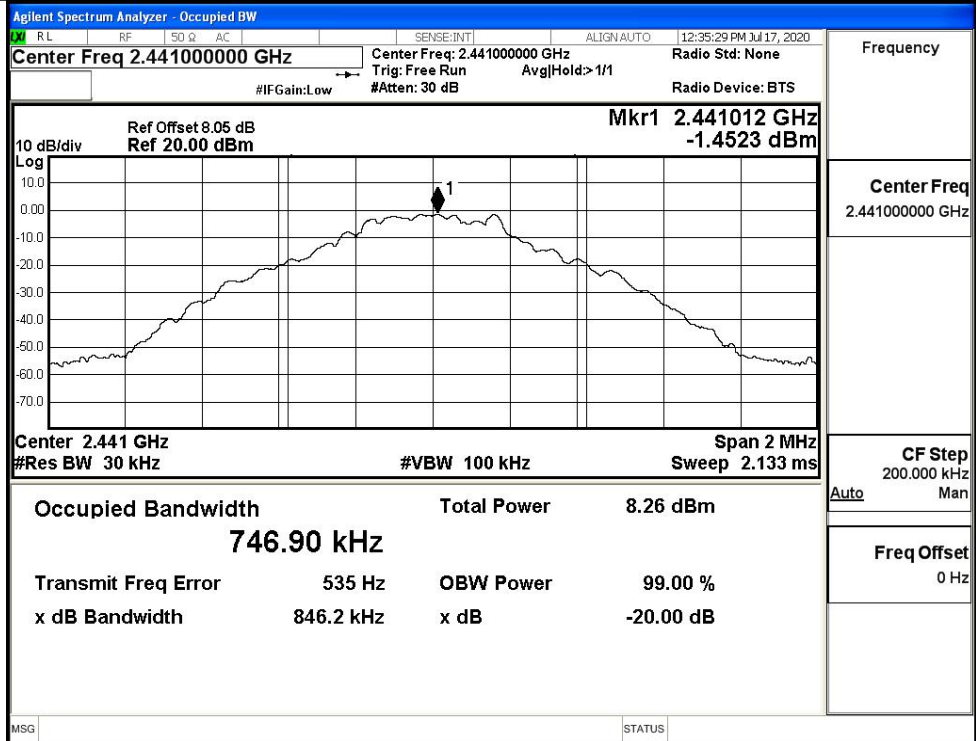


A.2 20dB Bandwidth

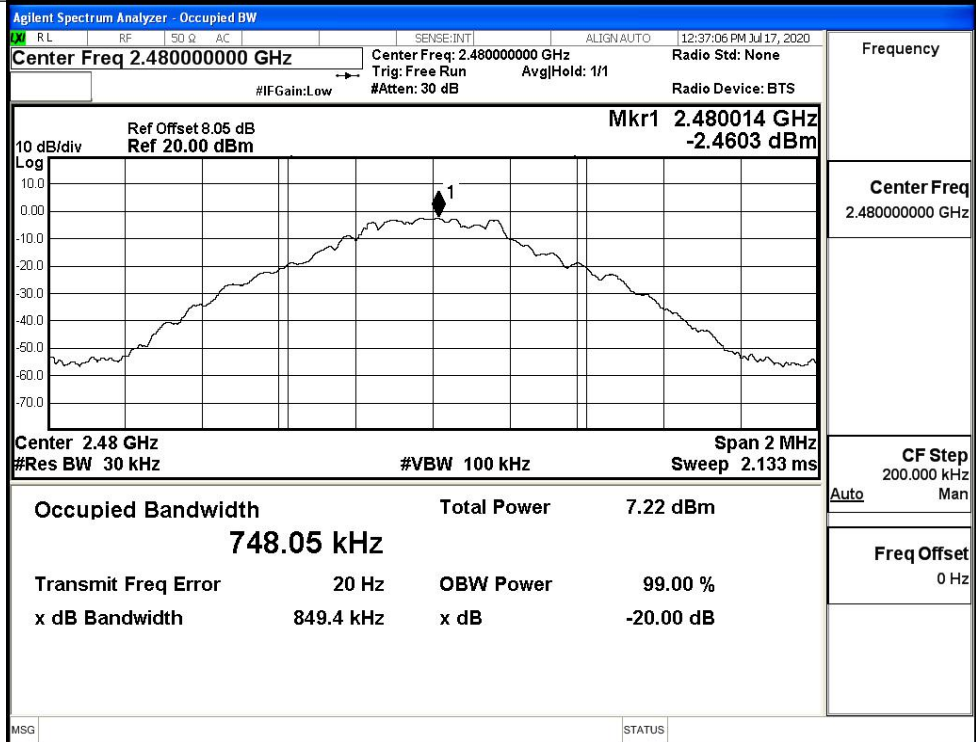
| Mode | Channel. | 20dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|----------|----------|----------------------|---------------|---------|
| GFSK | LCH | 0.8582 | Not Specified | PASS |
| | MCH | 0.8462 | Not Specified | PASS |
| | HCH | 0.8494 | Not Specified | PASS |
| π/4DQPSK | LCH | 1.274 | Not Specified | PASS |
| | MCH | 1.274 | Not Specified | PASS |
| | HCH | 1.266 | Not Specified | PASS |
| 8DPSK | LCH | 1.284 | Not Specified | PASS |
| | MCH | 1.269 | Not Specified | PASS |
| | HCH | 1.265 | Not Specified | PASS |



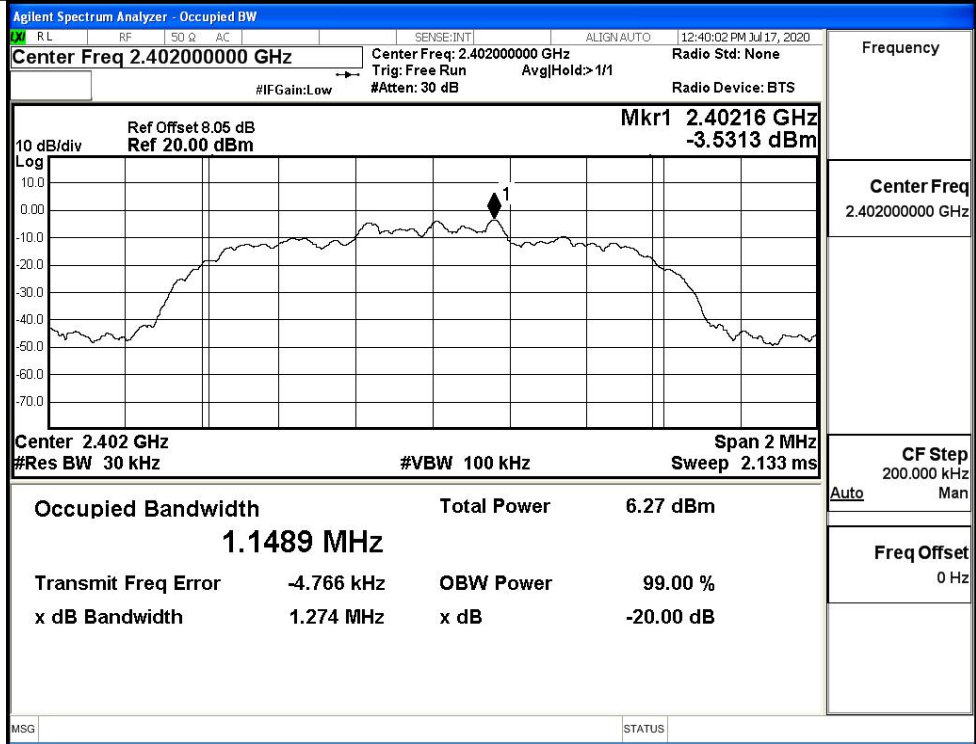
GFSK/MCH



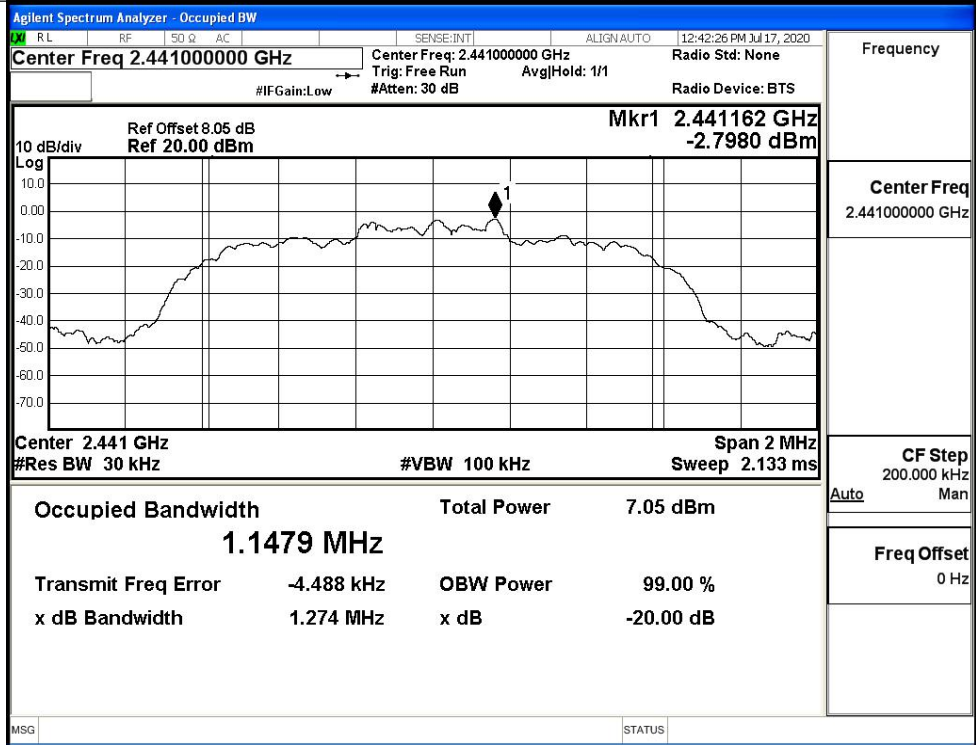
GFSK/HCH



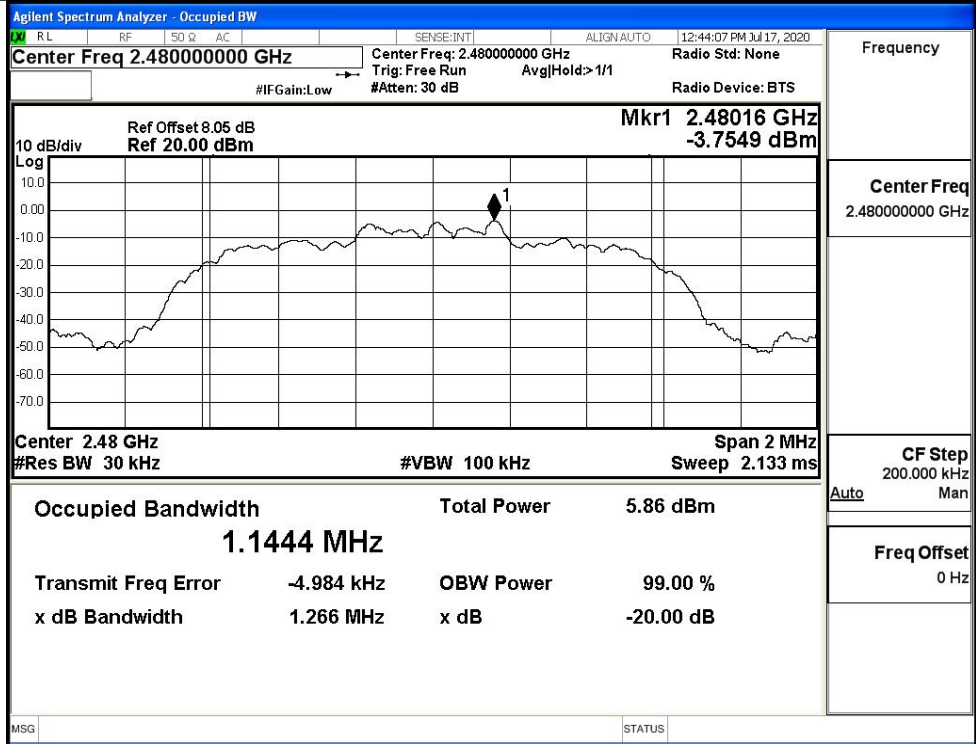
$\pi/4$ DQPSK/LCH



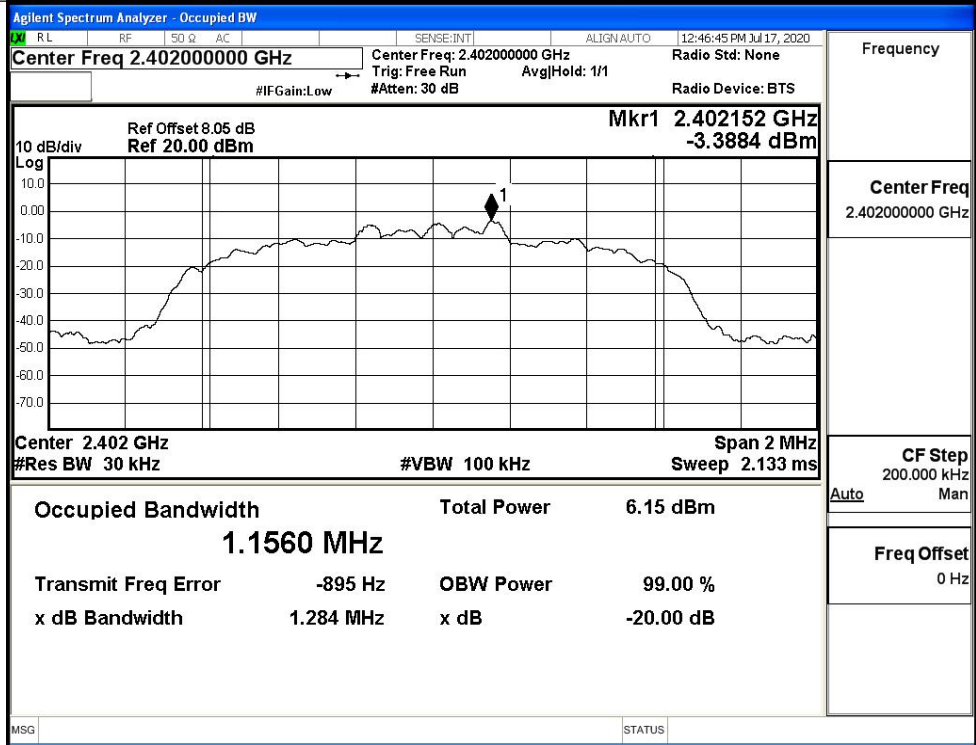
$\pi/4$ DQPSK/MCH



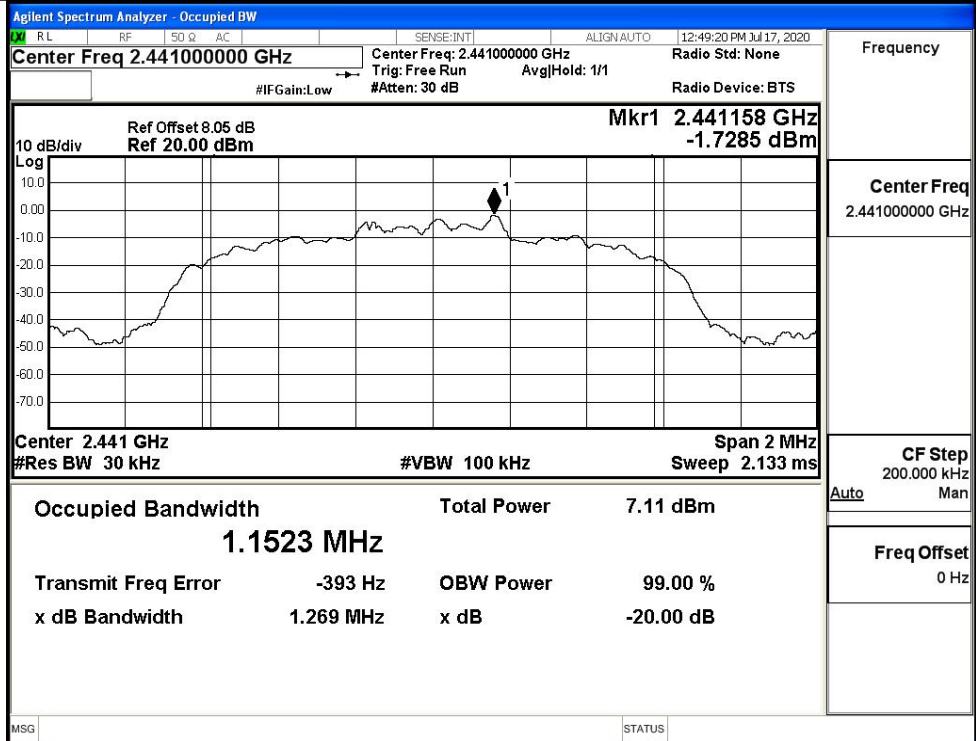
$\pi/4$ DQPSK/HCH



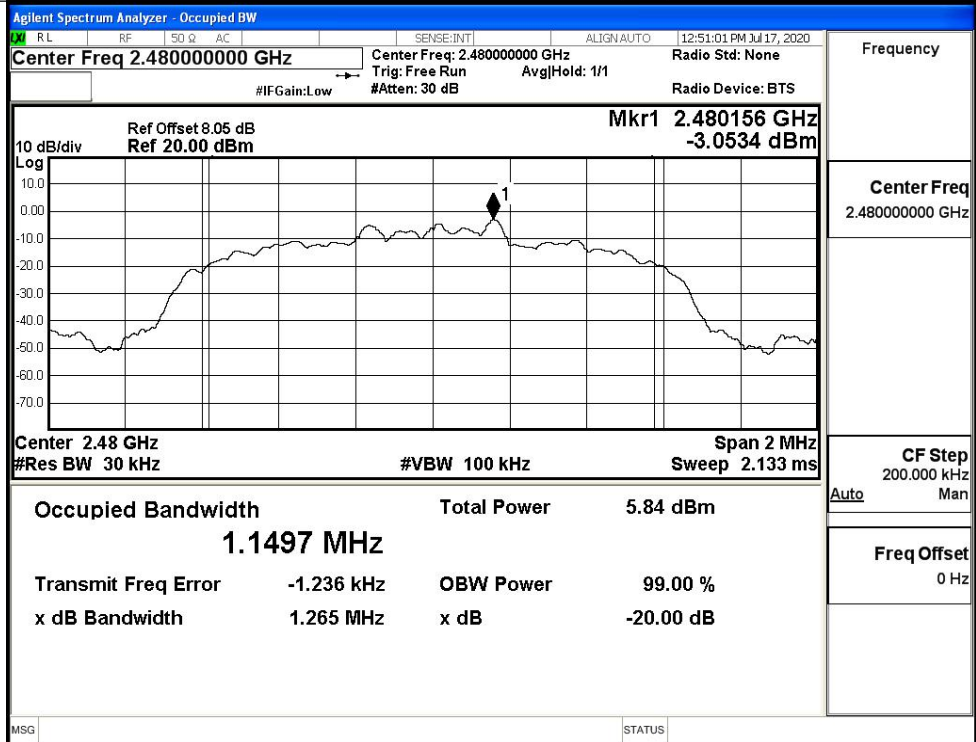
8DPSK/LCH



8DPSK/MCH

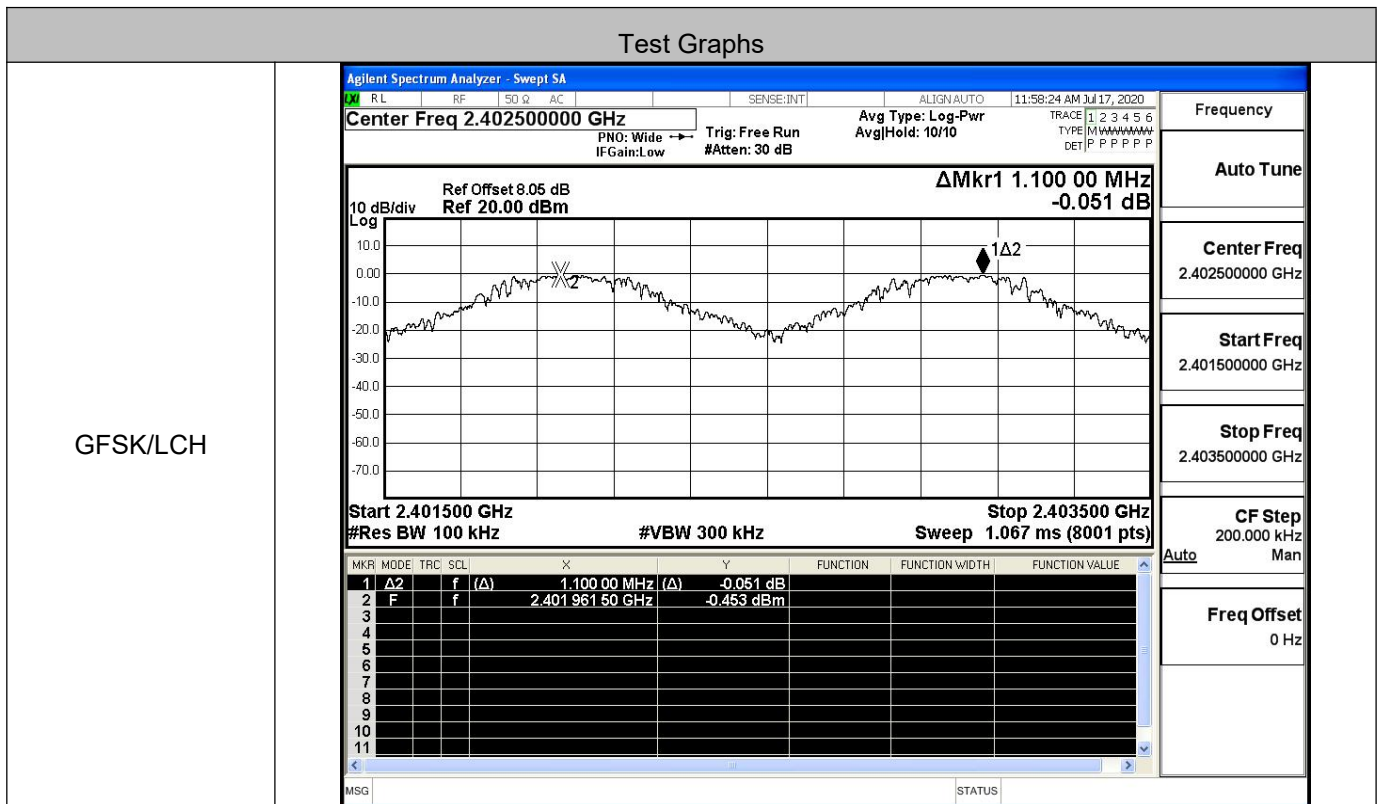


8DPSK/HCH

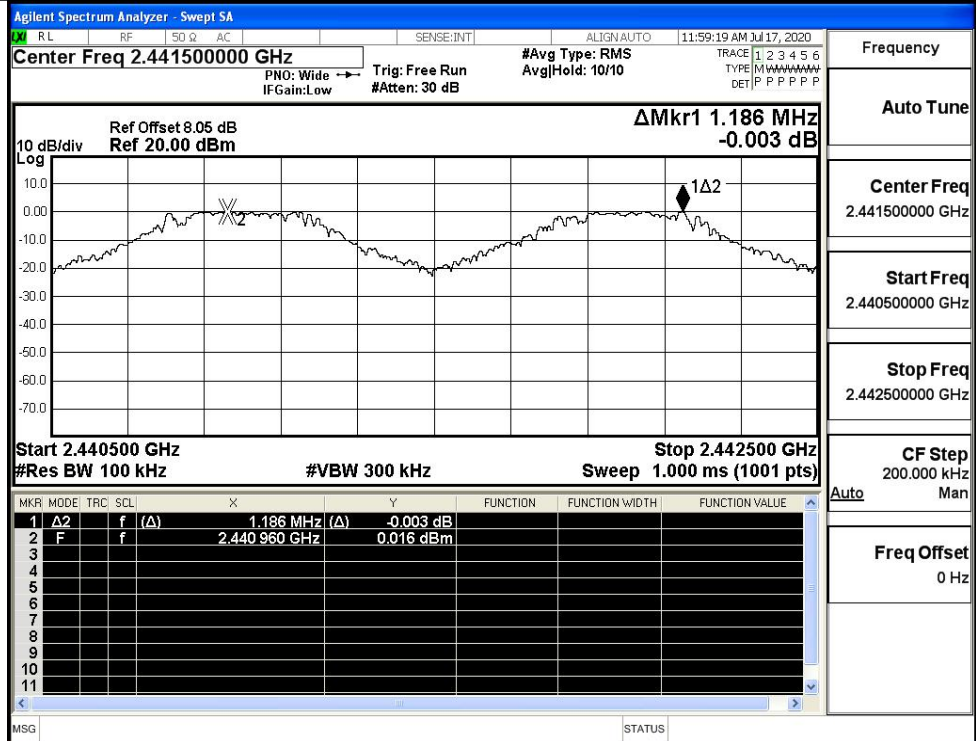


A.3 Carrier Frequency Separation

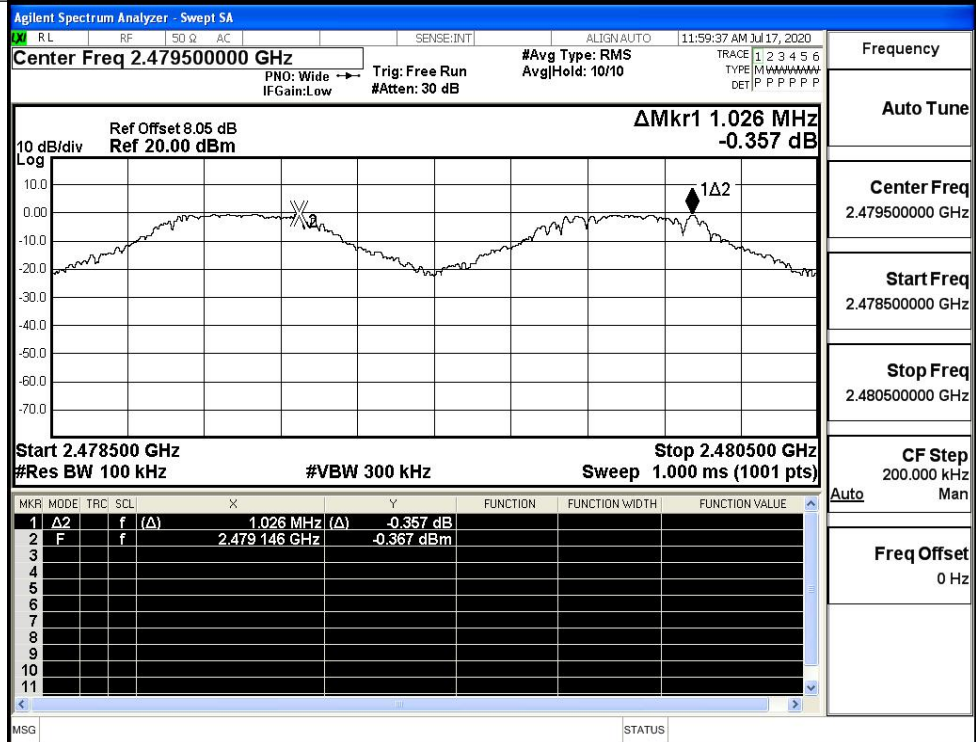
| Mode | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|----------|----------|------------------------------------|-------------|---------|
| GFSK | LCH | 1.100 | 0.573 | PASS |
| | MCH | 1.186 | 0.573 | PASS |
| | HCH | 1.026 | 0.573 | PASS |
| π/4DQPSK | LCH | 1.120 | 0.848 | PASS |
| | MCH | 0.996 | 0.848 | PASS |
| | HCH | 1.018 | 0.849 | PASS |
| 8DPSK | LCH | 1.104 | 0.848 | PASS |
| | MCH | 1.068 | 0.856 | PASS |
| | HCH | 1.060 | 0.848 | PASS |



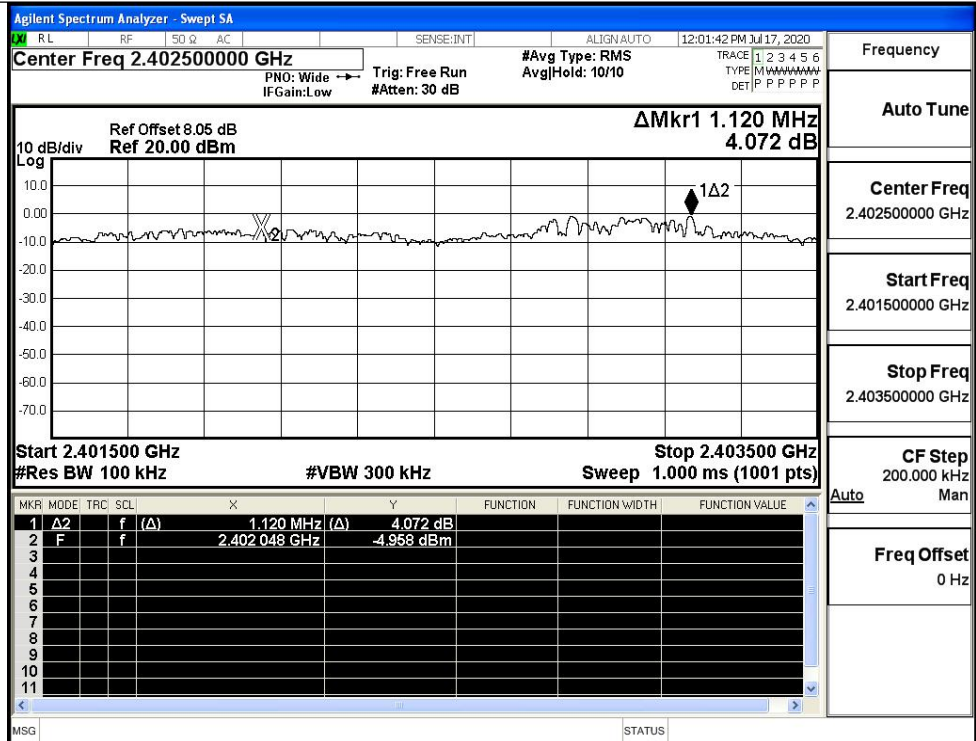
GFSK/MCH



GFSK/HCH



$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

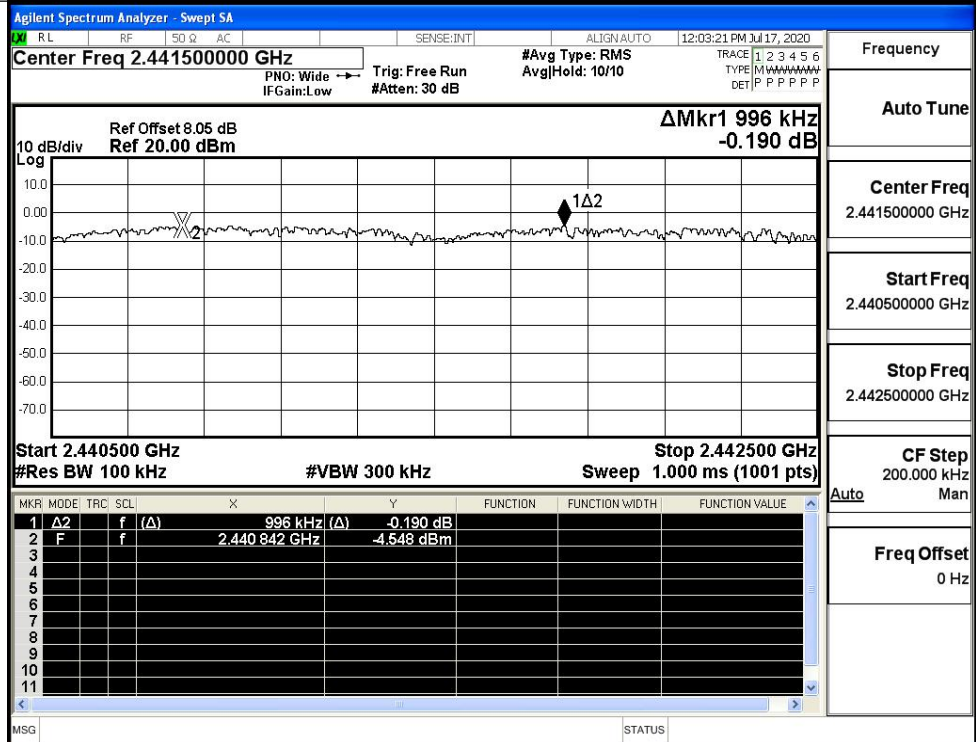
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

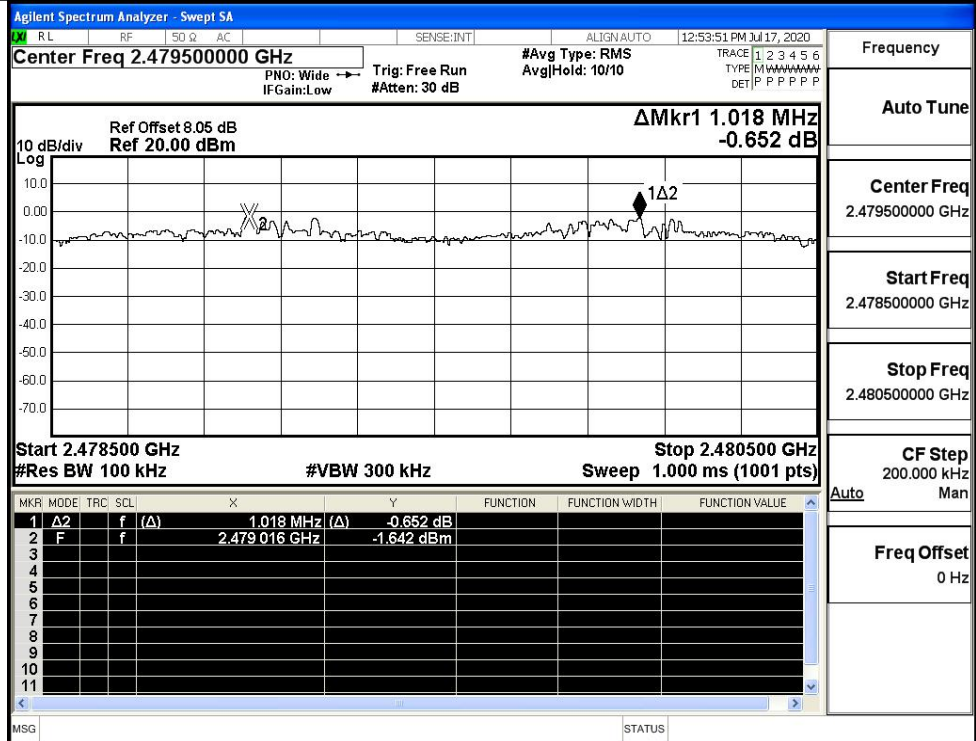
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz

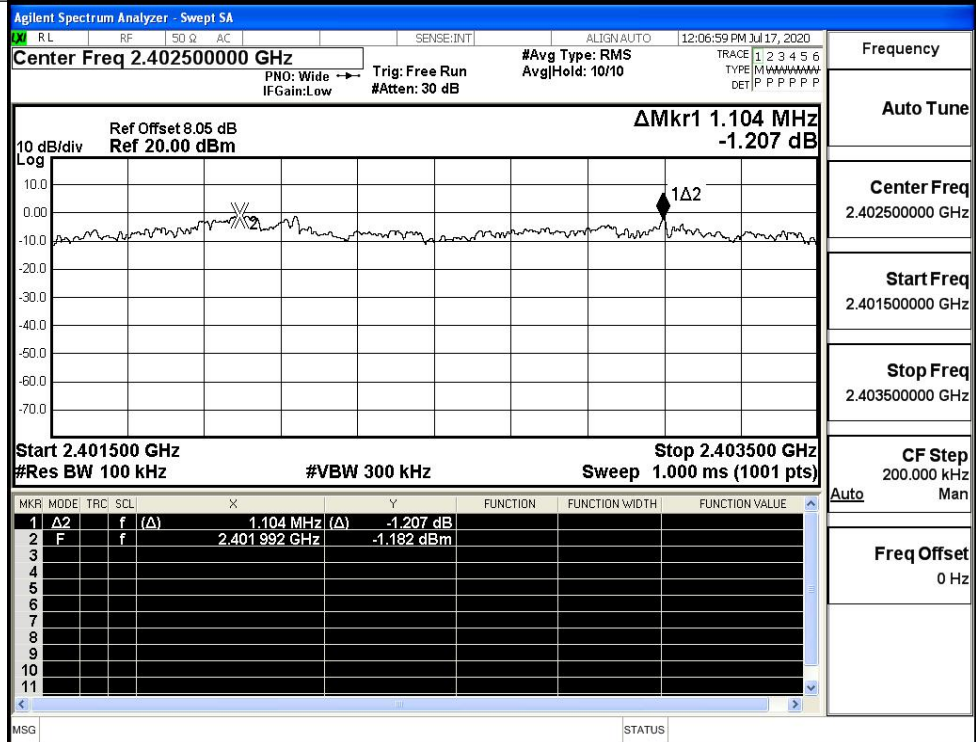
Freq Offset
0 Hz

π/4DQPSK/HCH

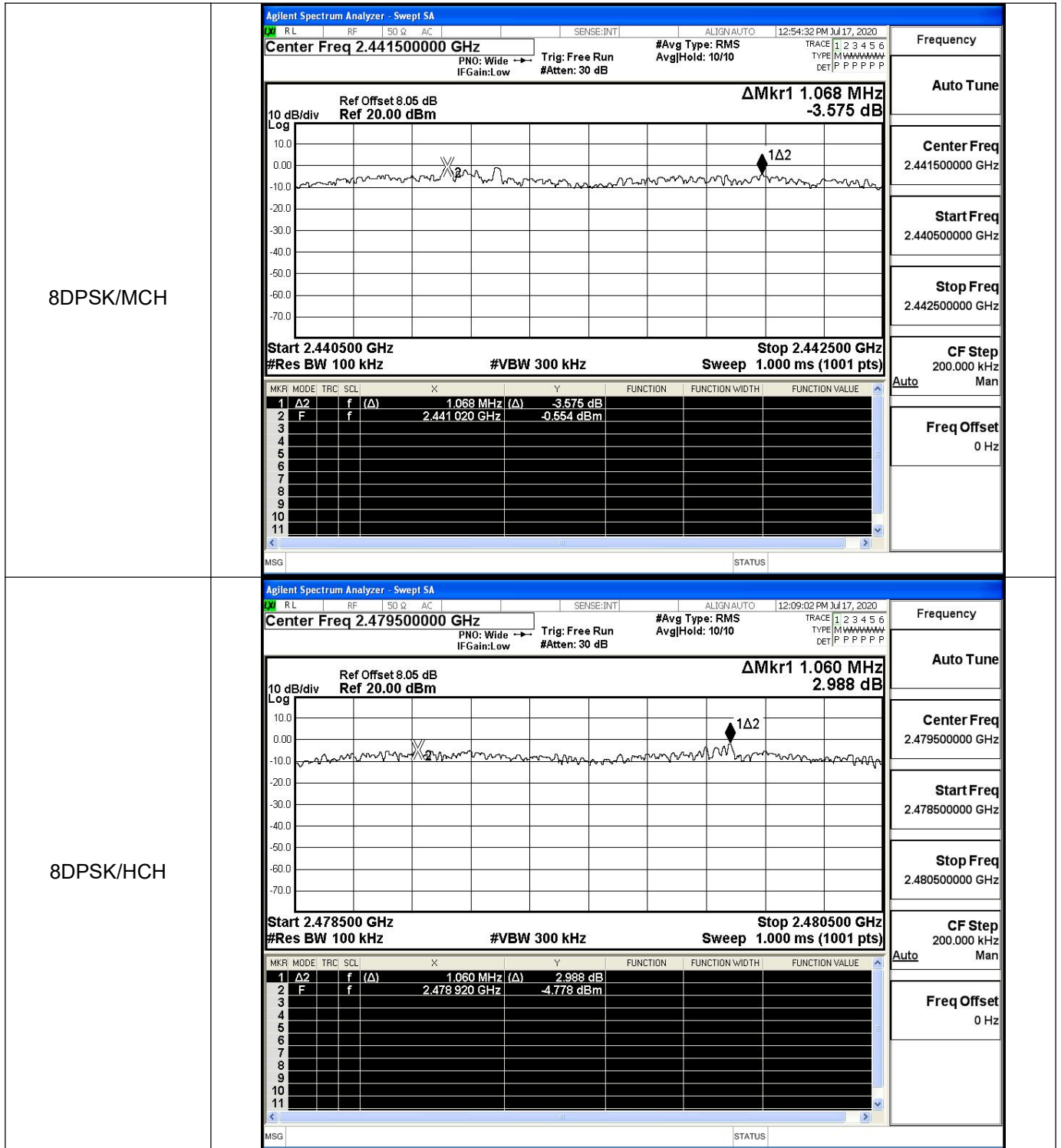


Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.480500000 GHz
CF Step
200.000 kHz
Auto Man
Freq Offset
0 Hz

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

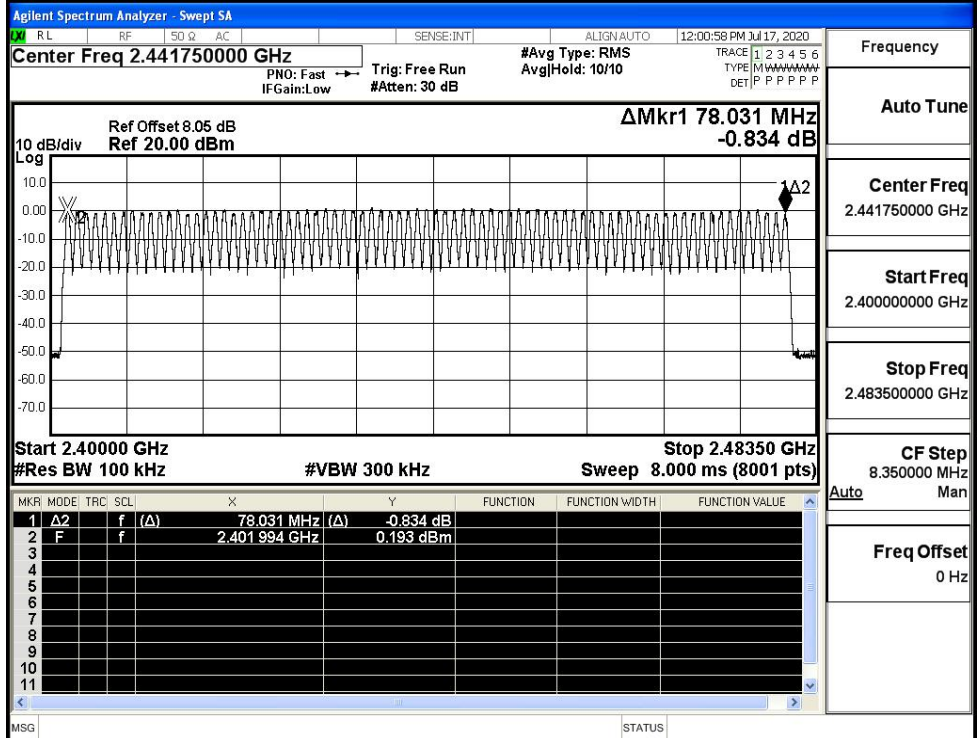


A.4 Hopping Channel Number

| Mode | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|----------|----------|-------------------------------|-----------|---------|
| GFSK | Hop | 79 | >=15 | PASS |
| π/4DQPSK | Hop | 79 | >=15 | PASS |
| 8DPSK | Hop | 79 | >=15 | PASS |

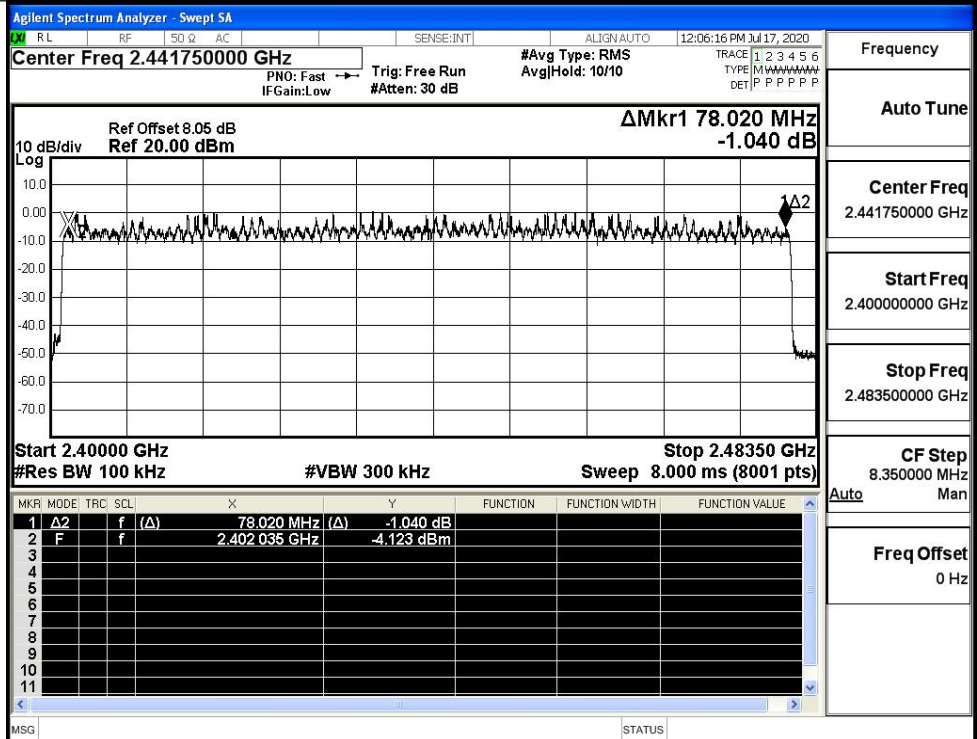
Test Graphs

GFSK/Hop



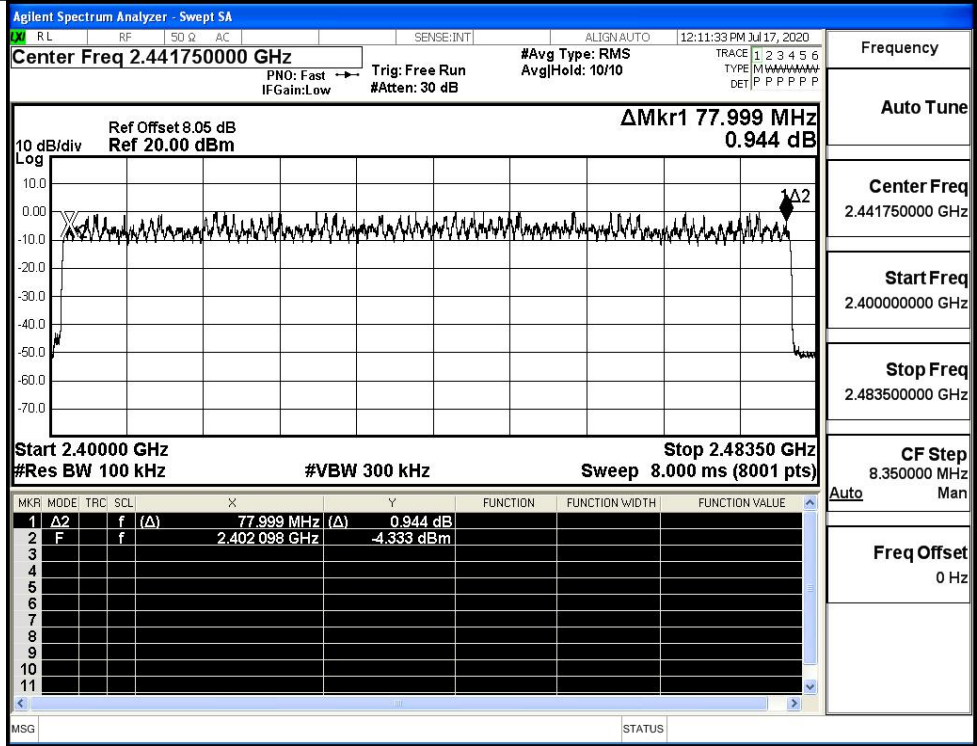
| | |
|-------------|-----------------|
| Frequency | 2.441750000 GHz |
| Auto Tune | |
| Center Freq | 2.441750000 GHz |
| Start Freq | 2.400000000 GHz |
| Stop Freq | 2.483500000 GHz |
| CF Step | 8.350000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

π /4DQPSK/Hop



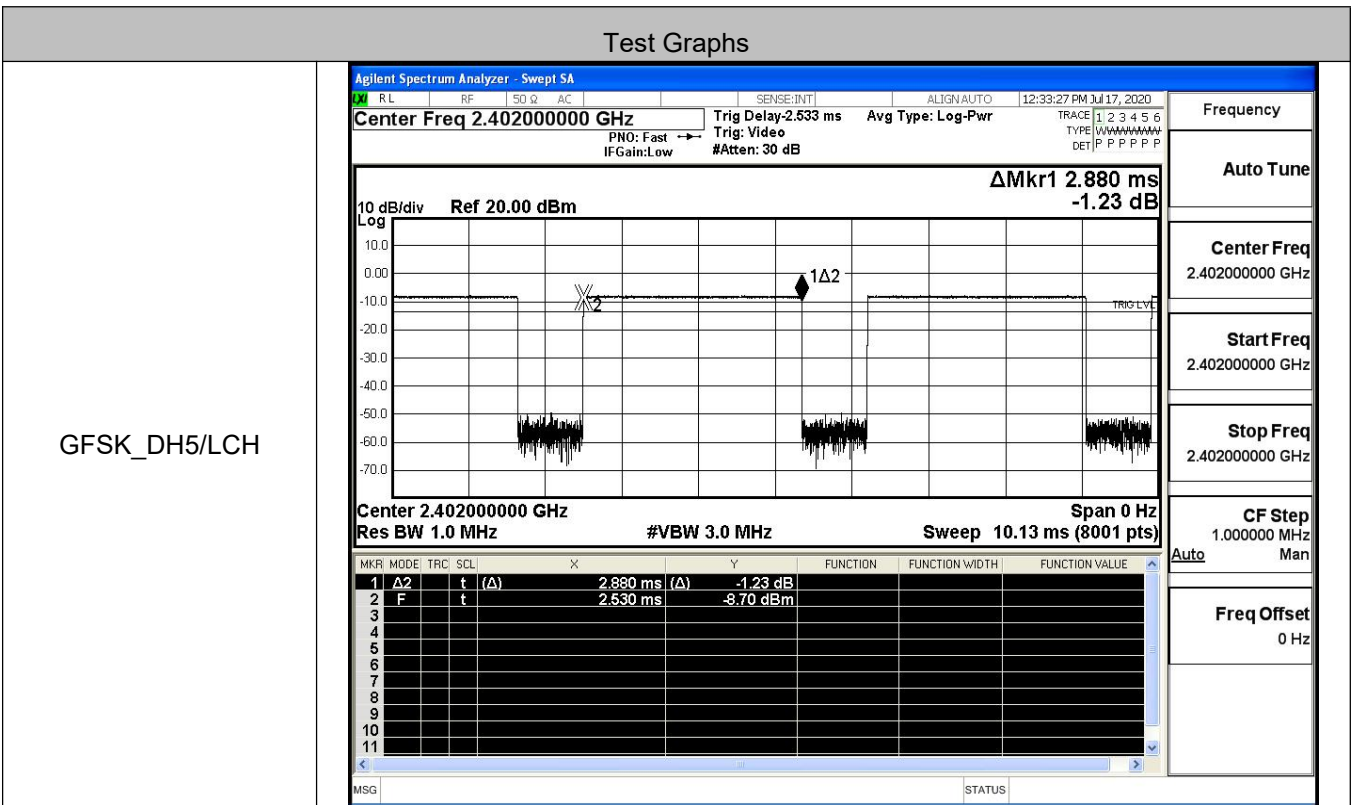
| | |
|-------------|-----------------|
| Frequency | 2.441750000 GHz |
| Auto Tune | |
| Center Freq | 2.441750000 GHz |
| Start Freq | 2.400000000 GHz |
| Stop Freq | 2.483500000 GHz |
| CF Step | 8.350000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

8DPSK/Hop

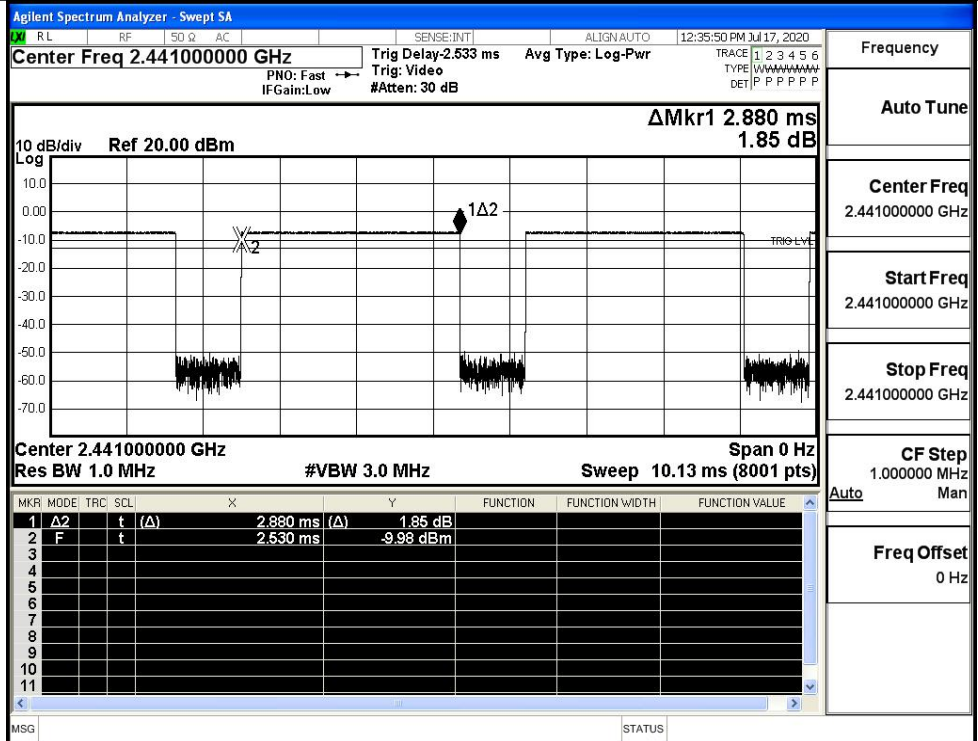


A.5 Dwell Time

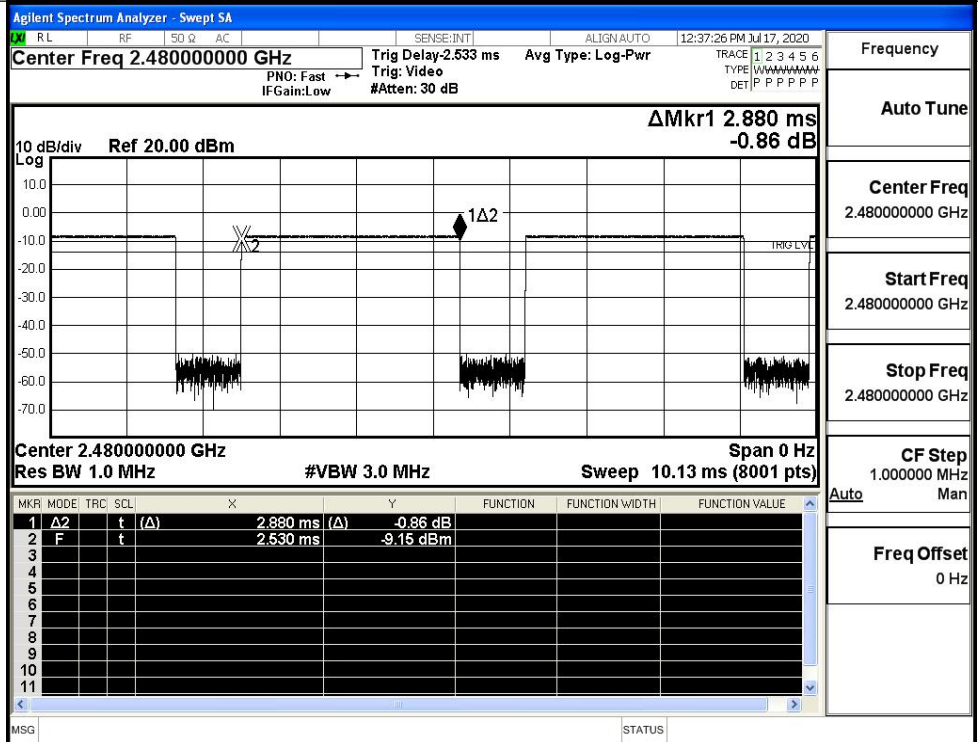
| Mode | Packet | Channel | Burst Width [ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|----------|--------|---------|-------------------------|--------------------|---------------|-----------|---------|
| GFSK | DH5 | LCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | DH5 | MCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | DH5 | HCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| π/4DQPSK | 2DH5 | LCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | 2DH5 | MCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| | 2DH5 | HCH | 2.88 | 106.7 | 0.307 | 0.4 | PASS |
| 8DPSK | 3DH5 | LCH | 2.88 | 106.7 | 0.308 | 0.4 | PASS |
| | 3DH5 | MCH | 2.88 | 106.7 | 0.308 | 0.4 | PASS |
| | 3DH5 | HCH | 2.88 | 106.7 | 0.308 | 0.4 | PASS |



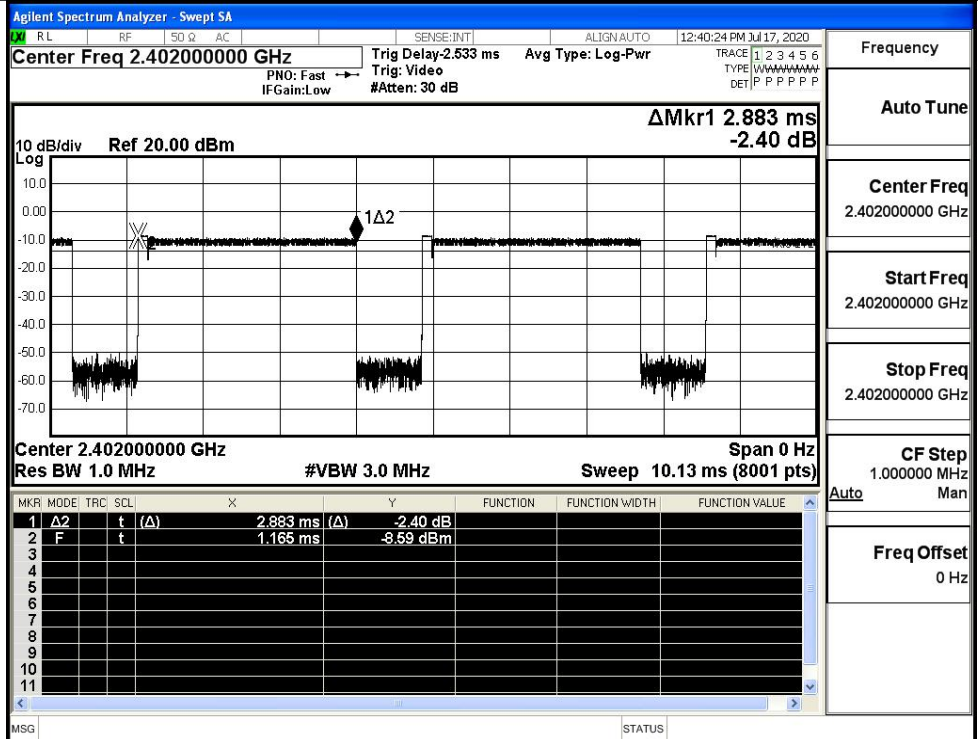
GFSK_DH5/MCH



GFSK_DH5/HCH

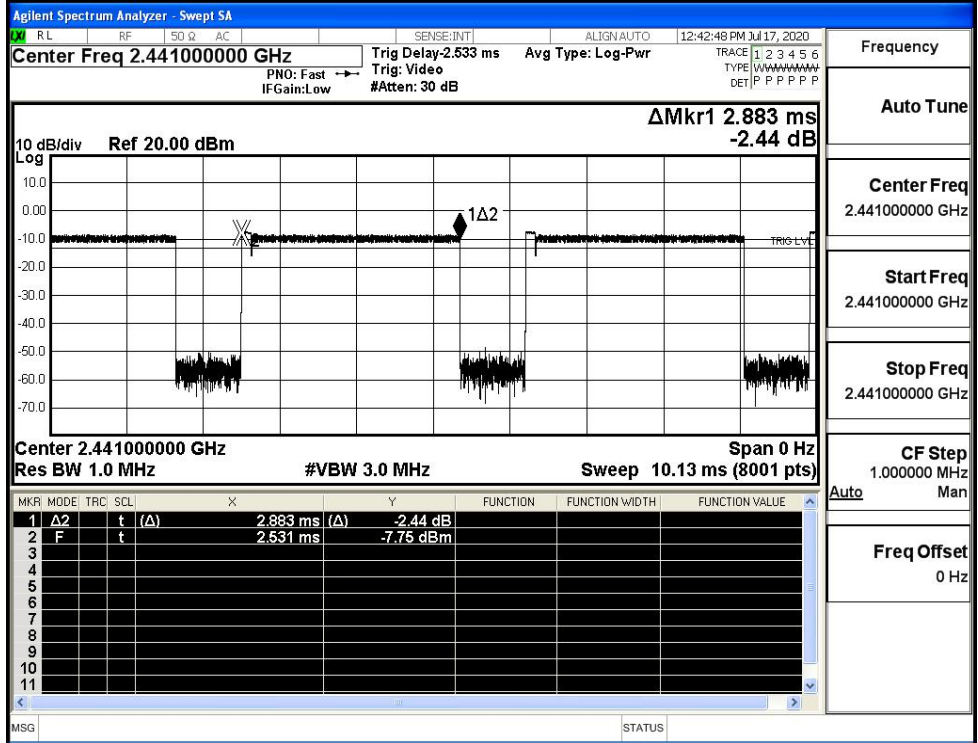


$\pi/4$ DQPSK
_2DH5/LCH



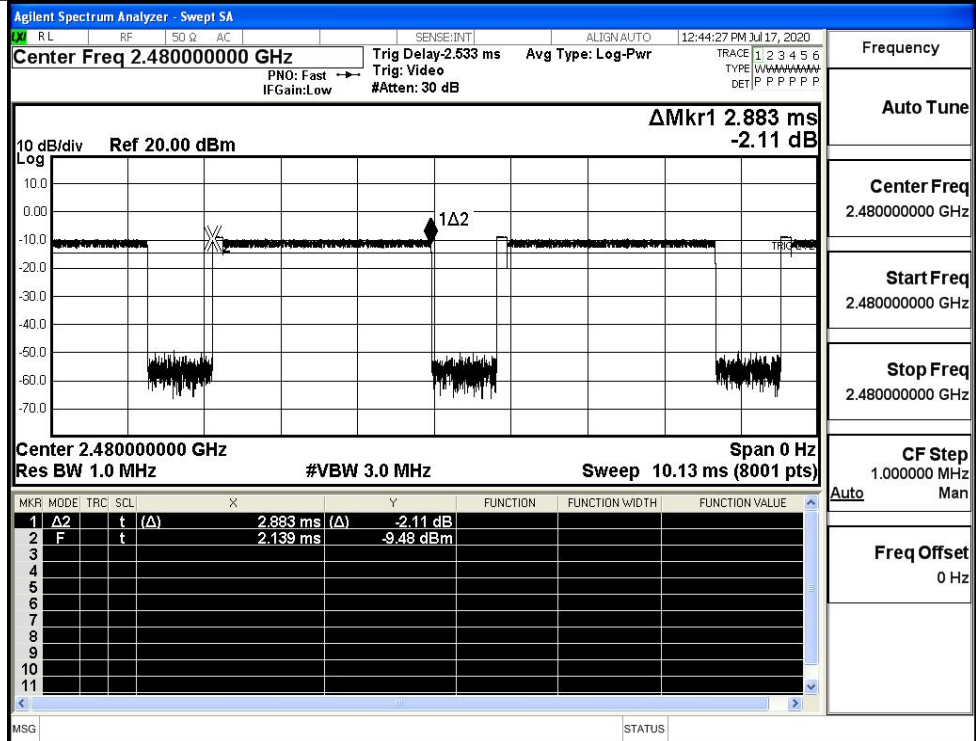
| | |
|-------------|-----------------|
| Frequency | 2.402000000 GHz |
| Auto Tune | |
| Center Freq | 2.402000000 GHz |
| Start Freq | 2.402000000 GHz |
| Stop Freq | 2.402000000 GHz |
| CF Step | 1.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

$\pi/4$ DQPSK
_2DH5/MCH

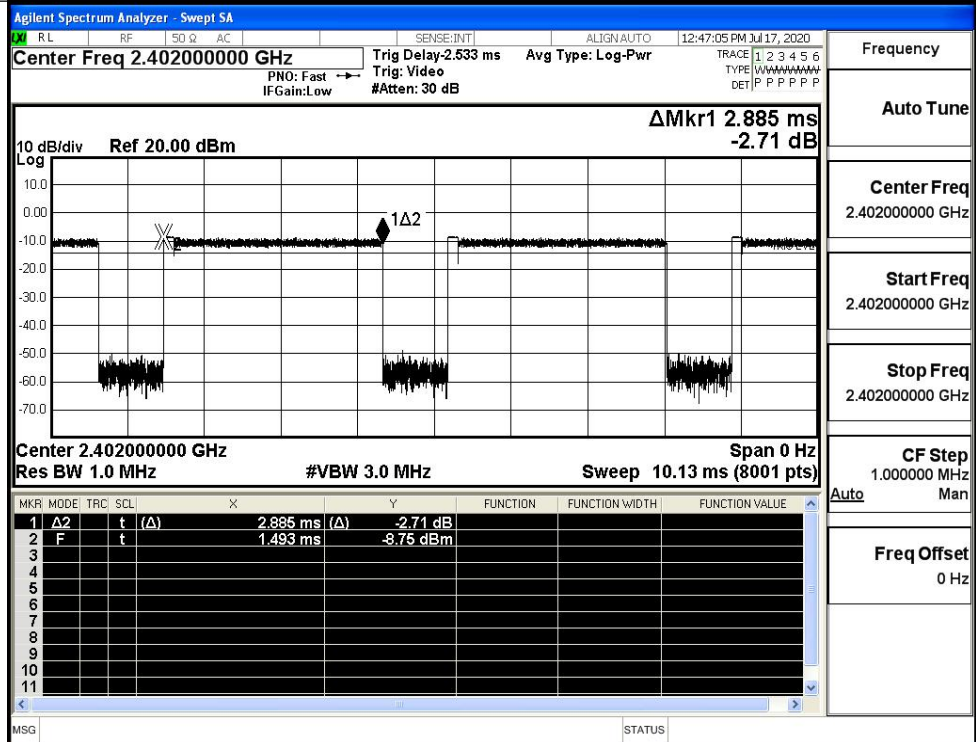


| | |
|-------------|-----------------|
| Frequency | 2.441000000 GHz |
| Auto Tune | |
| Center Freq | 2.441000000 GHz |
| Start Freq | 2.441000000 GHz |
| Stop Freq | 2.441000000 GHz |
| CF Step | 1.000000 MHz |
| Auto | Man |
| Freq Offset | 0 Hz |

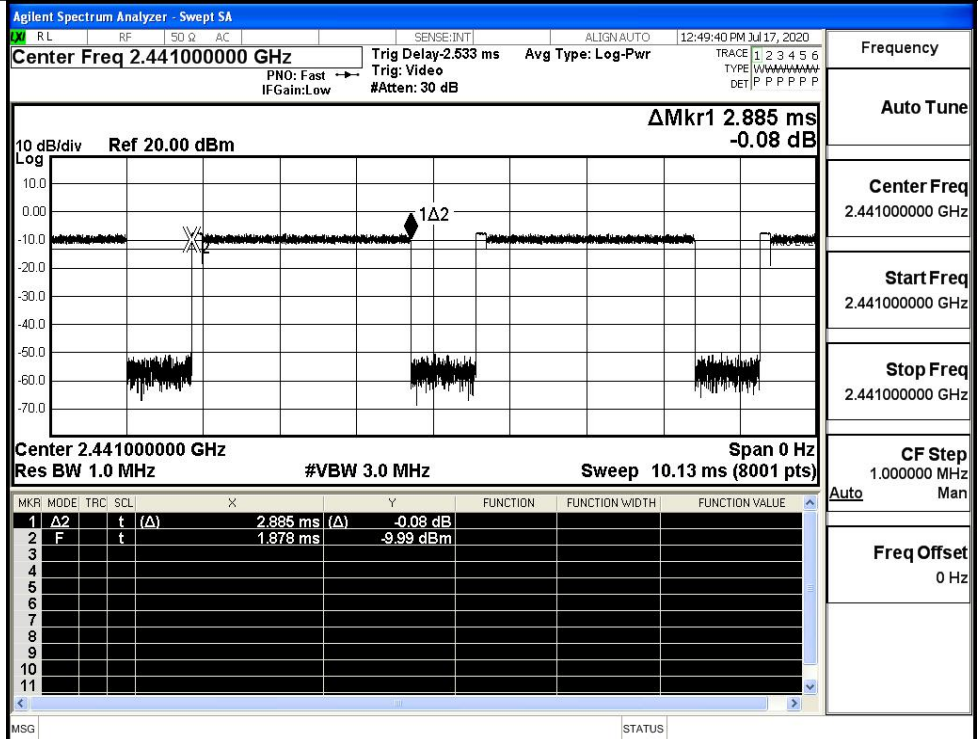
$\pi/4$ DQPSK
_2DH5/HCH



8DPSK_3DH5/LCH



8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

