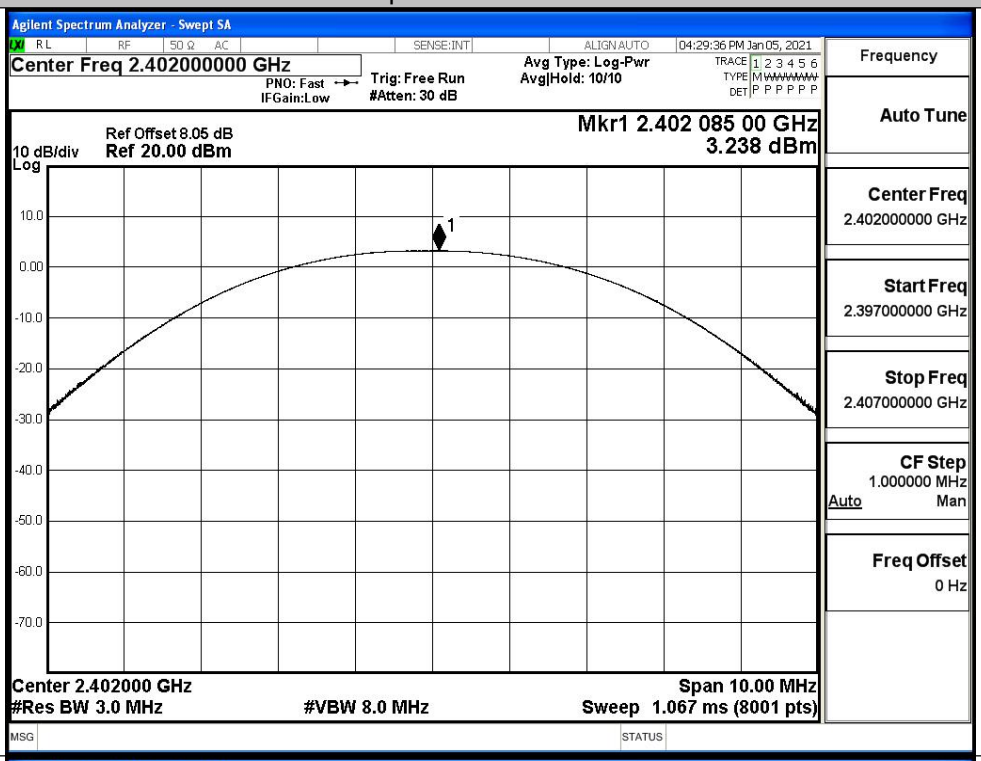
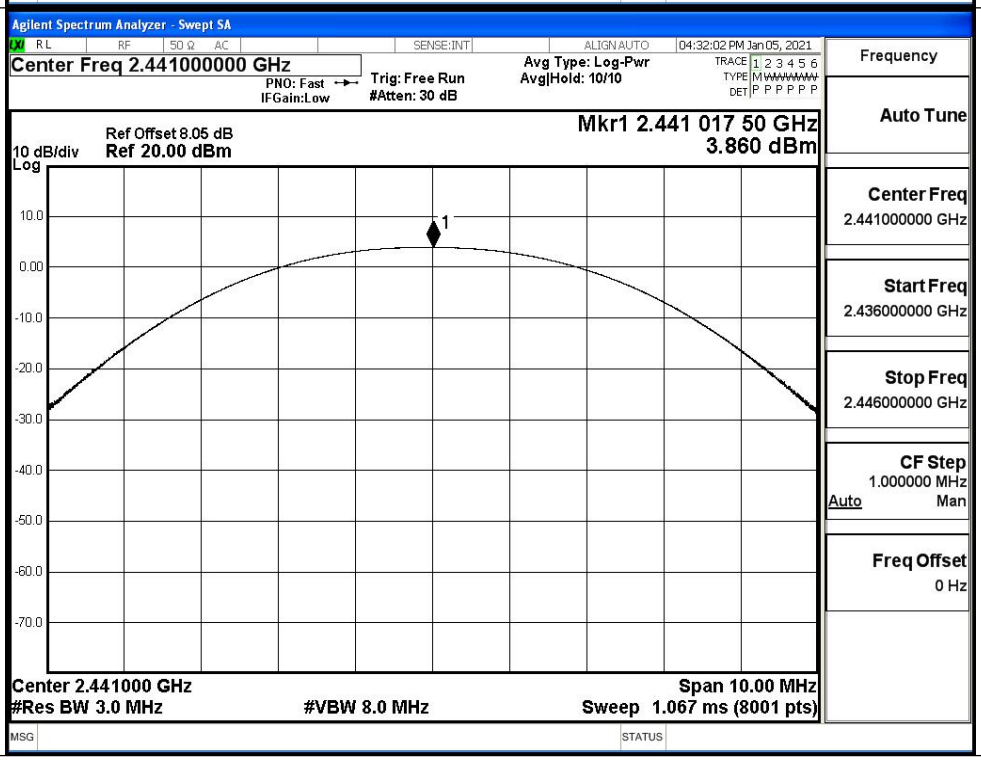
# Appendix A
# RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)
# Product Name: X96Mate
# Trade Mark: N/A
# Test Model: X96Mate

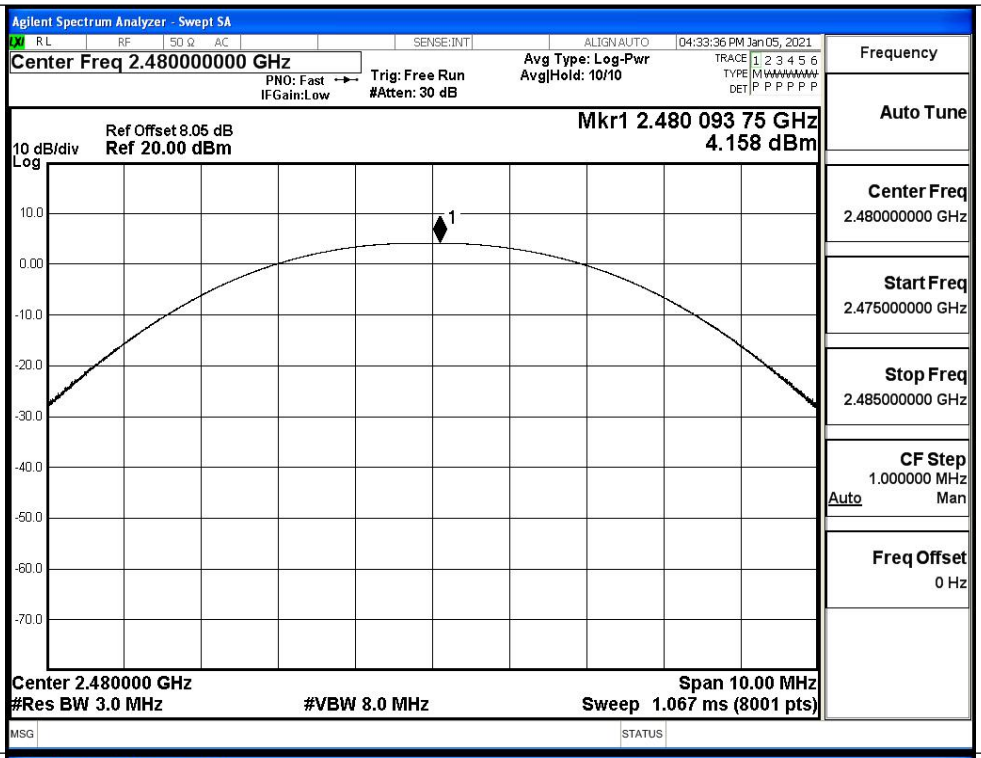
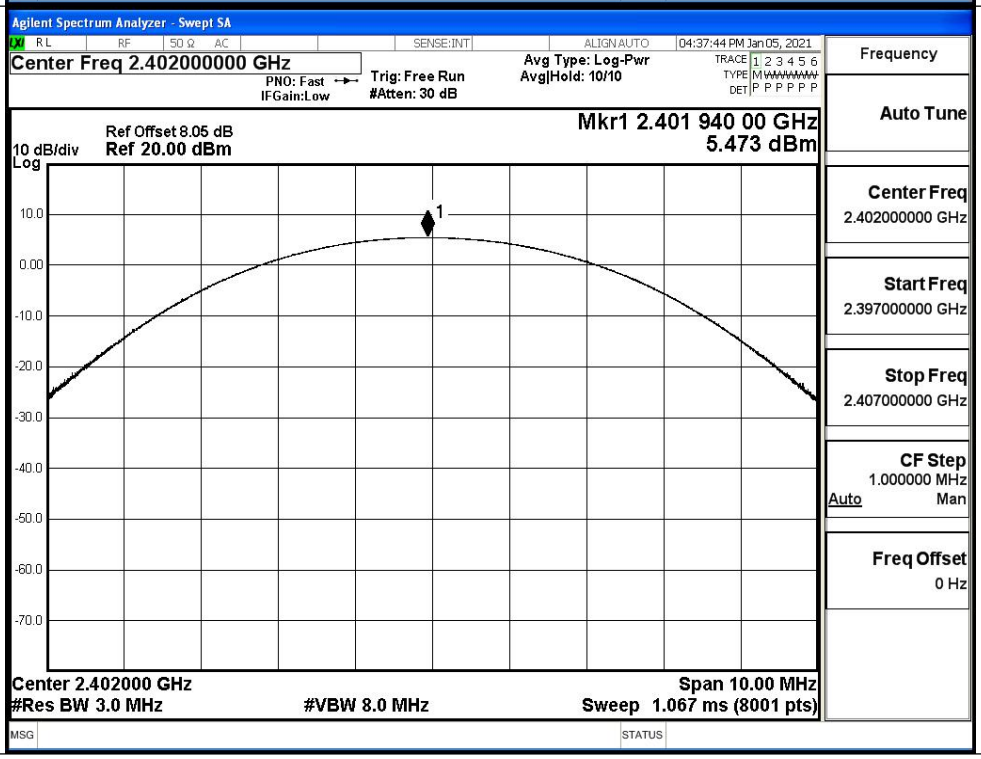
**Environmental Conditions**

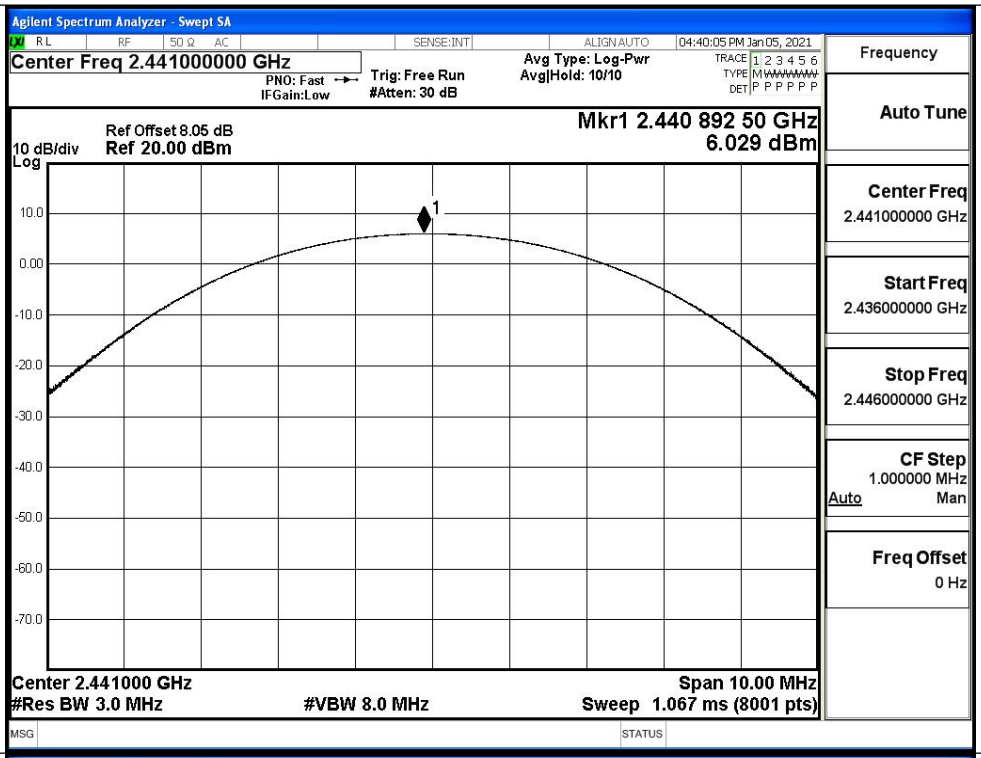
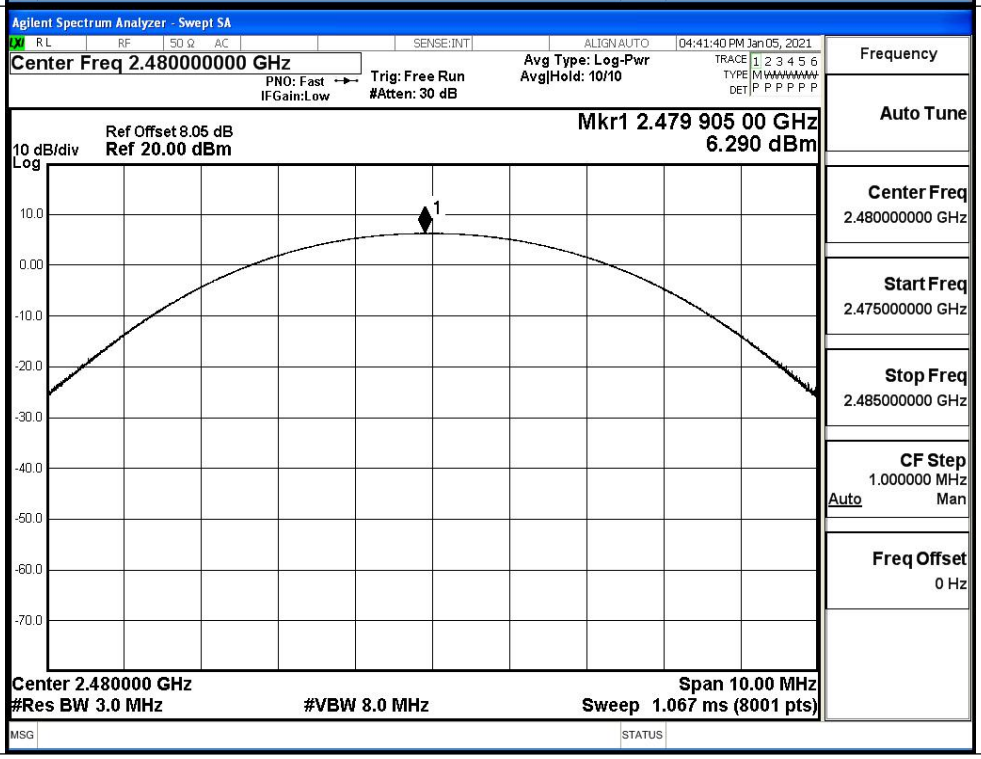
| | |
|---|---|
| Temperature: | 23.4 ° C |
| Relative Humidity: | 54.5% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Ken He |
| Supervised by: | Li Huan |

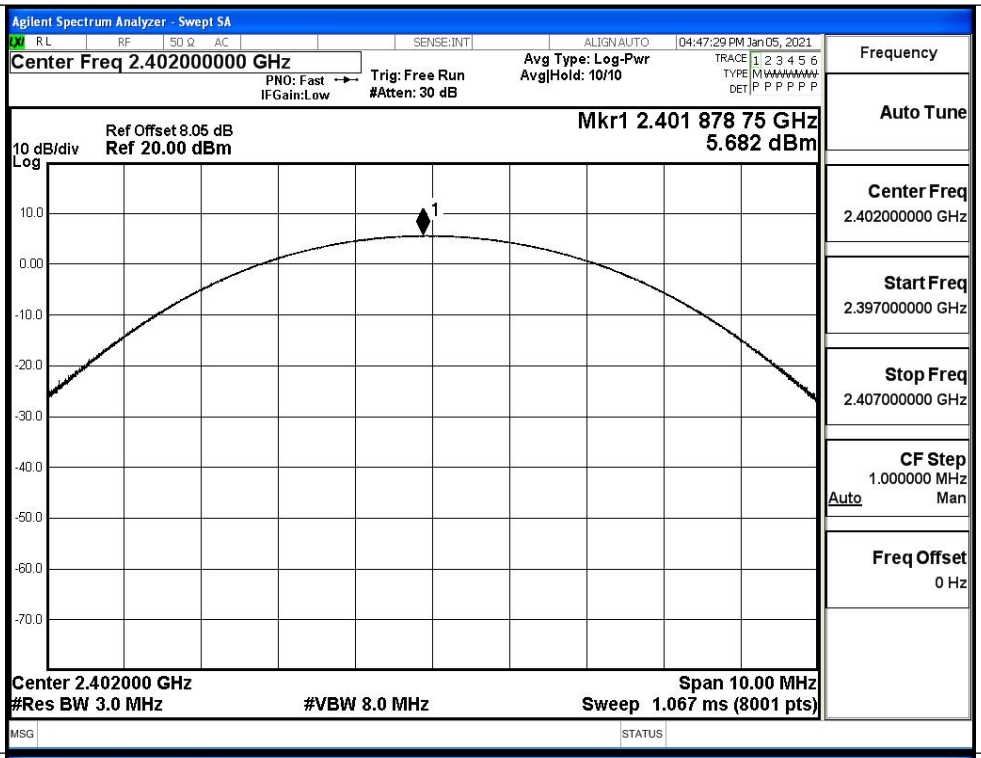
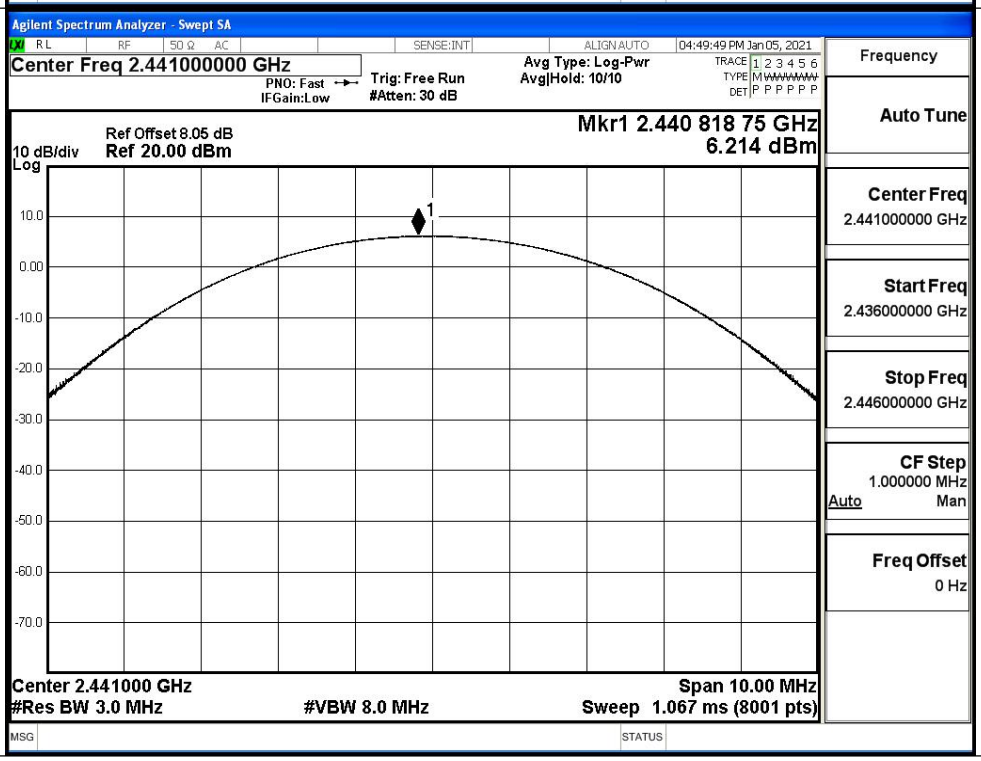
## A.1 Maxmum Conducted Peak Output Power

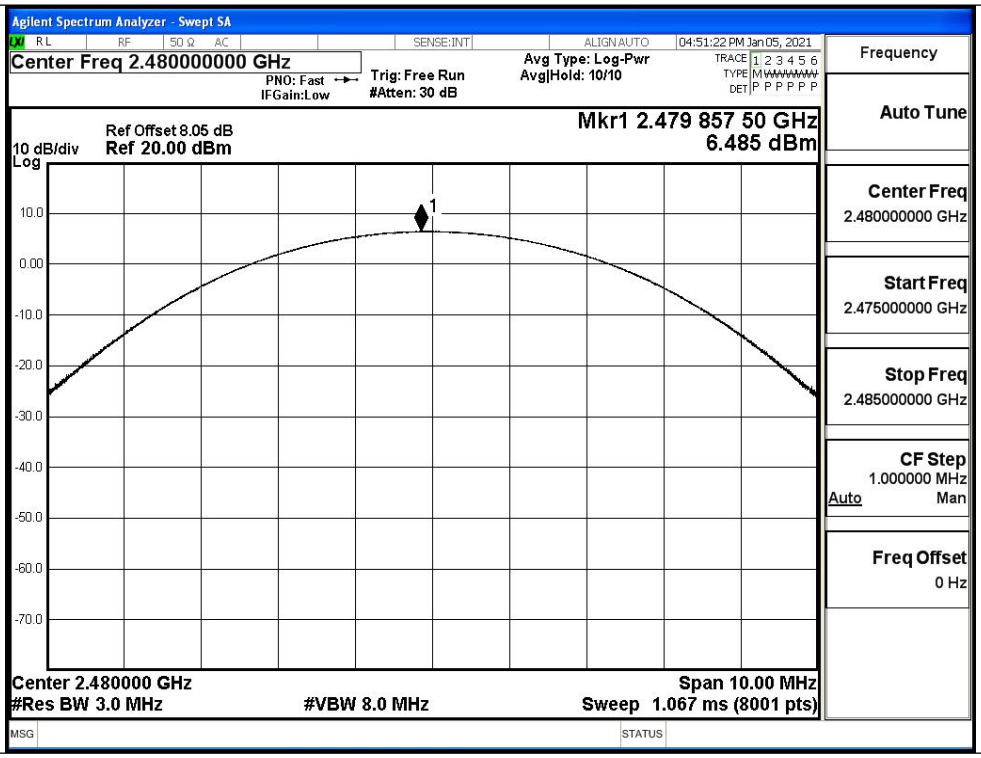
| Mode | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|
| GFSK | LCH | 3.238 | 21 | PASS |
| | MCH | 3.860 | 21 | PASS |
| | HCH | 4.158 | 21 | PASS |
| π/4DQPSK | LCH | 5.473 | 21 | PASS |
| | MCH | 6.029 | 21 | PASS |
| | HCH | 6.290 | 21 | PASS |
| 8DPSK | LCH | 5.682 | 21 | PASS |
| | MCH | 6.214 | 21 | PASS |
| | HCH | 6.485 | 21 | PASS |

| Test Graphs | | |
|---|---|---|
| GFSK/LCH | |  |
| GFSK/MCH | |  |

| | | |
|---|---|---|
| GFSK/HCH | |  |
| π/4DQPSK/LCH | |  |

| | | |
|---|---|---|
| π/4DQPSK/MCH | |  |
| π/4DQPSK/HCH | |  |

| | | |
|---|---|---|
| 8DPSK/LCH | |  |
| 8DPSK/MCH | |  |

| | |
|---|---|
| 8DPSK/HCH |  |

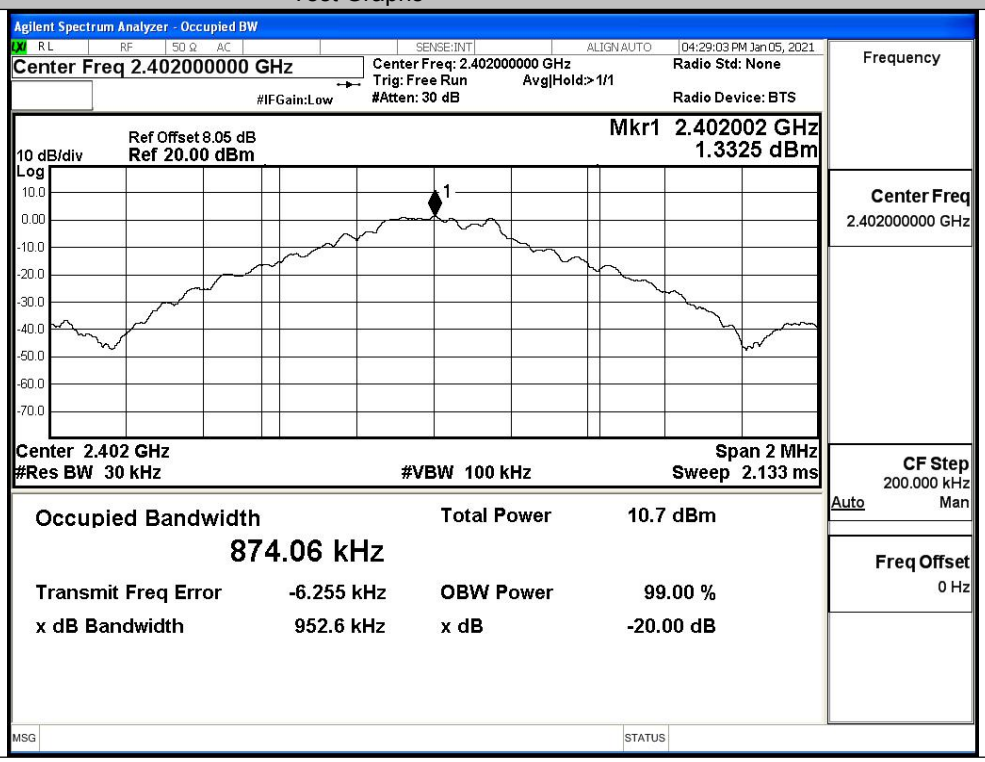
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:51:22 PM Jan 05, 2021
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M
DET P P P P P
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.479 857 50 GHz
6.485 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 10.00 MHz
Sweep 1.067 ms (8001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.485000000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

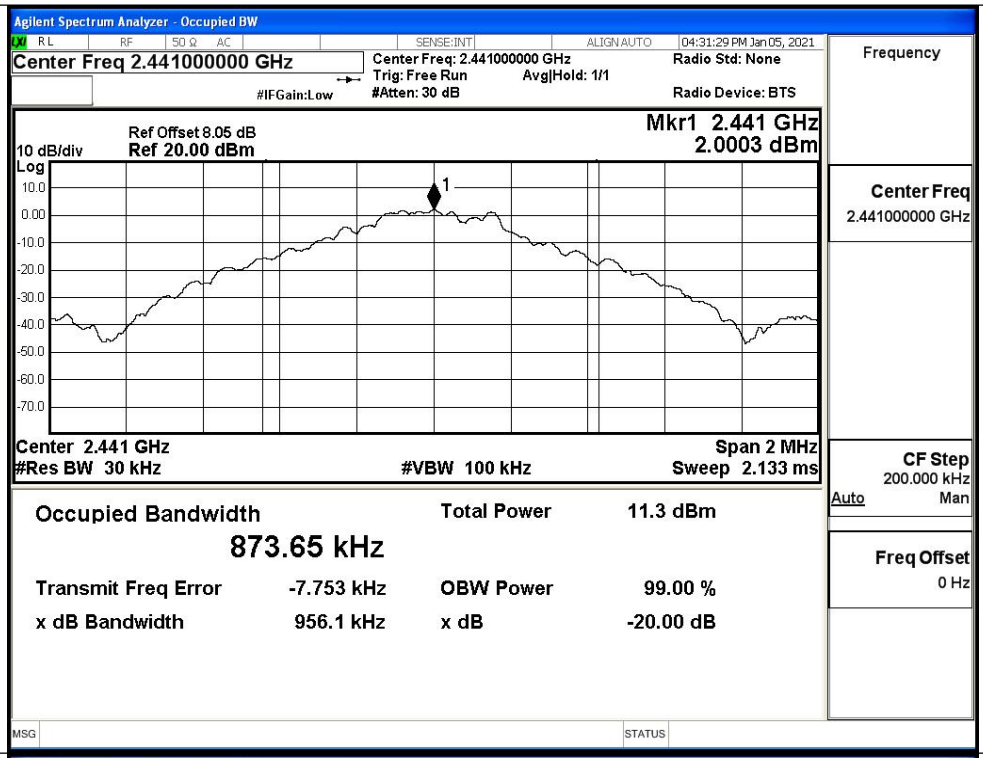
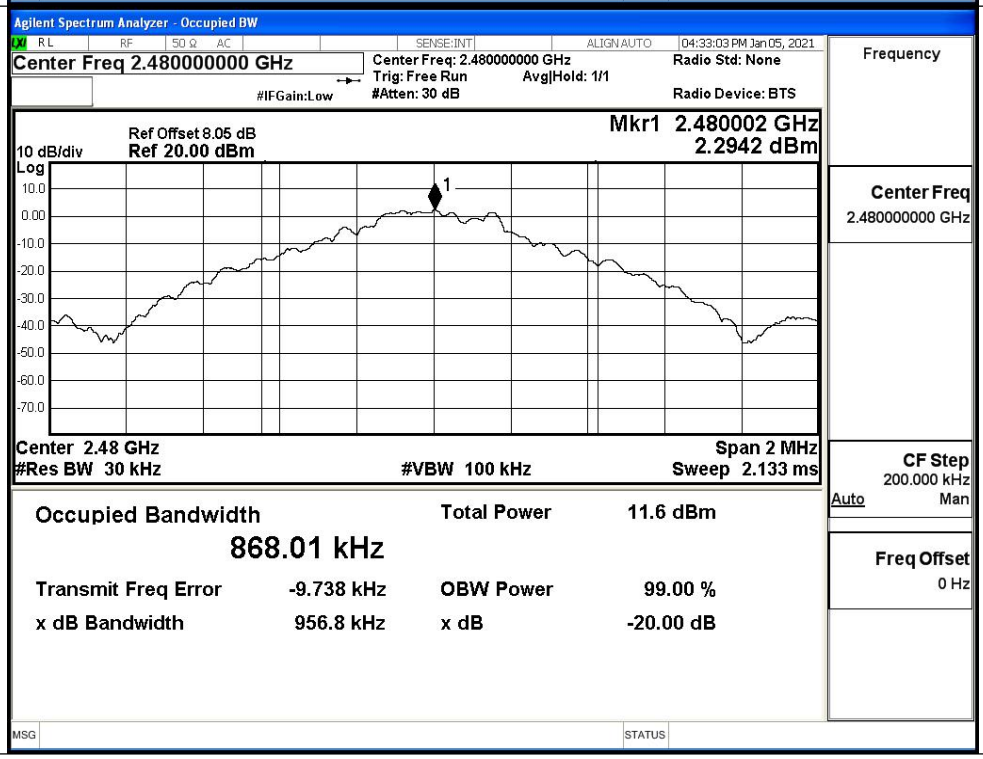
## A.2 20dB Bandwidth

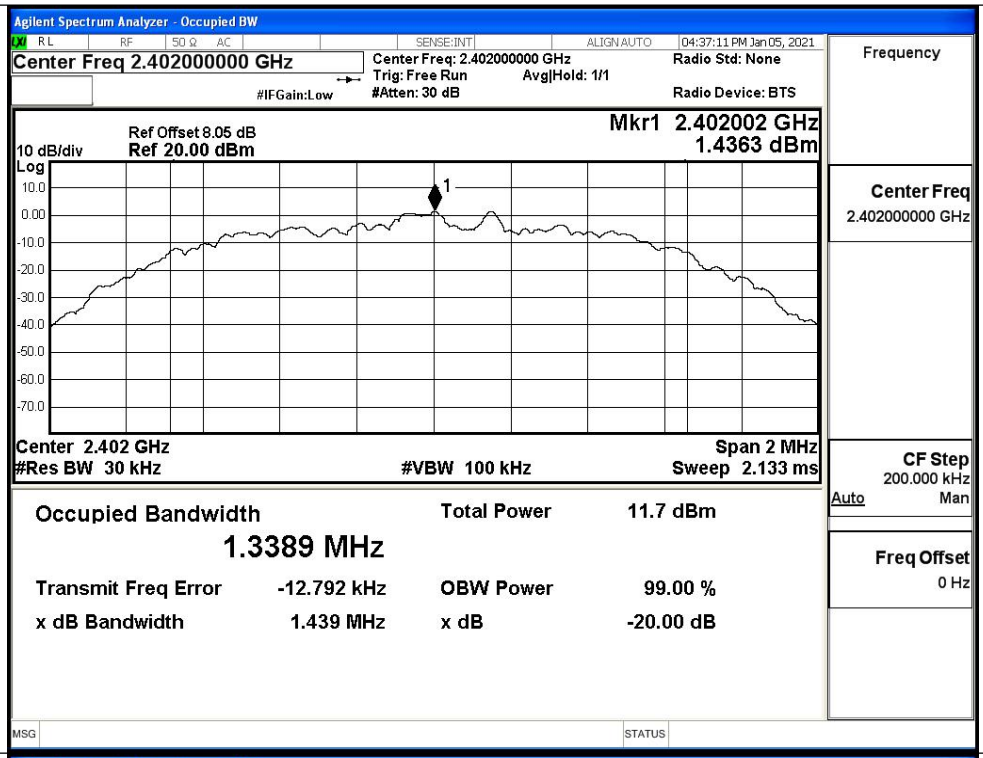
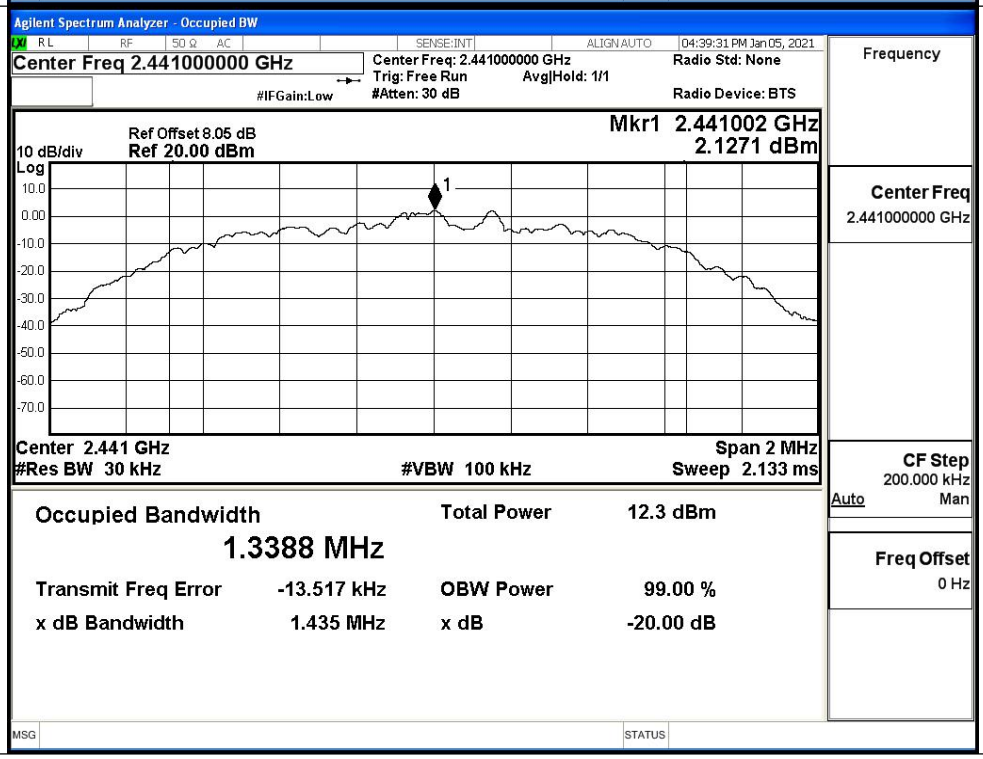
| Mode | Channel. | 20dB Bandwidth [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|
| GFSK | LCH | 0.9526 | Not Specified | PASS |
| | MCH | 0.9561 | Not Specified | PASS |
| | HCH | 0.9568 | Not Specified | PASS |
| π/4DQPSK | LCH | 1.439 | Not Specified | PASS |
| | MCH | 1.435 | Not Specified | PASS |
| | HCH | 1.437 | Not Specified | PASS |
| 8DPSK | LCH | 1.480 | Not Specified | PASS |
| | MCH | 1.479 | Not Specified | PASS |
| | HCH | 1.477 | Not Specified | PASS |

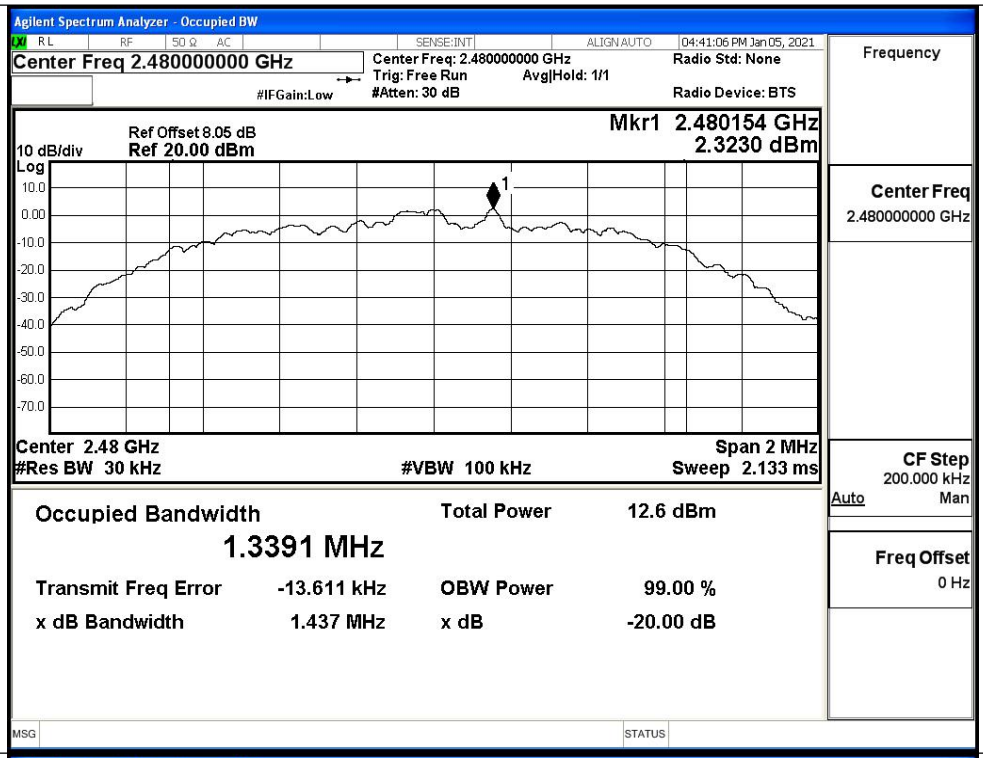
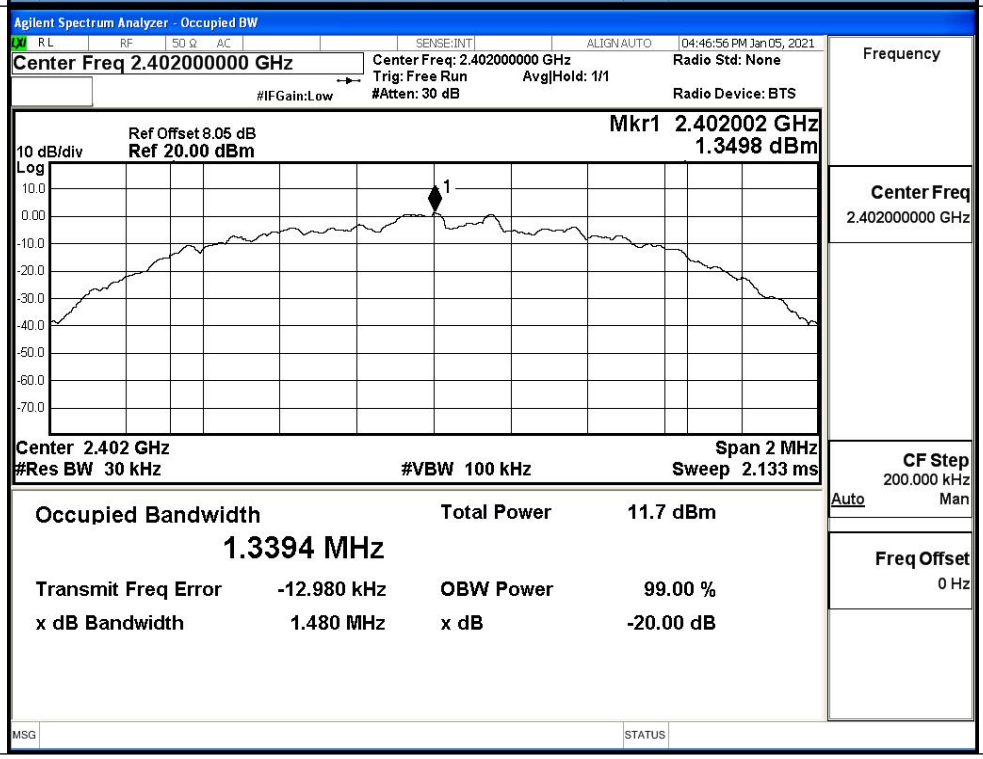
Test Graphs

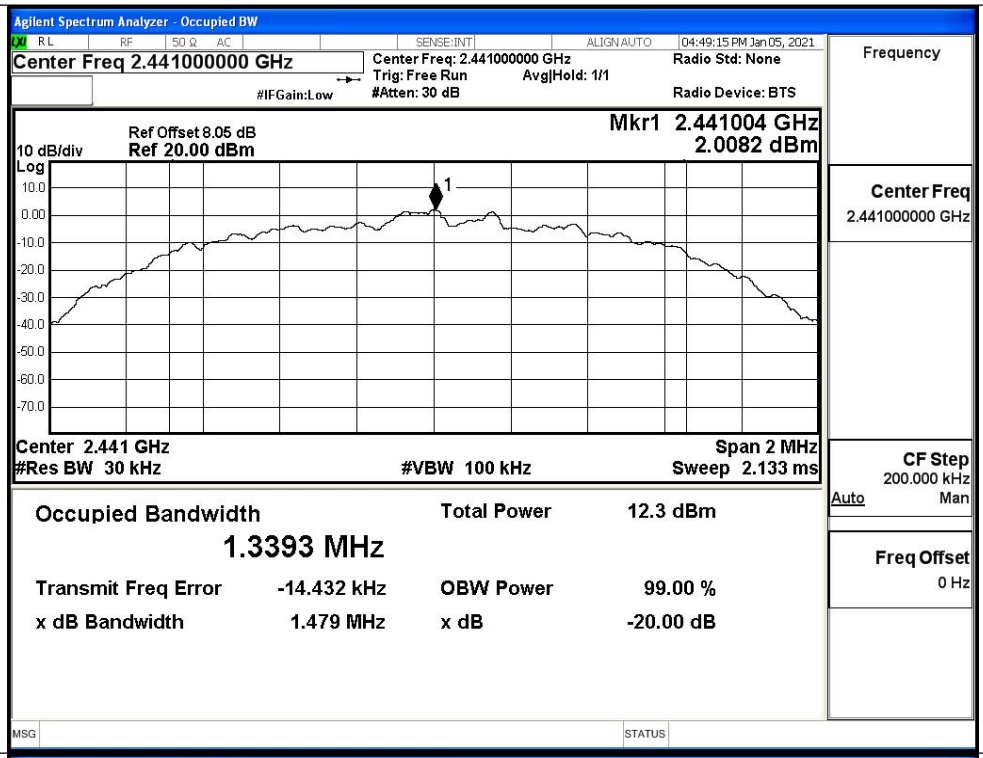
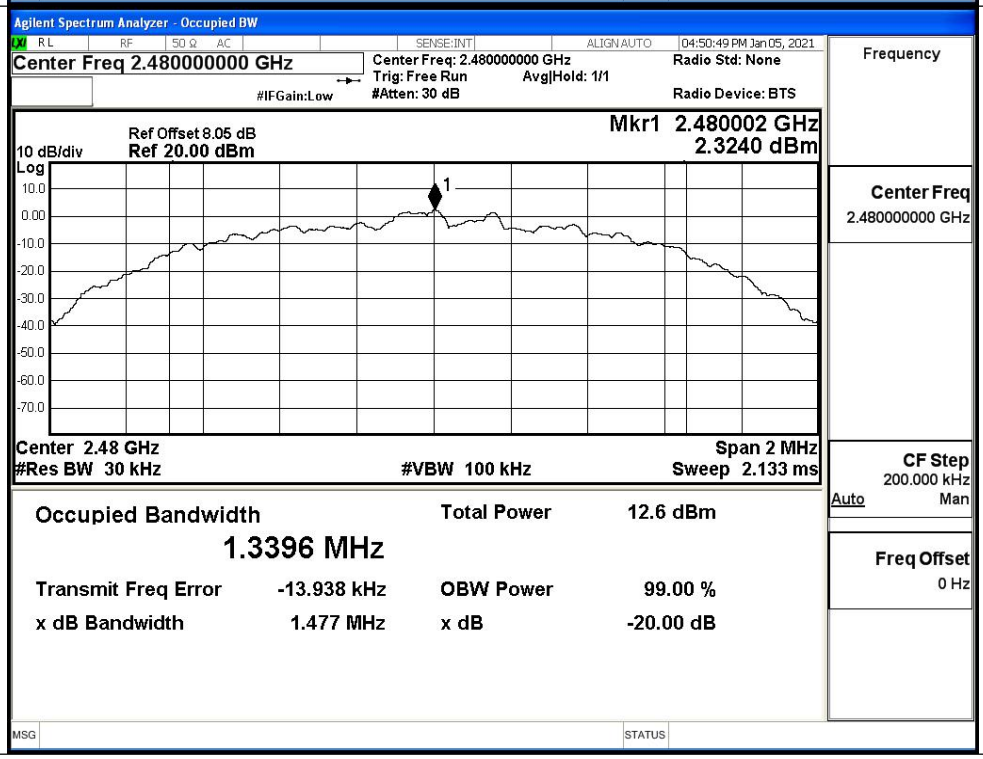
GFSK/LCH



| | |
|---|---|
| GFSK/MCH |  |
| GFSK/HCH |  |

| | |
|---|---|
| π/4DQPSK/LCH |  |
| π/4DQPSK/MCH |  |

| | |
|---|---|
| π/4DQPSK/HCH |  |
| 8DPSK/LCH |  |

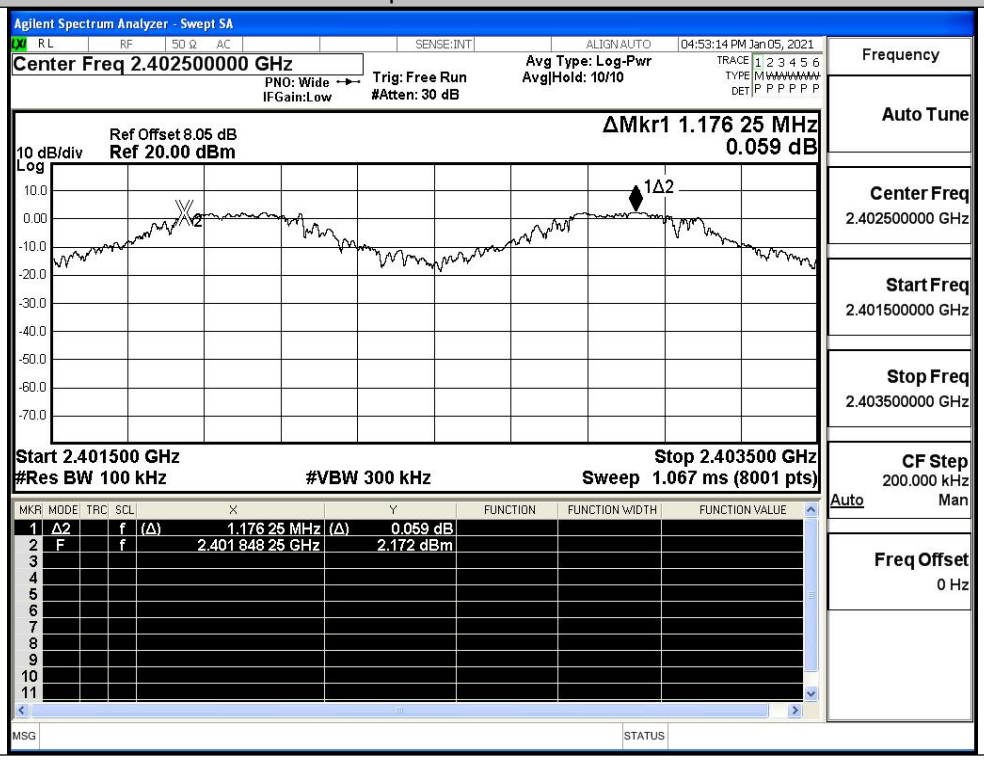
| | |
|---|---|
| 8DPSK/MCH |  |
| 8DPSK/HCH |  |

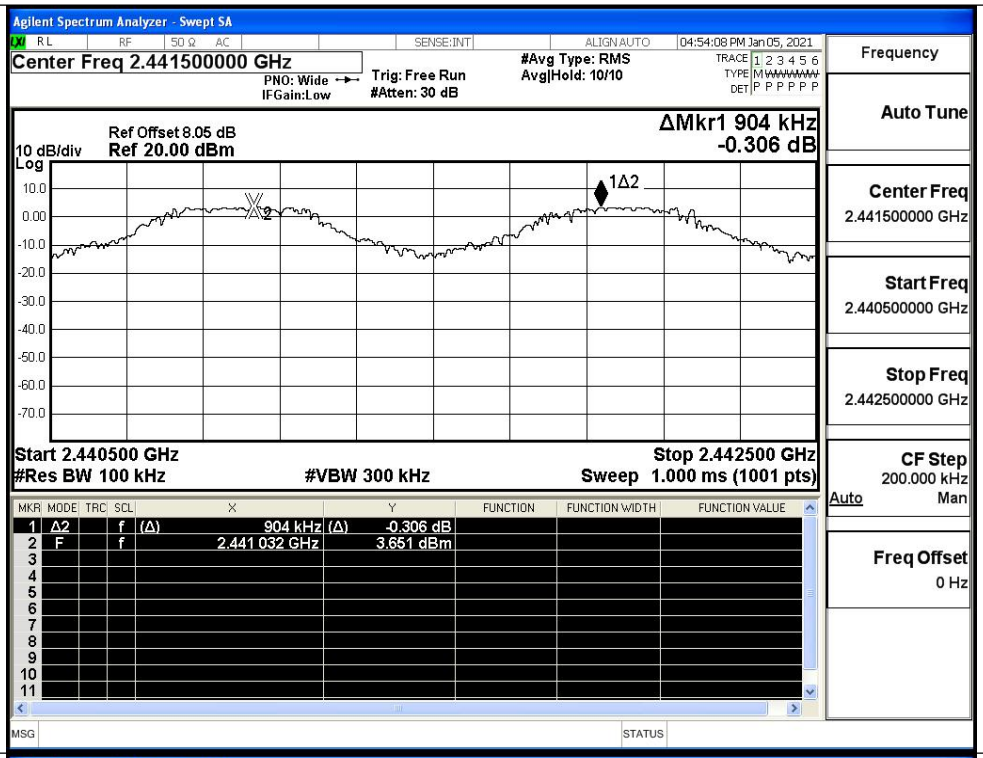
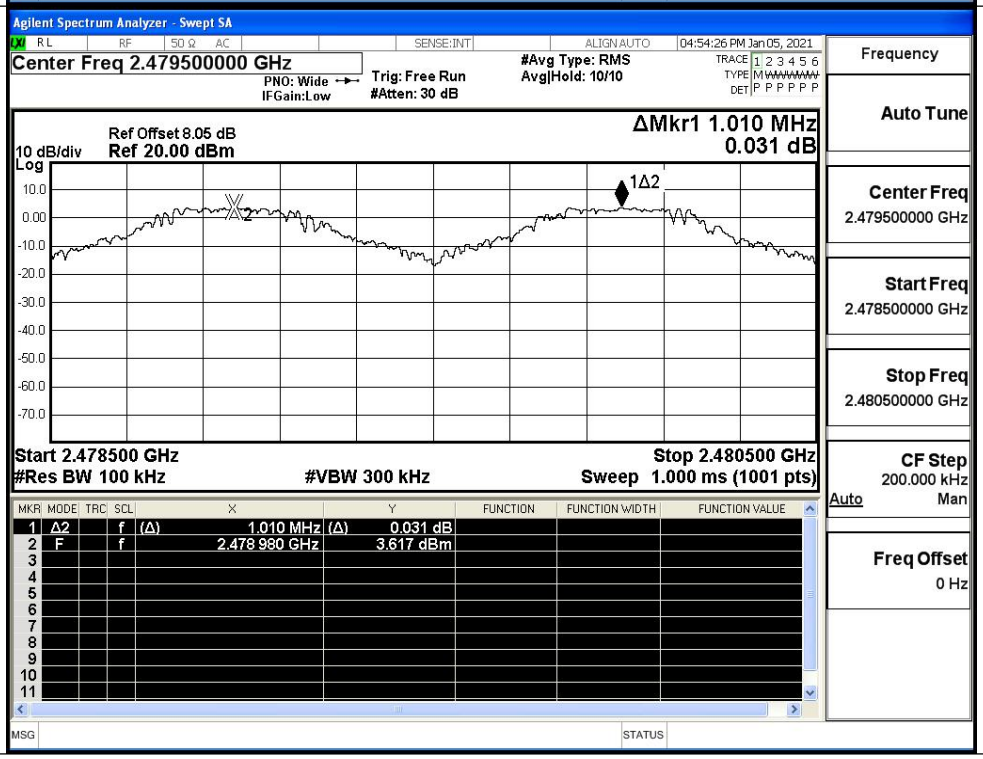
## A.3 Carrier Frequency Separation

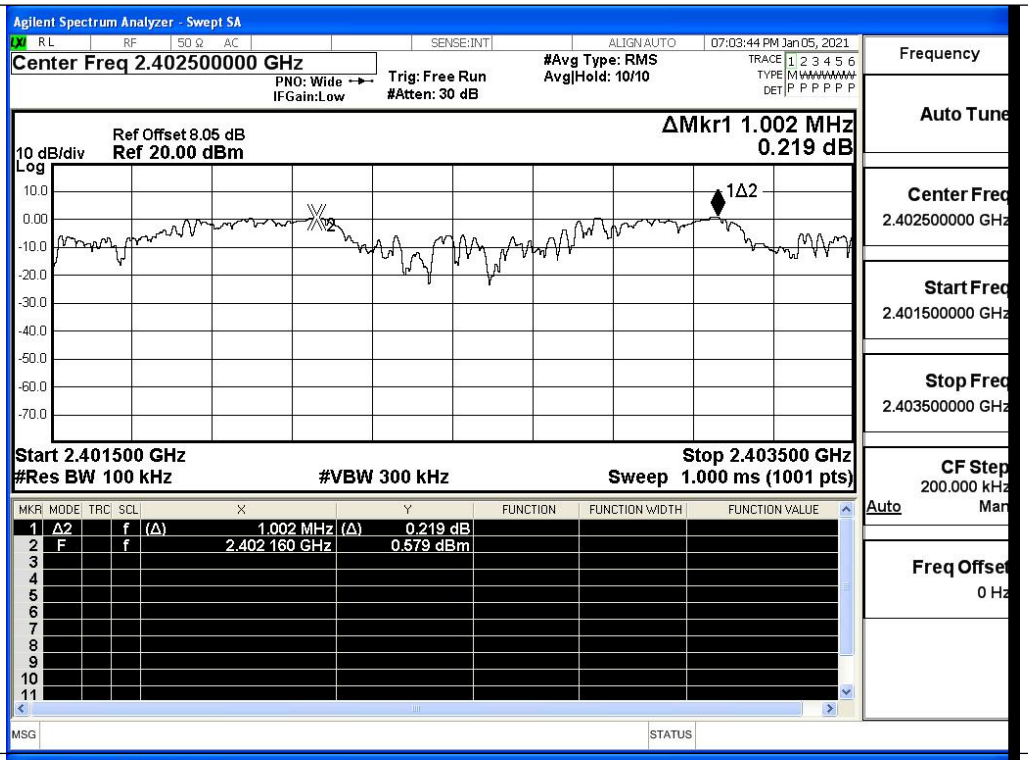
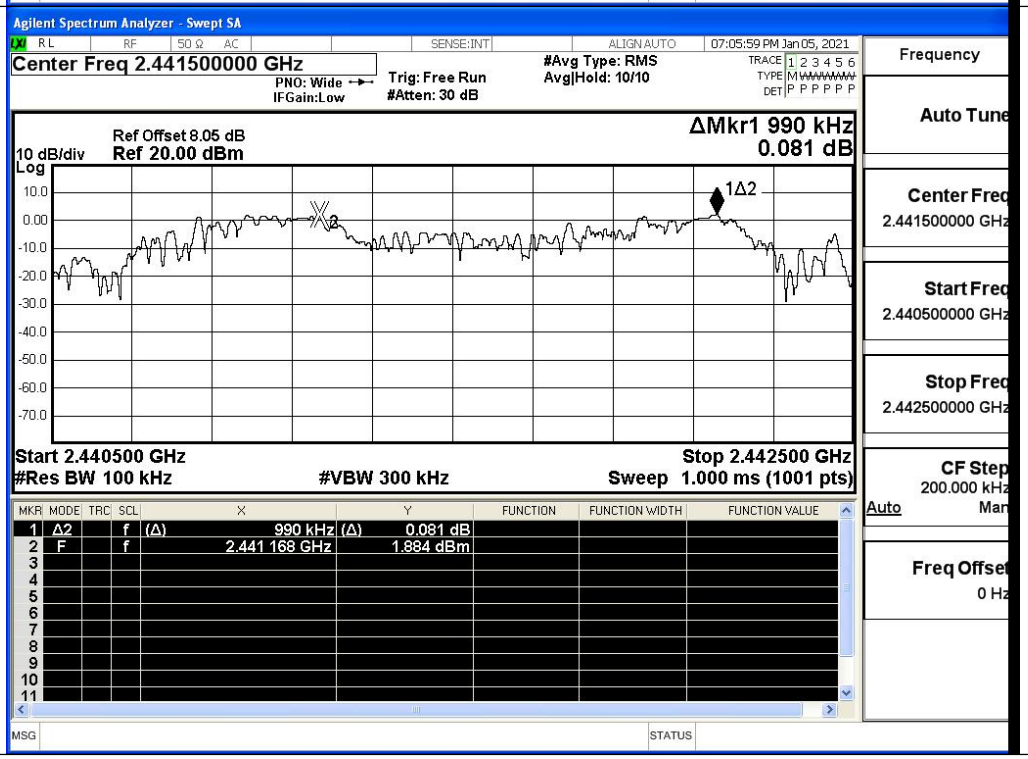
| Mode | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---|---|---|---|---|
| GFSK | LCH | 1.176 | 0.638 | PASS |
| | MCH | 0.904 | 0.638 | PASS |
| | HCH | 1.010 | 0.638 | PASS |
| π/4DQPSK | LCH | 1.002 | 0.756 | PASS |
| | MCH | 0.990 | 0.756 | PASS |
| | HCH | 1.148 | 0.756 | PASS |
| 8DPSK | LCH | 1.012 | 0.768 | PASS |
| | MCH | 1.286 | 0.768 | PASS |
| | HCH | 1.006 | 0.768 | PASS |

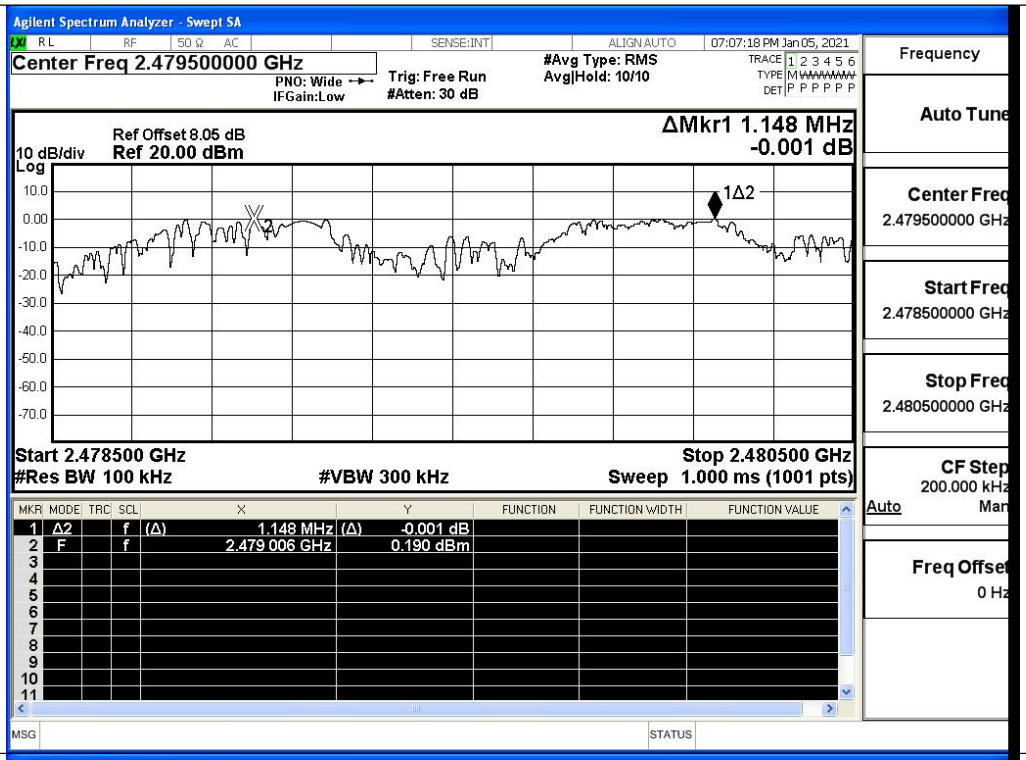
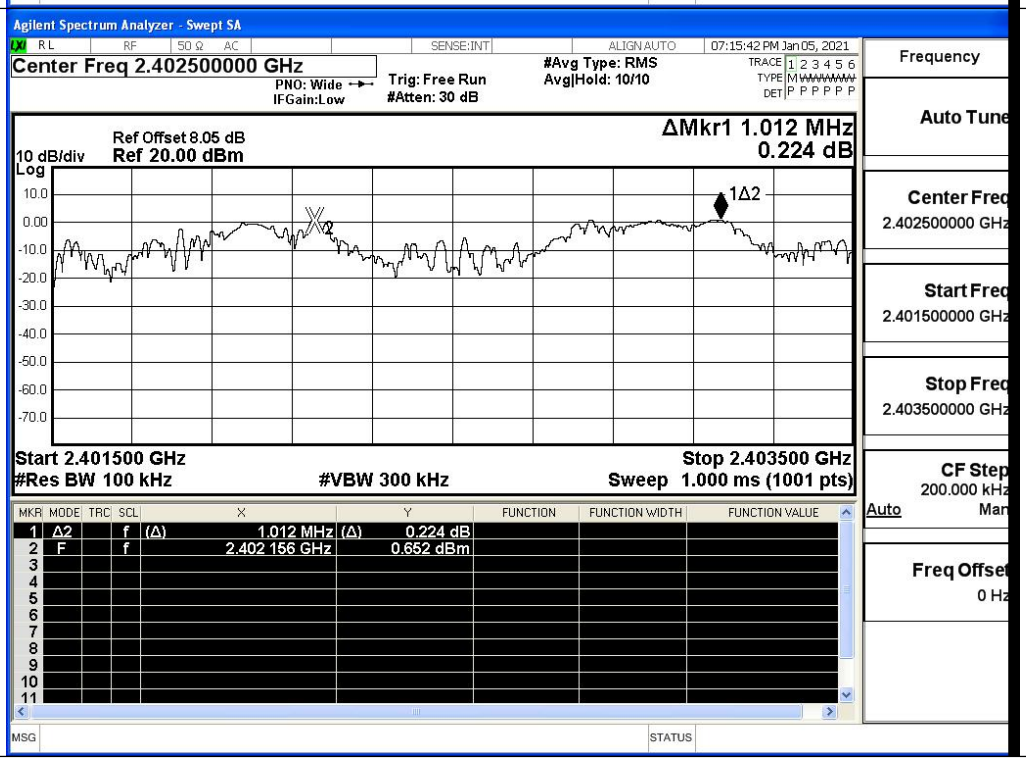
Test Graphs

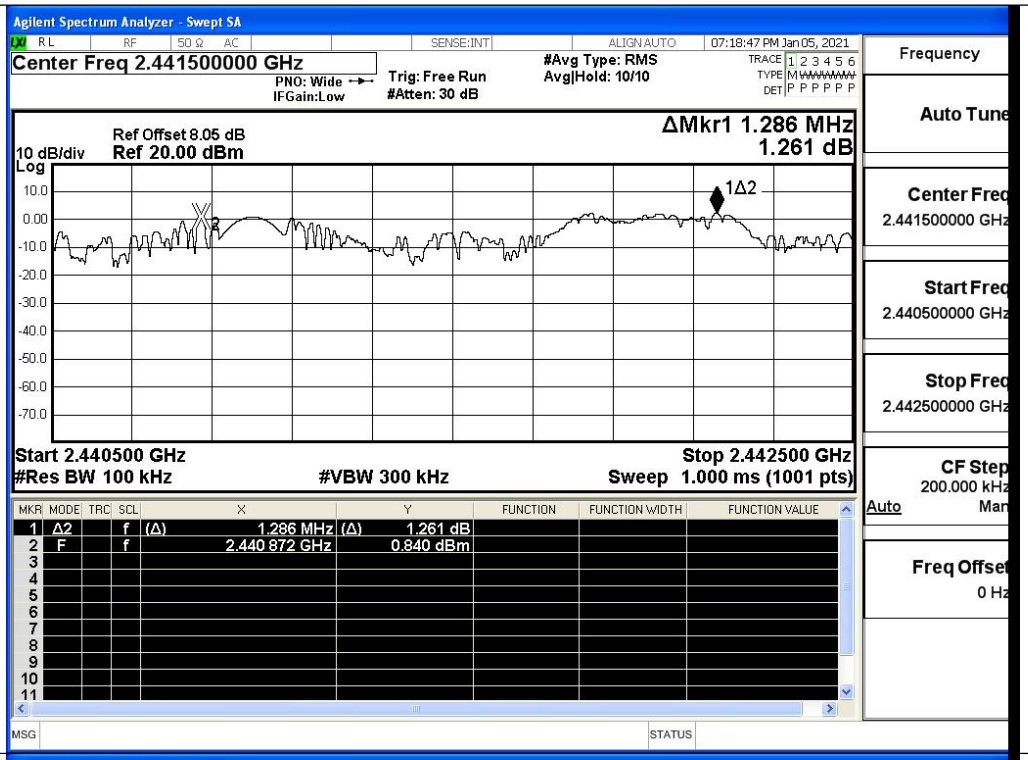
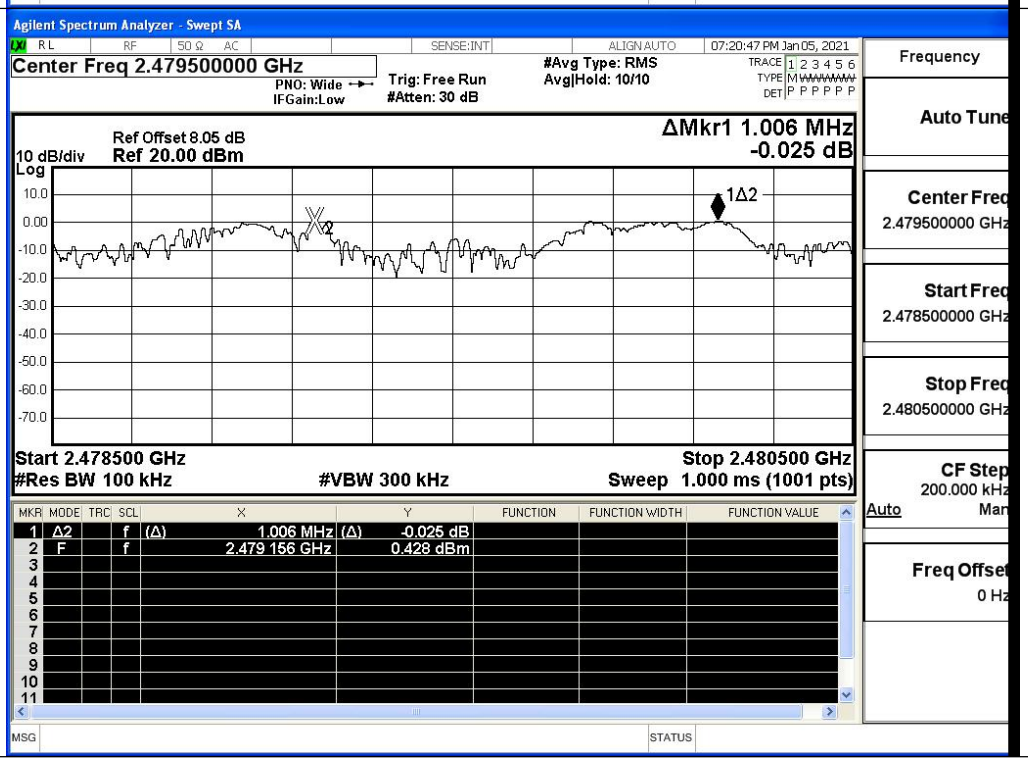
GFSK/LCH



| | |
|---|---|
| GFSK/MCH |  |
| GFSK/HCH |  |

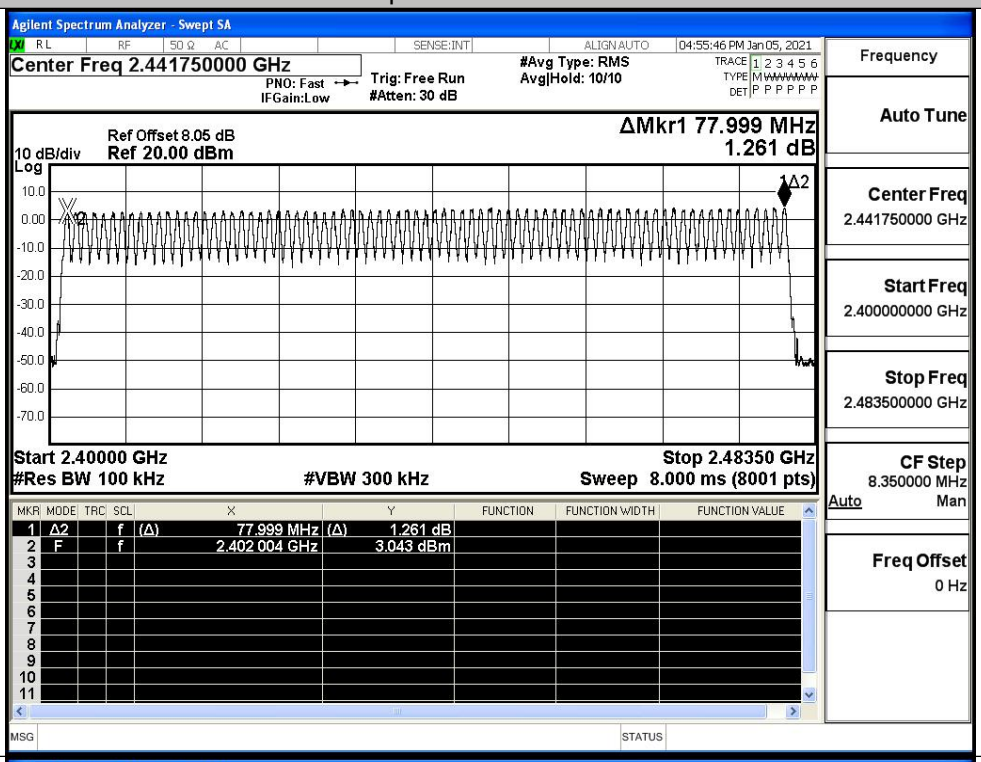
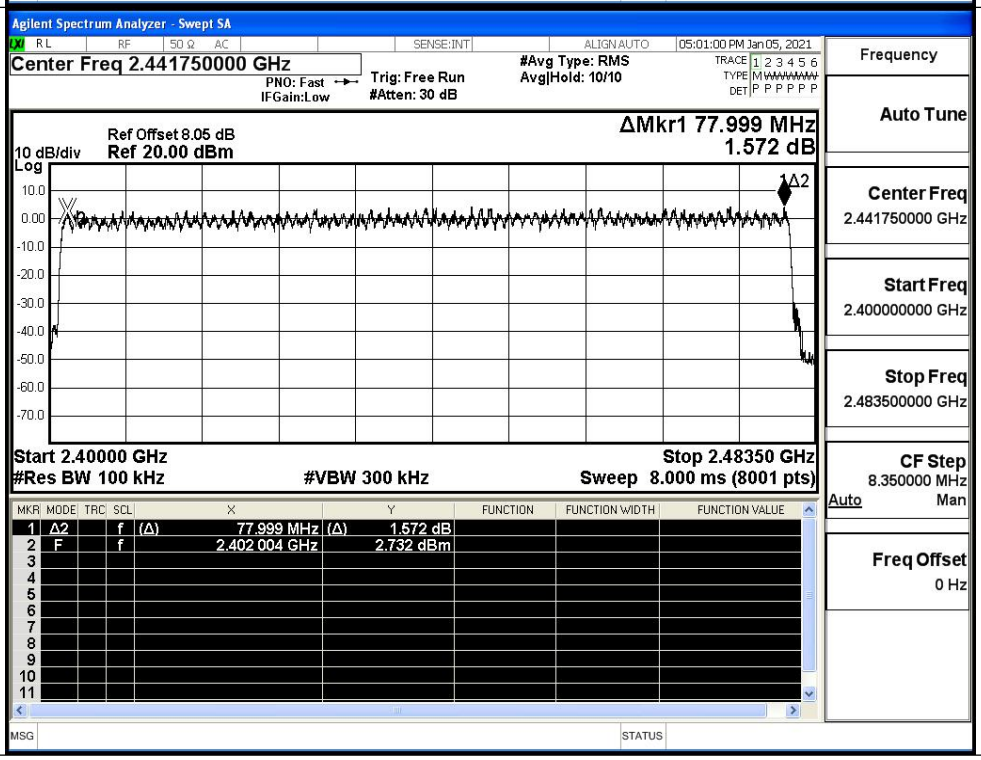
| | |
|---|---|
| π/4DQPSK/LCH |  |
| π/4DQPSK/MCH |  |

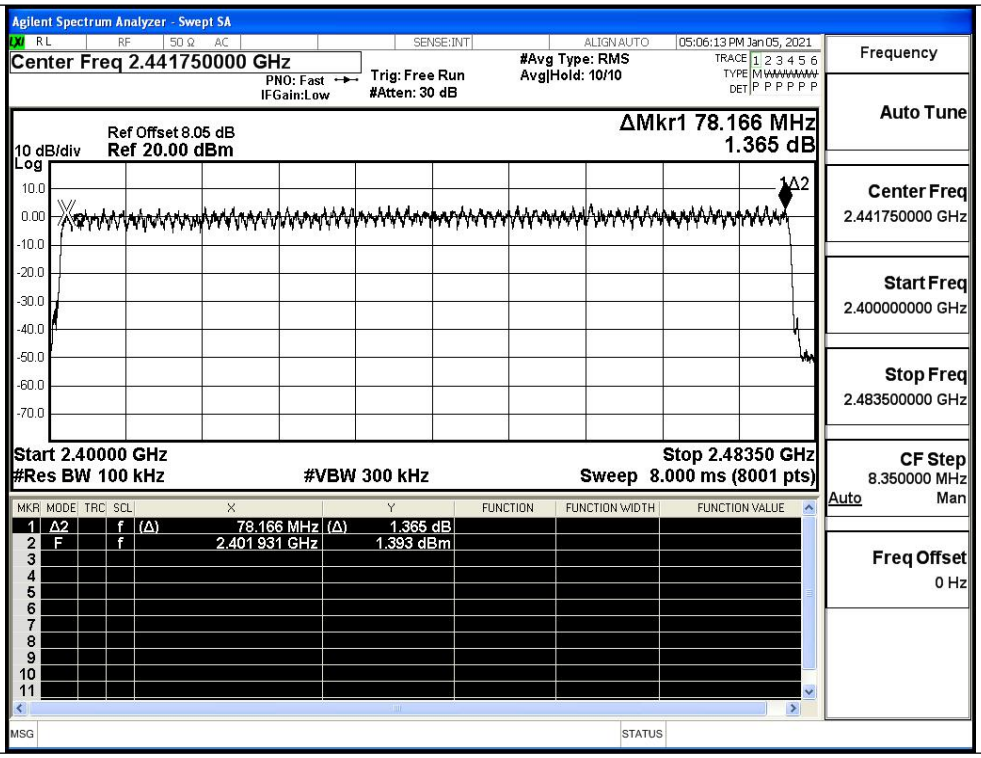
| | |
|---|---|
| π/4DQPSK/HCH |  |
| 8DPSK/LCH |  |

| | |
|---|---|
| 8DPSK/MCH |  |
| 8DPSK/HCH |  |

## 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 |  |
| π/4DQPSK/Hop |  |

| | |
|---|---|
| 8DPSK/Hop |  |

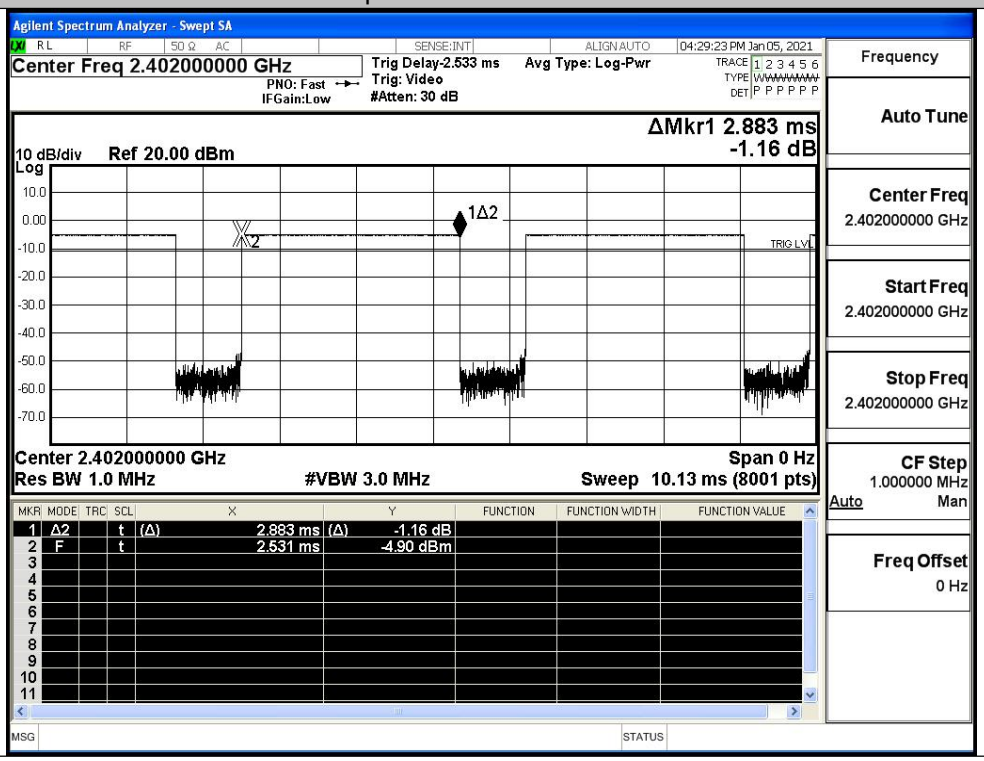
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
05:06:13 PM Jan 05, 2021
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
ΔMkr1 78.166 MHz
1.365 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 f (Δ) 78.166 MHz (Δ) 1.365 dB
2 F f 2.401 931 GHz 1.393 dBm
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

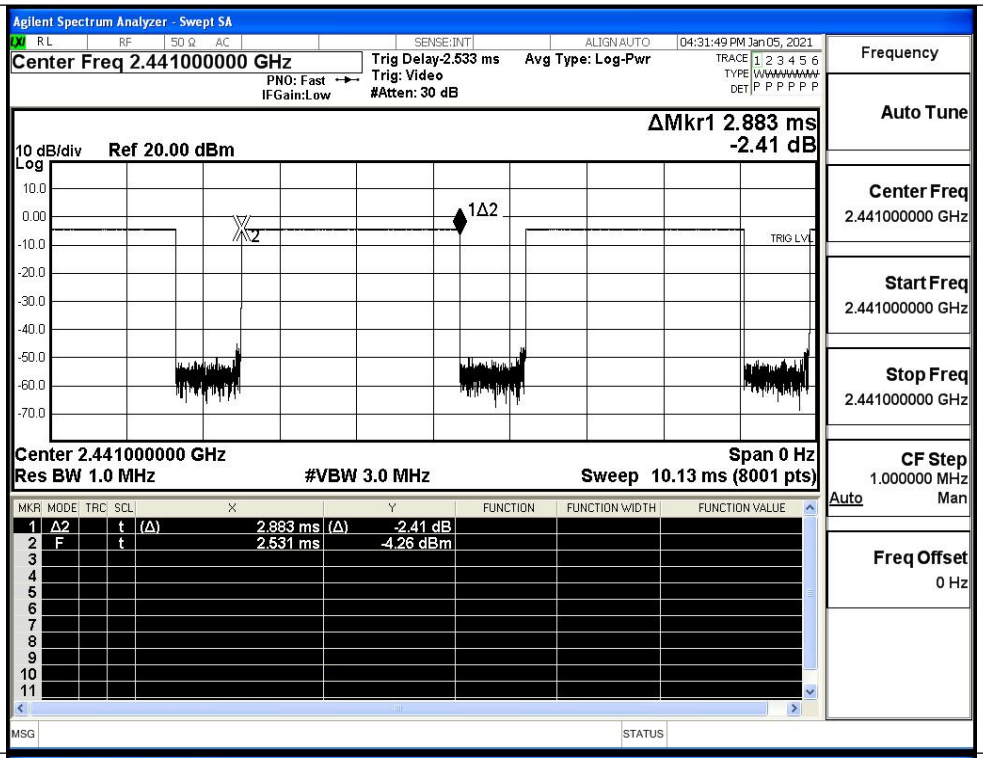
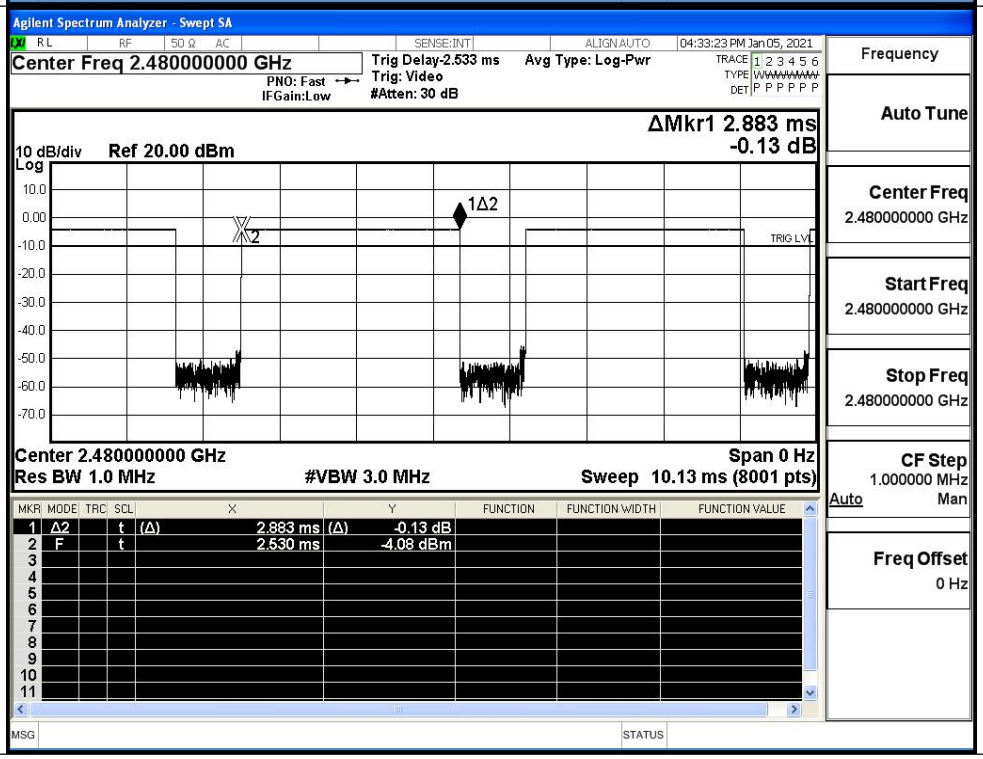
## A.5 Dwell Time

| 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 | 0.015 | 0.4 | PASS |
| | 2DH5 | MCH | 2.88 | 106.7 | 0.015 | 0.4 | PASS |
| | 2DH5 | HCH | 2.88 | 106.7 | 0.015 | 0.4 | PASS |
| 8DPSK | 3DH5 | LCH | 2.88 | 106.7 | 0.015 | 0.4 | PASS |
| | 3DH5 | MCH | 2.88 | 106.7 | 0.015 | 0.4 | PASS |
| | 3DH5 | HCH | 2.88 | 106.7 | 0.015 | 0.4 | PASS |

Test Graphs

GFSK_DH5/LCH



| | |
|---|---|
| GFSK_DH5/MCH |  |
| GFSK_DH5/HCH |  |