



## Appendix A

### RF Test Data for BT V5.0(DSS) (Conducted Measurement)

Product Name: Elevoc Clear

Trade Mark: ELEVOC

Test Model: Elevoc Clear Black

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 24.6 ° C  |
| Relative Humidity: | 54.1%     |
| ATM Pressure:      | 100.0 kPa |
| Test Engineer:     | Kay Hu    |
| Supervised by:     | Li Huan   |

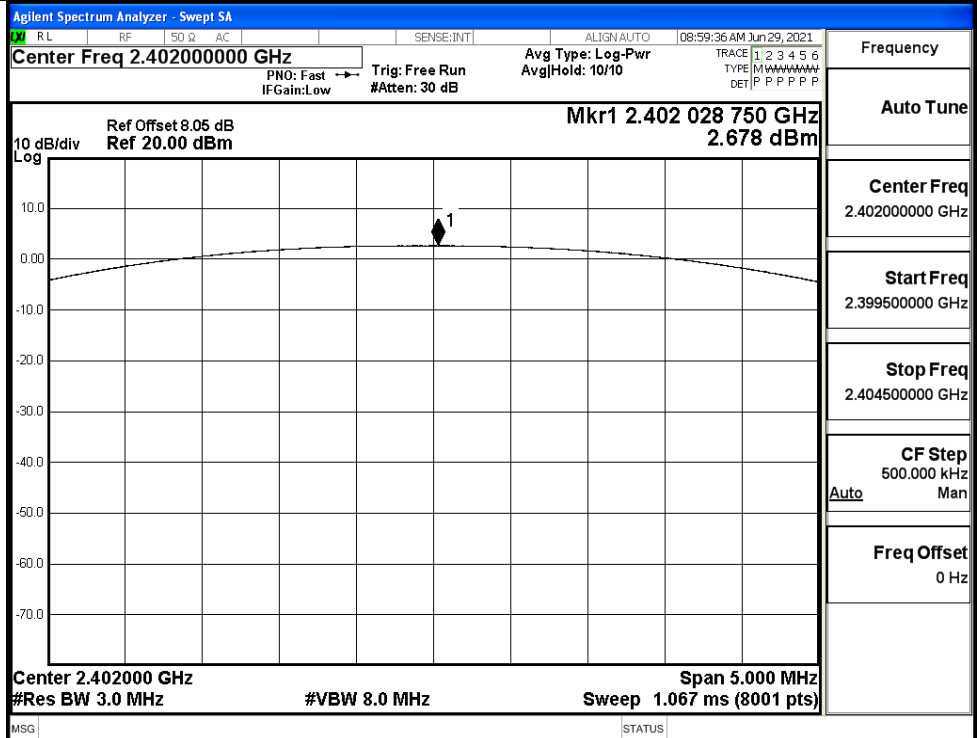
#### A.1 Maximum Conducted Peak Output Power

| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| GFSK          | LCH      | 2.678                           | 21          | PASS    |
|               | MCH      | 2.753                           | 21          | PASS    |
|               | HCH      | 2.044                           | 21          | PASS    |
| $\pi/4$ DQPSK | LCH      | 2.755                           | 21          | PASS    |
|               | MCH      | 2.690                           | 21          | PASS    |
|               | HCH      | 1.996                           | 21          | PASS    |
| 8DPSK         | LCH      | 2.722                           | 21          | PASS    |
|               | MCH      | 2.686                           | 21          | PASS    |
|               | HCH      | 2.048                           | 21          | PASS    |

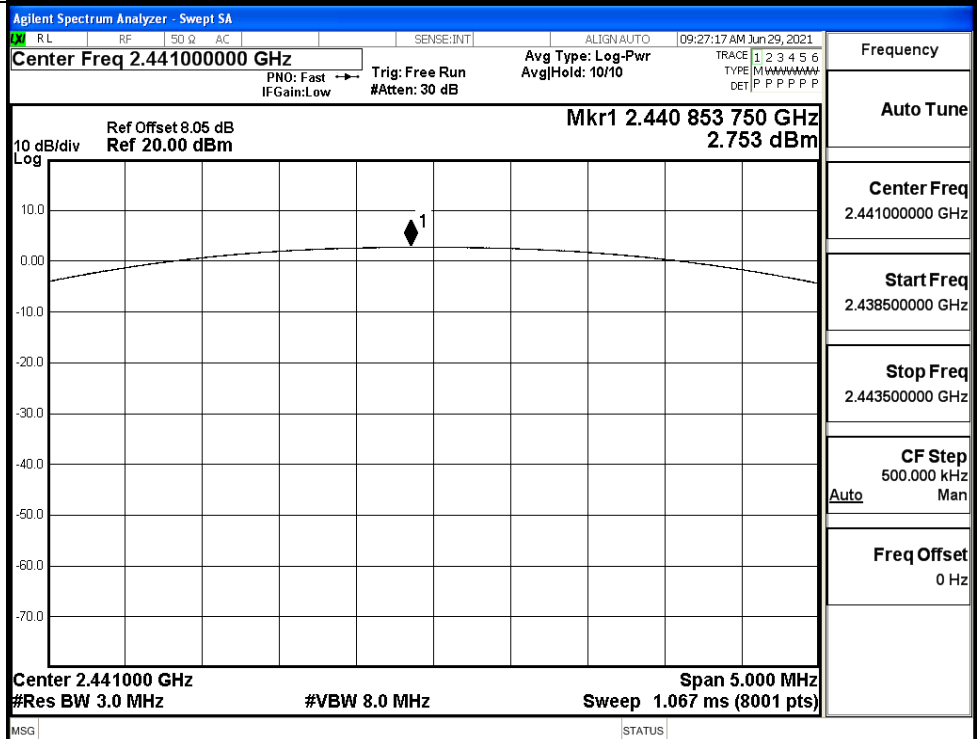


## Test Graphs

GFSK/LCH

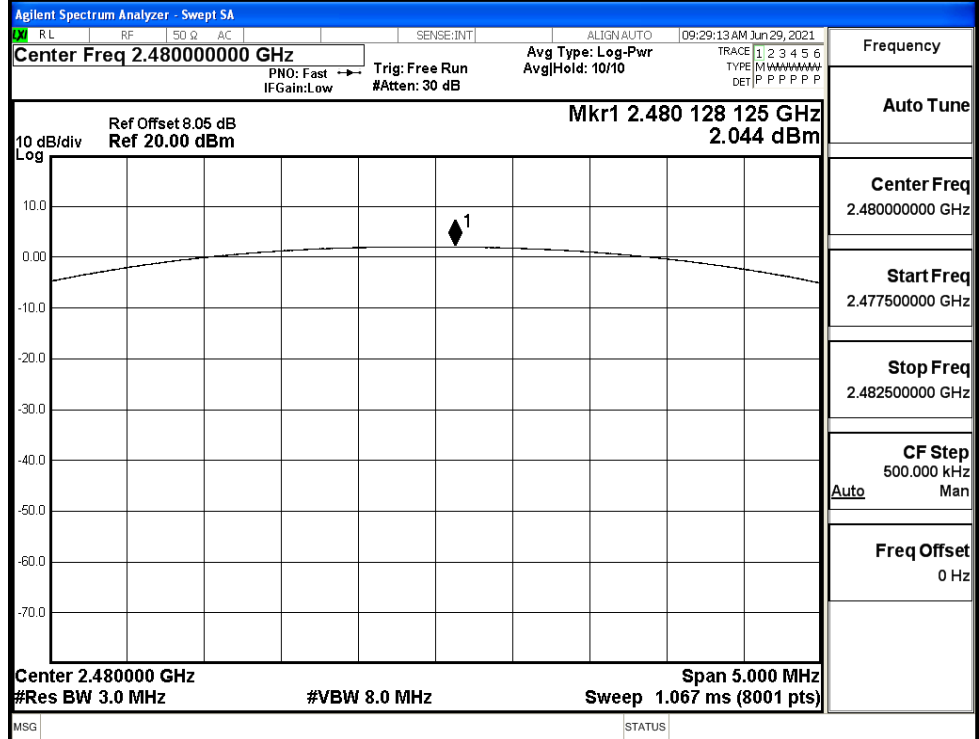
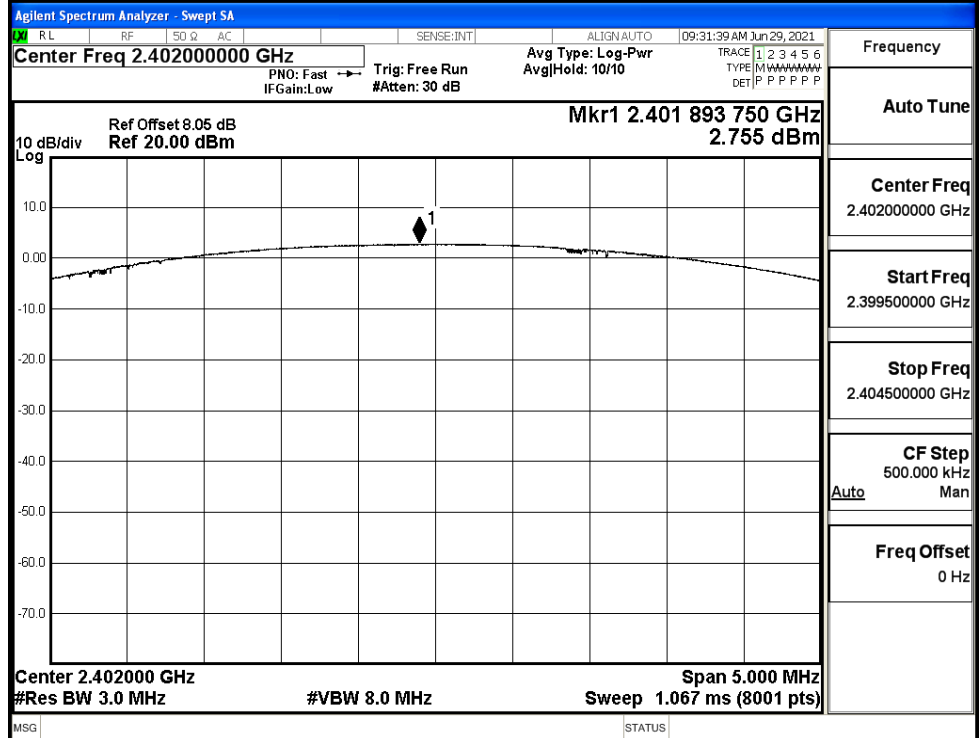


GFSK/MCH

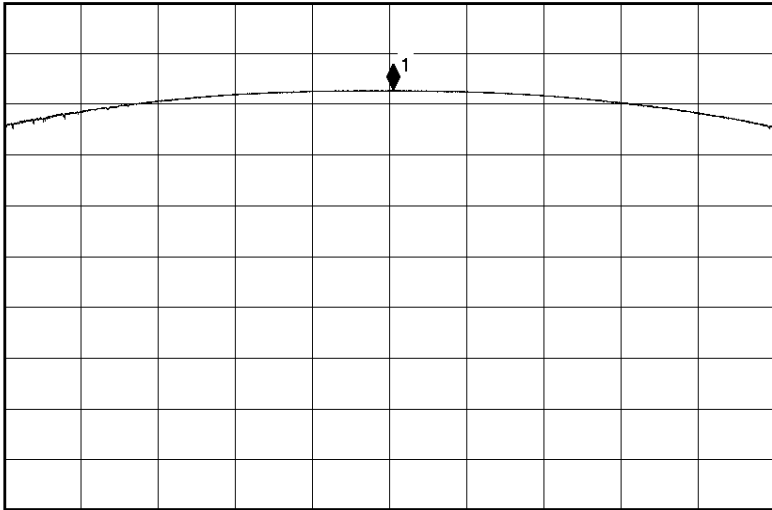
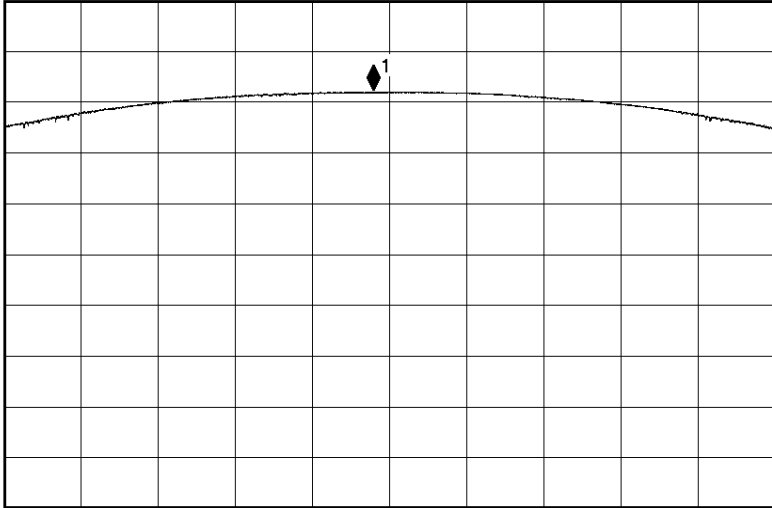




GFSK/HCH

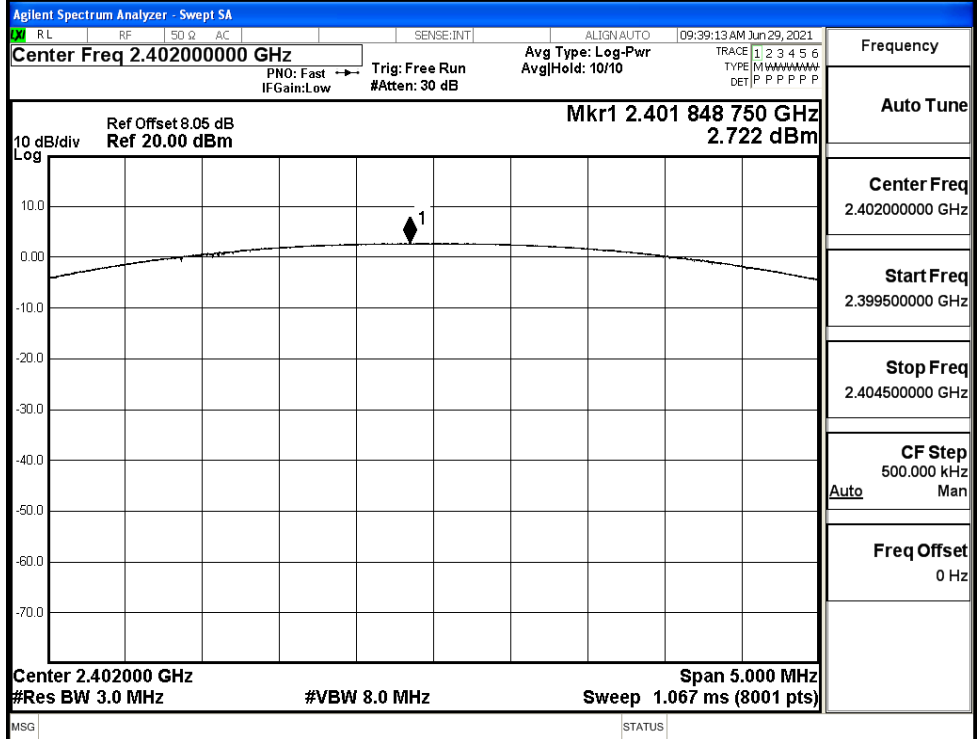
 $\pi$ /4DQPSK/LCH



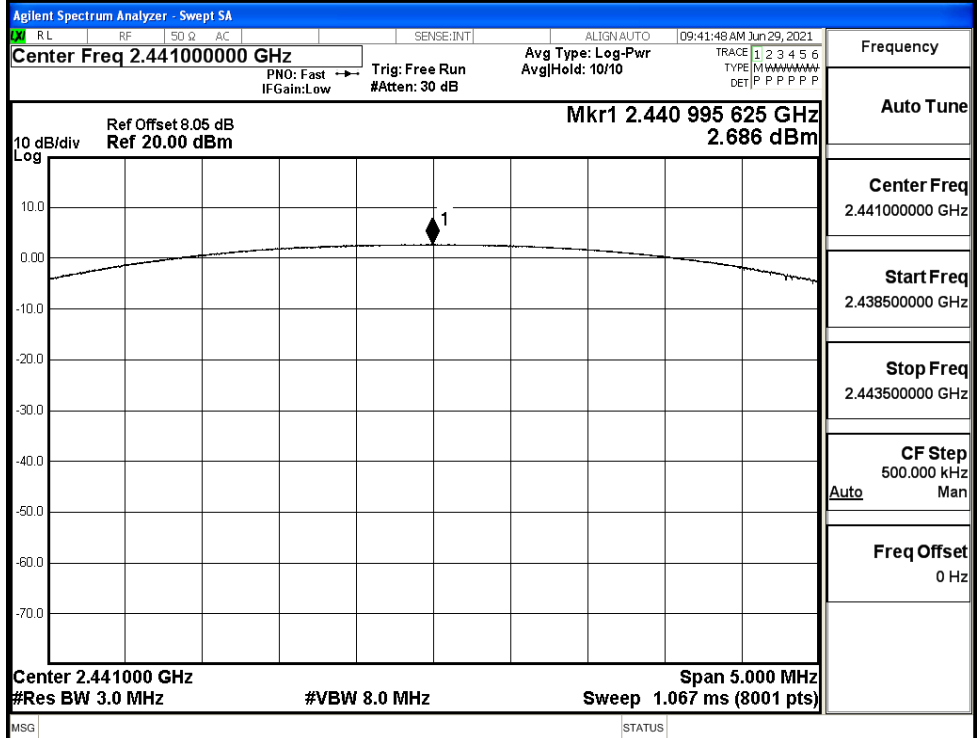
|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|--------------------------------|-------------------------------|------------------------------|------------------------------------|---------------------|
| $\pi$ /4DQPSK/MCH                  | <div><div>Agilent Spectrum Analyzer - Swept SA</div><div><div><div><div>RL</div><div>RF</div><div>50 <math>\Omega</math></div><div>AC</div></div><div>SENSE:INT</div><div>ALIGN:AUTO</div><div>09:34:28 AM Jun 29, 2021</div></div><div><div>Center Freq 2.441000000 GHz</div><div>PNO: Fast<br/>IF Gain: Low</div><div>Trig: Free Run<br/>#Atten: 30 dB</div><div>Avg Type: Log-Pwr<br/>Avg/Hold: 10/10</div><div>TRACE 1 2 3 4 5 6<br/>TYPE M W W W W W W W<br/>DET P P P P P P P</div></div></div><div><div>Ref Offset 8.05 dB<br/>Ref 20.00 dBm</div><div>Mkr1 2.441 024 375 GHz<br/>2.690 dBm</div><div><div>10 dB/div<br/>Log</div><div></div></div><div><div>Center 2.441000 GHz<br/>#Res BW 3.0 MHz</div><div>#VBW 8.0 MHz</div><div>Span 5.000 MHz<br/>Sweep 1.067 ms (8001 pts)</div></div><div><div>MSG</div><div>STATUS</div></div></div><div><table><tr><td>Frequency</td></tr><tr><td>Auto Tune</td></tr><tr><td>Center Freq<br/>2.441000000 GHz</td></tr><tr><td>Start Freq<br/>2.438500000 GHz</td></tr><tr><td>Stop Freq<br/>2.443500000 GHz</td></tr><tr><td>CF Step<br/>500.000 kHz<br/>Auto Man</td></tr><tr><td>Freq Offset<br/>0 Hz</td></tr></table></div></div>   | Frequency | Auto Tune | Center Freq<br>2.441000000 GHz | Start Freq<br>2.438500000 GHz | Stop Freq<br>2.443500000 GHz | CF Step<br>500.000 kHz<br>Auto Man | Freq Offset<br>0 Hz |
|                                    | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |                                |                               |                              |                                    |                     |
|                                    | Auto Tune                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |                                |                               |                              |                                    |                     |
|                                    | Center Freq<br>2.441000000 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |           |                                |                               |                              |                                    |                     |
|                                    | Start Freq<br>2.438500000 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |           |                                |                               |                              |                                    |                     |
| Stop Freq<br>2.443500000 GHz       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
| CF Step<br>500.000 kHz<br>Auto Man |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
| Freq Offset<br>0 Hz                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
| $\pi$ /4DQPSK/HCH                  | <div><div>Agilent Spectrum Analyzer - Swept SA</div><div><div><div><div>RL</div><div>RF</div><div>50 <math>\Omega</math></div><div>AC</div></div><div>SENSE:INT</div><div>ALIGN:AUTO</div><div>09:36:16 AM Jun 29, 2021</div></div><div><div>Center Freq 2.480000000 GHz</div><div>PNO: Fast<br/>IF Gain: Low</div><div>Trig: Free Run<br/>#Atten: 30 dB</div><div>Avg Type: Log-Pwr<br/>Avg/Hold: 10/10</div><div>TRACE 1 2 3 4 5 6<br/>TYPE M W W W W W W W<br/>DET P P P P P P P</div></div></div><div><div>Ref Offset 8.05 dB<br/>Ref 20.00 dBm</div><div>Mkr1 2.479 895 625 GHz<br/>1.996 dBm</div><div><div>10 dB/div<br/>Log</div><div></div></div><div><div>Center 2.480000 GHz<br/>#Res BW 3.0 MHz</div><div>#VBW 8.0 MHz</div><div>Span 5.000 MHz<br/>Sweep 1.067 ms (8001 pts)</div></div><div><div>MSG</div><div>STATUS</div></div></div><div><table><tr><td>Frequency</td></tr><tr><td>Auto Tune</td></tr><tr><td>Center Freq<br/>2.480000000 GHz</td></tr><tr><td>Start Freq<br/>2.477500000 GHz</td></tr><tr><td>Stop Freq<br/>2.482500000 GHz</td></tr><tr><td>CF Step<br/>500.000 kHz<br/>Auto Man</td></tr><tr><td>Freq Offset<br/>0 Hz</td></tr></table></div></div> | Frequency | Auto Tune | Center Freq<br>2.480000000 GHz | Start Freq<br>2.477500000 GHz | Stop Freq<br>2.482500000 GHz | CF Step<br>500.000 kHz<br>Auto Man | Freq Offset<br>0 Hz |
|                                    | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |                                |                               |                              |                                    |                     |
|                                    | Auto Tune                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |                                |                               |                              |                                    |                     |
|                                    | Center Freq<br>2.480000000 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |           |                                |                               |                              |                                    |                     |
|                                    | Start Freq<br>2.477500000 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |           |           |                                |                               |                              |                                    |                     |
| Stop Freq<br>2.482500000 GHz       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
| CF Step<br>500.000 kHz<br>Auto Man |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |
| Freq Offset<br>0 Hz                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |                                |                               |                              |                                    |                     |

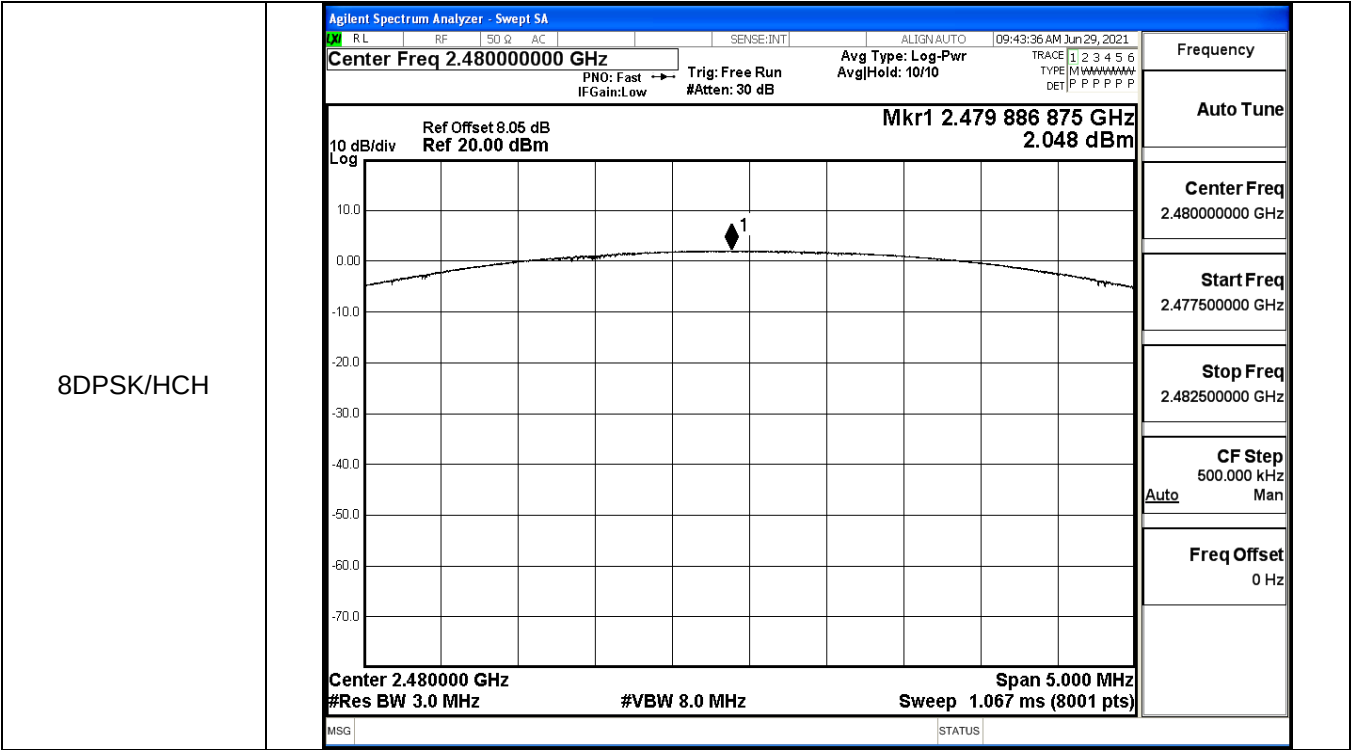


8DPSK/LCH



8DPSK/MCH



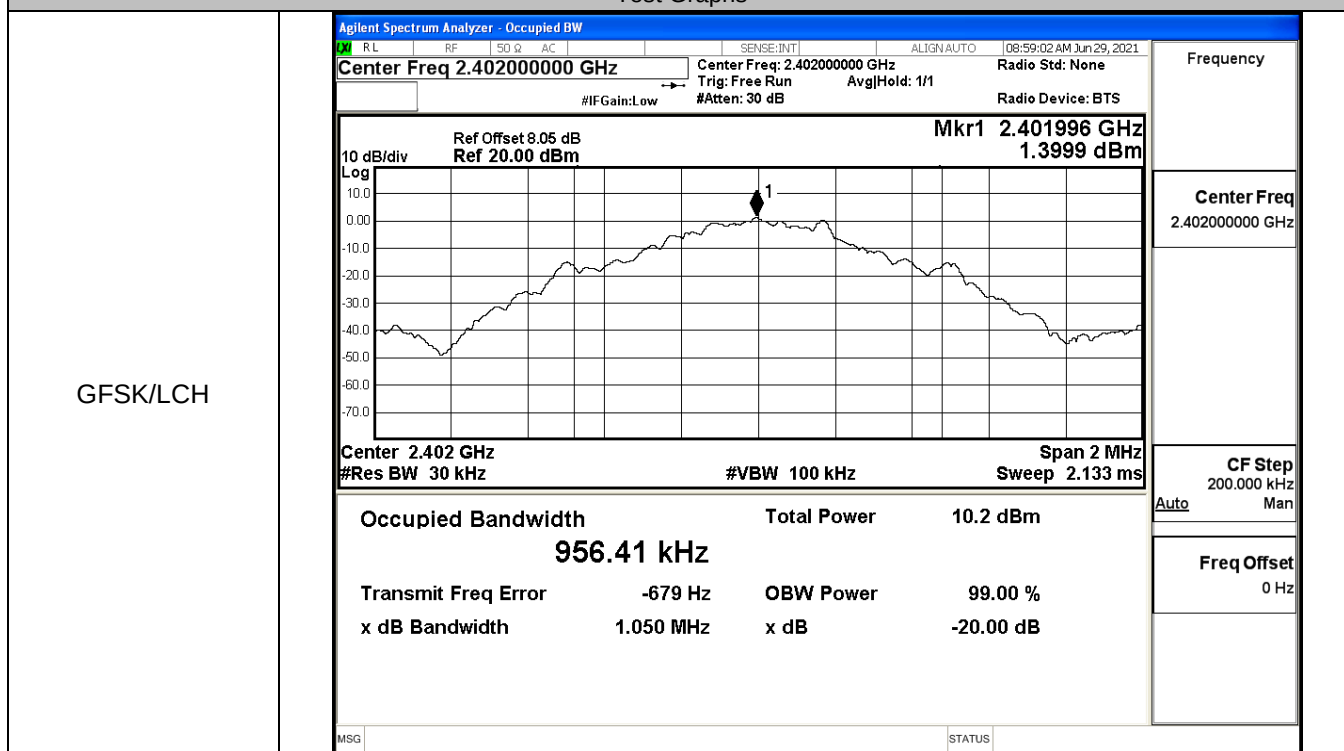




## A.2 20dB Bandwidth

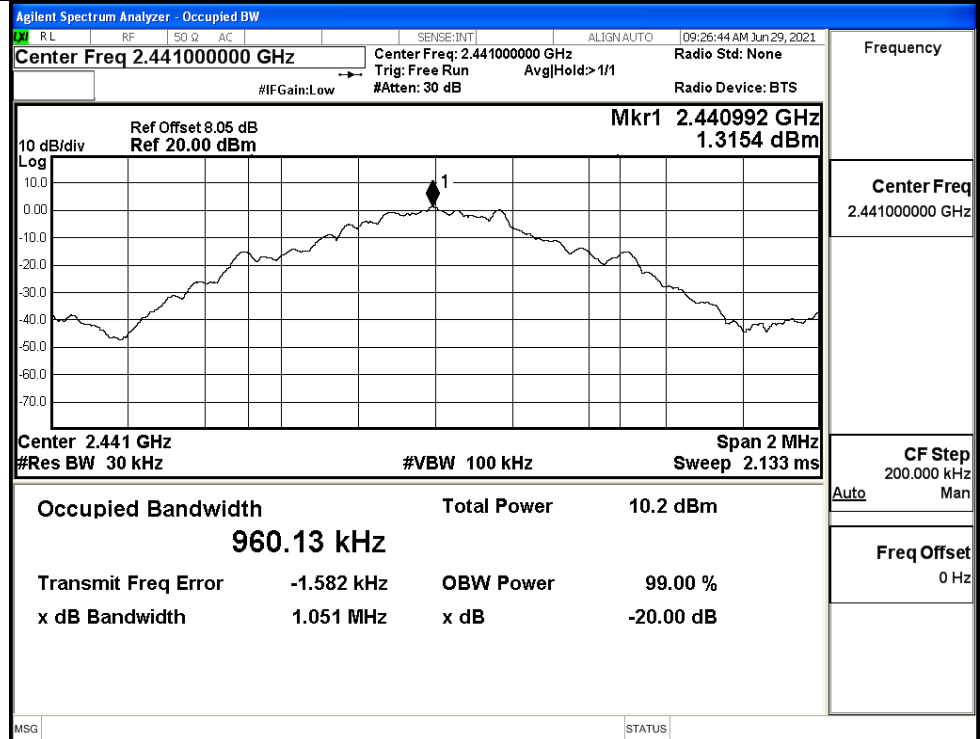
| Mode          | Channel. | 20dB Bandwidth [MHz] | Limit [MHz]   | Verdict |
|---------------|----------|----------------------|---------------|---------|
| GFSK          | LCH      | 1.050                | Not Specified | PASS    |
|               | MCH      | 1.051                | Not Specified | PASS    |
|               | HCH      | 1.050                | Not Specified | PASS    |
| $\pi/4$ DQPSK | LCH      | 1.191                | Not Specified | PASS    |
|               | MCH      | 1.191                | Not Specified | PASS    |
|               | HCH      | 1.192                | Not Specified | PASS    |
| 8DPSK         | LCH      | 1.238                | Not Specified | PASS    |
|               | MCH      | 1.235                | Not Specified | PASS    |
|               | HCH      | 1.239                | Not Specified | PASS    |

Test Graphs

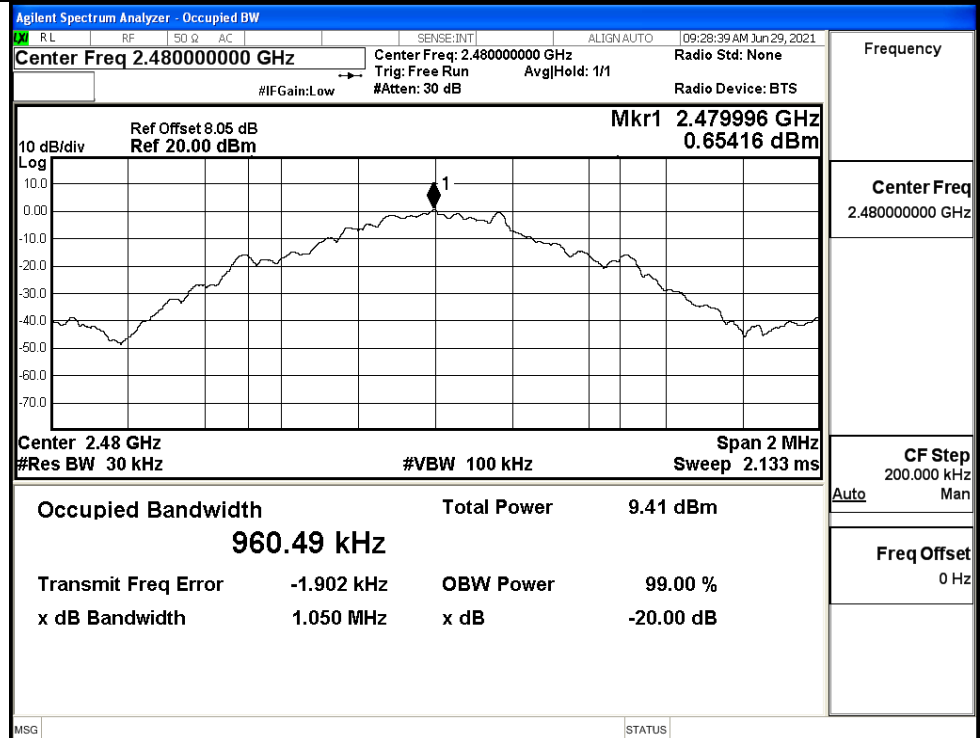




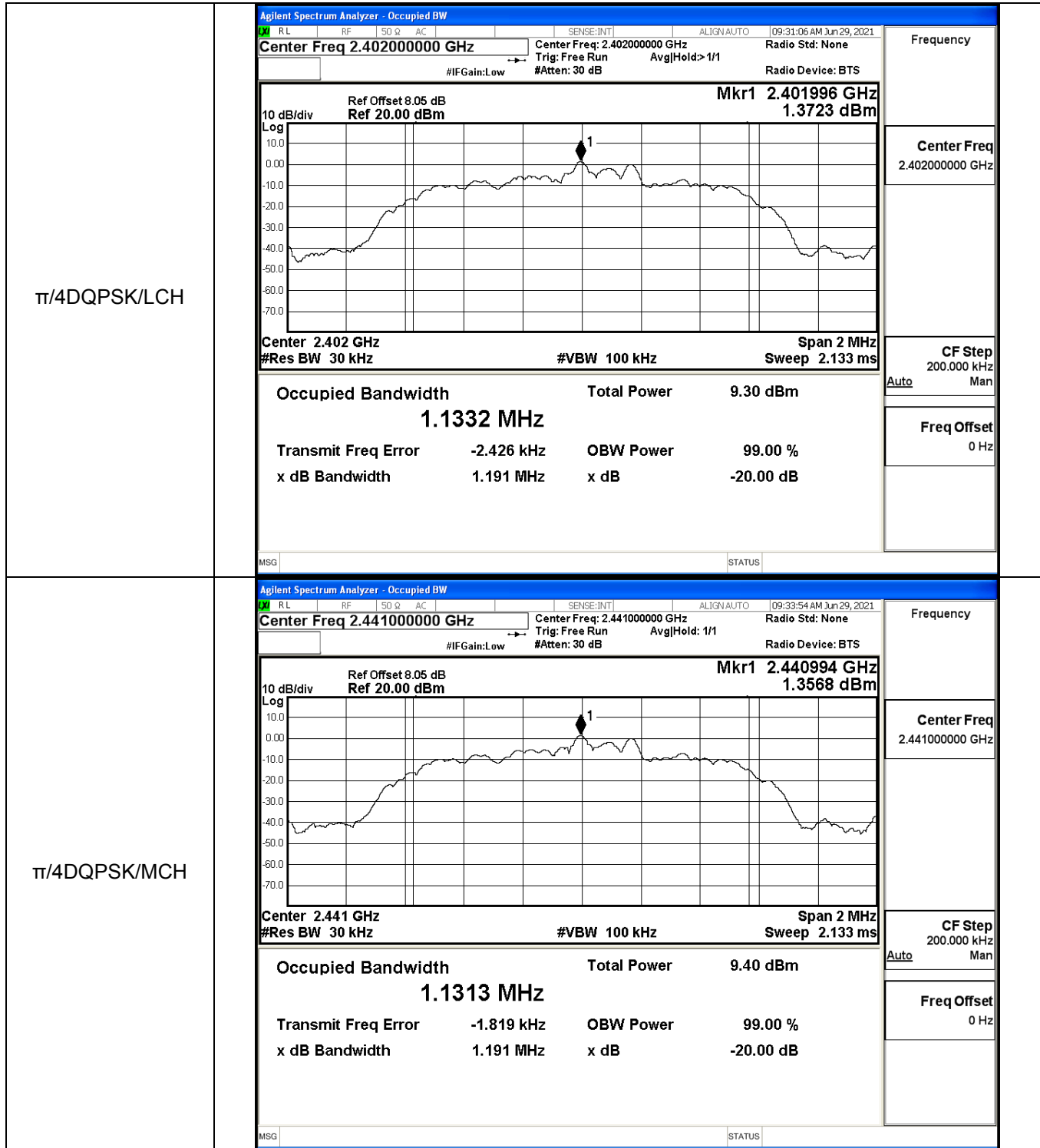
GFSK/MCH



GFSK/HCH





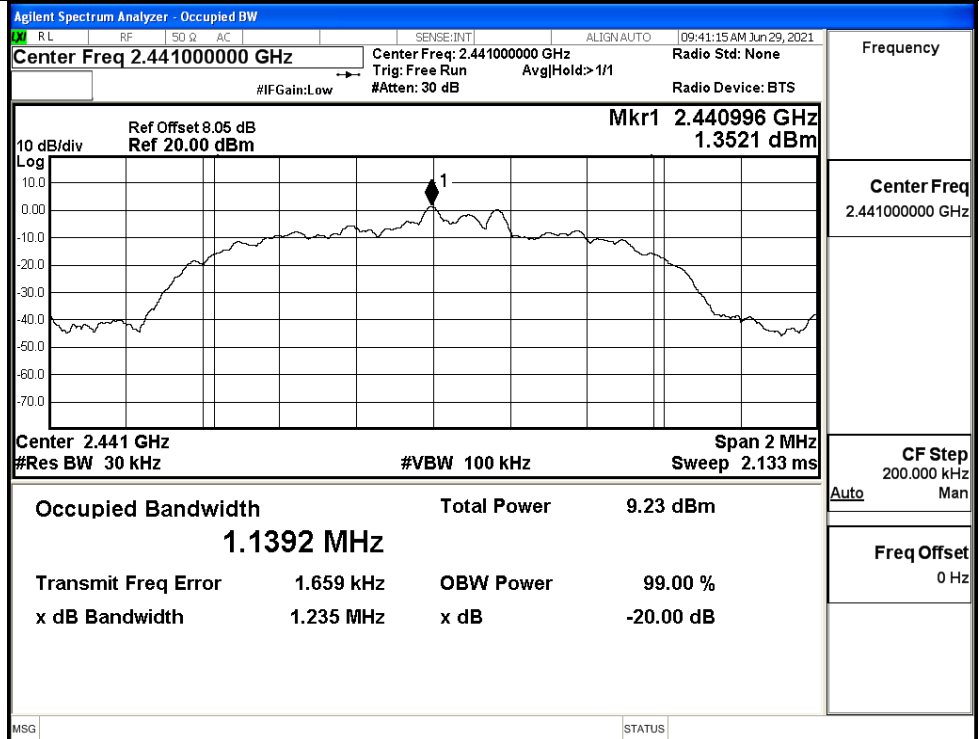




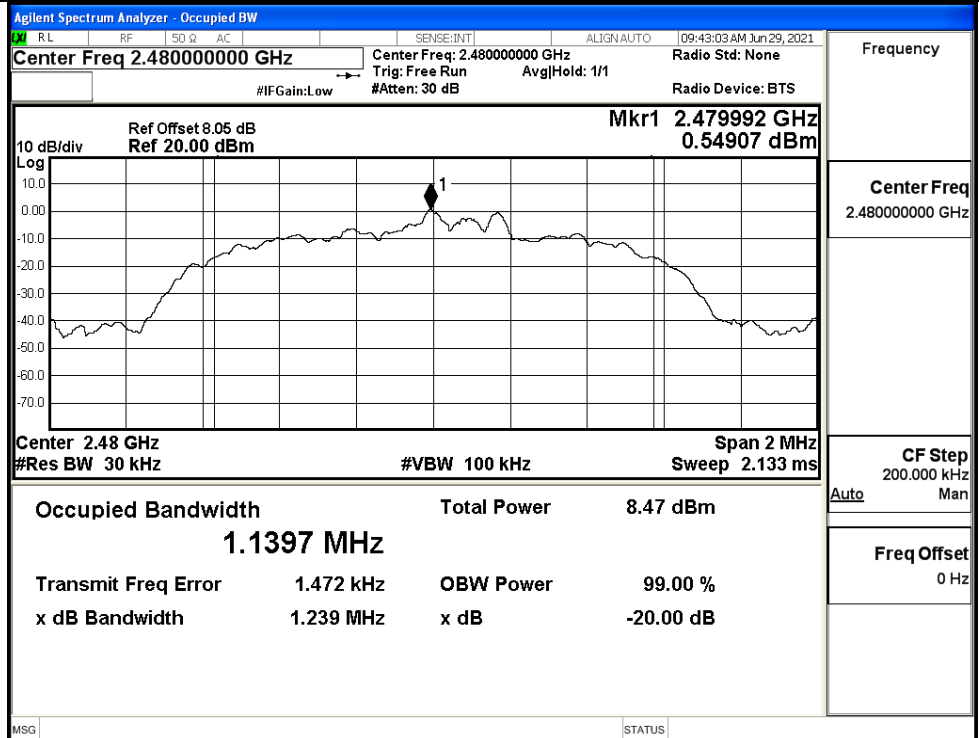
|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div data-bbox="156 504 354 533" data-label="Text"><p><math>\pi</math>/4DQPSK/HCH</p></div> | <div data-bbox="448 141 1262 871" data-label="Figure"><p>Agilent Spectrum Analyzer - Occupied BW</p><p>Center Freq 2.48000000 GHz</p><p>Ref Offset 8.05 dB</p><p>Ref 20.00 dBm</p><p>10 dB/div</p><p>Log</p><p>Center 2.48 GHz</p><p>#Res BW 30 kHz</p><p>#VBW 100 kHz</p><p>Span 2 MHz</p><p>Sweep 2.133 ms</p><p>Occupied Bandwidth</p><p>1.1319 MHz</p><p>Total Power</p><p>8.63 dBm</p><p>Transmit Freq Error</p><p>-2.072 kHz</p><p>OBW Power</p><p>99.00 %</p><p>x dB Bandwidth</p><p>1.192 MHz</p><p>x dB</p><p>-20.00 dB</p></div>  | <div data-bbox="1305 174 1385 197" data-label="Text"><p>Frequency</p></div> <div data-bbox="1284 311 1414 360" data-label="Text"><p>Center Freq<br/>2.48000000 GHz</p></div> <div data-bbox="1284 577 1414 638" data-label="Text"><p>CF Step<br/>200.000 kHz</p></div> <div data-bbox="1284 676 1414 723" data-label="Text"><p>Freq Offset<br/>0 Hz</p></div>       |
| <div data-bbox="180 1249 330 1279" data-label="Text"><p>8DPSK/LCH</p></div>                 | <div data-bbox="448 887 1262 1617" data-label="Figure"><p>Agilent Spectrum Analyzer - Occupied BW</p><p>Center Freq 2.40200000 GHz</p><p>Ref Offset 8.05 dB</p><p>Ref 20.00 dBm</p><p>10 dB/div</p><p>Log</p><p>Center 2.402 GHz</p><p>#Res BW 30 kHz</p><p>#VBW 100 kHz</p><p>Span 2 MHz</p><p>Sweep 2.133 ms</p><p>Occupied Bandwidth</p><p>1.1398 MHz</p><p>Total Power</p><p>9.17 dBm</p><p>Transmit Freq Error</p><p>1.453 kHz</p><p>OBW Power</p><p>99.00 %</p><p>x dB Bandwidth</p><p>1.238 MHz</p><p>x dB</p><p>-20.00 dB</p></div> | <div data-bbox="1305 918 1385 940" data-label="Text"><p>Frequency</p></div> <div data-bbox="1284 1055 1414 1104" data-label="Text"><p>Center Freq<br/>2.40200000 GHz</p></div> <div data-bbox="1284 1321 1414 1382" data-label="Text"><p>CF Step<br/>200.000 kHz</p></div> <div data-bbox="1284 1420 1414 1467" data-label="Text"><p>Freq Offset<br/>0 Hz</p></div> |

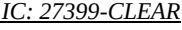


8DPSK/MCH



8DPSK/HCH

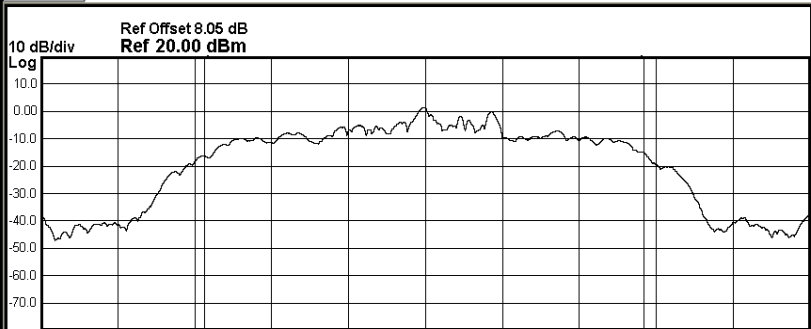
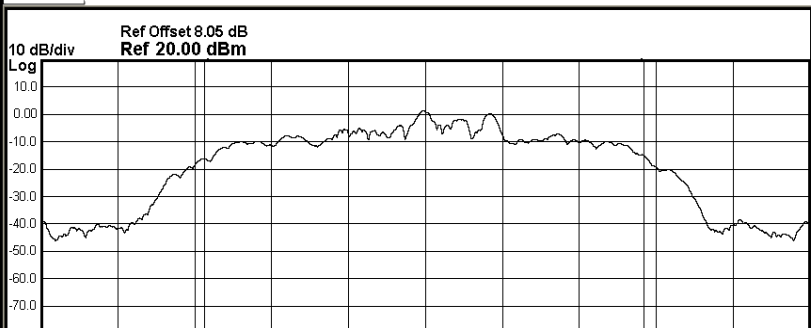


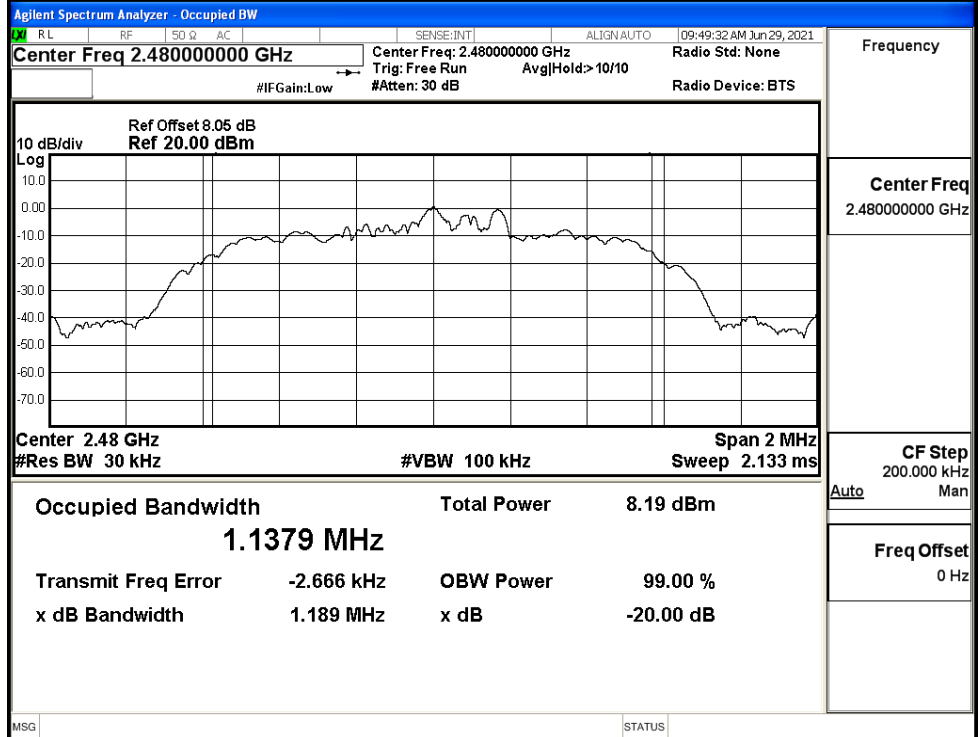




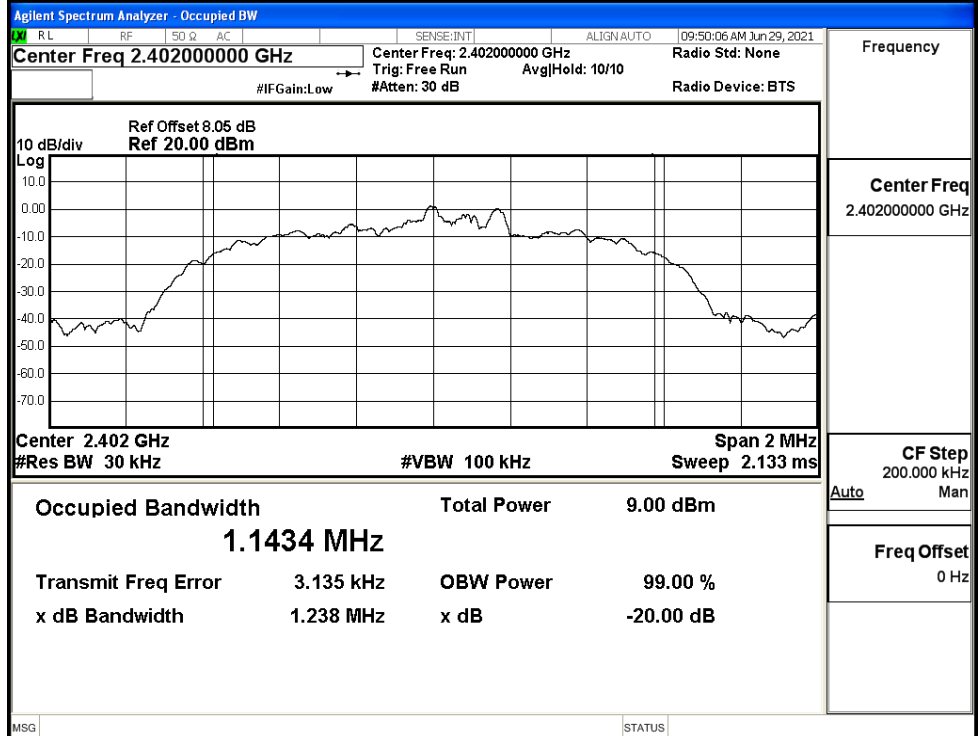
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>GFSK/MCH</div> | <div><div>Agilent Spectrum Analyzer - Occupied BW</div><div><div><div><div>RL</div><div>RF</div><div>50 Ω</div><div>AC</div></div><div><div>SENSE:INT</div><div>ALIGN: AUTO</div><div>09:47:08 AM Jun 29, 2021</div></div></div><div><div>Center Freq 2.441000000 GHz</div><div>Center Freq: 2.441000000 GHz</div><div>Trig: Free Run</div><div>Avg/Hold: 10/10</div><div>Radio Std: None</div><div>#IFGain: Low</div><div>#Atten: 30 dB</div><div>Radio Device: BTS</div></div></div><div><div>10 dB/div</div><div>Ref Offset 8.05 dB</div><div>Ref 20.00 dBm</div><div><div>Log</div></div></div><div><div>Center 2.441 GHz</div><div>#Res BW 30 kHz</div><div>#VBW 100 kHz</div><div>Span 2 MHz</div><div>Sweep 2.133 ms</div></div><div><div>Occupied Bandwidth</div><div>Total Power</div><div>9.85 dBm</div><div>954.61 kHz</div></div><div><div>Transmit Freq Error</div><div>-3.991 kHz</div><div>OBW Power</div><div>99.00 %</div><div>x dB Bandwidth</div><div>1.050 MHz</div><div>x dB</div><div>-20.00 dB</div></div><div><div>MSG</div><div>STATUS</div></div></div> <td data-bbox="1420 136 1476 880"><div>Frequency</div><div>Center Freq</div><div>2.441000000 GHz</div><div>CF Step</div><div>200.000 kHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0 Hz</div></td> | <div>Frequency</div> <div>Center Freq</div> <div>2.441000000 GHz</div> <div>CF Step</div> <div>200.000 kHz</div> <div>Auto</div> <div>Man</div> <div>Freq Offset</div> <div>0 Hz</div> |
| <div>GFSK/HCH</div> | <div><div>Agilent Spectrum Analyzer - Occupied BW</div><div><div><div><div>RL</div><div>RF</div><div>50 Ω</div><div>AC</div></div><div><div>SENSE:INT</div><div>ALIGN: AUTO</div><div>09:47:46 AM Jun 29, 2021</div></div></div><div><div>Center Freq 2.480000000 GHz</div><div>Center Freq: 2.480000000 GHz</div><div>Trig: Free Run</div><div>Avg/Hold: 10/10</div><div>Radio Std: None</div><div>#IFGain: Low</div><div>#Atten: 30 dB</div><div>Radio Device: BTS</div></div></div><div><div>10 dB/div</div><div>Ref Offset 8.05 dB</div><div>Ref 20.00 dBm</div><div><div>Log</div></div></div><div><div>Center 2.48 GHz</div><div>#Res BW 30 kHz</div><div>#VBW 100 kHz</div><div>Span 2 MHz</div><div>Sweep 2.133 ms</div></div><div><div>Occupied Bandwidth</div><div>Total Power</div><div>9.24 dBm</div><div>955.16 kHz</div></div><div><div>Transmit Freq Error</div><div>2.750 kHz</div><div>OBW Power</div><div>99.00 %</div><div>x dB Bandwidth</div><div>1.040 MHz</div><div>x dB</div><div>-20.00 dB</div></div><div><div>MSG</div><div>STATUS</div></div></div> <td data-bbox="1420 880 1476 1630"><div>Frequency</div><div>Center Freq</div><div>2.480000000 GHz</div><div>CF Step</div><div>200.000 kHz</div><div>Auto</div><div>Man</div><div>Freq Offset</div><div>0 Hz</div></td>  | <div>Frequency</div> <div>Center Freq</div> <div>2.480000000 GHz</div> <div>CF Step</div> <div>200.000 kHz</div> <div>Auto</div> <div>Man</div> <div>Freq Offset</div> <div>0 Hz</div> |



|                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div data-bbox="156 504 354 533" data-label="Text"><p><math>\pi/4</math>DQPSK/LCH</p></div>   | <div data-bbox="448 141 1417 871" data-label="Figure"><p>Agilent Spectrum Analyzer - Occupied BW</p><p>Center Freq 2.40200000 GHz</p><p>Ref Offset 8.05 dB<br/>Ref 20.00 dBm</p><p>Center 2.402 GHz<br/>#Res BW 30 kHz</p><p>Span 2 MHz<br/>#VBW 100 kHz<br/>Sweep 2.133 ms</p><p>Occupied Bandwidth 1.1407 MHz</p><p>Total Power 8.83 dBm</p><p>Transmit Freq Error -2.680 kHz</p><p>OBW Power 99.00 %</p><p>x dB Bandwidth 1.189 MHz</p><p>x dB -20.00 dB</p></div>   | <div data-bbox="1305 174 1385 197" data-label="Text"><p>Frequency</p></div> <div data-bbox="1284 311 1414 360" data-label="Text"><p>Center Freq<br/>2.40200000 GHz</p></div> <div data-bbox="1273 577 1414 638" data-label="Text"><p>CF Step<br/>200.000 kHz</p></div> <div data-bbox="1313 676 1414 723" data-label="Text"><p>Freq Offset<br/>0 Hz</p></div>       |
| <div data-bbox="156 1249 354 1279" data-label="Text"><p><math>\pi/4</math>DQPSK/MCH</p></div> | <div data-bbox="448 884 1417 1615" data-label="Figure"><p>Agilent Spectrum Analyzer - Occupied BW</p><p>Center Freq 2.44100000 GHz</p><p>Ref Offset 8.05 dB<br/>Ref 20.00 dBm</p><p>Center 2.441 GHz<br/>#Res BW 30 kHz</p><p>Span 2 MHz<br/>#VBW 100 kHz<br/>Sweep 2.133 ms</p><p>Occupied Bandwidth 1.1358 MHz</p><p>Total Power 9.09 dBm</p><p>Transmit Freq Error -1.623 kHz</p><p>OBW Power 99.00 %</p><p>x dB Bandwidth 1.188 MHz</p><p>x dB -20.00 dB</p></div> | <div data-bbox="1305 918 1385 940" data-label="Text"><p>Frequency</p></div> <div data-bbox="1284 1055 1414 1104" data-label="Text"><p>Center Freq<br/>2.44100000 GHz</p></div> <div data-bbox="1273 1321 1414 1382" data-label="Text"><p>CF Step<br/>200.000 kHz</p></div> <div data-bbox="1313 1420 1414 1467" data-label="Text"><p>Freq Offset<br/>0 Hz</p></div> |

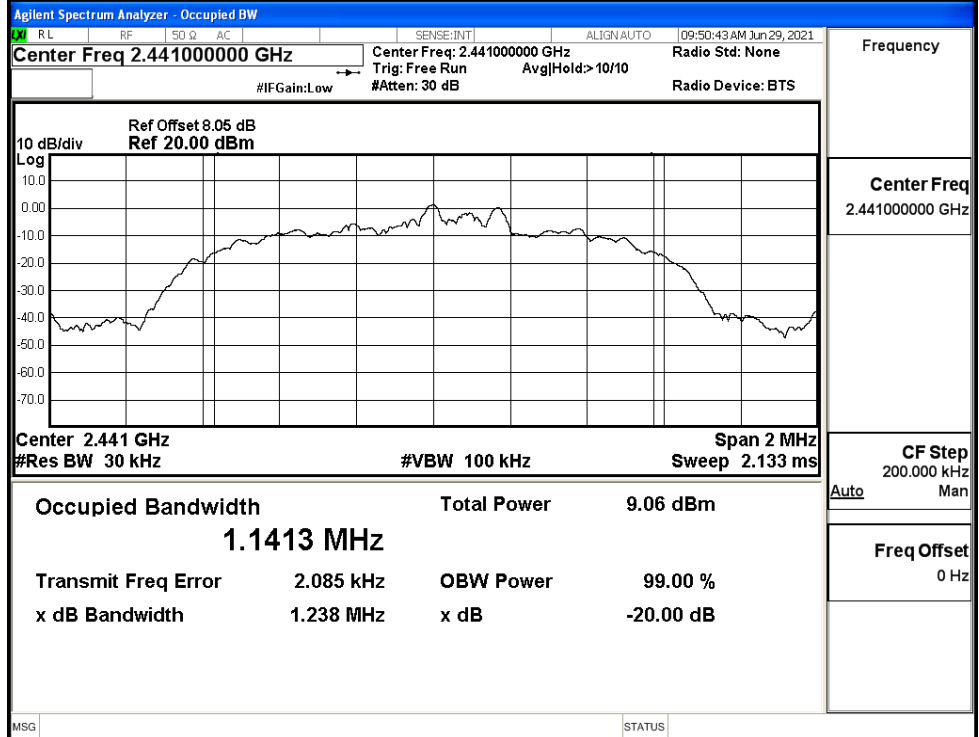
 $\pi/4$ DQPSK/HCH

8DPSK/LCH

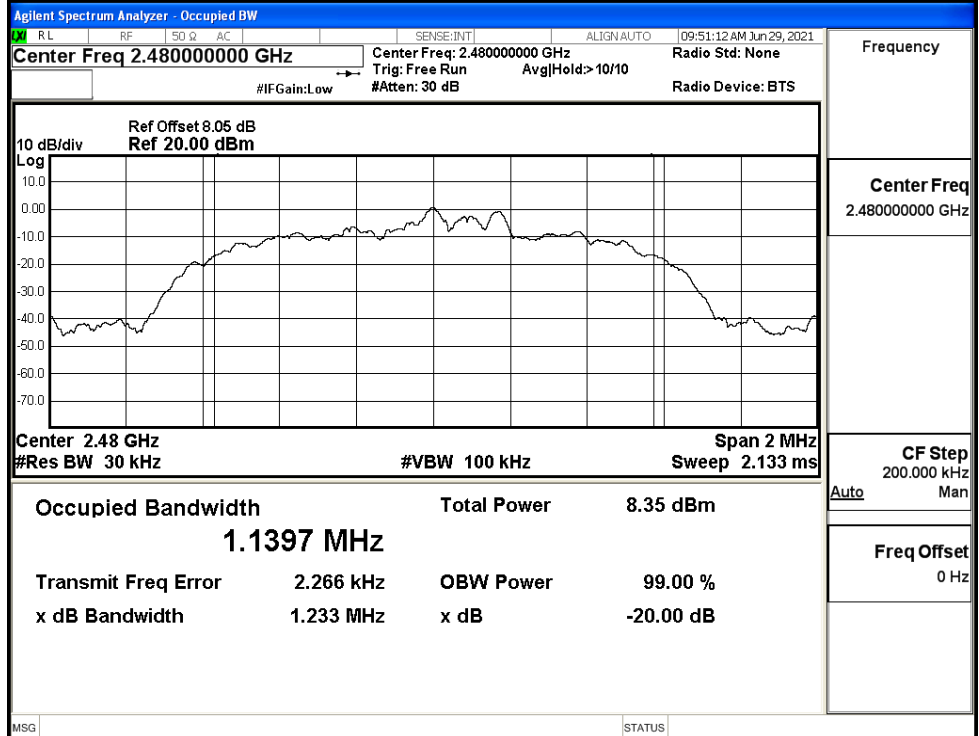




8DPSK/MCH



8DPSK/HCH

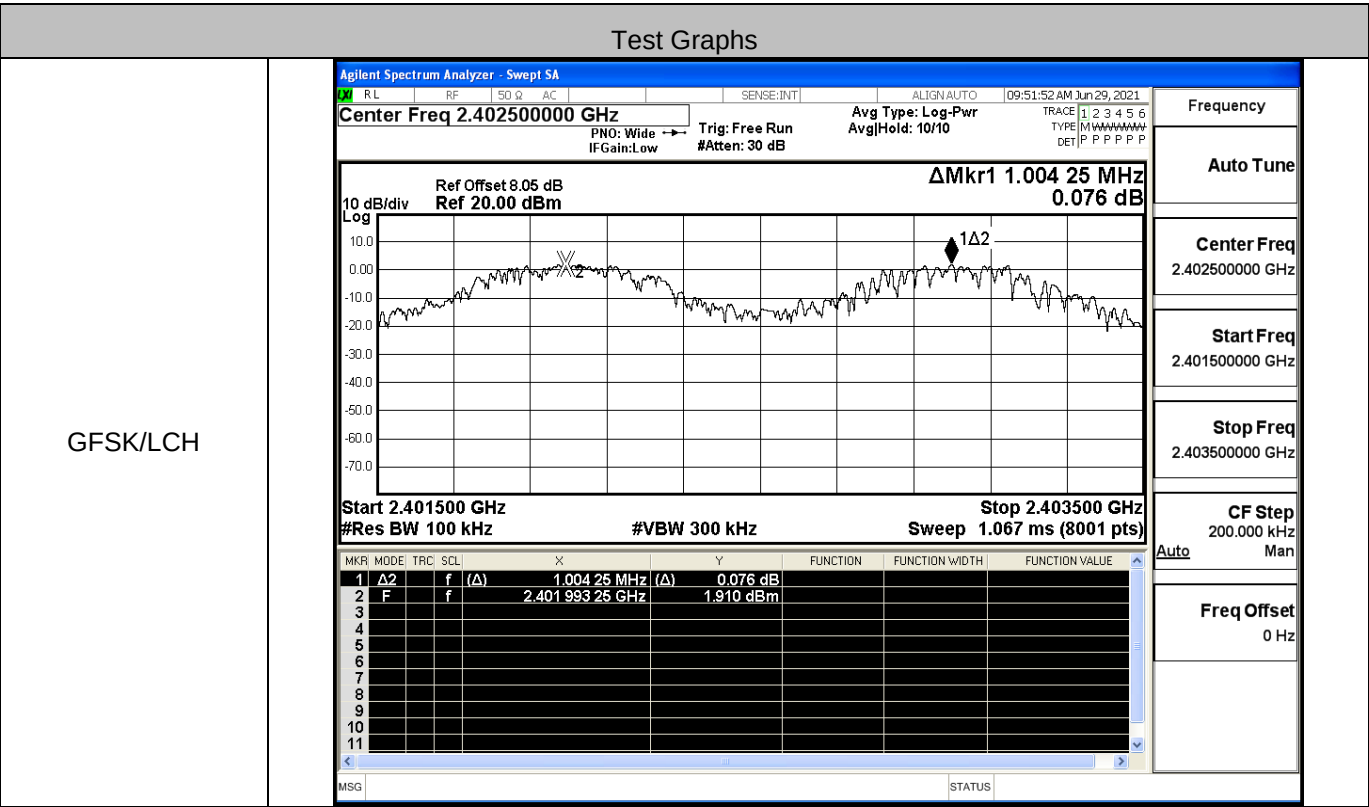






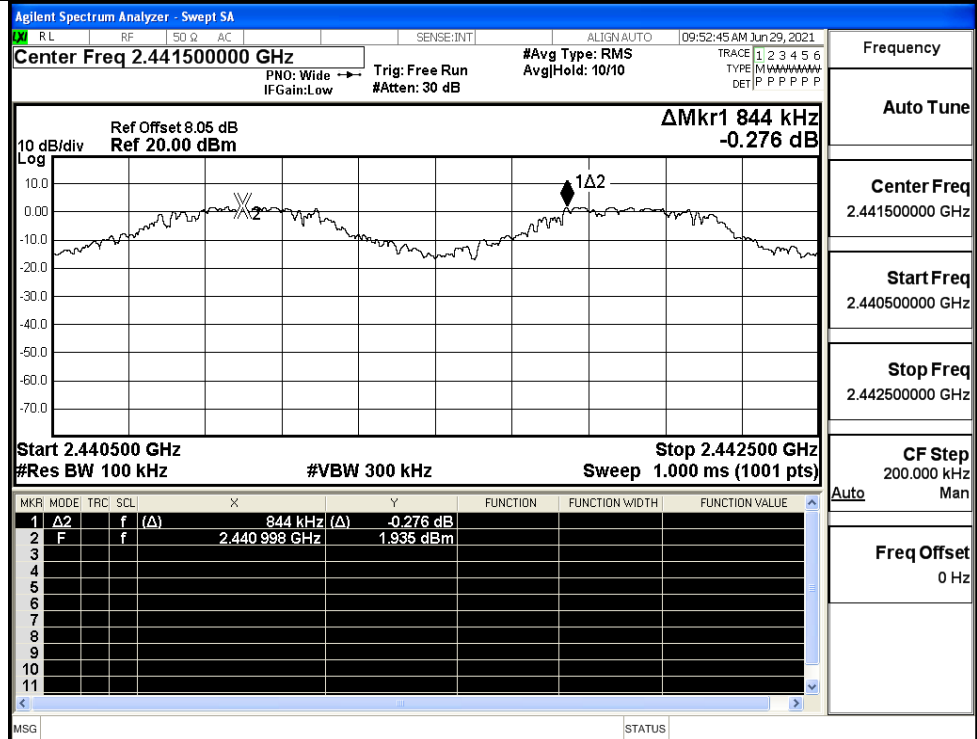
A.4 Carrier Frequency Separation

| Mode          | Channel. | Carrier Frequency Separation [MHz] | Limit [MHz] | Verdict |
|---------------|----------|------------------------------------|-------------|---------|
| GFSK          | LCH      | 1.004                              | 0.701       | PASS    |
|               | MCH      | 0.844                              | 0.701       | PASS    |
|               | HCH      | 1.180                              | 0.701       | PASS    |
| $\pi$ /4DQPSK | LCH      | 1.060                              | 0.795       | PASS    |
|               | MCH      | 0.970                              | 0.795       | PASS    |
|               | HCH      | 0.884                              | 0.795       | PASS    |
| 8DPSK         | LCH      | 0.914                              | 0.826       | PASS    |
|               | MCH      | 1.092                              | 0.826       | PASS    |
|               | HCH      | 0.910                              | 0.826       | PASS    |

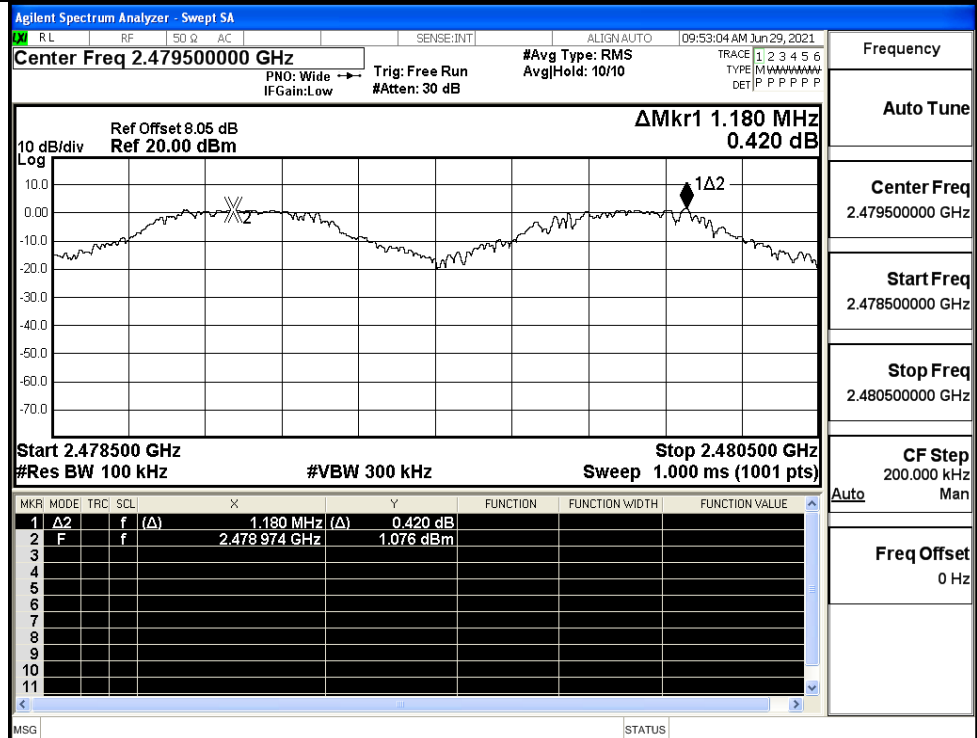


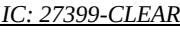


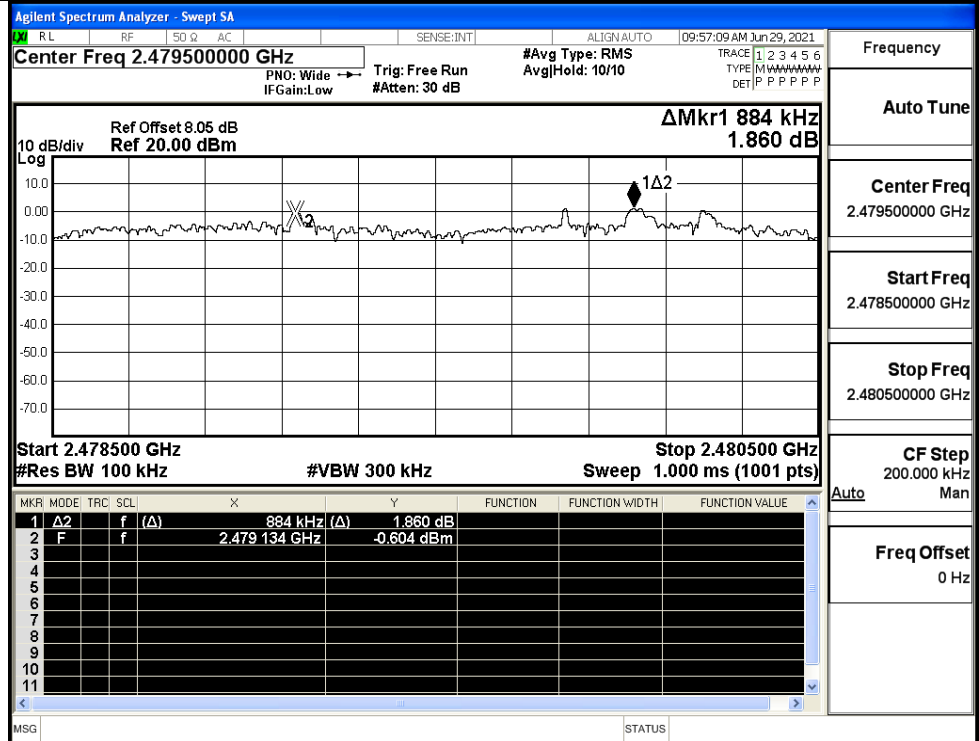
GFSK/MCH



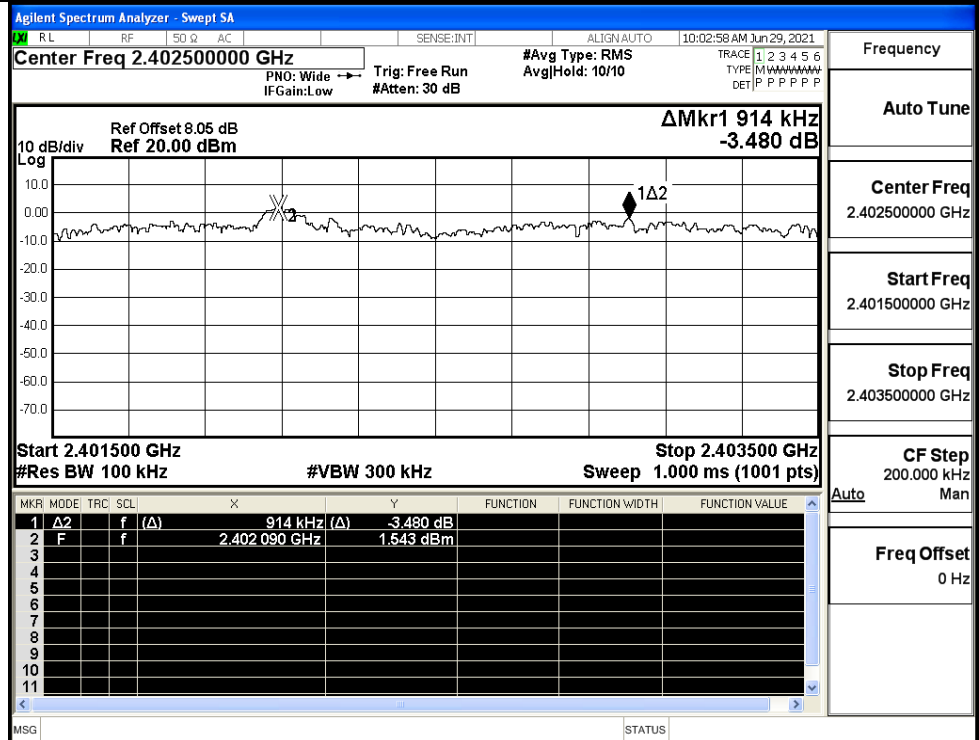
GFSK/HCH

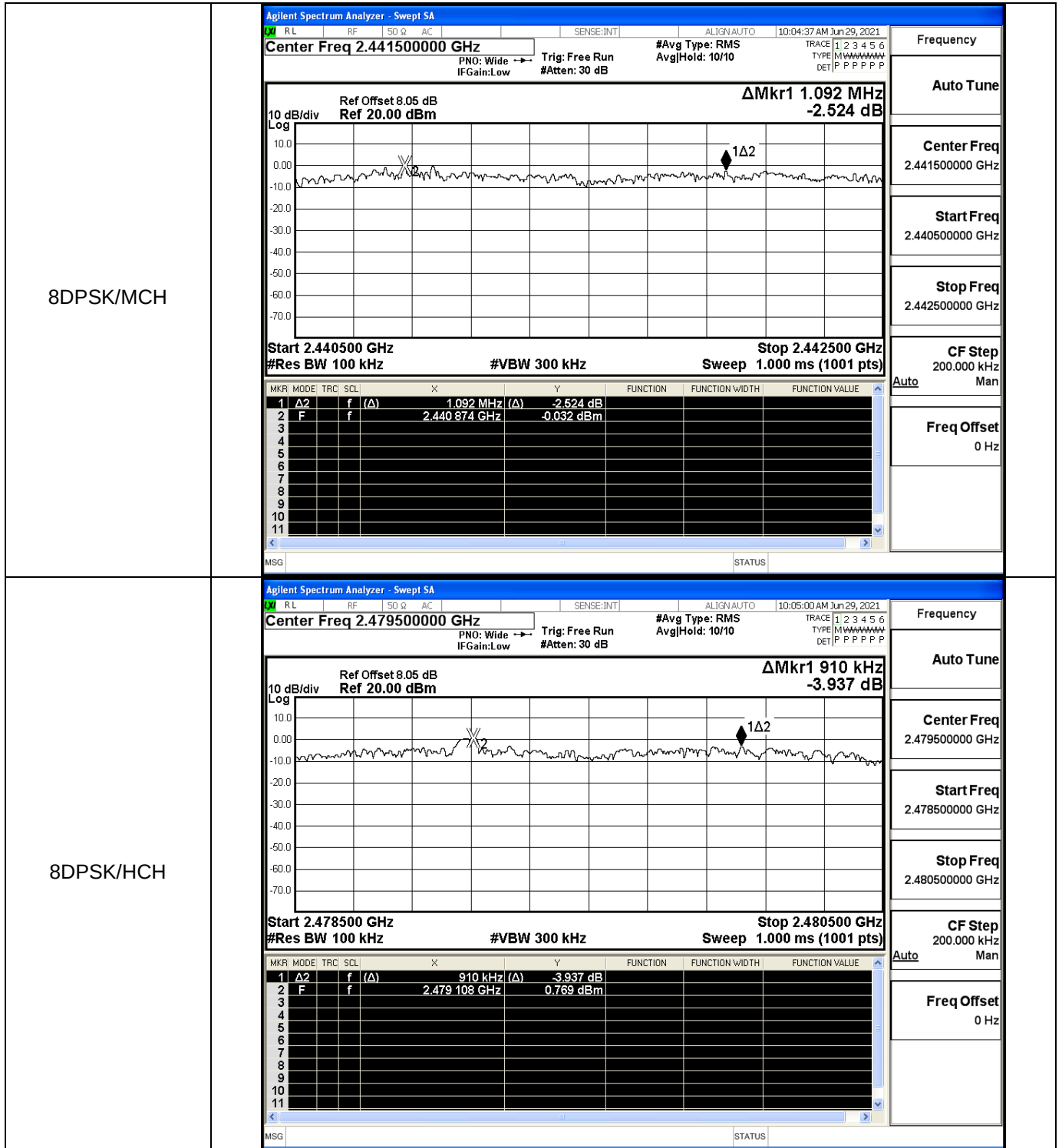


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 $\pi/4$ DQPSK/HCH

8DPSK/LCH

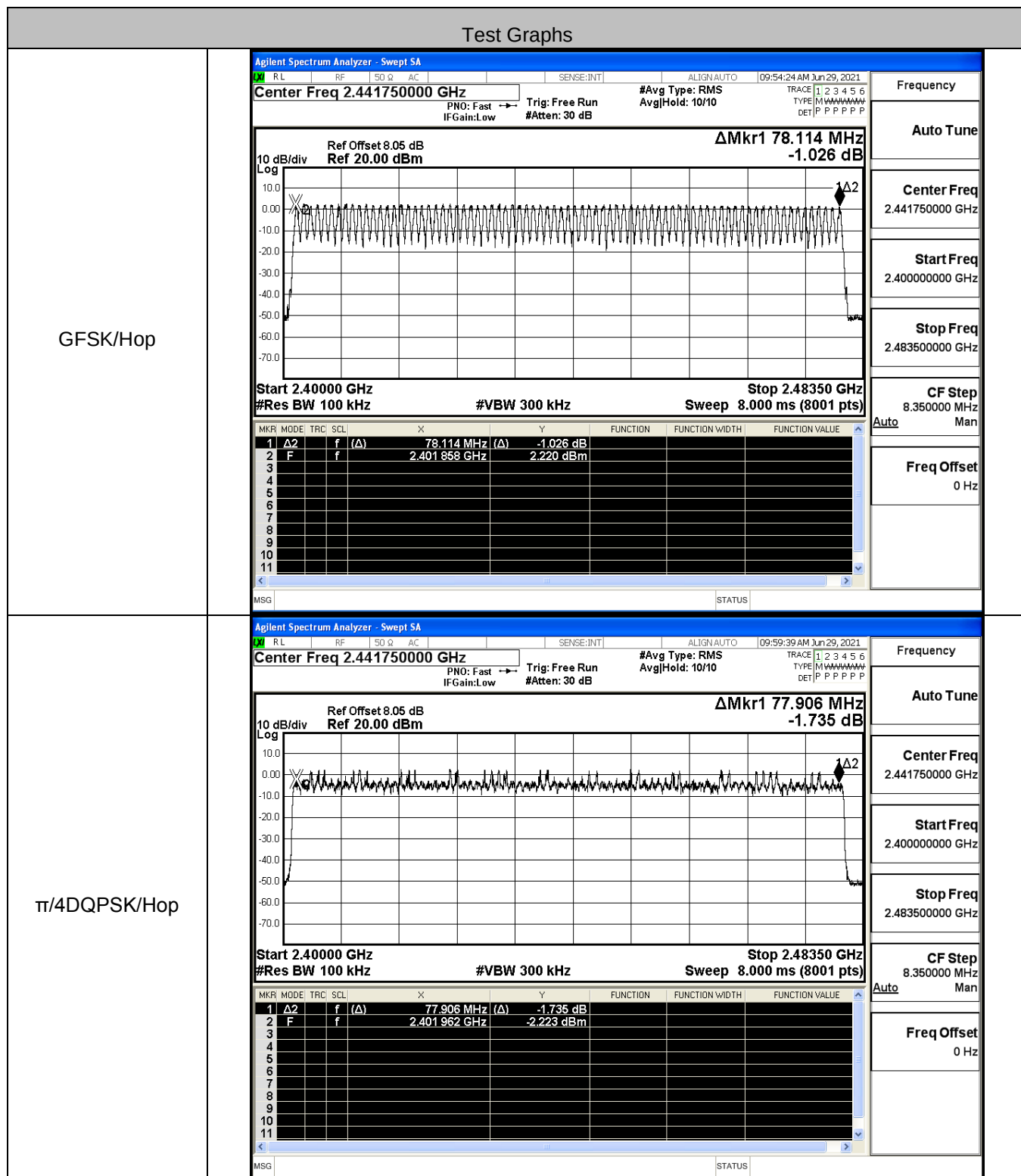


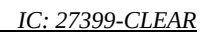




## A.5 Hopping Channel Number

| Mode          | Channel. | Number of Hopping Channel [N] | Limit [N] | Verdict |
|---------------|----------|-------------------------------|-----------|---------|
| GFSK          | Hop      | 79                            | $\geq 15$ | PASS    |
| $\pi/4$ DQPSK | Hop      | 79                            | $\geq 15$ | PASS    |
| 8DPSK         | Hop      | 79                            | $\geq 15$ | PASS    |





**Agilent Spectrum Analyzer - Swept SA**

RL RF 50 Ω AC SENSE: INT ALIGN AUTO 10:07:30 AM Jun 29, 2021

**Center Freq 2.441750000 GHz** #Avg Type: RMS Avg/Hold: 10/10 TRACE 1 2 3 4 5 6  
PNO: Fast IF Gain: Low Trig: Free Run #Atten: 30 dB TYPE [MAWAAAAA] DET [PPPPPP]

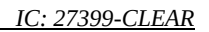
Ref Offset 8.05 dB ΔMkr1 77.926 MHz  
Ref 20.00 dBm -1.501 dB

Start 2.40000 GHz Stop 2.48350 GHz  
#Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)

| MKR | MODE | TRC | SCL | X            | Y         | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE |
|-----|------|-----|-----|--------------|-----------|----------|----------------|----------------|
| 1   | Δ2   | f   | (Δ) | 77.926 MHz   | -1.501 dB |          |                |                |
| 2   | F    | f   |     | 2.402098 GHz | 0.625 dBm |          |                |                |
| 3   |      |     |     |              |           |          |                |                |
| 4   |      |     |     |              |           |          |                |                |
| 5   |      |     |     |              |           |          |                |                |
| 6   |      |     |     |              |           |          |                |                |
| 7   |      |     |     |              |           |          |                |                |
| 8   |      |     |     |              |           |          |                |                |
| 9   |      |     |     |              |           |          |                |                |
| 10  |      |     |     |              |           |          |                |                |
| 11  |      |     |     |              |           |          |                |                |

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

MSG STATUS

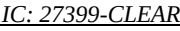


| Mode          | Packet | Channel | Burst Width<br>[ms/hop/ch] | Total<br>Hops[hop*ch] | Dwell Time[s] | Limit [s] | Verdict |
|---------------|--------|---------|----------------------------|-----------------------|---------------|-----------|---------|
| GFSK          | DH5    | LCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | DH5    | MCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | DH5    | HCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
| $\pi/4$ DQPSK | 2DH5   | LCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | 2DH5   | MCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | 2DH5   | HCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
| 8DPSK         | 3DH5   | LCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | 3DH5   | MCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |
|               | 3DH5   | HCH     | 2.9                        | 106.7                 | 0.309         | 0.4       | PASS    |

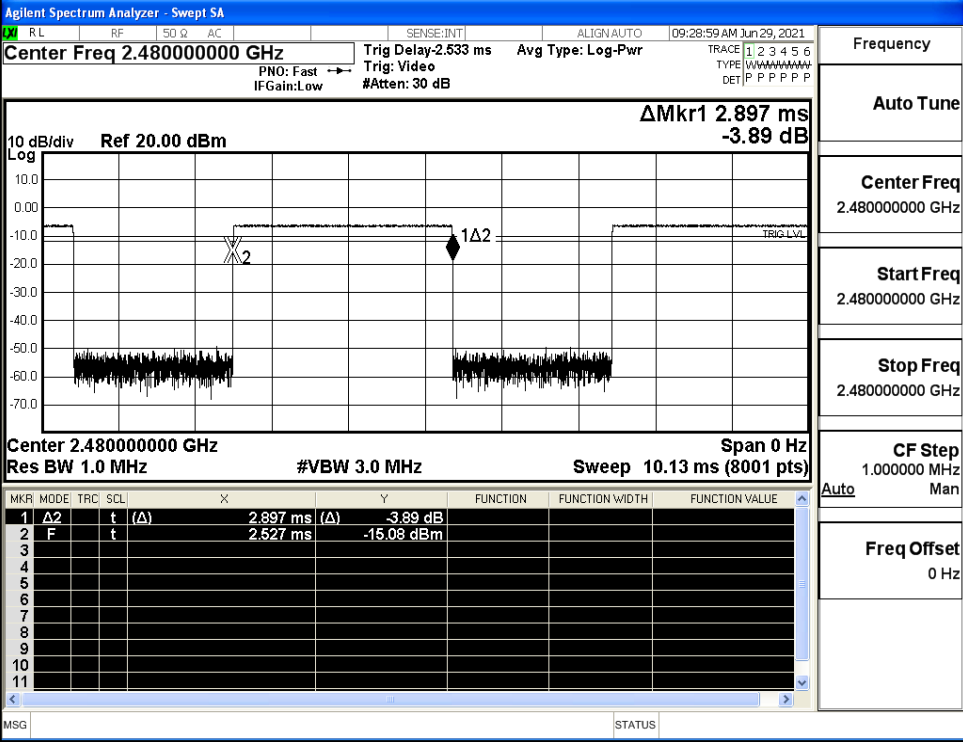


GFSK\_DH5/LCH



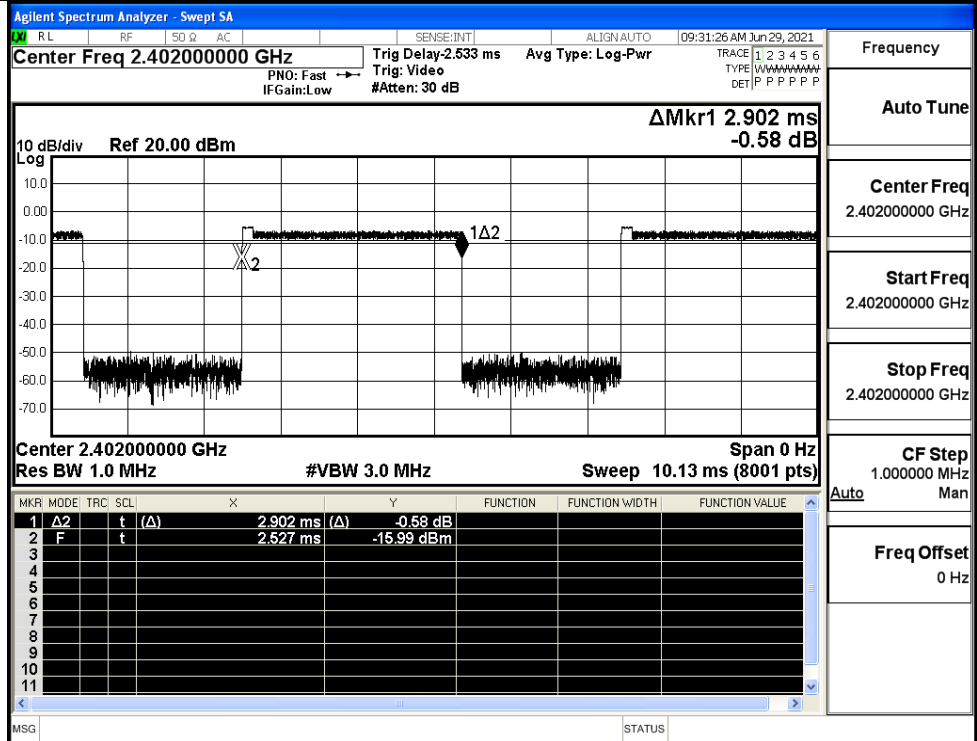


GFSK\_DH5/HCH

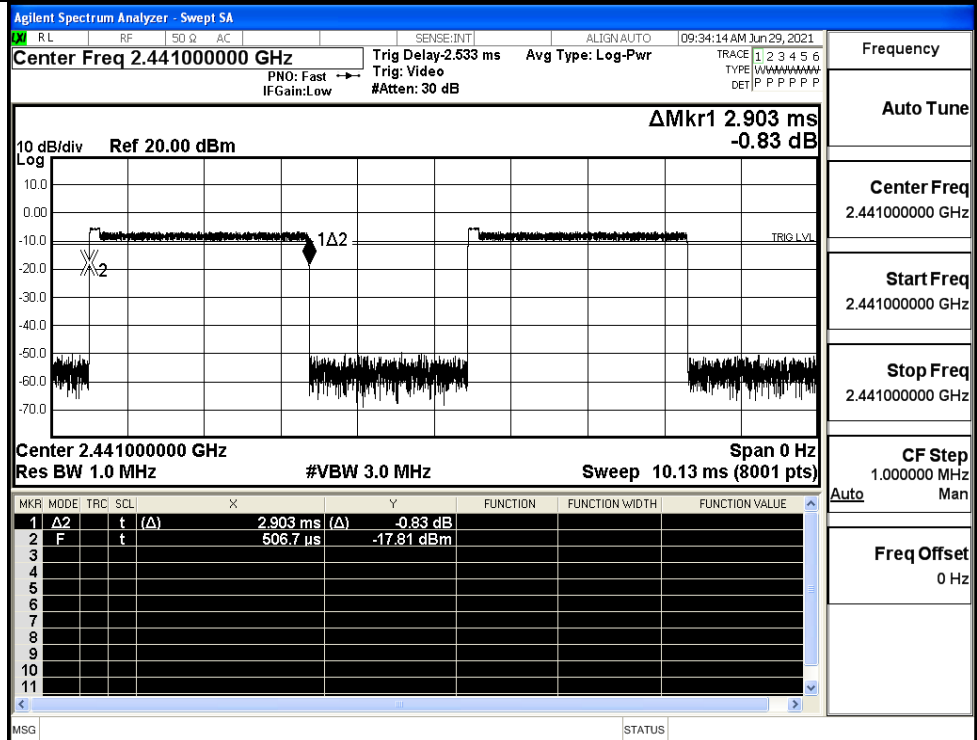




$\pi/4$ DQPSK  
\_2DH5/LCH

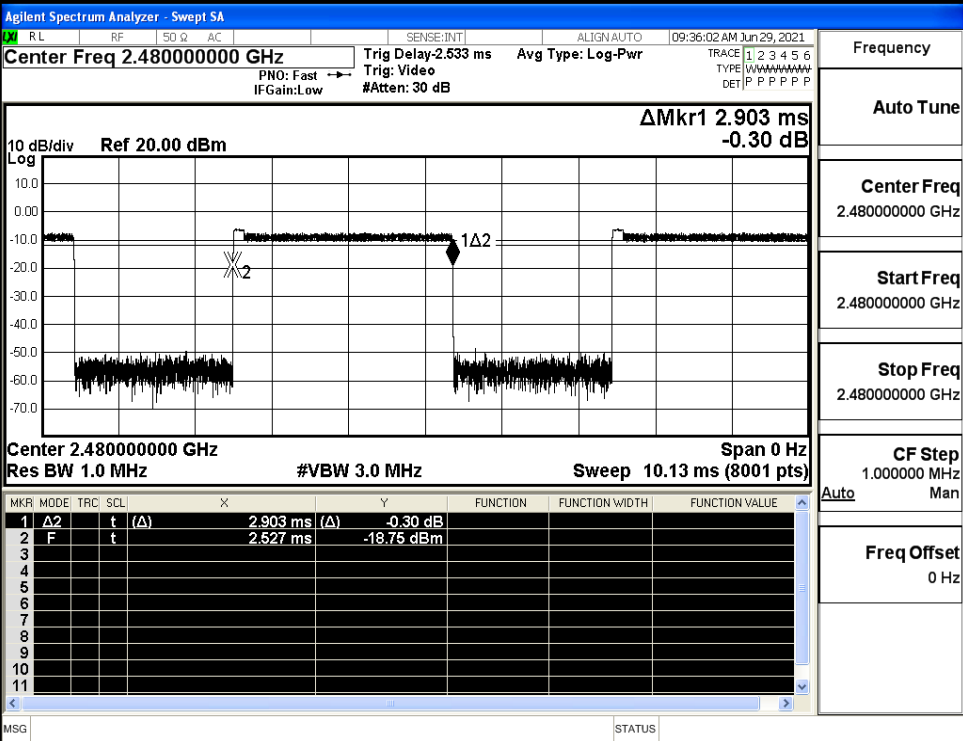


$\pi/4$ DQPSK  
\_2DH5/MCH

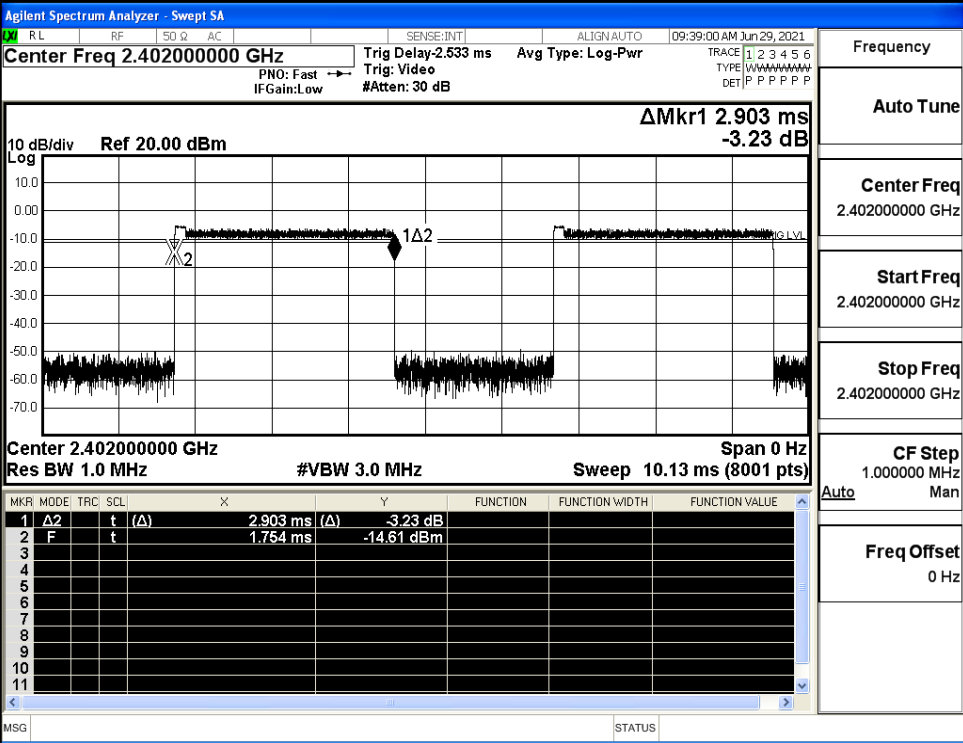




$\pi/4$ DQPSK  
\_2DH5/HCH

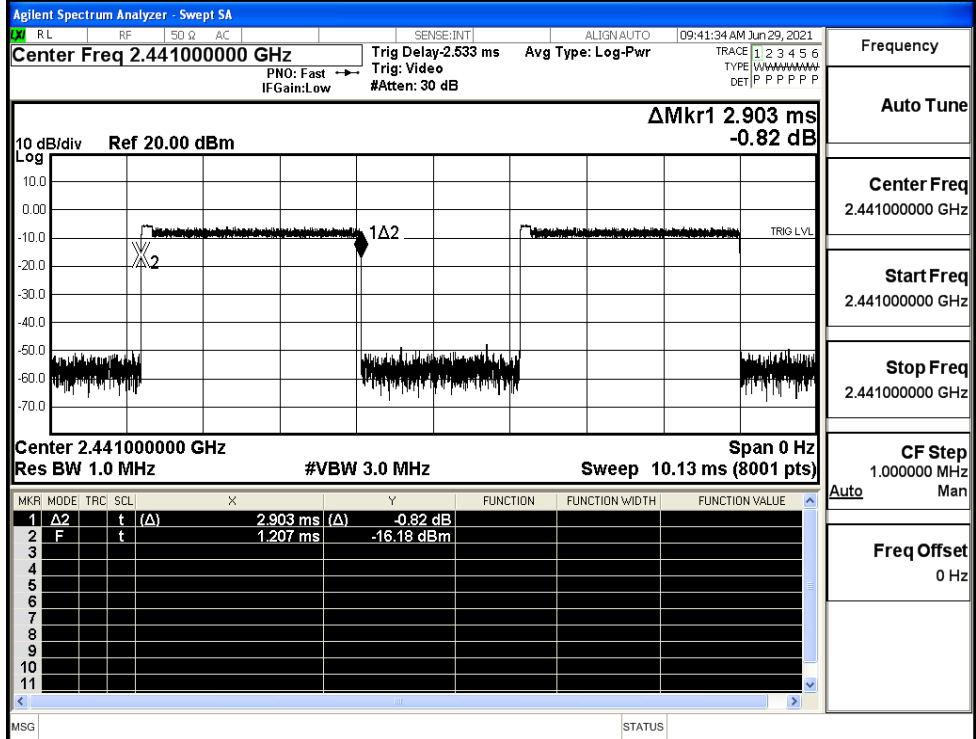


8DPSK \_3DH5/LCH

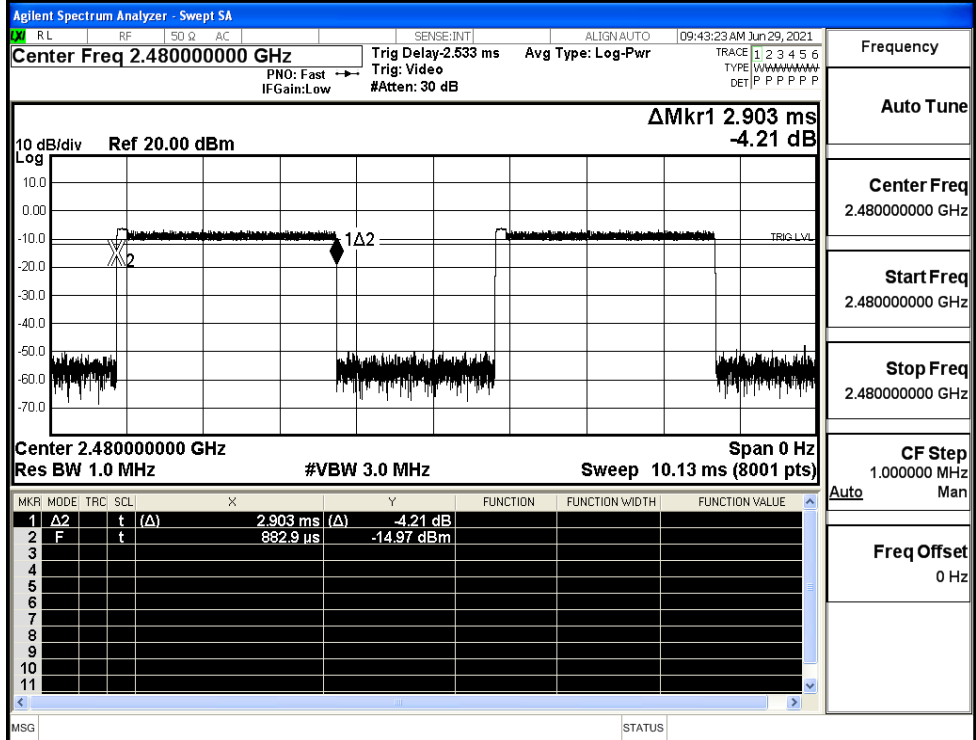




8DPSK\_3DH5/MCH



8DPSK\_3DH5/HCH

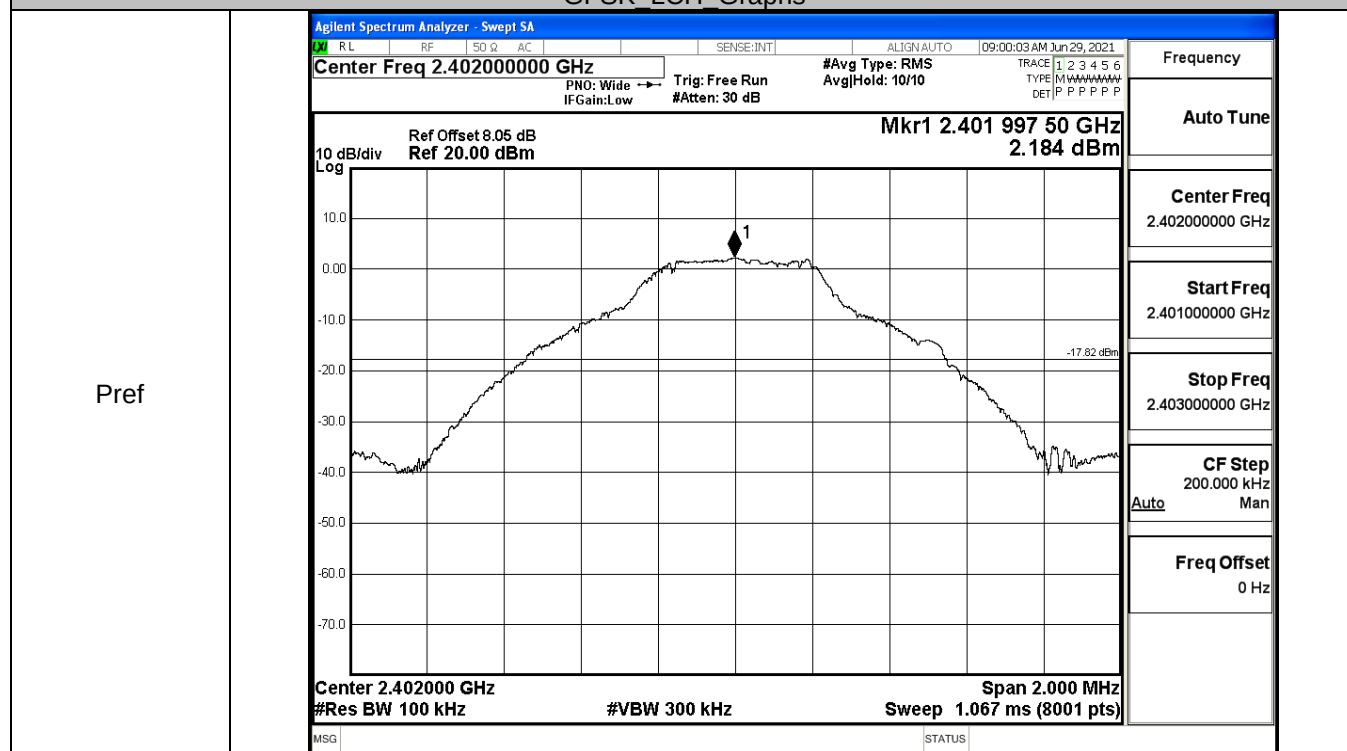


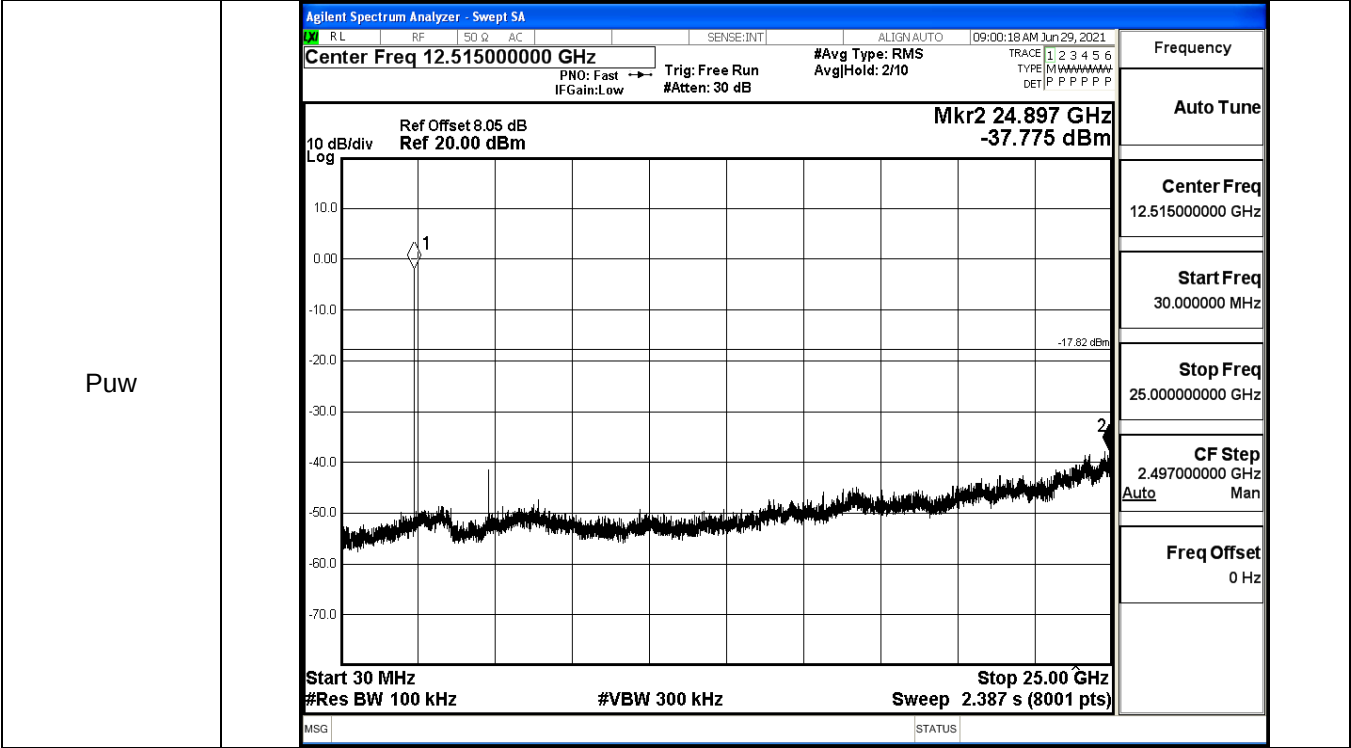


## A.7 RF Conducted Spurious Emissions

| Mode          | Channel | Pref [dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|------------|------------------|-------------|---------|
| GFSK          | LCH     | 2.184      | -37.775          | -17.816     | PASS    |
|               | MCH     | 2.469      | -38.027          | -17.531     | PASS    |
|               | HCH     | 1.226      | -38.232          | -18.774     | PASS    |
| $\pi/4$ DQPSK | LCH     | 2.29       | -37.696          | -17.710     | PASS    |
|               | MCH     | 2.277      | -37.494          | -17.723     | PASS    |
|               | HCH     | 1.548      | -38.402          | -18.452     | PASS    |
| 8DPSK         | LCH     | 2.452      | -38.088          | -17.548     | PASS    |
|               | MCH     | 2.438      | -37.789          | -17.562     | PASS    |
|               | HCH     | 1.283      | -37.624          | -18.717     | PASS    |

GFSK LCH Graphs

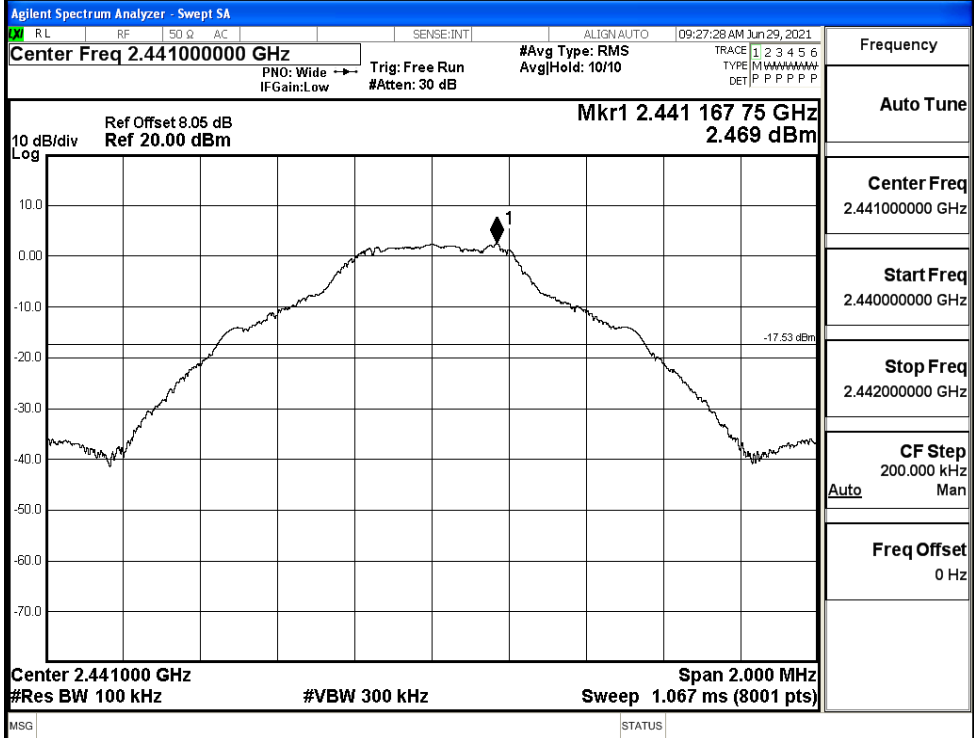




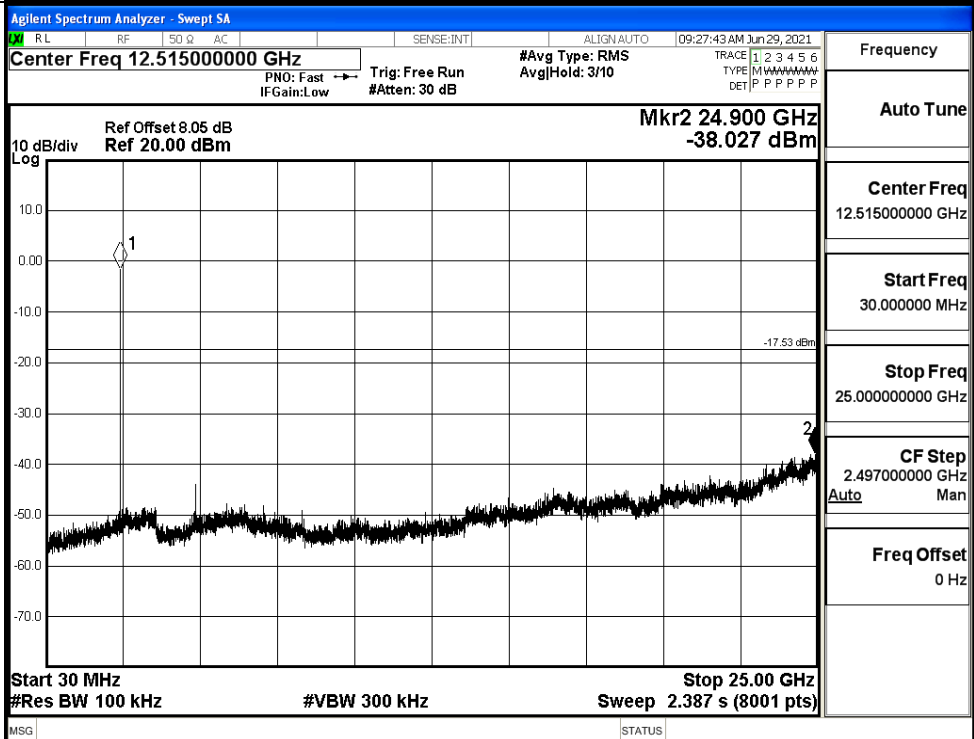


## GFSK\_MCH\_Graphs

Pref



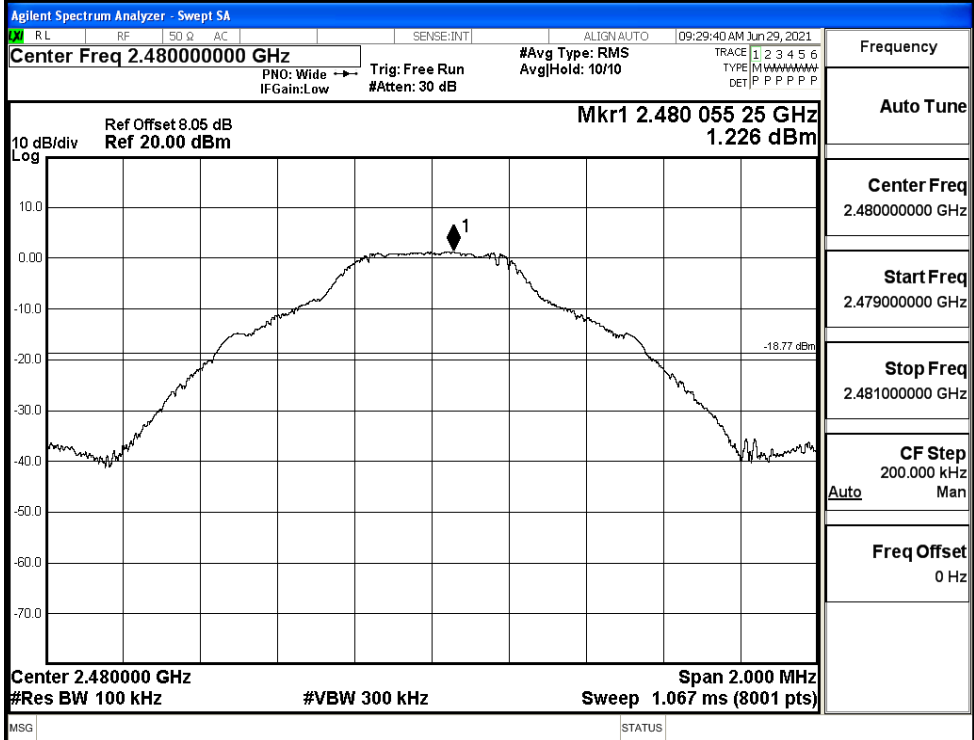
Puw



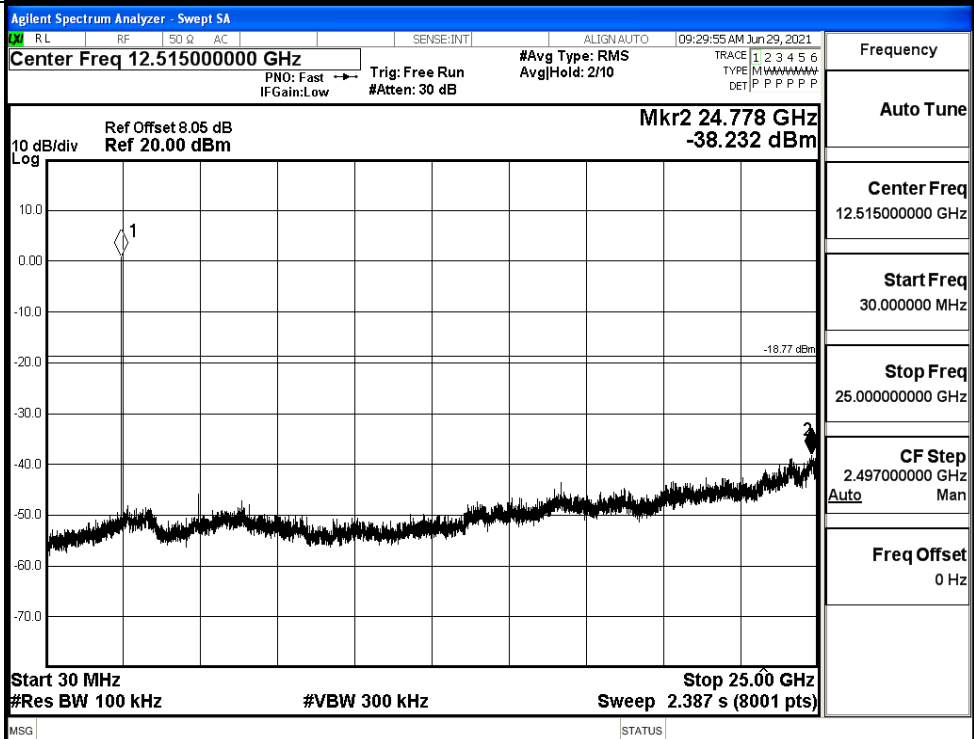


## GFSK HCH Graphs

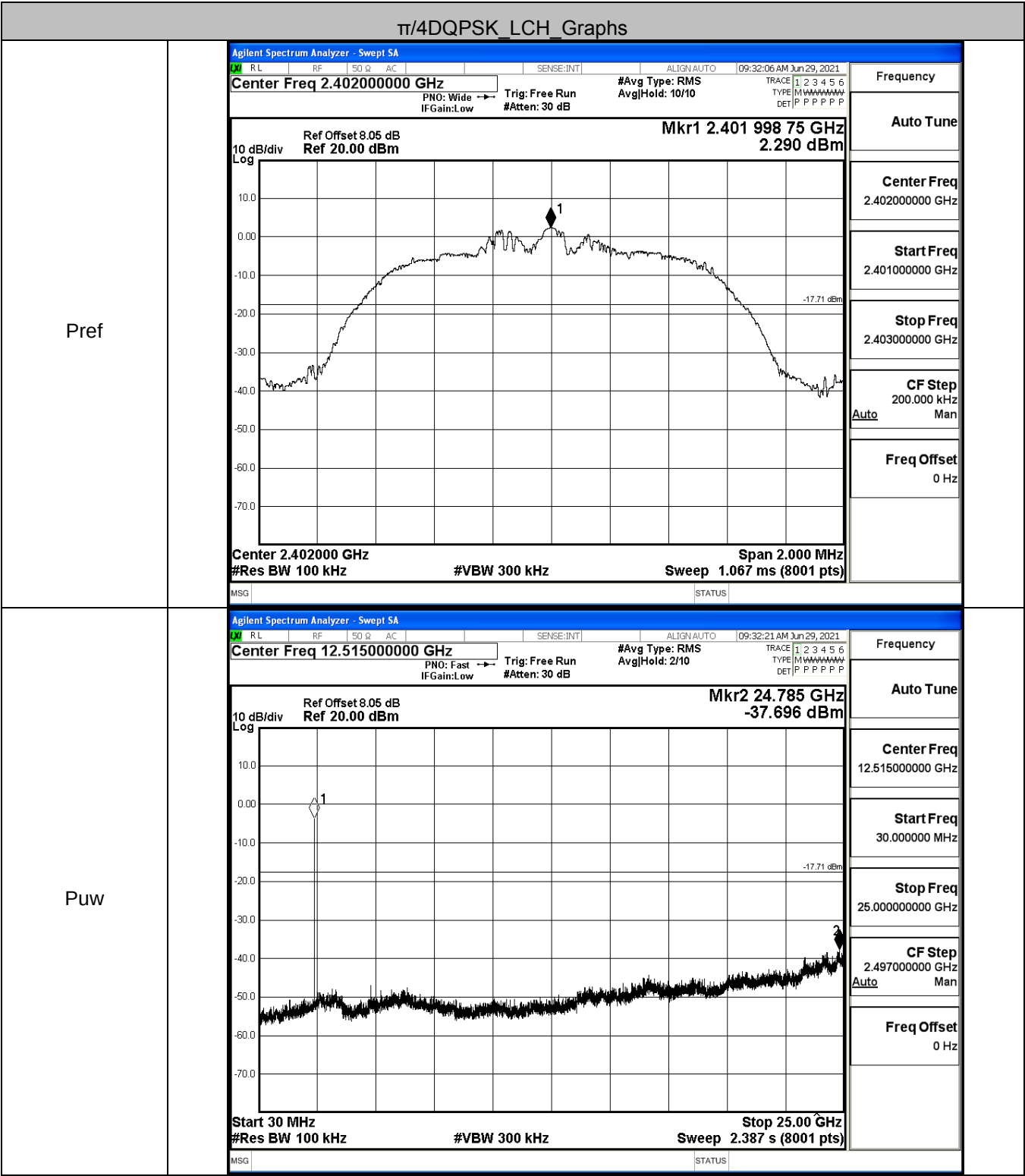
Pref

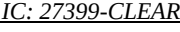


Puw



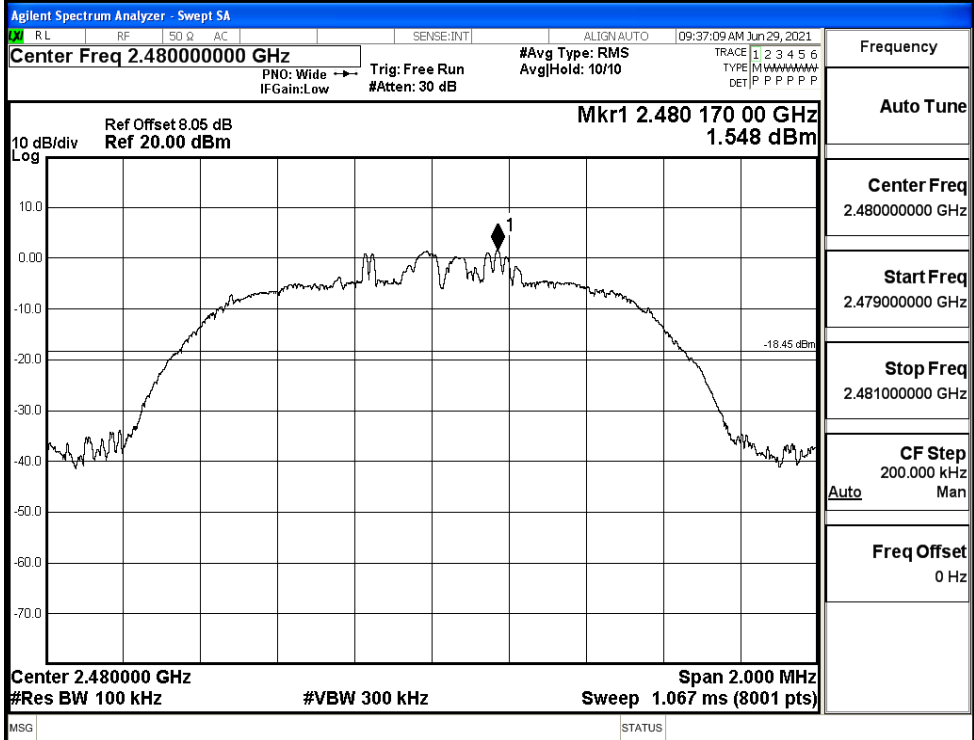




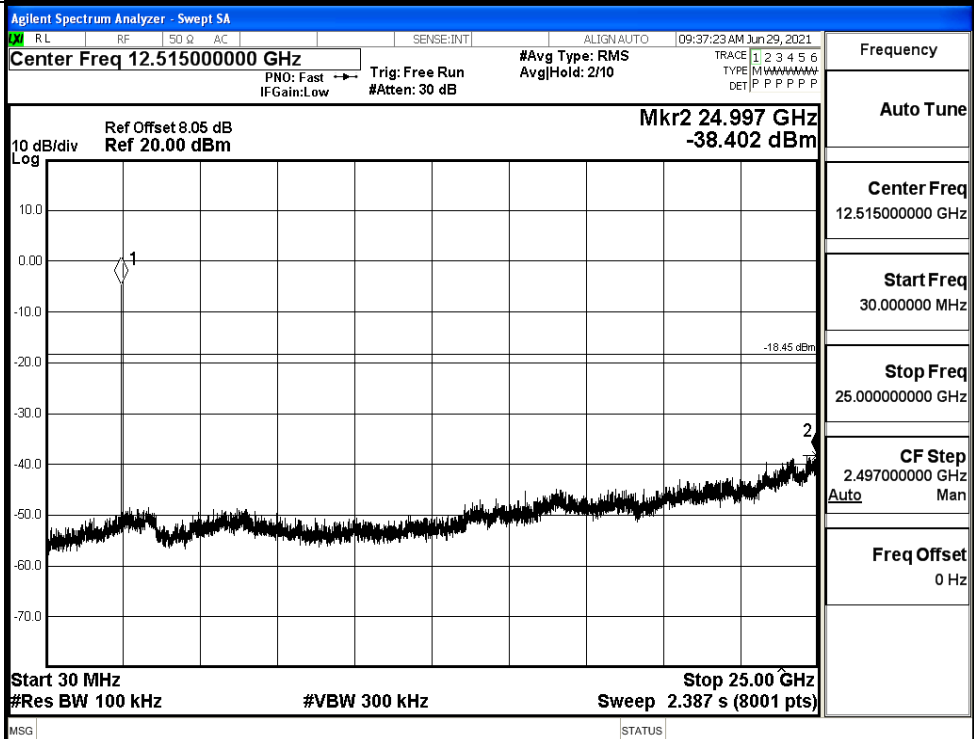


 $\pi/4$ DQPSK\_HCH\_Graphs

Pref



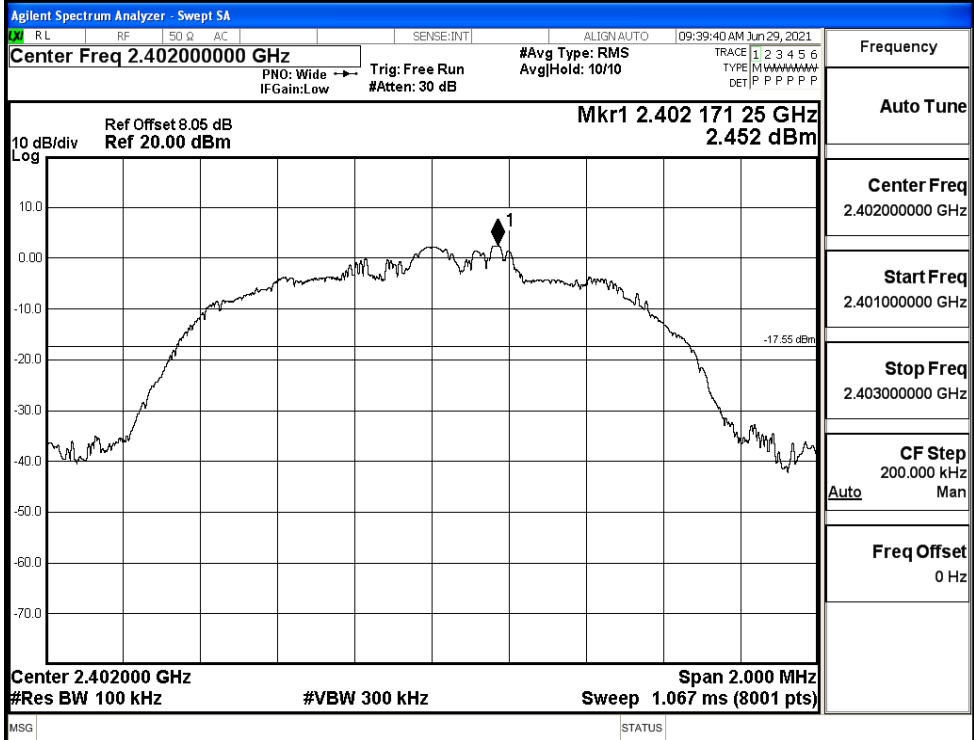
Puw



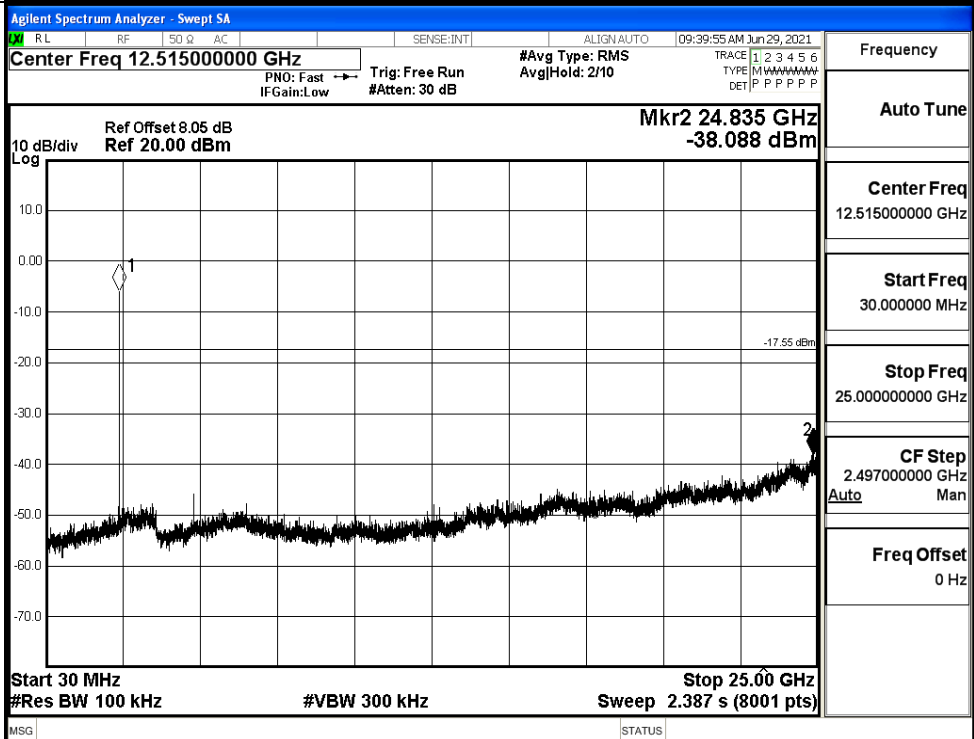


## 8DPSK\_LCH\_Graphs

Pref



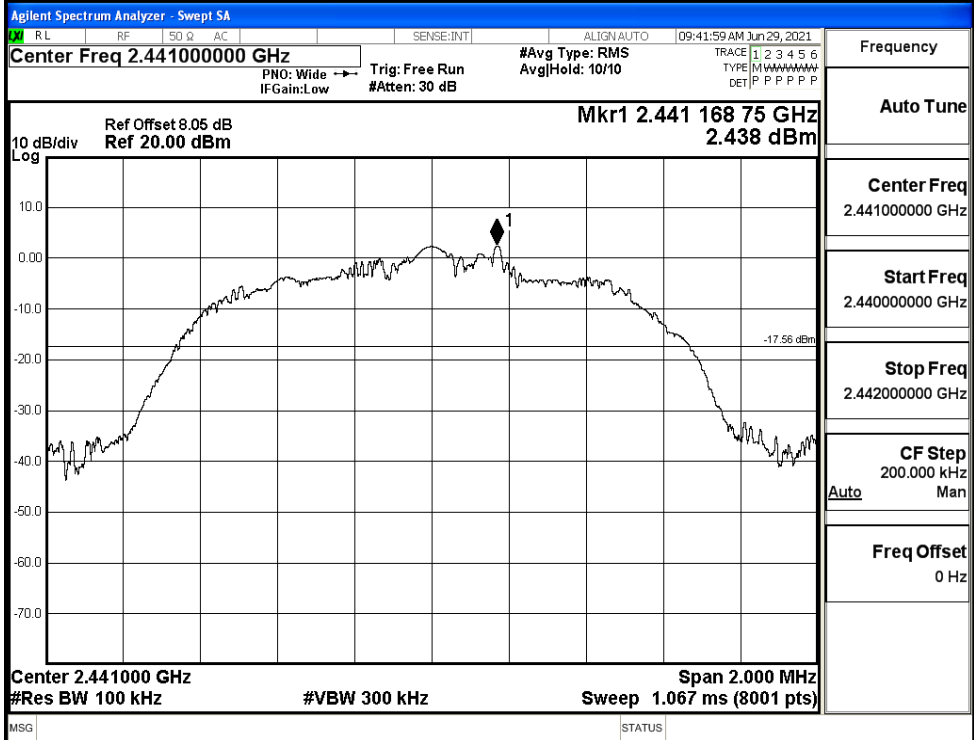
Puw



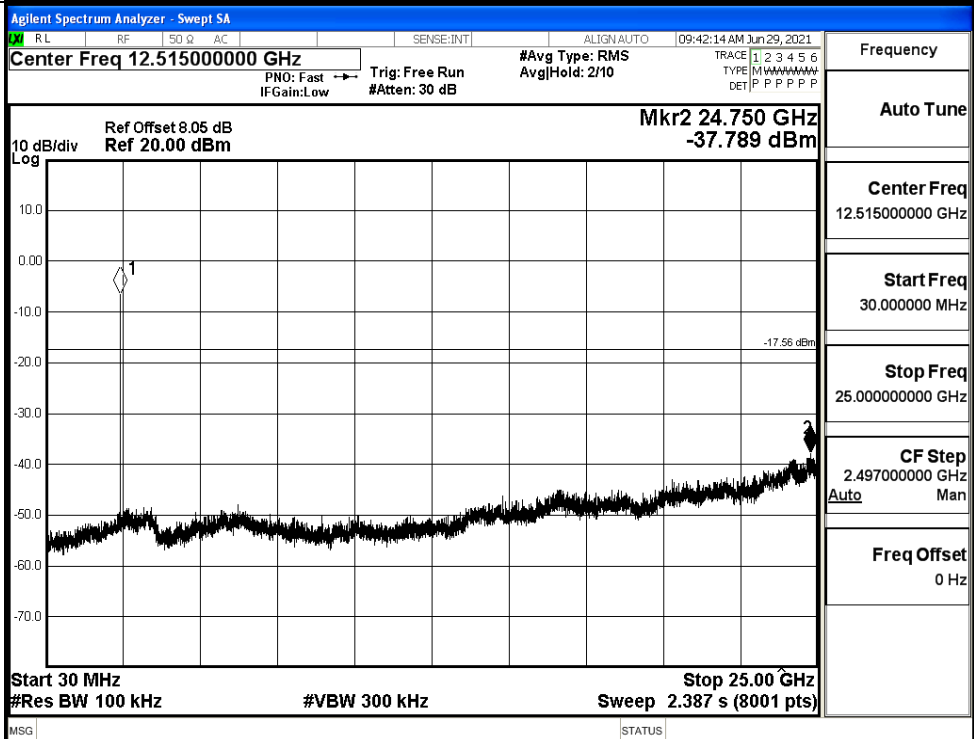


## 8DPSK\_MCH\_Graphs

Pref



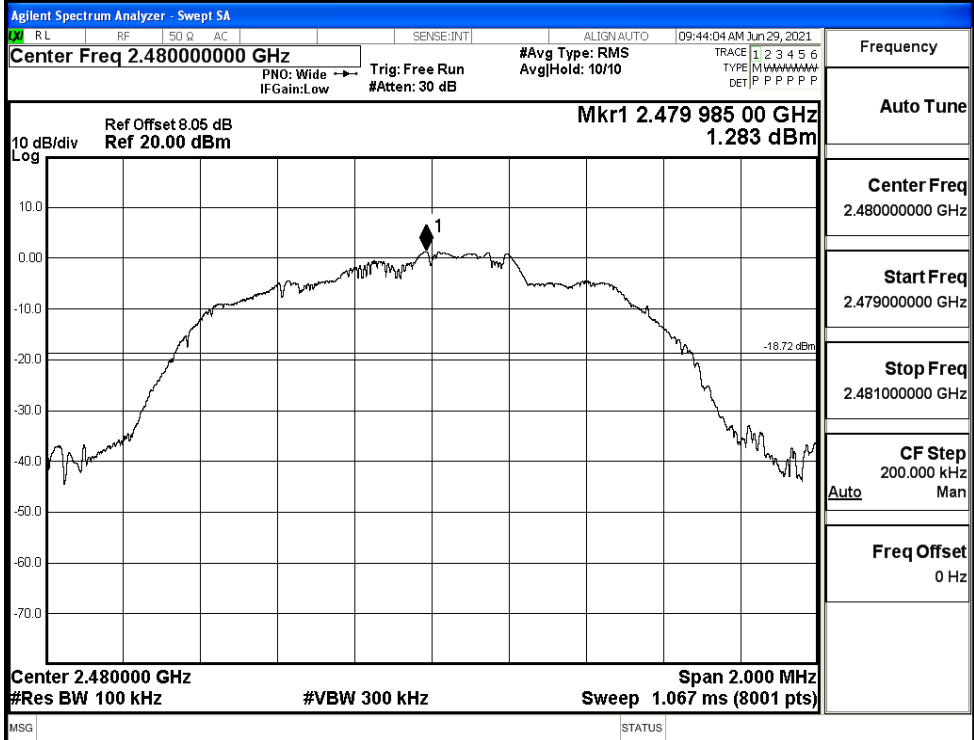
Puw



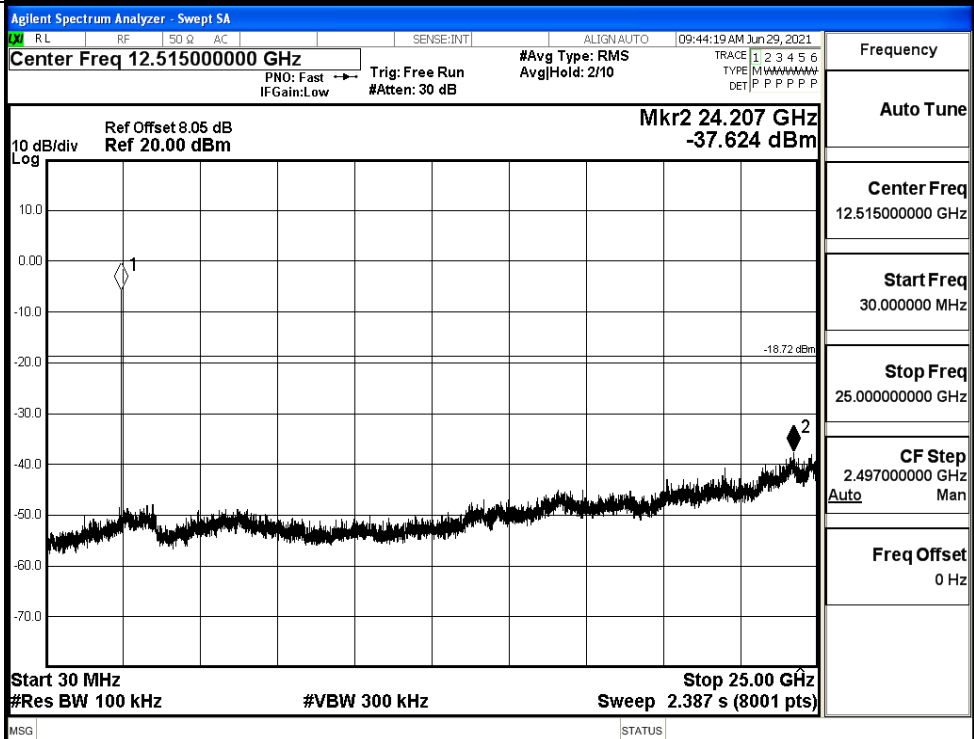


## 8DPSK\_HCH\_Graphs

Pref



Puw



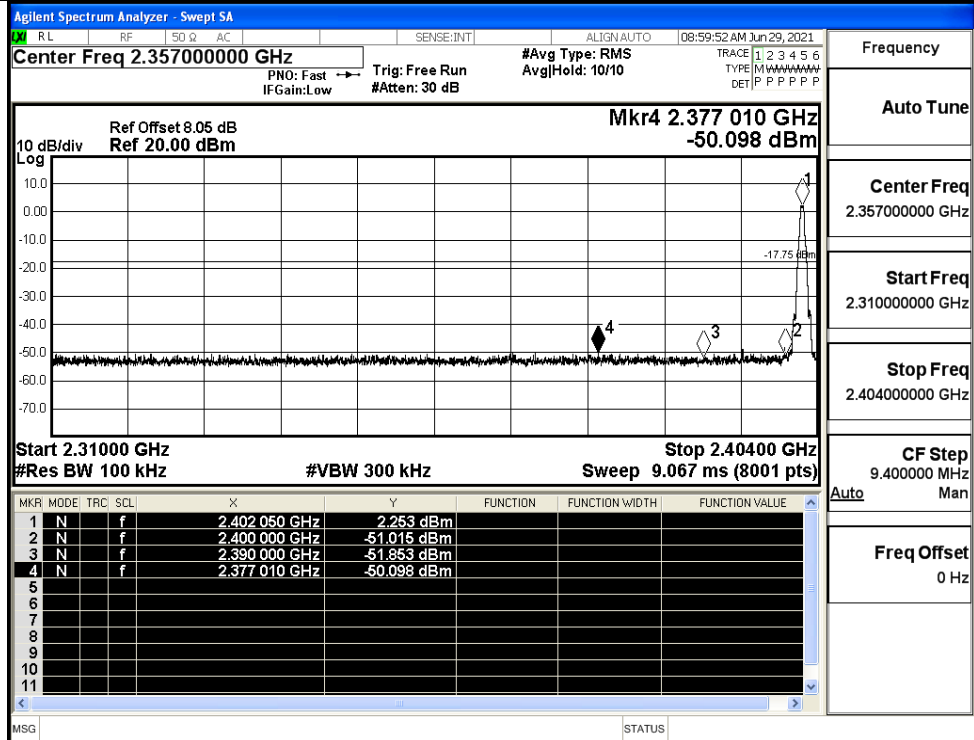
**A.8 Band-edge for RF Conducted Emissions**

| Mode          | Channel | Carrier Frequency [MHz] | Carrier Power [dBm] | Frequency Hopping | Max Spurious Level [dBm] | Limit [dBm] | Verdict |
|---------------|---------|-------------------------|---------------------|-------------------|--------------------------|-------------|---------|
| GFSK          | LCH     | 2402                    | 2.253               | Off               | -50.098                  | -17.75      | PASS    |
|               |         |                         | 2.497               | On                | -49.082                  | -17.5       | PASS    |
|               | HCH     | 2480                    | 1.616               | Off               | -49.302                  | -18.38      | PASS    |
|               |         |                         | 2.328               | On                | -48.425                  | -17.67      | PASS    |
| $\pi/4$ DQPSK | LCH     | 2402                    | 1.840               | Off               | -49.259                  | -18.16      | PASS    |
|               |         |                         | 2.616               | On                | -49.275                  | -17.38      | PASS    |
|               | HCH     | 2480                    | 1.666               | Off               | -48.547                  | -18.33      | PASS    |
|               |         |                         | 2.319               | On                | -48.835                  | -17.68      | PASS    |
| 8DPSK         | LCH     | 2402                    | 2.379               | Off               | -49.204                  | -17.62      | PASS    |
|               |         |                         | 2.443               | On                | -49.041                  | -17.56      | PASS    |
|               | HCH     | 2480                    | 1.565               | Off               | -49.545                  | -18.44      | PASS    |
|               |         |                         | 2.364               | On                | -47.760                  | -17.64      | PASS    |

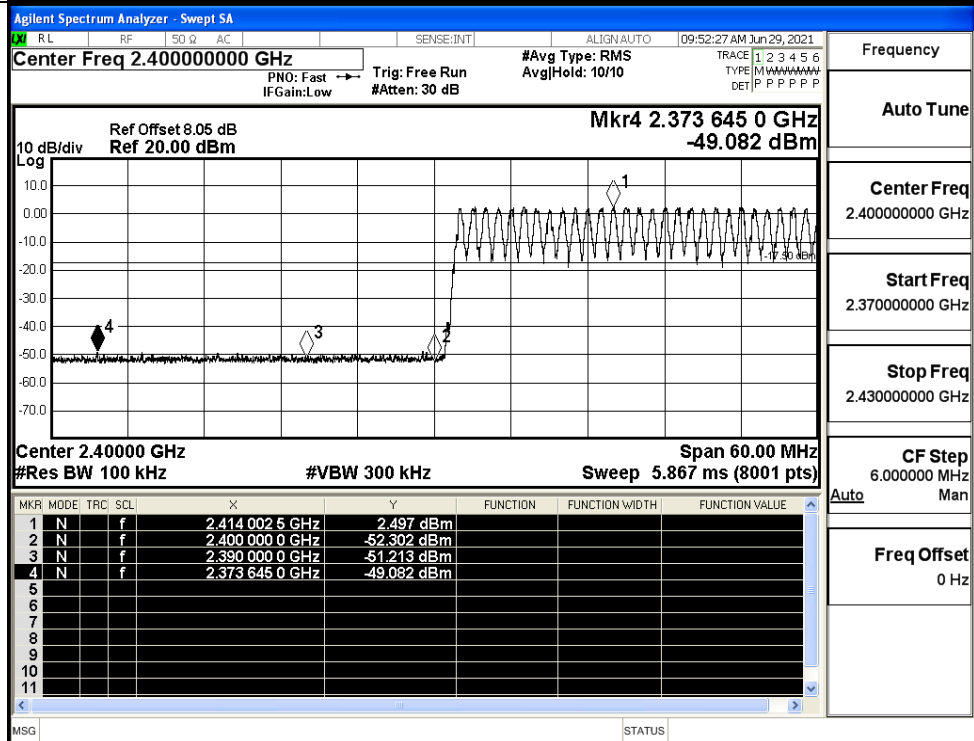


## Test Graphs

GFSK/LCH/No Hop



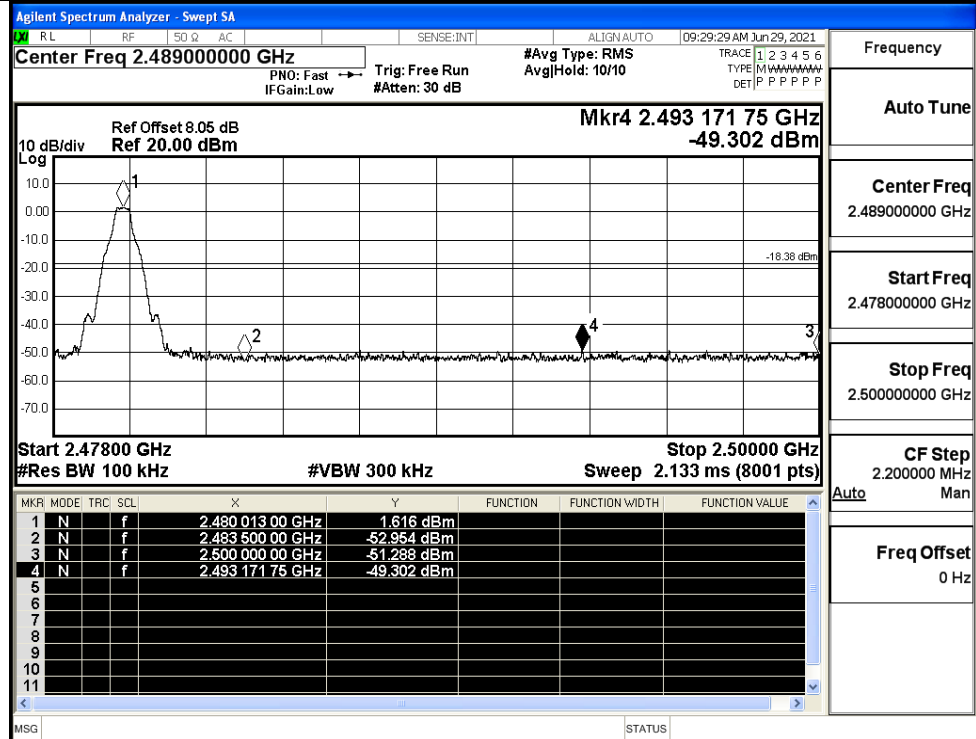
GFSK/LCH/Hop



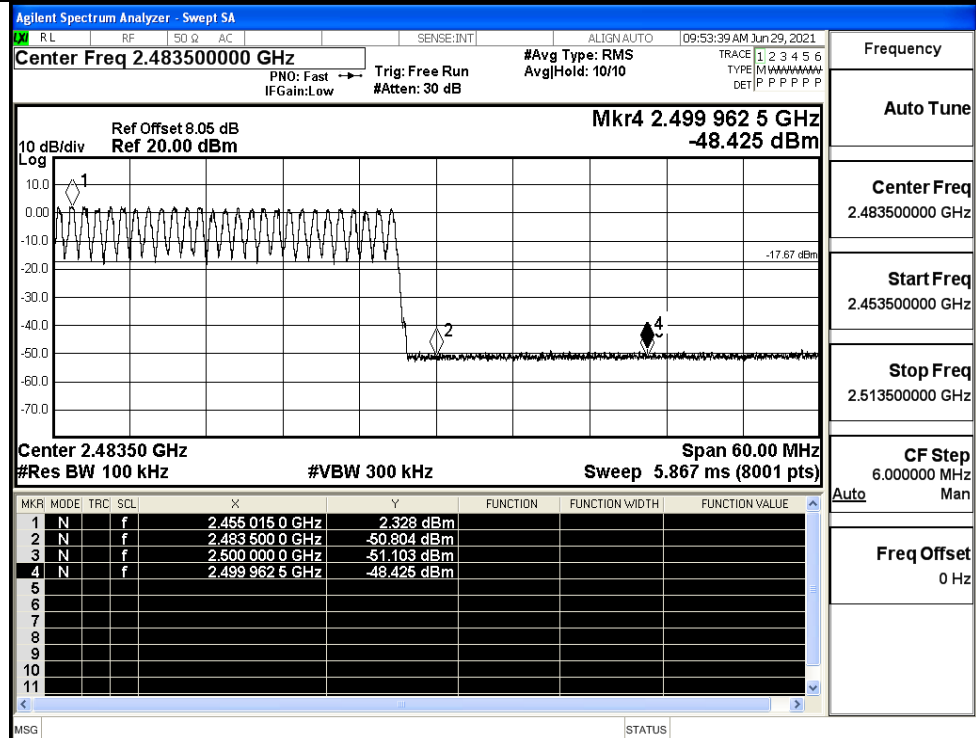




GFSK/HCH/No Hop

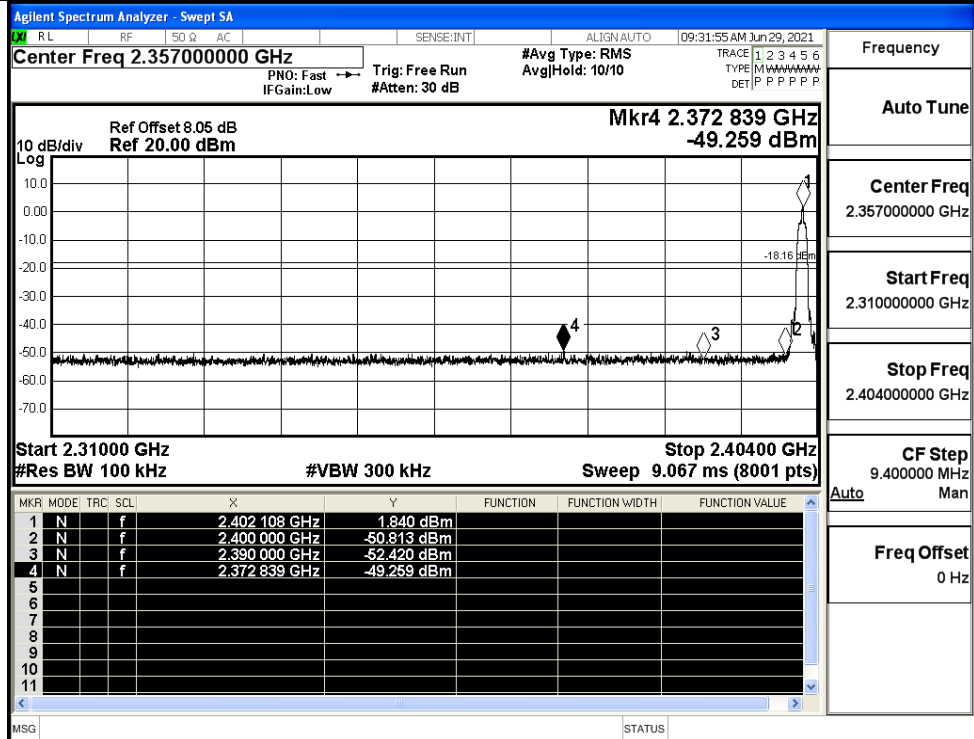


GFSK/HCH/Hop

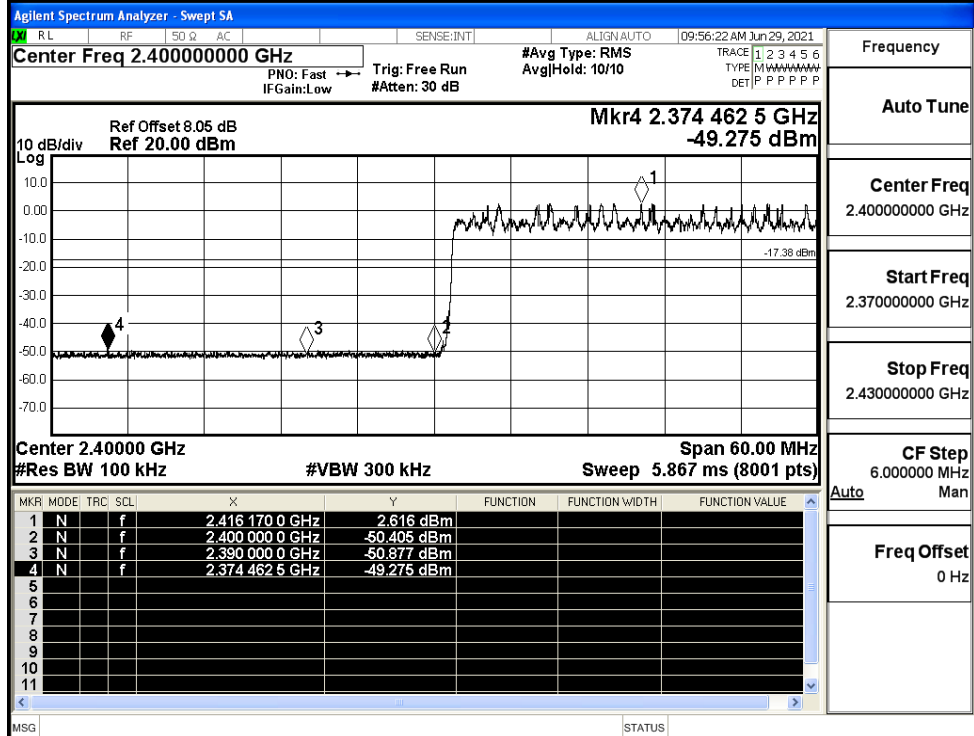




$\pi/4$ DQPSK/LCH/No  
Hop

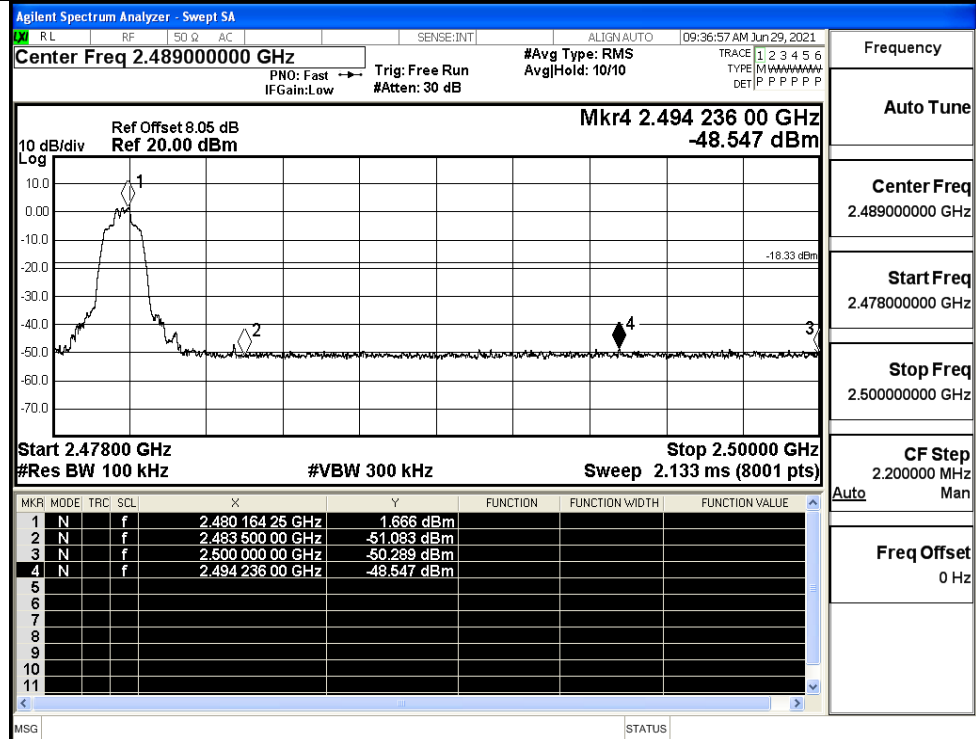


$\pi/4$ DQPSK/LCH/Hop

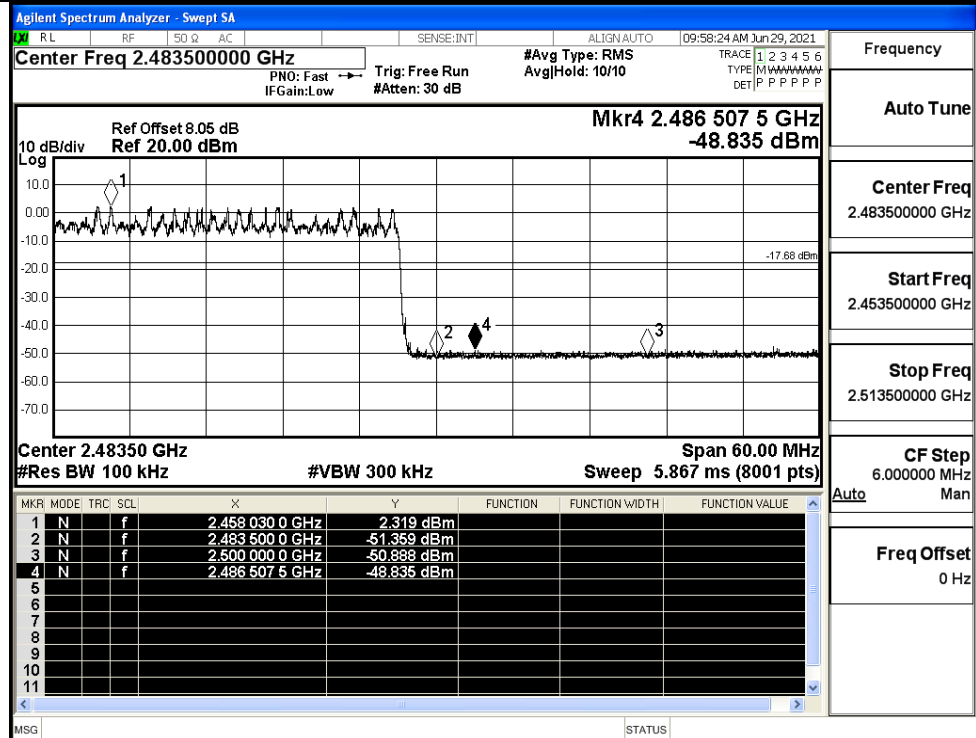




$\pi/4$ DQPSK/HCH/No  
Hop

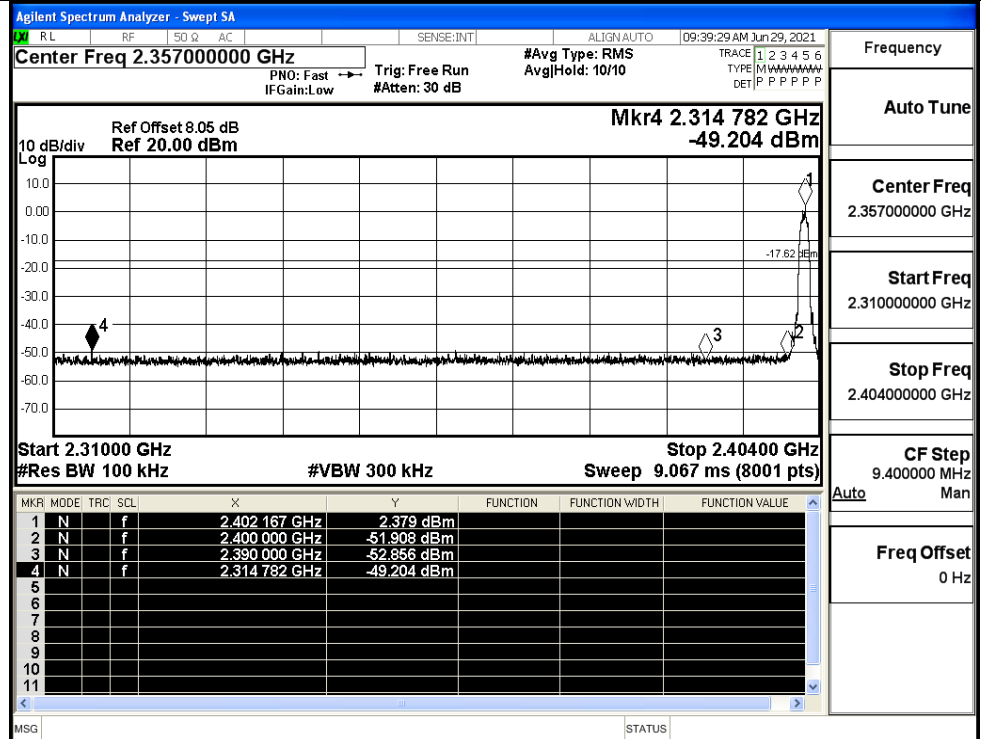


$\pi/4$ DQPSK/HCH/Hop

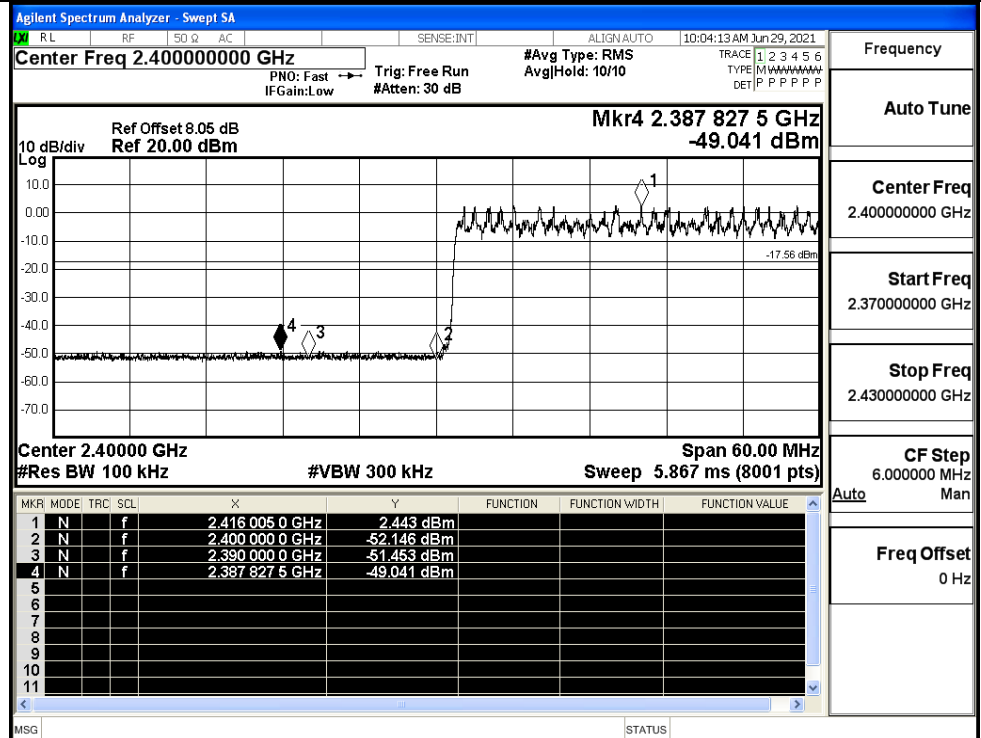




8DPSK/LCH/No Hop

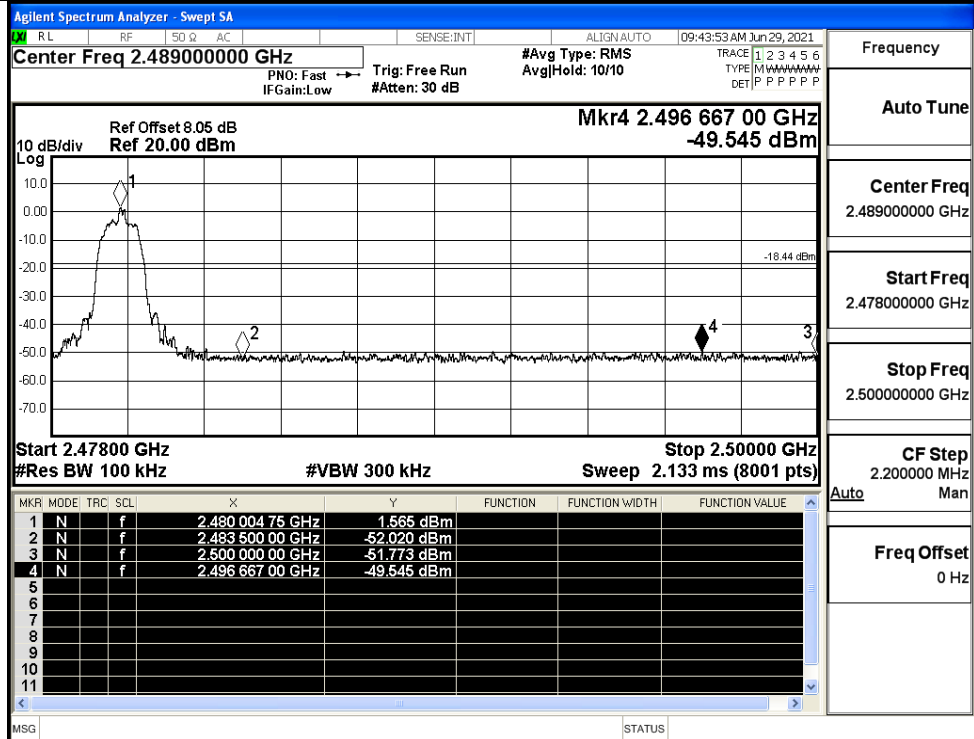


8DPSK/LCH/Hop

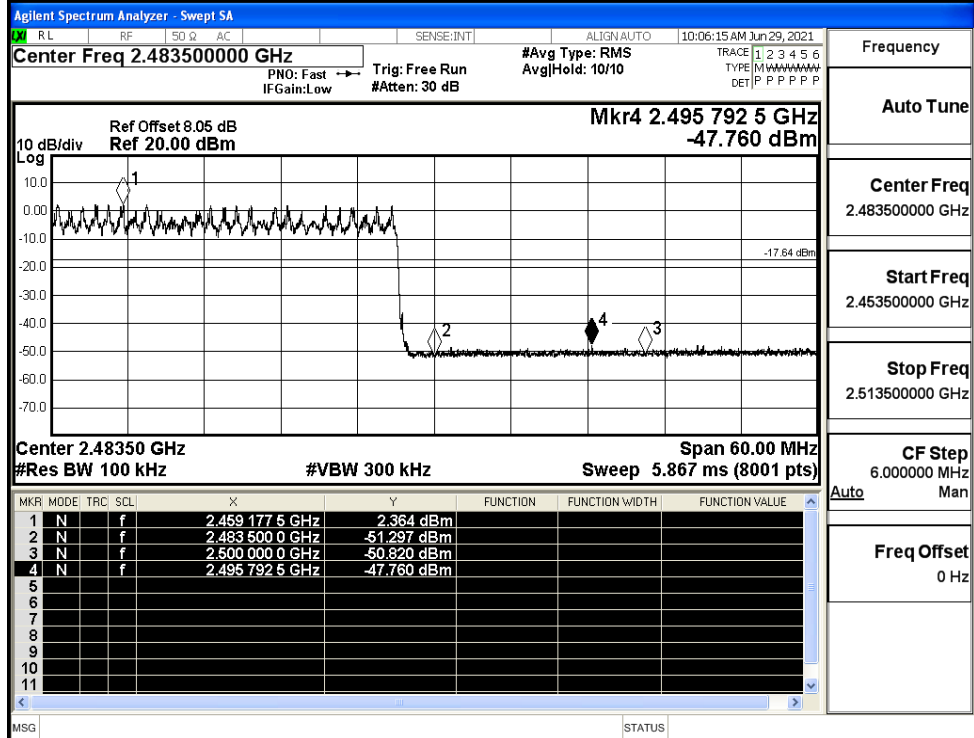




8DPSK/HCH/No Hop



8DPSK/HCH/Hop



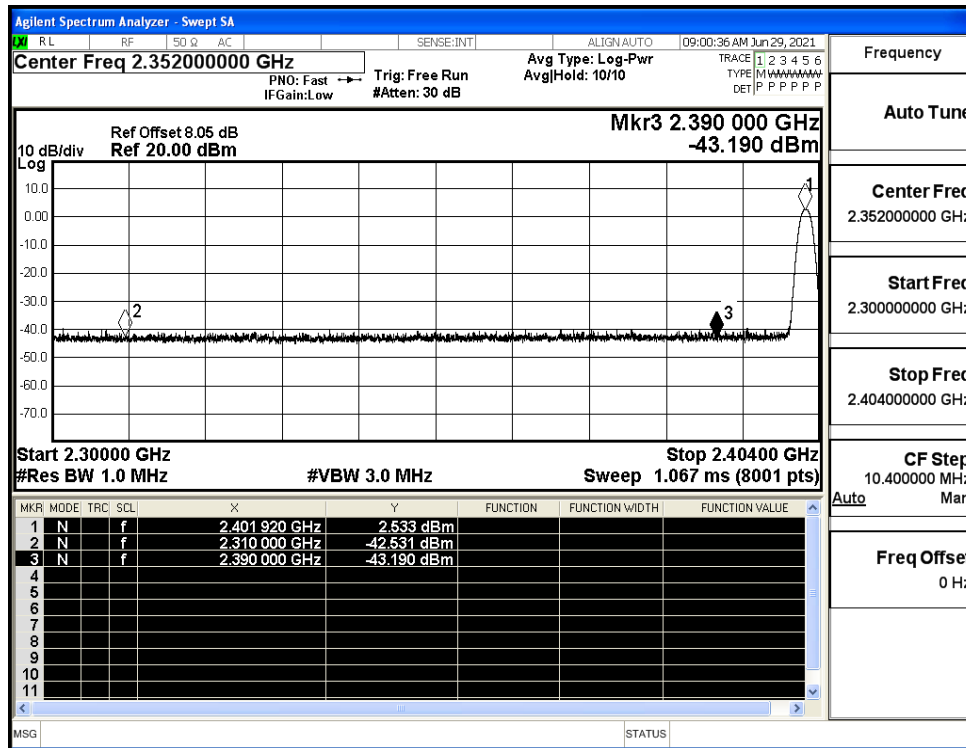


## A.9 Restrict-band band-edge measurements

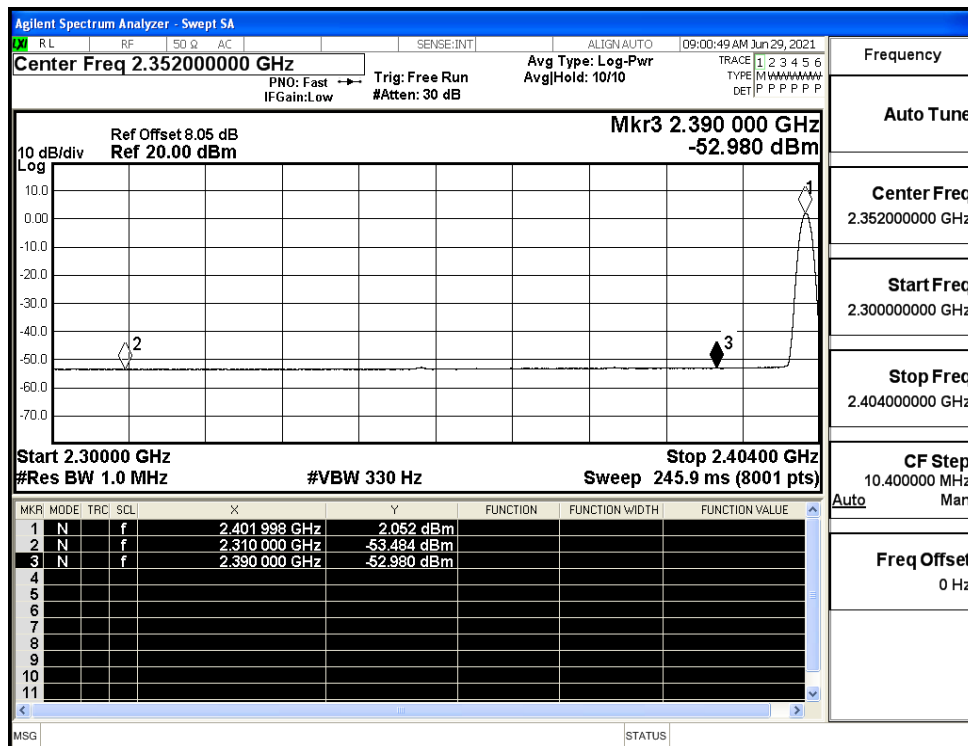
| Test Mode     | Hopping | Freq.  | Power [dBm] | Gain | Ground Factor | E [dBuV/m] | Detector | Limit [dBuV/m] | Verdict |
|---------------|---------|--------|-------------|------|---------------|------------|----------|----------------|---------|
| GFSK          | Off     | 2310.0 | -42.53      | 2.0  | 0             | 54.73      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.48      | 2.0  | 0             | 43.77      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.19      | 2.0  | 0             | 54.07      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.98      | 2.0  | 0             | 44.28      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -41.18      | 2.0  | 0             | 56.08      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.17      | 2.0  | 0             | 45.09      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -41.63      | 2.0  | 0             | 55.63      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.23      | 2.0  | 0             | 45.02      | AV       | 54             | PASS    |
| $\pi/4$ DQPSK | Off     | 2310.0 | -43.33      | 2.0  | 0             | 53.93      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.37      | 2.0  | 0             | 43.89      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -43.23      | 2.0  | 0             | 54.03      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.86      | 2.0  | 0             | 44.4       | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.81      | 2.0  | 0             | 54.45      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.34      | 2.0  | 0             | 44.92      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -42.30      | 2.0  | 0             | 54.96      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.24      | 2.0  | 0             | 45.02      | AV       | 54             | PASS    |
| 8DPSK         | Off     | 2310.0 | -43.04      | 2.0  | 0             | 54.22      | PEAK     | 74             | PASS    |
|               | Off     | 2310.0 | -53.48      | 2.0  | 0             | 43.78      | AV       | 54             | PASS    |
|               | Off     | 2390.0 | -42.04      | 2.0  | 0             | 55.22      | PEAK     | 74             | PASS    |
|               | Off     | 2390.0 | -52.84      | 2.0  | 0             | 44.42      | AV       | 54             | PASS    |
|               | Off     | 2483.5 | -42.42      | 2.0  | 0             | 54.83      | PEAK     | 74             | PASS    |
|               | Off     | 2483.5 | -52.46      | 2.0  | 0             | 44.80      | AV       | 54             | PASS    |
|               | Off     | 2500.0 | -42.06      | 2.0  | 0             | 55.20      | PEAK     | 74             | PASS    |
|               | Off     | 2500.0 | -52.35      | 2.0  | 0             | 44.91      | AV       | 54             | PASS    |



## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)

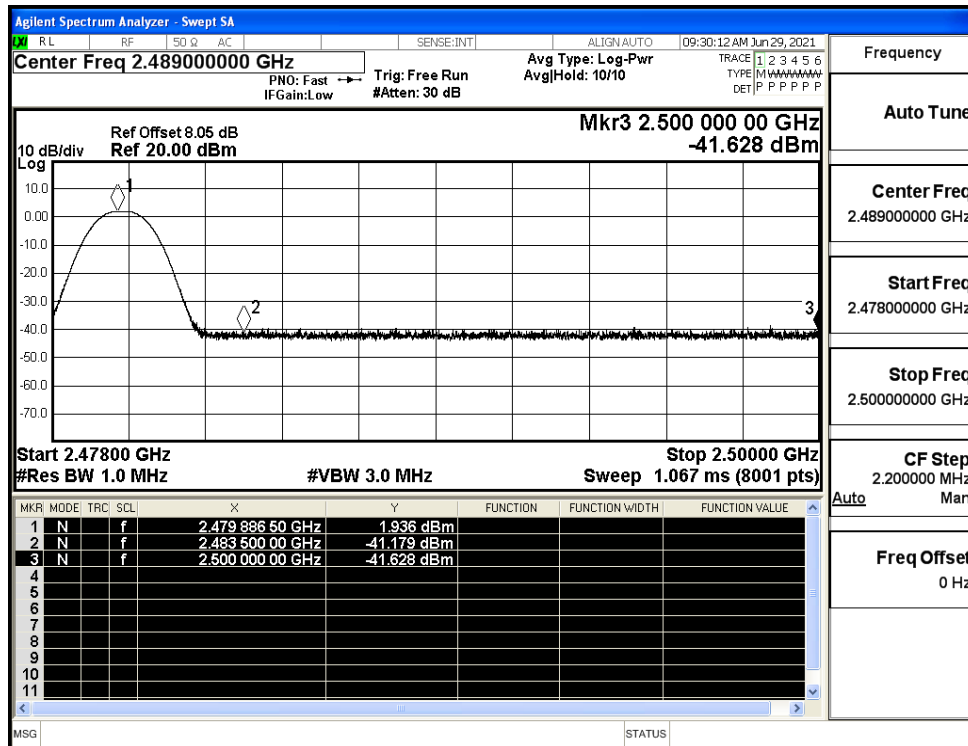


## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)

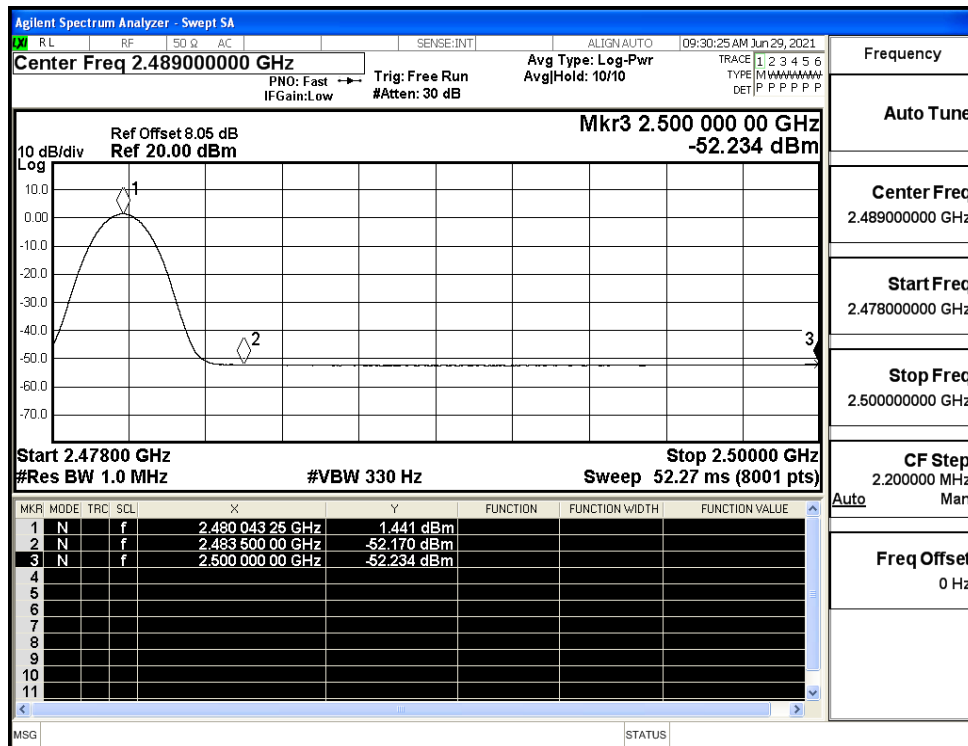




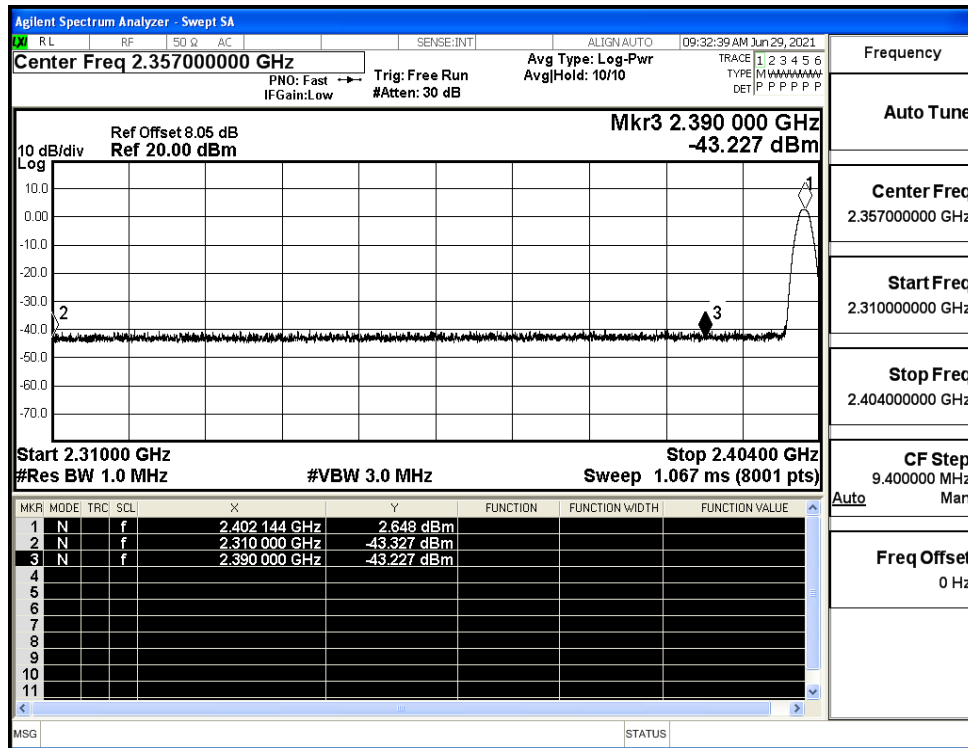
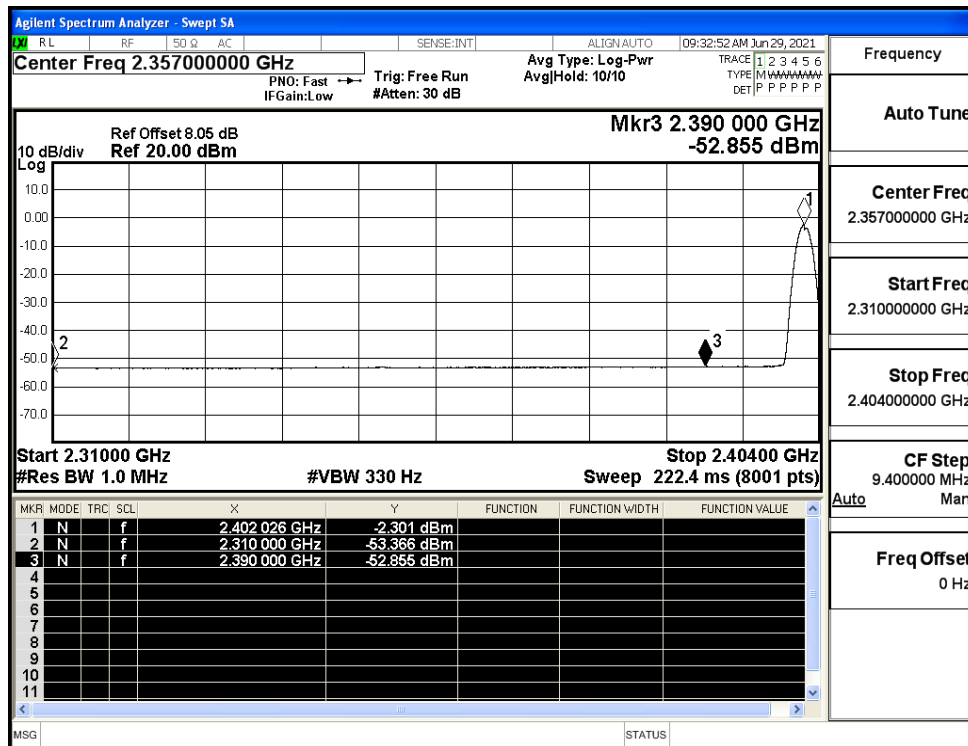
## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



## Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)

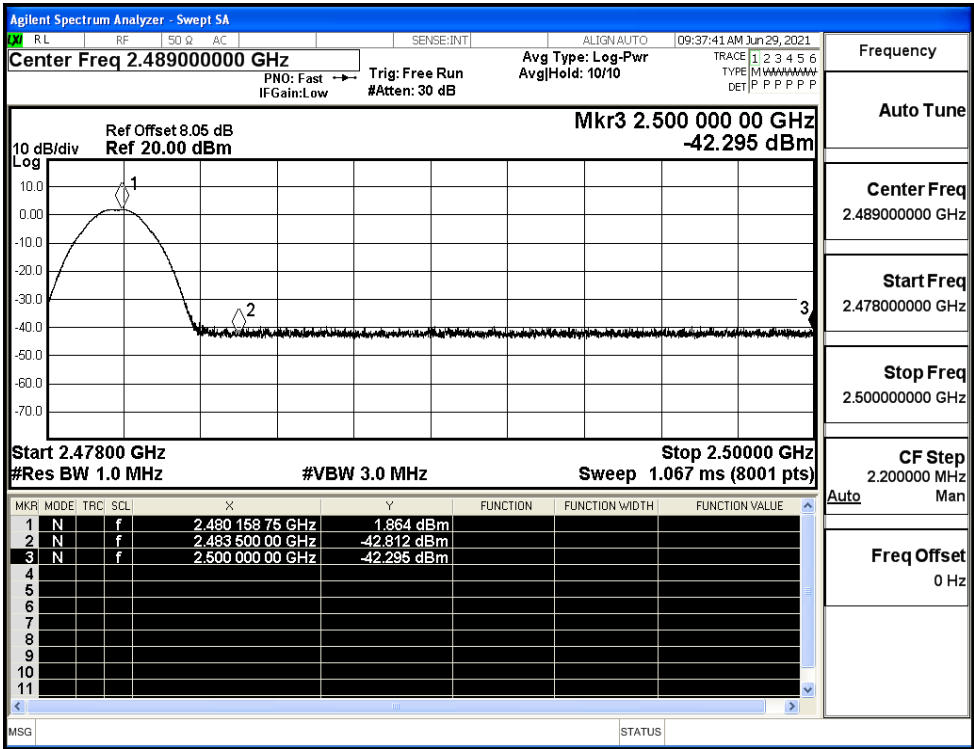




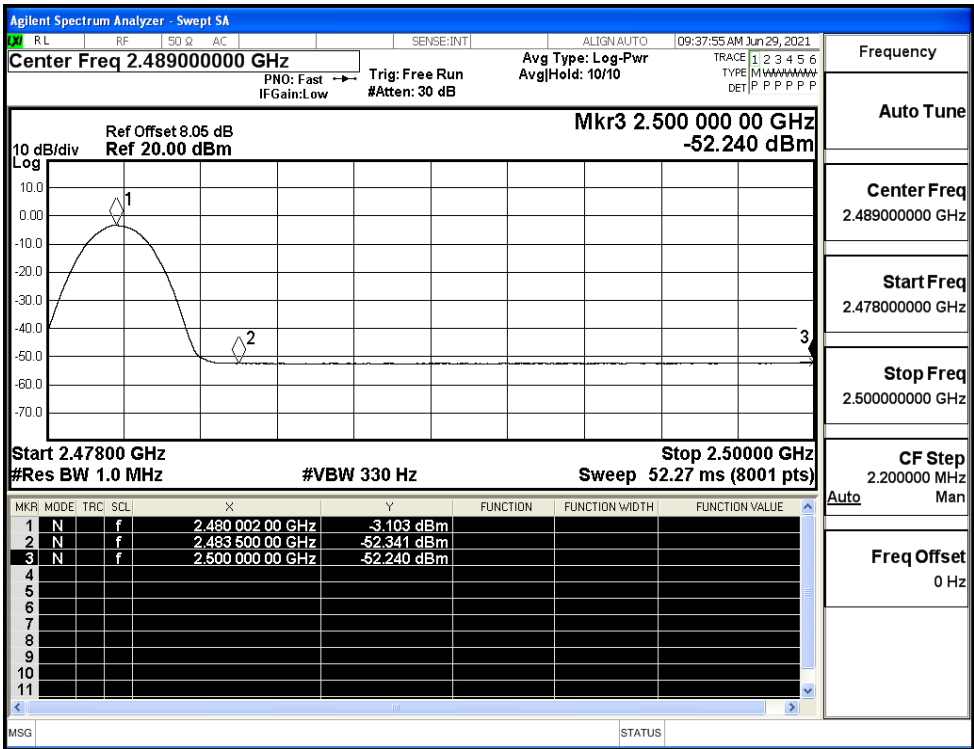
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)



Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)

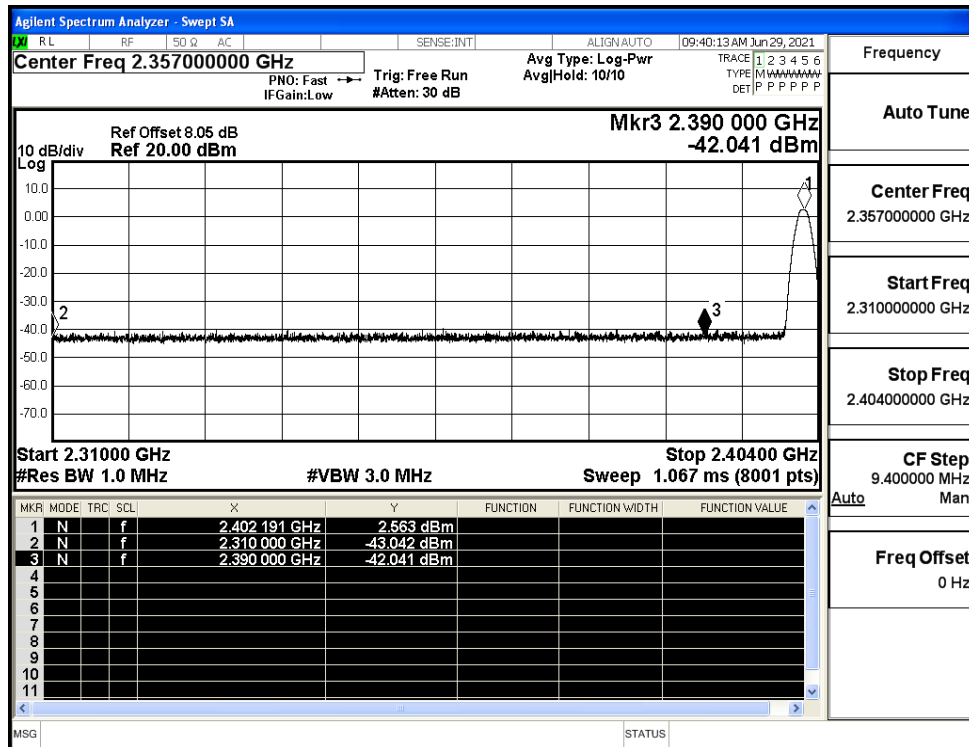


Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)

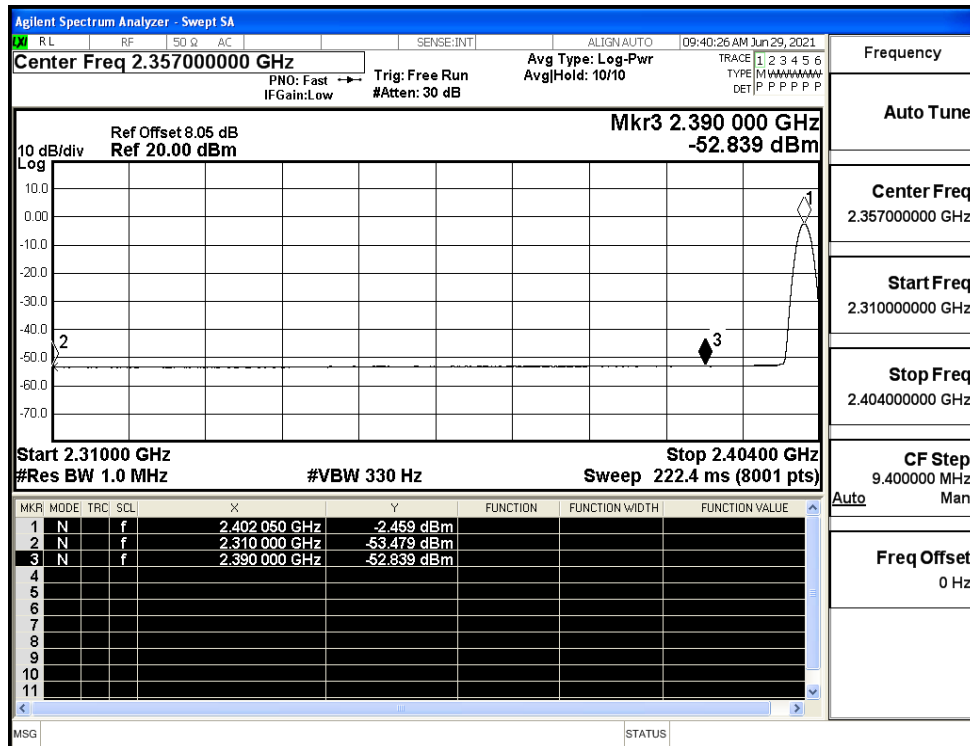




## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)

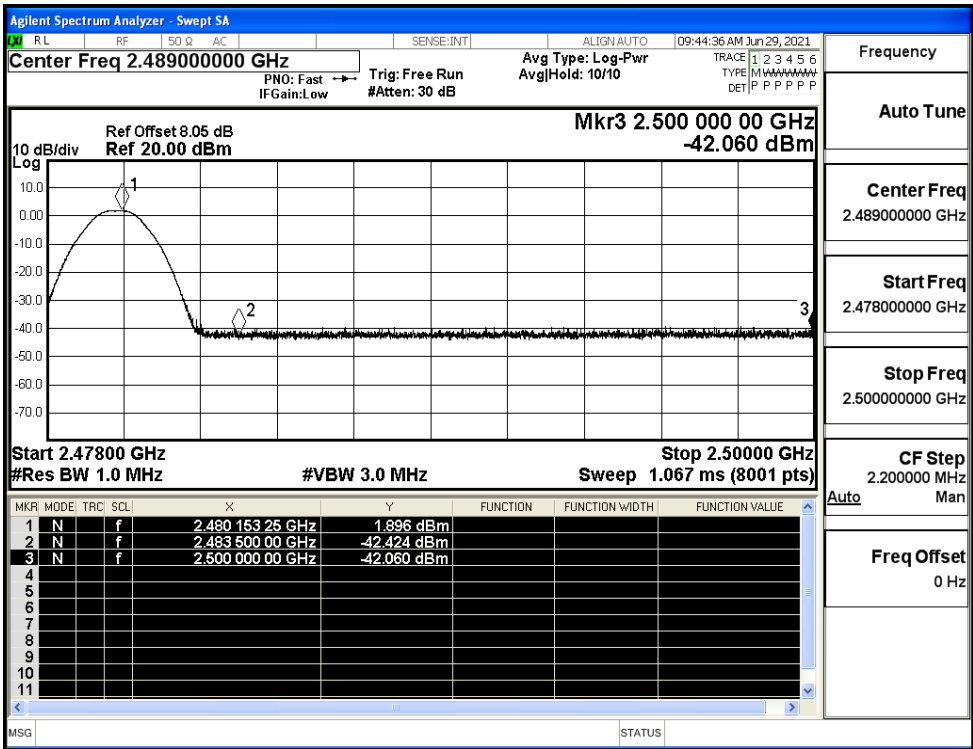


## Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)





Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (High Channel)

