

Appendix A

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

Product Name: Urbanista Miami

Trade Mark: Urbanista

Test Model: Urbanista Miami

Environmental Conditions

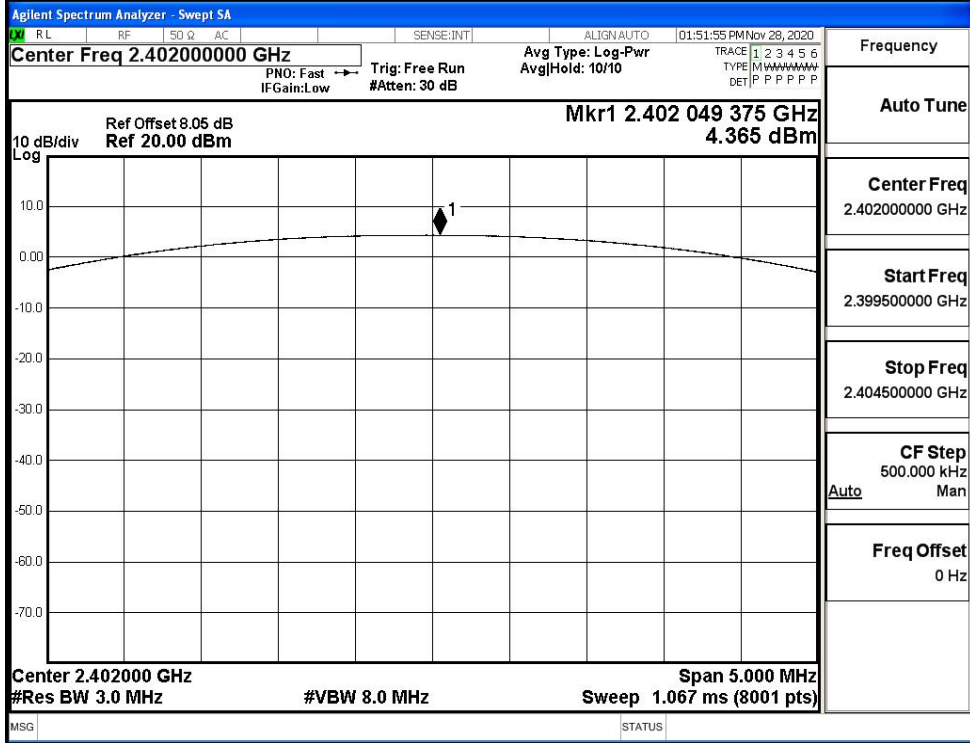
Temperature:	22.3° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

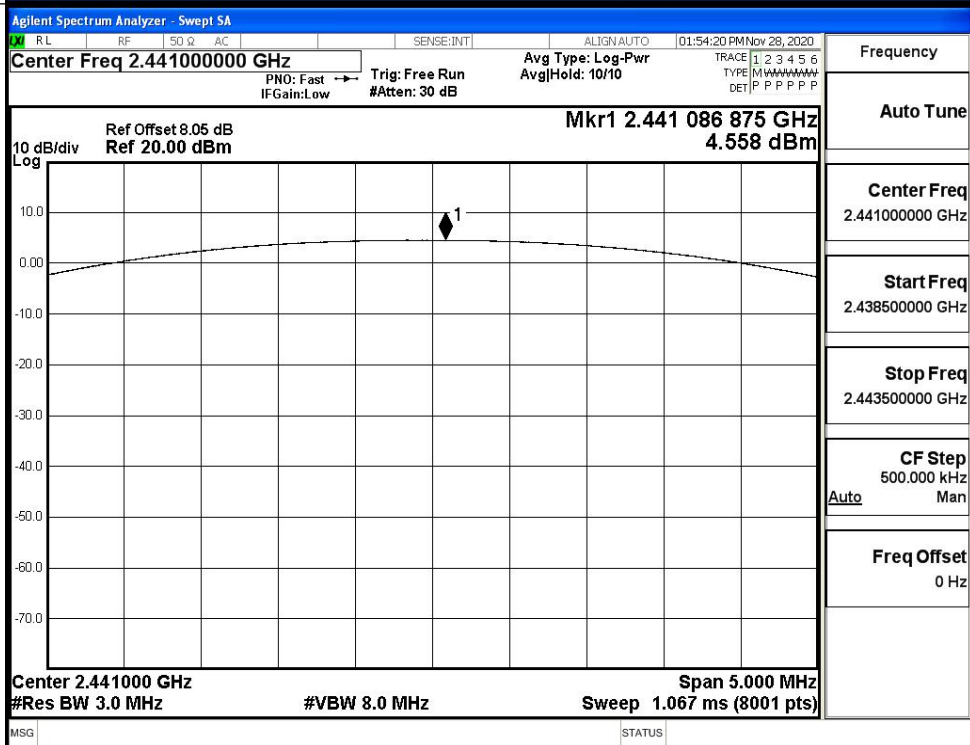
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.365	21	PASS
	MCH	4.558	21	PASS
	HCH	4.053	21	PASS
$\pi/4$ DQPSK	LCH	4.295	21	PASS
	MCH	4.519	21	PASS
	HCH	4.031	21	PASS
8DPSK	LCH	4.281	21	PASS
	MCH	4.519	21	PASS
	HCH	4.126	21	PASS

Test Graphs

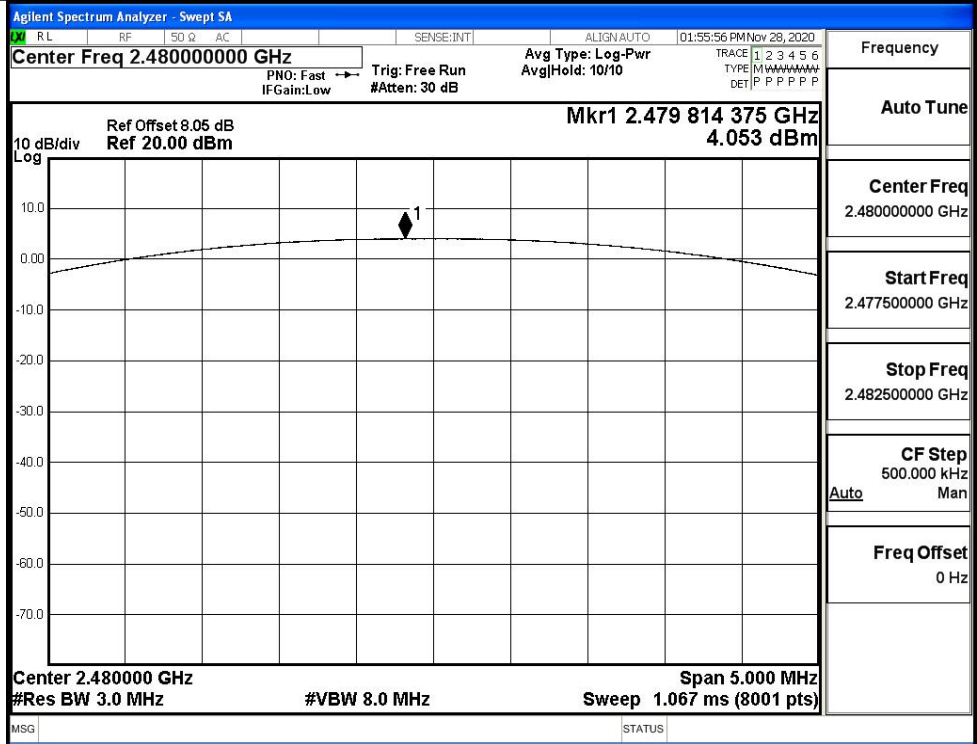
GFSK/LCH



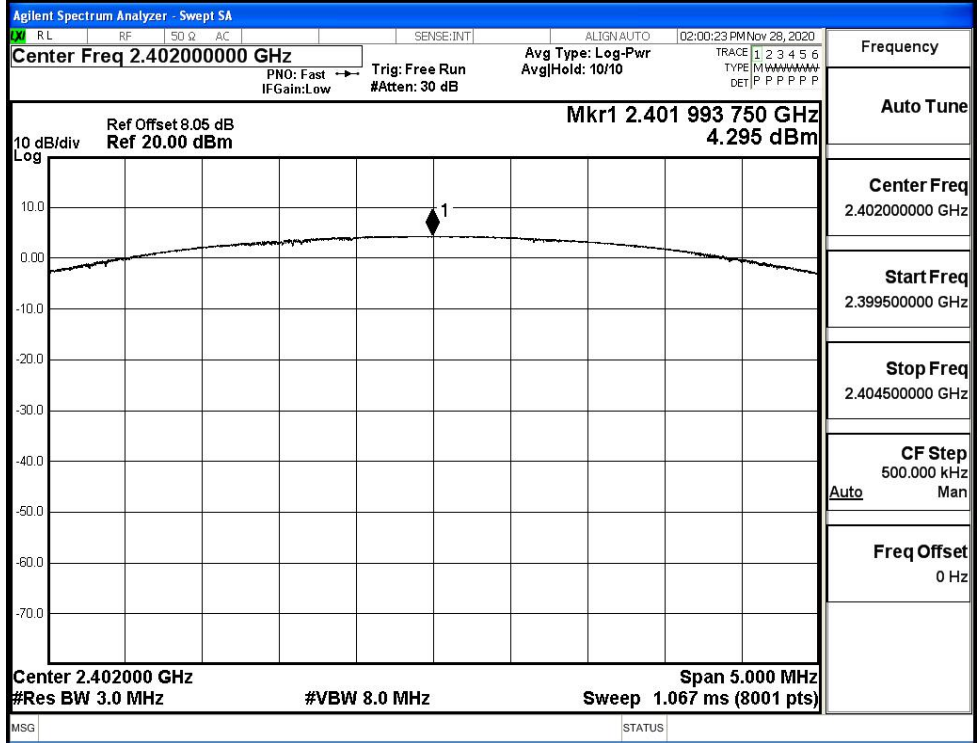
GFSK/MCH

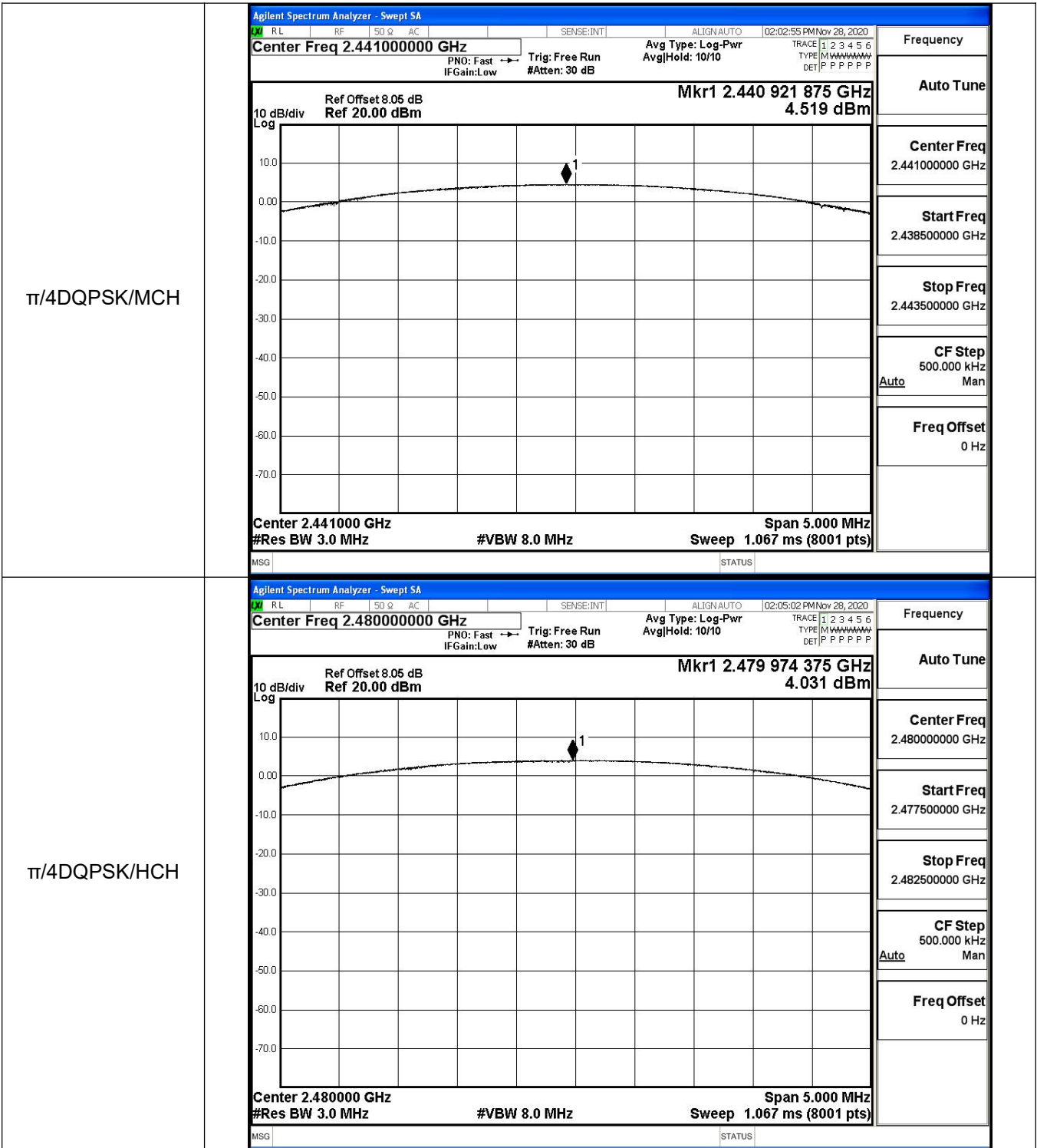


GFSK/HCH

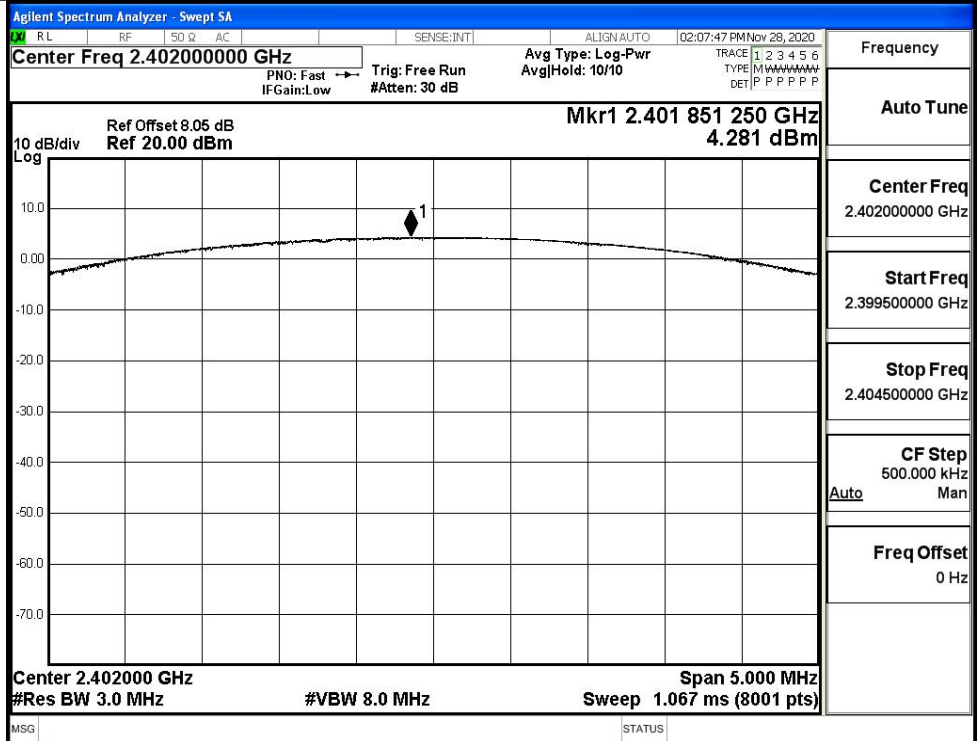


$\pi/4$ DQPSK/LCH

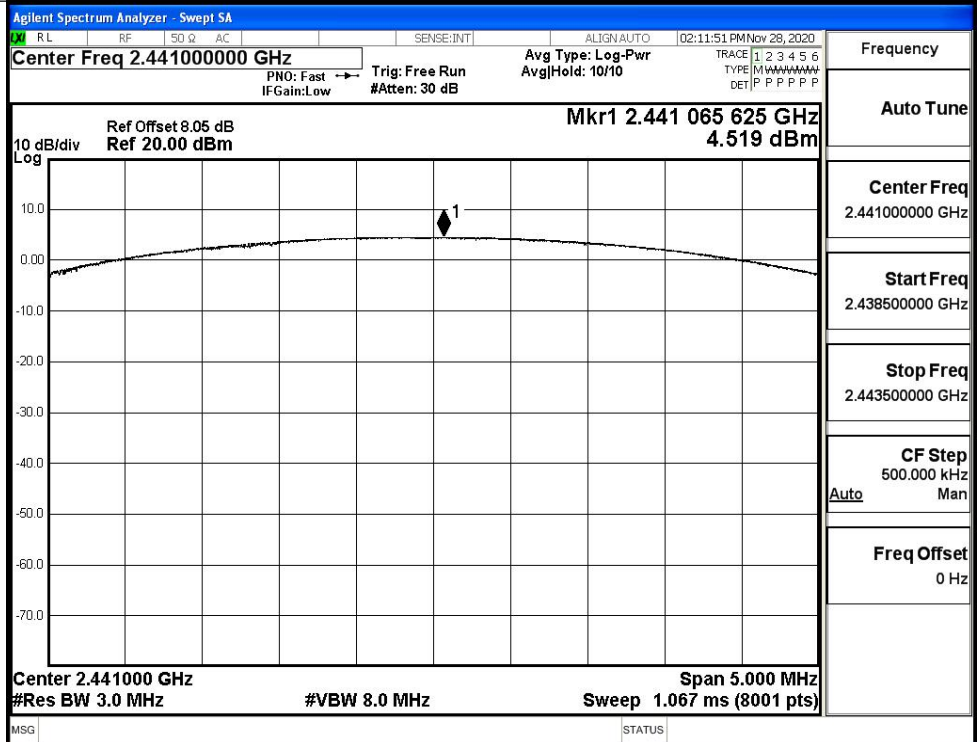




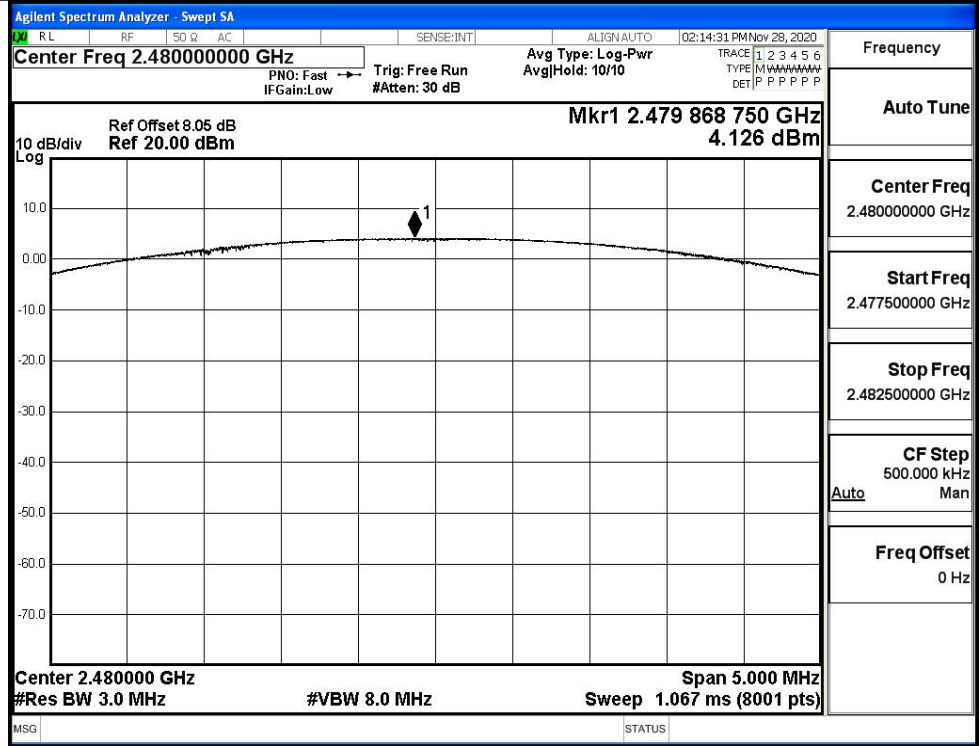
8DPSK/LCH



8DPSK/MCH

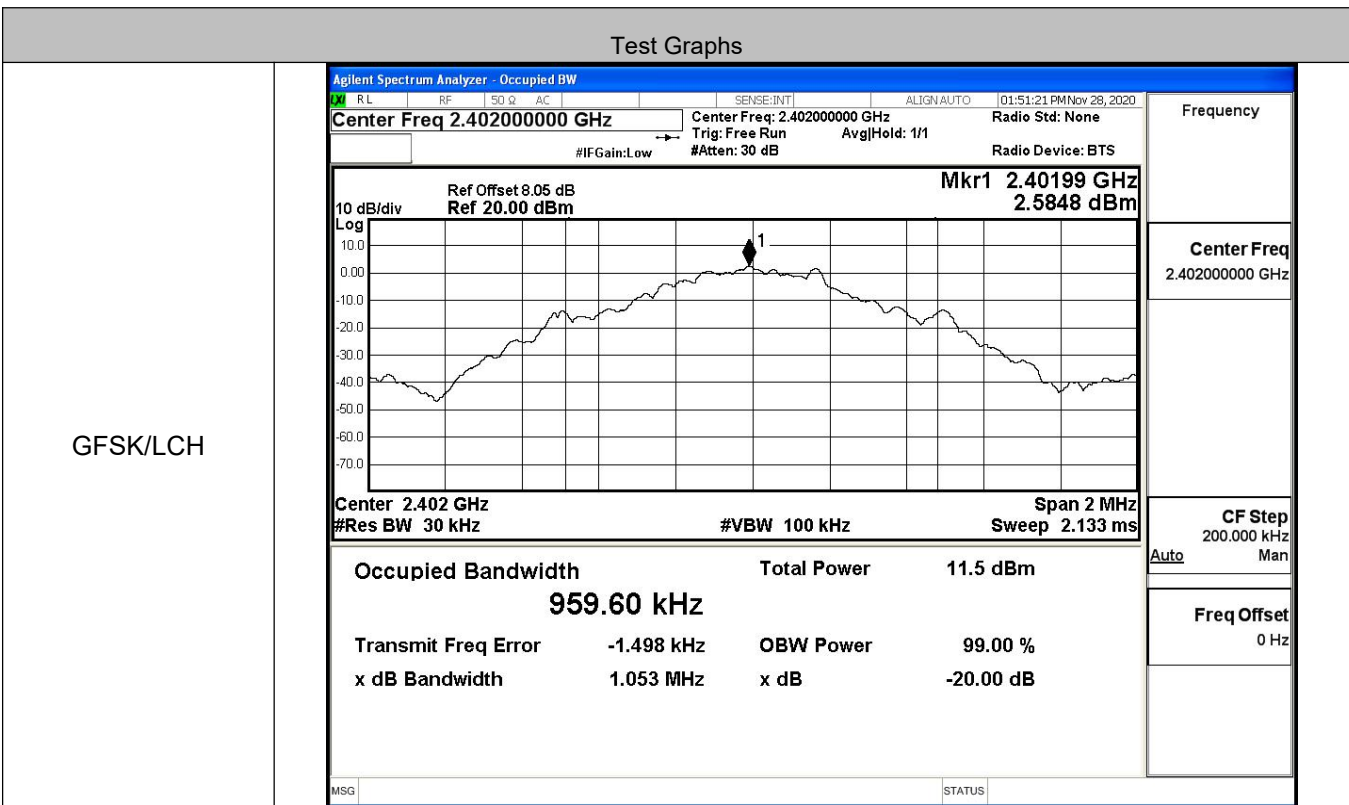


8DPSK/HCH

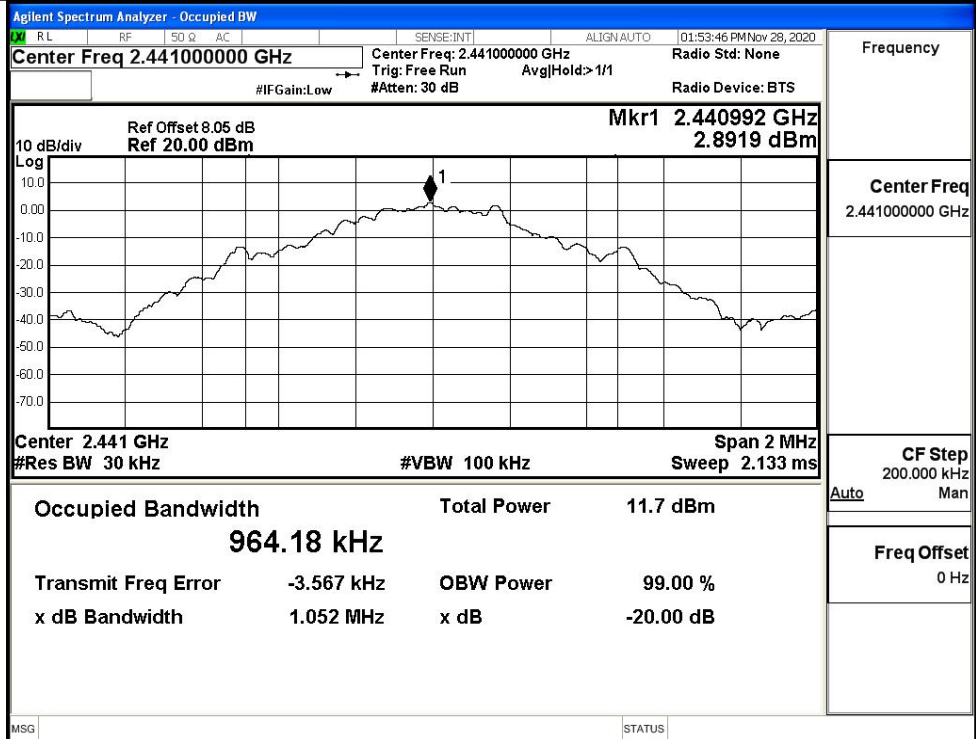


A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.053	Not Specified	PASS
	MCH	1.052	Not Specified	PASS
	HCH	1.053	Not Specified	PASS
π/4DQPSK	LCH	1.192	Not Specified	PASS
	MCH	1.191	Not Specified	PASS
	HCH	1.190	Not Specified	PASS
8DPSK	LCH	1.237	Not Specified	PASS
	MCH	1.235	Not Specified	PASS
	HCH	1.237	Not Specified	PASS

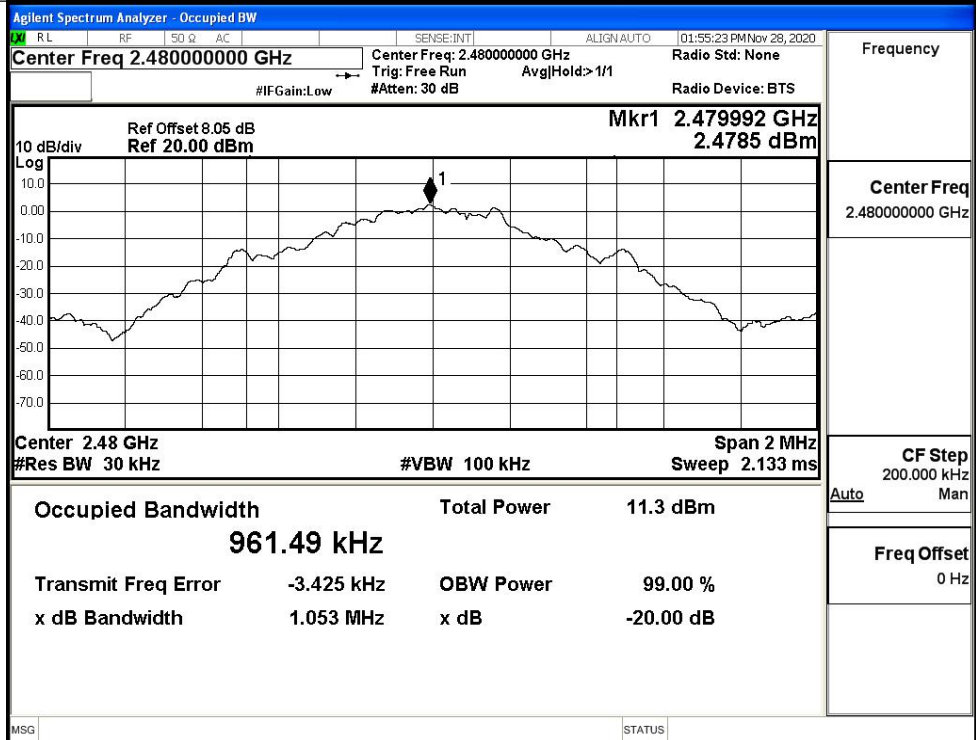


GFSK/MCH



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

GFSK/HCH

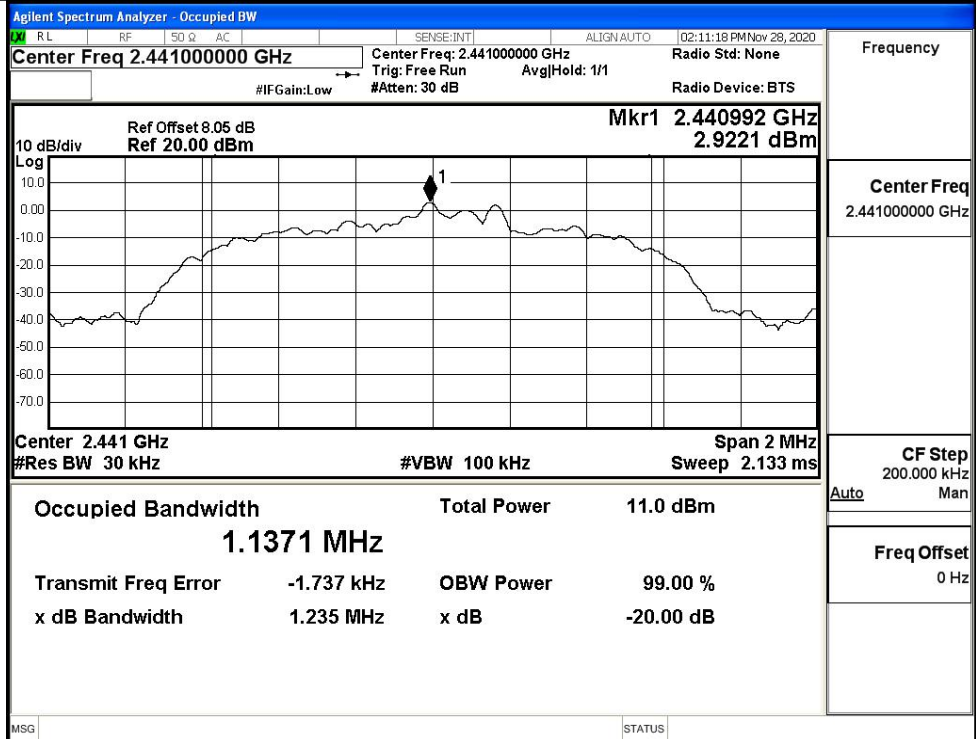


Frequency	2.48000000 GHz
Center Freq	2.48000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

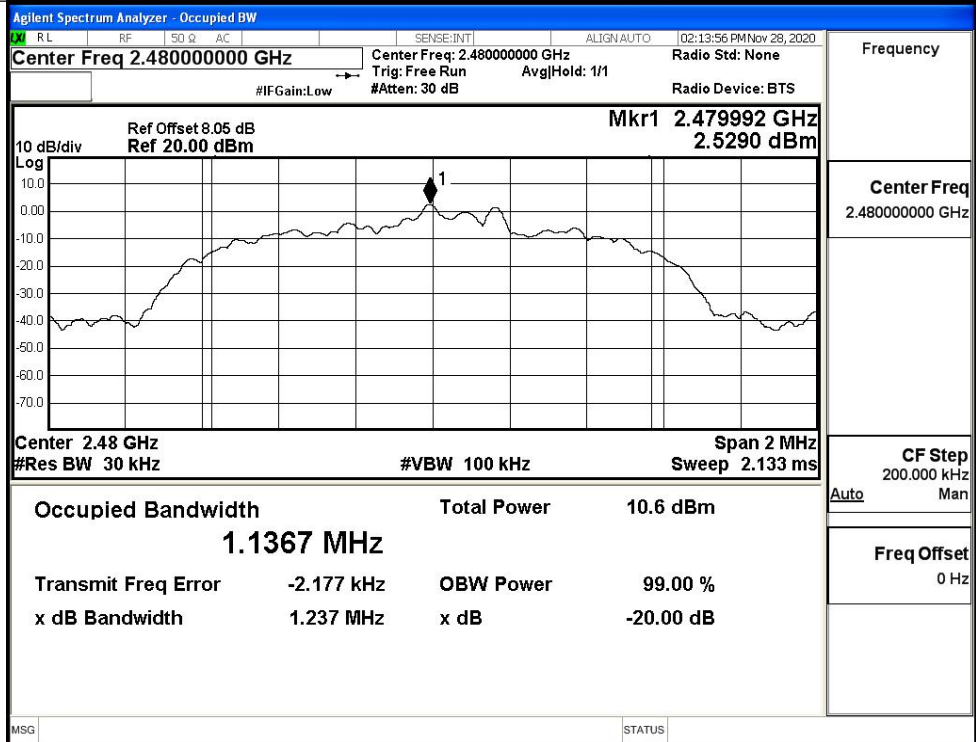
<p style="text-align: center;">π/4DQPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.401992 GHz 2.6115 dBm</p> <p>10 dB/div Log</p> <p>Center 2.402 GHz #Res BW 30 kHz</p> <p>Span 2 MHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1320 MHz</p> <p>Total Power 10.6 dBm</p> <p>Transmit Freq Error -5.430 kHz</p> <p>x dB Bandwidth 1.192 MHz</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
<p style="text-align: center;">π/4DQPSK/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Mkr1 2.440992 GHz 2.8398 dBm</p> <p>10 dB/div Log</p> <p>Center 2.441 GHz #Res BW 30 kHz</p> <p>Span 2 MHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1314 MHz</p> <p>Total Power 10.9 dBm</p> <p>Transmit Freq Error -5.303 kHz</p> <p>x dB Bandwidth 1.191 MHz</p>	<p>Frequency</p> <p>Center Freq 2.44100000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

<p>$\pi/4$DQPSK/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Mkr1 2.47992 GHz 2.4789 dBm</p> <p>Occupied Bandwidth 1.1295 MHz</p> <p>Total Power 10.5 dBm</p> <p>Transmit Freq Error -5.058 kHz</p> <p>x dB Bandwidth 1.190 MHz</p>	<p>Frequency</p> <p>Center Freq 2.48000000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
<p>8DPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Mkr1 2.401992 GHz 2.5744 dBm</p> <p>Occupied Bandwidth 1.1368 MHz</p> <p>Total Power 10.6 dBm</p> <p>Transmit Freq Error -1.751 kHz</p> <p>x dB Bandwidth 1.237 MHz</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

8DPSK/MCH

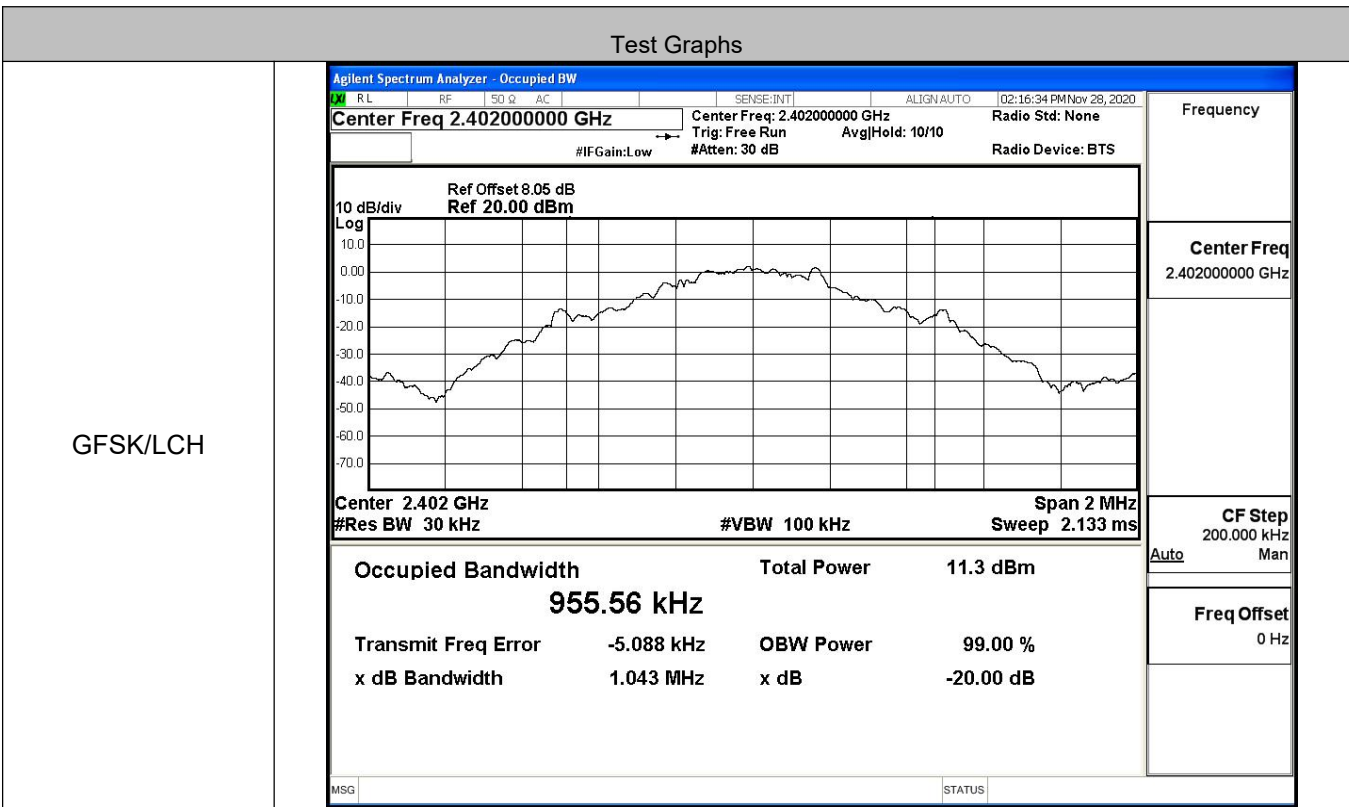


8DPSK/HCH

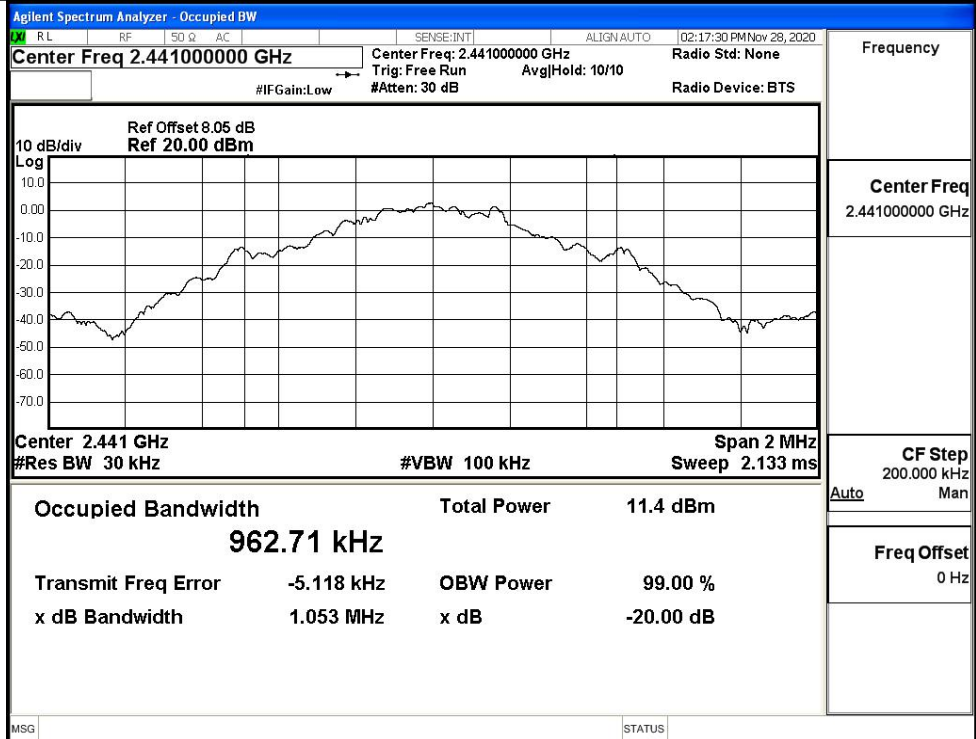


A.3 Occupied Bandwidth

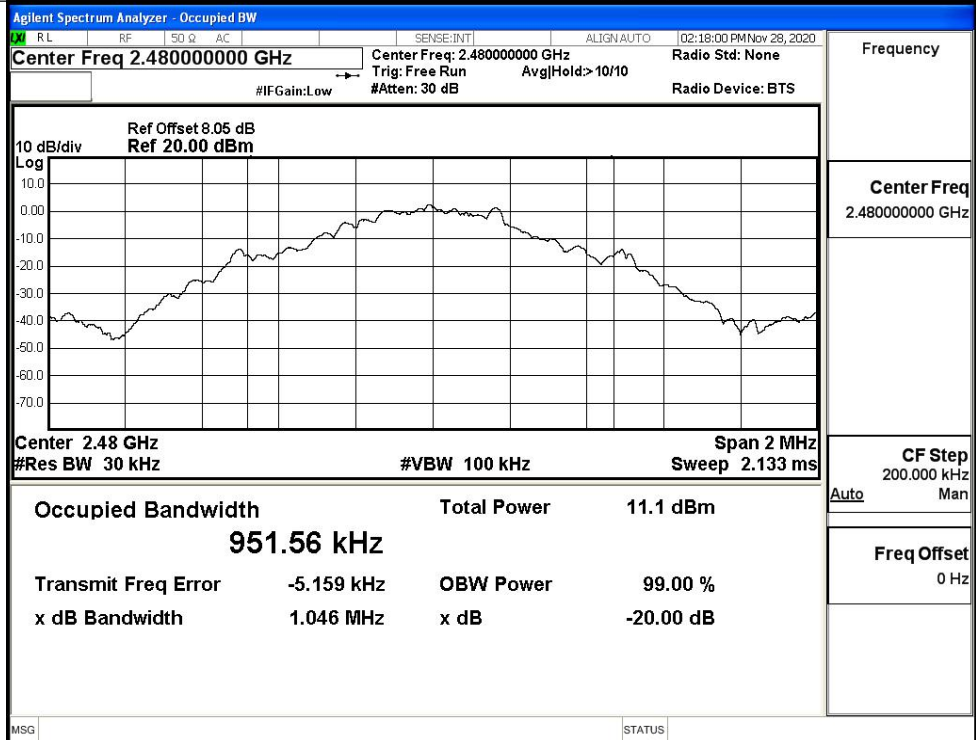
Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.95556	Not Specified	PASS
	MCH	0.96271	Not Specified	PASS
	HCH	0.95156	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.1327	Not Specified	PASS
	MCH	1.1294	Not Specified	PASS
	HCH	1.1295	Not Specified	PASS
8DPSK	LCH	1.1368	Not Specified	PASS
	MCH	1.1396	Not Specified	PASS
	HCH	1.1420	Not Specified	PASS



GFSK/MCH



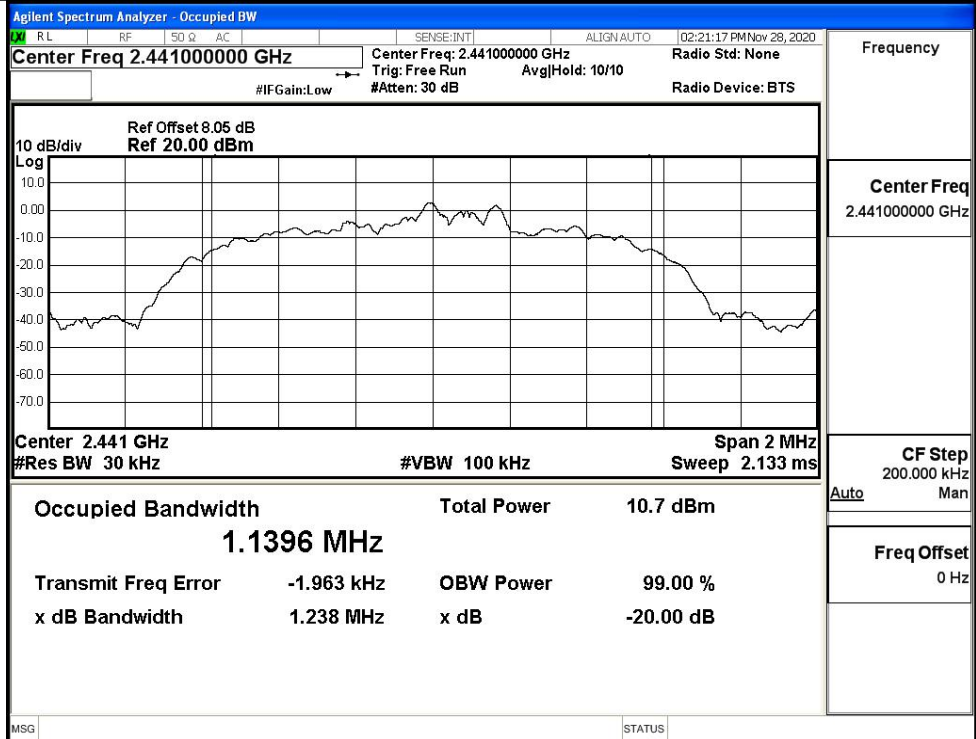
GFSK/HCH



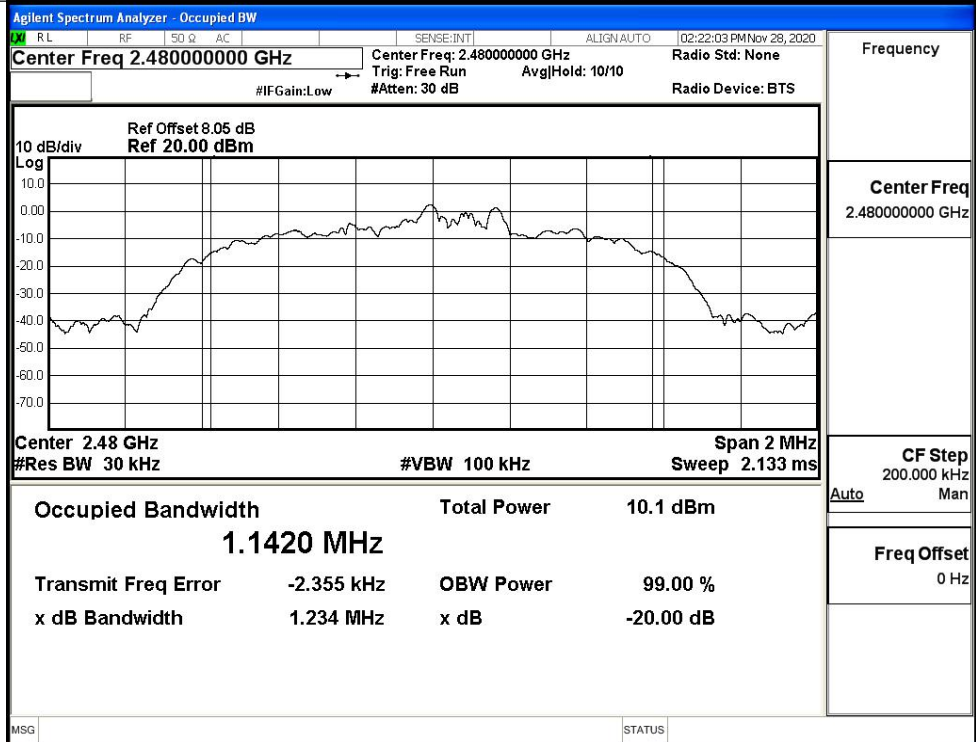
<p>$\pi/4$DQPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.402 GHz #Res BW 30 kHz</p> <p>Span 2 MHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1327 MHz</p> <p>Total Power 10.4 dBm</p> <p>Transmit Freq Error -5.632 kHz</p> <p>x dB Bandwidth 1.190 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
<p>$\pi/4$DQPSK/MCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.44100000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Center 2.441 GHz #Res BW 30 kHz</p> <p>Span 2 MHz Sweep 2.133 ms</p> <p>Occupied Bandwidth 1.1294 MHz</p> <p>Total Power 10.9 dBm</p> <p>Transmit Freq Error -5.449 kHz</p> <p>x dB Bandwidth 1.194 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.44100000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

<p>π/4DQPSK/HCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.48000000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Occupied Bandwidth 1.1295 MHz</p> <p>Total Power 10.5 dBm</p> <p>Transmit Freq Error -5.438 kHz</p> <p>x dB Bandwidth 1.189 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.48000000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>
<p>8DPSK/LCH</p>	<p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.40200000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>Occupied Bandwidth 1.1368 MHz</p> <p>Total Power 10.5 dBm</p> <p>Transmit Freq Error -1.798 kHz</p> <p>x dB Bandwidth 1.230 MHz</p> <p>OBW Power 99.00 %</p> <p>x dB -20.00 dB</p>	<p>Frequency</p> <p>Center Freq 2.40200000 GHz</p> <p>CF Step 200.000 kHz</p> <p>Freq Offset 0 Hz</p>

8DPSK/MCH

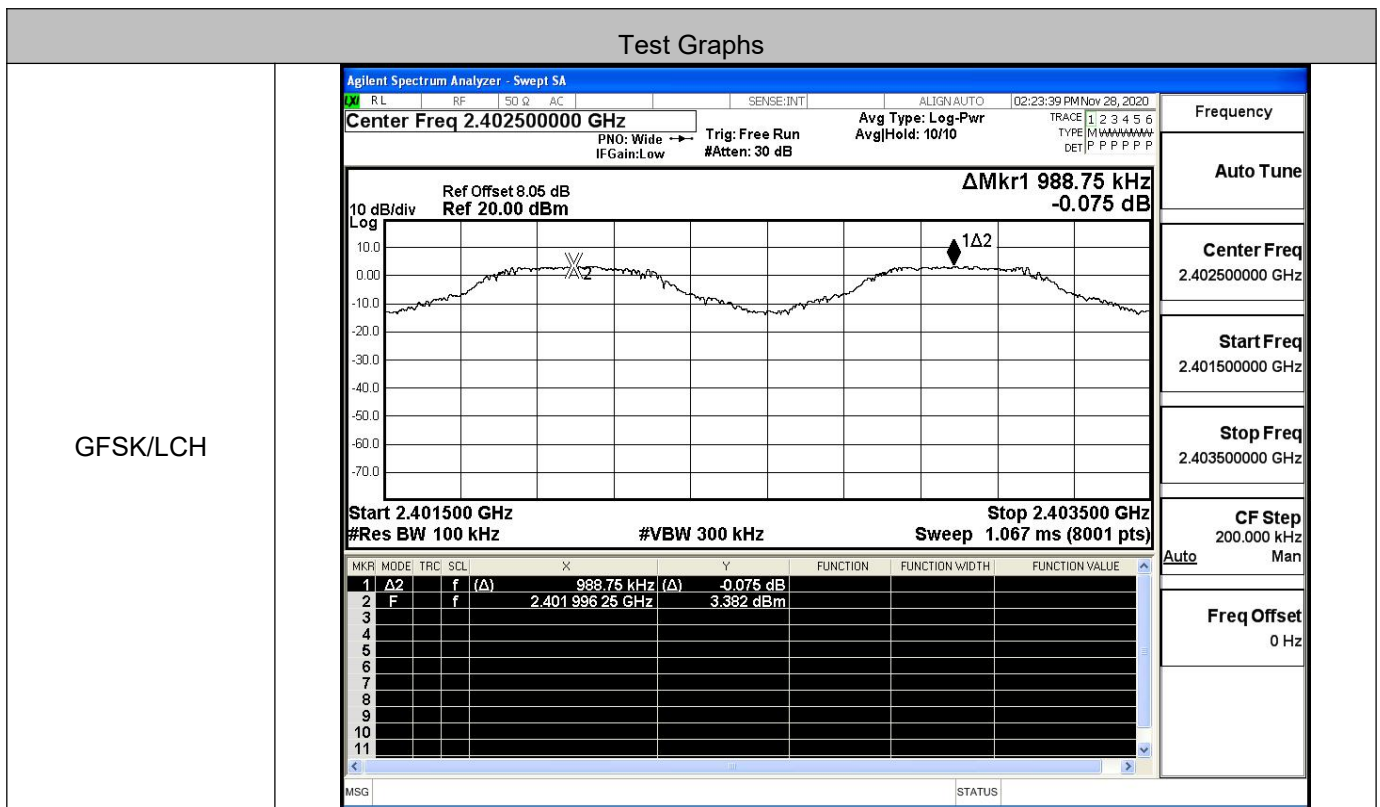


8DPSK/HCH

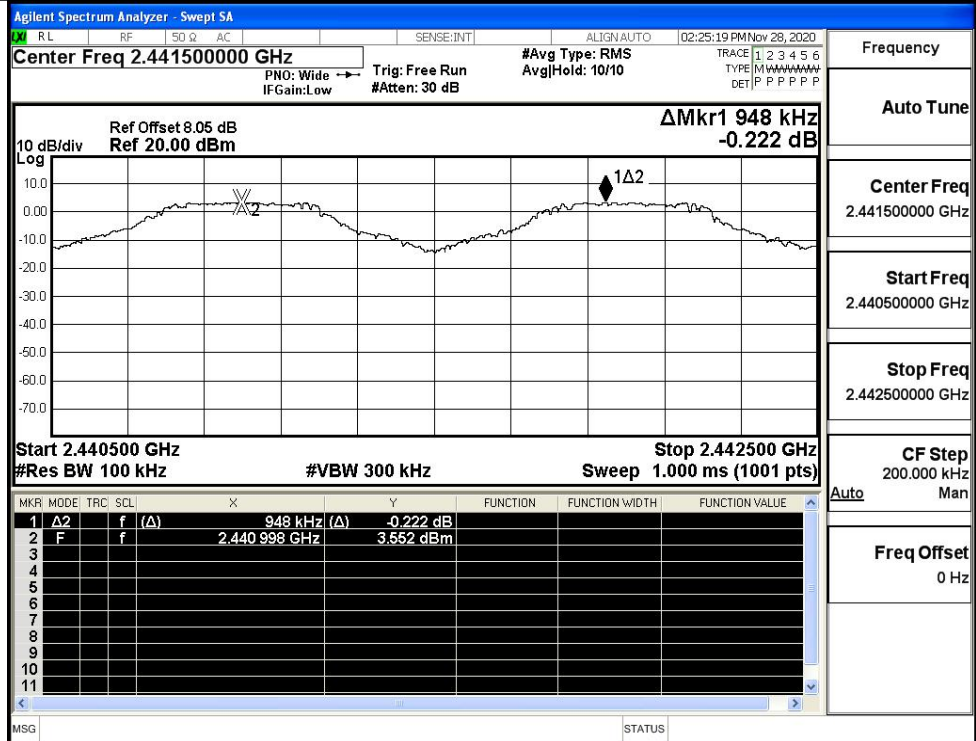


A.4 Carrier Frequency Separation

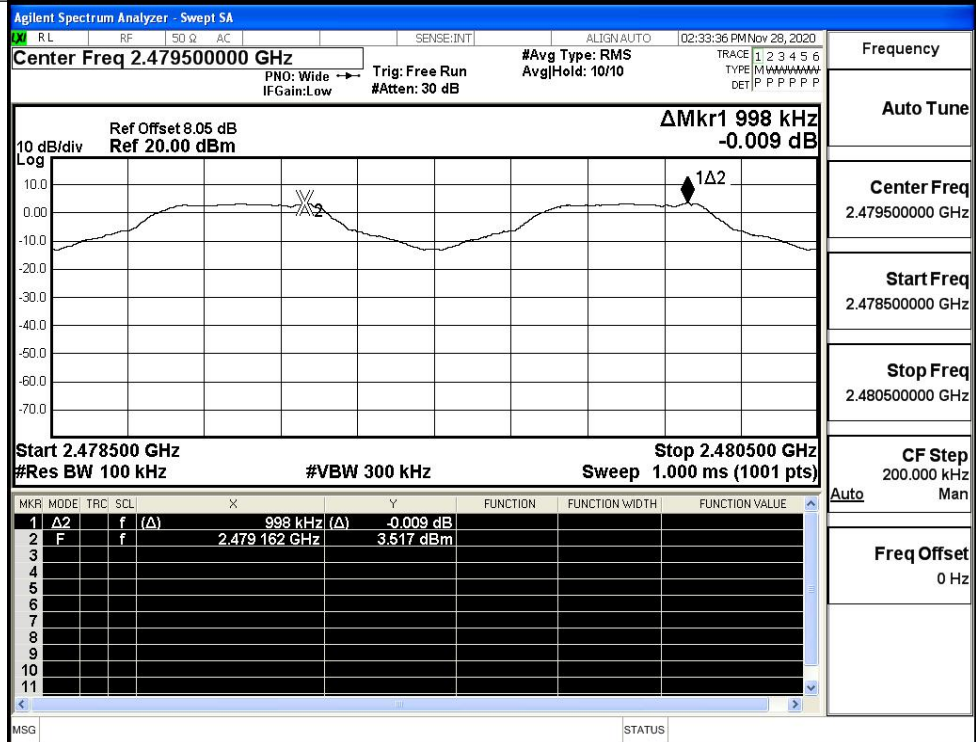
Mode	Channel	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.989	0.702	PASS
	MCH	0.948	0.702	PASS
	HCH	0.998	0.702	PASS
$\pi/4$ DQPSK	LCH	0.838	0.795	PASS
	MCH	0.858	0.795	PASS
	HCH	1.004	0.795	PASS
8DPSK	LCH	1.012	0.825	PASS
	MCH	1.146	0.825	PASS
	HCH	0.858	0.825	PASS



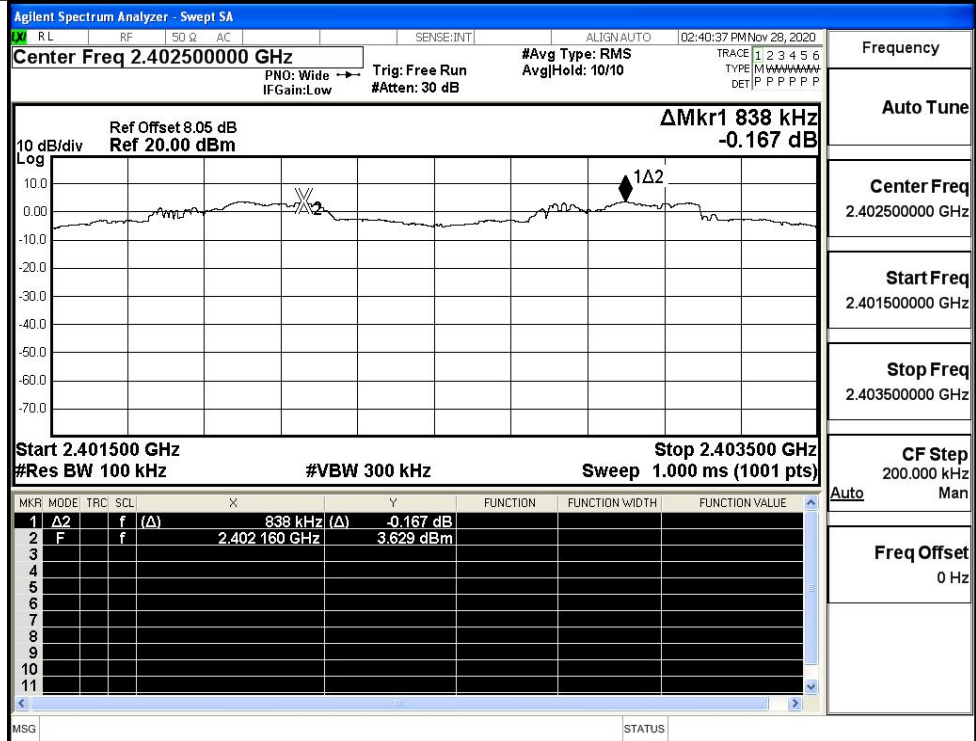
GFSK/MCH



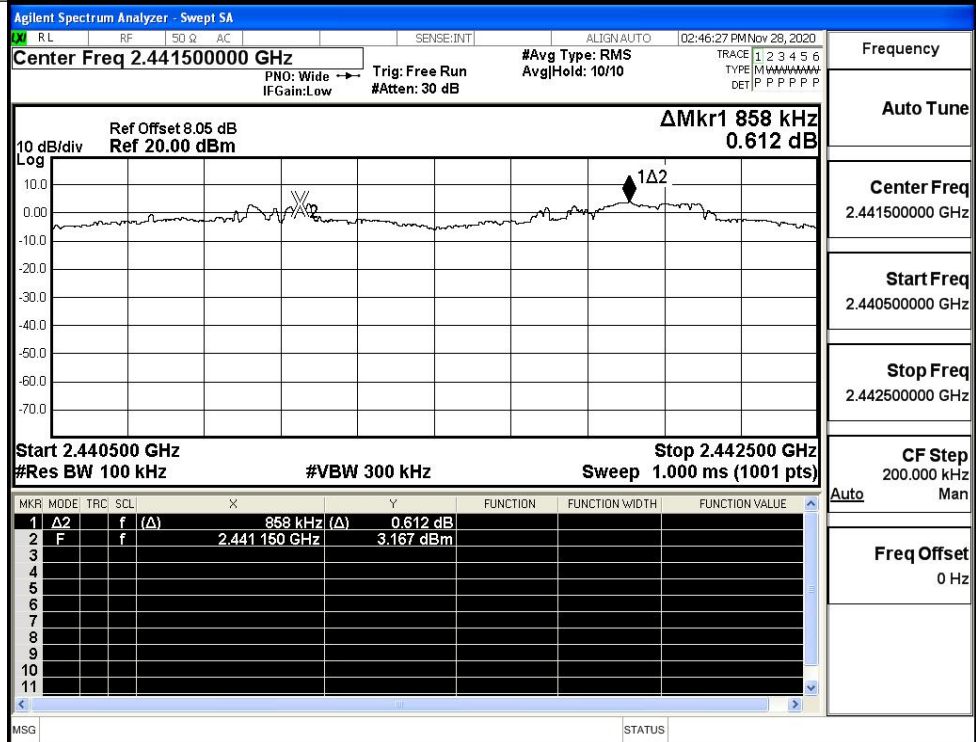
GFSK/HCH



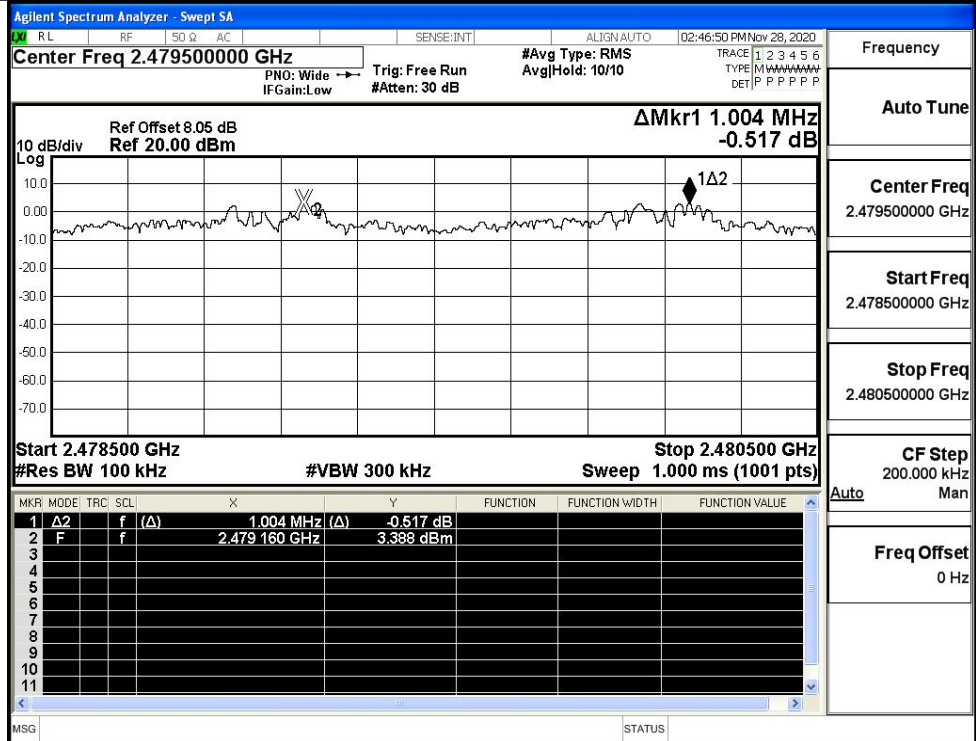
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



π/4DQPSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

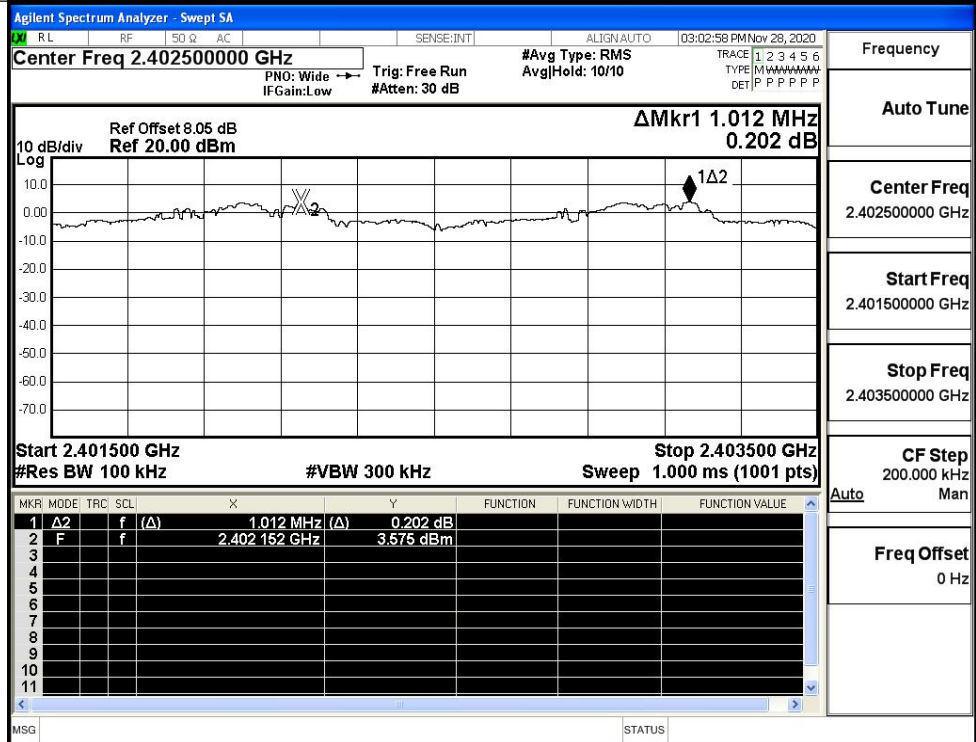
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

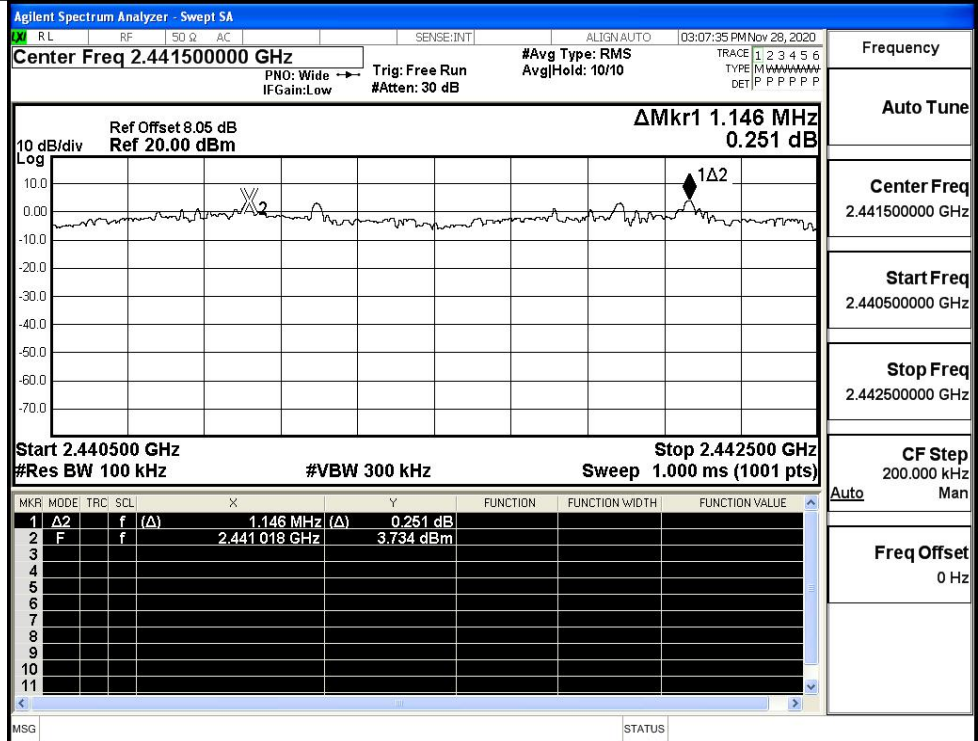
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

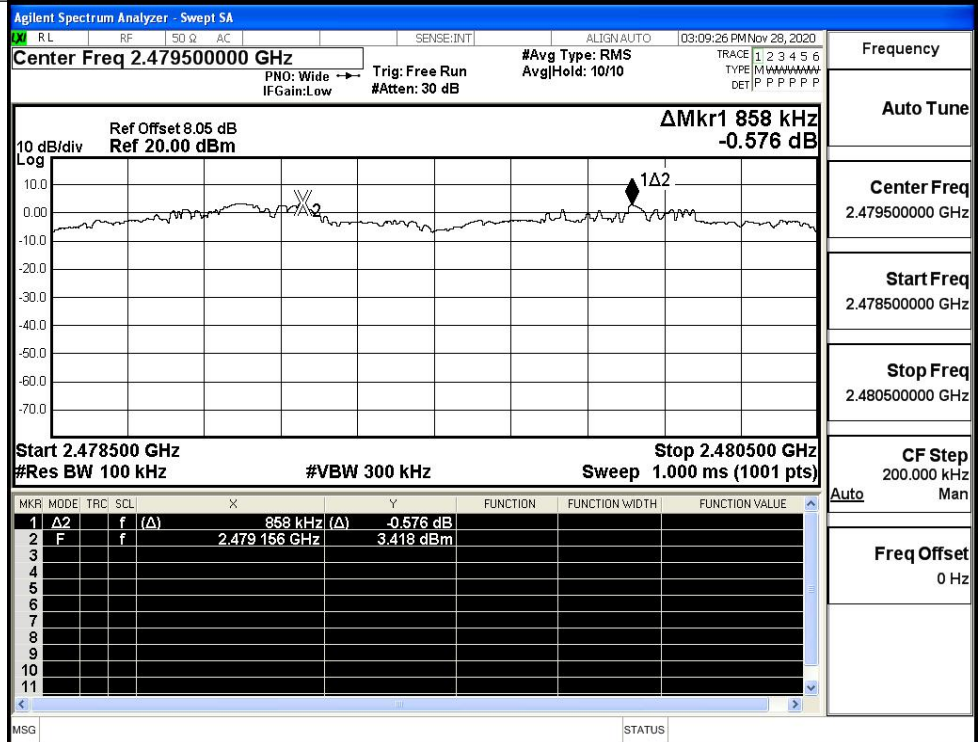
CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/MCH



8DPSK/HCH



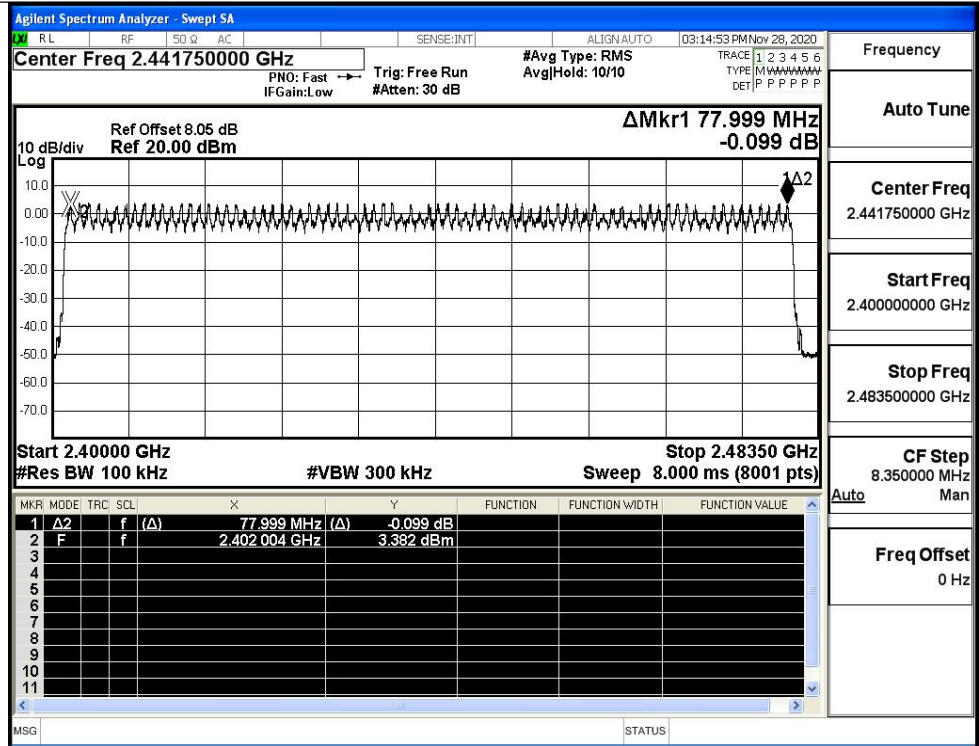
A.5 Hopping Channel Number

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

Test Graphs

<p>GFSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 77.801 MHz -0.230 dB</p> <p>Start 2.40000 GHz #Res BW 100 kHz</p> <p>Stop 2.48350 GHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>77.801 MHz (Δ)</td> <td>-0.230 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.402171 GHz</td> <td>3.647 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	77.801 MHz (Δ)	-0.230 dB				2	F	f	(Δ)	2.402171 GHz	3.647 dBm				<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz Man</p> <p>Freq Offset 0 Hz</p>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ 2	f	(Δ)	77.801 MHz (Δ)	-0.230 dB																								
2	F	f	(Δ)	2.402171 GHz	3.647 dBm																								
<p>$\pi/4$DQPSK/Hop</p>	<p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.441750000 GHz</p> <p>Ref Offset 8.05 dB Ref 20.00 dBm</p> <p>ΔMkr1 78.020 MHz 0.036 dB</p> <p>Start 2.40000 GHz #Res BW 100 kHz</p> <p>Stop 2.48350 GHz #VBW 300 kHz Sweep 8.000 ms (8001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRC</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Δ2</td> <td>f</td> <td>(Δ)</td> <td>78.020 MHz (Δ)</td> <td>0.036 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>F</td> <td>f</td> <td>(Δ)</td> <td>2.402150 GHz</td> <td>3.094 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	Δ 2	f	(Δ)	78.020 MHz (Δ)	0.036 dB				2	F	f	(Δ)	2.402150 GHz	3.094 dBm				<p>Frequency</p> <p>Auto Tune</p> <p>Center Freq 2.441750000 GHz</p> <p>Start Freq 2.400000000 GHz</p> <p>Stop Freq 2.483500000 GHz</p> <p>CF Step 8.350000 MHz Man</p> <p>Freq Offset 0 Hz</p>
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	Δ 2	f	(Δ)	78.020 MHz (Δ)	0.036 dB																								
2	F	f	(Δ)	2.402150 GHz	3.094 dBm																								

8DPSK/Hop



A.6 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total 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
π/4DQPSK	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

