

Appendix A

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

Product Name: t-Seven True Wireless

Trade Mark: Jays

Test Model: T7TW01

Environmental Conditions

Temperature:	22.2° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

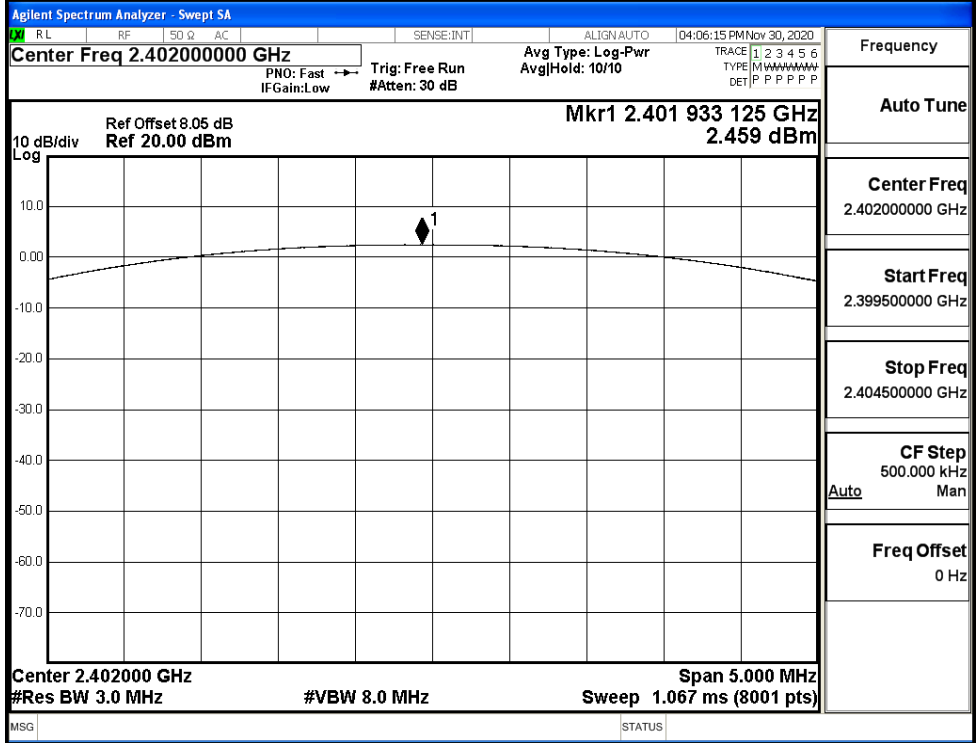
A.1 Maxmum Conducted Peak Output Power

Right

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.459	21	PASS
	MCH	2.908	21	PASS
	HCH	2.479	21	PASS
$\pi/4$ DQPSK	LCH	2.435	21	PASS
	MCH	2.836	21	PASS
	HCH	2.439	21	PASS
8DPSK	LCH	2.448	21	PASS
	MCH	2.855	21	PASS
	HCH	2.479	21	PASS

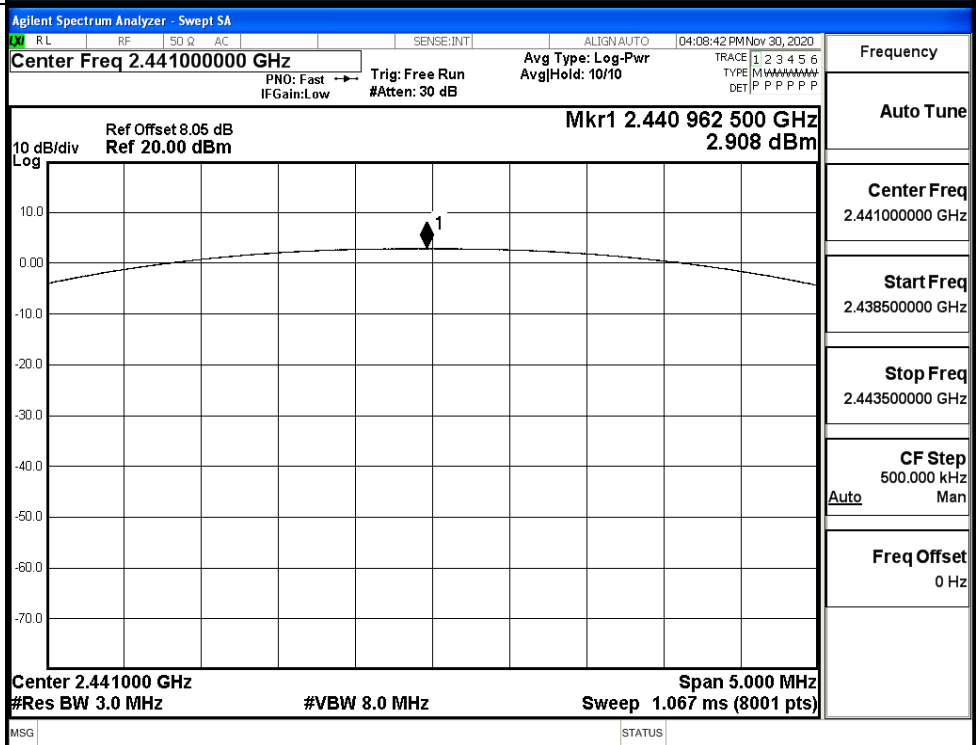
Test Graphs

GFSK/LCH



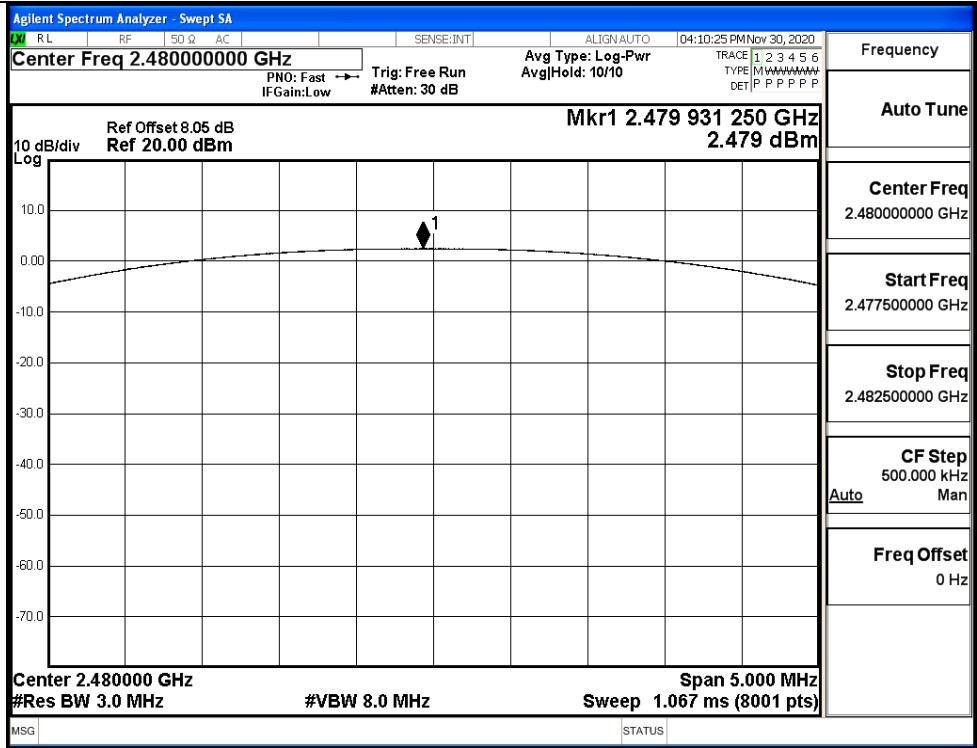
Frequency	2.40200000 GHz
Auto Tune	
Center Freq	2.40200000 GHz
Start Freq	2.399500000 GHz
Stop Freq	2.404500000 GHz
CF Step	500.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/MCH

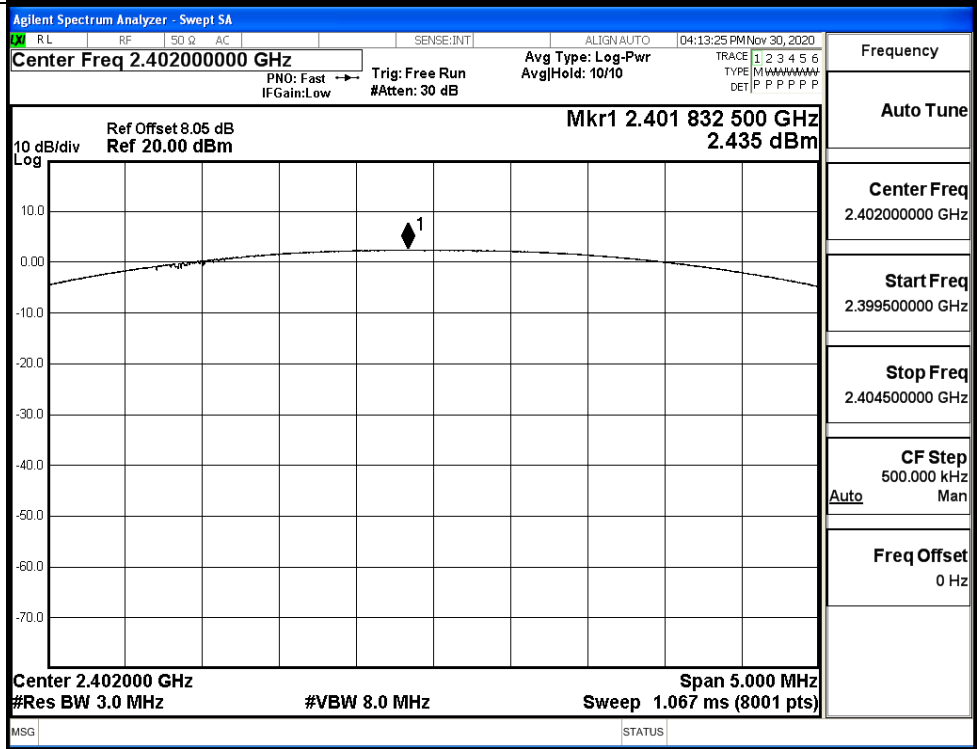


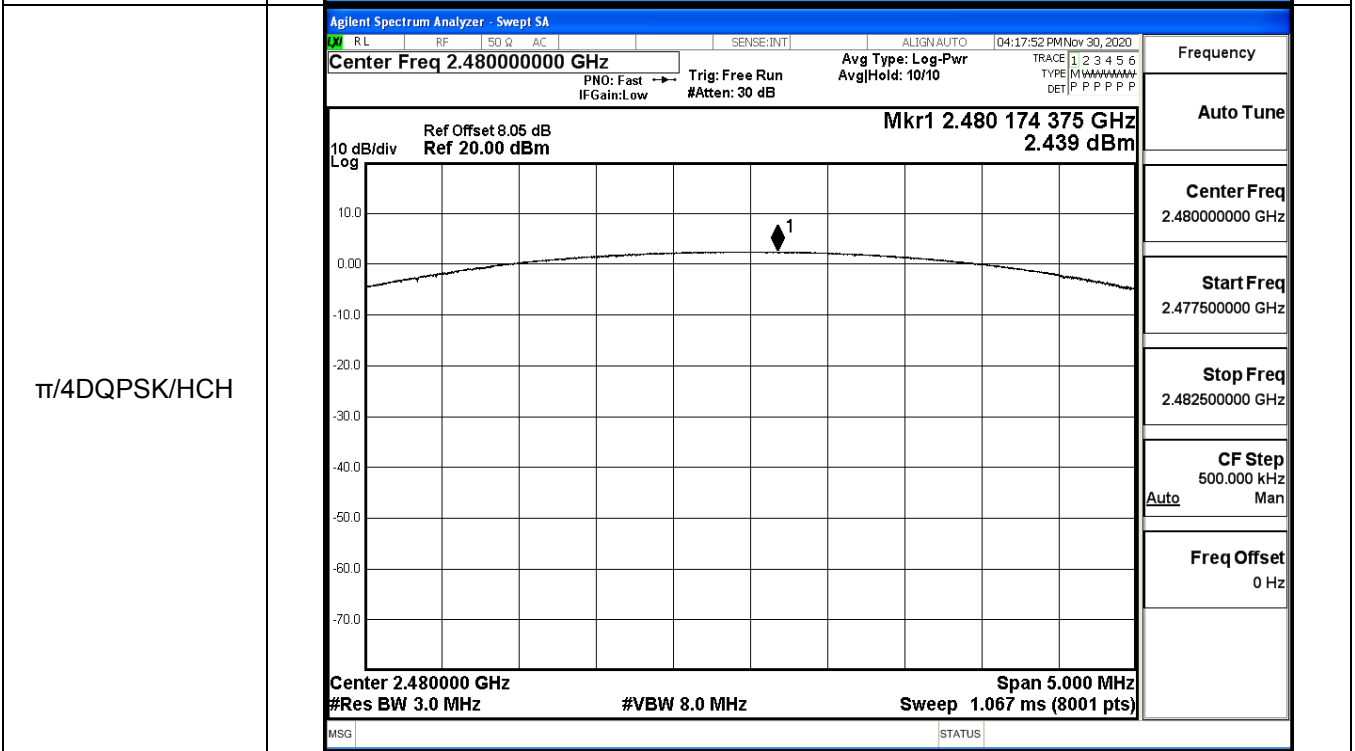
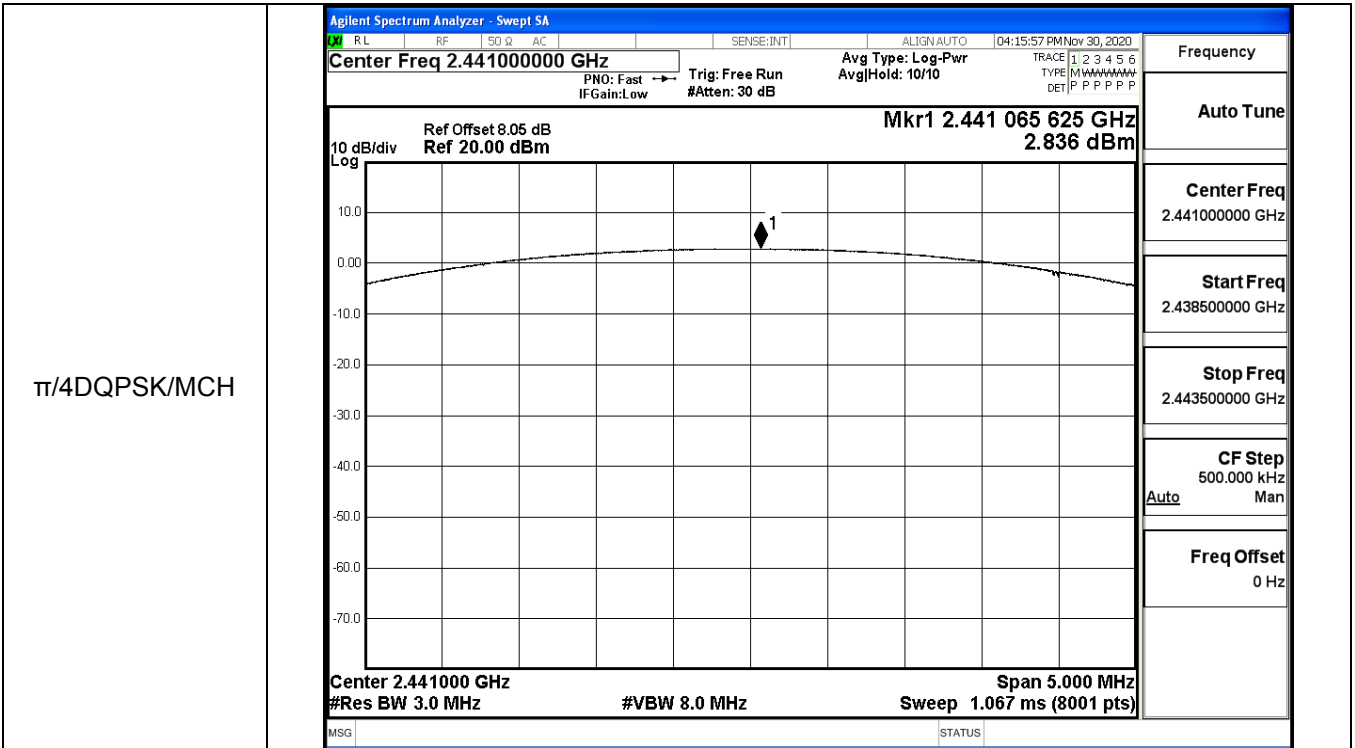
Frequency	2.44100000 GHz
Auto Tune	
Center Freq	2.441000000 GHz
Start Freq	2.438500000 GHz
Stop Freq	2.443500000 GHz
CF Step	500.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

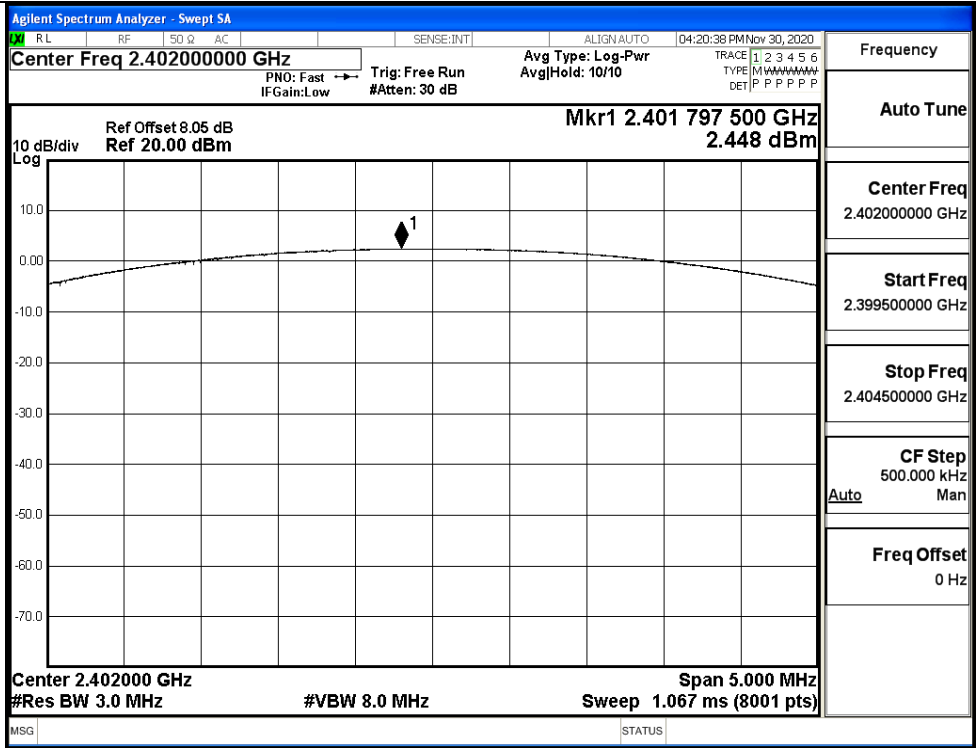


$\pi/4$ DQPSK/LCH

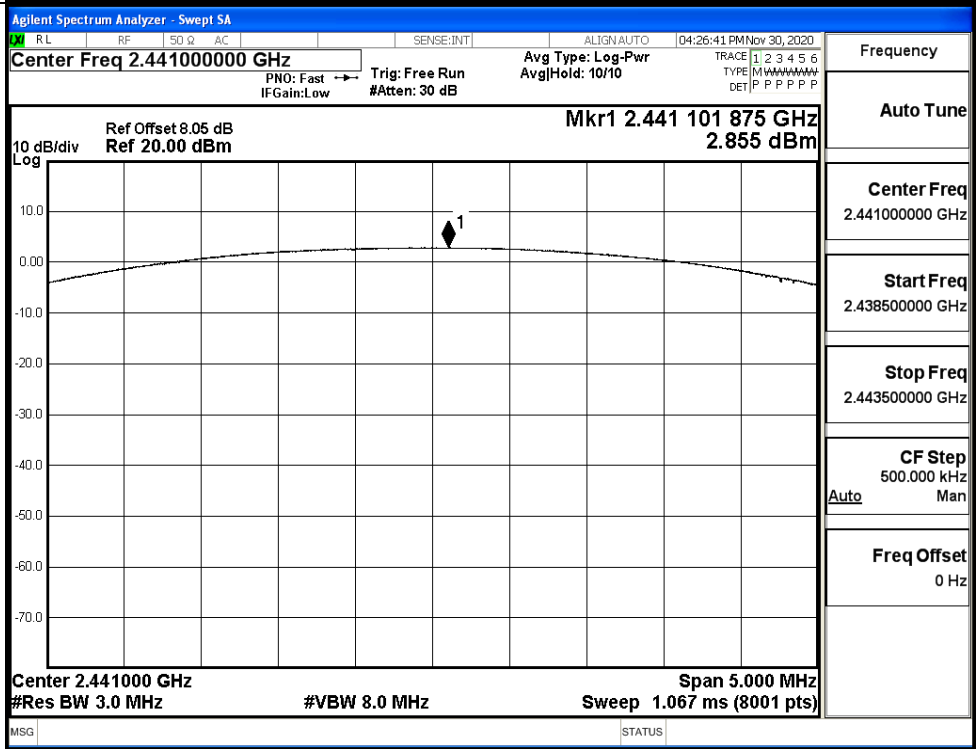


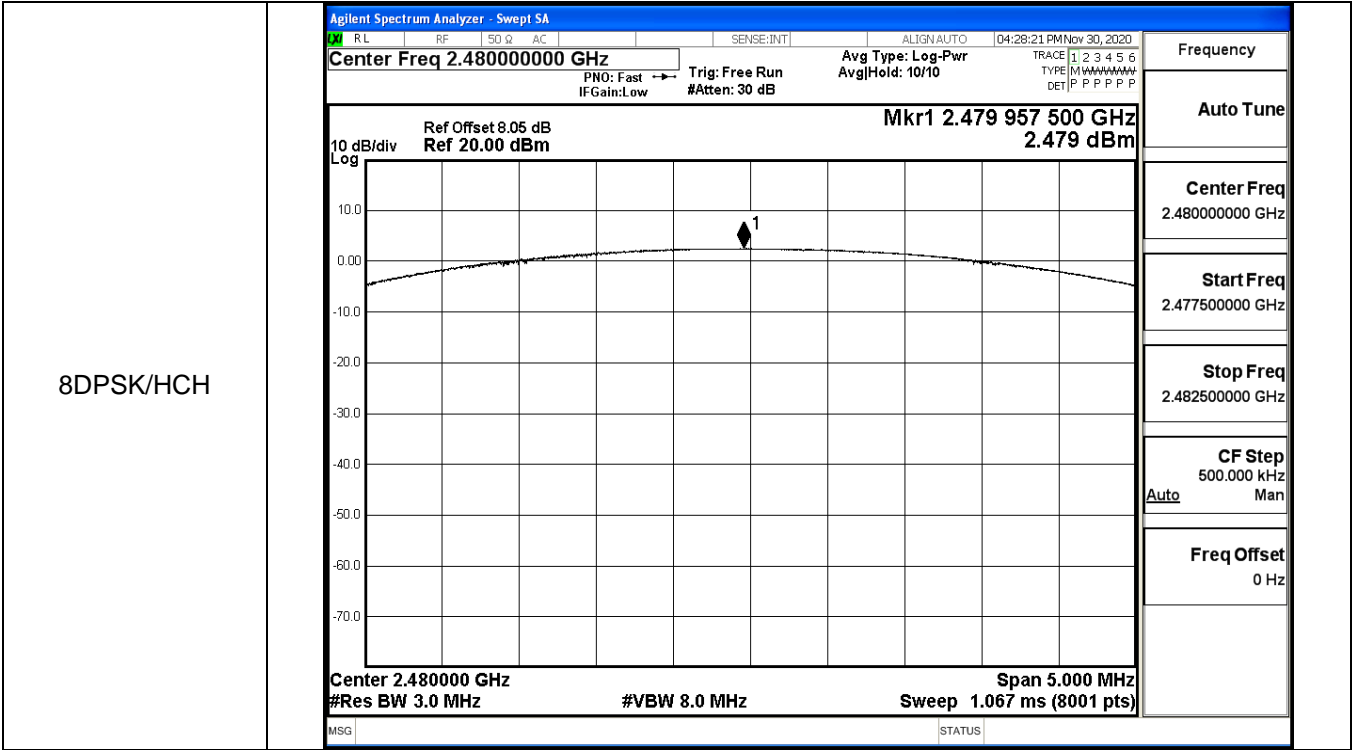


8DPSK/LCH



8DPSK/MCH



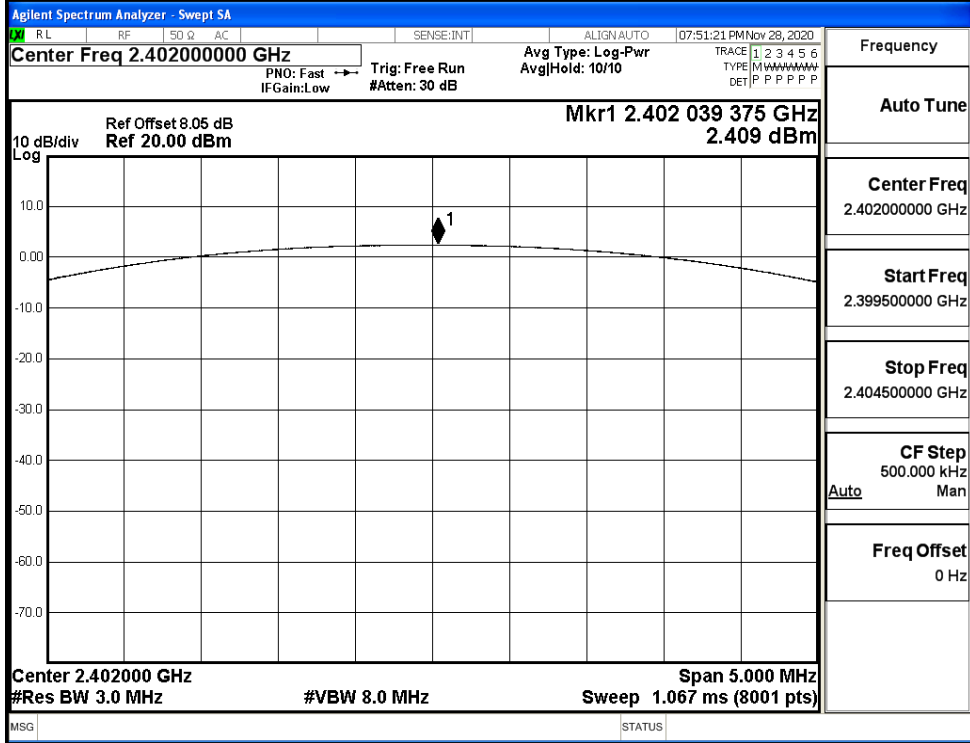


Left

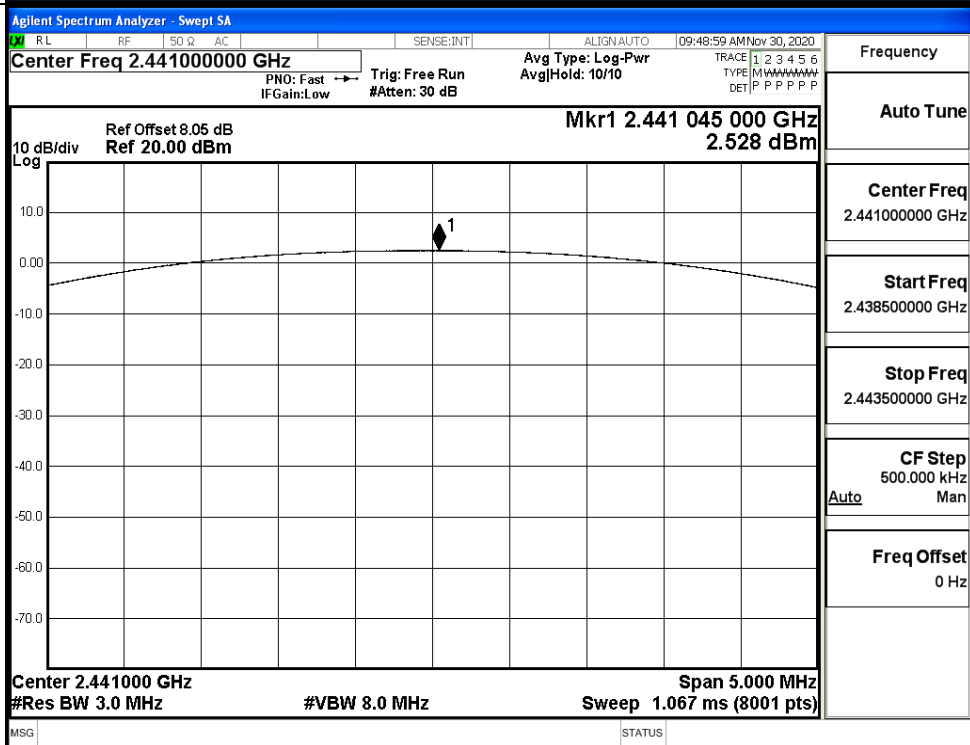
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.409	21	PASS
	MCH	2.528	21	PASS
	HCH	1.568	21	PASS
$\pi/4$ DQPSK	LCH	2.324	21	PASS
	MCH	2.385	21	PASS
	HCH	1.555	21	PASS
8DPSK	LCH	2.332	21	PASS
	MCH	2.378	21	PASS
	HCH	1.530	21	PASS

Test Graphs

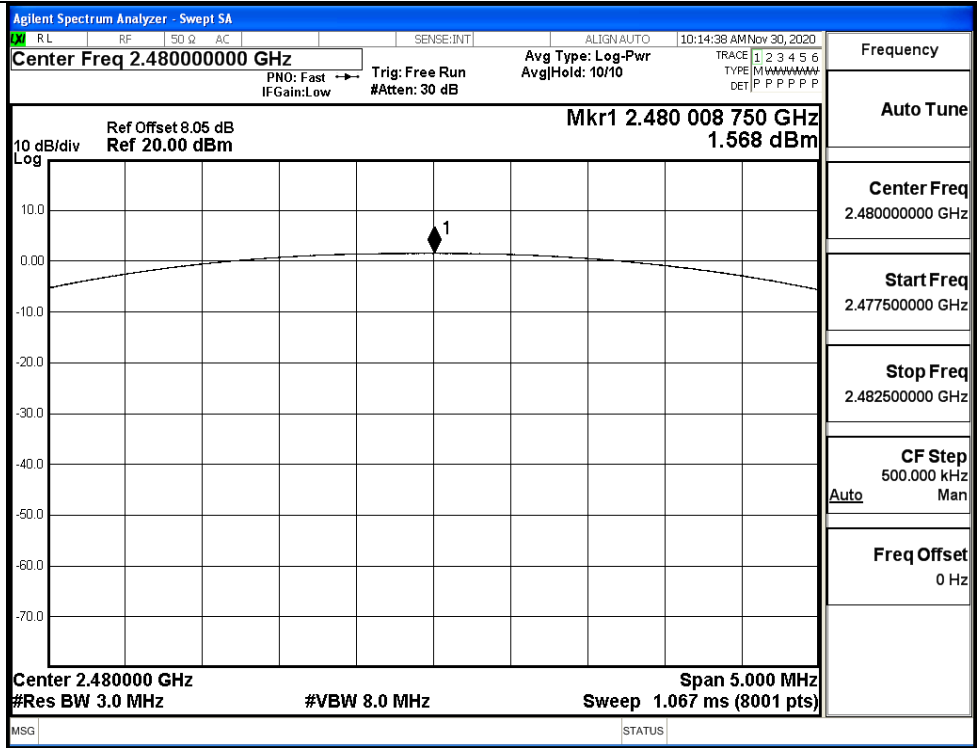
GFSK/LCH



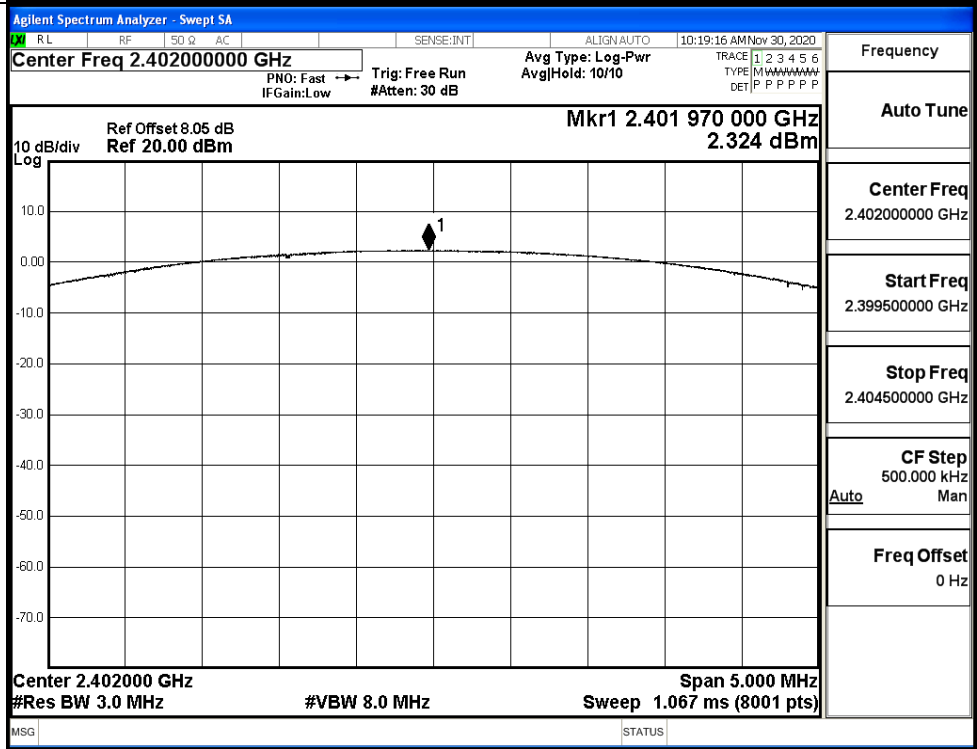
GFSK/MCH



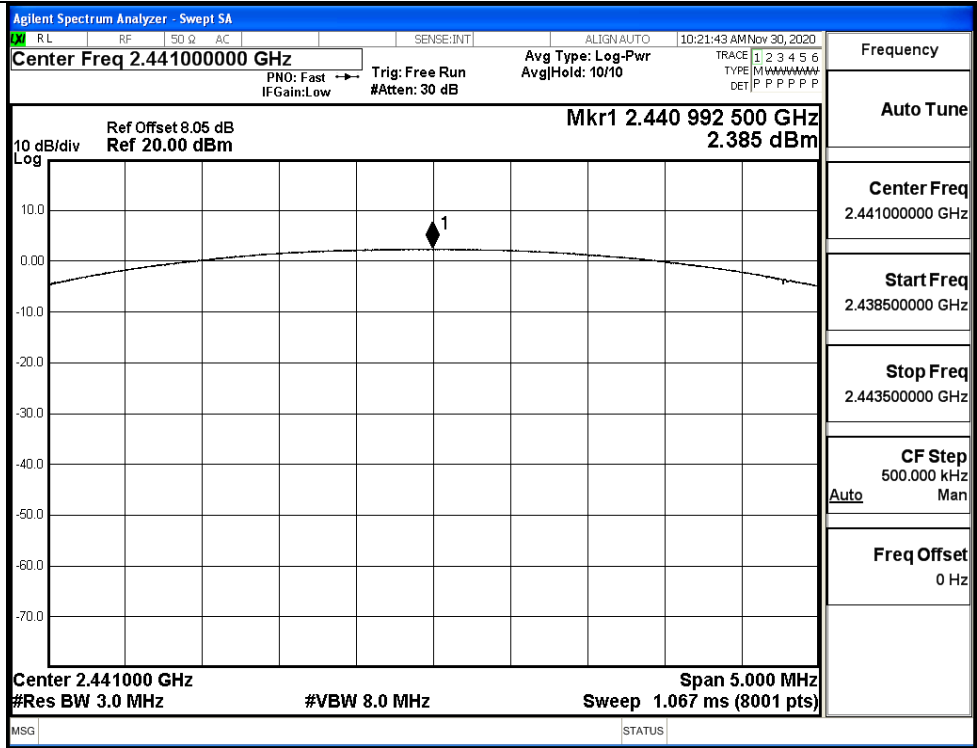
GFSK/HCH



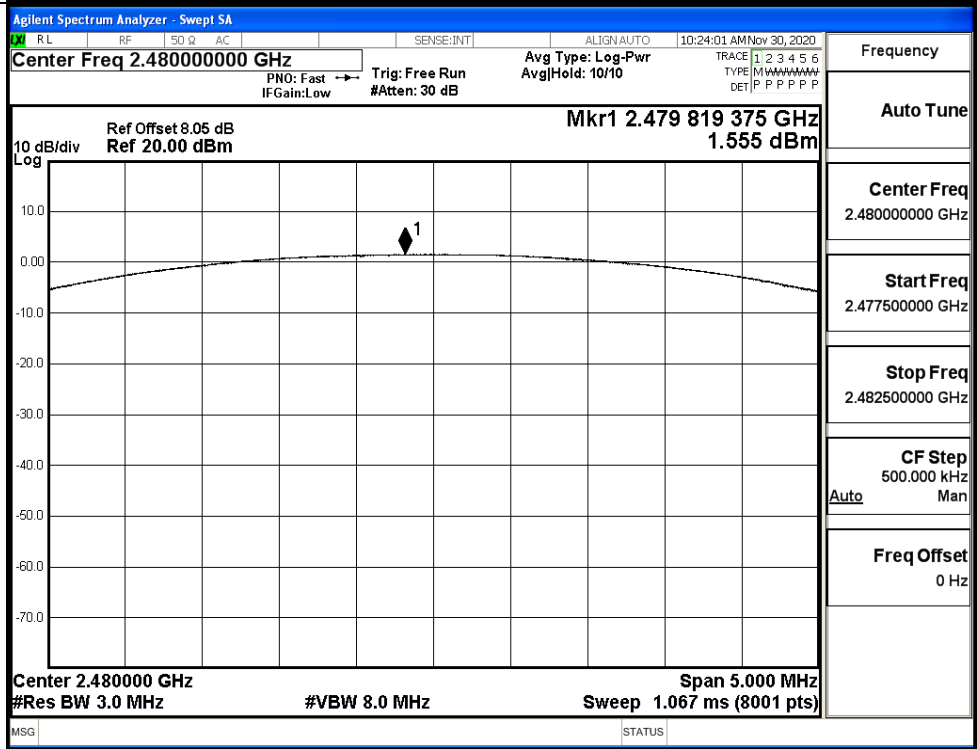
π /4DQPSK/LCH



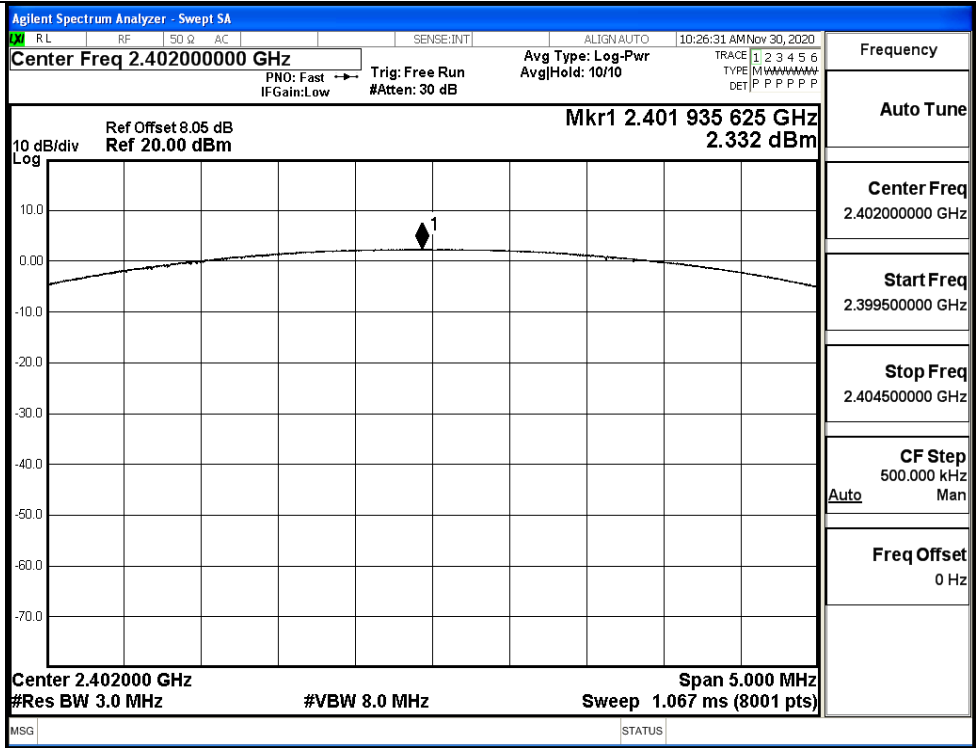
$\pi/4$ DQPSK/MCH



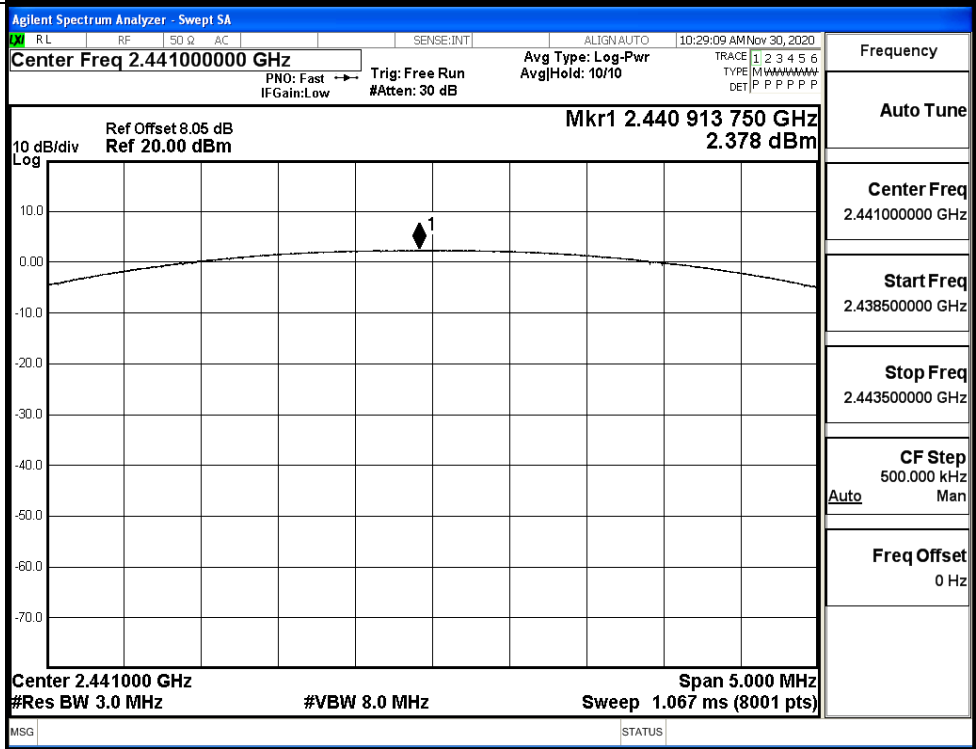
$\pi/4$ DQPSK/HCH



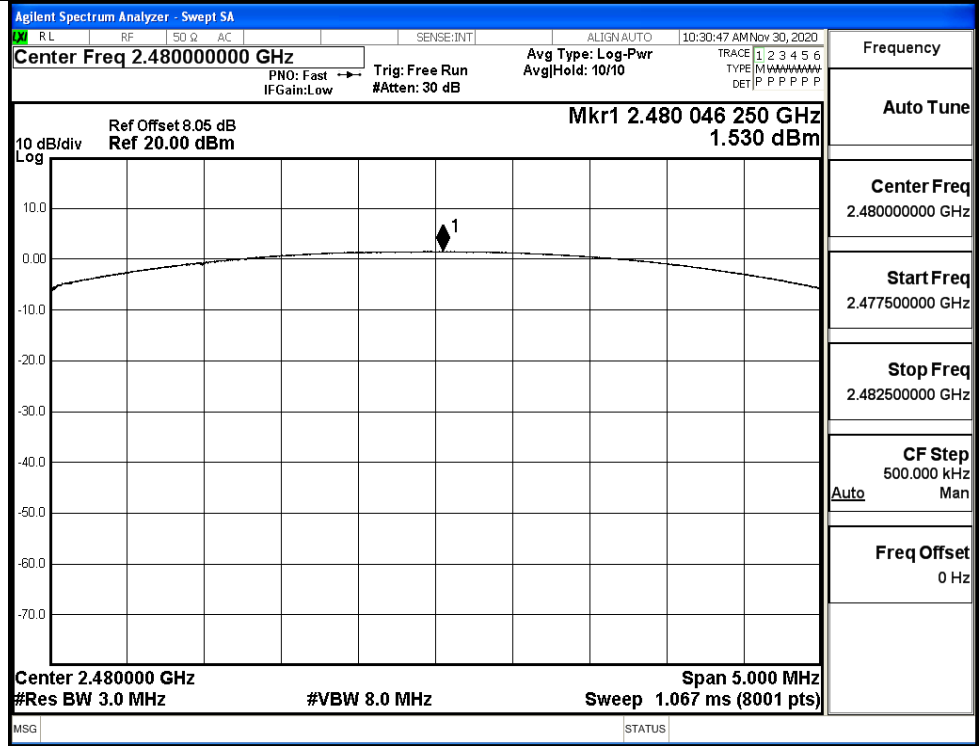
8DPSK/LCH



8DPSK/MCH



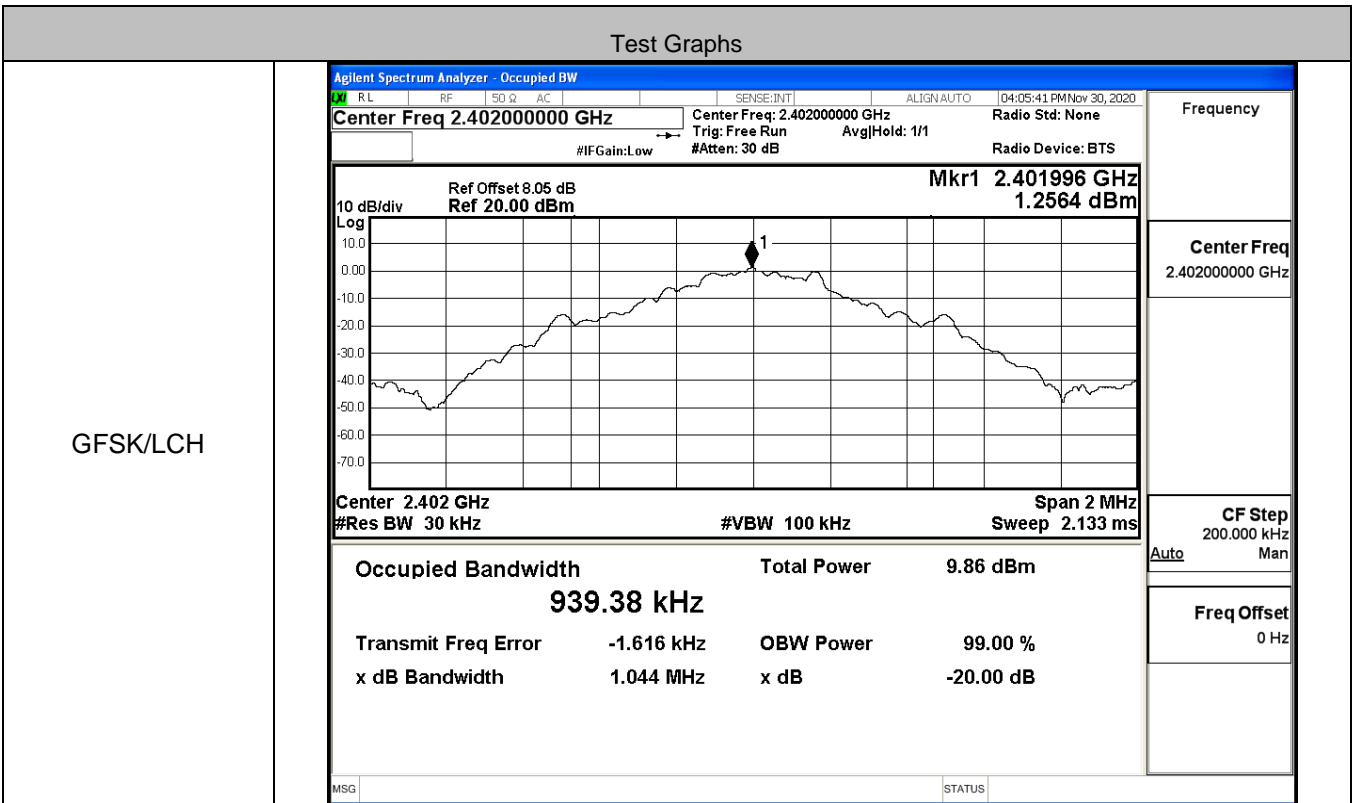
8DPSK/HCH



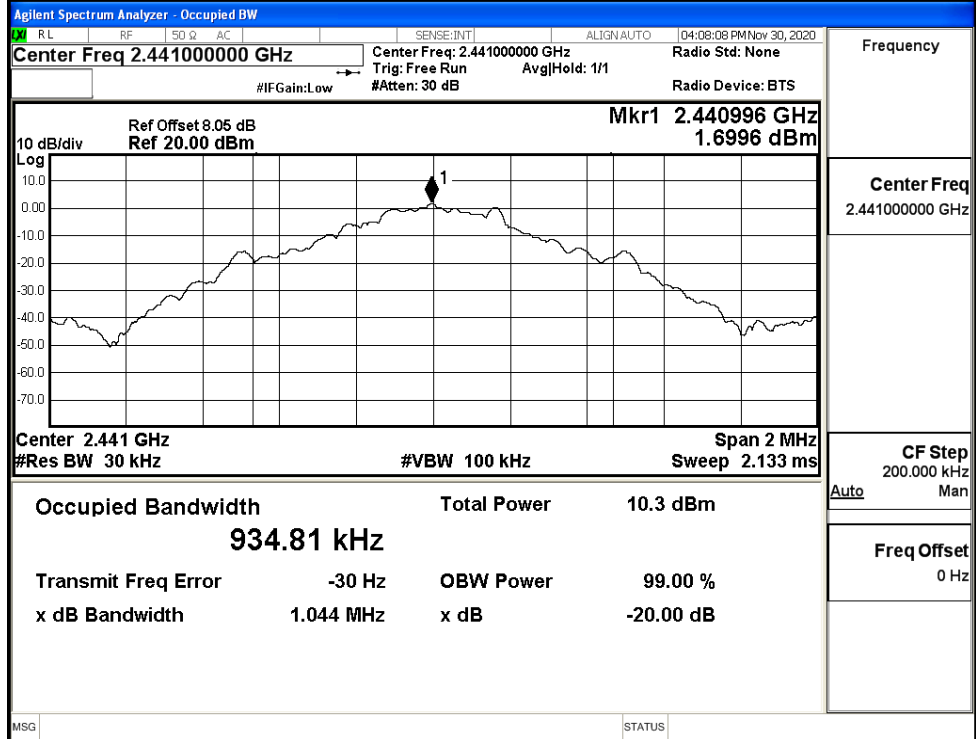
A.2 20dB Bandwidth

Right

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.044	Not Specified	PASS
	MCH	1.044	Not Specified	PASS
	HCH	1.045	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.187	Not Specified	PASS
	MCH	1.187	Not Specified	PASS
	HCH	1.187	Not Specified	PASS
8DPSK	LCH	1.195	Not Specified	PASS
	MCH	1.197	Not Specified	PASS
	HCH	1.236	Not Specified	PASS



GFSK/MCH



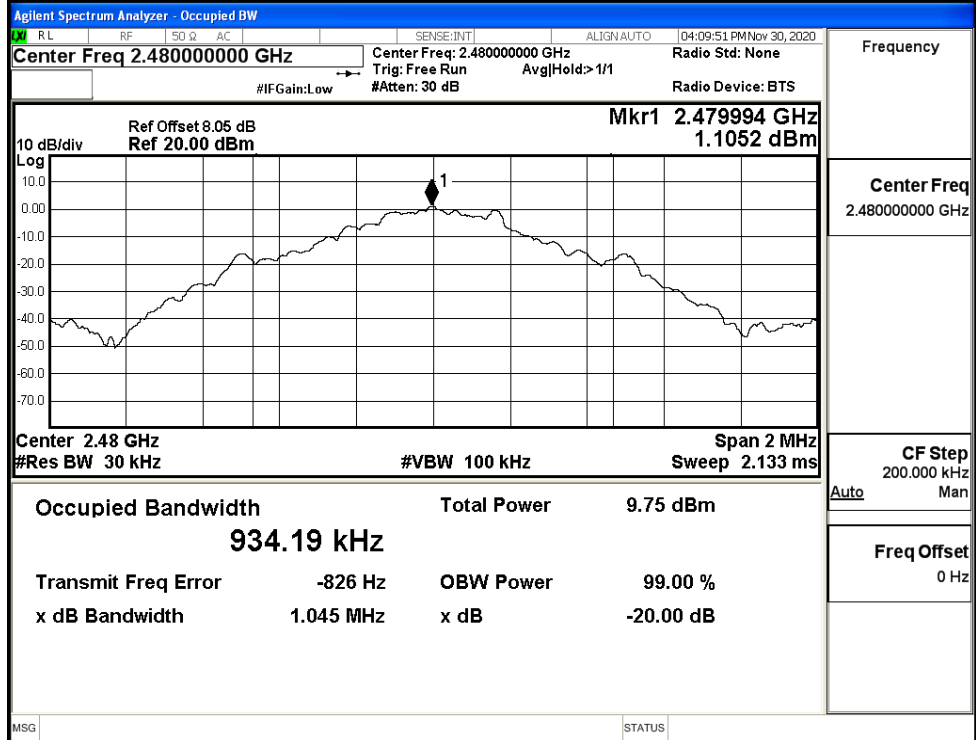
Frequency

Center Freq
2.441000000 GHz

CF Step
200.000 kHz

Freq Offset
0 Hz

GFSK/HCH



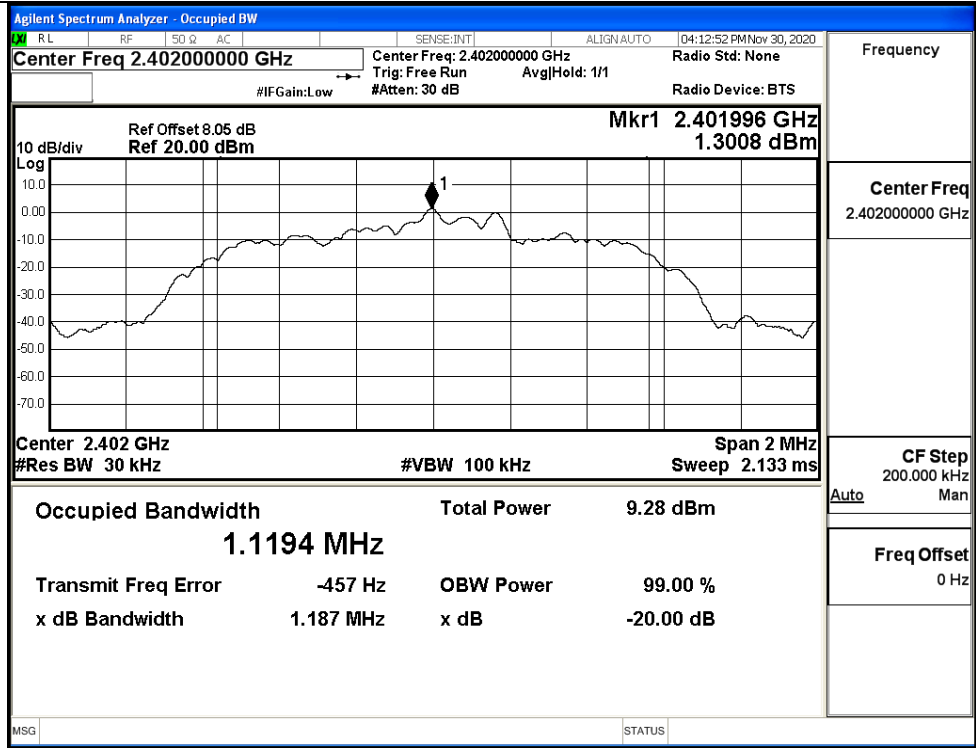
Frequency

Center Freq
2.480000000 GHz

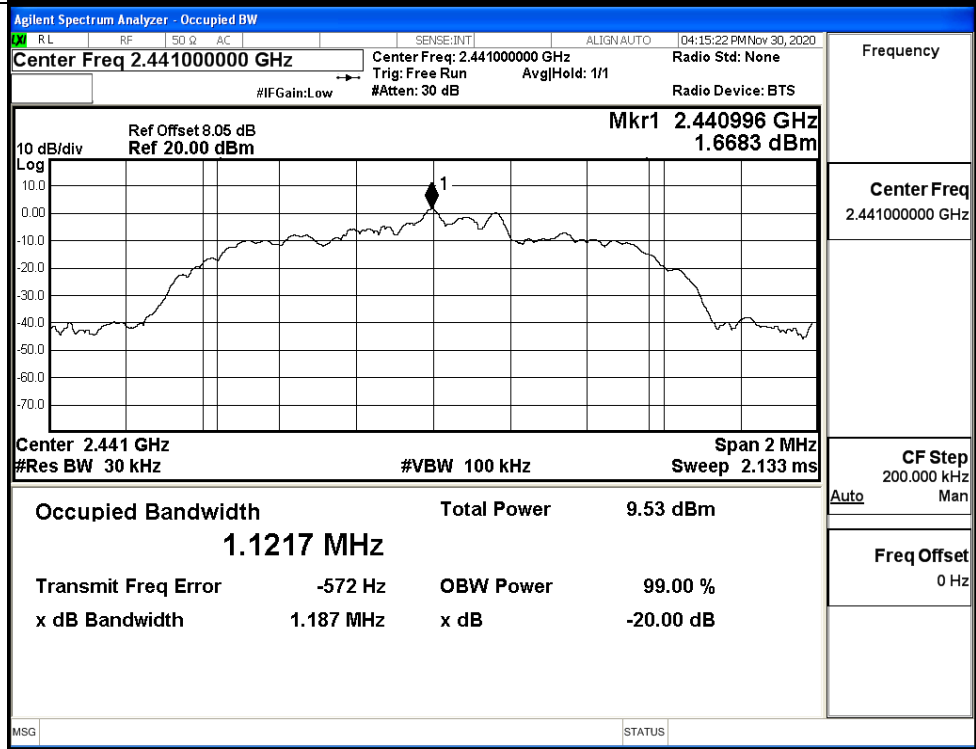
CF Step
200.000 kHz

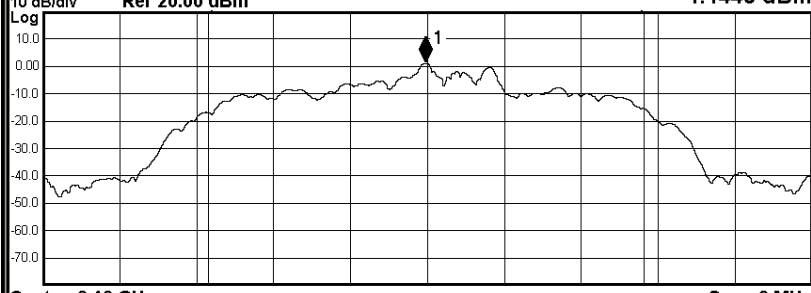
Freq Offset
0 Hz

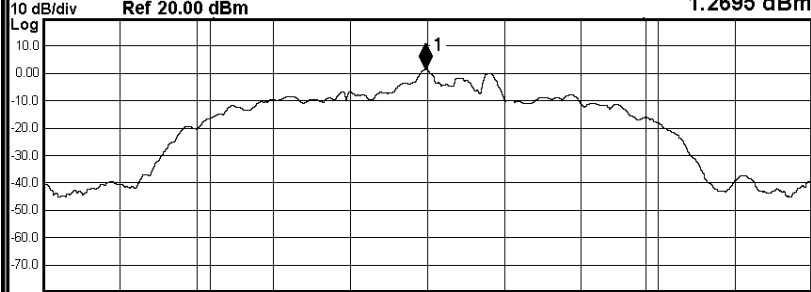
$\pi/4$ DQPSK/LCH



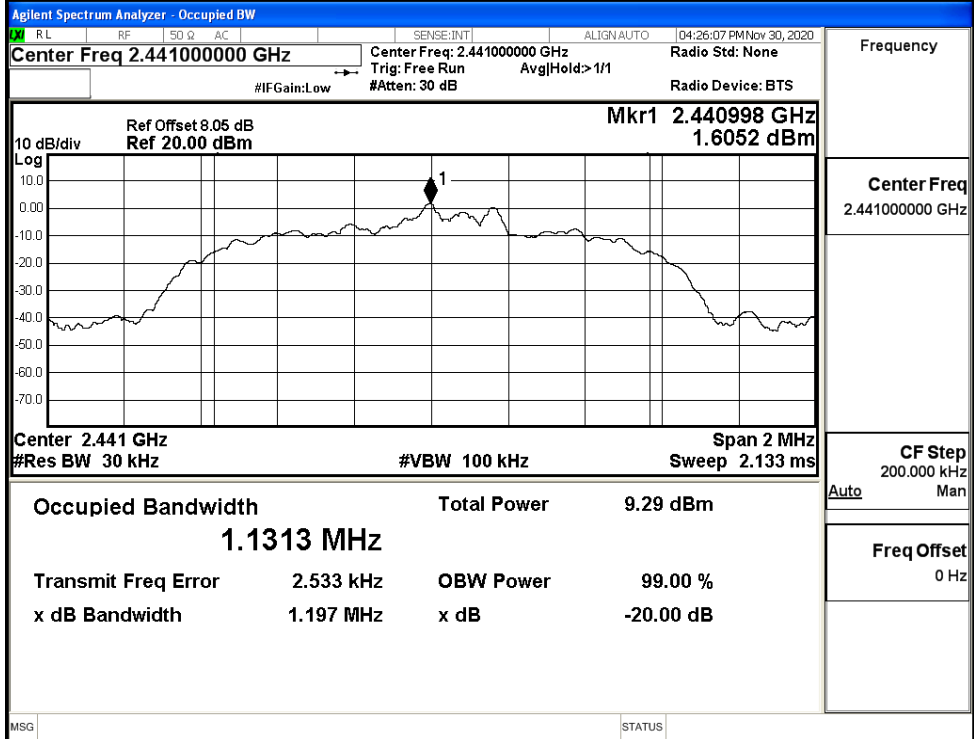
$\pi/4$ DQPSK/MCH



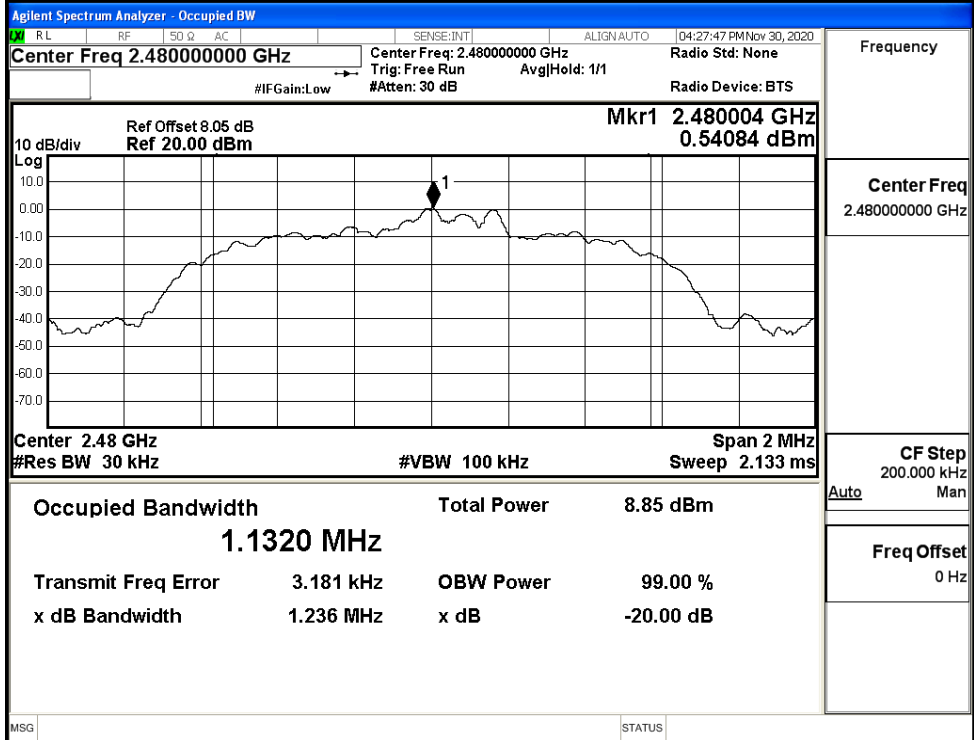
$\pi/4$ DQPSK/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.48000000 GHz #IFGain: Low #Atten: 30 dB Mkr1 2.479994 GHz 1.1448 dBm 10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm 	Frequency 2.48000000 GHz
	Center 2.48 GHz #Res BW 30 kHz #VBW 100 kHz Span 2 MHz Sweep 2.133 ms	CF Step 200.000 kHz Auto Man
	Occupied Bandwidth 1.1256 MHz Total Power 8.93 dBm Transmit Freq Error -1.372 kHz OBW Power 99.00 % x dB Bandwidth 1.187 MHz x dB -20.00 dB	Freq Offset 0 Hz
	MSG STATUS	

8DPSK/LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.40200000 GHz #IFGain: Low #Atten: 30 dB Mkr1 2.401994 GHz 1.2695 dBm 10 dB/div Ref Offset 8.05 dB Ref 20.00 dBm 	Frequency 2.40200000 GHz
	Center 2.402 GHz #Res BW 30 kHz #VBW 100 kHz Span 2 MHz Sweep 2.133 ms	CF Step 200.000 kHz Auto Man
	Occupied Bandwidth 1.1308 MHz Total Power 8.93 dBm Transmit Freq Error 3.049 kHz OBW Power 99.00 % x dB Bandwidth 1.195 MHz x dB -20.00 dB	Freq Offset 0 Hz
	MSG STATUS	

8DPSK/MCH



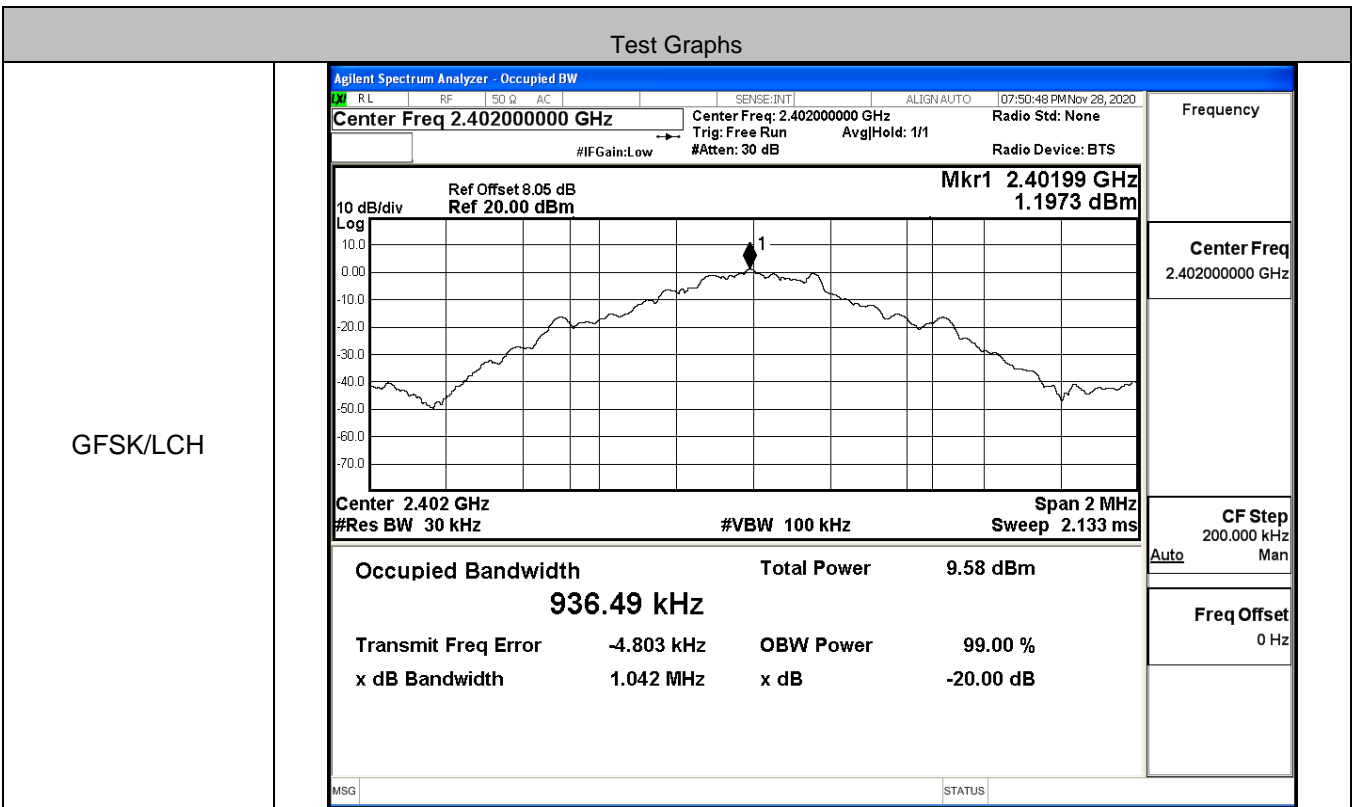
8DPSK/HCH



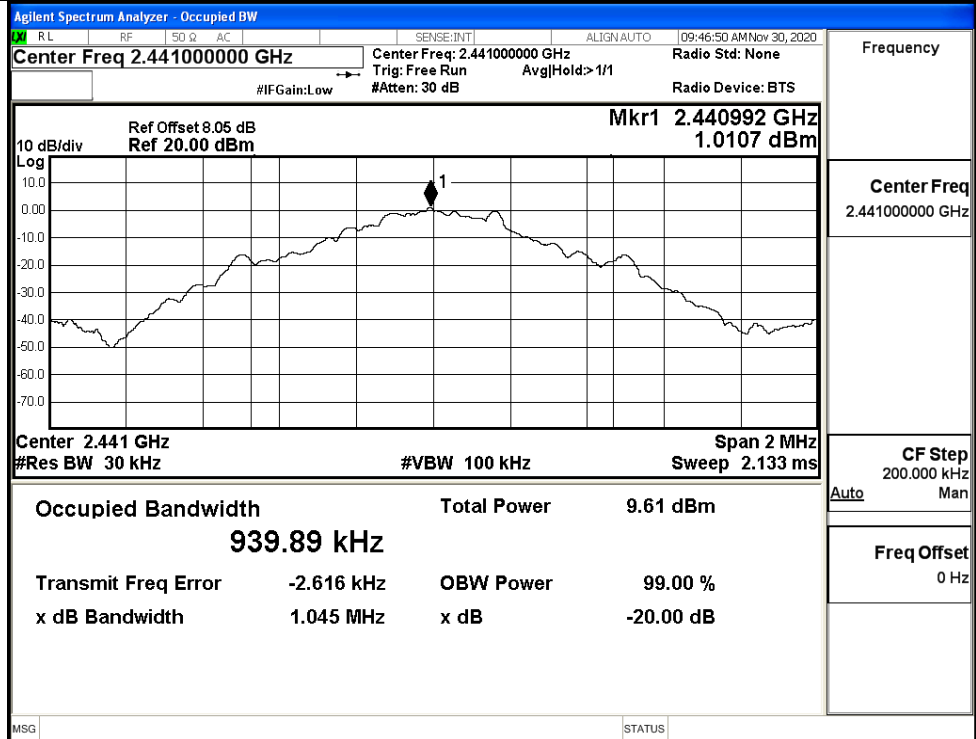
Left

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.042	Not Specified	PASS
	MCH	1.045	Not Specified	PASS
	HCH	1.024	Not Specified	PASS
π/4DQPSK	LCH	1.186	Not Specified	PASS
	MCH	1.186	Not Specified	PASS
	HCH	1.187	Not Specified	PASS
8DPSK	LCH	1.195	Not Specified	PASS
	MCH	1.195	Not Specified	PASS
	HCH	1.197	Not Specified	PASS

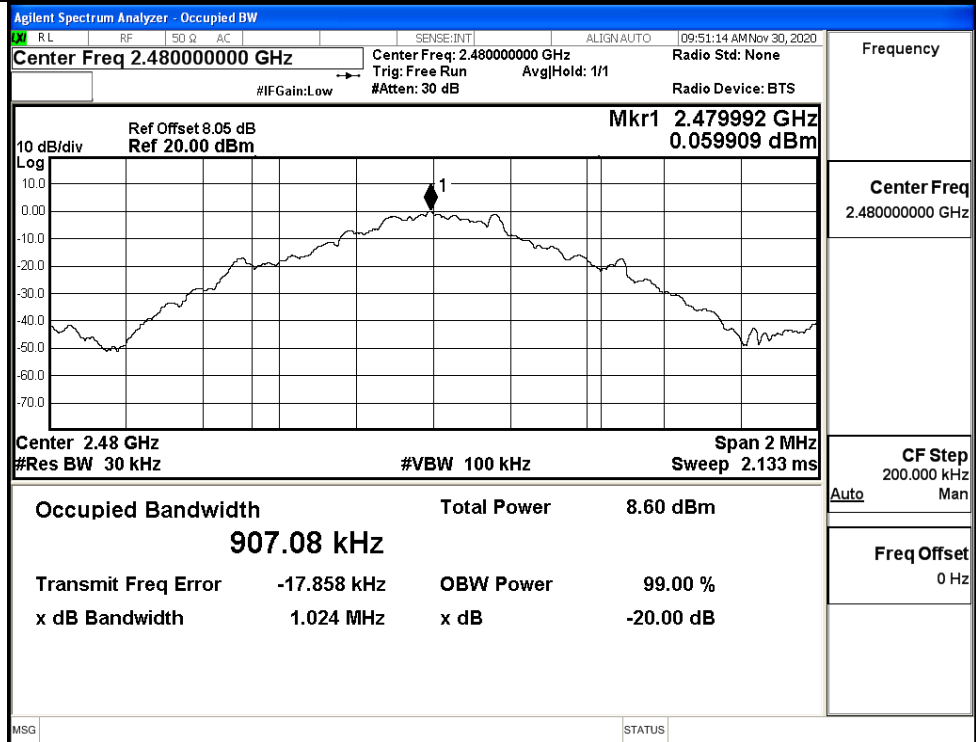
Test Graphs



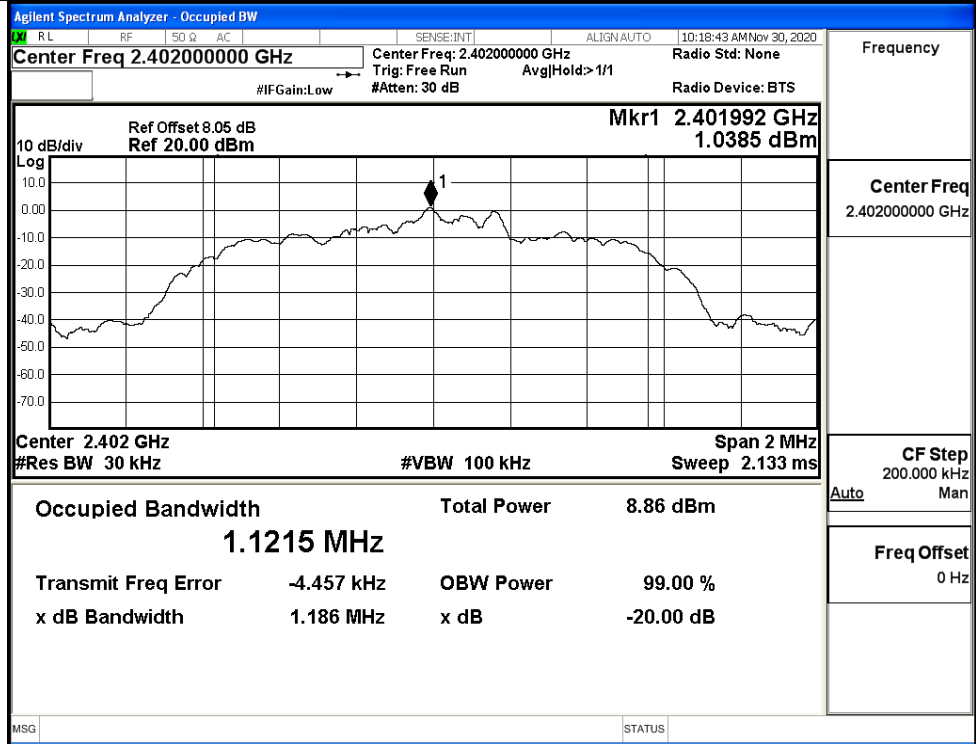
GFSK/MCH



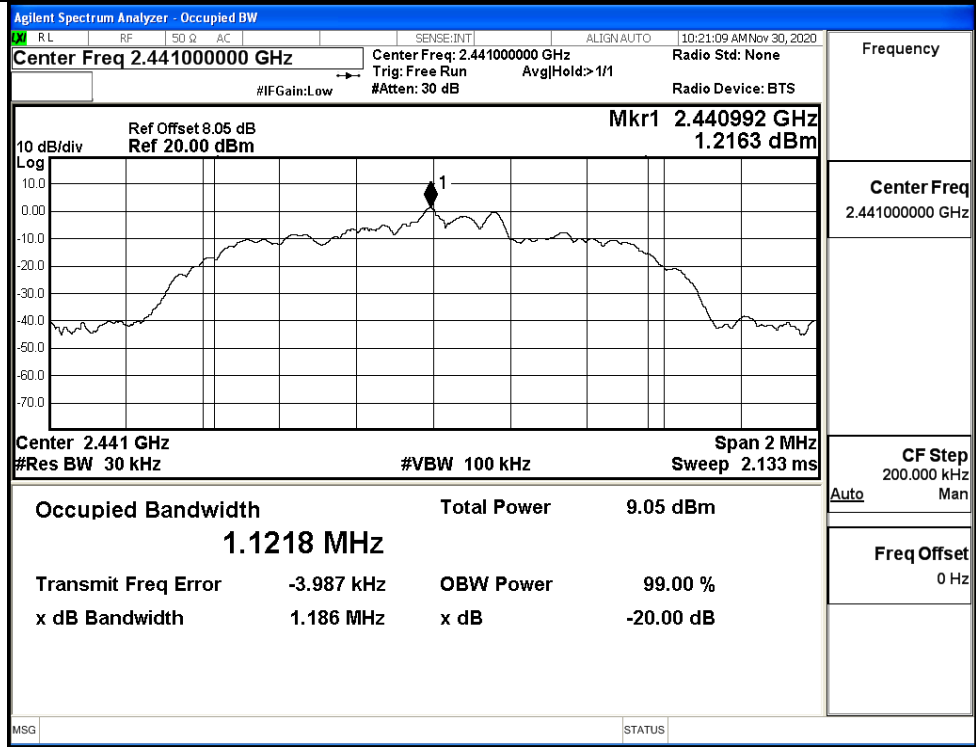
GFSK/HCH



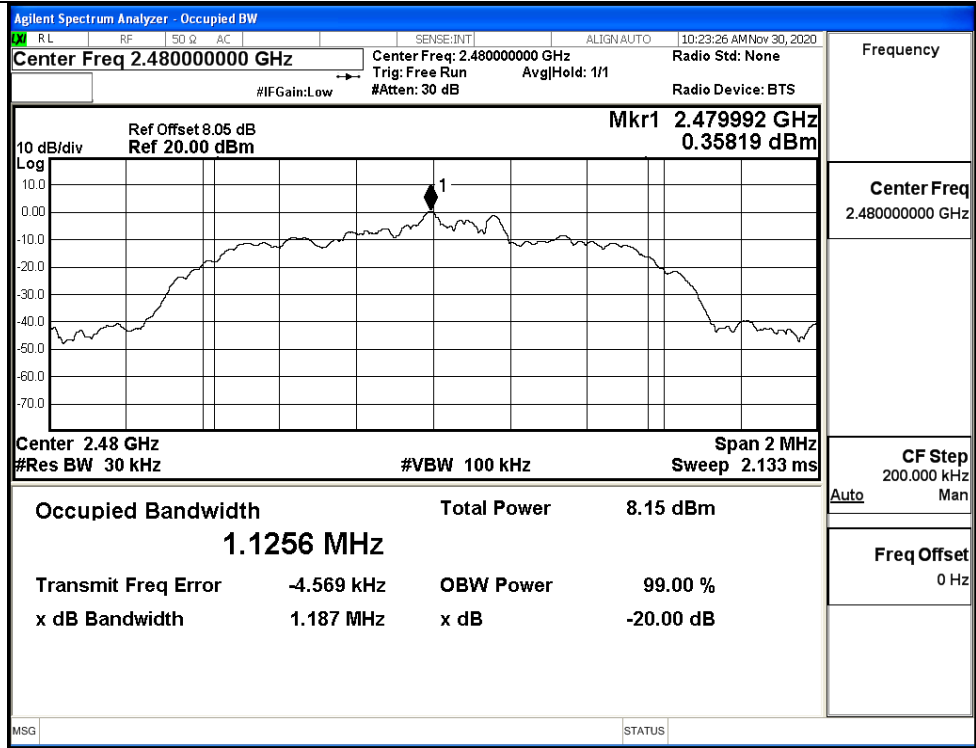
$\pi/4$ DQPSK/LCH



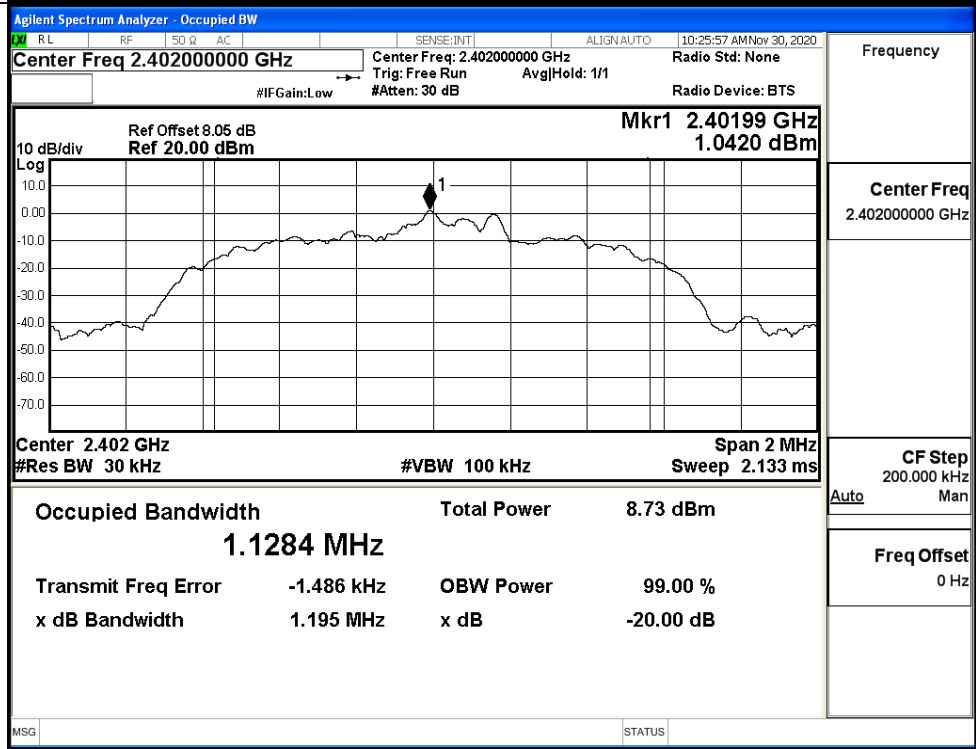
$\pi/4$ DQPSK/MCH



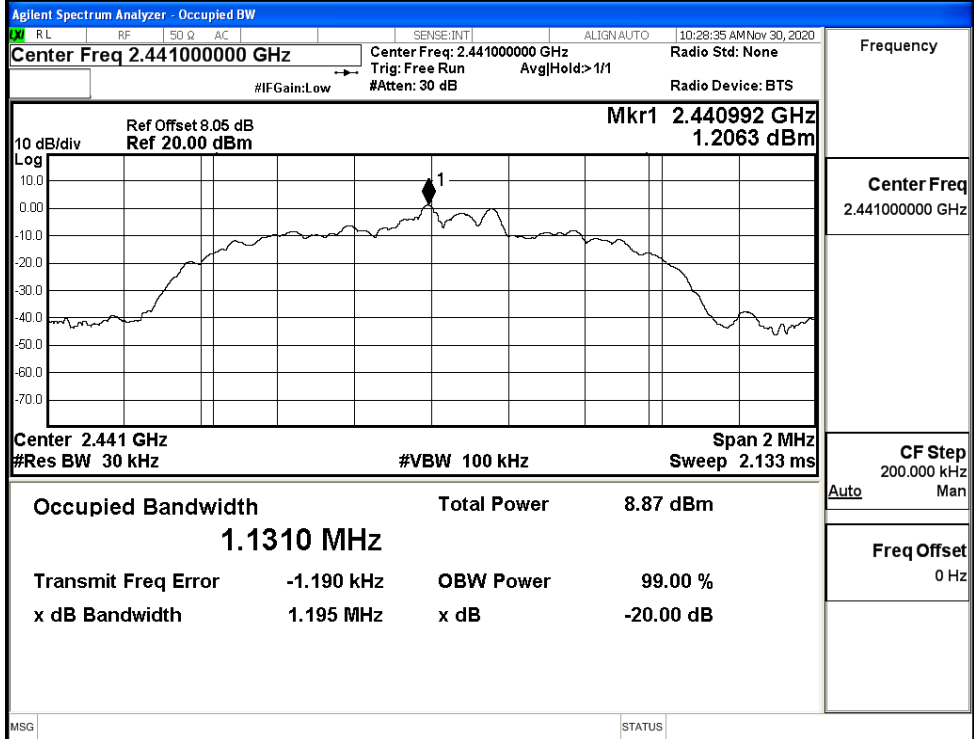
$\pi/4$ DQPSK/HCH



8DPSK/LCH

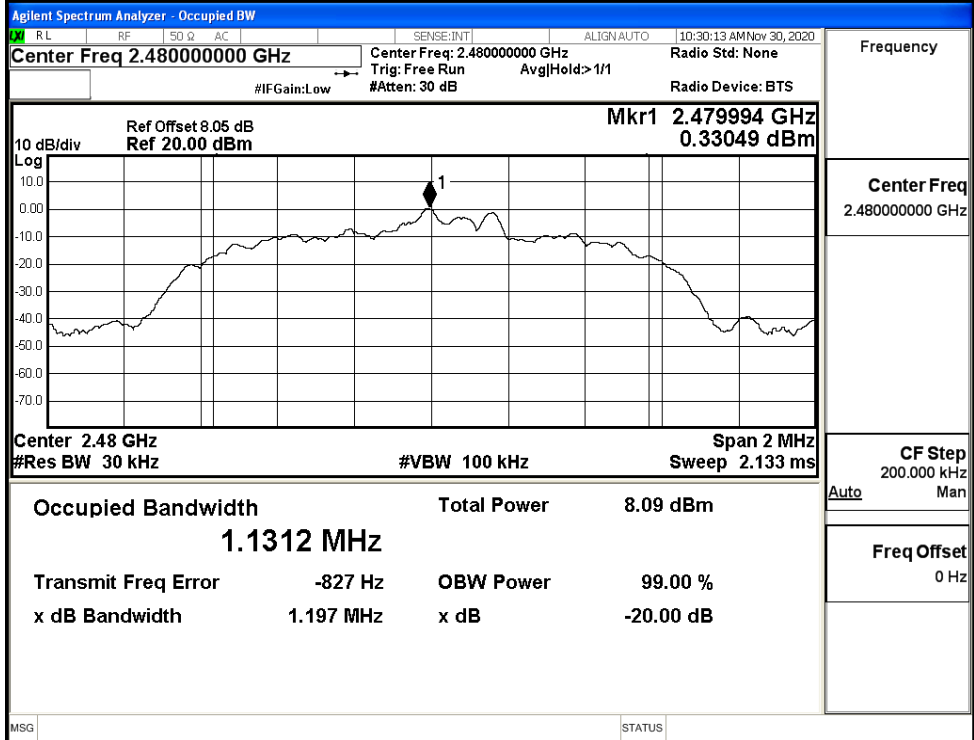


8DPSK/MCH



Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH

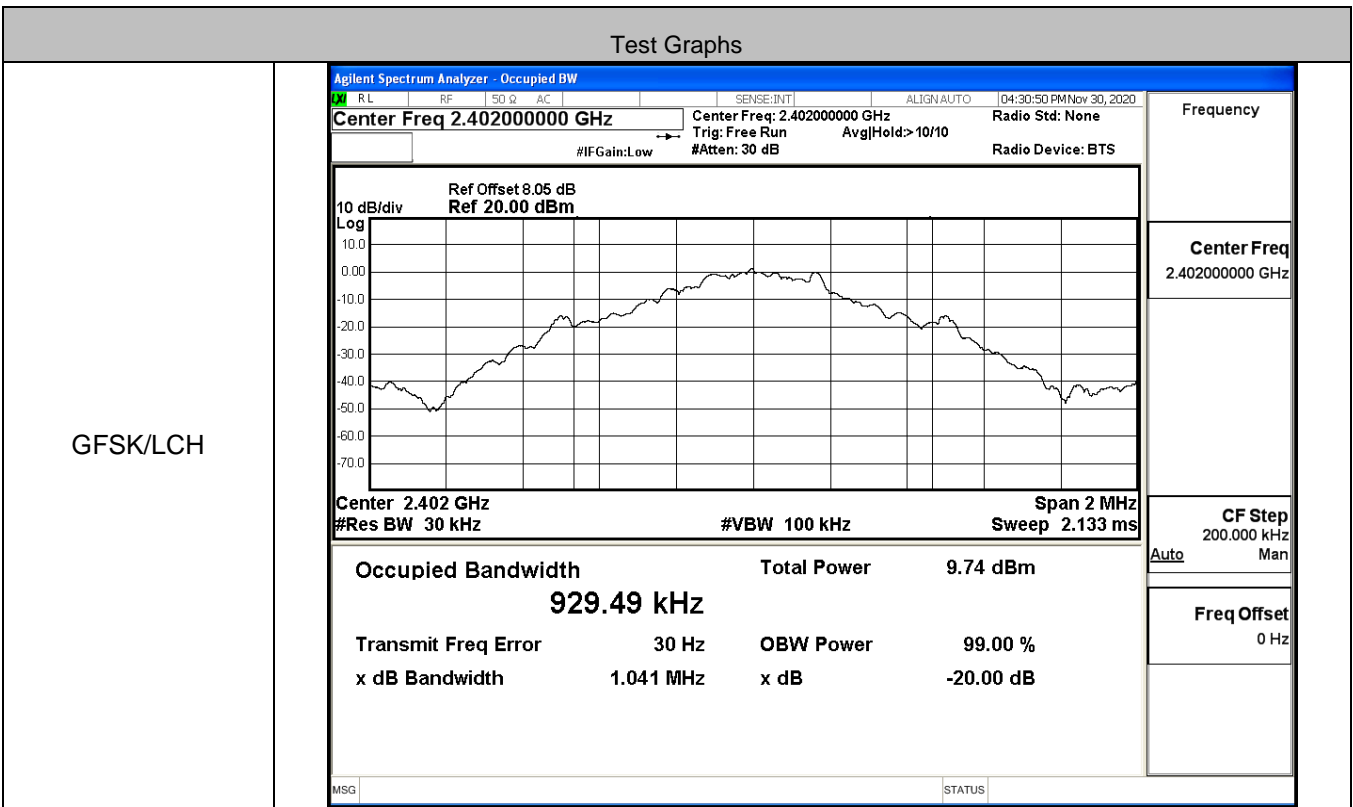


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

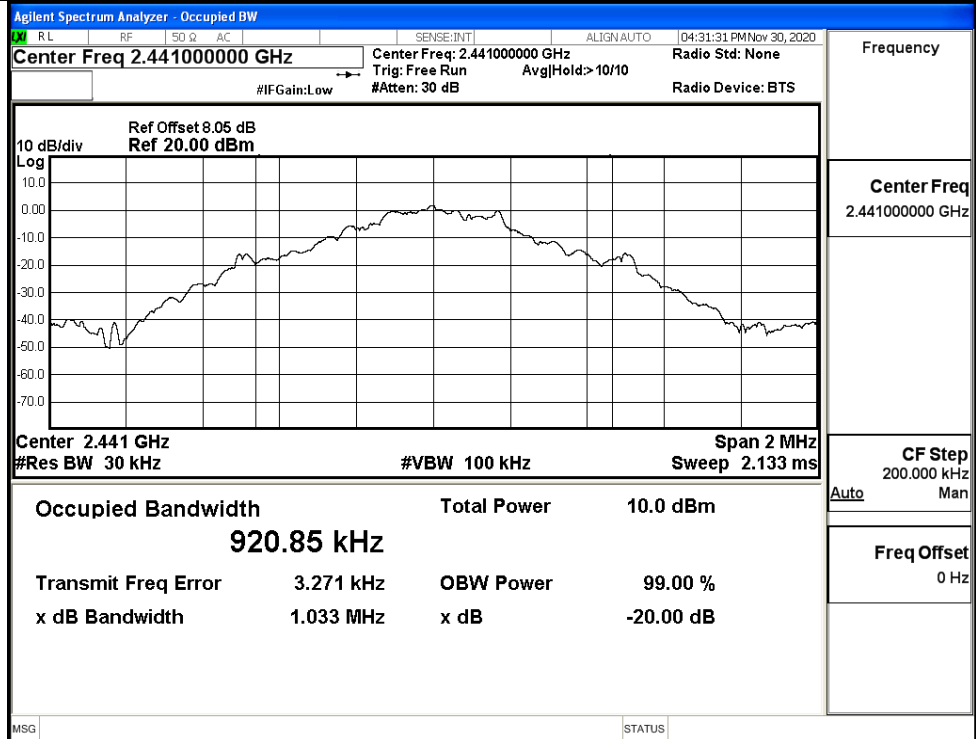
A.3 Occupied Bandwidth

Right

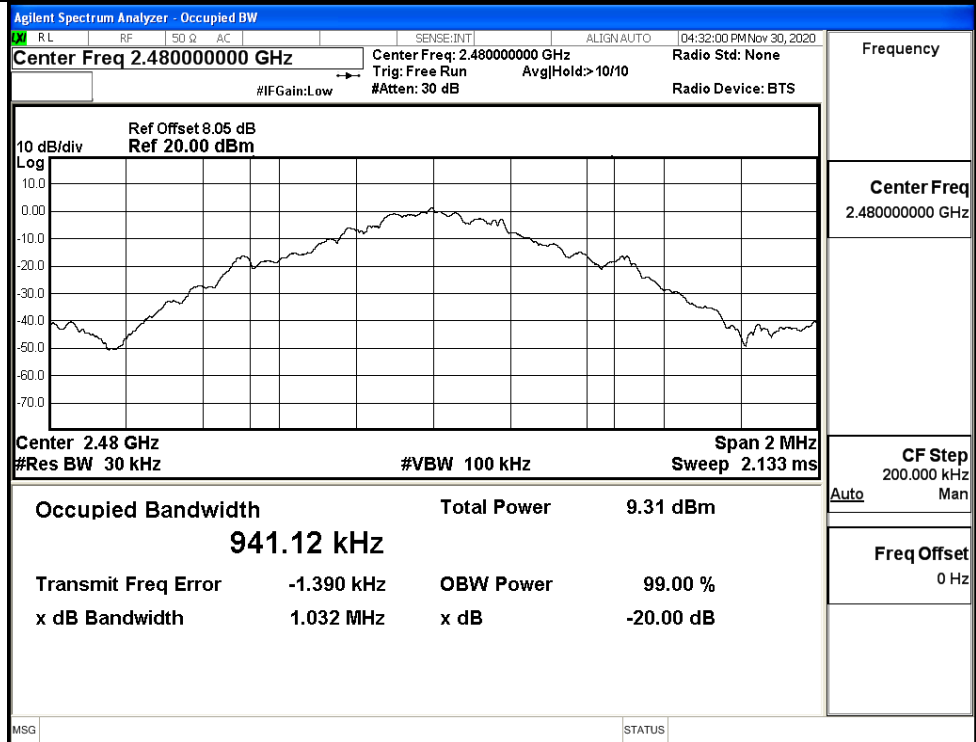
Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.92949	Not Specified	PASS
	MCH	0.92085	Not Specified	PASS
	HCH	0.94112	Not Specified	PASS
π/4DQPSK	LCH	1.1219	Not Specified	PASS
	MCH	1.1264	Not Specified	PASS
	HCH	1.1267	Not Specified	PASS
8DPSK	LCH	1.1293	Not Specified	PASS
	MCH	1.1318	Not Specified	PASS
	HCH	1.1311	Not Specified	PASS



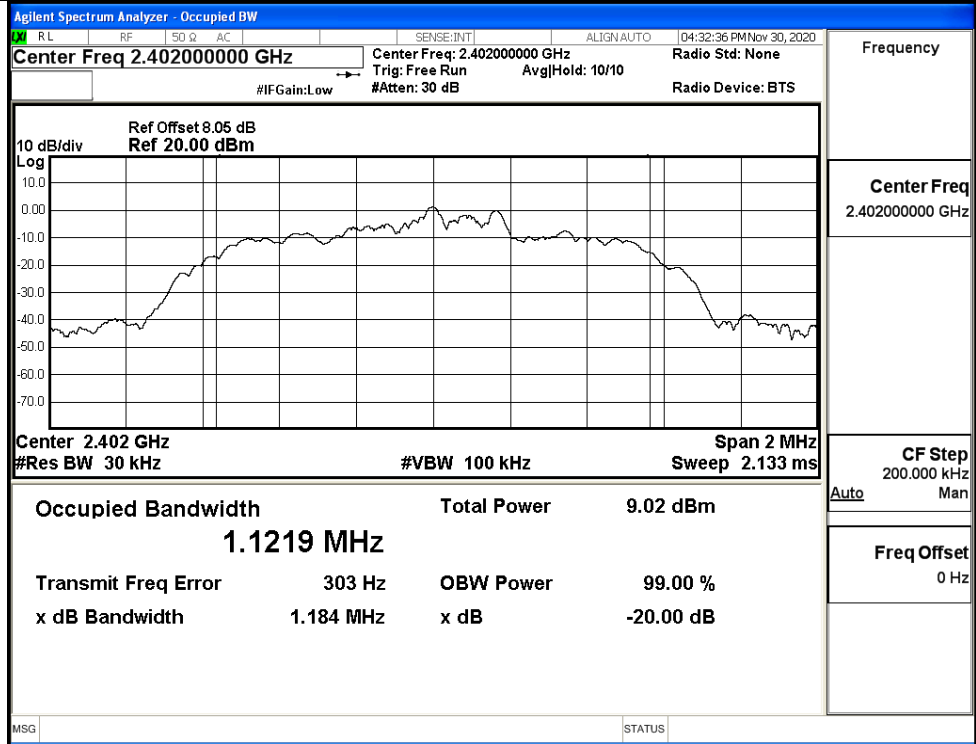
GFSK/MCH



GFSK/HCH

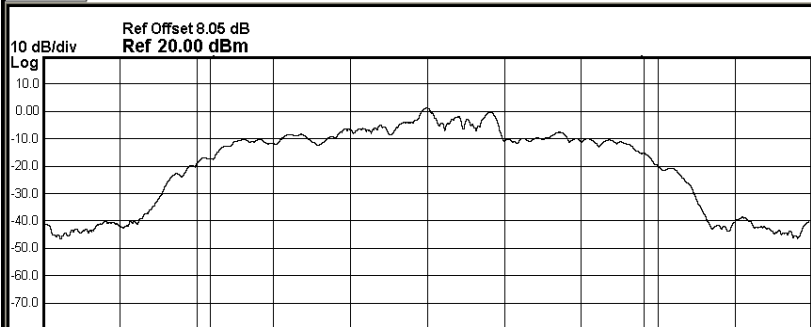


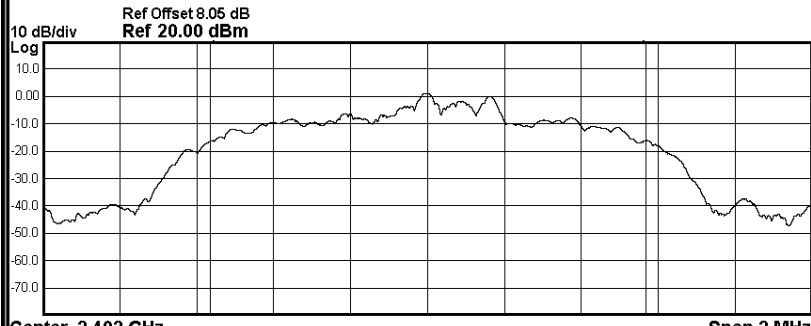
$\pi/4$ DQPSK/LCH



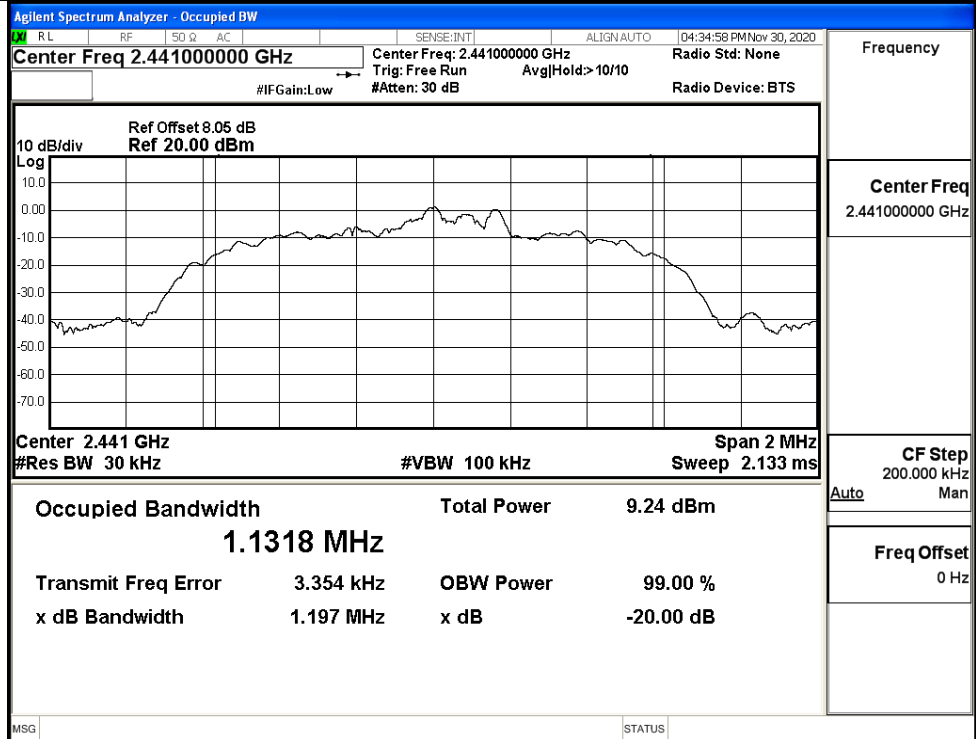
$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.48000000 GHz #IFGain:Low #Atten: 30 dB	Frequency 2.48000000 GHz
	Ref Offset 8.05 dB Ref 20.00 dBm 	Center Freq 2.48000000 GHz
	Center 2.48 GHz #Res BW 30 kHz #VBW 100 kHz Span 2 MHz Sweep 2.133 ms	CF Step 200.000 kHz Auto Man
	Occupied Bandwidth 1.1267 MHz Total Power 8.82 dBm Transmit Freq Error 83 Hz OBW Power 99.00 % x dB Bandwidth 1.185 MHz x dB -20.00 dB	Freq Offset 0 Hz

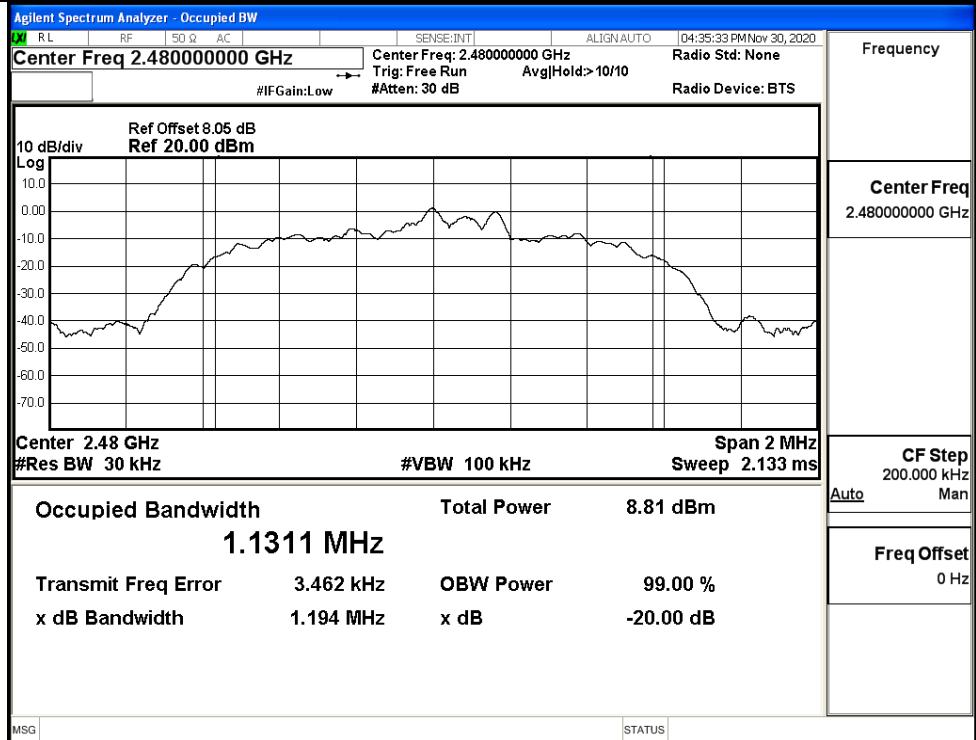
8DPSK/LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.40200000 GHz #IFGain:Low #Atten: 30 dB	Frequency 2.40200000 GHz
	Ref Offset 8.05 dB Ref 20.00 dBm 	Center Freq 2.40200000 GHz
	Center 2.402 GHz #Res BW 30 kHz #VBW 100 kHz Span 2 MHz Sweep 2.133 ms	CF Step 200.000 kHz Auto Man
	Occupied Bandwidth 1.1293 MHz Total Power 8.88 dBm Transmit Freq Error 3.004 kHz OBW Power 99.00 % x dB Bandwidth 1.194 MHz x dB -20.00 dB	Freq Offset 0 Hz

8DPSK/MCH



Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

8DPSK/HCH

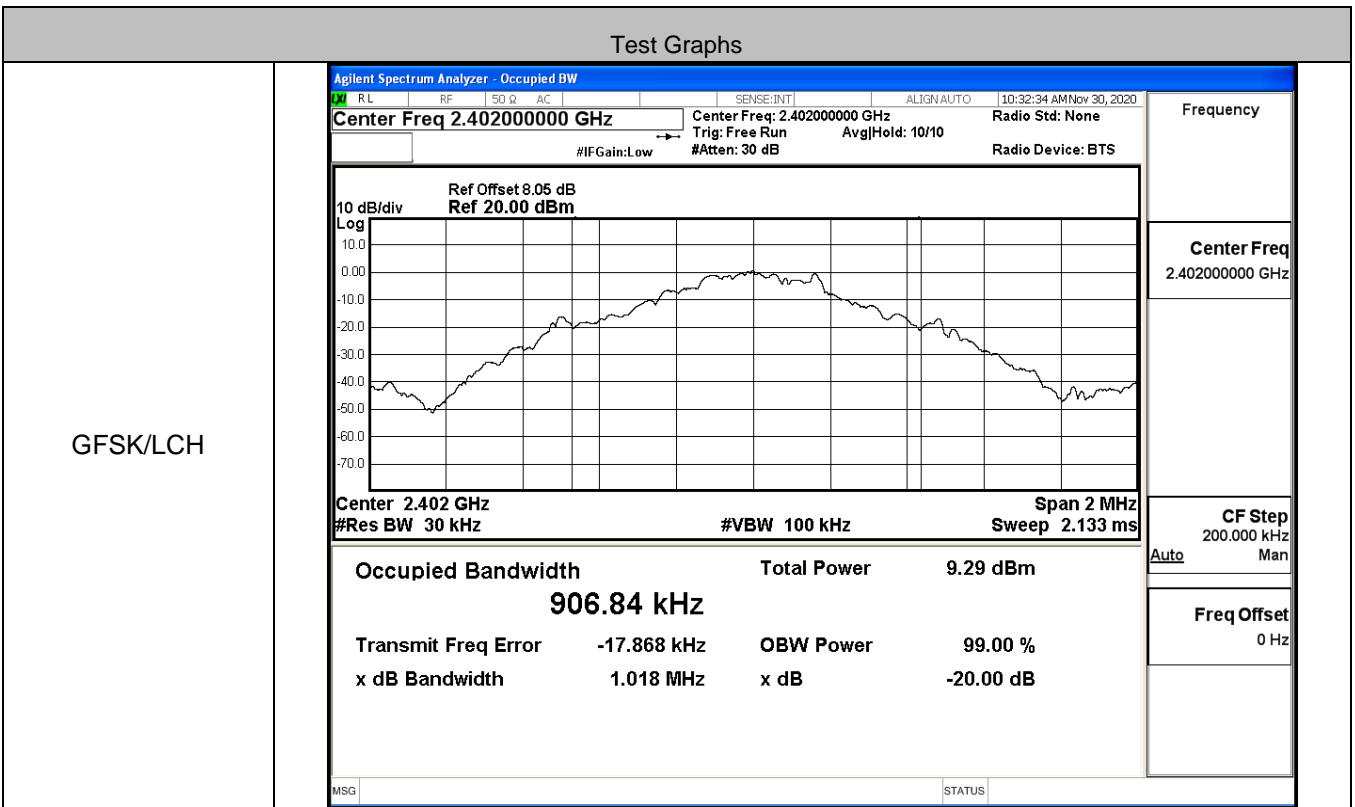


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

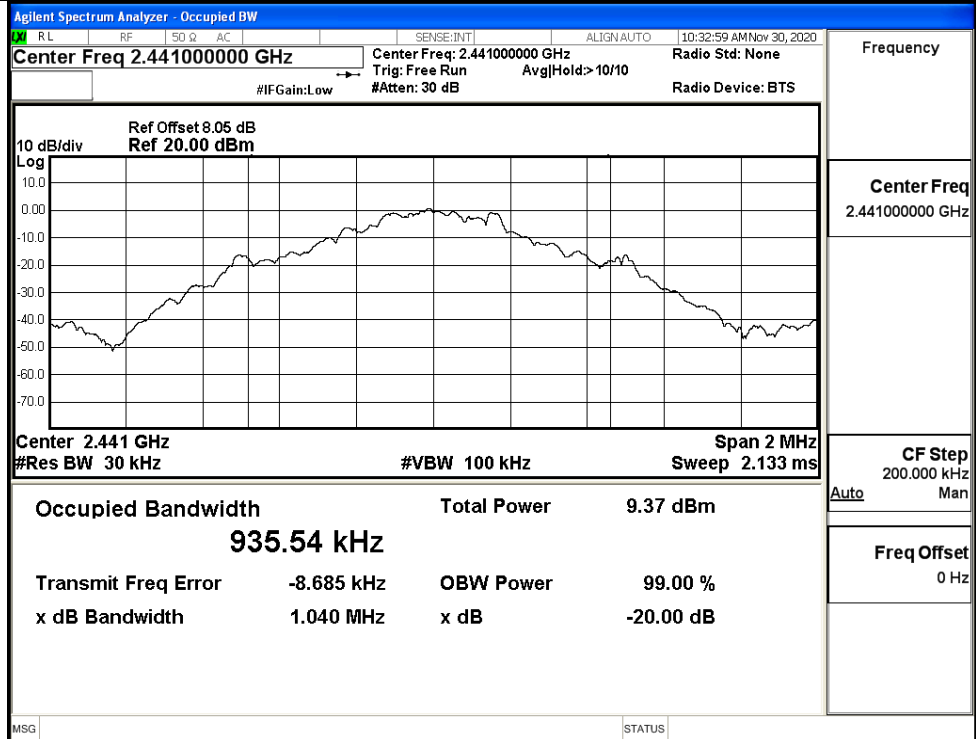
Left

Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.90684	Not Specified	PASS
	MCH	0.93554	Not Specified	PASS
	HCH	0.93818	Not Specified	PASS
π/4DQPSK	LCH	1.1316	Not Specified	PASS
	MCH	1.1224	Not Specified	PASS
	HCH	1.1235	Not Specified	PASS
8DPSK	LCH	1.1300	Not Specified	PASS
	MCH	1.1288	Not Specified	PASS
	HCH	1.1312	Not Specified	PASS

Test Graphs

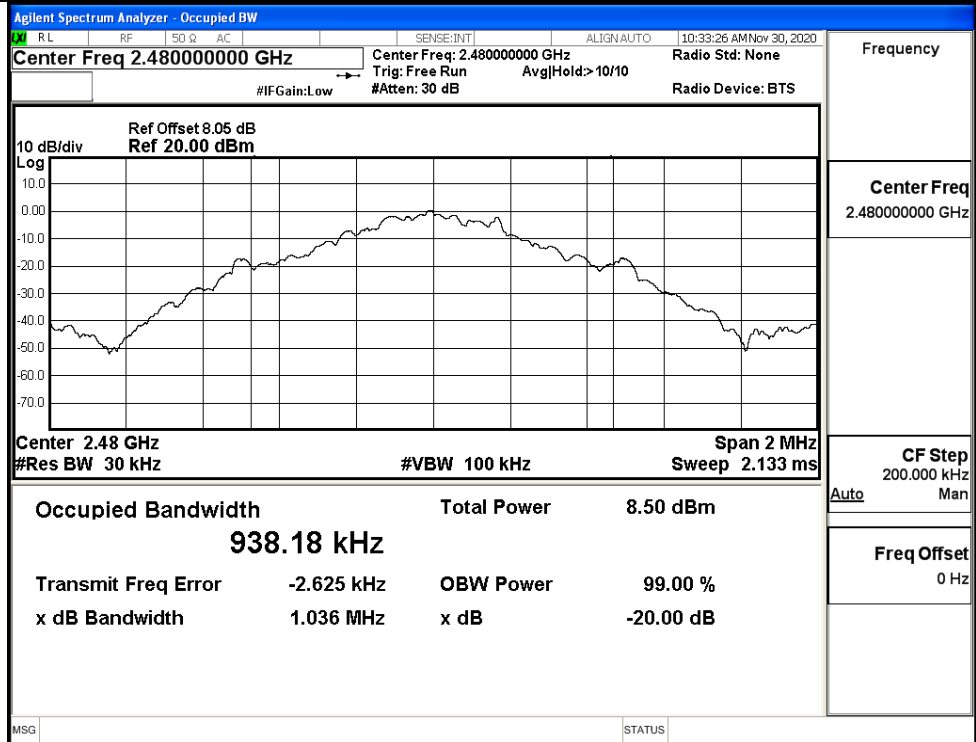


GFSK/MCH



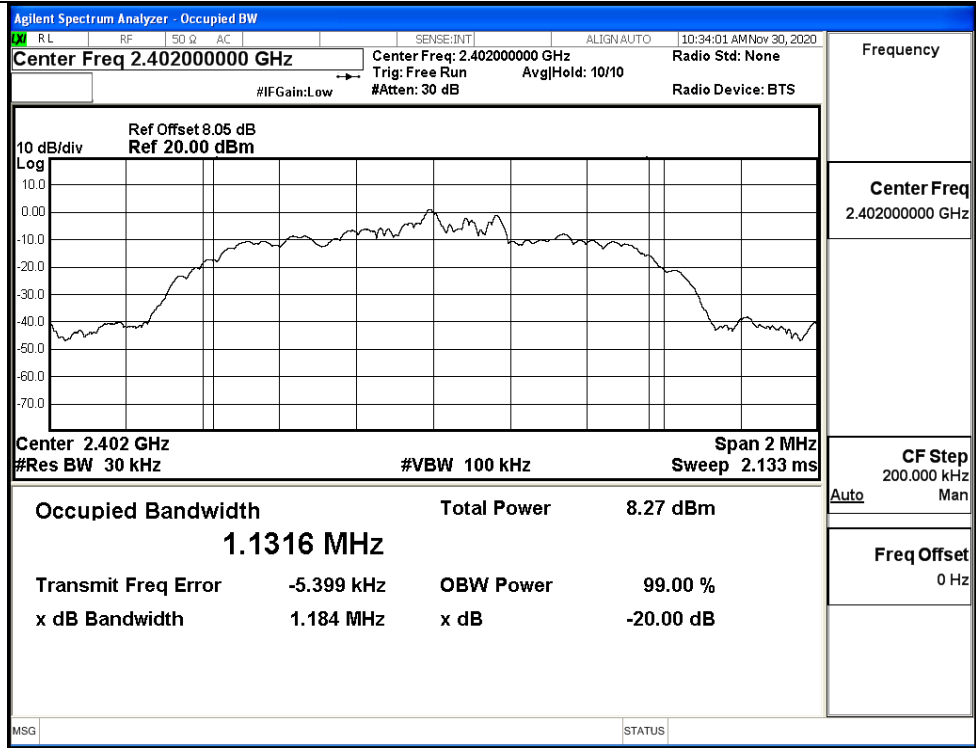
Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

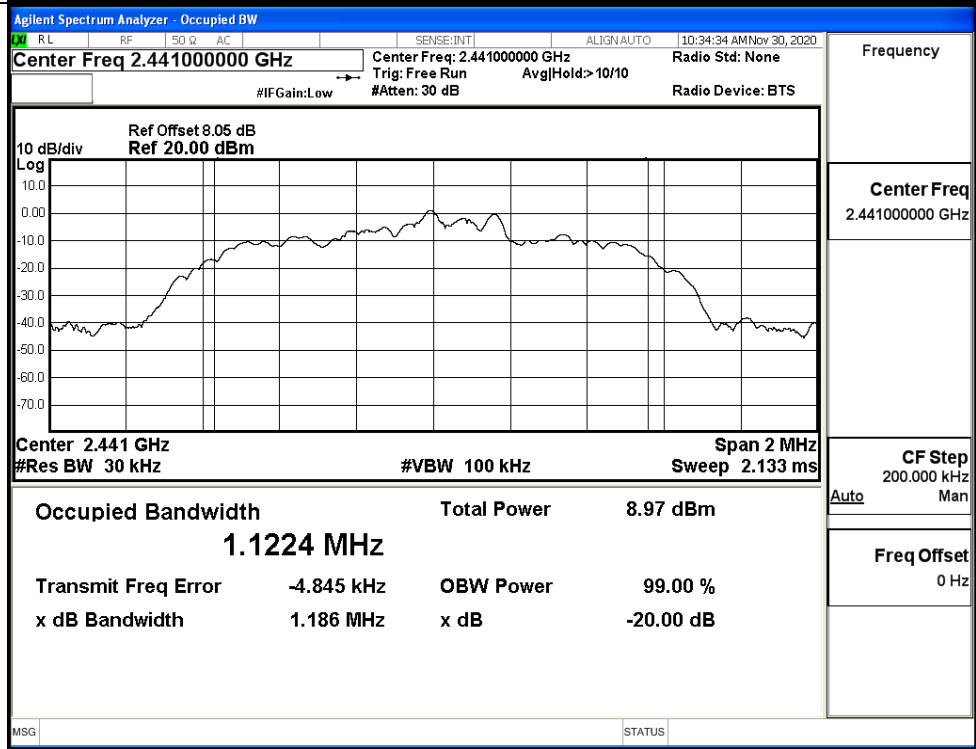


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

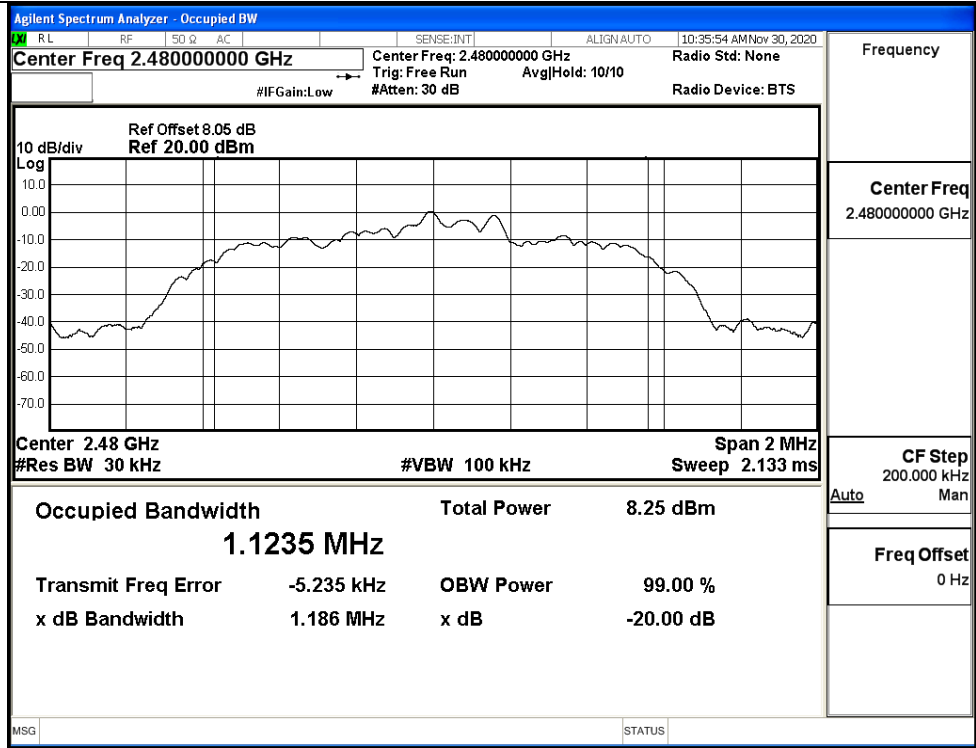
$\pi/4$ DQPSK/LCH



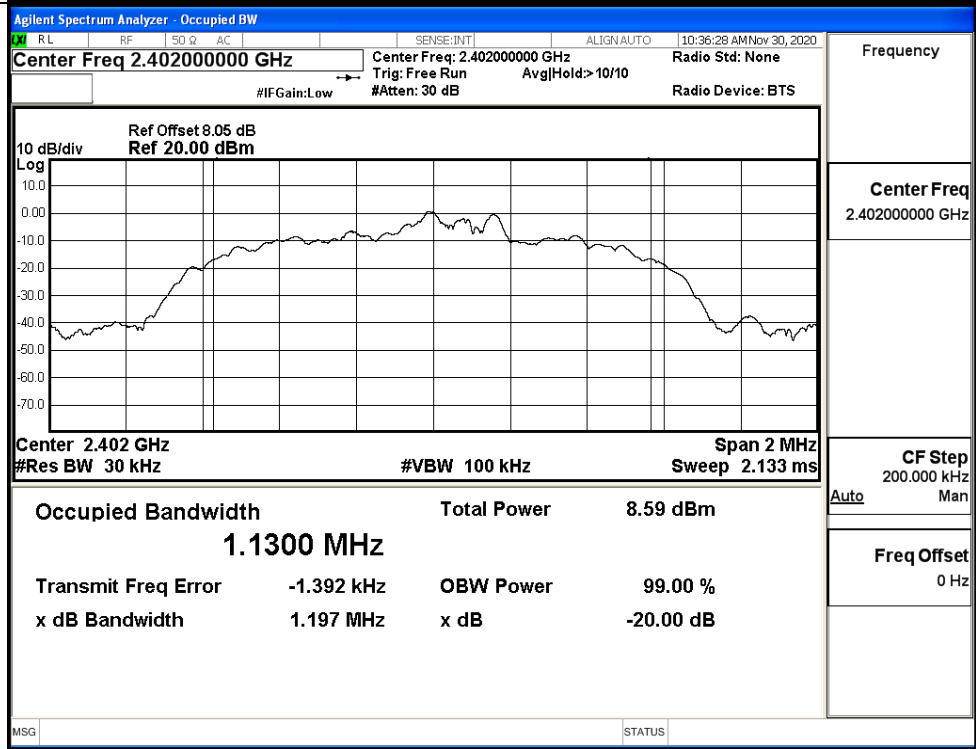
$\pi/4$ DQPSK/MCH



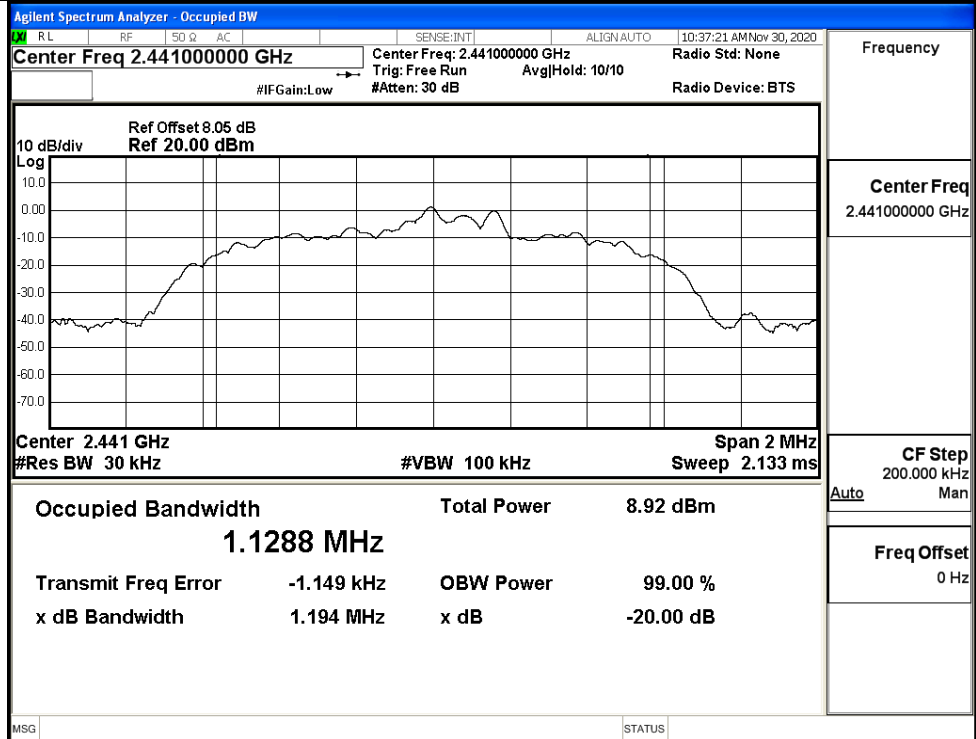
$\pi/4$ DQPSK/HCH



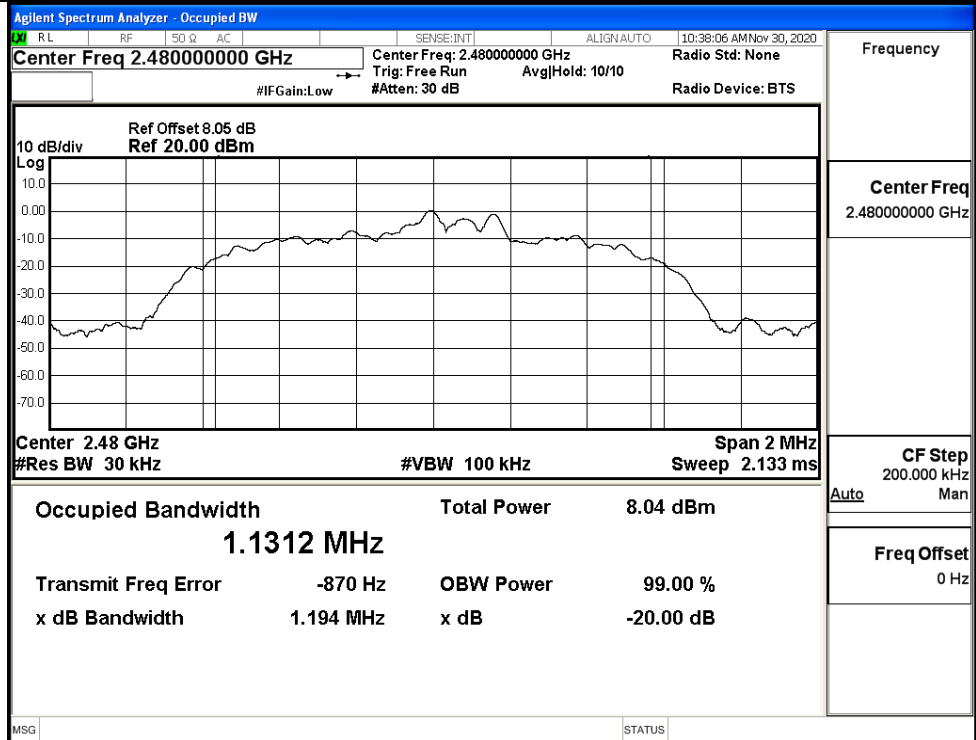
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



A.4 Carrier Frequency Separation

Right

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.003	0.696	PASS
	MCH	0.968	0.696	PASS
	HCH	0.984	0.697	PASS
π/4DQPSK	LCH	0.988	0.791	PASS
	MCH	0.998	0.791	PASS
	HCH	1.006	0.791	PASS
8DPSK	LCH	0.994	0.797	PASS
	MCH	0.998	0.798	PASS
	HCH	0.844	0.824	PASS

Test Graphs

GFSK/LCH

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.402500000 GHz

Ref Offset 8.05 dB
Ref 20.00 dBm

ΔMkr1 1.002 50 MHz
-0.009 dB

Start 2.401500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.067 ms (8001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	A2	f	(Δ)	1.002 50 MHz (Δ)	-0.009 dB			
2	F	f		2.401 996 25 GHz	2.070 dBm			

Frequency

Auto Tune

Center Freq
2.402500000 GHz

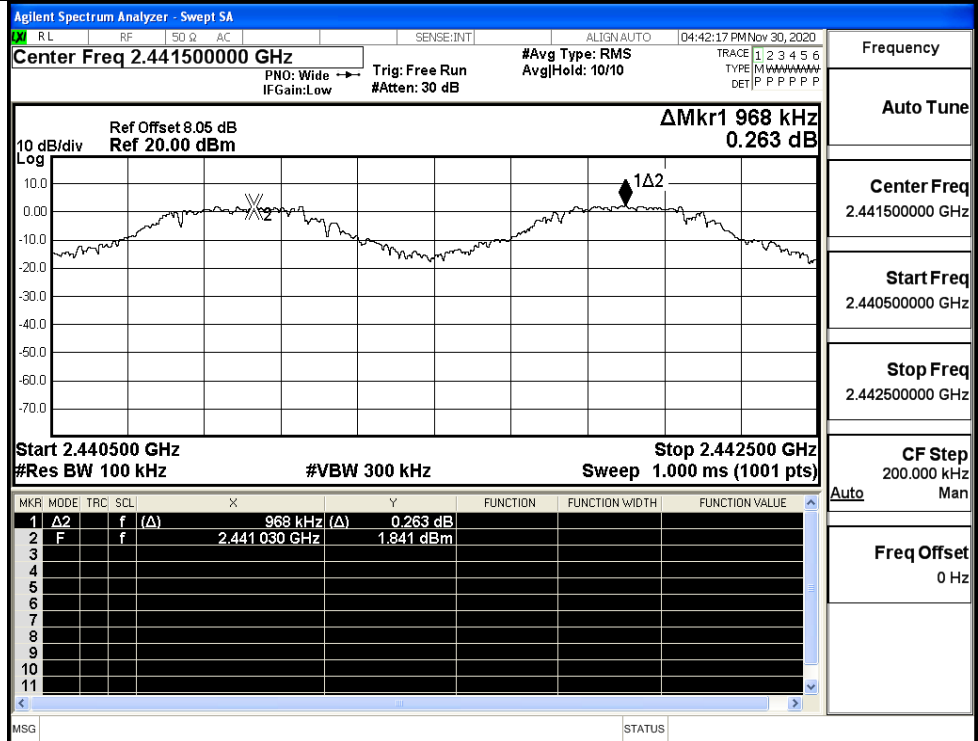
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

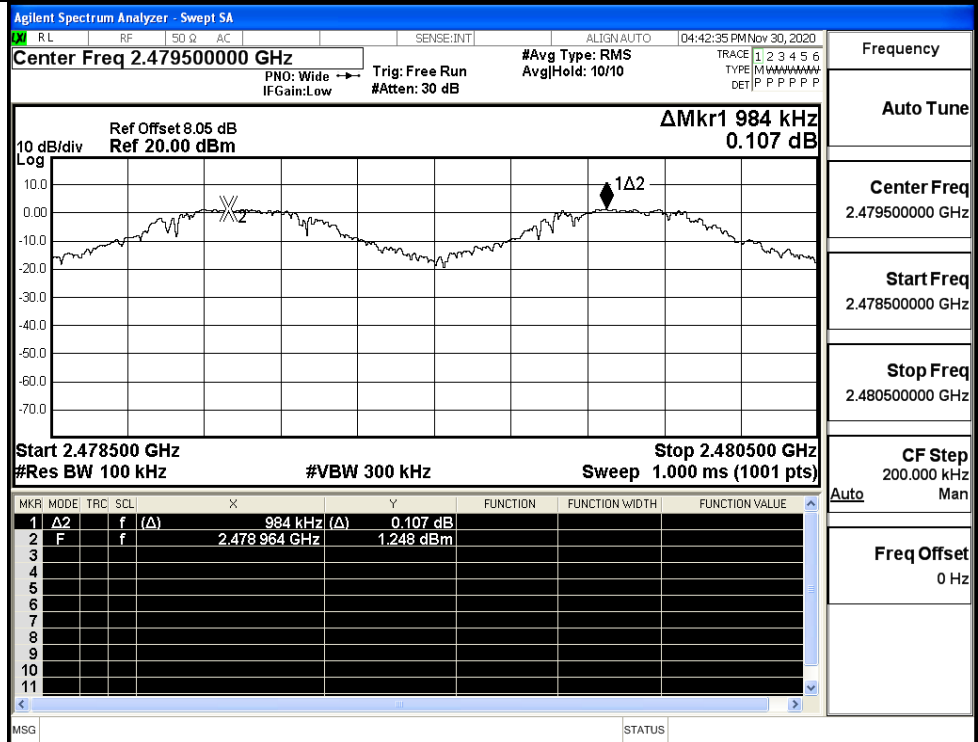
Freq Offset
0 Hz

GFSK/MCH



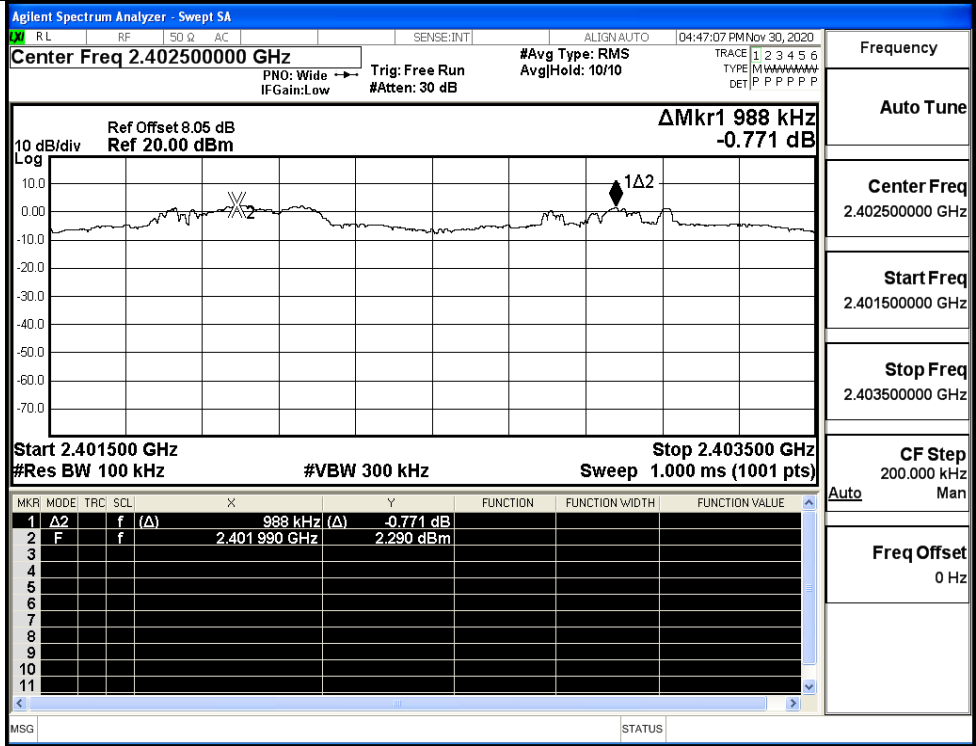
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

GFSK/HCH



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

$\pi/4$ DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

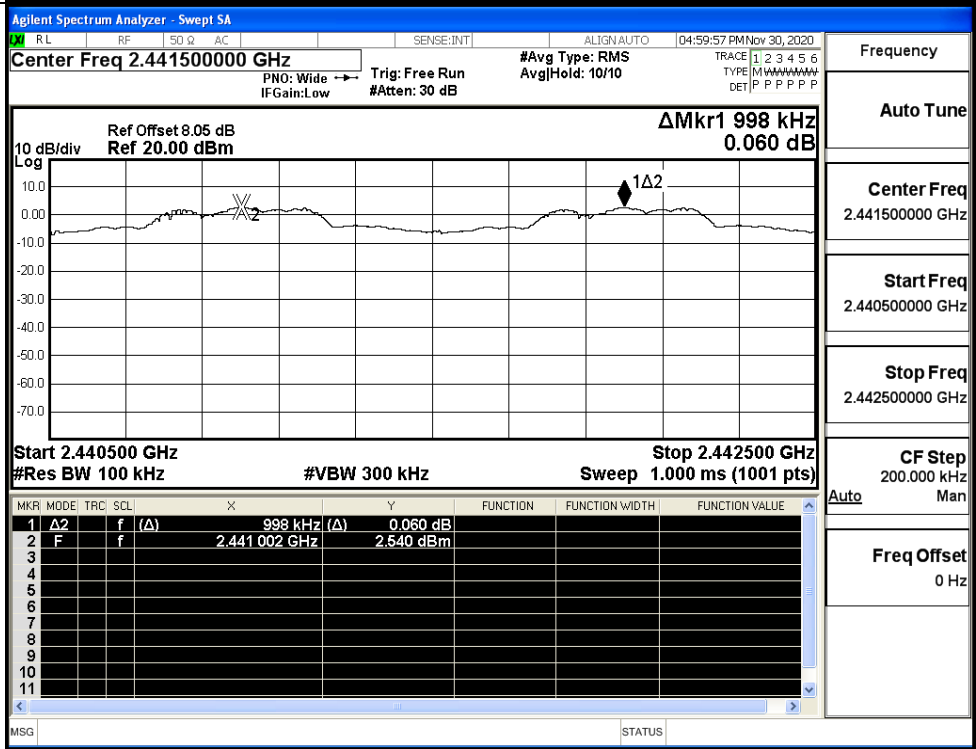
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

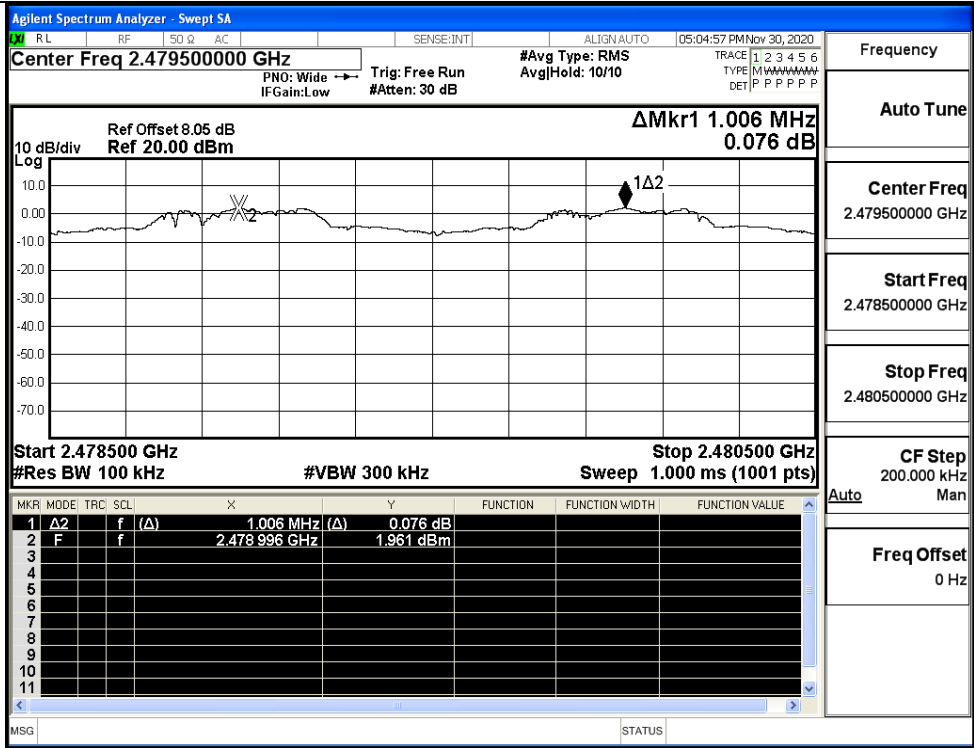
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

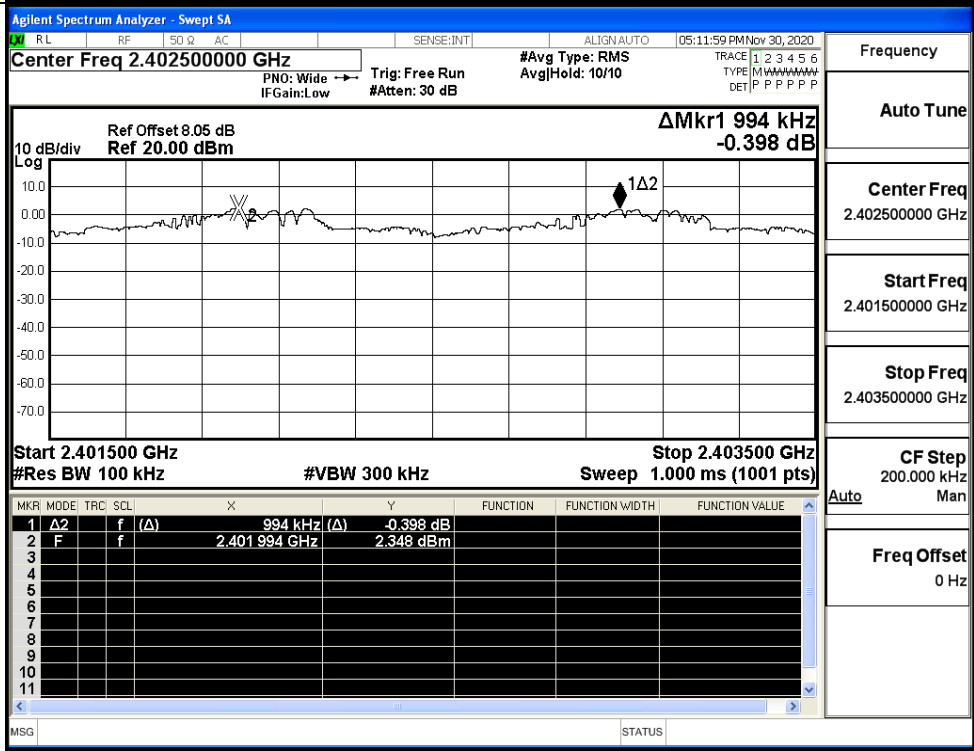
CF Step
200.000 kHz

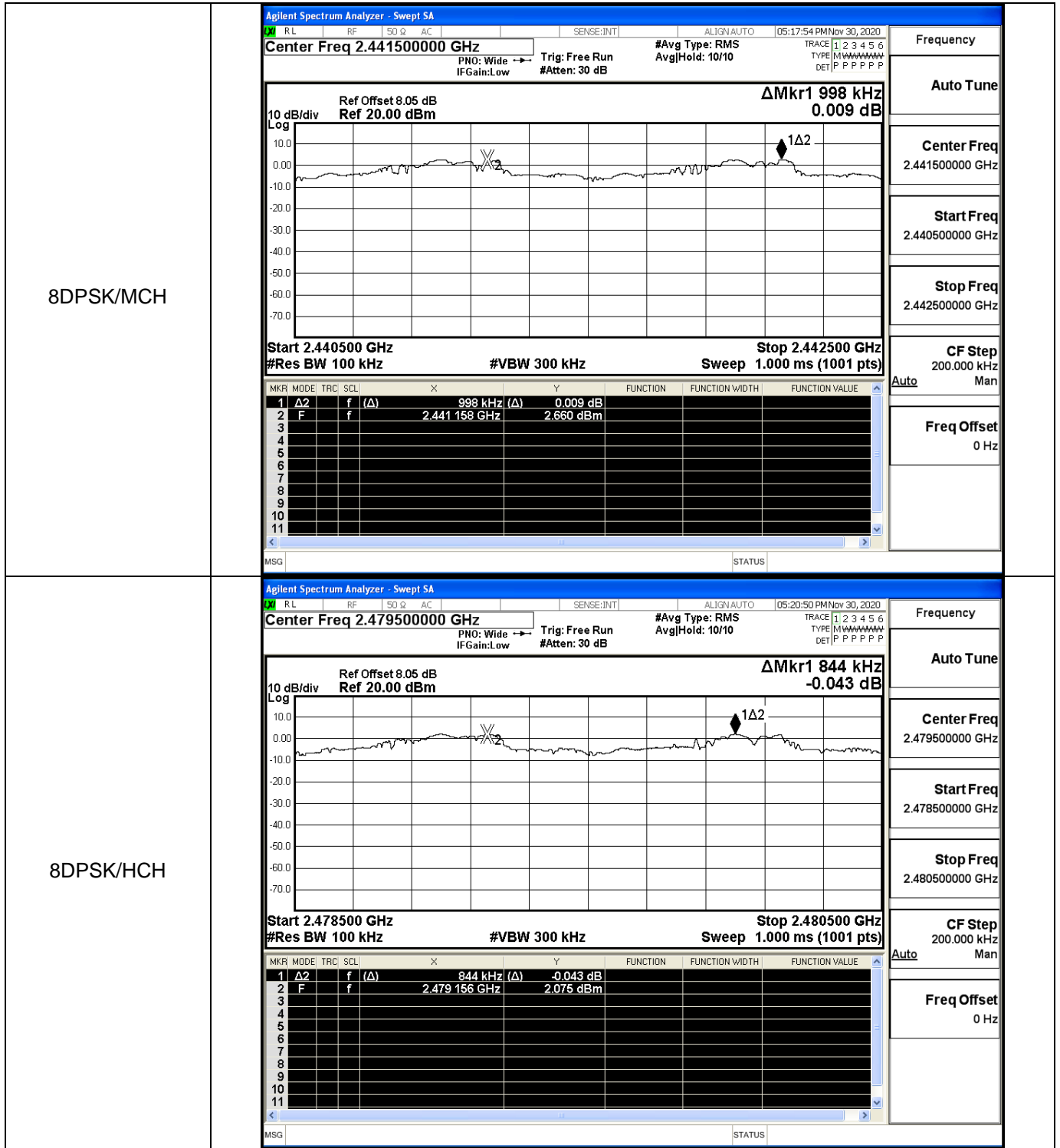
Freq Offset
0 Hz

π/4DQPSK/HCH



8DPSK/LCH





Left

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.156	0.695	PASS
	MCH	0.996	0.697	PASS
	HCH	1.004	0.683	PASS
π/4DQPSK	LCH	0.998	0.791	PASS
	MCH	0.974	0.791	PASS
	HCH	1.144	0.791	PASS

8DPSK	LCH	0.840	0.797	PASS
	MCH	0.982	0.797	PASS
	HCH	0.842	0.798	PASS

Test Graphs

GFSK/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

GFSK/MCH

Frequency

Auto Tune

Center Freq
2.441500000 GHz

Start Freq
2.440500000 GHz

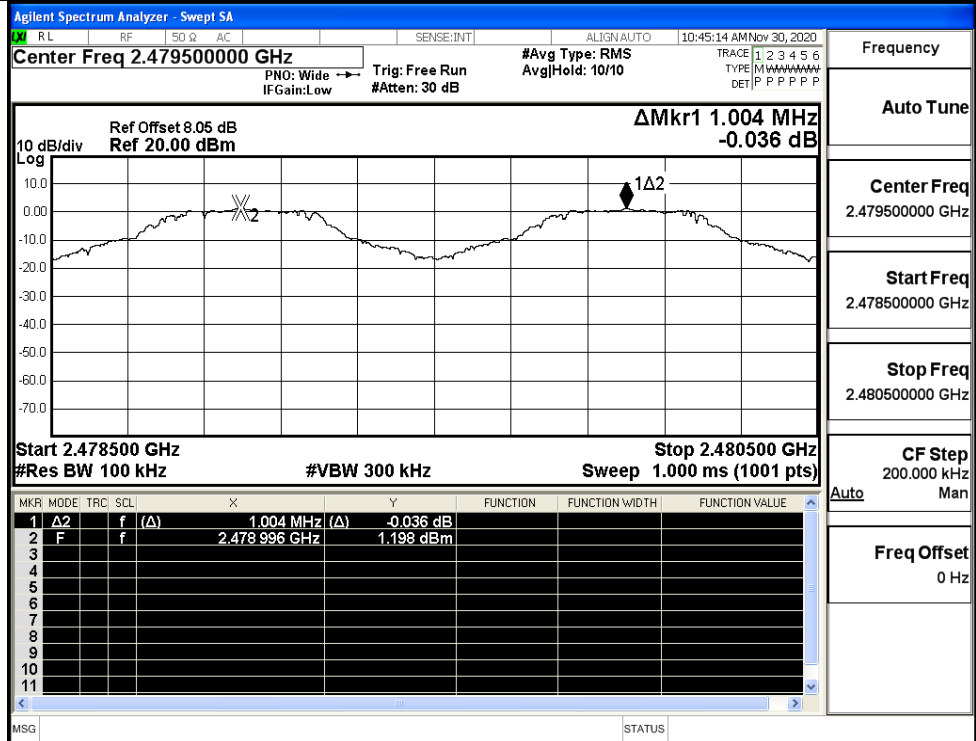
Stop Freq
2.442500000 GHz

CF Step
200.000 kHz

Auto Man

Freq Offset
0 Hz

GFSK/HCH



Frequency

Auto Tune

Center Freq
2.479500000 GHz

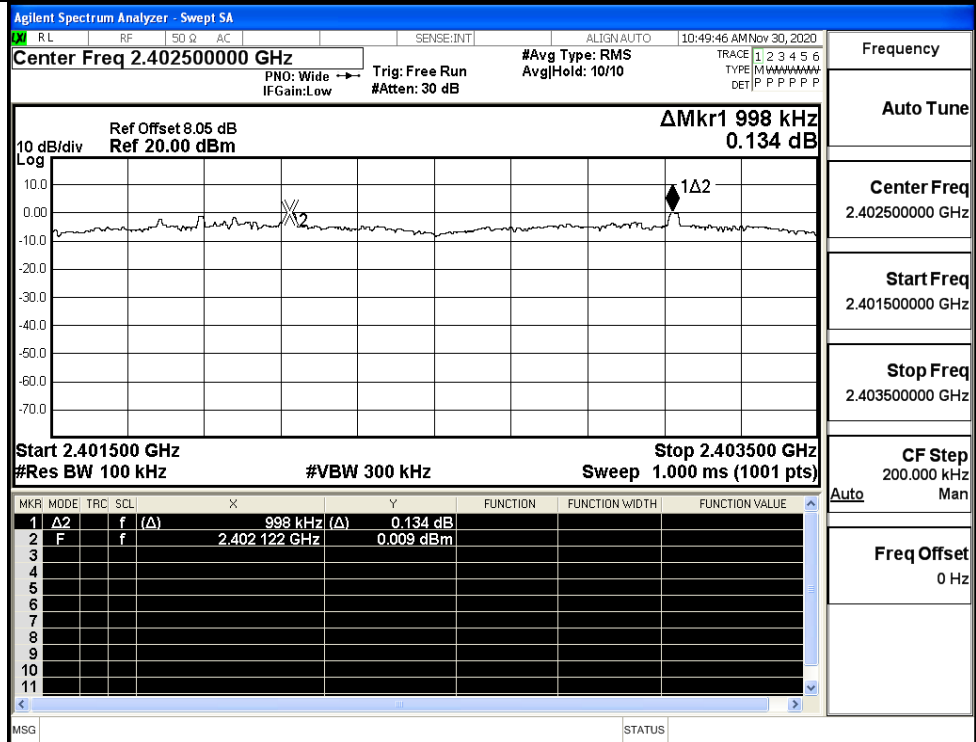
Start Freq
2.478500000 GHz

Stop Freq
2.480500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

π/4DQPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

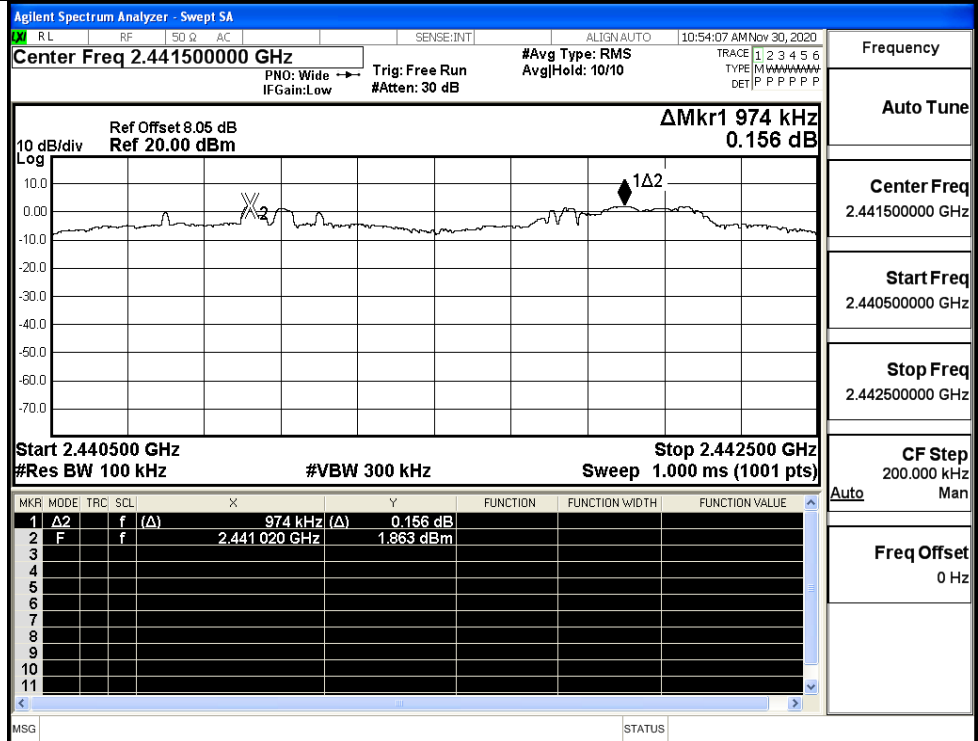
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

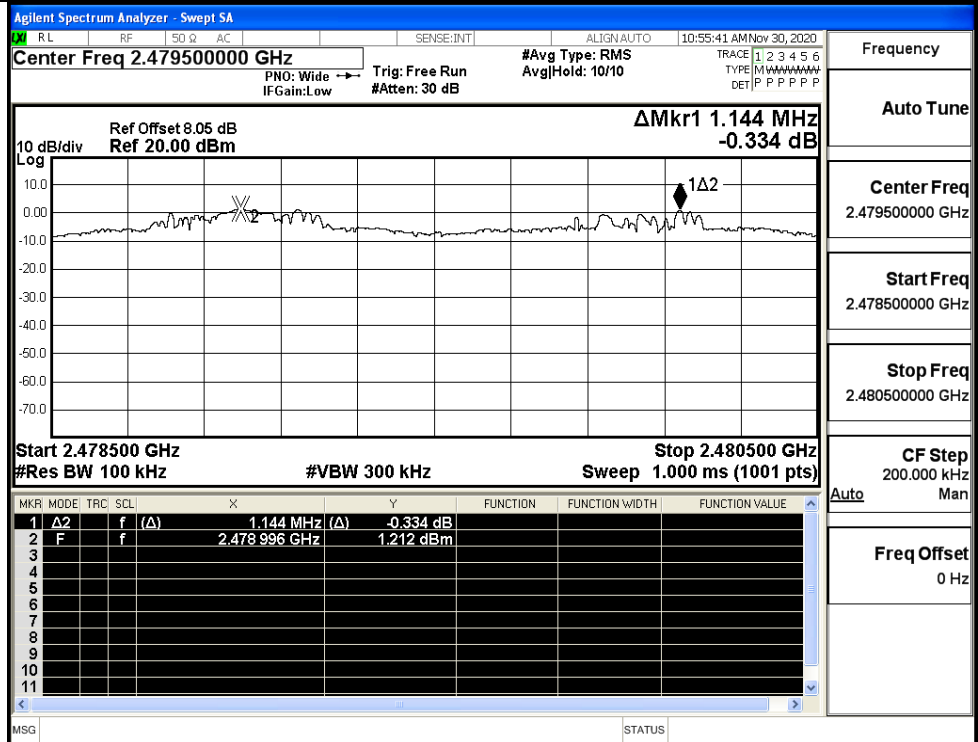
CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

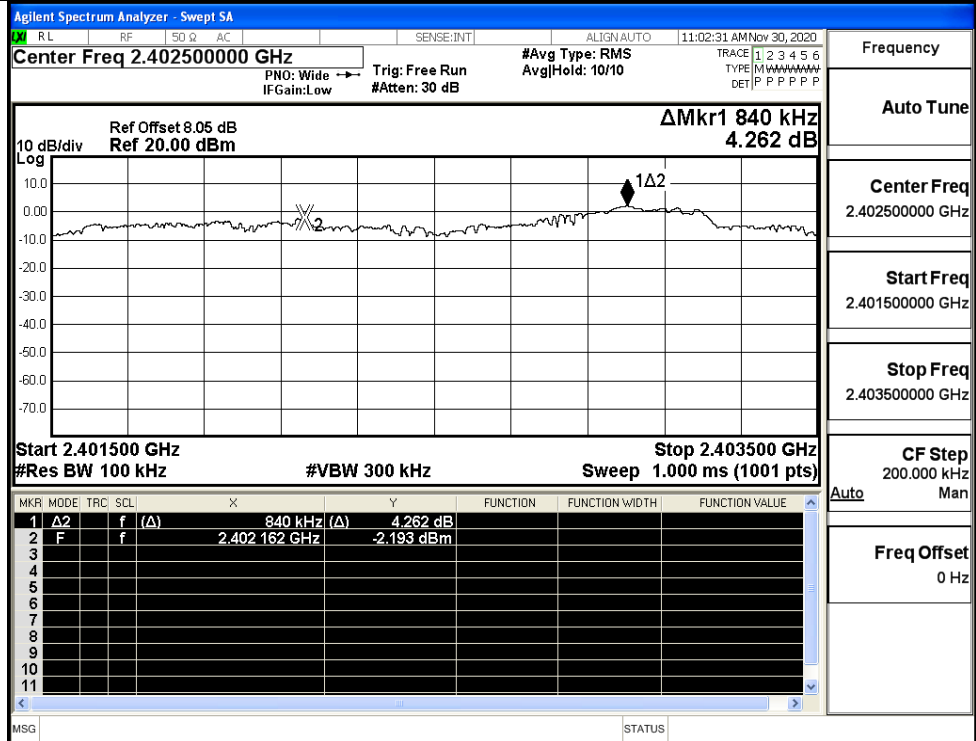
$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



8DPSK/LCH



Frequency

Auto Tune

Center Freq
2.402500000 GHz

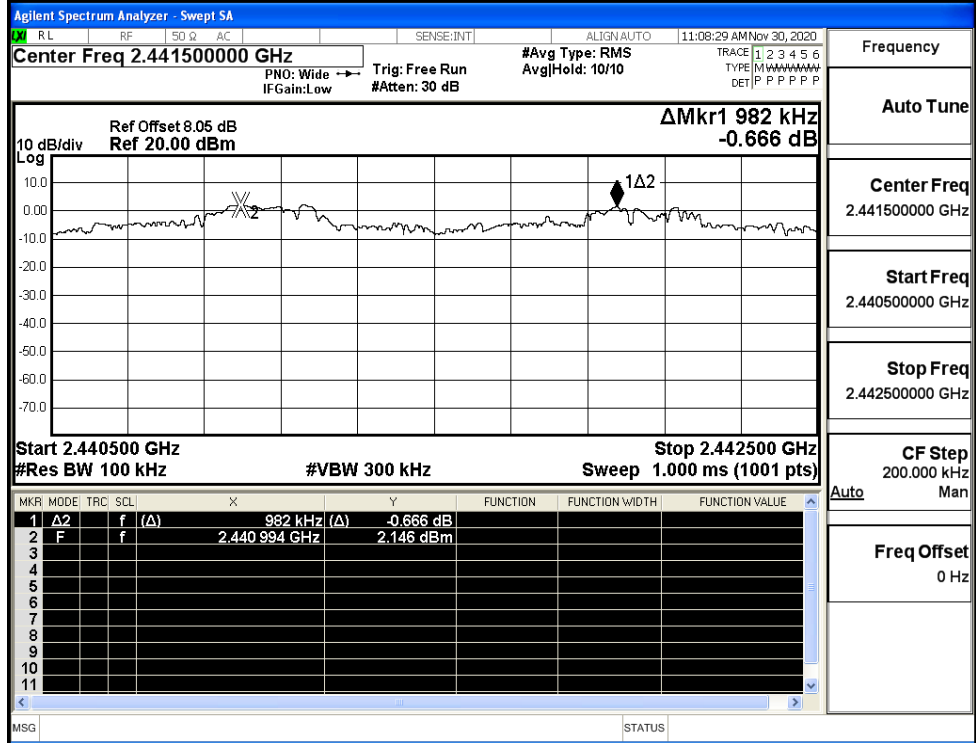
Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/MCH



Frequency

Auto Tune

Center Freq
2.441500000 GHz

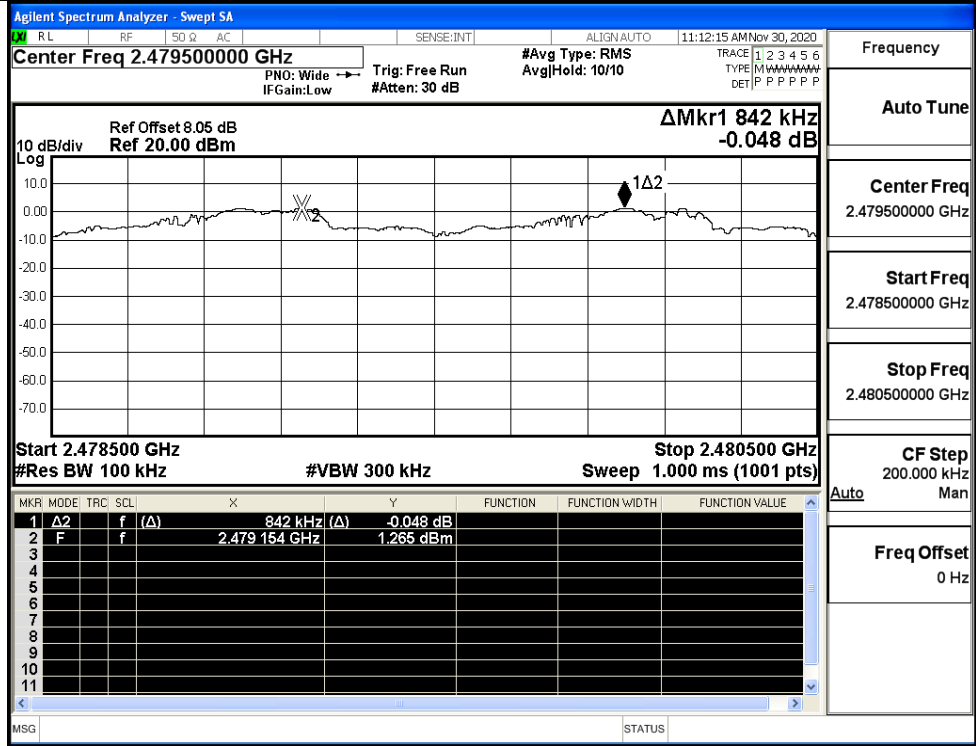
Start Freq
2.440500000 GHz

Stop Freq
2.442500000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

8DPSK/HCH



A.5 Hopping Channel Number

Right

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

Test Graphs

GFSK/Hop

Frequency

Auto Tune

Center Freq
2.441750000 GHz

Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz

Freq Offset
0 Hz

$\pi/4$ DQPSK/Hop

Frequency

Auto Tune

Center Freq
2.441750000 GHz

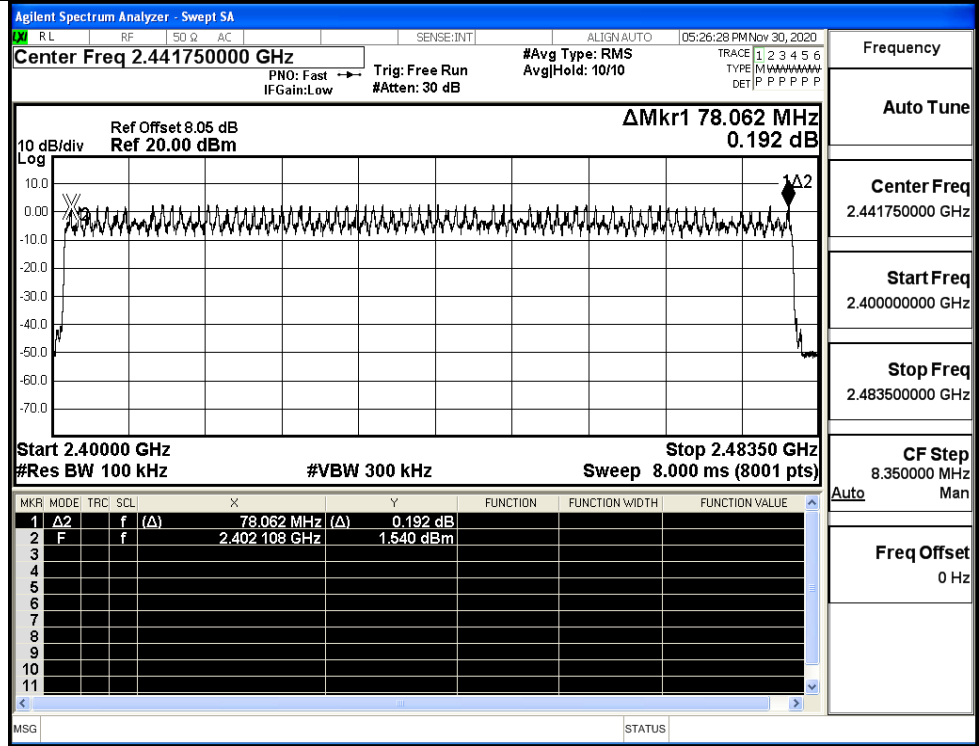
Start Freq
2.400000000 GHz

Stop Freq
2.483500000 GHz

CF Step
8.350000 MHz

Freq Offset
0 Hz

8DPSK/Hop

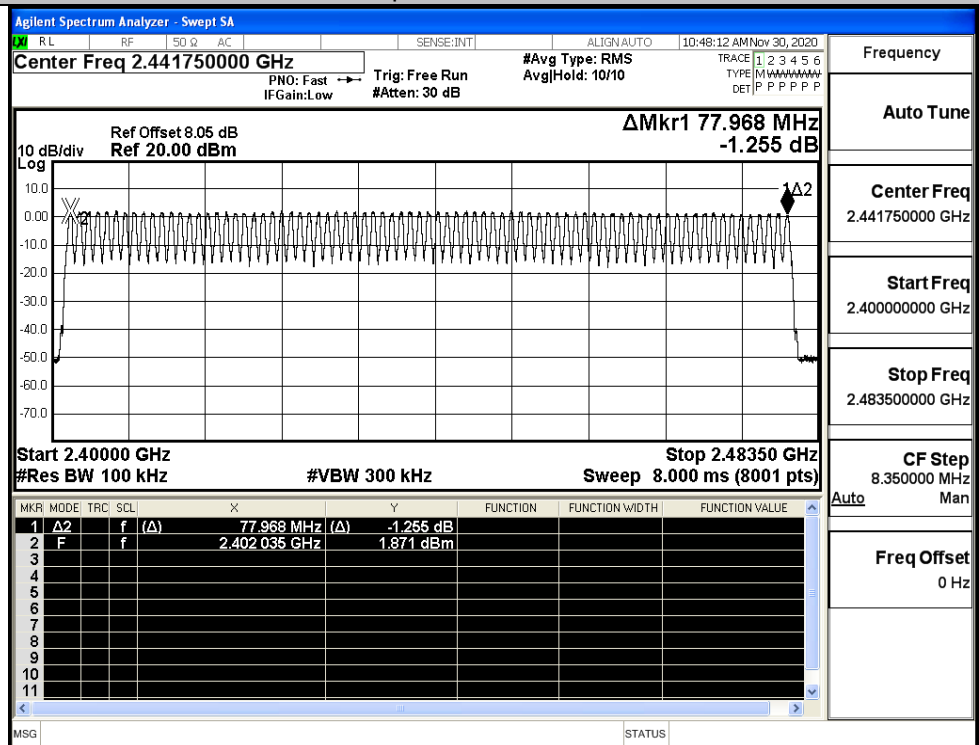


Left

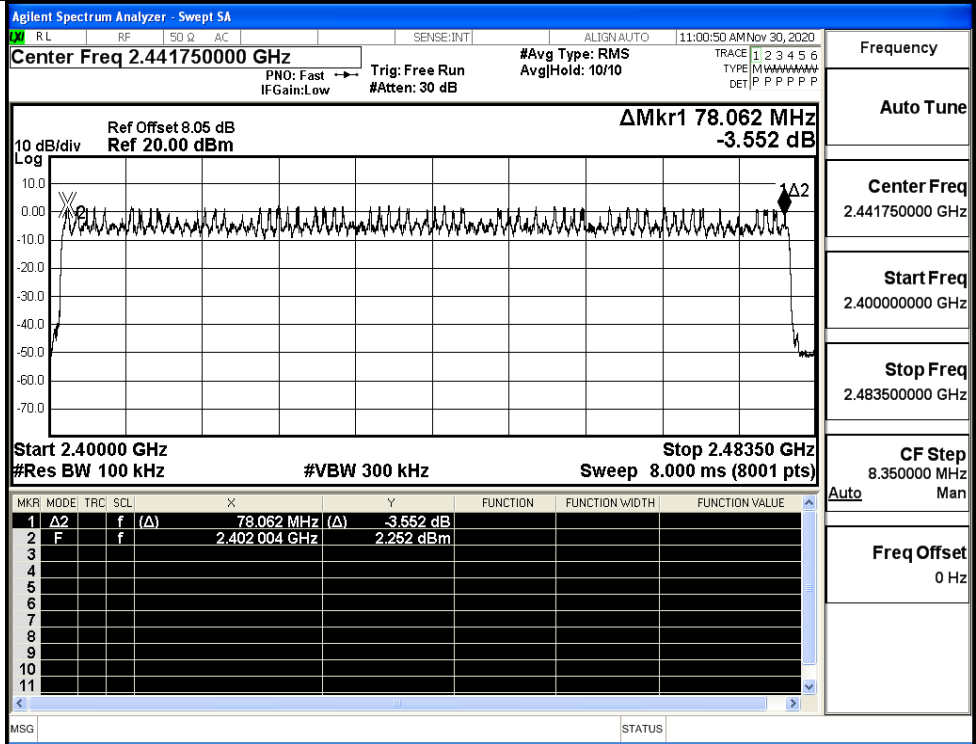
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

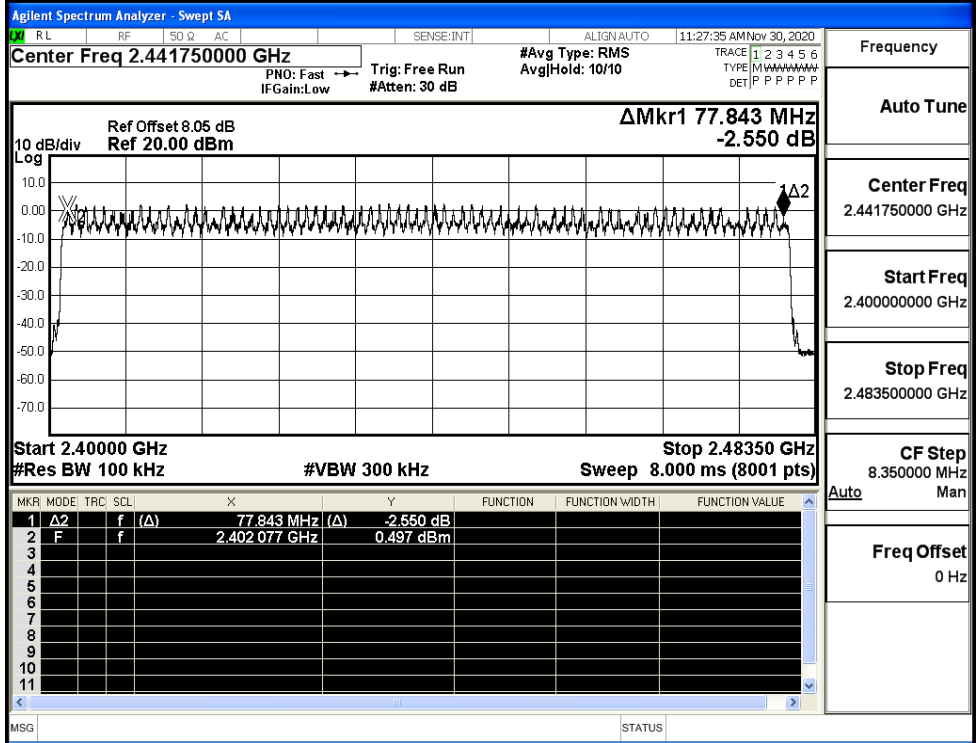


$\pi/4$ DQPSK/Hop



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

8DPSK/Hop

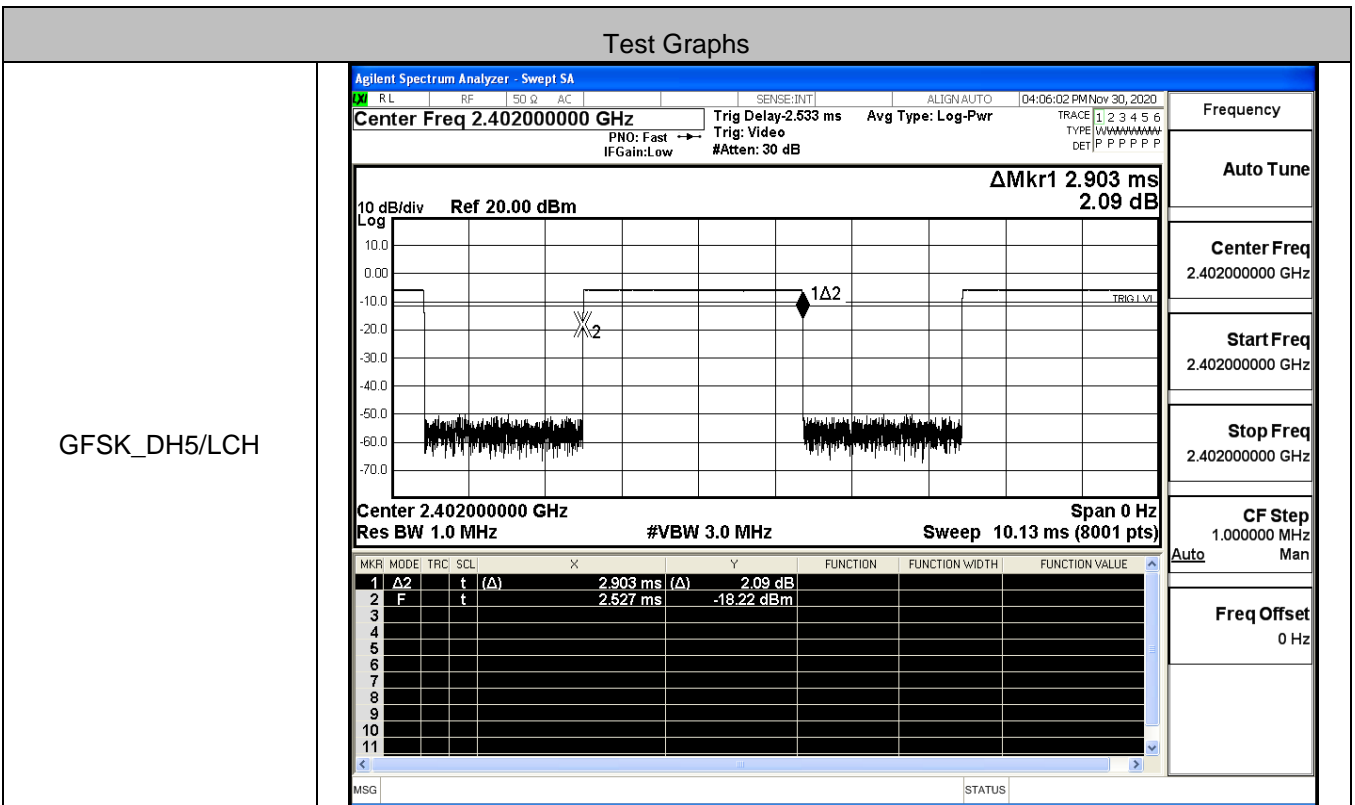


Frequency	2.441750000 GHz
Auto Tune	
Center Freq	2.441750000 GHz
Start Freq	2.400000000 GHz
Stop Freq	2.483500000 GHz
CF Step	8.350000 MHz
Auto	Man
Freq Offset	0 Hz

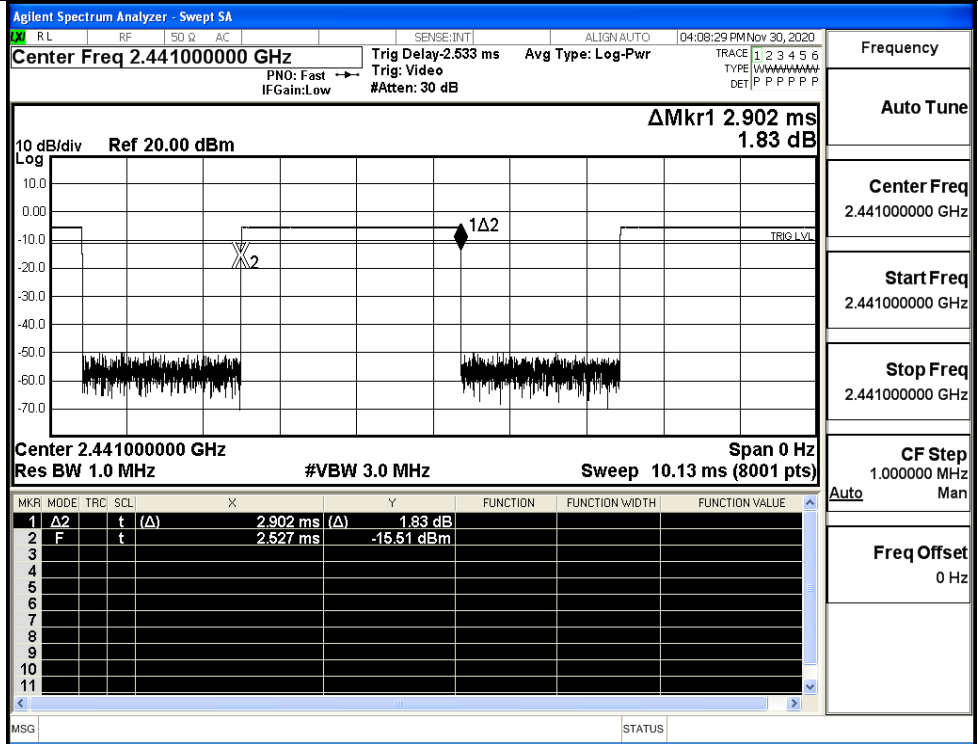
A.6 Dwell Time

Right

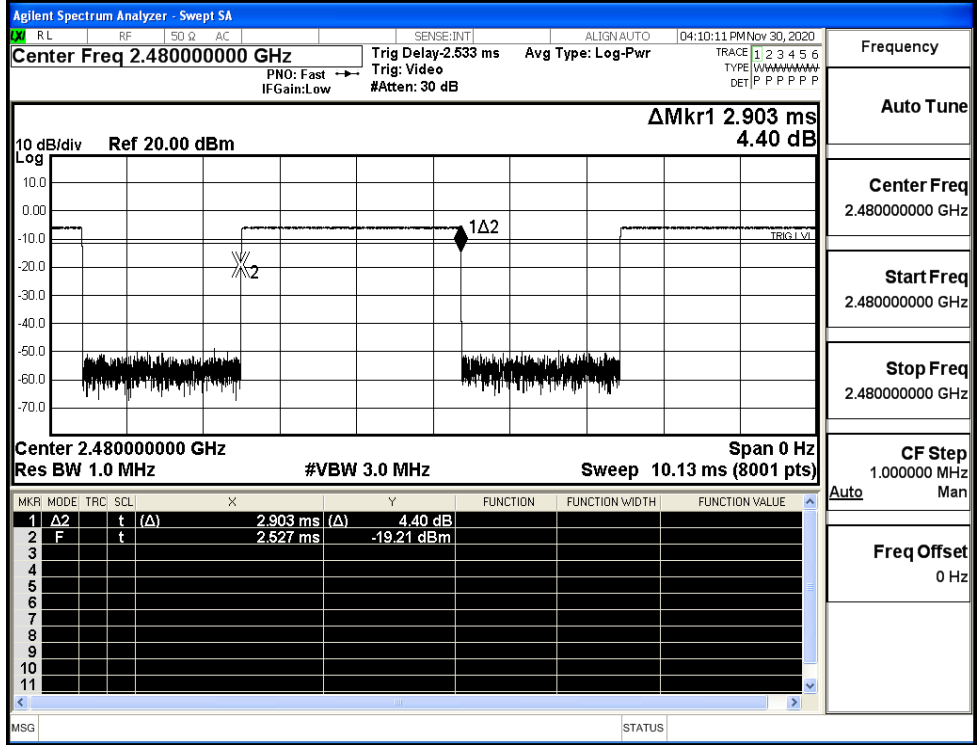
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.9	106.7	0.309	0.4	PASS
	DH5	MCH	2.9	106.7	0.309	0.4	PASS
	DH5	HCH	2.9	106.7	0.309	0.4	PASS
π/4DQPSK	2DH5	LCH	2.9	106.7	0.309	0.4	PASS
	2DH5	MCH	2.9	106.7	0.309	0.4	PASS
	2DH5	HCH	2.9	106.7	0.309	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



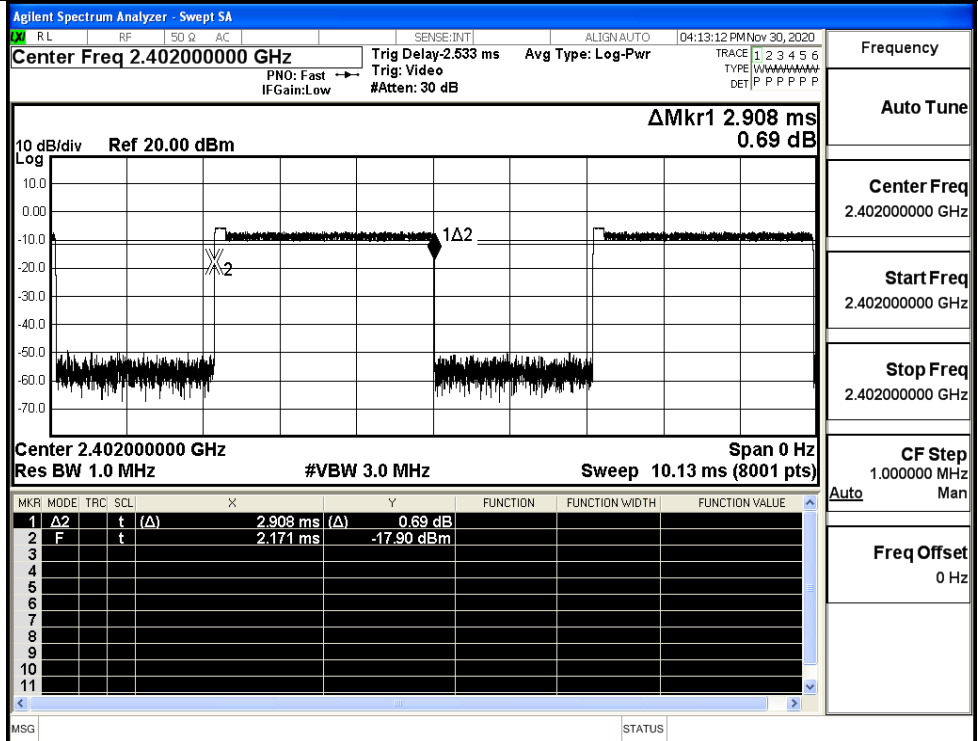
GFSK_DH5/MCH



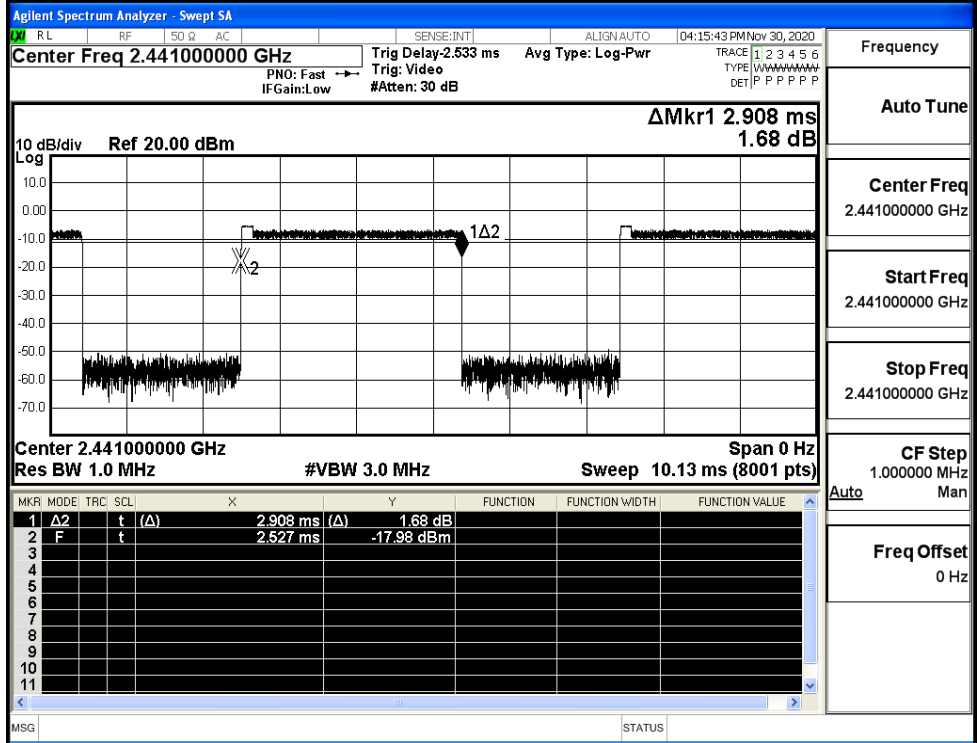
GFSK_DH5/HCH



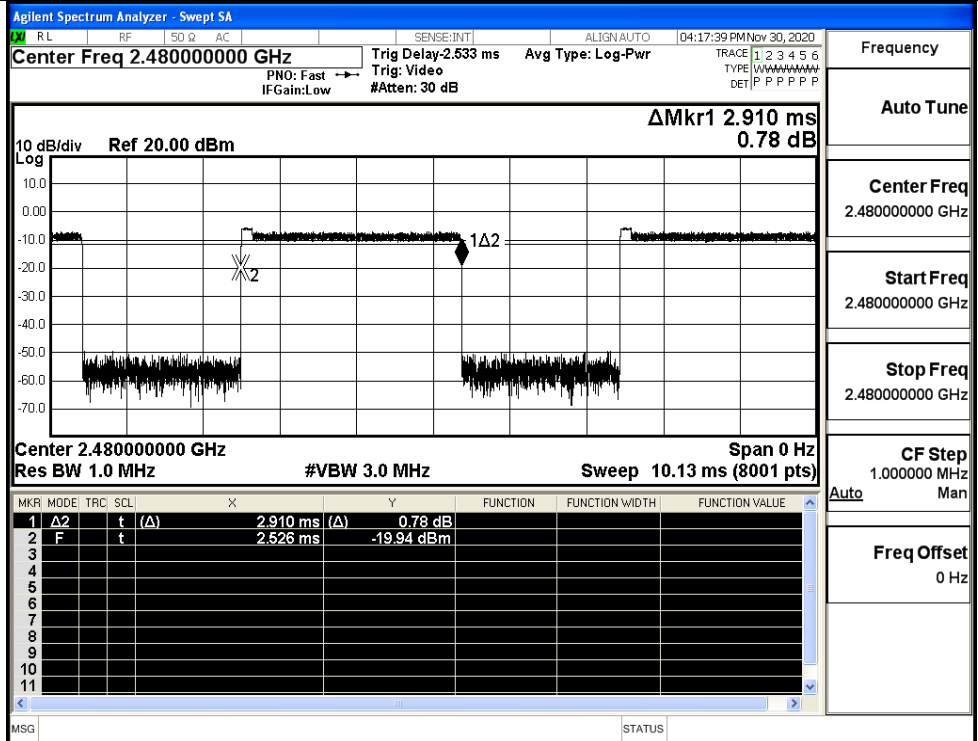
$\pi/4$ DQPSK
_2DH5/LCH



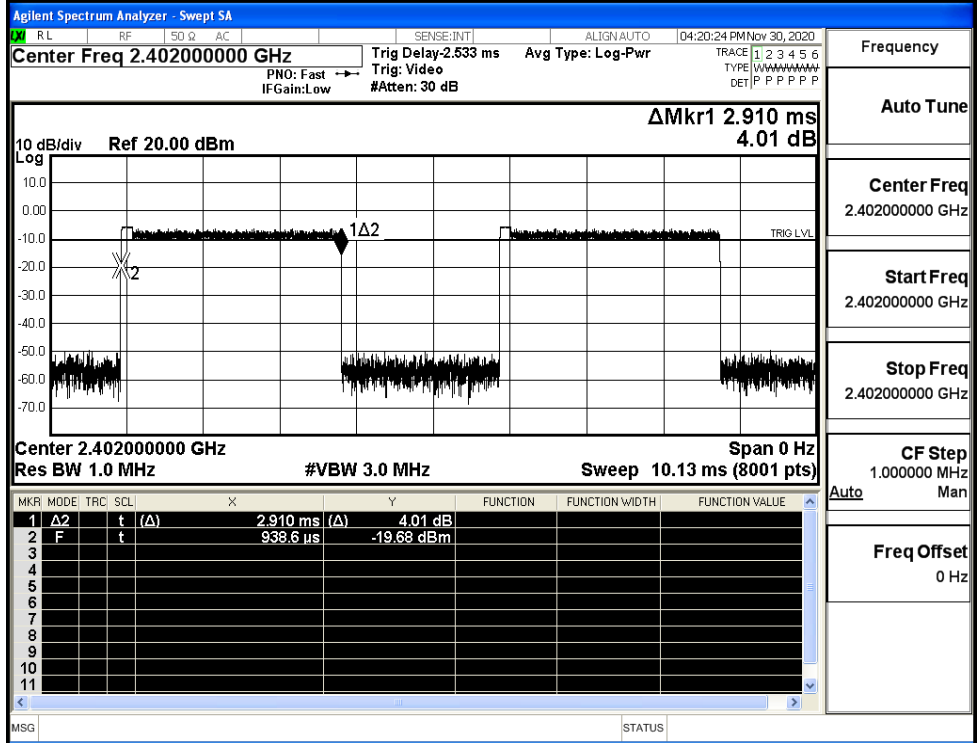
$\pi/4$ DQPSK
_2DH5/MCH

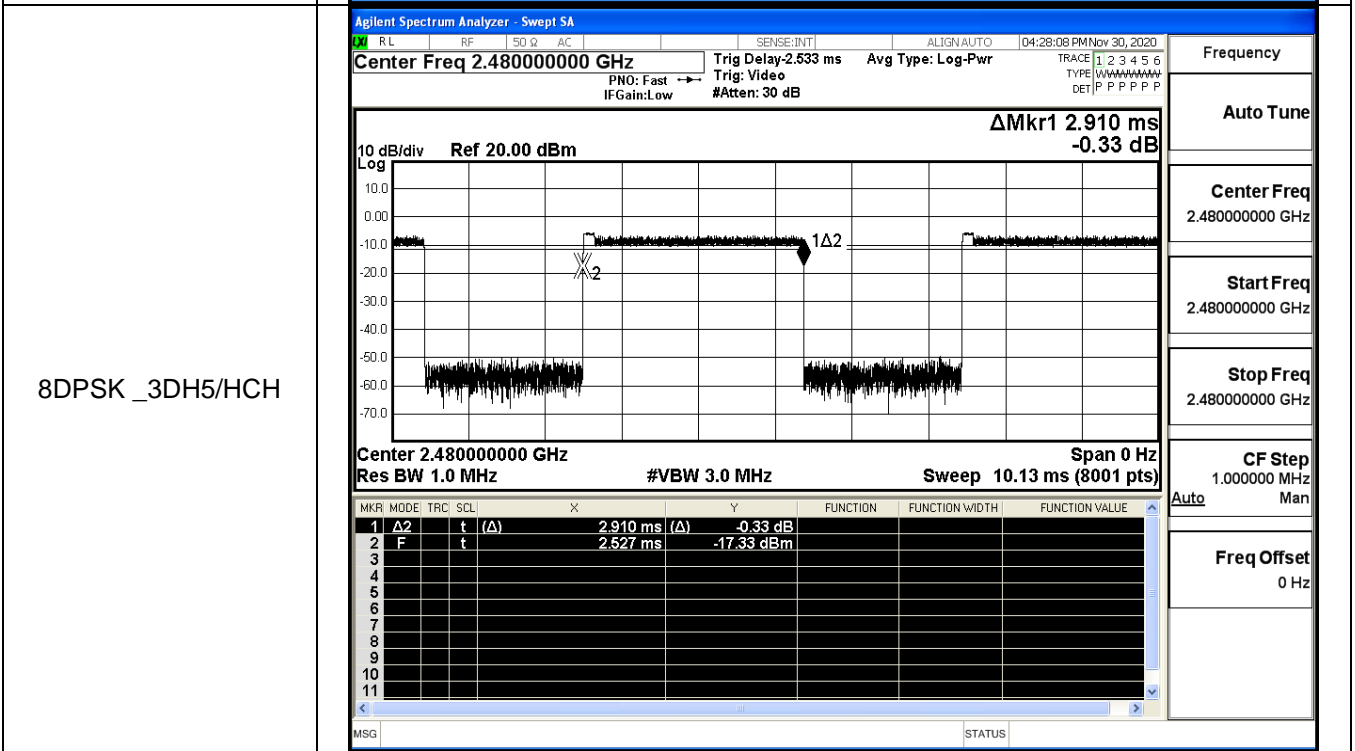
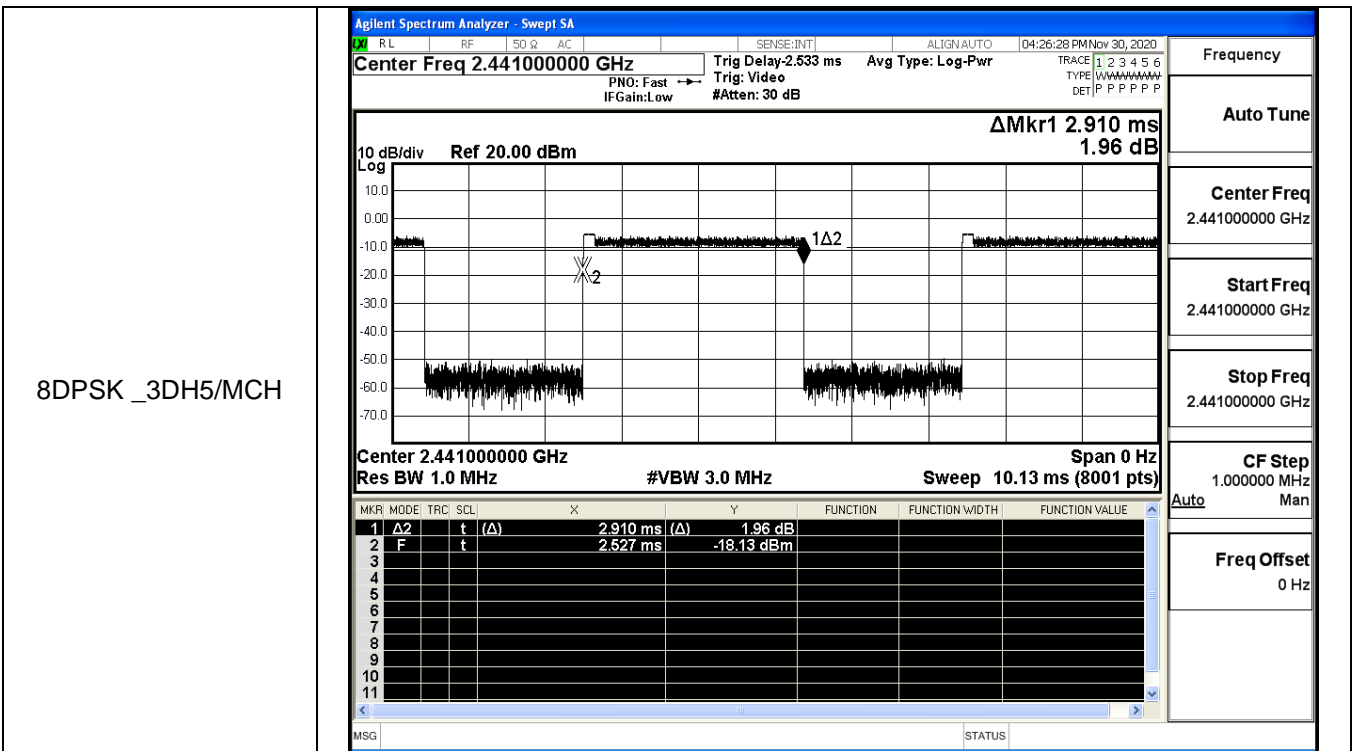


$\pi/4$ DQPSK
_2DH5/HCH



8DPSK_3DH5/LCH





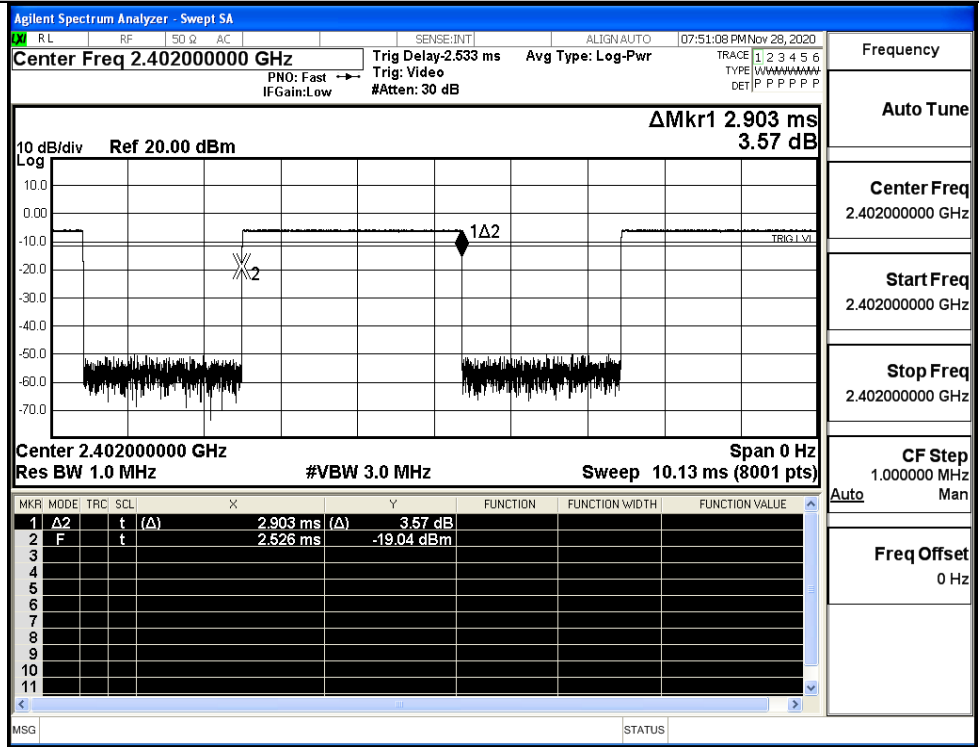
Left

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

Test Graphs

GFSK_DH5/LCH



GFSK_DH5/MCH

