

Appendix A

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

Product Name: BGM UNI Wireless Earphones

Trade Mark: BGM

Test Model: UN-100

Environmental Conditions

Temperature:	24.3 ° C
Relative Humidity:	53.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhuo Zhuo
Supervised by:	Tom.Liu

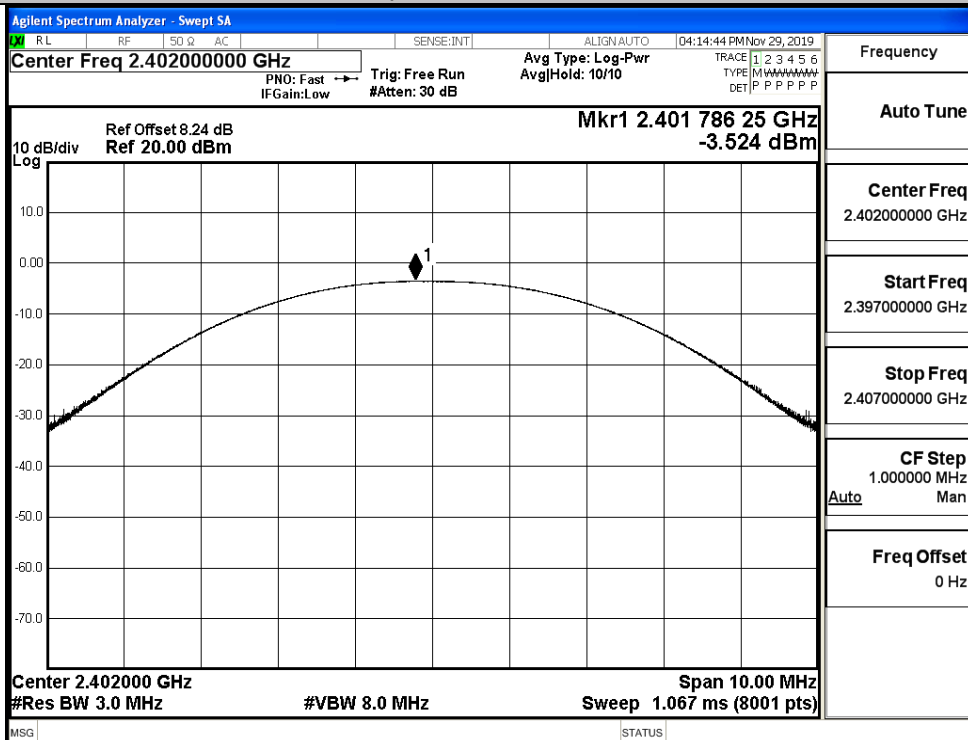
A.1 Maximum Conducted Peak Output Power

L

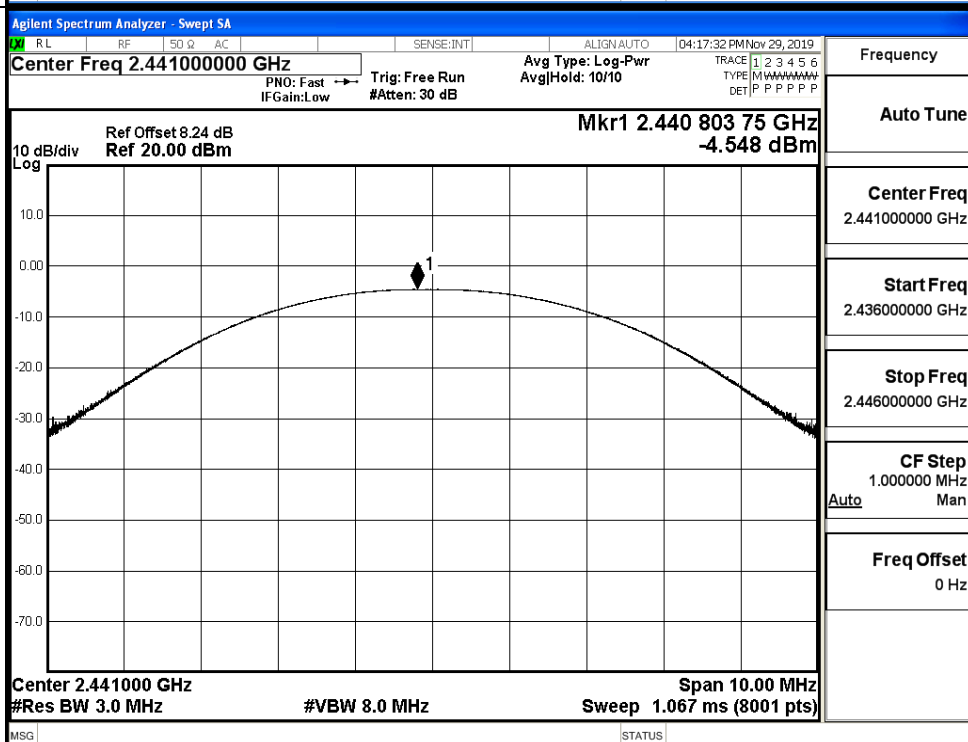
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.524	21	PASS
	MCH	-4.548	21	PASS
	HCH	-4.361	21	PASS
$\pi/4$ DQPSK	LCH	-1.353	21	PASS
	MCH	-2.722	21	PASS
	HCH	-4.438	21	PASS
8DPSK	LCH	-0.507	21	PASS
	MCH	-2.747	21	PASS
	HCH	-4.382	21	PASS

Test Graphs

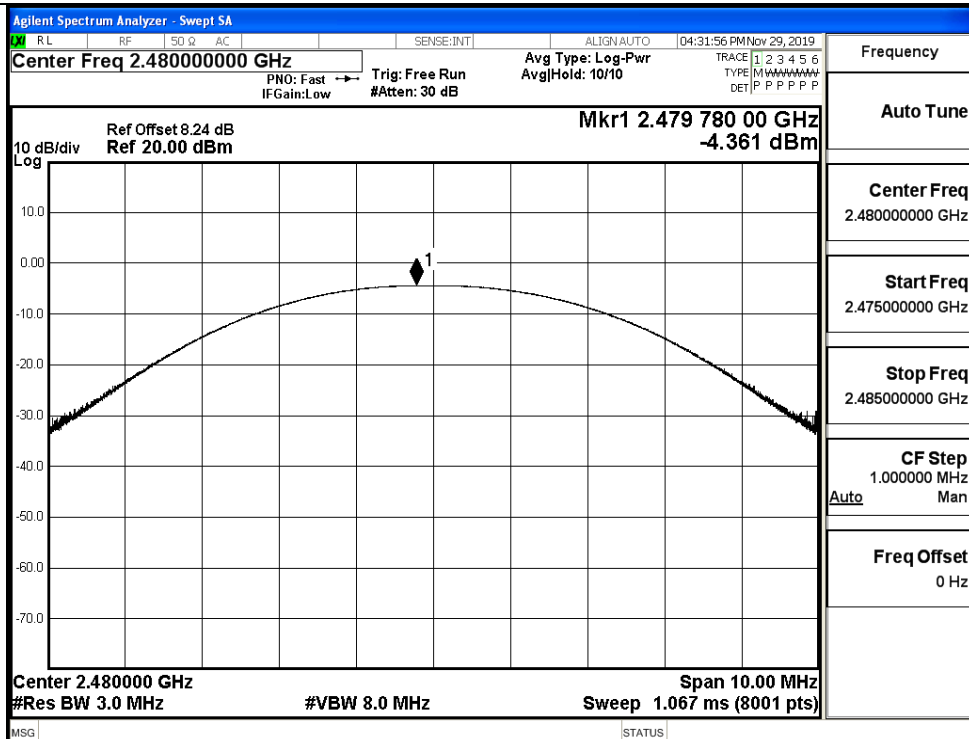
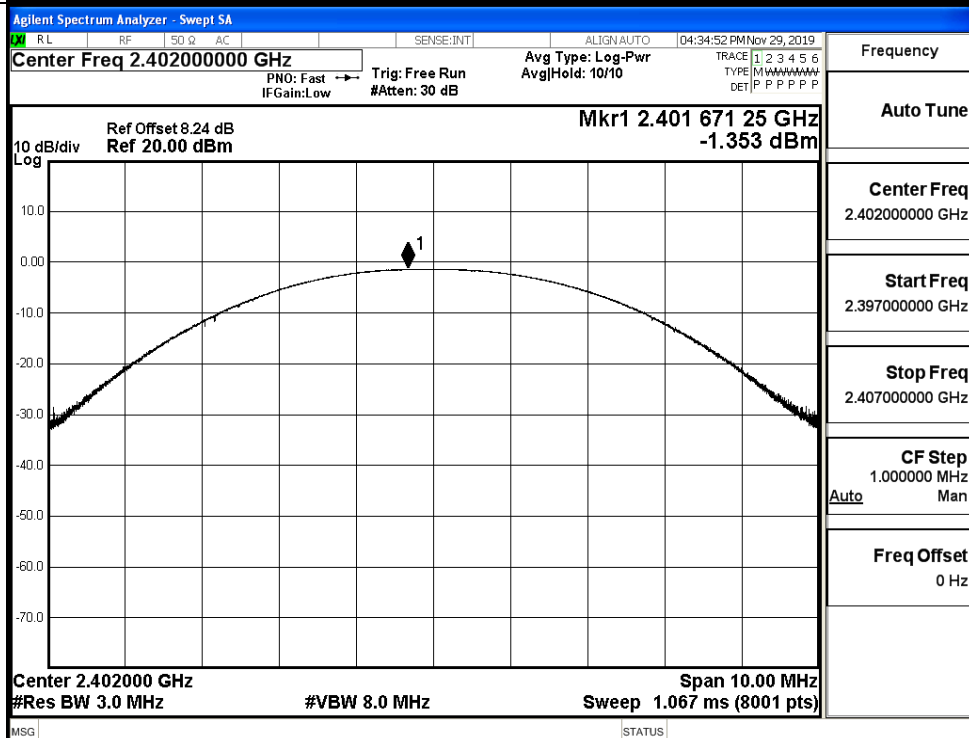
GFSK/LCH

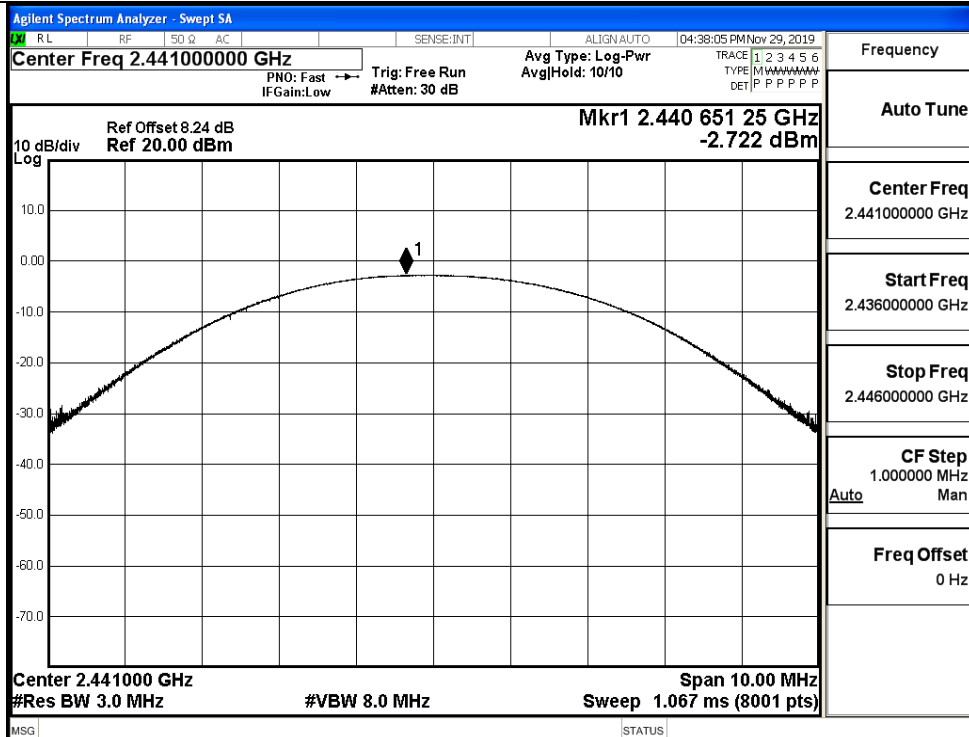
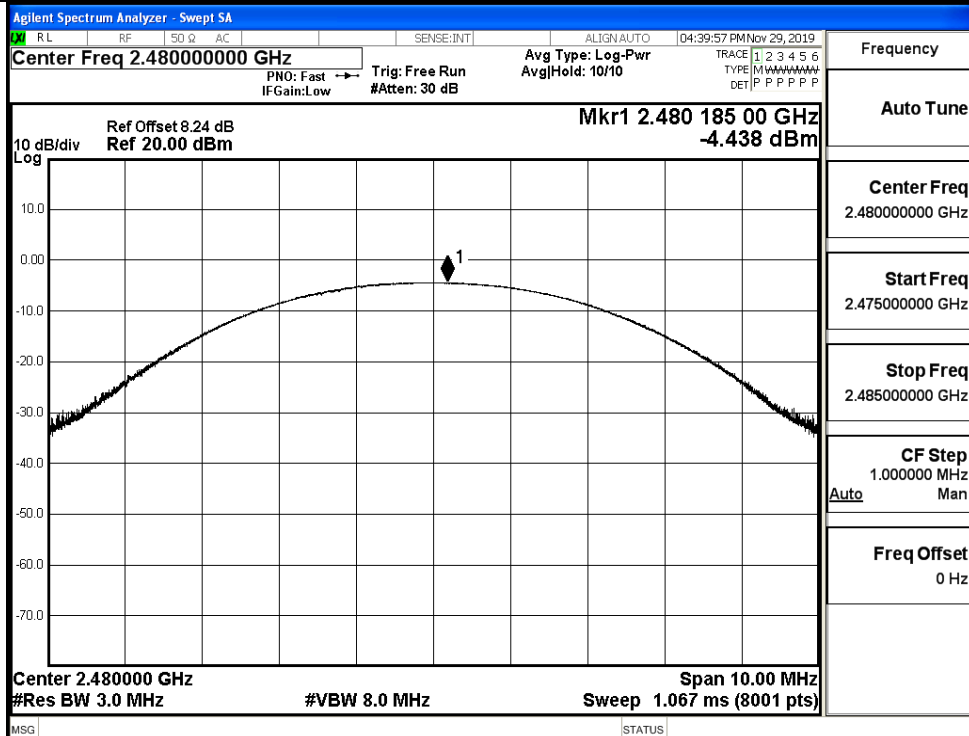


GFSK/MCH

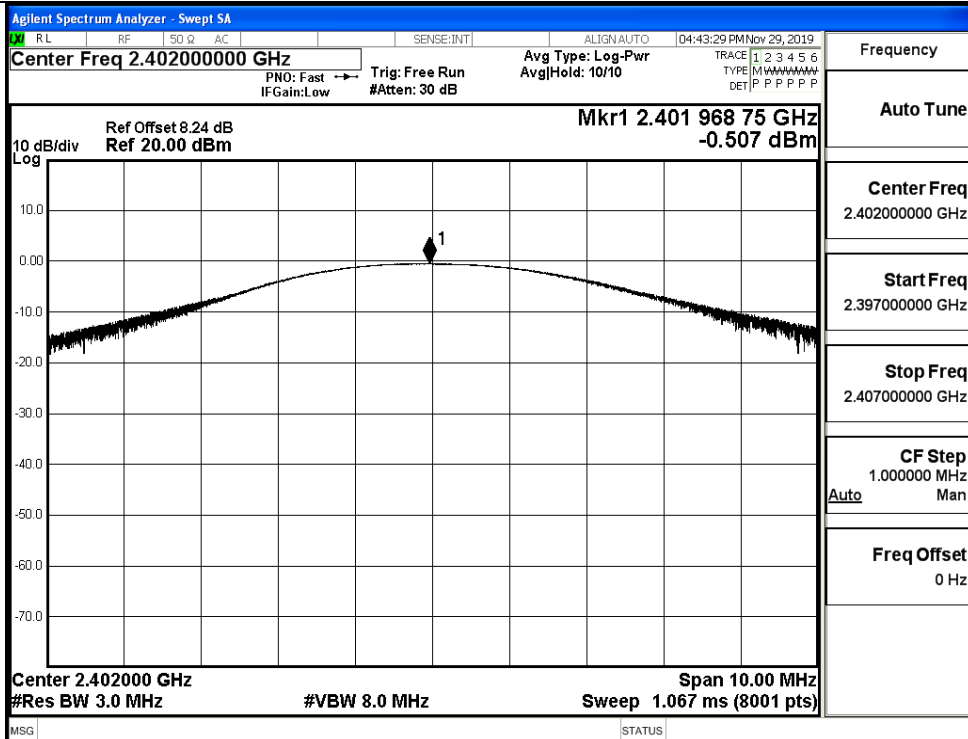


GFSK/HCH

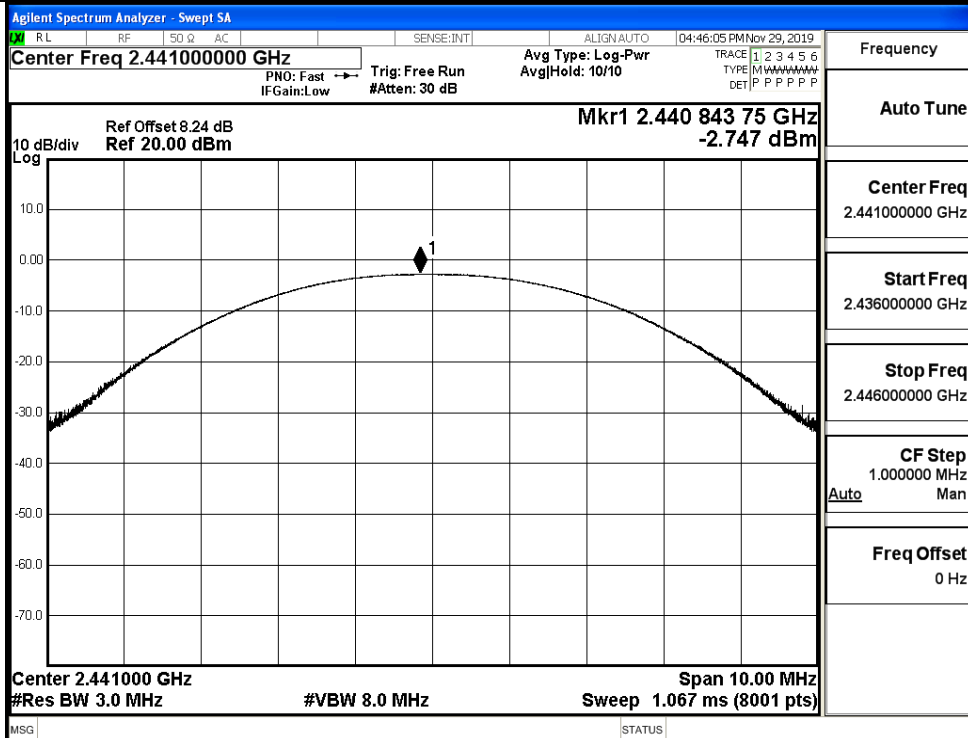
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

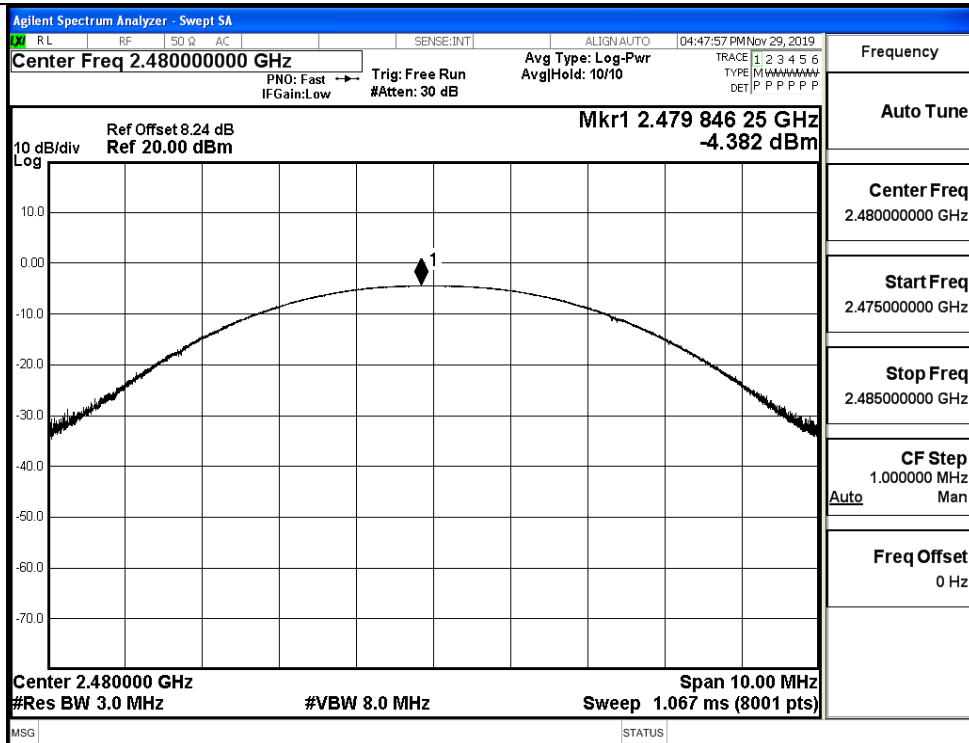
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

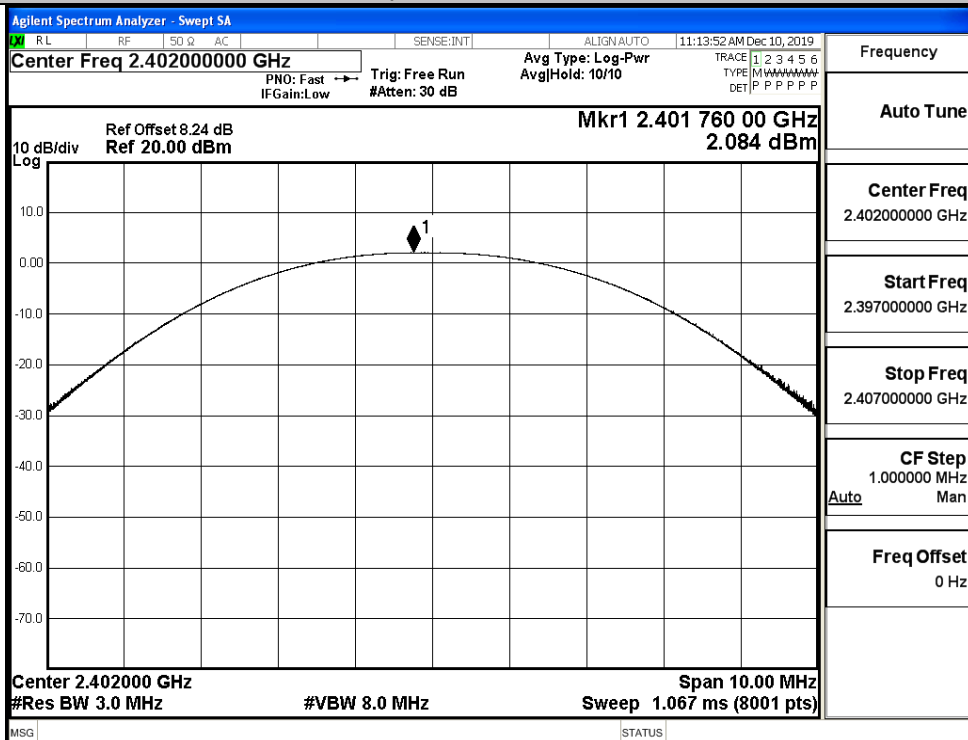


R

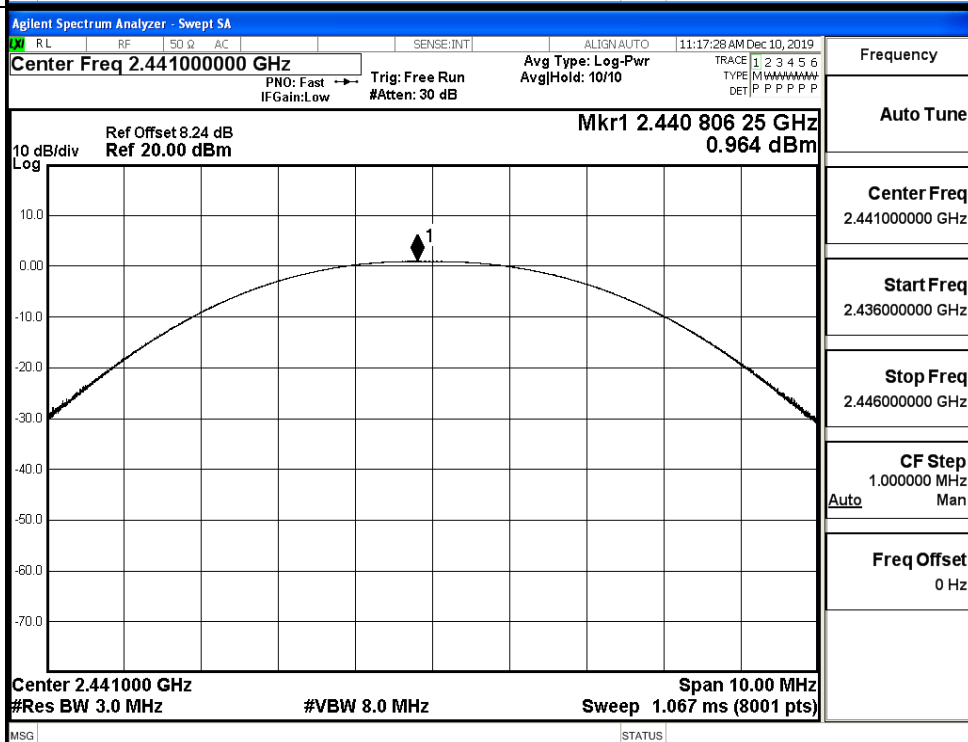
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.084	21	PASS
	MCH	0.964	21	PASS
	HCH	0.374	21	PASS
$\pi/4$ DQPSK	LCH	1.014	21	PASS
	MCH	0.285	21	PASS
	HCH	-0.145	21	PASS
8DPSK	LCH	1.329	21	PASS
	MCH	0.305	21	PASS
	HCH	-0.046	21	PASS

Test Graphs

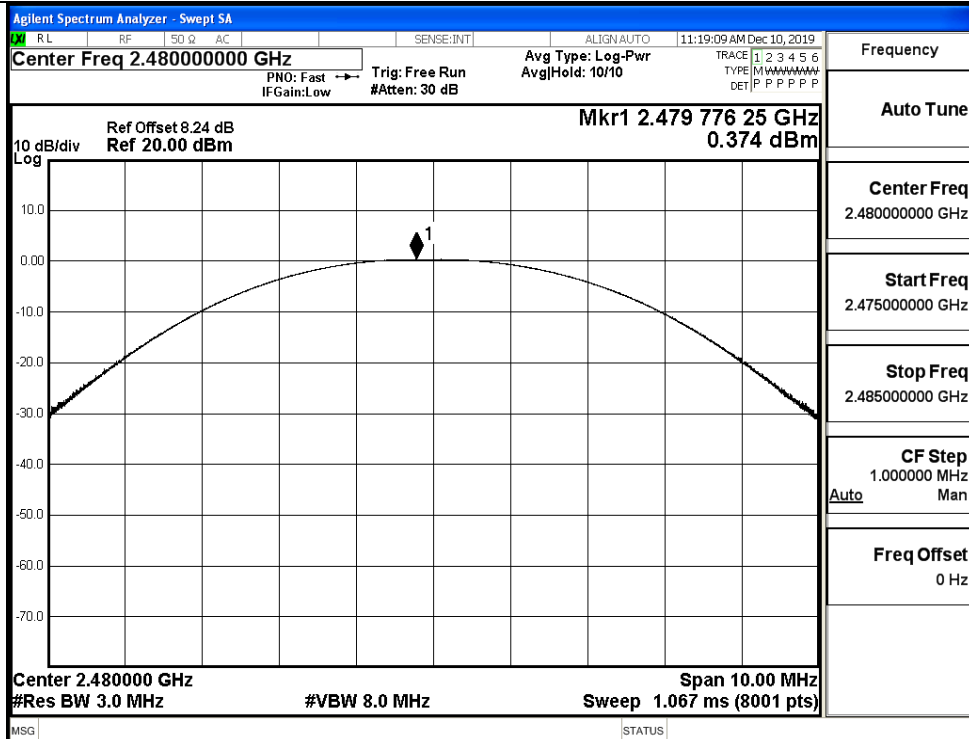
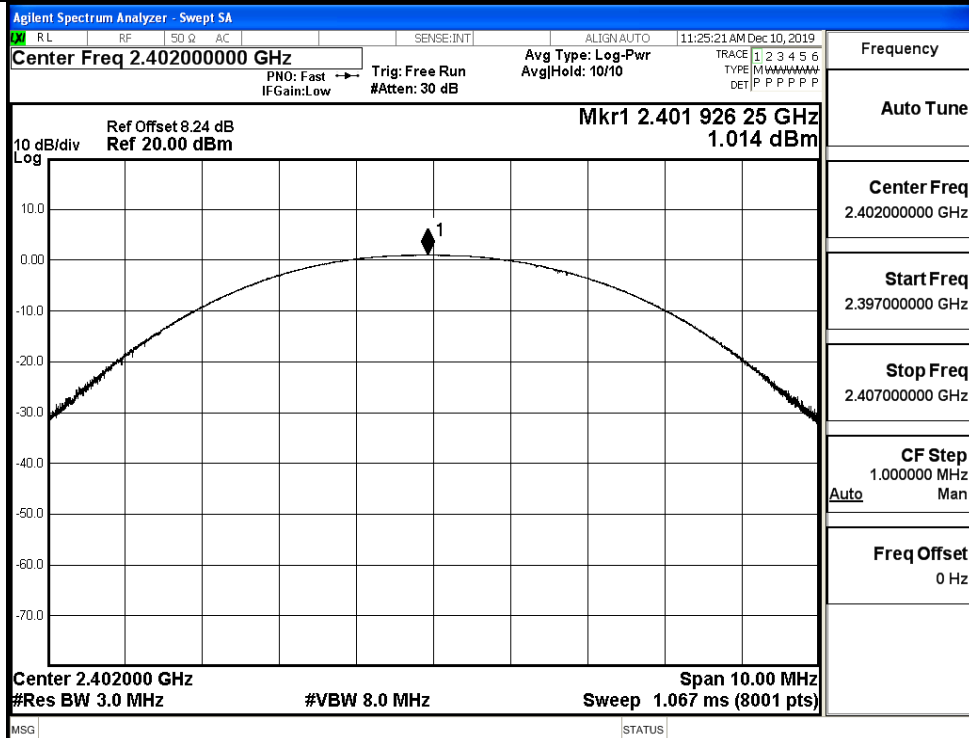
GFSK/LCH

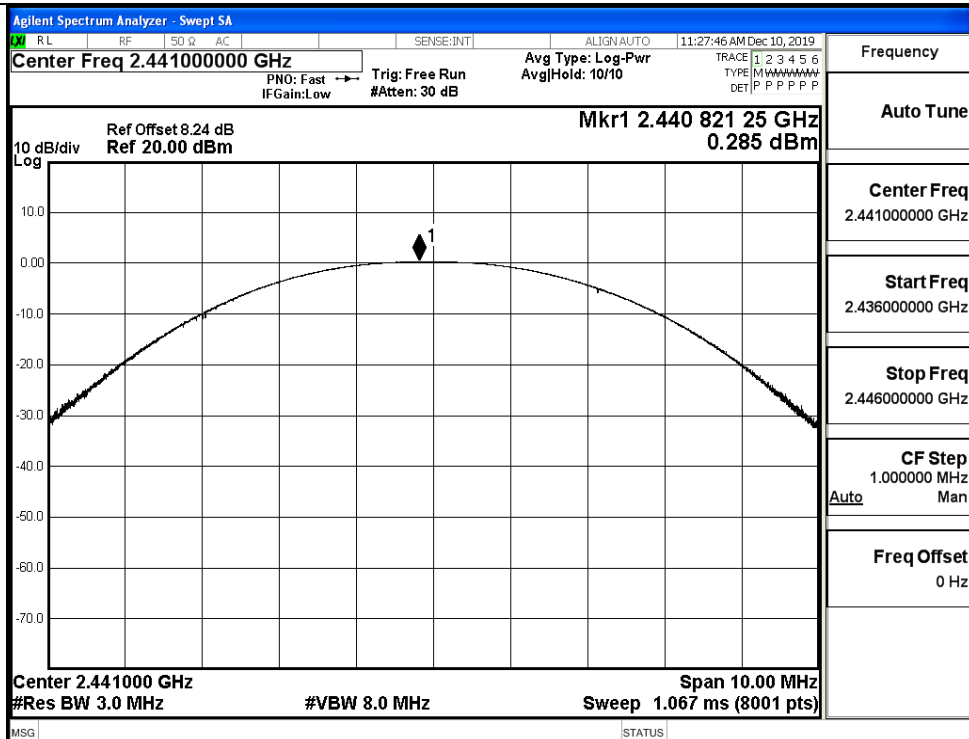
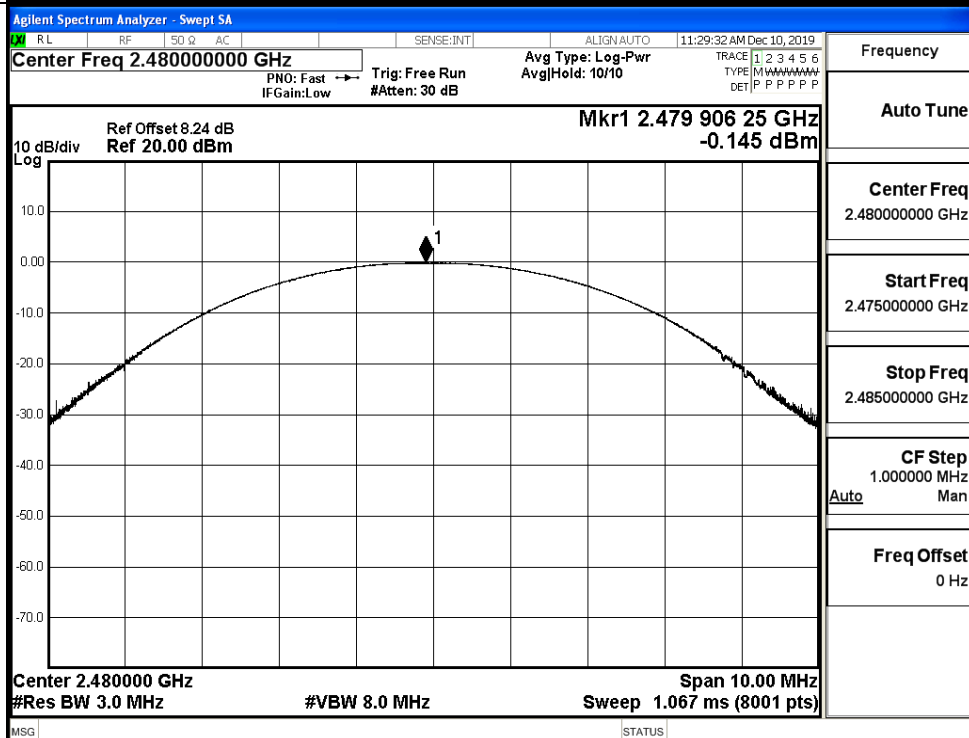


GFSK/MCH

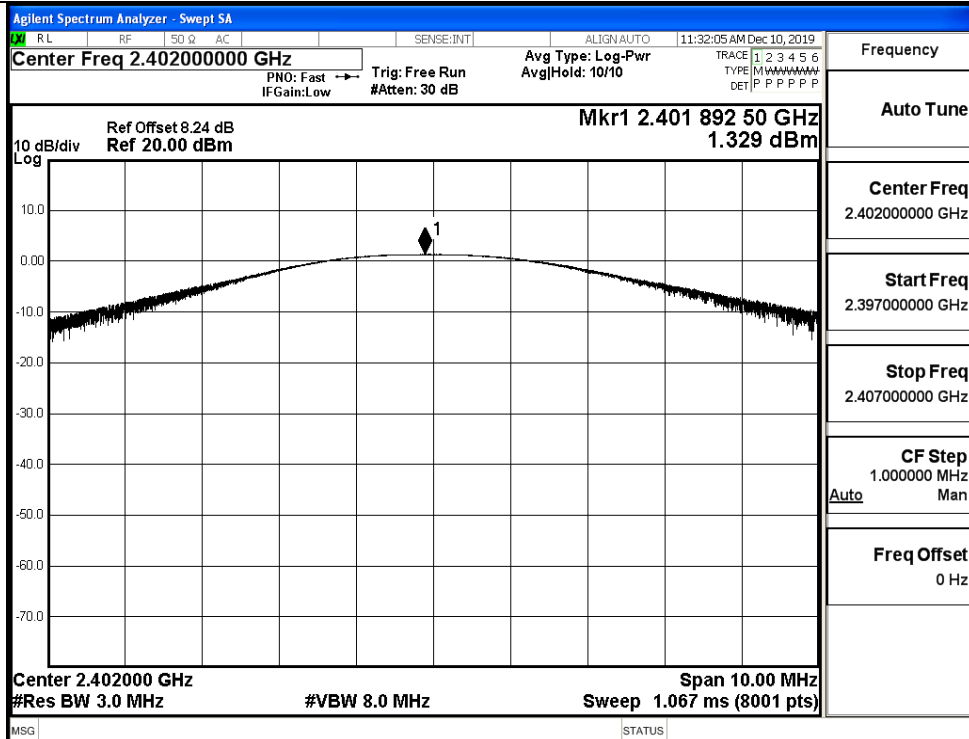


GFSK/HCH

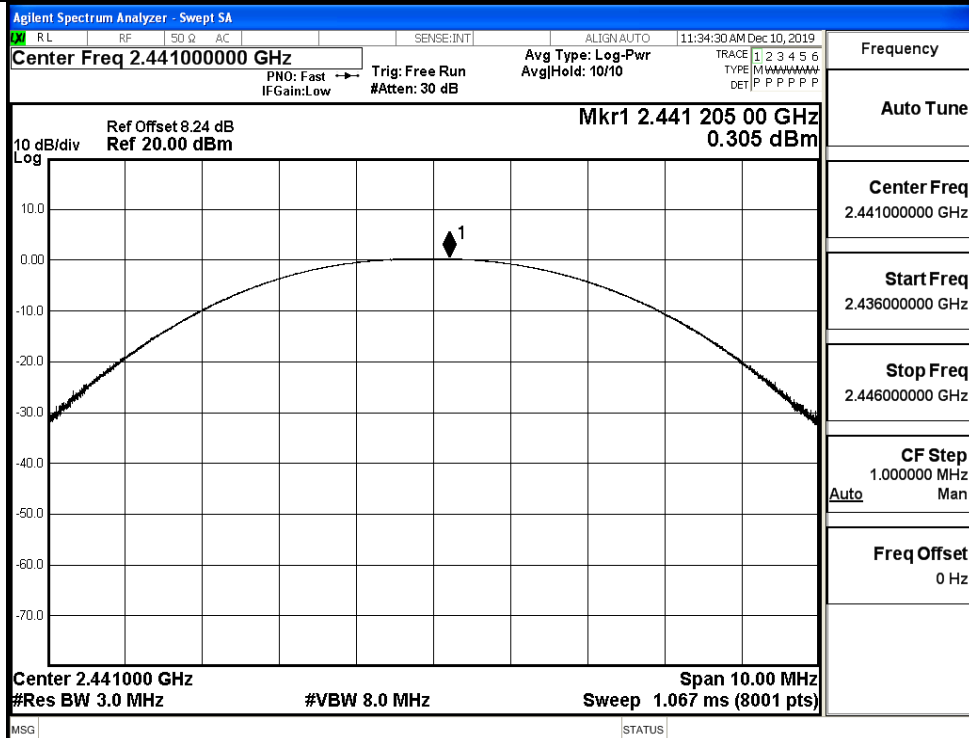
 π /4DQPSK/LCH

$\pi/4$ DQPSK/MCH $\pi/4$ DQPSK/HCH

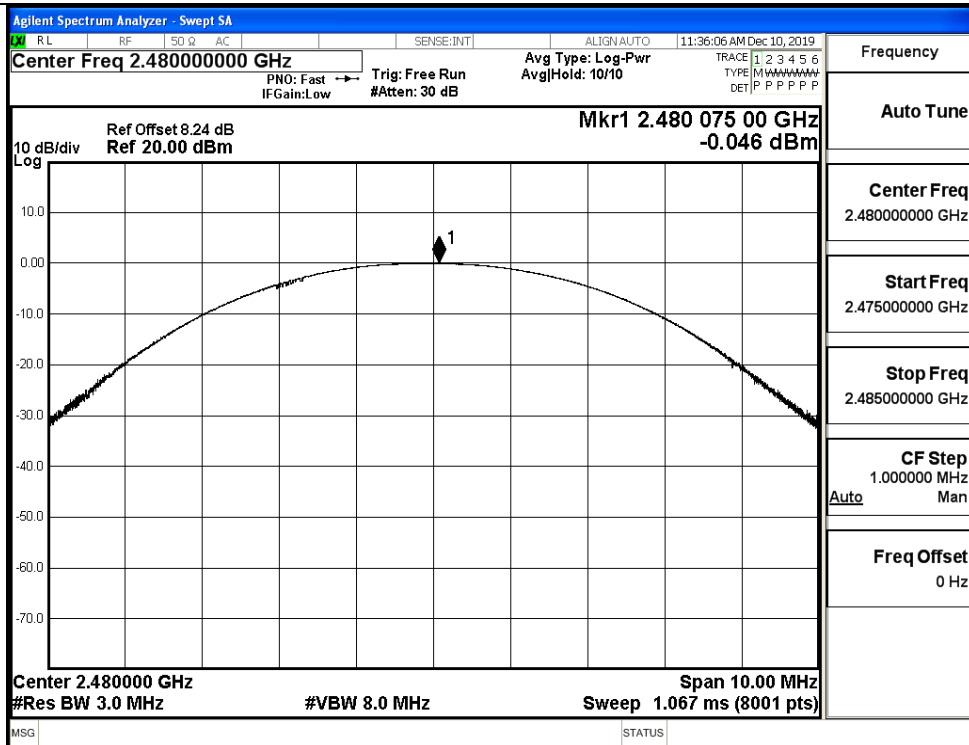
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

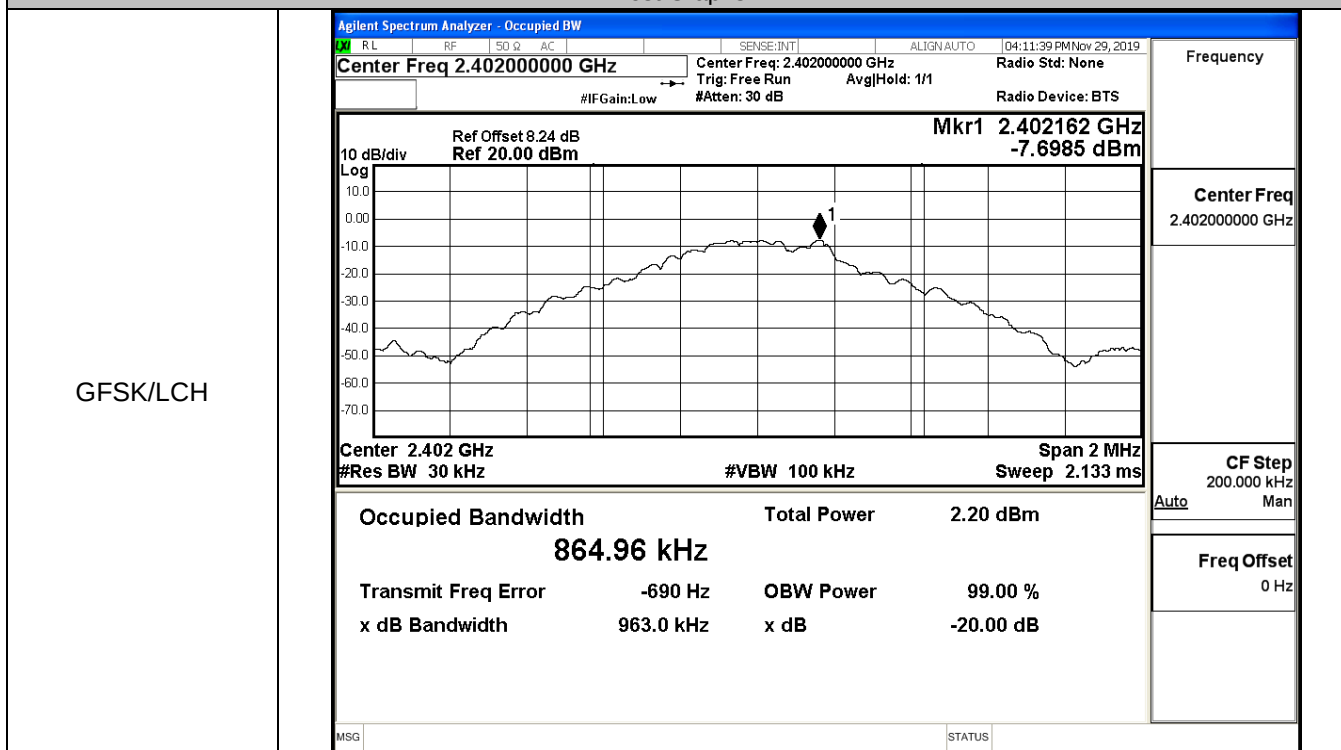


A.2 20dB Bandwidth

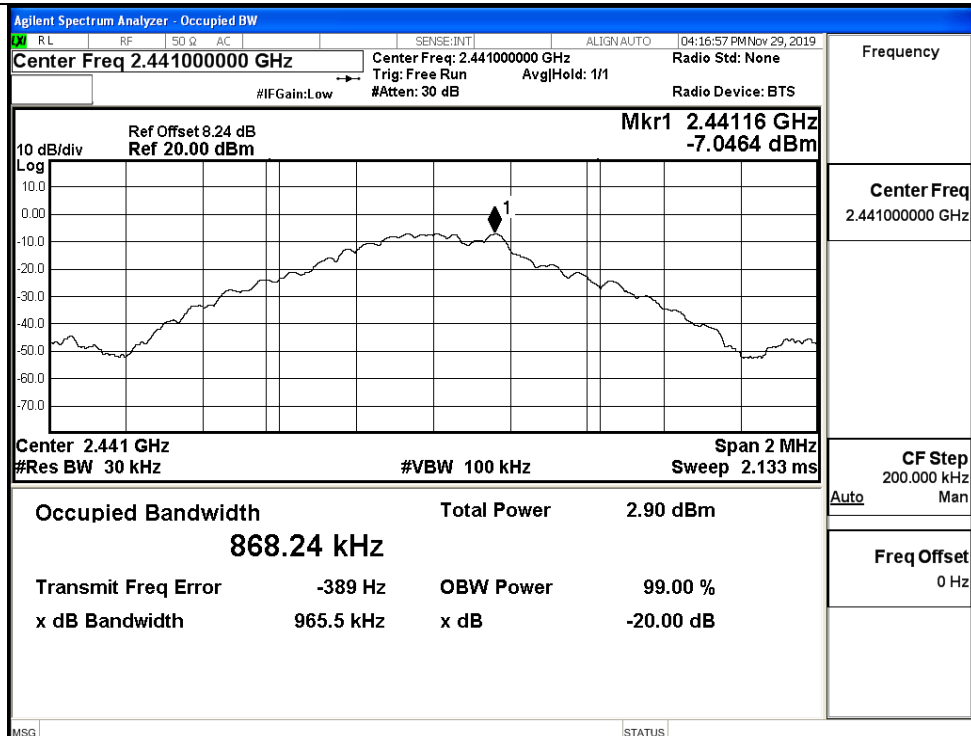
L

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9630	Not Specified	PASS
	MCH	0.9655	Not Specified	PASS
	HCH	0.9602	Not Specified	PASS
$\pi/4$ DQPSK	LCH	0.6878	Not Specified	PASS
	MCH	0.6867	Not Specified	PASS
	HCH	0.6909	Not Specified	PASS
8DPSK	LCH	1.316	Not Specified	PASS
	MCH	0.6956	Not Specified	PASS
	HCH	0.6921	Not Specified	PASS

Test Graphs



GFSK/MCH



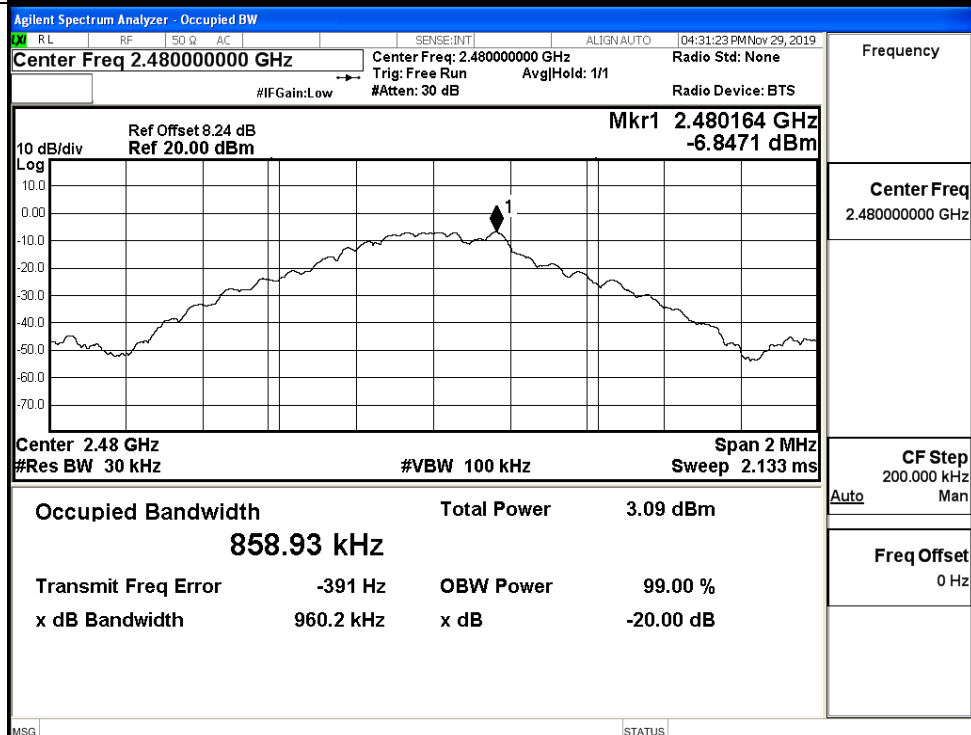
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

GFSK/HCH

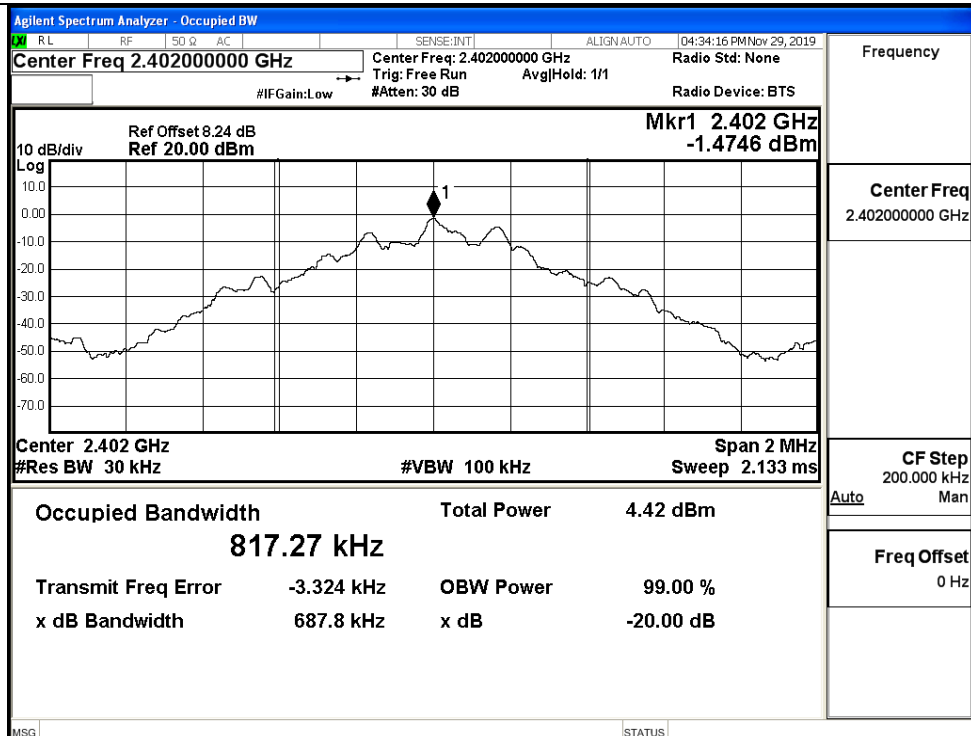


Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

Auto

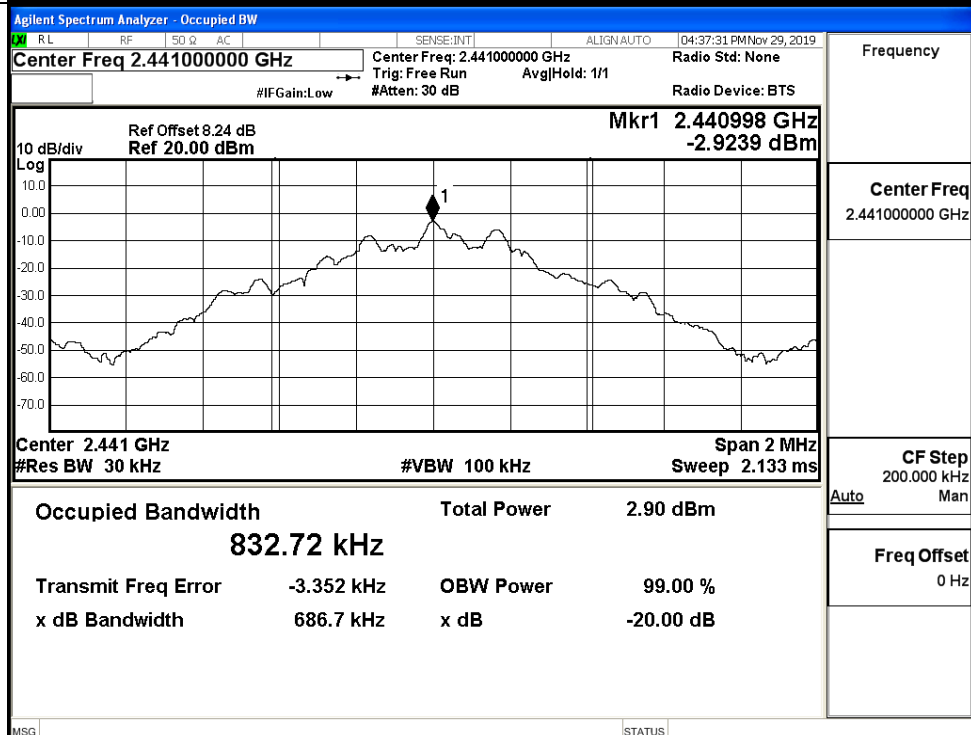
Freq Offset
0 Hz

$\pi/4$ DQPSK/LCH

Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz
Man

Auto

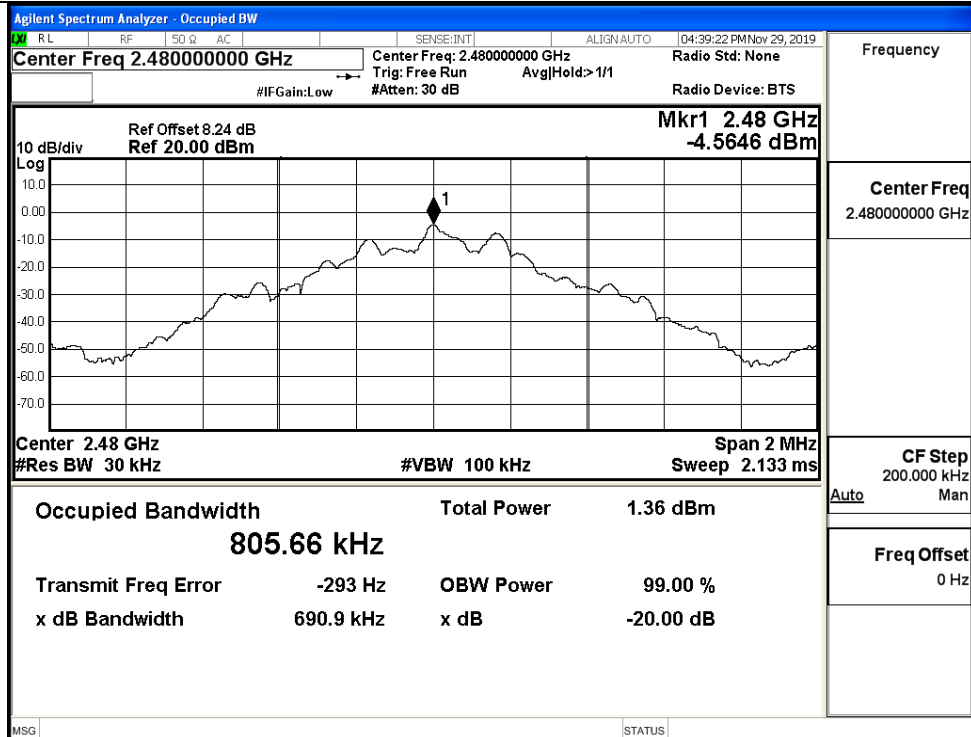
Freq Offset
0 Hz $\pi/4$ DQPSK/MCH

Frequency

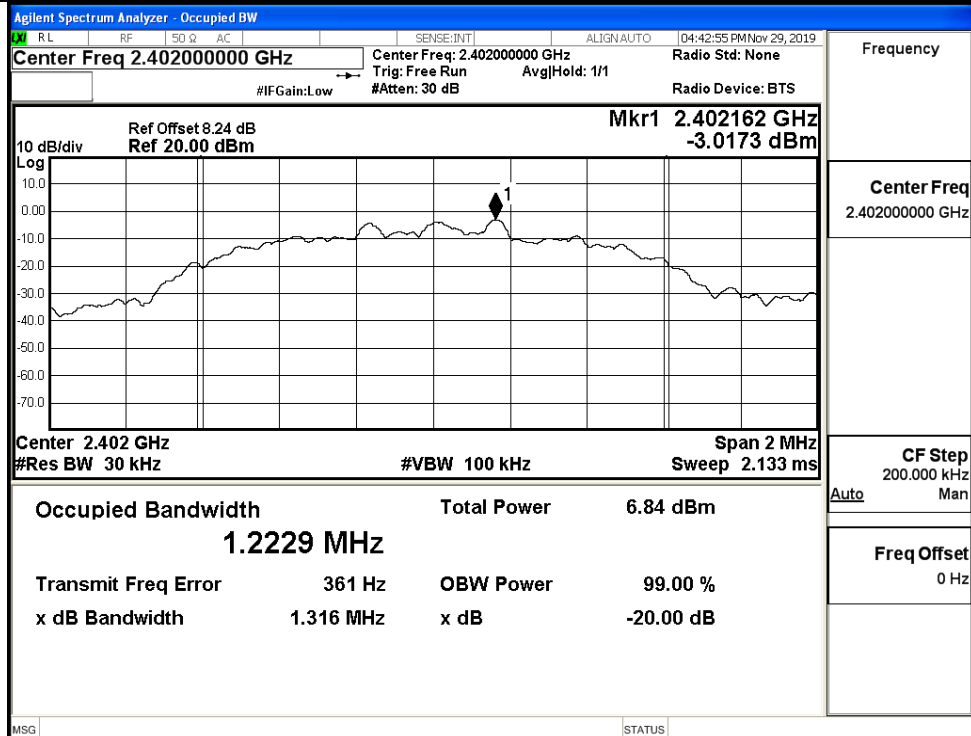
Center Freq
2.44100000 GHzCF Step
200.000 kHz
Man

Auto

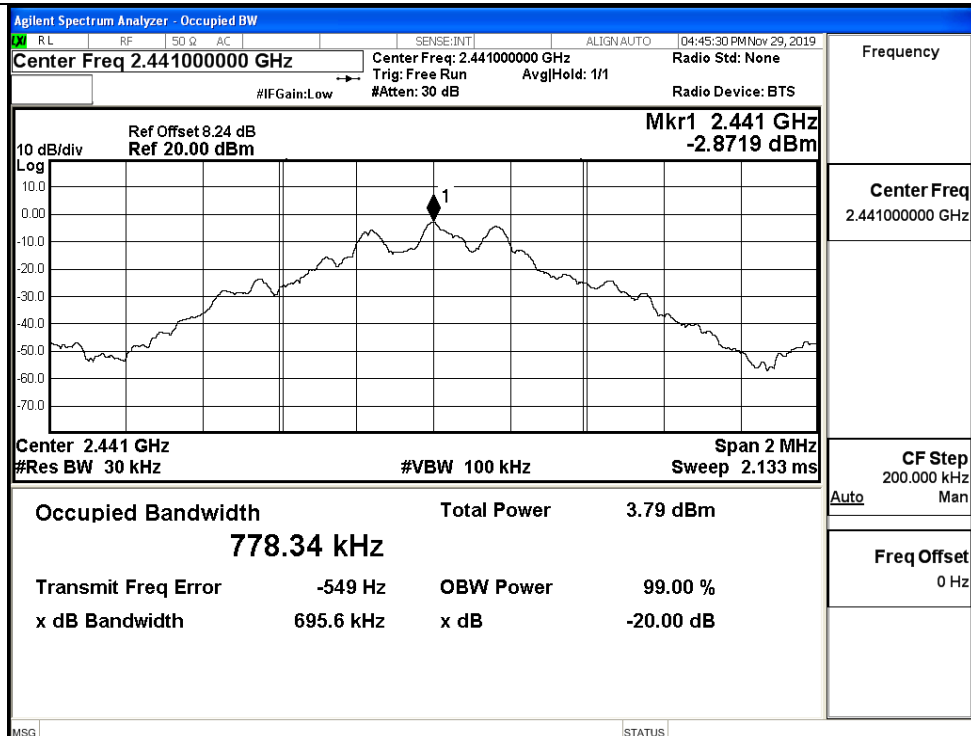
Freq Offset
0 Hz

$\pi/4$ DQPSK/HCH

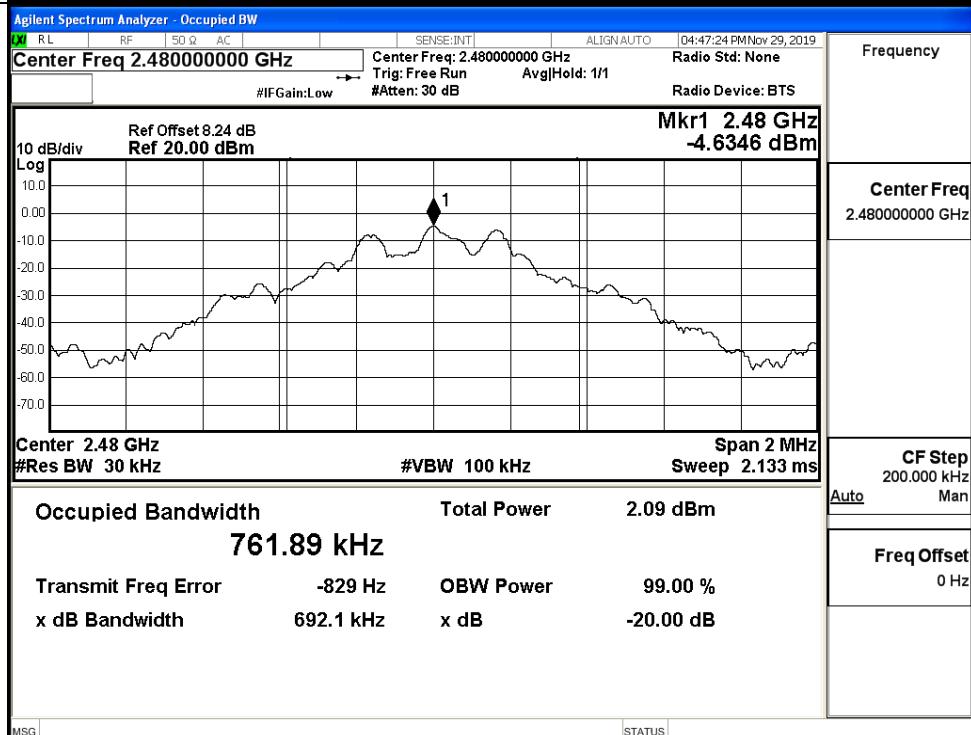
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

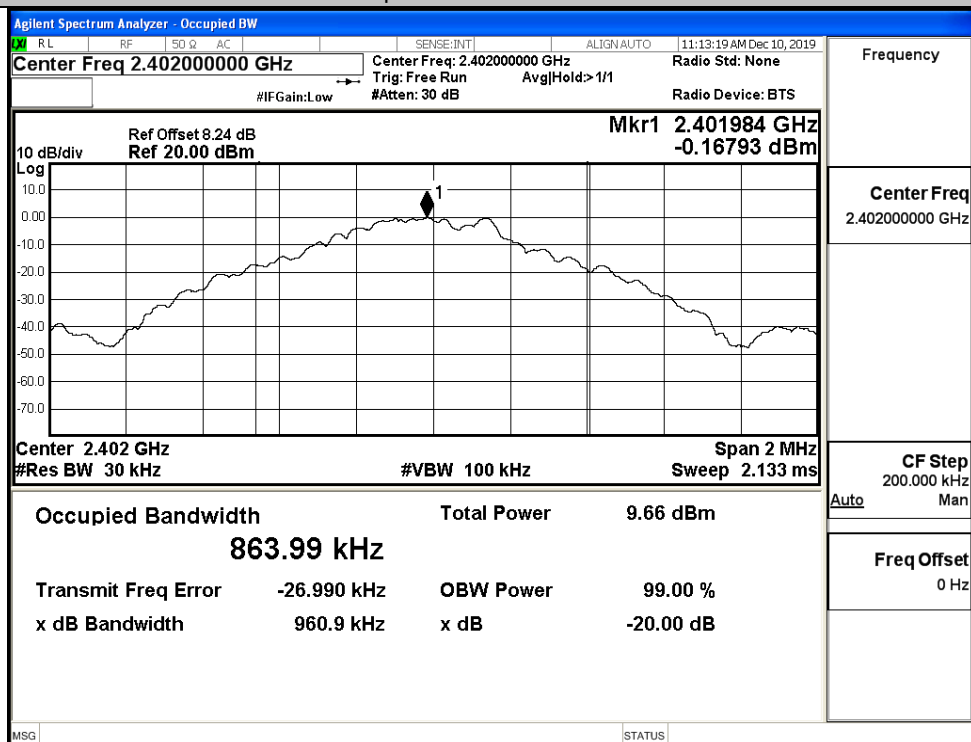


R

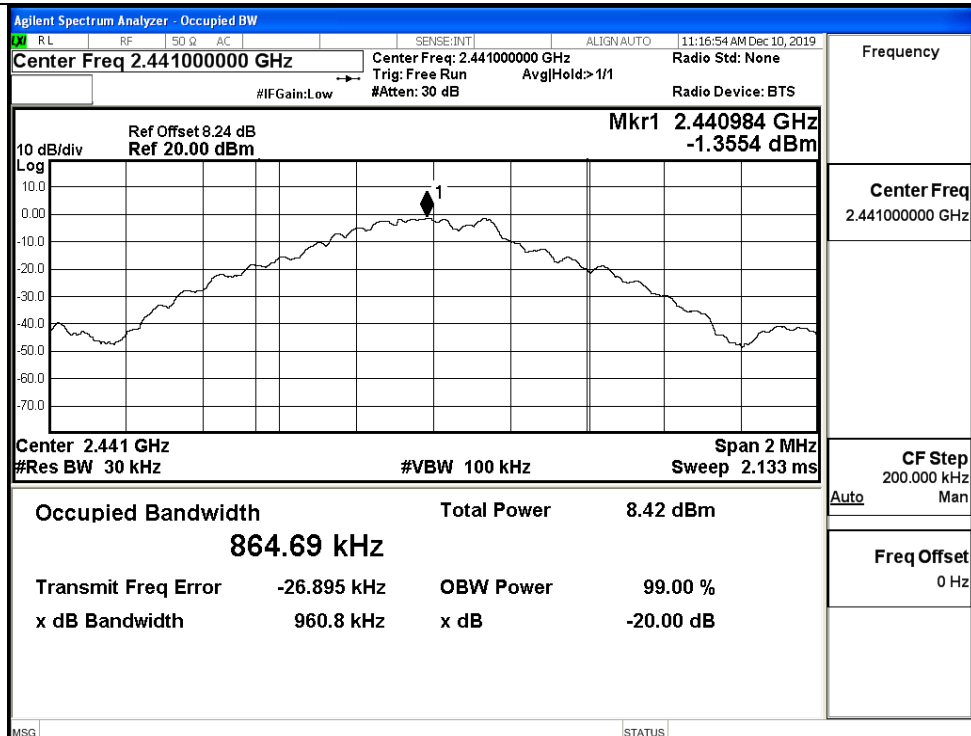
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.9609	Not Specified	PASS
	MCH	0.9608	Not Specified	PASS
	HCH	0.9591	Not Specified	PASS
$\pi/4$ DQPSK	LCH	0.6949	Not Specified	PASS
	MCH	0.6976	Not Specified	PASS
	HCH	0.6877	Not Specified	PASS
8DPSK	LCH	1.315	Not Specified	PASS
	MCH	0.6980	Not Specified	PASS
	HCH	0.6938	Not Specified	PASS

Test Graphs

GFSK/LCH



GFSK/MCH



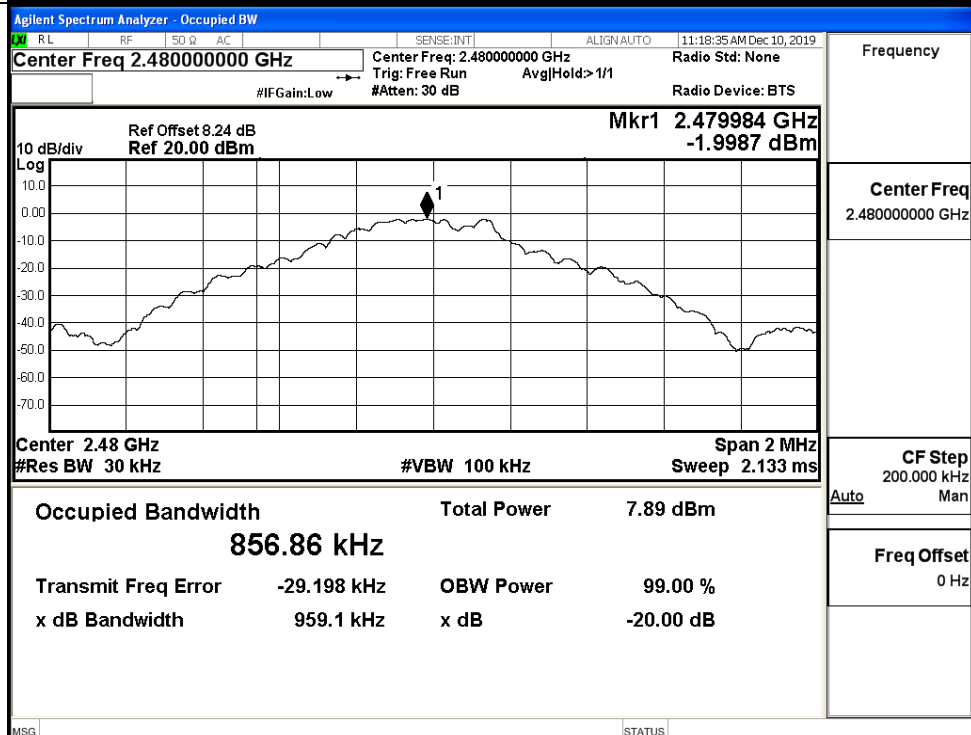
Frequency

Center Freq
2.441000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

GFSK/HCH

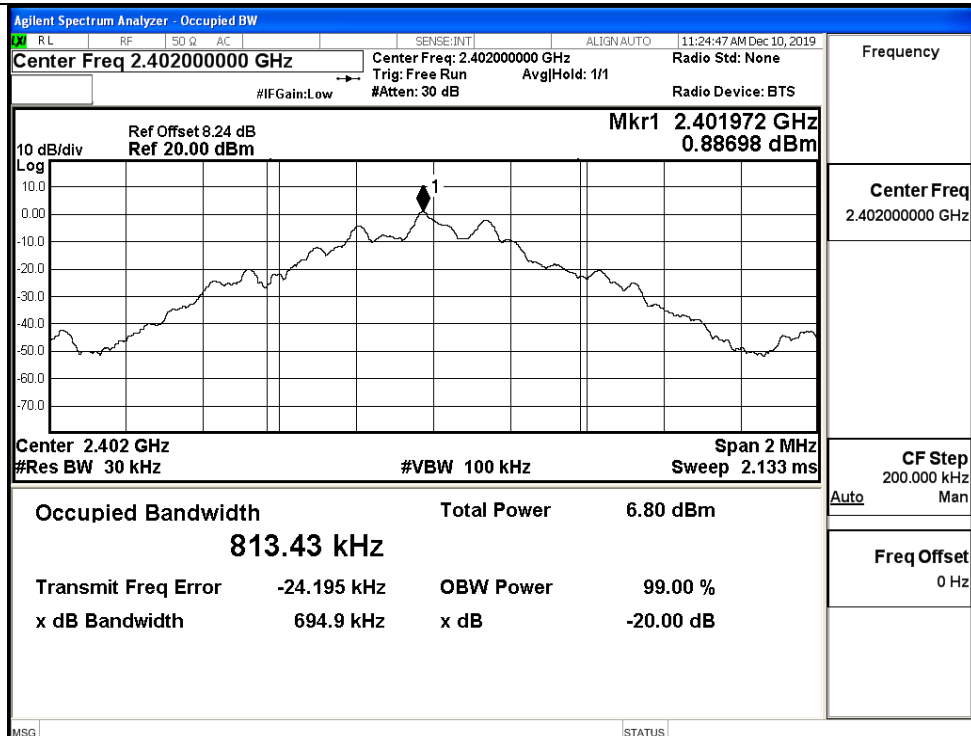
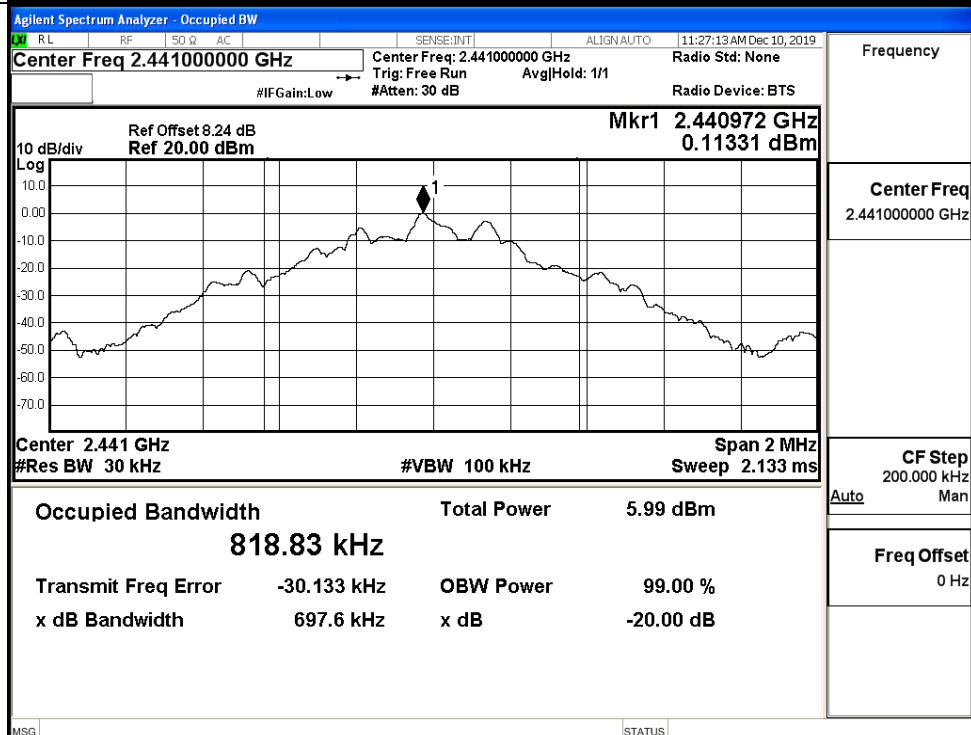


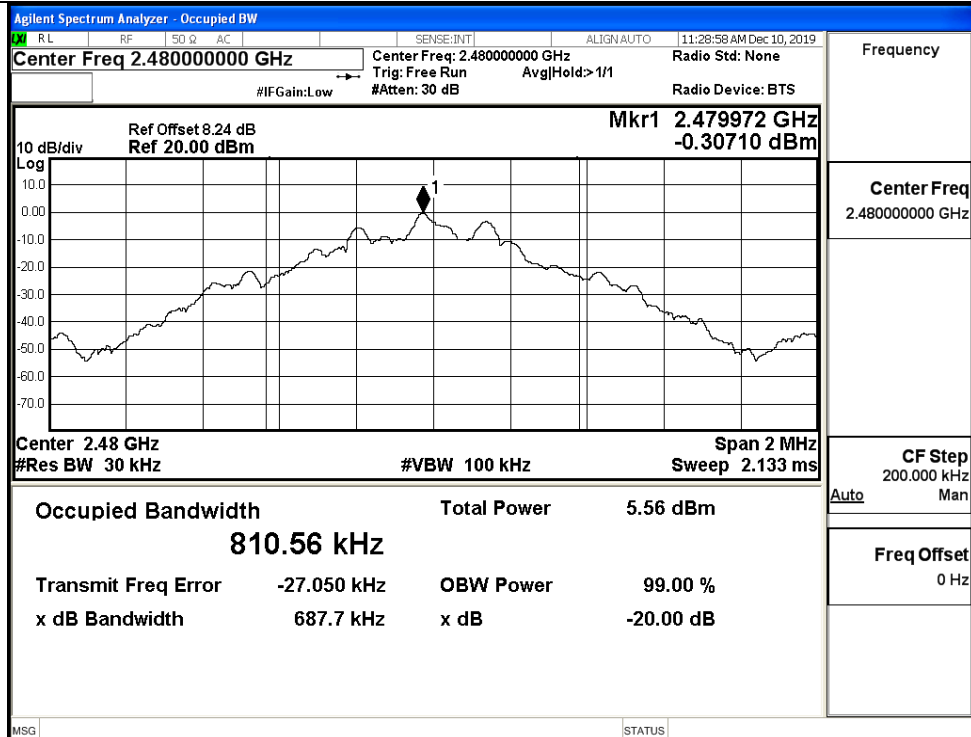
Frequency

Center Freq
2.480000000 GHzCF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

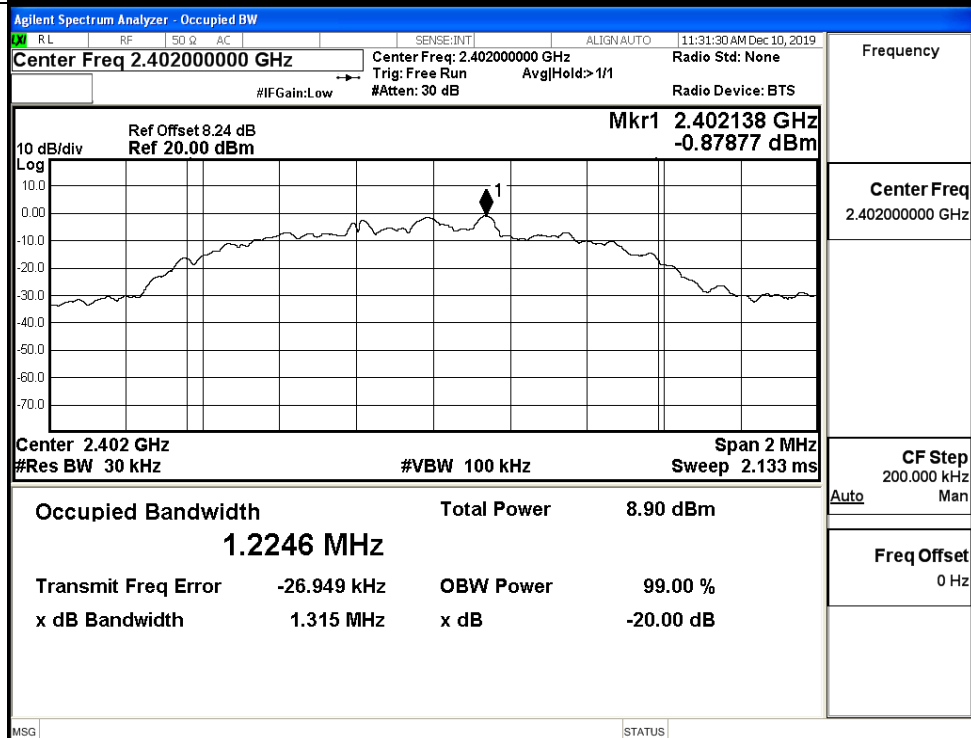
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

Frequency

Center Freq
2.48000000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

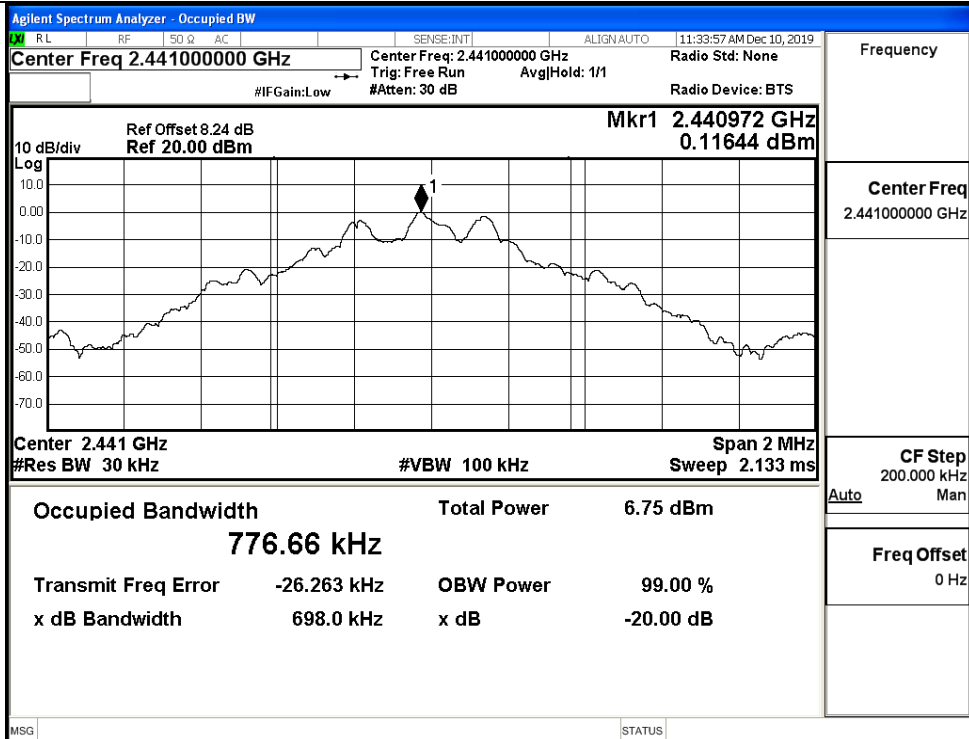
8DPSK/LCH



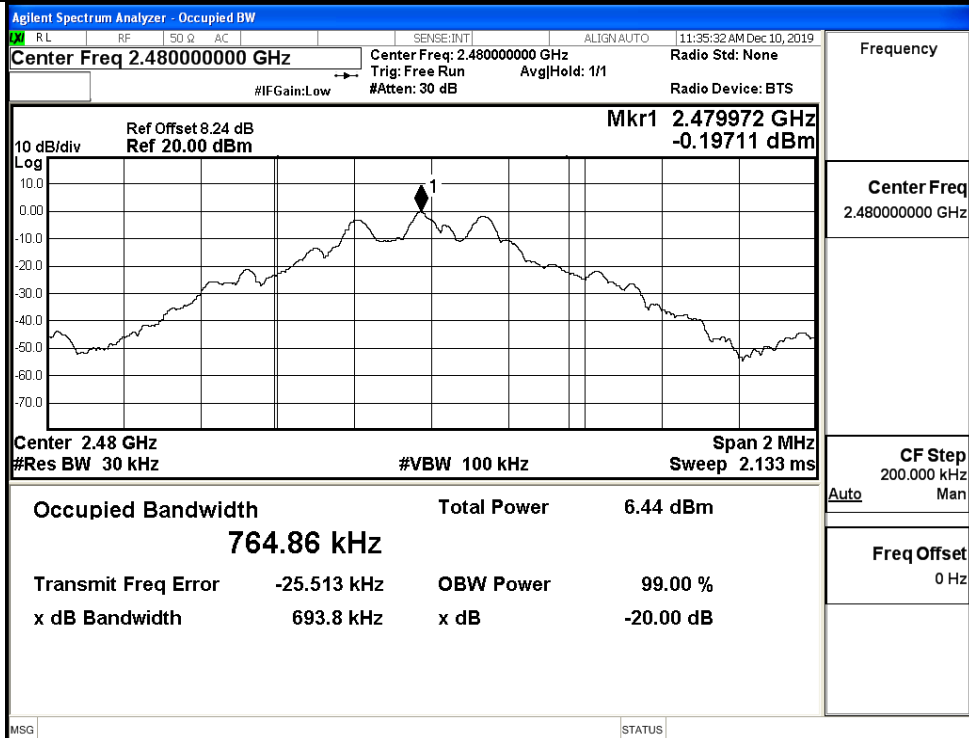
Frequency

Center Freq
2.40200000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

8DPSK/MCH



8DPSK/HCH



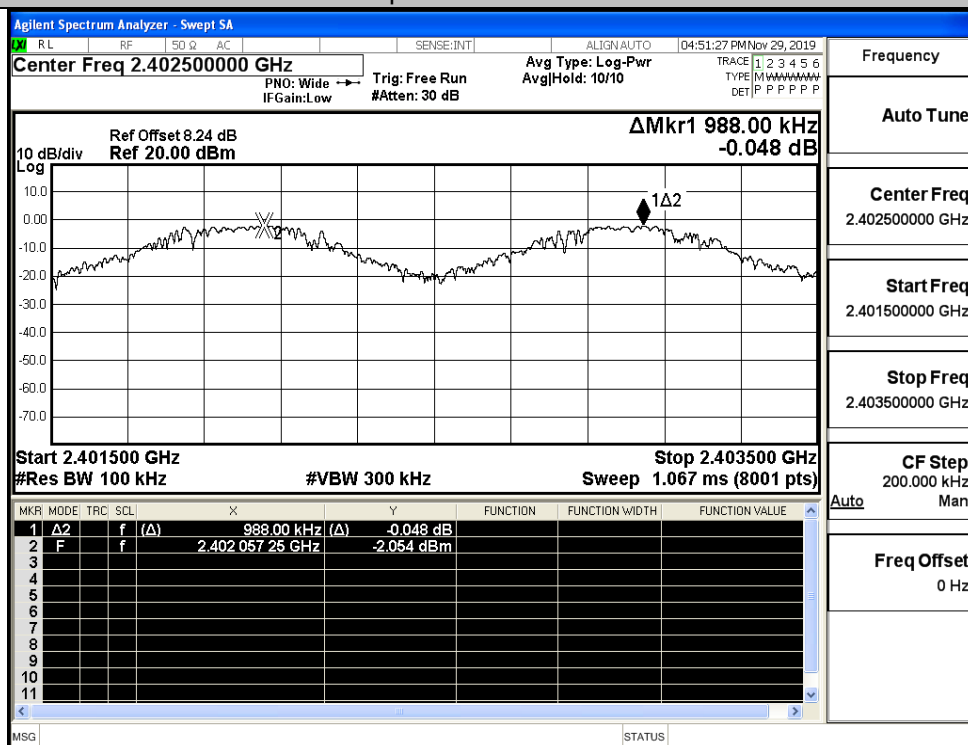
A.3 Carrier Frequency Separation

L

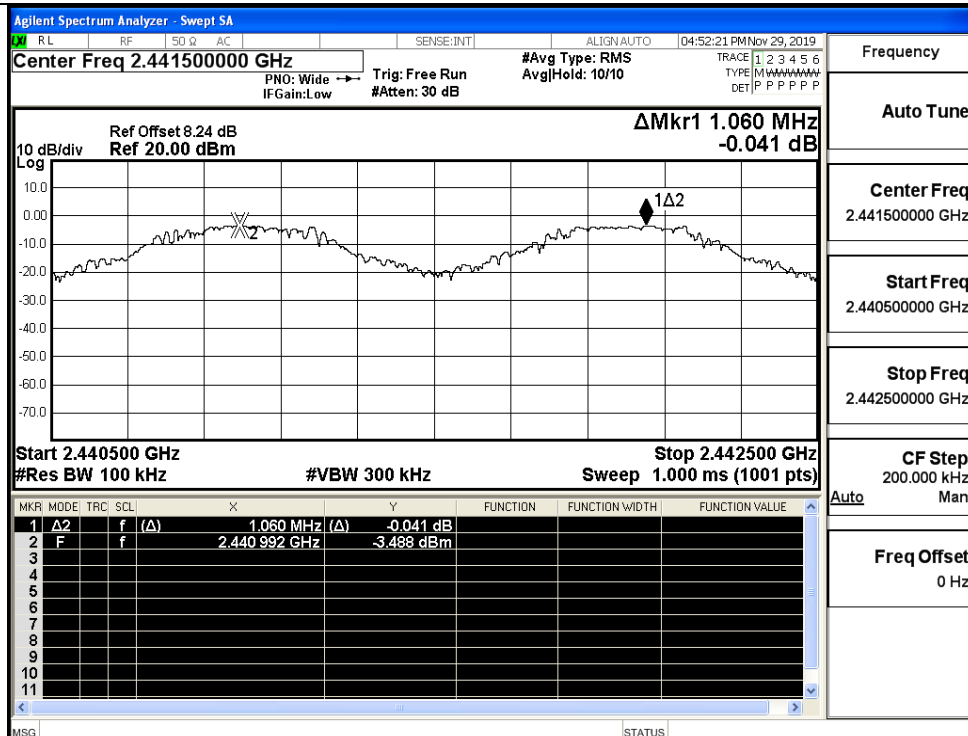
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.988	0.644	PASS
	MCH	1.060	0.644	PASS
	HCH	0.994	0.644	PASS
π /4DQPSK	LCH	1.152	0.461	PASS
	MCH	1.060	0.461	PASS
	HCH	1.180	0.461	PASS
8DPSK	LCH	1.310	0.877	PASS
	MCH	0.998	0.877	PASS
	HCH	0.994	0.877	PASS

Test Graphs

GFSK/LCH



GFSK/MCH

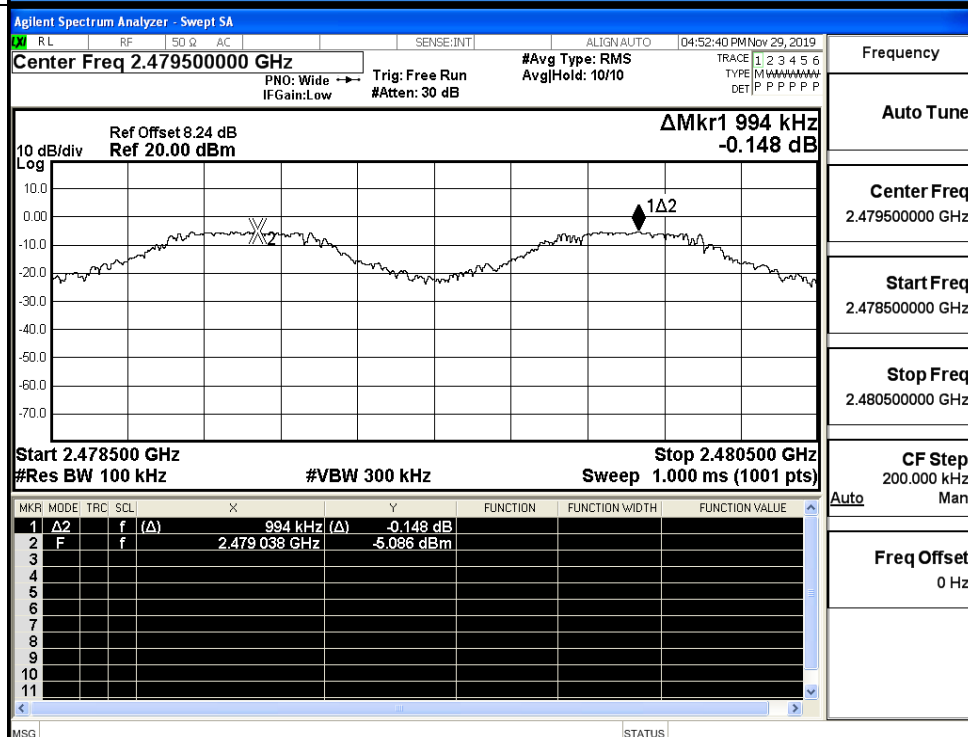


Frequency

Auto Tune

Center Freq
2.441500000 GHzStart Freq
2.440500000 GHzStop Freq
2.442500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

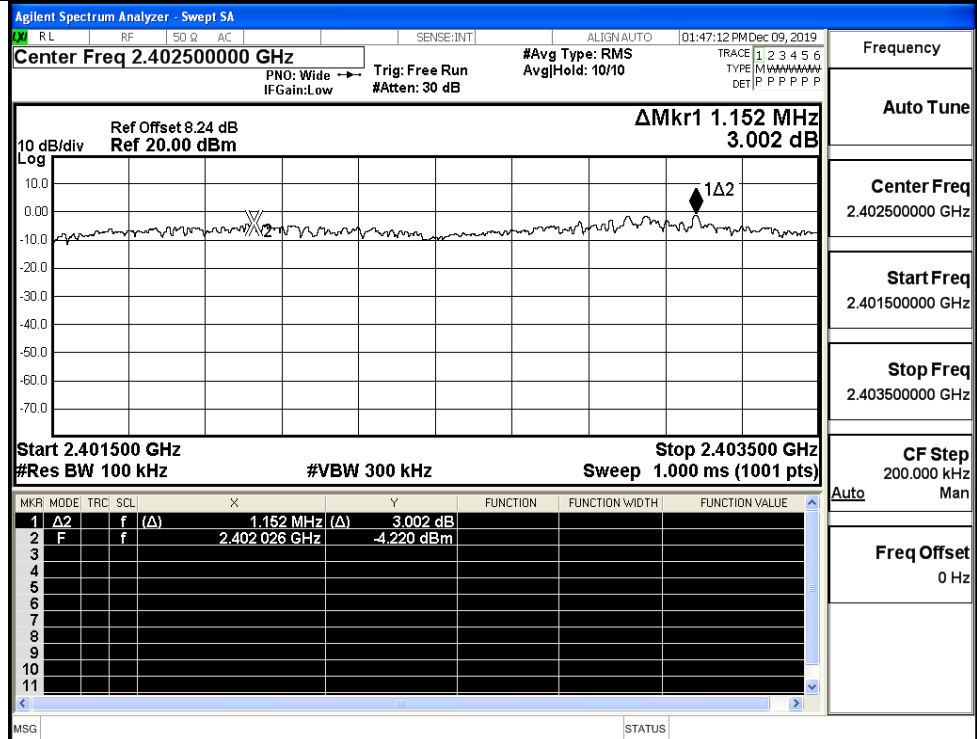
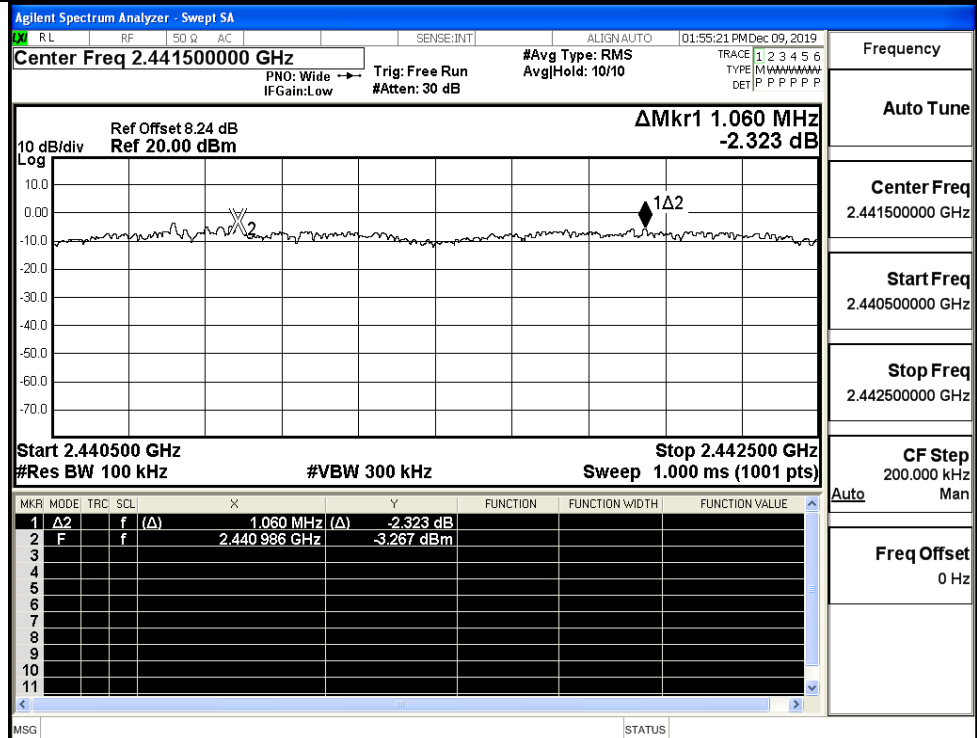
GFSK/HCH

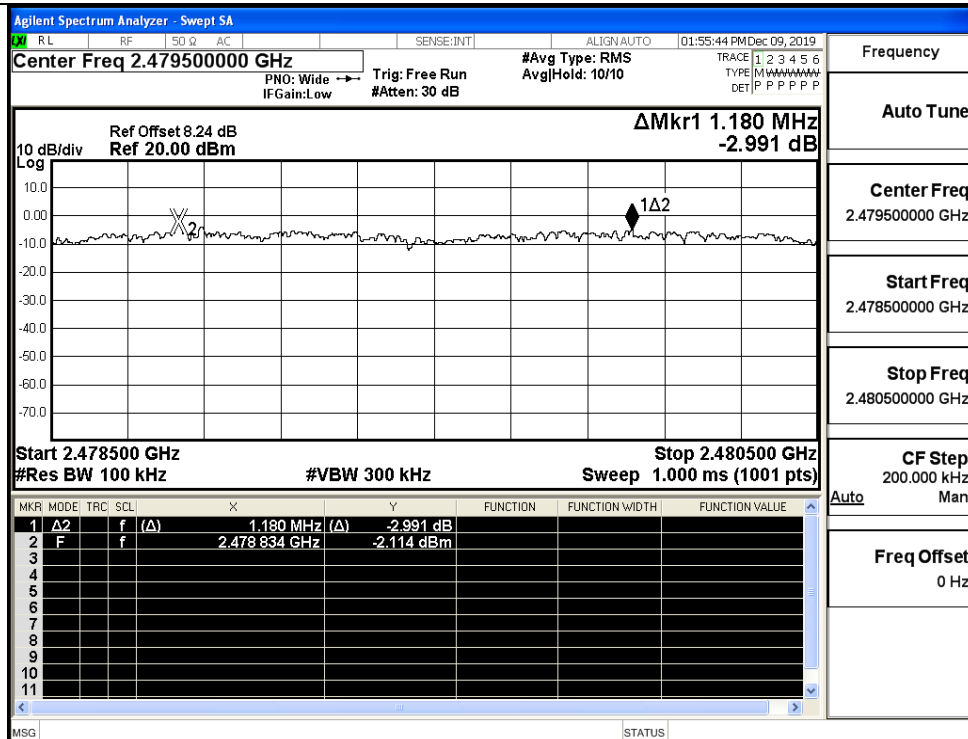


Frequency

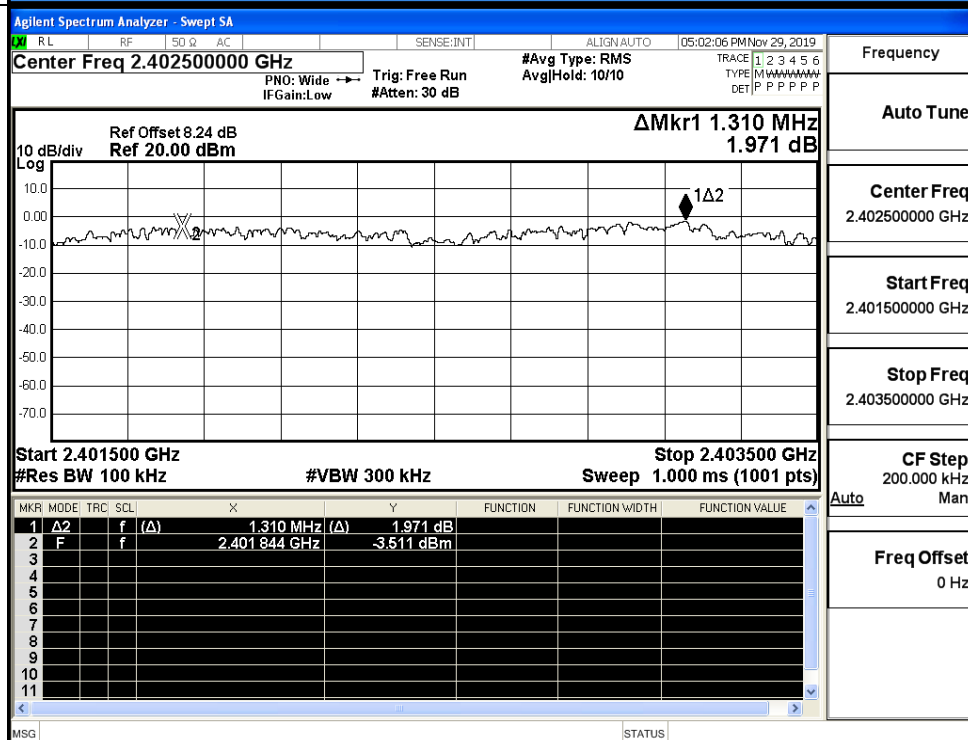
Auto Tune

Center Freq
2.479500000 GHzStart Freq
2.478500000 GHzStop Freq
2.480500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

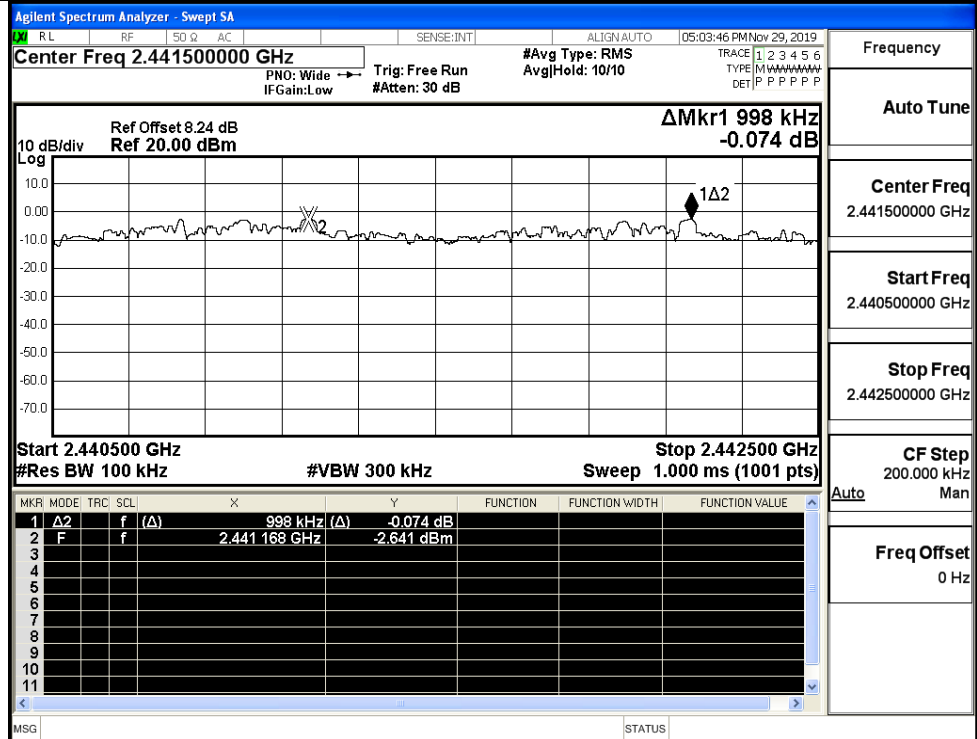
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

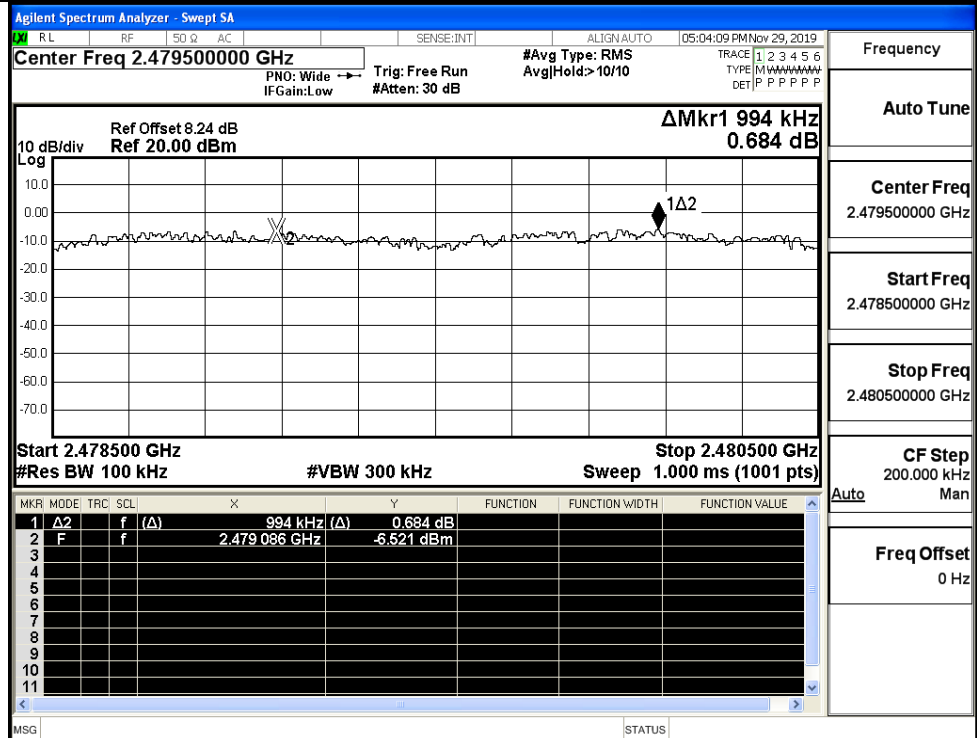
8DPSK/LCH



8DPSK/MCH



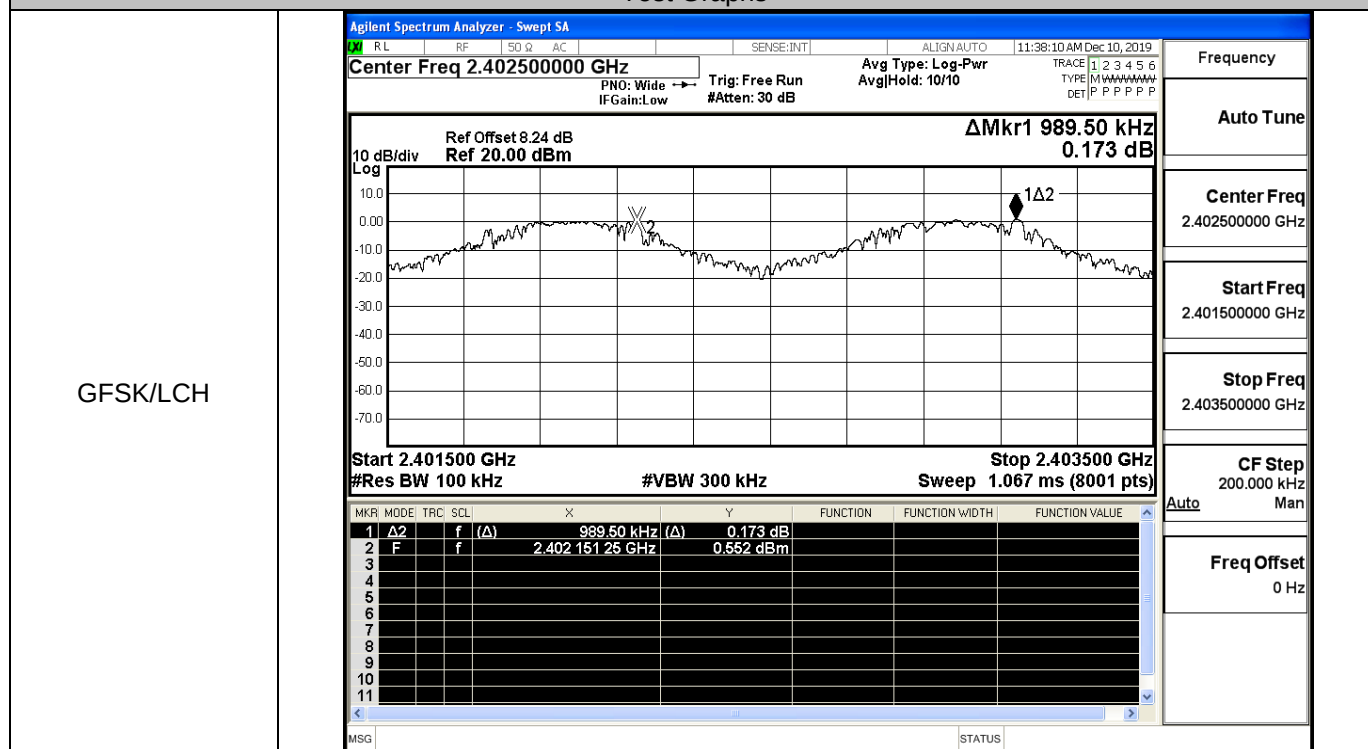
8DPSK/HCH



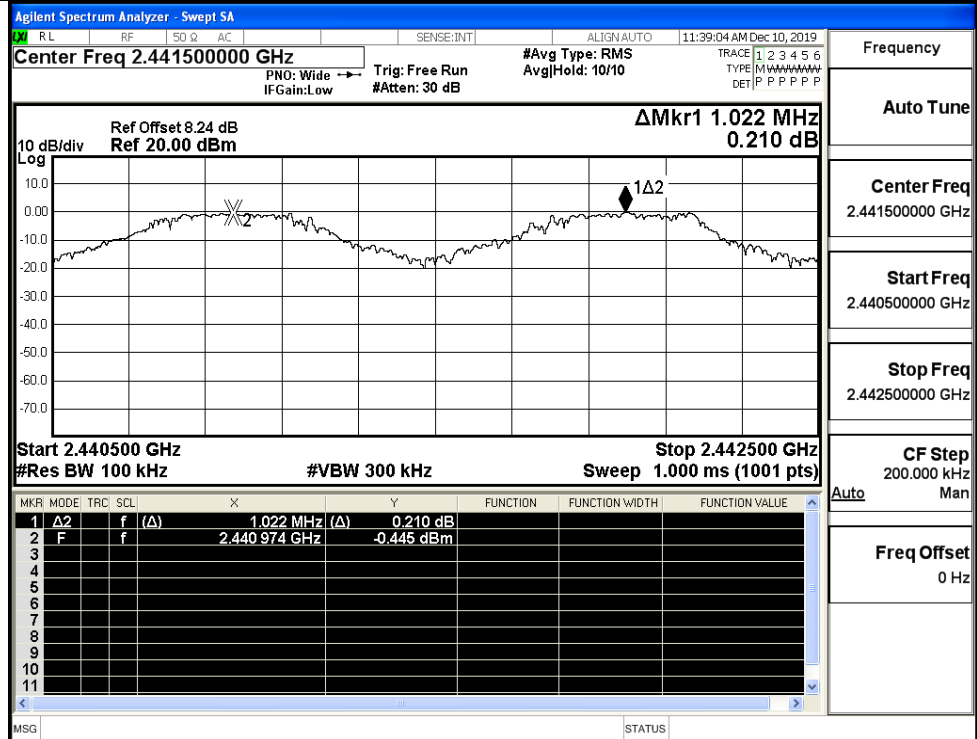
R

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.990	0.641	PASS
	MCH	1.022	0.641	PASS
	HCH	1.316	0.641	PASS
$\pi/4$ DQPSK	LCH	1.156	0.465	PASS
	MCH	0.980	0.465	PASS
	HCH	0.858	0.465	PASS
8DPSK	LCH	1.234	0.877	PASS
	MCH	1.194	0.877	PASS
	HCH	0.964	0.877	PASS

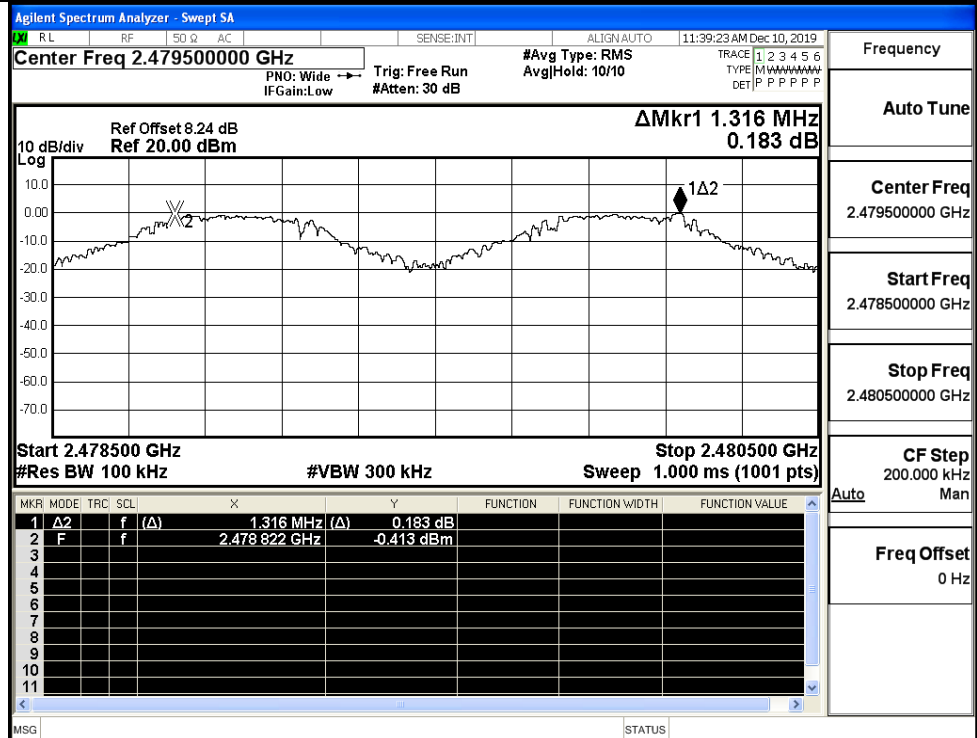
Test Graphs

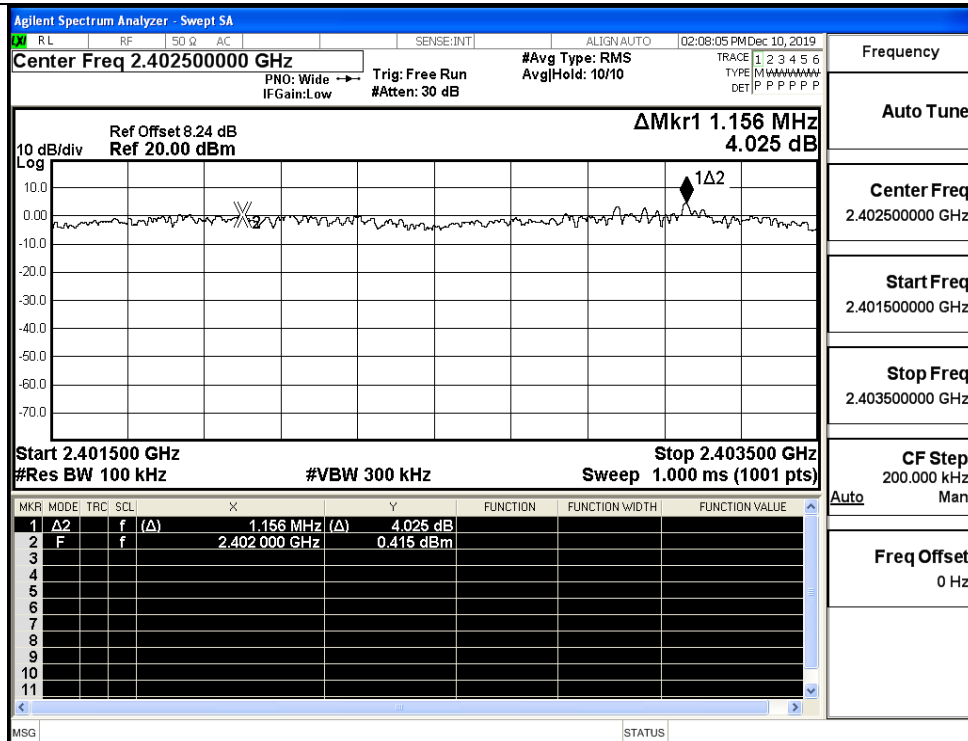
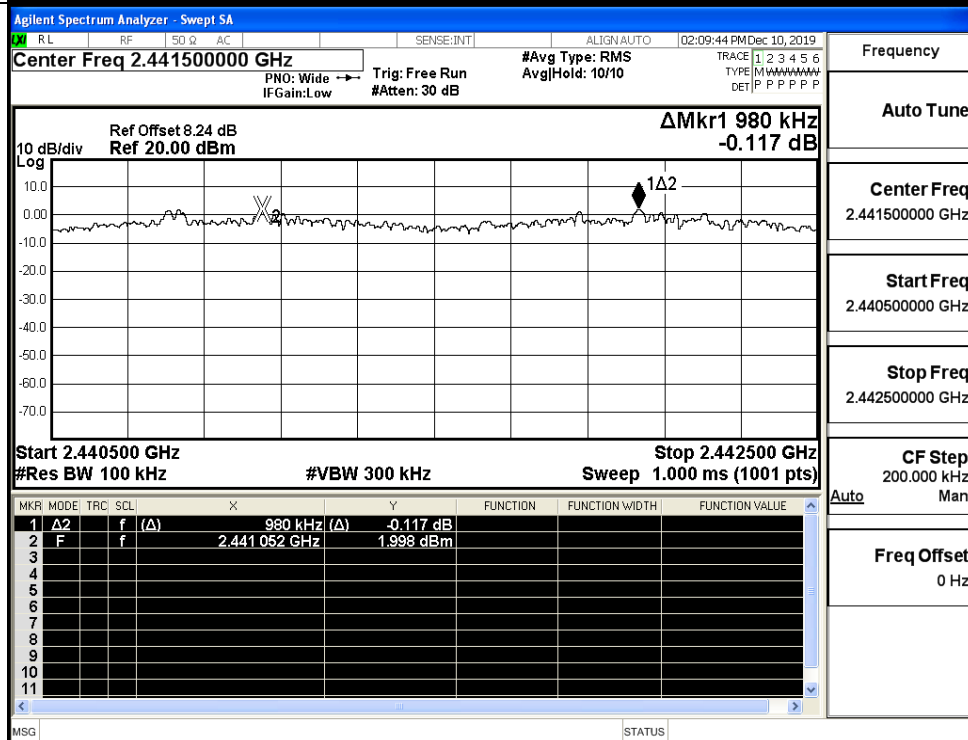


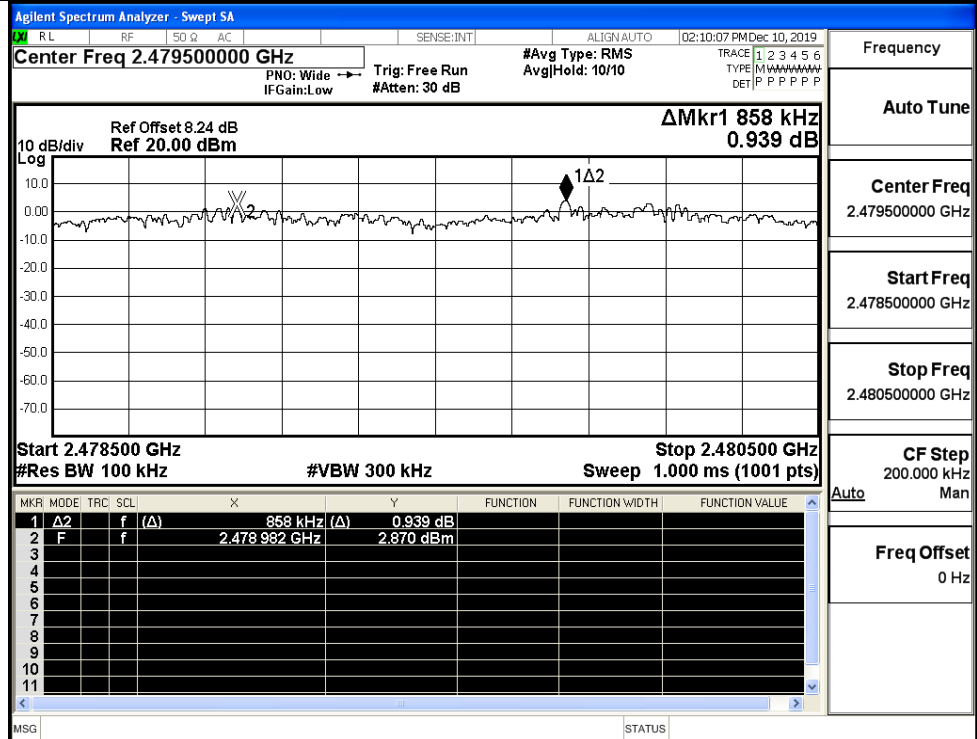
GFSK/MCH



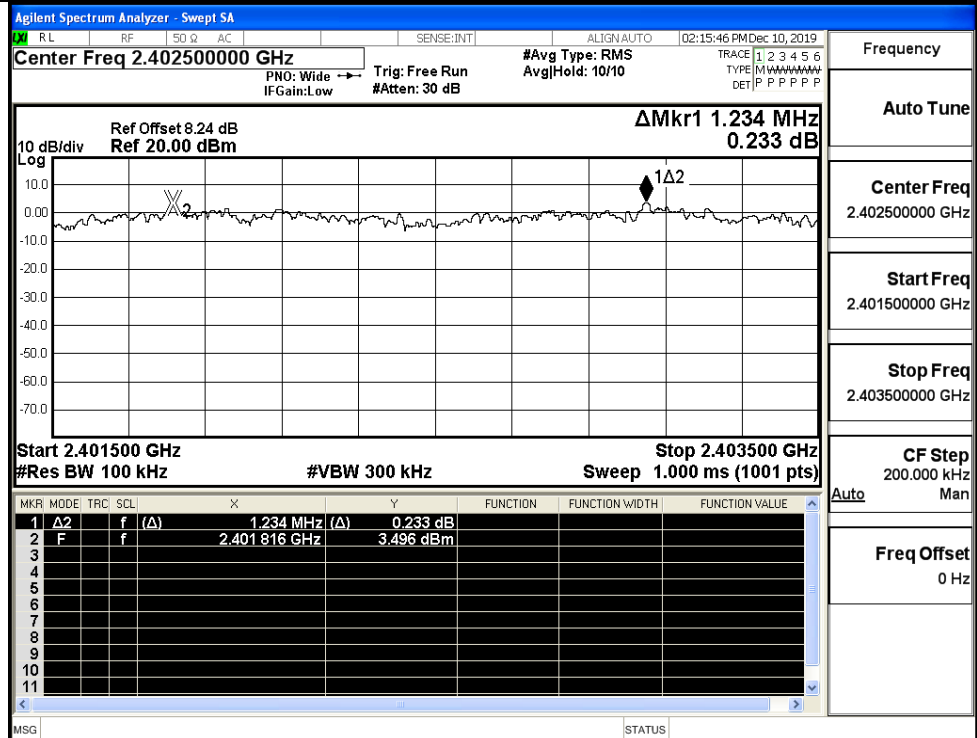
GFSK/HCH



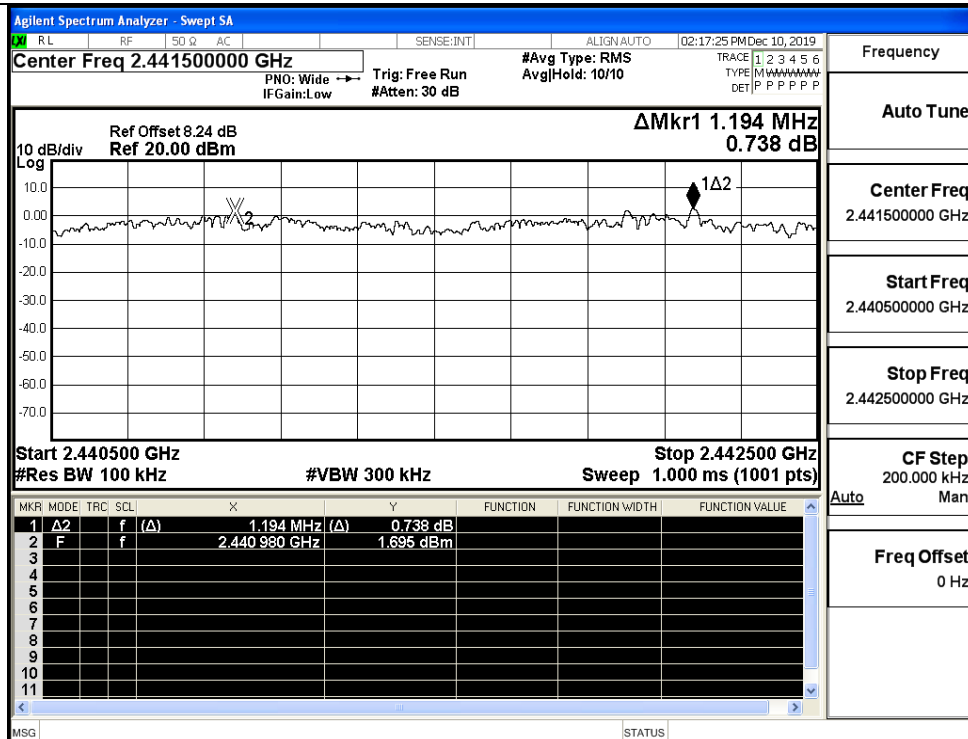
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

$\pi/4$ DQPSK/HCH

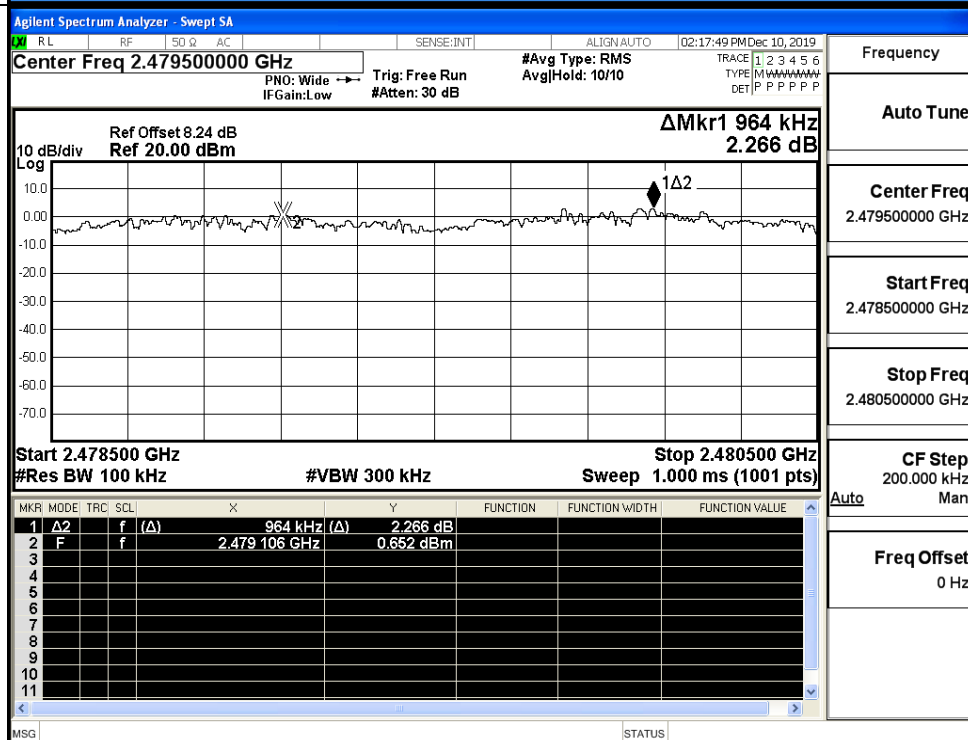
8DPSK/LCH



8DPSK/MCH



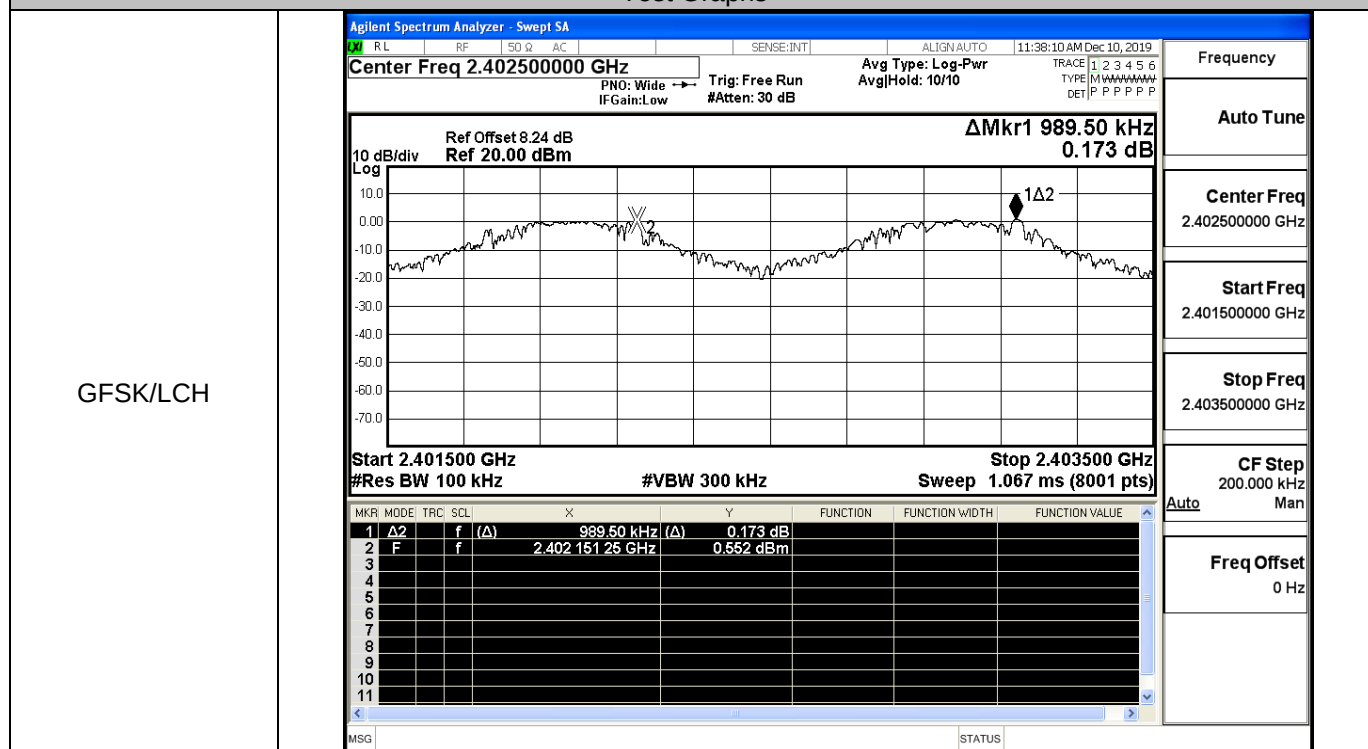
8DPSK/HCH



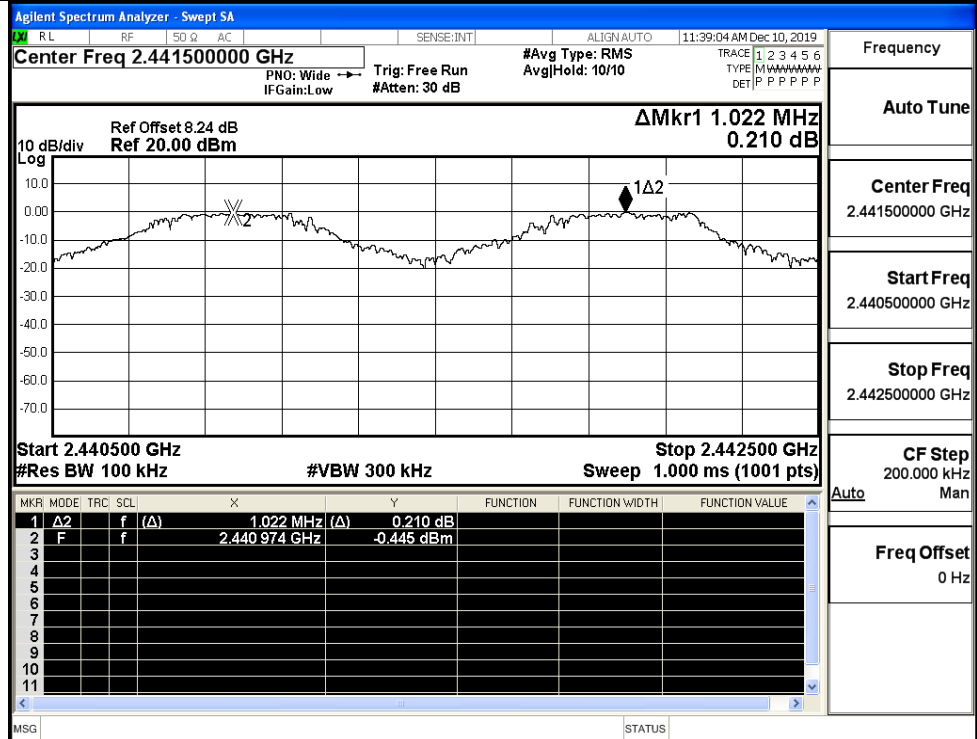
R

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.990	0.641	PASS
	MCH	1.022	0.641	PASS
	HCH	1.316	0.641	PASS
$\pi/4$ DQPSK	LCH	1.156	0.465	PASS
	MCH	0.980	0.465	PASS
	HCH	0.858	0.465	PASS
8DPSK	LCH	1.234	0.877	PASS
	MCH	1.194	0.877	PASS
	HCH	0.964	0.877	PASS

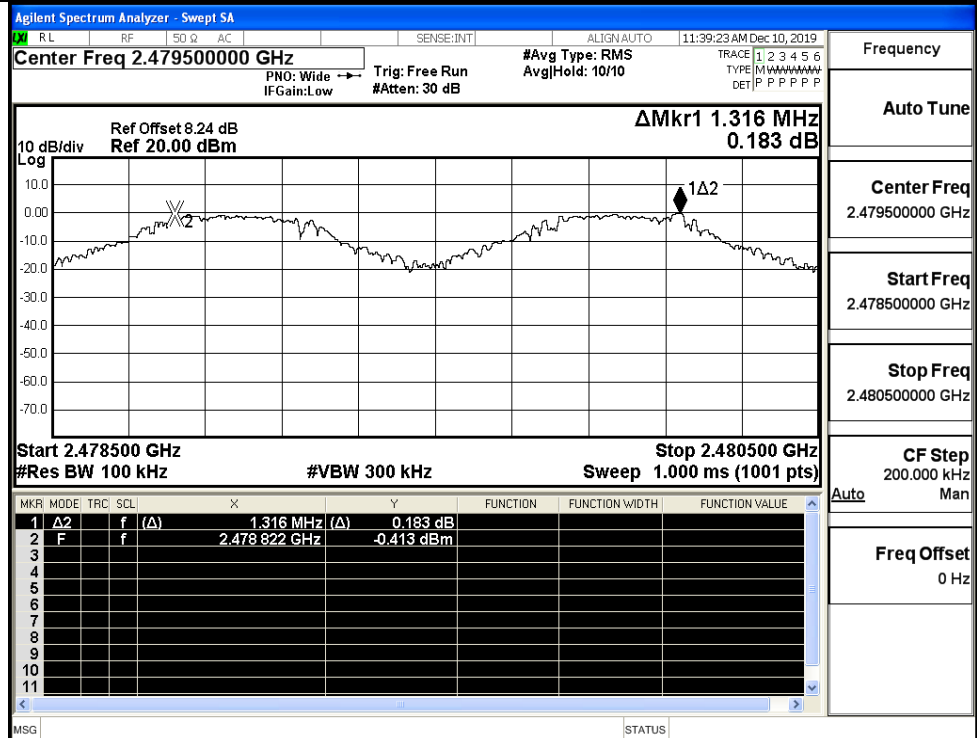
Test Graphs

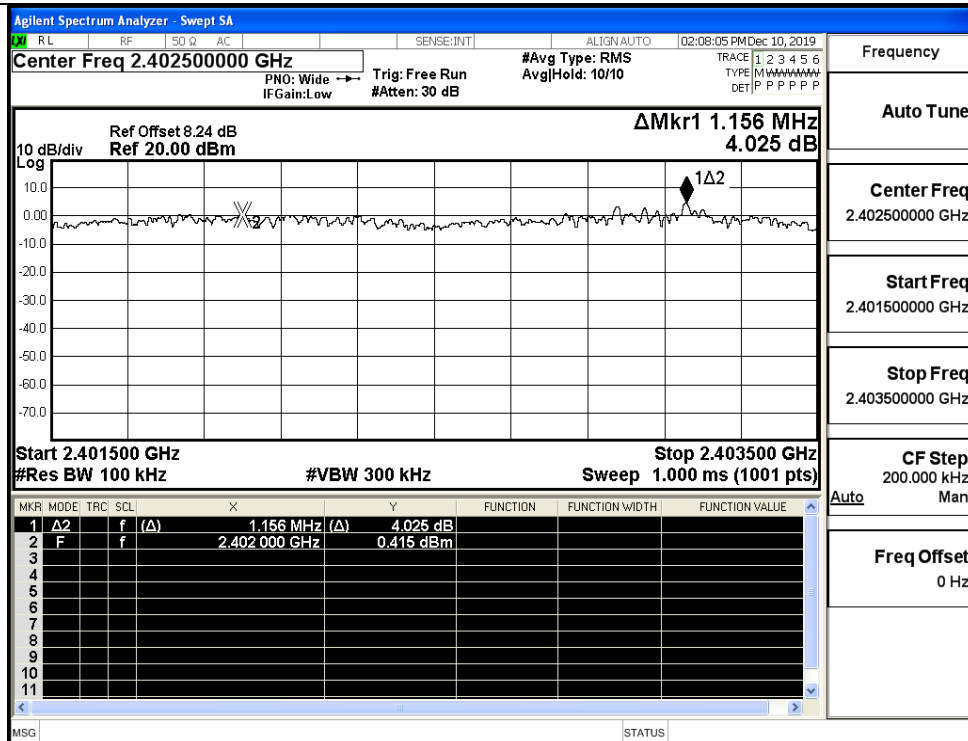


GFSK/MCH



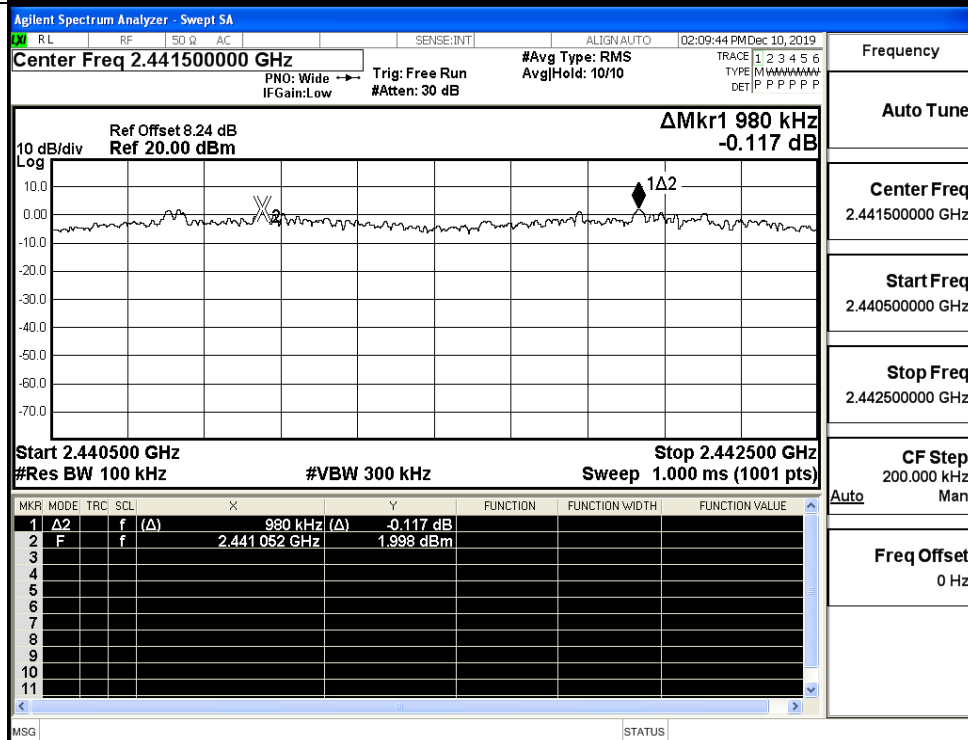
GFSK/HCH



$\pi/4$ DQPSK/LCH

Frequency

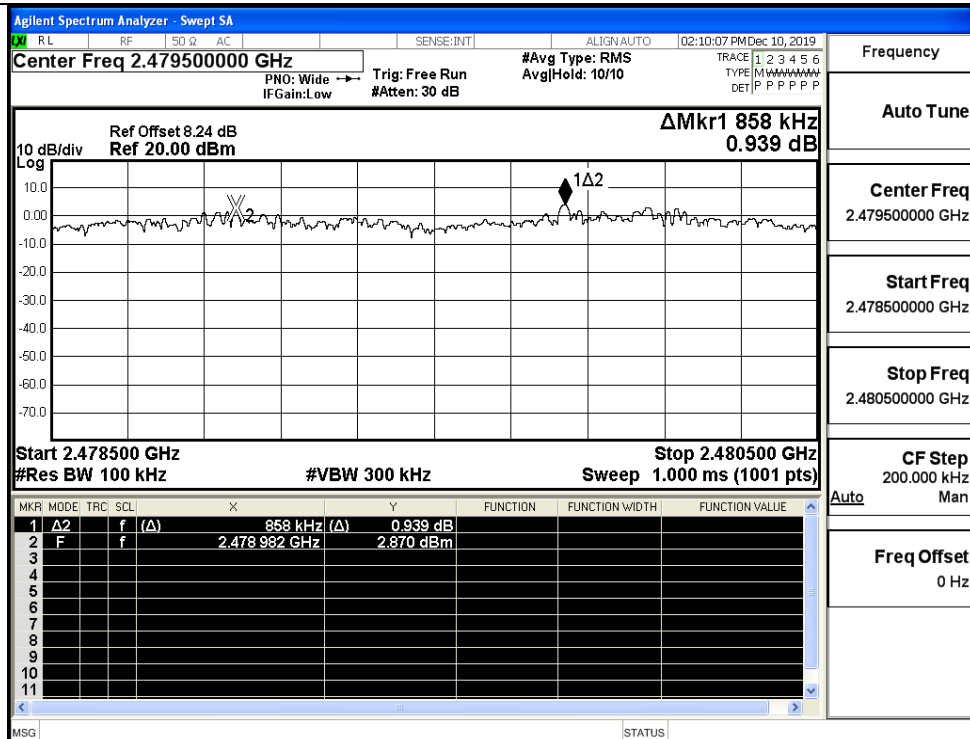
Auto Tune

Center Freq
2.402500000 GHzStart Freq
2.401500000 GHzStop Freq
2.403500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz $\pi/4$ DQPSK/MCH

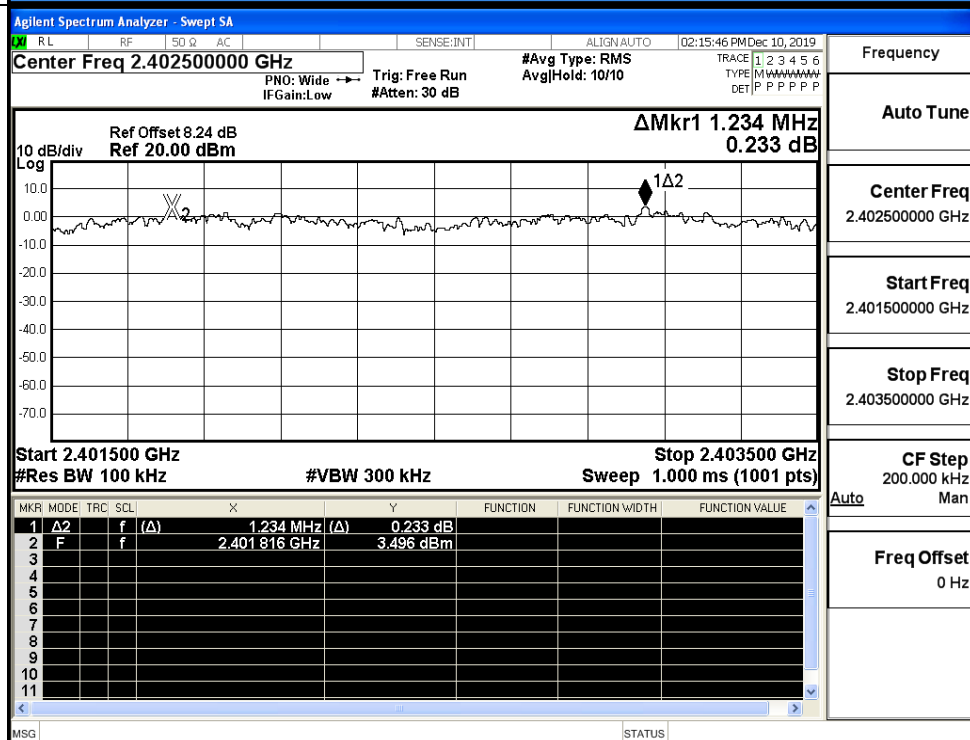
Frequency

Auto Tune

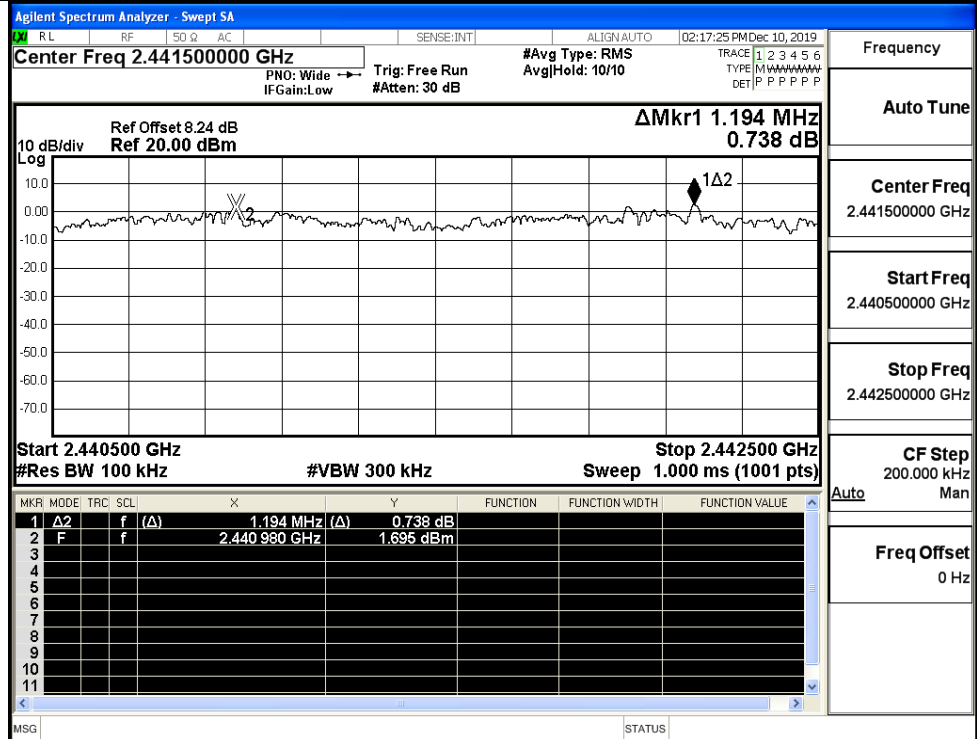
Center Freq
2.441500000 GHzStart Freq
2.440500000 GHzStop Freq
2.442500000 GHzCF Step
200.000 kHz
ManFreq Offset
0 Hz

$\pi/4$ DQPSK/HCH

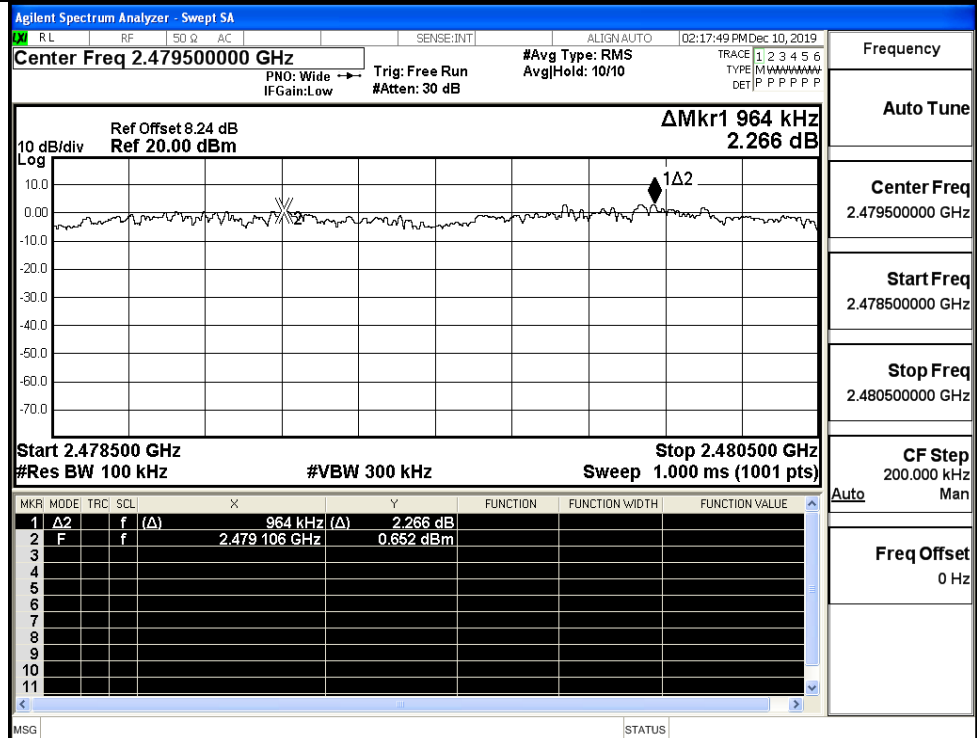
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

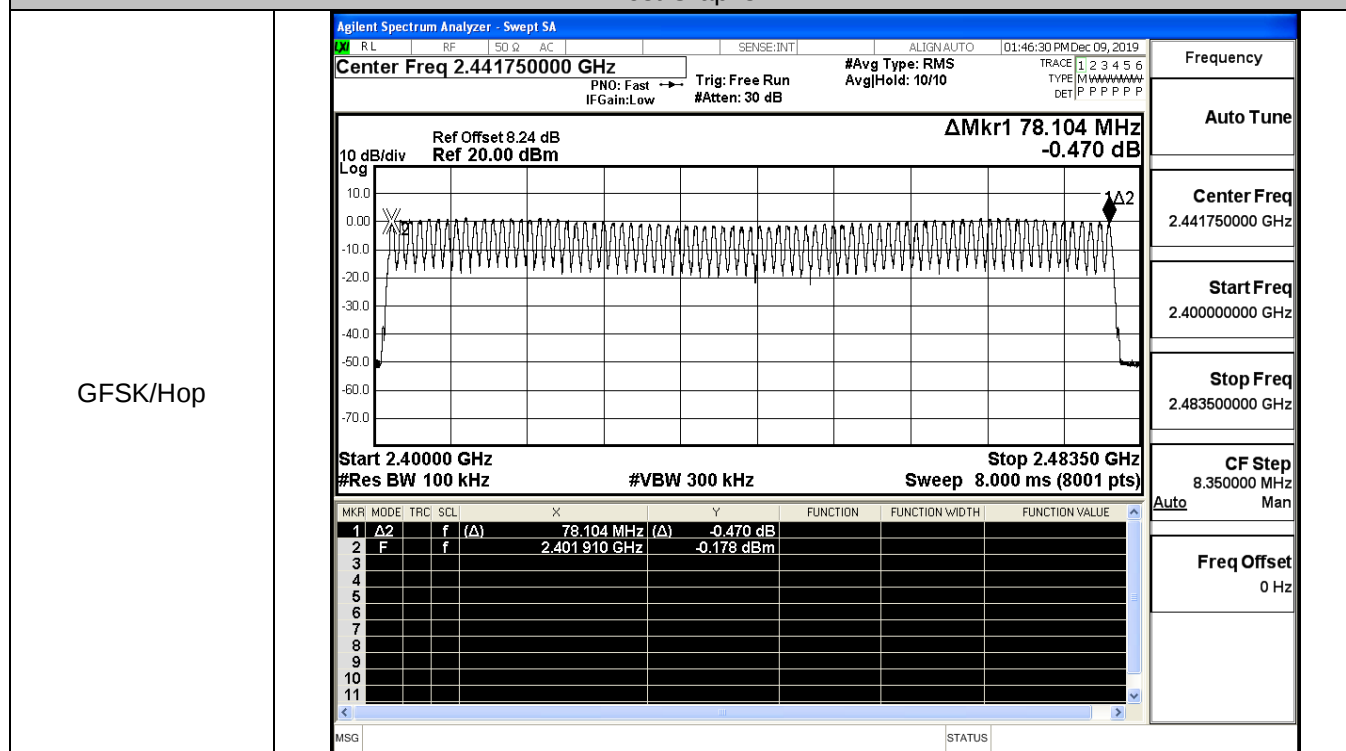


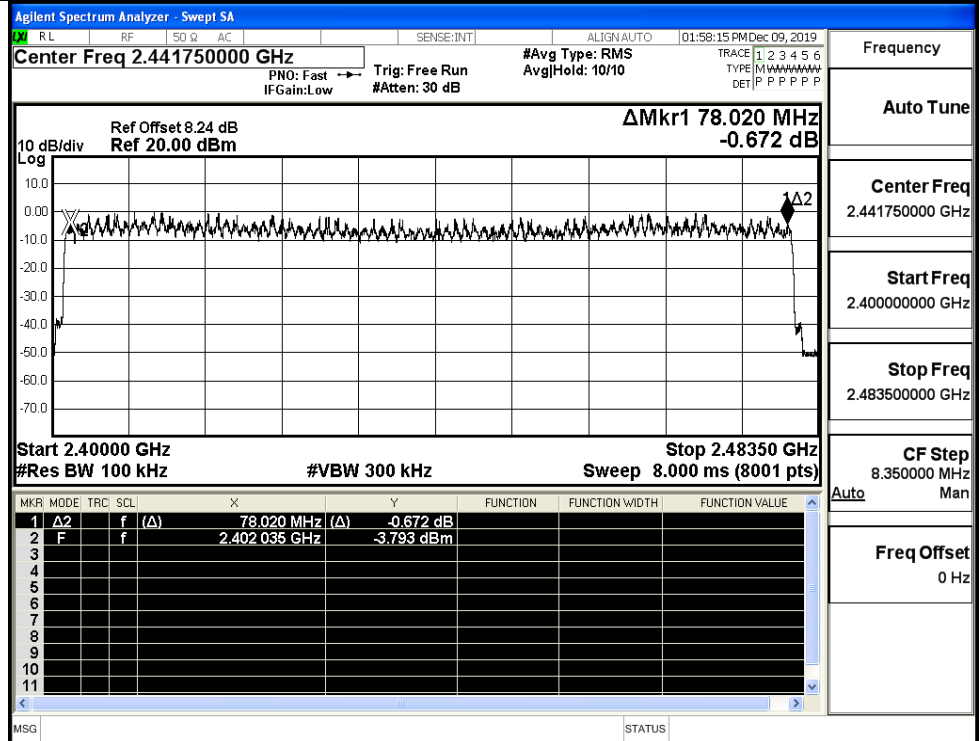
A.4 Hopping Channel Number

L

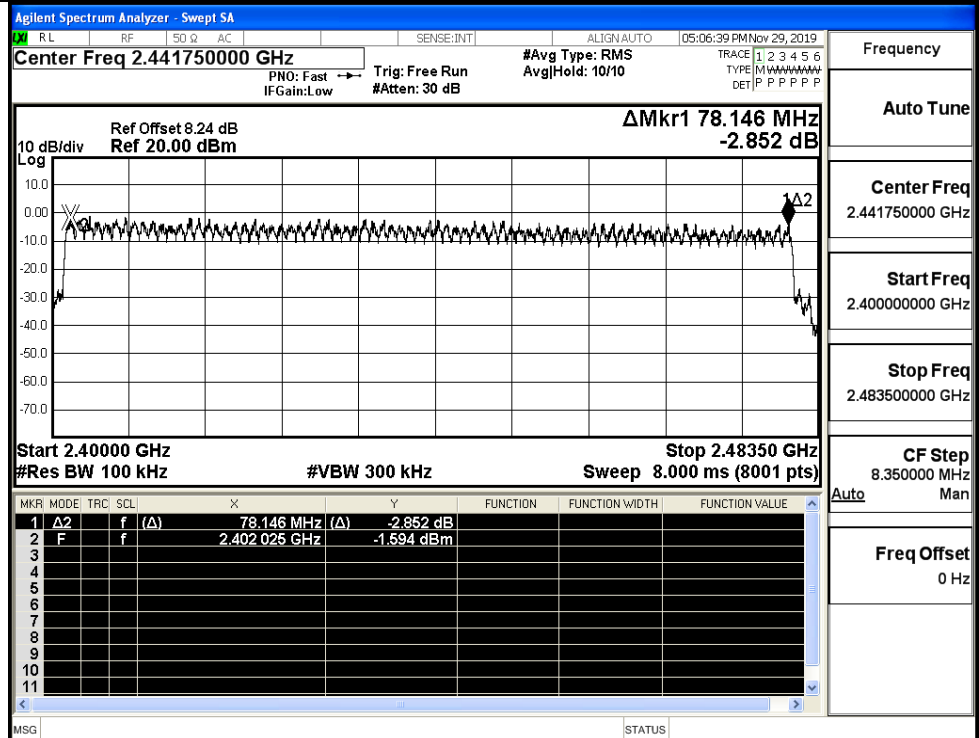
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs



$\pi/4$ DQPSK/Hop

8DPSK/Hop

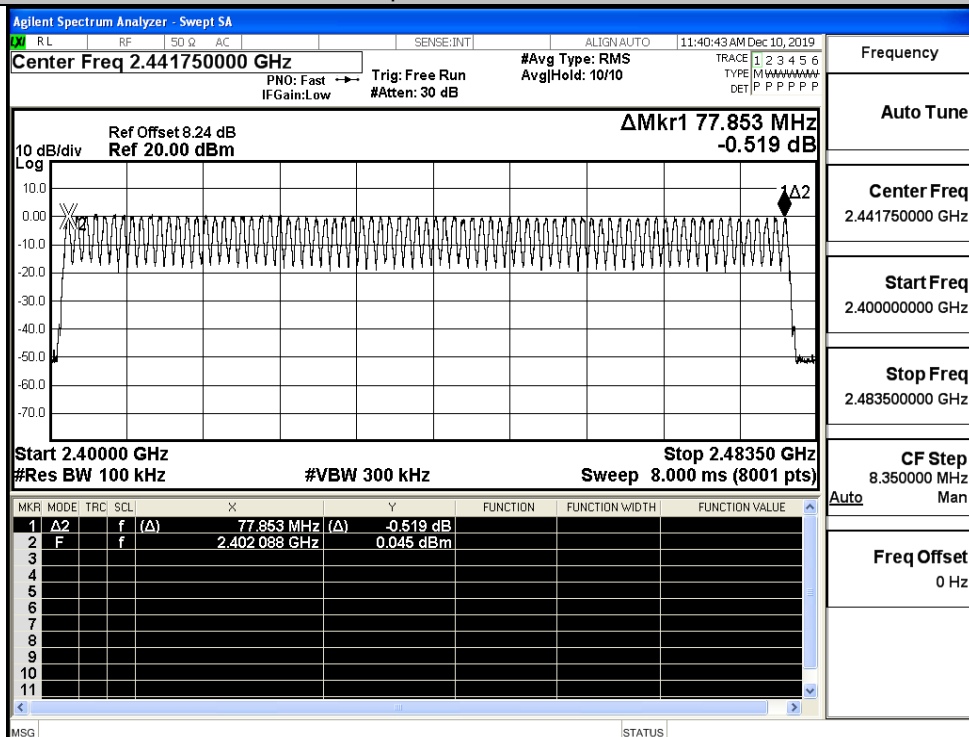
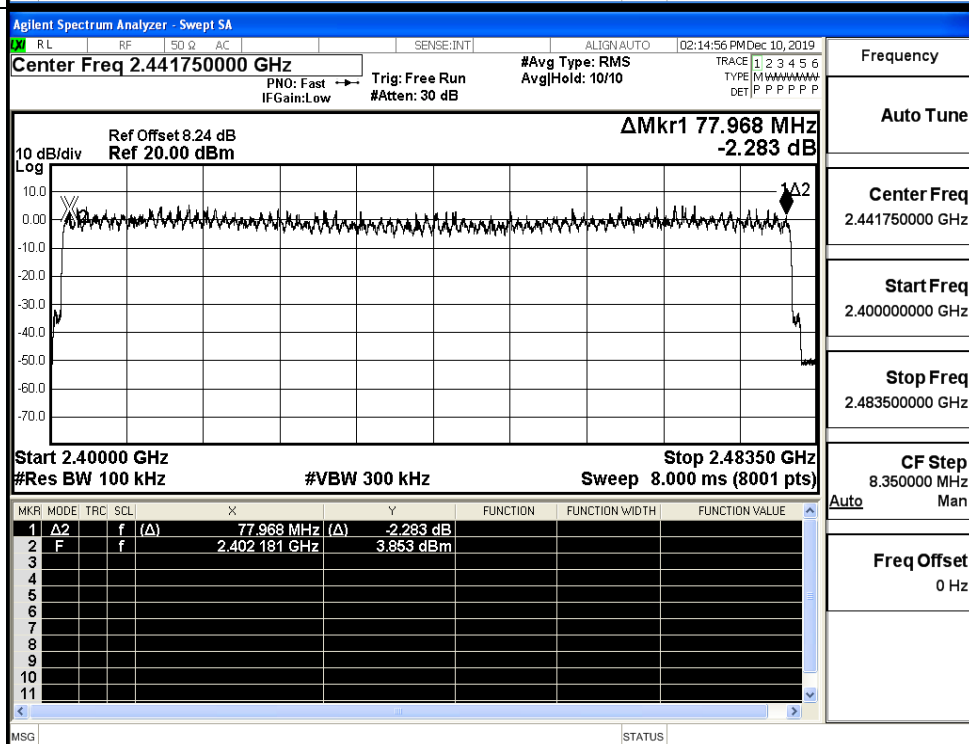


R

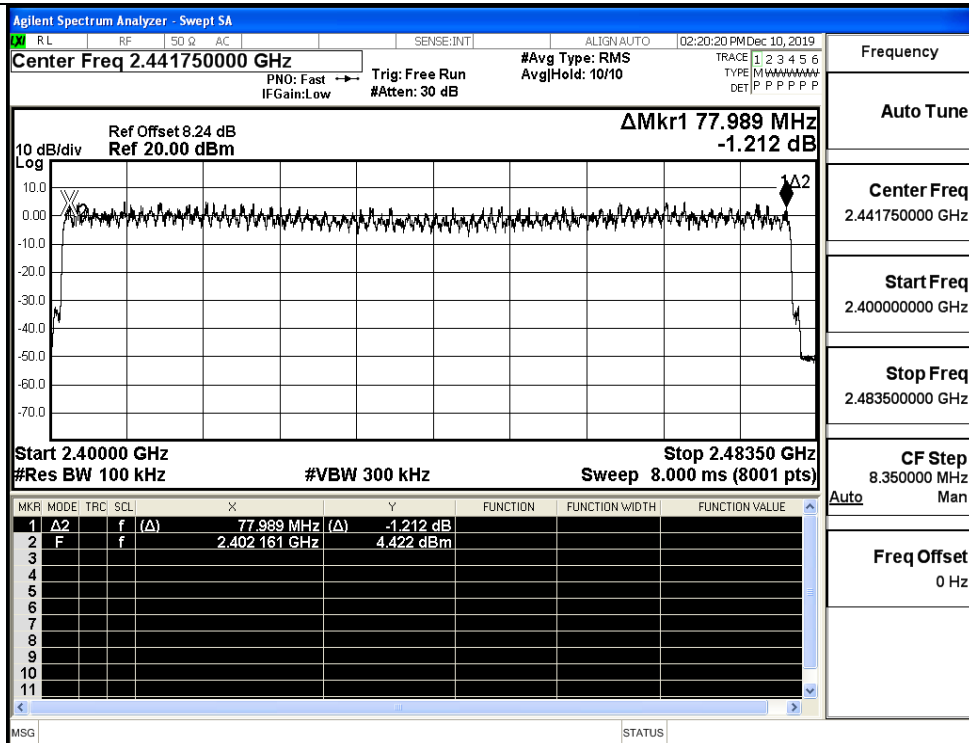
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop



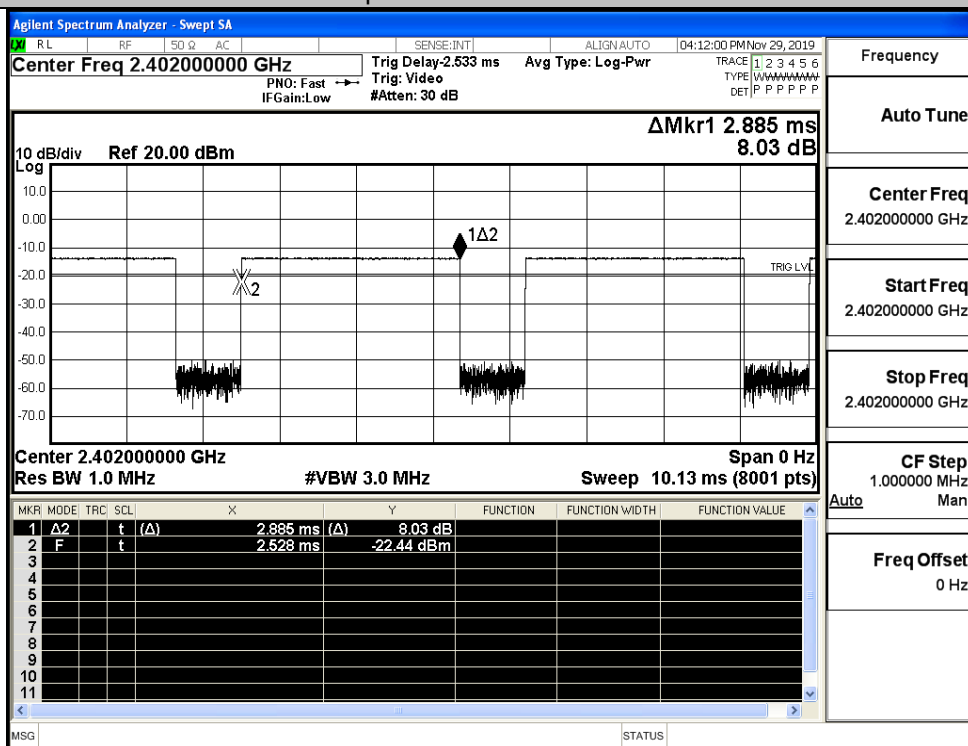
A.5 Dwell Time

L

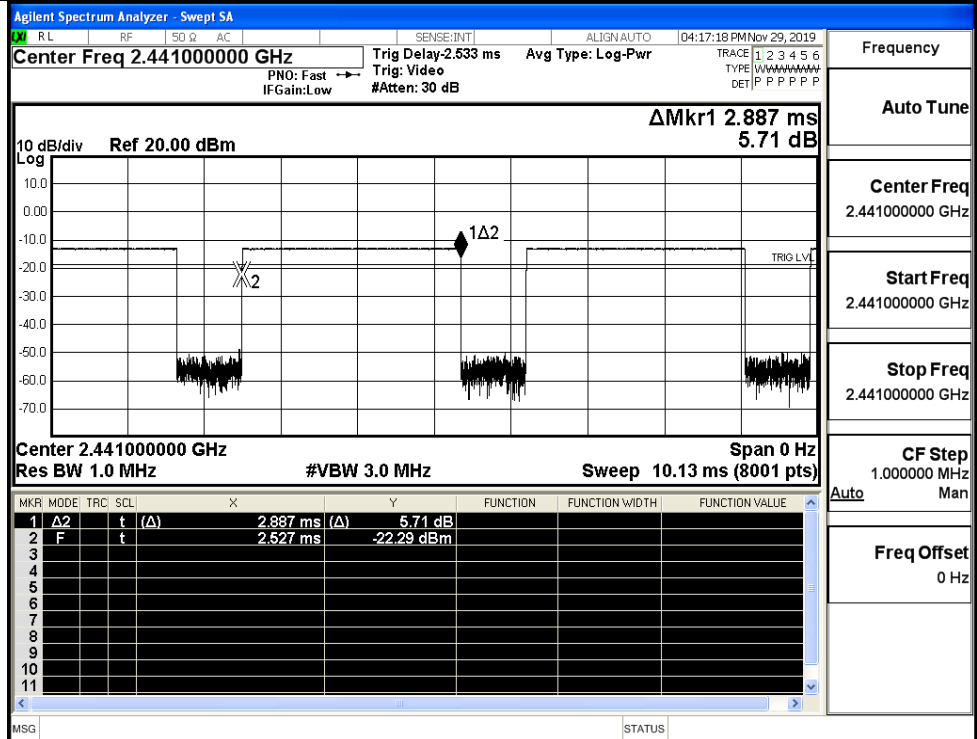
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.307	0.4	PASS
	2DH5	MCH	2.89	106.7	0.307	0.4	PASS
	2DH5	HCH	2.89	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs

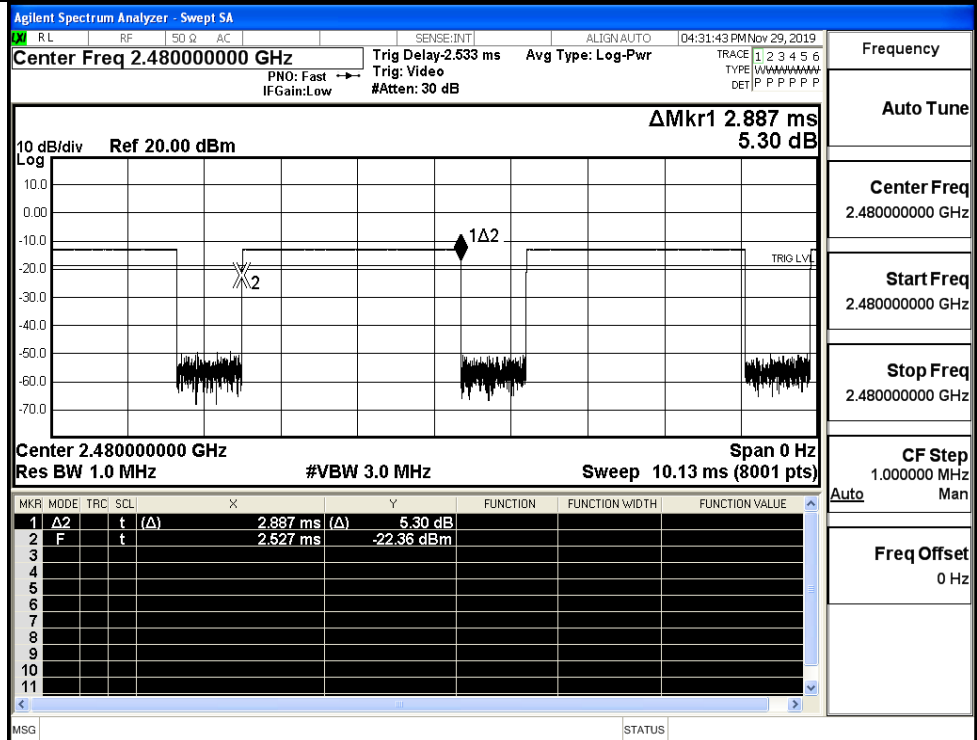
GFSK_DH5/LCH



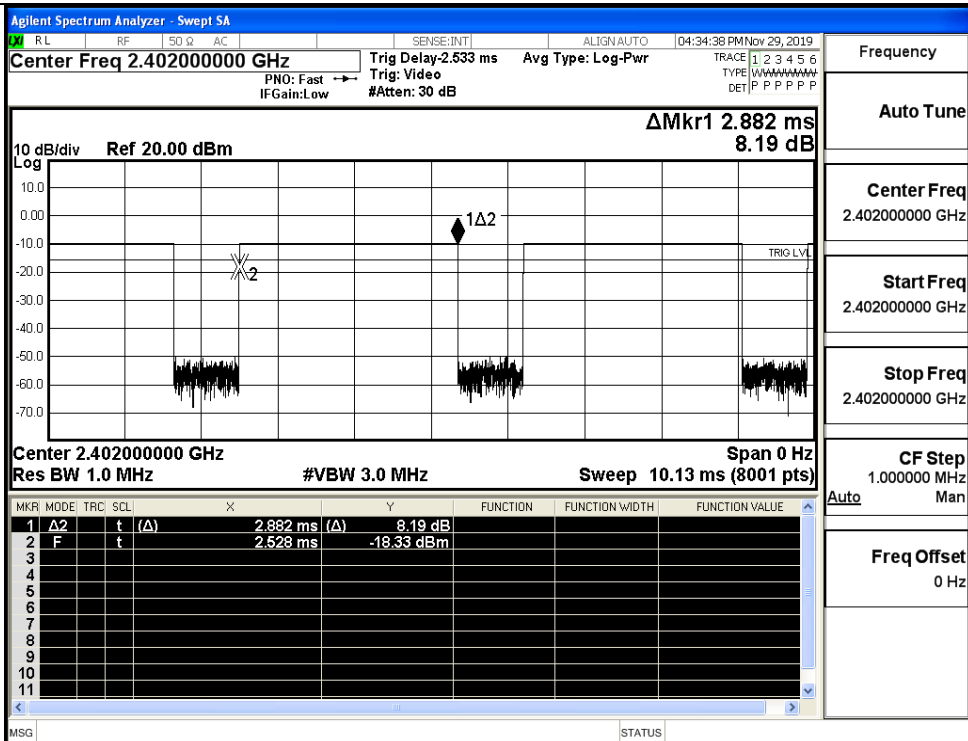
GFSK_DH5/MCH



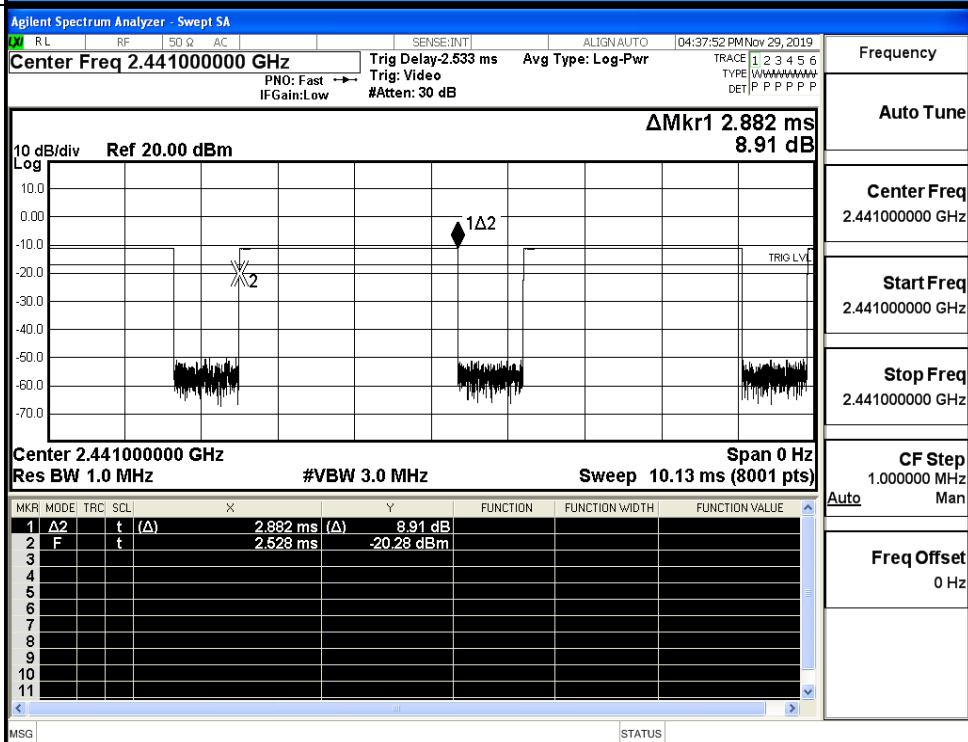
GFSK_DH5/HCH



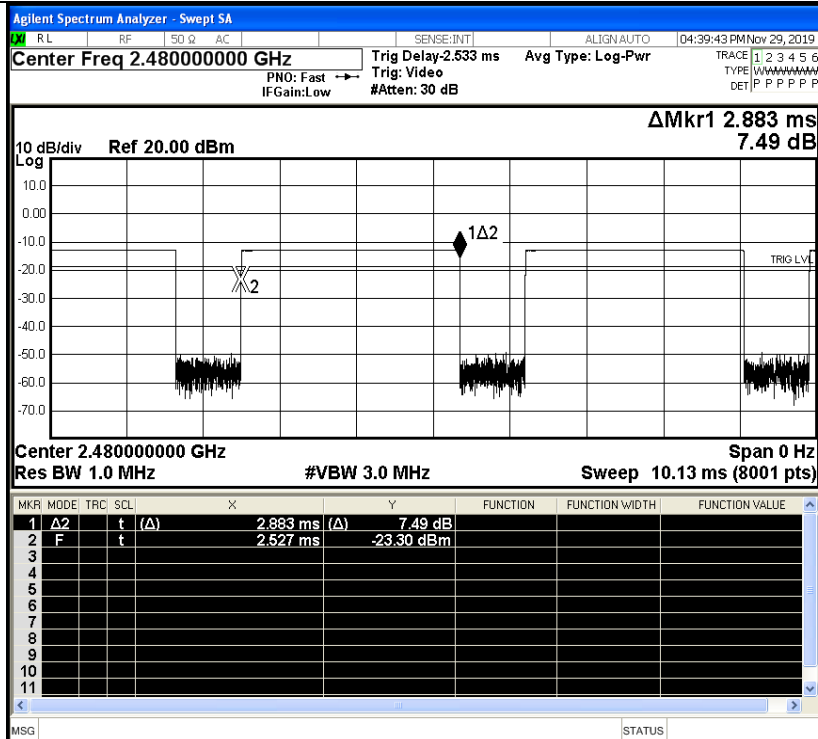
$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH

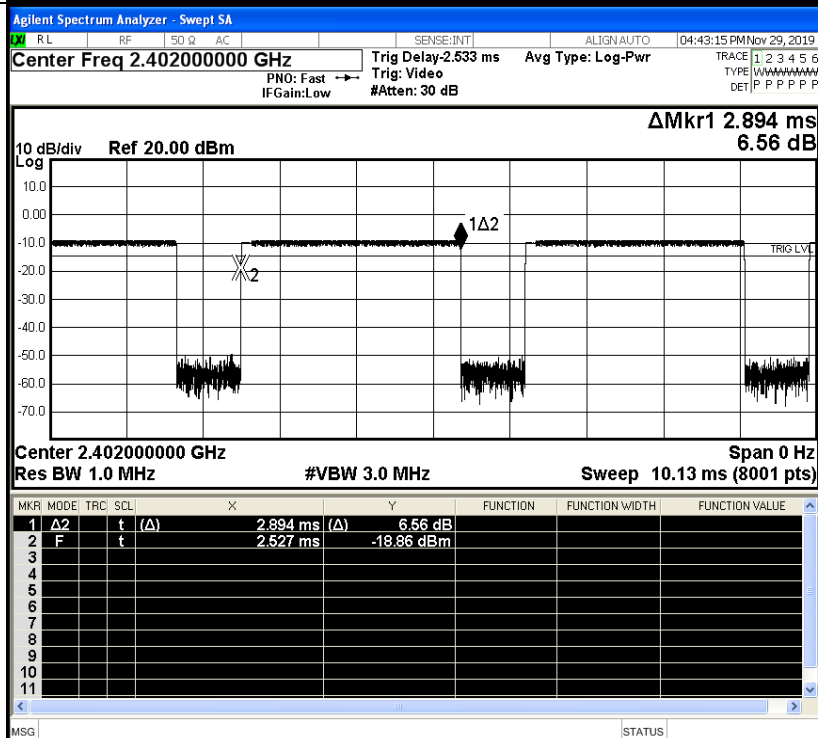


$\pi/4$ DQPSK
_2DH5/HCH



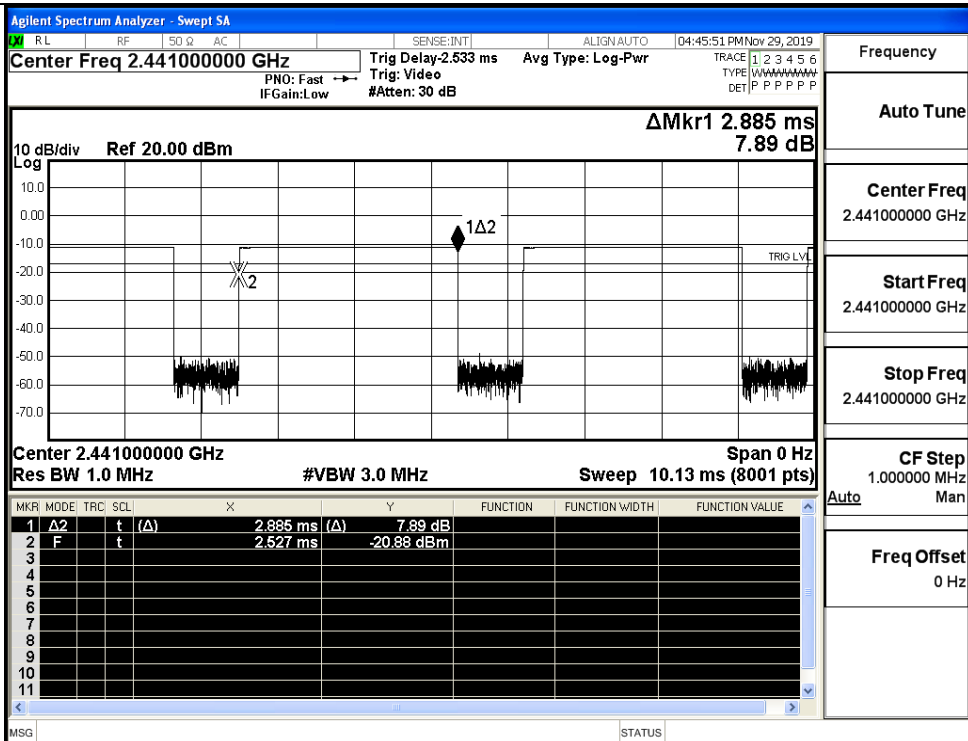
Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz

8DPSK _3DH5/LCH

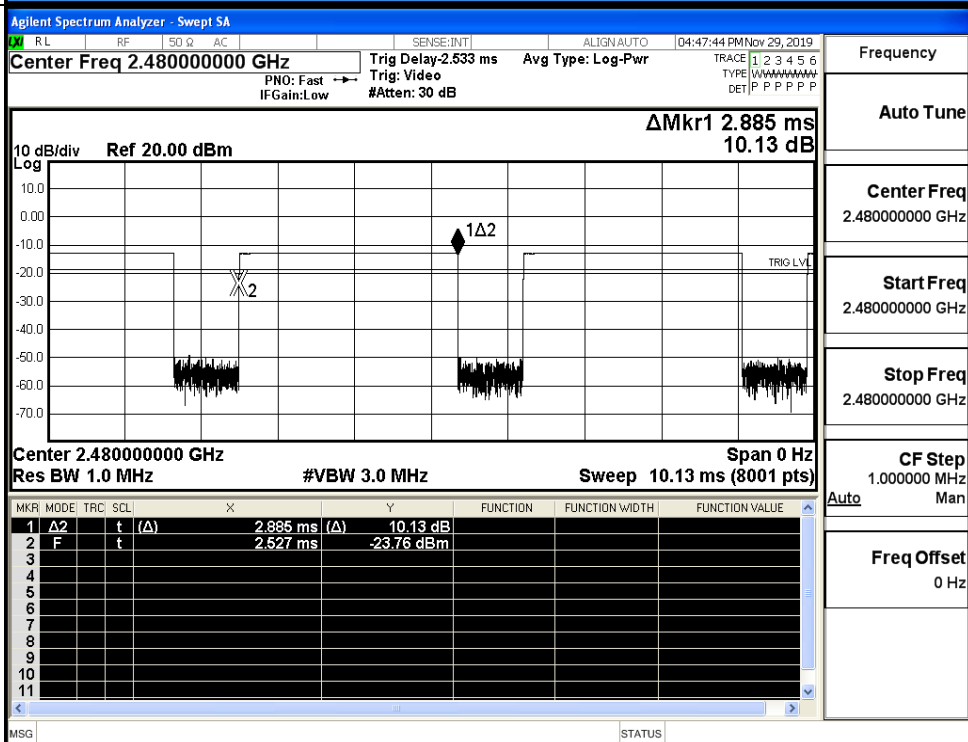


Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.402000000 GHz
Stop Freq 2.402000000 GHz
CF Step 1.000000 MHz Auto Man
Freq Offset 0 Hz

8DPSK_3DH5/MCH



8DPSK_3DH5/HCH

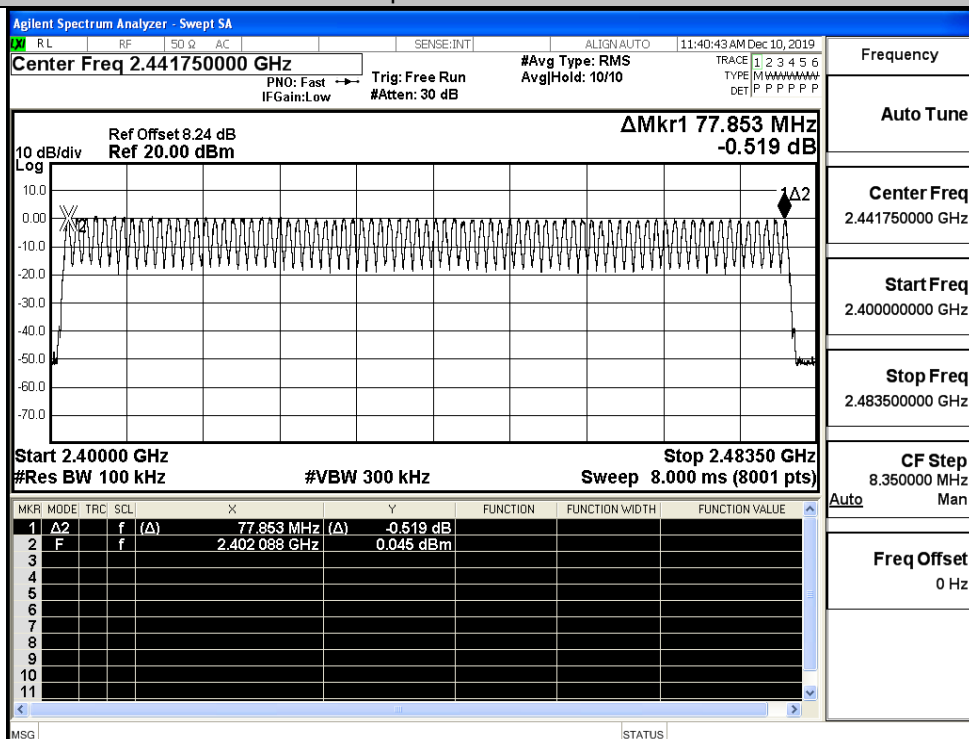
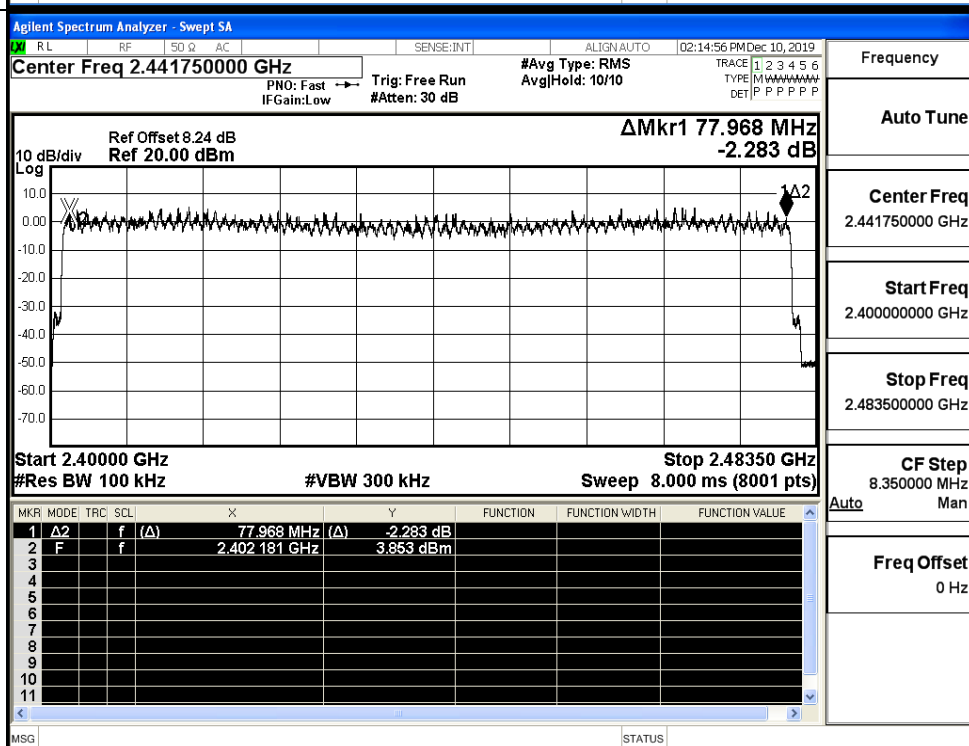


R

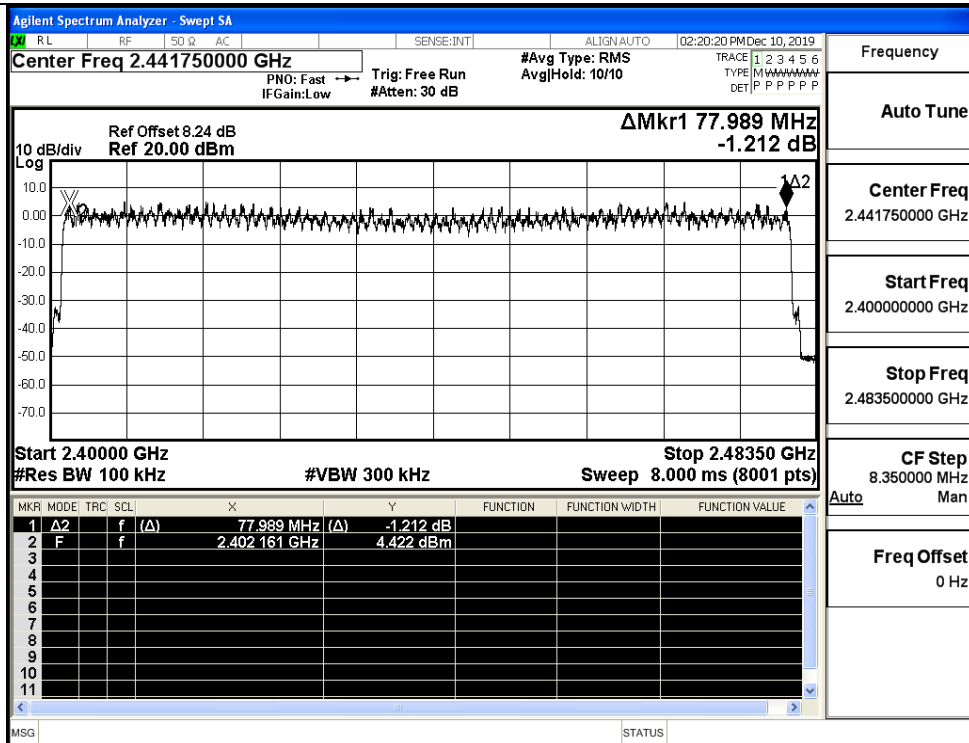
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

 $\pi/4$ DQPSK/Hop

8DPSK/Hop

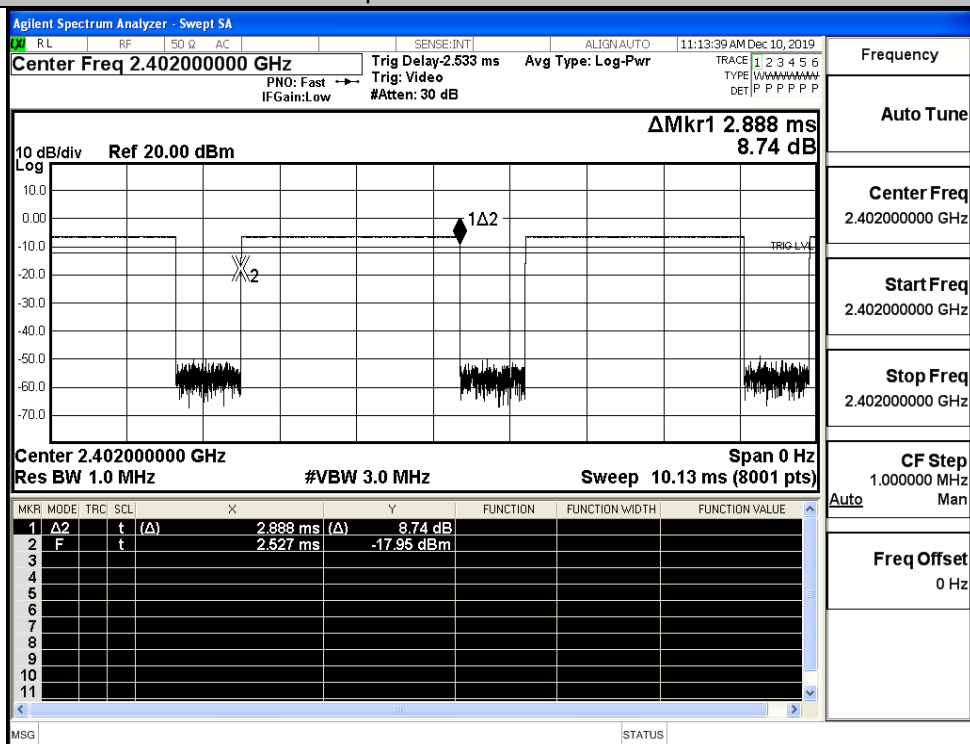


A.5 Dwell Time

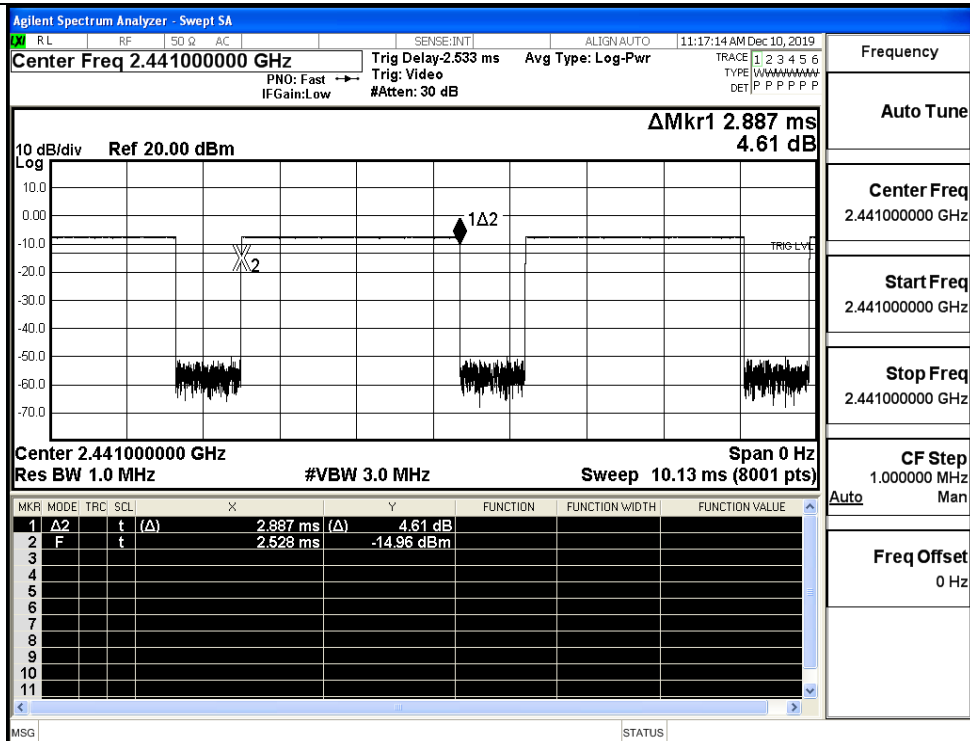
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.89	106.7	0.308	0.4	PASS
	DH5	MCH	2.89	106.7	0.308	0.4	PASS
	DH5	HCH	2.89	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.89	106.7	0.307	0.4	PASS
	2DH5	MCH	2.89	106.7	0.307	0.4	PASS
	2DH5	HCH	2.89	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.309	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS

Test Graphs

GFSK_DH5/LCH



GFSK_DH5/MCH



GFSK_DH5/HCH

