

## Appendix A

### RF Test Data for BT V4.2 (BDR/EDR) (Conducted Measurement)

Product Name: VISION SB-900P Active Soundbar

Trade Mark: VISION

Test Model: SB-900P

#### Environmental Conditions

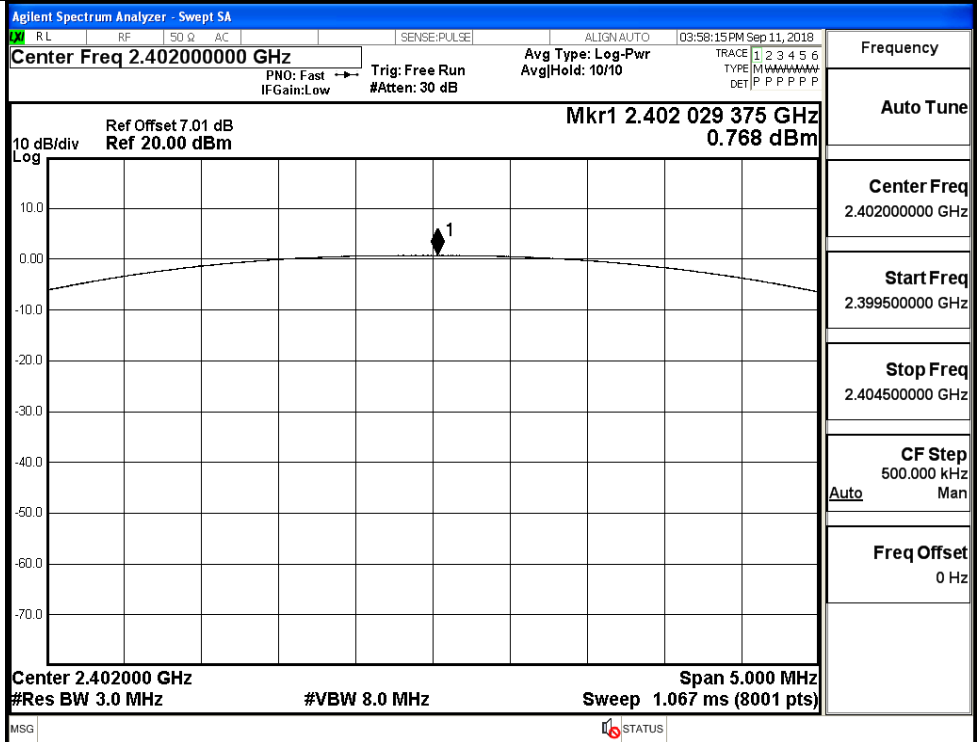
Temperature:	24.5 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

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

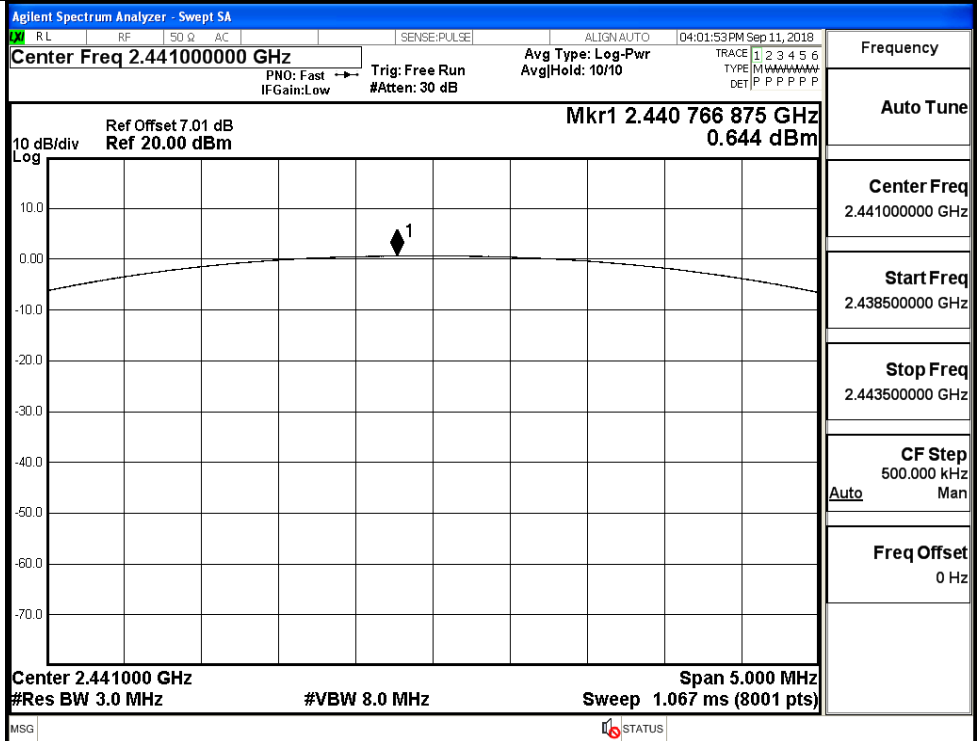
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.768	30	PASS
	MCH	0.644	30	PASS
	HCH	0.488	30	PASS
π/4DQPSK	LCH	0.518	21	PASS
	MCH	0.486	21	PASS
	HCH	0.270	21	PASS

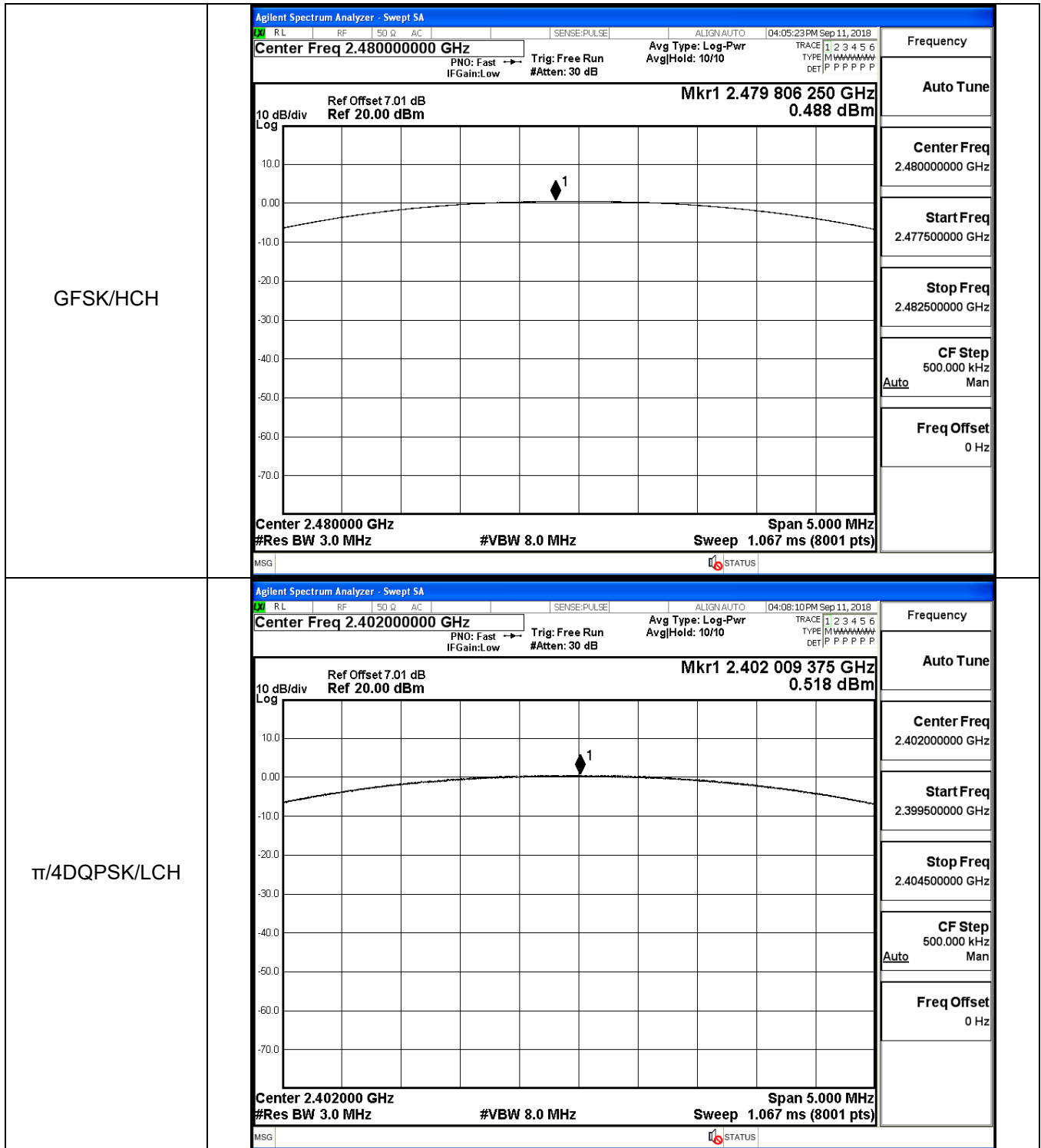
Test Graphs

GFSK/LCH

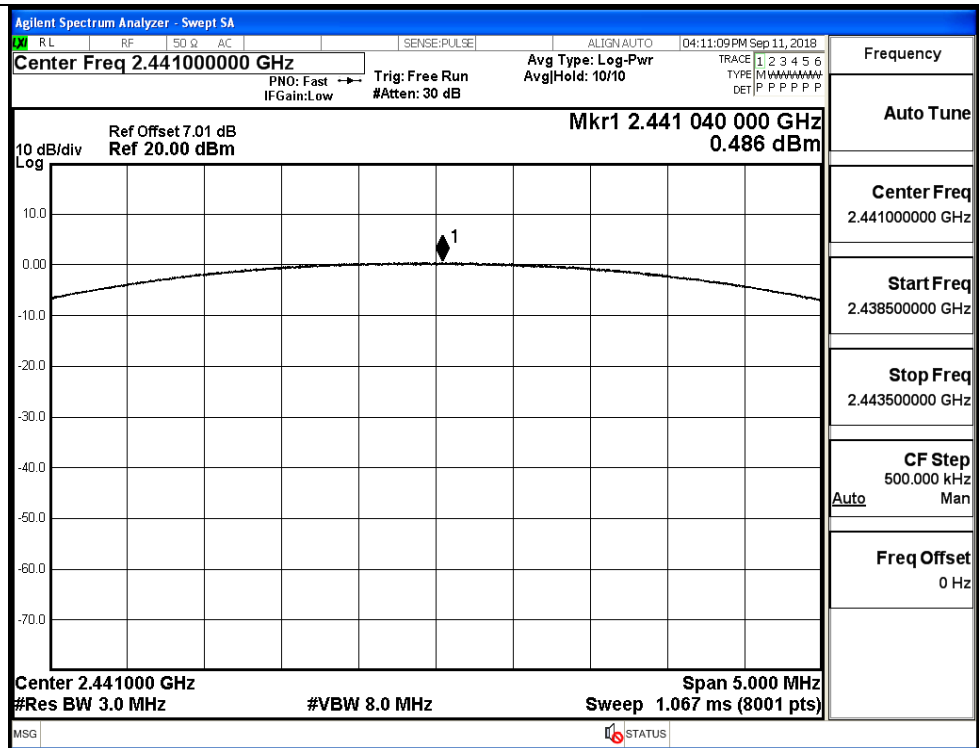


GFSK/MCH

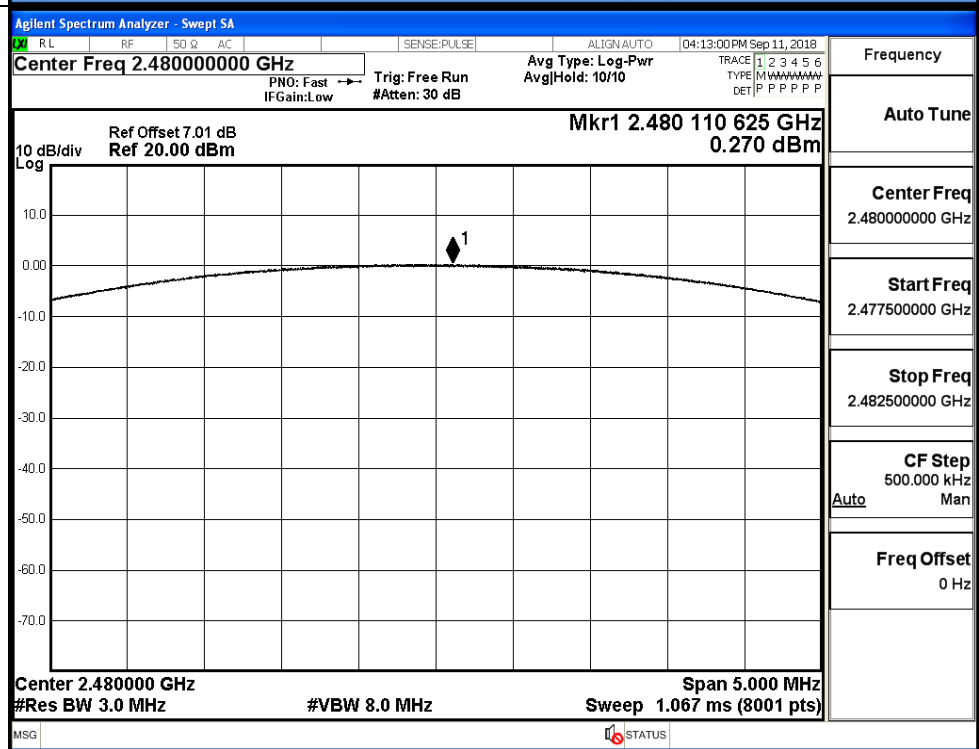




$\pi$ /4DQPSK/MCH

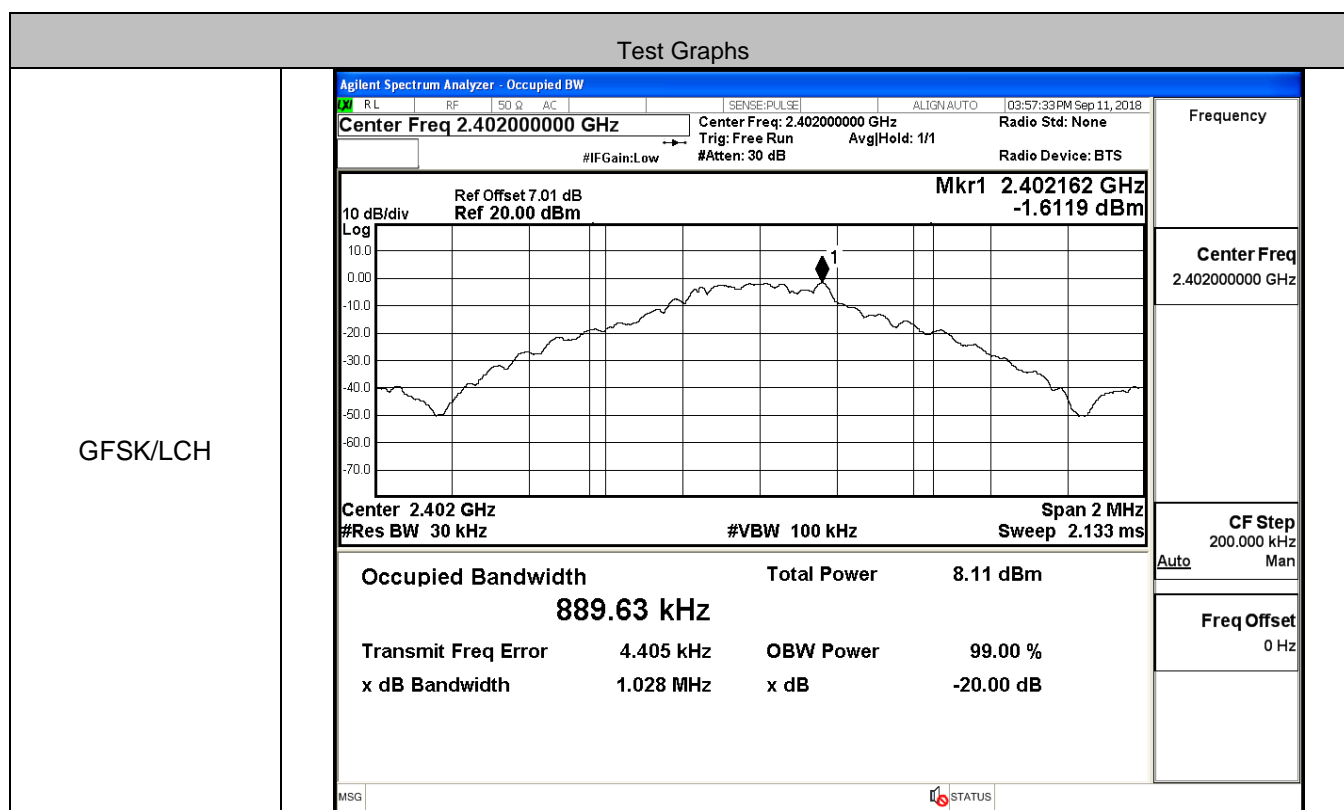


$\pi$ /4DQPSK/HCH

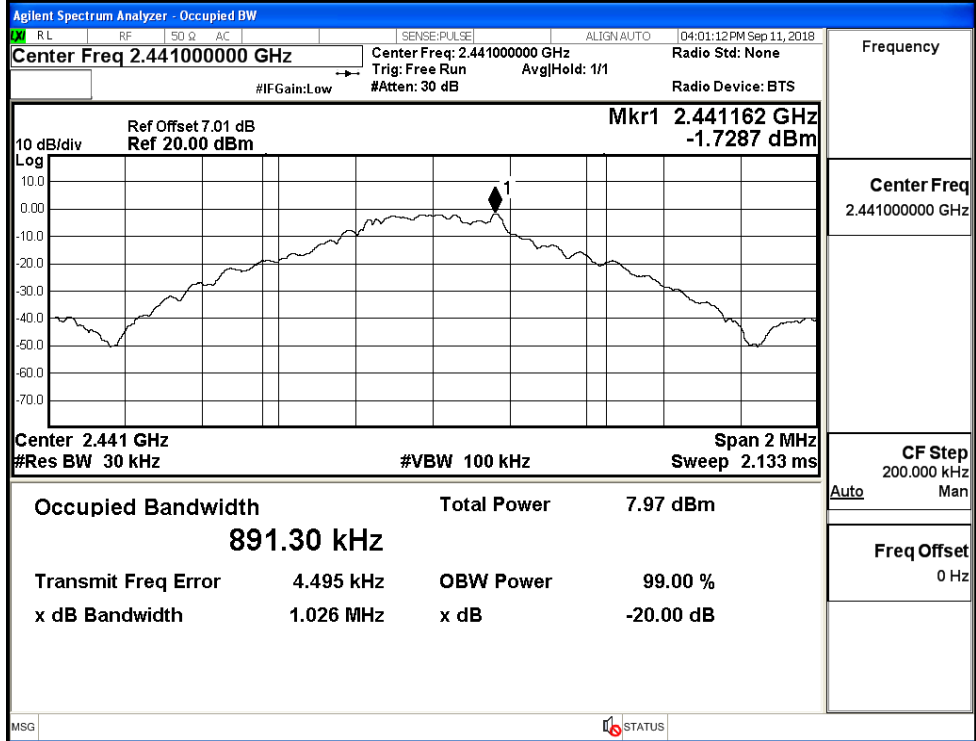


### A.2 99% and 20dB Bandwidth

Mode	Channel.	99% Bandwidth [MHz]	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.88963	1.028	Not Specified	PASS
	MCH	0.89130	1.026	Not Specified	PASS
	HCH	0.89004	1.024	Not Specified	PASS
π/4DQPSK	LCH	1.1678	1.288	Not Specified	PASS
	MCH	1.1679	1.287	Not Specified	PASS
	HCH	1.1666	1.286	Not Specified	PASS

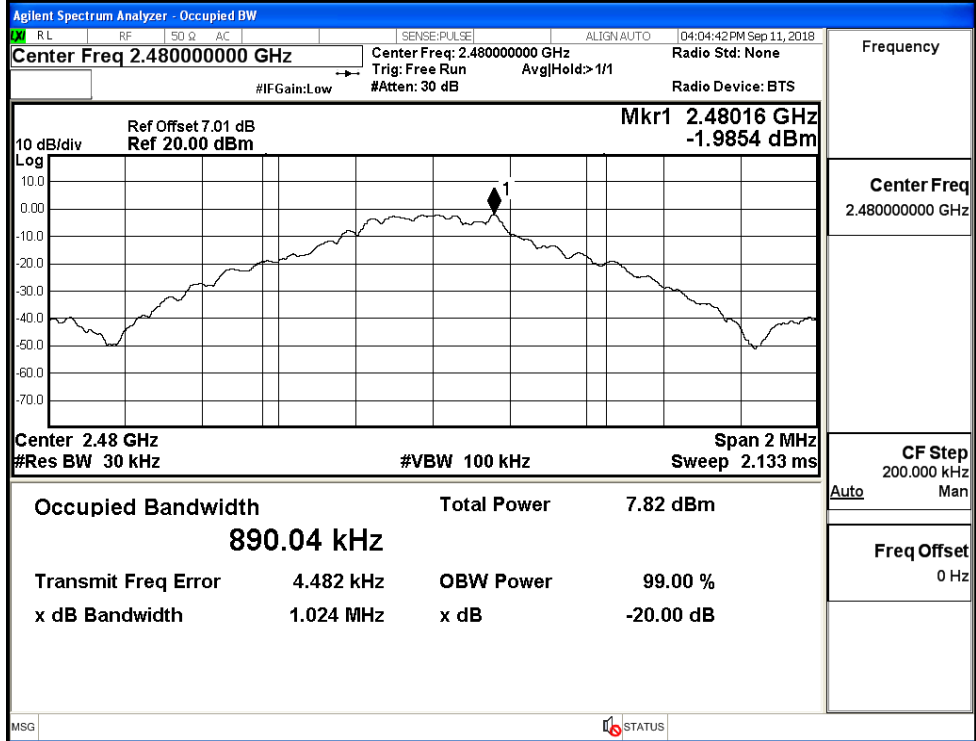


GFSK/MCH



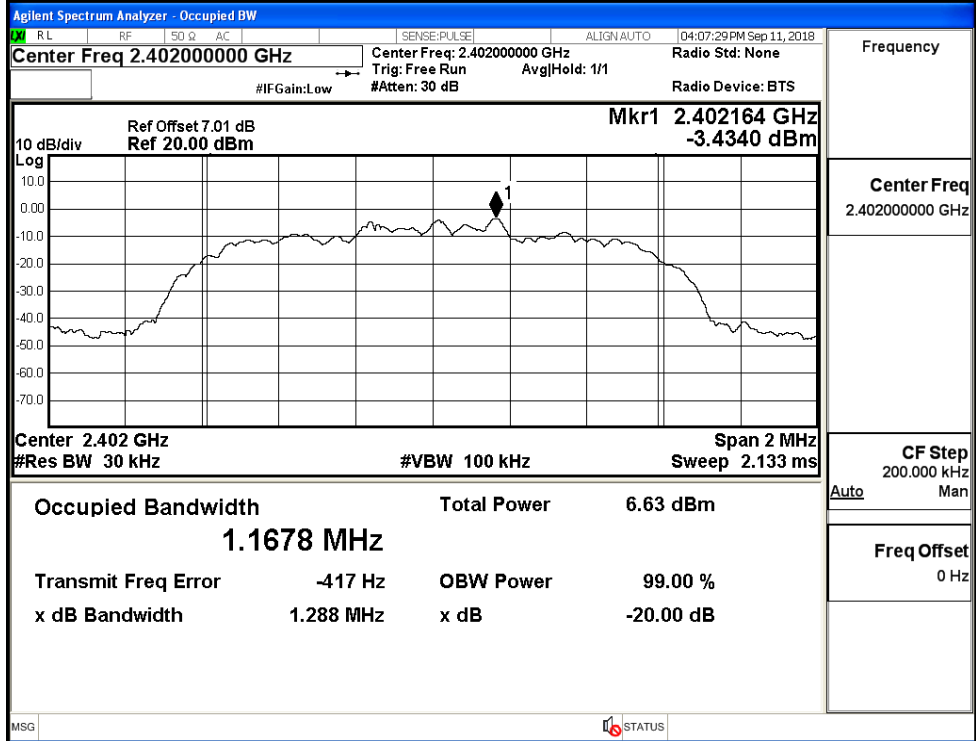
Frequency	2.441000000 GHz
Center Freq	2.441000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

GFSK/HCH

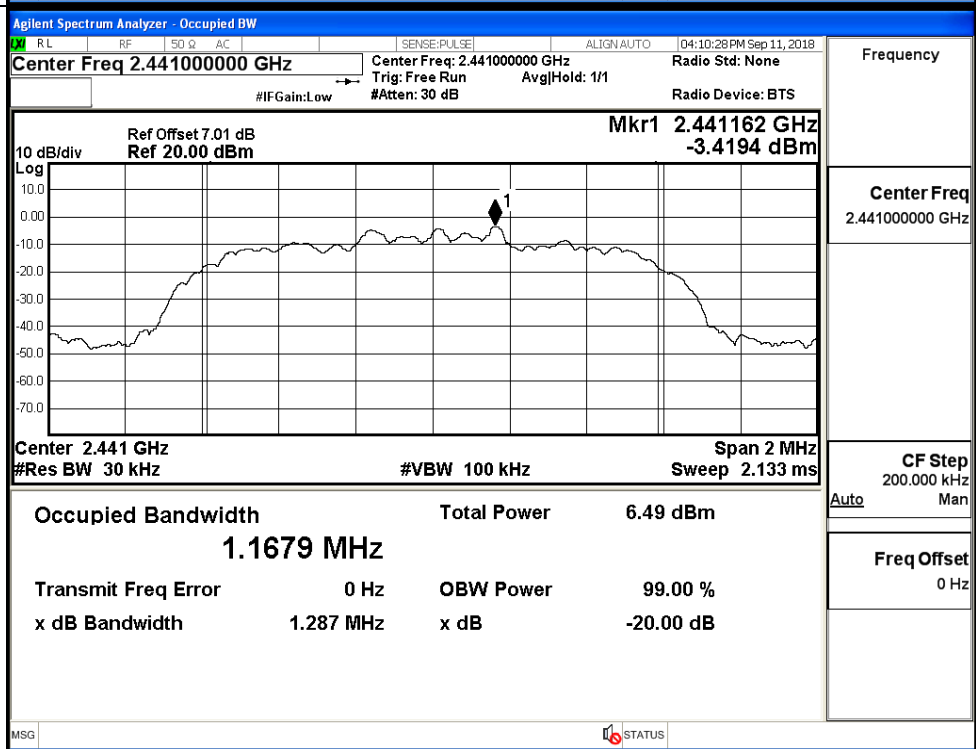


Frequency	2.480000000 GHz
Center Freq	2.480000000 GHz
CF Step	200.000 kHz
Auto	Man
Freq Offset	0 Hz

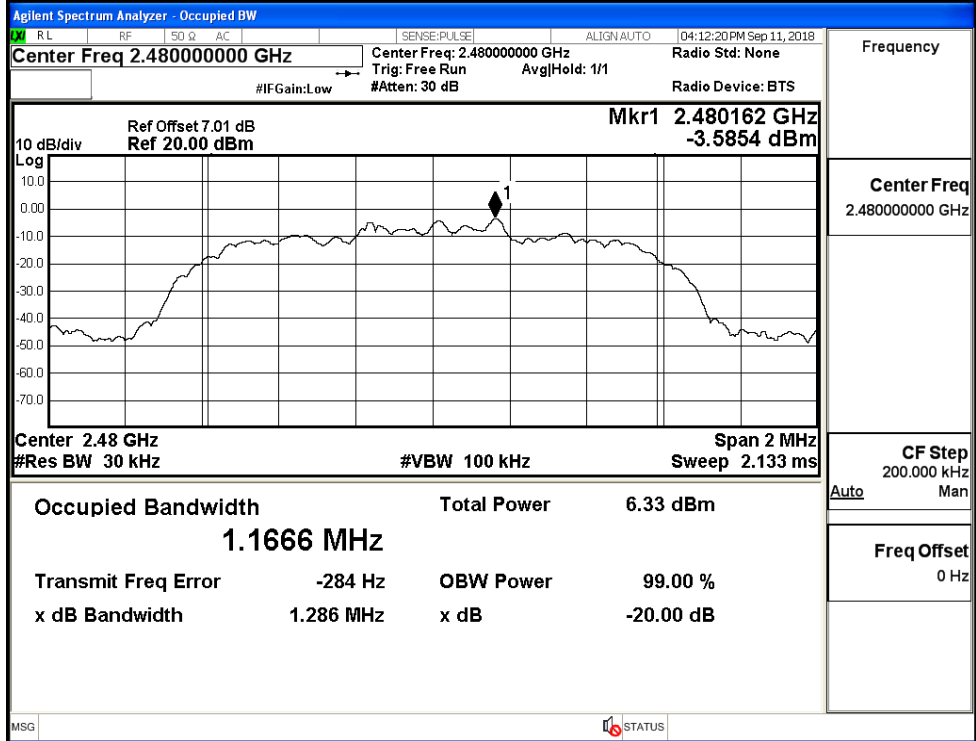
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



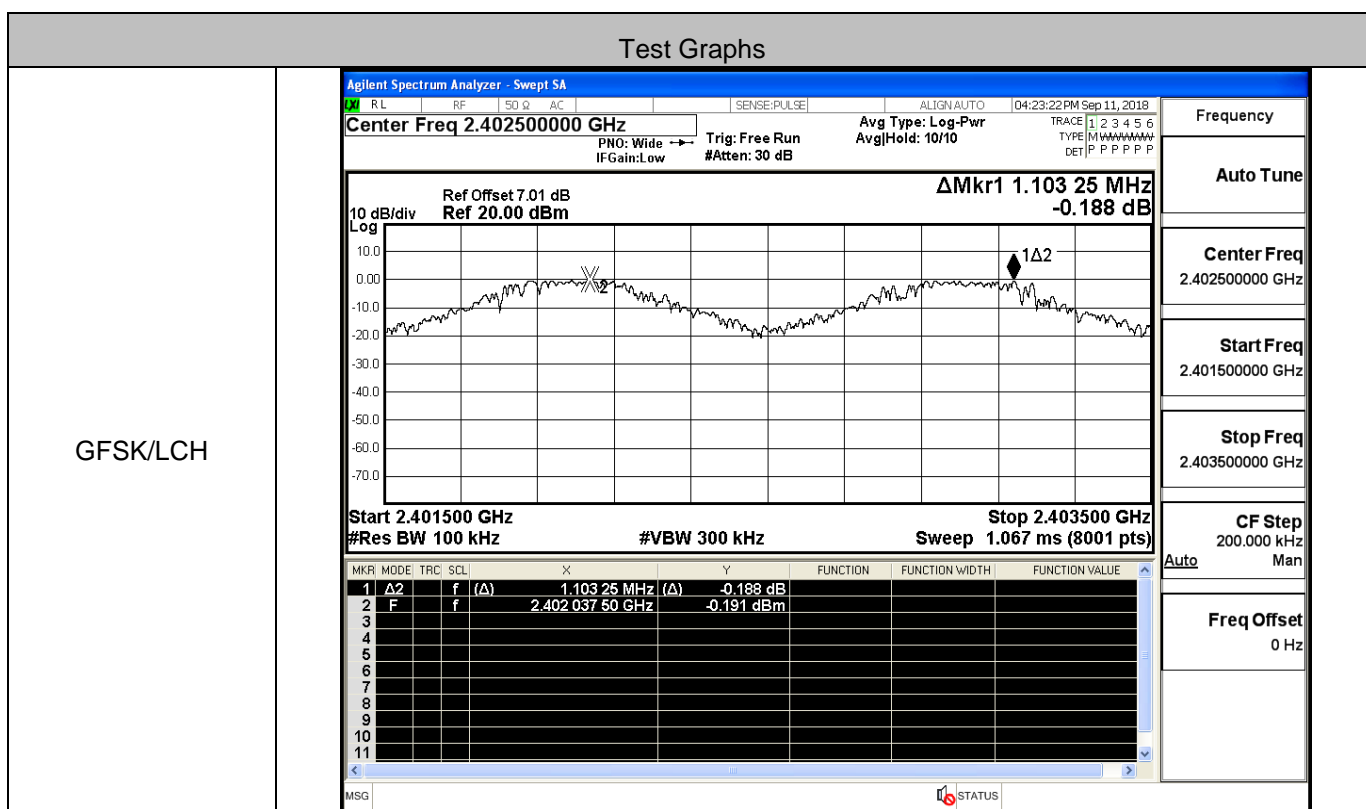
$\pi/4$ DQPSK/HCH



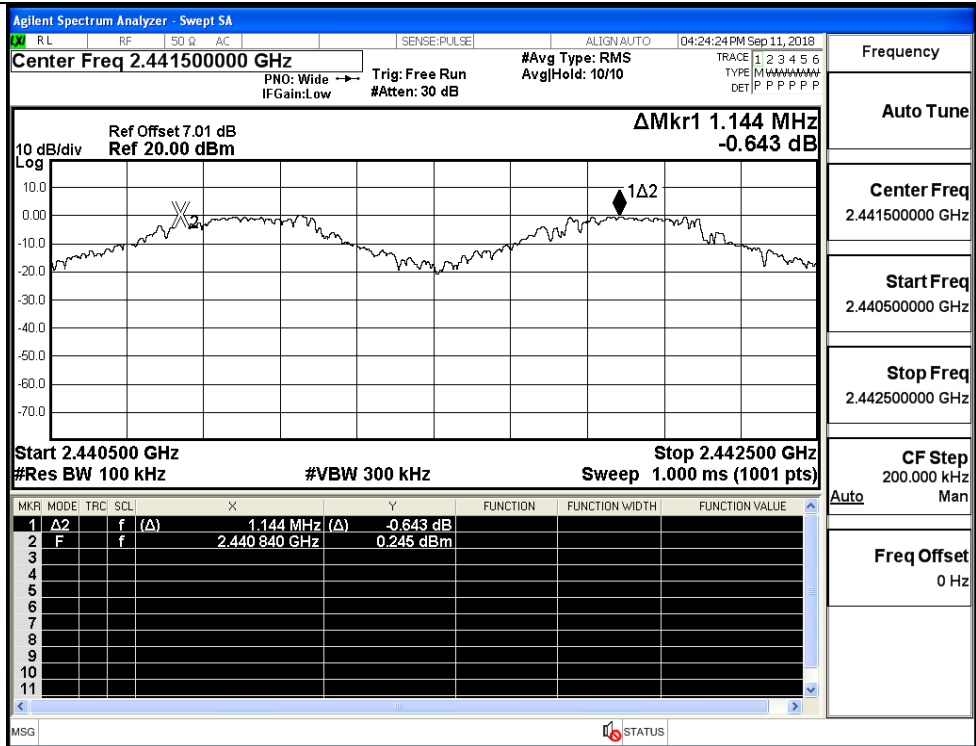


### A.3 Carrier Frequency Separation

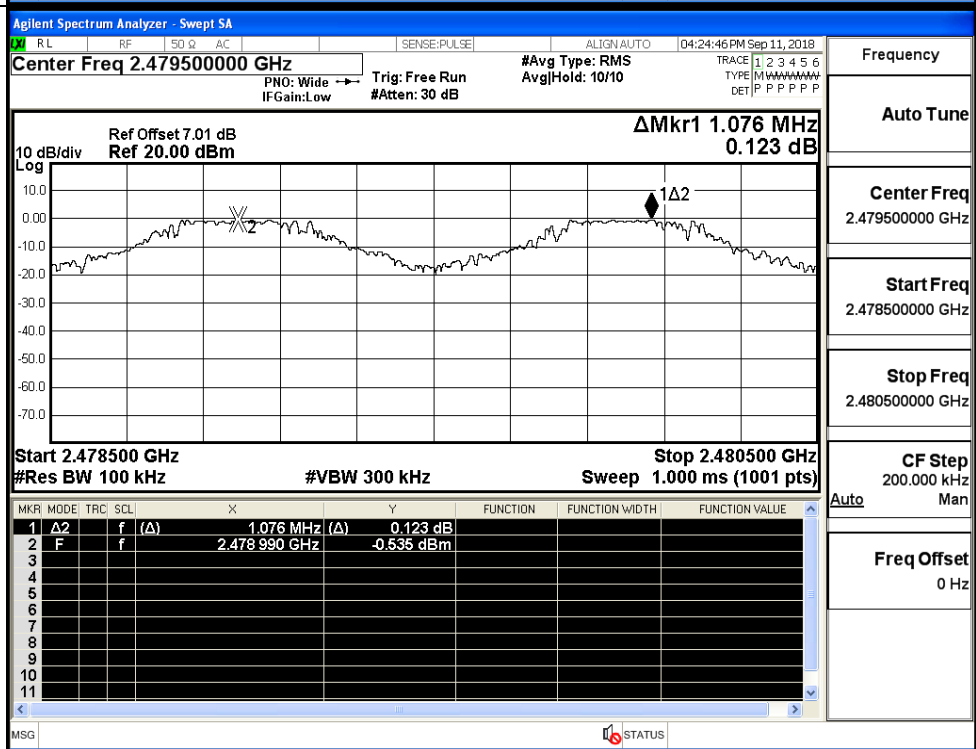
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.103	0.685	PASS
	MCH	1.144	0.685	PASS
	HCH	1.076	0.685	PASS
π/4DQPSK	LCH	1.156	0.859	PASS
	MCH	0.994	0.859	PASS
	HCH	1.158	0.859	PASS



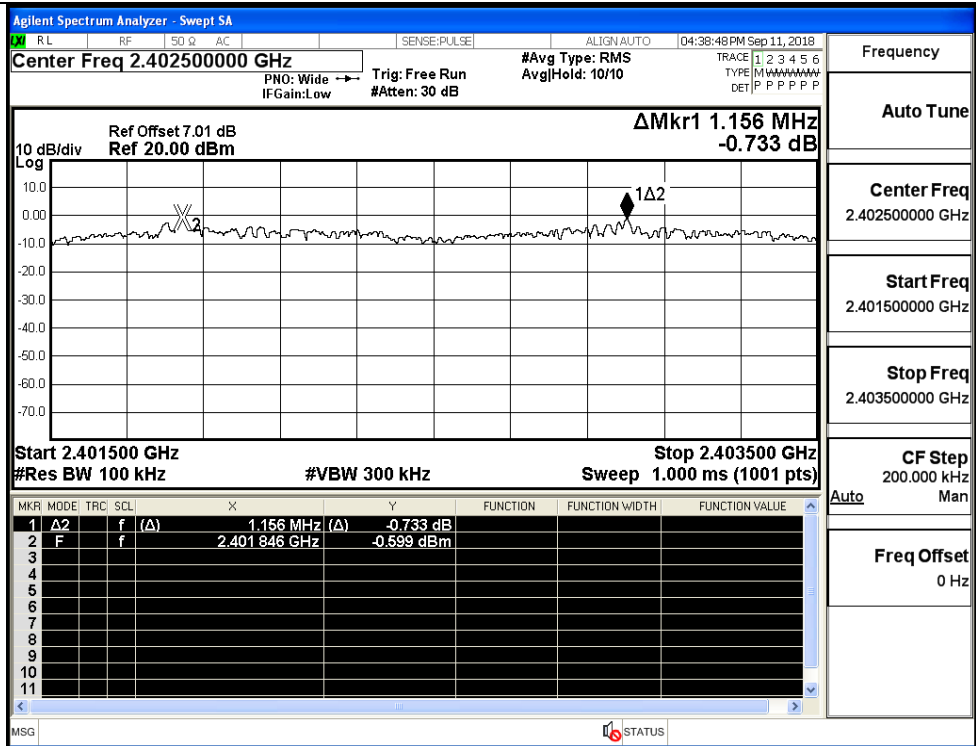
GFSK/MCH



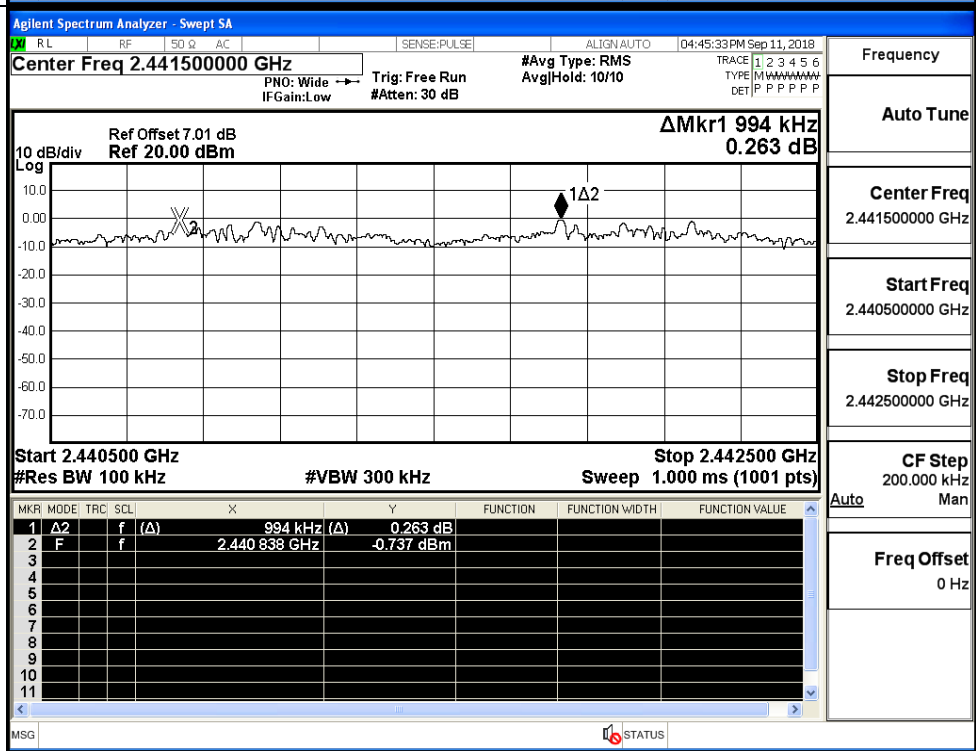
GFSK/HCH



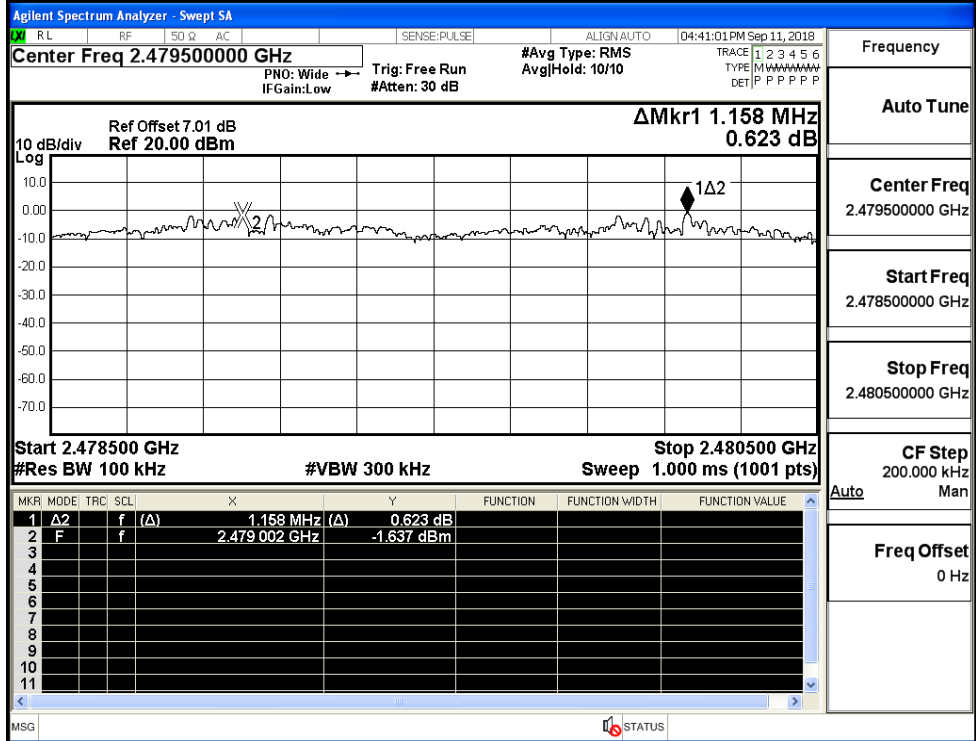
$\pi$ /4DQPSK/LCH



$\pi$ /4DQPSK/MCH



π/4DQPSK/HCH



### A.4 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

Test Graphs

GFSK/Hop

**Agilent Spectrum Analyzer - Swept SA**  
 Center Freq 2.441750000 GHz  
 Ref Offset 7.01 dB, Ref 20.00 dBm  
 $\Delta$ Mkr1 77.916 MHz, -0.478 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	$\Delta$ 2	f	( $\Delta$ )	77.916 MHz ( $\Delta$ )	-0.478 dB			
2	F	f		2.401983 GHz	-0.016 dBm			

Frequency

Auto Tune

Center Freq  
2.441750000 GHz

Start Freq  
2.400000000 GHz

Stop Freq  
2.483500000 GHz

CF Step  
8.350000 MHz  
Man

Freq Offset  
0 Hz

$\pi/4$ DQPSK/Hop

**Agilent Spectrum Analyzer - Swept SA**  
 Center Freq 2.441750000 GHz  
 Ref Offset 7.01 dB, Ref 20.00 dBm  
 $\Delta$ Mkr1 77.989 MHz, -1.249 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	$\Delta$ 2	f	( $\Delta$ )	77.989 MHz ( $\Delta$ )	-1.249 dB			
2	F	f		2.402129 GHz	-2.017 dBm			

Frequency

Auto Tune

Center Freq  
2.441750000 GHz

Start Freq  
2.400000000 GHz

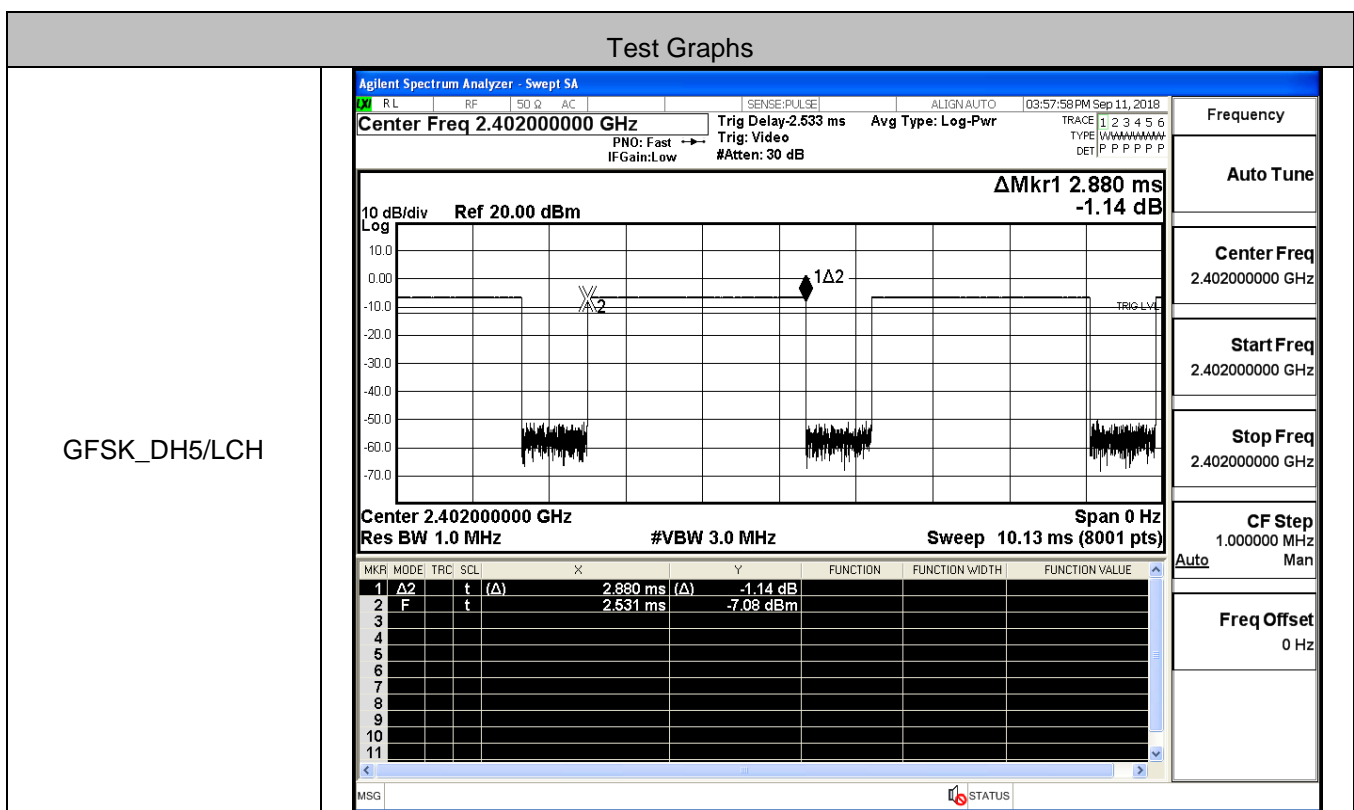
Stop Freq  
2.483500000 GHz

CF Step  
8.350000 MHz  
Man

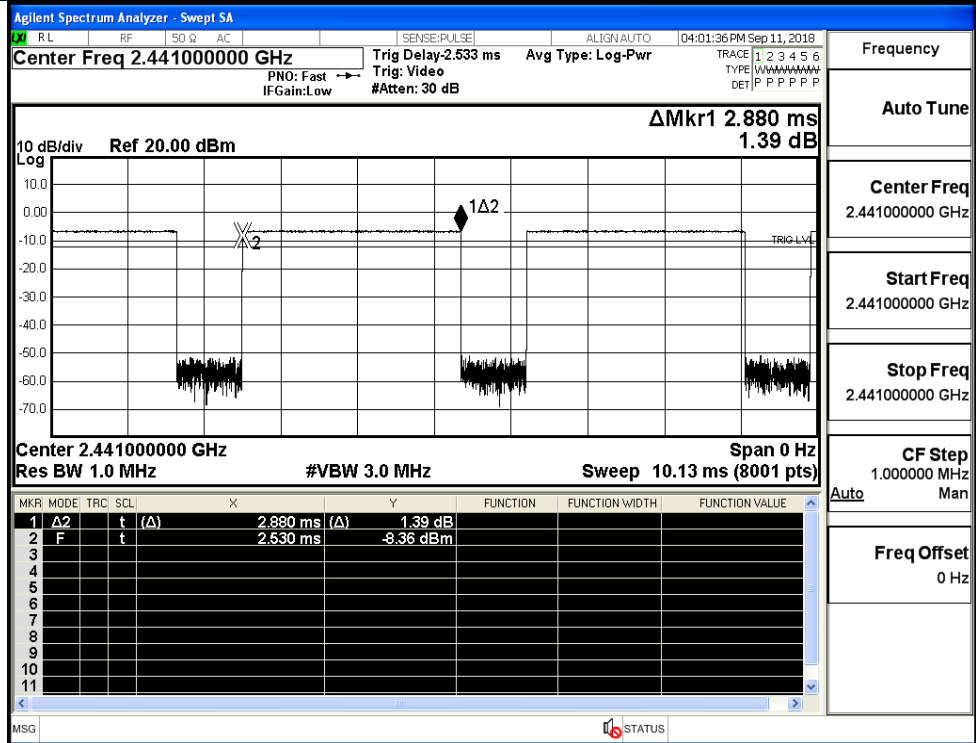
Freq Offset  
0 Hz

### A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS



GFSK\_DH5/MCH



Frequency

Auto Tune

Center Freq 2.441000000 GHz

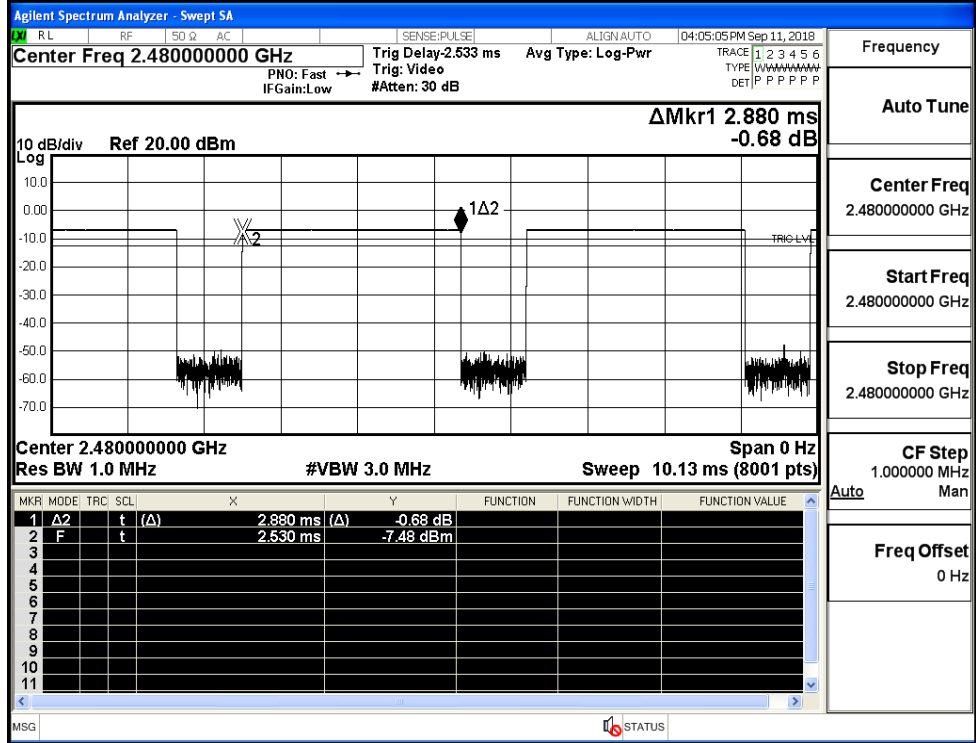
Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Freq Offset 0 Hz

GFSK\_DH5/HCH



Frequency

Auto Tune

Center Freq 2.480000000 GHz

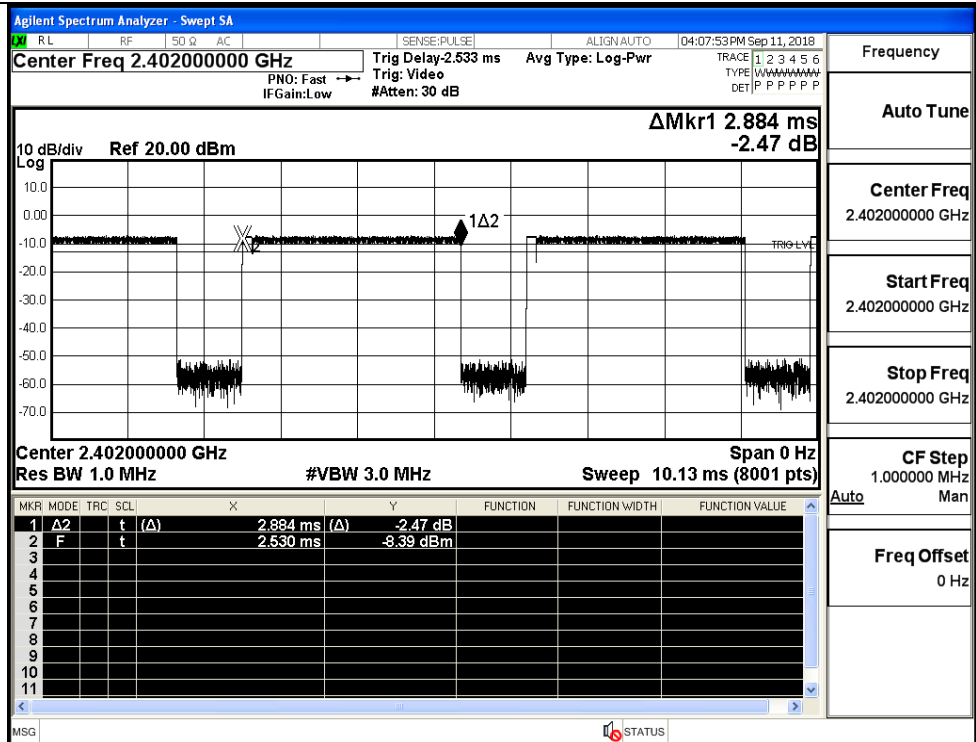
Start Freq 2.480000000 GHz

Stop Freq 2.480000000 GHz

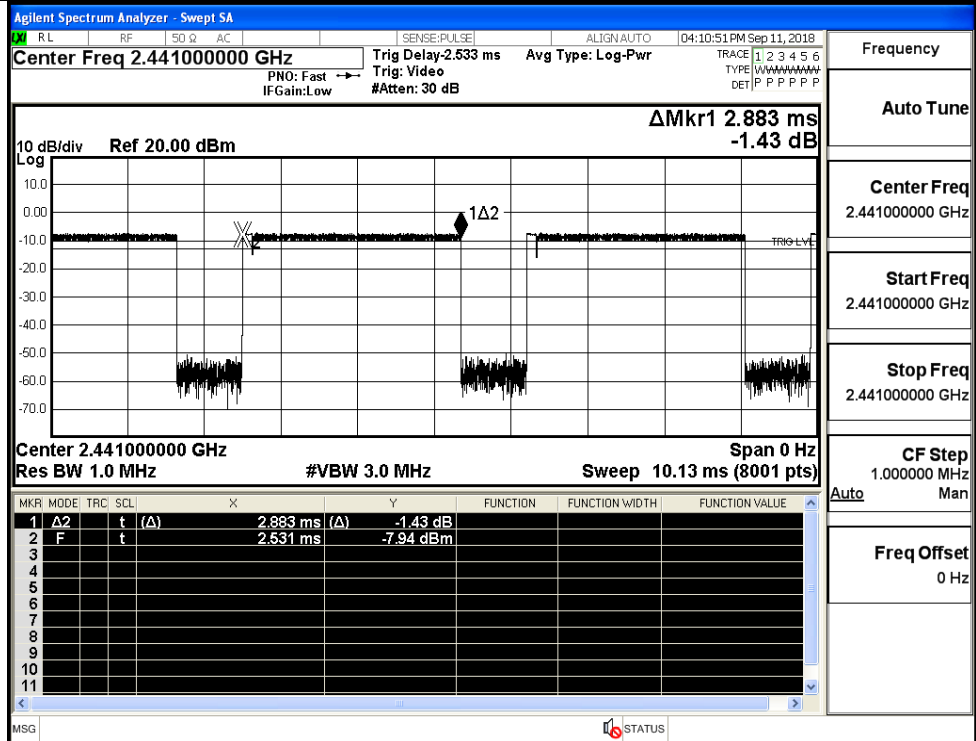
CF Step 1.000000 MHz

Freq Offset 0 Hz

$\pi/4$ DQPSK  
\_2DH5/LCH

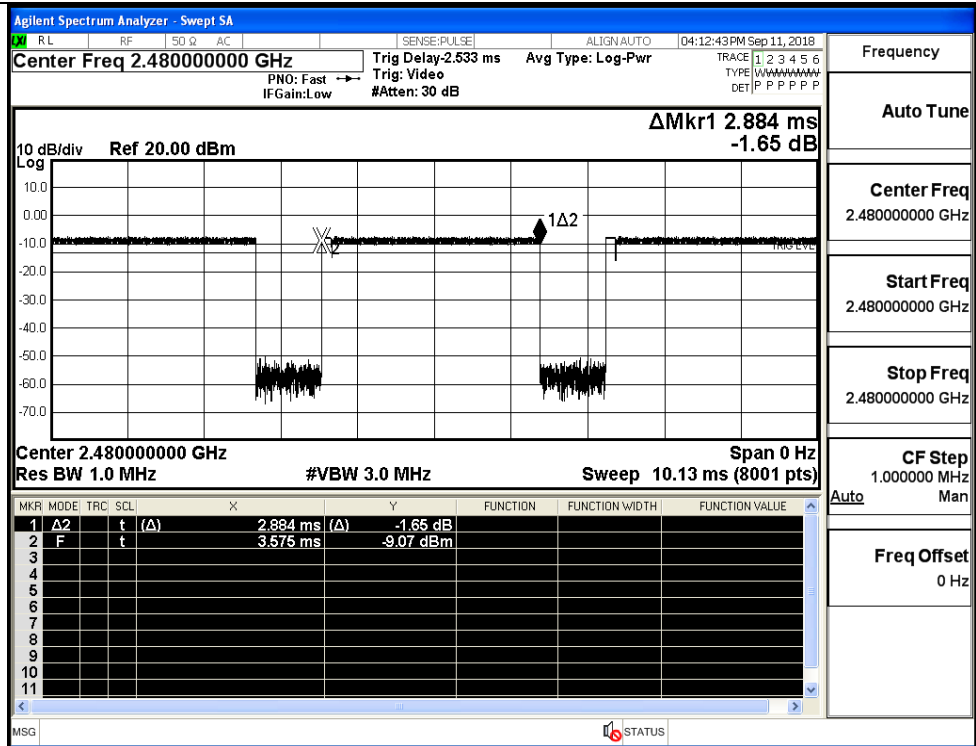


$\pi/4$ DQPSK  
\_2DH5/MCH





$\pi/4$ DQPSK  
\_2DH5/HCH

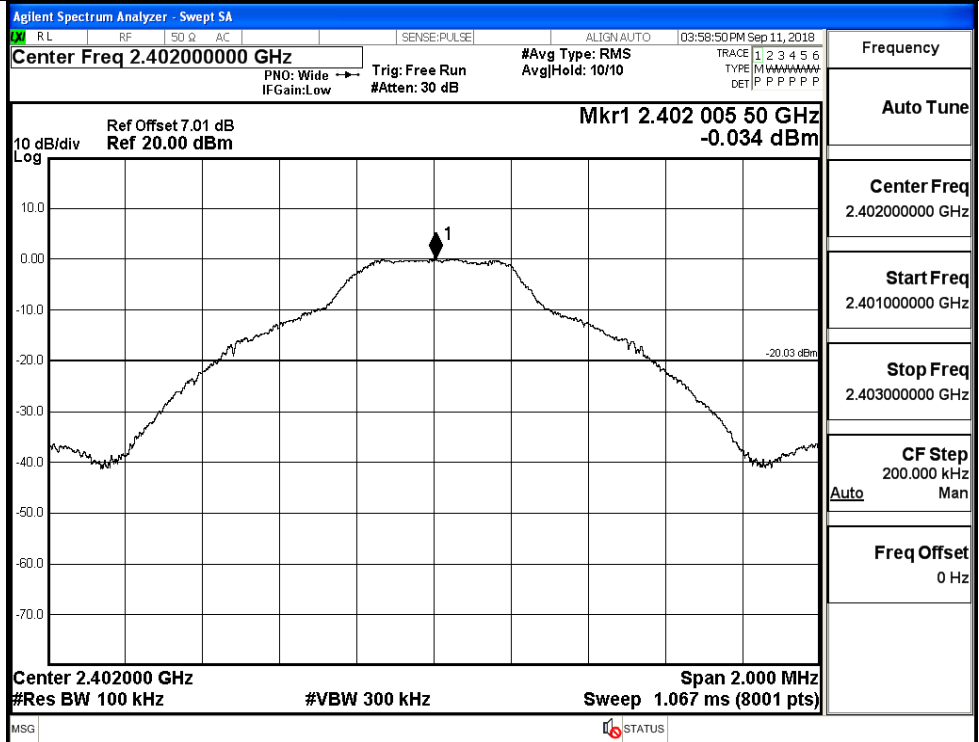


**A.6 RF Conducted Spurious Emissions**

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.034	-45.844	-20.034	PASS
	MCH	0.364	-44.928	-19.636	PASS
	HCH	0.191	-45.107	-19.809	PASS
$\pi/4$ DQPSK	LCH	-0.987	-44.125	-20.987	PASS
	MCH	-0.842	-45.700	-20.842	PASS
	HCH	-0.935	-45.800	-20.935	PASS

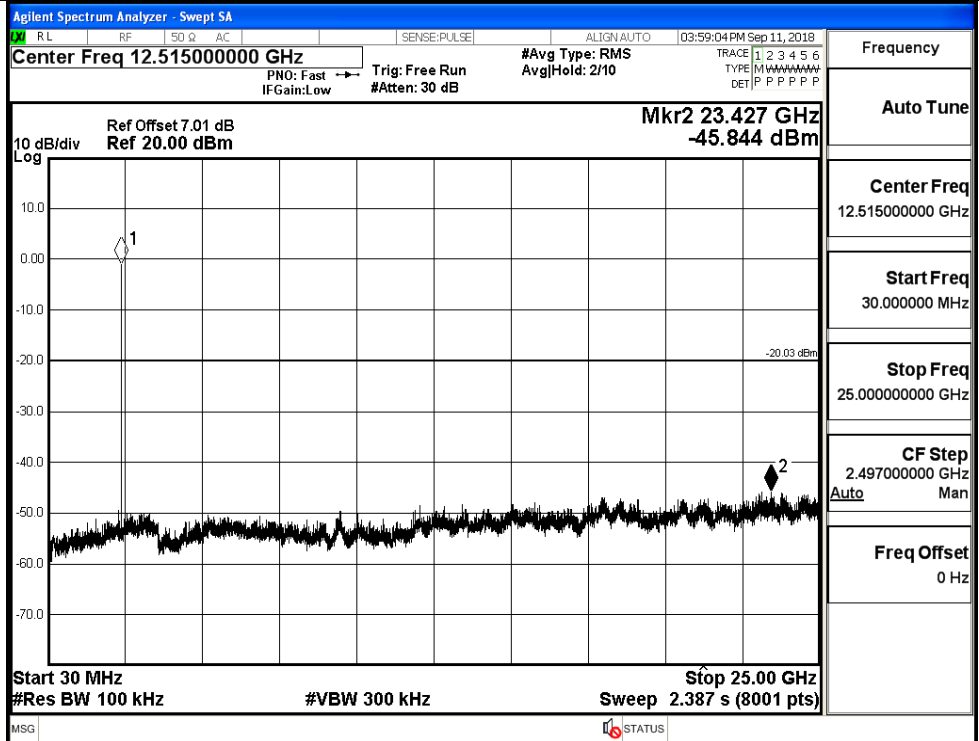
GFSK\_LCH\_Graphs

Pref



Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

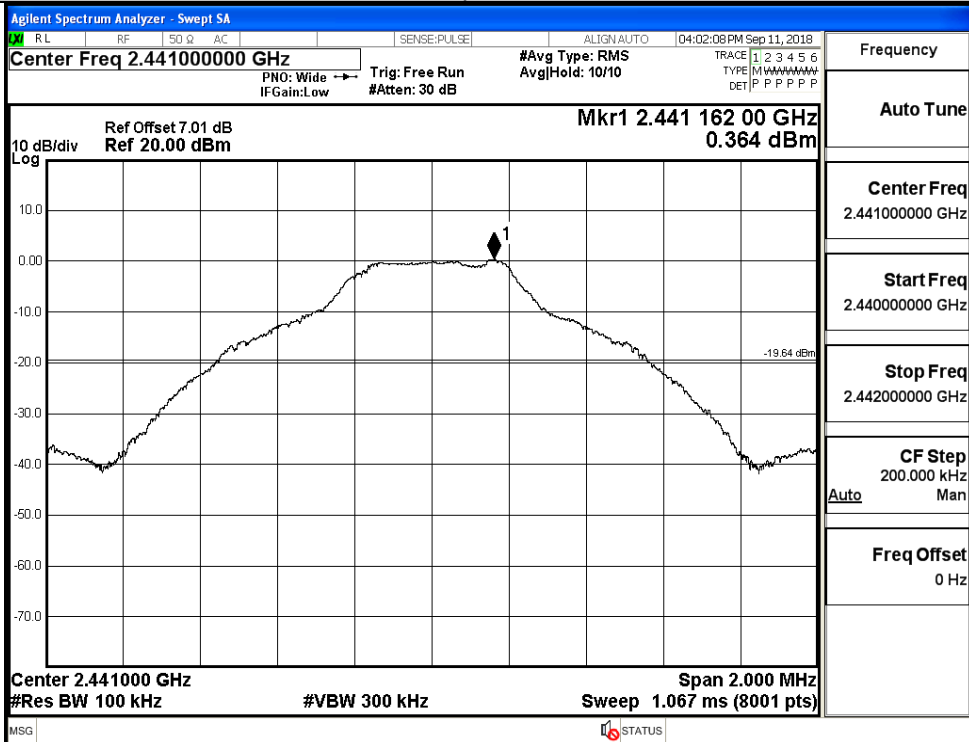
Puw



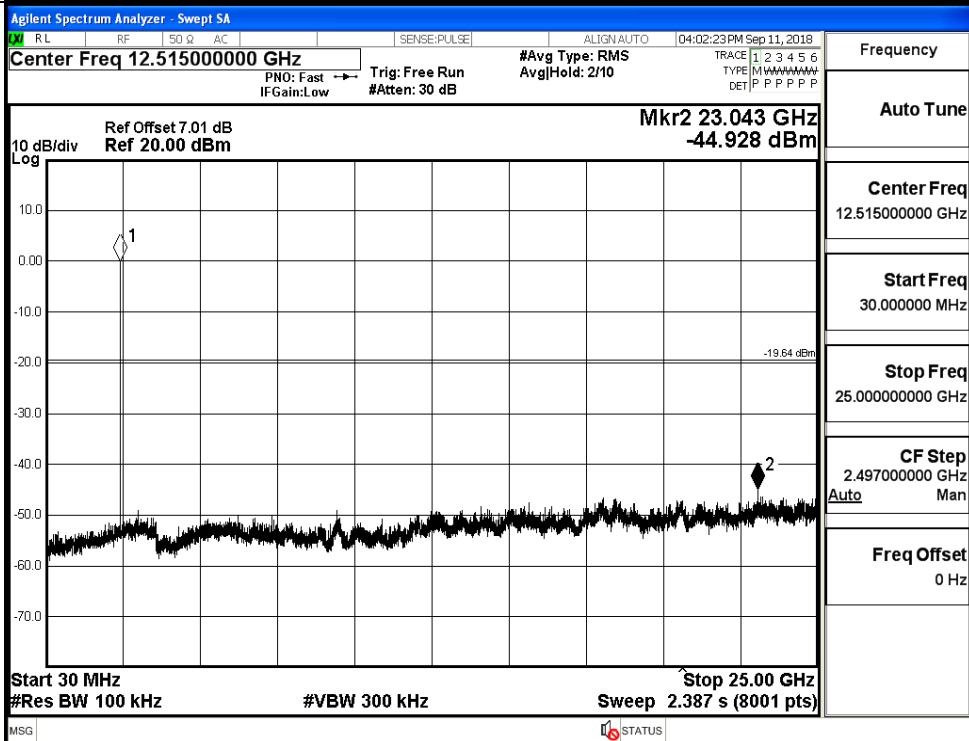
Frequency
Auto Tune
Center Freq 12.515000000 GHz
Start Freq 30.0000000 MHz
Stop Freq 25.000000000 GHz
CF Step 2.497000000 GHz Auto Man
Freq Offset 0 Hz

GFSK\_MCH\_Graphs

Pref

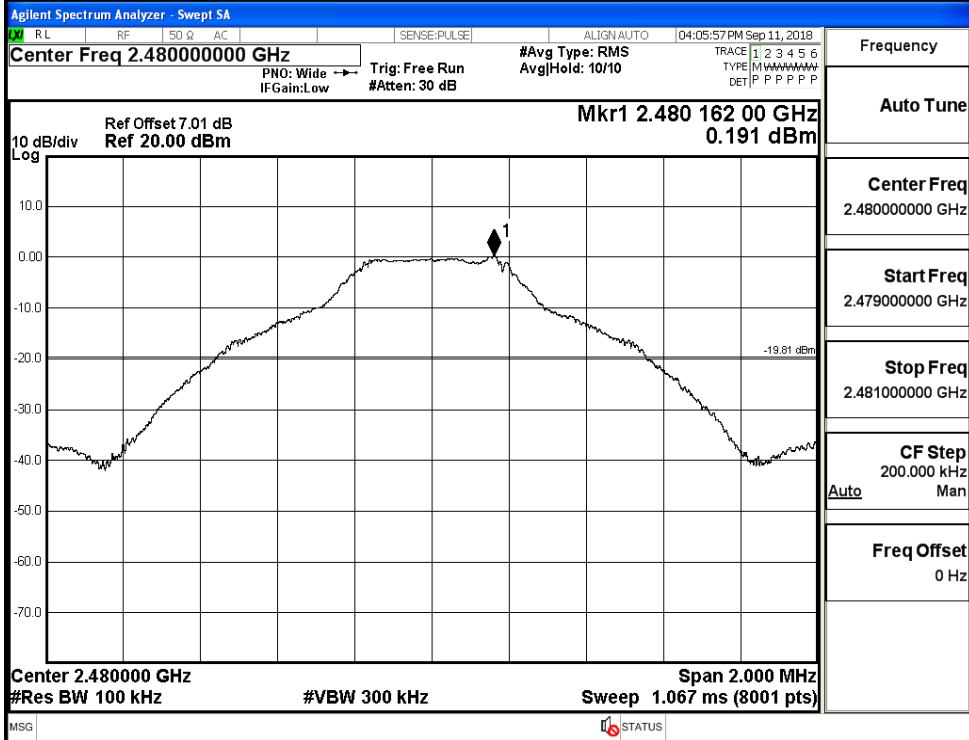


Puw

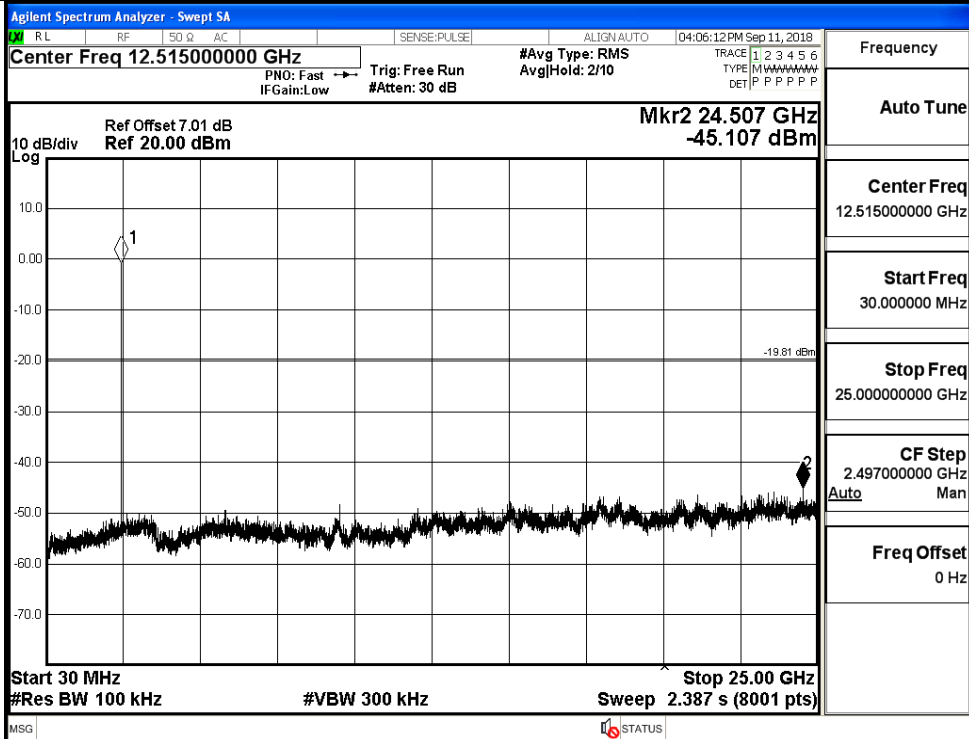


GFSK\_HCH\_Graphs

Pref

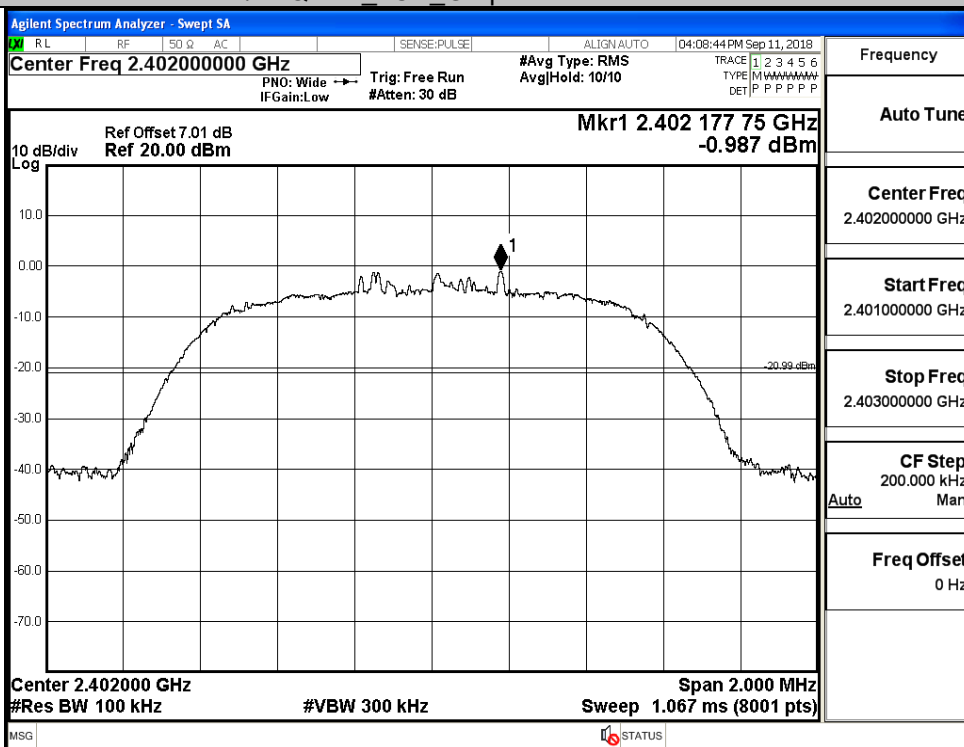


Puw



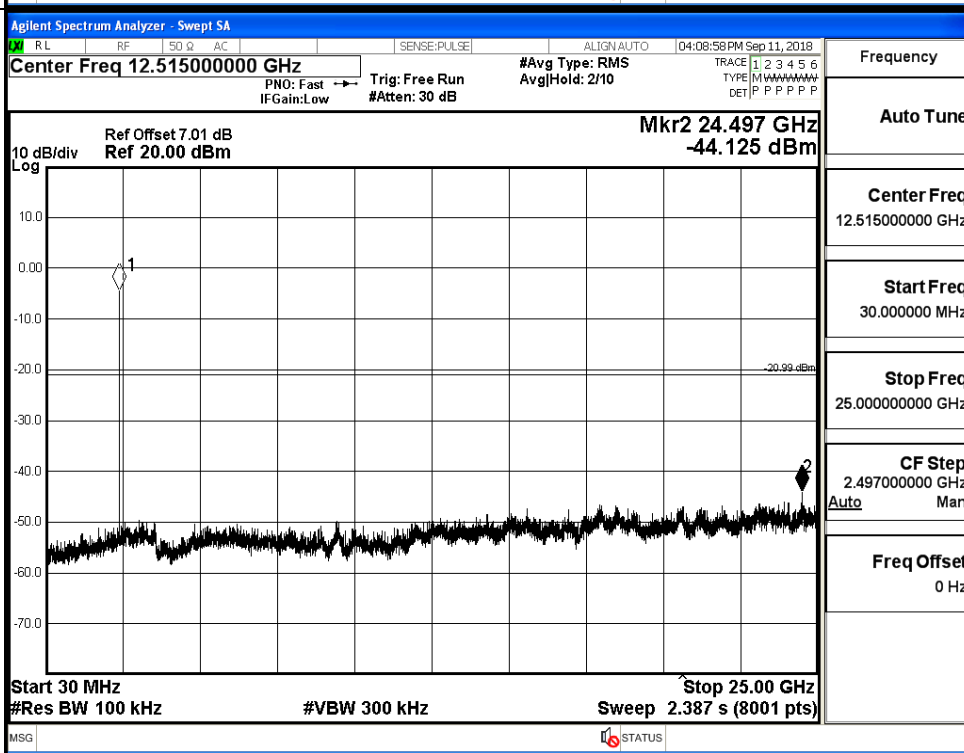
$\pi/4$ DQPSK LCH\_Graphs

Pref



Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

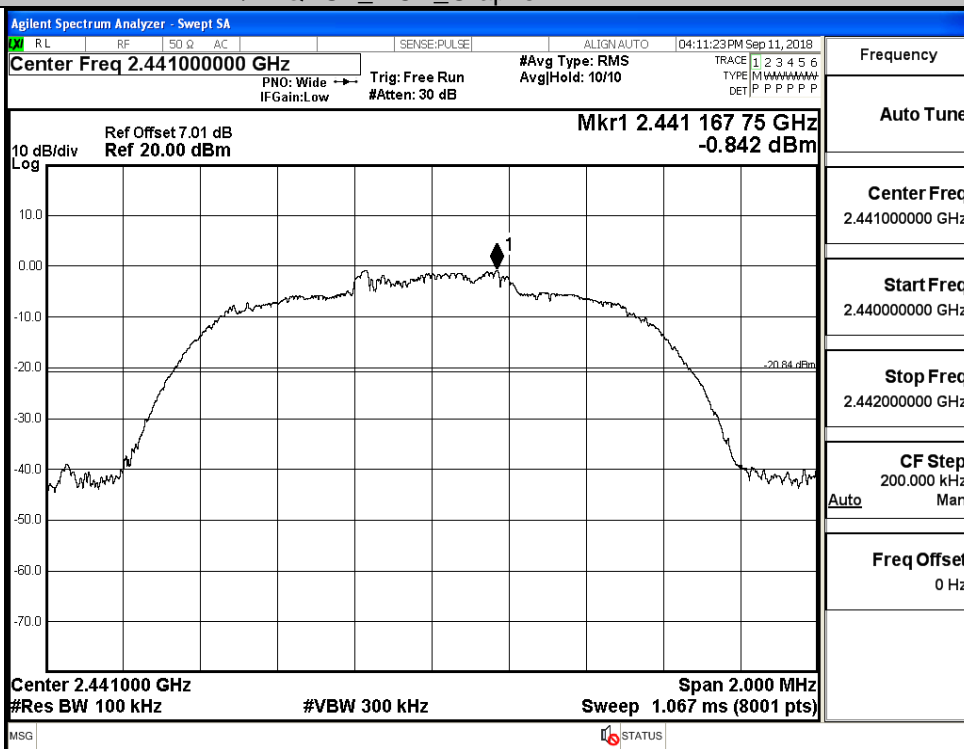
Puw



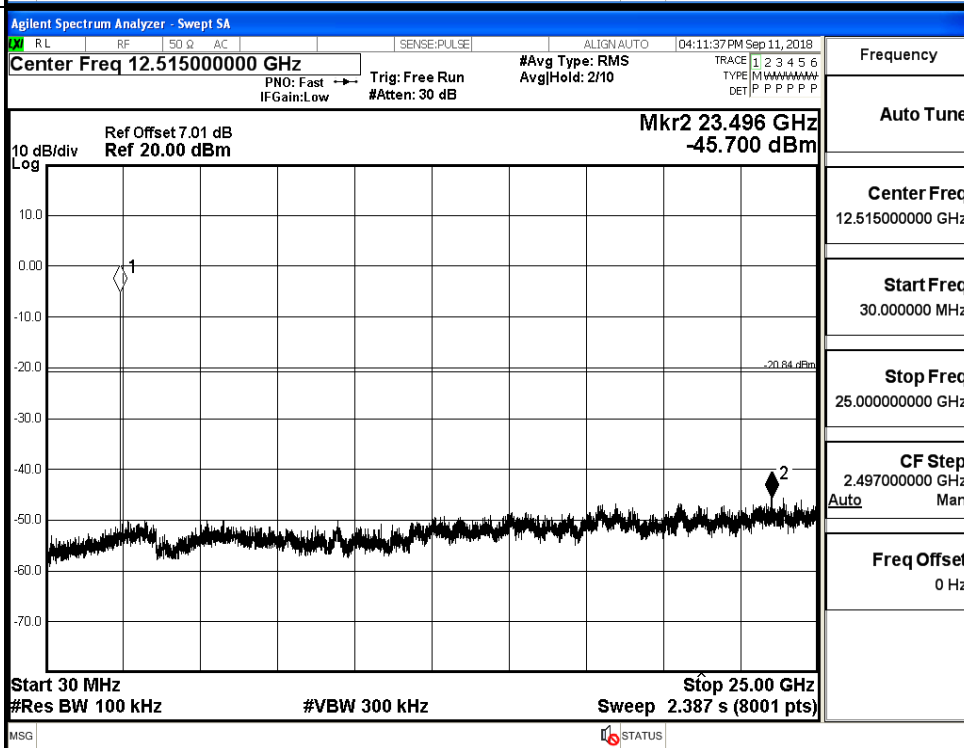
Frequency
Auto Tune
Center Freq 12.515000000 GHz
Start Freq 30.0000000 MHz
Stop Freq 25.000000000 GHz
CF Step 2.497000000 GHz Auto Man
Freq Offset 0 Hz

$\pi$ /4DQPSK\_MCH\_Graphs

Pref

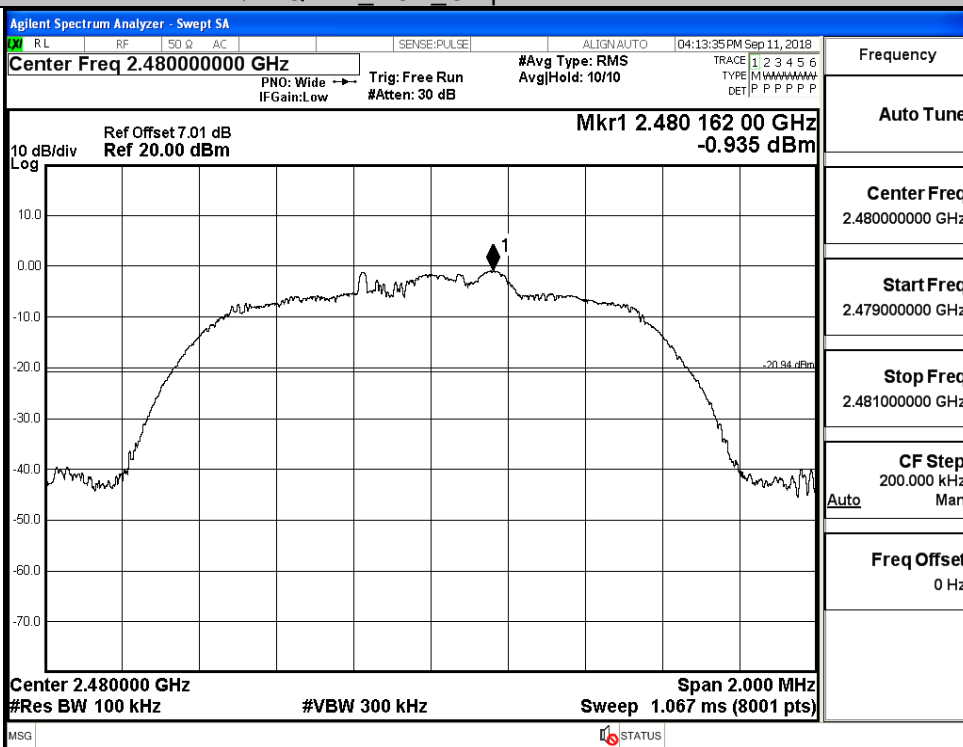


Puw

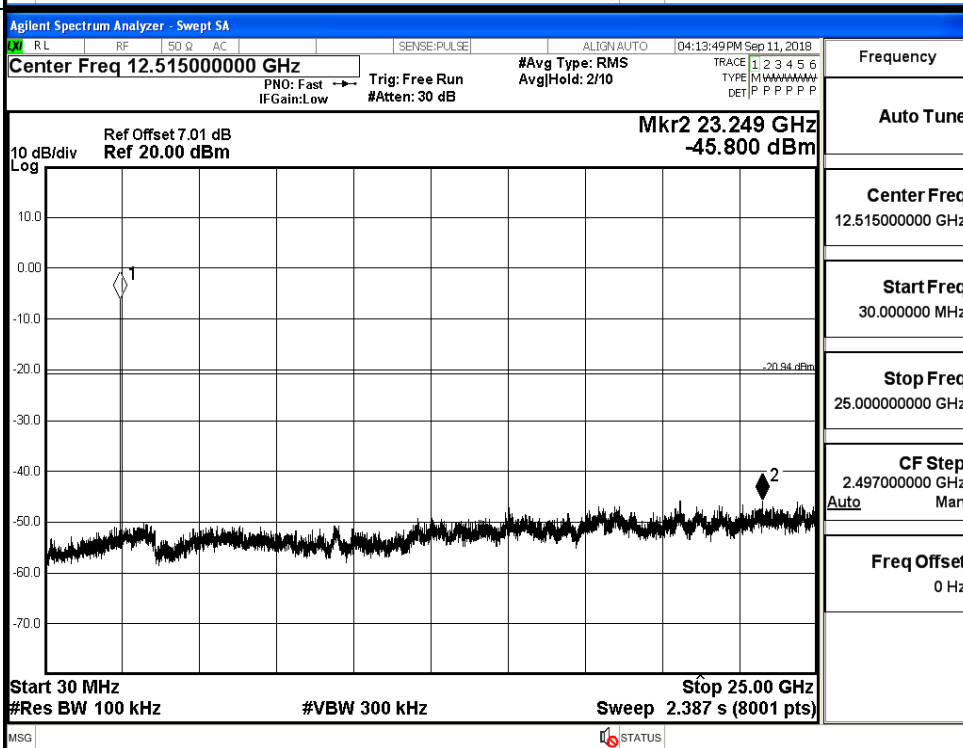


$\pi/4$ DQPSK\_HCH\_Graphs

Pref



Puw



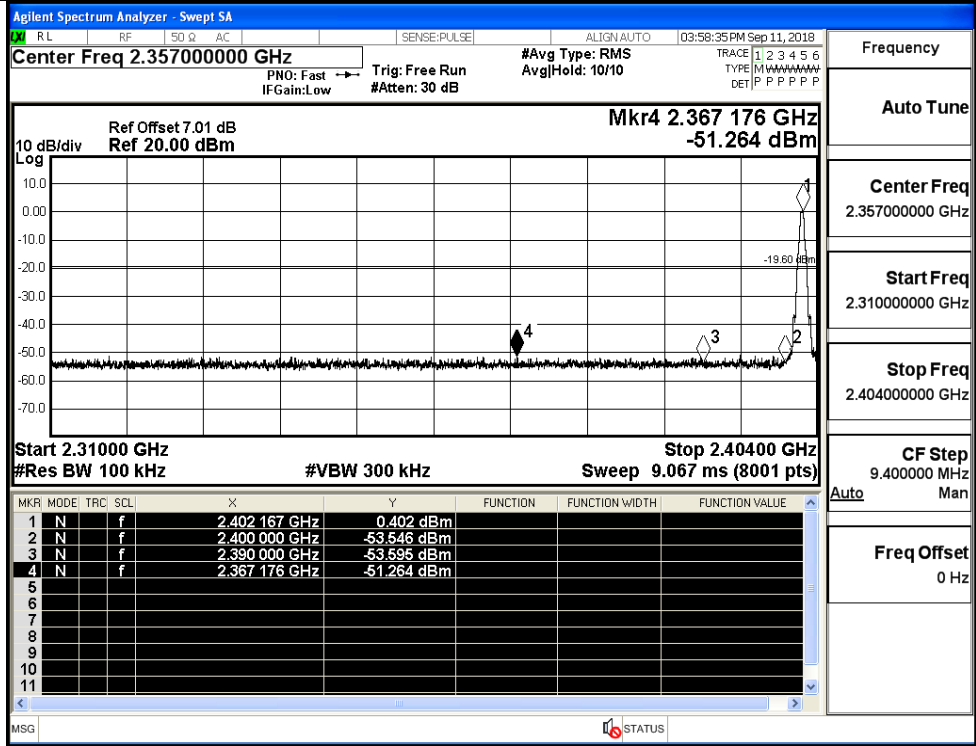


## A.7 Band-edge for RF Conducted Emissions

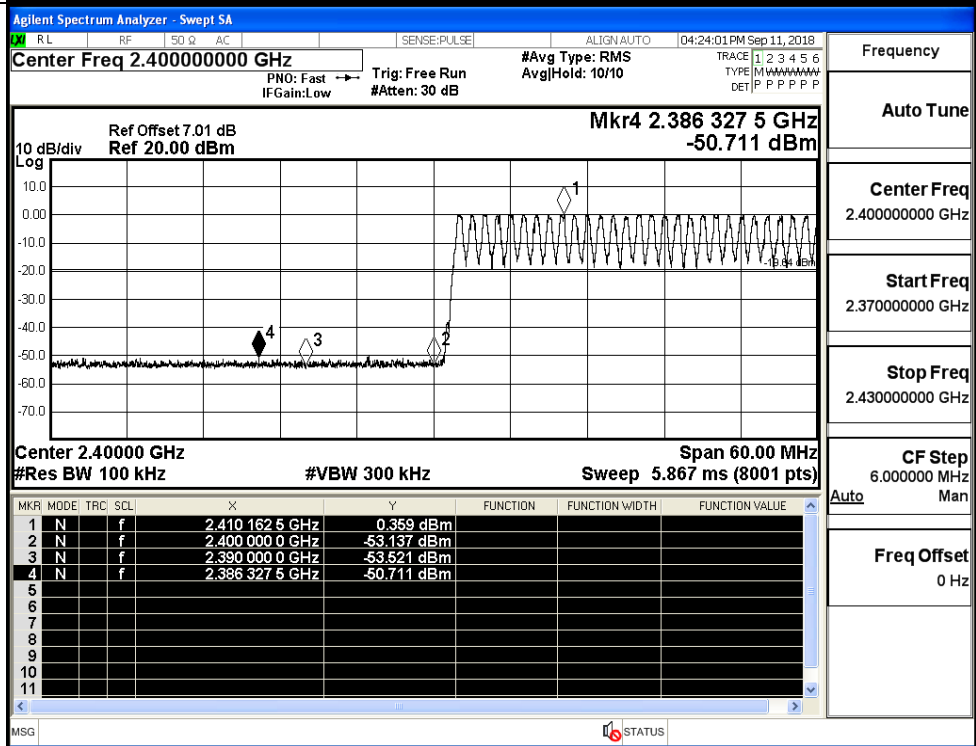
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.402	Off	-51.264	-19.6	PASS
			0.359	On	-50.711	-19.64	PASS
	HCH	2480	0.159	Off	-50.825	-19.84	PASS
			0.092	On	-50.464	-19.91	PASS
$\pi/4$ DQPSK	LCH	2402	-0.498	Off	-51.164	-20.5	PASS
			-0.748	On	-49.986	-20.75	PASS
	HCH	2480	-0.836	Off	-51.151	-20.84	PASS
			-0.871	On	-50.292	-20.87	PASS

Test Graphs

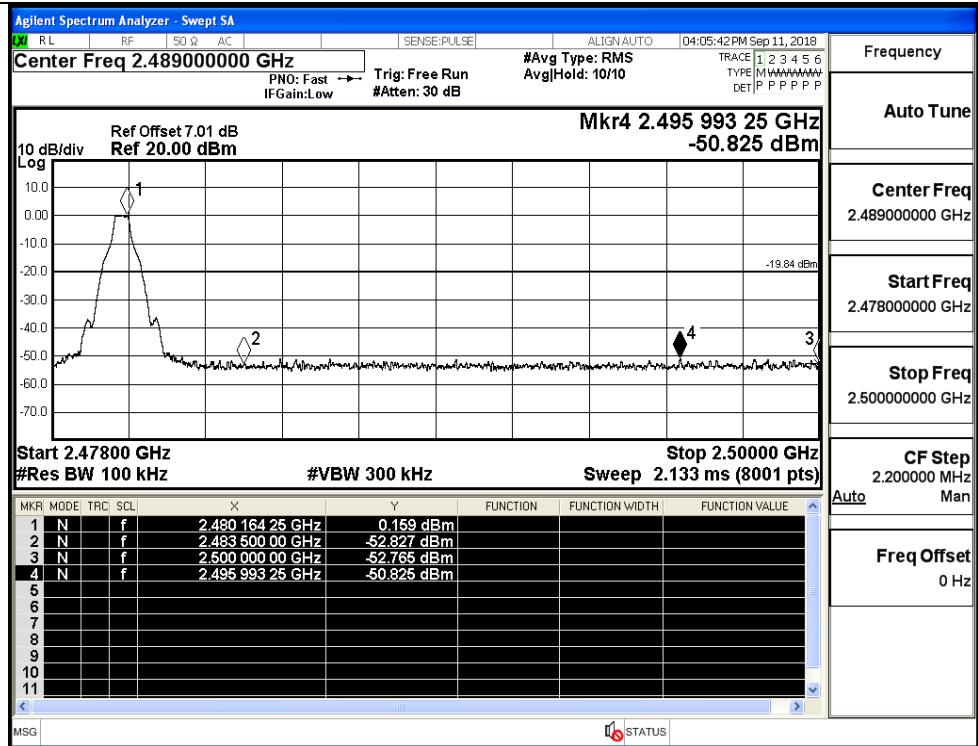
GFSK/LCH/No Hop



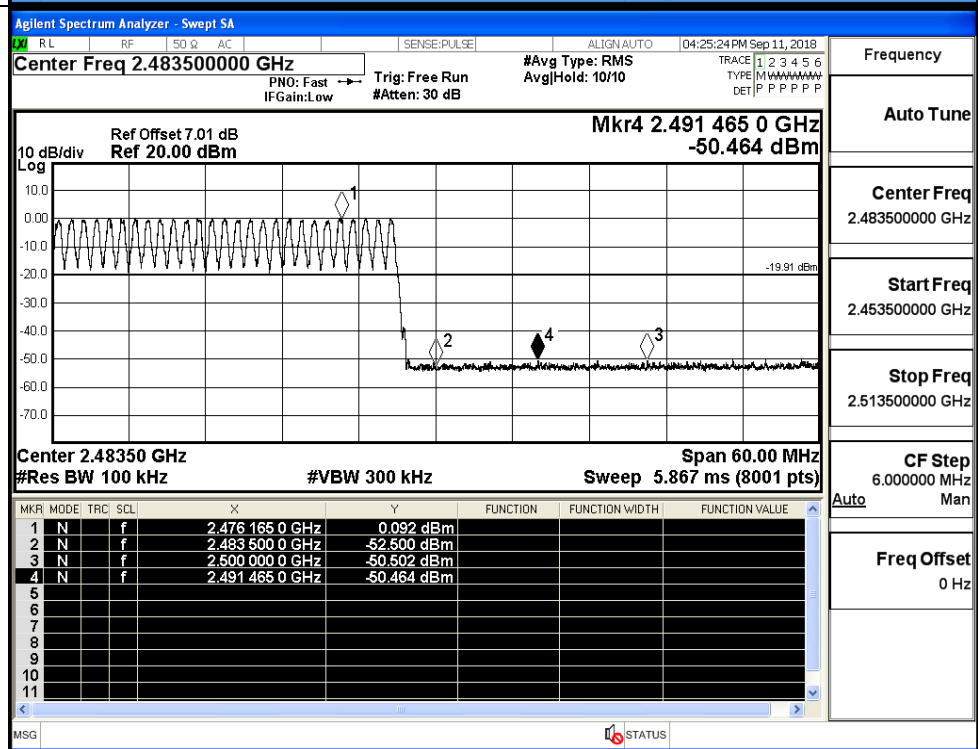
GFSK/LCH/Hop



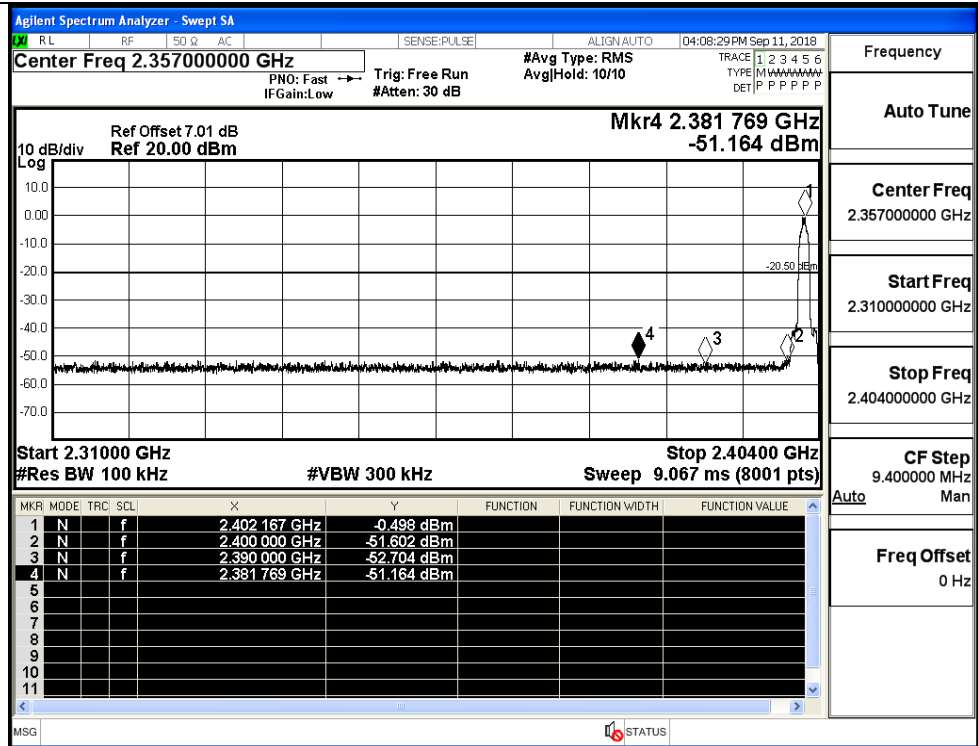
GFSK/HCH/No Hop



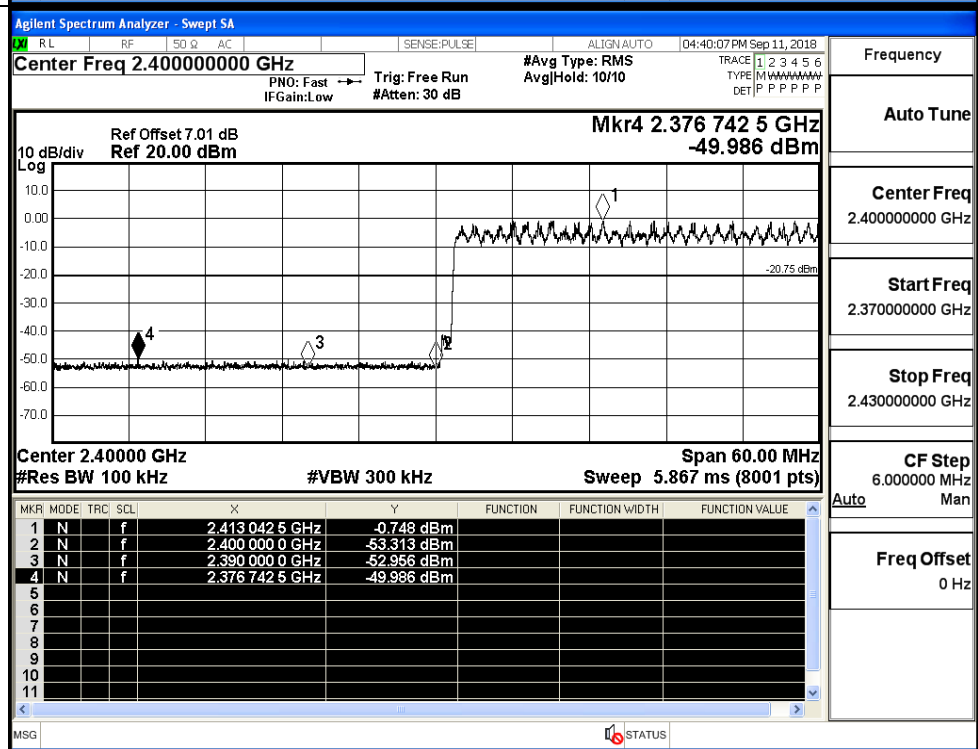
GFSK/HCH/Hop



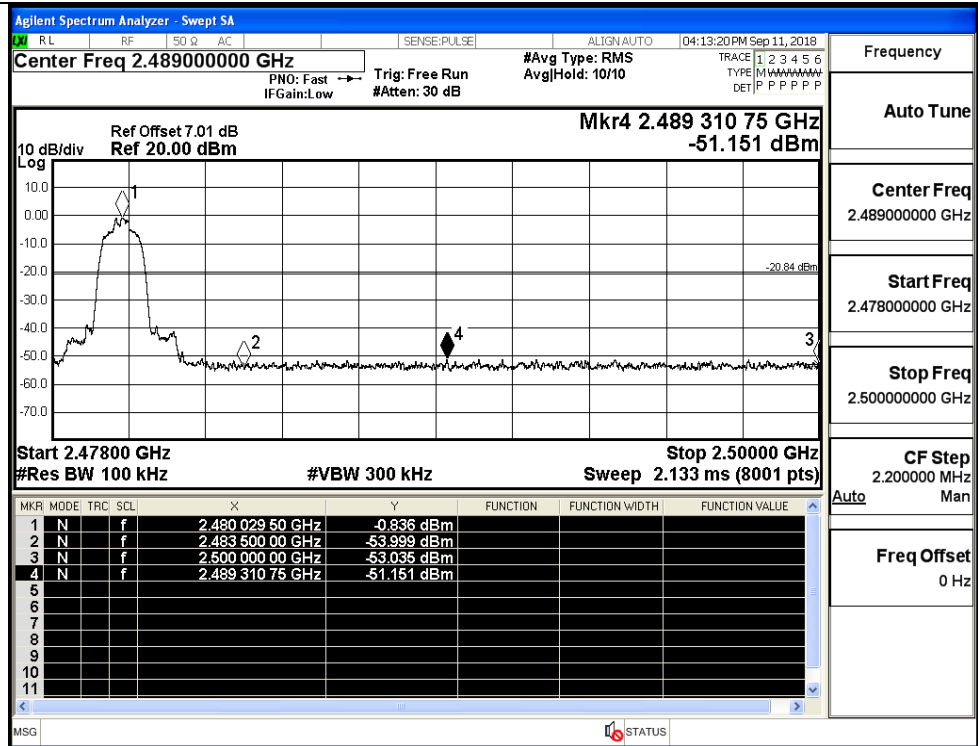
$\pi/4$ DQPSK/LCH/No  
Hop



$\pi/4$ DQPSK/LCH/Hop

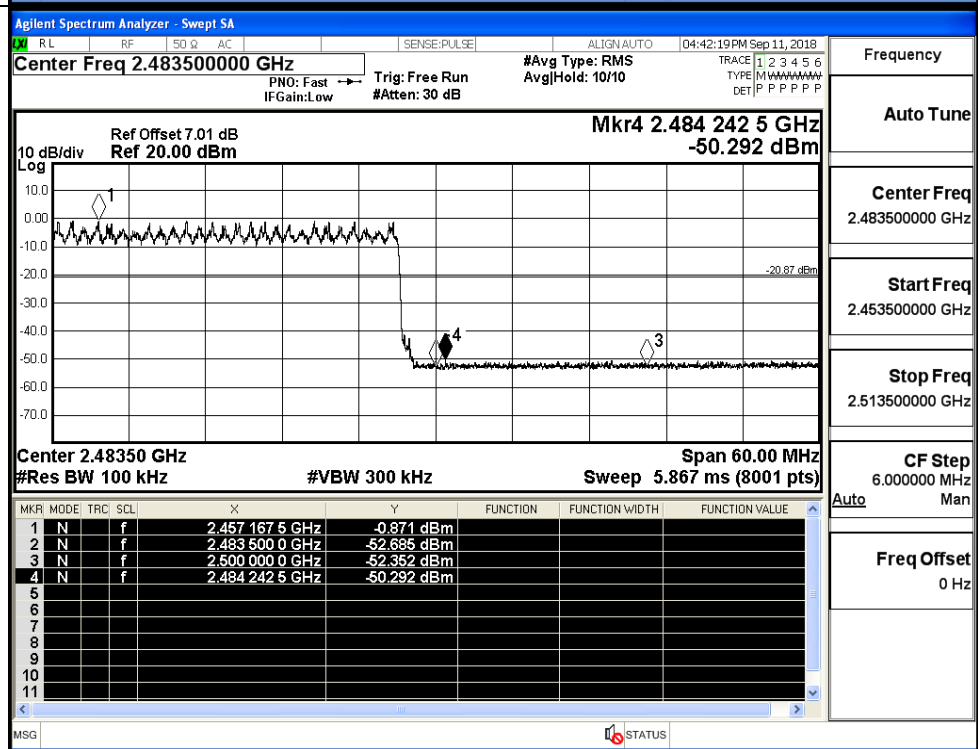


$\pi/4$ DQPSK/HCH/No  
Hop



Frequency	
Auto Tune	
Center Freq	2.489000000 GHz
Start Freq	2.478000000 GHz
Stop Freq	2.500000000 GHz
CF Step	2.200000 MHz
Auto	Man
Freq Offset	0 Hz

$\pi/4$ DQPSK/HCH/Hop

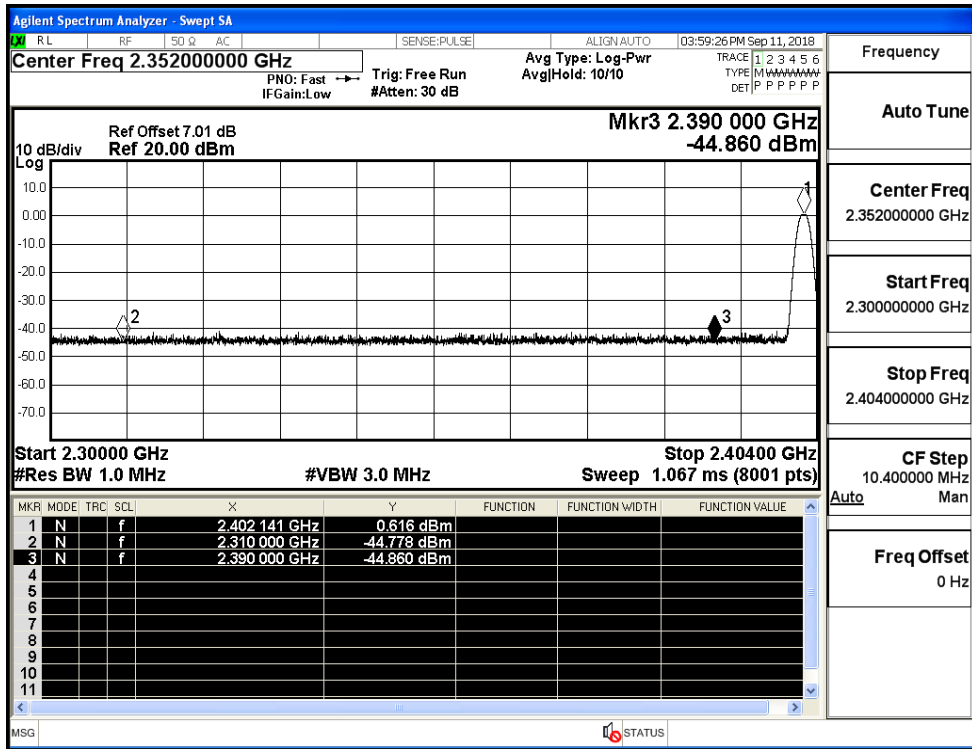


Frequency	
Auto Tune	
Center Freq	2.483500000 GHz
Start Freq	2.453500000 GHz
Stop Freq	2.513500000 GHz
CF Step	6.000000 MHz
Auto	Man
Freq Offset	0 Hz

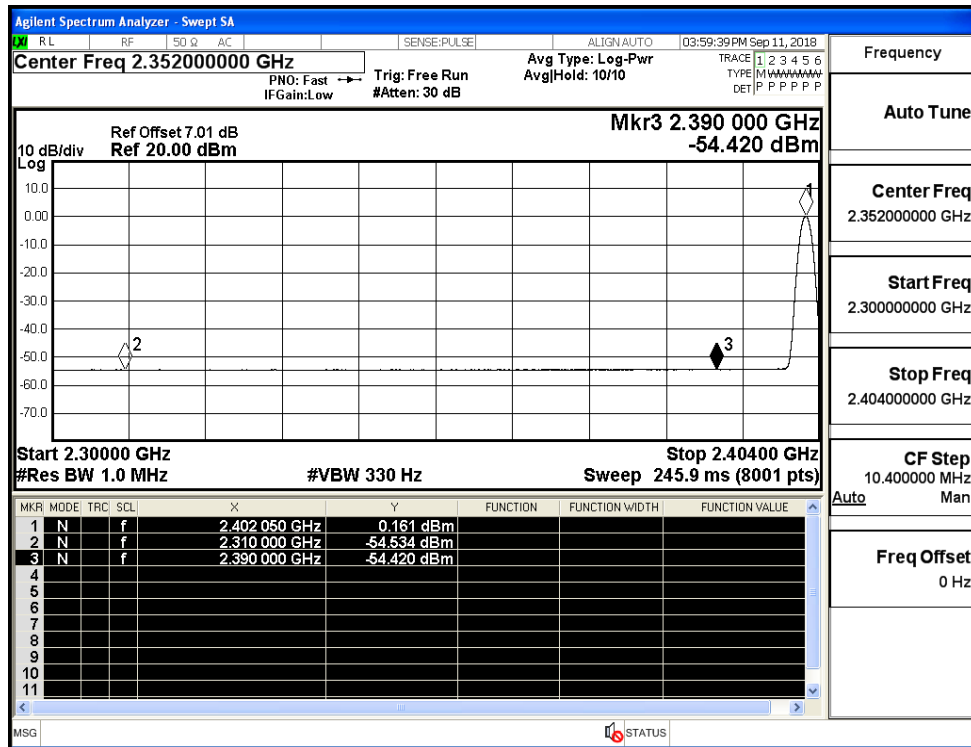
**A.8 Restrict-band band-edge measurements**

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-44.78	2.0	0	52.48	PEAK	74	PASS
	Off	2310.0	-54.53	2.0	0	42.72	AV	54	PASS
	Off	2390.0	-44.86	2.0	0	52.40	PEAK	74	PASS
	Off	2390.0	-54.42	2.0	0	42.84	AV	54	PASS
	Off	2483.5	-44.48	2.0	0	52.78	PEAK	74	PASS
	Off	2483.5	-54.07	2.0	0	43.19	AV	54	PASS
	Off	2500.0	-44.31	2.0	0	52.95	PEAK	74	PASS
	Off	2500.0	-53.96	2.0	0	43.29	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-45.71	2.0	0	51.55	PEAK	74	PASS
	Off	2310.0	-54.57	2.0	0	42.69	AV	54	PASS
	Off	2390.0	-44.94	2.0	0	52.32	PEAK	74	PASS
	Off	2390.0	-54.30	2.0	0	42.96	AV	54	PASS
	Off	2483.5	-43.47	2.0	0	53.79	PEAK	74	PASS
	Off	2483.5	-53.99	2.0	0	43.27	AV	54	PASS
	Off	2500.0	-44.08	2.0	0	53.18	PEAK	74	PASS
	Off	2500.0	-54.05	2.0	0	43.21	AV	54	PASS

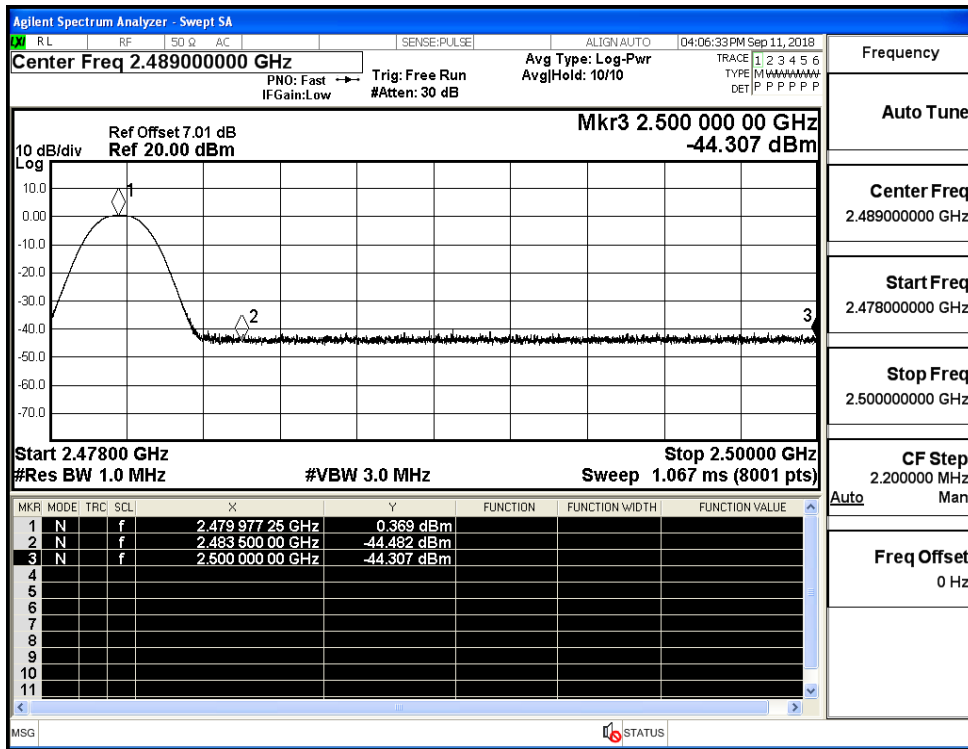
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



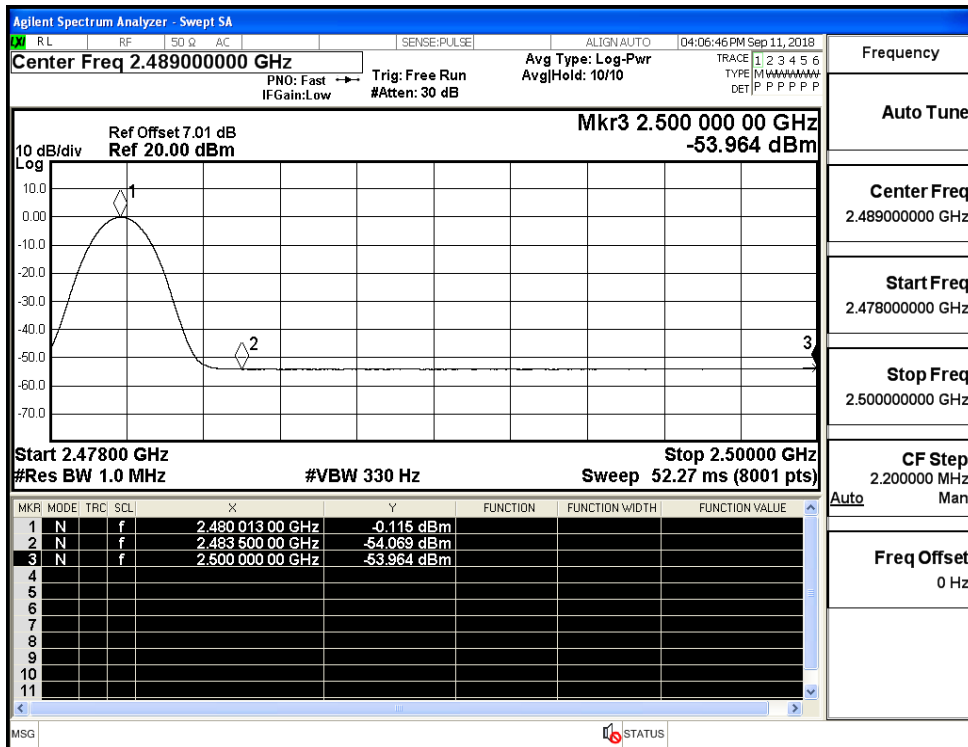
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



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

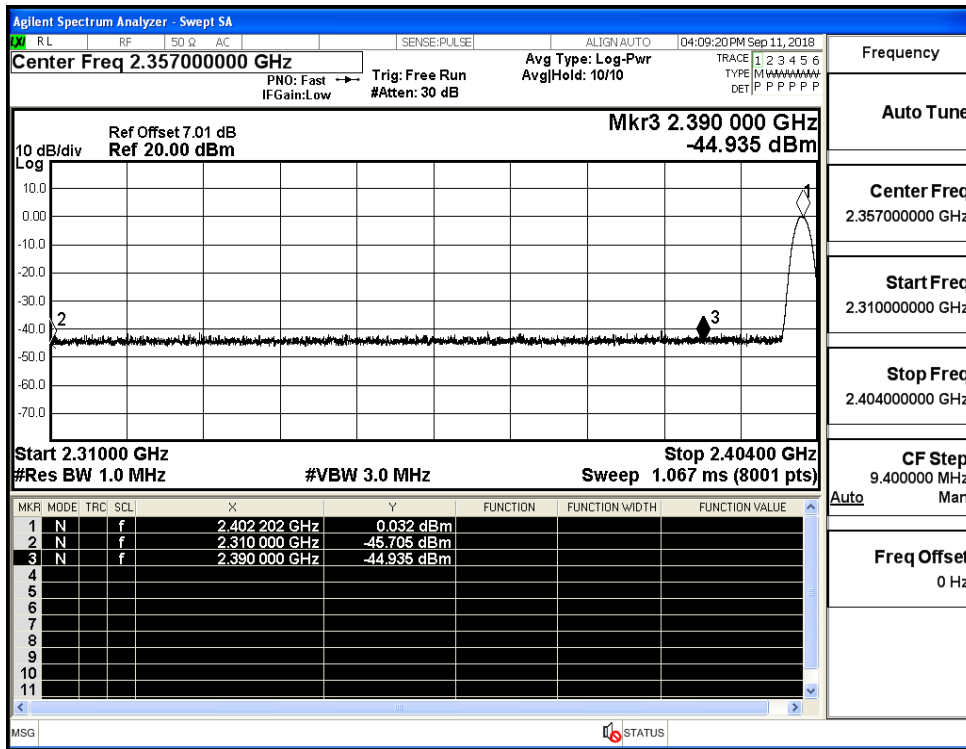


Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)

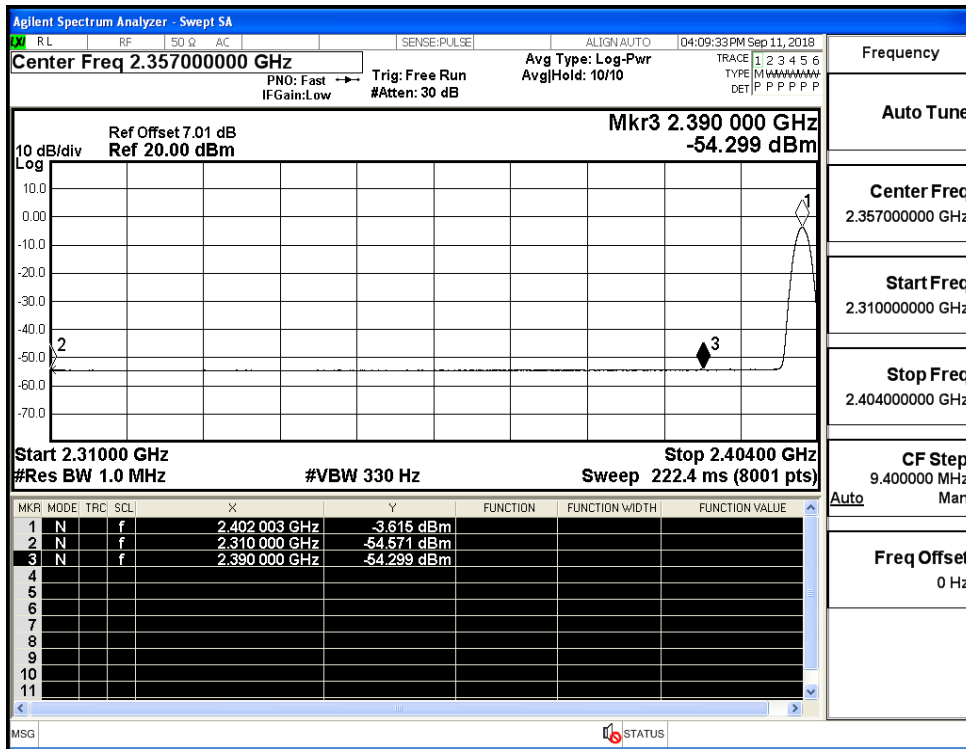




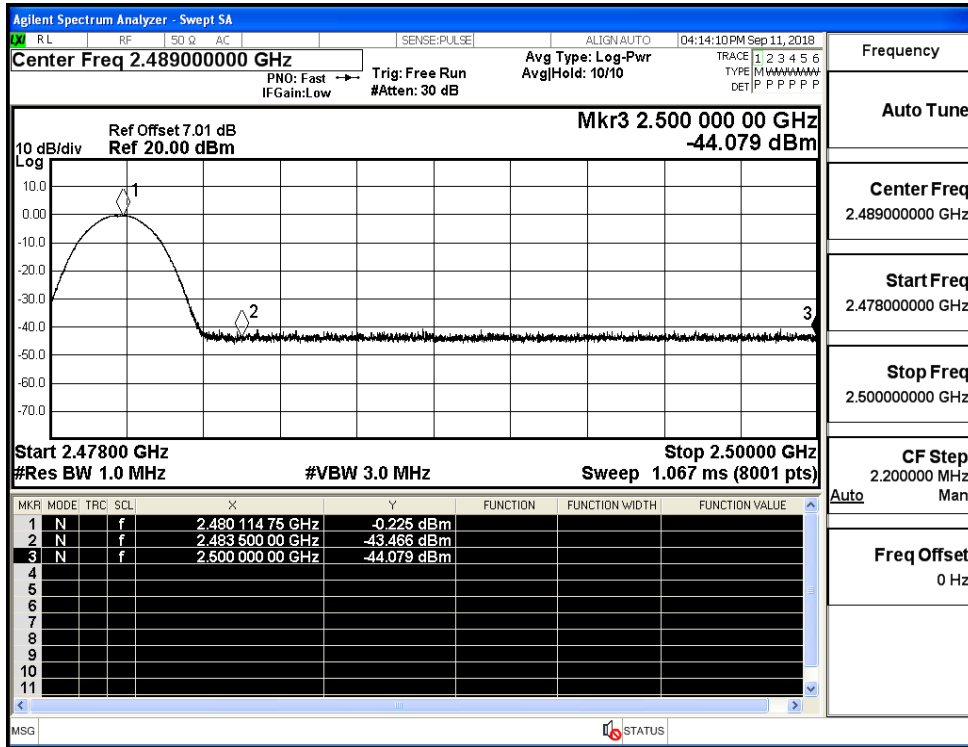
Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



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)

