

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

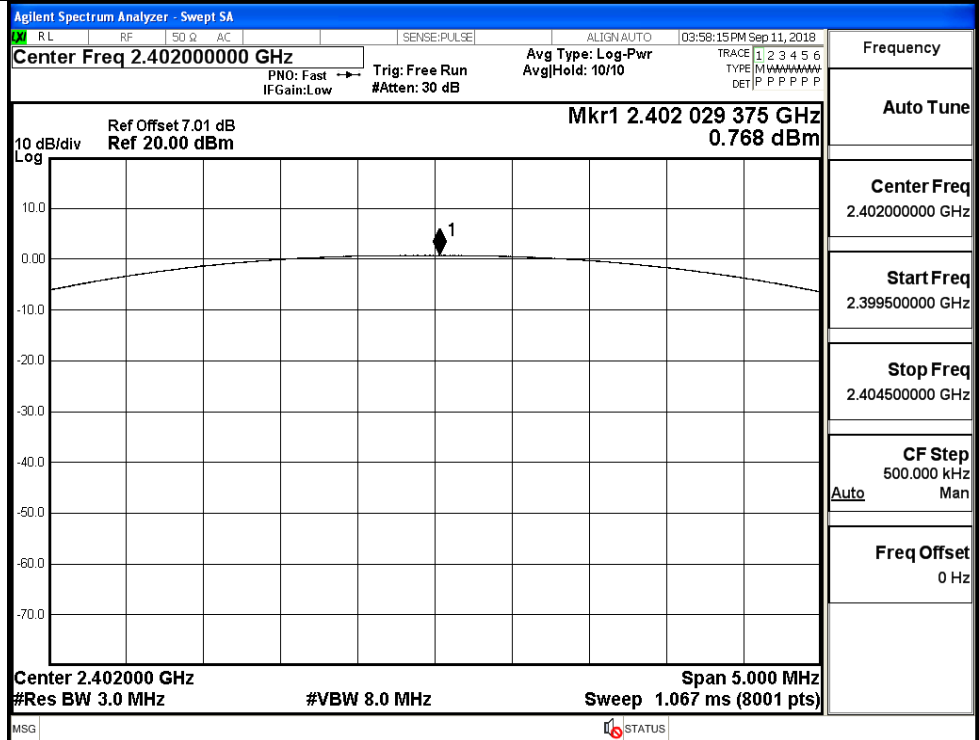
Temperature:	24.5 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Jayden.Zhuo

A.1 Maximum Conducted Peak Output Power

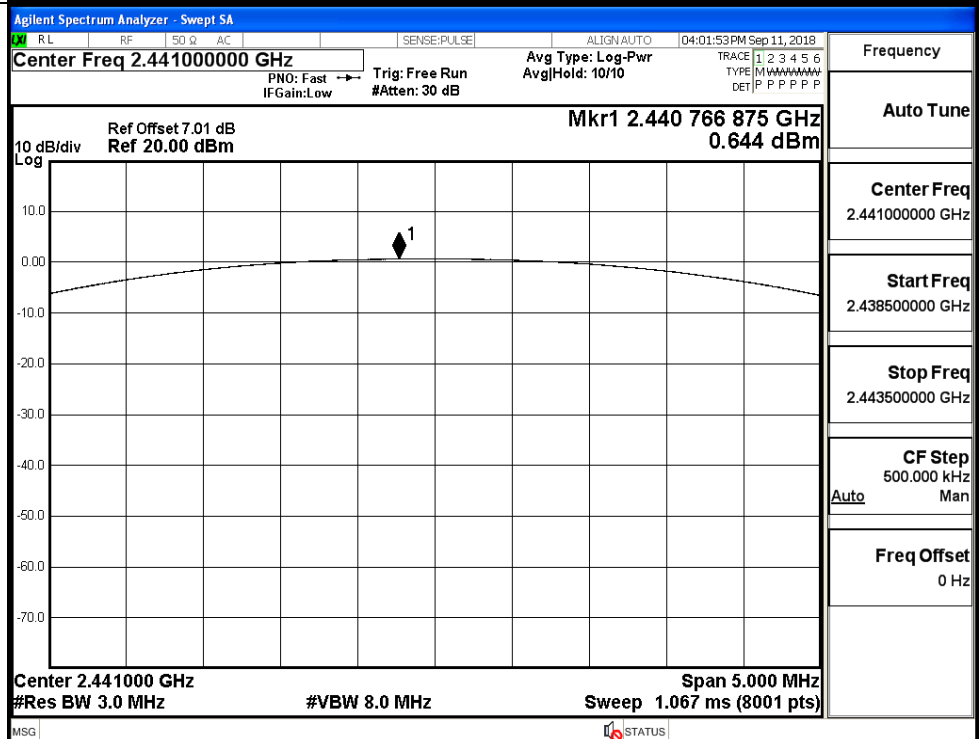
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.768	30	PASS
	MCH	0.644	30	PASS
	HCH	0.488	30	PASS
$\pi/4$ DQPSK	LCH	0.518	21	PASS
	MCH	0.486	21	PASS
	HCH	0.270	21	PASS

Test Graphs

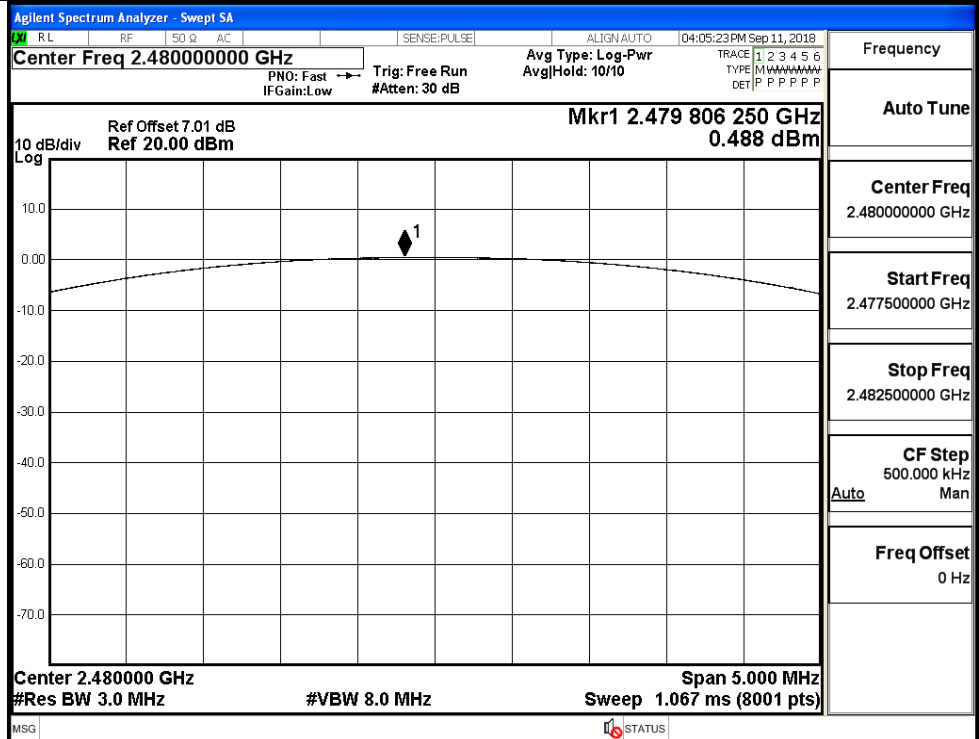
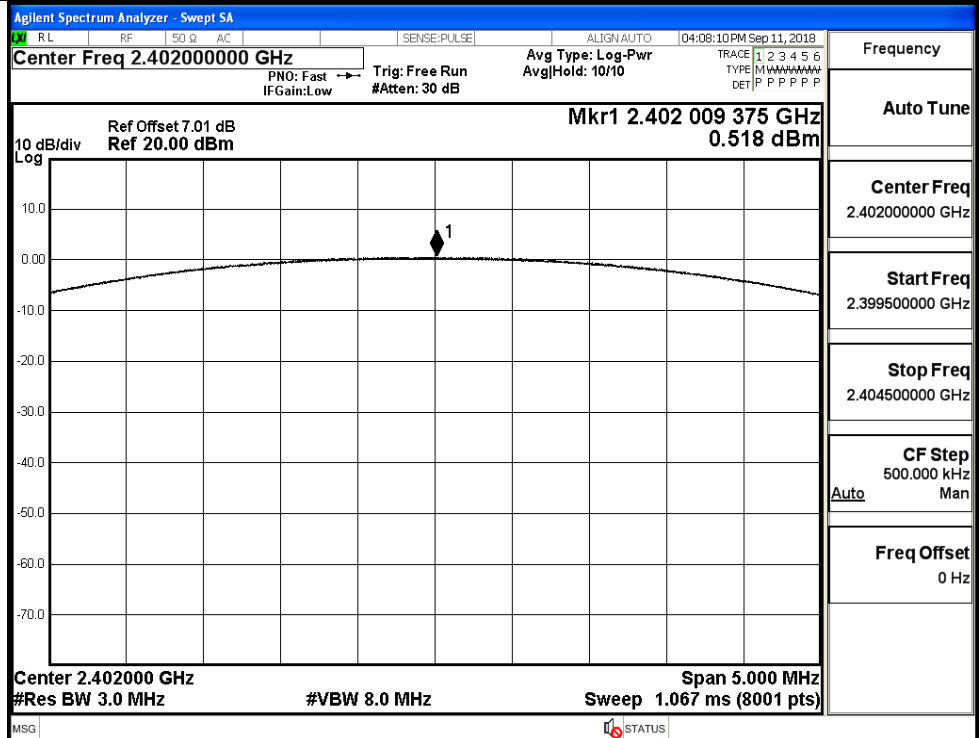
GFSK/LCH

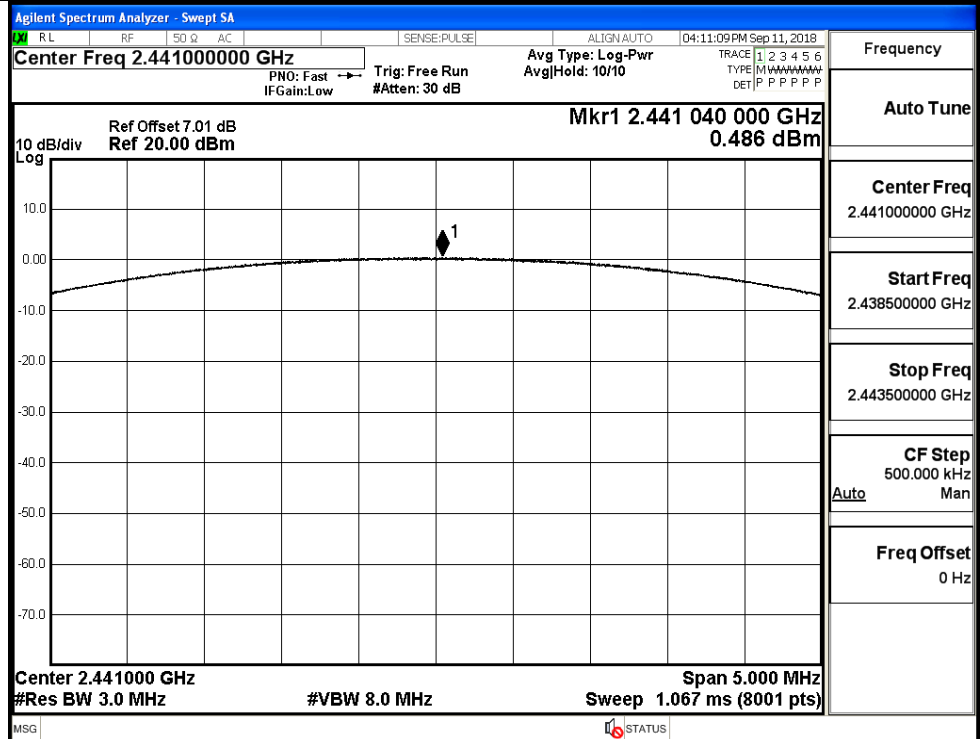
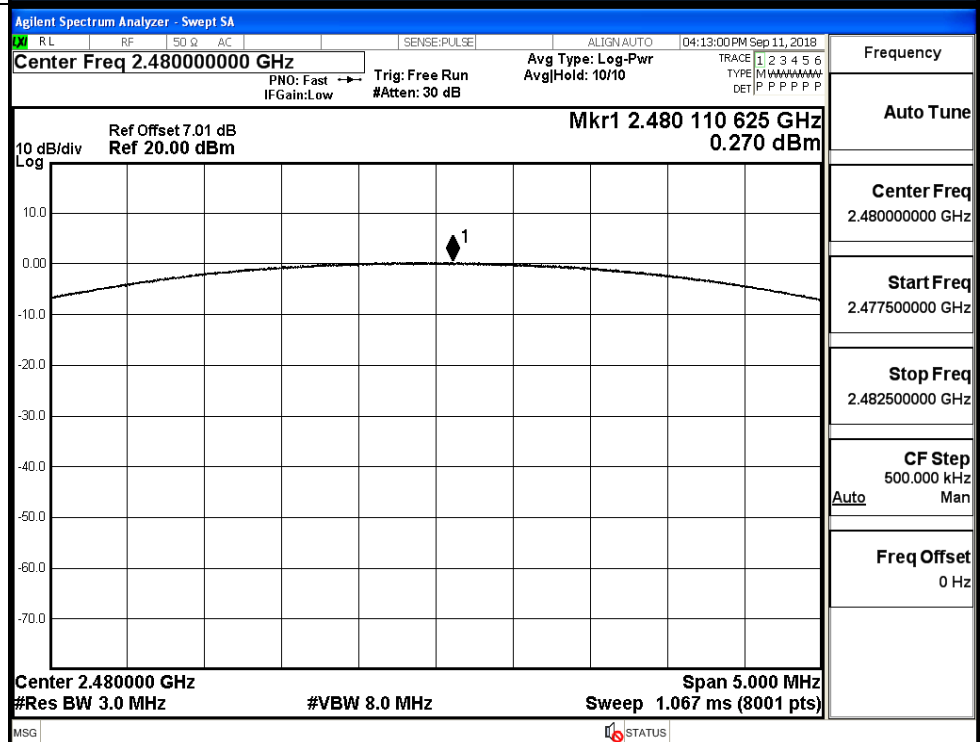


GFSK/MCH



GFSK/HCH

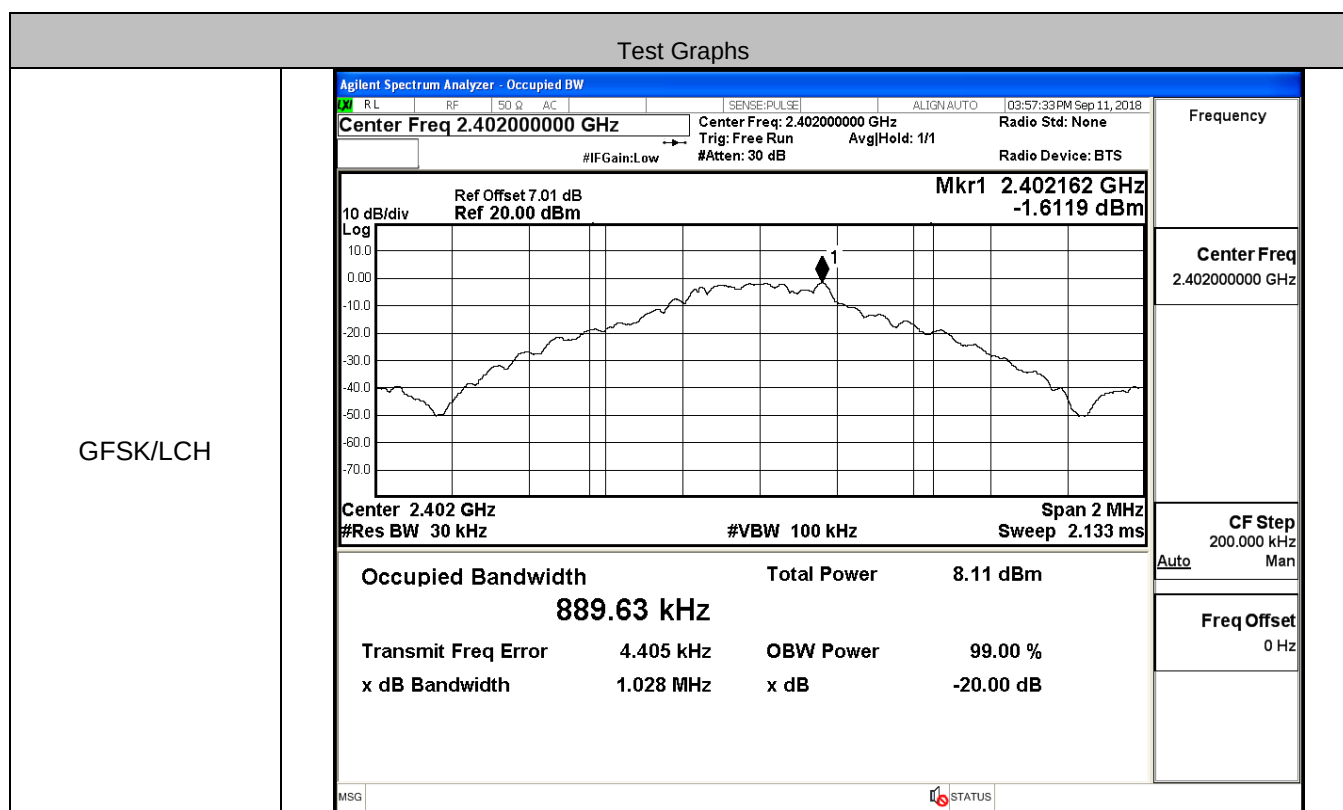
 π /4DQPSK/LCH

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

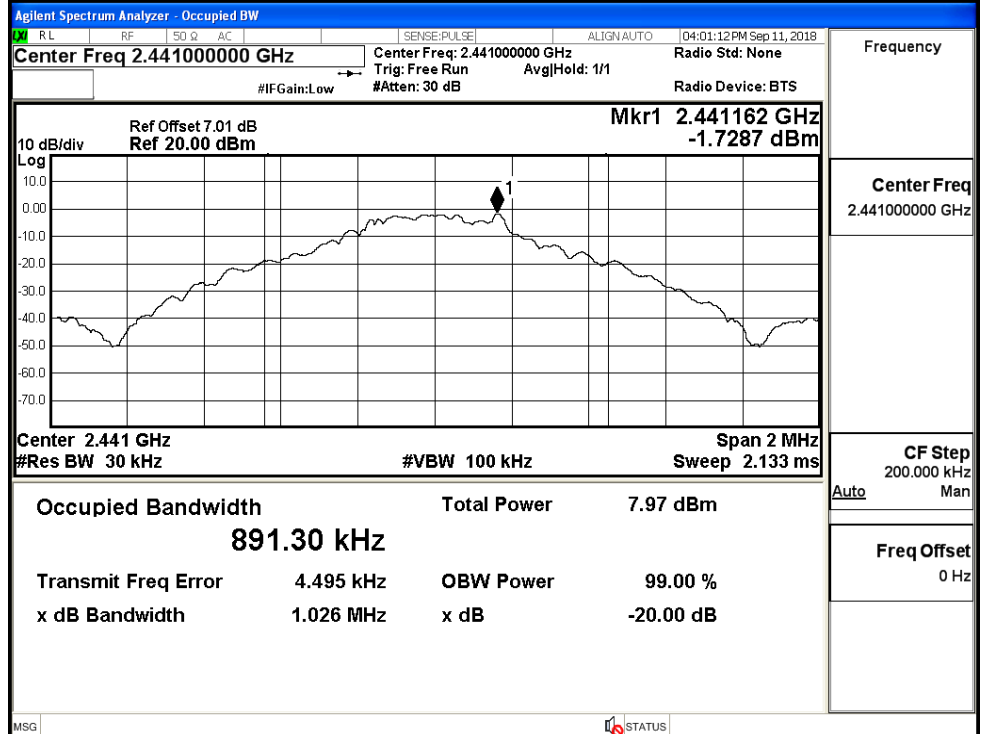
A.2 99% and 20dB Bandwidth

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

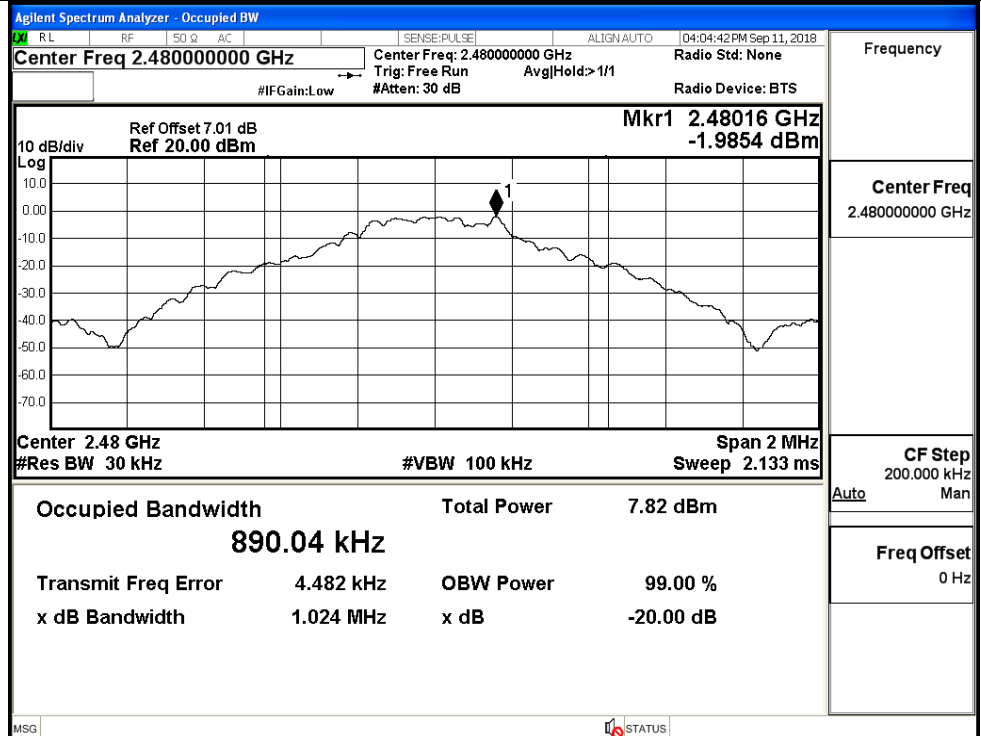
Test Graphs

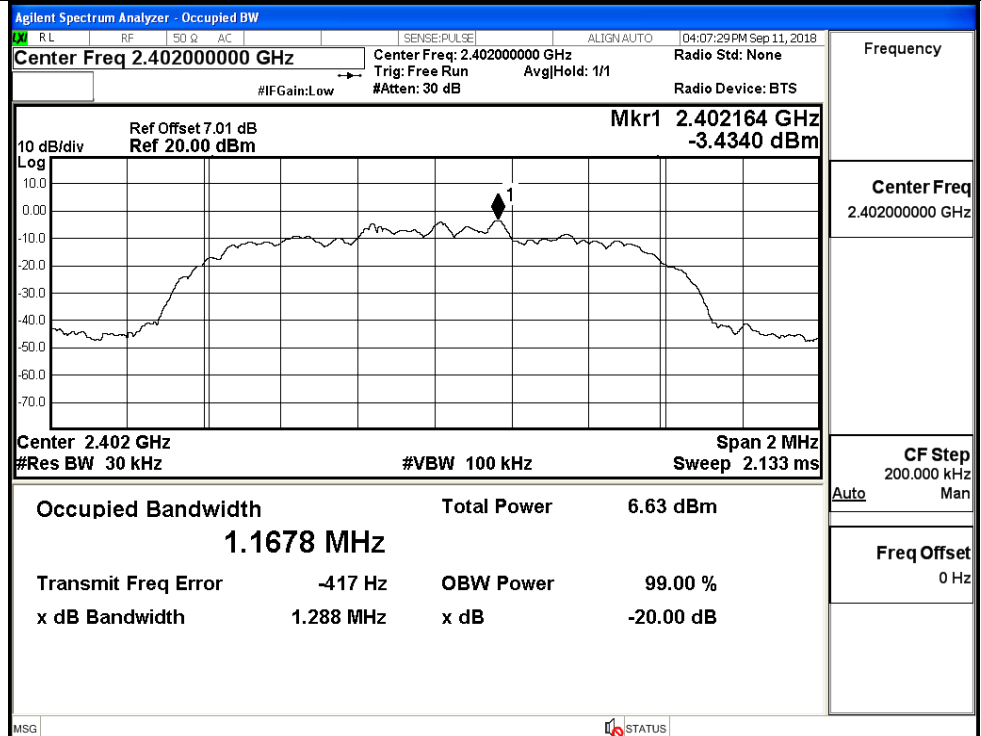
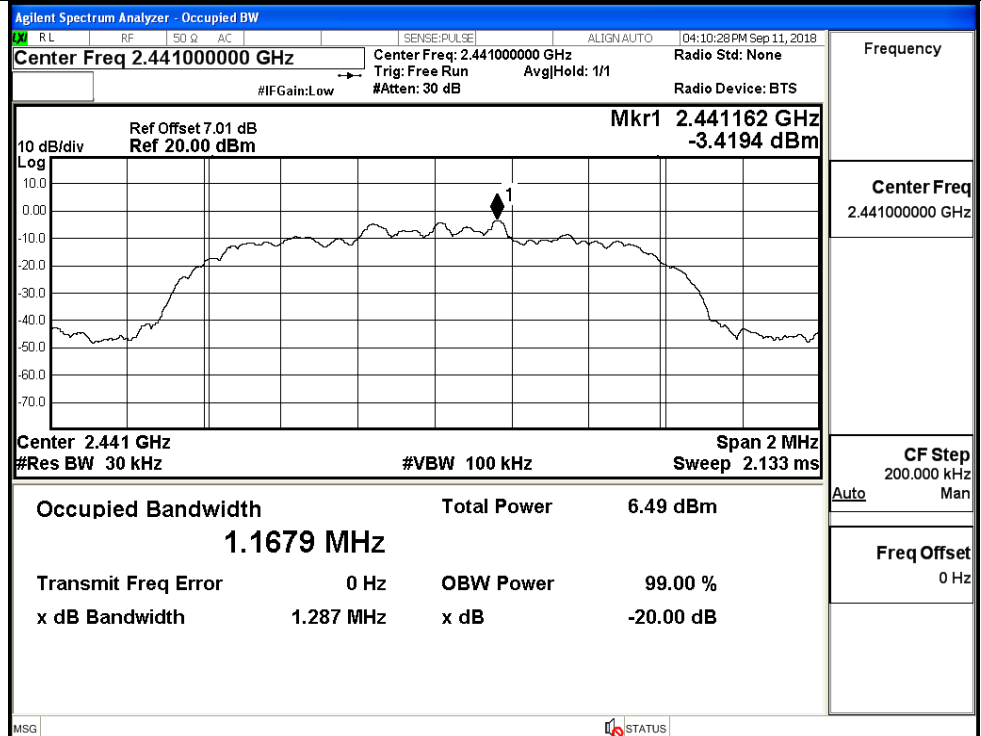


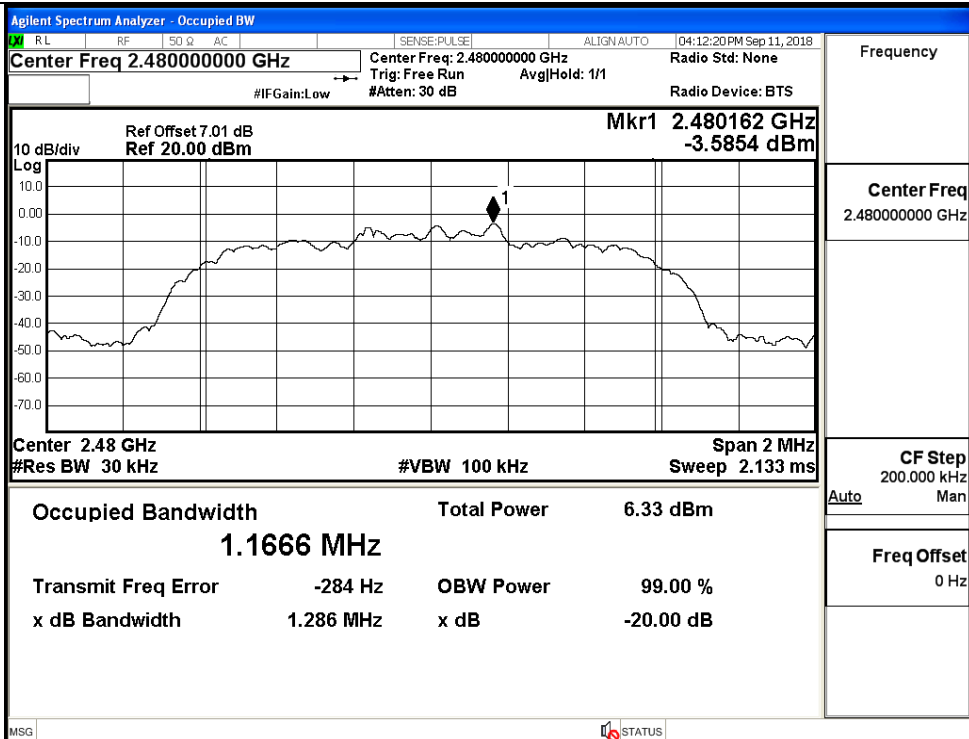
GFSK/MCH



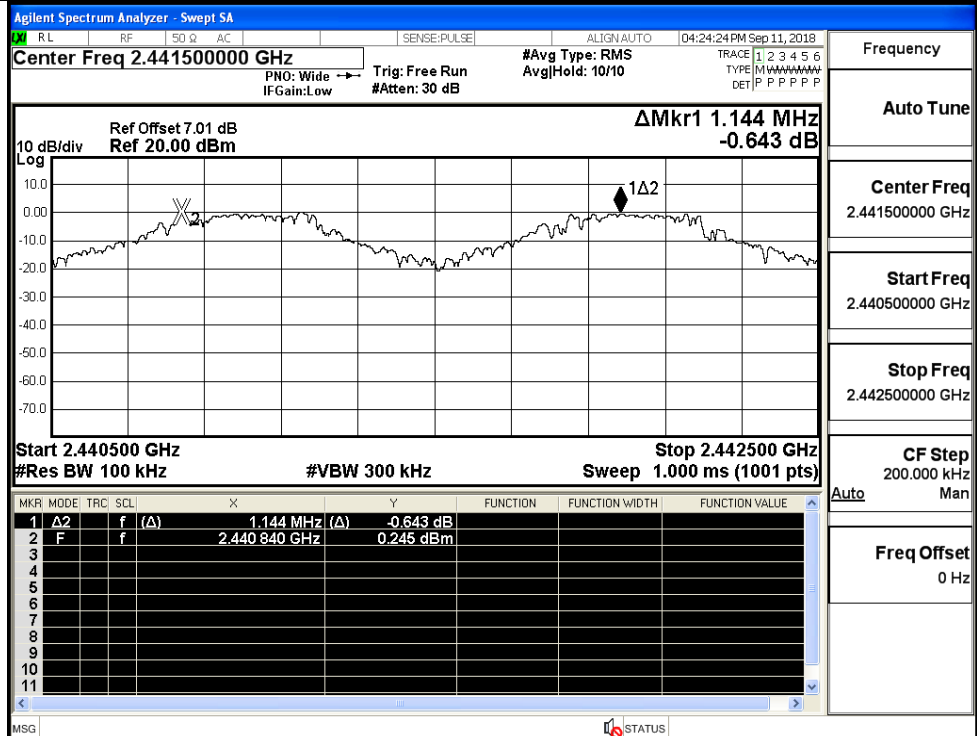
GFSK/HCH



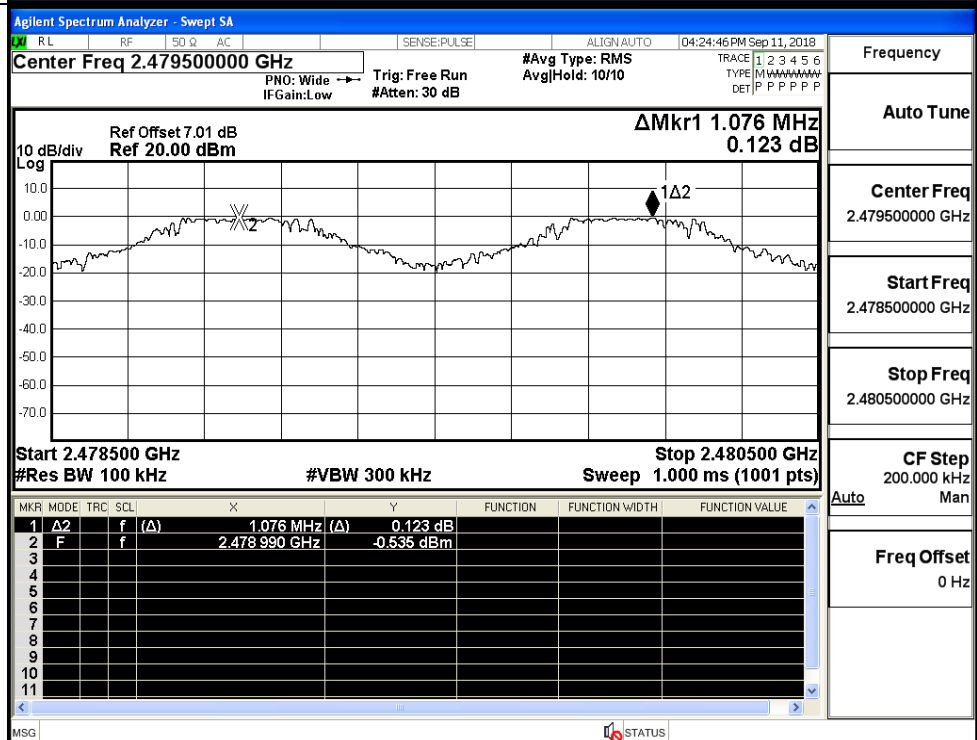
$\pi/4$ DQPSK/LCH $\pi/4$ DQPSK/MCH

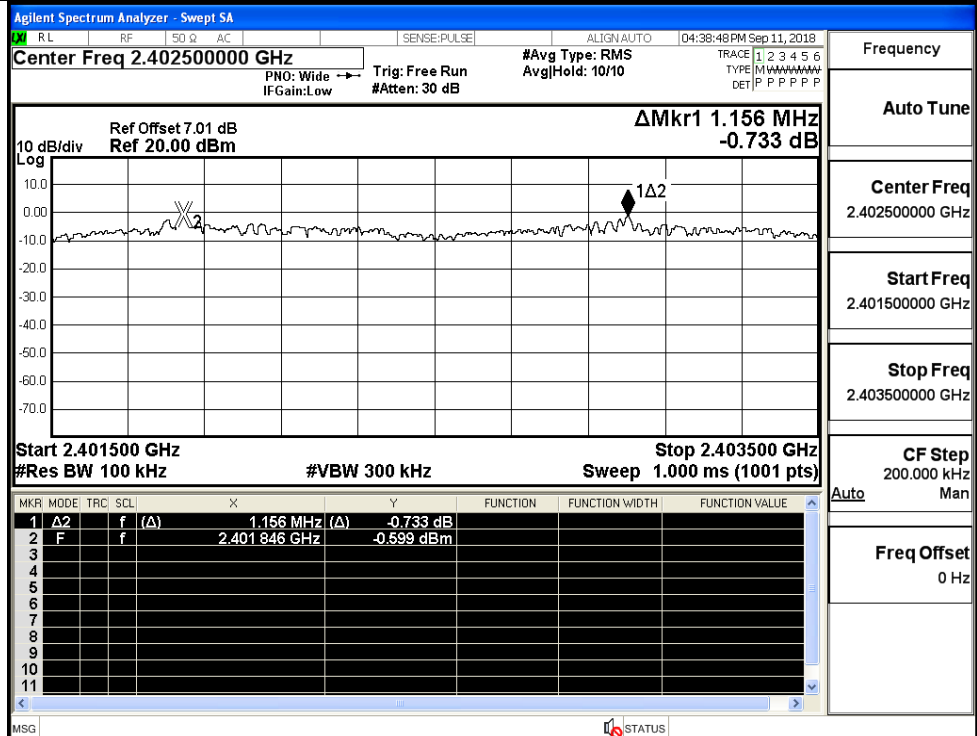
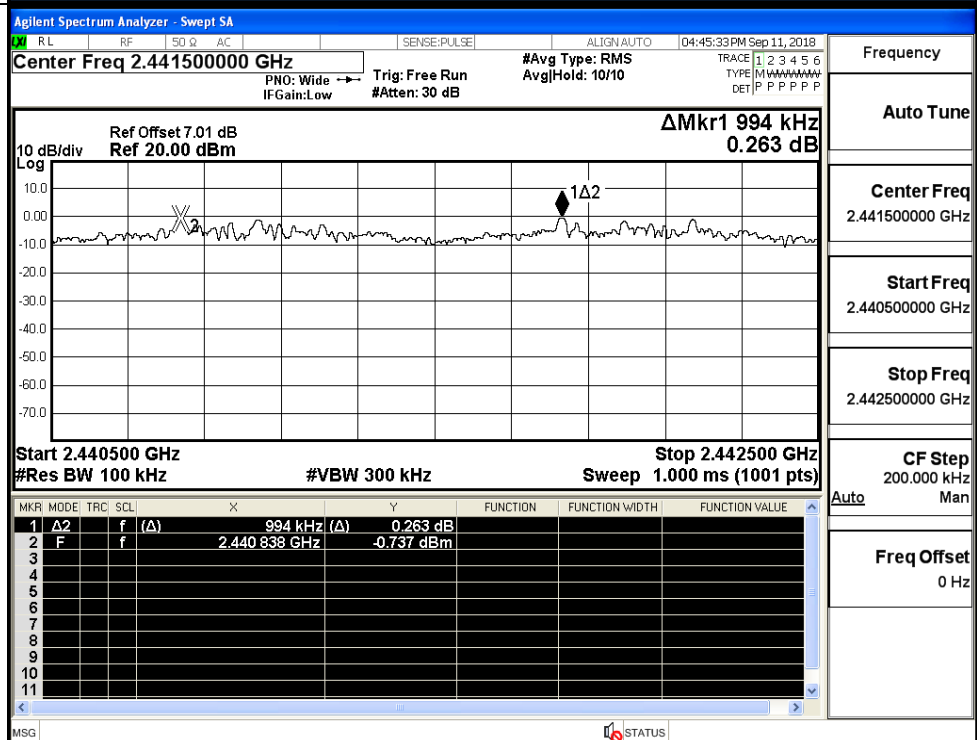
$\pi/4$ DQPSK/HCH

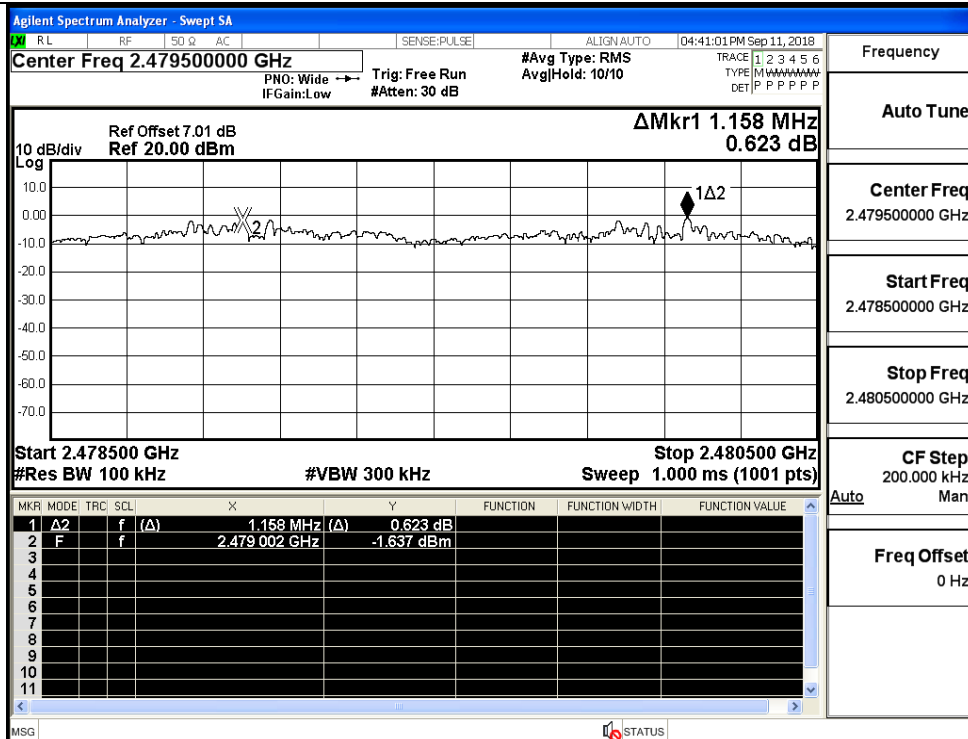
GFSK/MCH



GFSK/HCH



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

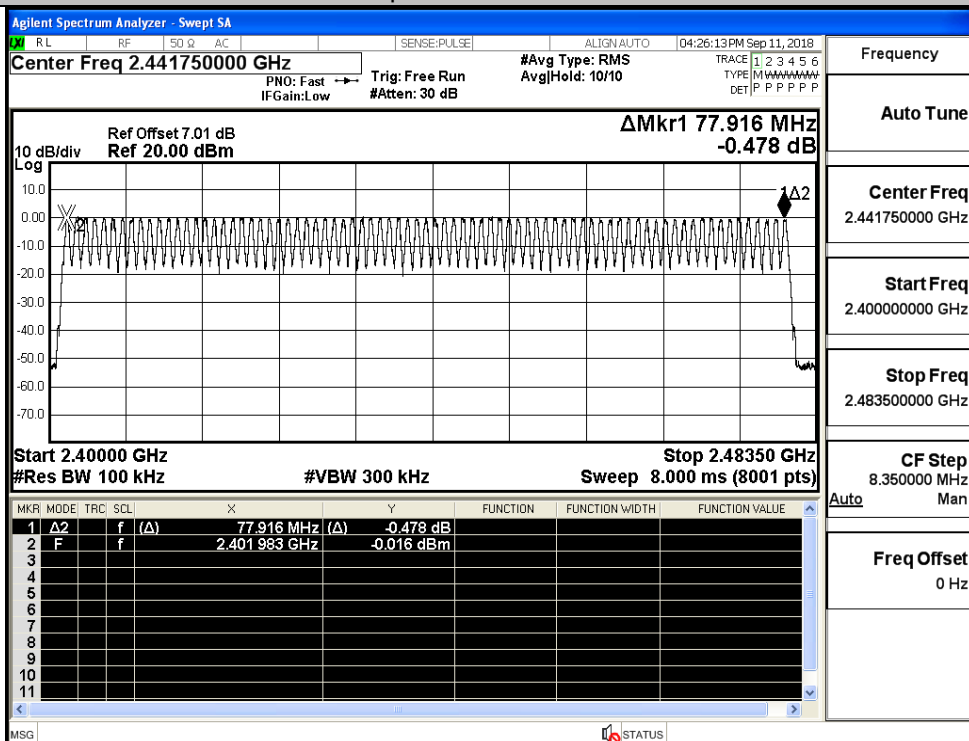
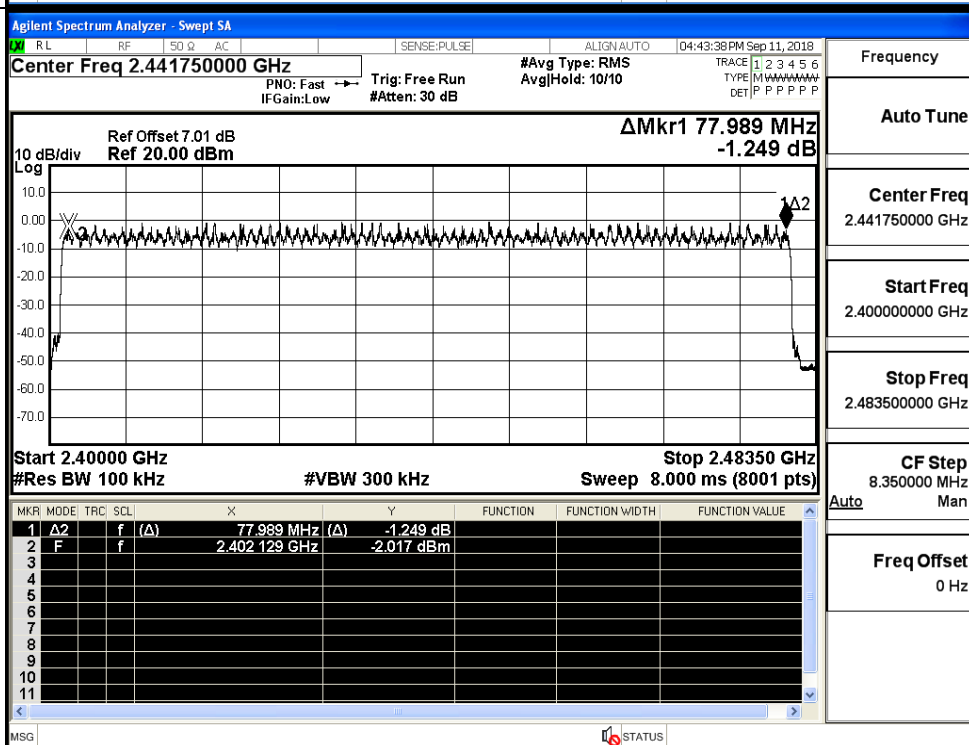
$\pi/4$ DQPSK/HCH

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

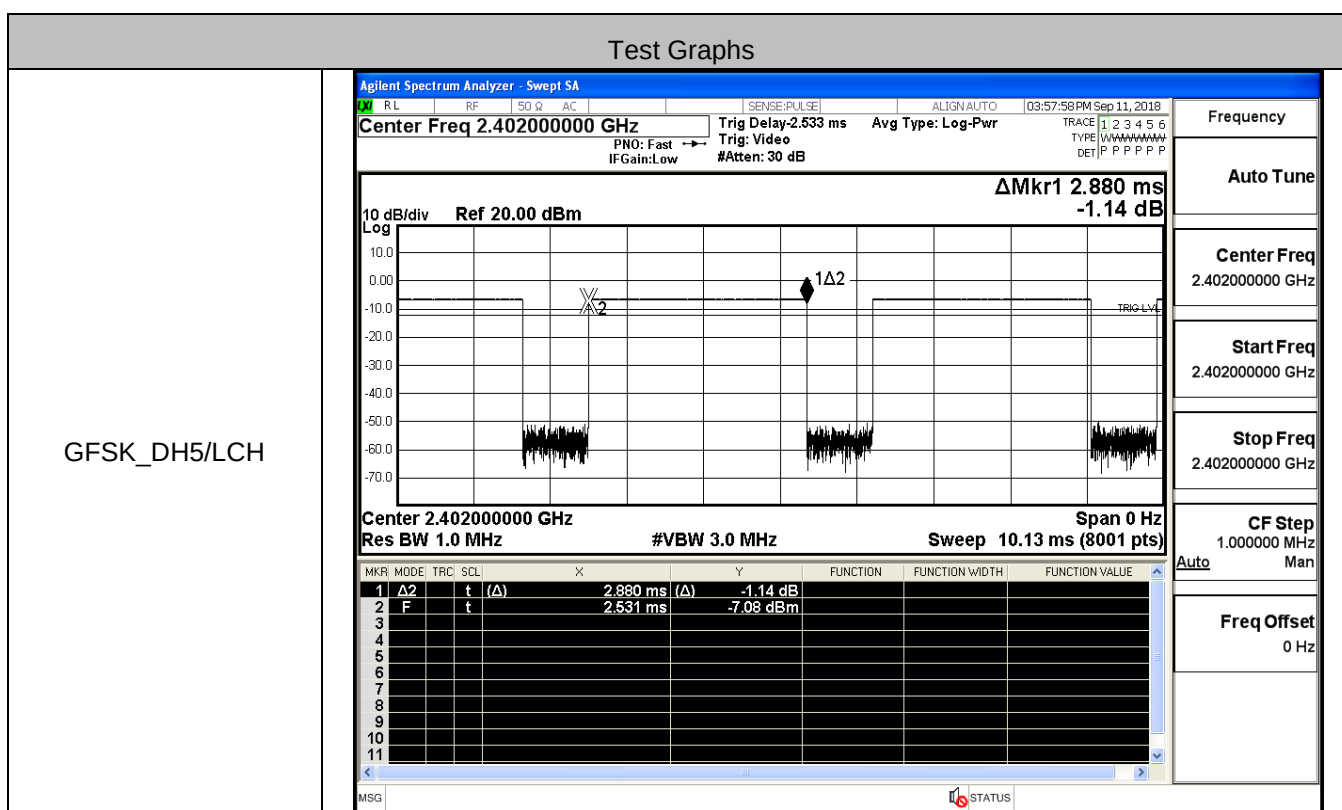
Test Graphs

GFSK/Hop

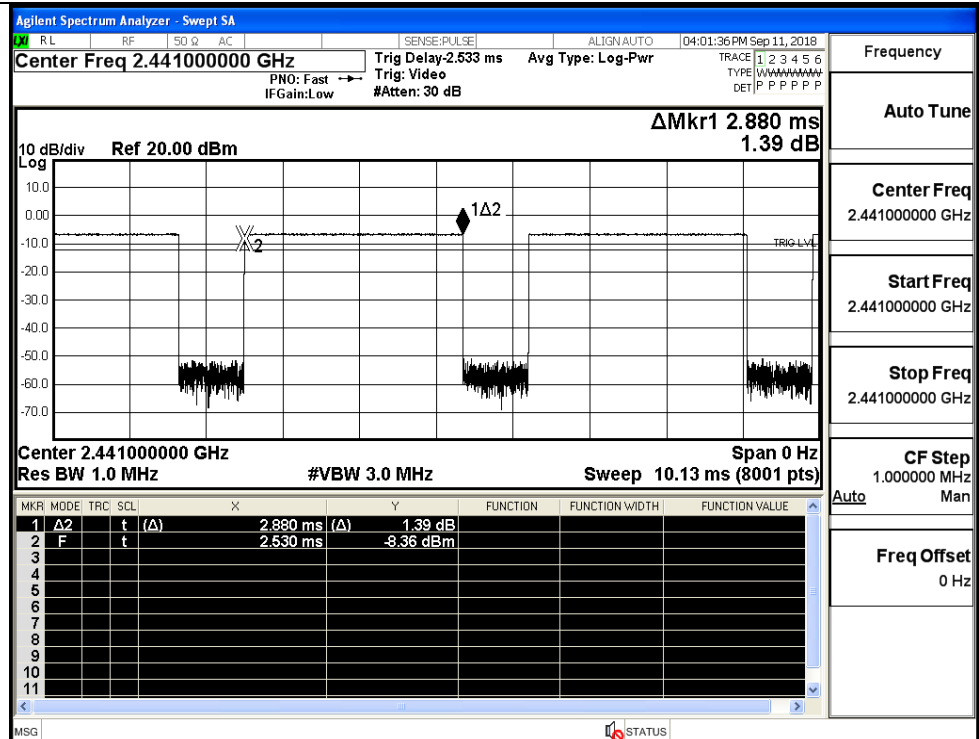
 $\pi/4$ DQPSK/Hop

A.5 Dwell Time

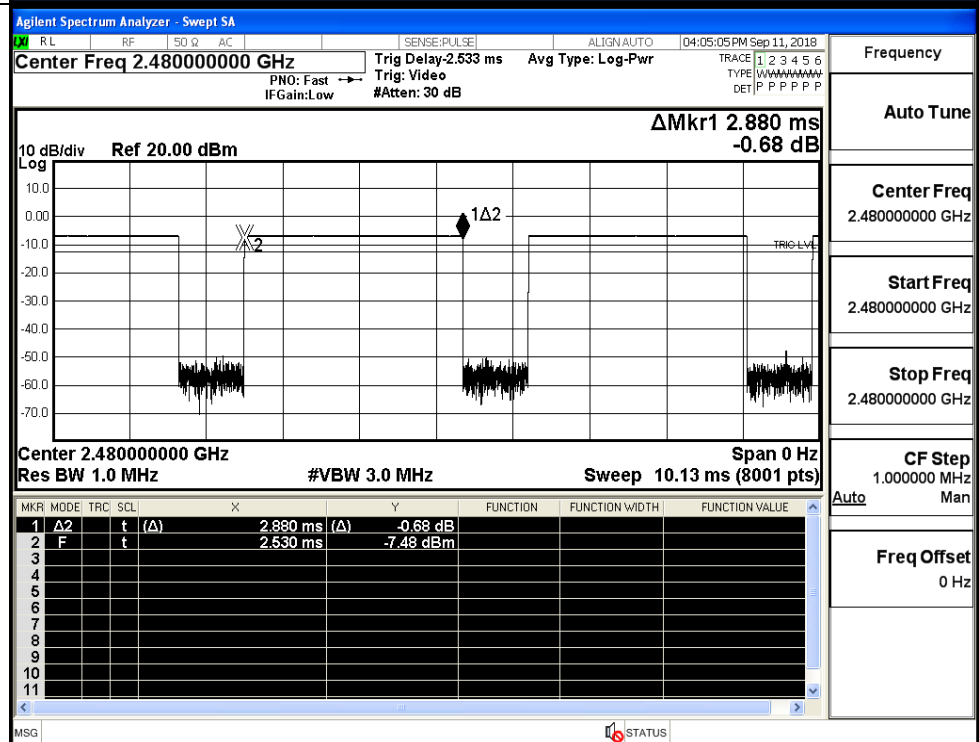
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88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



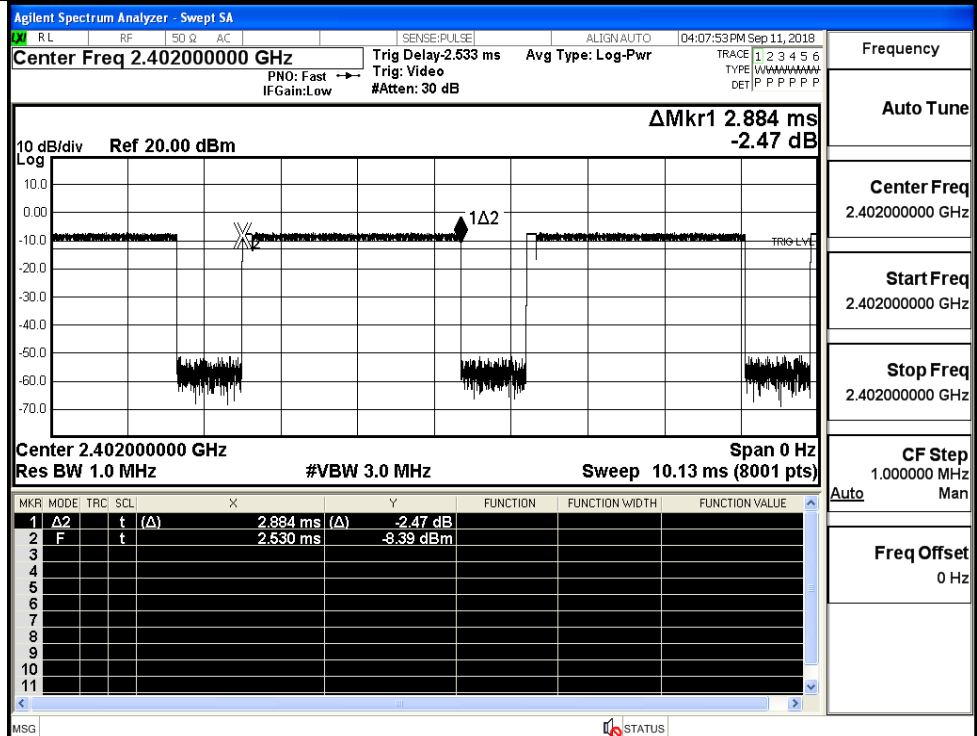
GFSK_DH5/MCH



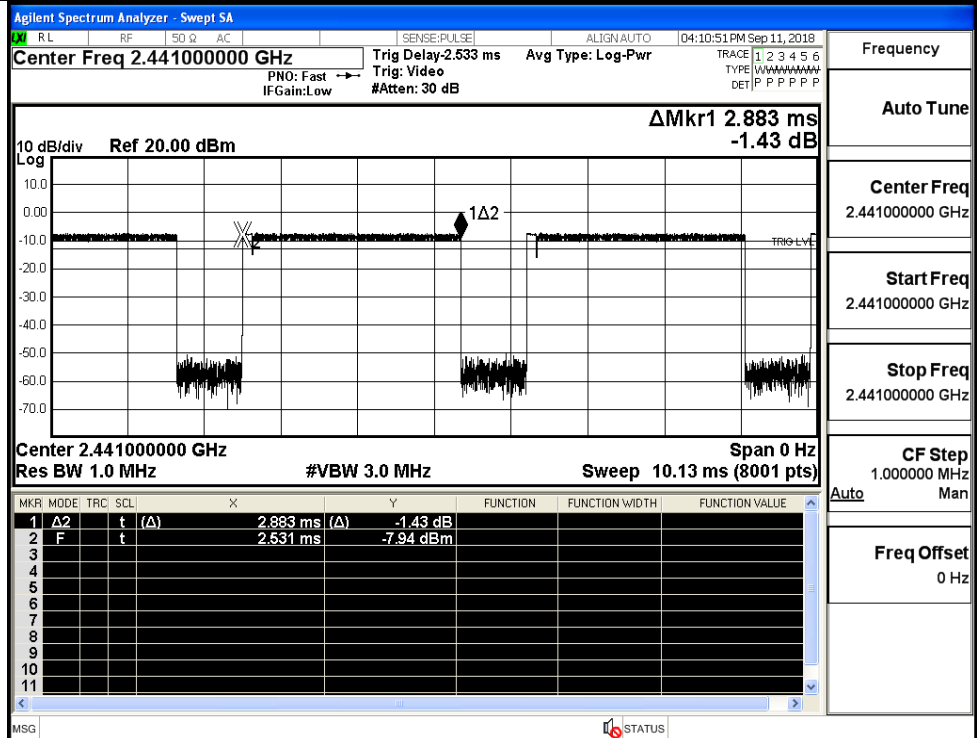
GFSK_DH5/HCH



$\pi/4$ DQPSK
_2DH5/LCH



$\pi/4$ DQPSK
_2DH5/MCH



Agilent Spectrum Analyzer - Swept SA

R L RF SQ Z AC SENSE:PULSE ALIGN AUTO 04:12:43 PM Sep 11, 2018

Center Freq 2.480000000 GHz Trig Delay-2.533 ms Avg Type: Log-Pwr
PNO: Fast → Trg: Video TYPE: W W W W W W W W
IF Gain: Low #Atten: 30 dB DET: P P P P P P

ΔMkr1 2.884 ms
-1.65 dB

10 dB/div Ref 20.00 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ2	t	(Δ)	2.884 ms	(Δ) -1.65 dB			
2	F	t		3.575 ms	-9.07 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

Center 2.480000000 GHz Sweep 10.13 ms (8001 pts)
Res BW 1.0 MHz #VBW 3.0 MHz

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

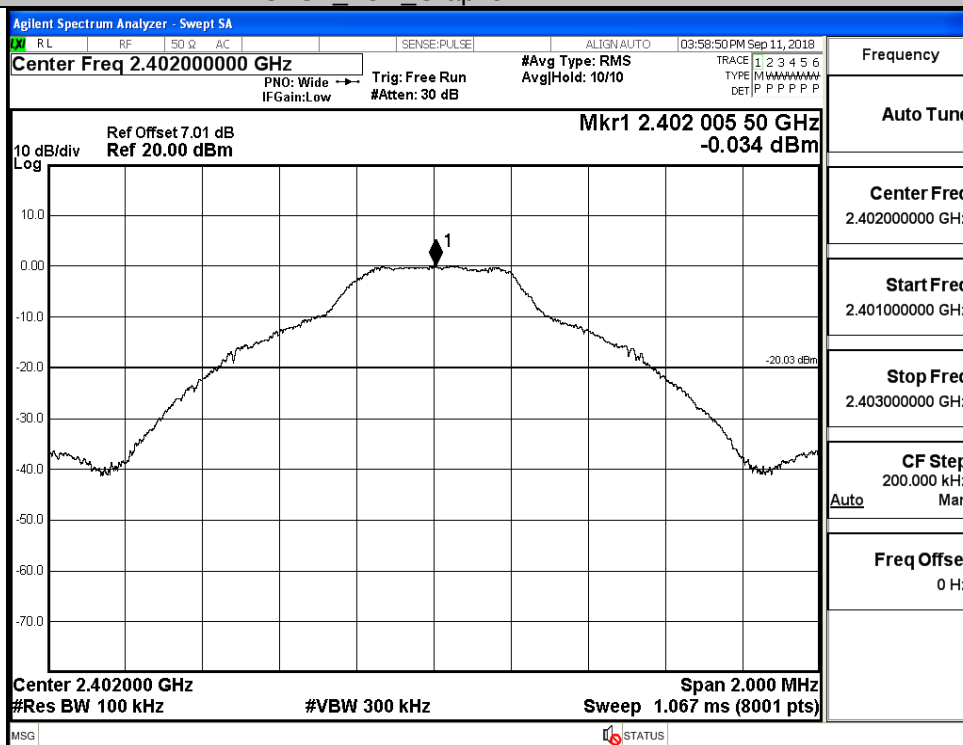
MSG STATUS

A.6 RF Conducted Spurious Emissions

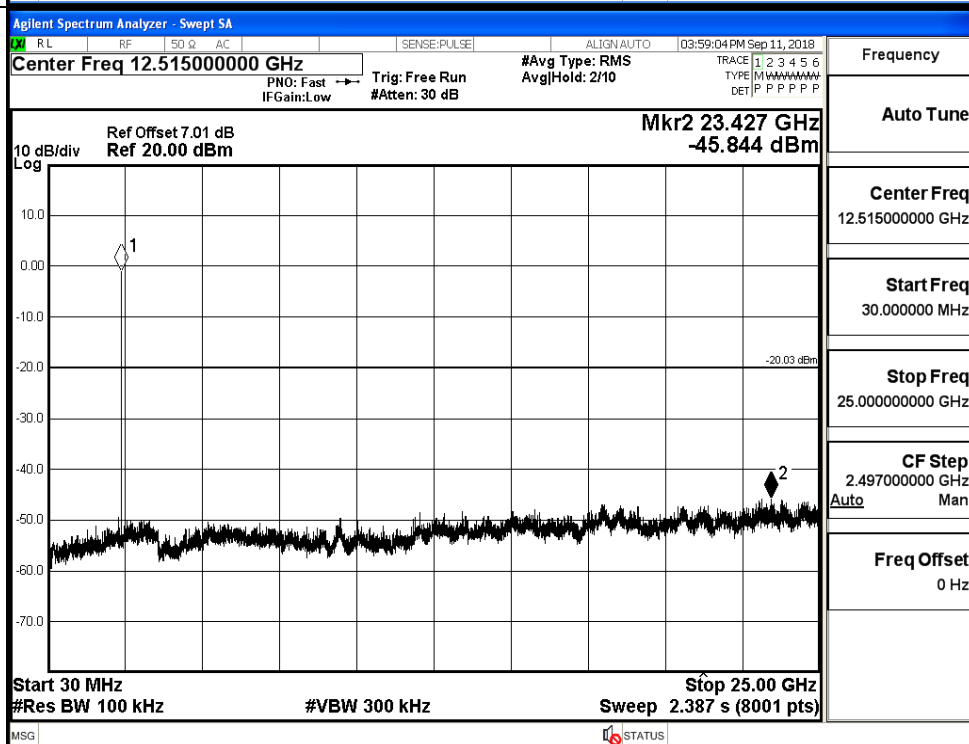
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.034	-45.844	-20.034	PASS
	MCH	0.364	-44.928	-19.636	PASS
	HCH	0.191	-45.107	-19.809	PASS
$\pi/4$ DQPSK	LCH	-0.987	-44.125	-20.987	PASS
	MCH	-0.842	-45.700	-20.842	PASS
	HCH	-0.935	-45.800	-20.935	PASS

GFSK LCH Graphs

Pref

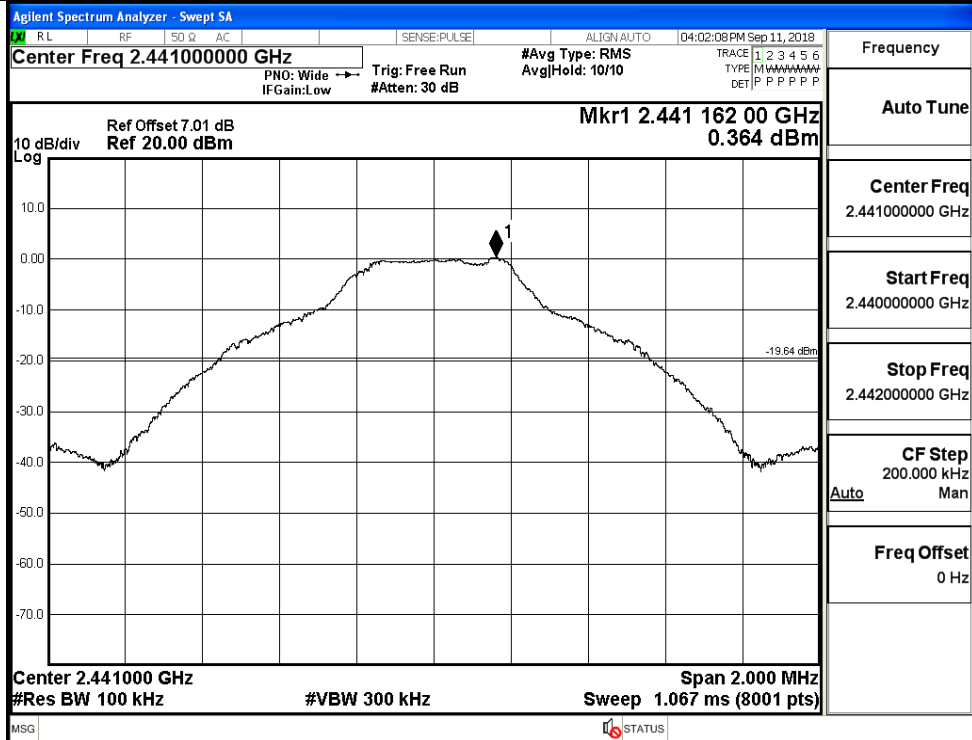


Puw

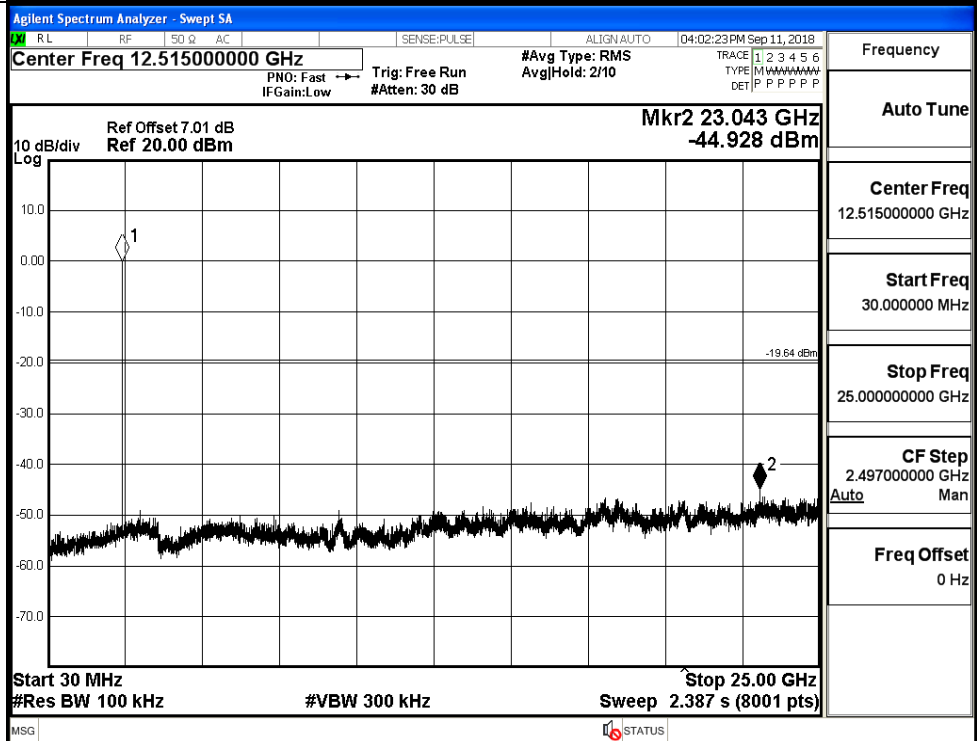


GFSK_MCH_Graphs

Pref

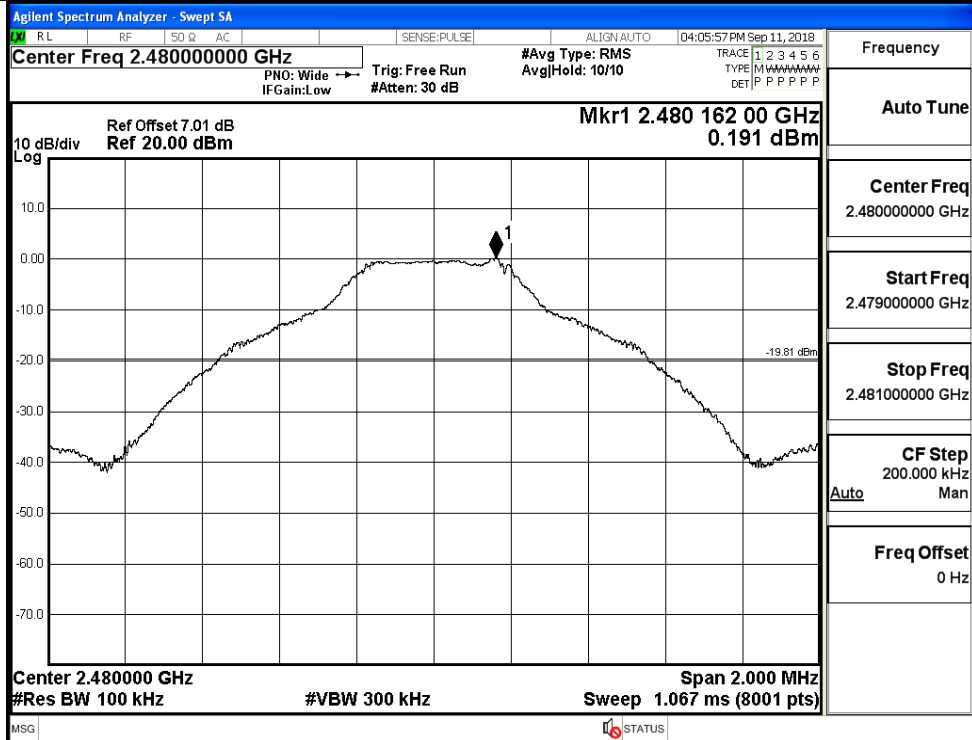


Puw

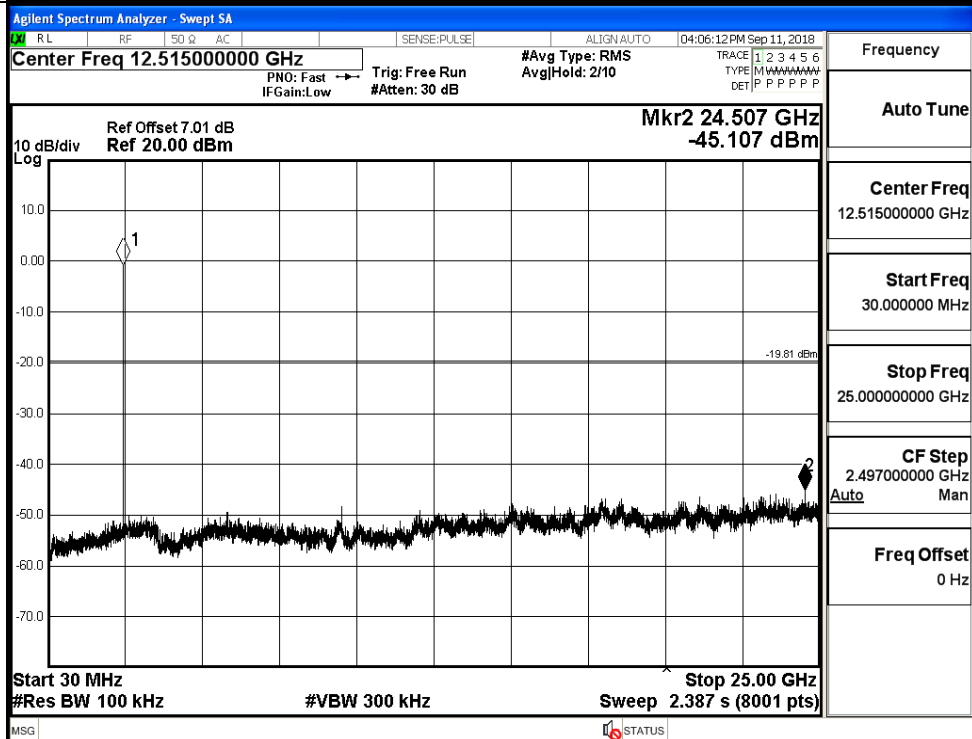


GFSK HCH_Graphs

Pref

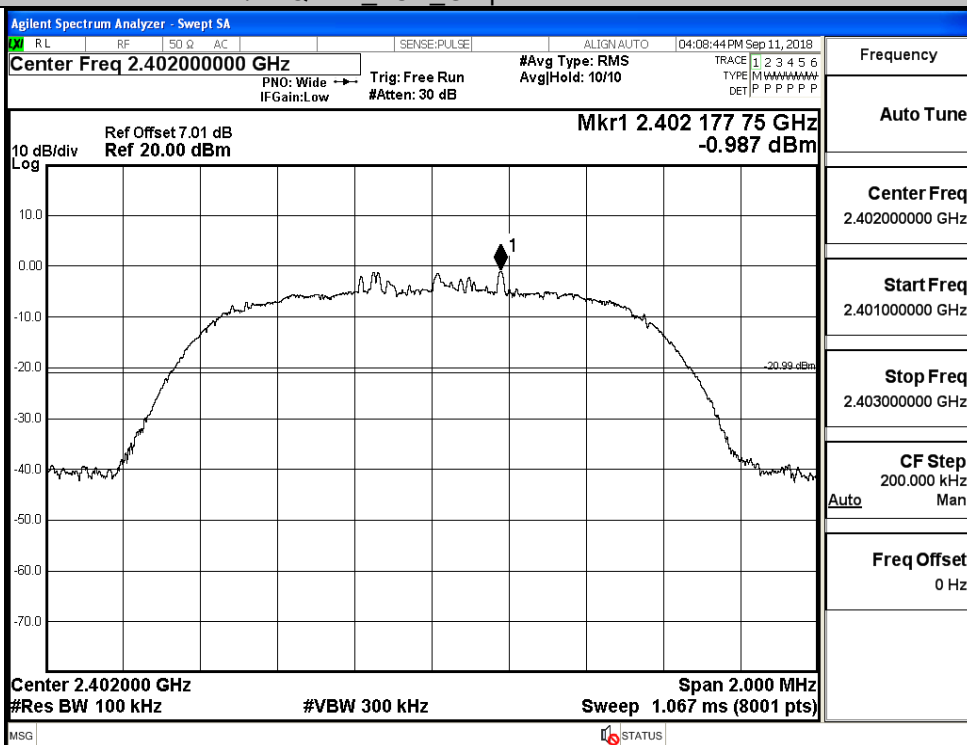


Puw

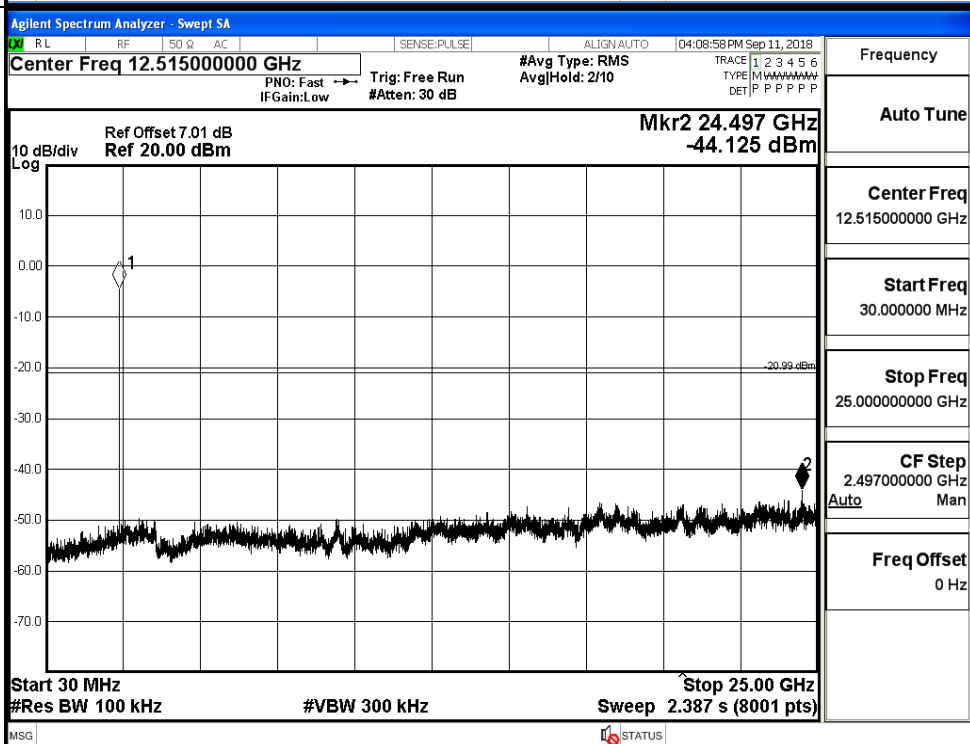


π /4DQPSK LCH_Graphs

Pref

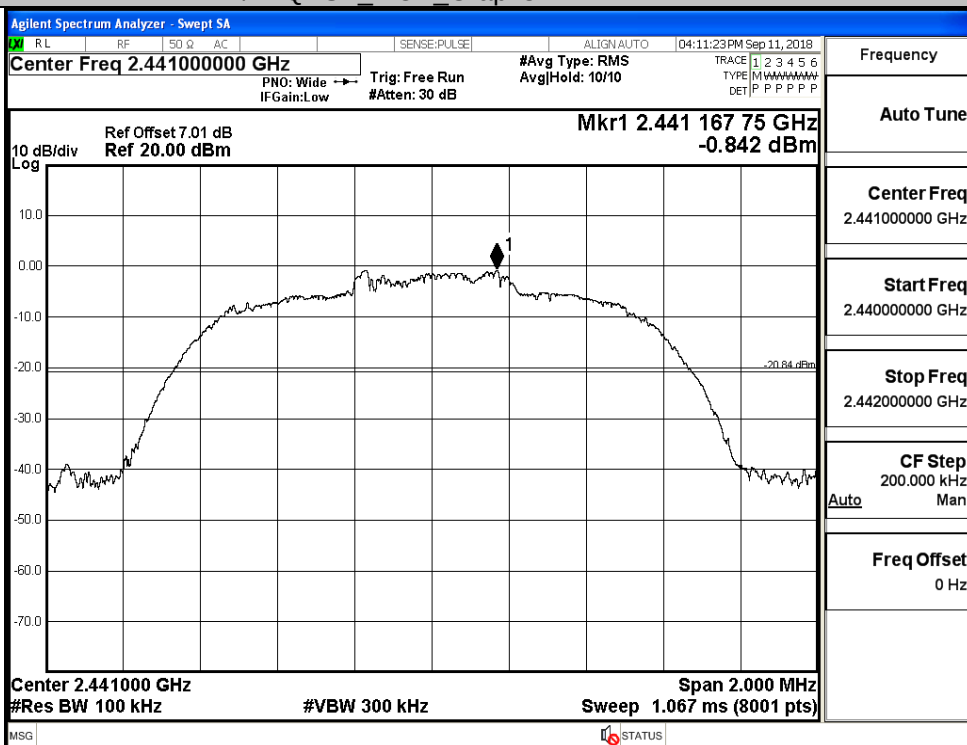


Puw

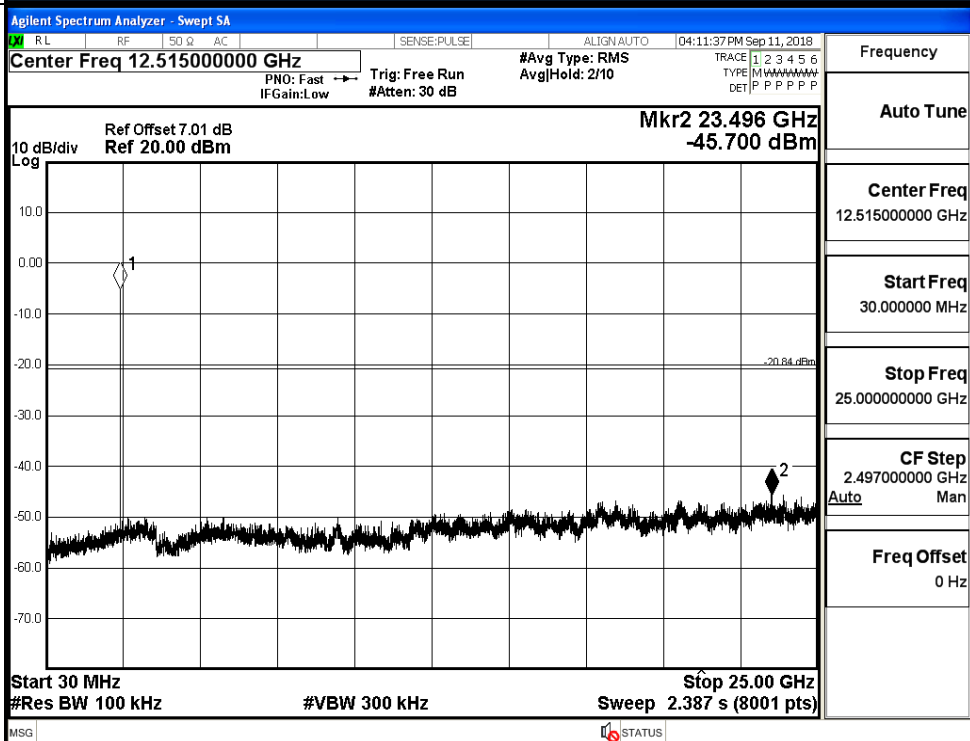


π /4DQPSK_MCH_Graphs

Pref

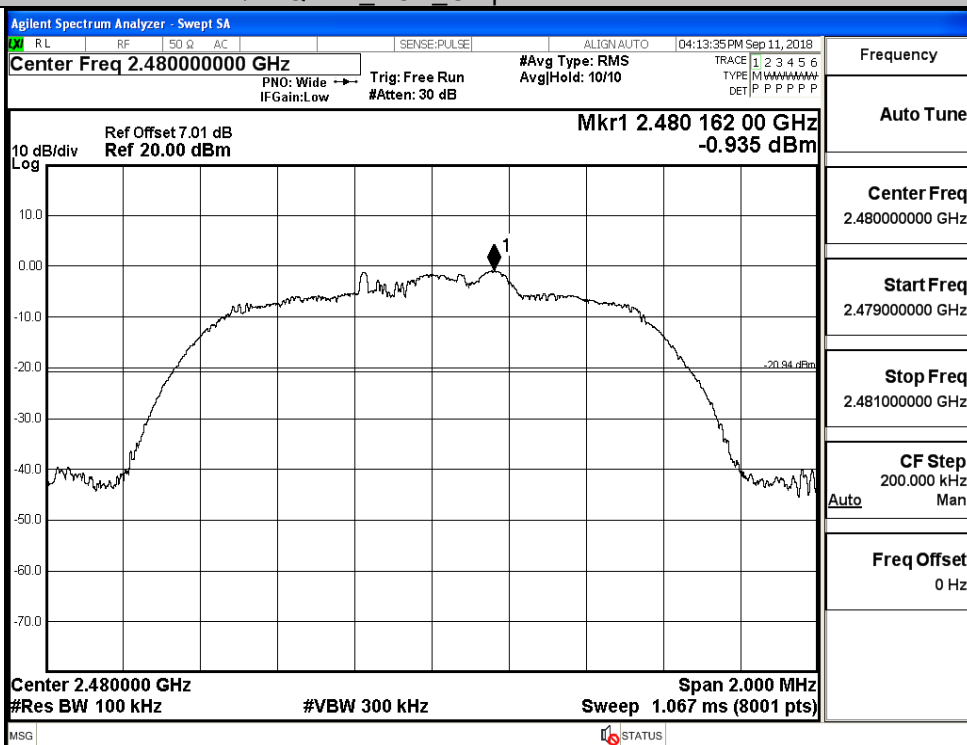


Puw

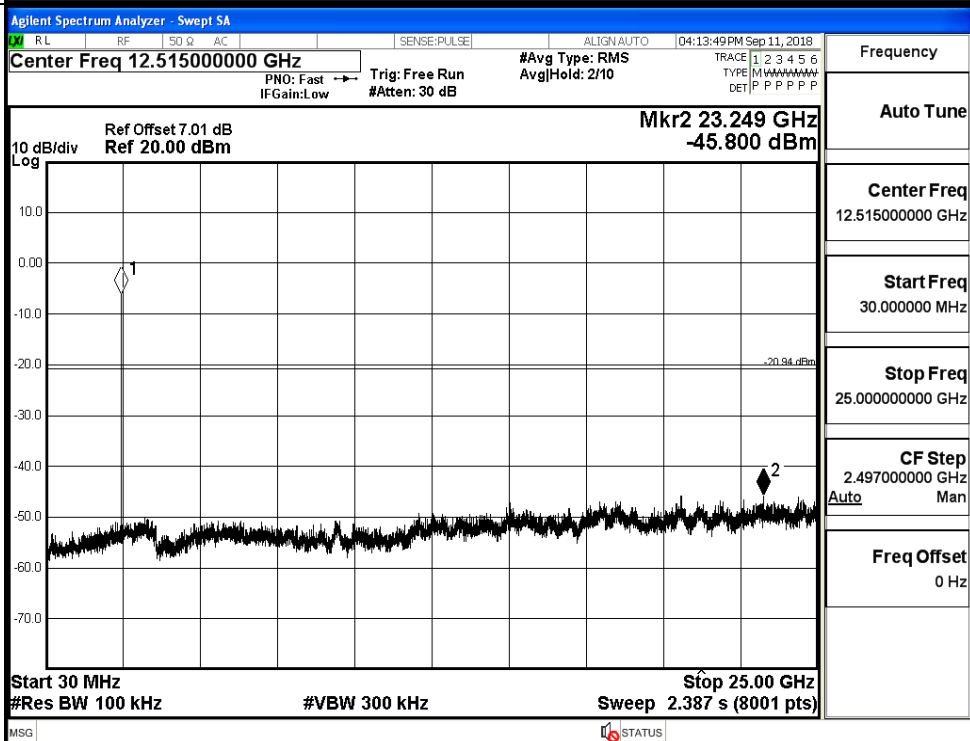


π /4DQPSK_HCH_Graphs

Pref



Puw

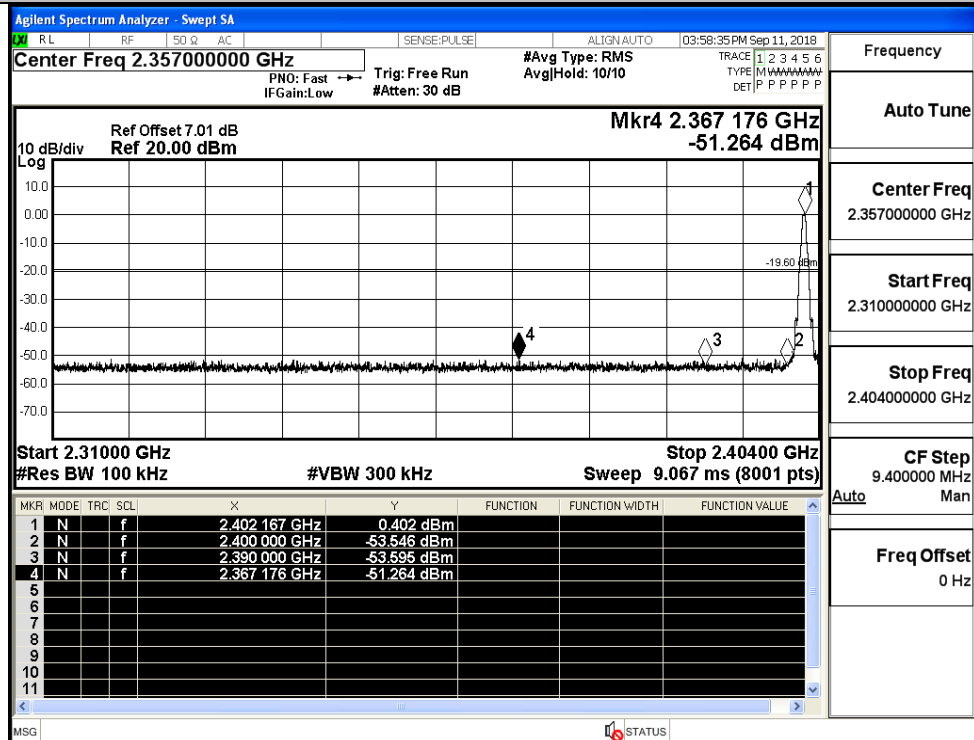


A.7 Band-edge for RF Conducted Emissions

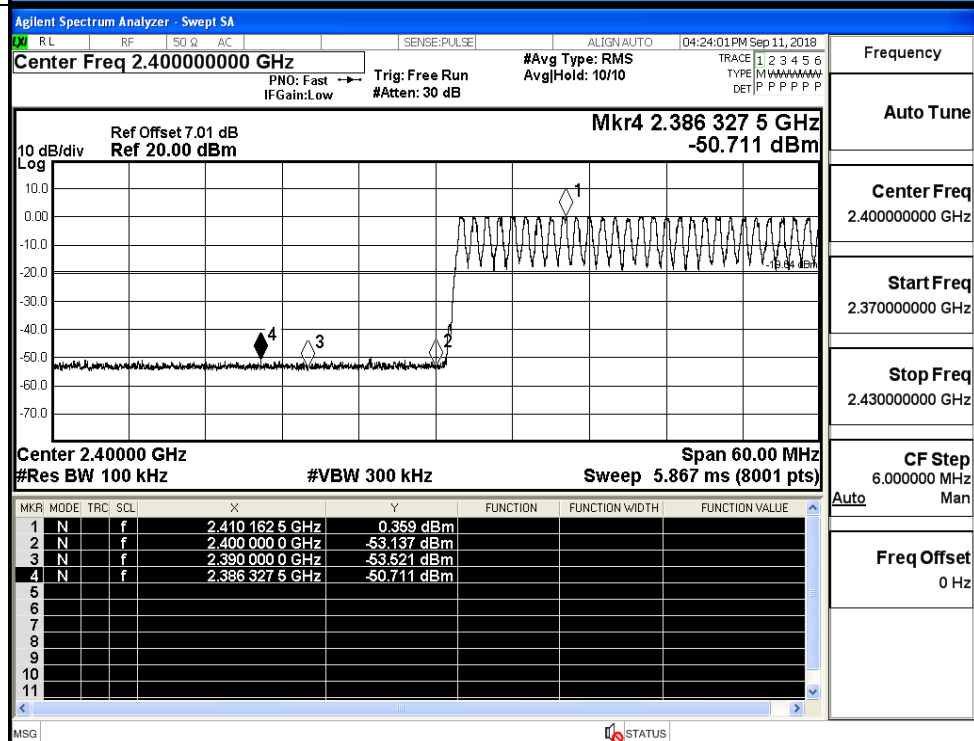
Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.402	Off	-51.264	-19.6	PASS
			0.359	On	-50.711	-19.64	PASS
	HCH	2480	0.159	Off	-50.825	-19.84	PASS
			0.092	On	-50.464	-19.91	PASS
$\pi/4$ DQPSK	LCH	2402	-0.498	Off	-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

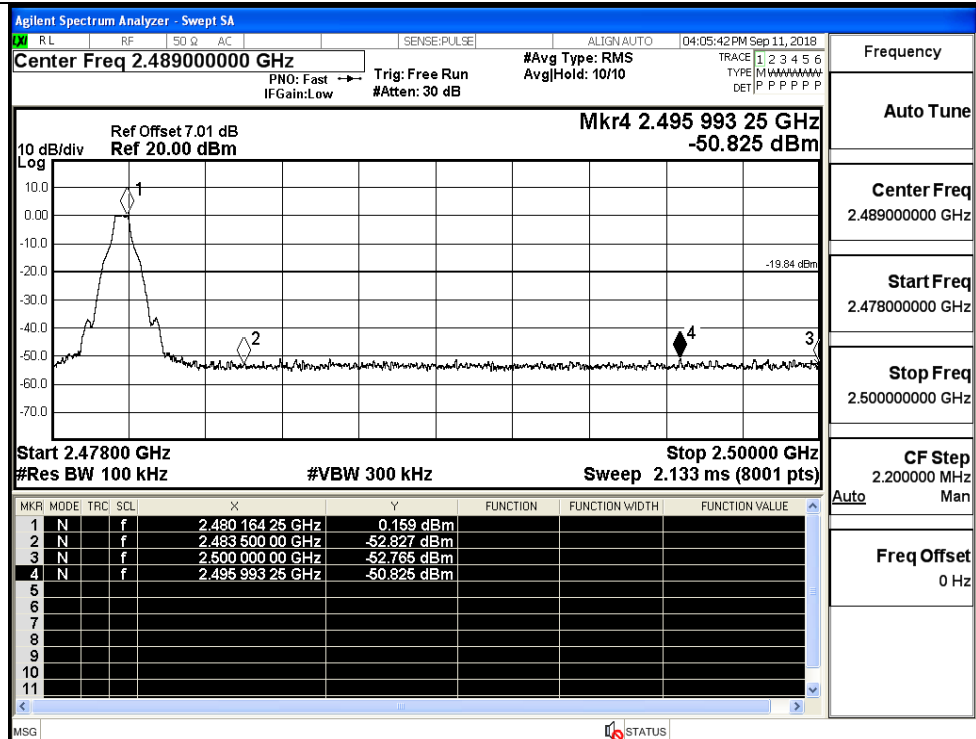
GFSK/LCH/No Hop



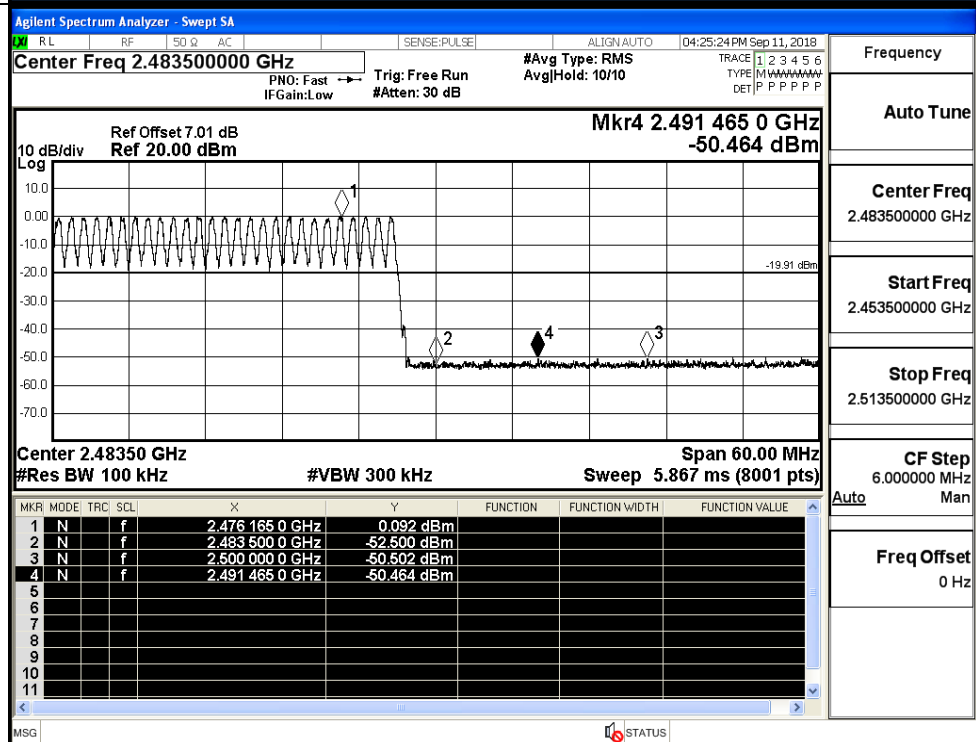
GFSK/LCH/Hop



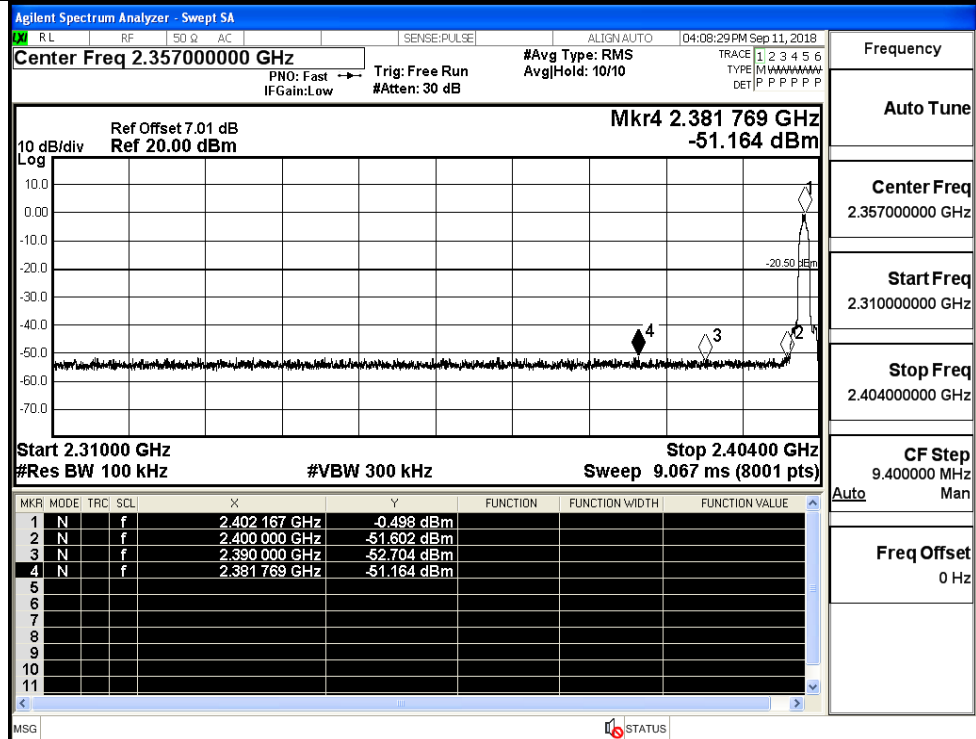
GFSK/HCH/No Hop



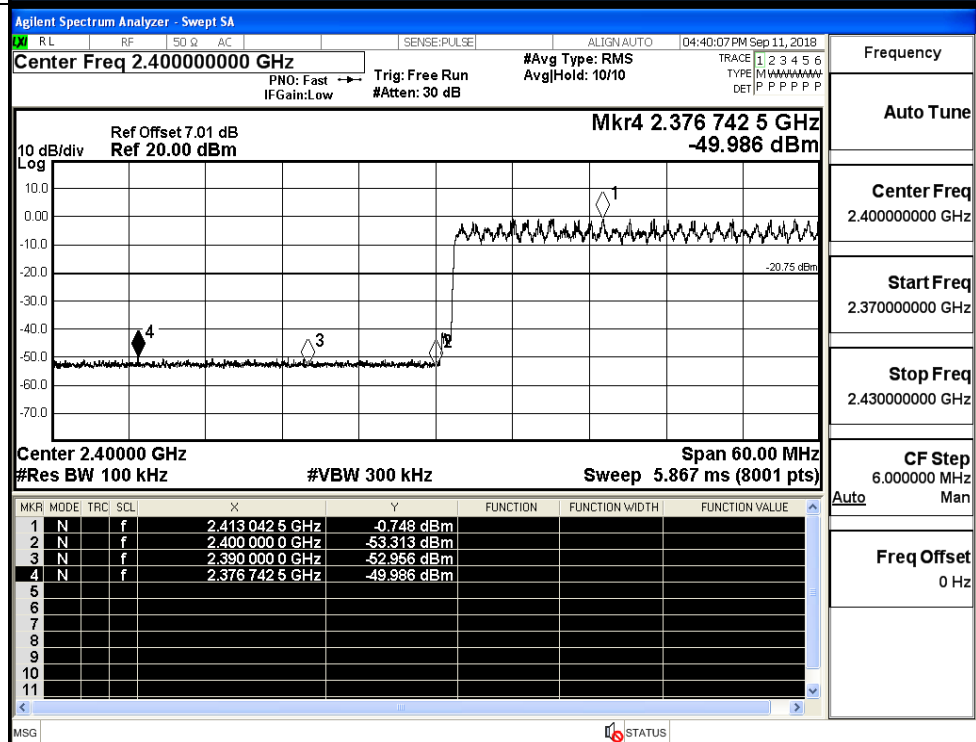
GFSK/HCH/Hop



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



$\pi/4$ DQPSK/LCH/Hop



Agilent Spectrum Analyzer - Swept SA

Center Freq 2.48900000 GHz

PNO: Fast → Trig: Free Run
IF Gain: Low #Atten: 30 dB

#Avg Type: RMS AvgHld: 10/10

ALIGN AUTO [04:13:20 PM Sep 11, 2018]

TRACE 1 2 3 4 5 6
TYPE M W A V I N N
DET P P P P P P

Frequency

Auto Tune

Center Freq
2.489000000 GHz

Start Freq
2.478000000 GHz

Stop Freq
2.500000000 GHz

CF Step
2.200000 MHz

Man

Freq Offset
0 Hz

Ref Offset 7.01 dB
Ref 20.00 dBm

Mkr4 2.489 310 75 GHz
-51.151 dBm

MKR	MODE	TAC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.480 029 50 GHz	-0.836 dBm			
2	N	f		2.483 500 00 GHz	-53.999 dBm			
3	N	f		2.500 000 00 GHz	-53.035 dBm			
4	N	f		2.489 310 75 GHz	-51.151 dBm			
5								
6								
7								
8								
9								
10								
11								

Start 2.47800 GHz
#Res BW 100 kHz

Stop 2.50000 GHz
Sweep 2.133 ms (8001 pts)

#VBW 300 kHz

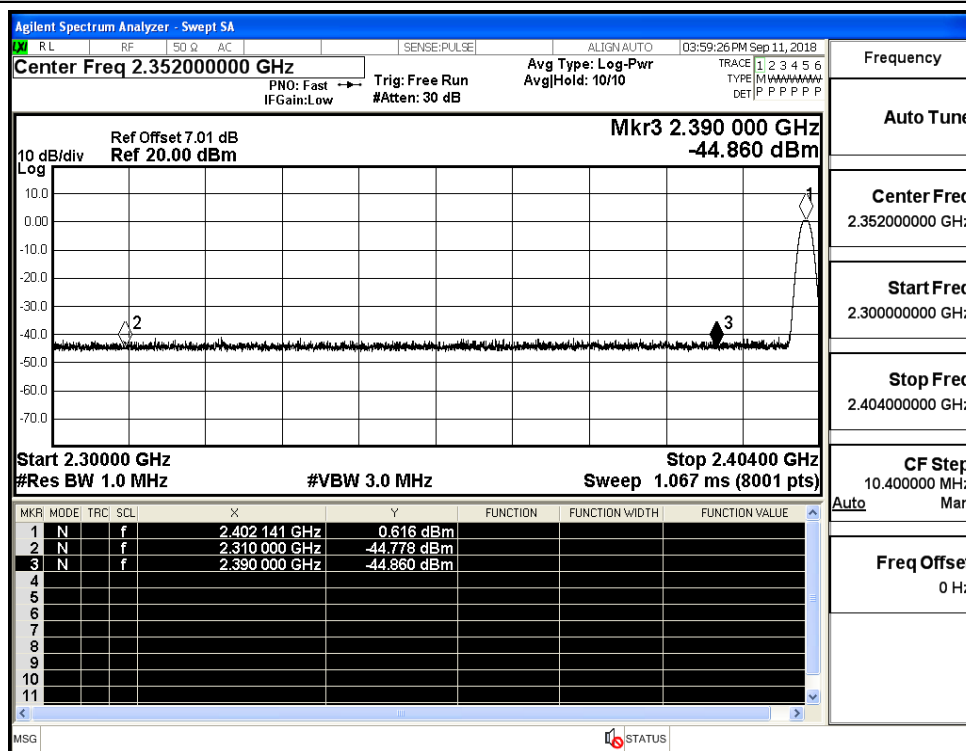
MSG STATUS

[illegible]

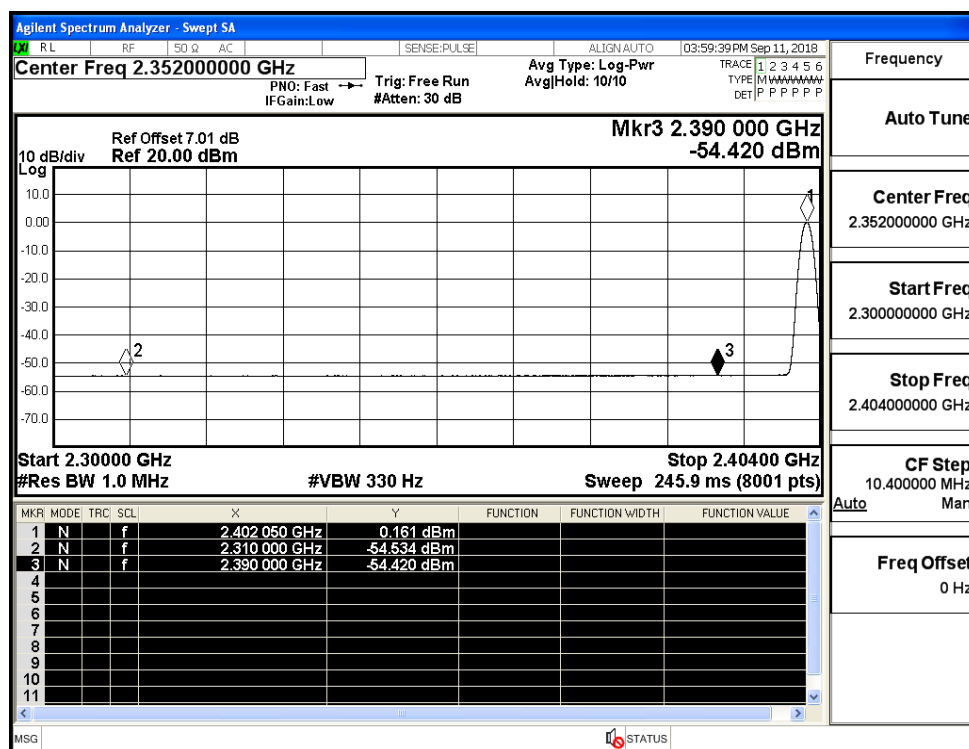
A.8 Restrict-band band-edge measurements

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

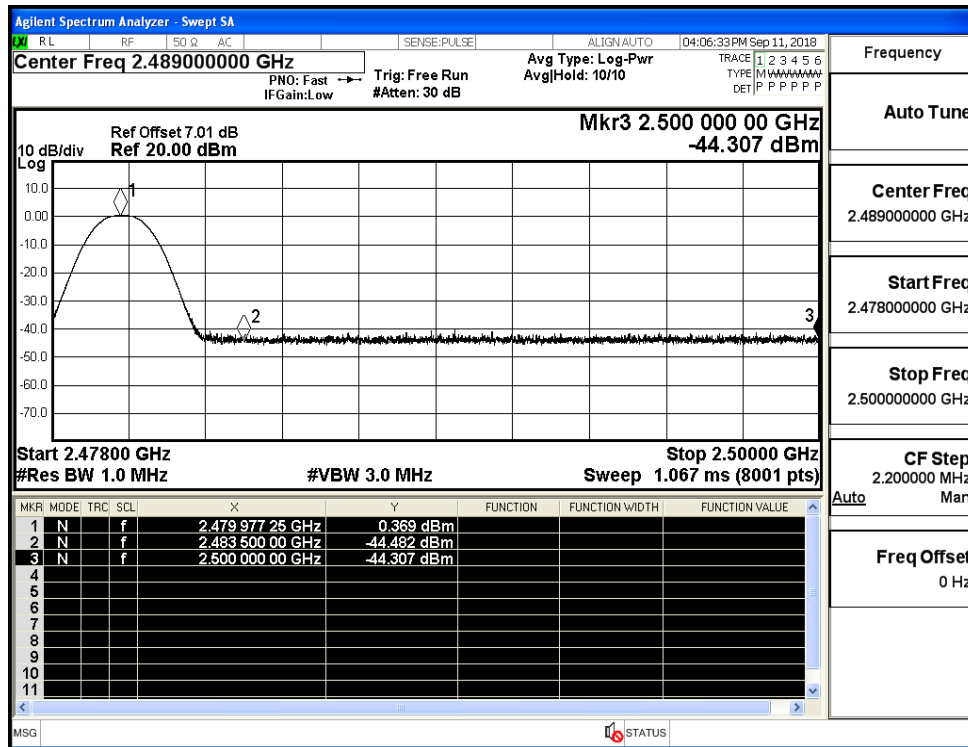
Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



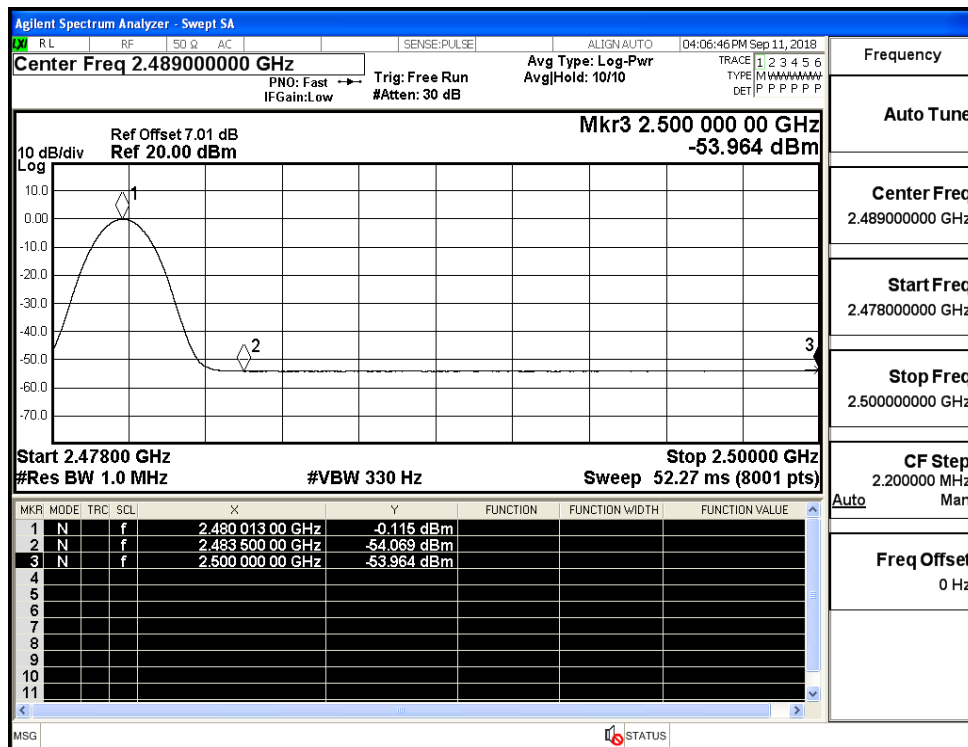
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)

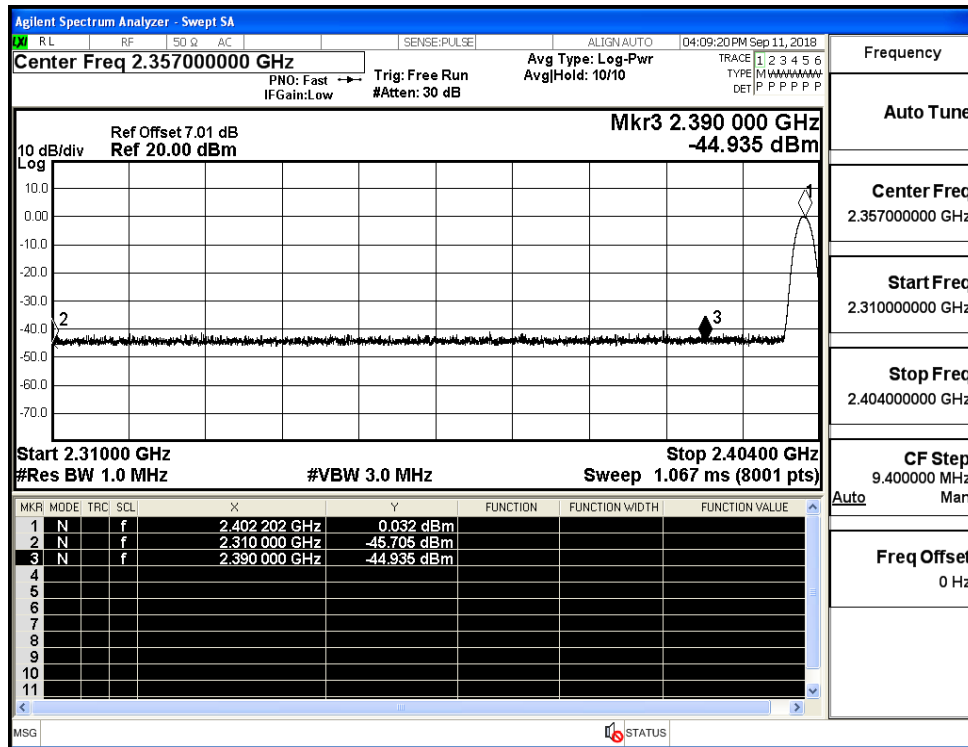
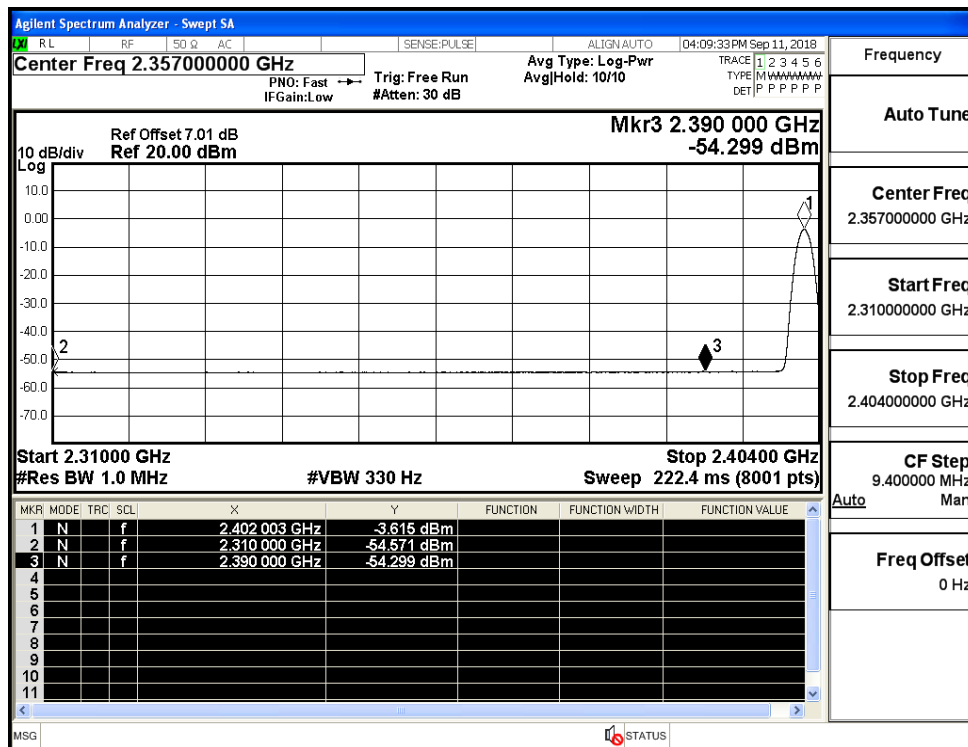


Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

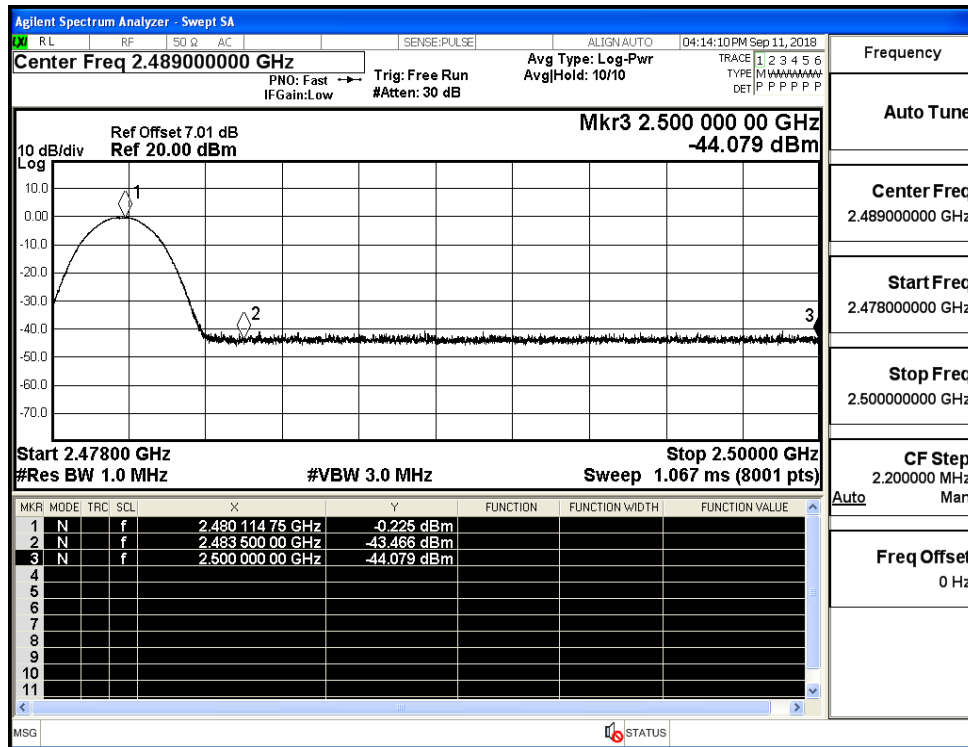


Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



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)

