

Appendix A
RF Test Data for BT(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Speaker

Trade Mark: MUZE/Vivitar

Test Model: MUZ5005

FCC ID: 2AL9B-MUZ5005

Environmental Conditions

Temperature:	23.6° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

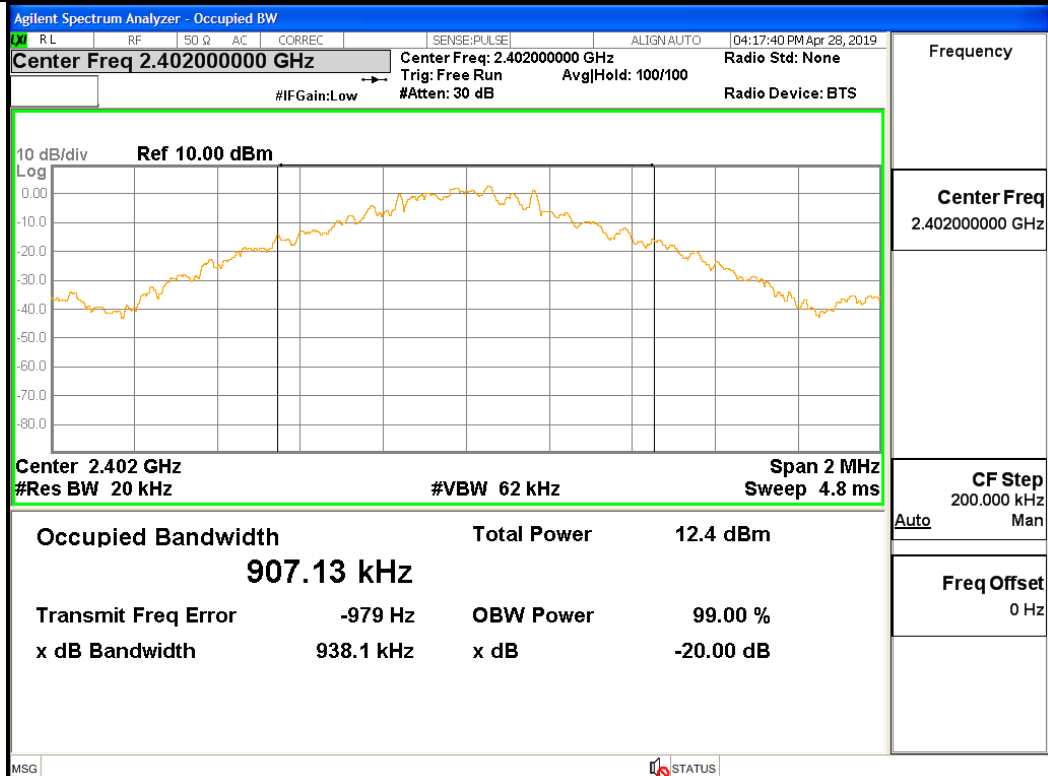
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.938	Not Specified	PASS
GFSK	MCH	0.957	Not Specified	PASS
GFSK	HCH	1.007	Not Specified	PASS
$\pi/4$ DQPSK	LCH	0.961	Not Specified	PASS
$\pi/4$ DQPSK	MCH	0.957	Not Specified	PASS
$\pi/4$ DQPSK	HCH	0.947	Not Specified	PASS
8DPSK	LCH	1.306	Not Specified	PASS
8DPSK	MCH	1.274	Not Specified	PASS
8DPSK	HCH	1.292	Not Specified	PASS

Test Graph

Graphs

GFSK/LCH



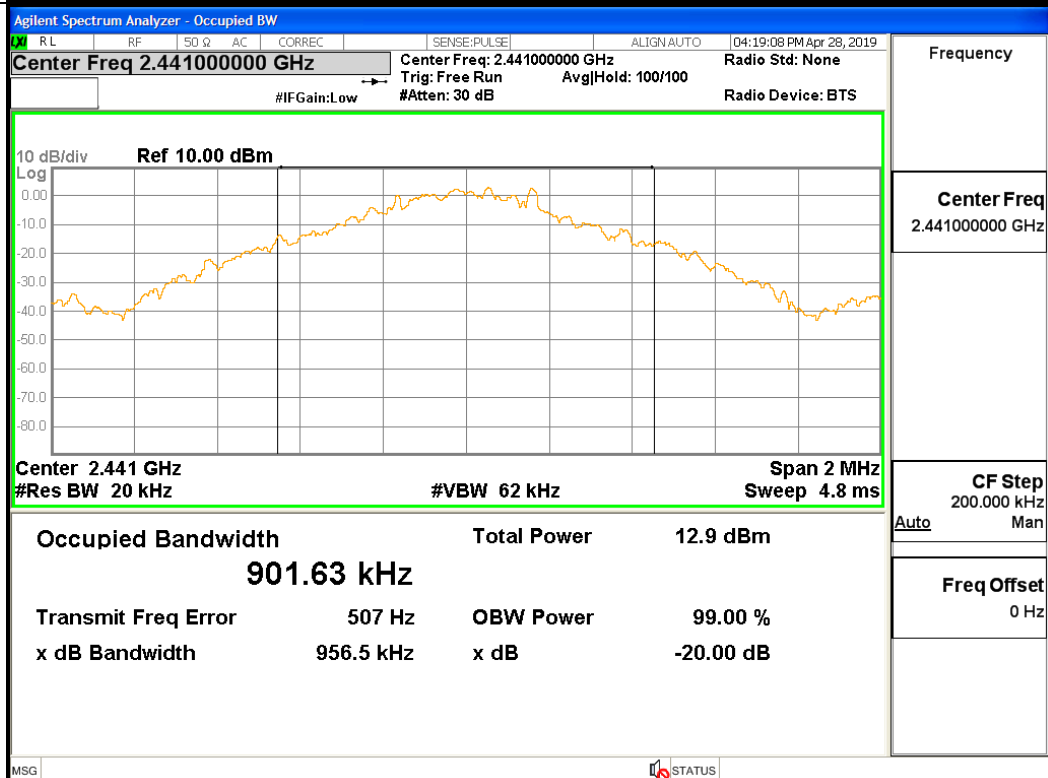
Frequency

Center Freq
2.40200000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

GFSK/MCH

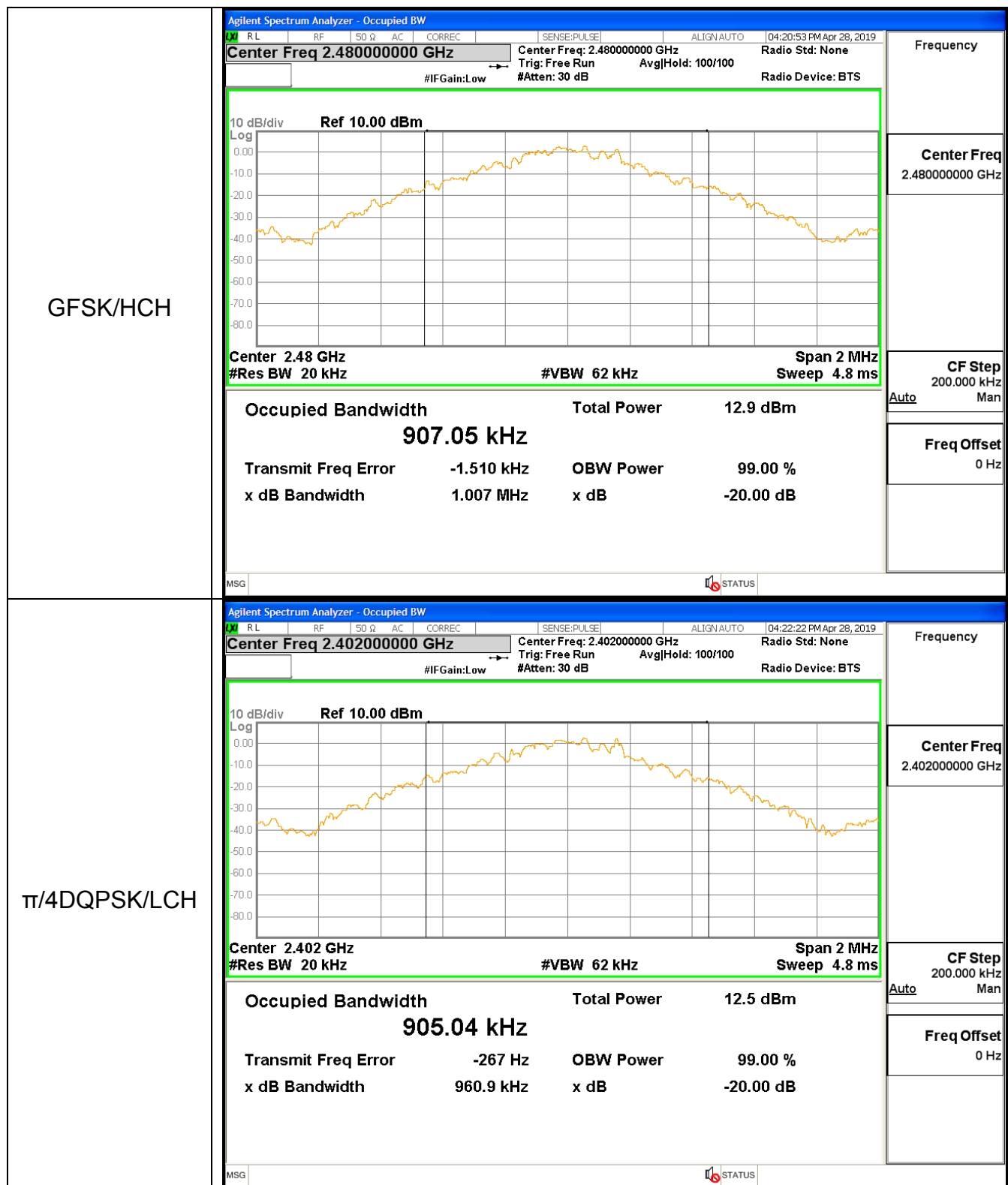


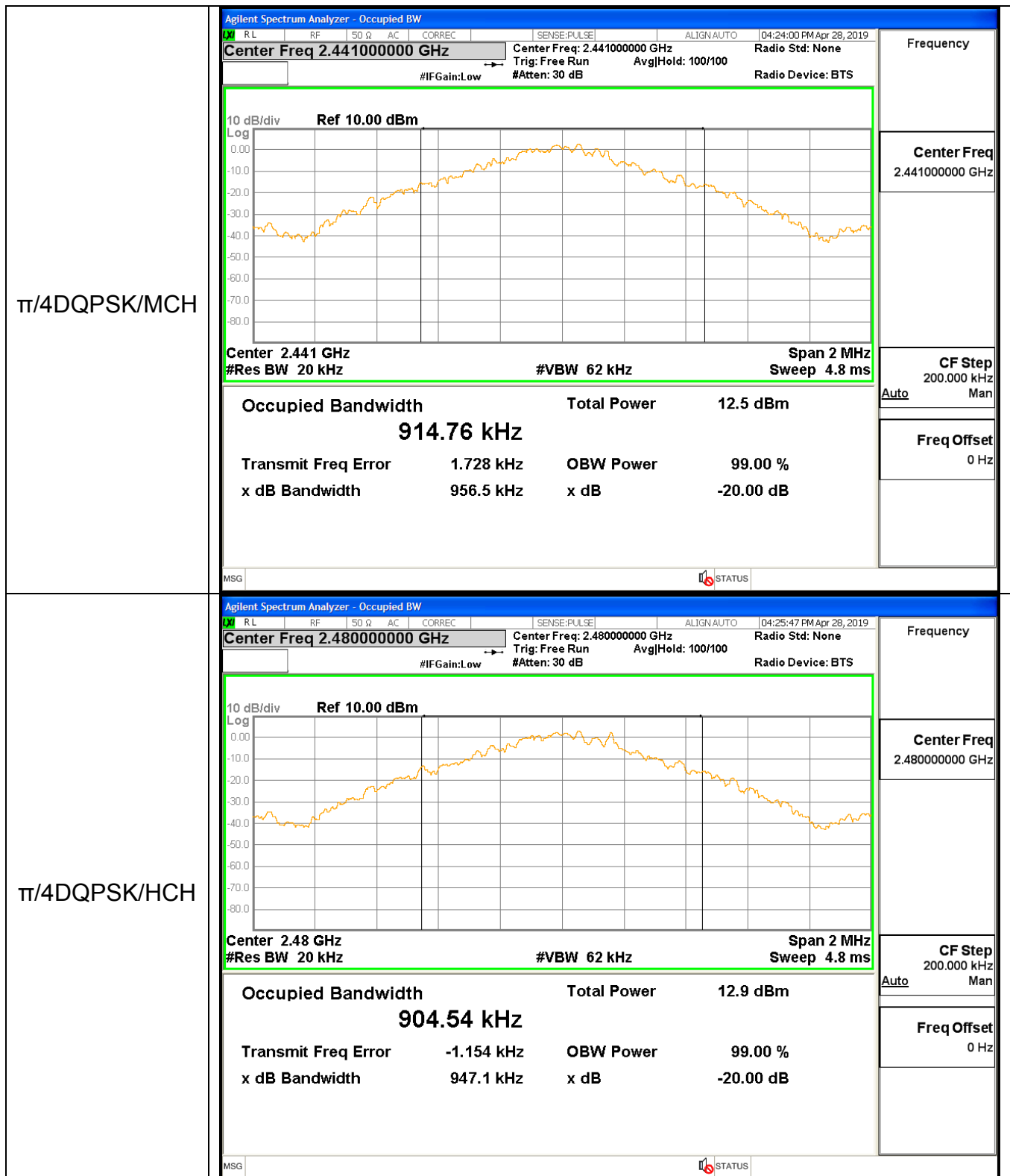
Frequency

Center Freq
2.44100000 GHz

CF Step
200.000 kHz
Auto Man

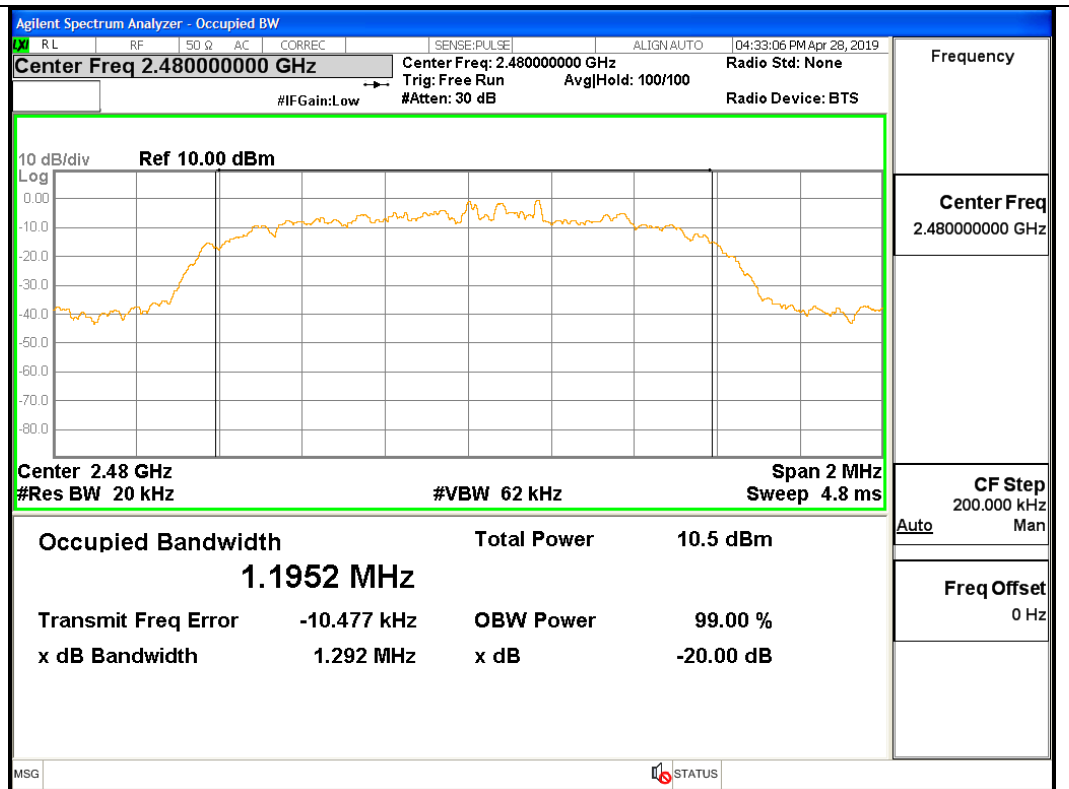
Freq Offset
0 Hz







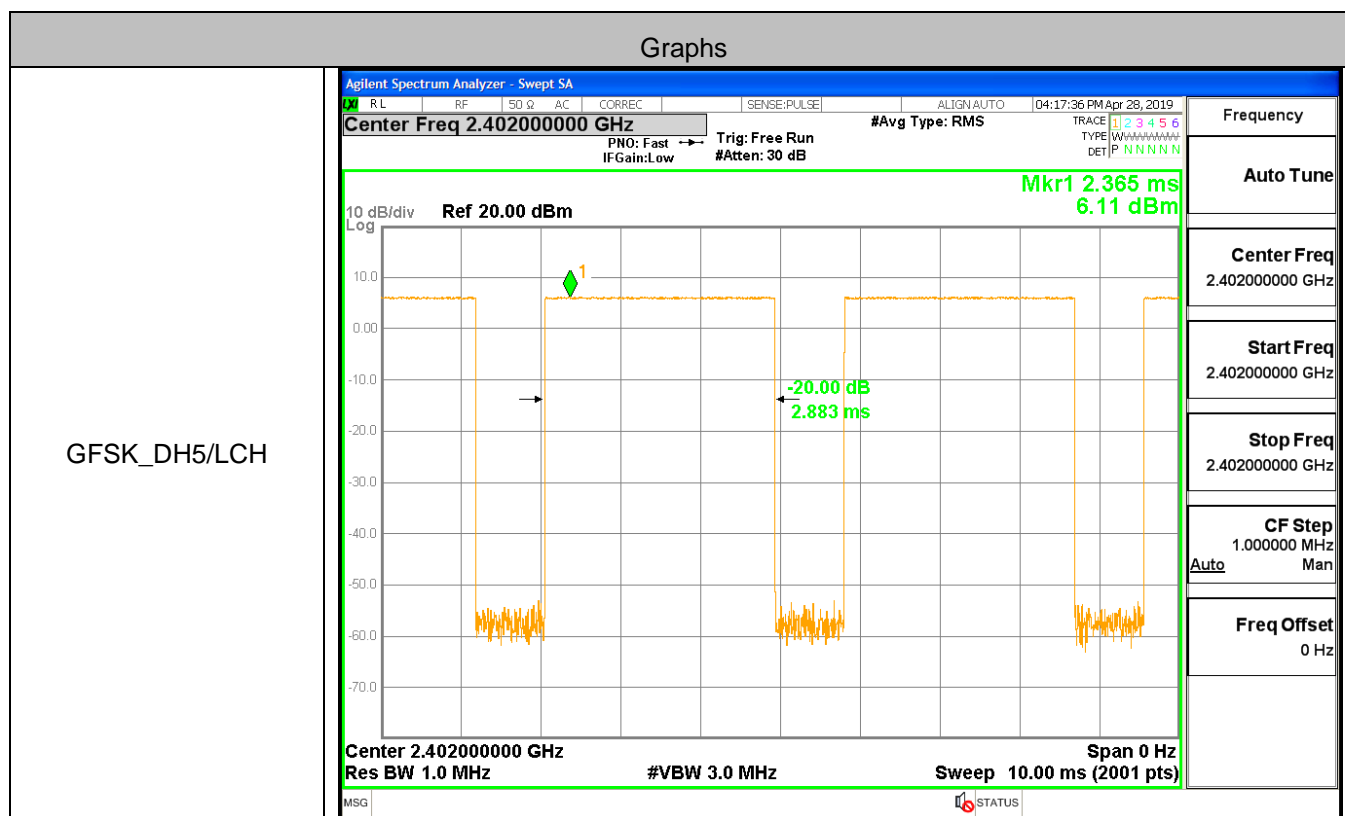
8DPSK/HCH



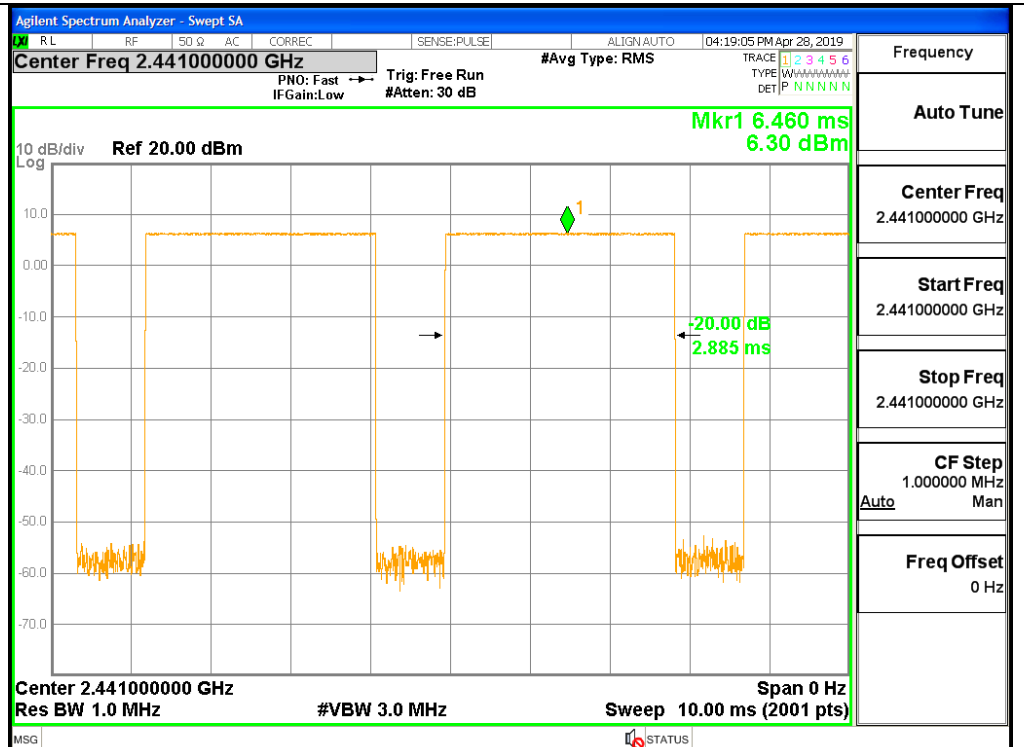
A.2 Dwell Time

Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002883	106.7	0.307597	0.4	PASS
GFSK	DH5	MCH	0.002885	106.7	0.307834	0.4	PASS
GFSK	DH5	HCH	0.002882	106.7	0.307541	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002883	106.7	0.307599	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002883	106.7	0.307602	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002885	106.7	0.307785	0.4	PASS
8DPSK	3DH5	LCH	0.002888	106.7	0.308126	0.4	PASS
8DPSK	3DH5	MCH	0.002888	106.7	0.308119	0.4	PASS
8DPSK	3DH5	HCH	0.002883	106.7	0.307568	0.4	PASS

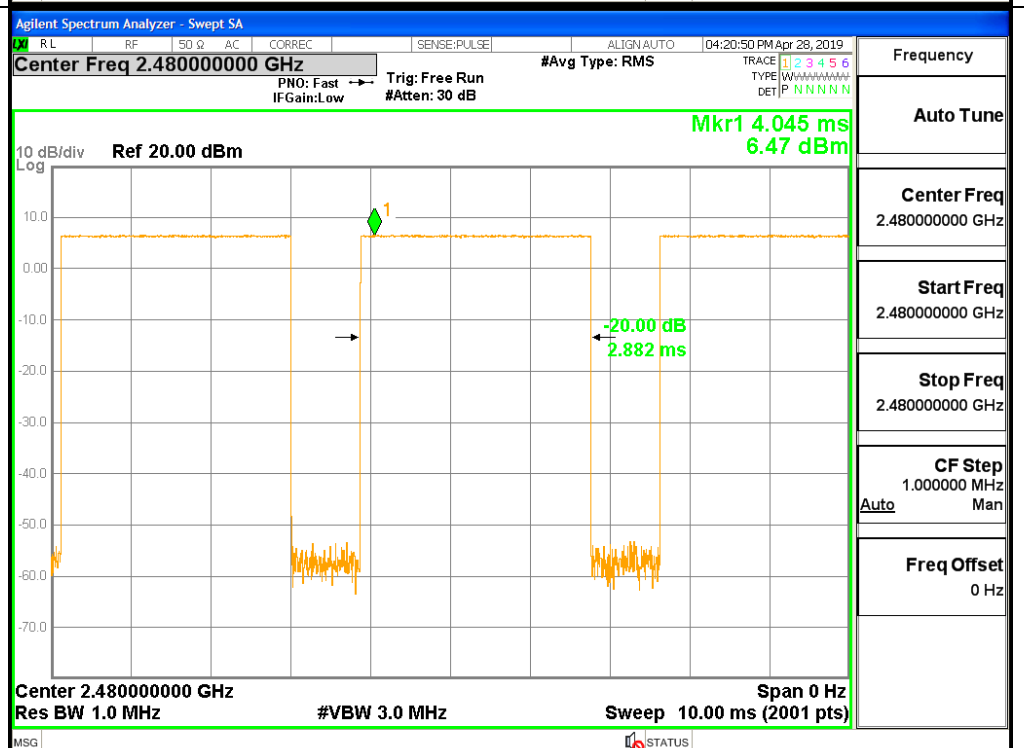
Test Graph



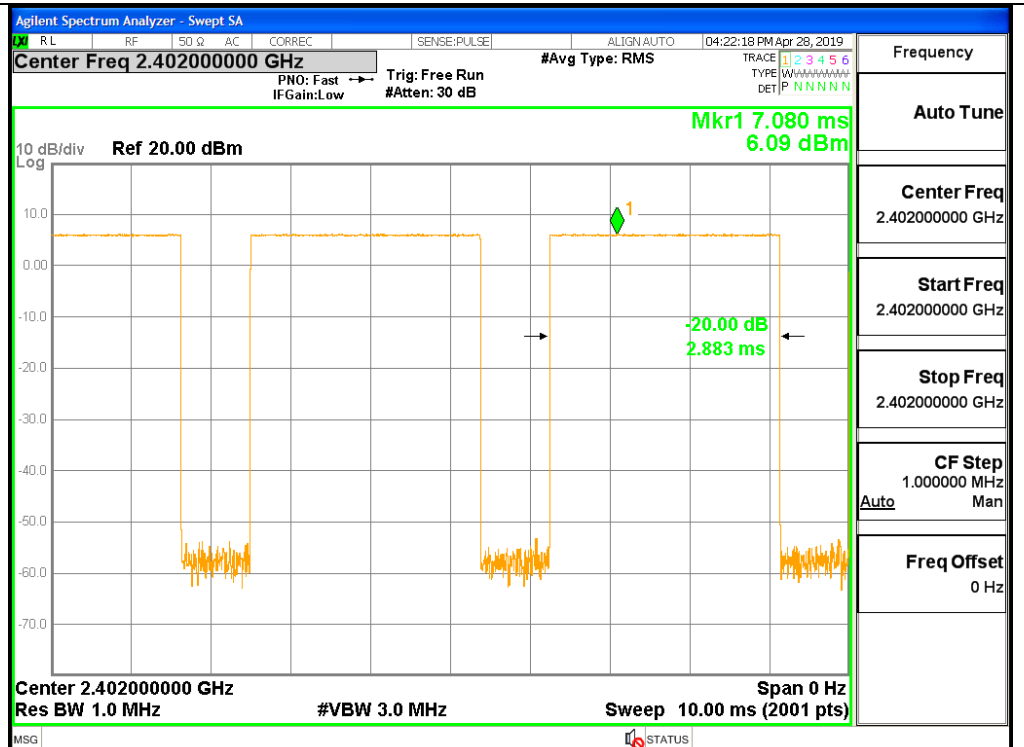
GFSK_DH5/MCH



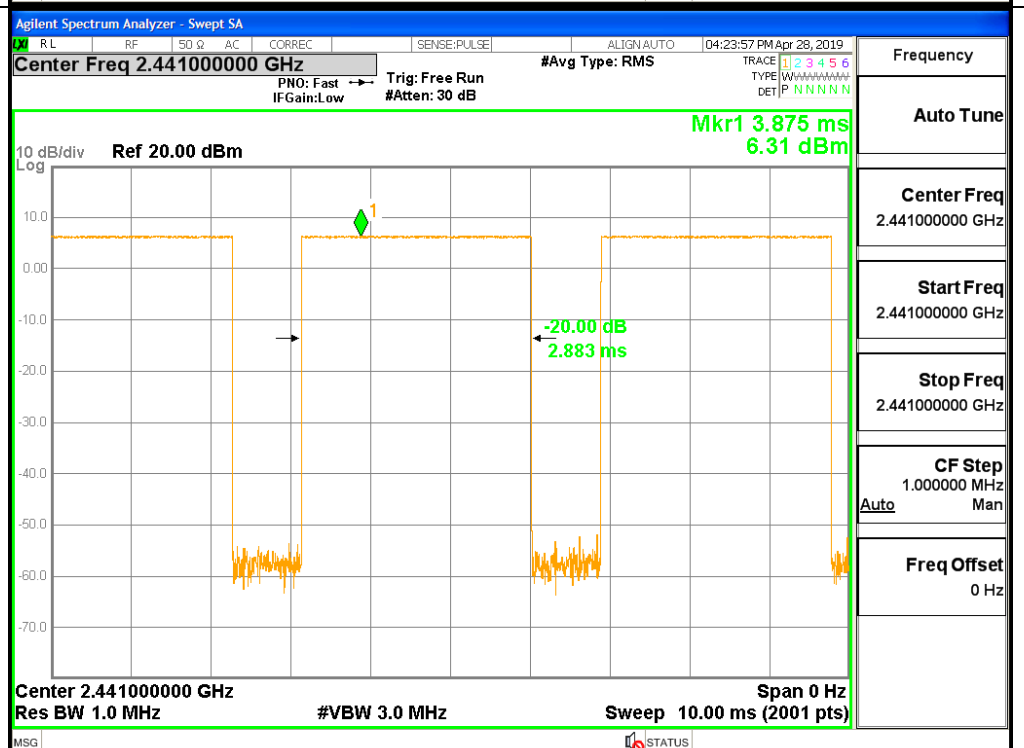
GFSK_DH5/HCH



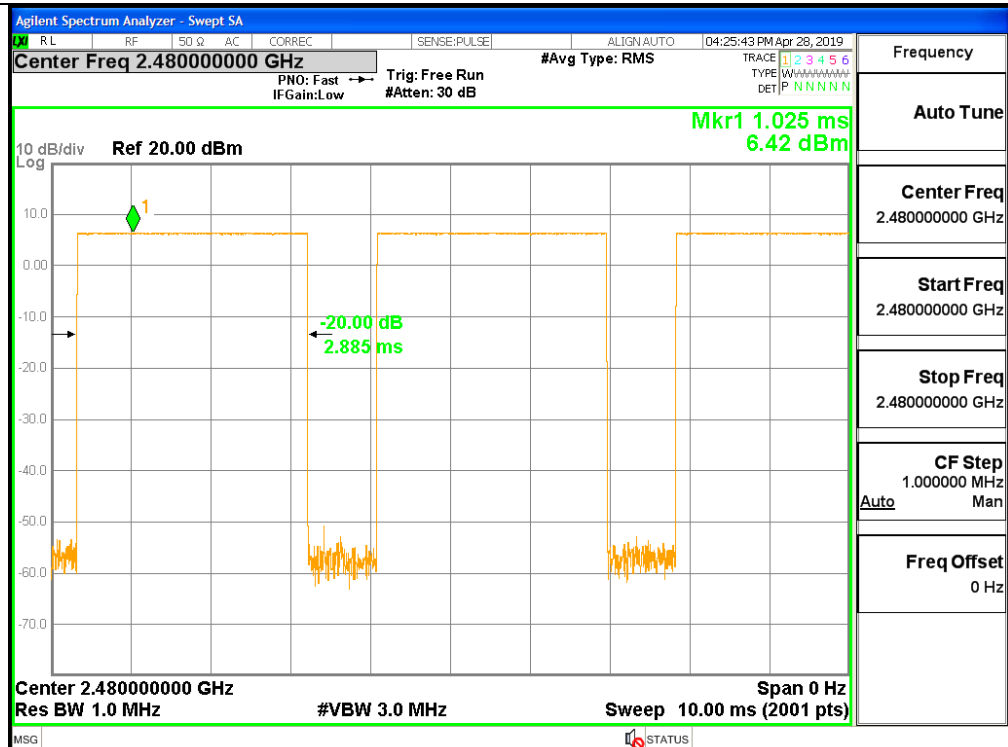
$\pi/4$ DQPSK
_2DH5/LCH



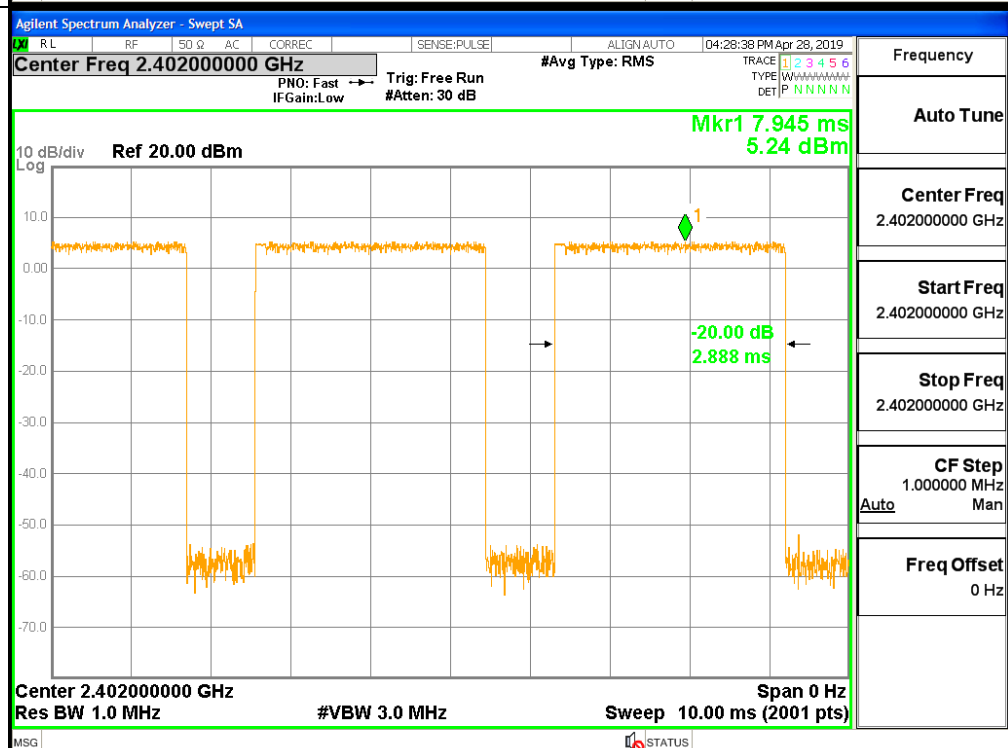
$\pi/4$ DQPSK
_2DH5/MCH

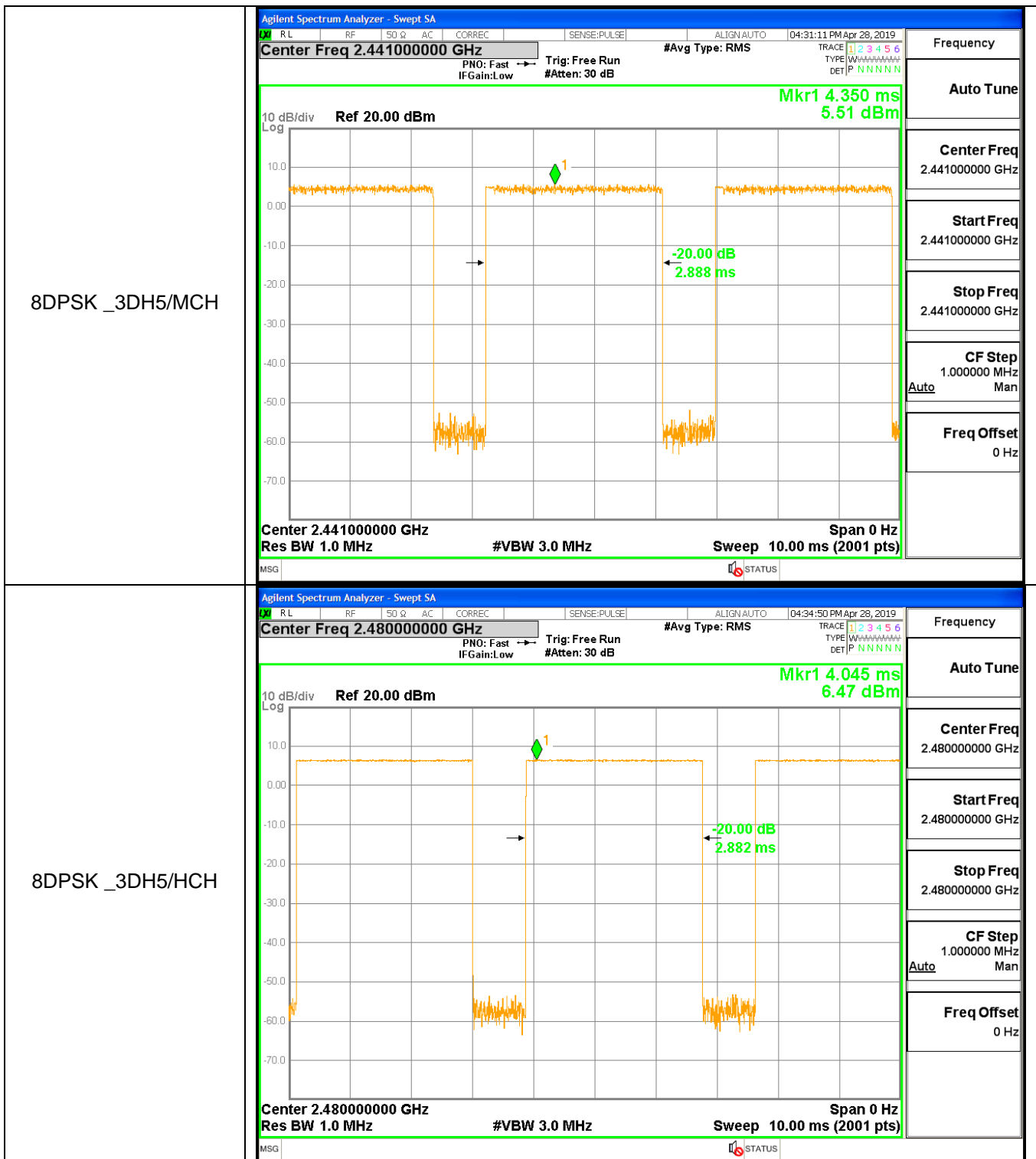


$\pi/4$ DQPSK
_2DH5/HCH



8DPSK _3DH5/LCH

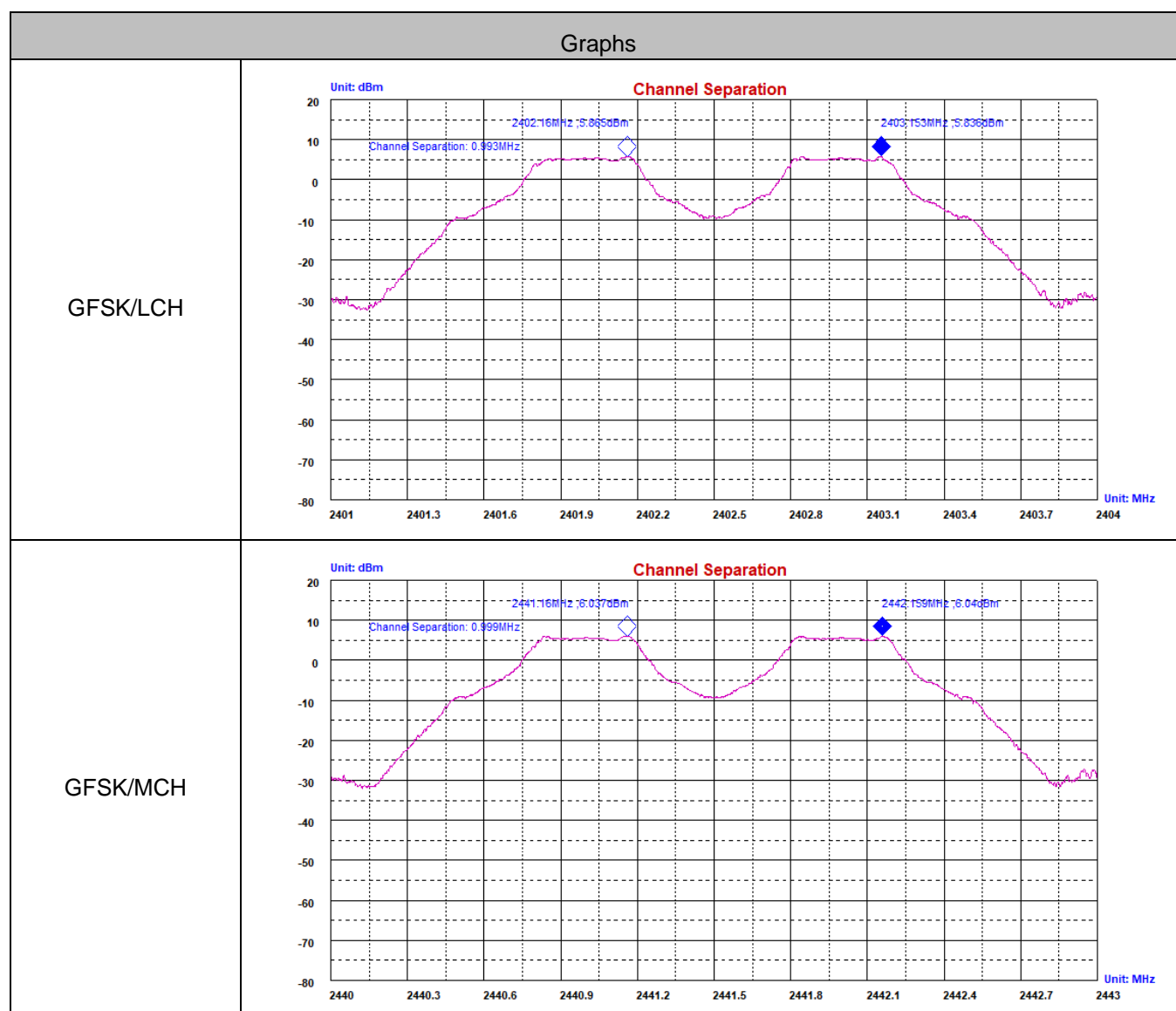




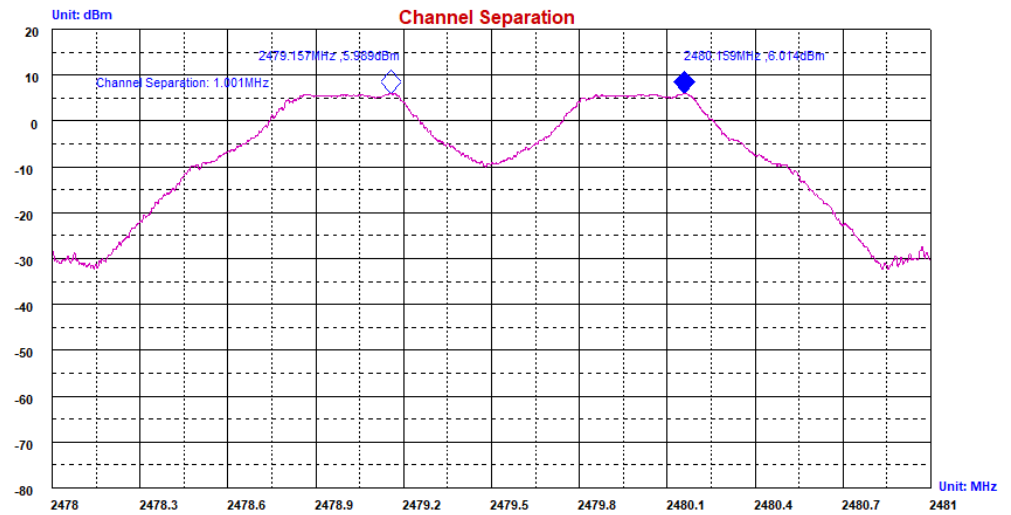
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.993	0.625	PASS
GFSK	MCH	0.999	0.638	PASS
GFSK	HCH	1.001	0.671	PASS
$\pi/4$ DQPSK	LCH	1.000	0.641	PASS
$\pi/4$ DQPSK	MCH	1.000	0.638	PASS
$\pi/4$ DQPSK	HCH	1.000	0.631	PASS
8DPSK	LCH	1.003	0.871	PASS
8DPSK	MCH	1.004	0.849	PASS
8DPSK	HCH	0.993	0.861	PASS

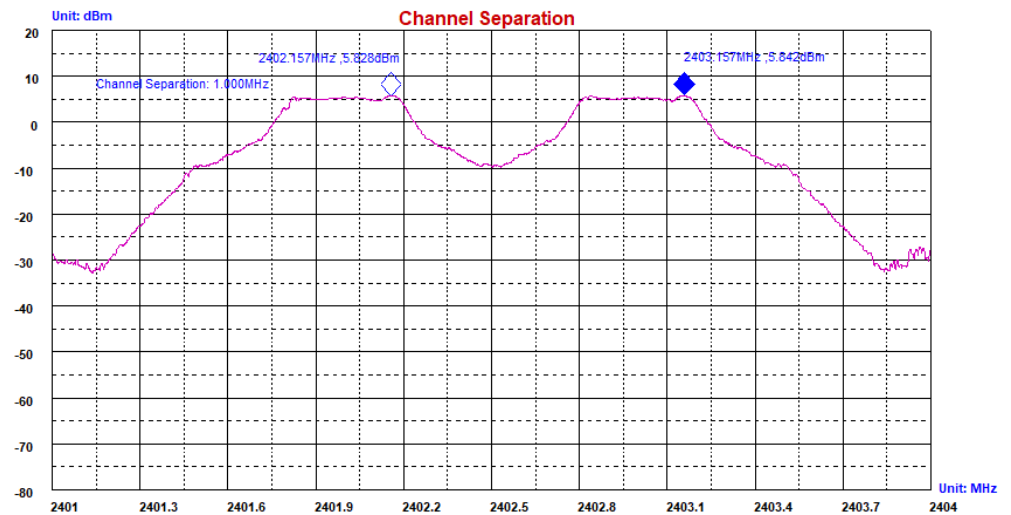
Test Graph



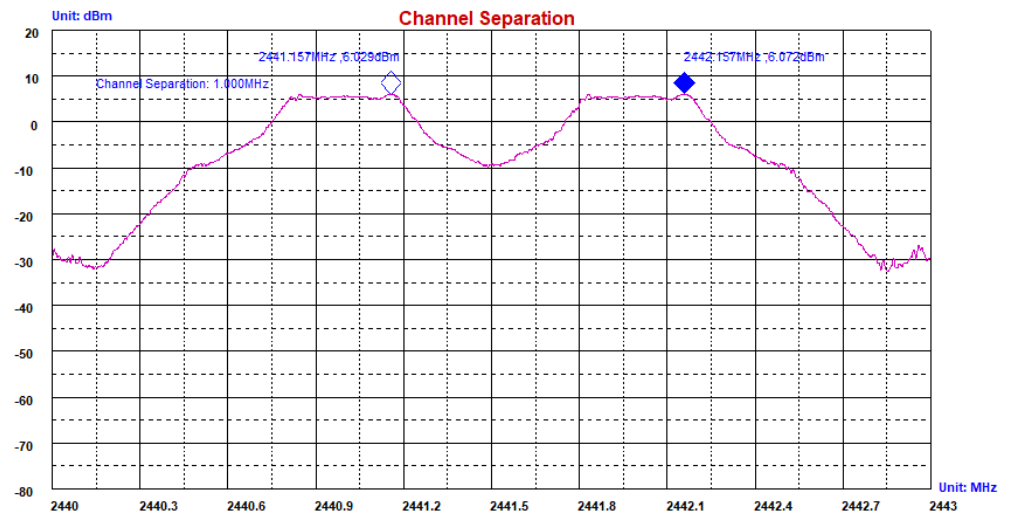
GFSK/HCH

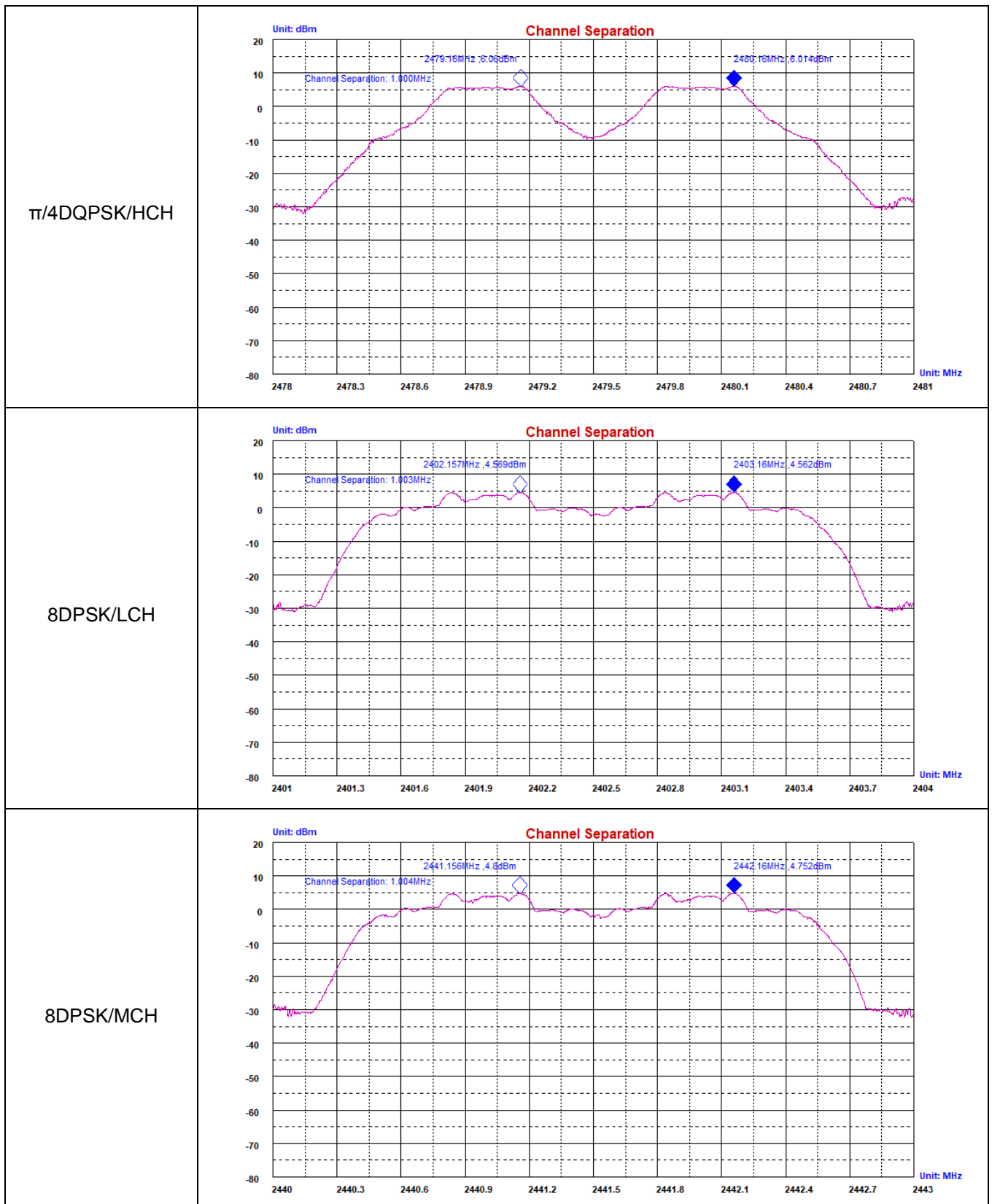


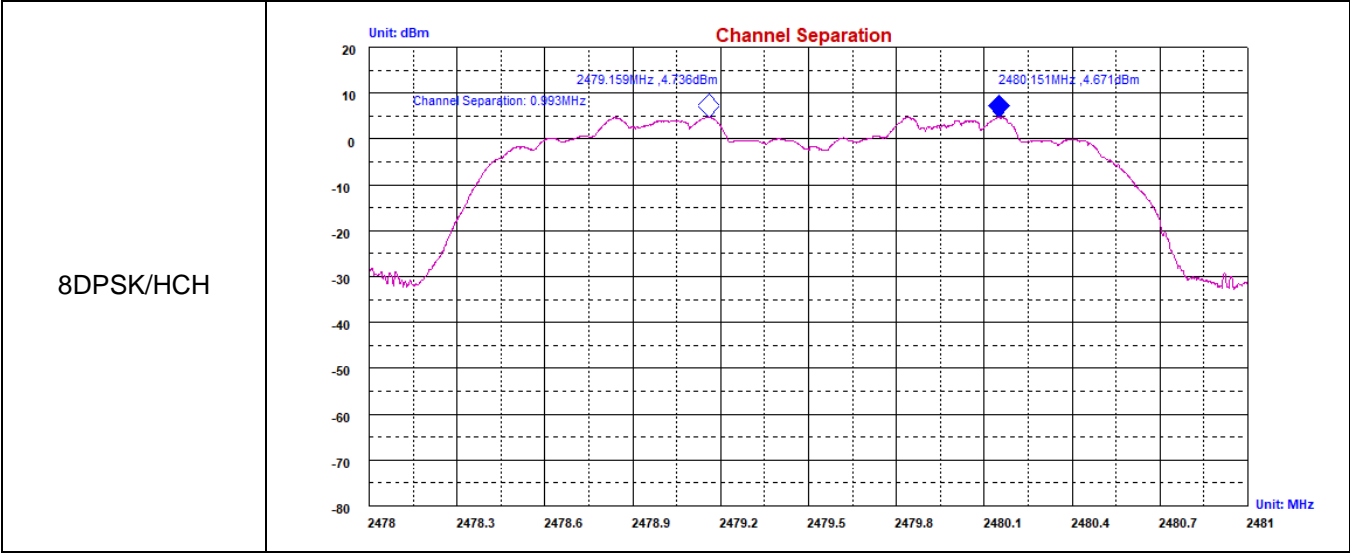
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



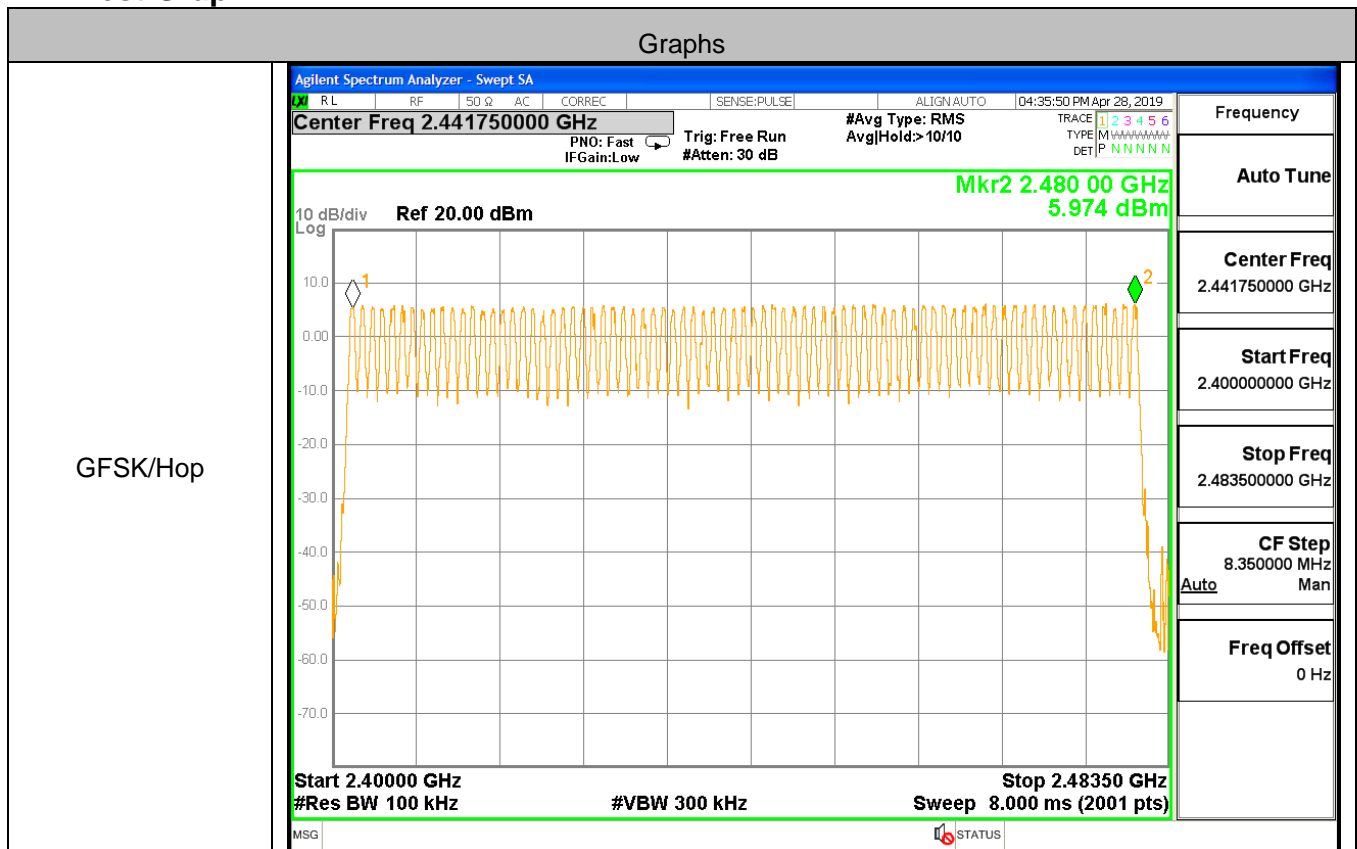




A.4 Hopping Channel Number

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

Test Graph

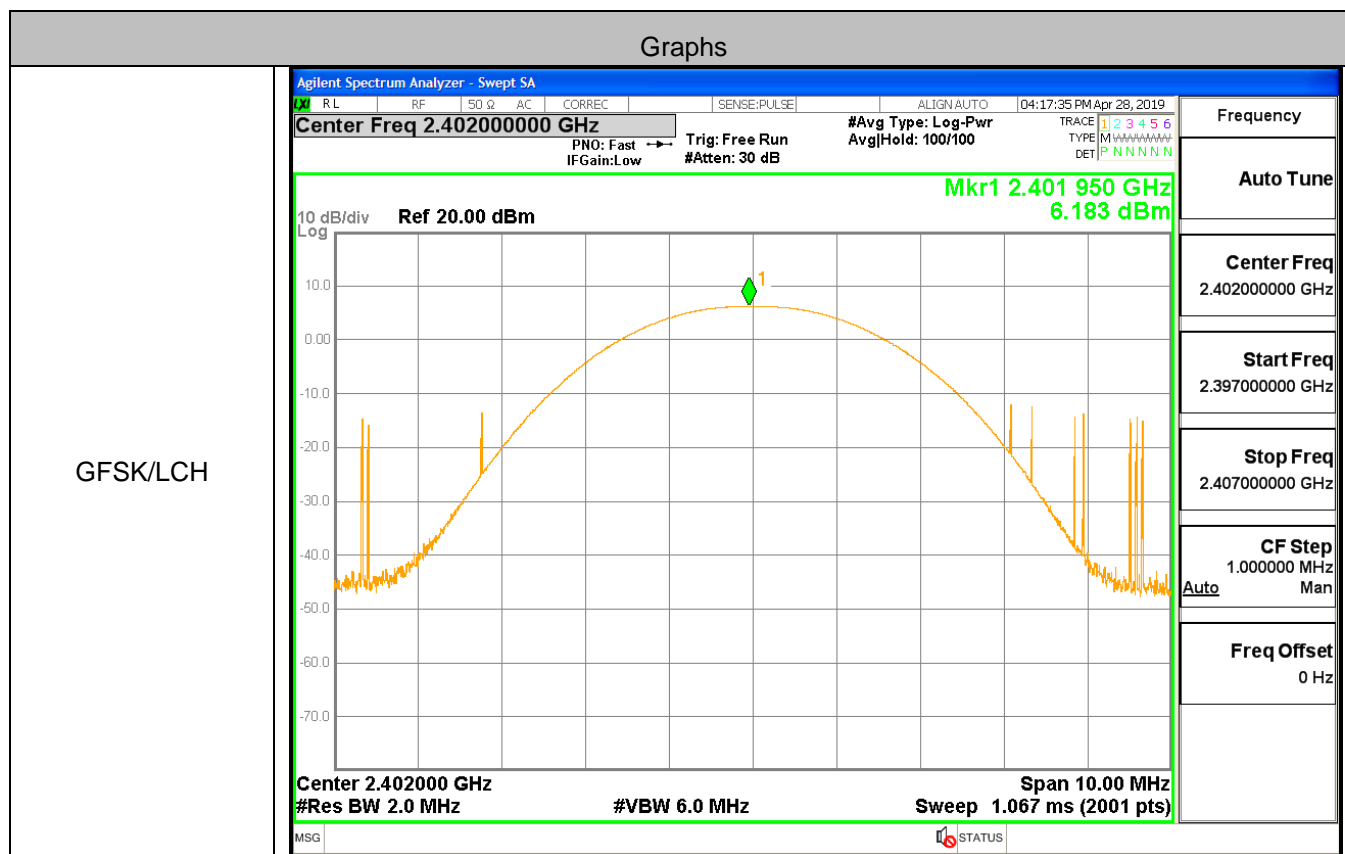




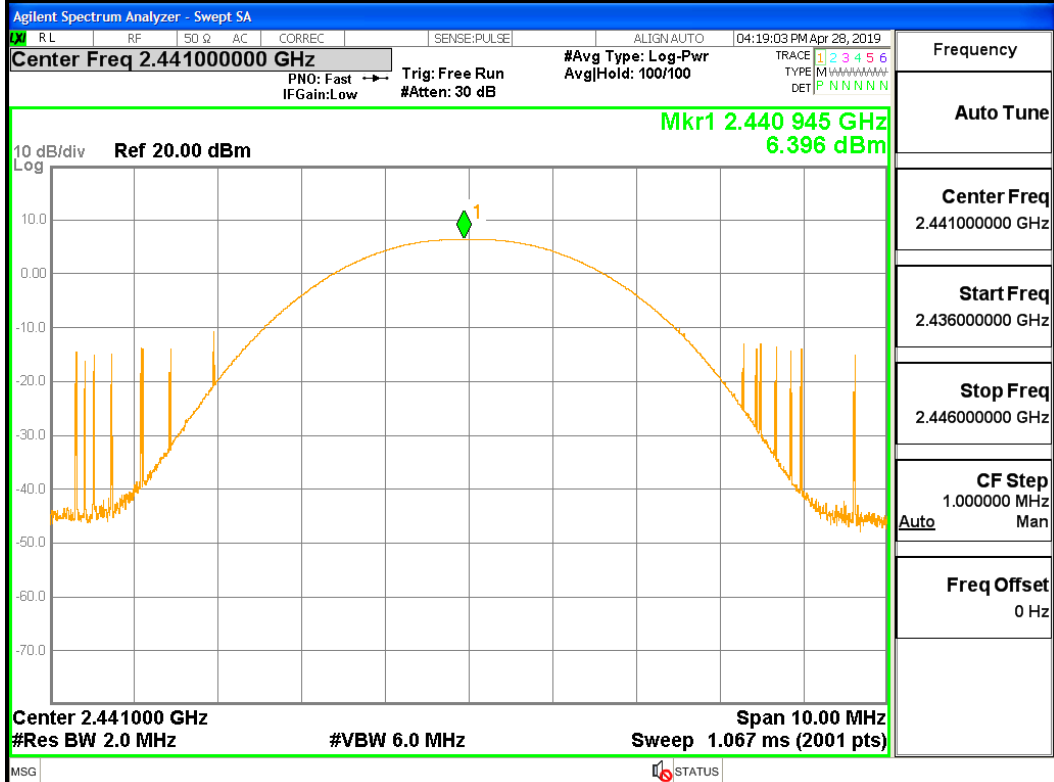
A.5 Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.183	21	PASS
GFSK	MCH	6.396	21	PASS
GFSK	HCH	6.530	21	PASS
$\pi/4$ DQPSK	LCH	6.155	21	PASS
$\pi/4$ DQPSK	MCH	6.367	21	PASS
$\pi/4$ DQPSK	HCH	6.478	21	PASS
8DPSK	LCH	5.621	21	PASS
8DPSK	MCH	5.887	21	PASS
8DPSK	HCH	5.961	21	PASS

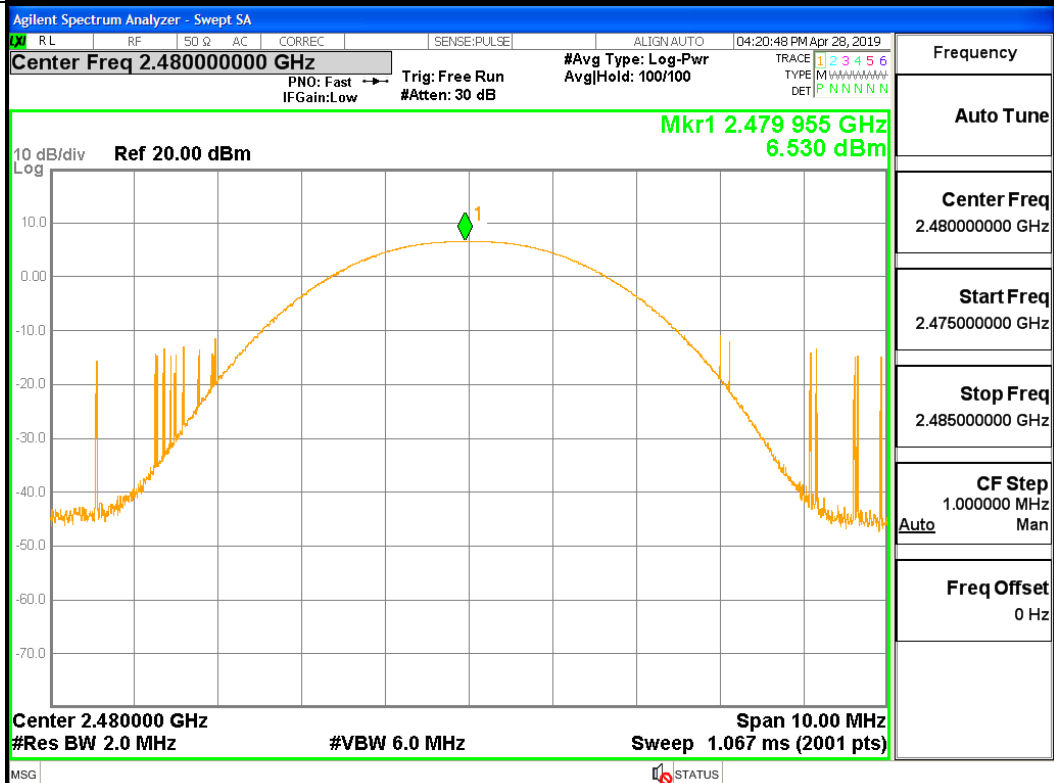
Test Graph

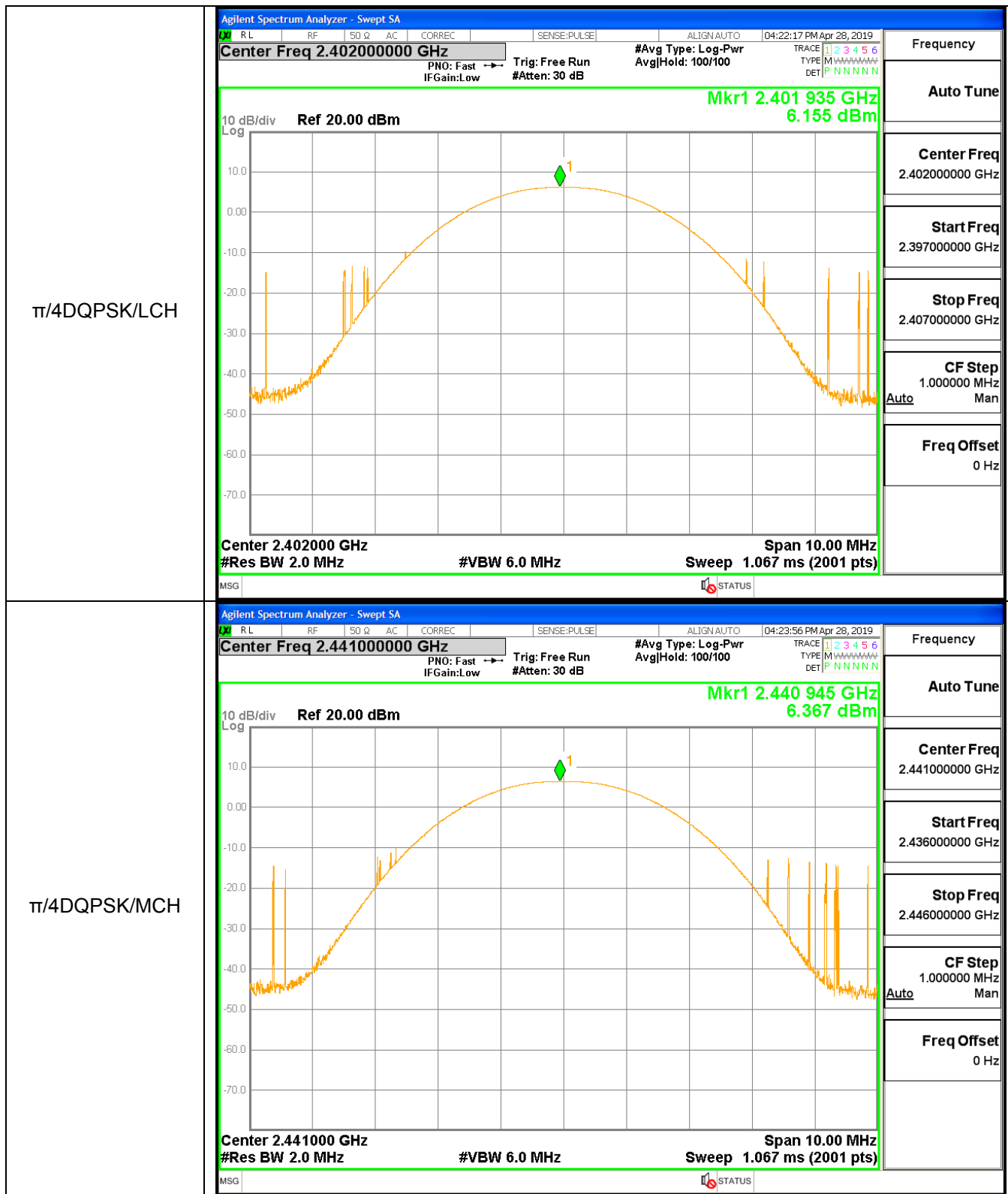


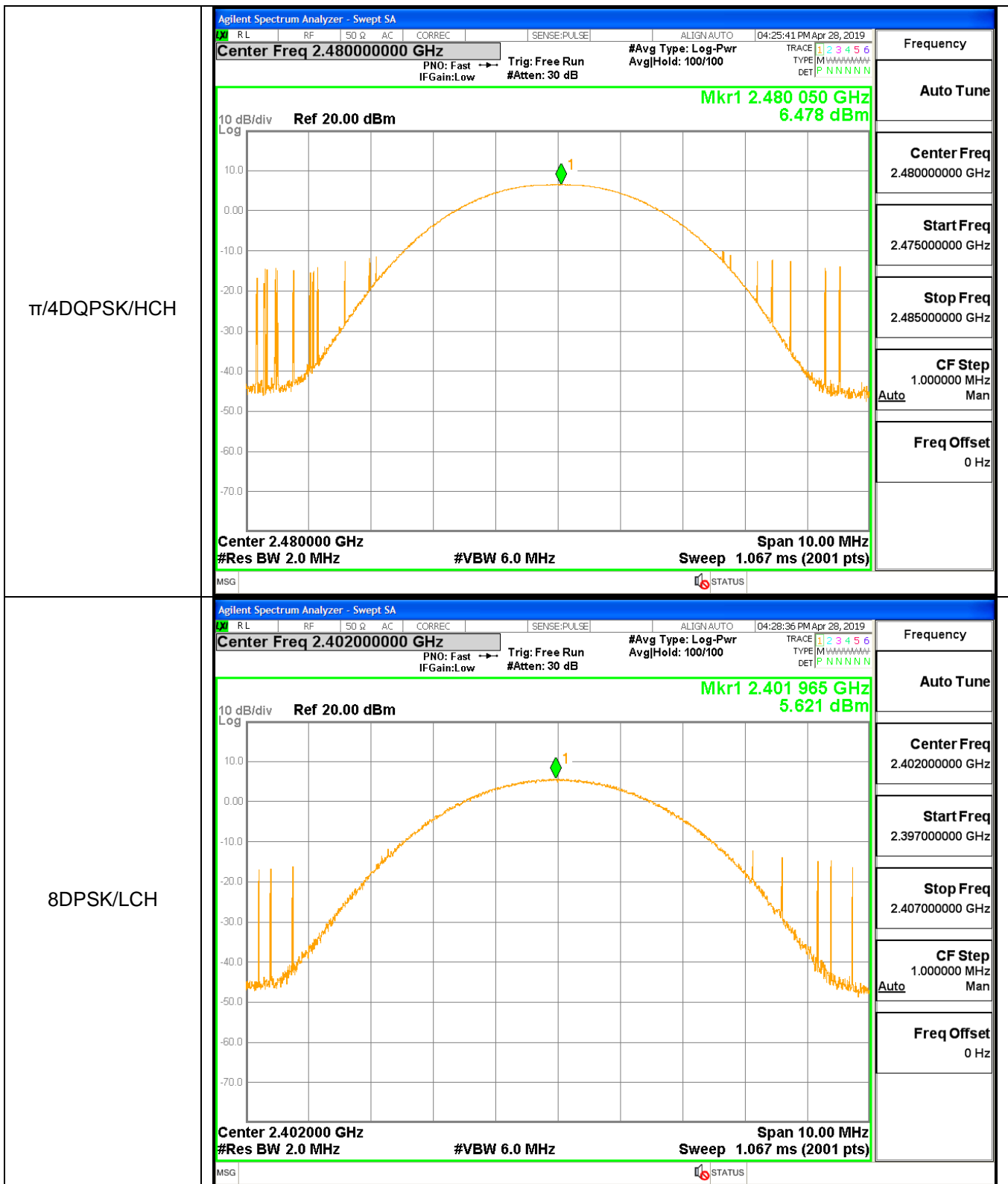
GFSK/MCH



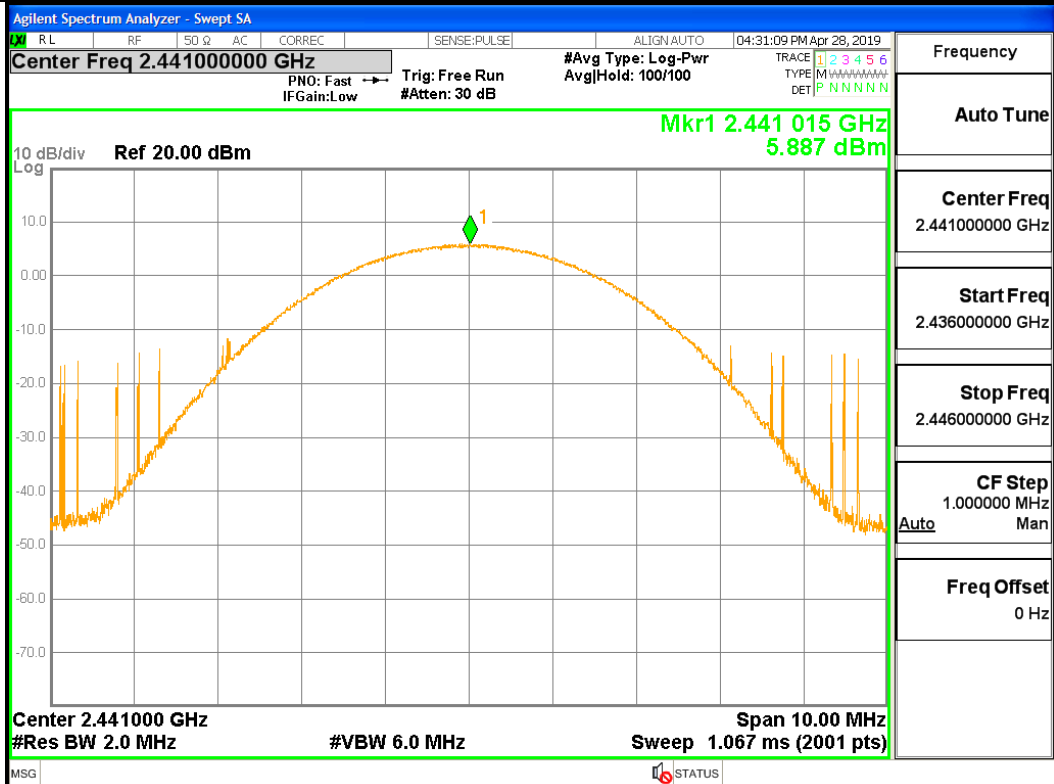
GFSK/HCH



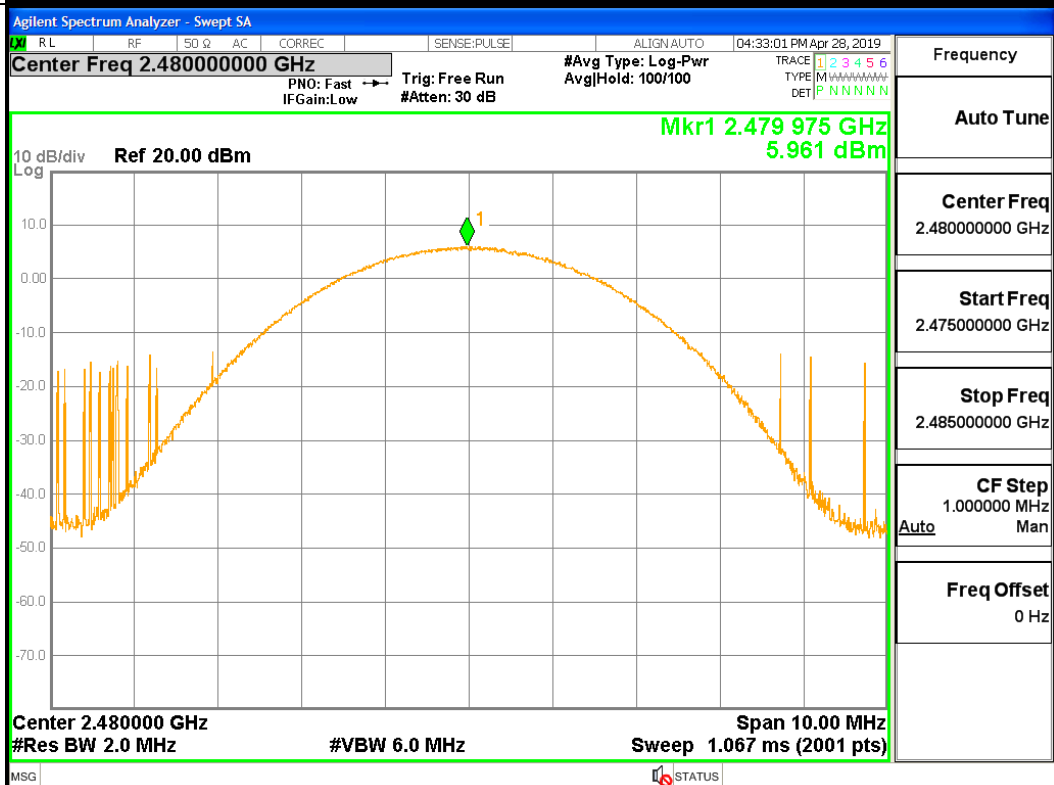




8DPSK/MCH



8DPSK/HCH

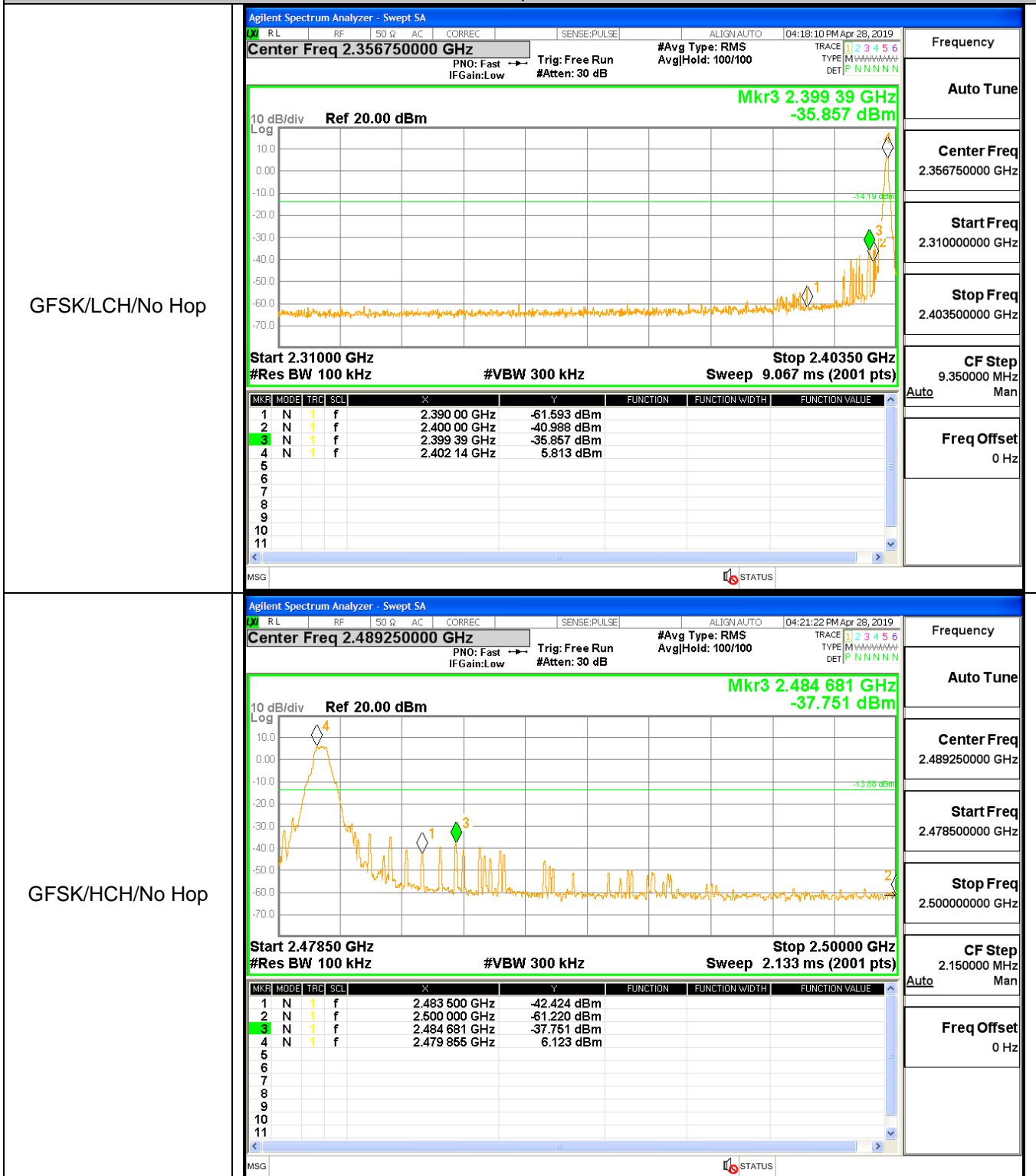


A.6 Band-edge for RF Conducted Emissions

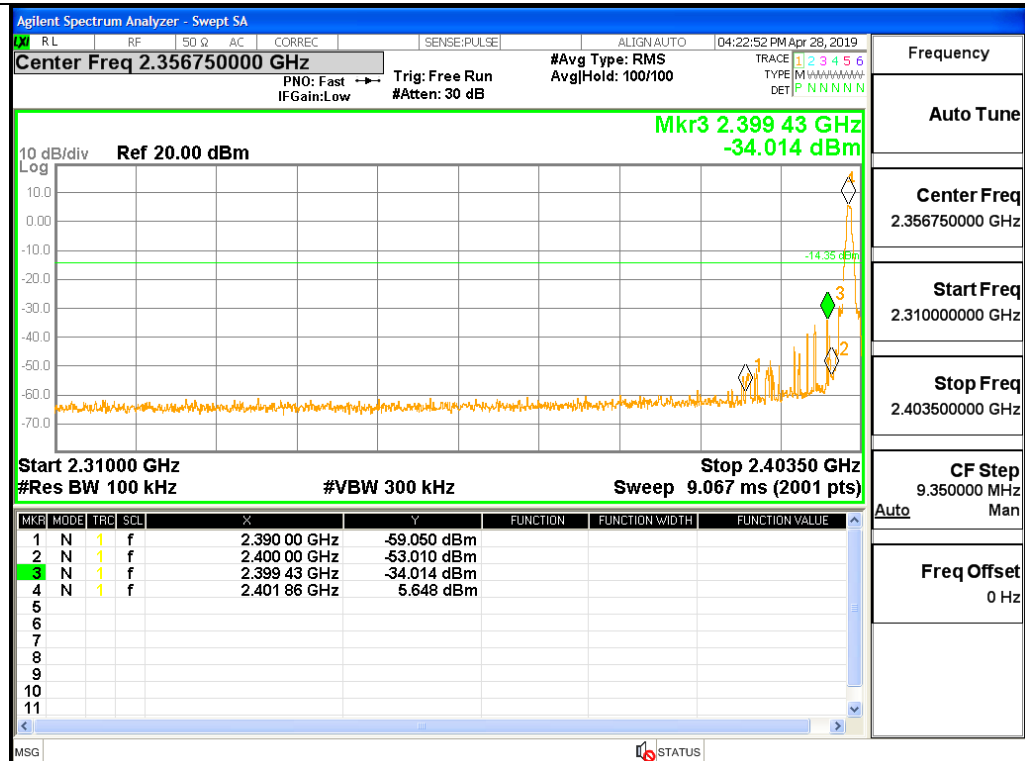
Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2399.386	5.813	-35.857	-14.187	Pass
1DH5	2480	2484.681	6.123	-37.751	-13.877	Pass
2DH5	2402	2399.433	5.648	-34.014	-14.352	Pass
2DH5	2480	2483.907	5.932	-36.498	-14.068	Pass
3DH5	2402	2399.386	1.754	-37.553	-18.246	Pass
3DH5	2480	2484.81	3.136	-38.611	-16.864	Pass
1DH5-Hopping	2402	2395.02	5.733	-43.34	-14.267	Pass
1DH5-Hopping	2480	2483.8	6.040	-39.426	-13.96	Pass
2DH5-Hopping	2402	2396.34	4.178	-43.644	-15.822	Pass
2DH5-Hopping	2480	2483.77	4.845	-37.862	-15.155	Pass
3DH5-Hopping	2402	2399.76	4.647	-37.103	-15.353	Pass
3DH5-Hopping	2480	2484.28	4.410	-40.707	-15.59	Pass

Test Graph

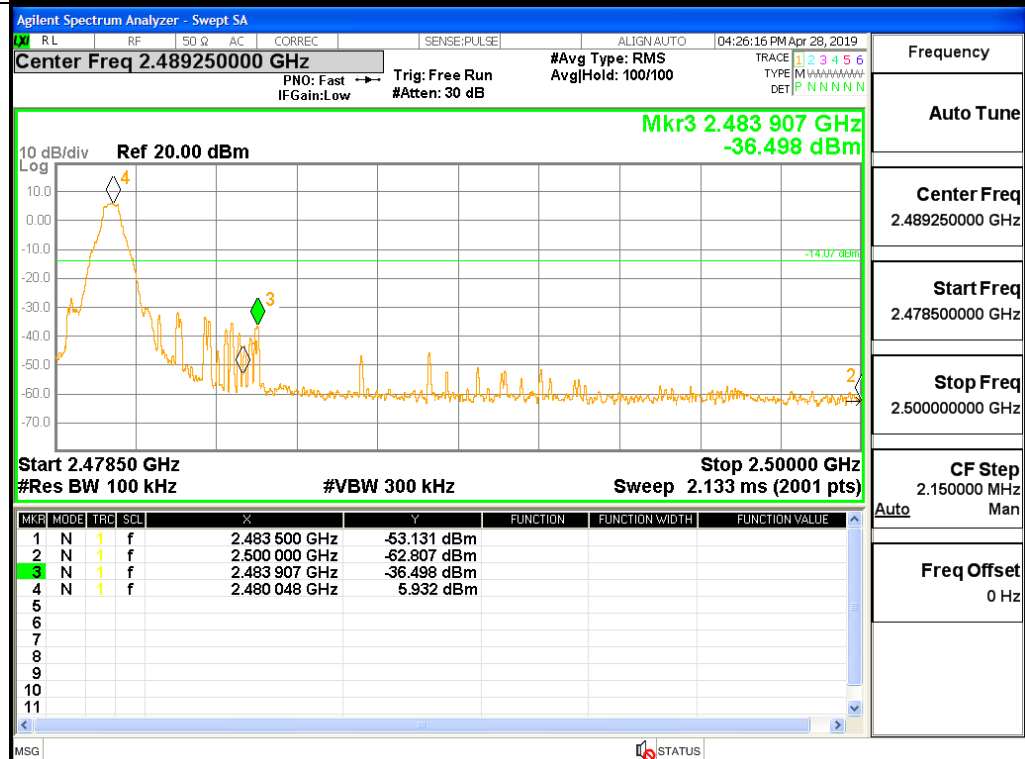
Graphs



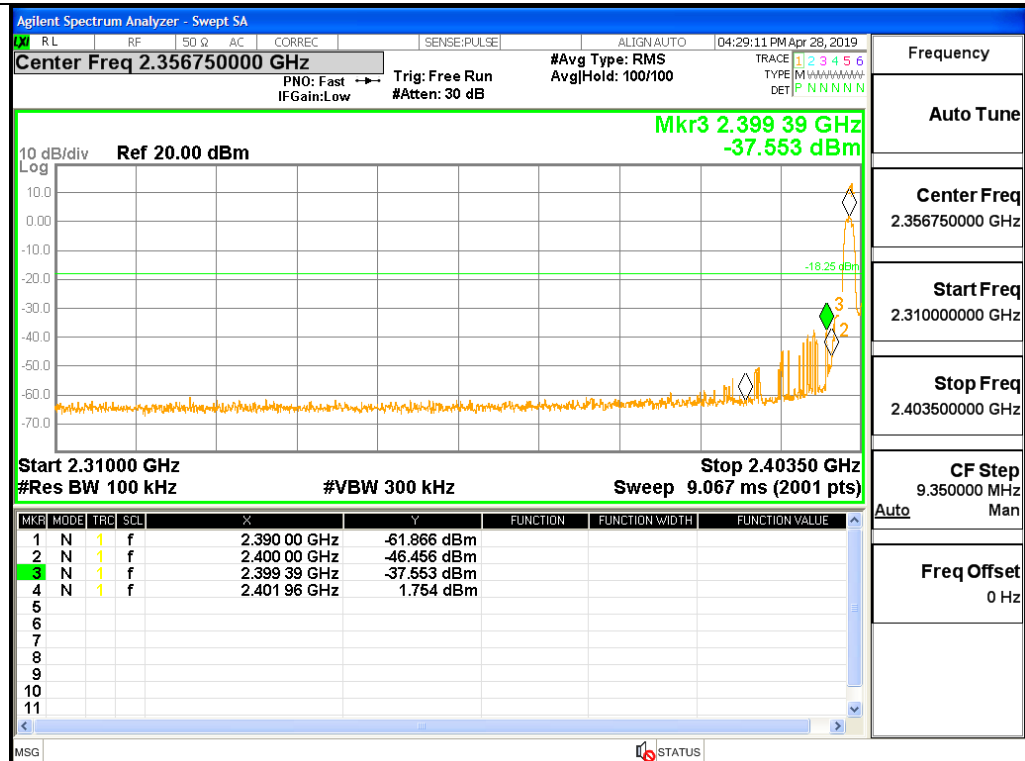
π /4DQPSK/LCH/No
Hop



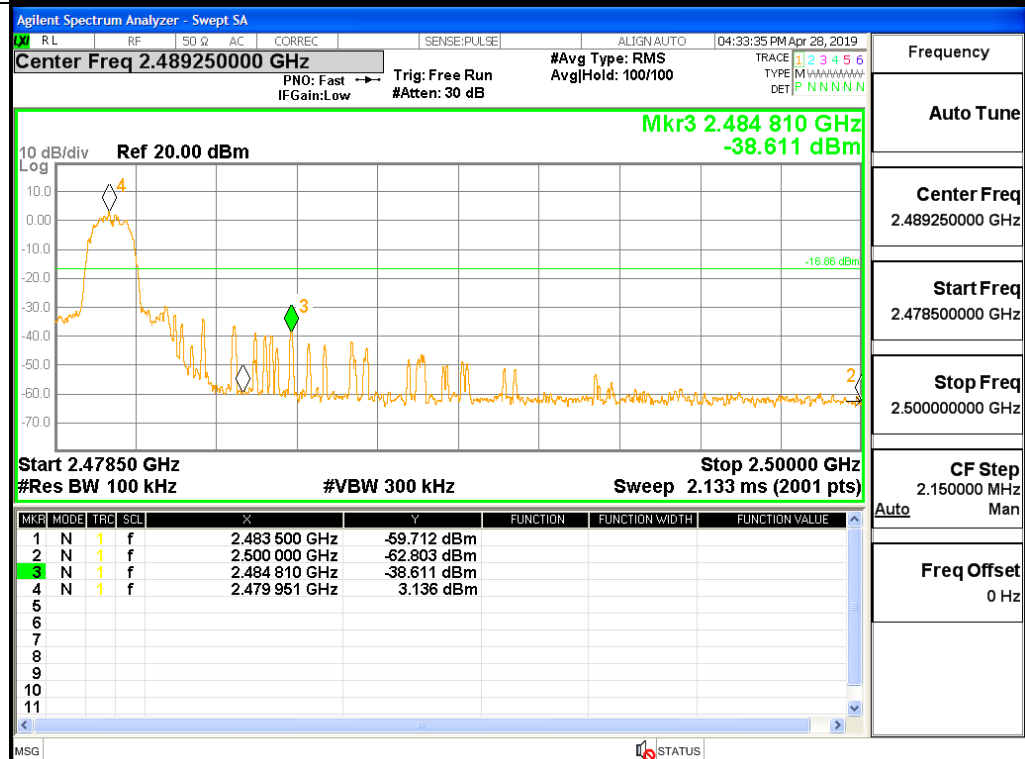
π /4DQPSK/HCH/No
Hop



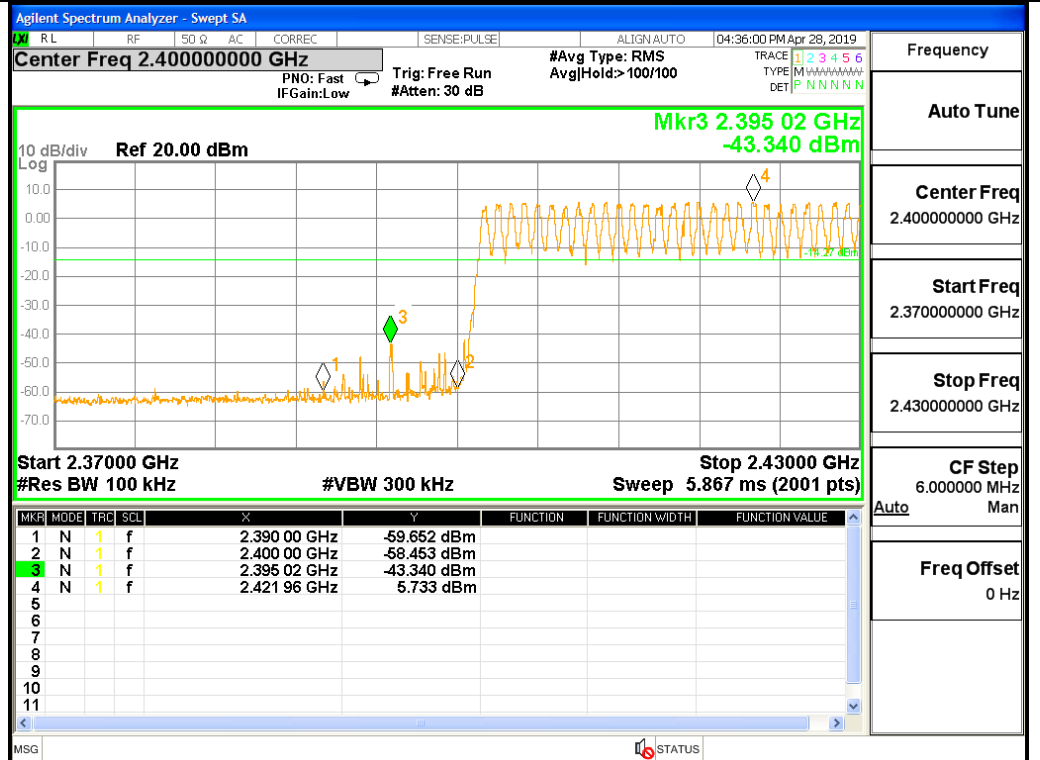
8DPSK/LCH/No Hop



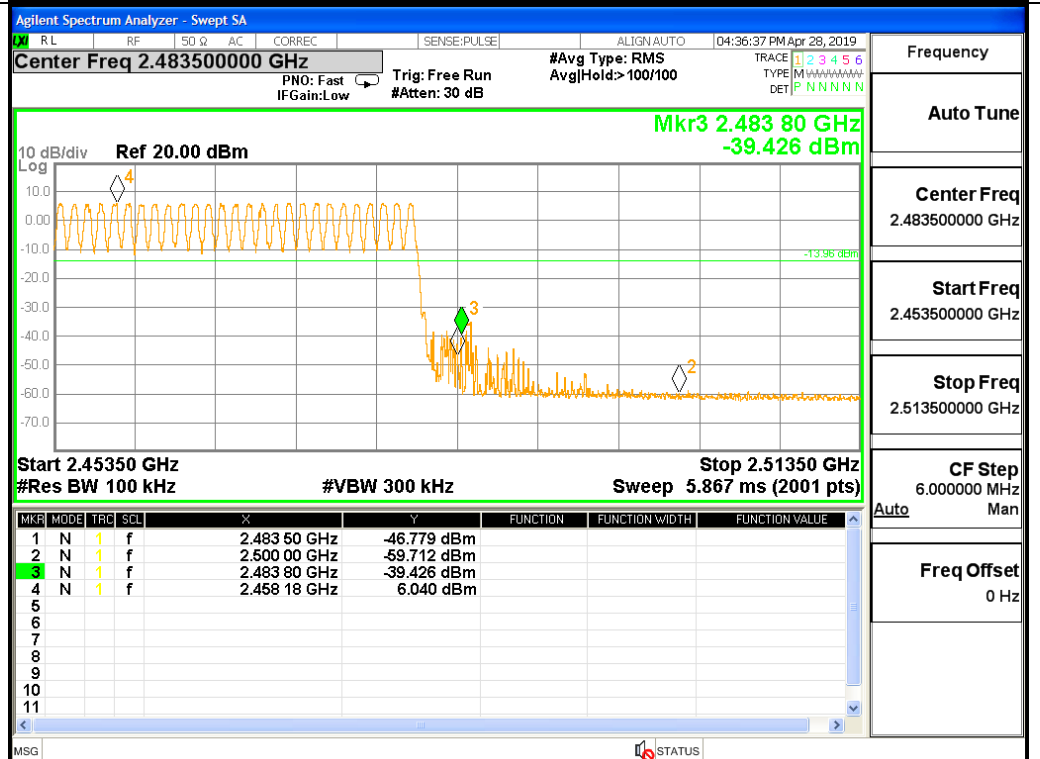
8DPSK/HCH/No Hop



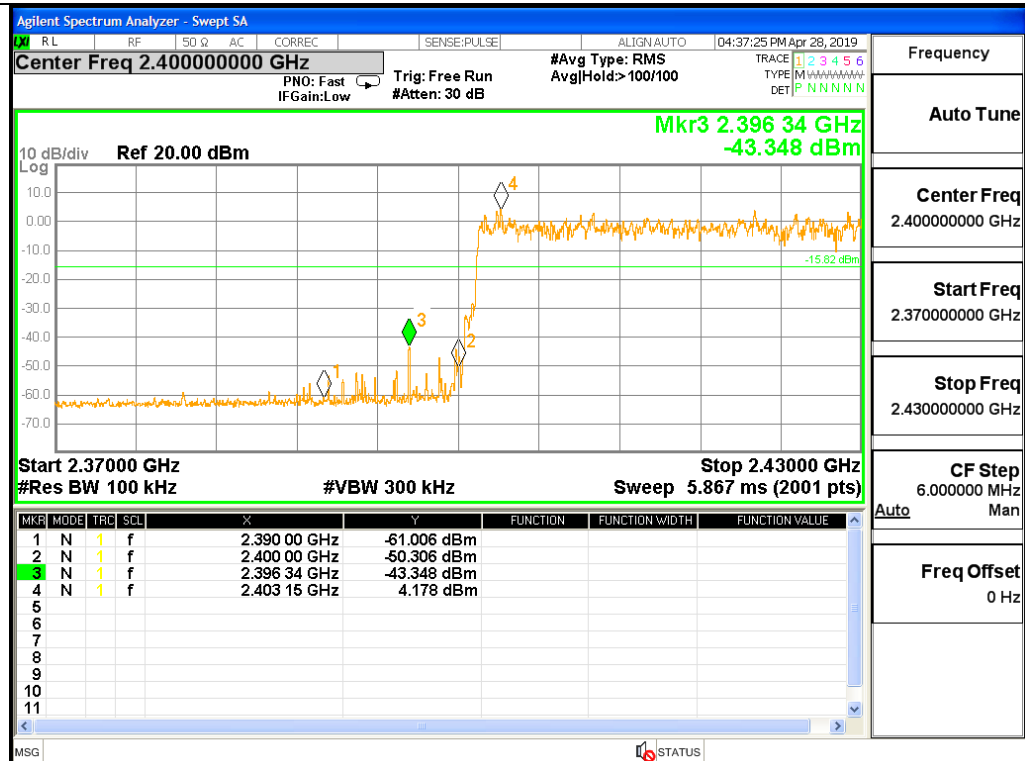
GFSK/LCH/Hop



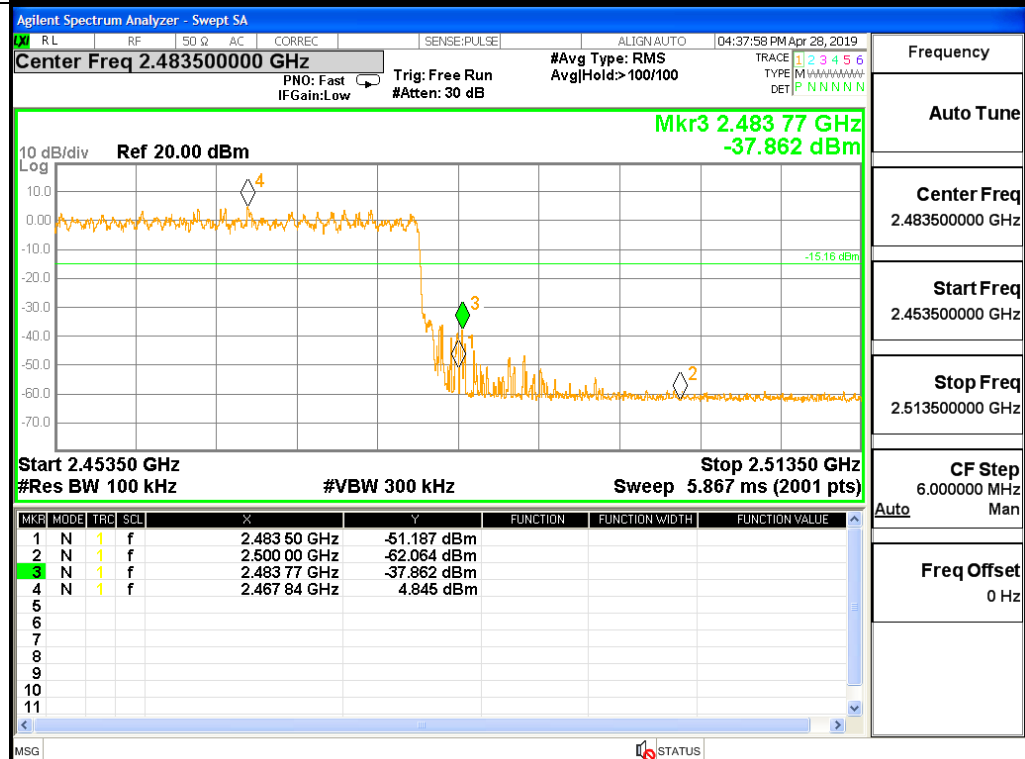
GFSK/HCH/Hop



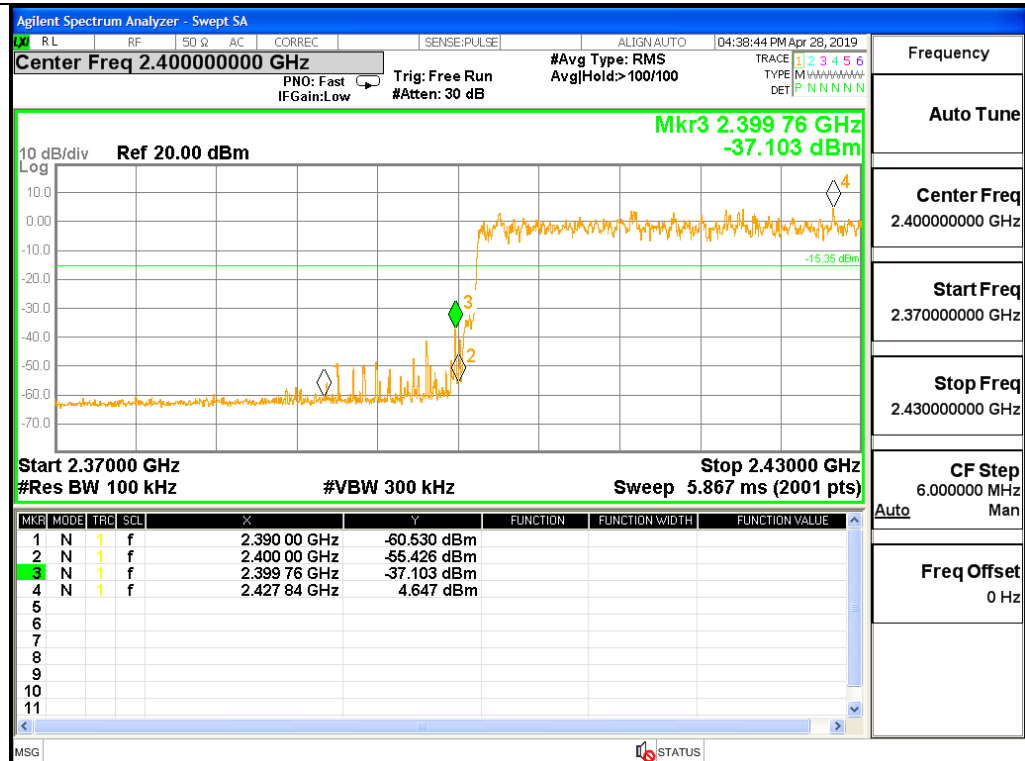
$\pi/4$ DQPSK/LCH/Hop



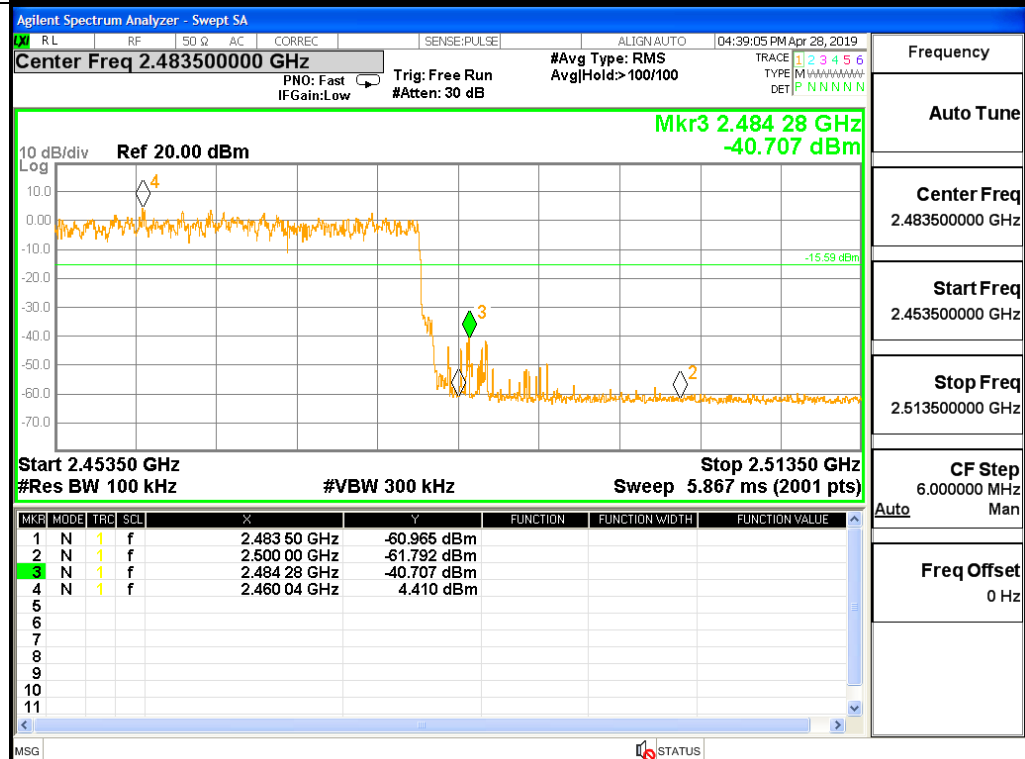
$\pi/4$ DQPSK/HCH/Hop



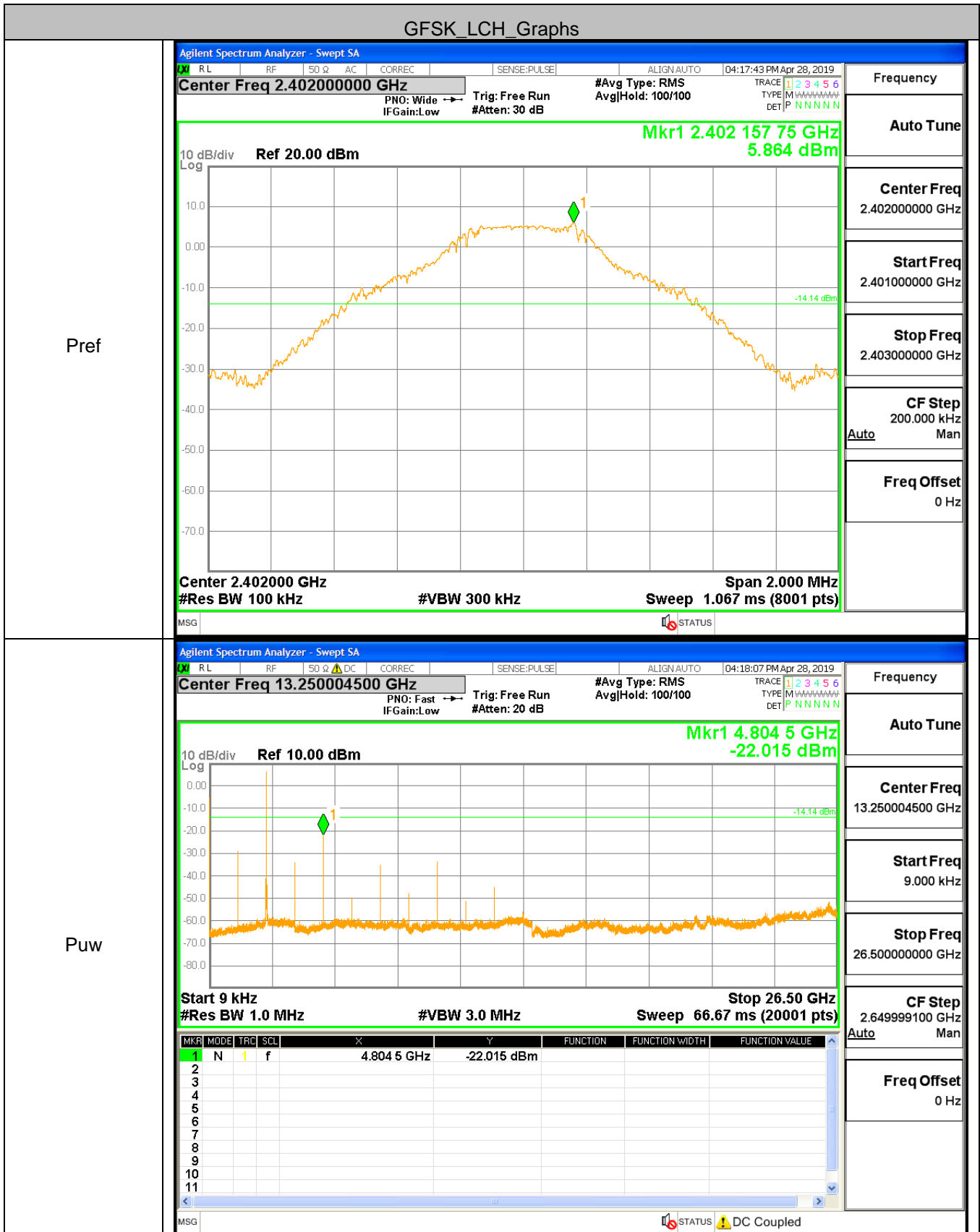
8DPSK/LCH/Hop



8DPSK/HCH/Hop

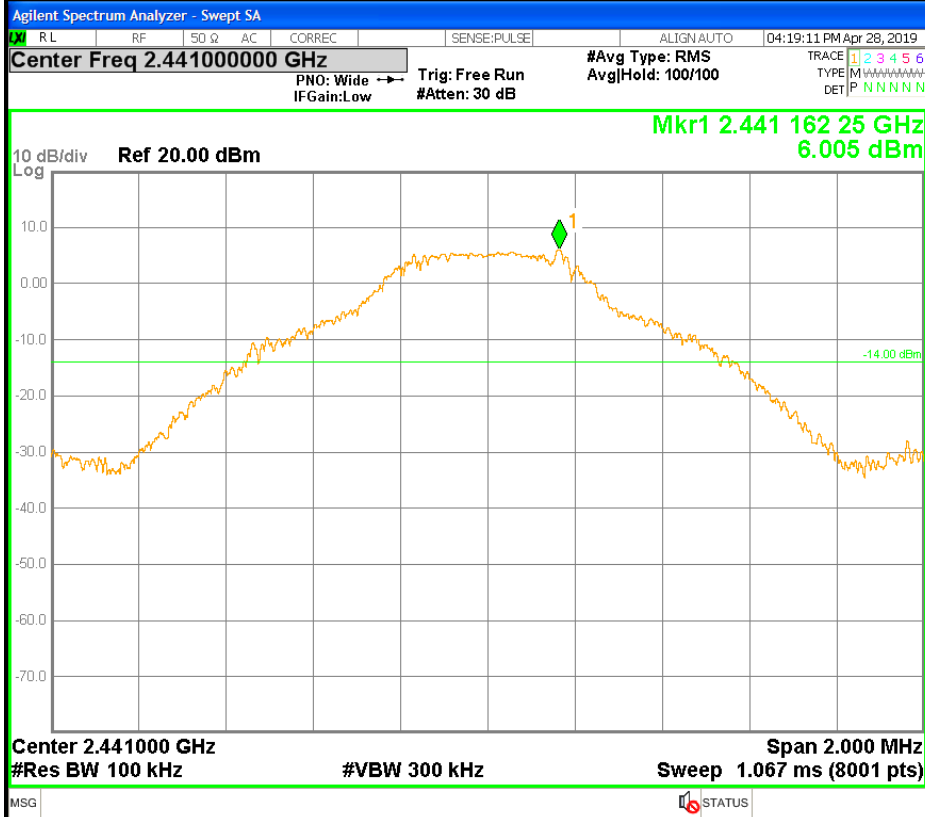


A.7 RF Conducted Spurious Emissions Test Graph



GFSK_MCH_Graphs

Pref



Frequency

Auto Tune

Center Freq
2.441000000 GHz

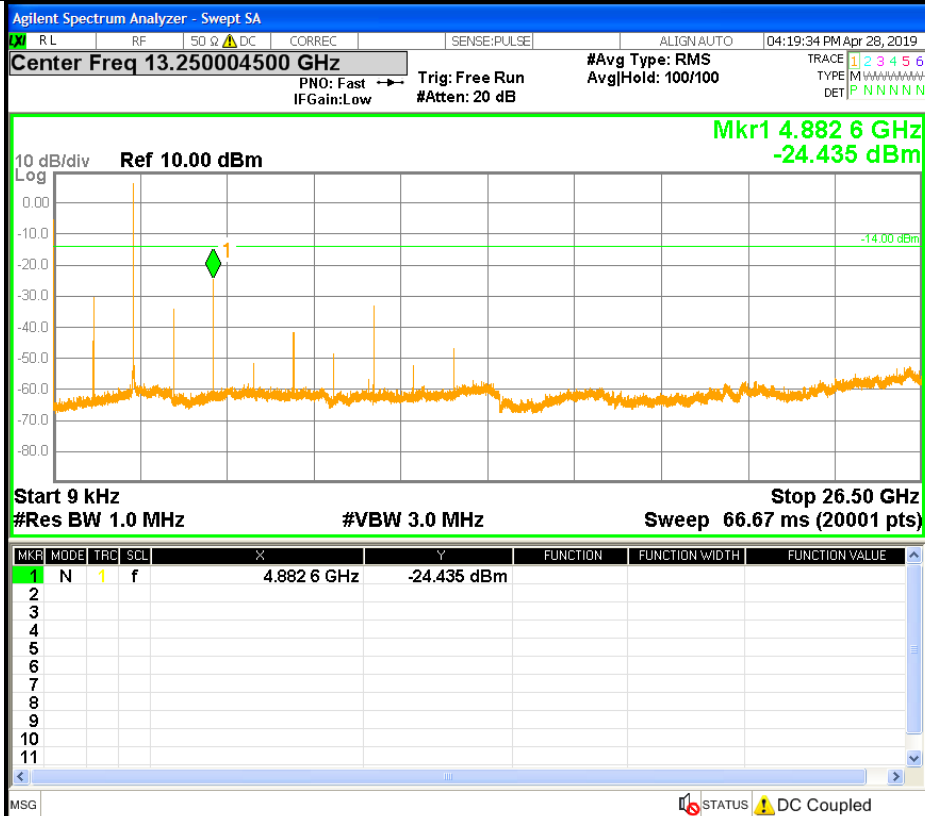
Start Freq
2.440000000 GHz

Stop Freq
2.442000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Puw



Frequency

Auto Tune

Center Freq
13.250004500 GHz

Start Freq
9.000 kHz

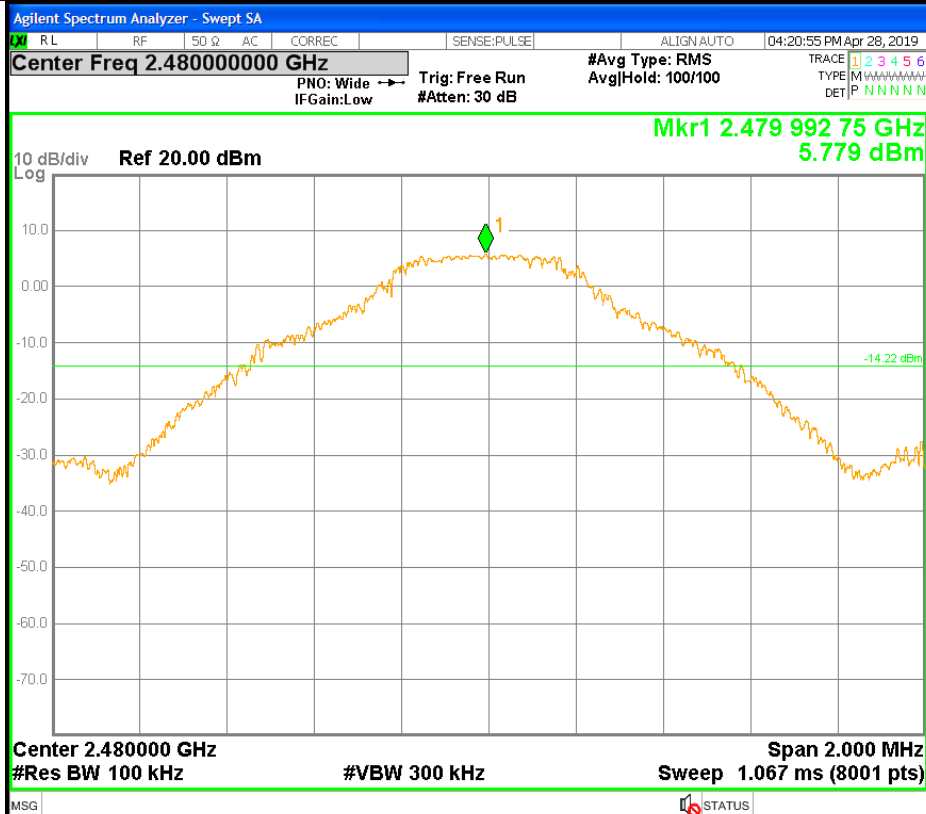
Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

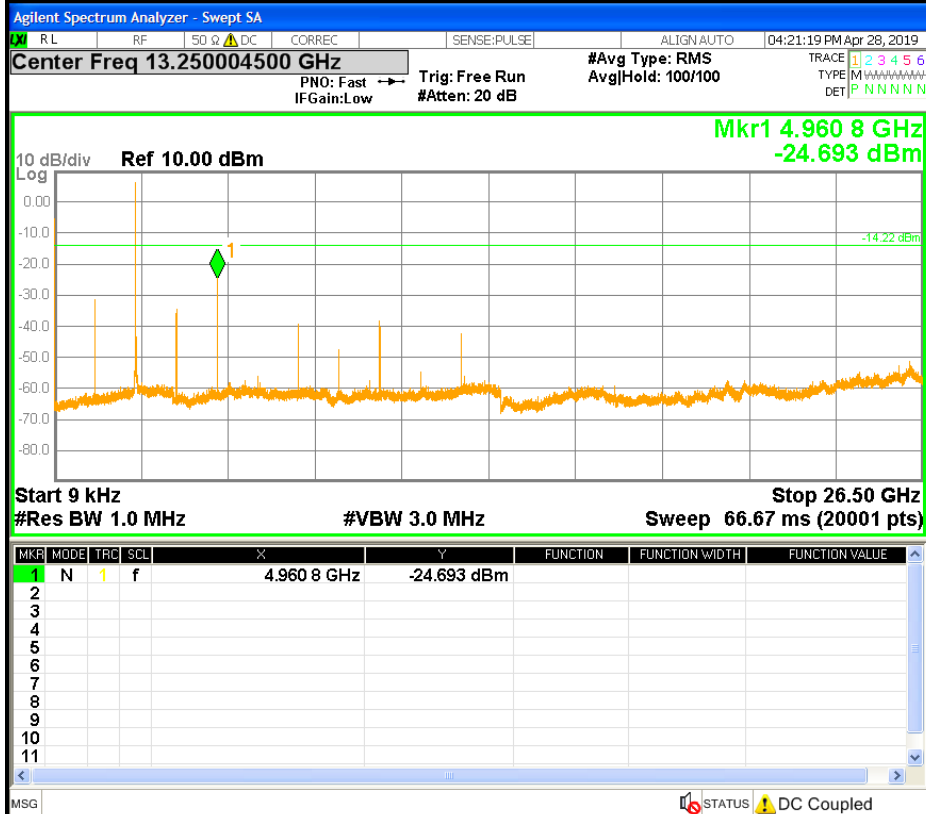
Freq Offset
0 Hz

GFSK_HCH_Graphs

Pref

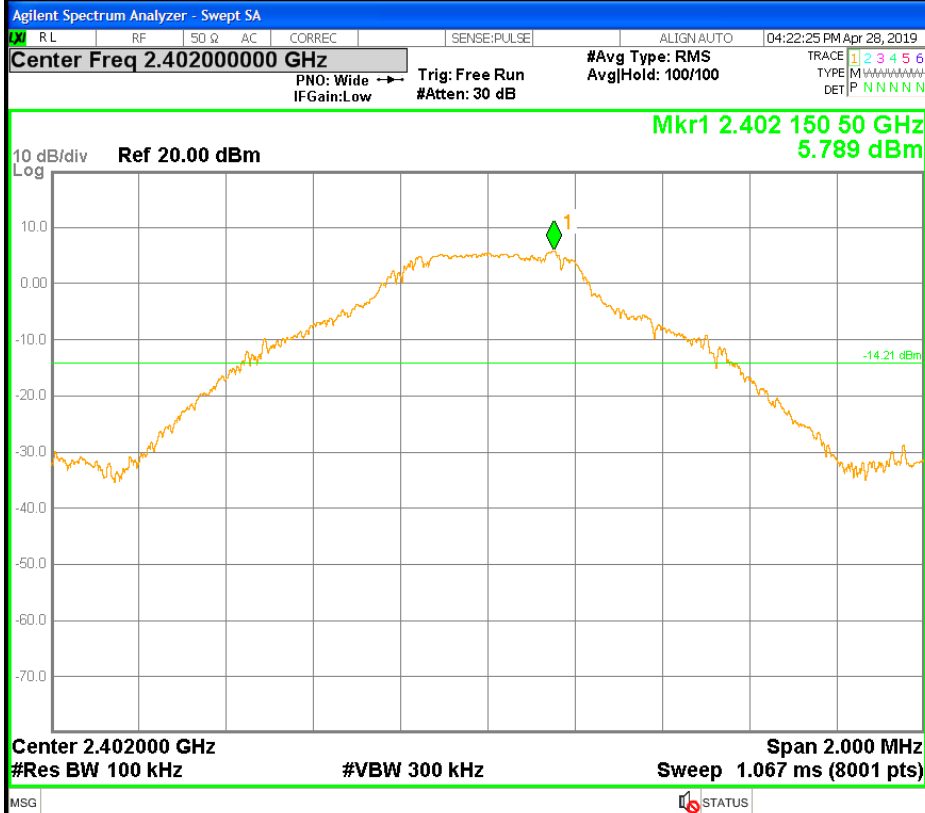


Puw



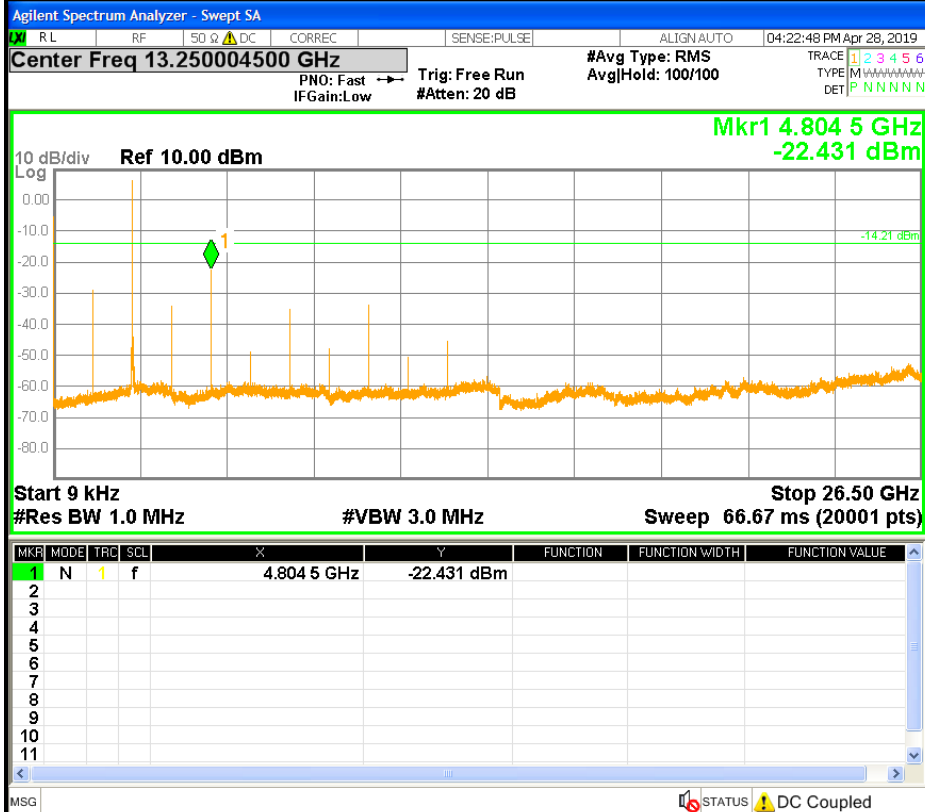
$\pi/4$ DQPSK LCH Graphs

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

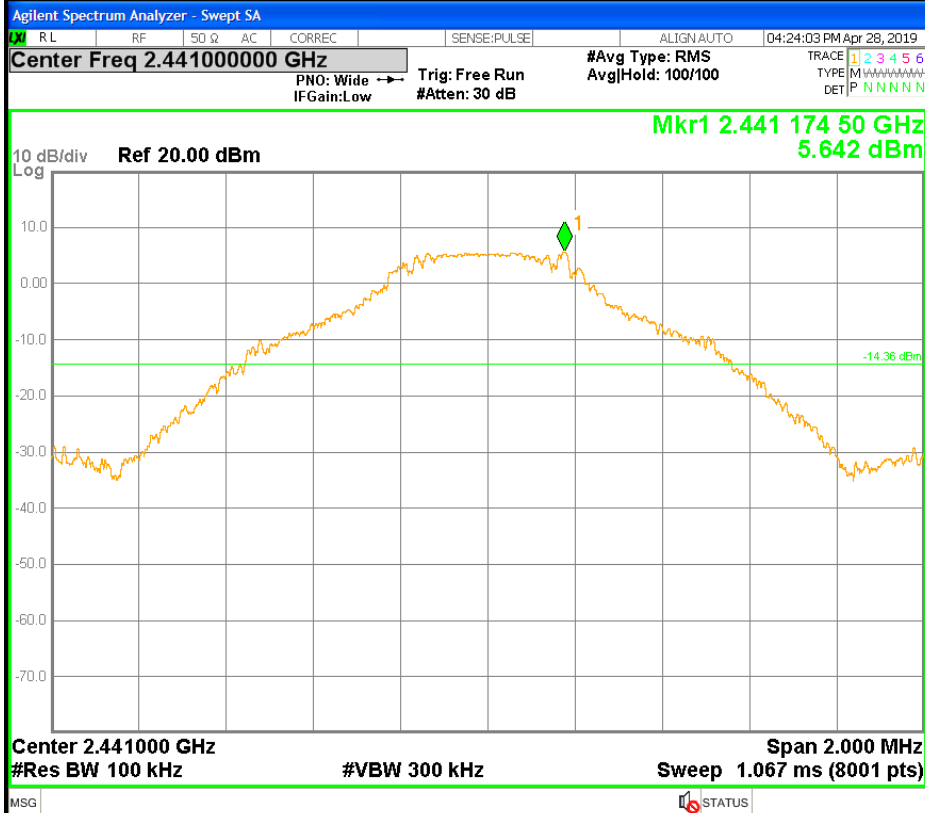
Puw



Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

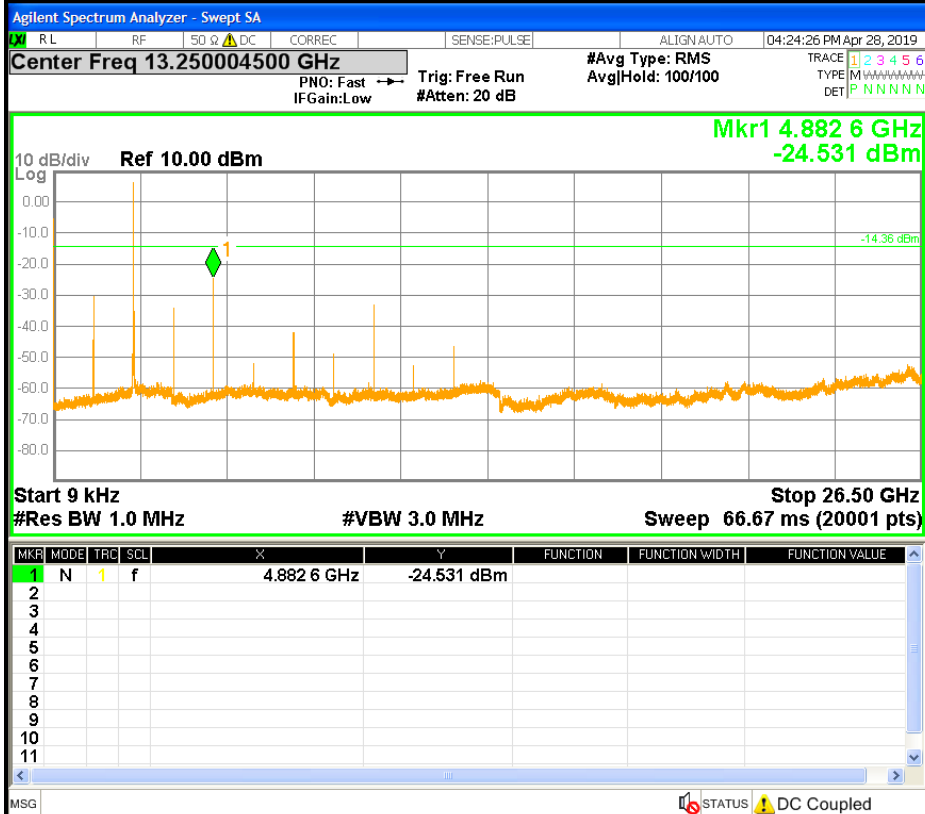
$\pi/4$ DQPSK MCH Graphs

Pref



Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

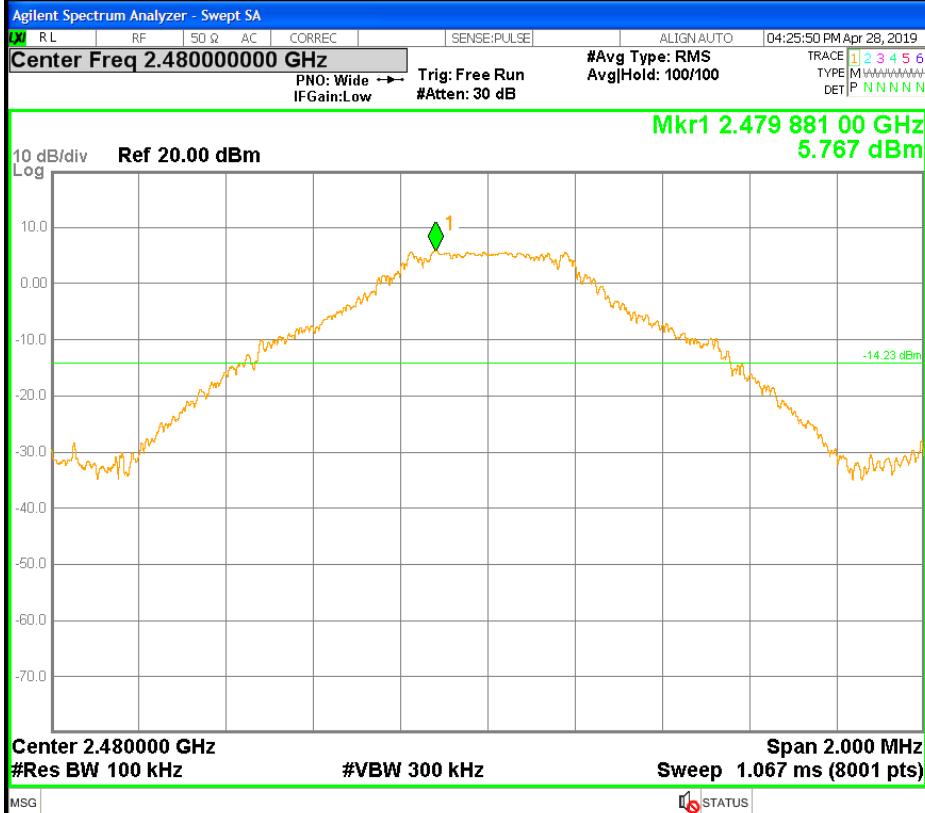
Puw



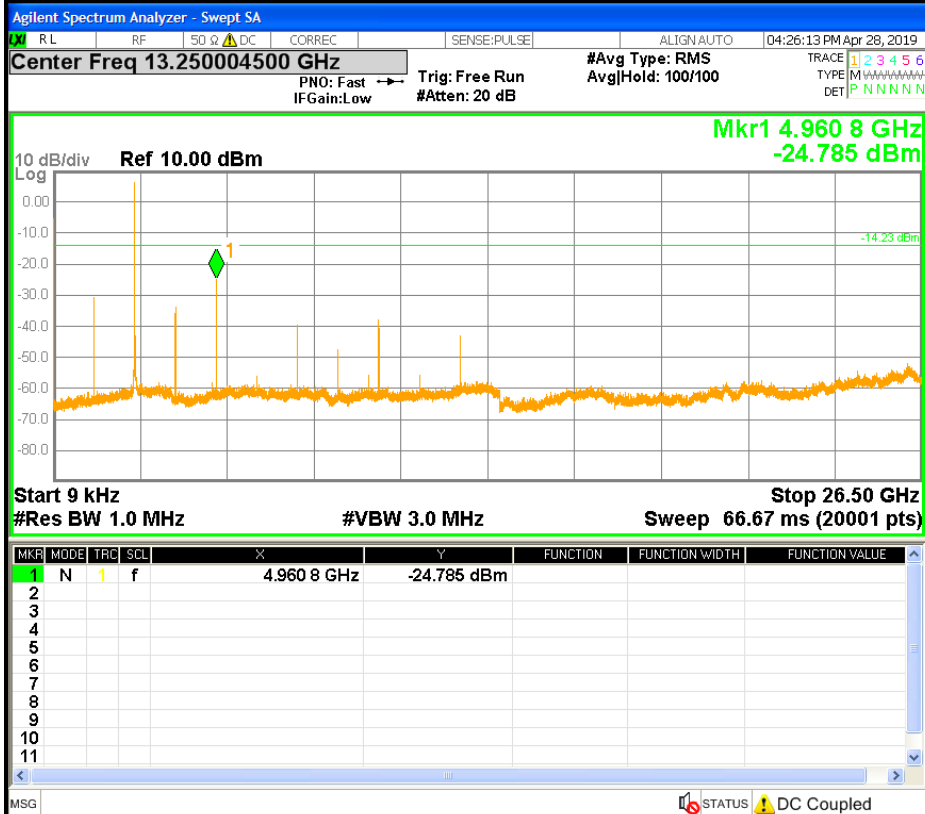
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK HCH Graphs

Pref

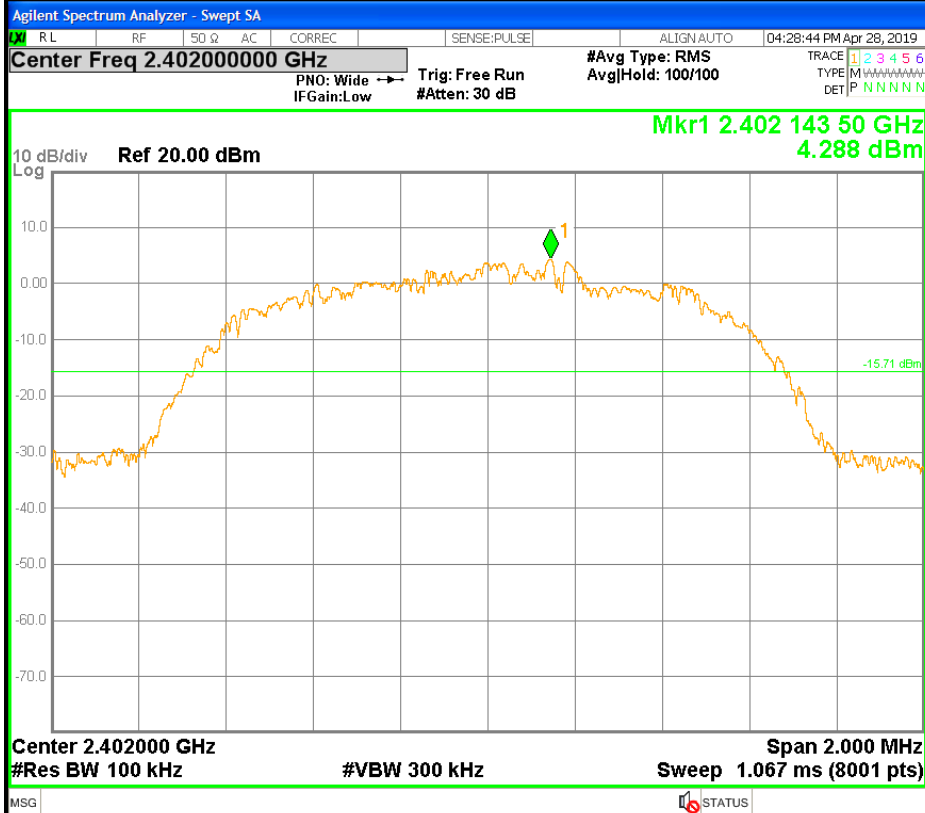


Puw



8DPSK_LCH_Graphs

Pref



Frequency

Auto Tune

Center Freq
2.402000000 GHz

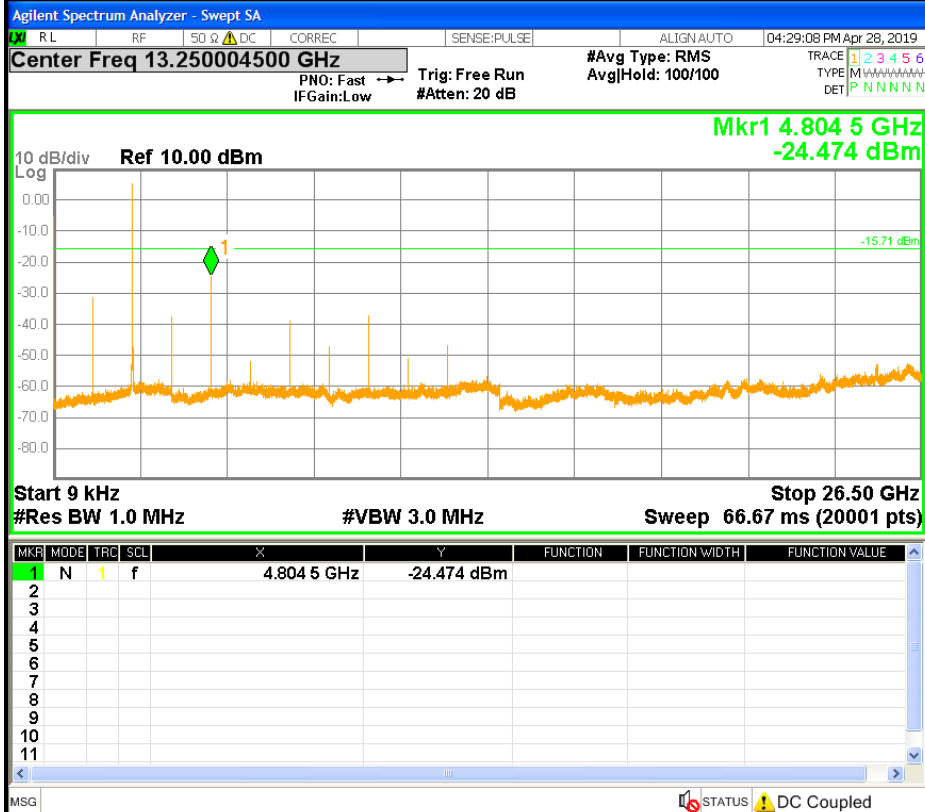
Start Freq
2.401000000 GHz

Stop Freq
2.403000000 GHz

CF Step
200.000 kHz
Auto Man

Freq Offset
0 Hz

Puw



Frequency

Auto Tune

Center Freq
13.250004500 GHz

Start Freq
9.000 kHz

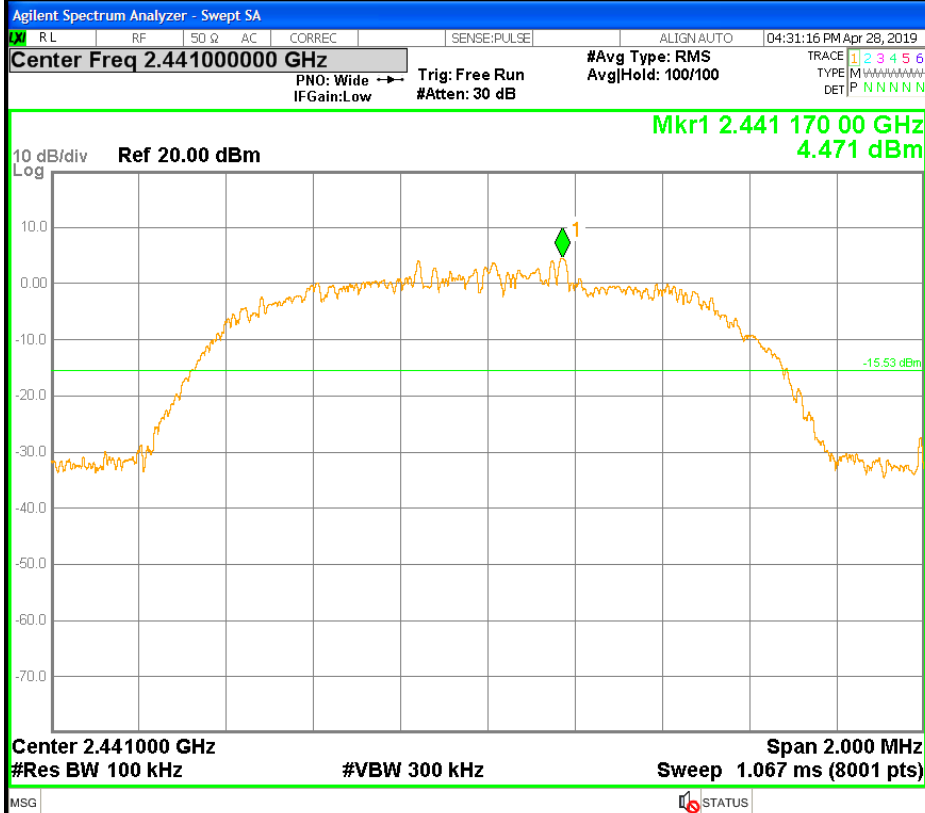
Stop Freq
26.500000000 GHz

CF Step
2.649999100 GHz
Auto Man

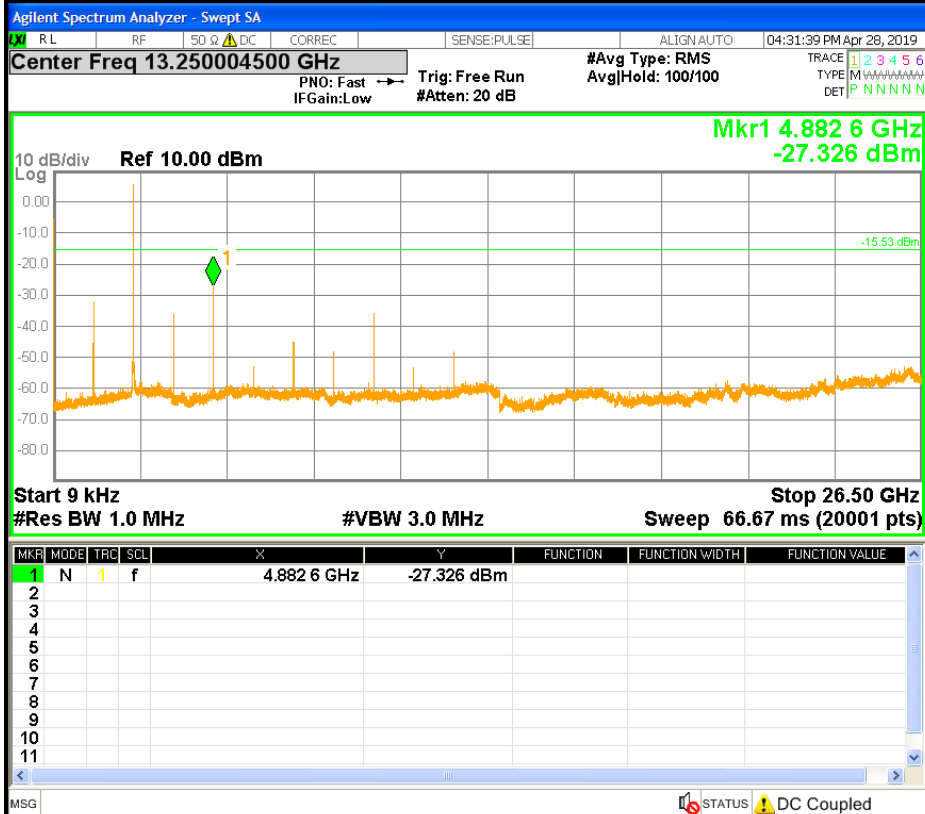
Freq Offset
0 Hz

8DPSK_MCH_Graphs

Pref

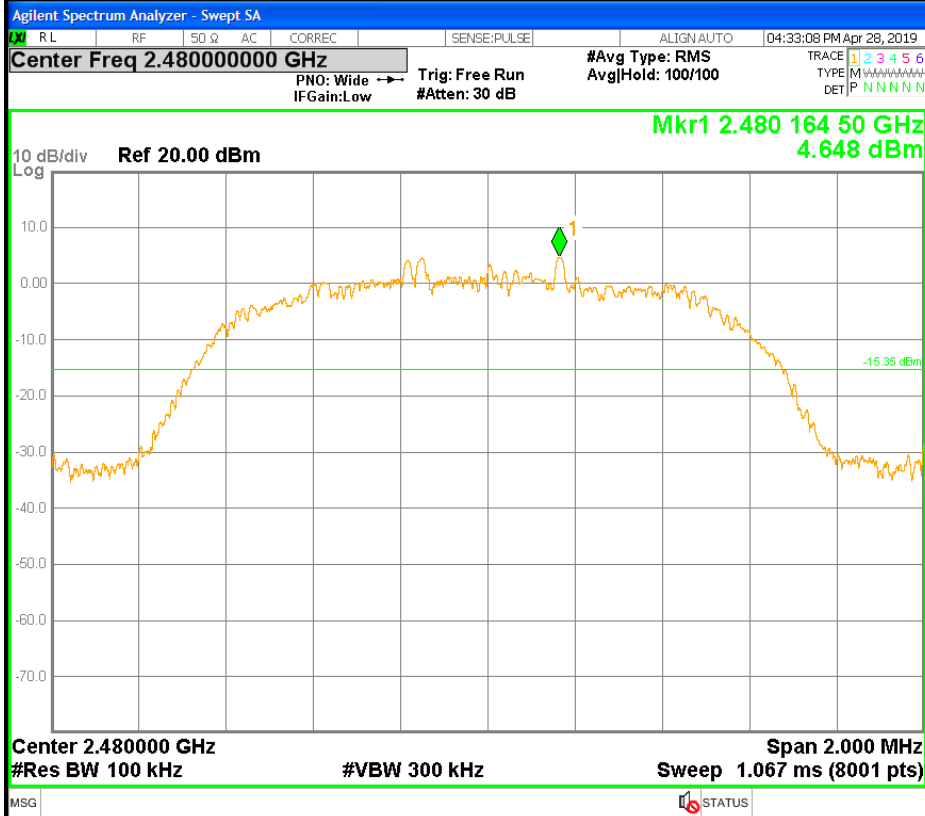


Puw



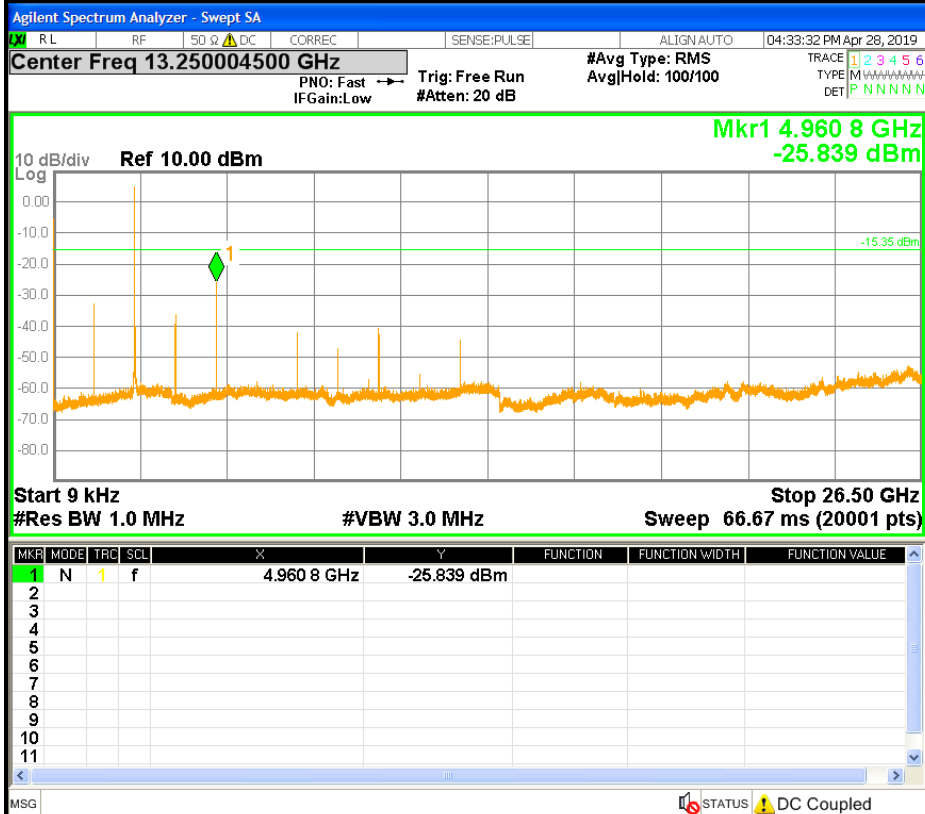
8DPSK_HCH_Graphs

Pref



Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.479000000 GHz
Stop Freq 2.481000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

Puw



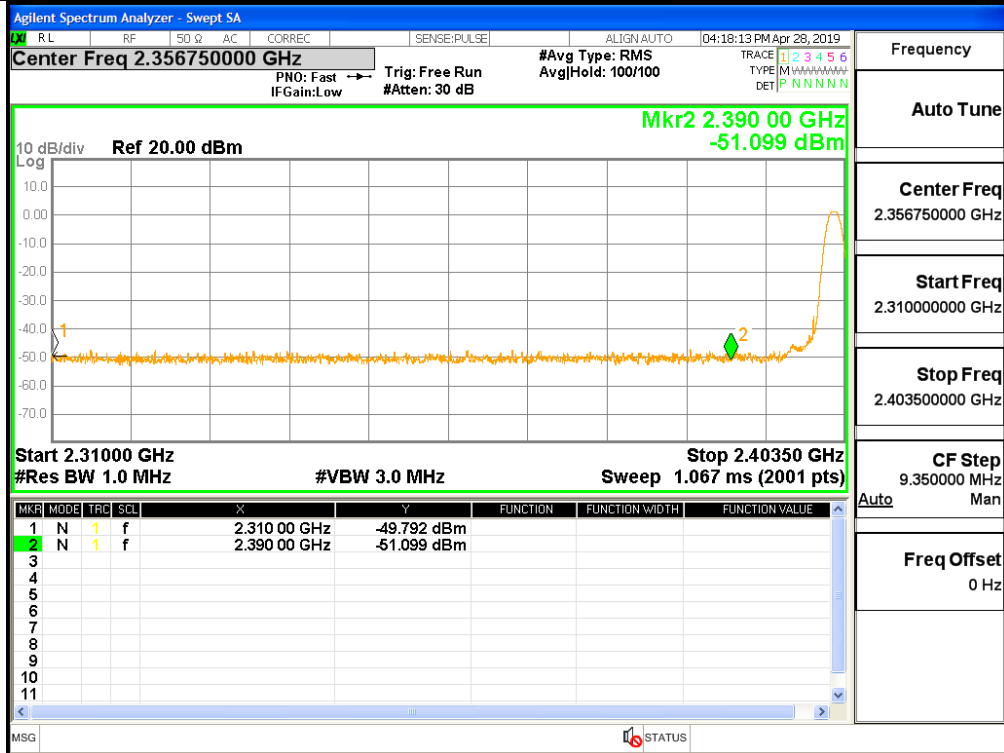
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

A.8 Restrict-band band-edge measurements

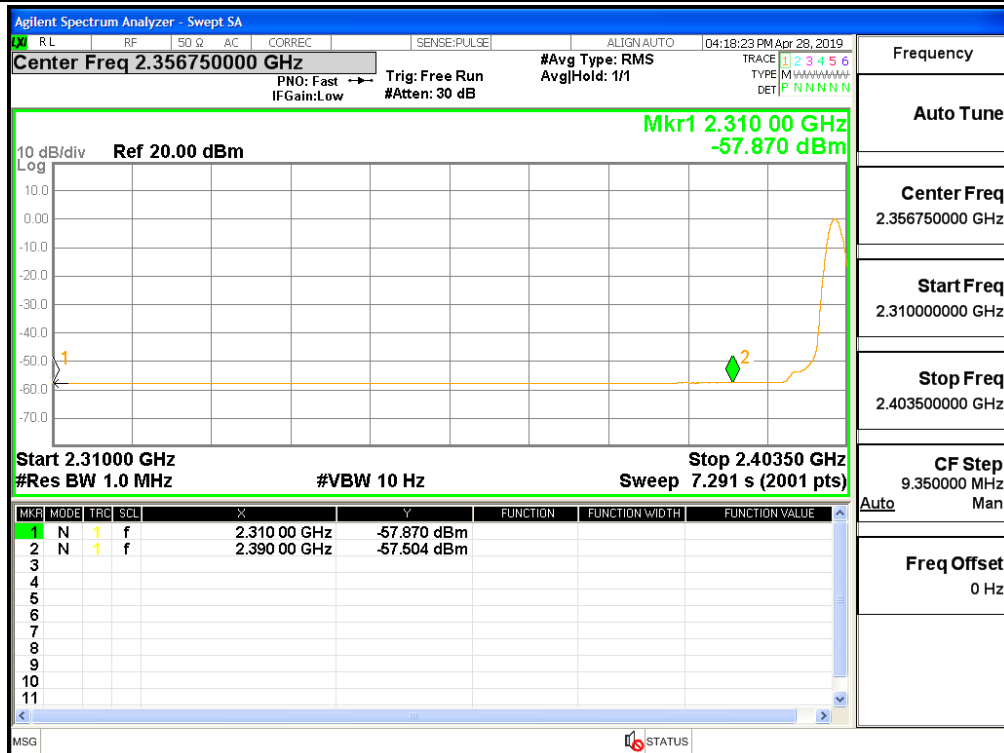
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2310	2.00	0.00	-49.79	47.41	74	Pass
1DH5	2480	2483.5	2.00	0.00	-42.11	55.09	74	Pass
2DH5	2402	2310	2.00	0.00	-49.44	47.76	74	Pass
2DH5	2480	2483.5	2.00	0.00	-35.00	62.20	74	Pass
3DH5	2402	2310	2.00	0.00	-48.70	48.50	74	Pass
3DH5	2480	2483.5	2.00	0.00	-35.13	62.07	74	Pass

Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390	2.00	0.00	-57.50	39.70	54	Pass
1DH5	2480	2483.5	2.00	0.00	-44.64	52.56	54	Pass
2DH5	2402	2390	2.00	0.00	-57.53	39.67	54	Pass
2DH5	2480	2483.5	2.00	0.00	-44.58	52.62	54	Pass
3DH5	2402	2390	2.00	0.00	-57.53	39.67	54	Pass
3DH5	2480	2483.5	2.00	0.00	-44.26	52.94	54	Pass

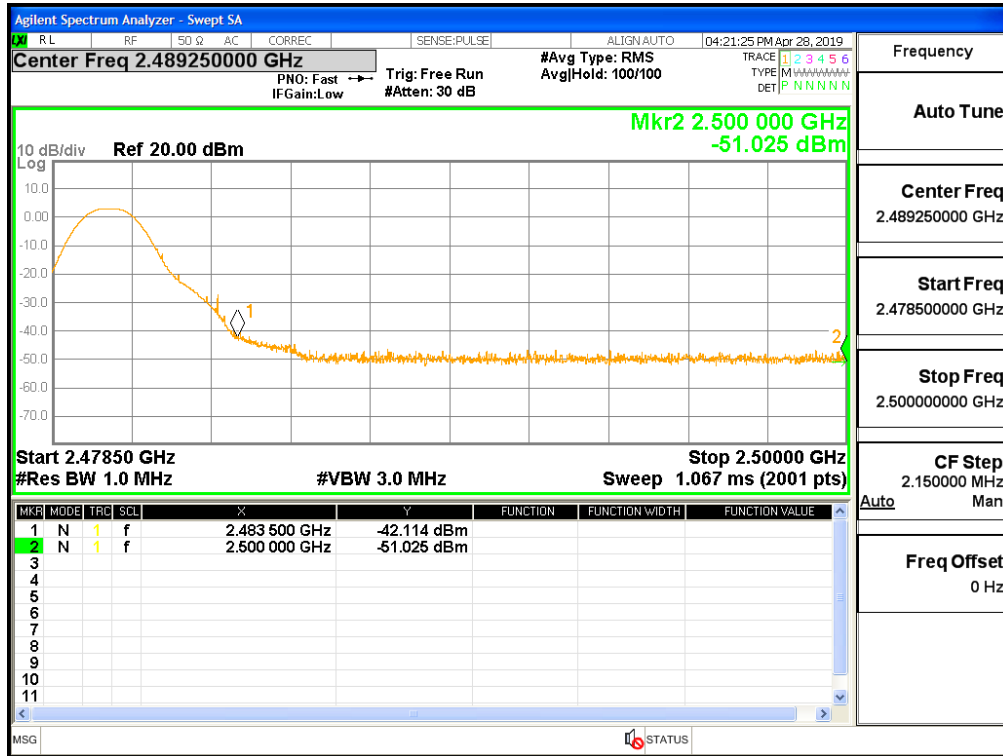
Restrict-band band-edge measurements_2402_PEAK_DH5



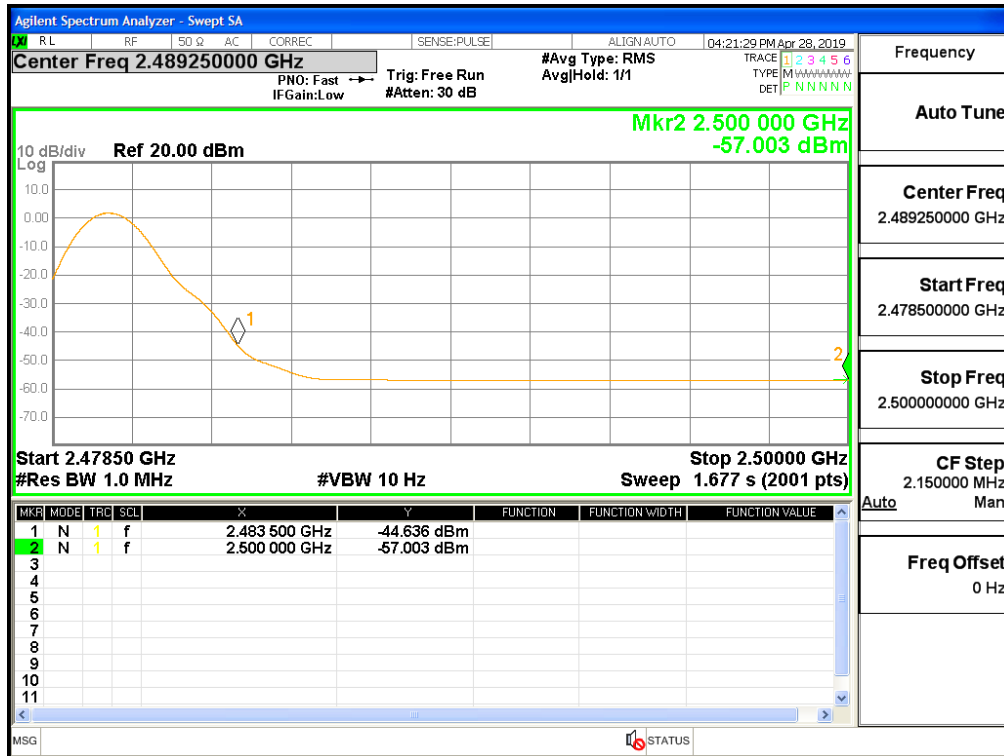
Restrict-band band-edge measurements_2402_AV_DH5



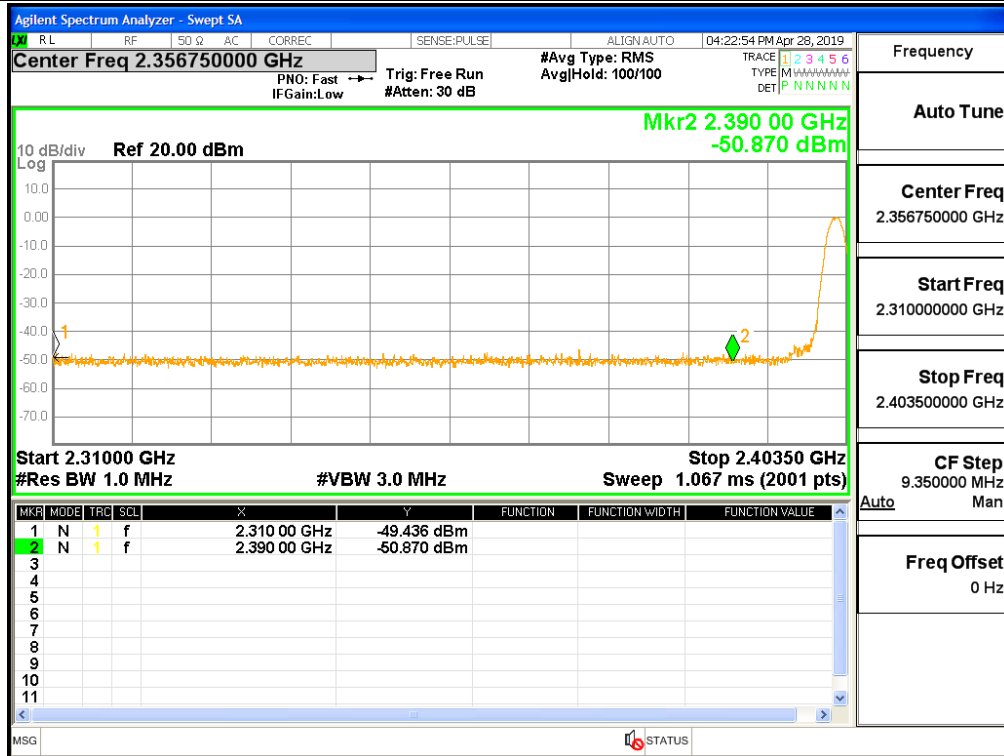
Restrict-band band-edge measurements_2480_PEAK_DH5



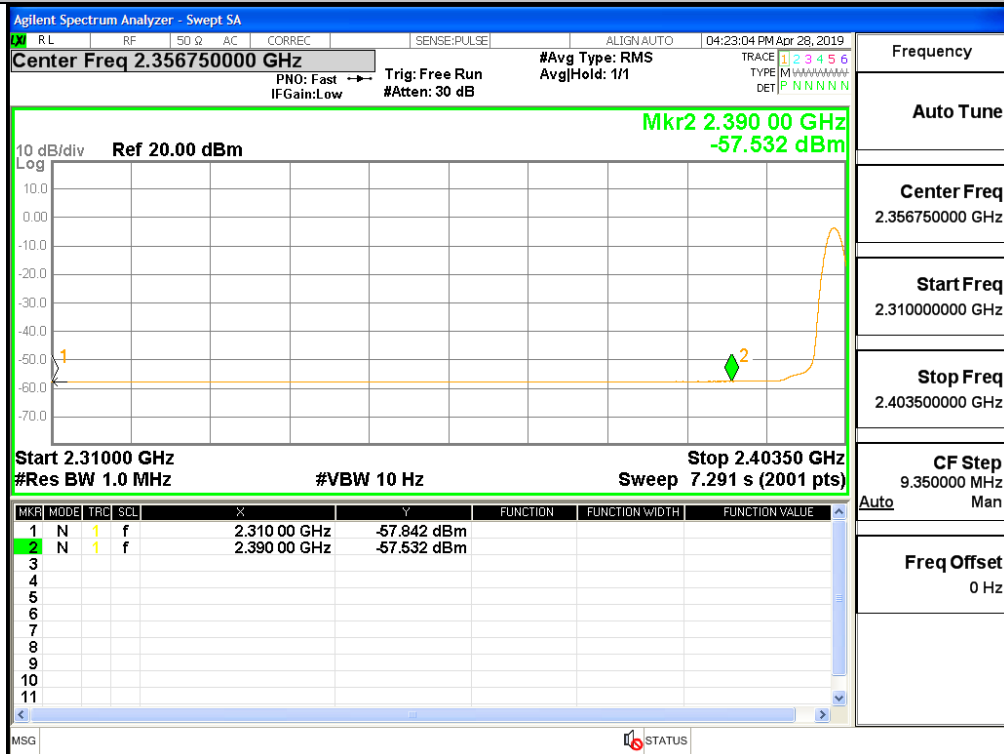
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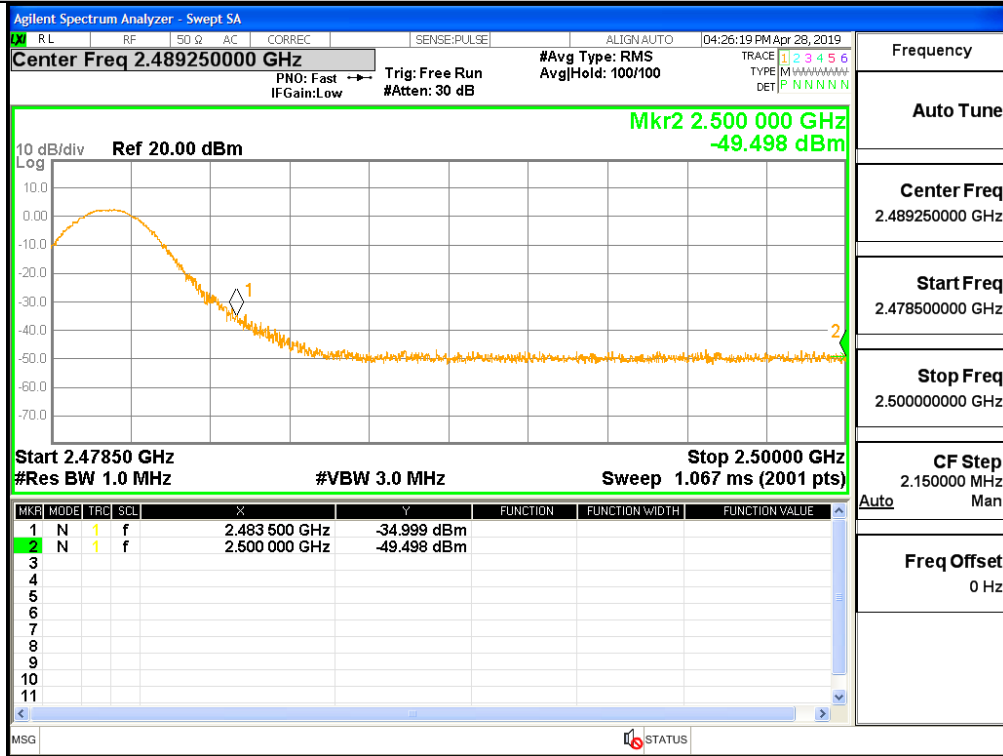
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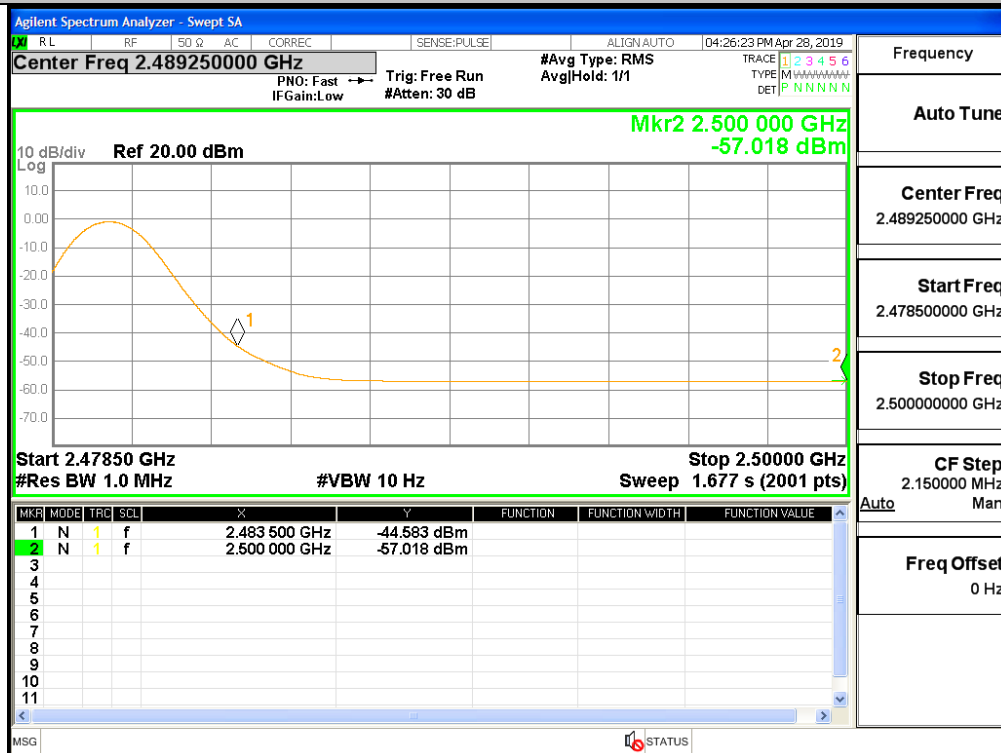
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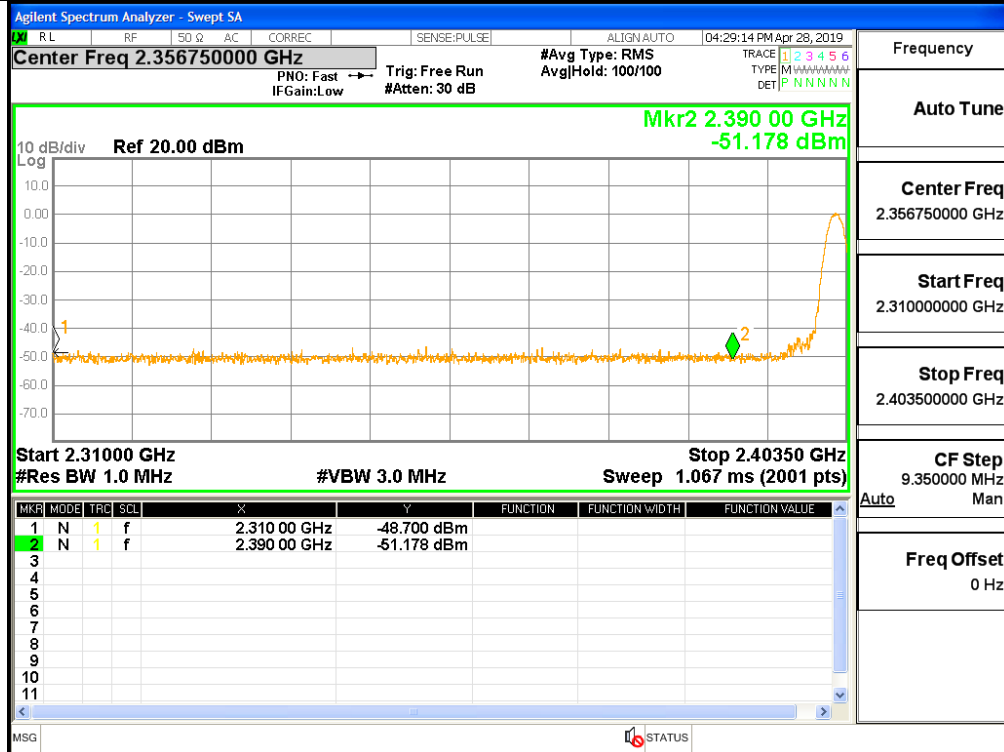
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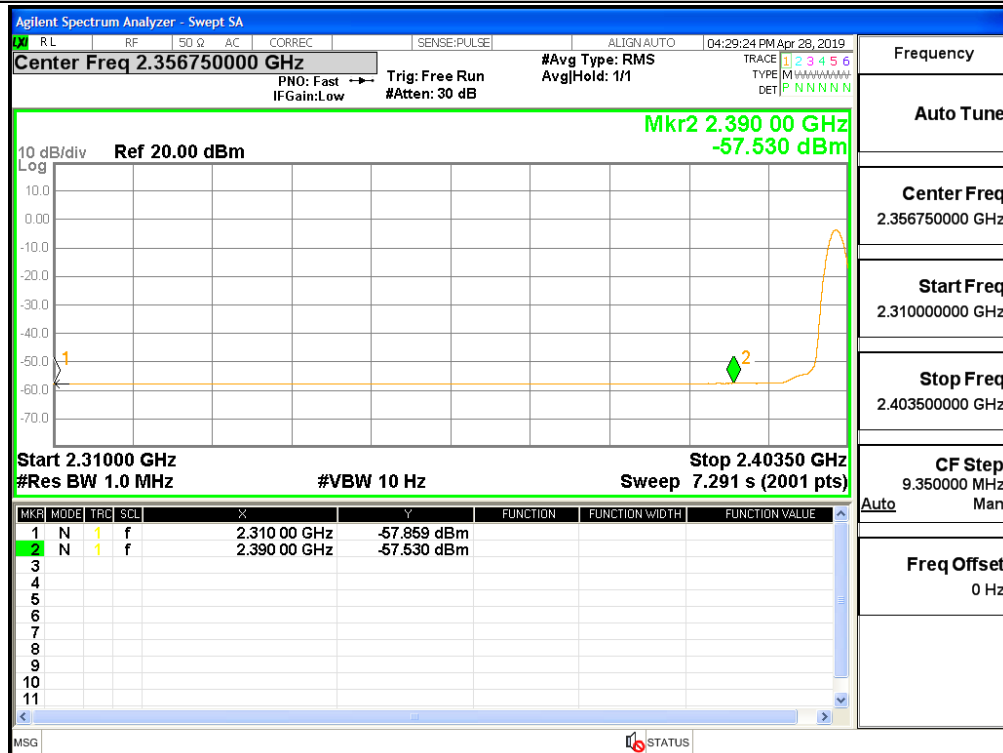
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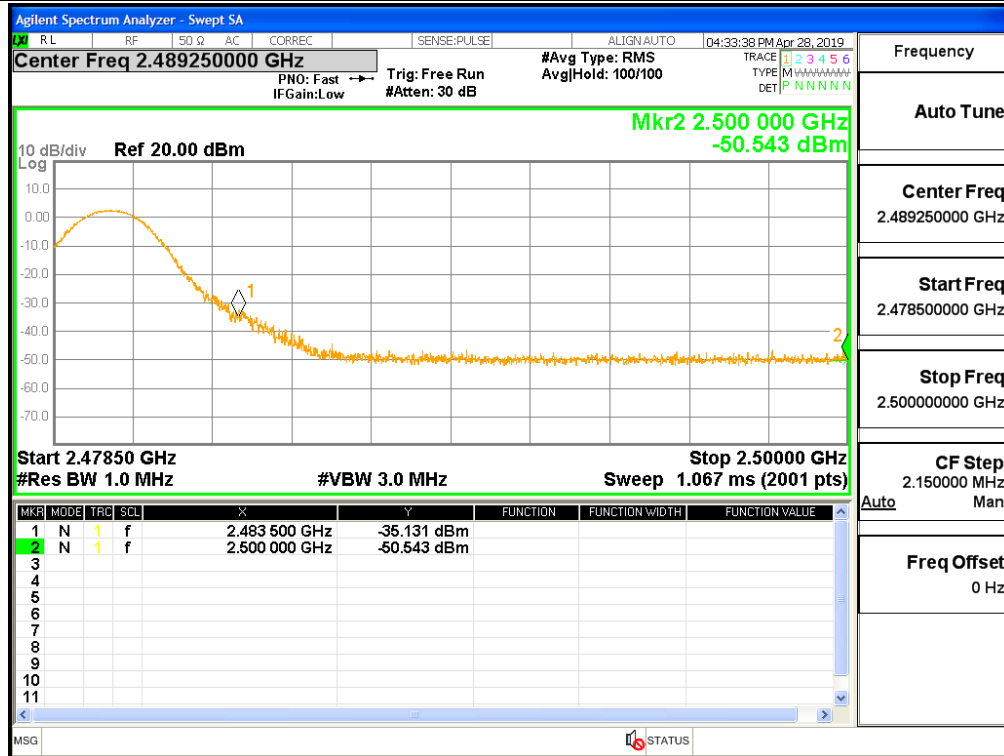
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

