

Appendix A

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

Product Name: LTE smartphone

Trade Mark: N/A

Test Model: HEROSP001

FCC ID: 2AVYL-HEROSP001

Environmental Conditions

Temperature:	22.8° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

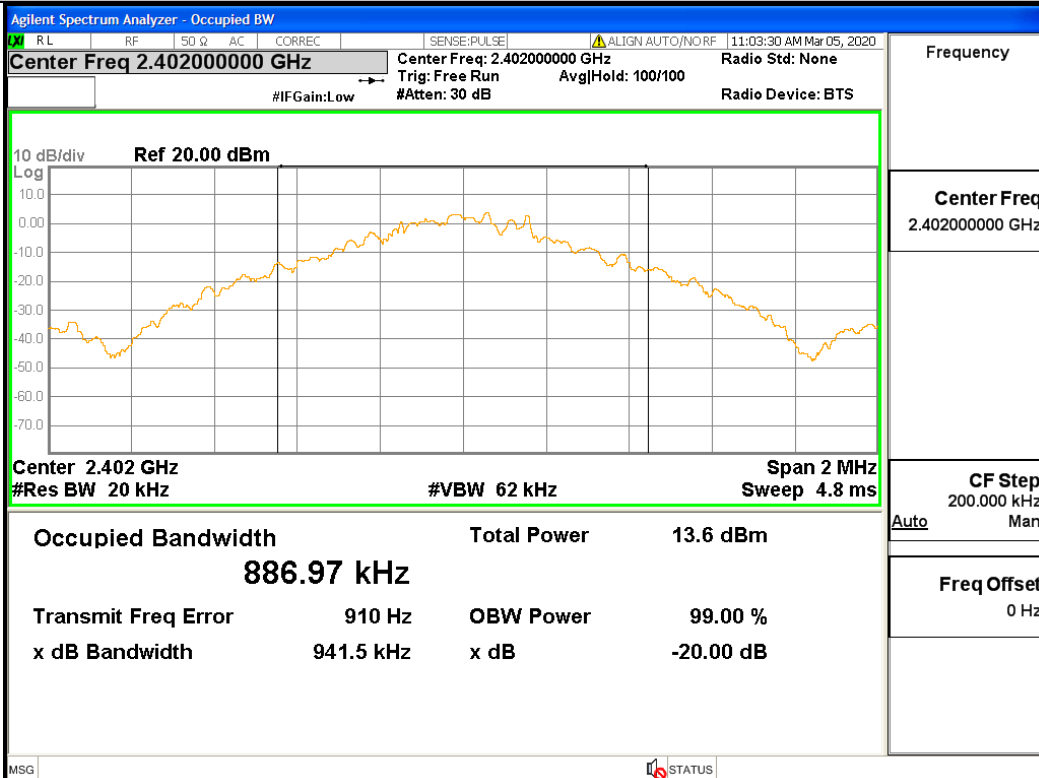
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	0.942	Not Specified	PASS
GFSK	MCH	0.943	Not Specified	PASS
GFSK	HCH	0.946	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.317	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.311	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.315	Not Specified	PASS
8DPSK	LCH	1.294	Not Specified	PASS
8DPSK	MCH	1.301	Not Specified	PASS
8DPSK	HCH	1.267	Not Specified	PASS

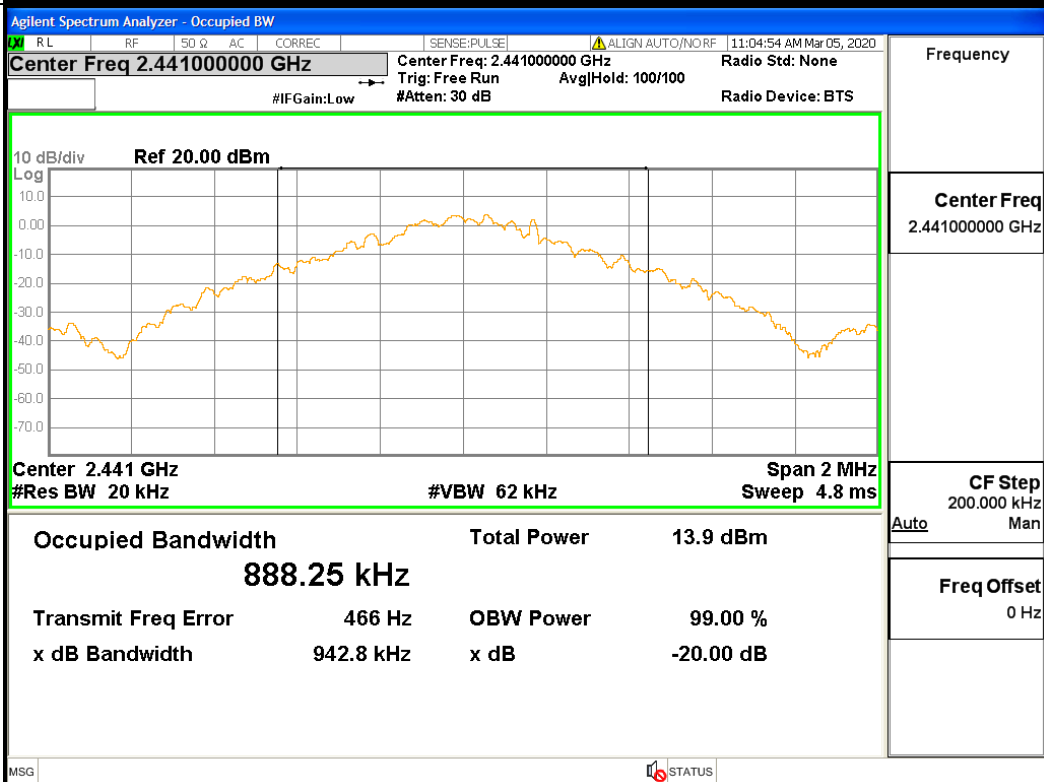
Test Graph

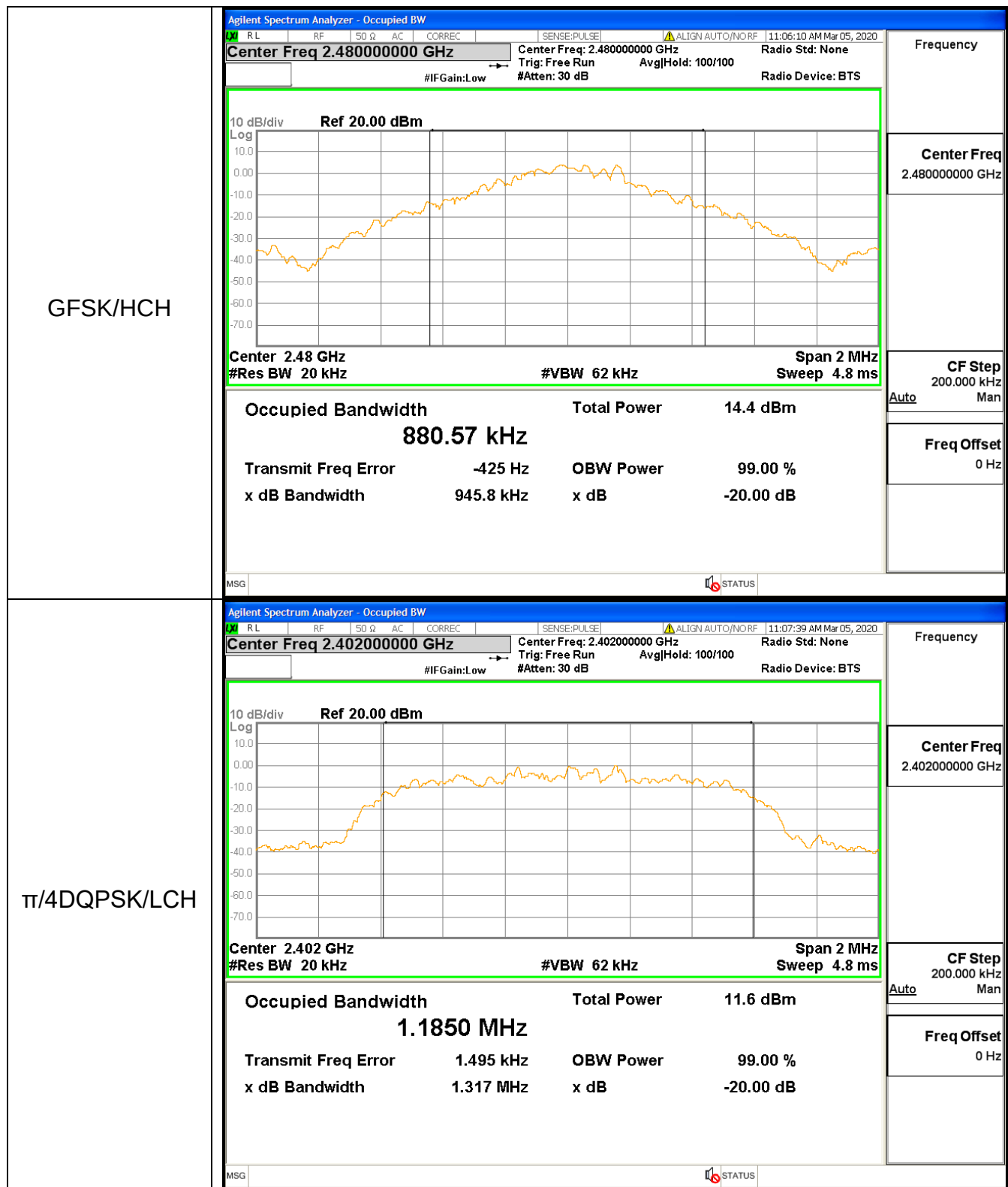
Graphs

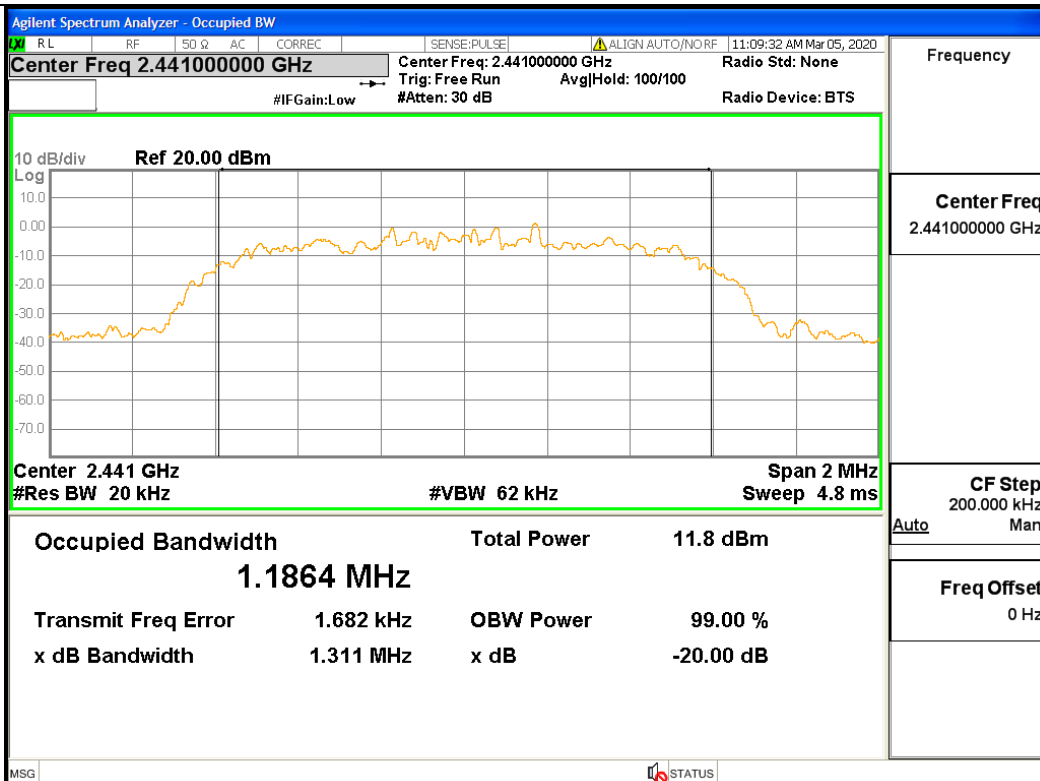
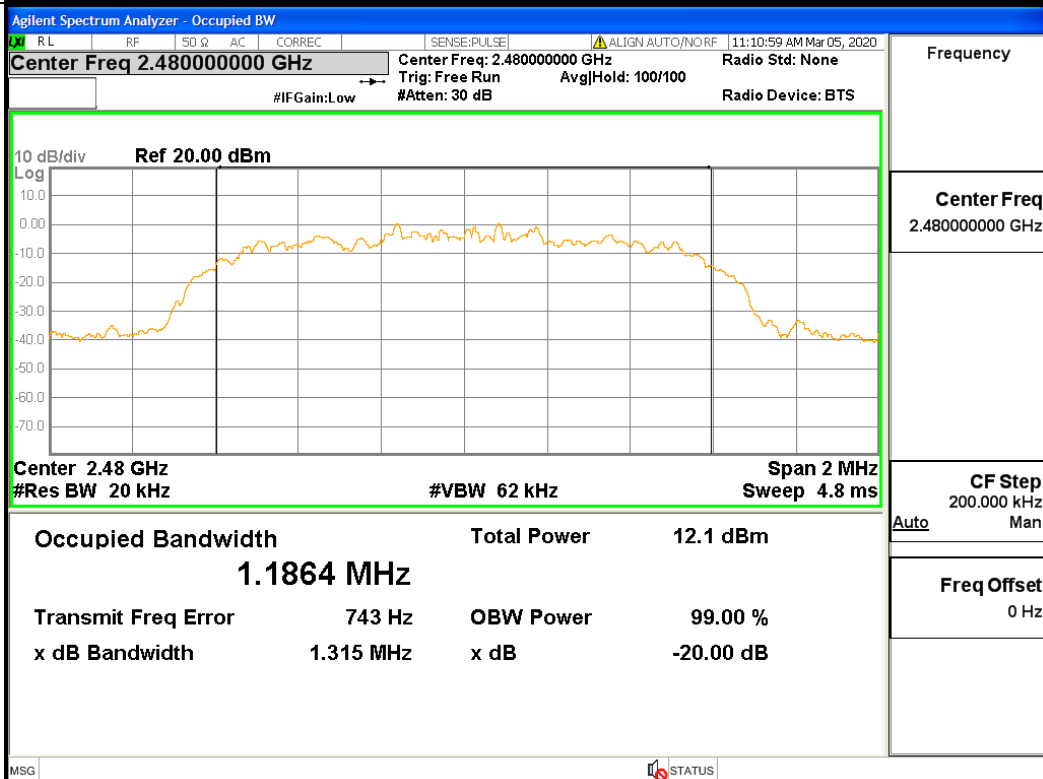
GFSK/LCH



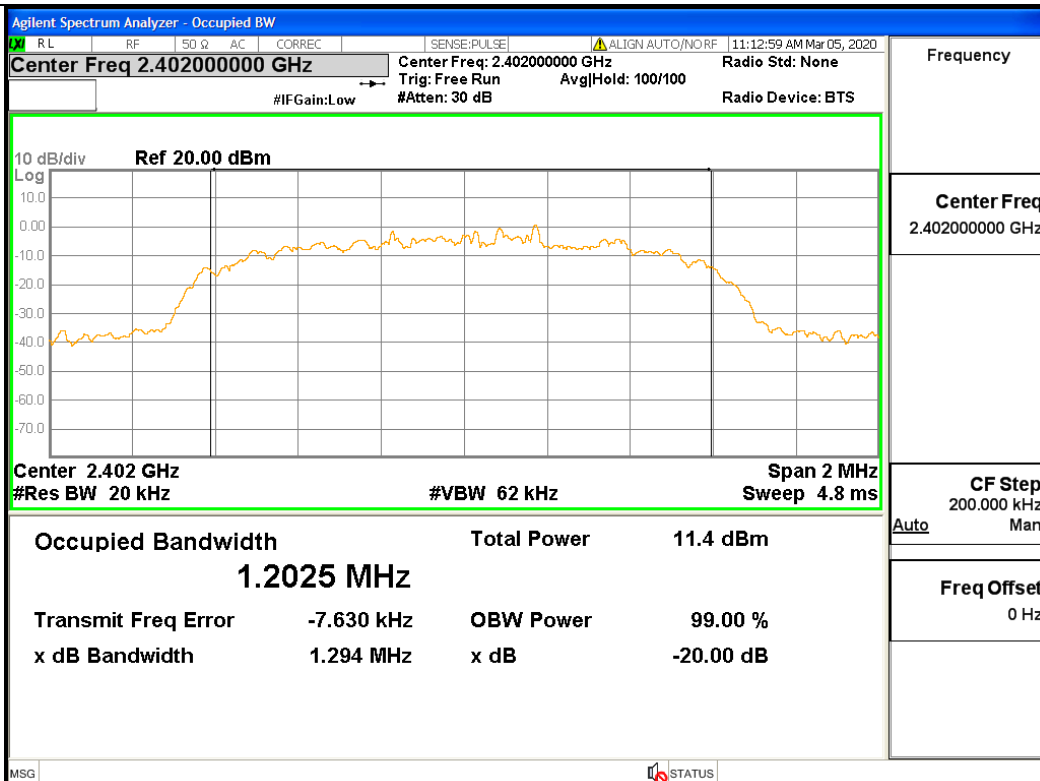
GFSK/MCH



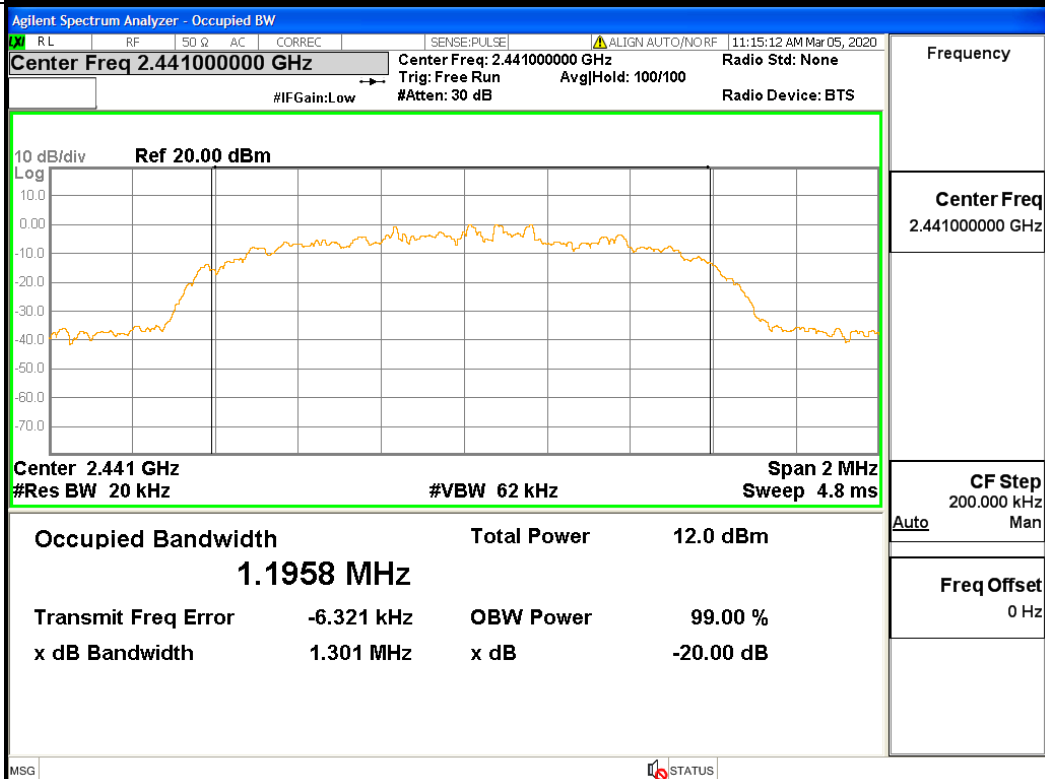


π /4DQPSK/MCH π /4DQPSK/HCH

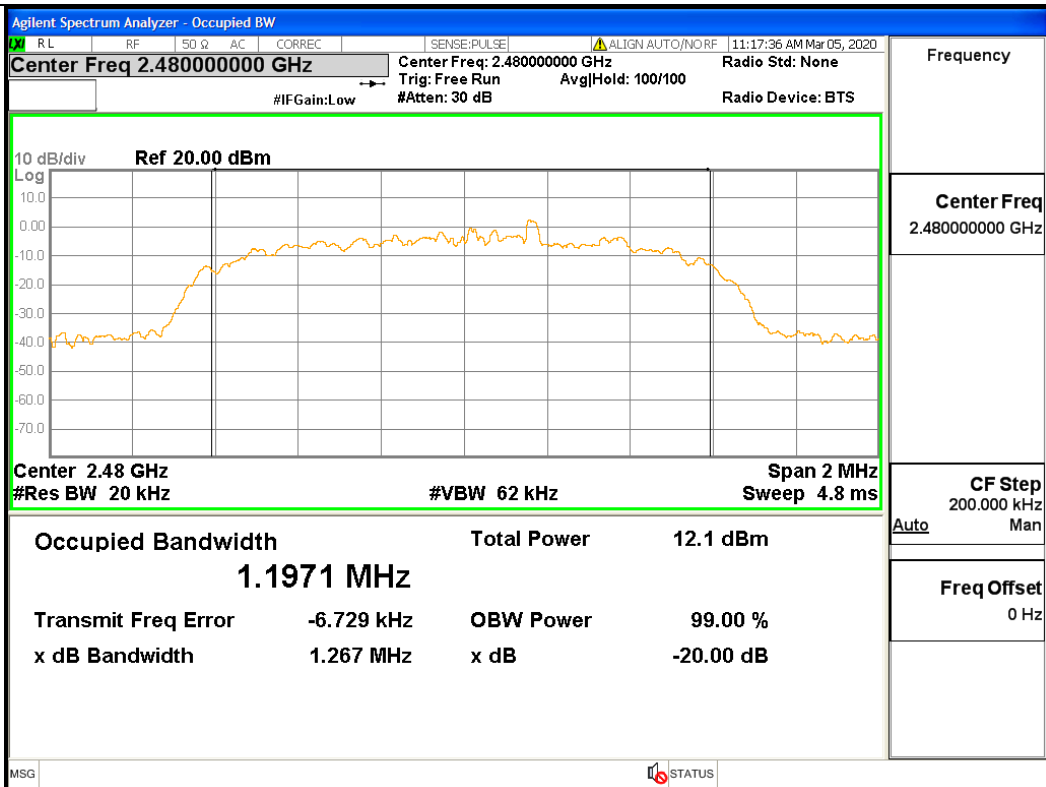
8DPSK/LCH



8DPSK/MCH



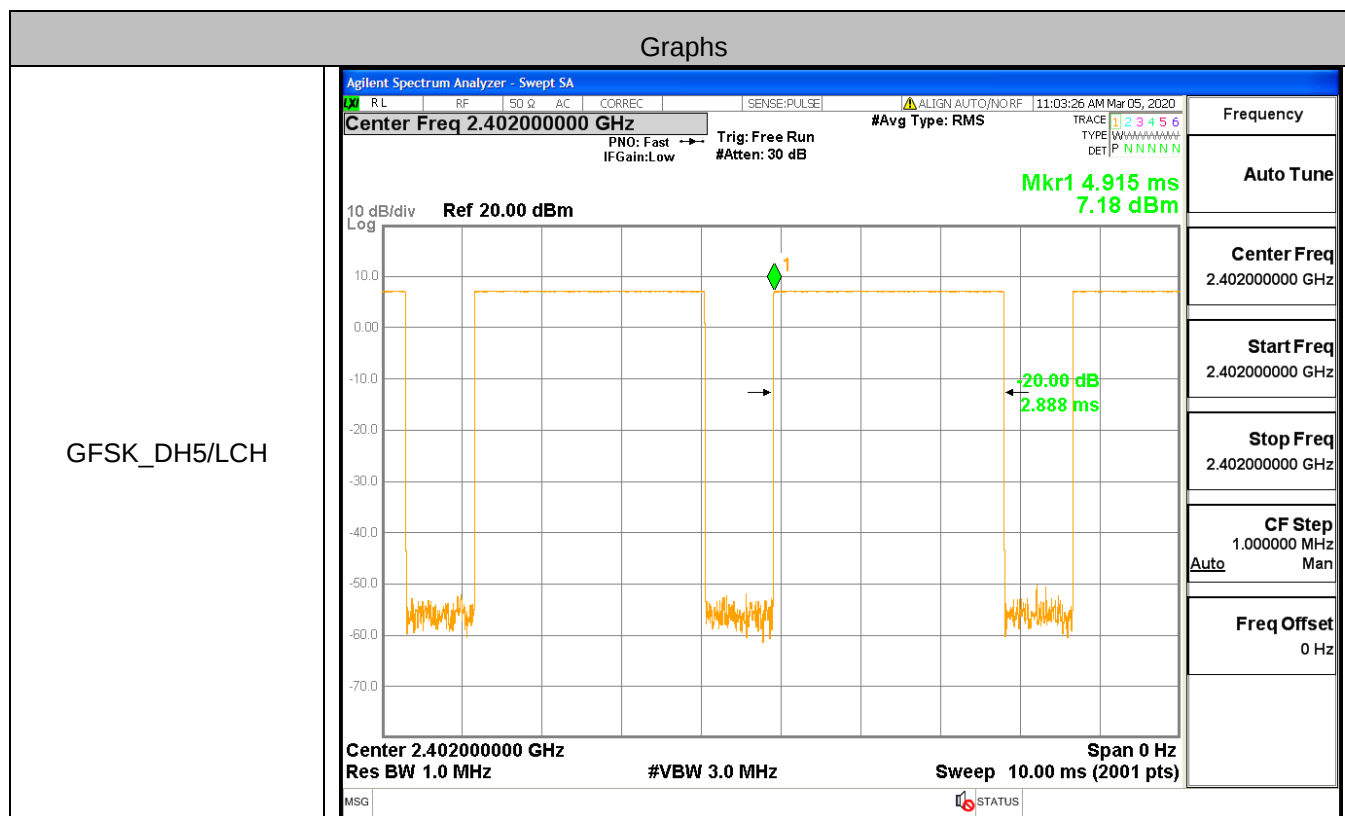
8DPSK/HCH

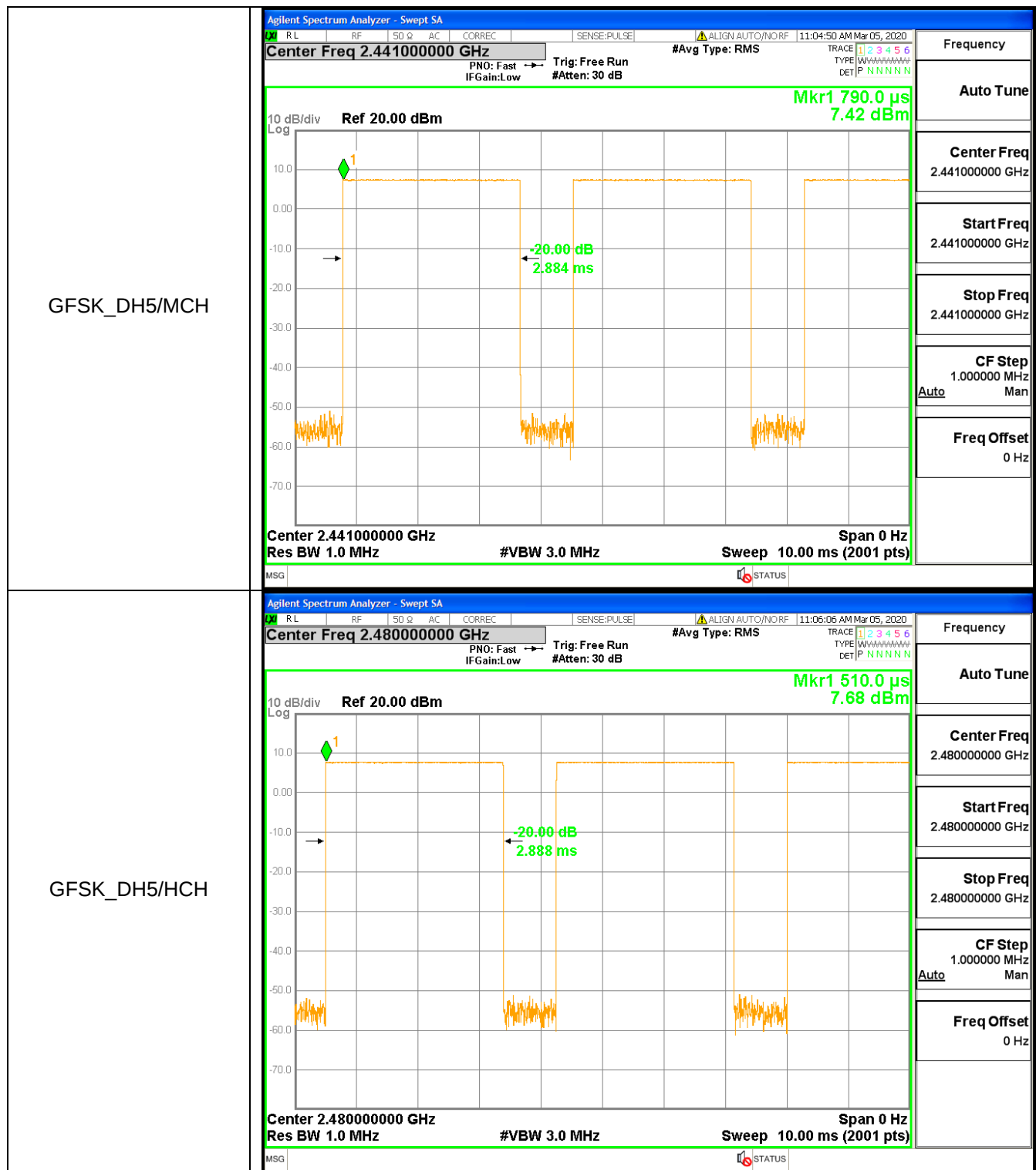


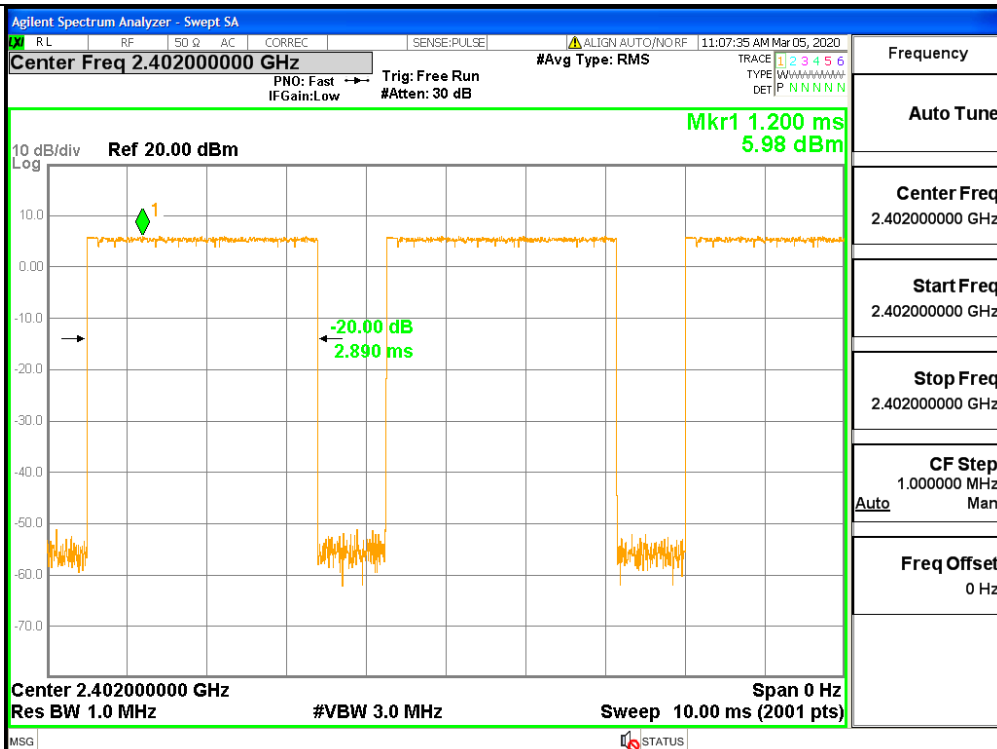
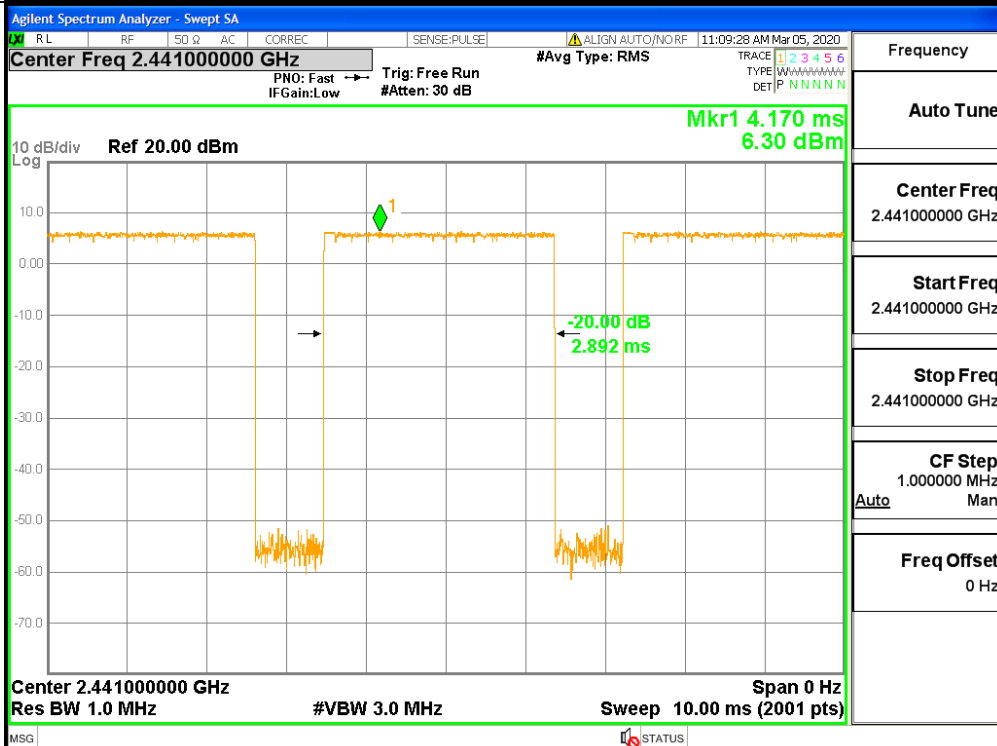
A.2 Dwell Time

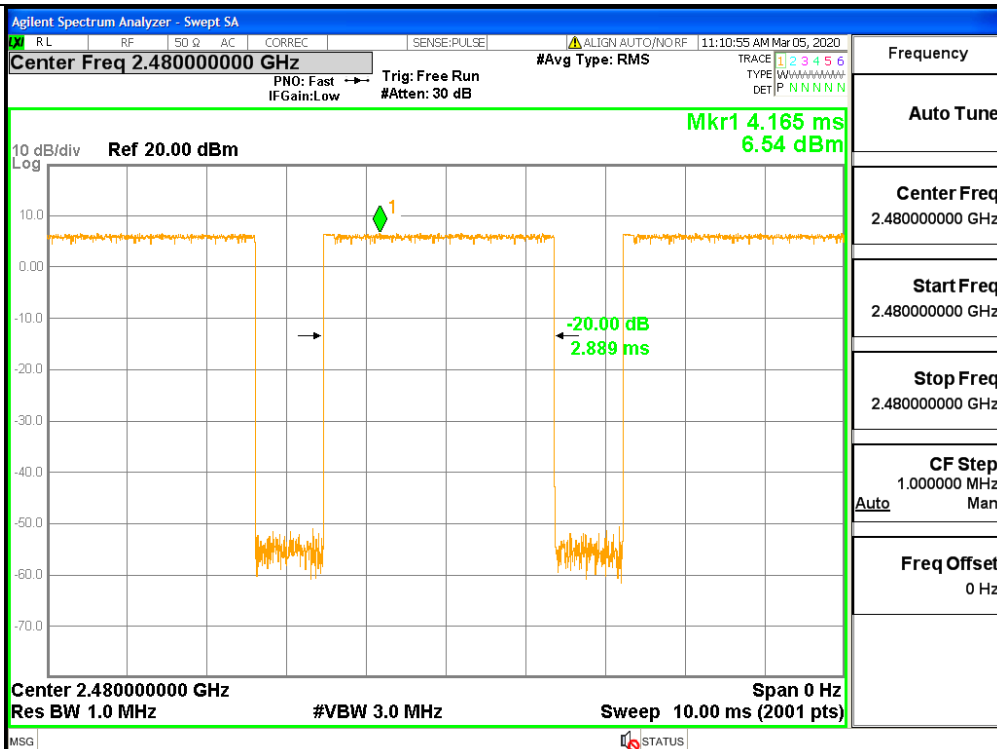
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.888	106.7	0.308	0.4	PASS
GFSK	DH5	MCH	2.884	106.7	0.308	0.4	PASS
GFSK	DH5	HCH	2.888	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.890	106.7	0.308	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	2.892	106.7	0.309	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	2.889	106.7	0.308	0.4	PASS
8DPSK	3DH5	LCH	2.892	106.7	0.309	0.4	PASS
8DPSK	3DH5	MCH	2.892	106.7	0.309	0.4	PASS
8DPSK	3DH5	HCH	2.892	106.7	0.309	0.4	PASS

Test Graph

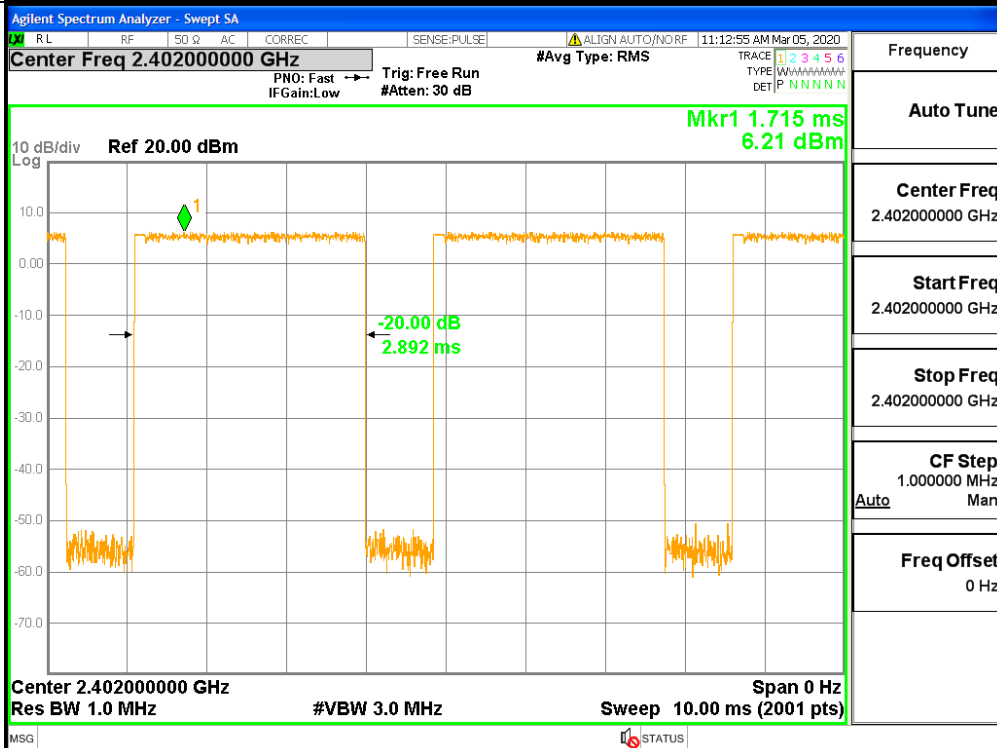




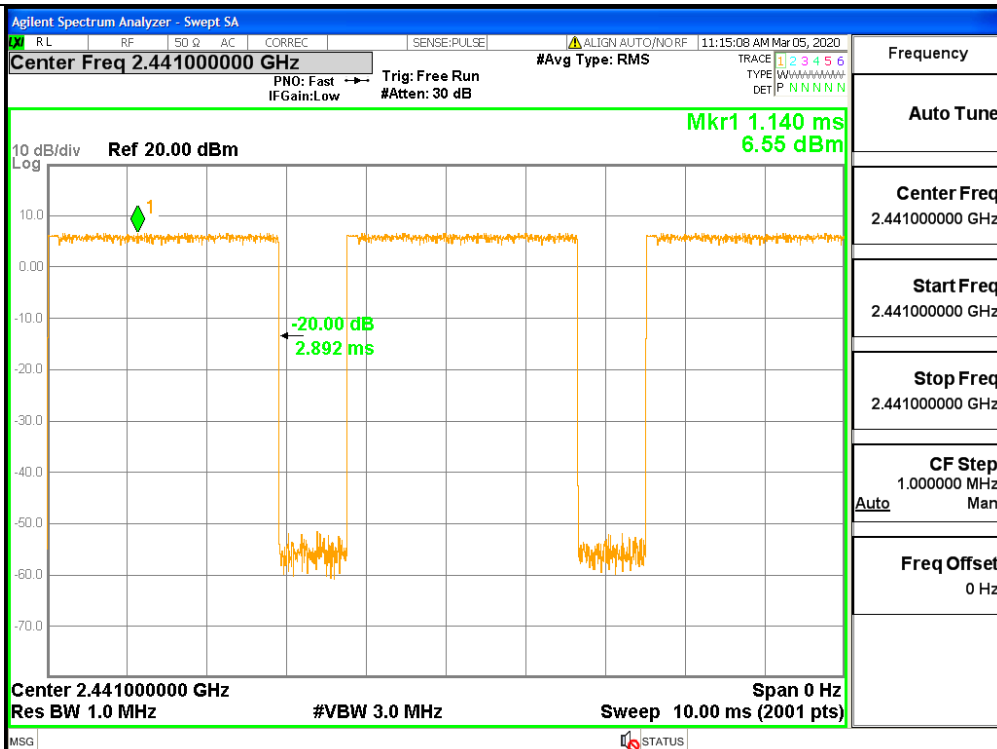
$\pi/4$ DQPSK
_2DH5/LCH $\pi/4$ DQPSK
_2DH5/MCH

$\pi/4$ DQPSK
_2DH5/HCH

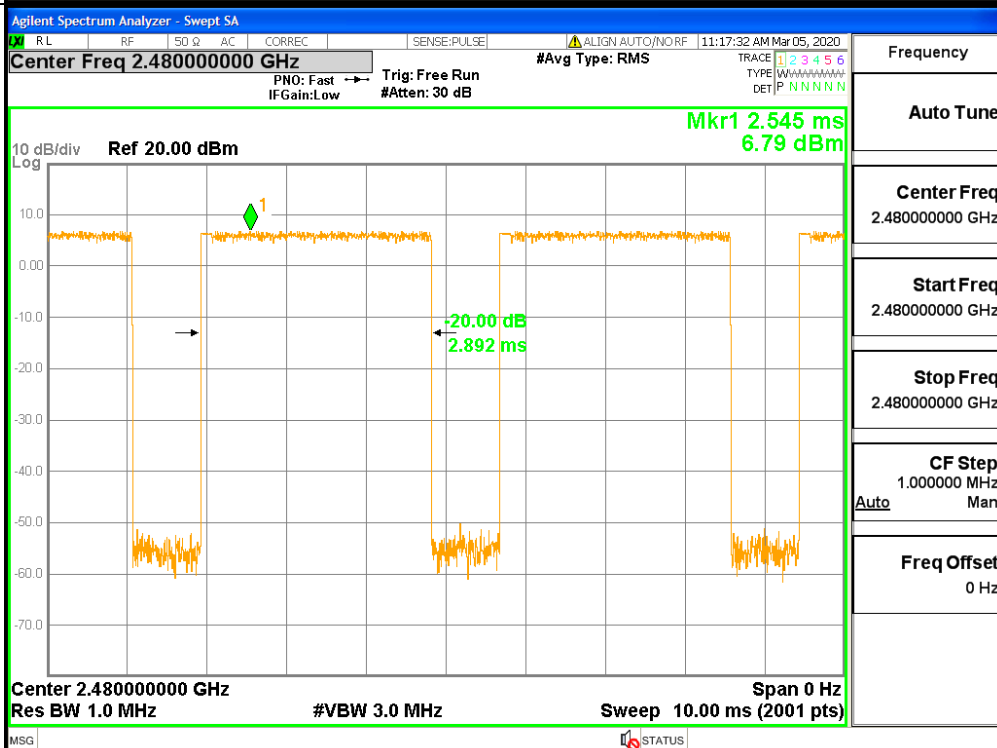
8DPSK_3DH5/LCH



8DPSK_3DH5/MCH

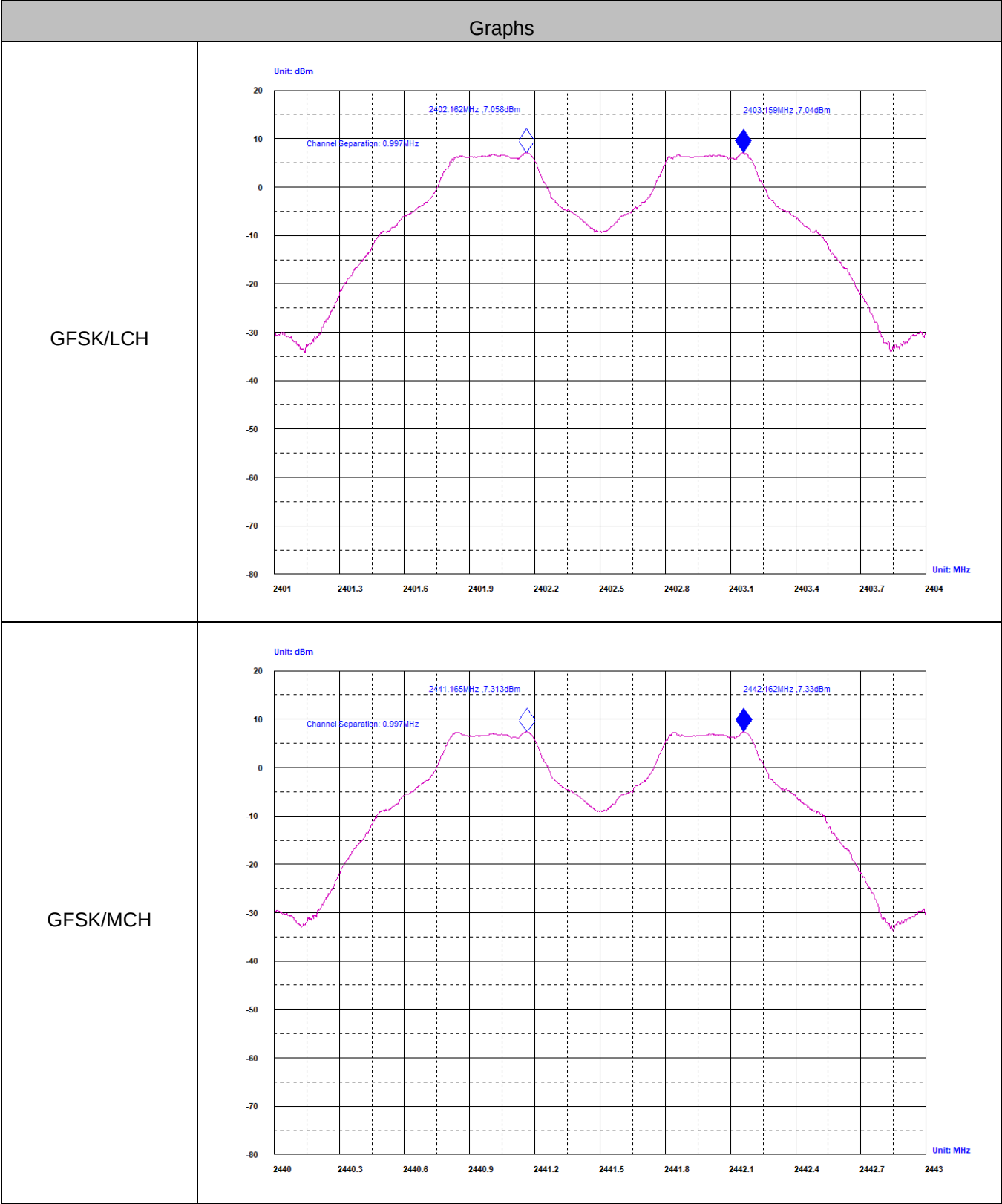


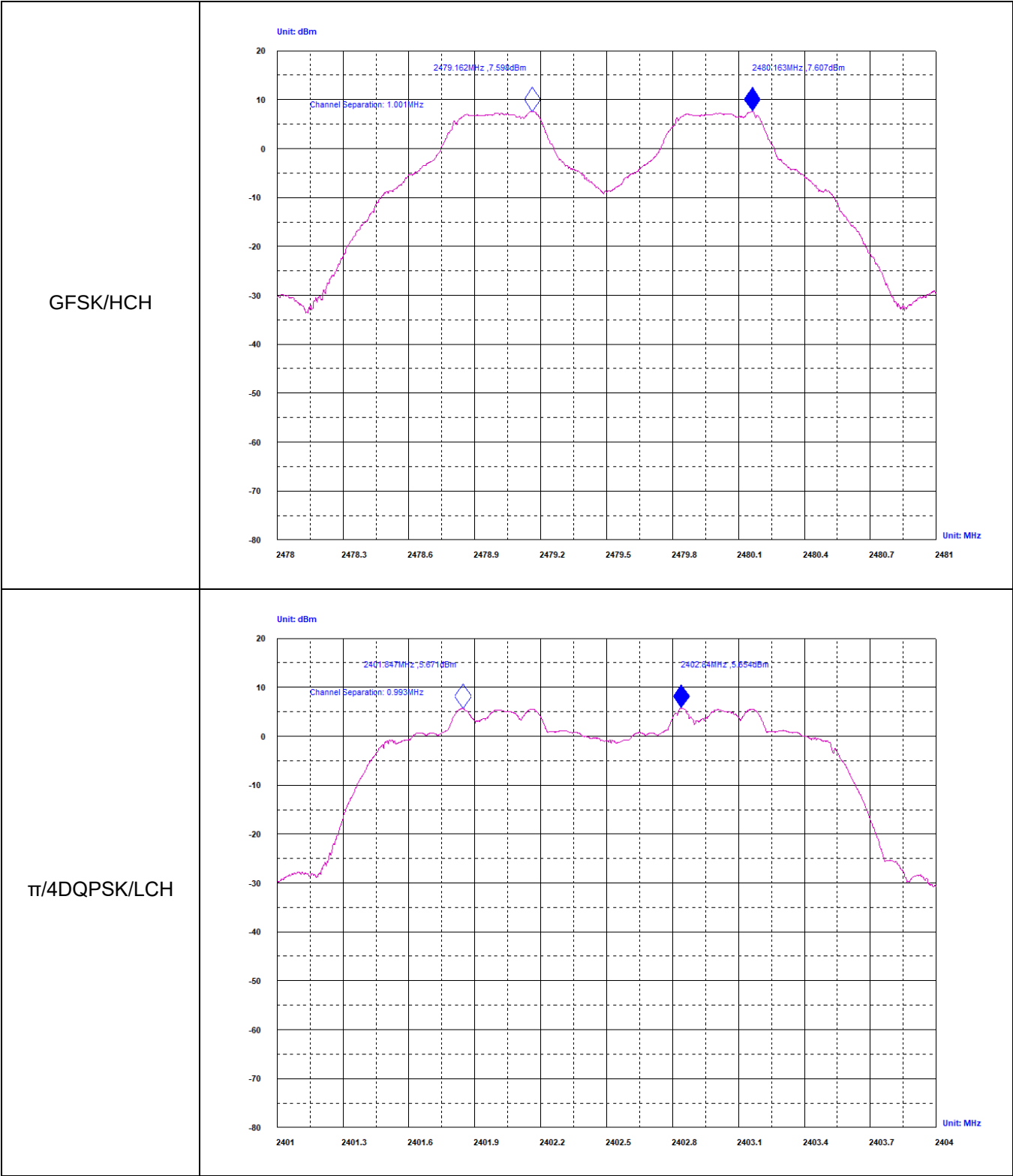
8DPSK_3DH5/HCH

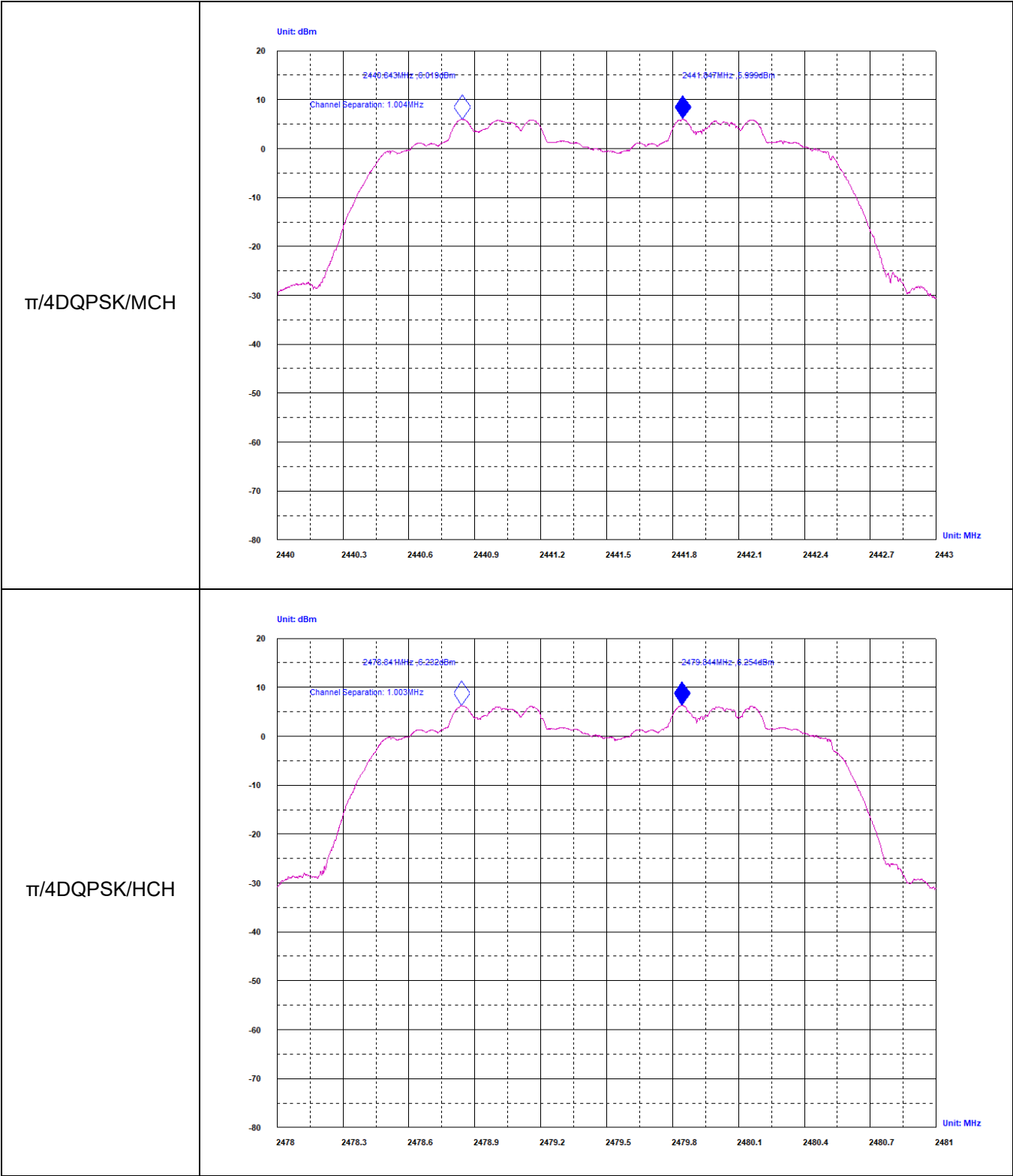


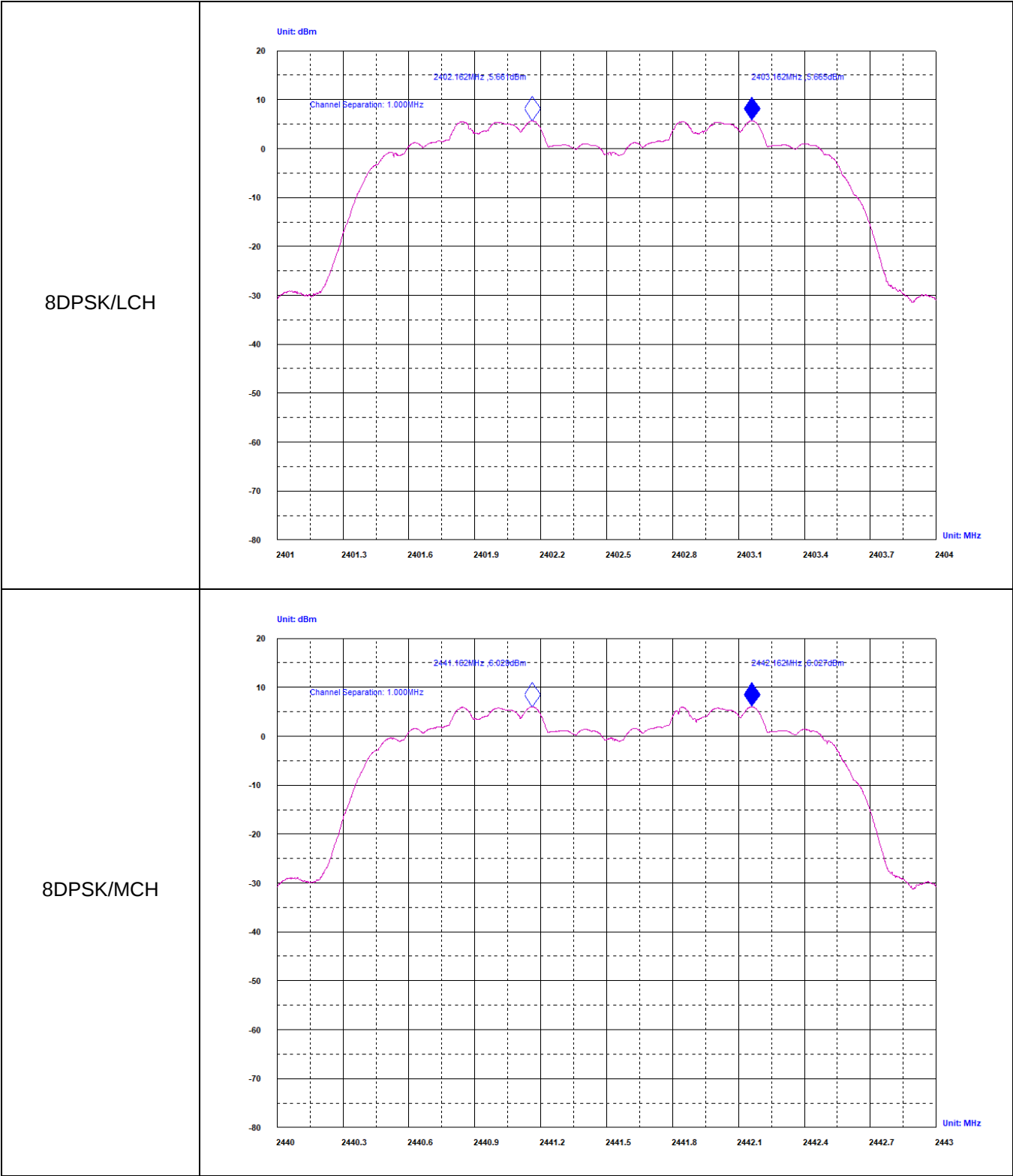
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.997	0.627	PASS
GFSK	MCH	0.997	0.629	PASS
GFSK	HCH	1.001	0.631	PASS
$\pi/4$ DQPSK	LCH	0.993	0.878	PASS
$\pi/4$ DQPSK	MCH	1.004	0.874	PASS
$\pi/4$ DQPSK	HCH	1.003	0.877	PASS
8DPSK	LCH	1.000	0.863	PASS
8DPSK	MCH	1.000	0.867	PASS
8DPSK	HCH	0.999	0.845	PASS

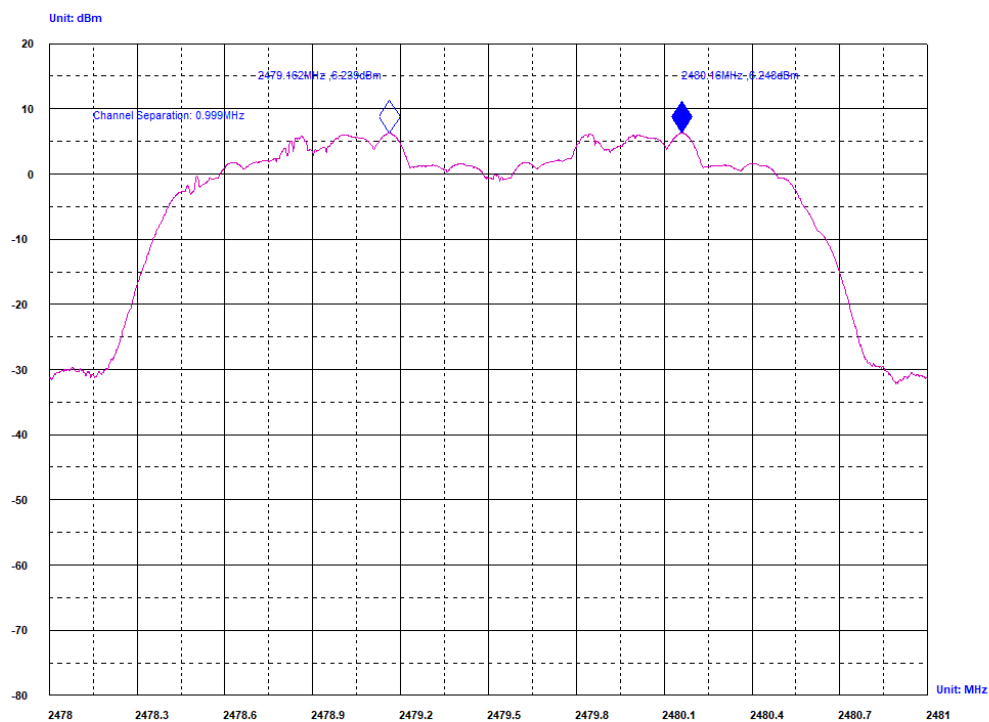








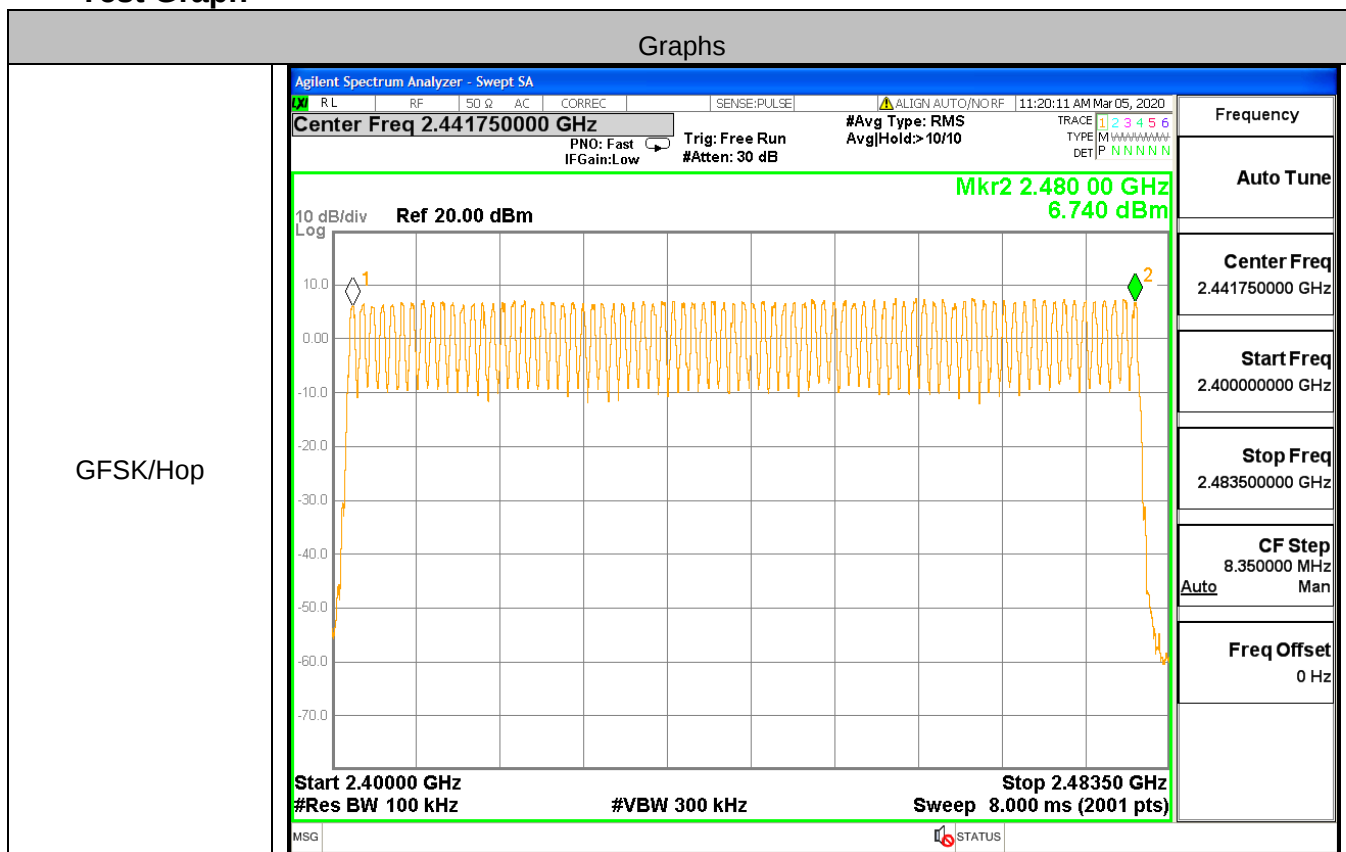
8DPSK/HCH

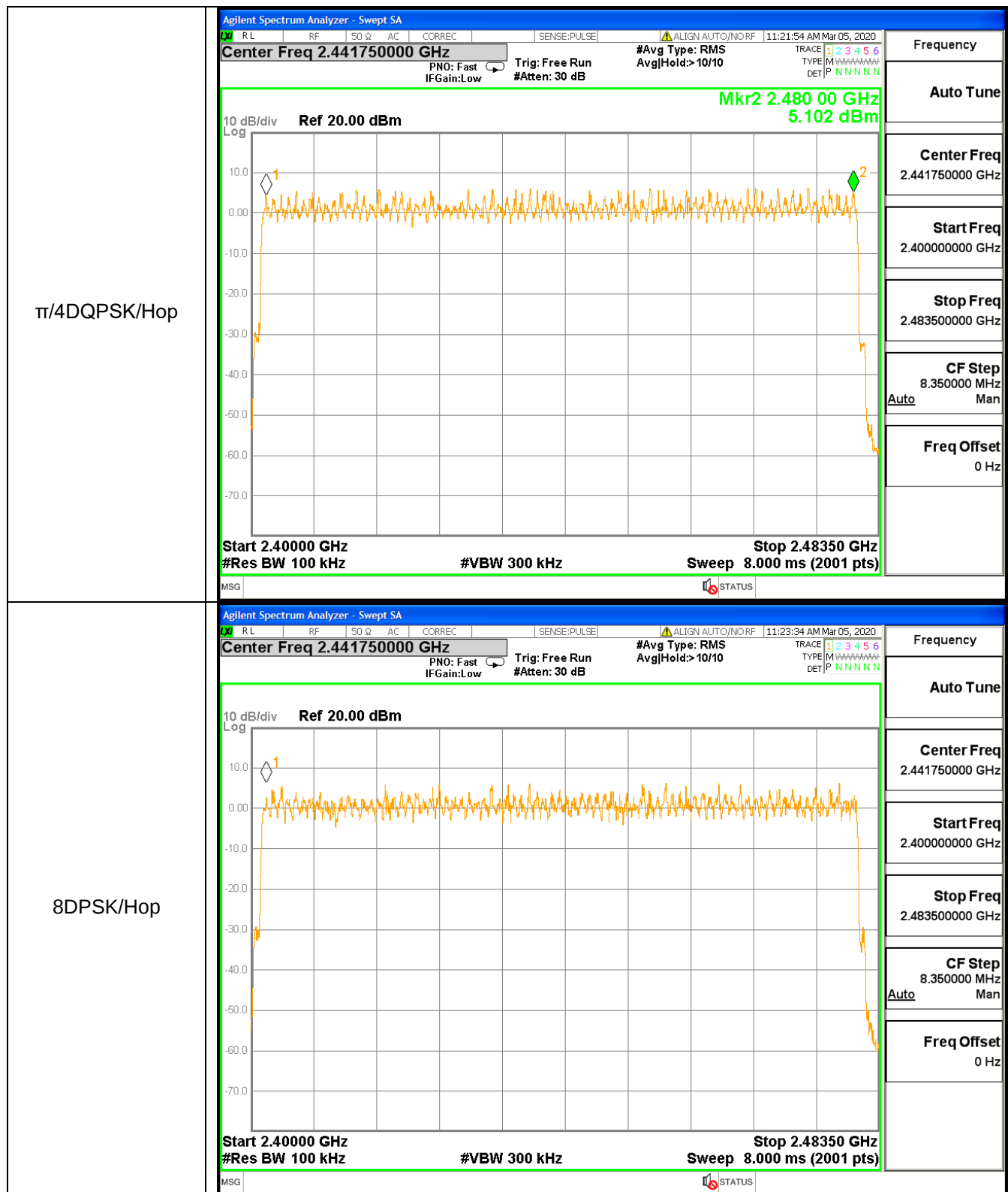


A.4 Hopping Channel Number

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

Test Graph

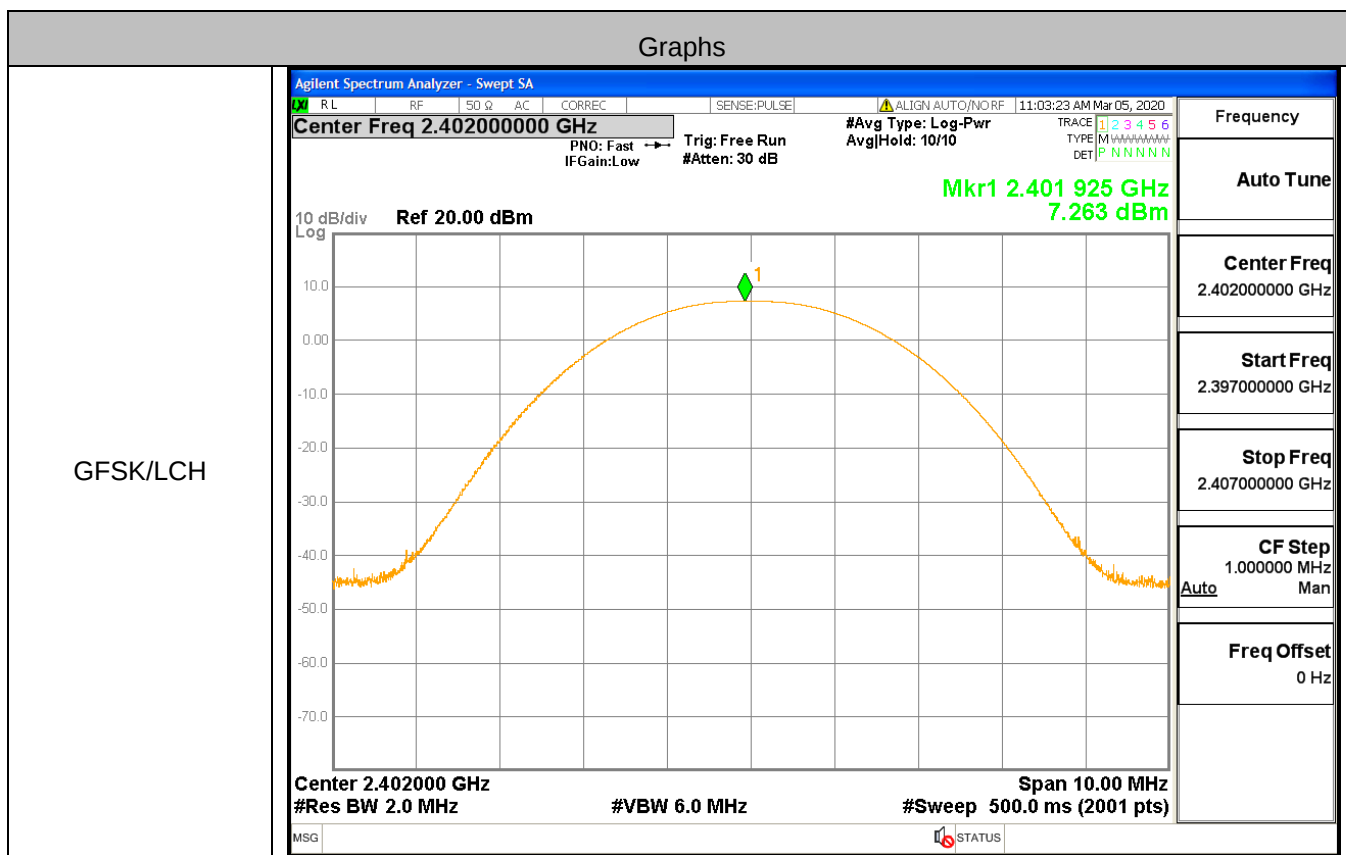


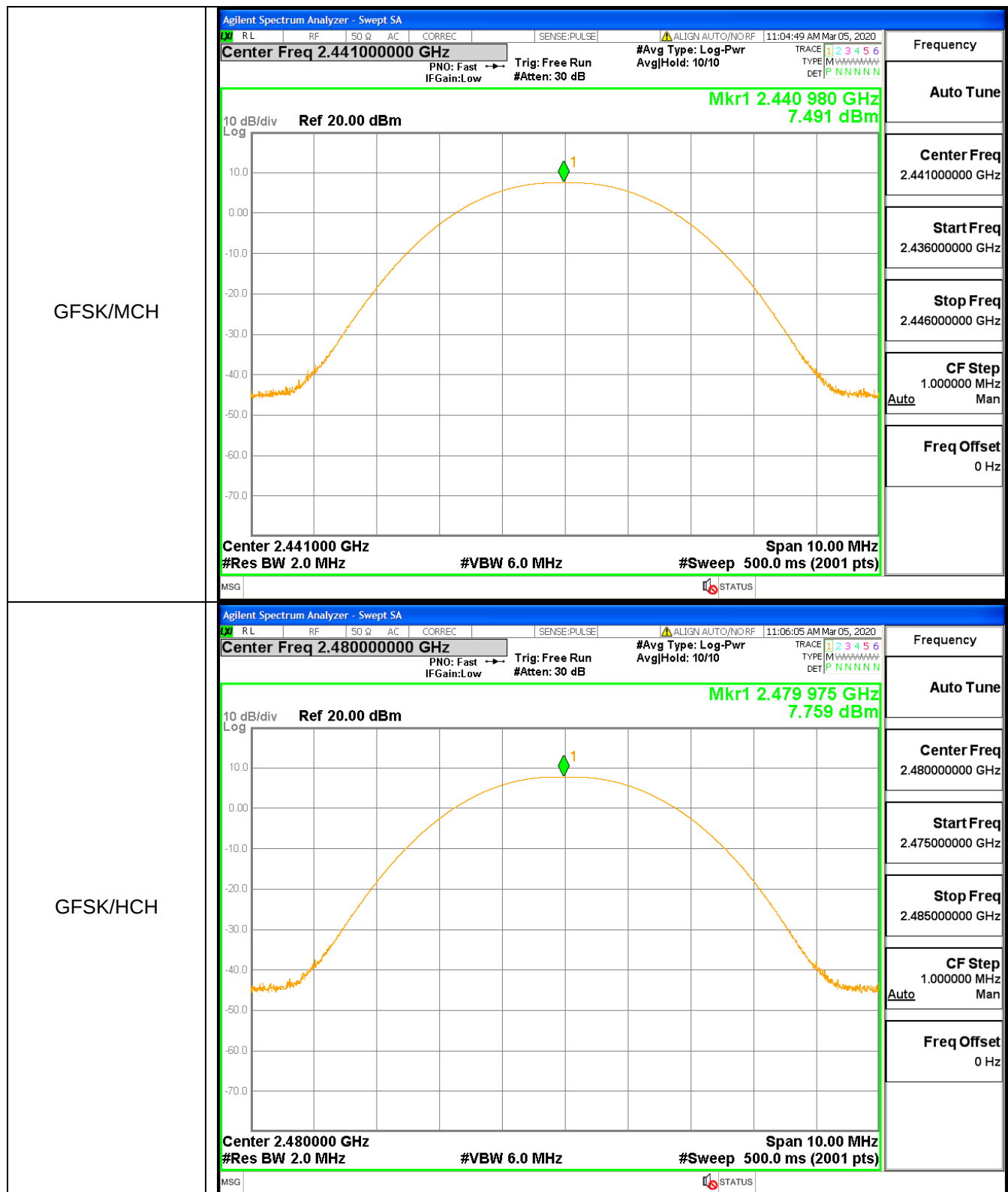


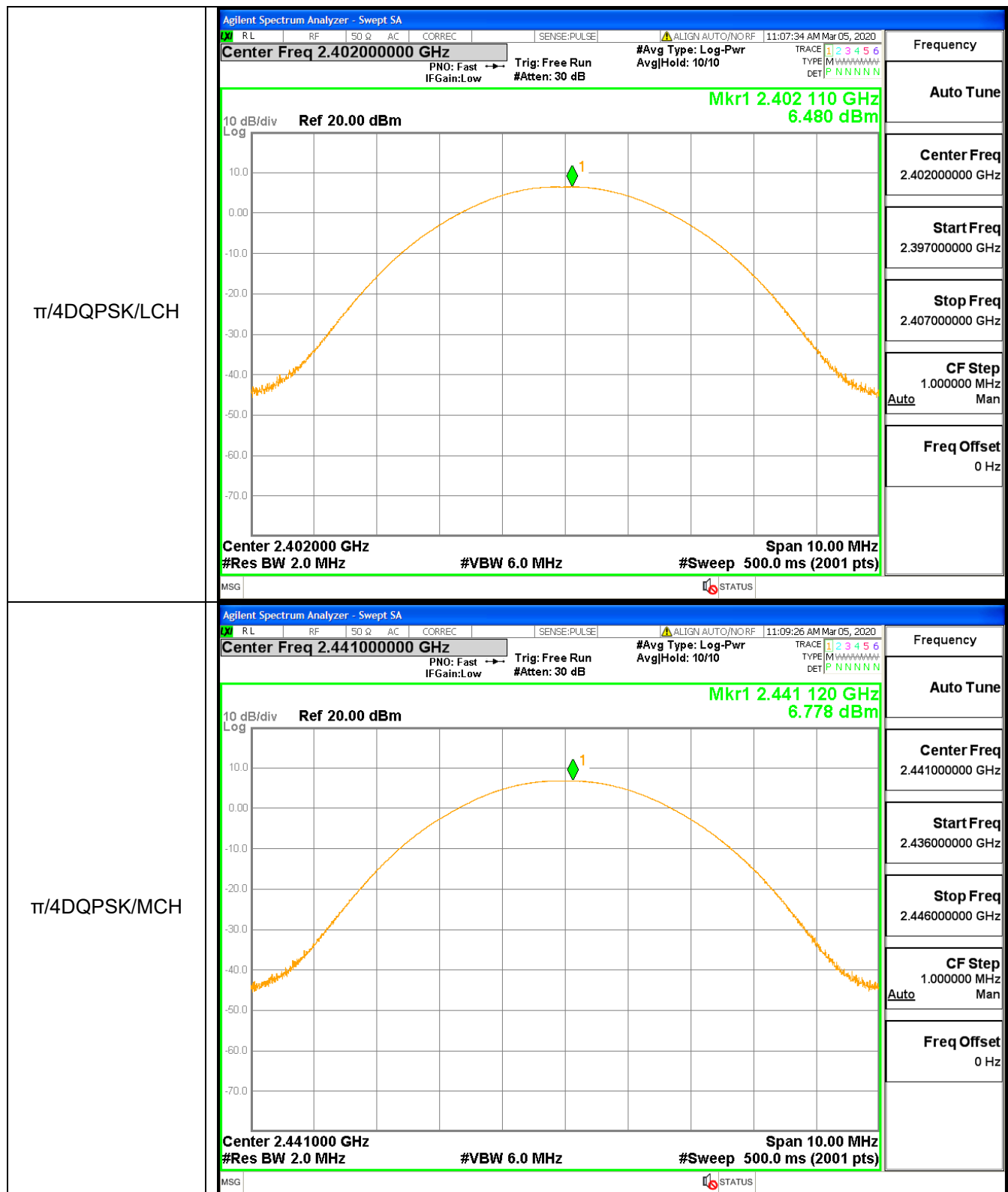
A.5 Conducted Peak Output Power

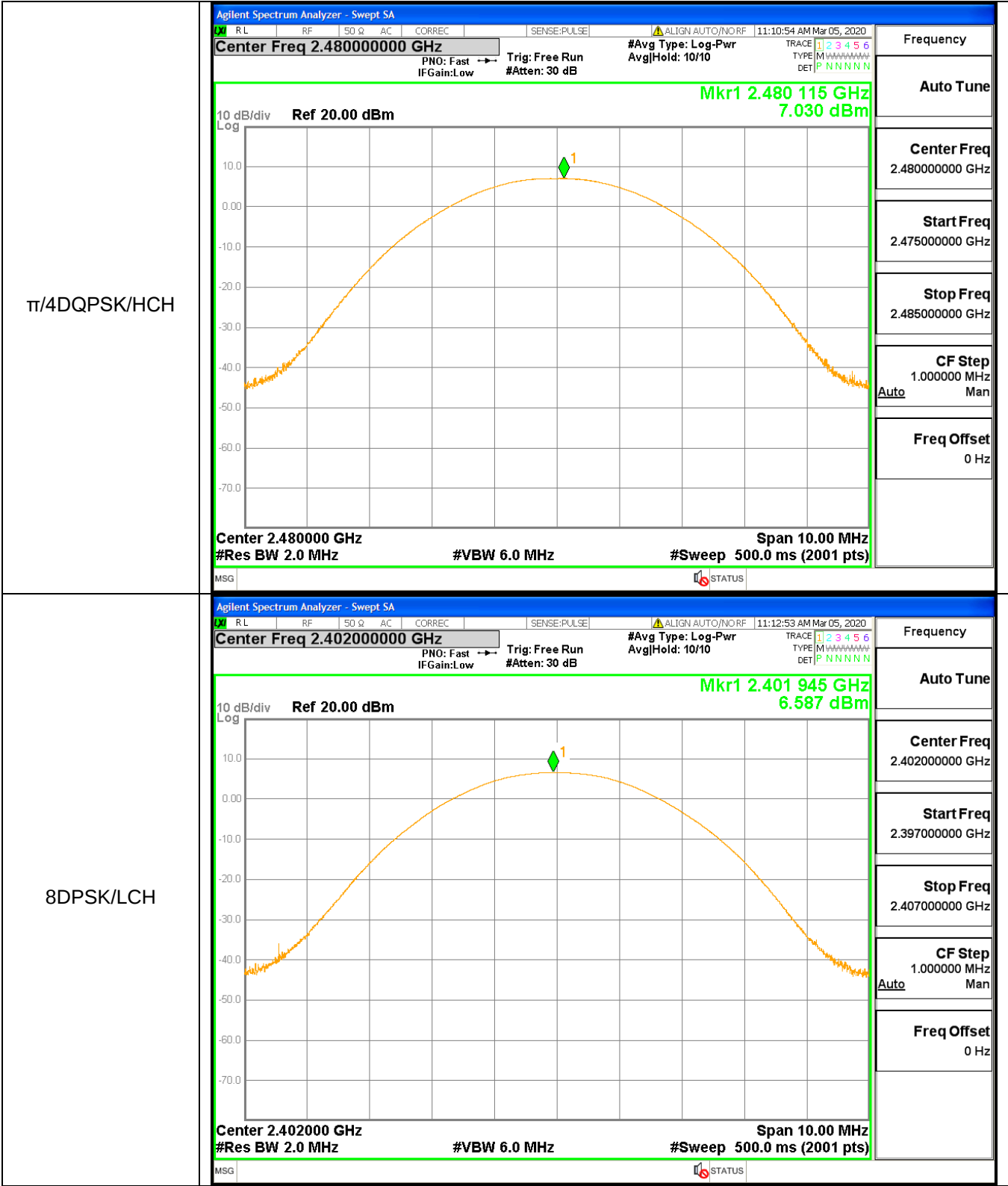
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	7.263	21	PASS
GFSK	MCH	7.491	21	PASS
GFSK	HCH	7.759	21	PASS
$\pi/4$ DQPSK	LCH	6.480	21	PASS
$\pi/4$ DQPSK	MCH	6.778	21	PASS
$\pi/4$ DQPSK	HCH	7.030	21	PASS
8DPSK	LCH	6.587	21	PASS
8DPSK	MCH	6.900	21	PASS
8DPSK	HCH	7.156	21	PASS

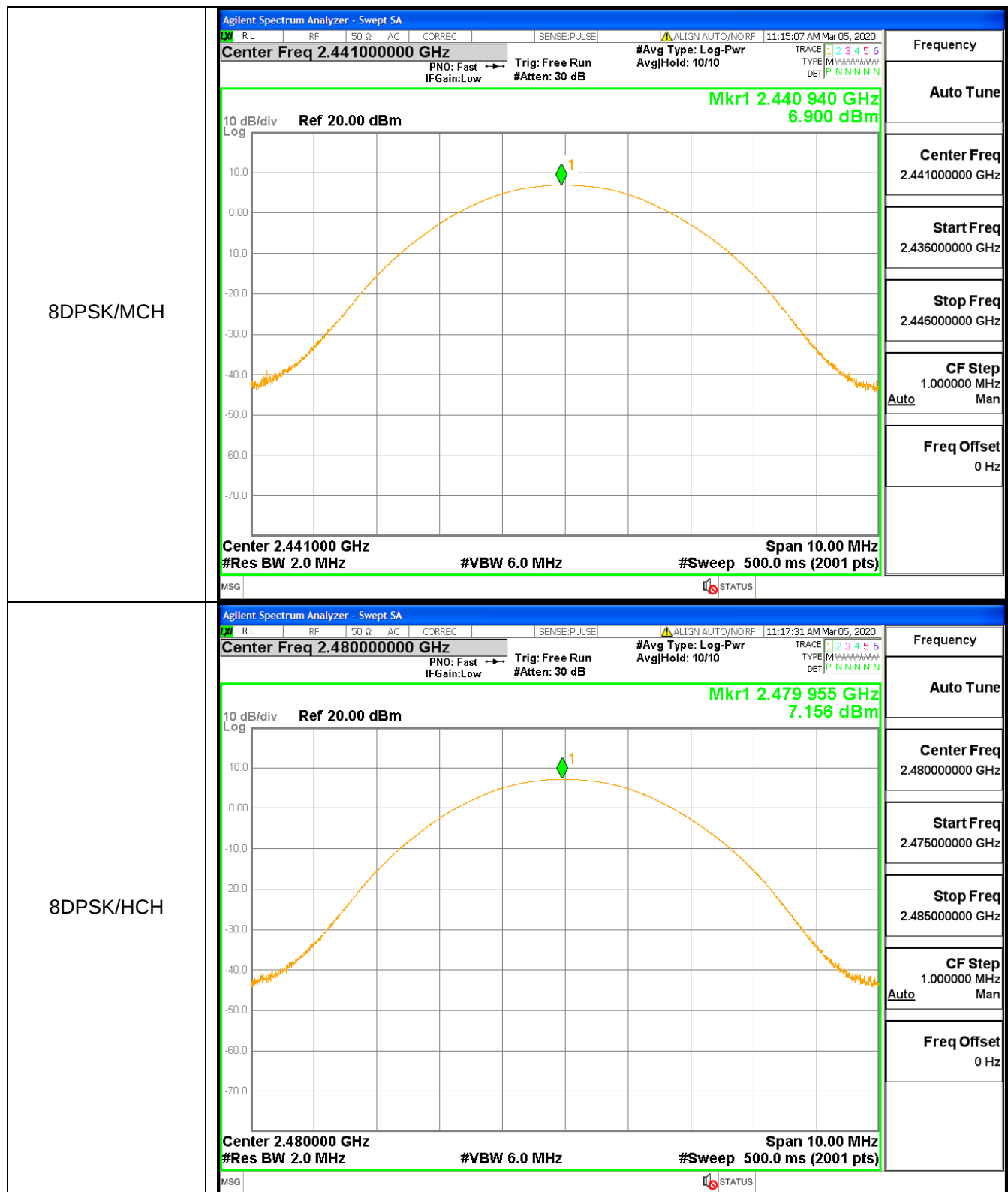
Test Graph











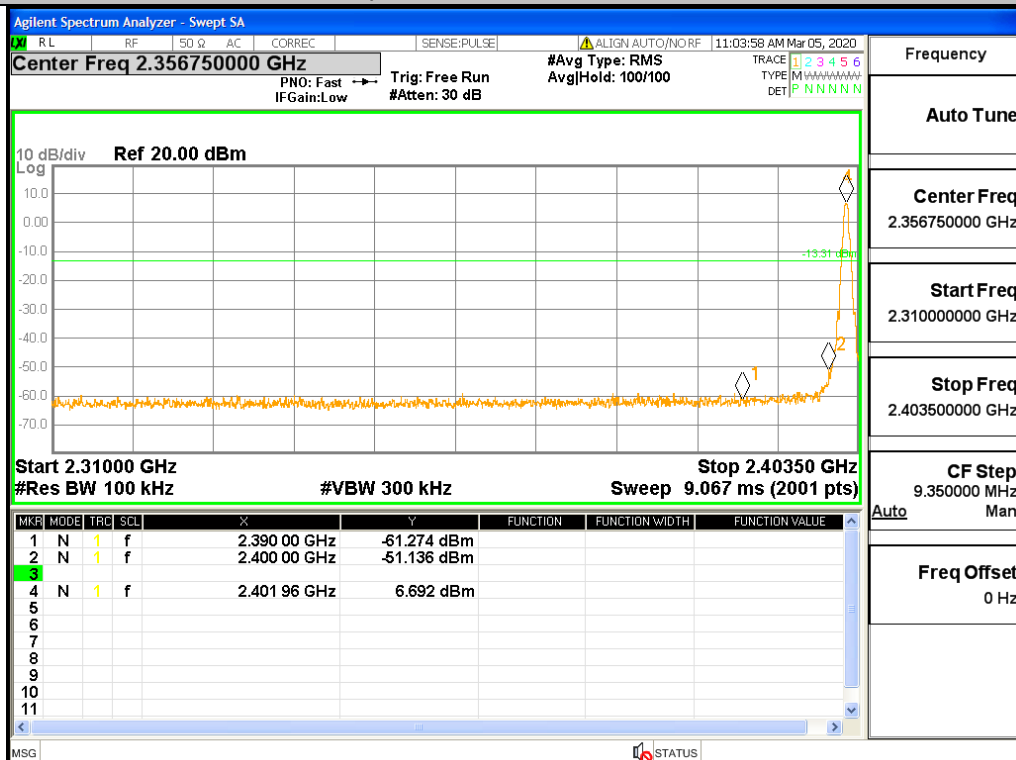
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	6.692	-51.14	-13.308	Pass
1DH5	2480	2483.832	7.354	-56.186	-12.646	Pass
2DH5	2402	2400	2.588	-51.47	-17.412	Pass
2DH5	2480	2483.5	5.933	-57.79	-14.067	Pass
3DH5	2402	2400	3.815	-53.32	-16.185	Pass
3DH5	2480	2483.5	4.494	-58.82	-15.506	Pass
1DH5-Hopping	2402	2399.73	6.915	-54.66	-13.085	Pass
1DH5-Hopping	2480	2483.5	7.46	-60.2	-12.54	Pass
2DH5-Hopping	2402	2400	5.283	-51.73	-14.717	Pass
2DH5-Hopping	2480	2483.5	6.194	-60.74	-13.806	Pass
3DH5-Hopping	2402	2400	5.576	-55.27	-14.424	Pass
3DH5-Hopping	2480	2483.5	6.165	-58.15	-13.835	Pass

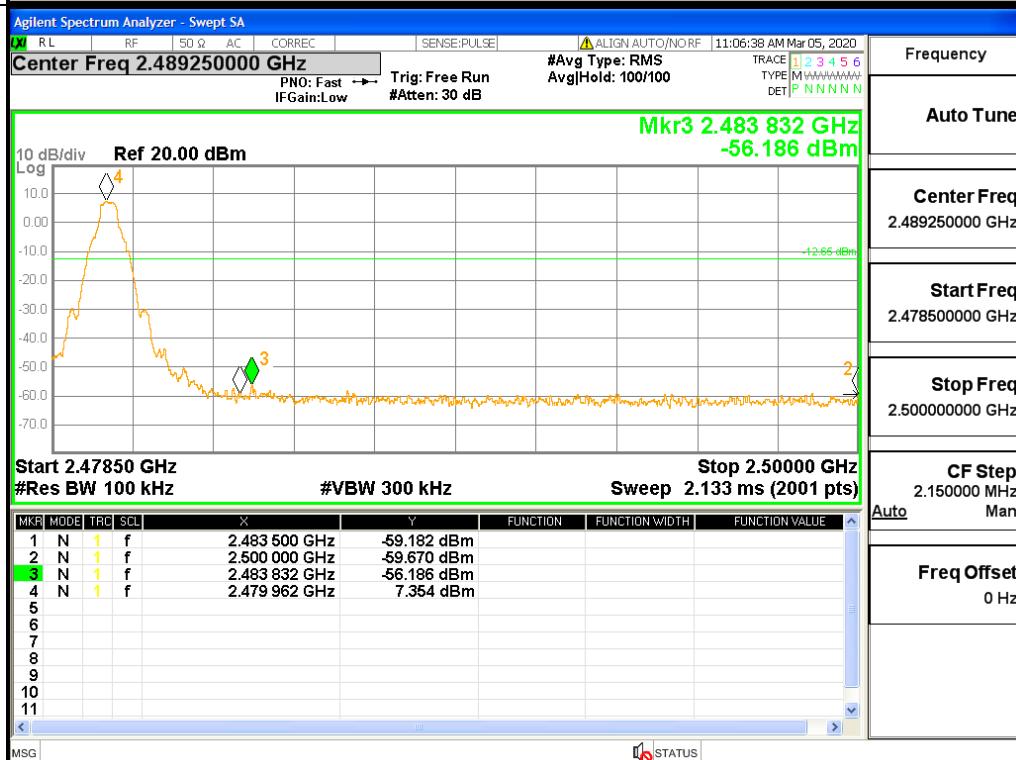
Test Graph

Graphs

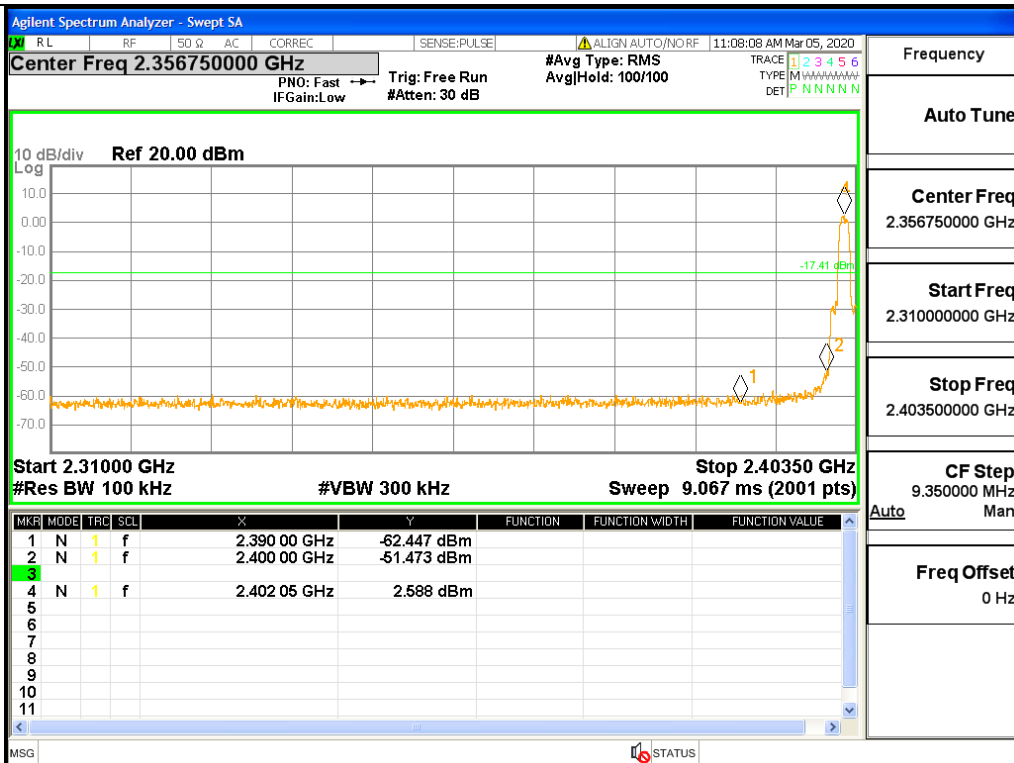
GFSK/LCH/No Hop



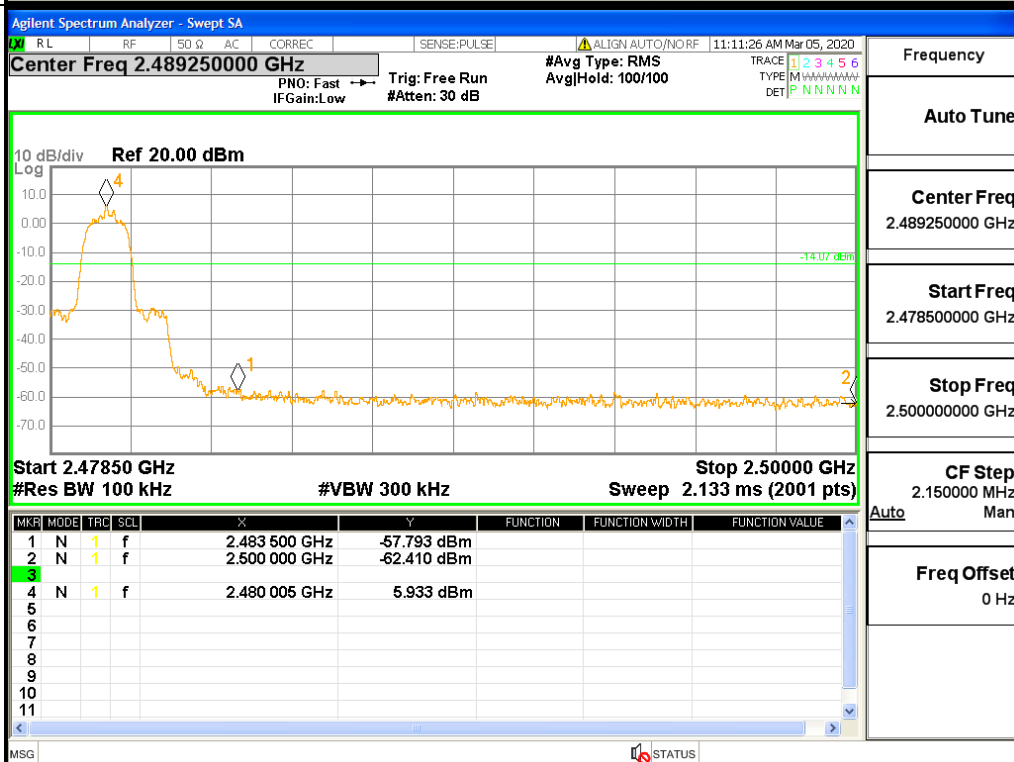
GFSK/HCH/No Hop



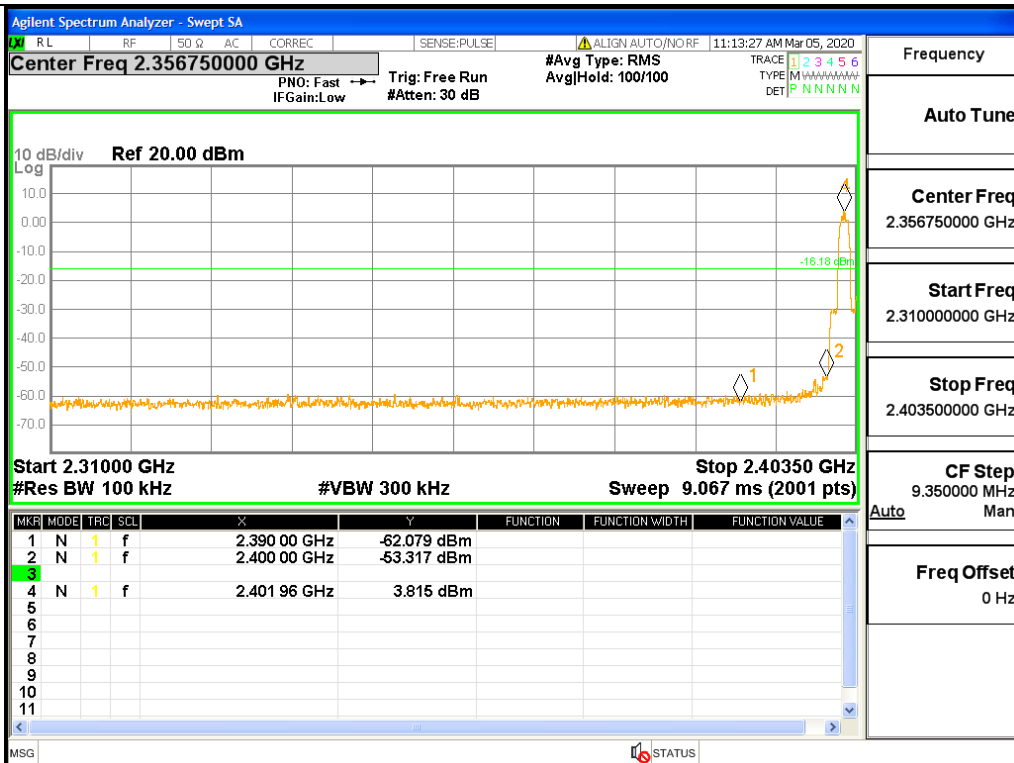
$\pi/4$ DQPSK/LCH/No
Hop



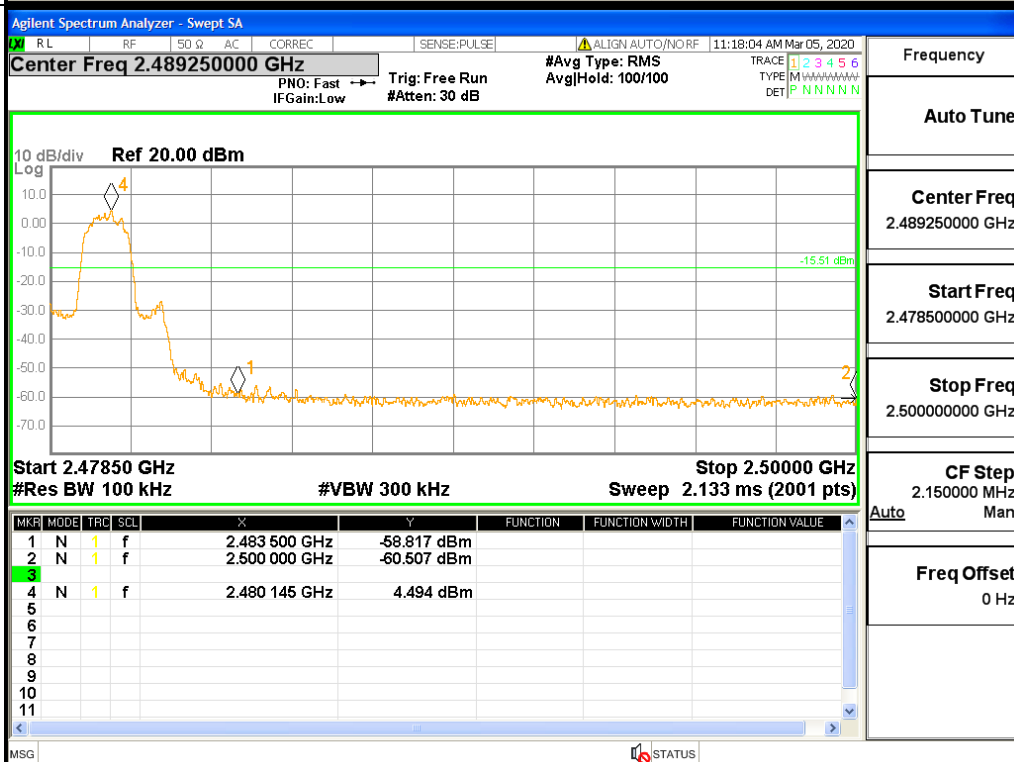
$\pi/4$ DQPSK/HCH/No
Hop



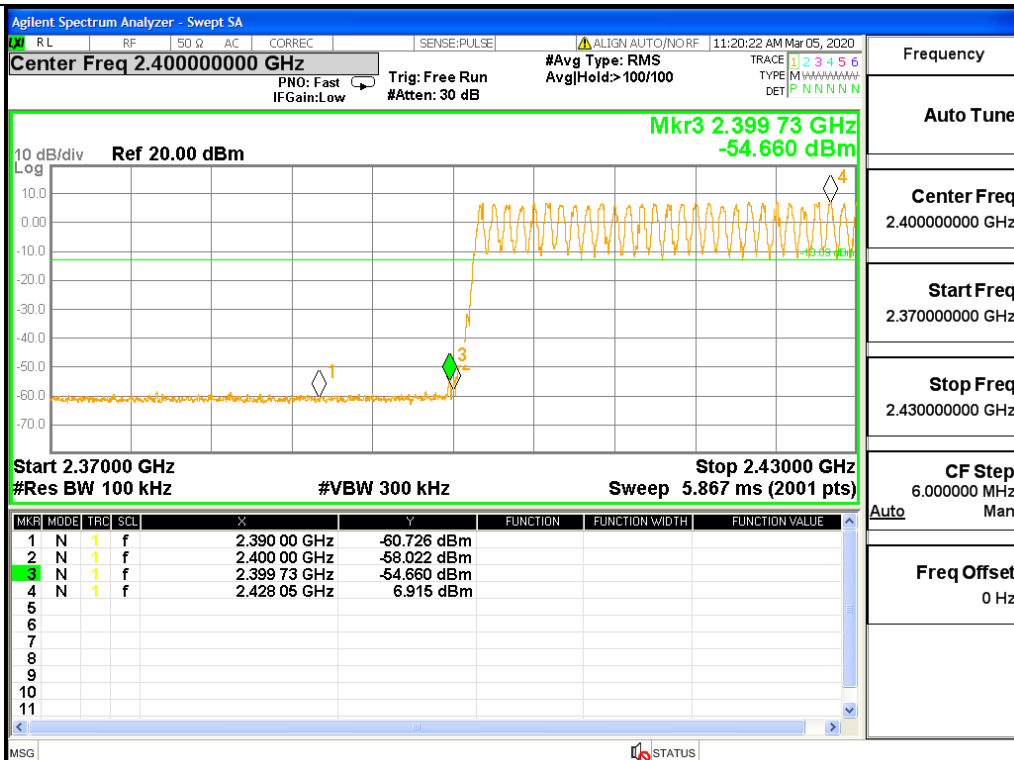
8DPSK/LCH/No Hop



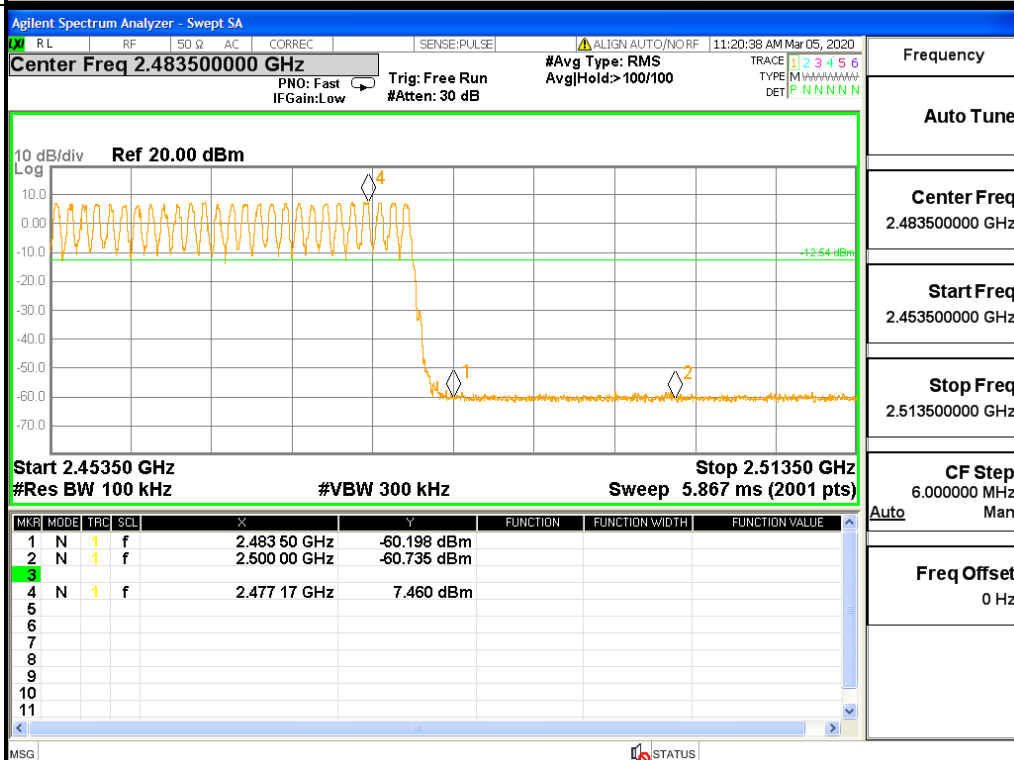
8DPSK/HCH/No Hop



GFSK/LCH/Hop



GFSK/HCH/Hop



$\pi/4$ DQPSK/LCH/Hop

$\pi/4$ DQPSK/HCH/Hop

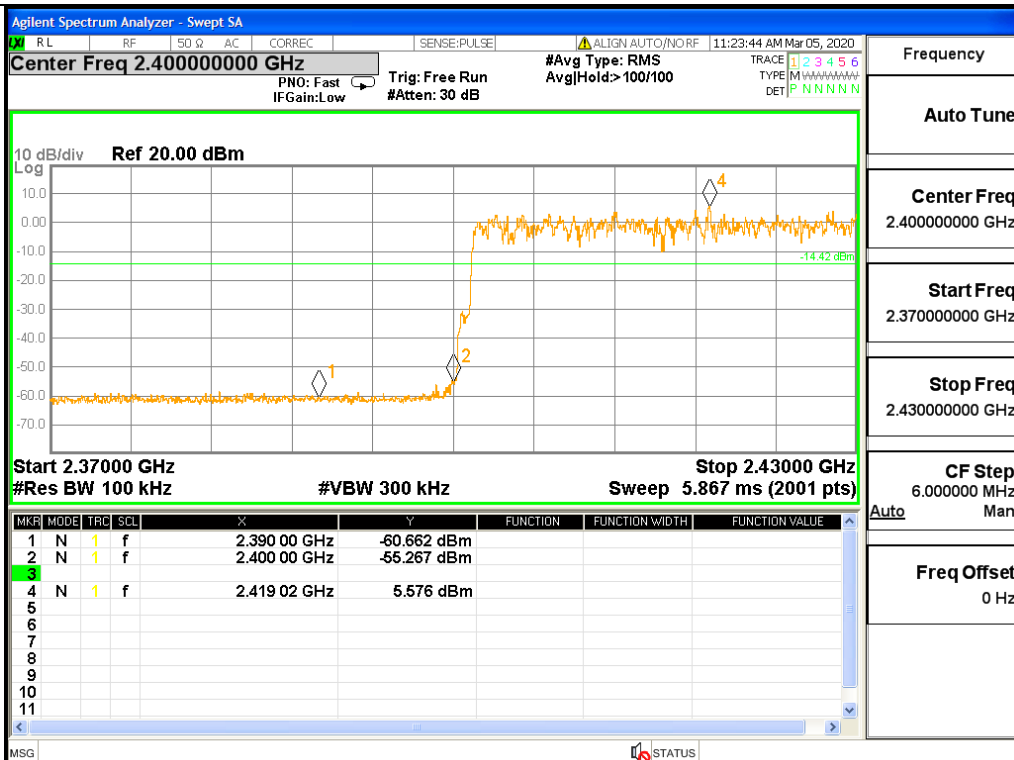
Top Screenshot: Center Freq 2.40000000 GHz

MkR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.390 00 GHz	-60.934 dBm			
2	N	1	f	2.400 00 GHz	-51.730 dBm			
3	N	1	f	2.417 88 GHz	5.283 dBm			

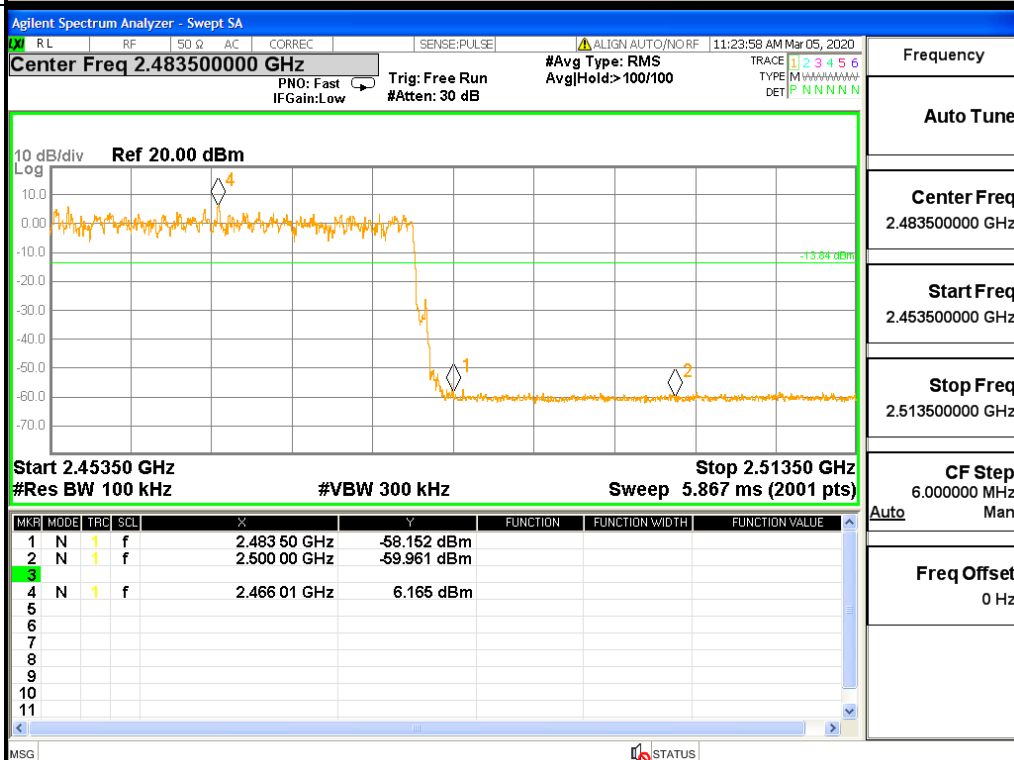
Bottom Screenshot: Center Freq 2.48350000 GHz

MkR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.483 50 GHz	-60.743 dBm			
2	N	1	f	2.500 00 GHz	-60.808 dBm			
3	N	1	f	2.459 86 GHz	6.194 dBm			

8DPSK/LCH/Hop

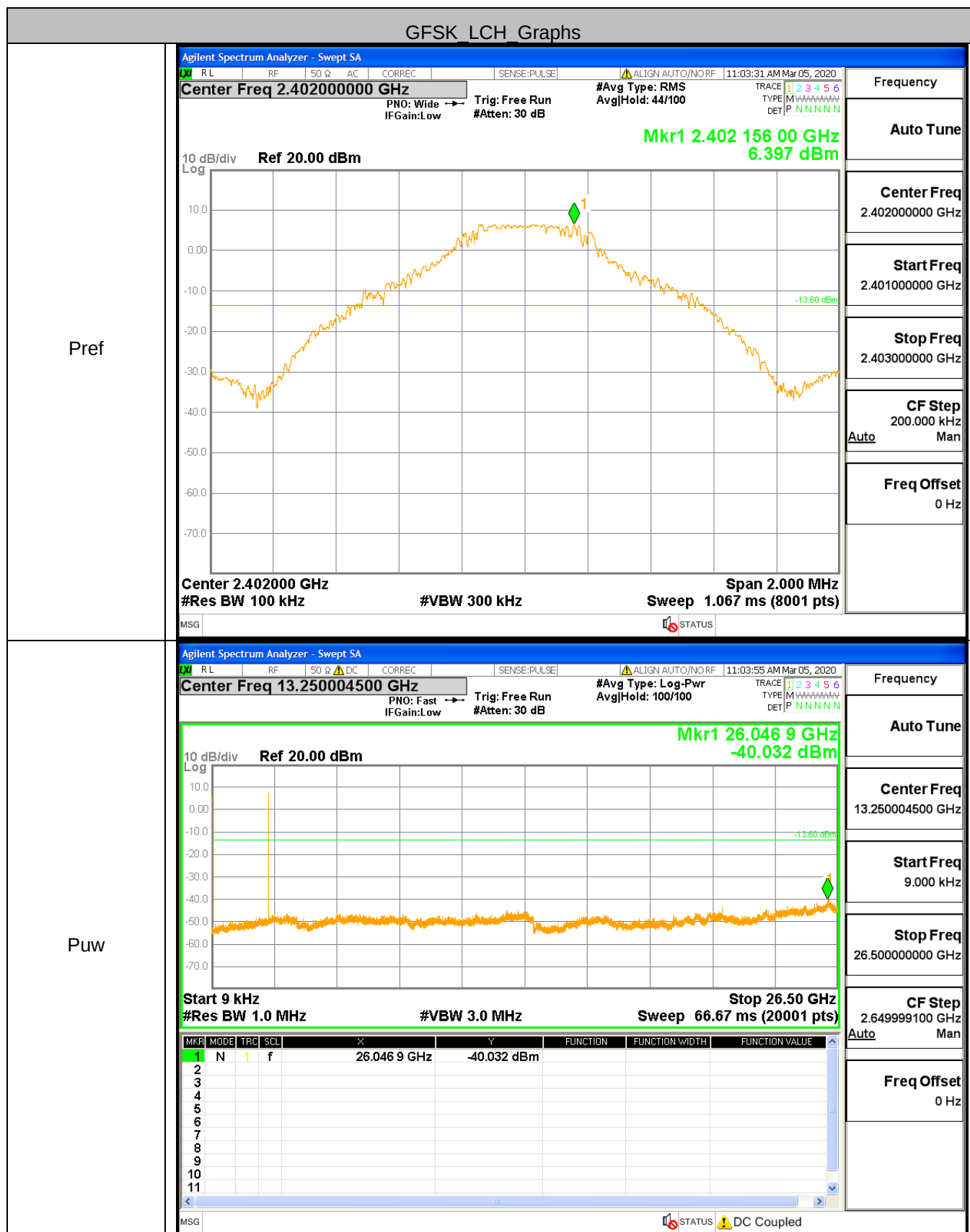


8DPSK/HCH/Hop



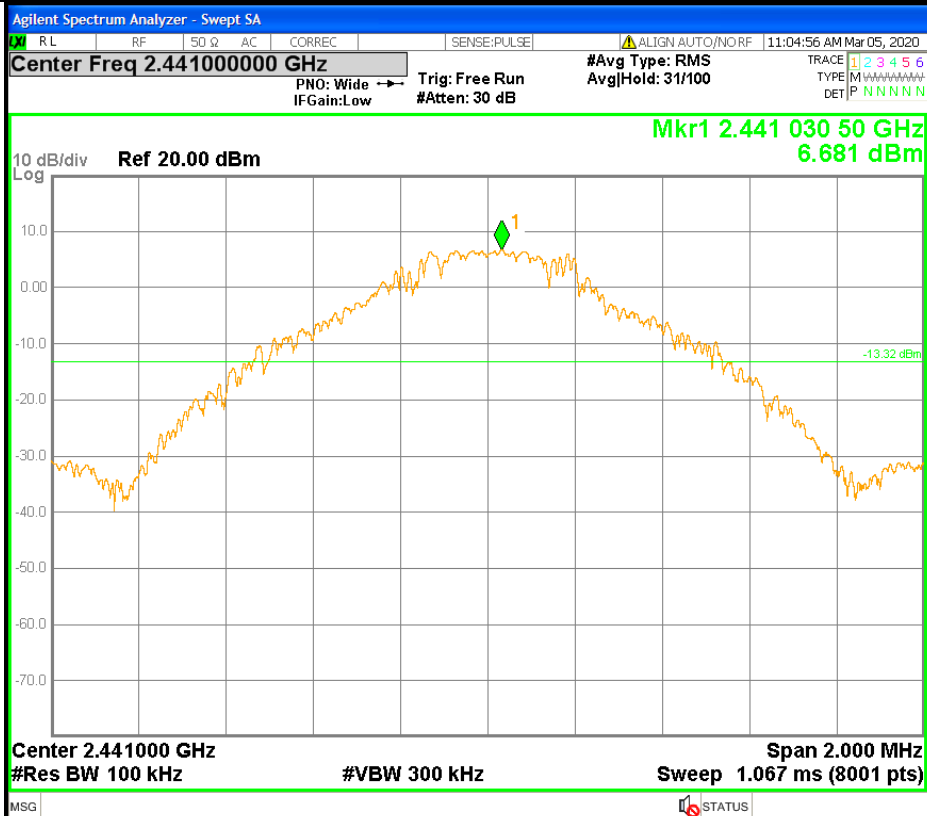
A.7 RF Conducted Spurious Emissions

Test Graph

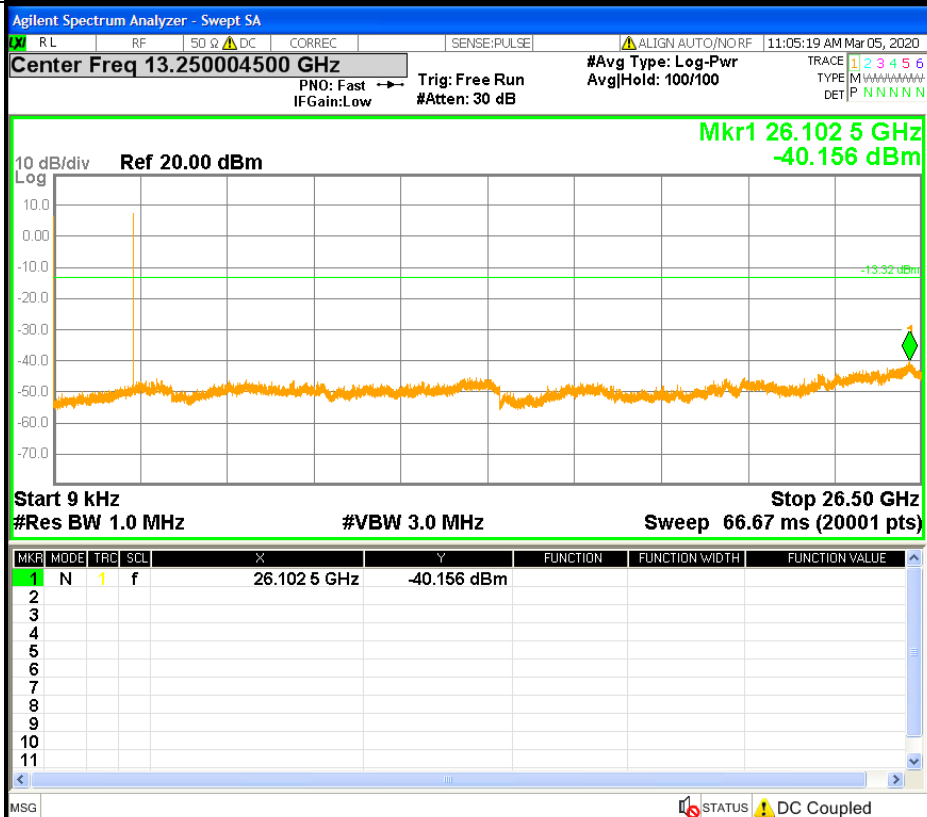


GFSK_MCH_Graphs

Pref

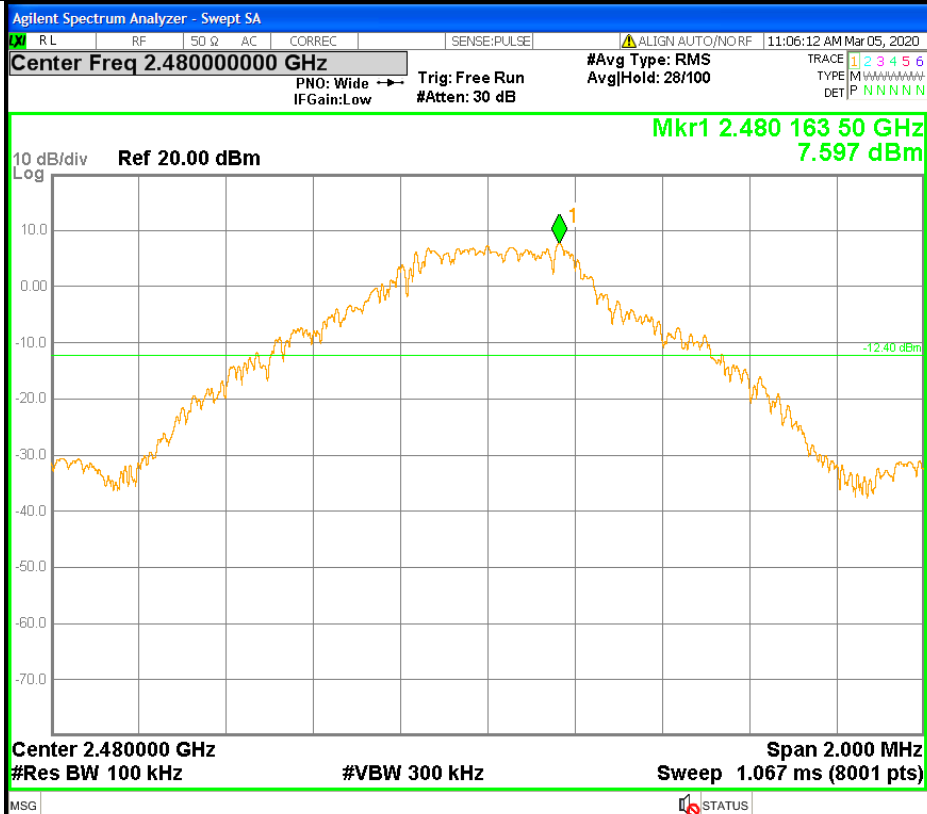


Puw

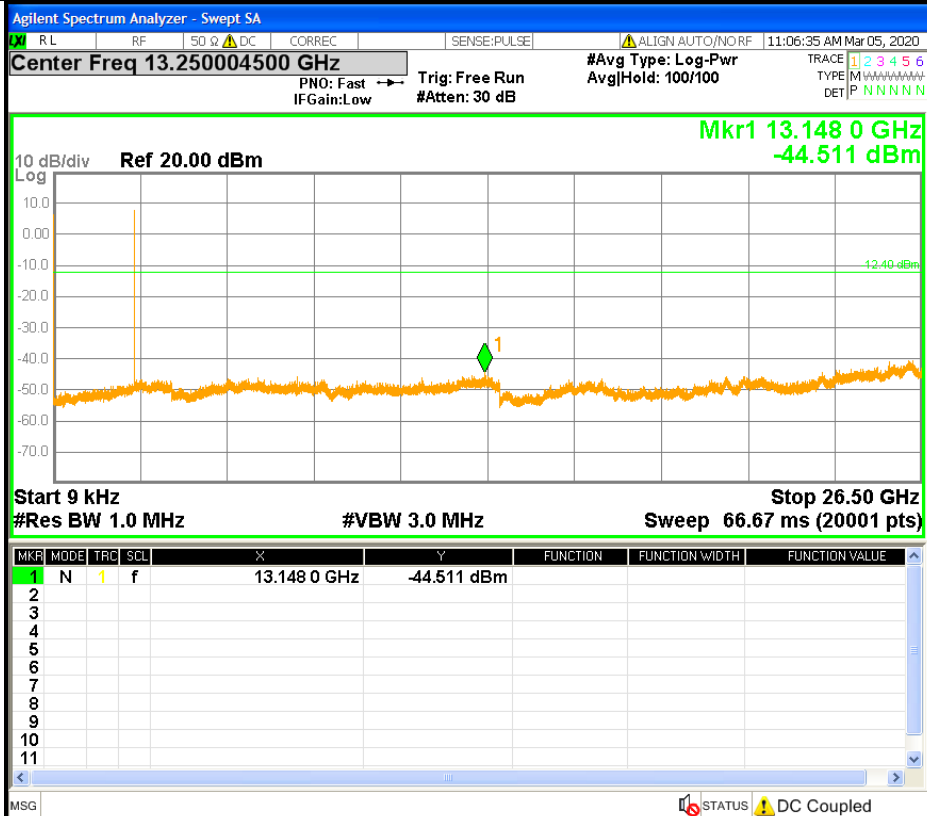


GFSK_HCH_Graphs

Pref

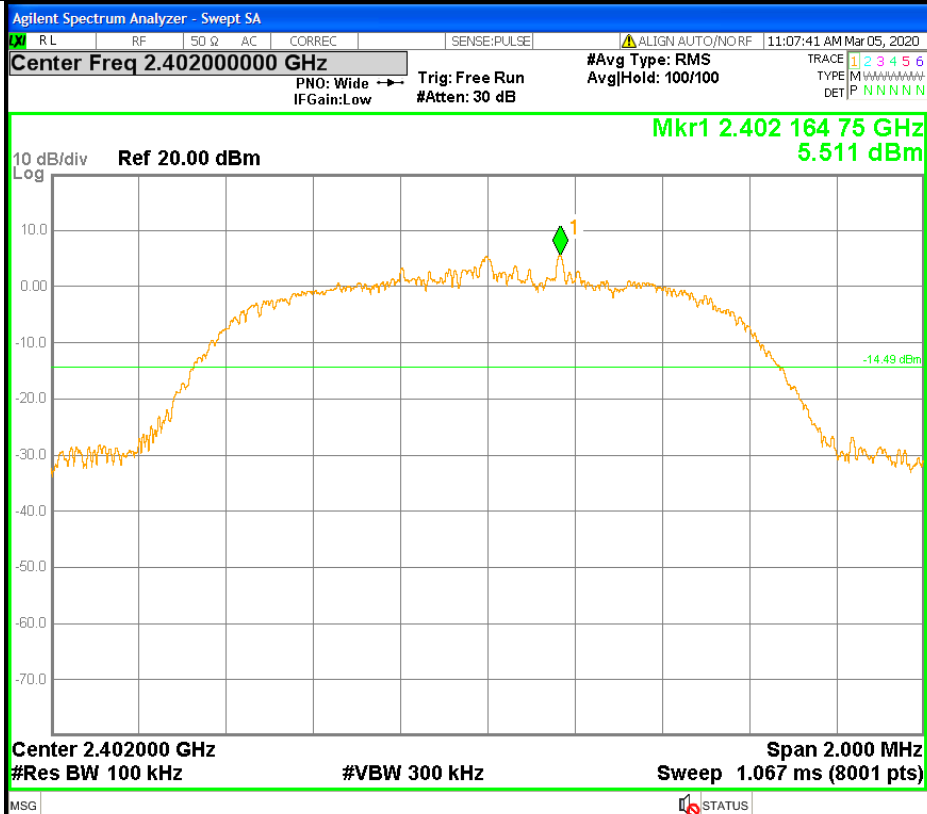


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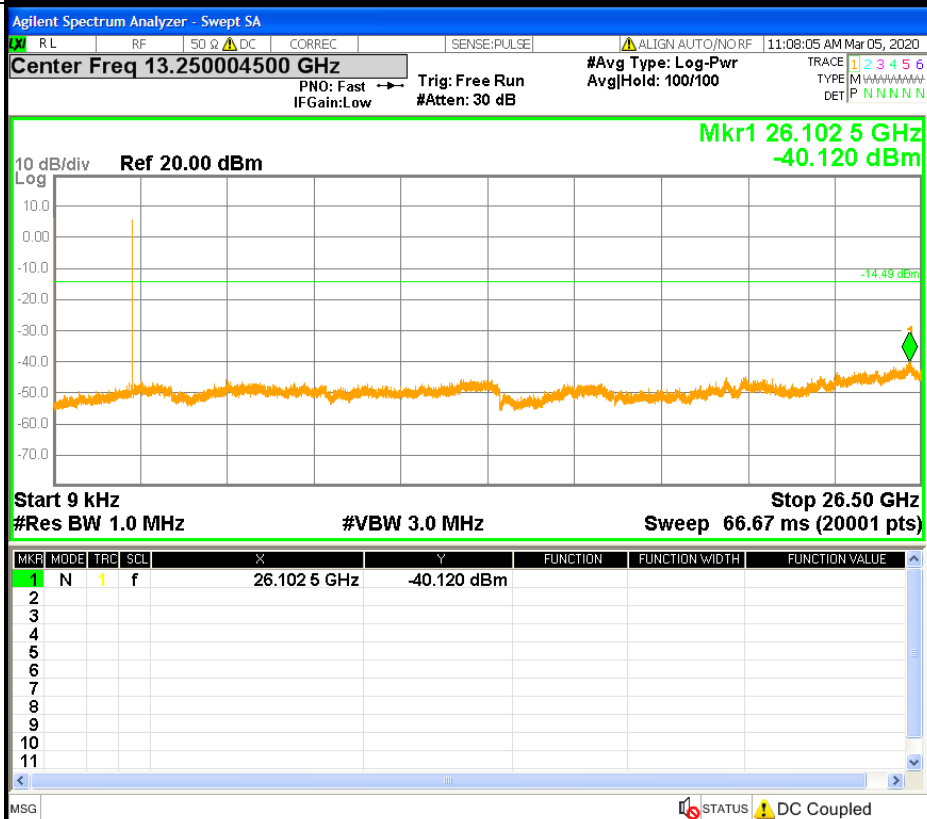


$\pi/4$ DQPSK_LCH_Graphs

Pref

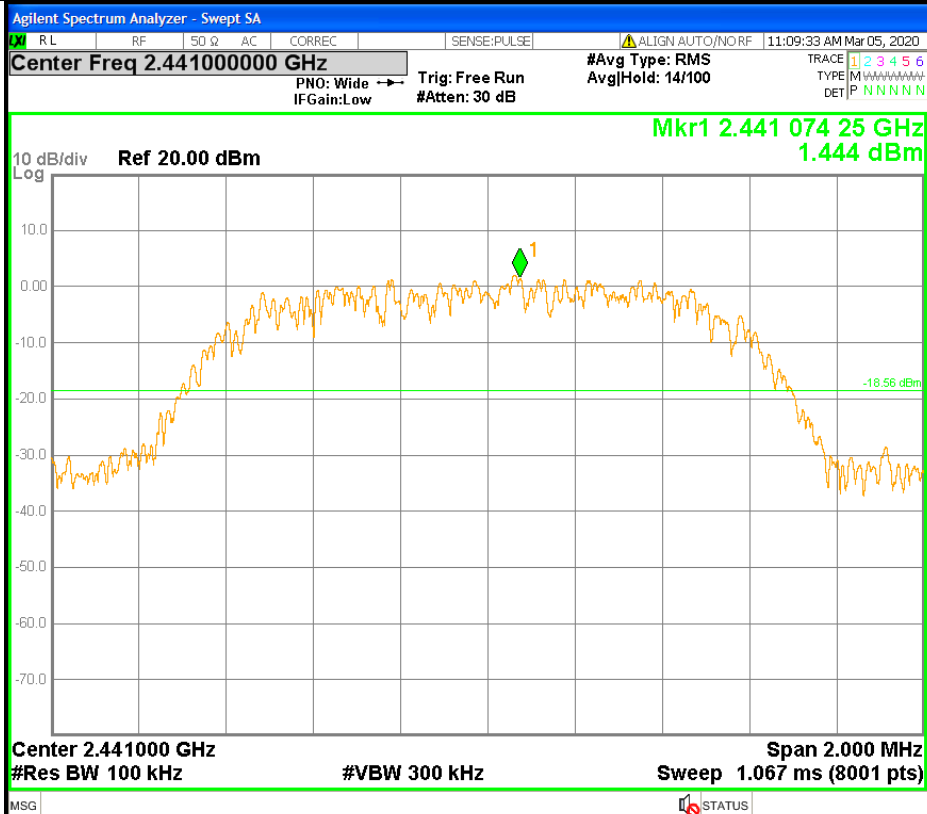


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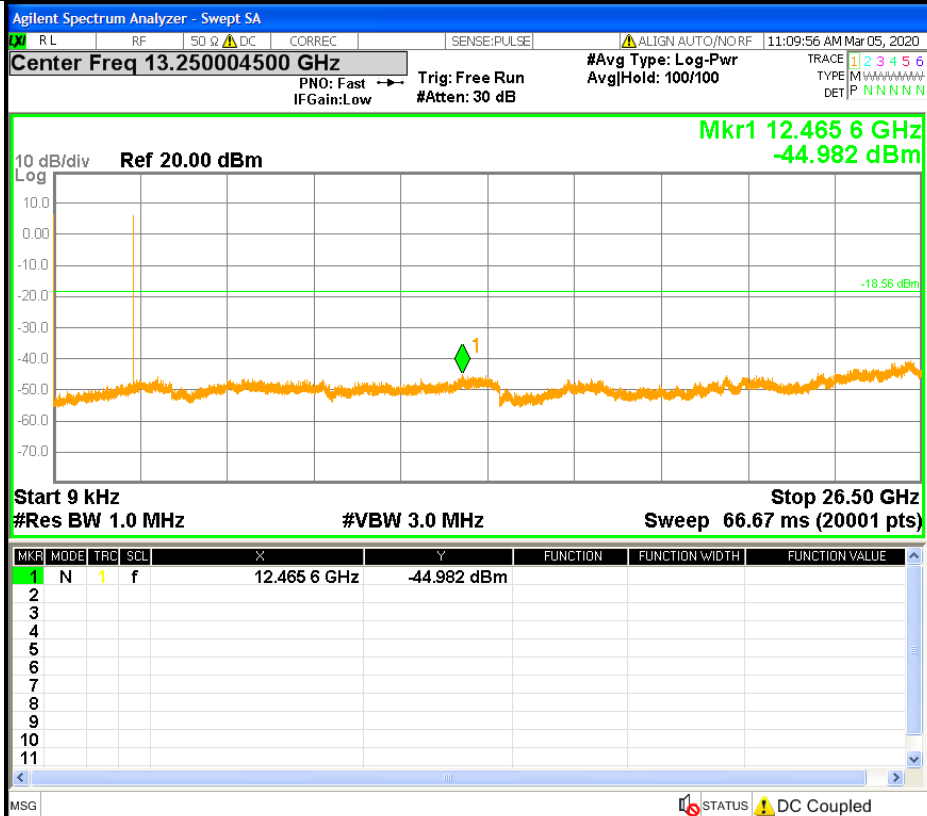


$\pi/4$ DQPSK_MCH_Graphs

Pref

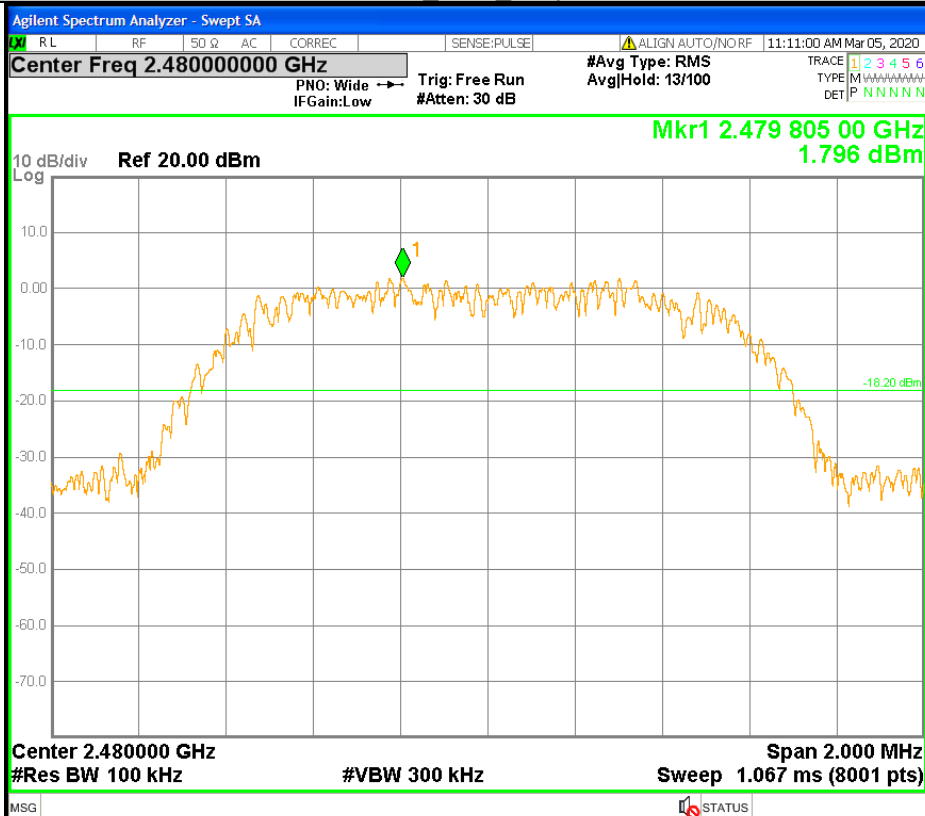


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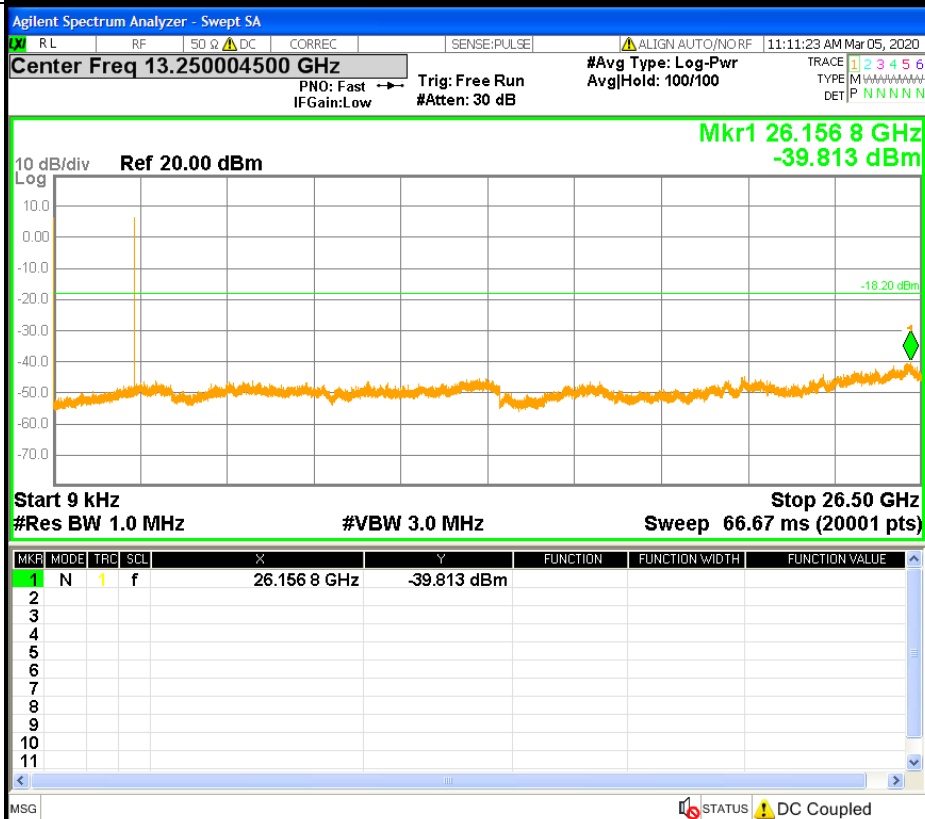


$\pi/4$ DQPSK_HCH_Graphs

Pref

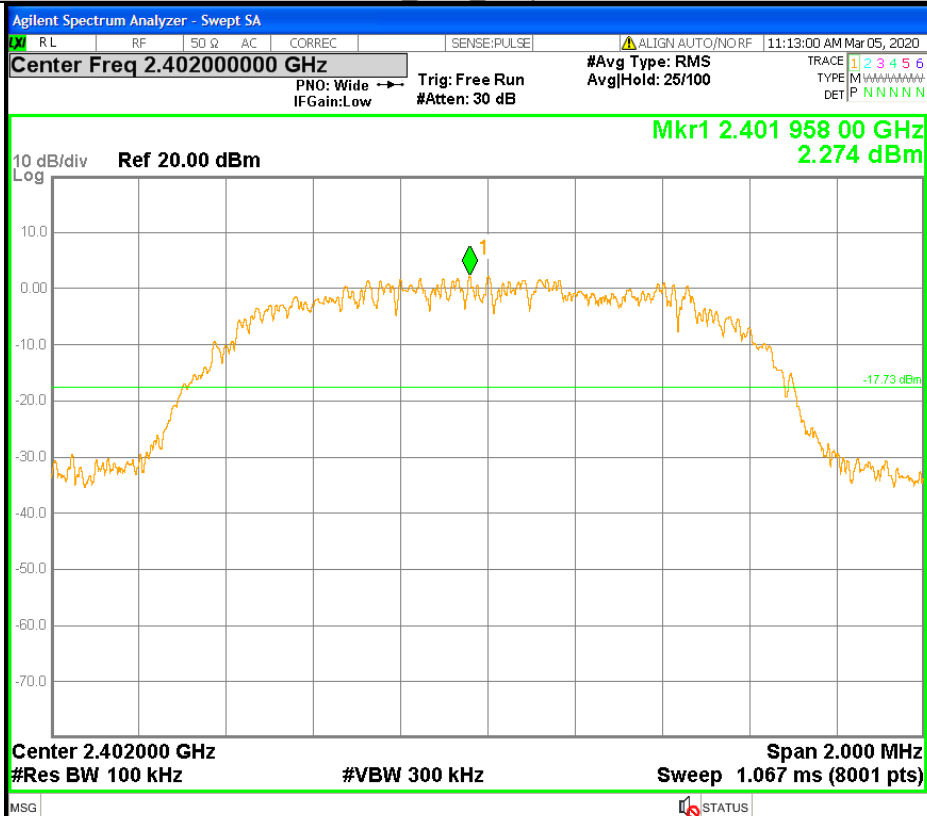


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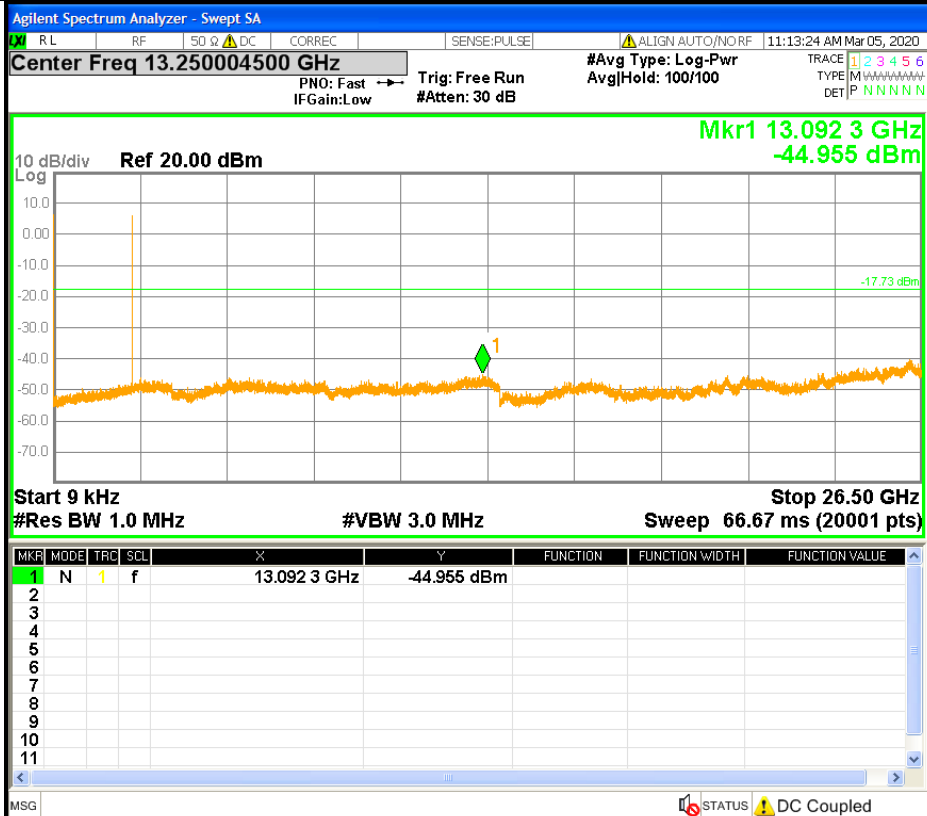


8DPSK LCH_Graphs

Pref

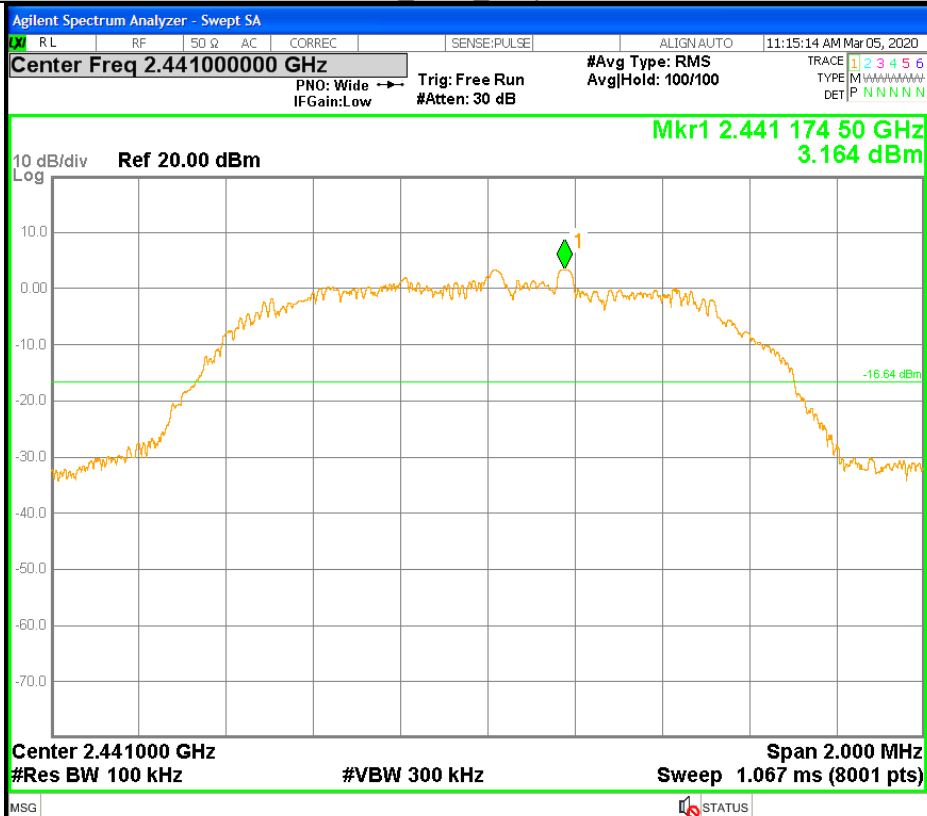


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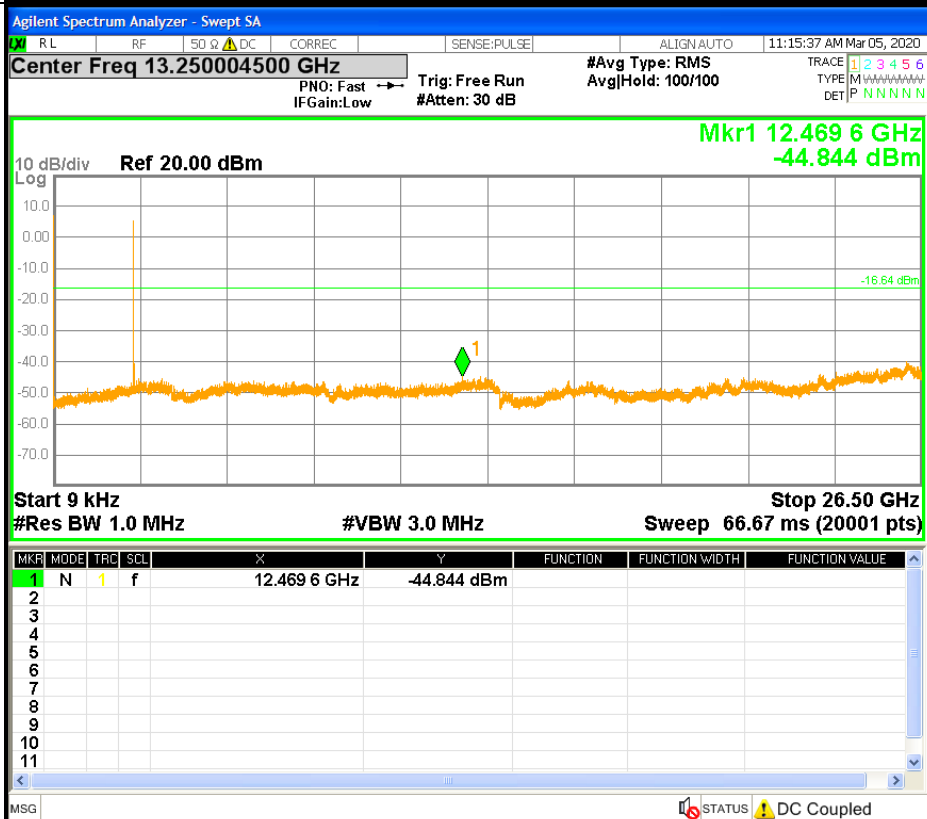


8DPSK_MCH_Graphs

Pref

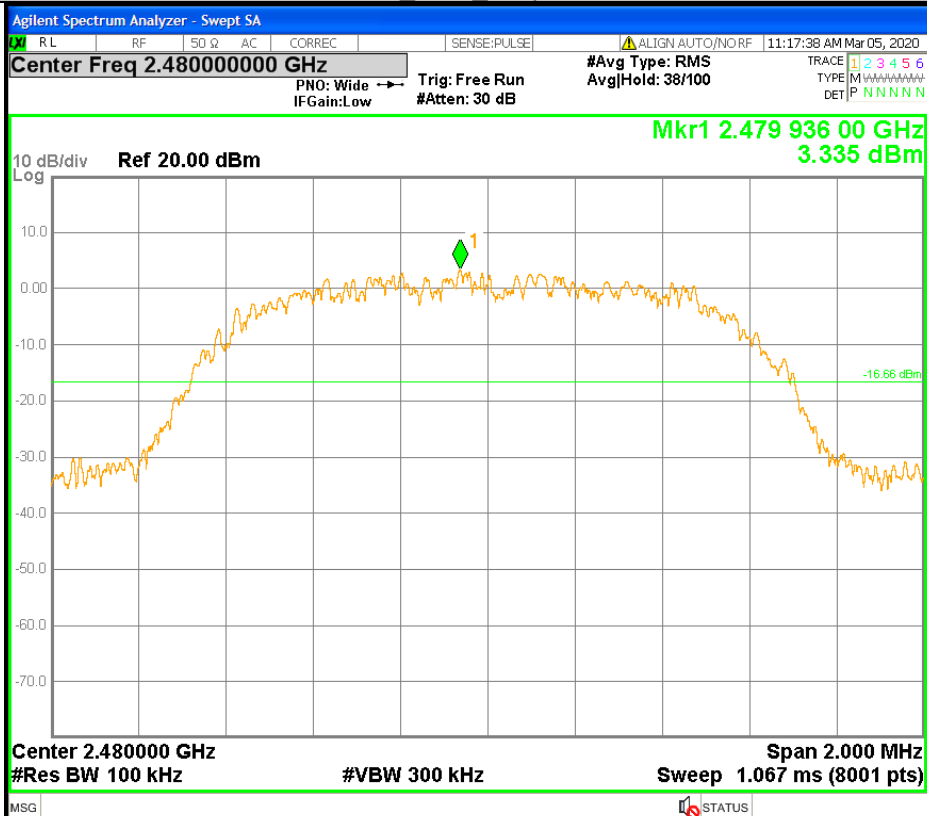


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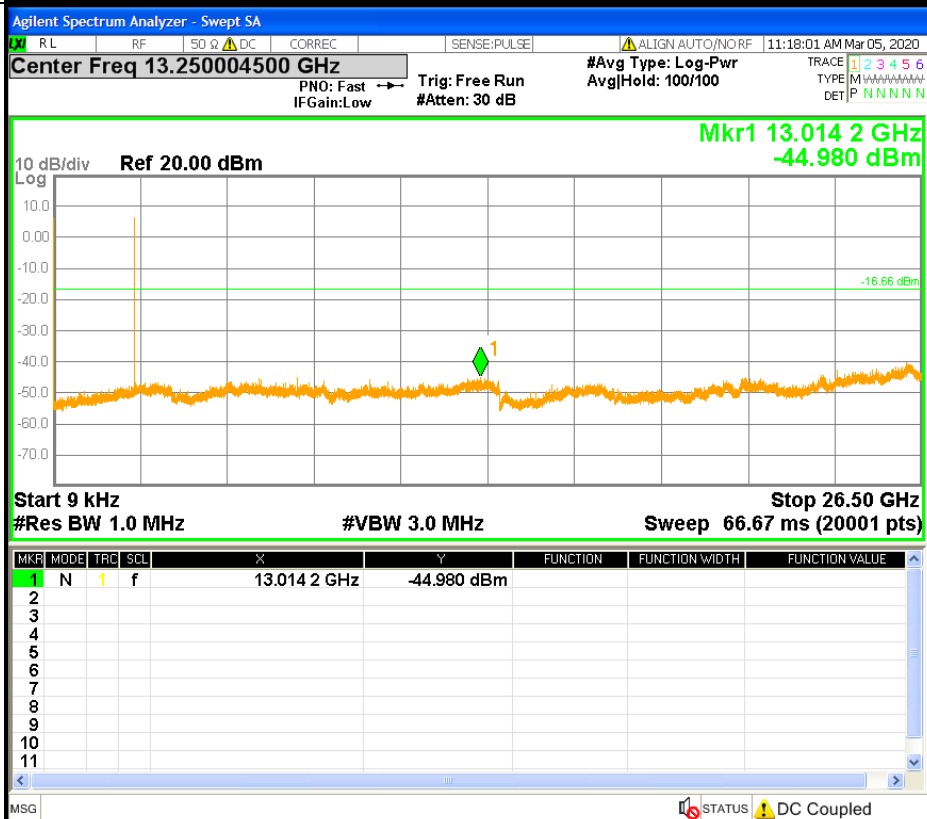


8DPSK_HCH_Graphs

Pref



Puw

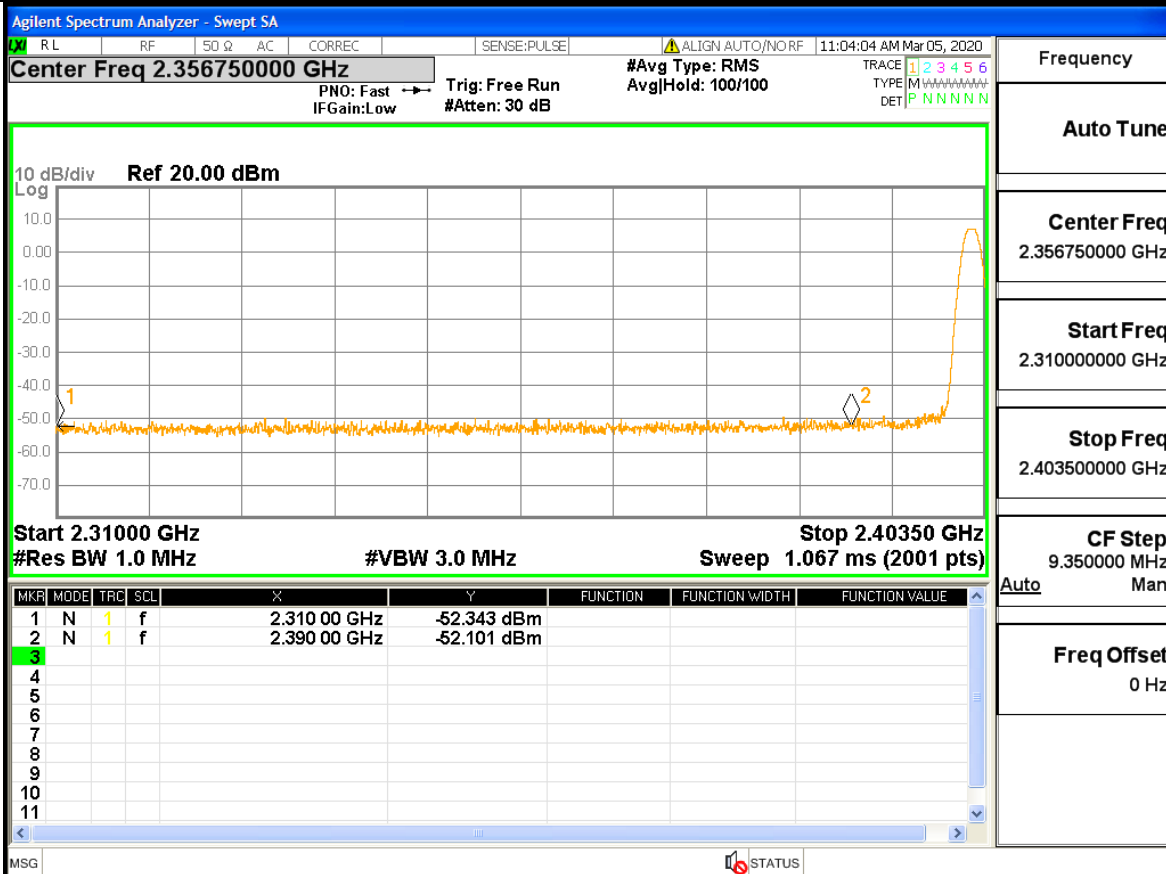


A.8 Restrict-band band-edge measurements

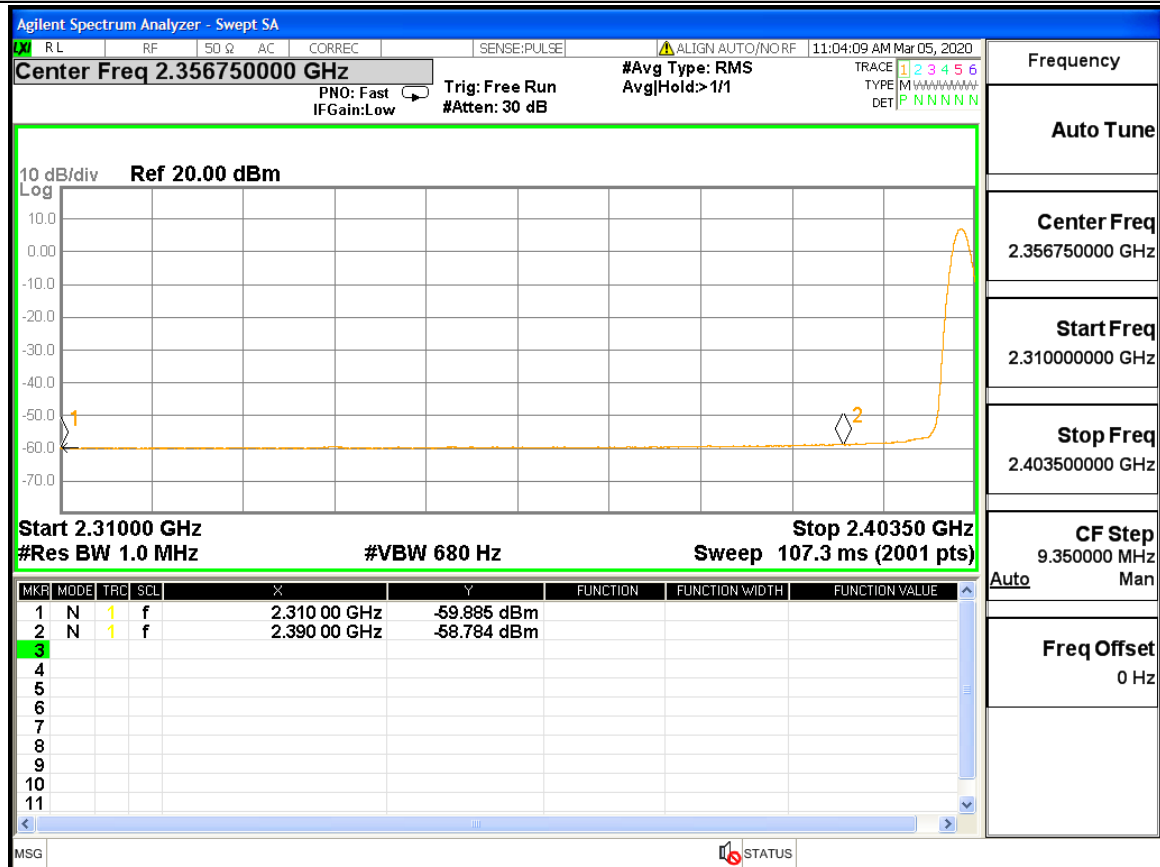
Type	Carrier Frequency (MHz)	Frequency(M Hz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390	2.84	0.00	-52.101	45.939	74	Pass
1DH5	2480	2483.5	2.84	0.00	-50.053	47.987	74	Pass
2DH5	2402	2390	2.84	0.00	-52.386	45.654	74	Pass
2DH5	2480	2483.5	2.84	0.00	-47.076	50.964	74	Pass
3DH5	2402	2335.946	2.84	0.00	-49.382	48.658	74	Pass
3DH5	2480	2497.334	2.84	0.00	-47.811	50.229	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	2.84	0.00	-58.784	39.256	54	Pass
1DH5	2480	2483.5	2.84	0.00	-49.655	48.385	54	Pass
2DH5	2402	2390	2.84	0.00	-58.779	39.261	54	Pass
2DH5	2480	2483.5	2.84	0.00	-49.436	48.604	54	Pass
3DH5	2402	2335.946	2.84	0.00	-58.432	39.608	54	Pass
3DH5	2480	2497.334	2.84	0.00	-49.316	48.724	54	Pass

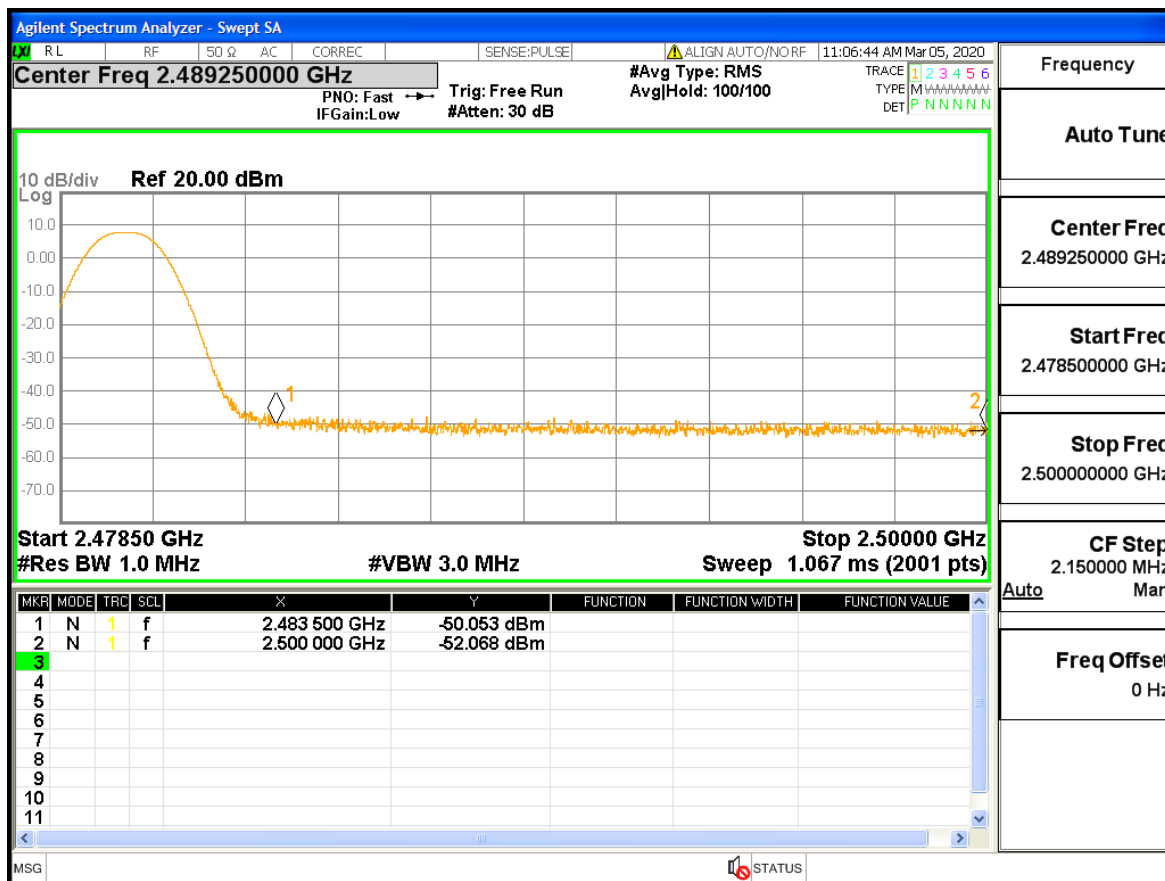
Restrict-band band-edge measurements_2402_PEAK_DH5



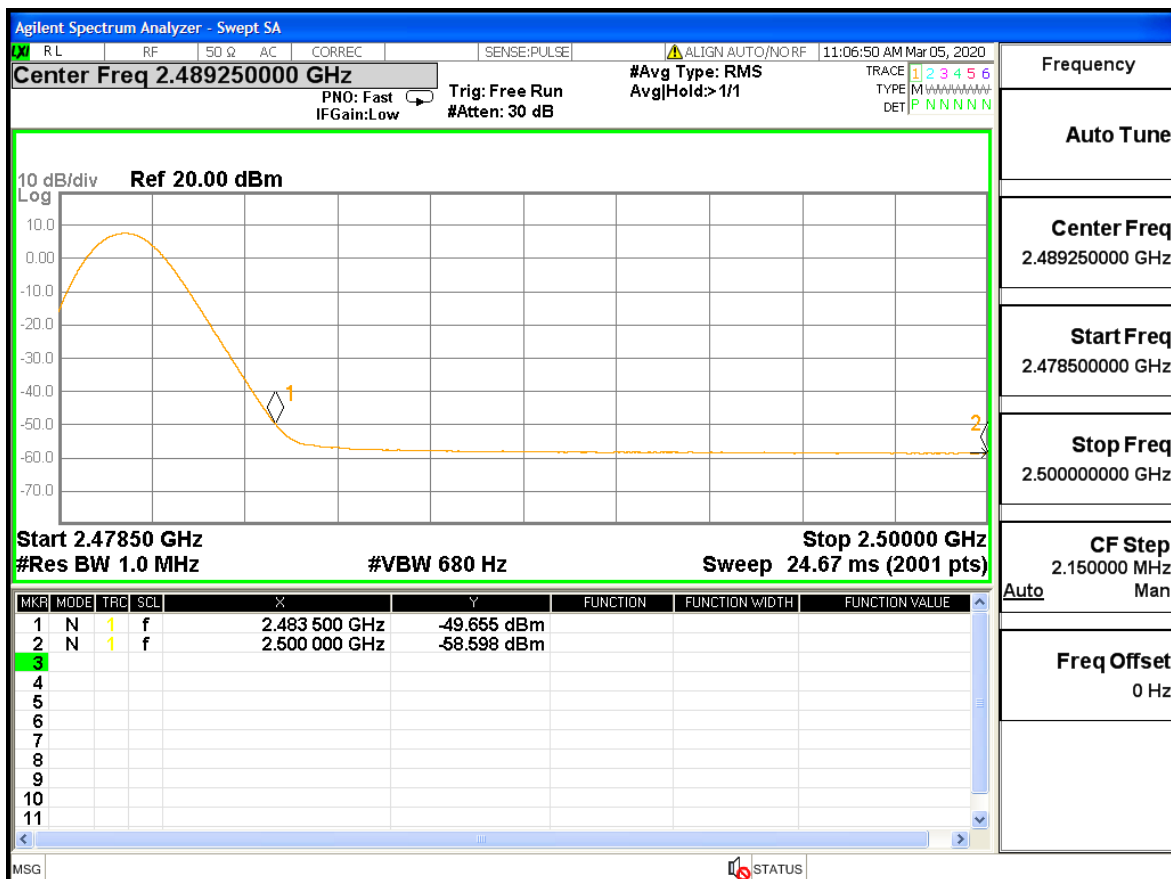
Restrict-band band-edge measurements_2402_AV_DH5



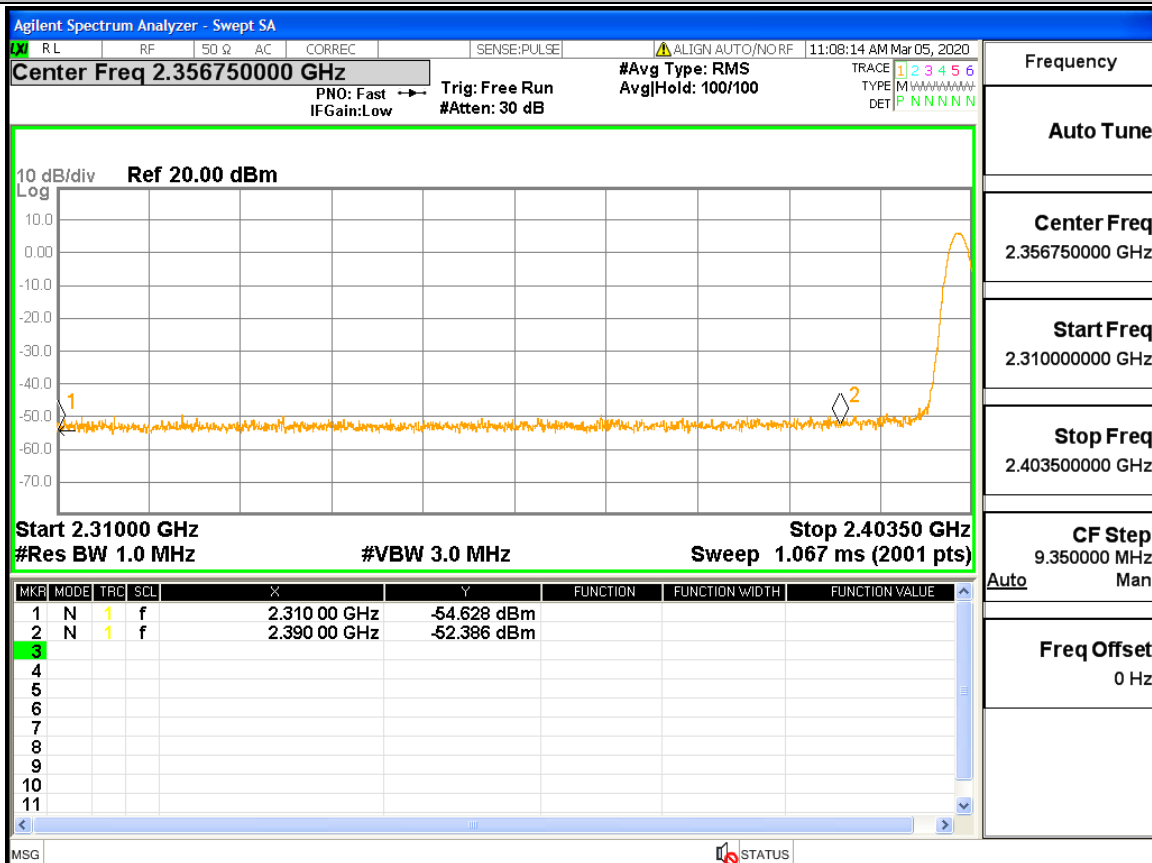
Restrict-band band-edge measurements_2480_PEAK_DH5



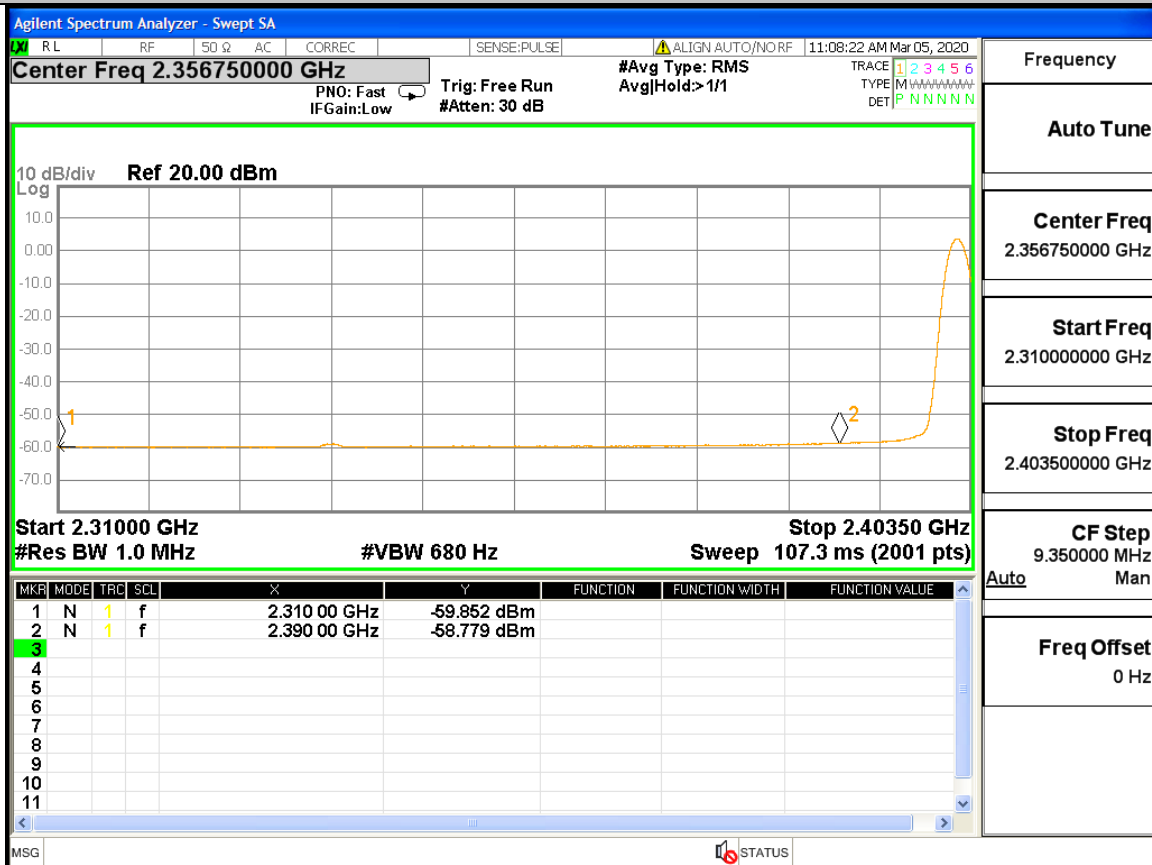
Restrict-band band-edge measurements_2480_AV_DH5



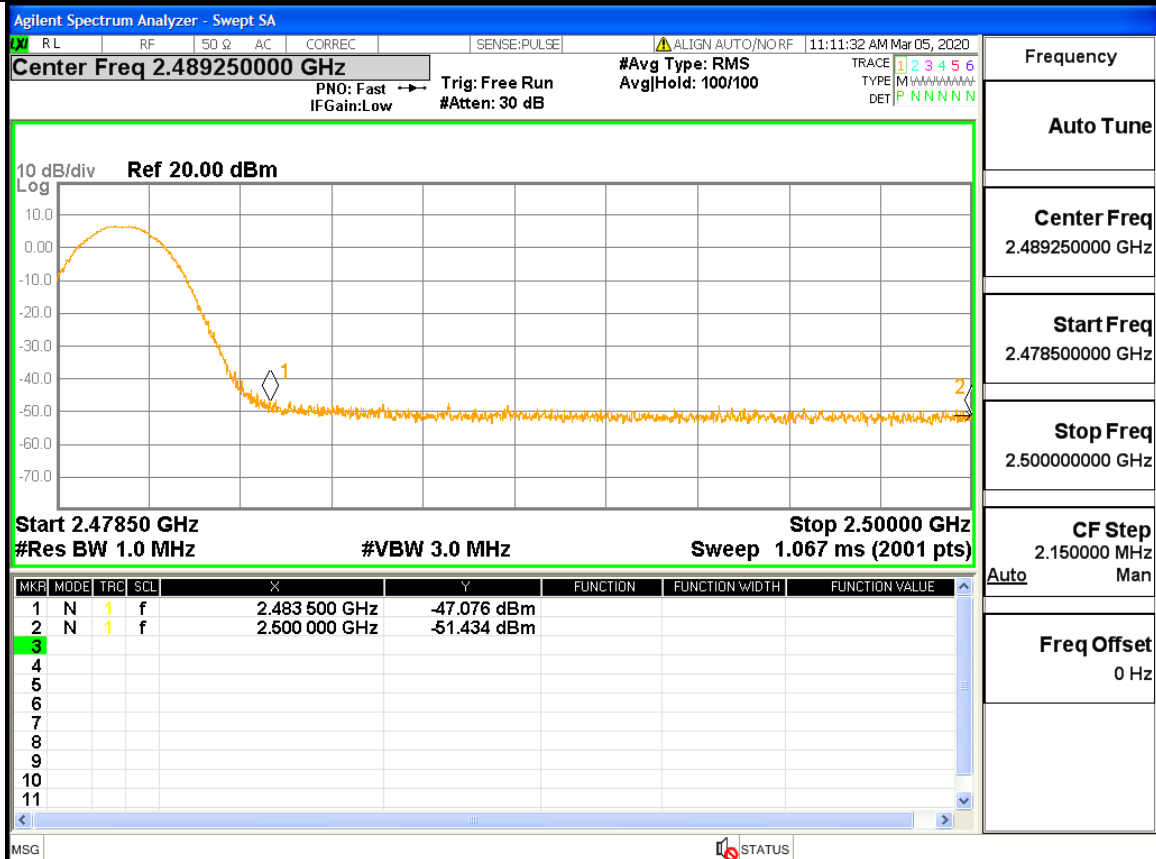
Restrict-band band-edge measurements_2402_PEAK_2DH5



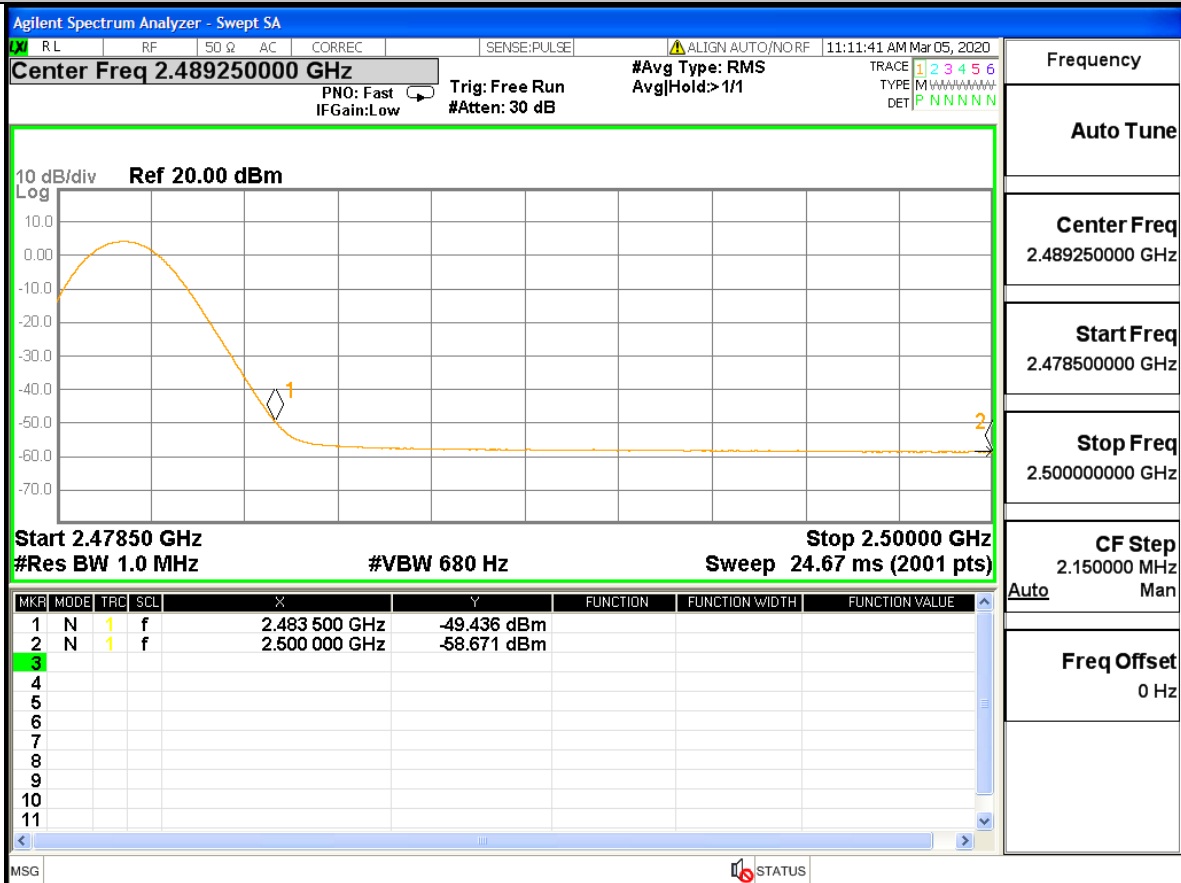
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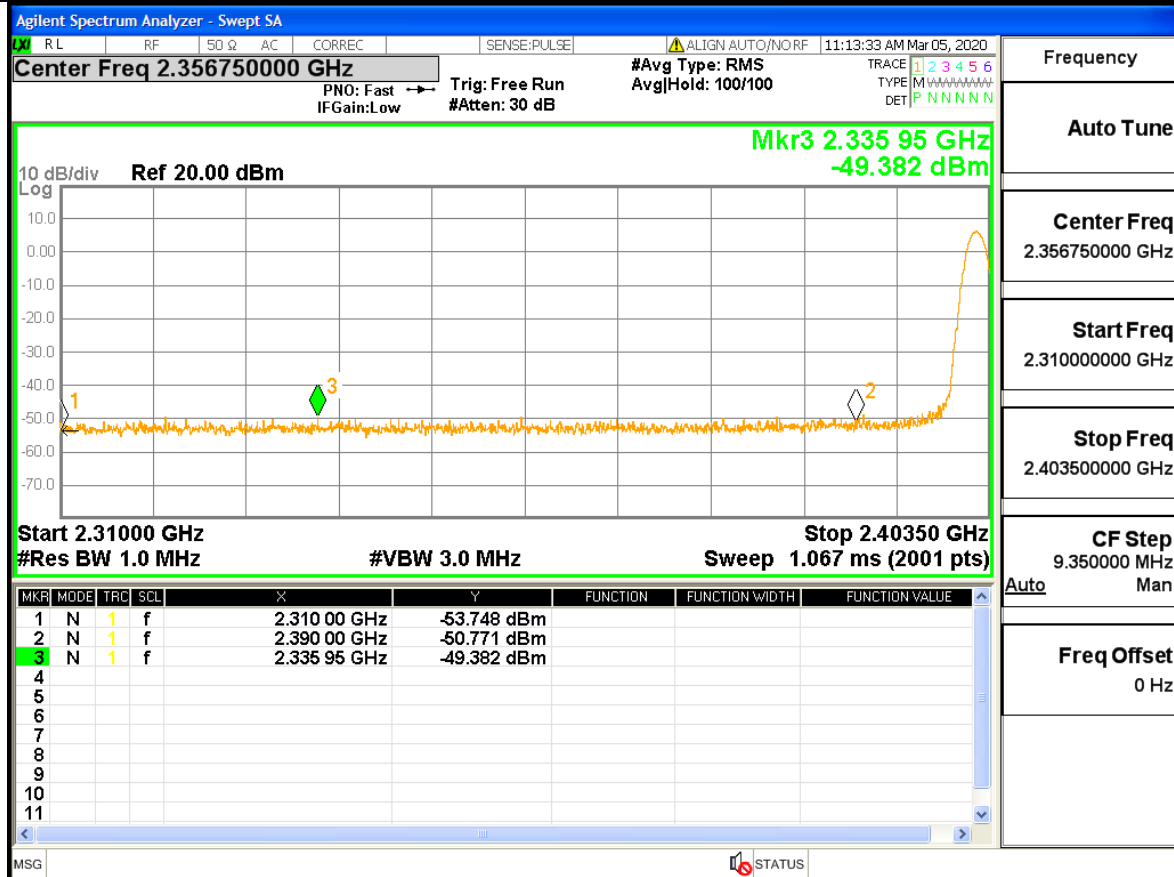
Restrict-band band-edge measurements_2480_PEAK_2DH5



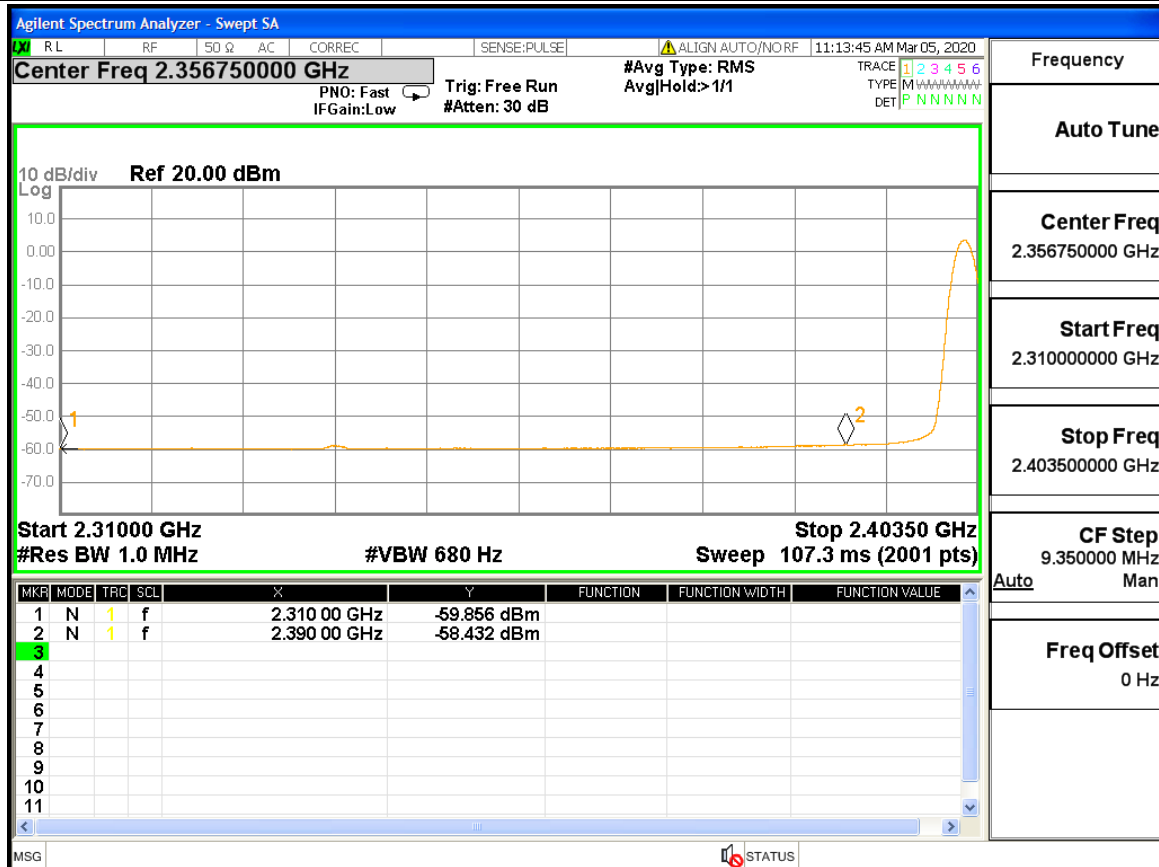
Restrict-band band-edge measurements_2480_AV_2DH5



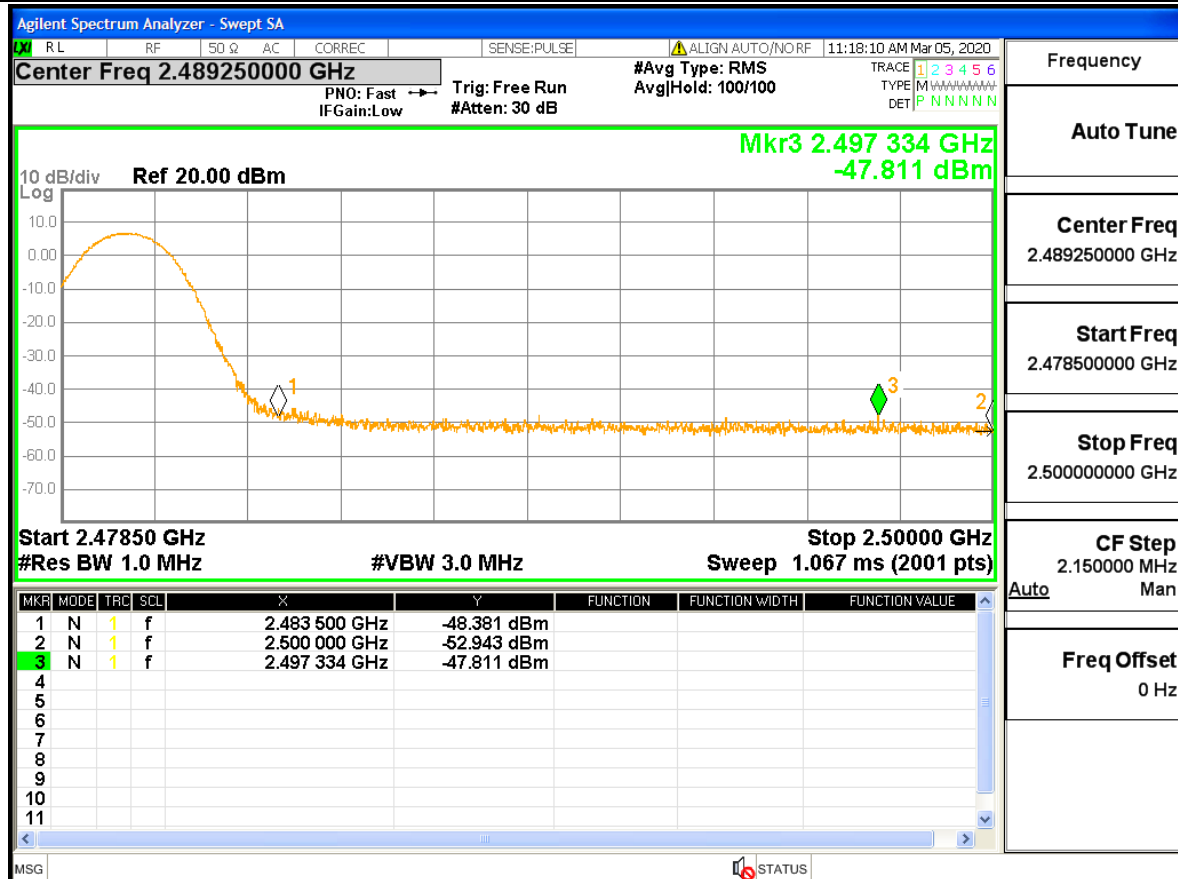
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

