



Appendix A

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

Product Name: Carstereo

Trade Mark: NUNOO

Test Model: N.1705

Environmental Conditions

Temperature:	24.0℃
Relative Humidity:	52.5%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

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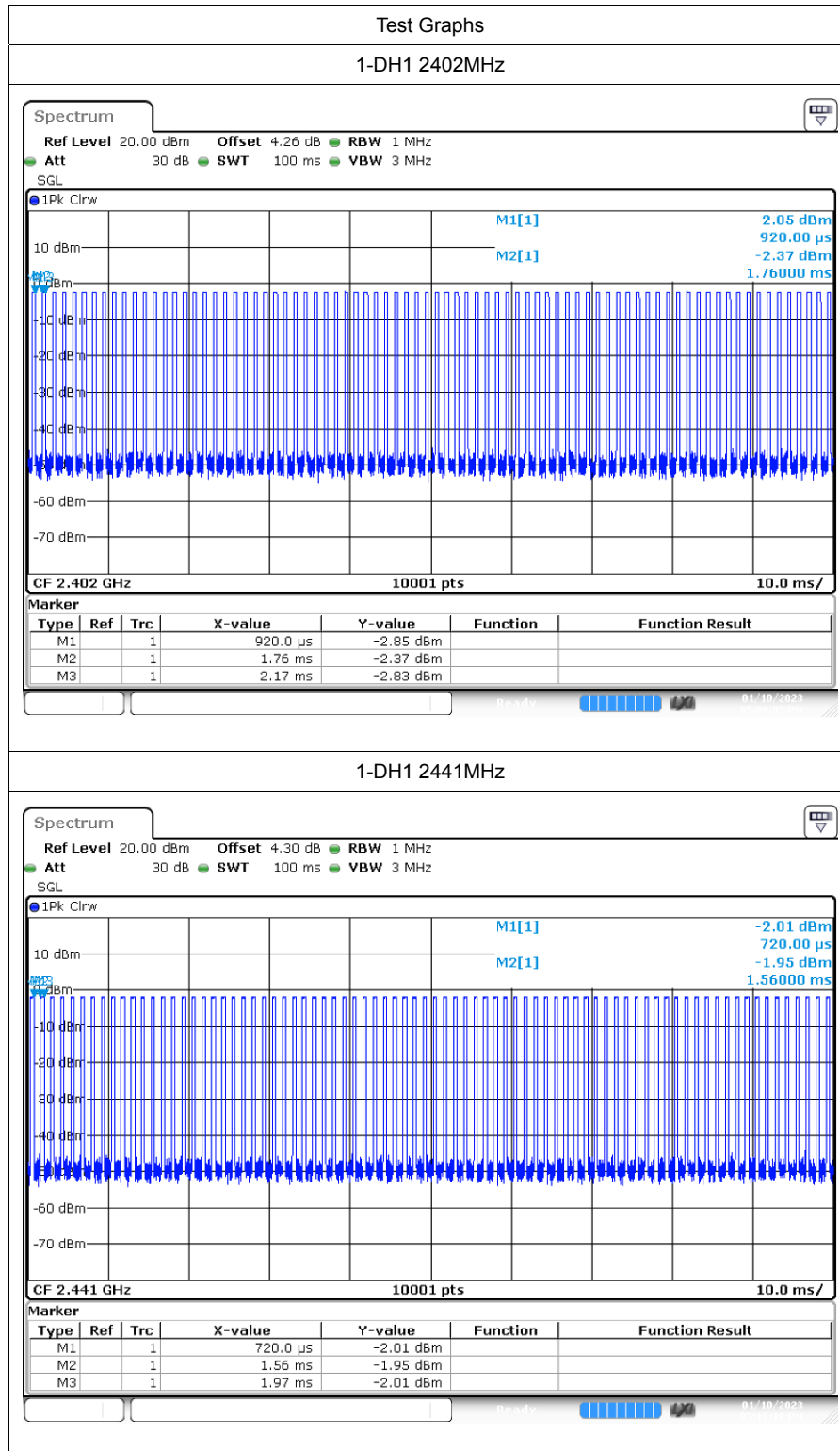
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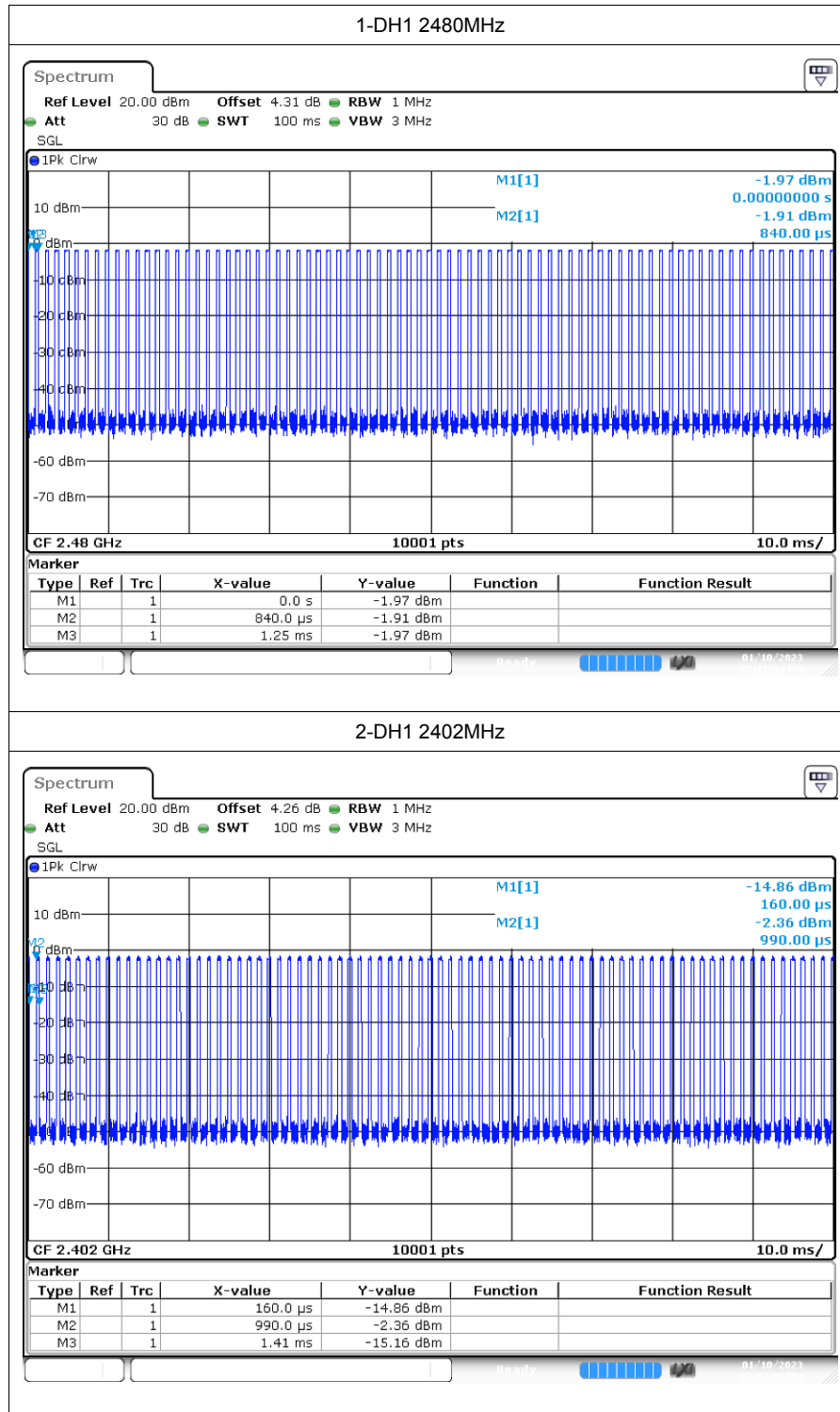
1 Duty Cycle

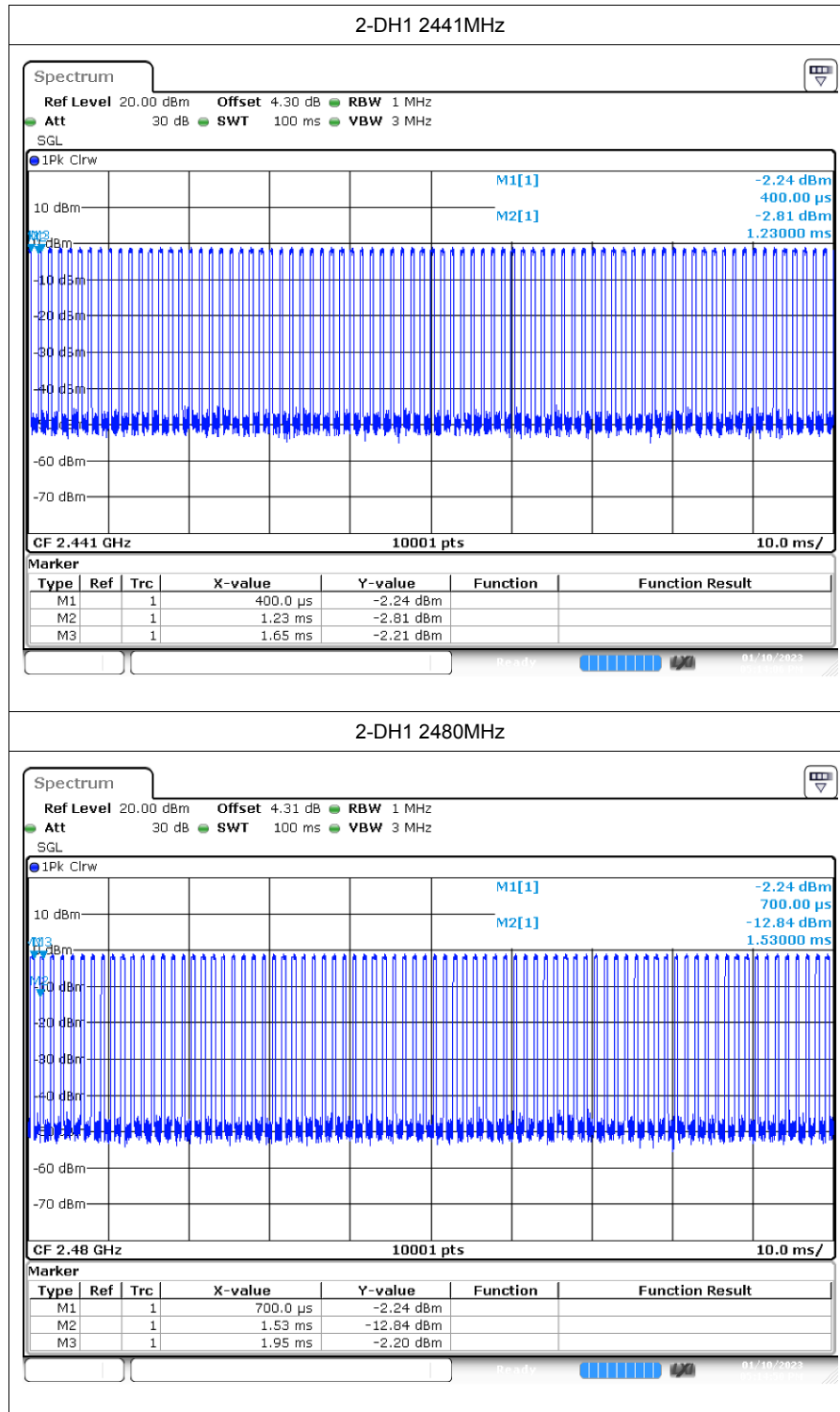
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	33.6	2.44
1-DH1	2441	33.6	2.44
1-DH1	2480	33.61	2.44
2-DH1	2402	34.49	2.38
2-DH1	2441	34.41	2.38
2-DH1	2480	34.4	2.38

1.2 Test Graphs





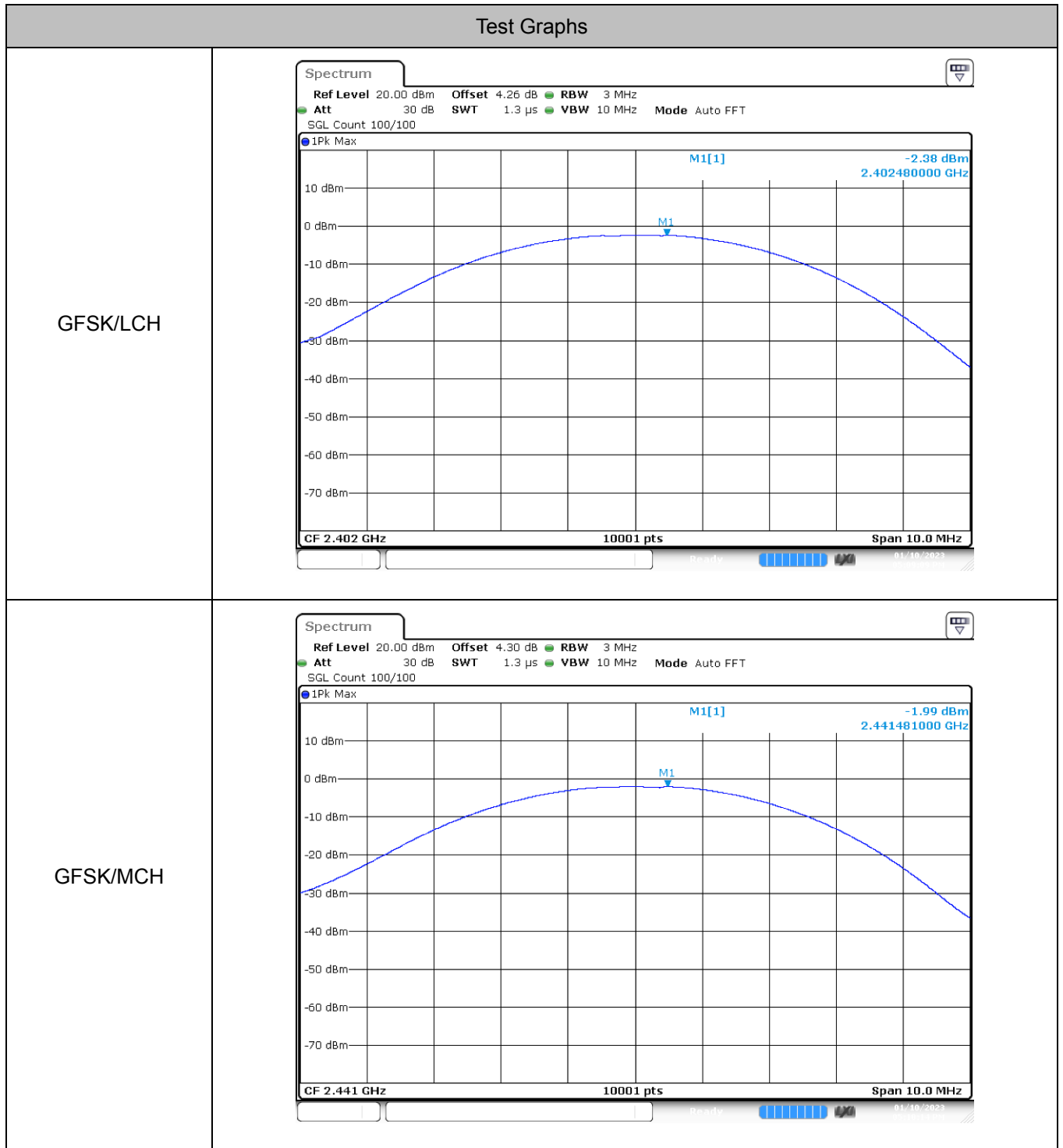


2 Maximum Conducted Peak Output Power

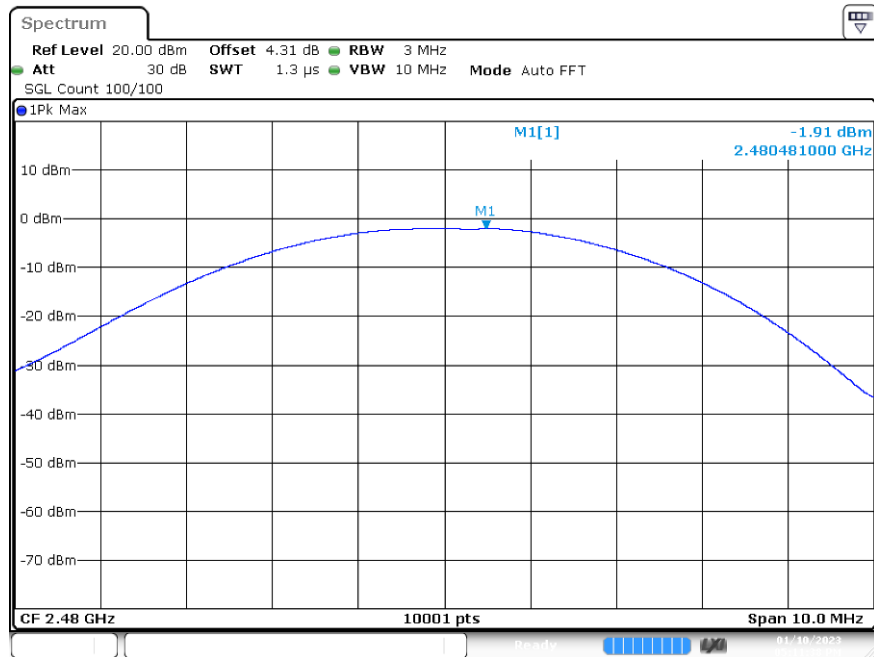
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.38	21	Pass
	MCH	-1.99	21	Pass
	HCH	-1.91	21	Pass
$\pi/4$ DQPSK	LCH	-1.25	21	Pass
	MCH	-1.71	21	Pass
	HCH	-1.32	21	Pass

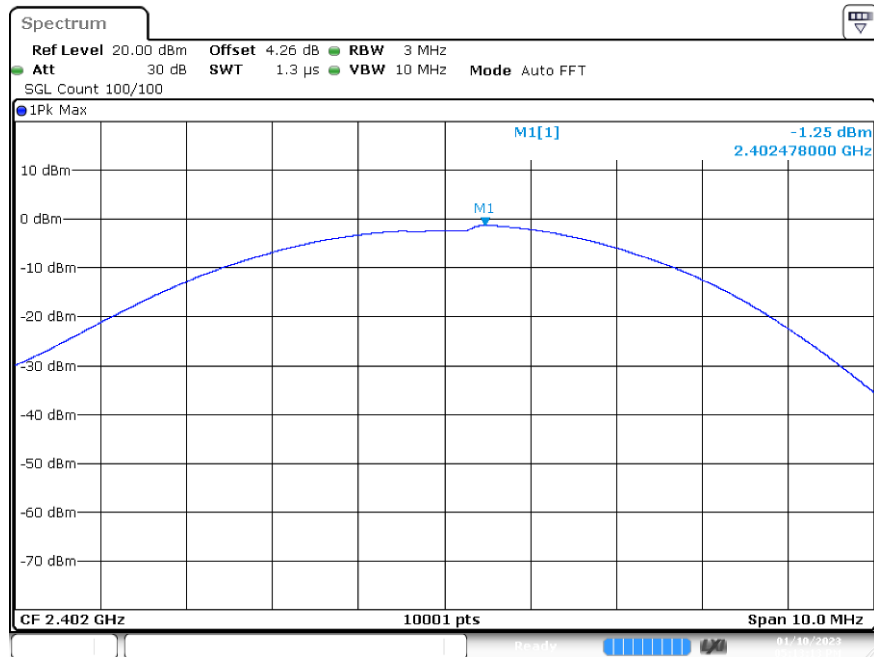
2.2 Test Graphs



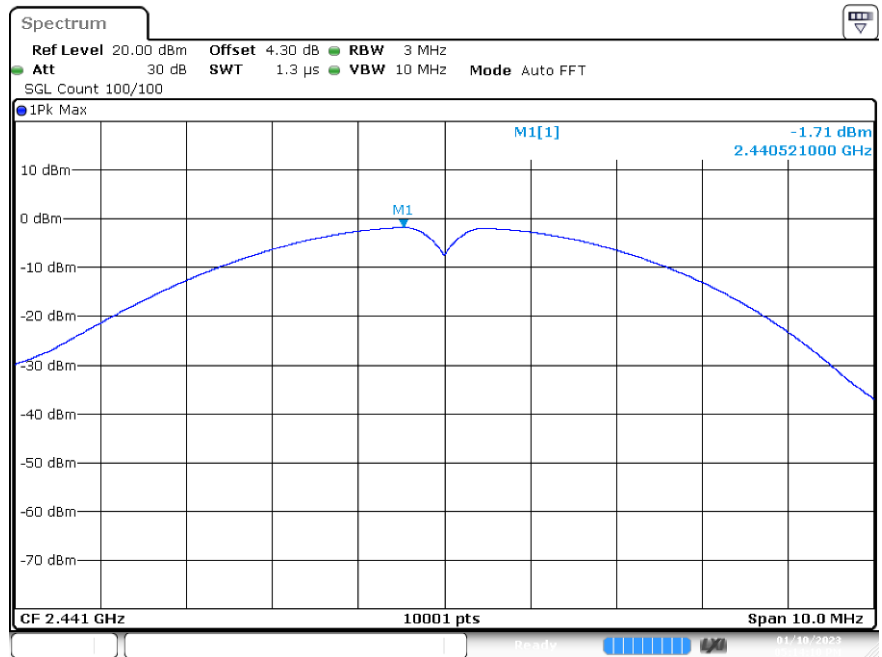
GFSK/HCH



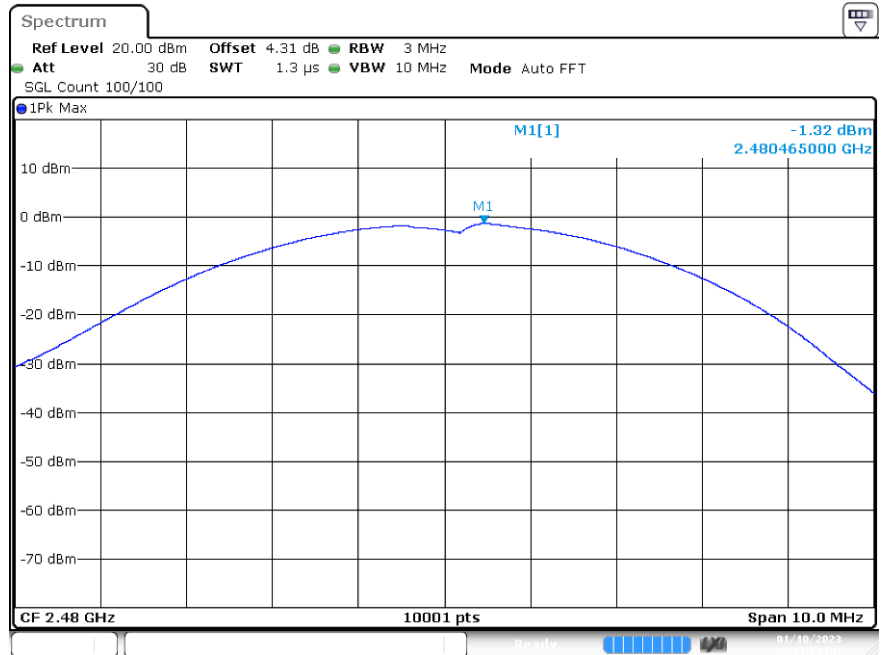
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

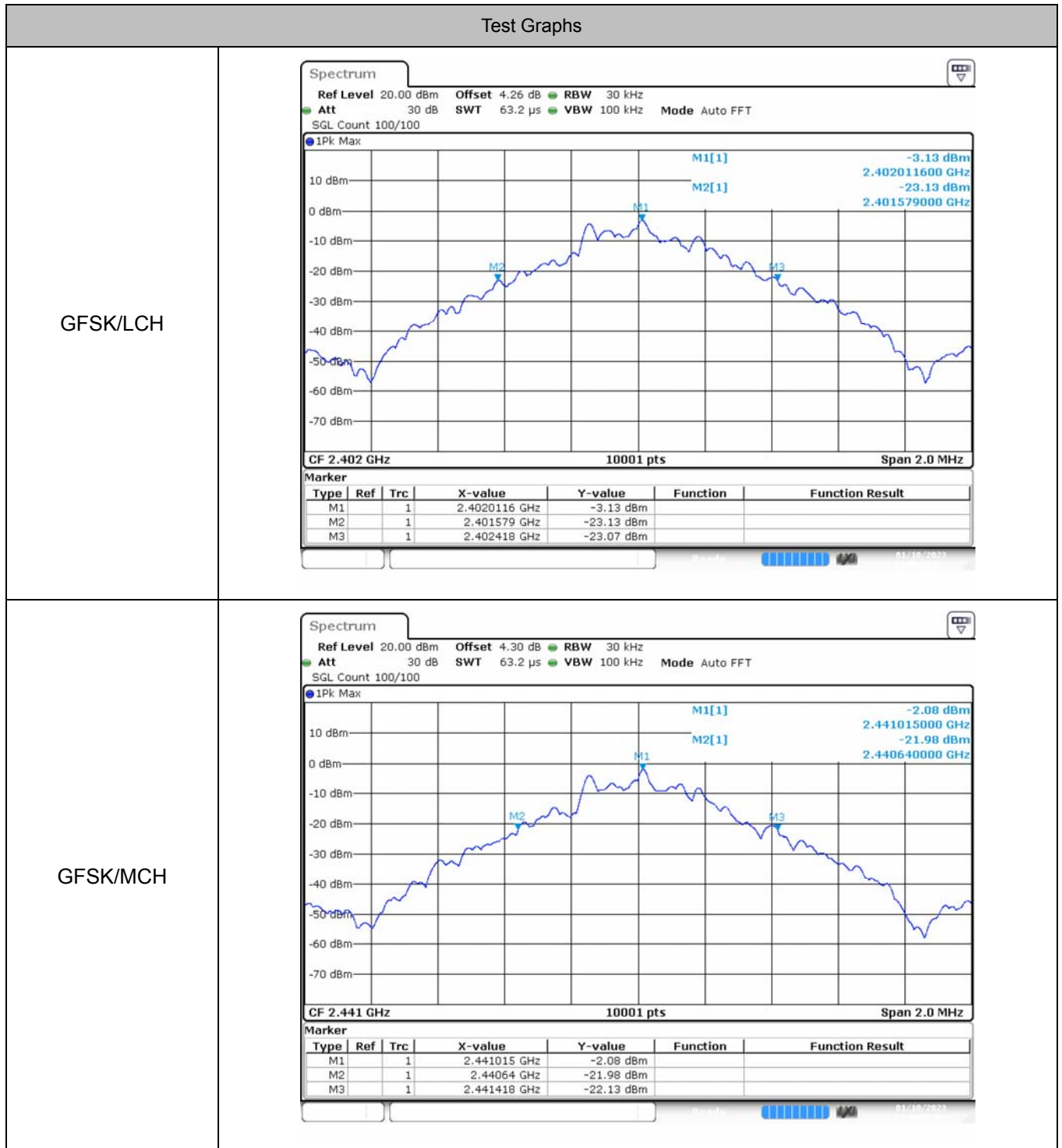


3 20dB Bandwidth

3.1 Test Result

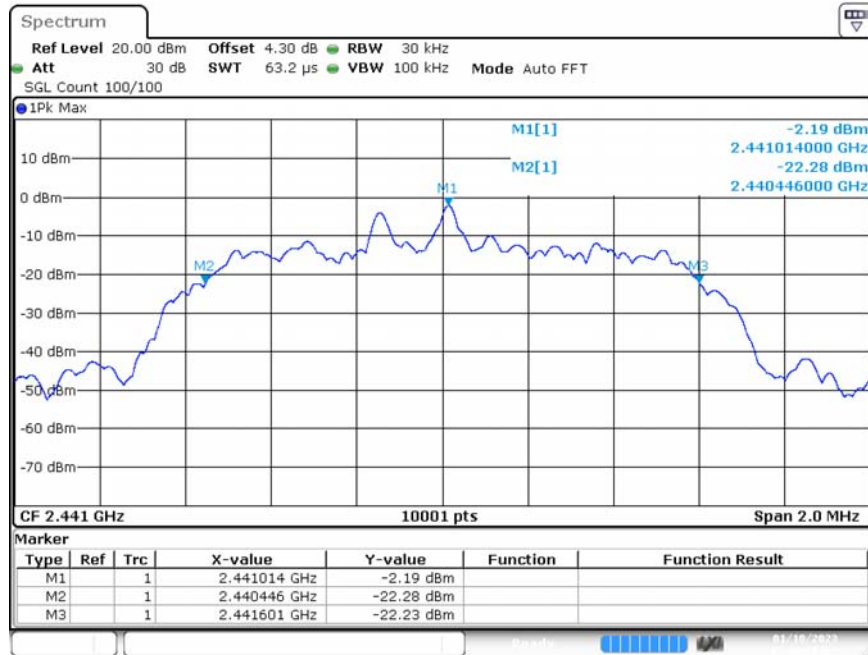
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.839	Not Specified	Pass
	MCH	0.778	Not Specified	Pass
	HCH	0.697	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.176	Not Specified	Pass
	MCH	1.154	Not Specified	Pass
	HCH	1.169	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH

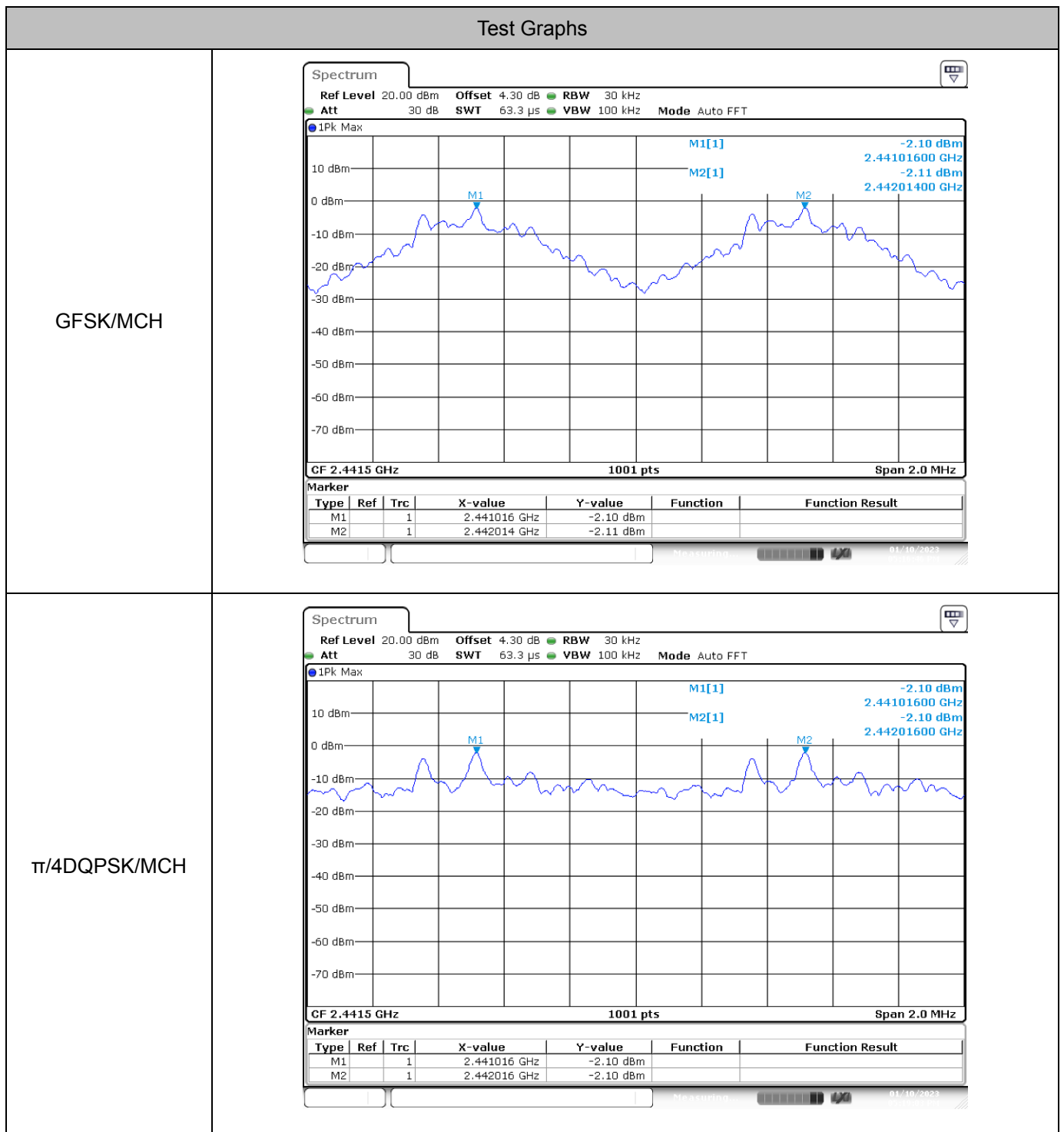

$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.998	0.519	Pass
$\pi/4$ DQPSK	MCH	1	0.769	Pass

4.2 Test Graphs



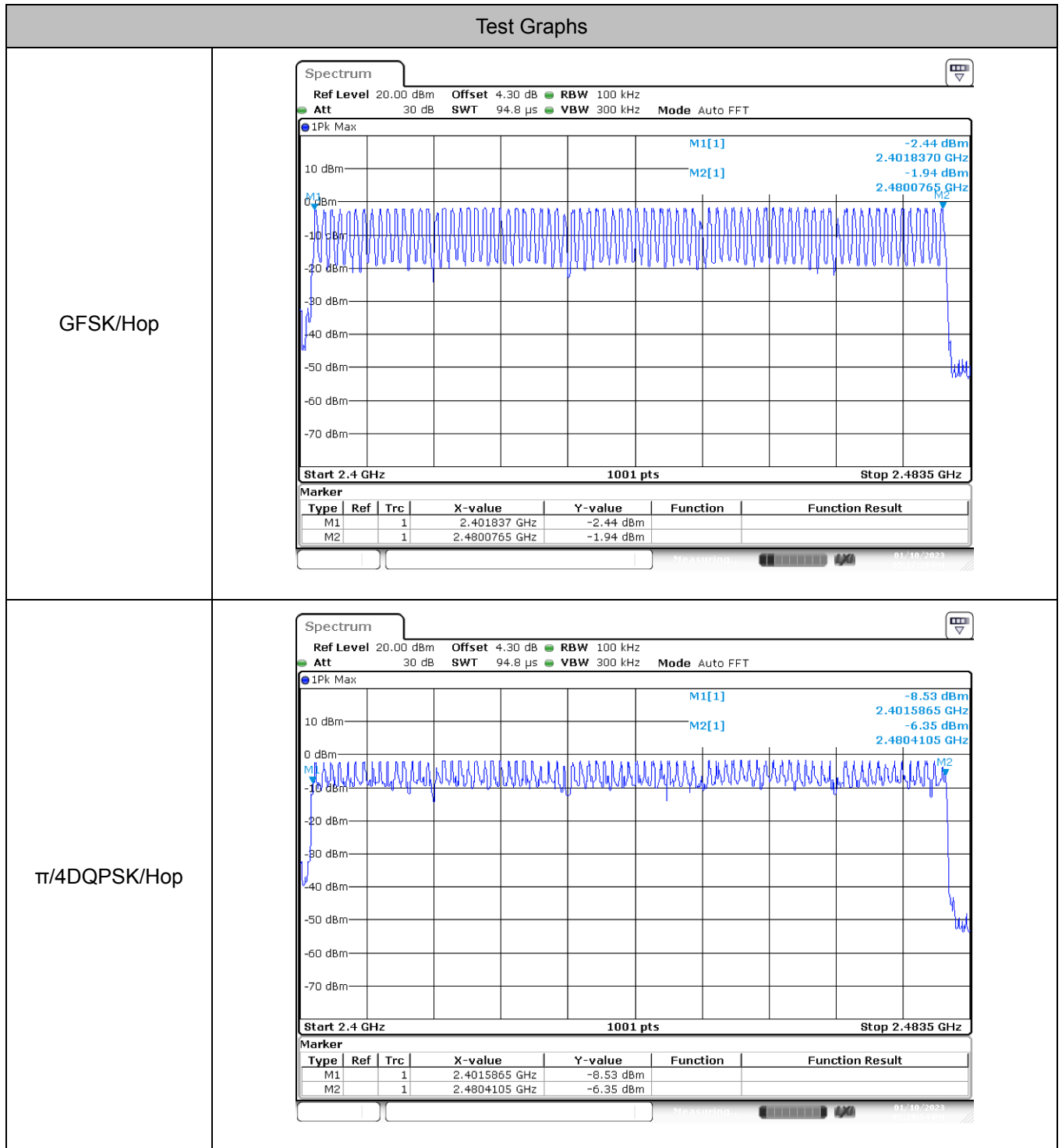


5 Hopping Channel Number

5.1 Test Result

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

5.2 Test Graphs

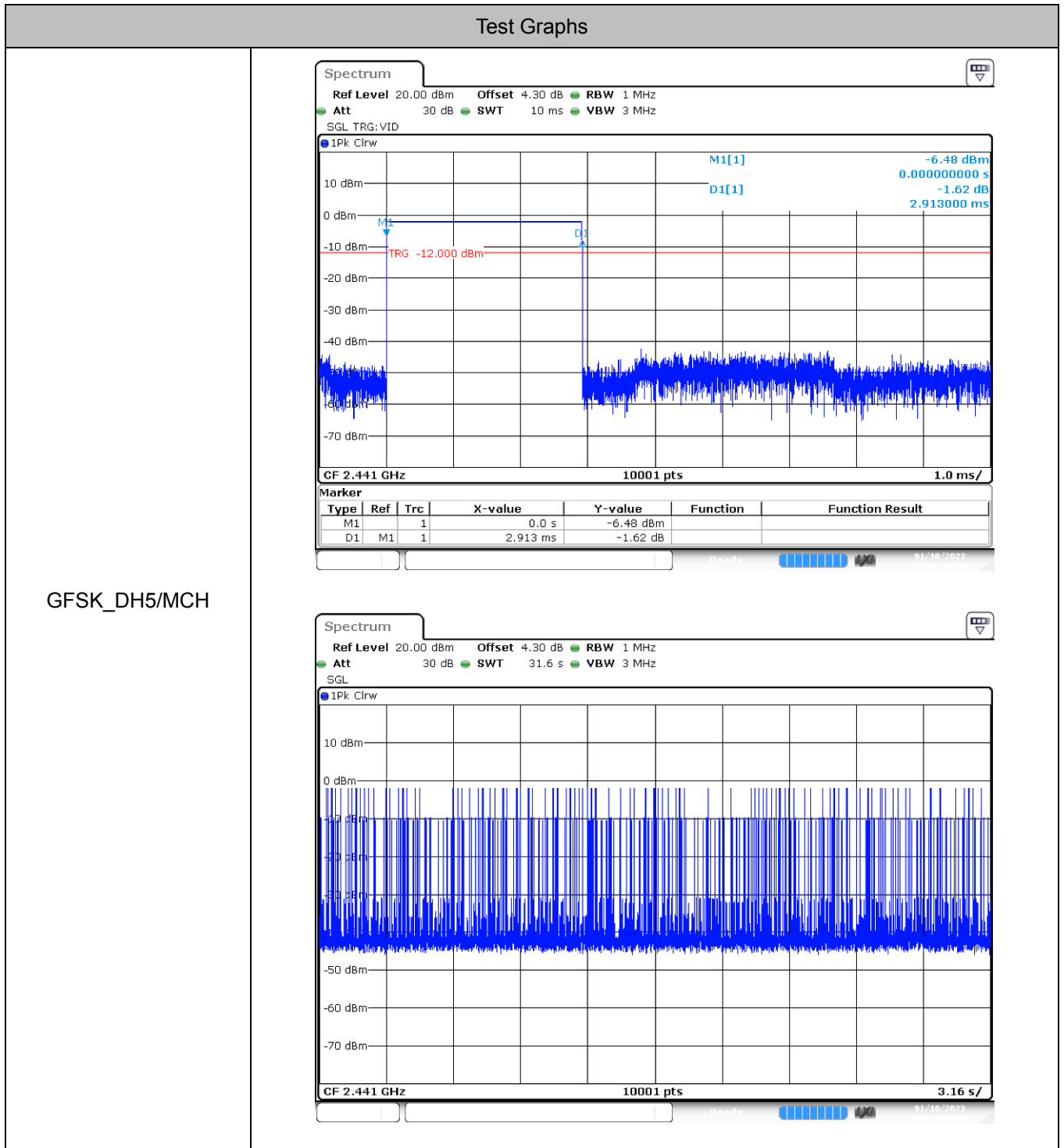


6 Dwell Time

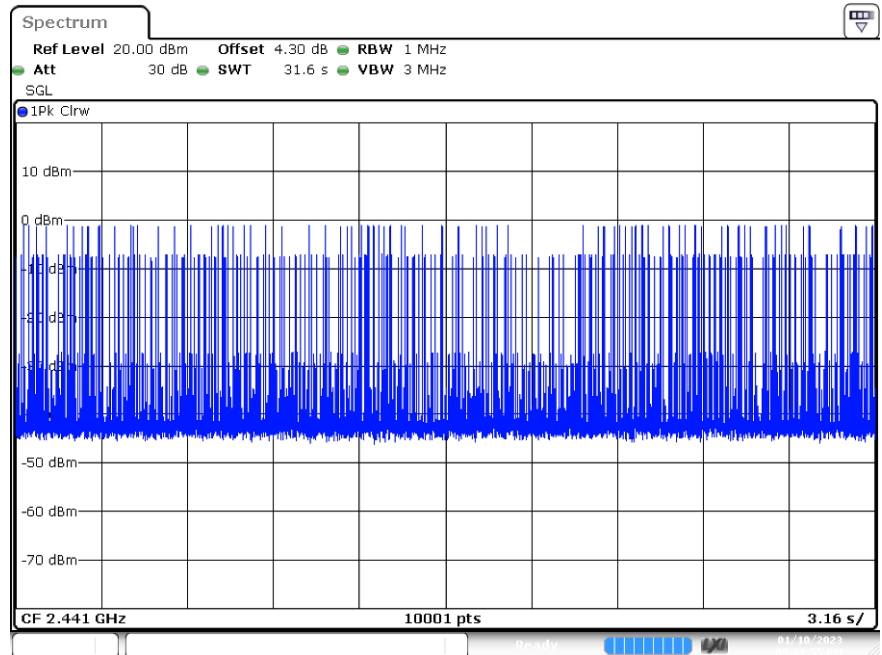
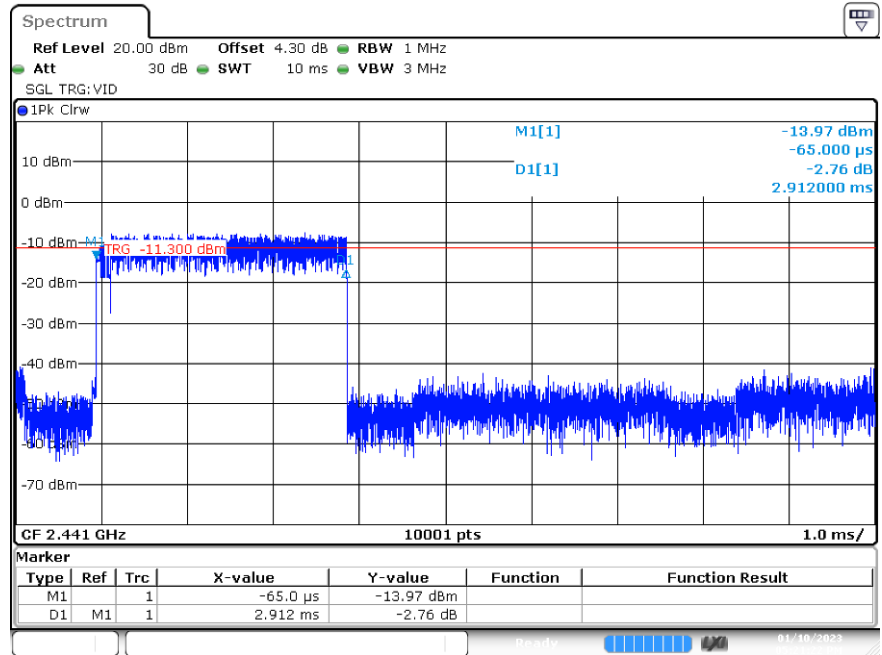
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.913	113	329.169	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.912	89	259.168	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

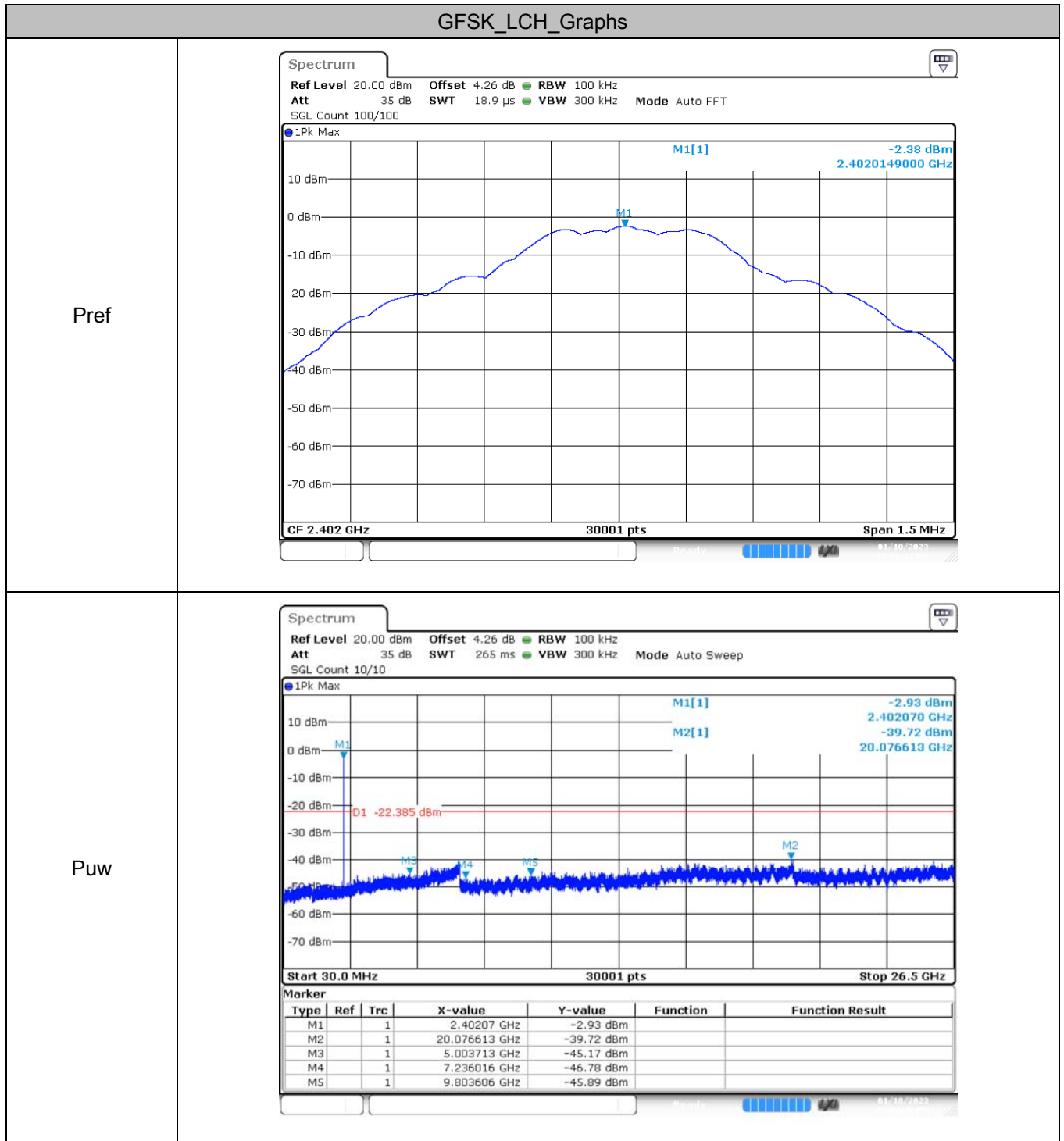


7 RF Conducted Spurious Emissions

7.1 Test Result

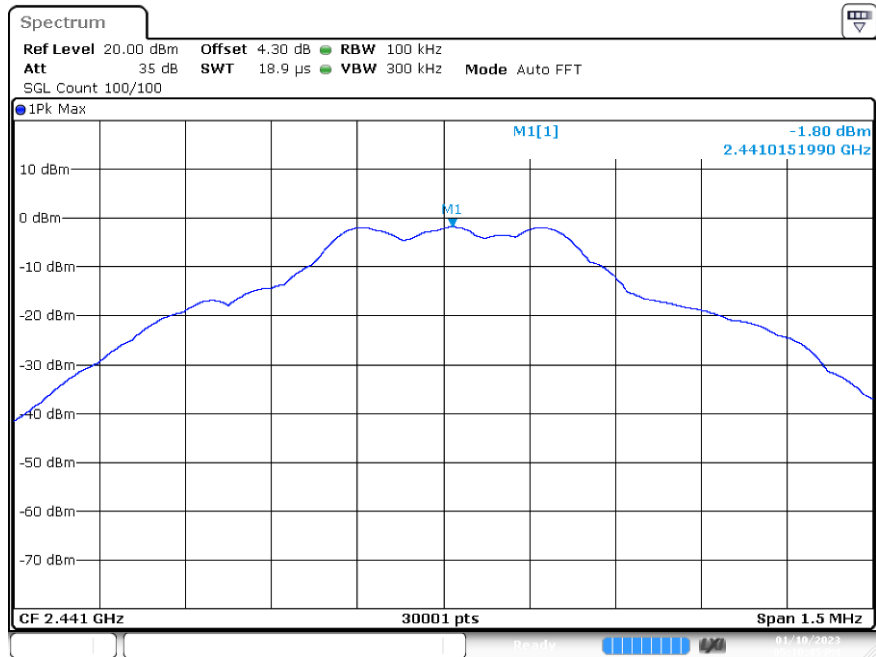
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-37.34	-20	Pass
	MCH	-37.48	-20	Pass
	HCH	-37.88	-20	Pass
$\pi/4$ DQPSK	LCH	-37.97	-20	Pass
	MCH	-37.75	-20	Pass
	HCH	-38.47	-20	Pass

7.2 Test Graphs

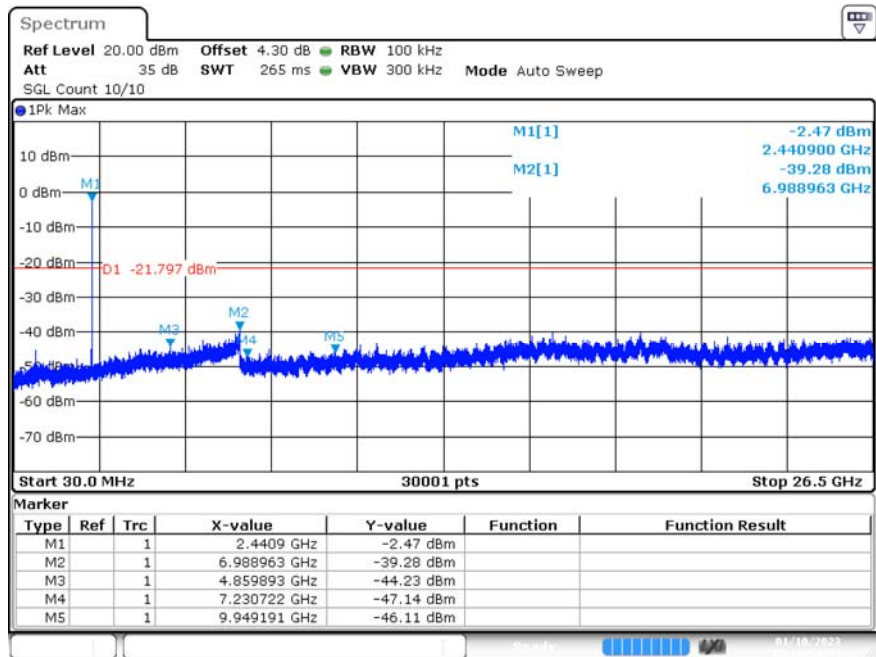


GFSK_MCH_Graphs

Pref

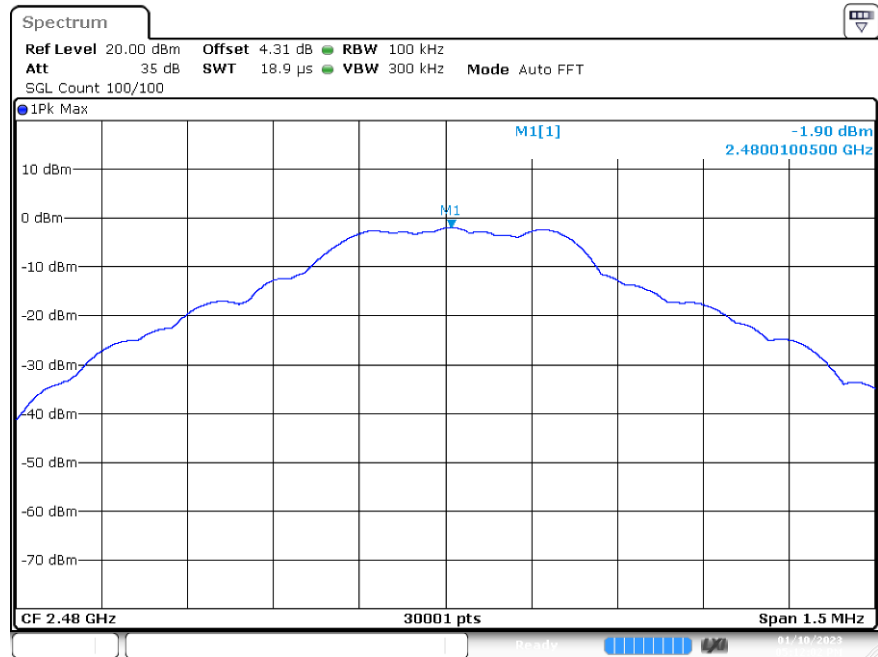


Puw

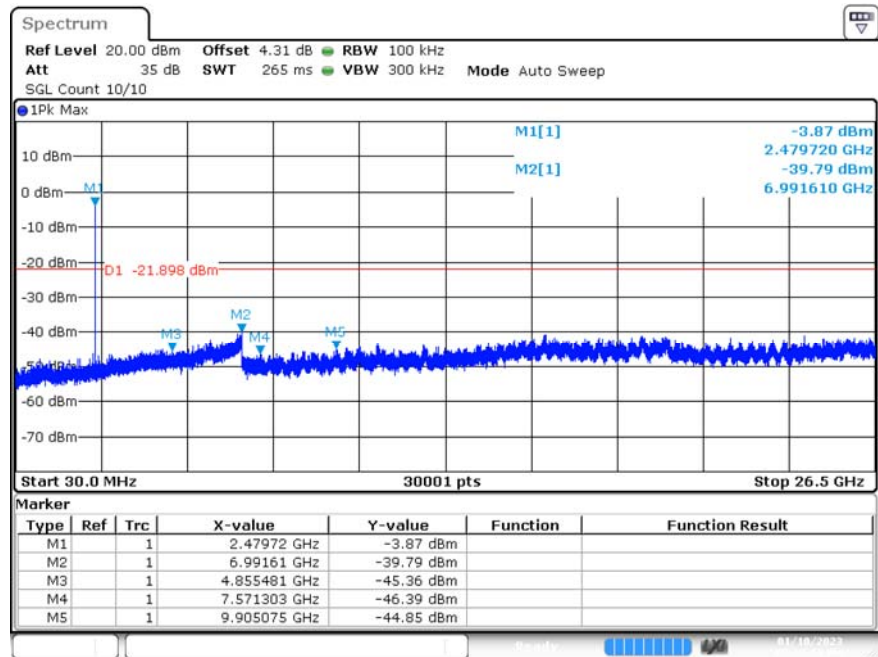


GFSK_HCH_Graphs

Pref

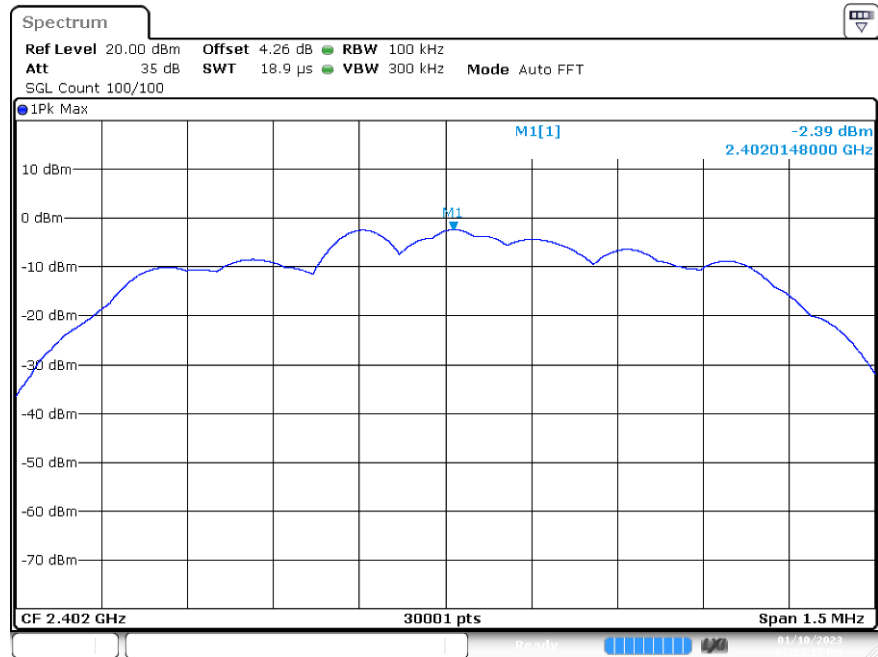


Puw

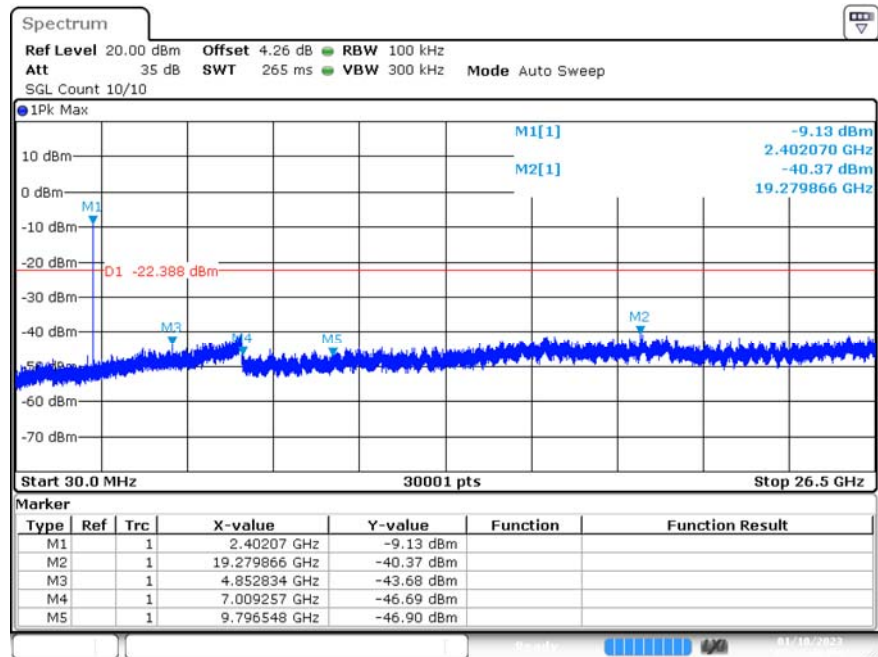


$\pi/4$ DQPSK_LCH_Graphs

Pref

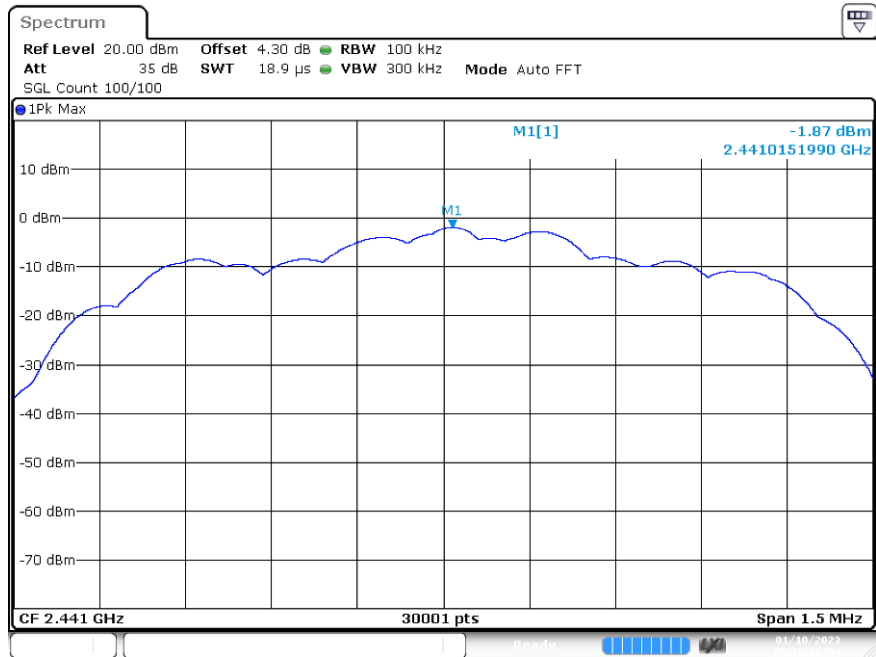


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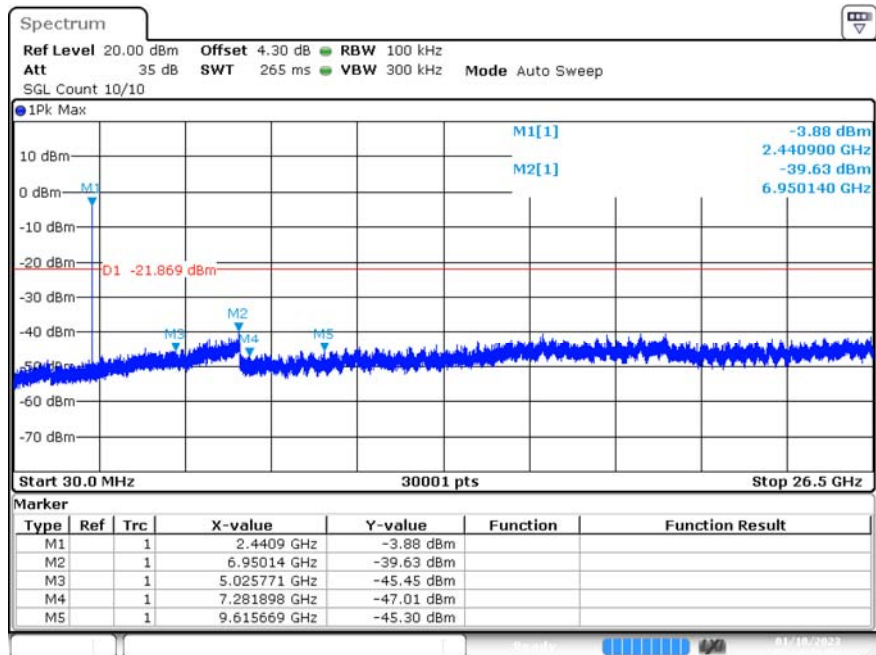


$\pi/4$ DQPSK_MCH_Graphs

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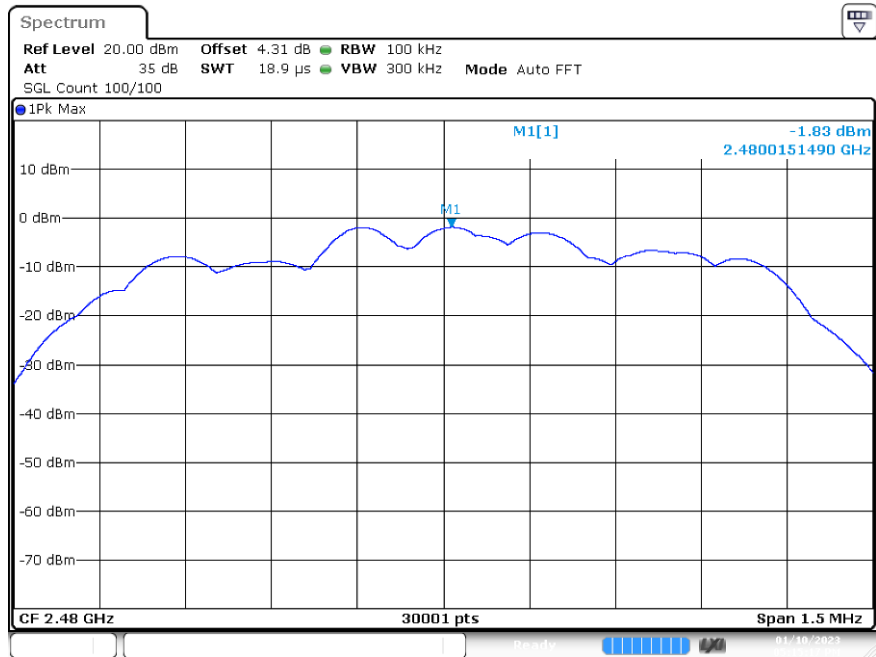


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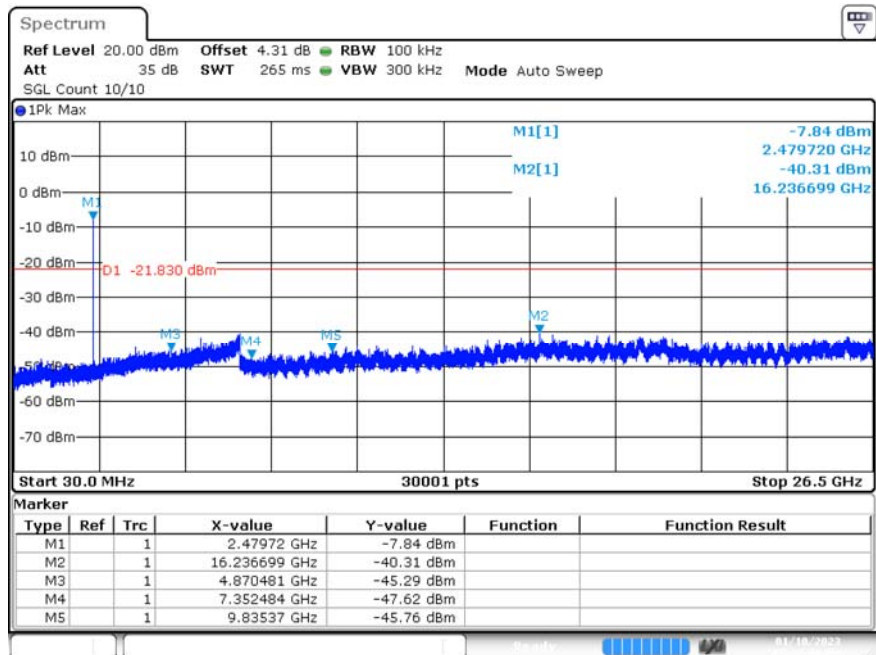


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

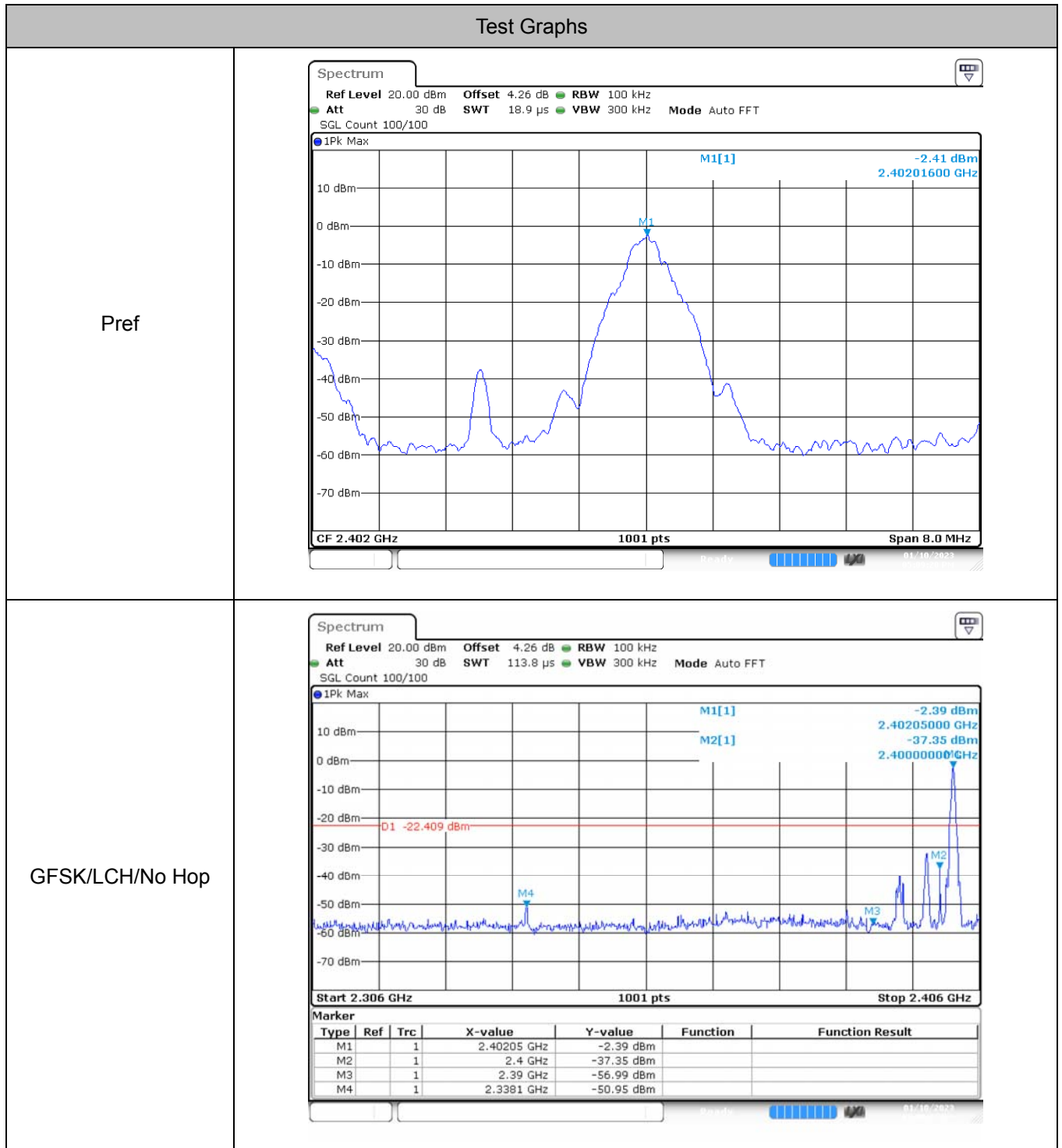


8 Band-edge for RF Conducted Emissions

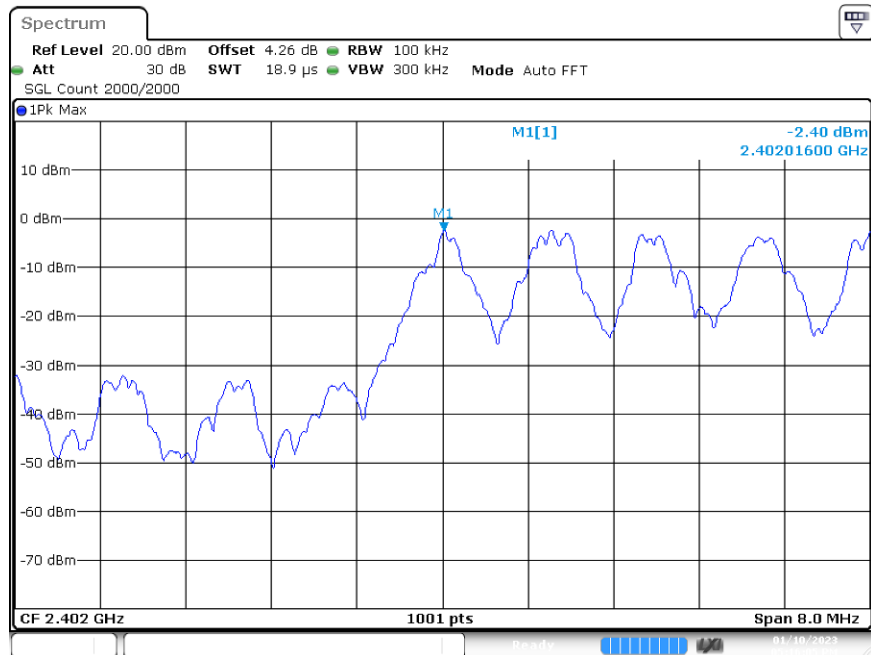
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-48.53	-20	Pass
			On	-46.63	-20	Pass
	HCH	2480	Off	-46.37	-20	Pass
			On	-48.38	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-48.73	-20	Pass
			On	-46.12	-20	Pass
	HCH	2480	Off	-46.98	-20	Pass
			On	-45.05	-20	Pass

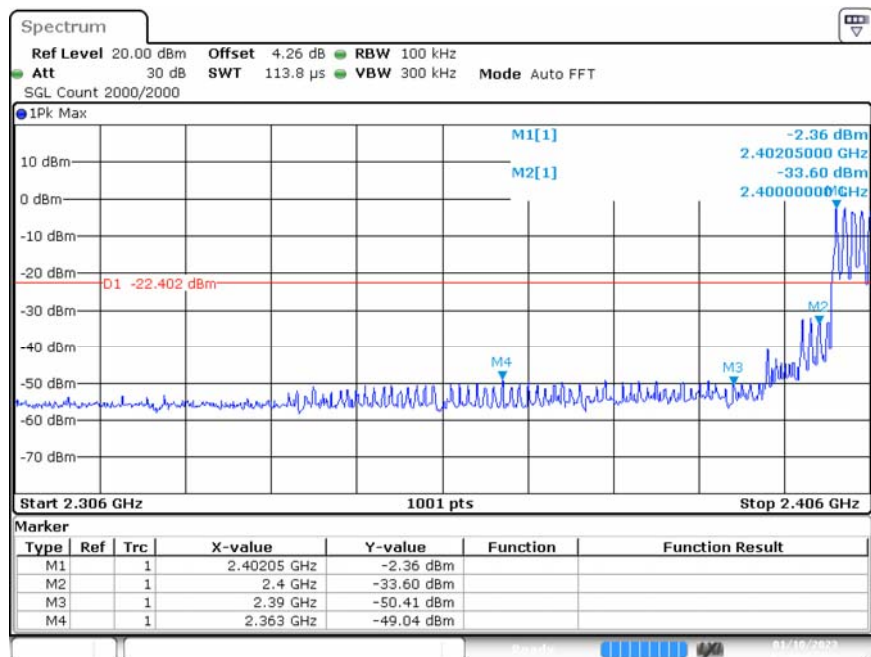
8.2 Test Graphs



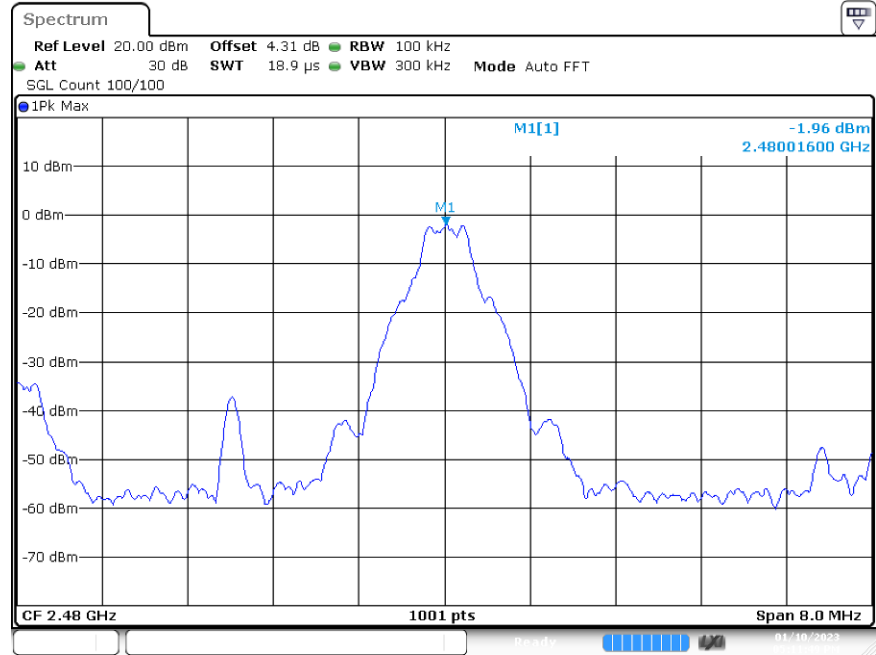
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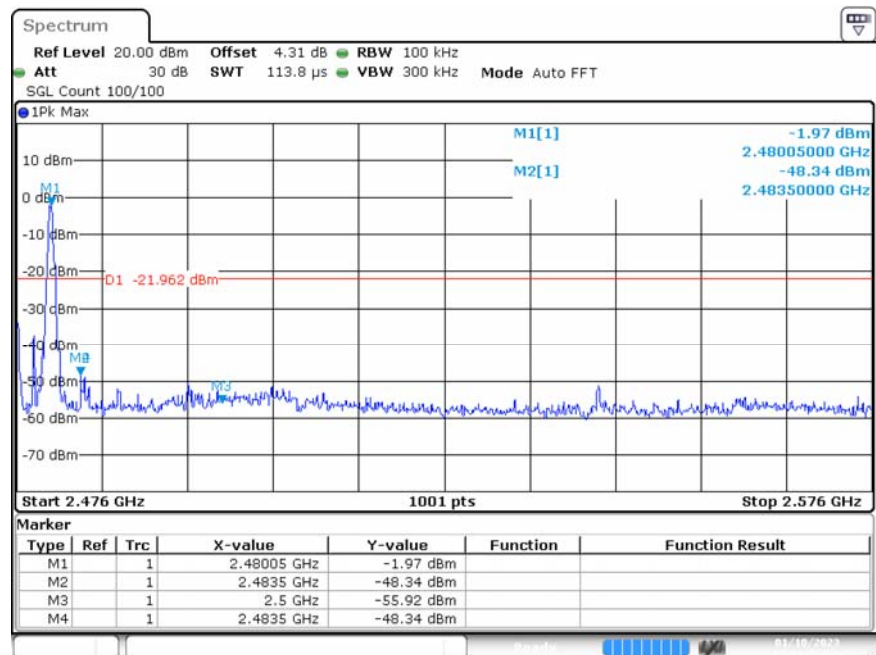
GFSK/LCH/Hop



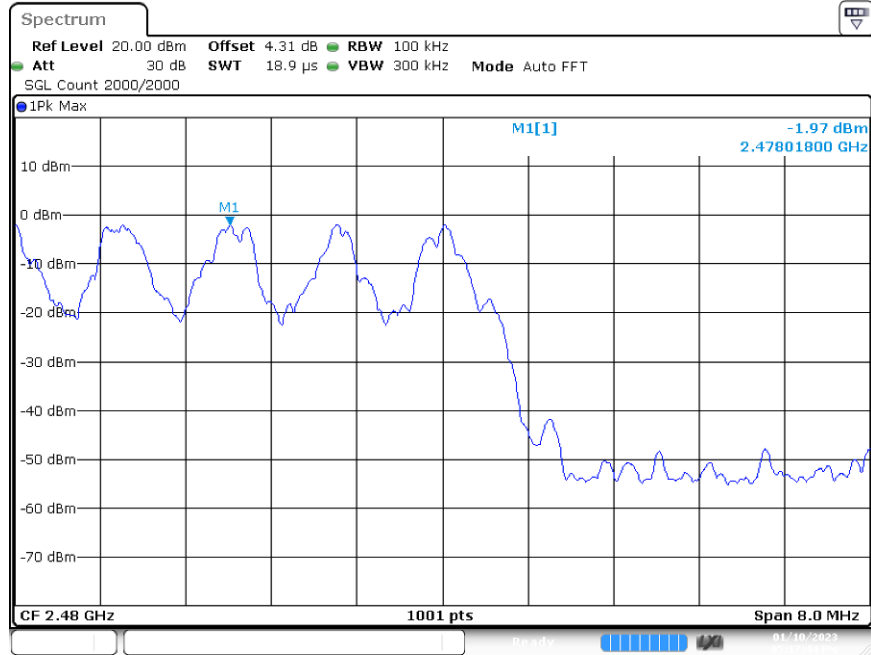
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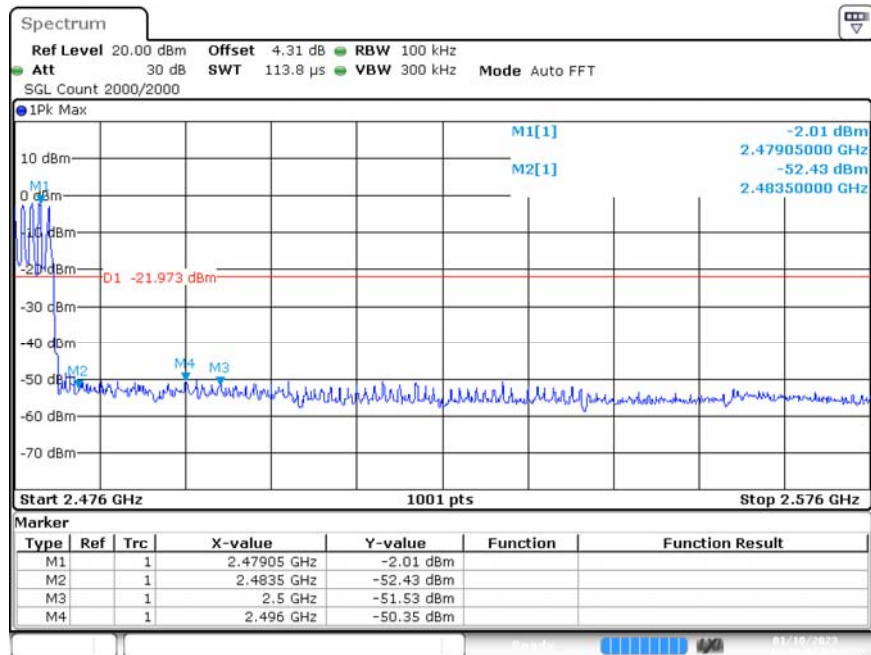
GFSK/HCH/No Hop



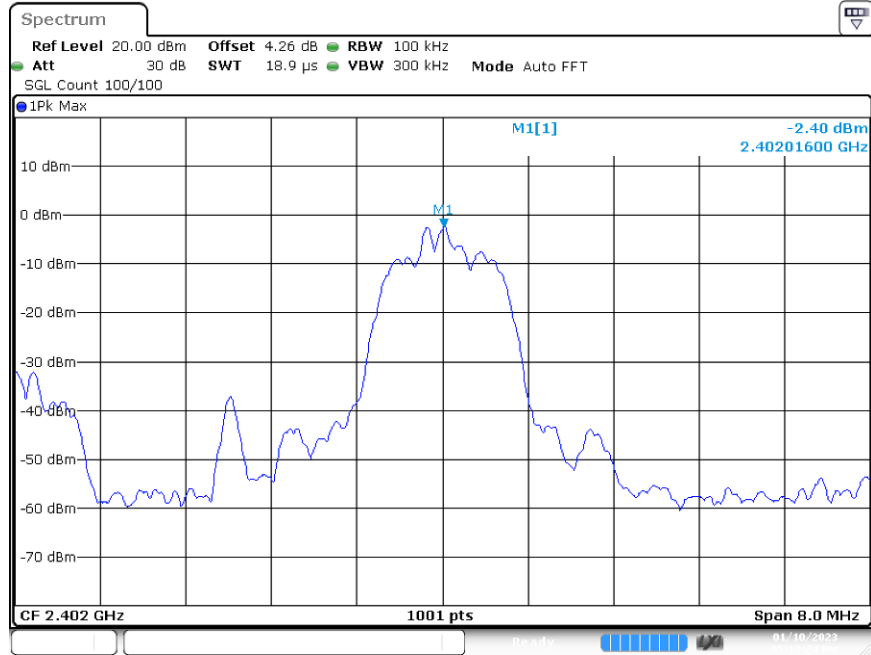
Ref.



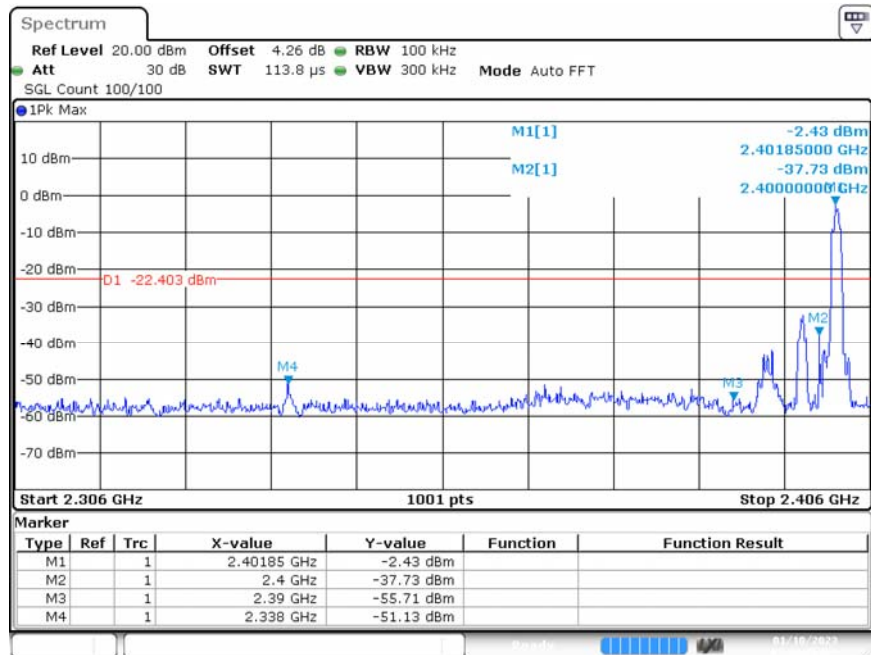
GFSK/HCH/Hop



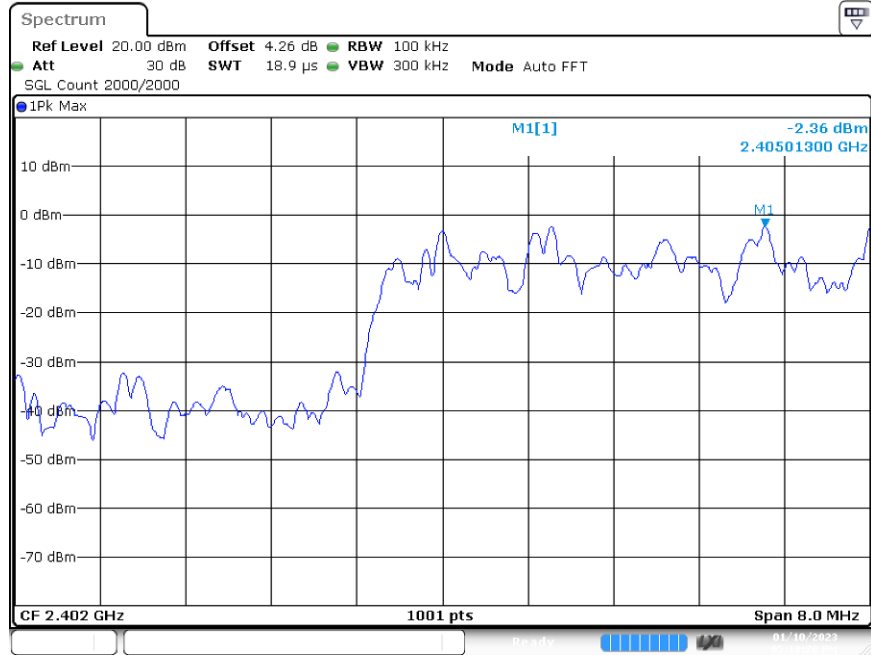
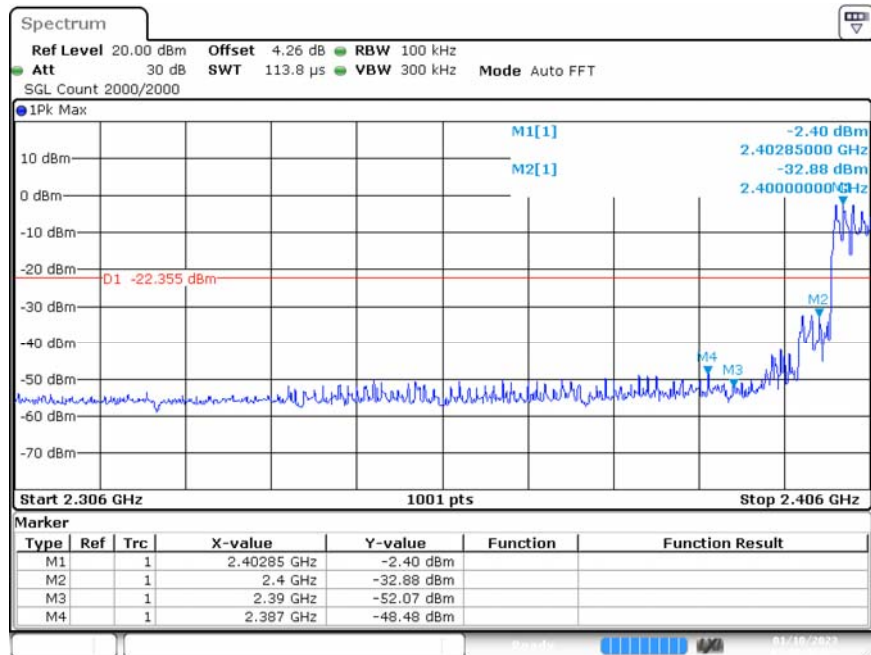
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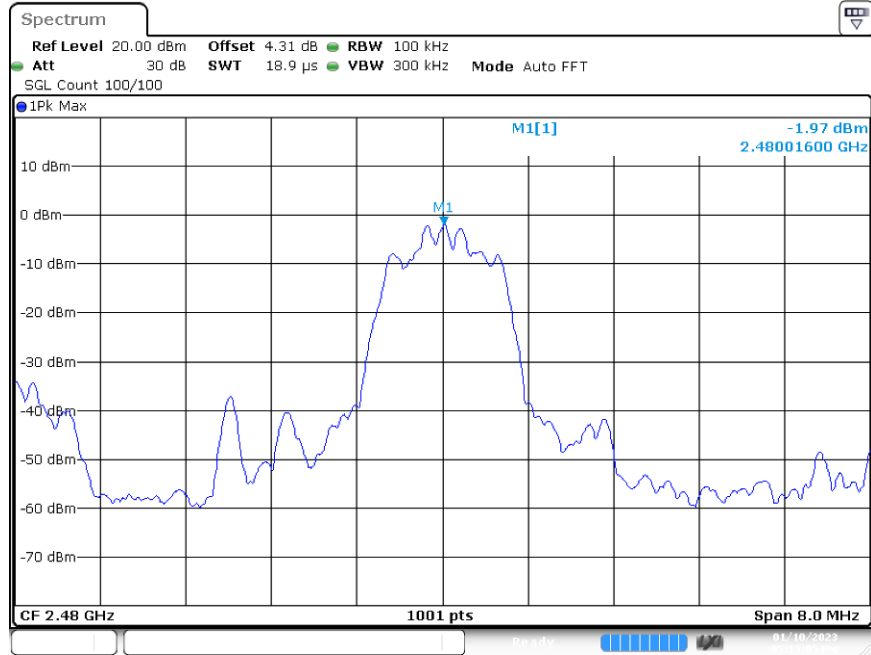
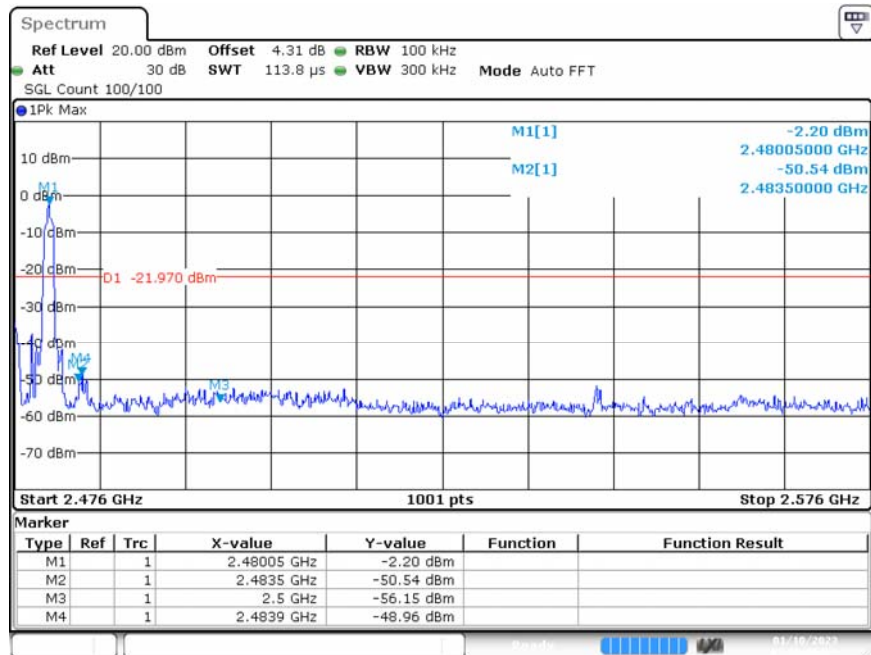
$\pi/4$ DQPSK/LCH/No
Hop



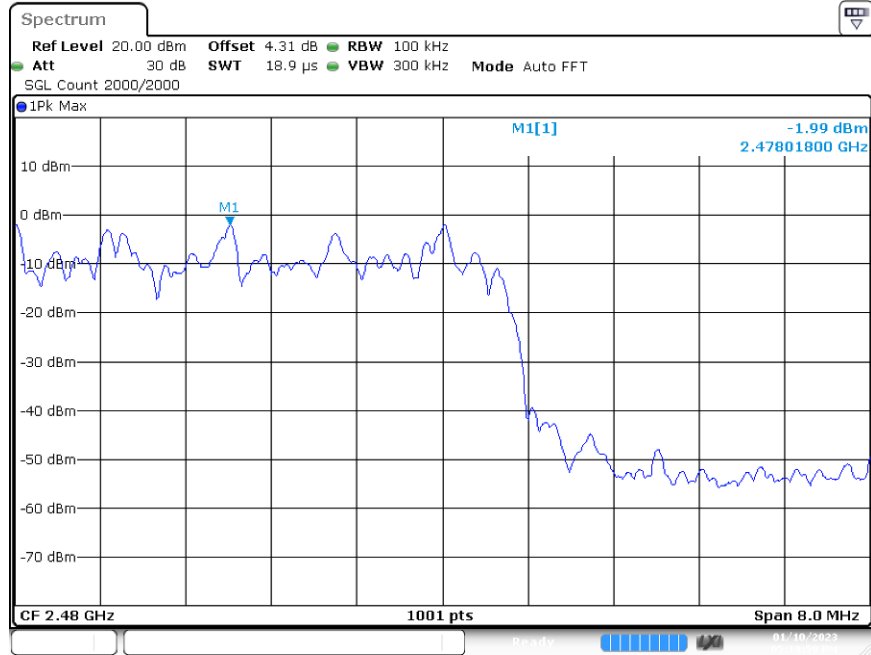
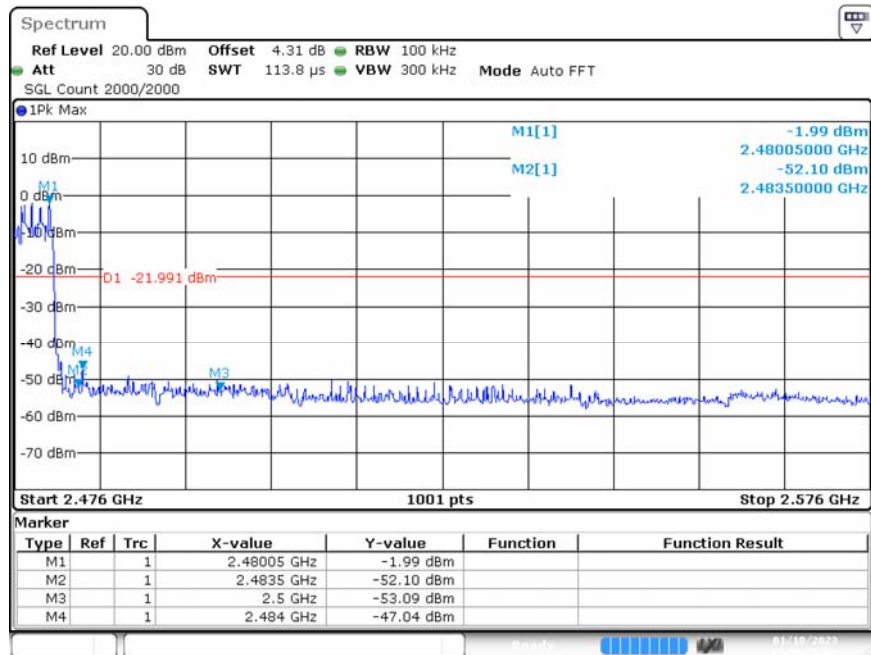
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


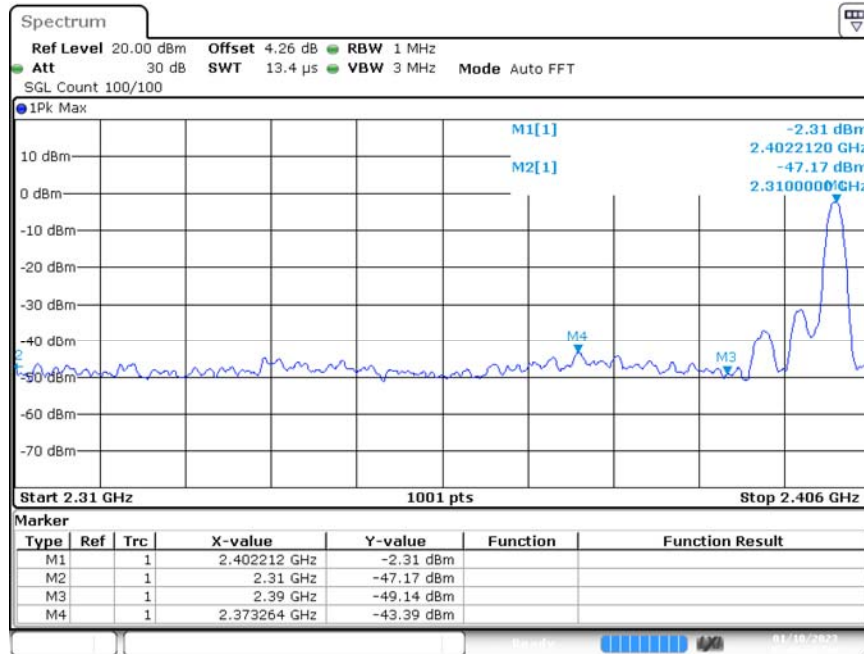
9 Restrict-band band-edge measurements

9.1 Test Result

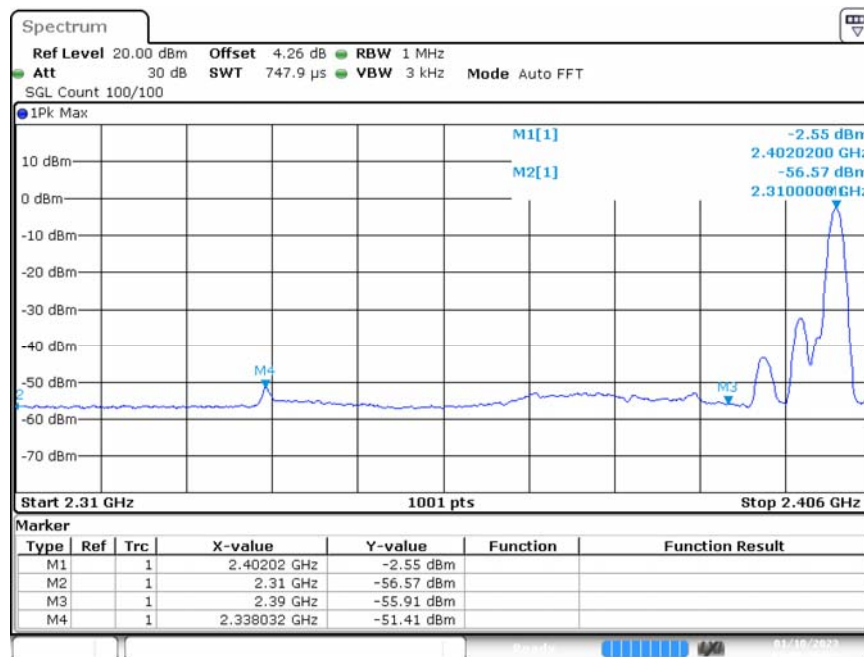
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-47.16	2	50.1	PEAK	74	Pass
	Off	2310.0	-56.56	2	40.7	AV	54	Pass
	Off	2373.264	-43.39	2	53.87	PEAK	74	Pass
	Off	2338.032	-51.41	2	45.85	AV	54	Pass
	Off	2390.0	-49.14	2	48.12	PEAK	74	Pass
	Off	2390.0	-55.9	2	41.36	AV	54	Pass
	Off	2483.5	-42.87	2	54.39	PEAK	74	Pass
	Off	2483.5	-50.73	2	46.53	AV	54	Pass
	Off	2483.704	-42.63	2	54.63	PEAK	74	Pass
	Off	2483.944	-49.39	2	47.87	AV	54	Pass
	Off	2500.0	-43.87	2	53.39	PEAK	74	Pass
	Off	2500.0	-53.31	2	43.95	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48.06	2	49.2	PEAK	74	Pass
	Off	2310.0	-56.14	2	41.12	AV	54	Pass
	Off	2367.888	-43.64	2	53.62	PEAK	74	Pass
	Off	2338.032	-52.29	2	44.97	AV	54	Pass
	Off	2390.0	-48.72	2	48.54	PEAK	74	Pass
	Off	2390.0	-55.96	2	41.3	AV	54	Pass
	Off	2483.5	-45.56	2	51.7	PEAK	74	Pass
	Off	2483.5	-51.68	2	45.58	AV	54	Pass
	Off	2496.064	-42.39	2	54.87	PEAK	74	Pass
	Off	2483.968	-50.44	2	46.82	AV	54	Pass
	Off	2500.0	-47.39	2	49.87	PEAK	74	Pass
	Off	2500.0	-53.53	2	43.73	AV	54	Pass

9.2 Test Graphs

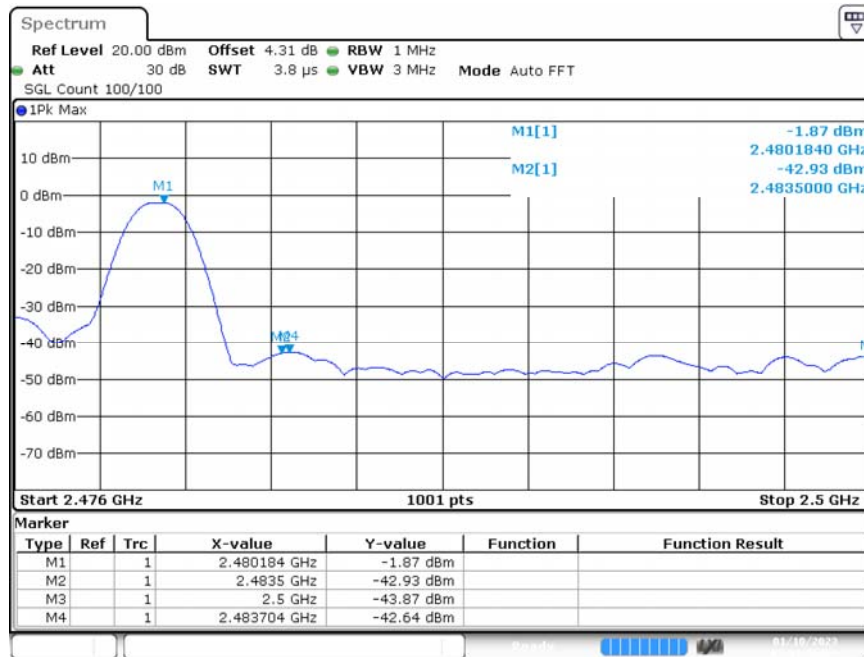
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



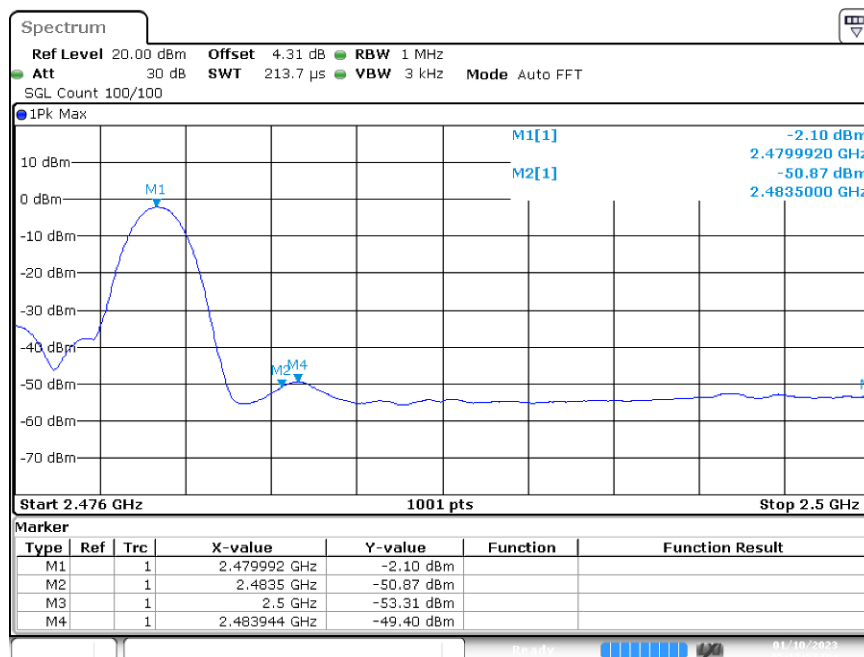
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



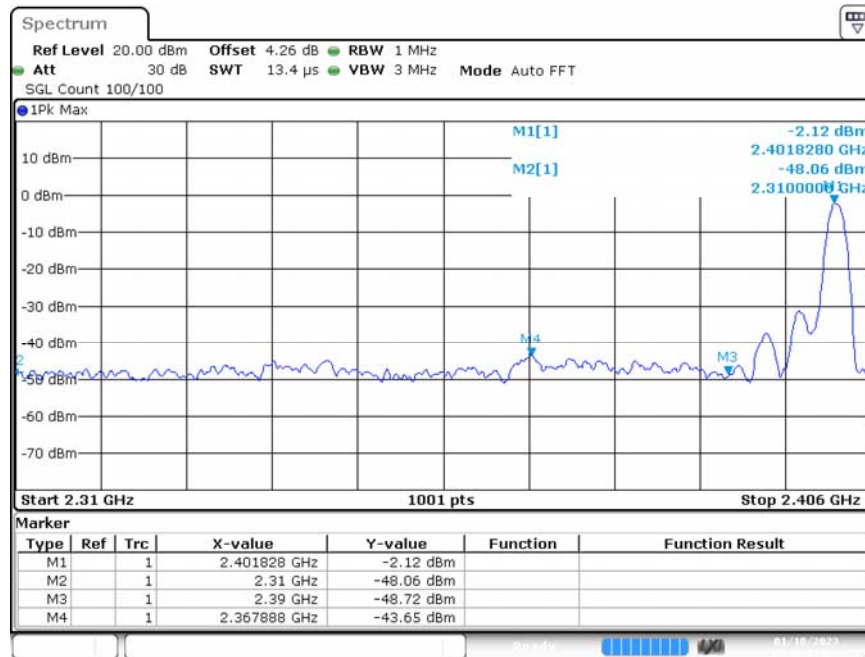
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



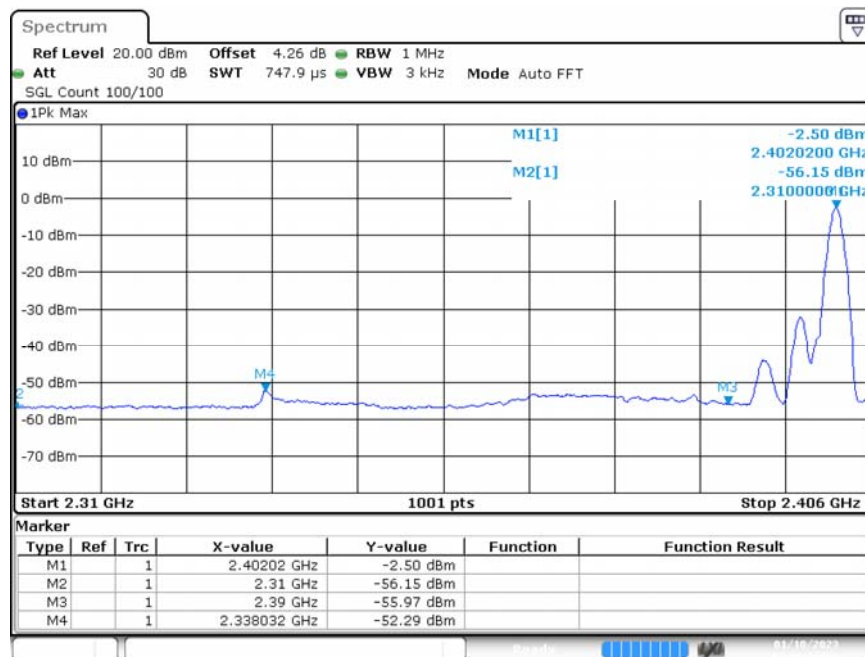
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



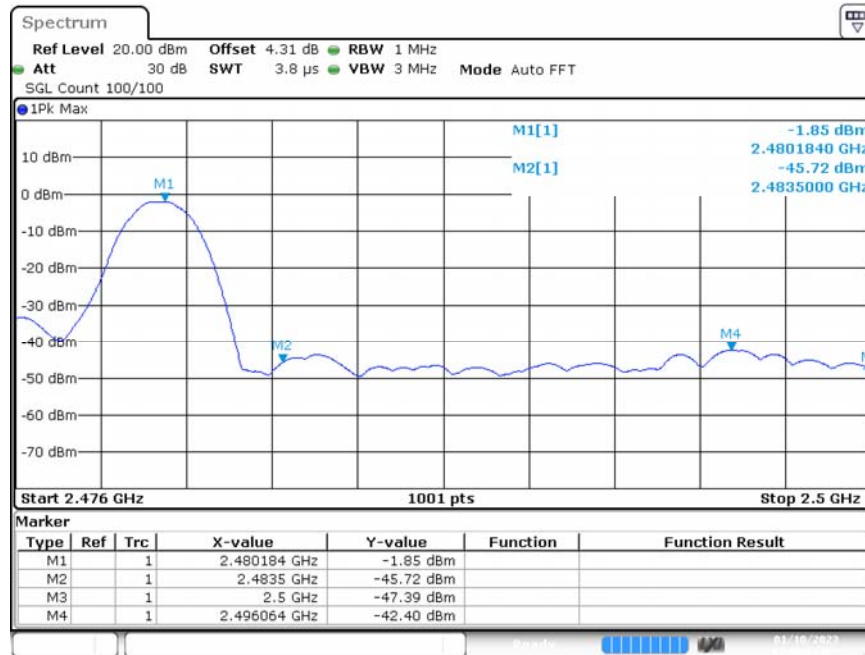
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



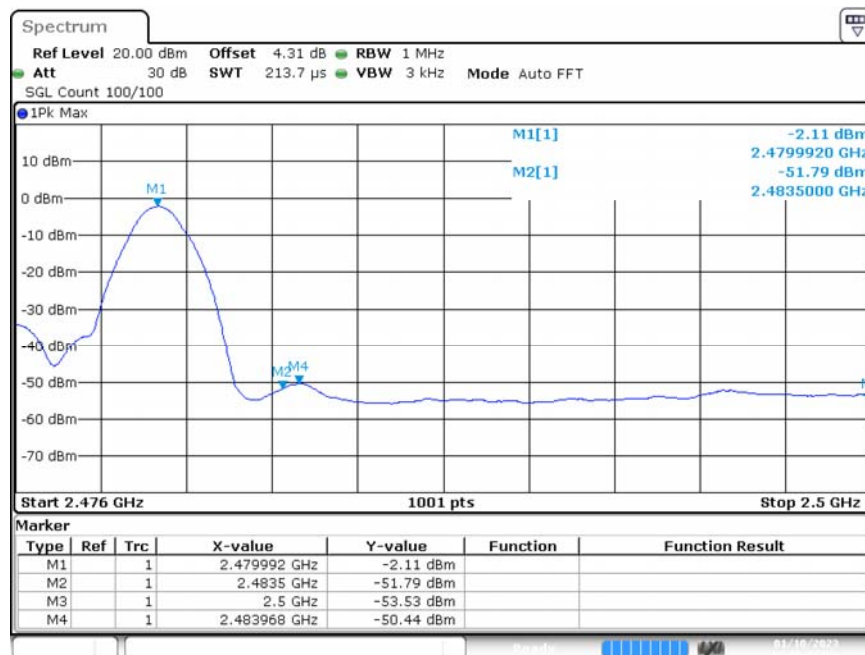
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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)



---The End---