



Appendix A

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

Product Name: Bluetooth Speakers

Trade Mark: N/A

Test Model: A01

Environmental Conditions

Temperature:	25.9℃
Relative Humidity:	52.3%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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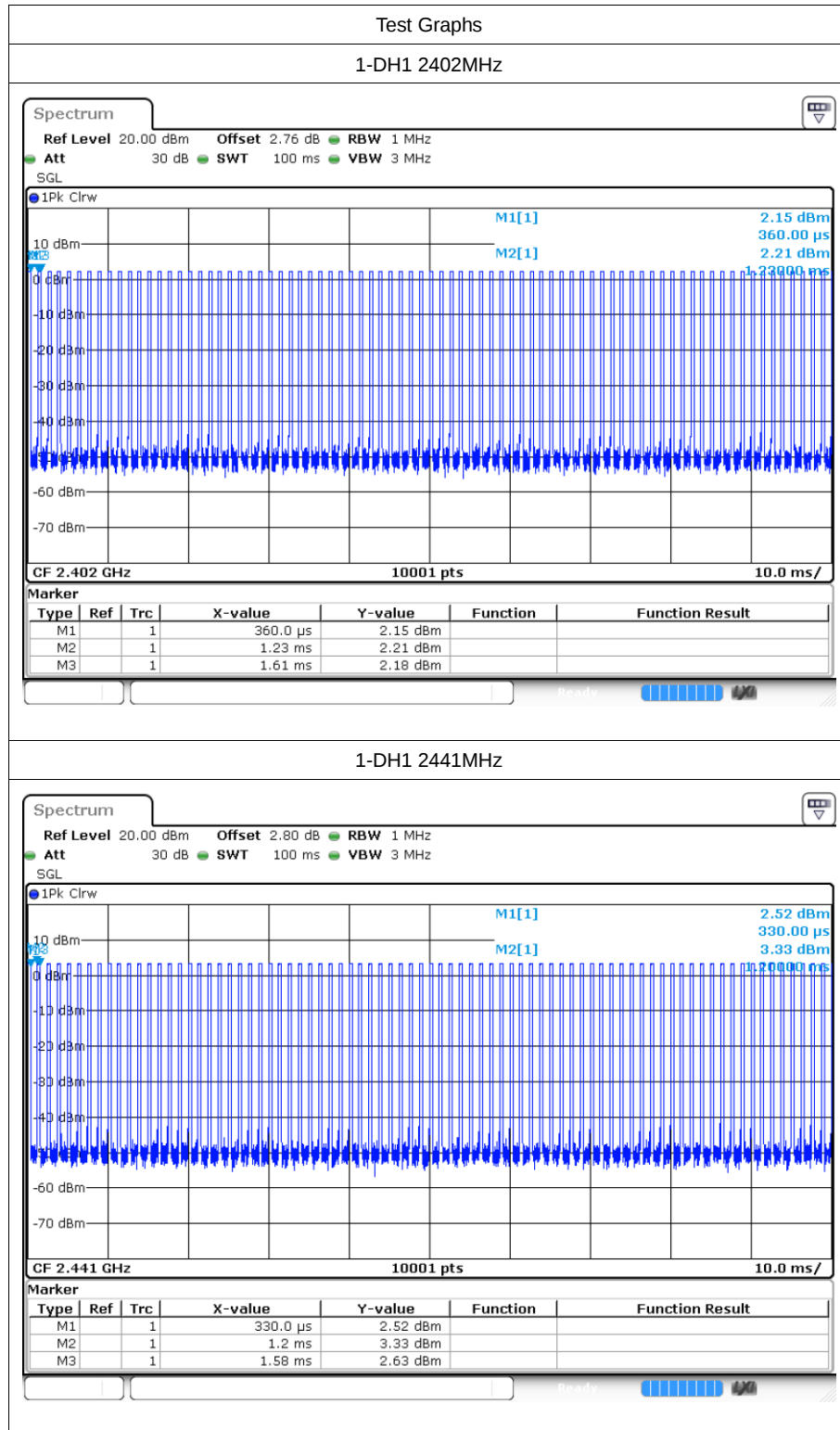
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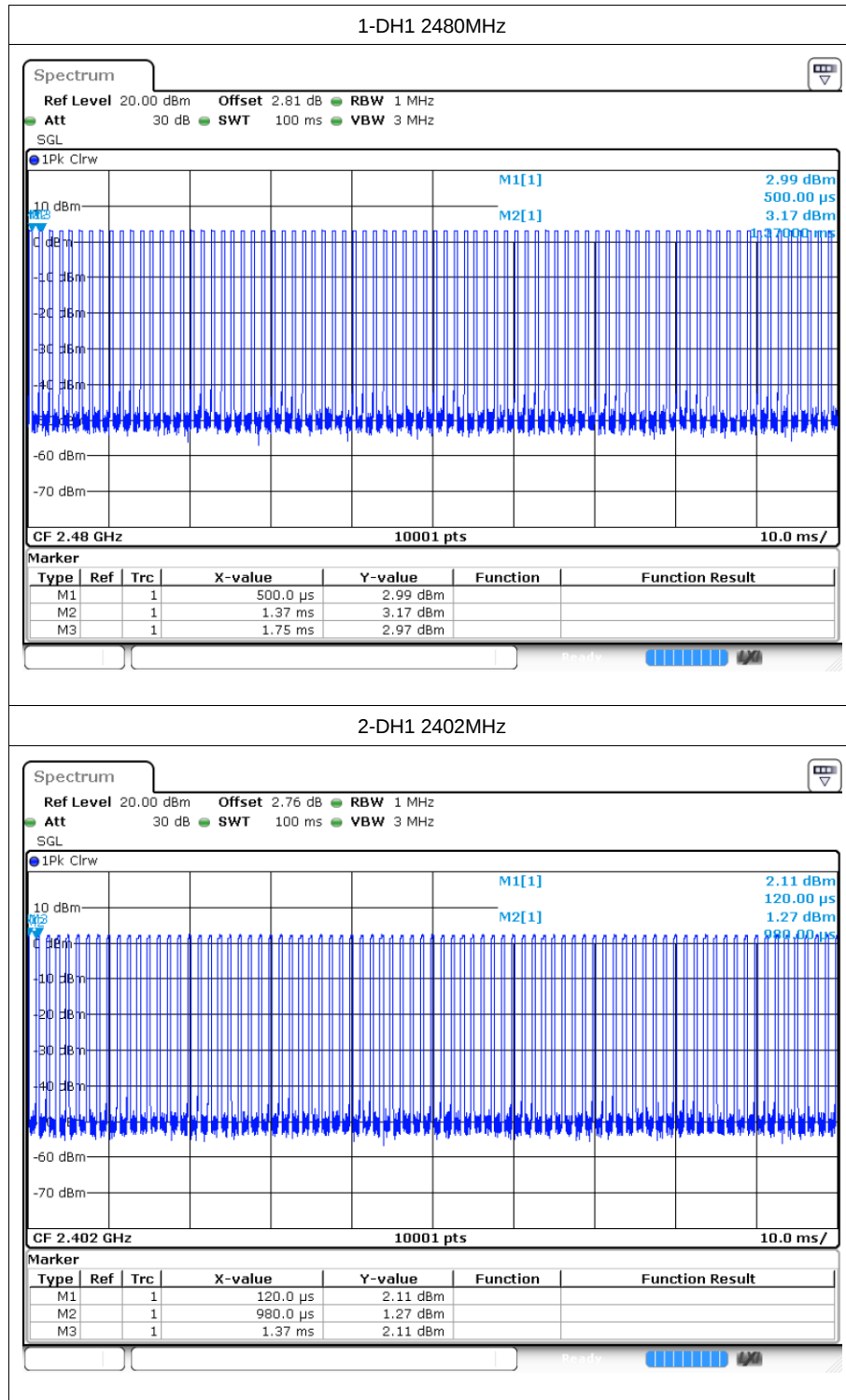
1 Duty Cycle

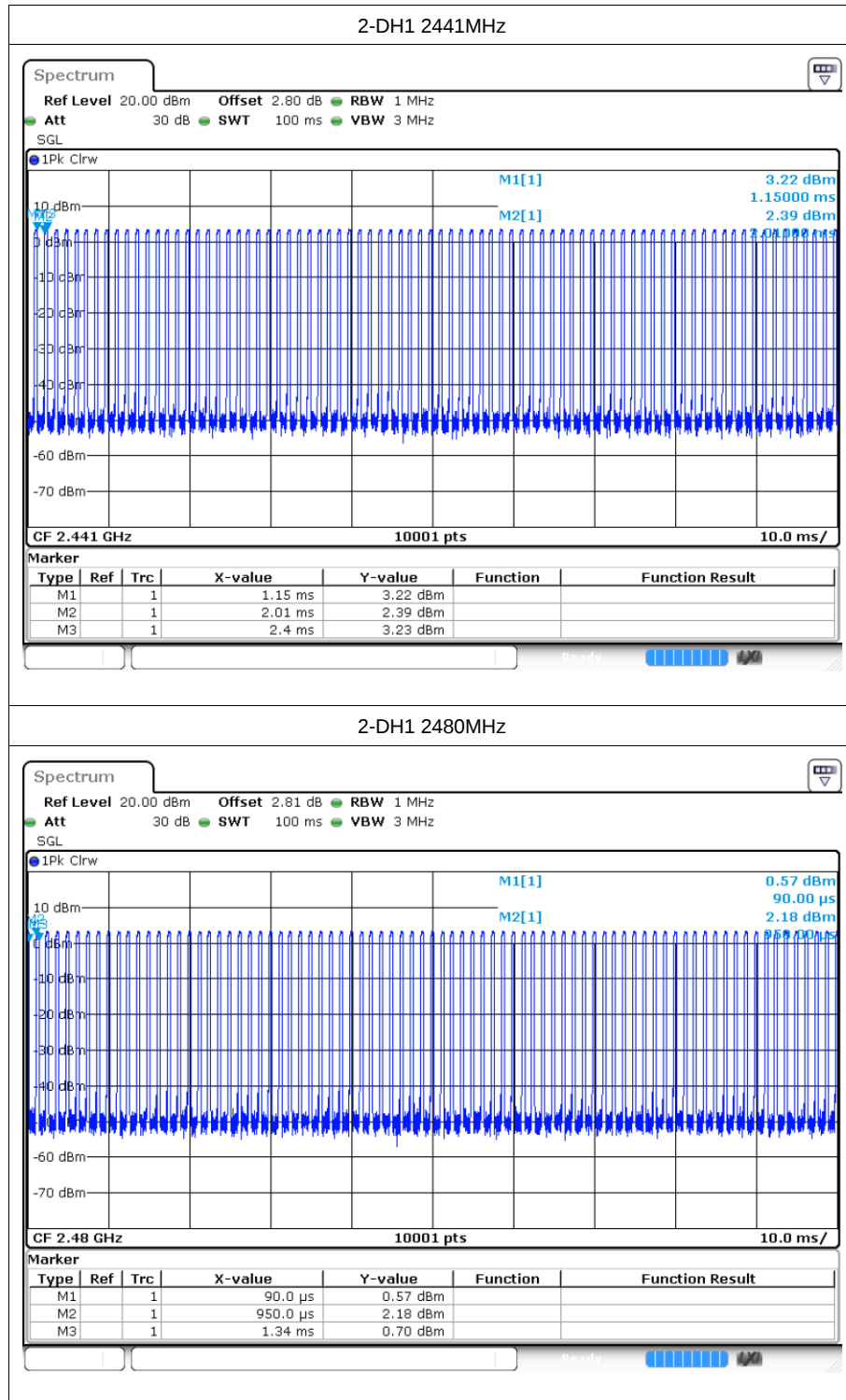
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.21	2.63
1-DH1	2441	31.21	2.63
1-DH1	2480	31.2	2.63
2-DH1	2402	32.01	2.56
2-DH1	2441	32	2.56
2-DH1	2480	32.01	2.56

1.2 Test Graphs





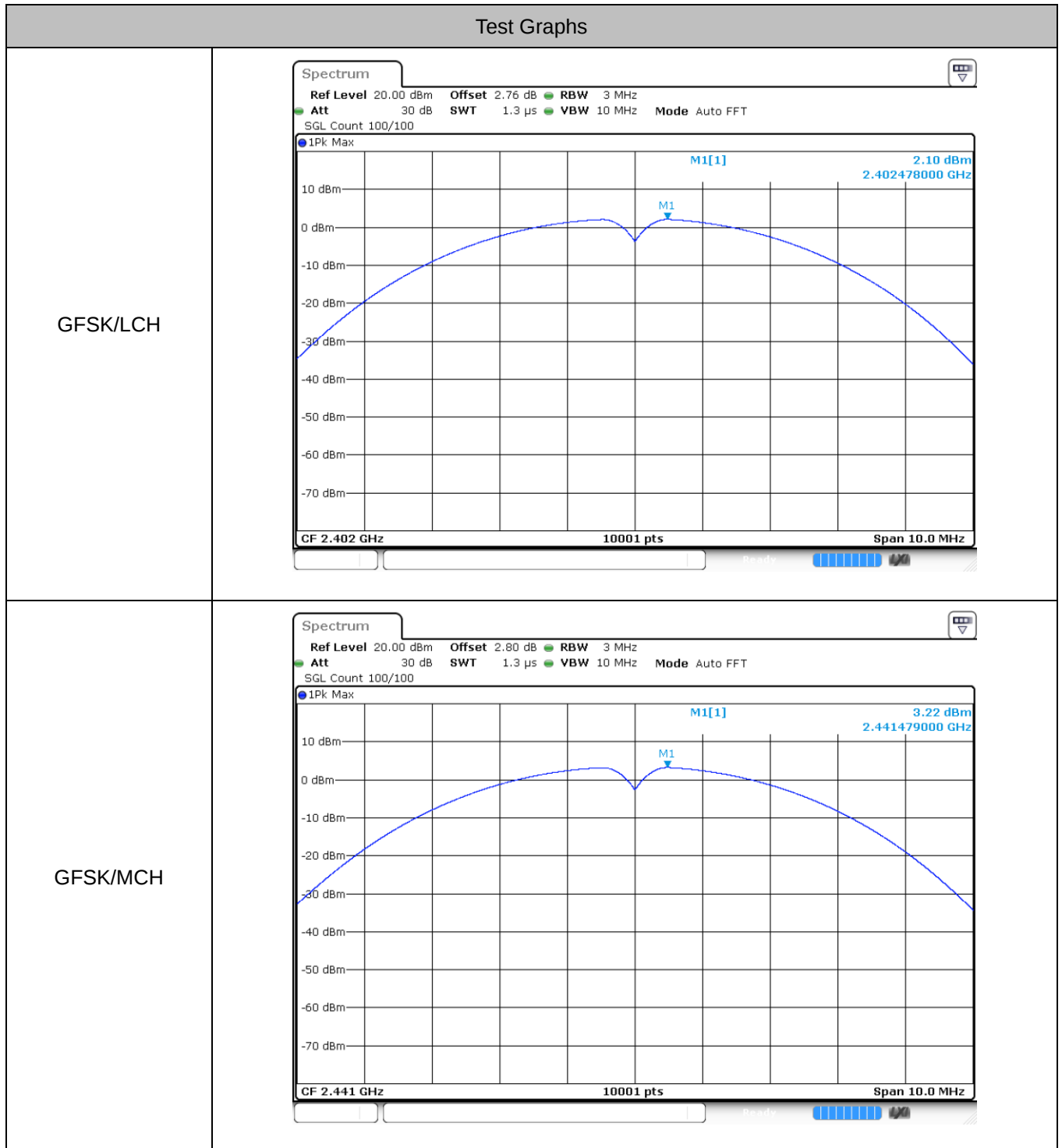


2 Maximum Conducted Peak Output Power

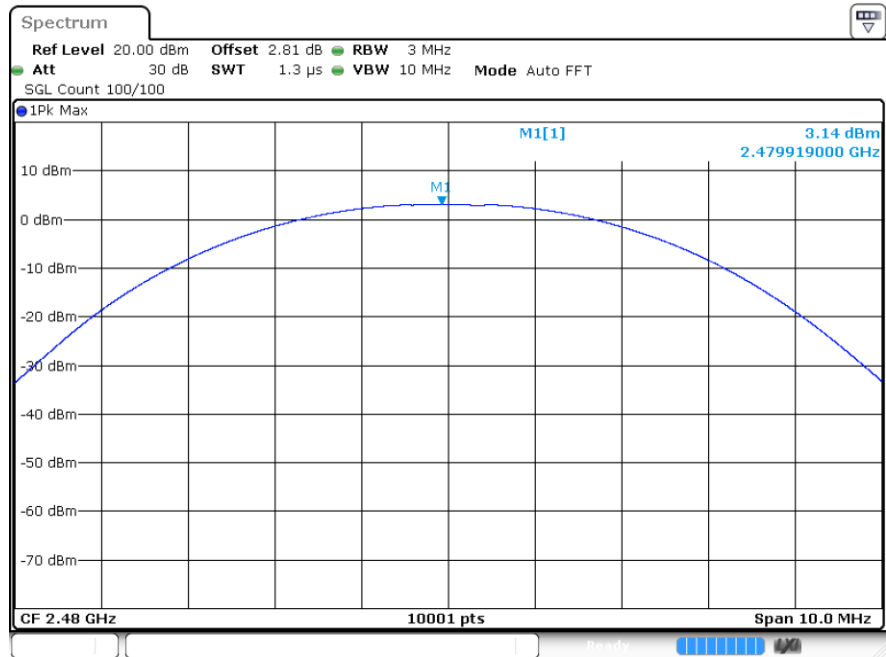
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.1	21	Pass
	MCH	3.22	21	Pass
	HCH	3.14	21	Pass
$\pi/4$ DQPSK	LCH	3.28	21	Pass
	MCH	4.33	21	Pass
	HCH	4.08	21	Pass

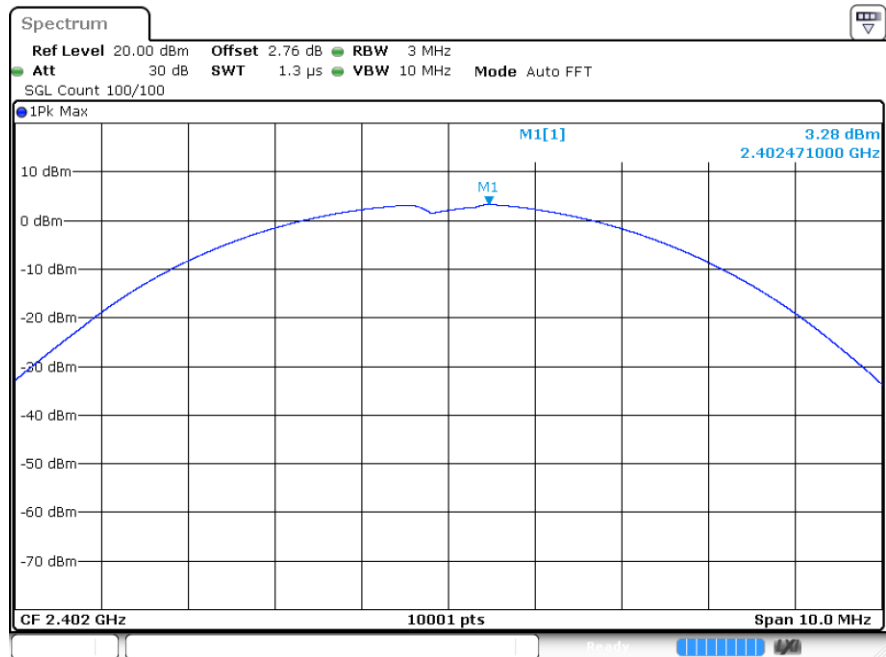
2.2 Test Graphs



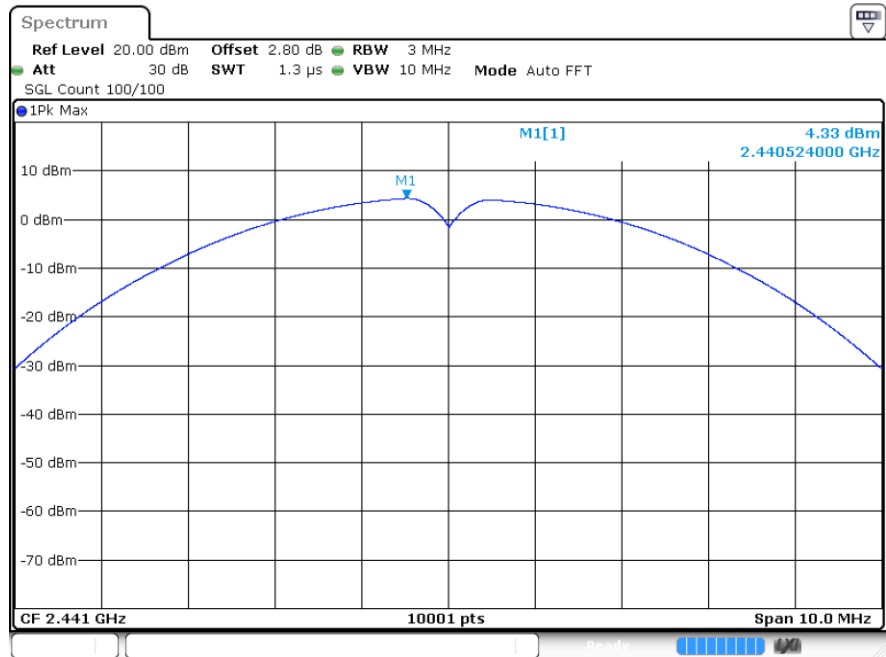
GFSK/HCH



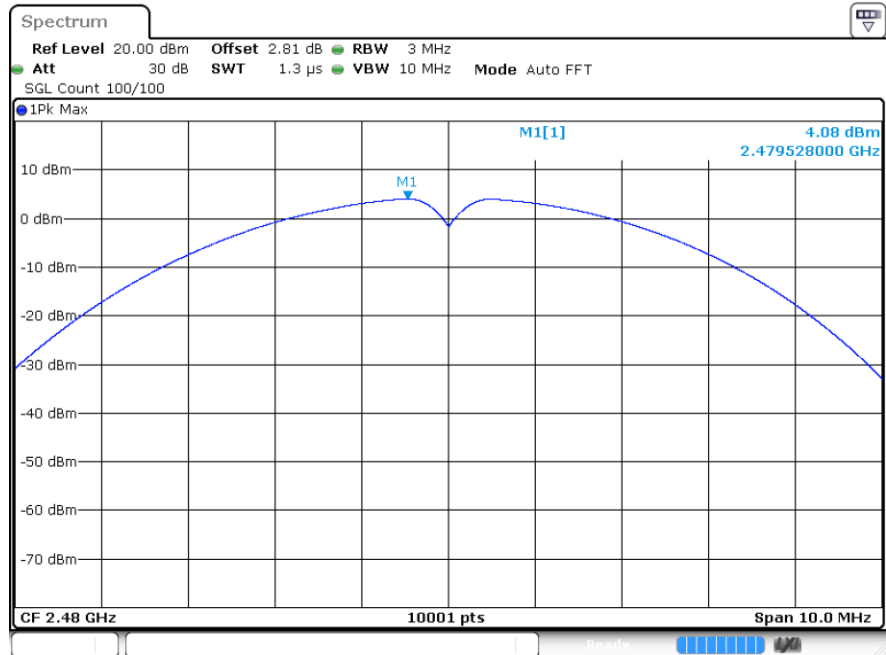
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

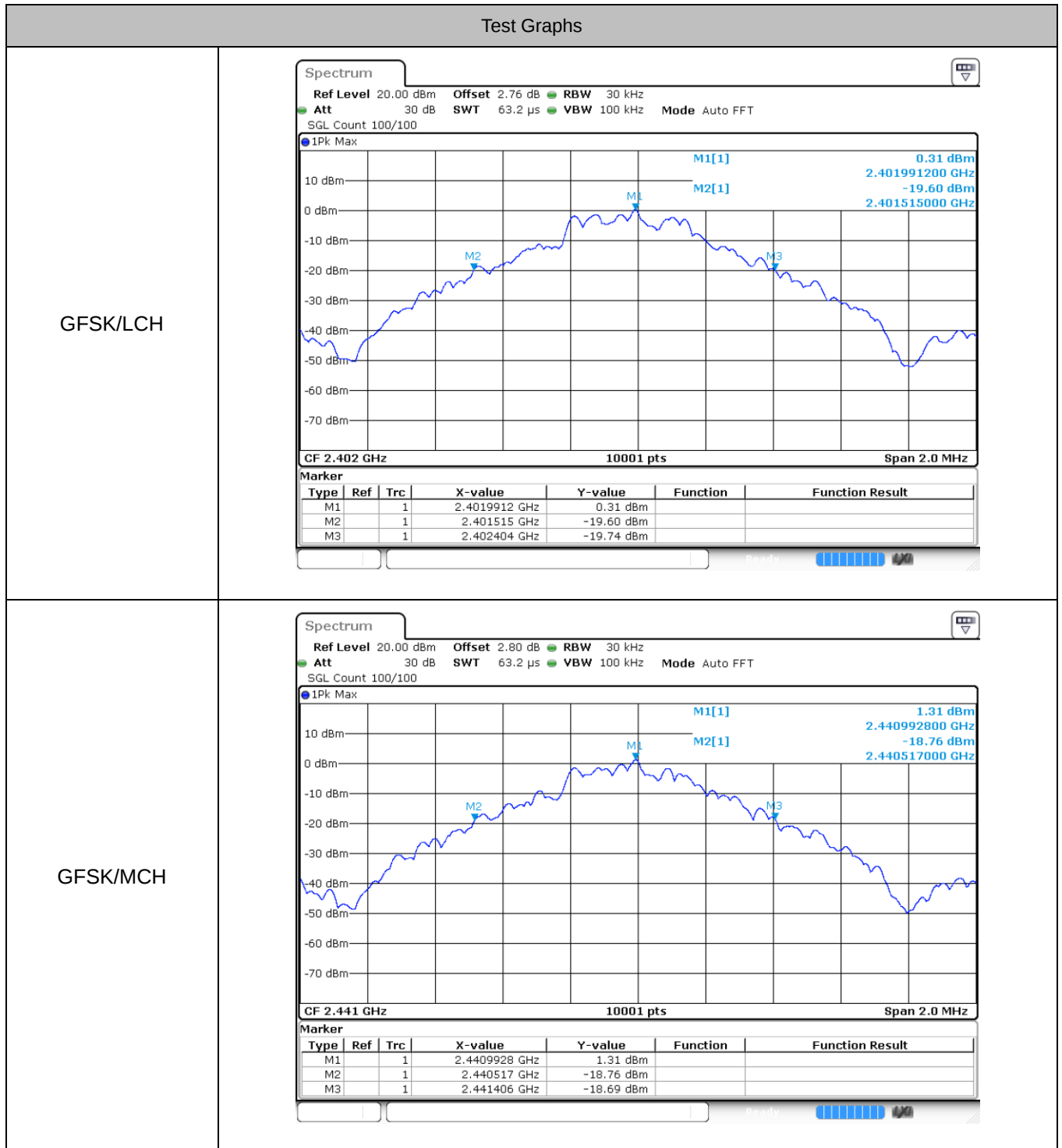


3 20dB Bandwidth

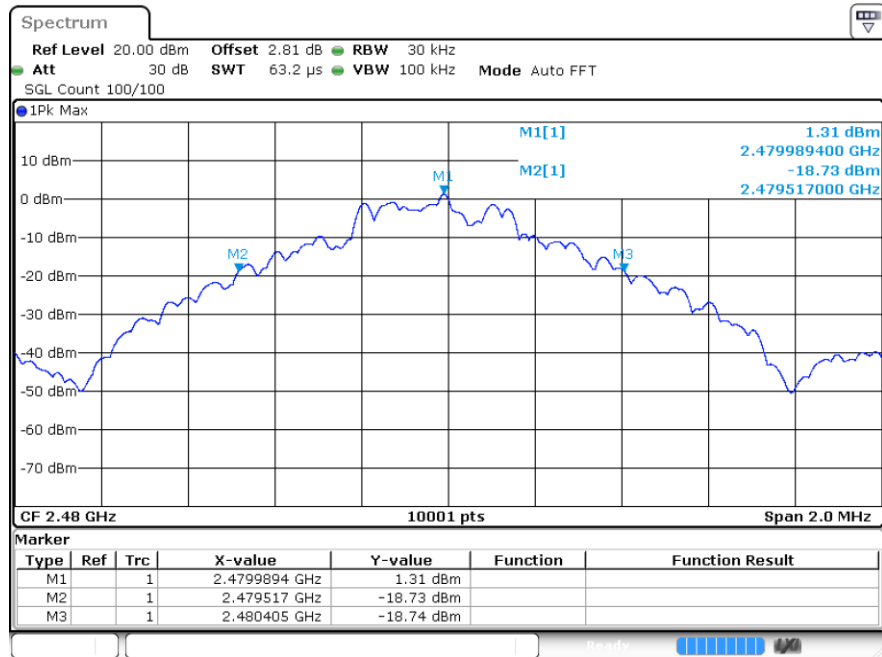
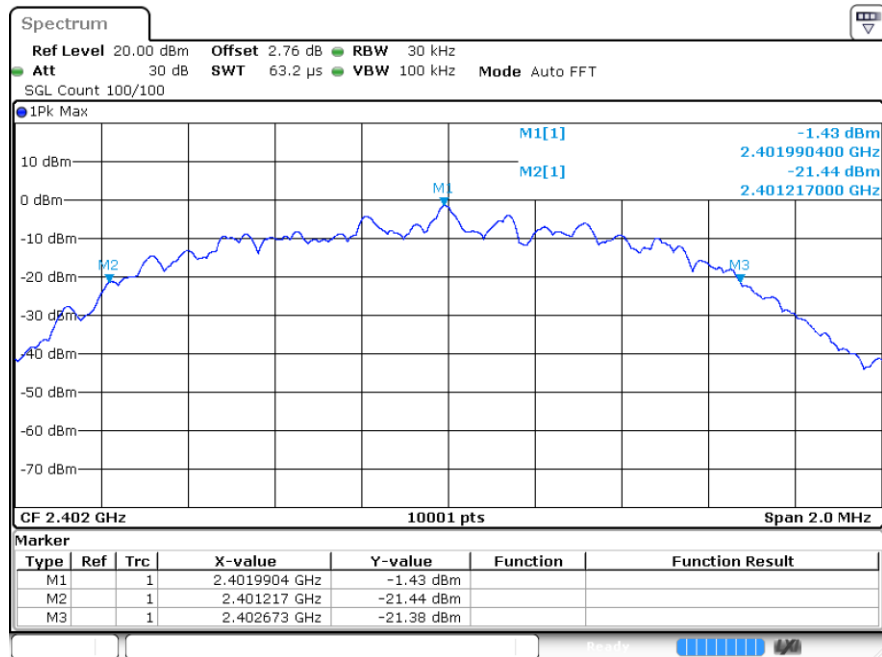
3.1 Test Result

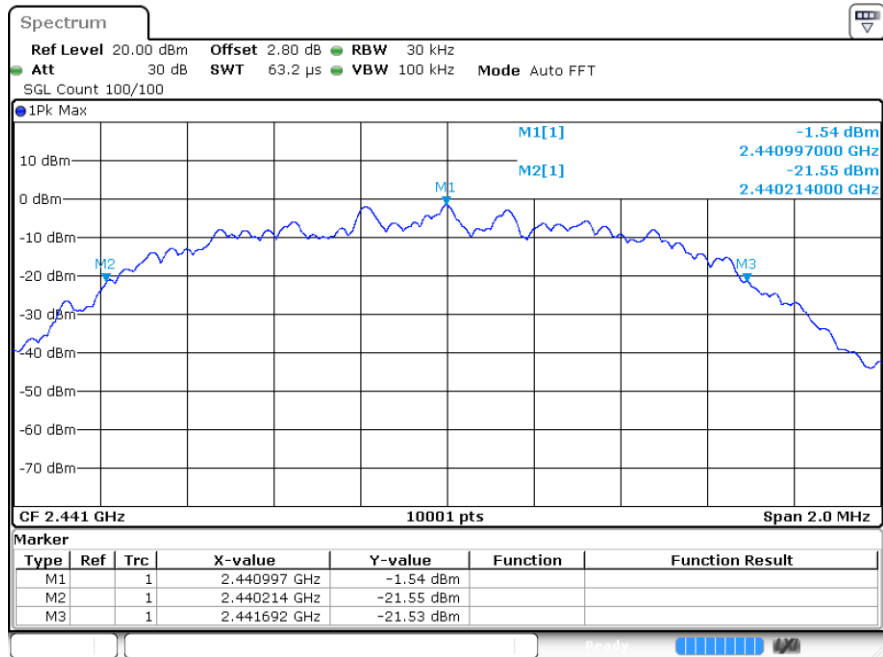
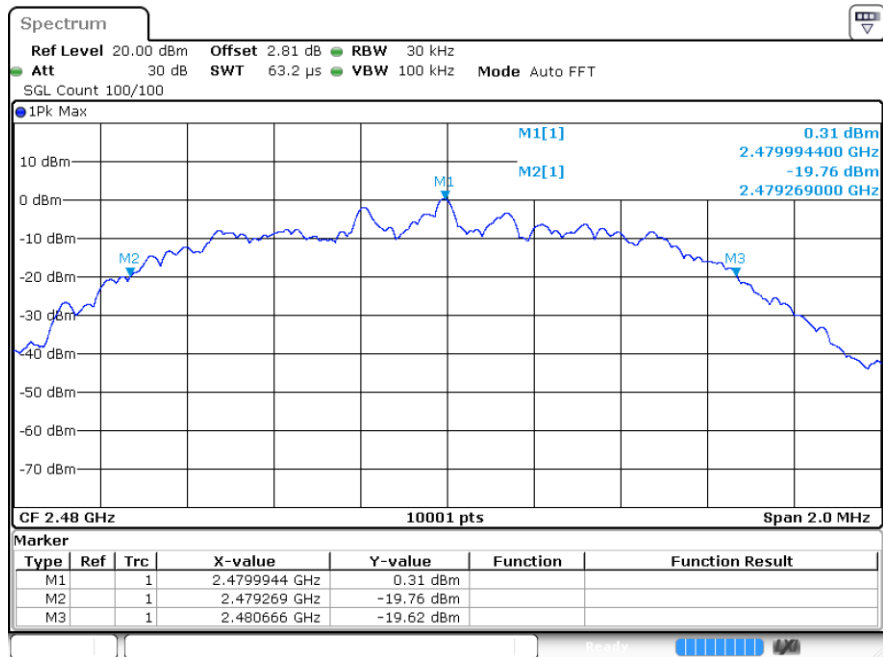
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.889	Not Specified	Pass
	MCH	0.889	Not Specified	Pass
	HCH	0.887	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.456	Not Specified	Pass
	MCH	1.478	Not Specified	Pass
	HCH	1.397	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


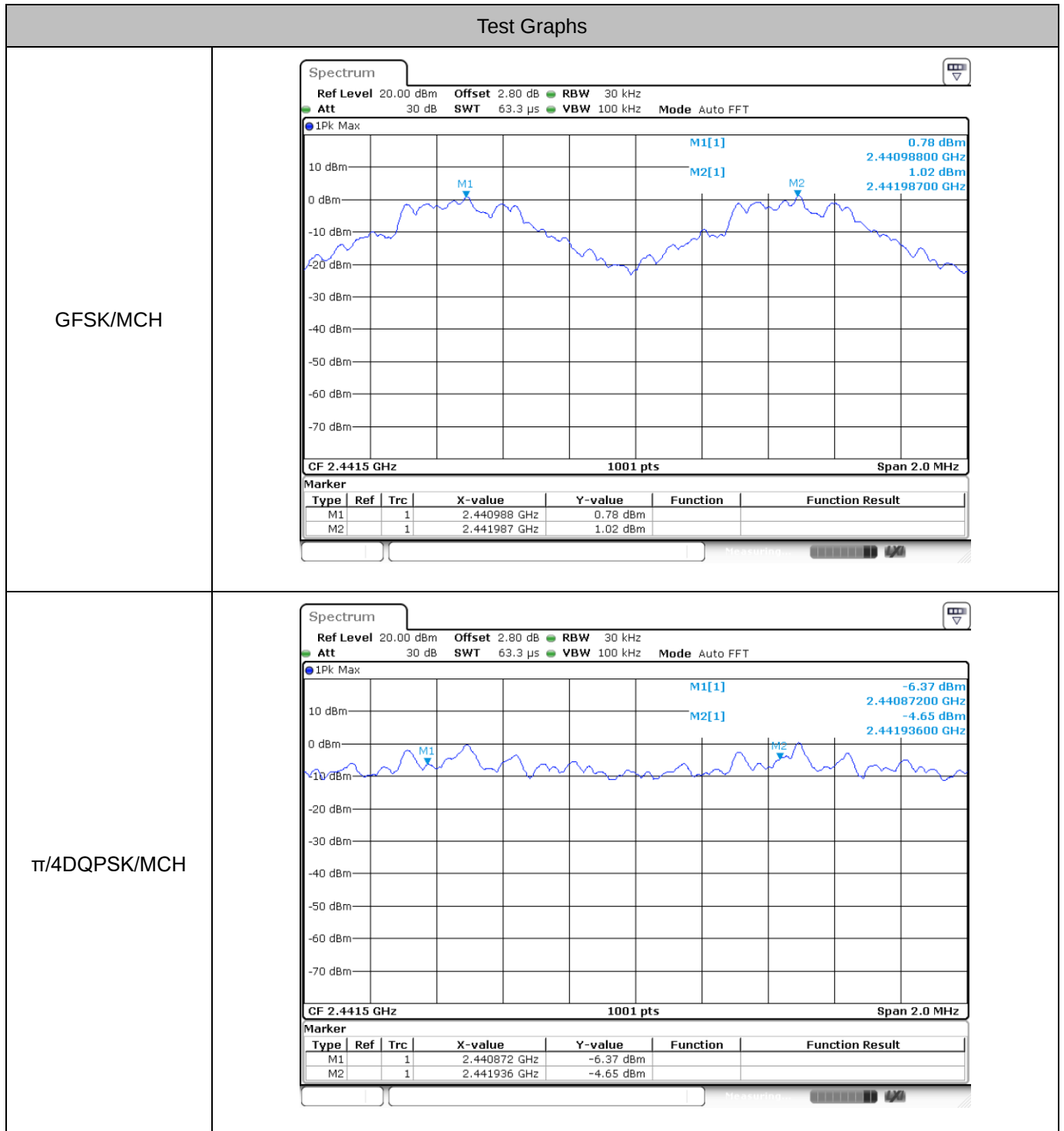
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.999	0.593	Pass
$\pi/4$ DQPSK	MCH	1.064	0.985	Pass

4.2 Test Graphs

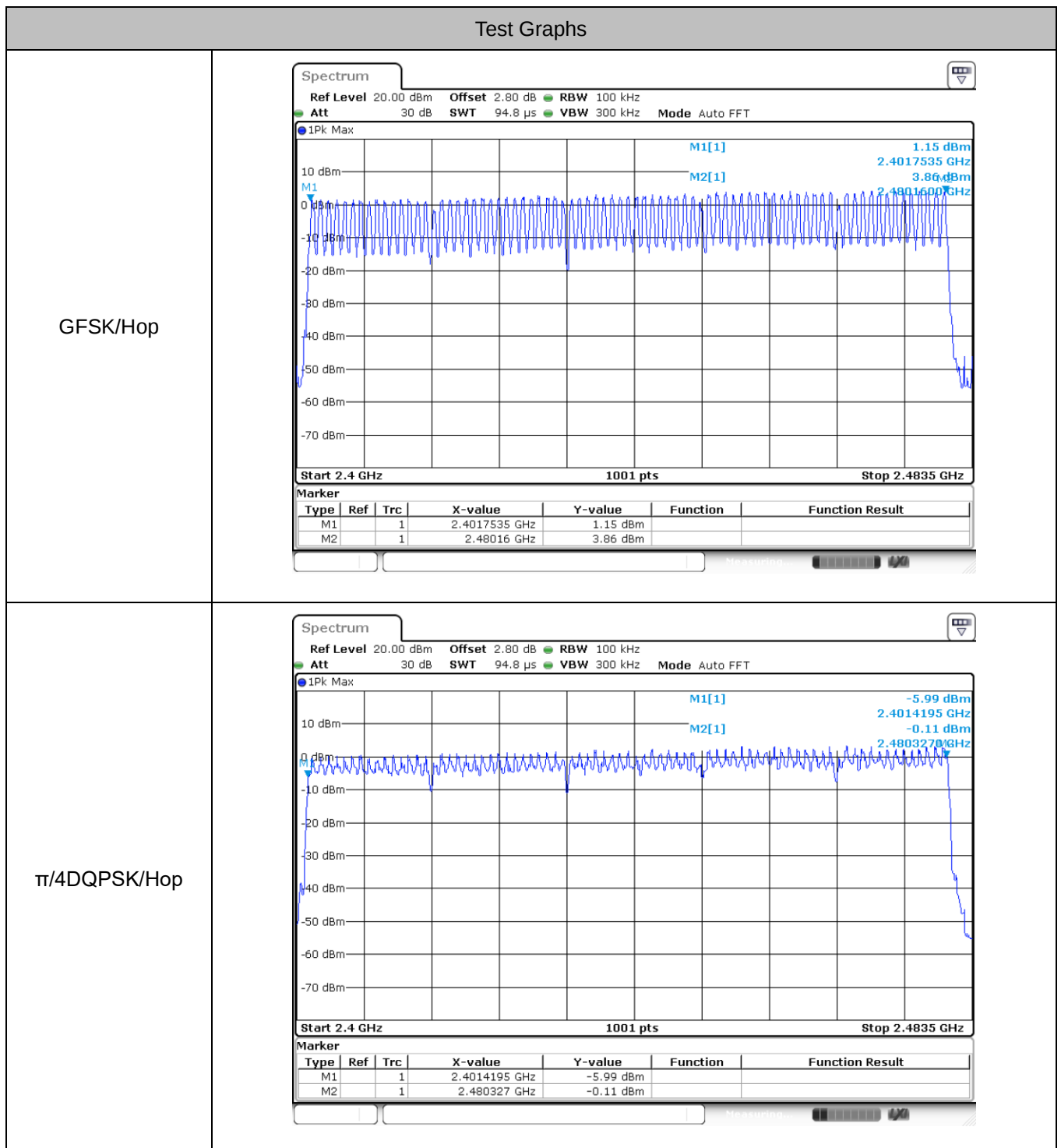


5 Hopping Channel Number

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

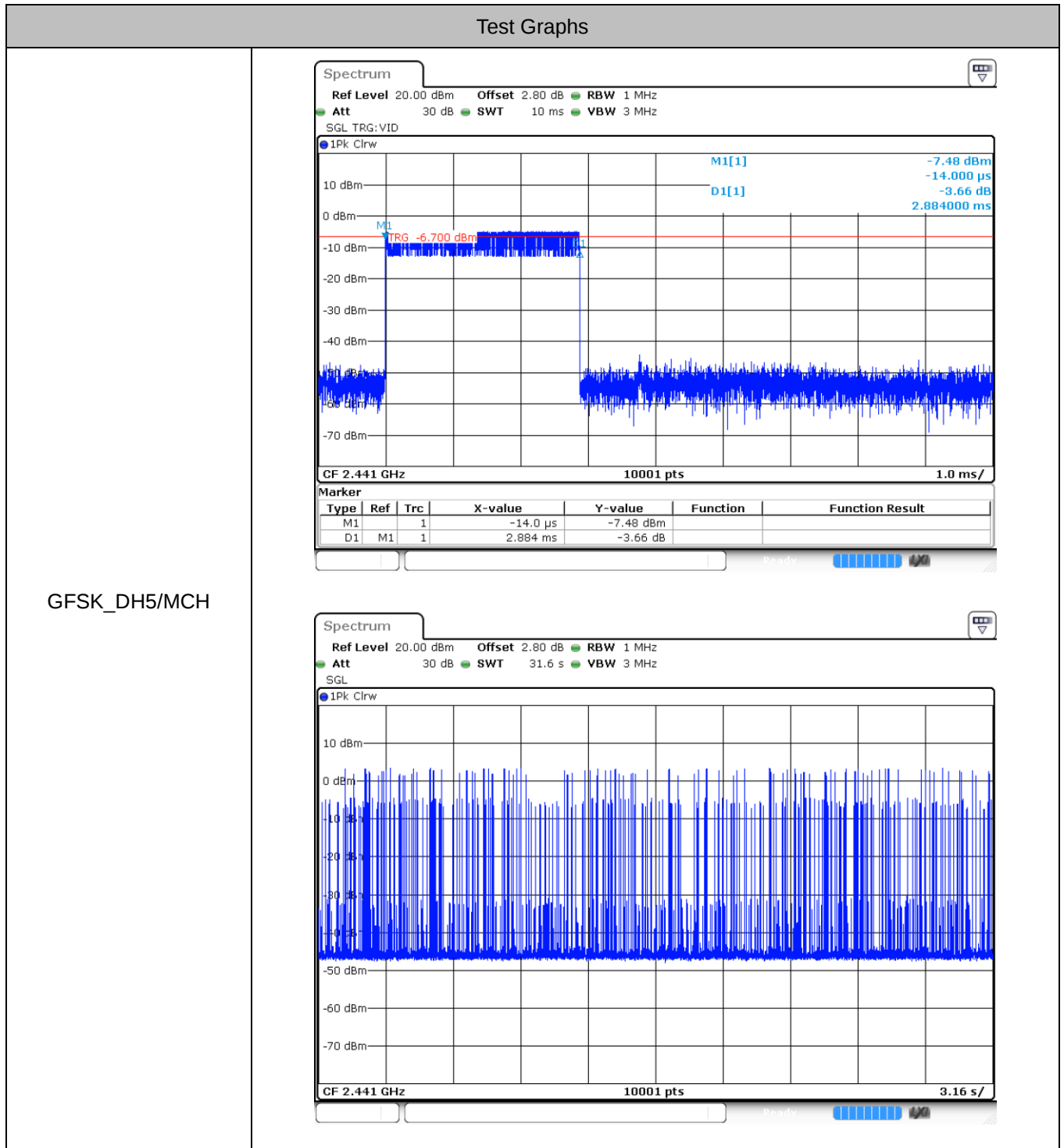


6 Dwell Time

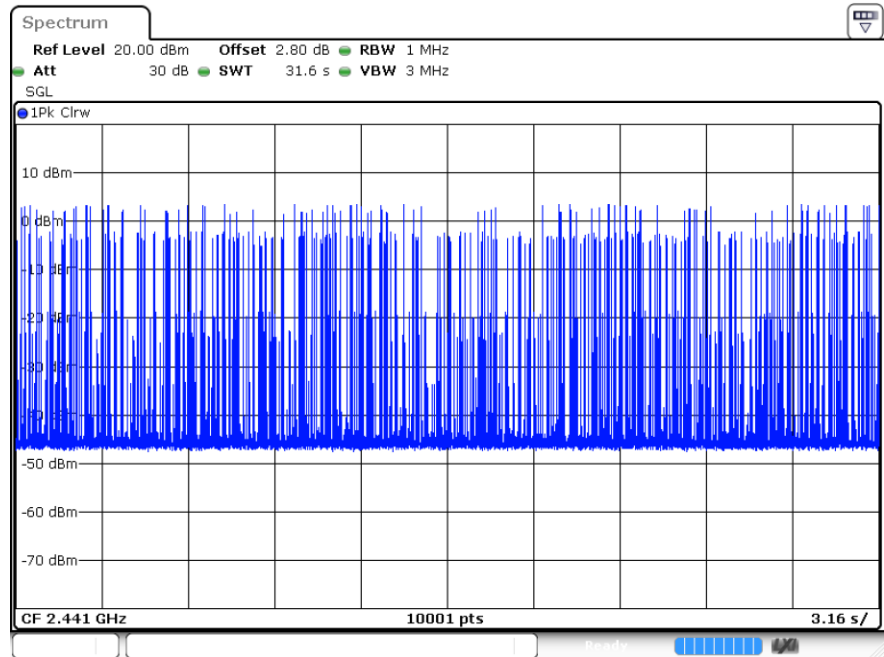
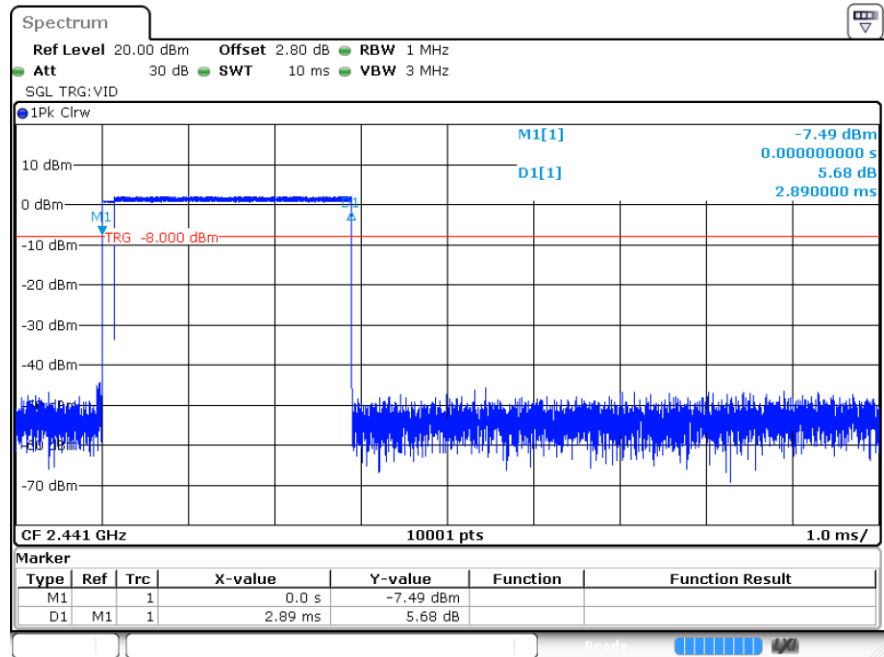
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.884	104	299.936	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.89	99	286.11	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

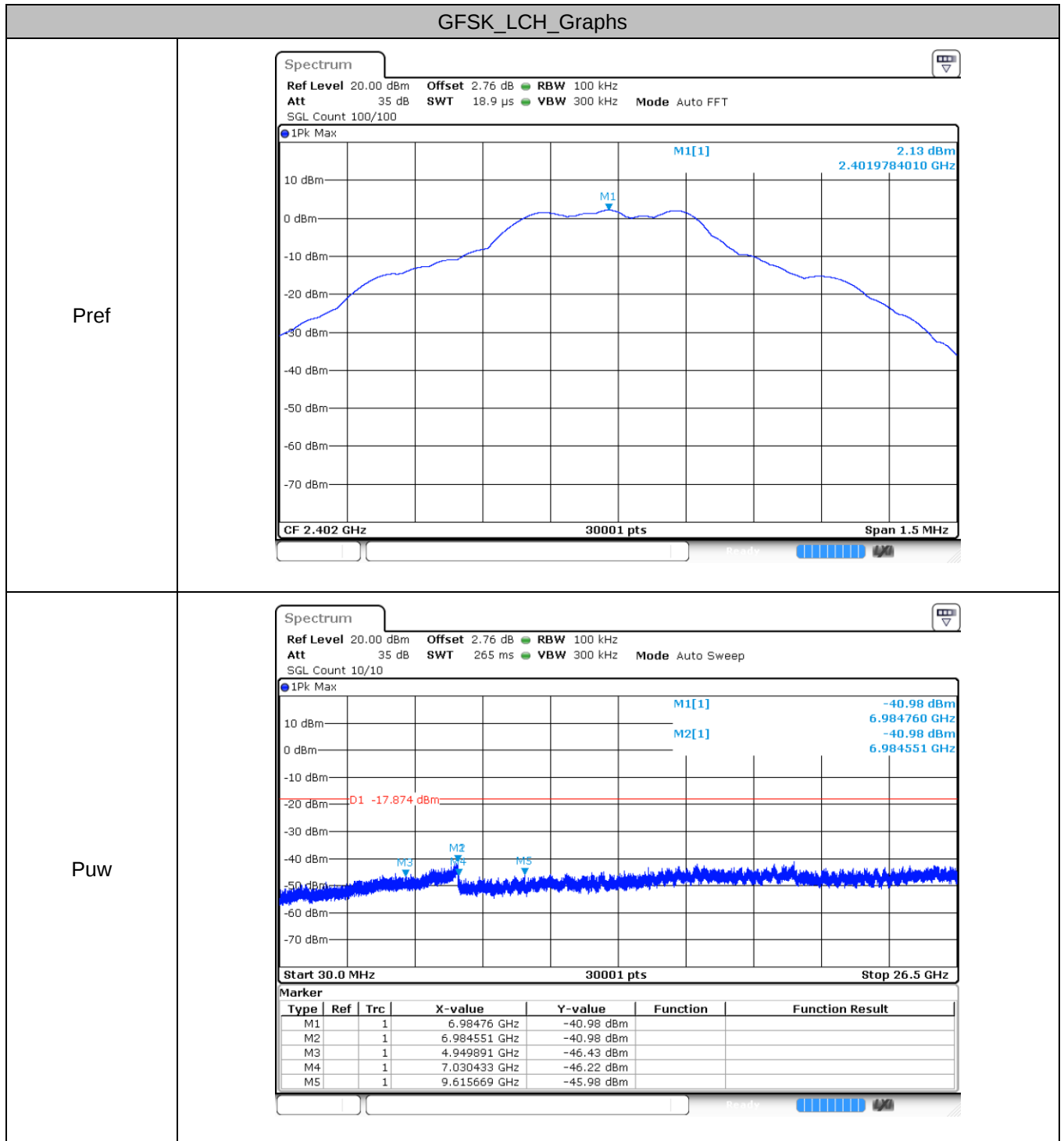


7 RF Conducted Spurious Emissions

7.1 Test Result

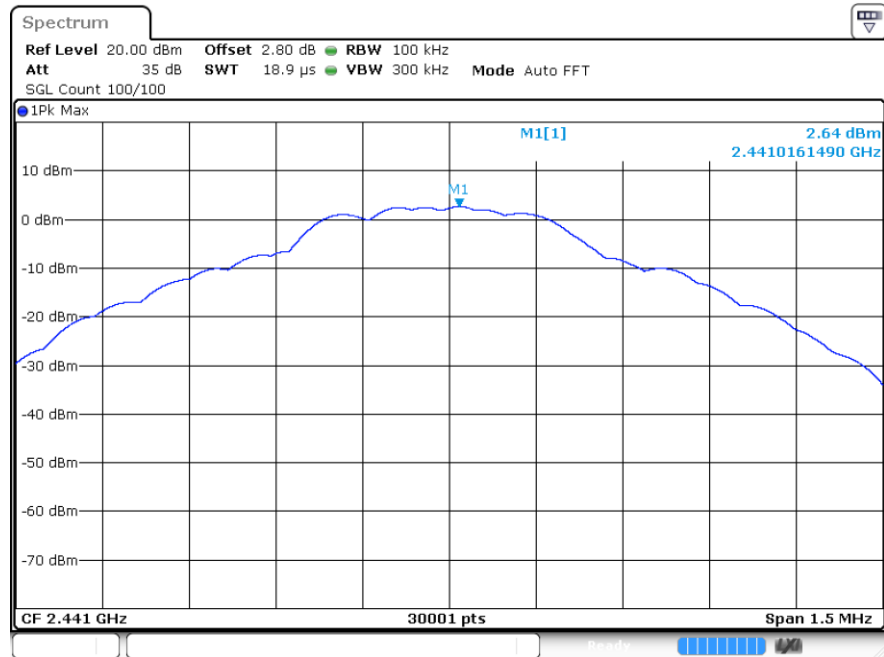
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-43.1	-20	Pass
	MCH	-43.12	-20	Pass
	HCH	-44.14	-20	Pass
$\pi/4$ DQPSK	LCH	-40.57	-20	Pass
	MCH	-42.67	-20	Pass
	HCH	-43.03	-20	Pass

7.2 Test Graphs

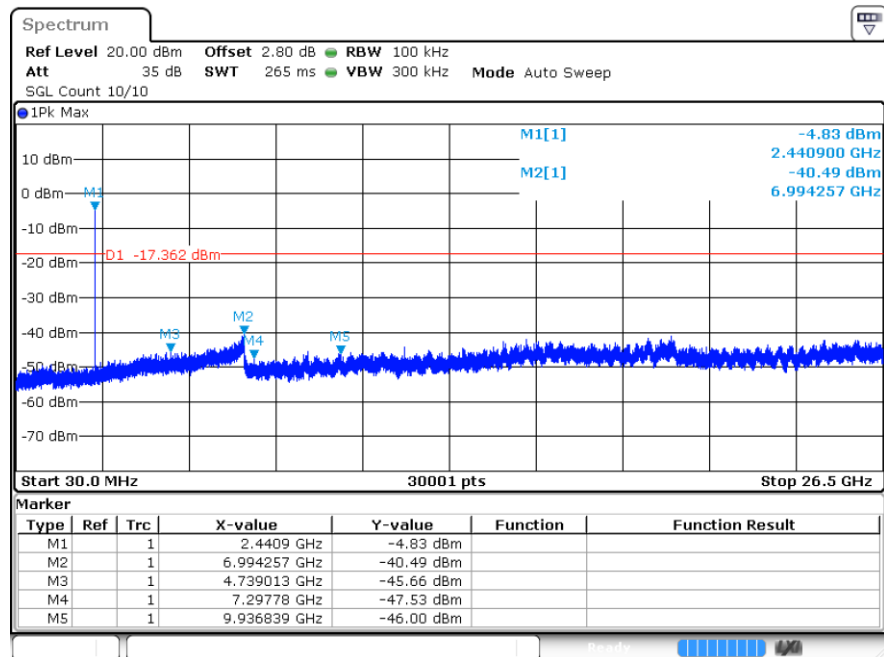


GFSK_MCH_Graphs

Pref

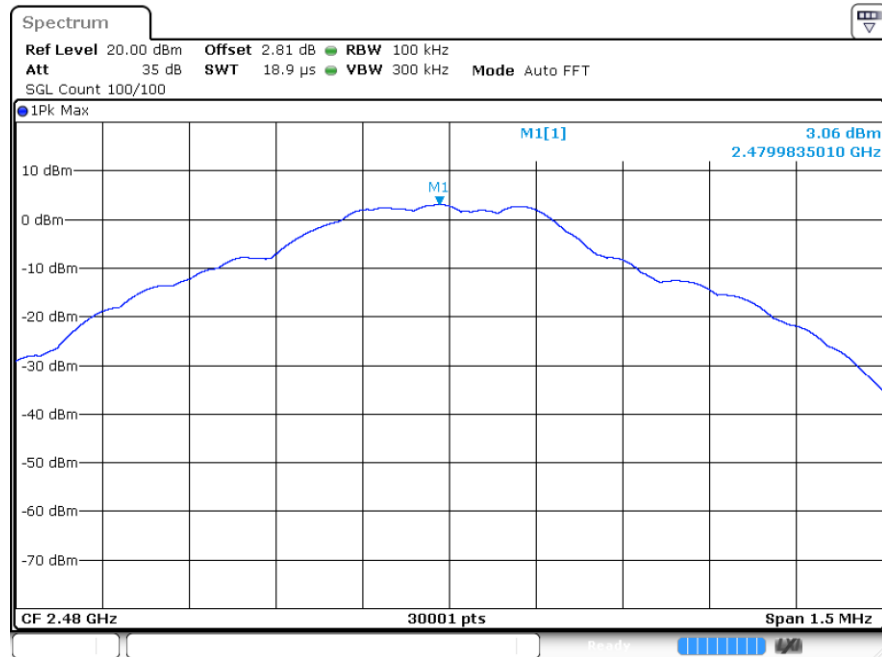


Puw

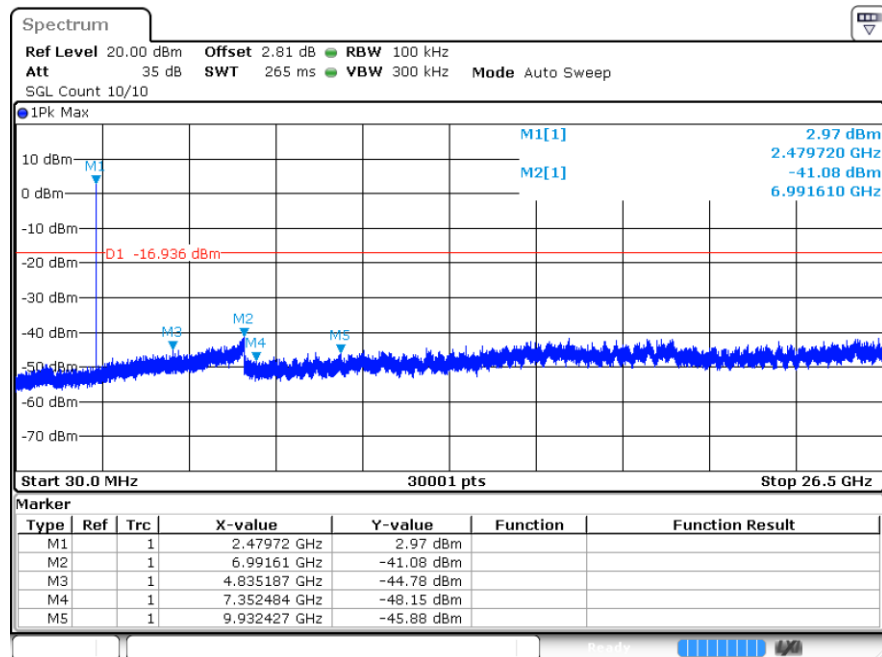


GFSK_HCH_Graphs

Pref

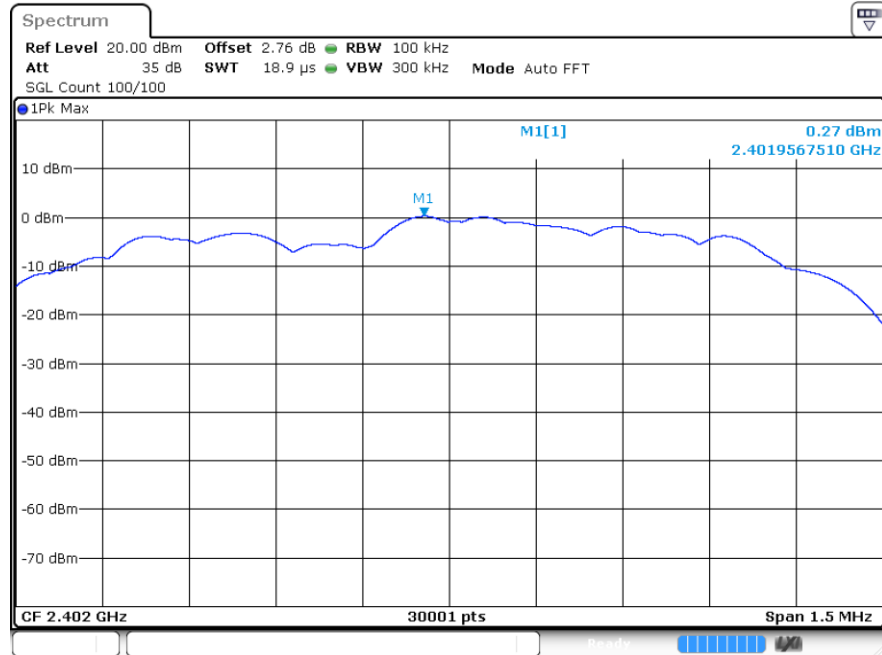


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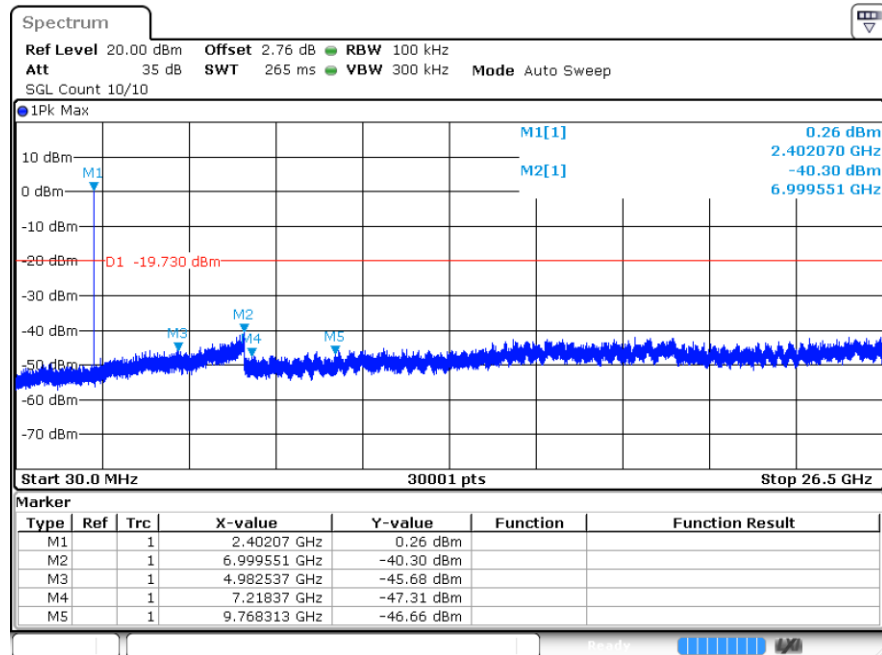


$\pi/4$ DQPSK_LCH_Graphs

Pref

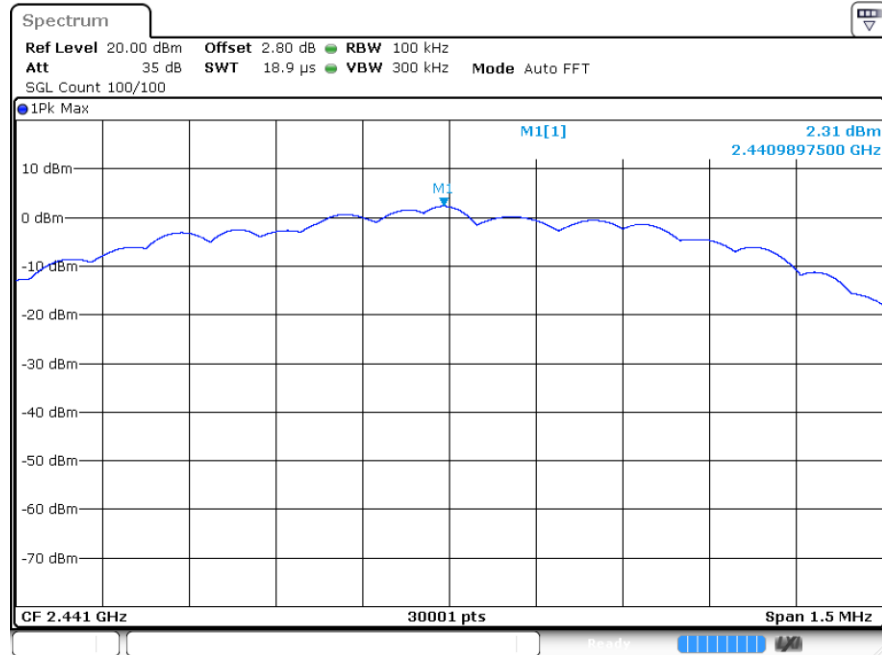


Puw

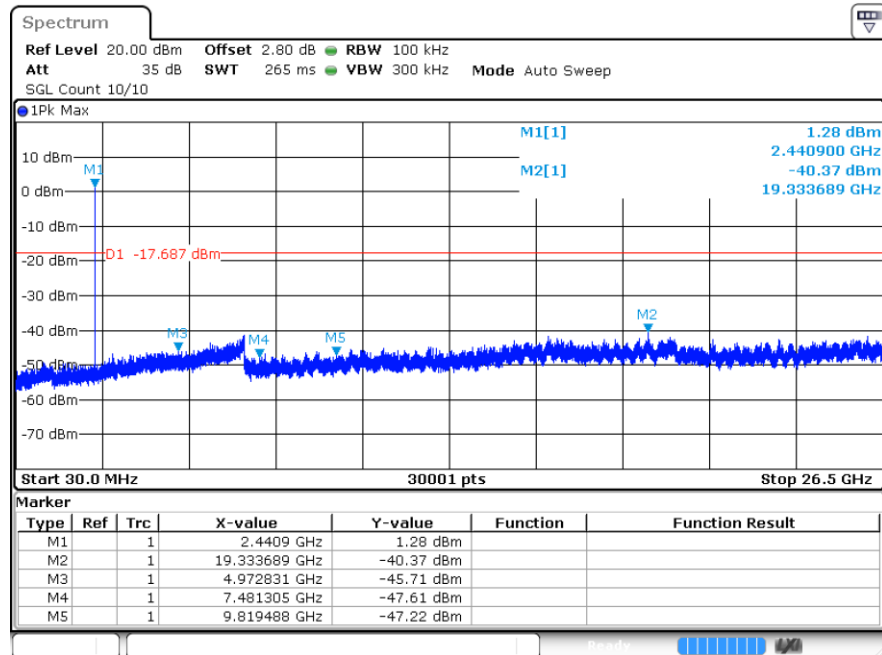


π /4DQPSK_MCH_Graphs

Pref

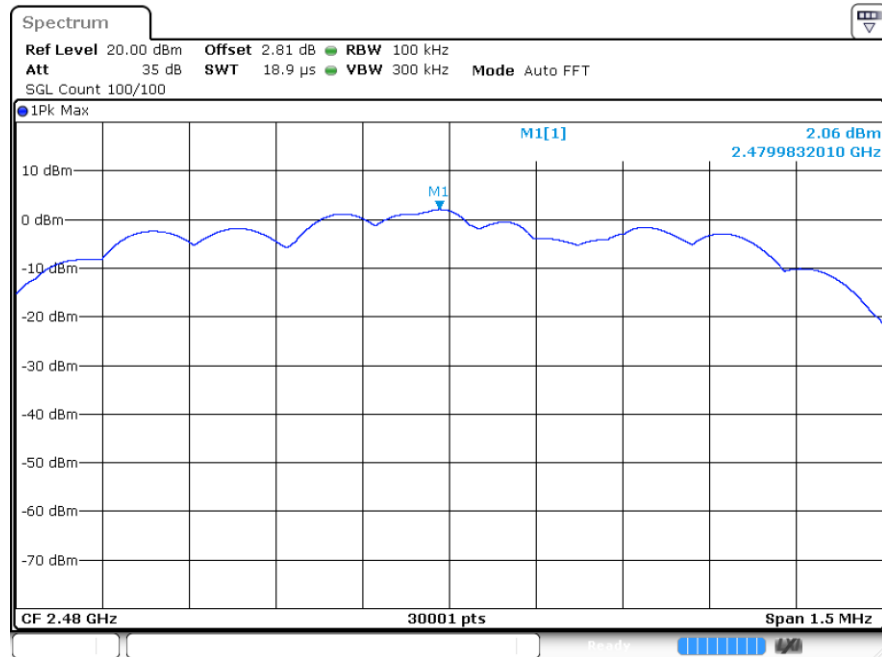


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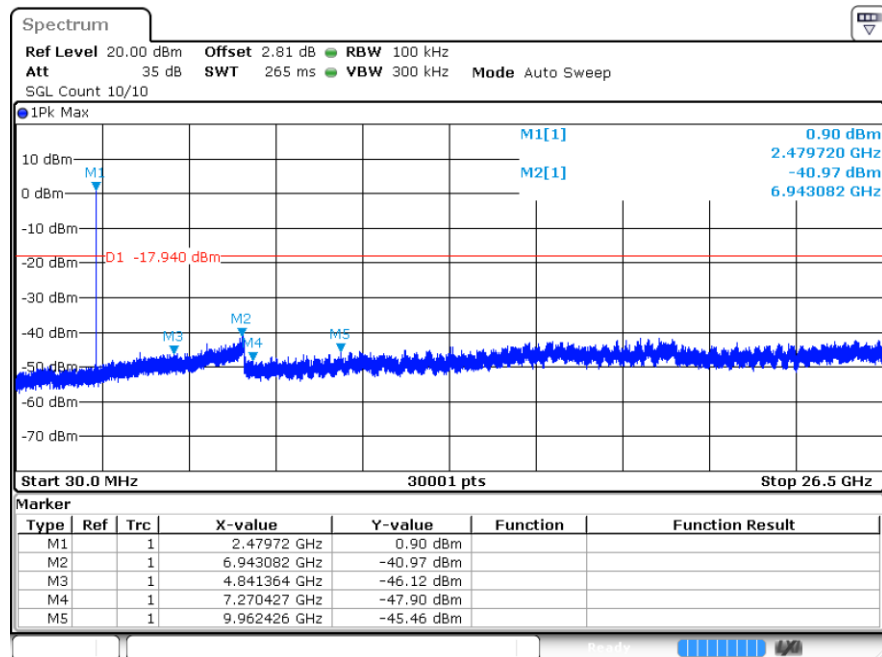


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

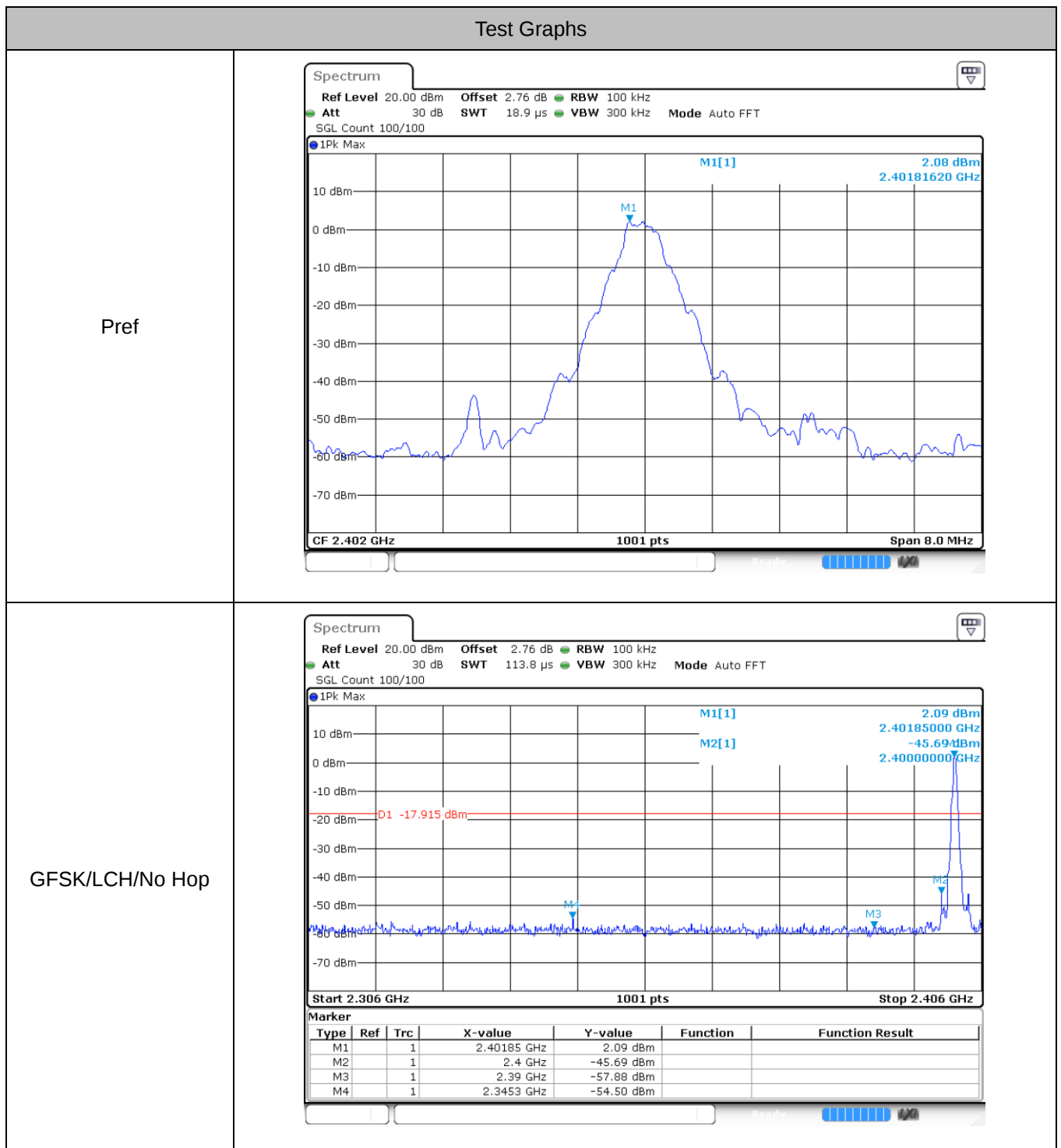


8 Band-edge for RF Conducted Emissions

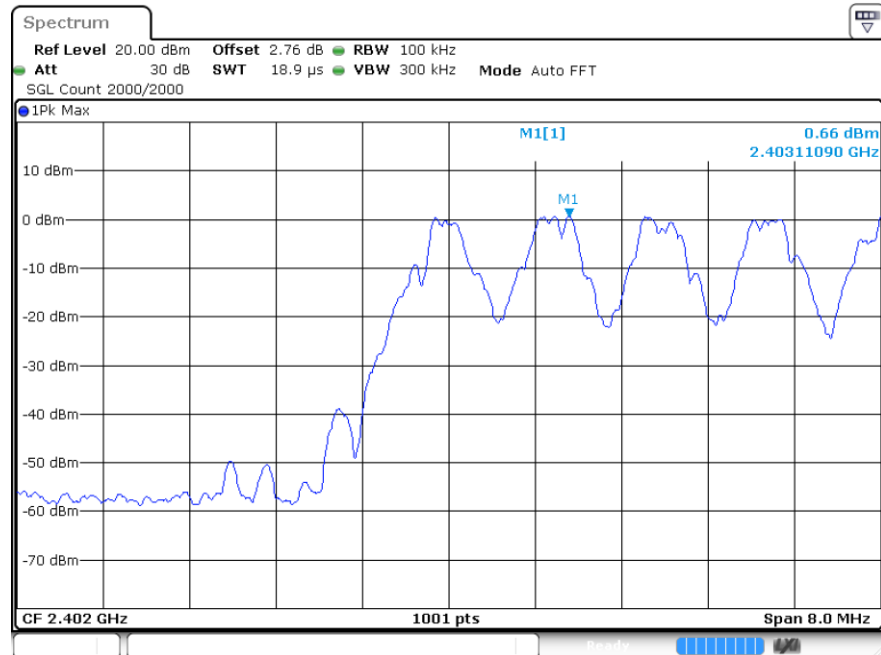
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-56.57	-20	Pass
			On	-54.19	-20	Pass
	HCH	2480	Off	-58.74	-20	Pass
			On	-53.42	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-57.02	-20	Pass
			On	-54.89	-20	Pass
	HCH	2480	Off	-49.05	-20	Pass
			On	-49.16	-20	Pass

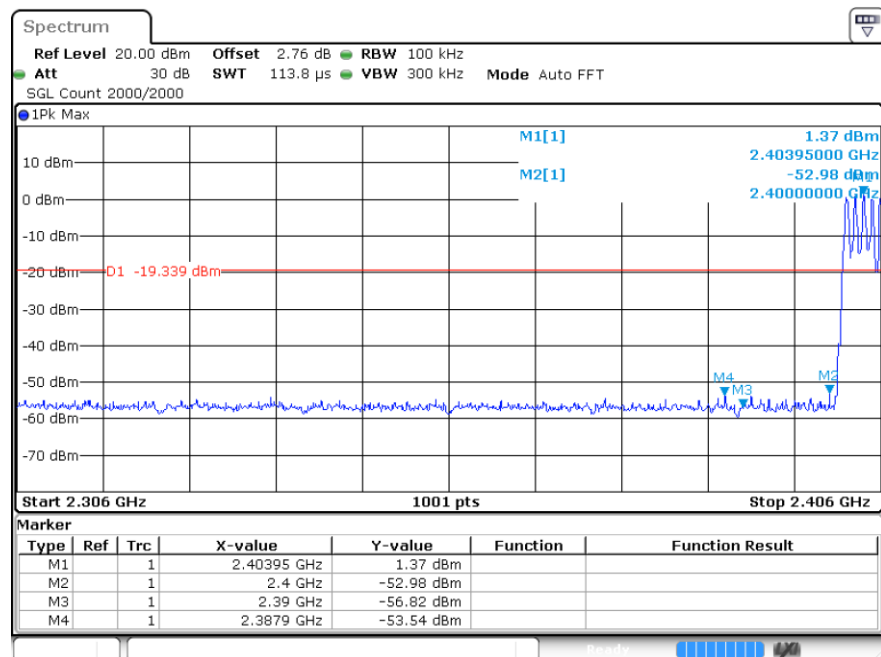
8.2 Test Graphs



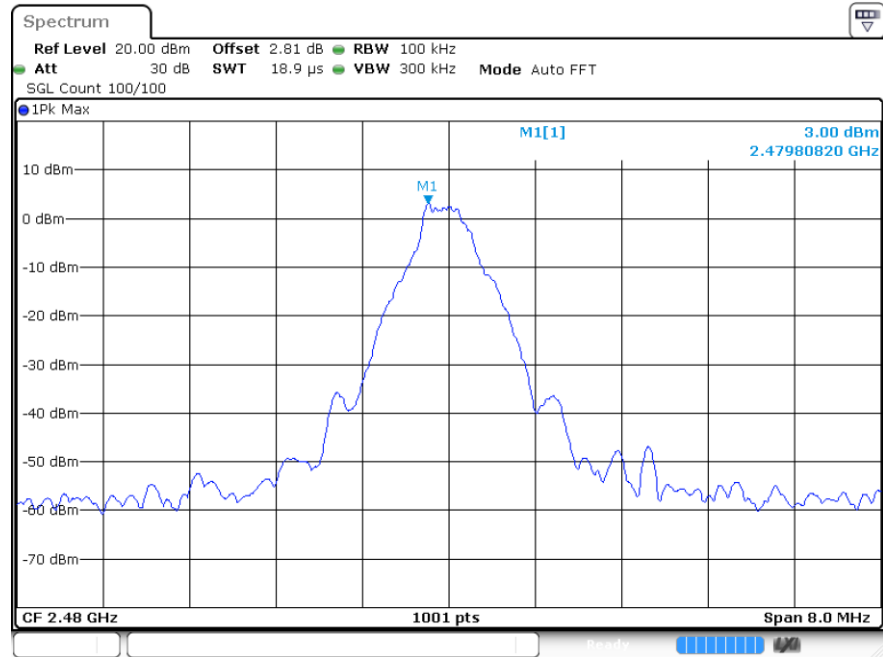
Ref



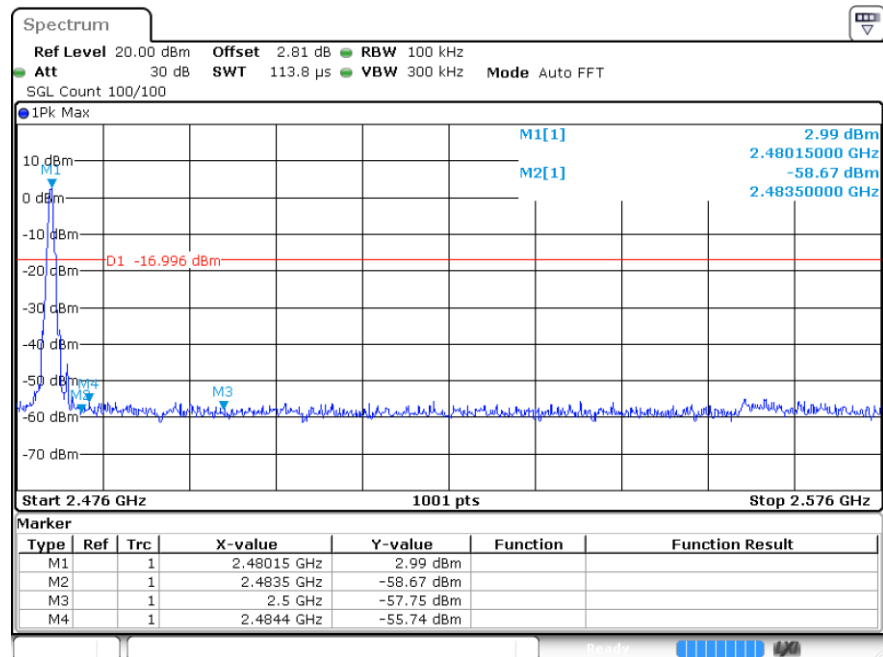
GFSK/LCH/Hop



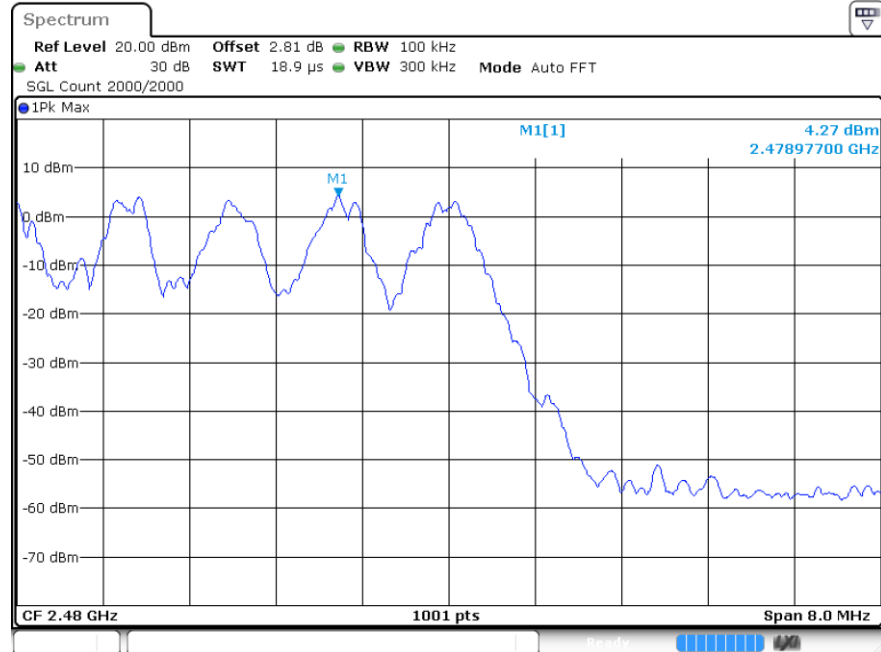
Ref



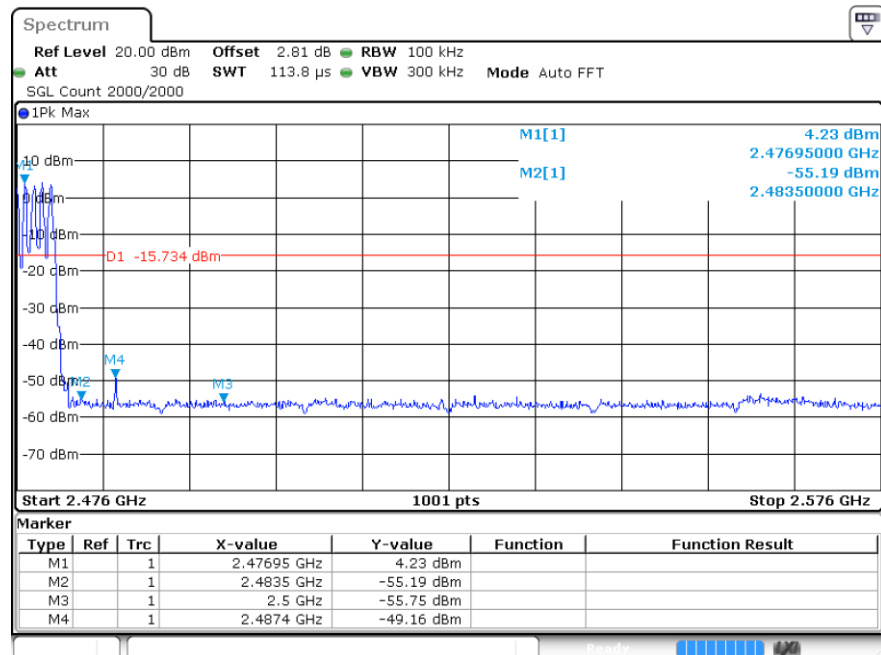
GFSK/HCH/No Hop



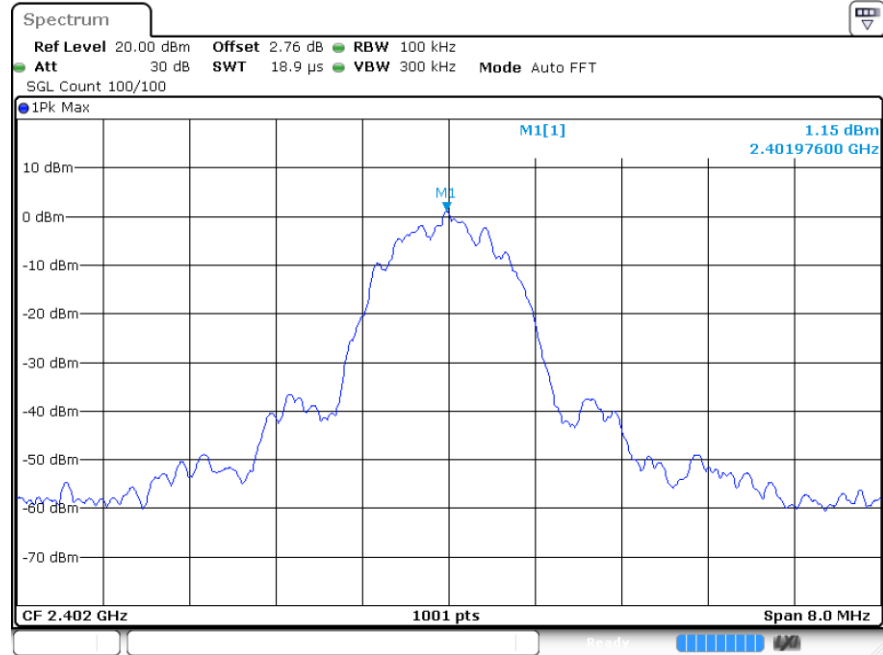
Ref.



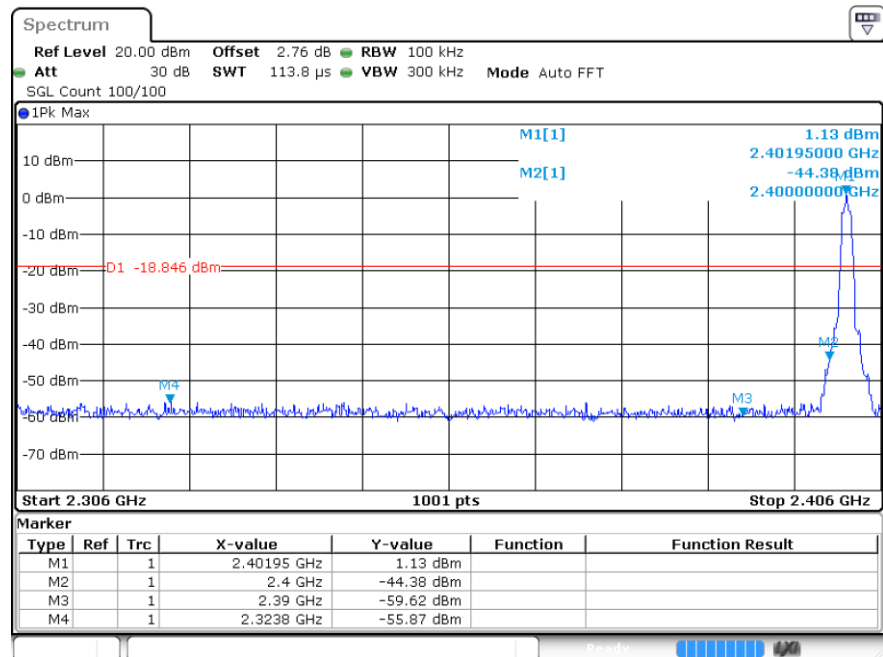
GFSK/HCH/Hop



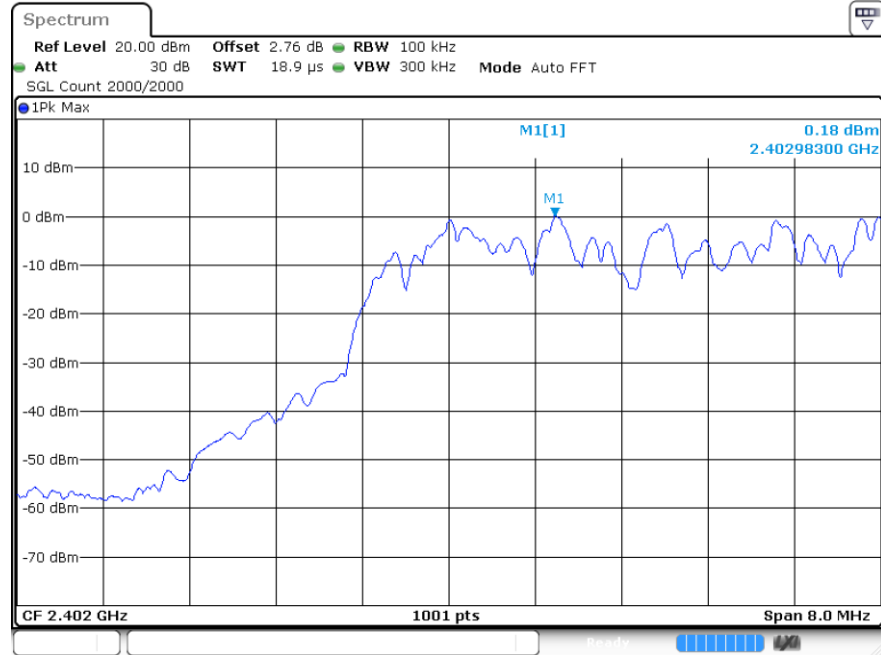
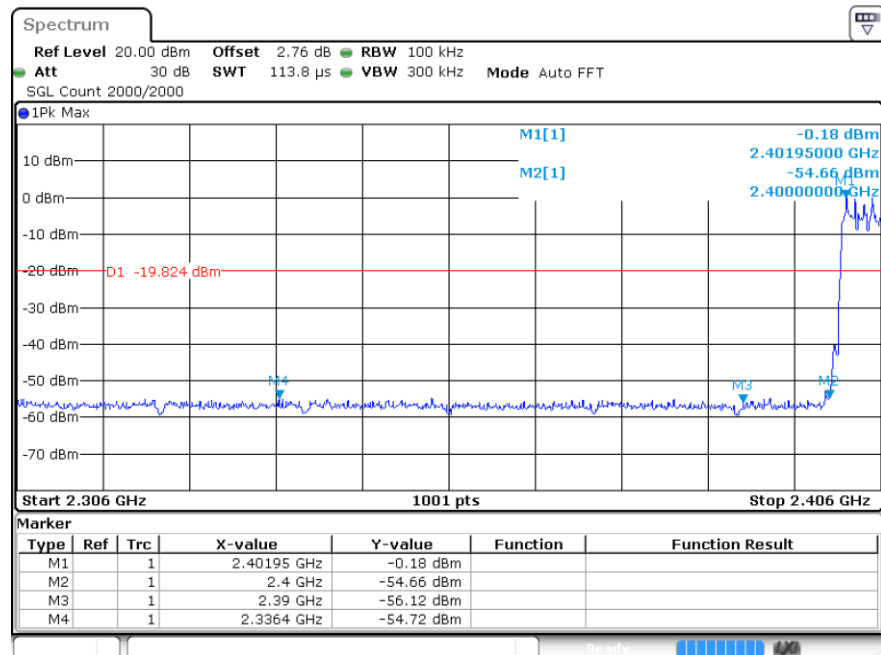
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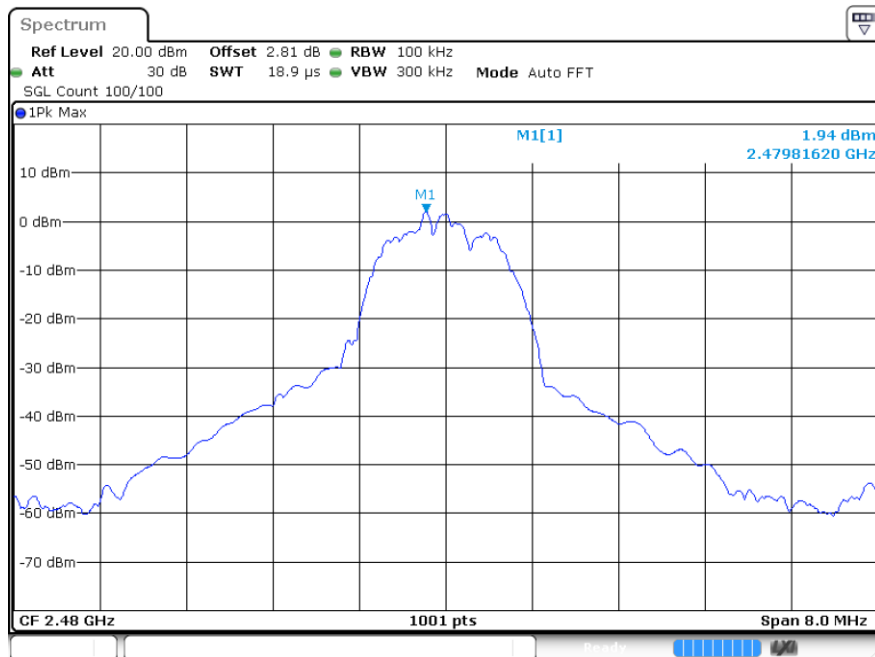
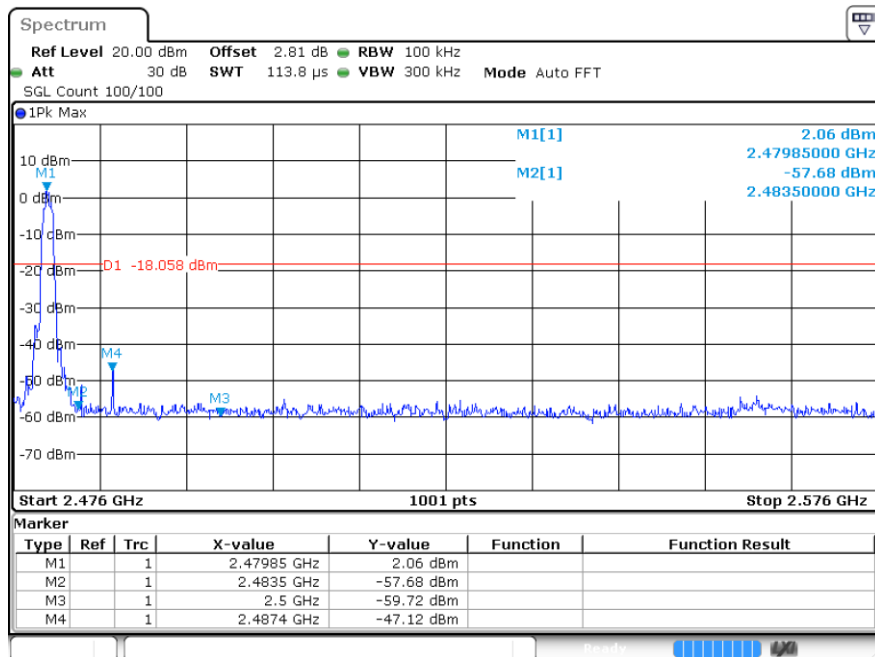
$\pi/4$ DQPSK/LCH/No Hop



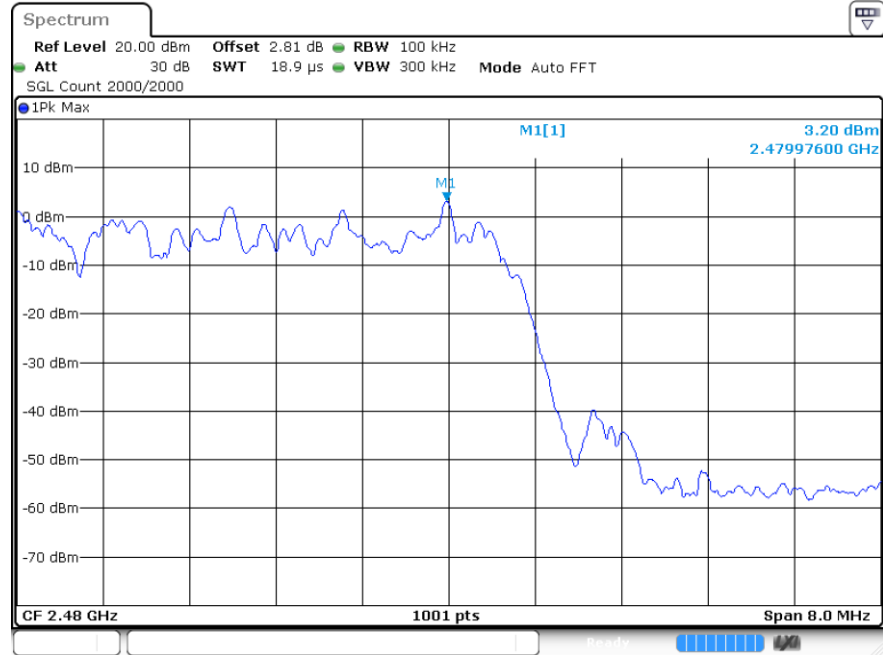
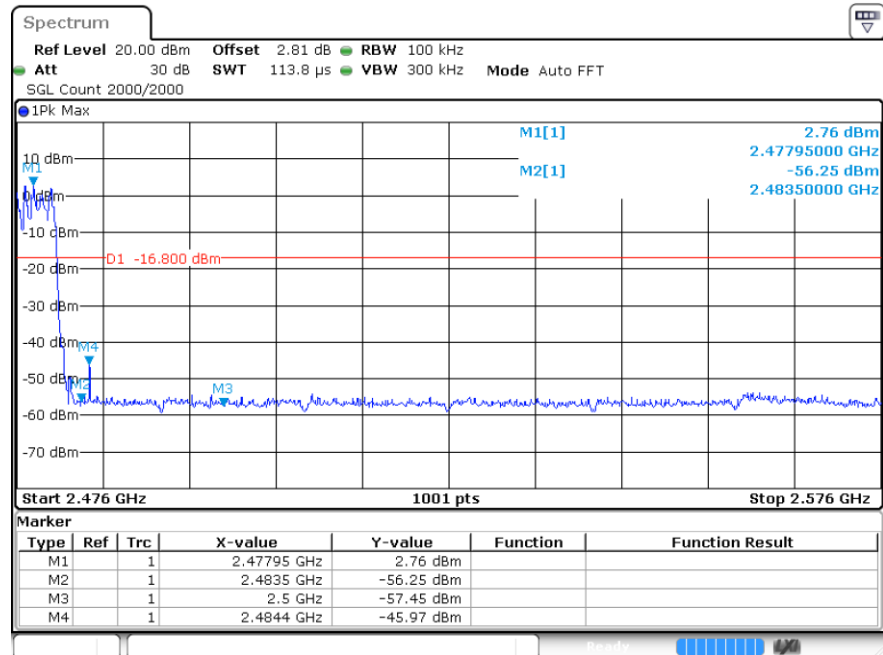
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


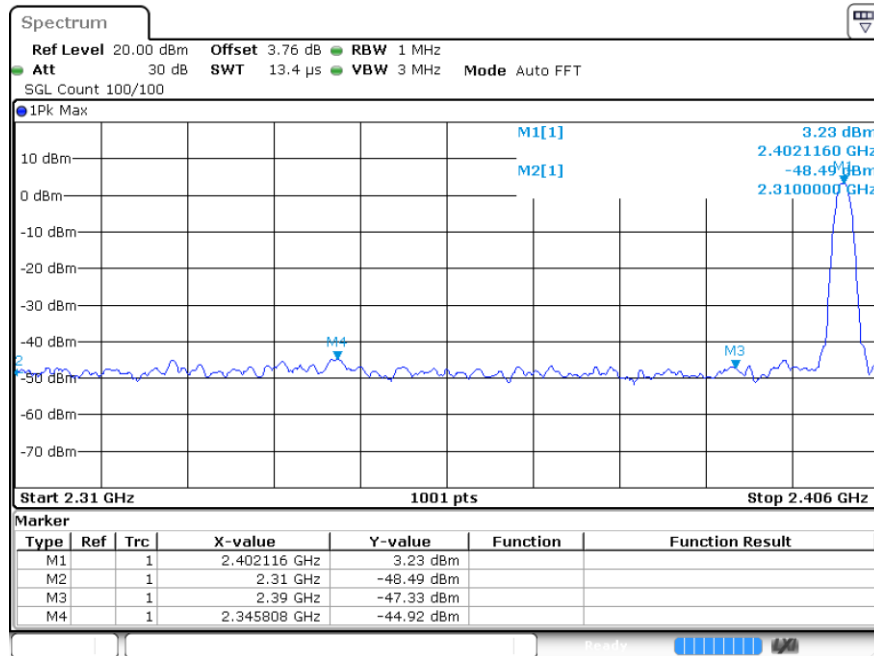
9 Restrict-band band-edge measurements

9.1 Test Result

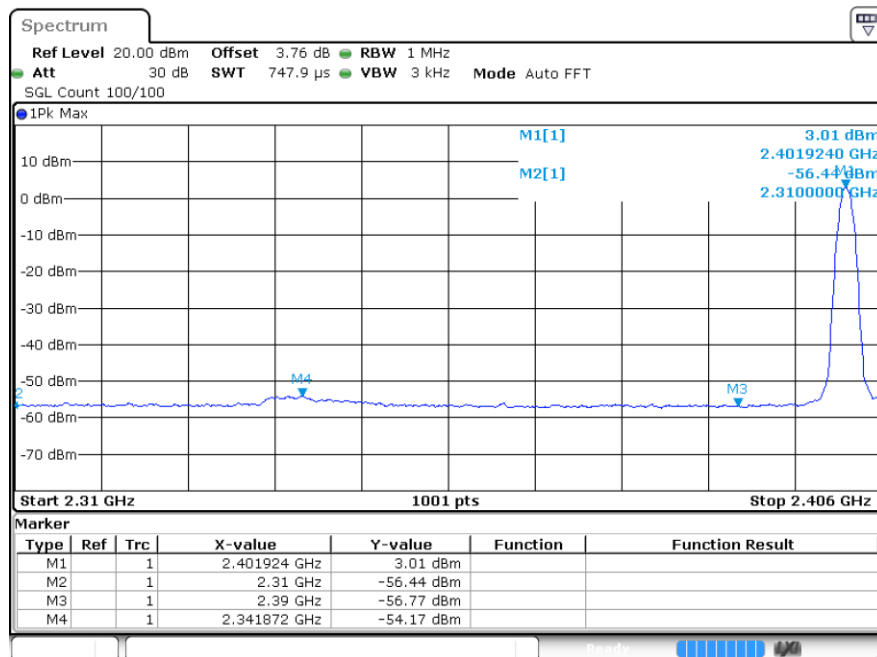
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.49	2	48.77	PEAK	74	Pass
	Off	2310.0	-56.43	2	40.83	AV	54	Pass
	Off	2345.808	-44.91	2	52.35	PEAK	74	Pass
	Off	2341.872	-54.17	2	43.09	AV	54	Pass
	Off	2390.0	-47.33	2	49.93	PEAK	74	Pass
	Off	2390.0	-56.77	2	40.49	AV	54	Pass
	Off	2483.5	-48.92	2	48.34	PEAK	74	Pass
	Off	2483.5	-53.32	2	43.94	AV	54	Pass
	Off	2491.912	-45.38	2	51.88	PEAK	74	Pass
	Off	2483.512	-53.32	2	43.94	AV	54	Pass
	Off	2500.0	-50.55	2	46.71	PEAK	74	Pass
	Off	2500.0	-55.98	2	41.28	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-47.79	2	49.47	PEAK	74	Pass
	Off	2310.0	-56.13	2	41.13	AV	54	Pass
	Off	2347.056	-44.97	2	52.29	PEAK	74	Pass
	Off	2339.184	-54.15	2	43.11	AV	54	Pass
	Off	2390.0	-46.29	2	50.97	PEAK	74	Pass
	Off	2390.0	-56.61	2	40.65	AV	54	Pass
	Off	2483.5	-46.95	2	50.31	PEAK	74	Pass
	Off	2483.5	-53.97	2	43.29	AV	54	Pass
	Off	2487.328	-43.78	2	53.48	PEAK	74	Pass
	Off	2484.232	-53.94	2	43.32	AV	54	Pass
	Off	2500.0	-47.67	2	49.59	PEAK	74	Pass
	Off	2500.0	-56.25	2	41.01	AV	54	Pass

9.2 Test Graphs

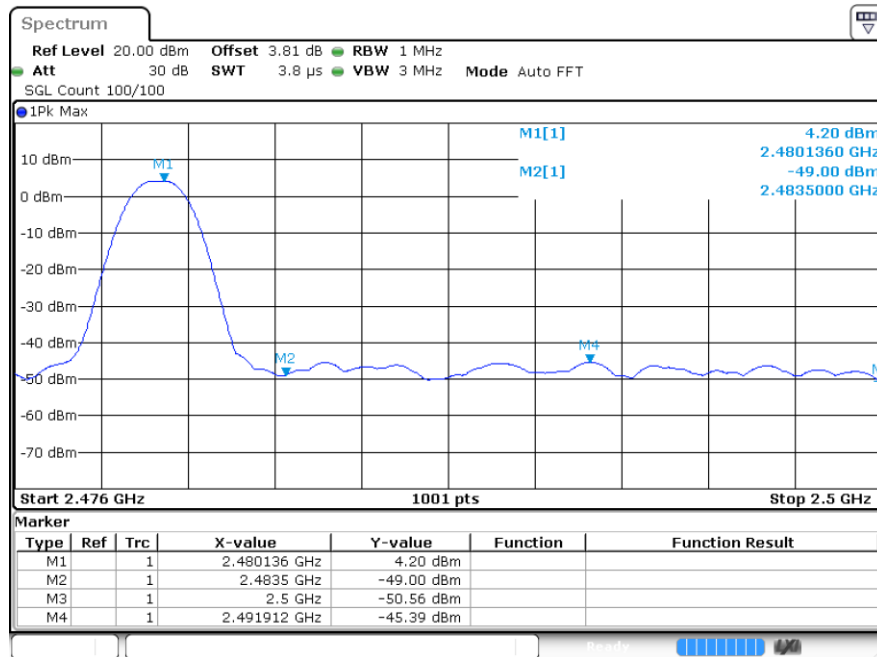
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



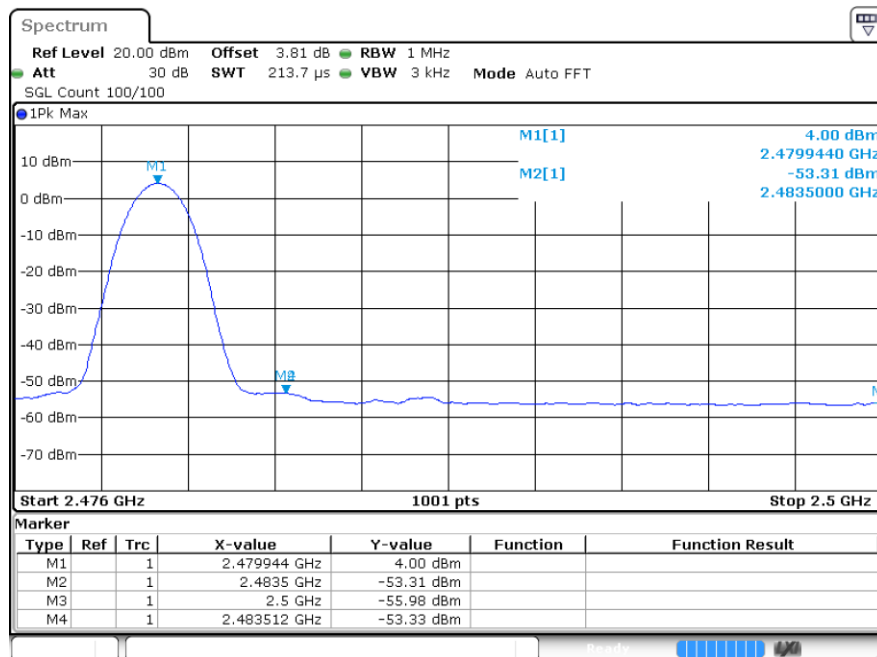
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



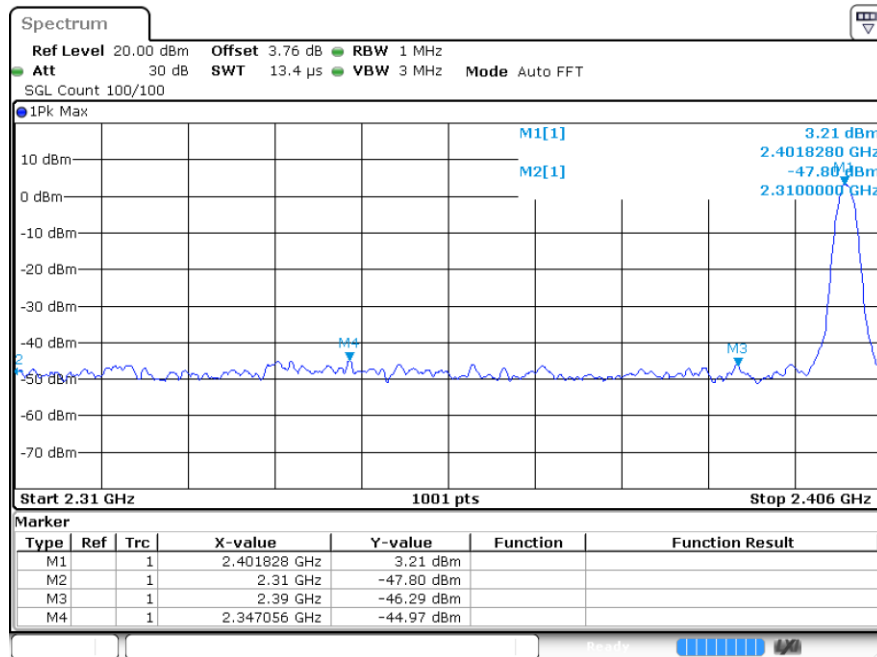
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



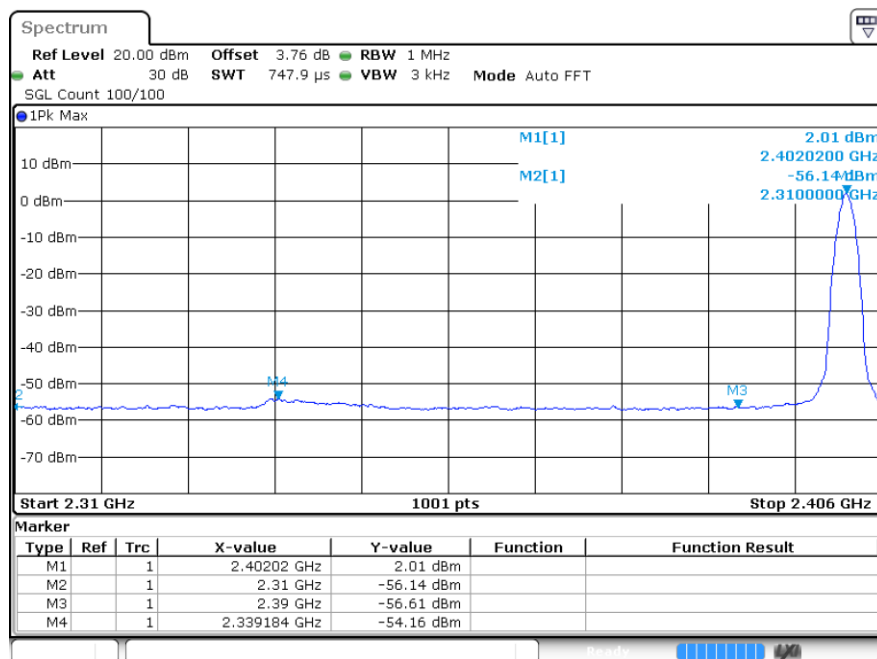
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



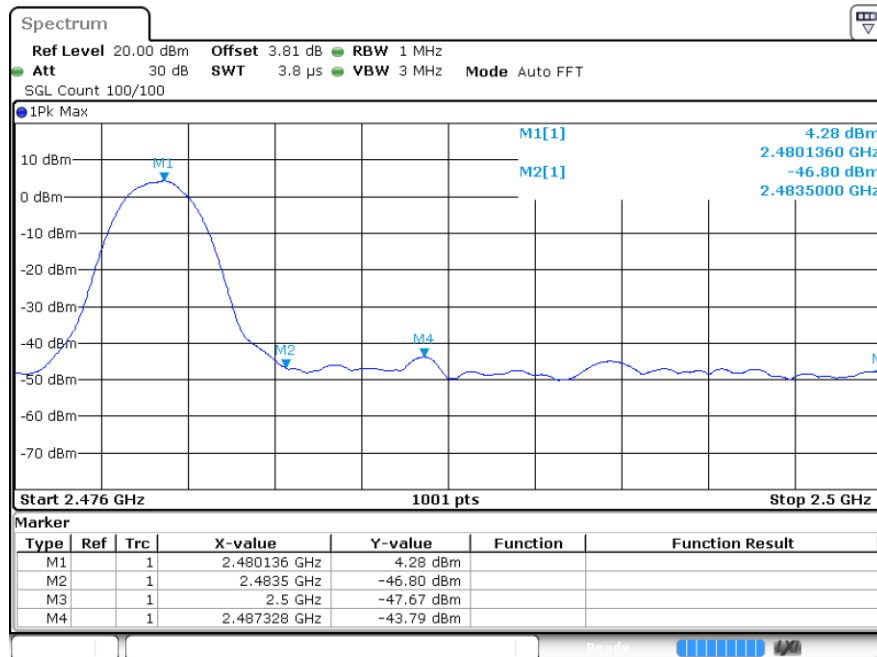
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



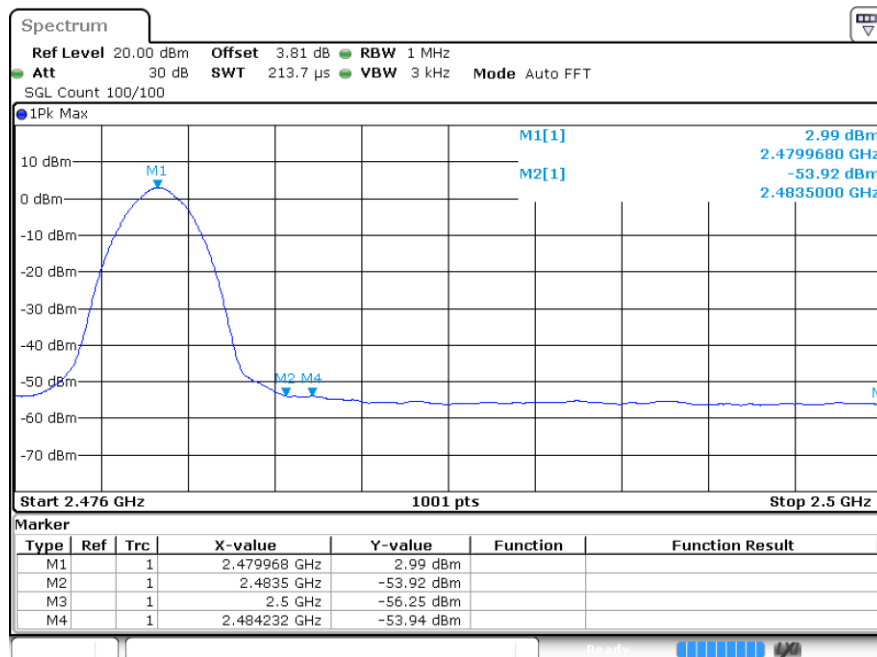
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---