



Appendix A

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

Product Name: True Wireless Earbuds

Trade Mark: N/A

Test Model: H2205

HVIN: H2205

Environmental Conditions

Temperature:	25.9℃
Relative Humidity:	52.2%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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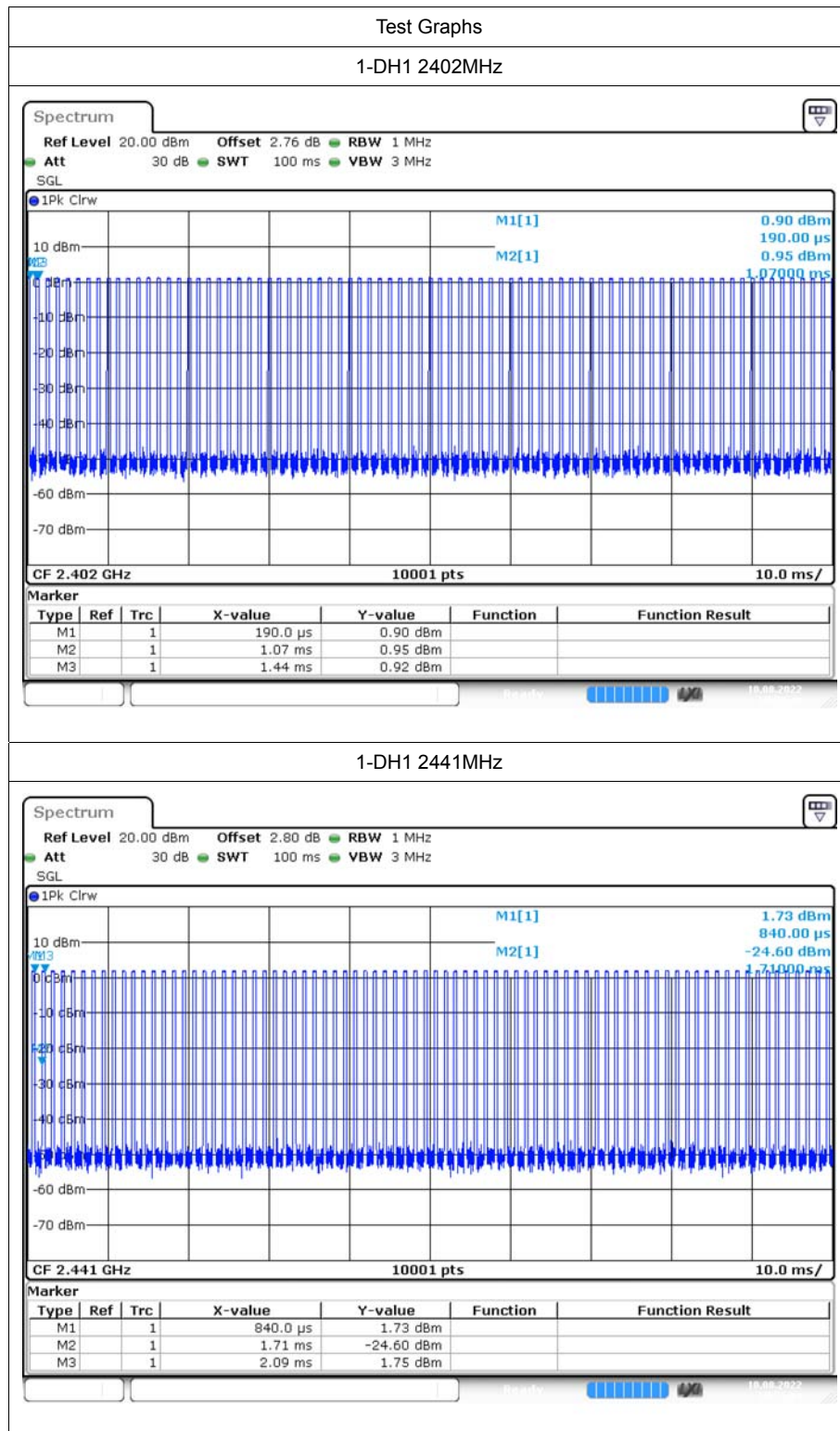


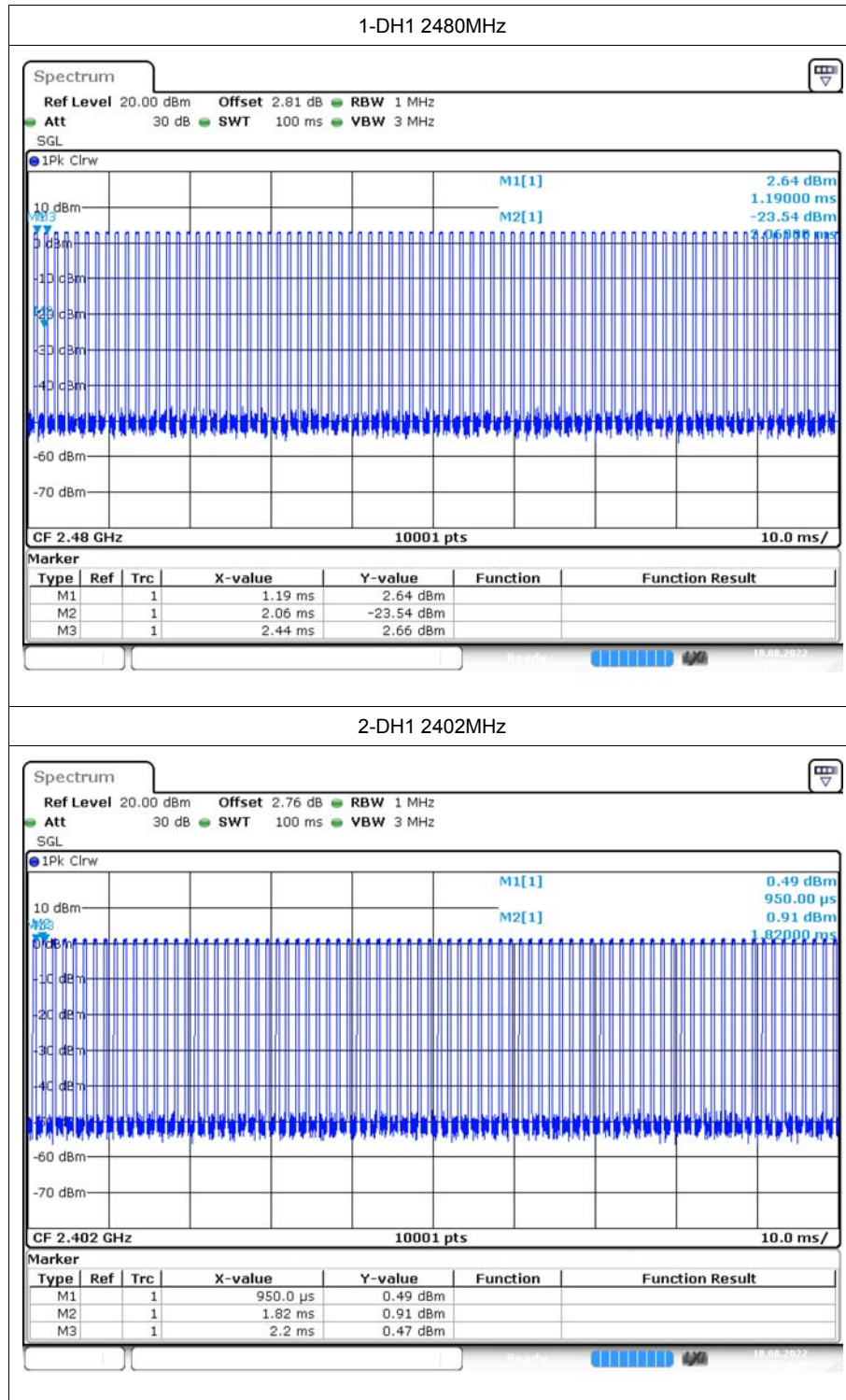
1 Duty Cycle

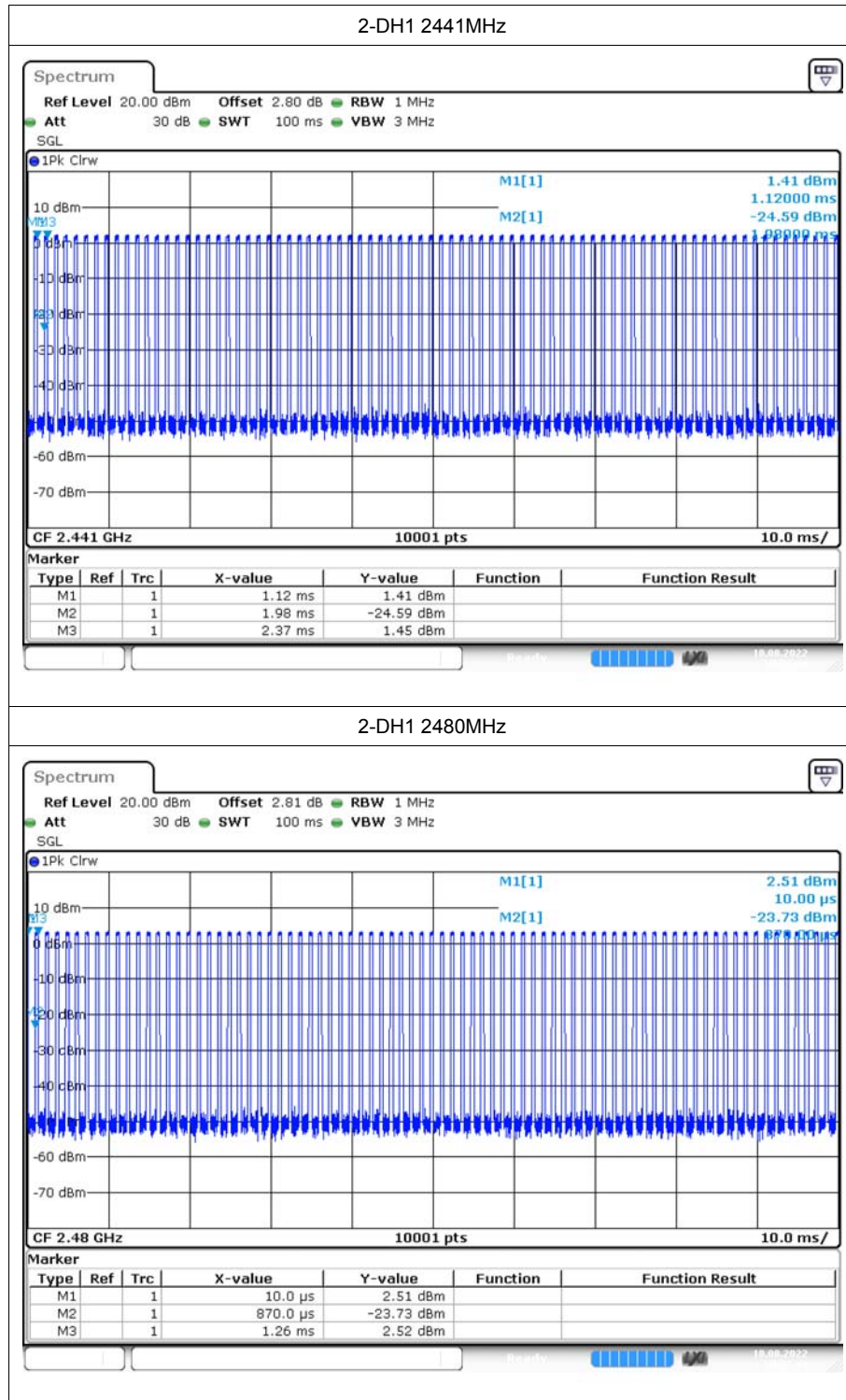
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	30.47	2.7
1-DH1	2441	31.2	2.63
1-DH1	2480	31.2	2.63
2-DH1	2402	31.2	2.63
2-DH1	2441	32	2.56
2-DH1	2480	32.01	2.56

1.2 Test Graphs





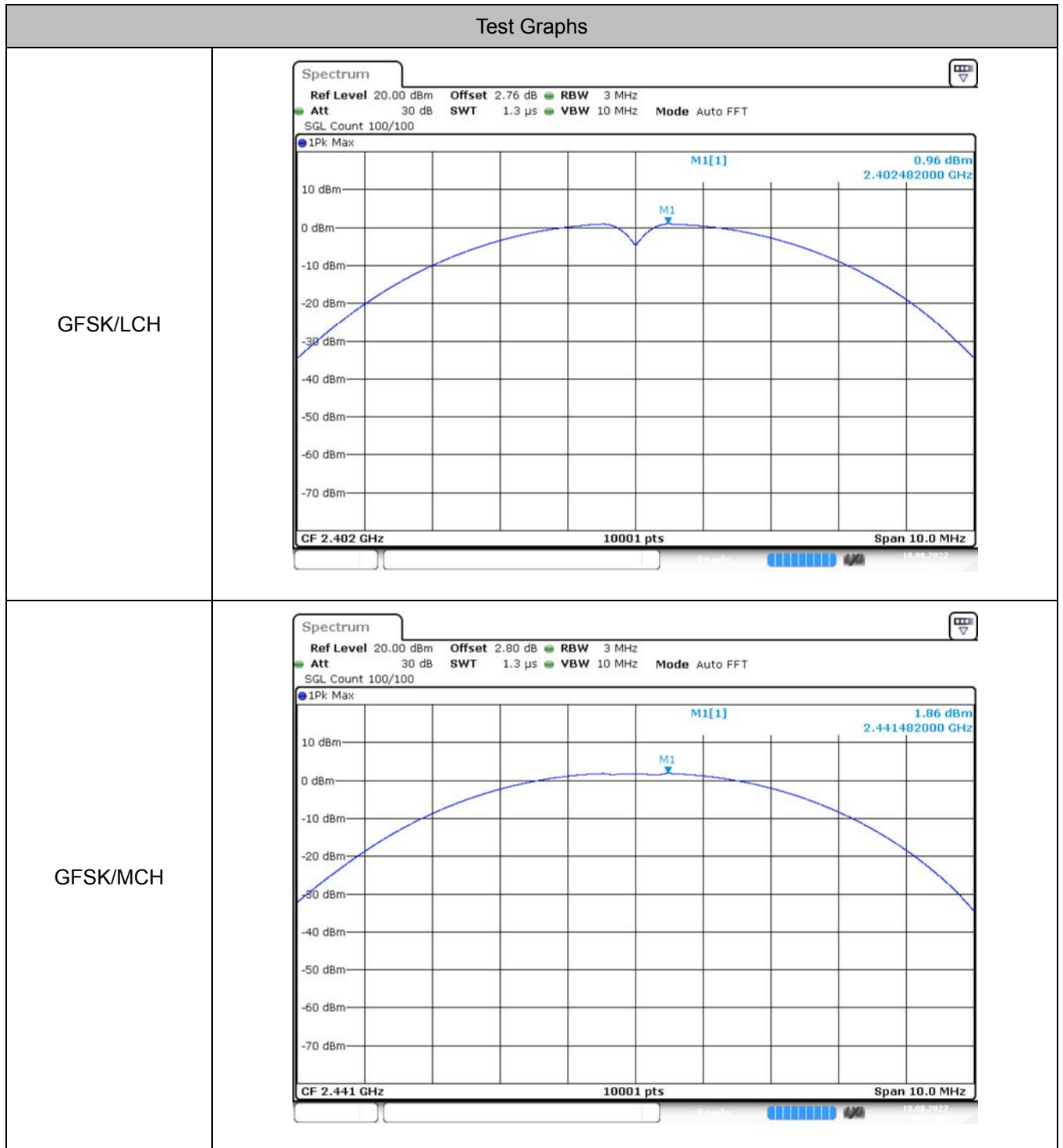


2 Maximum Conducted Peak Output Power

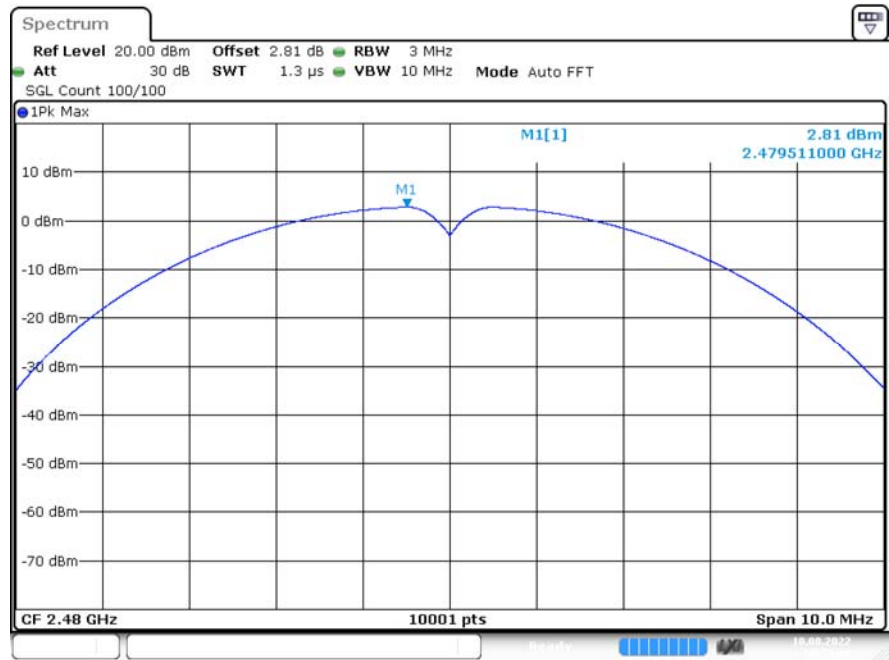
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.96	21	Pass
	MCH	1.86	21	Pass
	HCH	2.81	21	Pass
$\pi/4$ DQPSK	LCH	1.35	21	Pass
	MCH	2.13	21	Pass
	HCH	3.28	21	Pass

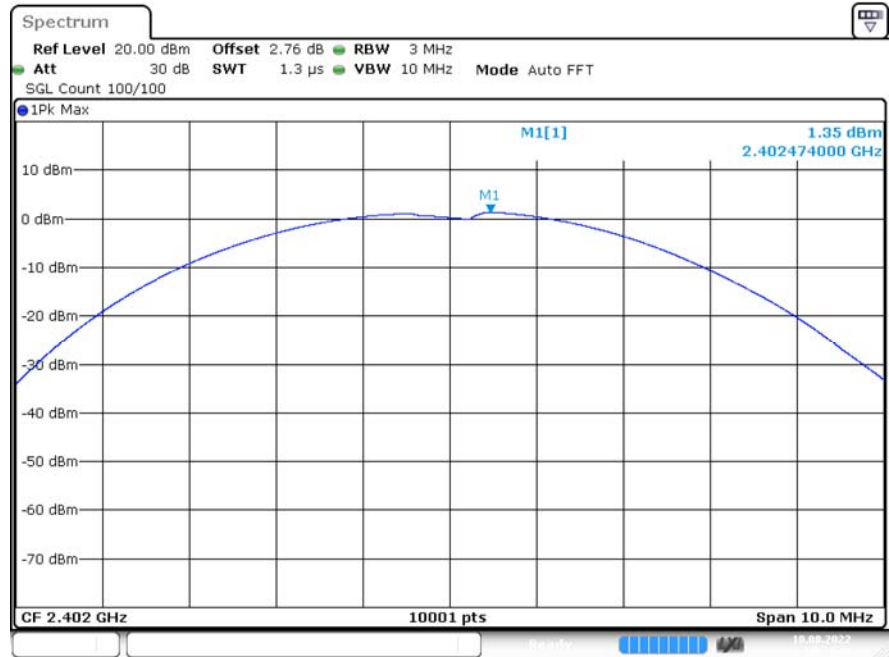
2.2 Test Graphs

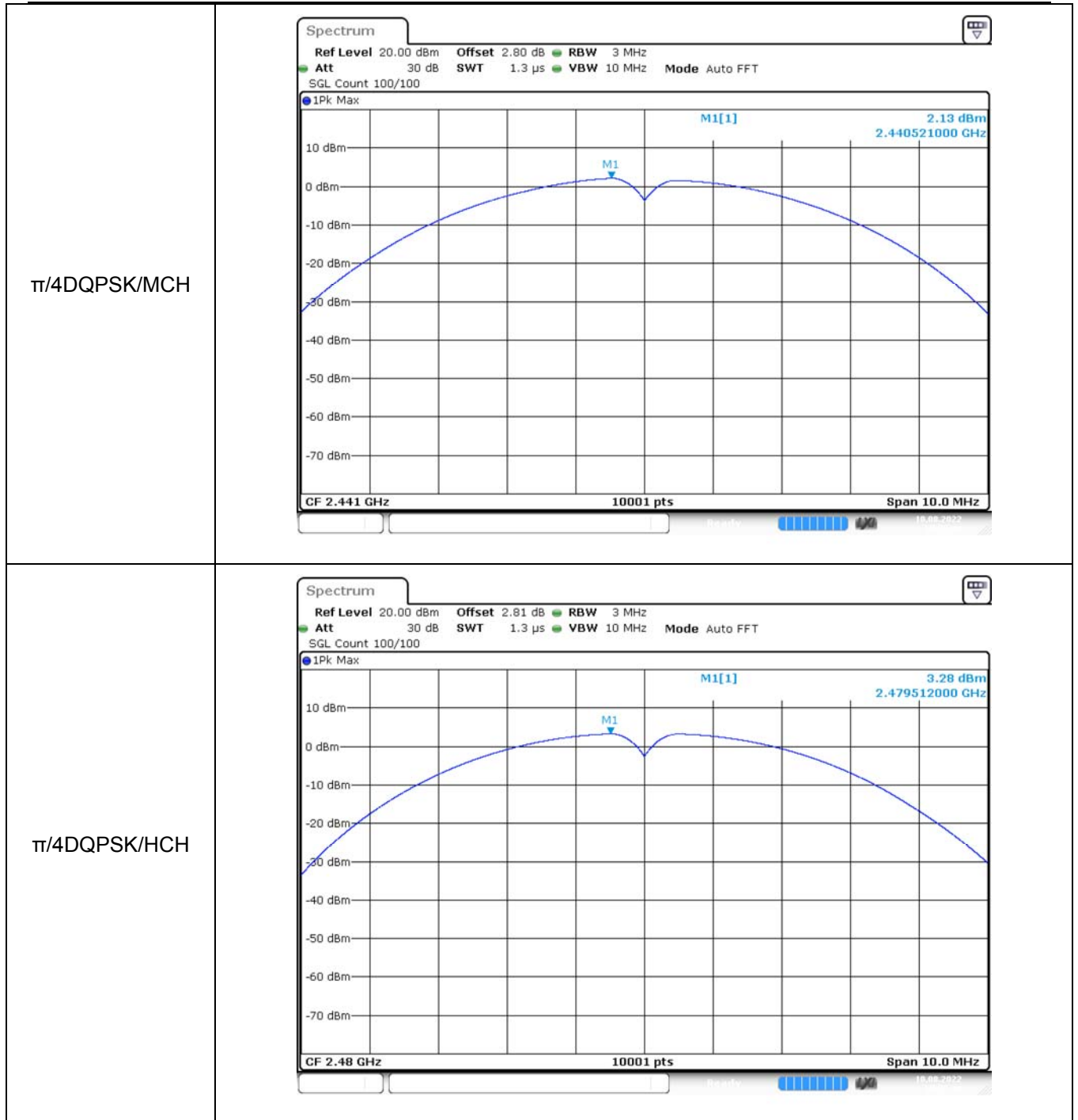


GFSK/HCH



$\pi/4$ DQPSK/LCH



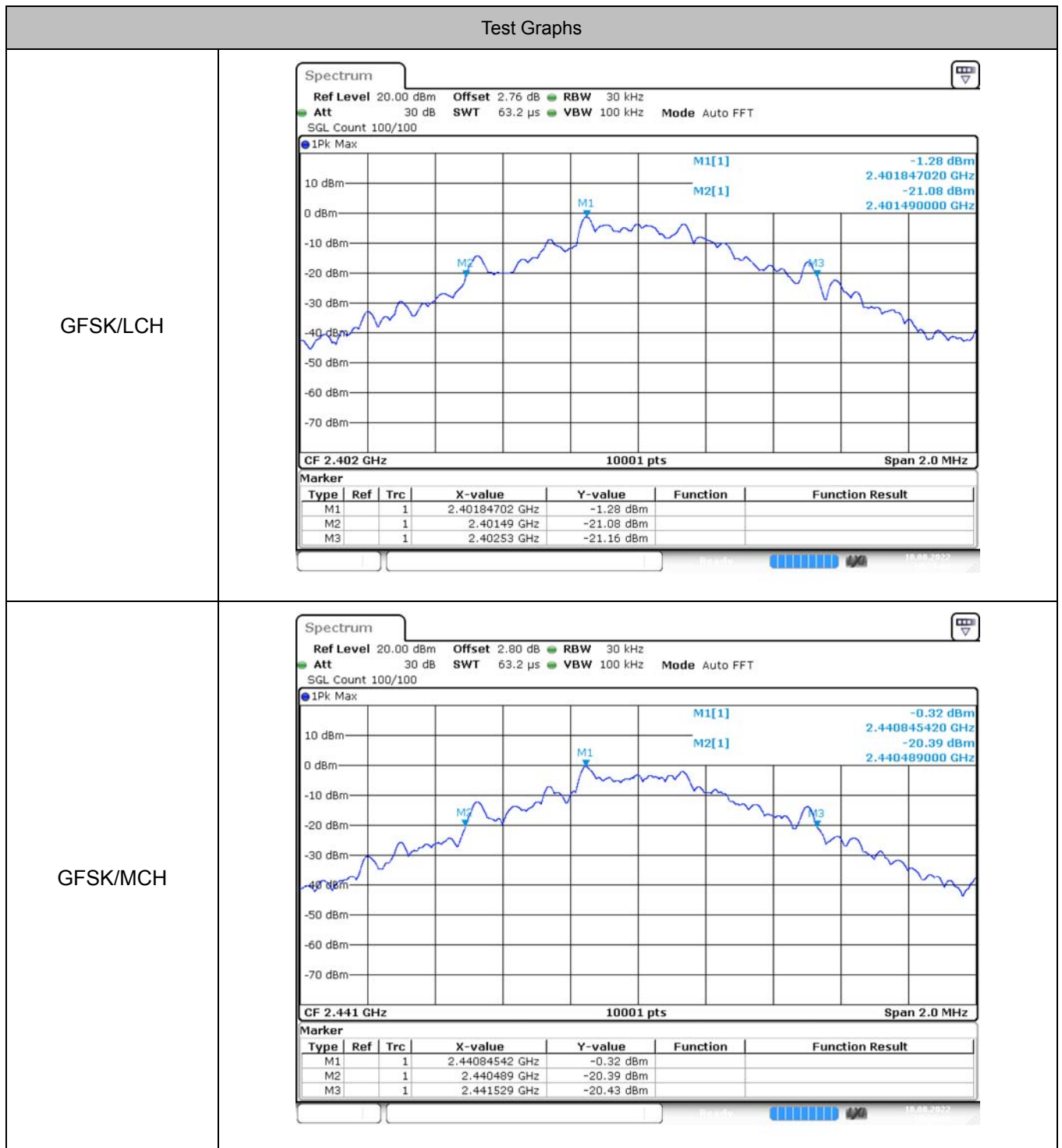


3 20dB Bandwidth

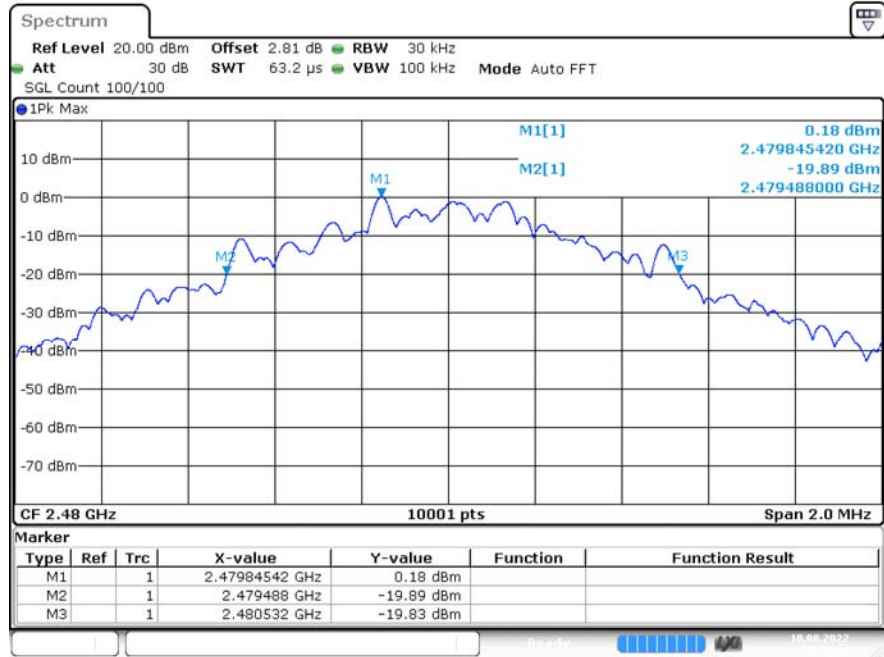
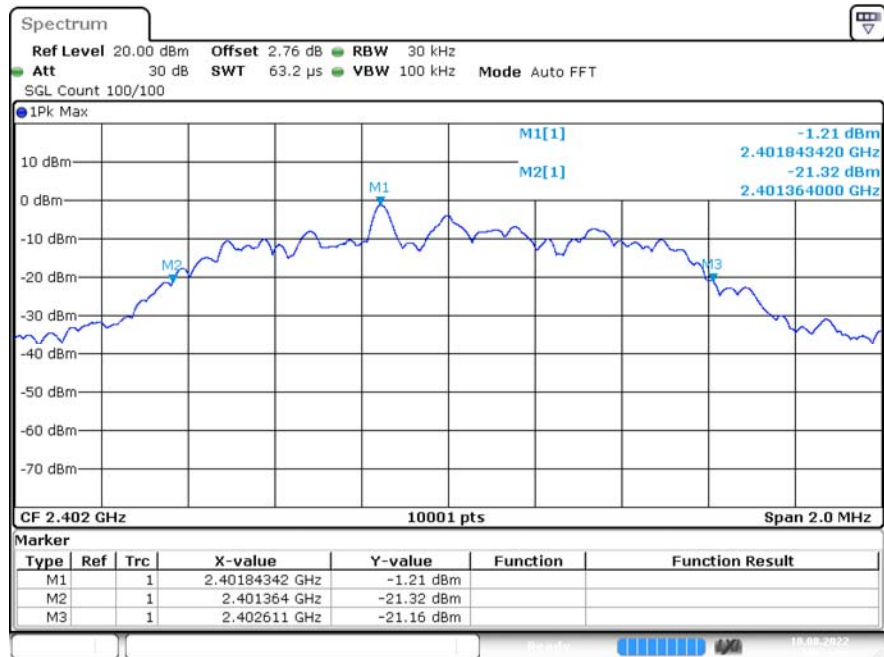
3.1 Test Result

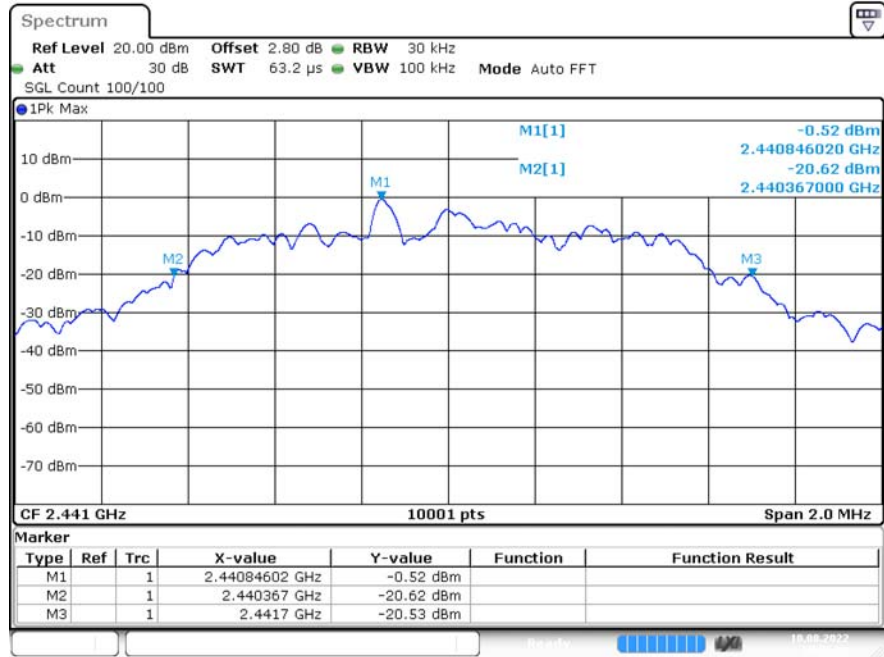
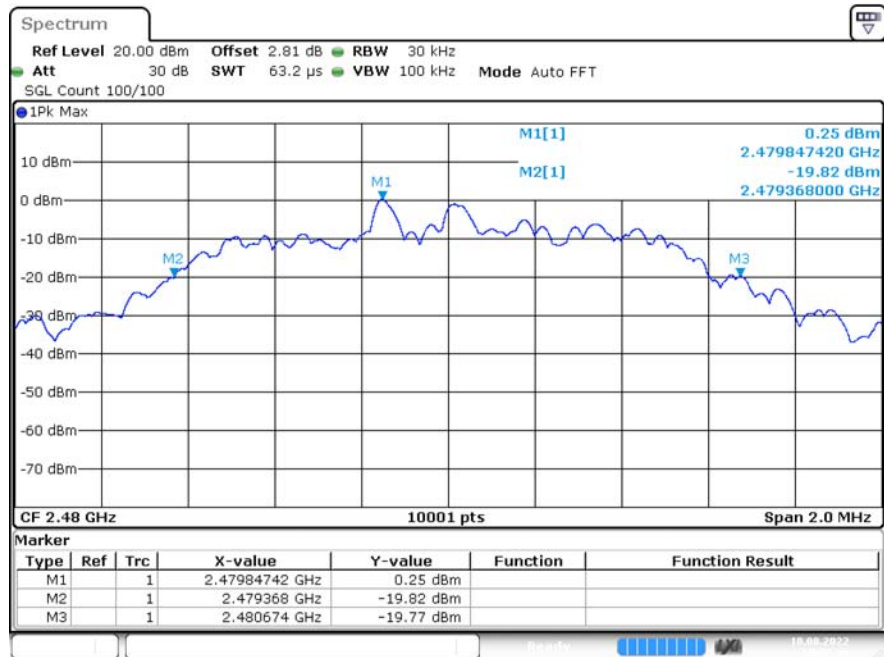
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.041	Not Specified	Pass
	MCH	1.039	Not Specified	Pass
	HCH	1.044	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.247	Not Specified	Pass
	MCH	1.333	Not Specified	Pass
	HCH	1.305	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


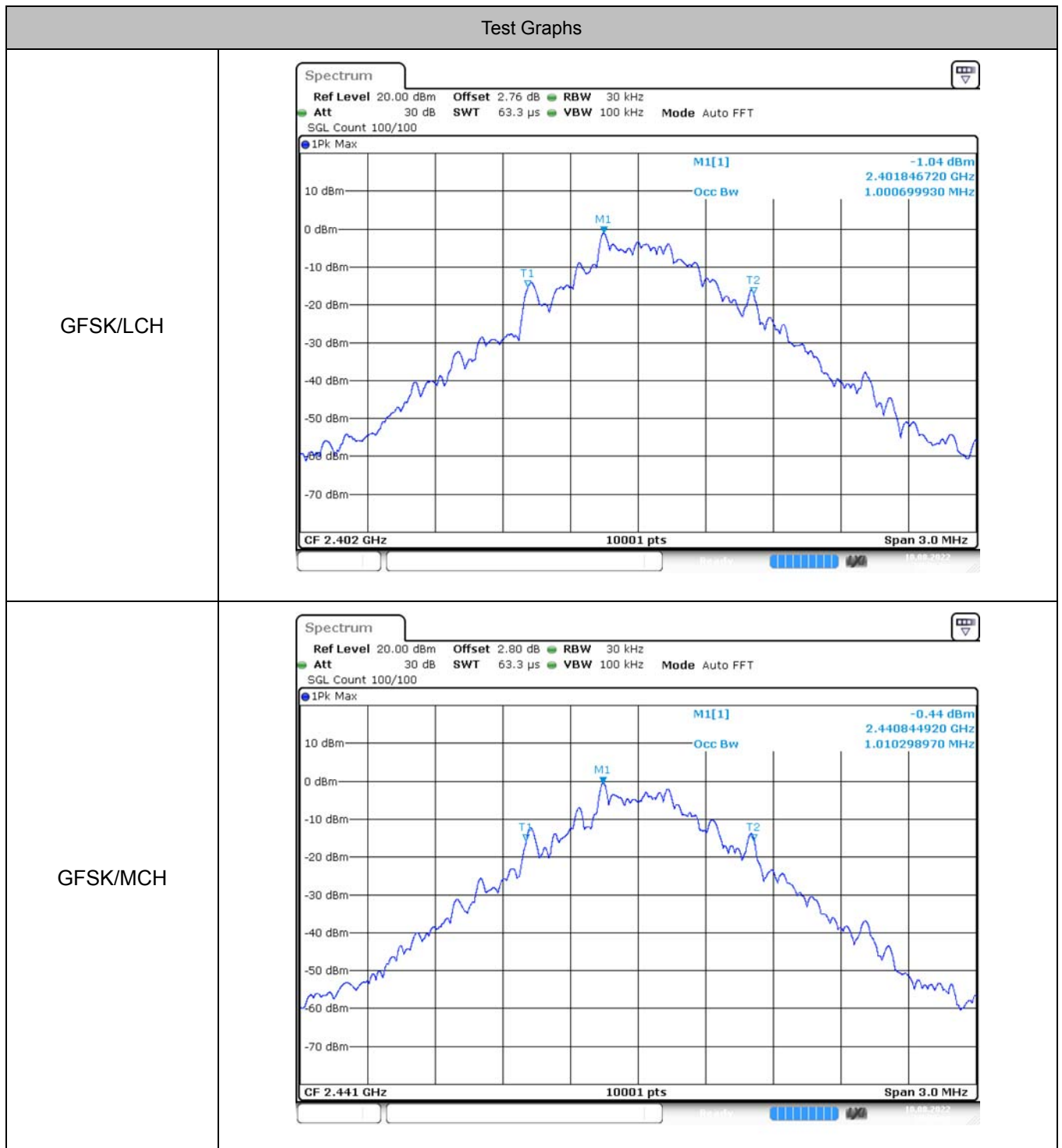
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Occupied Bandwidth

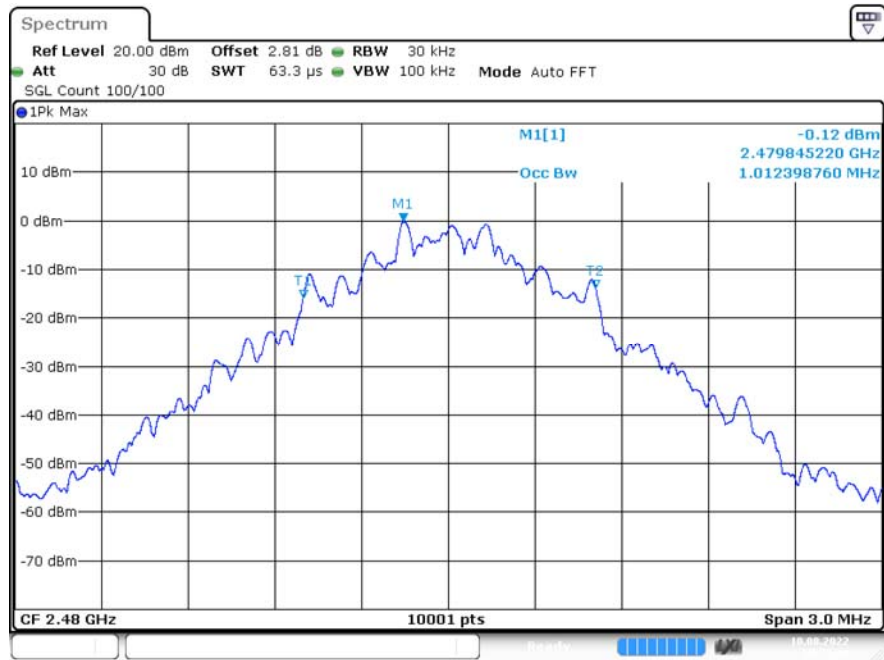
4.1 Test Result

Mode	Channel.	99% Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.001	Not Specified	PASS
	MCH	1.01	Not Specified	PASS
	HCH	1.012	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.236	Not Specified	PASS
	MCH	1.257	Not Specified	PASS
	HCH	1.262	Not Specified	PASS

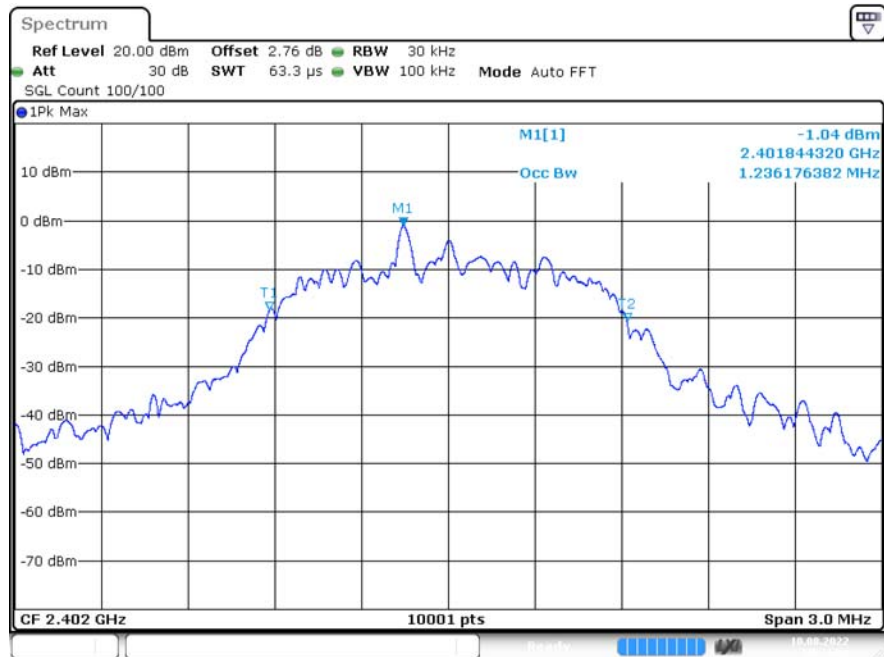
4.2 Test Graphs



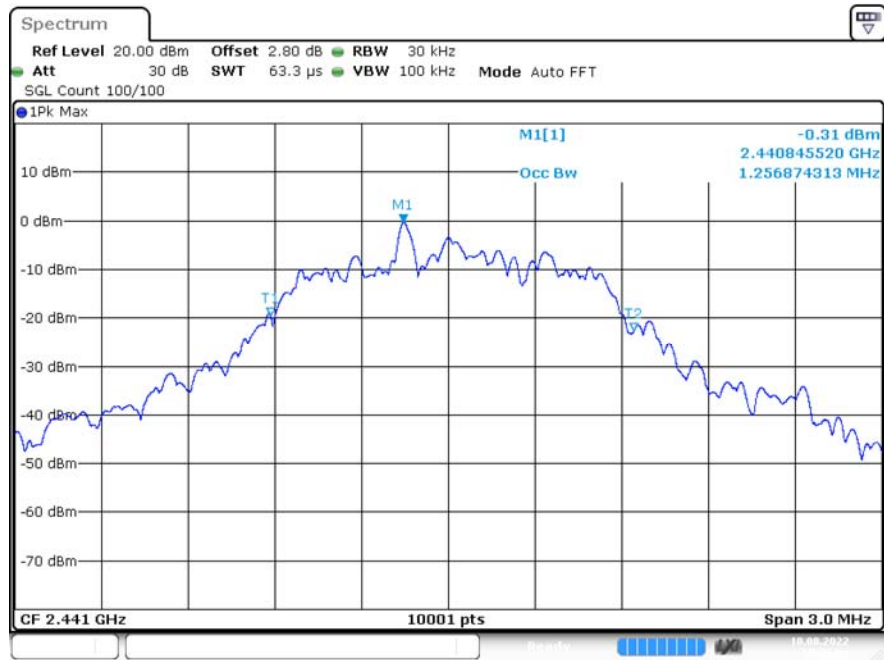
GFSK/HCH



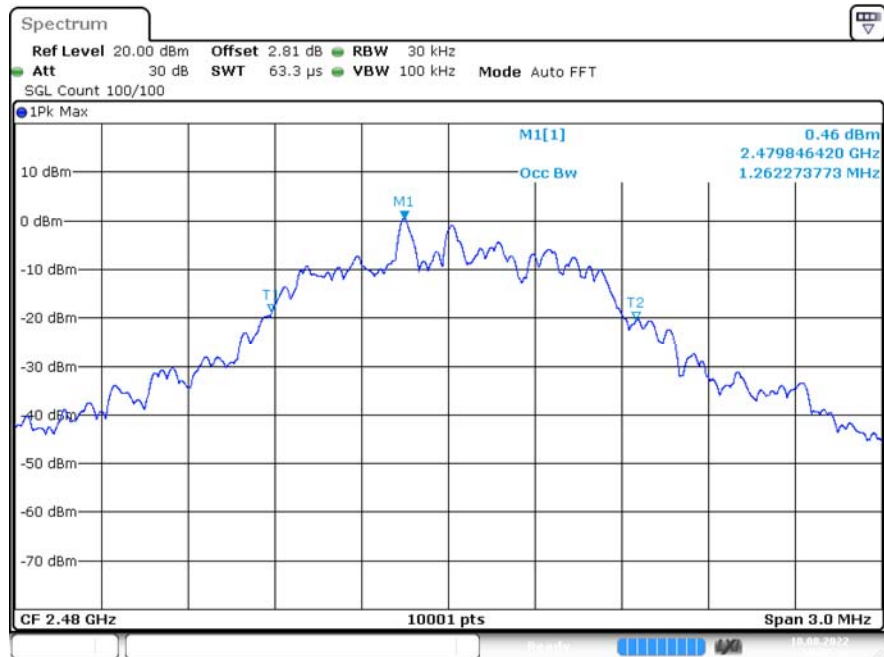
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



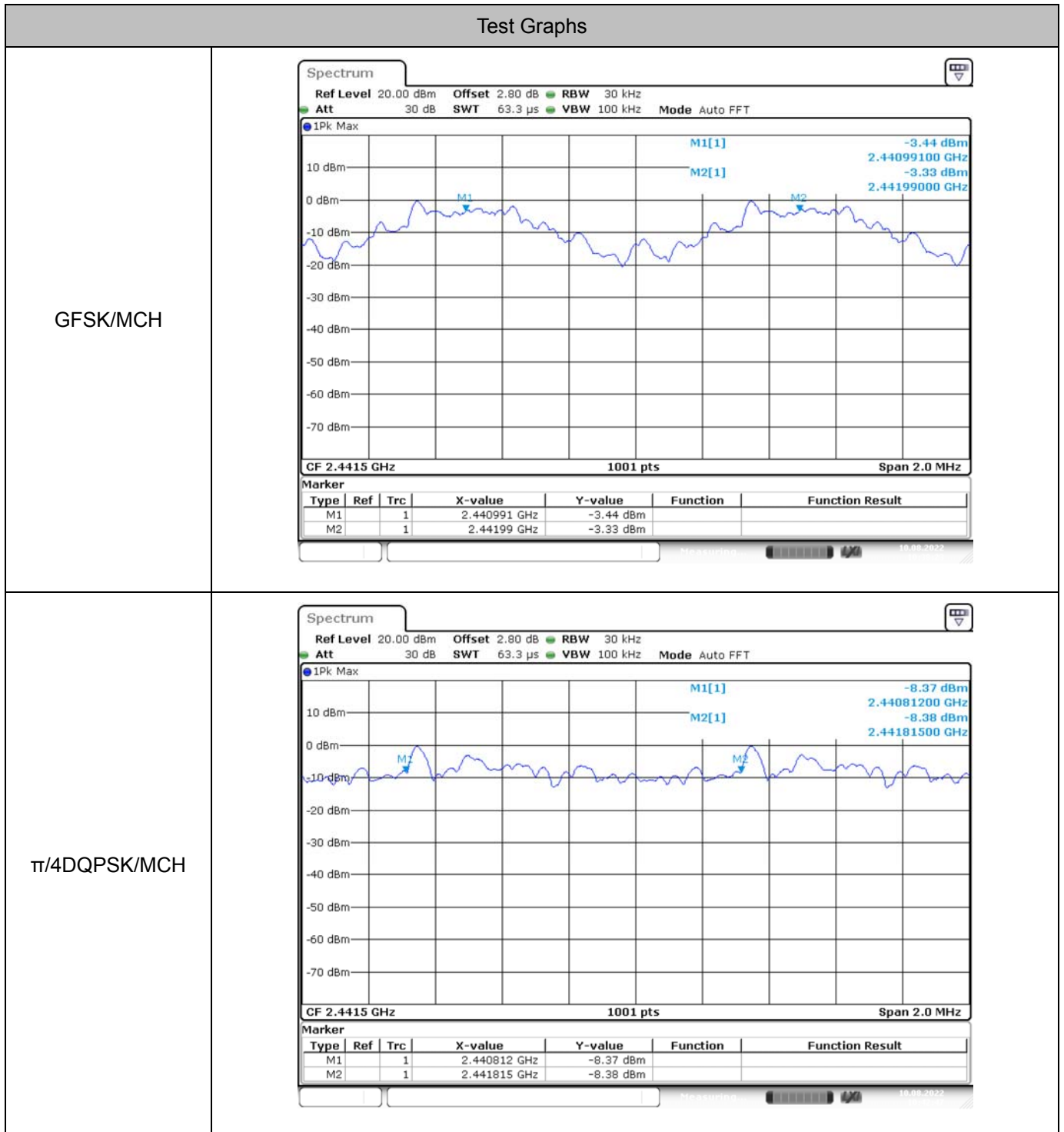


5 Carrier Frequency Separation

5.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.999	0.693	Pass
$\pi/4$ DQPSK	MCH	1.003	0.889	Pass

5.2 Test Graphs



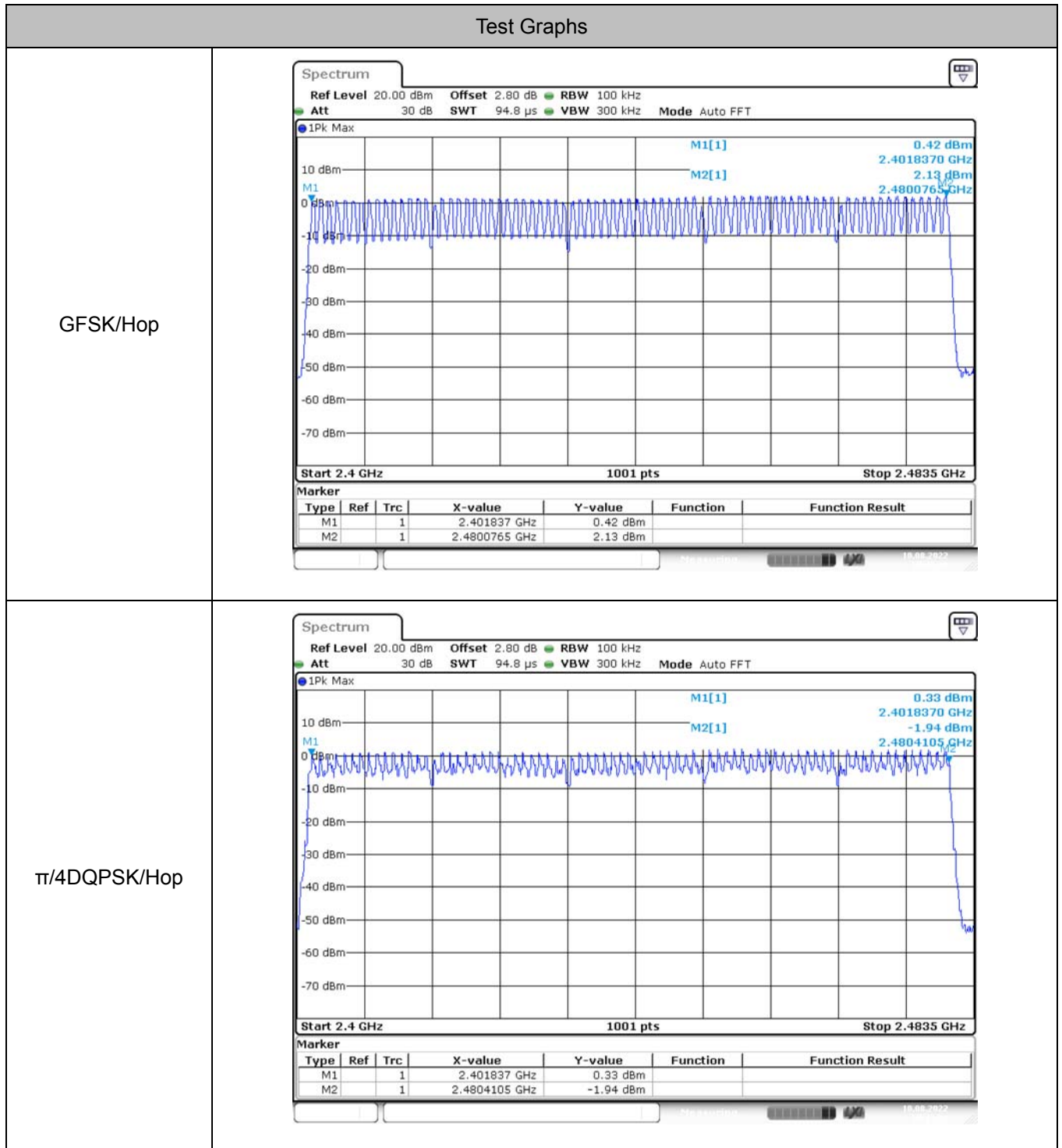


6 Hopping Channel Number

6.1 Test Result

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

6.2 Test Graphs

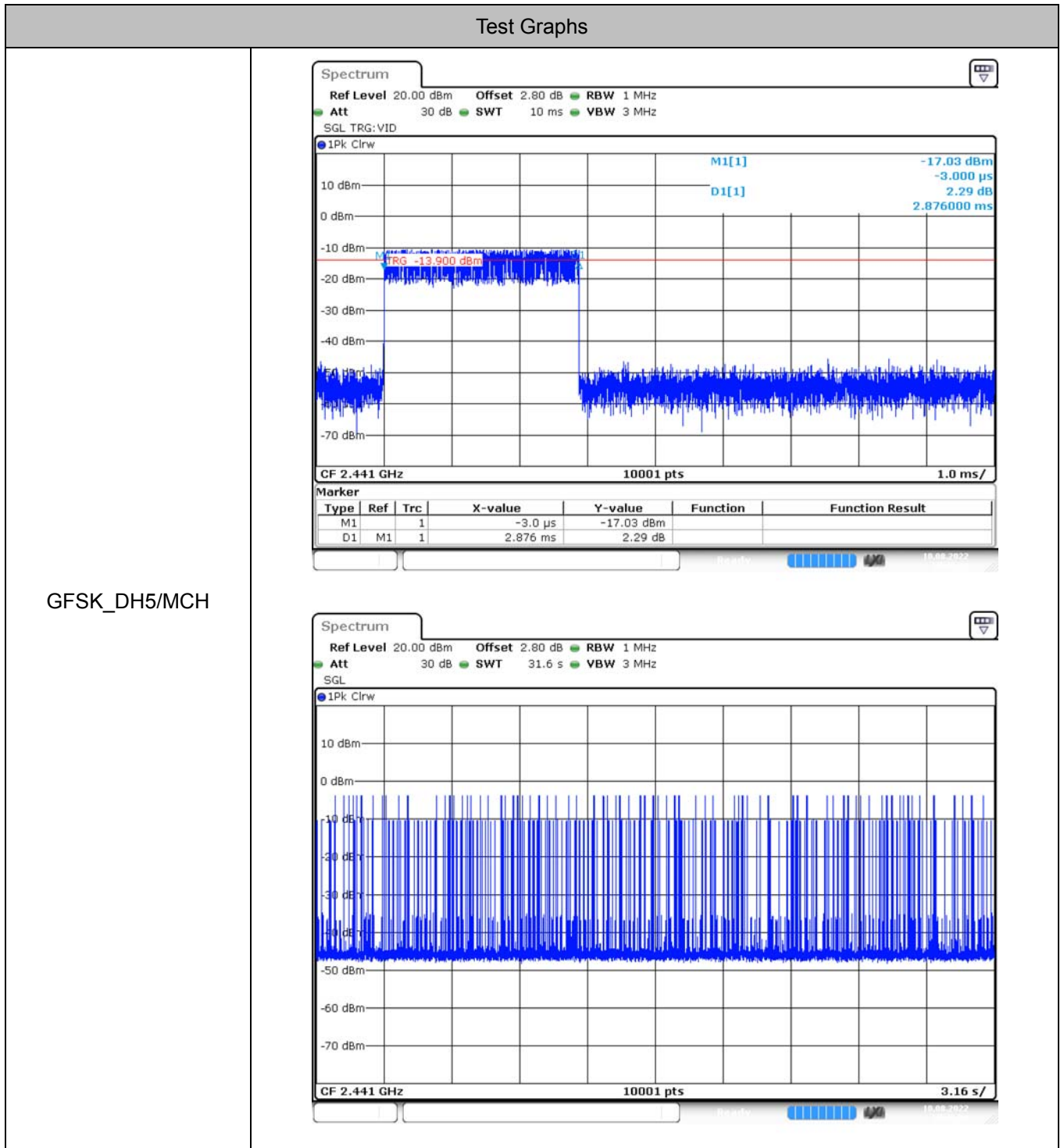


7 Dwell Time

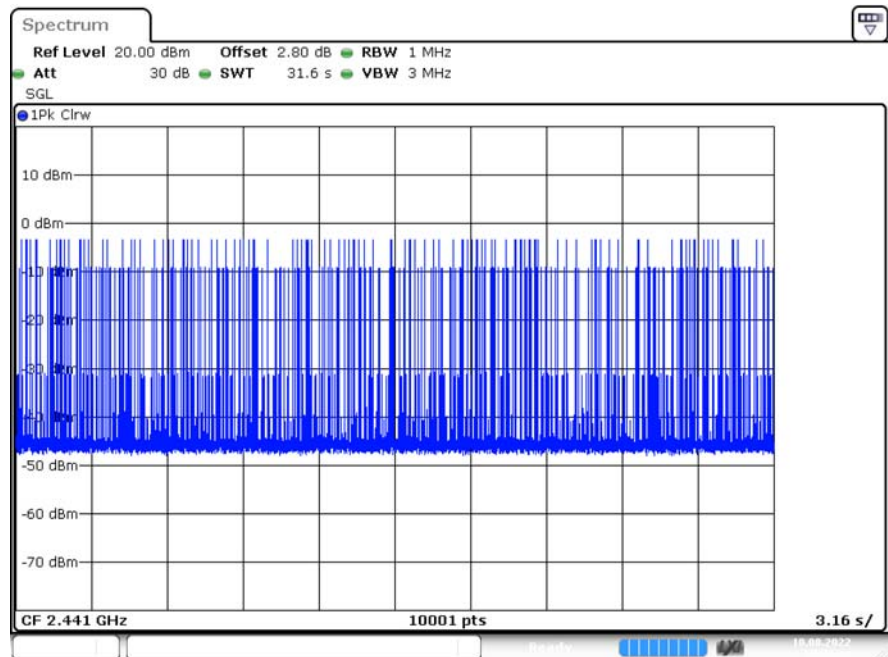
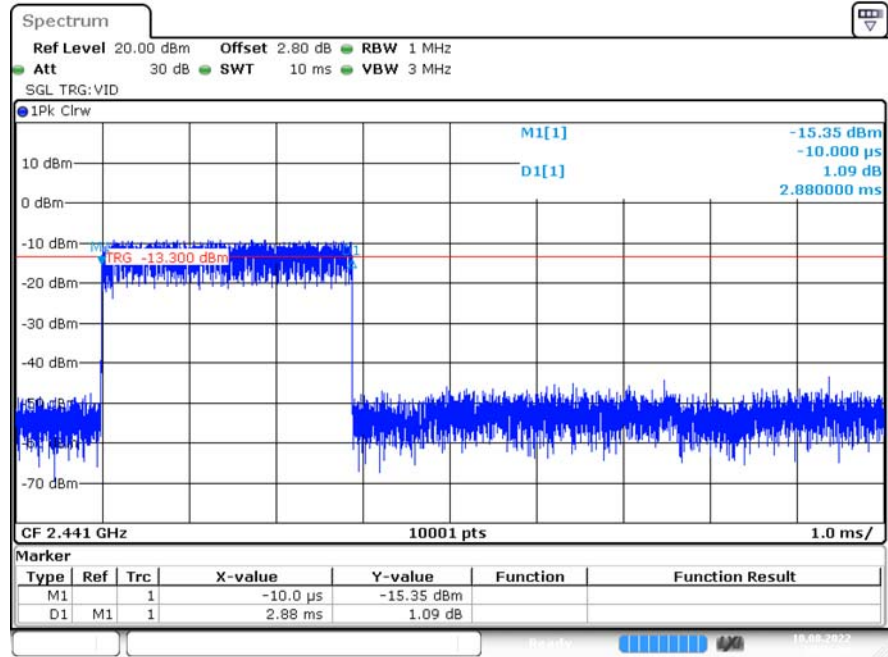
7.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.876	99	284.724	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.88	112	322.56	0.4	Pass

7.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

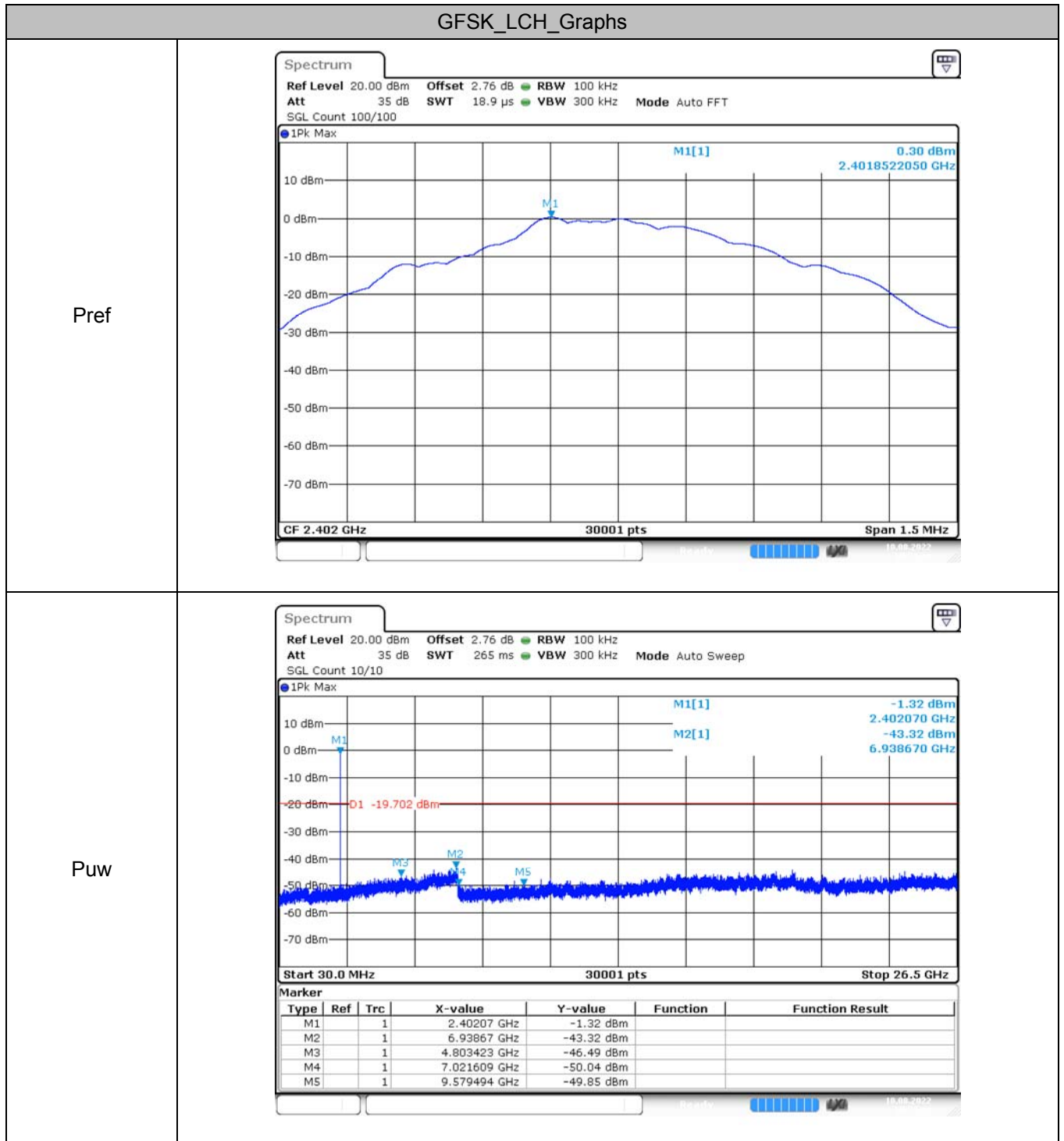


8 RF Conducted Spurious Emissions

8.1 Test Result

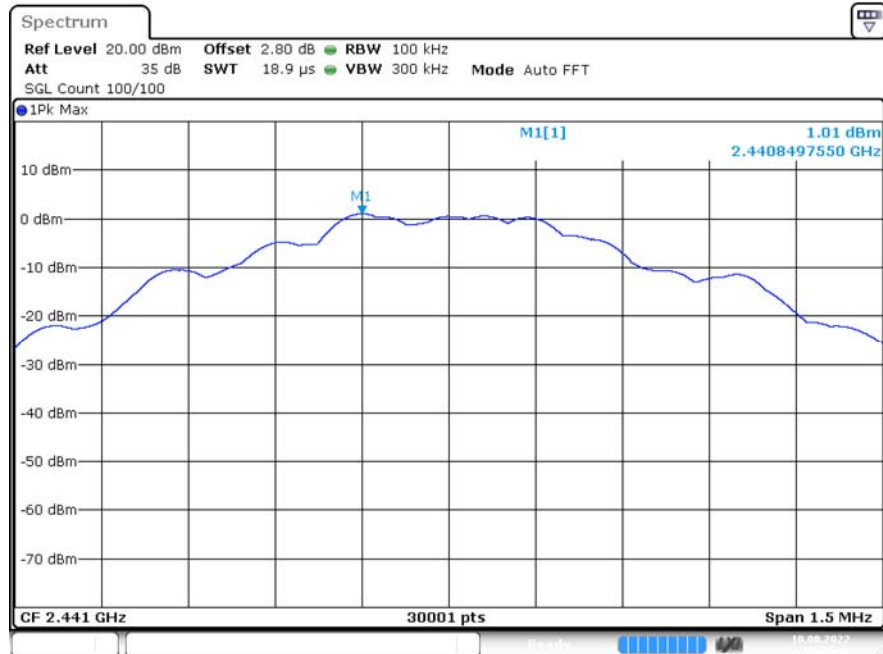
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-43.61	-20	Pass
	MCH	-44.52	-20	Pass
	HCH	-44.1	-20	Pass
$\pi/4$ DQPSK	LCH	-44.36	-20	Pass
	MCH	-44.83	-20	Pass
	HCH	-44.85	-20	Pass

8.2 Test Graphs

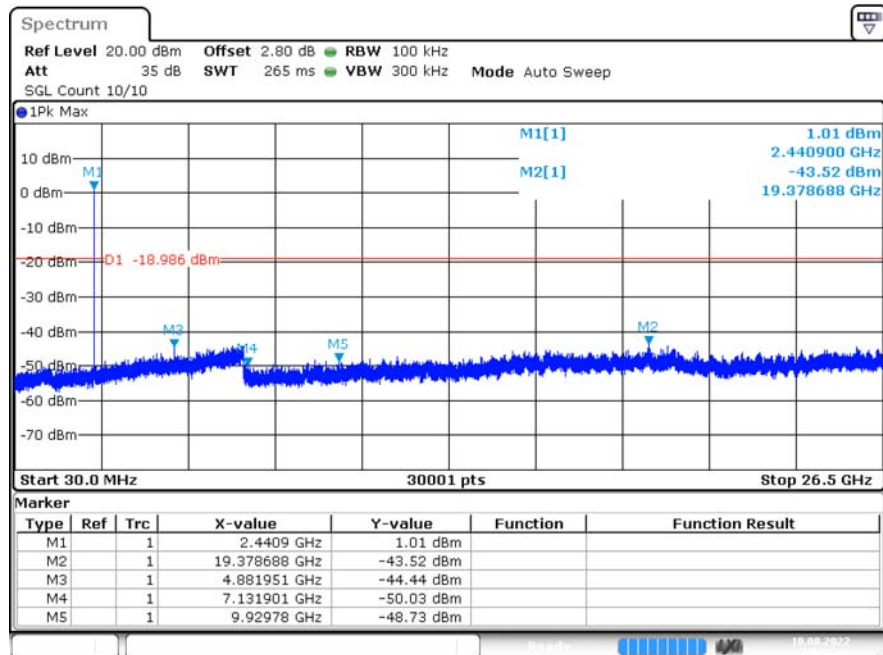


GFSK_MCH_Graphs

Pref

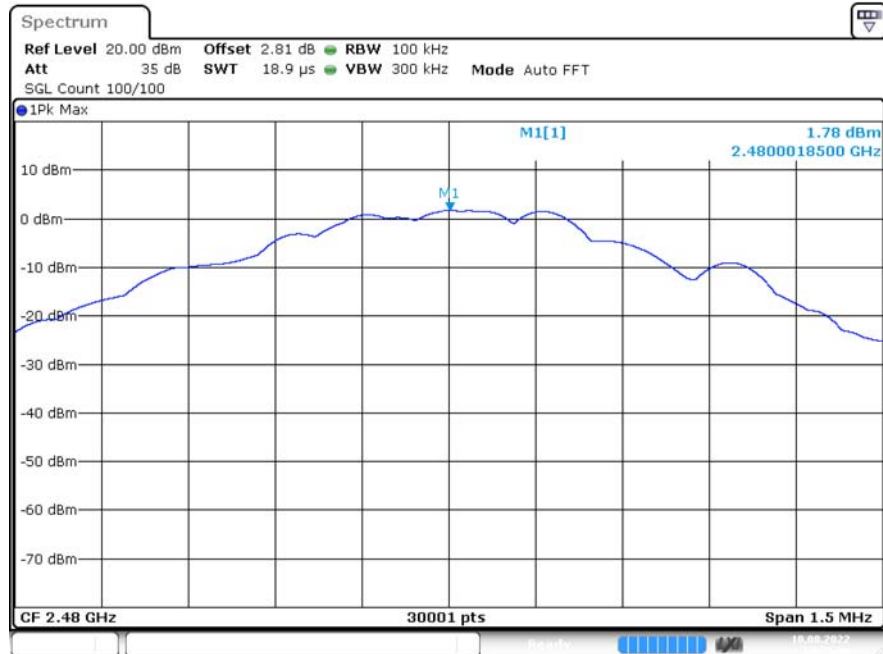


Puw

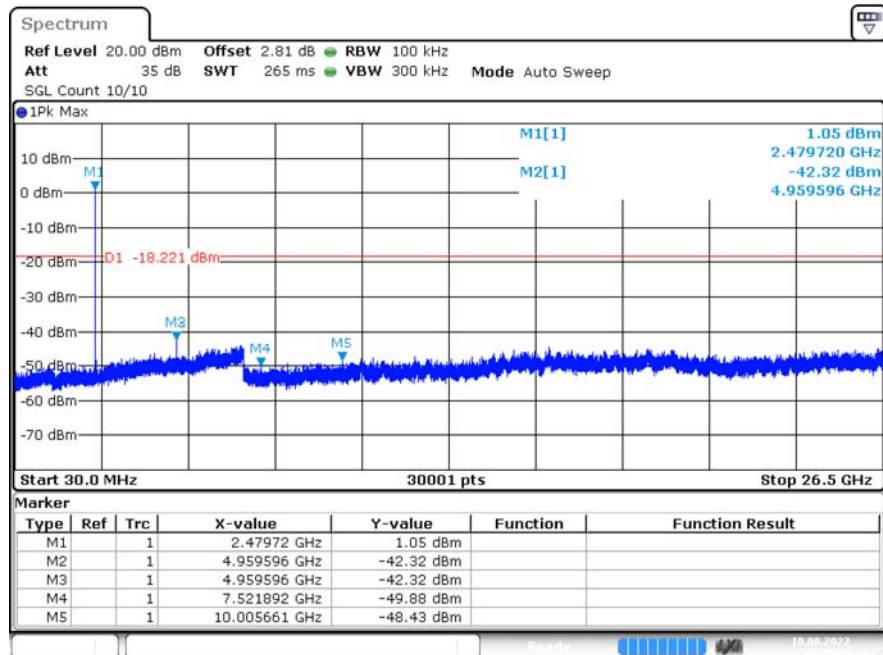


GFSK_HCH_Graphs

Pref

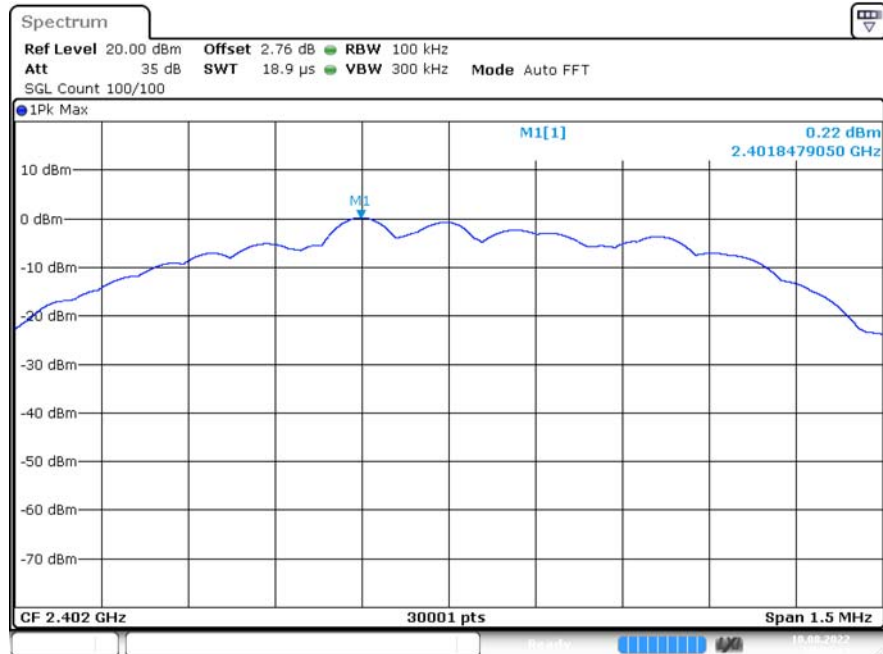


Puw

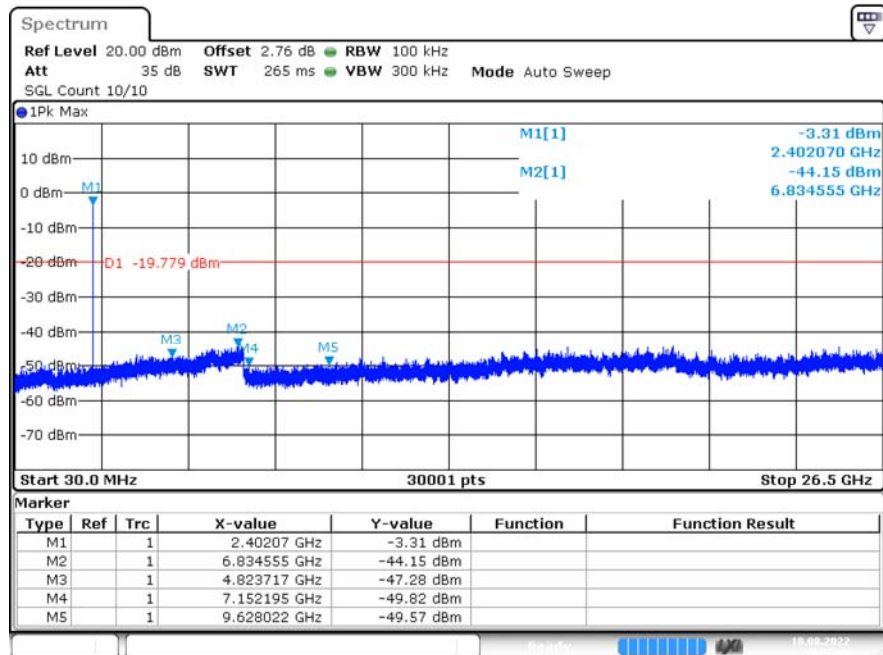


$\pi/4$ DQPSK_LCH_Graphs

Pref

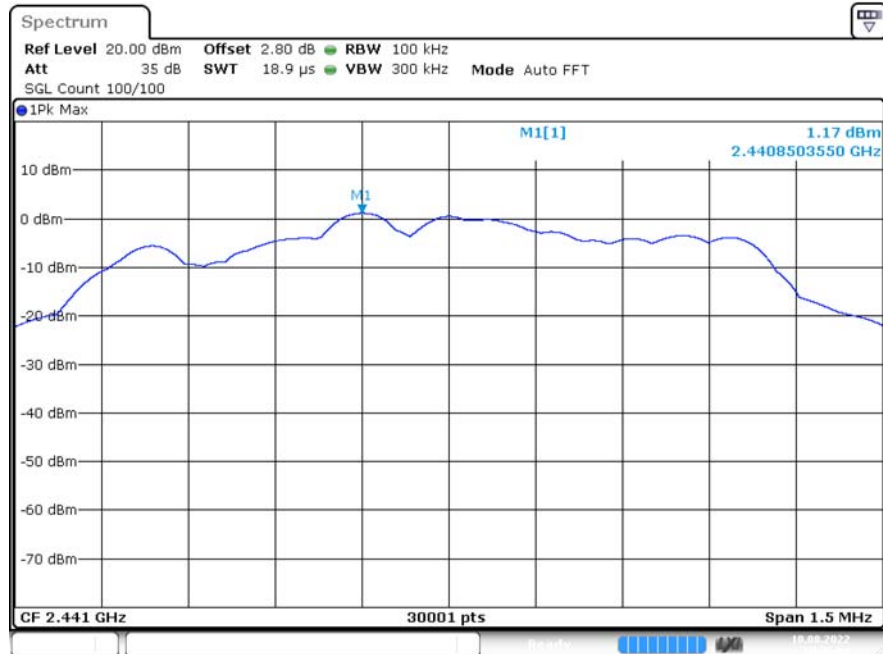


Puw

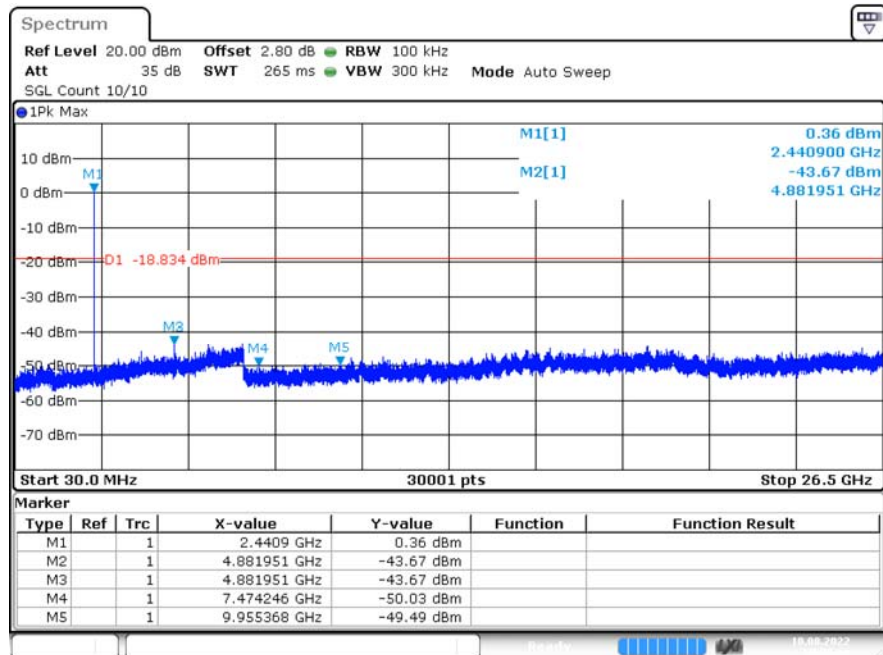


$\pi/4$ DQPSK_MCH_Graphs

Pref

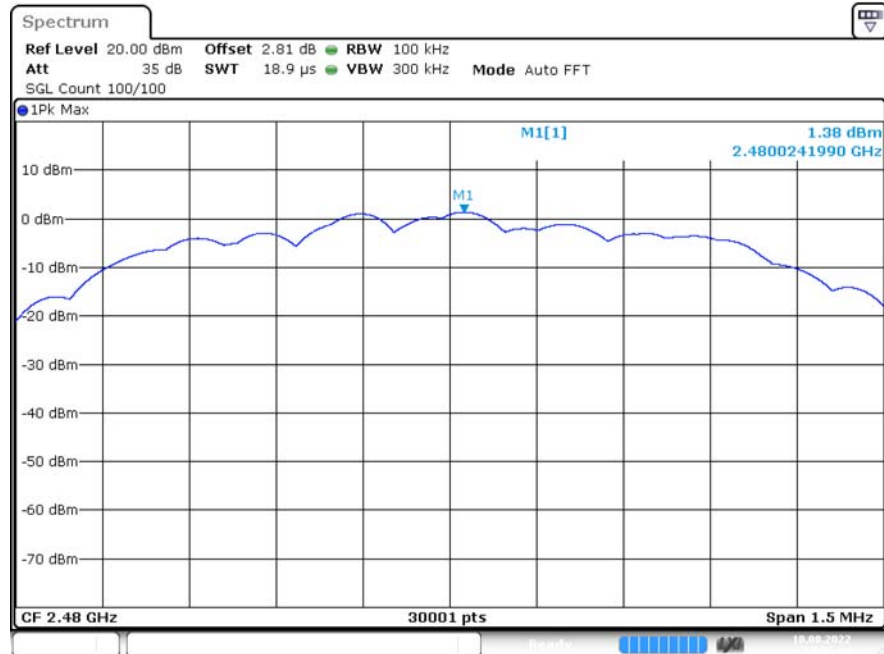


Puw

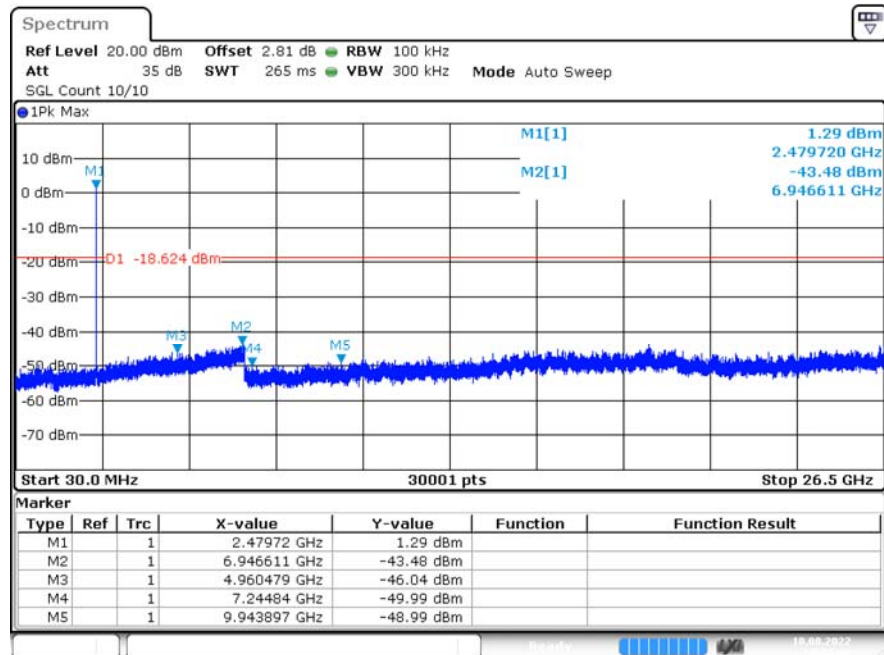


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

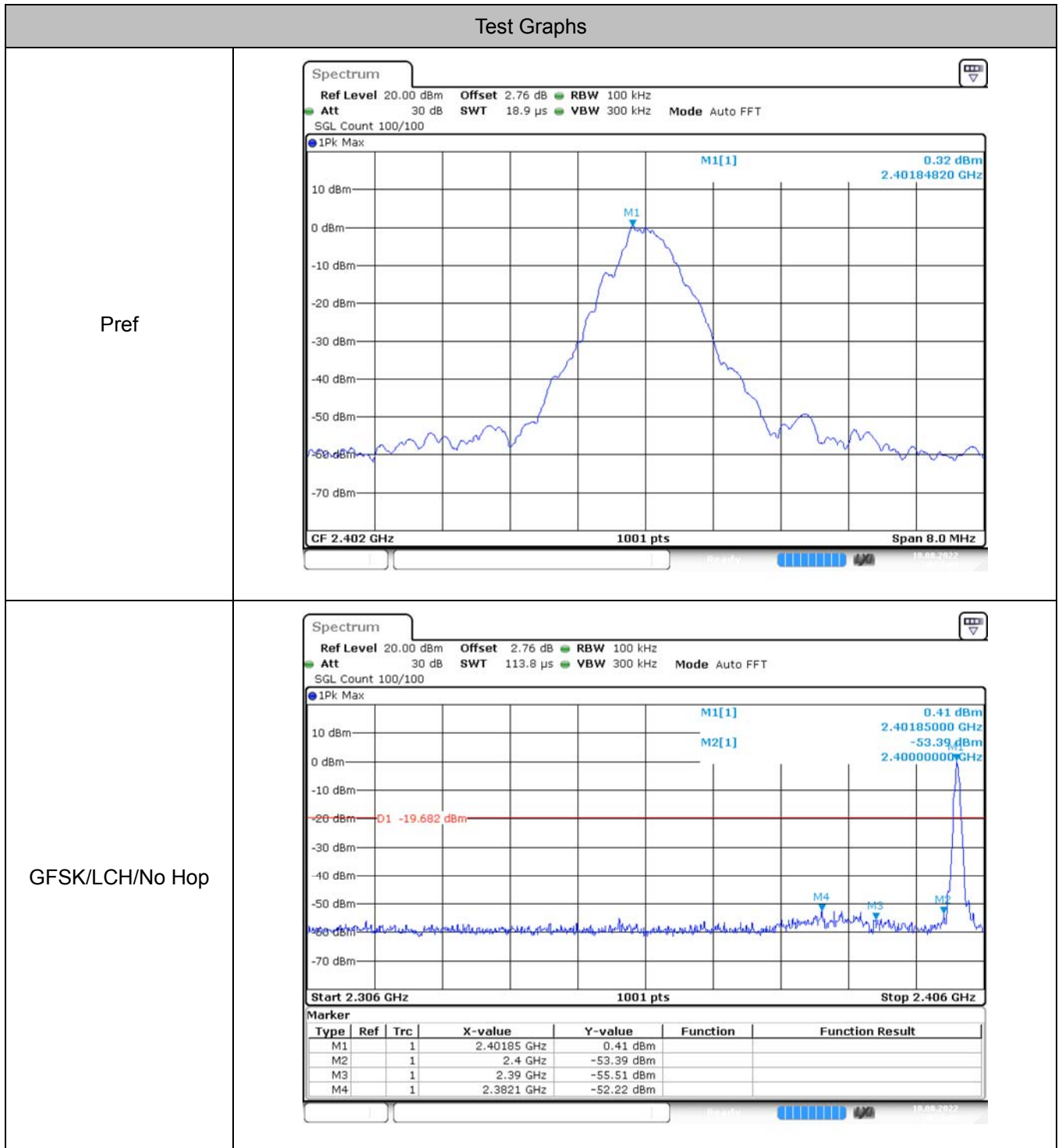


9 Band-edge for RF Conducted Emissions

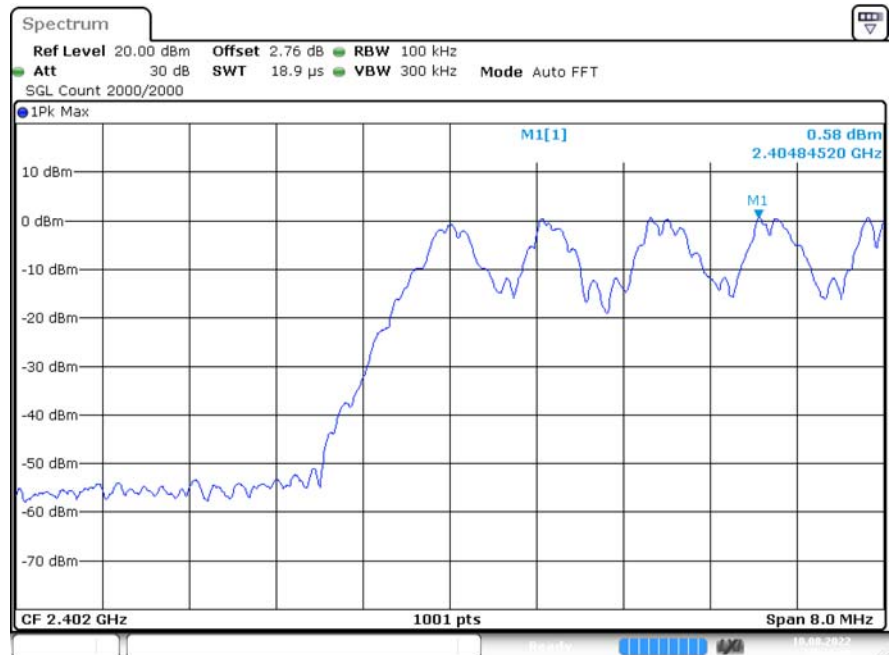
9.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-52.54	-20	Pass
			On	-53.55	-20	Pass
	HCH	2480	Off	-54.33	-20	Pass
			On	-52.55	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-51.4	-20	Pass
			On	-53.63	-20	Pass
	HCH	2480	Off	-53.37	-20	Pass
			On	-52.61	-20	Pass

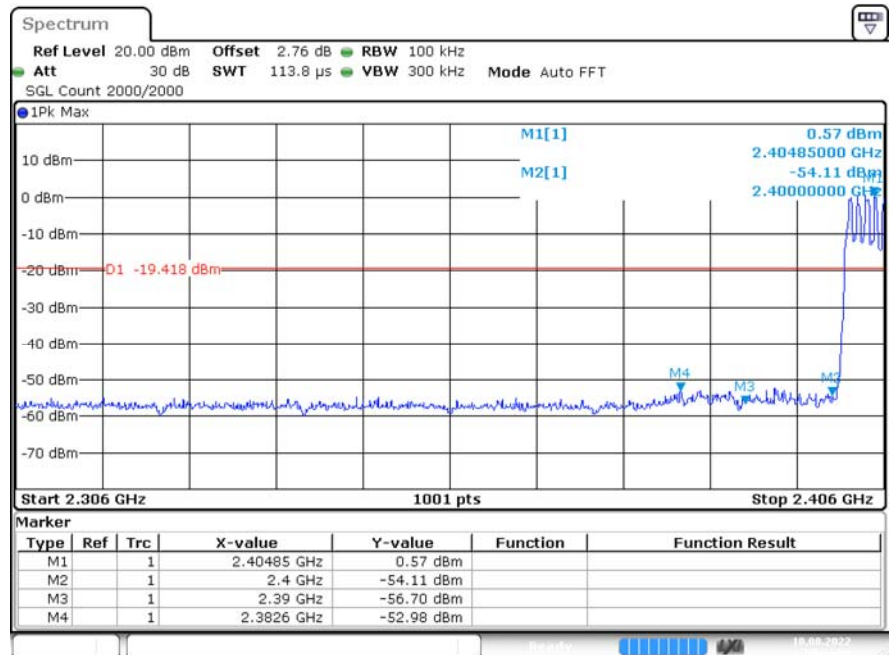
9.2 Test Graphs



Ref



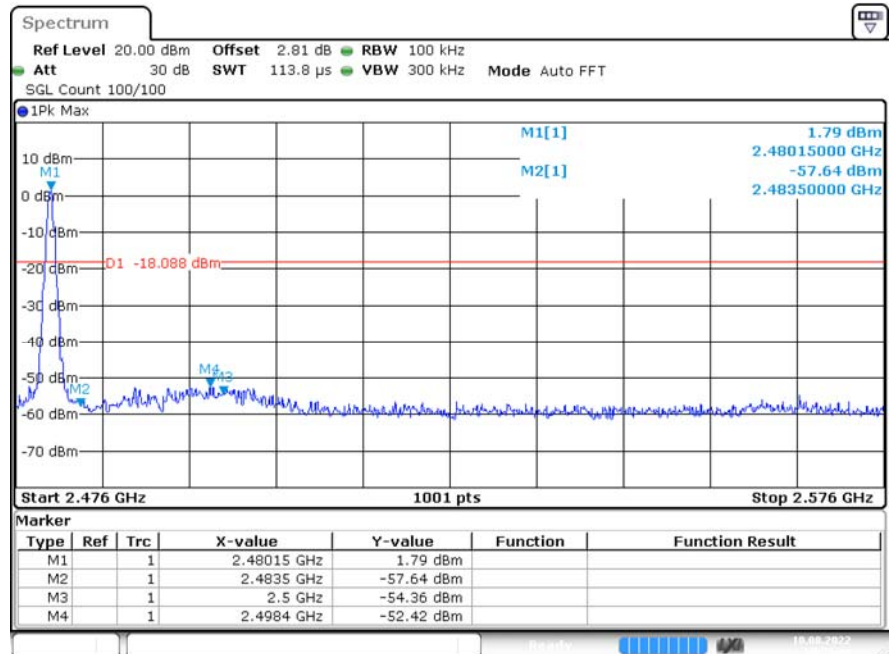
GFSK/LCH/Hop



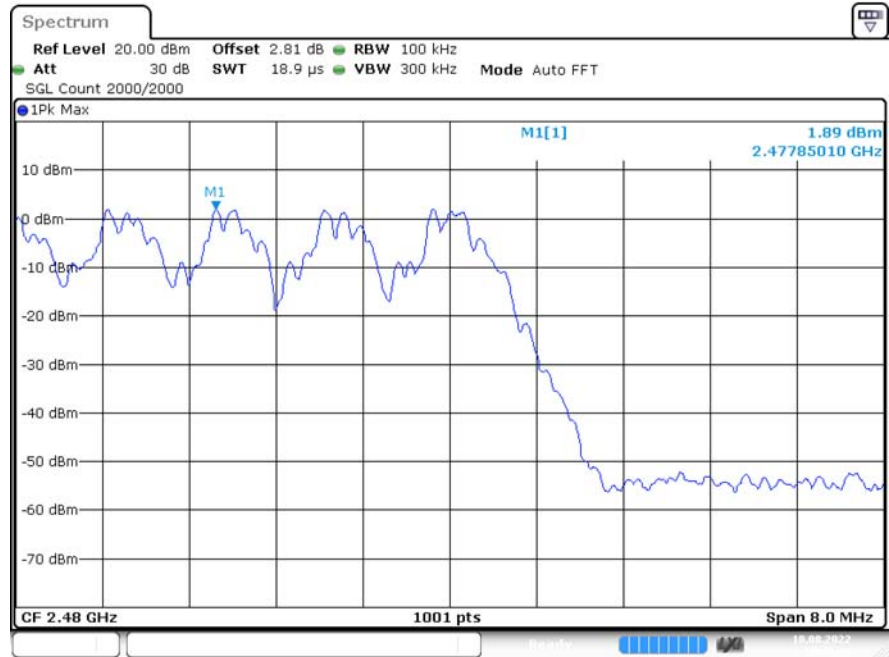
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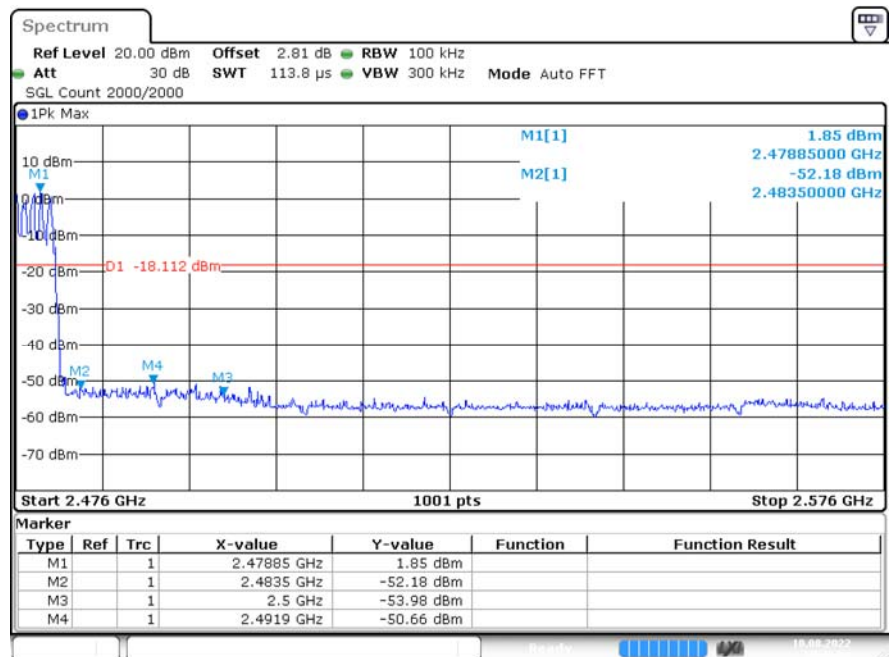
GFSK/HCH/No Hop



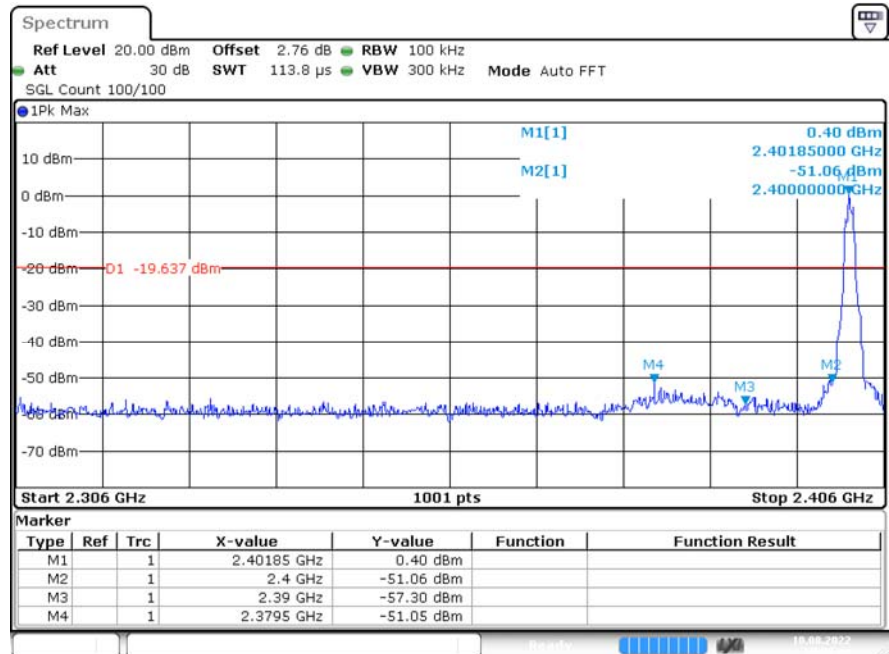
Ref.



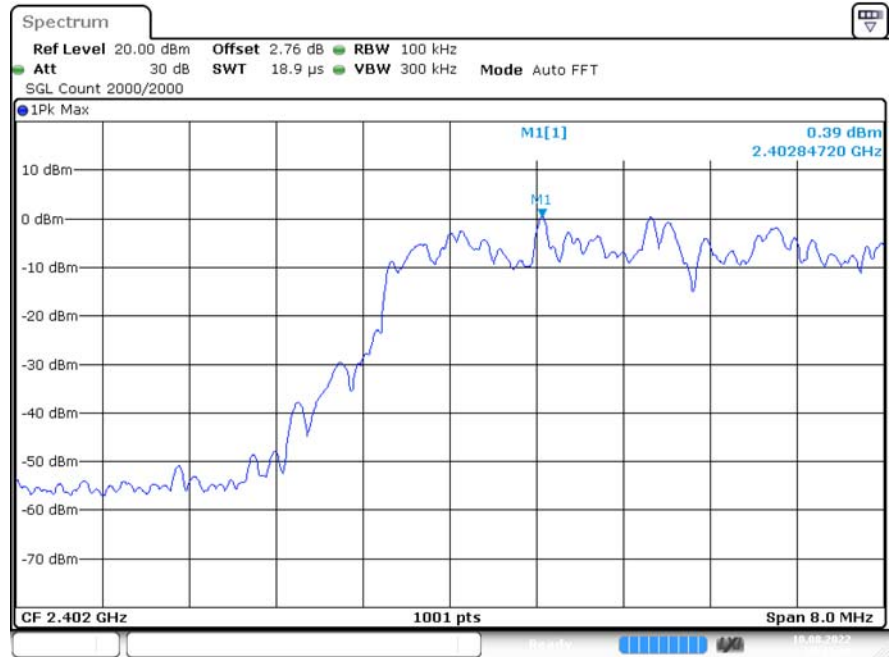
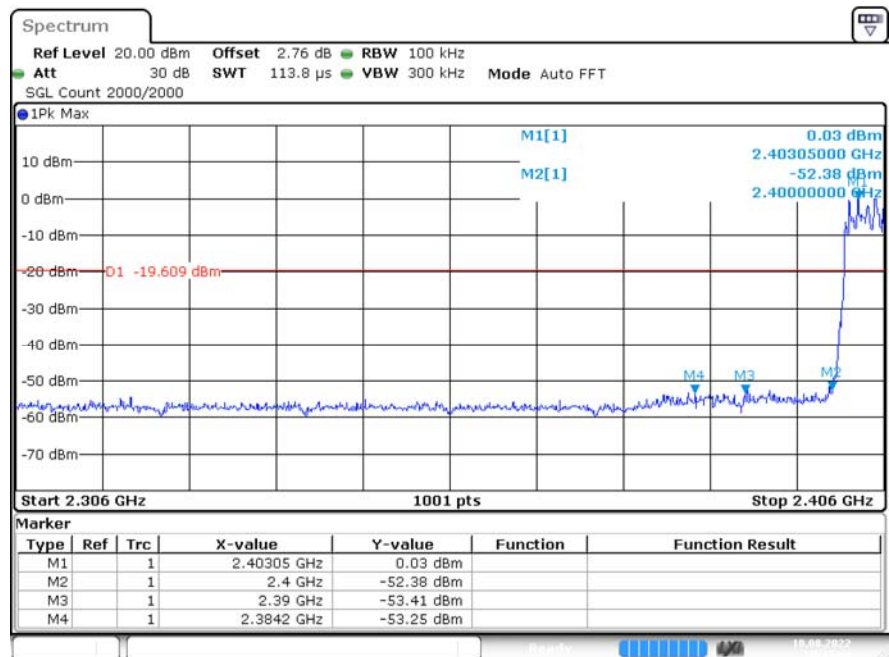
GFSK/HCH/Hop



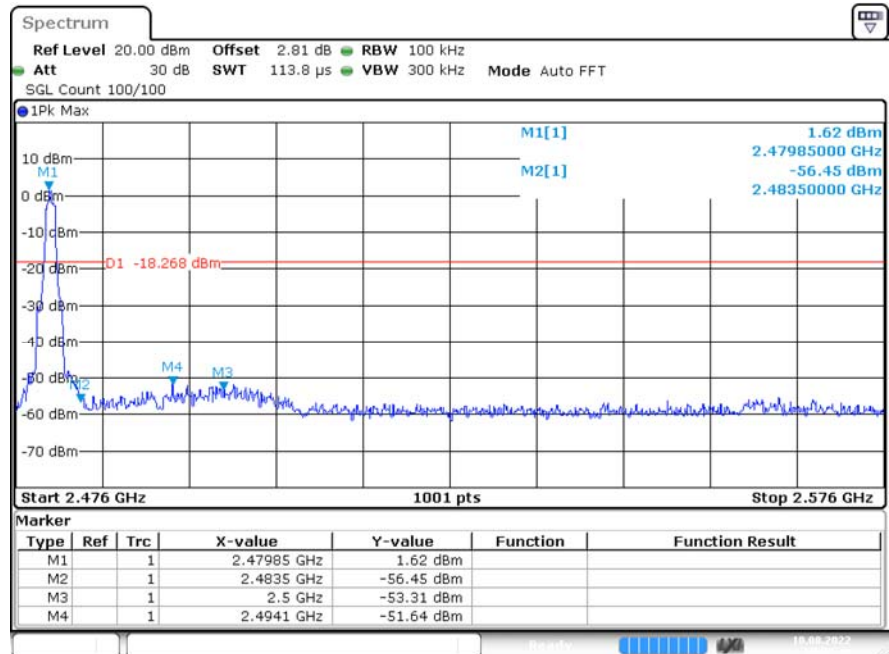
Ref


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


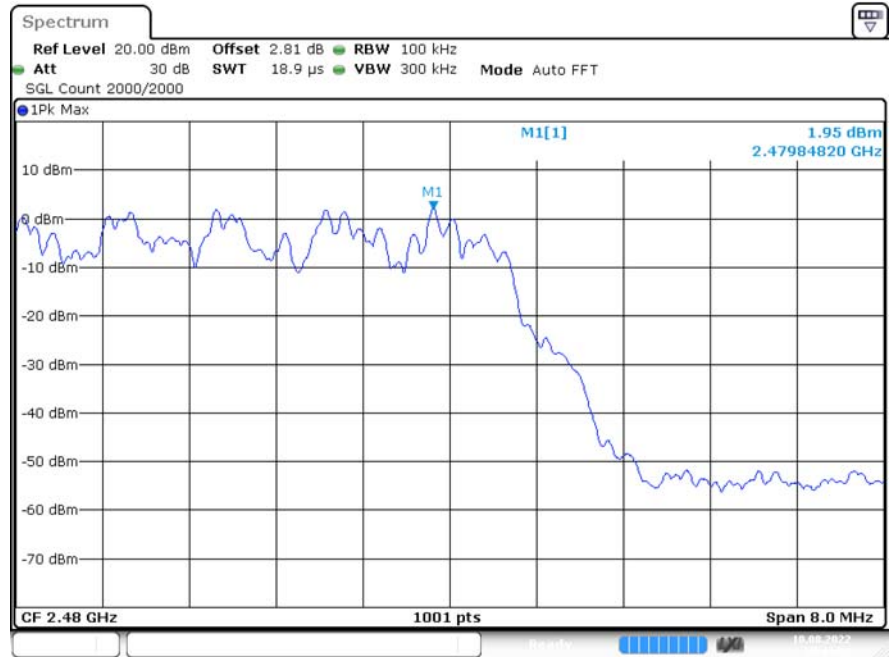
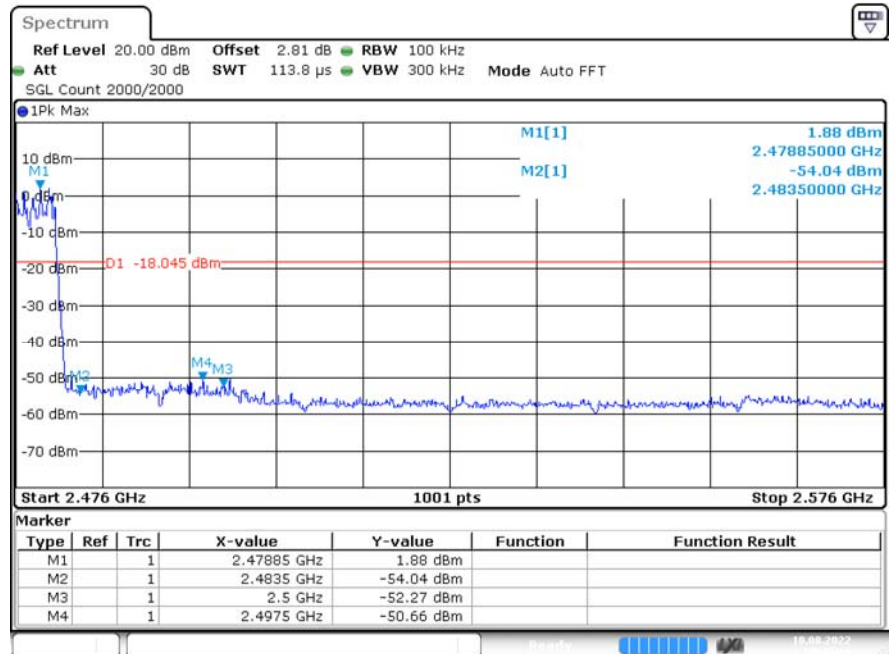
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


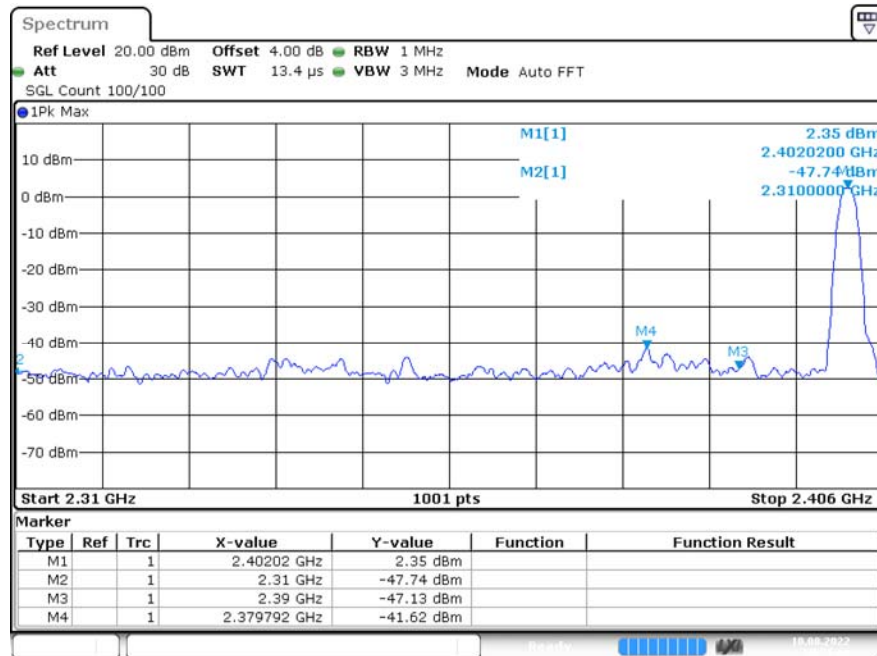
10 Restrict-band band-edge measurements

10.1 Test Result

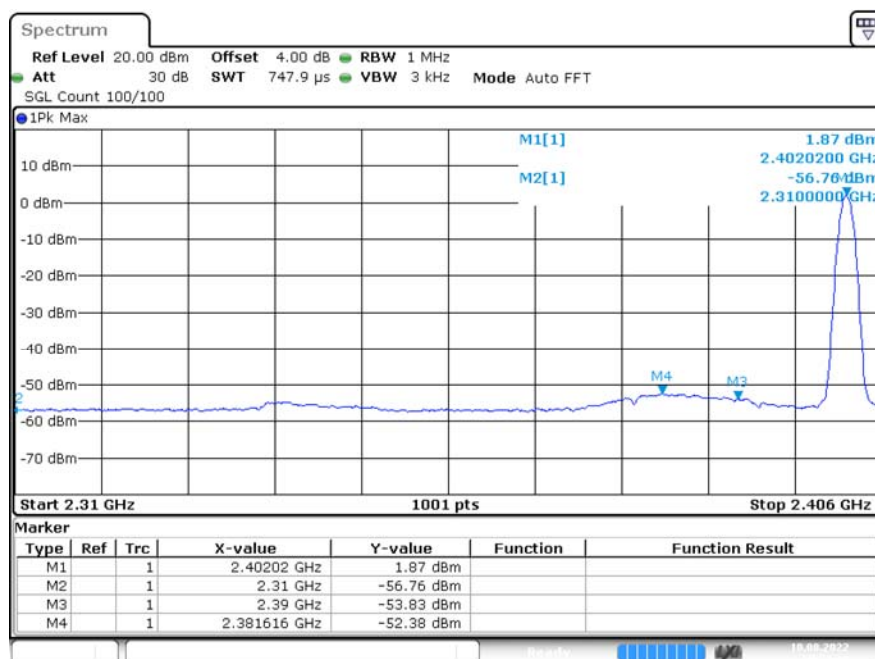
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-47.73	2	49.53	PEAK	74	Pass
	Off	2310.0	-56.76	2	40.5	AV	54	Pass
	Off	2379.792	-41.61	2	55.65	PEAK	74	Pass
	Off	2381.616	-52.38	2	44.88	AV	54	Pass
	Off	2390.0	-47.13	2	50.13	PEAK	74	Pass
	Off	2390.0	-53.83	2	43.43	AV	54	Pass
	Off	2483.5	-45.1	2	52.16	PEAK	74	Pass
	Off	2483.5	-54.56	2	42.7	AV	54	Pass
	Off	2500	-42.17	2	55.09	PEAK	74	Pass
	Off	2497.312	-50.75	2	46.51	AV	54	Pass
	Off	2500.0	-42.17	2	55.09	PEAK	74	Pass
	Off	2500.0	-50.88	2	46.38	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-49.34	2	47.92	PEAK	74	Pass
	Off	2310.0	-56.84	2	40.42	AV	54	Pass
	Off	2385.36	-42.34	2	54.92	PEAK	74	Pass
	Off	2383.344	-51.85	2	45.41	AV	54	Pass
	Off	2390.0	-44.79	2	52.47	PEAK	74	Pass
	Off	2390.0	-54.39	2	42.87	AV	54	Pass
	Off	2483.5	-45.54	2	51.72	PEAK	74	Pass
	Off	2483.5	-54.69	2	42.57	AV	54	Pass
	Off	2497.36	-41.09	2	56.17	PEAK	74	Pass
	Off	2496.544	-50.75	2	46.51	AV	54	Pass
	Off	2500.0	-45.17	2	52.09	PEAK	74	Pass
	Off	2500.0	-51.38	2	45.88	AV	54	Pass

10.2 Test Graphs

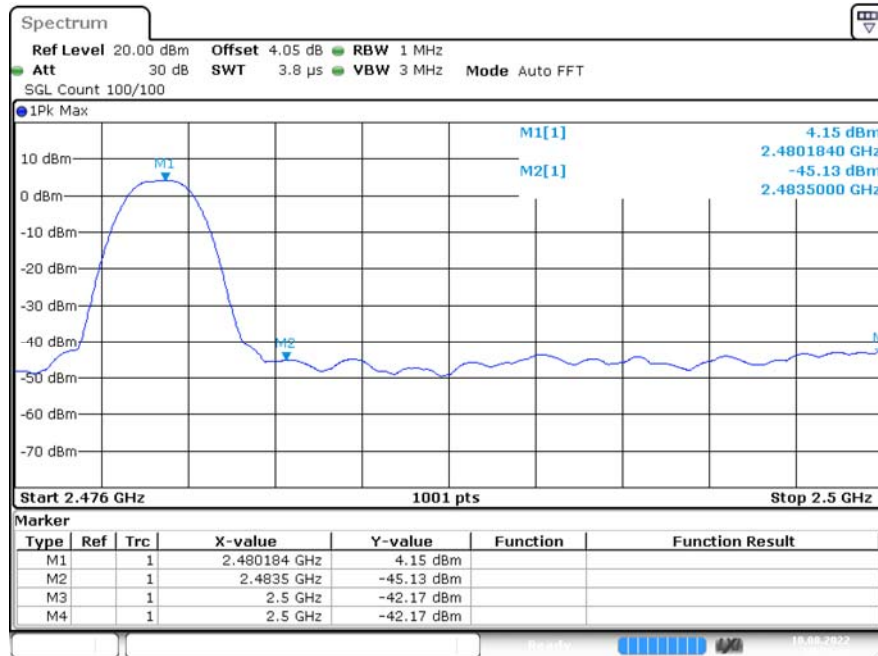
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



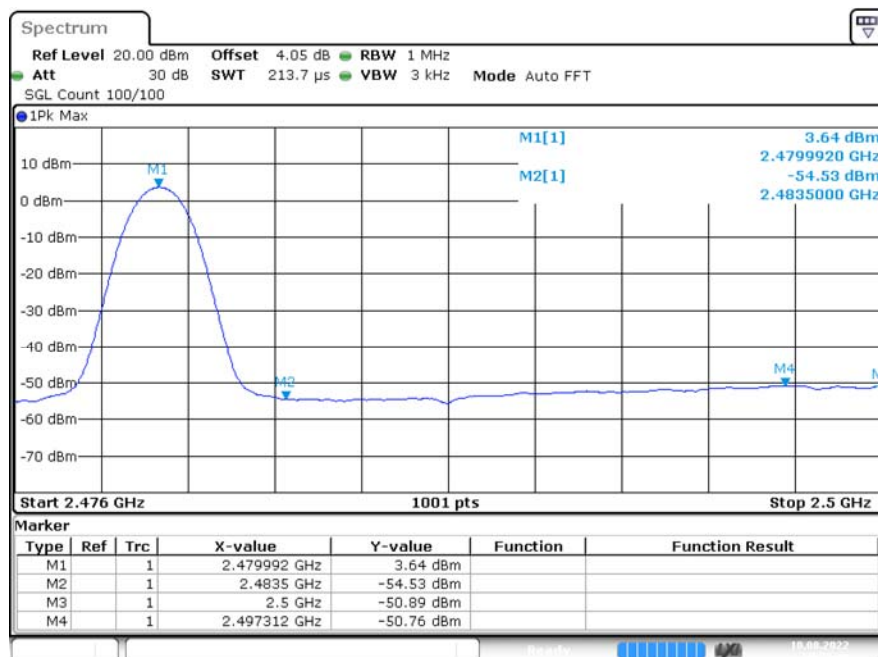
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



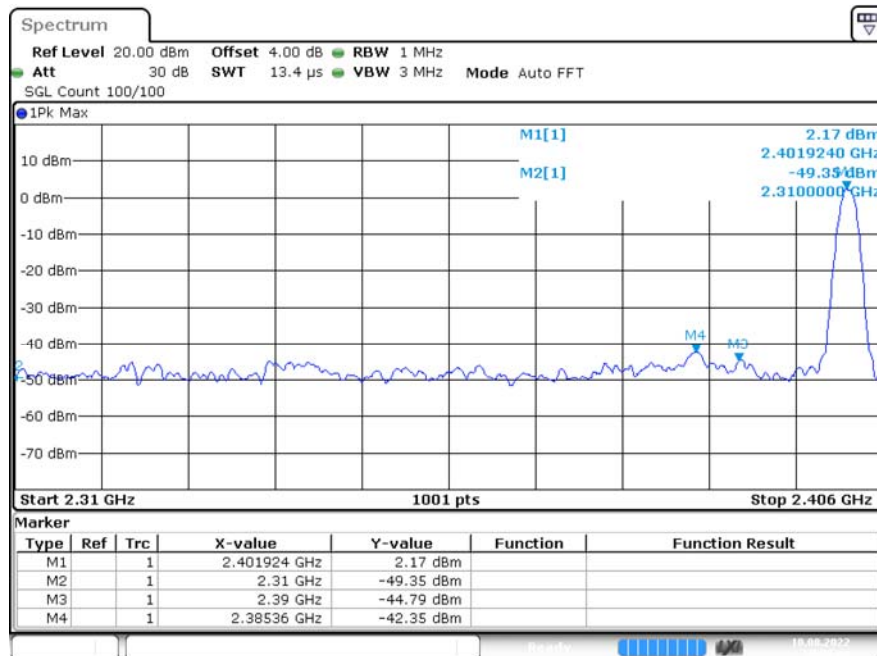
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



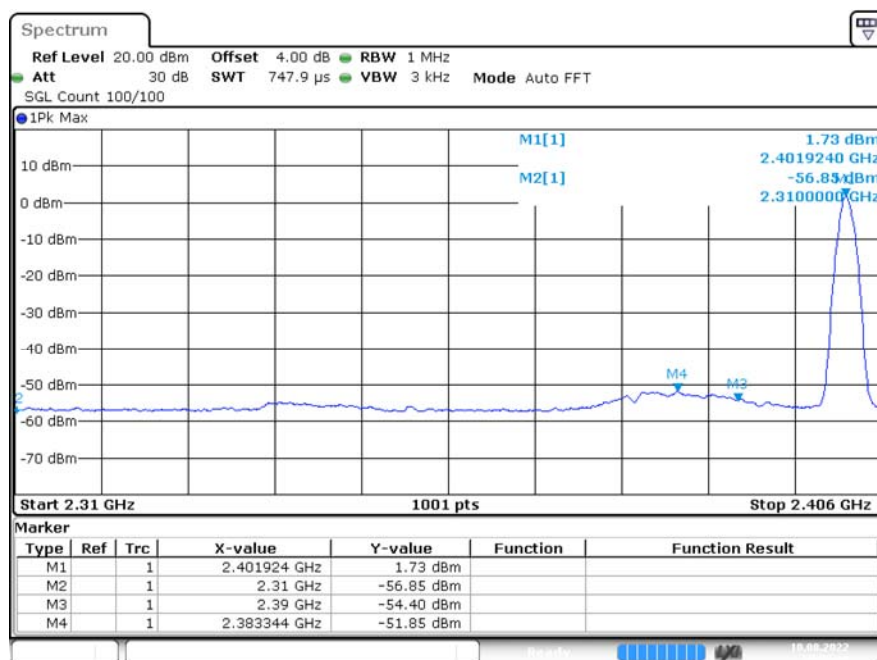
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



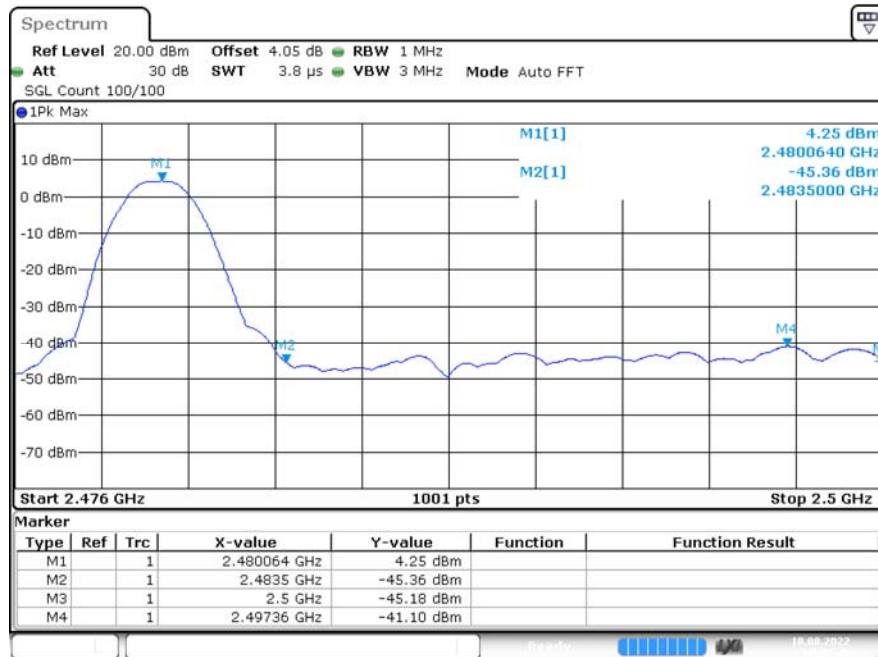
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



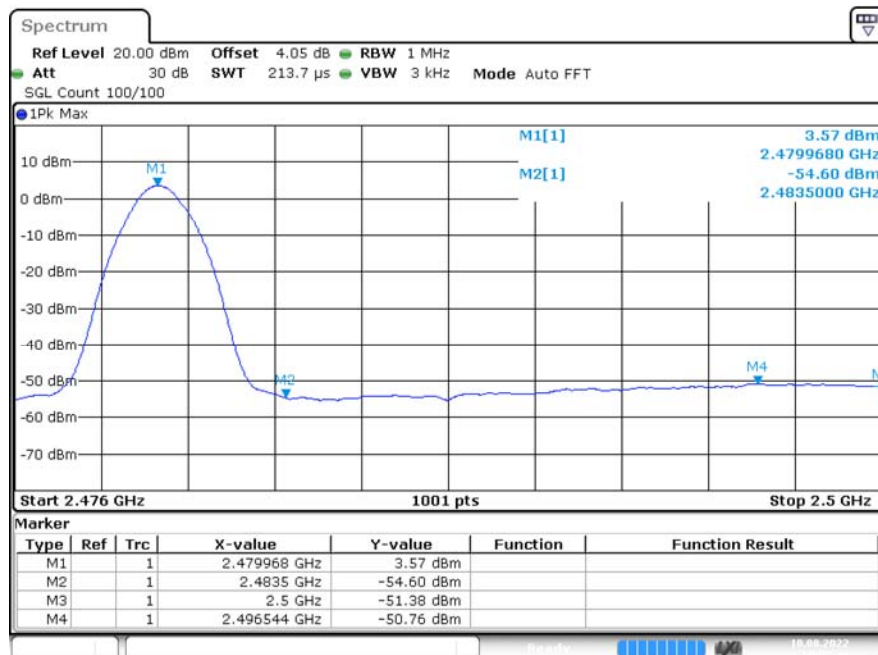
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---