



Appendix A

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

Product Name: PORTABLE PARTY SPEAKER SYSTEM

Trade Mark: borne

Test Model: BTSPK145

Environmental Conditions

Temperature:	23.5℃
Relative Humidity:	51.6%
ATM Pressure:	101Kpa
Test Engineer:	Emiya Lin
Supervised by:	Simba Huang



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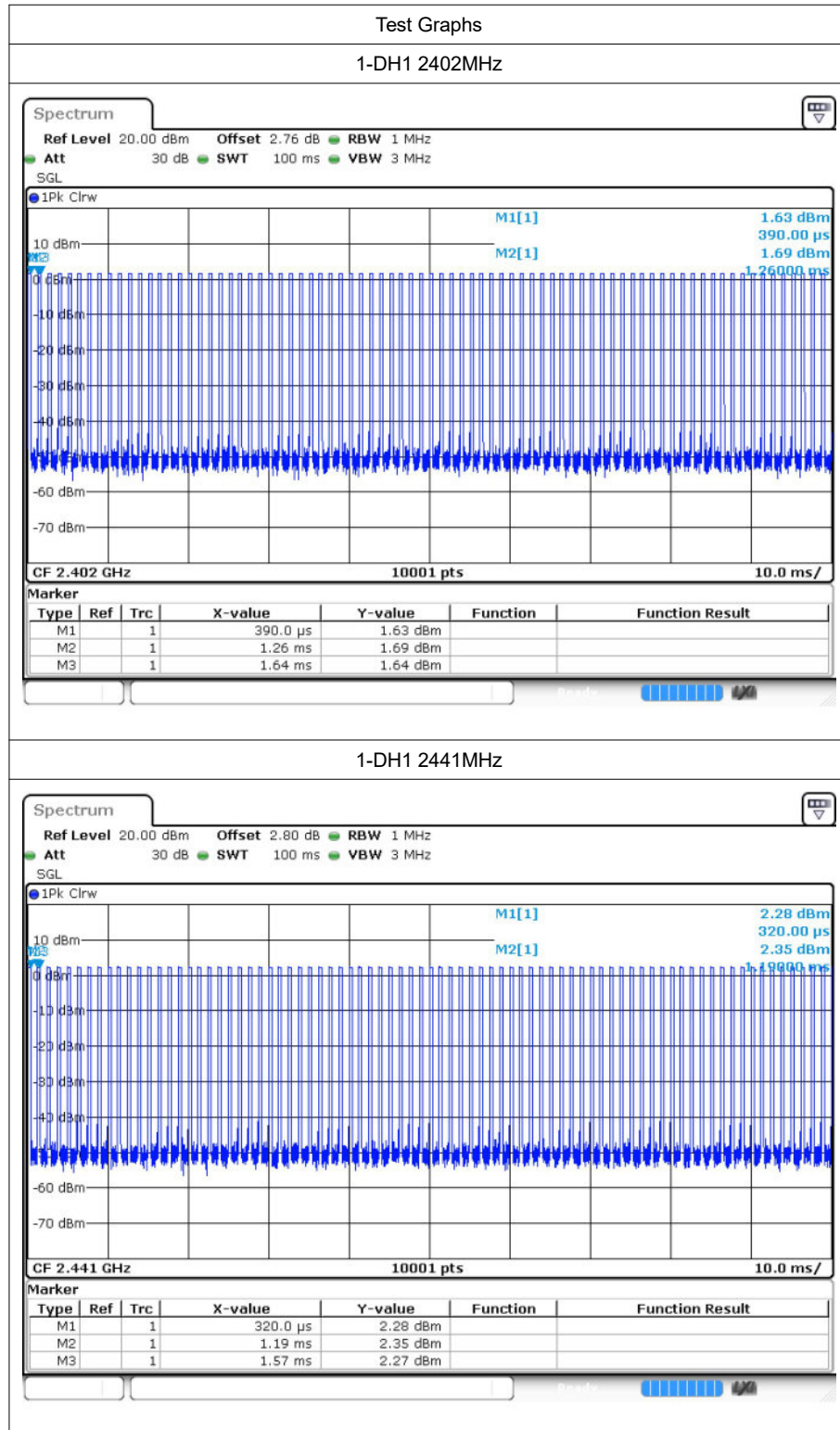
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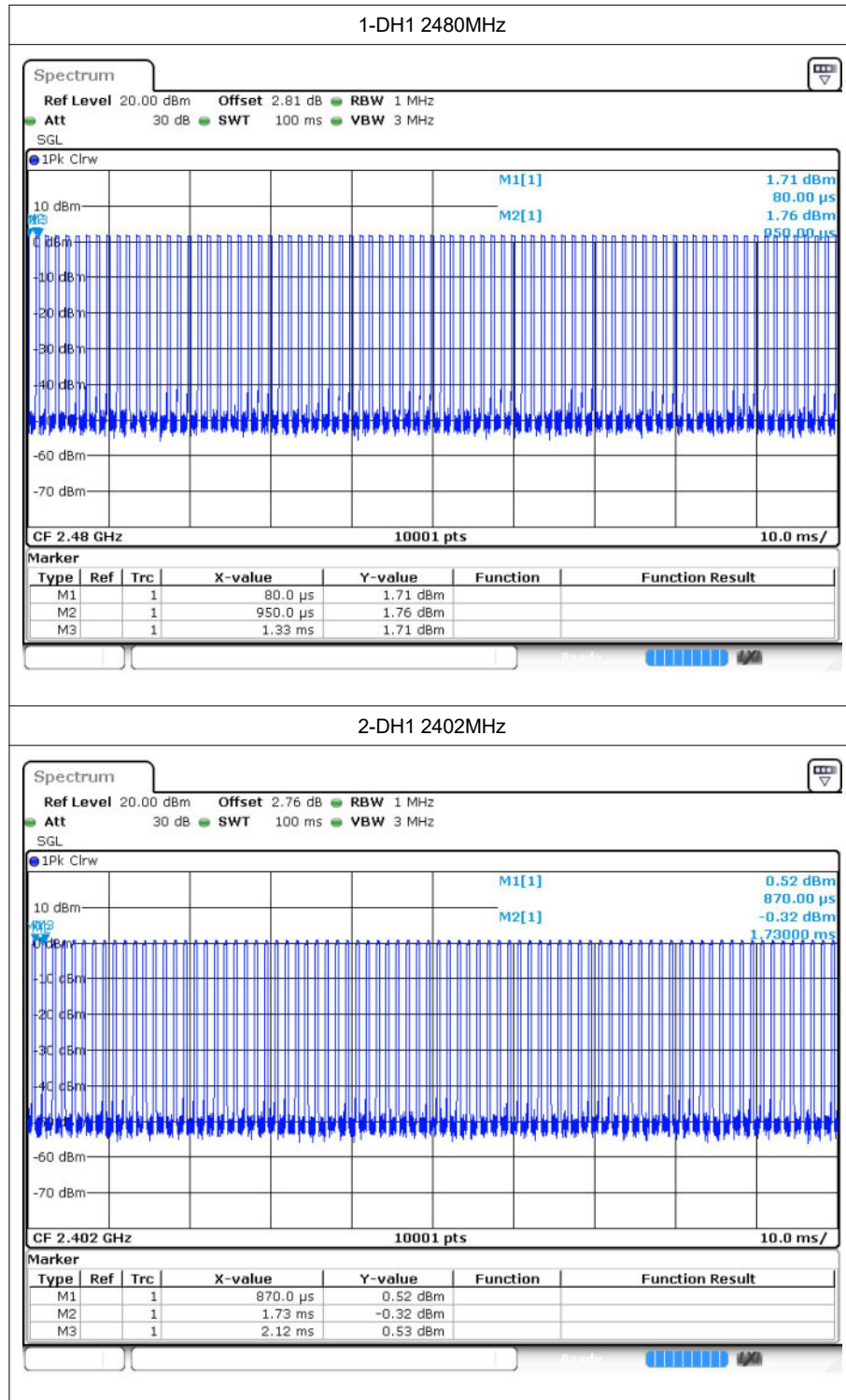
1 Duty Cycle

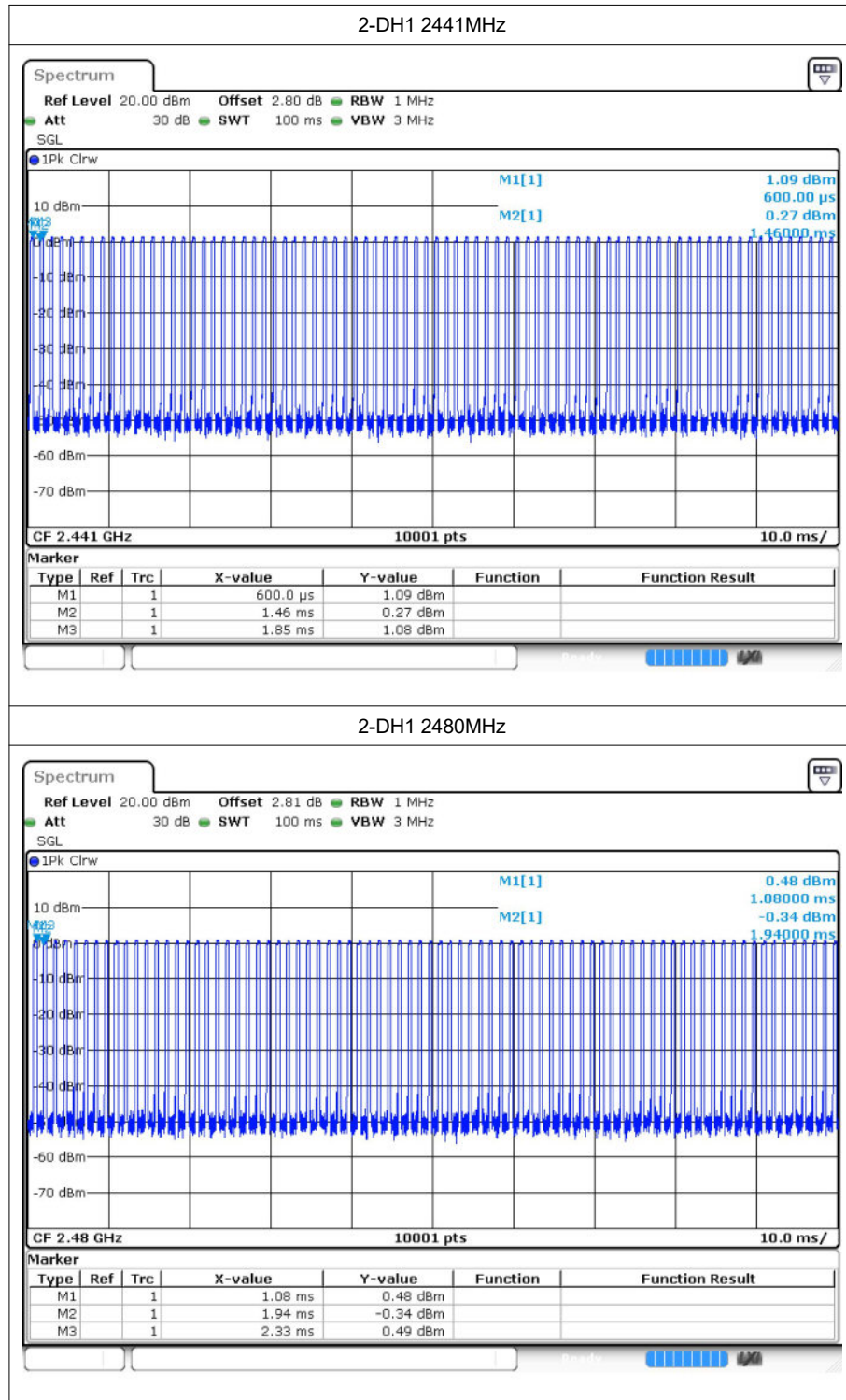
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.2	5.06	2.63
1-DH1	2441	31.28	5.05	2.63
1-DH1	2480	31.21	5.06	2.63
2-DH1	2402	32	4.95	2.56
2-DH1	2441	32	4.95	2.56
2-DH1	2480	32	4.95	2.56

1.2 Test Graphs





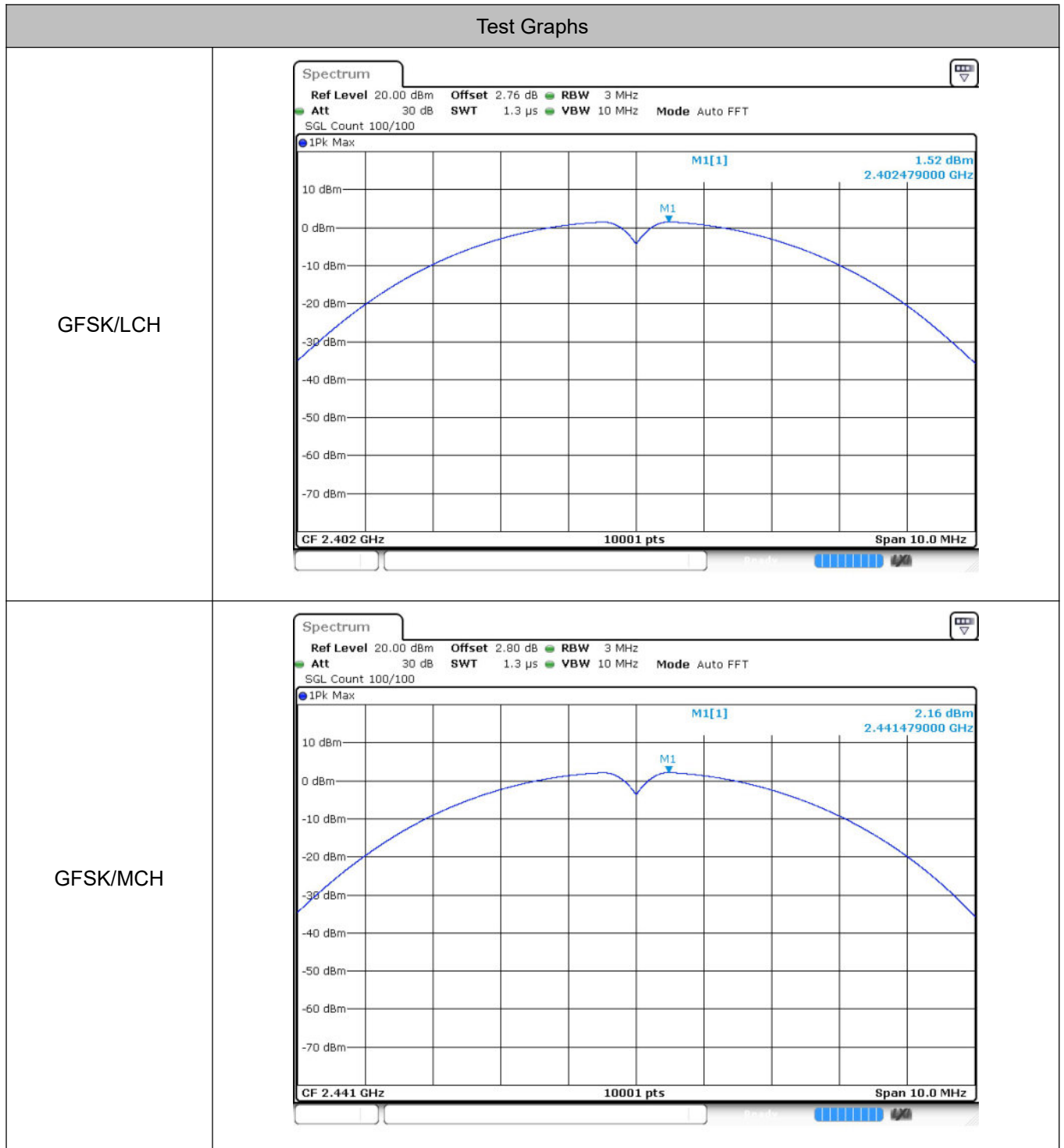


2 Maximum Conducted Peak Output Power

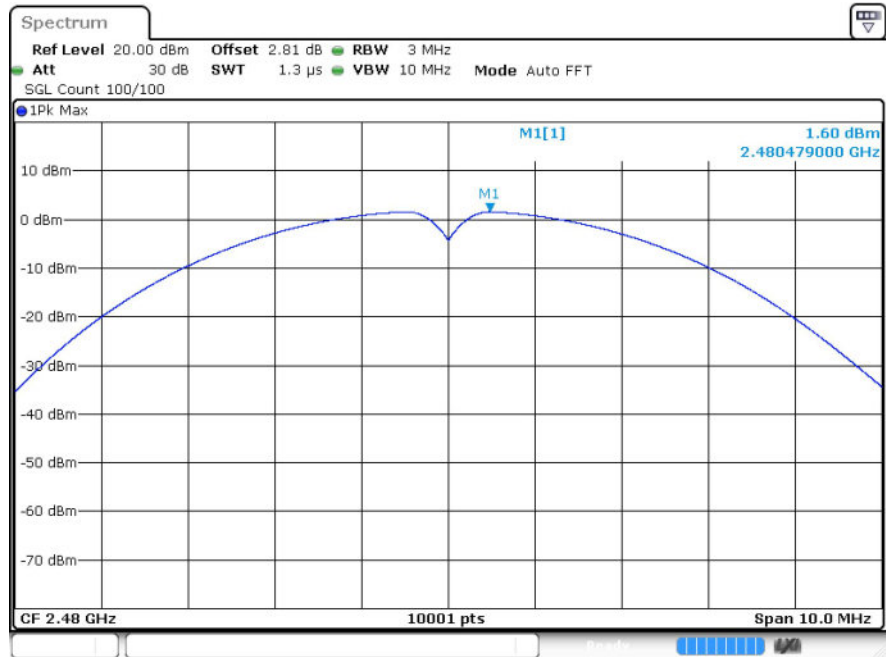
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.52	21	Pass
	MCH	2.16	21	Pass
	HCH	1.6	21	Pass
$\pi/4$ DQPSK	LCH	1.58	21	Pass
	MCH	2.28	21	Pass
	HCH	1.73	21	Pass

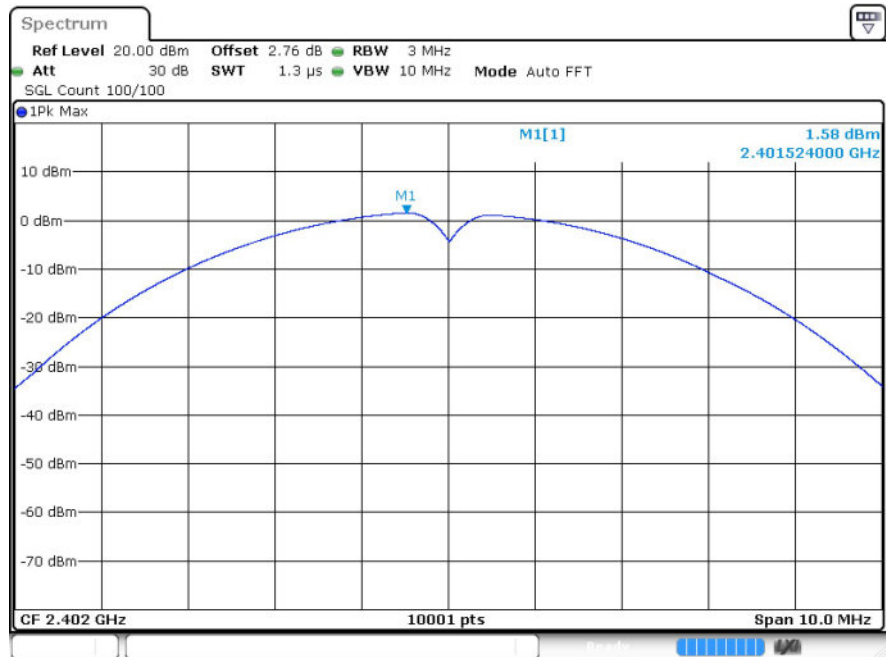
2.2 Test Graphs



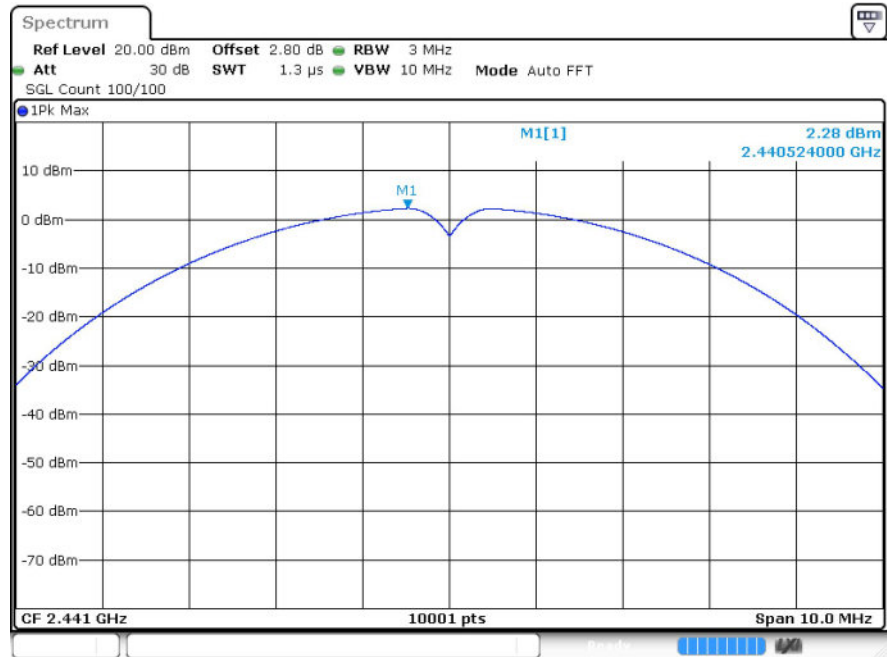
GFSK/HCH



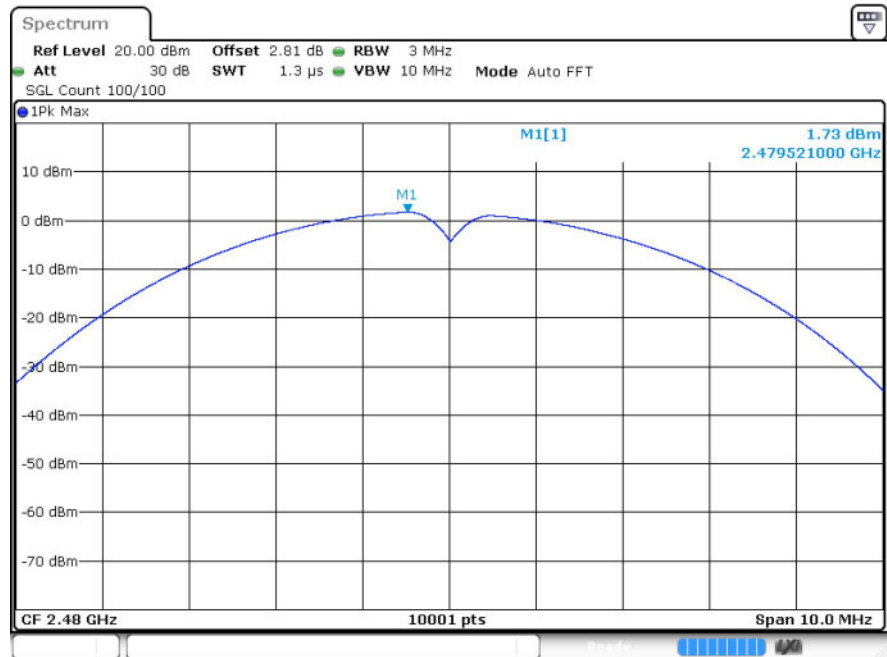
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

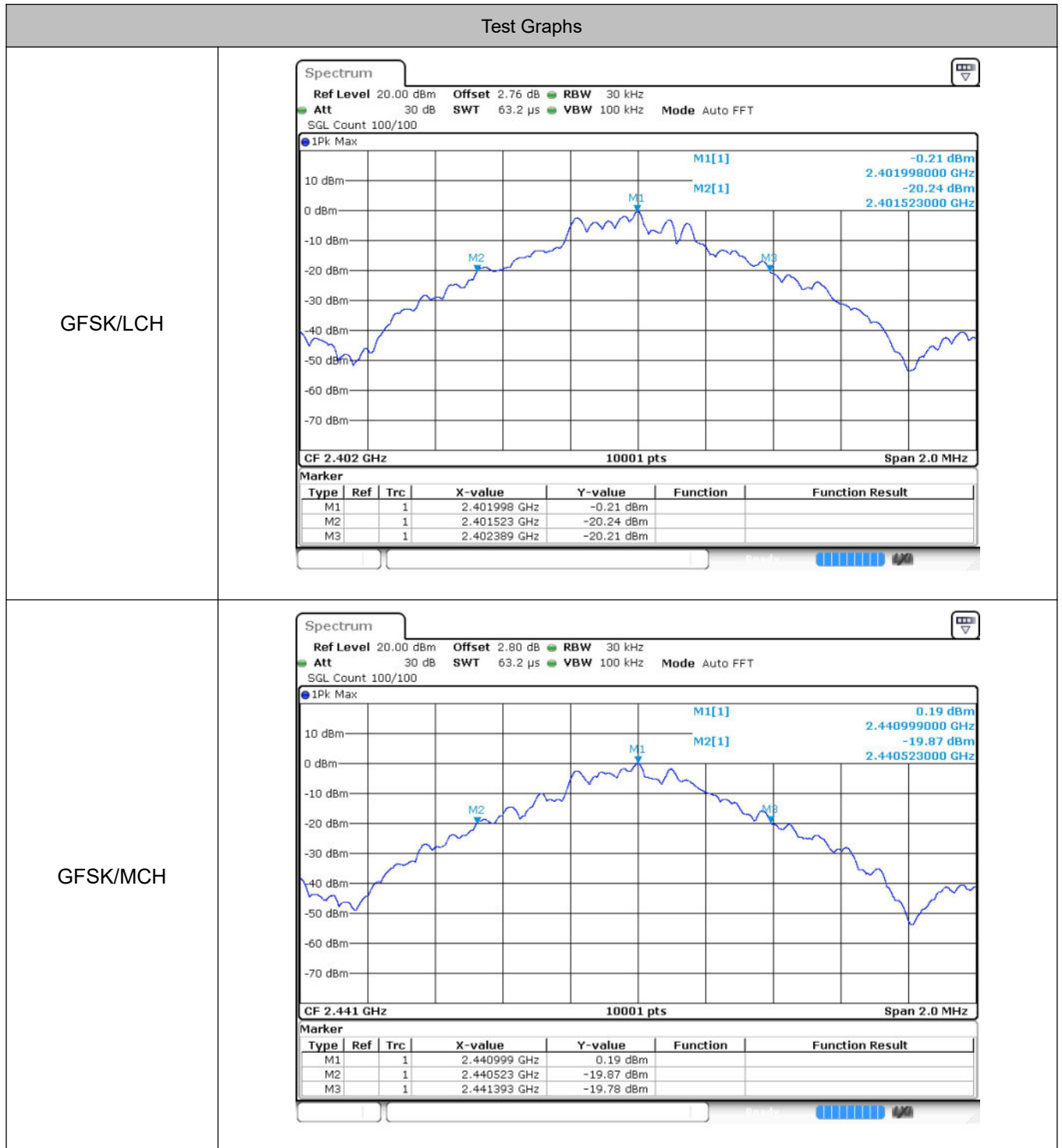


3 20dB Bandwidth

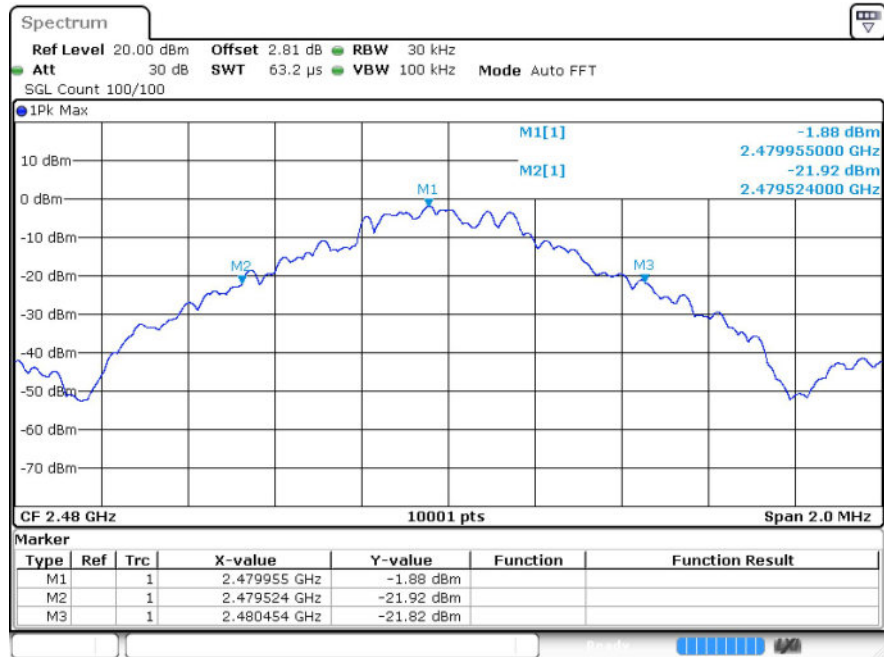
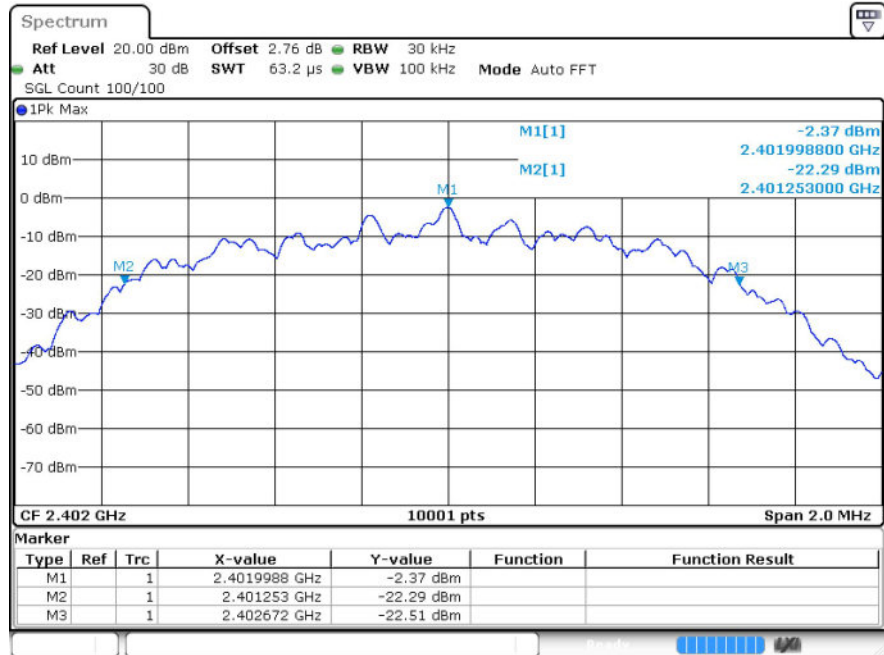
3.1 Test Result

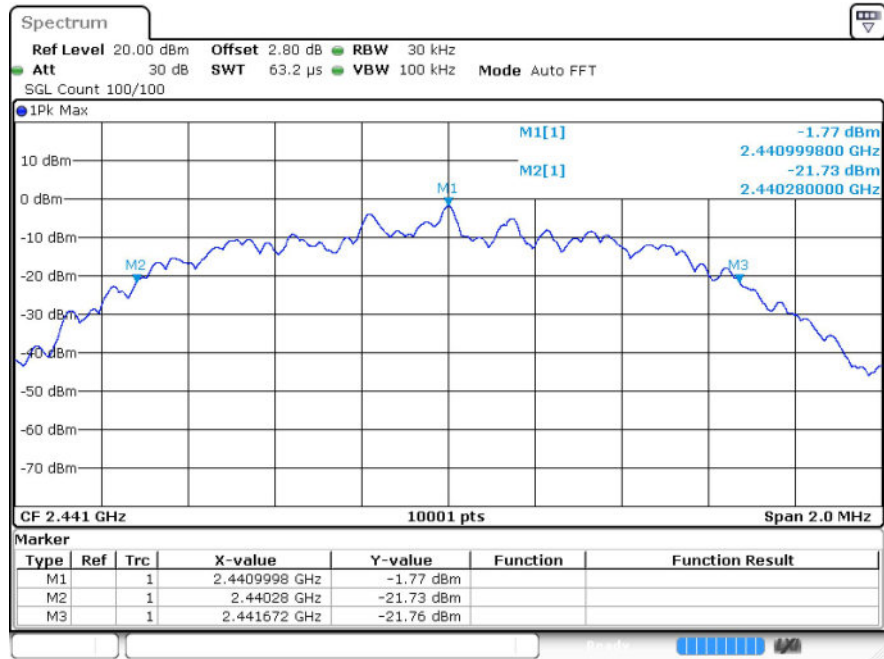
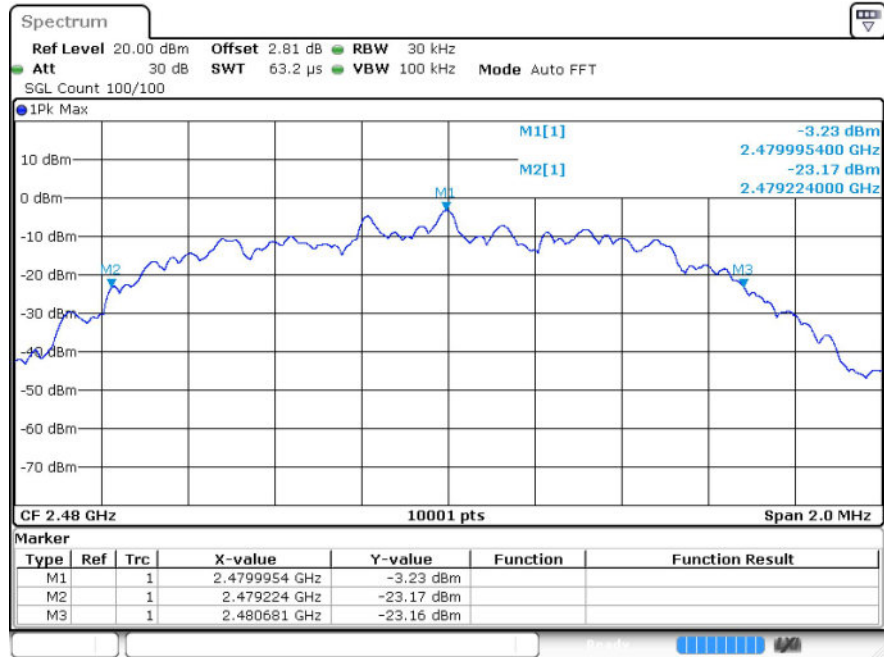
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.866	Not Specified	Pass
	MCH	0.87	Not Specified	Pass
	HCH	0.93	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.419	Not Specified	Pass
	MCH	1.392	Not Specified	Pass
	HCH	1.458	Not Specified	Pass

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	1.003	0.58	Pass
$\pi/4$ DQPSK	MCH	0.991	0.928	Pass

4.2 Test Graphs

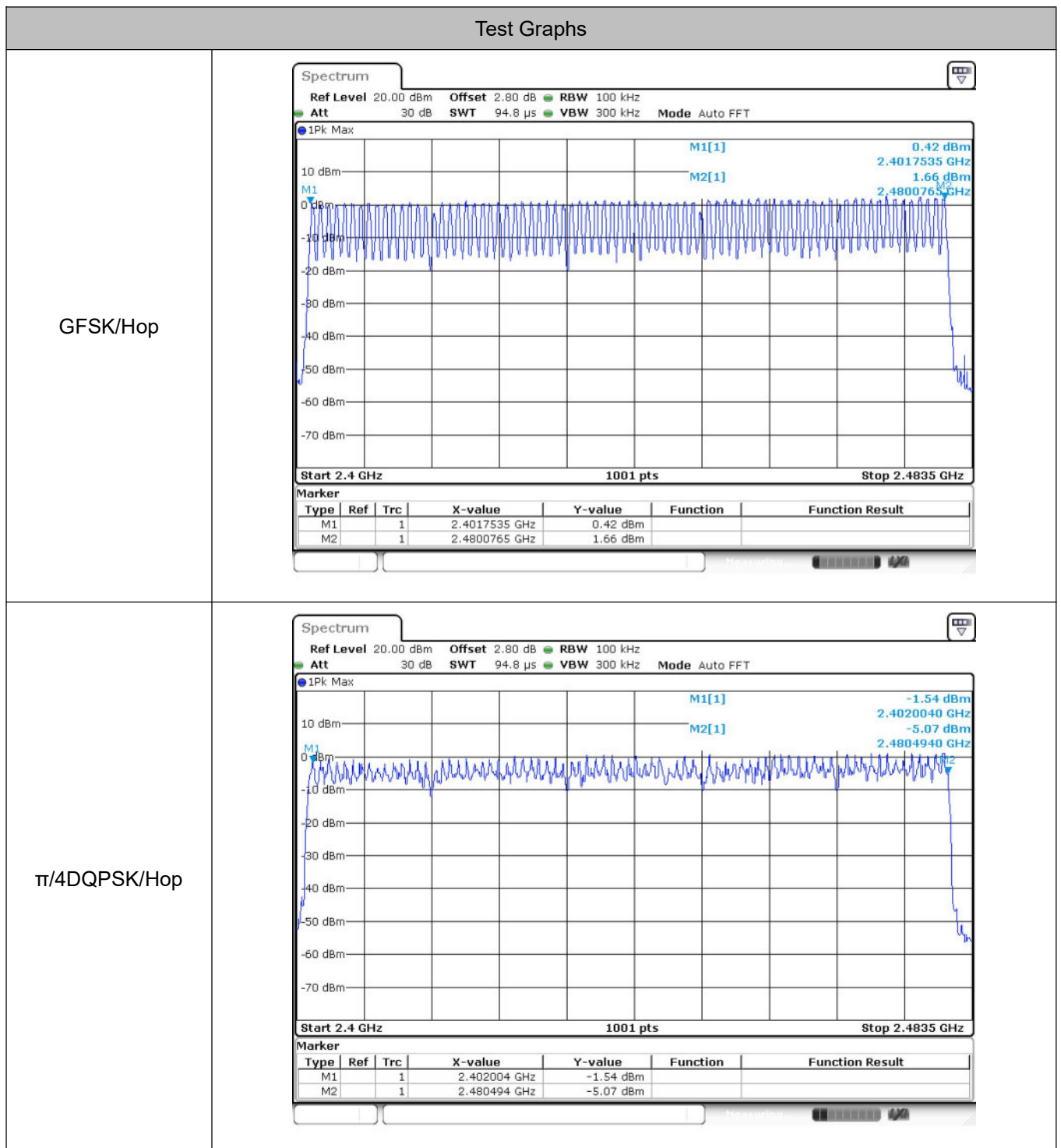


5 Hopping Channel Number

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

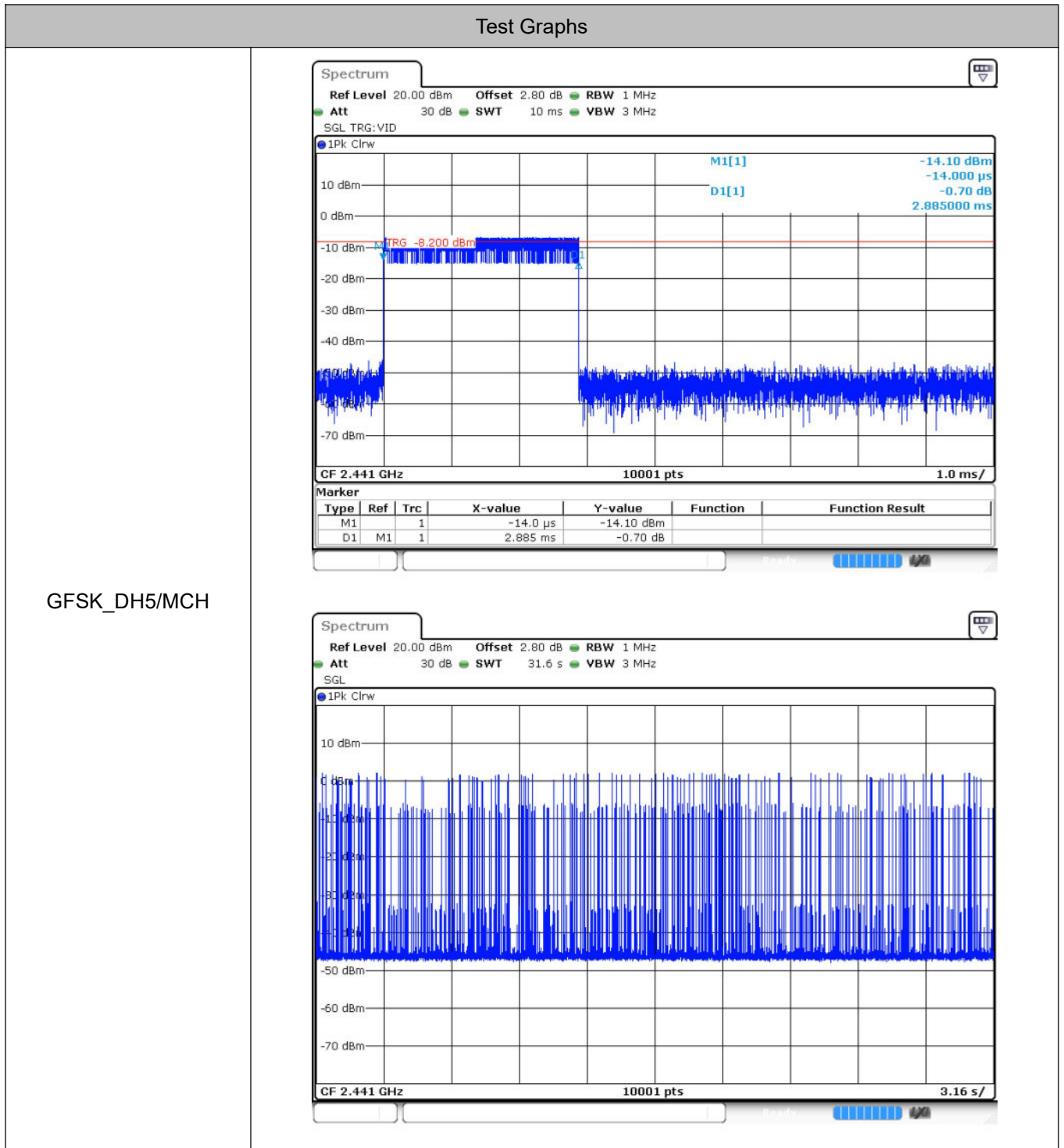


6 Dwell Time

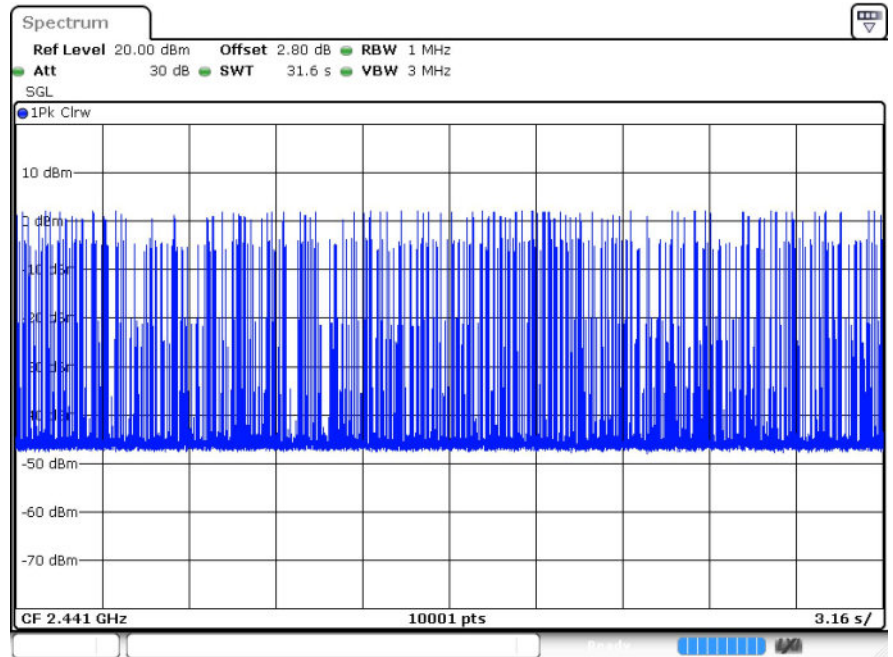
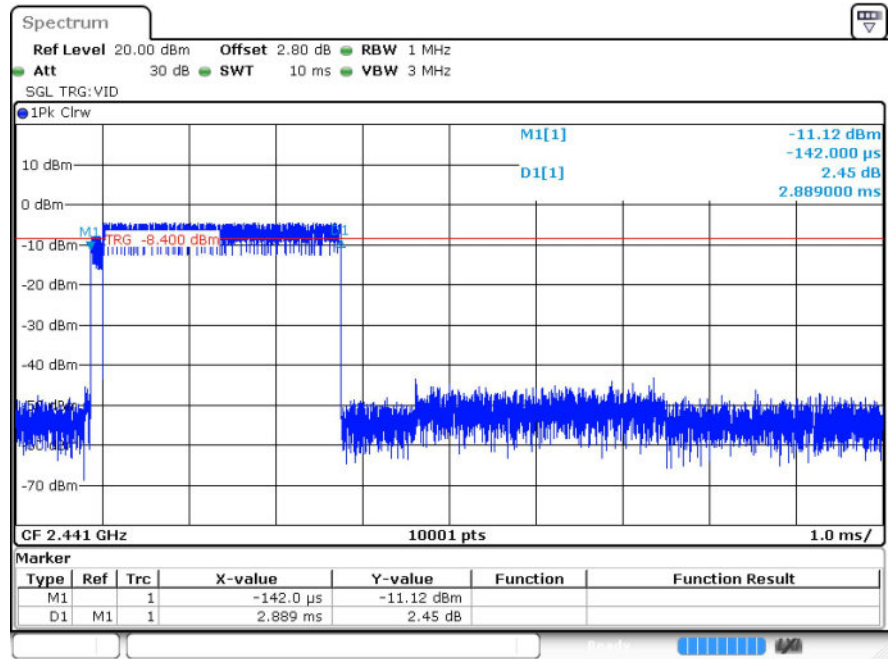
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.885	118	340.43	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	120	346.68	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH



7 RF Conducted Spurious Emissions

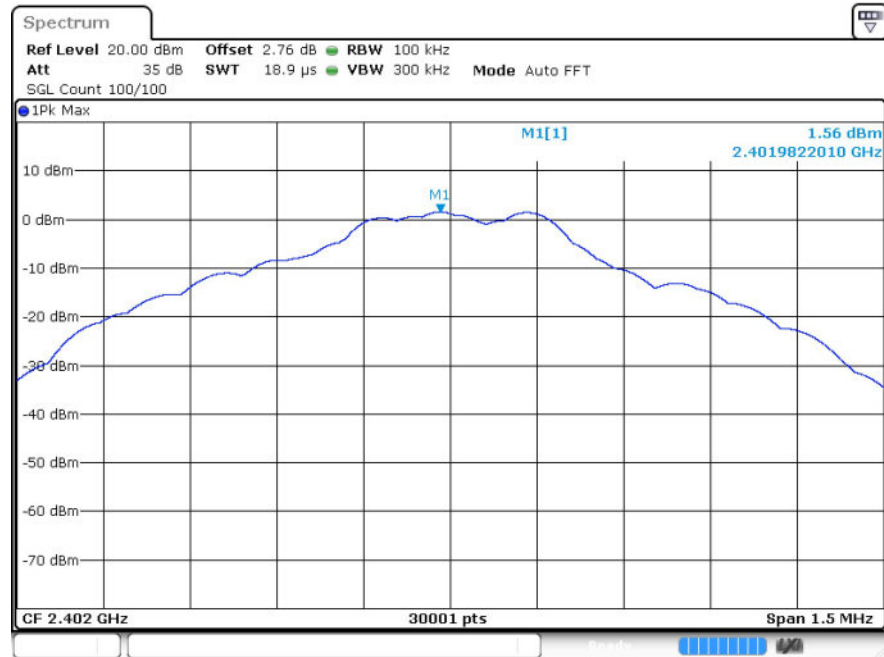
7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-41.69	-20	Pass
	MCH	-42.81	-20	Pass
	HCH	-42.32	-20	Pass
$\pi/4$ DQPSK	LCH	-40.67	-20	Pass
	MCH	-41.57	-20	Pass
	HCH	-40.97	-20	Pass

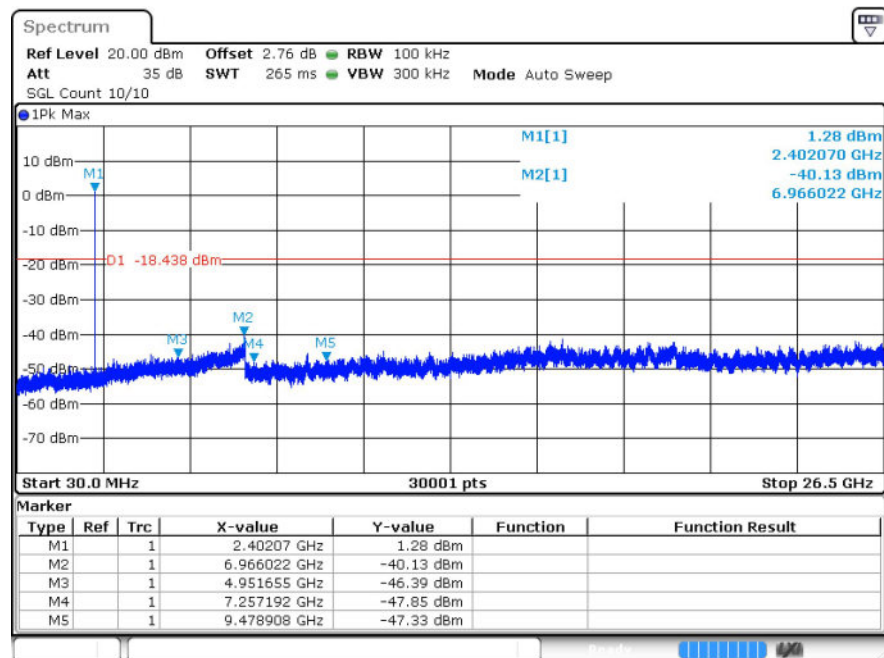
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

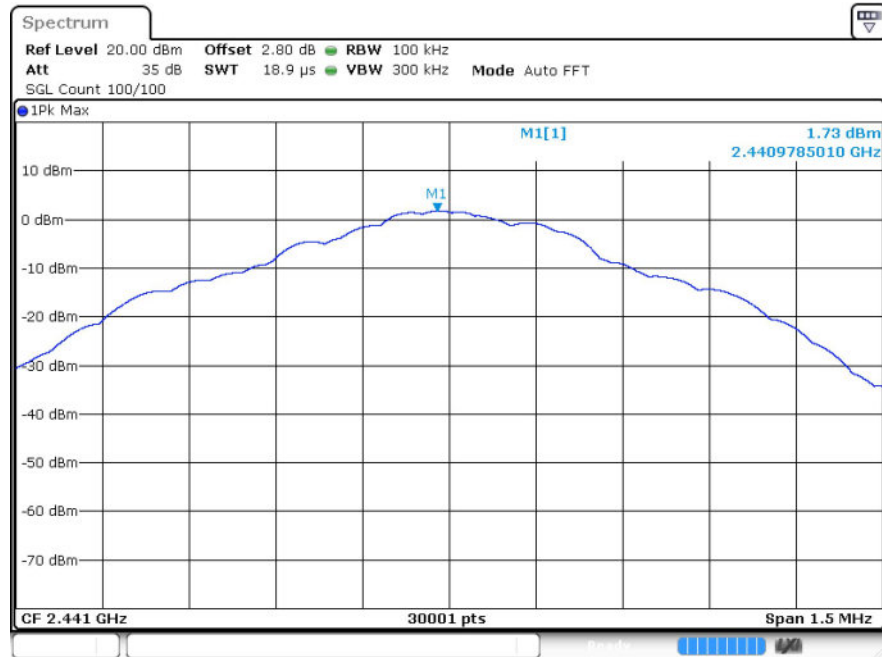


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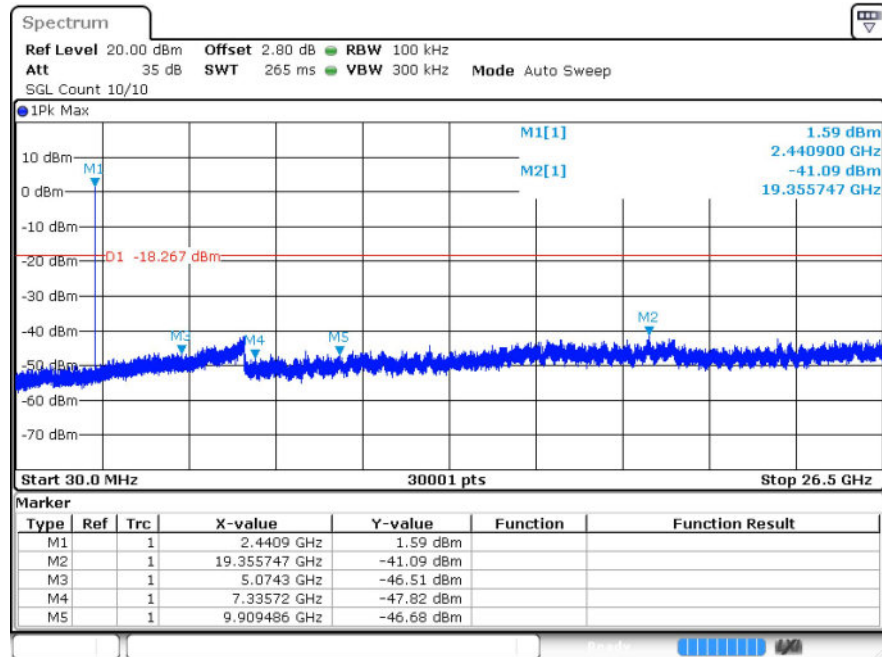


GFSK_MCH_Graphs

Pref

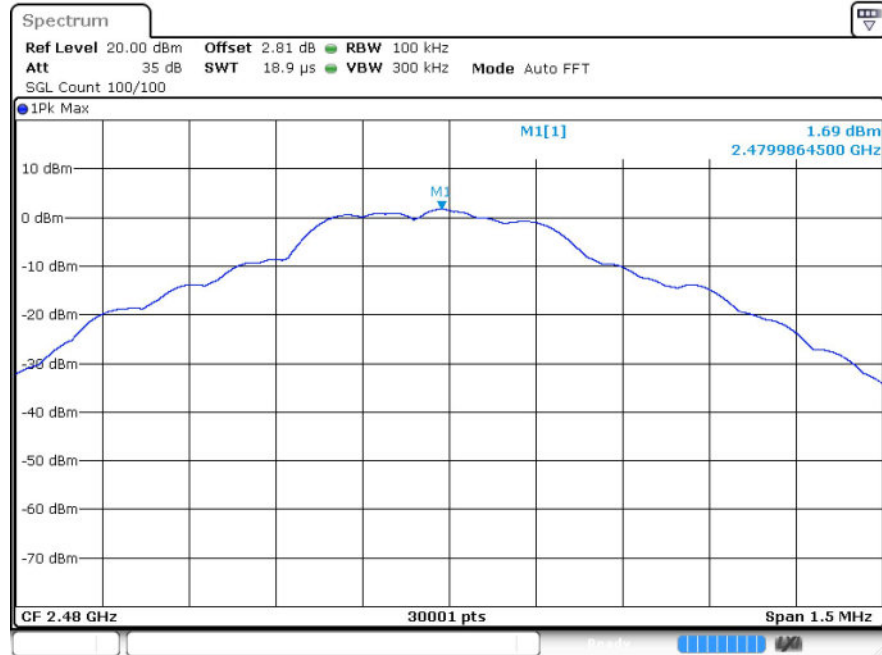


Puw

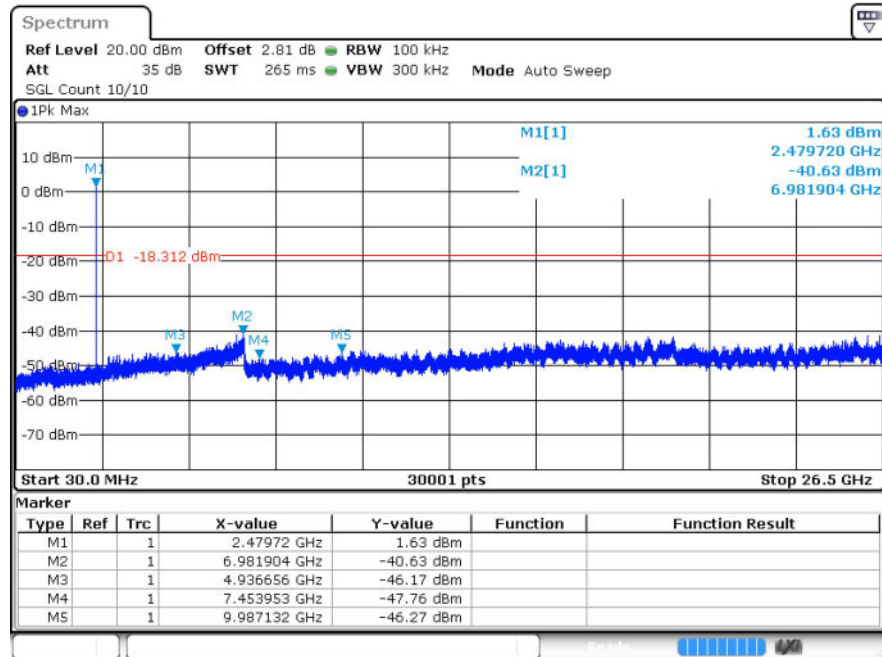


GFSK_HCH_Graphs

Pref

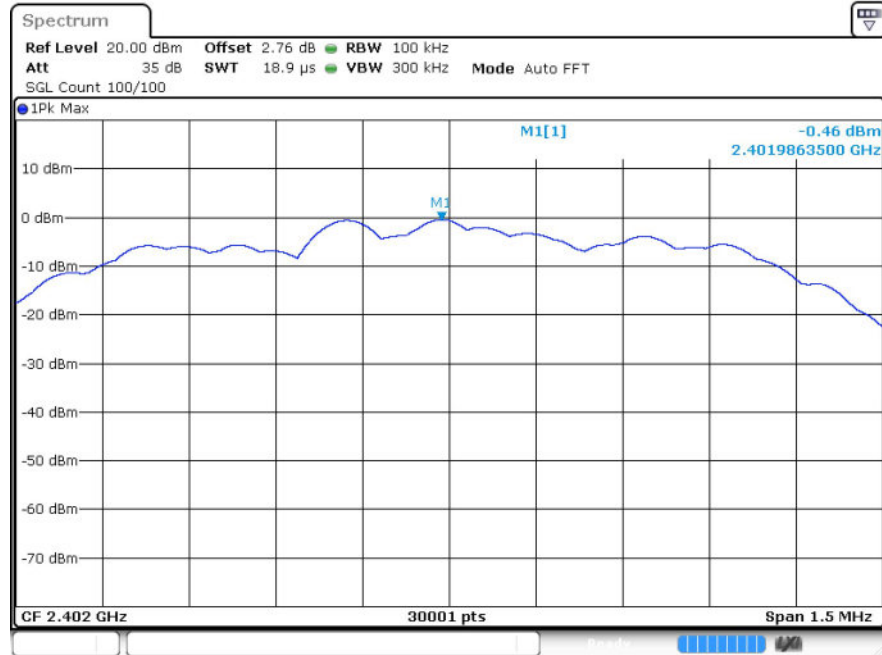


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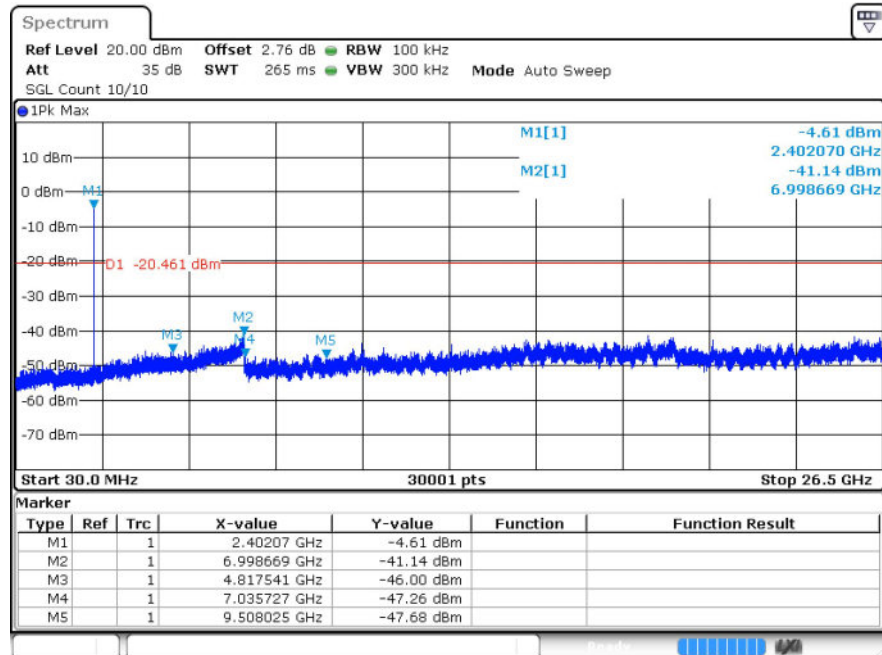


$\pi/4$ DQPSK_LCH_Graphs

Pref

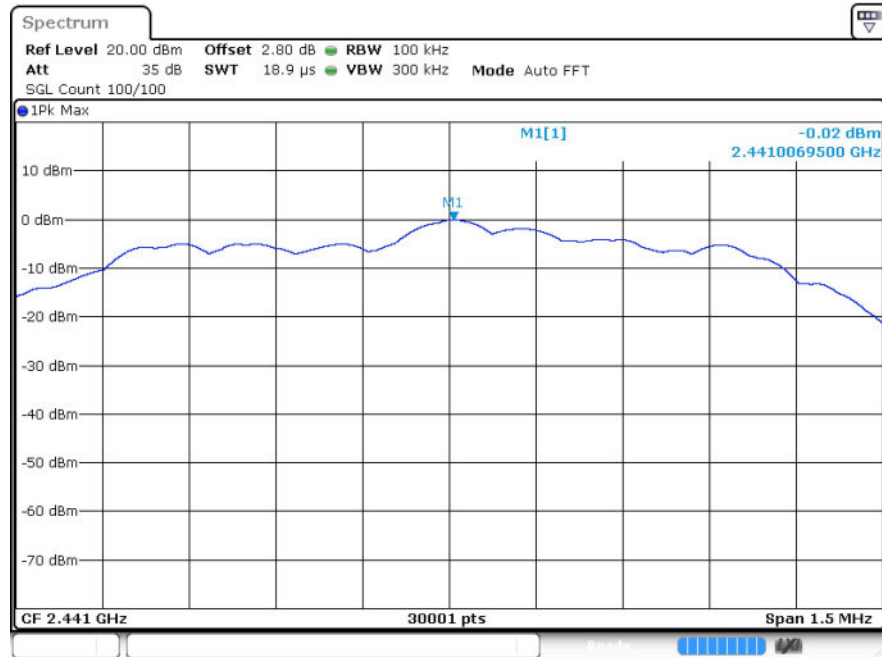


Puw

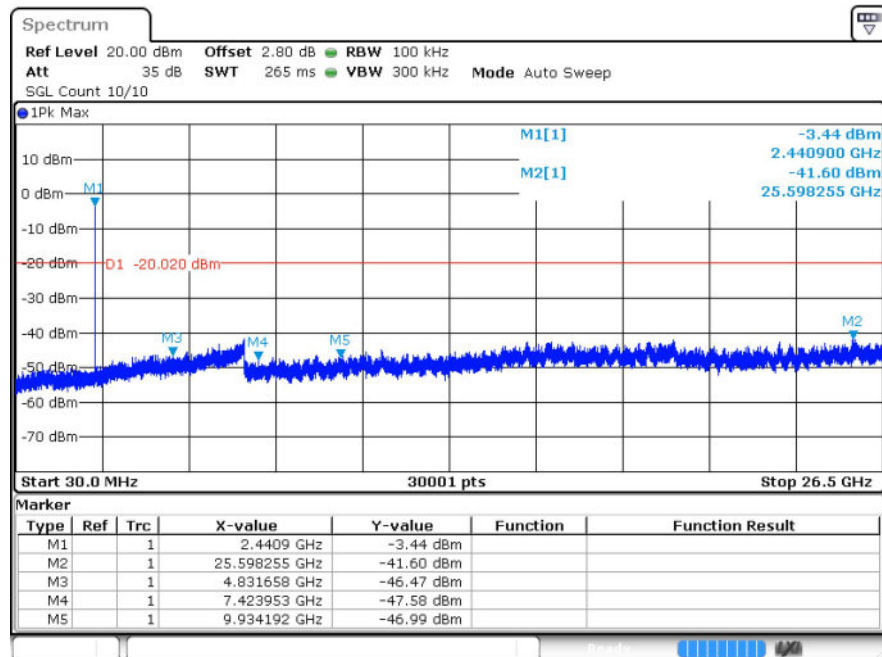


π /4DQPSK_MCH_Graphs

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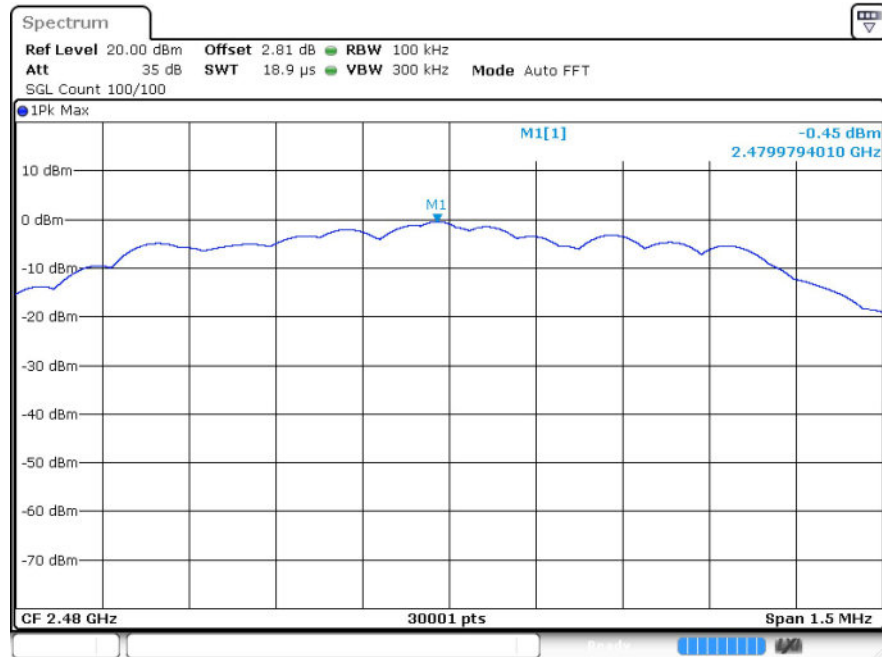


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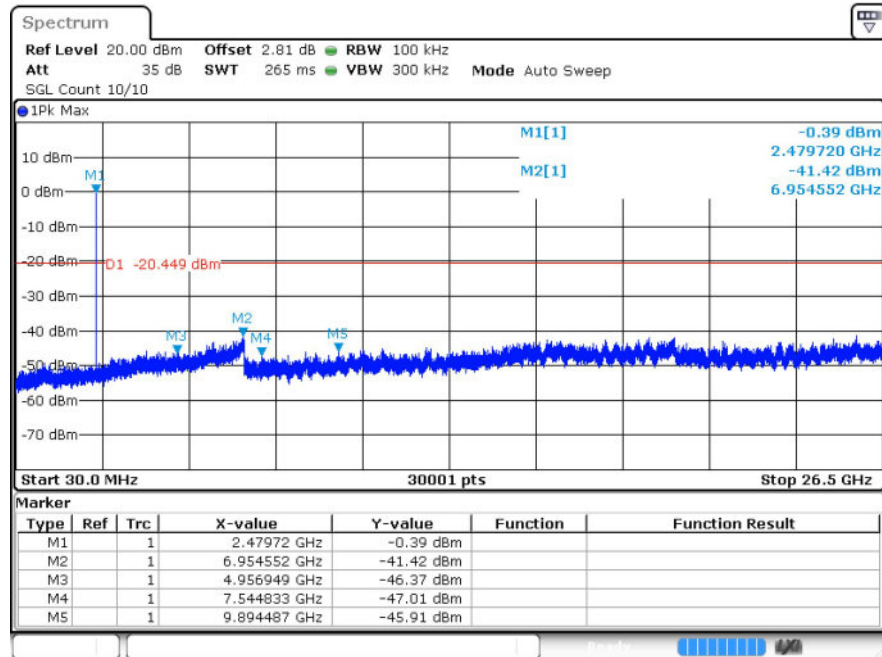


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

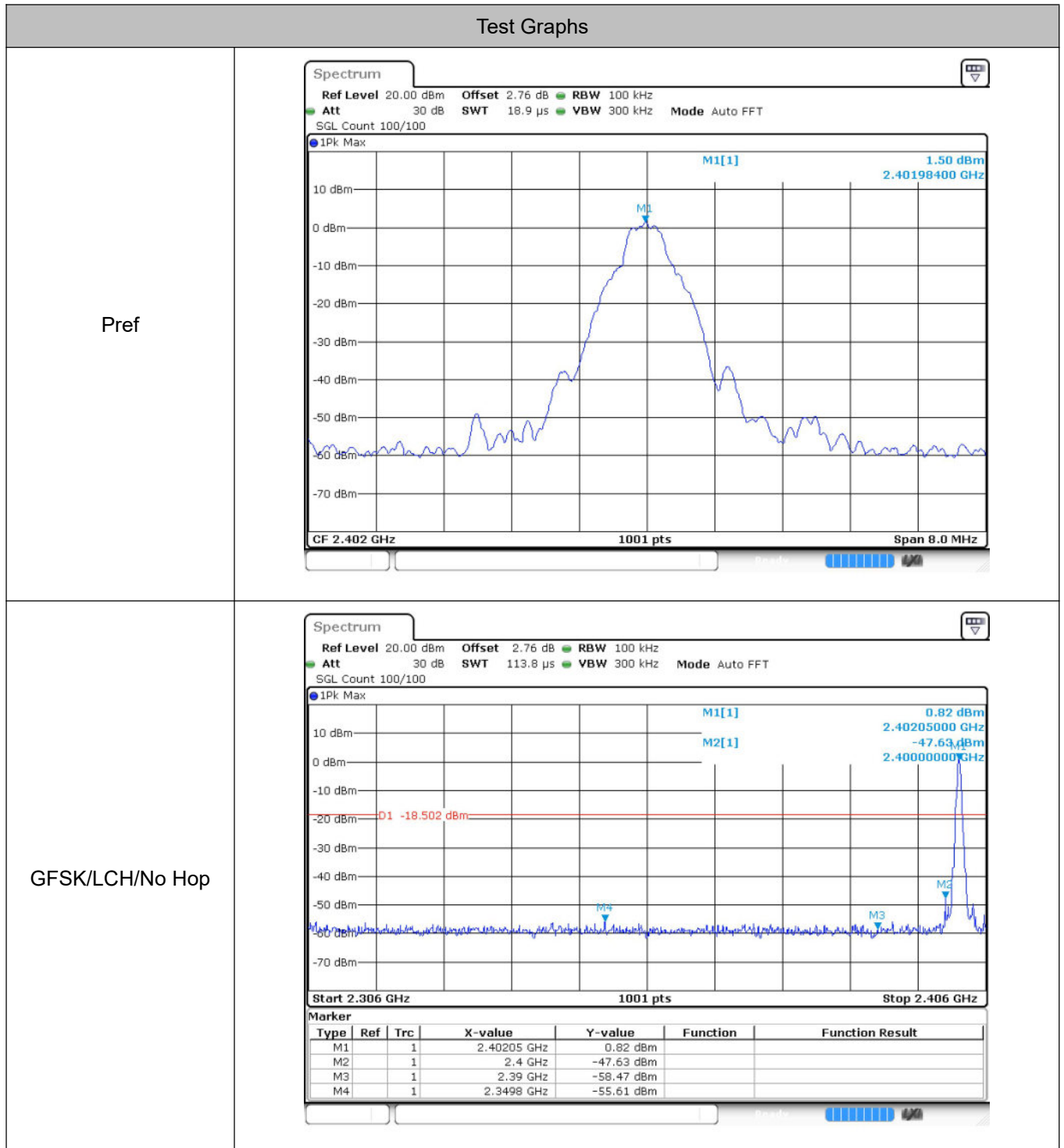


8 Band-edge for RF Conducted Emissions

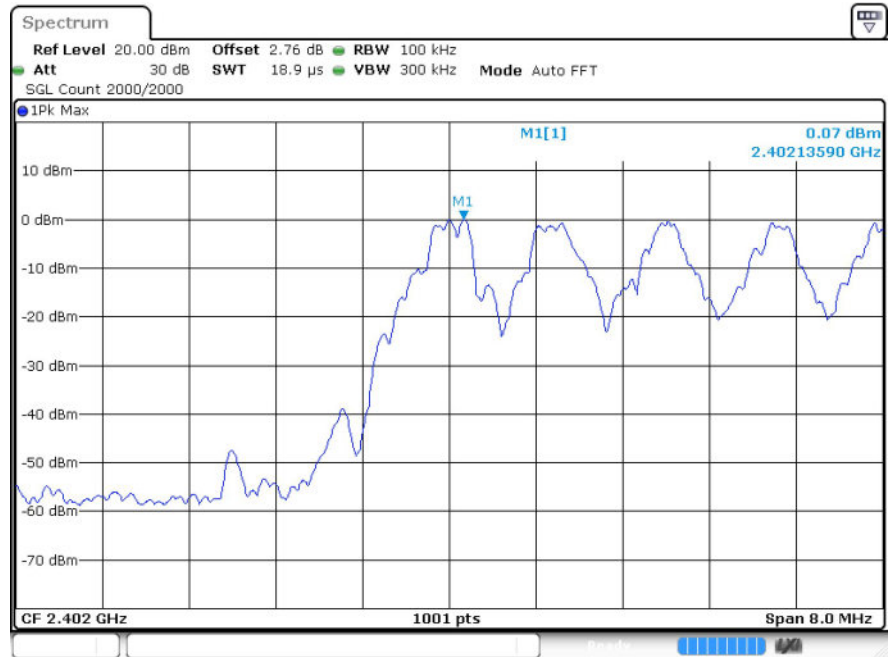
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-57.1	-20	Pass
			On	-54.05	-20	Pass
	HCH	2480	Off	-51.14	-20	Pass
			On	-49.51	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-55.29	-20	Pass
			On	-53.71	-20	Pass
	HCH	2480	Off	-45.21	-20	Pass
			On	-49.6	-20	Pass

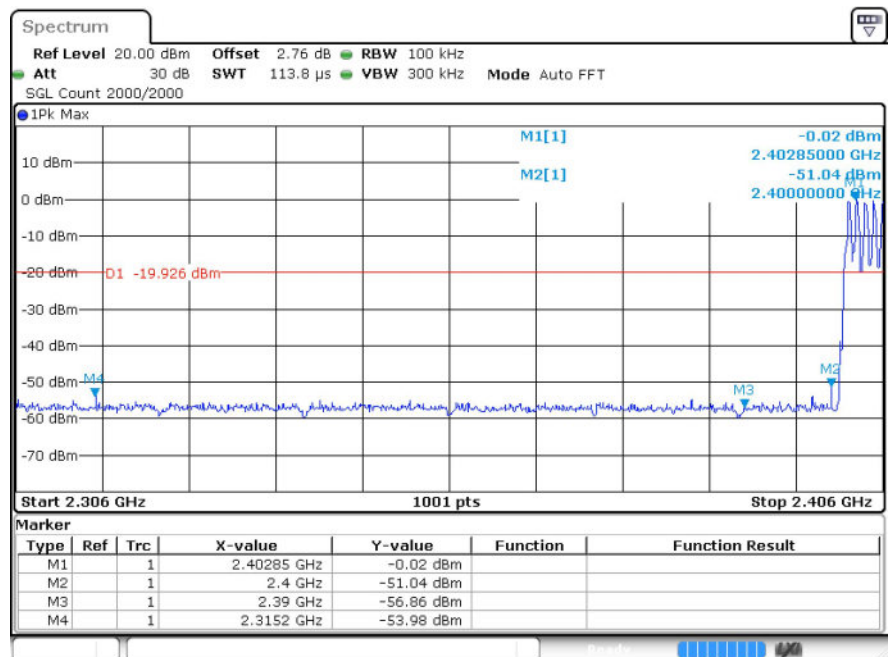
8.2 Test Graphs



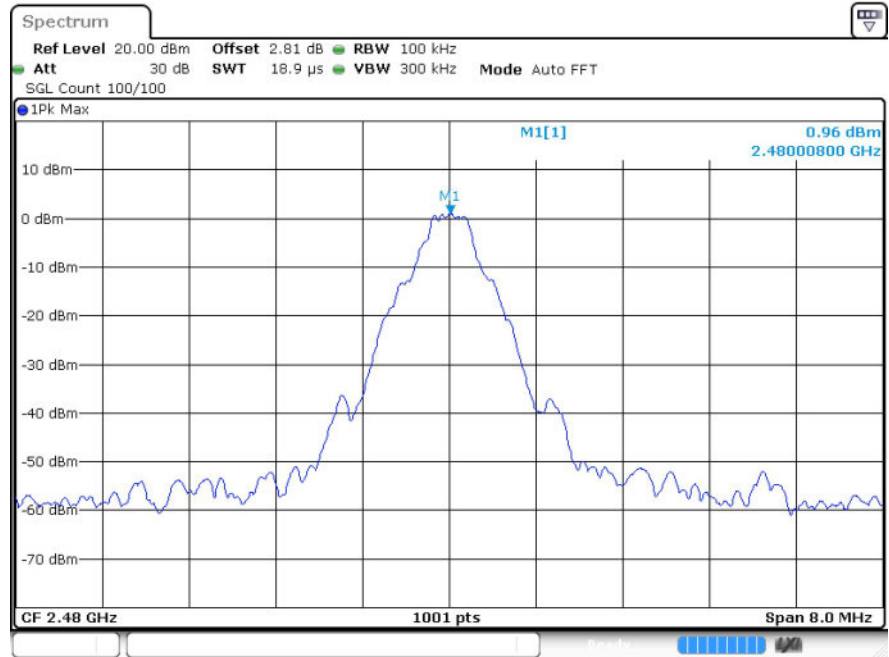
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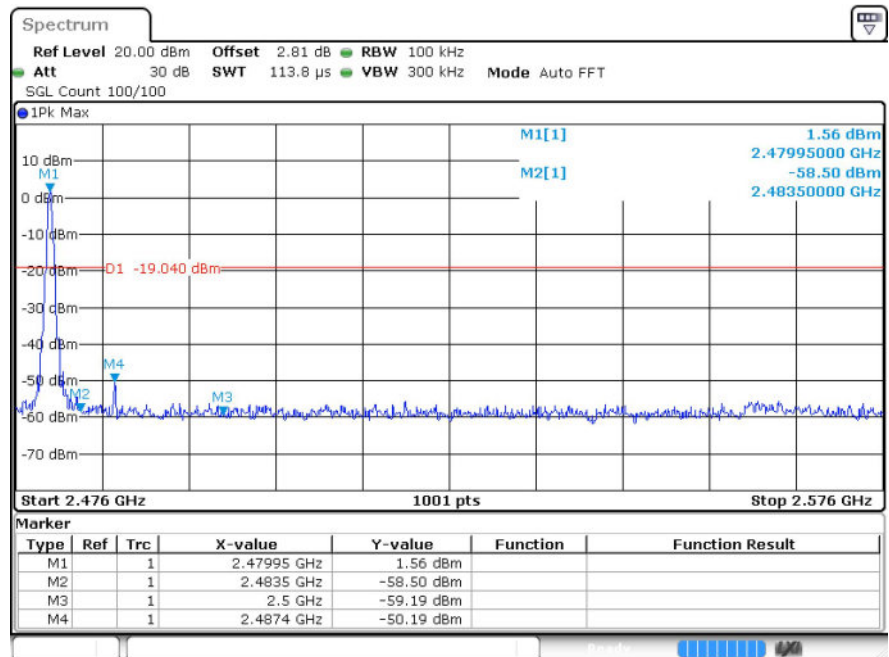
GFSK/LCH/Hop



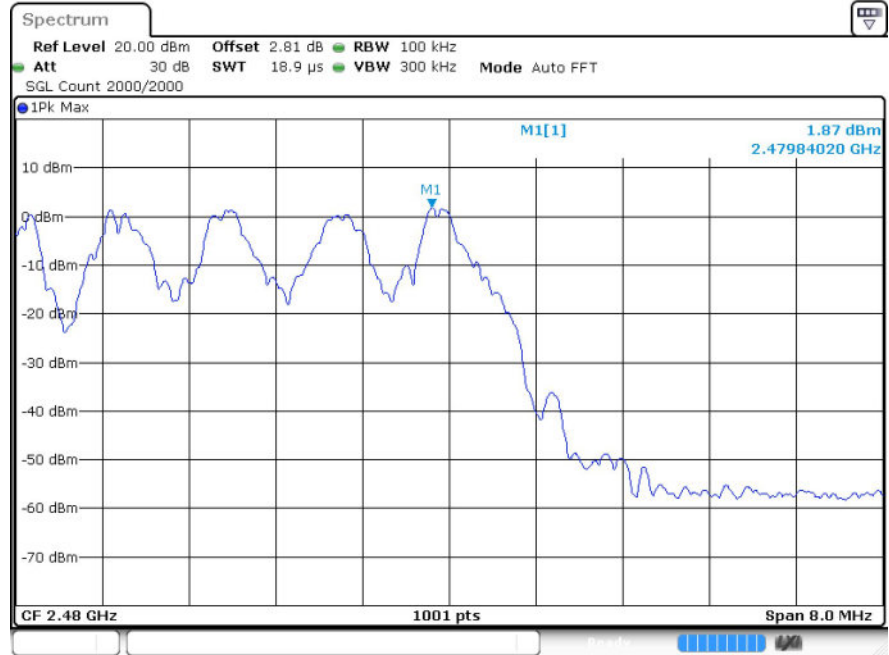
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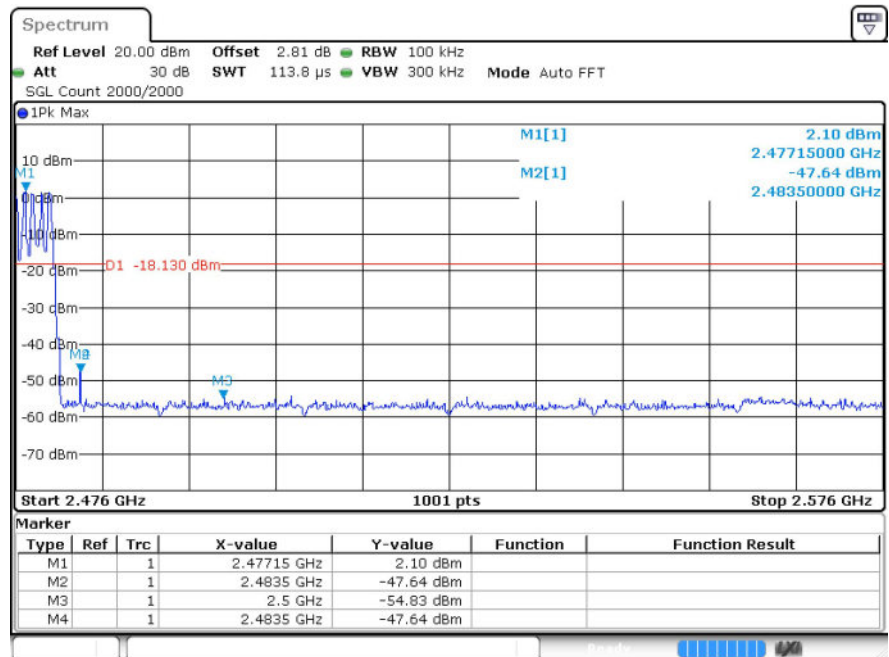
GFSK/HCH/No Hop



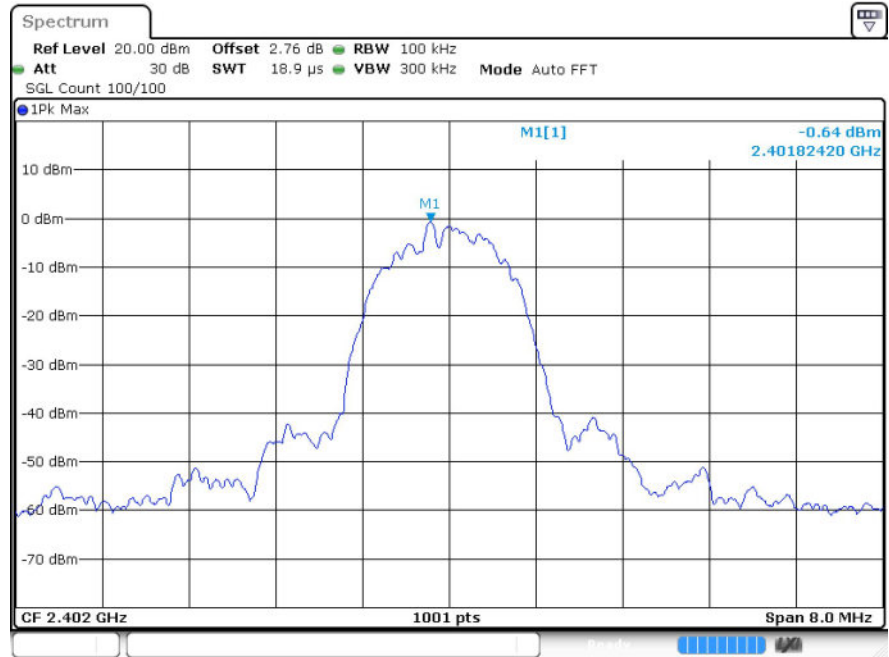
Ref.



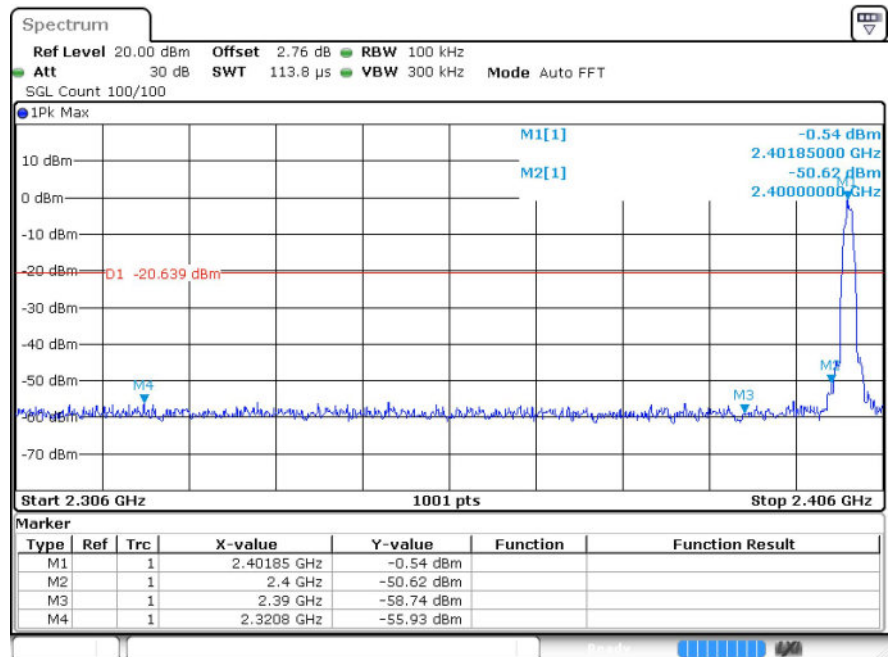
GFSK/HCH/Hop



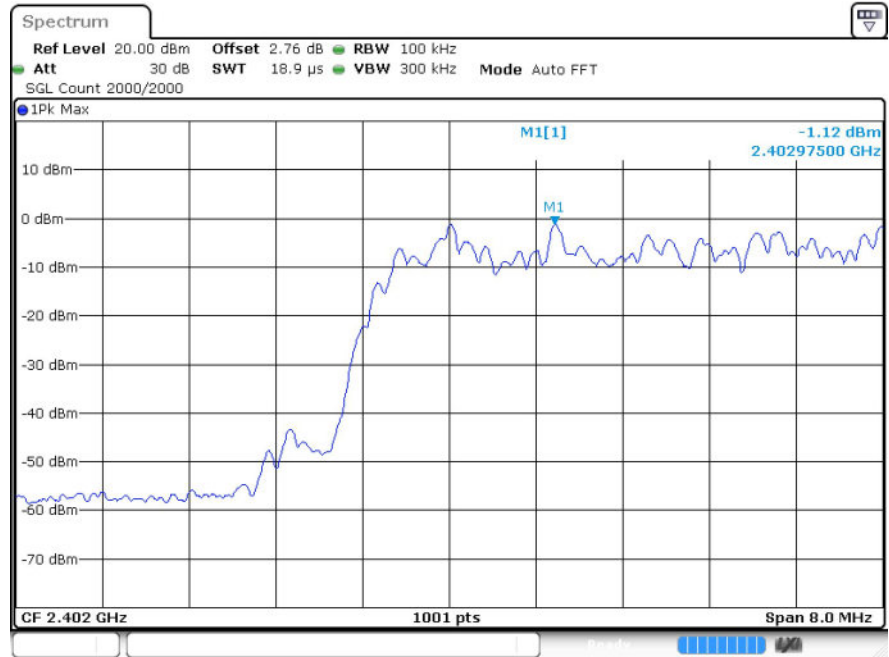
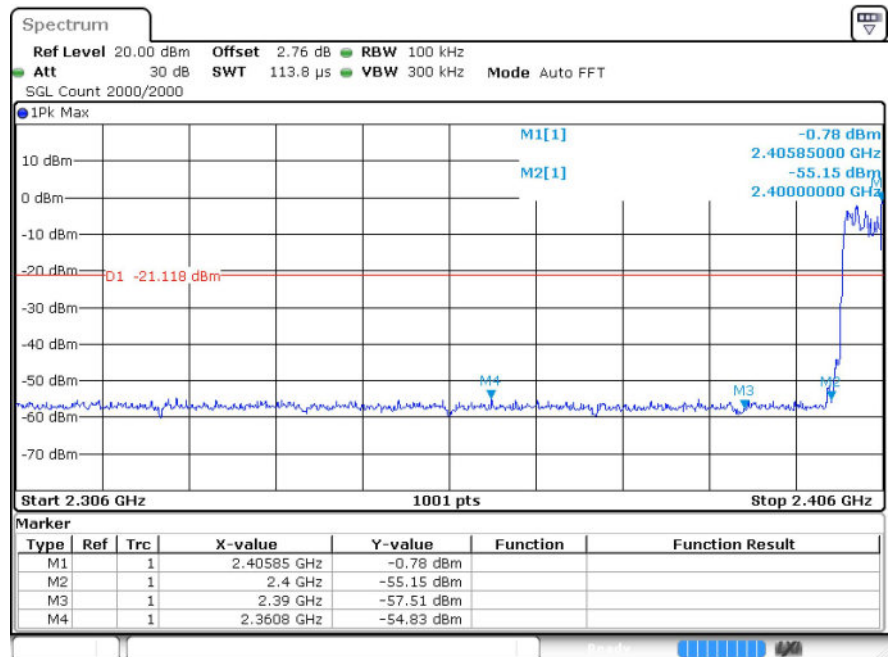
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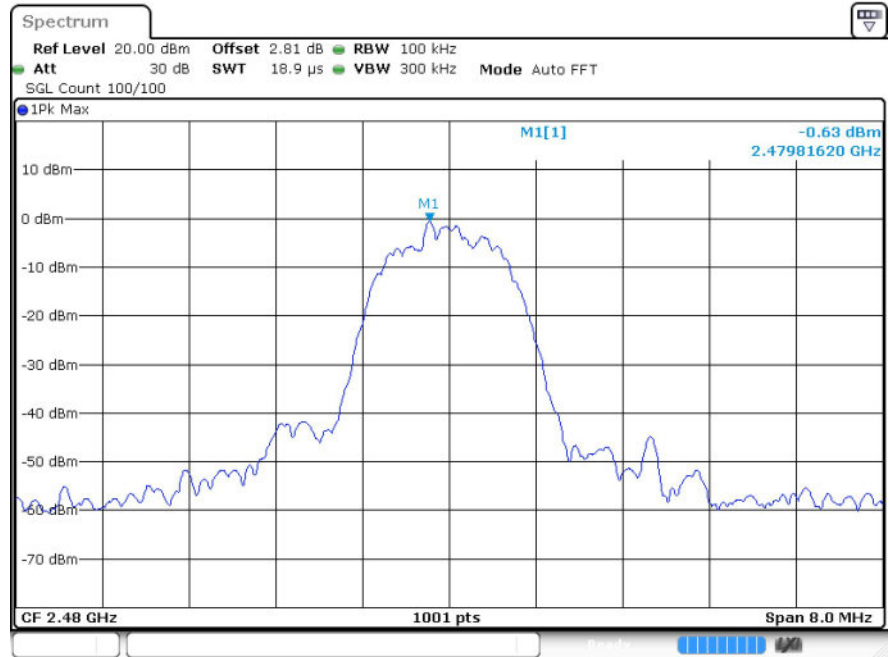
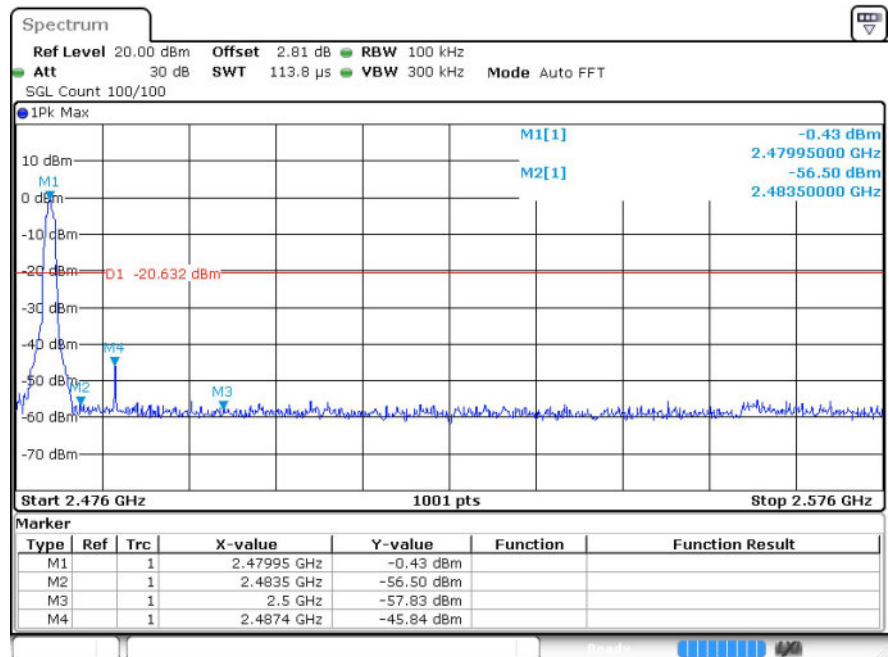
$\pi/4$ DQPSK/LCH/No
Hop



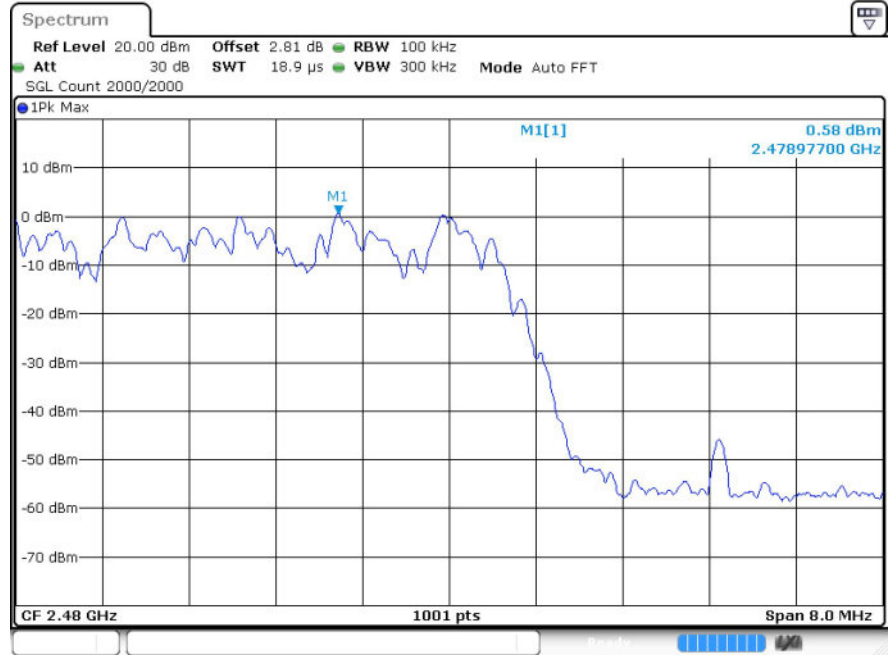
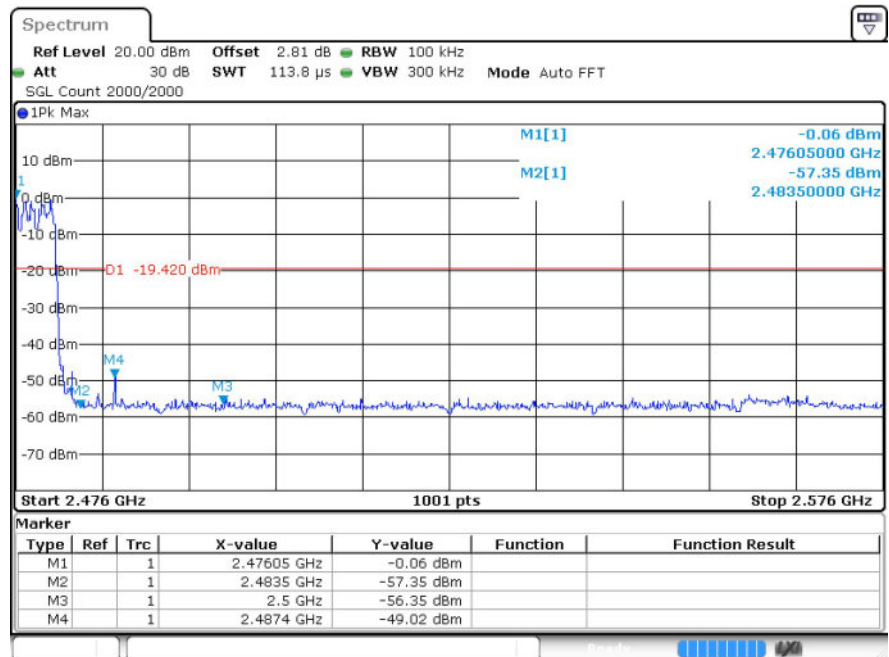
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


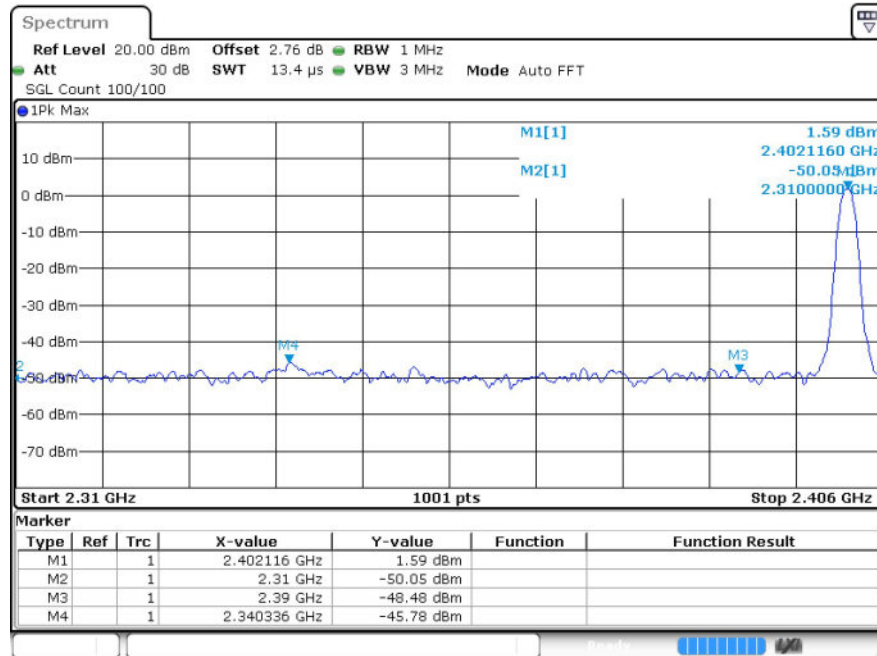
9 Restrict-band band-edge measurements

9.1 Test Result

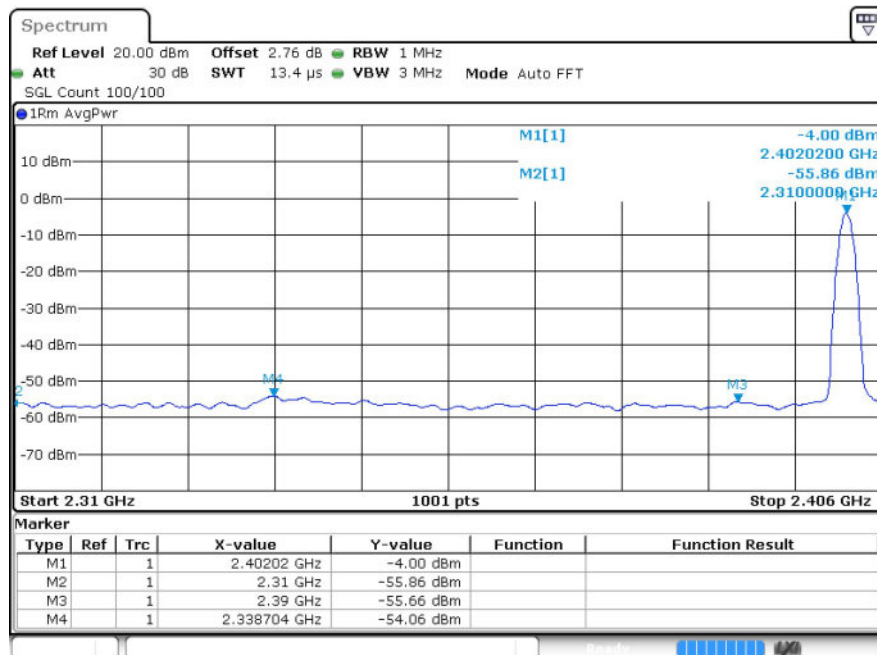
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.05	2	-	47.21	PEAK	74	Pass
	Off	2310.0	-55.86	2	5.06	46.46	AV	54	Pass
	Off	2340.336	-45.77	2	-	51.49	PEAK	74	Pass
	Off	2338.704	-54.06	2	5.06	48.26	AV	54	Pass
	Off	2390.0	-48.48	2	-	48.78	PEAK	74	Pass
	Off	2390.0	-55.66	2	5.06	46.66	AV	54	Pass
	Off	2483.5	-45.45	2	-	51.81	PEAK	74	Pass
	Off	2483.5	-56.3	2	5.06	46.02	AV	54	Pass
	Off	2487.424	-44.33	2	-	52.93	PEAK	74	Pass
	Off	2487.184	-55.22	2	5.06	47.1	AV	54	Pass
	Off	2500.0	-48.52	2	-	48.74	PEAK	74	Pass
	Off	2500.0	-56.28	2	5.06	46.04	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-50.48	2	-	46.78	PEAK	74	Pass
	Off	2310.0	-56.29	2	4.95	45.92	AV	54	Pass
	Off	2328.912	-46.44	2	-	50.82	PEAK	74	Pass
	Off	2340.048	-54.46	2	4.95	47.75	AV	54	Pass
	Off	2390.0	-49.68	2	-	47.58	PEAK	74	Pass
	Off	2390.0	-56.41	2	4.95	45.8	AV	54	Pass
	Off	2483.5	-50.53	2	-	46.73	PEAK	74	Pass
	Off	2483.5	-56.04	2	4.95	46.17	AV	54	Pass
	Off	2486.512	-45.85	2	-	51.41	PEAK	74	Pass
	Off	2487.232	-54.73	2	4.95	47.48	AV	54	Pass
	Off	2500.0	-48.31	2	-	48.95	PEAK	74	Pass
	Off	2500.0	-56.32	2	4.95	45.89	AV	54	Pass

9.2 Test Graphs

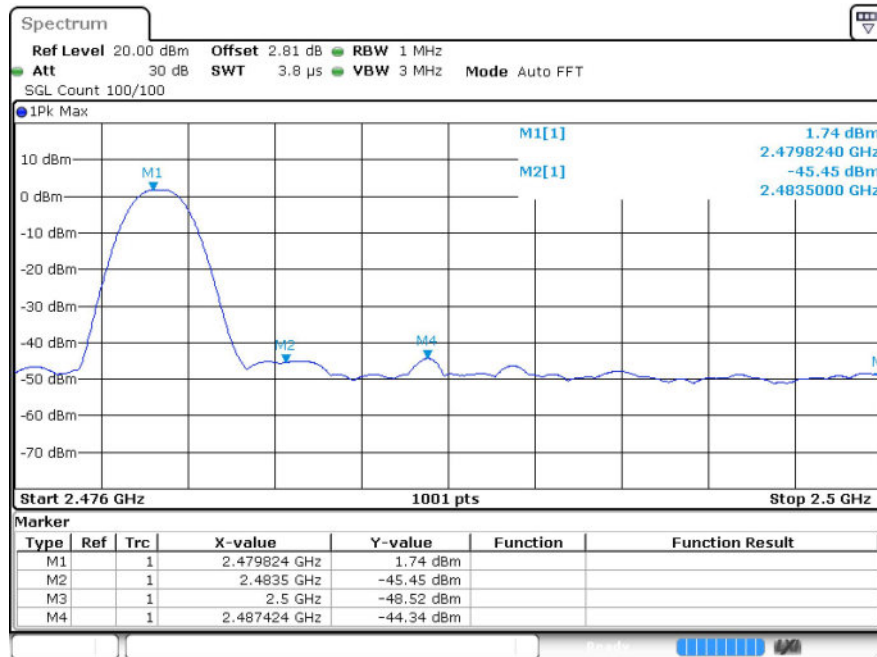
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



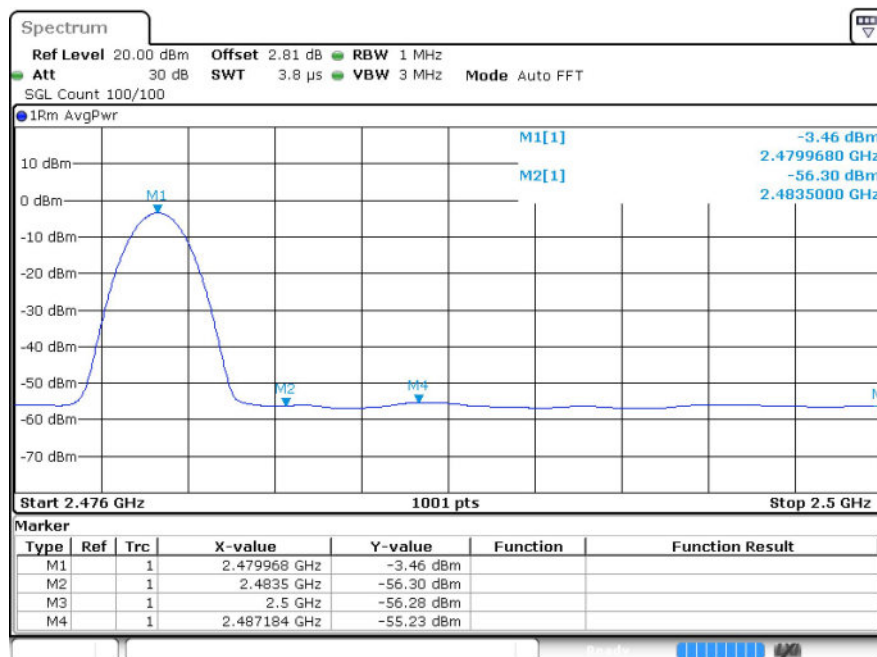
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



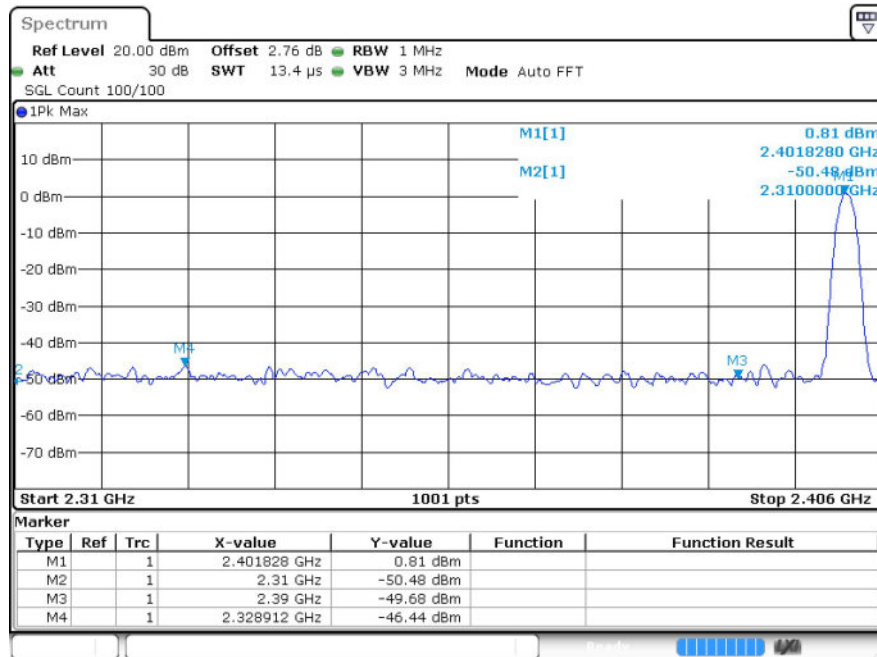
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



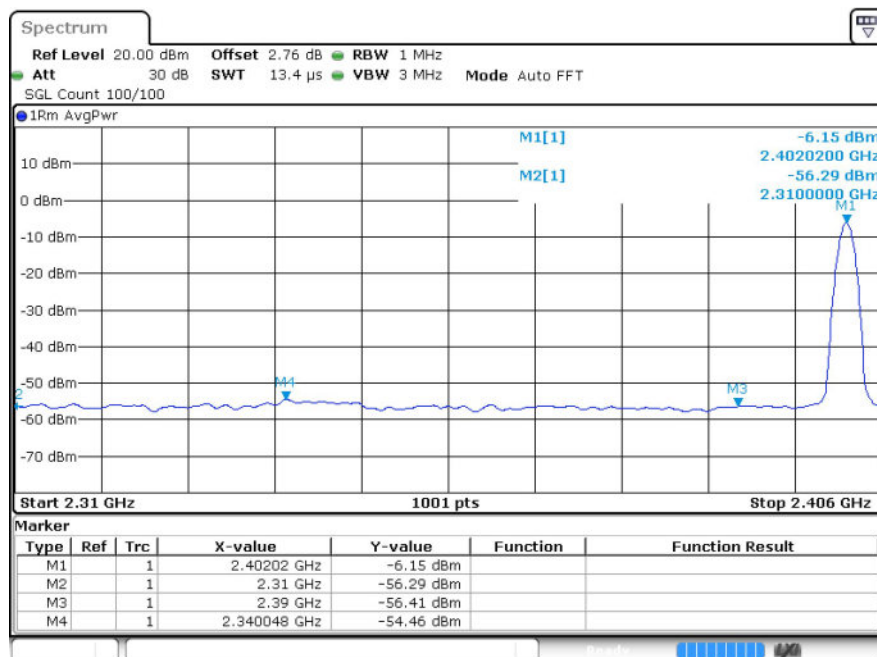
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



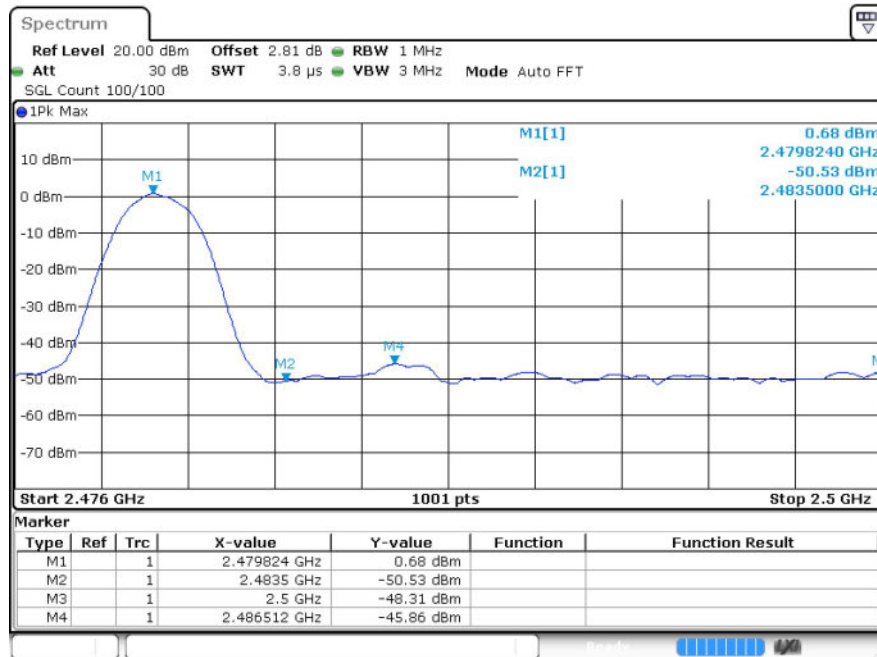
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



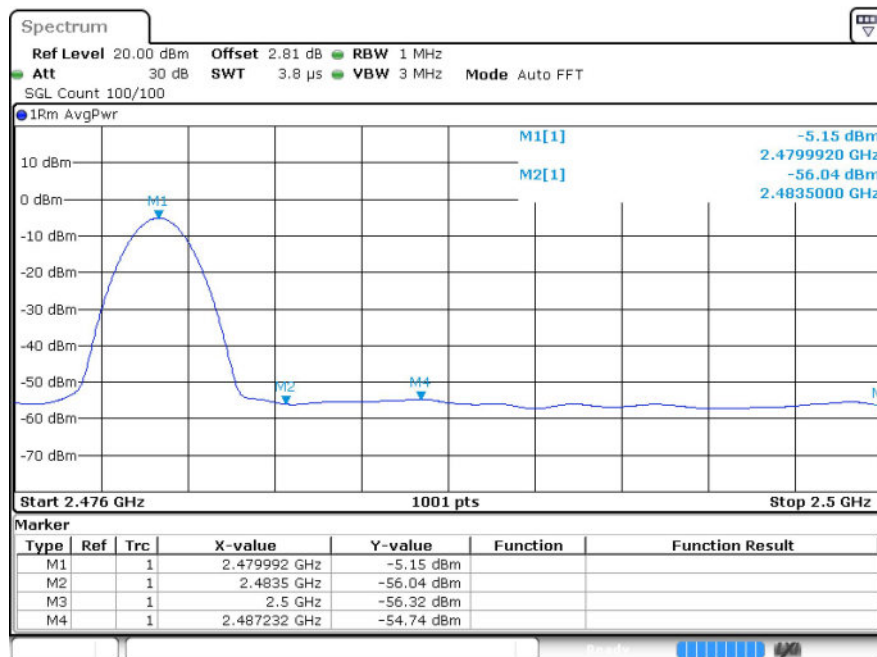
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---