



Appendix A

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

Product Name: COOLPO IGNITE SPEAKERPHONE

Trade Mark: COOLPO

Test Model: CP-S23C

Environmental Conditions

Temperature:	25.6℃
Relative Humidity:	52.3%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



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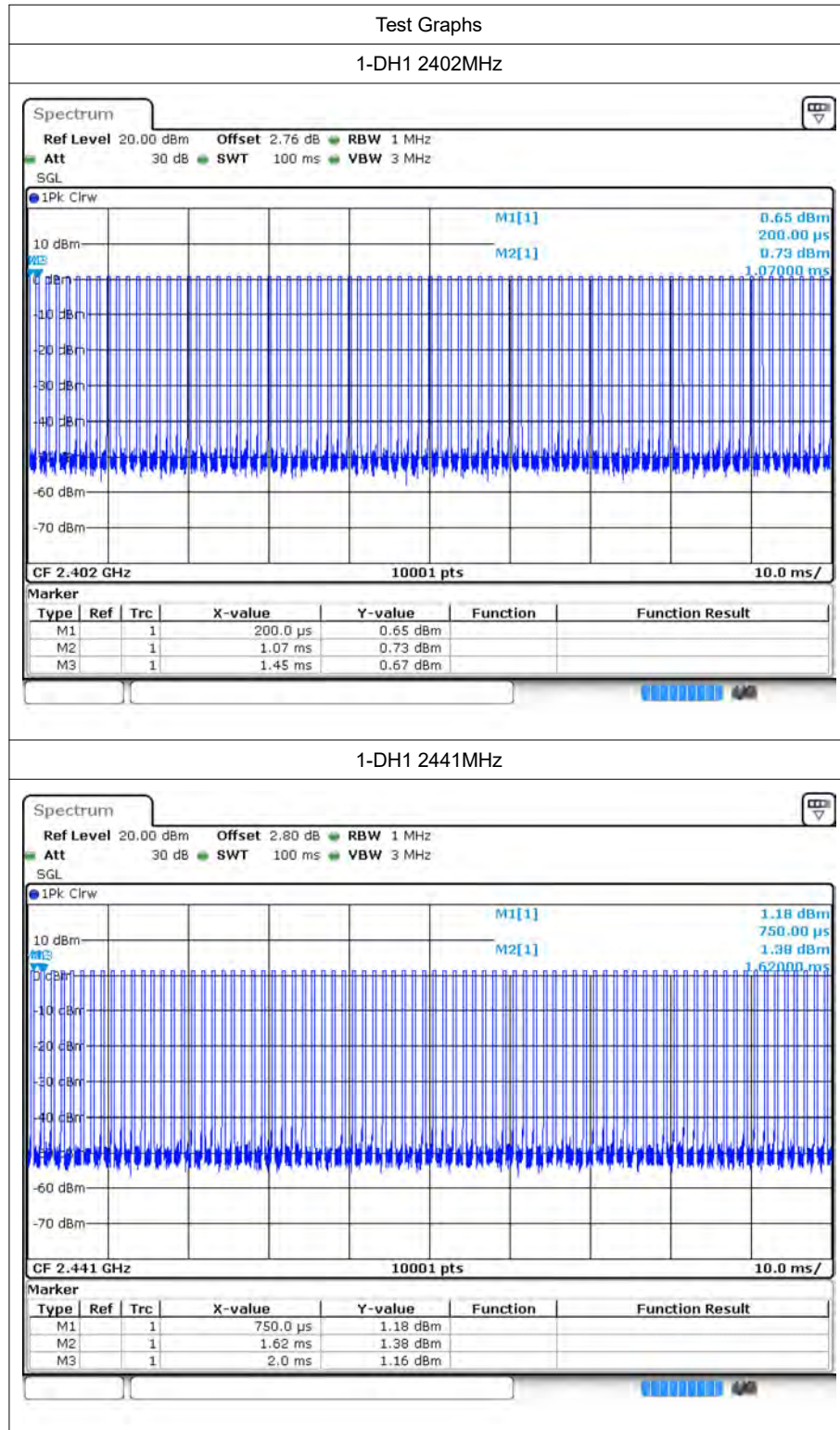
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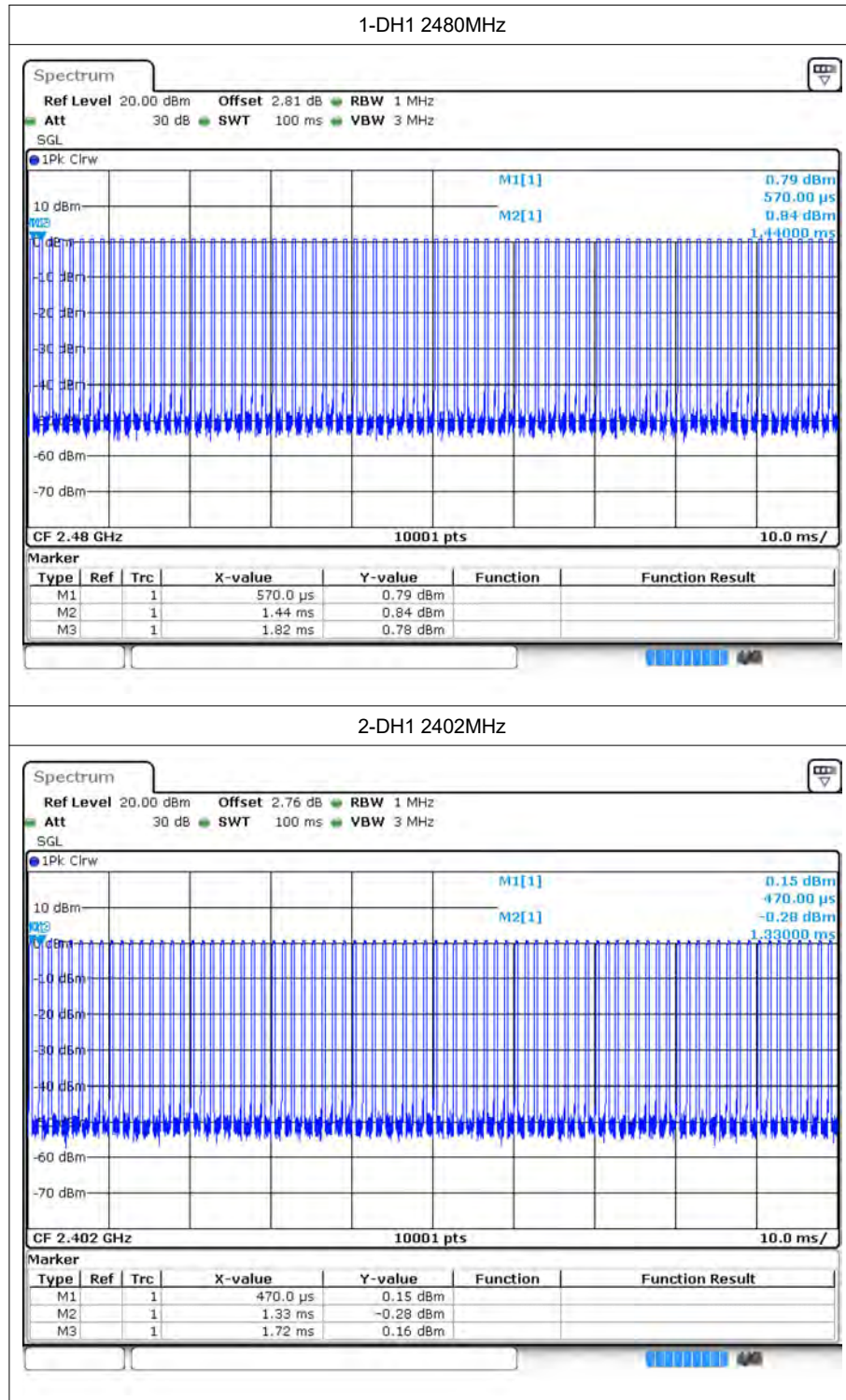
1 Duty Cycle

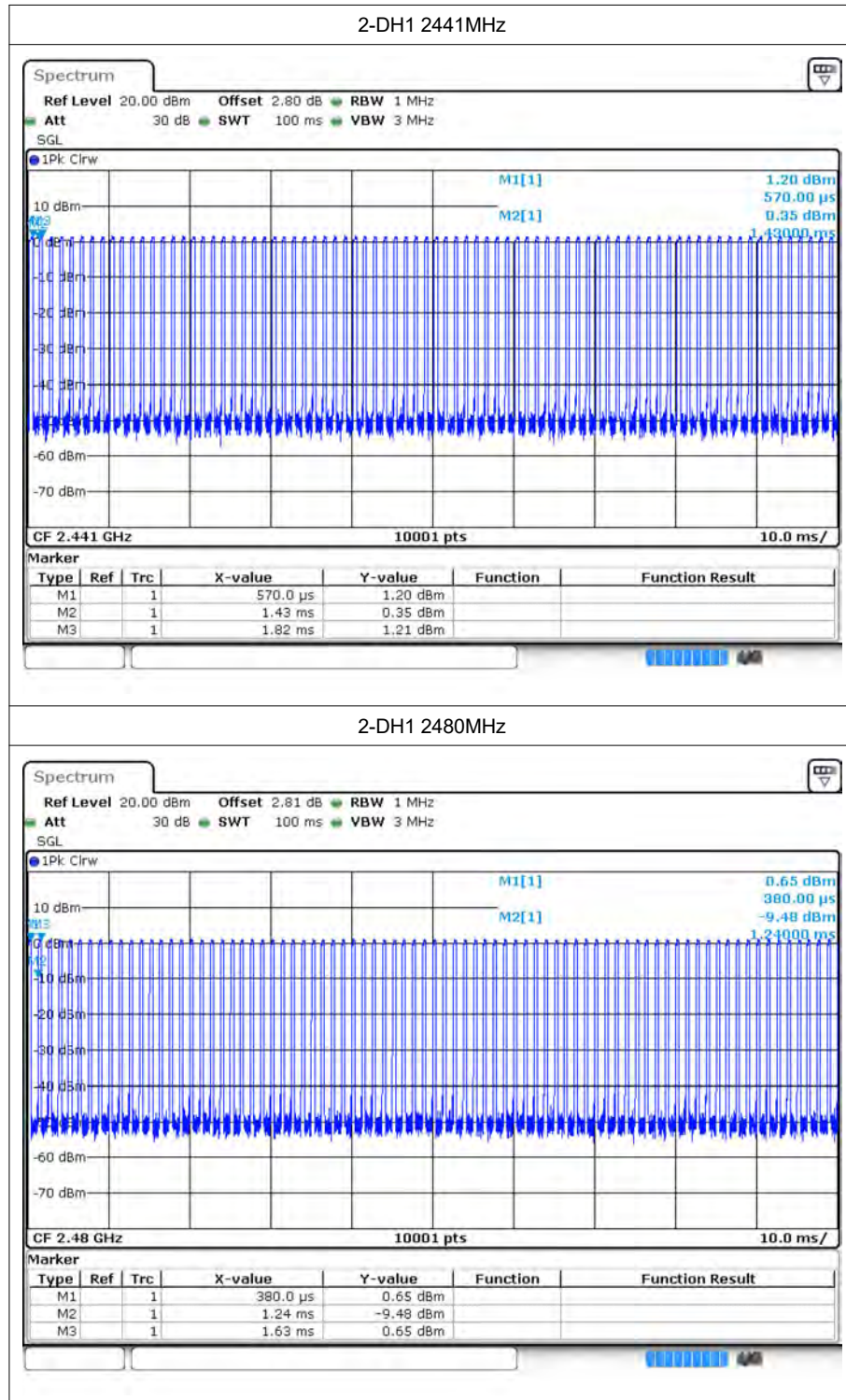
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.26	5.05	2.63
1-DH1	2441	31.2	5.06	2.63
1-DH1	2480	31.2	5.06	2.63
2-DH1	2402	32	4.95	2.56
2-DH1	2441	32	4.95	2.56
2-DH1	2480	31.94	4.96	2.56

1.2 Test Graphs





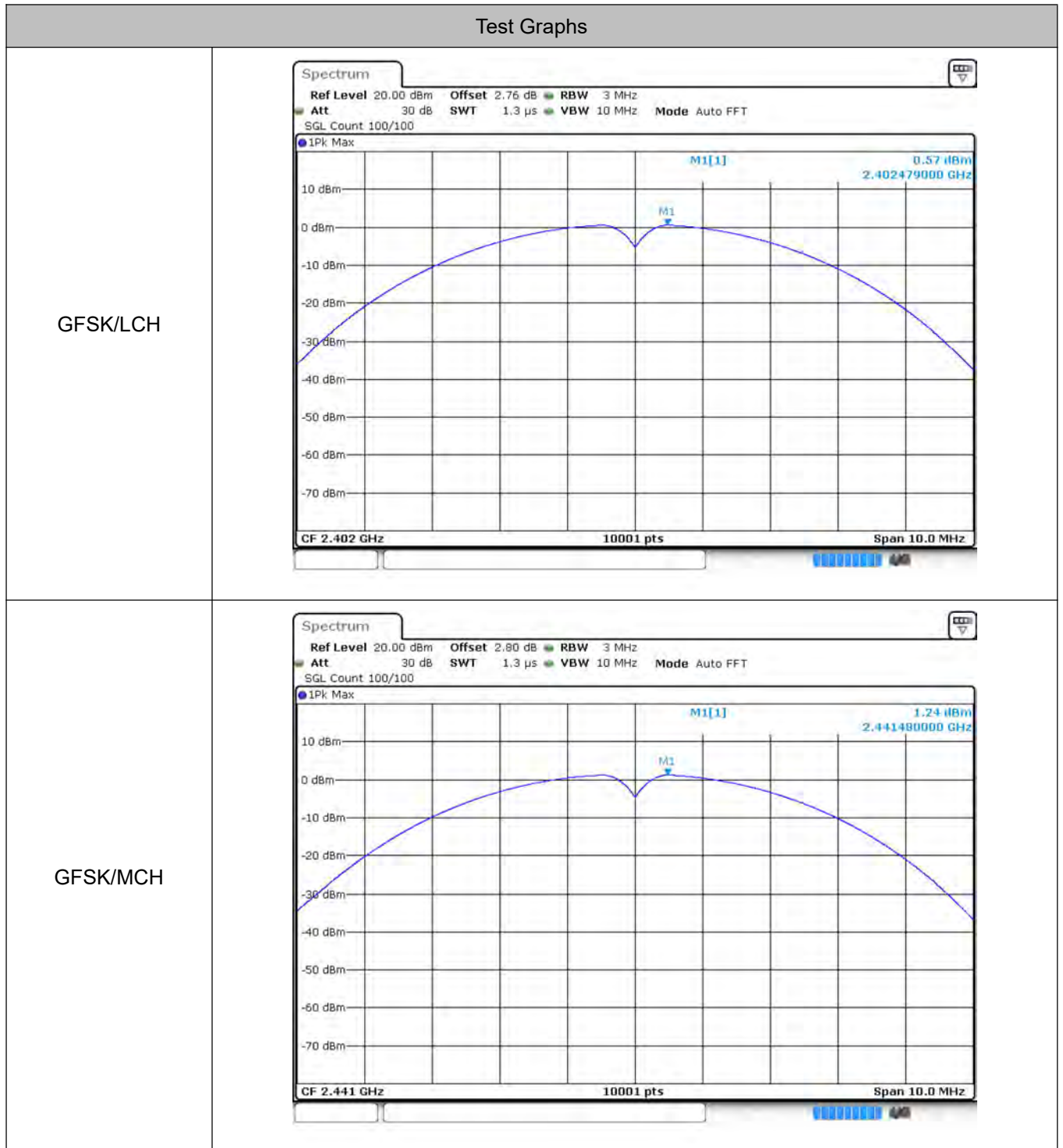


2 Maximum Conducted Peak Output Power

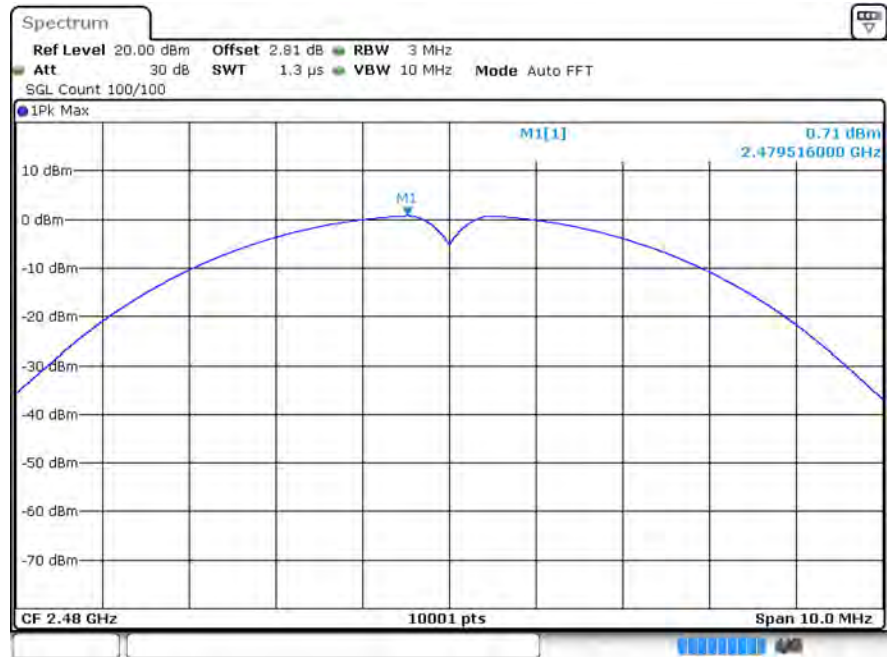
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.57	21	Pass
	MCH	1.24	21	Pass
	HCH	0.71	21	Pass
$\pi/4$ DQPSK	LCH	1.89	21	Pass
	MCH	2.54	21	Pass
	HCH	1.96	21	Pass

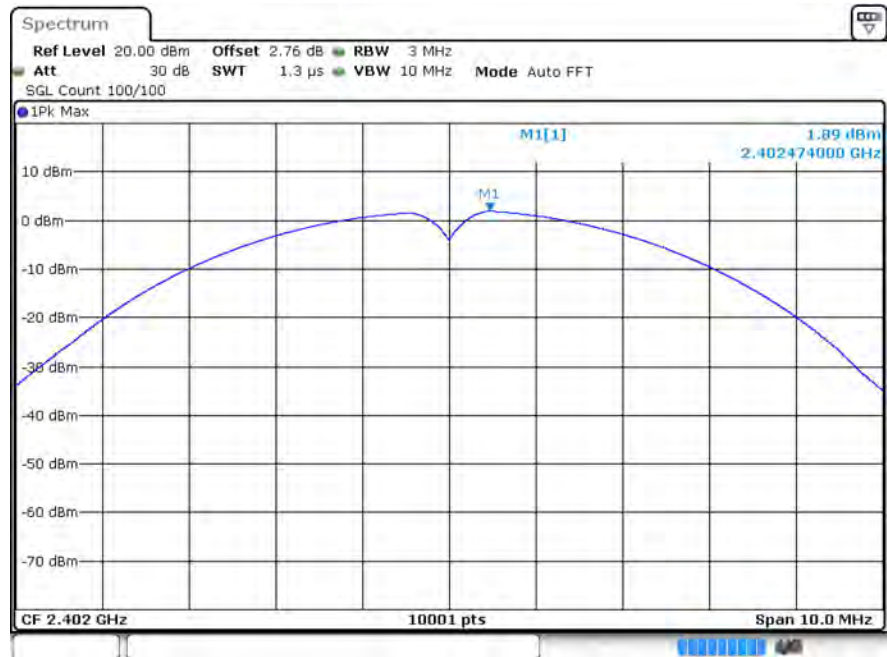
2.2 Test Graphs



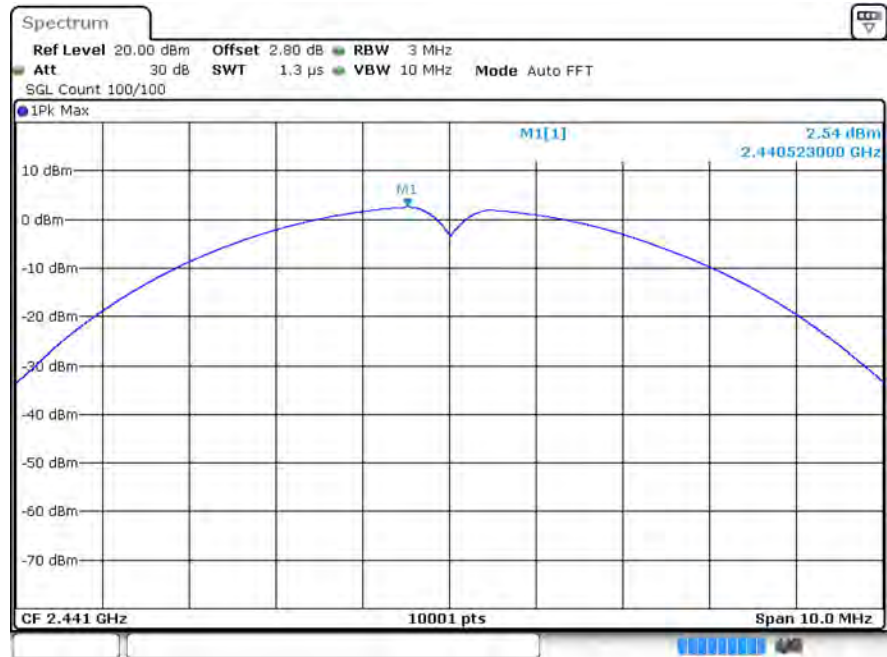
GFSK/HCH



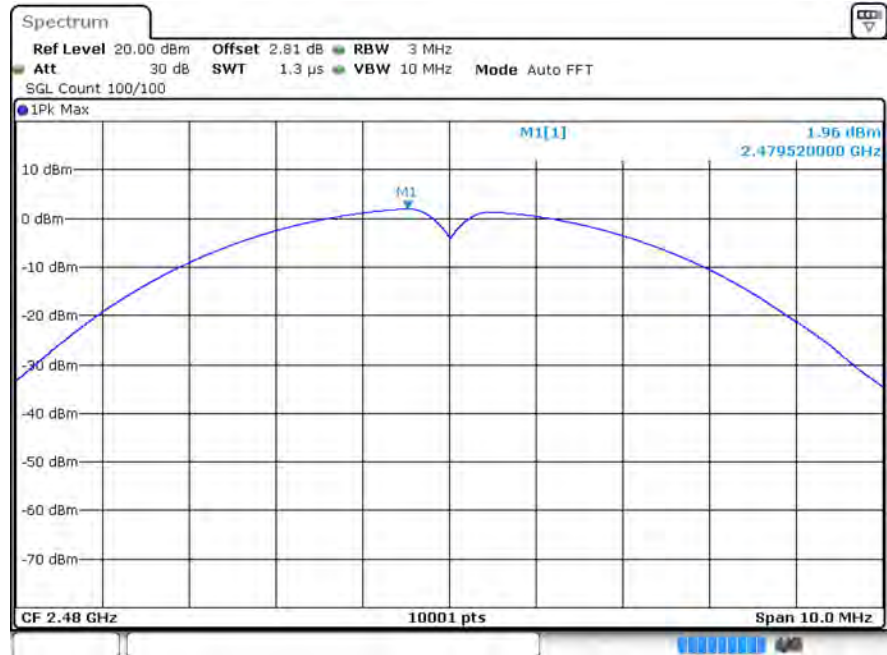
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

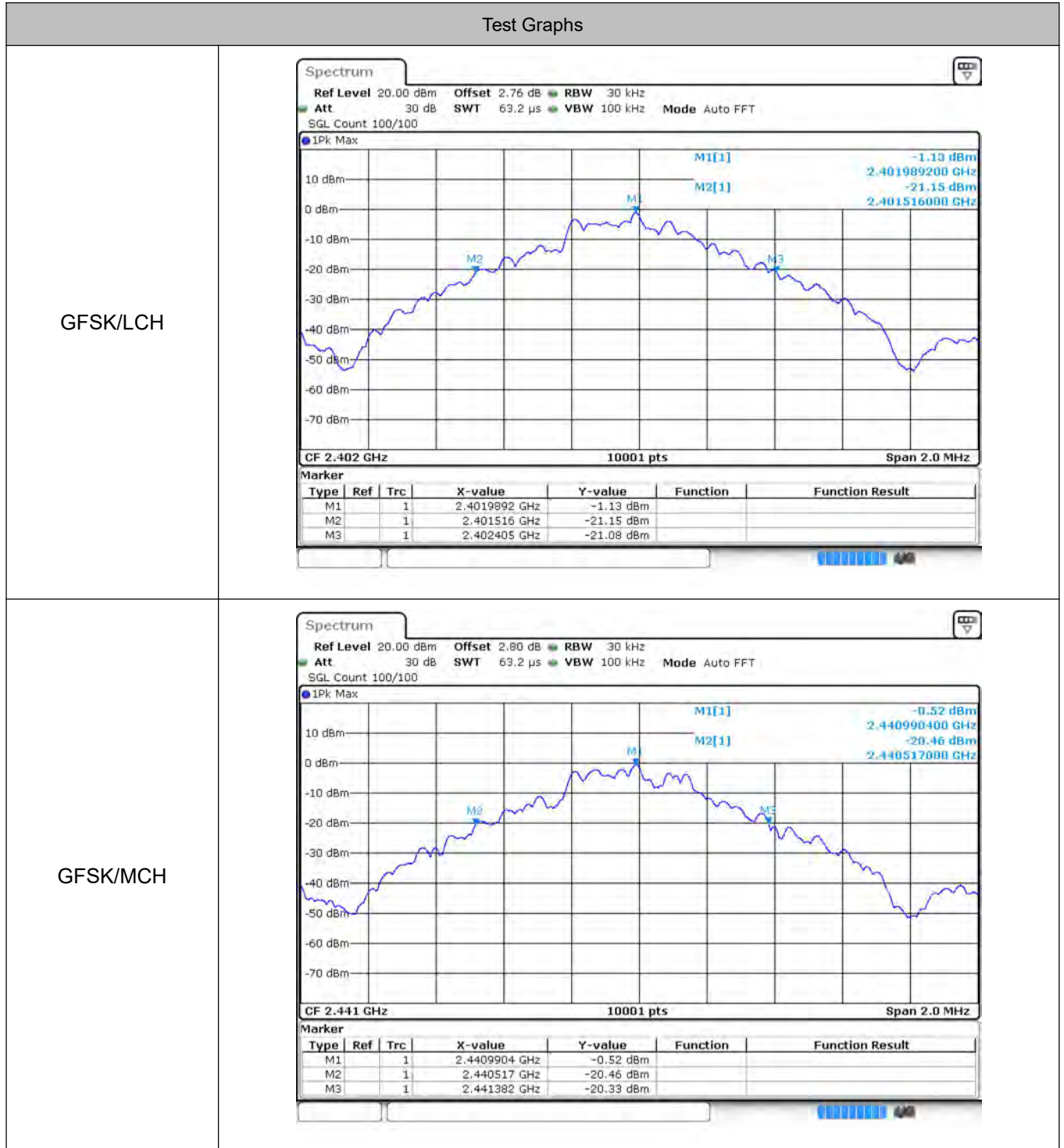


3 20dB Bandwidth

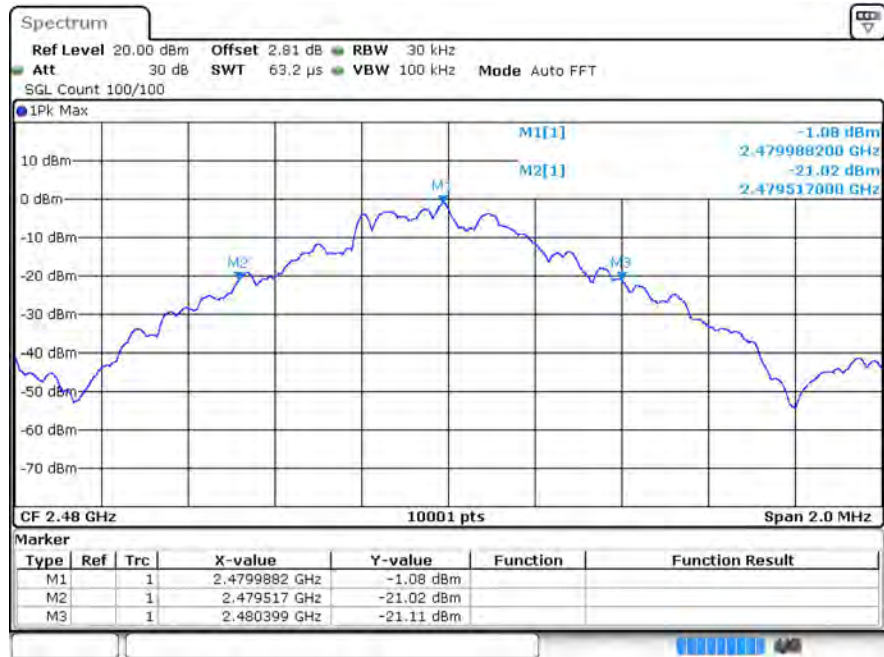
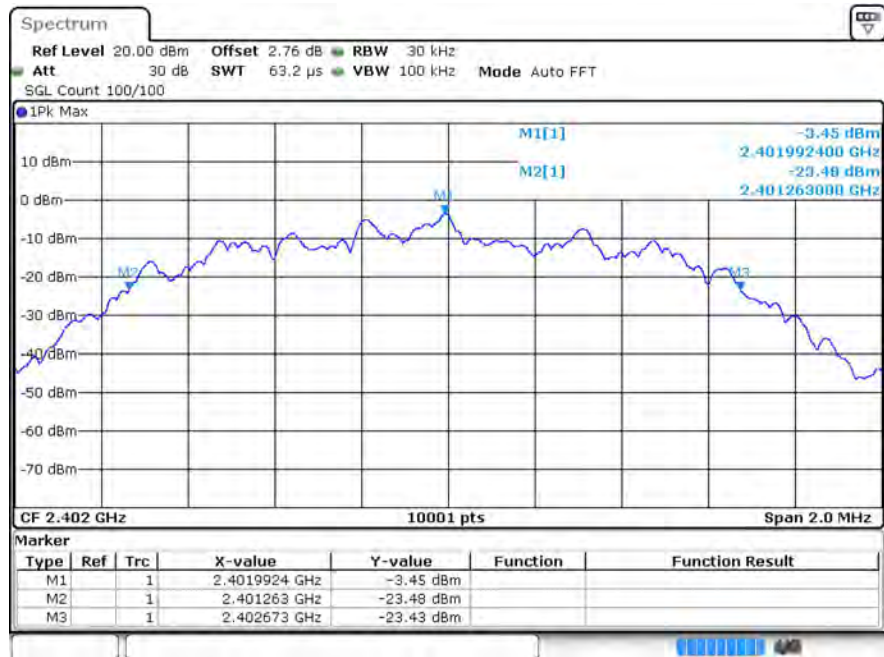
3.1 Test Result

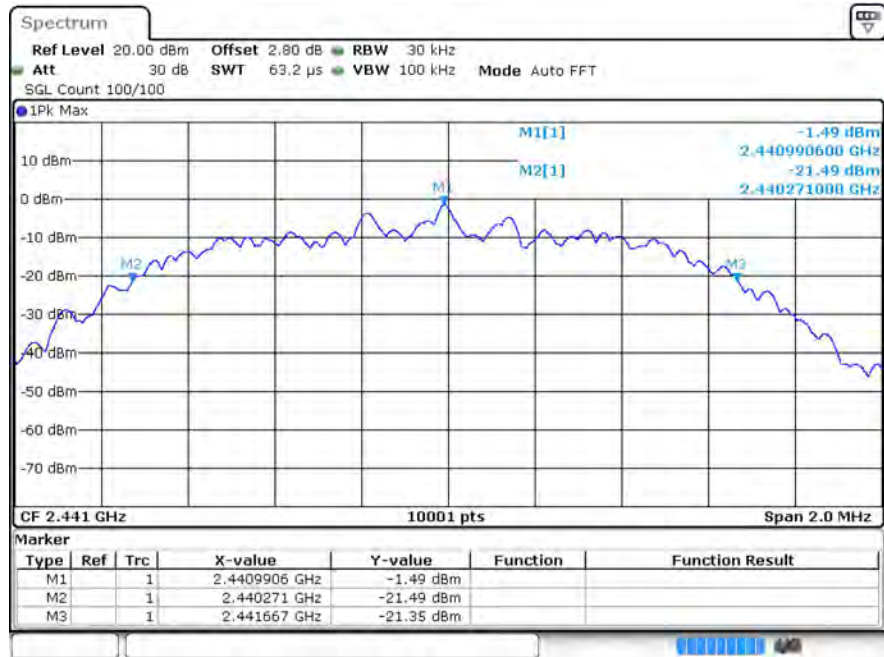
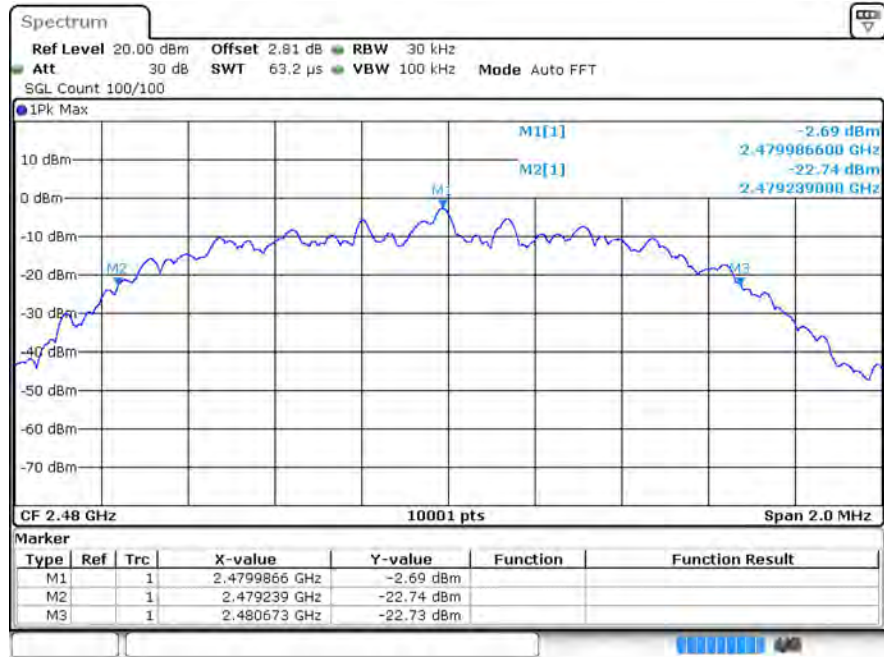
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.889	Not Specified	Pass
	MCH	0.866	Not Specified	Pass
	HCH	0.882	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.41	Not Specified	Pass
	MCH	1.396	Not Specified	Pass
	HCH	1.433	Not Specified	Pass

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	0.997	0.577	Pass
$\pi/4$ DQPSK	MCH	0.963	0.931	Pass

4.2 Test Graphs

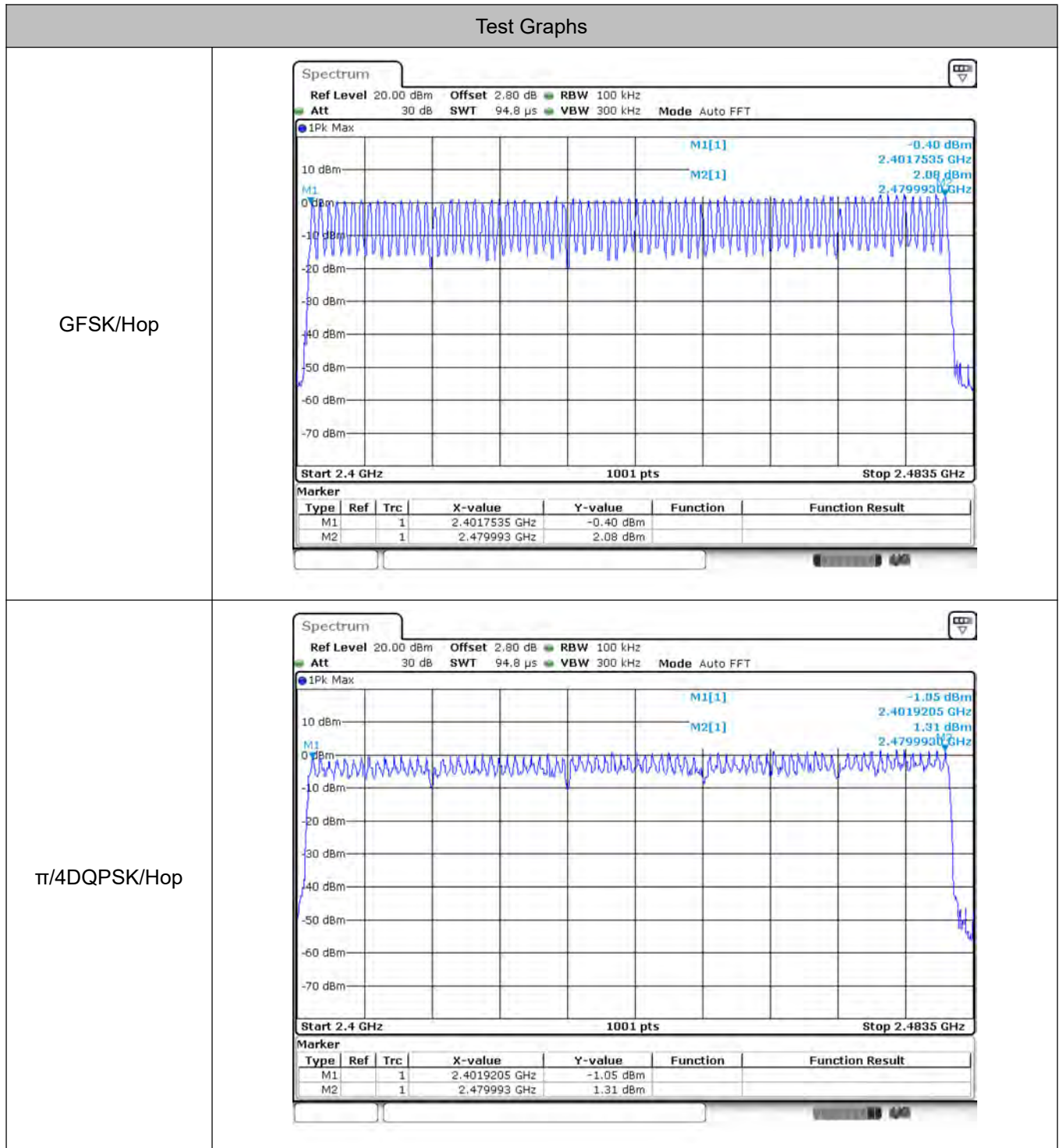


5 Hopping Channel Number

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

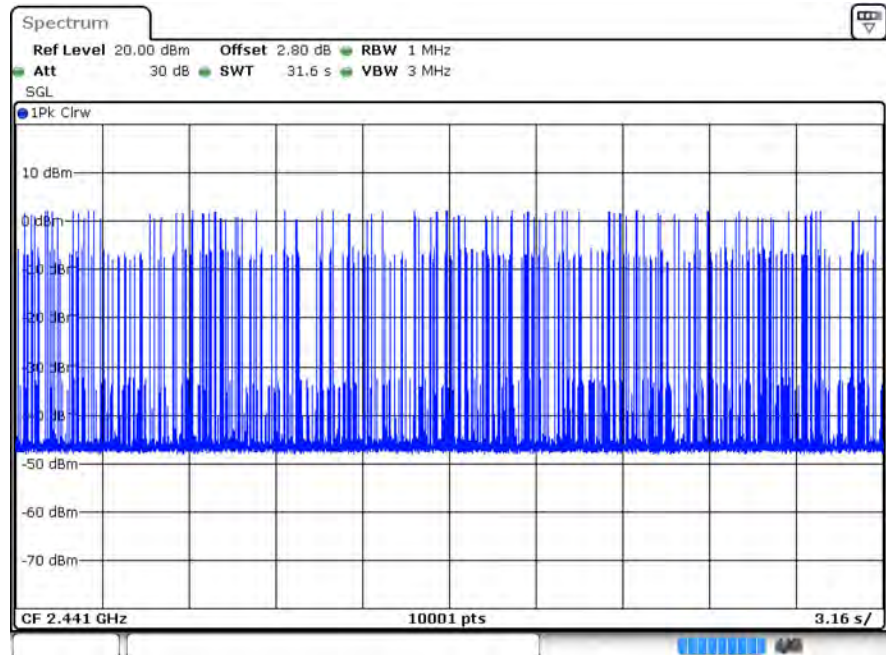
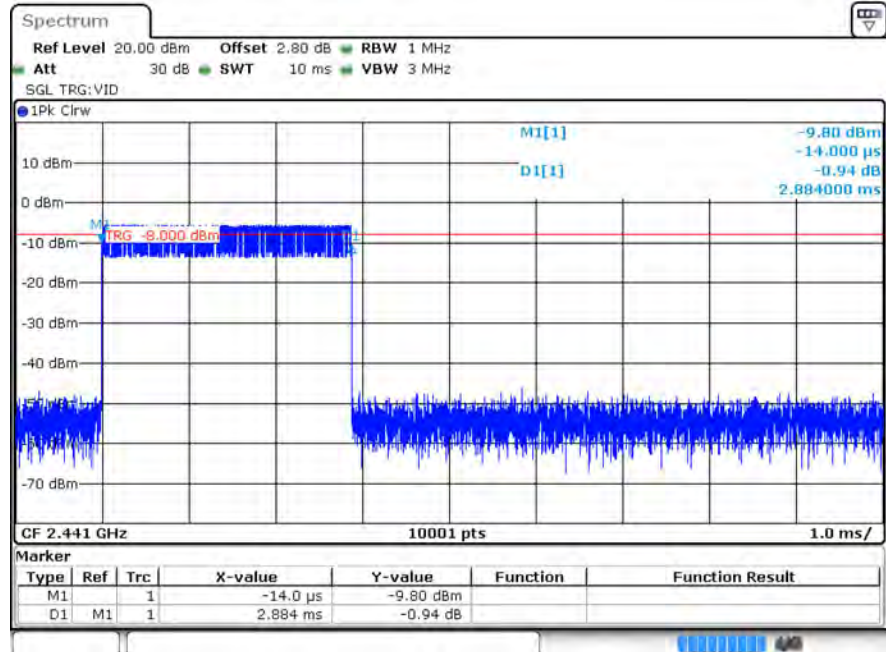
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.884	101	291.284	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	106	306.234	0.4	Pass

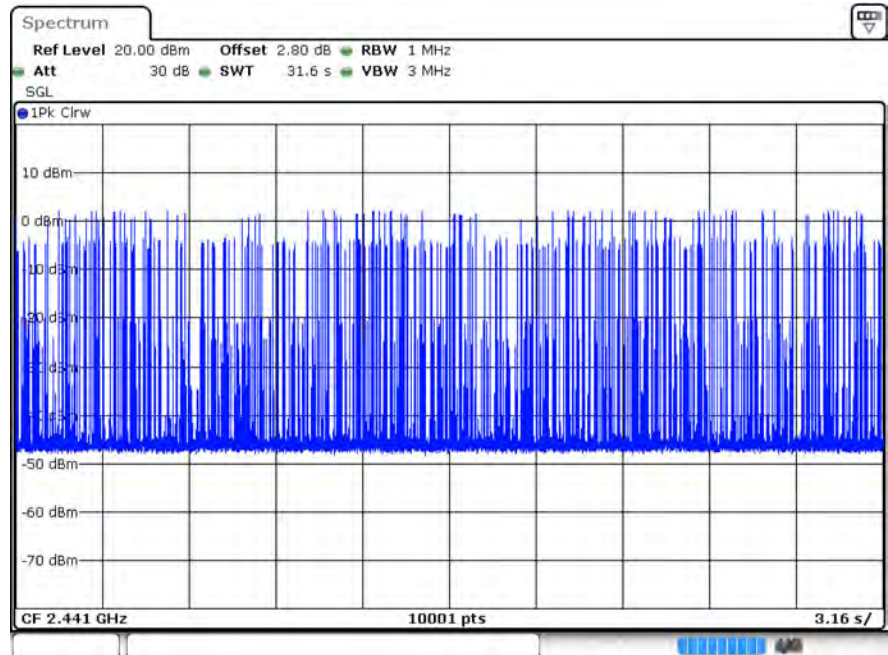
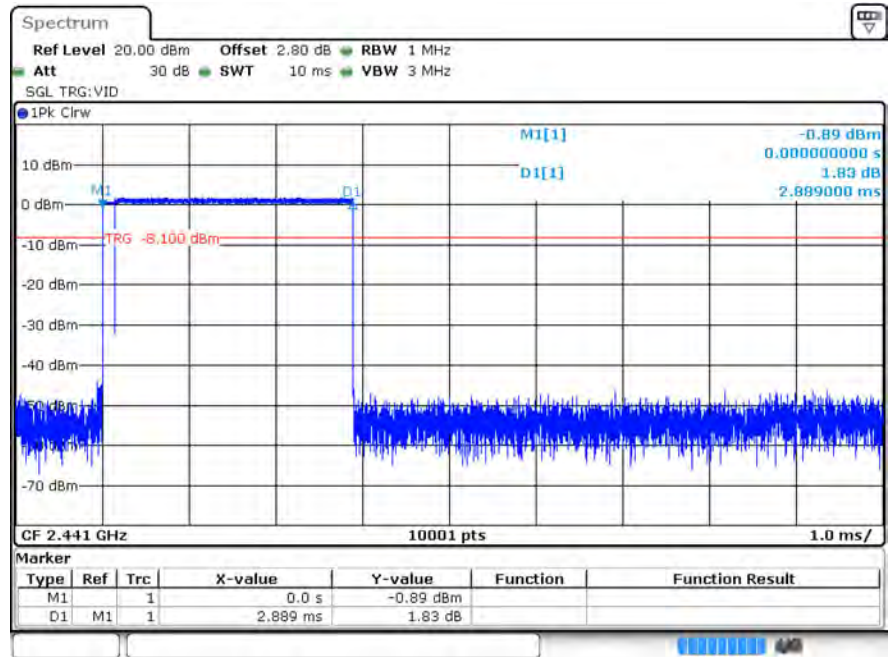
6.2 Test Graphs

Test Graphs

GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH



7 RF Conducted Spurious Emissions

7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-41.18	-20	Pass
	MCH	-43.29	-20	Pass
	HCH	-42.11	-20	Pass
$\pi/4$ DQPSK	LCH	-40.27	-20	Pass
	MCH	-41.44	-20	Pass
	HCH	-41.23	-20	Pass

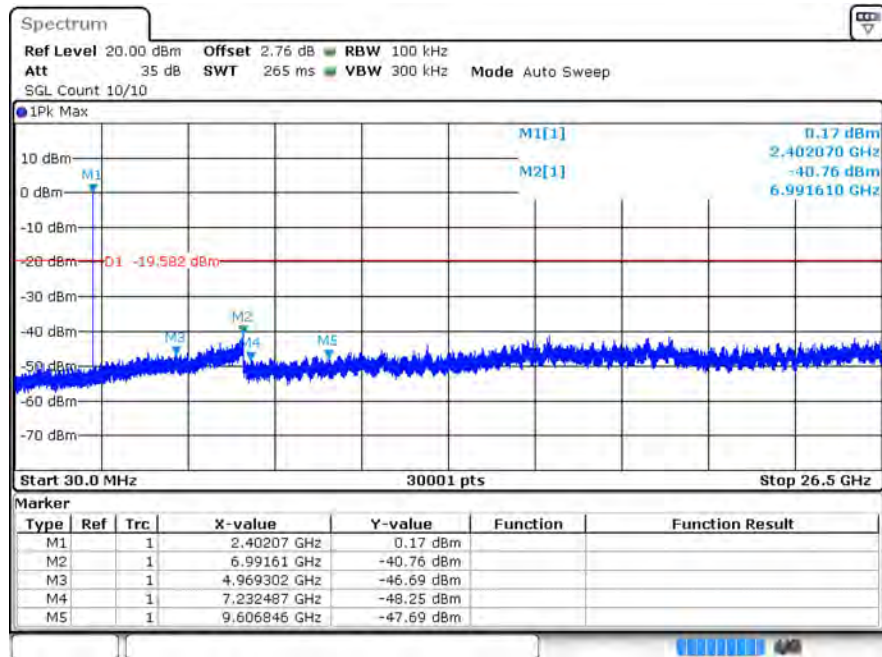
7.2 Test Graphs

GFSK_LCH_Graphs

Pref



Puw

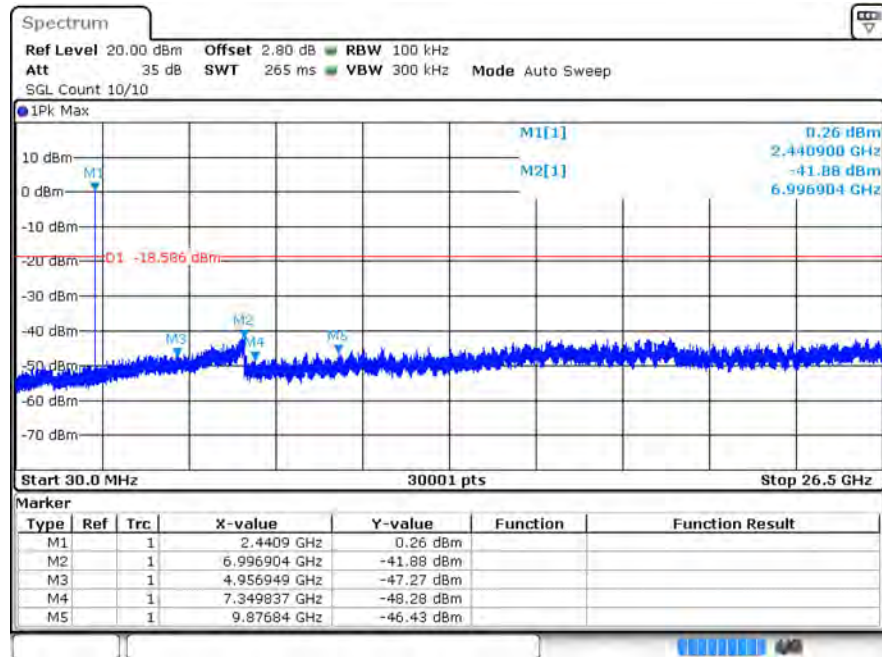


GFSK_MCH_Graphs

Pref



Puw

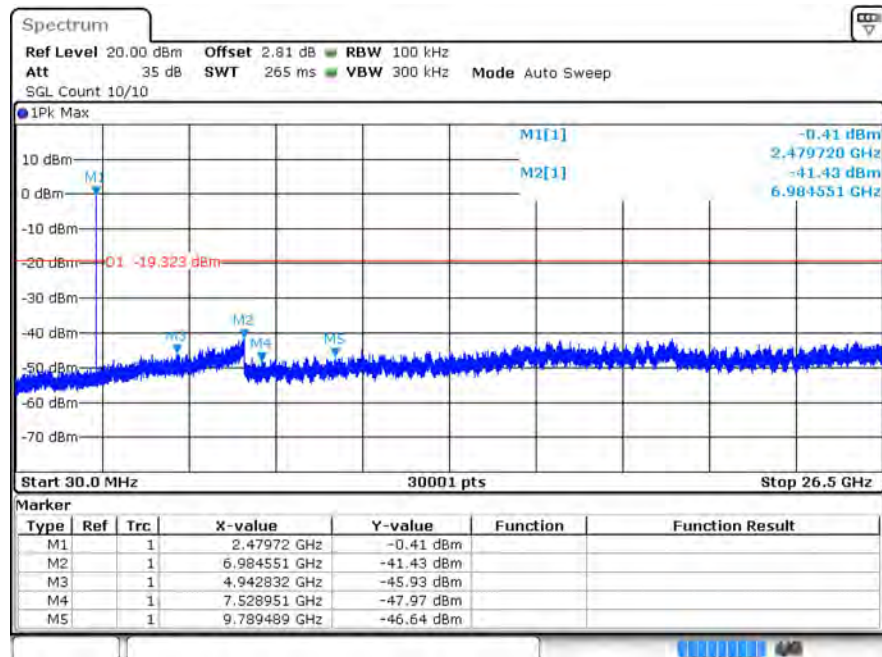


GFSK_HCH_Graphs

Pref

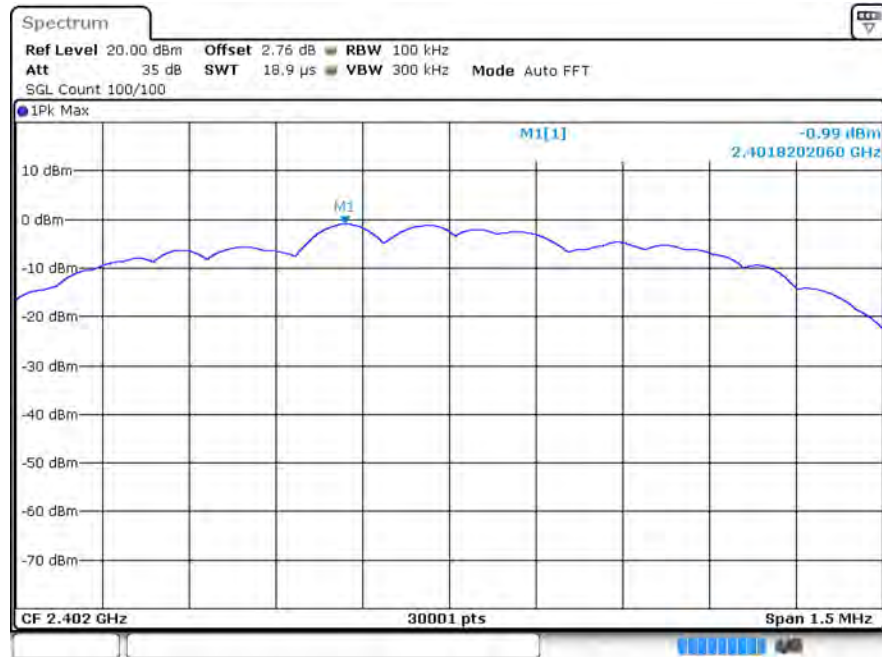


Puw

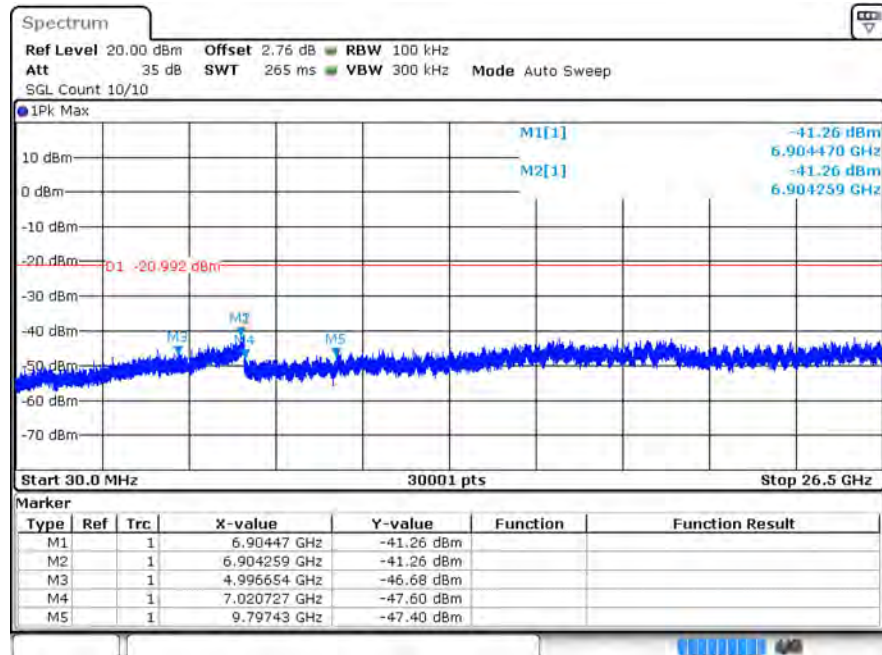


$\pi/4$ DQPSK_LCH_Graphs

Pref

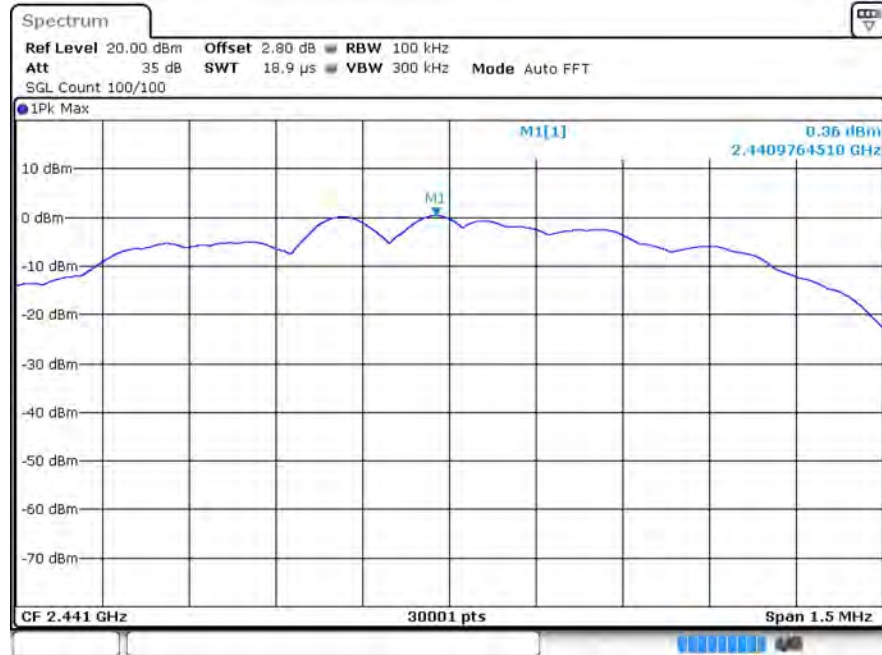


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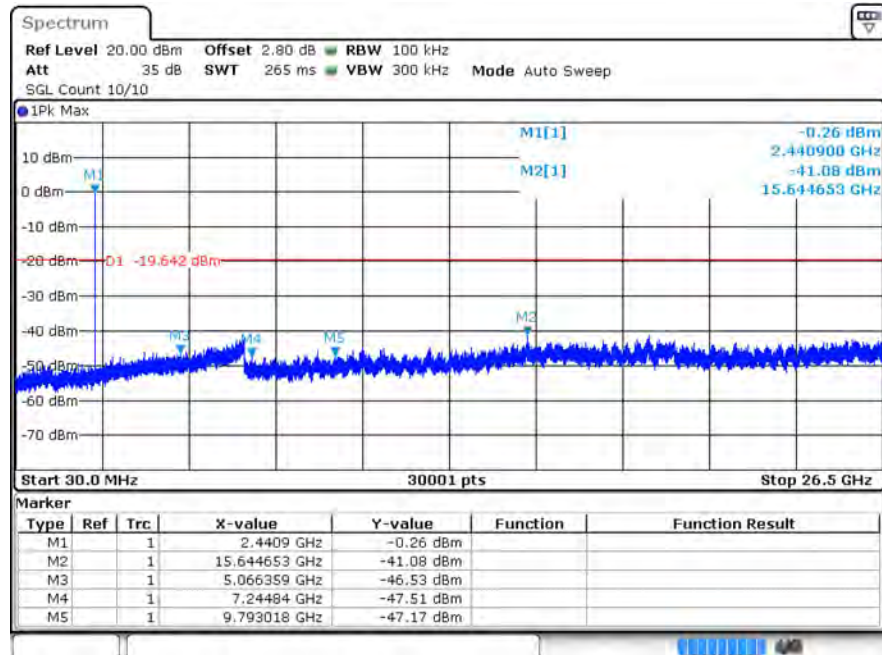


$\pi/4$ DQPSK_MCH_Graphs

Pref



Puw

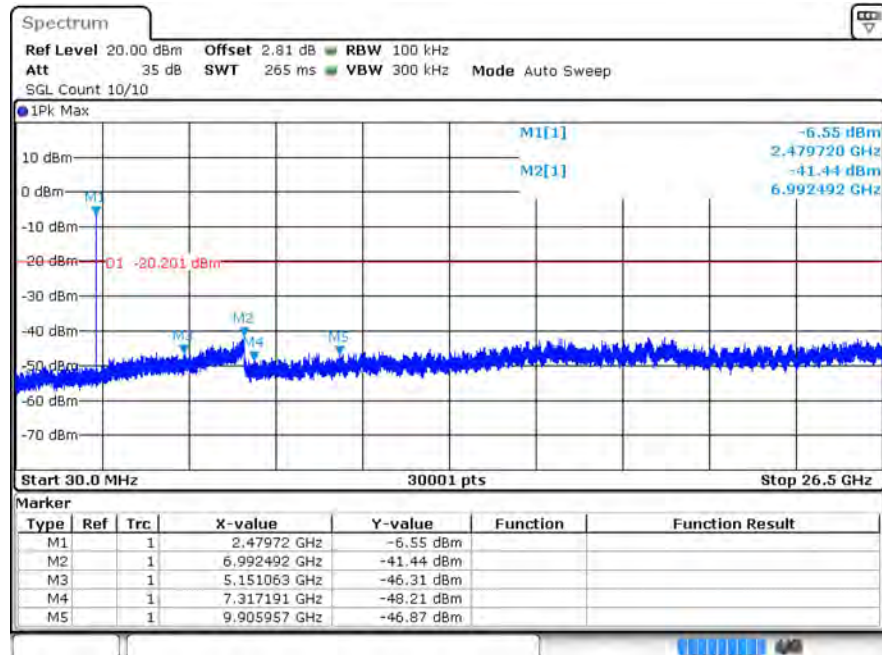


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

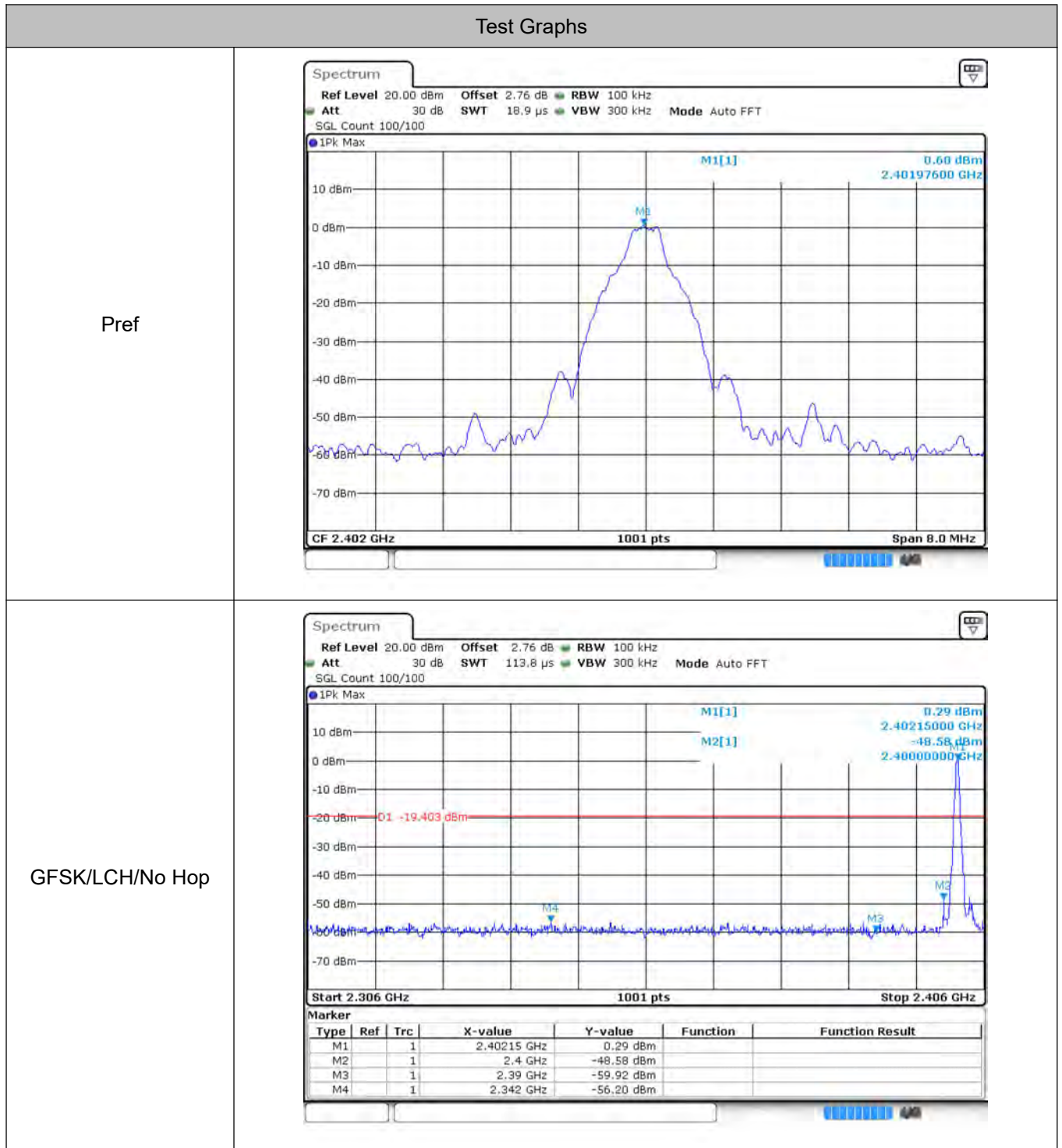


8 Band-edge for RF Conducted Emissions

8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-56.8	-20	Pass
			On	-55.38	-20	Pass
	HCH	2480	Off	-56.33	-20	Pass
			On	-49.79	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-54.58	-20	Pass
			On	-53.2	-20	Pass
	HCH	2480	Off	-46.46	-20	Pass
			On	-56.13	-20	Pass

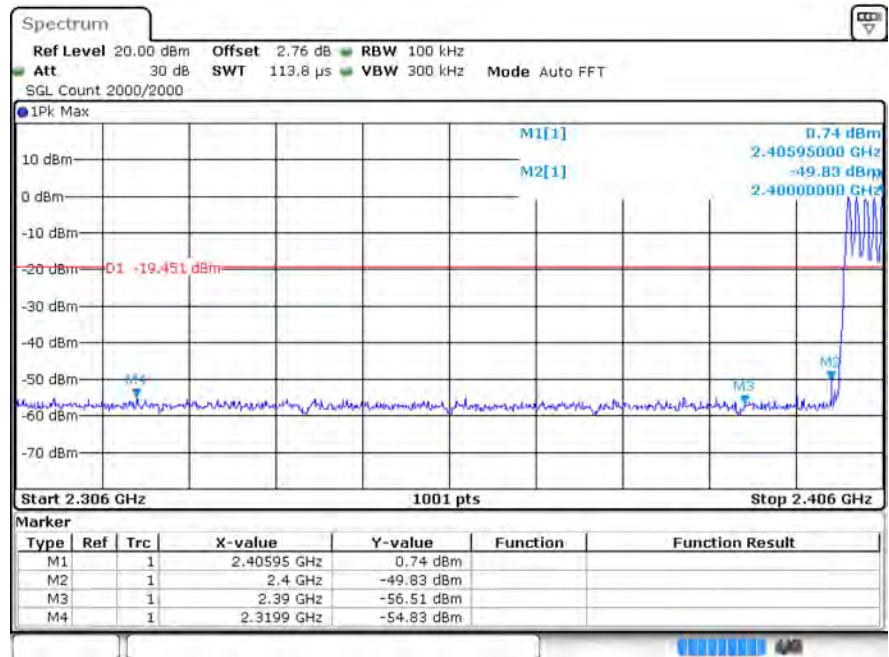
8.2 Test Graphs



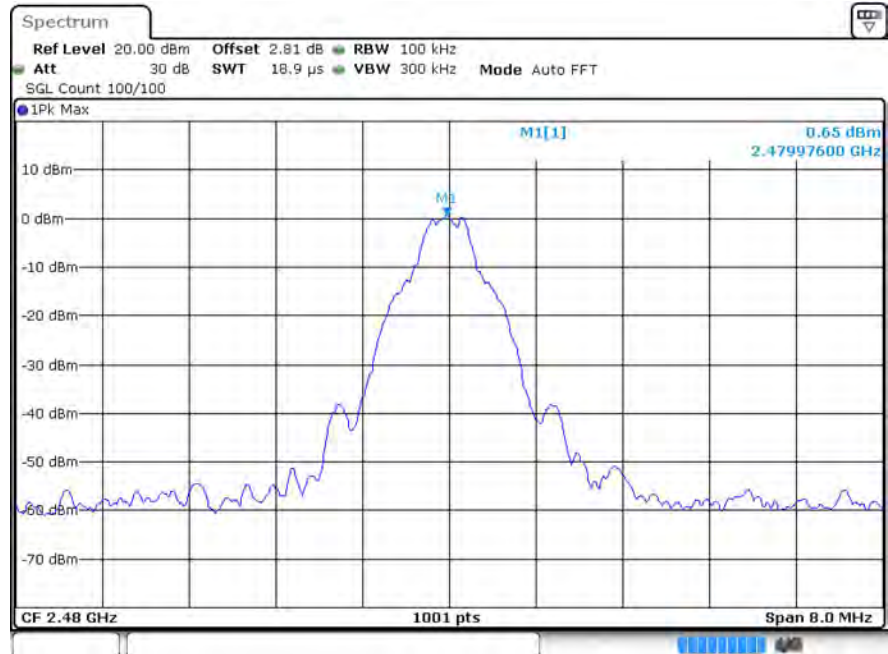
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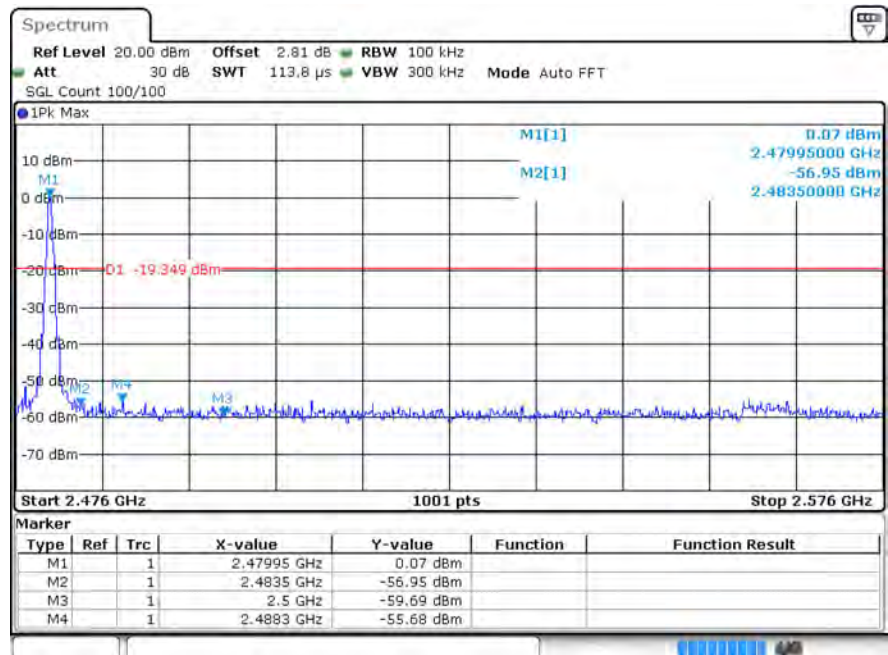
GFSK/LCH/Hop



Ref



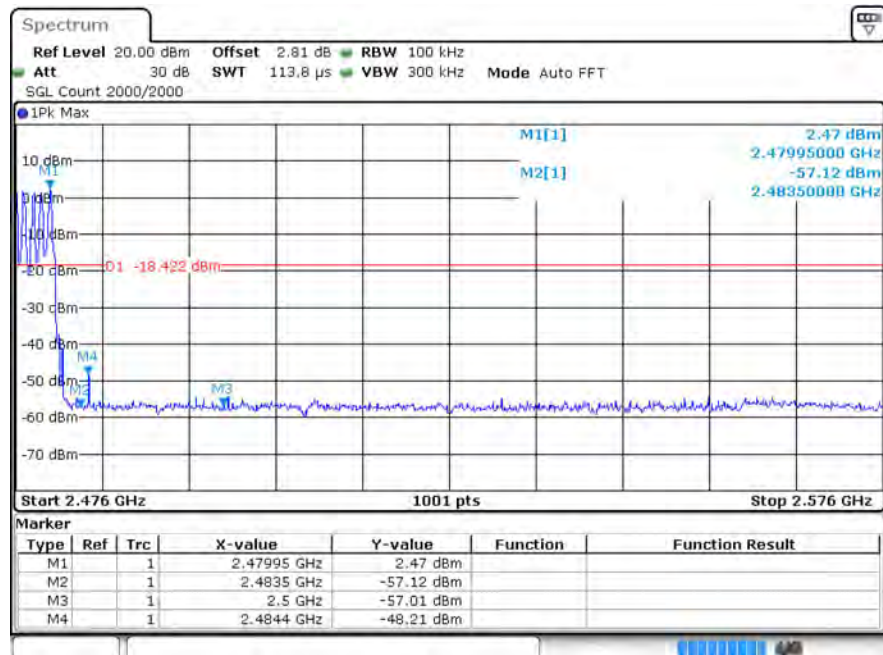
GFSK/HCH/No Hop



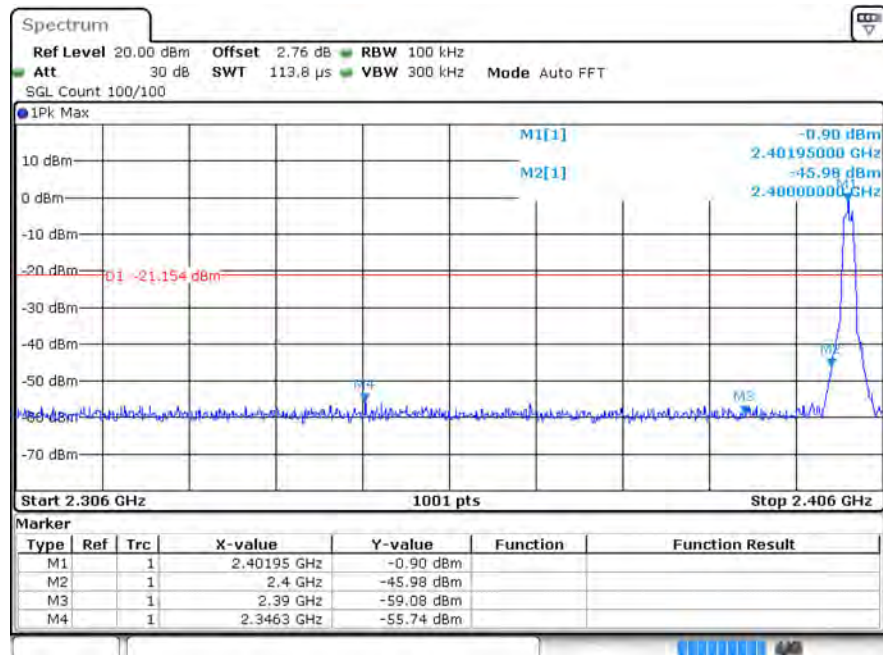
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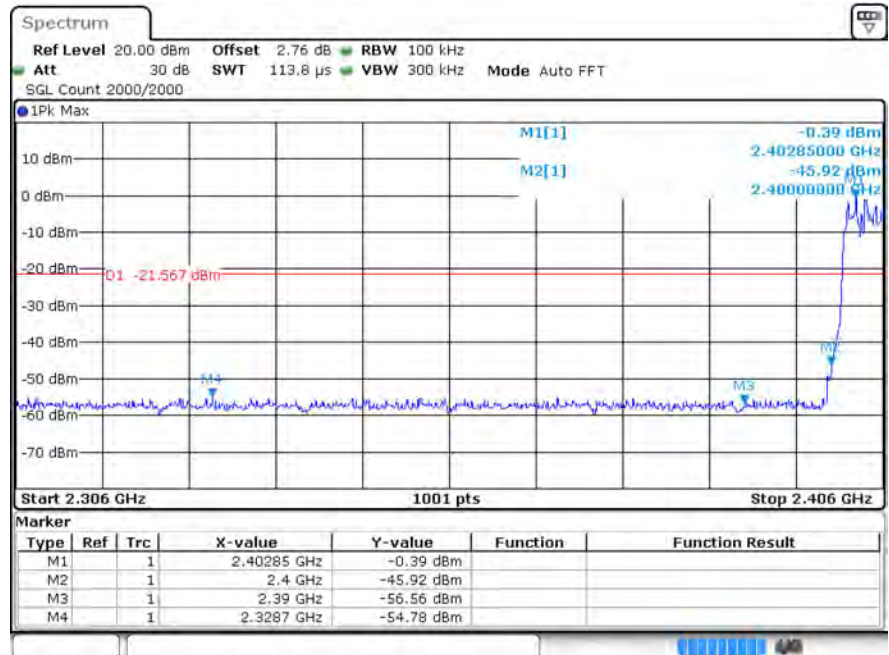
GFSK/HCH/Hop



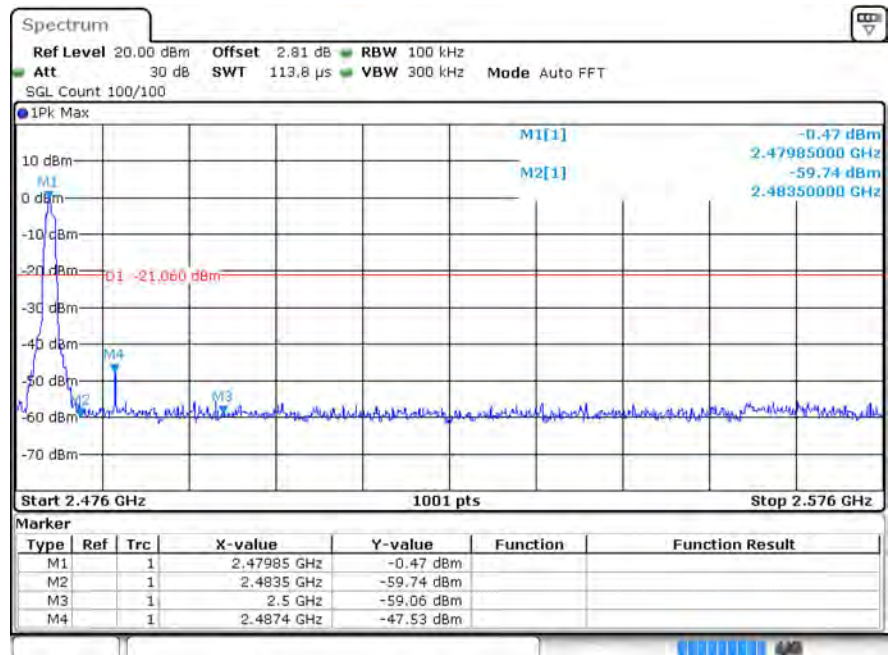
Ref


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


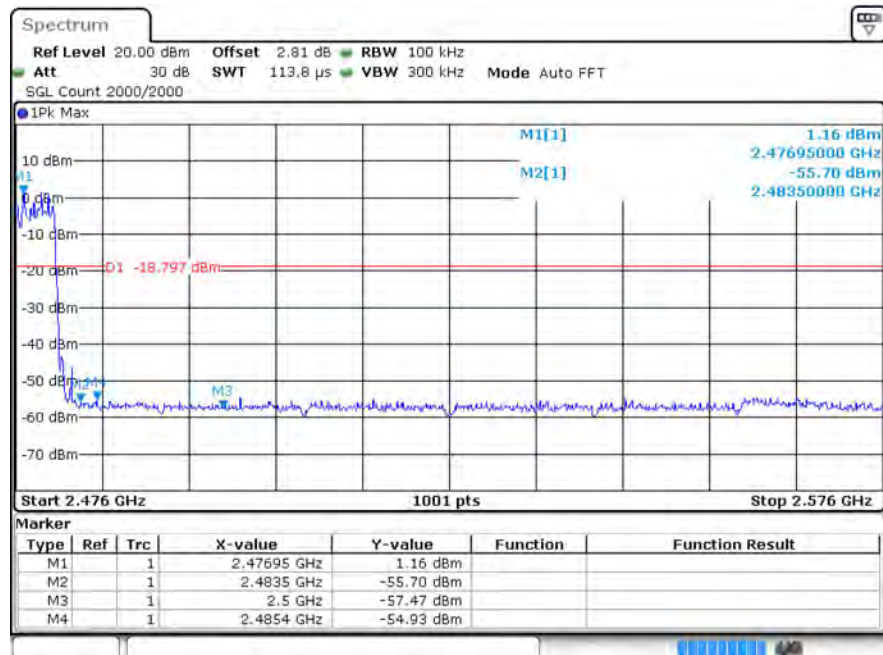
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


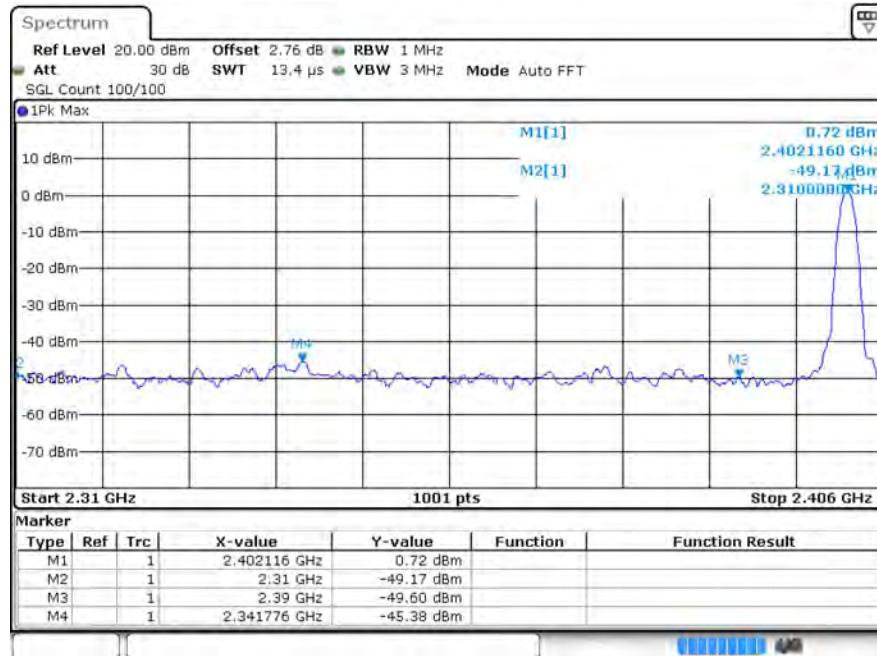
9 Restrict-band band-edge measurements

9.1 Test Result

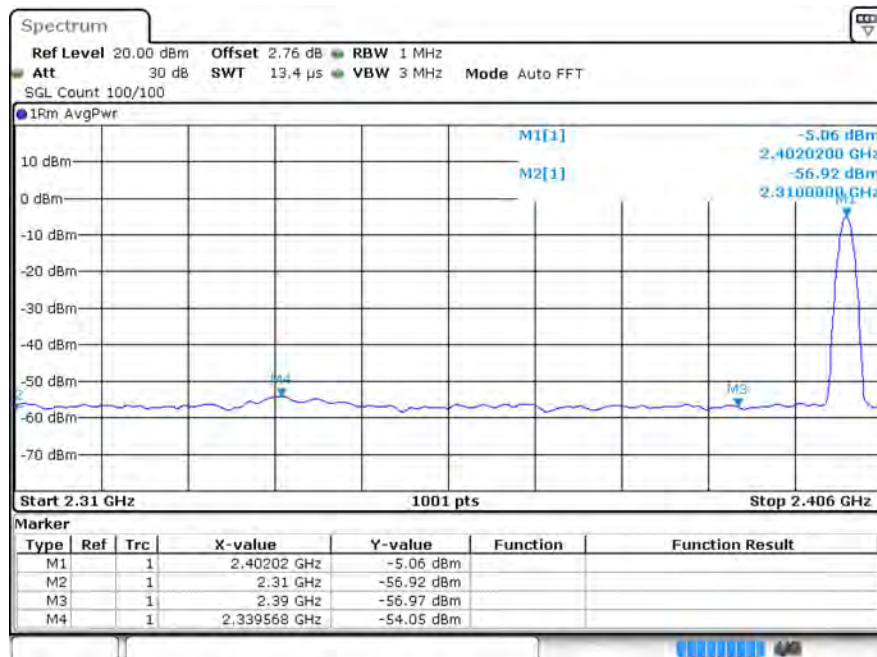
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-49.17	2	-	48.09	PEAK	74	Pass
	Off	2310.0	-56.92	2	5.05	45.39	AV	54	Pass
	Off	2341.776	-45.37	2	-	51.89	PEAK	74	Pass
	Off	2339.568	-54.04	2	5.05	48.27	AV	54	Pass
	Off	2390.0	-49.6	2	-	47.66	PEAK	74	Pass
	Off	2390.0	-56.97	2	5.05	45.34	AV	54	Pass
	Off	2483.5	-49.21	2	-	48.05	PEAK	74	Pass
	Off	2483.5	-56.1	2	5.06	46.22	AV	54	Pass
	Off	2487.424	-46.55	2	-	50.71	PEAK	74	Pass
	Off	2487.208	-55.14	2	5.06	47.18	AV	54	Pass
	Off	2500.0	-48.28	2	-	48.98	PEAK	74	Pass
	Off	2500.0	-56.49	2	5.06	45.83	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-49.14	2	-	48.12	PEAK	74	Pass
	Off	2310.0	-56.52	2	4.95	45.69	AV	54	Pass
	Off	2341.872	-46.19	2	-	51.07	PEAK	74	Pass
	Off	2338.224	-54.28	2	4.95	47.93	AV	54	Pass
	Off	2390.0	-50.17	2	-	47.09	PEAK	74	Pass
	Off	2390.0	-57.37	2	4.95	44.84	AV	54	Pass
	Off	2483.5	-50.05	2	-	47.21	PEAK	74	Pass
	Off	2483.5	-55.94	2	4.96	46.28	AV	54	Pass
	Off	2487.424	-46.14	2	-	51.12	PEAK	74	Pass
	Off	2487.424	-55.51	2	4.96	46.71	AV	54	Pass
	Off	2500.0	-50.03	2	-	47.23	PEAK	74	Pass
	Off	2500.0	-56.55	2	4.96	45.67	AV	54	Pass

9.2 Test Graphs

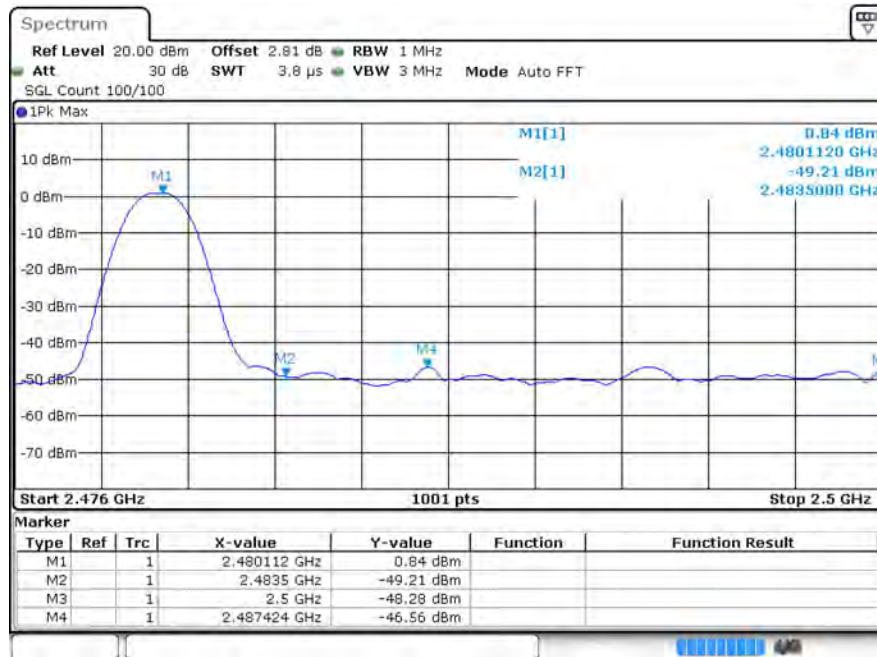
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



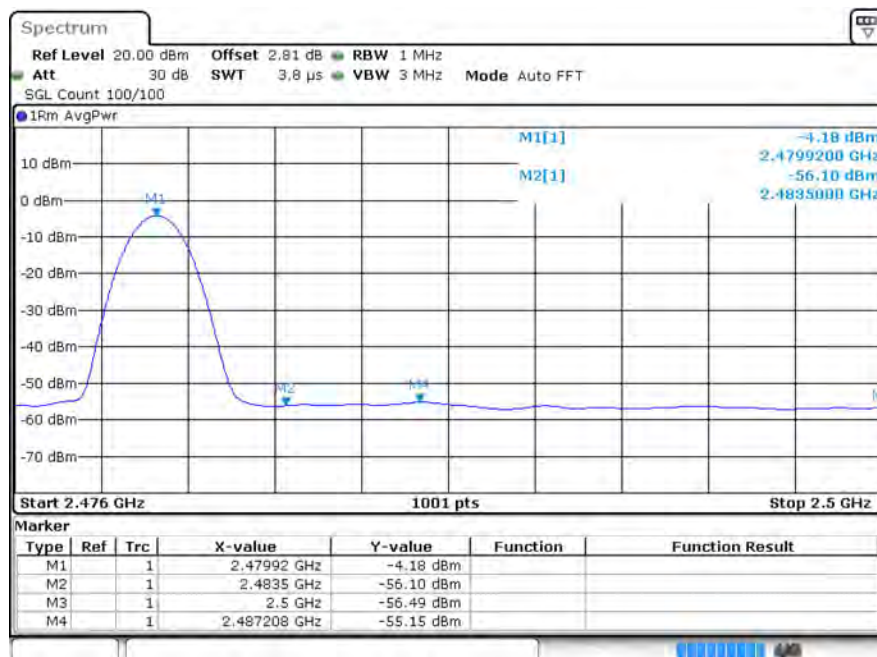
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



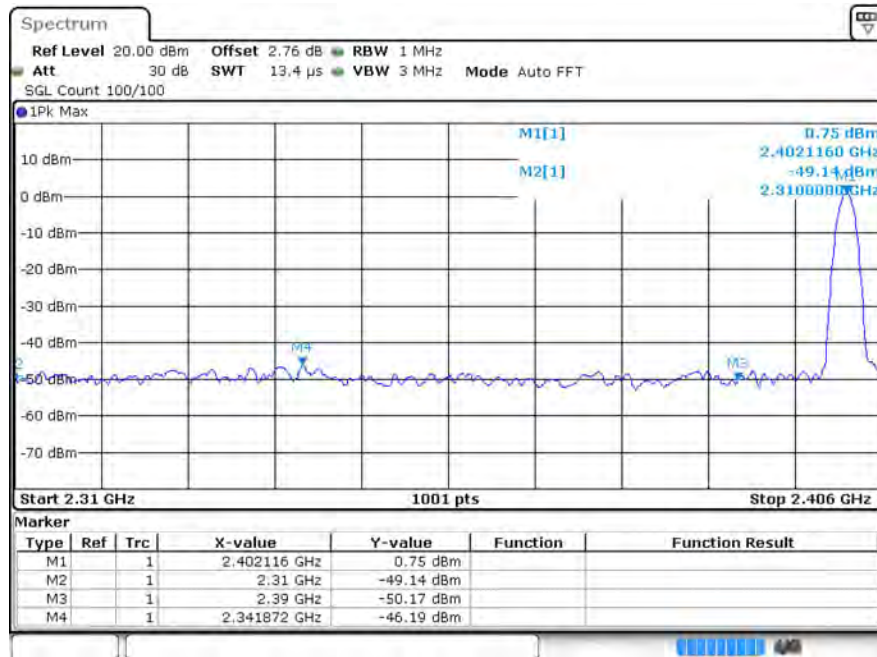
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



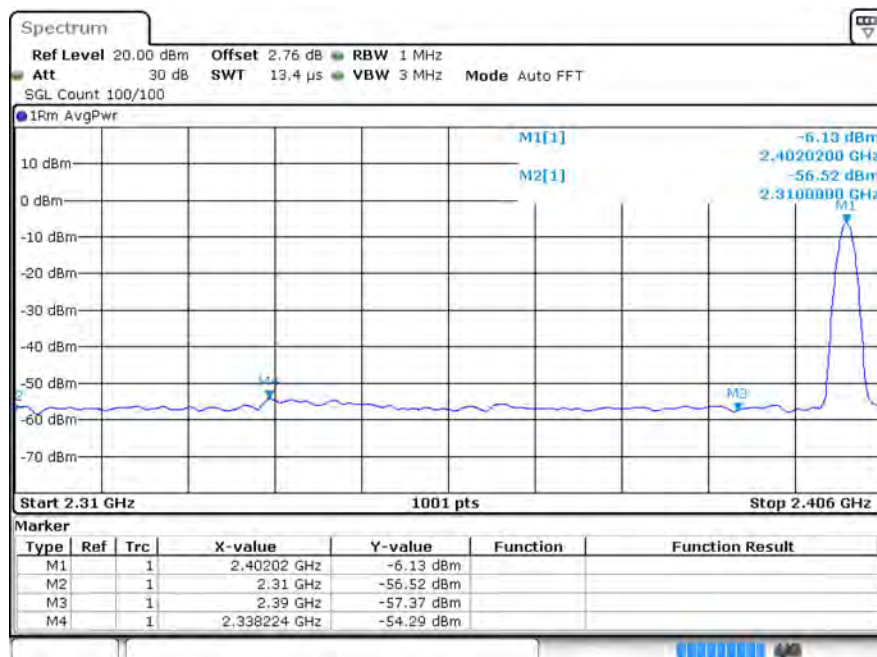
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



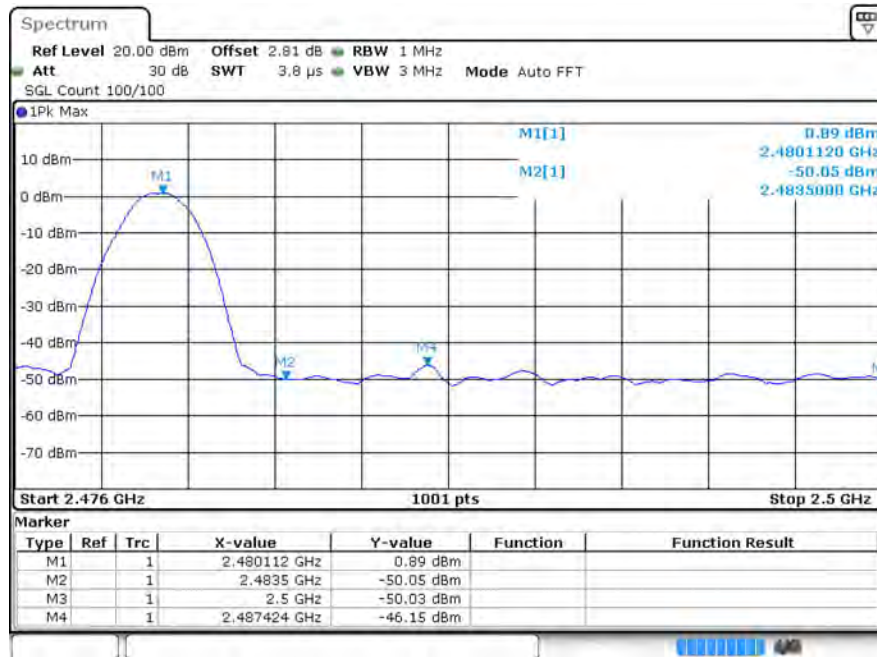
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



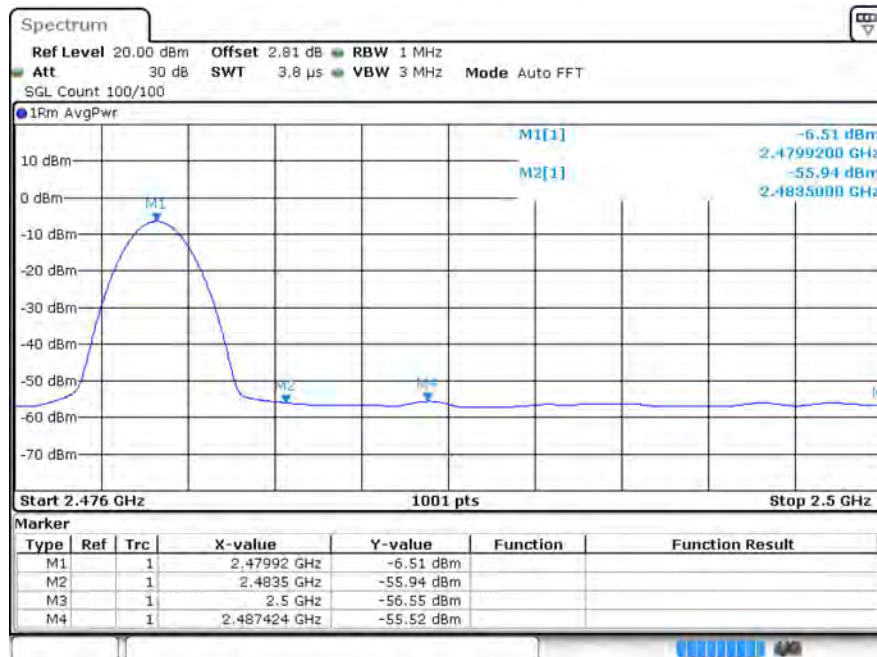
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---