



Appendix A

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

Product Name: Mini Boomboxes

Trade Mark: N/A

Test Model: WE-MBB-RB

Environmental Conditions

Temperature:	19.6℃
Relative Humidity:	51.3%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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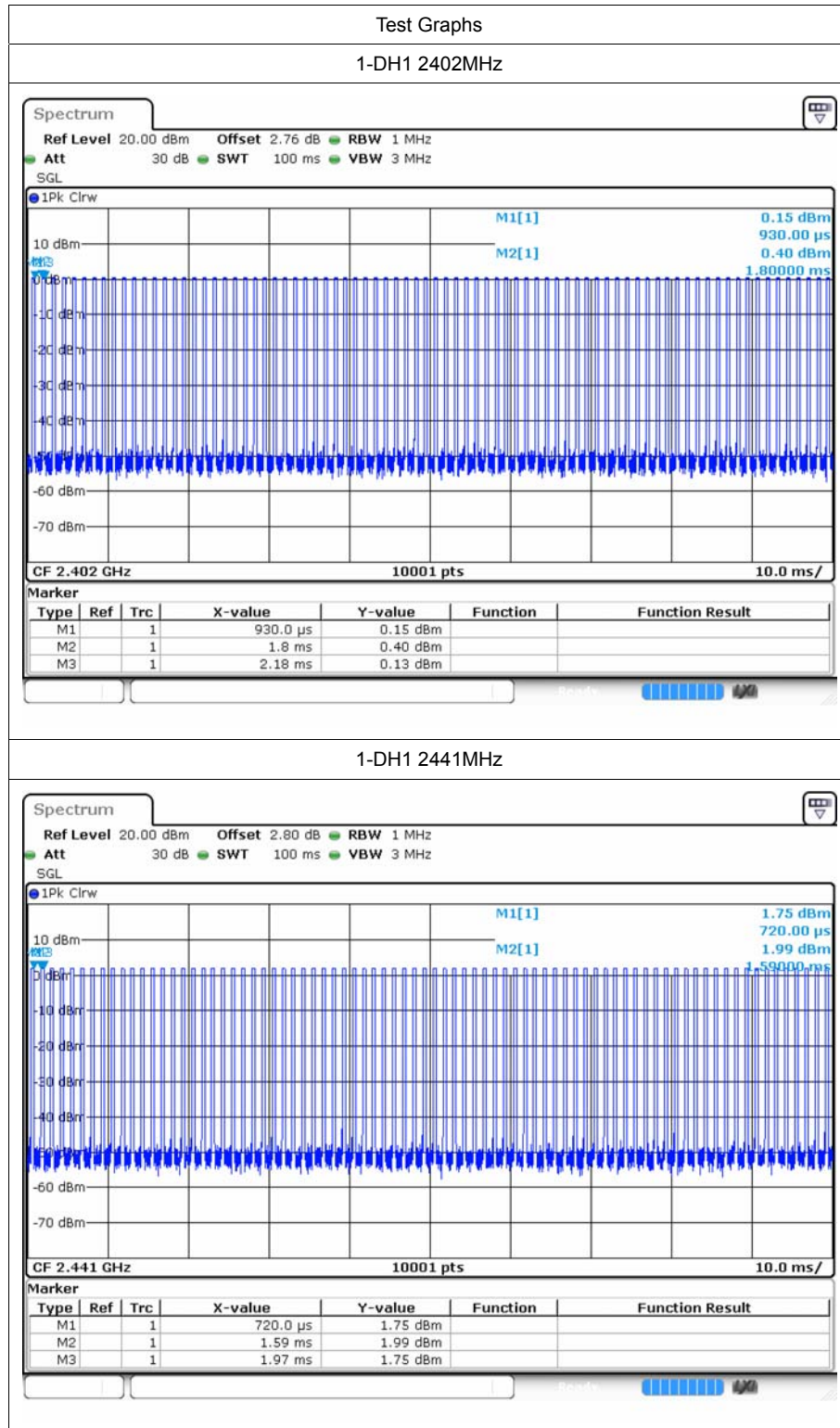
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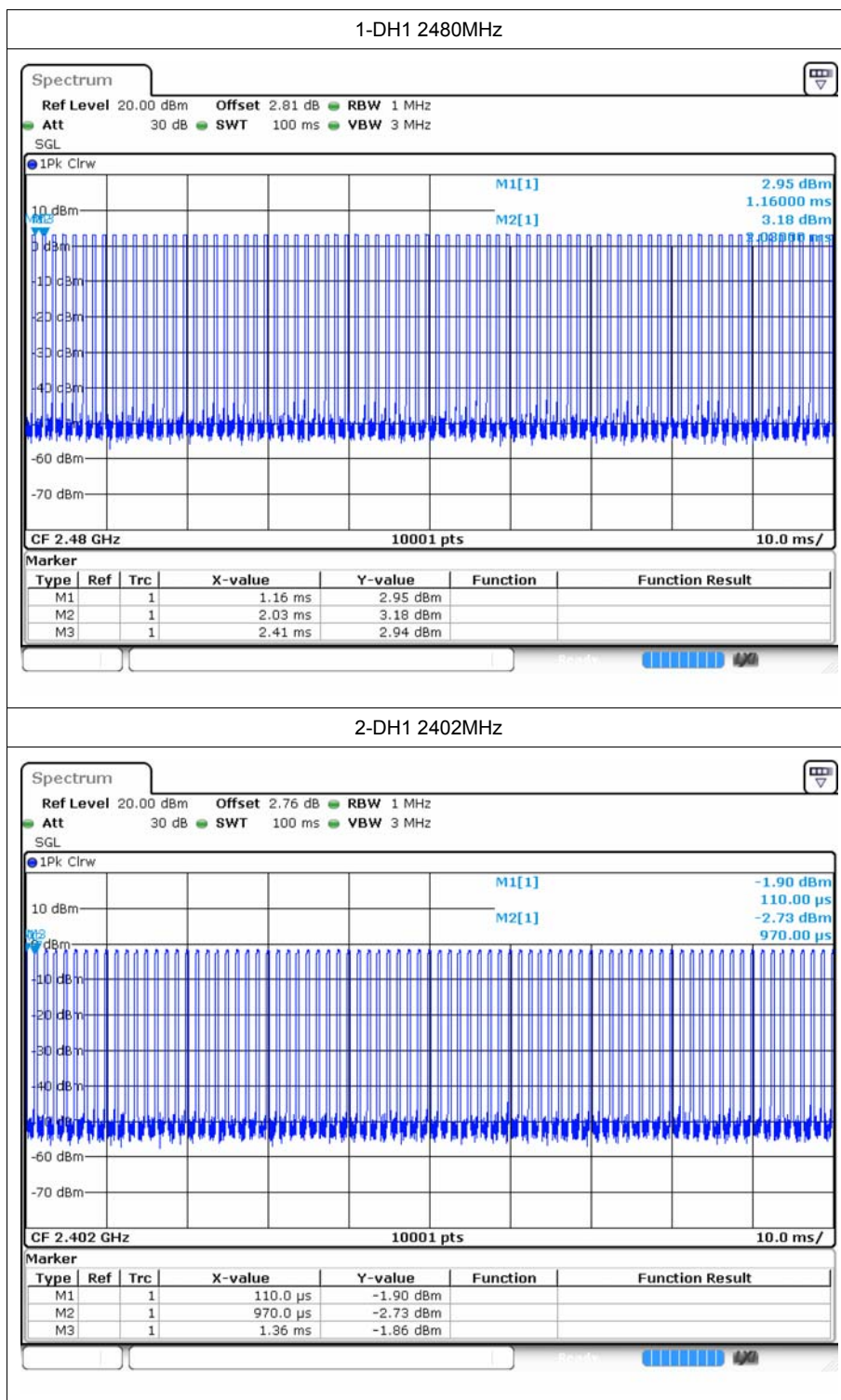
1 Duty Cycle

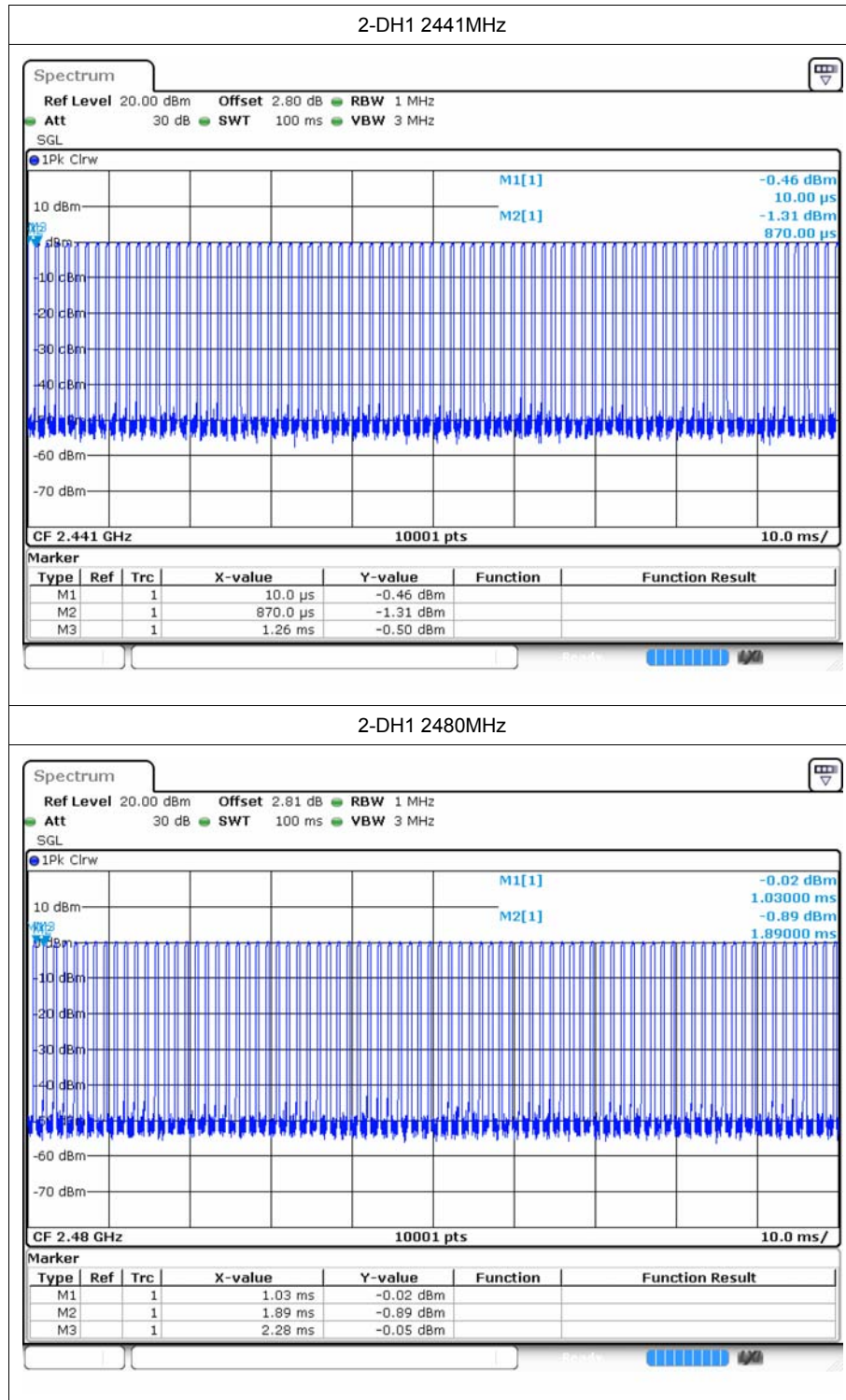
1.1 Test Result

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

1.2 Test Graphs





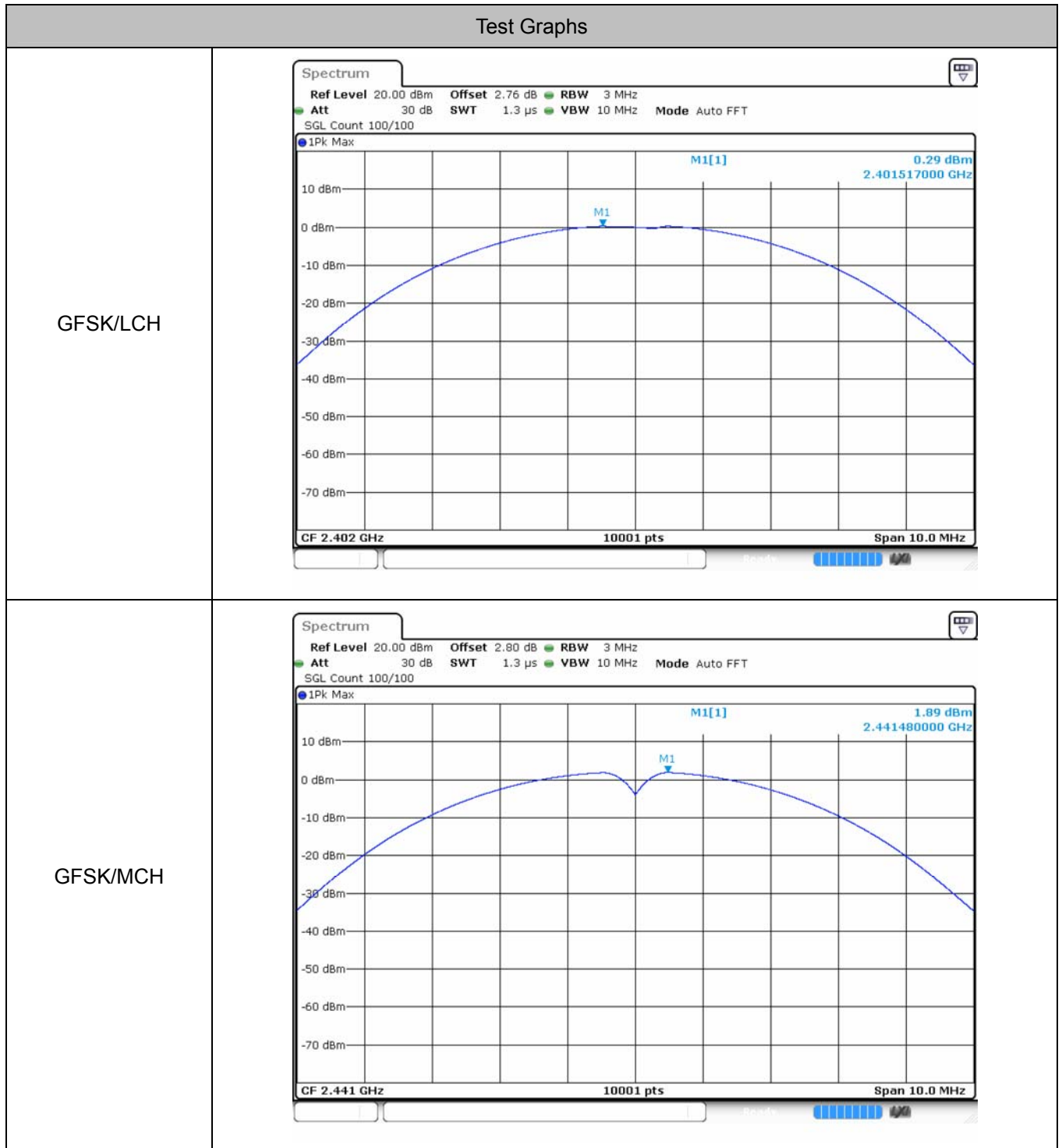


2 Maximum Conducted Peak Output Power

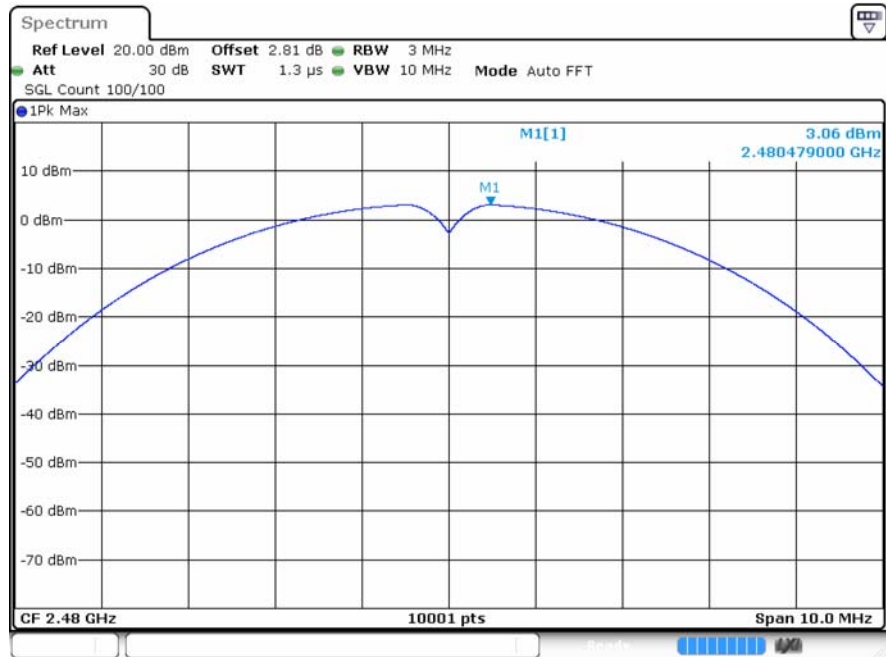
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.29	21	Pass
	MCH	1.89	21	Pass
	HCH	3.06	21	Pass
$\pi/4$ DQPSK	LCH	-0.61	21	Pass
	MCH	0.63	21	Pass
	HCH	0.72	21	Pass

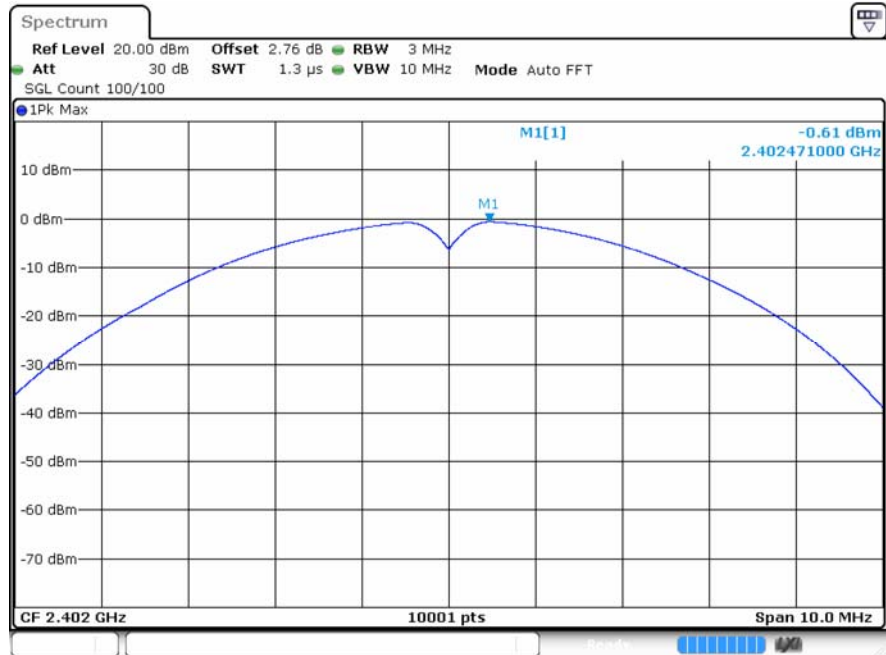
2.2 Test Graphs



GFSK/HCH



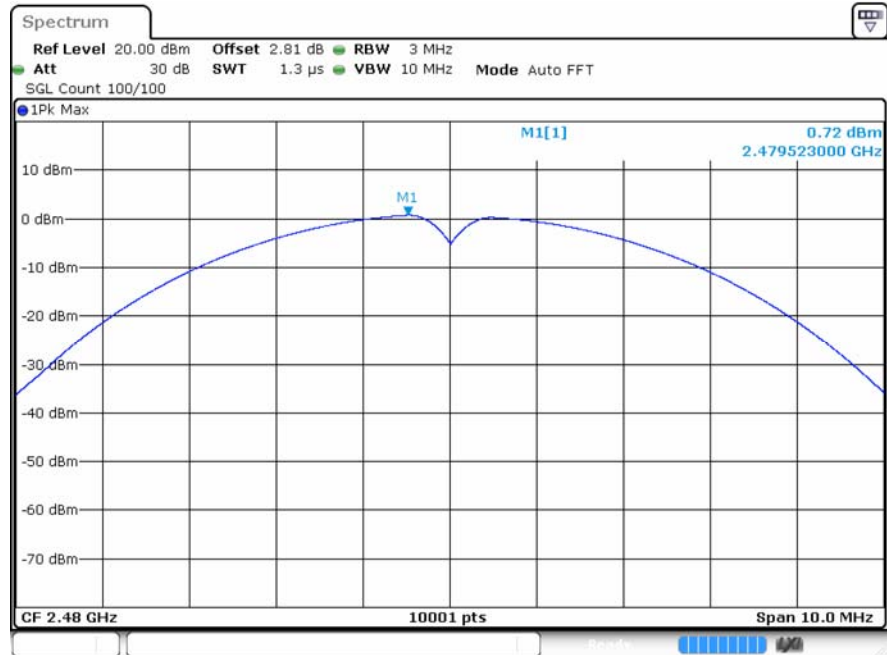
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

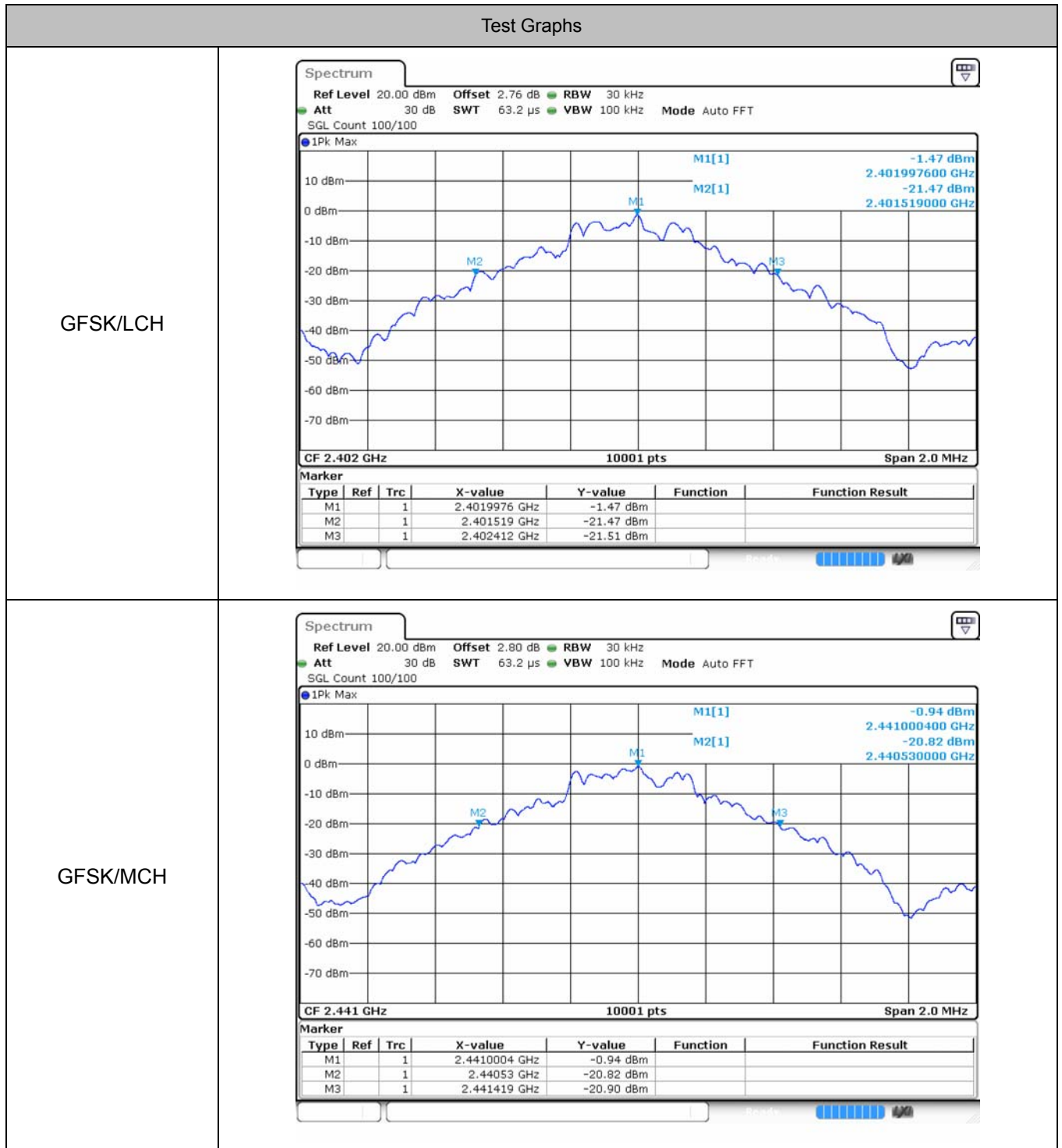


3 20dB Bandwidth

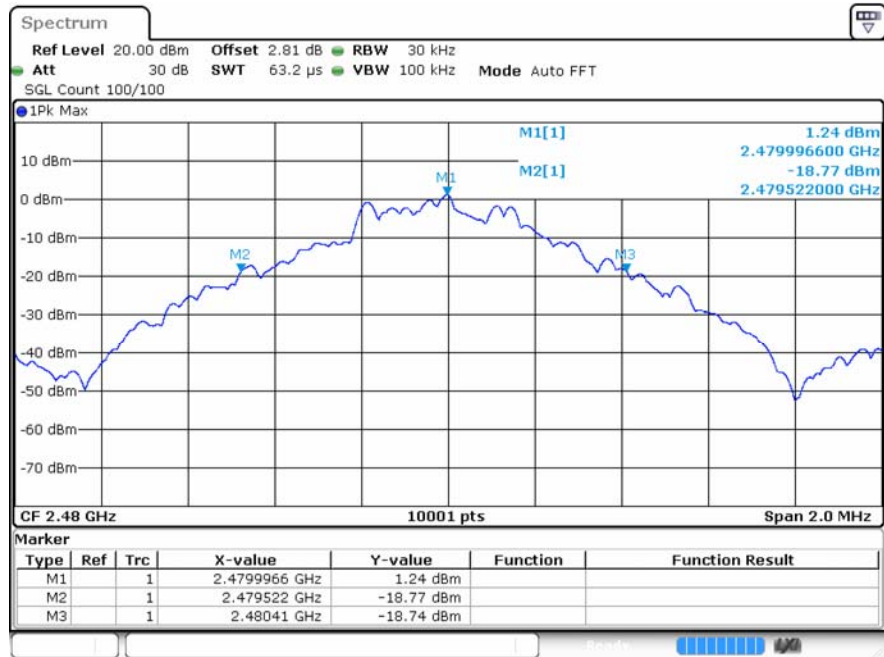
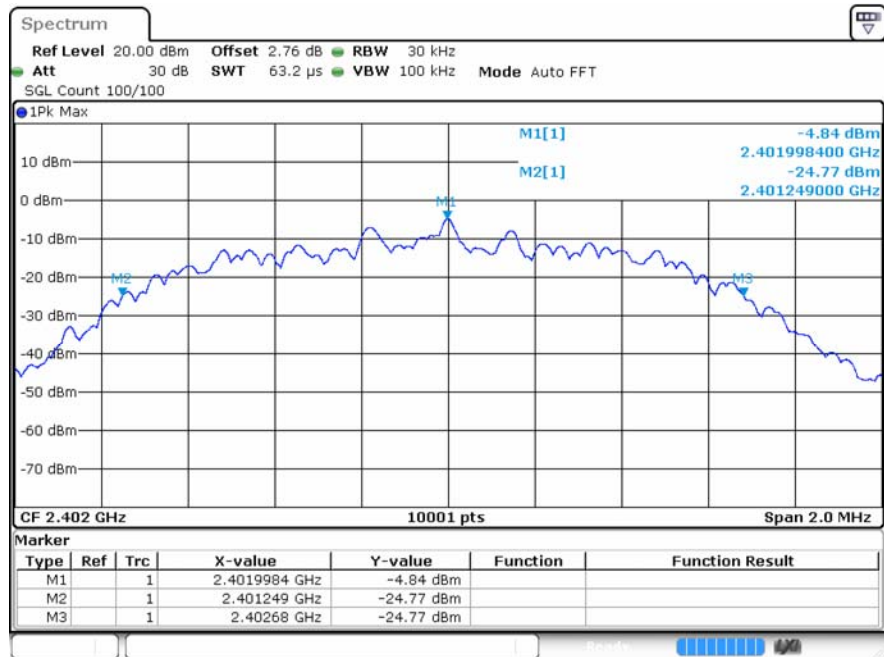
3.1 Test Result

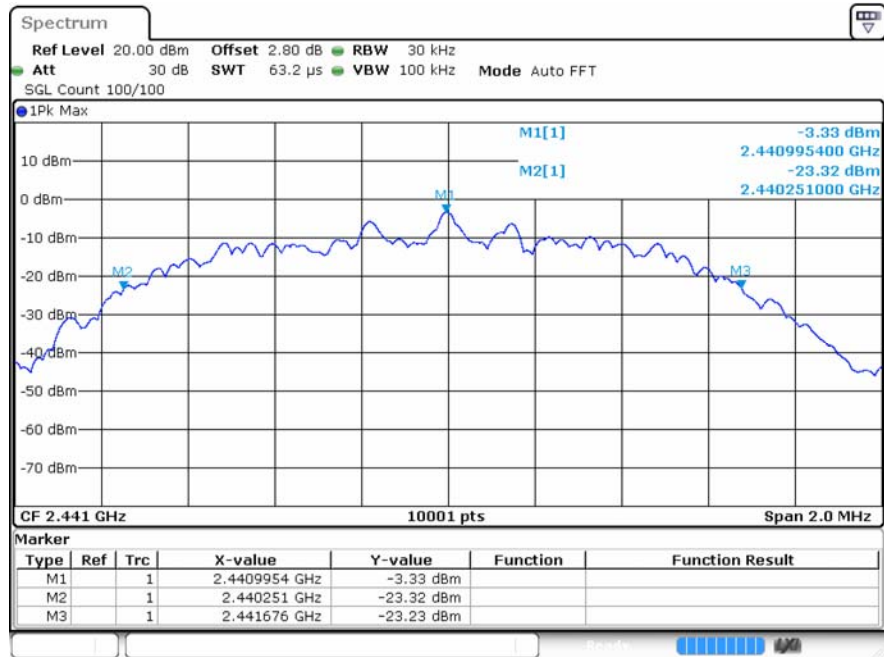
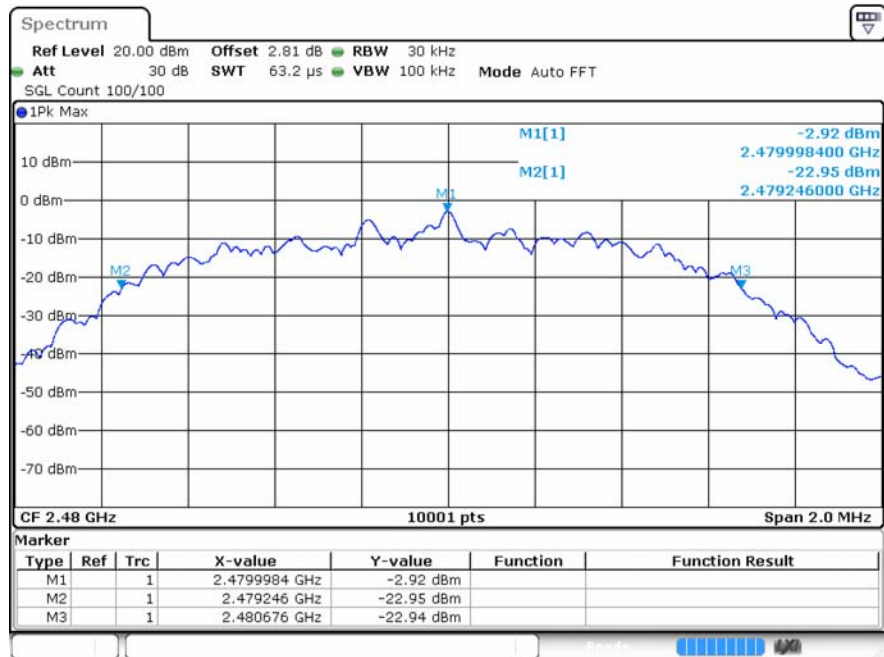
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.892	Not Specified	Pass
	MCH	0.89	Not Specified	Pass
	HCH	0.888	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.431	Not Specified	Pass
	MCH	1.425	Not Specified	Pass
	HCH	1.429	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


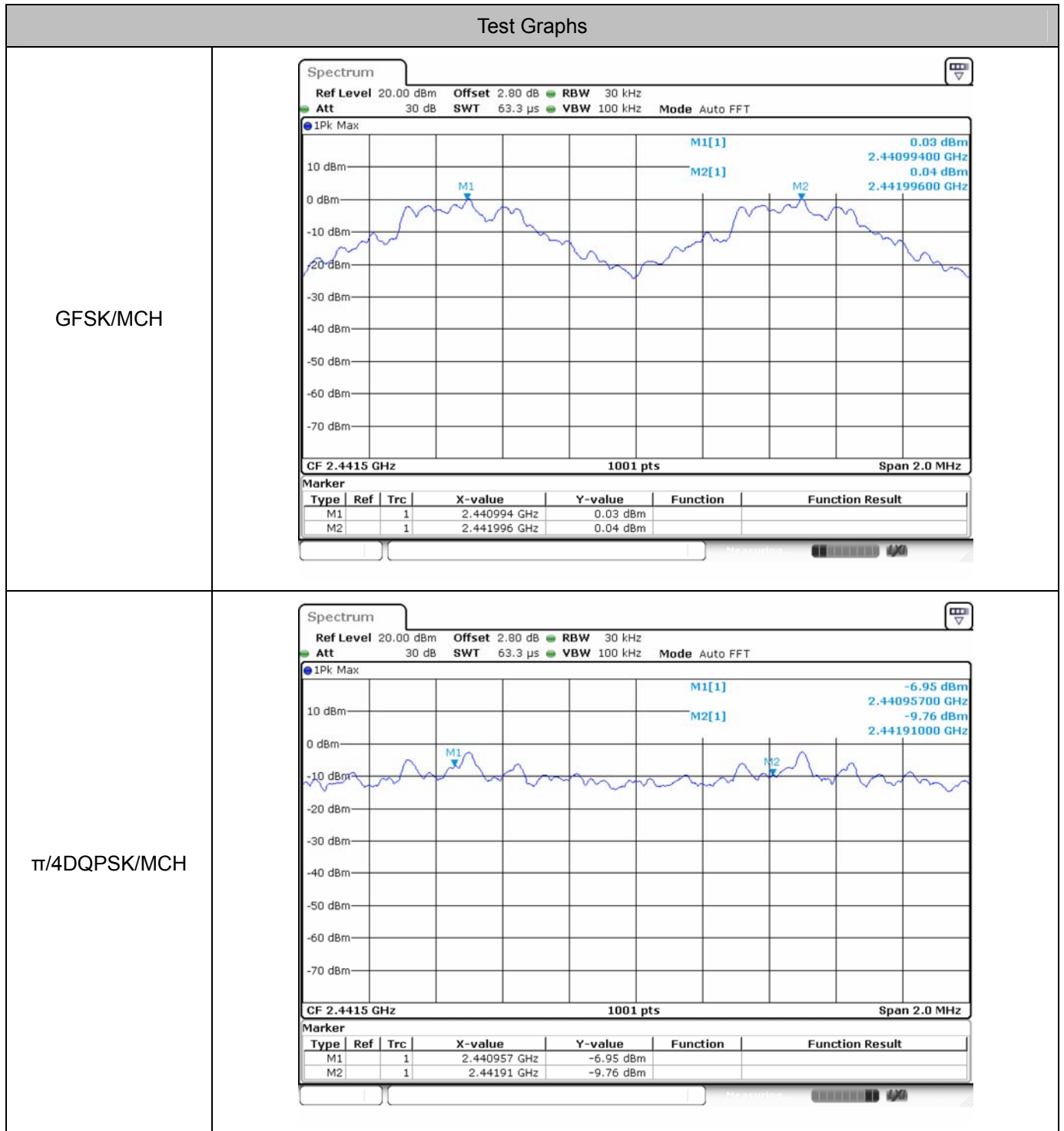
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.002	0.593	Pass
$\pi/4$ DQPSK	MCH	0.953	0.95	Pass

4.2 Test Graphs

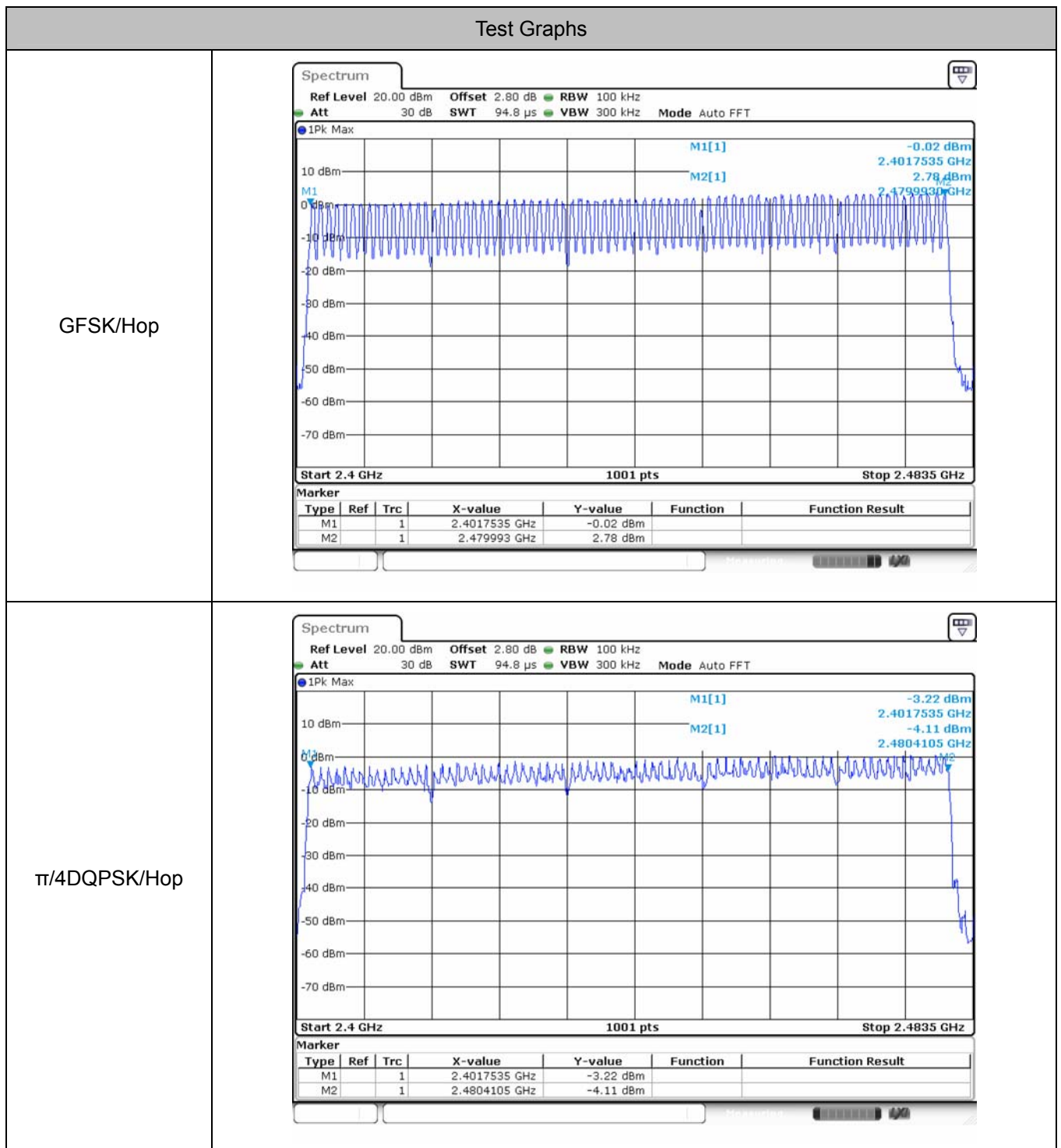


5 Hopping Channel Number

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

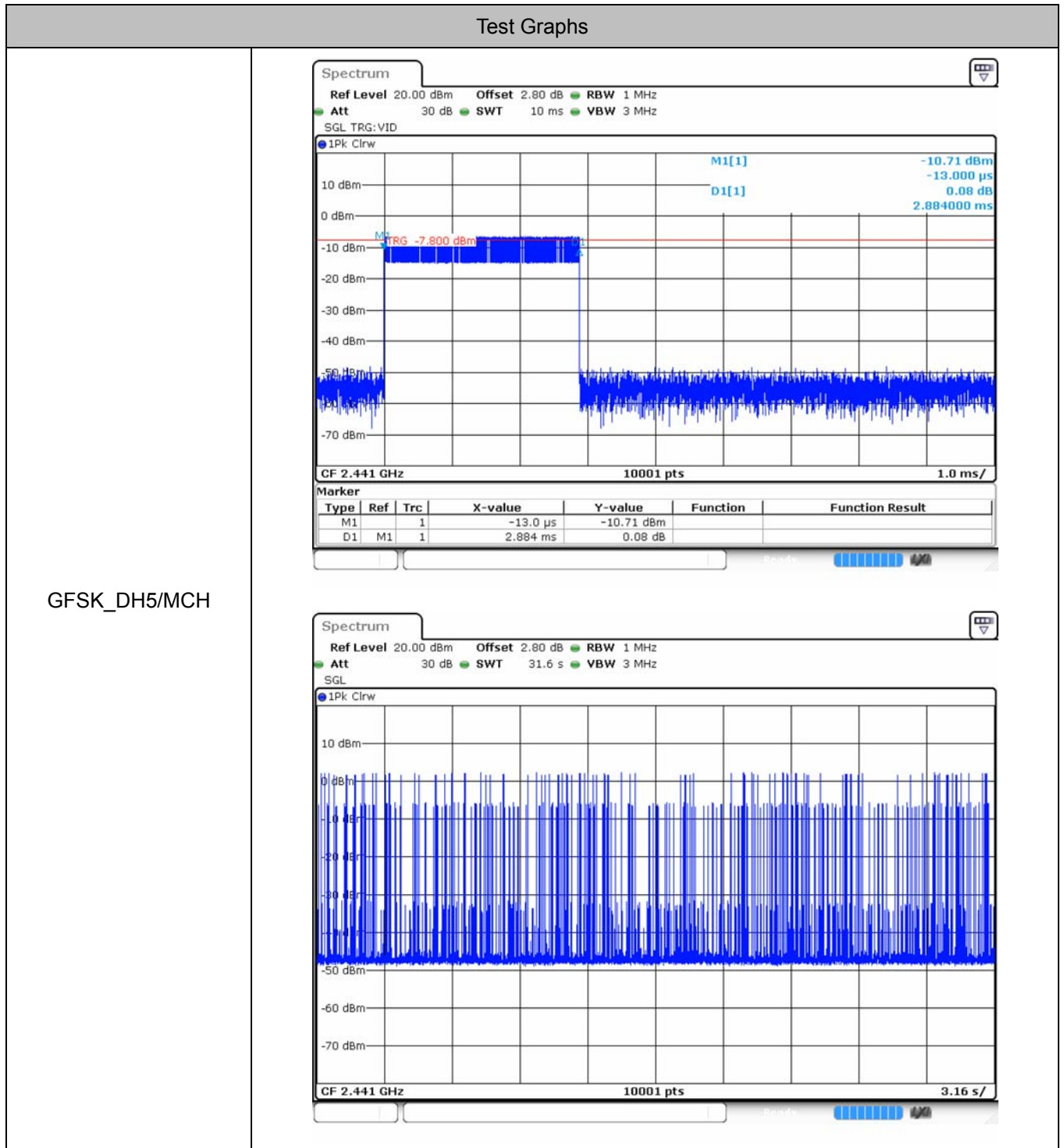


6 Dwell Time

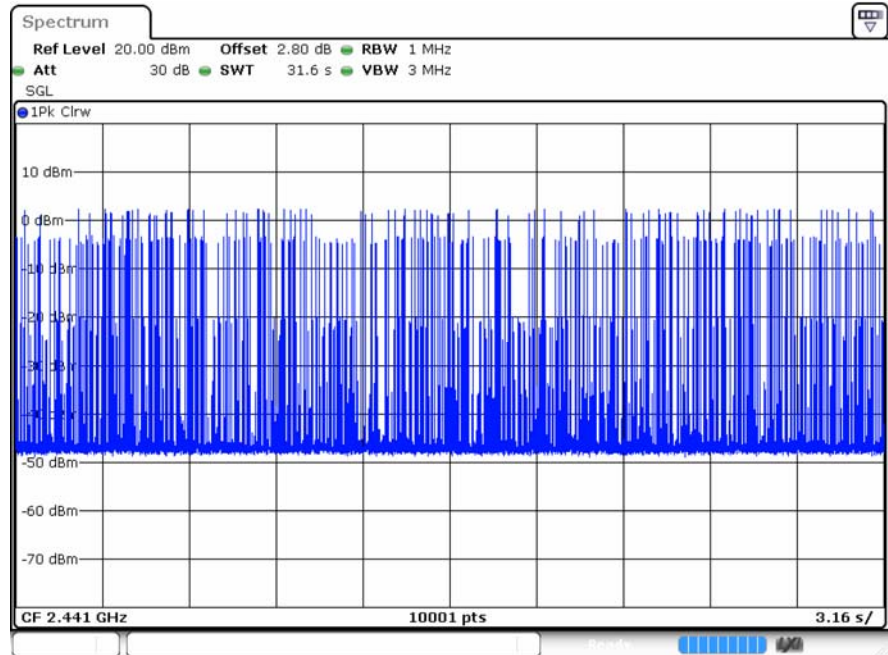
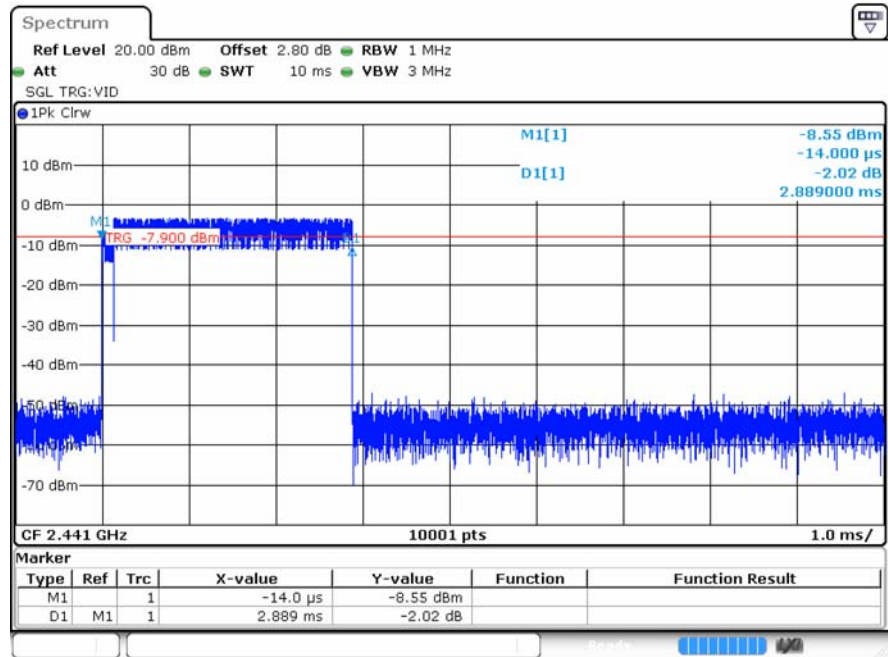
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.884	98	282.632	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	102	294.678	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

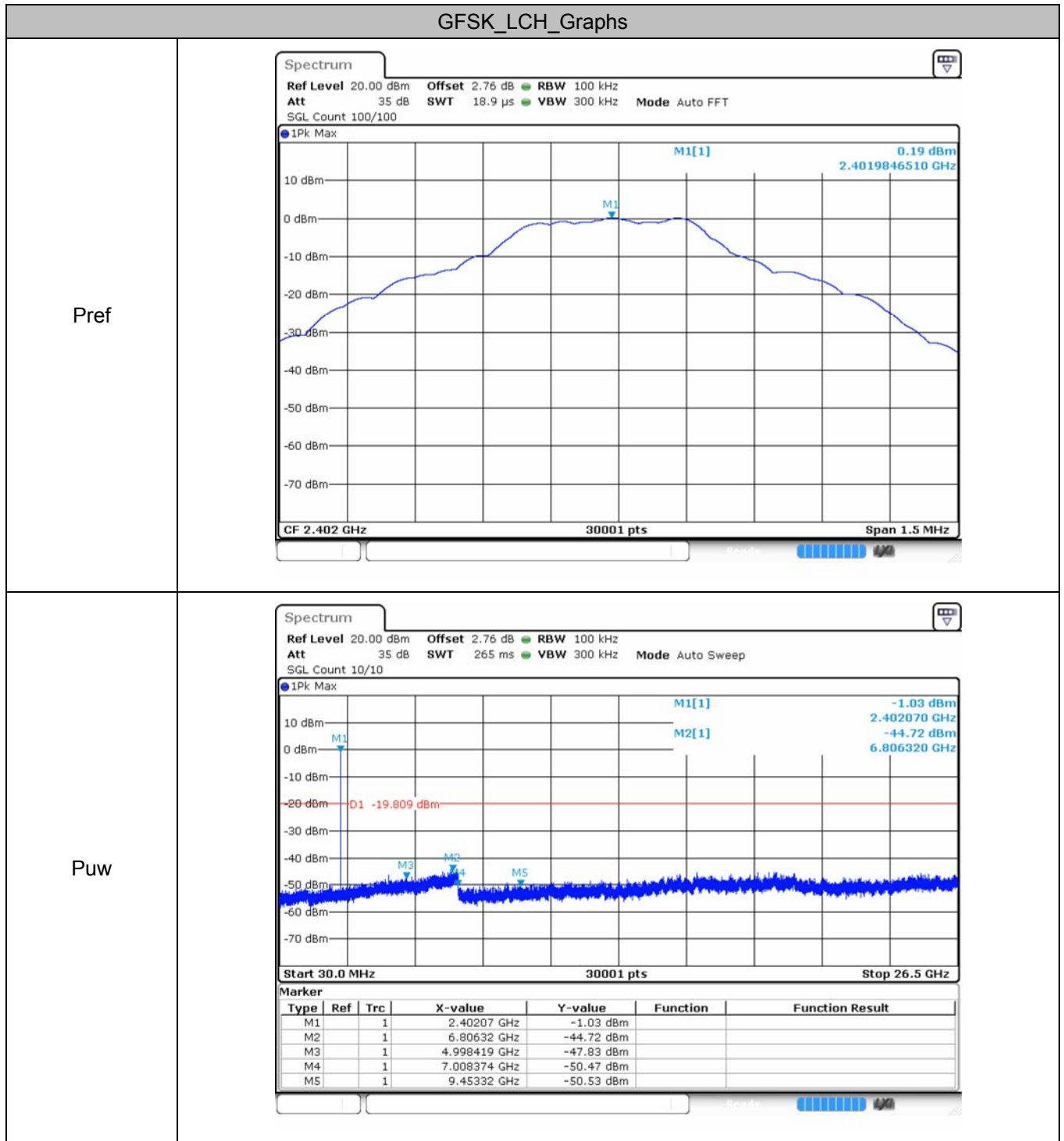


7 RF Conducted Spurious Emissions

7.1 Test Result

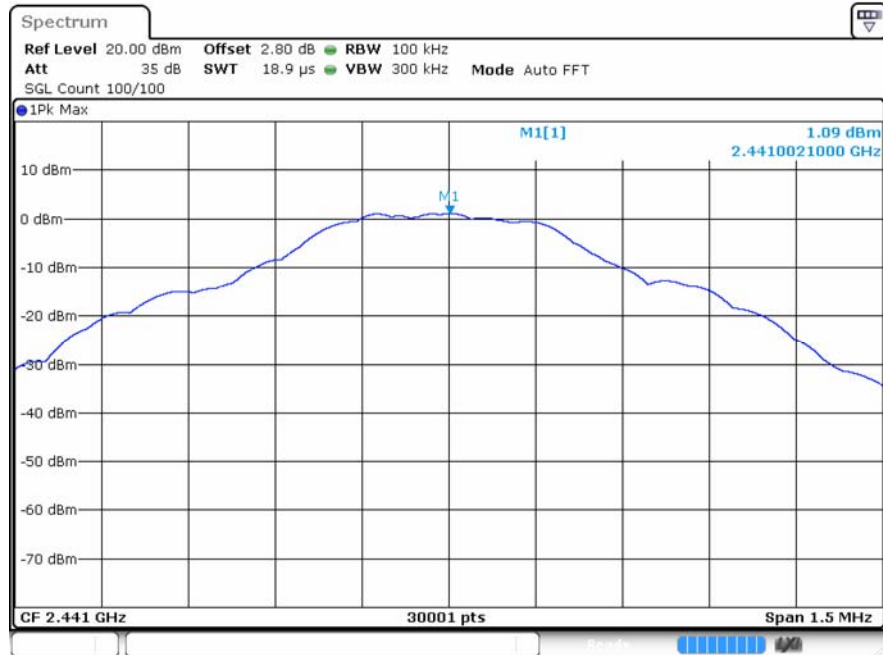
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-44.9	-20	Pass
	MCH	-45.02	-20	Pass
	HCH	-46.63	-20	Pass
$\pi/4$ DQPSK	LCH	-45.64	-20	Pass
	MCH	-42.44	-20	Pass
	HCH	-43.26	-20	Pass

7.2 Test Graphs

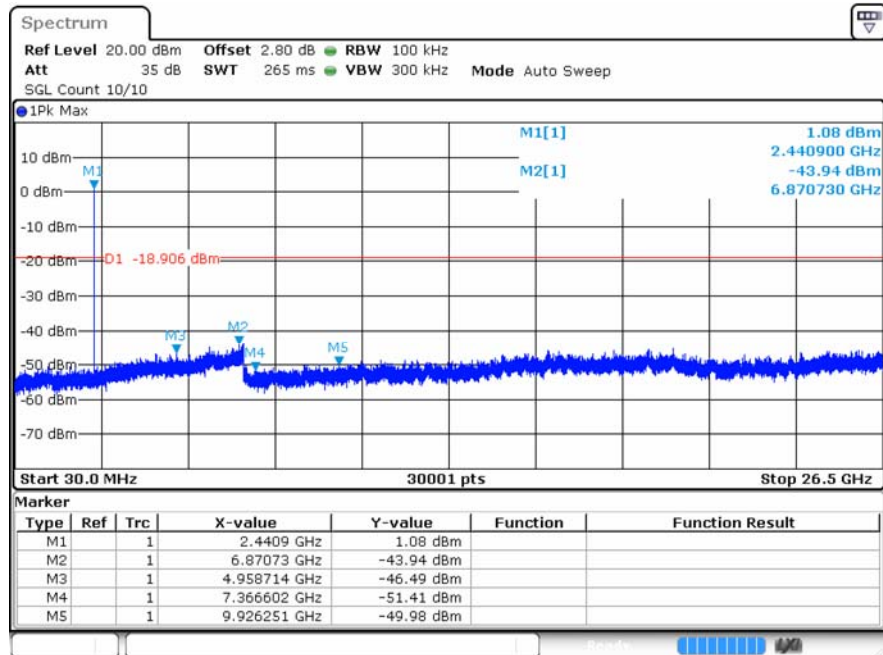


GFSK_MCH_Graphs

Pref



Puw

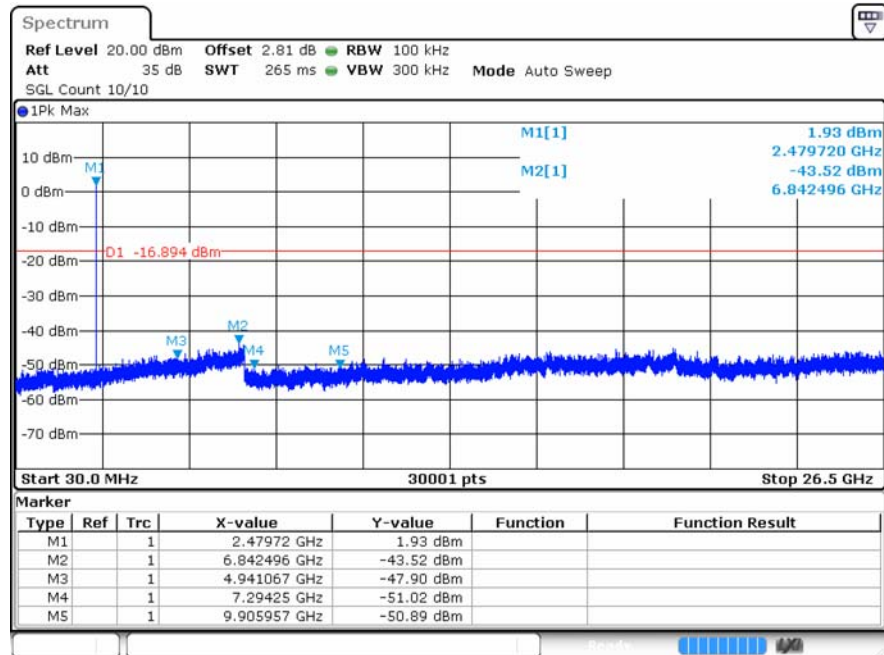


GFSK_HCH_Graphs

Pref

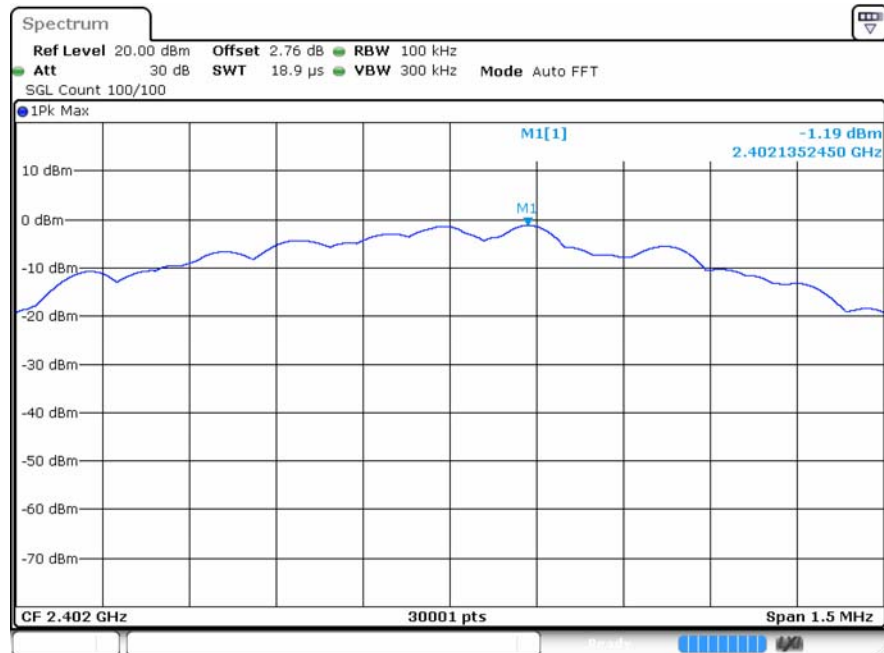


Puw

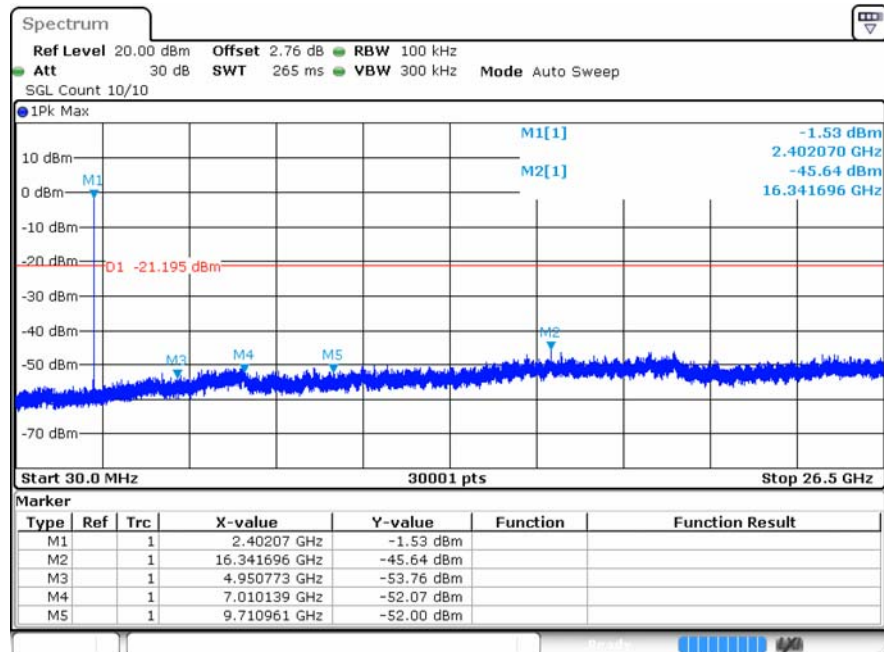


$\pi/4$ DQPSK_LCH_Graphs

Pref

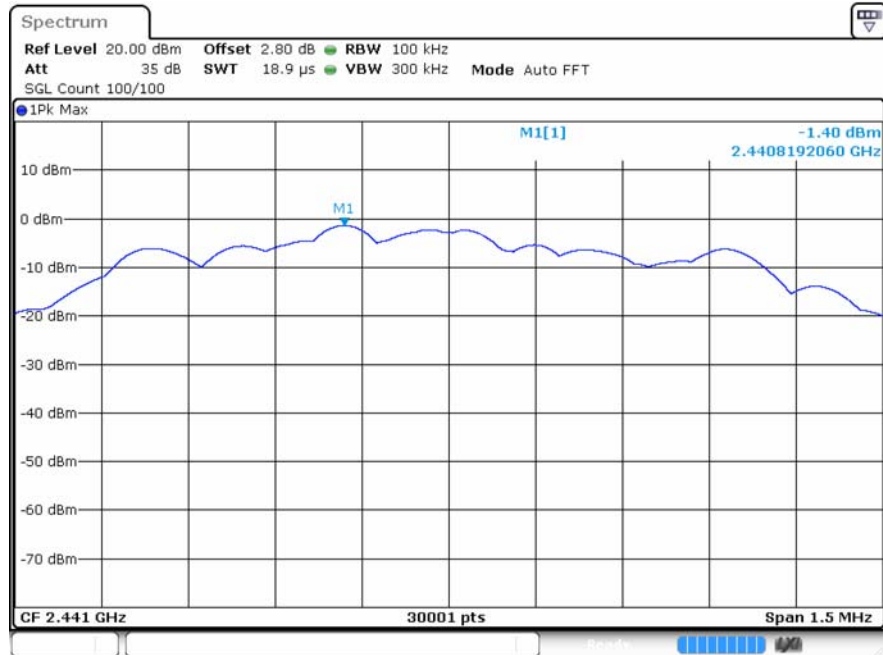


Puw

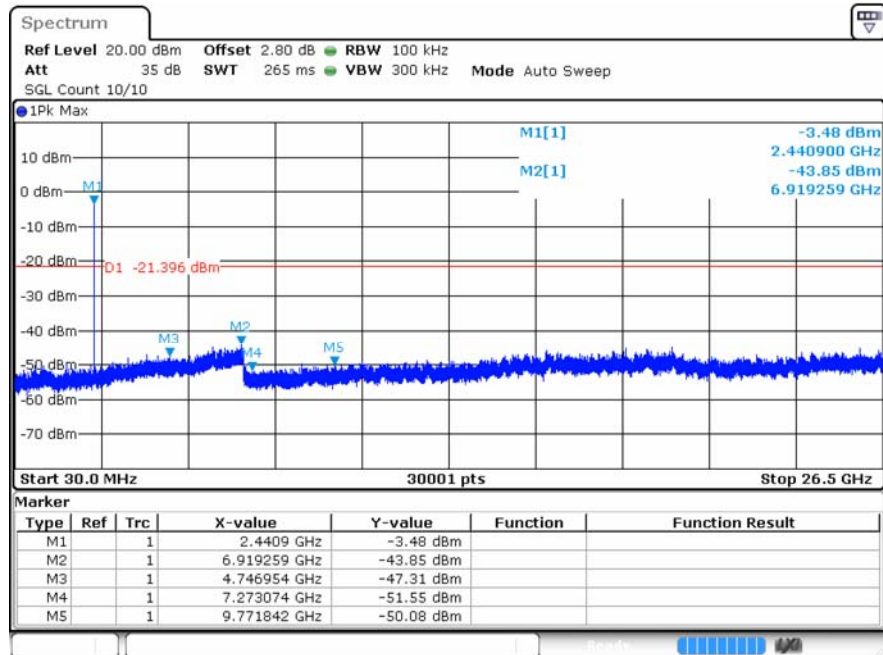


$\pi/4$ DQPSK_MCH_Graphs

Pref

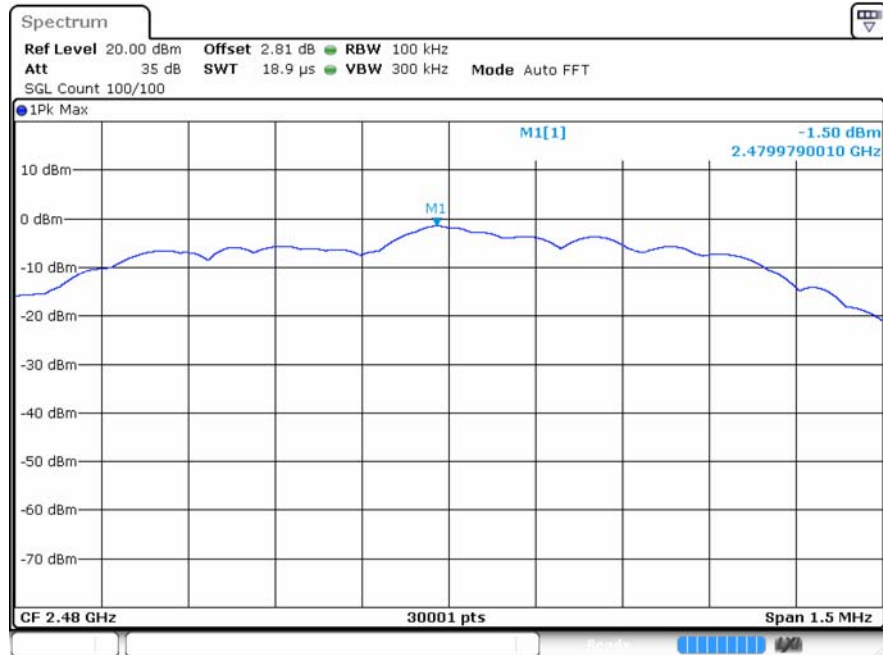


Puw

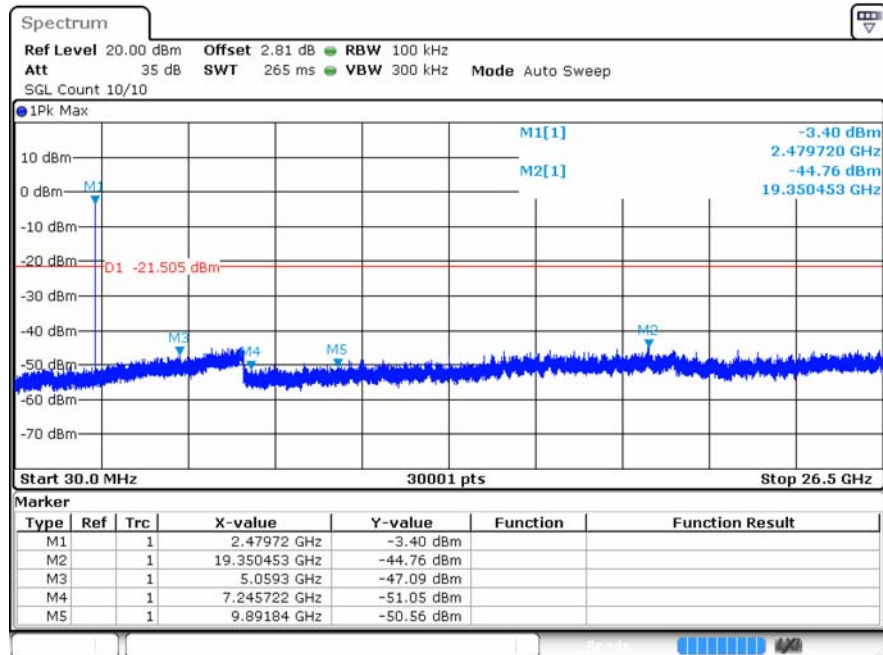


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

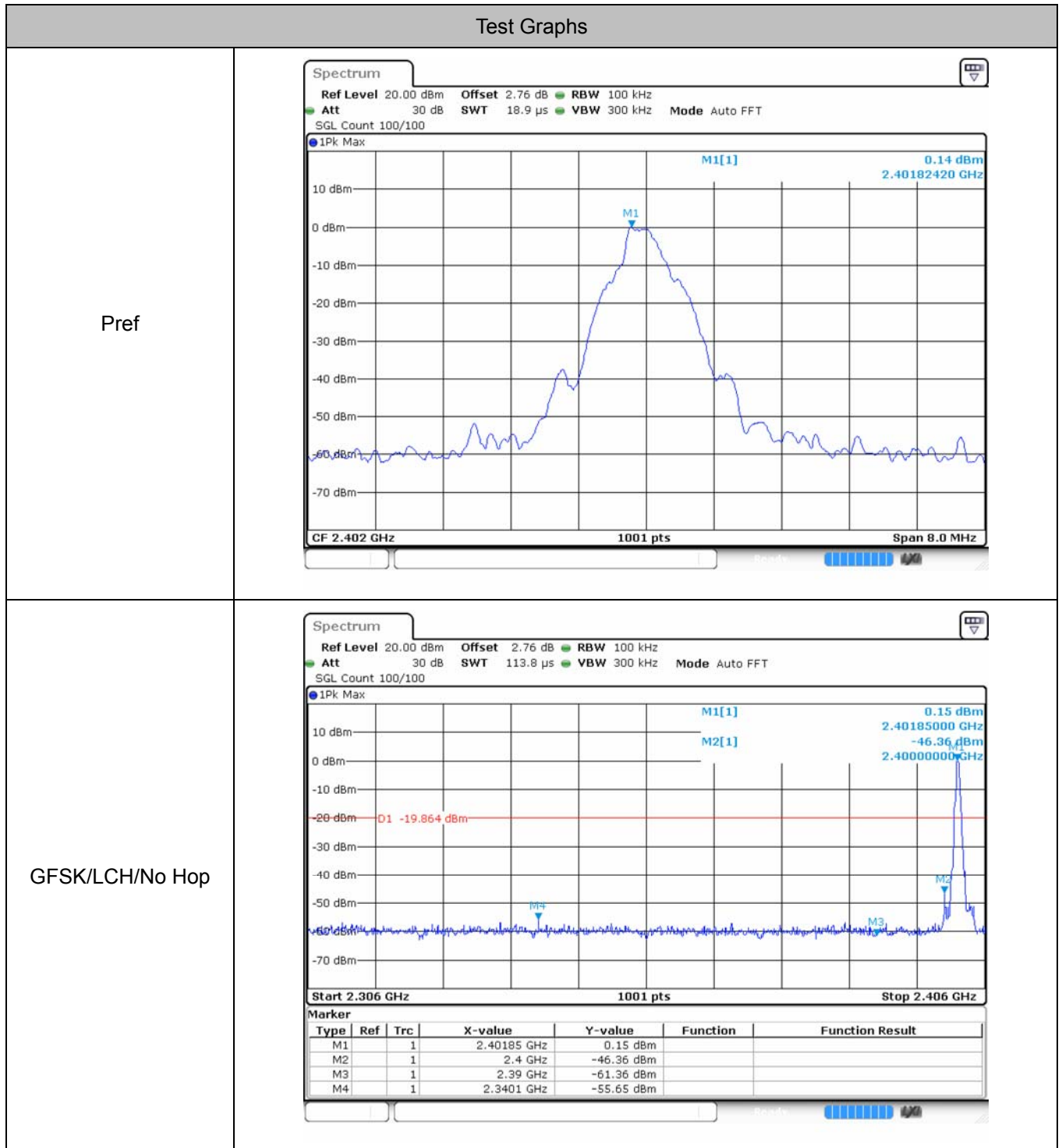


8 Band-edge for RF Conducted Emissions

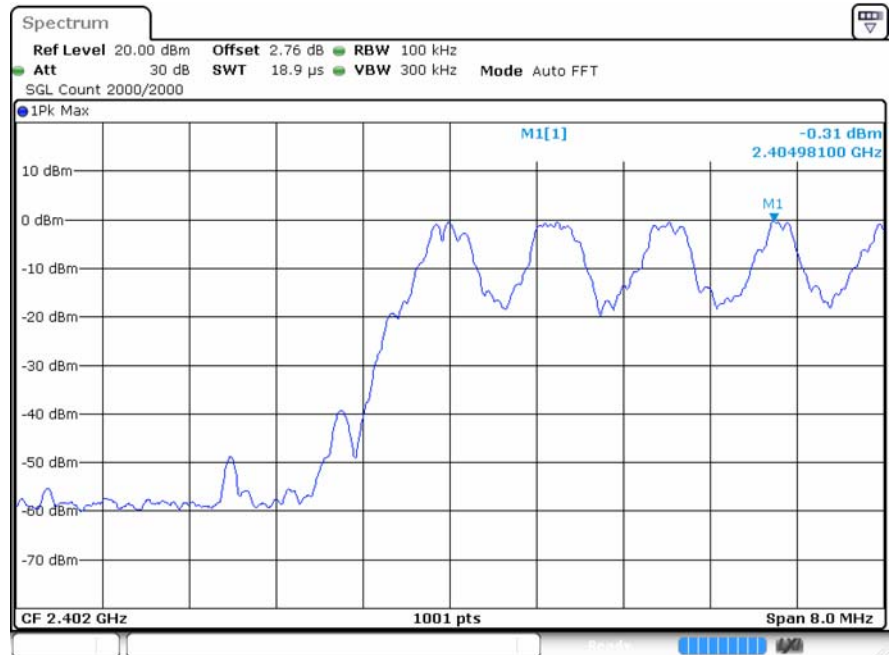
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-55.78	-20	Pass
			On	-55.15	-20	Pass
	HCH	2480	Off	-51.25	-20	Pass
			On	-59.37	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-52.7	-20	Pass
			On	-52.24	-20	Pass
	HCH	2480	Off	-48.05	-20	Pass
			On	-53.32	-20	Pass

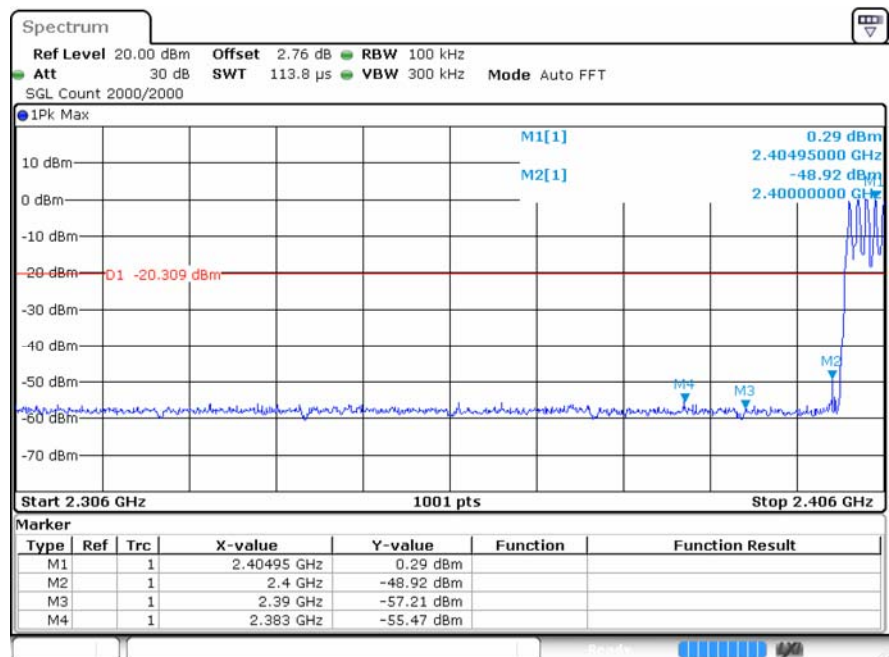
8.2 Test Graphs



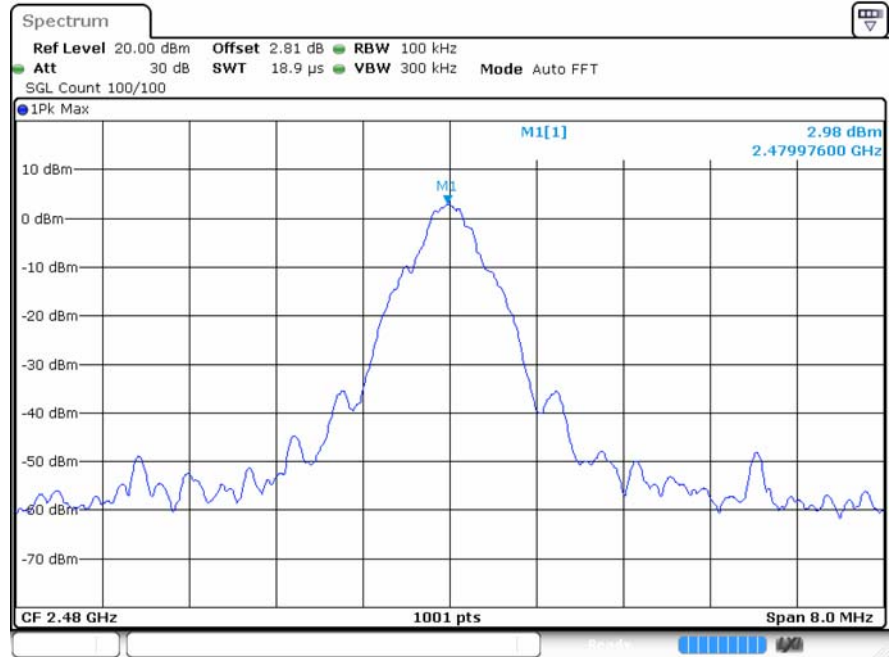
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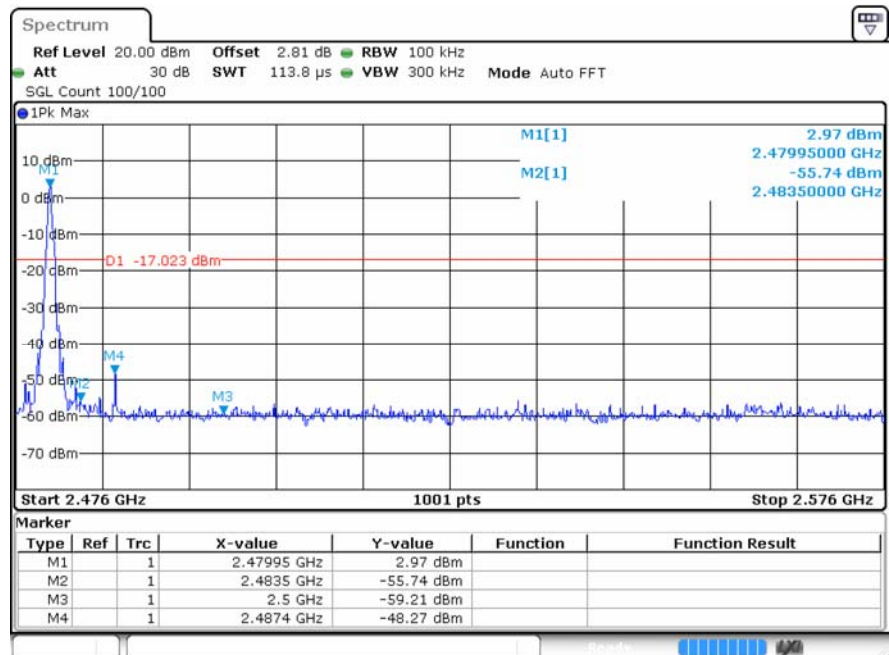
GFSK/LCH/Hop



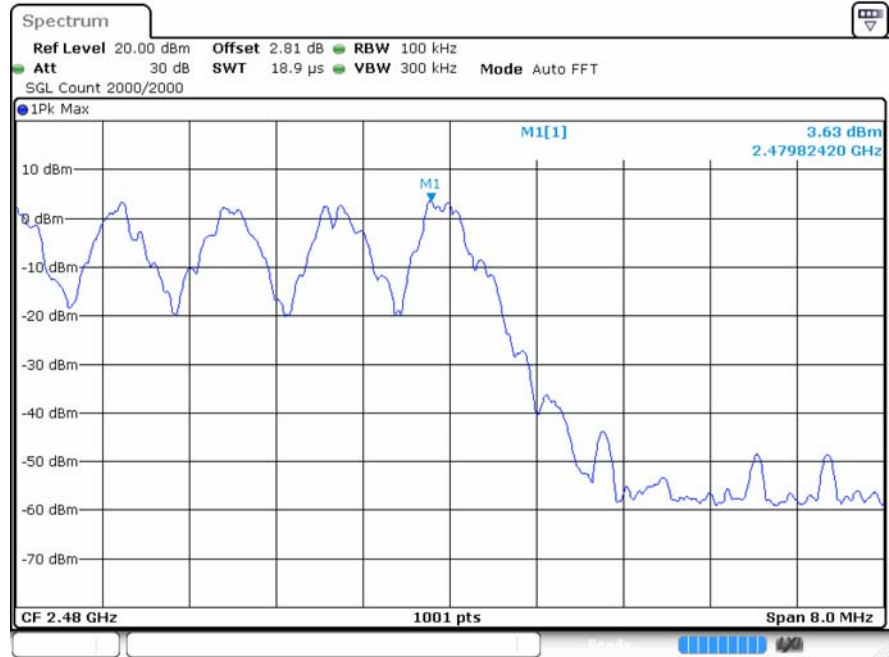
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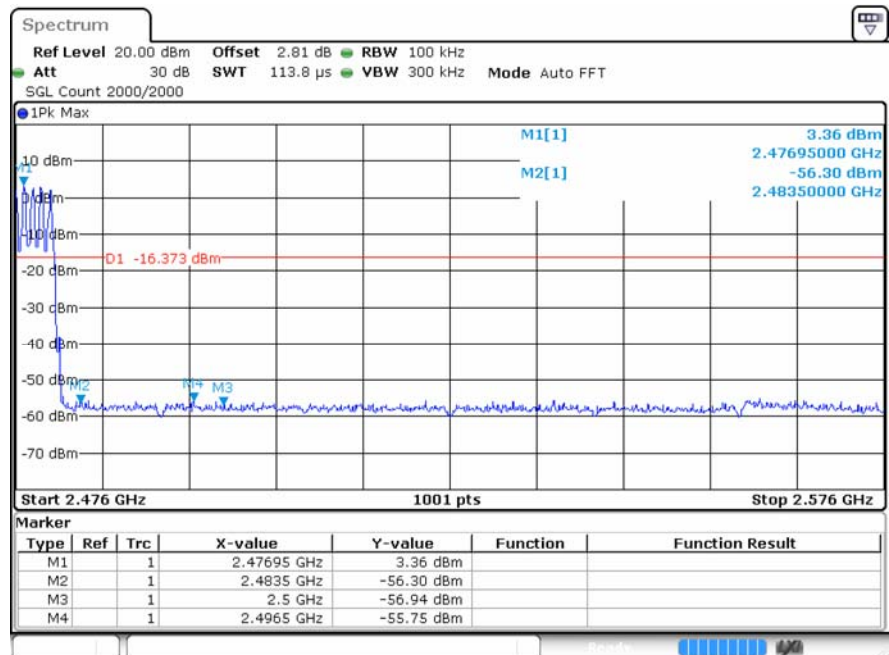
GFSK/HCH/No Hop



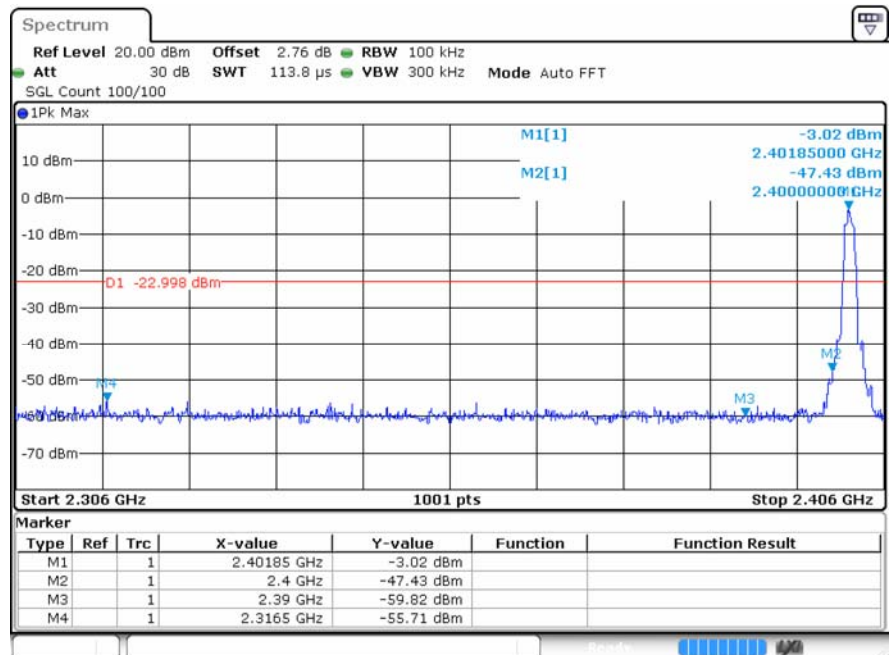
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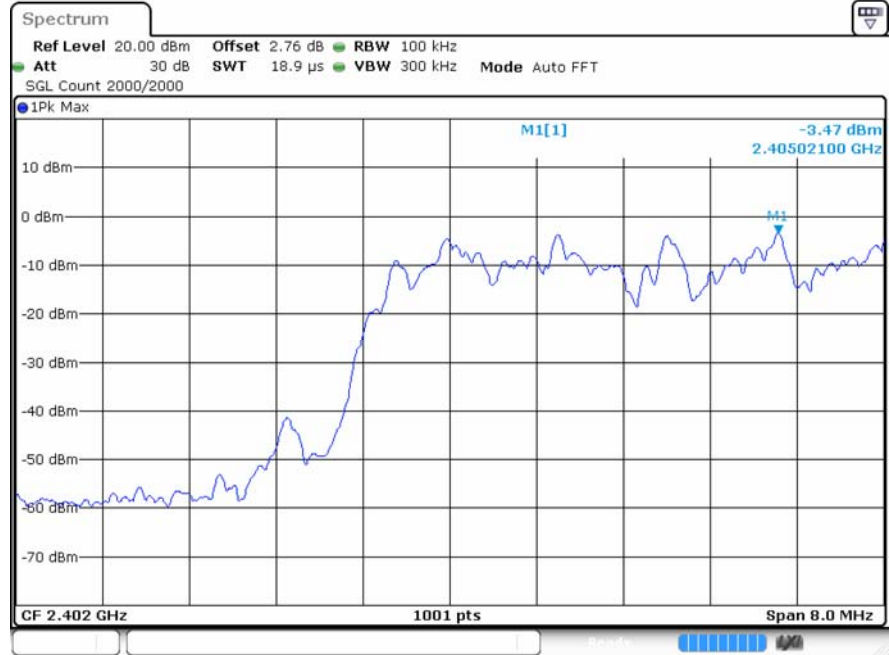
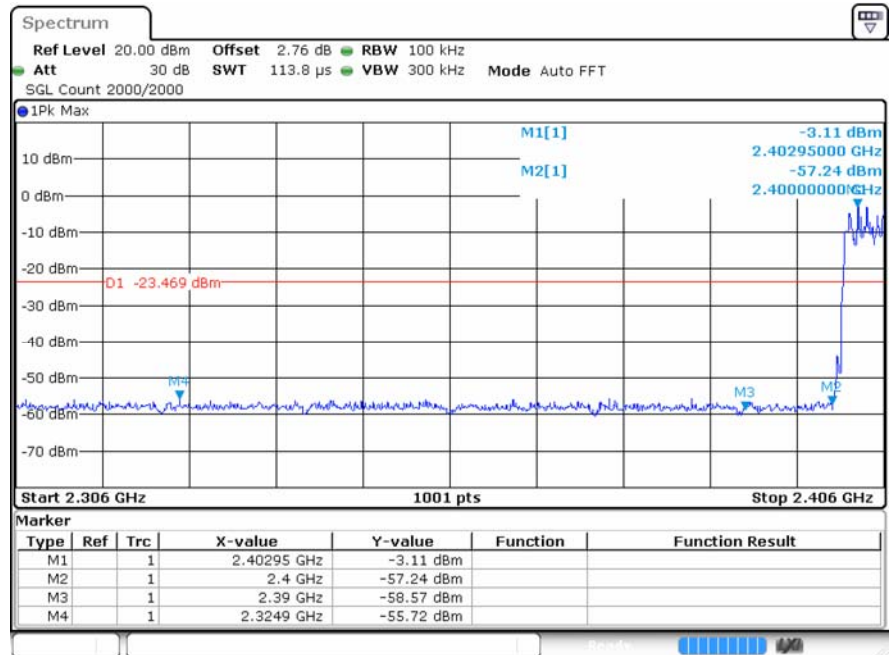
GFSK/HCH/Hop



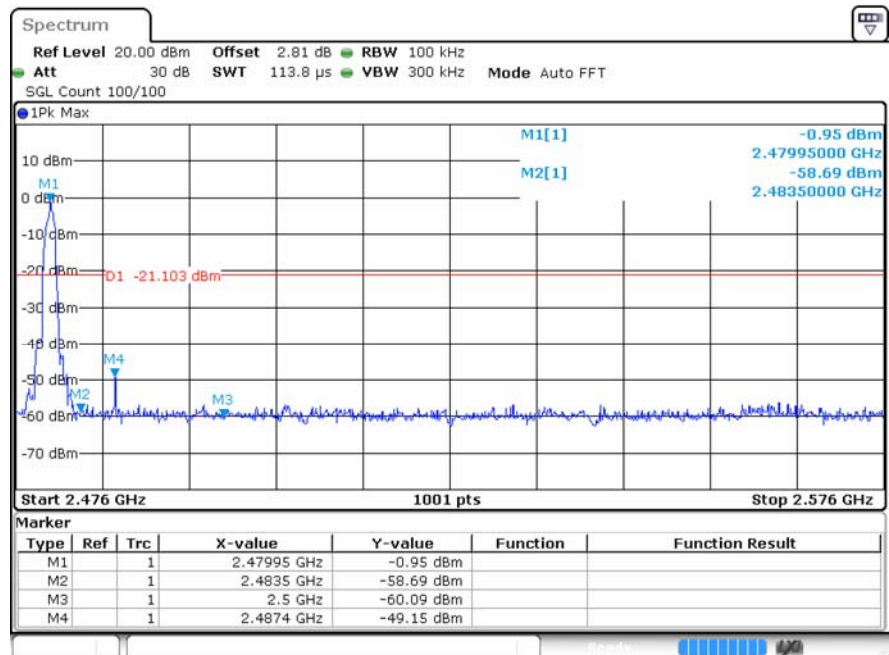
Ref


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


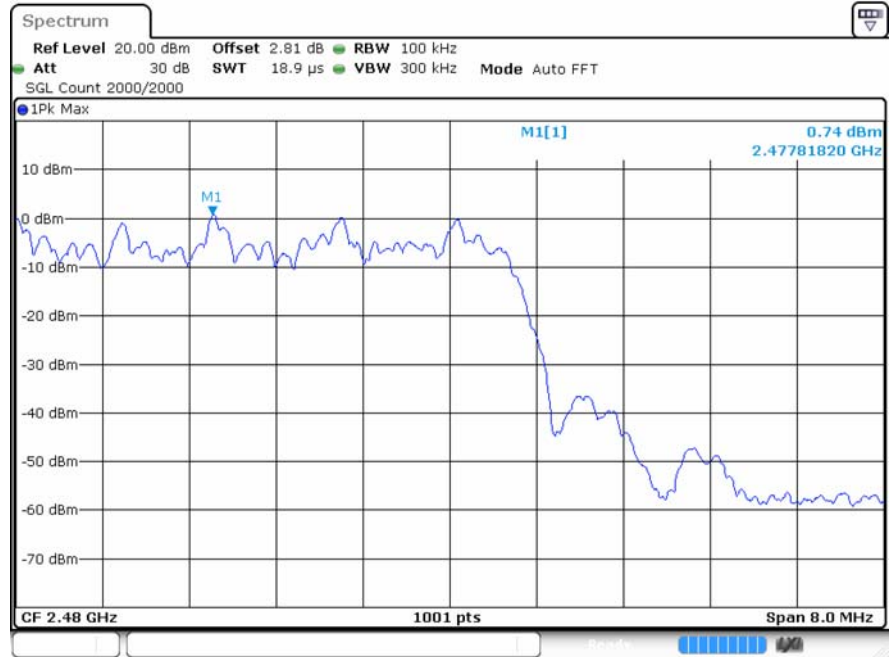
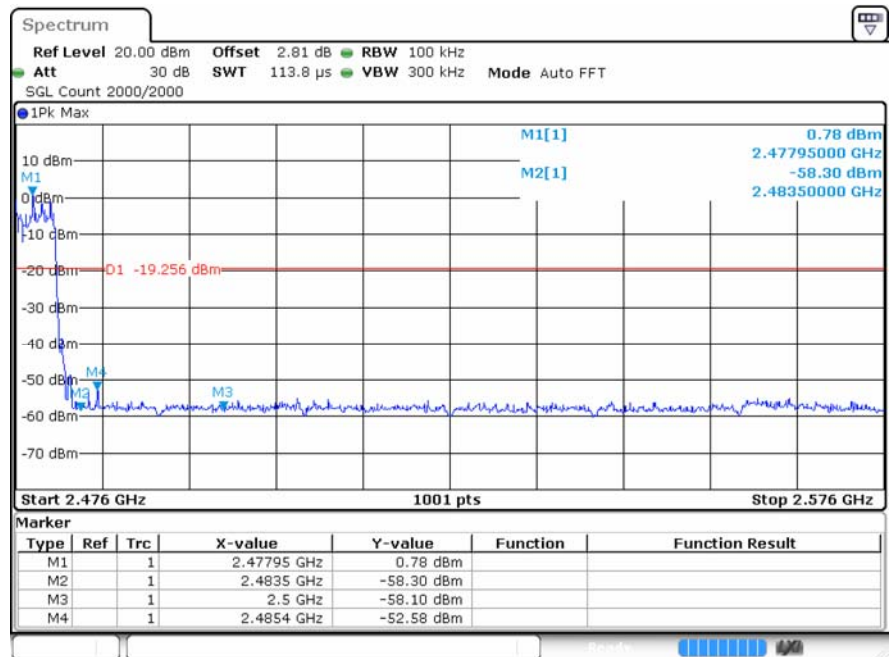
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


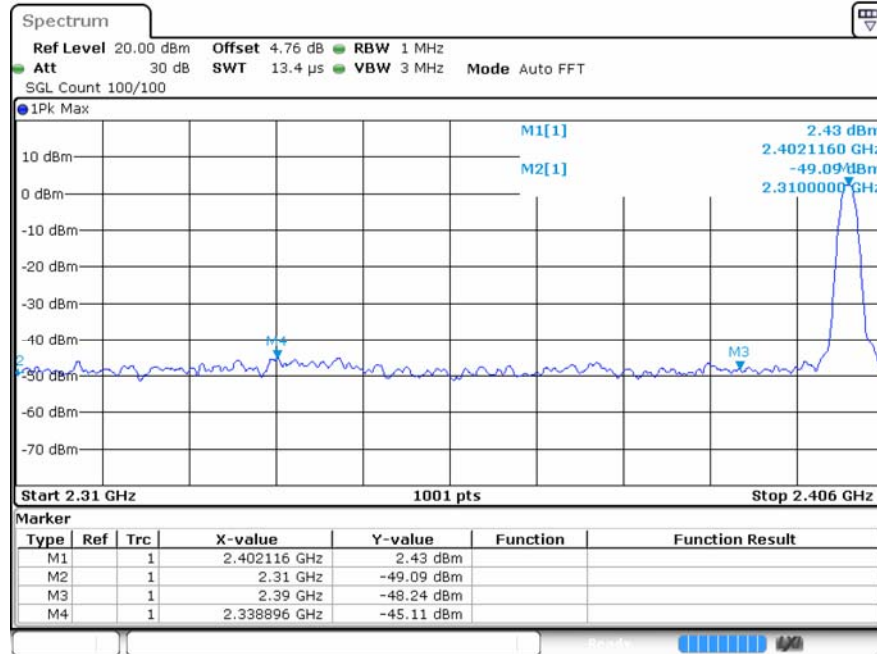
9 Restrict-band band-edge measurements

9.1 Test Result

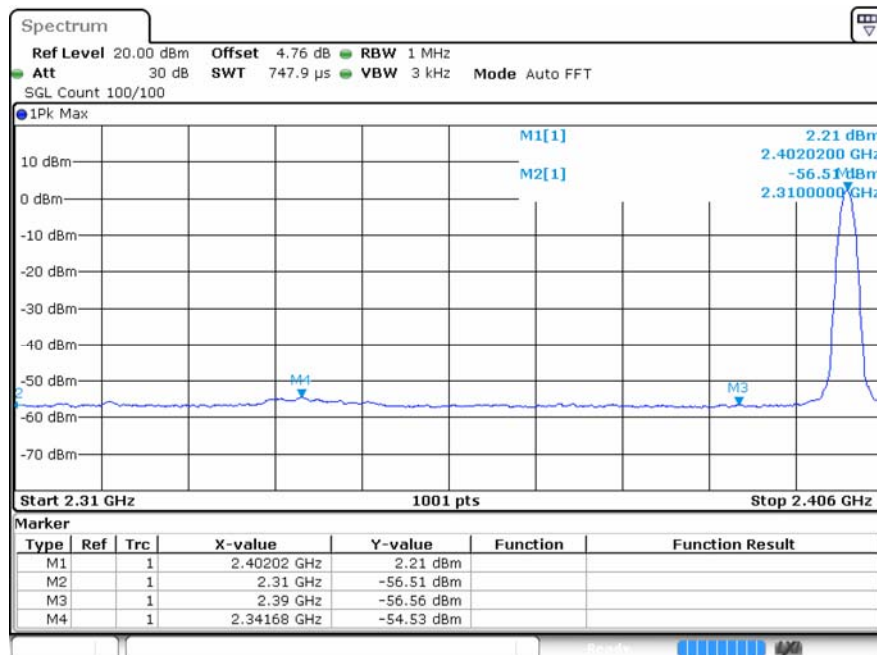
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-49.08	2	48.18	PEAK	74	Pass
	Off	2310.0	-56.51	2	40.75	AV	54	Pass
	Off	2338.896	-45.1	2	52.16	PEAK	74	Pass
	Off	2341.68	-54.52	2	42.74	AV	54	Pass
	Off	2390.0	-48.24	2	49.02	PEAK	74	Pass
	Off	2390.0	-56.56	2	40.7	AV	54	Pass
	Off	2483.5	-44.55	2	52.71	PEAK	74	Pass
	Off	2483.5	-53.24	2	44.02	AV	54	Pass
	Off	2483.512	-44.55	2	52.71	PEAK	74	Pass
	Off	2483.512	-53.24	2	44.02	AV	54	Pass
	Off	2500.0	-47.42	2	49.84	PEAK	74	Pass
	Off	2500.0	-56.21	2	41.05	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48.62	2	48.64	PEAK	74	Pass
	Off	2310.0	-56.56	2	40.7	AV	54	Pass
	Off	2340.816	-43.1	2	54.16	PEAK	74	Pass
	Off	2340.336	-54.86	2	42.4	AV	54	Pass
	Off	2390.0	-50.12	2	47.14	PEAK	74	Pass
	Off	2390.0	-56.39	2	40.87	AV	54	Pass
	Off	2483.5	-48.51	2	48.75	PEAK	74	Pass
	Off	2483.5	-54.88	2	42.38	AV	54	Pass
	Off	2487.304	-47.06	2	50.2	PEAK	74	Pass
	Off	2483.848	-54.5	2	42.76	AV	54	Pass
	Off	2500.0	-47.87	2	49.39	PEAK	74	Pass
	Off	2500.0	-55.58	2	41.68	AV	54	Pass

9.2 Test Graphs

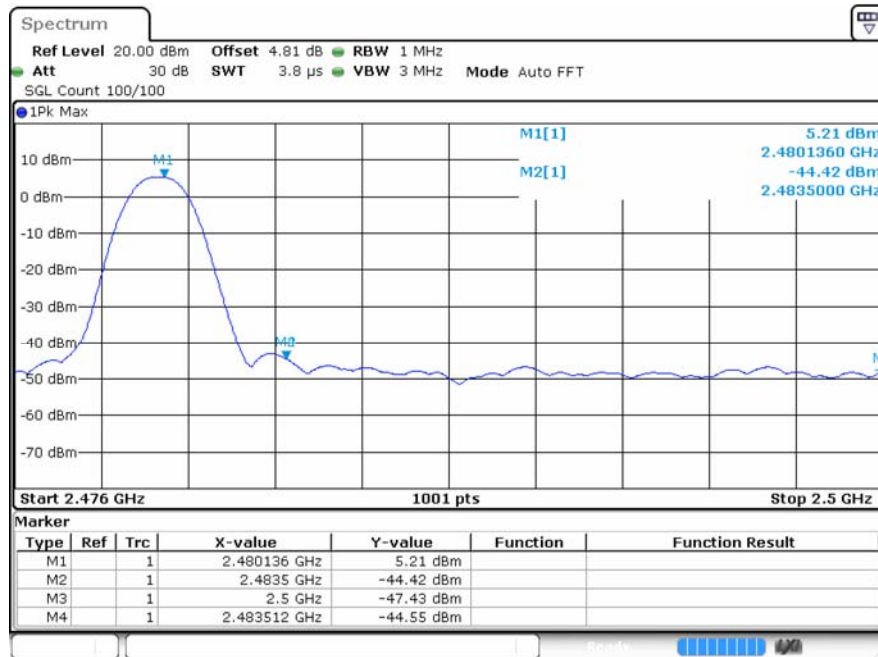
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



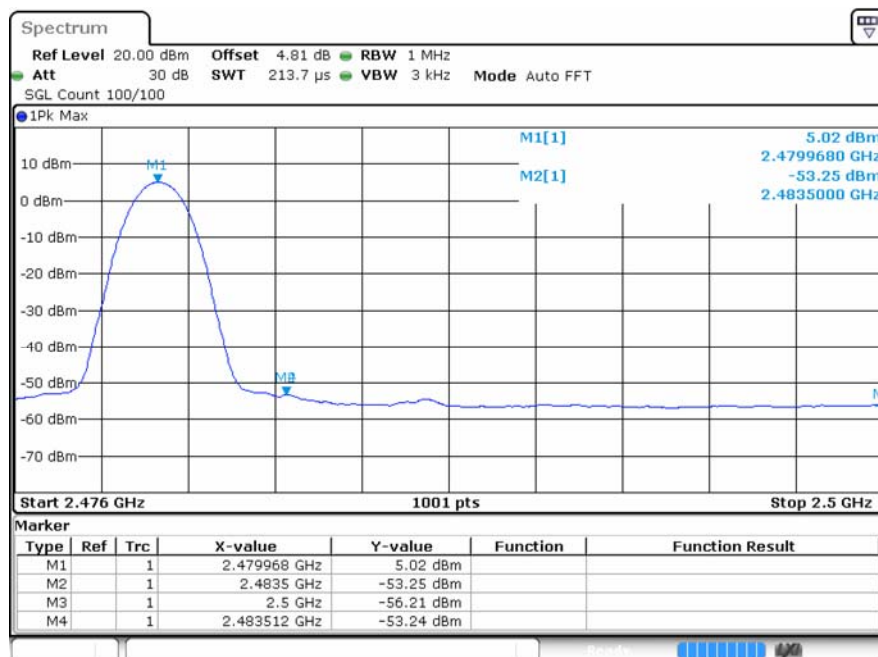
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



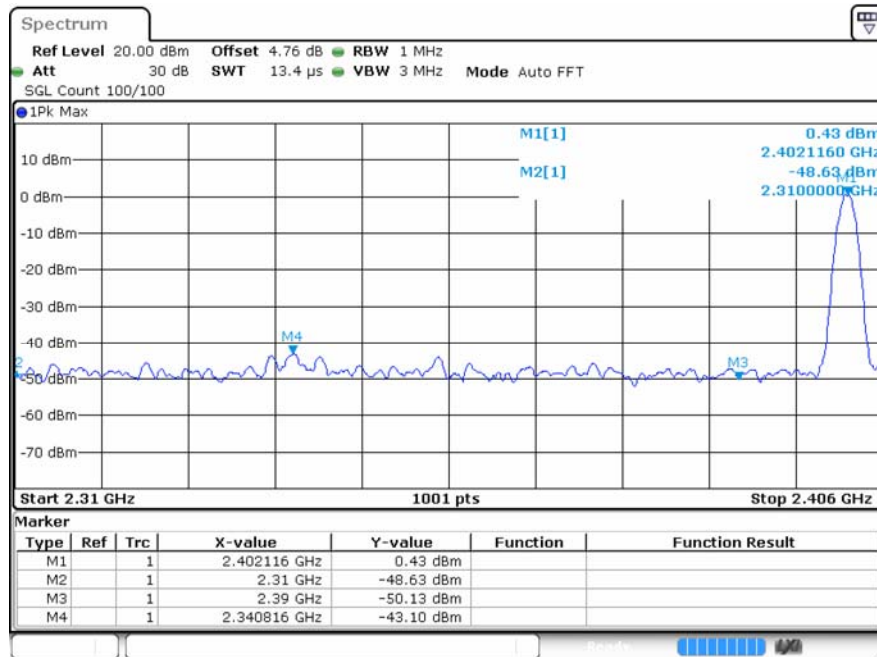
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



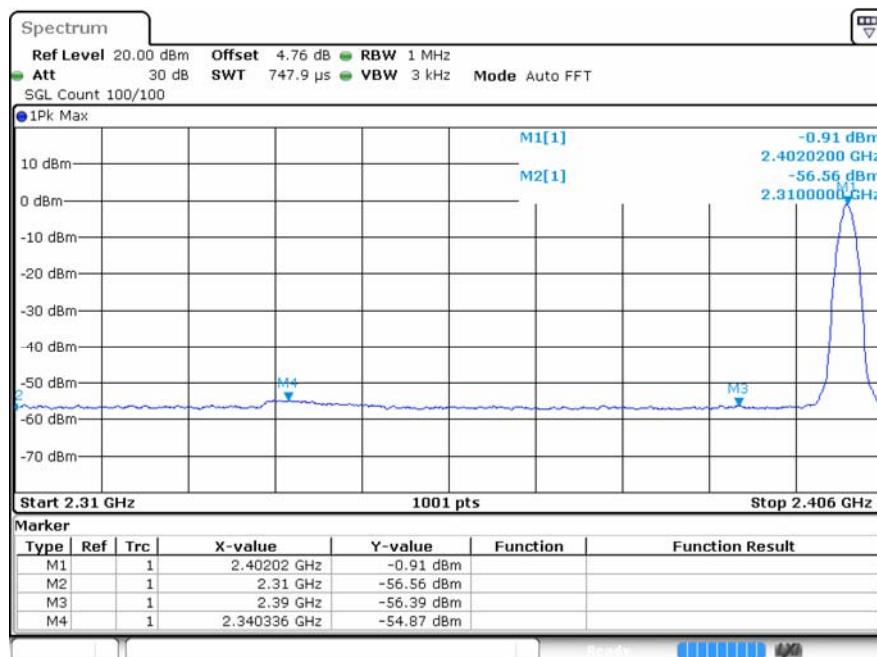
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



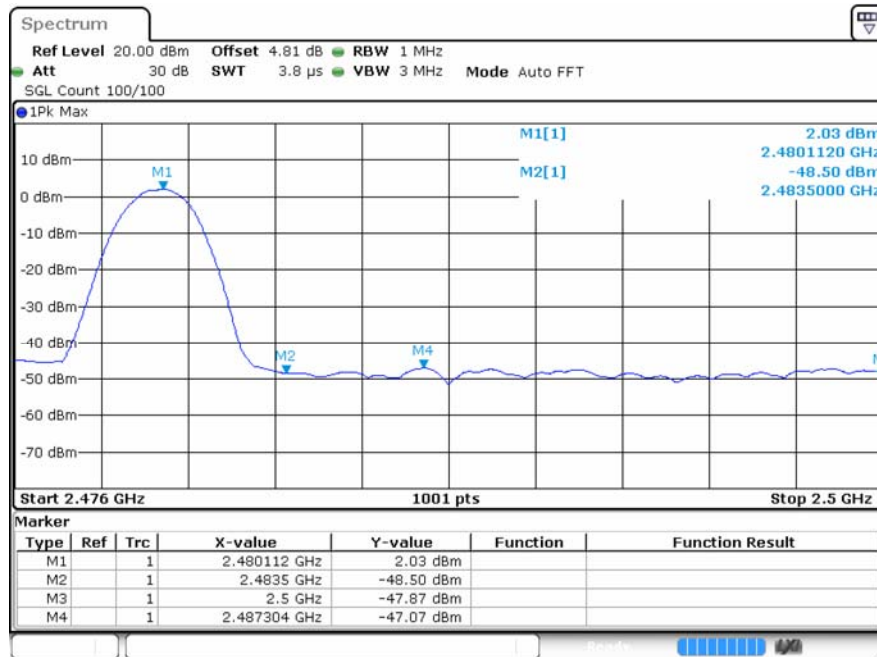
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



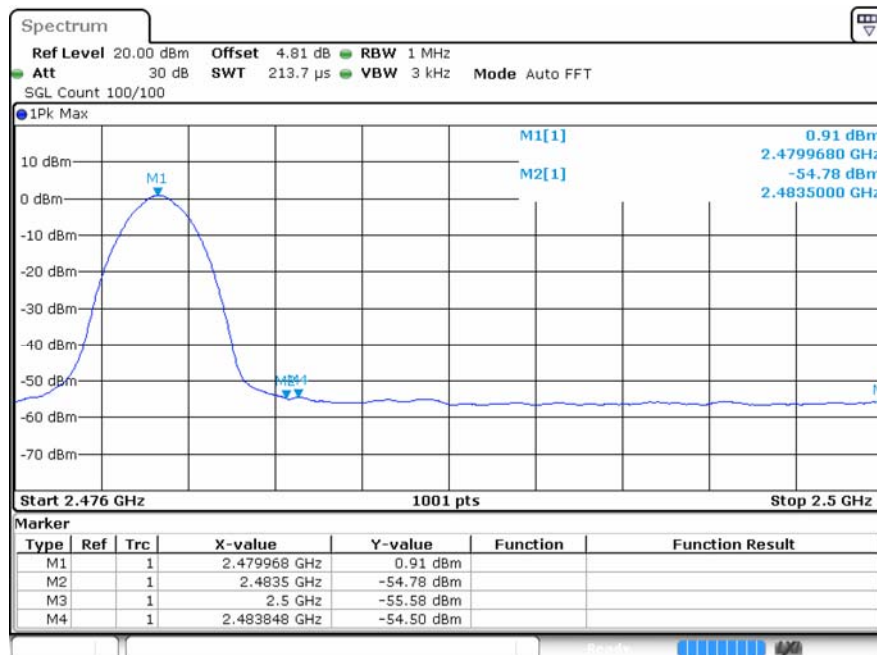
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---