



Appendix A

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

Product Name: Wireless Receiver

Trade Mark: JOYROOM

Test Model: JR-CB3

Environmental Conditions

Temperature:	25.2℃
Relative Humidity:	52.4%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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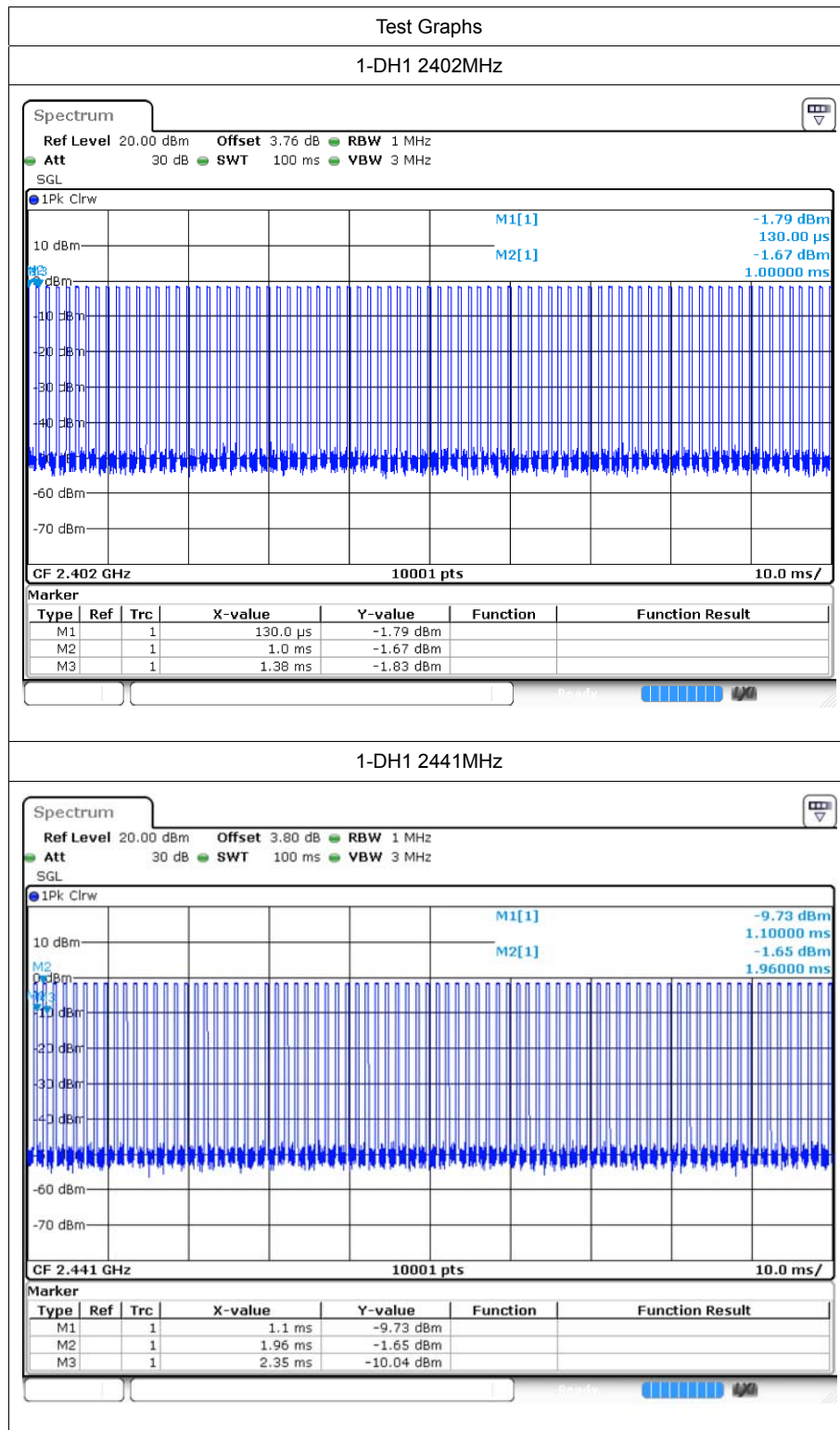


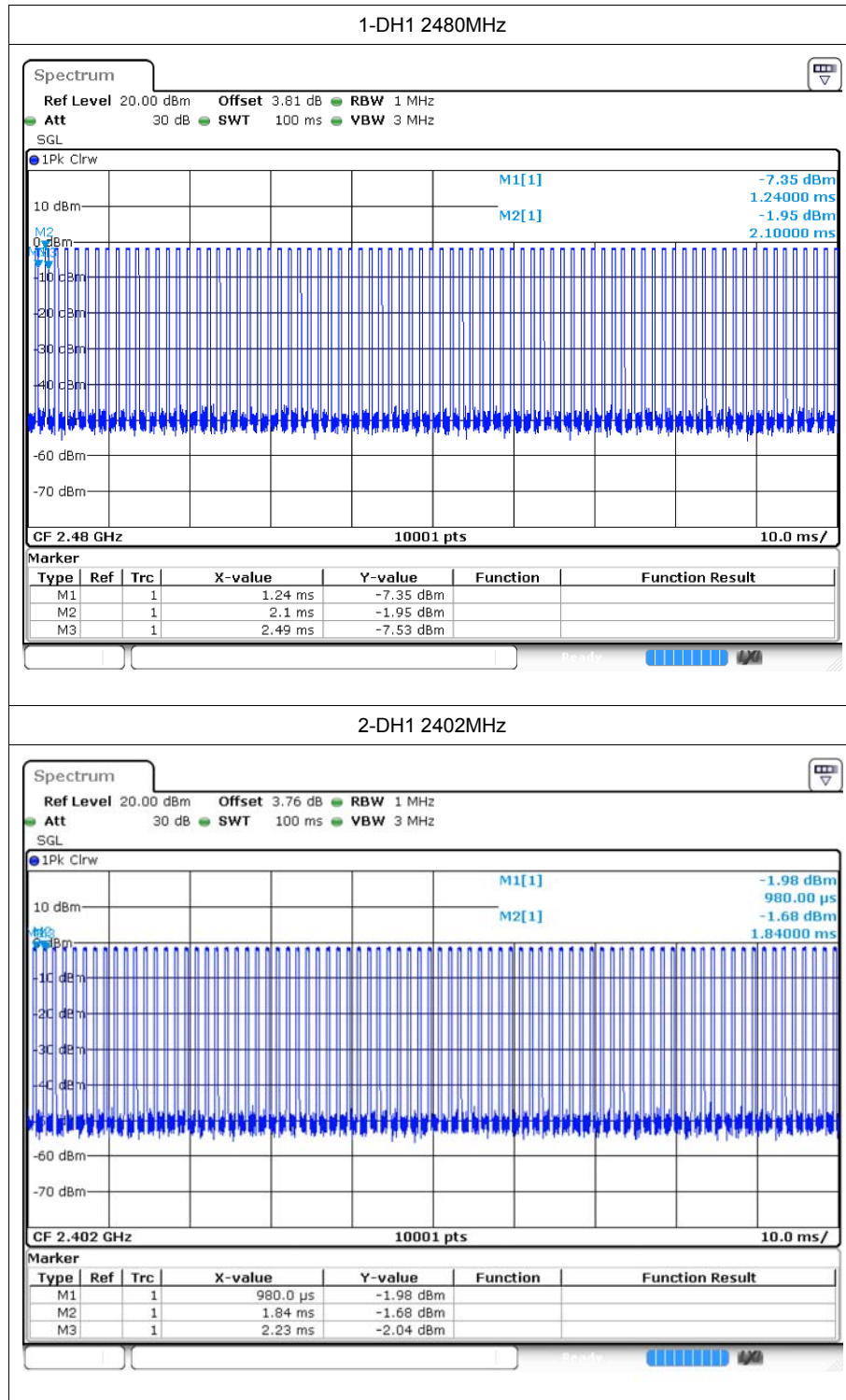
1 Duty Cycle

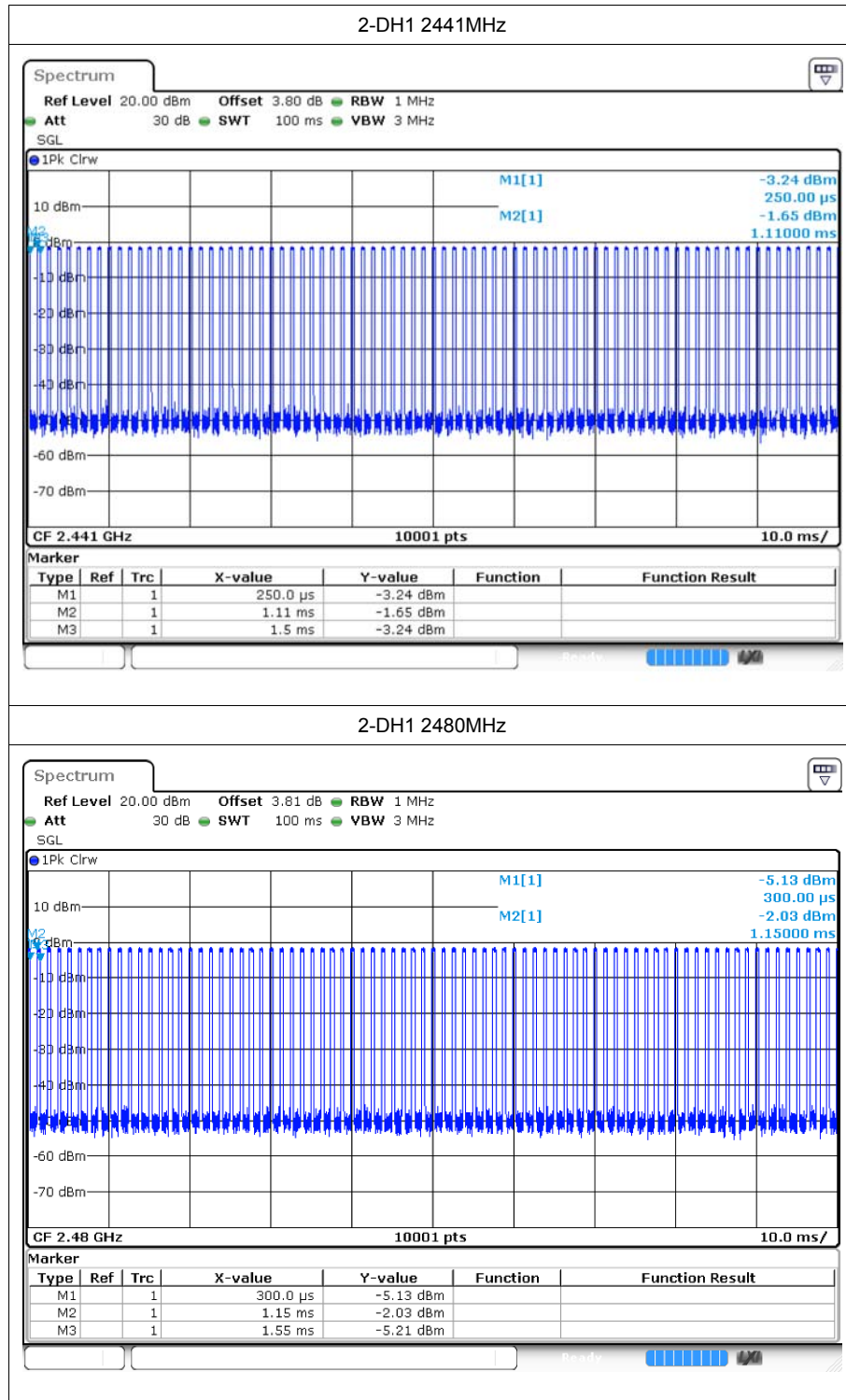
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.21	2.63
1-DH1	2441	31.54	2.56
1-DH1	2480	31.66	2.56
2-DH1	2402	32	2.56
2-DH1	2441	32.01	2.56
2-DH1	2480	32.71	2.5

1.2 Test Graphs





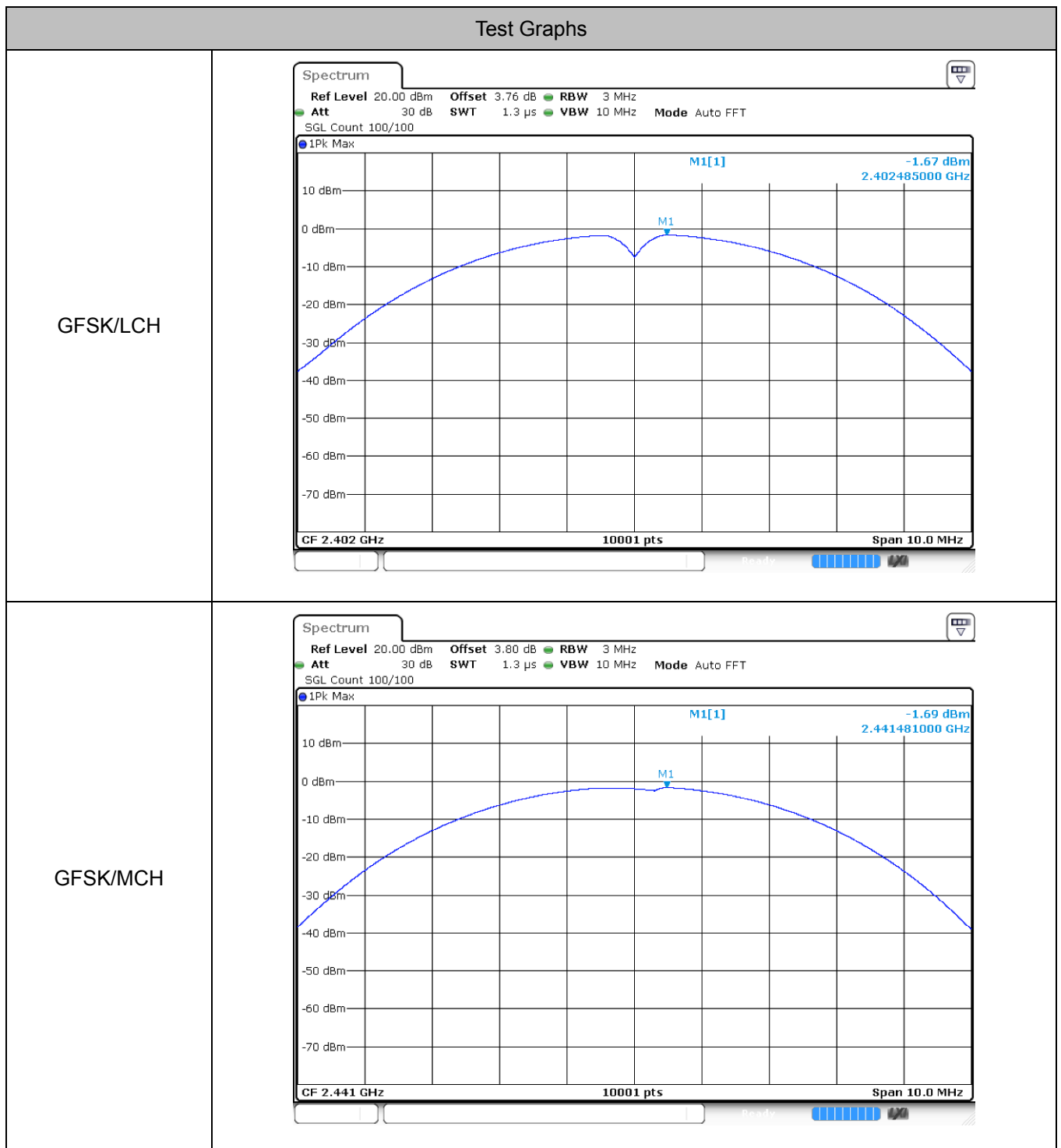


2 Maximum Conducted Peak Output Power

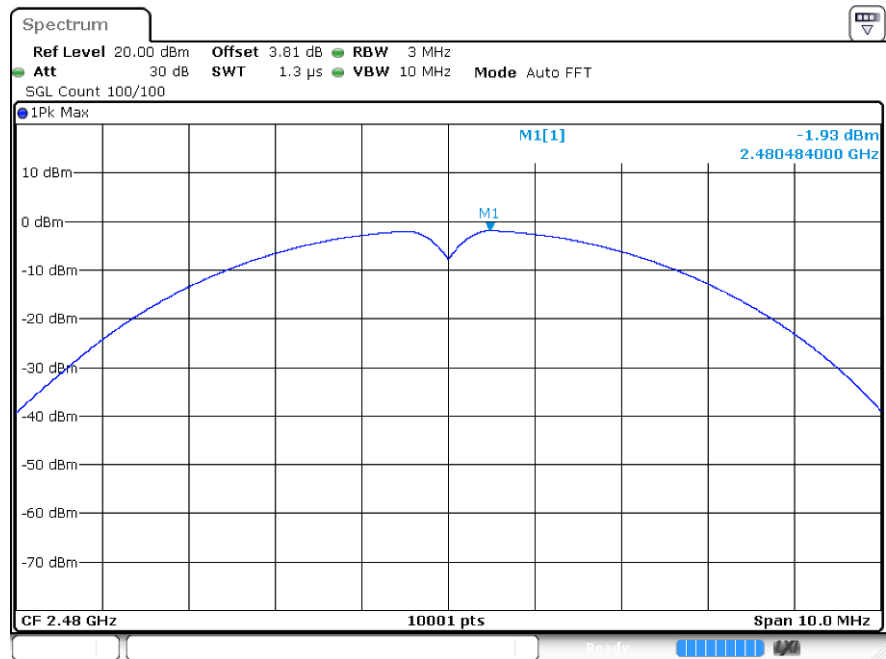
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.67	21	Pass
	MCH	-1.69	21	Pass
	HCH	-1.93	21	Pass
$\pi/4$ DQPSK	LCH	-1.09	21	Pass
	MCH	-0.84	21	Pass
	HCH	-1.46	21	Pass

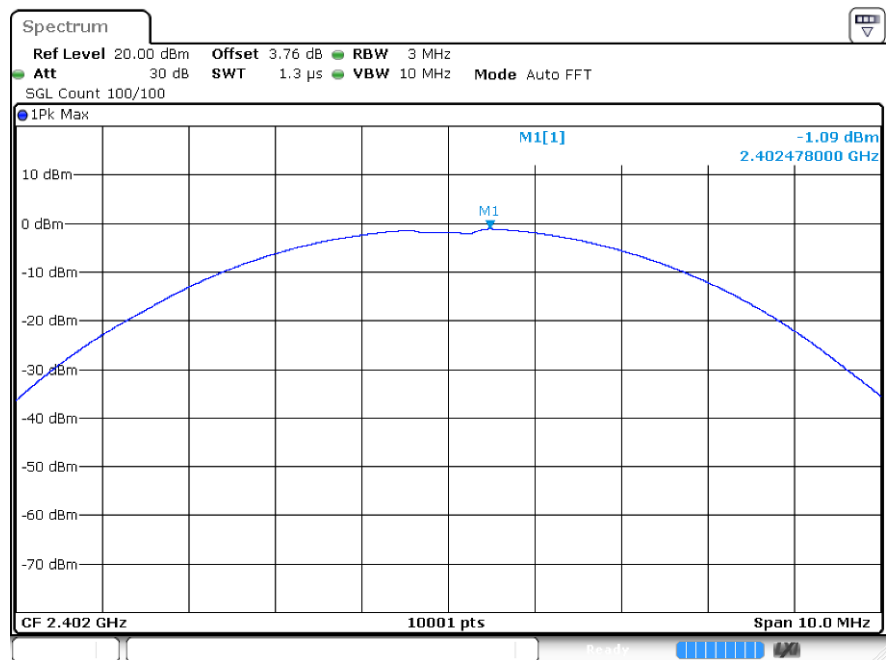
2.2 Test Graphs



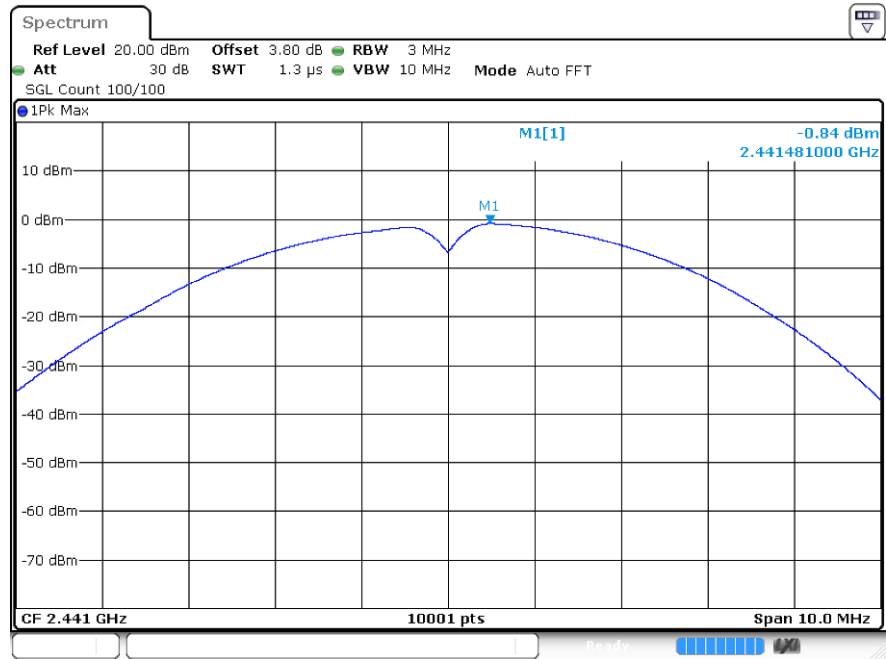
GFSK/HCH



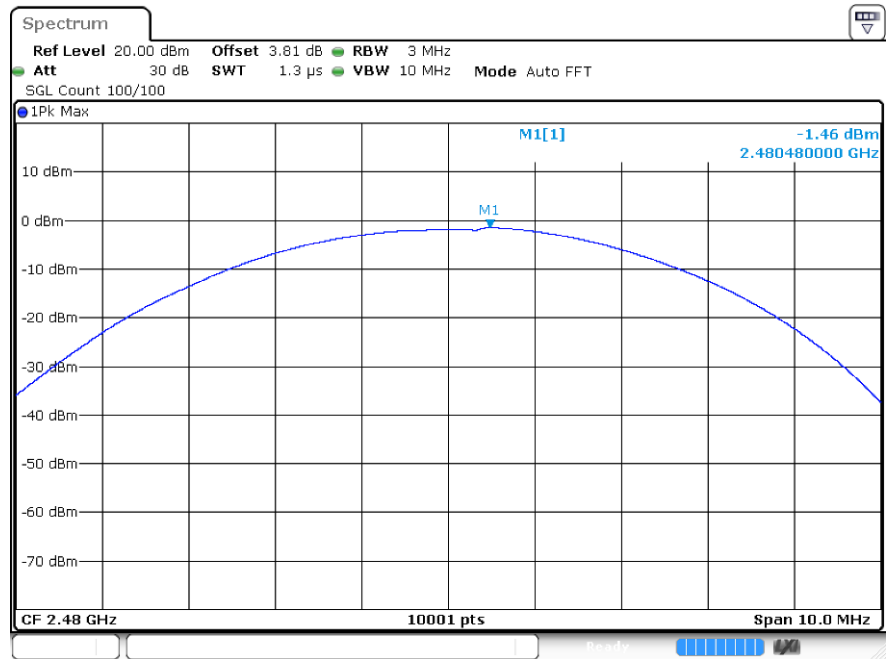
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

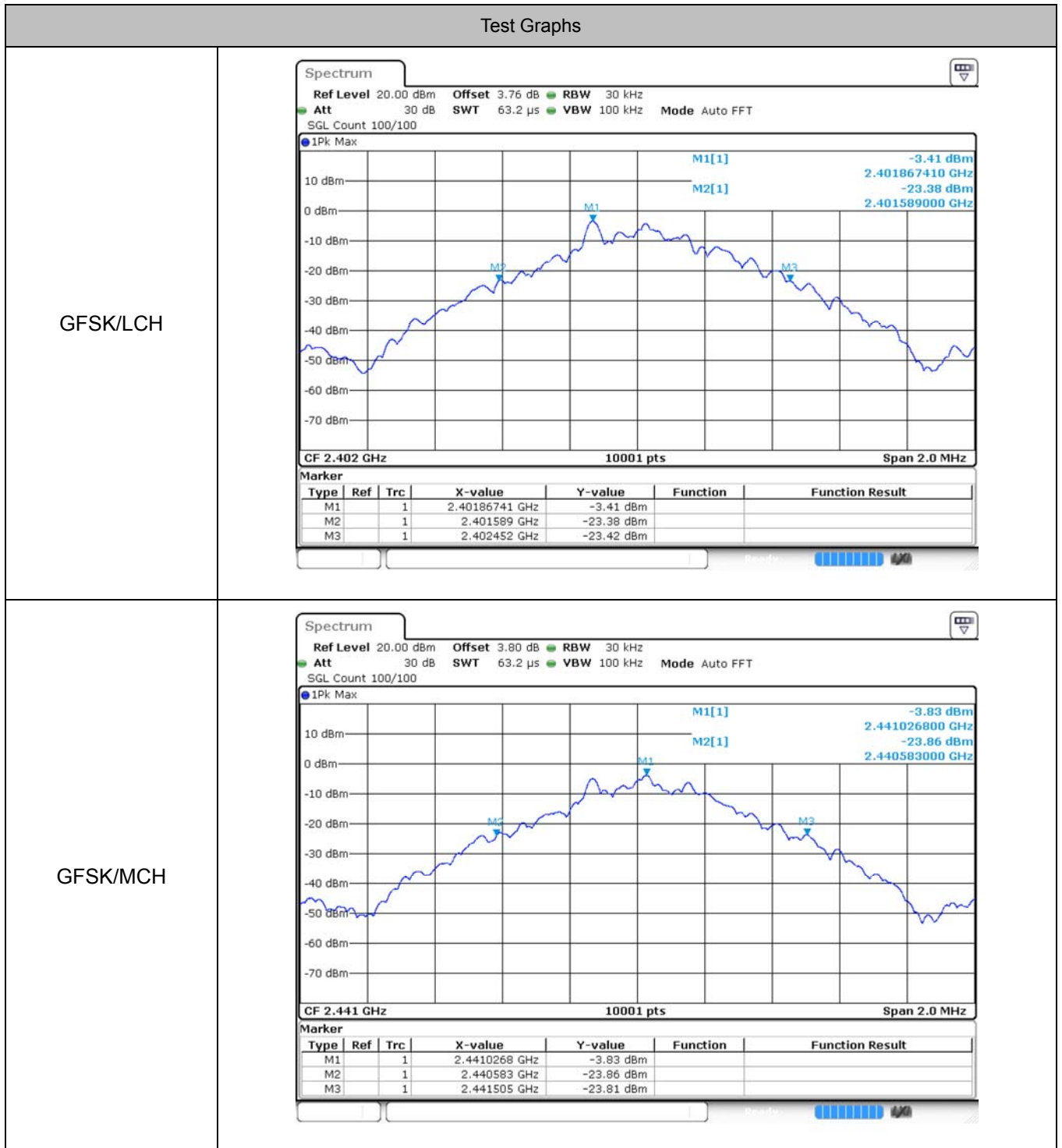


3 20dB Bandwidth

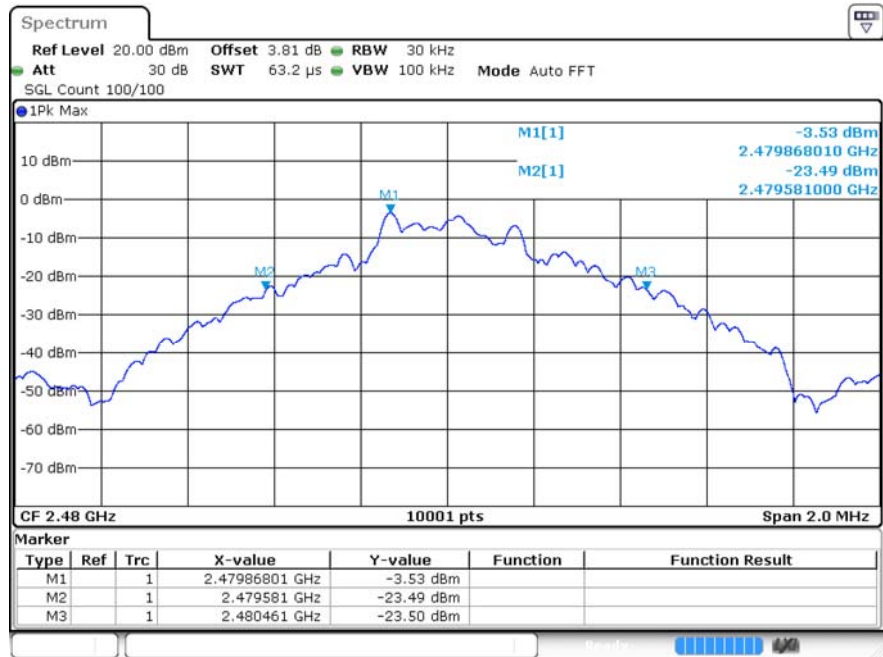
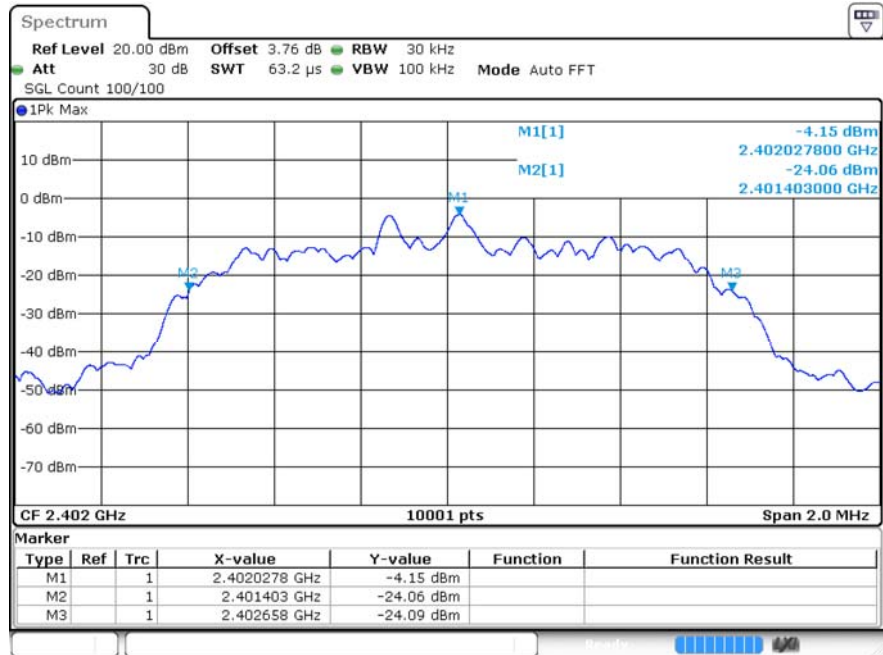
3.1 Test Result

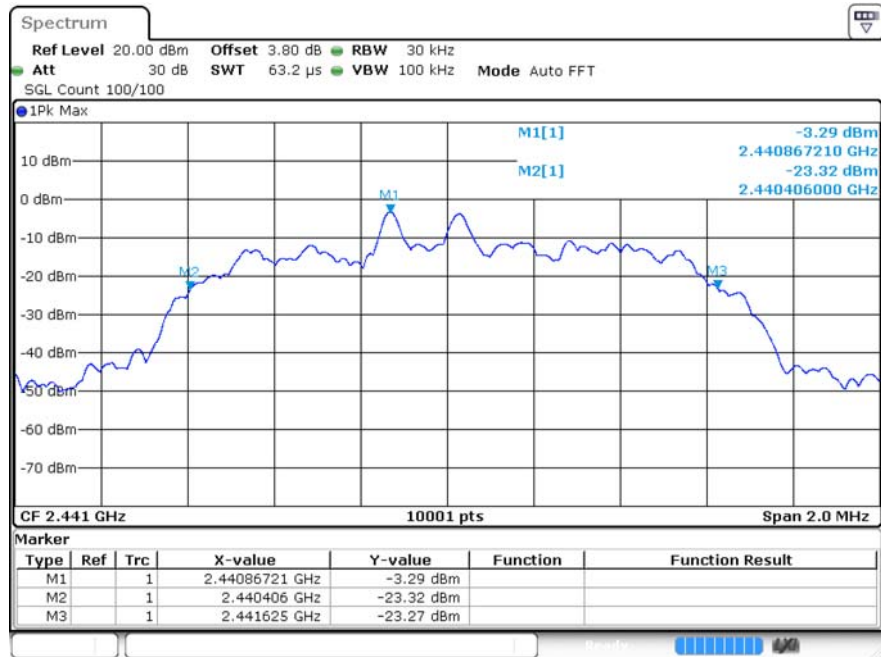
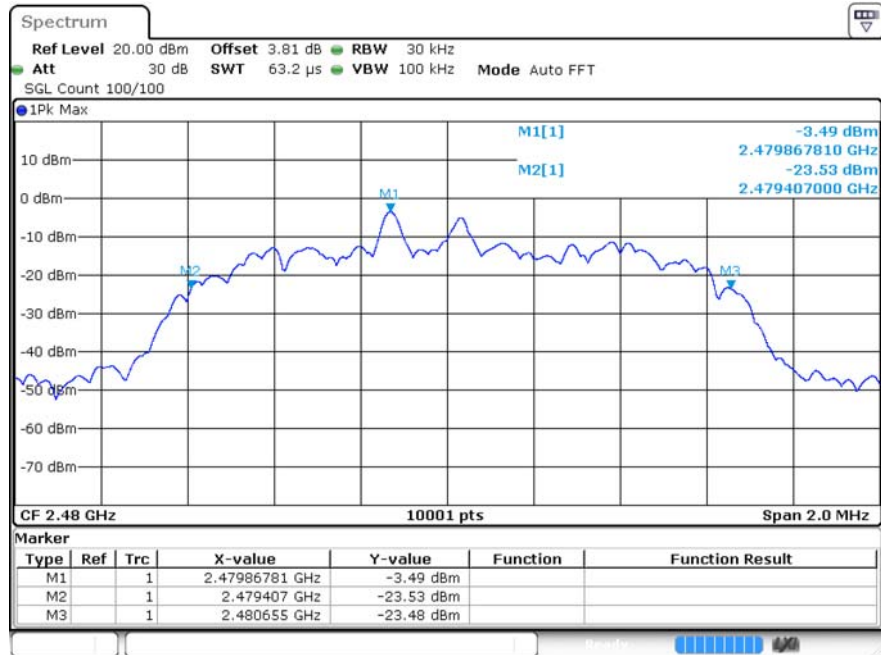
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.863	Not Specified	Pass
	MCH	0.922	Not Specified	Pass
	HCH	0.88	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.256	Not Specified	Pass
	MCH	1.219	Not Specified	Pass
	HCH	1.248	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


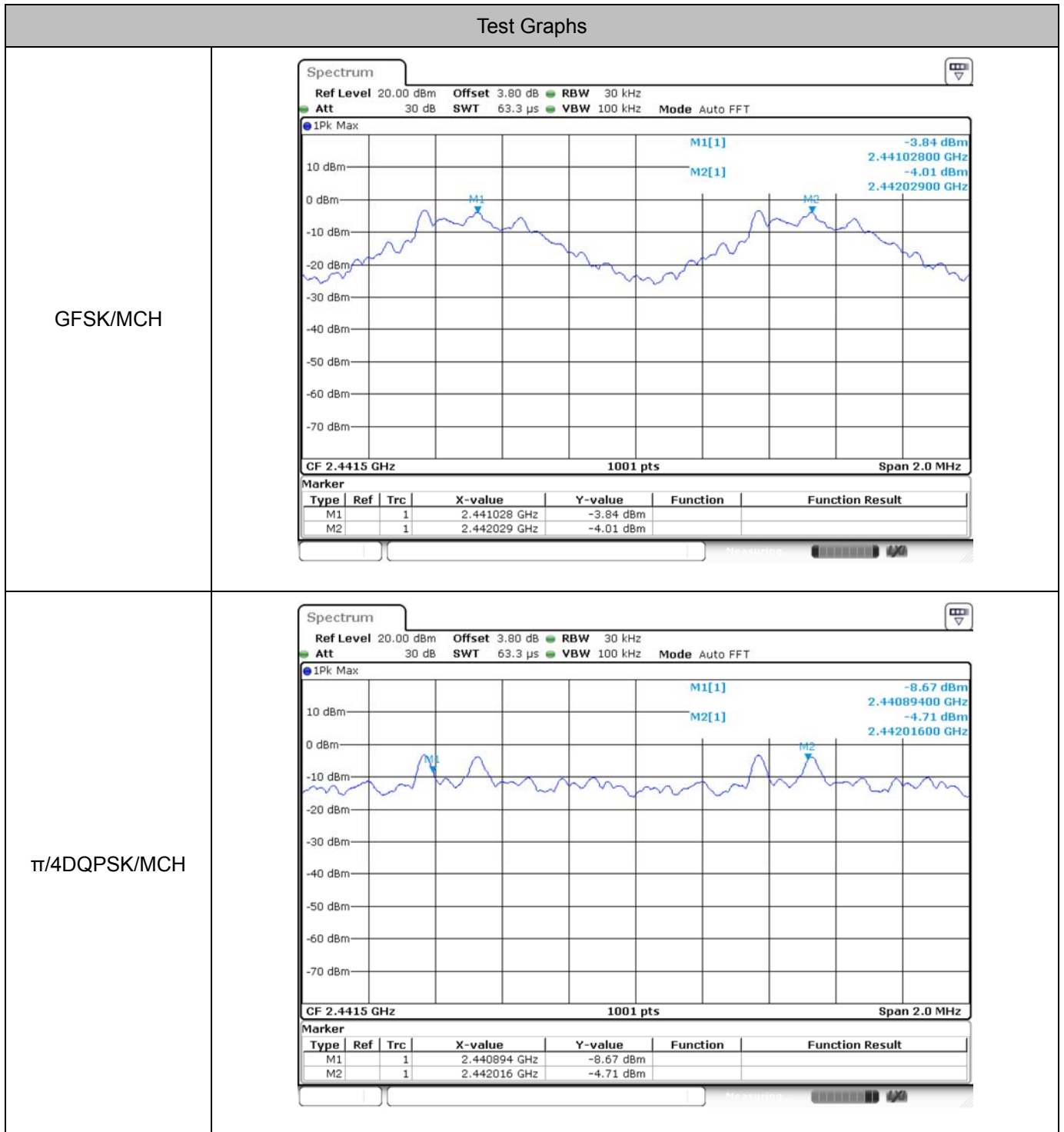
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.001	0.615	Pass
$\pi/4$ DQPSK	MCH	1.122	0.813	Pass

4.2 Test Graphs

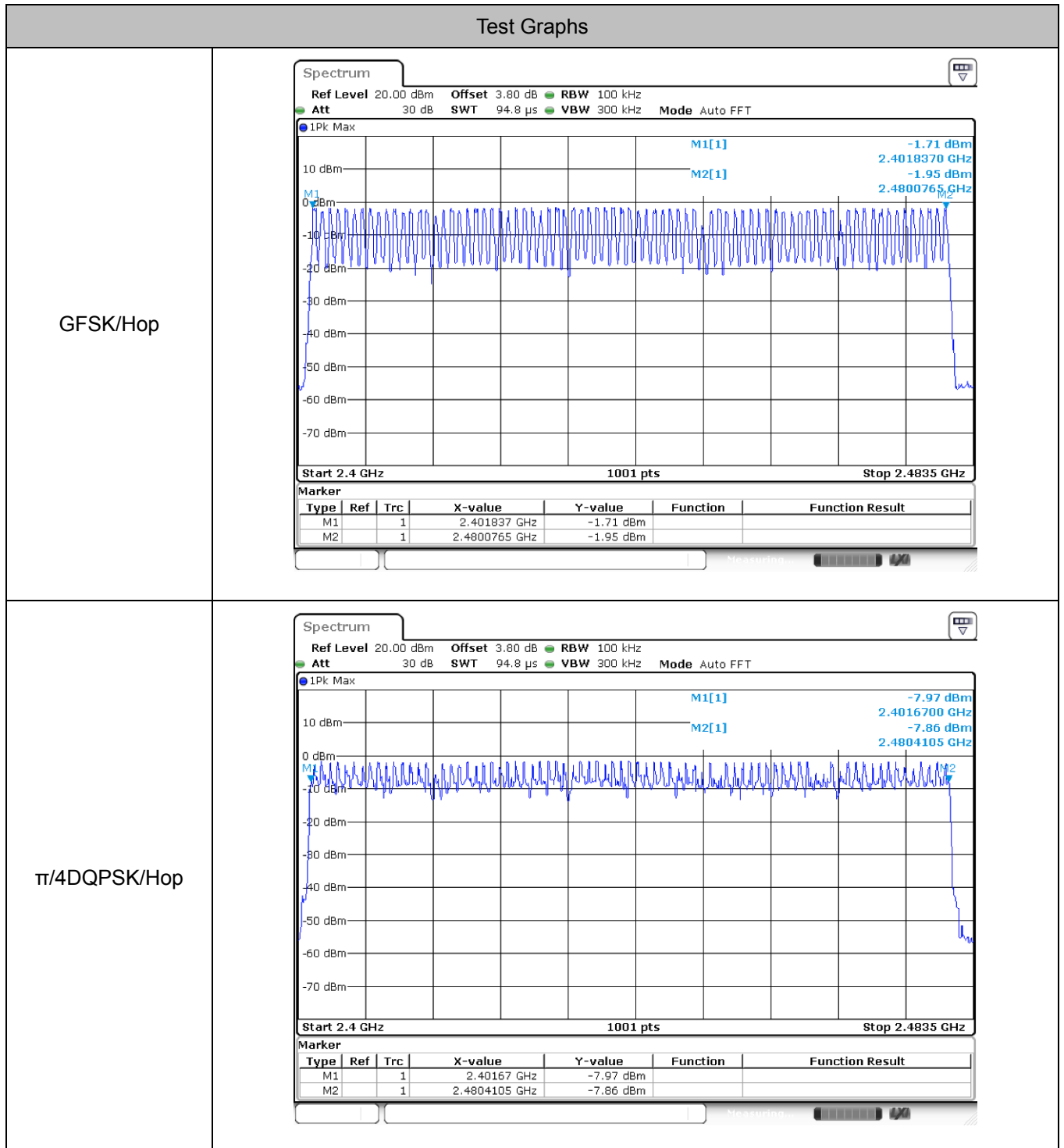


5 Hopping Channel Number

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

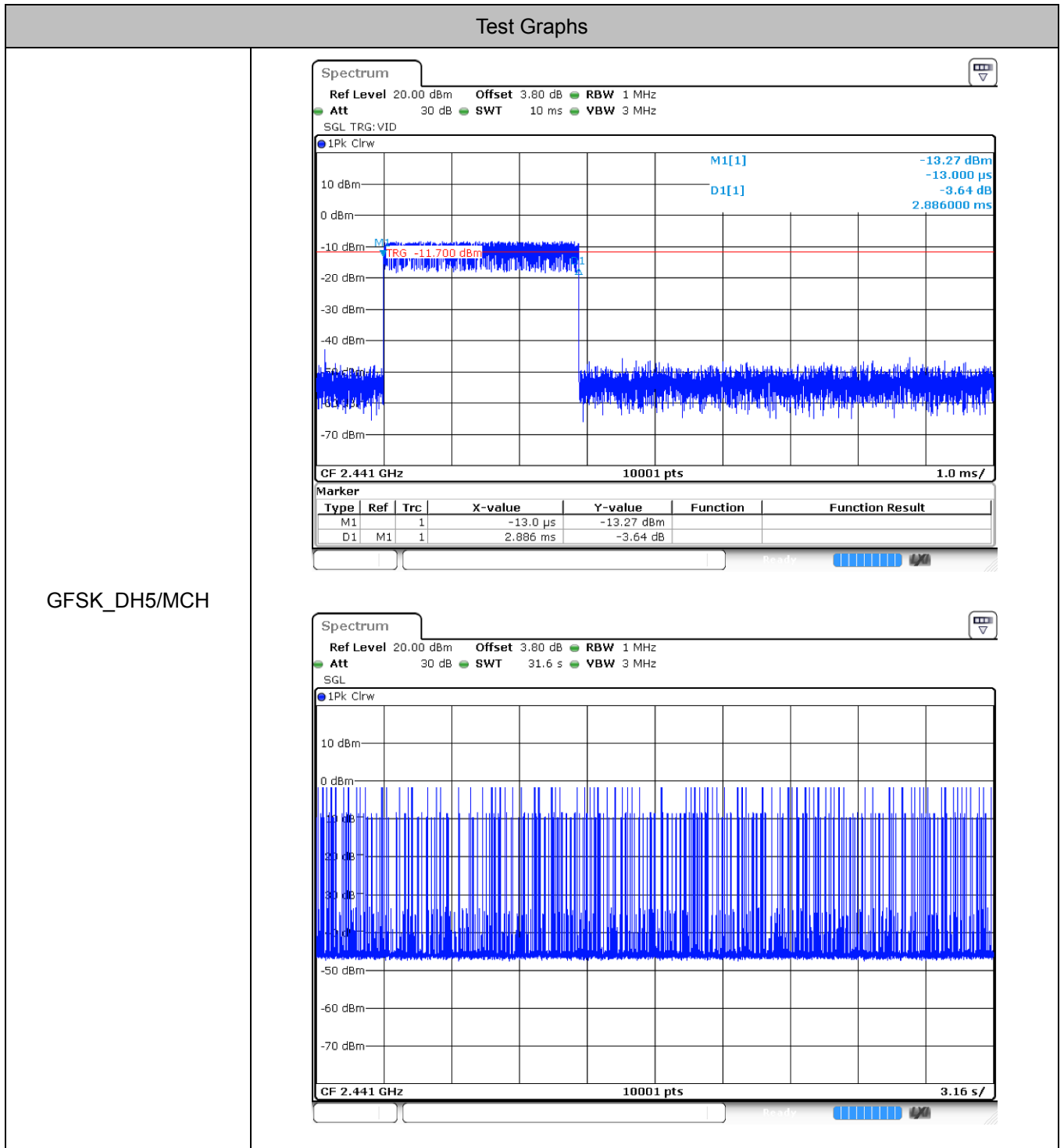


6 Dwell Time

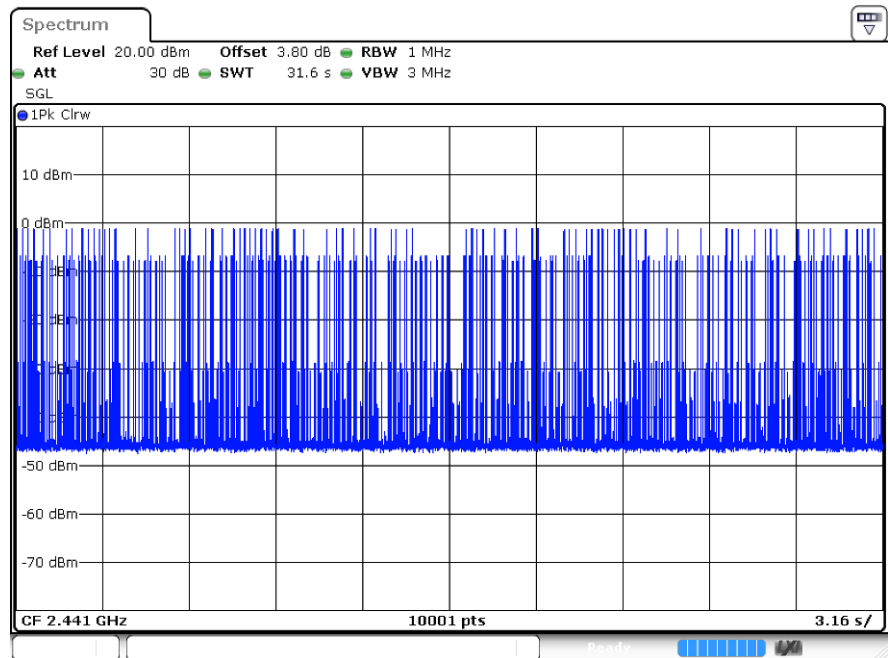
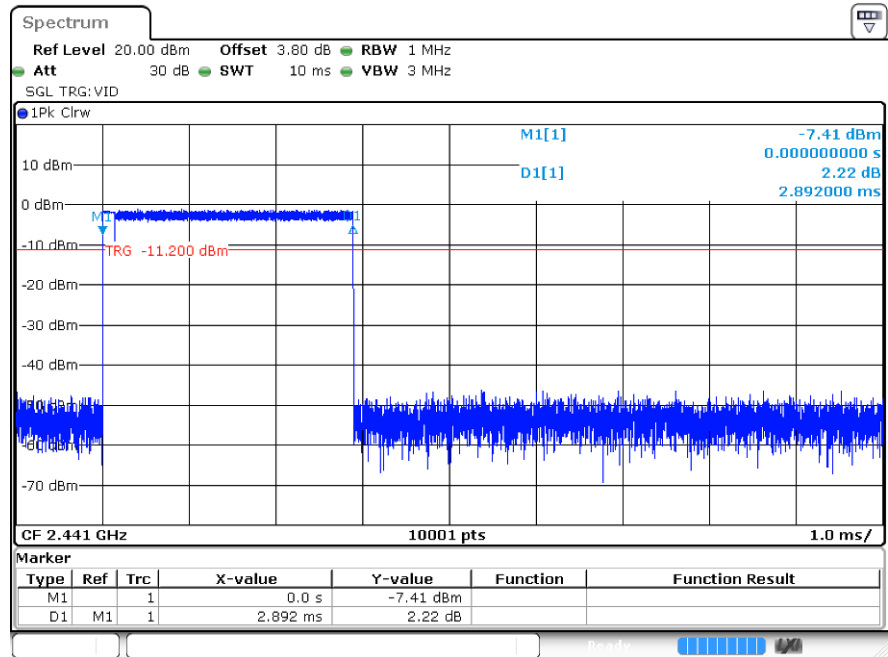
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.886	109	314.574	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.892	113	326.796	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

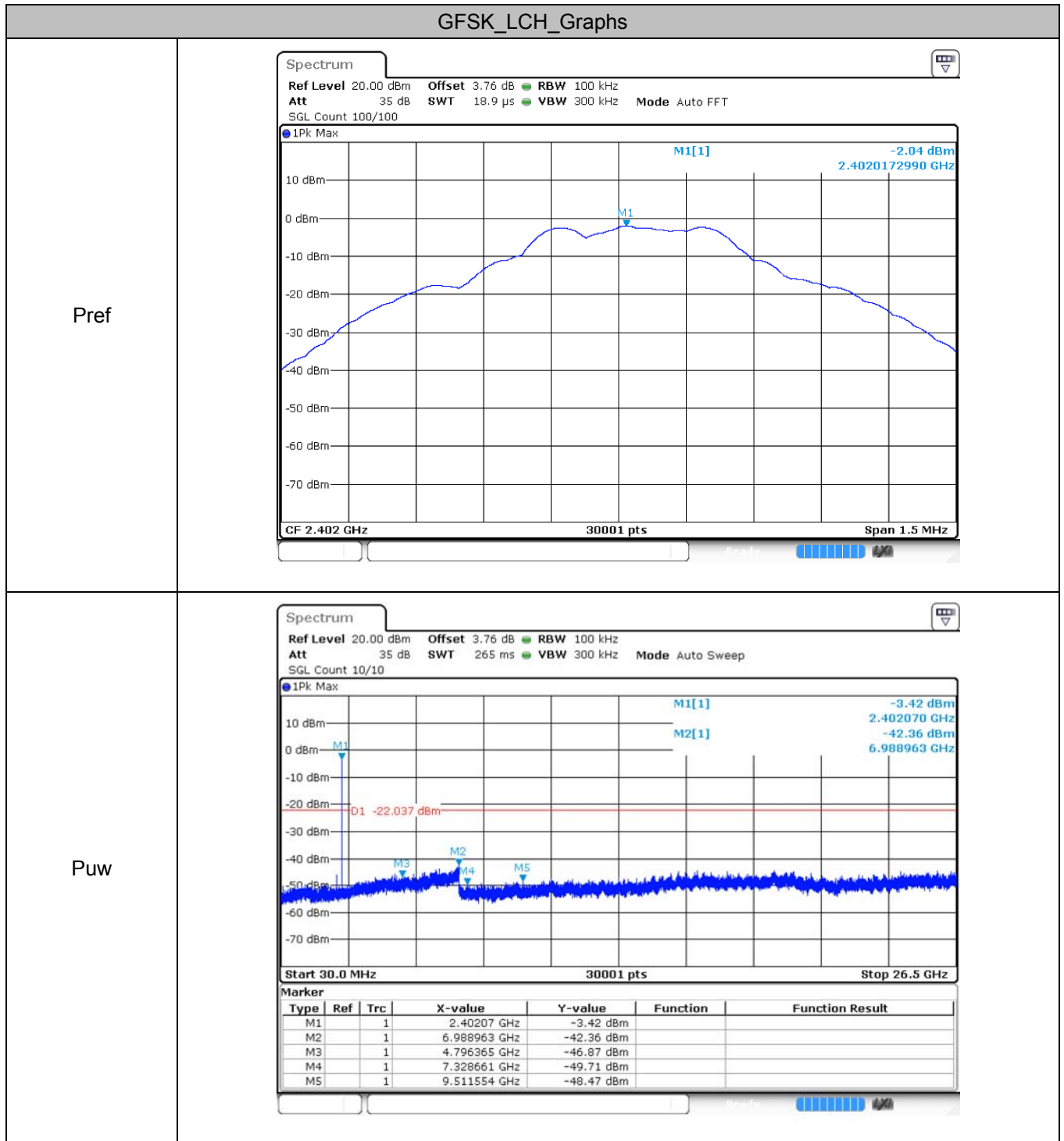


7 RF Conducted Spurious Emissions

7.1 Test Result

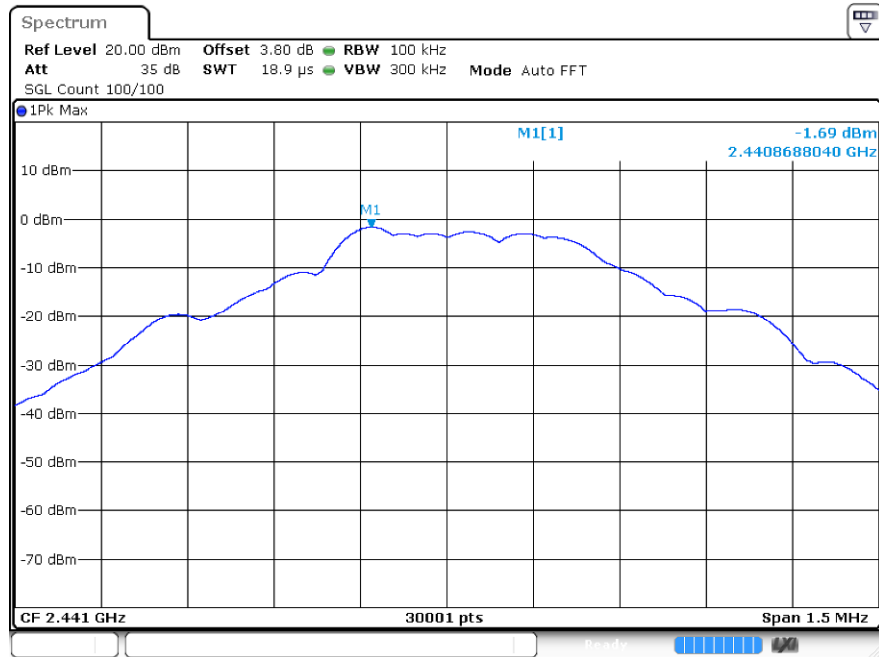
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-40.32	-20	Pass
	MCH	-41.42	-20	Pass
	HCH	-41.03	-20	Pass
$\pi/4$ DQPSK	LCH	-41.85	-20	Pass
	MCH	-41.71	-20	Pass
	HCH	-41.62	-20	Pass

7.2 Test Graphs

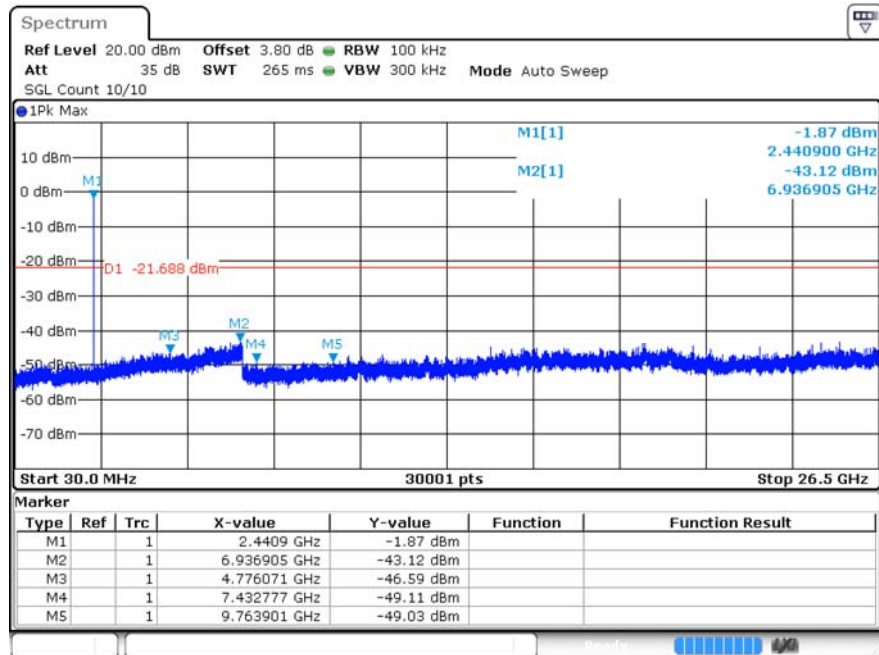


GFSK_MCH_Graphs

Pref

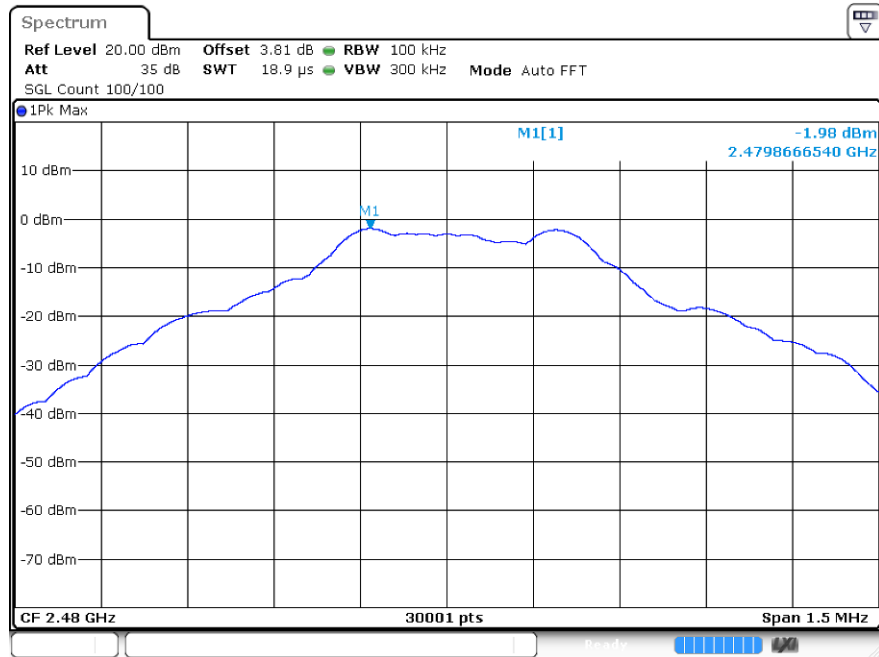


Puw

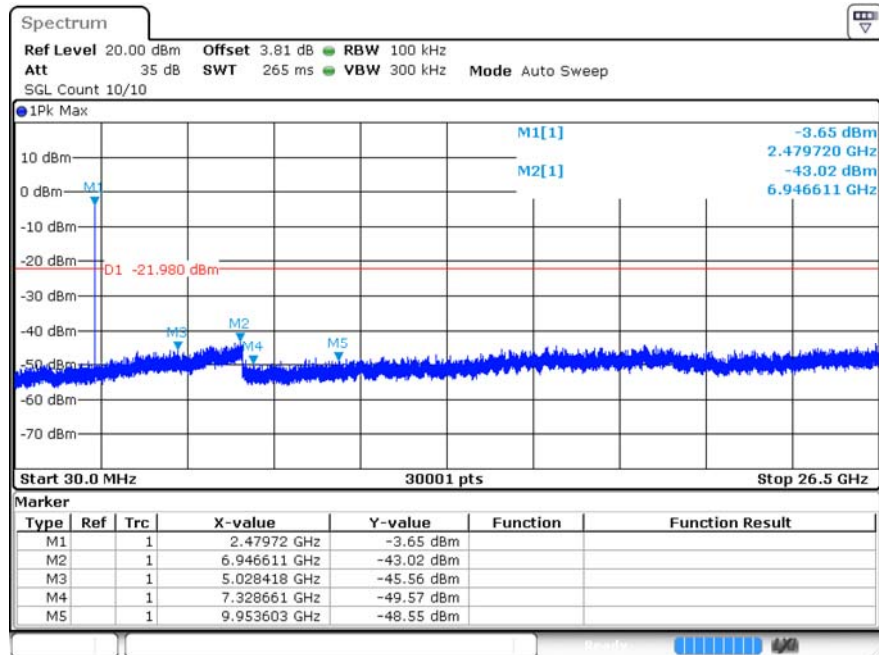


GFSK_HCH_Graphs

Pref

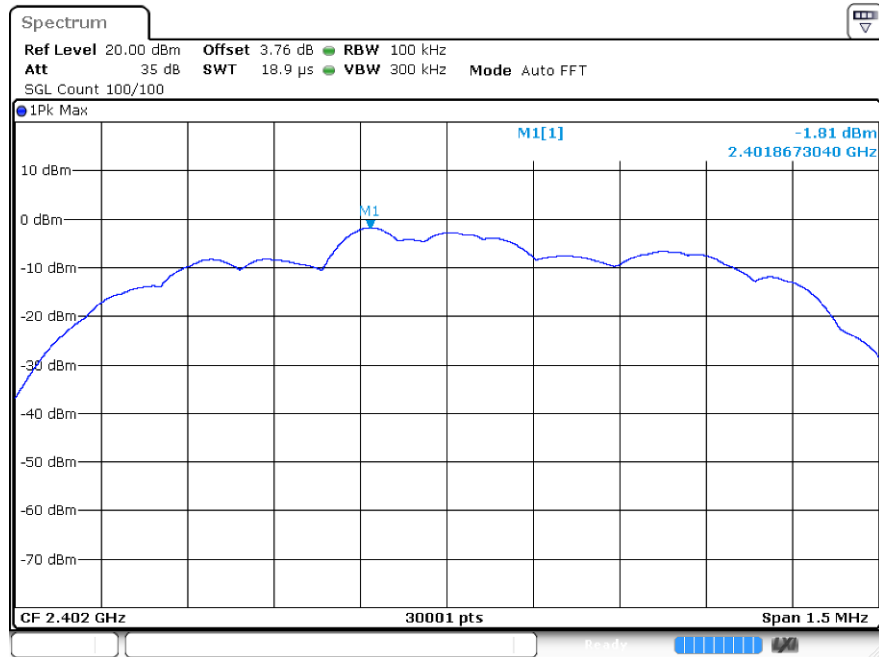


Puw

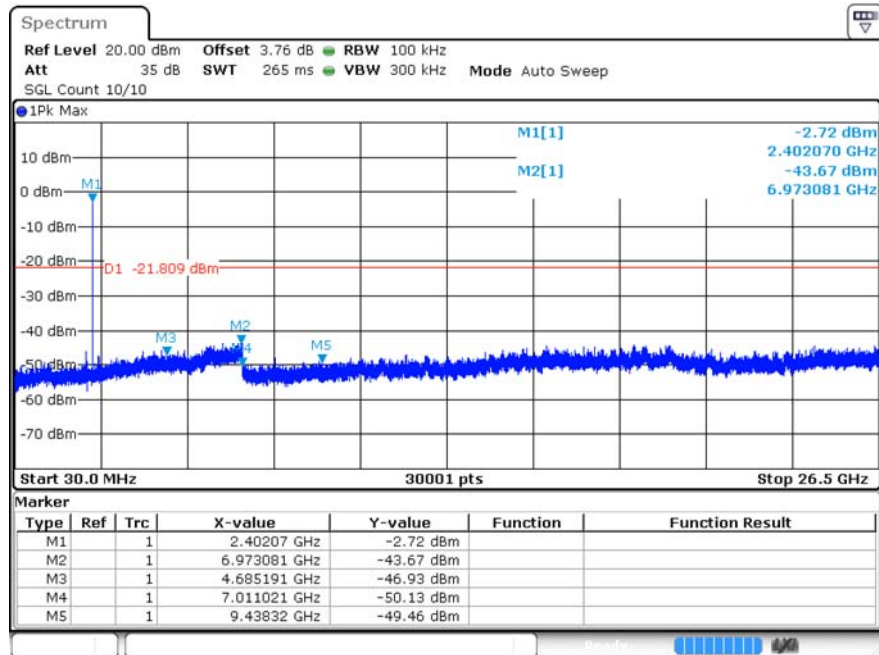


$\pi/4$ DQPSK_LCH_Graphs

Pref

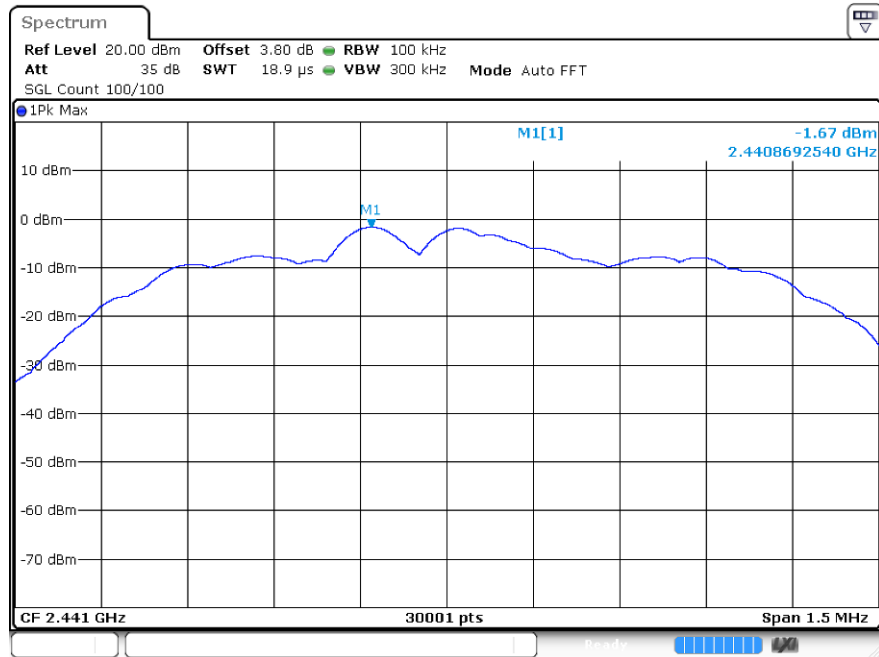


Puw

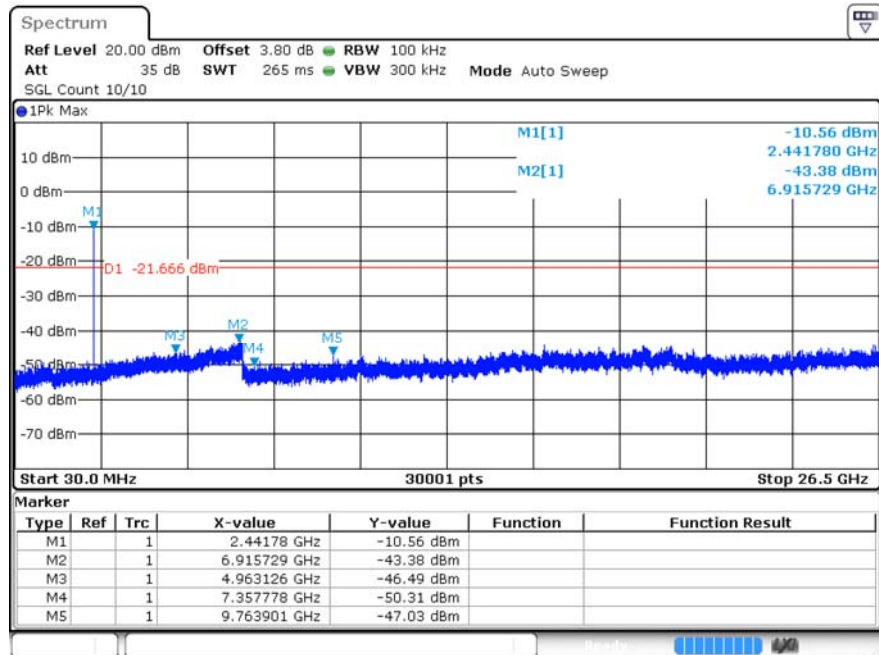


π /4DQPSK_MCH_Graphs

Pref

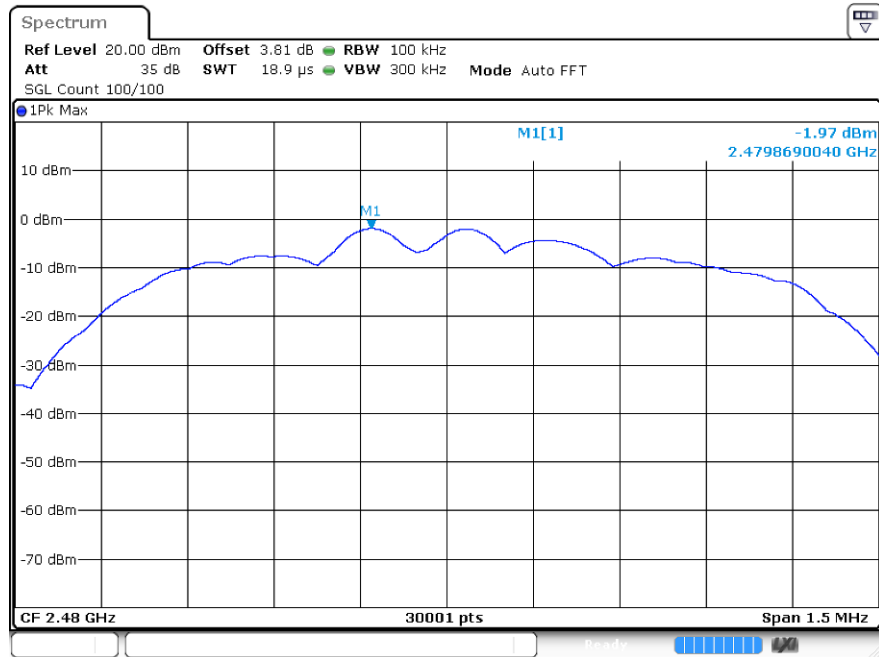


Puw

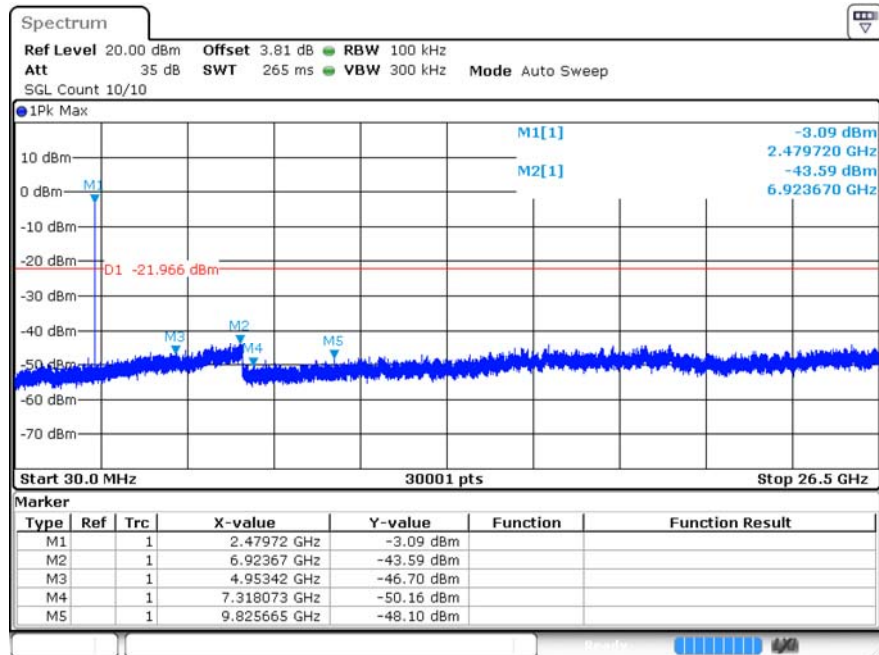


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

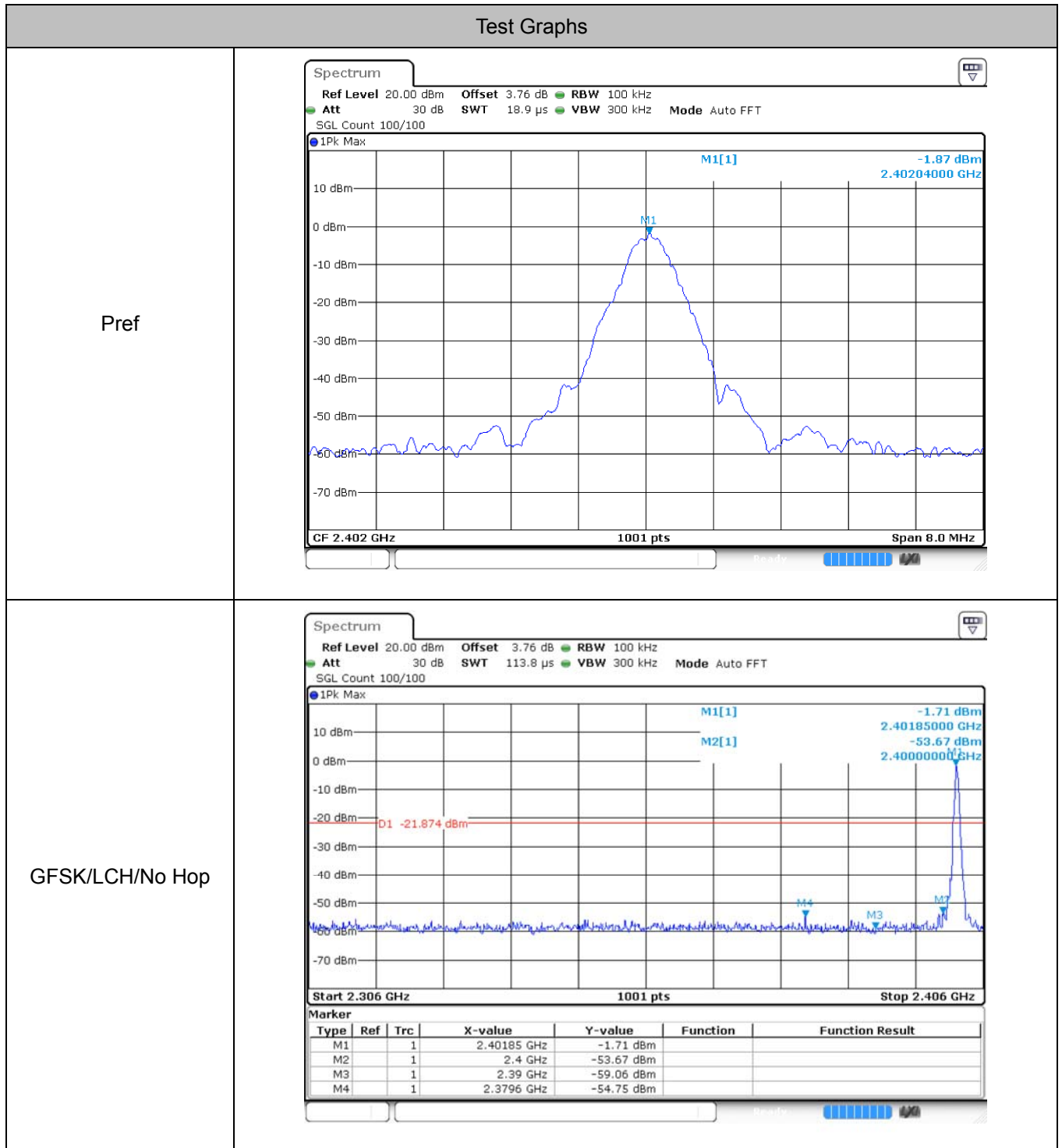


8 Band-edge for RF Conducted Emissions

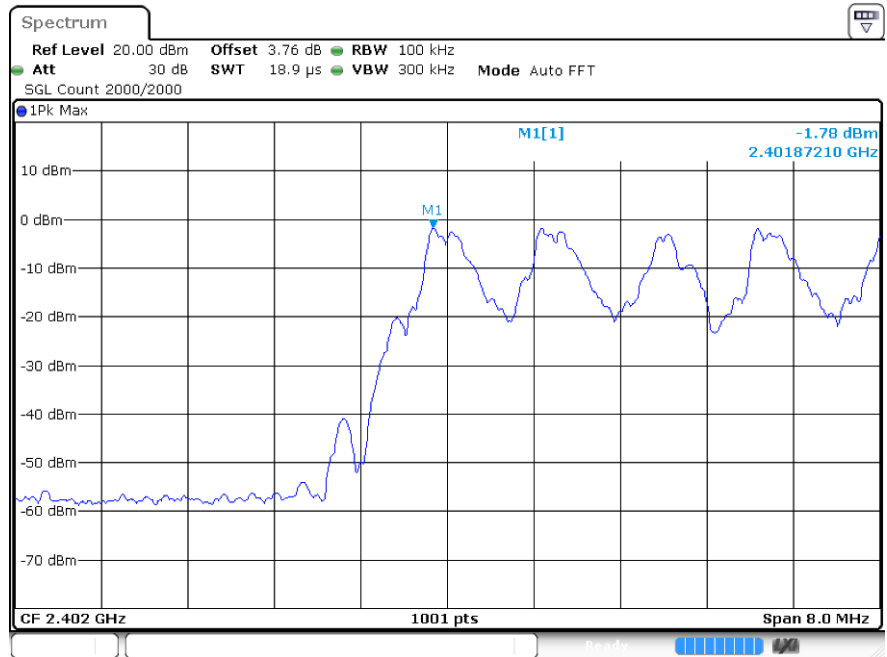
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-52.88	-20	Pass
			On	-52.2	-20	Pass
	HCH	2480	Off	-53.62	-20	Pass
			On	-51.36	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-53.31	-20	Pass
			On	-52.27	-20	Pass
	HCH	2480	Off	-53.62	-20	Pass
			On	-50.5	-20	Pass

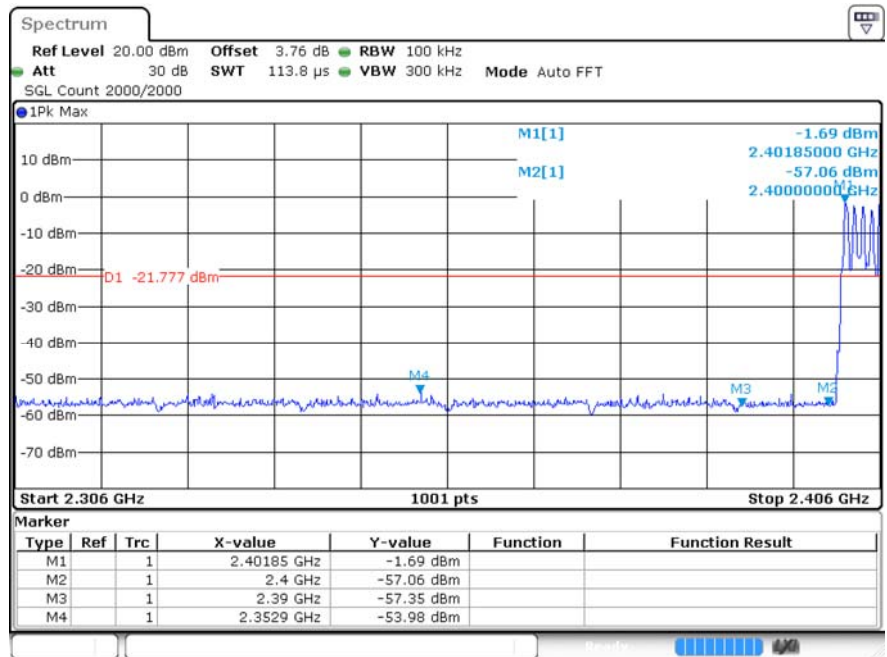
8.2 Test Graphs



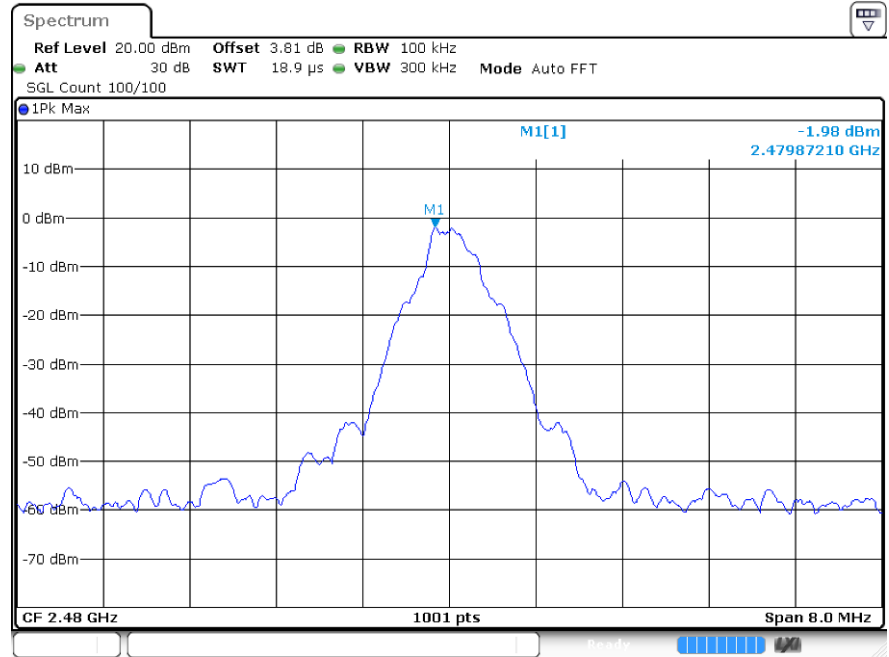
Ref



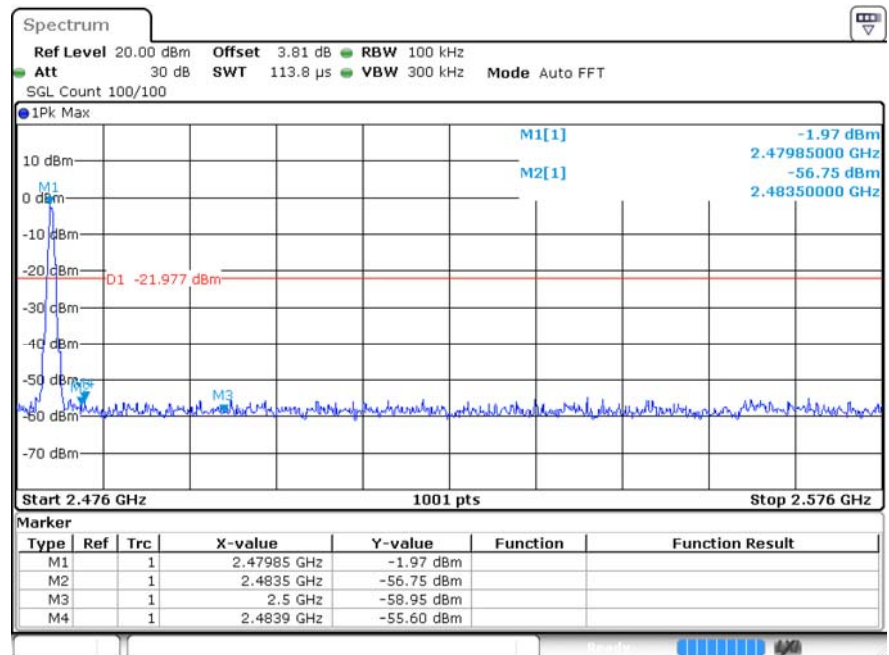
GFSK/LCH/Hop



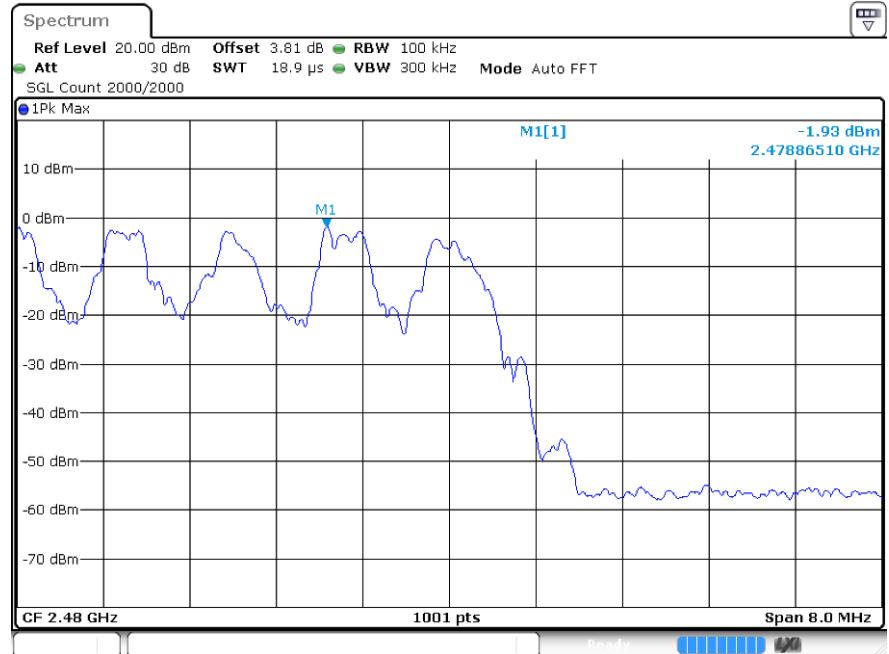
Ref



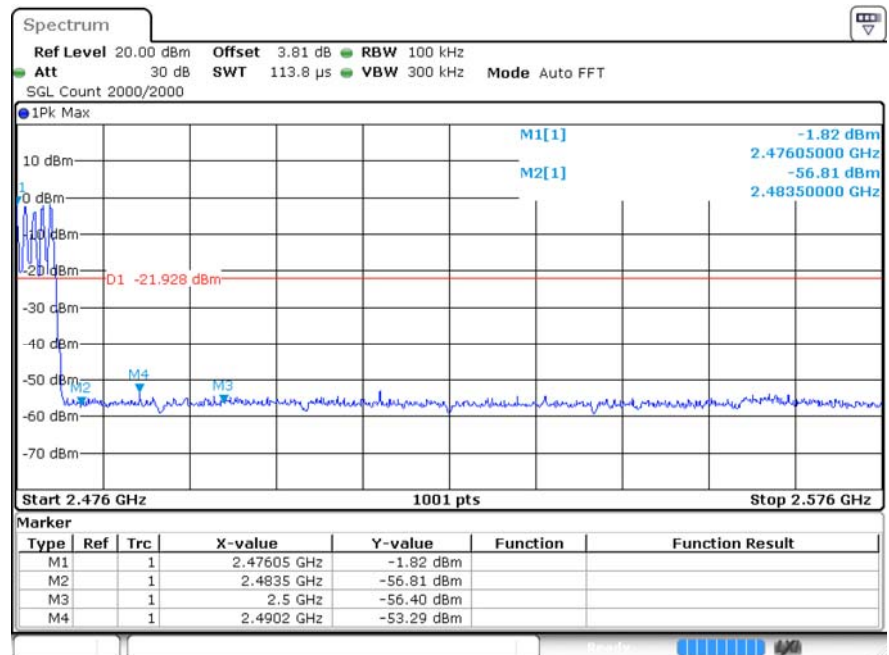
GFSK/HCH/No Hop



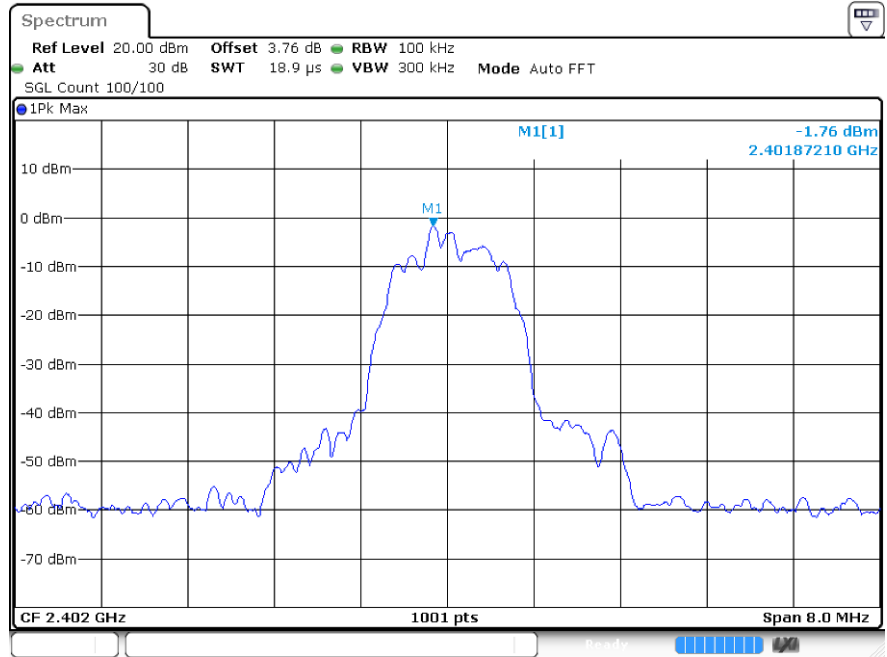
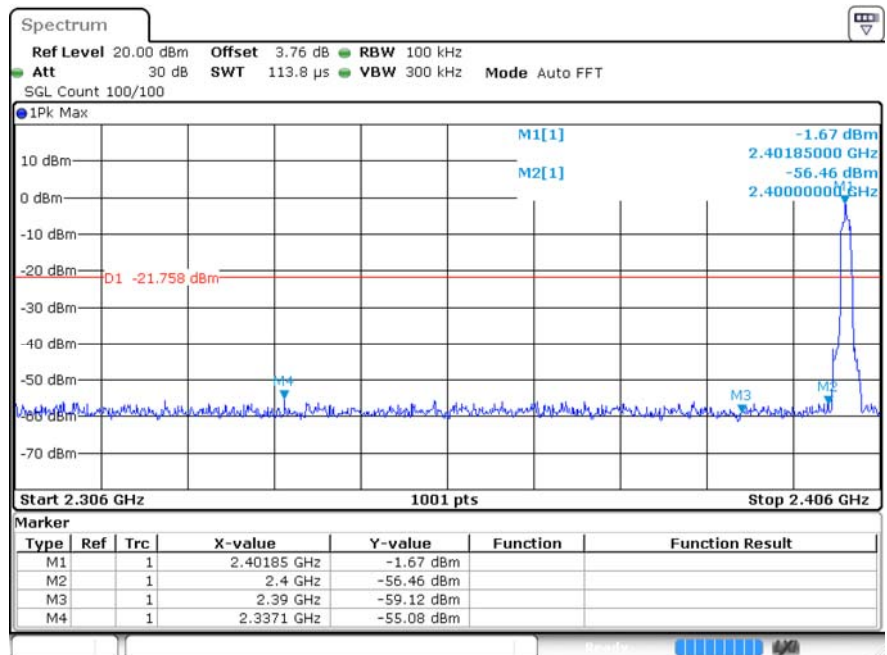
Ref.



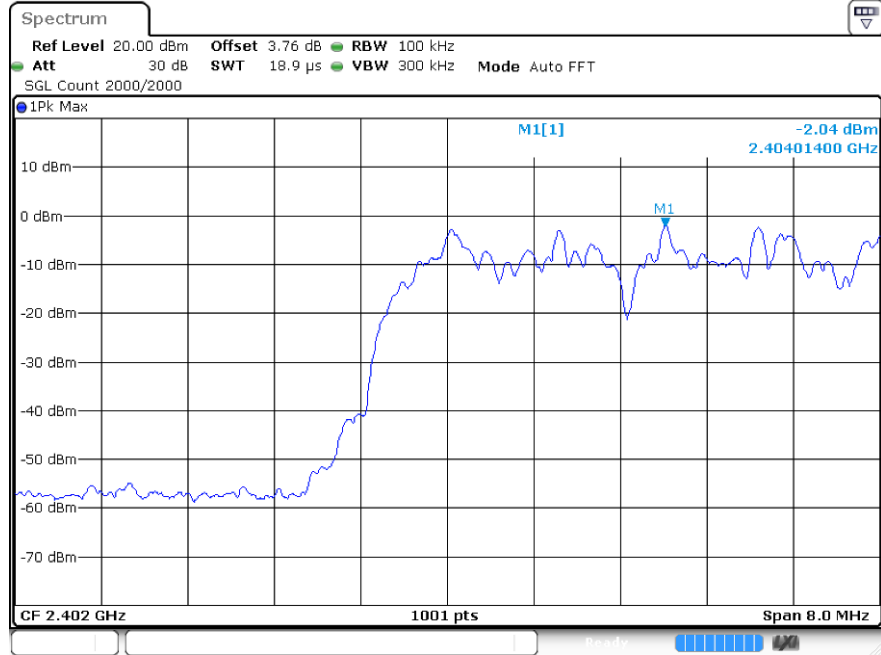
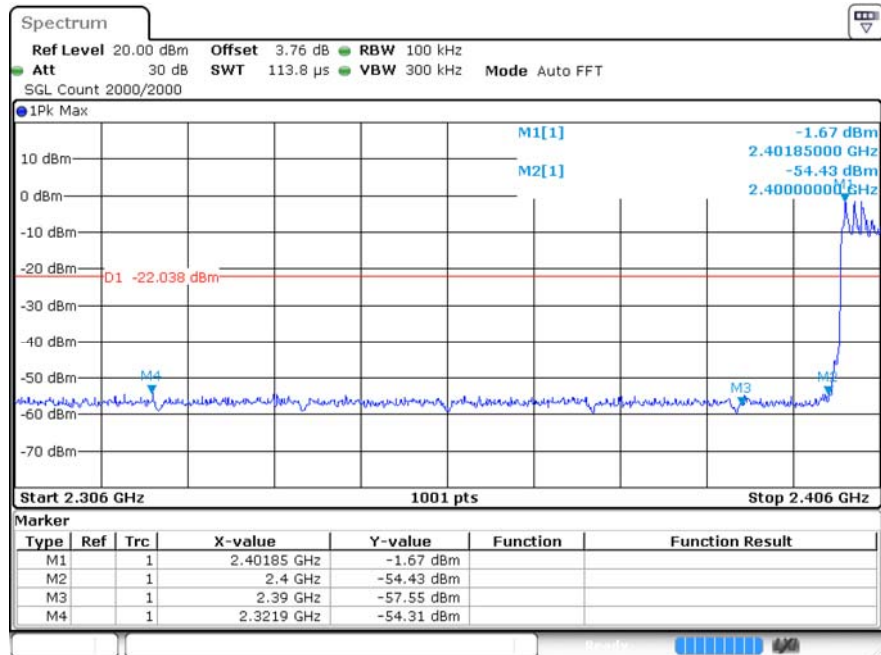
GFSK/HCH/Hop



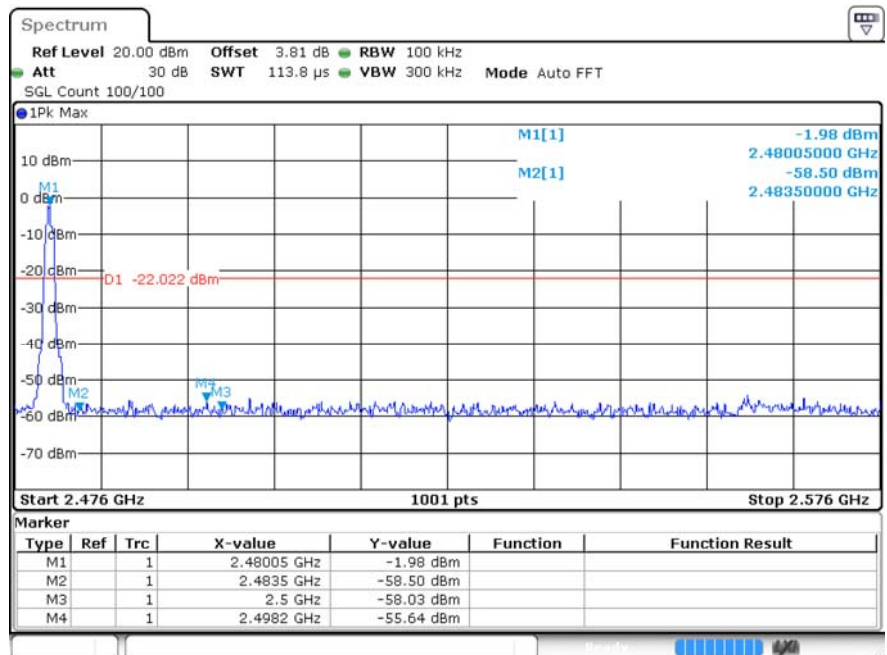
Ref


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


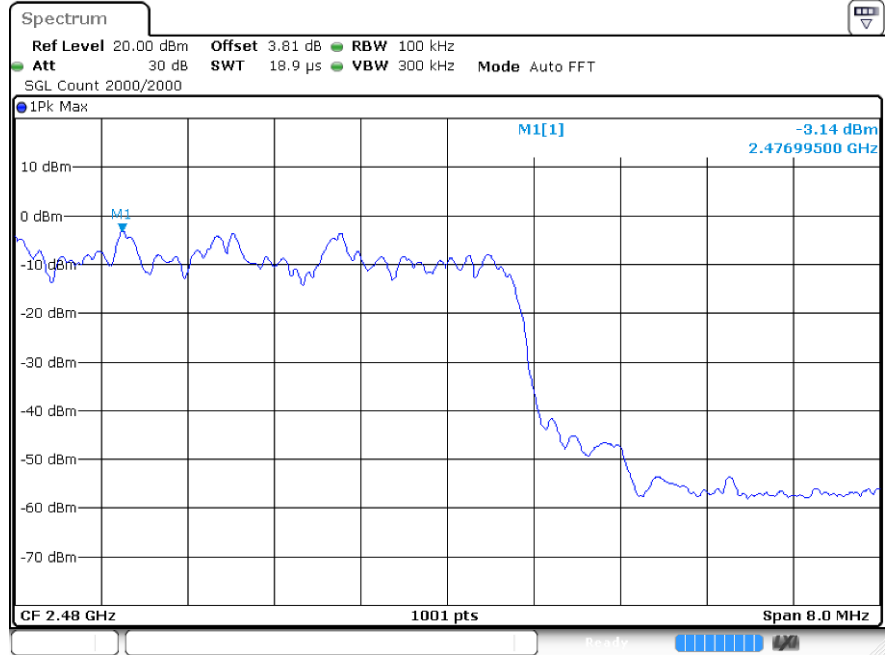
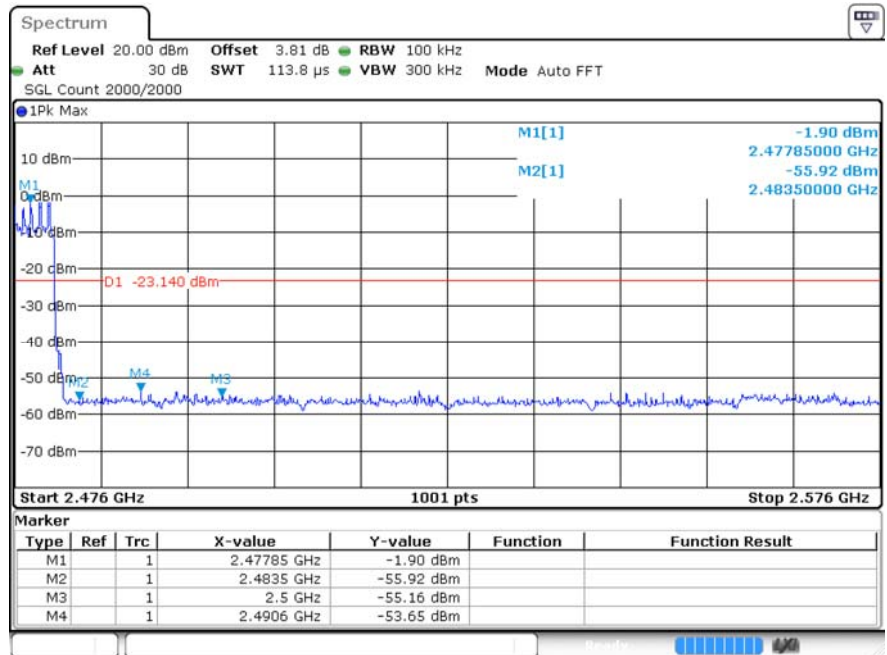
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


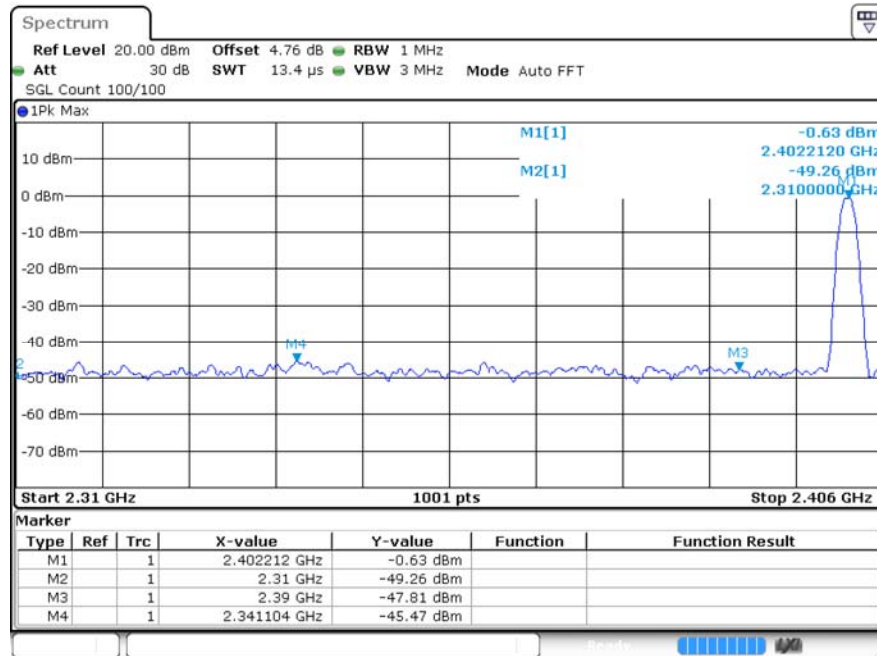
9 Restrict-band band-edge measurements

9.1 Test Result

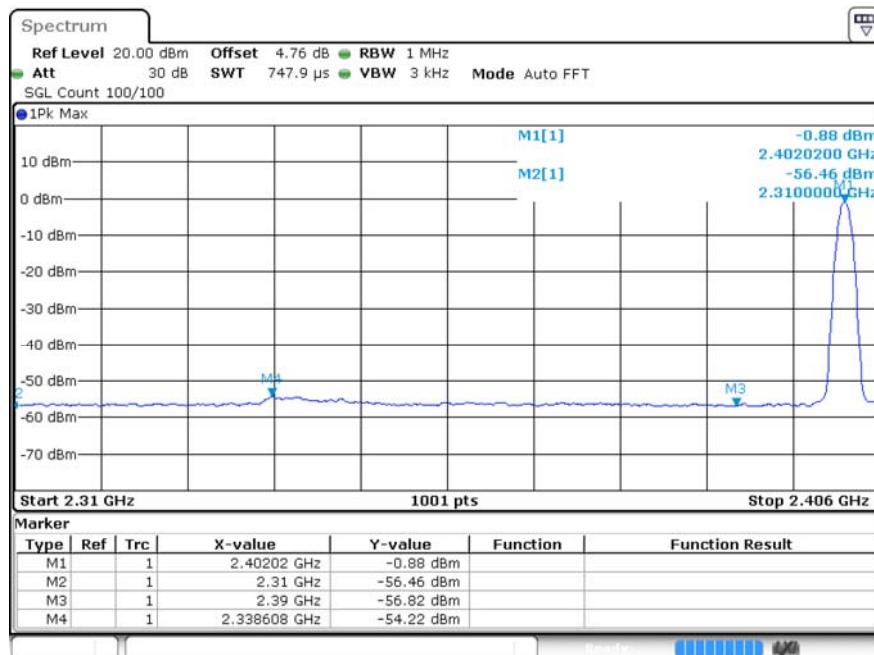
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-49.26	2	48	PEAK	74	Pass
	Off	2310.0	-56.46	2	40.8	AV	54	Pass
	Off	2341.104	-45.47	2	51.79	PEAK	74	Pass
	Off	2338.608	-54.21	2	43.05	AV	54	Pass
	Off	2390.0	-47.81	2	49.45	PEAK	74	Pass
	Off	2390.0	-56.82	2	40.44	AV	54	Pass
	Off	2483.5	-50.08	2	47.18	PEAK	74	Pass
	Off	2483.5	-55.98	2	41.28	AV	54	Pass
	Off	2495.92	-46.74	2	50.52	PEAK	74	Pass
	Off	2491.024	-55.58	2	41.68	AV	54	Pass
	Off	2500.0	-46.98	2	50.28	PEAK	74	Pass
	Off	2500.0	-55.95	2	41.31	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-47.33	2	49.93	PEAK	74	Pass
	Off	2310.0	-56.02	2	41.24	AV	54	Pass
	Off	2342.928	-44.78	2	52.48	PEAK	74	Pass
	Off	2341.2	-54.64	2	42.62	AV	54	Pass
	Off	2390.0	-47.6	2	49.66	PEAK	74	Pass
	Off	2390.0	-56.87	2	40.39	AV	54	Pass
	Off	2483.5	-48.87	2	48.39	PEAK	74	Pass
	Off	2483.5	-55.96	2	41.3	AV	54	Pass
	Off	2500	-45.26	2	52	PEAK	74	Pass
	Off	2485.48	-55.55	2	41.71	AV	54	Pass
	Off	2500.0	-45.26	2	52	PEAK	74	Pass
	Off	2500.0	-56.04	2	41.22	AV	54	Pass

9.2 Test Graphs

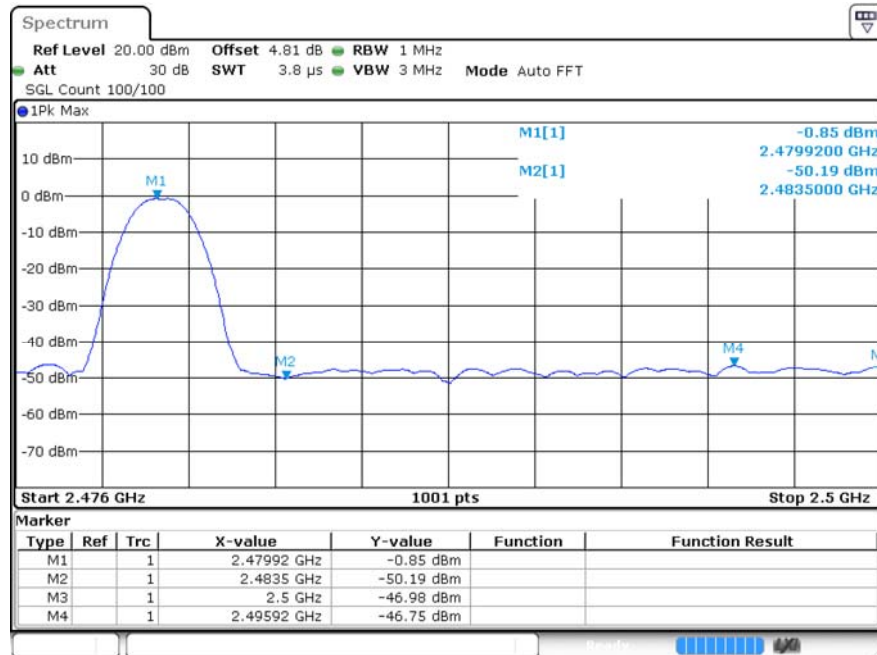
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



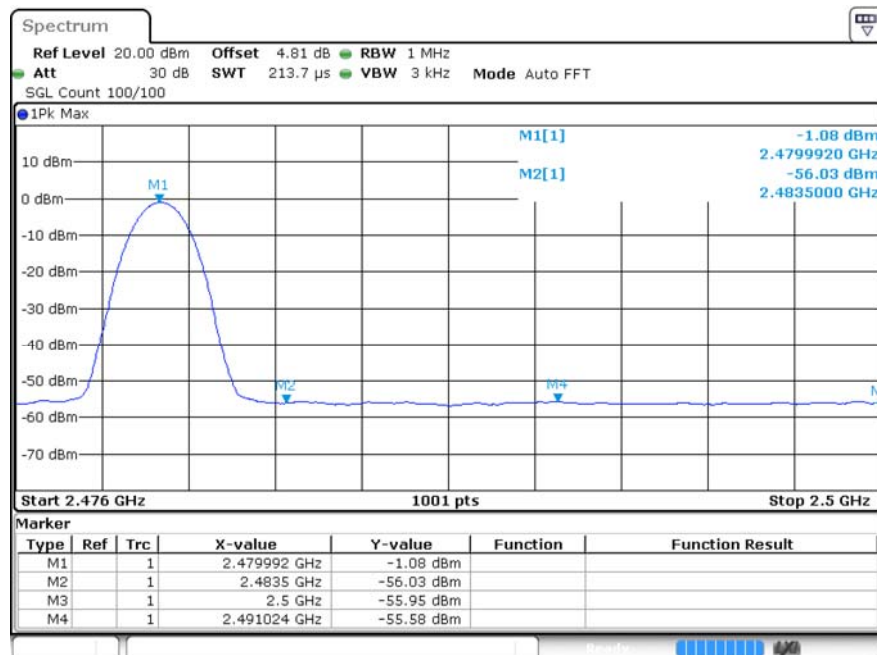
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



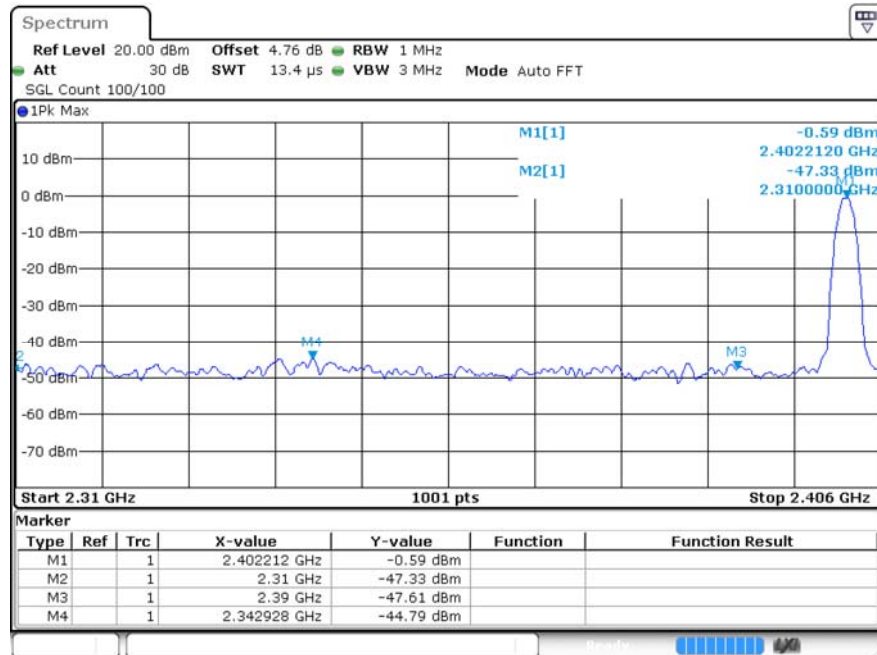
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



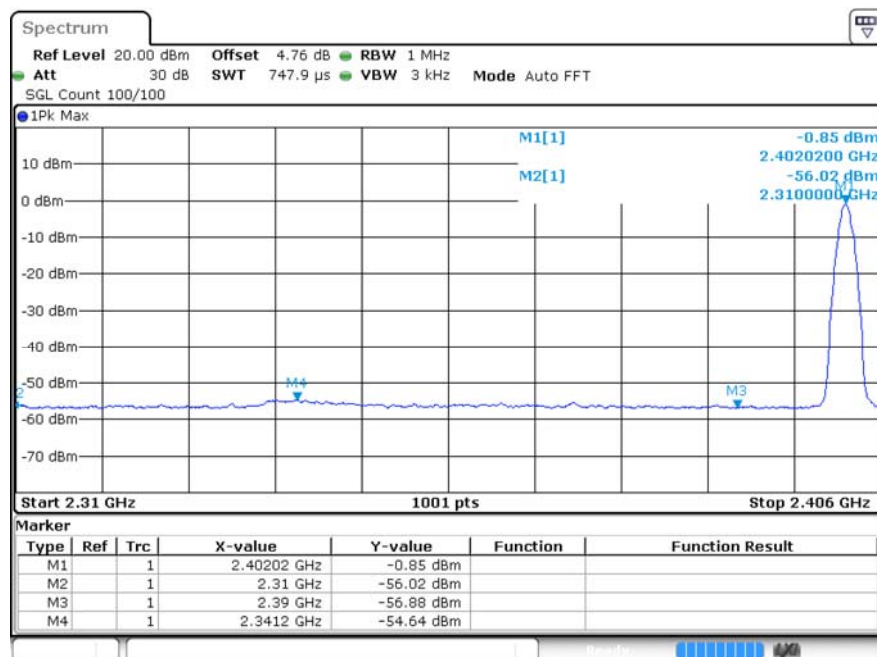
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



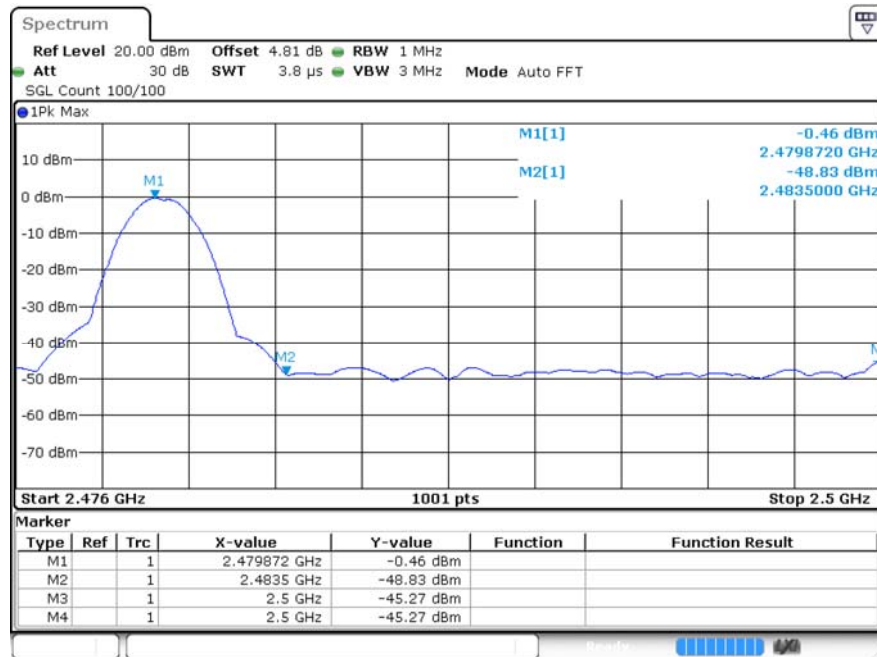
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



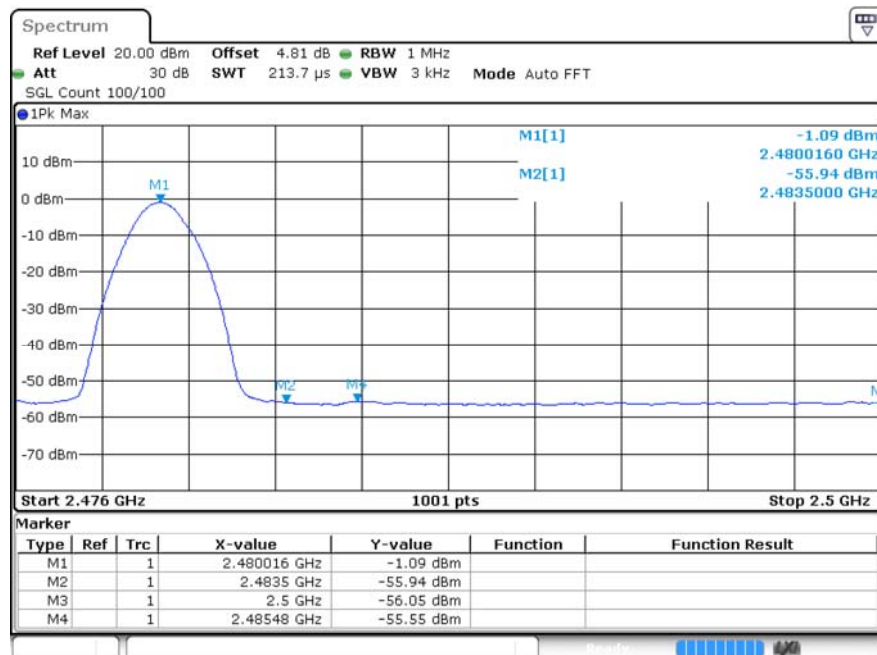
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---