Appendix A

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

Product Name: Portable Bluetooth Speaker

Trade Mark: N/A

Test Model: SPK770

Environmental Conditions

Temperature:	24.4℃
Relative Humidity:	51.2%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

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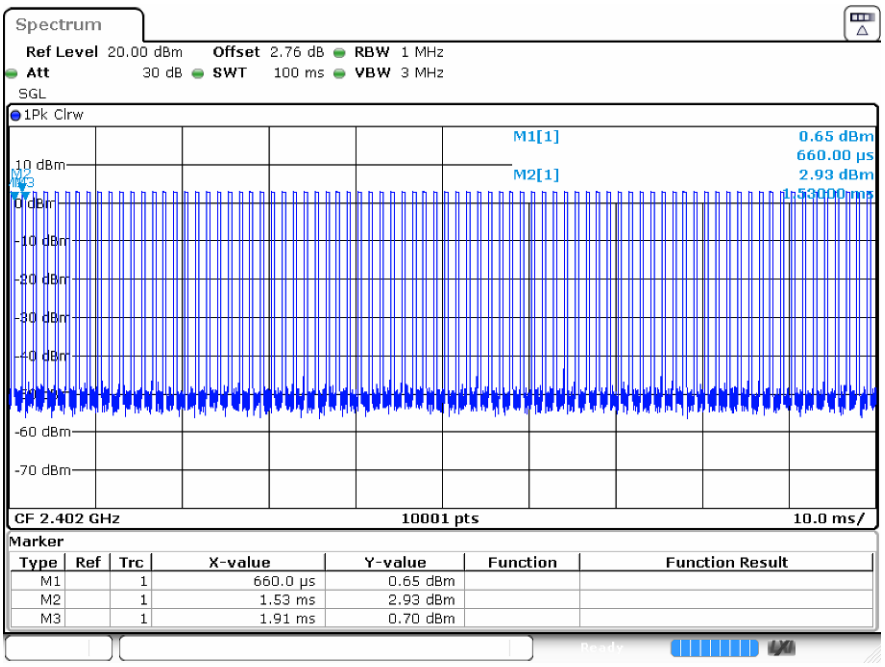
1 Duty Cycle

1.1 Test Result

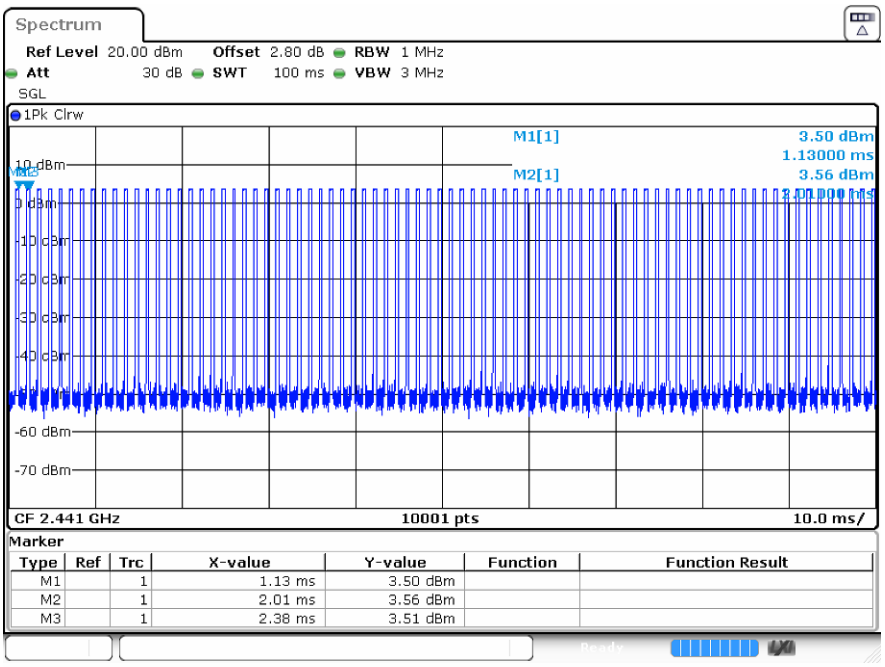
Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.2	2.63
1-DH1	2441	30.4	2.7
1-DH1	2480	30.41	2.7
2-DH1	2402	32.01	2.56
2-DH1	2441	31.21	2.63
2-DH1	2480	32	2.56

1.2 Test Graphs

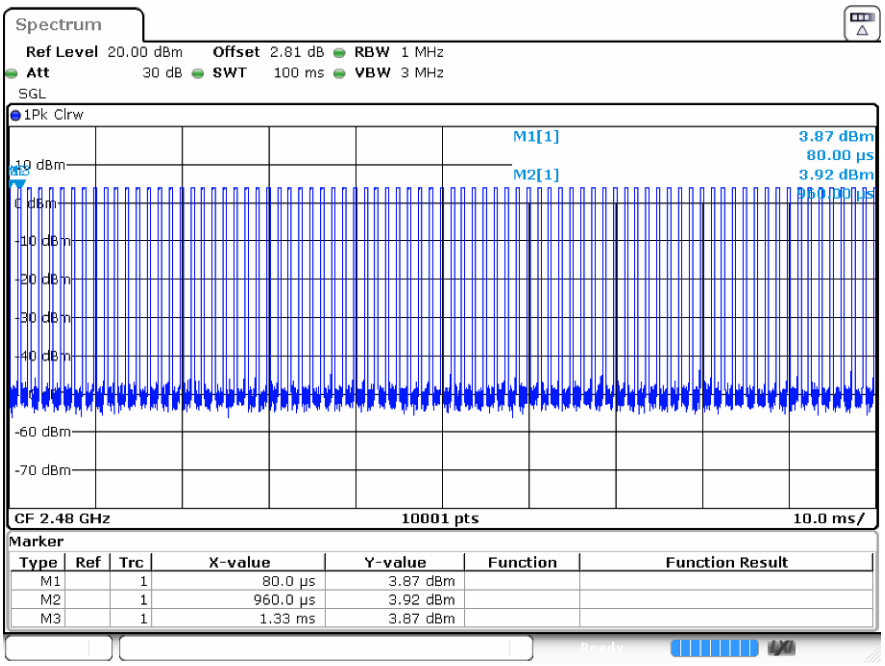
Test Graphs
1-DH1 2402MHz



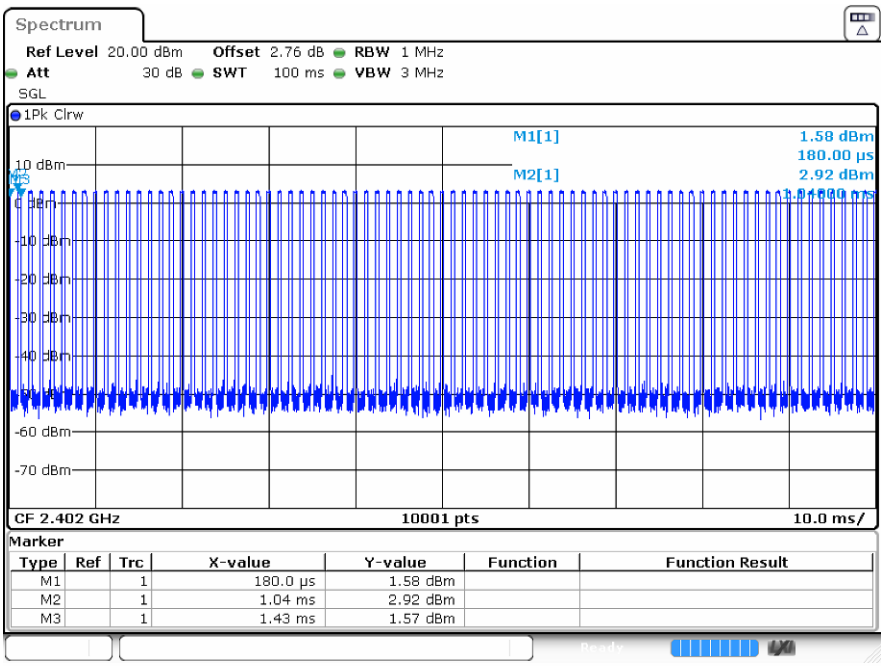
1-DH1 2441MHz



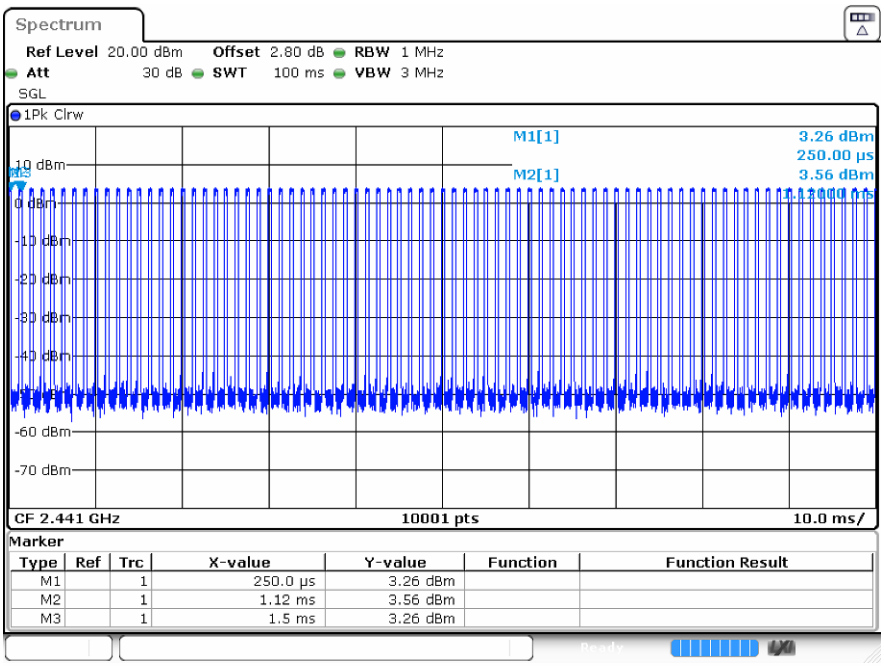
1-DH1 2480MHz



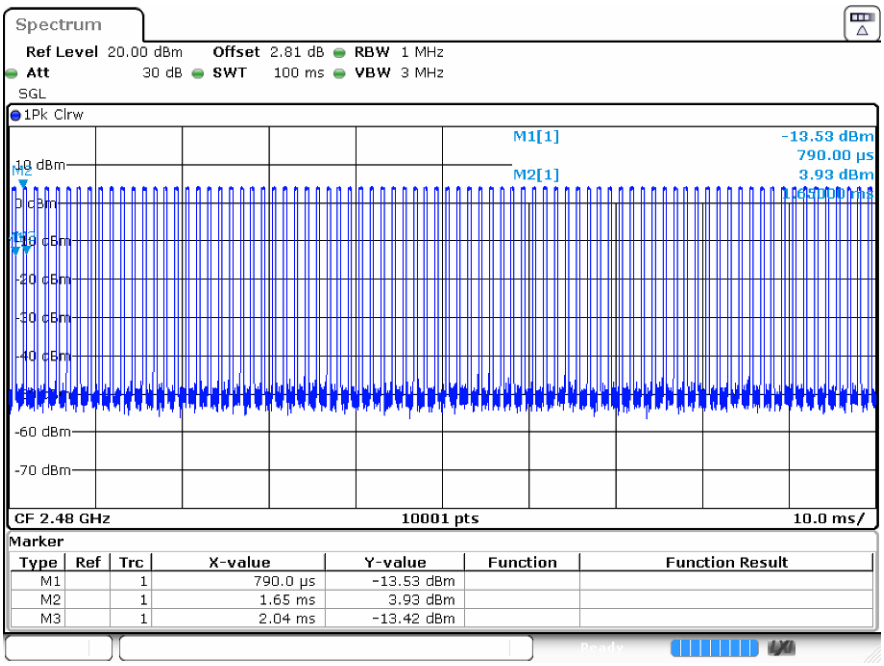
2-DH1 2402MHz



2-DH1 2441MHz



2-DH1 2480MHz

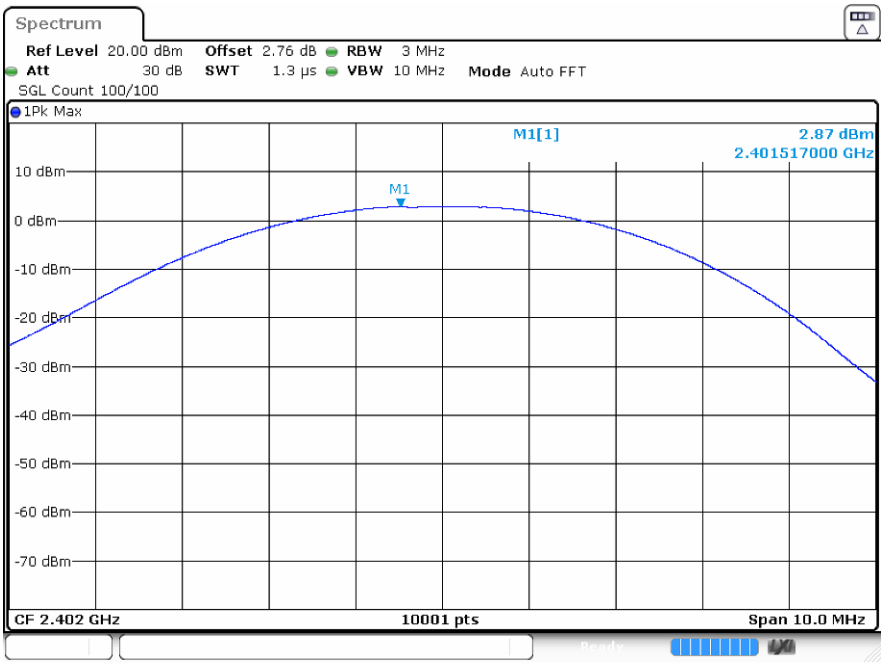
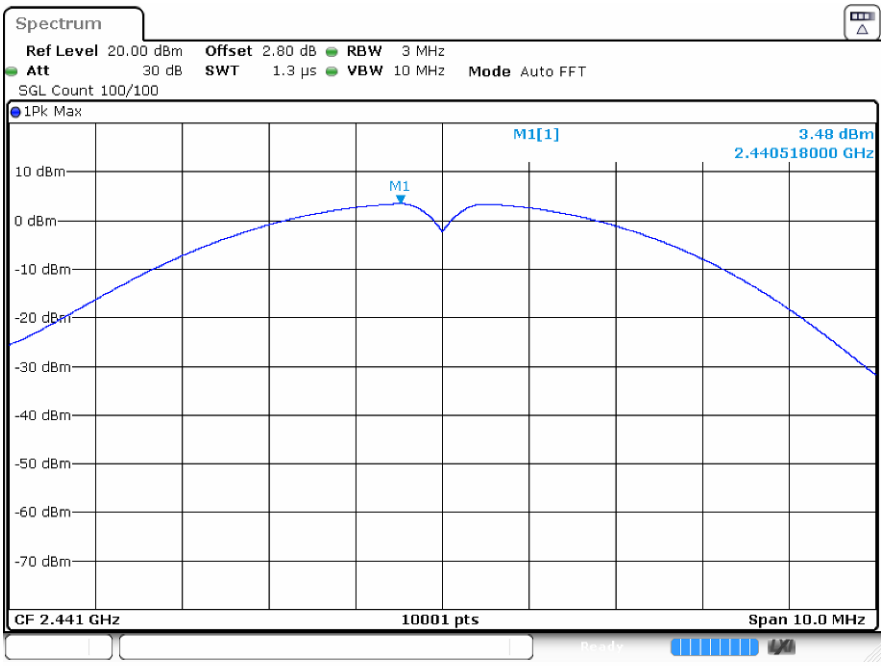


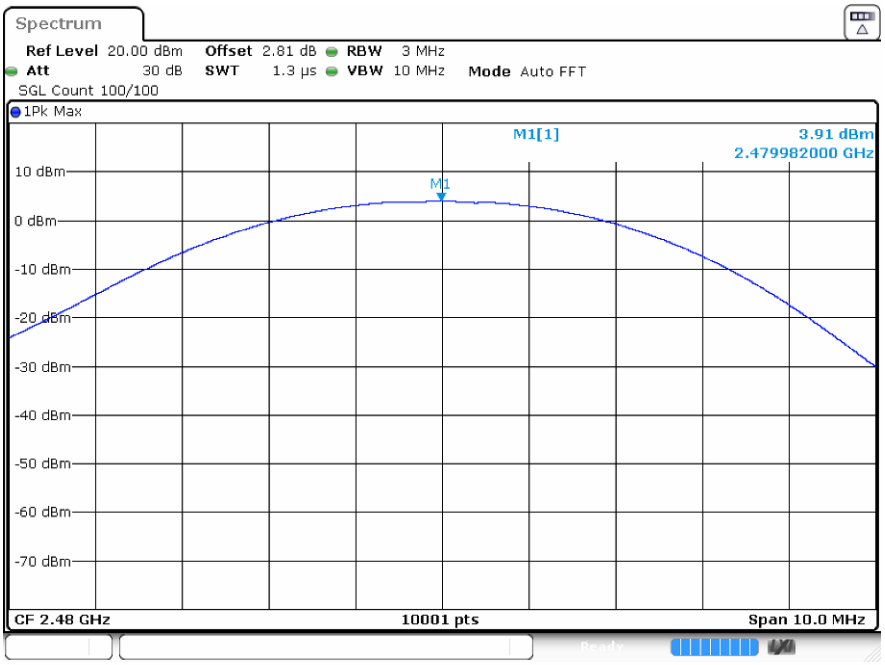
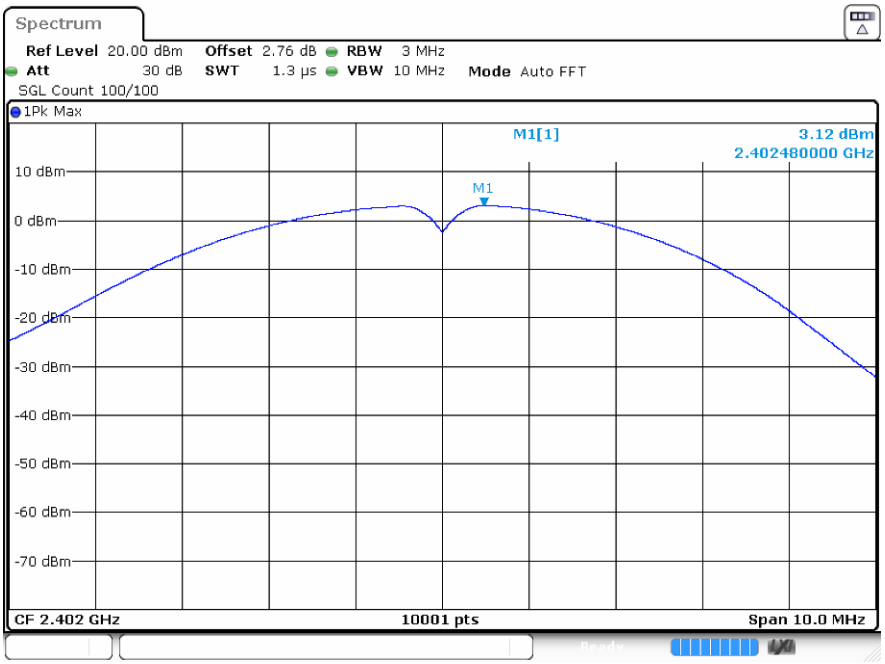
2 Maximum Conducted Peak Output Power

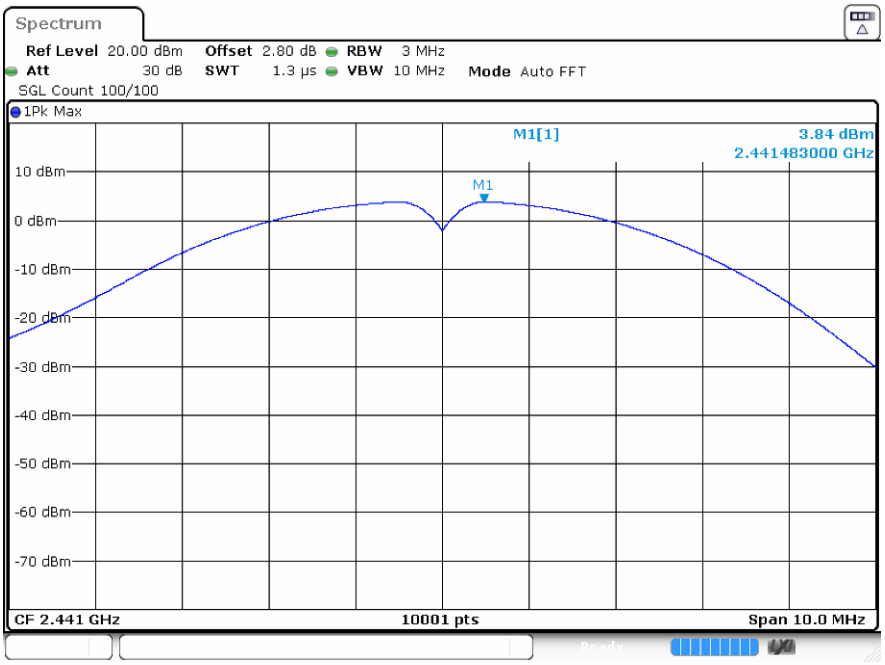
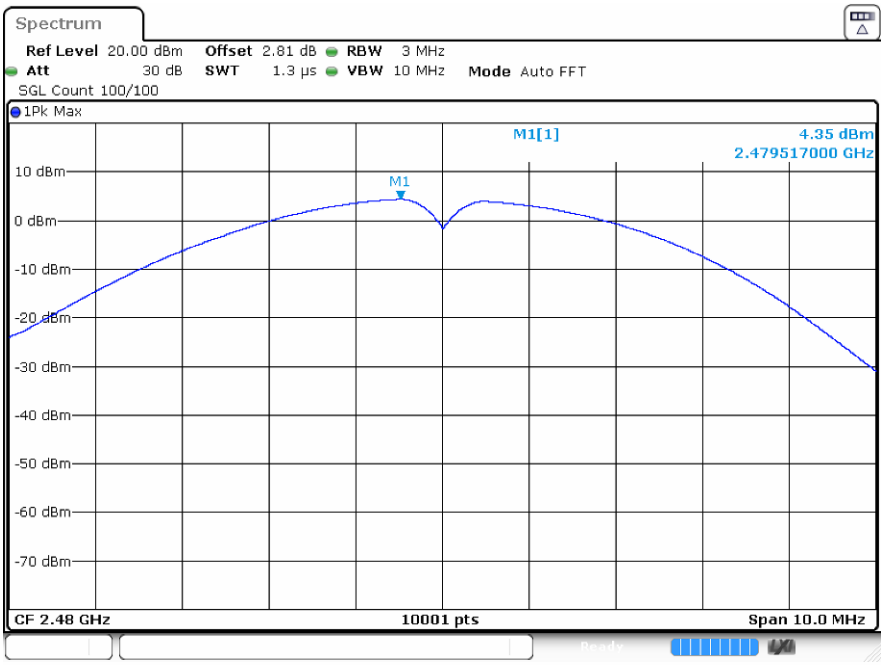
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2.87	21	Pass
	MCH	3.48	21	Pass
	HCH	3.91	21	Pass
π/4DQPSK	LCH	3.12	21	Pass
	MCH	3.84	21	Pass
	HCH	4.35	21	Pass

2.2 Test Graphs

Test Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

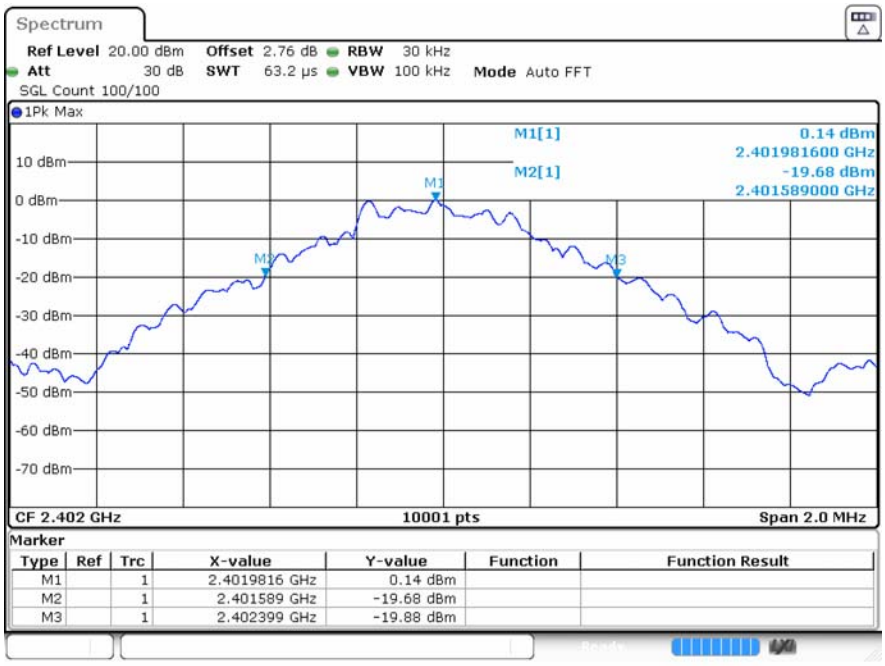
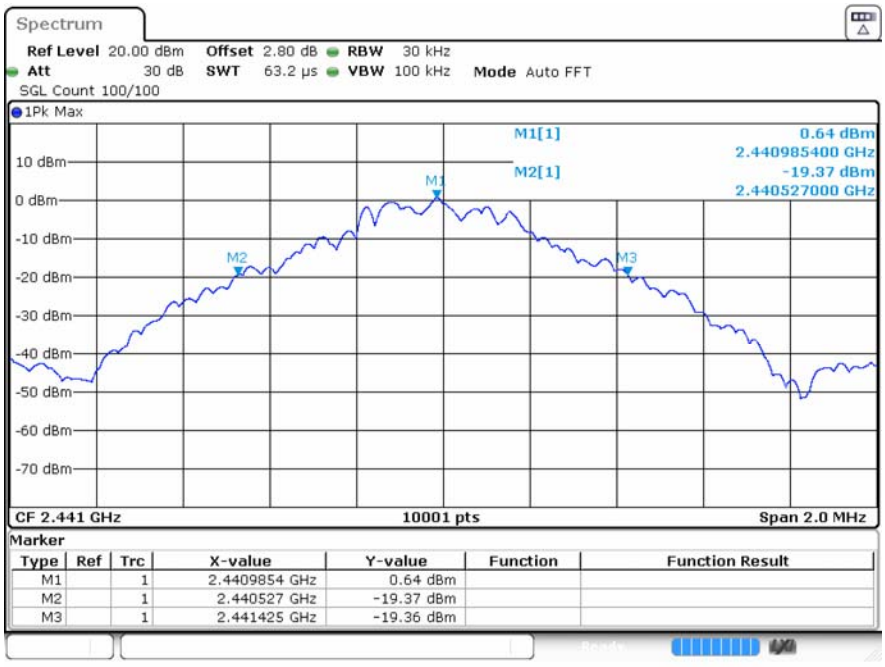
π/4DQPSK/MCH	
π/4DQPSK/HCH	

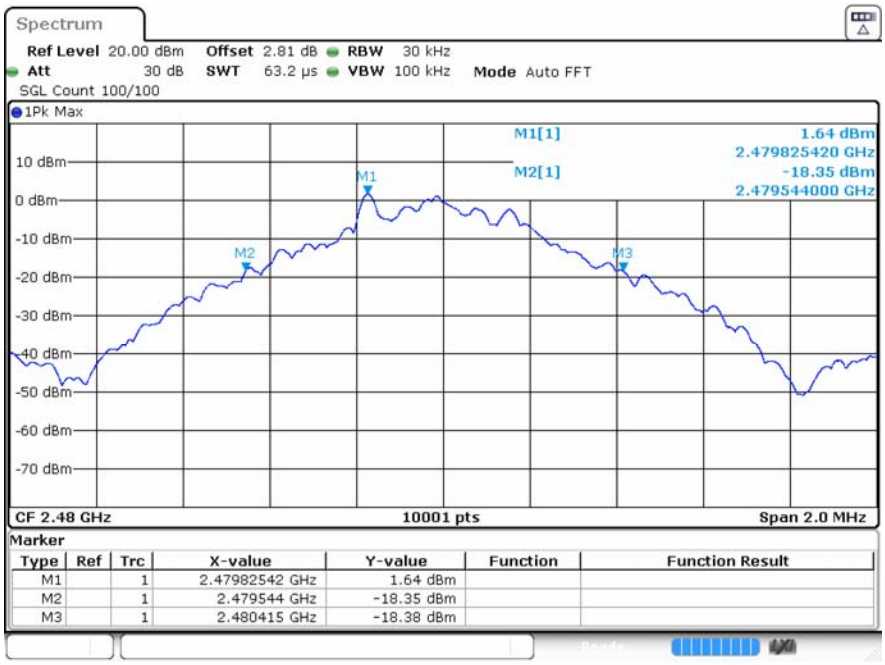
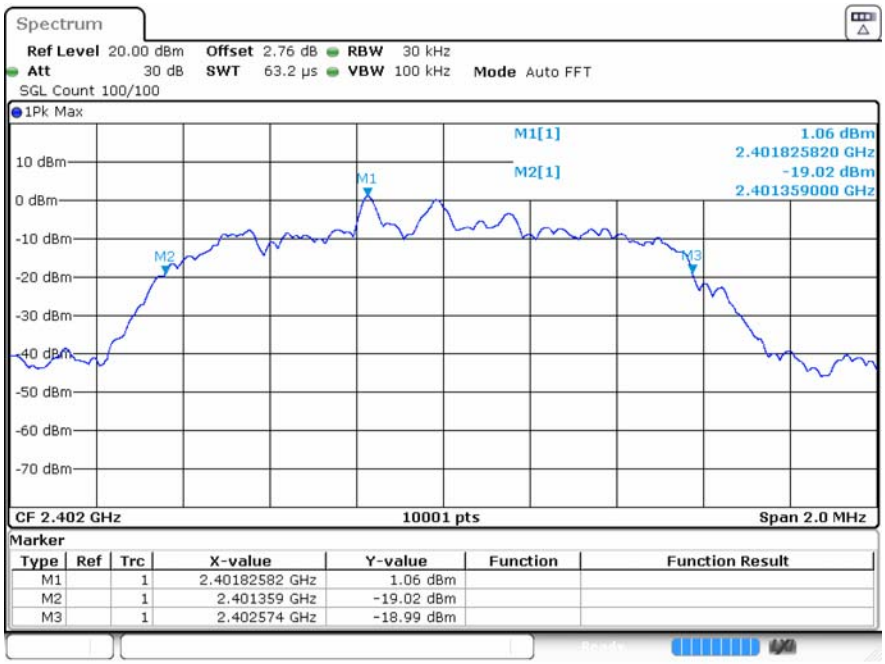
3 20dB Bandwidth

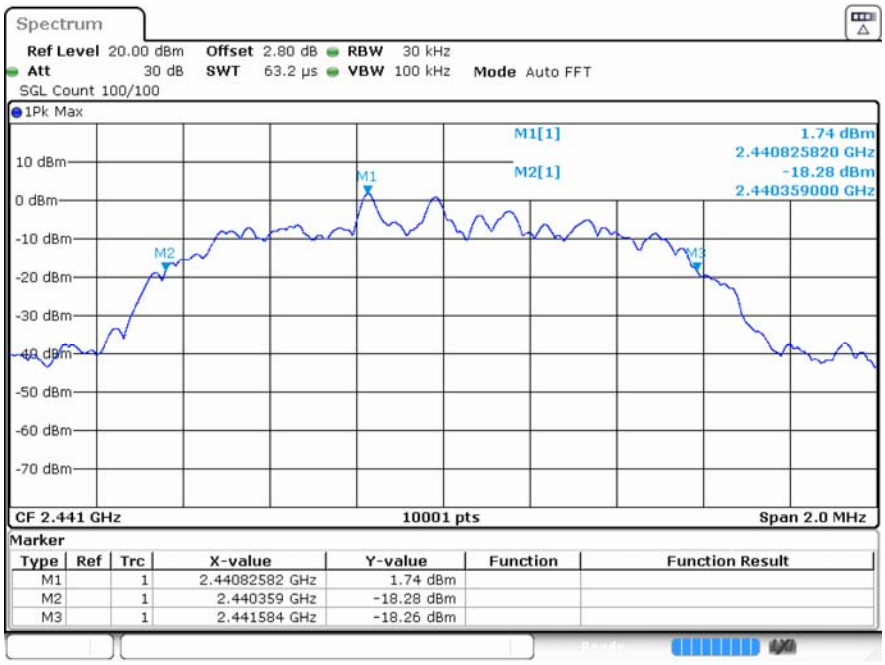
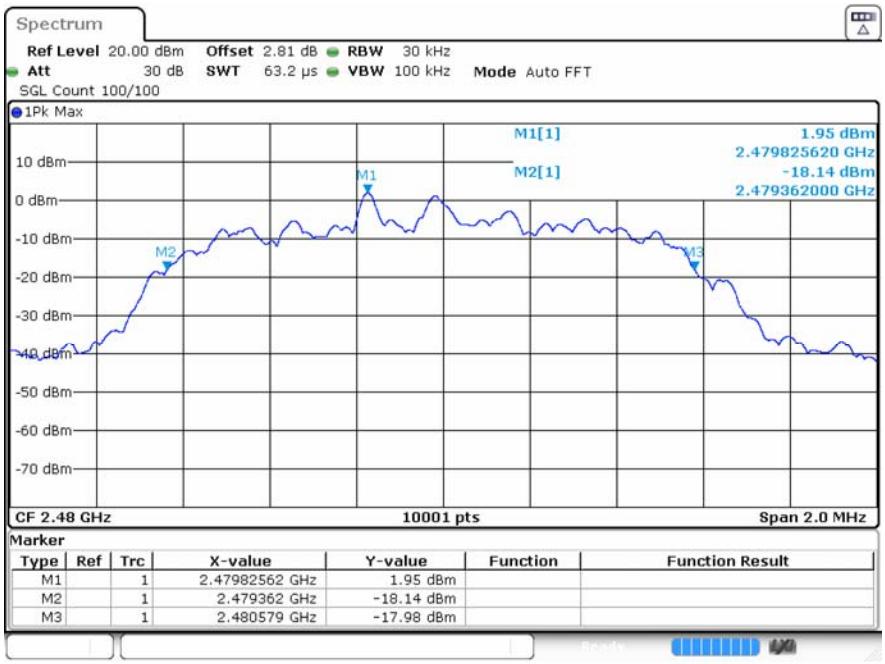
3.1 Test Result

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.81	Not Specified	Pass
	MCH	0.898	Not Specified	Pass
	HCH	0.871	Not Specified	Pass
π/4DQPSK	LCH	1.214	Not Specified	Pass
	MCH	1.225	Not Specified	Pass
	HCH	1.217	Not Specified	Pass

3.2 Test Graphs

Test Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

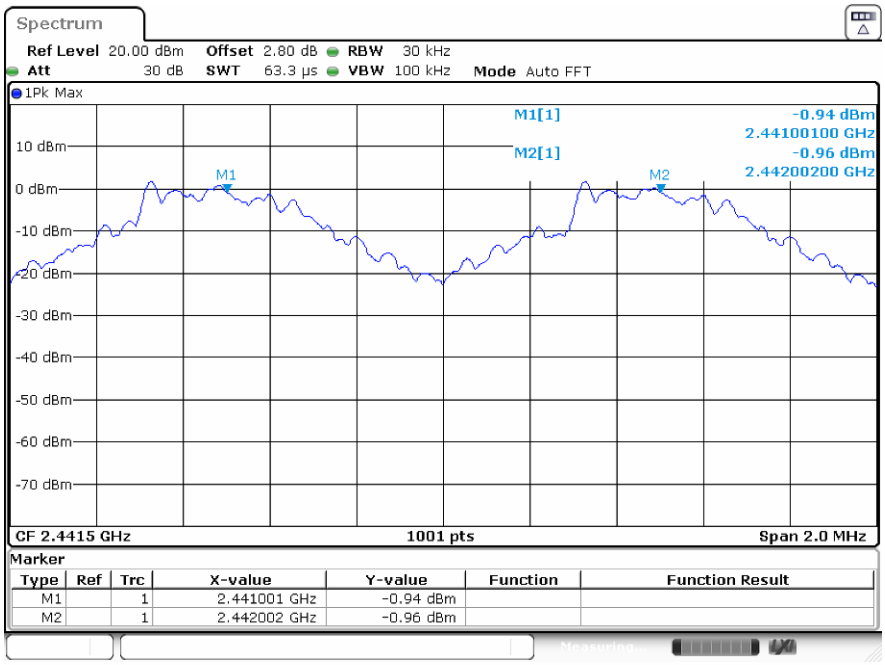
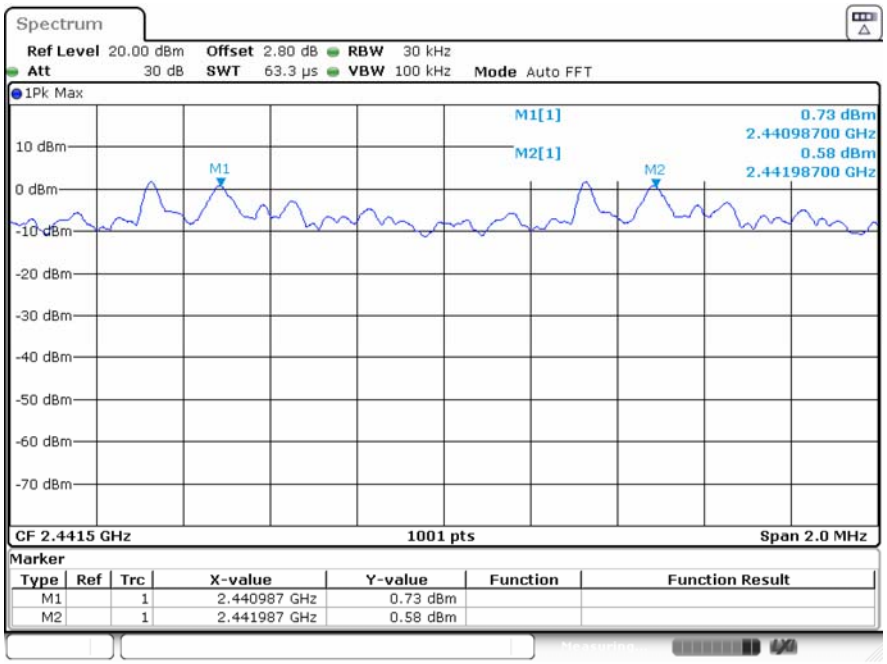
π/4DQPSK/MCH	
π/4DQPSK/HCH	

4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.001	0.599	Pass
π/4DQPSK	MCH	1	0.817	Pass

4.2 Test Graphs

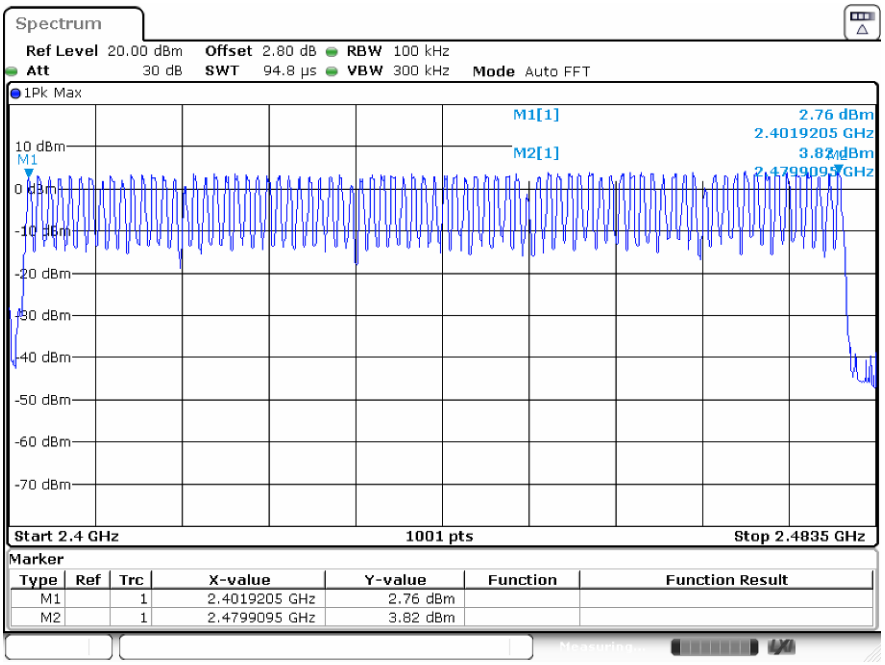
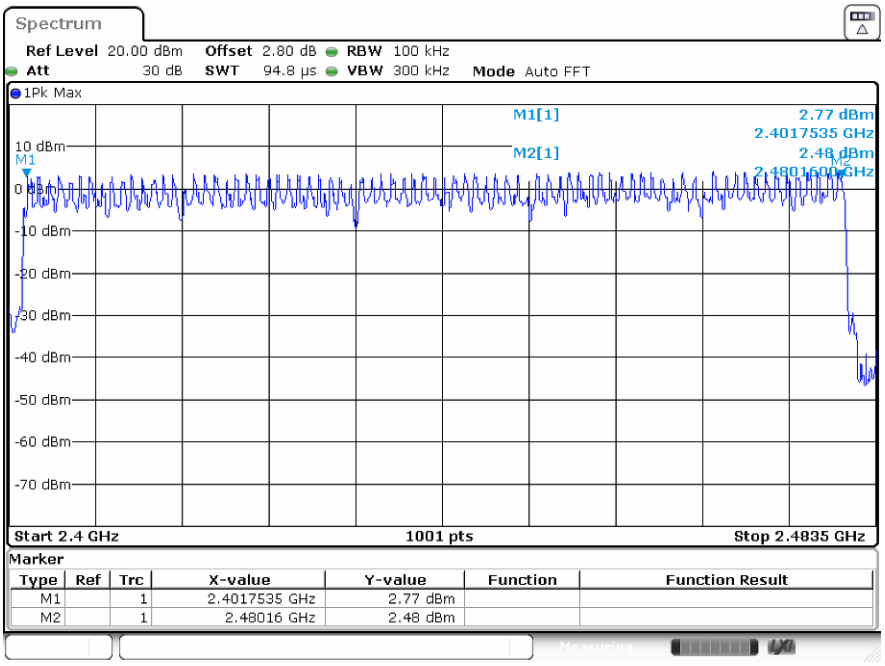
Test Graphs	
GFSK/MCH	
π/4DQPSK/MCH	

5 Hopping Channel Number

5.1 Test Result

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS

5.2 Test Graphs

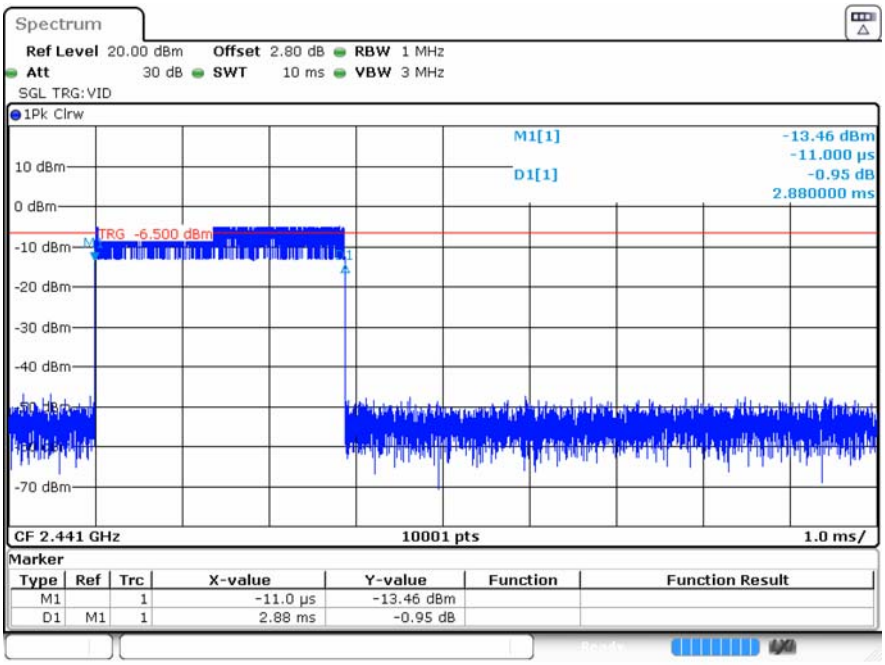
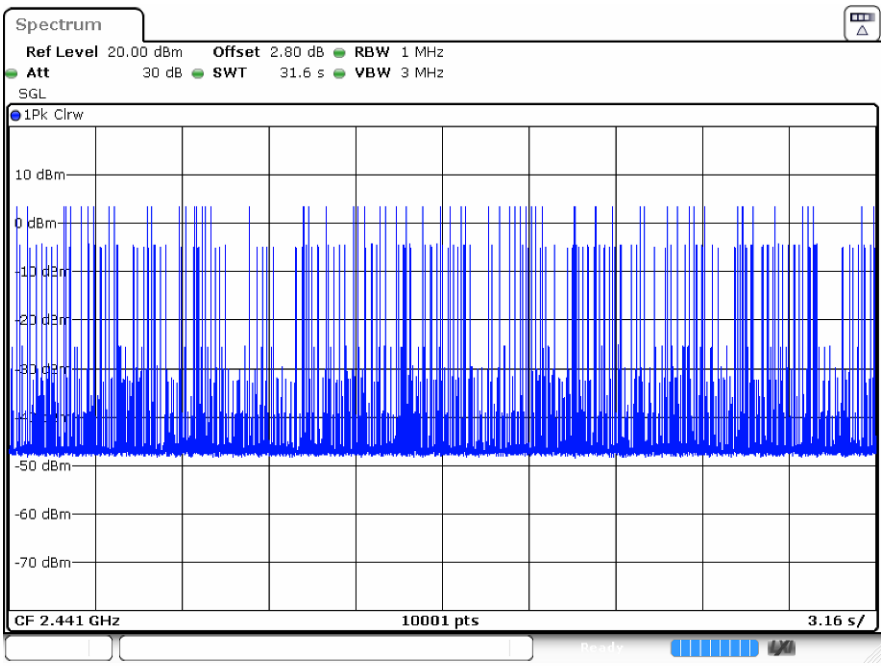
Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

6 Dwell Time

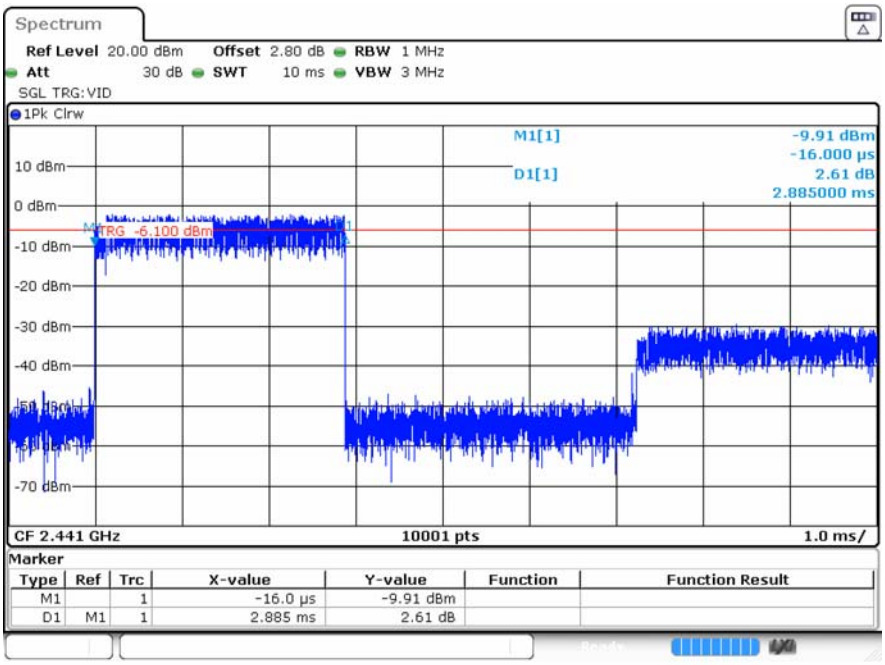
6.1 Test Result

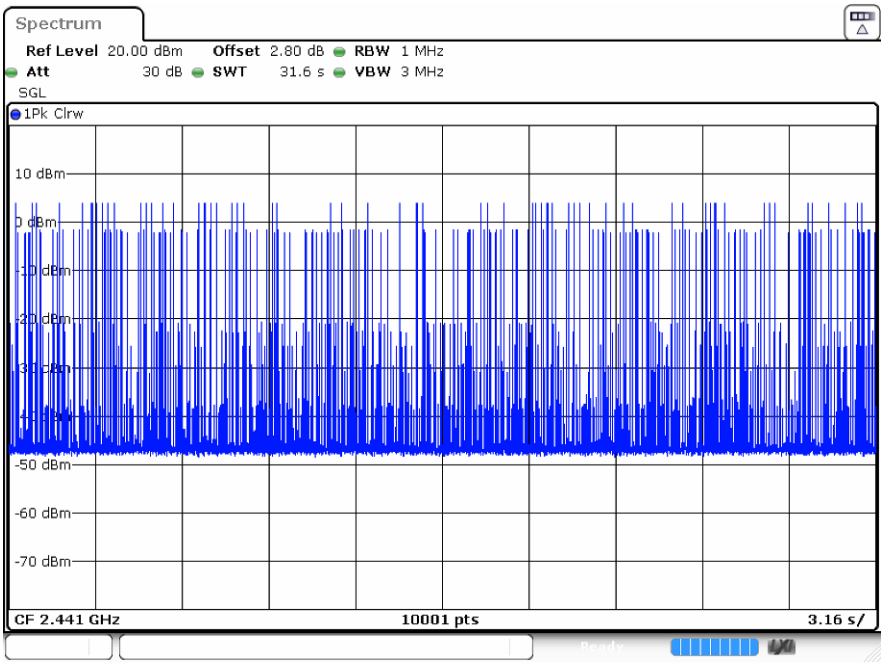
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.88	67	192.96	0.4	Pass
π/4DQPSK	2DH5	MCH	2.885	66	190.41	0.4	Pass

6.2 Test Graphs

Test Graphs	
GFSK_DH5/MCH	 

π/4DQPSK
_2DH5/MCH



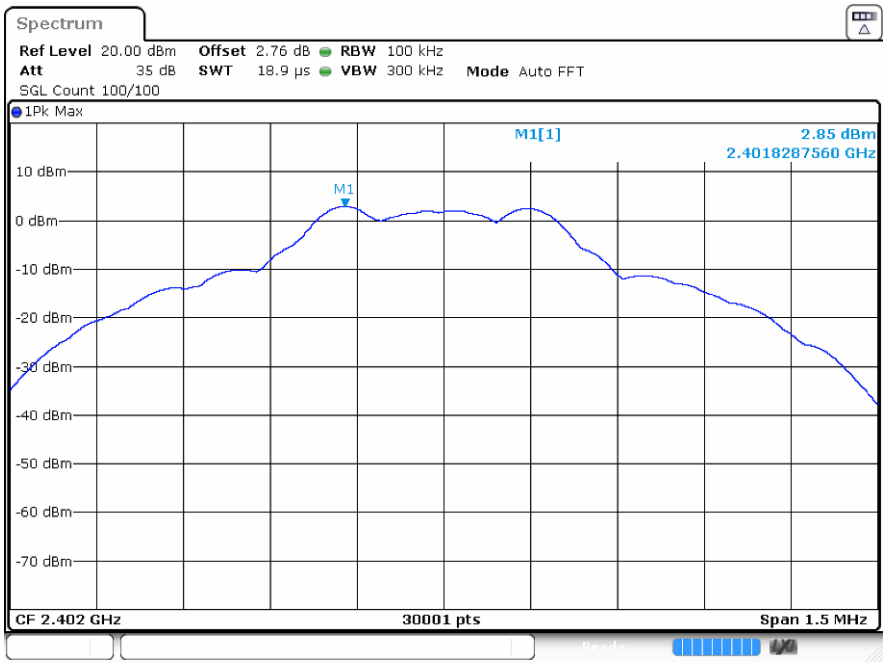
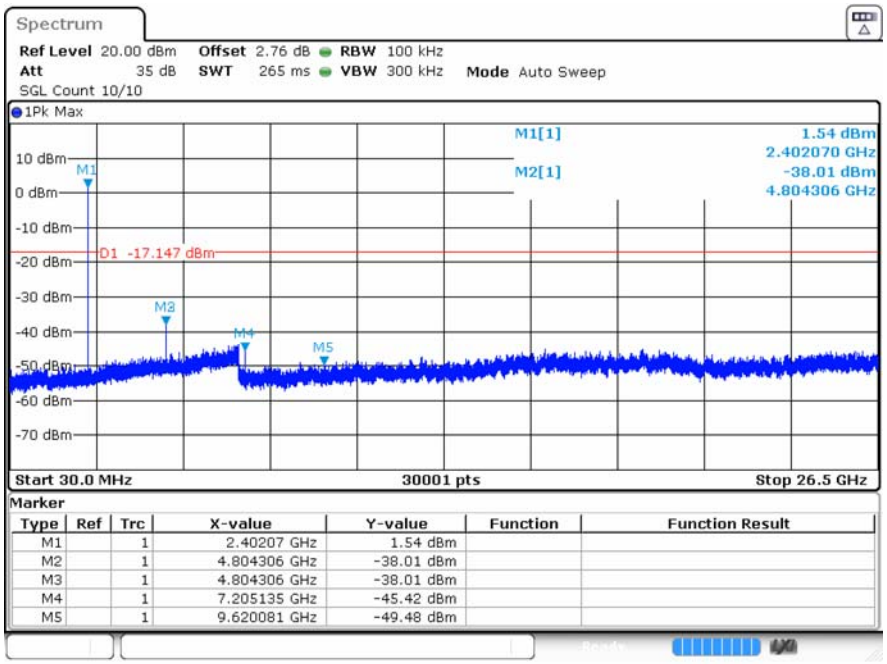


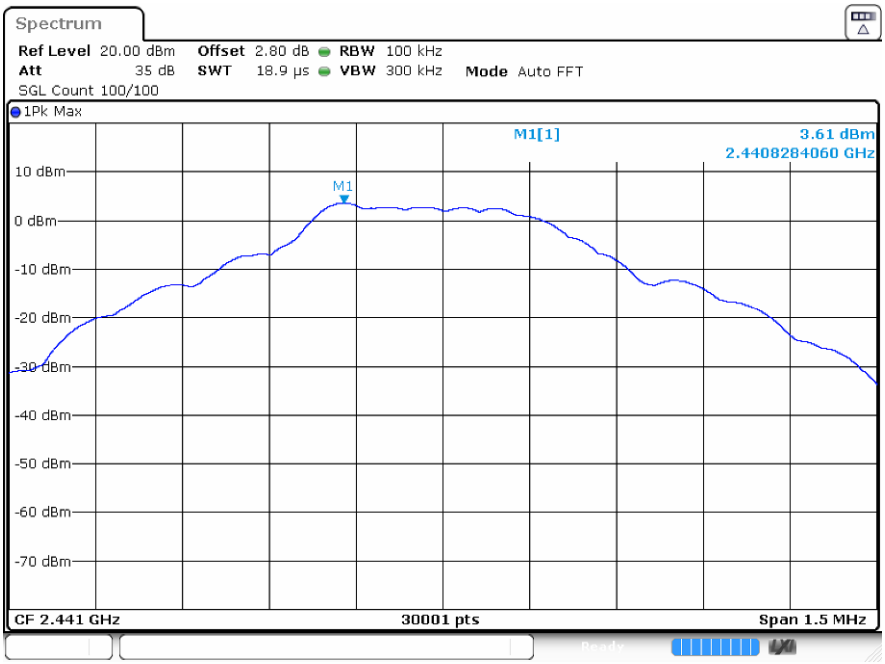
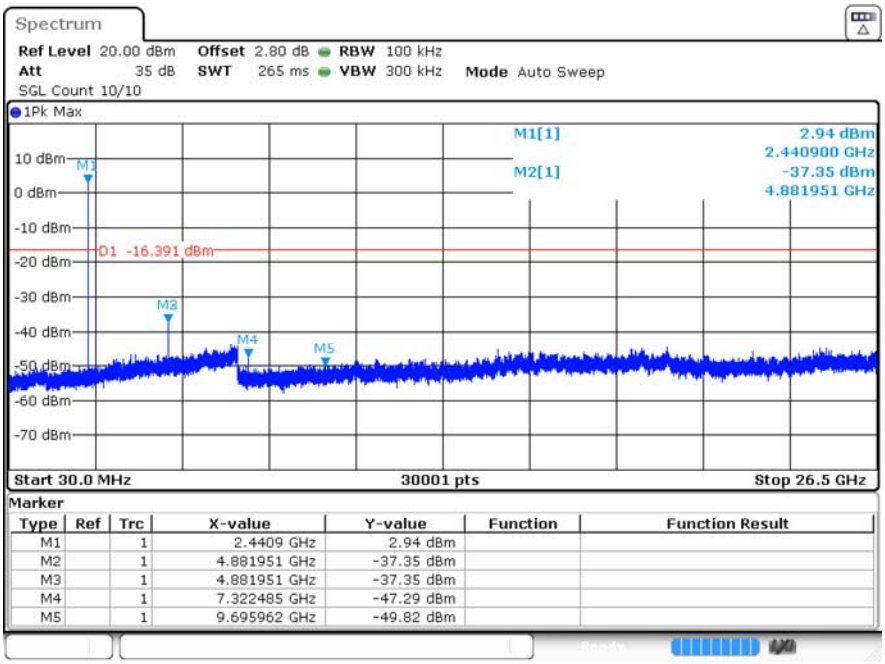
7 RF Conducted Spurious Emissions

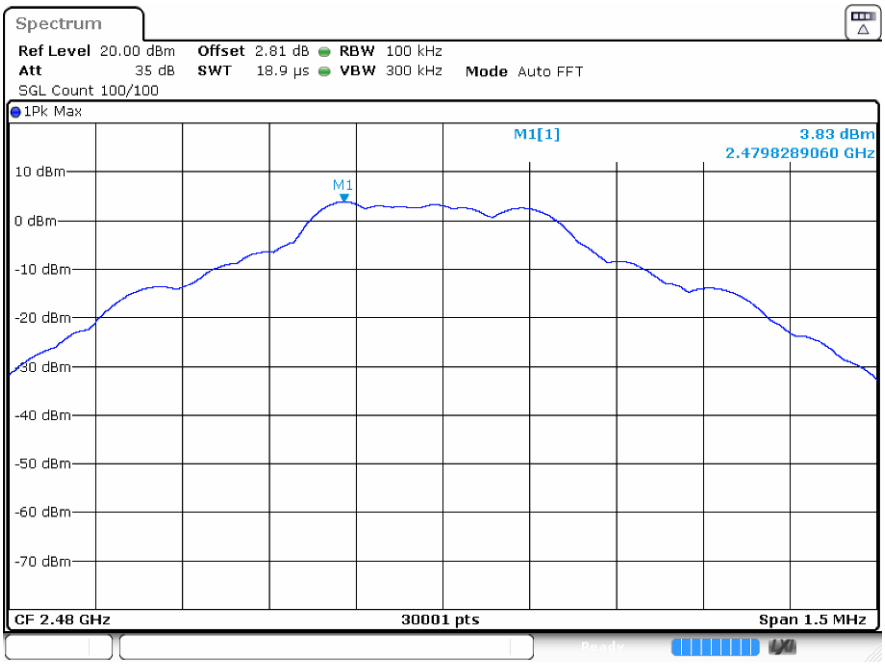
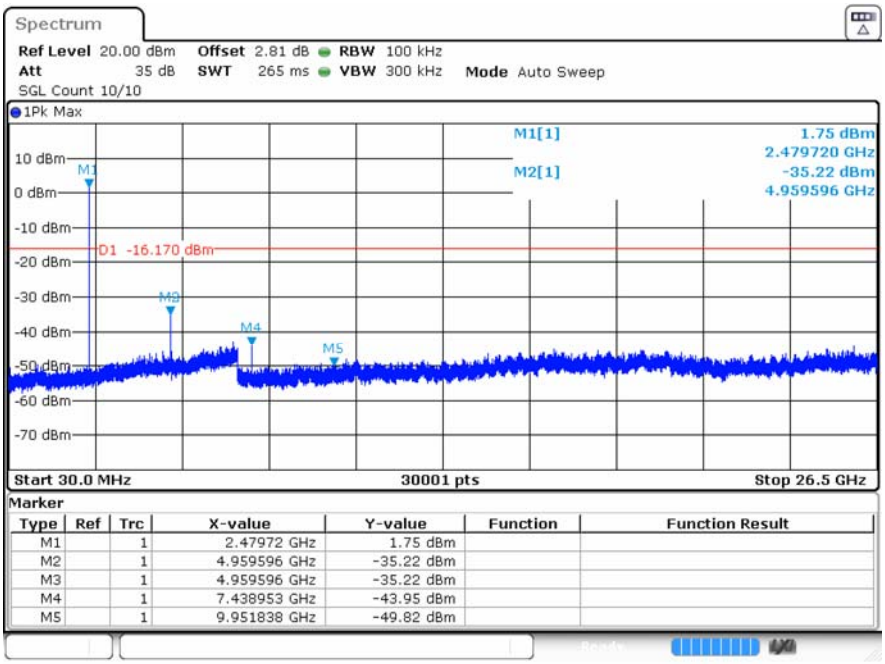
7.1 Test Result

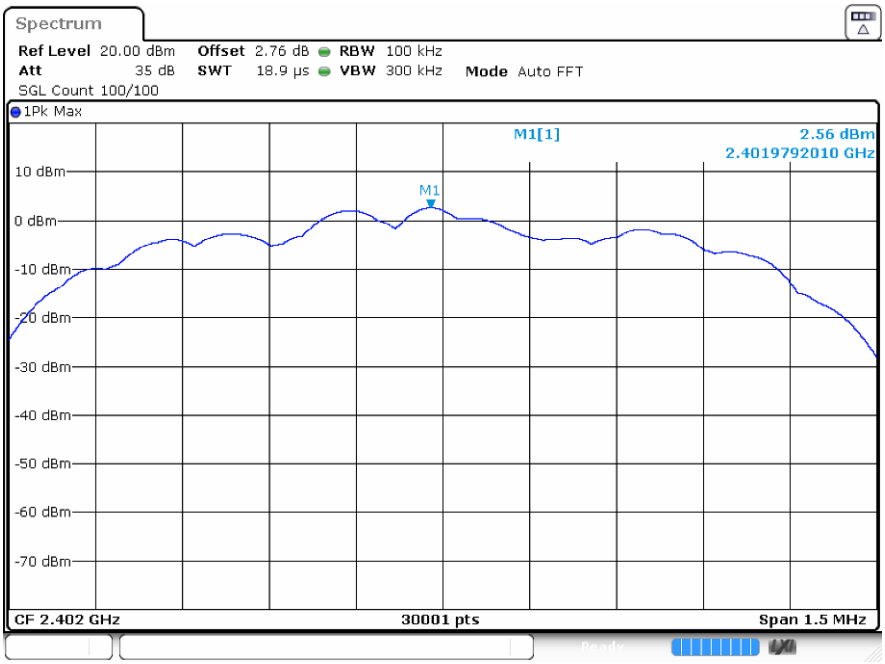
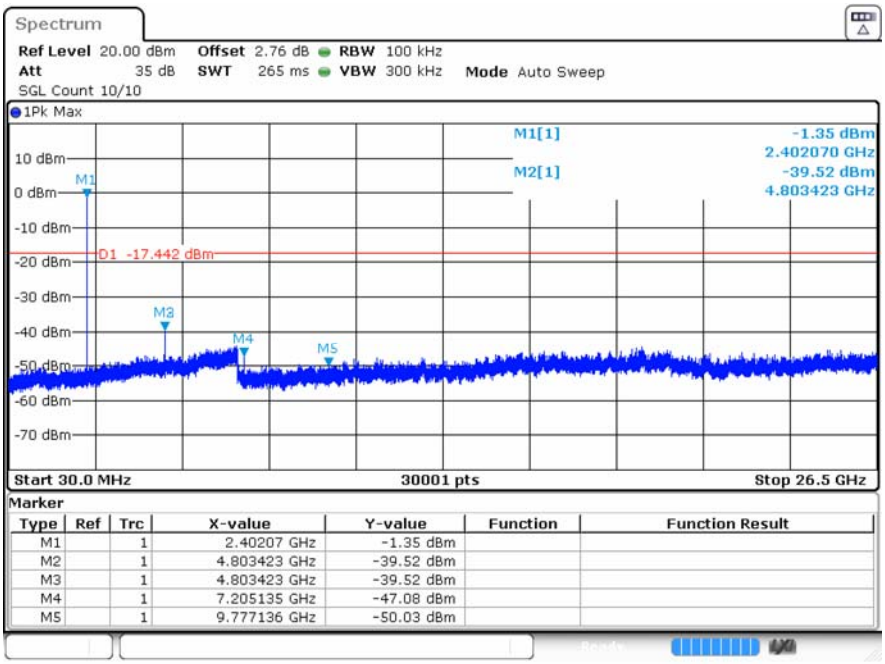
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-40.85	-20	Pass
	MCH	-40.95	-20	Pass
	HCH	-39.05	-20	Pass
π/4DQPSK	LCH	-42.07	-20	Pass
	MCH	-42.93	-20	Pass
	HCH	-45.31	-20	Pass

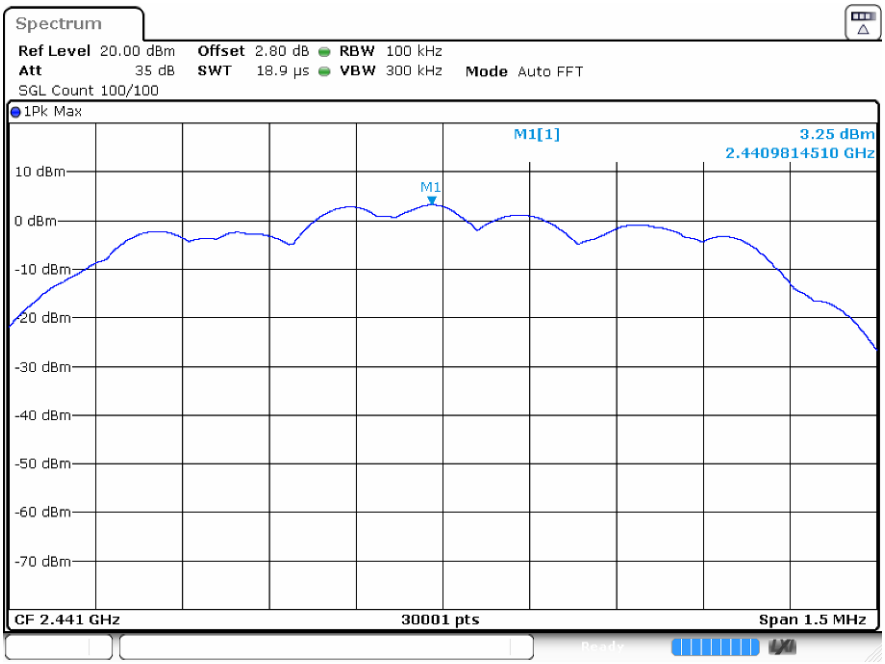
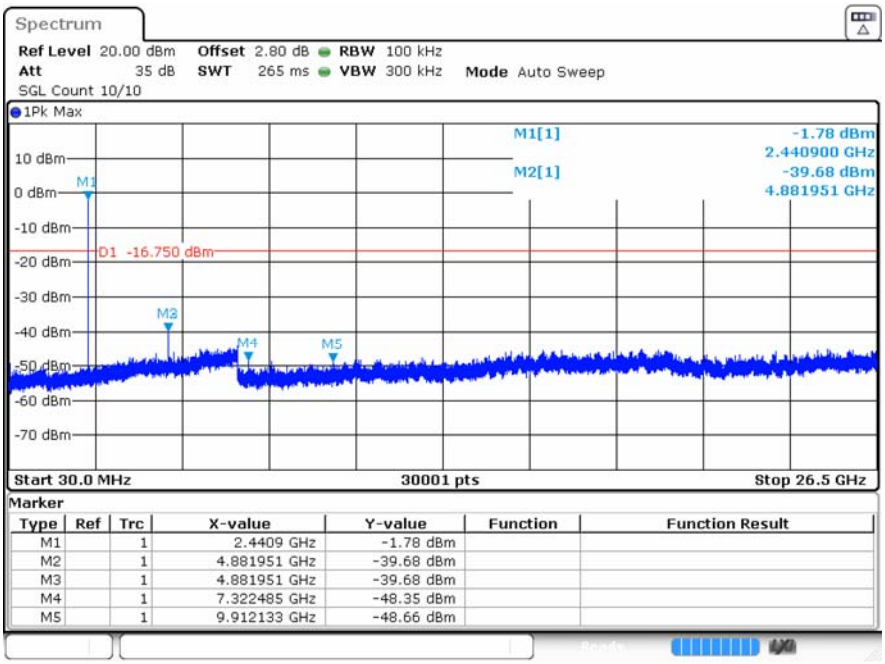
7.2 Test Graphs

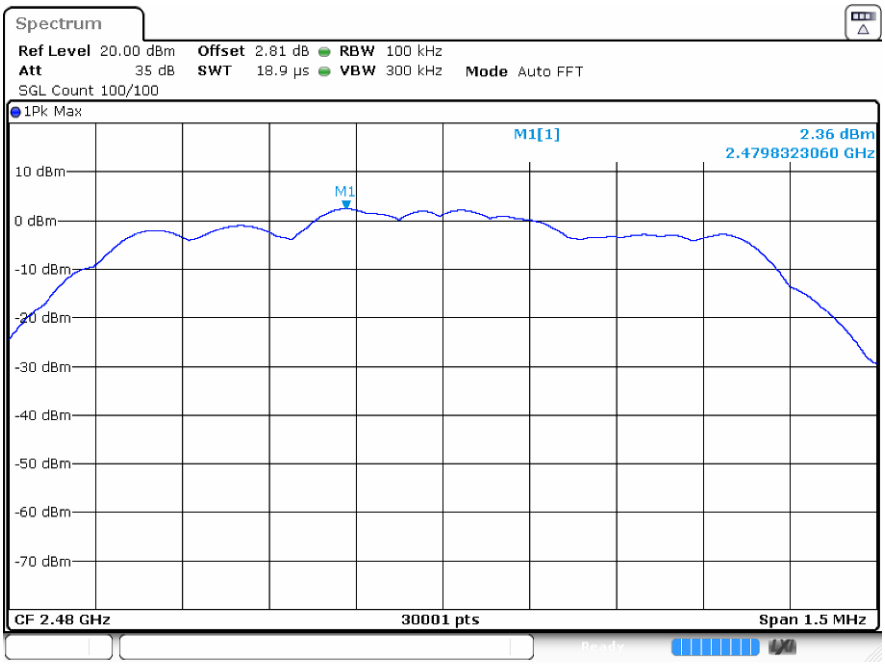
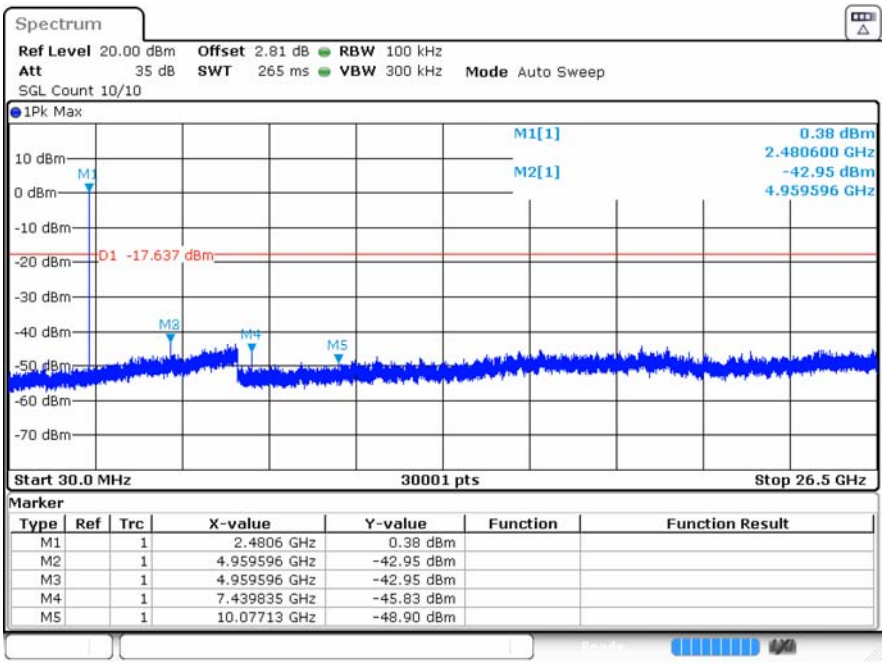
GFSK_LCH_Graphs	
Pref	
Puw	

GFSK_MCH_Graphs	
Pref	
Puw	

GFSK_HCH_Graphs	
Pref	
Puw	

π/4DQPSK_LCH_Graphs	
Pref	
Puw	

π/4DQPSK_MCH_Graphs	
Pref	
Puw	

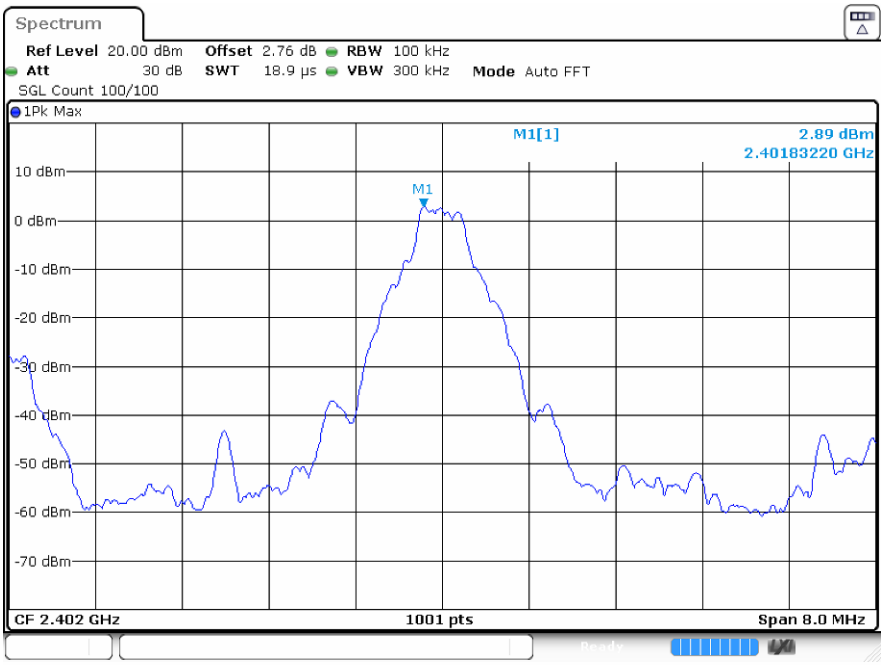
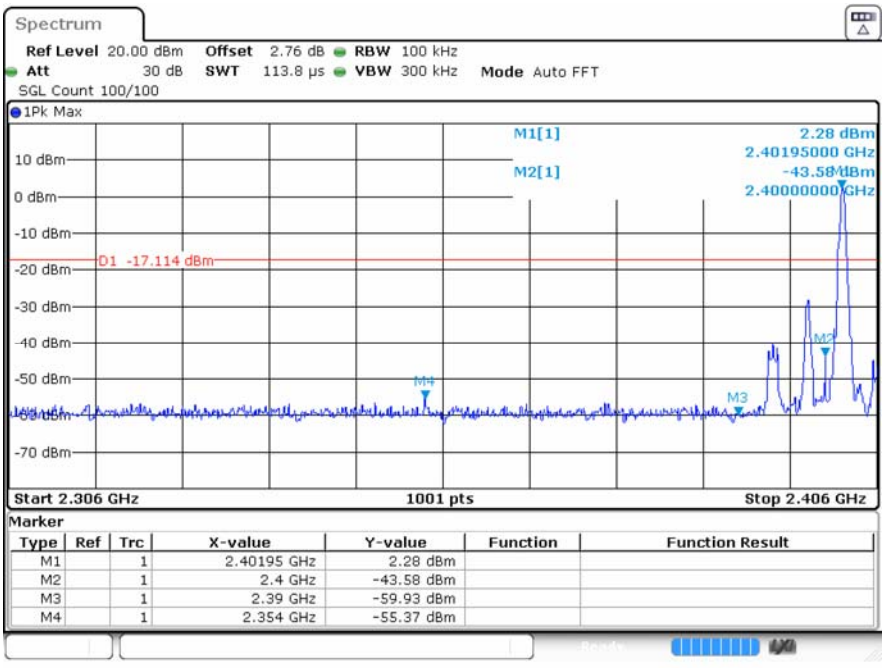
π/4DQPSK_HCH_Graphs	
Pref	
Puw	

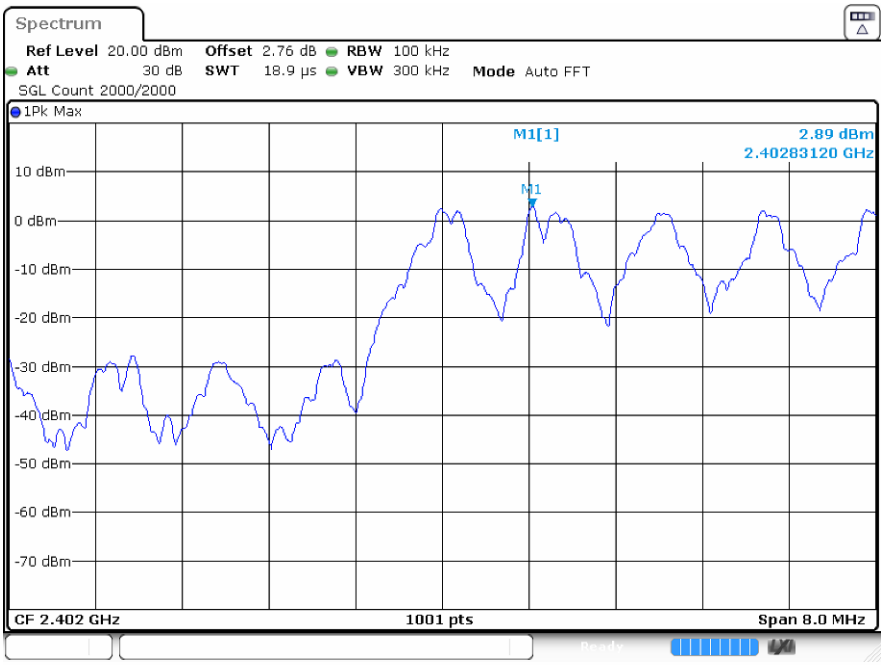
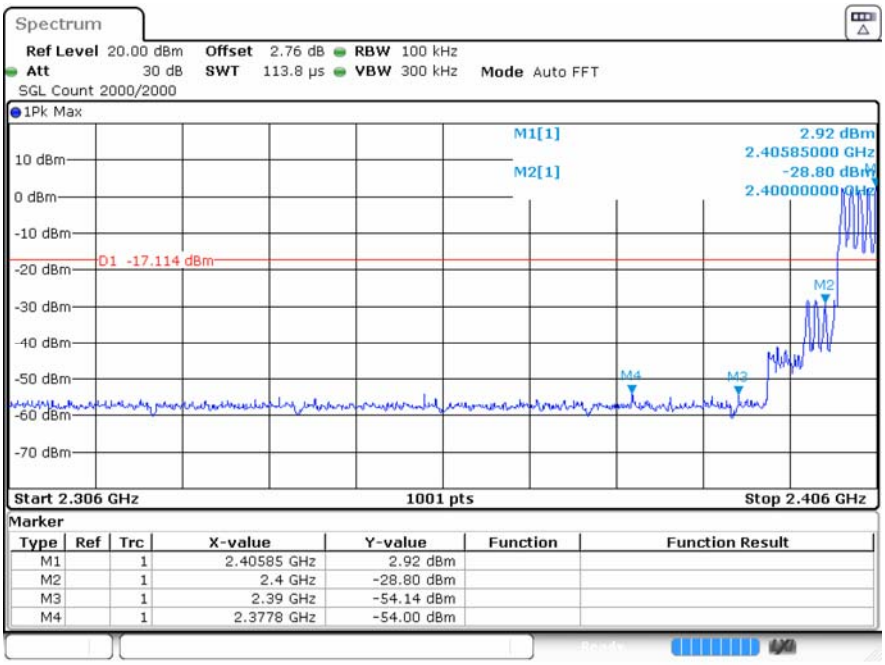
8 Band-edge for RF Conducted Emissions

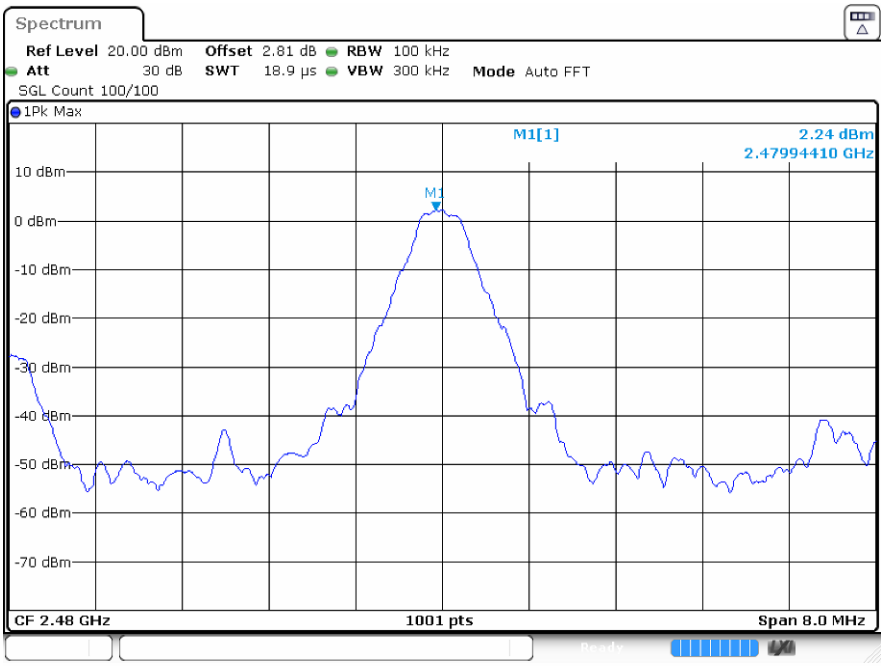
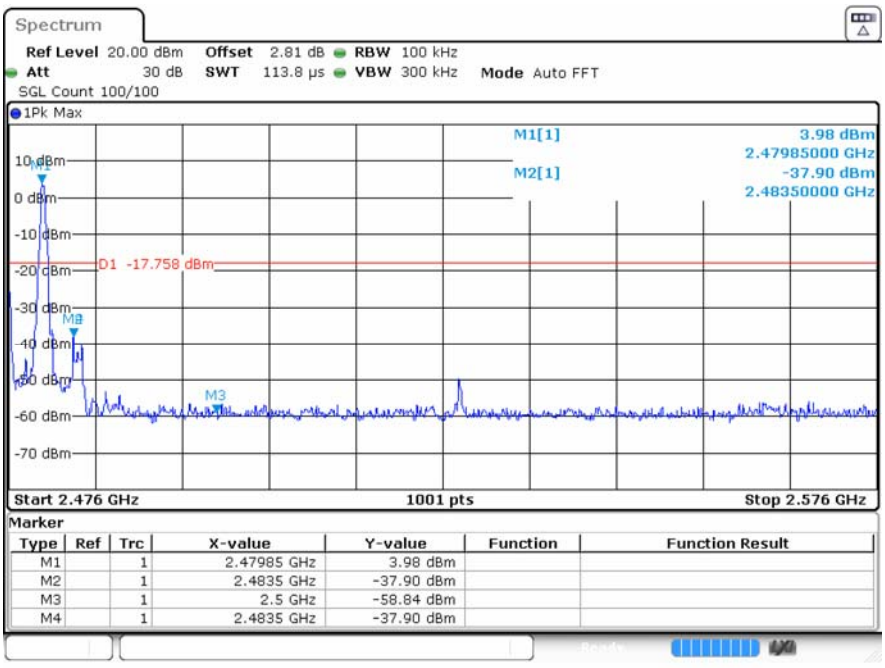
8.1 Test Result

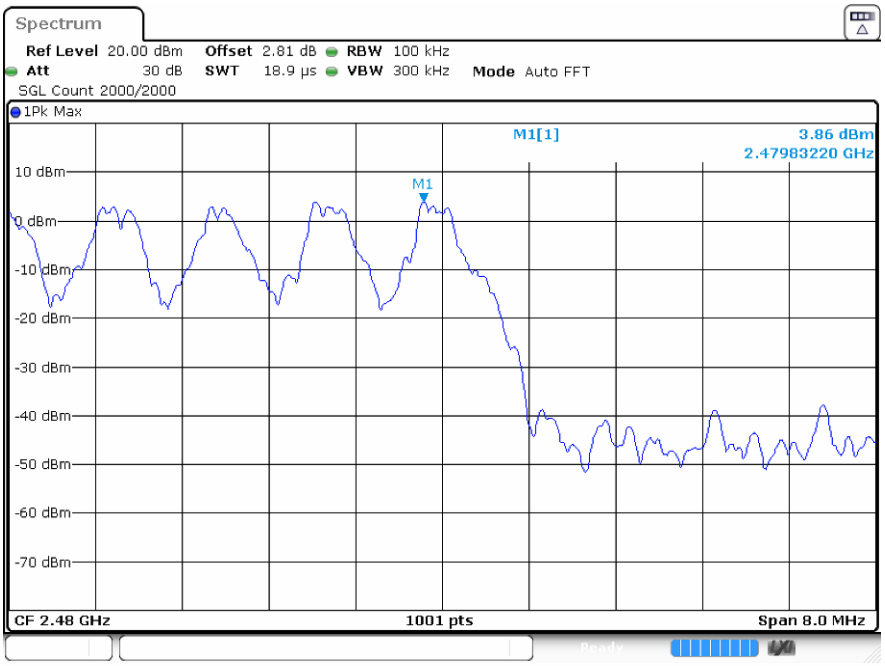
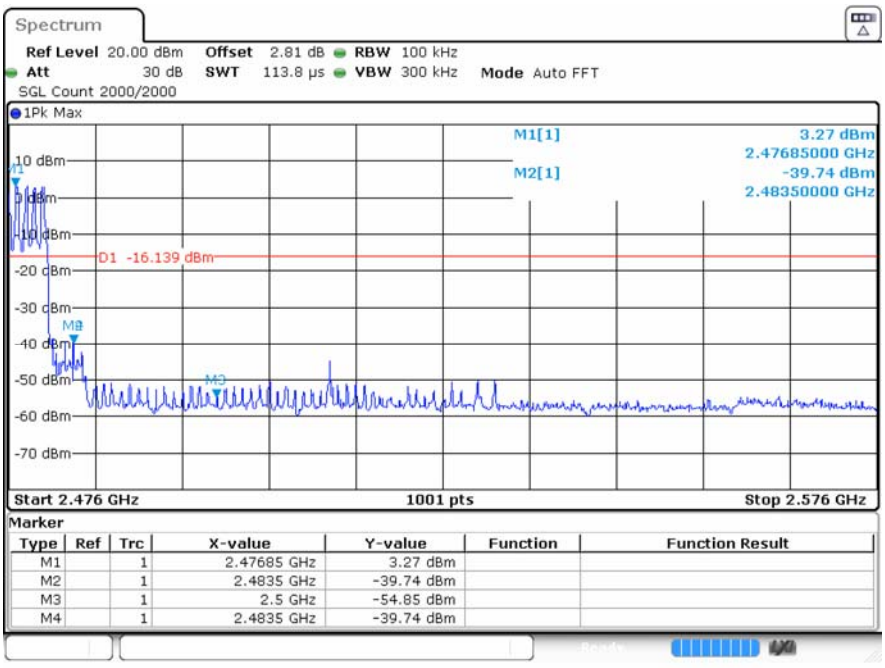
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-58.25	-20	Pass
			On	-56.88	-20	Pass
	HCH	2480	Off	-40.13	-20	Pass
			On	-43.6	-20	Pass
π/4DQPSK	LCH	2402	Off	-58.73	-20	Pass
			On	-57.05	-20	Pass
	HCH	2480	Off	-41.05	-20	Pass
			On	-46.96	-20	Pass

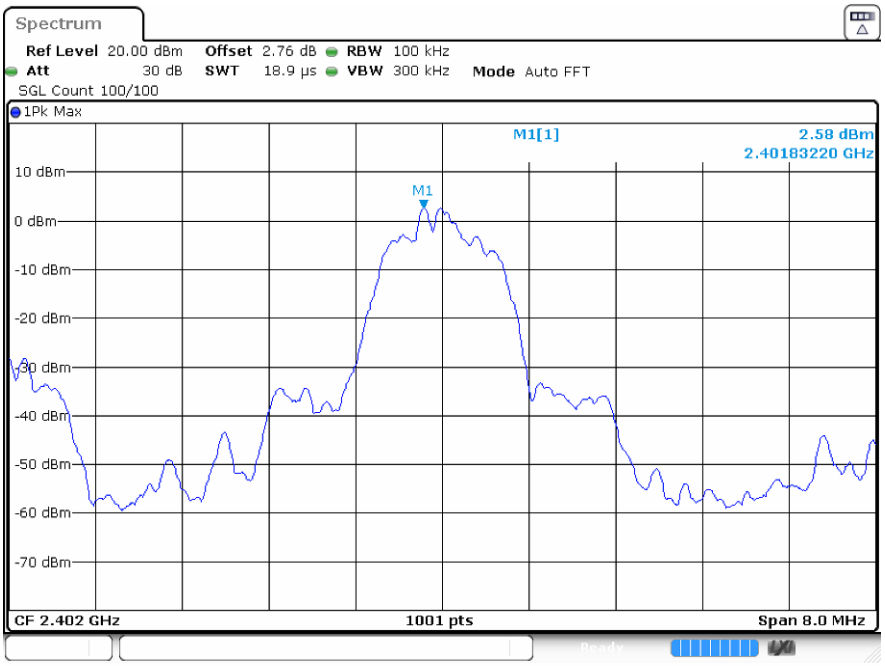
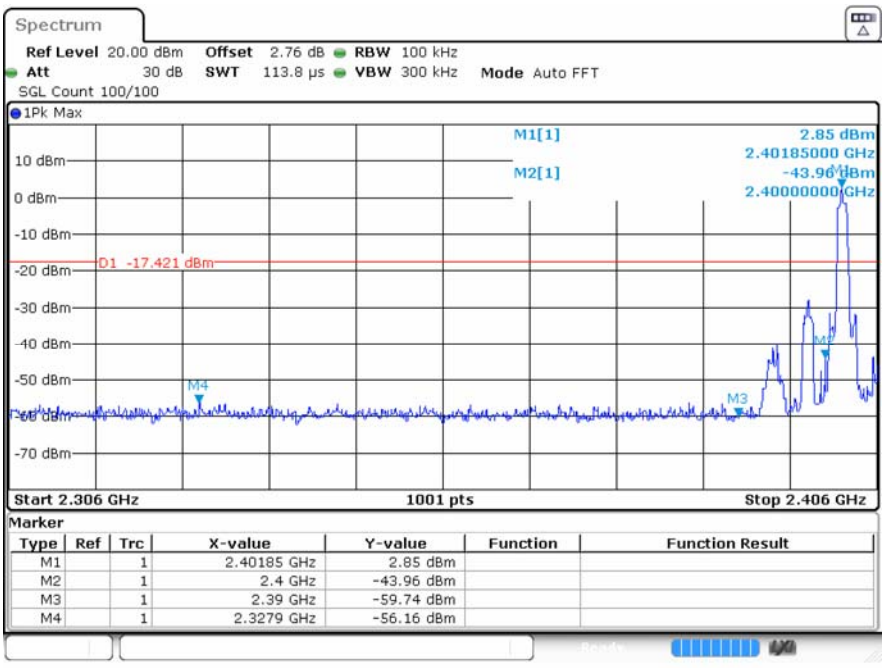
8.2 Test Graphs

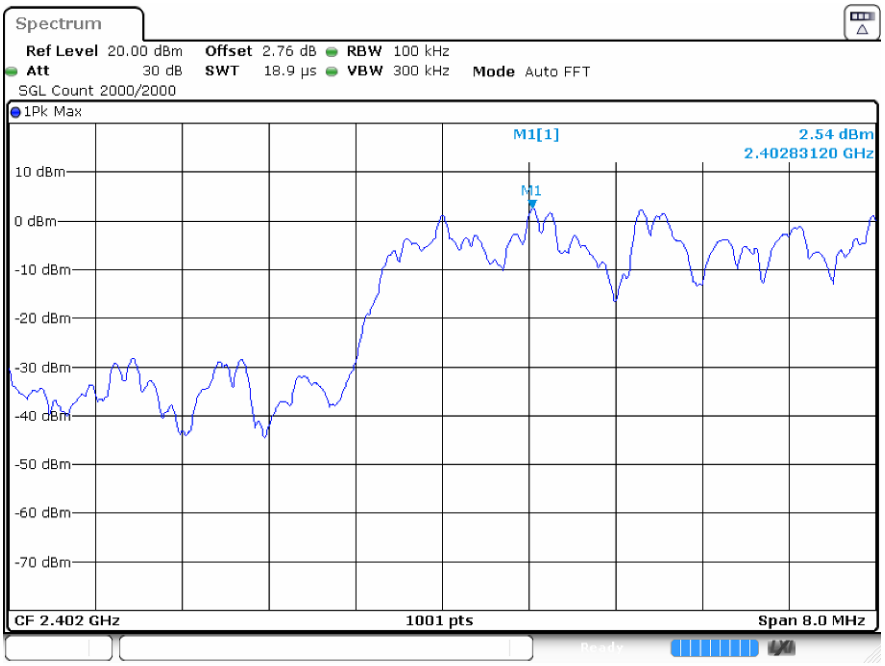
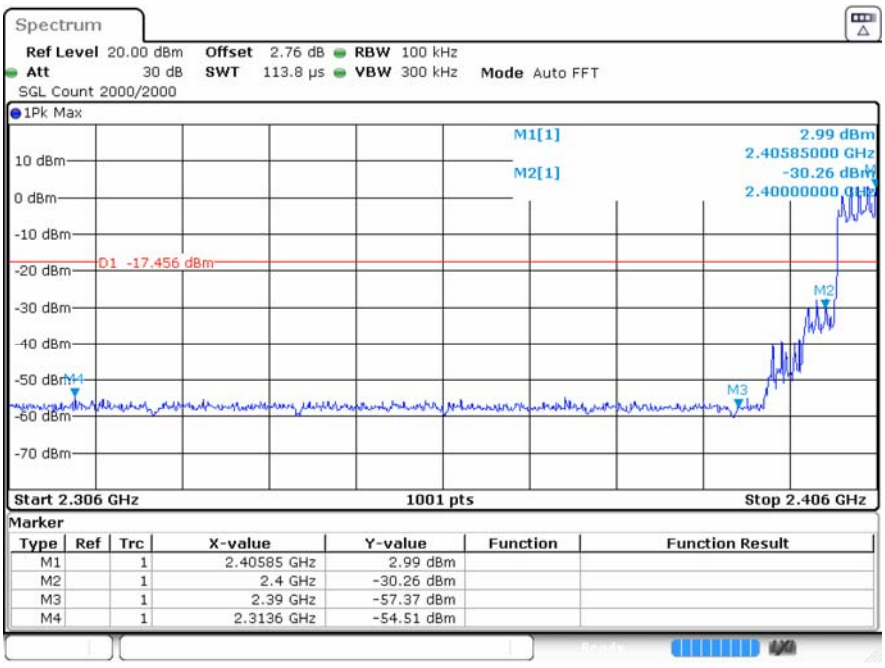
Test Graphs	
Pref	
GFSK/LCH/No Hop	

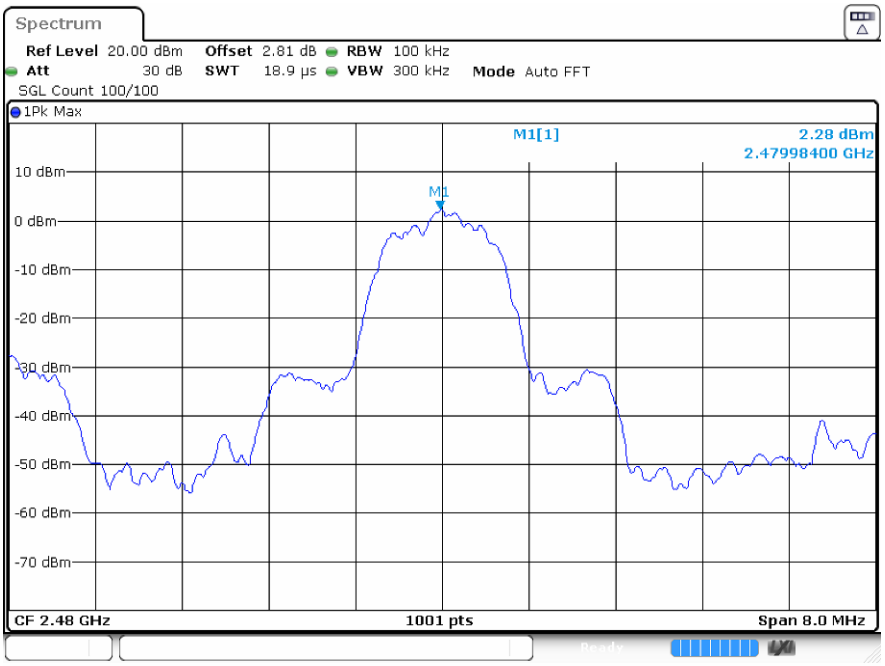
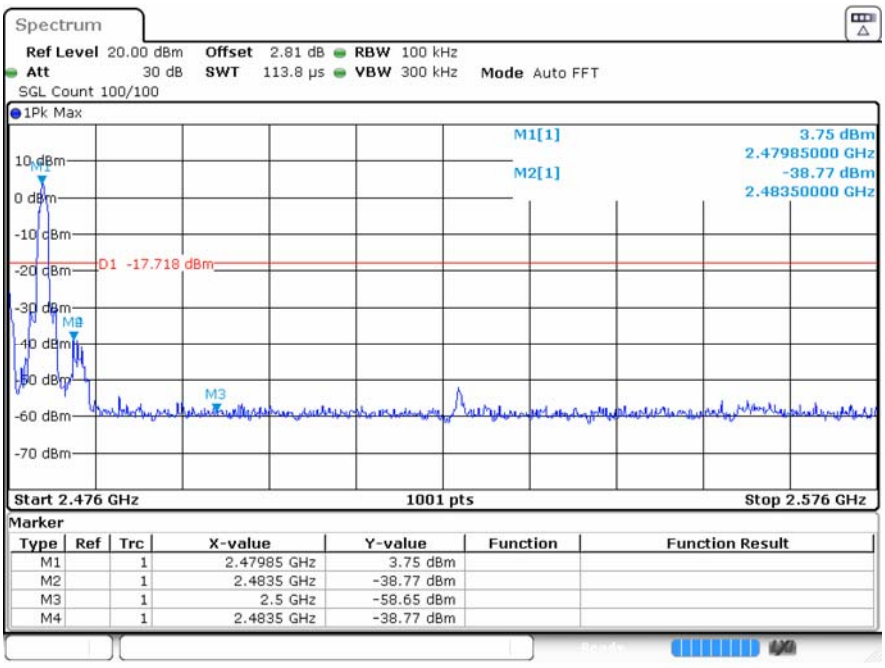
Ref	
GFSK/LCH/Hop	

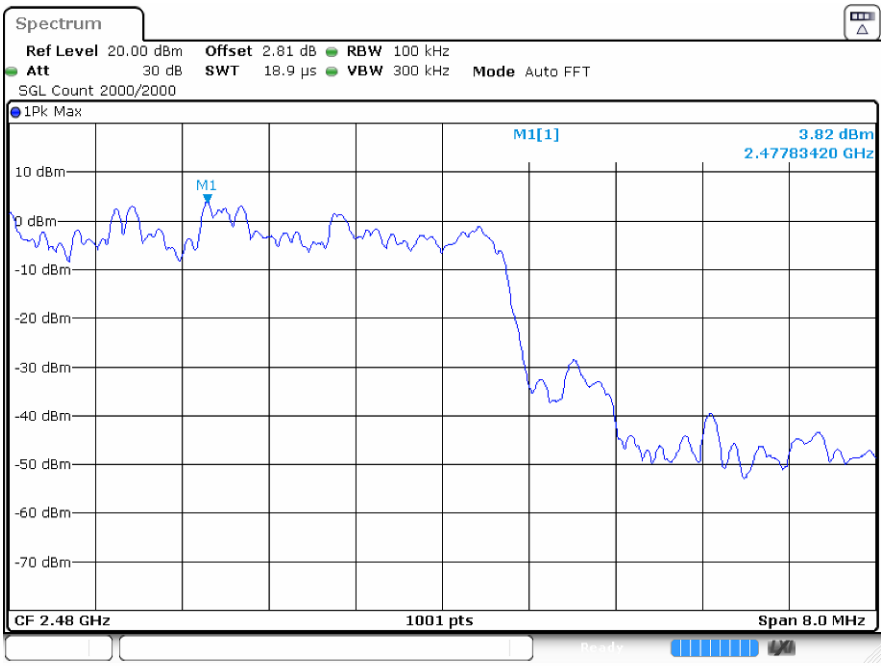
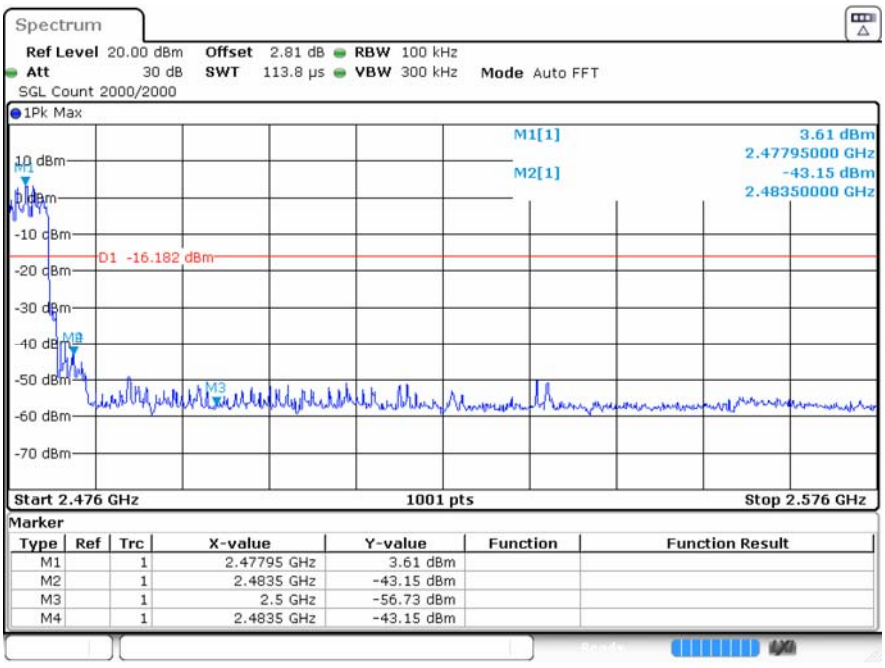
Ref	
GFSK/HCH/No Hop	

Ref.	
GFSK/HCH/Hop	

Ref	
π/4DQPSK/LCH/No Hop	

Ref	
π/4DQPSK/LCH/Hop	

Ref	
π/4DQPSK/HCH/No Hop	

Ref	
π/4DQPSK/HCH/Hop	

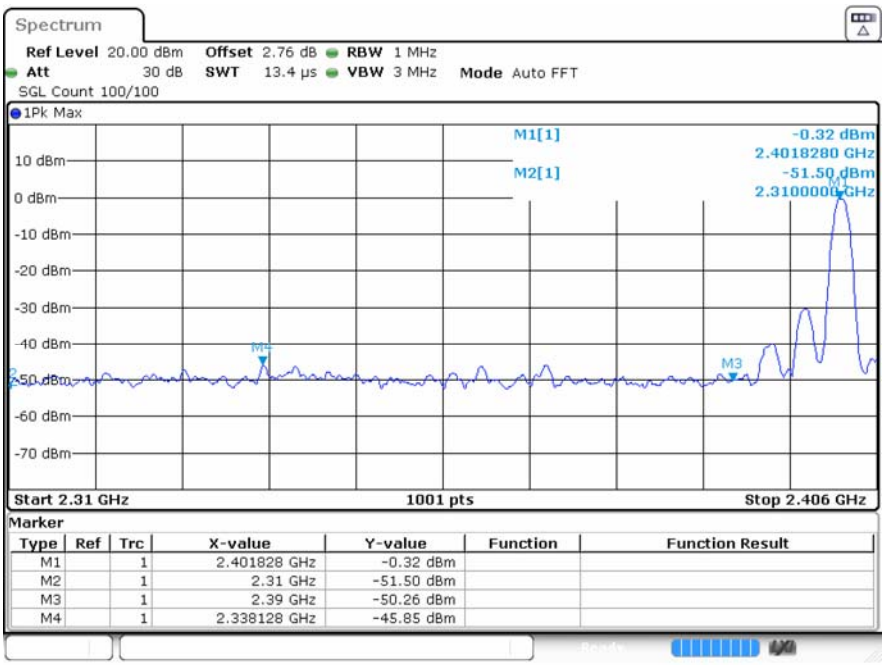
9 Restrict-band band-edge measurements

9.1 Test Result

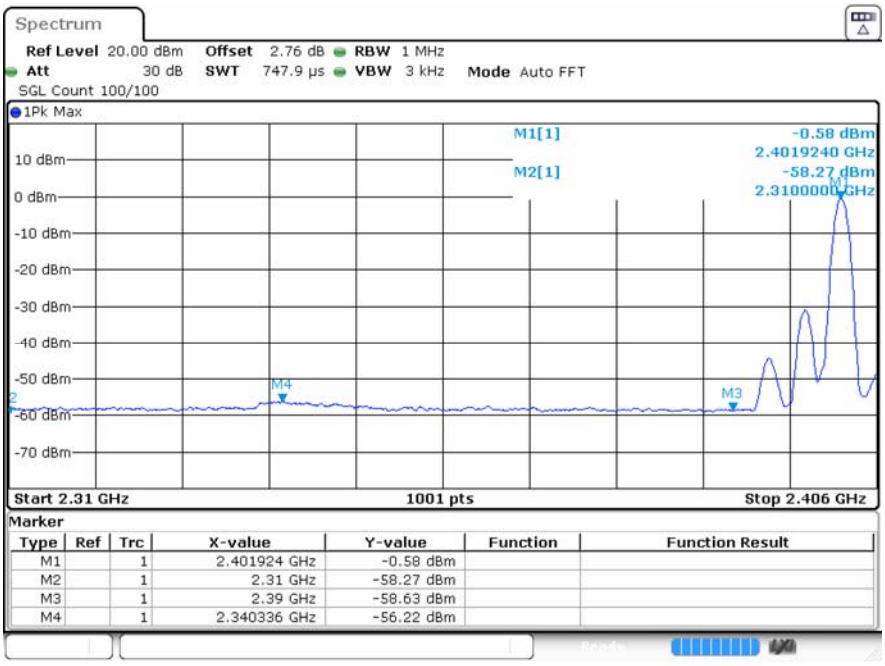
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-51.49	2	45.77	PEAK	74	Pass
	Off	2310.0	-58.27	2	38.99	AV	54	Pass
	Off	2338.128	-45.84	2	51.42	PEAK	74	Pass
	Off	2340.336	-56.22	2	41.04	AV	54	Pass
	Off	2390.0	-50.26	2	47	PEAK	74	Pass
	Off	2390.0	-58.62	2	38.64	AV	54	Pass
	Off	2483.5	-40.3	2	56.96	PEAK	74	Pass
	Off	2483.5	-45.44	2	51.82	AV	54	Pass
	Off	2483.968	-40.25	2	57.01	PEAK	74	Pass
	Off	2483.848	-44.38	2	52.88	AV	54	Pass
	Off	2500.0	-49.22	2	48.04	PEAK	74	Pass
	Off	2500.0	-57.6	2	39.66	AV	54	Pass
π/4DQPSK	Off	2310.0	-50.18	2	47.08	PEAK	74	Pass
	Off	2310.0	-58.47	2	38.79	AV	54	Pass
	Off	2353.104	-46.55	2	50.71	PEAK	74	Pass
	Off	2341.392	-55.89	2	41.37	AV	54	Pass
	Off	2390.0	-50.08	2	47.18	PEAK	74	Pass
	Off	2390.0	-58.39	2	38.87	AV	54	Pass
	Off	2483.5	-41.97	2	55.29	PEAK	74	Pass
	Off	2483.5	-45.76	2	51.5	AV	54	Pass
	Off	2484.376	-40.25	2	57.01	PEAK	74	Pass
	Off	2483.872	-44.61	2	52.65	AV	54	Pass
	Off	2500.0	-50.68	2	46.58	PEAK	74	Pass
	Off	2500.0	-57.8	2	39.46	AV	54	Pass

9.2 Test Graphs

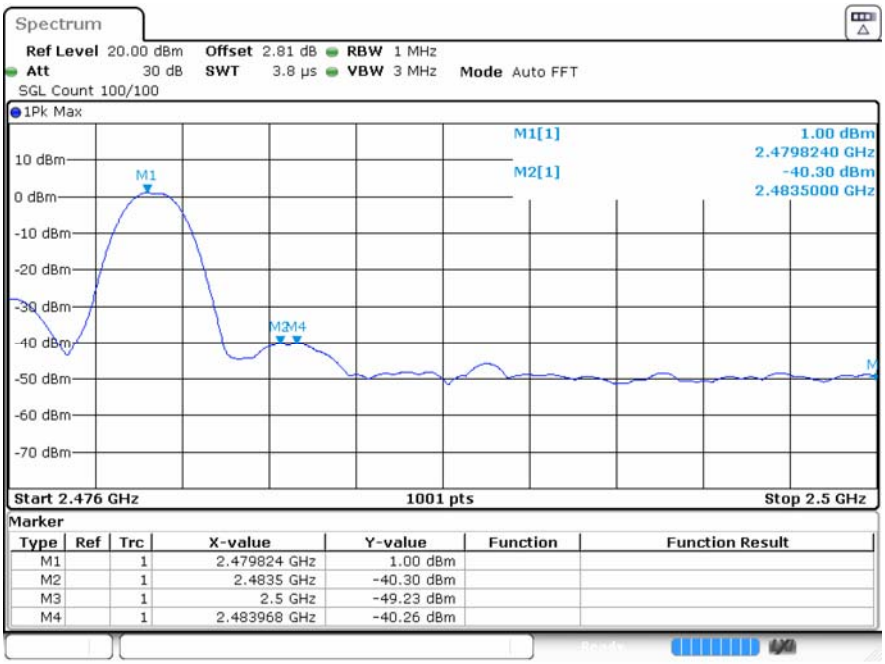
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



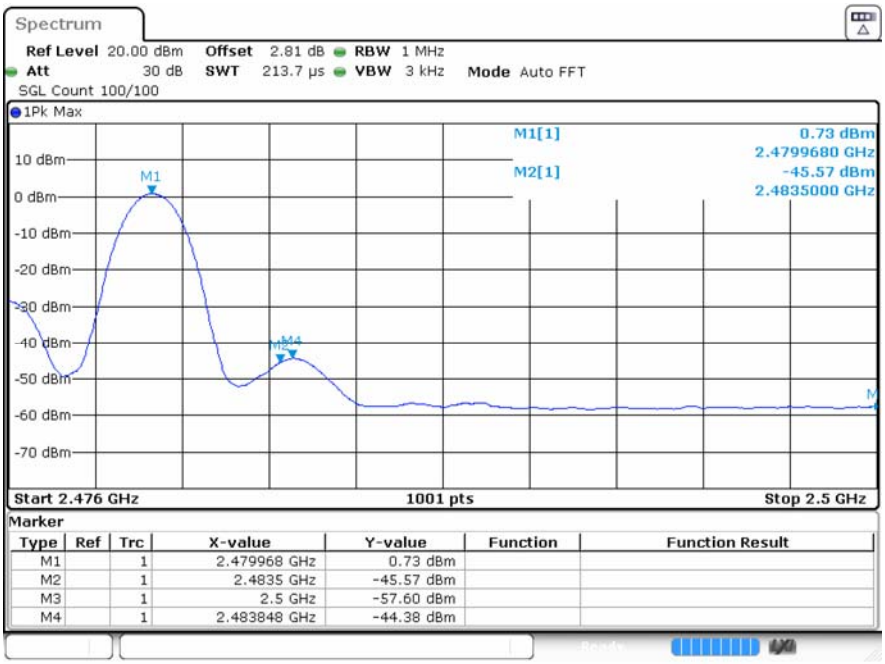
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



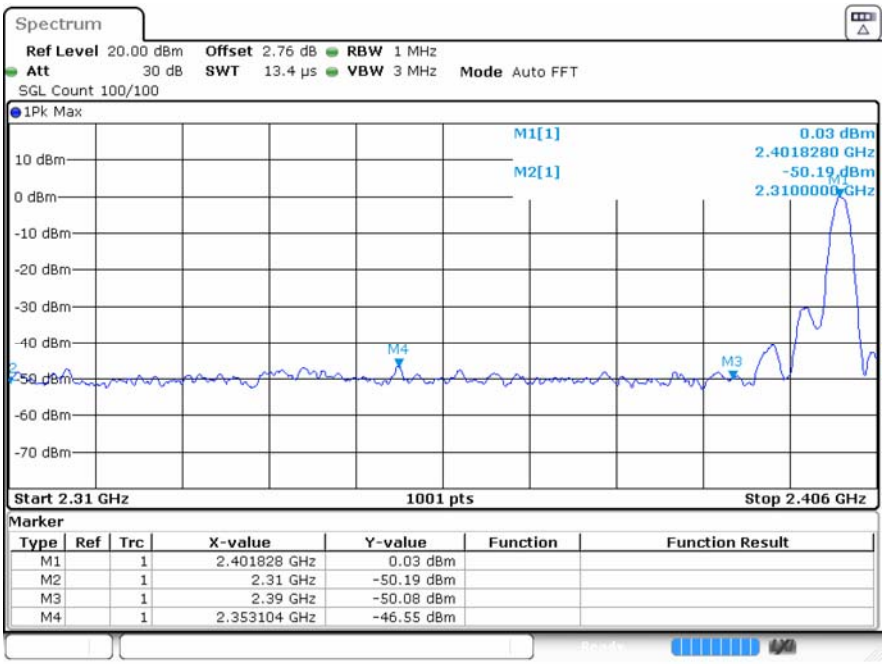
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



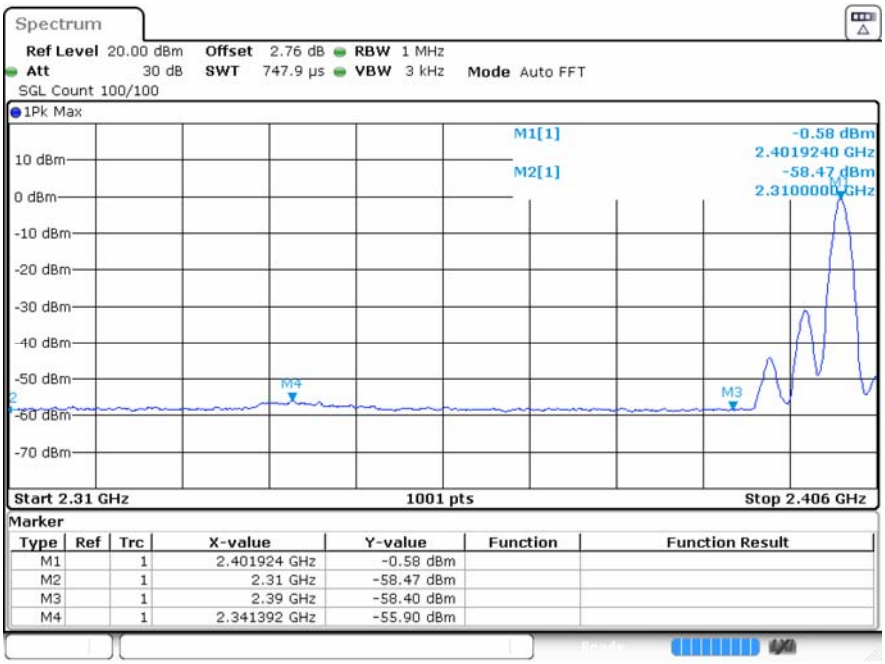
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



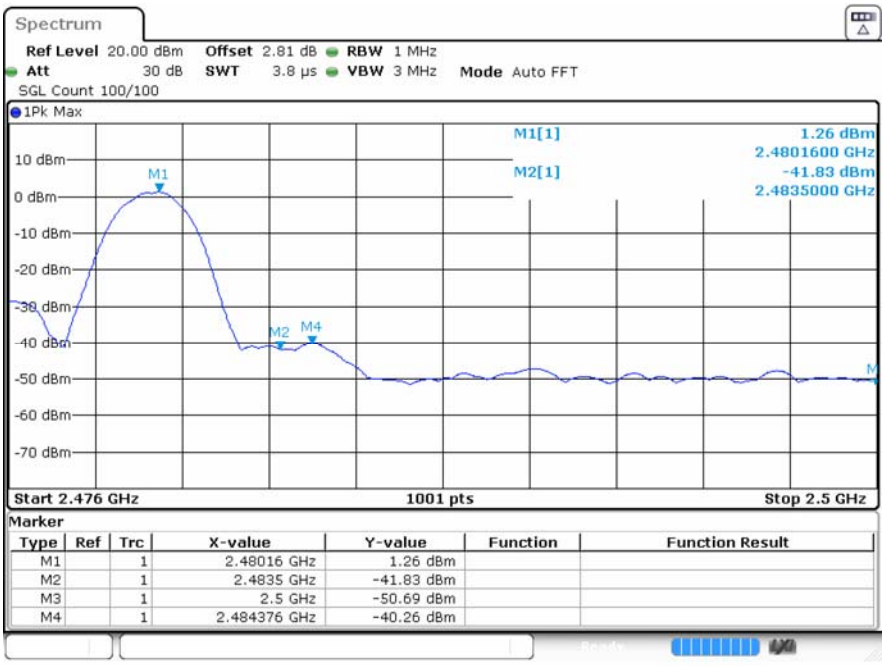
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



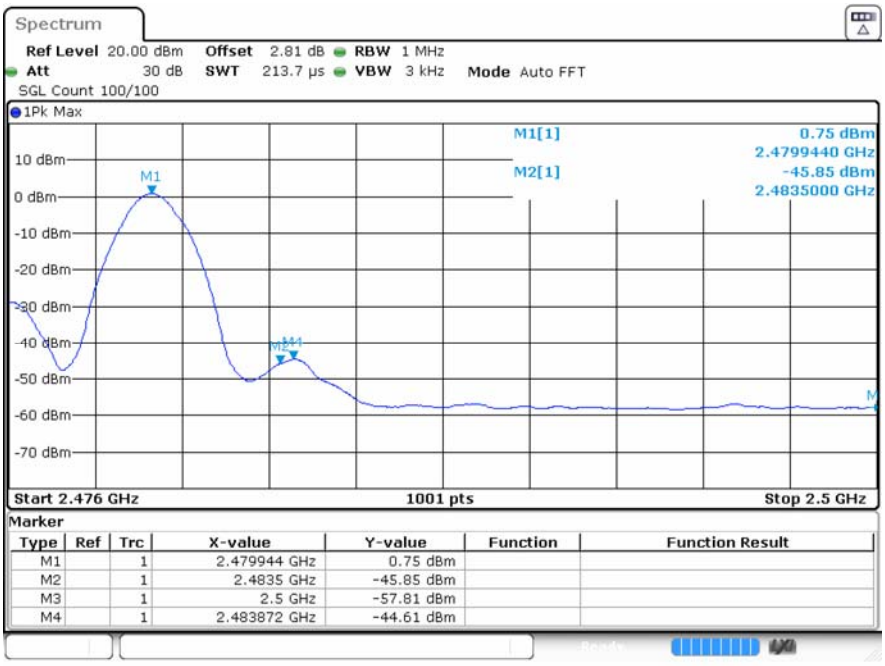
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---