



Appendix A_ Test Data

for BT(BDR/EDR)

Conducted Measurement

Product Name: OPEN EAR HEADPHONES

Trade Mark: N/A

Test Model: STG-6959-KB

Environmental Conditions

Temperature:	25.5℃
Relative Humidity:	52.1%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

Contents

Page

COVER PAGE

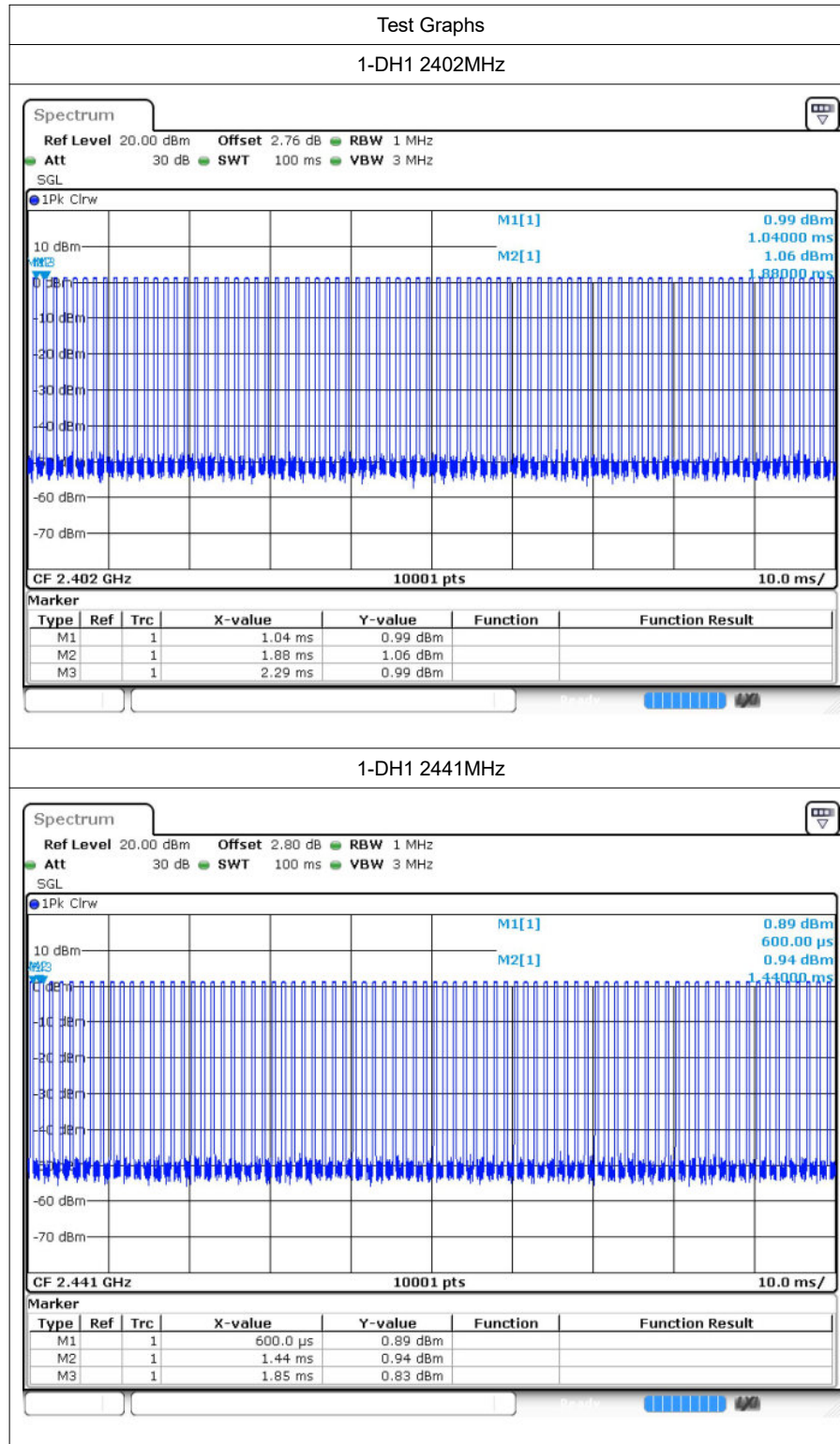
1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Peak Output Power	7
2.1	Test Result	7
2.2	Test Graphs	8
3	20dB Bandwidth	11
3.1	Test Result	11
3.2	Test Graphs	12
4	Carrier Frequency Separation	15
4.1	Test Result	15
4.2	Test Graphs	16
5	Hopping Channel Number	17
5.1	Test Result	17
5.2	Test Graphs	18
6	Dwell Time	19
6.1	Test Result	19
6.2	Test Graphs	20
7	RF Conducted Spurious Emissions	22
7.1	Test Result	22
7.2	Test Graphs	23
8	Band-edge for RF Conducted Emissions	29
8.1	Test Result	29
8.2	Test Graphs	30
9	Restrict-band band-edge measurements	38
9.1	Test Result	38
9.2	Test Graphs	39

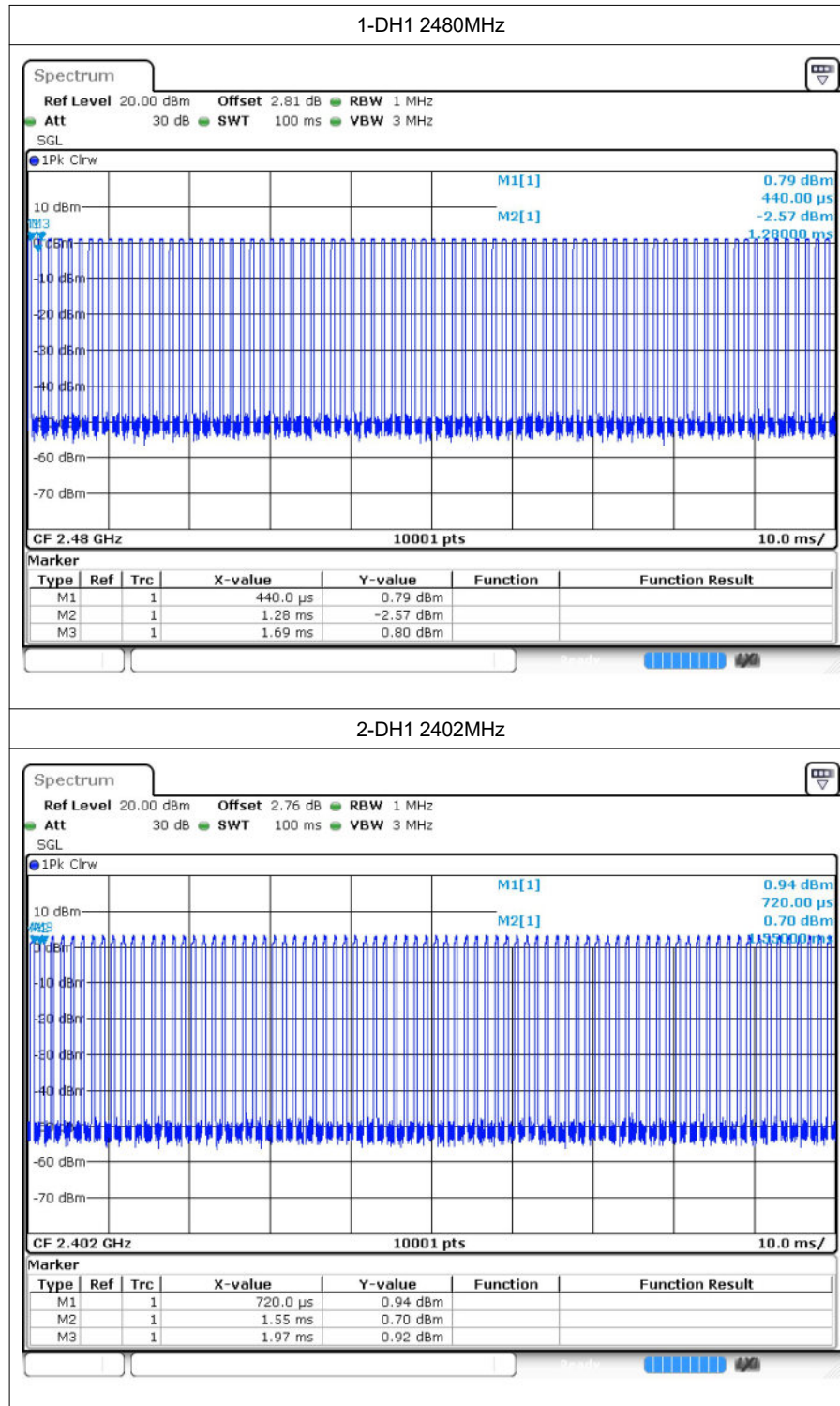
1 Duty Cycle

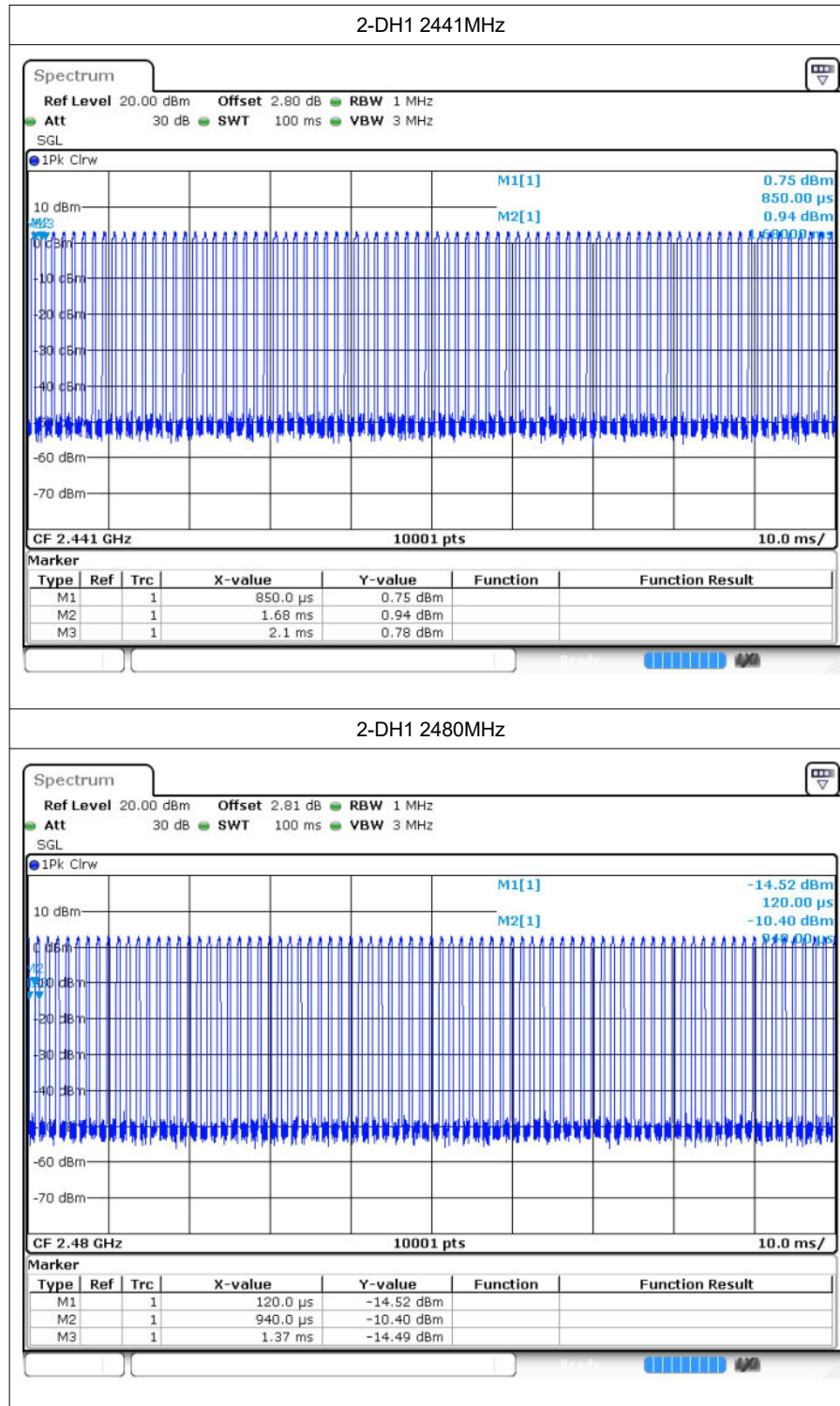
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	33.6	2.44
1-DH1	2441	33.6	2.44
1-DH1	2480	33.6	2.44
2-DH1	2402	34.4	2.38
2-DH1	2441	34.4	2.38
2-DH1	2480	35.21	2.33

1.2 Test Graphs





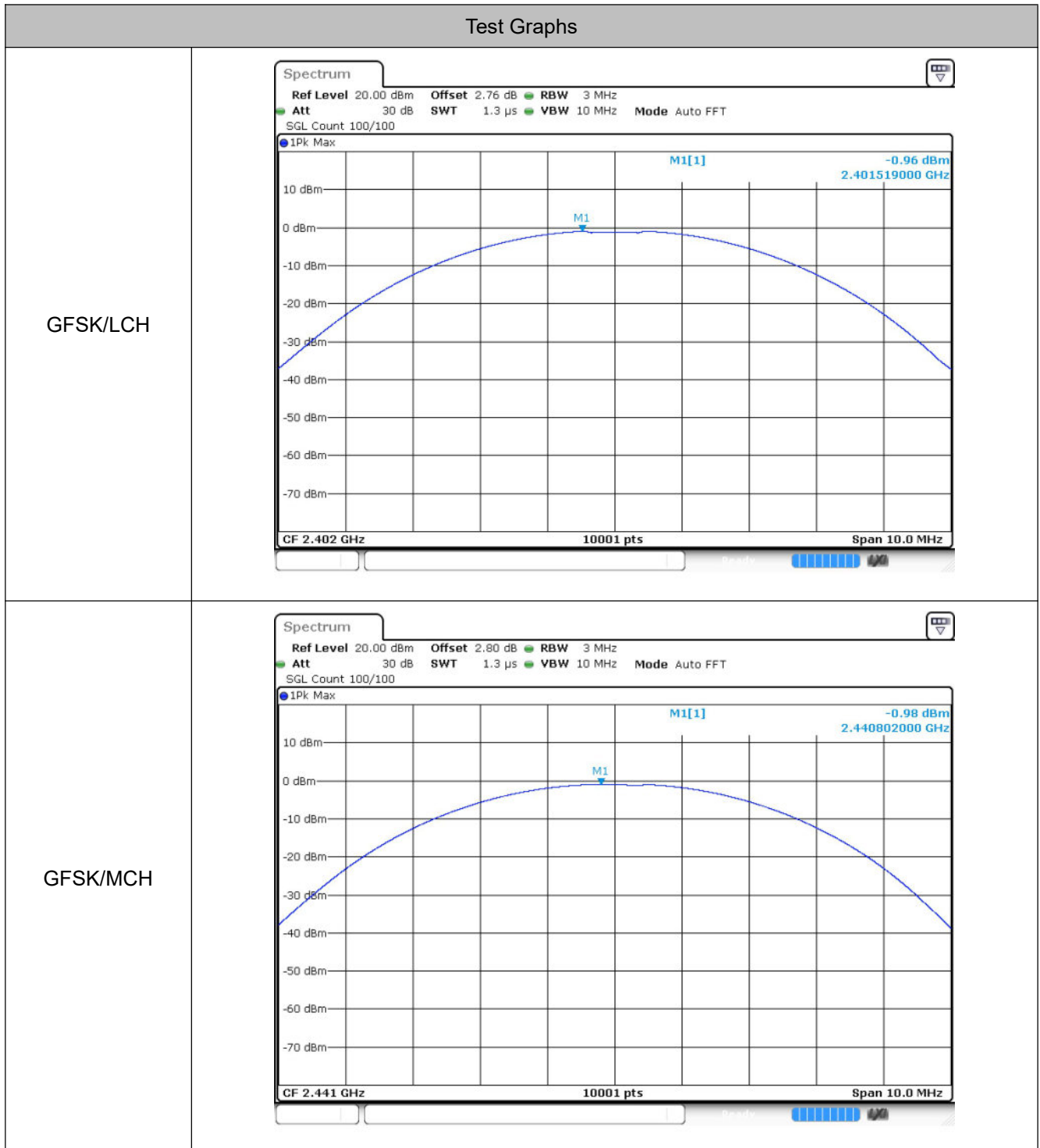


2 Maximum Conducted Peak Output Power

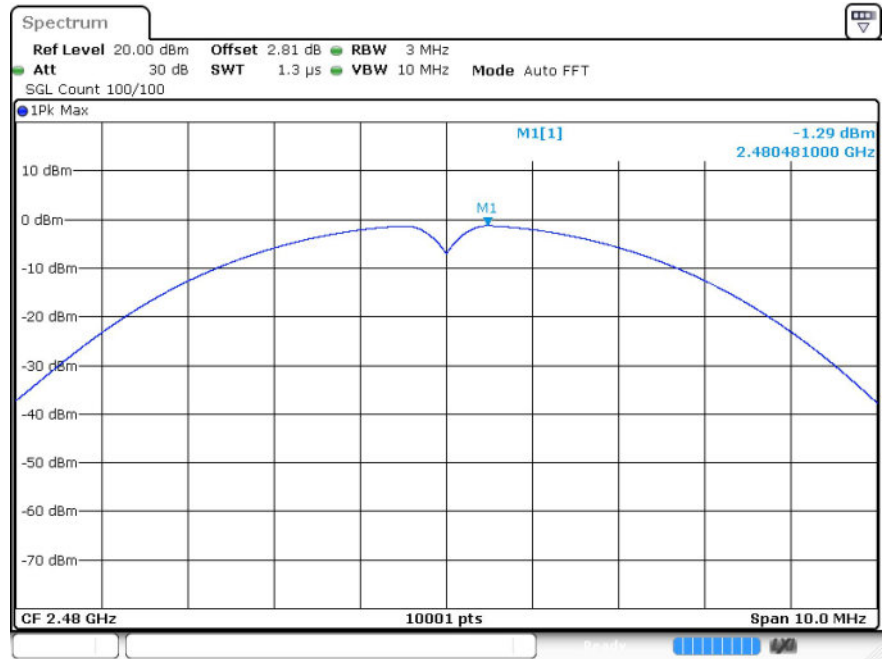
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.96	21	Pass
	MCH	-0.98	21	Pass
	HCH	-1.29	21	Pass
$\pi/4$ DQPSK	LCH	0.91	21	Pass
	MCH	0.43	21	Pass
	HCH	0.67	21	Pass

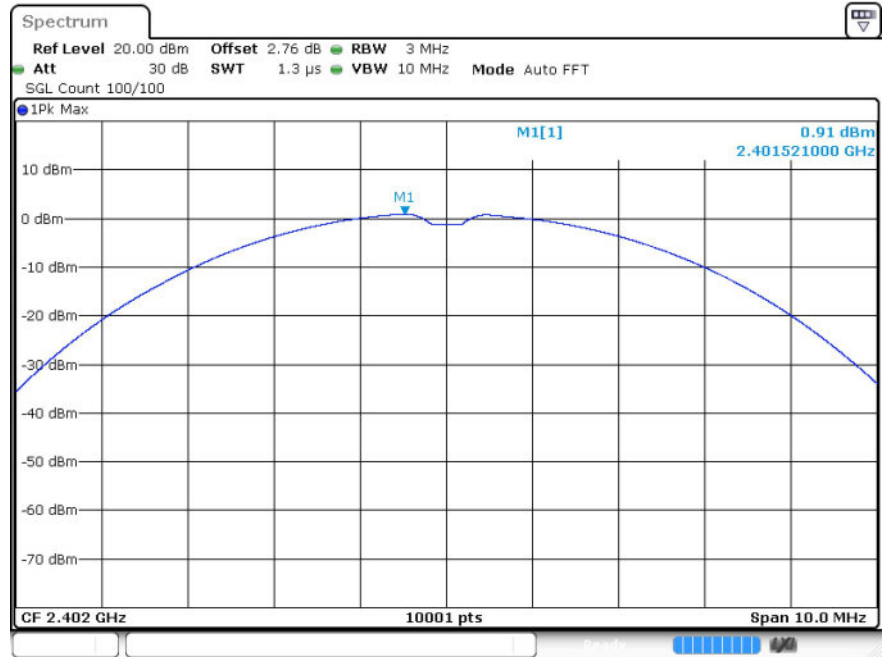
2.2 Test Graphs

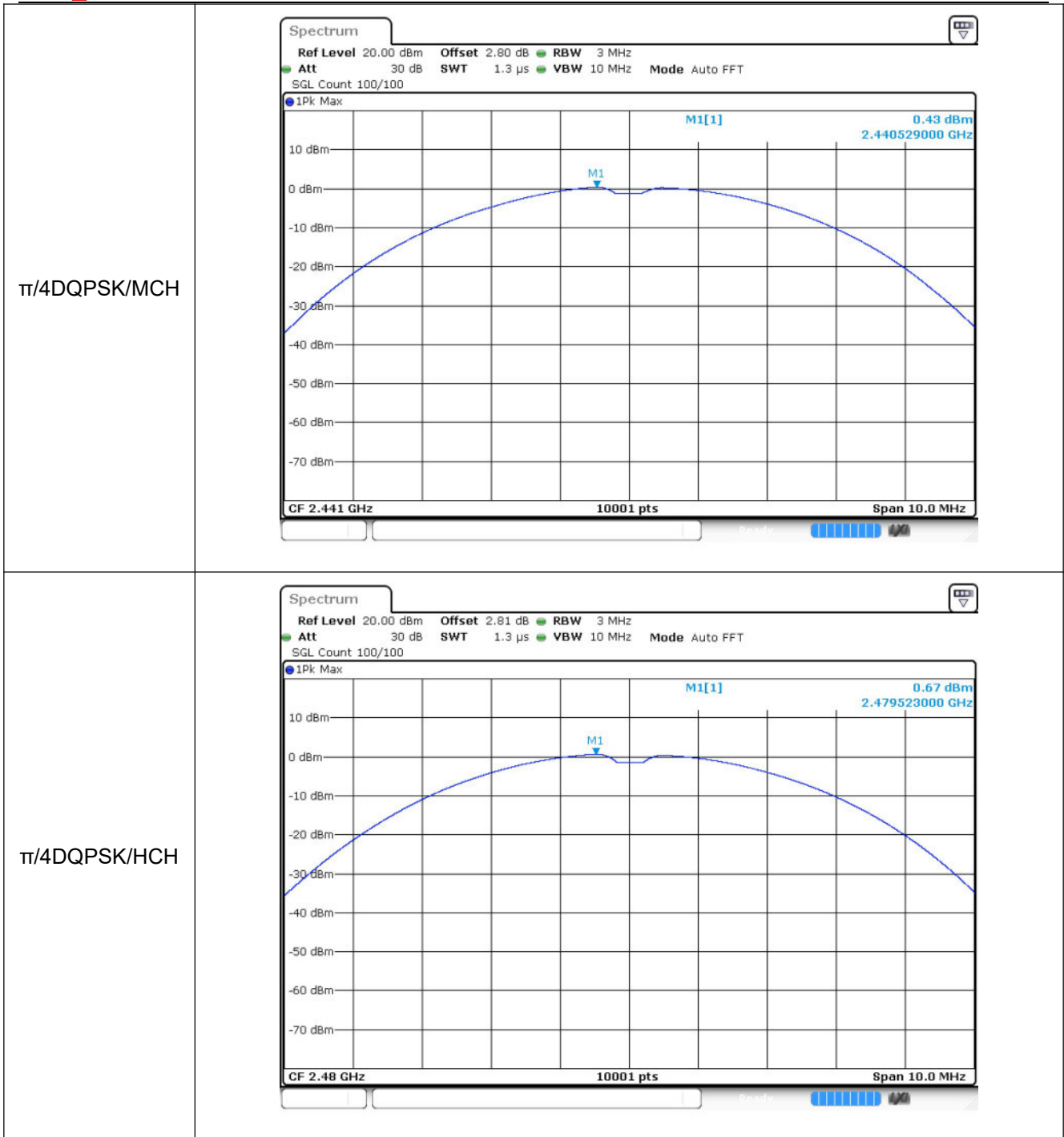


GFSK/HCH



$\pi/4$ DQPSK/LCH



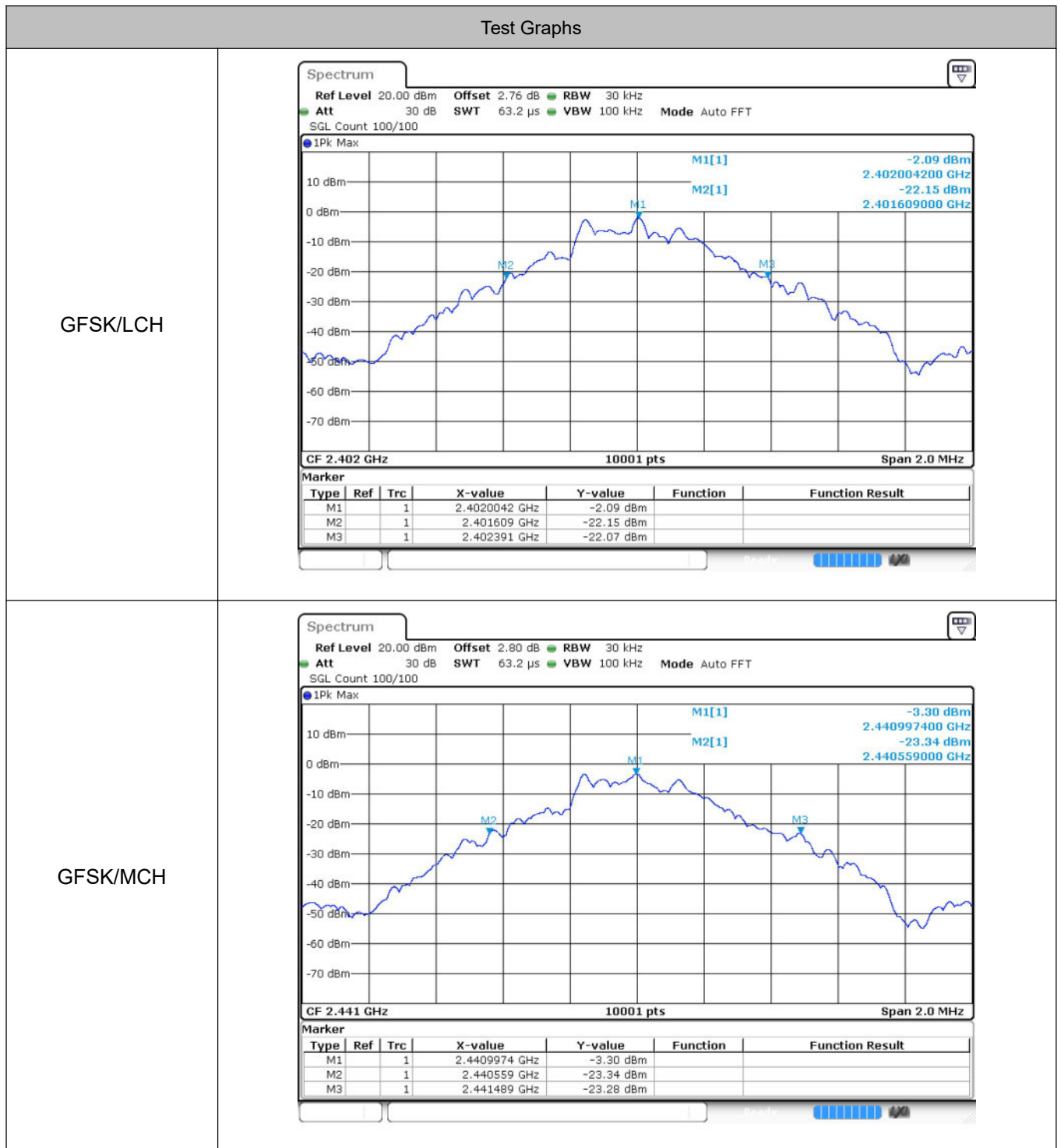


3 20dB Bandwidth

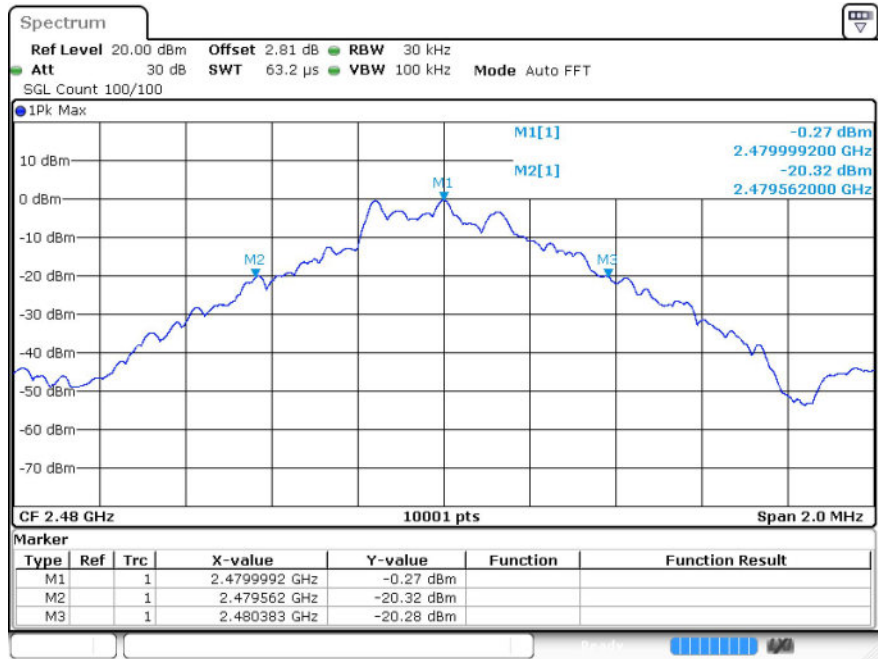
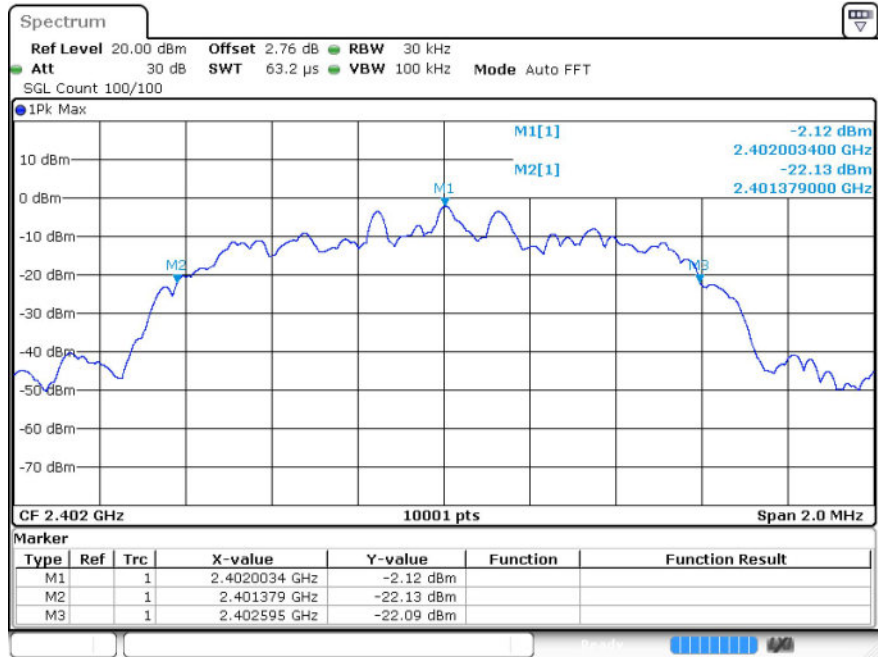
3.1 Test Result

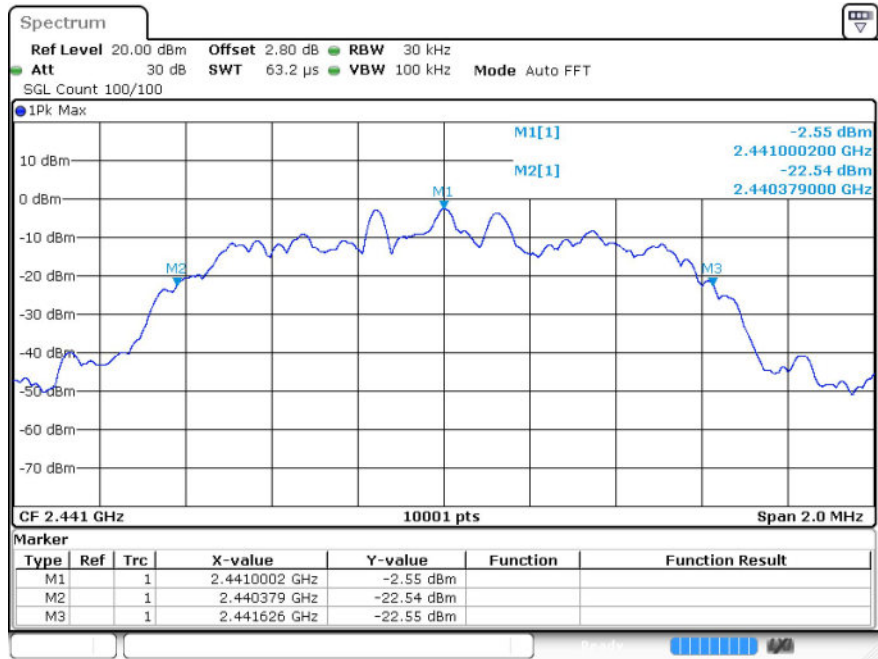
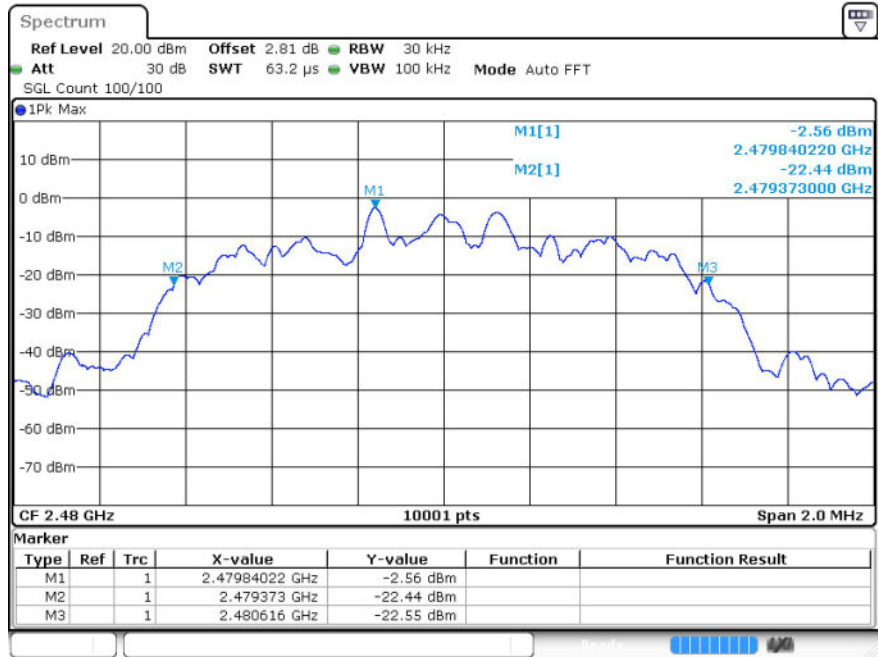
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.782	Not Specified	Pass
	MCH	0.93	Not Specified	Pass
	HCH	0.82	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.216	Not Specified	Pass
	MCH	1.247	Not Specified	Pass
	HCH	1.243	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


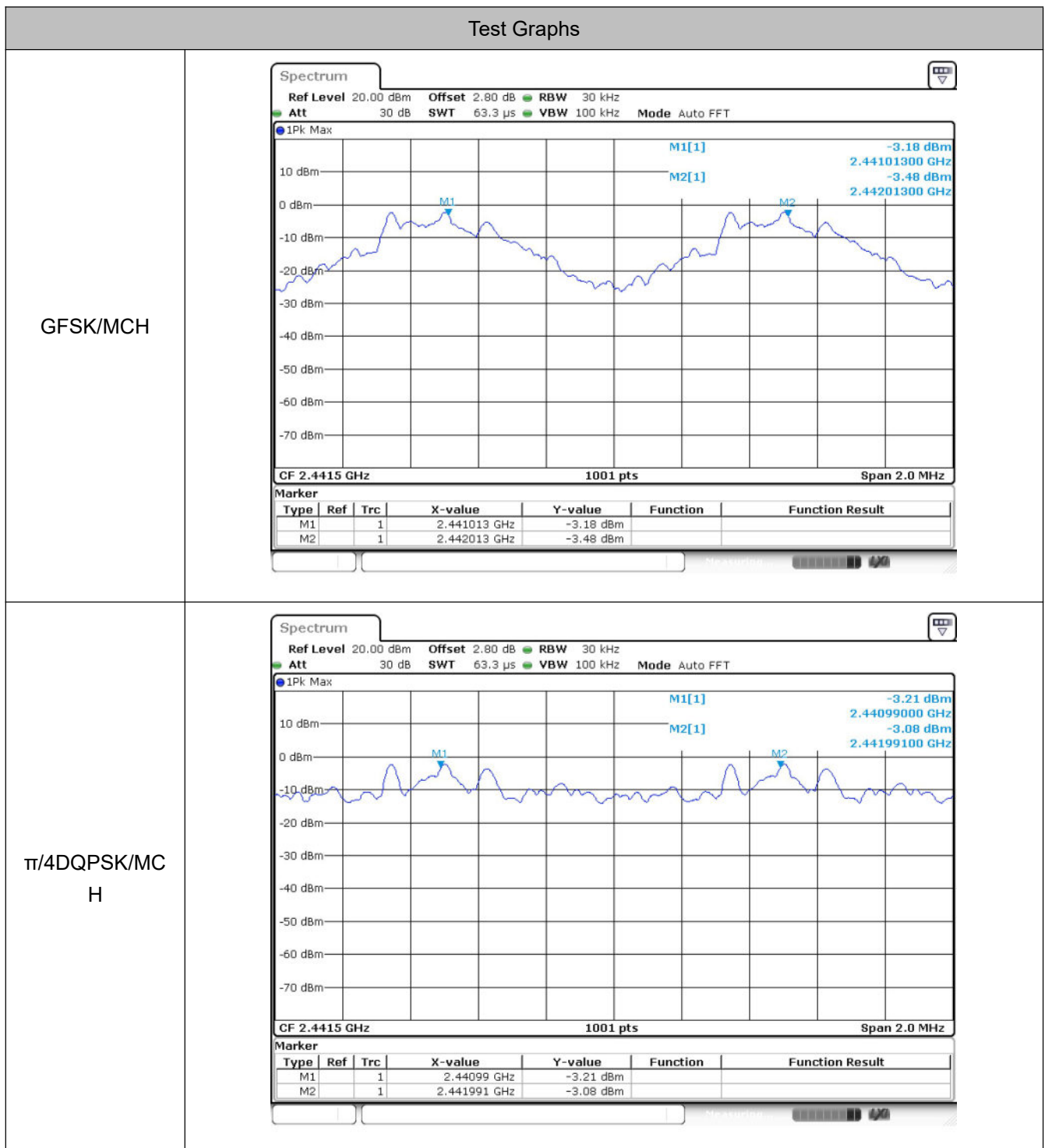
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1	0.62	Pass
$\pi/4$ DQPSK	MCH	1.001	0.831	Pass

4.2 Test Graphs

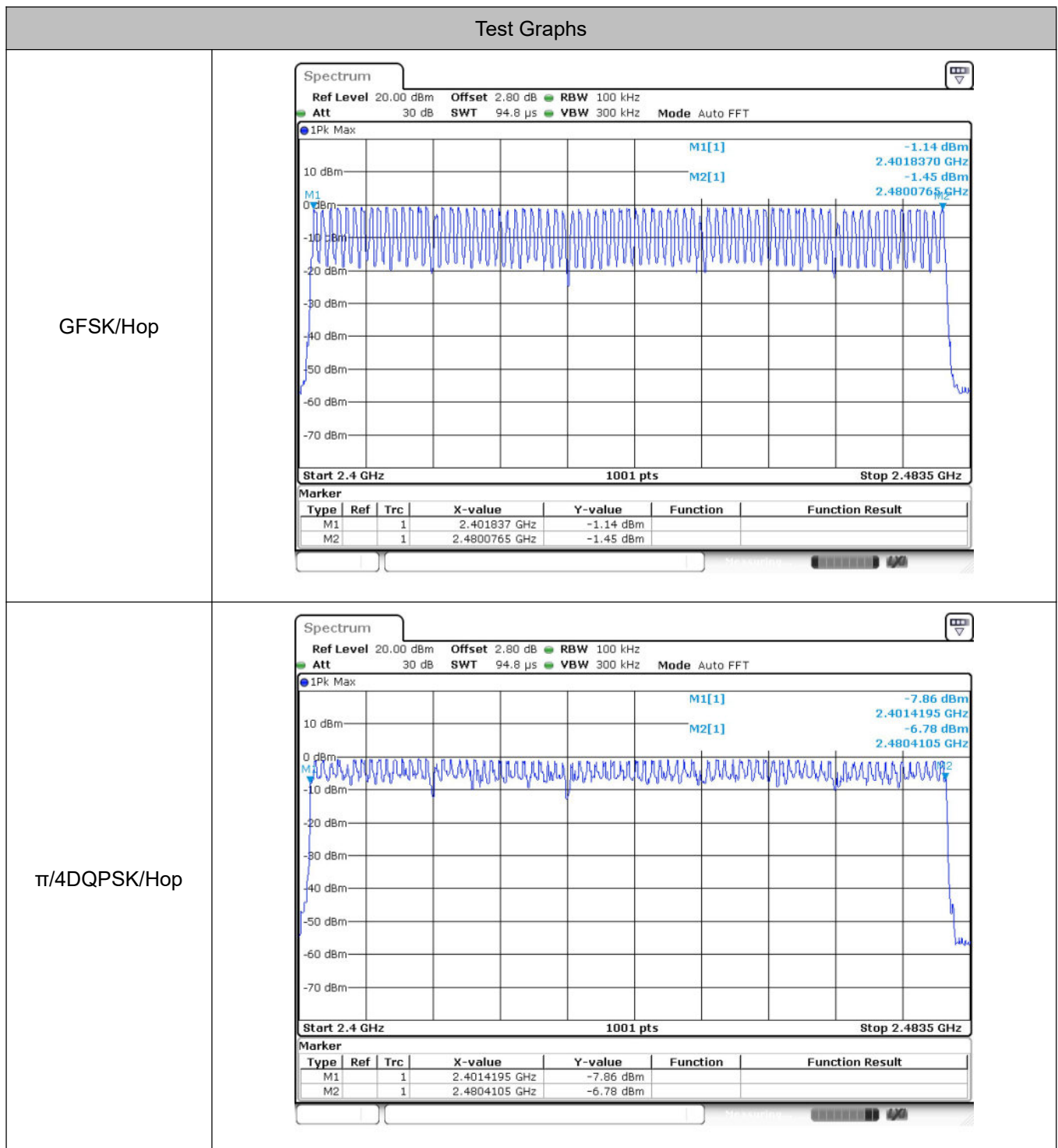


5 Hopping Channel Number

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

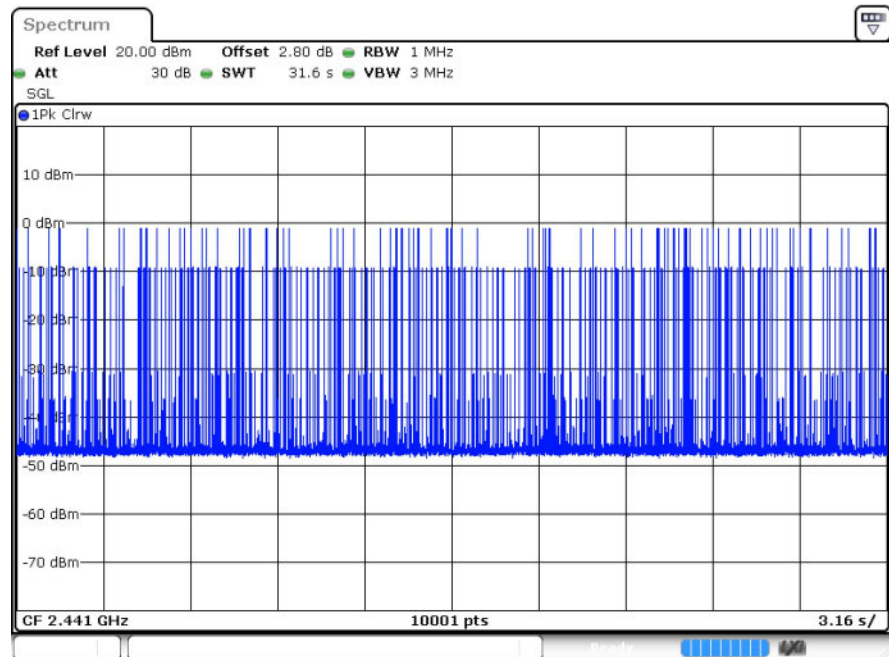
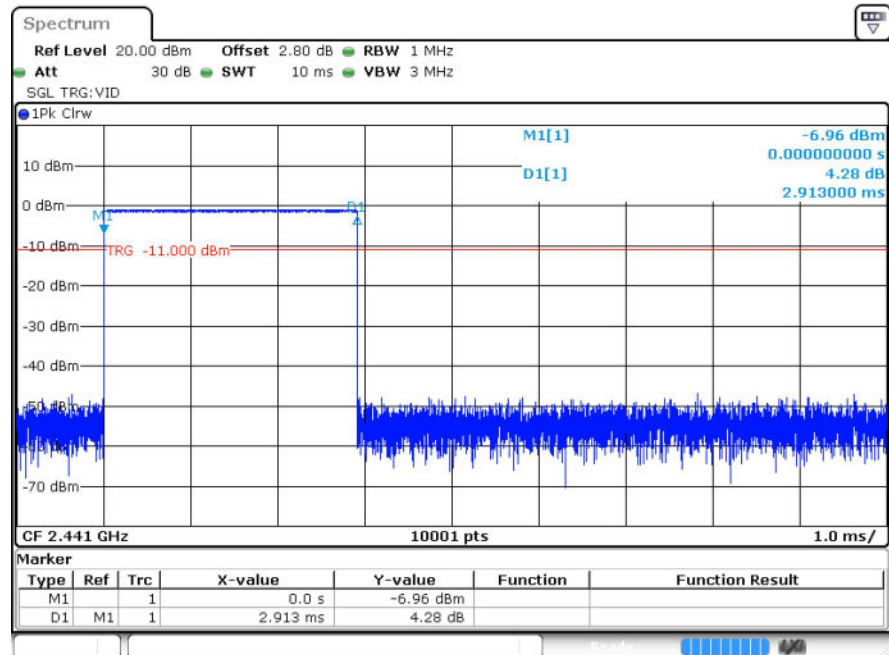
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.913	95	276.735	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.918	104	303.472	0.4	Pass

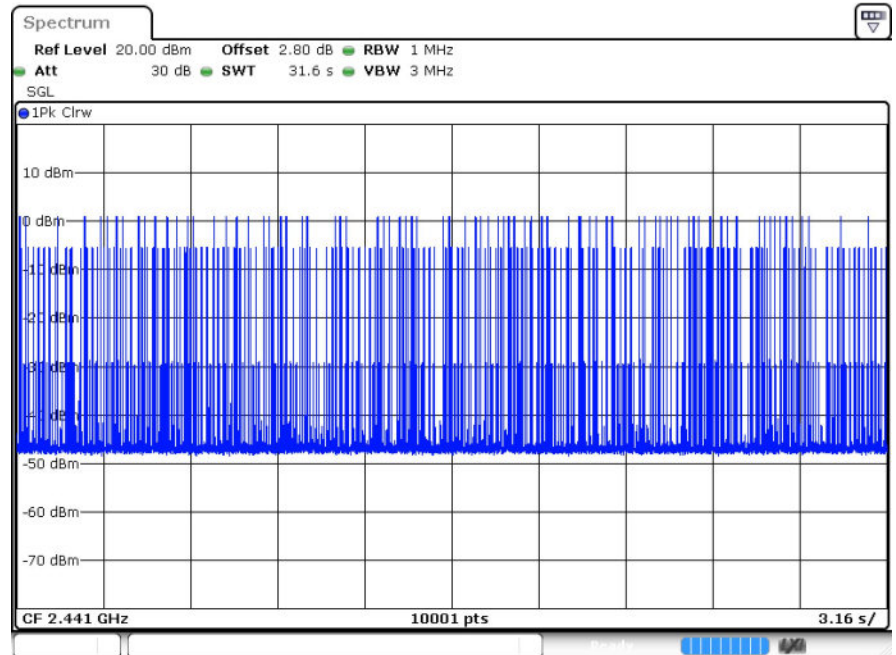
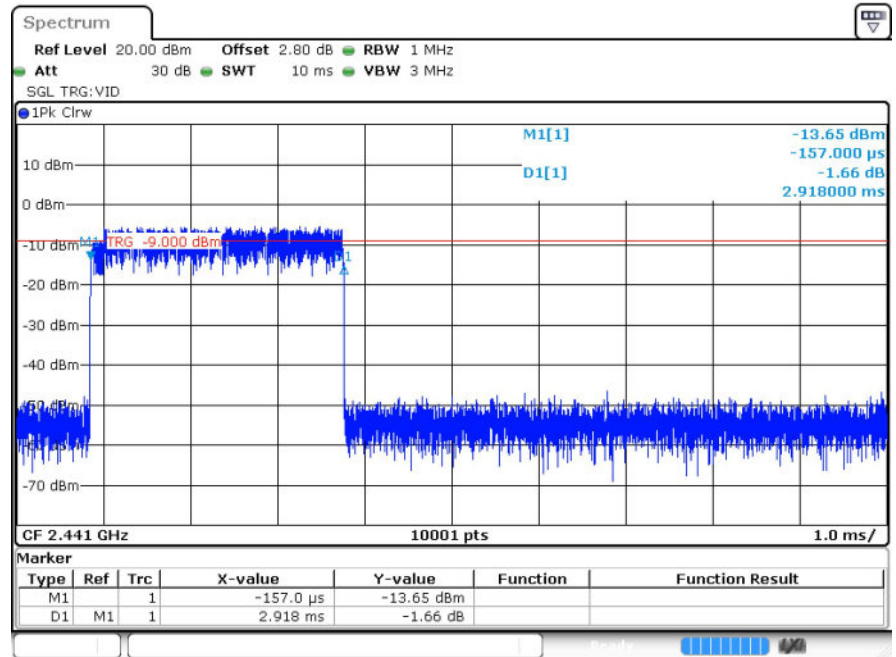
6.2 Test Graphs

Test Graphs

GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH

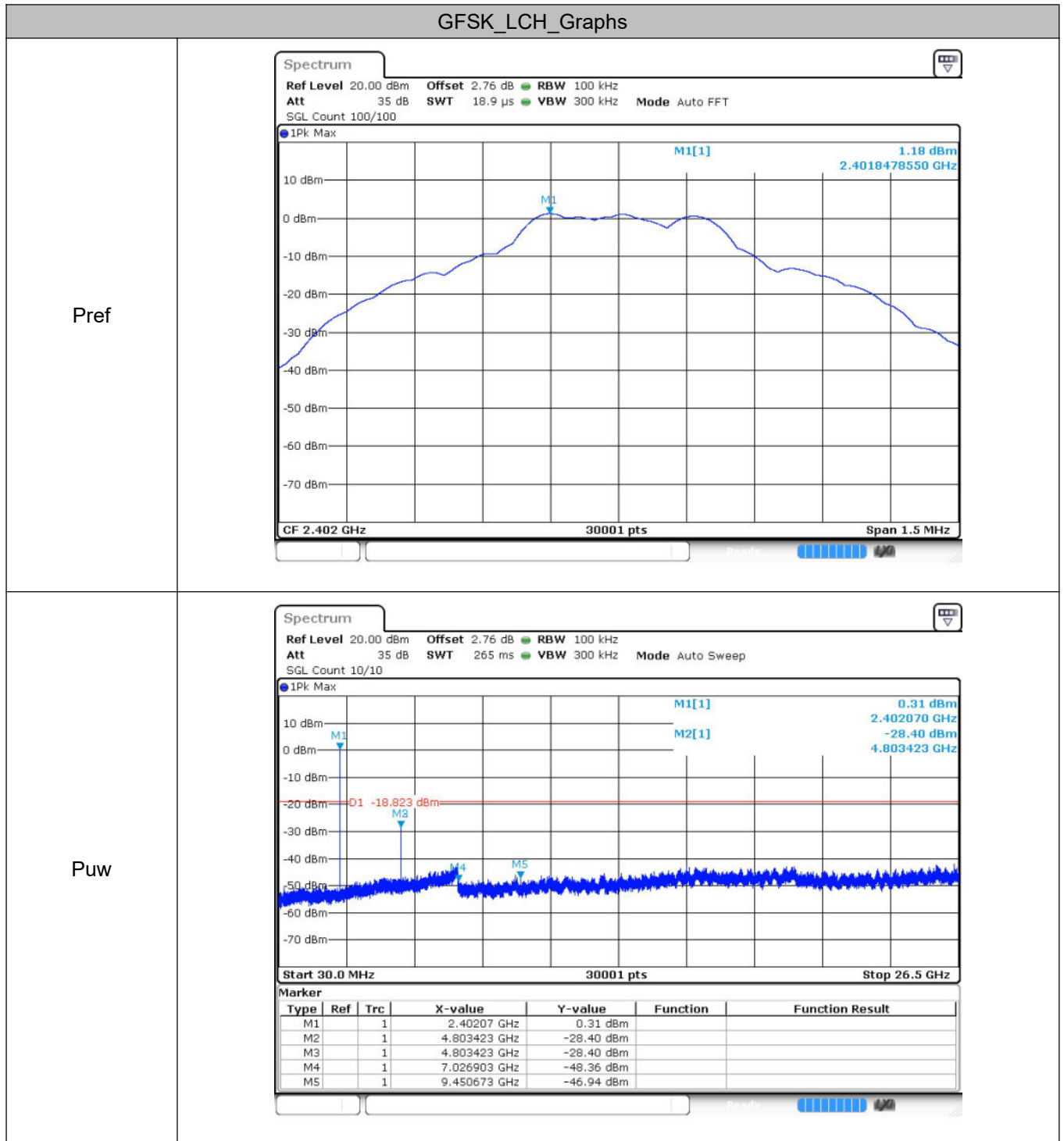


7 RF Conducted Spurious Emissions

7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-29.58	-20	Pass
	MCH	-34.42	-20	Pass
	HCH	-33.83	-20	Pass
$\pi/4$ DQPSK	LCH	-31.05	-20	Pass
	MCH	-34.41	-20	Pass
	HCH	-30.34	-20	Pass

7.2 Test Graphs

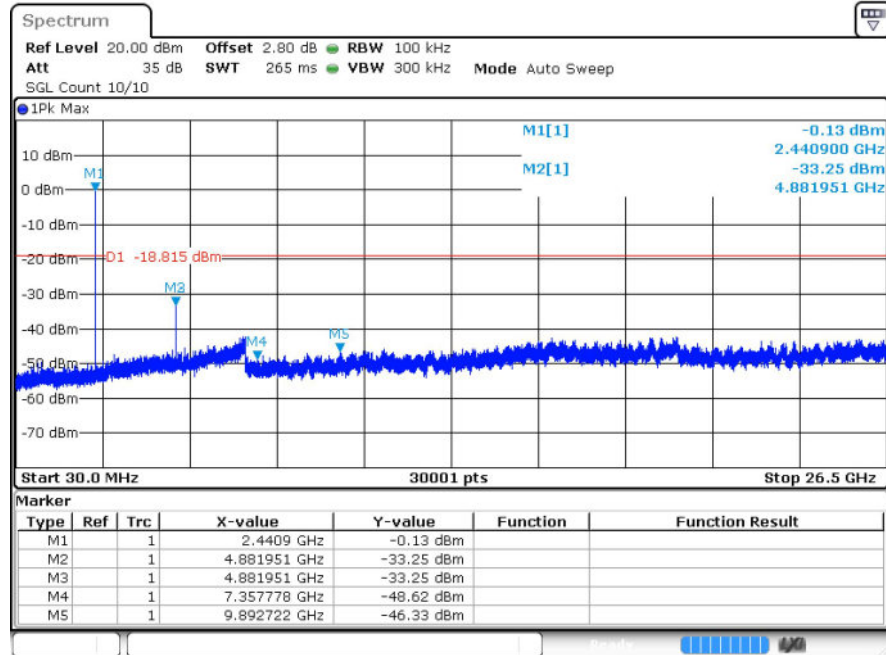


GFSK_MCH_Graphs

Pref

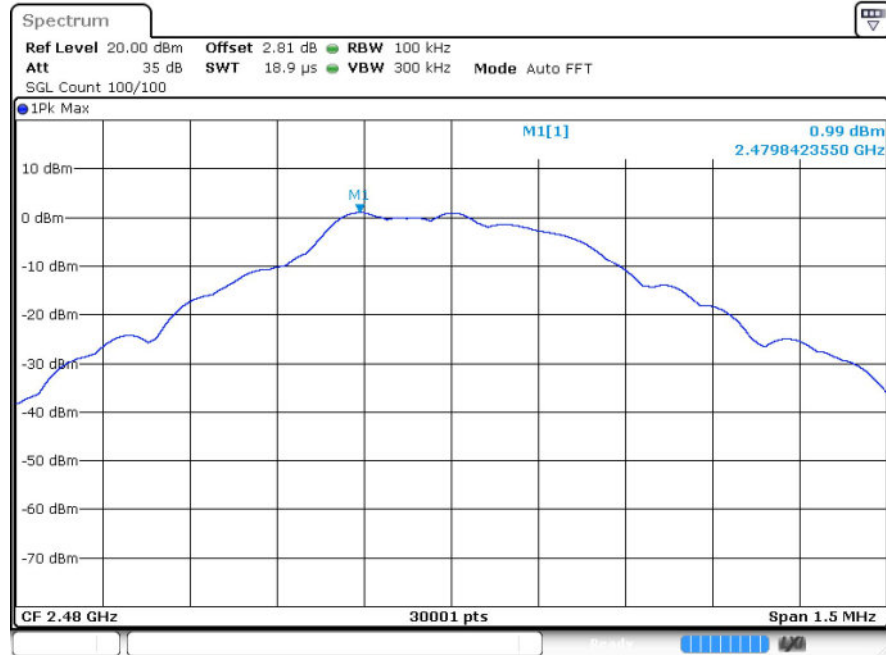


Puw

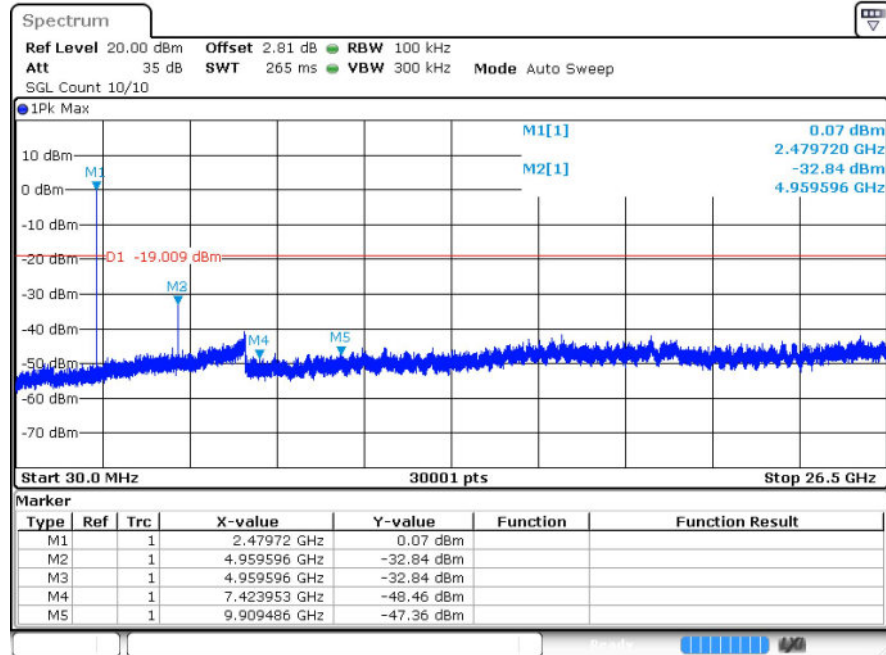


GFSK_HCH_Graphs

Pref

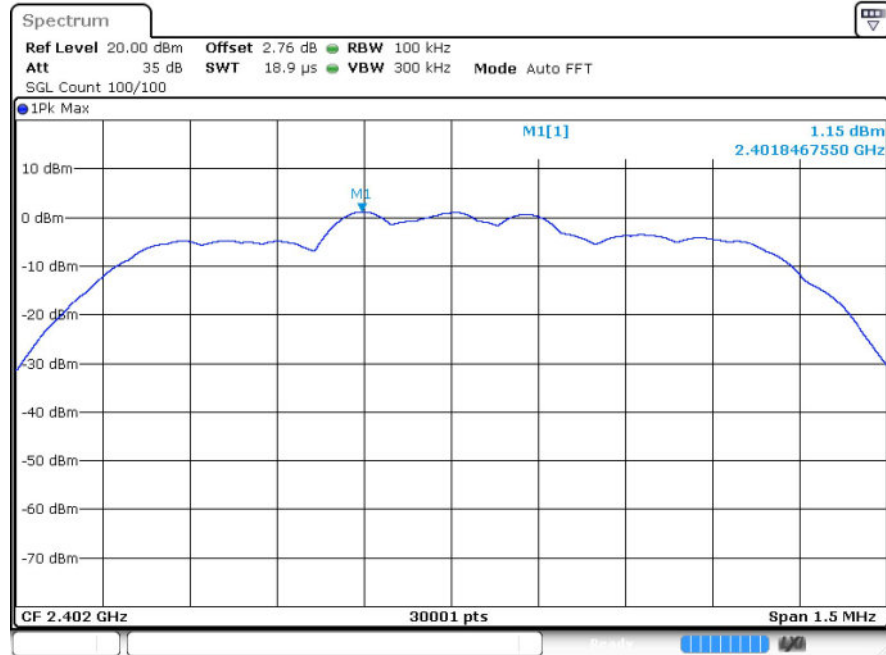


Puw

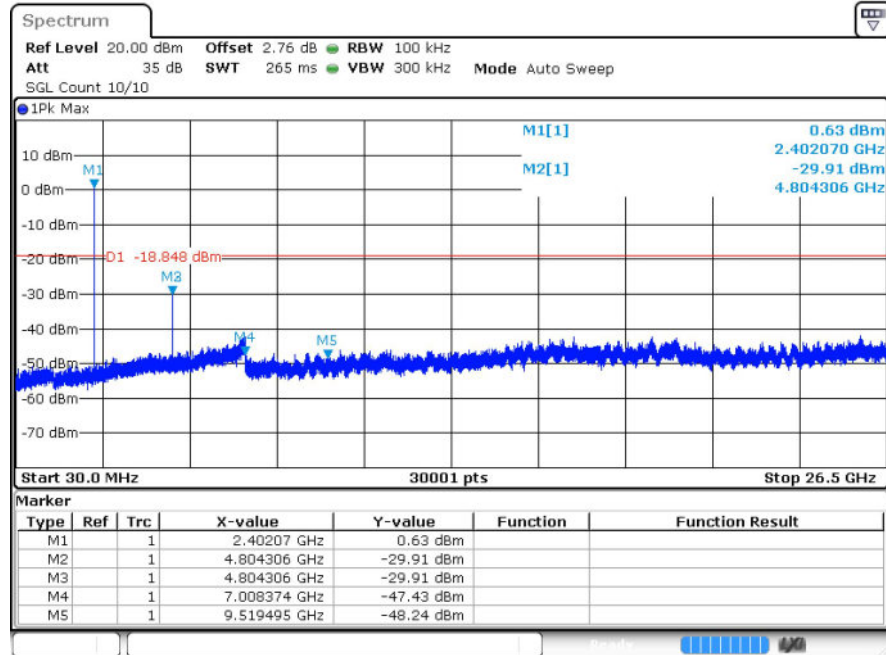


$\pi/4$ DQPSK_LCH_Graphs

Pref

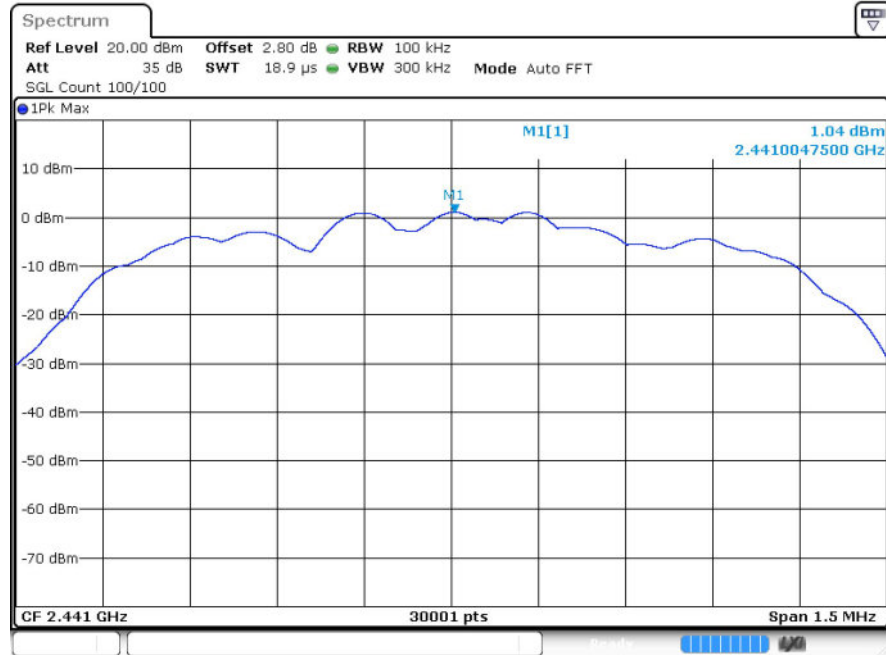


Puw

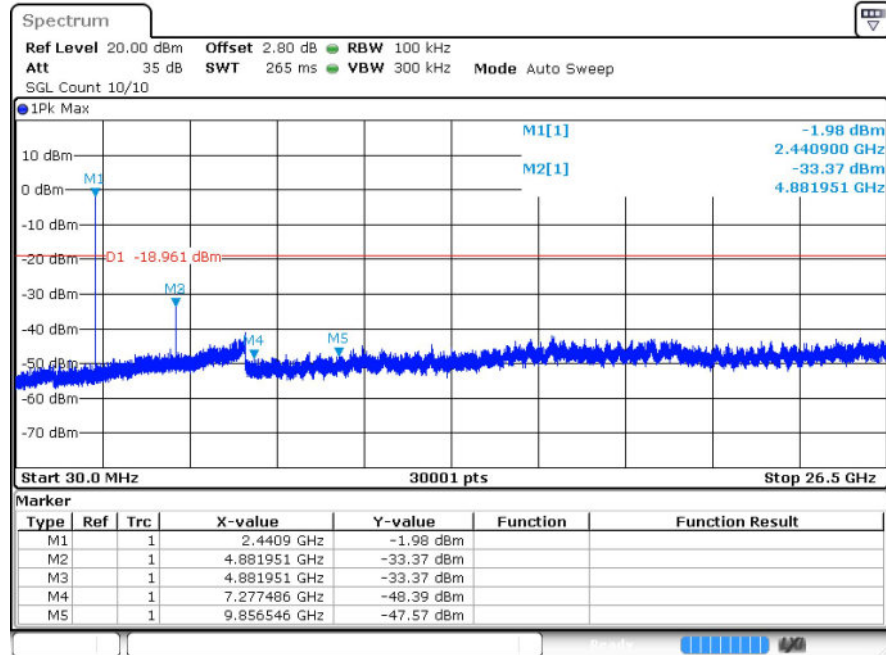


π /4DQPSK_MCH_Graphs

Pref

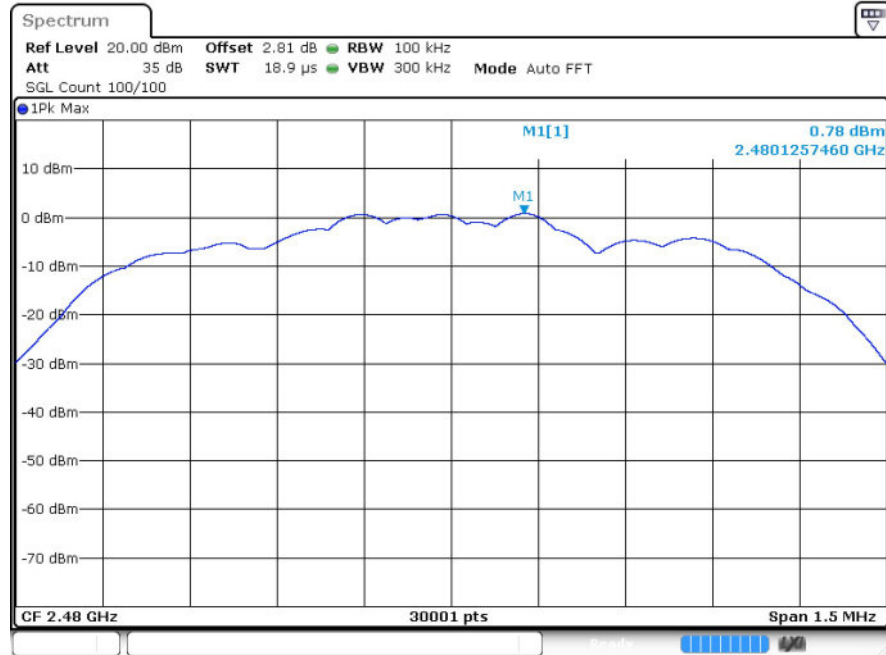


Puw

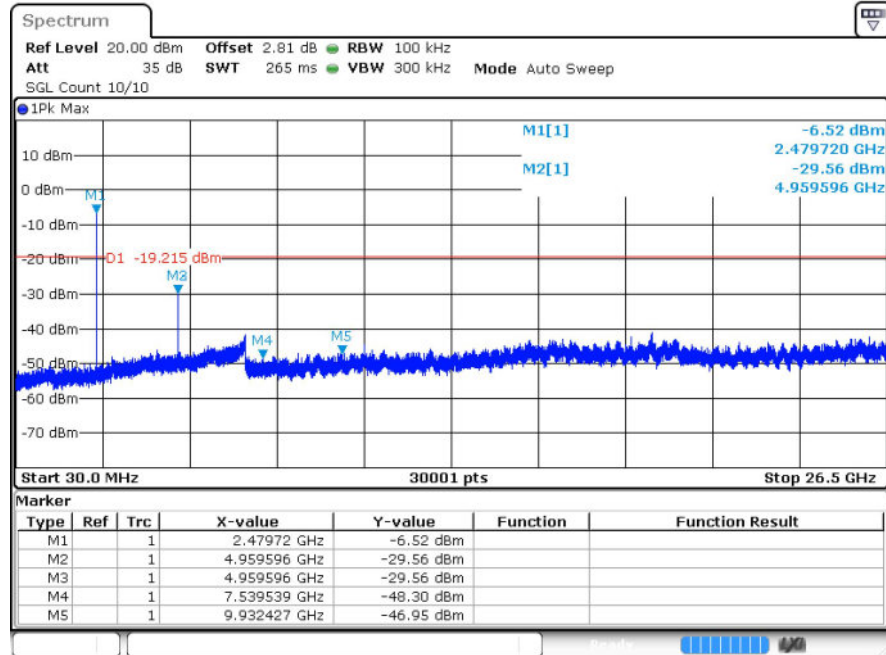


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

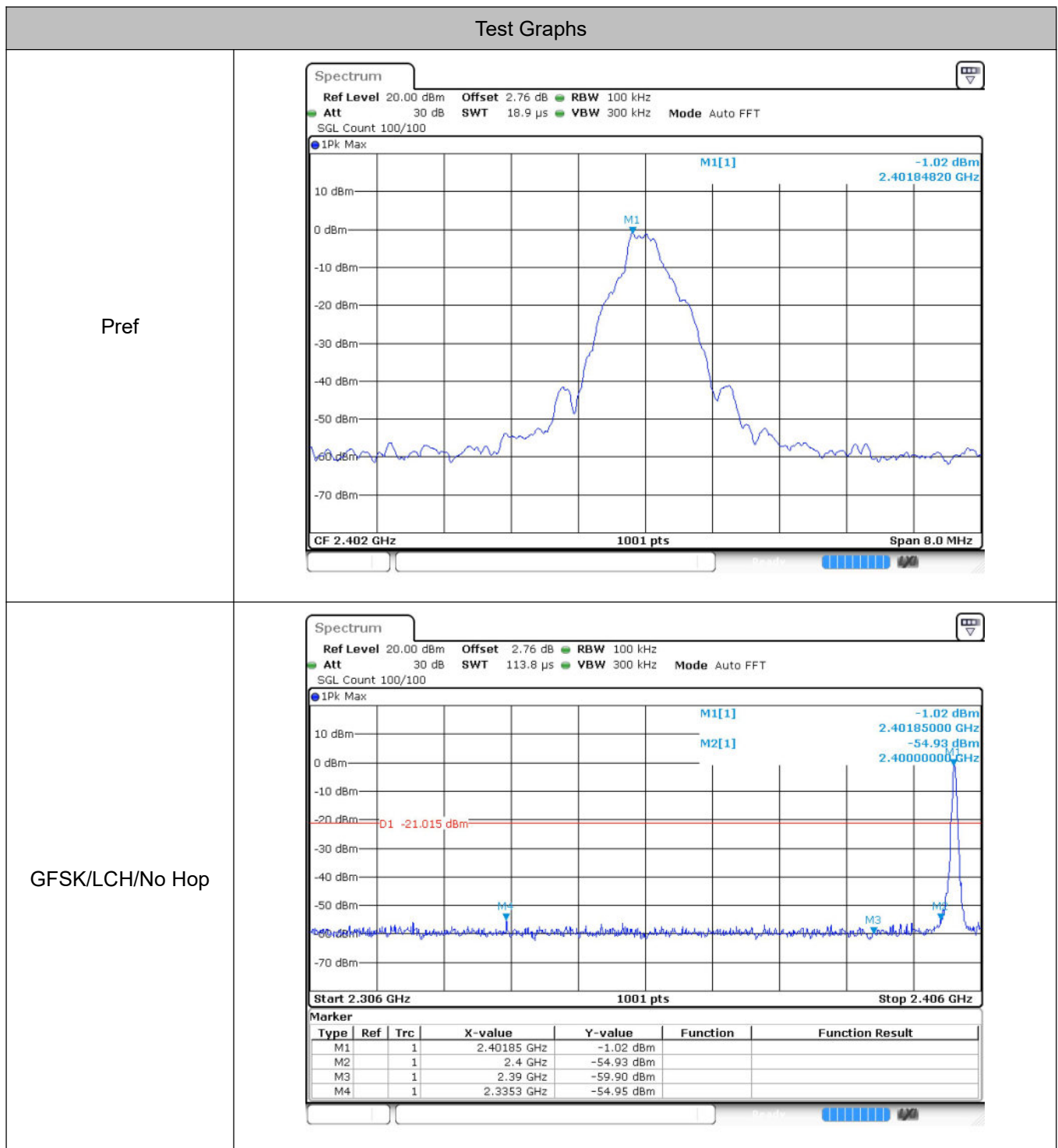


8 Band-edge for RF Conducted Emissions

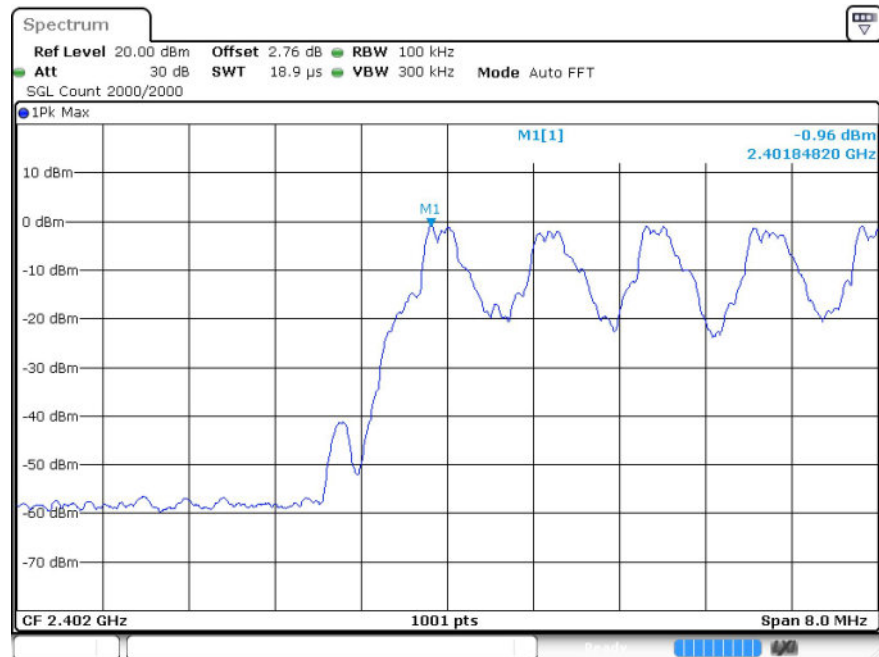
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-53.93	-20	Pass
			On	-54.22	-20	Pass
	HCH	2480	Off	-53.54	-20	Pass
			On	-54.17	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-55.47	-20	Pass
			On	-53.98	-20	Pass
	HCH	2480	Off	-56.81	-20	Pass
			On	-54.14	-20	Pass

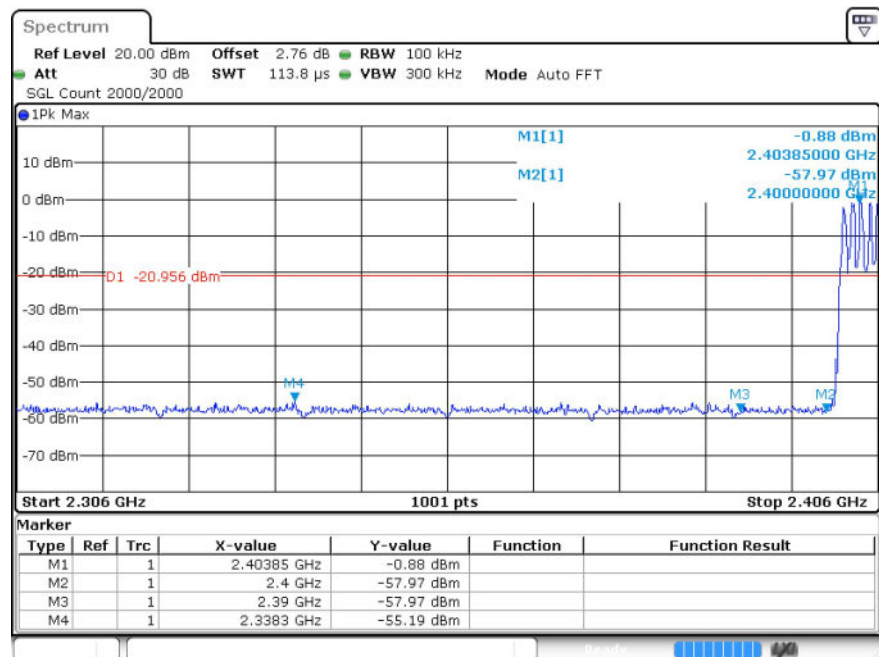
8.2 Test Graphs



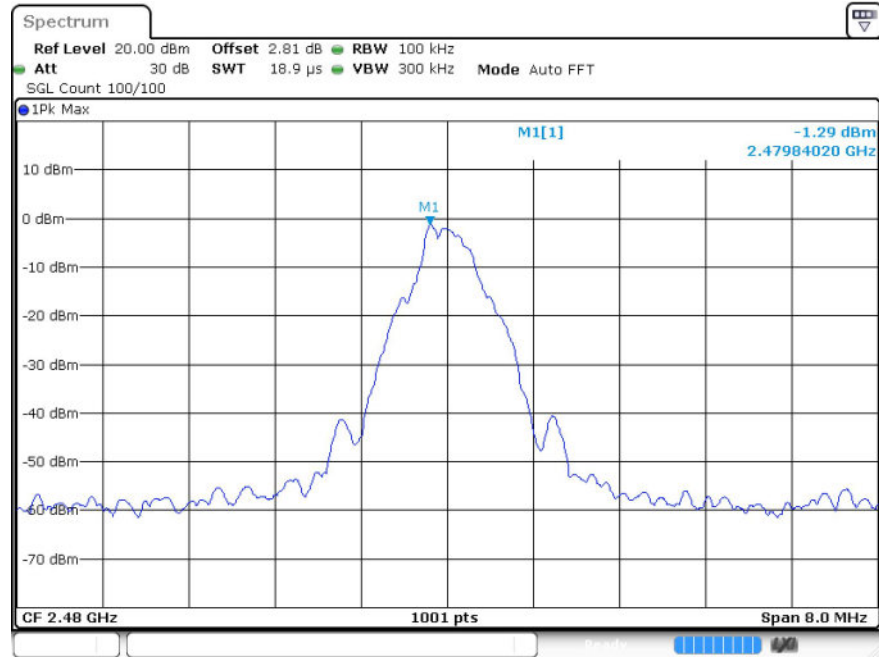
Ref



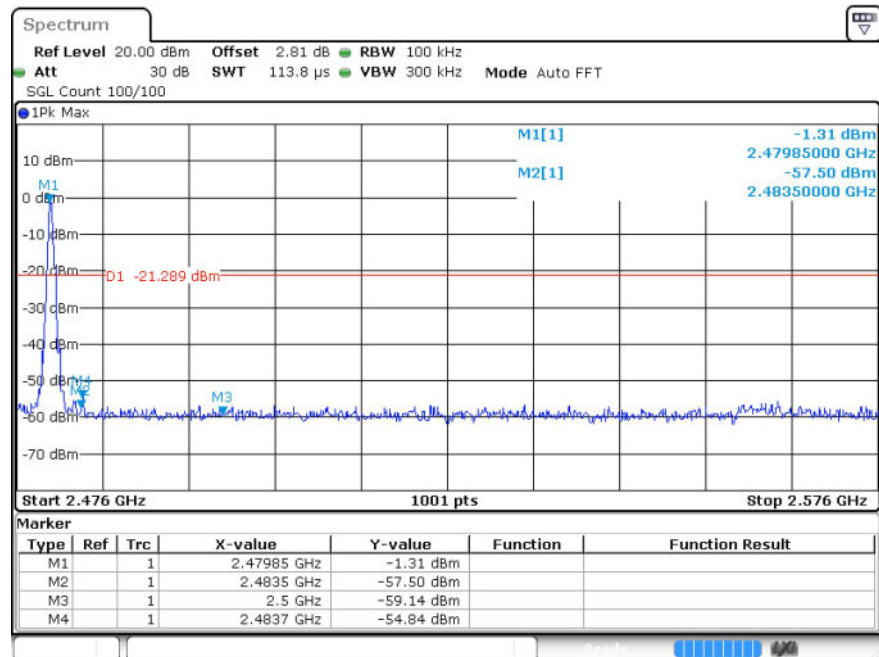
GFSK/LCH/Hop



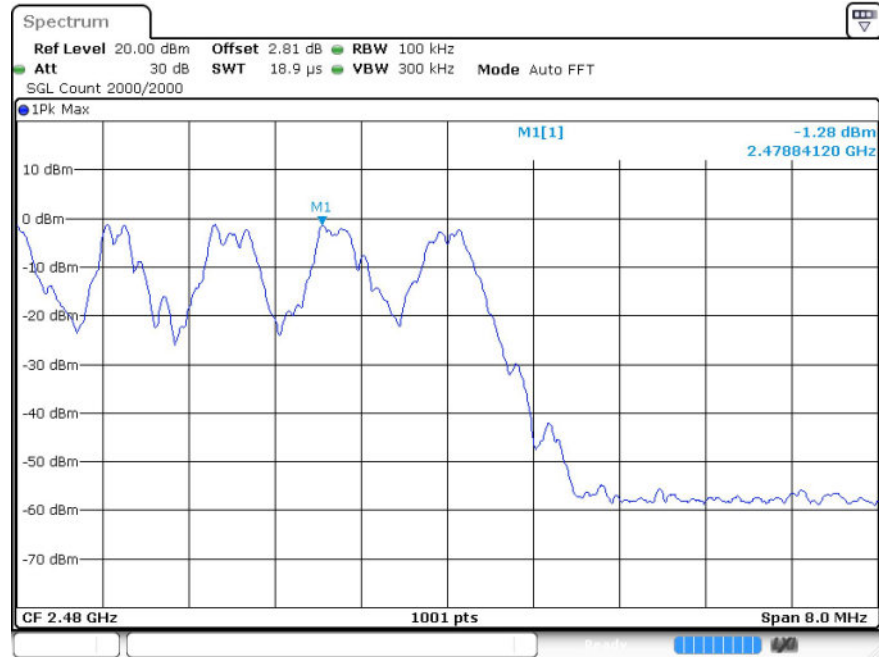
Ref



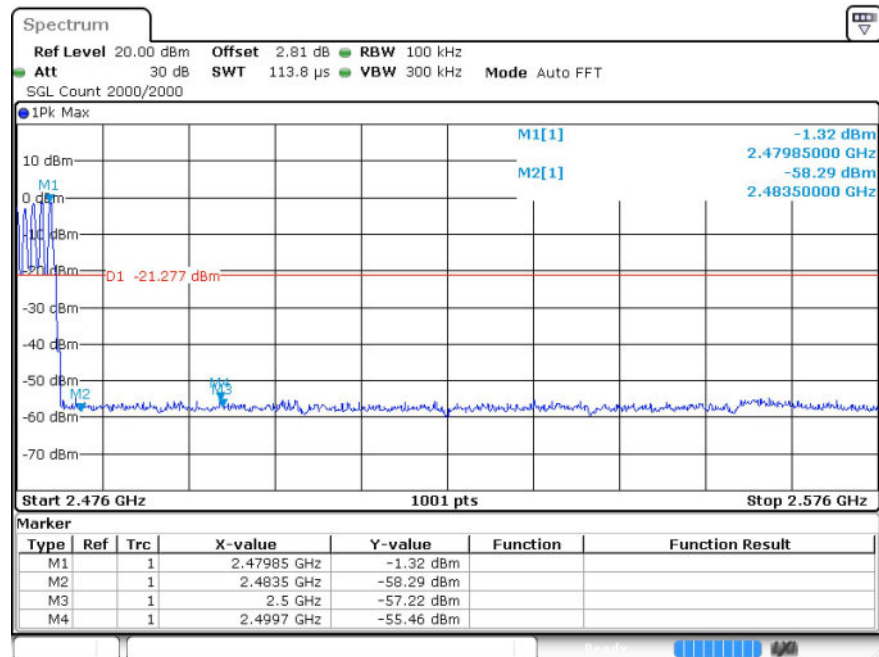
GFSK/HCH/No Hop



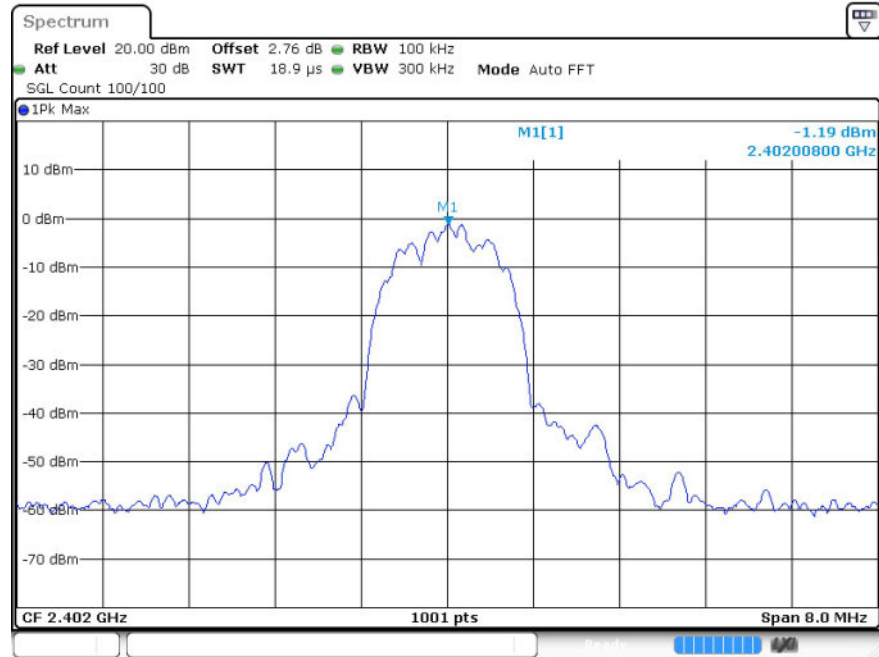
Ref.



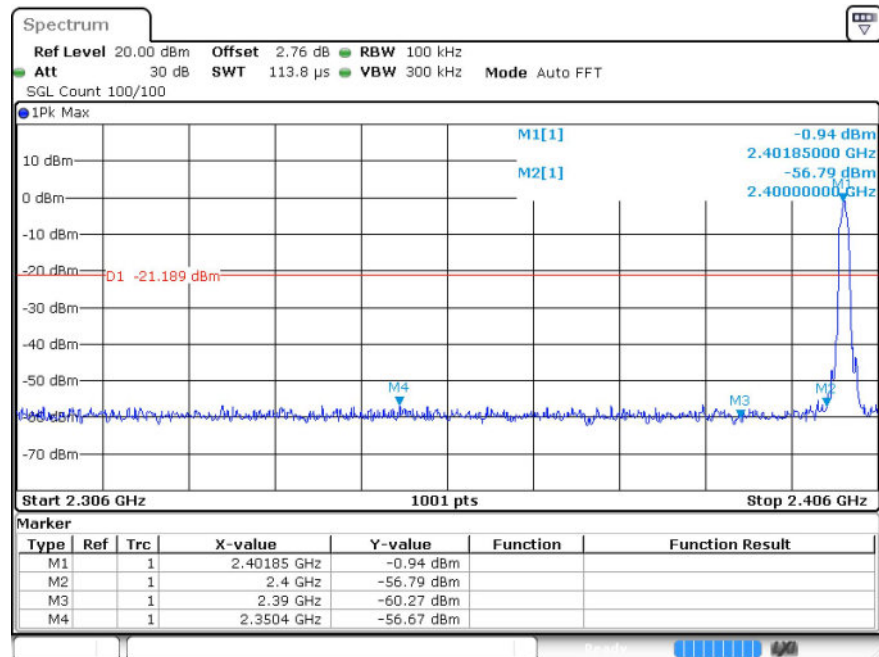
GFSK/HCH/Hop



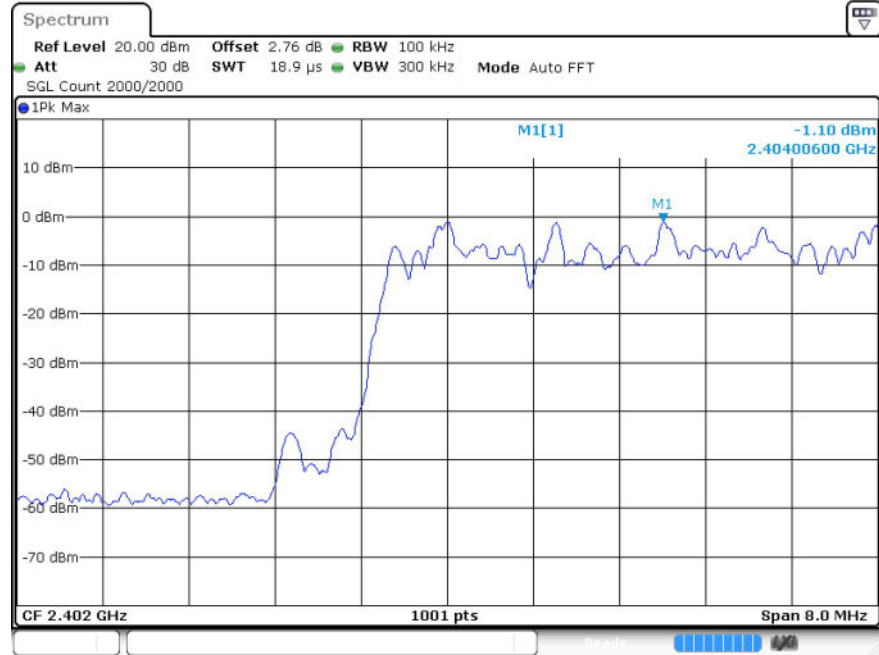
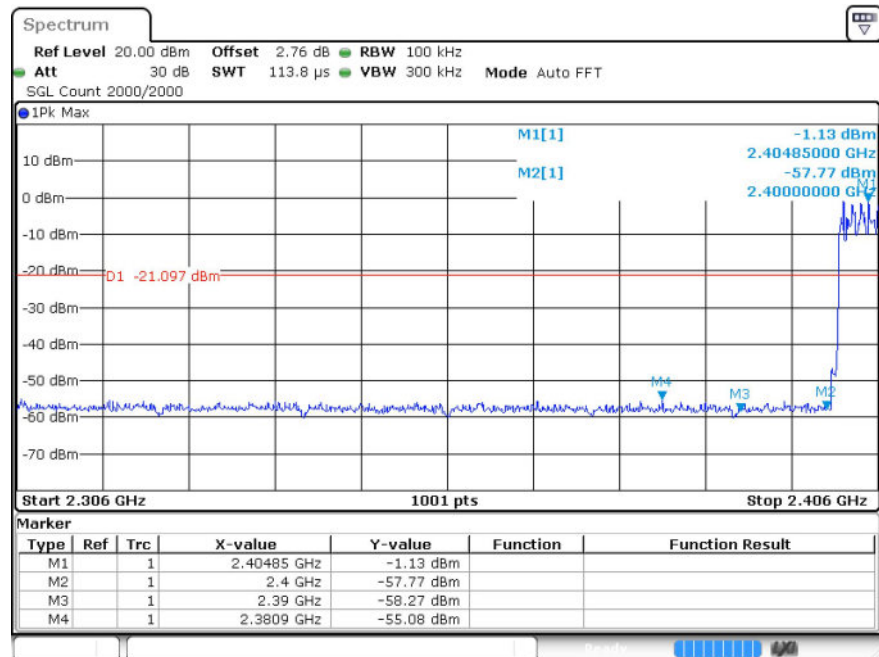
Ref



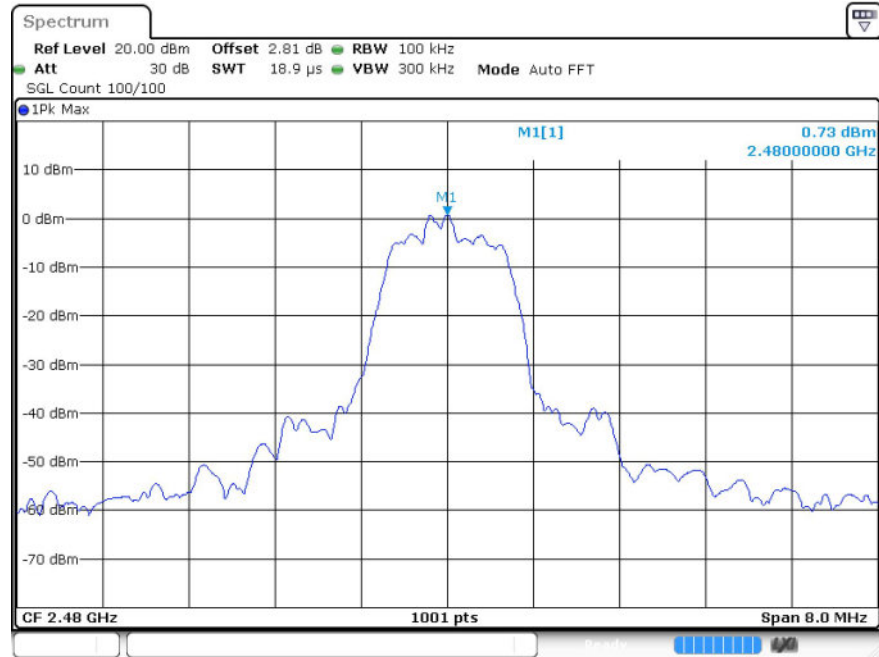
$\pi/4$ DQPSK/LCH/No
Hop



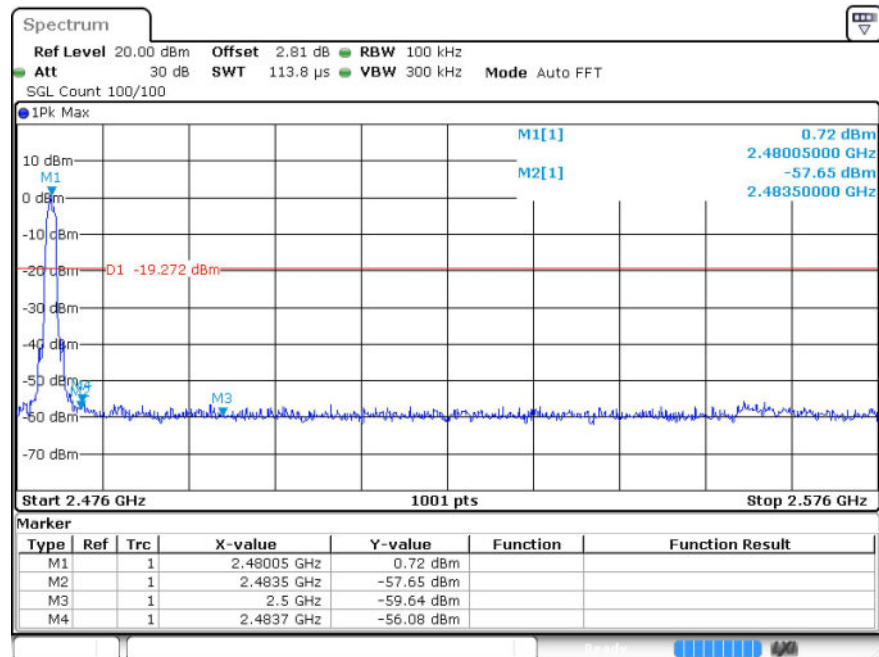
Ref


 $\pi/4$ DQPSK/LCH/Hop


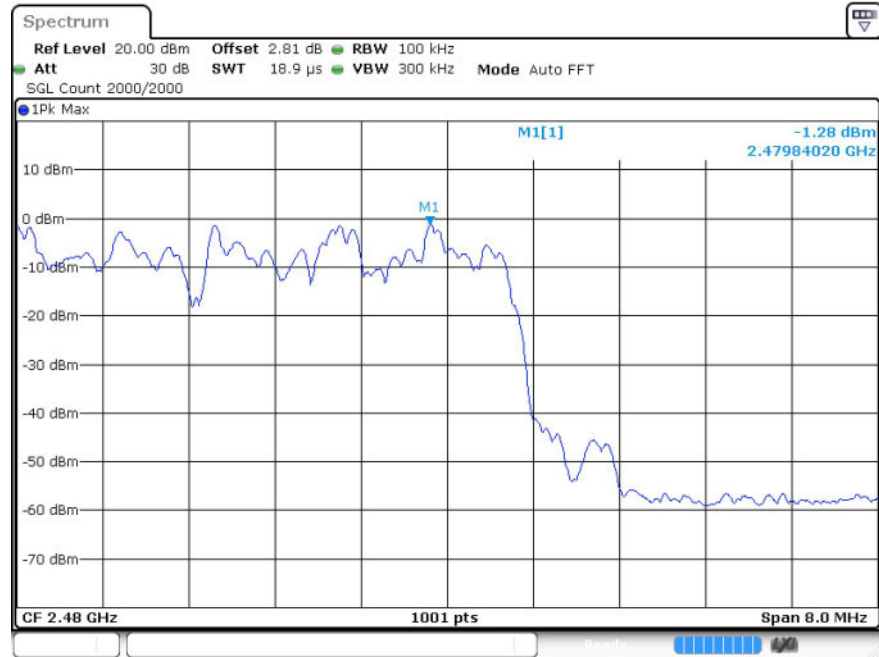
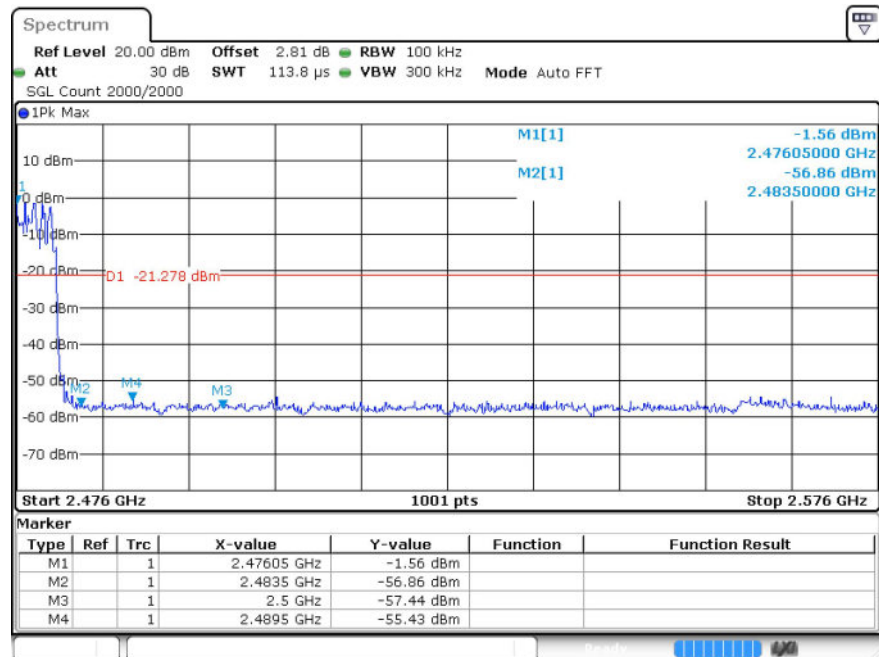
Ref



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



Ref


 $\pi/4$ DQPSK/HCH/Hop


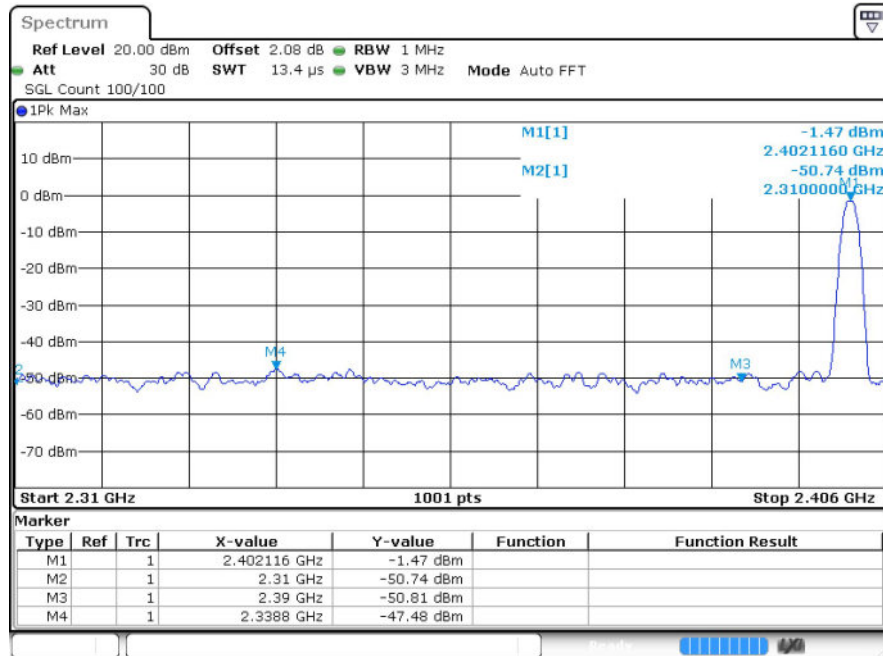
9 Restrict-band band-edge measurements

9.1 Test Result

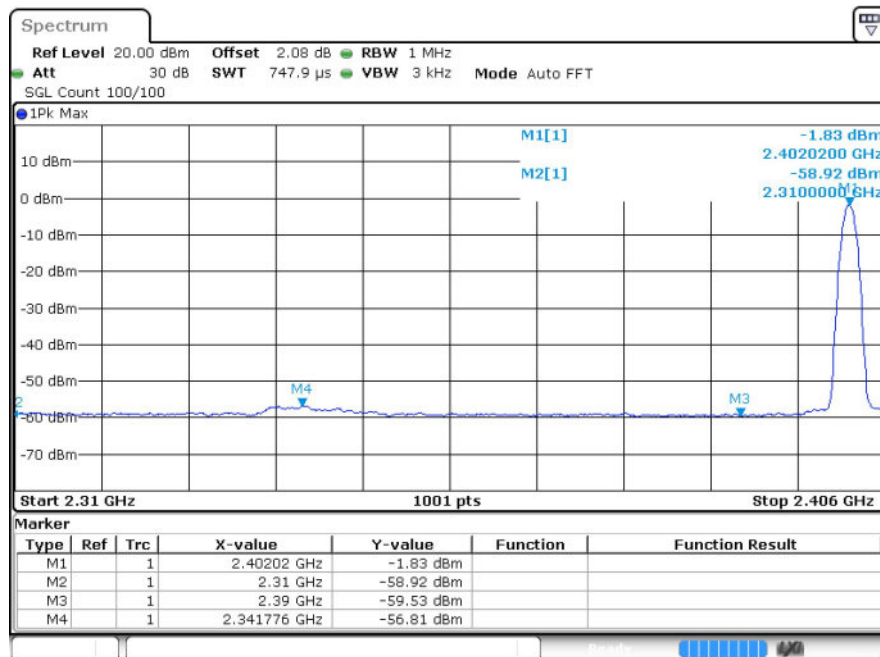
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.73	2	46.53	PEAK	74	Pass
	Off	2310.0	-58.91	2	38.35	AV	54	Pass
	Off	2338.8	-47.47	2	49.79	PEAK	74	Pass
	Off	2341.776	-56.8	2	40.46	AV	54	Pass
	Off	2390.0	-50.81	2	46.45	PEAK	74	Pass
	Off	2390.0	-59.53	2	37.73	AV	54	Pass
	Off	2483.5	-48.45	2	48.81	PEAK	74	Pass
	Off	2483.5	-56.45	2	40.81	AV	54	Pass
	Off	2498.104	-48.18	2	49.08	PEAK	74	Pass
	Off	2483.824	-56.26	2	41	AV	54	Pass
	Off	2500.0	-50.43	2	46.83	PEAK	74	Pass
	Off	2500.0	-58.81	2	38.45	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48.3	2	48.96	PEAK	74	Pass
	Off	2310.0	-58.6	2	38.66	AV	54	Pass
	Off	2339.184	-47.96	2	49.3	PEAK	74	Pass
	Off	2338.992	-57.07	2	40.19	AV	54	Pass
	Off	2390.0	-52.36	2	44.9	PEAK	74	Pass
	Off	2390.0	-59.21	2	38.05	AV	54	Pass
	Off	2483.5	-50.12	2	47.14	PEAK	74	Pass
	Off	2483.5	-57.11	2	40.15	AV	54	Pass
	Off	2497.168	-47.38	2	49.88	PEAK	74	Pass
	Off	2483.584	-57.06	2	40.2	AV	54	Pass
	Off	2500.0	-51.3	2	45.96	PEAK	74	Pass
	Off	2500.0	-58.65	2	38.61	AV	54	Pass

9.2 Test Graphs

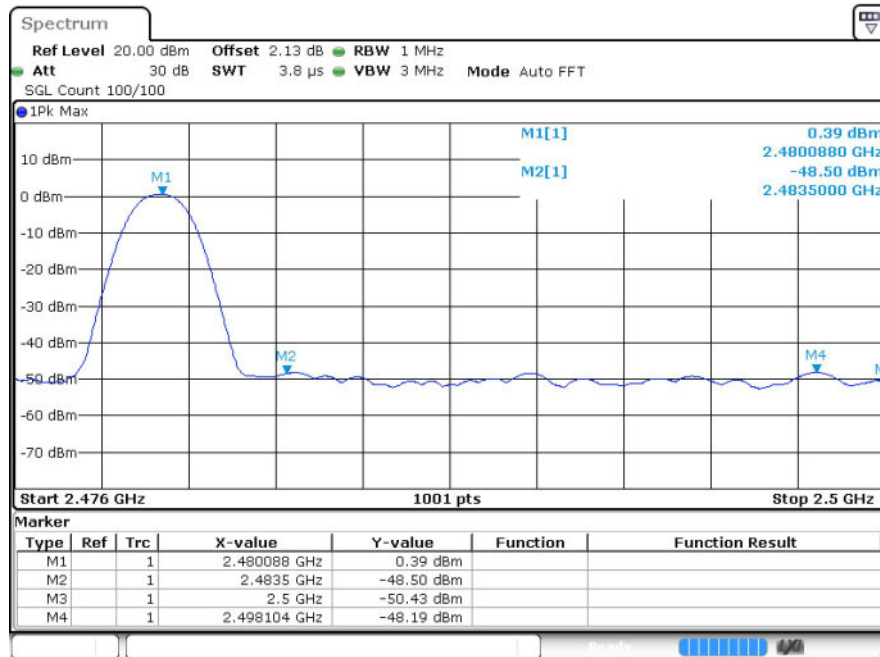
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



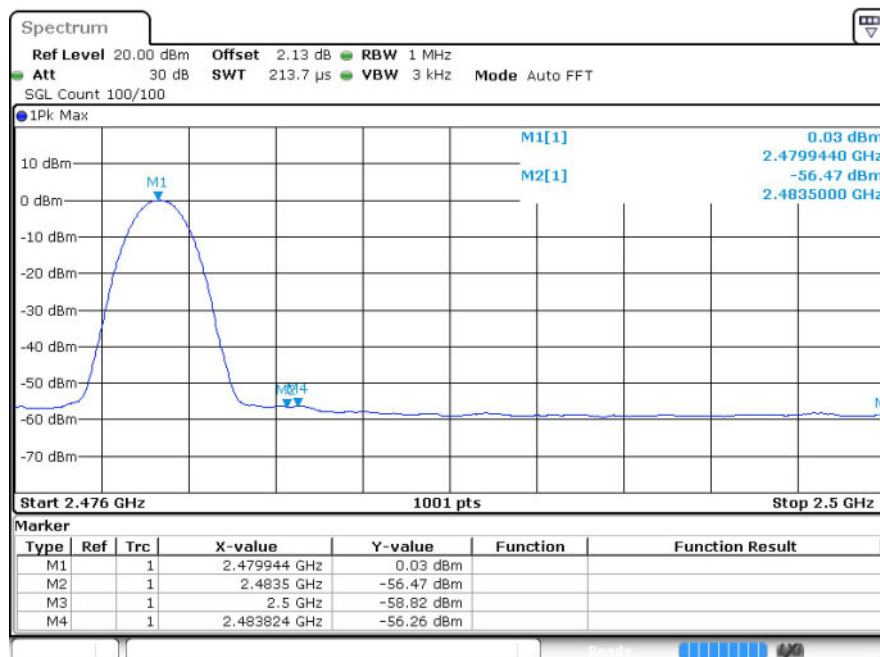
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



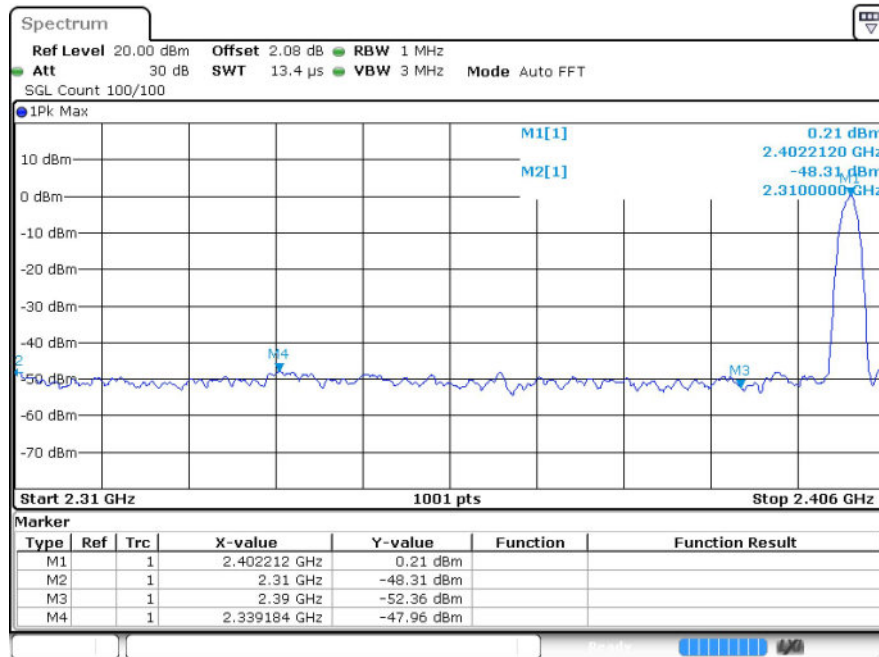
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



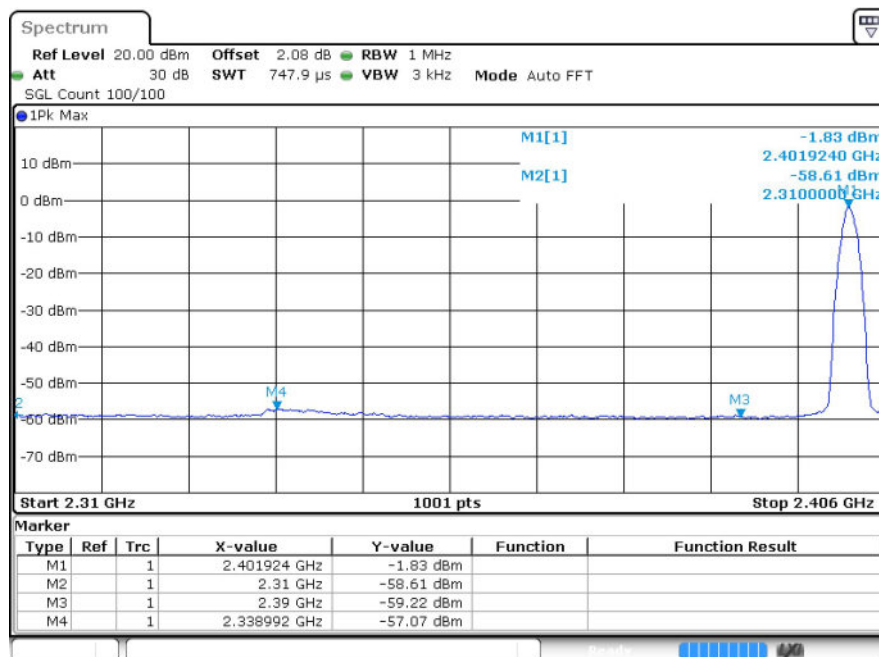
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



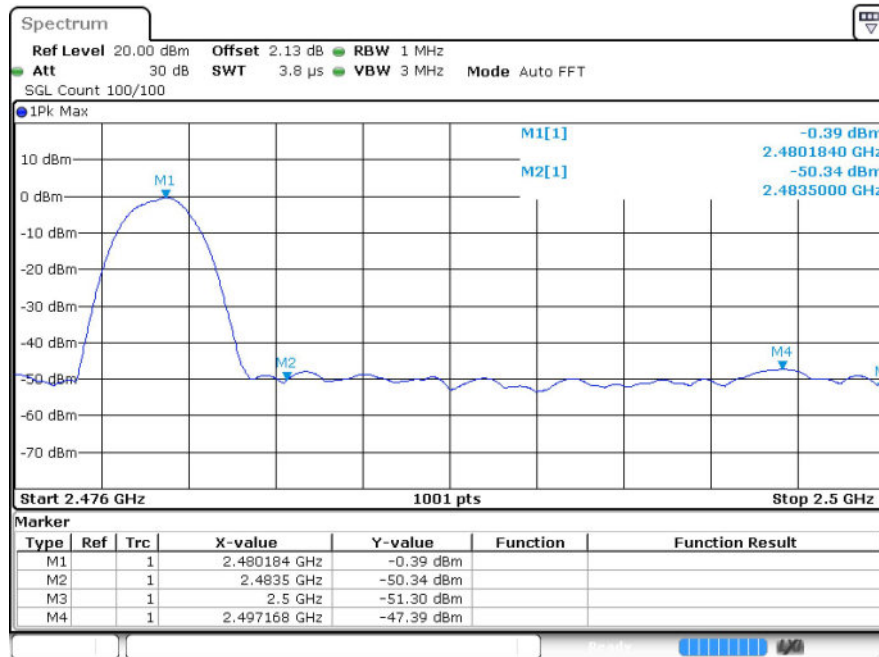
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



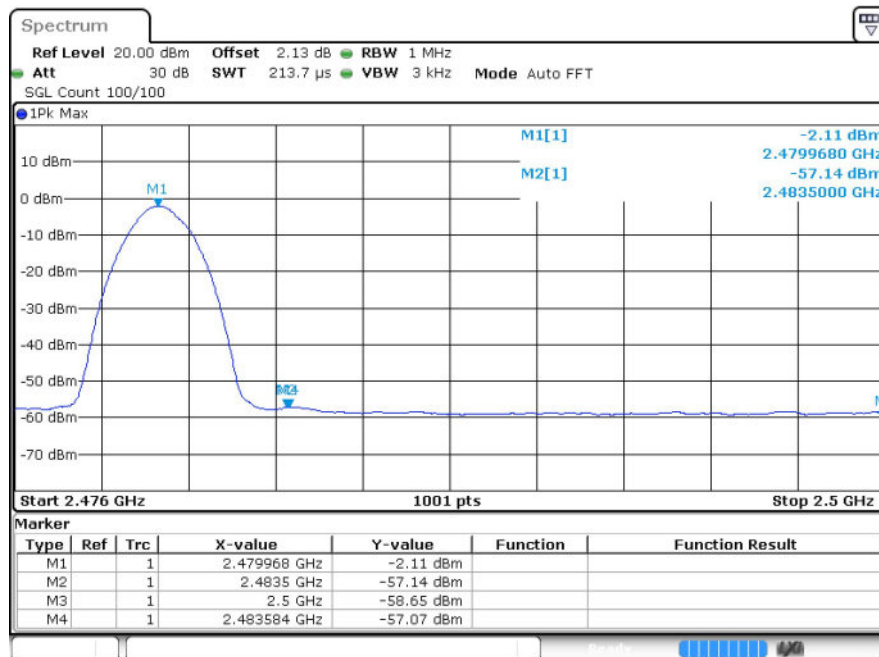
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---