



Appendix A

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

Product Name: Wireless Headphones

Trade Mark: N/A

Test Model: XT16

Environmental Conditions

Temperature:	24.5℃
Relative Humidity:	52.3%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



Contents

Page

COVER PAGE

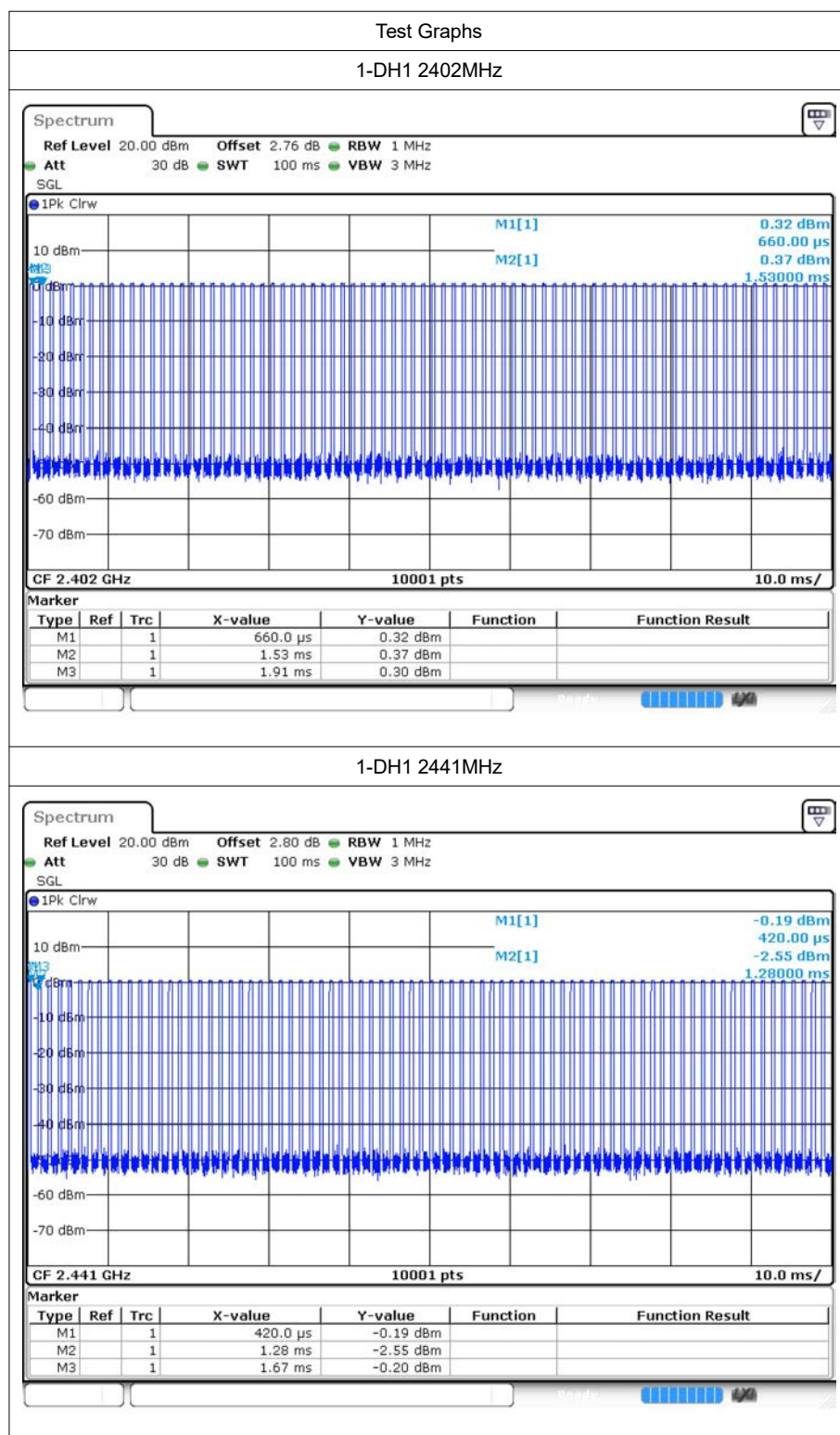
1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Peak Output Power	7
2.1	Test Result	7
2.2	Test Graphs	8
3	20dB Bandwidth	11
3.1	Test Result	11
3.2	Test Graphs	12
4	Carrier Frequency Separation	15
4.1	Test Result	15
4.2	Test Graphs	16
5	Hopping Channel Number	17
5.1	Test Result	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

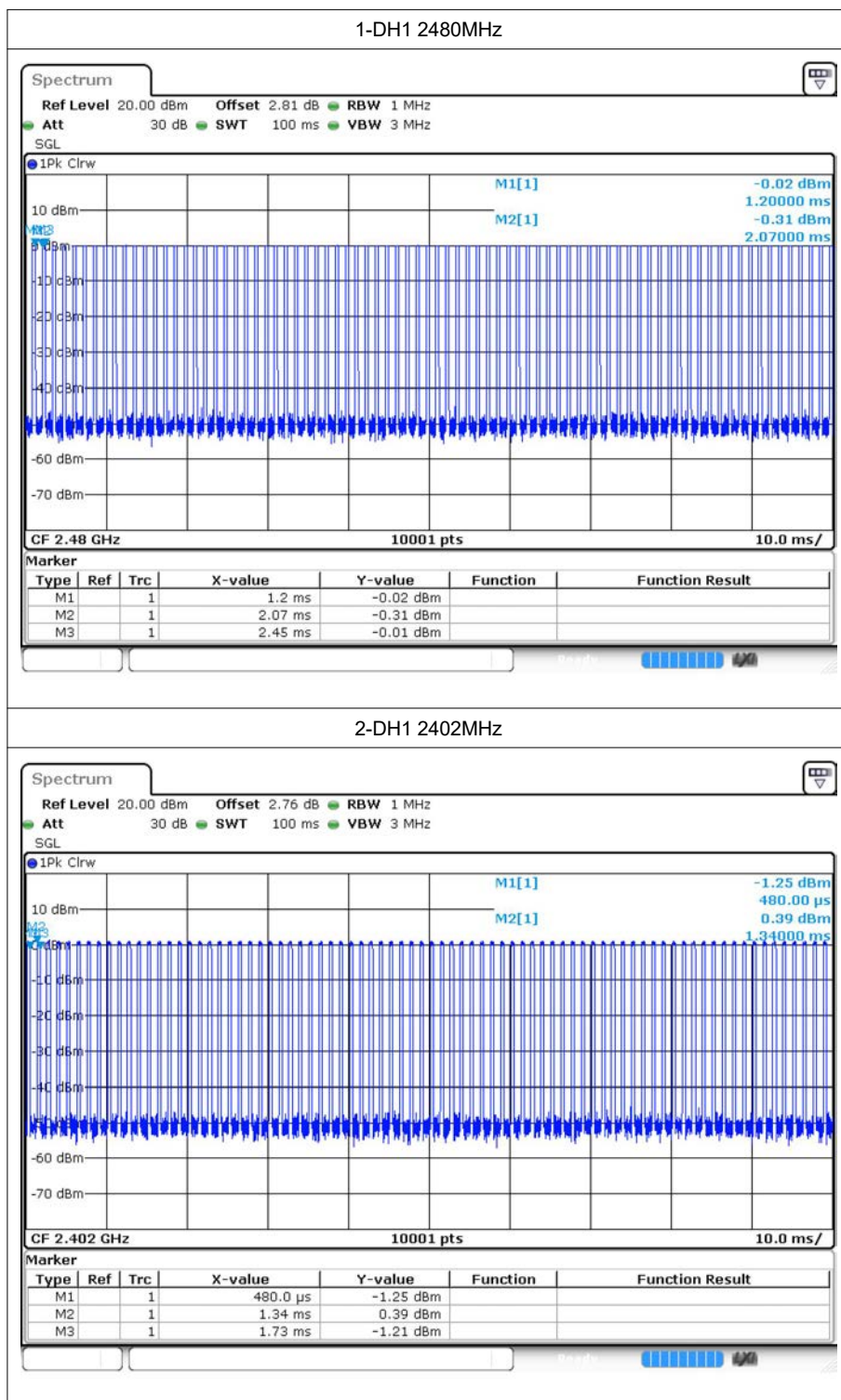
1 Duty Cycle

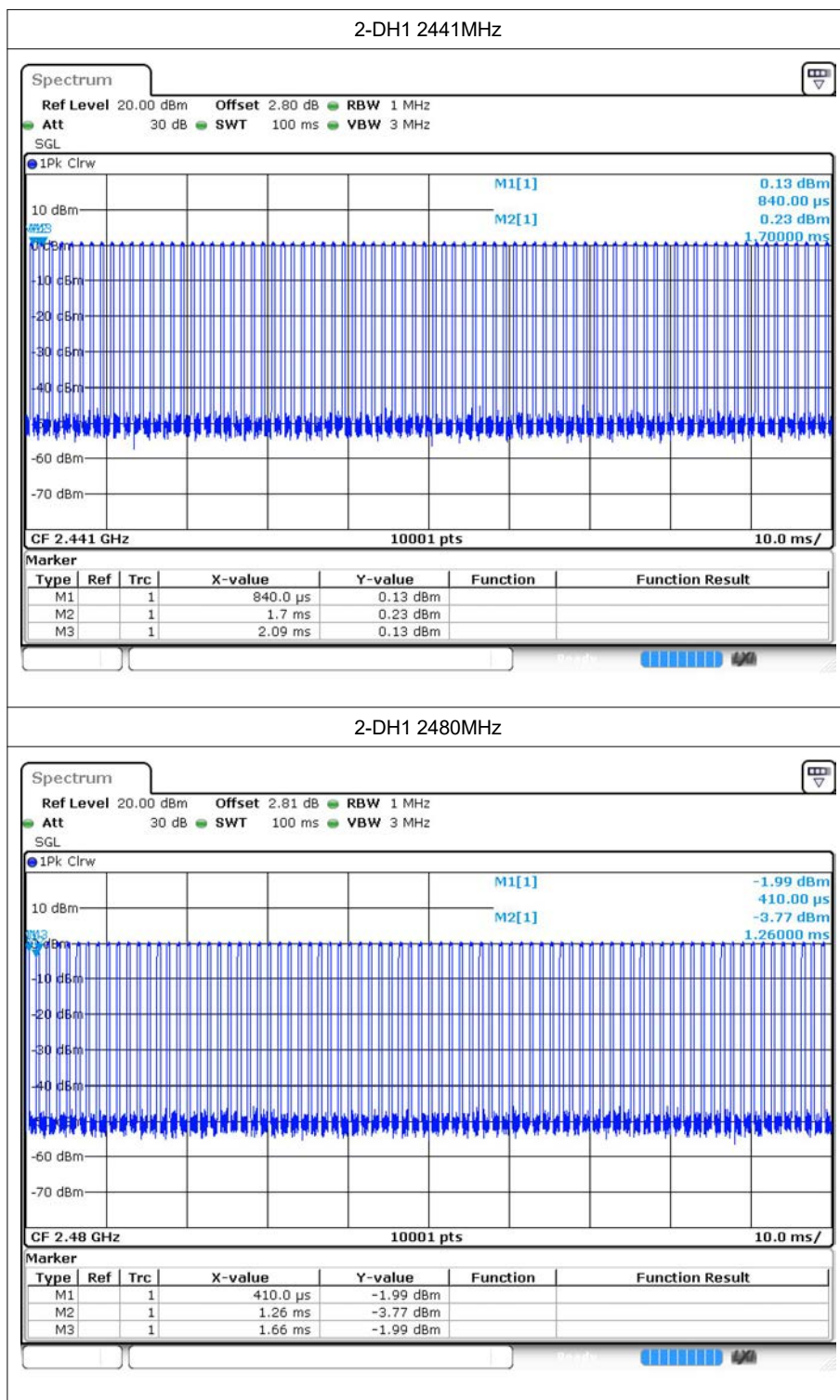
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.2	5.06	2.63
1-DH1	2441	32	4.95	2.56
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	32.8	4.84	2.5

1.2 Test Graphs





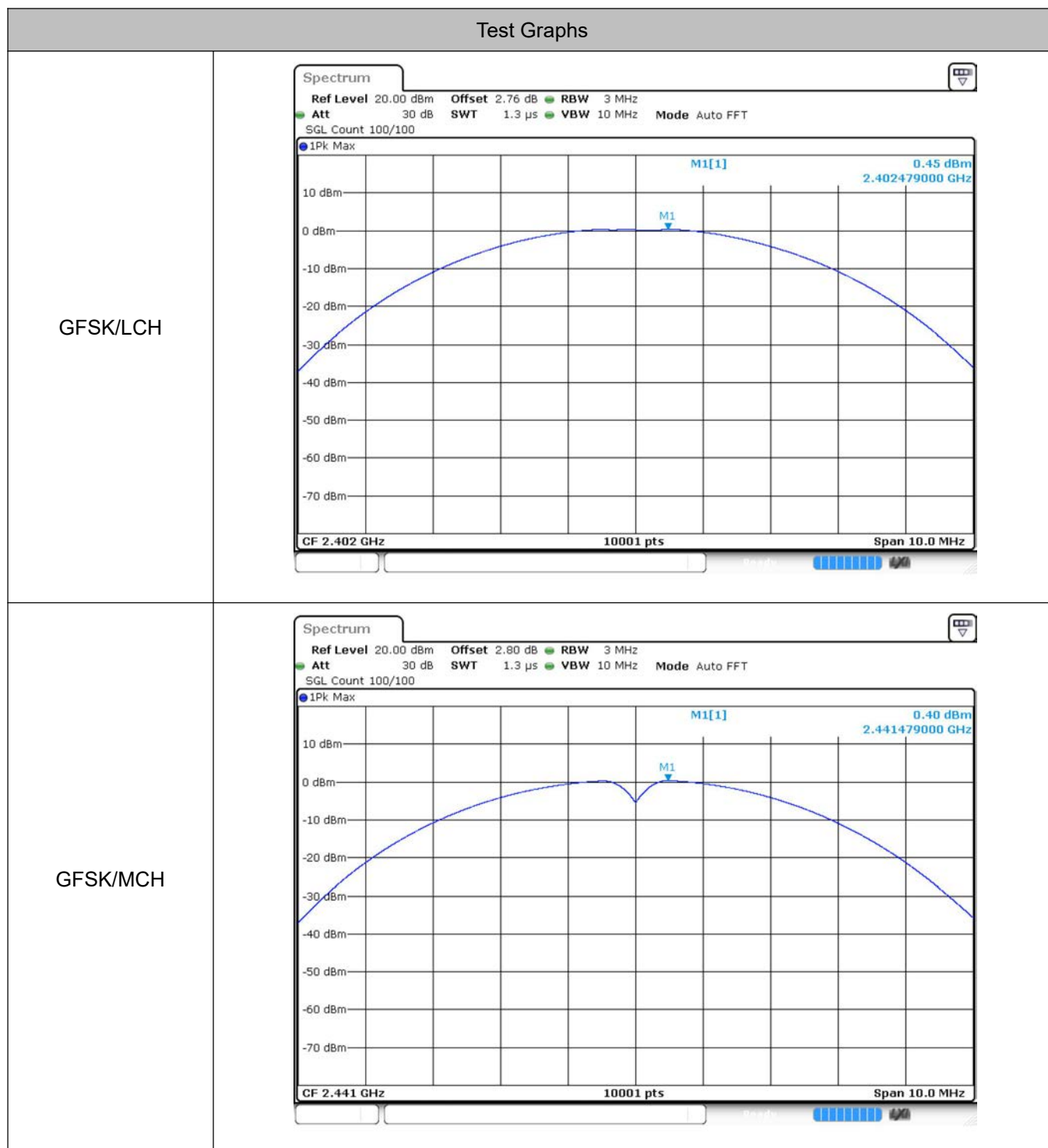


2 Maximum Conducted Peak Output Power

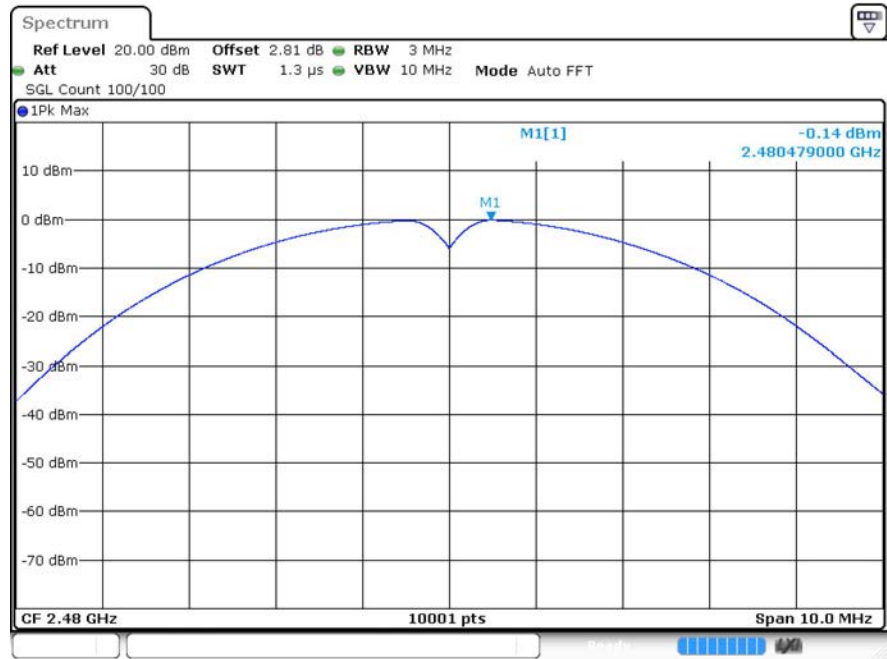
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.45	21	Pass
	MCH	0.4	21	Pass
	HCH	-0.14	21	Pass
$\pi/4$ DQPSK	LCH	1	21	Pass
	MCH	1.15	21	Pass
	HCH	0.04	21	Pass

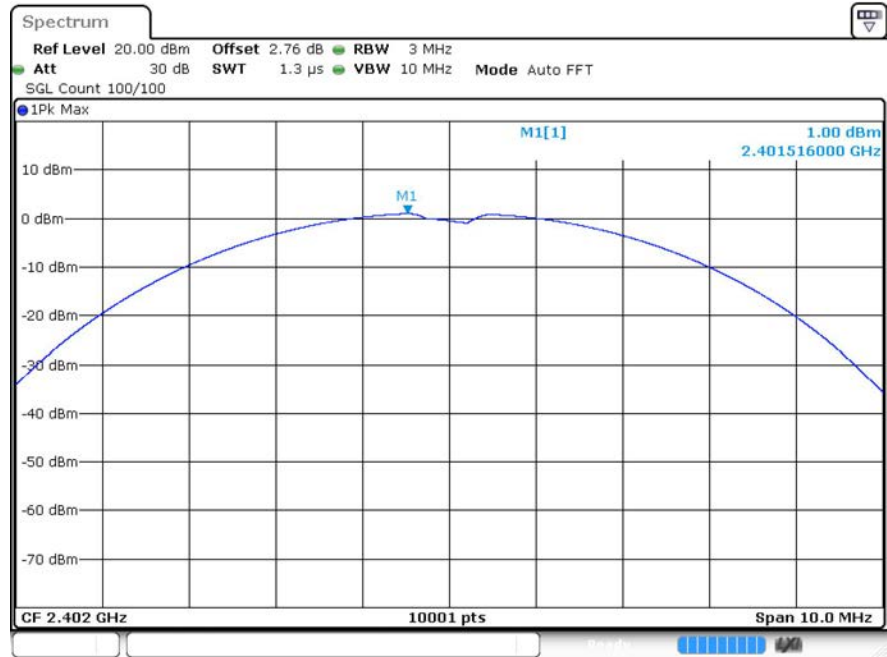
2.2 Test Graphs

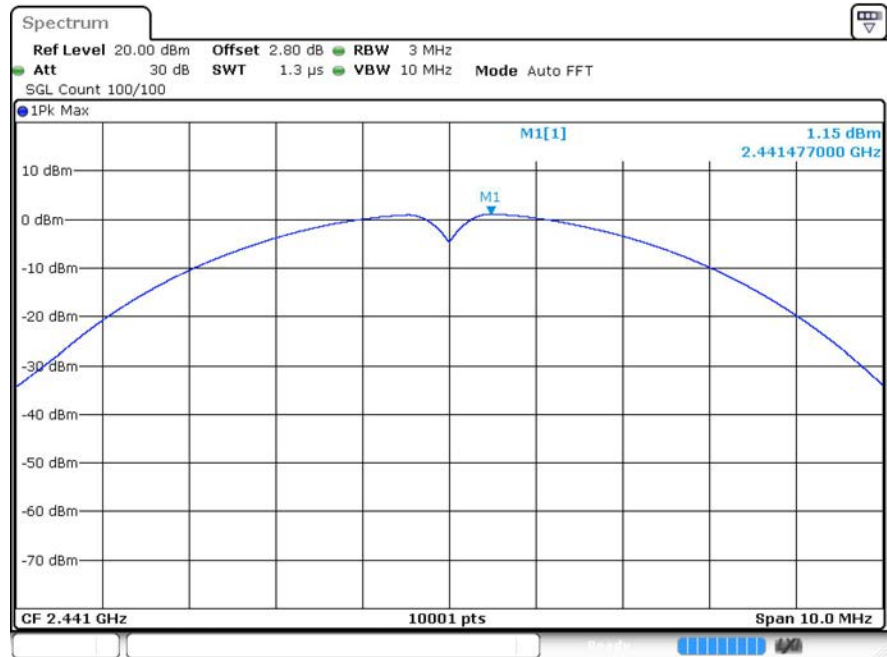
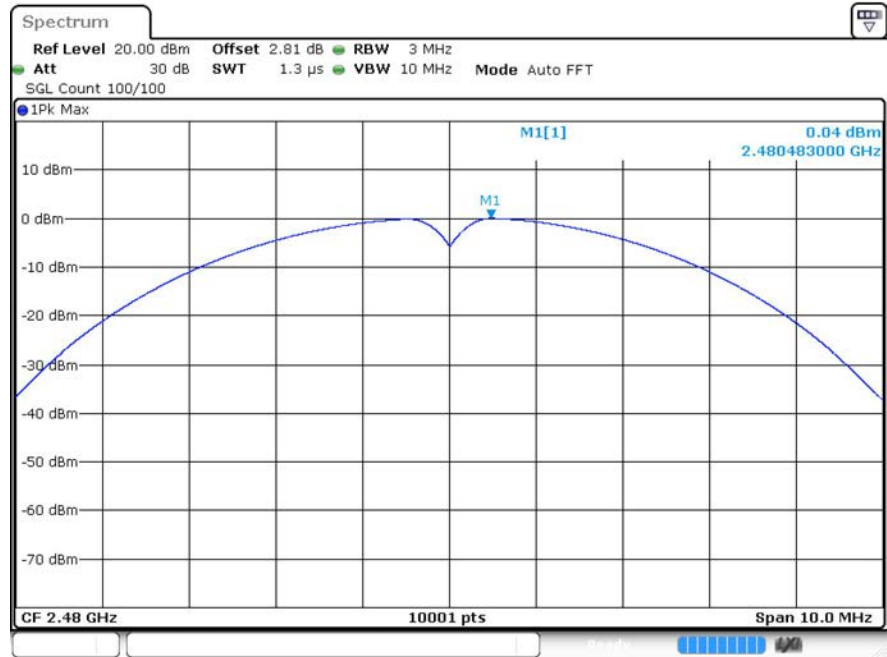


GFSK/HCH



$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


3 20dB Bandwidth

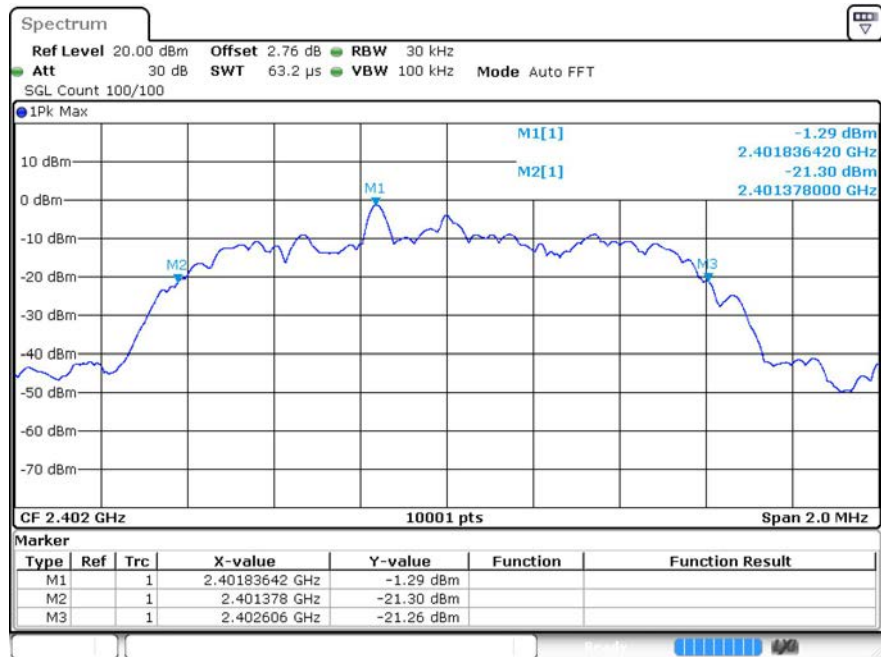
3.1 Test Result

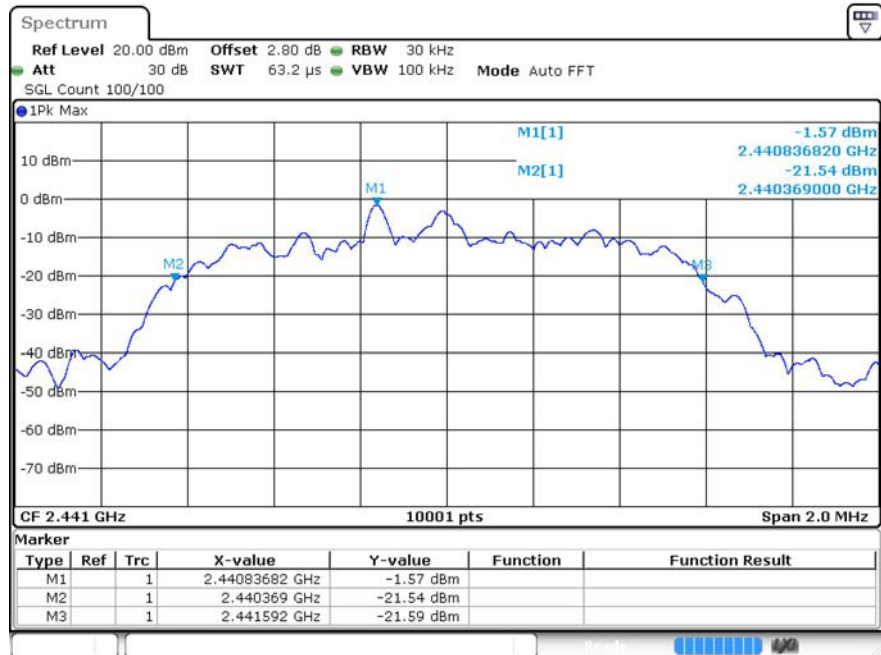
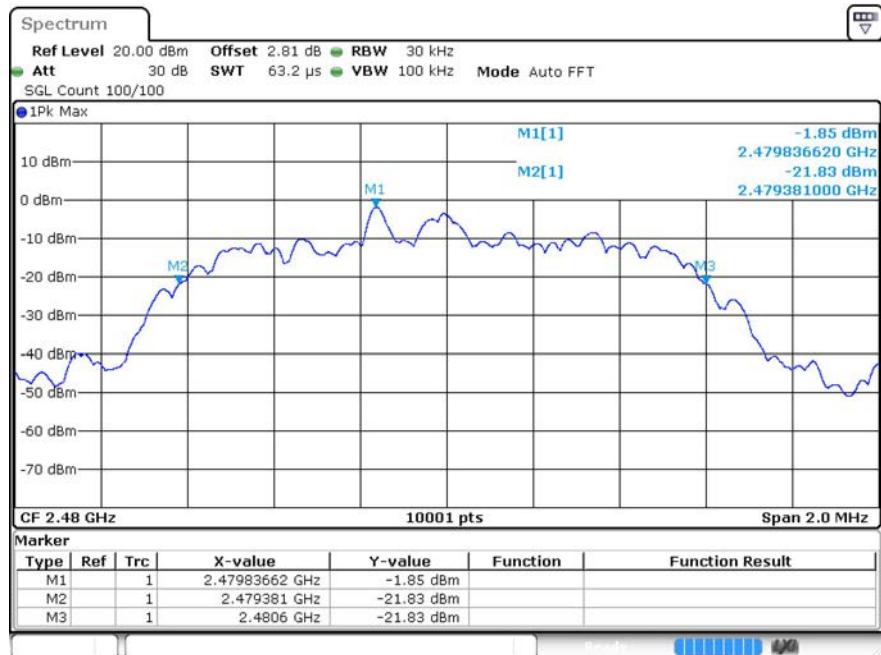
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.831	Not Specified	Pass
	MCH	0.837	Not Specified	Pass
	HCH	0.88	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.228	Not Specified	Pass
	MCH	1.223	Not Specified	Pass
	HCH	1.219	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


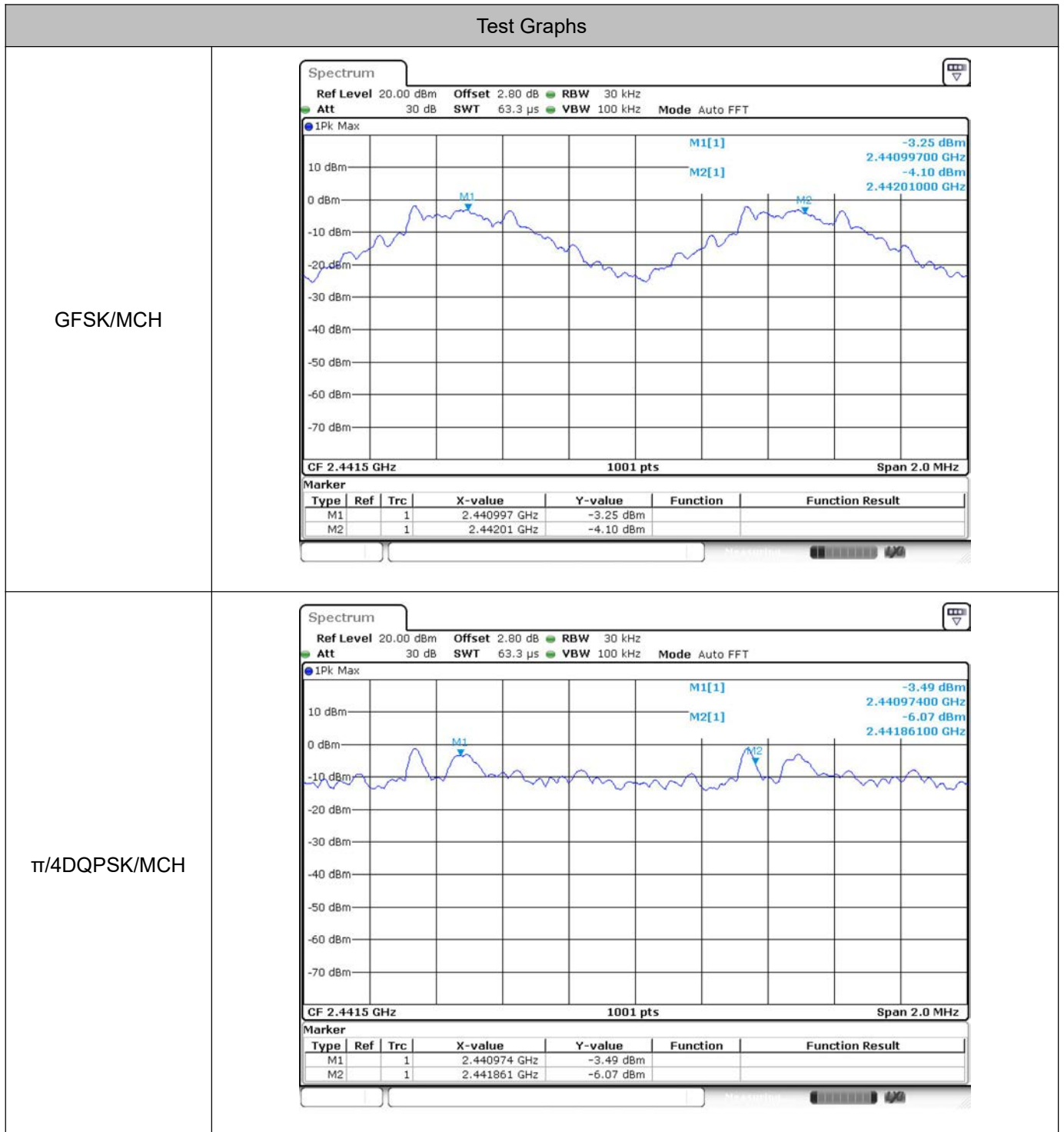
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.013	0.558	Pass
$\pi/4$ DQPSK	MCH	0.887	0.815	Pass

4.2 Test Graphs

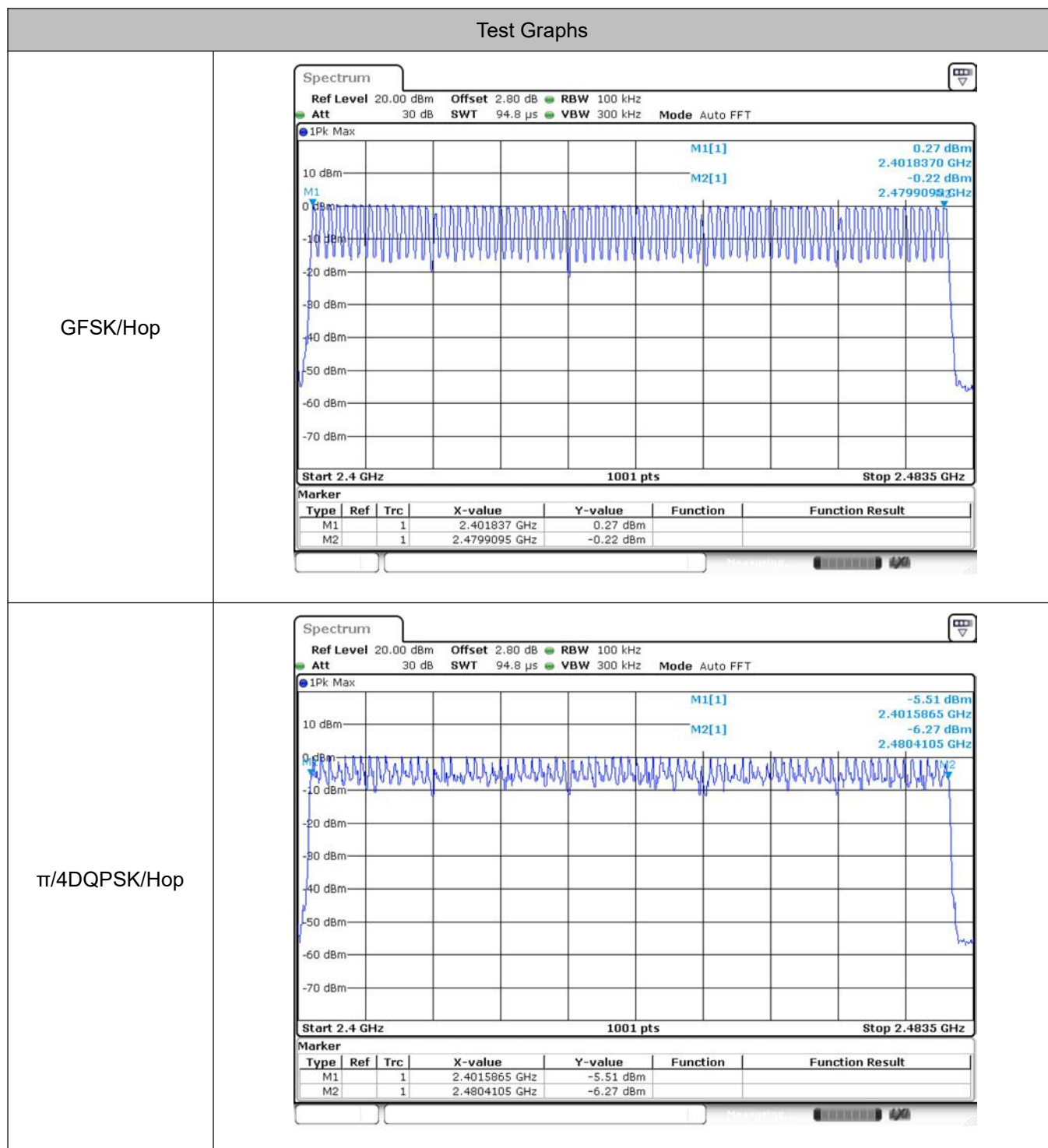


5 Hopping Channel Number

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

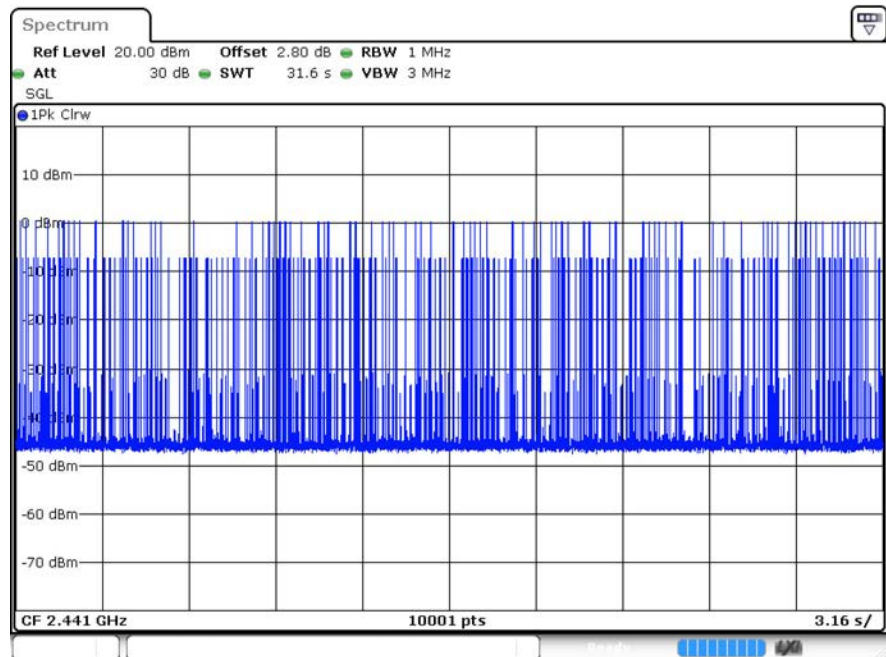
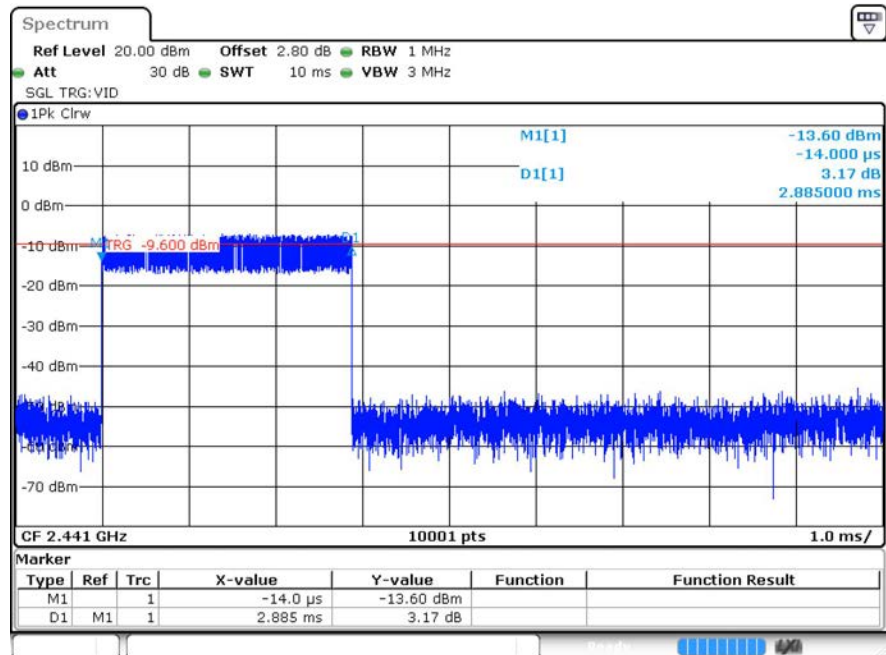
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.885	104	300.04	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.89	104	300.56	0.4	Pass

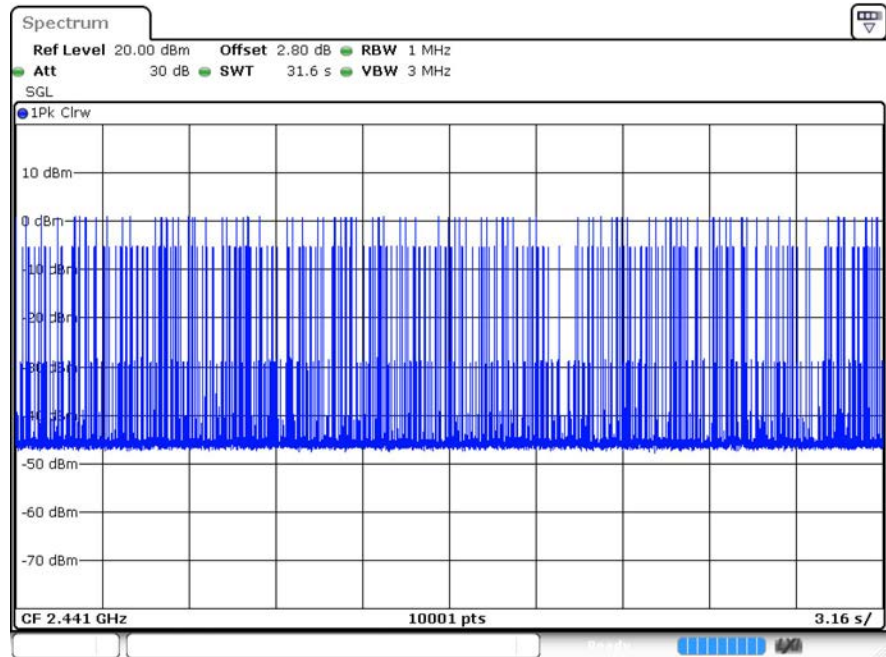
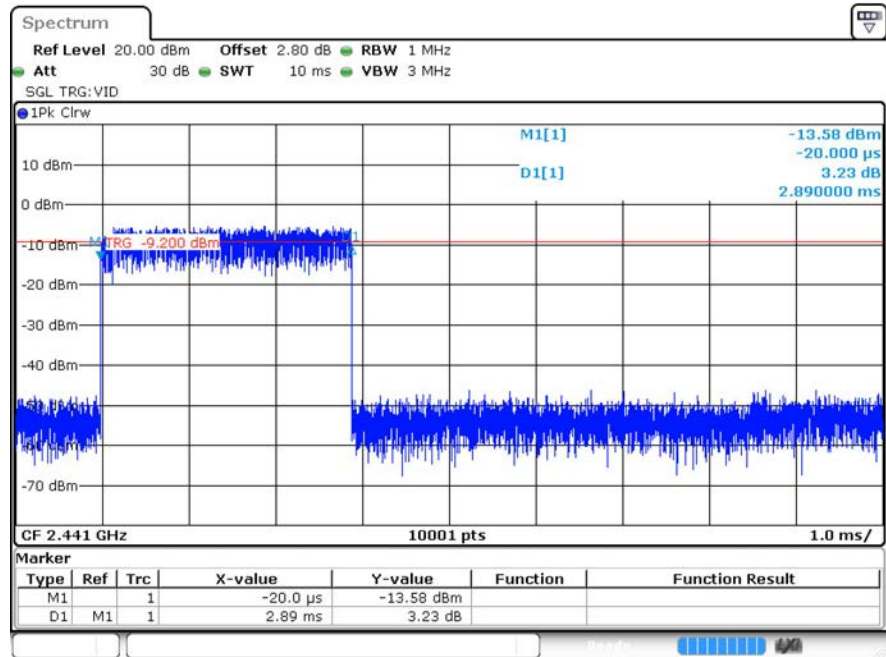
6.2 Test Graphs

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	-35.65	-20	Pass
	MCH	-35.29	-20	Pass
	HCH	-31.61	-20	Pass
$\pi/4$ DQPSK	LCH	-36.13	-20	Pass
	MCH	-34.82	-20	Pass
	HCH	-31.1	-20	Pass

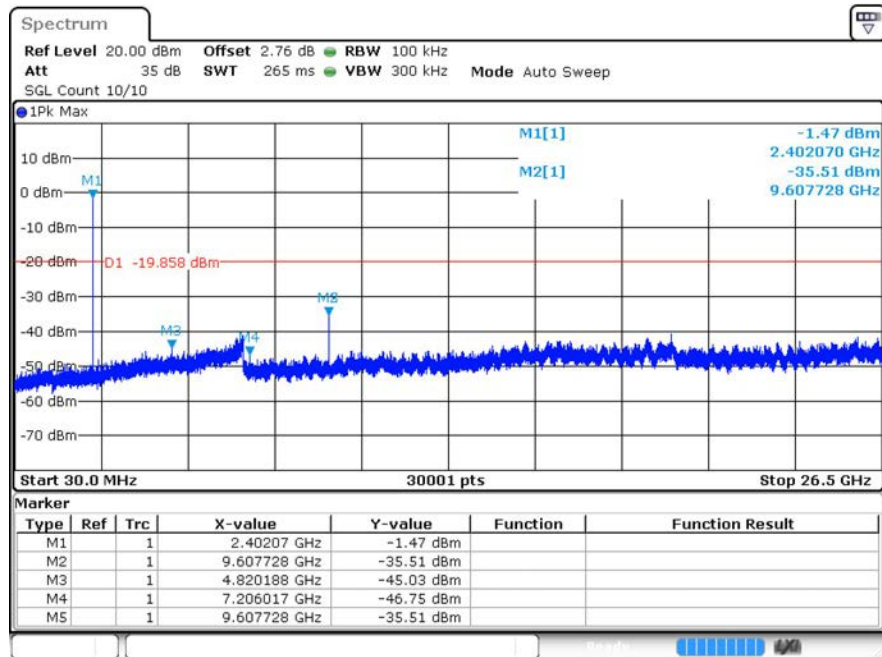
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

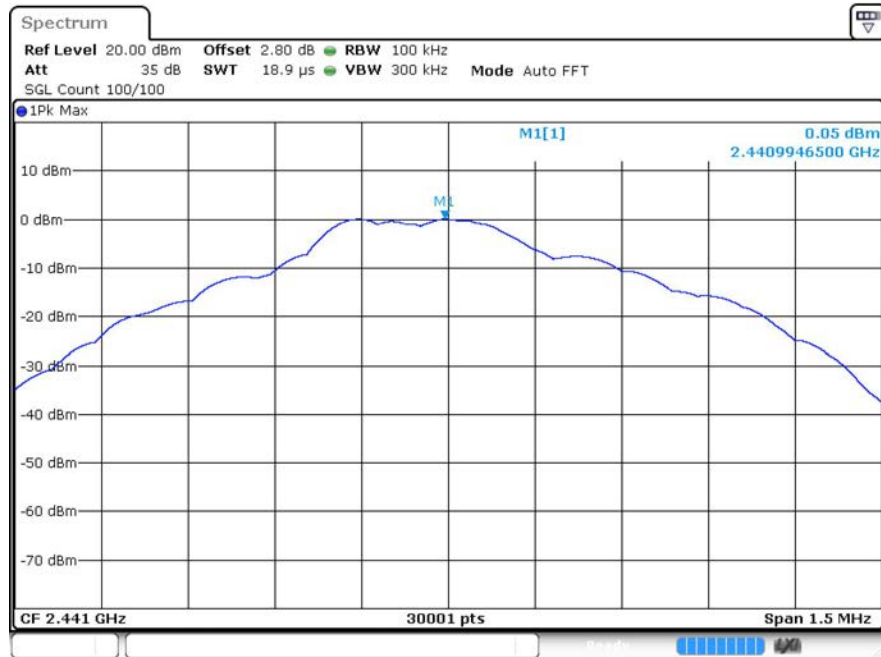


Puw

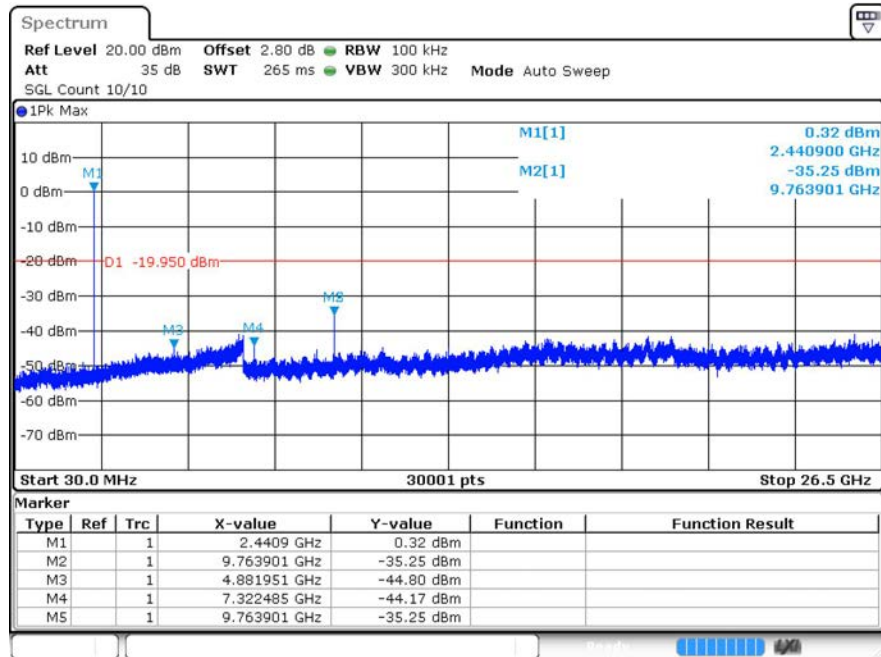


GFSK_MCH_Graphs

Pref



Puw

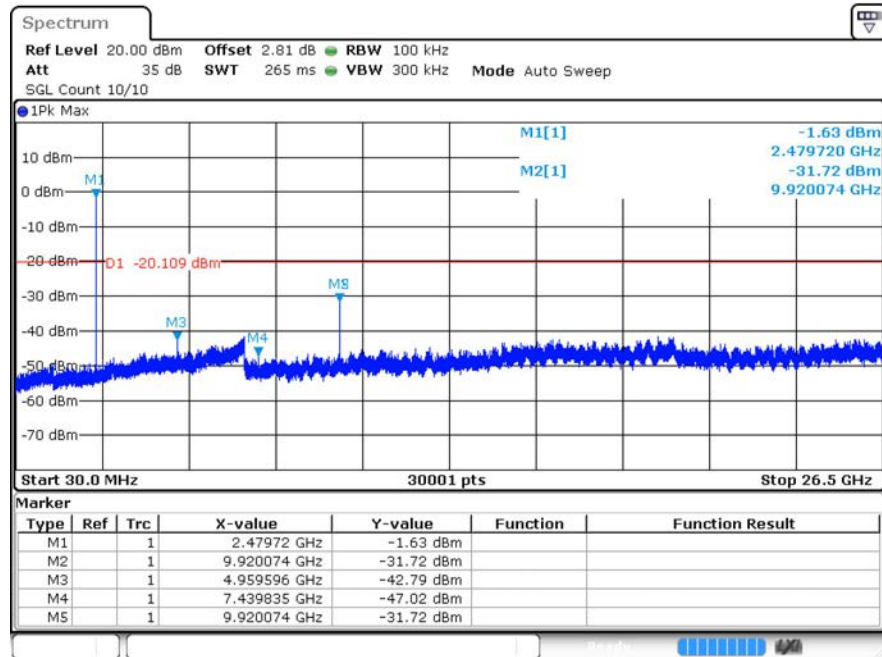


GFSK_HCH_Graphs

Pref

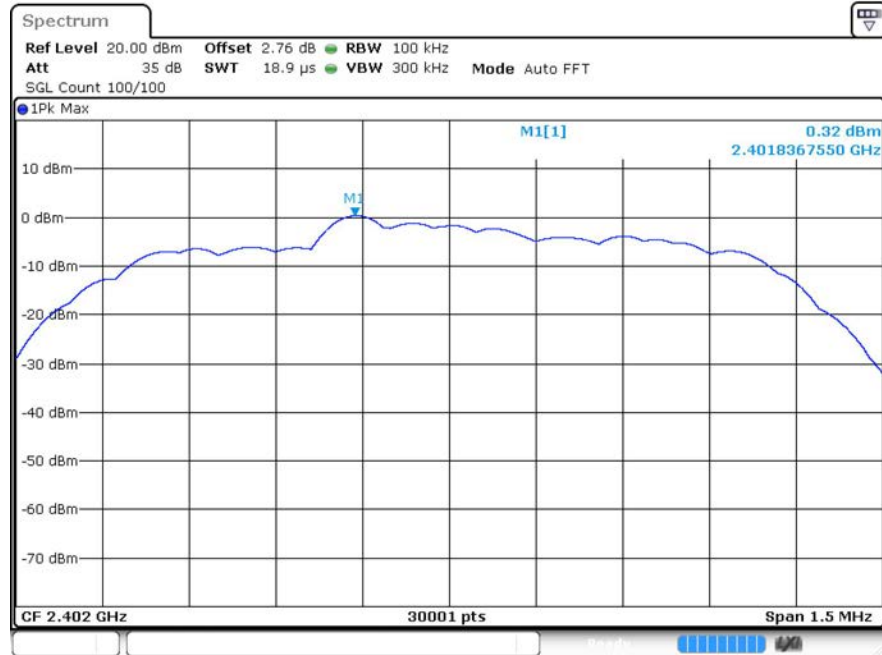


Puw

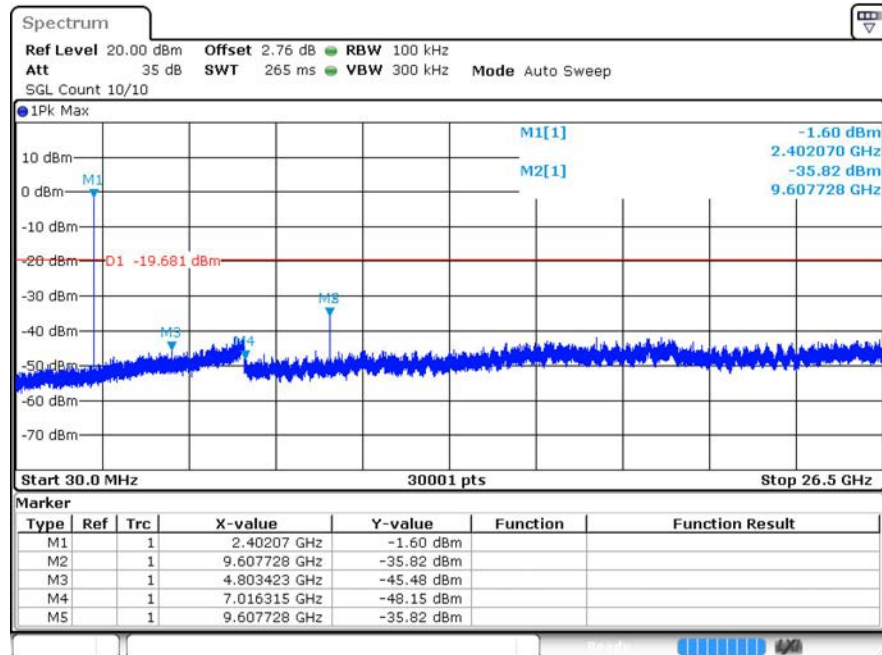


$\pi/4$ DQPSK_LCH_Graphs

Pref

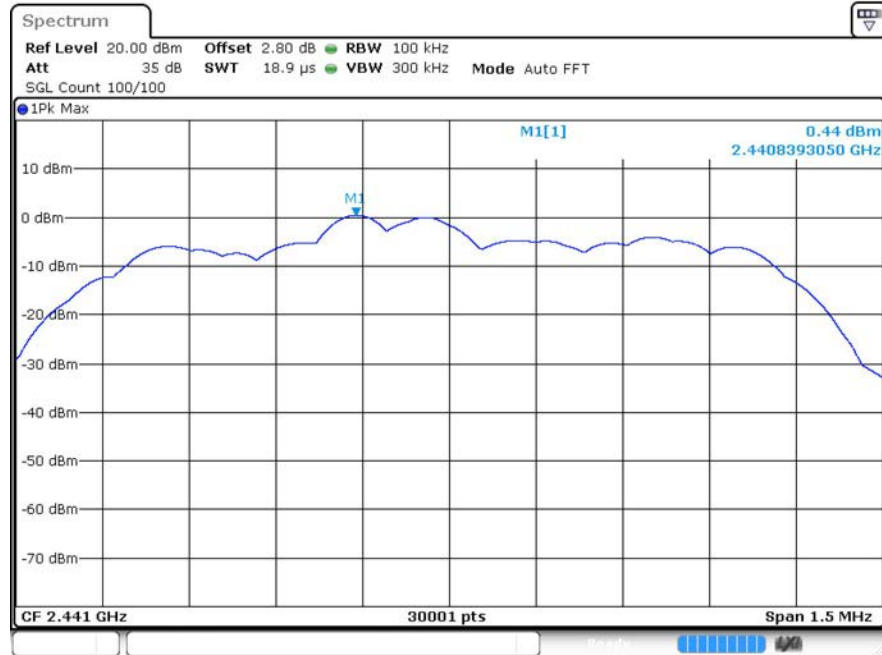


Puw

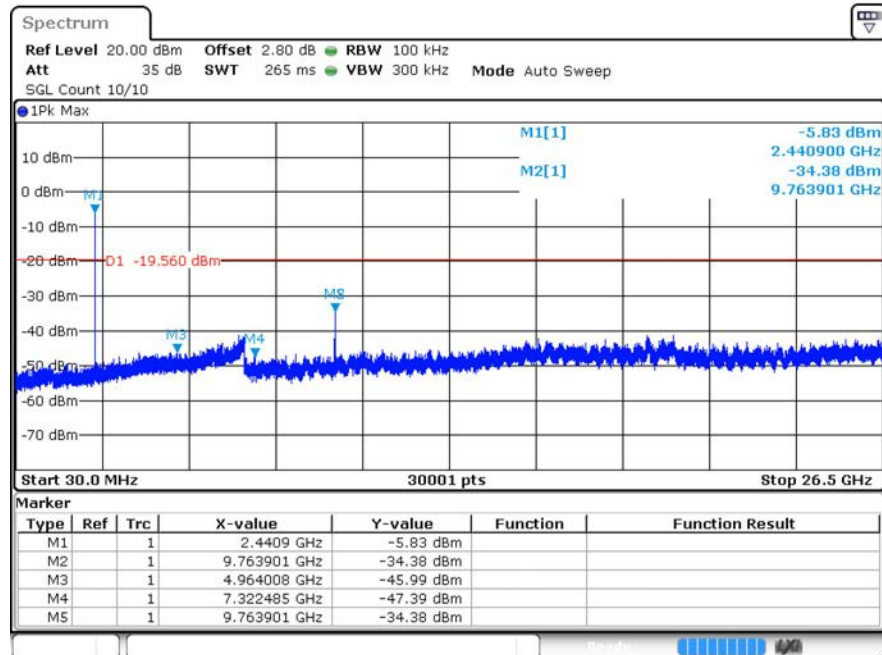


π /4DQPSK_MCH_Graphs

Pref

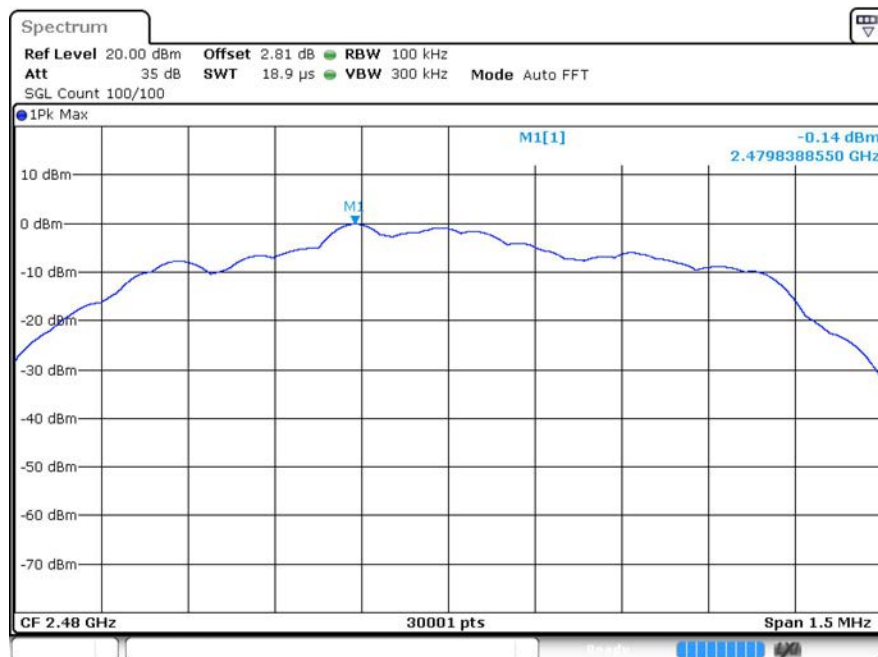


Puw

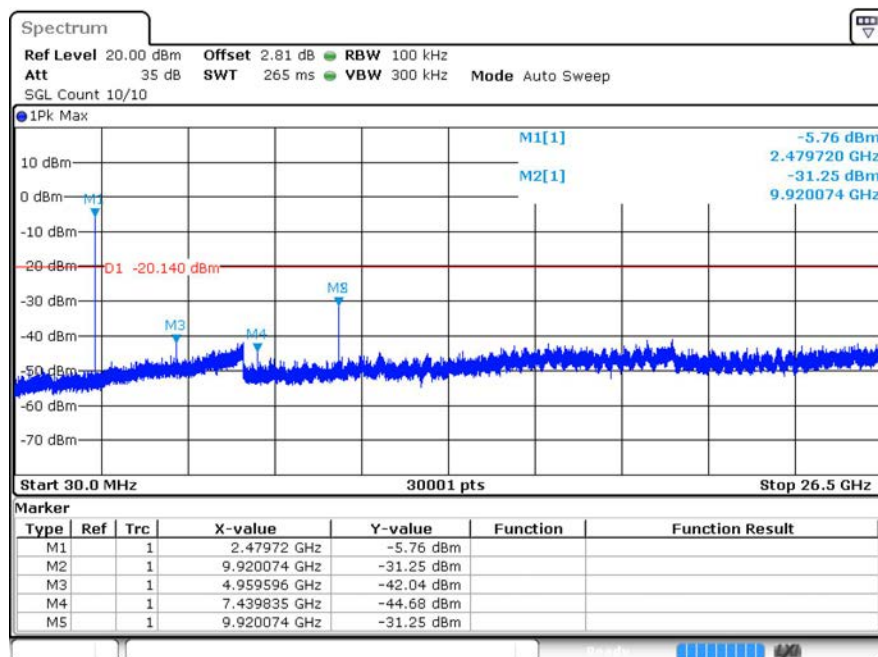


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

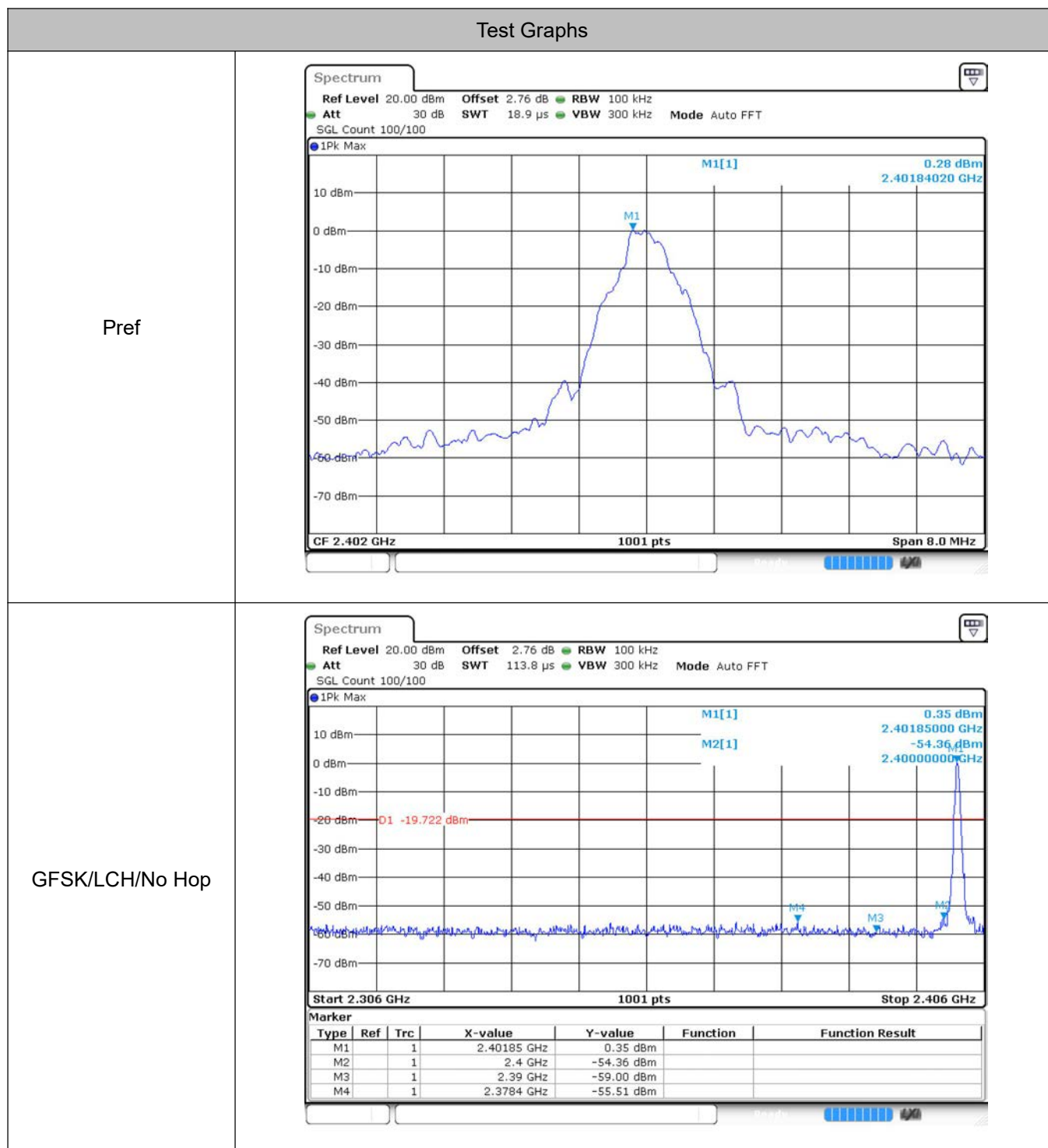


8 Band-edge for RF Conducted Emissions

8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-55.79	-20	Pass
			On	-55.25	-20	Pass
	HCH	2480	Off	-55.76	-20	Pass
			On	-54.24	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-56.1	-20	Pass
			On	-55.12	-20	Pass
	HCH	2480	Off	-55.01	-20	Pass
			On	-53.67	-20	Pass

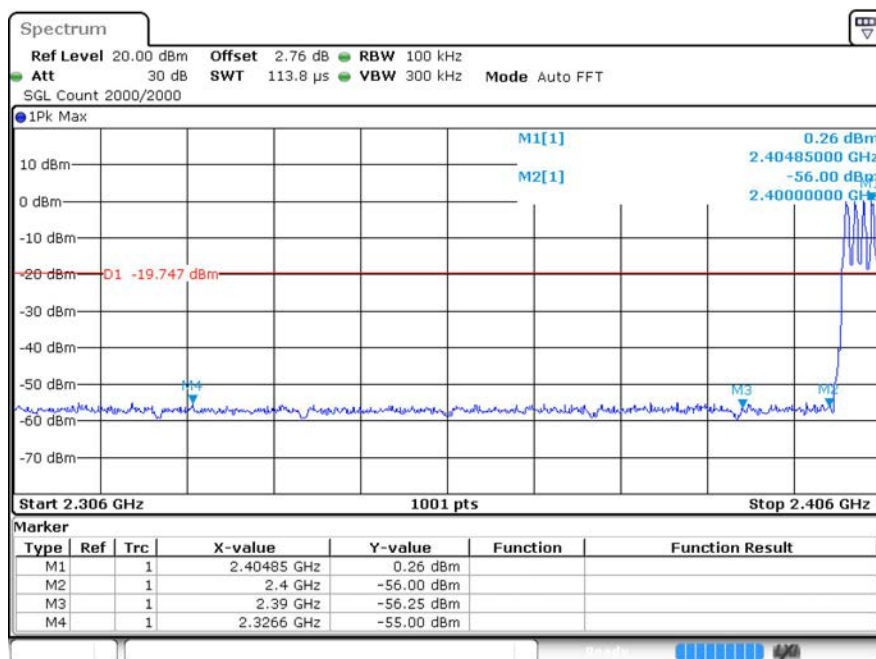
8.2 Test Graphs



Ref



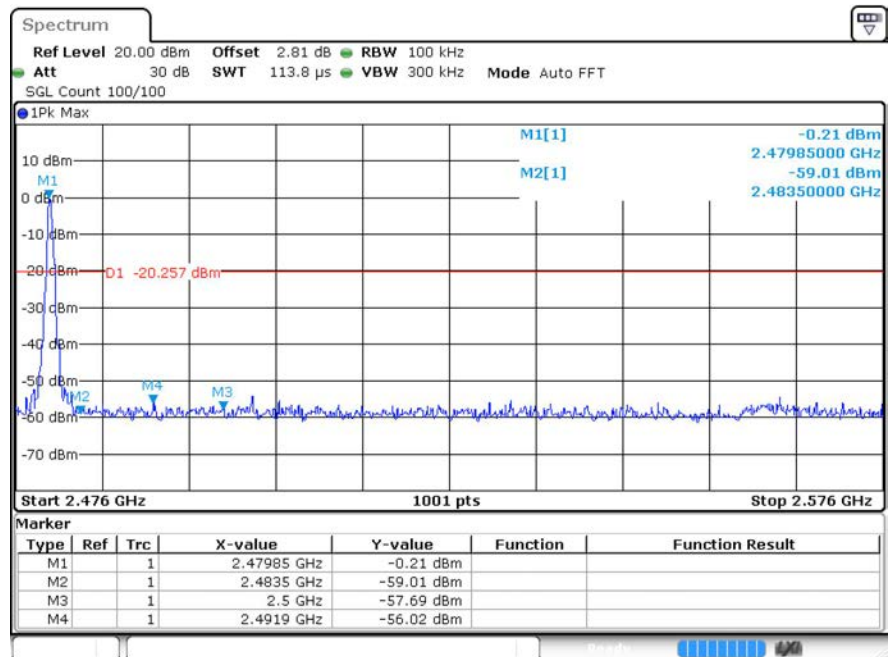
GFSK/LCH/Hop



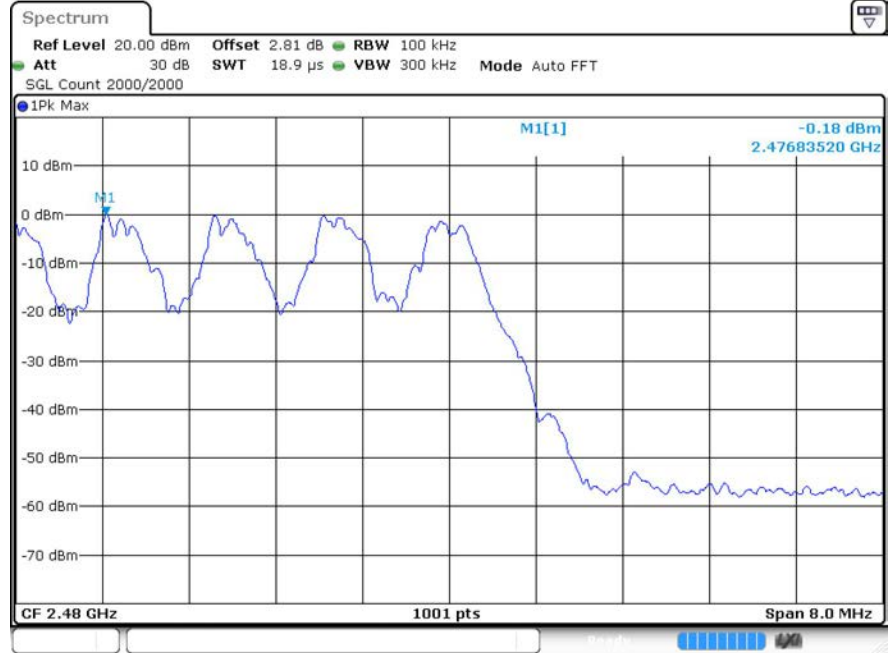
Ref



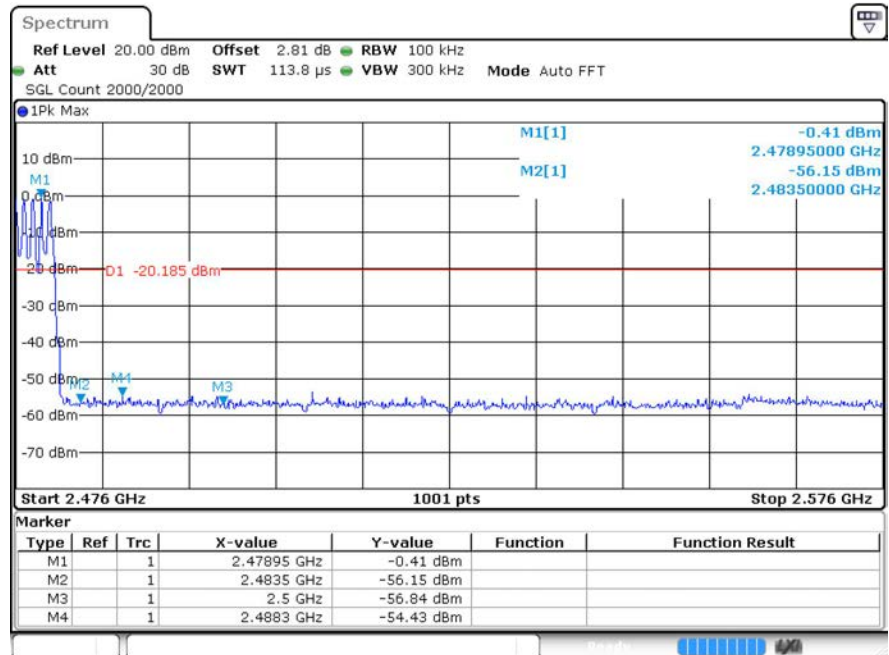
GFSK/HCH/No Hop



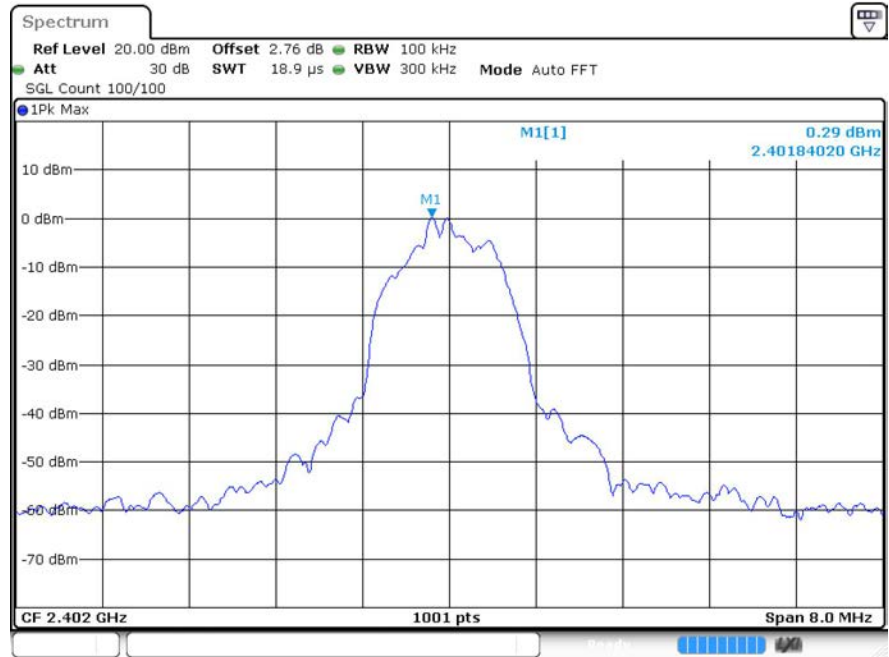
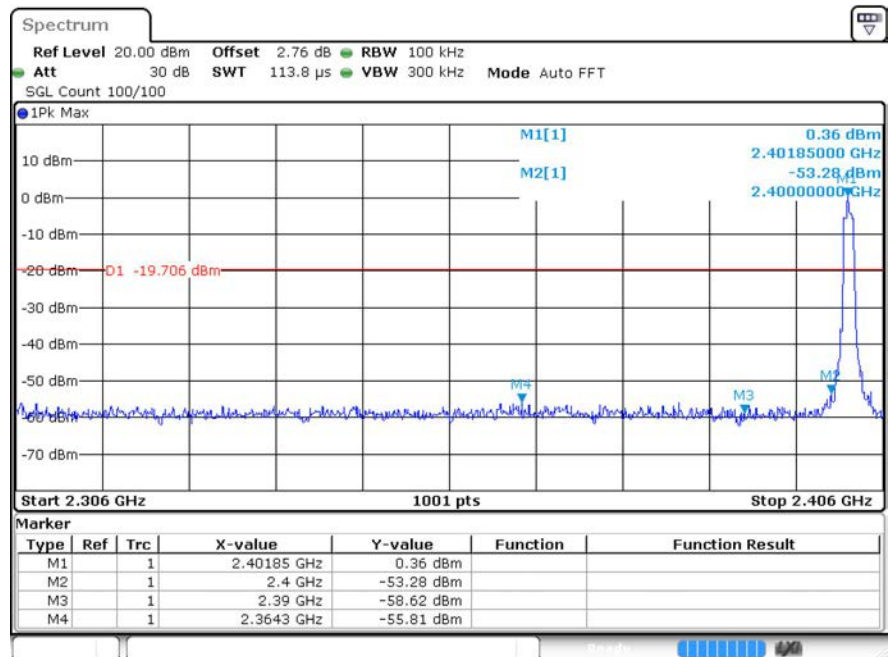
Ref.



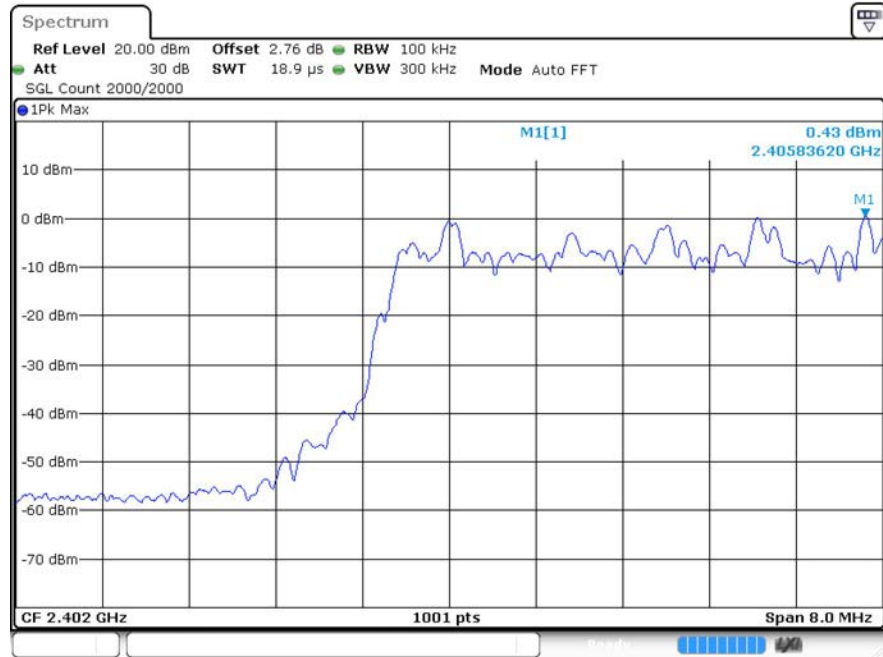
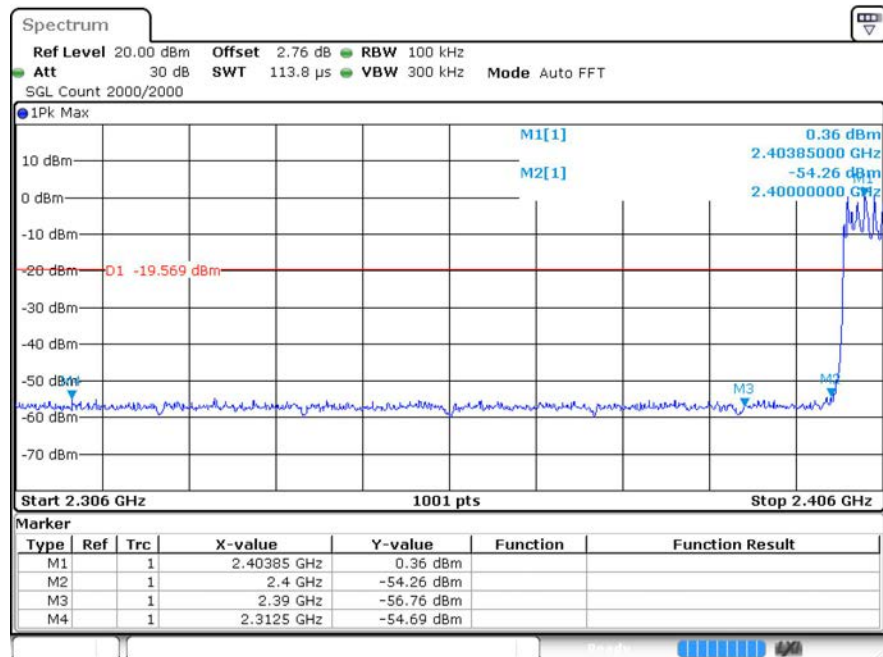
GFSK/HCH/Hop



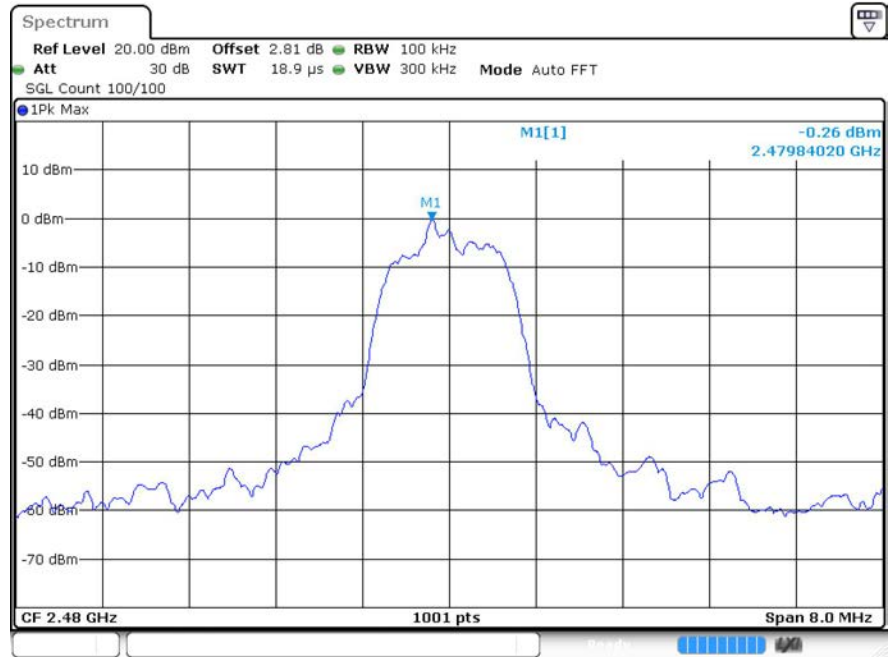
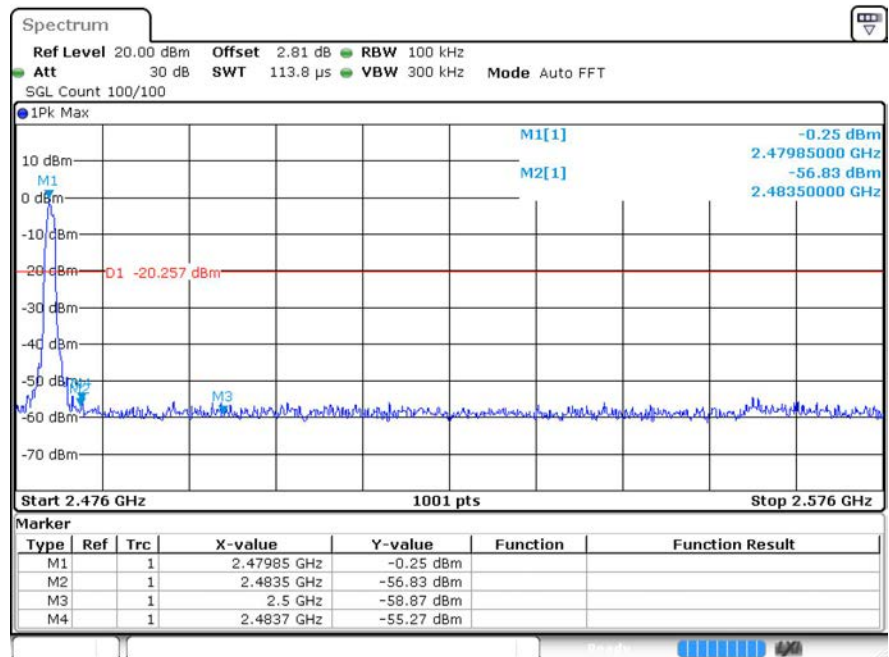
Ref


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


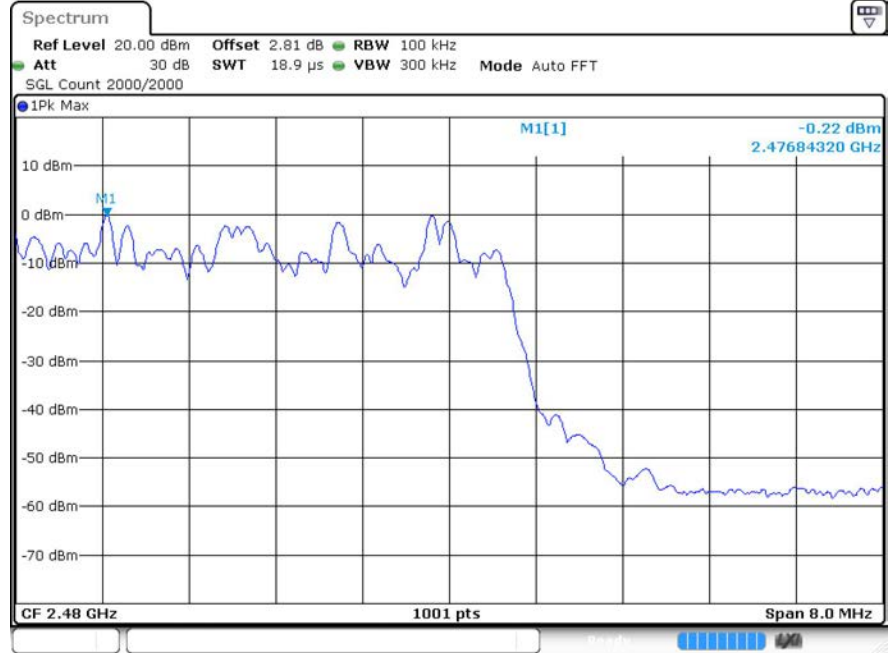
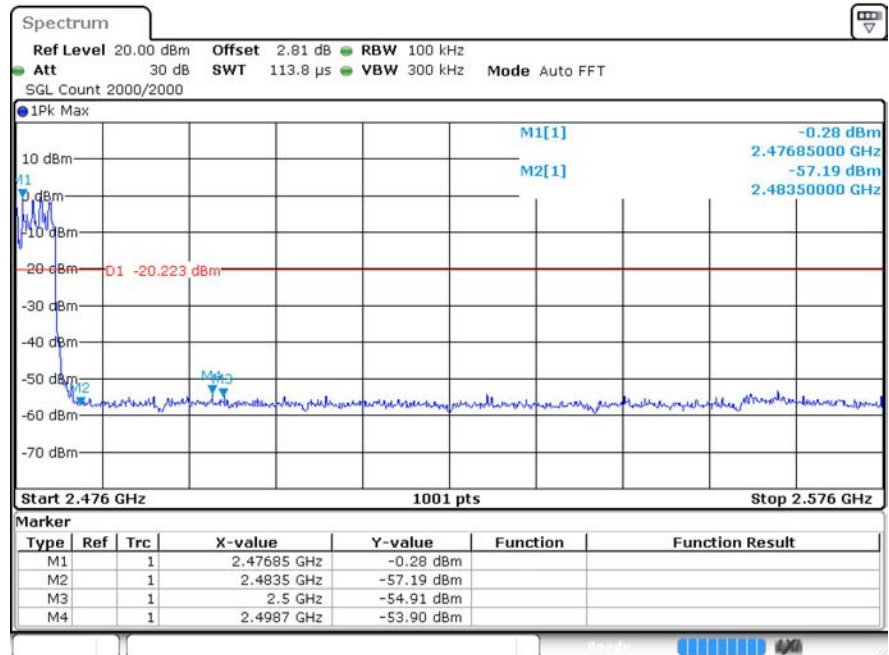
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


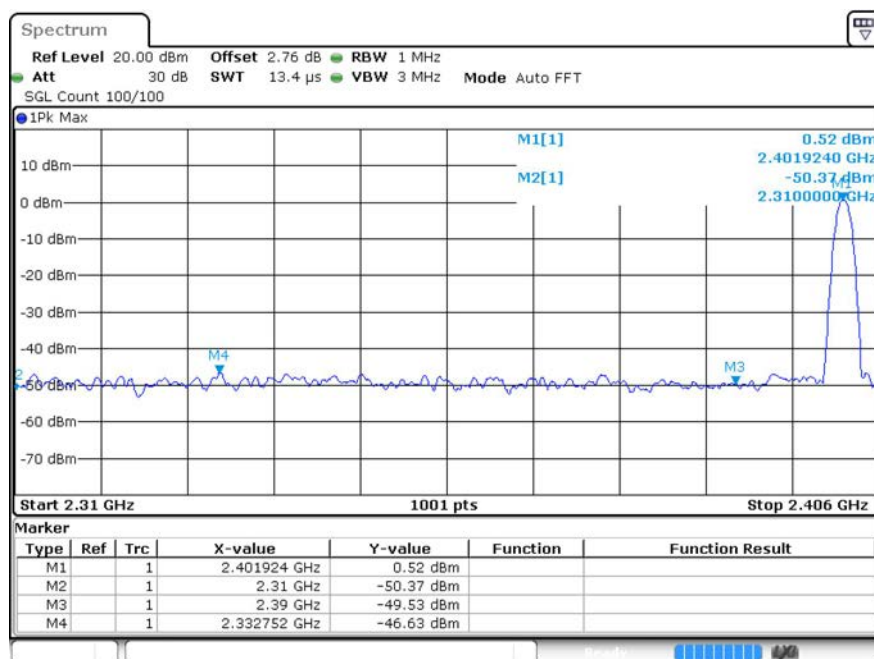
9 Restrict-band band-edge measurements

9.1 Test Result

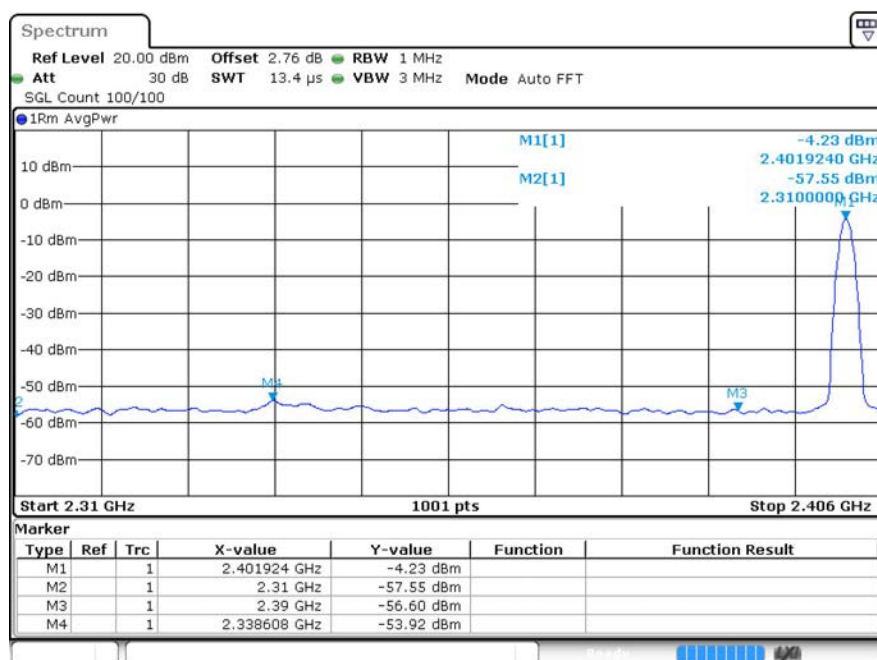
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-50.37	2.78	-	47.64	PEAK	74	Pass
	Off	2310.0	-57.55	2.78	5.06	45.52	AV	54	Pass
	Off	2332.752	-46.62	2.78	-	51.39	PEAK	74	Pass
	Off	2338.608	-53.91	2.78	5.06	49.16	AV	54	Pass
	Off	2390.0	-49.53	2.78	-	48.48	PEAK	74	Pass
	Off	2390.0	-56.6	2.78	5.06	46.47	AV	54	Pass
	Off	2483.5	-49.6	2.78	-	48.41	PEAK	74	Pass
	Off	2483.5	-56.32	2.78	5.06	46.75	AV	54	Pass
	Off	2486.248	-47.27	2.78	-	50.74	PEAK	74	Pass
	Off	2487.688	-55.82	2.78	5.06	47.25	AV	54	Pass
	Off	2500.0	-48.42	2.78	-	49.59	PEAK	74	Pass
	Off	2500.0	-56.35	2.78	5.06	46.72	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-49.19	2.78	-	48.82	PEAK	74	Pass
	Off	2310.0	-56.44	2.78	4.95	46.52	AV	54	Pass
	Off	2338.128	-45.1	2.78	-	52.91	PEAK	74	Pass
	Off	2344.08	-54.35	2.78	4.95	48.61	AV	54	Pass
	Off	2390.0	-50.33	2.78	-	47.68	PEAK	74	Pass
	Off	2390.0	-57.1	2.78	4.95	45.86	AV	54	Pass
	Off	2483.5	-50.32	2.78	-	47.69	PEAK	74	Pass
	Off	2483.5	-55.99	2.78	4.84	46.86	AV	54	Pass
	Off	2488.696	-47.34	2.78	-	50.67	PEAK	74	Pass
	Off	2489.704	-55.37	2.78	4.84	47.48	AV	54	Pass
	Off	2500.0	-49.91	2.78	-	48.1	PEAK	74	Pass
	Off	2500.0	-56.92	2.78	4.84	45.93	AV	54	Pass

9.2 Test Graphs

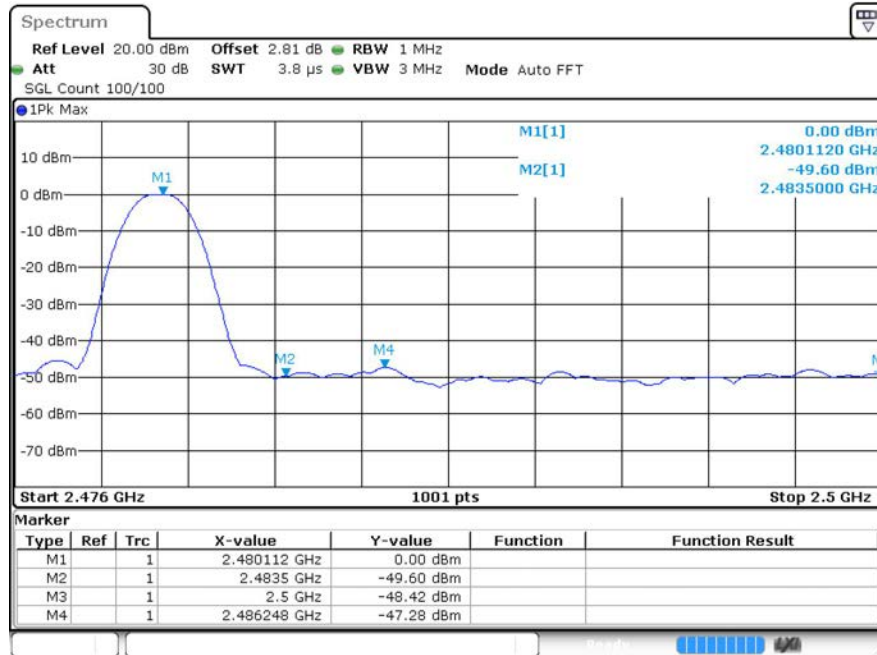
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



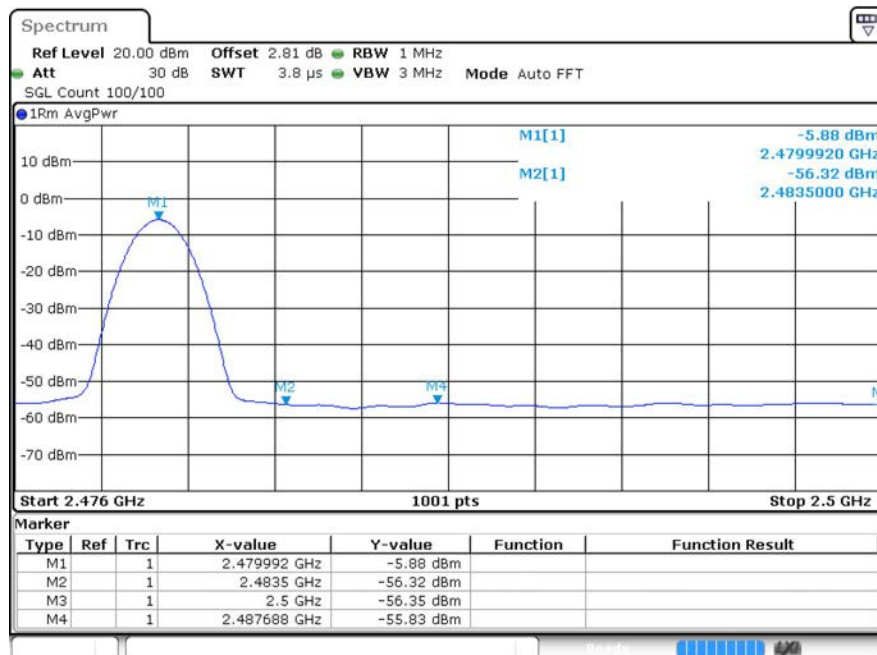
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



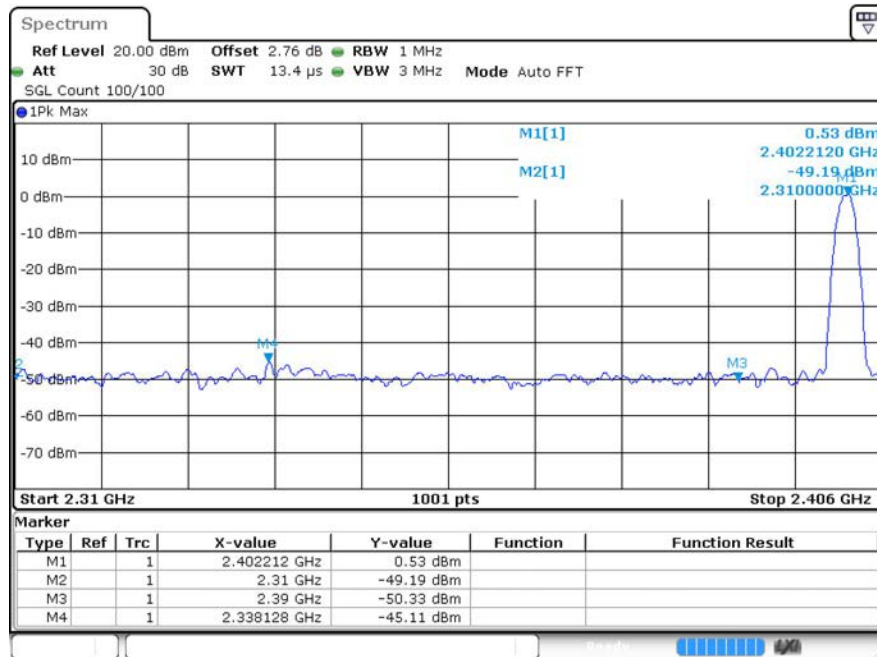
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



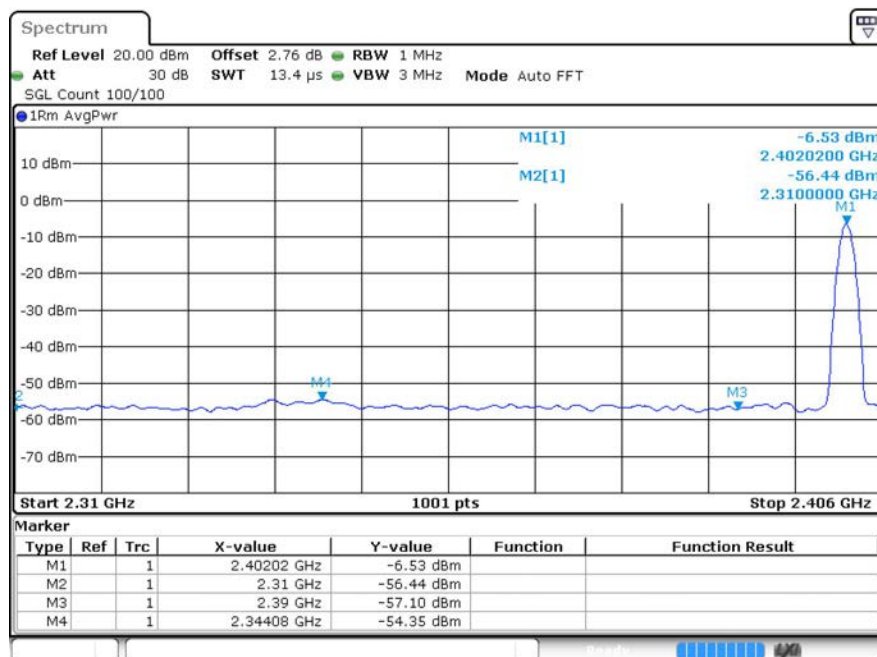
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



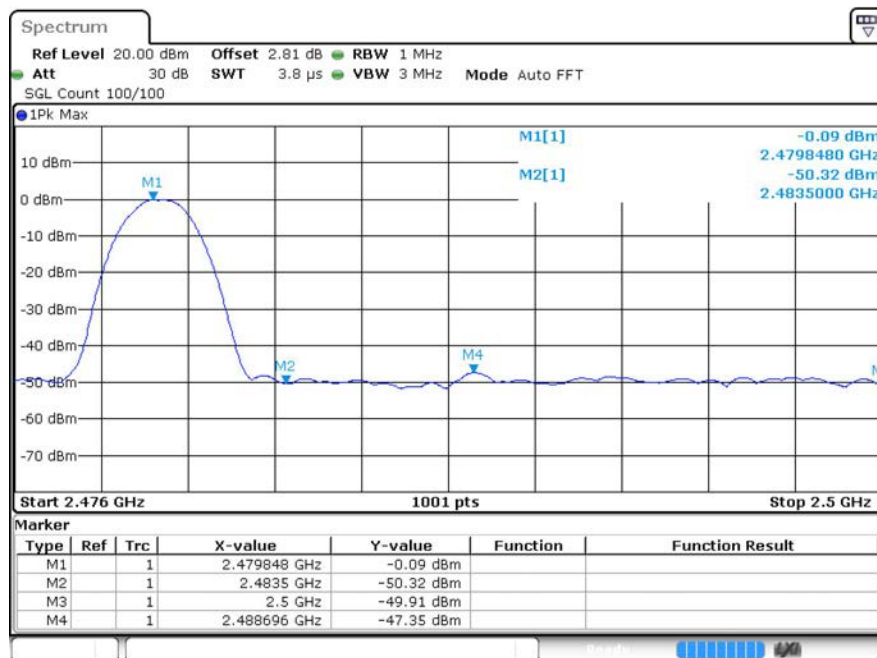
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



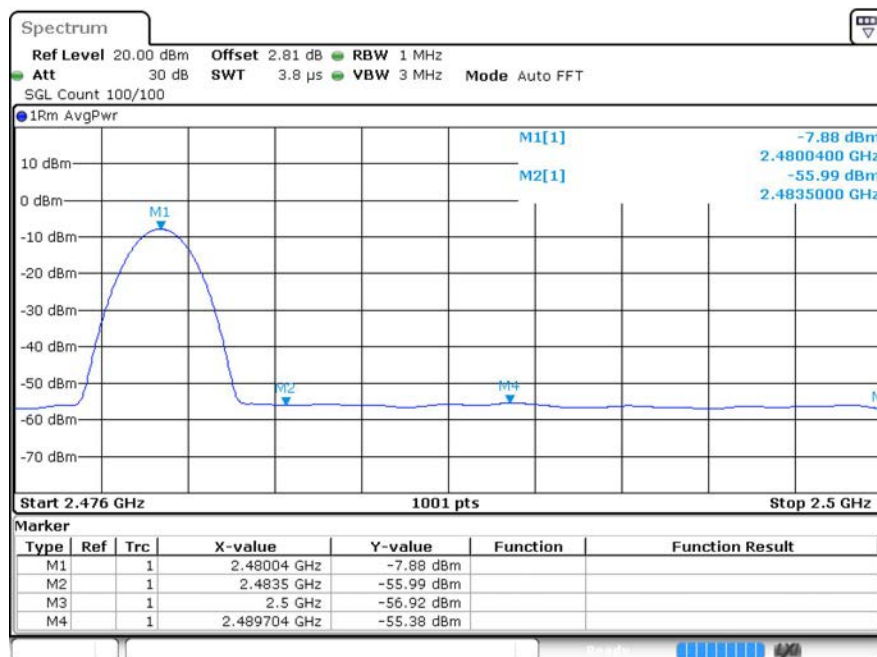
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---