



Appendix A

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

Product Name: Bluetooth headset

Trade Mark: N/A

Test Model: M99-A

Environmental Conditions

Temperature:	25. 5℃
Relative Humidity:	52.5%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



Contents

Page

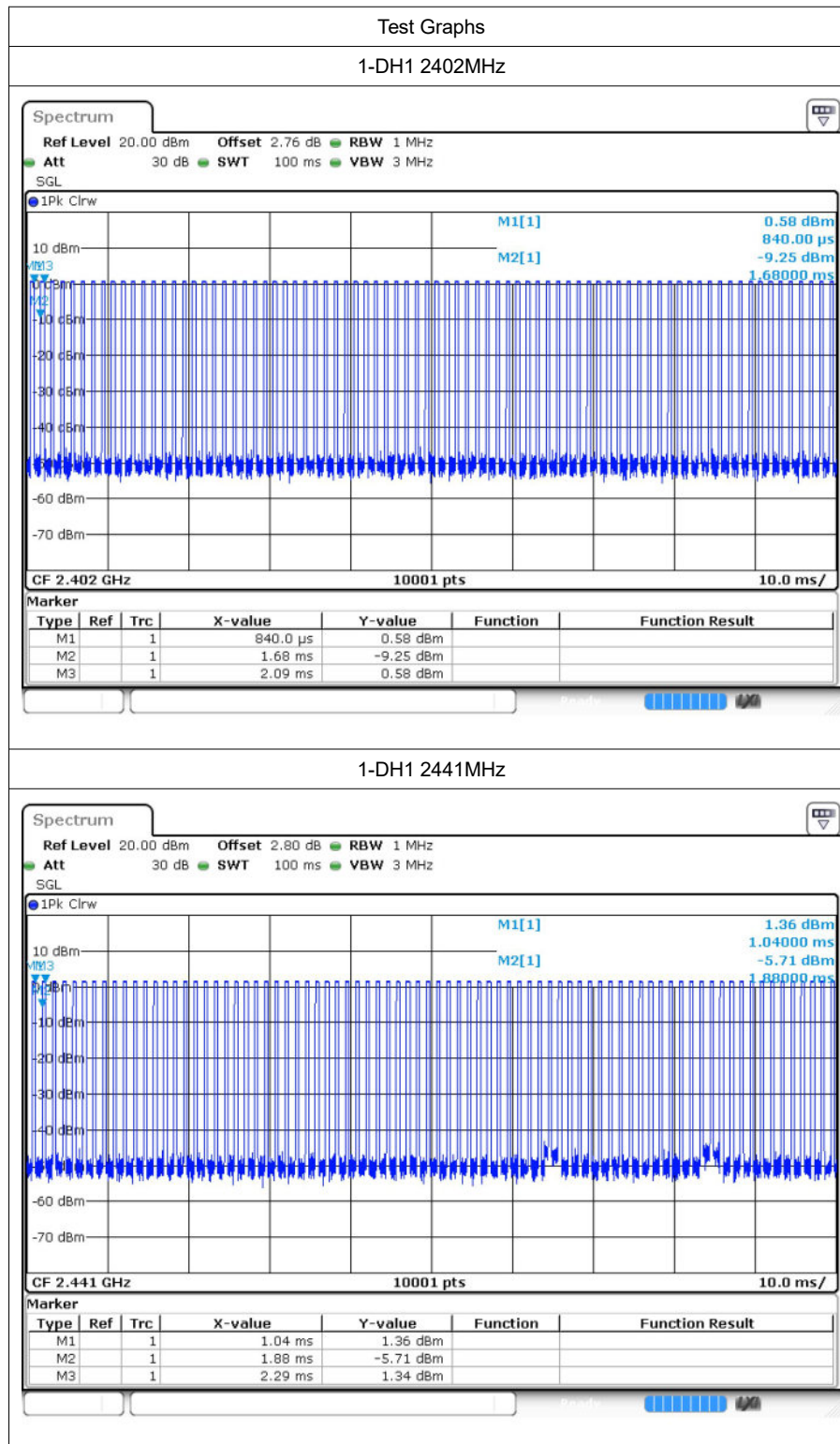
COVER PAGE

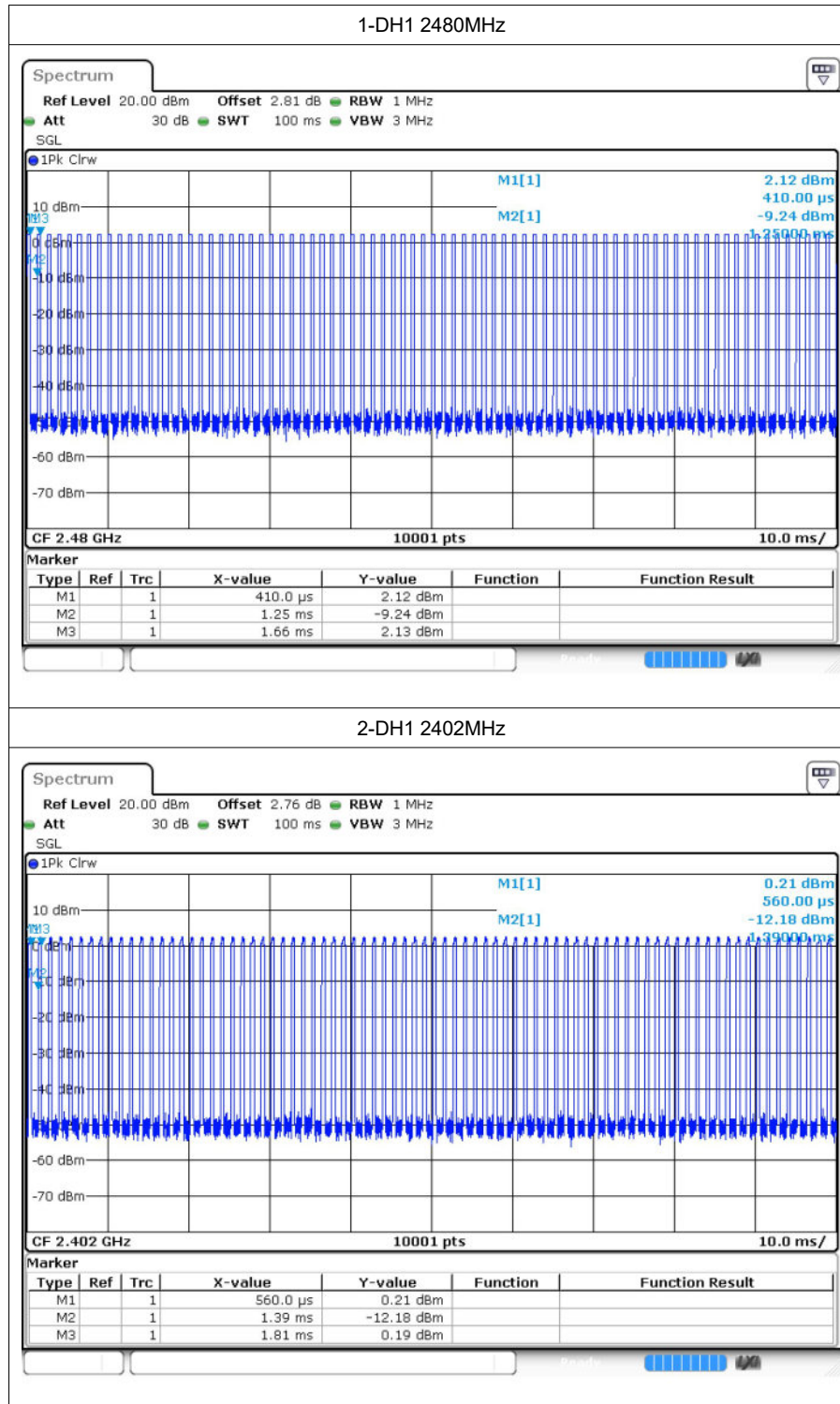
1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Peak Output Power	7
2.1	Test Result	7
2.2	Test Graphs	8
3	20dB Bandwidth	11
3.1	Test Result	11
3.2	Test Graphs	12
4	Carrier Frequency Separation	15
4.1	Test Result	15
4.2	Test Graphs	16
5	Hopping Channel Number	17
5.1	Test Result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

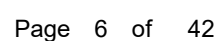
1 Duty Cycle

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	33.61	2.44
2-DH1	2402	34.4	2.38
2-DH1	2441	34.4	2.38
2-DH1	2480	34.66	2.33





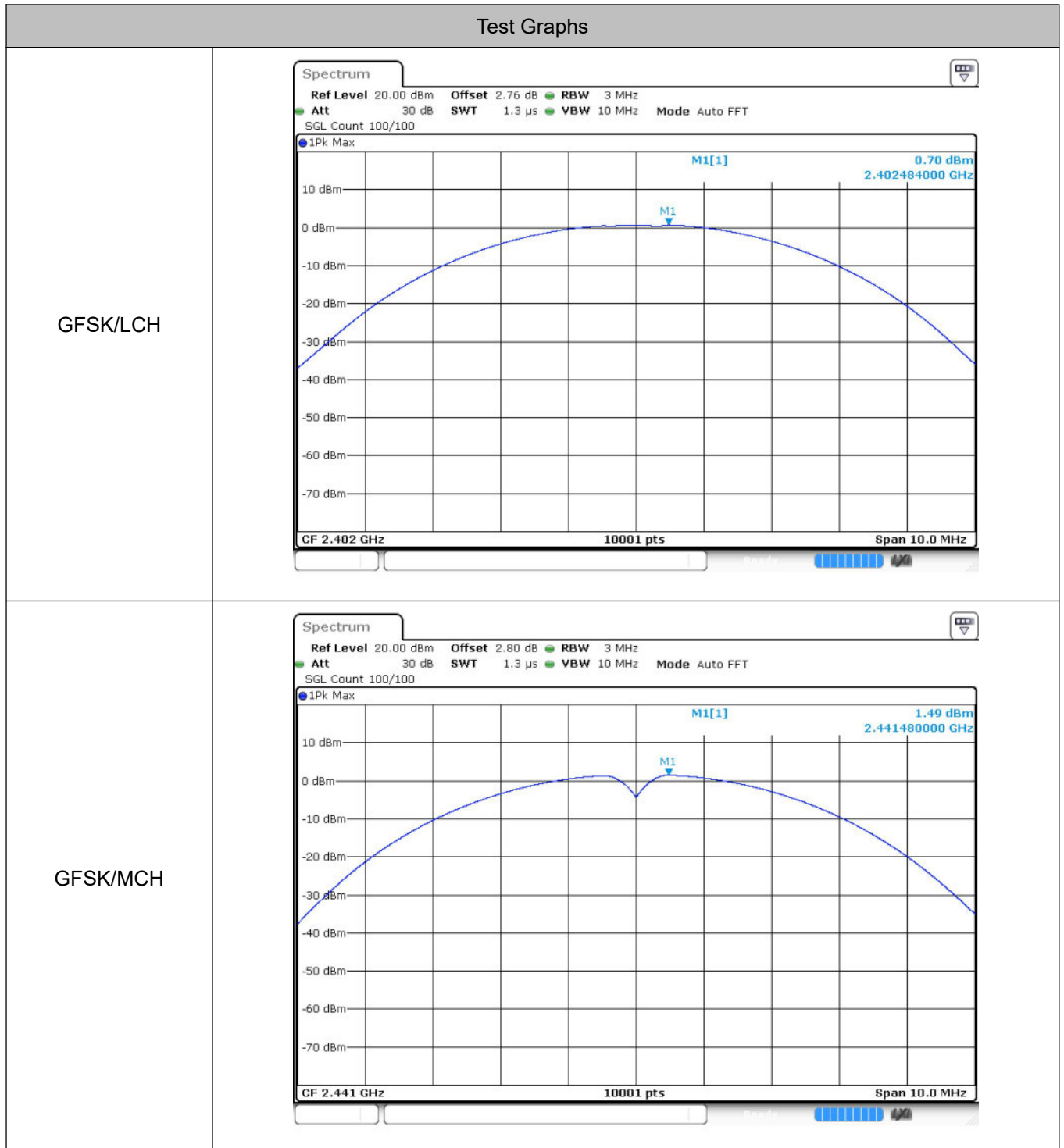


2 Maximum Conducted Peak Output Power

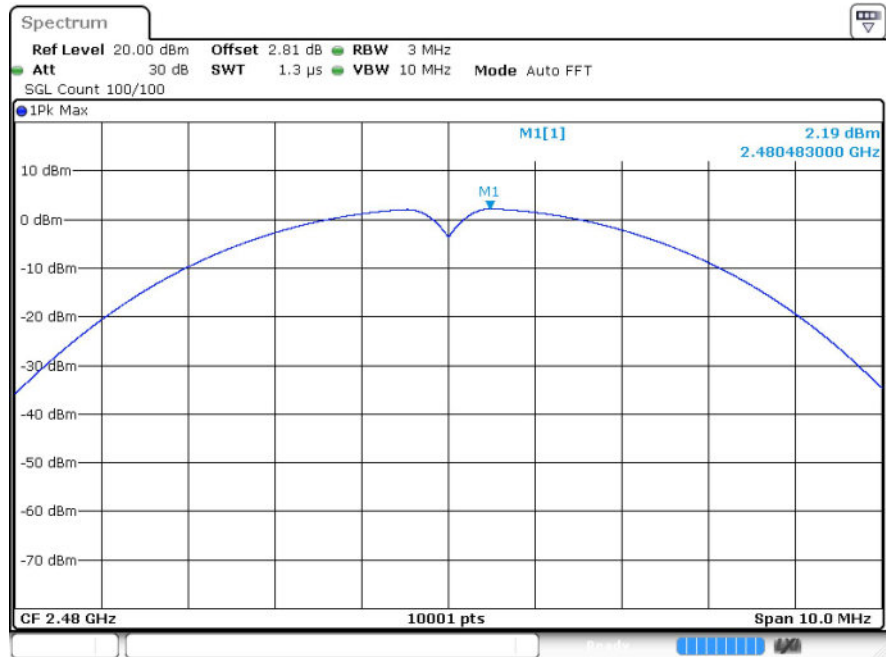
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.7	21	Pass
	MCH	1.49	21	Pass
	HCH	2.19	21	Pass
$\pi/4$ DQPSK	LCH	2.23	21	Pass
	MCH	3.24	21	Pass
	HCH	3.72	21	Pass

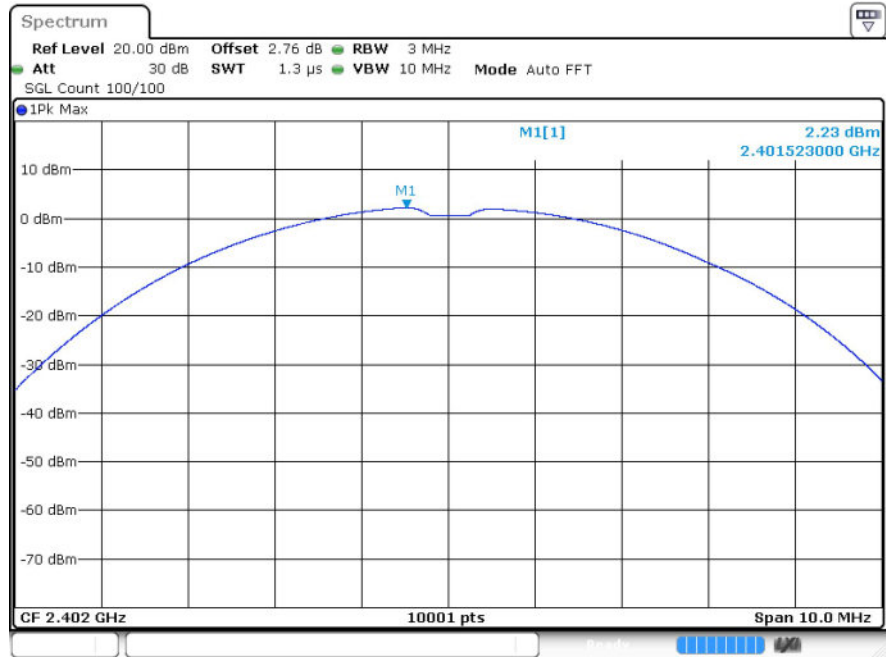
2.2 Test Graphs



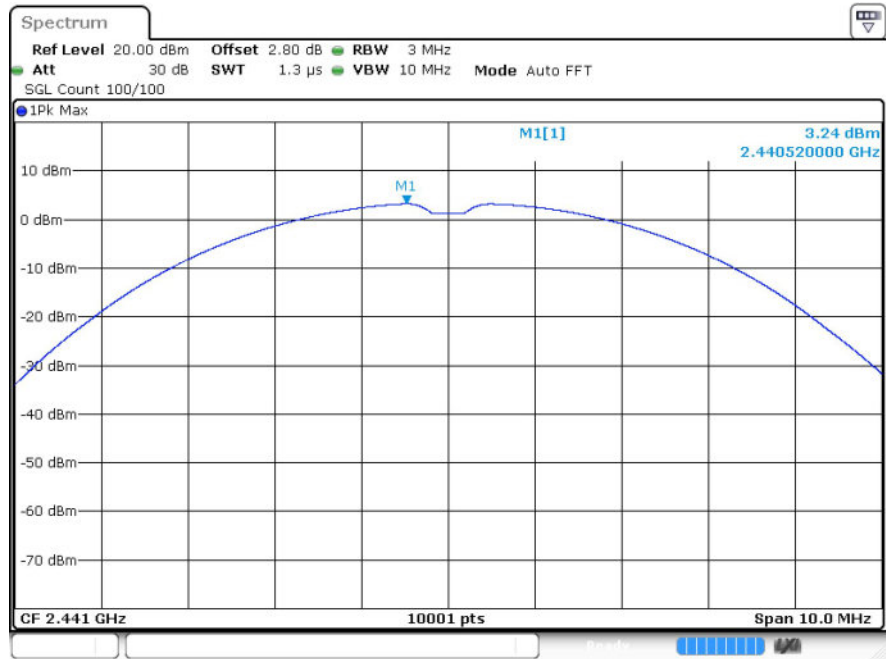
GFSK/HCH



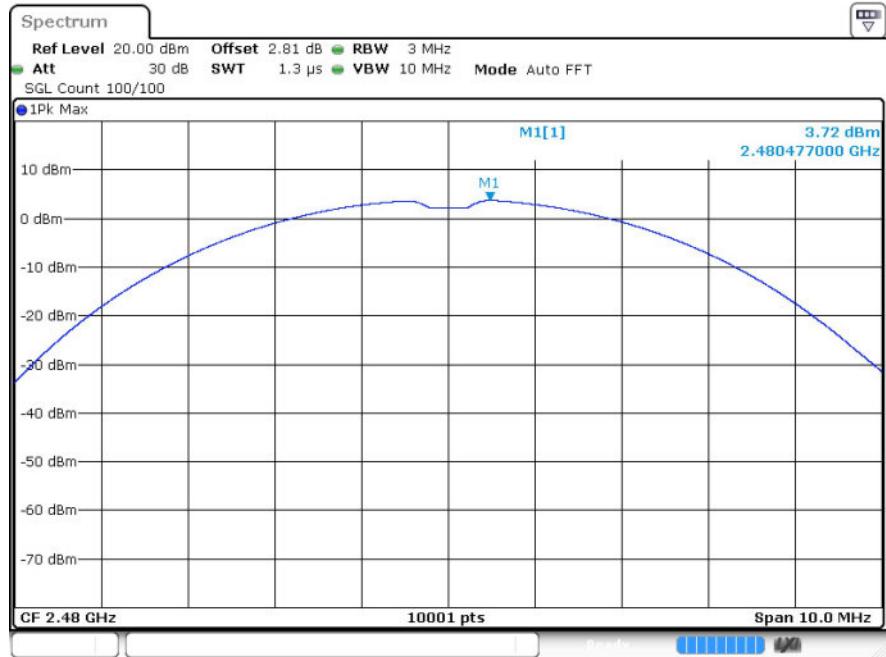
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

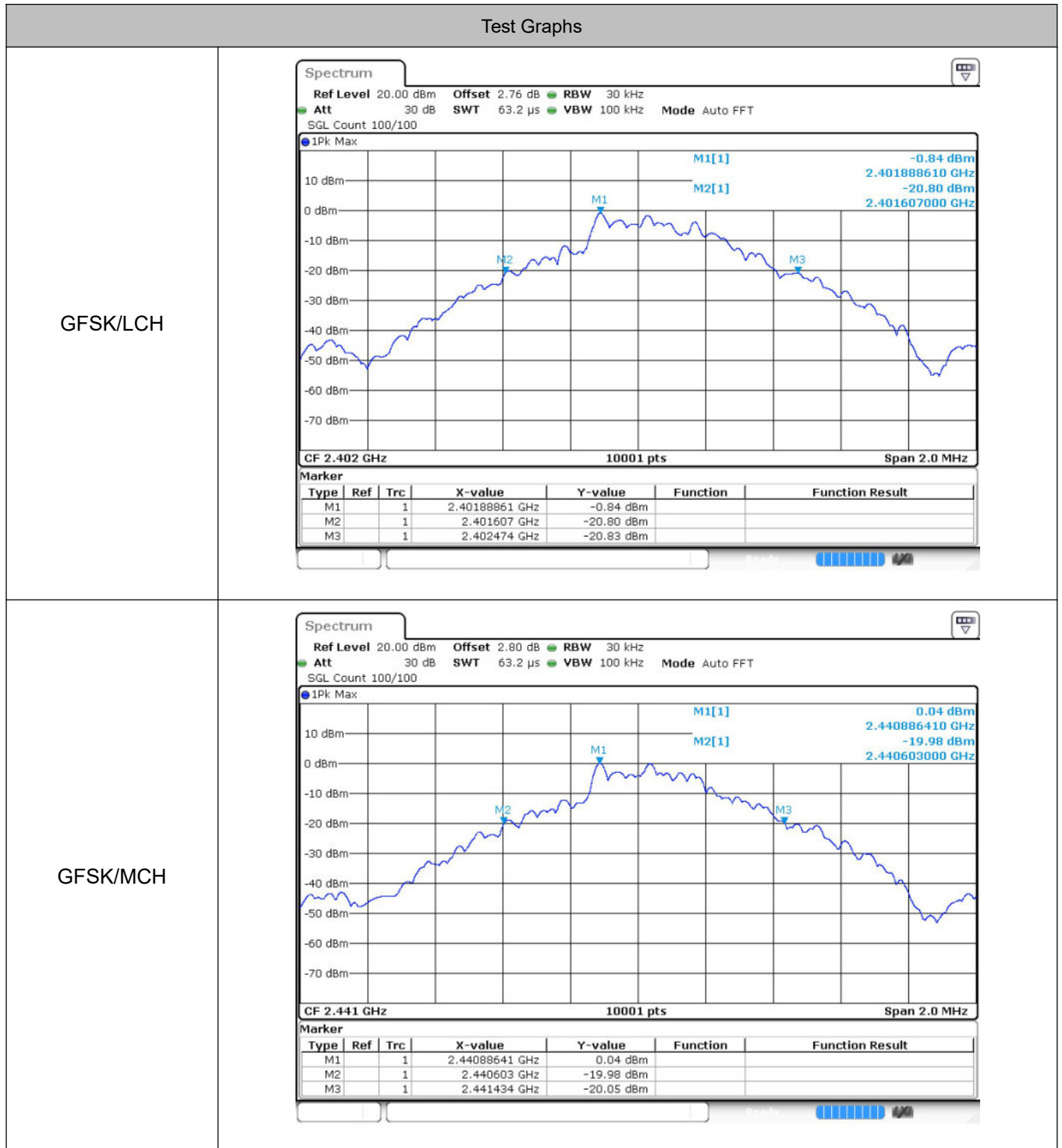


3 20dB Bandwidth

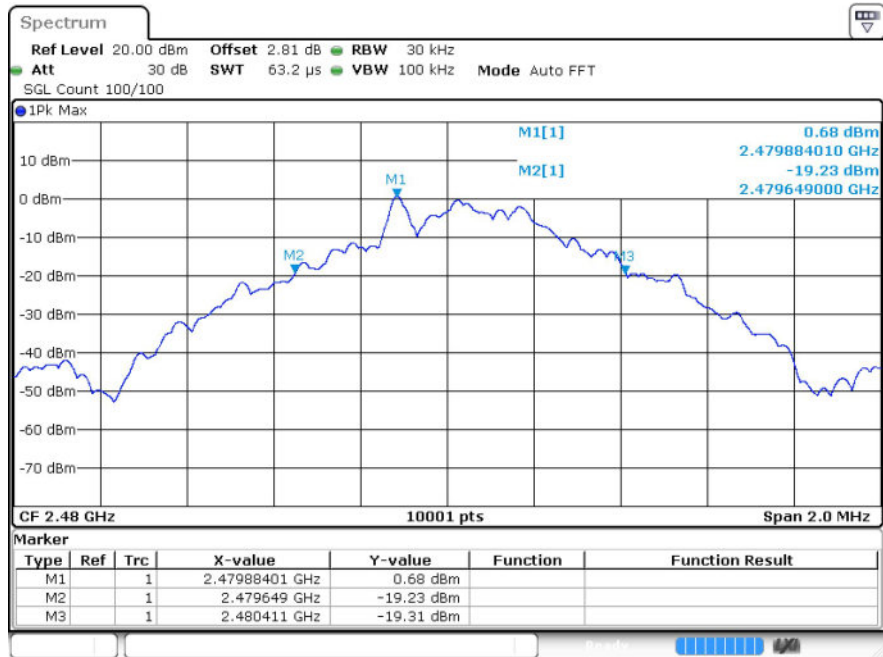
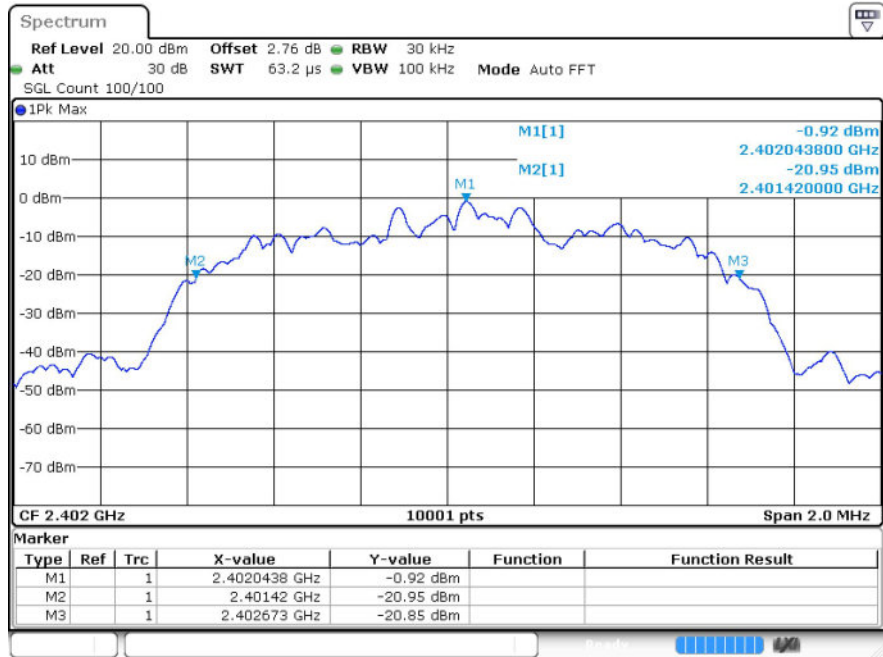
3.1 Test Result

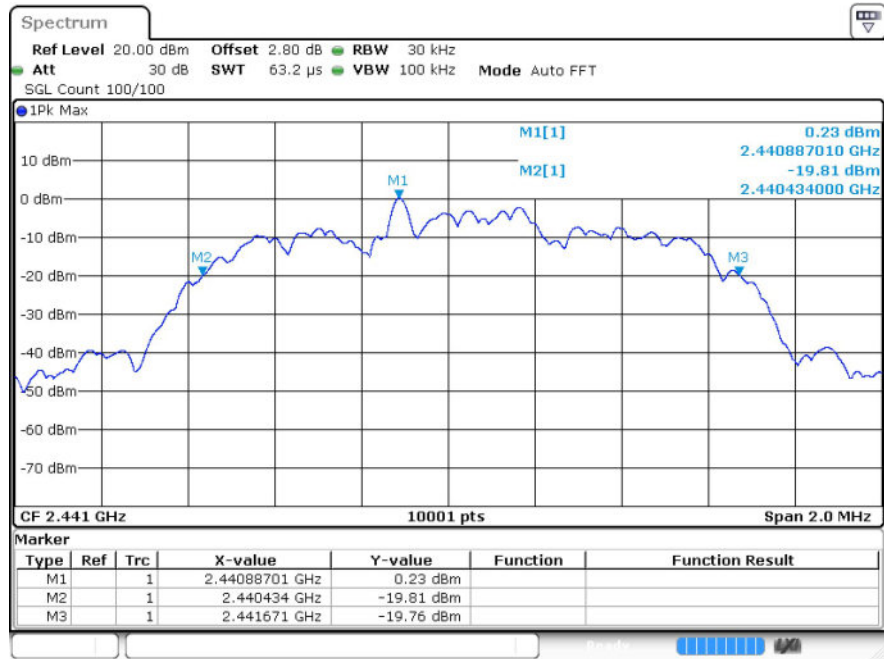
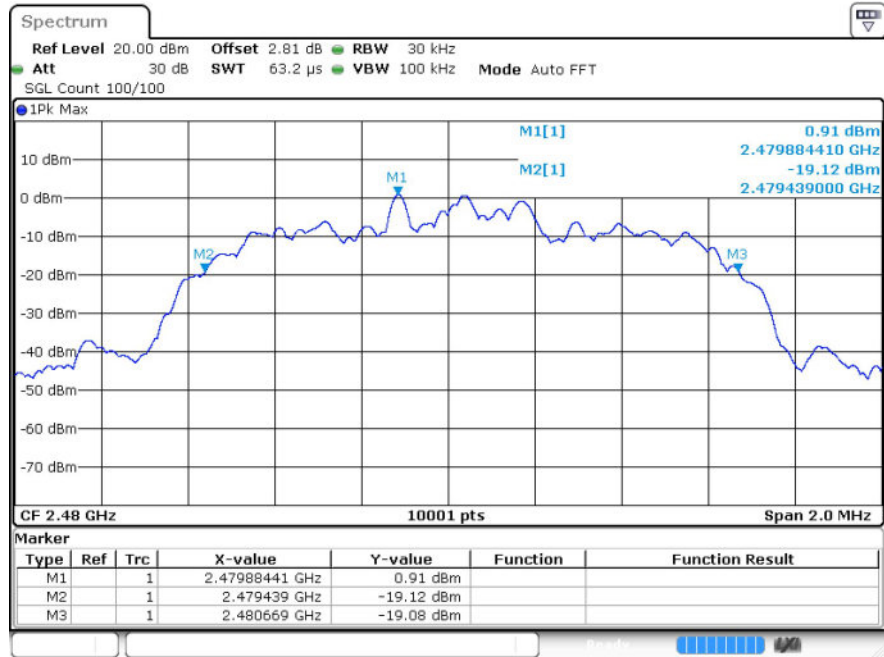
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.868	Not Specified	Pass
	MCH	0.831	Not Specified	Pass
	HCH	0.762	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.253	Not Specified	Pass
	MCH	1.237	Not Specified	Pass
	HCH	1.23	Not Specified	Pass

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	0.554	Pass
$\pi/4$ DQPSK	MCH	1.152	0.825	Pass

4.2 Test Graphs

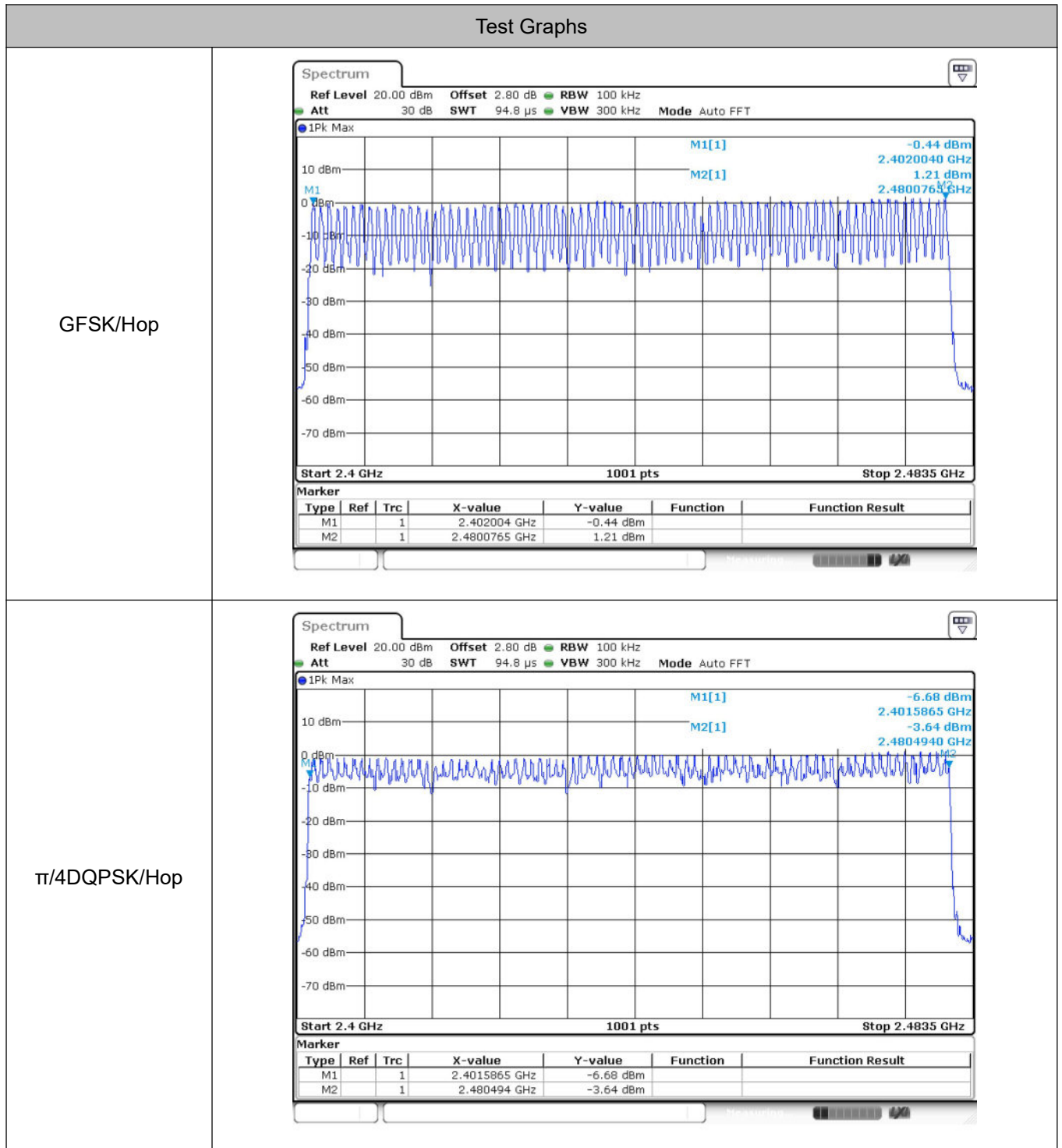


5 Hopping Channel Number

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

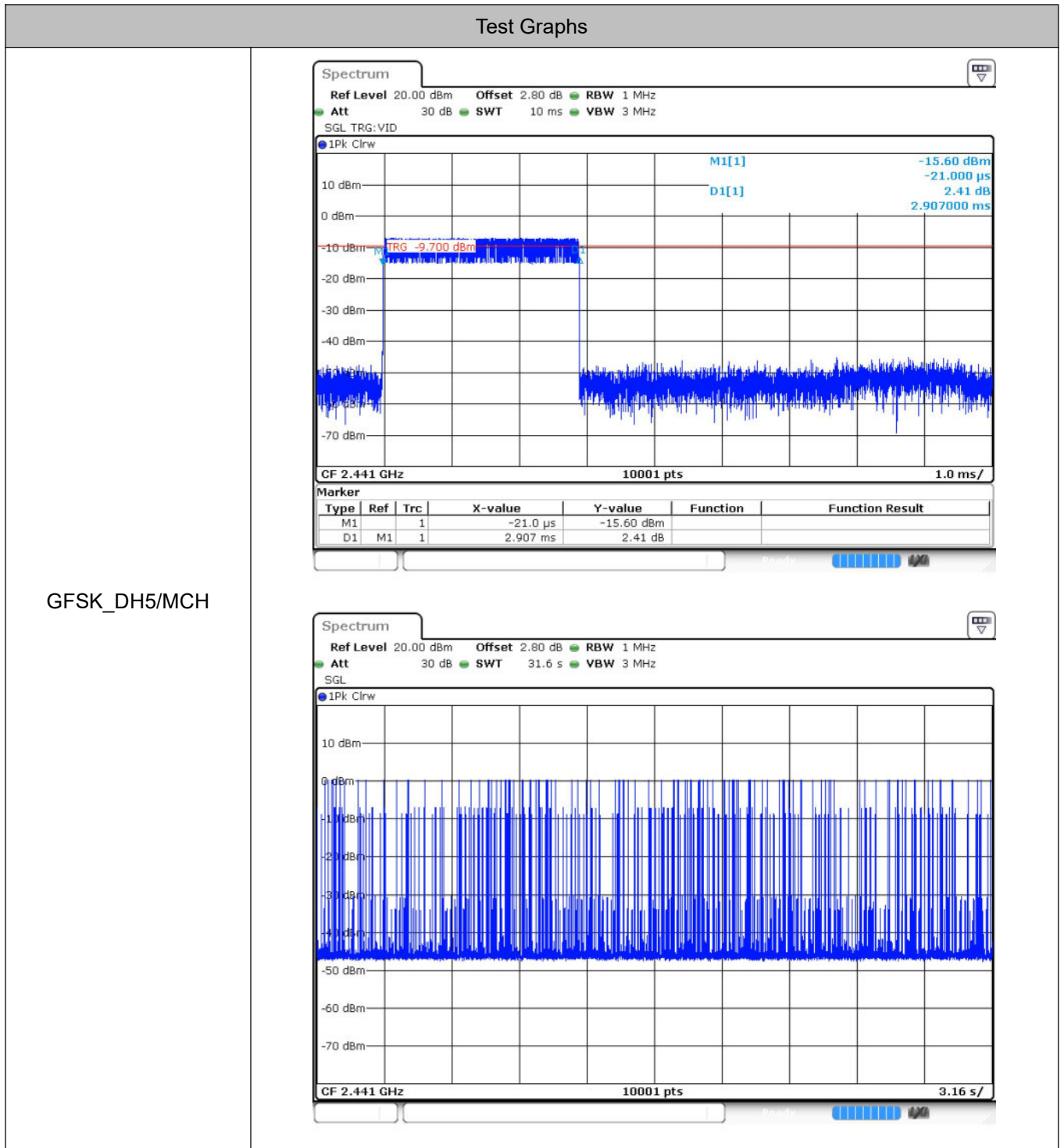


6 Dwell Time

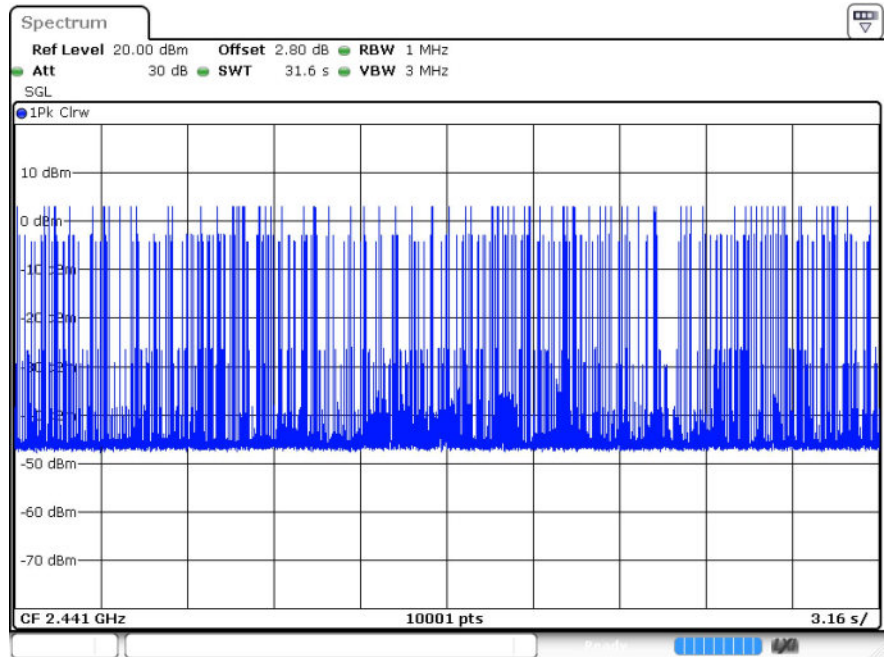
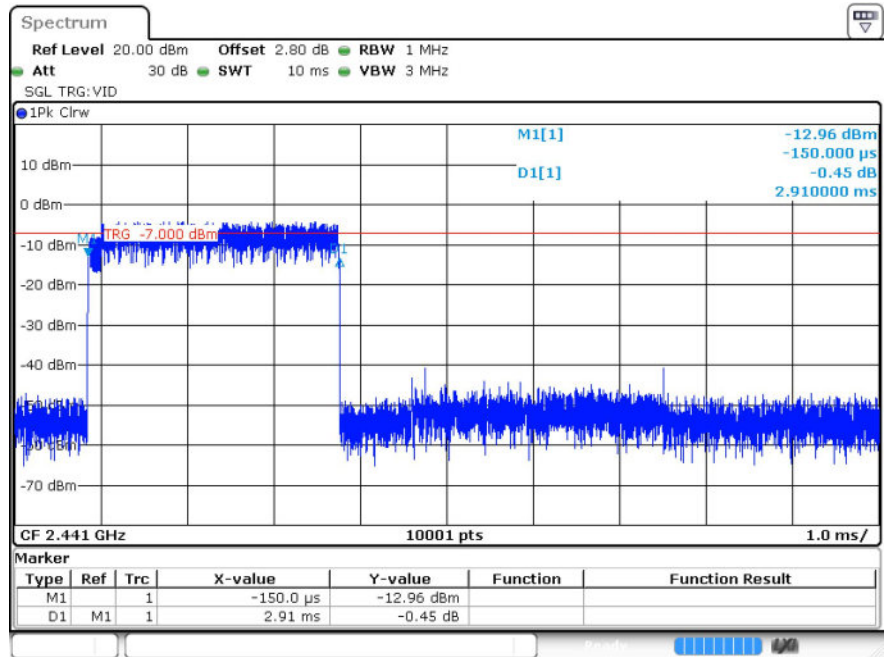
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.907	107	311.049	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.91	93	270.63	0.4	Pass

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH

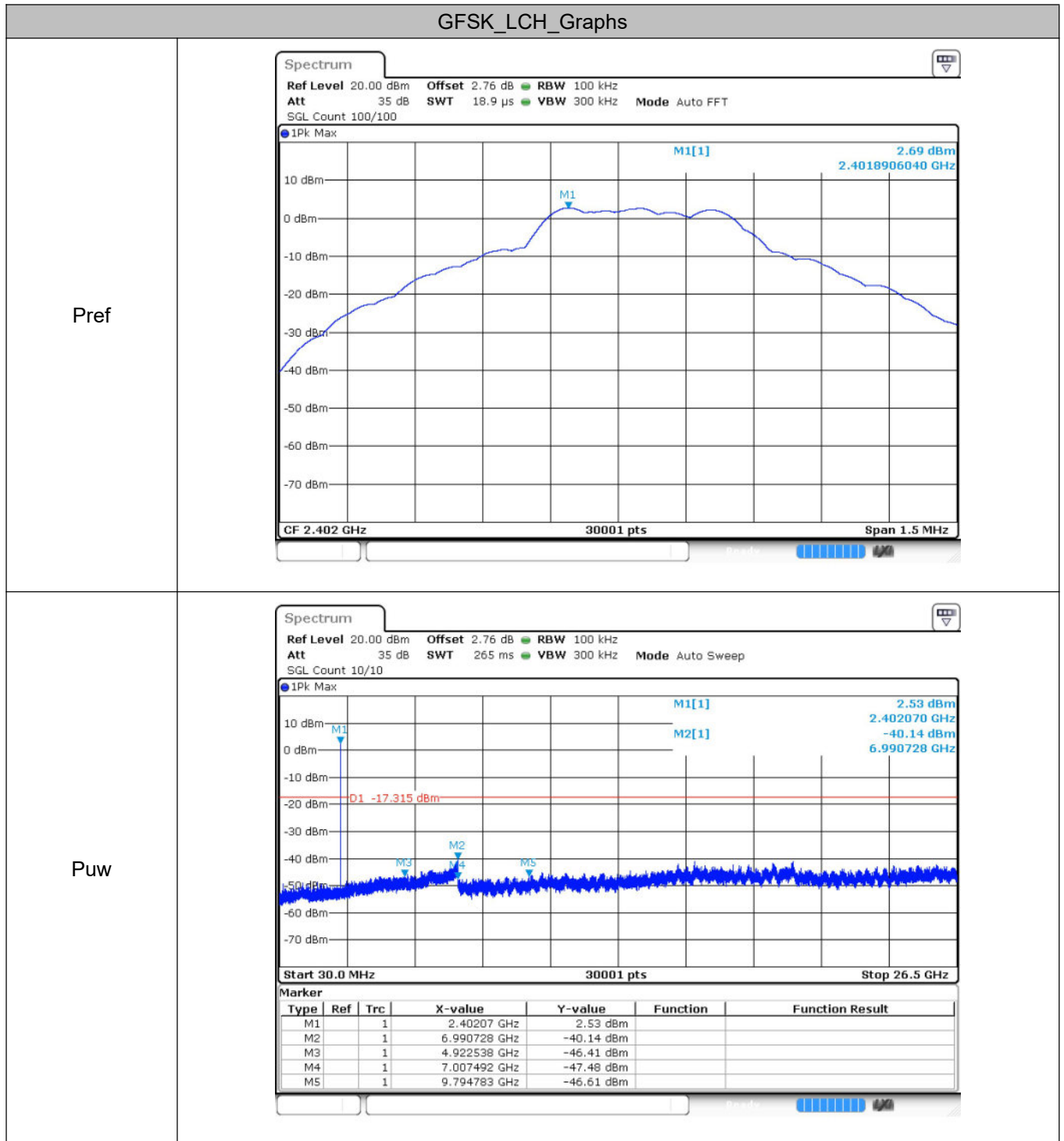


7 RF Conducted Spurious Emissions

7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-42.83	-20	Pass
	MCH	-32.17	-20	Pass
	HCH	-27.95	-20	Pass
$\pi/4$ DQPSK	LCH	-33.61	-20	Pass
	MCH	-34.12	-20	Pass
	HCH	-31.58	-20	Pass

7.2 Test Graphs

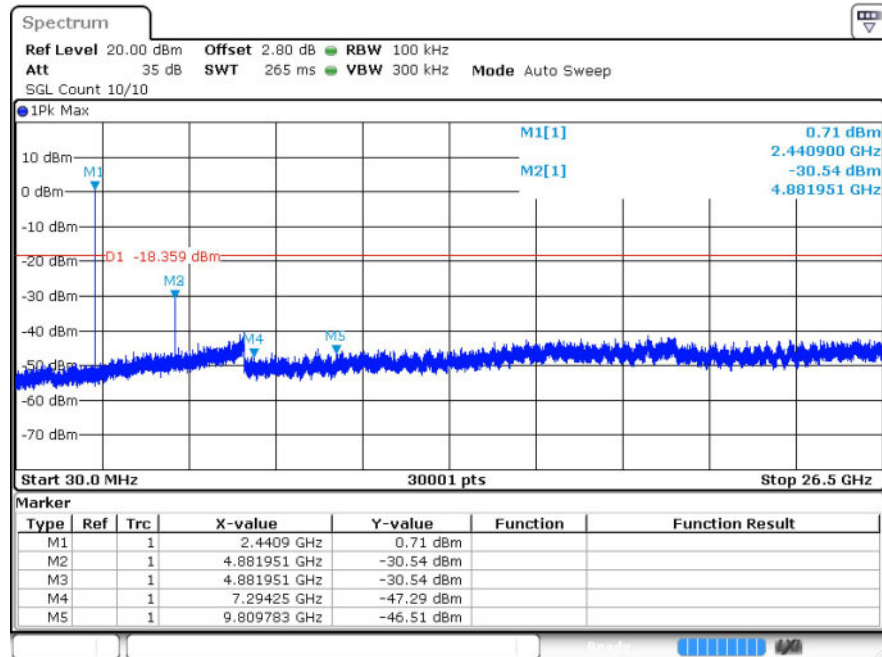


GFSK_MCH_Graphs

Pref

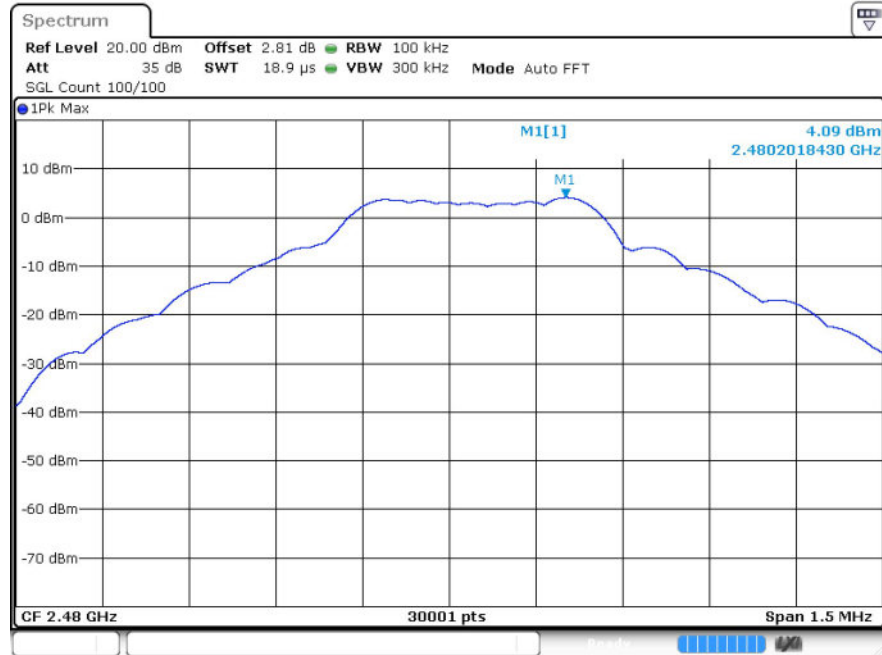


Puw

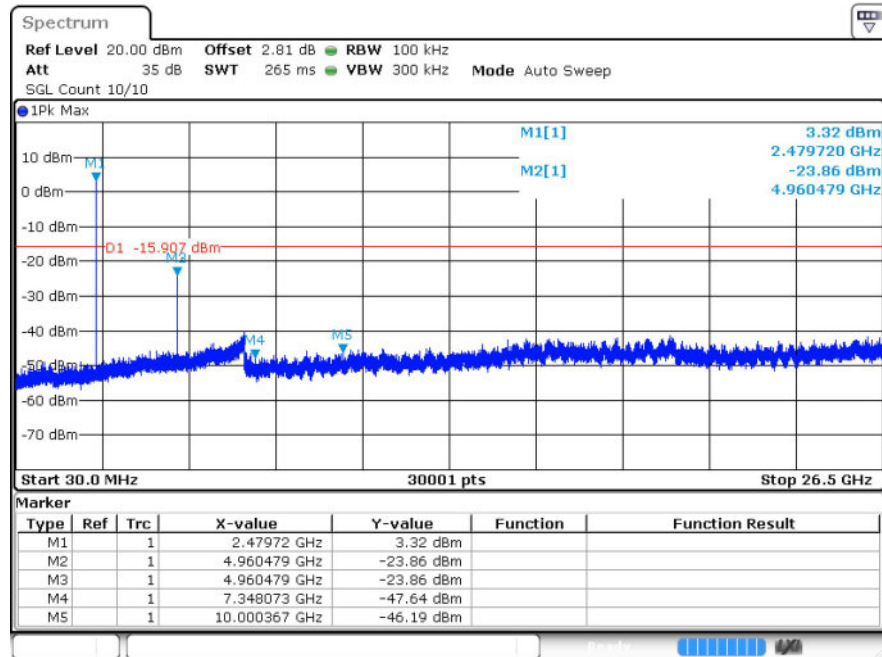


GFSK_HCH_Graphs

Pref

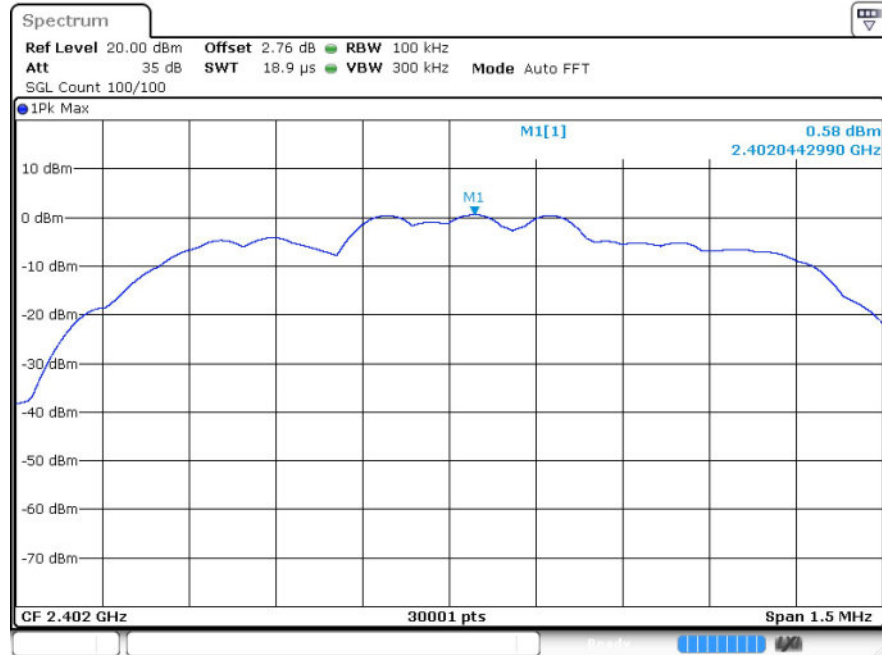


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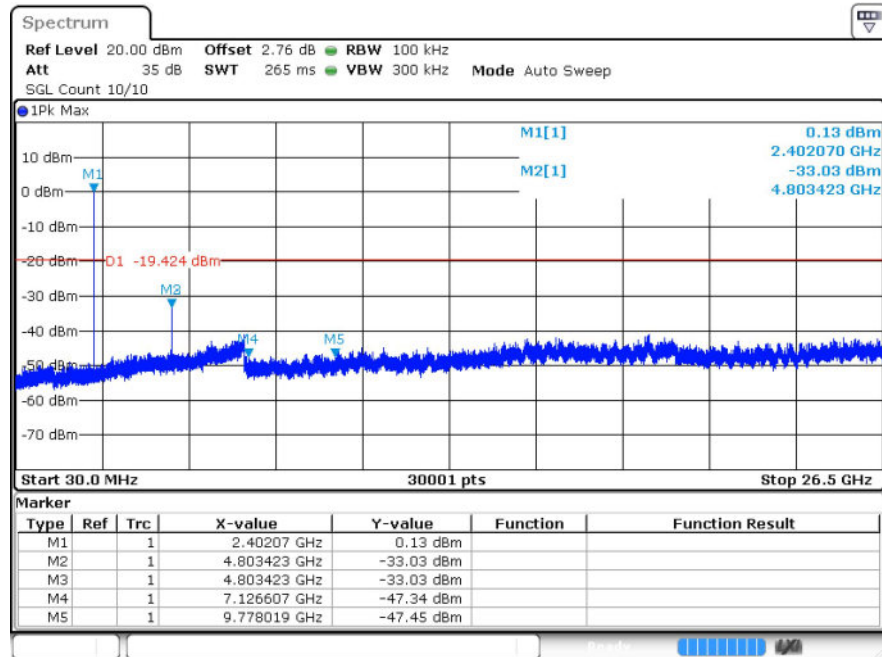


$\pi/4$ DQPSK_LCH_Graphs

Pref

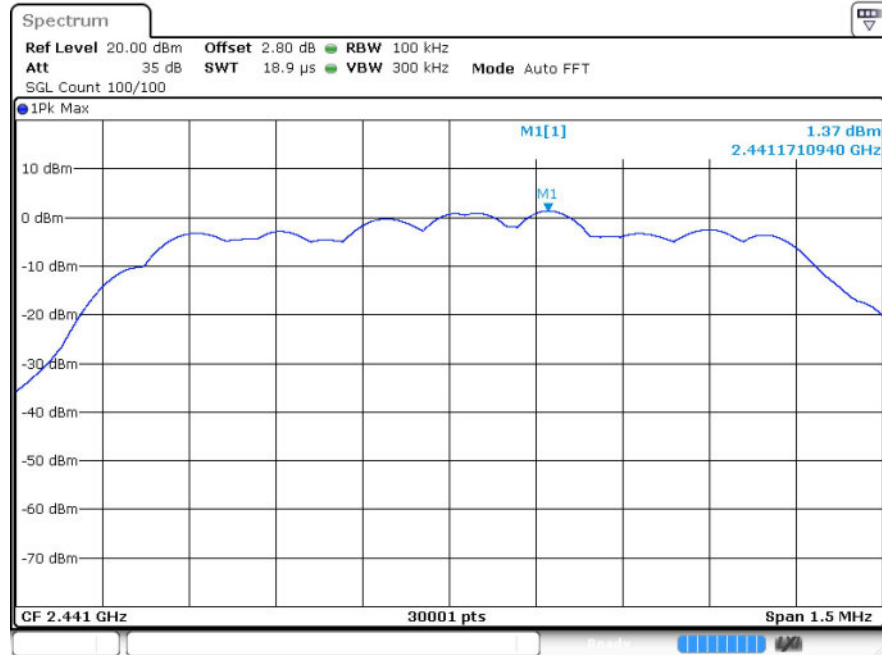


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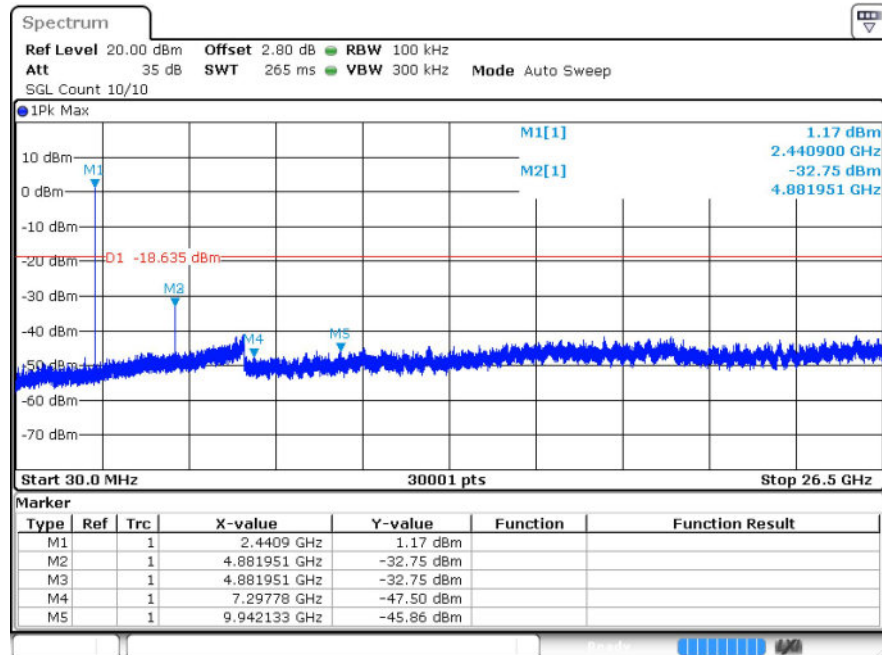


$\pi/4$ DQPSK_MCH_Graphs

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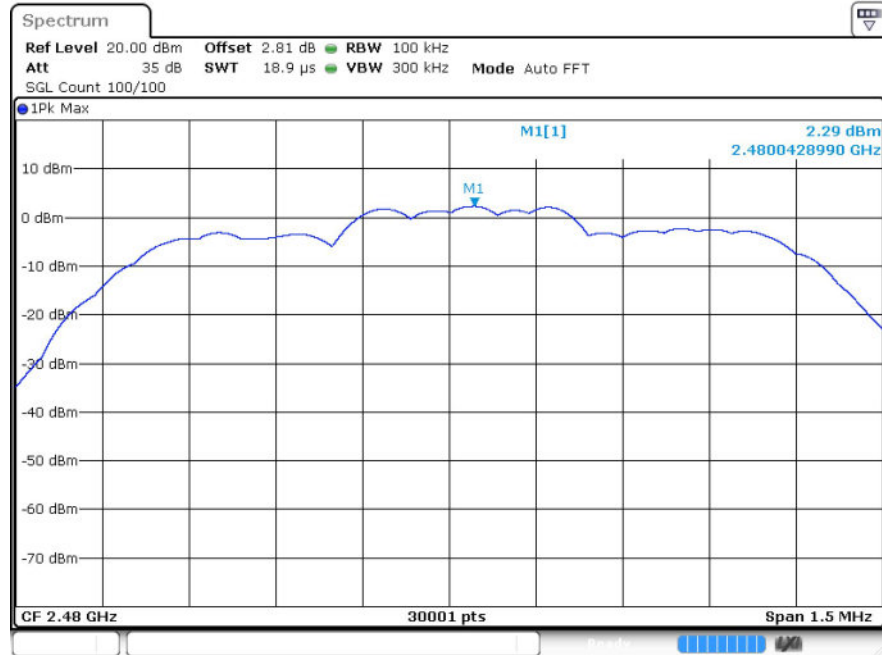


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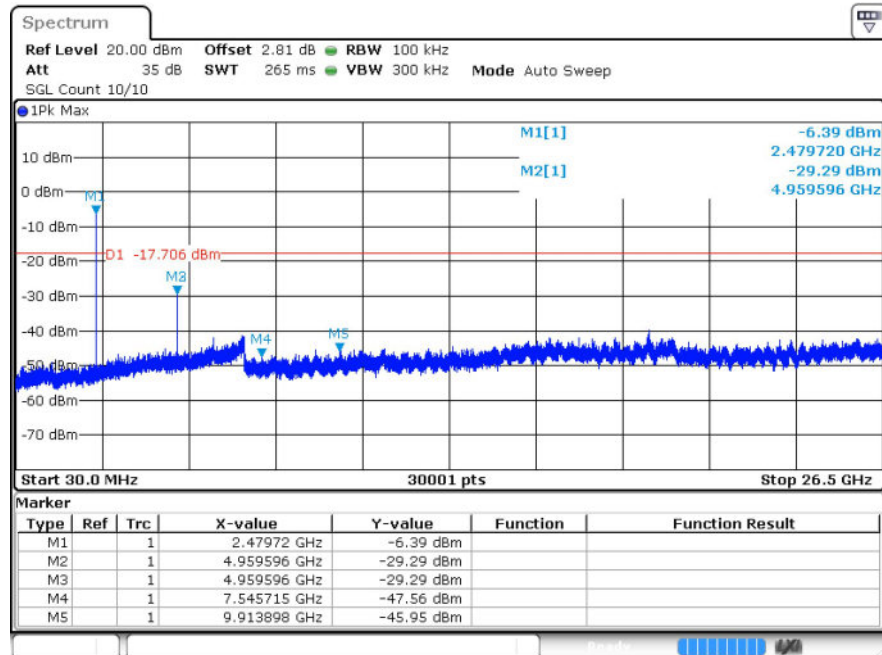


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

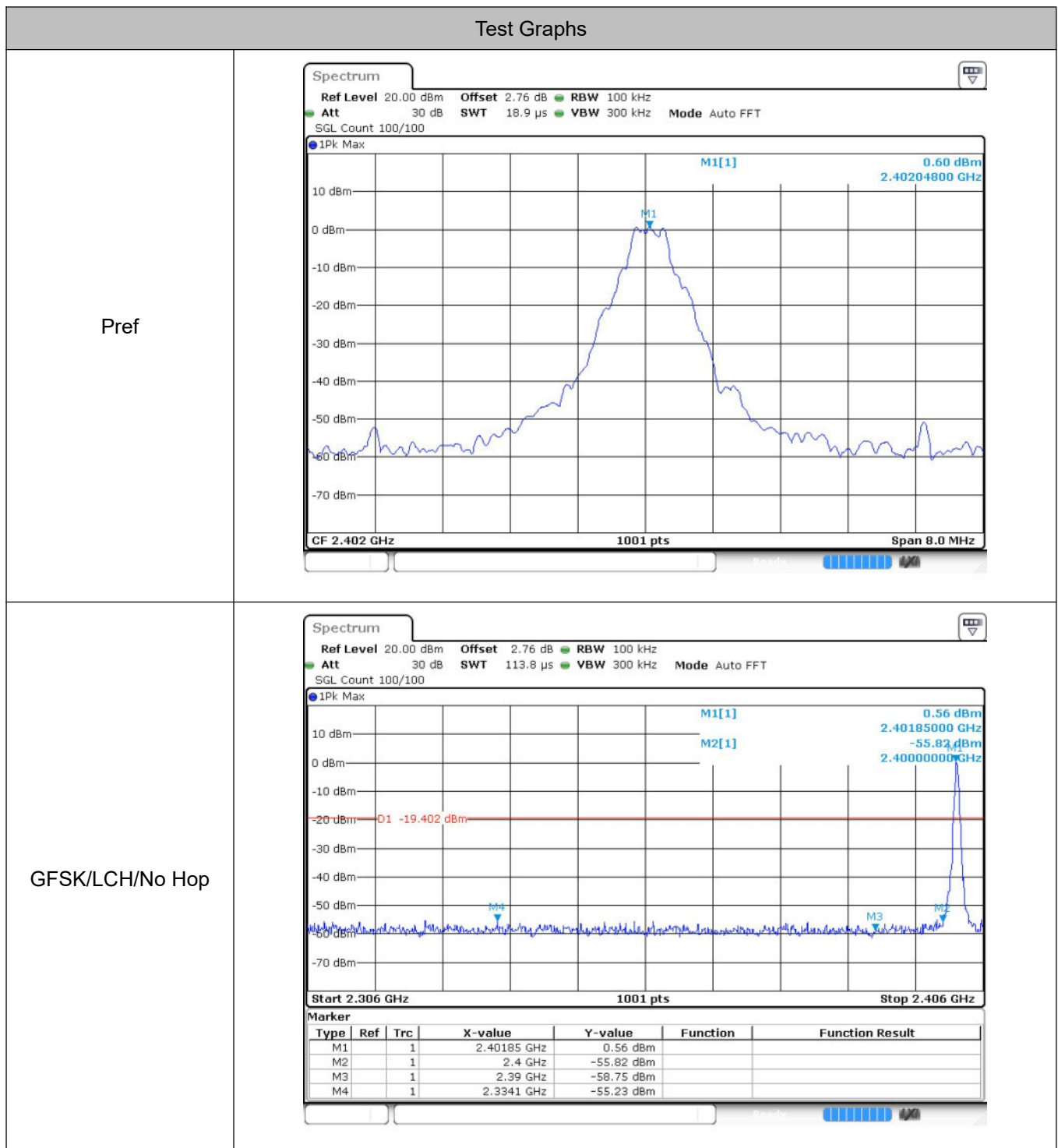


8 Band-edge for RF Conducted Emissions

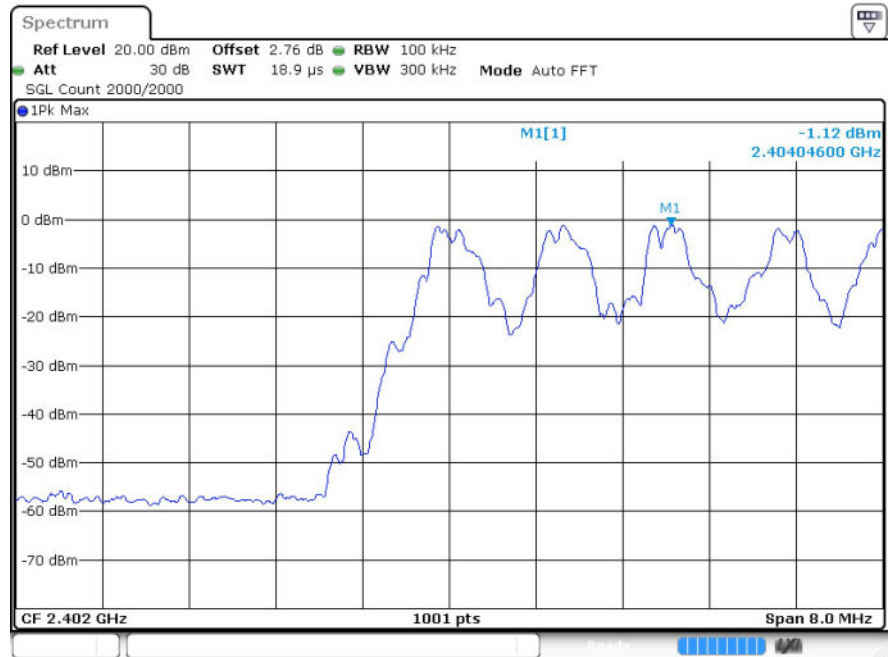
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-55.82	-20	Pass
			On	-53.7	-20	Pass
	HCH	2480	Off	-57.61	-20	Pass
			On	-54.99	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-56.57	-20	Pass
			On	-52.8	-20	Pass
	HCH	2480	Off	-57.81	-20	Pass
			On	-55.14	-20	Pass

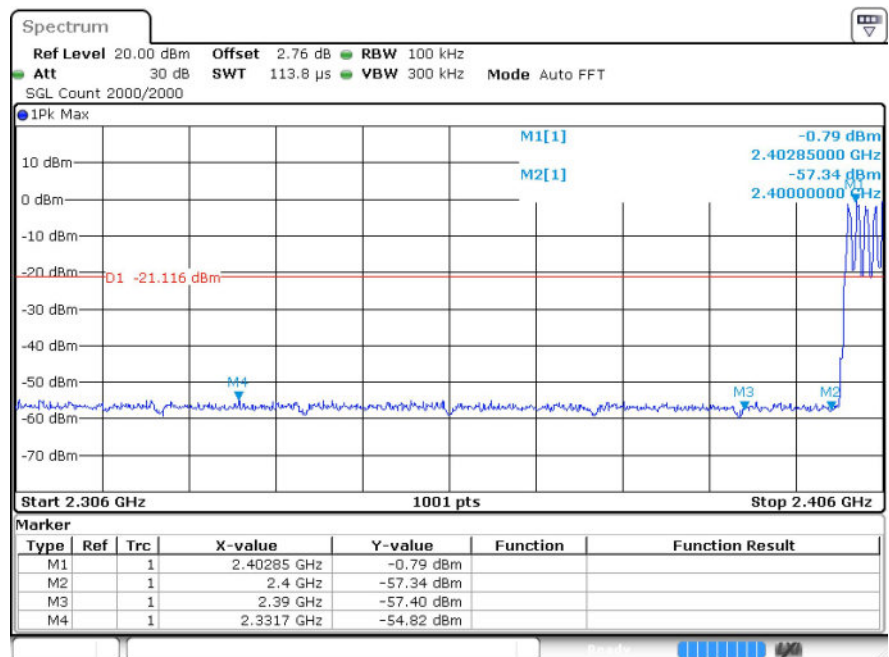
8.2 Test Graphs



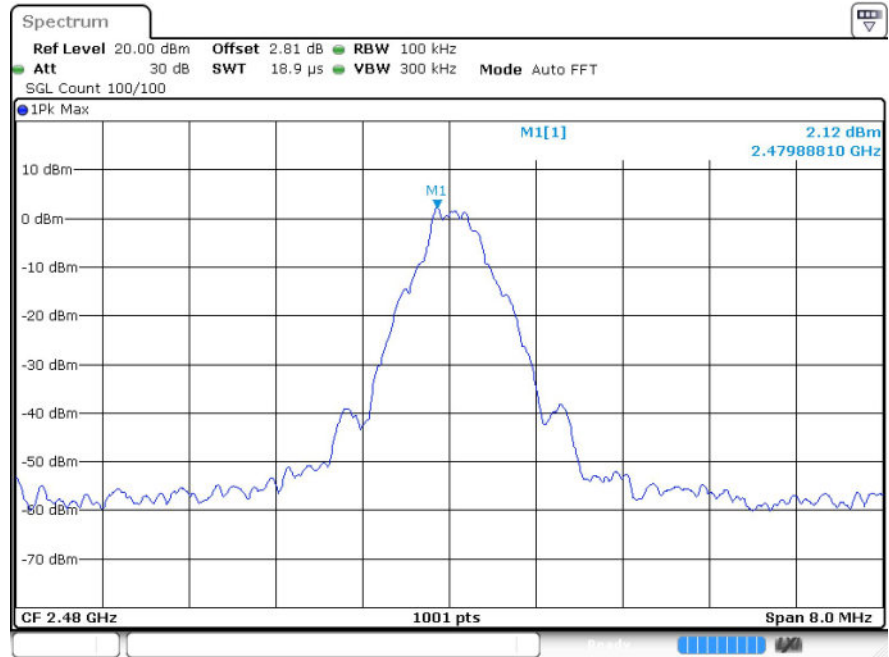
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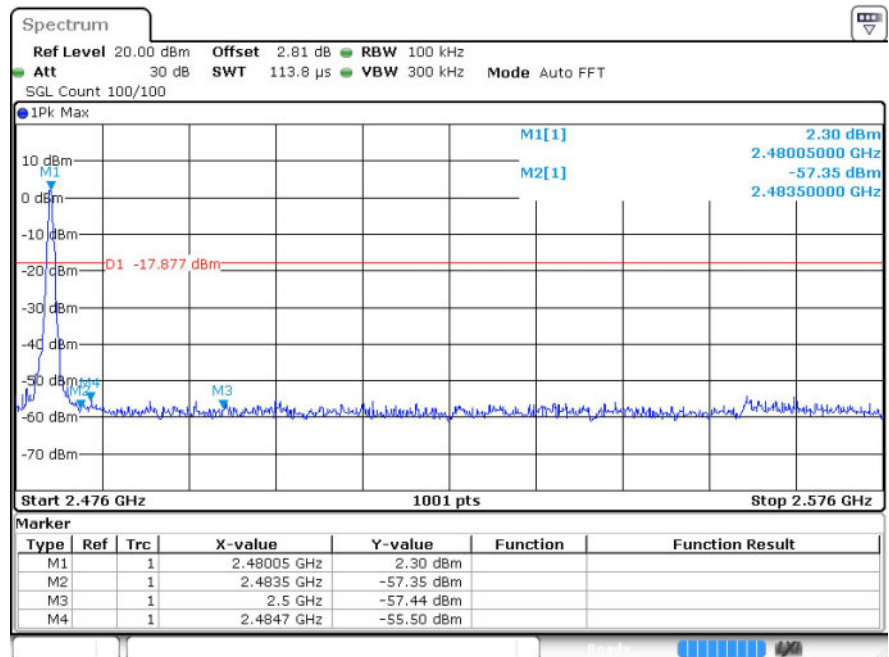
GFSK/LCH/Hop



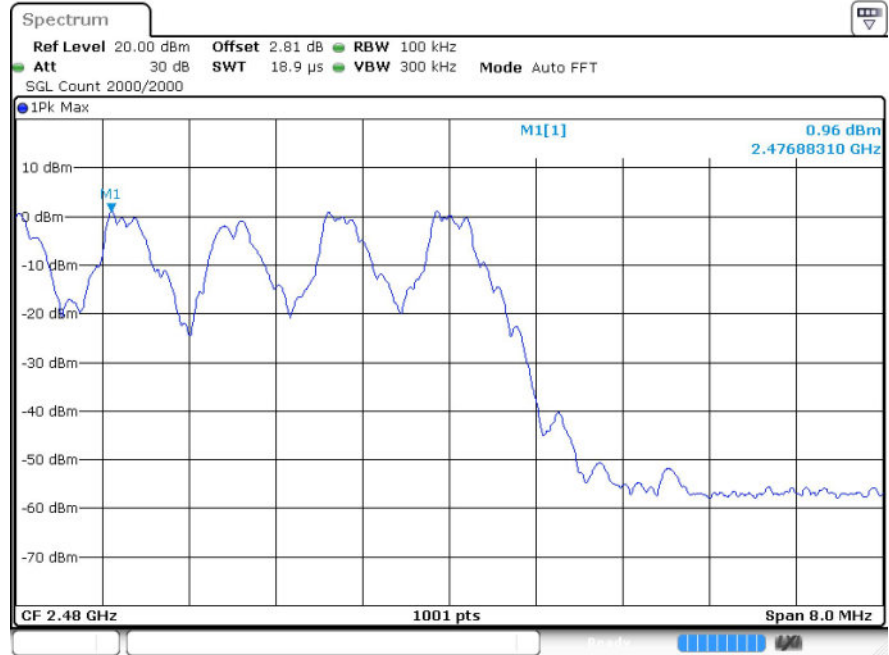
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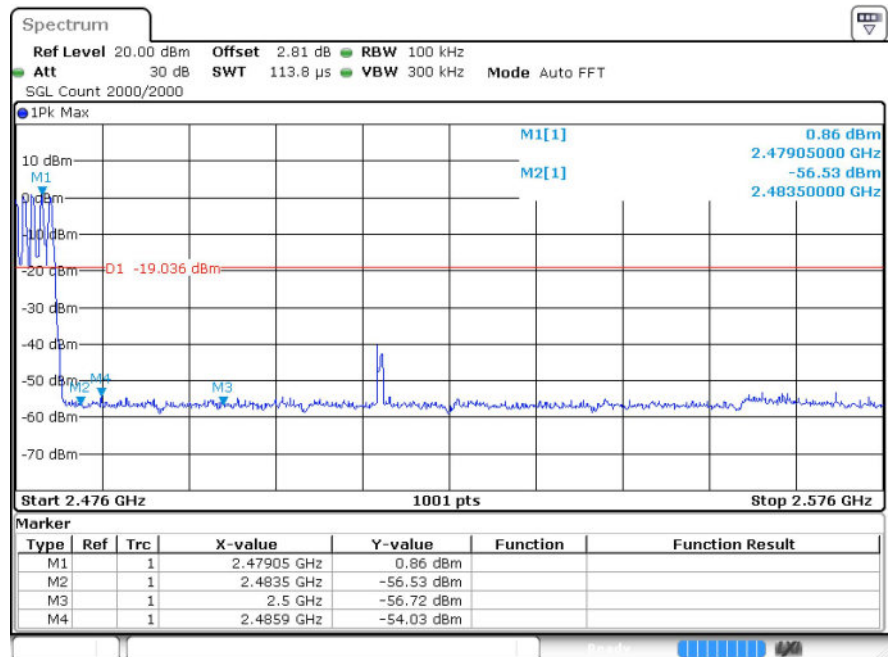
GFSK/HCH/No Hop



Ref.



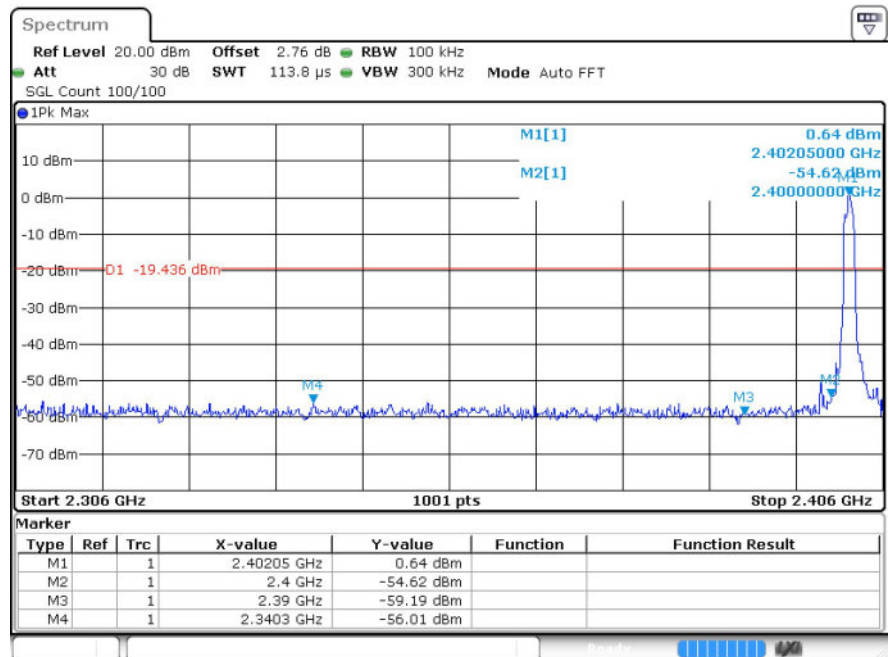
GFSK/HCH/Hop



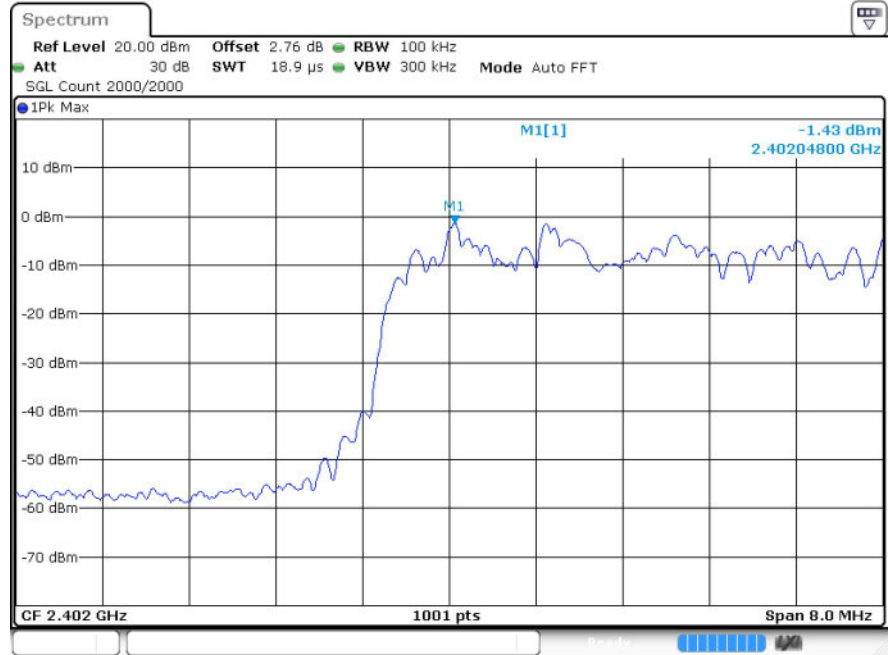
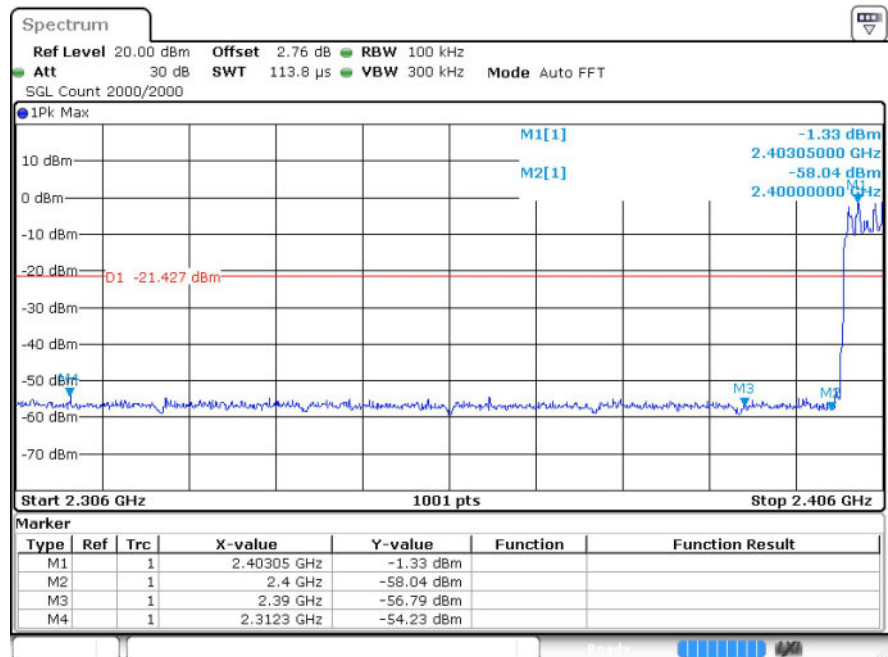
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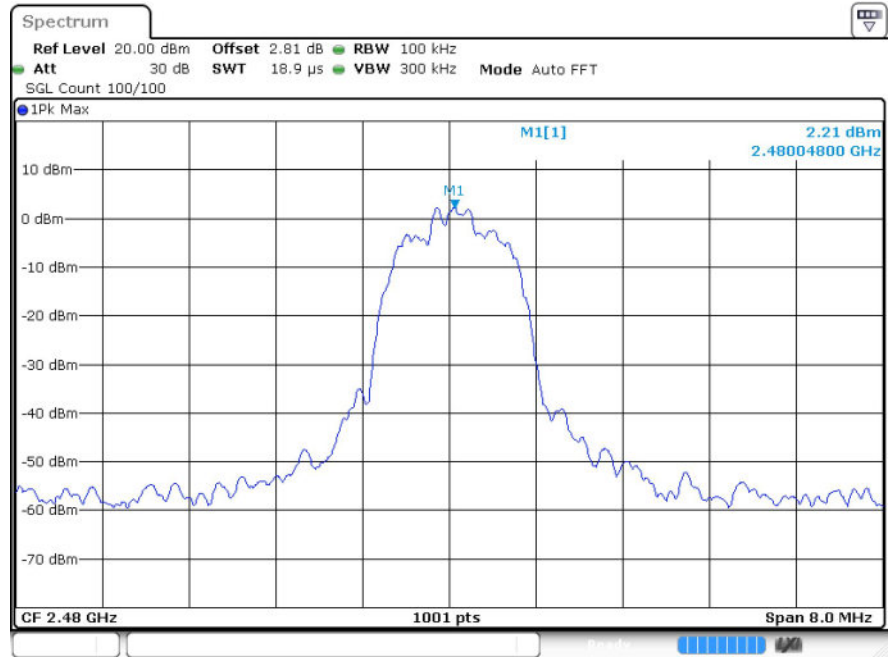
$\pi/4$ DQPSK/LCH/No Hop



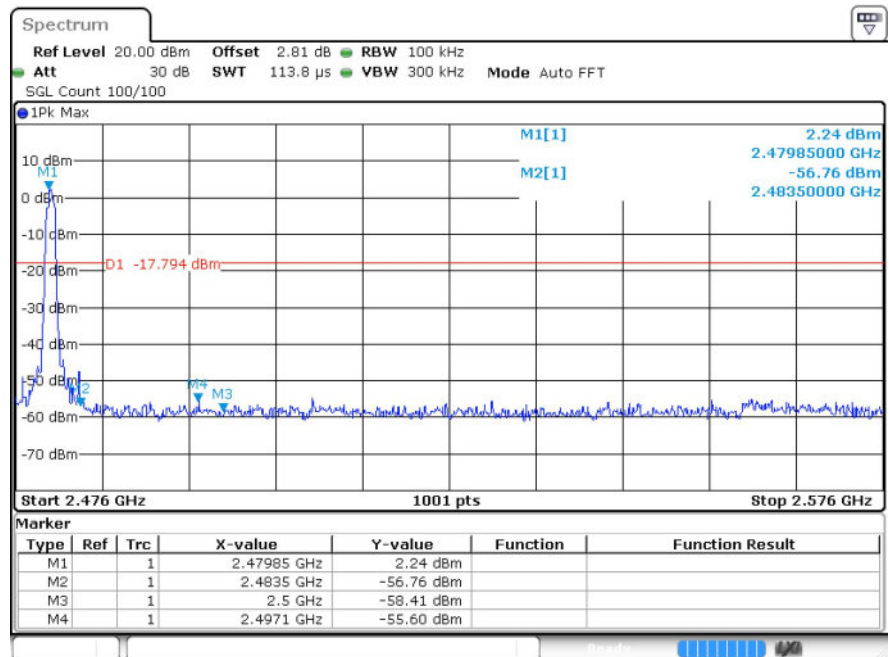
Ref


 $\pi/4$ DQPSK/LCH/Hop


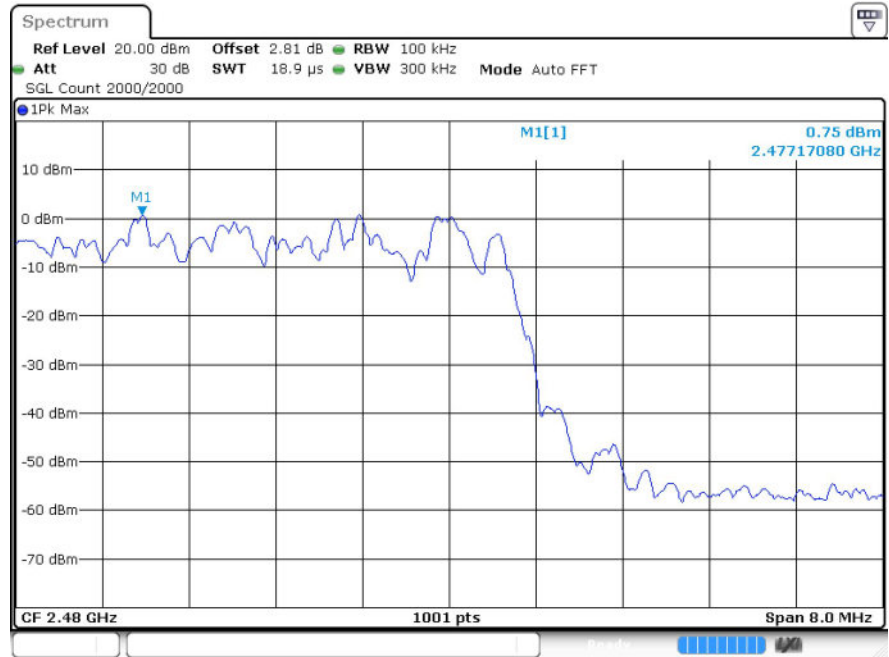
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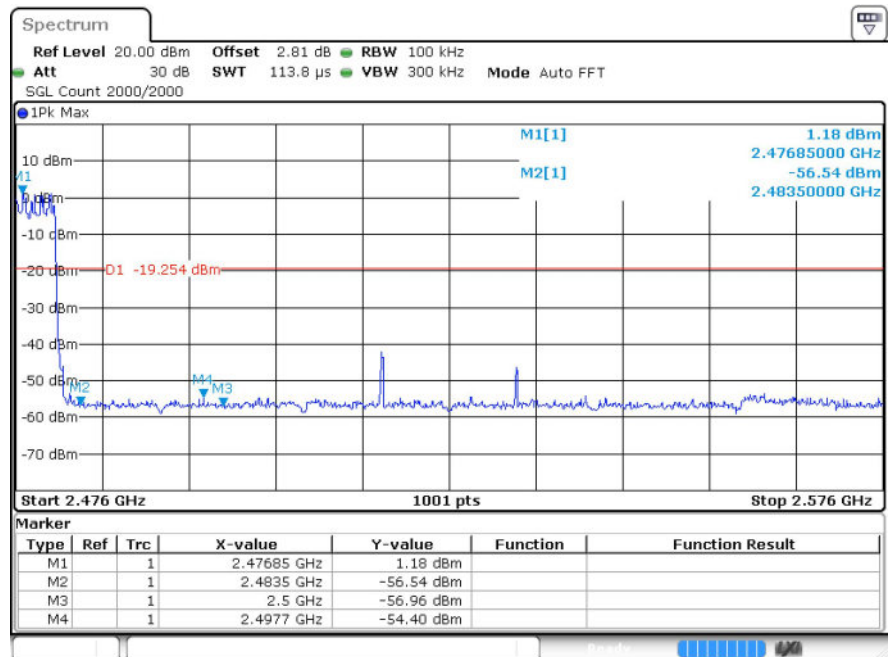
$\pi/4$ DQPSK/HCH/No
Hop



Ref



$\pi/4$ DQPSK/HCH/Hop



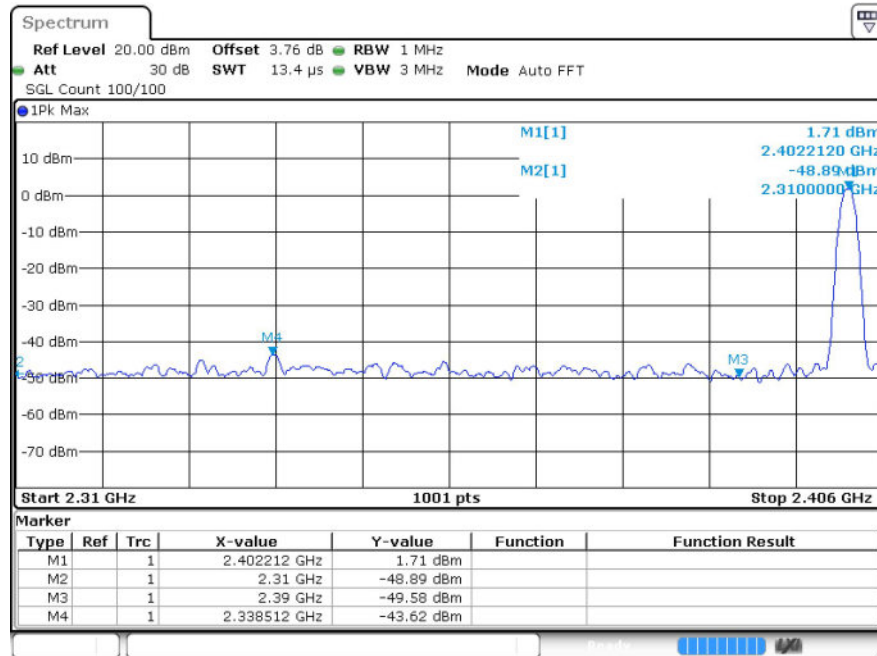
9 Restrict-band band-edge measurements

9.1 Test Result

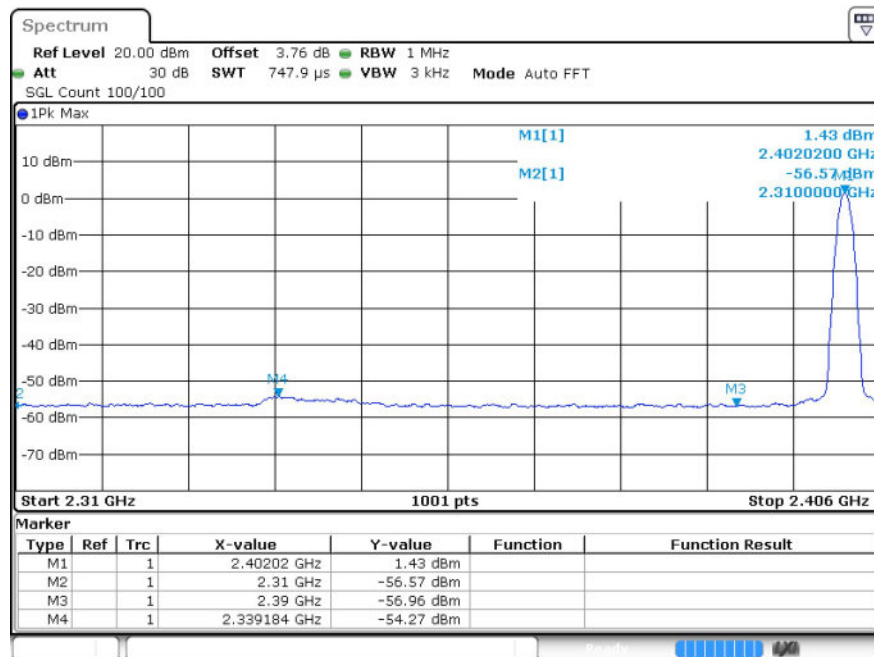
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.88	2.38	48.76	PEAK	74	Pass
	Off	2310.0	-56.57	2.38	41.07	AV	54	Pass
	Off	2338.512	-43.62	2.38	54.02	PEAK	74	Pass
	Off	2339.184	-54.27	2.38	43.37	AV	54	Pass
	Off	2390.0	-49.57	2.38	48.07	PEAK	74	Pass
	Off	2390.0	-56.95	2.38	40.69	AV	54	Pass
	Off	2483.5	-48.05	2.38	49.59	PEAK	74	Pass
	Off	2483.5	-53.76	2.38	43.88	AV	54	Pass
	Off	2485.888	-45.24	2.38	52.40	PEAK	74	Pass
	Off	2483.512	-53.76	2.38	43.88	AV	54	Pass
	Off	2500.0	-48.34	2.38	49.30	PEAK	74	Pass
	Off	2500.0	-56.51	2.38	41.13	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48	2.38	49.64	PEAK	74	Pass
	Off	2310.0	-56.21	2.38	41.43	AV	54	Pass
	Off	2339.856	-44.44	2.38	53.20	PEAK	74	Pass
	Off	2340.336	-54.26	2.38	43.38	AV	54	Pass
	Off	2390.0	-47.65	2.38	49.99	PEAK	74	Pass
	Off	2390.0	-56.58	2.38	41.06	AV	54	Pass
	Off	2483.5	-40.33	2.38	57.31	PEAK	74	Pass
	Off	2483.5	-54.19	2.38	43.45	AV	54	Pass
	Off	2483.512	-40.33	2.38	57.31	PEAK	74	Pass
	Off	2483.512	-54.19	2.38	43.45	AV	54	Pass
	Off	2500.0	-48.83	2.38	48.81	PEAK	74	Pass
	Off	2500.0	-56.59	2.38	41.05	AV	54	Pass

9.2 Test Graphs

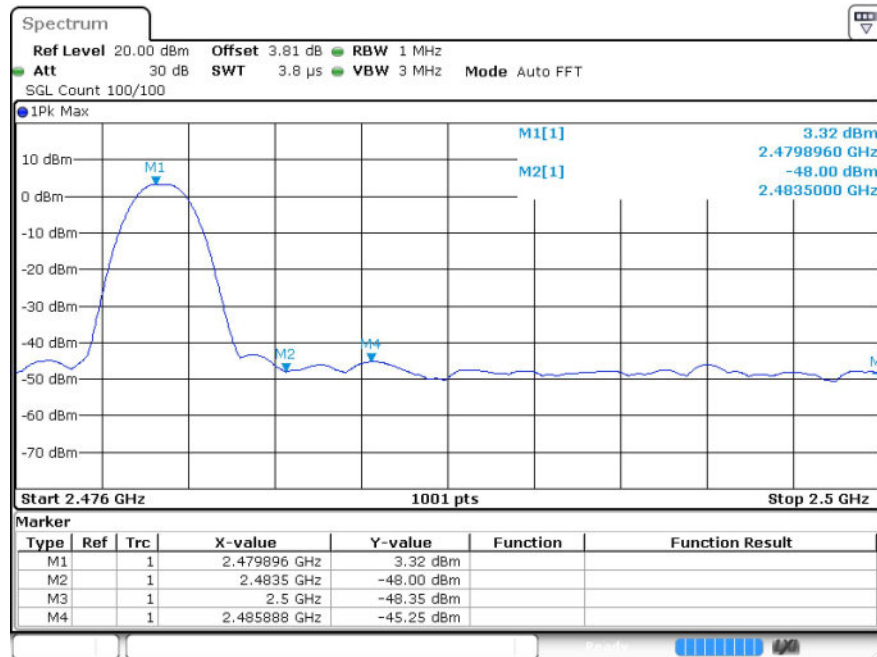
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



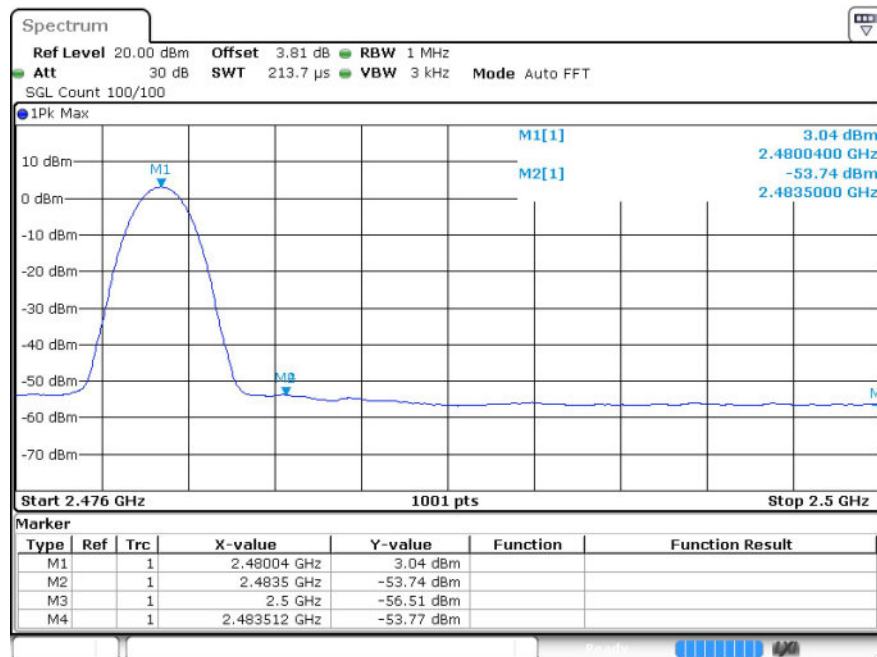
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



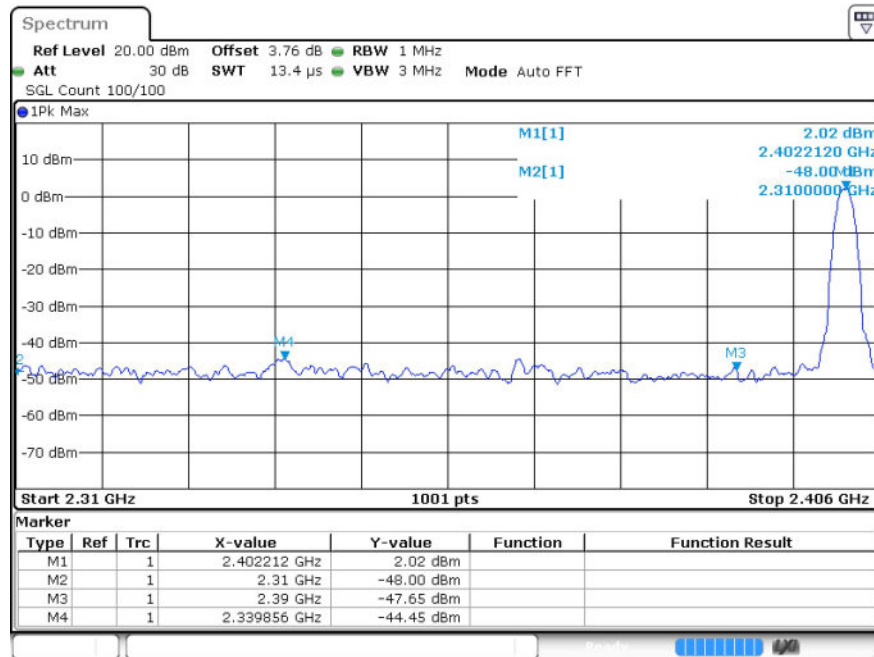
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



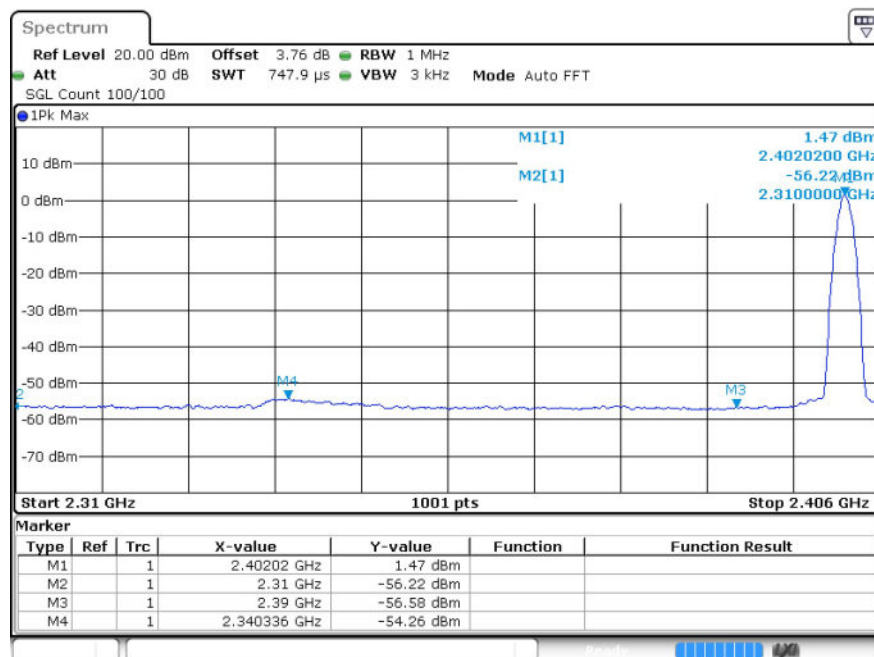
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



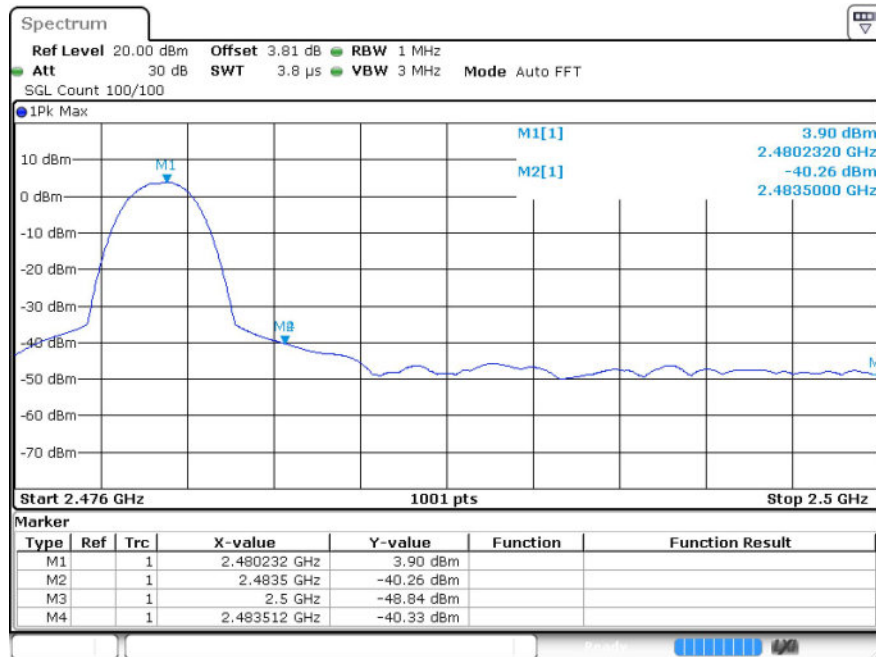
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



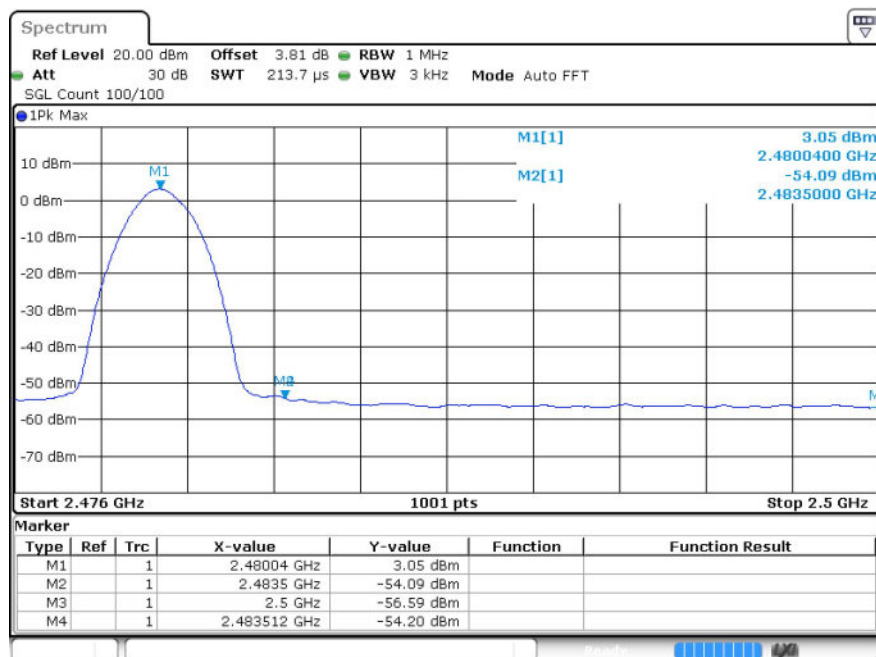
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---