



Appendix A

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

Product Name: Bluetooth audio receiver transmitter

Trade Mark: N/A

Test Model: BR01

Environmental Conditions

Temperature:	25.0℃
Relative Humidity:	55.5%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

Contents

Page

COVER PAGE

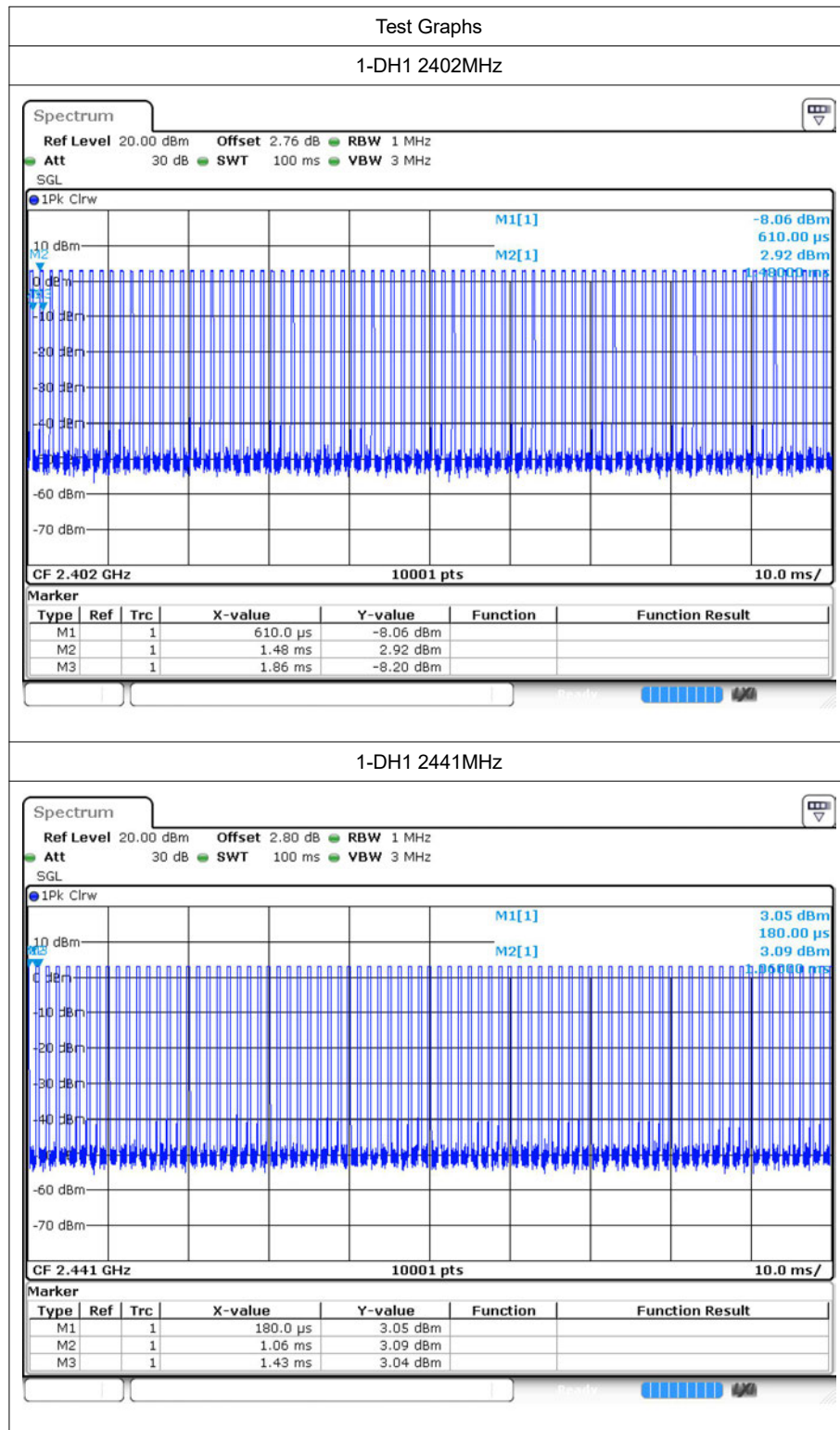
1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Peak Output Power	7
2.1	Test Result	7
2.2	Test Graphs	8
3	20dB Bandwidth	11
3.1	Test Result	11
3.2	Test Graphs	12
4	Carrier Frequency Separation	15
4.1	Test Result	15
4.2	Test Graphs	16
5	Hopping Channel Number	17
5.1	Test Result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

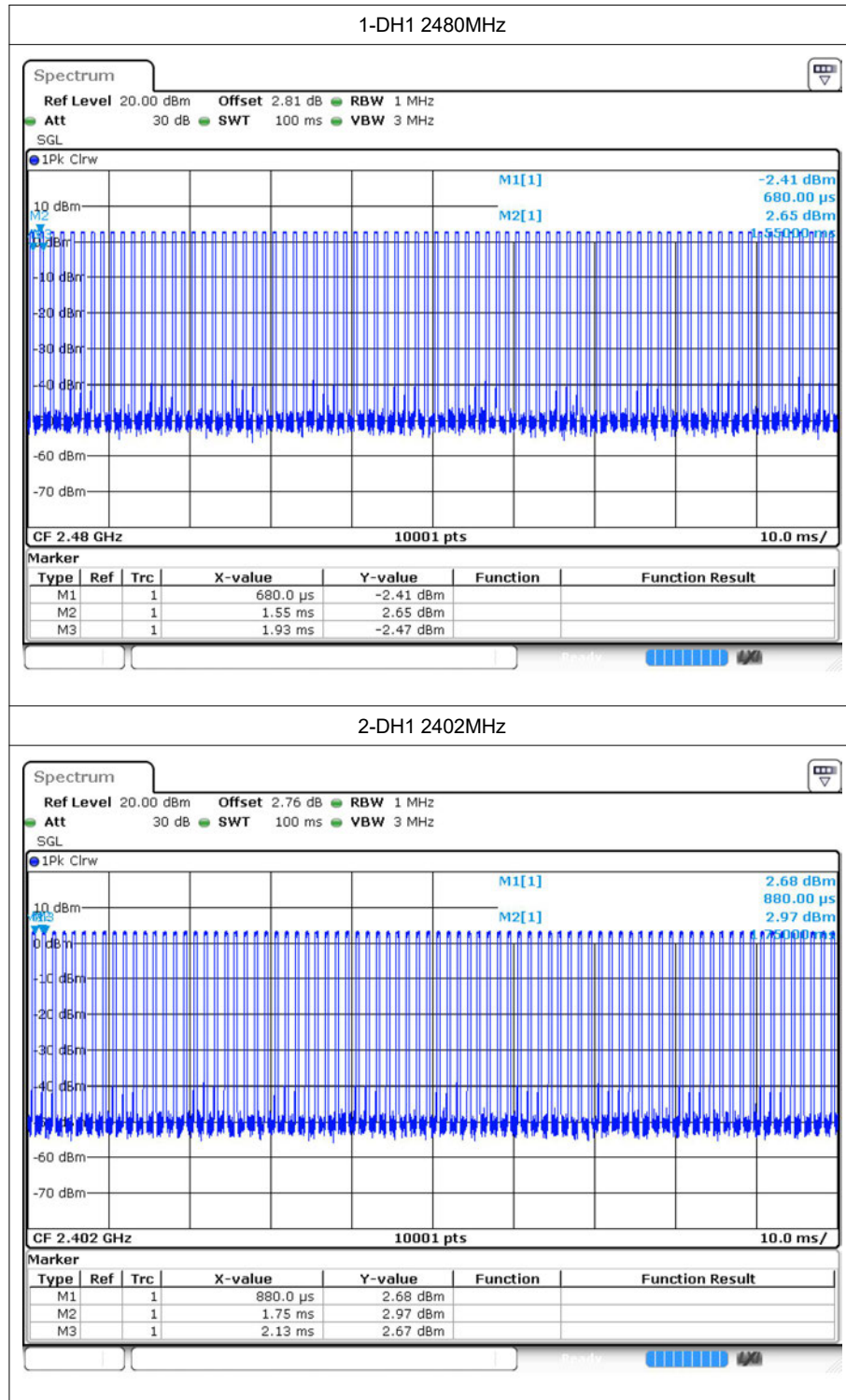
1 Duty Cycle

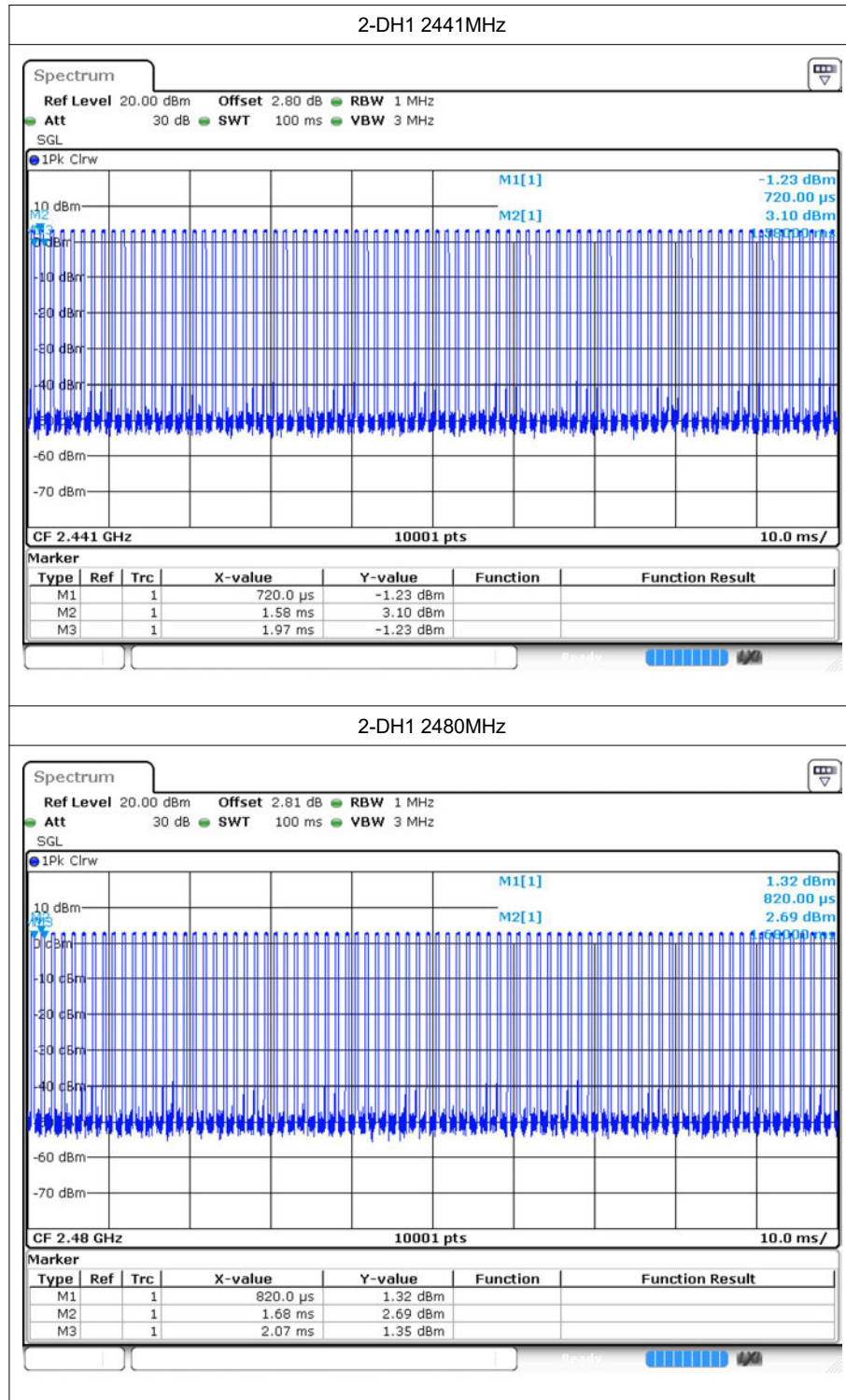
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.19	2.63
1-DH1	2441	30.41	2.7
1-DH1	2480	31.2	2.63
2-DH1	2402	31.2	2.63
2-DH1	2441	32	2.56
2-DH1	2480	32	2.56

1.2 Test Graphs





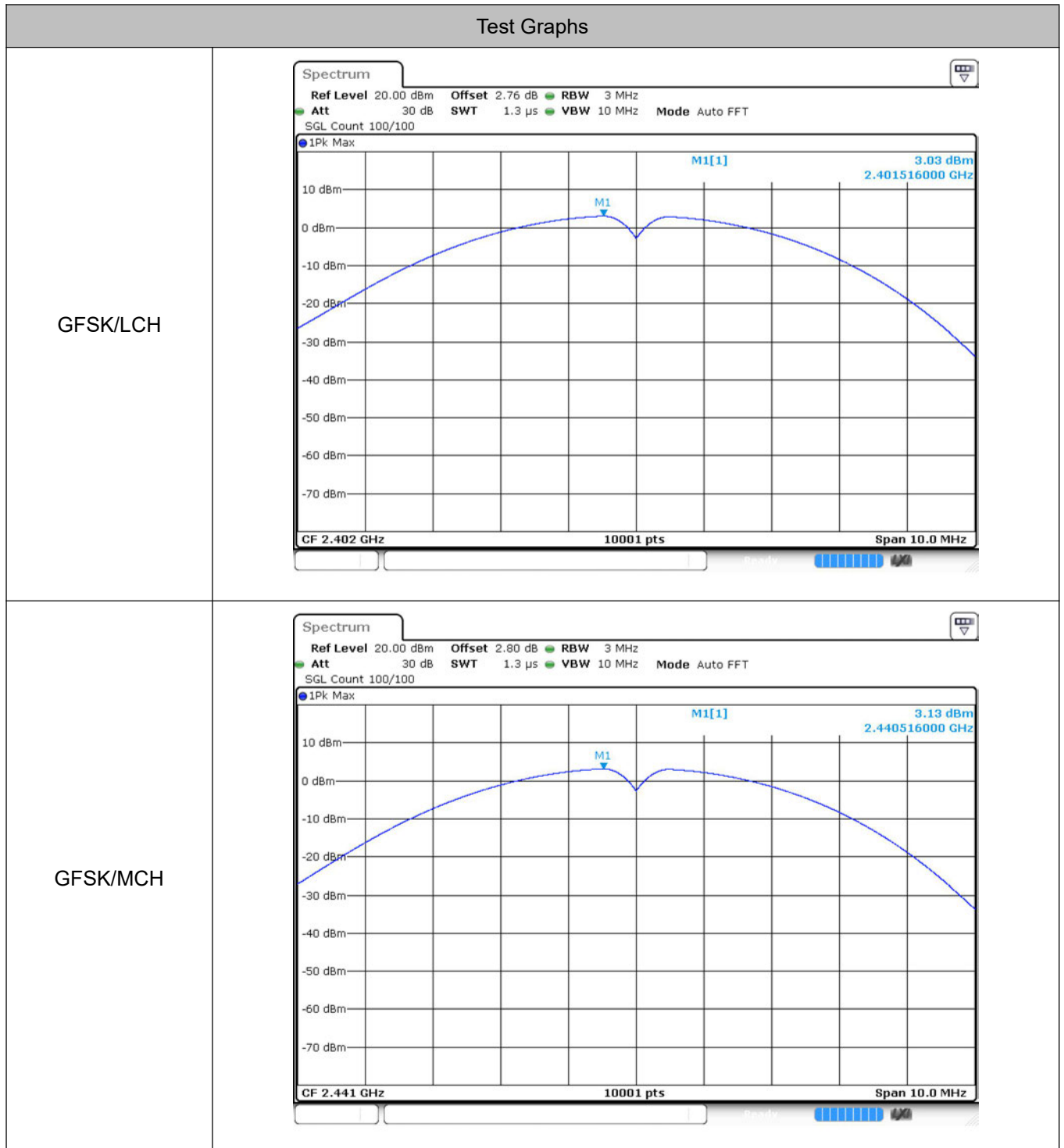


2 Maximum Conducted Peak Output Power

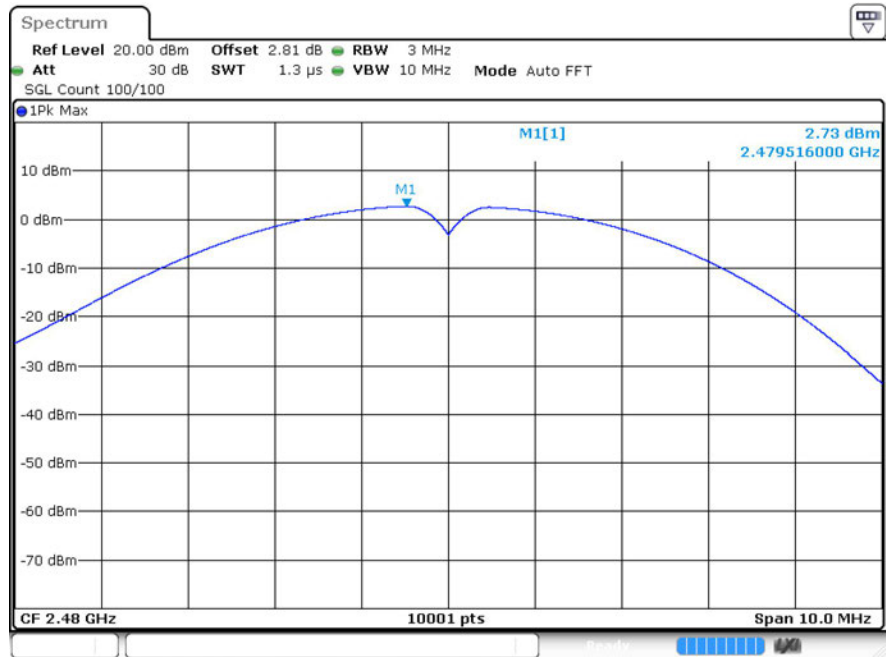
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.03	21	Pass
	MCH	3.13	21	Pass
	HCH	2.73	21	Pass
$\pi/4$ DQPSK	LCH	3.21	21	Pass
	MCH	3.46	21	Pass
	HCH	3.35	21	Pass

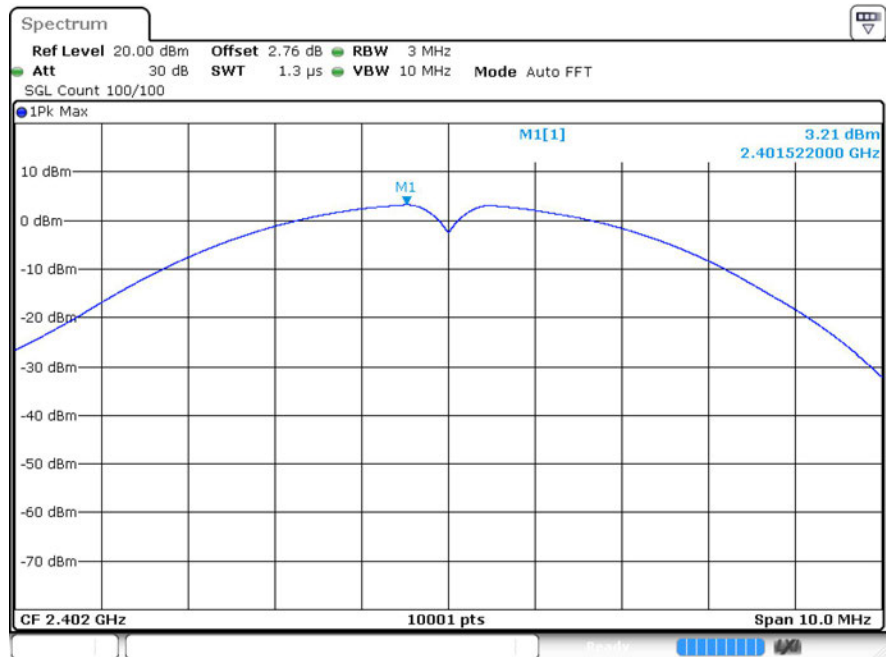
2.2 Test Graphs



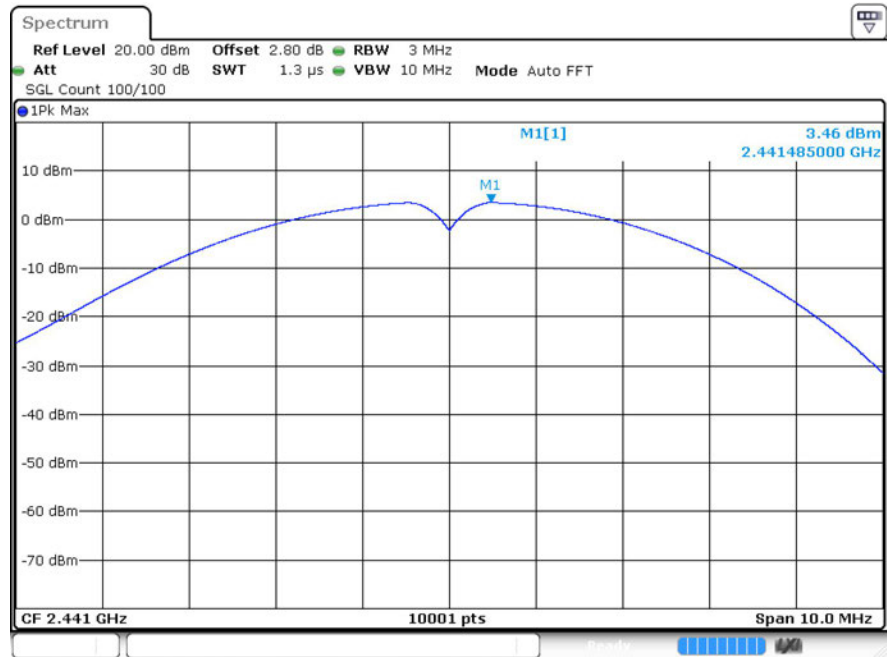
GFSK/HCH



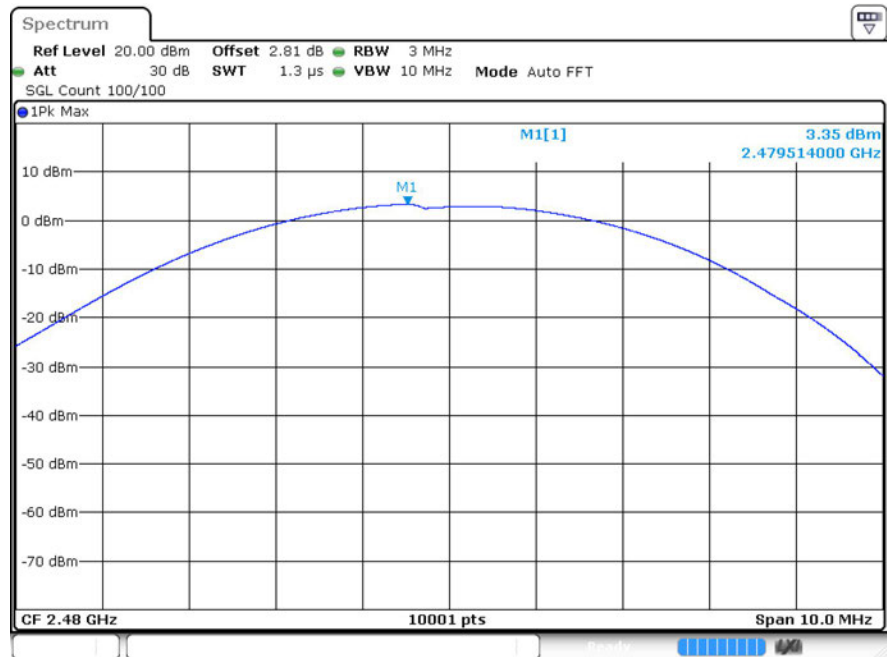
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

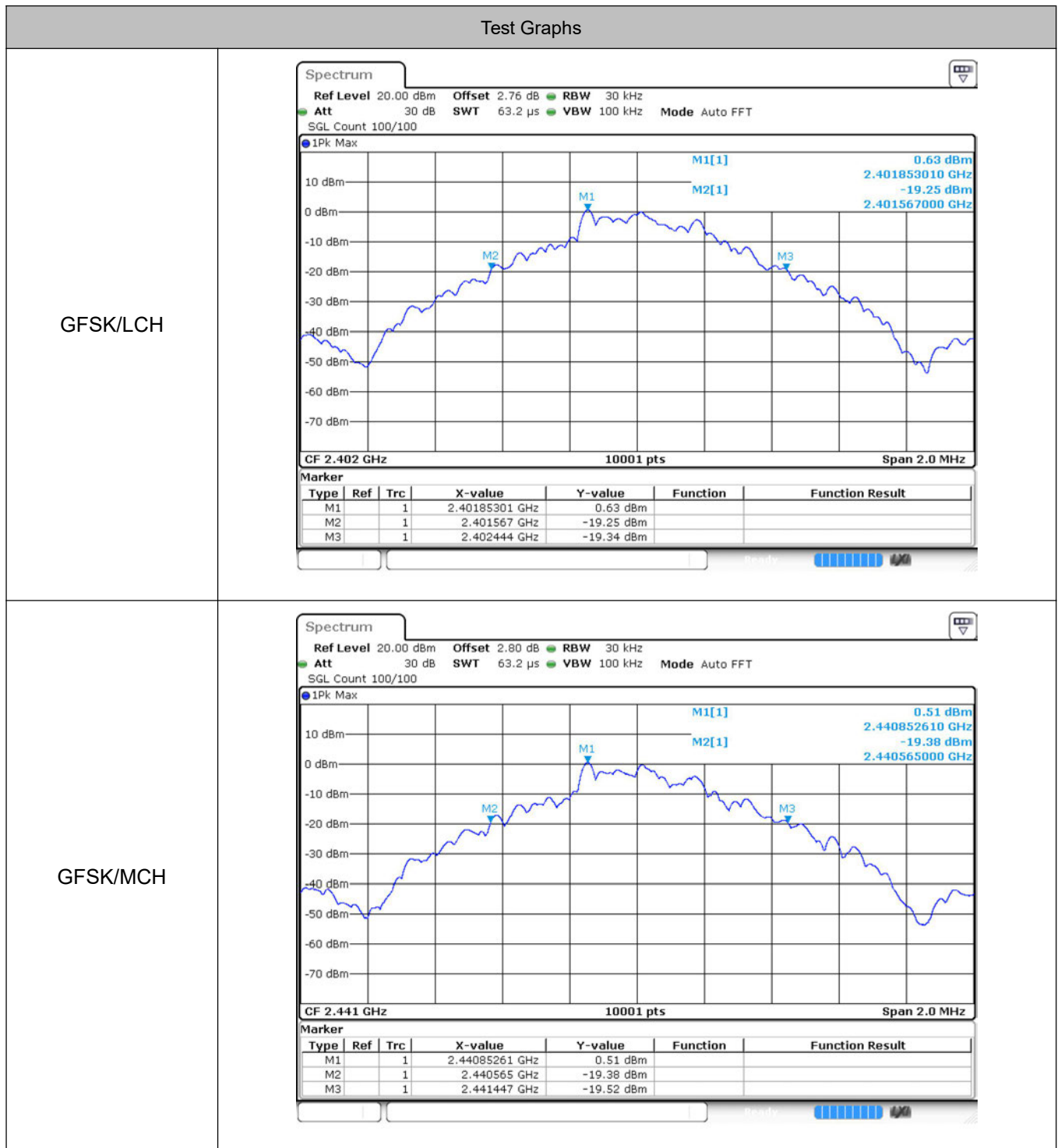


3 20dB Bandwidth

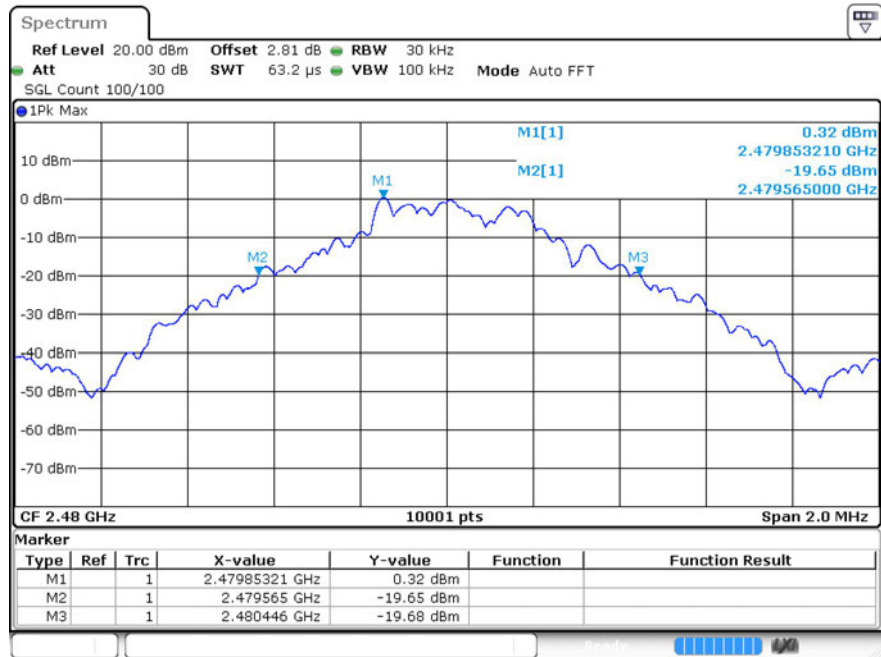
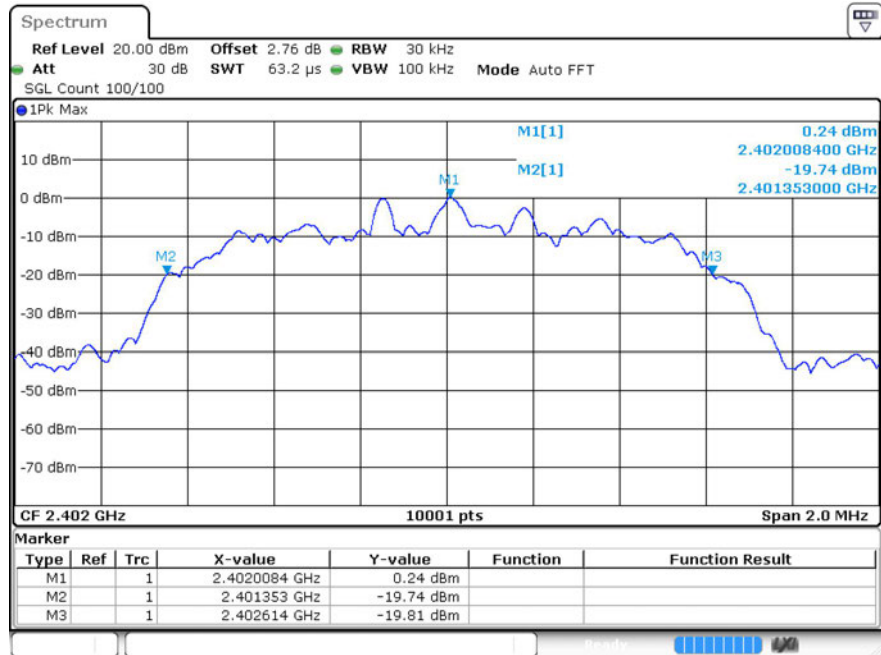
3.1 Test Result

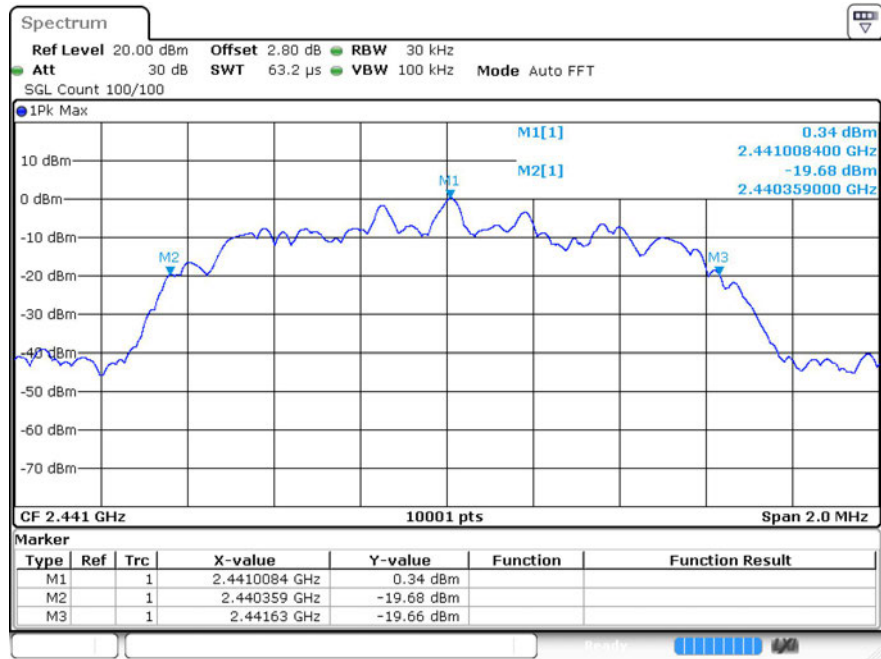
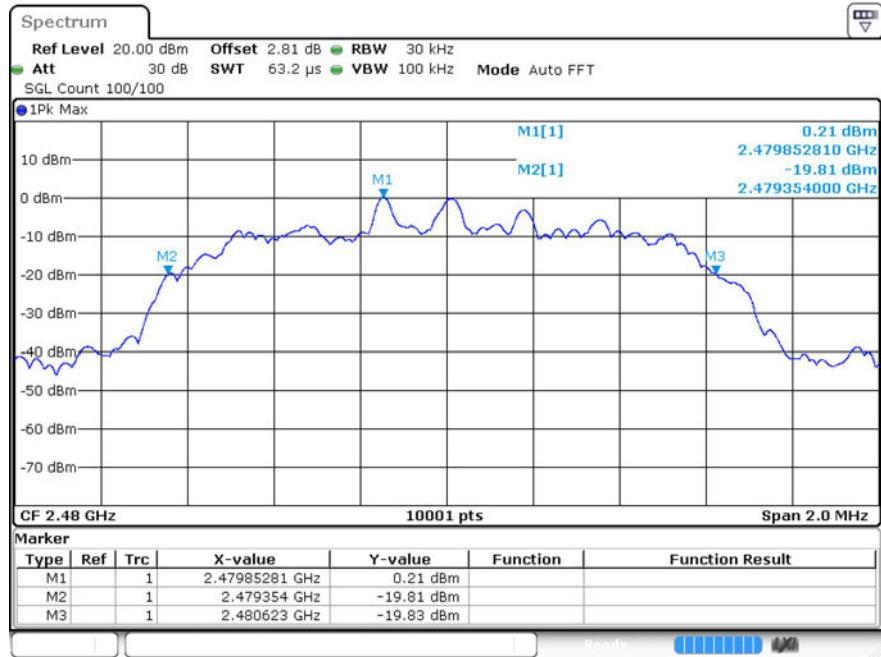
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.878	Not Specified	Pass
	MCH	0.882	Not Specified	Pass
	HCH	0.881	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.261	Not Specified	Pass
	MCH	1.271	Not Specified	Pass
	HCH	1.269	Not Specified	Pass

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


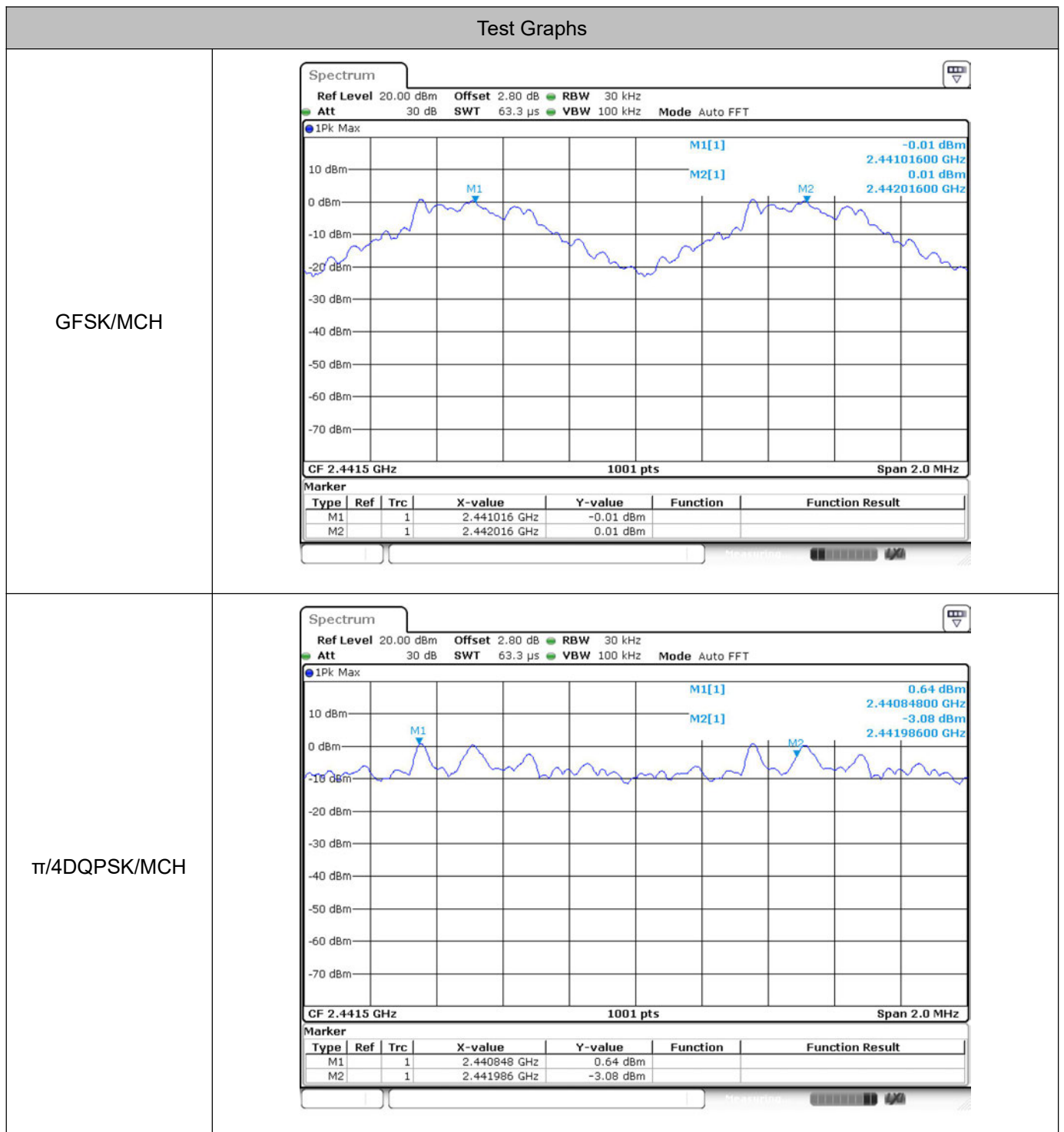
$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1	0.588	Pass
$\pi/4$ DQPSK	MCH	1.138	0.847	Pass

4.2 Test Graphs

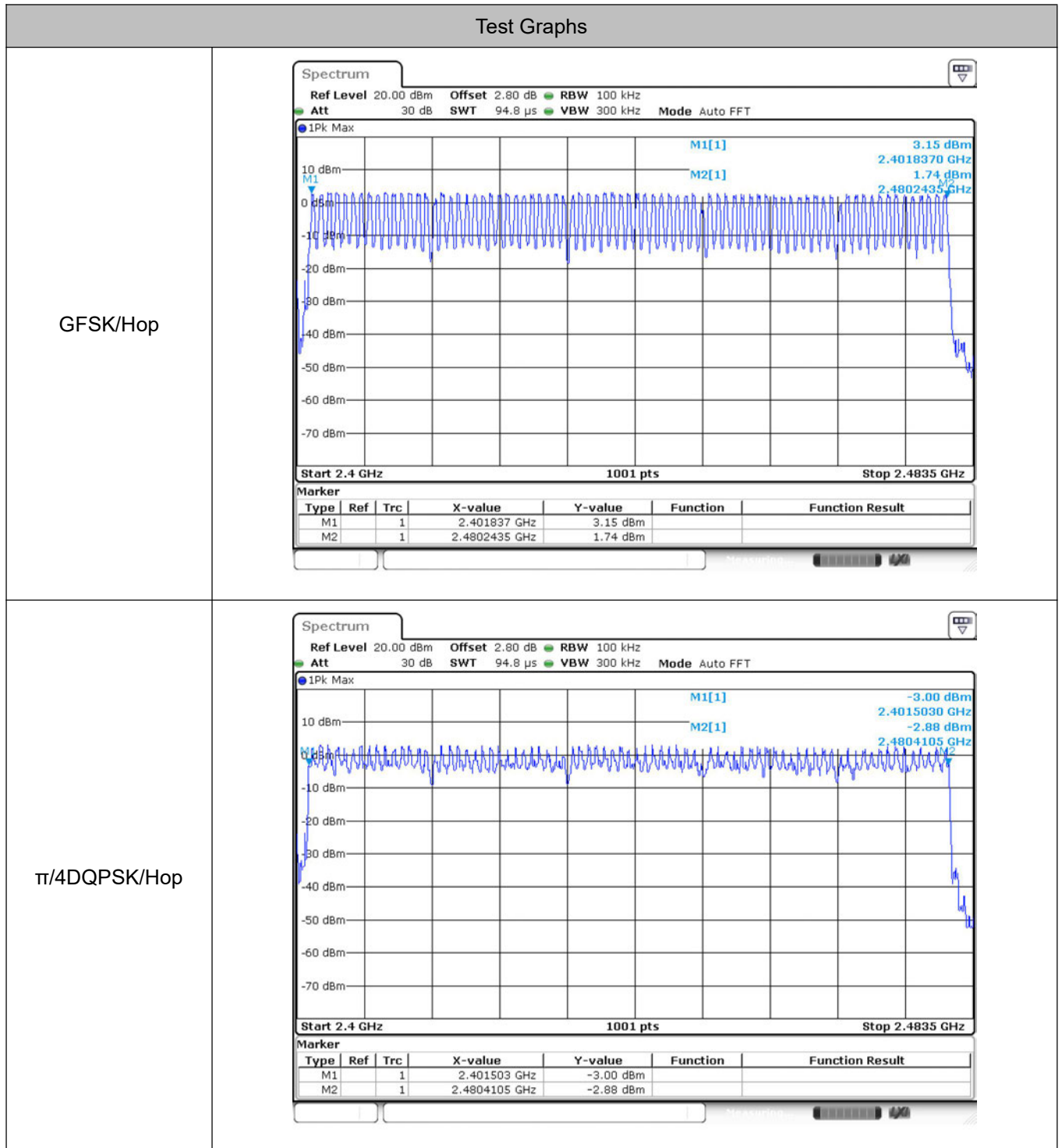


5 Hopping Channel Number

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

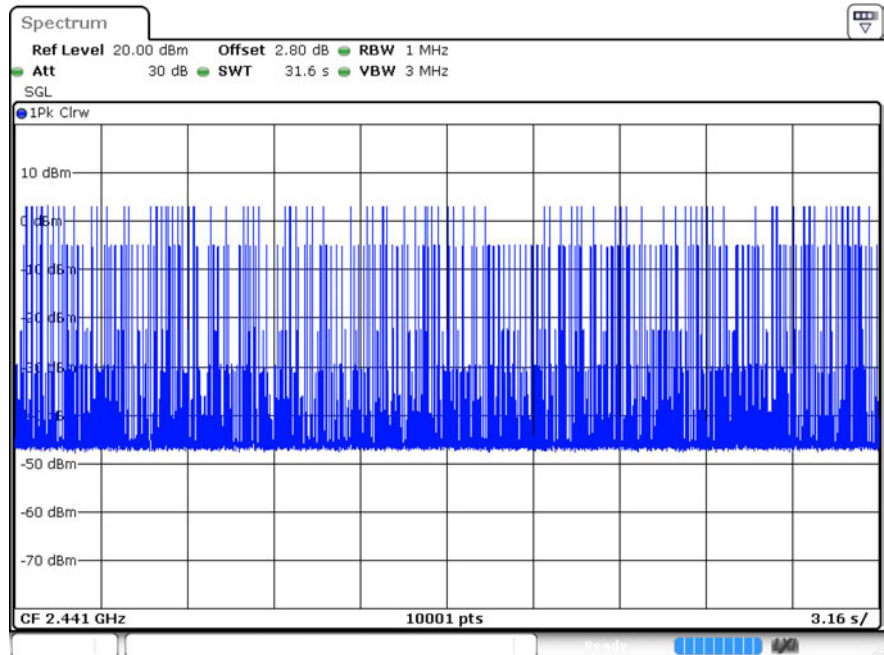
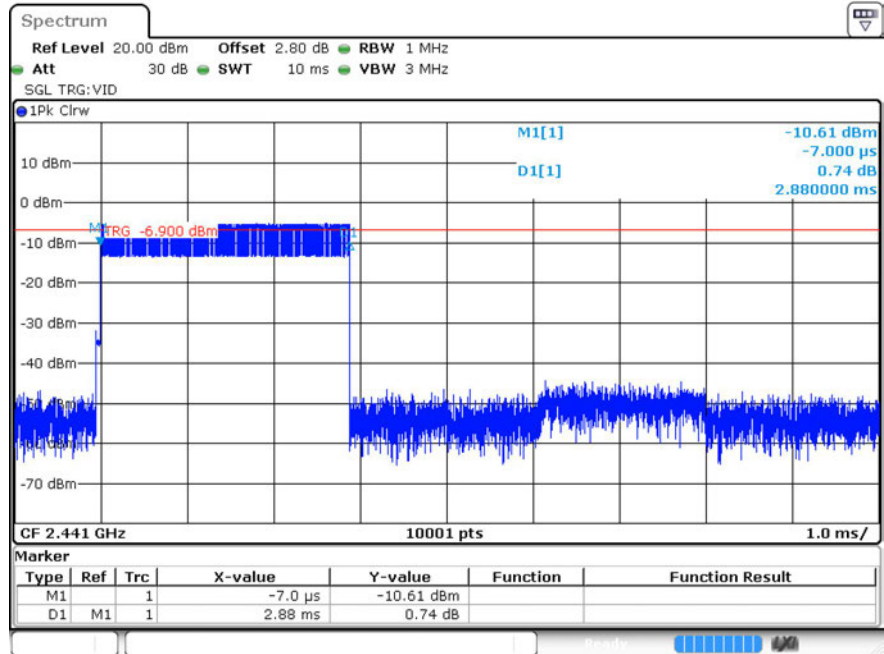
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.88	108	311.04	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.886	97	279.942	0.4	Pass

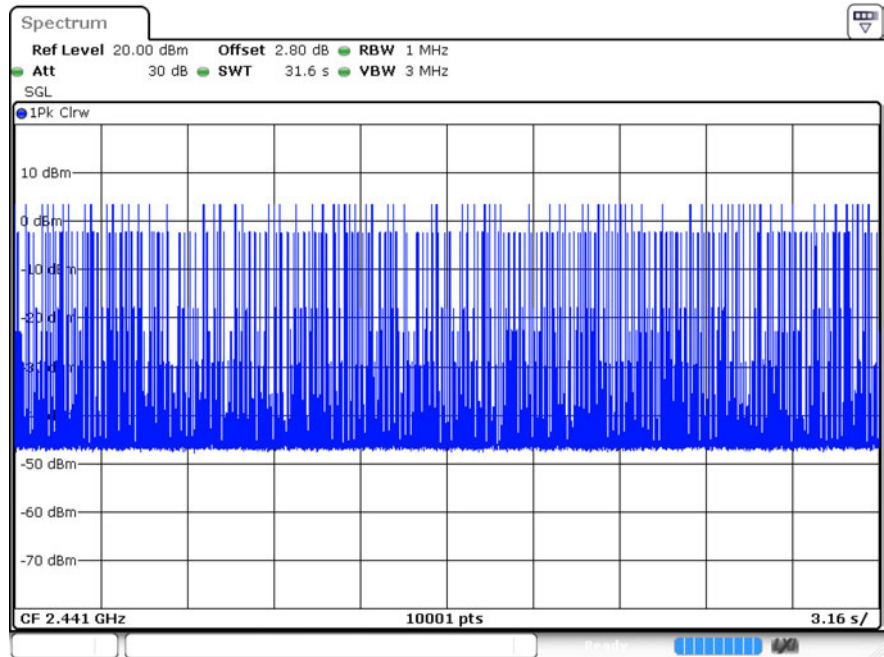
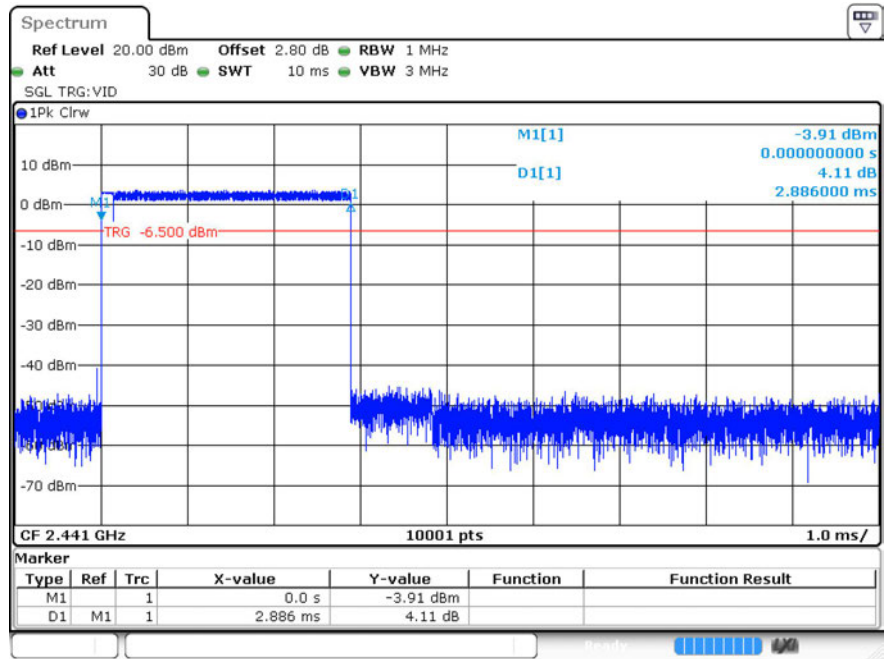
6.2 Test Graphs

Test Graphs

GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH



7 RF Conducted Spurious Emissions

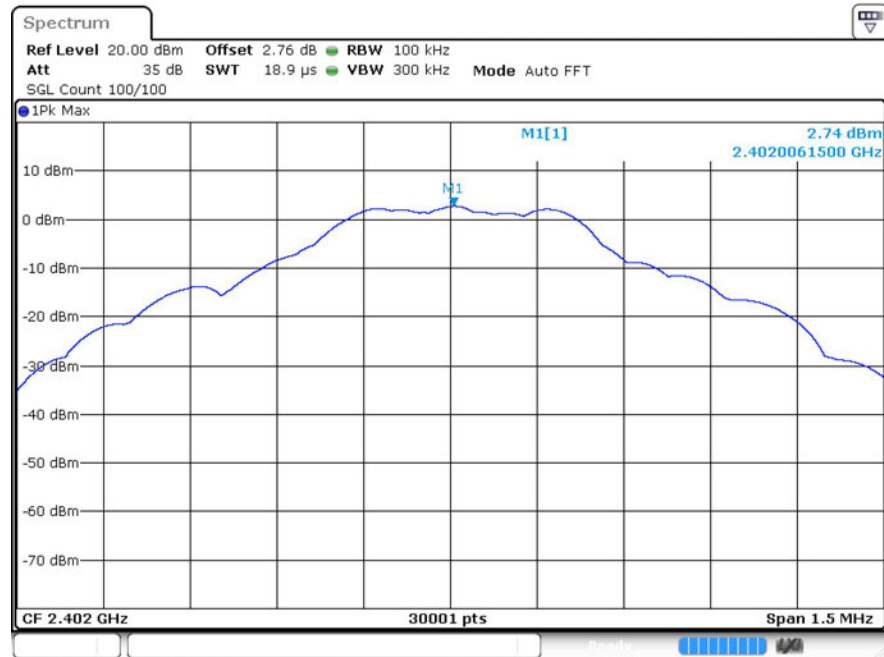
7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-41.44	-20	Pass
	MCH	-37.58	-20	Pass
	HCH	-41.5	-20	Pass
$\pi/4$ DQPSK	LCH	-38.52	-20	Pass
	MCH	-38.05	-20	Pass
	HCH	-42.63	-20	Pass

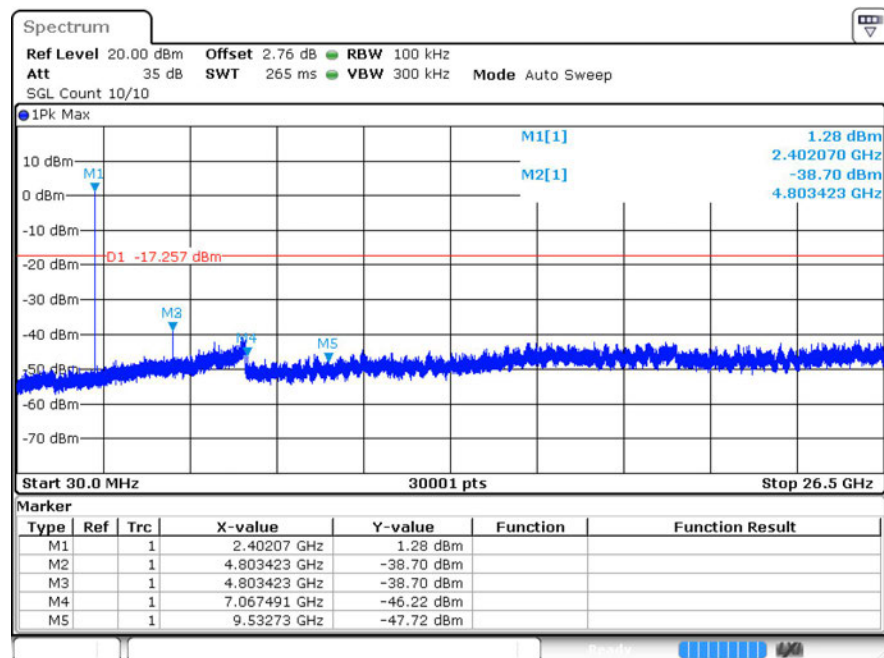
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

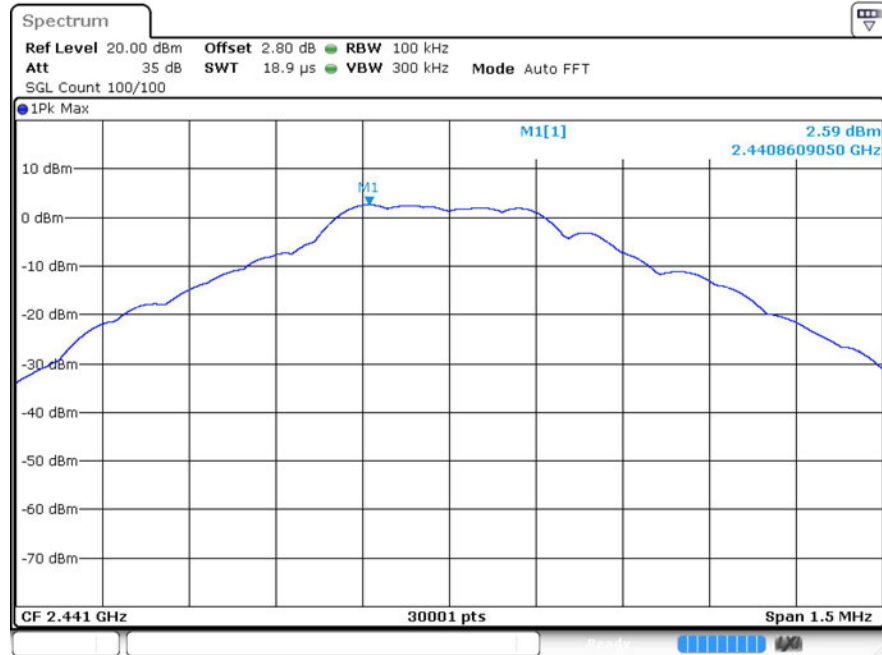


Puw

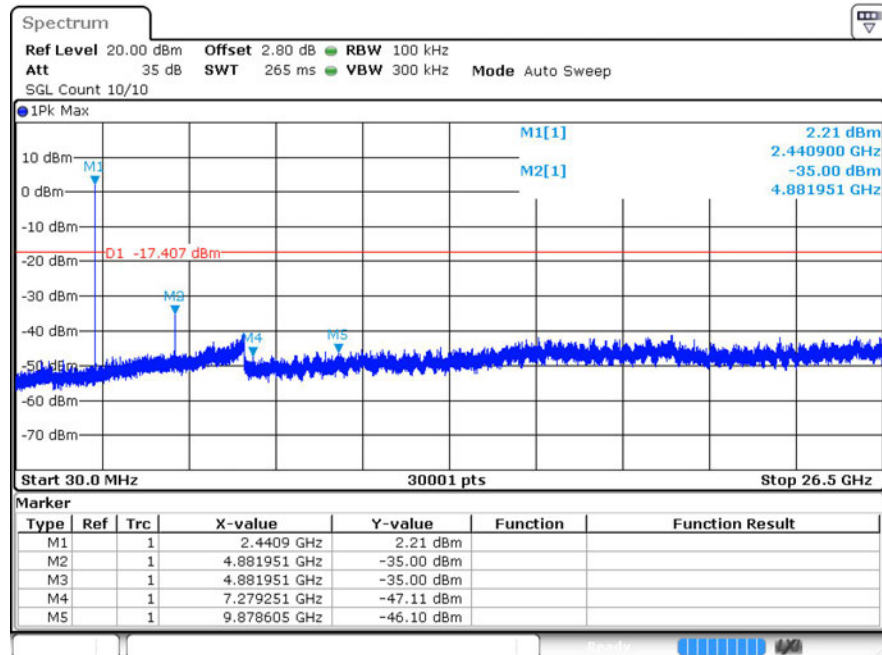


GFSK_MCH_Graphs

Pref

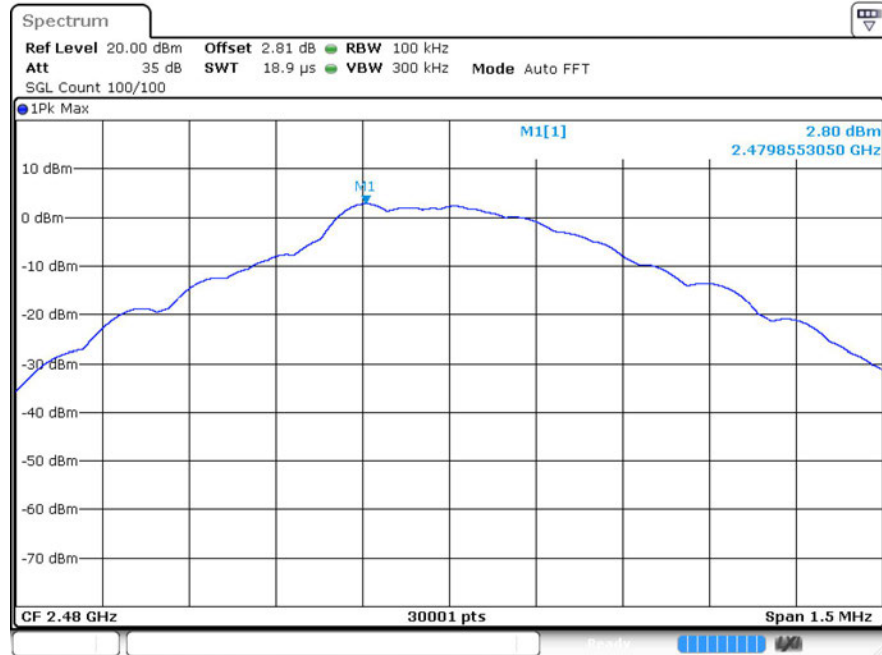


Puw

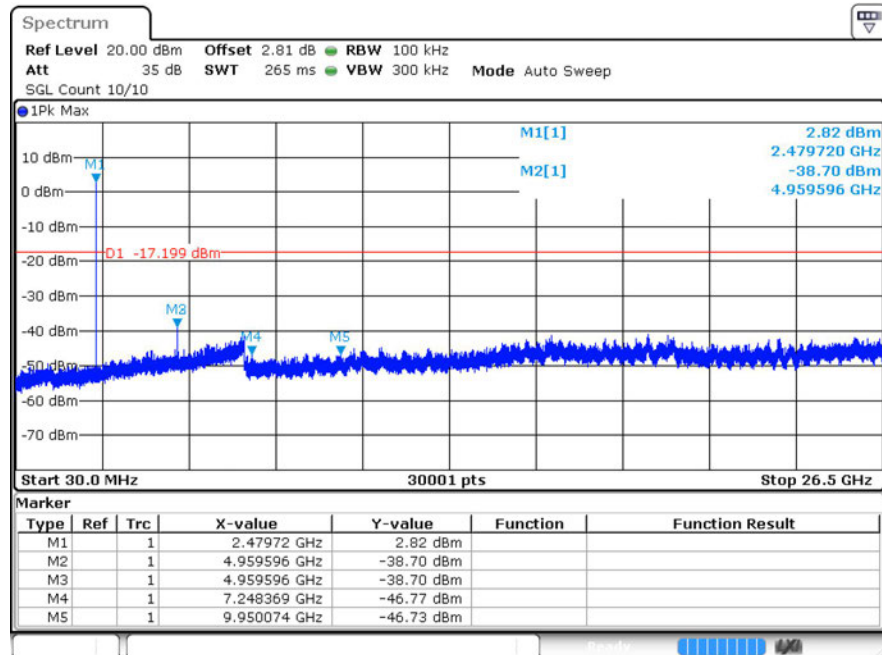


GFSK_HCH_Graphs

Pref

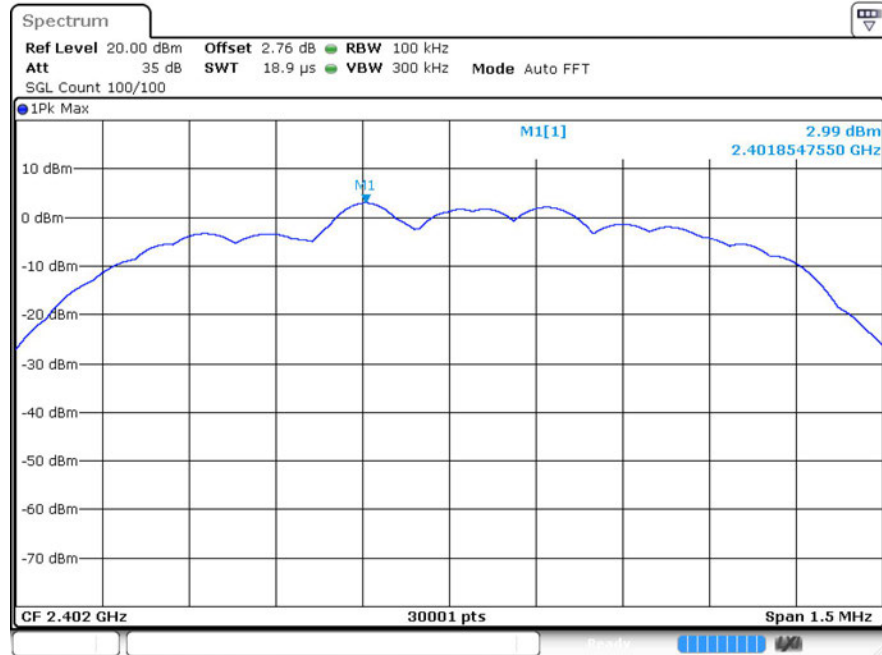


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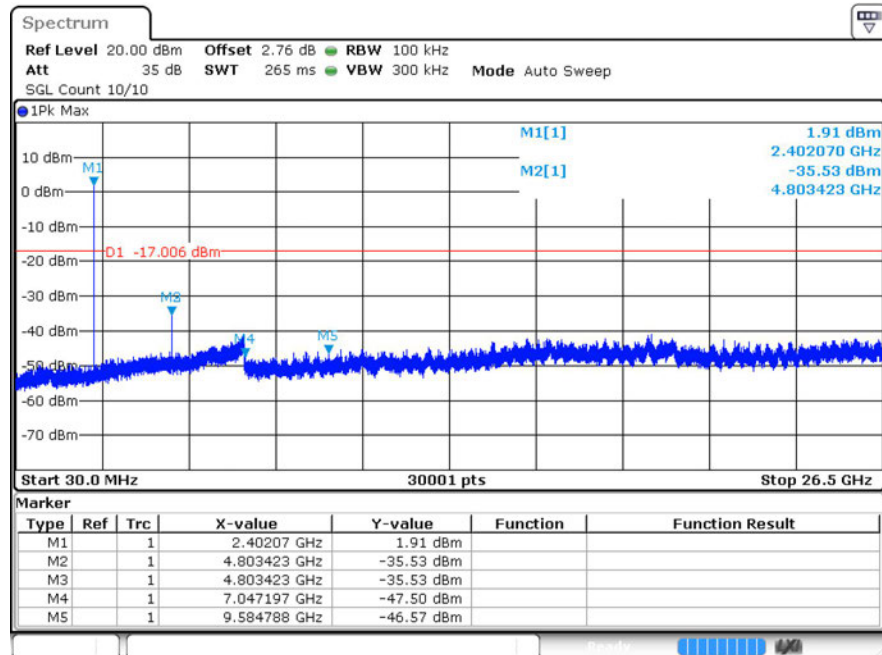


$\pi/4$ DQPSK_LCH_Graphs

Pref

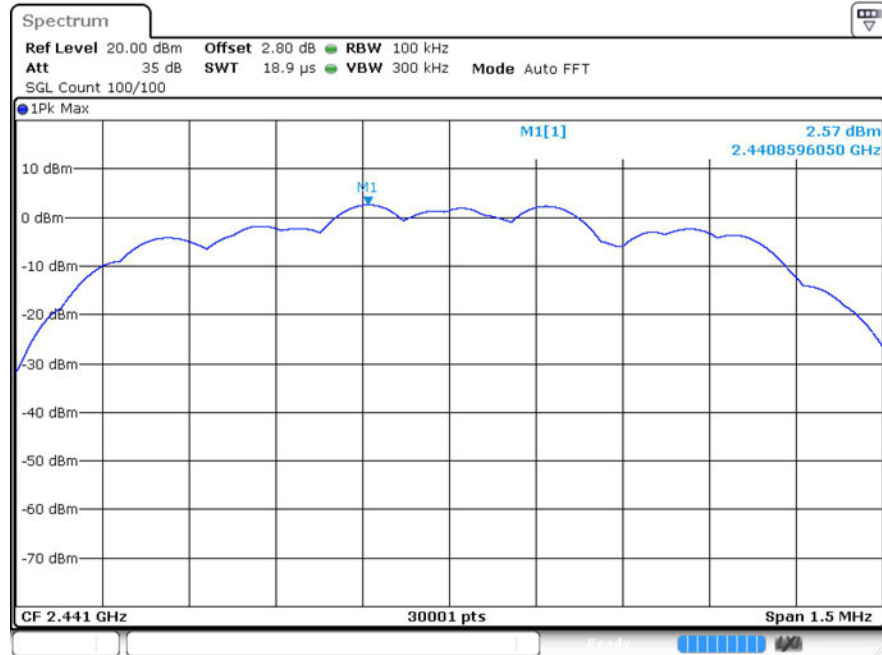


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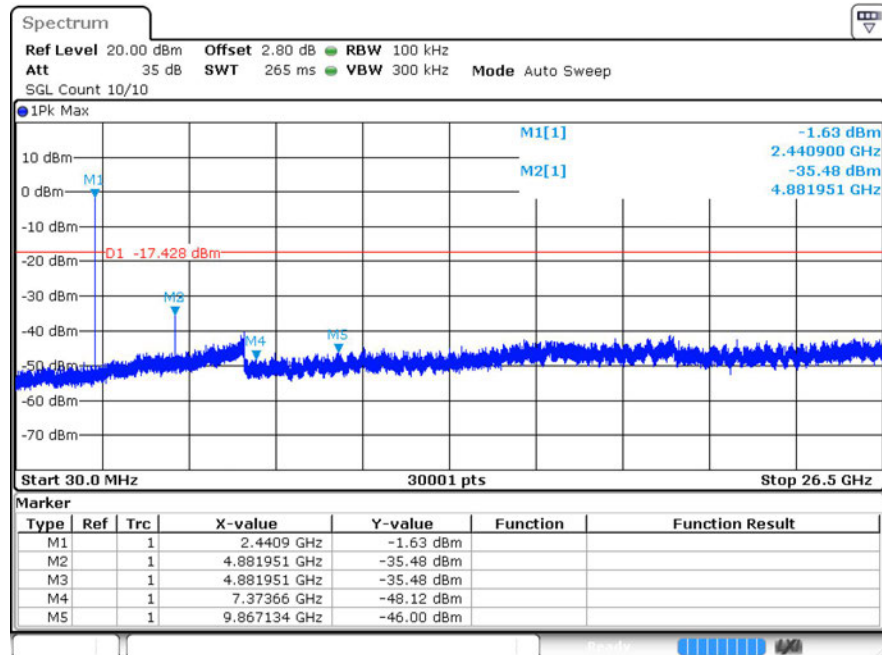


$\pi/4$ DQPSK_MCH_Graphs

Pref

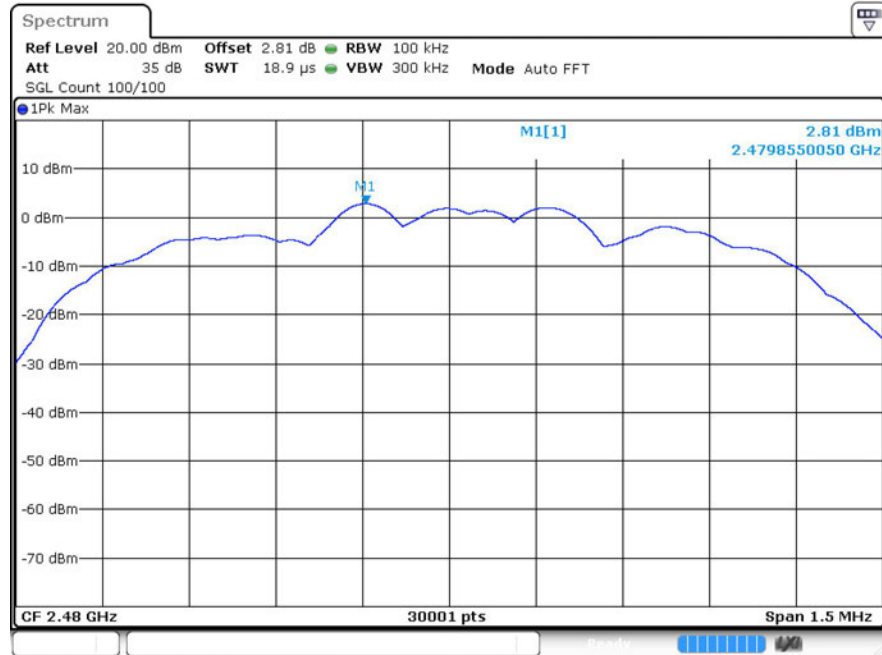


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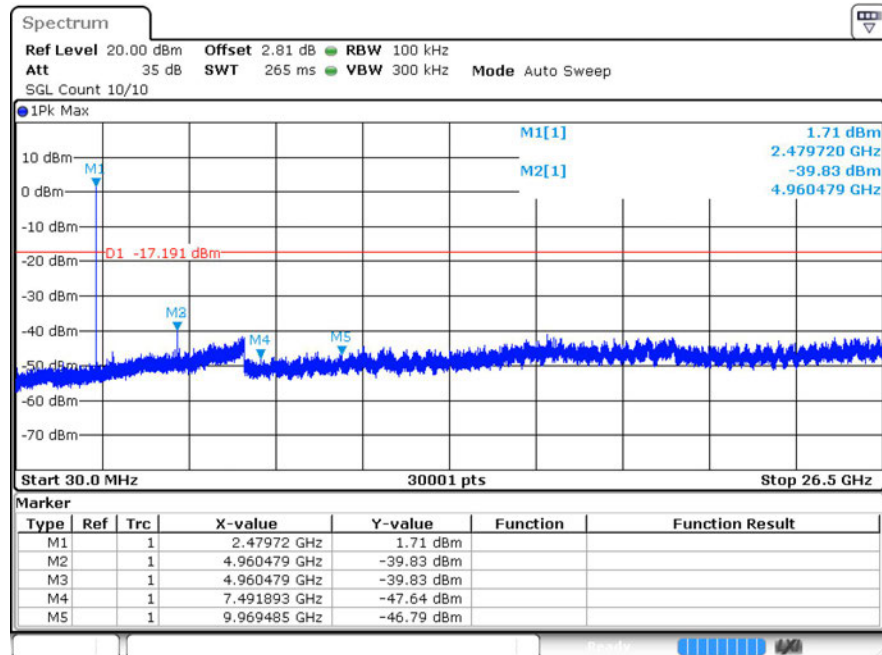


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

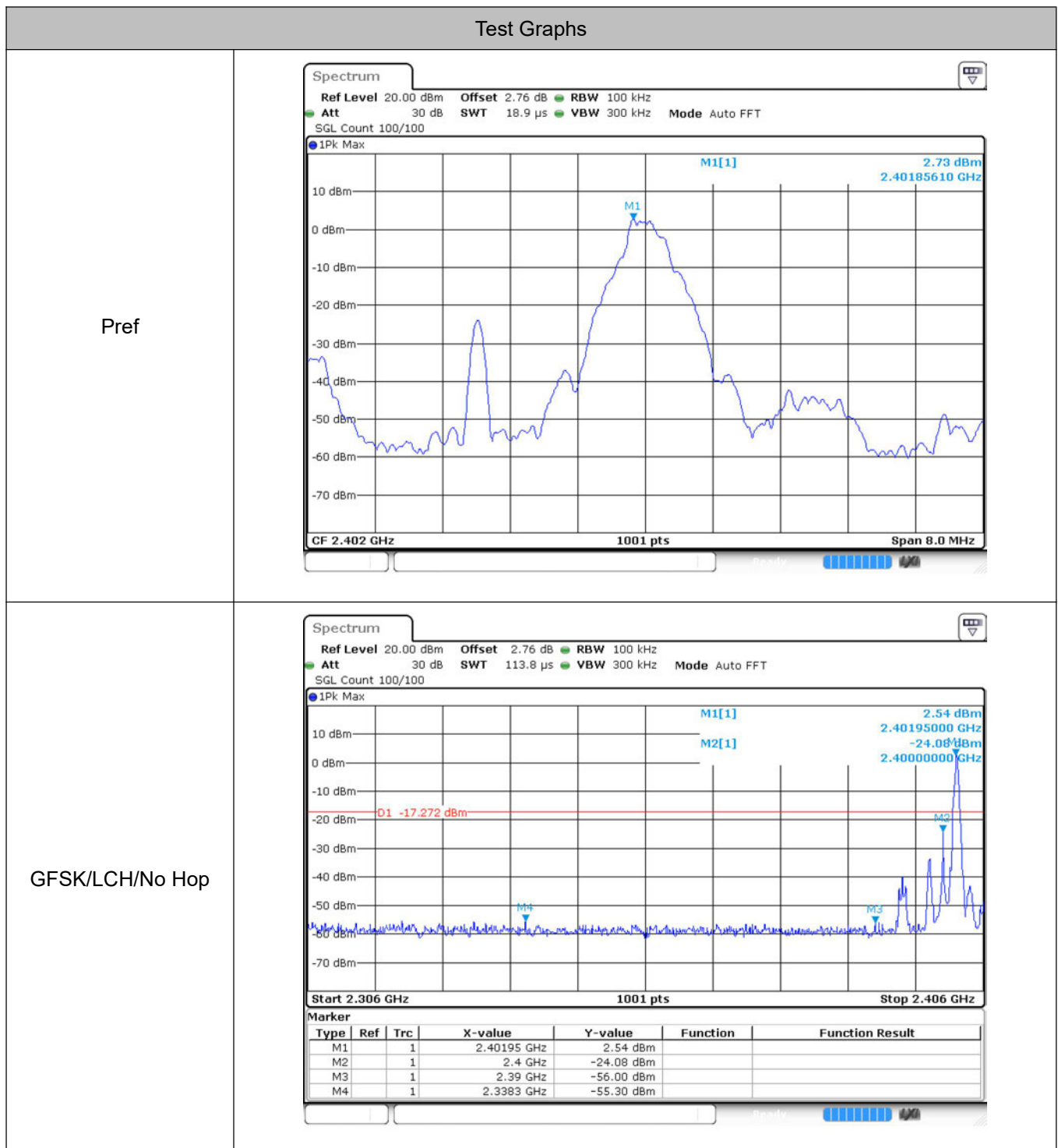


8 Band-edge for RF Conducted Emissions

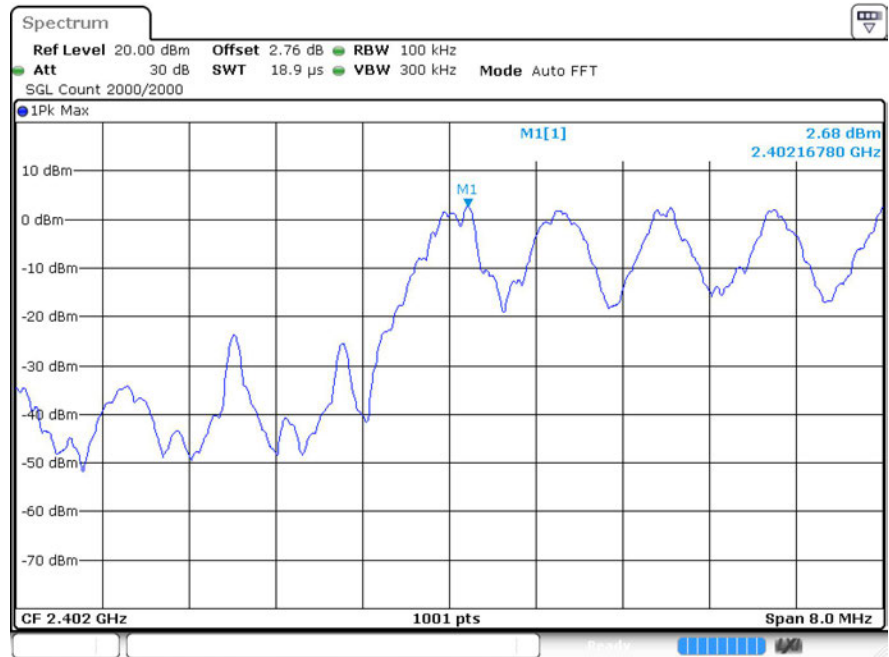
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-58.02	-20	Pass
			On	-56.89	-20	Pass
	HCH	2480	Off	-48.66	-20	Pass
			On	-49.52	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-57.68	-20	Pass
			On	-57.91	-20	Pass
	HCH	2480	Off	-49.73	-20	Pass
			On	-53.62	-20	Pass

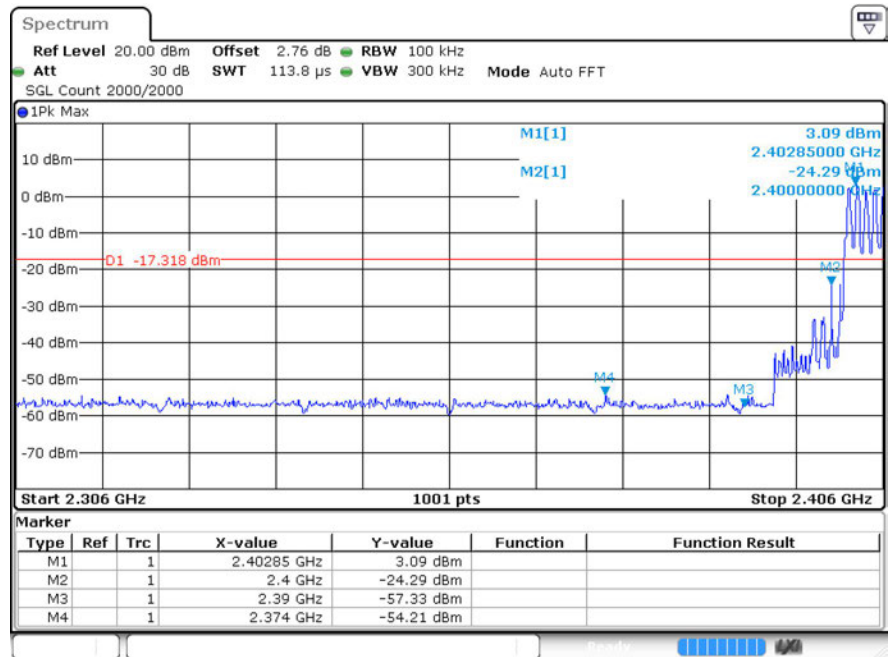
8.2 Test Graphs



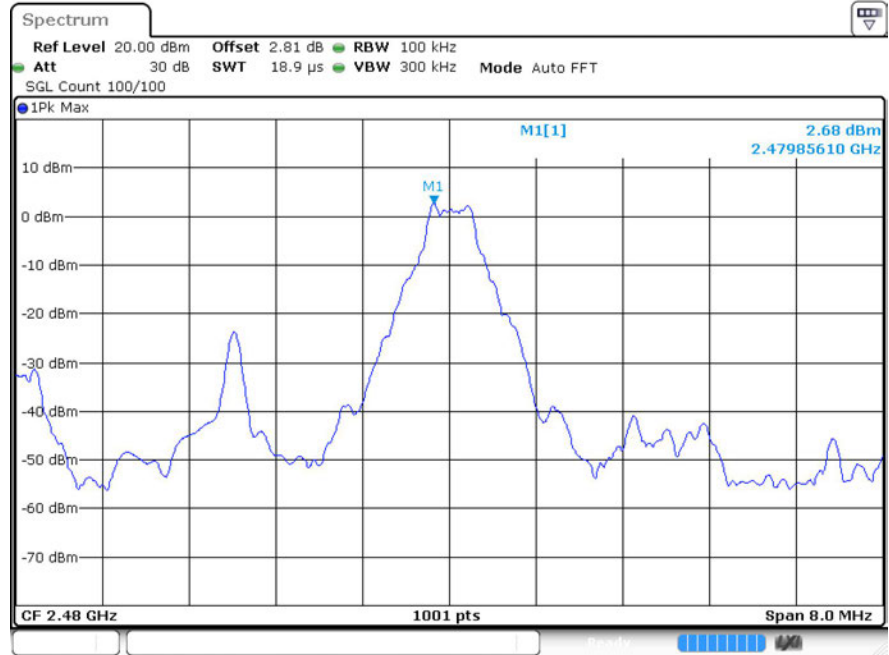
Ref



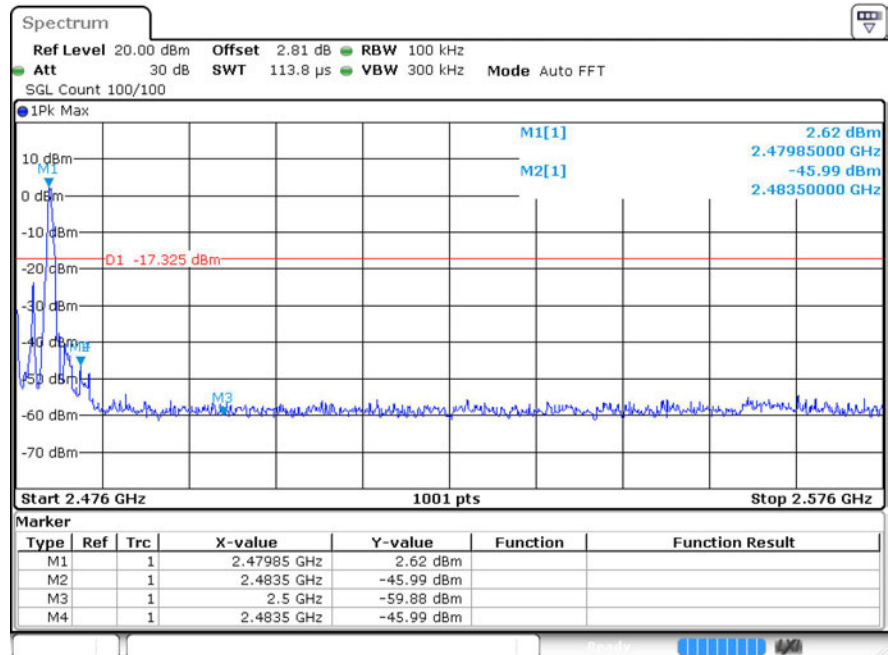
GFSK/LCH/Hop



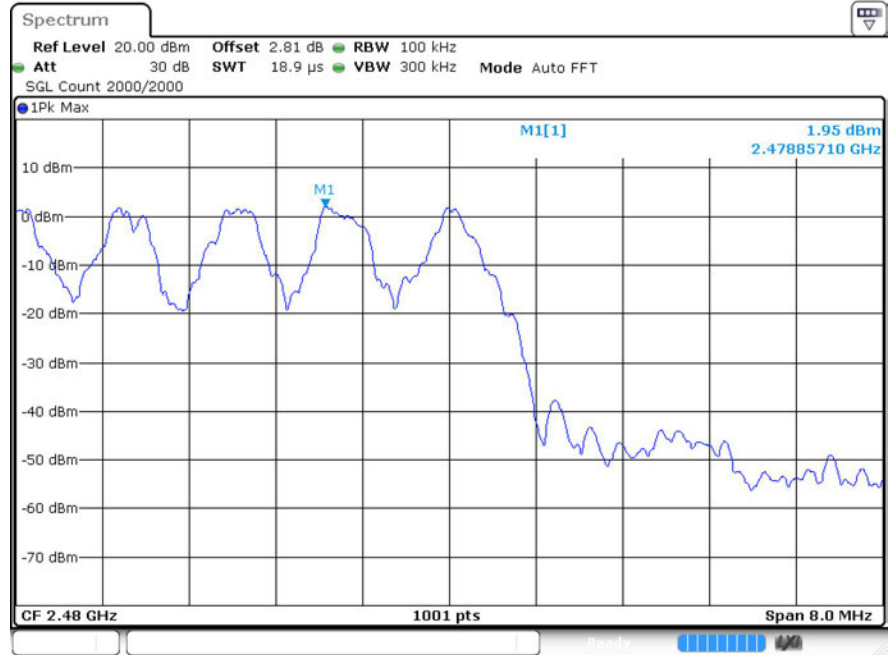
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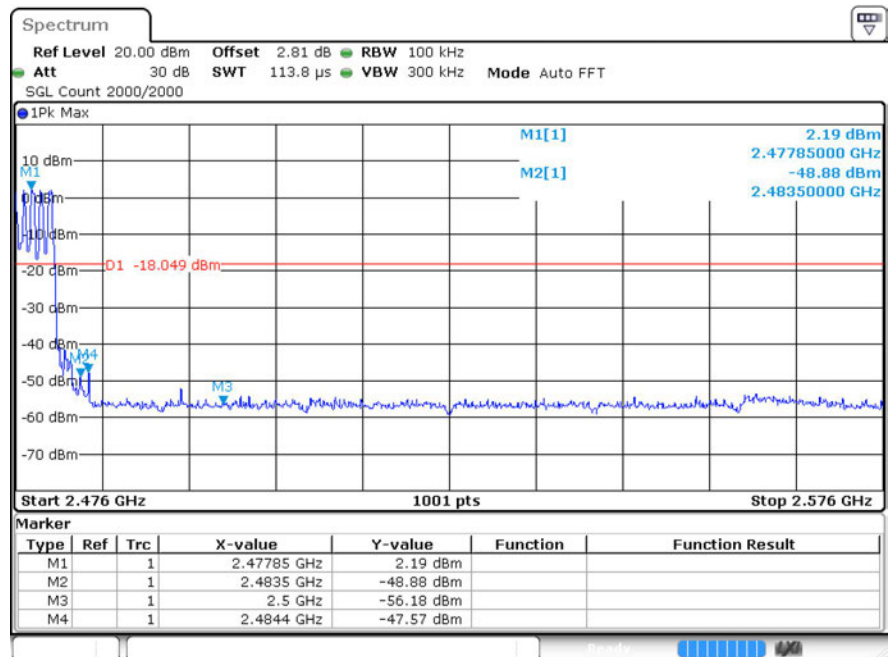
GFSK/HCH/No Hop



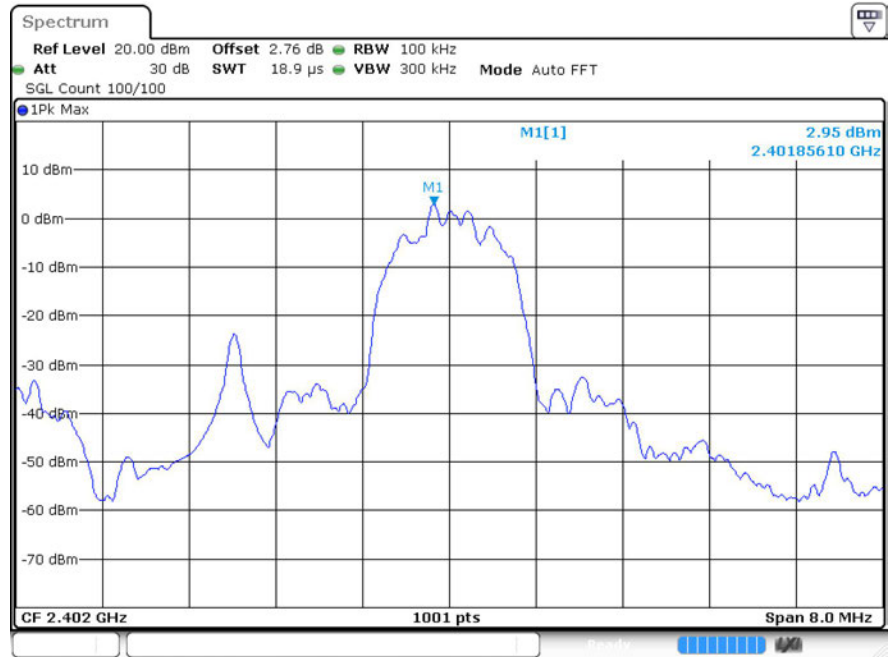
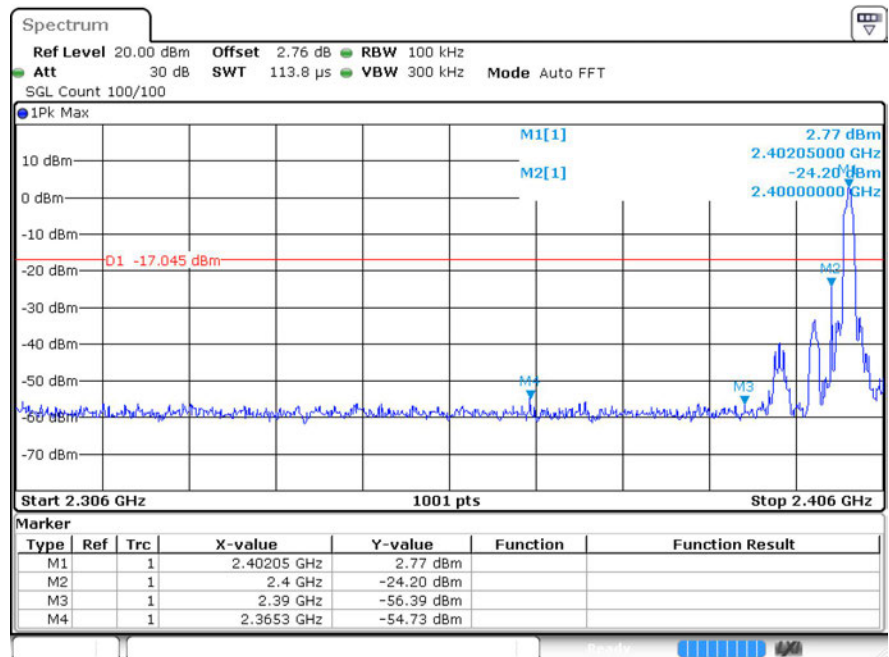
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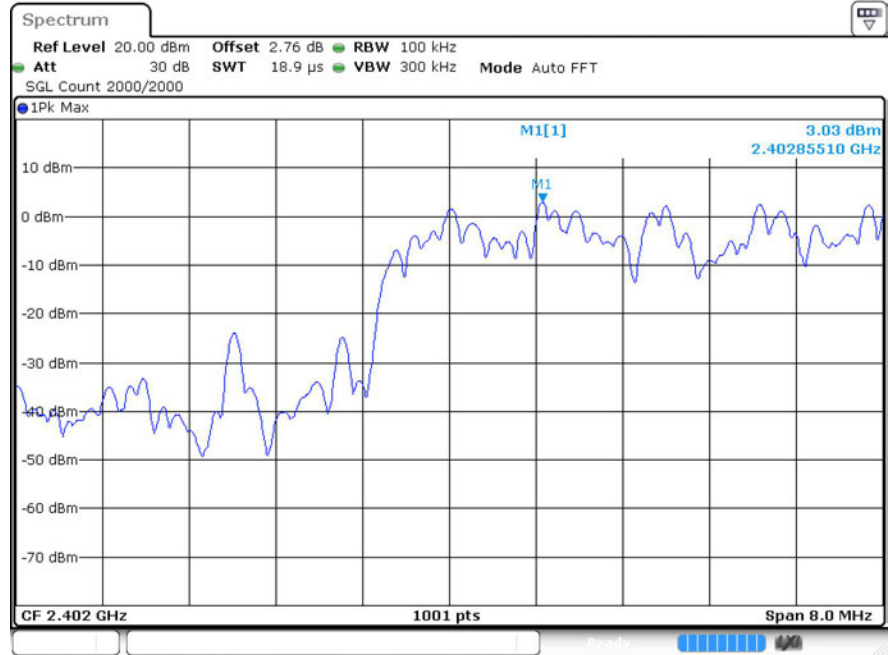
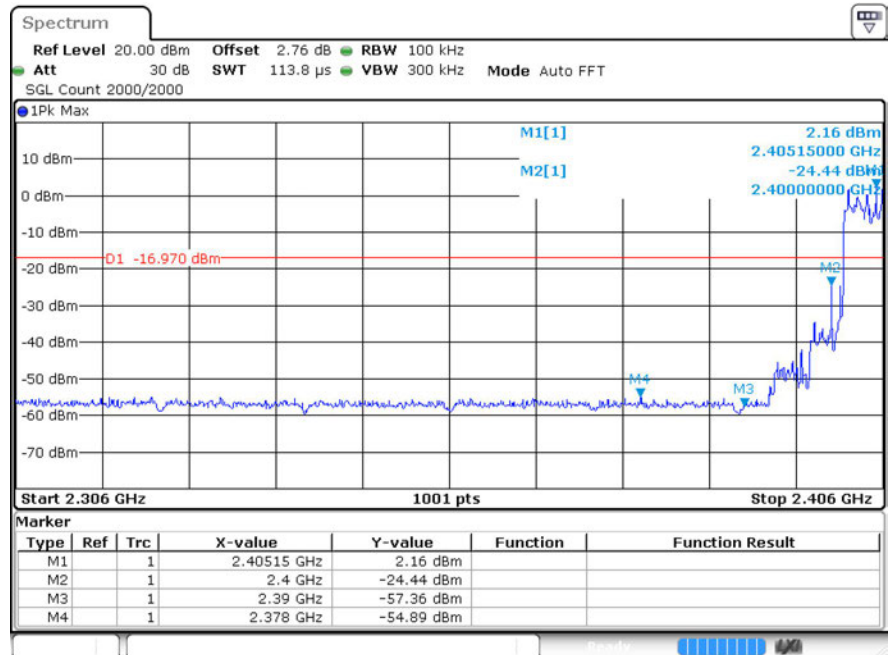
GFSK/HCH/Hop



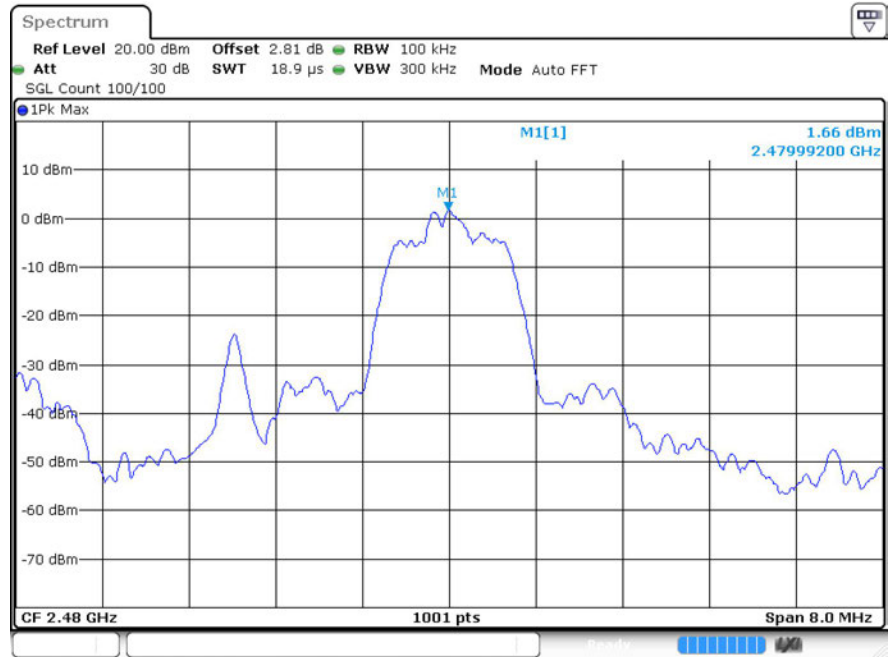
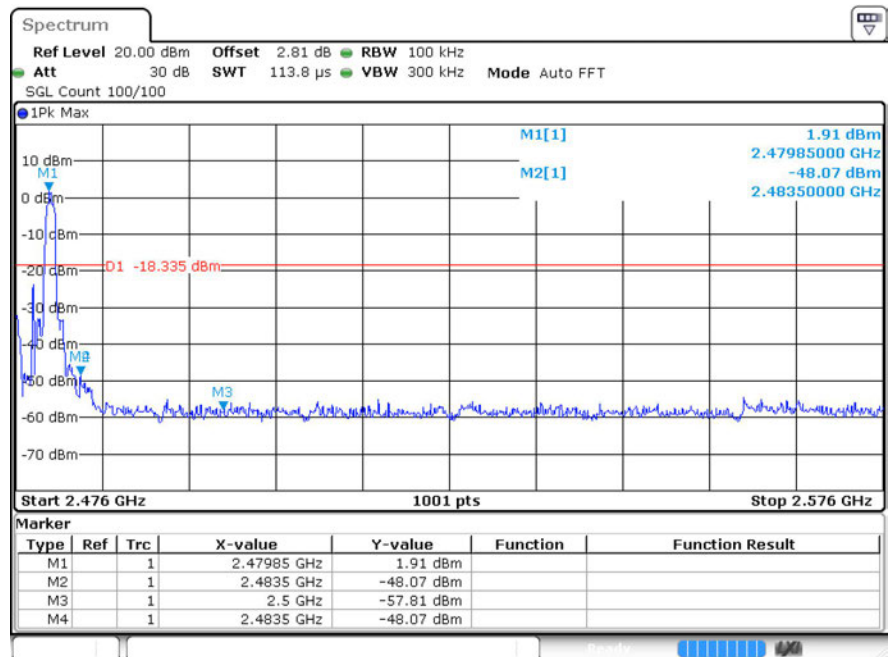
Ref


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


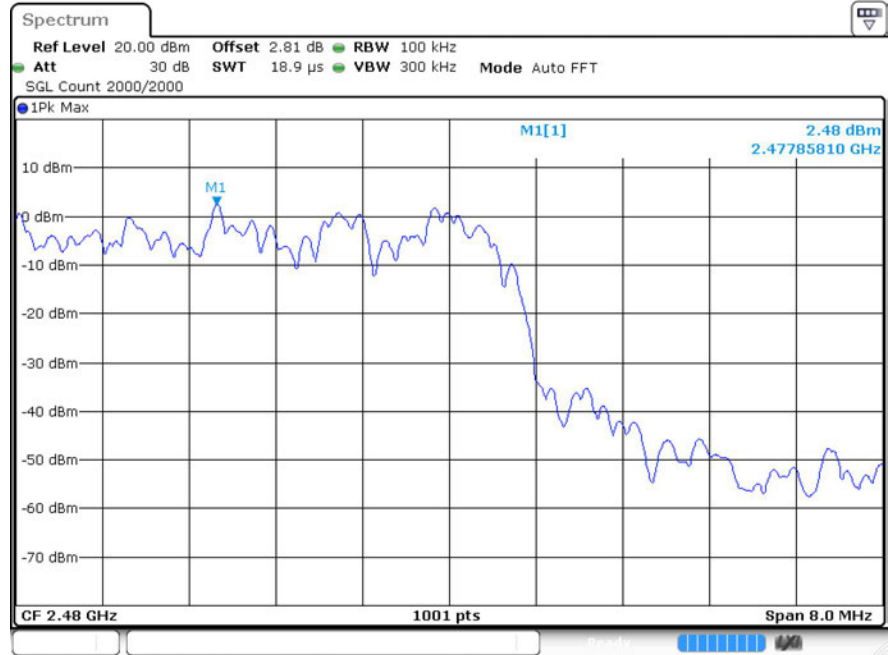
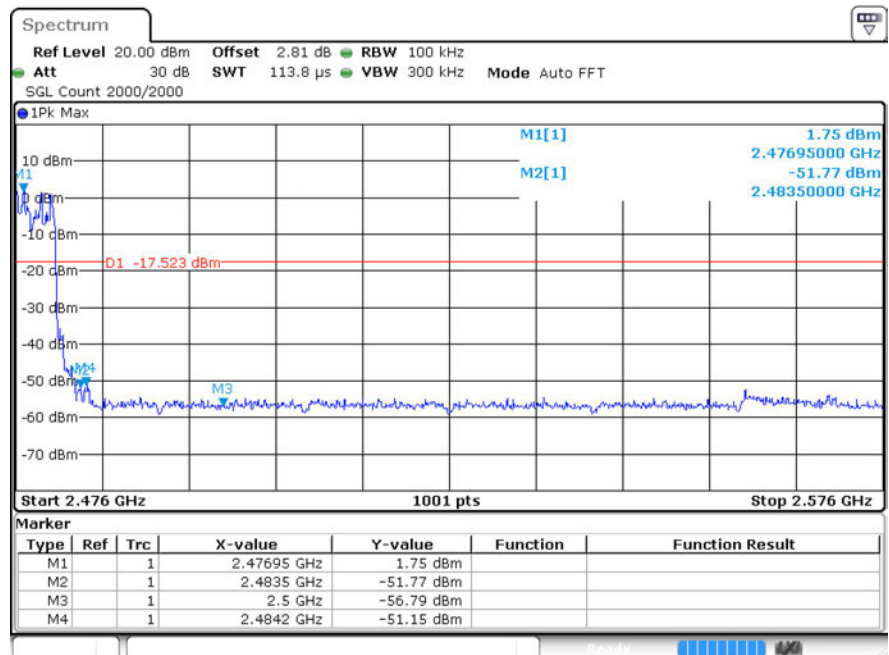
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


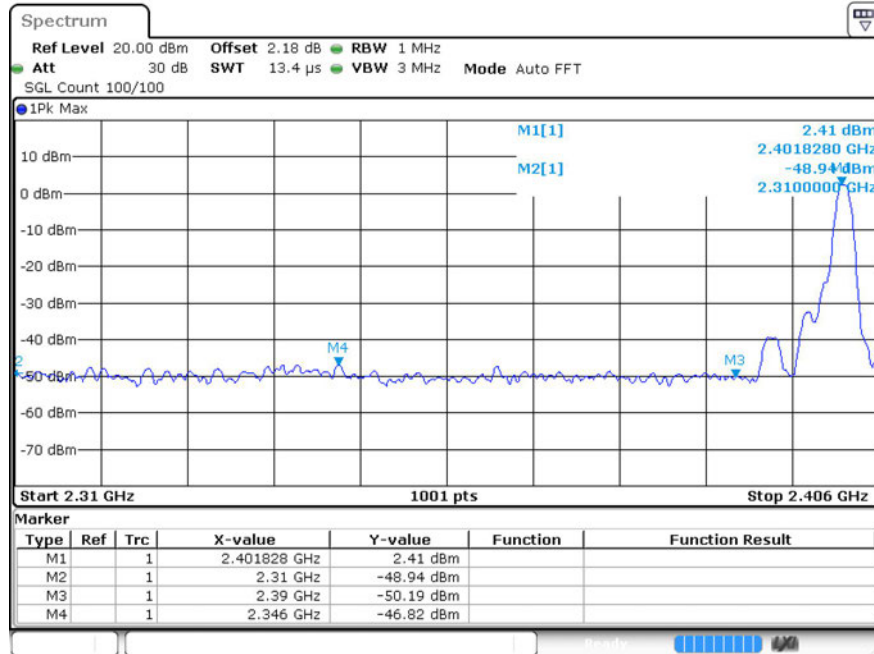
9 Restrict-band band-edge measurements

9.1 Test Result

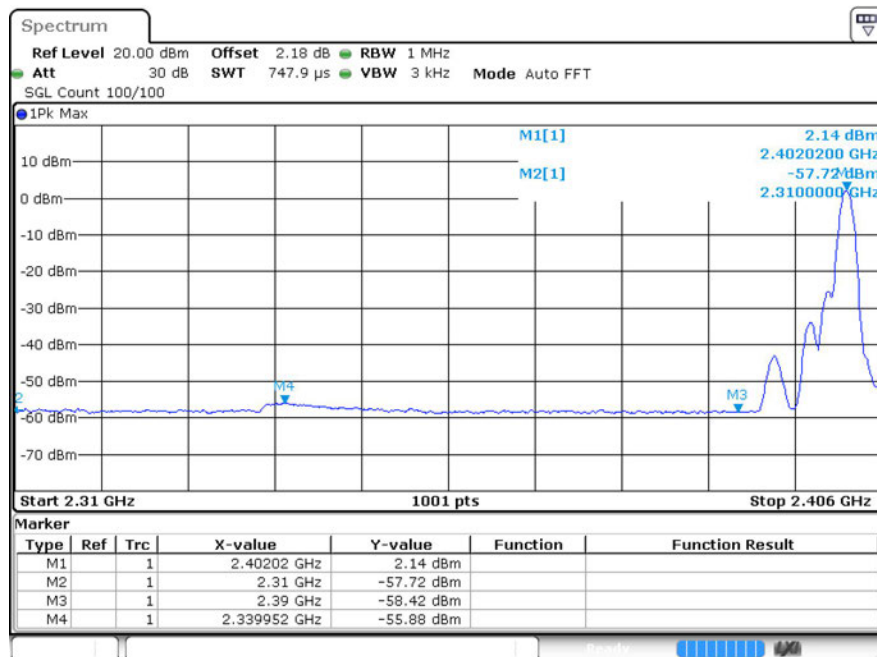
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.93	2	48.33	PEAK	74	Pass
	Off	2310.0	-57.72	2	39.54	AV	54	Pass
	Off	2346	-46.81	2	50.45	PEAK	74	Pass
	Off	2339.952	-55.88	2	41.38	AV	54	Pass
	Off	2390.0	-50.19	2	47.07	PEAK	74	Pass
	Off	2390.0	-58.41	2	38.85	AV	54	Pass
	Off	2483.5	-42.92	2	54.34	PEAK	74	Pass
	Off	2483.5	-49.25	2	48.01	AV	54	Pass
	Off	2483.896	-41.68	2	55.58	PEAK	74	Pass
	Off	2483.896	-48.38	2	48.88	AV	54	Pass
	Off	2500.0	-49.44	2	47.82	PEAK	74	Pass
	Off	2500.0	-57.68	2	39.58	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-50.82	2	46.44	PEAK	74	Pass
	Off	2310.0	-57.99	2	39.27	AV	54	Pass
	Off	2347.92	-46.27	2	50.99	PEAK	74	Pass
	Off	2340.432	-55.81	2	41.45	AV	54	Pass
	Off	2390.0	-52.62	2	44.64	PEAK	74	Pass
	Off	2390.0	-58.44	2	38.82	AV	54	Pass
	Off	2483.5	-42.25	2	55.01	PEAK	74	Pass
	Off	2483.5	-49.18	2	48.08	AV	54	Pass
	Off	2483.512	-42.25	2	55.01	PEAK	74	Pass
	Off	2483.872	-48.48	2	48.78	AV	54	Pass
	Off	2500.0	-48.89	2	48.37	PEAK	74	Pass
	Off	2500.0	-57.96	2	39.3	AV	54	Pass

9.2 Test Graphs

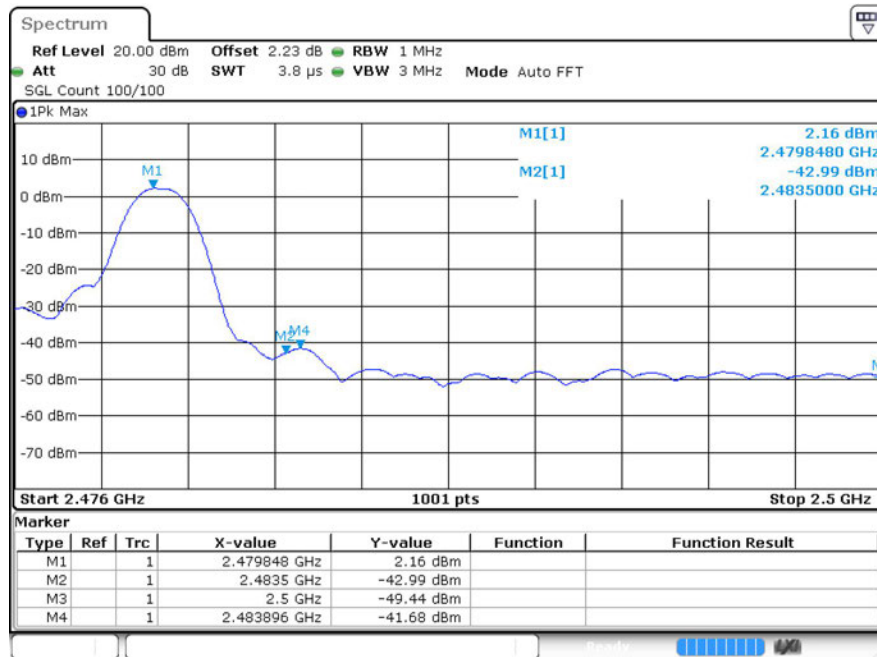
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



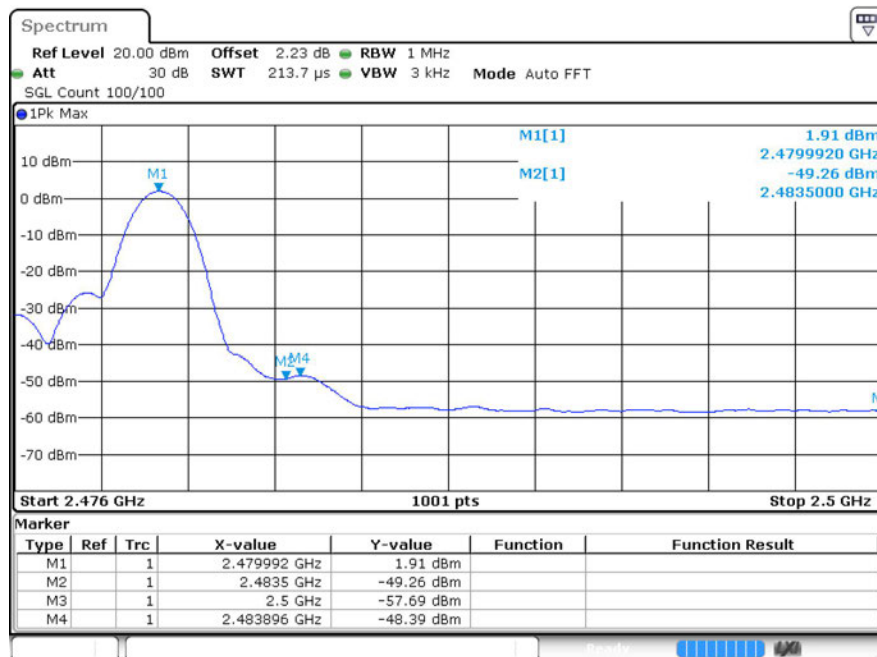
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



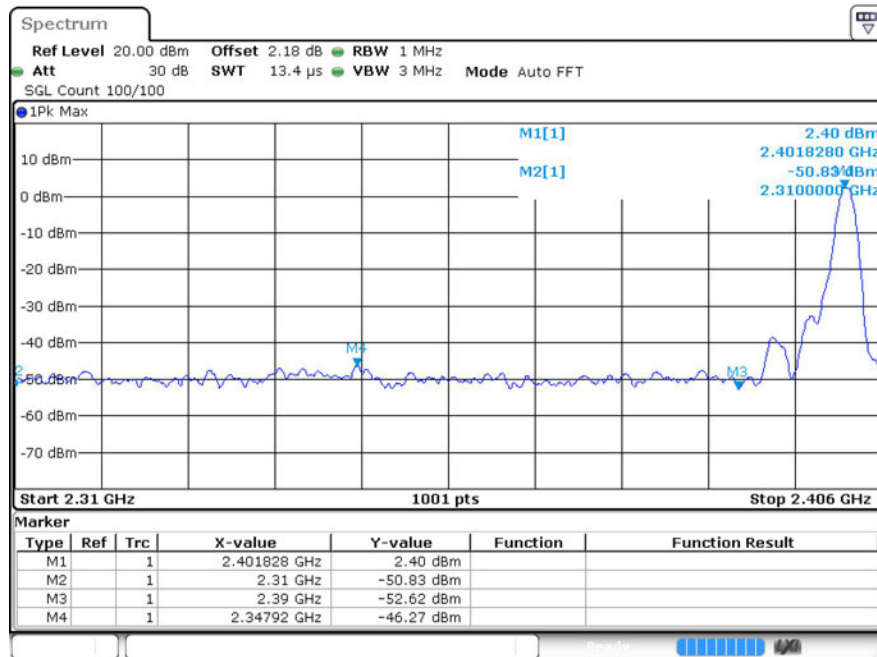
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



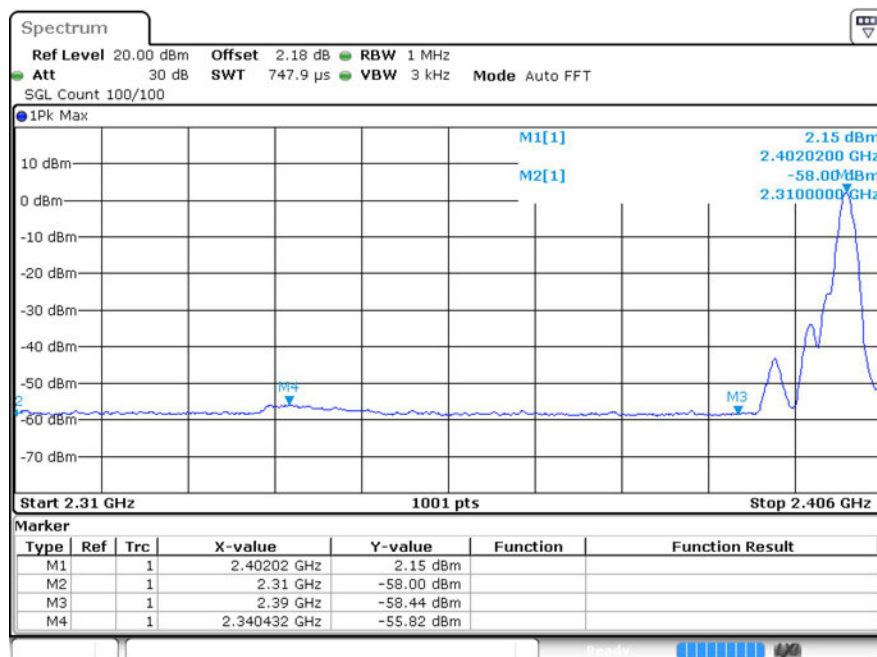
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



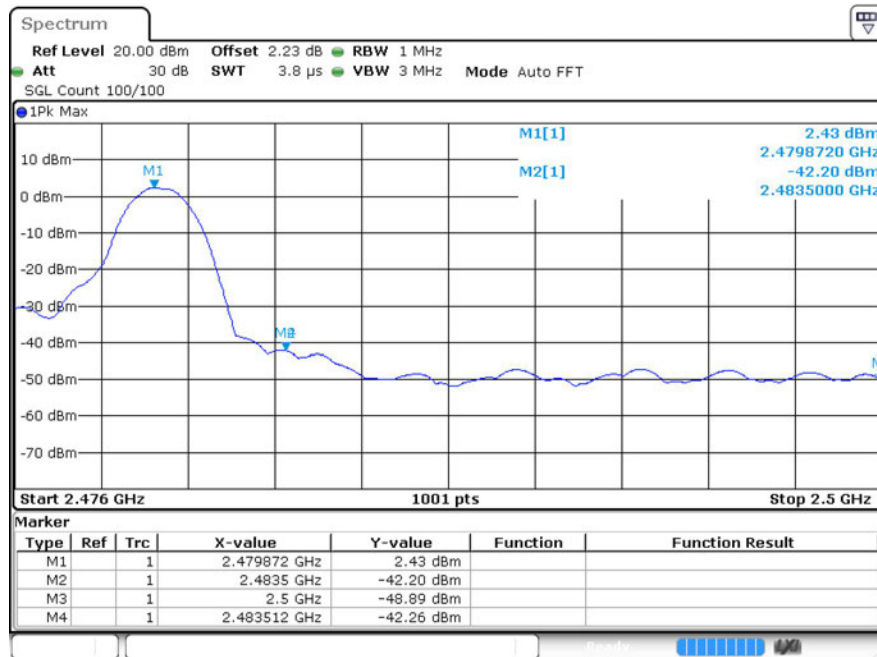
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



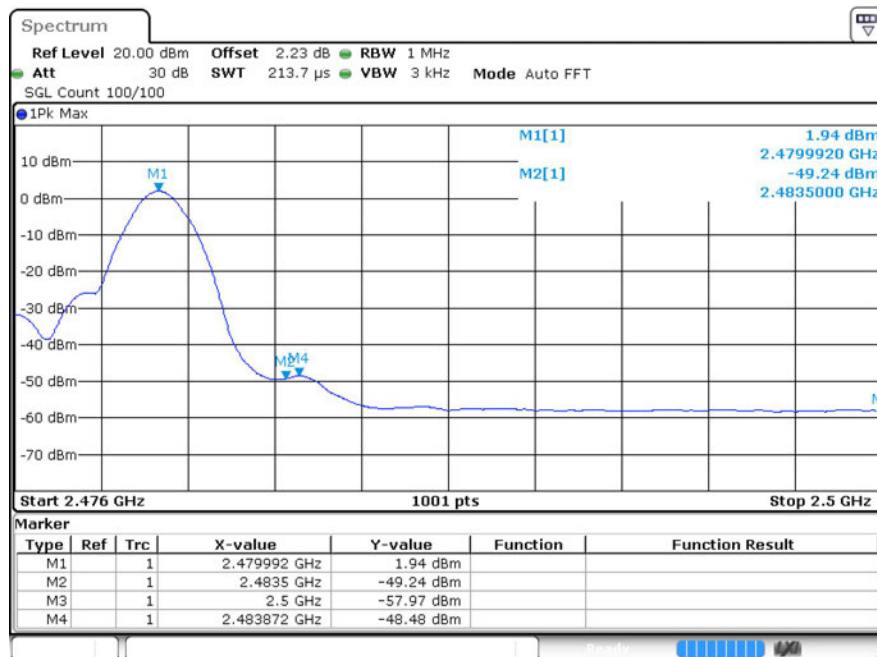
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---