



Appendix A

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

Product Name: Wireless Earphones

Trade Mark: N/A

Test Model: D308

Environmental Conditions

Temperature:	24.2℃
Relative Humidity:	52.3%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



Contents

Page

COVER PAGE

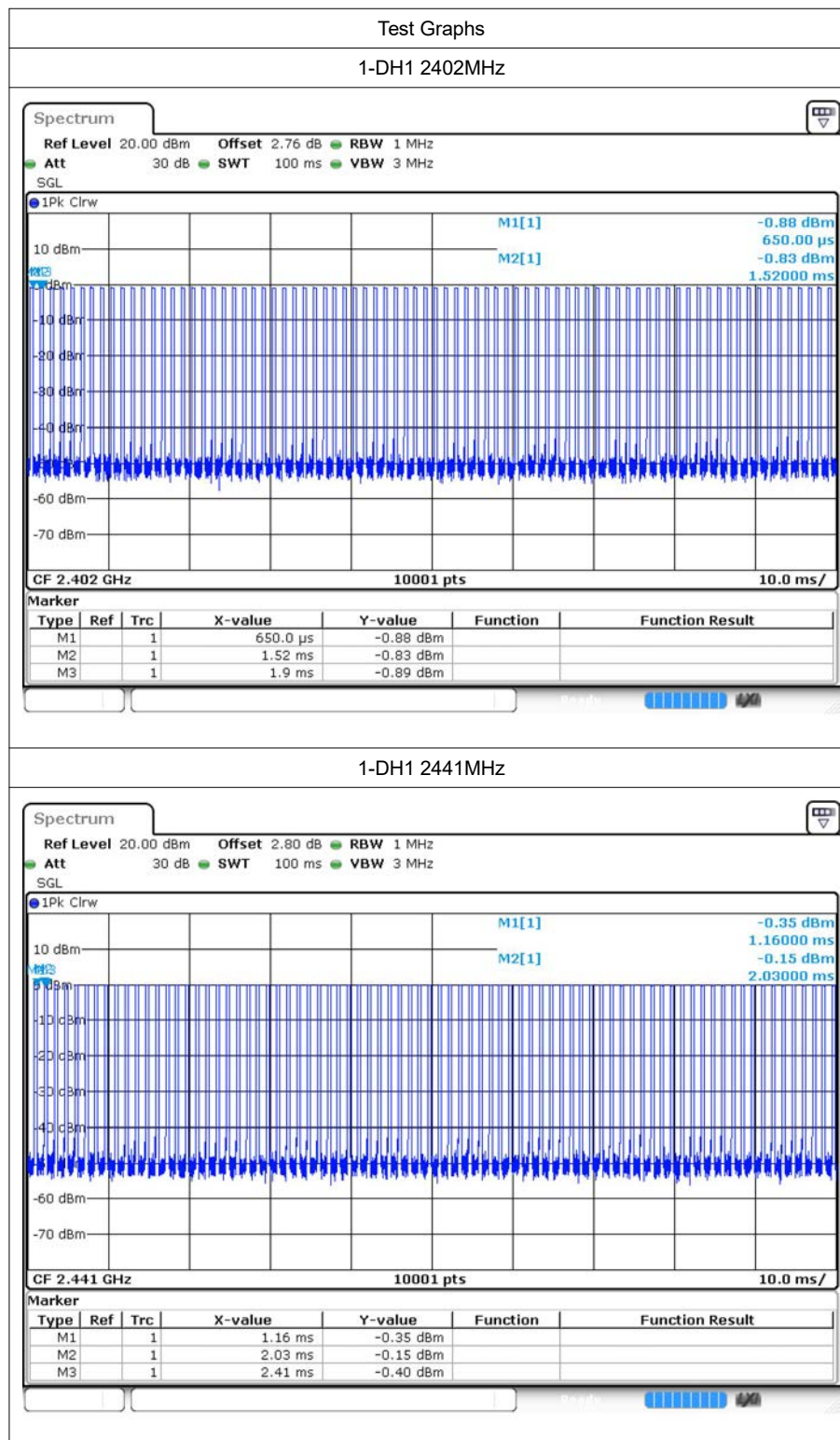
1	Duty Cycle	3
1.1	Test Result	3
1.2	Test Graphs	4
2	Maximum Conducted Peak Output Power	7
2.1	Test Result	7
2.2	Test Graphs	8
3	20dB Bandwidth	11
3.1	Test Result	11
3.2	Test Graphs	12
4	Carrier Frequency Separation	15
4.1	Test Result	15
4.2	Test Graphs	16
5	Hopping Channel Number	17
5.1	Test Result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

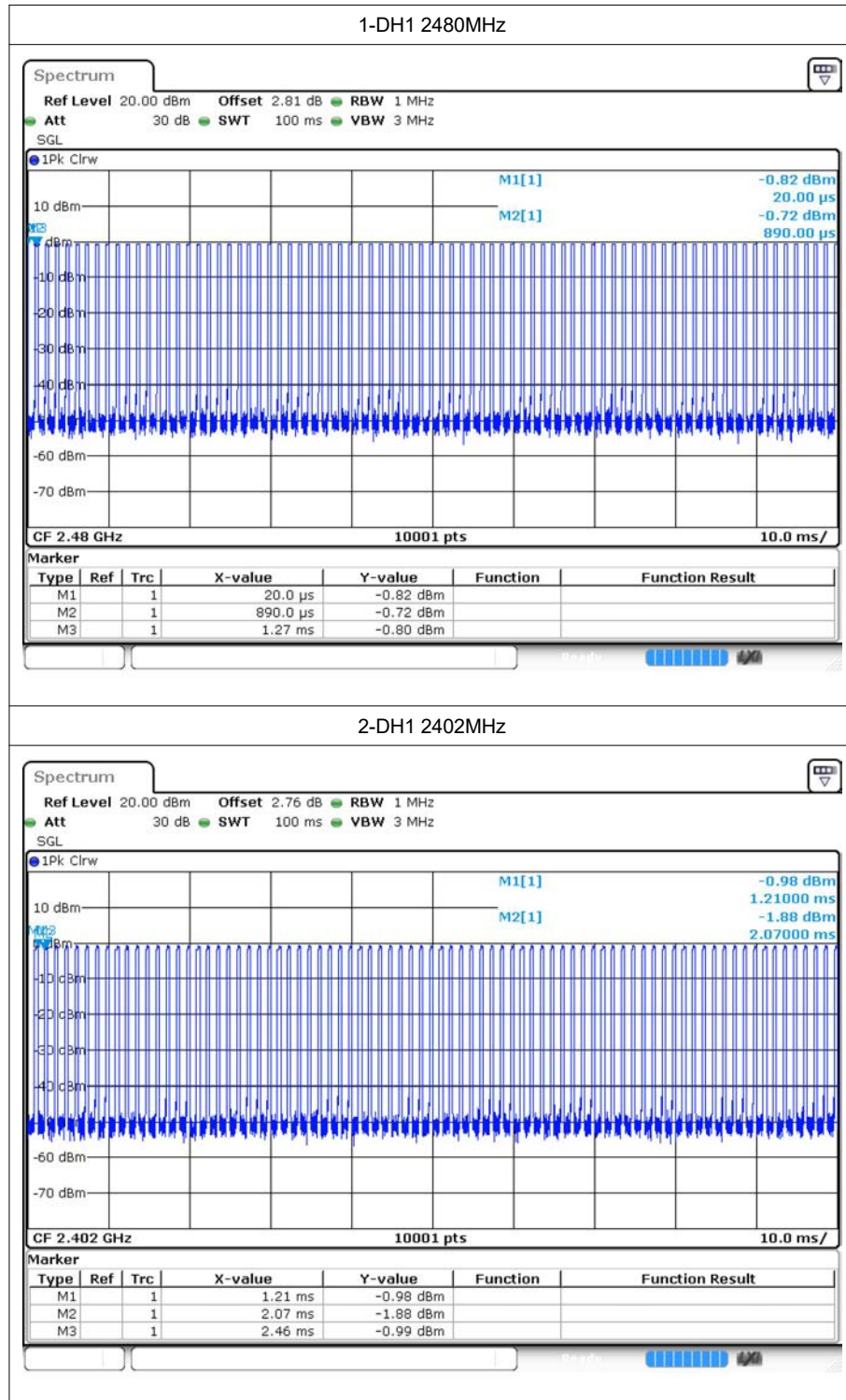
1 Duty Cycle

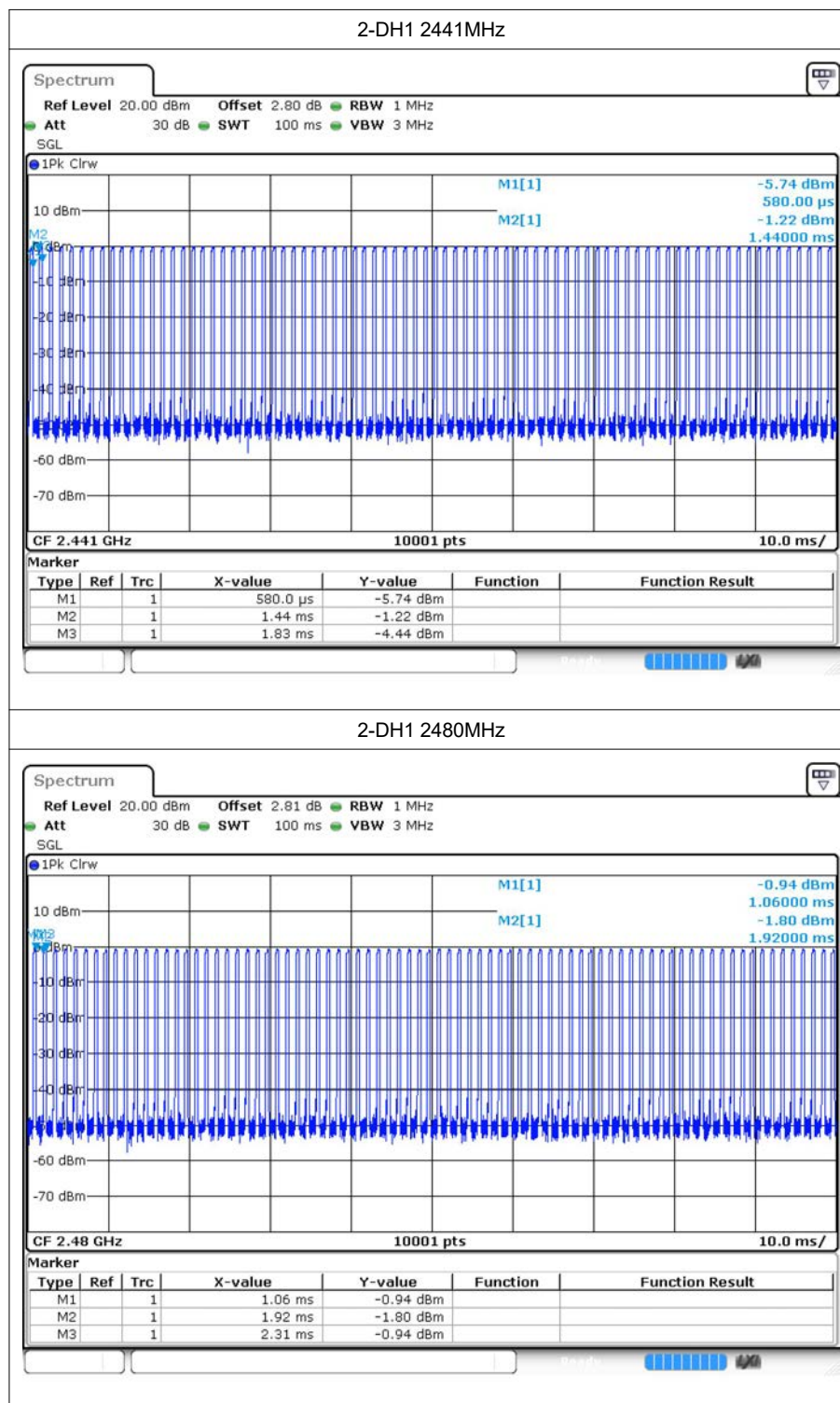
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.46	5.02	2.63
1-DH1	2441	31.2	5.06	2.63
1-DH1	2480	31.21	5.06	2.63
2-DH1	2402	32	4.95	2.56
2-DH1	2441	32	4.95	2.56
2-DH1	2480	32	4.95	2.56

1.2 Test Graphs





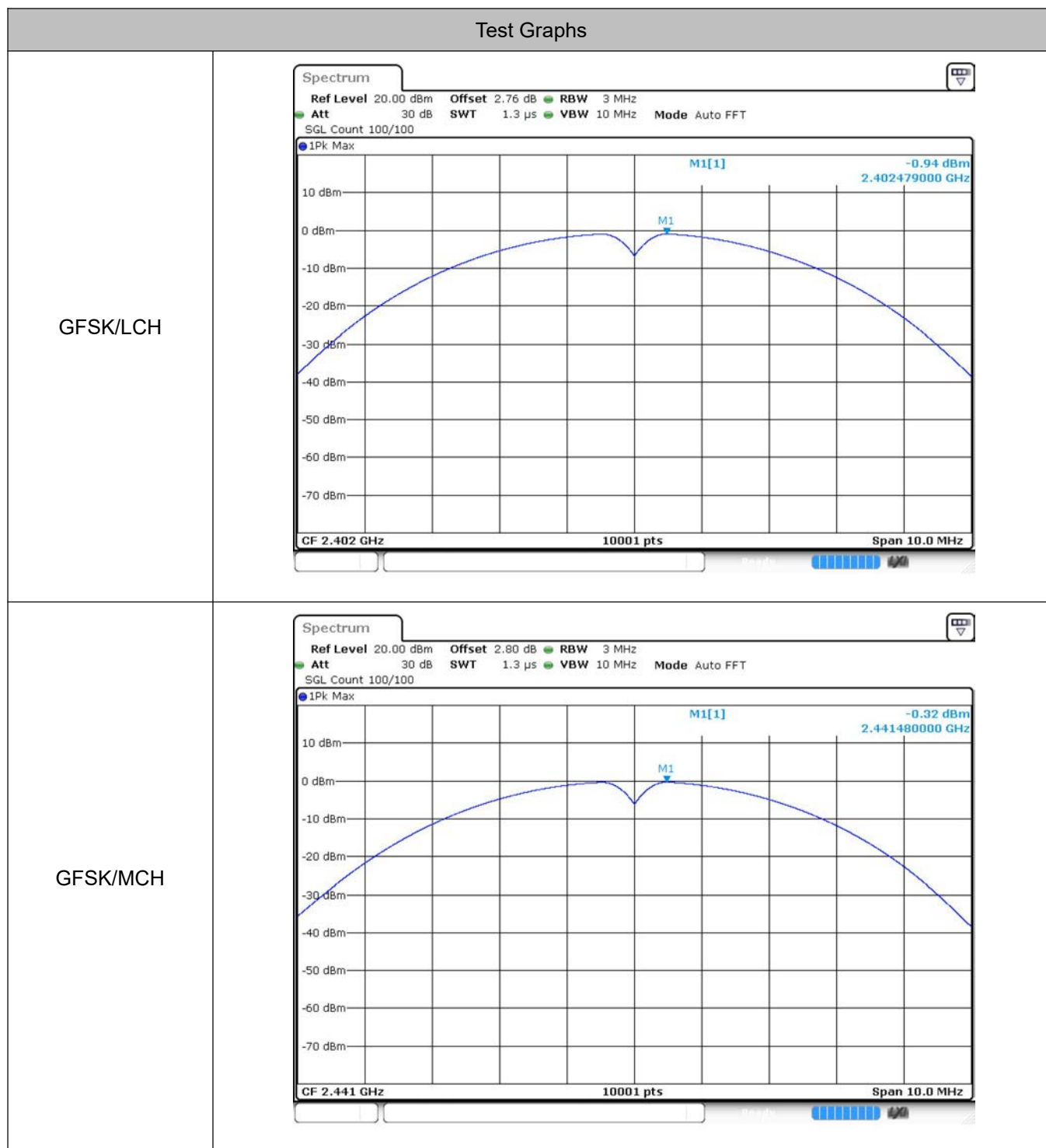


2 Maximum Conducted Peak Output Power

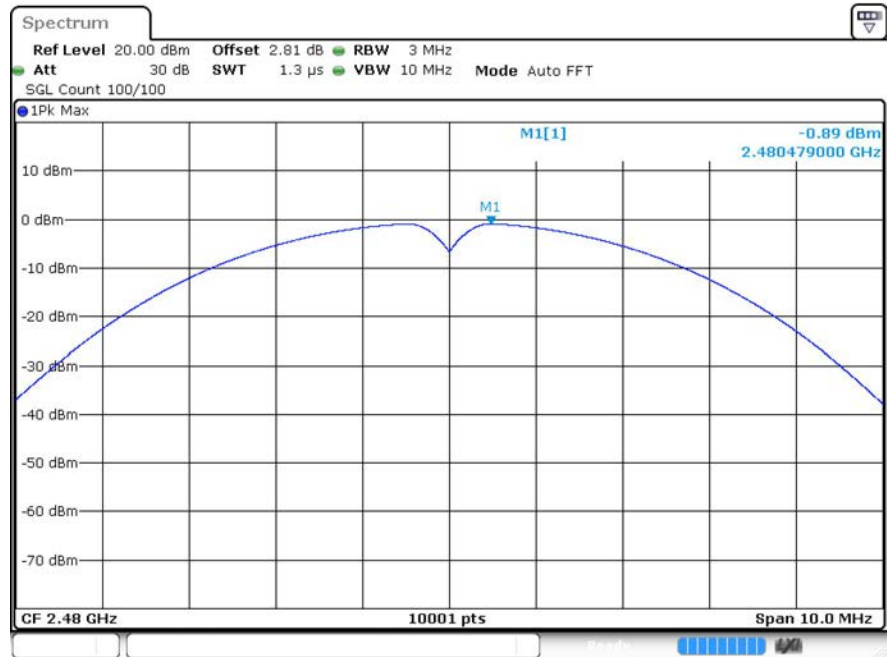
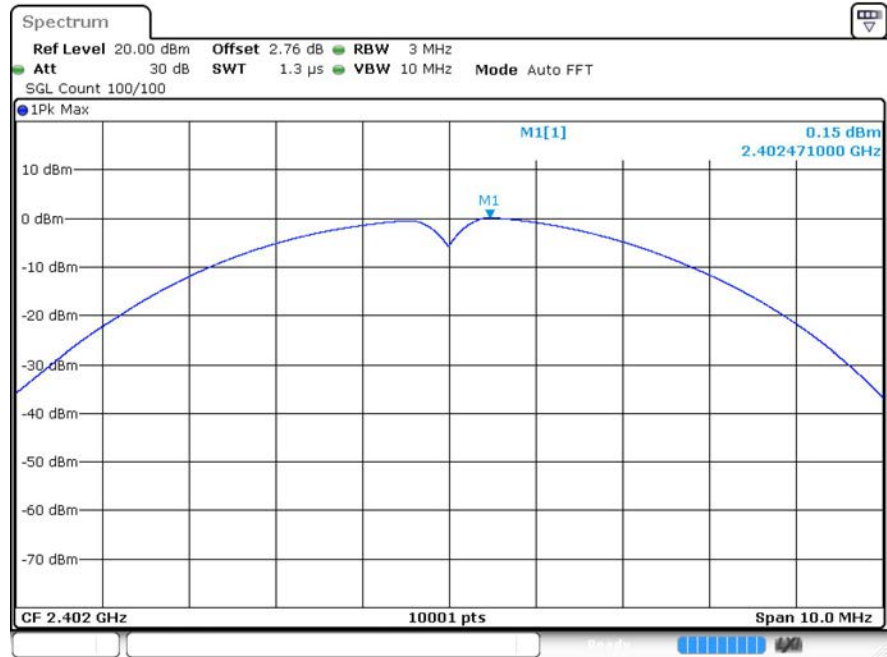
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.94	21	Pass
	MCH	-0.32	21	Pass
	HCH	-0.89	21	Pass
$\pi/4$ DQPSK	LCH	0.15	21	Pass
	MCH	0.83	21	Pass
	HCH	0.05	21	Pass

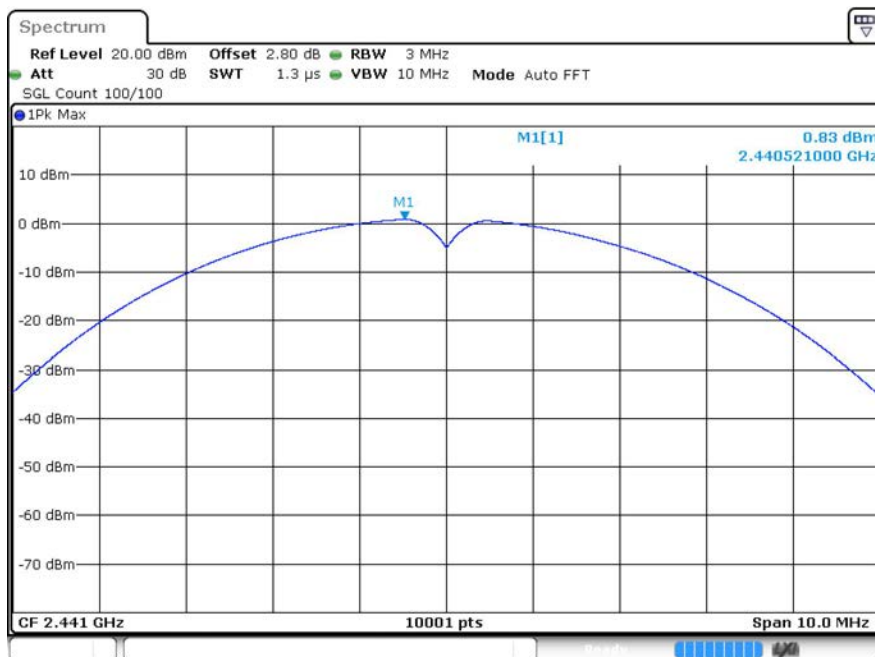
2.2 Test Graphs



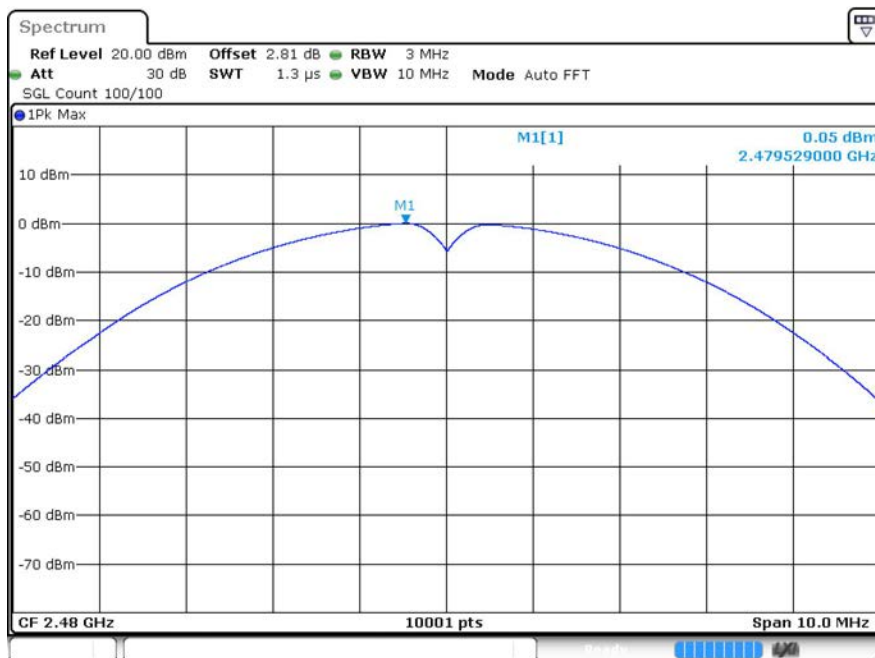
GFSK/HCH


 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

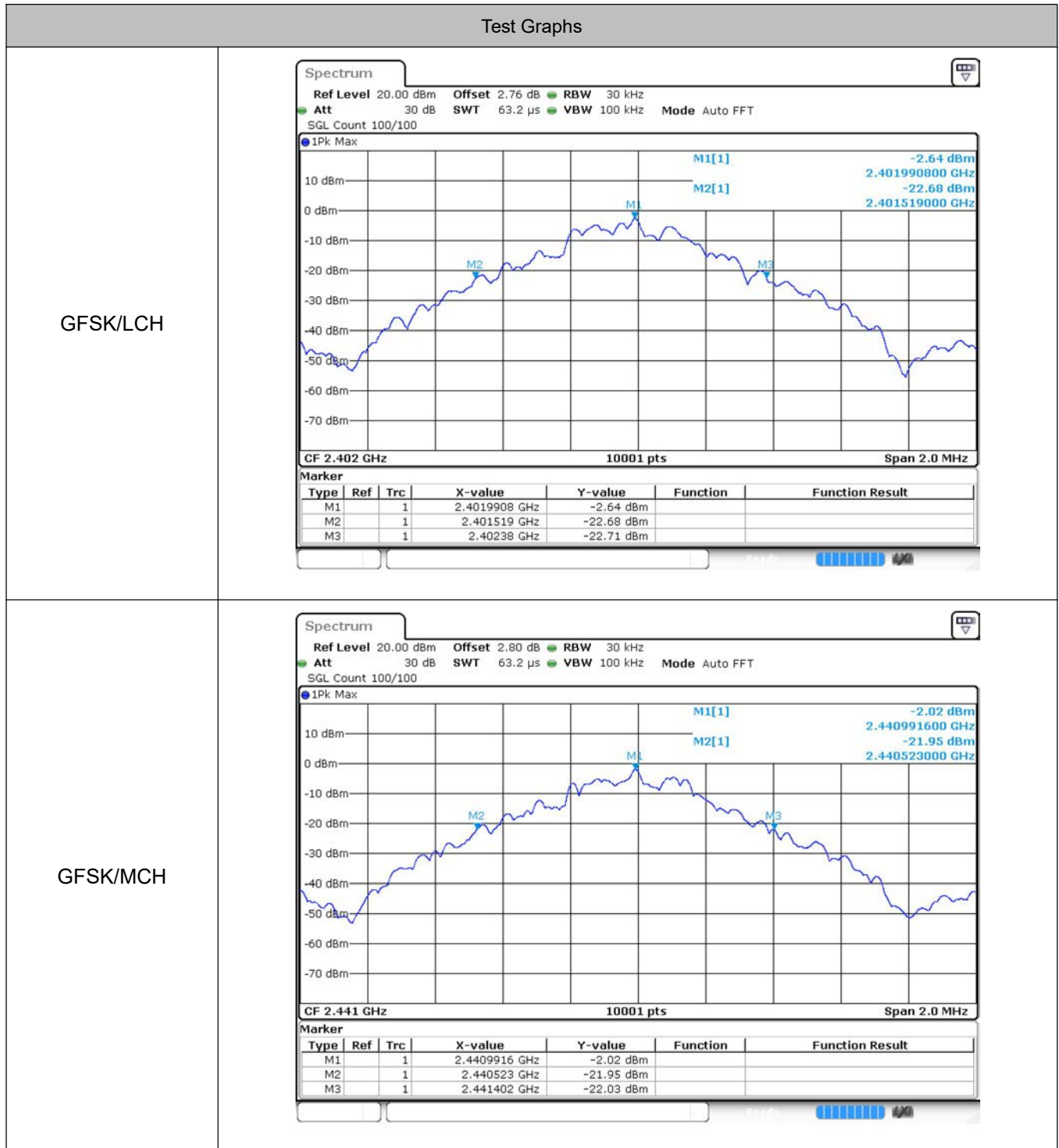


3 20dB Bandwidth

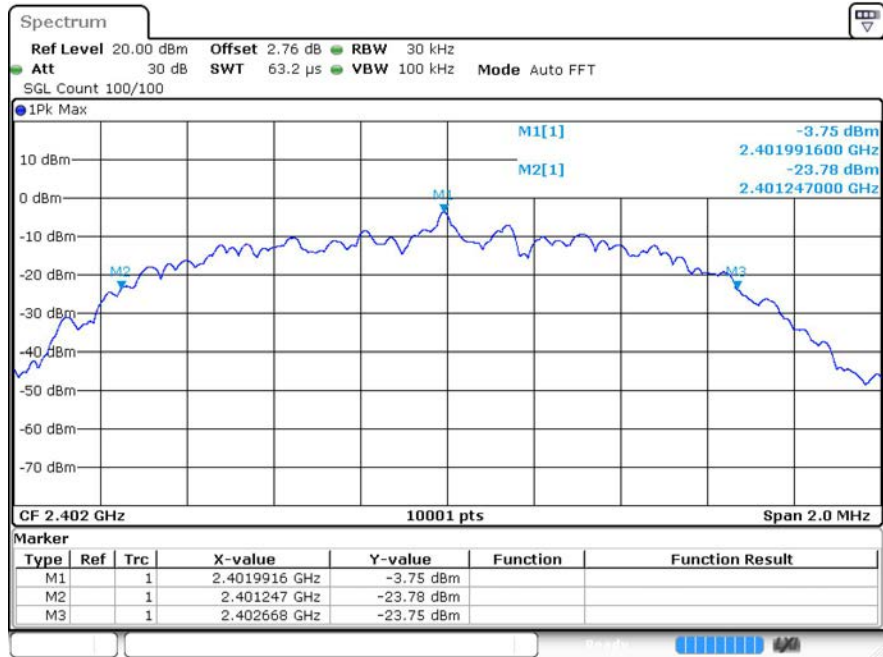
3.1 Test Result

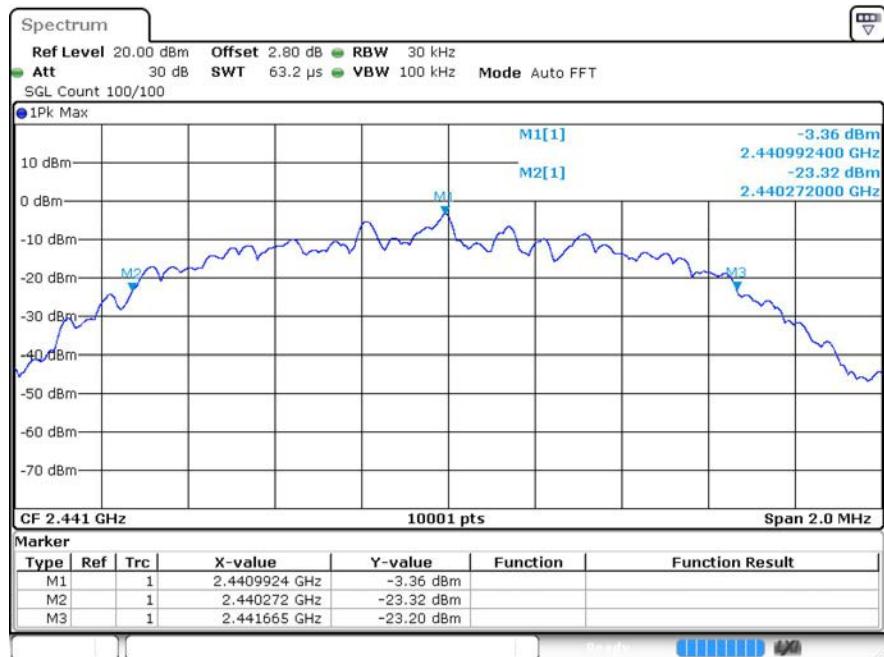
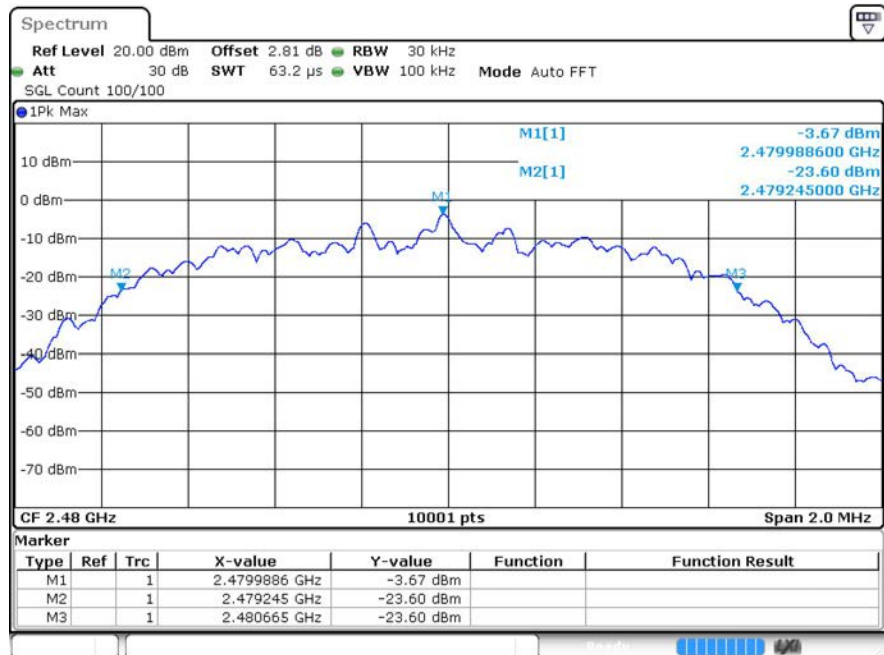
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.86	Not Specified	Pass
	MCH	0.879	Not Specified	Pass
	HCH	0.872	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.42	Not Specified	Pass
	MCH	1.394	Not Specified	Pass
	HCH	1.421	Not Specified	Pass

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	1.003	0.586	Pass
$\pi/4$ DQPSK	MCH	0.995	0.929	Pass

4.2 Test Graphs

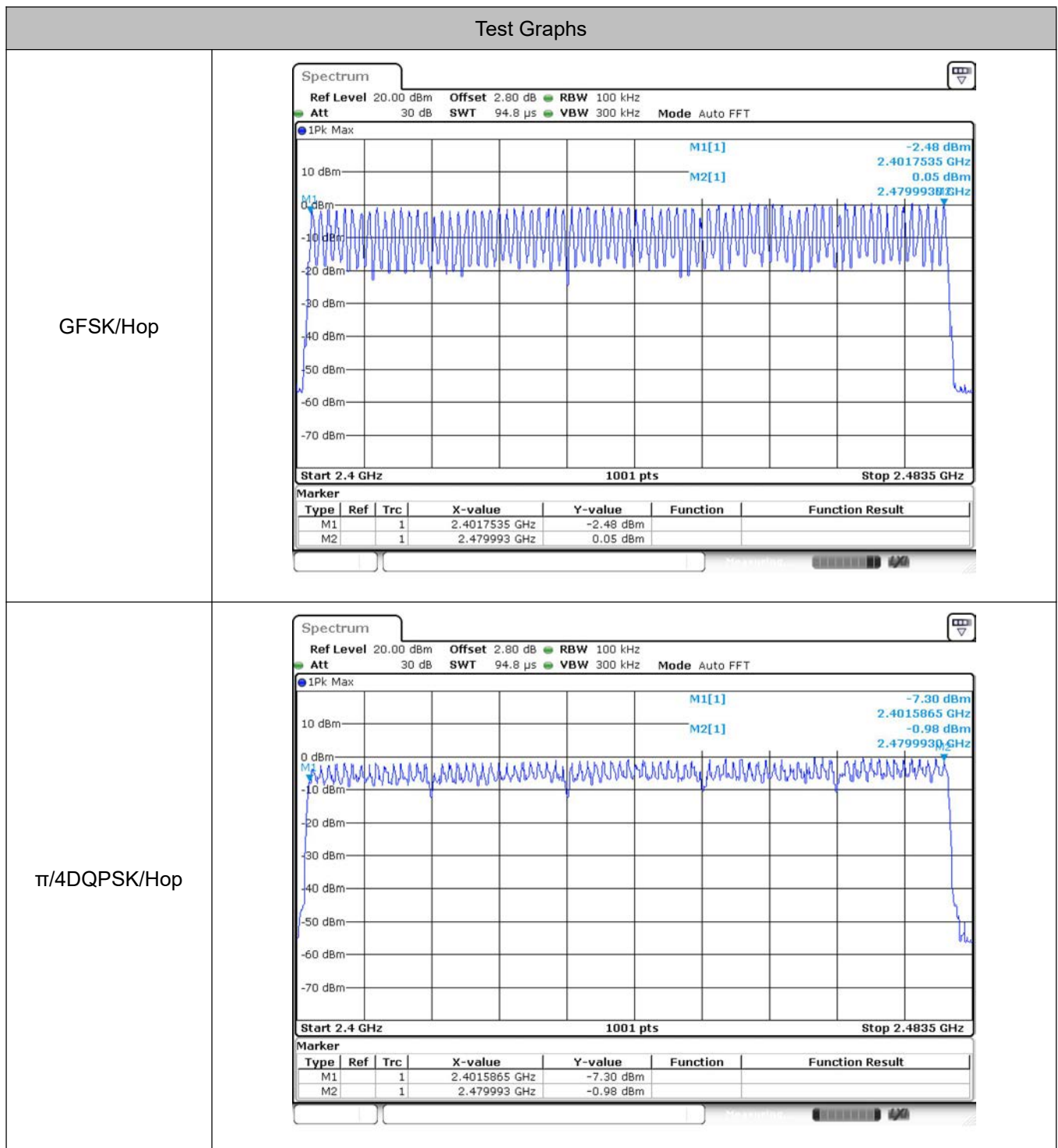


5 Hopping Channel Number

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

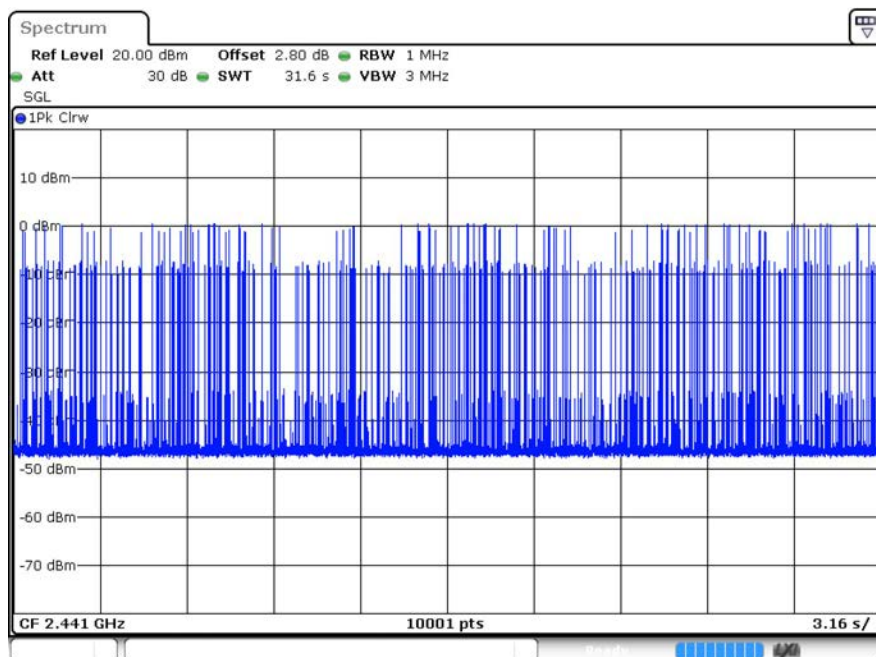
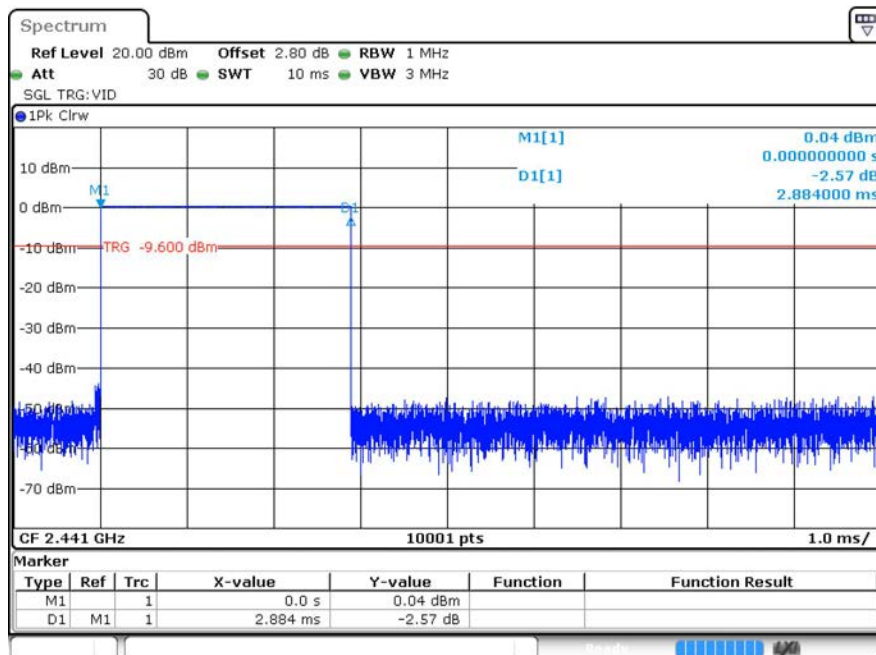
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.884	101	291.284	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	100	288.9	0.4	Pass

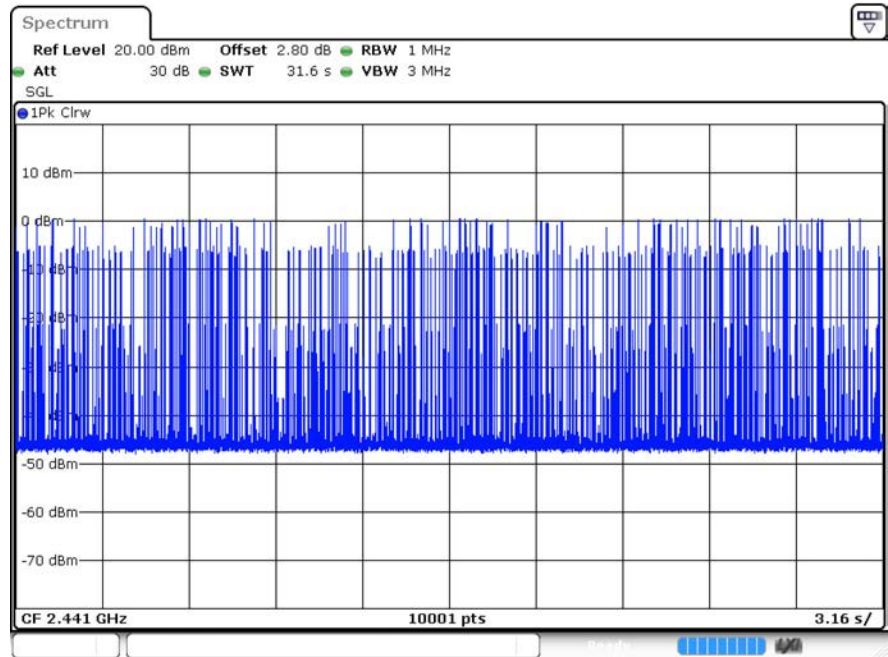
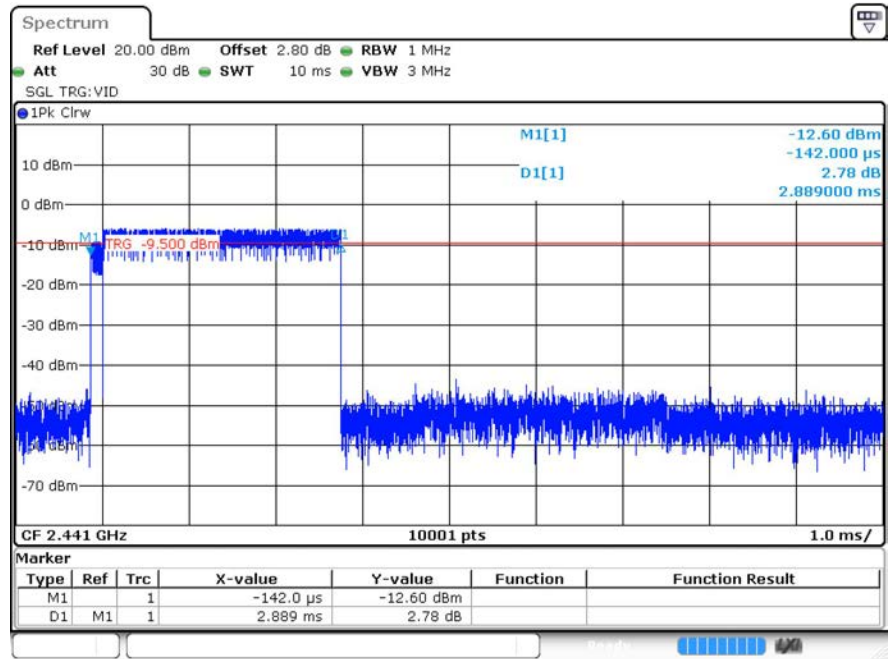
6.2 Test Graphs

Test Graphs

GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH



7 RF Conducted Spurious Emissions

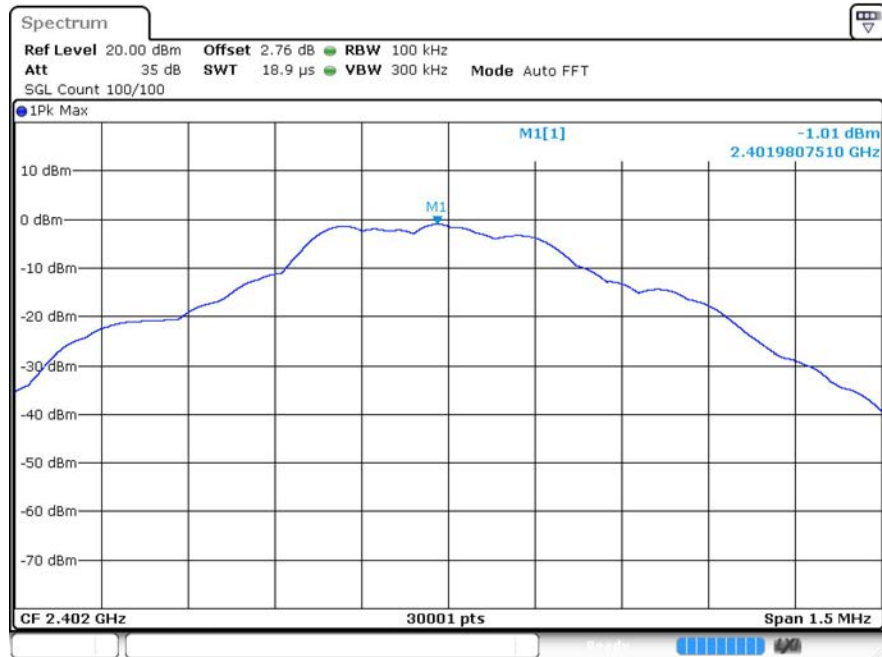
7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-40.18	-20	Pass
	MCH	-40.94	-20	Pass
	HCH	-39.94	-20	Pass
$\pi/4$ DQPSK	LCH	-39.14	-20	Pass
	MCH	-39.28	-20	Pass
	HCH	-38.56	-20	Pass

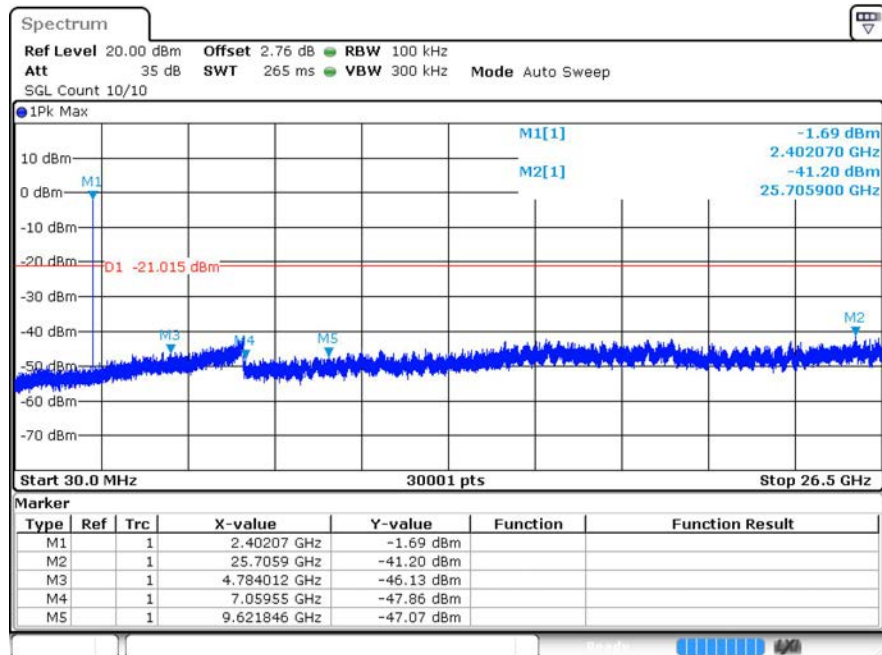
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

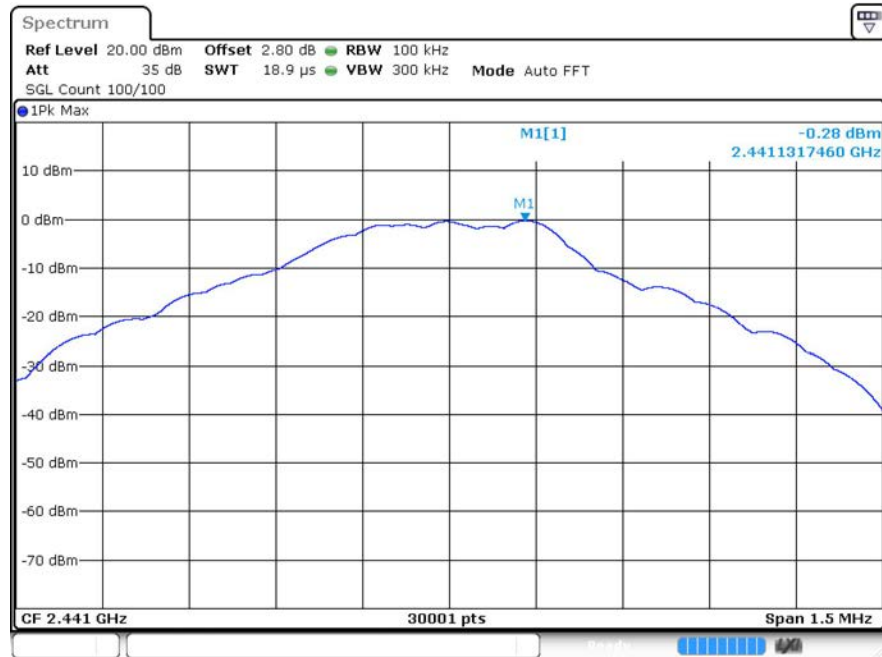


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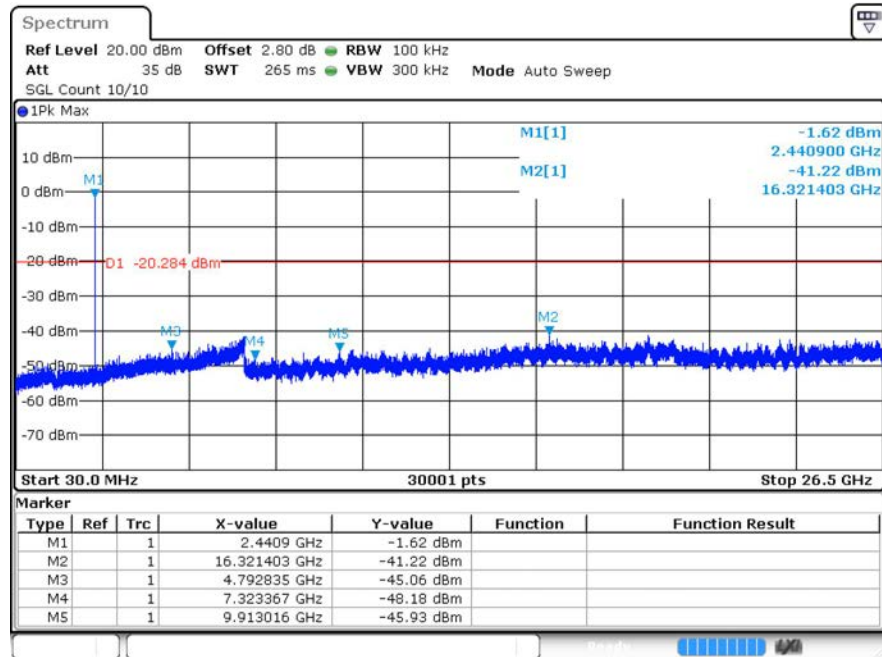


GFSK_MCH_Graphs

Pref

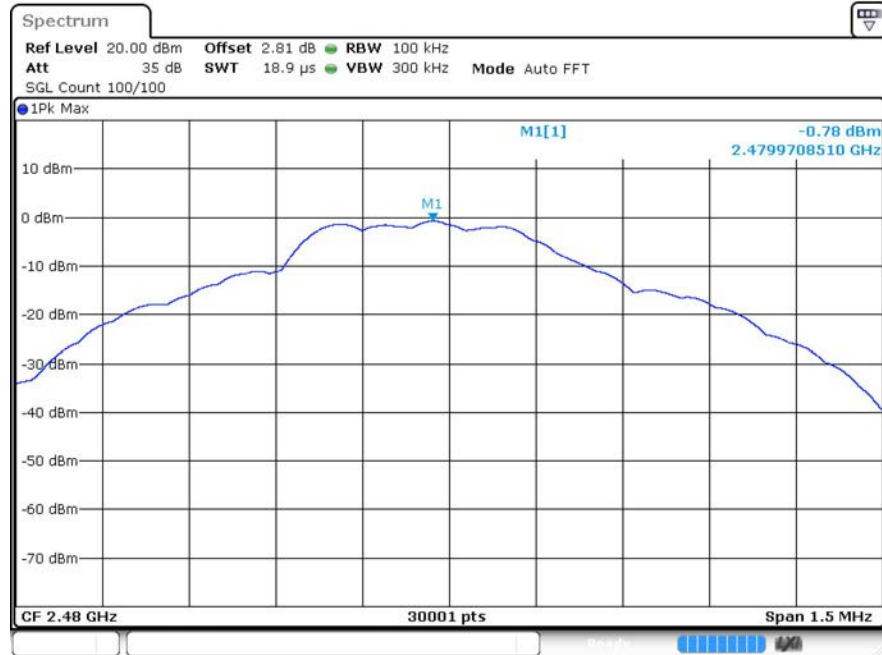


Puw

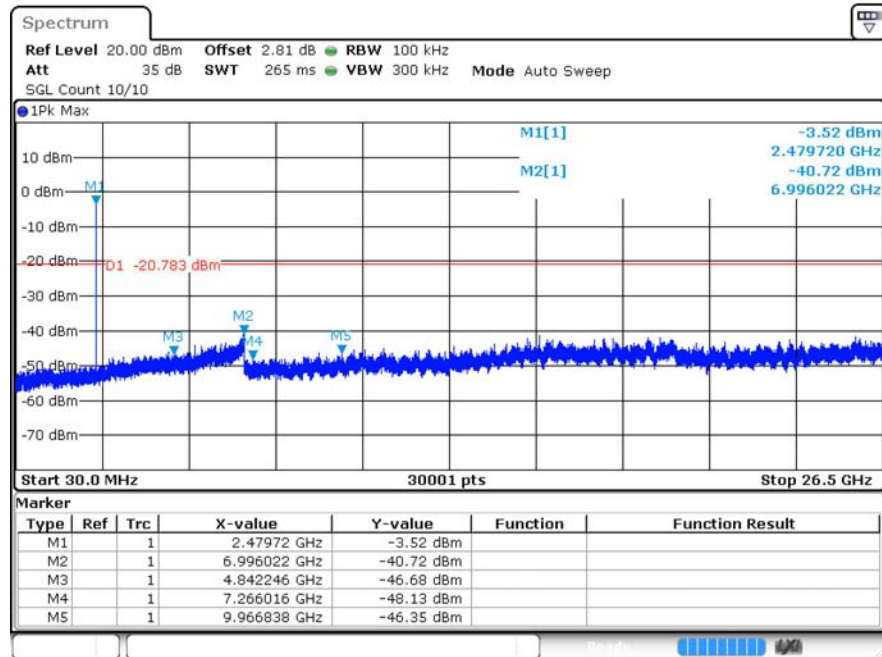


GFSK_HCH_Graphs

Pref

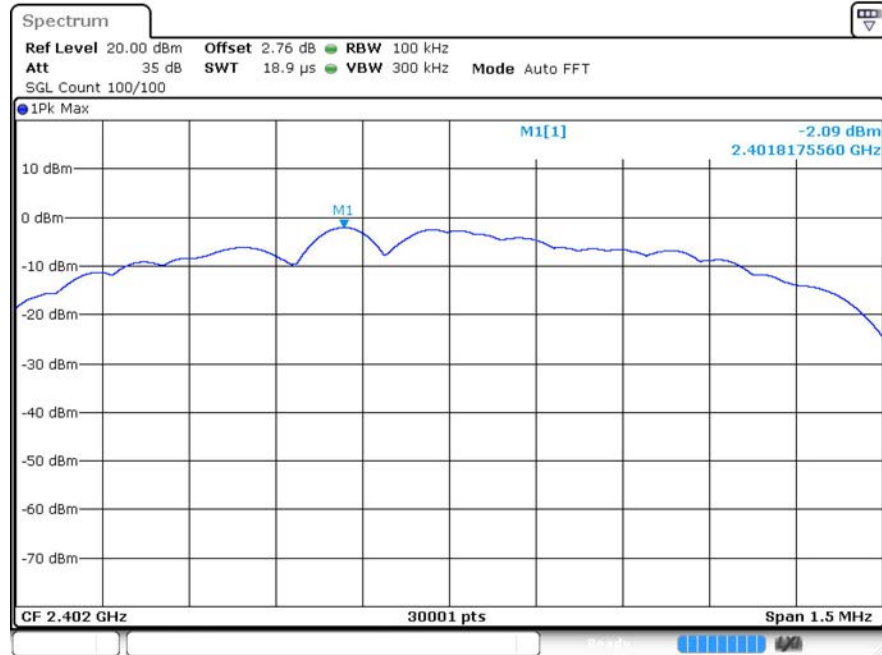


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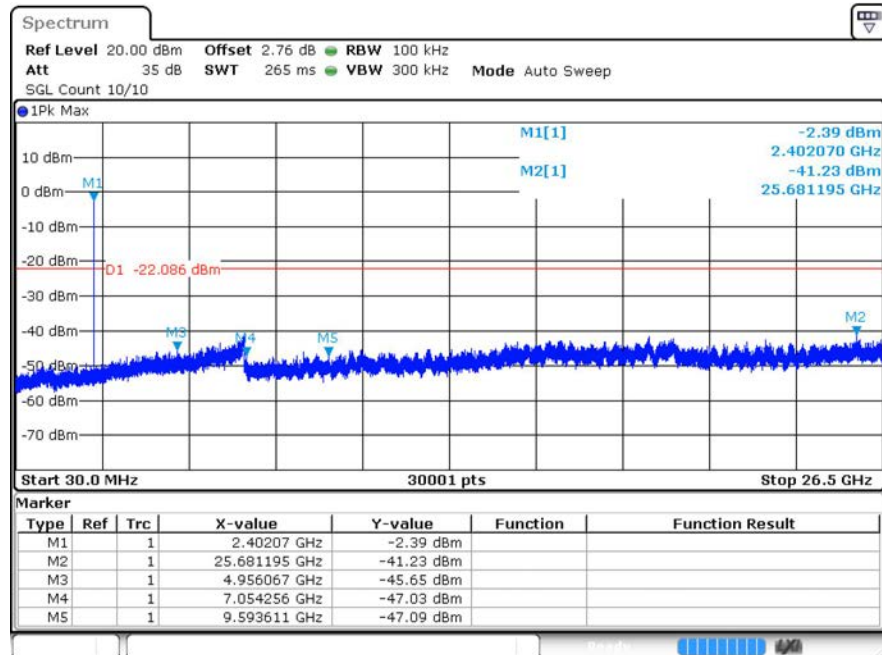


$\pi/4$ DQPSK_LCH_Graphs

Pref

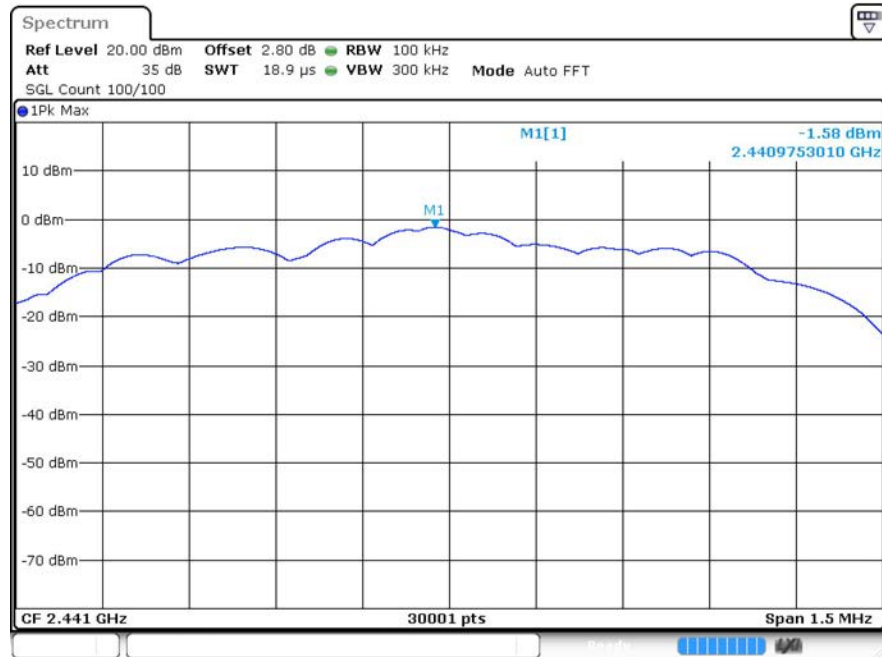


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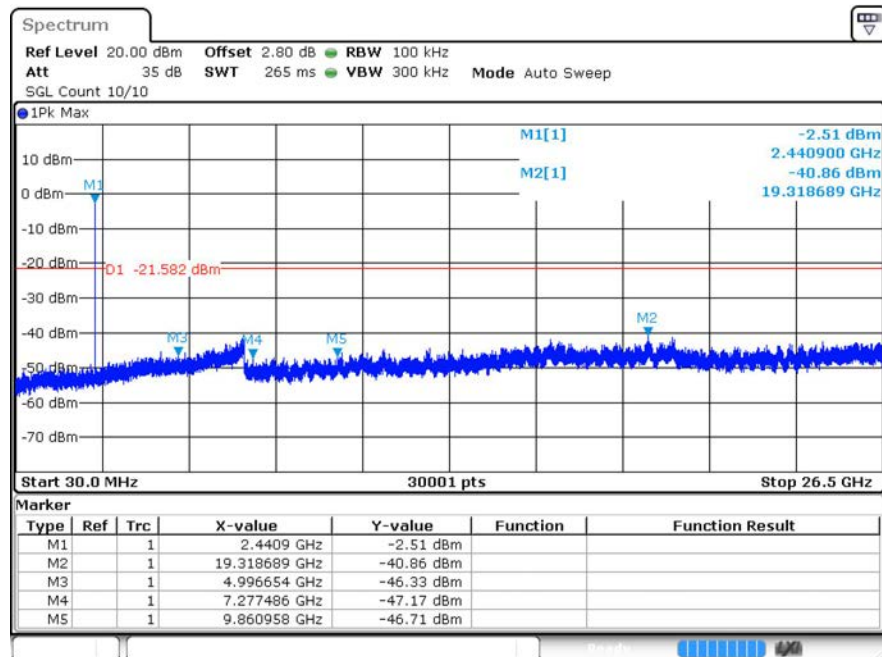


π /4QPSK_MCH_Graphs

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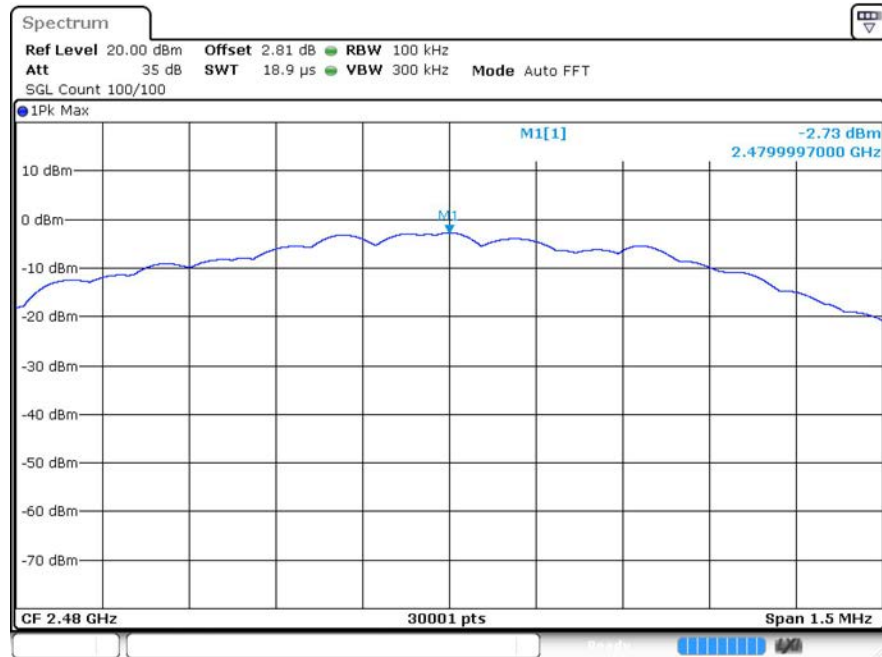


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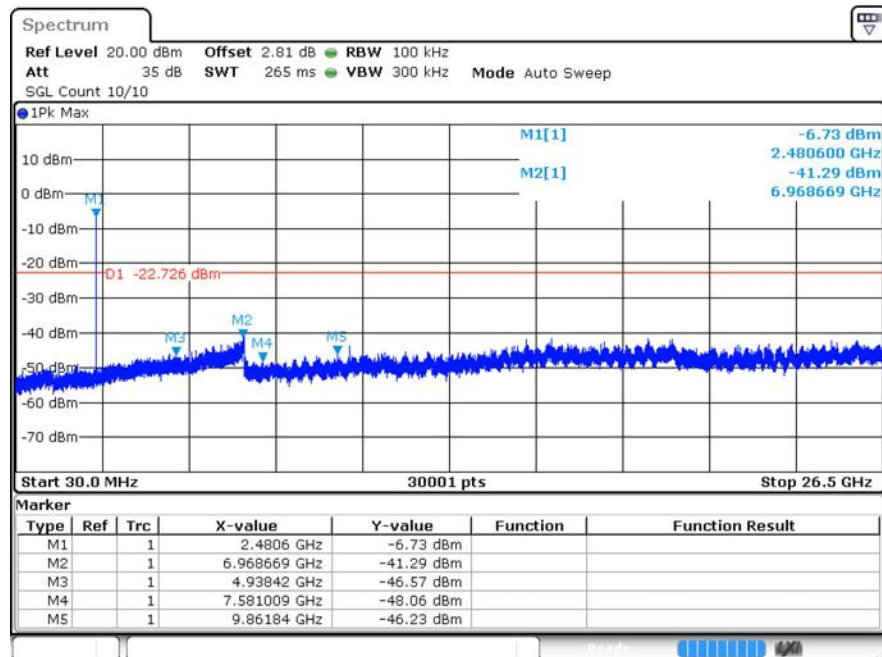


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

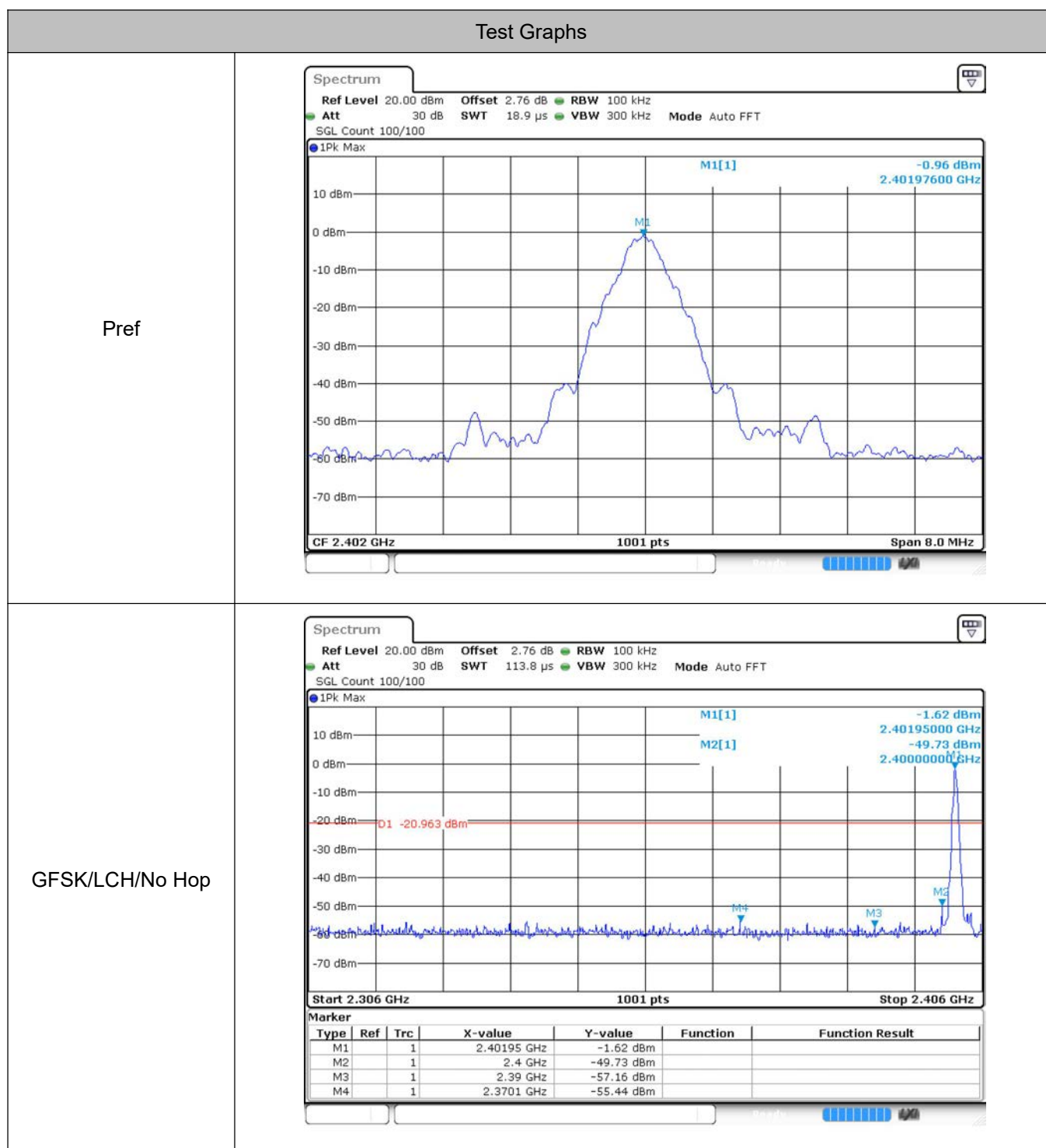


8 Band-edge for RF Conducted Emissions

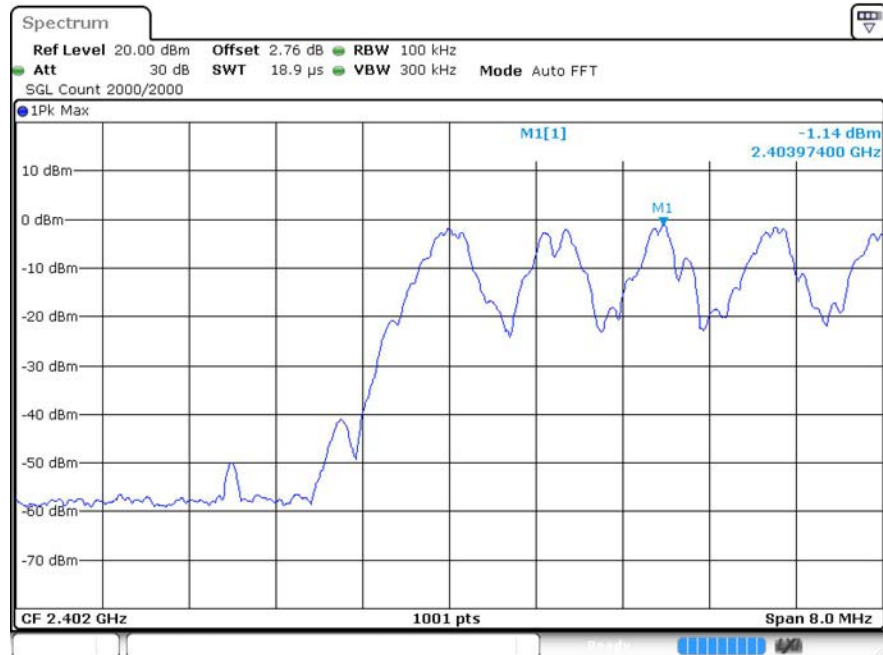
8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-54.48	-20	Pass
			On	-53.2	-20	Pass
	HCH	2480	Off	-46.18	-20	Pass
			On	-46	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-53.43	-20	Pass
			On	-52.72	-20	Pass
	HCH	2480	Off	-52.83	-20	Pass
			On	-44.37	-20	Pass

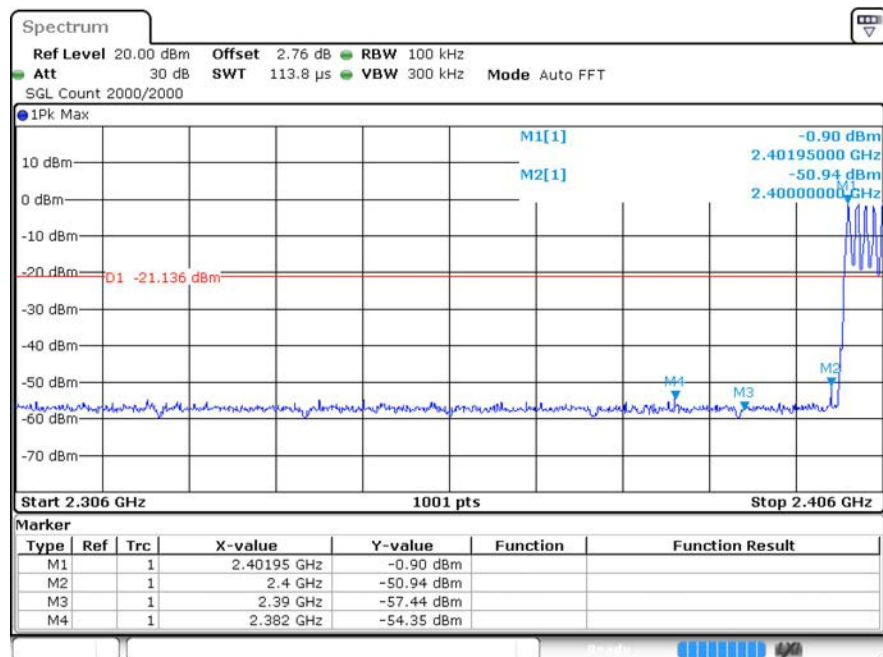
8.2 Test Graphs



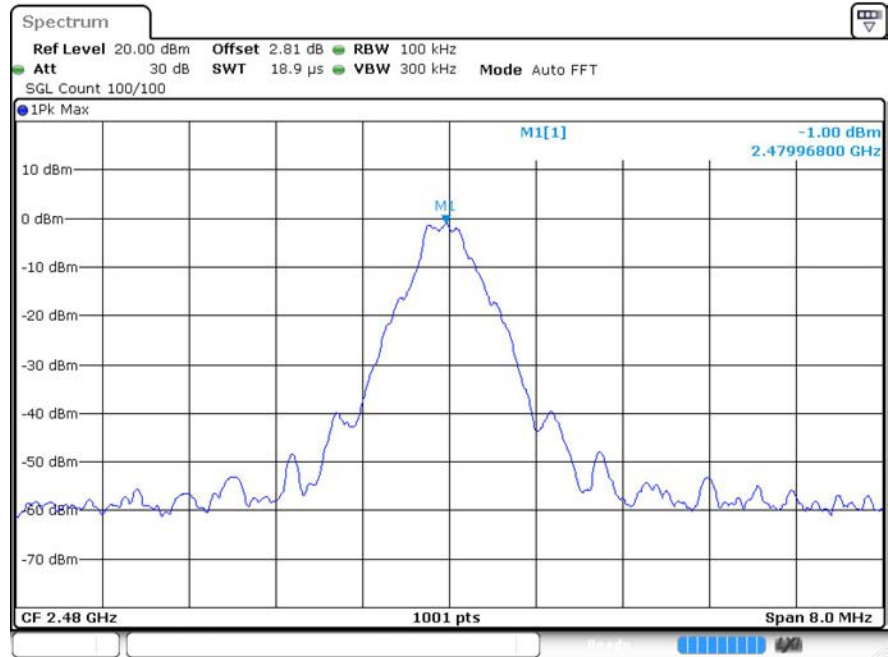
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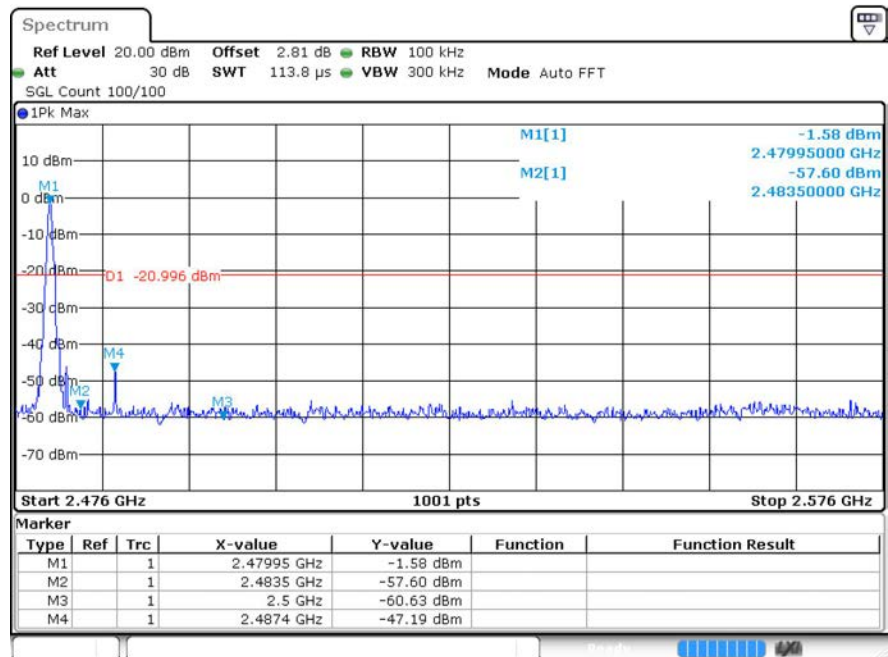
GFSK/LCH/Hop



Ref



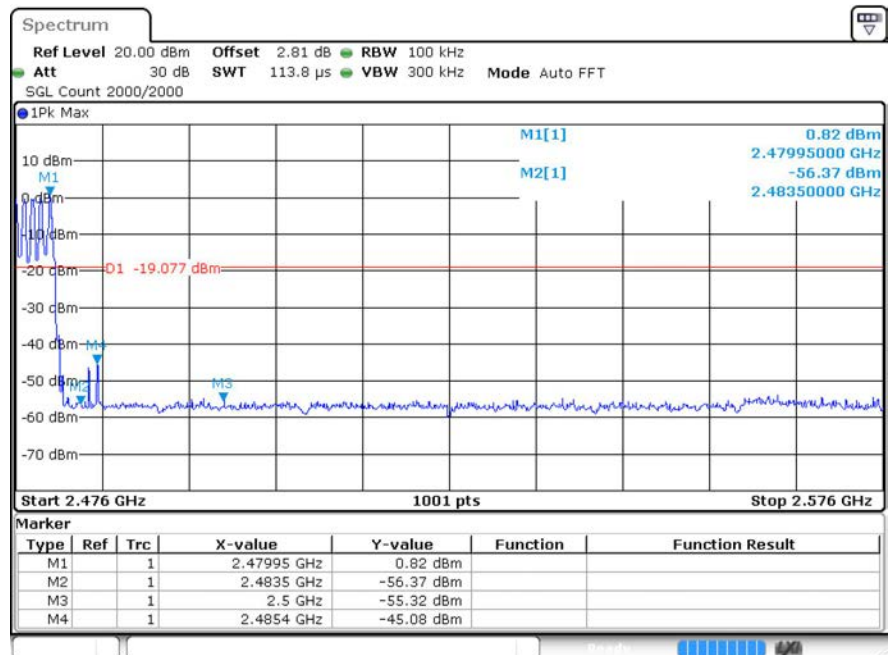
GFSK/HCH/No Hop



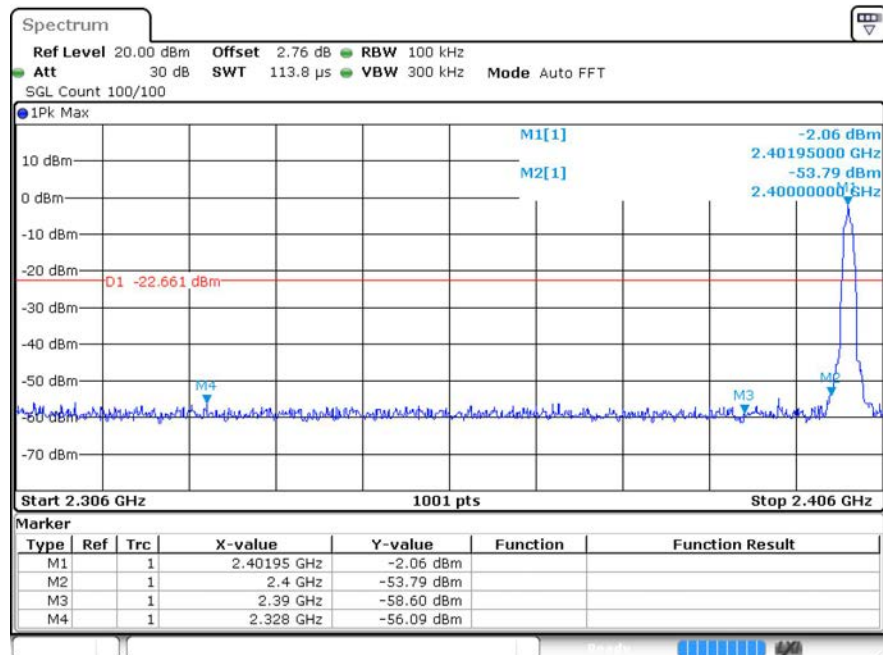
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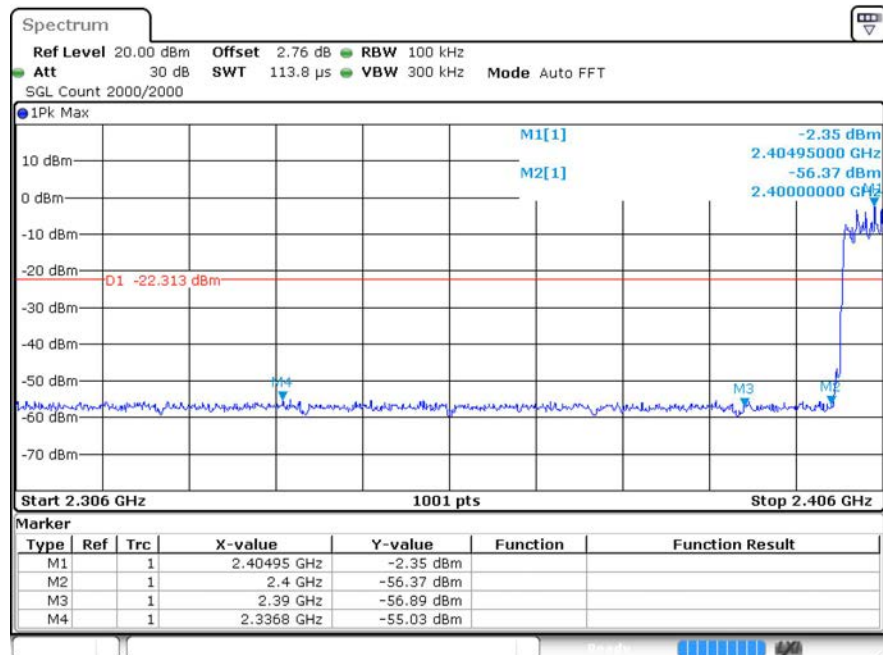
GFSK/HCH/Hop



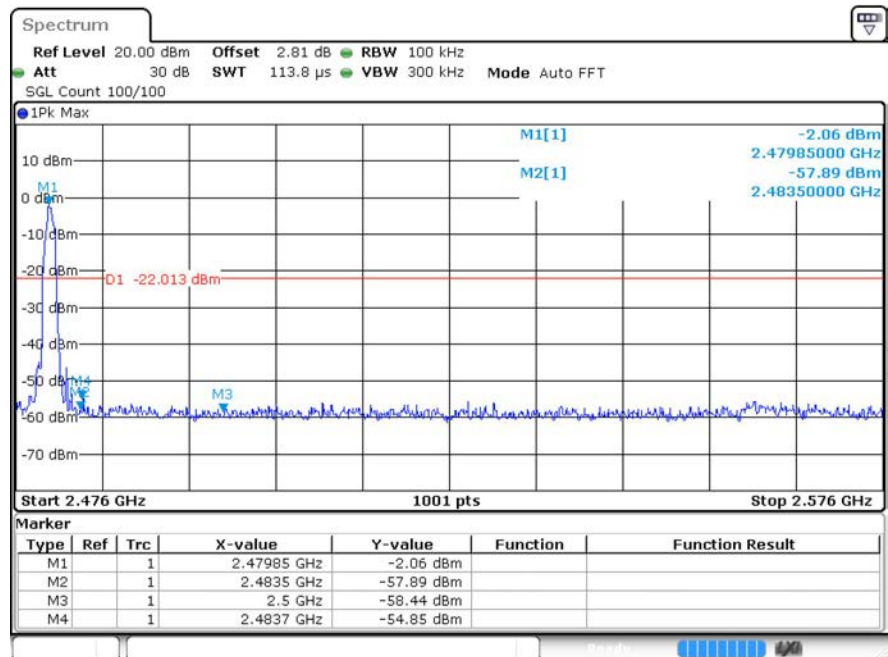
Ref


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


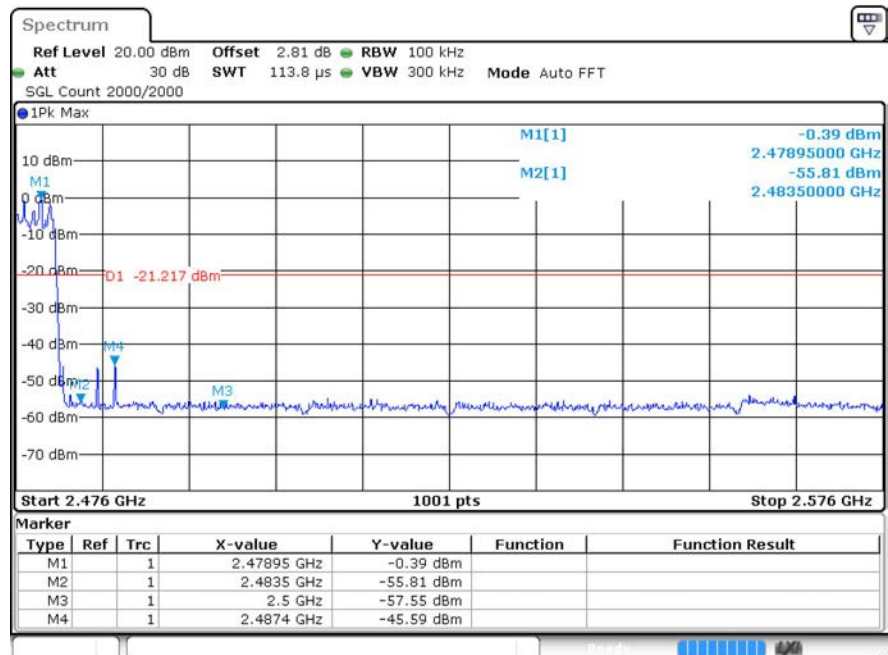
Ref


 $\pi/4$ DQPSK/LCH/Hop


Ref


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


Ref


 $\pi/4$ DQPSK/HCH/Hop


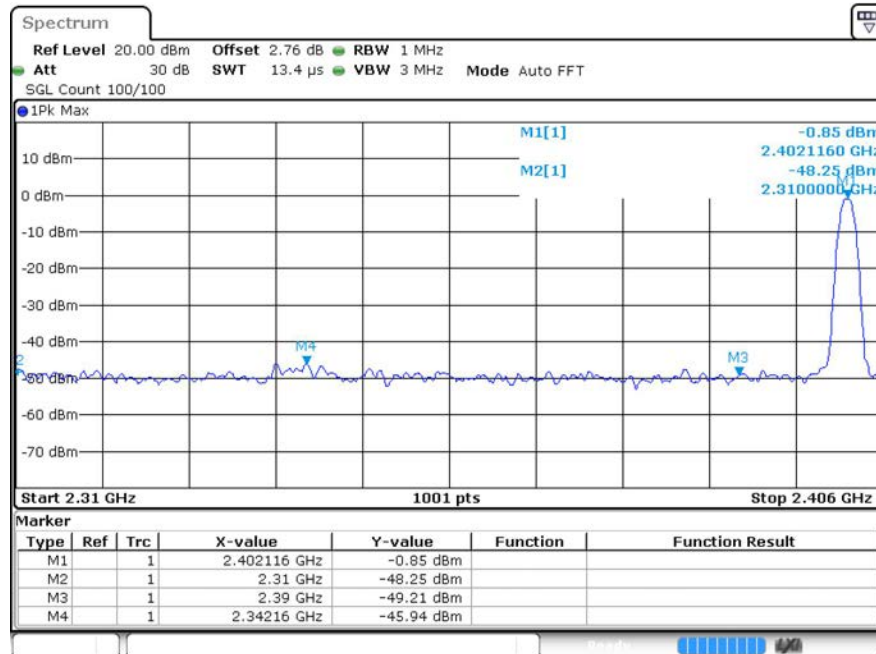
9 Restrict-band band-edge measurements

9.1 Test Result

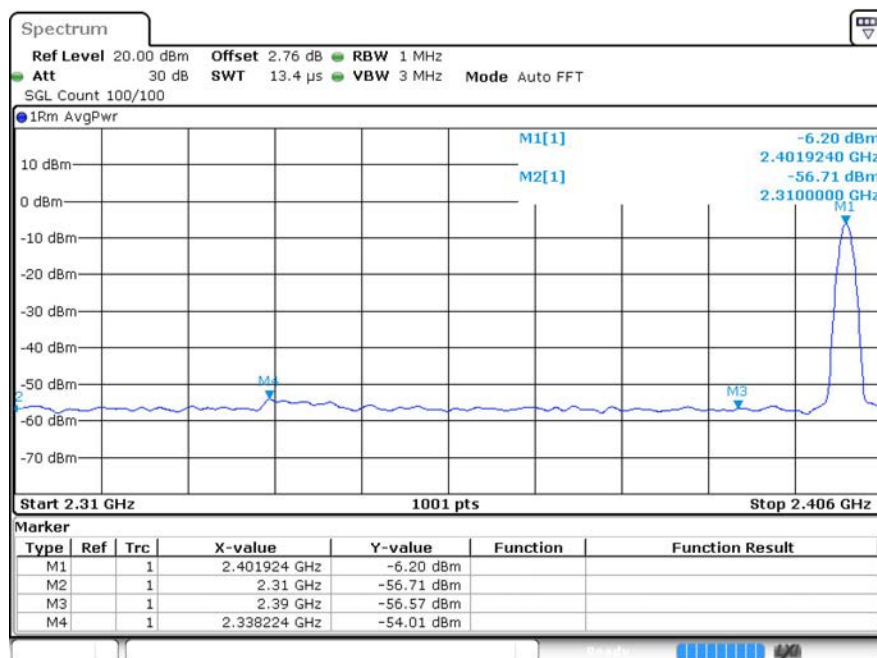
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.25	2	-	49.01	PEAK	74	Pass
	Off	2310.0	-56.71	2	5.02	45.57	AV	54	Pass
	Off	2342.16	-45.93	2	-	51.33	PEAK	74	Pass
	Off	2338.224	-54.01	2	5.02	48.27	AV	54	Pass
	Off	2390.0	-49.21	2	-	48.05	PEAK	74	Pass
	Off	2390.0	-56.57	2	5.02	45.71	AV	54	Pass
	Off	2483.5	-49.21	2	-	48.05	PEAK	74	Pass
	Off	2483.5	-56.54	2	5.06	45.78	AV	54	Pass
	Off	2487.4	-45.48	2	-	51.78	PEAK	74	Pass
	Off	2498.968	-55.61	2	5.06	46.71	AV	54	Pass
	Off	2500.0	-47.92	2	-	49.34	PEAK	74	Pass
	Off	2500.0	-56.53	2	5.06	45.79	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48.65	2	-	48.61	PEAK	74	Pass
	Off	2310.0	-56.41	2	4.95	45.8	AV	54	Pass
	Off	2338.128	-45.33	2	-	51.93	PEAK	74	Pass
	Off	2344.464	-54.06	2	4.95	48.15	AV	54	Pass
	Off	2390.0	-48.41	2	-	48.85	PEAK	74	Pass
	Off	2390.0	-57.55	2	4.95	44.66	AV	54	Pass
	Off	2483.5	-48.59	2	-	48.67	PEAK	74	Pass
	Off	2483.5	-55.18	2	4.95	47.03	AV	54	Pass
	Off	2487.424	-45.31	2	-	51.95	PEAK	74	Pass
	Off	2483.512	-55.2	2	4.95	47.01	AV	54	Pass
	Off	2500.0	-49.22	2	-	48.04	PEAK	74	Pass
	Off	2500.0	-56.13	2	4.95	46.08	AV	54	Pass

9.2 Test Graphs

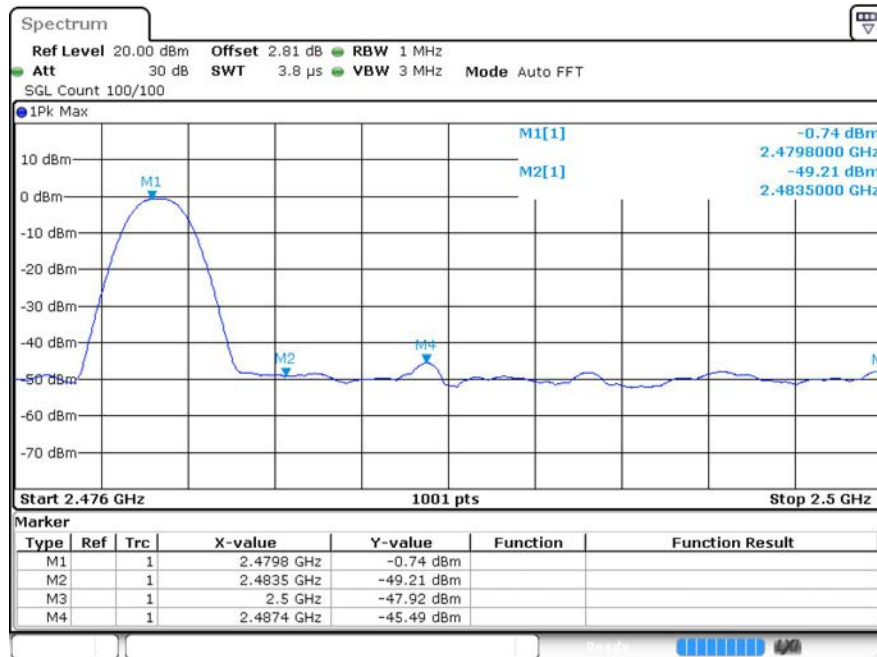
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (Low Channel)



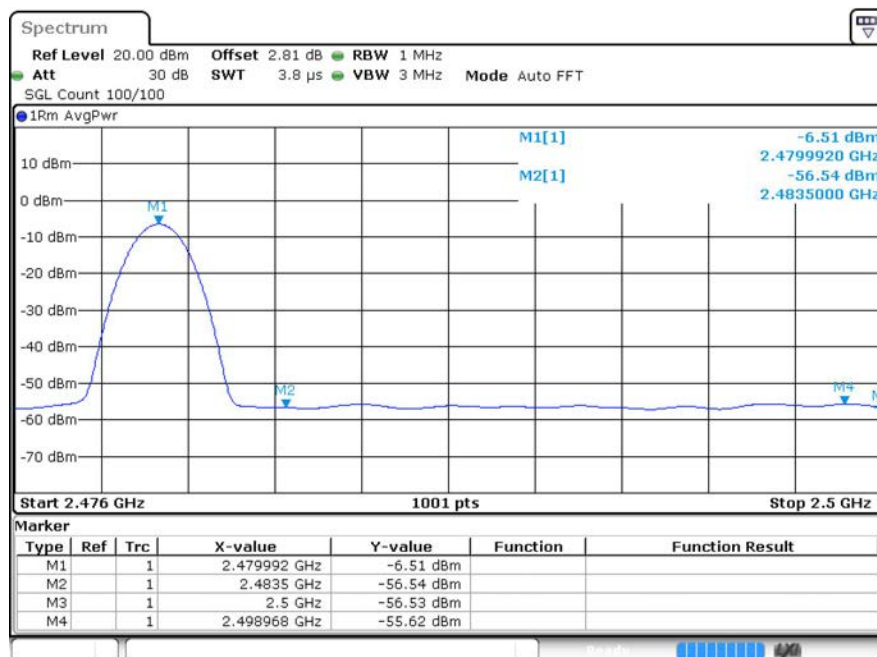
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (Low Channel)



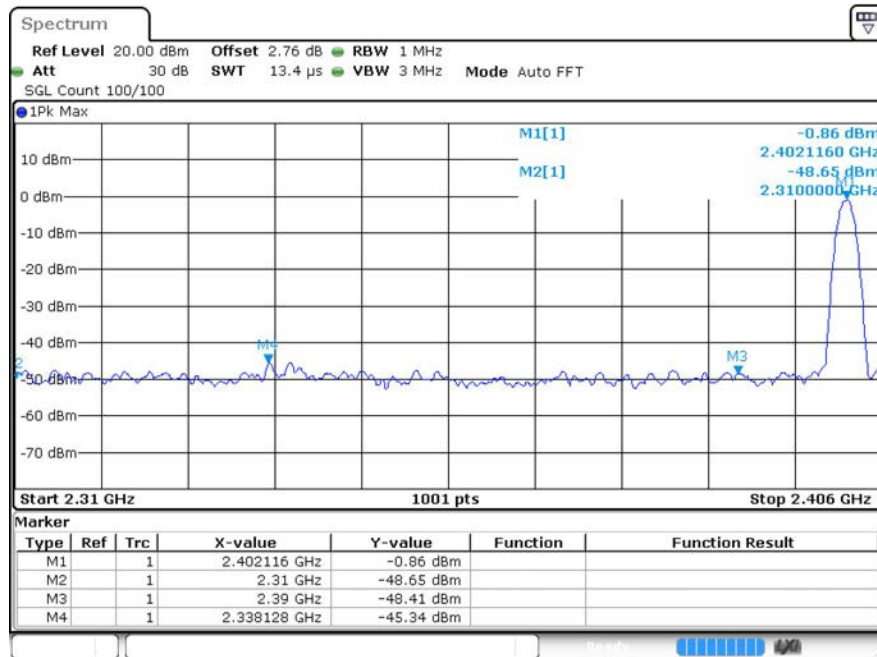
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



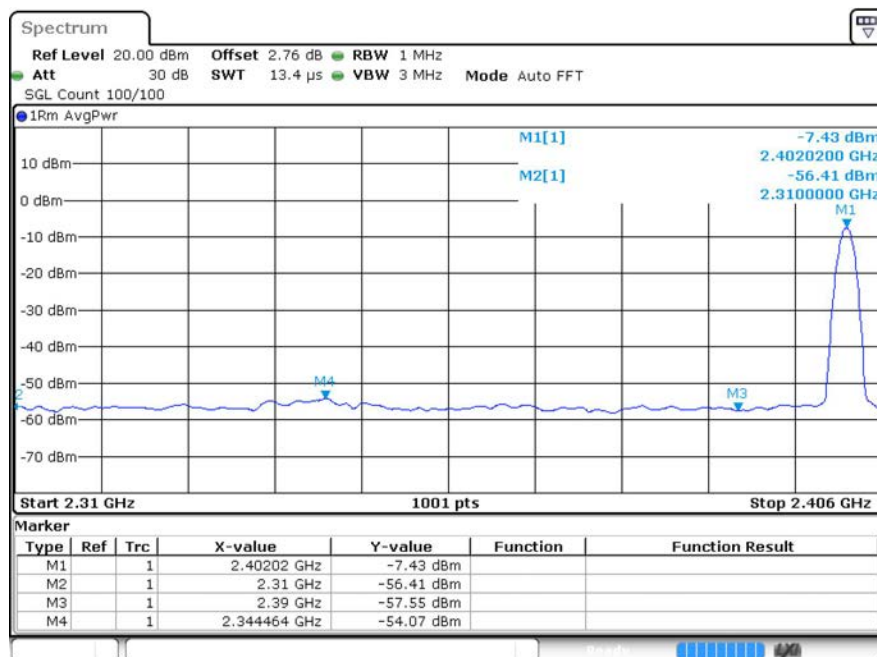
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



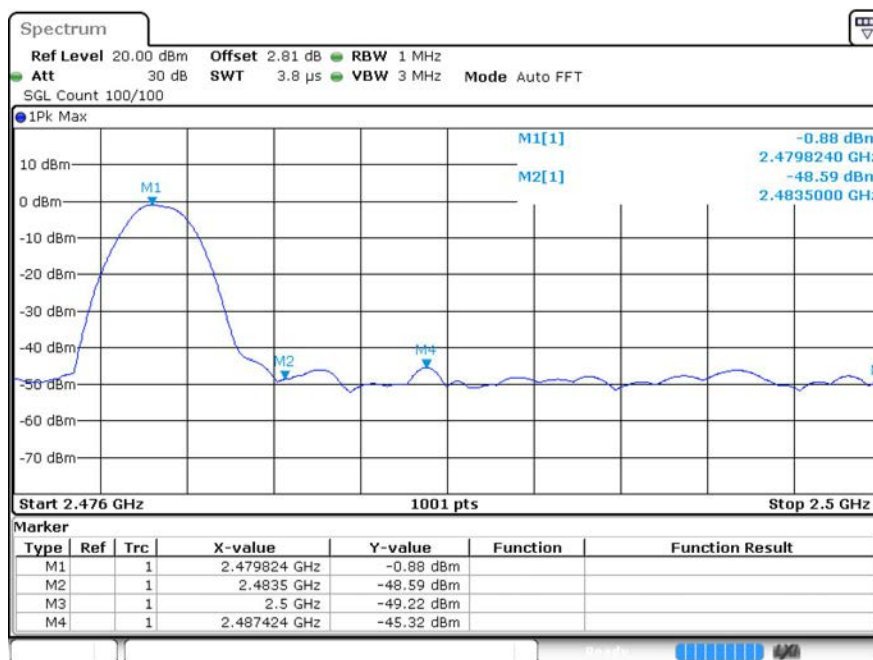
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



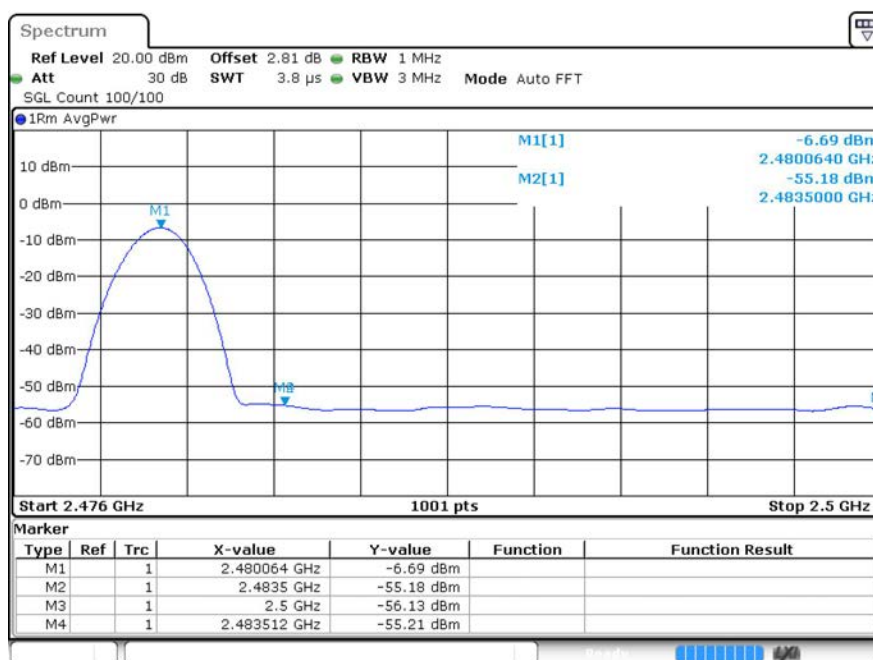
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---