



Appendix A

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

Product Name: Bluetooth headphone

Trade Mark: PANTONE

Test Model: 08

Environmental Conditions

Temperature:	25.2℃
Relative Humidity:	52.2%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung

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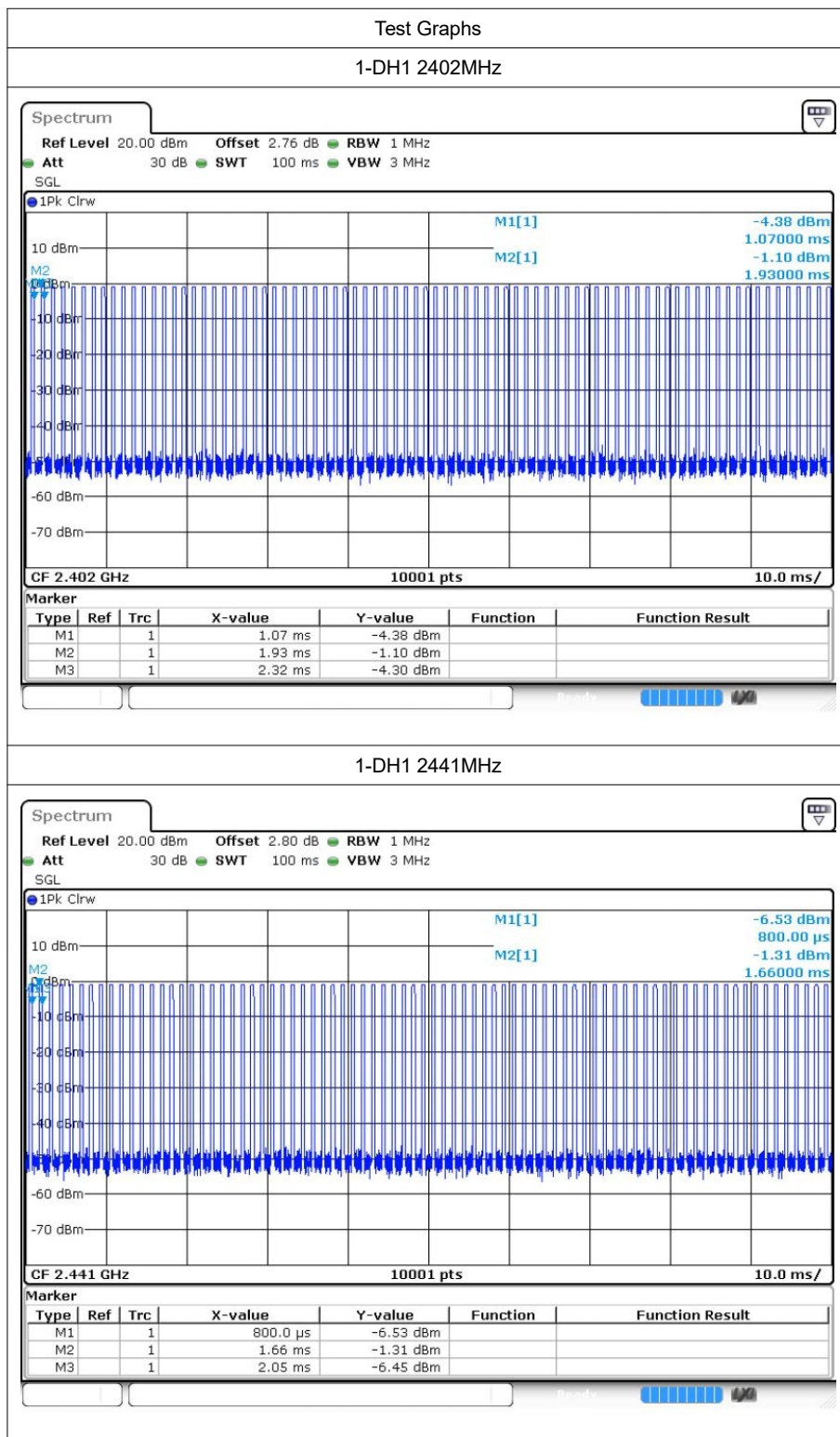


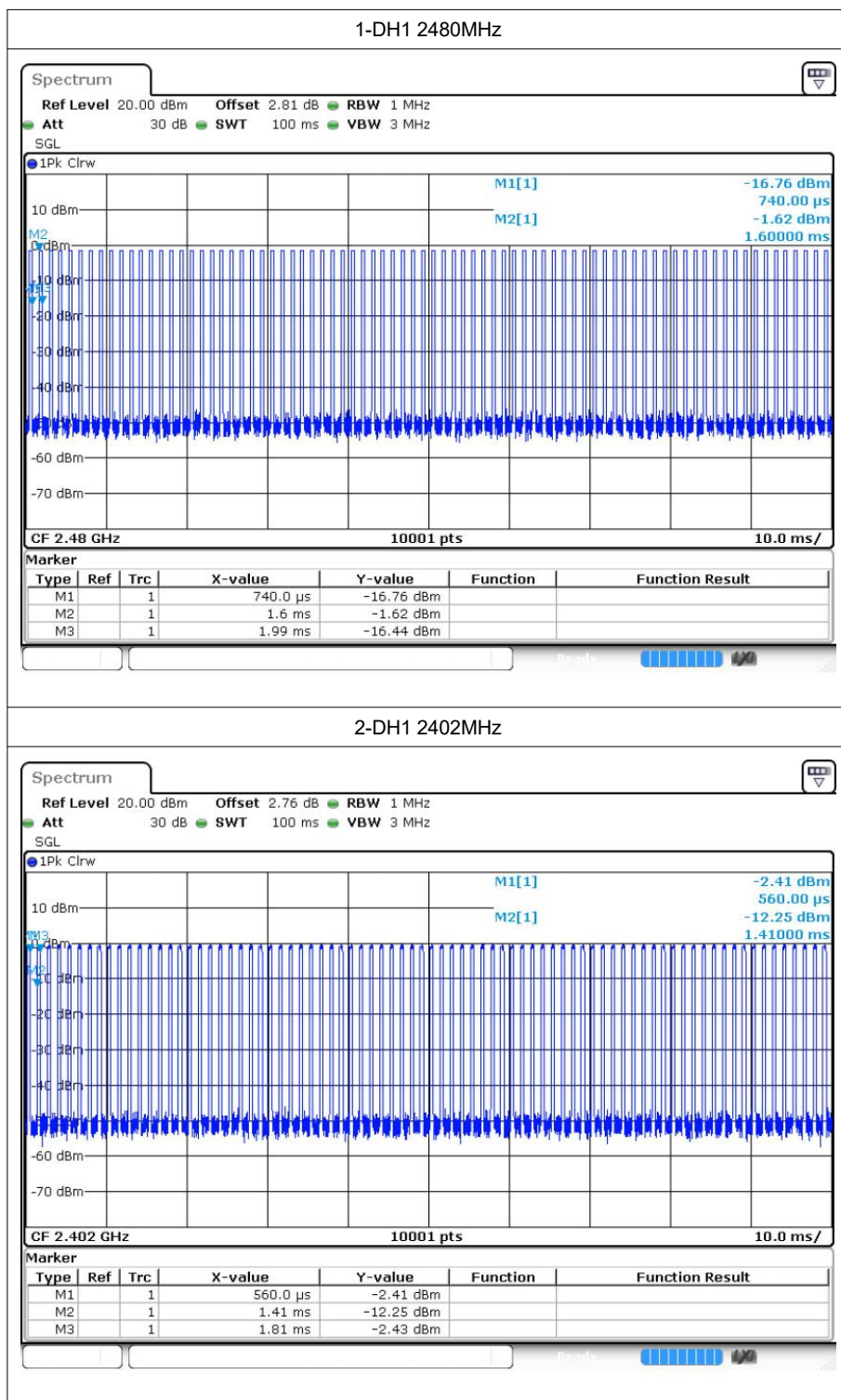
1 Duty Cycle

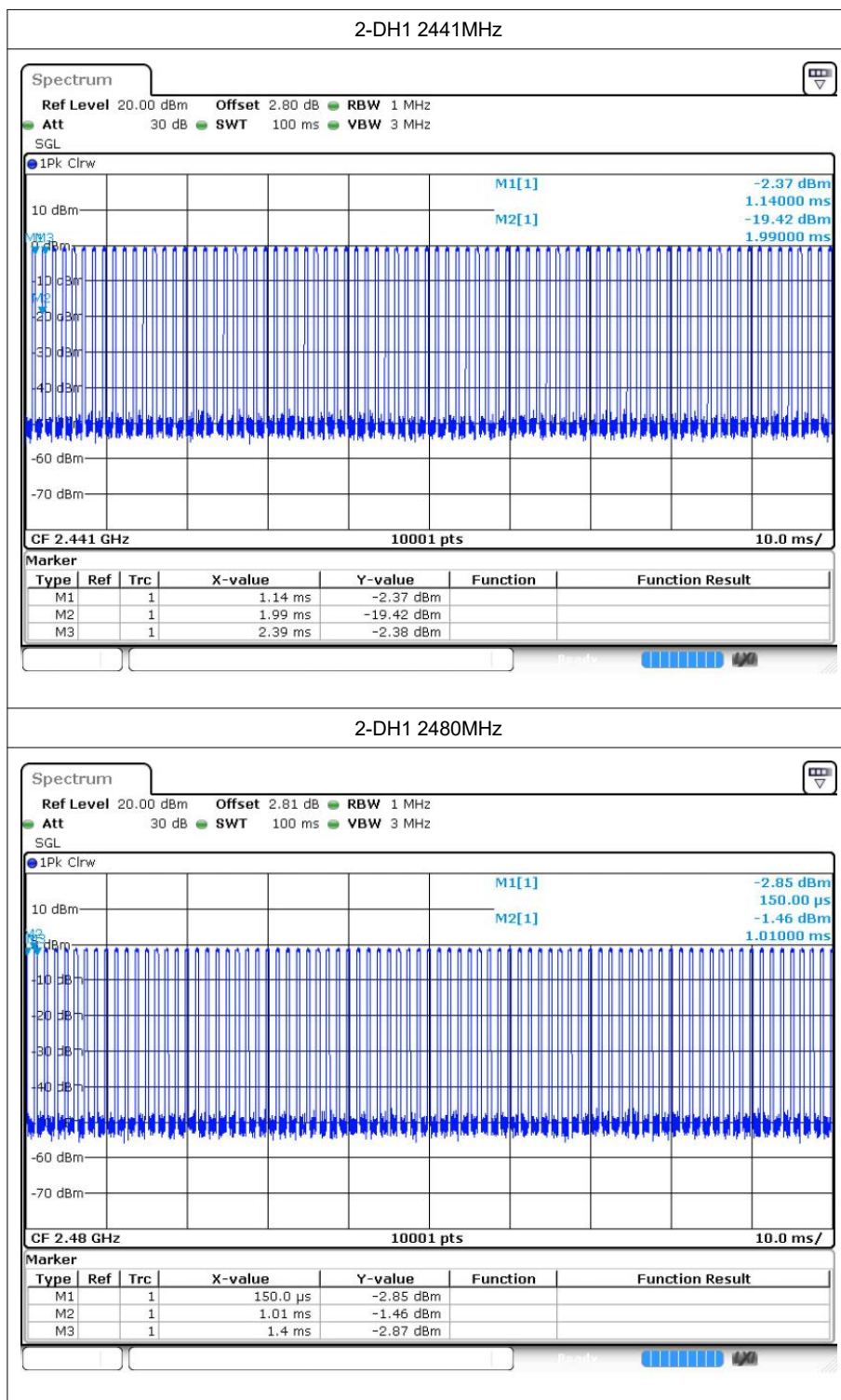
1.1 Test Result

Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	32	4.95	2.56
1-DH1	2441	32	4.95	2.56
1-DH1	2480	32	4.95	2.56
2-DH1	2402	32.5	4.88	2.5
2-DH1	2441	32.19	4.92	2.5
2-DH1	2480	32.01	4.95	2.56

1.2 Test Graphs





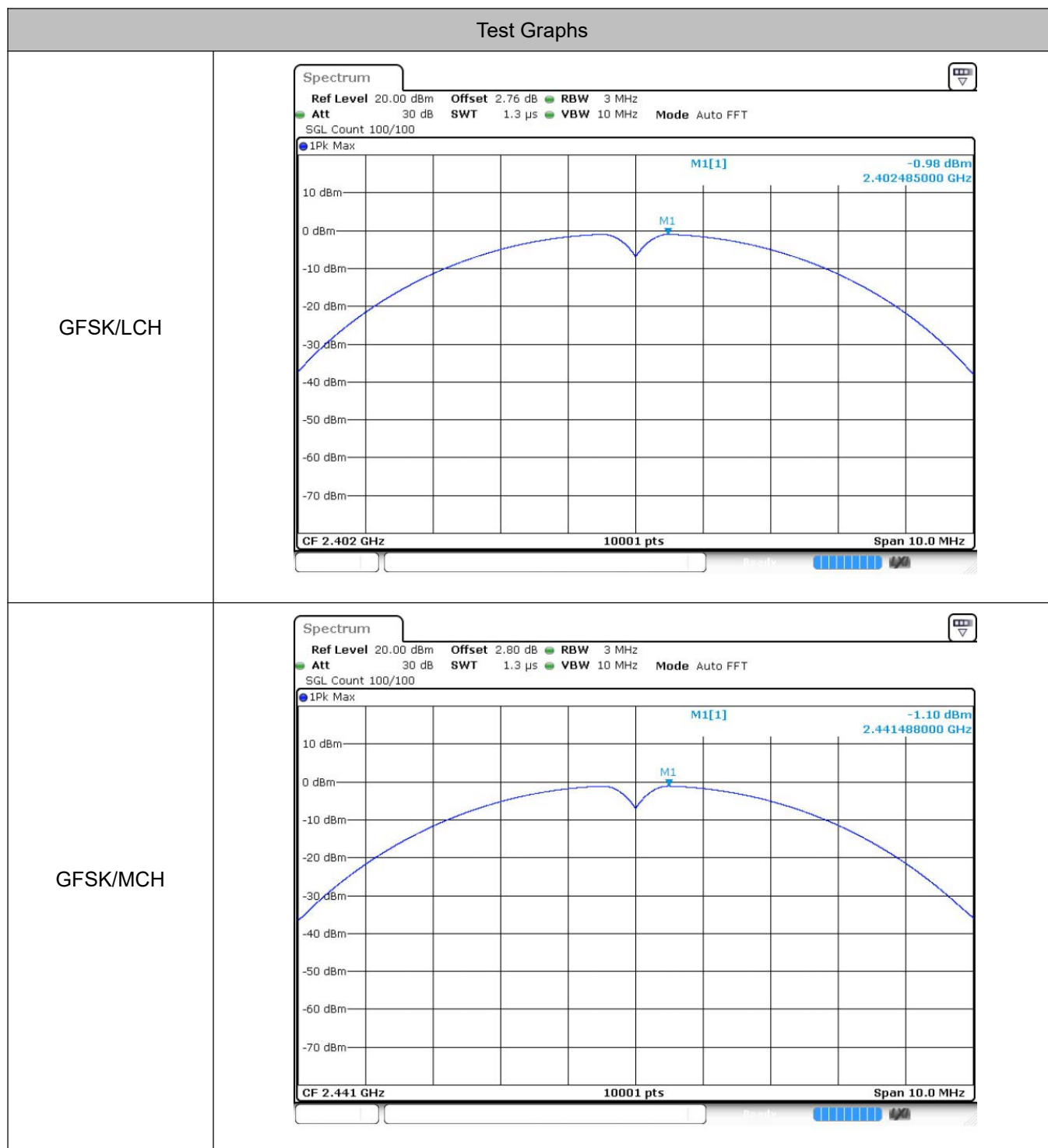


2 Maximum Conducted Peak Output Power

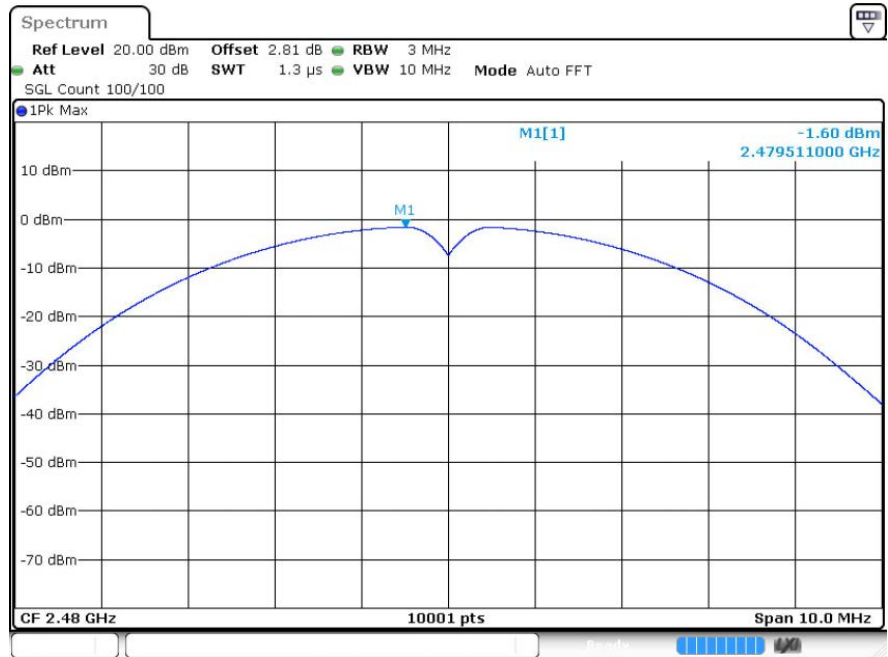
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.98	21	Pass
	MCH	-1.1	21	Pass
	HCH	-1.6	21	Pass
$\pi/4$ DQPSK	LCH	-0.08	21	Pass
	MCH	-0.54	21	Pass
	HCH	-1.21	21	Pass

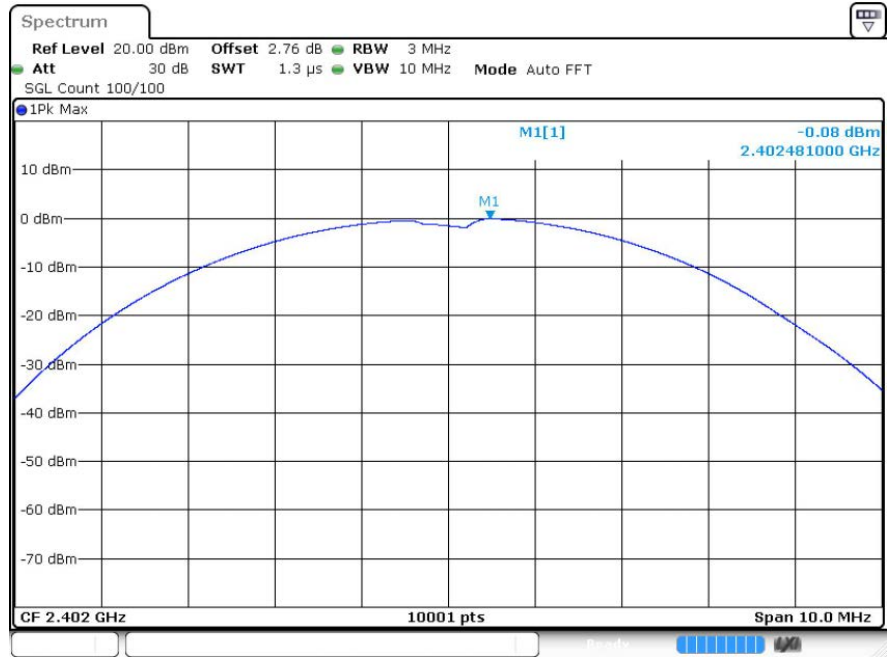
2.2 Test Graphs



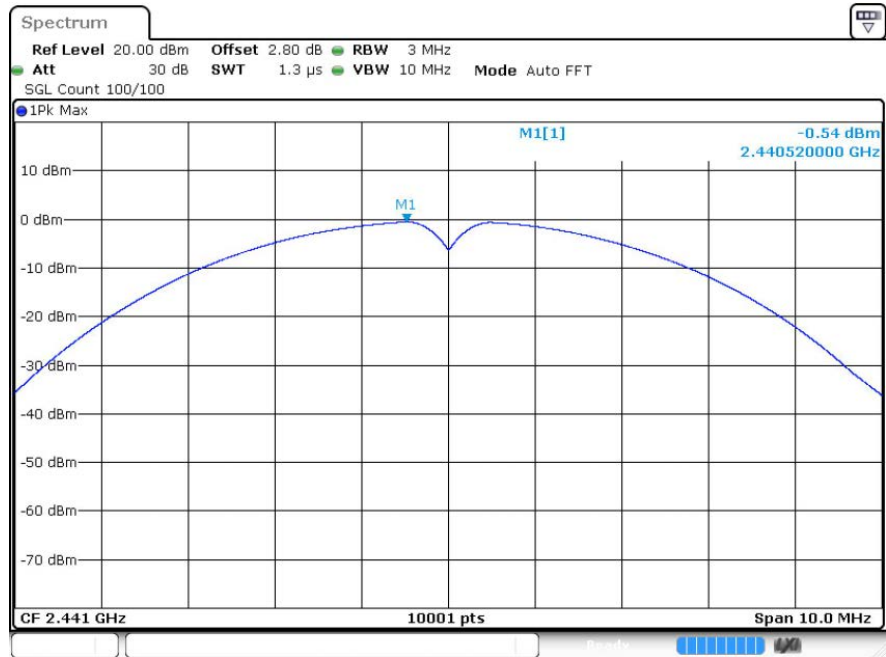
GFSK/HCH



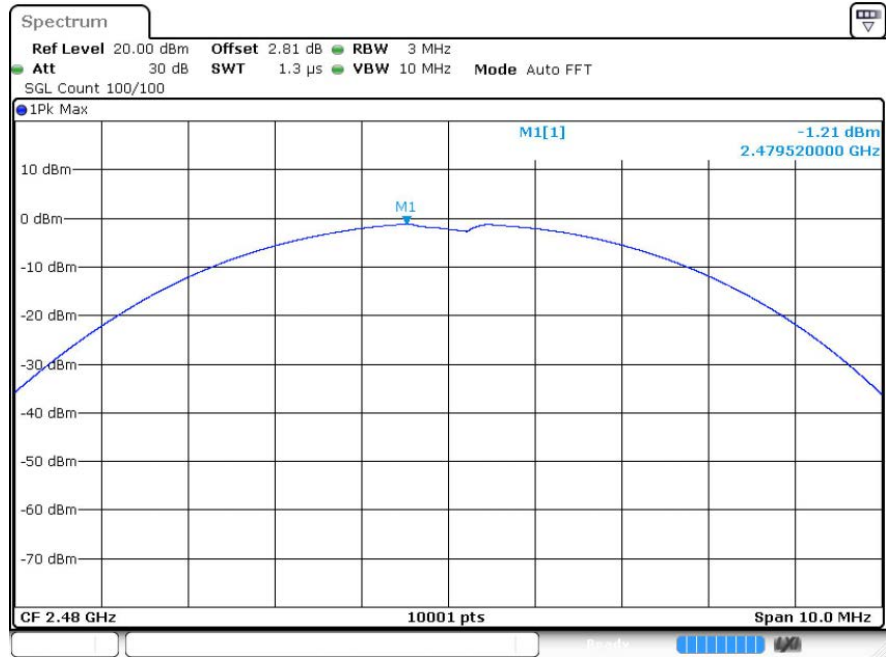
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH

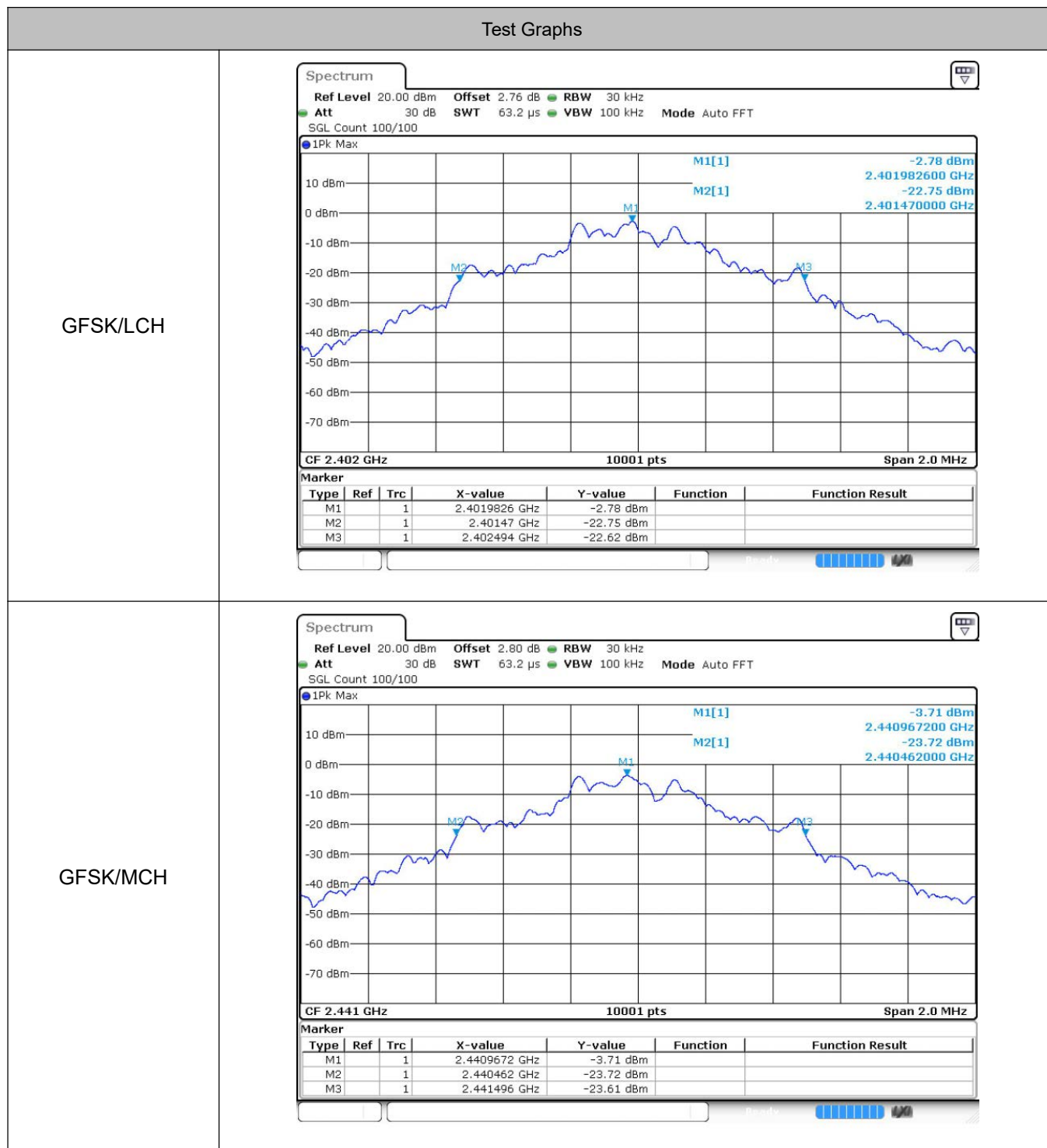


3 20dB Bandwidth

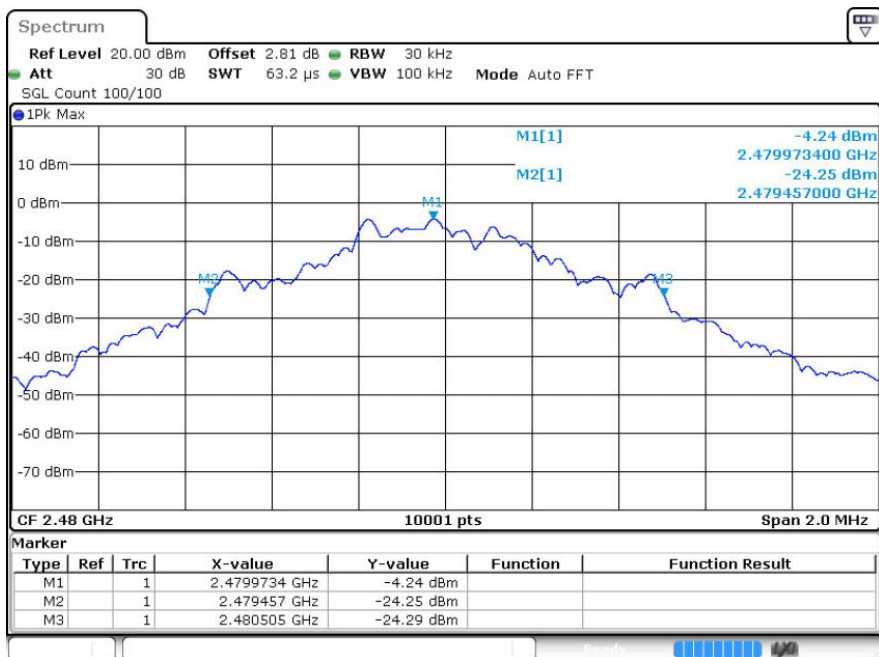
3.1 Test Result

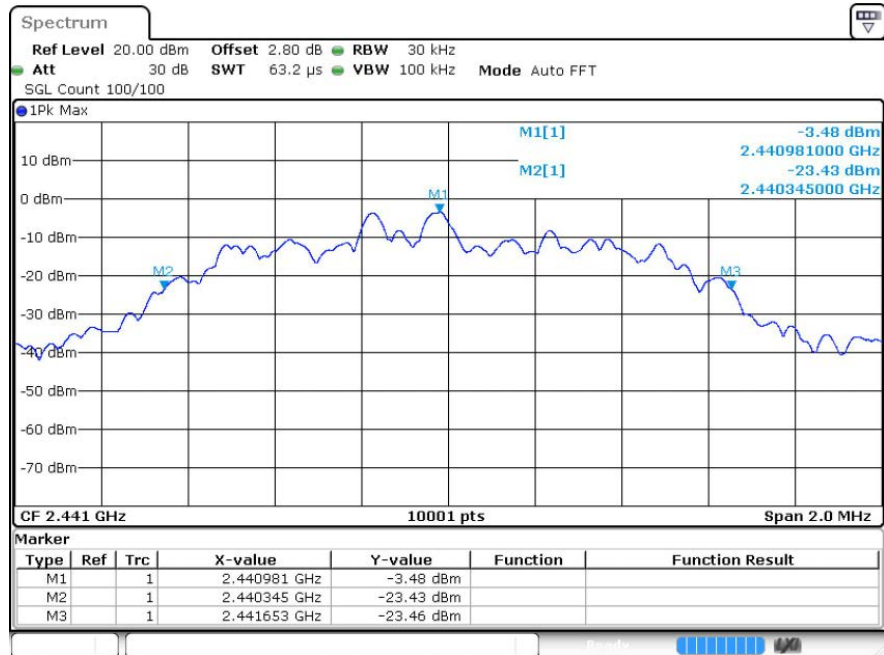
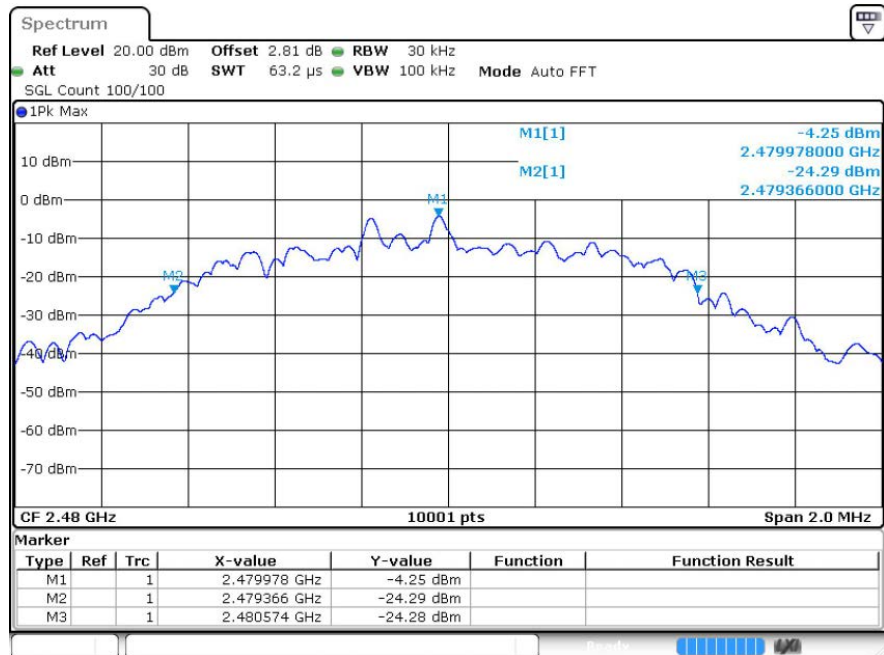
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.024	Not Specified	Pass
	MCH	1.034	Not Specified	Pass
	HCH	1.047	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.211	Not Specified	Pass
	MCH	1.308	Not Specified	Pass
	HCH	1.207	Not Specified	Pass

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	1.012	0.689	Pass
$\pi/4$ DQPSK	MCH	0.988	0.872	Pass

4.2 Test Graphs

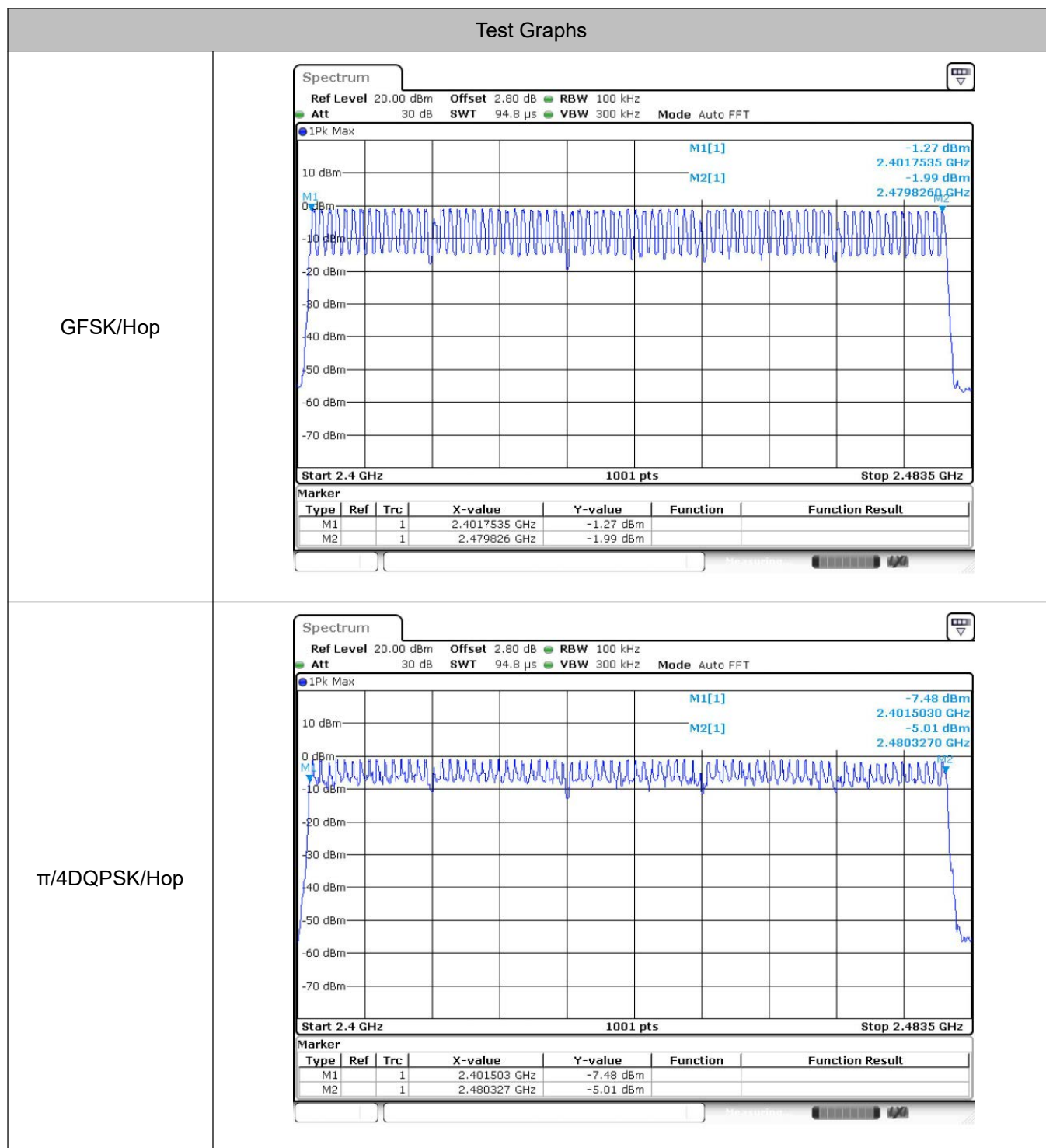


5 Hopping Channel Number

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

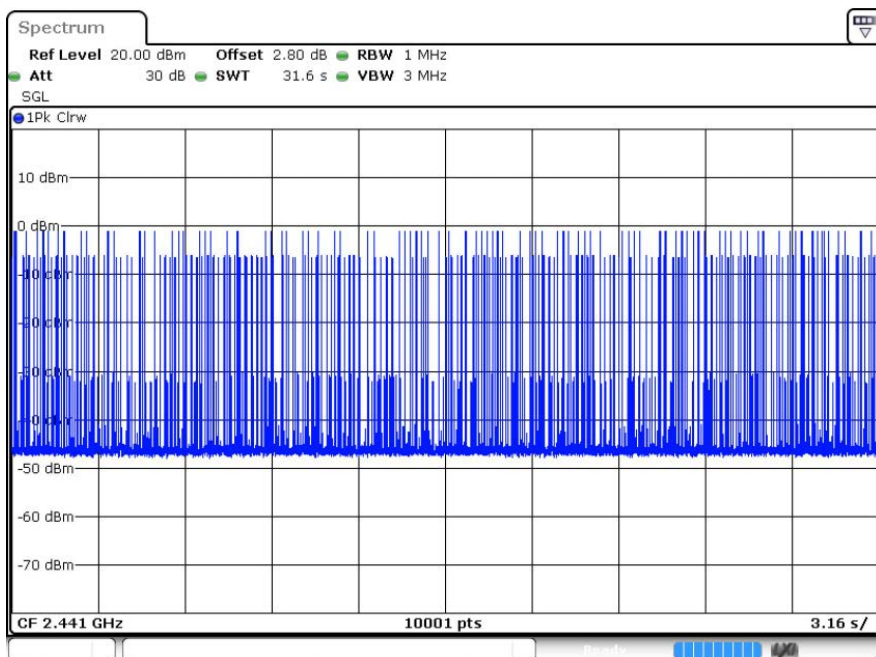
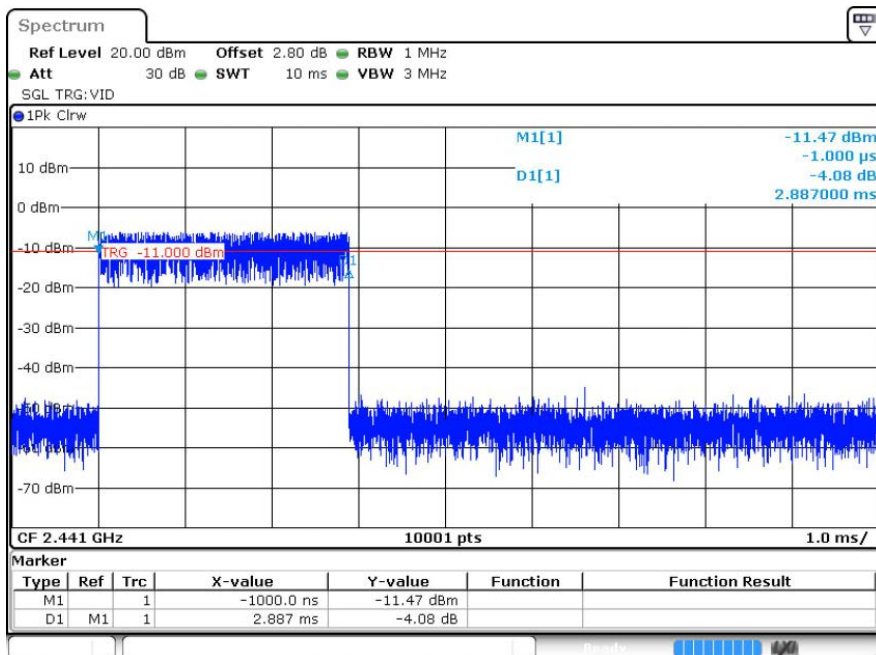
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.887	121	349.327	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.892	104	300.768	0.4	Pass

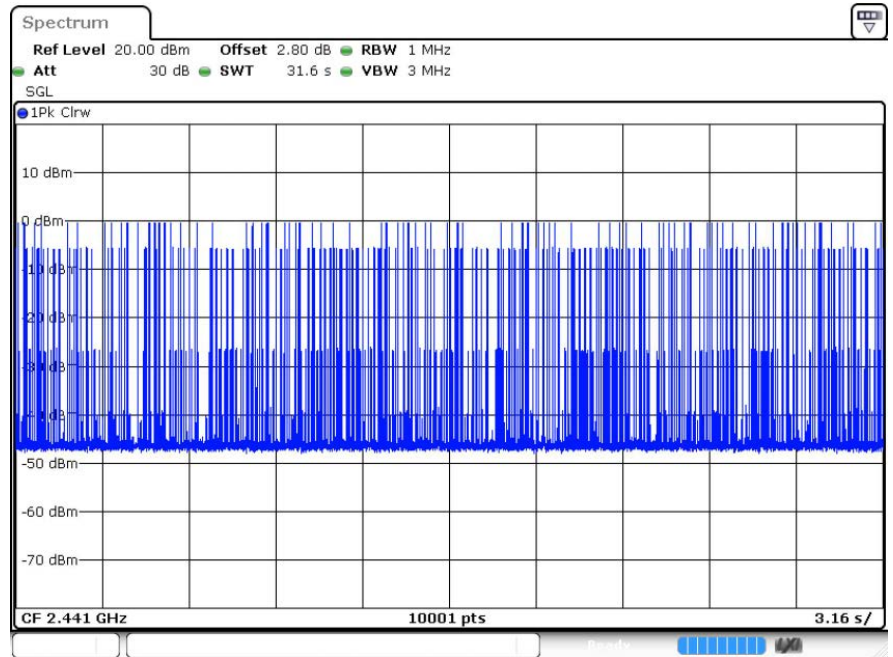
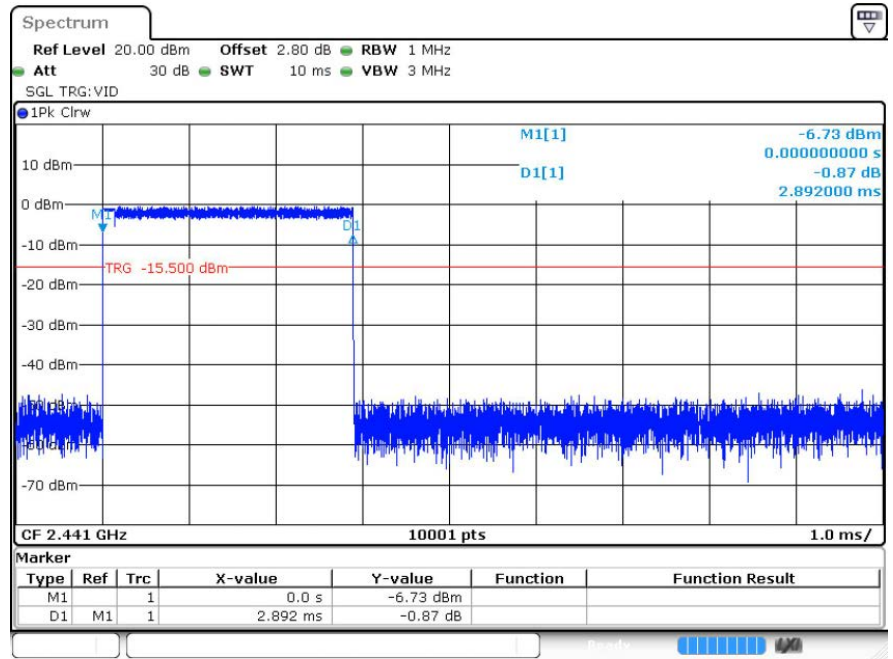
6.2 Test Graphs

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	-38.41	-20	Pass
	MCH	-39.5	-20	Pass
	HCH	-36.74	-20	Pass
$\pi/4$ DQPSK	LCH	-36.57	-20	Pass
	MCH	-38.65	-20	Pass
	HCH	-35.7	-20	Pass

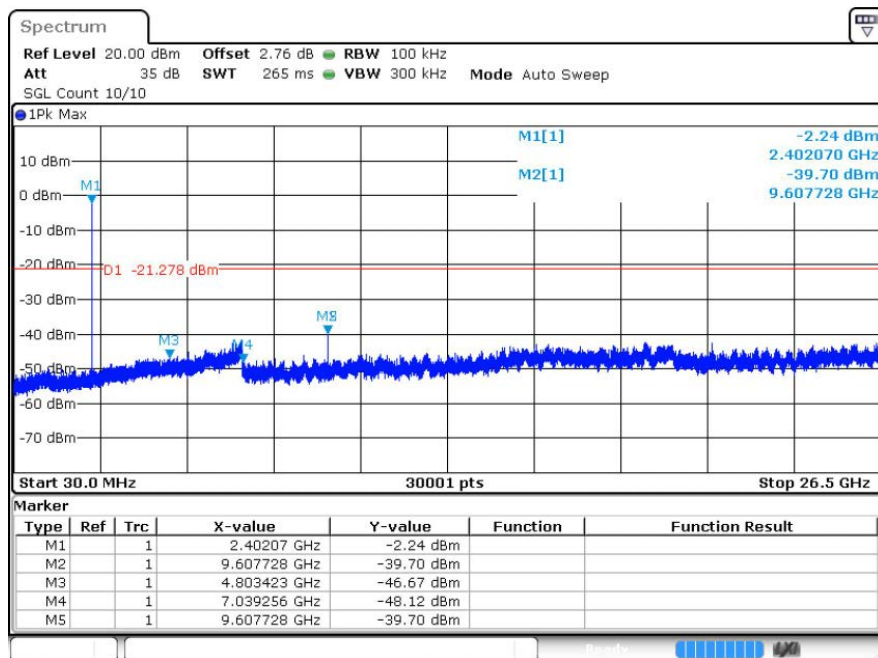
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

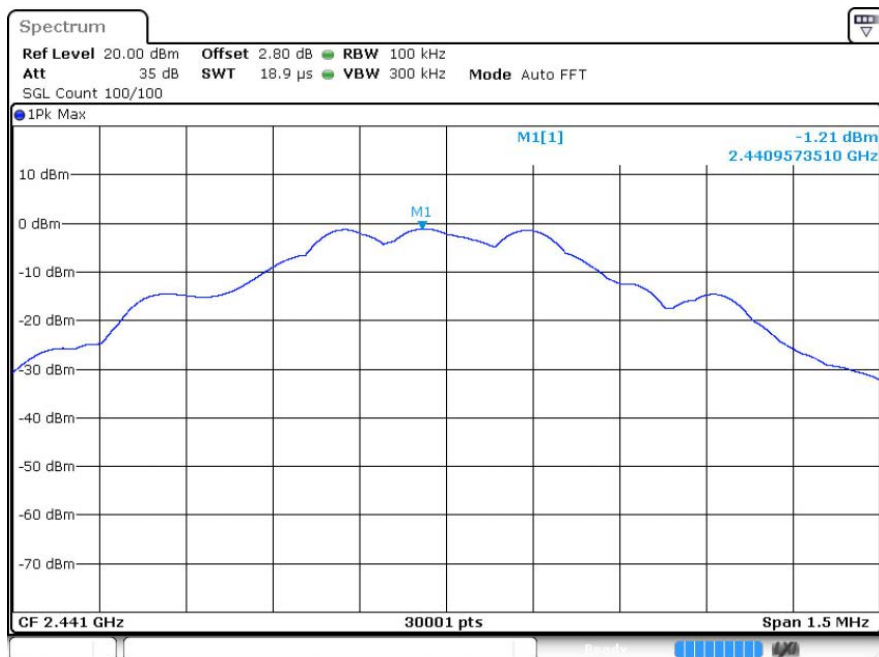


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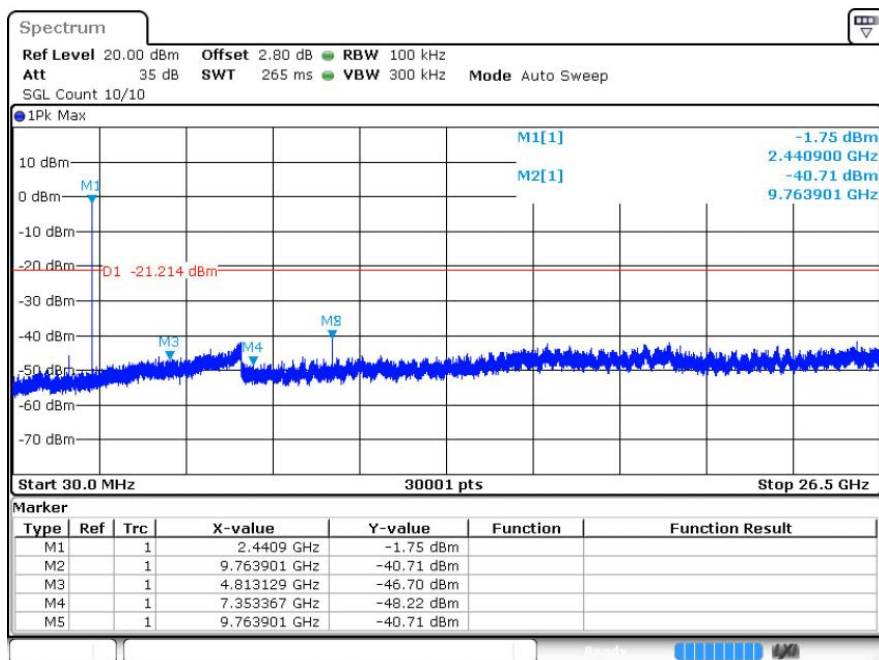


GFSK_MCH_Graphs

Pref



Puw

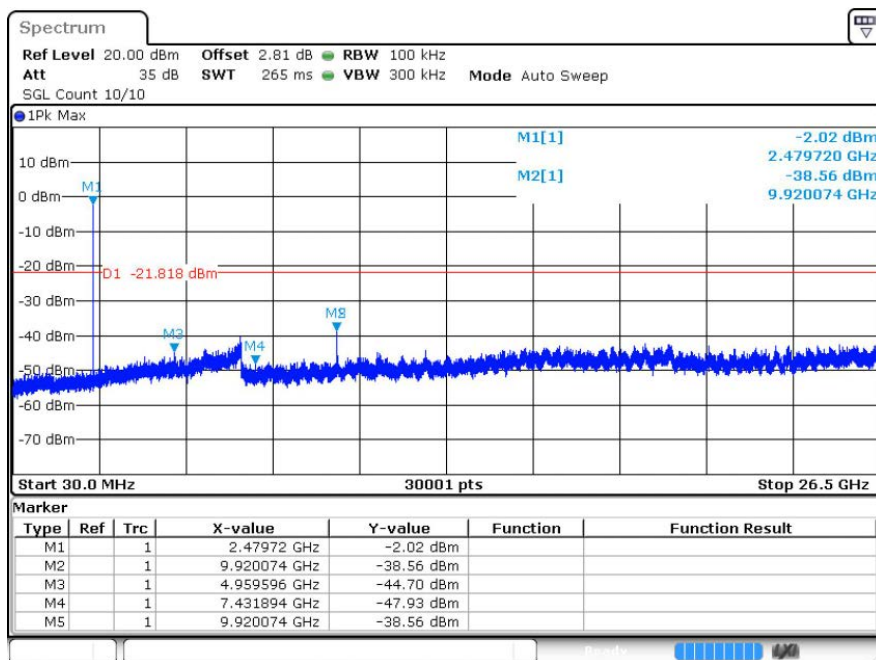


GFSK_HCH_Graphs

Pref

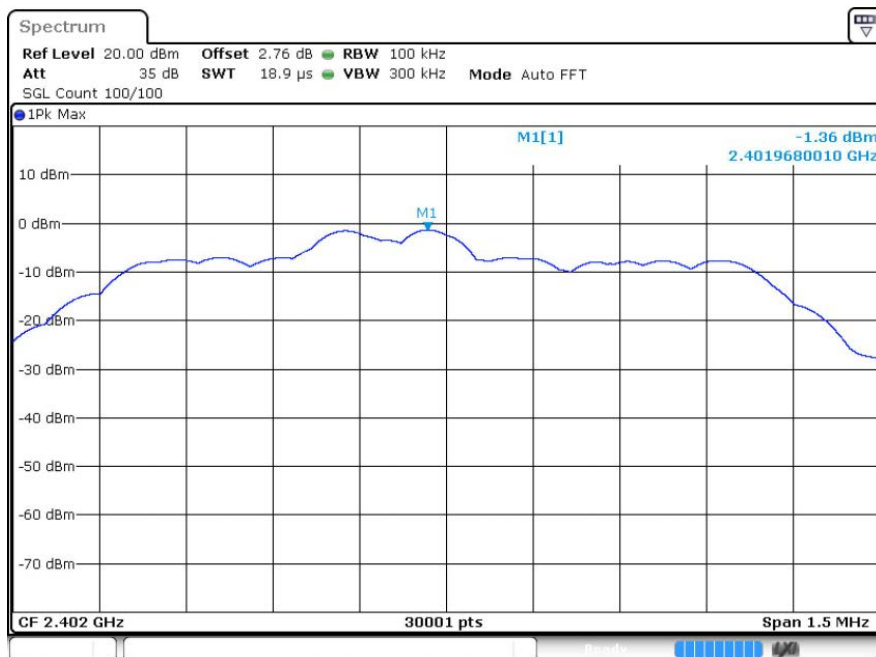


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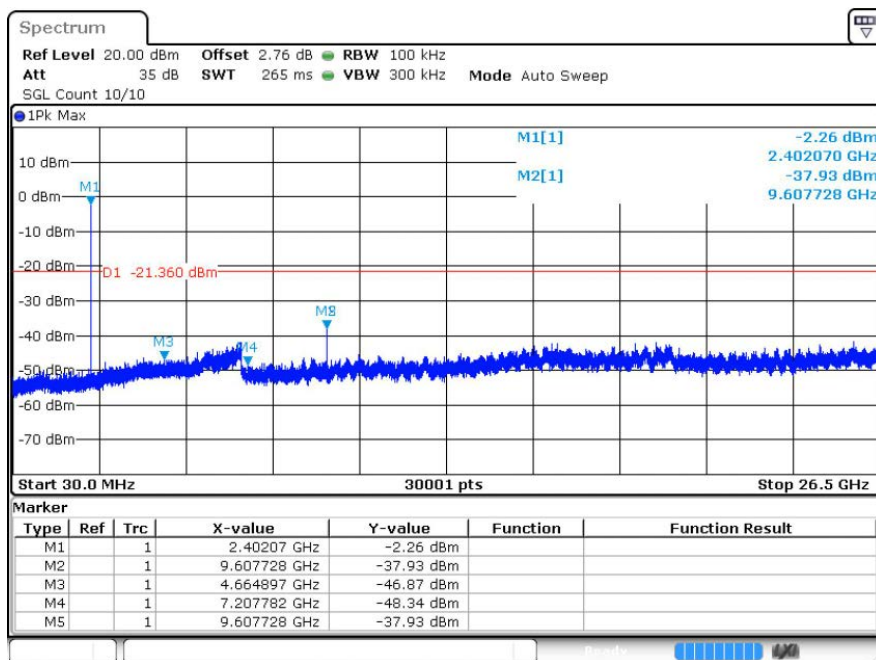


$\pi/4$ DQPSK_LCH_Graphs

Pref

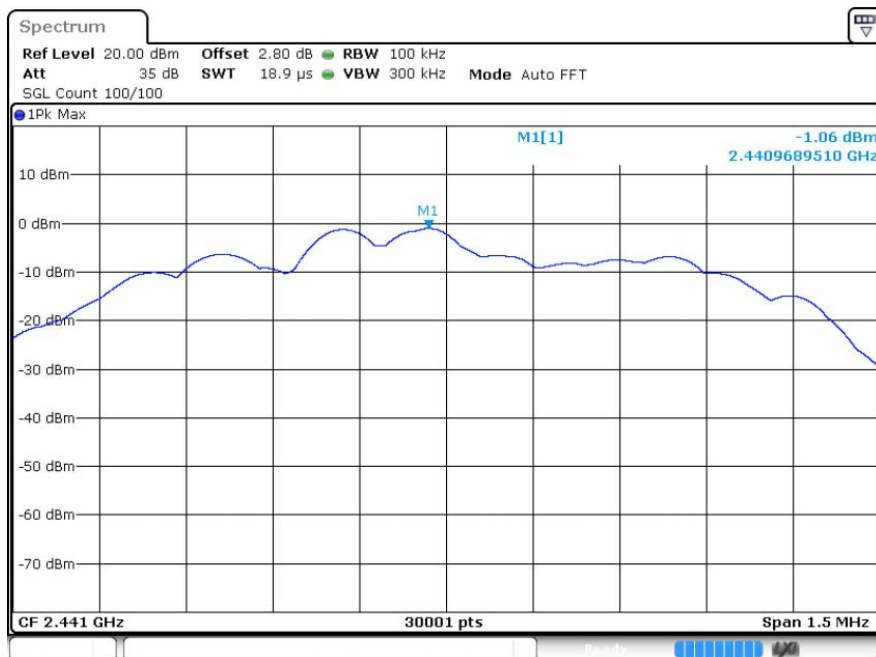


Puw

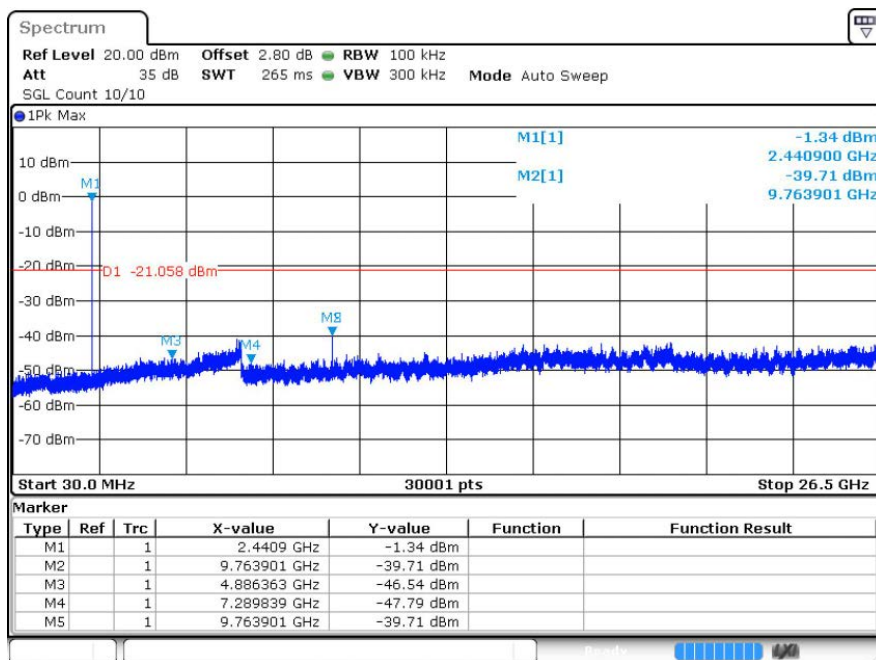


π /4DQPSK_MCH_Graphs

Pref

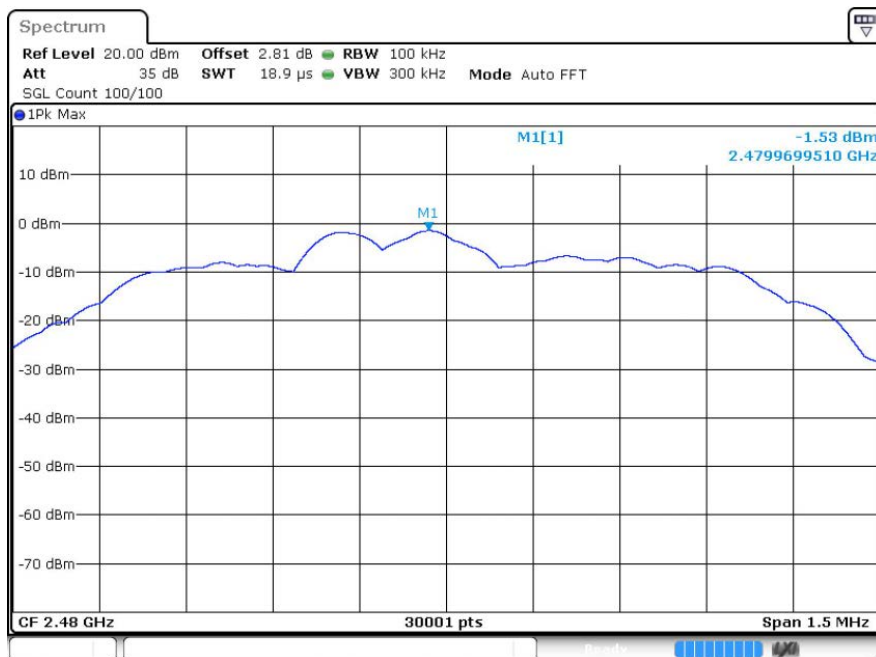


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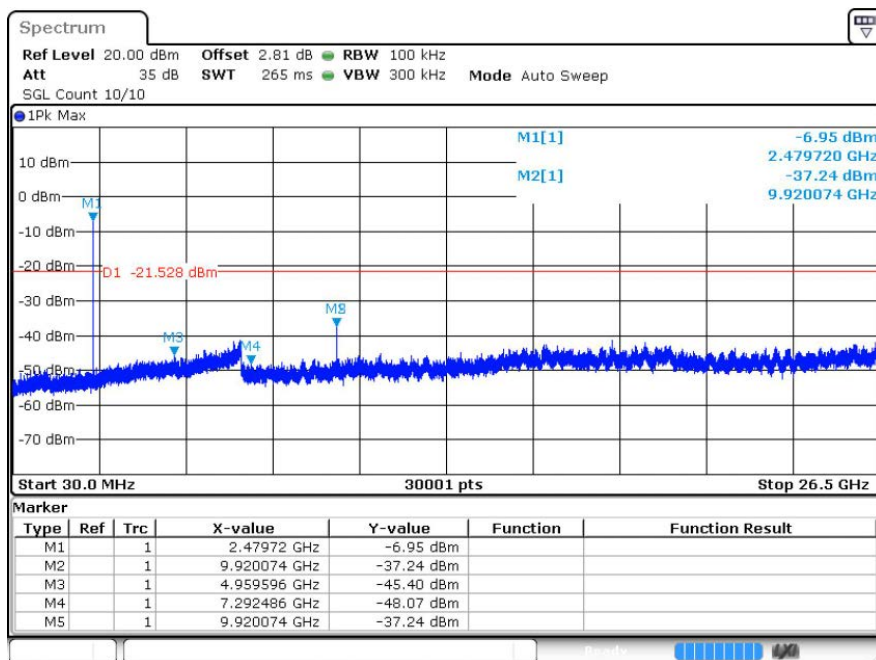


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

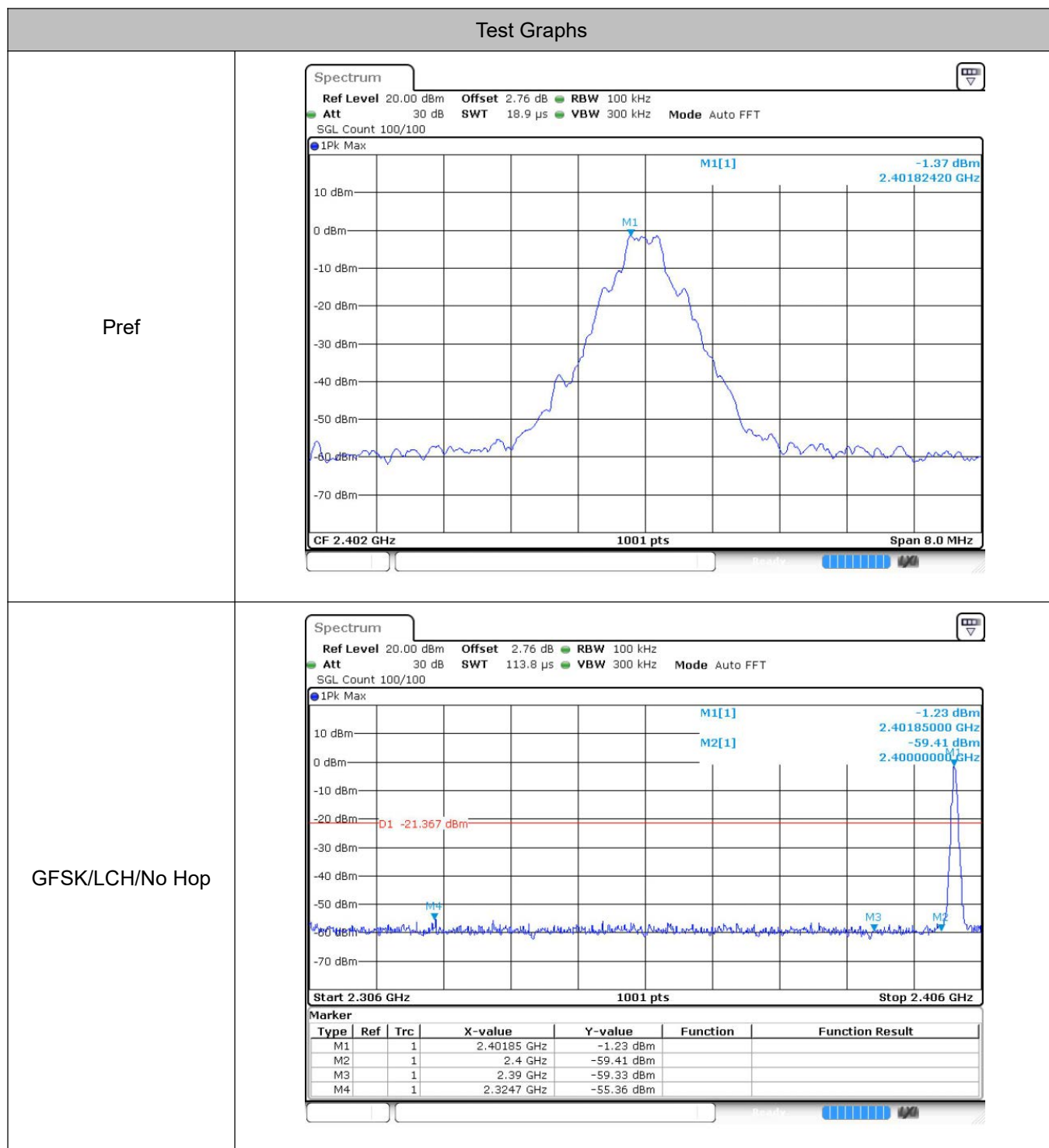


8 Band-edge for RF Conducted Emissions

8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-53.99	-20	Pass
			On	-48.08	-20	Pass
	HCH	2480	Off	-54.76	-20	Pass
			On	-52.12	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-54.89	-20	Pass
			On	-53.73	-20	Pass
	HCH	2480	Off	-54.4	-20	Pass
			On	-53.51	-20	Pass

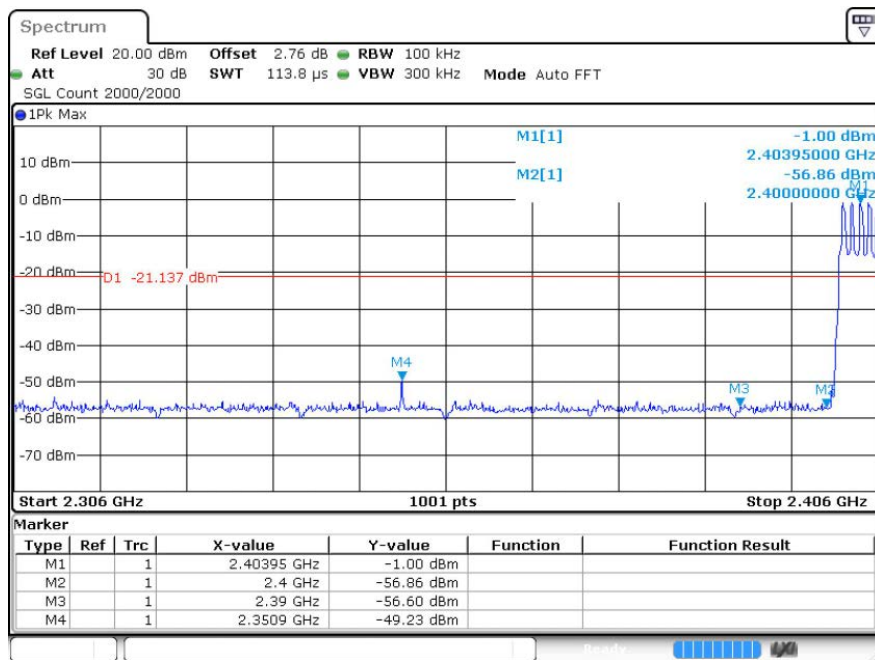
8.2 Test Graphs



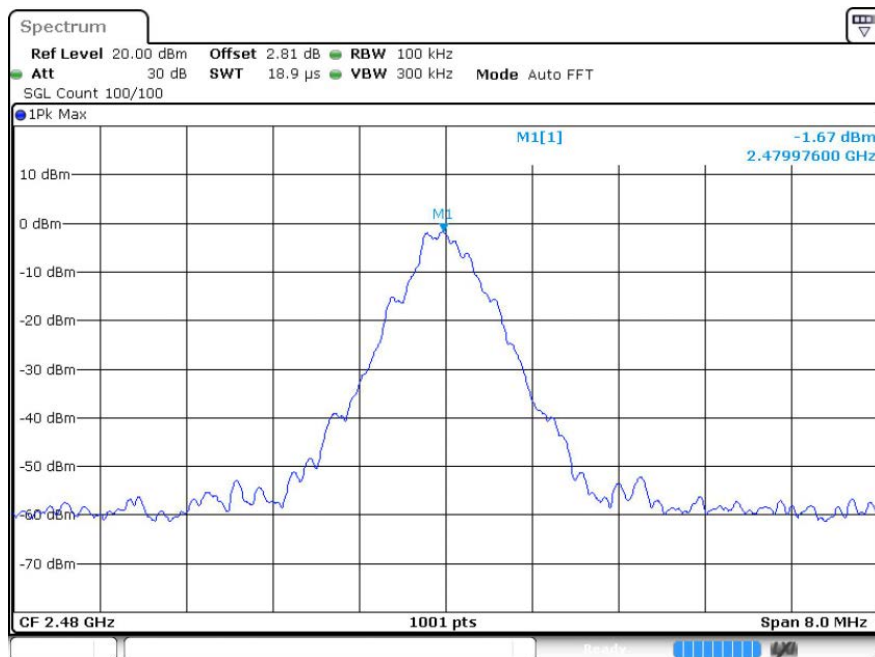
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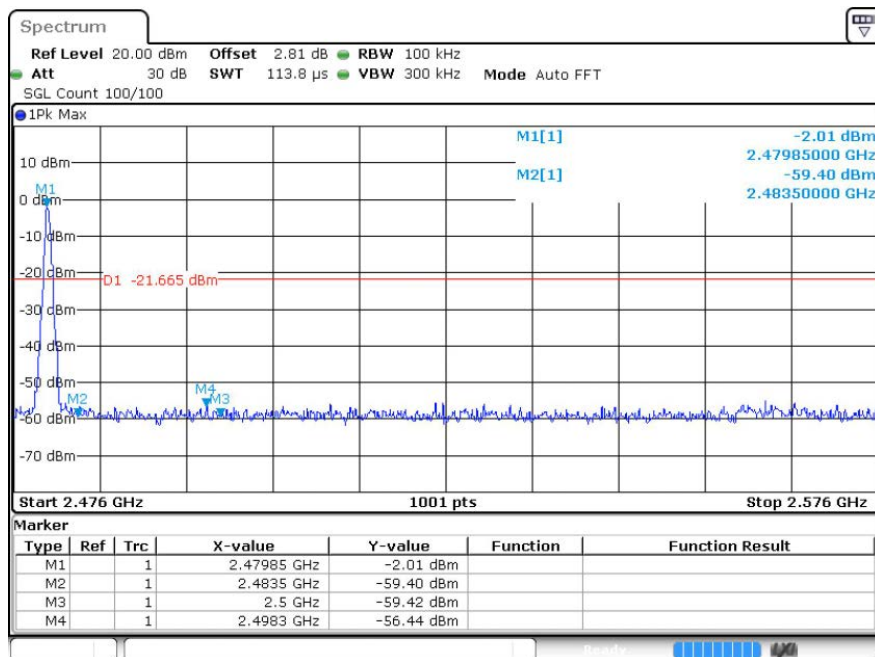
GFSK/LCH/Hop



Ref



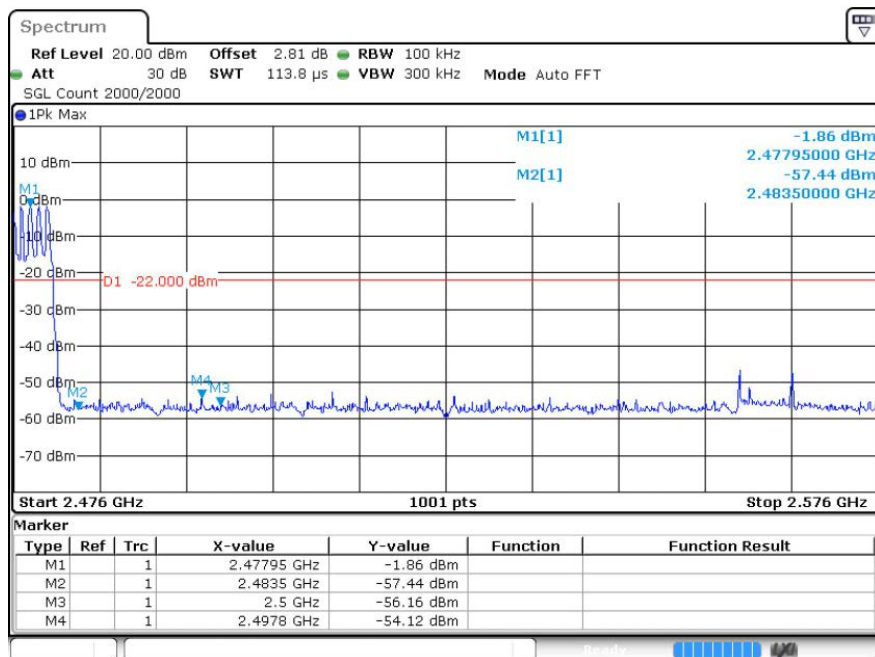
GFSK/HCH/No Hop



Ref.



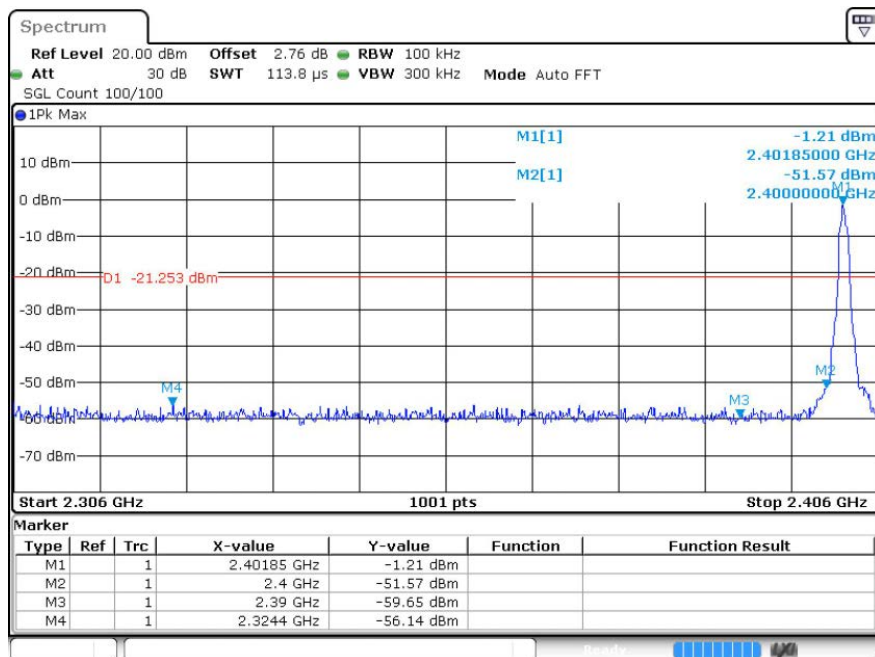
GFSK/HCH/Hop



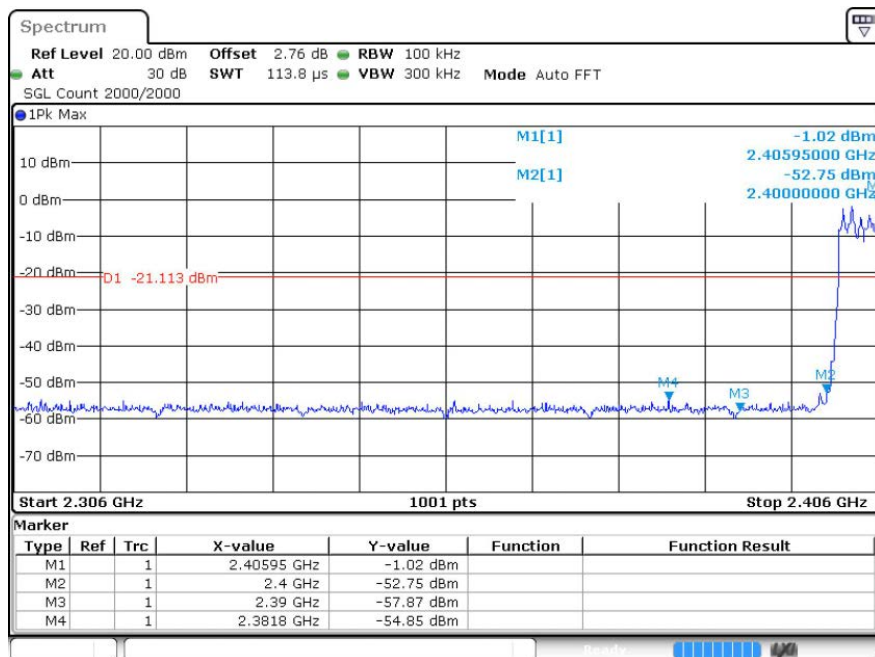
Ref



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



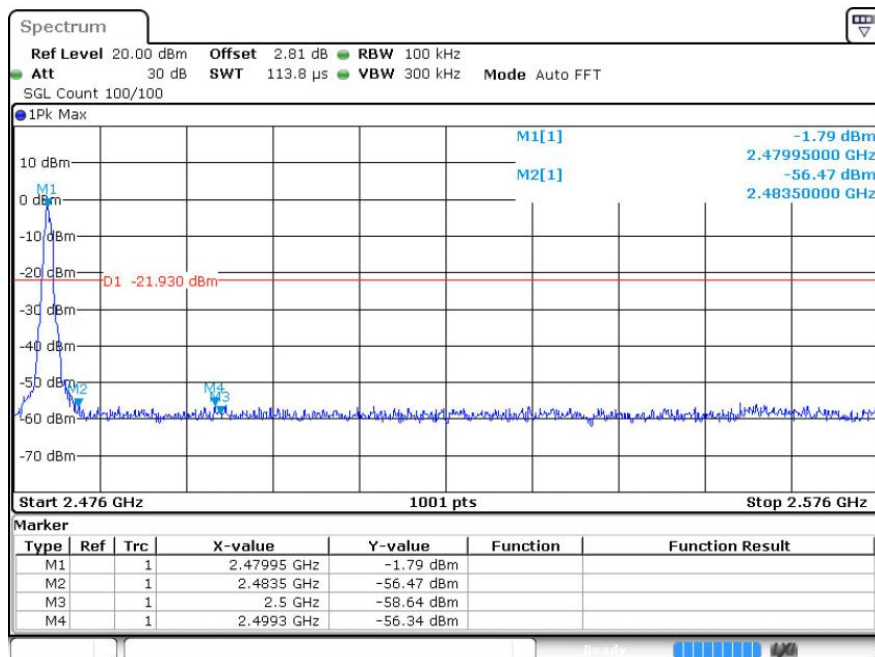
Ref


 $\pi/4$ DQPSK/LCH/Hop


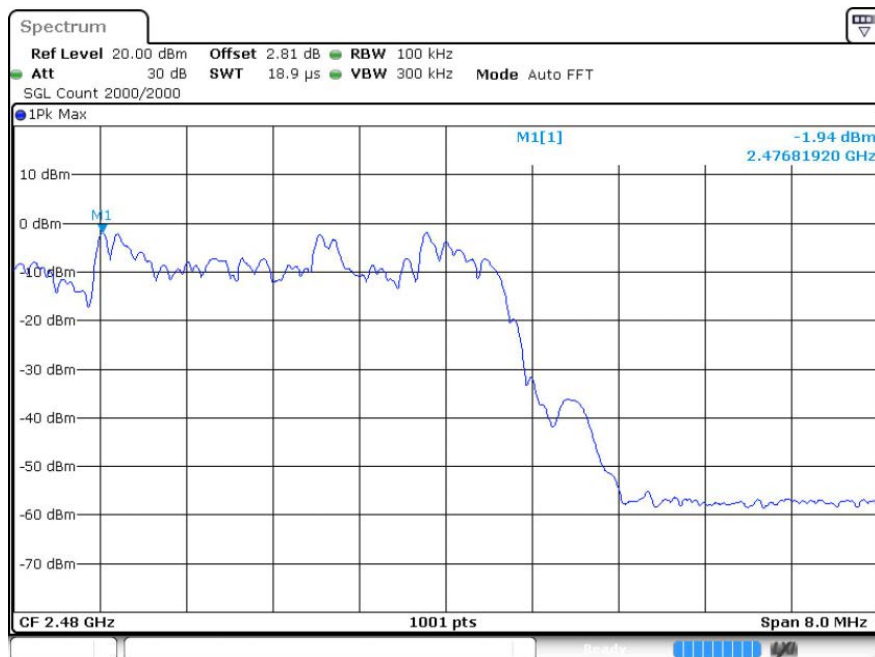
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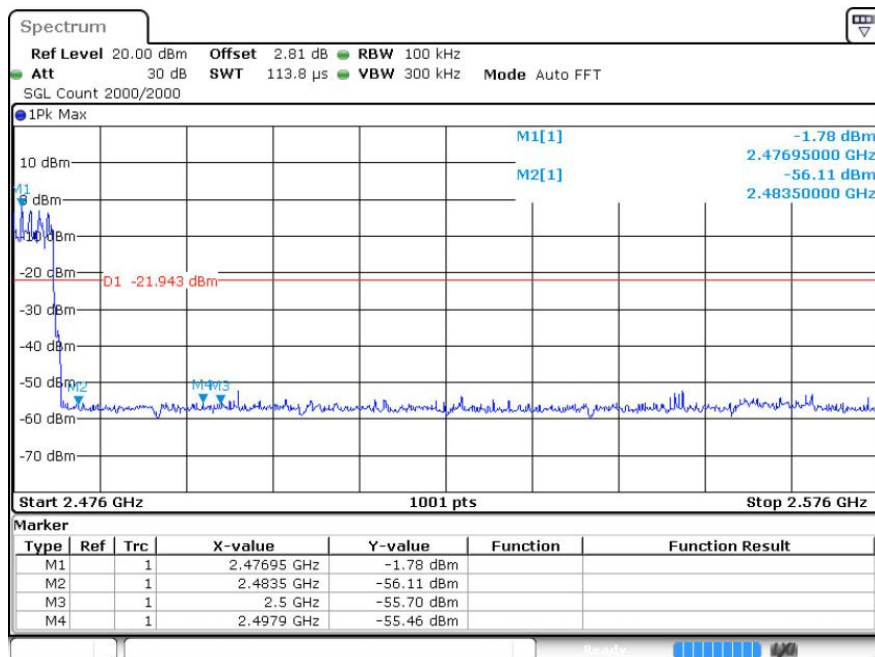
$\pi/4$ DQPSK/HCH/No
Hop



Ref



$\pi/4$ DQPSK/HCH/Hop

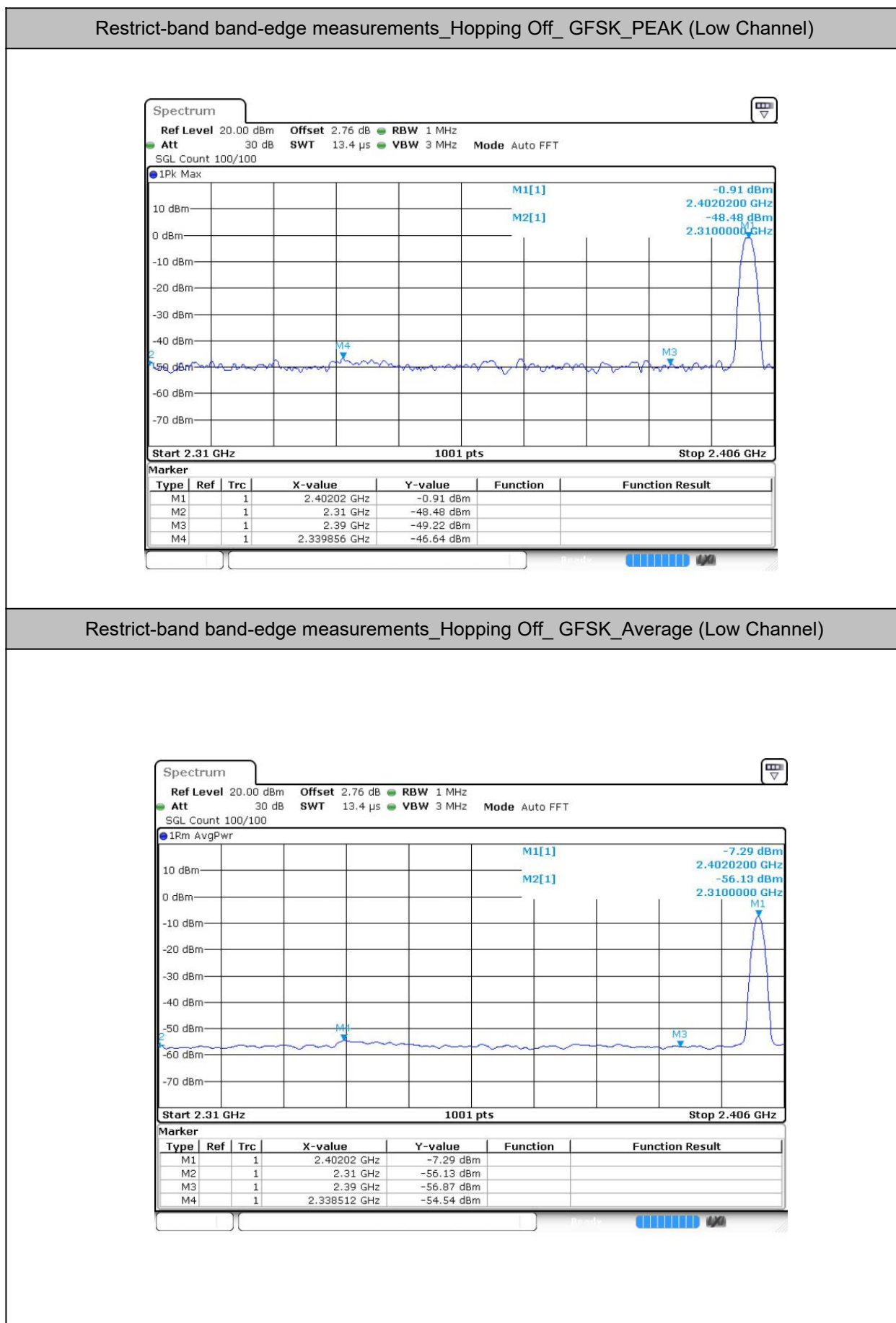


9 Restrict-band band-edge measurements

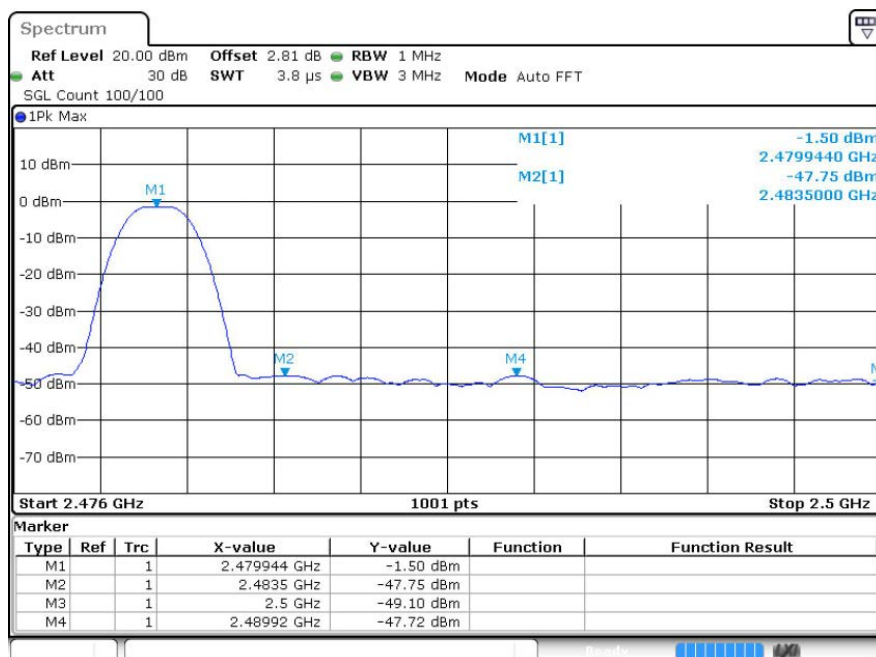
9.1 Test Result

Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.48	2	-	48.78	PEAK	74	Pass
	Off	2310.0	-56.13	2	4.95	46.08	AV	54	Pass
	Off	2339.856	-46.63	2	-	50.63	PEAK	74	Pass
	Off	2338.512	-54.53	2	4.95	47.68	AV	54	Pass
	Off	2390.0	-49.22	2	-	48.04	PEAK	74	Pass
	Off	2390.0	-56.87	2	4.95	45.34	AV	54	Pass
	Off	2483.5	-47.75	2	-	49.51	PEAK	74	Pass
	Off	2483.5	-56.56	2	4.95	45.65	AV	54	Pass
	Off	2489.92	-47.72	2	-	49.54	PEAK	74	Pass
	Off	2495.128	-55.34	2	4.95	46.87	AV	54	Pass
	Off	2500.0	-49.1	2	-	48.16	PEAK	74	Pass
	Off	2500.0	-56.54	2	4.95	45.67	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-50.5	2	-	46.76	PEAK	74	Pass
	Off	2310.0	-57.37	2	4.88	44.77	AV	54	Pass
	Off	2377.968	-46.95	2	-	50.31	PEAK	74	Pass
	Off	2340.336	-54.09	2	4.88	48.05	AV	54	Pass
	Off	2390.0	-49.17	2	-	48.09	PEAK	74	Pass
	Off	2390.0	-56.79	2	4.88	45.35	AV	54	Pass
	Off	2483.5	-43.93	2	-	53.33	PEAK	74	Pass
	Off	2483.5	-56	2	4.95	46.21	AV	54	Pass
	Off	2483.512	-43.96	2	-	53.3	PEAK	74	Pass
	Off	2485.288	-55.76	2	4.95	46.45	AV	54	Pass
	Off	2500.0	-50.35	2	-	46.91	PEAK	74	Pass
	Off	2500.0	-55.99	2	4.95	46.22	AV	54	Pass

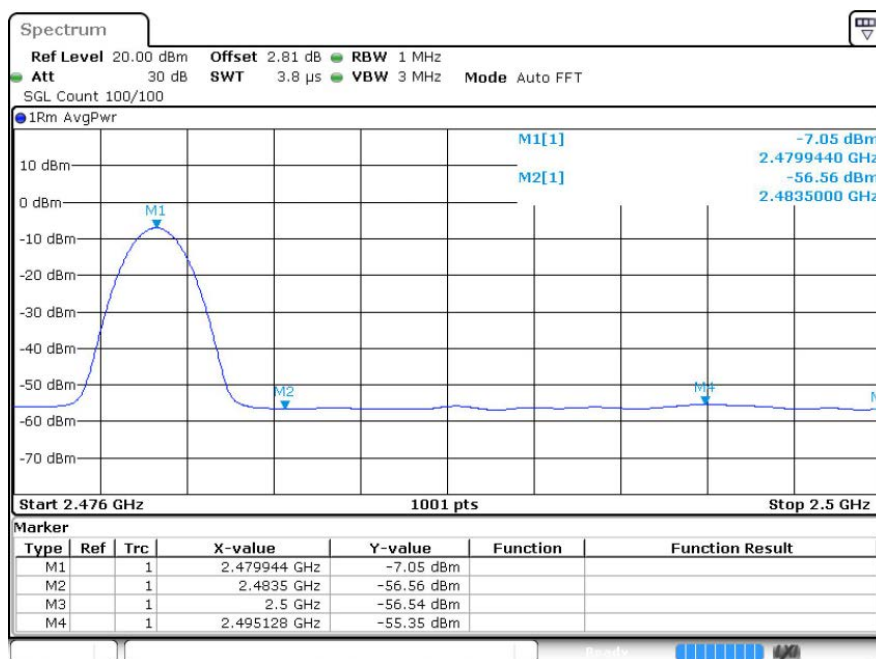
9.2 Test Graphs



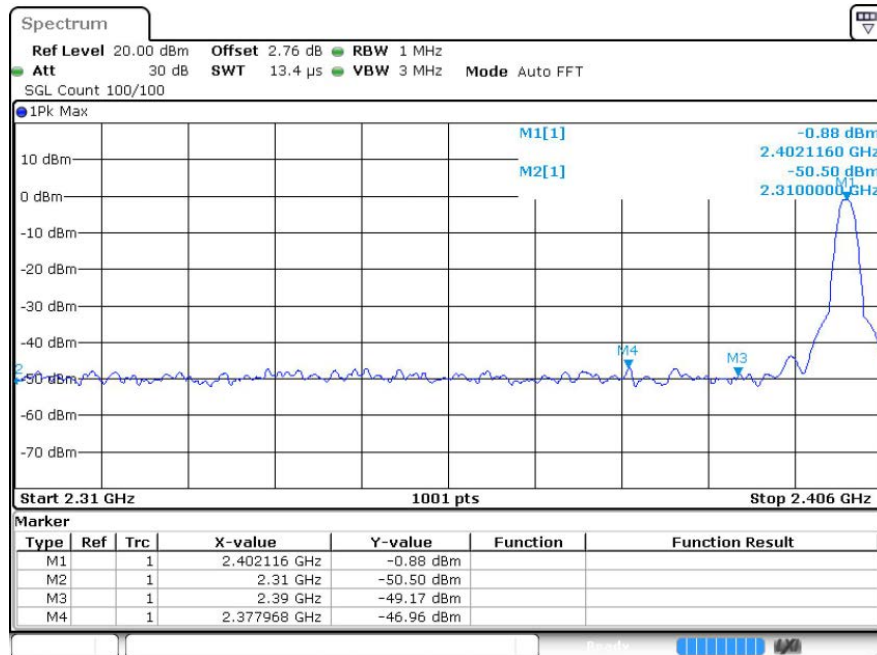
Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)



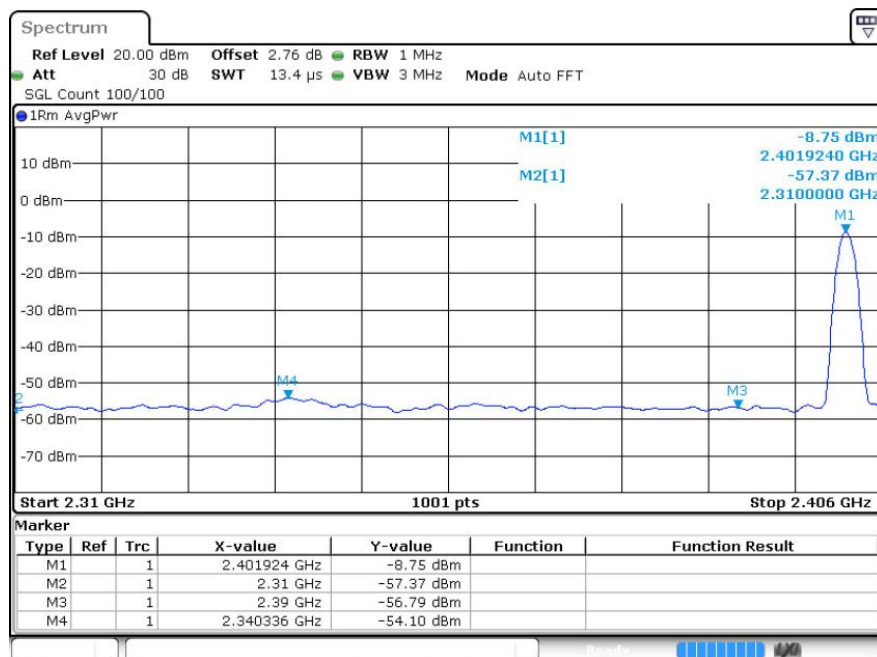
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



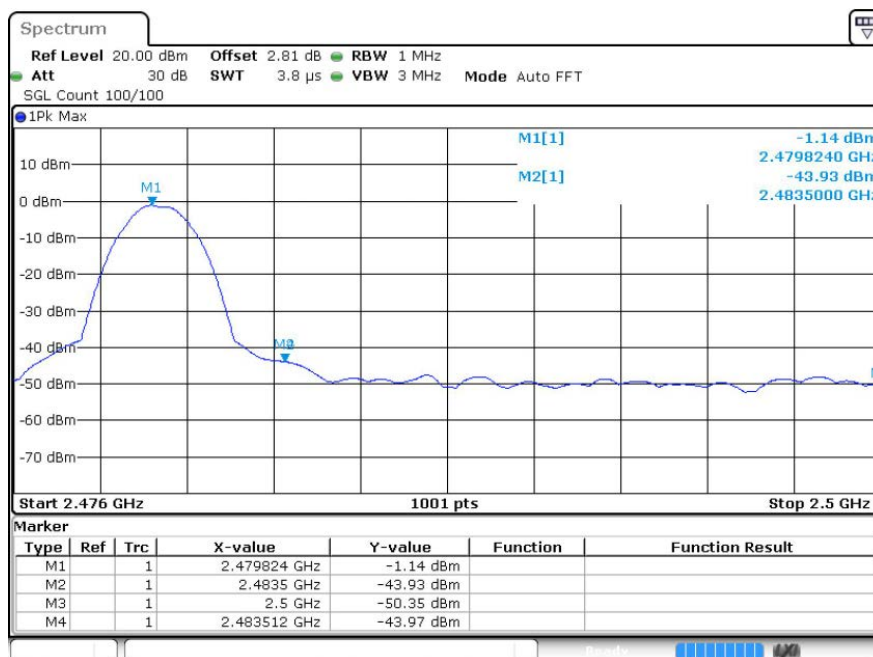
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (Low Channel)



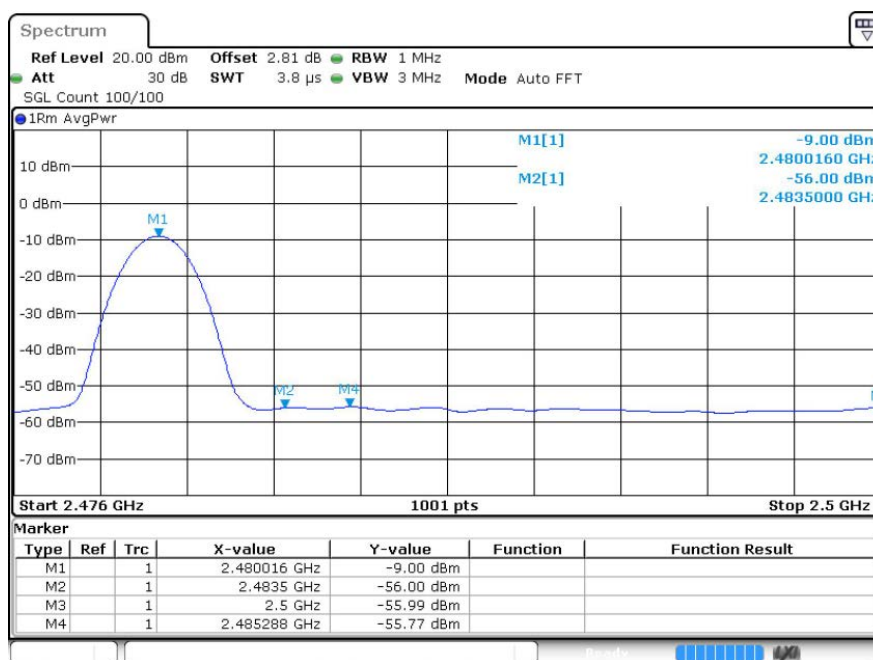
Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (Low Channel)



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---