



Appendix A

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

Product Name: True Wireless Earbuds

Trade Mark: N/A

Test Model: NC9i

Environmental Conditions

Temperature:	25.4° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
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	14
3.1	Test Result	14
3.2	Test Graphs	15
4	Carrier Frequency Separation	18
4.1	Test Result	18
4.2	Test Graphs	19
5	Hopping Channel Number	20
5.1	Test Result	20
5.2	Test Graphs	21
6	Dwell Time	22
6.1	Test Result	22
6.2	Test Graphs	23
7	RF Conducted Spurious Emissions	25
7.1	Test Result	25
7.2	Test Graphs	26
8	Band-edge for RF Conducted Emissions	32
8.1	Test Result	32
8.2	Test Graphs	33
9	Restrict-band band-edge measurements	41
9.1	Test Result	41
9.2	Test Graphs	42

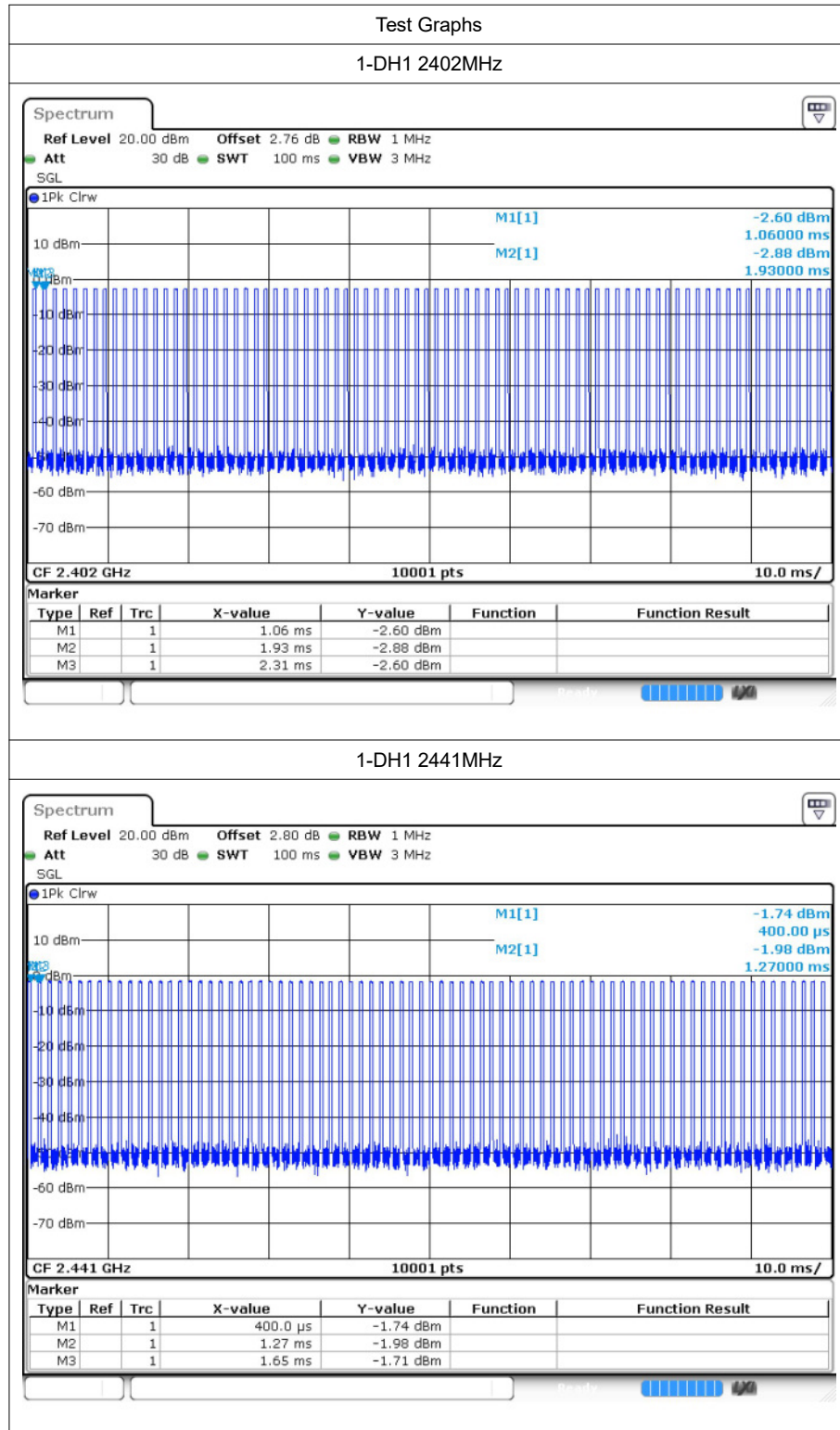
1 Duty Cycle

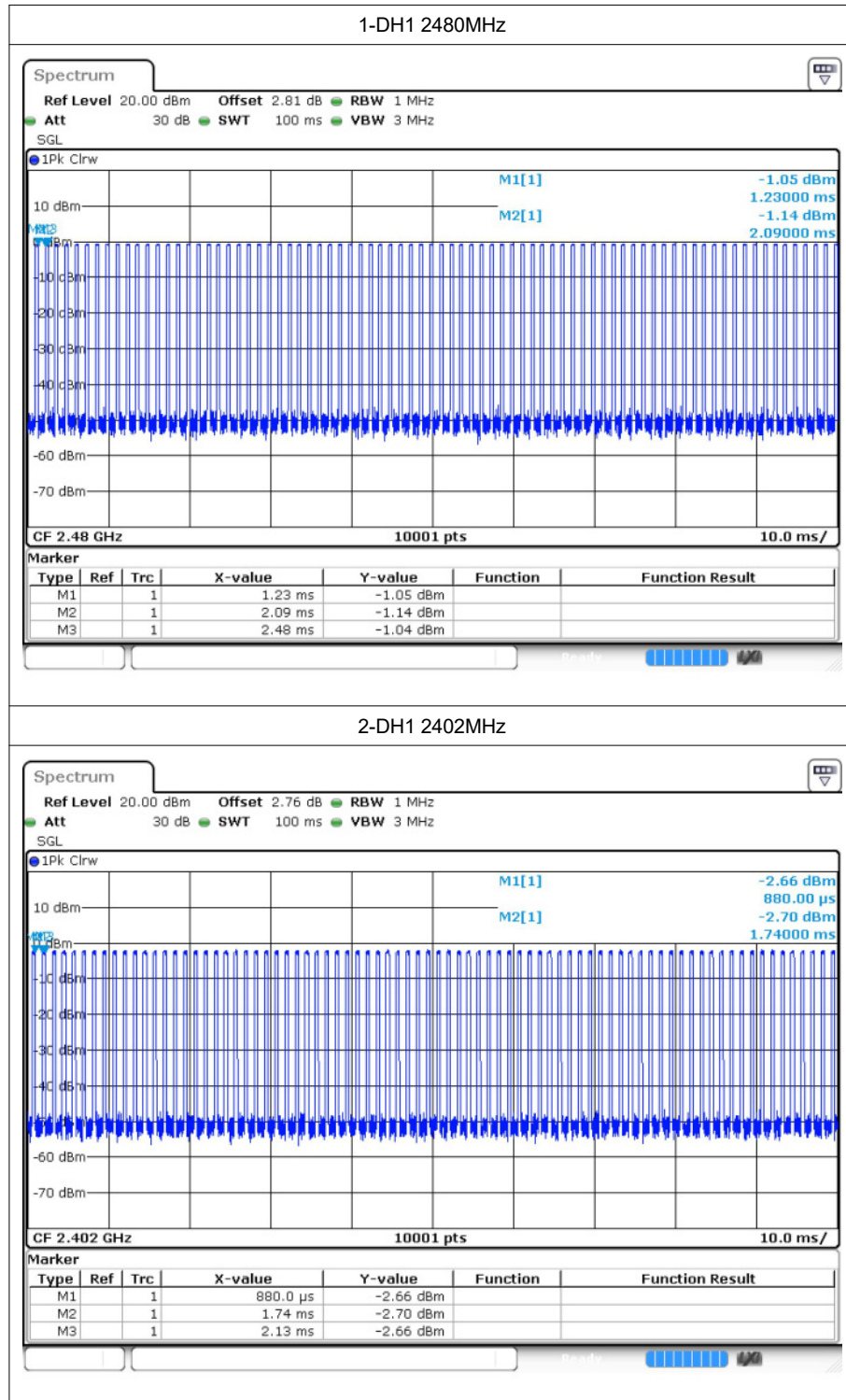
1.1 Test Result

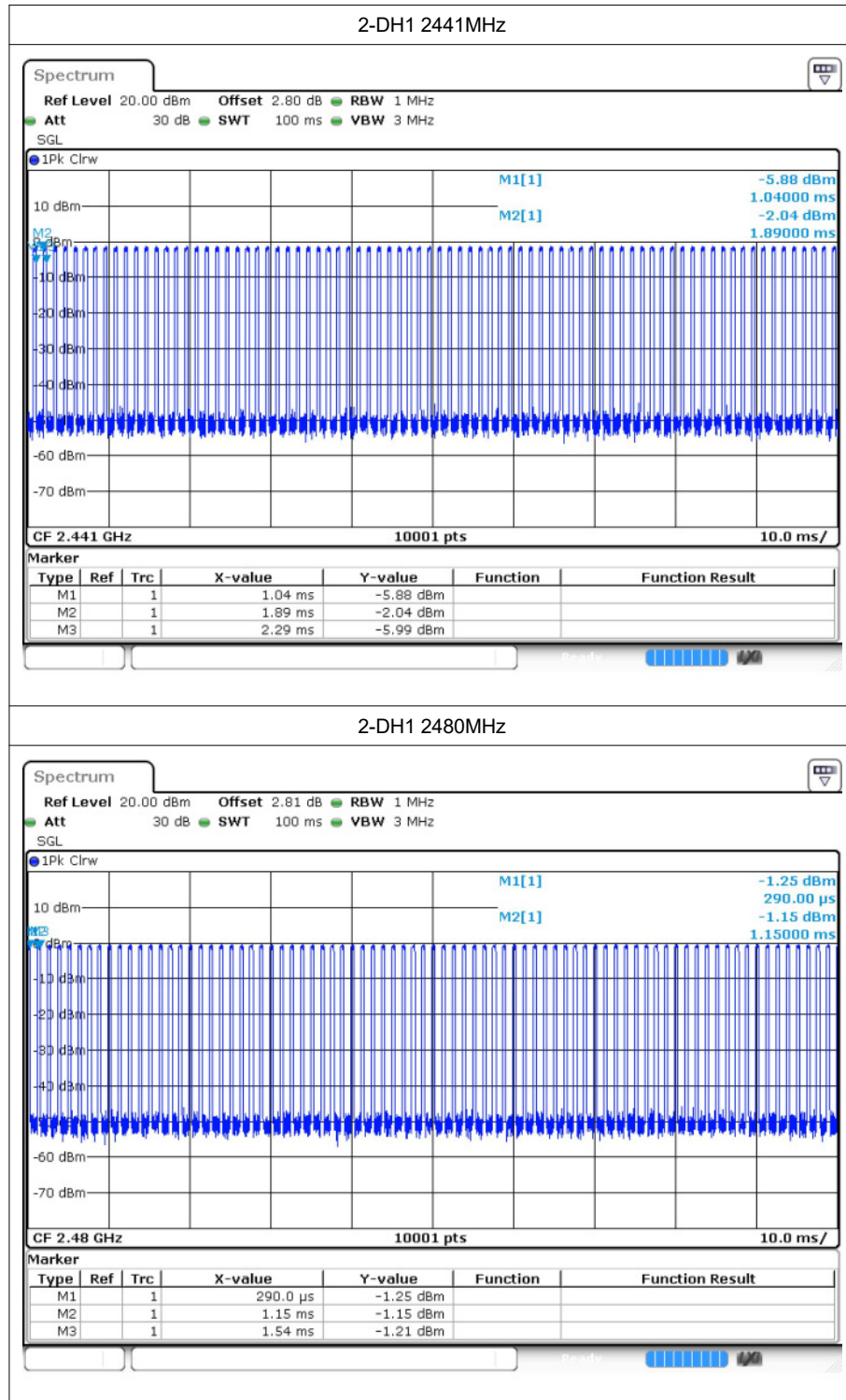
Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.2	5.06	2.63
1-DH1	2441	31.2	5.06	2.63
1-DH1	2480	32	4.95	2.56
2-DH1	2402	32	4.95	2.56
2-DH1	2441	32.46	4.89	2.5
2-DH1	2480	32.01	4.95	2.56

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

1.2 Test Graphs







2 Maximum Conducted Peak Output Power

2.1 Test Result

Left:

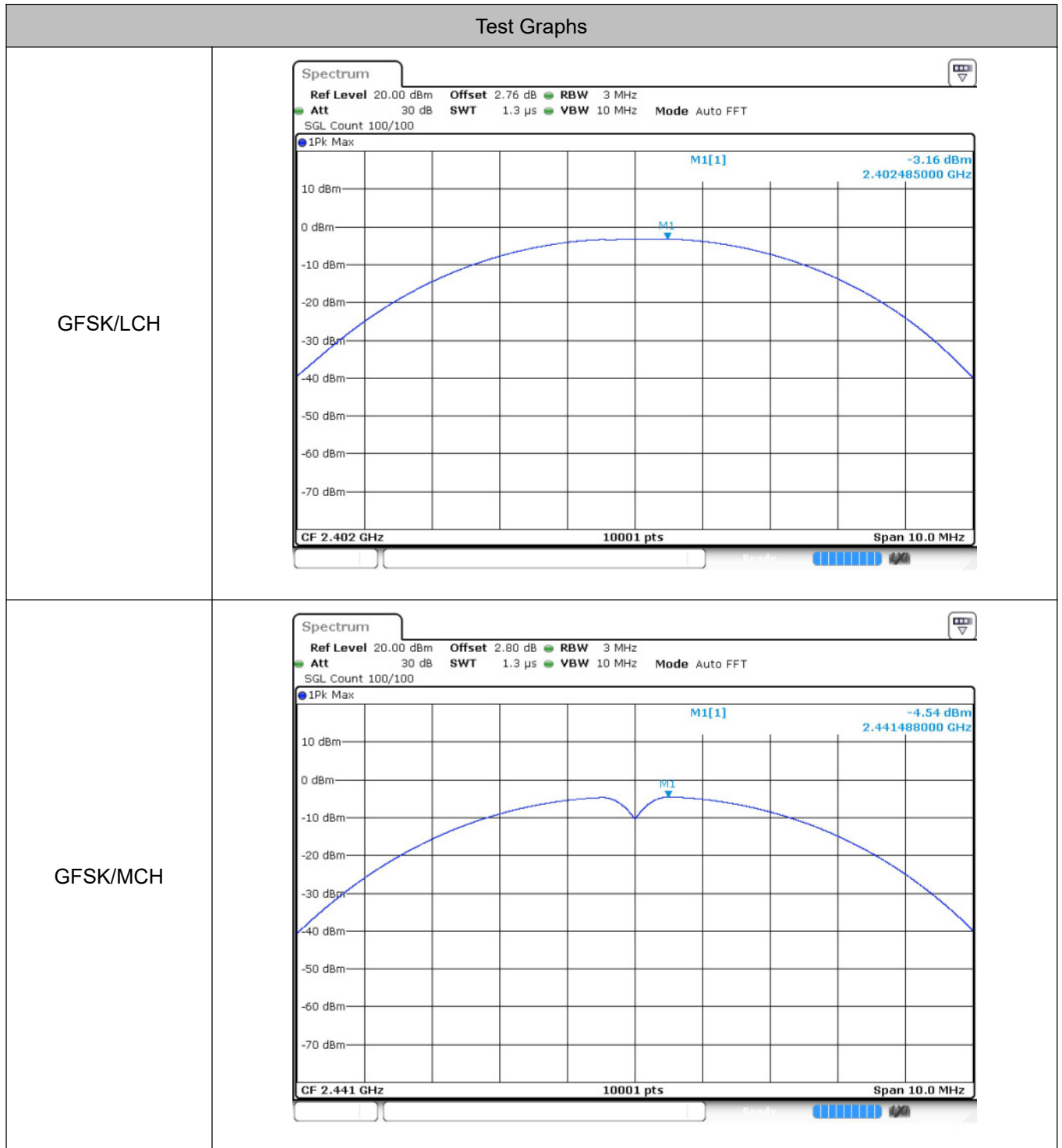
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-3.16	21	Pass
	MCH	-4.54	21	Pass
	HCH	-7.11	21	Pass
$\pi/4$ DQPSK	LCH	-2.68	21	Pass
	MCH	-4	21	Pass
	HCH	-6.36	21	Pass

Right:

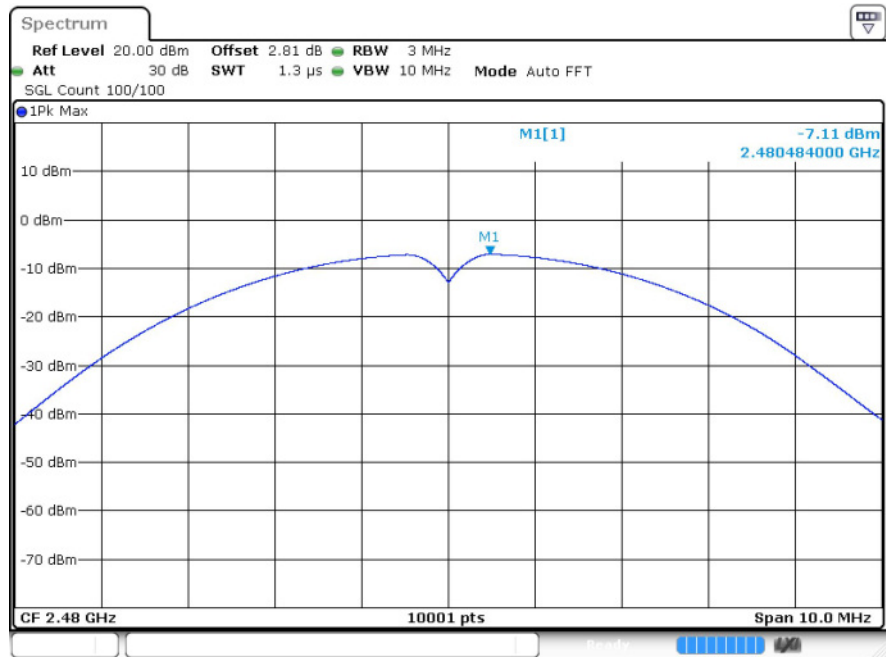
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.68	21	Pass
	MCH	-1.78	21	Pass
	HCH	-0.97	21	Pass
$\pi/4$ DQPSK	LCH	-1.94	21	Pass
	MCH	-1.55	21	Pass
	HCH	-0.58	21	Pass

2.2 Test Graphs

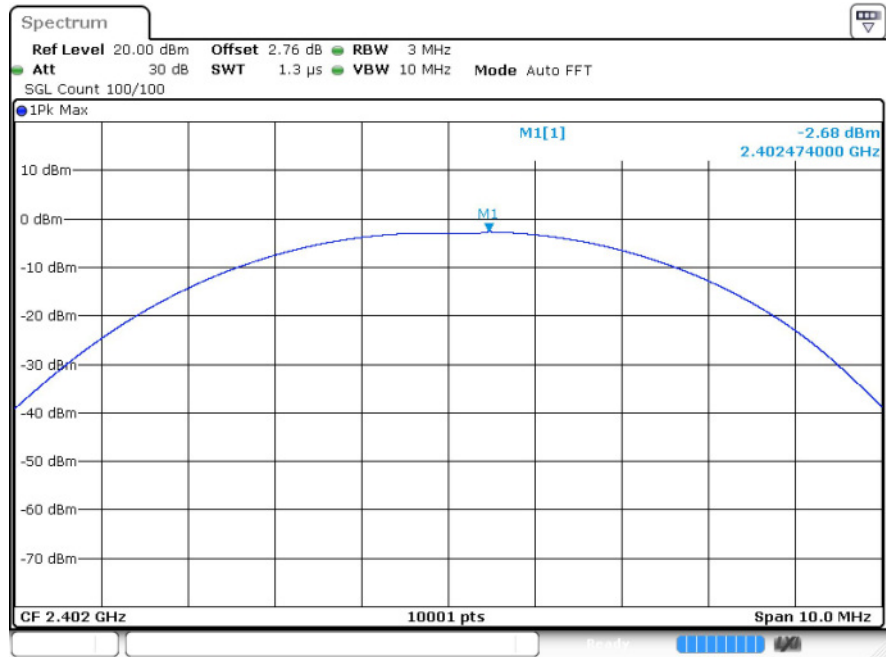
Left:



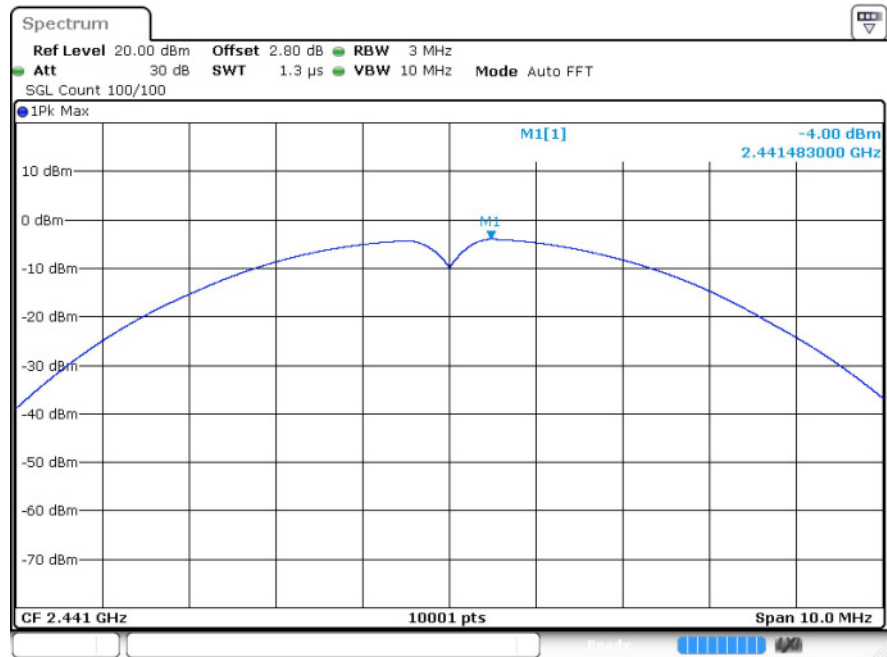
GFSK/HCH



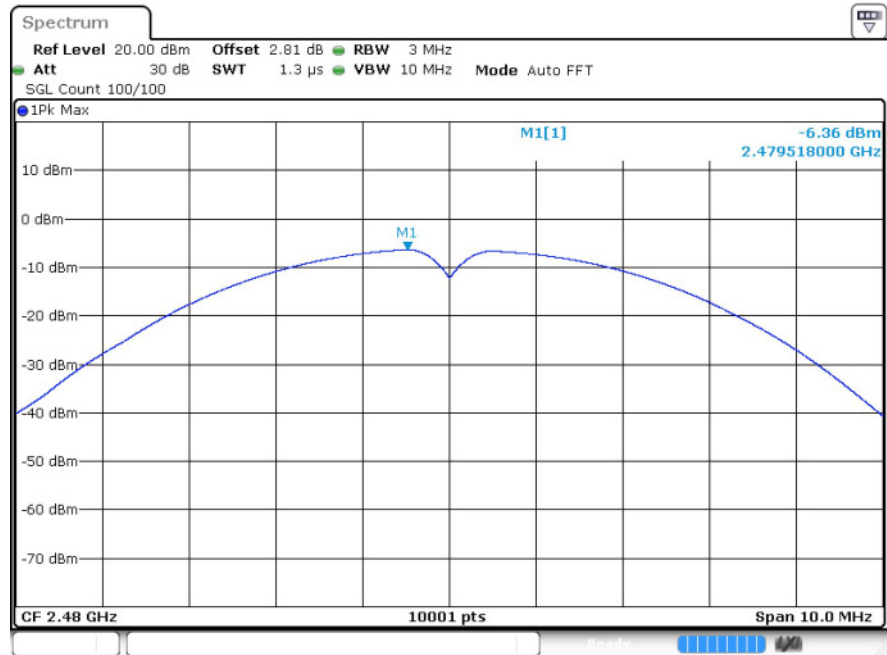
$\pi/4$ DQPSK/LCH



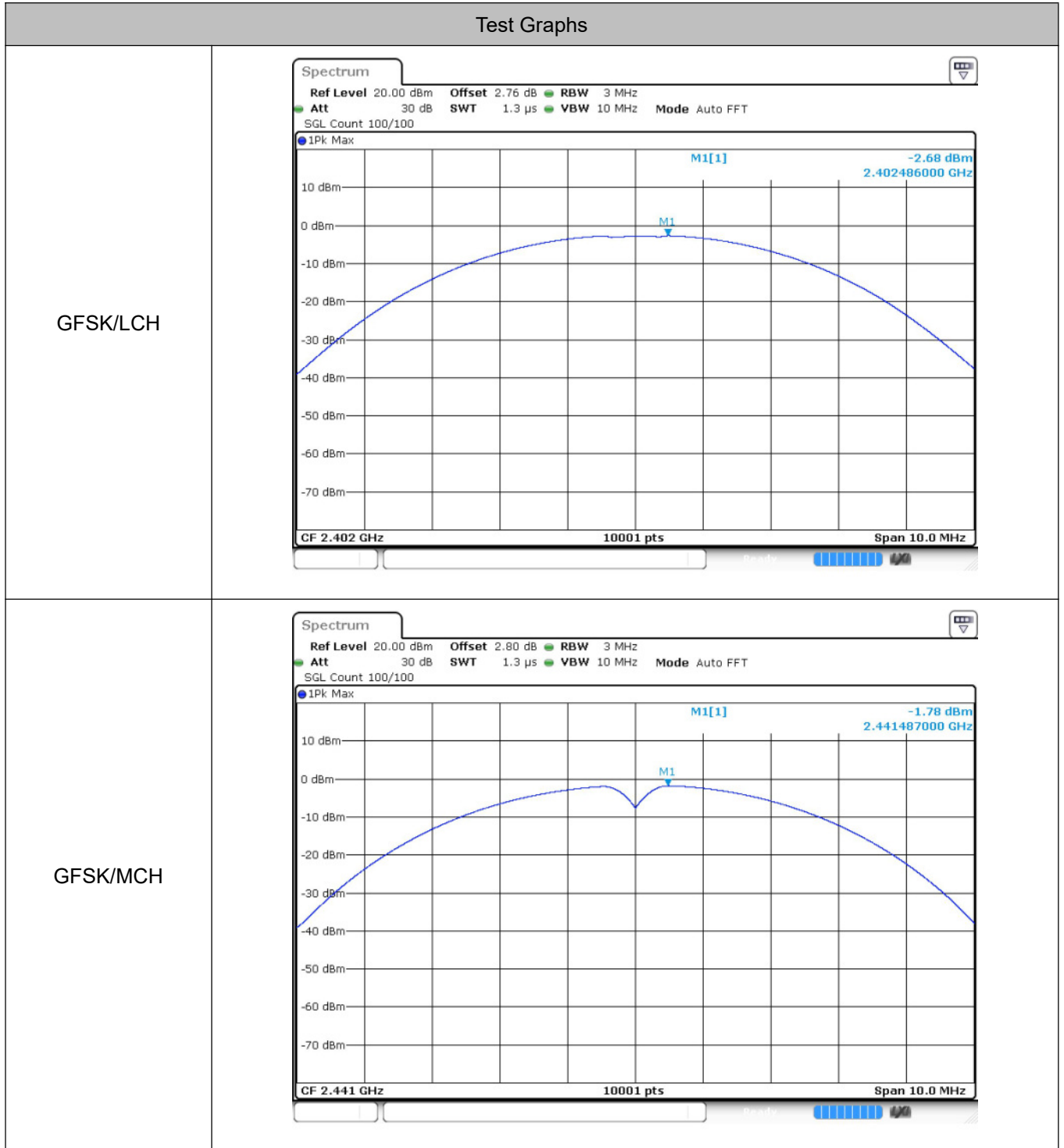
$\pi/4$ DQPSK/MCH



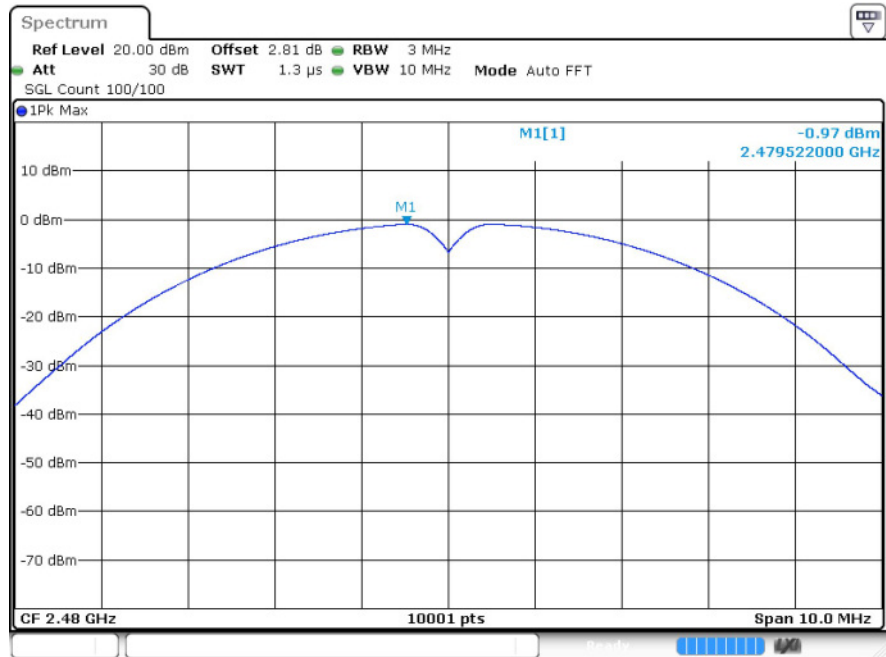
$\pi/4$ DQPSK/HCH



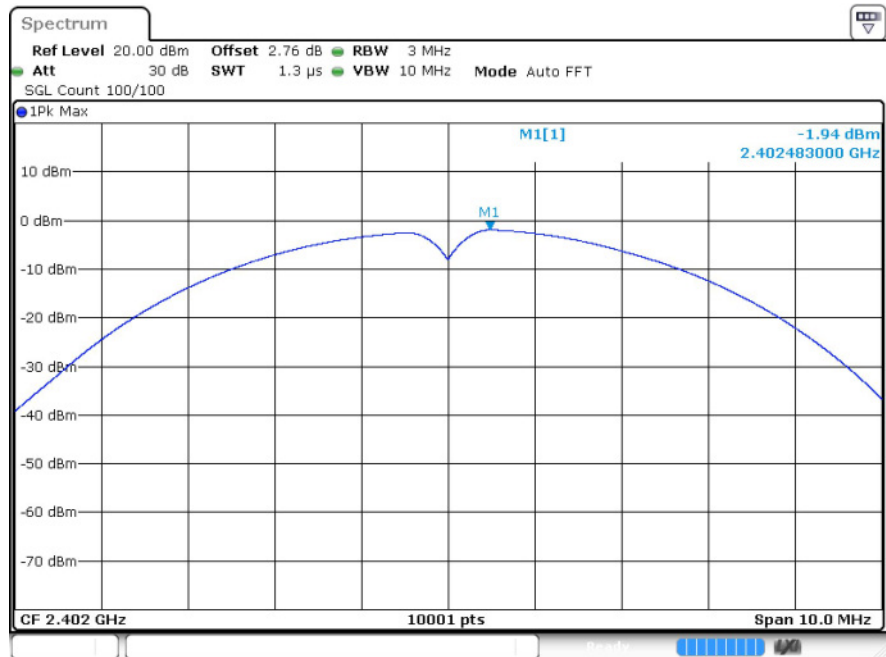
Right:



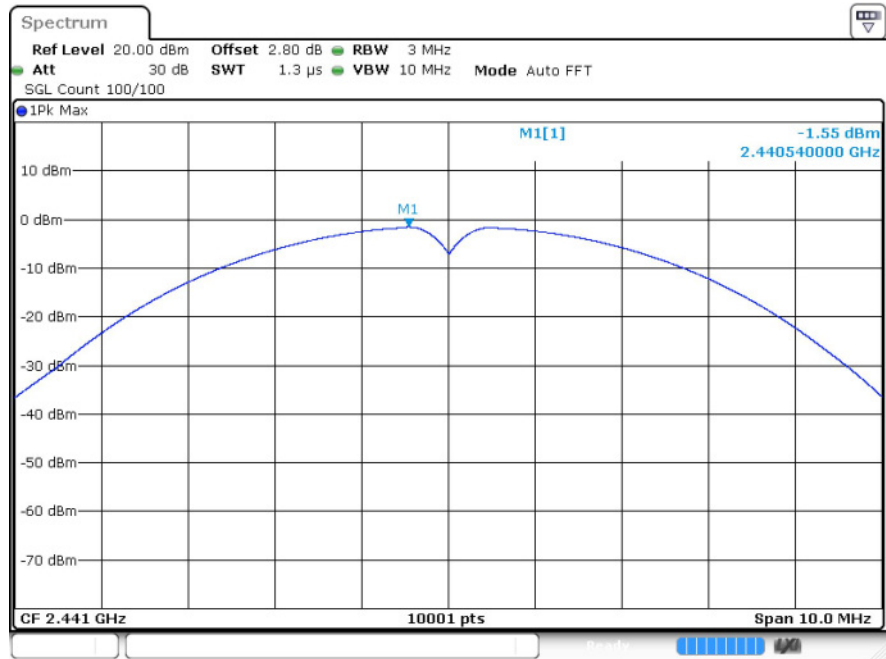
GFSK/HCH



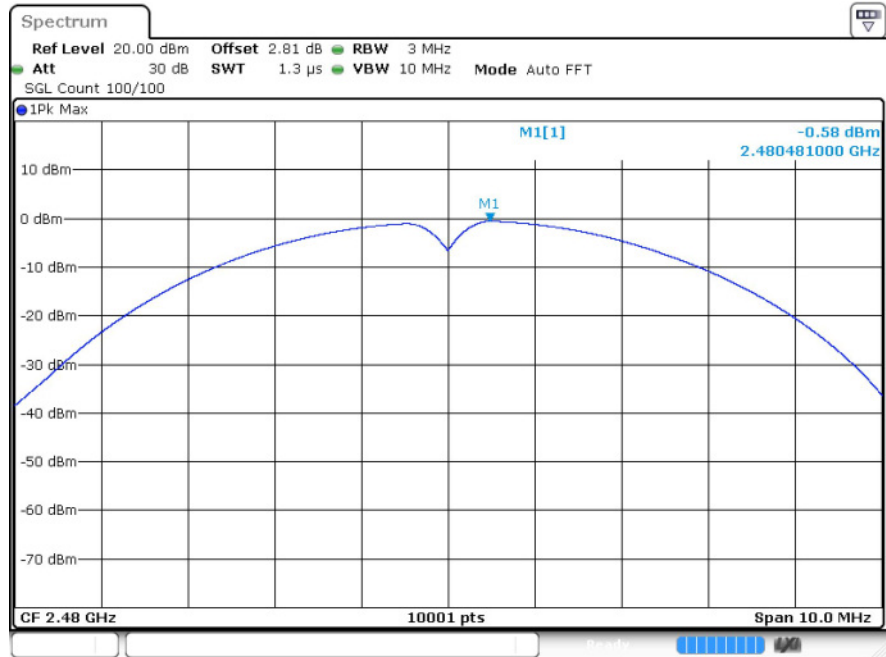
$\pi/4$ DQPSK/LCH



$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



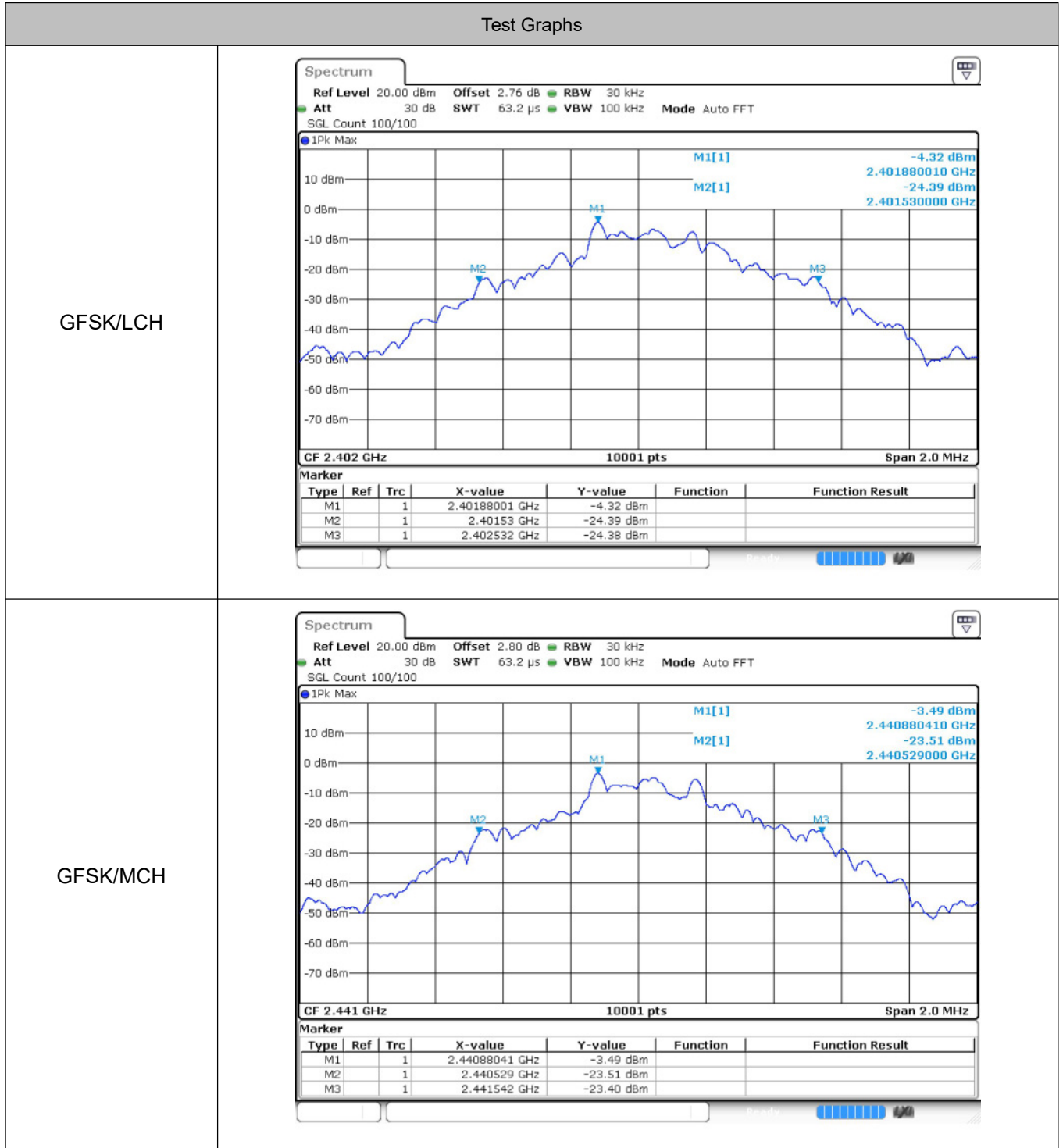
3 20dB Bandwidth

3.1 Test Result

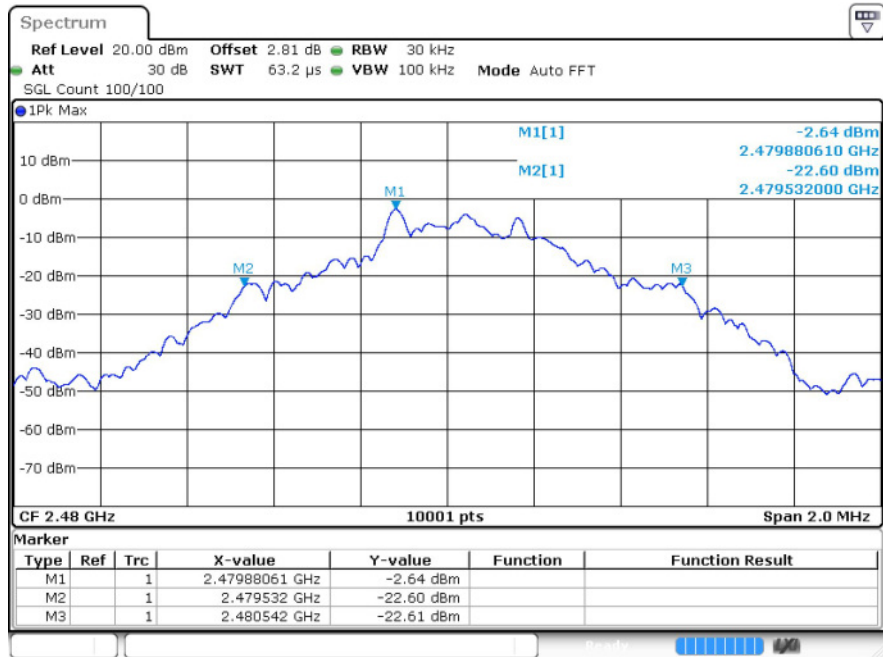
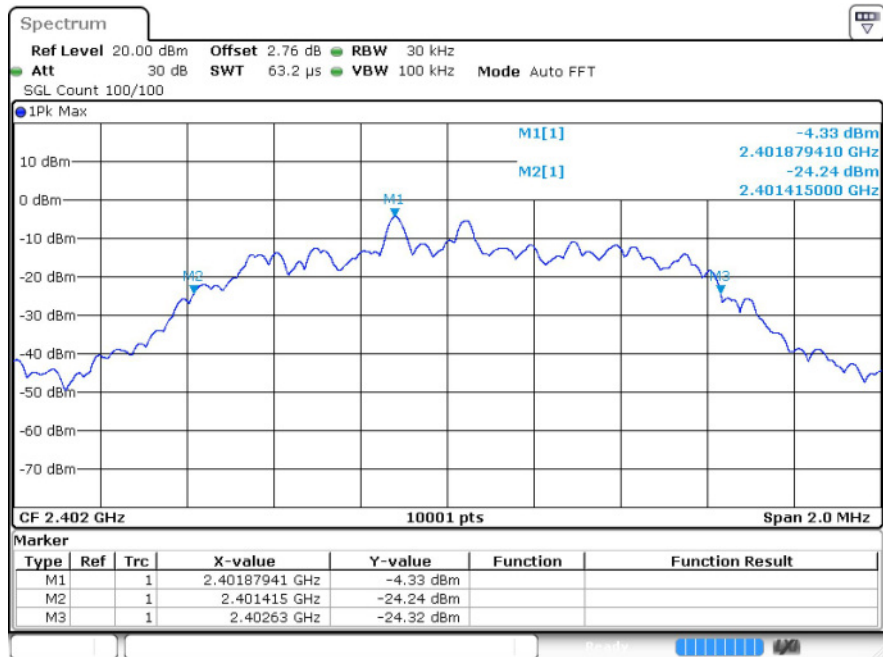
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.001	Not Specified	Pass
	MCH	1.013	Not Specified	Pass
	HCH	1.011	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.215	Not Specified	Pass
	MCH	1.205	Not Specified	Pass
	HCH	1.257	Not Specified	Pass

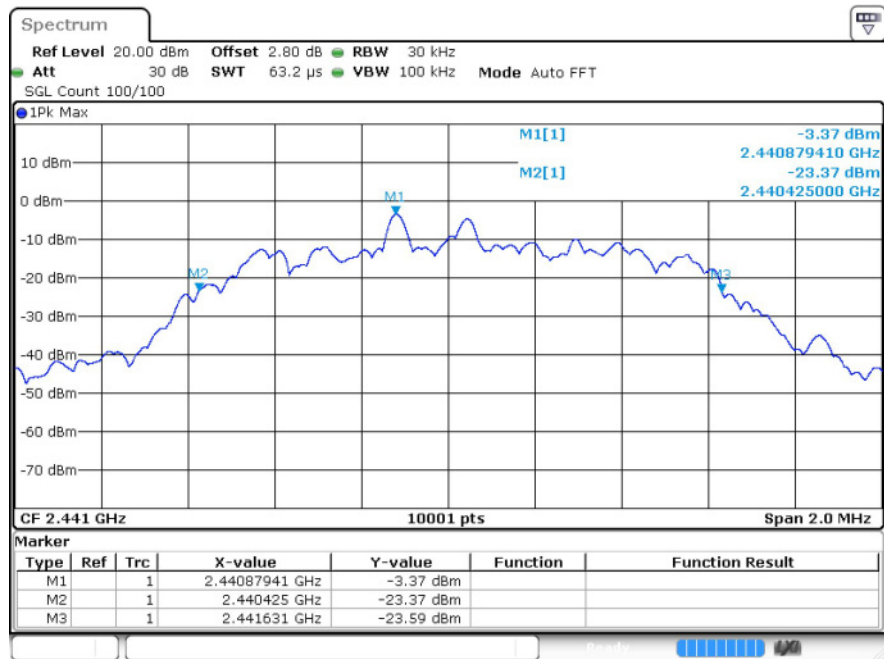
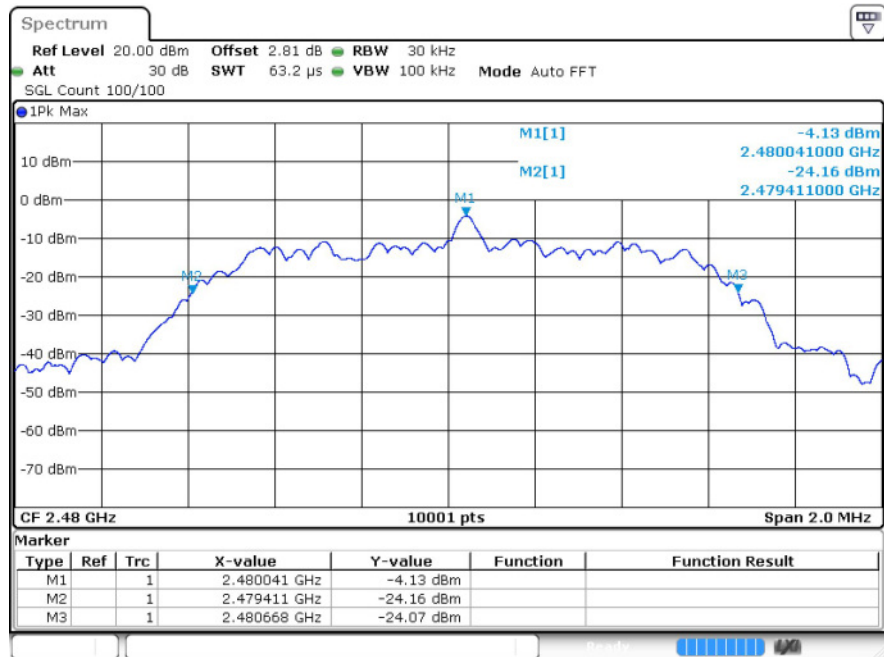
Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

3.2 Test Graphs



GFSK/HCH


 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


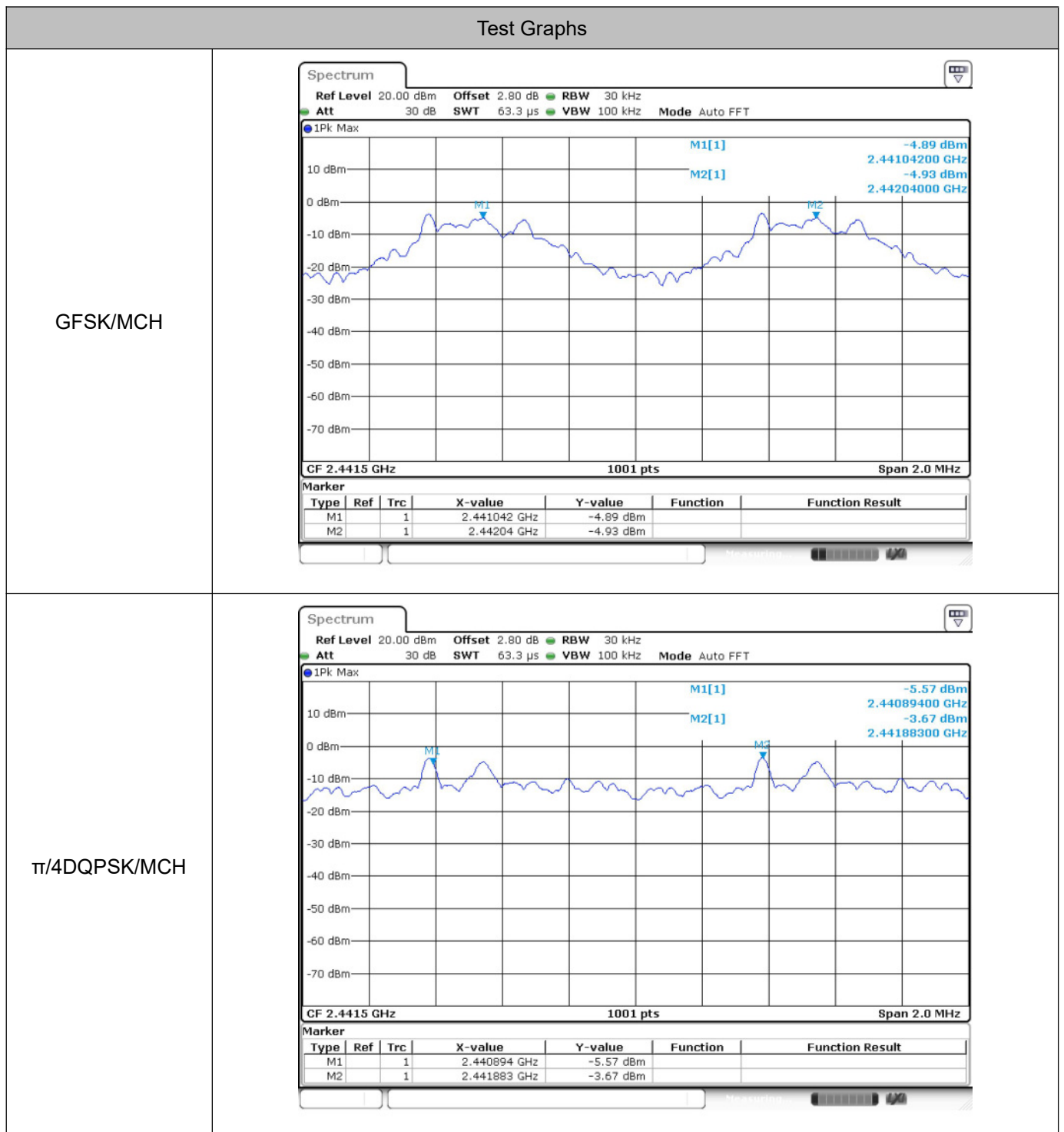
4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.998	0.675	Pass
$\pi/4$ DQPSK	MCH	0.989	0.803	Pass

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

4.2 Test Graphs



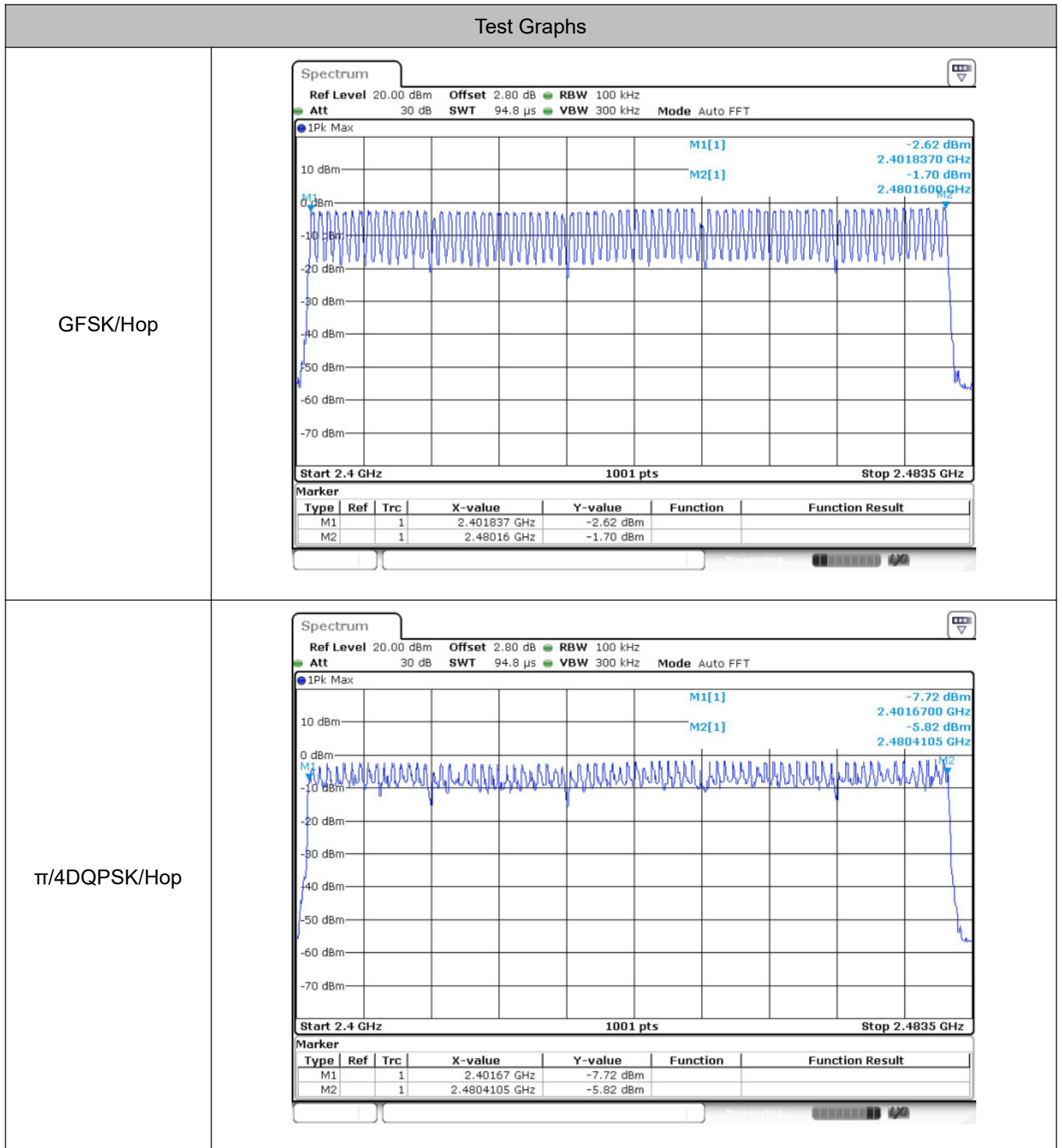
5 Hopping Channel Number

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

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

5.2 Test Graphs



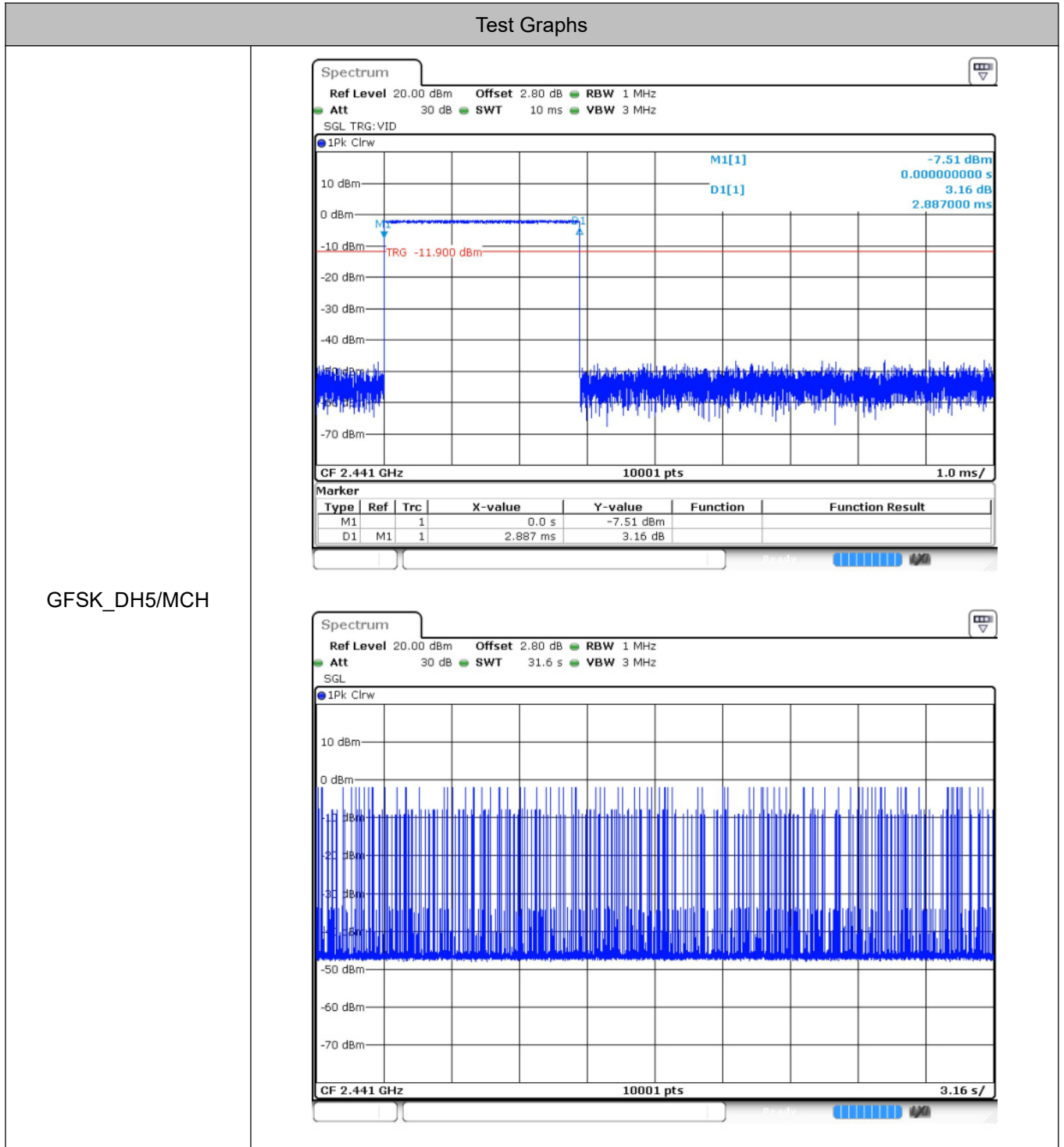
6 Dwell Time

6.1 Test Result

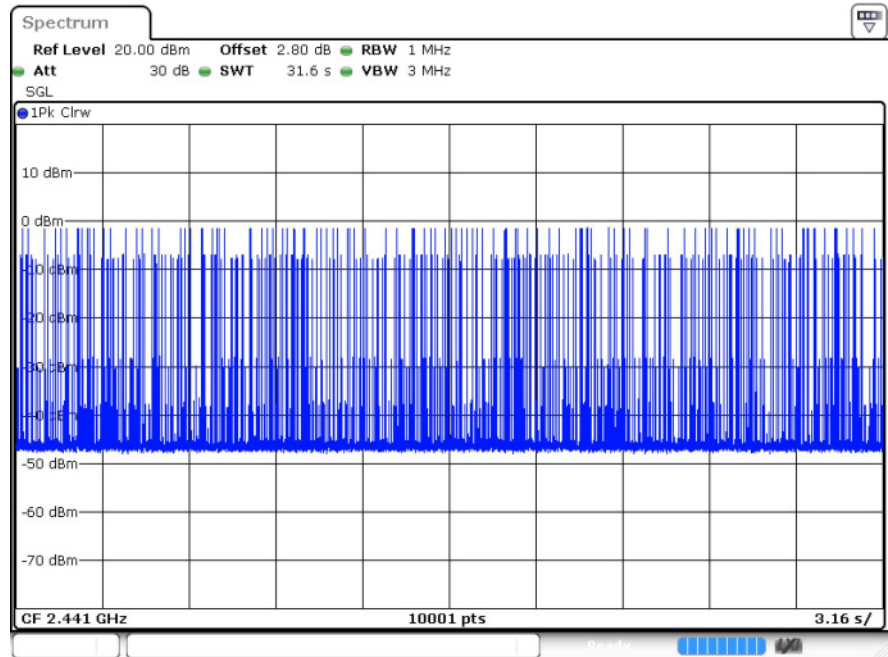
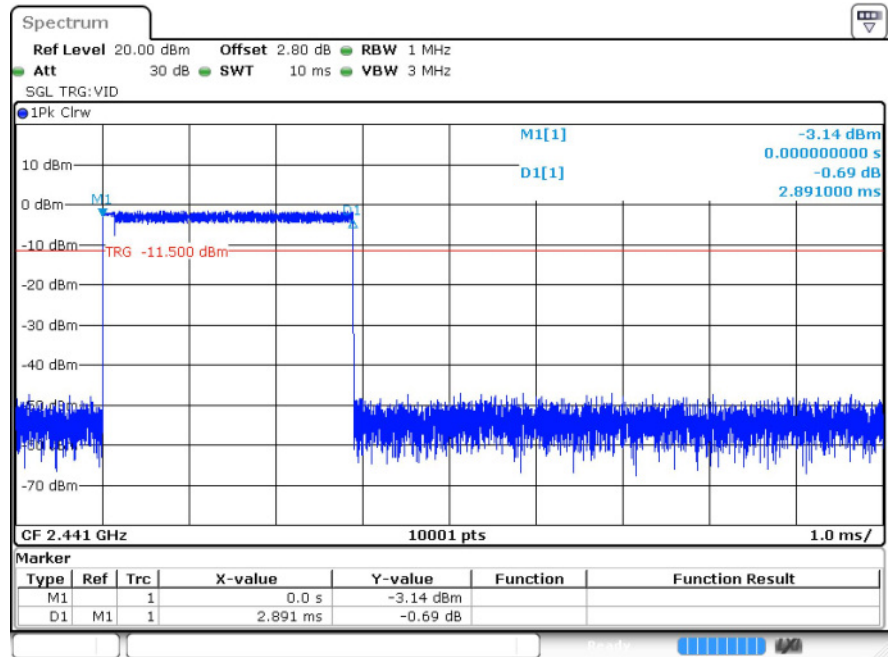
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.887	94	271.378	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.891	115	332.465	0.4	Pass

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

6.2 Test Graphs



$\pi/4$ DQPSK
_2DH5/MCH



7 RF Conducted Spurious Emissions

7.1 Test Result

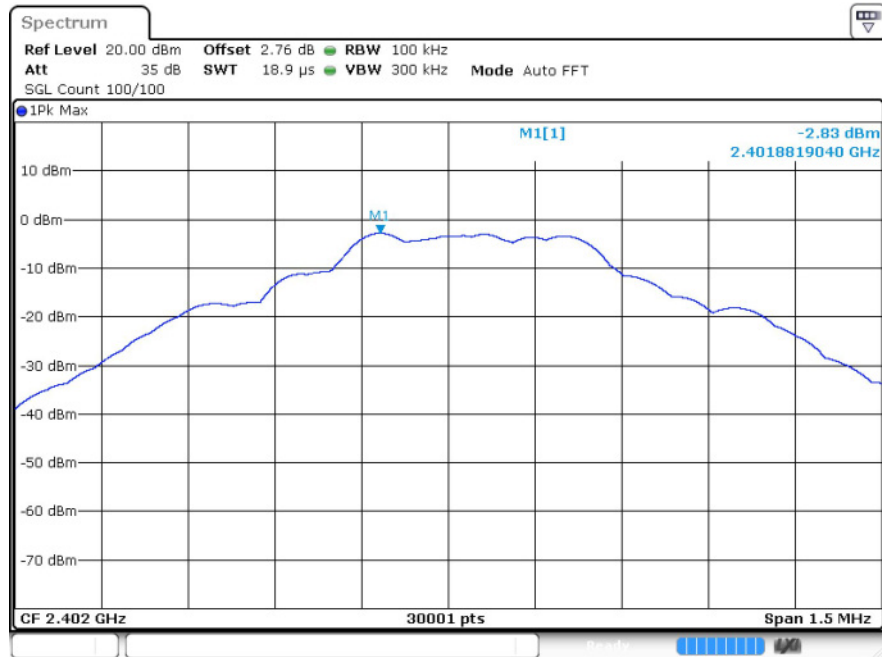
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-39.03	-20	Pass
	MCH	-38.76	-20	Pass
	HCH	-39.41	-20	Pass
$\pi/4$ DQPSK	LCH	-38.28	-20	Pass
	MCH	-39.45	-20	Pass
	HCH	-40.1	-20	Pass

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

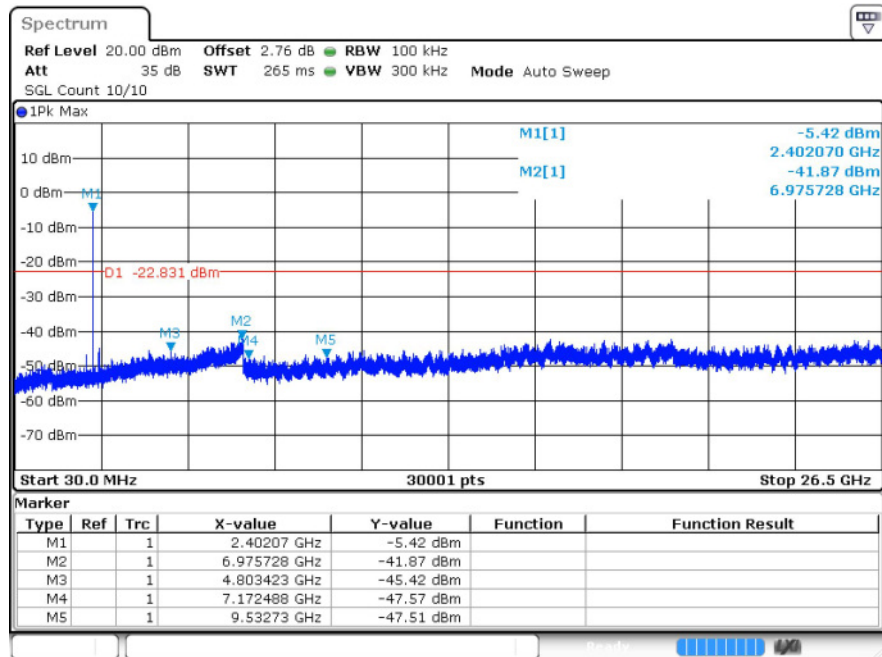
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

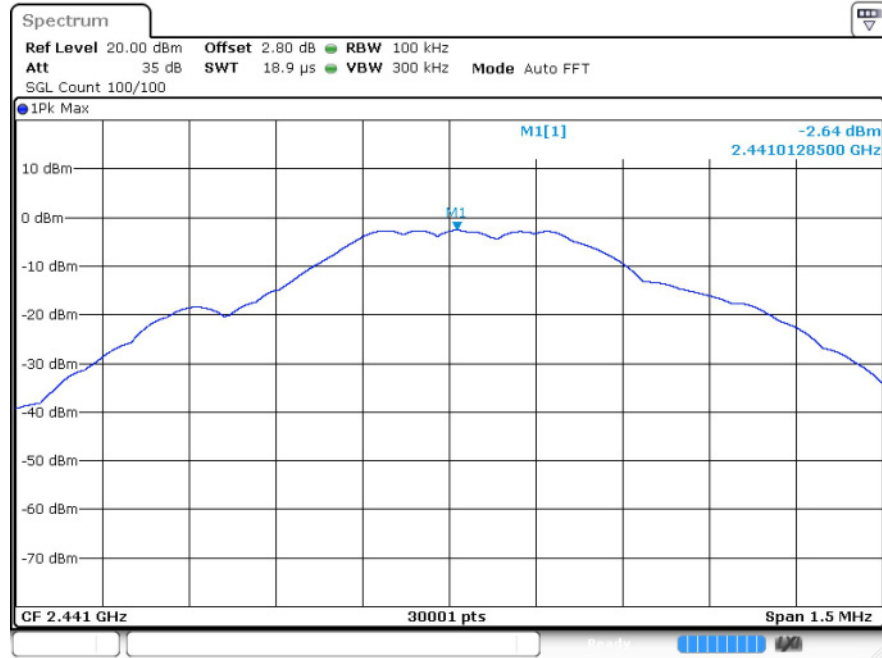


Puw

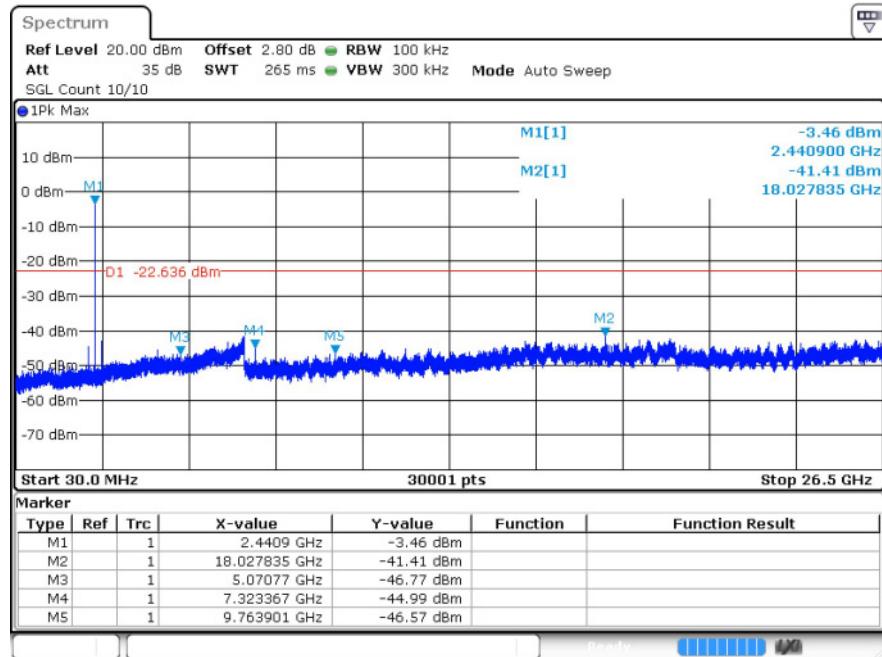


GFSK_MCH_Graphs

Pref

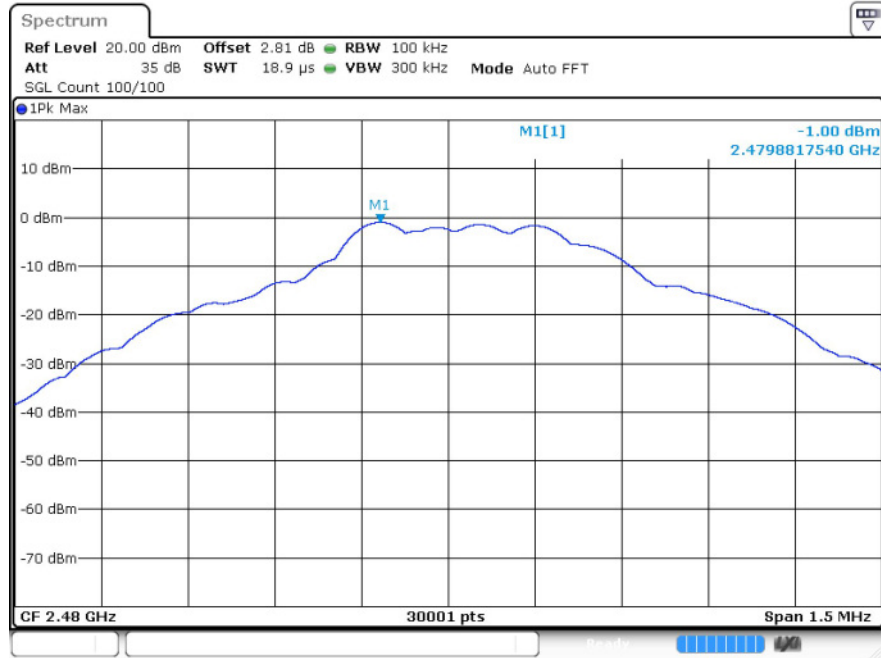


Puw

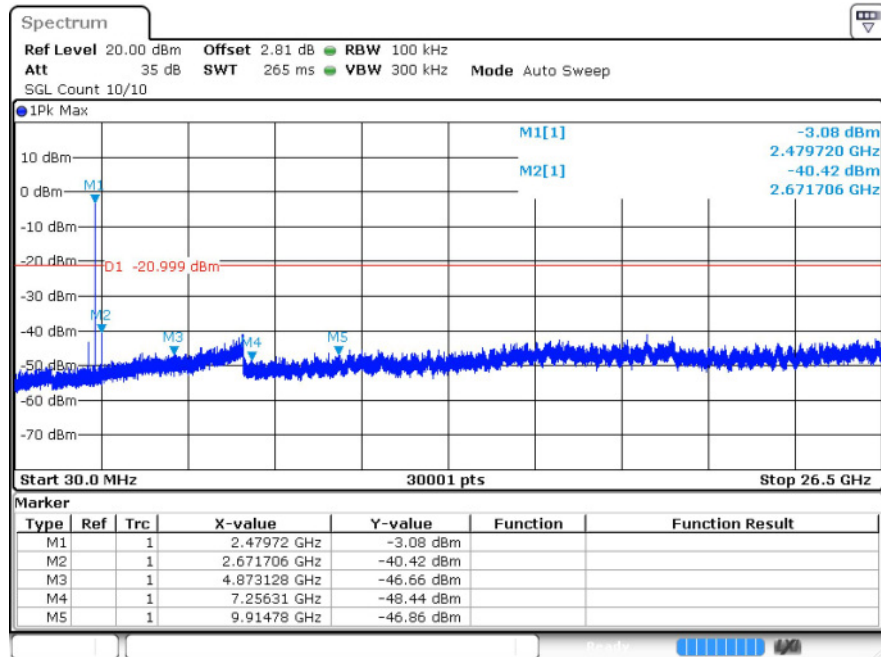


GFSK_HCH_Graphs

Pref

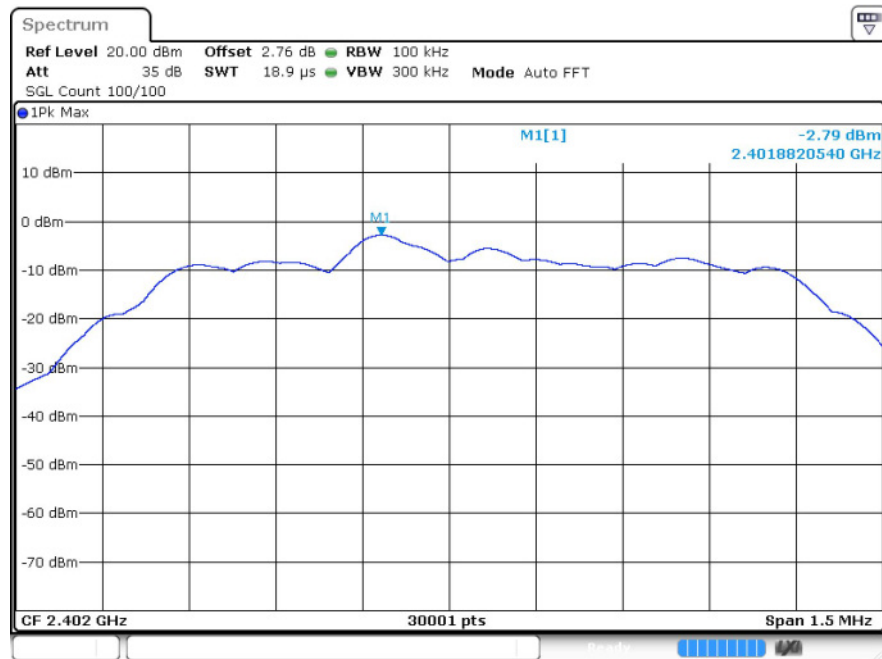


Puw

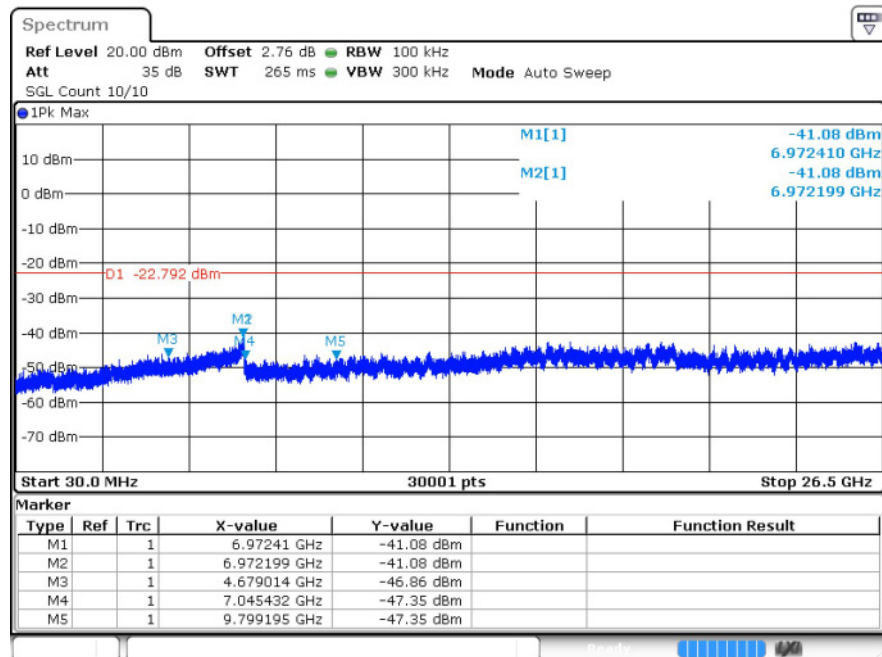


$\pi/4$ DQPSK_LCH_Graphs

Pref

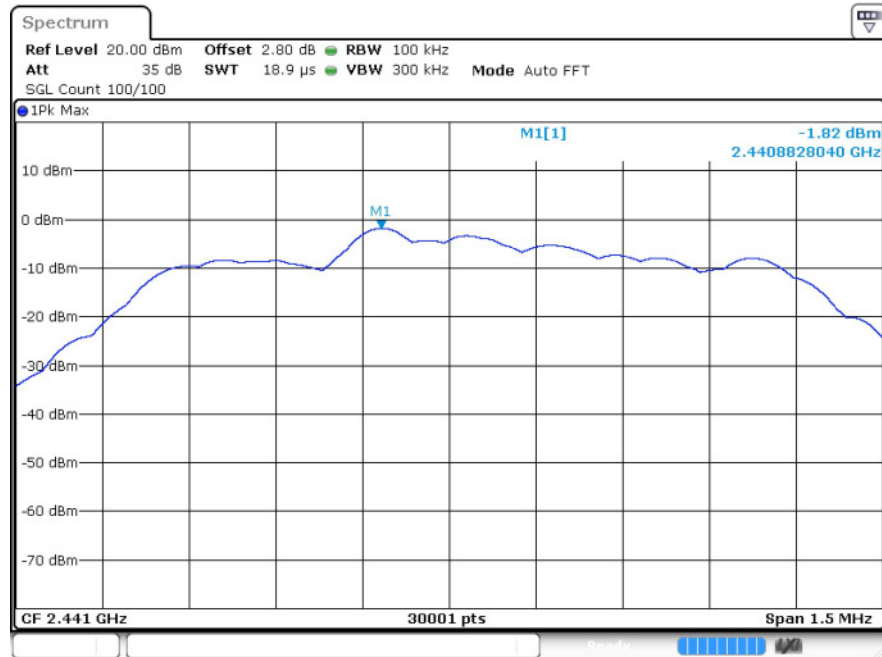


Puw

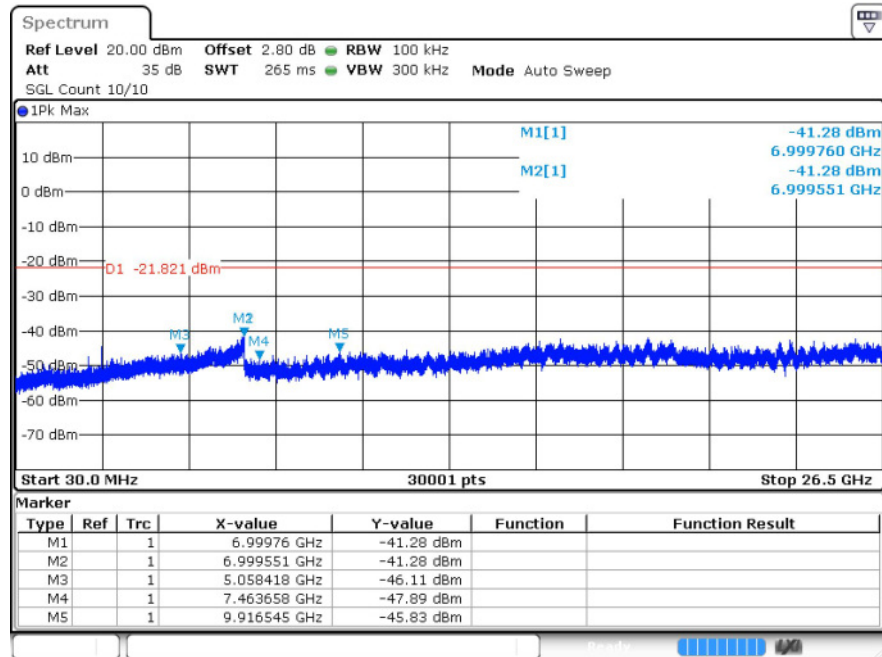


π /4DQPSK_MCH_Graphs

Pref

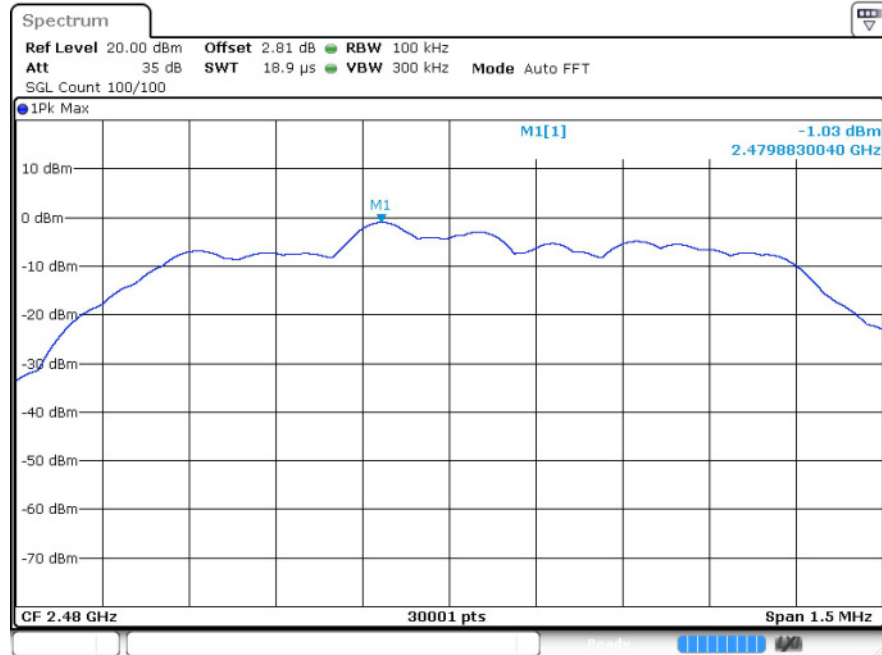


Puw

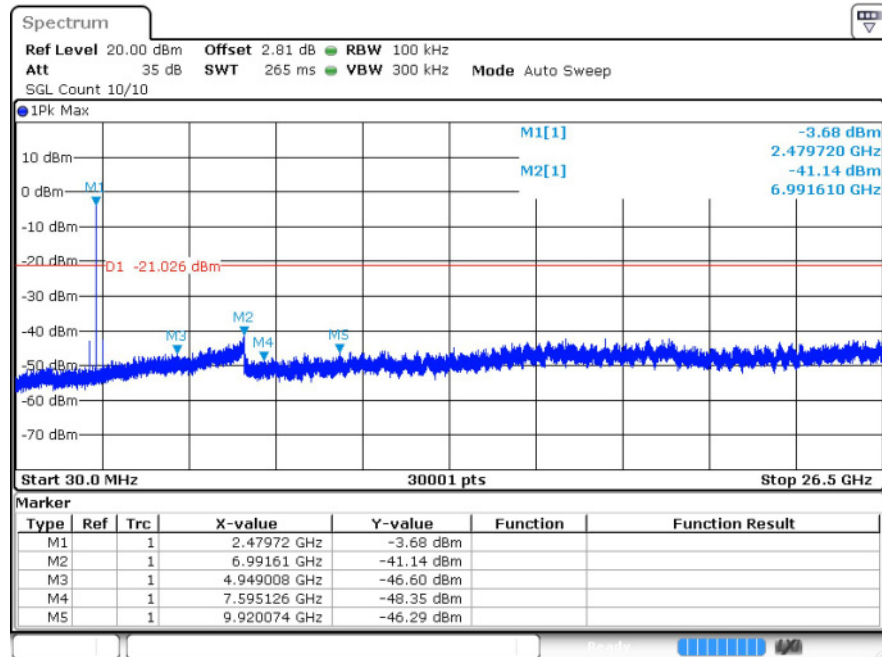


$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw



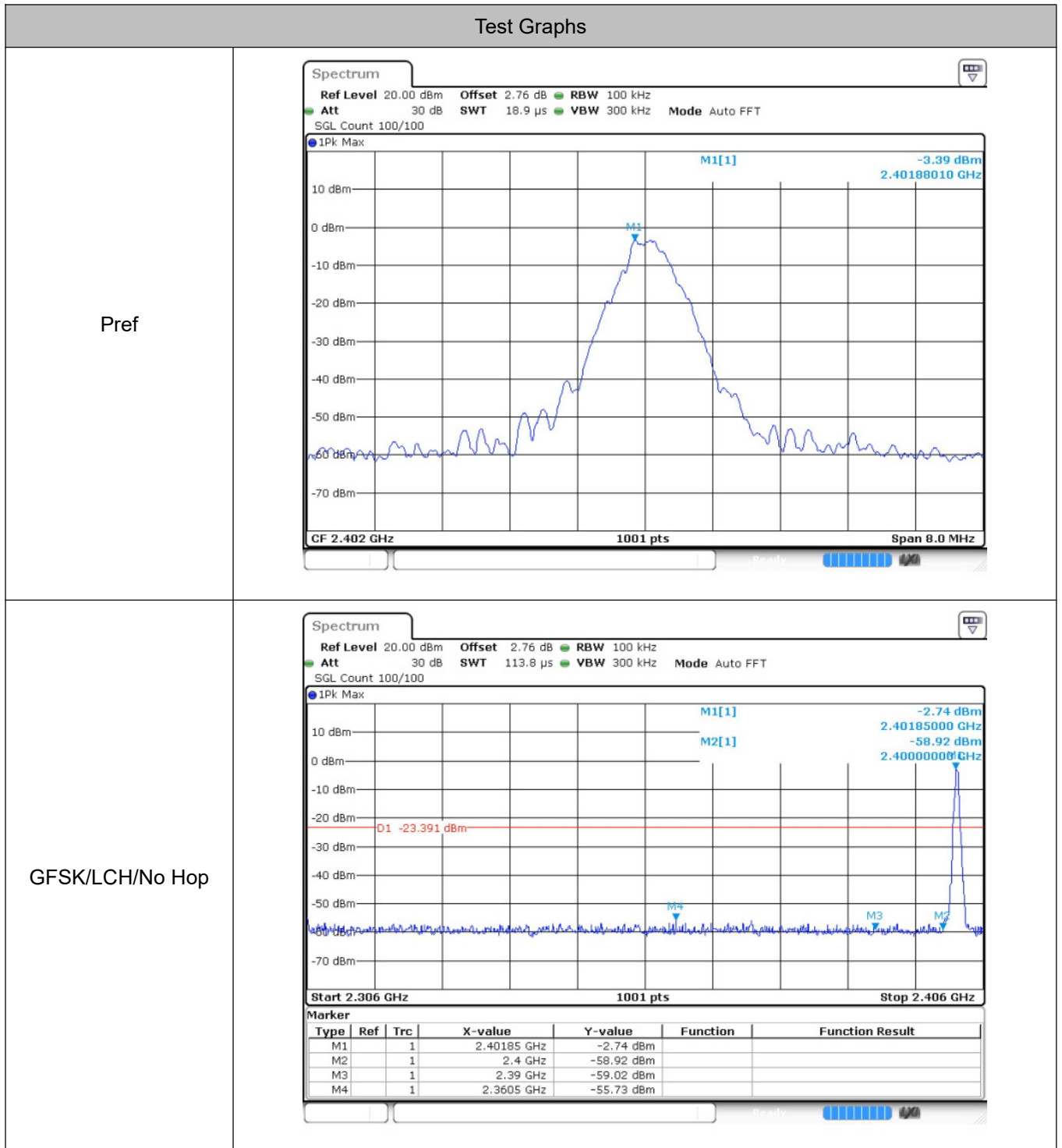
8 Band-edge for RF Conducted Emissions

8.1 Test Result

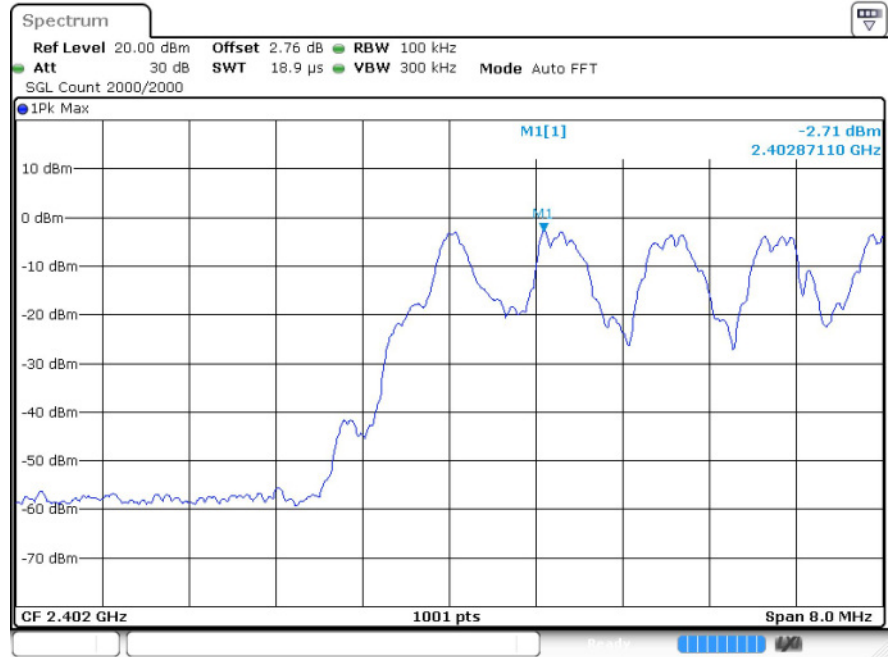
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-52.34	-20	Pass
			On	-49.02	-20	Pass
	HCH	2480	Off	-55.19	-20	Pass
			On	-51.67	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-53.48	-20	Pass
			On	-50.43	-20	Pass
	HCH	2480	Off	-55.46	-20	Pass
			On	-53.39	-20	Pass

Note: Both left and right headphones were tested, right headphones is worst data, and the report recorded only the worst data.

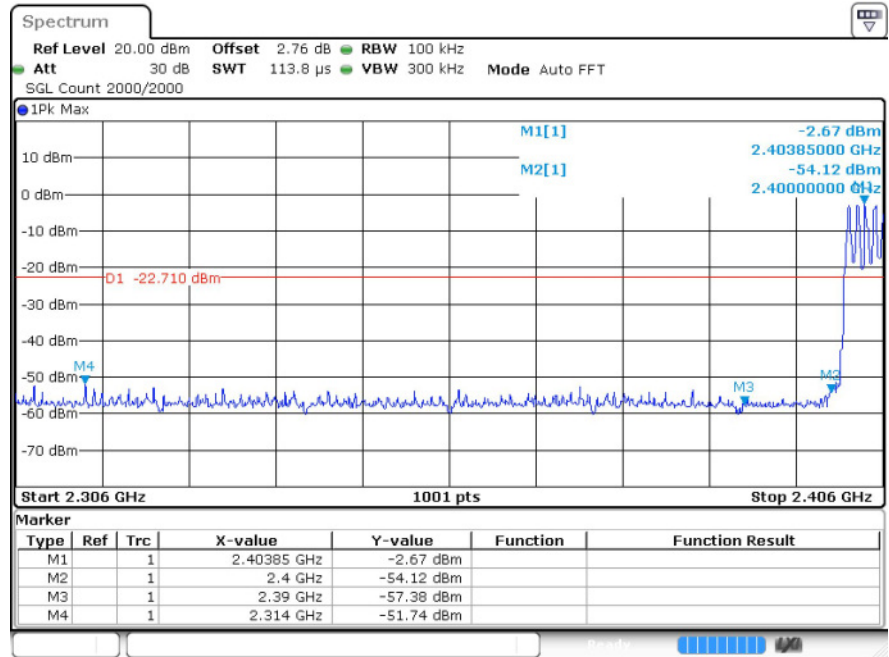
8.2 Test Graphs



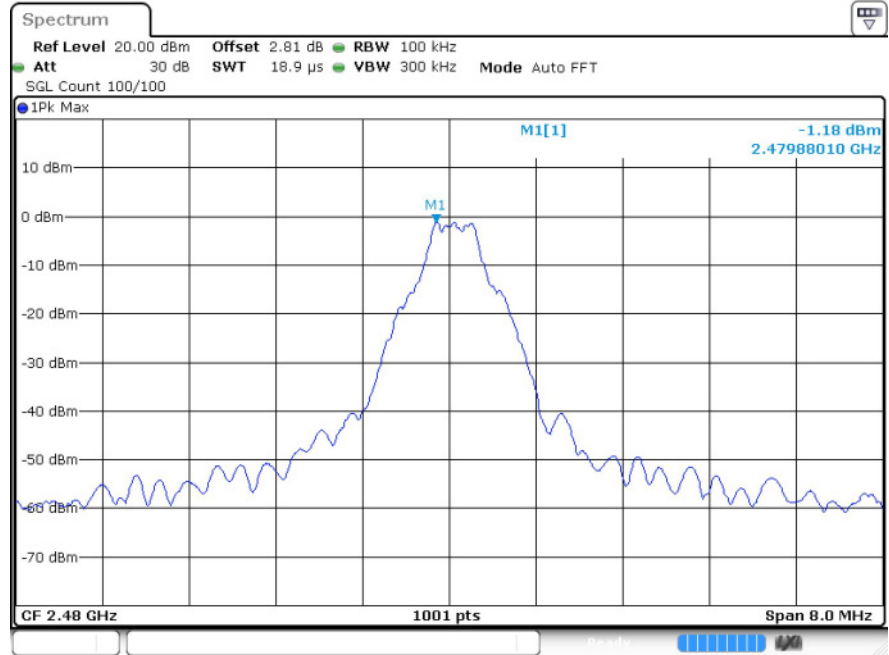
Ref



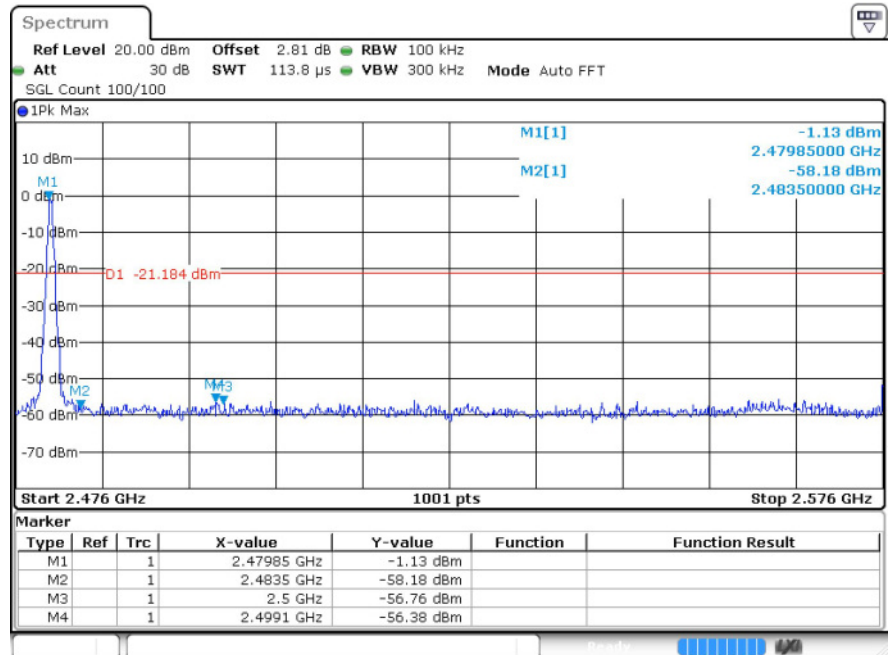
GFSK/LCH/Hop



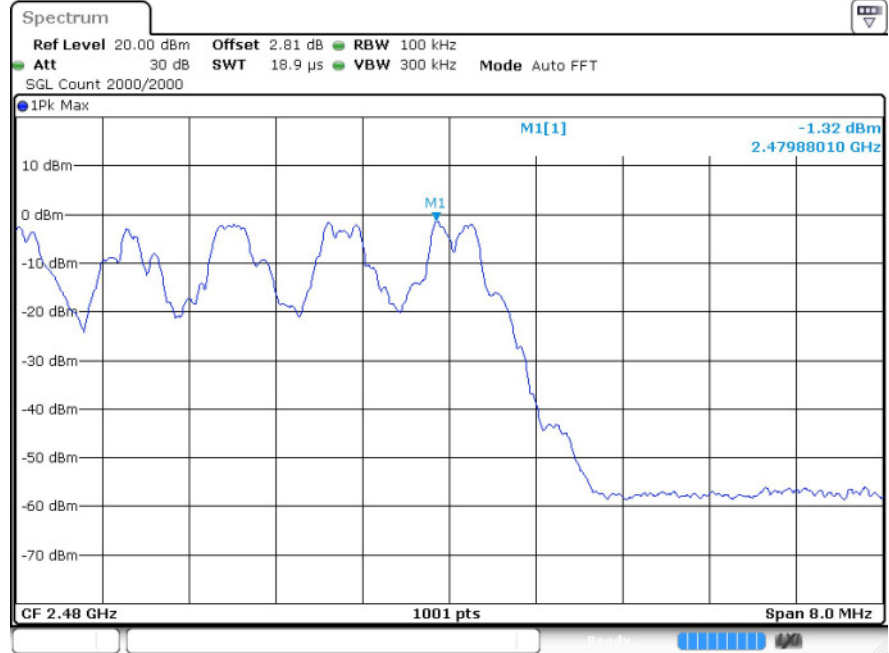
Ref



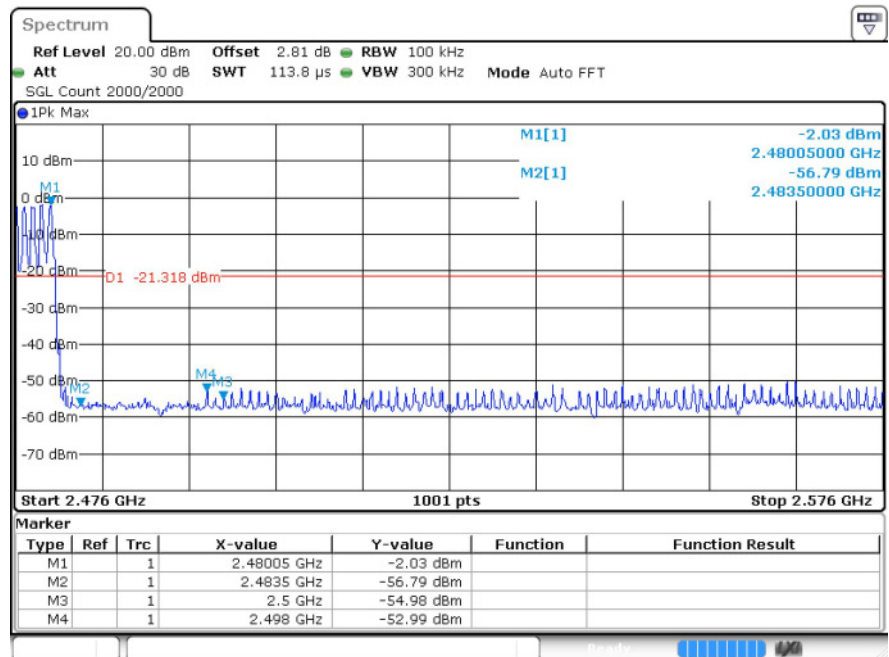
GFSK/HCH/No Hop



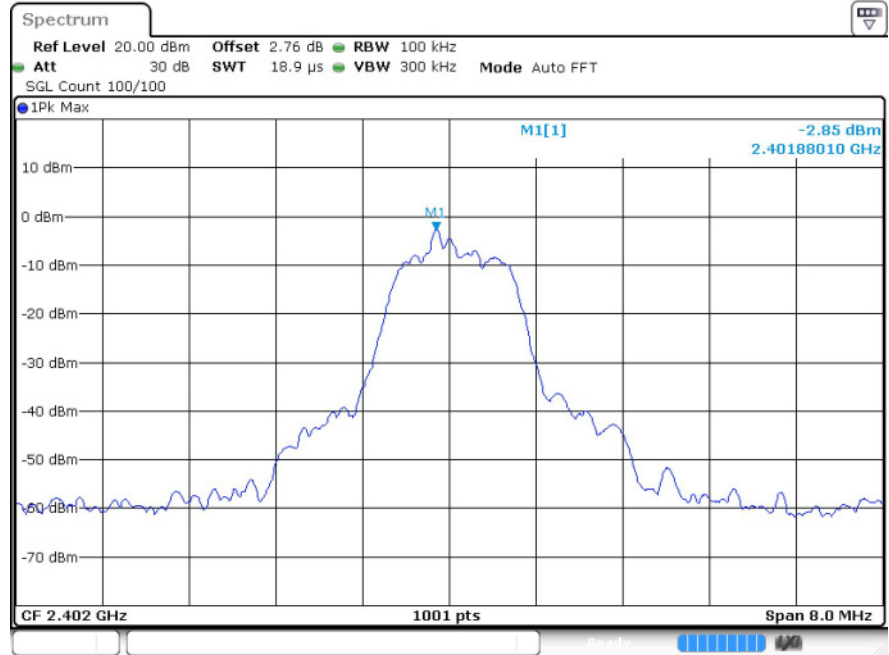
Ref.



GFSK/HCH/Hop



Ref


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