

Appendix A

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

Product Name: Bluetooth Speaker

Trade Mark: ROYQUEEN

Test Model: G180

Environmental Conditions

Temperature:	25.4℃
Relative Humidity:	52.3%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

Contents

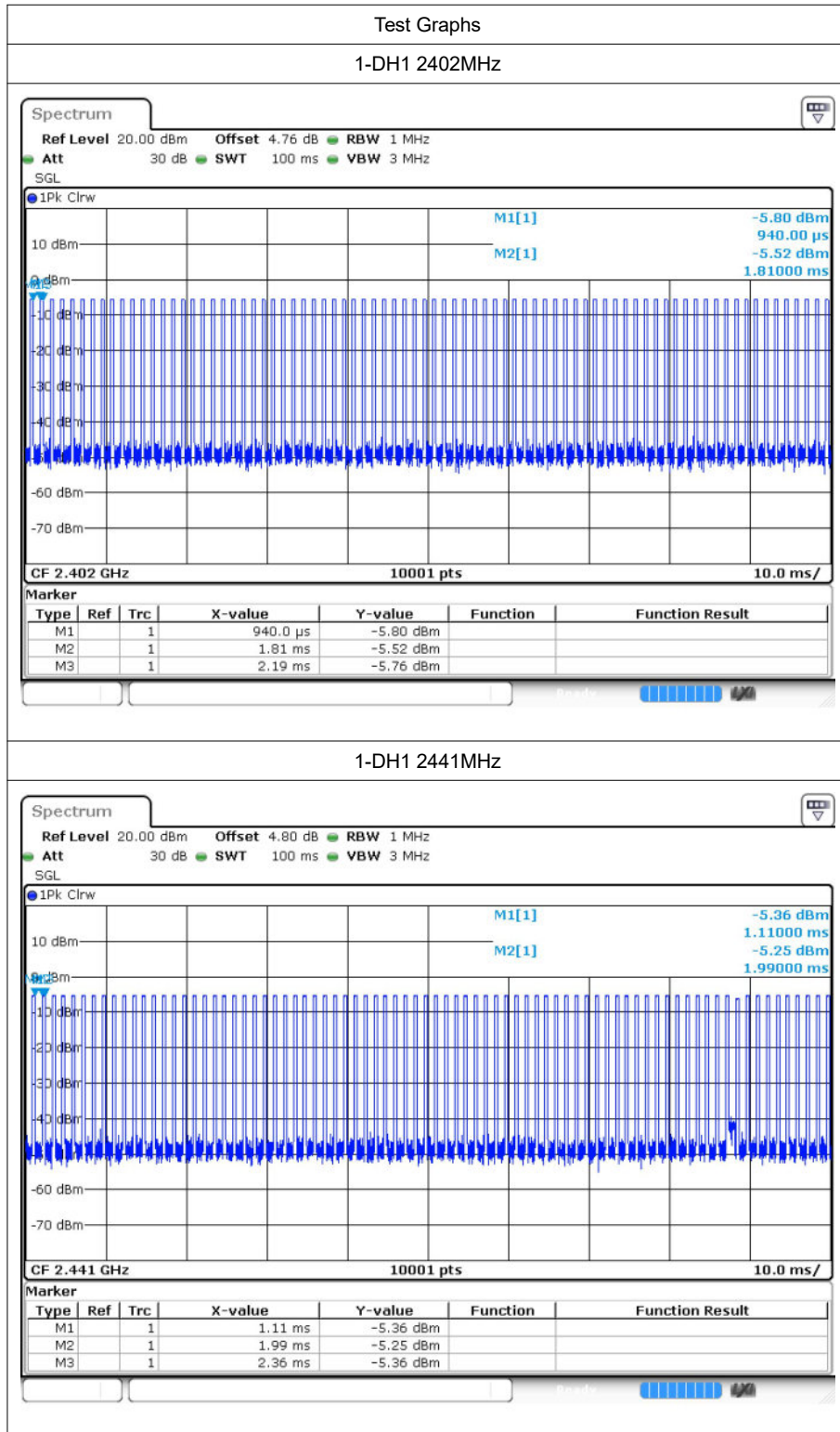
	Page
COVER PAGE	
1 Duty Cycle	3
1.1 Test Result	3
1.2 Test Graphs	4
2 Maximum Conducted Peak Output Power	9
2.1 Test Result	9
2.2 Test Graphs	10
3 20dB Bandwidth	15
3.1 Test Result	15
3.2 Test Graphs	16
4 Carrier Frequency Separation	21
4.1 Test Result	21
4.2 Test Graphs	22
5 Hopping Channel Number	24
5.1 Test Result	24
5.2 Test Graphs	25
6 Dwell Time	27
6.1 Test Result	27
6.2 Test Graphs	28
7 RF Conducted Spurious Emissions	31
7.1 Test Result	31
7.2 Test Graphs	32
8 Band-edge for RF Conducted Emissions	41
8.1 Test Result	41
8.2 Test Graphs	42
9 Restrict-band band-edge measurements	54
9.1 Test Result	54
9.2 Test Graphs	56

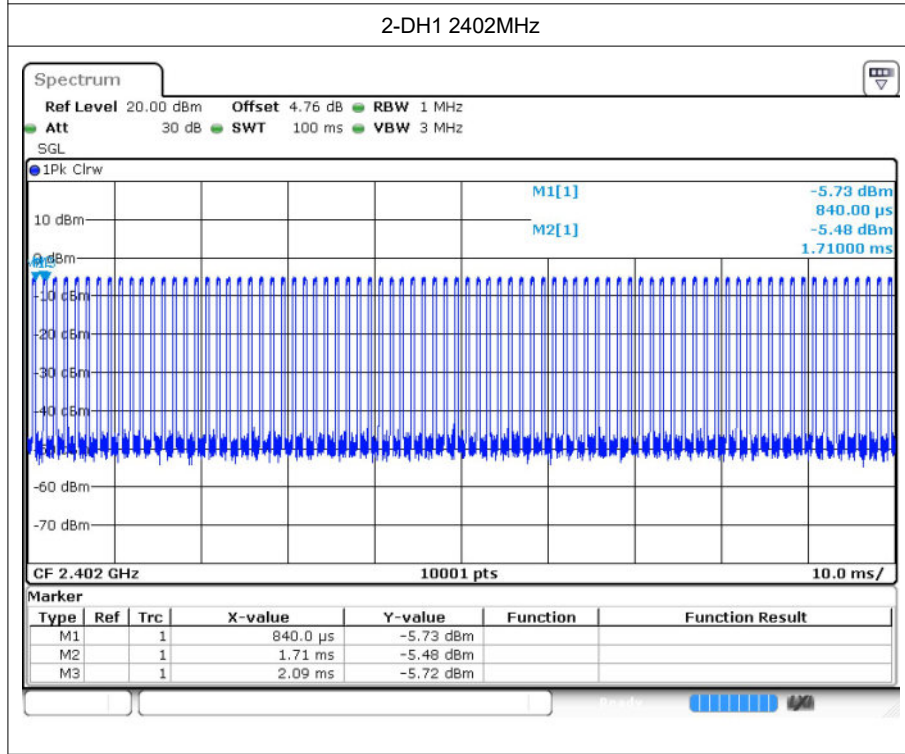
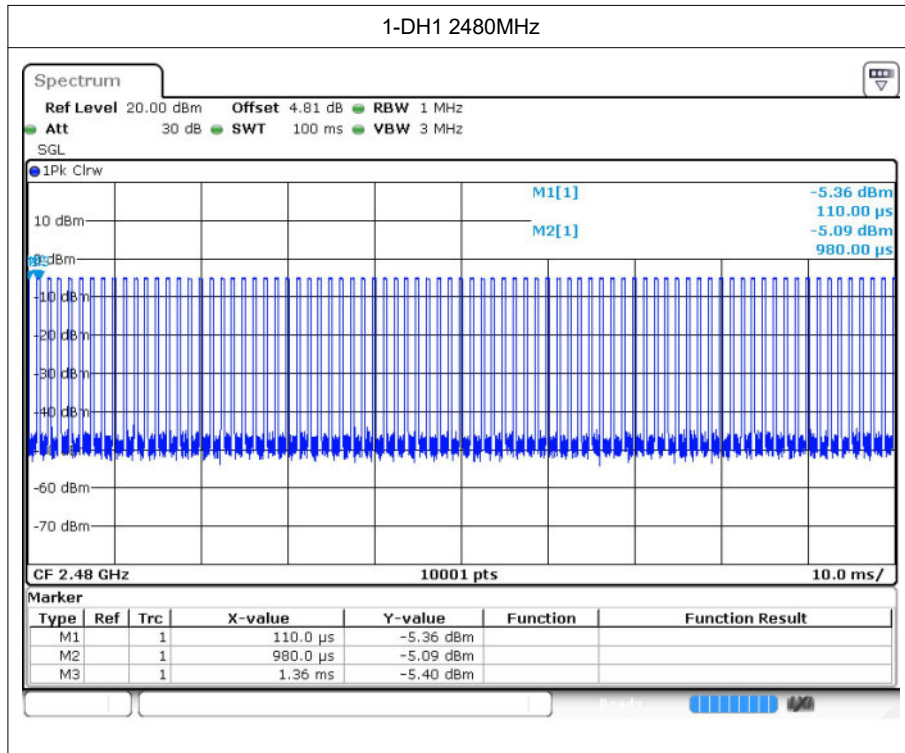
1 Duty Cycle

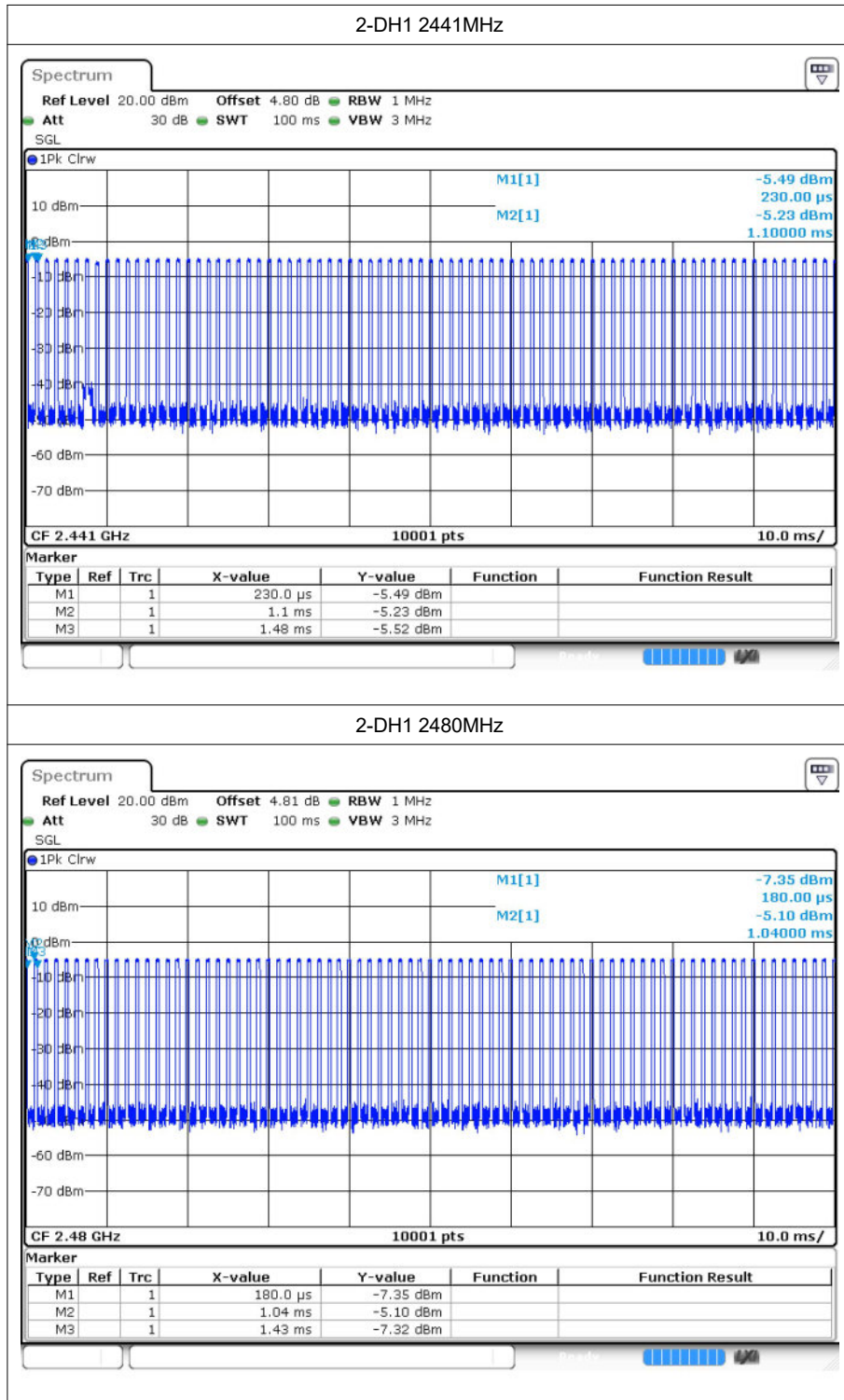
1.1 Test Result

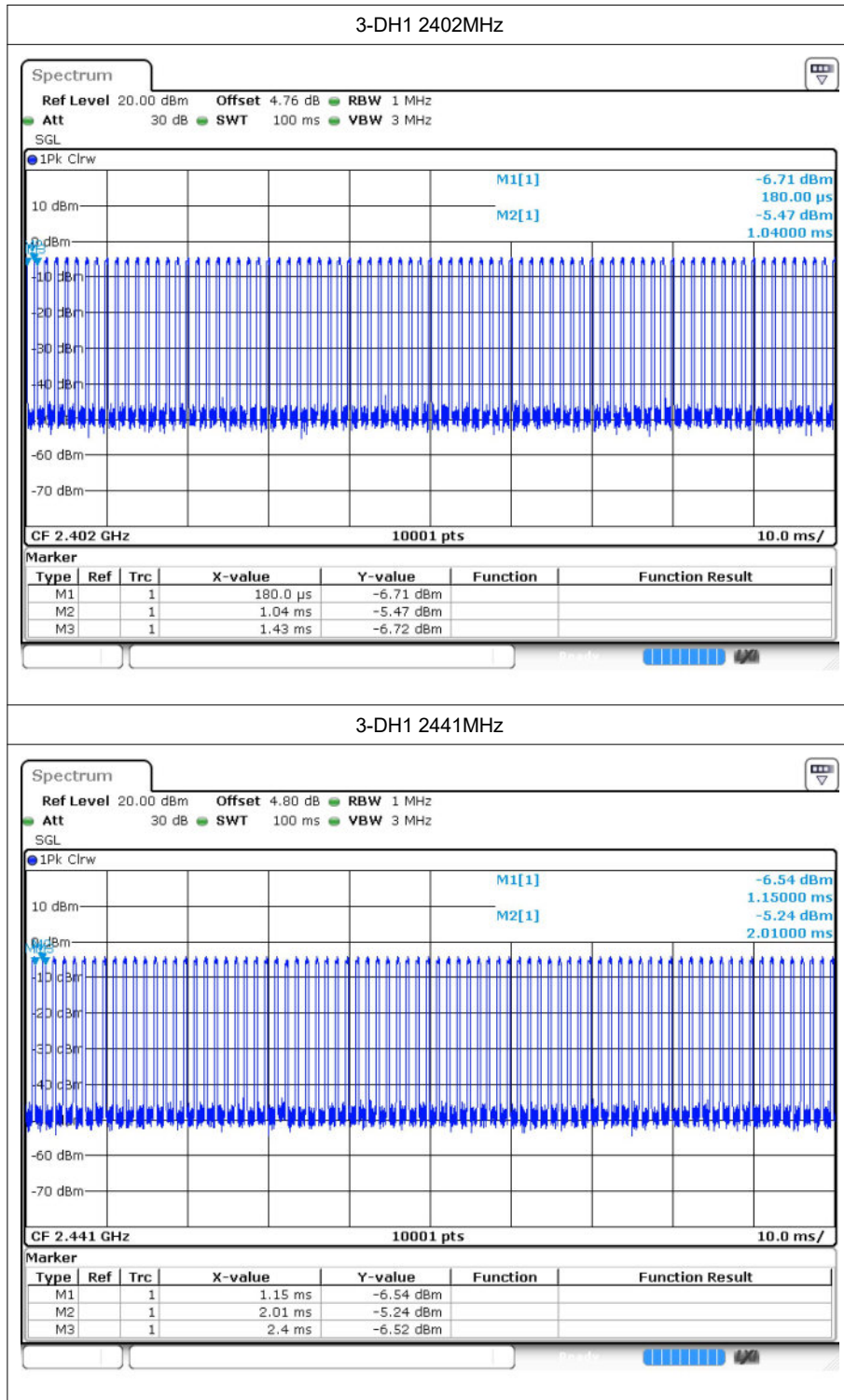
Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.2	2.63
1-DH1	2441	30.4	2.7
1-DH1	2480	31.21	2.63
2-DH1	2402	31.2	2.63
2-DH1	2441	31.21	2.63
2-DH1	2480	32.01	2.56
3-DH1	2402	32.01	2.56
3-DH1	2441	32	2.56
3-DH1	2480	32	2.56

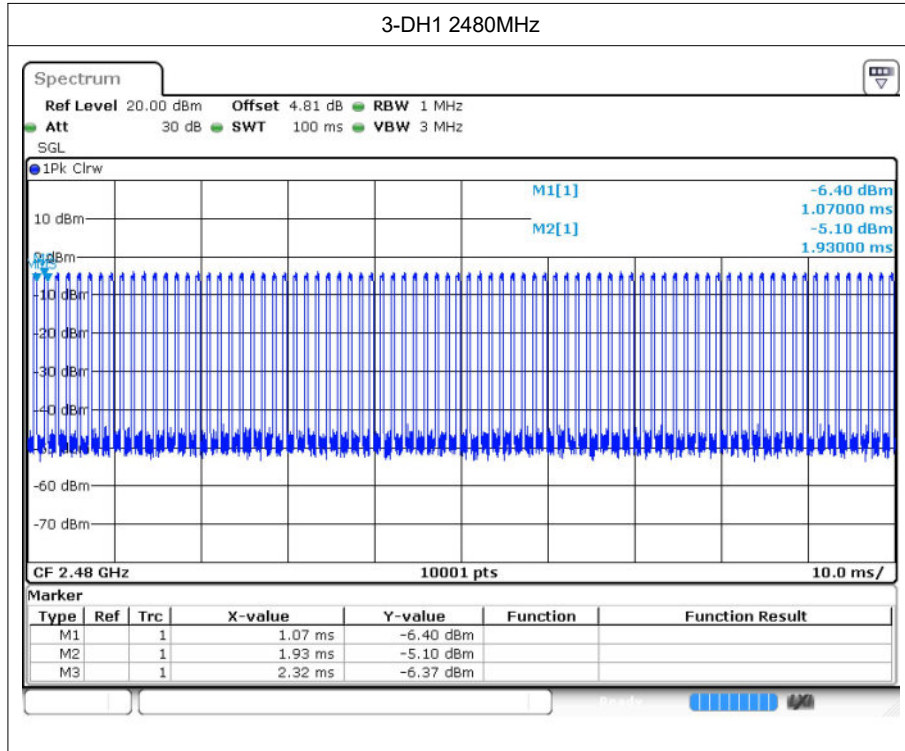
1.2 Test Graphs









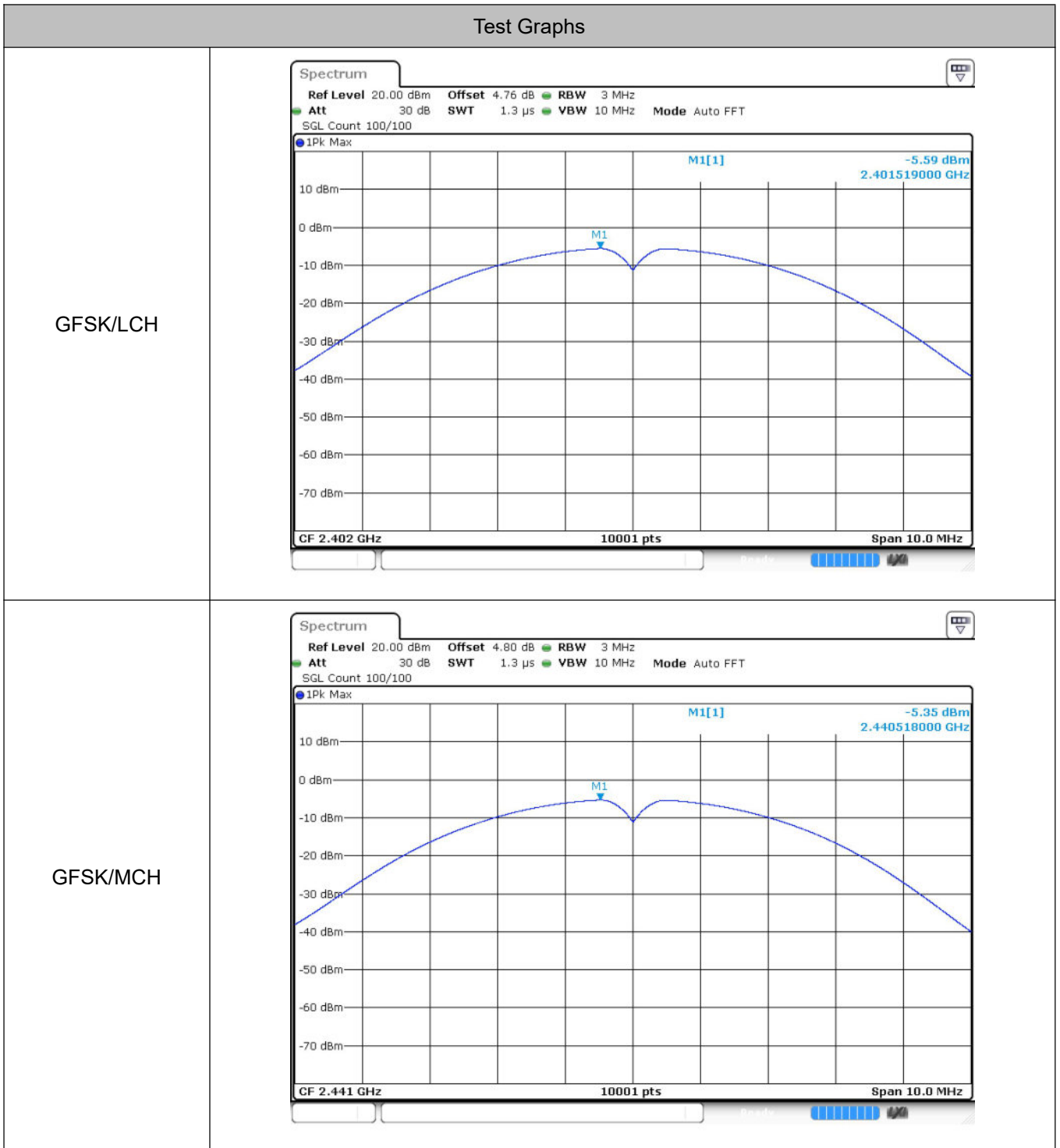


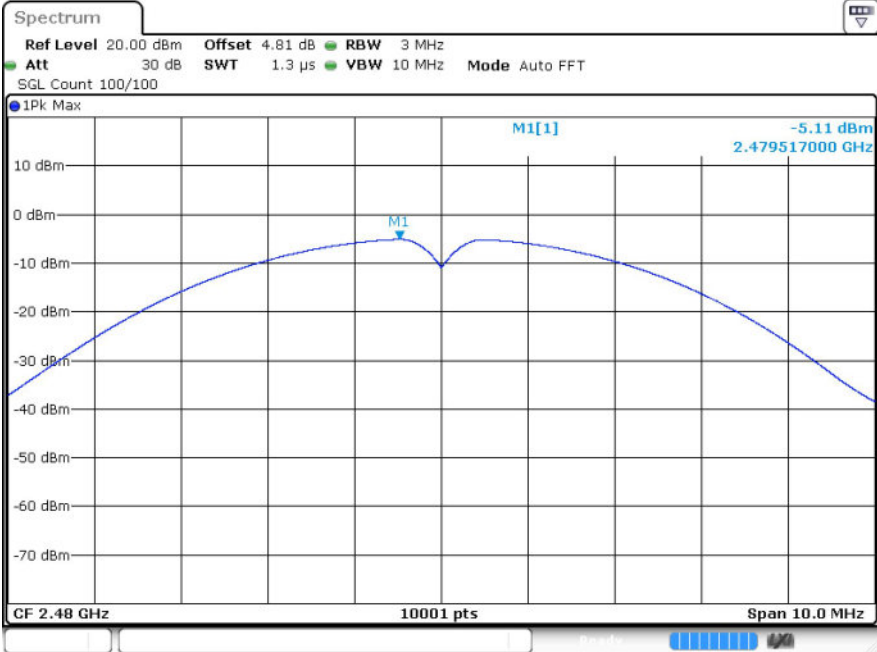
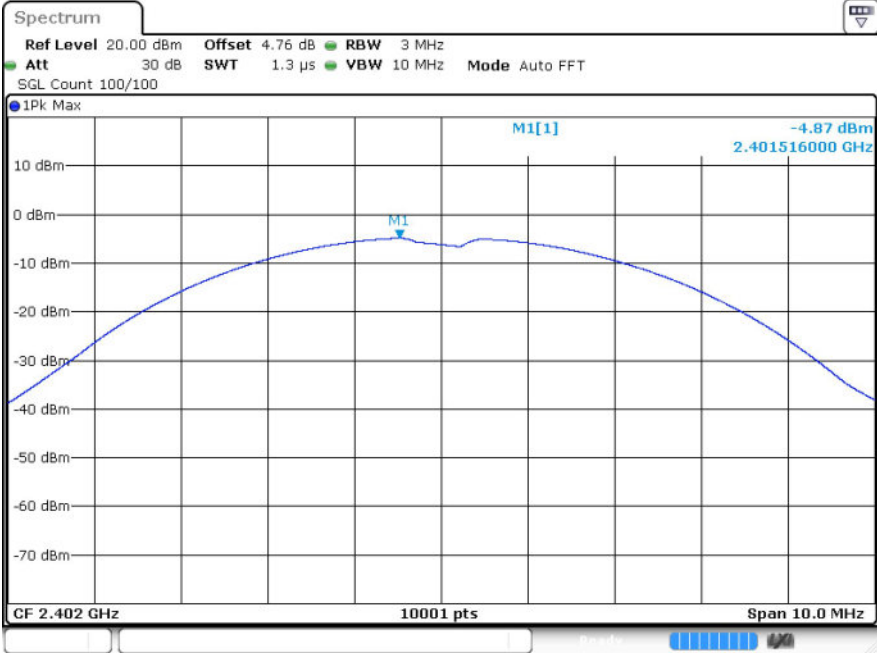
2 Maximum Conducted Peak Output Power

2.1 Test Result

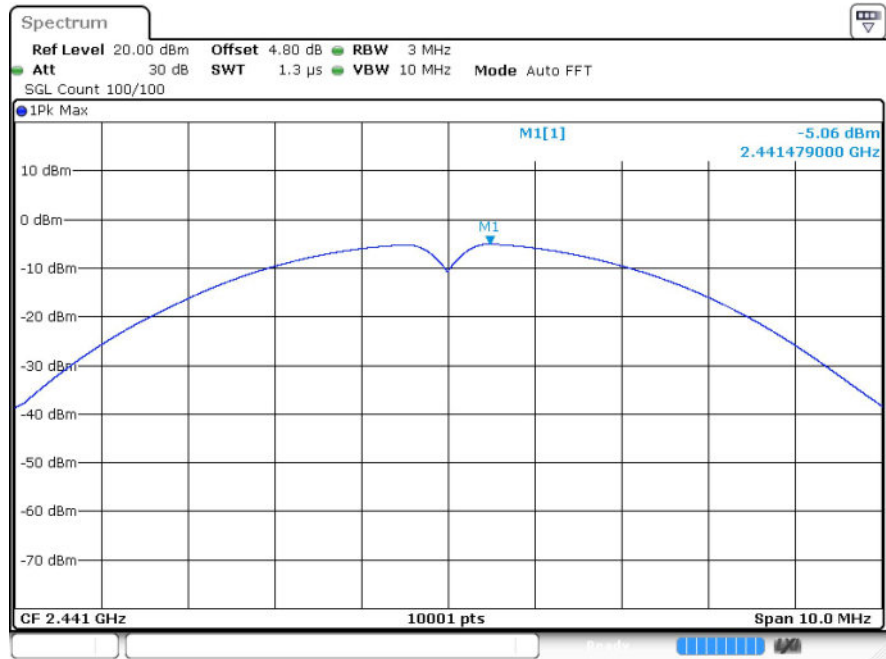
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-5.59	21	Pass
	MCH	-5.35	21	Pass
	HCH	-5.11	21	Pass
$\pi/4$ DQPSK	LCH	-4.87	21	Pass
	MCH	-5.06	21	Pass
	HCH	-4.68	21	Pass
8DPSK	LCH	-4.72	21	Pass
	MCH	-4.69	21	Pass
	HCH	-4.27	21	Pass

2.2 Test Graphs



<p>GFSK/HCH</p>	 <p>Spectrum Ref Level 20.00 dBm Offset 4.81 dB RBW 3 MHz Att 30 dB SWT 1.3 μs VBW 10 MHz Mode Auto FFT SGL Count 100/100 1Pk Max M1[1] -5.11 dBm 2.479517000 GHz CF 2.48 GHz 10001 pts Span 10.0 MHz</p>
<p>$\pi/4$DQPSK/LCH</p>	 <p>Spectrum Ref Level 20.00 dBm Offset 4.76 dB RBW 3 MHz Att 30 dB SWT 1.3 μs VBW 10 MHz Mode Auto FFT SGL Count 100/100 1Pk Max M1[1] -4.87 dBm 2.401516000 GHz CF 2.402 GHz 10001 pts Span 10.0 MHz</p>

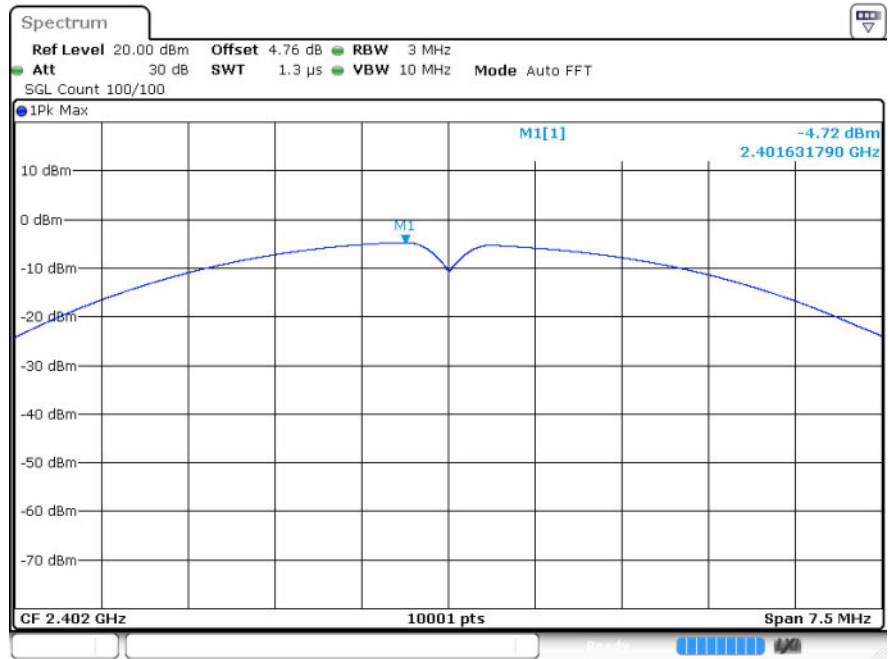
$\pi/4$ DQPSK/MCH



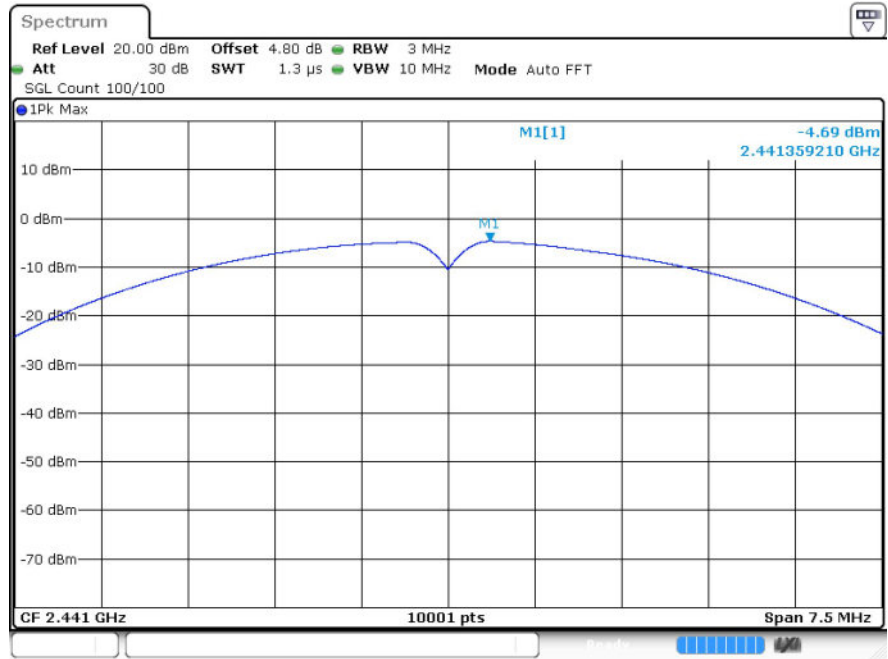
$\pi/4$ DQPSK/HCH



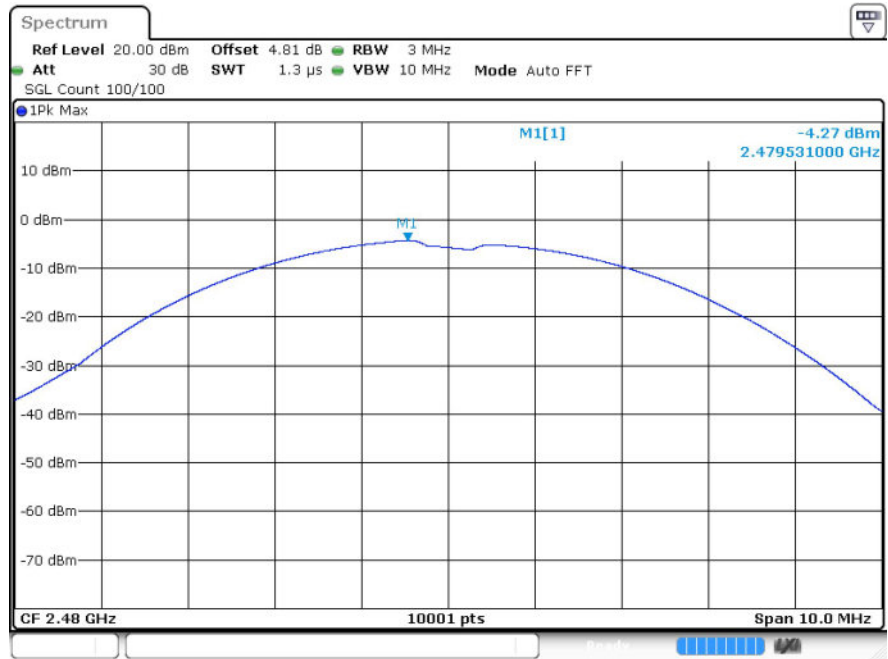
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

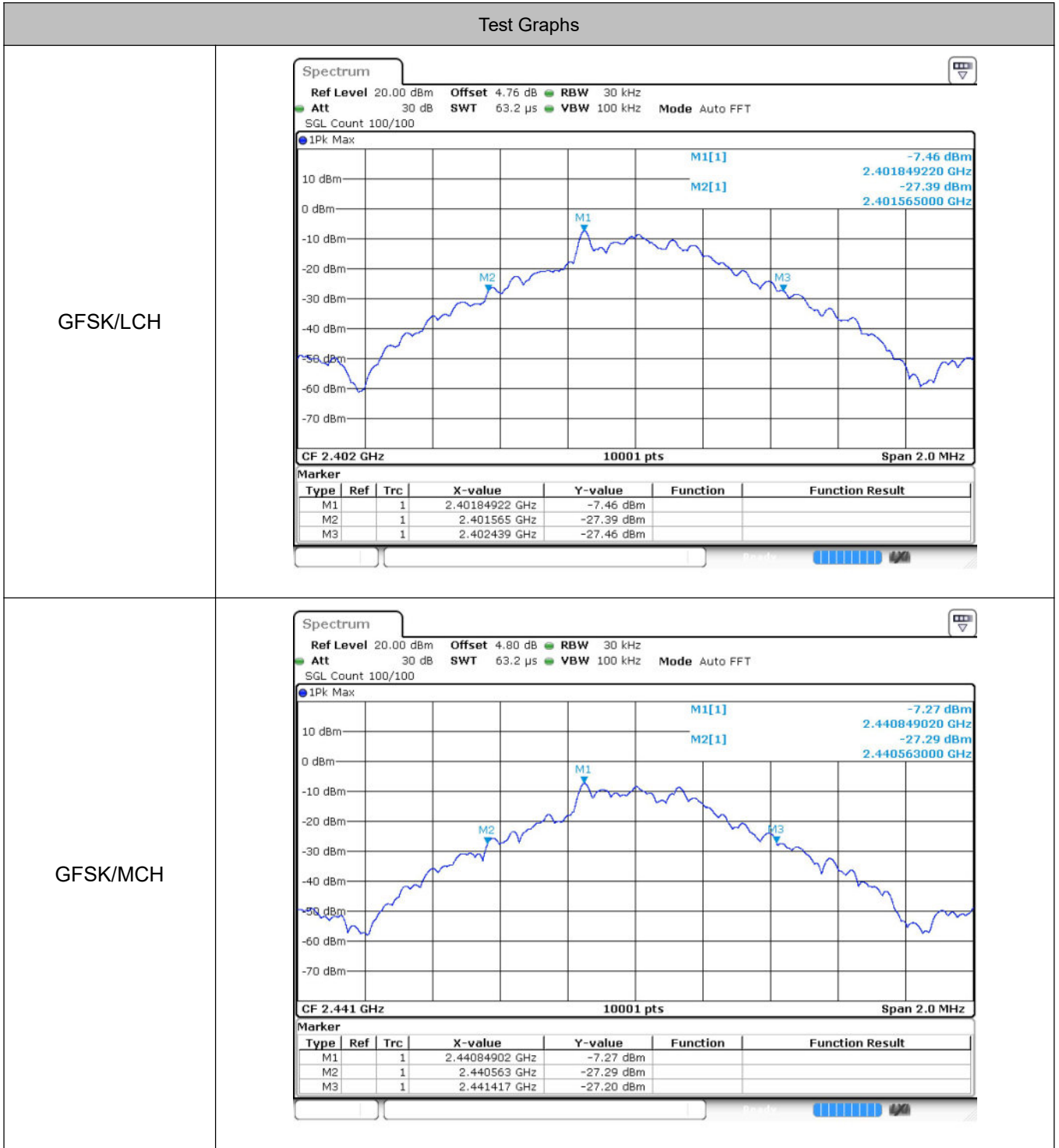


3 20dB Bandwidth

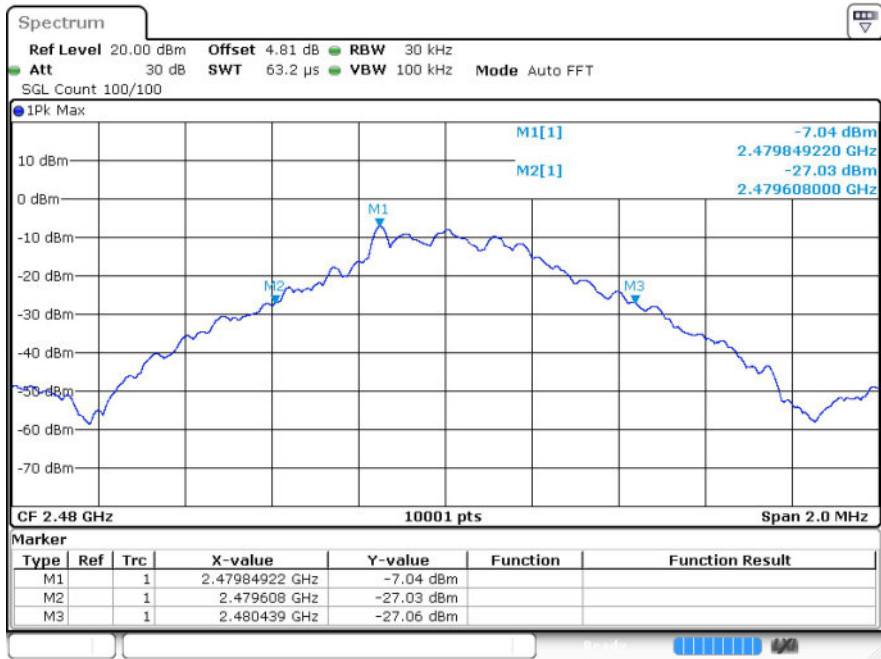
3.1 Test Result

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.874	Not Specified	Pass
	MCH	0.854	Not Specified	Pass
	HCH	0.831	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.215	Not Specified	Pass
	MCH	1.246	Not Specified	Pass
	HCH	1.234	Not Specified	Pass
8DPSK	LCH	1.244	Not Specified	Pass
	MCH	1.208	Not Specified	Pass
	HCH	1.196	Not Specified	Pass

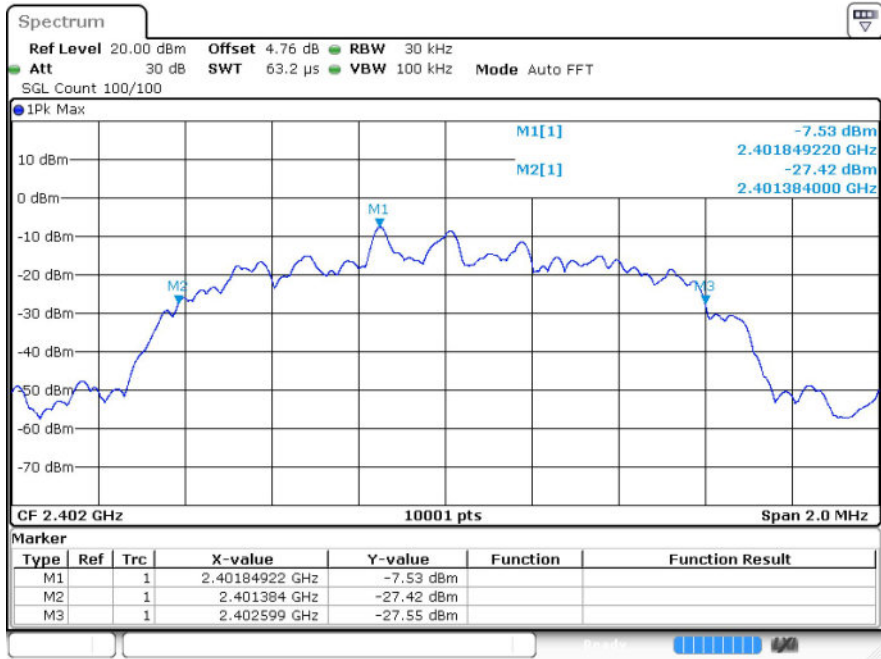
3.2 Test Graphs



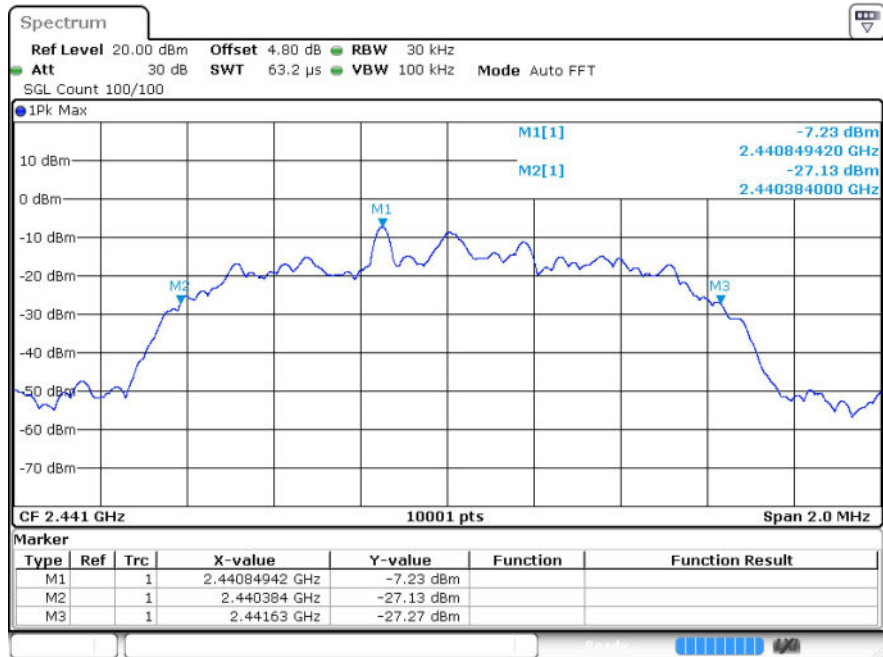
GFSK/HCH



$\pi/4$ DQPSK/LCH



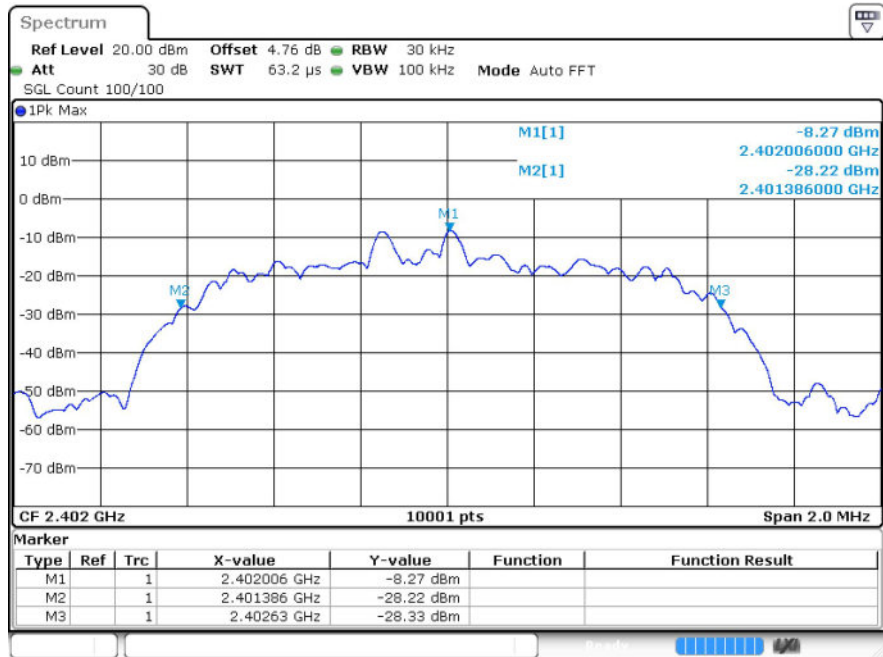
$\pi/4$ DQPSK/MCH



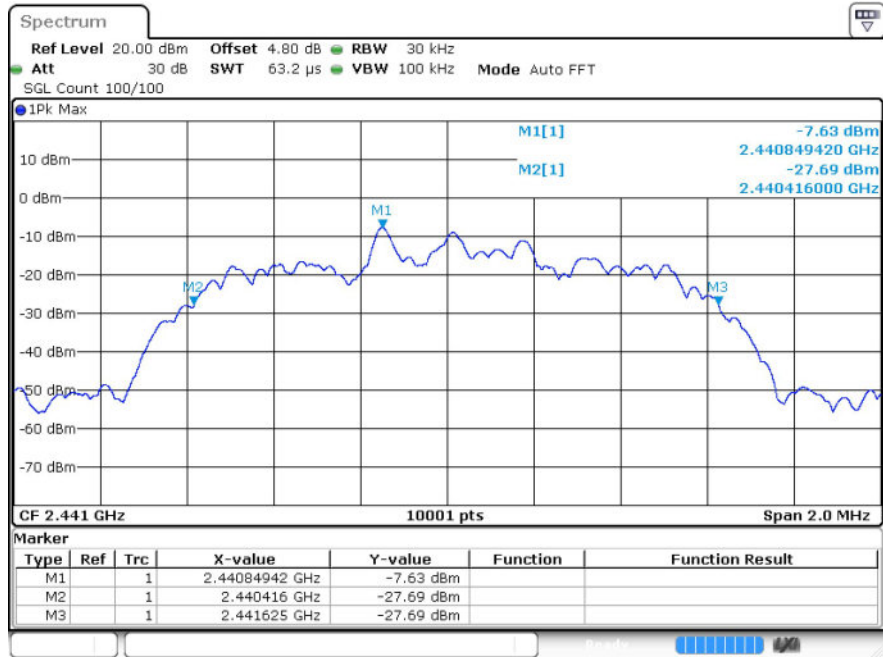
$\pi/4$ DQPSK/HCH



8DPSK/LCH

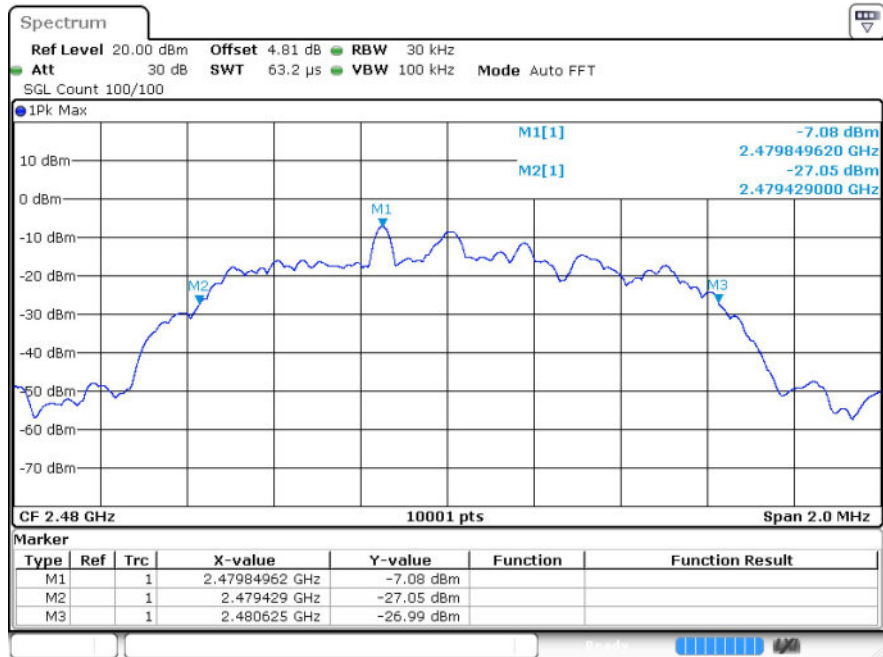


8DPSK/MCH





8DPSK/HCH

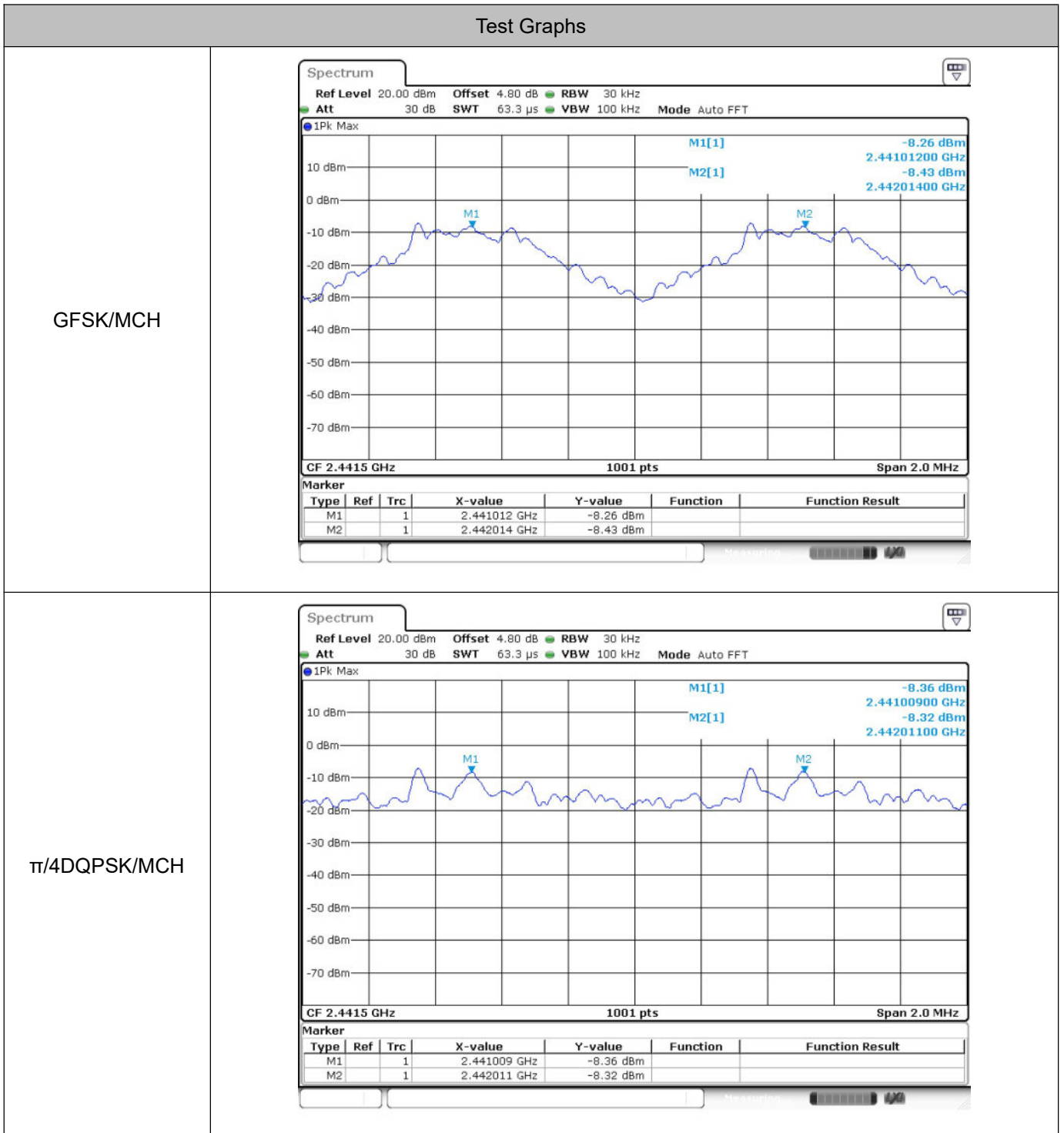


4 Carrier Frequency Separation

4.1 Test Result

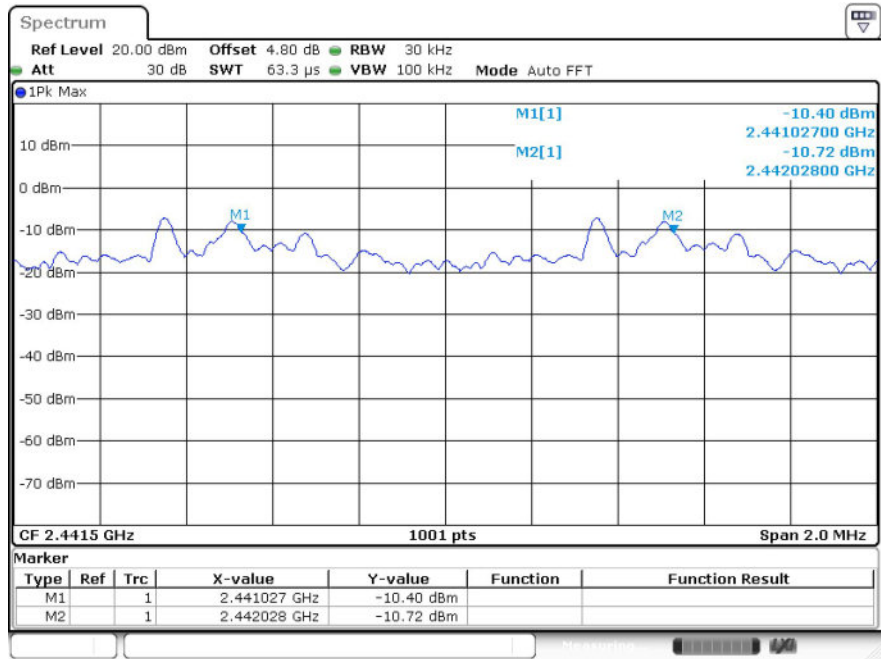
Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.002	0.569	Pass
$\pi/4$ DQPSK	MCH	1.002	0.831	Pass
8DPSK	MCH	1.001	0.805	Pass

4.2 Test Graphs





8DPSK/MCH

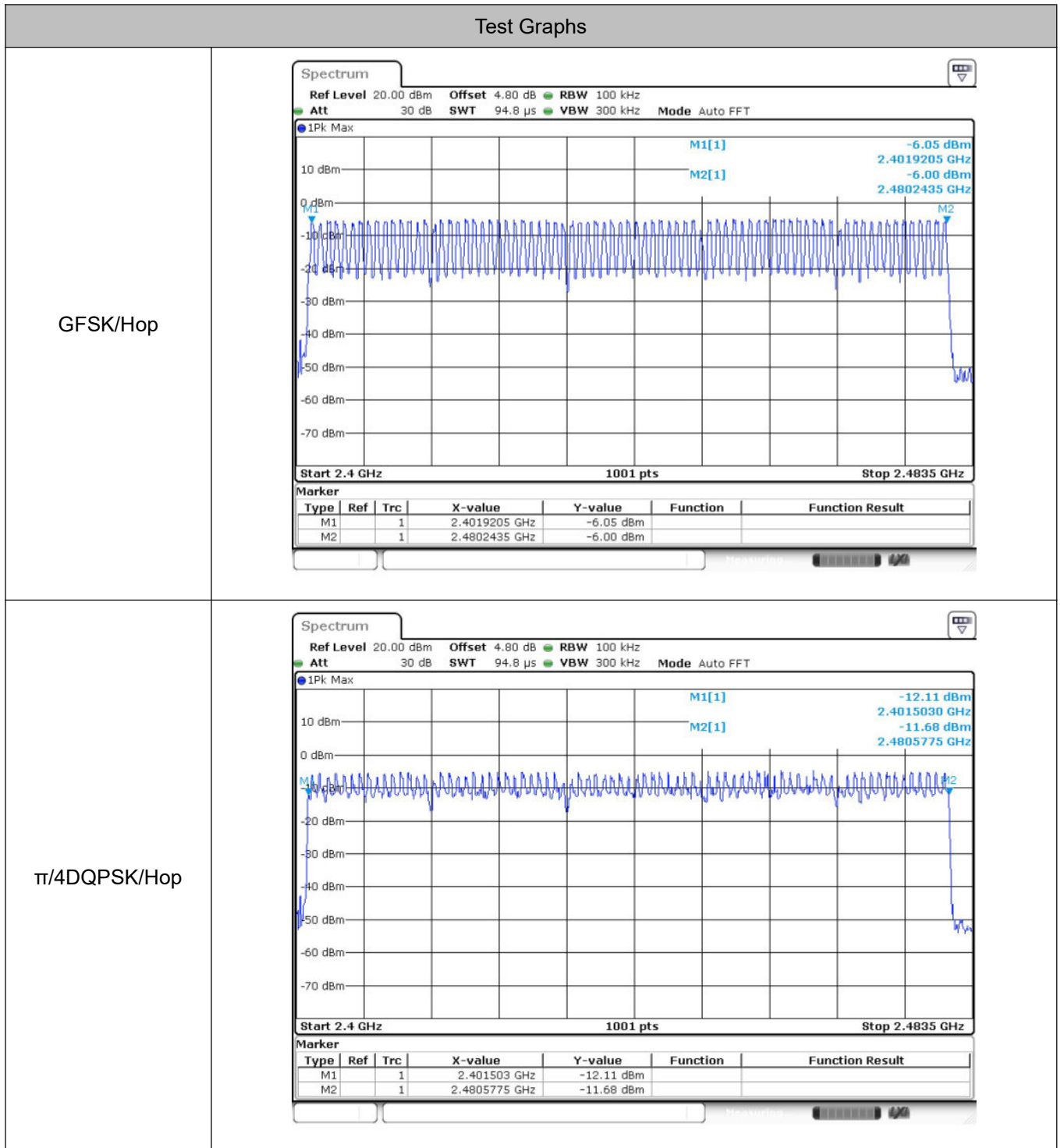


5 Hopping Channel Number

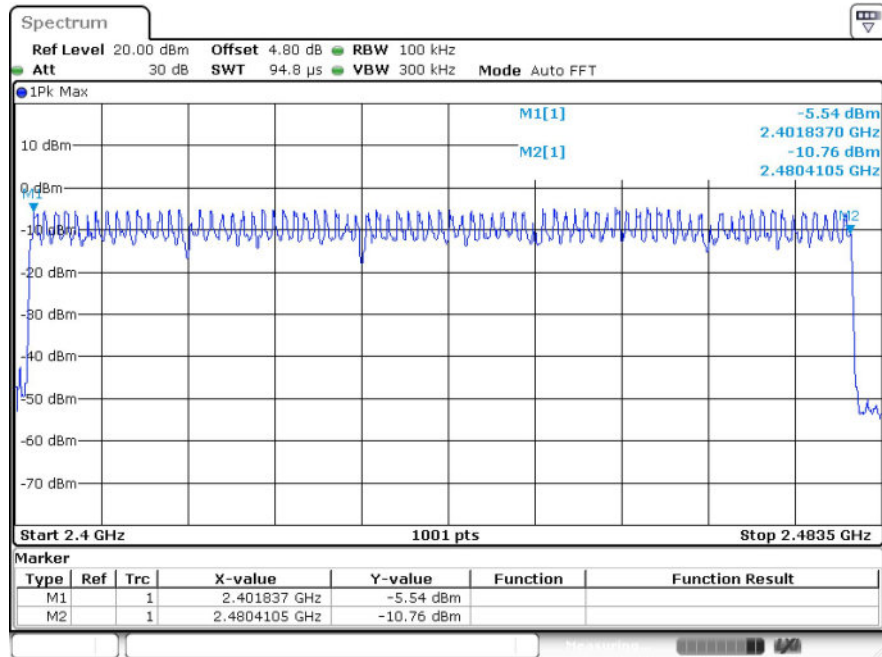
5.1 Test Result

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

5.2 Test Graphs



8DPSK/Hop

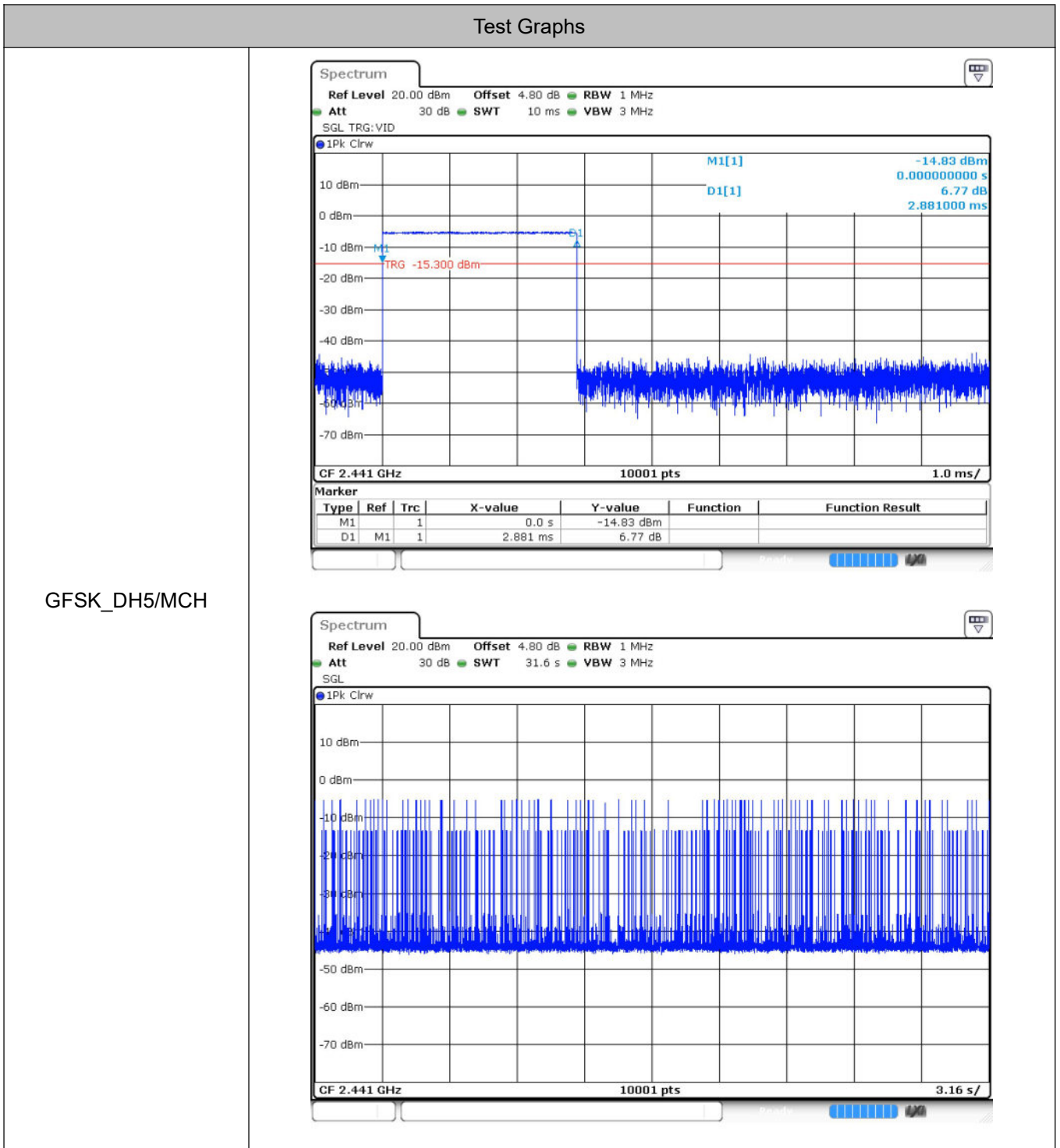


6 Dwell Time

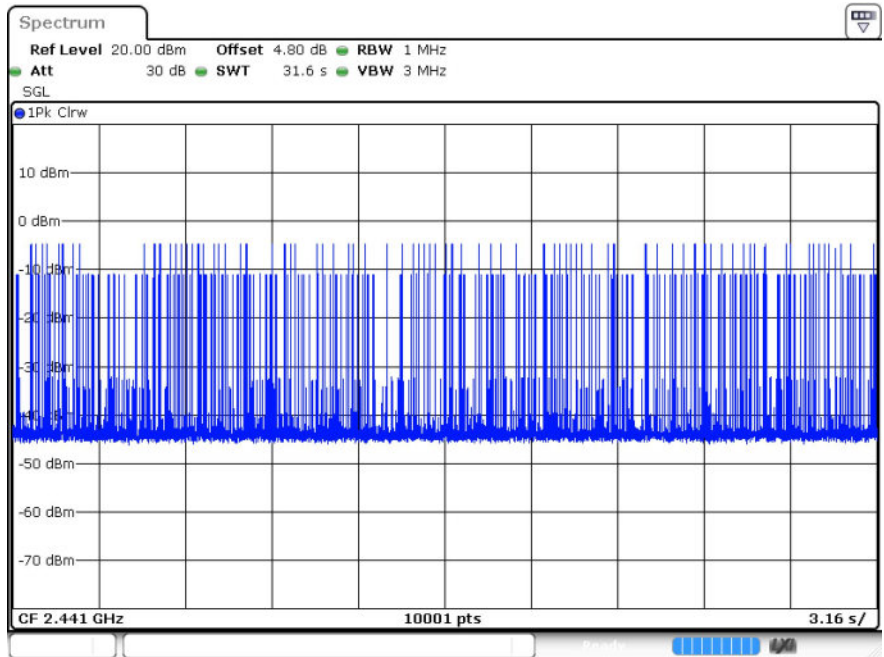
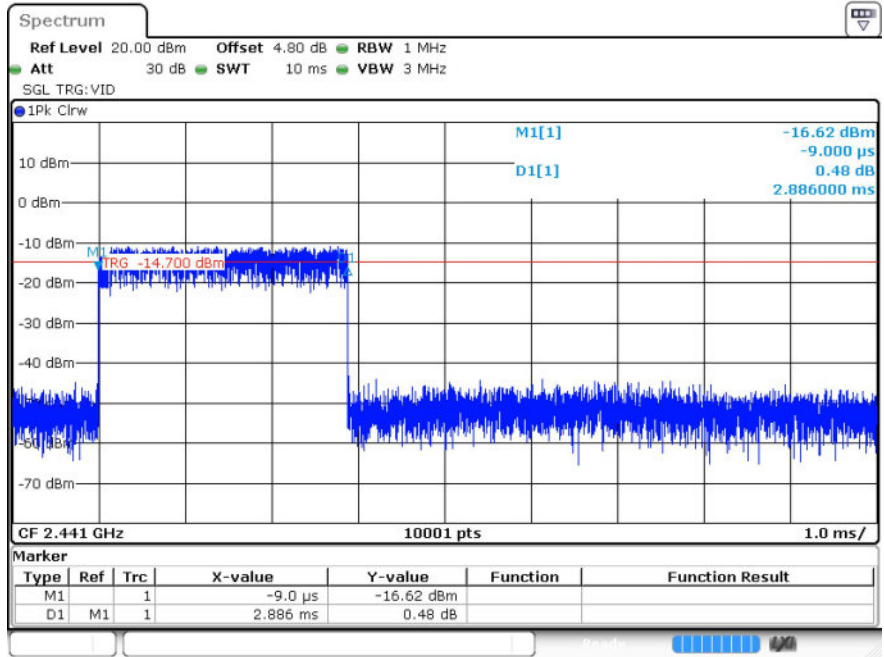
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.881	94	270.814	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.886	92	265.512	0.4	Pass
8DPSK	3DH5	MCH	2.888	94	271.472	0.4	Pass

6.2 Test Graphs

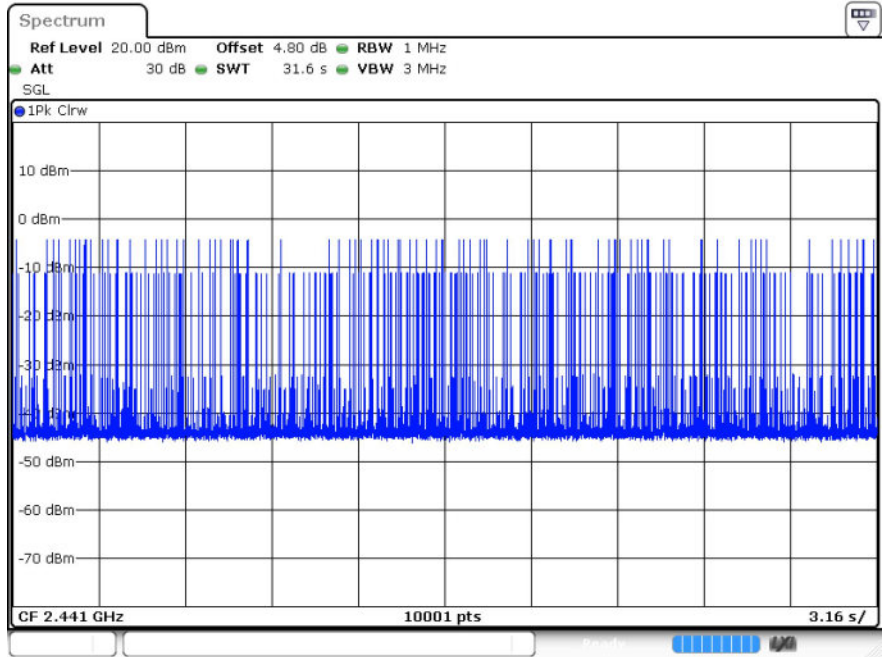
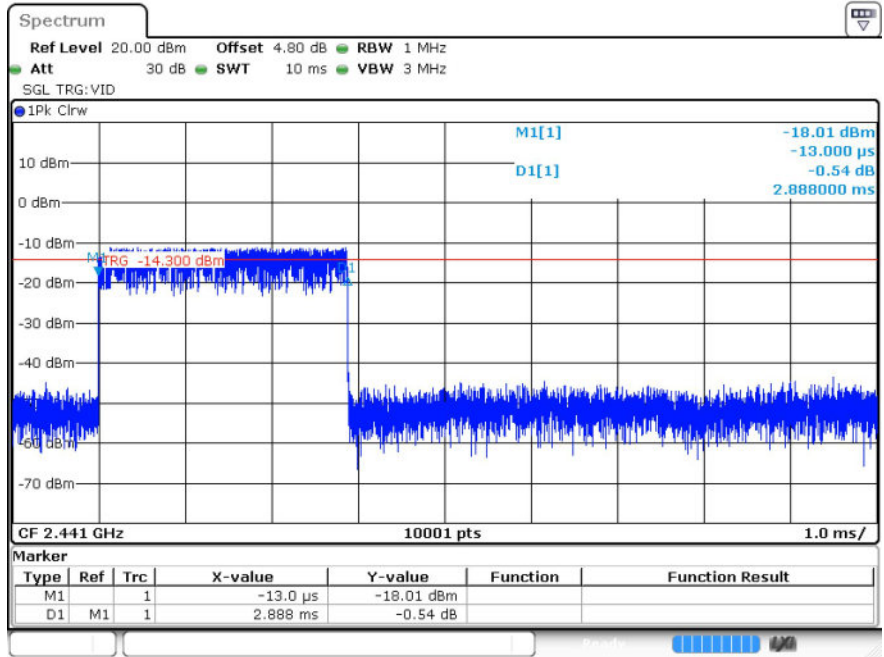


$\pi/4$ DQPSK
_2DH5/MCH





8DPSK_3DH5/MCH

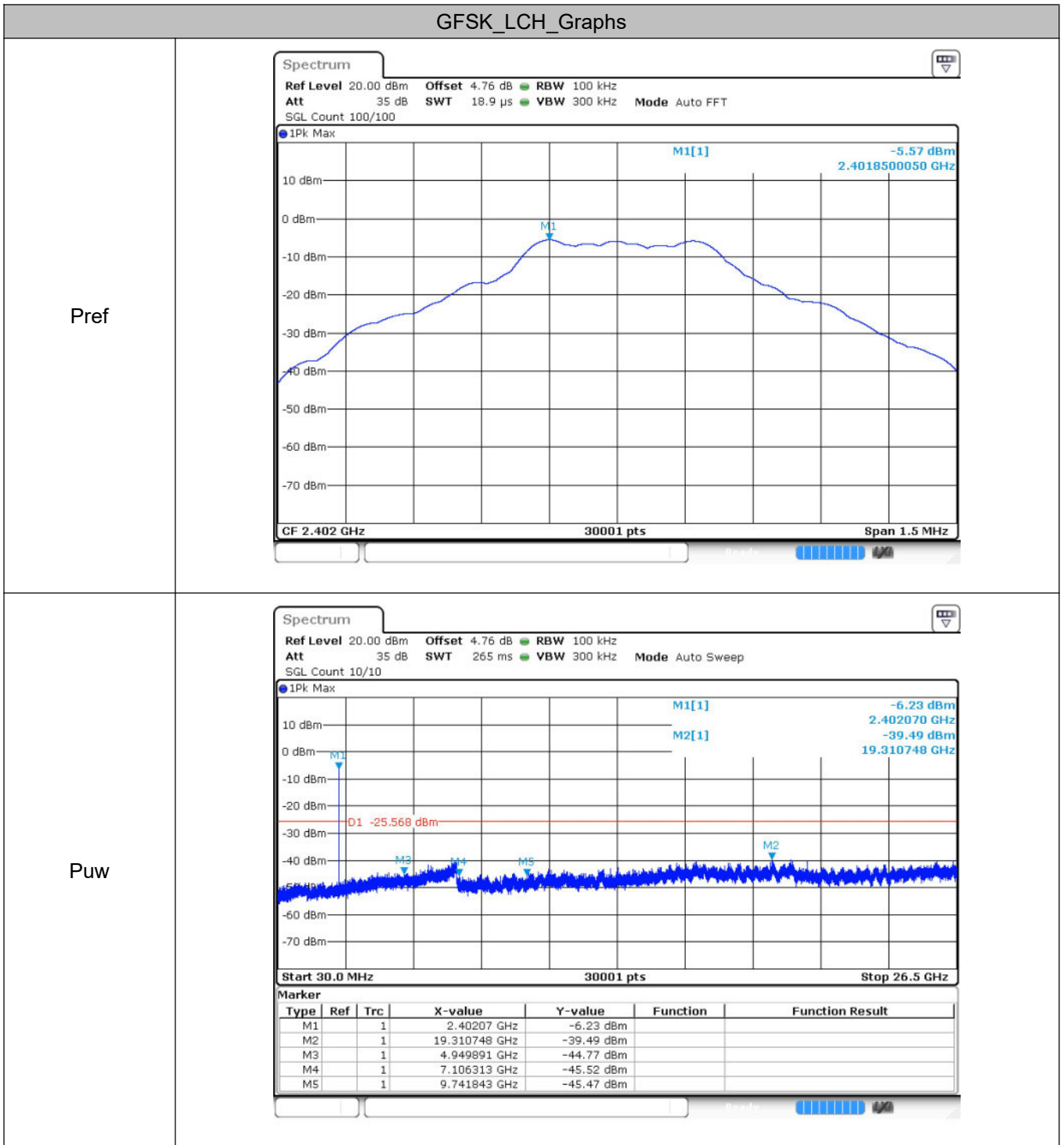


7 RF Conducted Spurious Emissions

7.1 Test Result

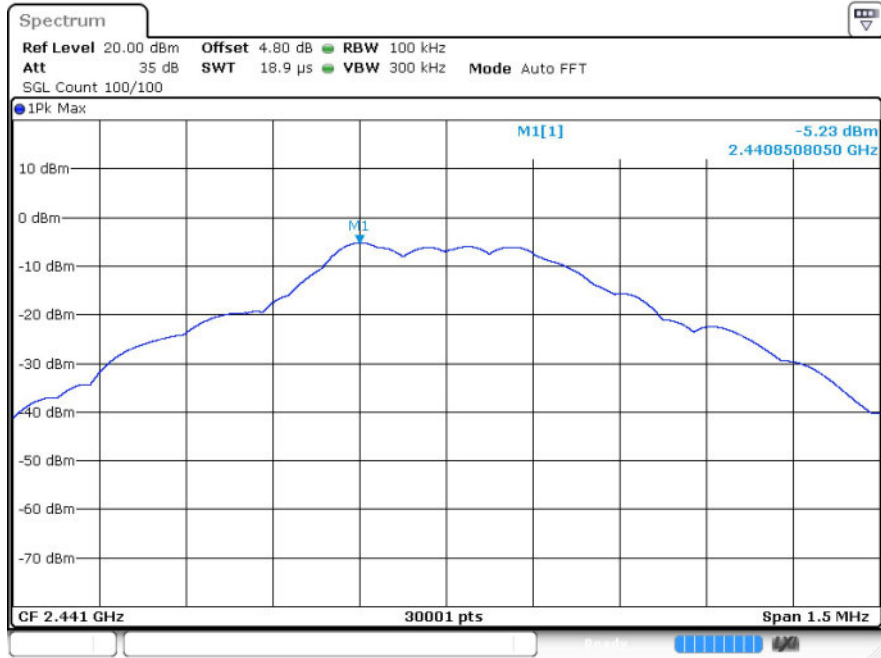
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-33.92	-20	Pass
	MCH	-33.7	-20	Pass
	HCH	-32.59	-20	Pass
$\pi/4$ DQPSK	LCH	-33.87	-20	Pass
	MCH	-33.08	-20	Pass
	HCH	-34.12	-20	Pass
8DPSK	LCH	-33.78	-20	Pass
	MCH	-32.62	-20	Pass
	HCH	-34	-20	Pass

7.2 Test Graphs

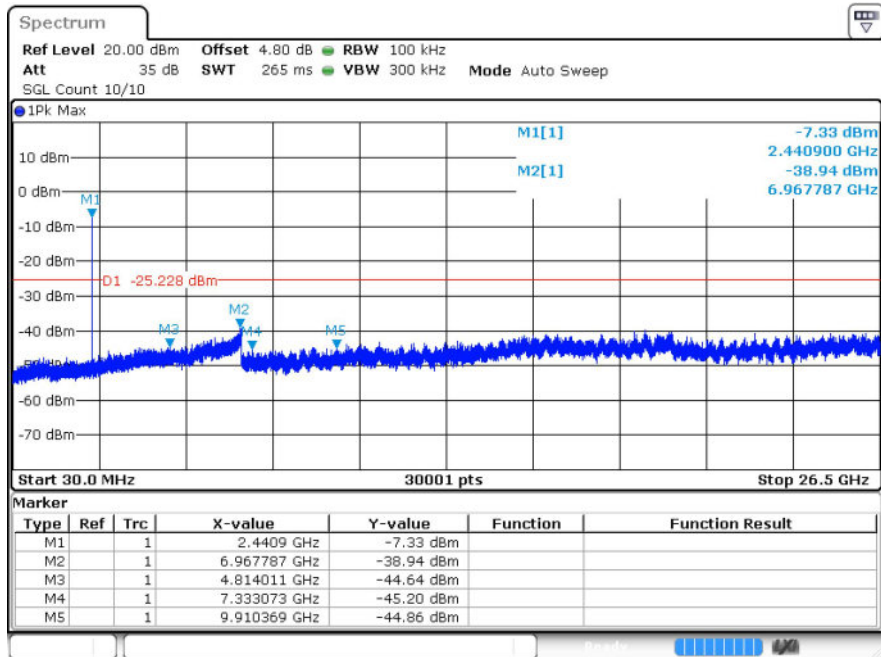


GFSK_MCH_Graphs

Pref

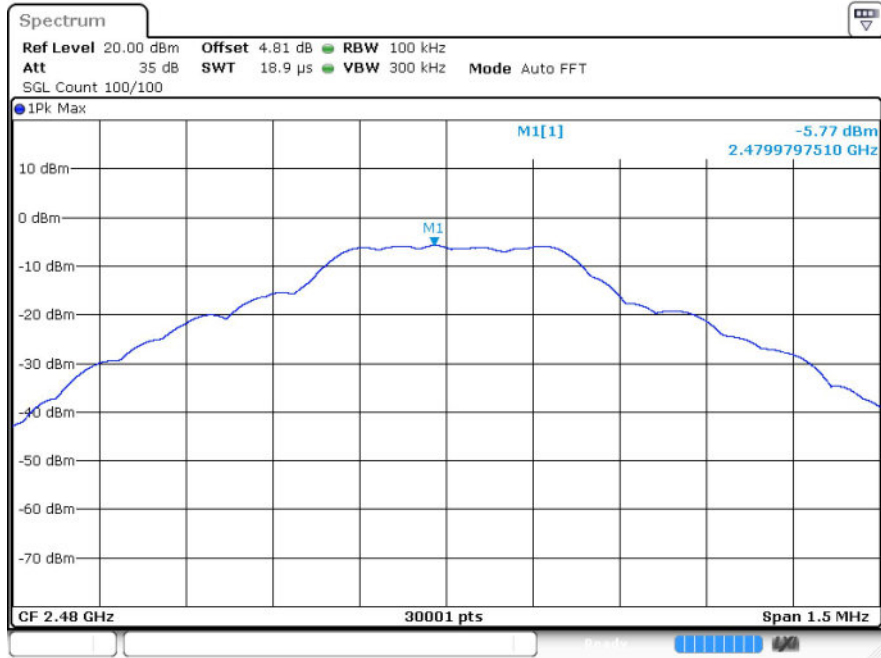


Puw



GFSK_HCH_Graphs

Pref



Puw

