



Appendix A

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

Product Name: Air-Powered Stem Building Toys

Trade Mark: N/A

Test Model: AWALVY-A

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung



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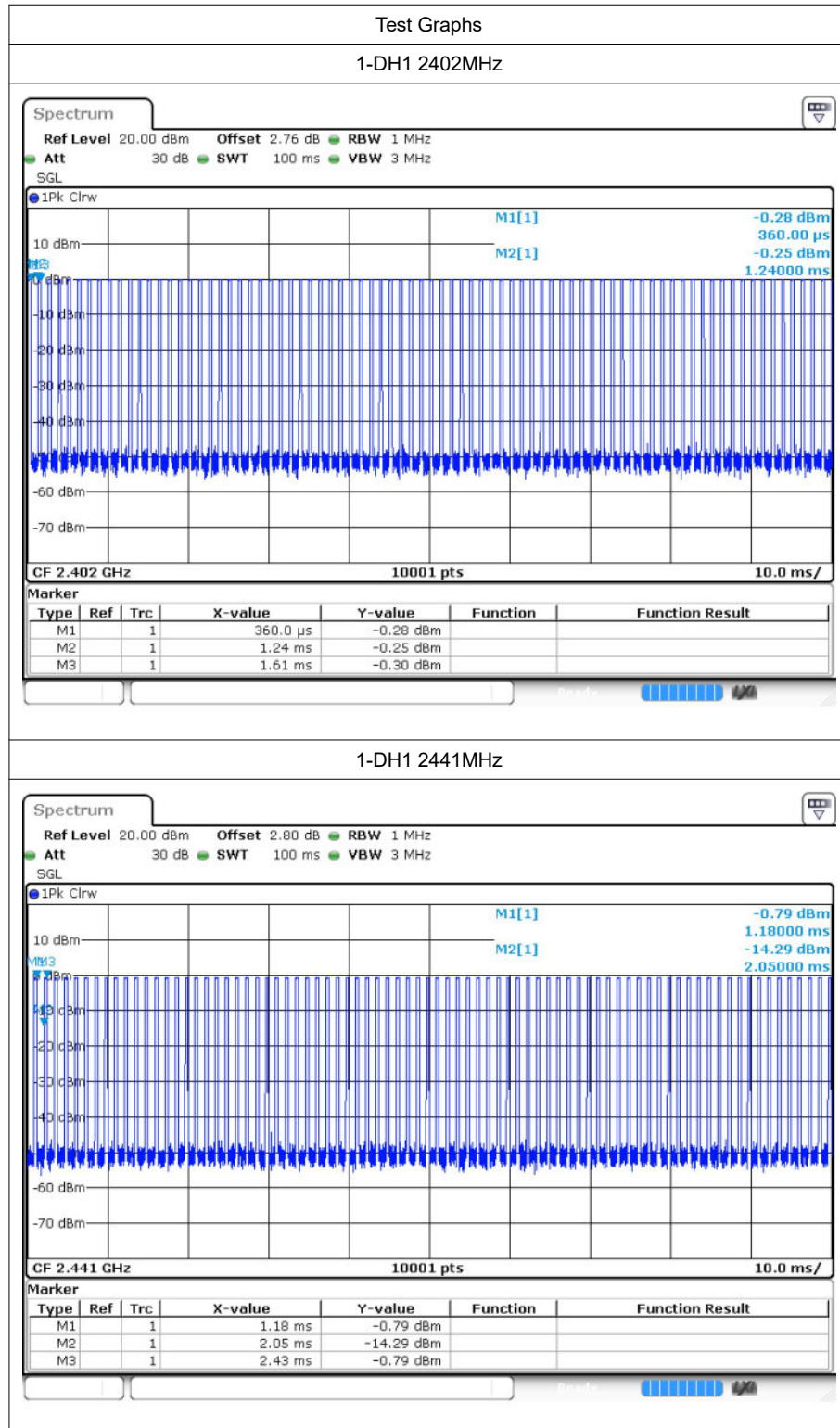
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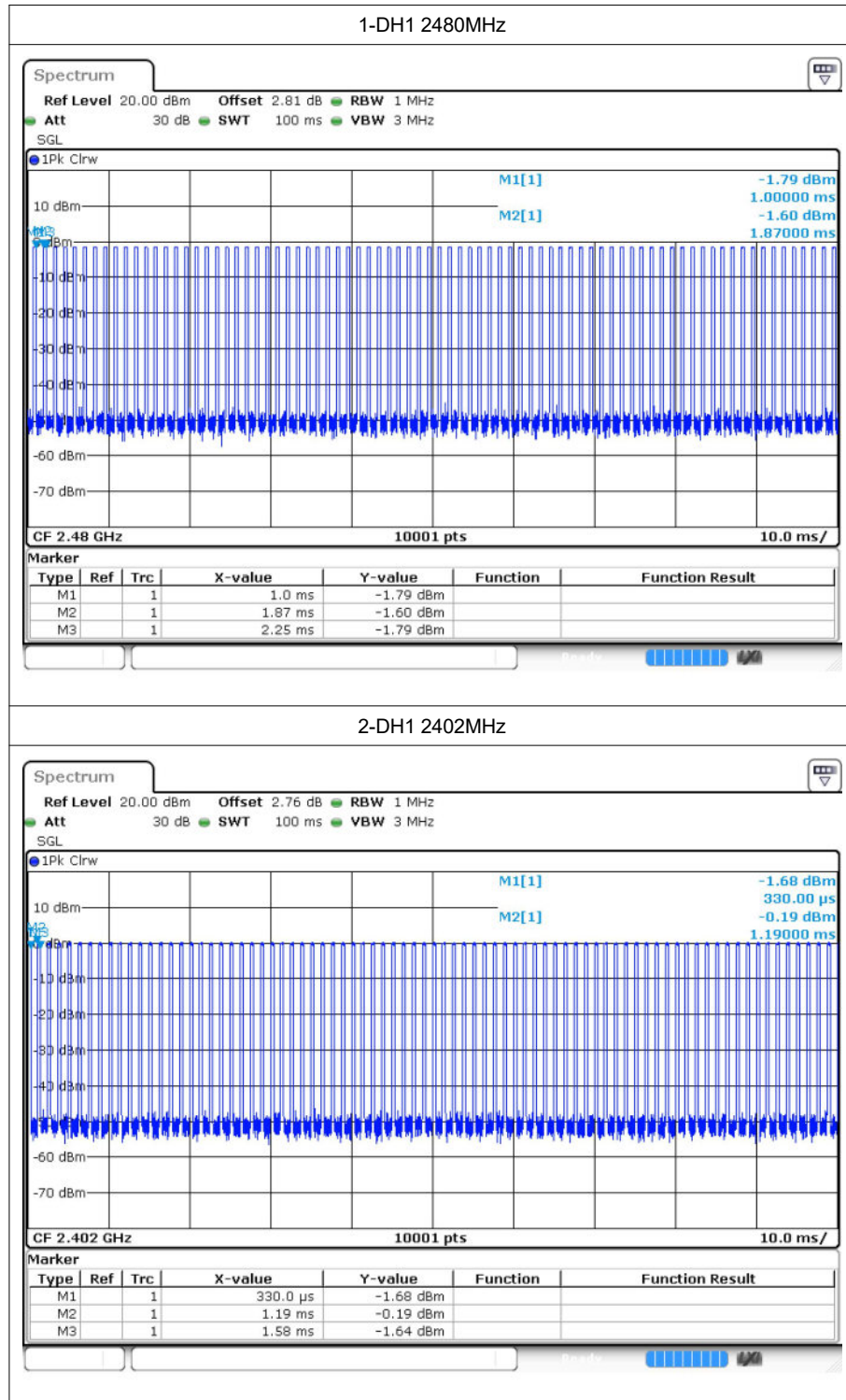
1 Duty Cycle

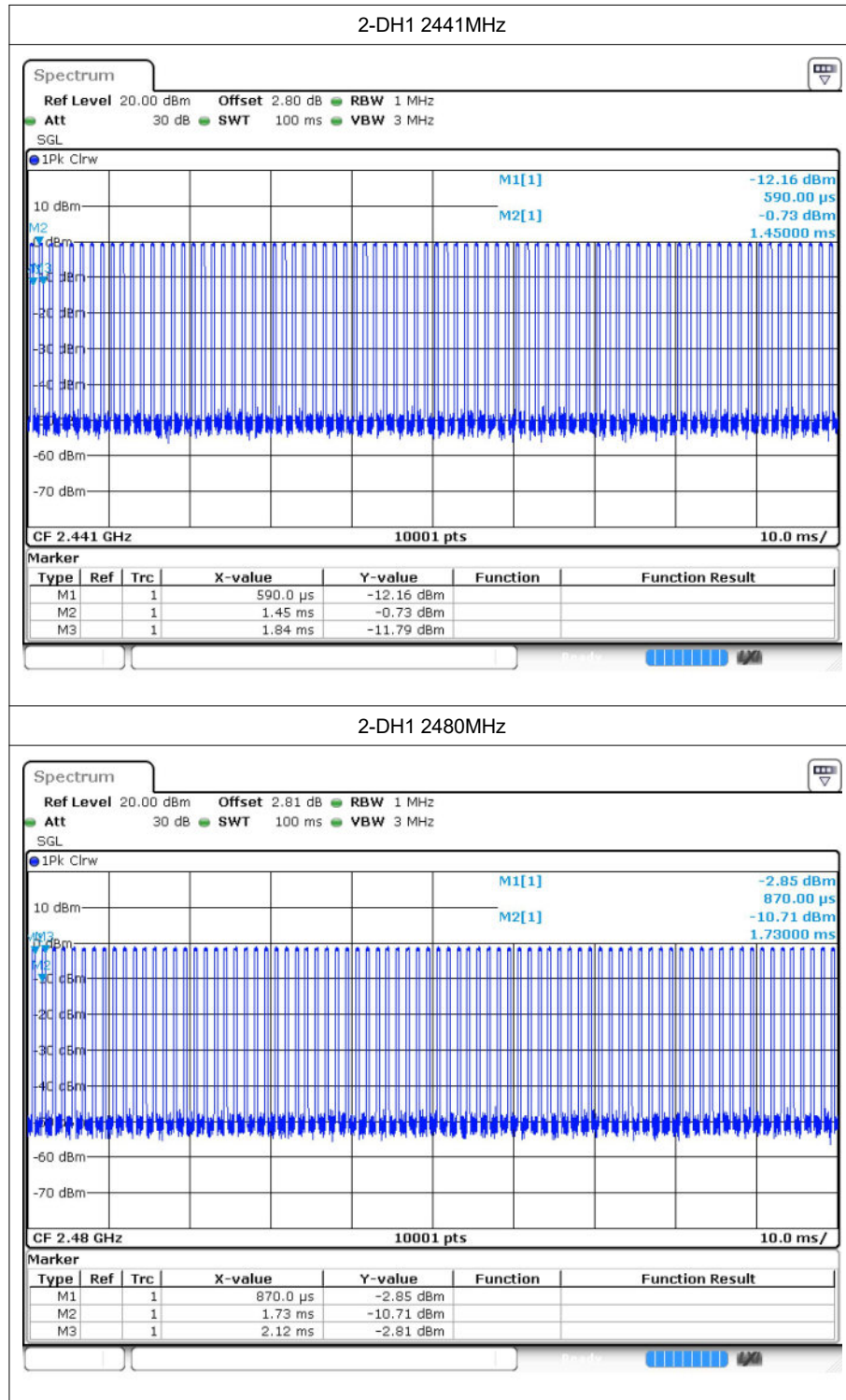
1.1 Test Result

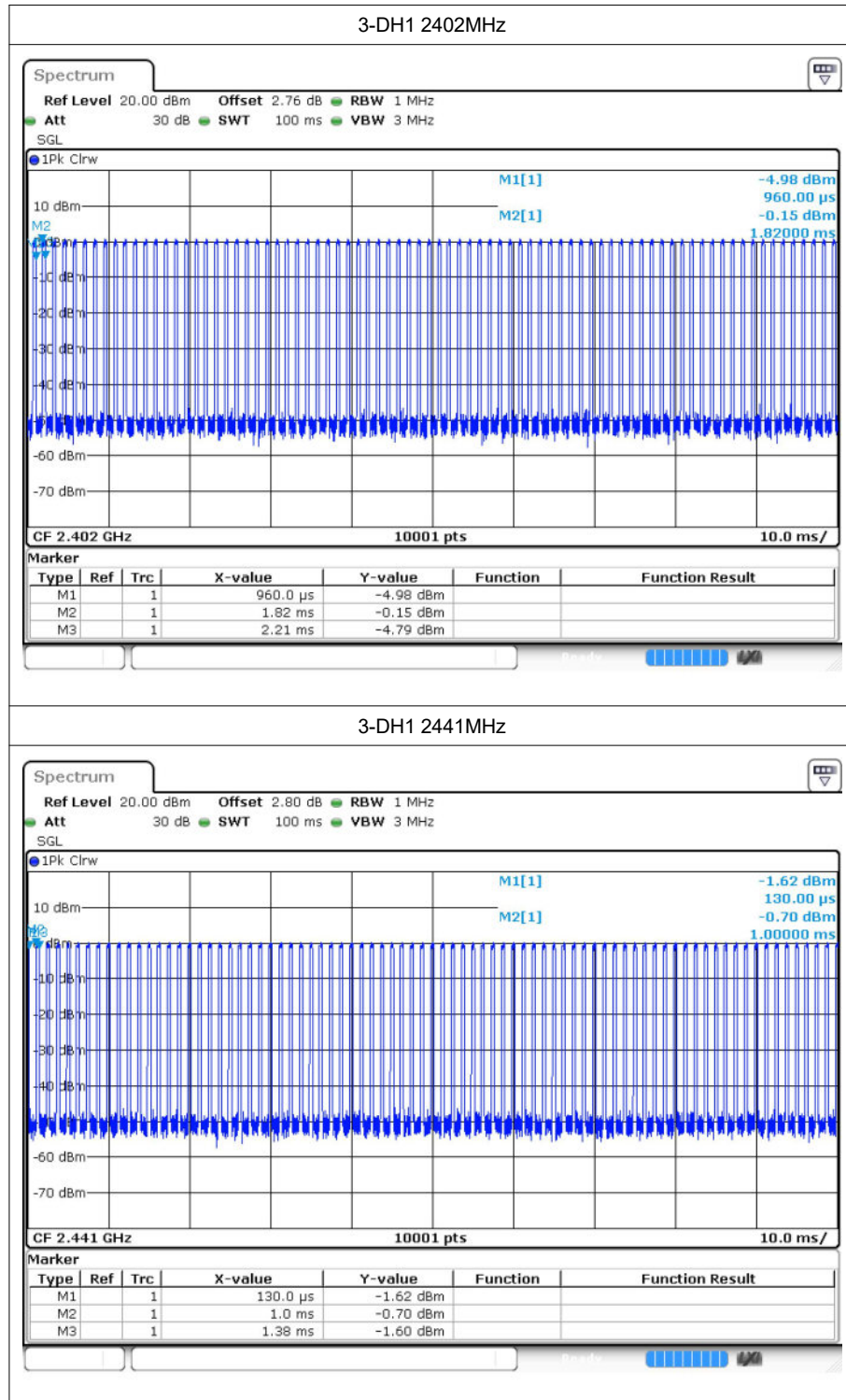
Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	30.64	5.14	2.7
1-DH1	2441	30.56	5.15	2.63
1-DH1	2480	31.2	5.06	2.63
2-DH1	2402	32.01	4.95	2.56
2-DH1	2441	32	4.95	2.56
2-DH1	2480	31.44	5.03	2.56
3-DH1	2402	32	4.95	2.56
3-DH1	2441	31.78	4.98	2.63
3-DH1	2480	31.59	5	2.56

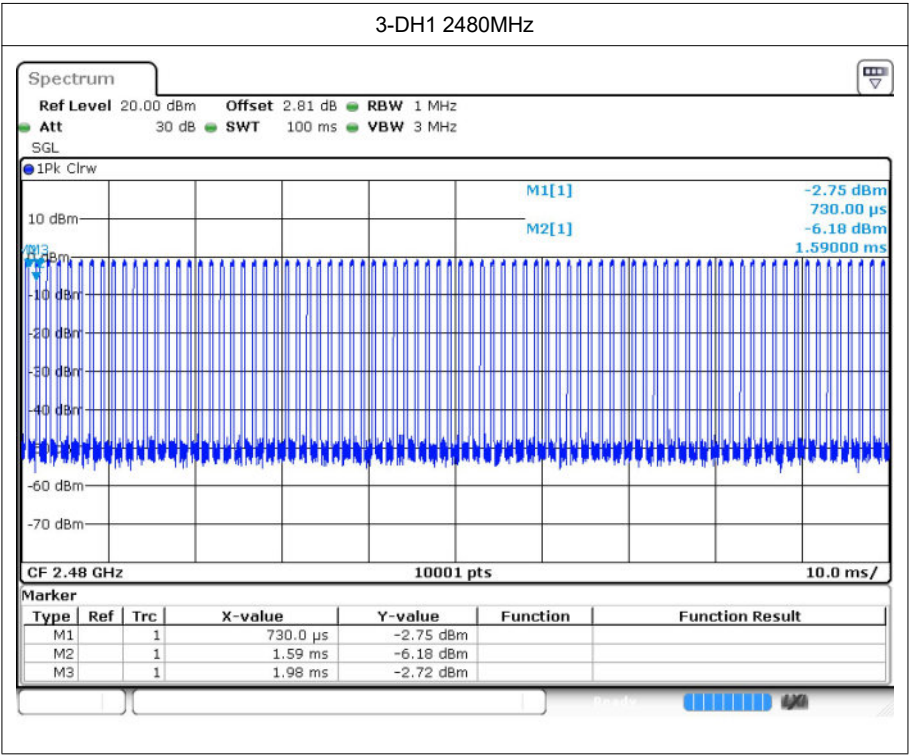
1.2 Test Graphs









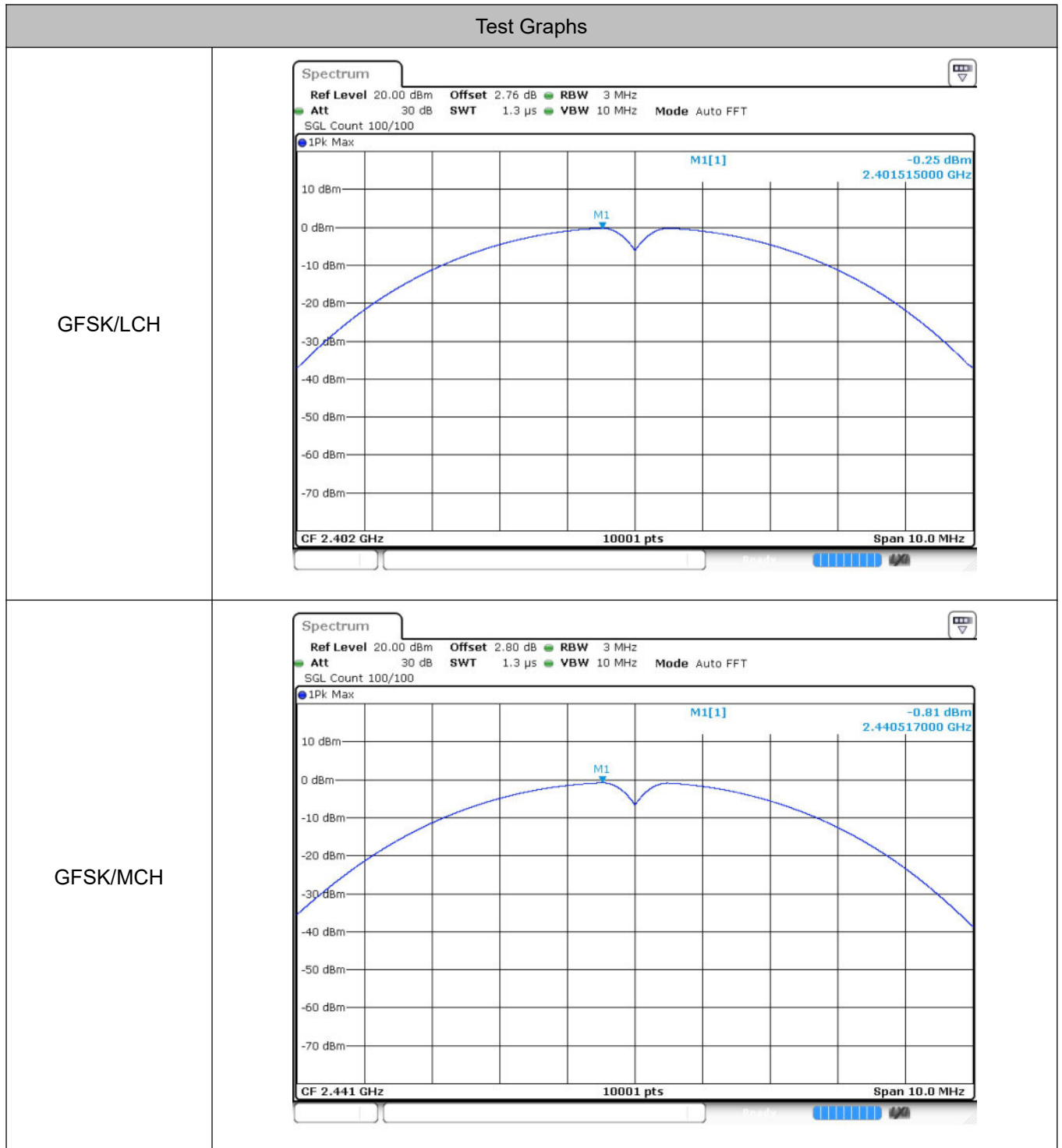


2 Maximum Conducted Peak Output Power

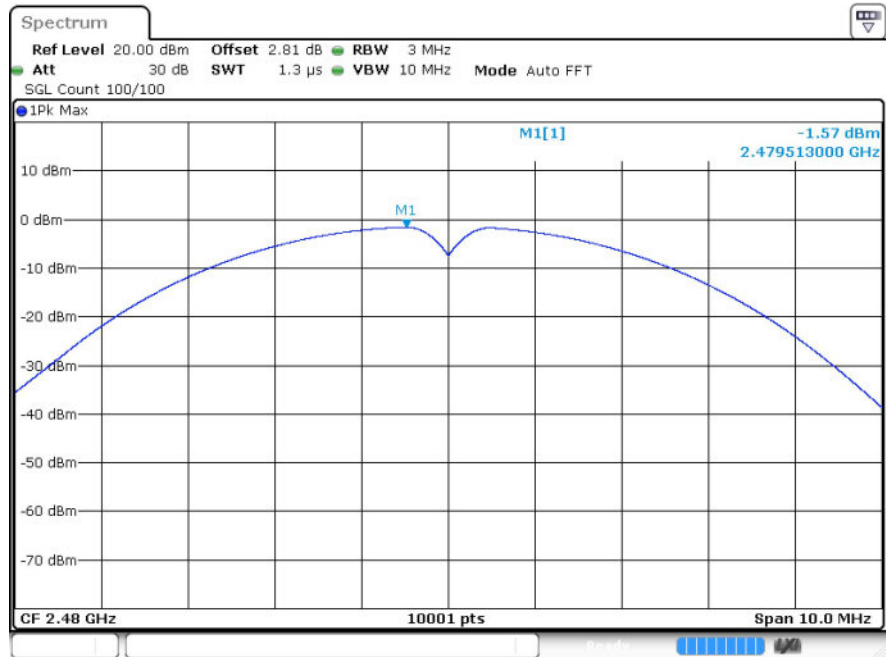
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.25	21	Pass
	MCH	-0.81	21	Pass
	HCH	-1.57	21	Pass
$\pi/4$ DQPSK	LCH	-0.07	21	Pass
	MCH	-0.31	21	Pass
	HCH	-0.89	21	Pass
8DPSK	LCH	0.56	21	Pass
	MCH	-0.58	21	Pass
	HCH	-1.13	21	Pass

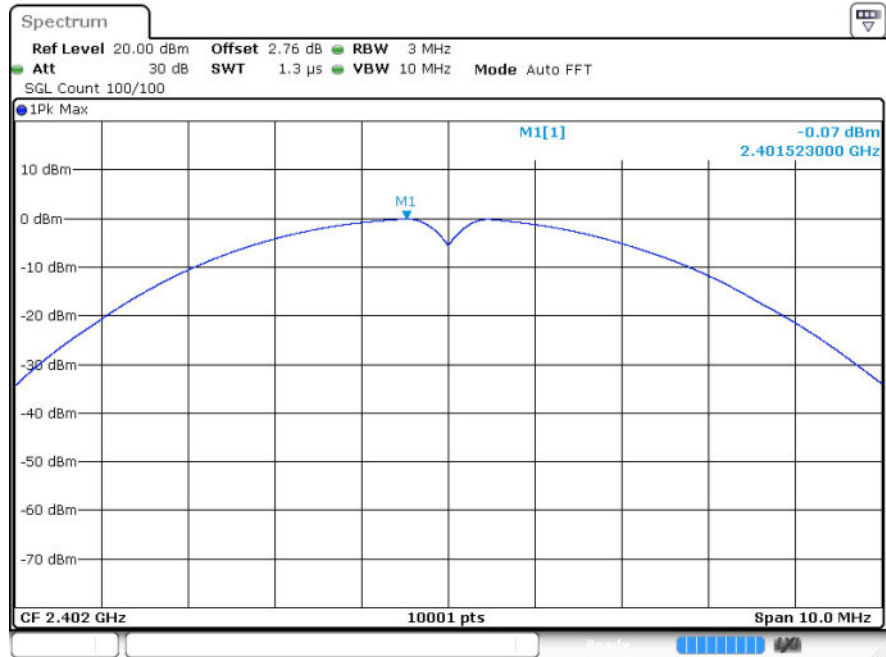
2.2 Test Graphs



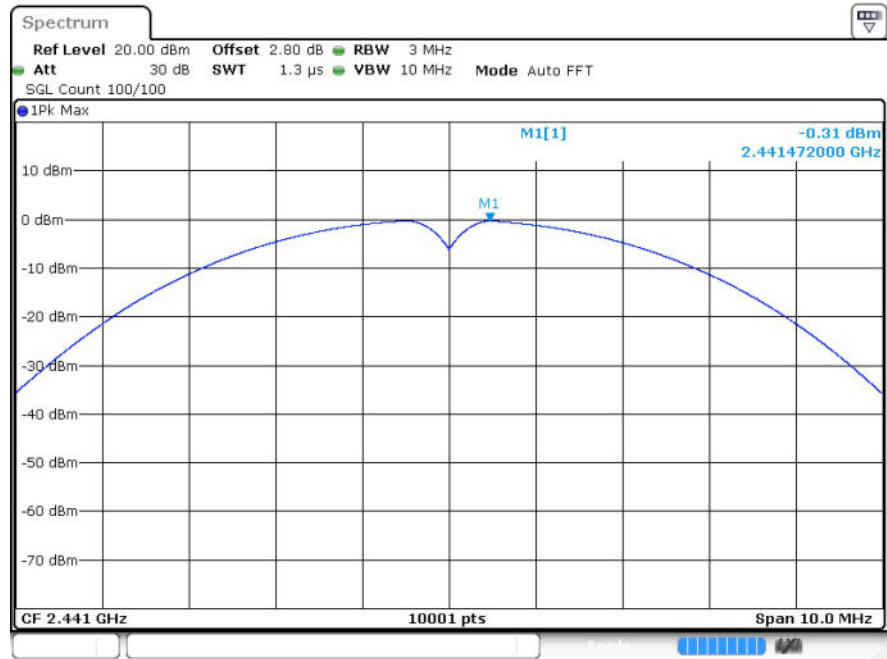
GFSK/HCH



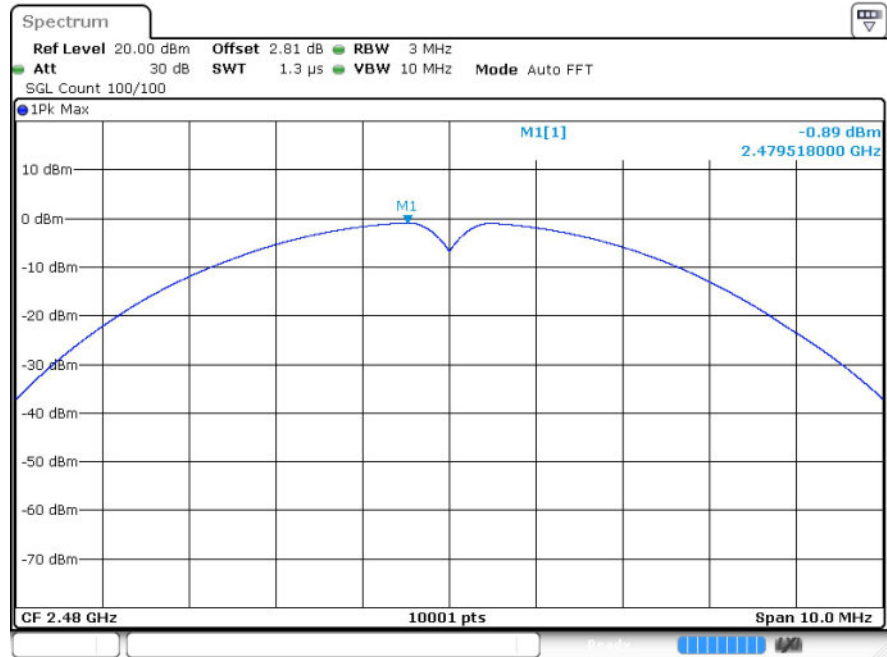
$\pi/4$ DQPSK/LCH



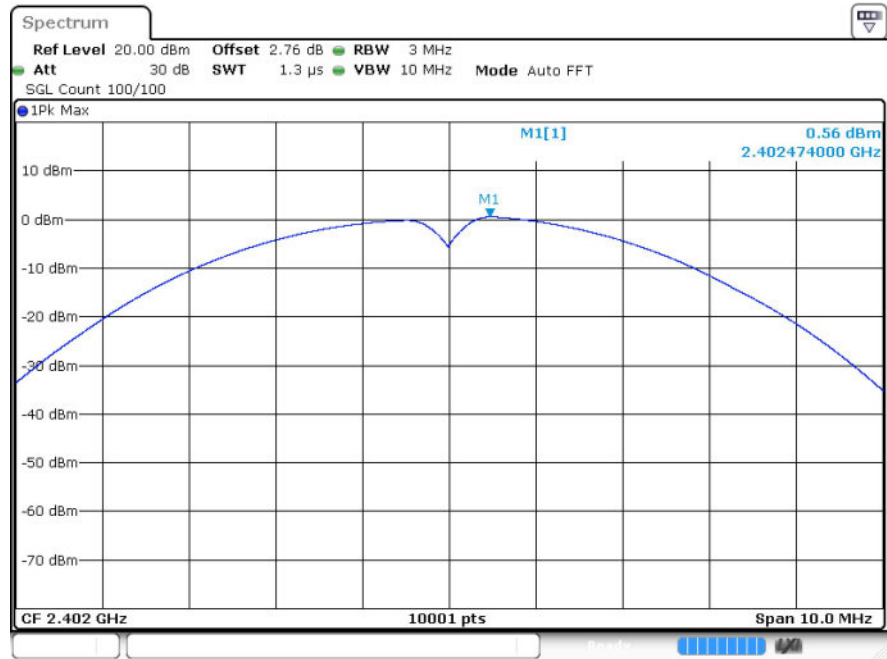
$\pi/4$ DQPSK/MCH



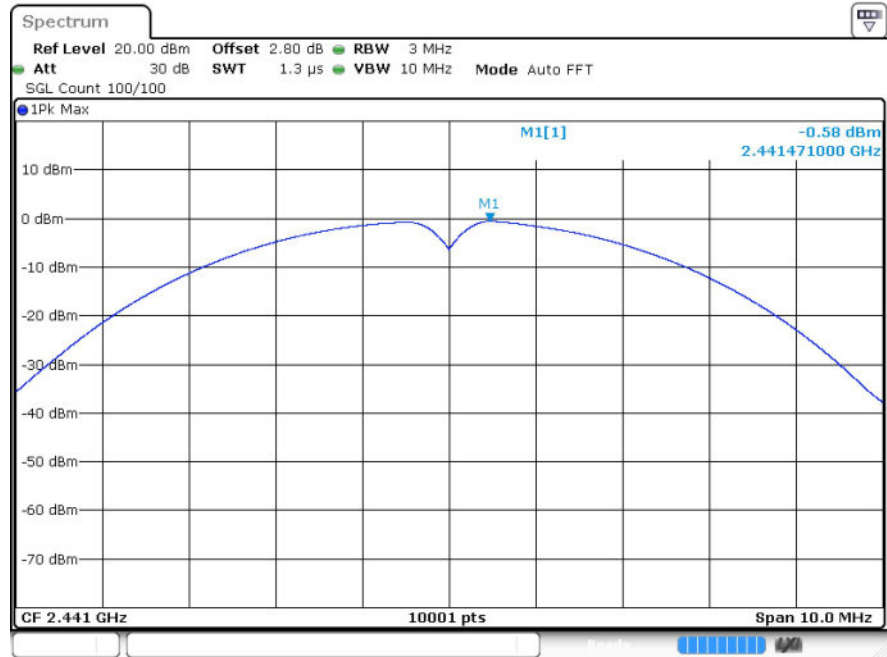
$\pi/4$ DQPSK/HCH



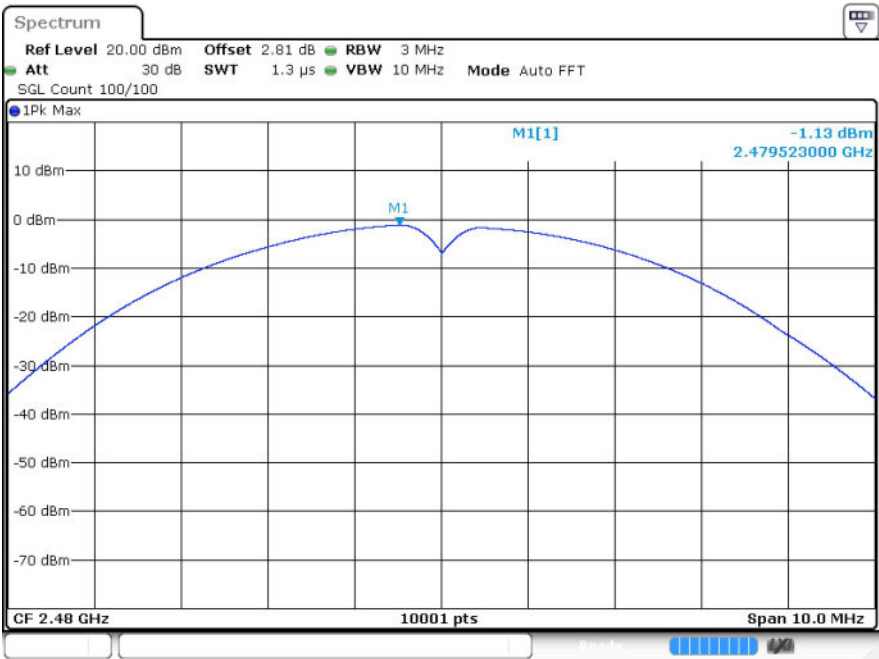
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



3 20dB Bandwidth

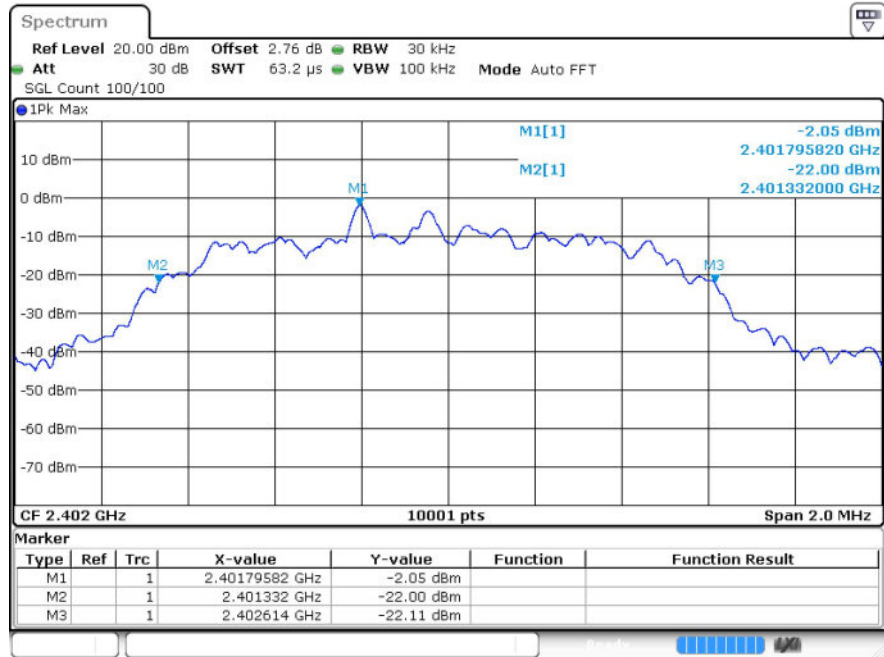
3.1 Test Result

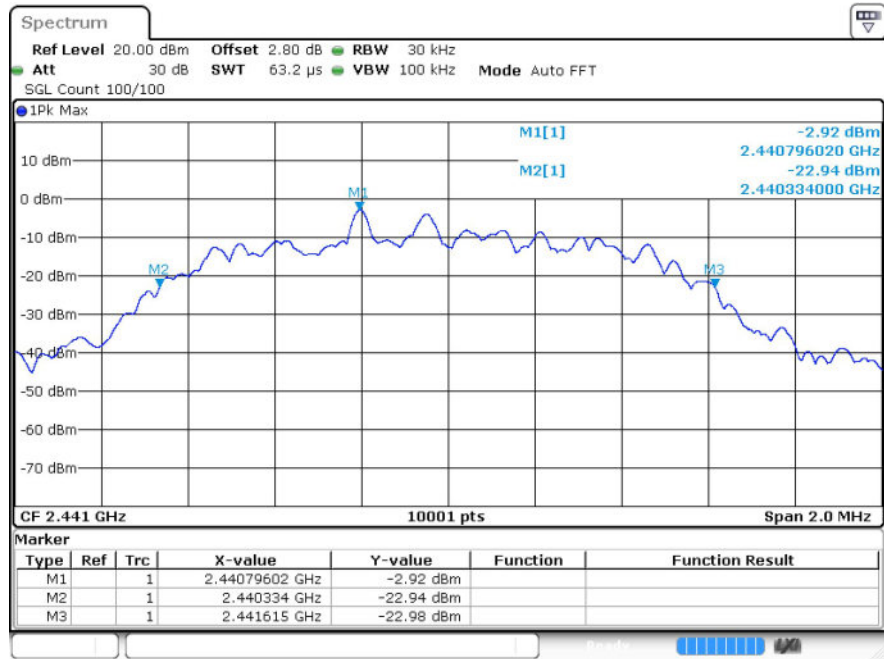
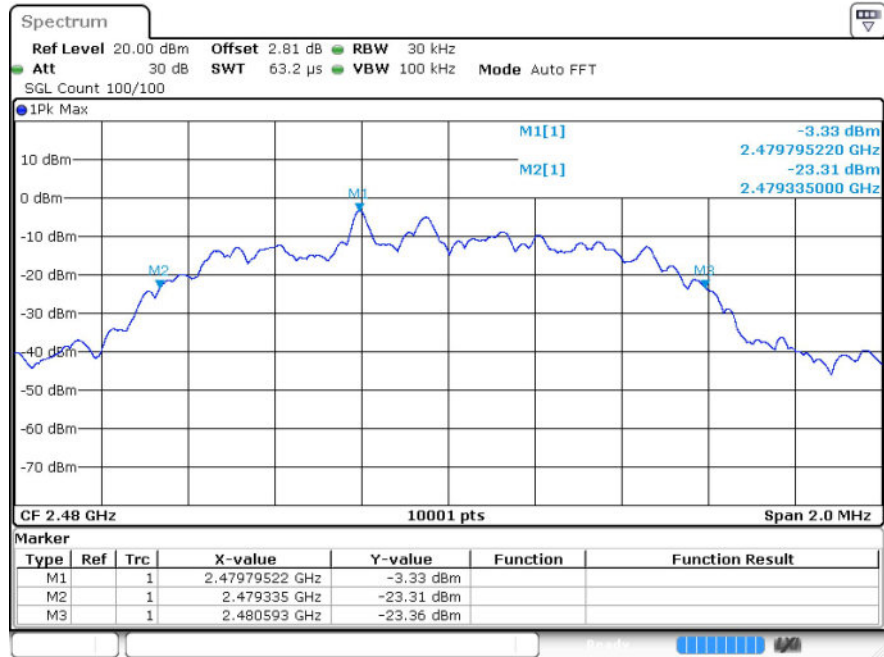
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.019	Not Specified	Pass
	MCH	1.016	Not Specified	Pass
	HCH	1.021	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.282	Not Specified	Pass
	MCH	1.28	Not Specified	Pass
	HCH	1.258	Not Specified	Pass
8DPSK	LCH	1.247	Not Specified	Pass
	MCH	1.232	Not Specified	Pass
	HCH	1.211	Not Specified	Pass

3.2 Test Graphs

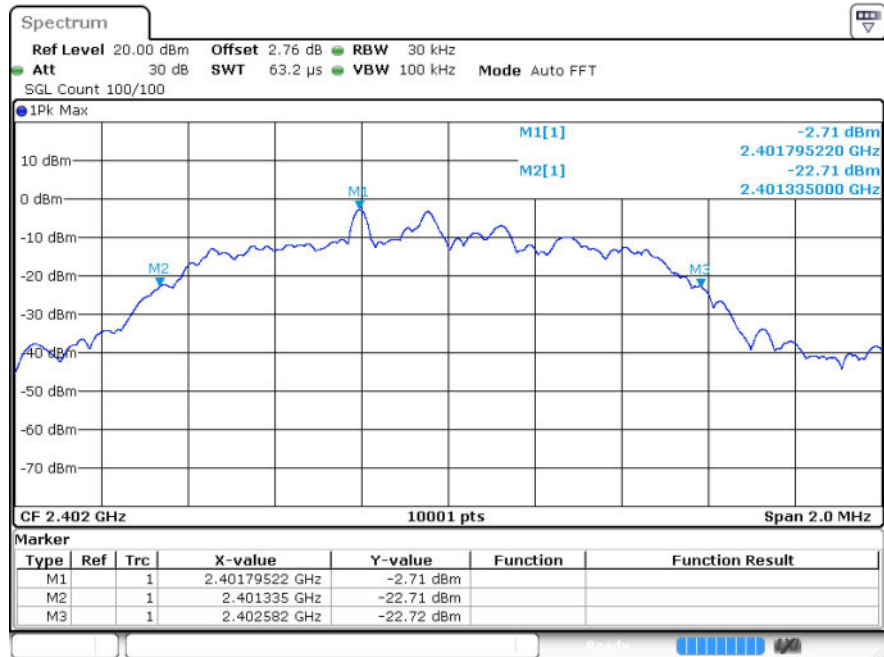


GFSK/HCH

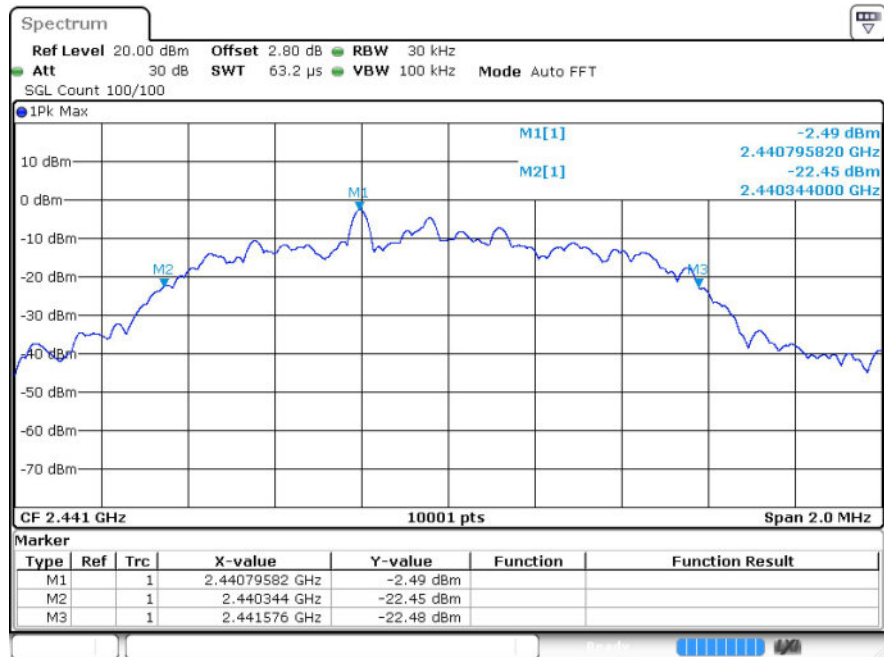

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


8DPSK/LCH



8DPSK/MCH





8DPSK/HCH

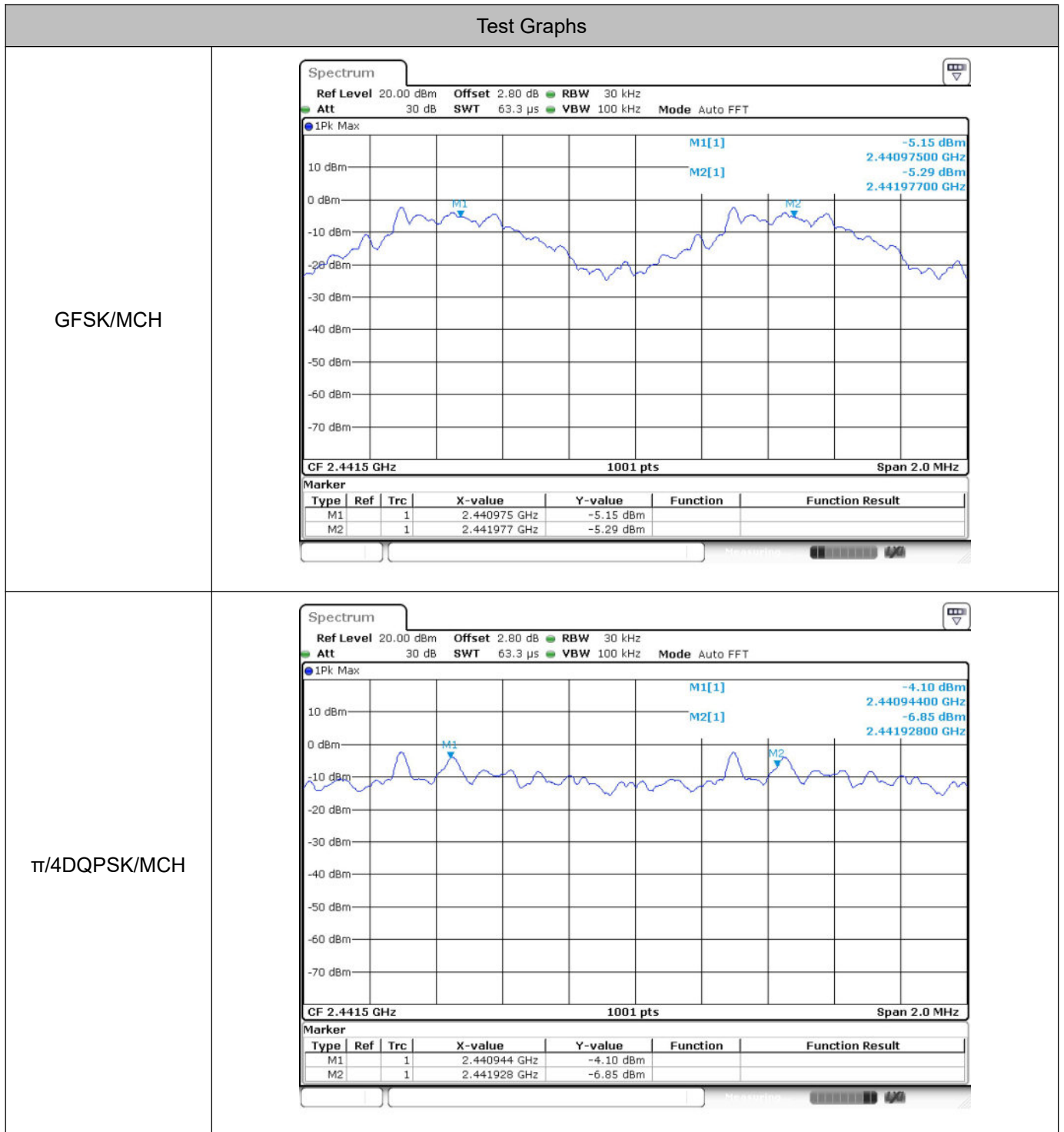


4 Carrier Frequency Separation

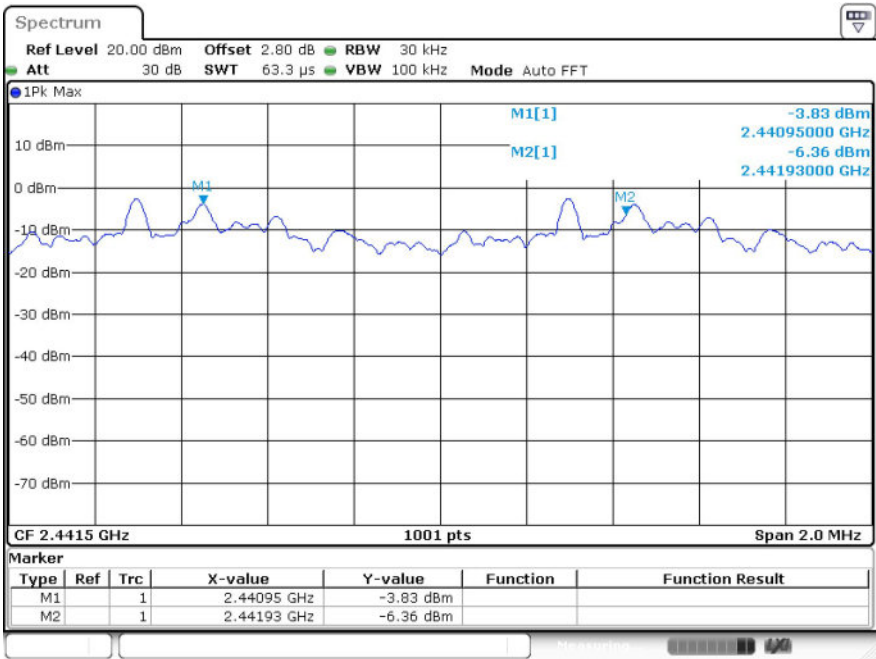
4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.002	0.677	Pass
$\pi/4$ DQPSK	MCH	0.984	0.853	Pass
8DPSK	MCH	0.98	0.821	Pass

4.2 Test Graphs



8DPSK/MCH

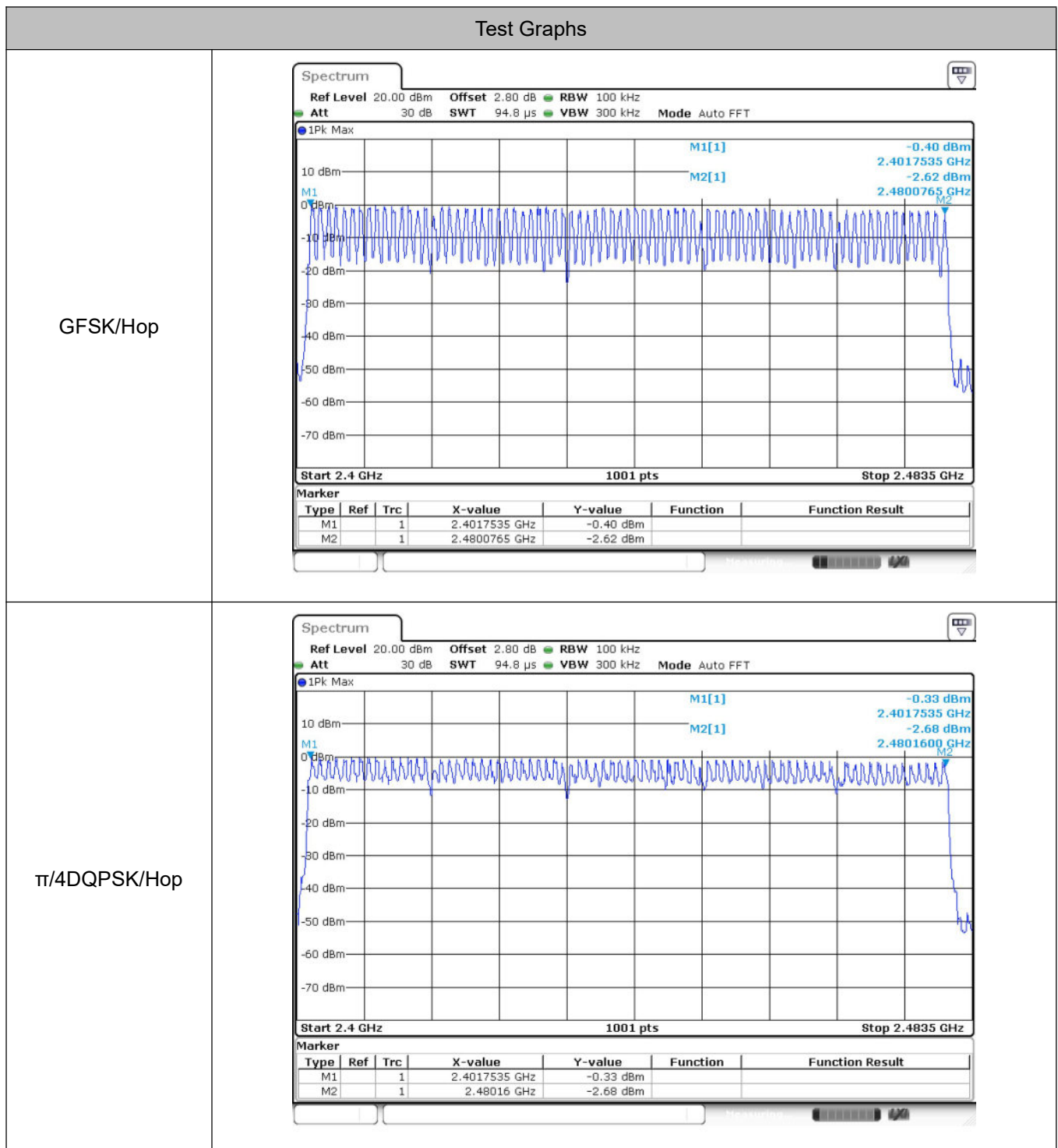


5 Hopping Channel Number

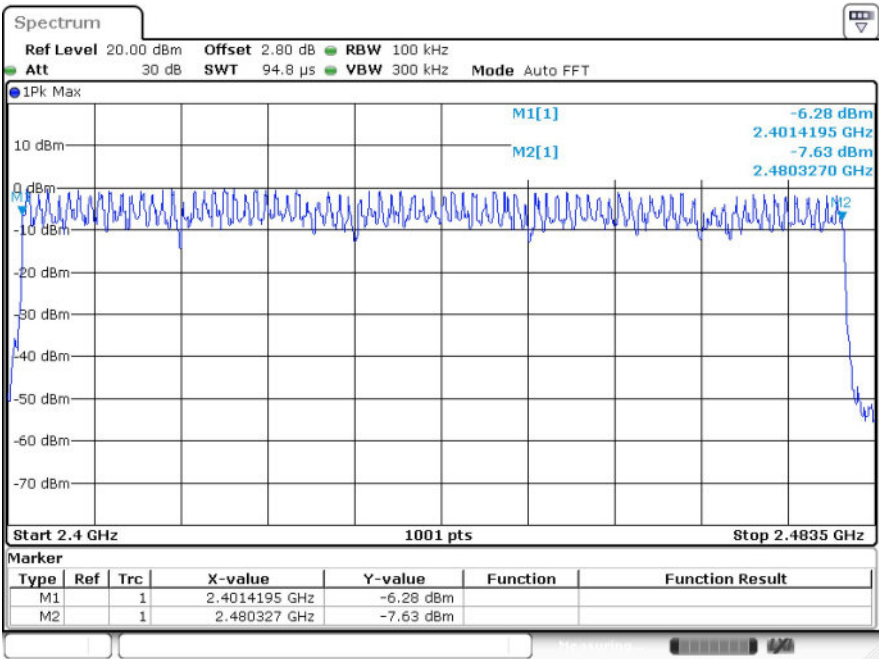
5.1 Test Result

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

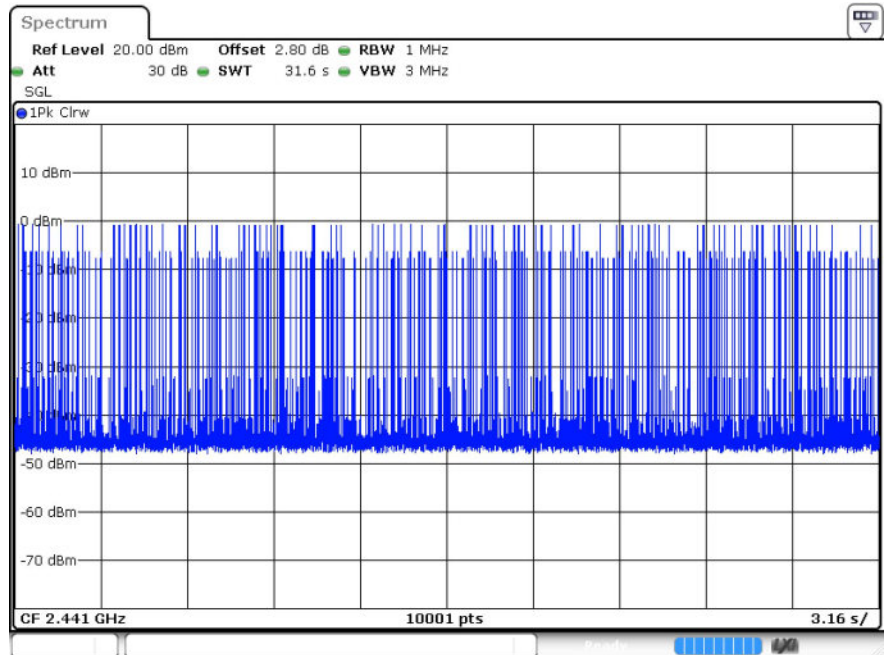
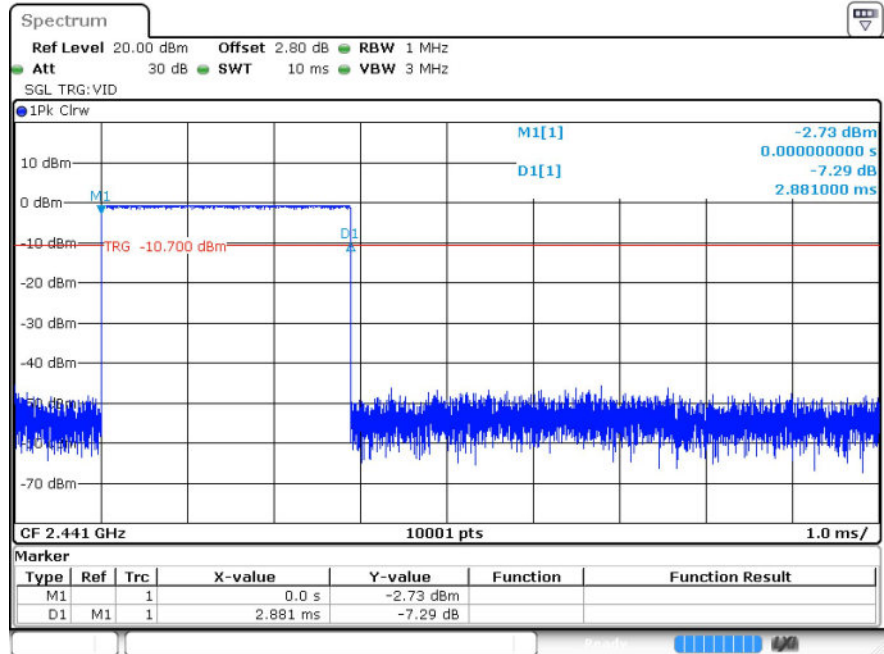
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.881	112	322.672	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.885	101	291.385	0.4	Pass
8DPSK	3DH5	MCH	2.888	105	303.24	0.4	Pass

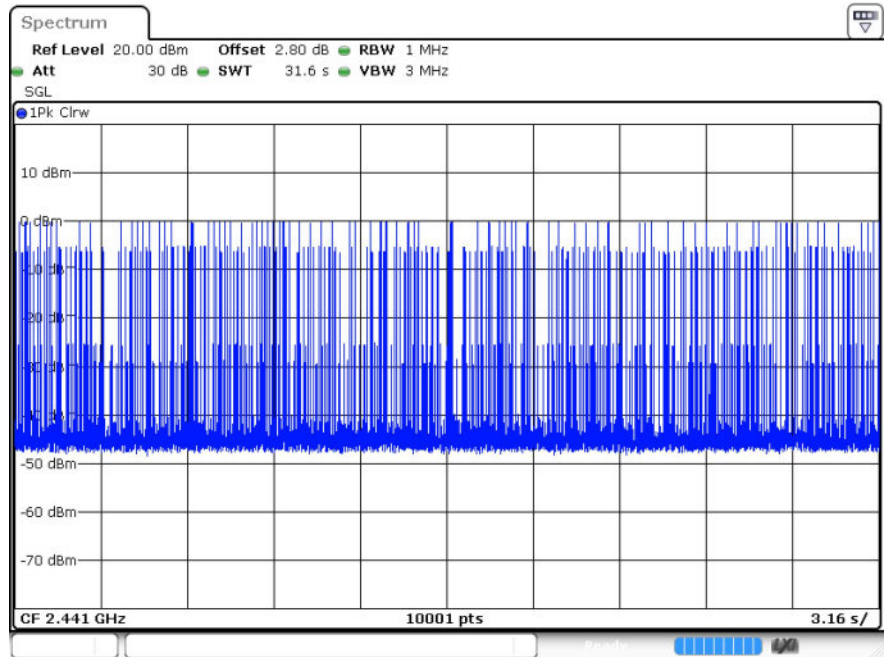
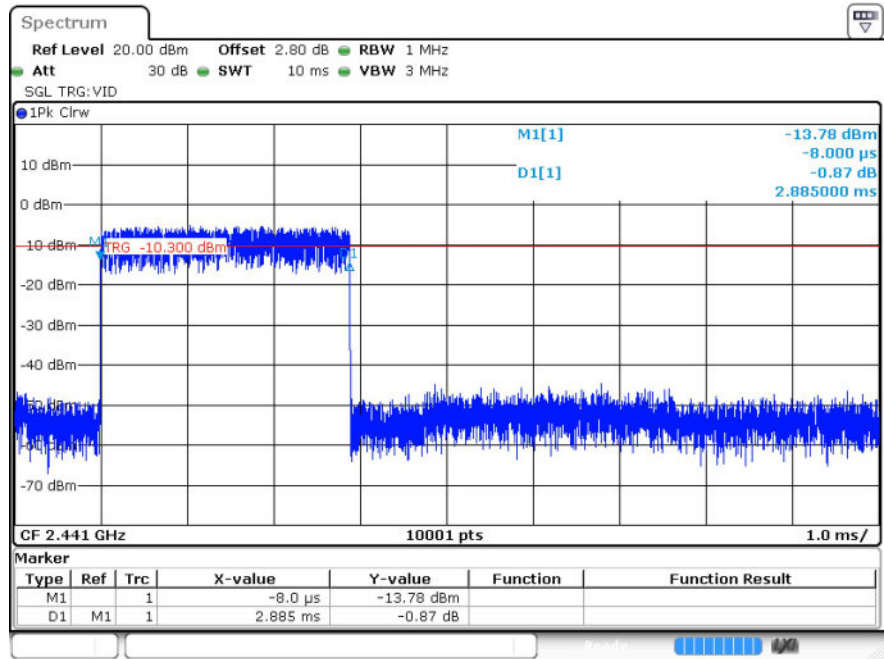
6.2 Test Graphs

Test Graphs

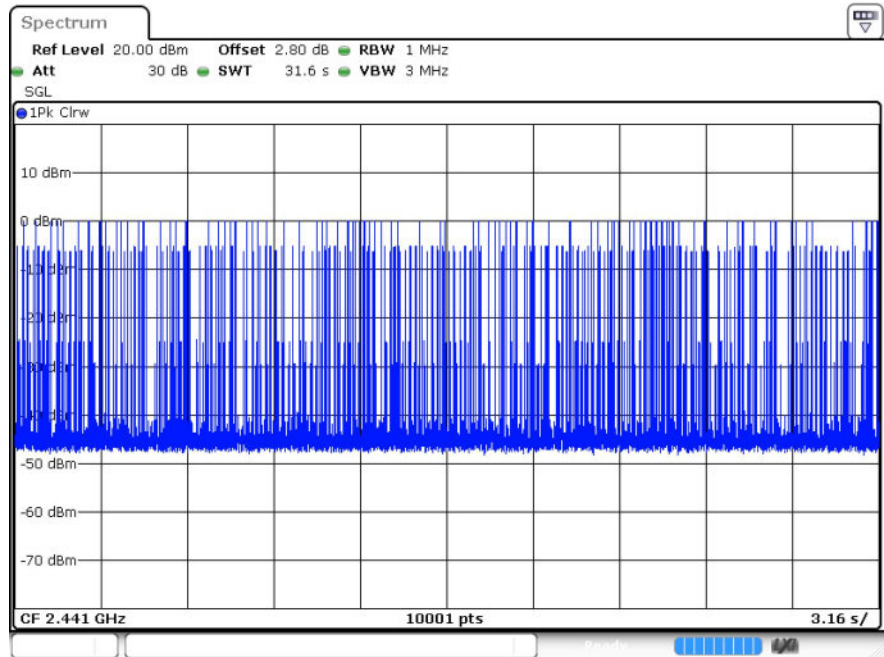
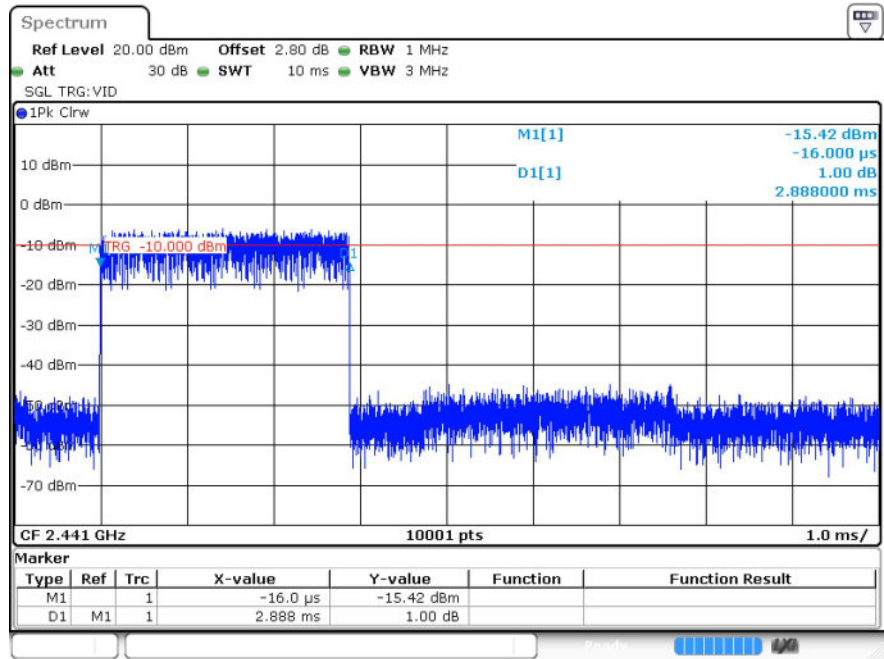
GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH



8DPSK_3DH5/MCH



7 RF Conducted Spurious Emissions

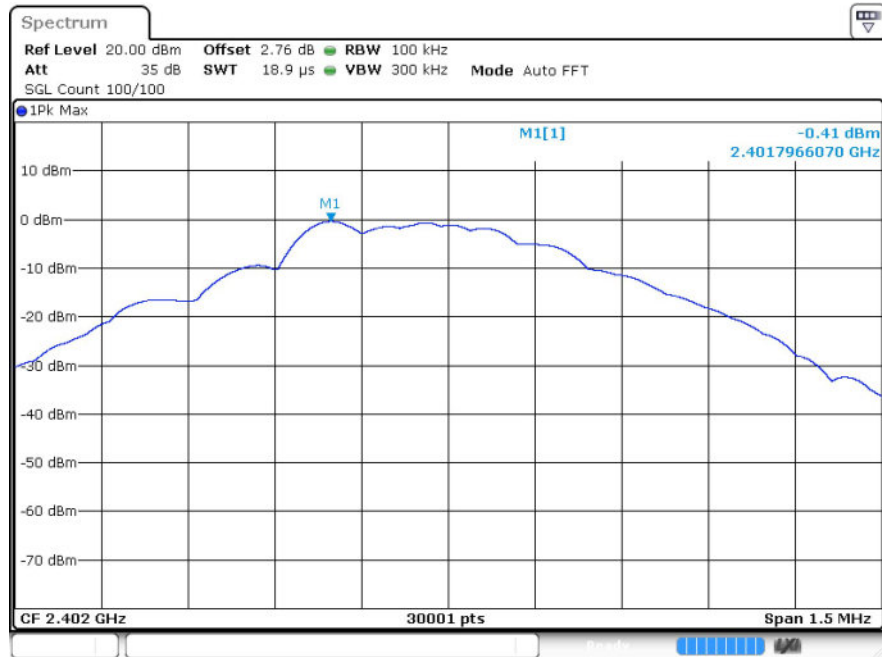
7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-40.16	-20	Pass
	MCH	-40.33	-20	Pass
	HCH	-39.1	-20	Pass
$\pi/4$ DQPSK	LCH	-41.25	-20	Pass
	MCH	-40.07	-20	Pass
	HCH	-39.39	-20	Pass
8DPSK	LCH	-40.18	-20	Pass
	MCH	-39.35	-20	Pass
	HCH	-39.07	-20	Pass

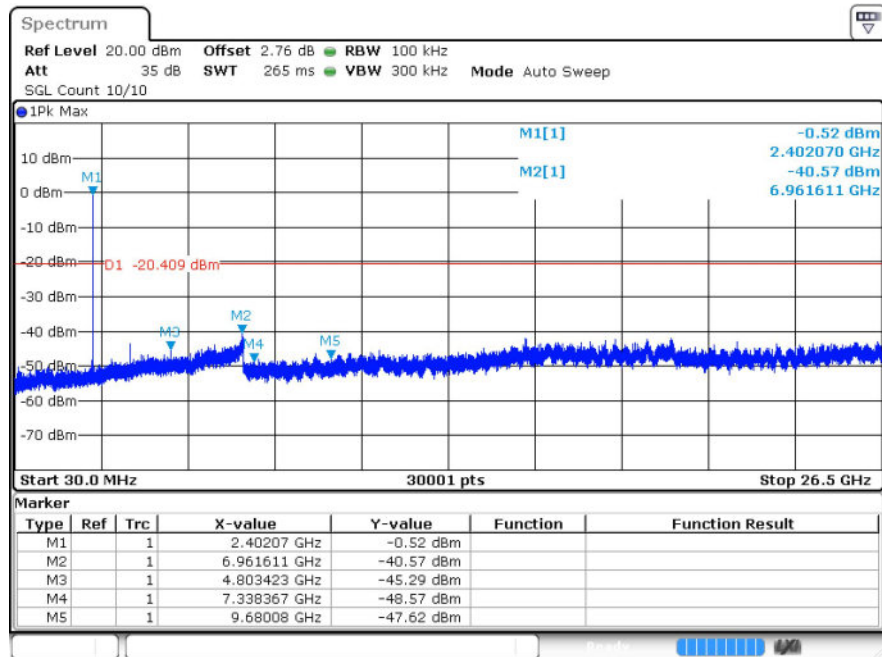
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

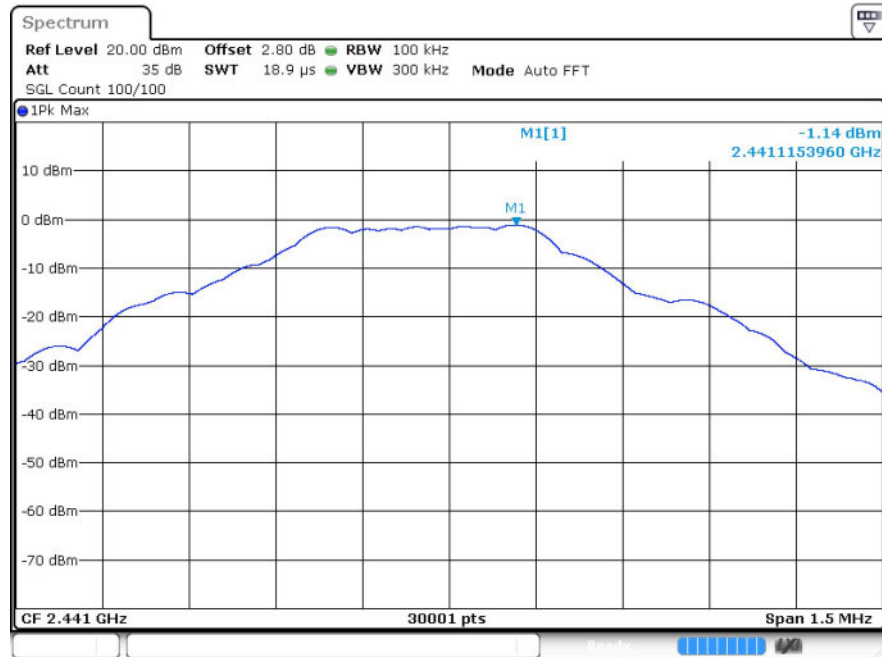


Puw

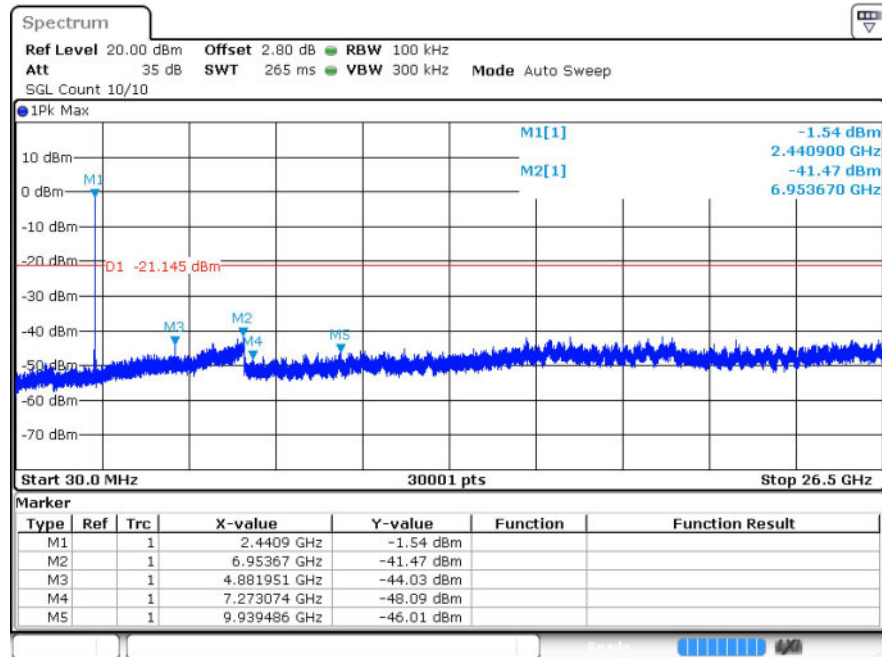


GFSK_MCH_Graphs

Pref

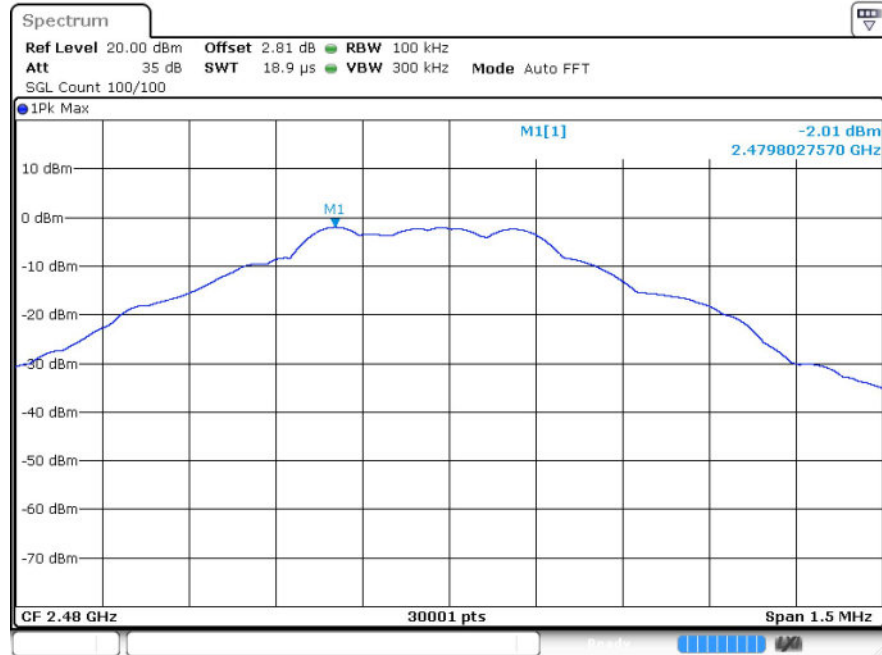


Puw



GFSK_HCH_Graphs

Pref



Puw

