

Appendix A

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

Product Name: carplay and android auto adapter

Trade Mark: marolak

Test Model: Z1

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Aalen.Ye
Supervised by:	Allen Wang



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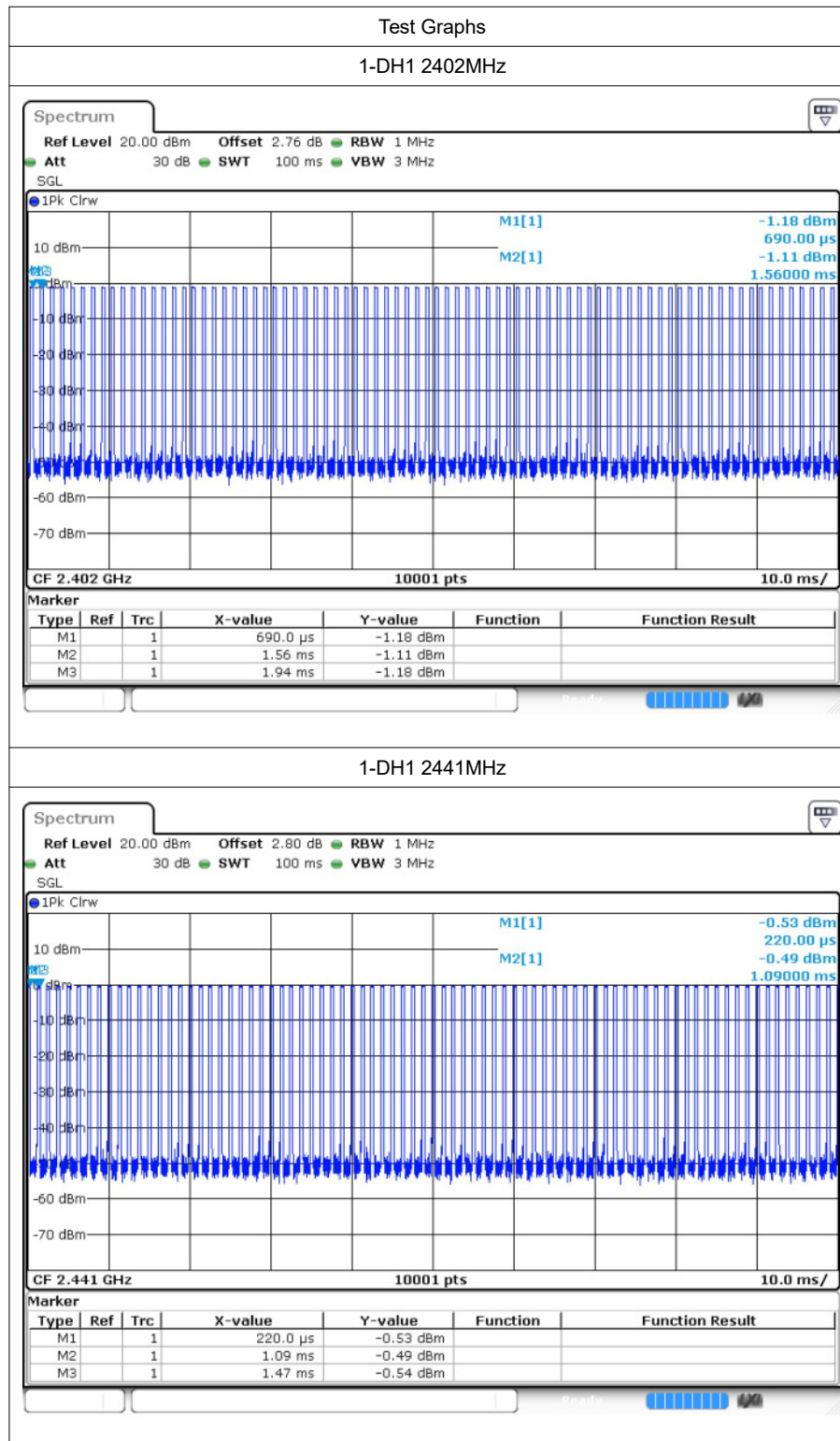
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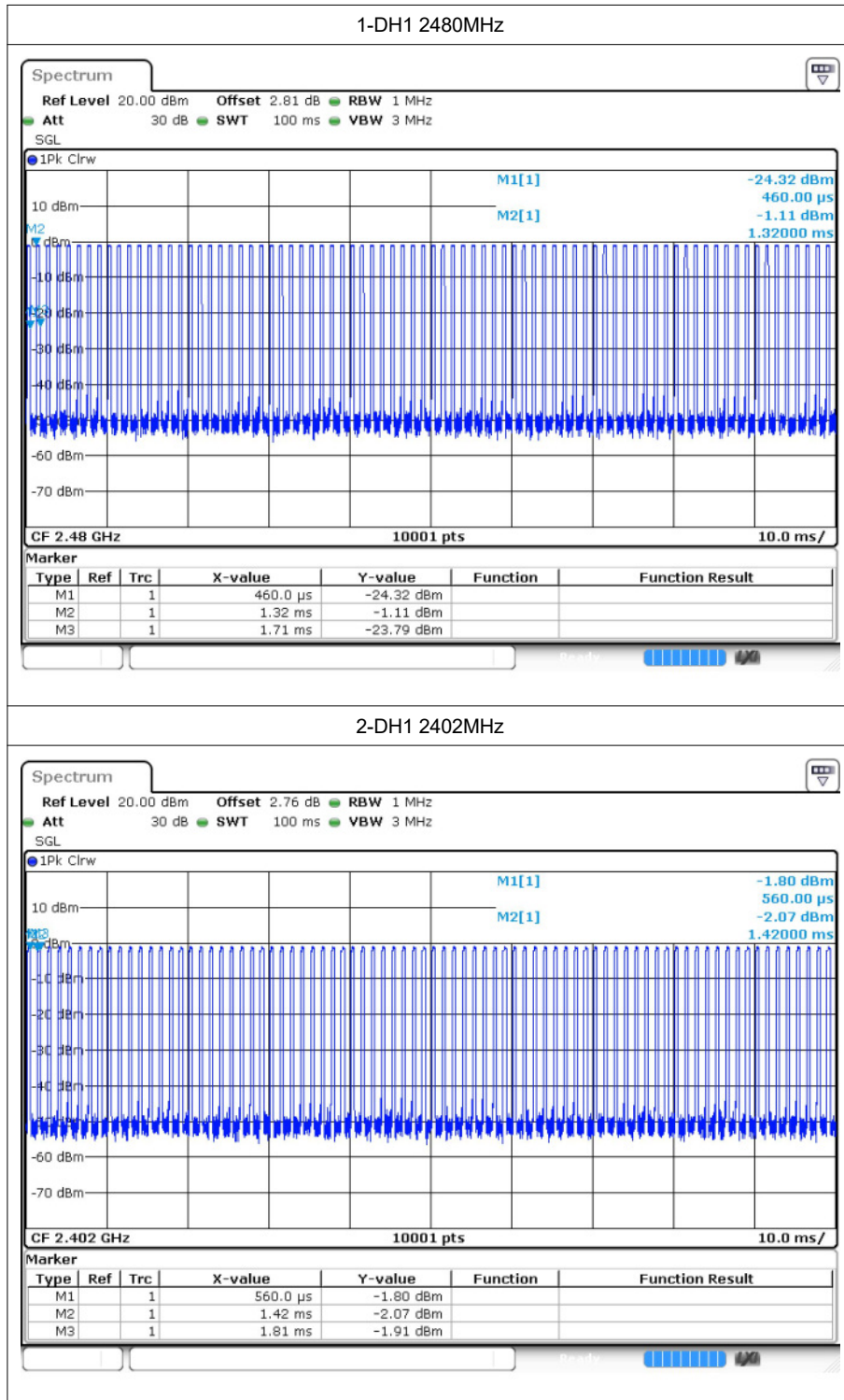
1 Duty Cycle

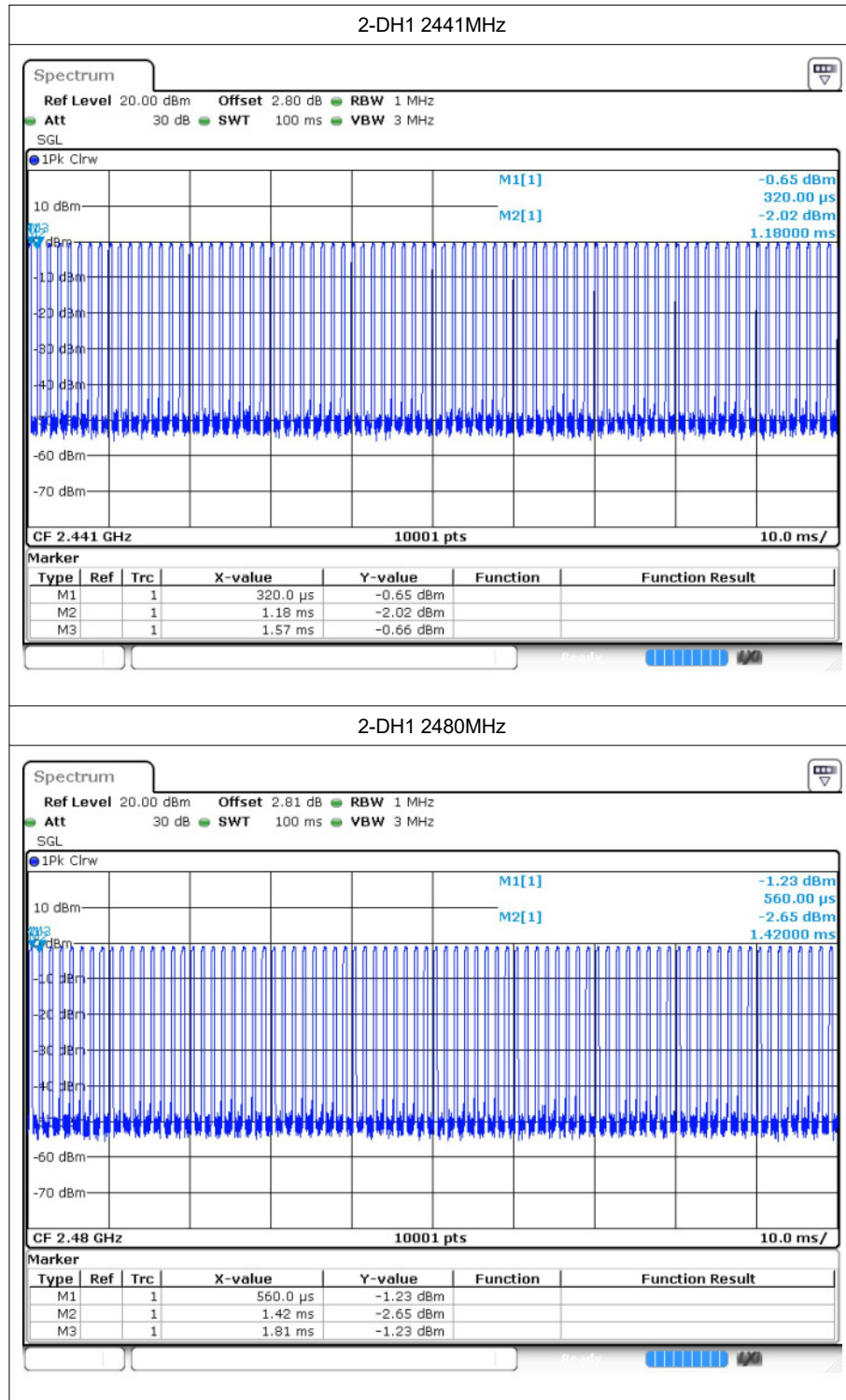
1.1 Test Result

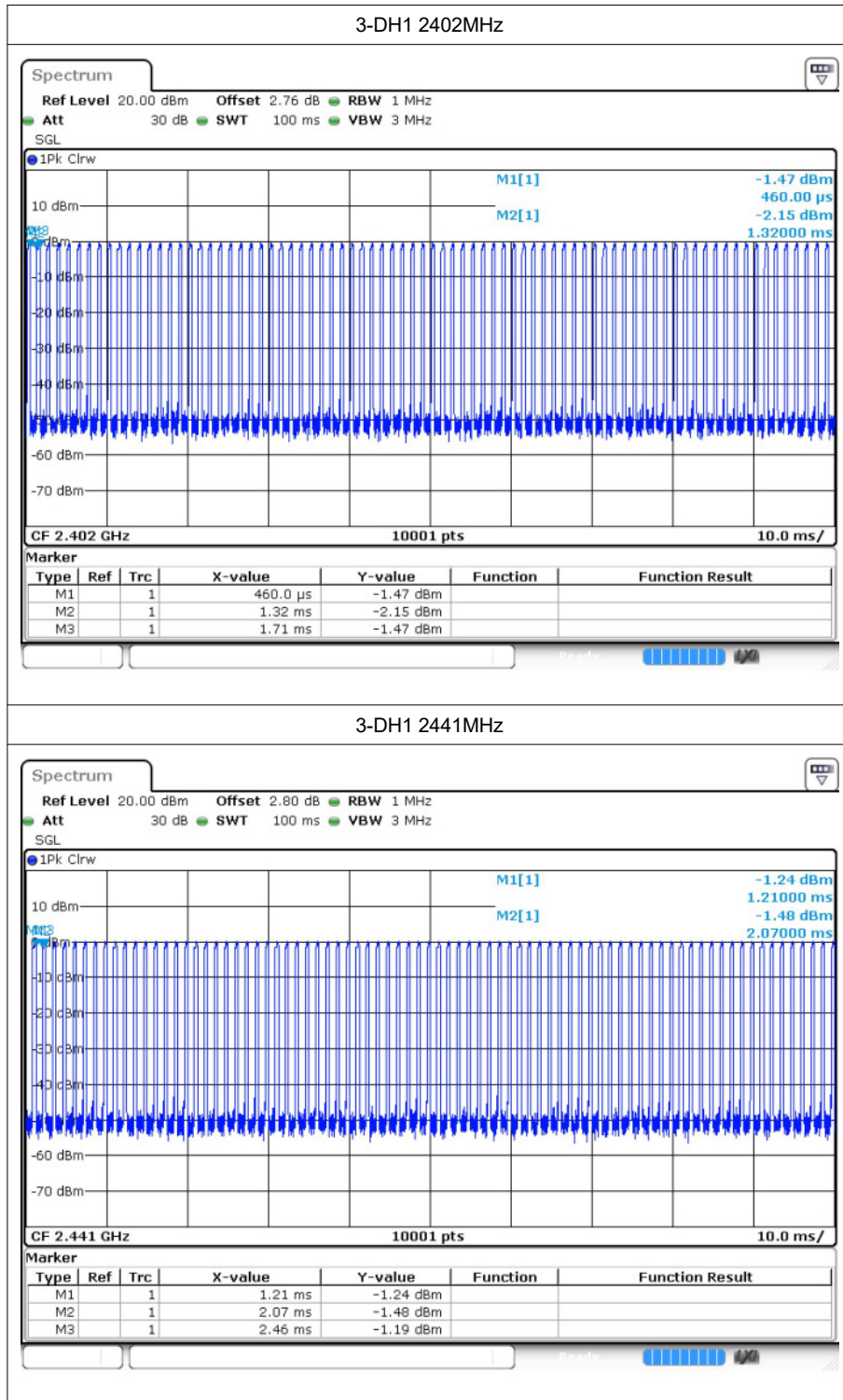
Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor	1/T (kHz)
1-DH1	2402	31.2	5.06	2.63
1-DH1	2441	31.21	5.06	2.63
1-DH1	2480	32	4.95	2.56
2-DH1	2402	32	4.95	2.56
2-DH1	2441	32	4.95	2.56
2-DH1	2480	31.99	4.95	2.56
3-DH1	2402	32	4.95	2.56
3-DH1	2441	32	4.95	2.56
3-DH1	2480	32	4.95	2.56

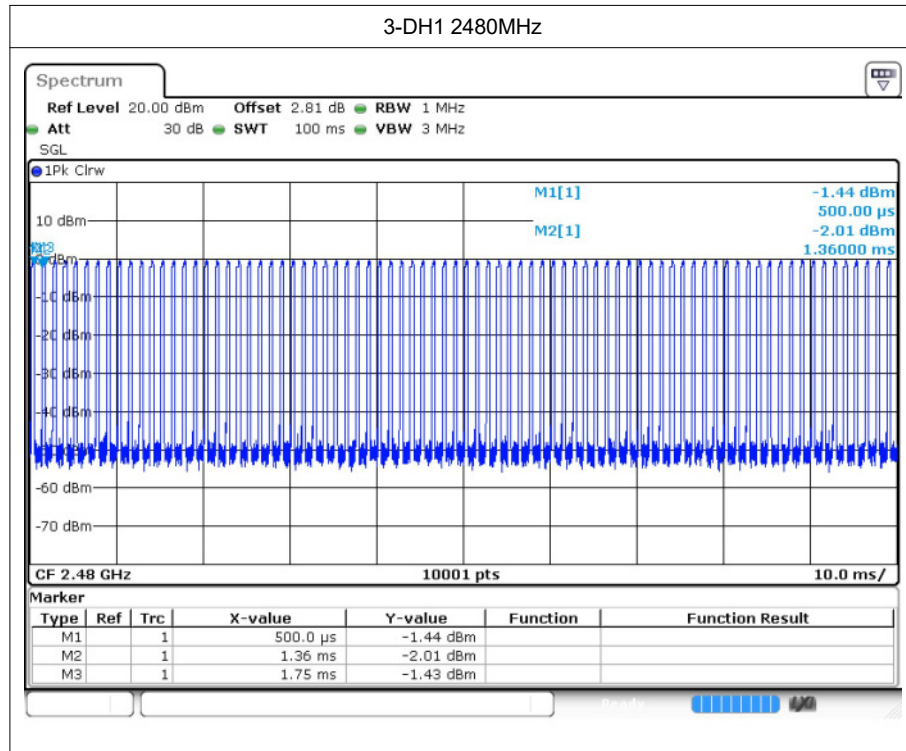
1.2 Test Graphs









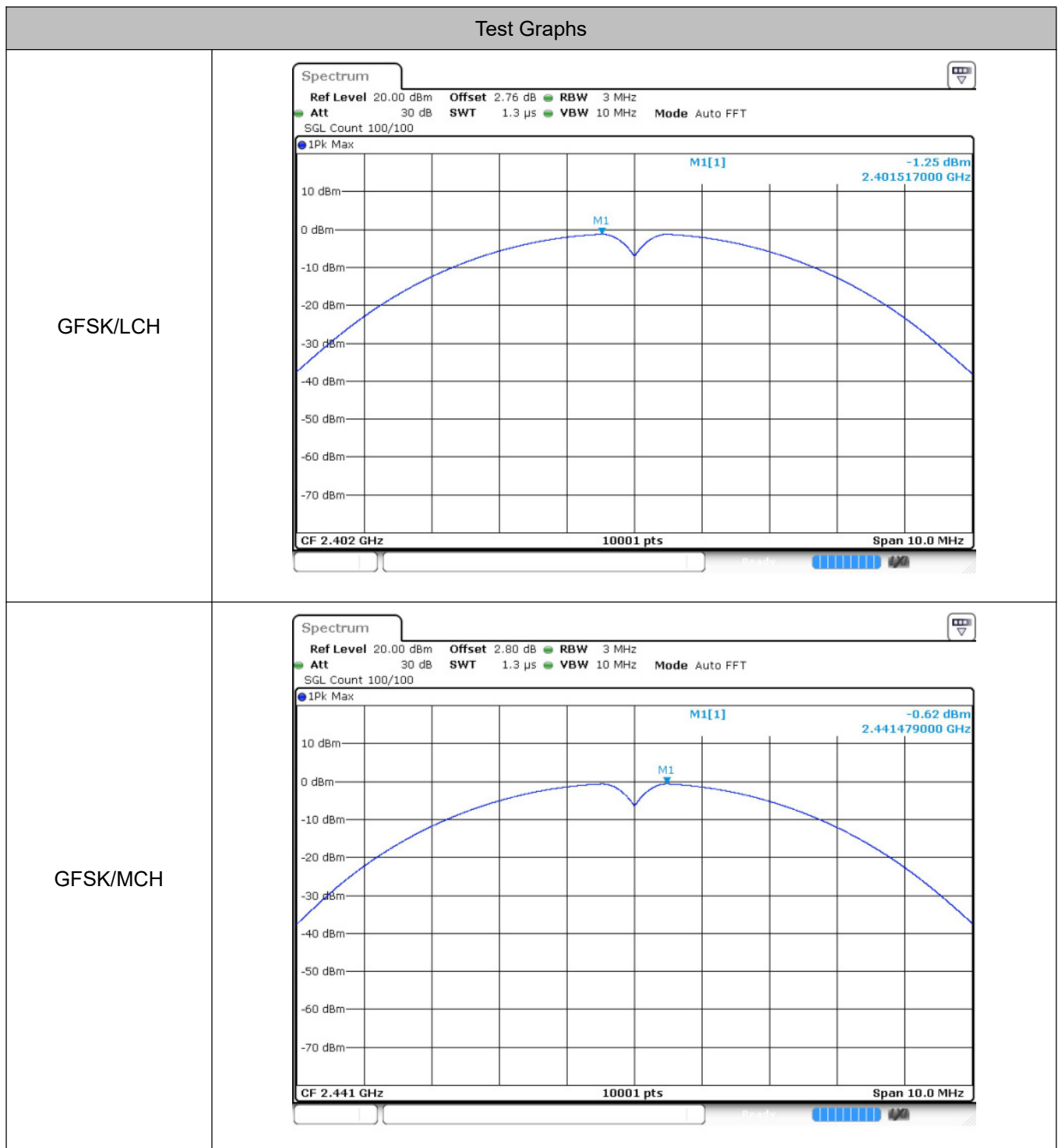


2 Maximum Conducted Peak Output Power

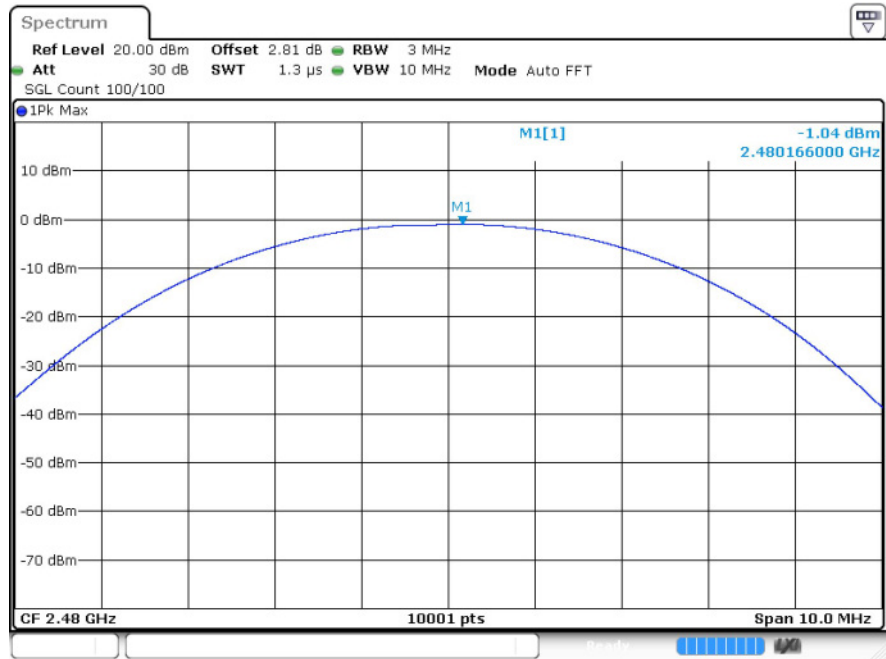
2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.25	21	Pass
	MCH	-0.62	21	Pass
	HCH	-1.04	21	Pass
$\pi/4$ DQPSK	LCH	0.07	21	Pass
	MCH	0.63	21	Pass
	HCH	0.08	21	Pass
8DPSK	LCH	0.37	21	Pass
	MCH	0.67	21	Pass
	HCH	-0.22	21	Pass

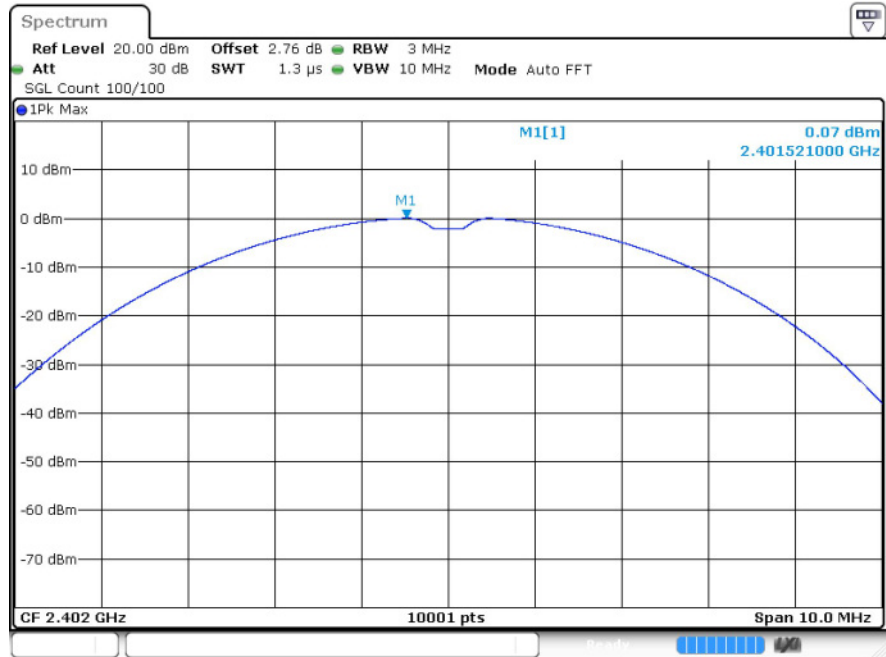
2.2 Test Graphs



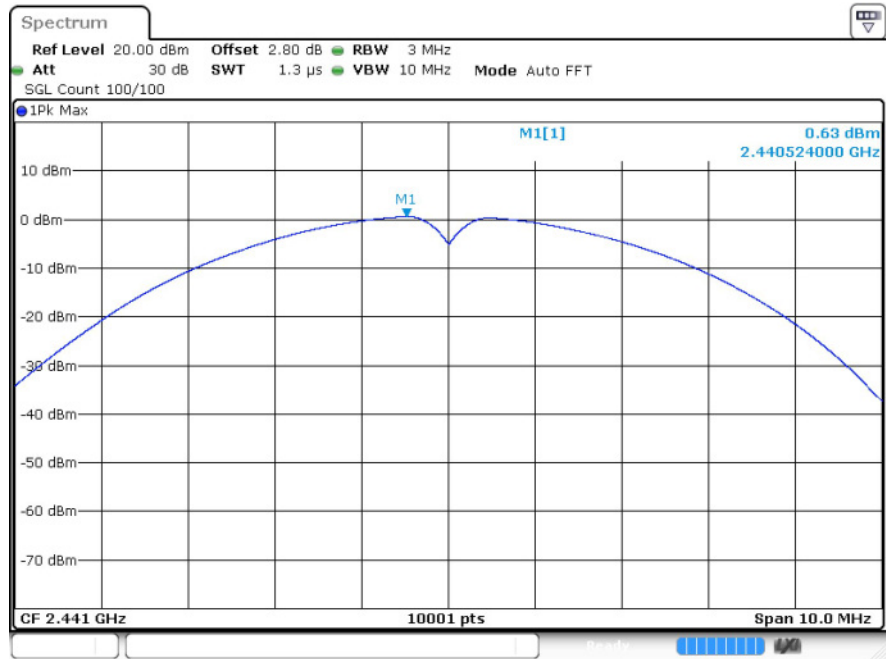
GFSK/HCH



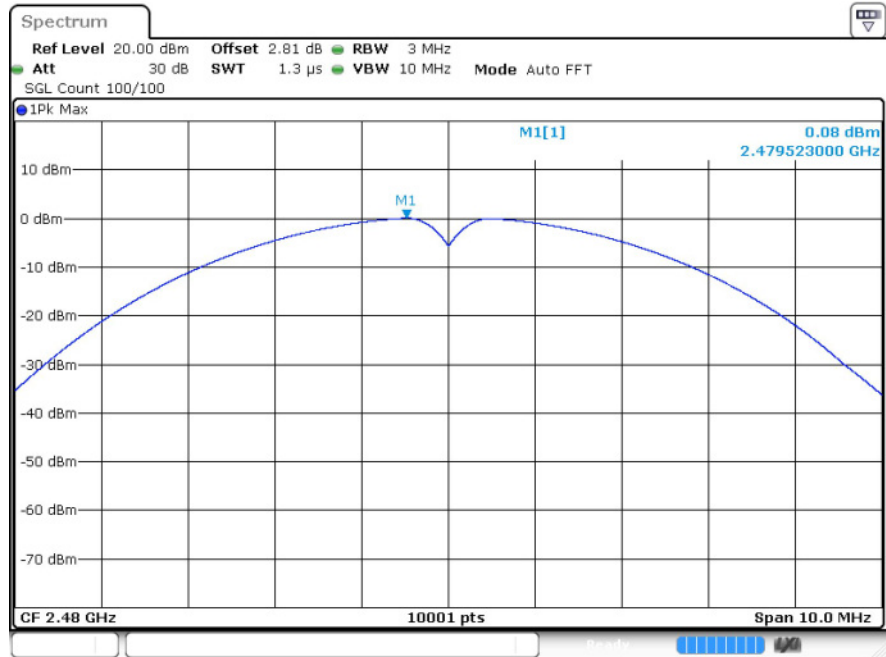
$\pi/4$ DQPSK/LCH



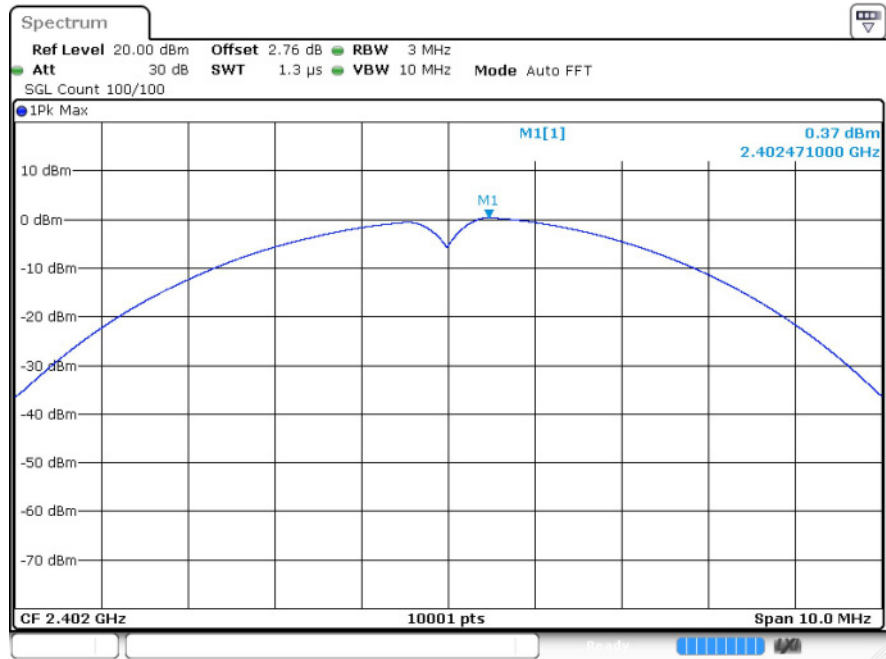
$\pi/4$ DQPSK/MCH



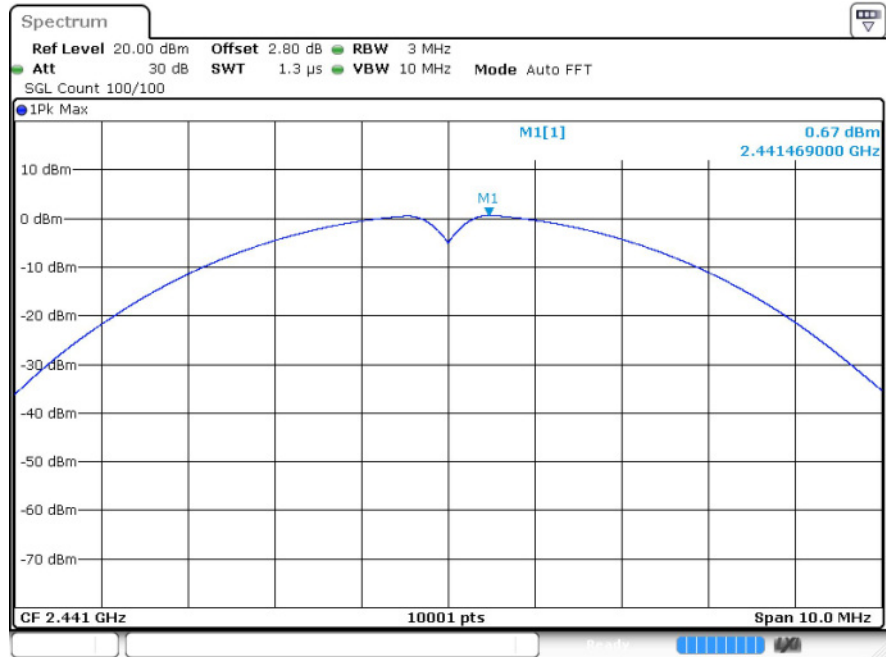
$\pi/4$ DQPSK/HCH



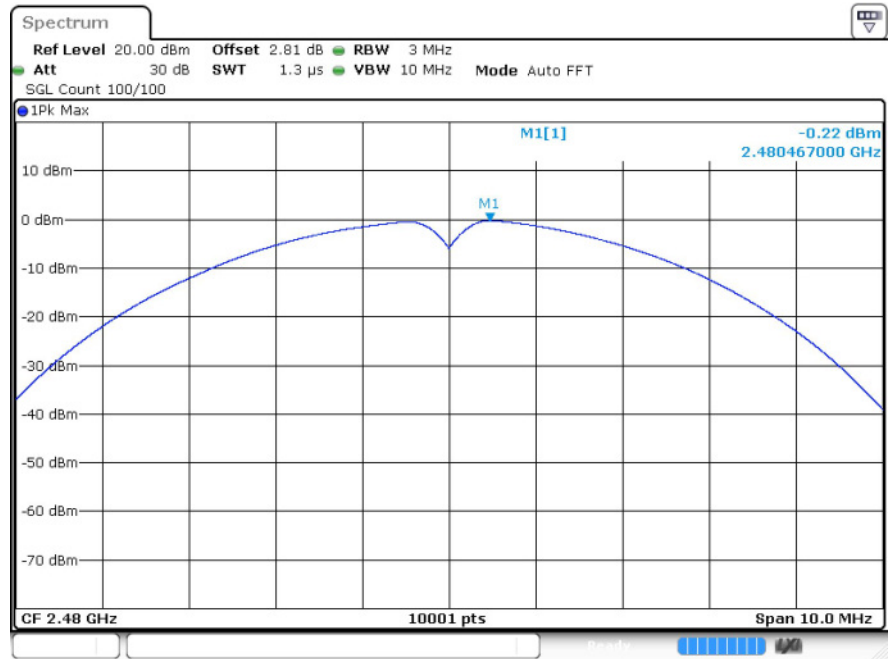
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

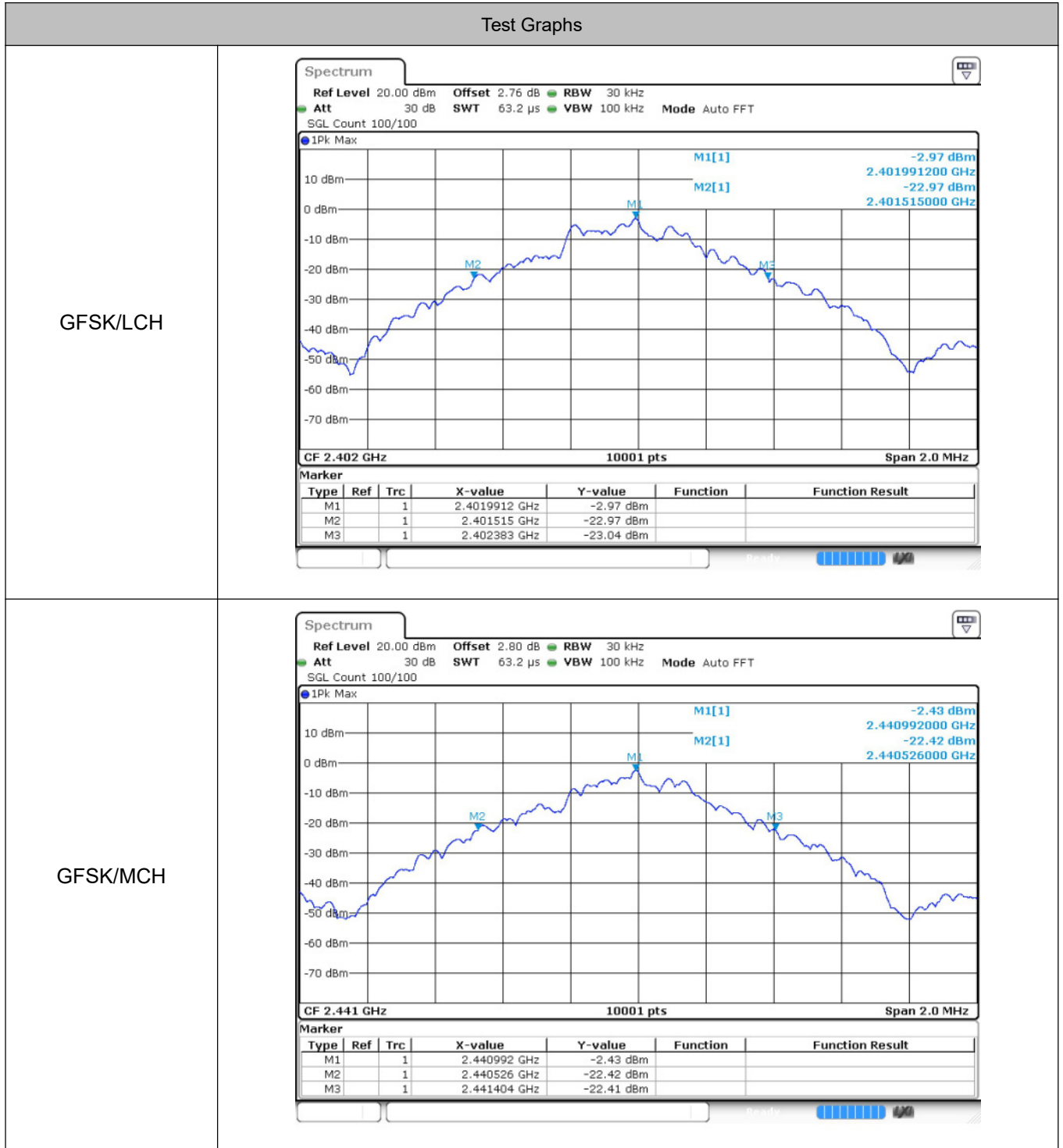


3 20dB Bandwidth

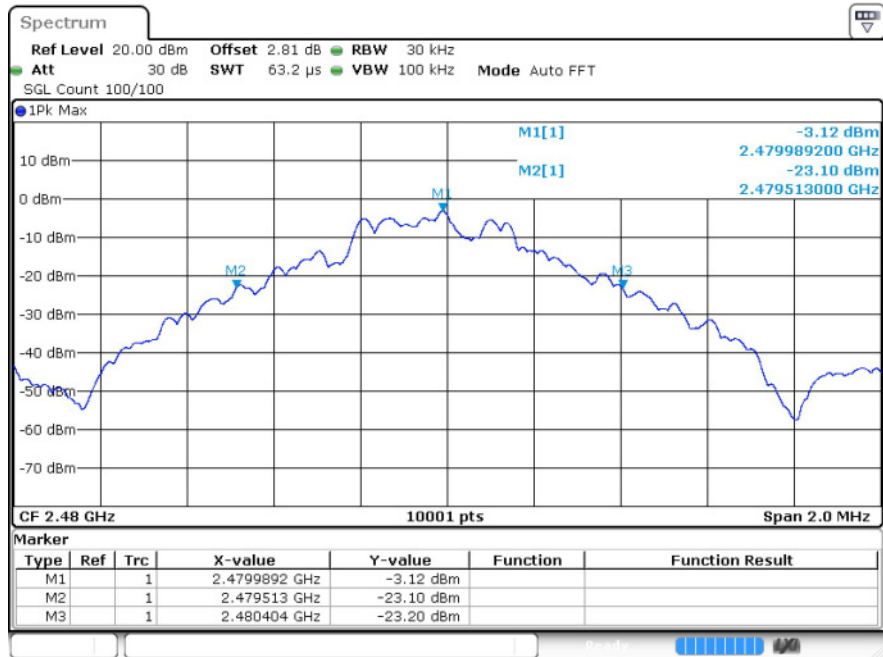
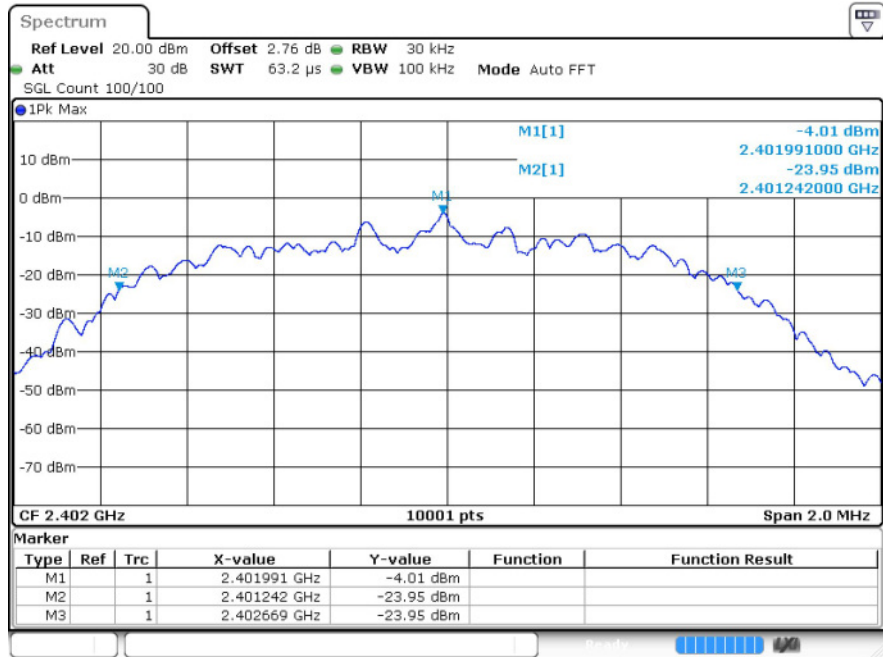
3.1 Test Result

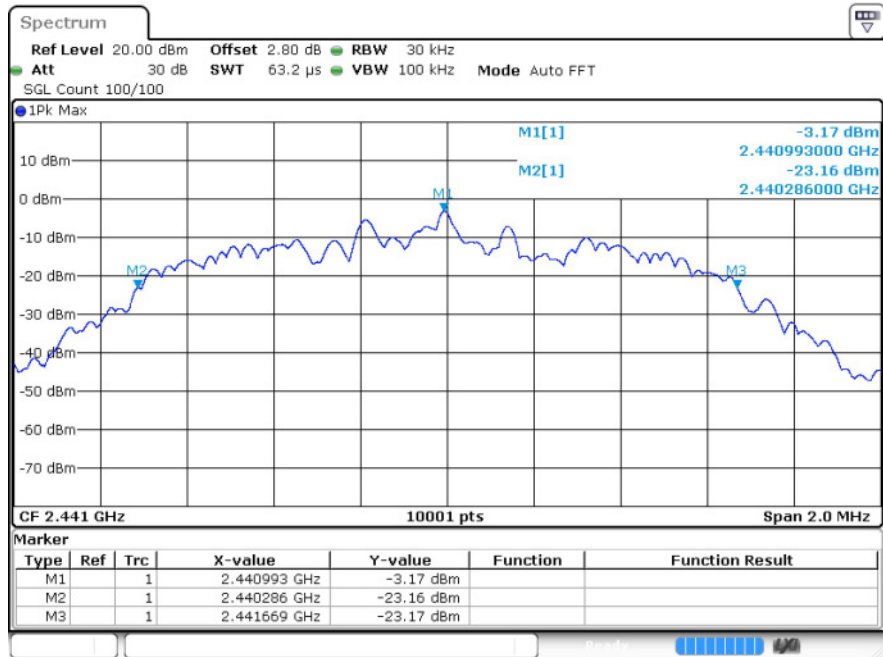
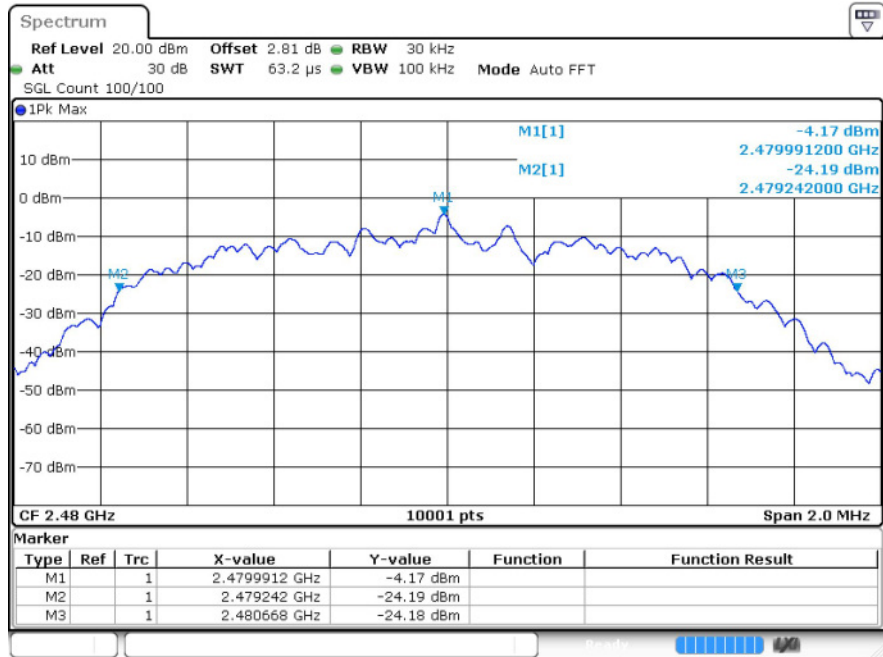
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.867	Not Specified	Pass
	MCH	0.878	Not Specified	Pass
	HCH	0.891	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.427	Not Specified	Pass
	MCH	1.383	Not Specified	Pass
	HCH	1.426	Not Specified	Pass
8DPSK	LCH	1.433	Not Specified	Pass
	MCH	1.405	Not Specified	Pass
	HCH	1.433	Not Specified	Pass

3.2 Test Graphs

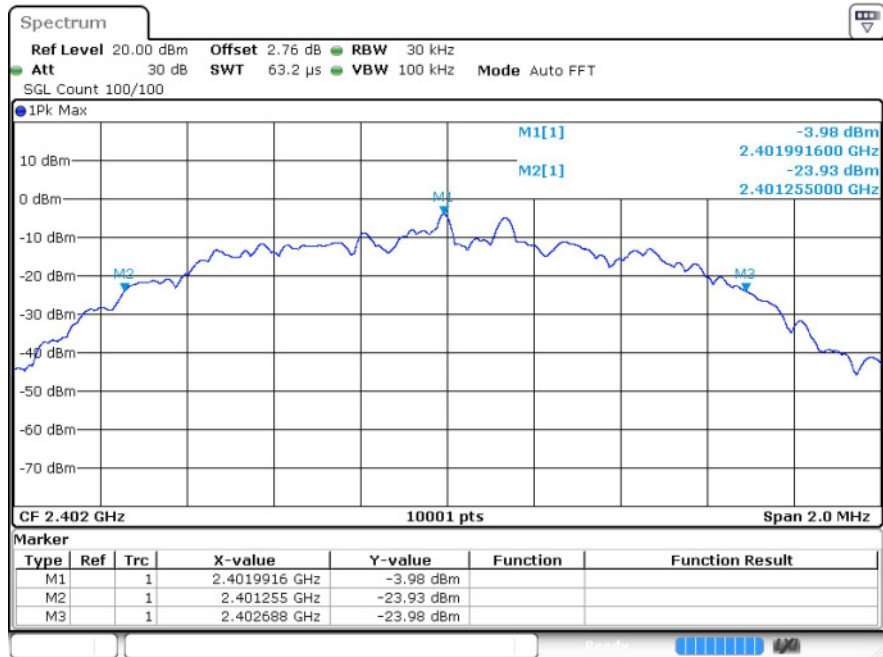


GFSK/HCH

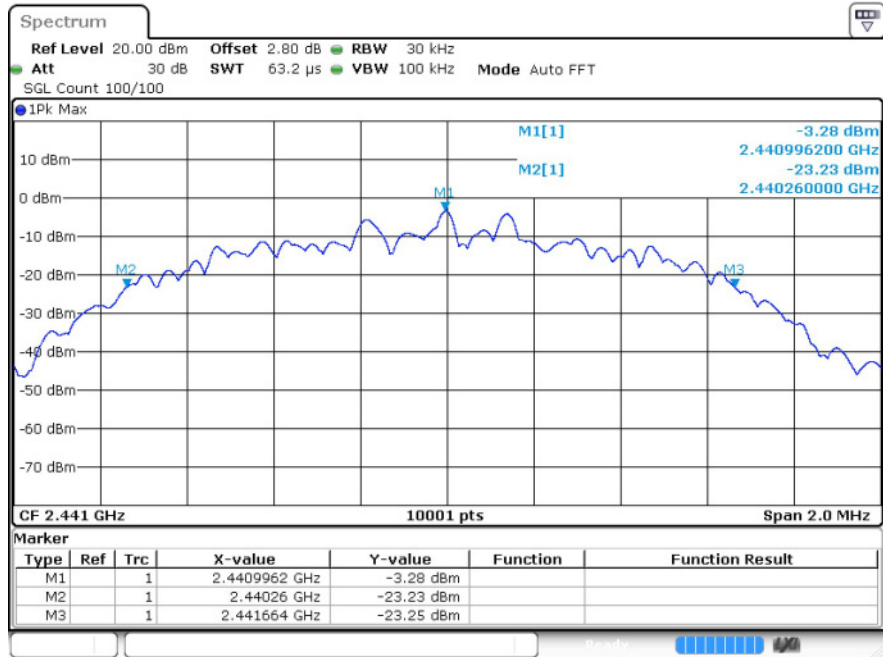

 $\pi/4$ DQPSK/LCH


$\pi/4$ DQPSK/MCH

 $\pi/4$ DQPSK/HCH


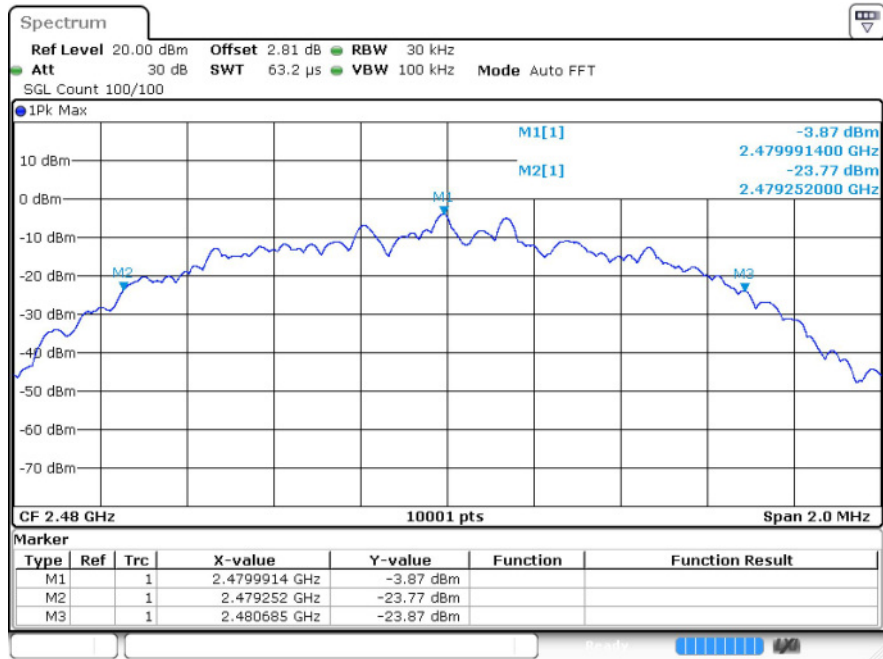
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



4 Carrier Frequency Separation

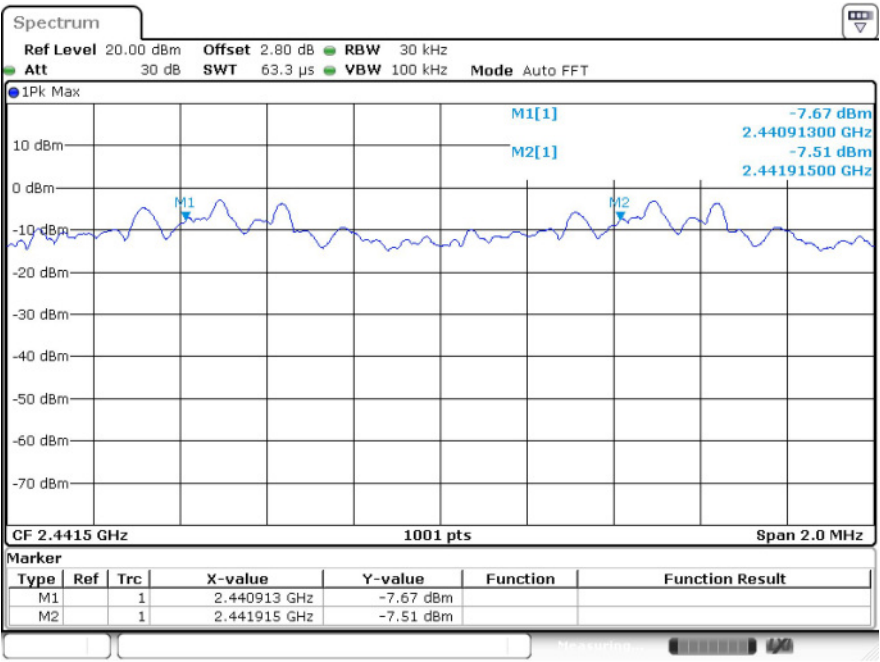
4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1	0.585	Pass
$\pi/4$ DQPSK	MCH	0.991	0.922	Pass
8DPSK	MCH	1.002	0.937	Pass

4.2 Test Graphs



8DPSK/MCH

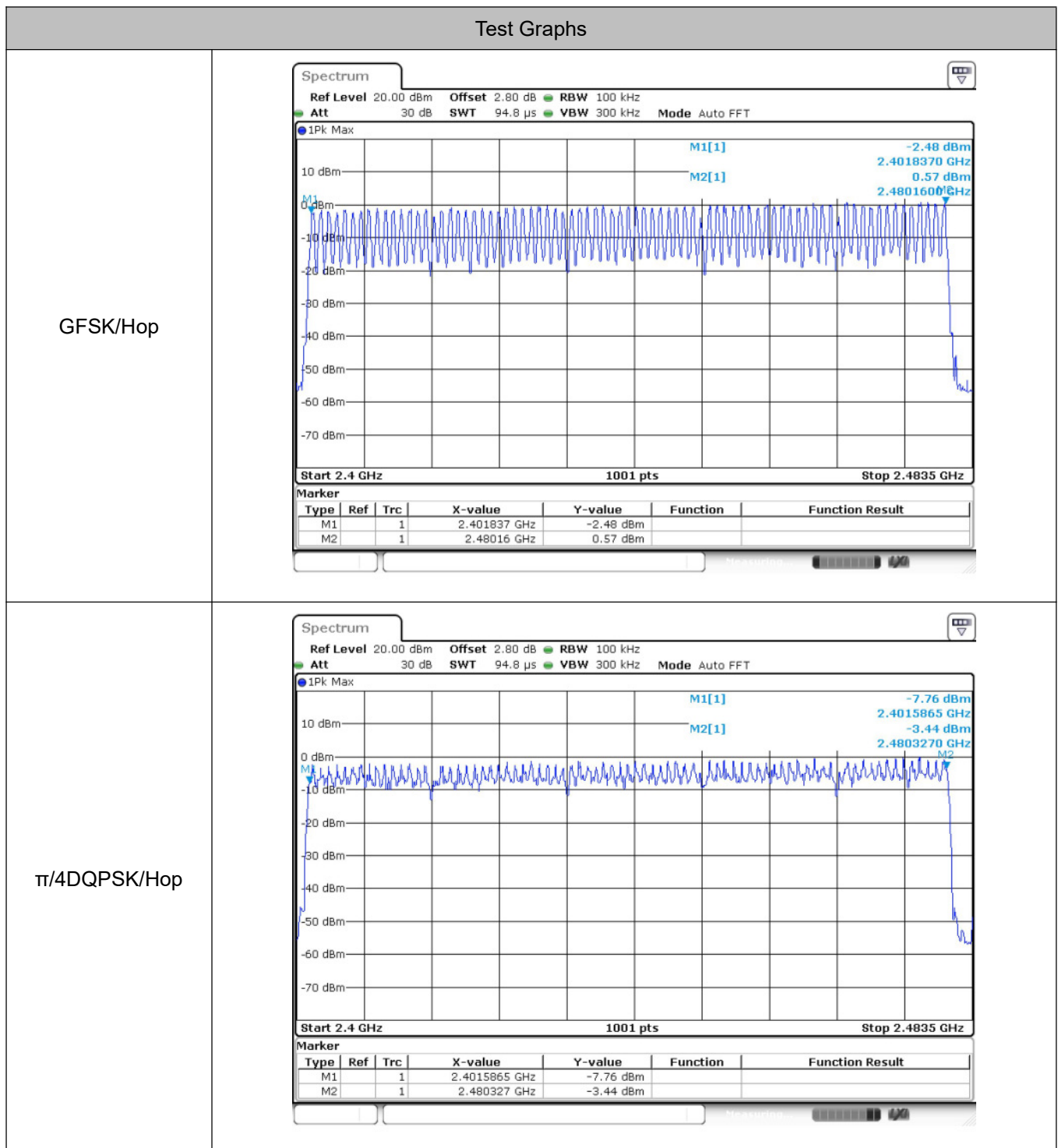


5 Hopping Channel Number

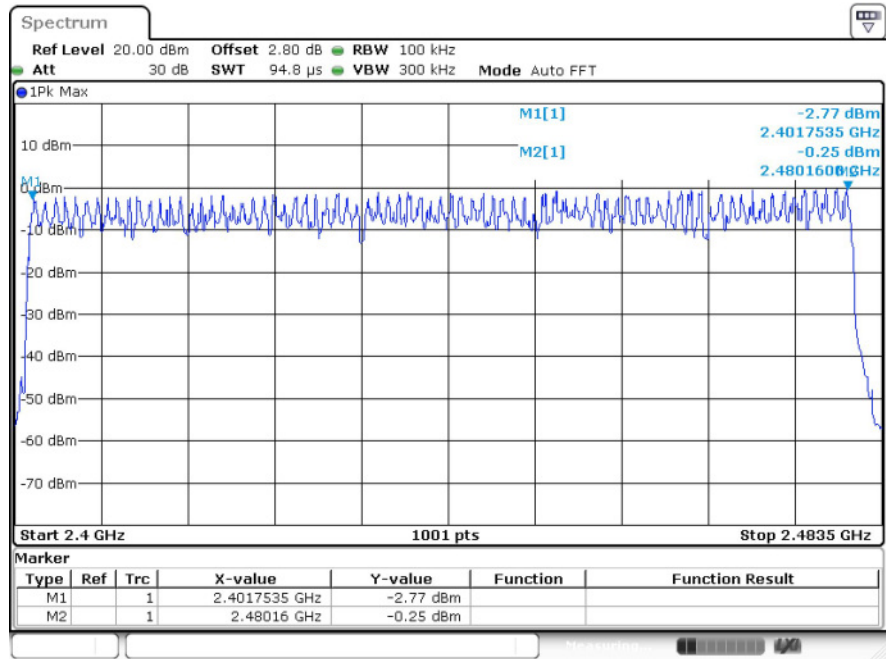
5.1 Test Result

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

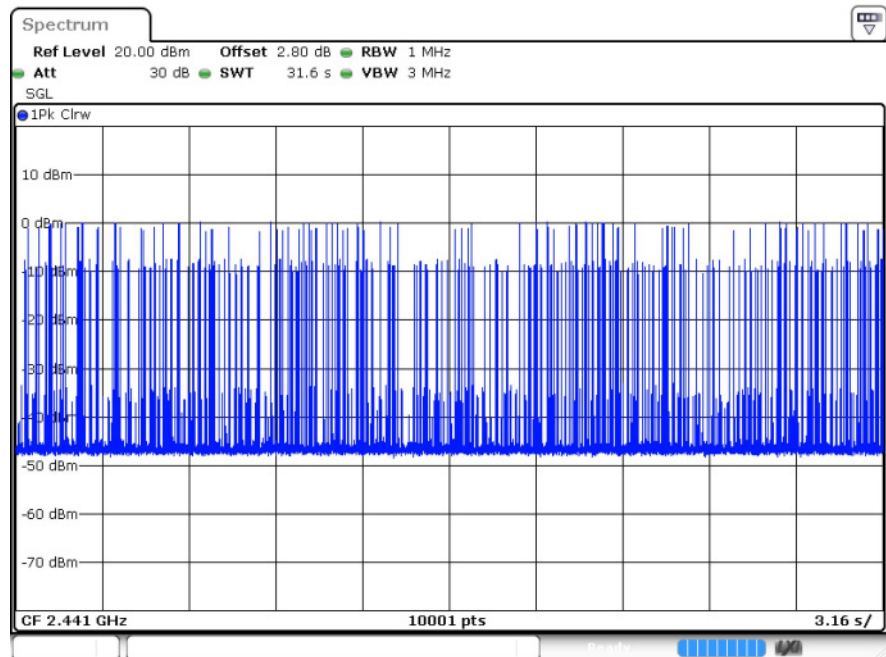
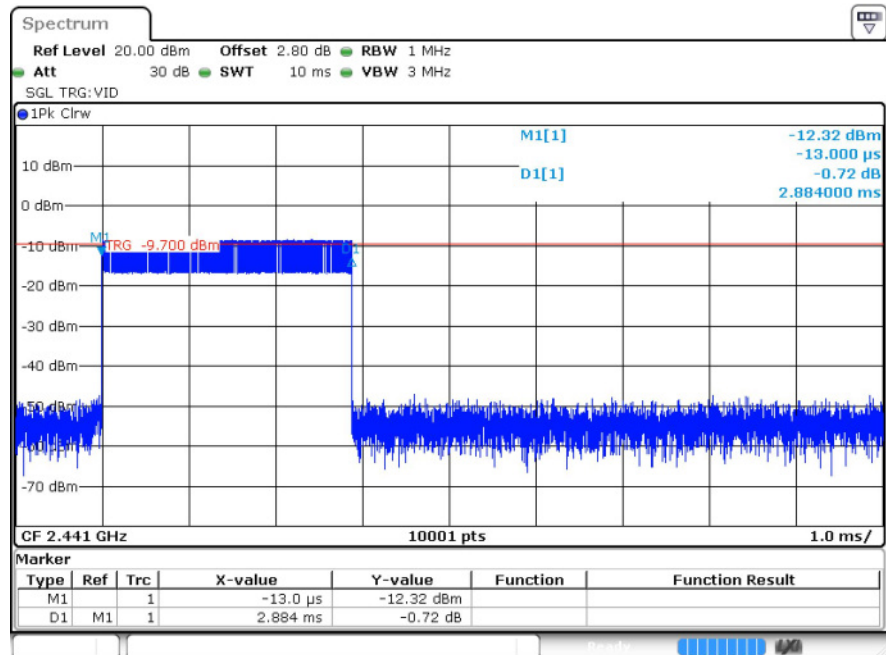
6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.884	100	288.4	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	103	297.567	0.4	Pass
8DPSK	3DH5	MCH	2.891	115	332.465	0.4	Pass

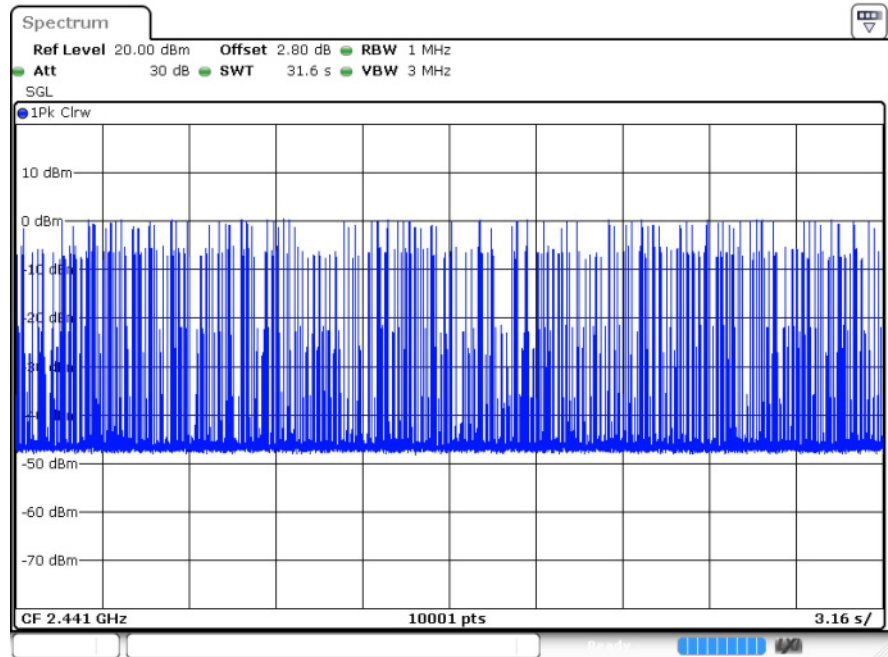
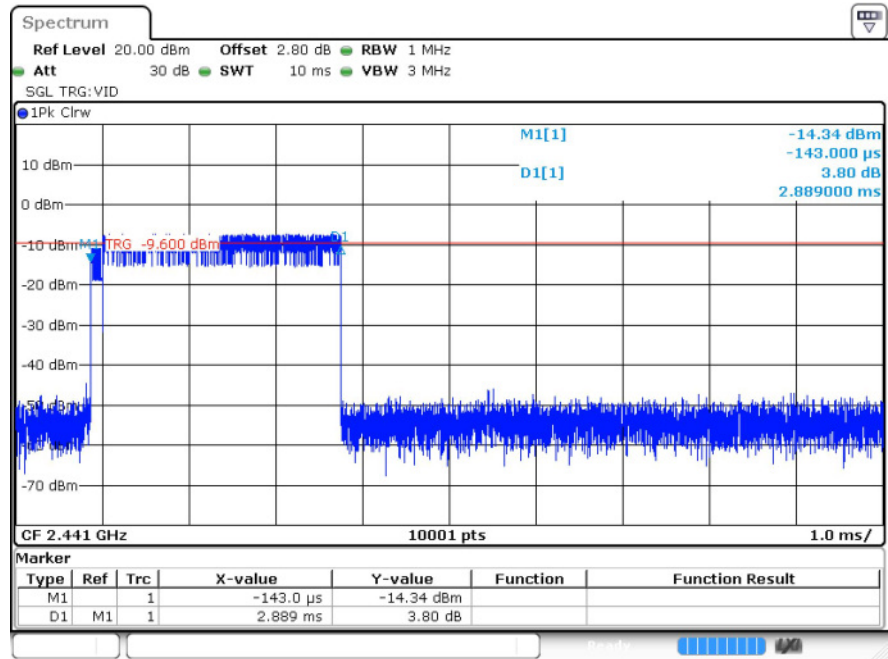
6.2 Test Graphs

Test Graphs

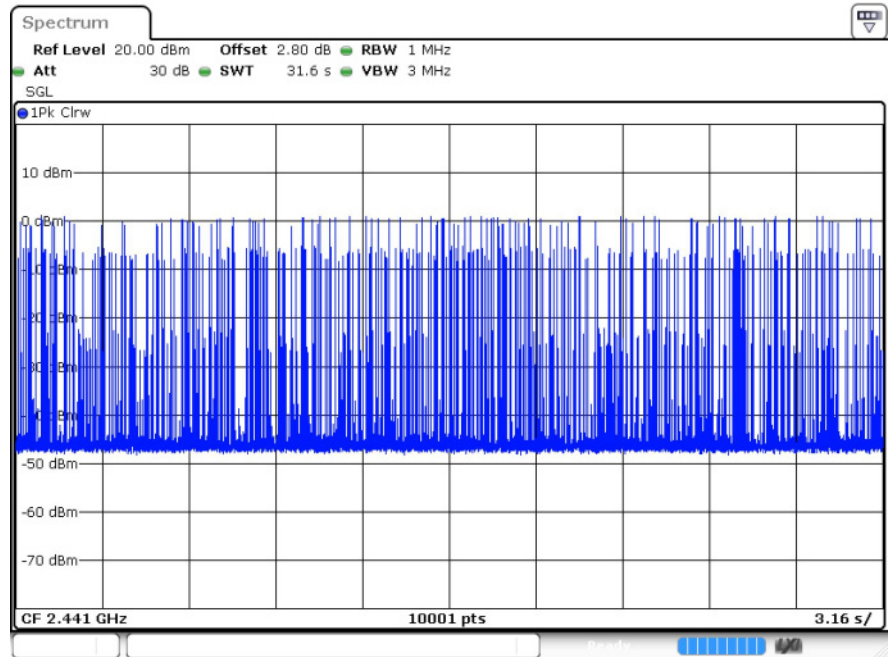
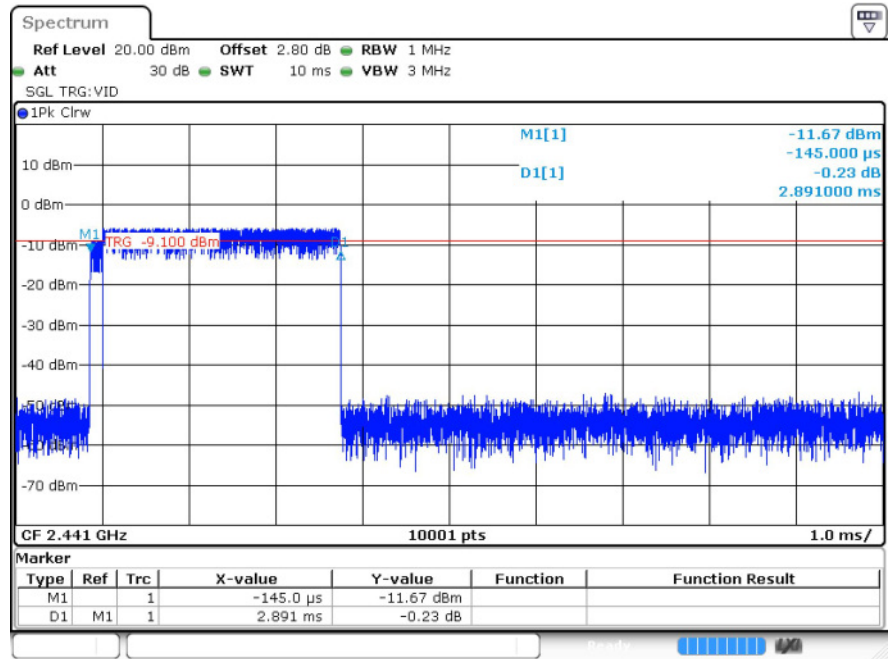
GFSK_DH5/MCH



$\pi/4$ DQPSK
_2DH5/MCH



8DPSK_3DH5/MCH



7 RF Conducted Spurious Emissions

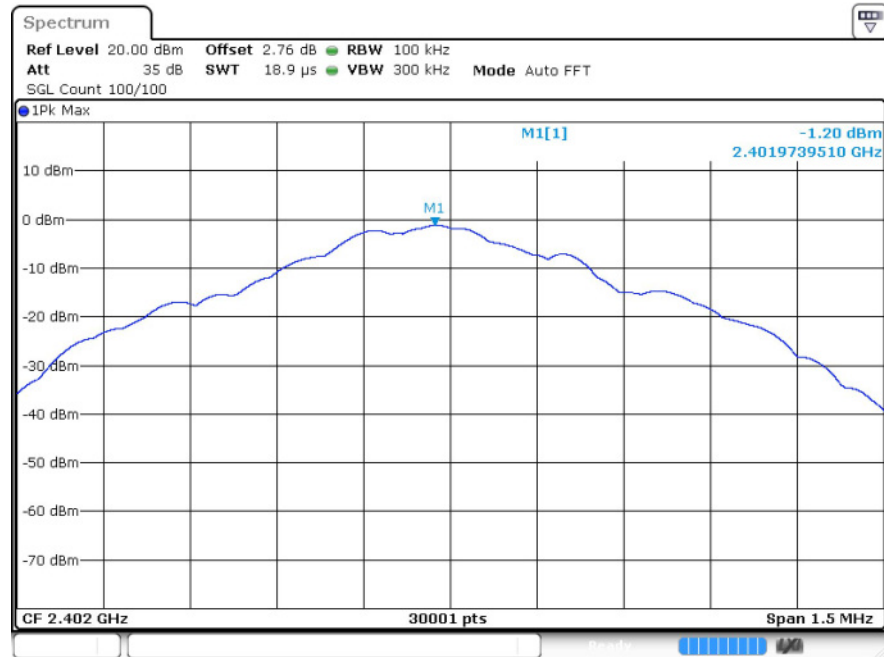
7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-40.47	-20	Pass
	MCH	-40.94	-20	Pass
	HCH	-38.68	-20	Pass
$\pi/4$ DQPSK	LCH	-39.61	-20	Pass
	MCH	-37.93	-20	Pass
	HCH	-38.91	-20	Pass
8DPSK	LCH	-39.7	-20	Pass
	MCH	-40.17	-20	Pass
	HCH	-39.59	-20	Pass

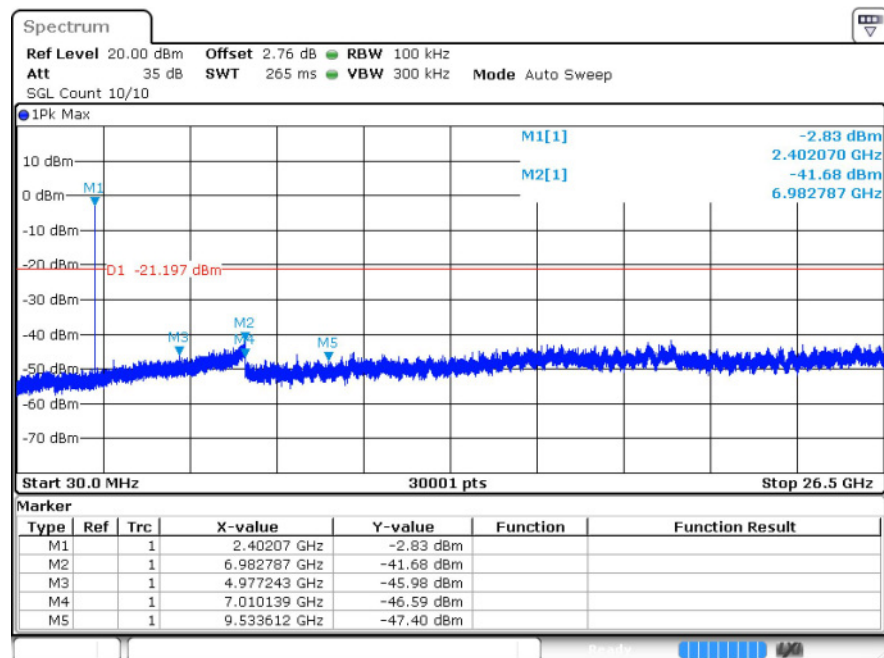
7.2 Test Graphs

GFSK_LCH_Graphs

Pref

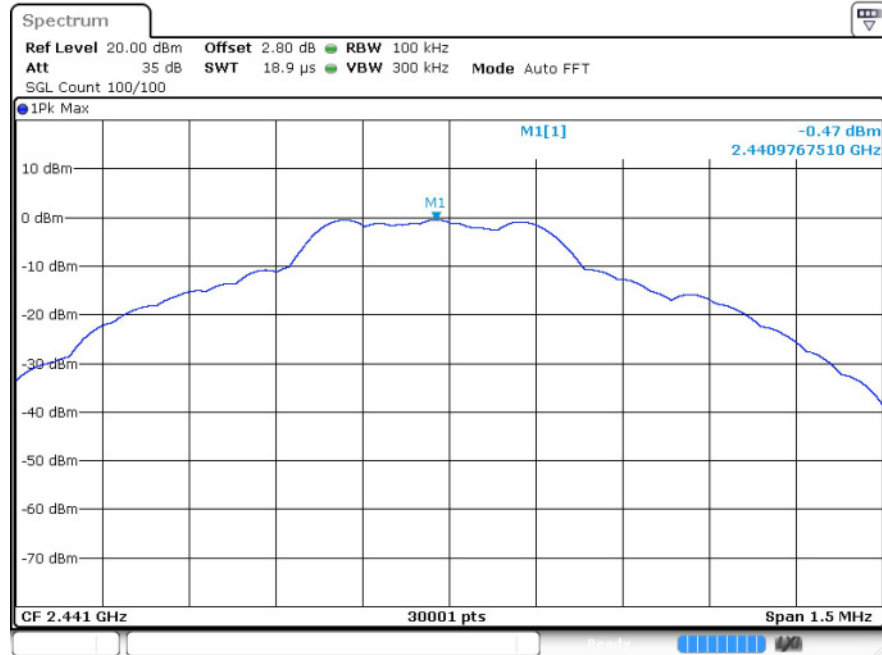


Puw

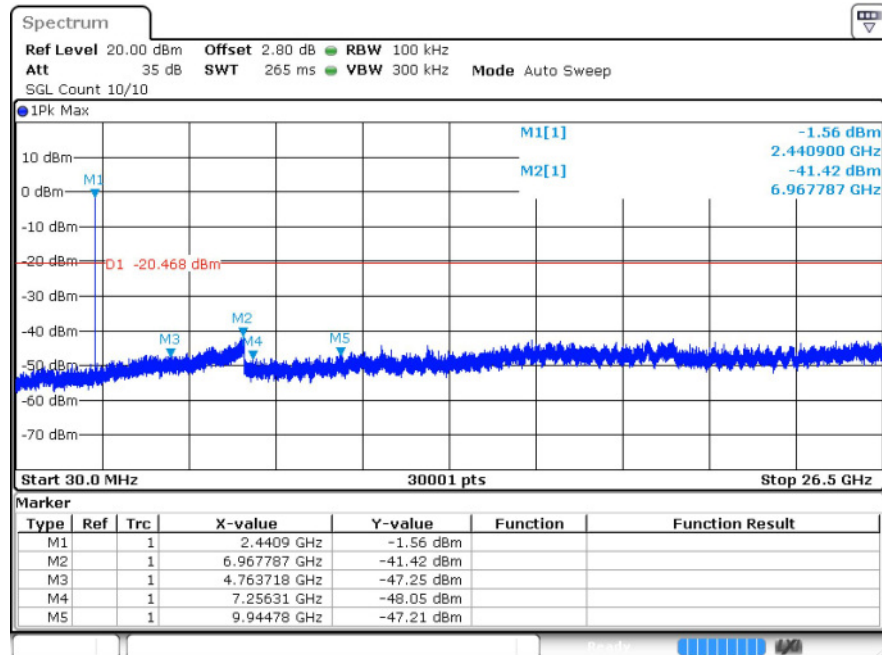


GFSK_MCH_Graphs

Pref

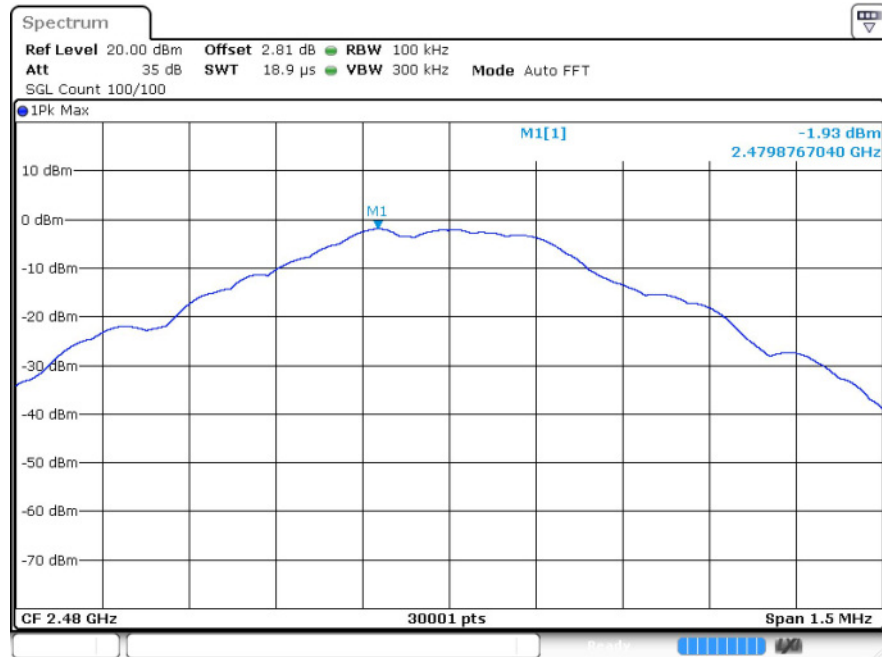


Puw

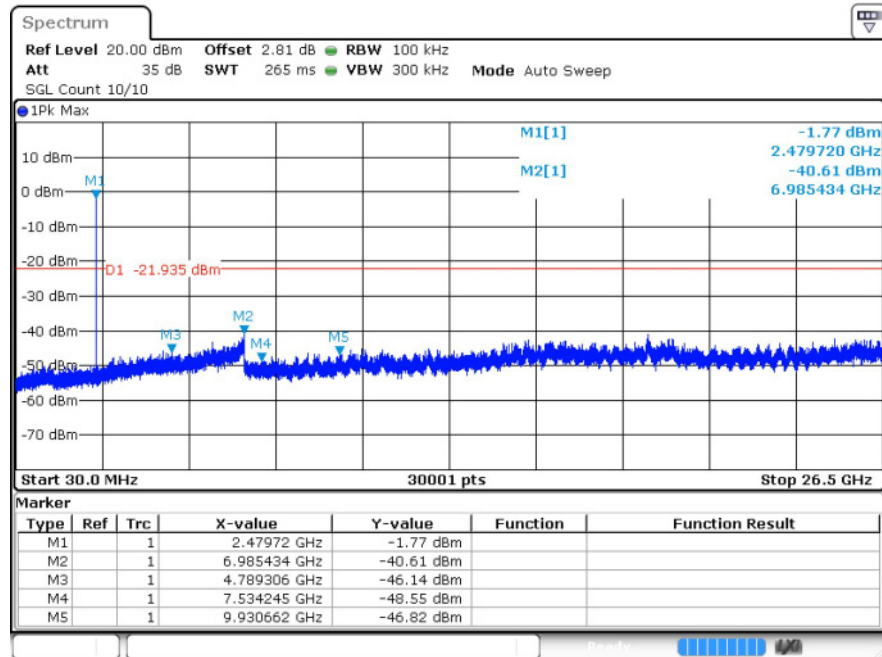


GFSK_HCH_Graphs

Pref

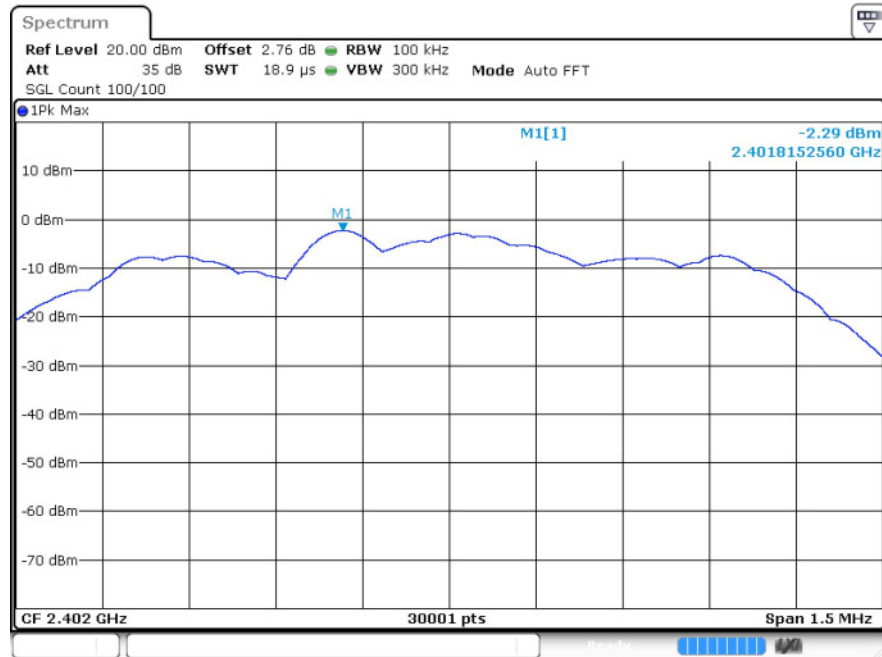


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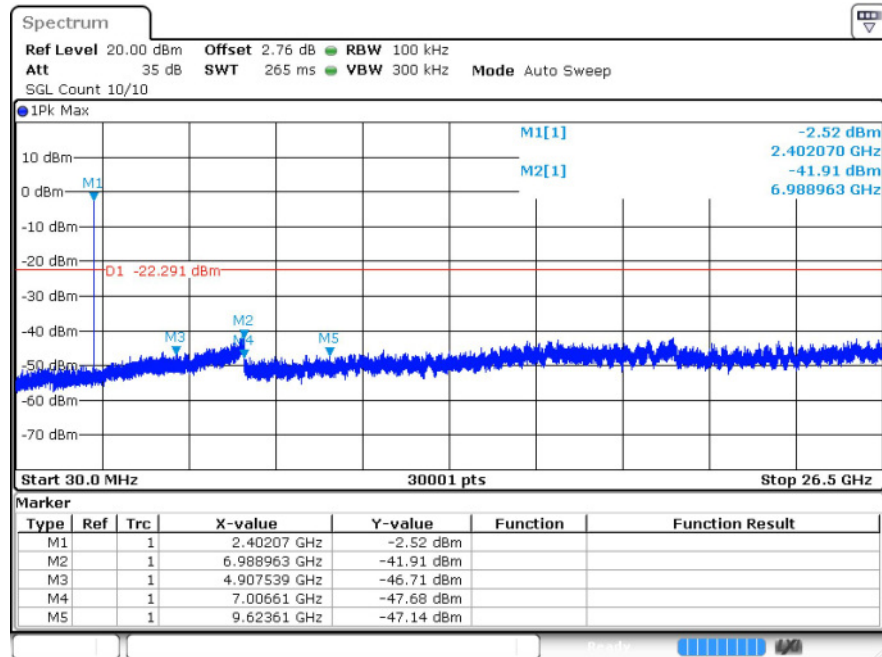


$\pi/4$ DQPSK_LCH_Graphs

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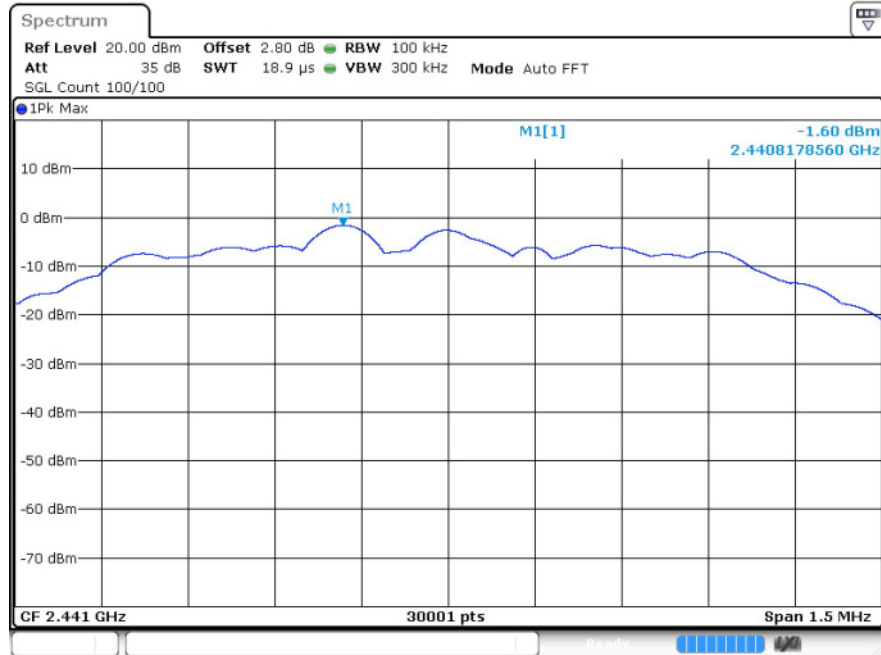


Puw

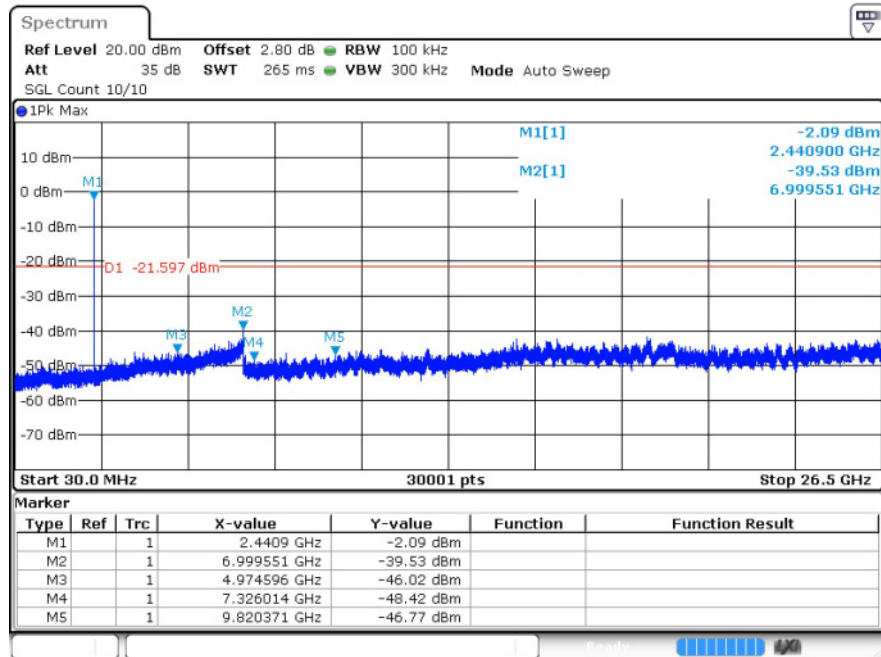


$\pi/4$ DQPSK_MCH_Graphs

Pref

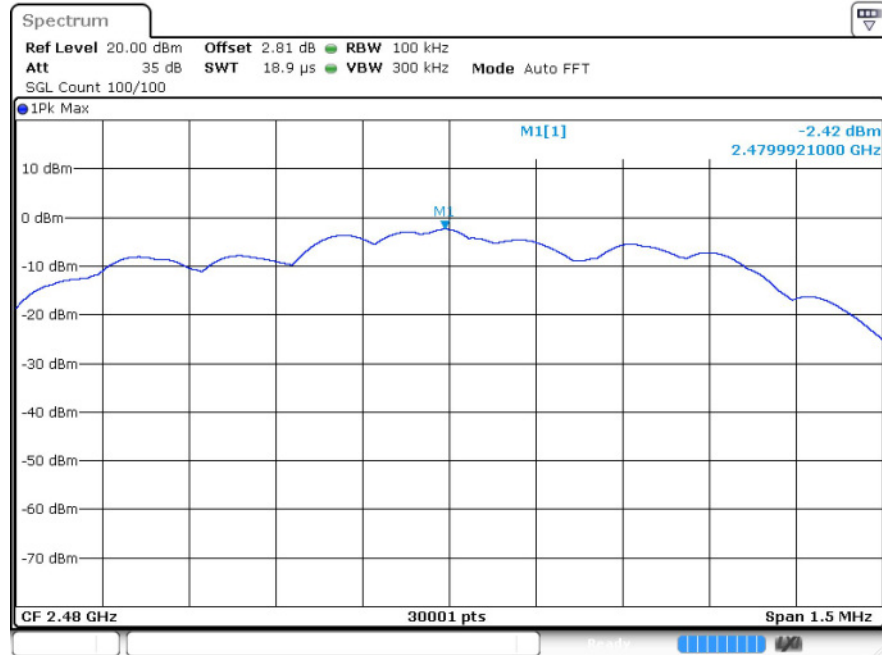


Puw



$\pi/4$ DQPSK_HCH_Graphs

Pref



Puw

