



## Appendix A

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

Product Name: Powered Monitor Speaker

Trade Mark: ELAC

Test Model: DCB41

#### Environmental Conditions

Temperature:	25.4° C
Relative Humidity:	51.2%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

# Contents

Page

**COVER PAGE**

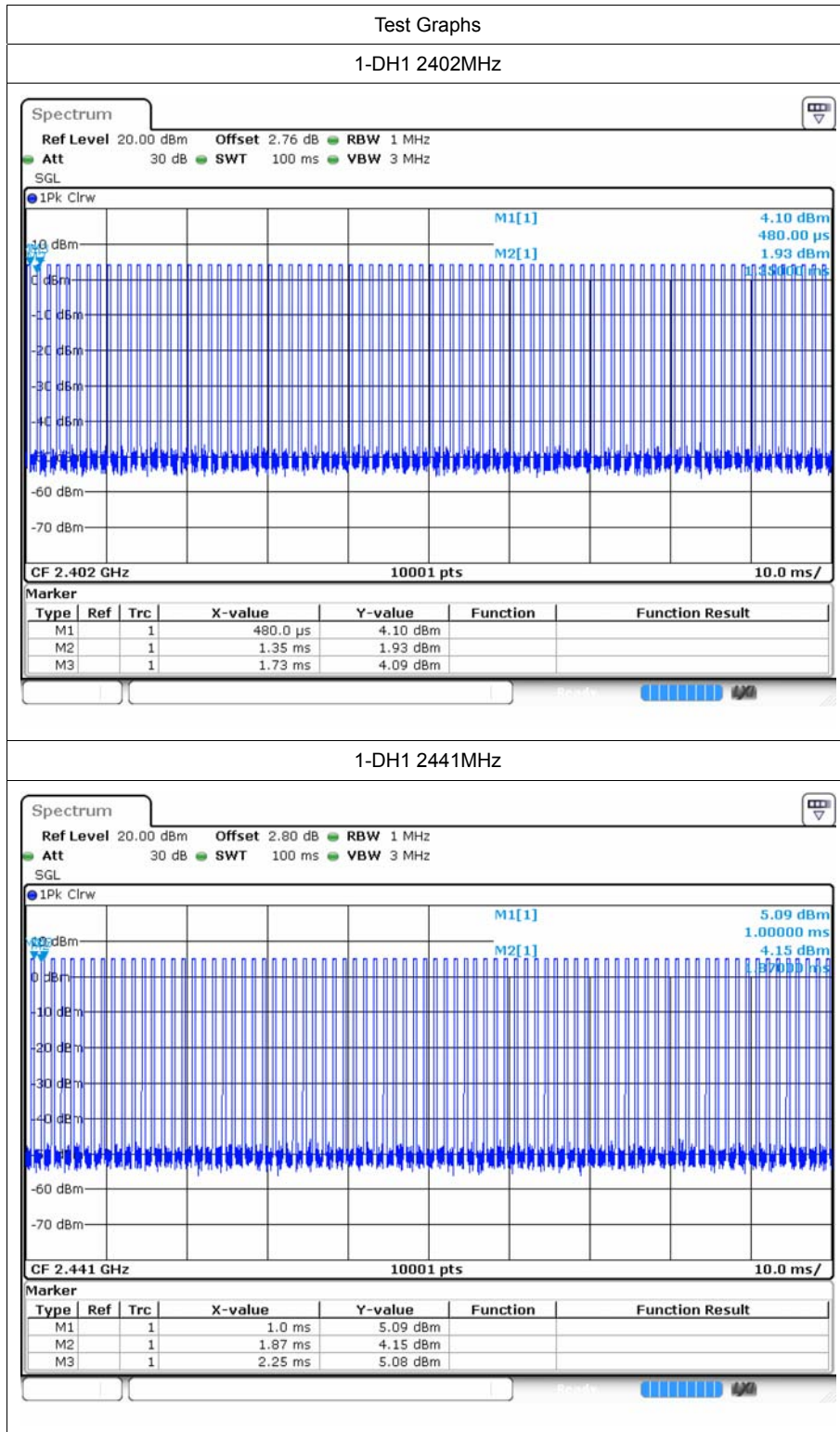
1	Duty Cycle .....	3
1.1	Test Result.....	3
1.2	Test Graphs.....	3
2	Maximum Conducted Peak Output Power .....	3
2.1	Test Result.....	3
2.2	Test Graphs.....	3
3	20dB Bandwidth .....	3
3.1	Test Result.....	3
3.2	Test Graphs.....	3
4	Carrier Frequency Separation .....	3
4.1	Test Result.....	3
4.2	Test Graphs.....	3
5	Hopping Channel Number.....	3
5.1	Test Result.....	3
5.2	Test Graphs.....	3
6	Dwell Time.....	3
6.1	Test Result.....	3
6.2	Test Graphs.....	3
7	RF Conducted Spurious Emissions.....	3
7.1	Test Result.....	3
7.2	Test Graphs.....	3
8	Band-edge for RF Conducted Emissions .....	3
8.1	Test Result.....	3
8.2	Test Graphs.....	3
9	Restrict-band band-edge measurements .....	3
9.1	Test Result.....	3
9.2	Test Graphs.....	3

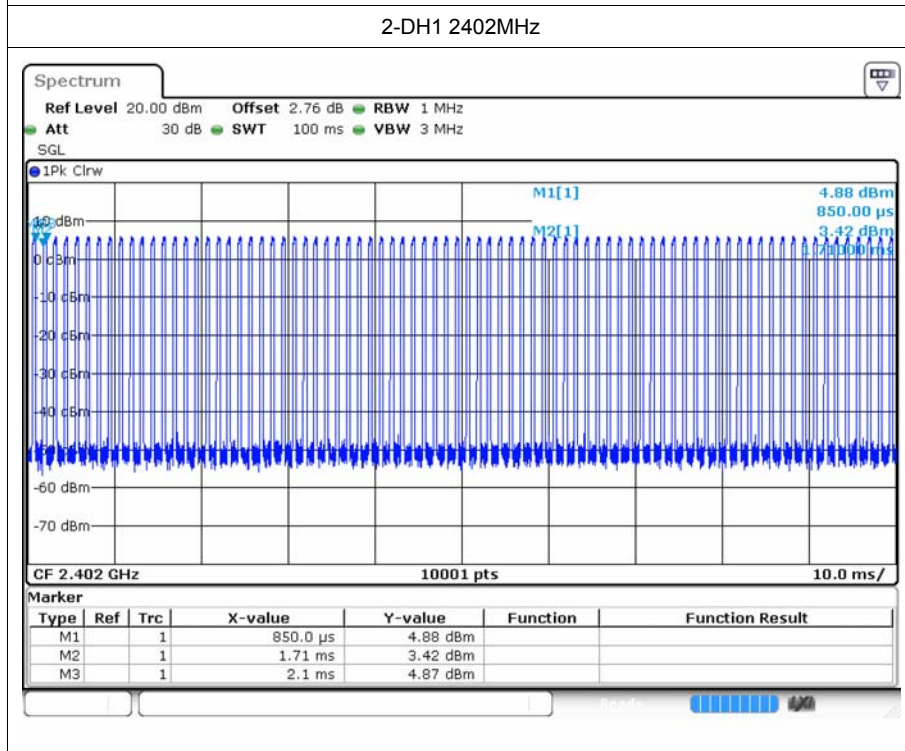
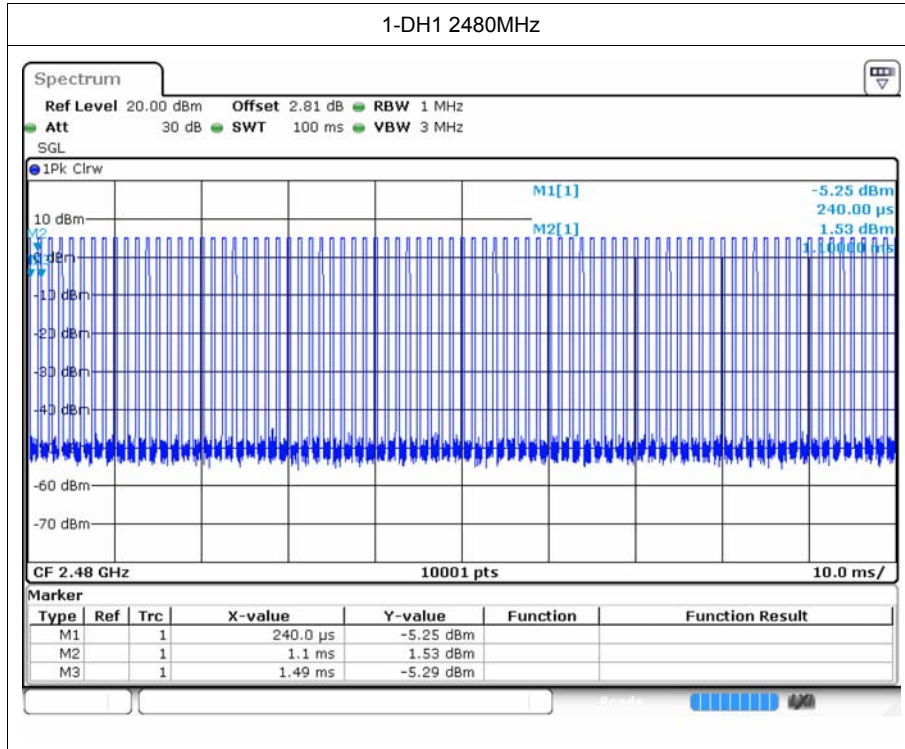
# 1 Duty Cycle

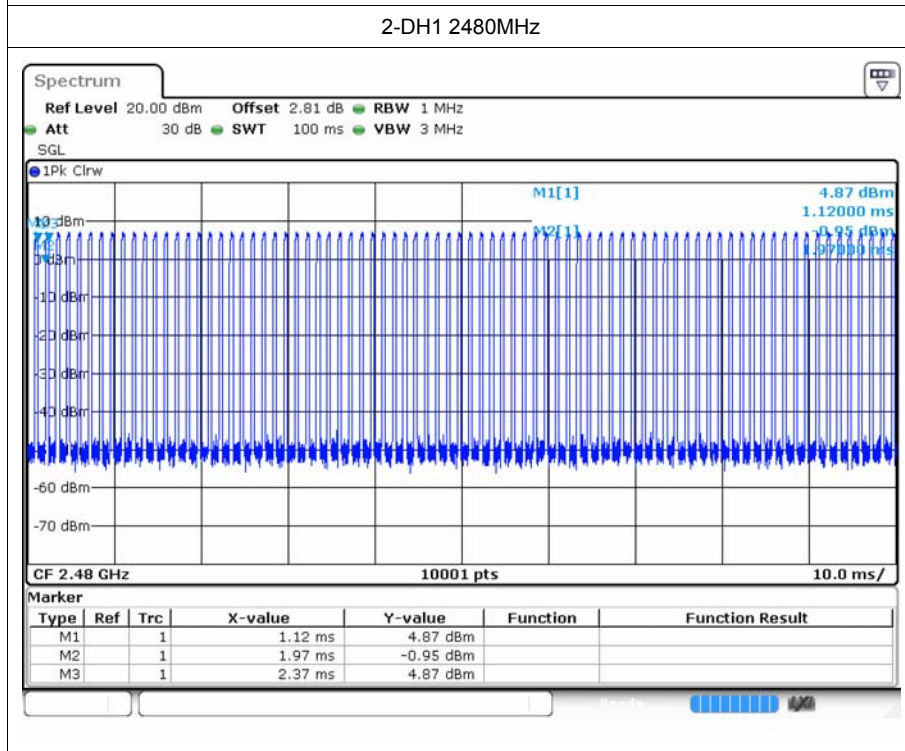
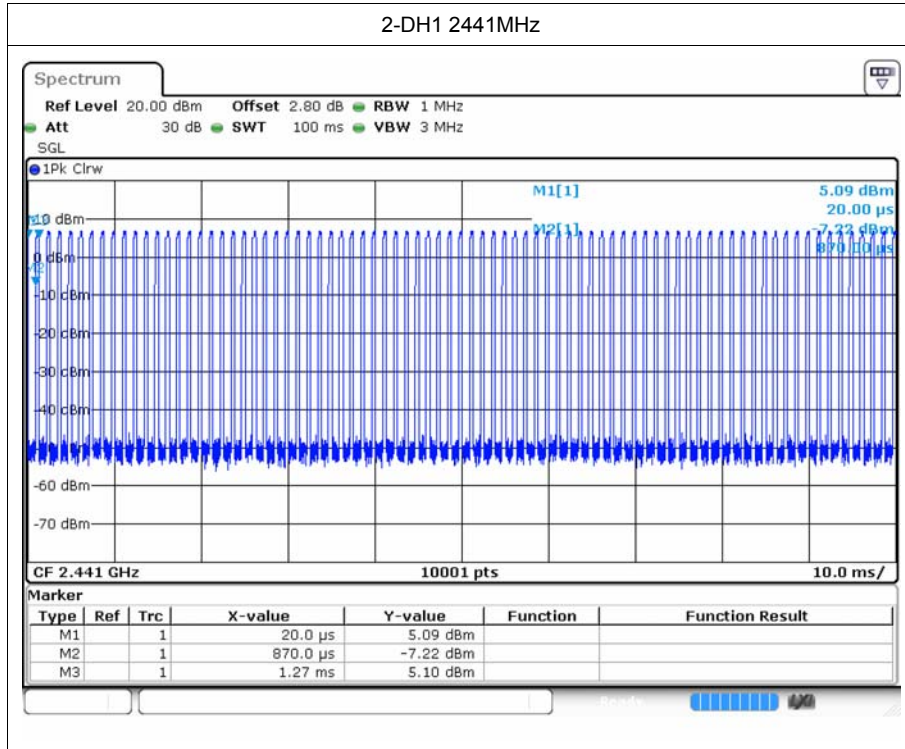
## 1.1 Test Result

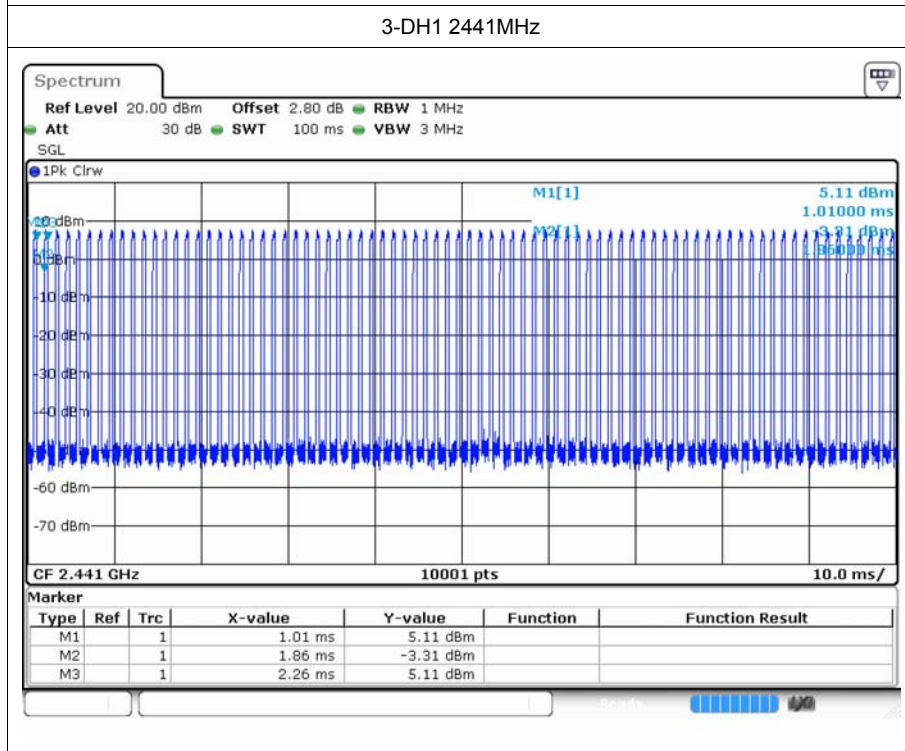
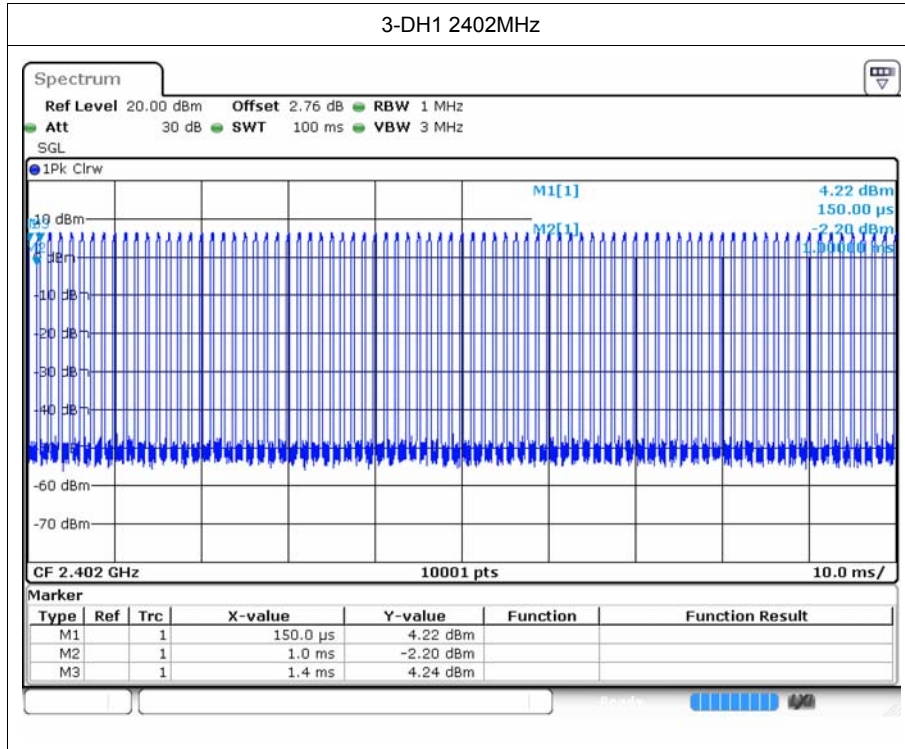
Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	31.2	2.63
1-DH1	2441	31.2	2.63
1-DH1	2480	32.01	2.56
2-DH1	2402	32	2.56
2-DH1	2441	32.81	2.5
2-DH1	2480	32.8	2.5
3-DH1	2402	32.81	2.5
3-DH1	2441	32.8	2.5
3-DH1	2480	32.01	2.56

## 1.2 Test Graphs

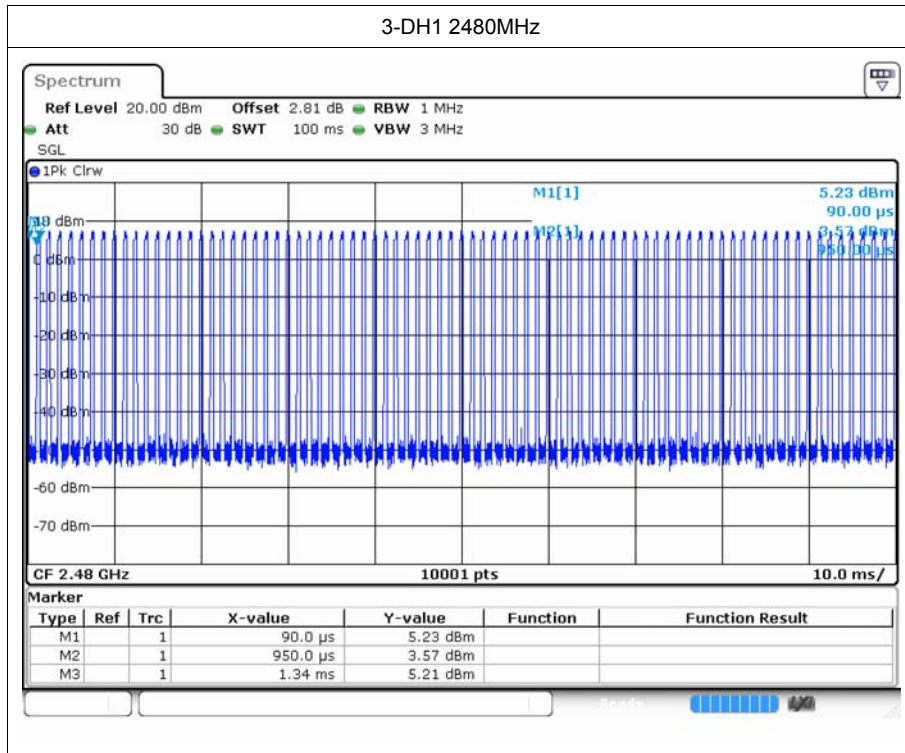












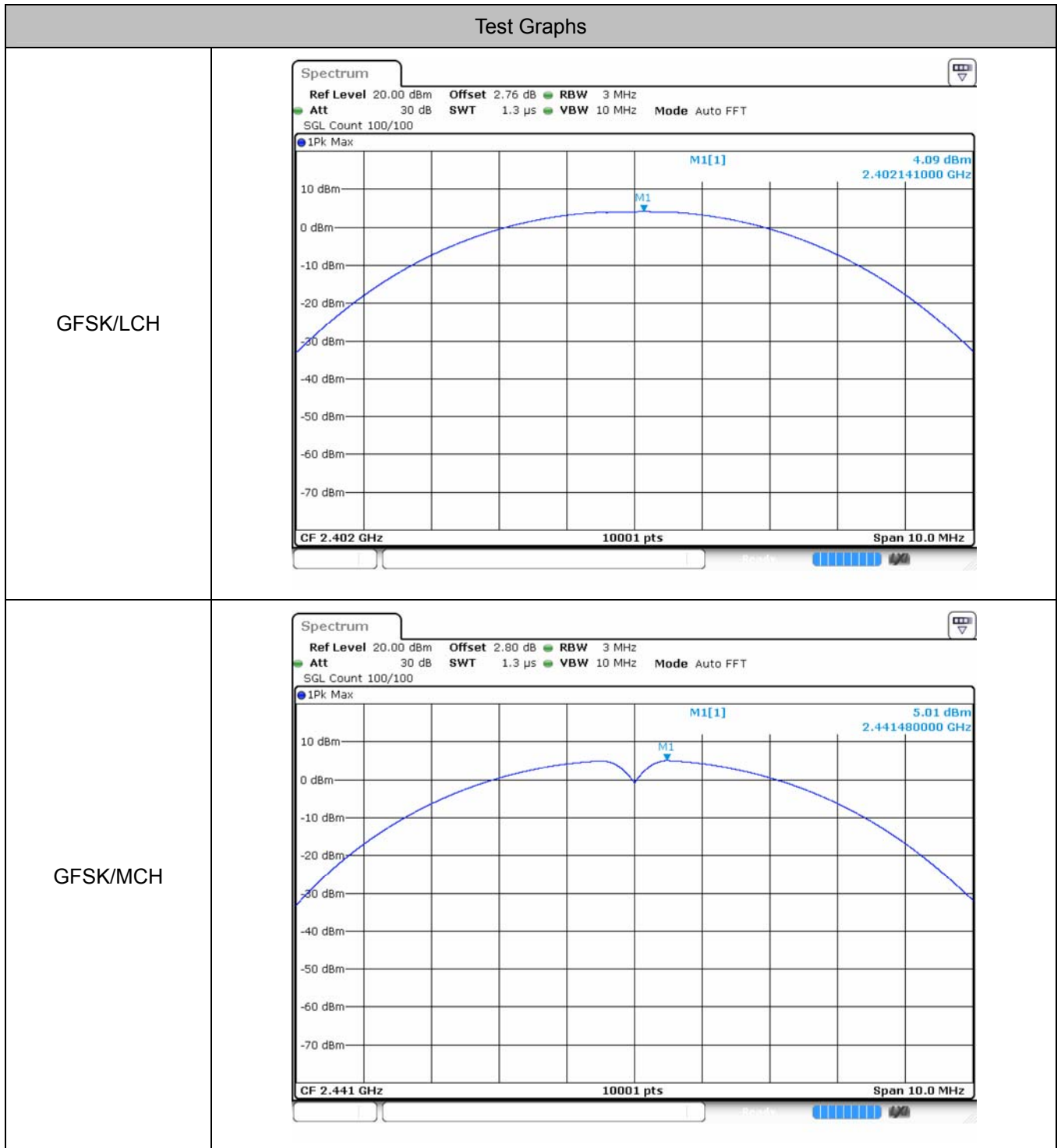


## 2 Maximum Conducted Peak Output Power

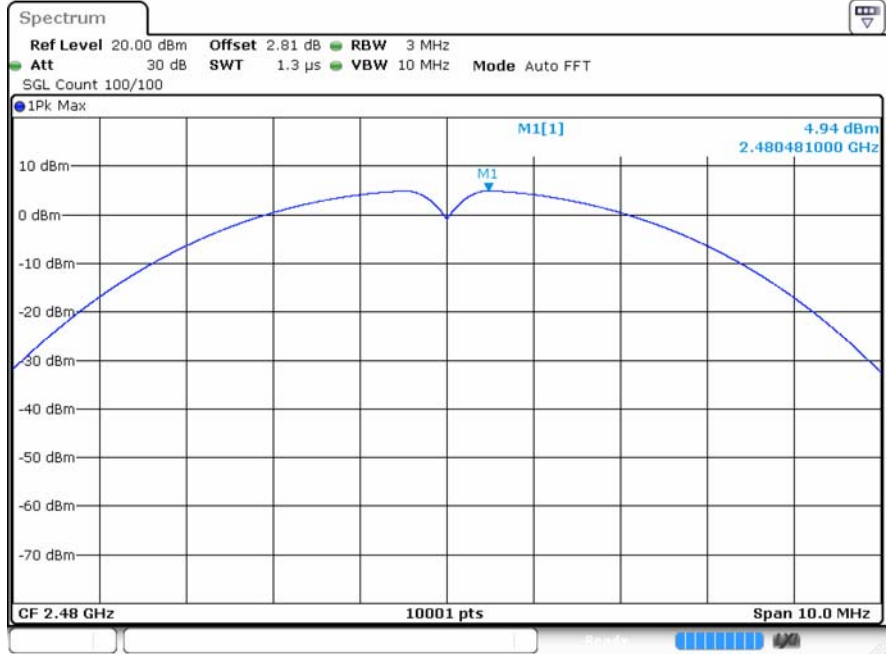
### 2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.09	21	Pass
	MCH	5.01	21	Pass
	HCH	4.94	21	Pass
$\pi/4$ DQPSK	LCH	5.92	21	Pass
	MCH	7.07	21	Pass
	HCH	6.91	21	Pass
8DPSK	LCH	6.47	21	Pass
	MCH	7.29	21	Pass
	HCH	6.83	21	Pass

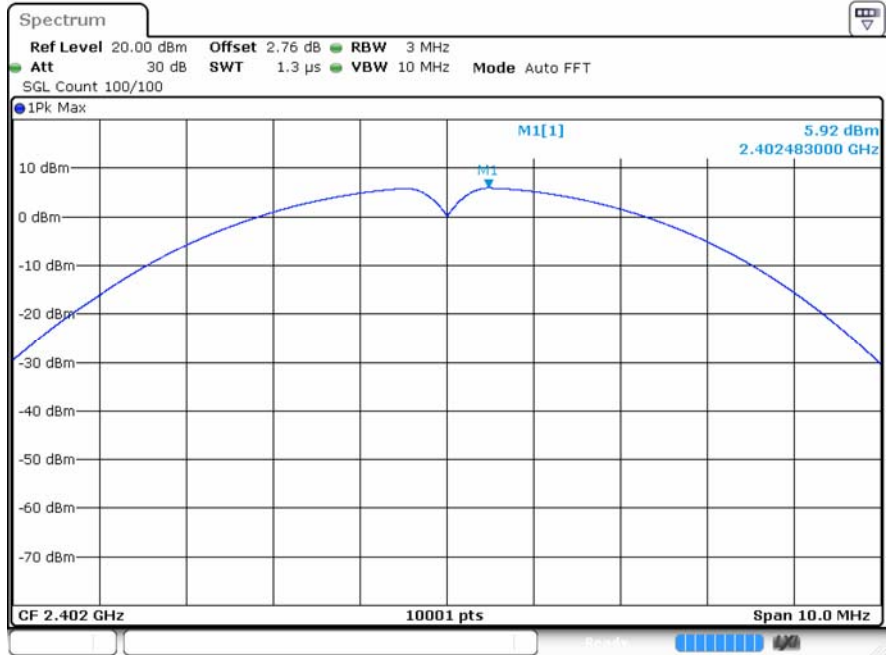
## 2.2 Test Graphs



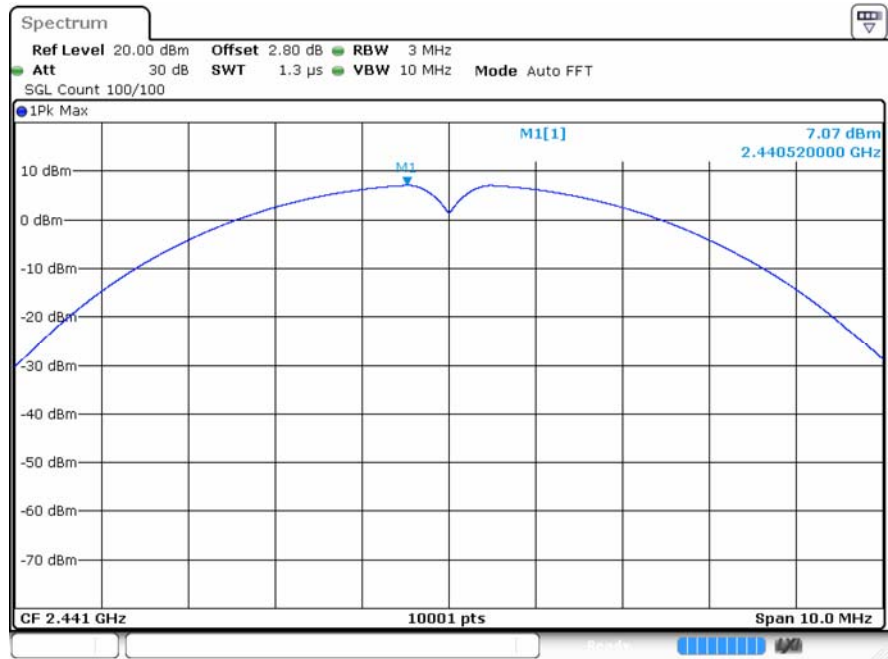
GFSK/HCH



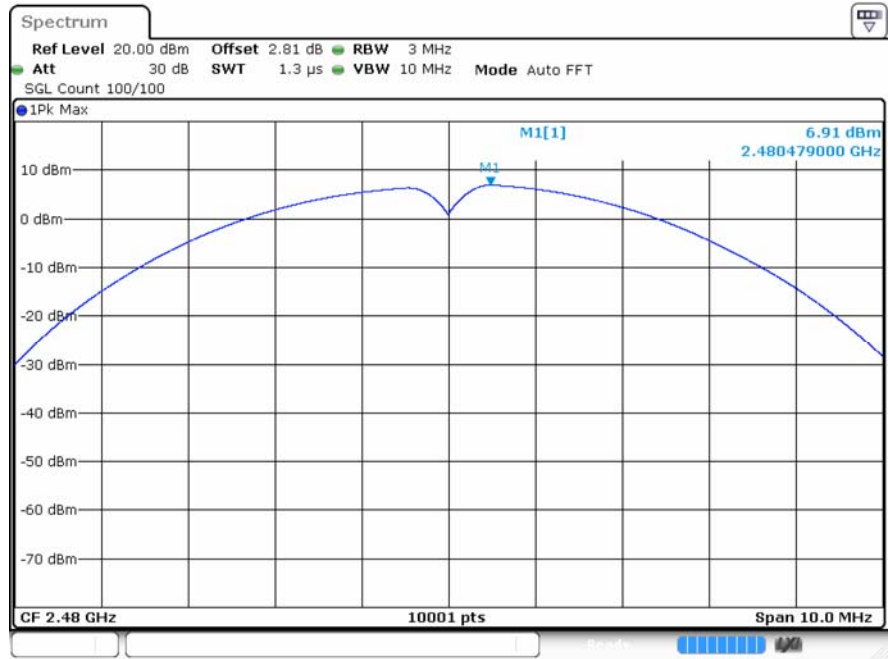
$\pi/4$ DQPSK/LCH



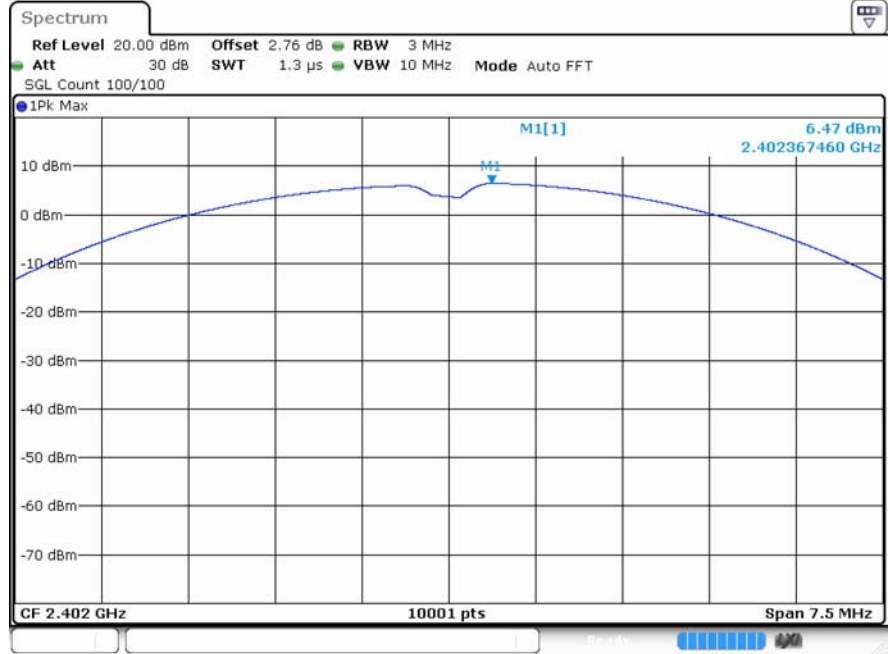
$\pi/4$ DQPSK/MCH



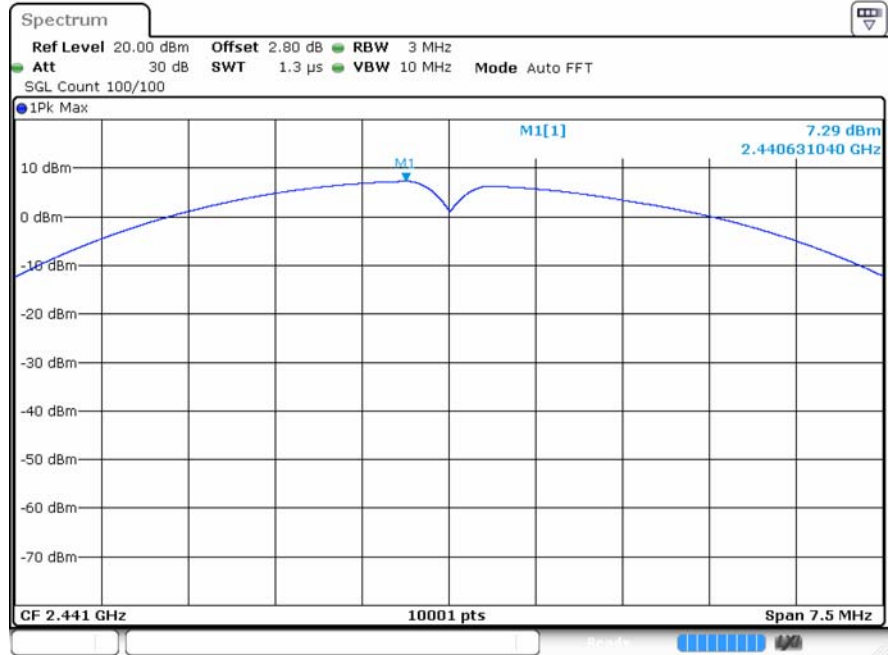
$\pi/4$ DQPSK/HCH



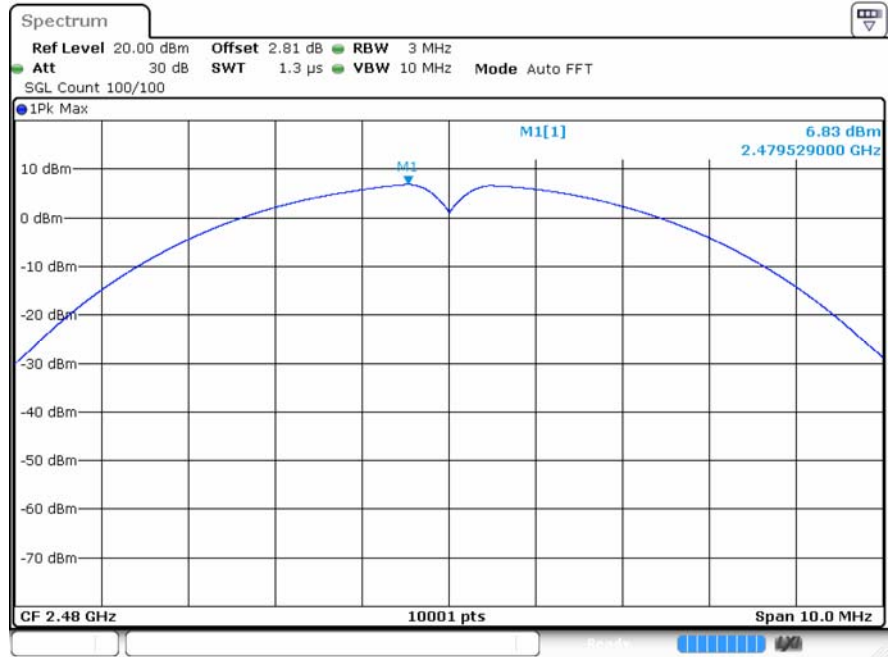
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH



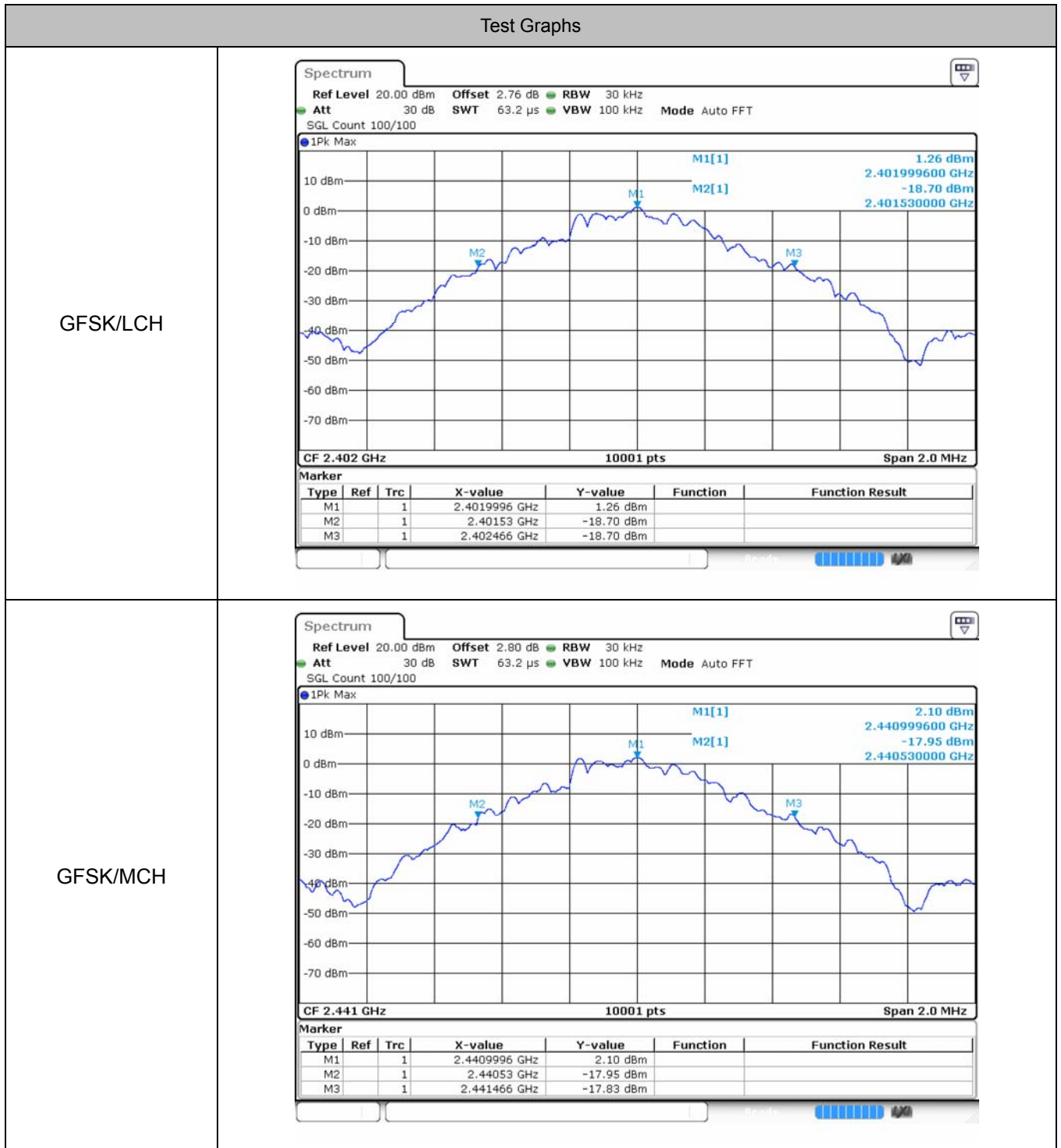
### 3 20dB Bandwidth

#### 3.1 Test Result

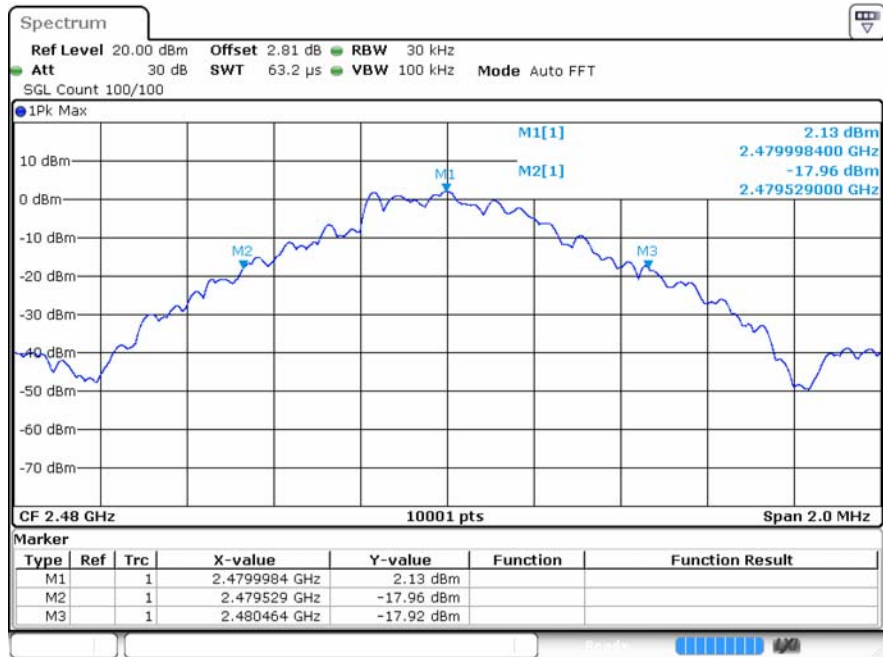
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.936	Not Specified	Pass
	MCH	0.936	Not Specified	Pass
	HCH	0.934	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.295	Not Specified	Pass
	MCH	1.32	Not Specified	Pass
	HCH	1.328	Not Specified	Pass
8DPSK	LCH	1.297	Not Specified	Pass
	MCH	1.286	Not Specified	Pass
	HCH	1.302	Not Specified	Pass



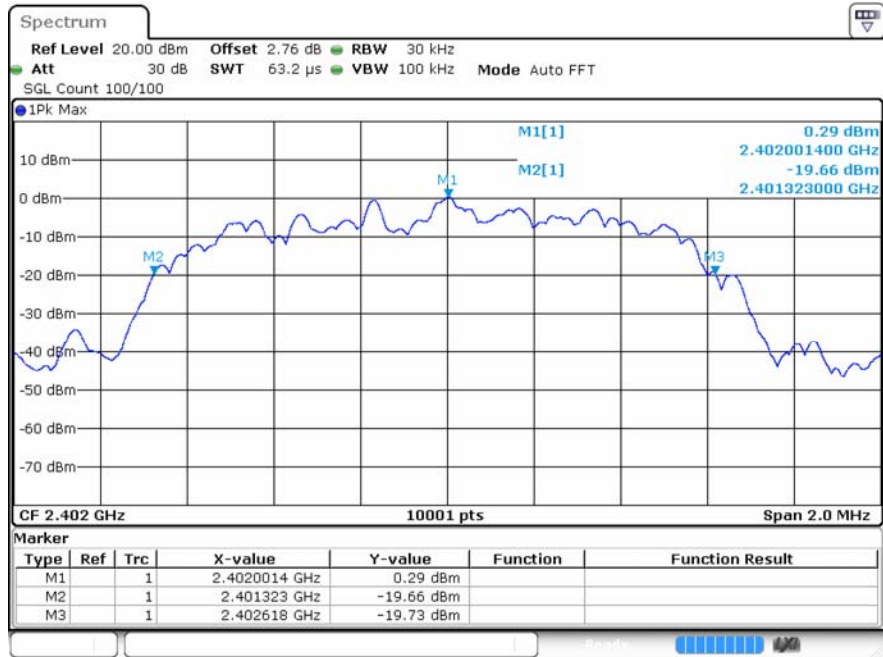
### 3.2 Test Graphs



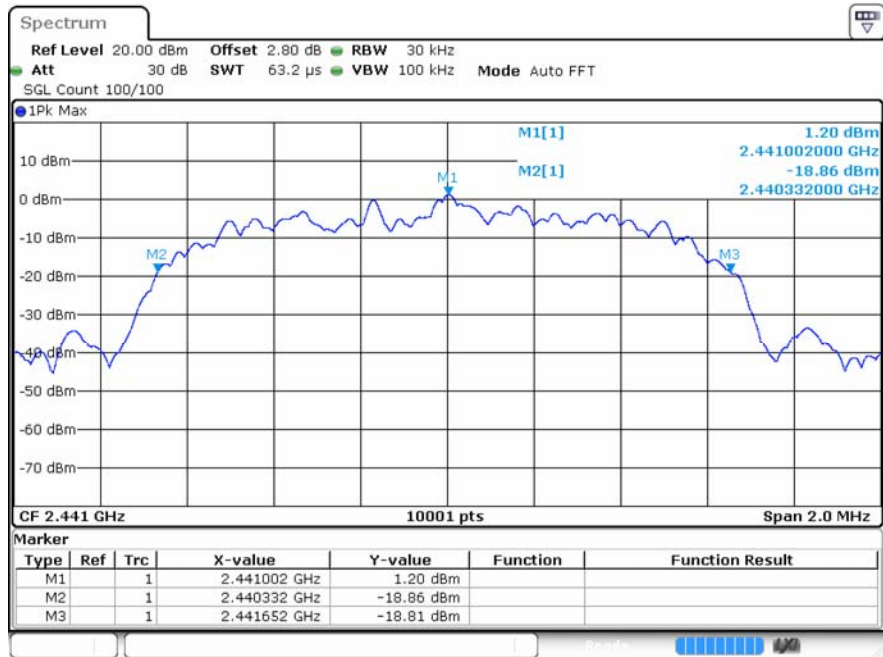
GFSK/HCH



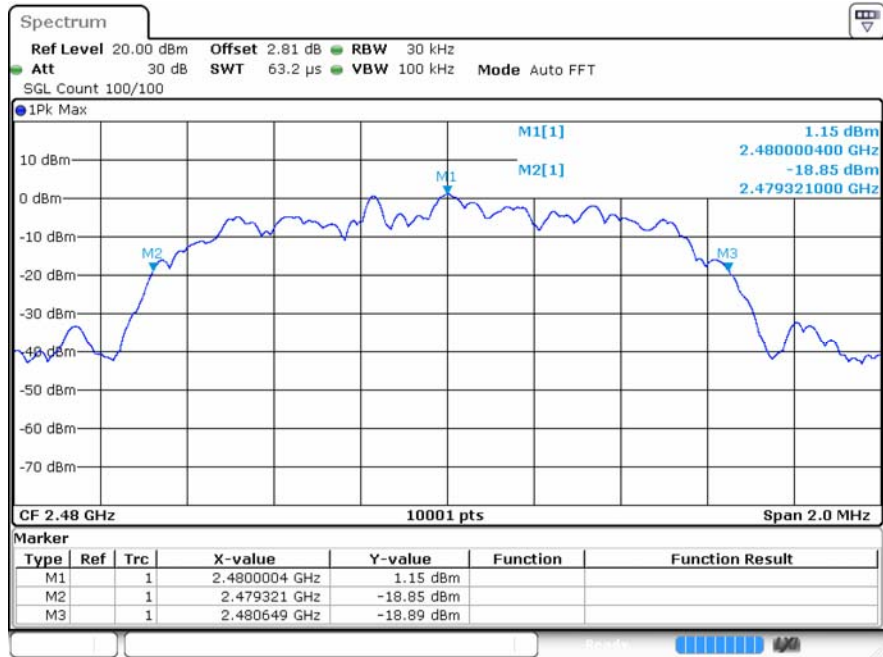
$\pi/4$ DQPSK/LCH



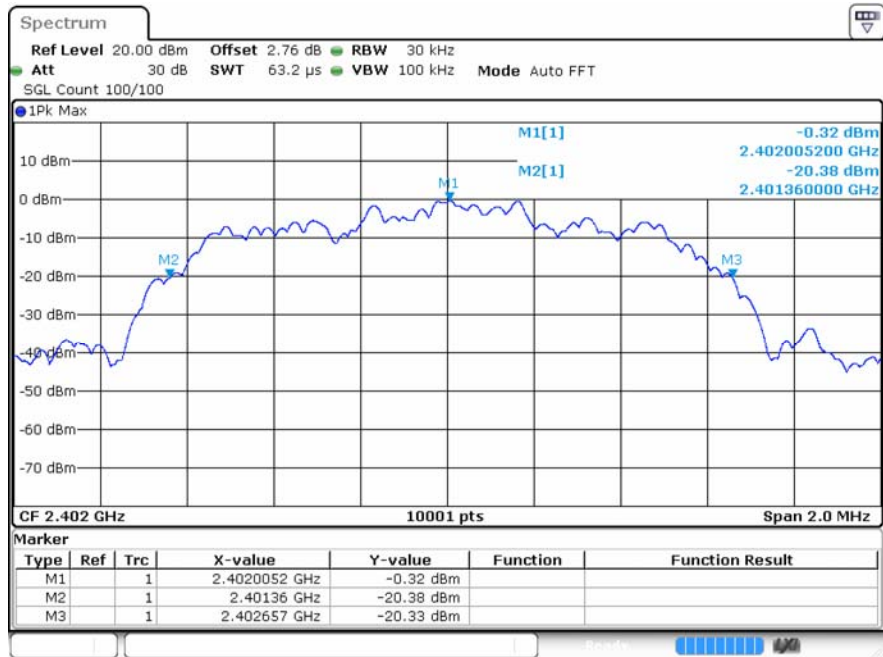
$\pi/4$ DQPSK/MCH



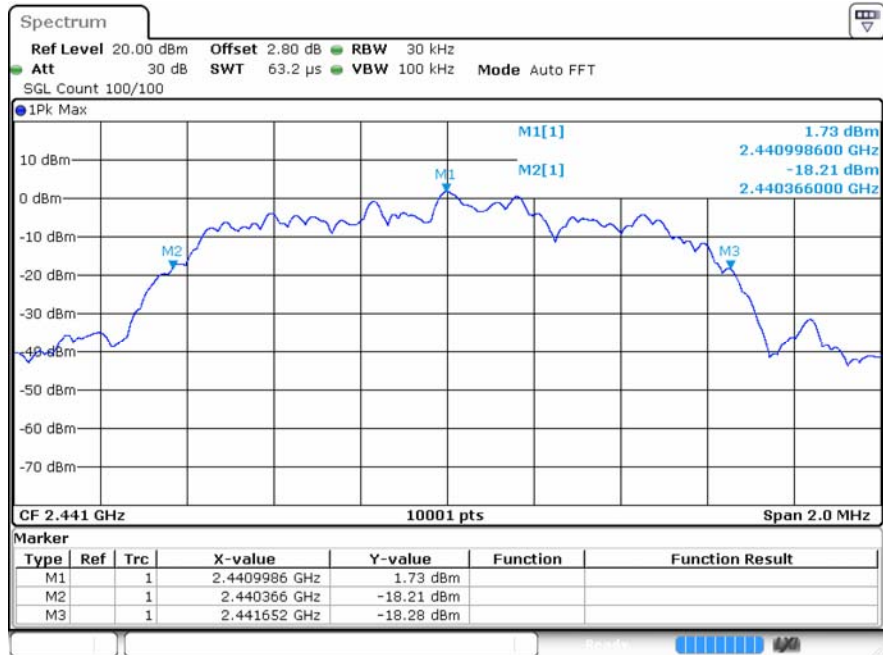
$\pi/4$ DQPSK/HCH



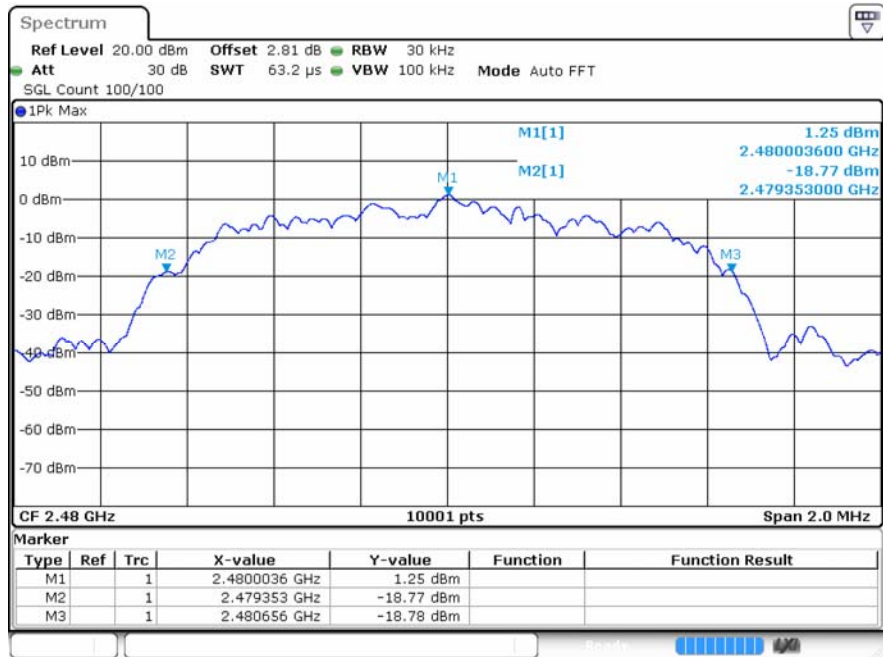
8DPSK/LCH



8DPSK/MCH



8DPSK/HCH

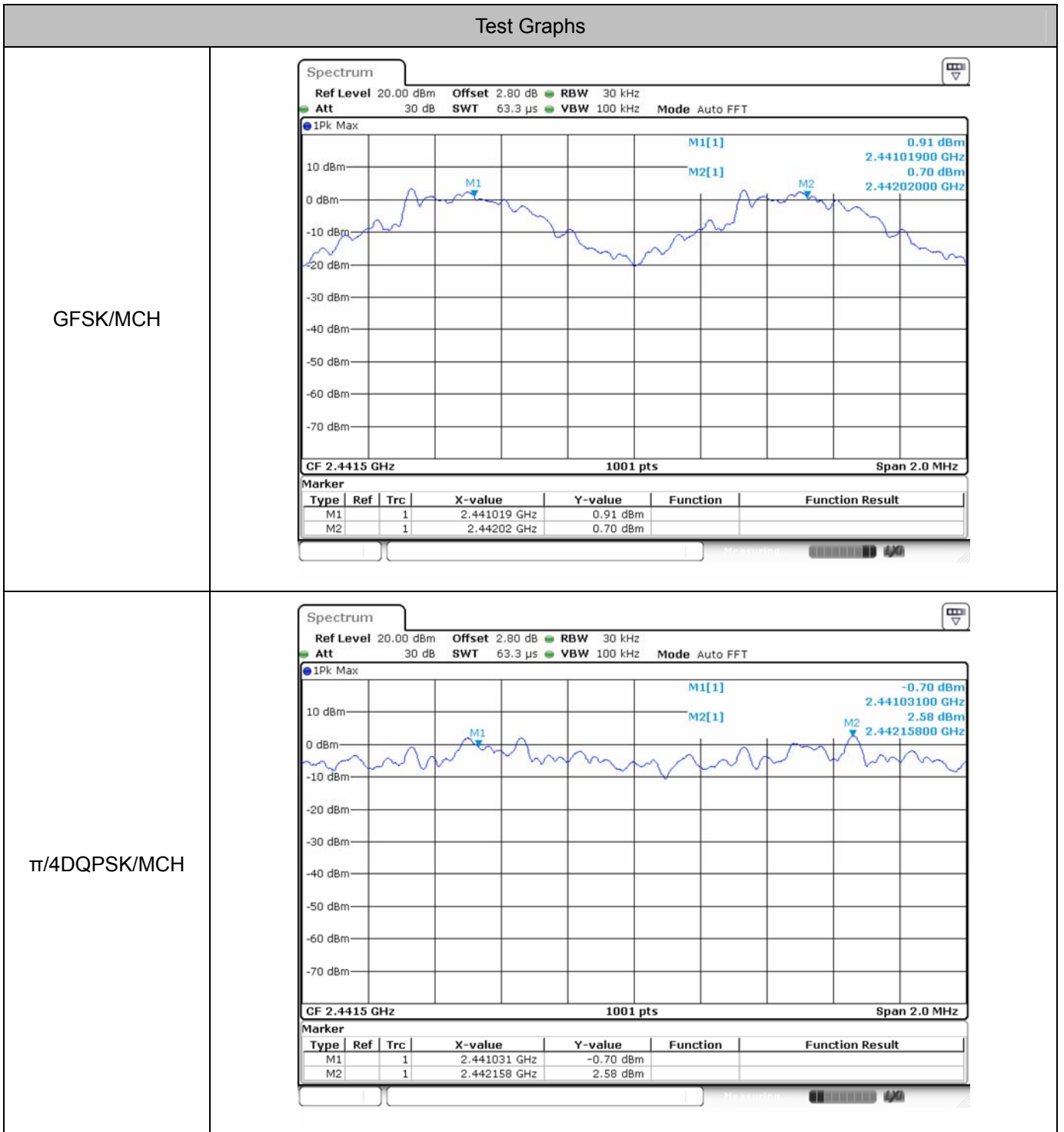


## 4 Carrier Frequency Separation

### 4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	1.001	0.624	Pass
$\pi/4$ DQPSK	MCH	1.127	0.88	Pass
8DPSK	MCH	1.011	0.857	Pass

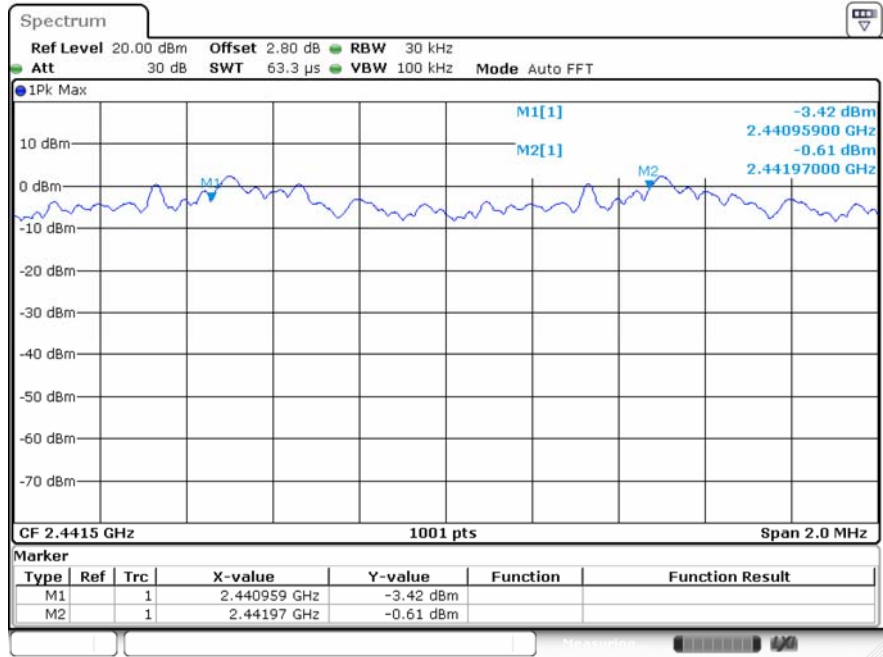
## 4.2 Test Graphs







8DPSK/MCH

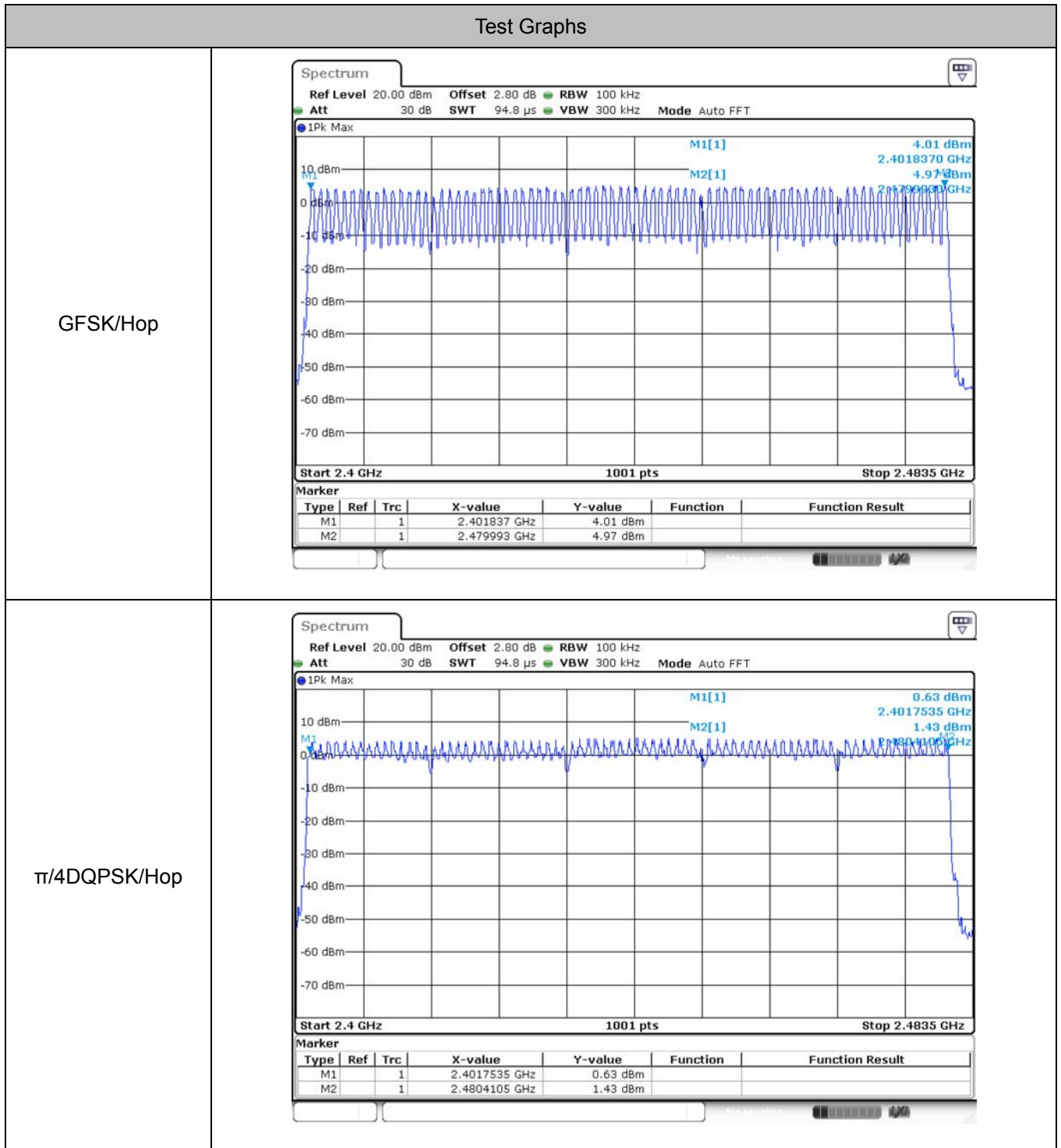


## 5 Hopping Channel Number

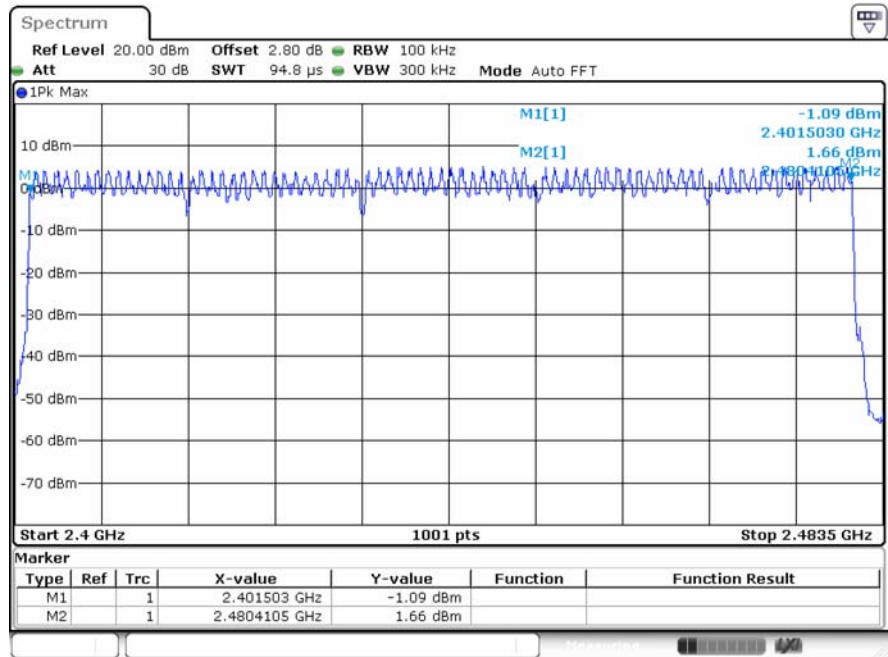
### 5.1 Test Result

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

## 5.2 Test Graphs



8DPSK/Hop

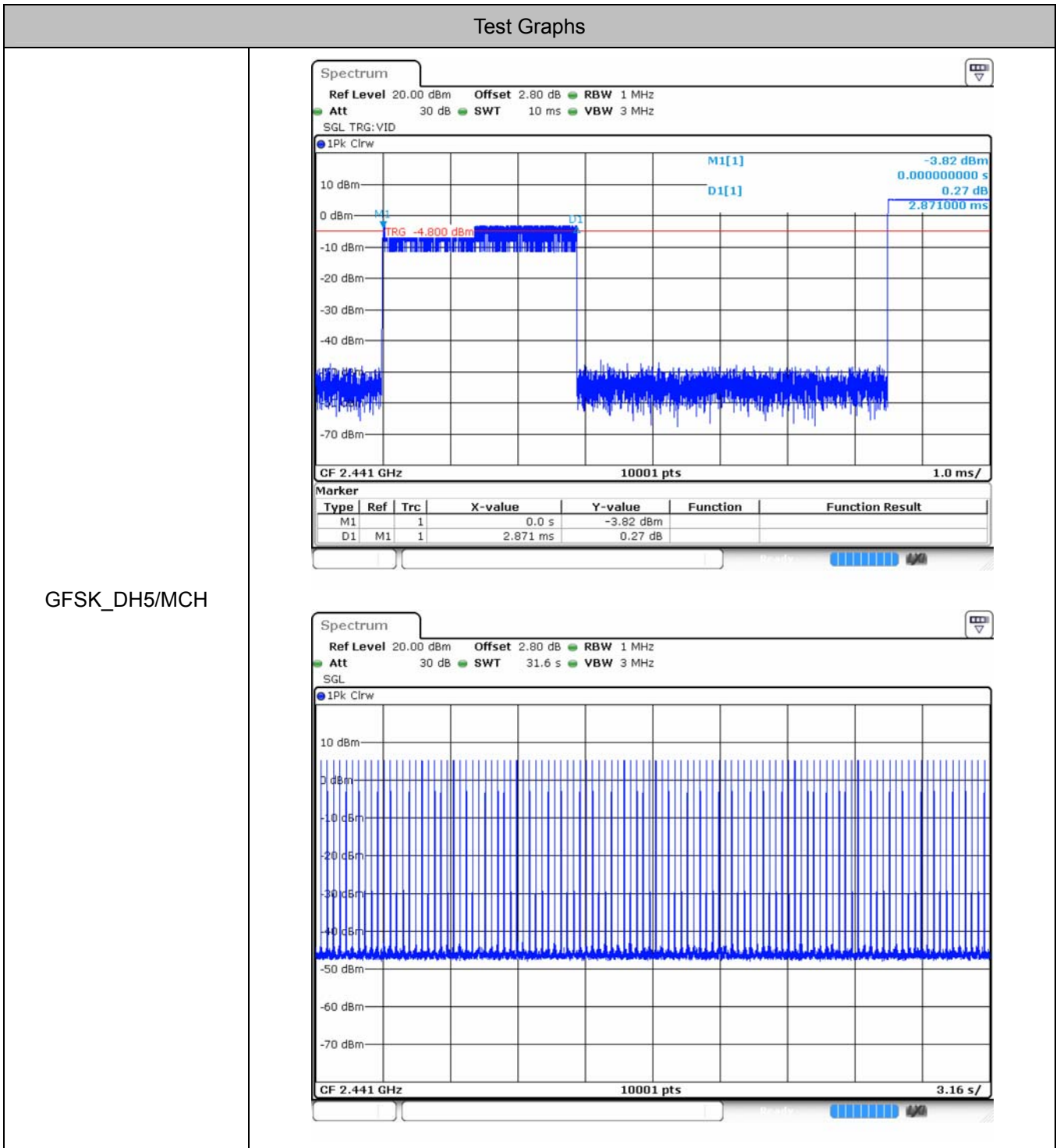


## 6 Dwell Time

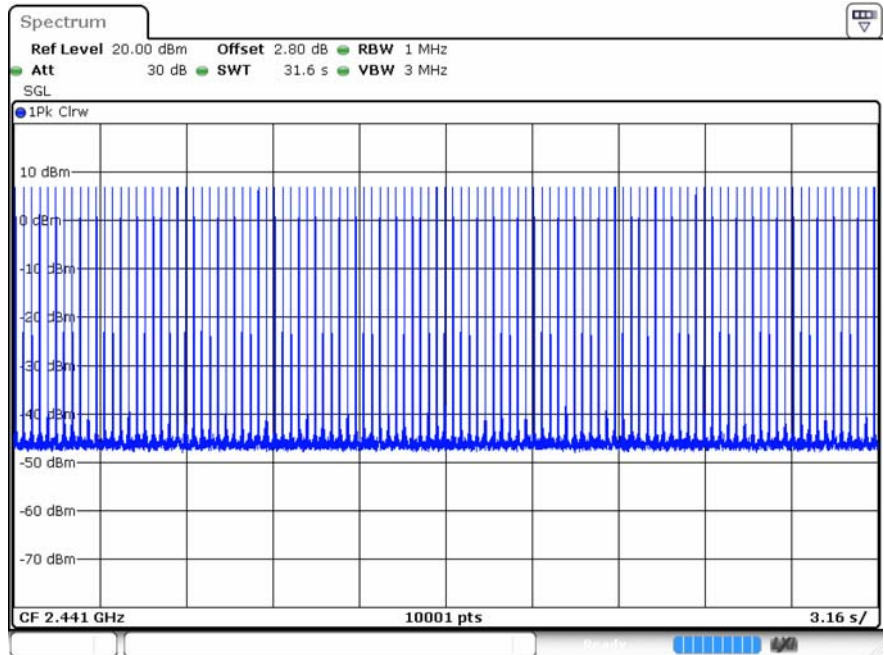
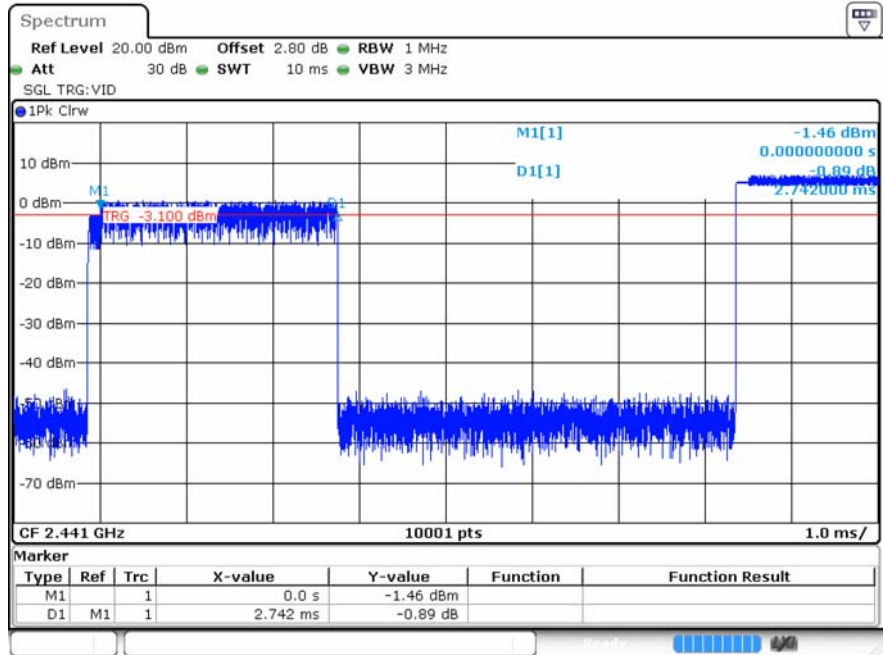
### 6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.871	105	301.455	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.742	107	293.394	0.4	Pass
8DPSK	3DH5	MCH	2.742	106	290.652	0.4	Pass

## 6.2 Test Graphs

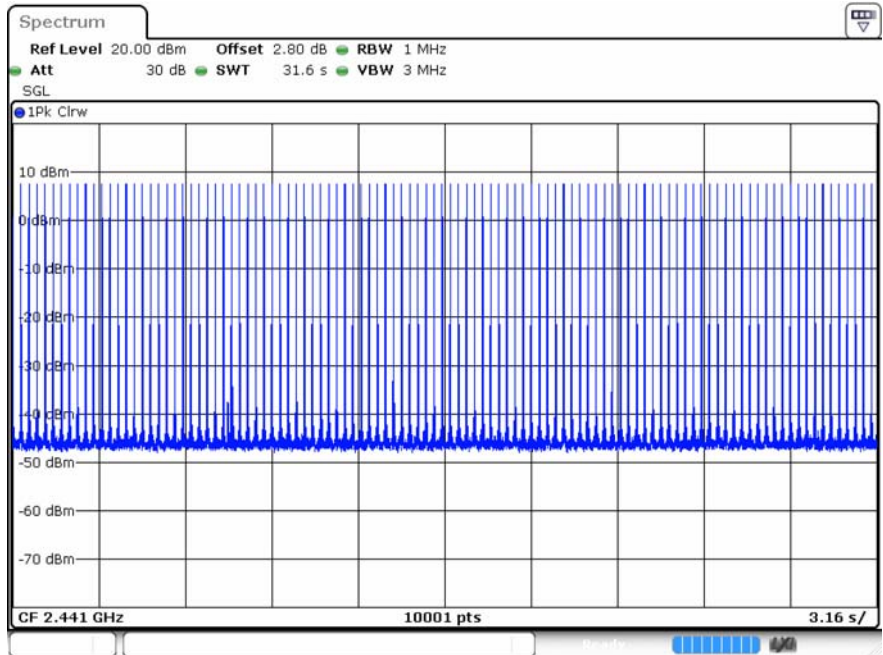
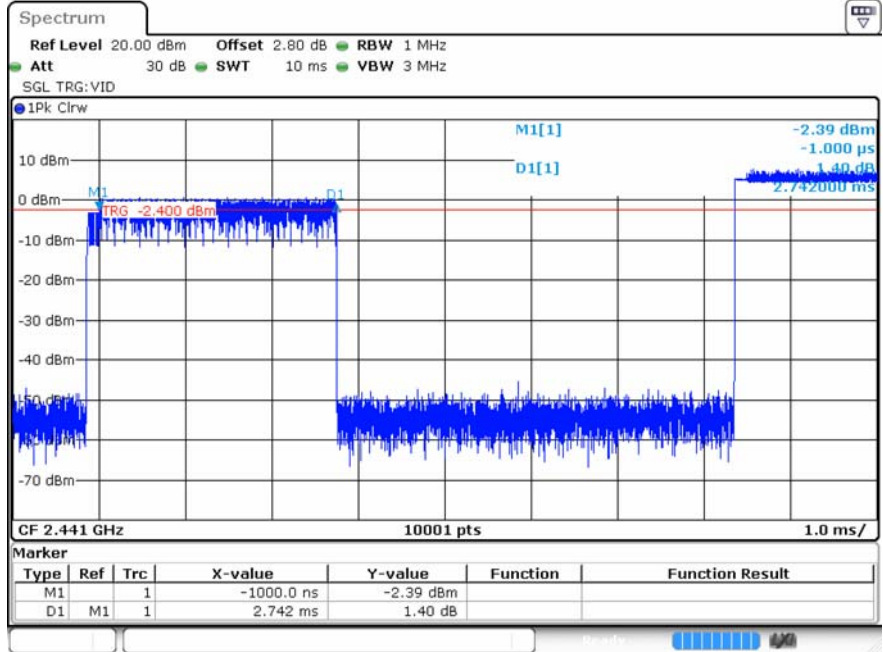


$\pi/4$ DQPSK  
\_2DH5/MCH





8DPSK\_3DH5/MCH

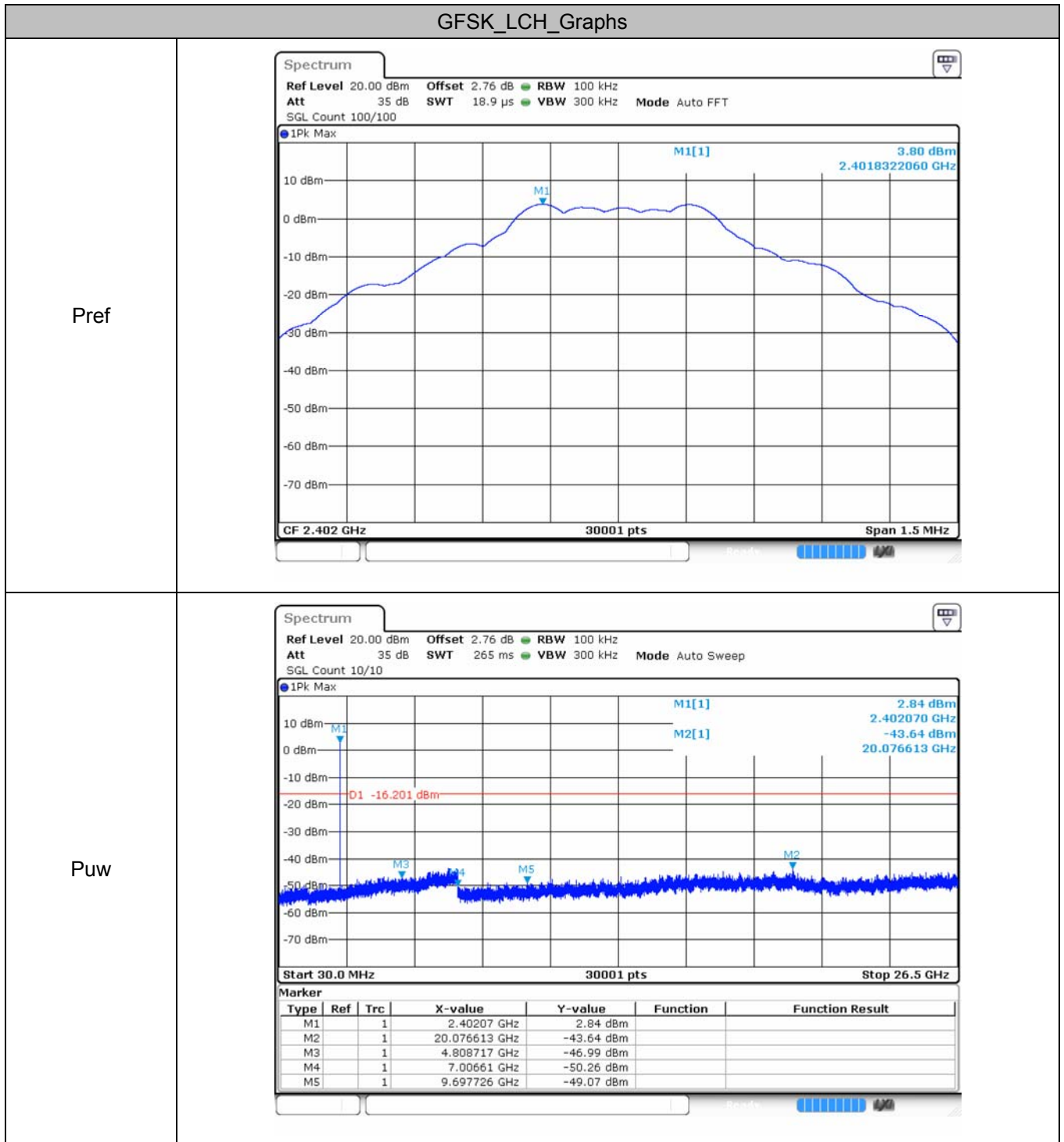


## 7 RF Conducted Spurious Emissions

### 7.1 Test Result

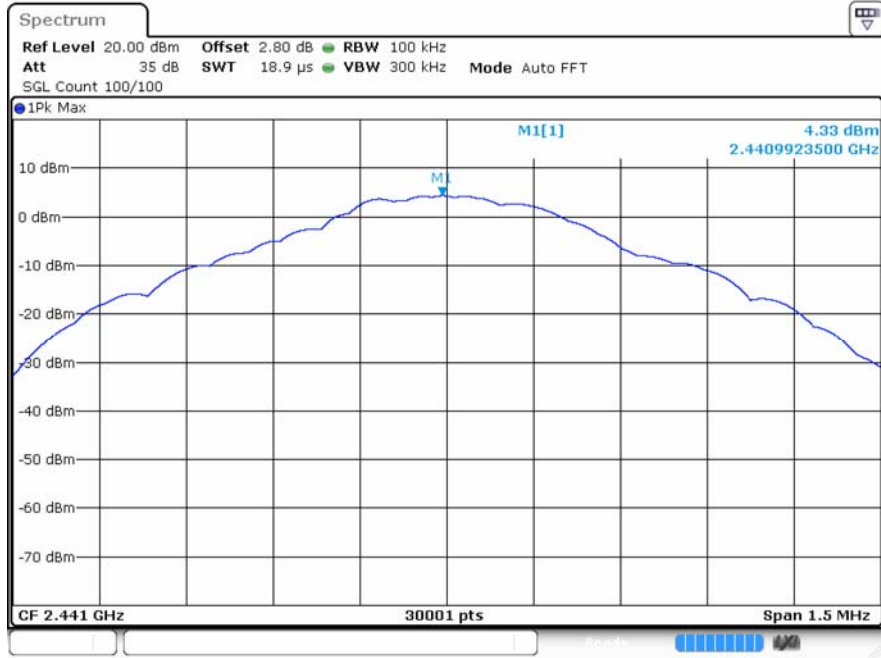
Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-47.43	-20	Pass
	MCH	-48.05	-20	Pass
	HCH	-47.66	-20	Pass
$\pi/4$ DQPSK	LCH	-46.85	-20	Pass
	MCH	-47.82	-20	Pass
	HCH	-47.19	-20	Pass
8DPSK	LCH	-47.23	-20	Pass
	MCH	-48.76	-20	Pass
	HCH	-48.54	-20	Pass

## 7.2 Test Graphs

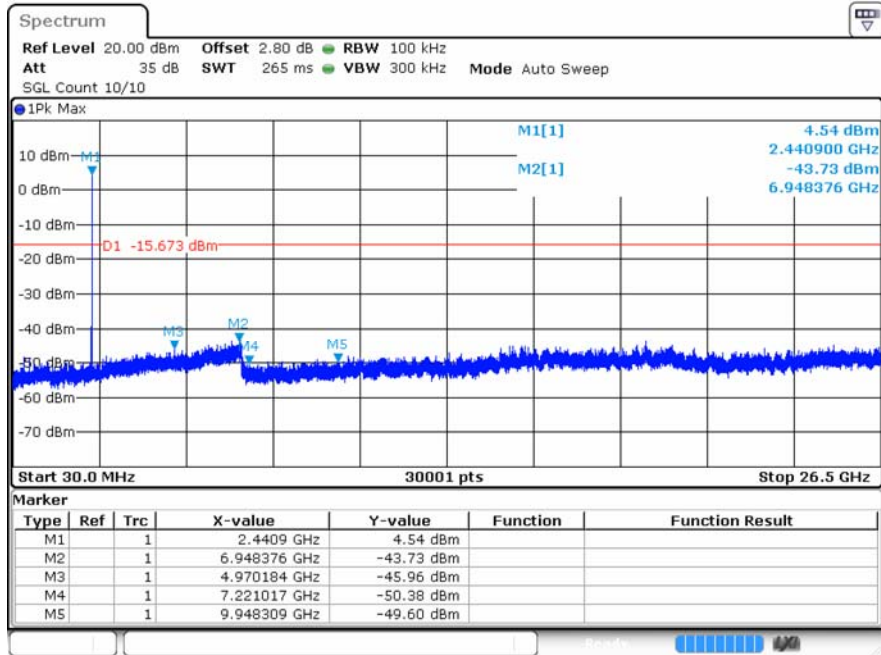


GFSK\_MCH\_Graphs

Pref



Puw

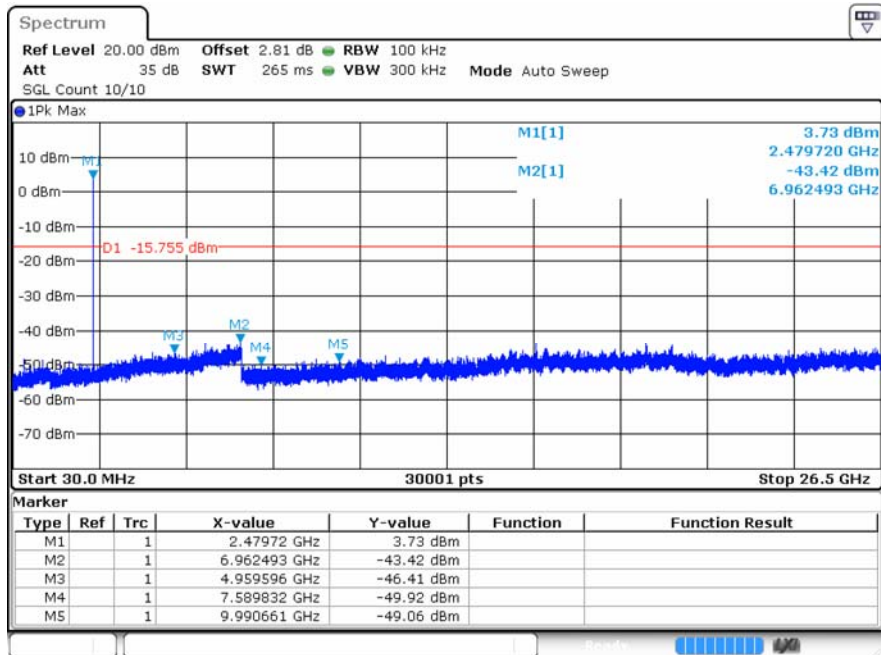


GFSK\_HCH\_Graphs

Pref

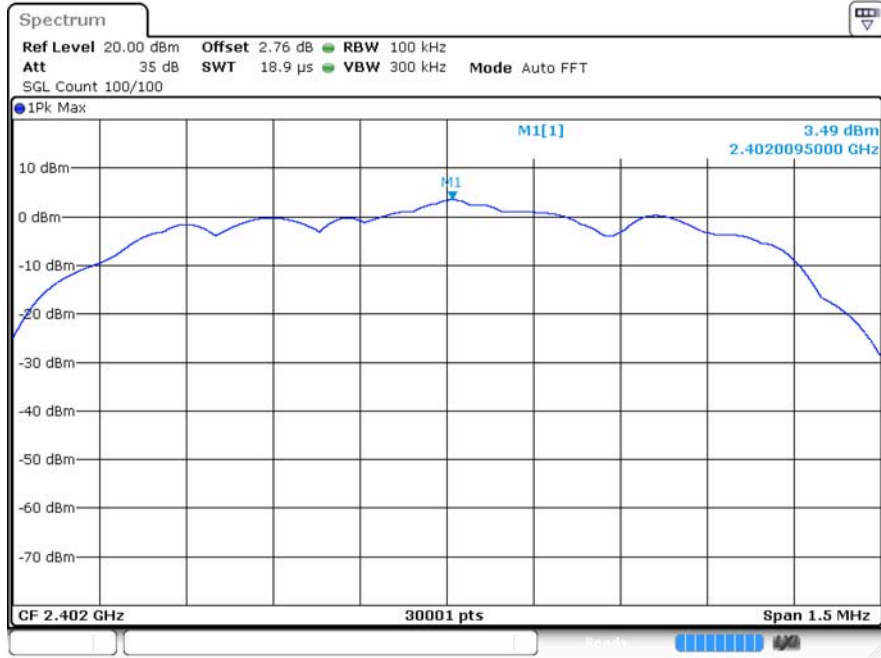


Puw

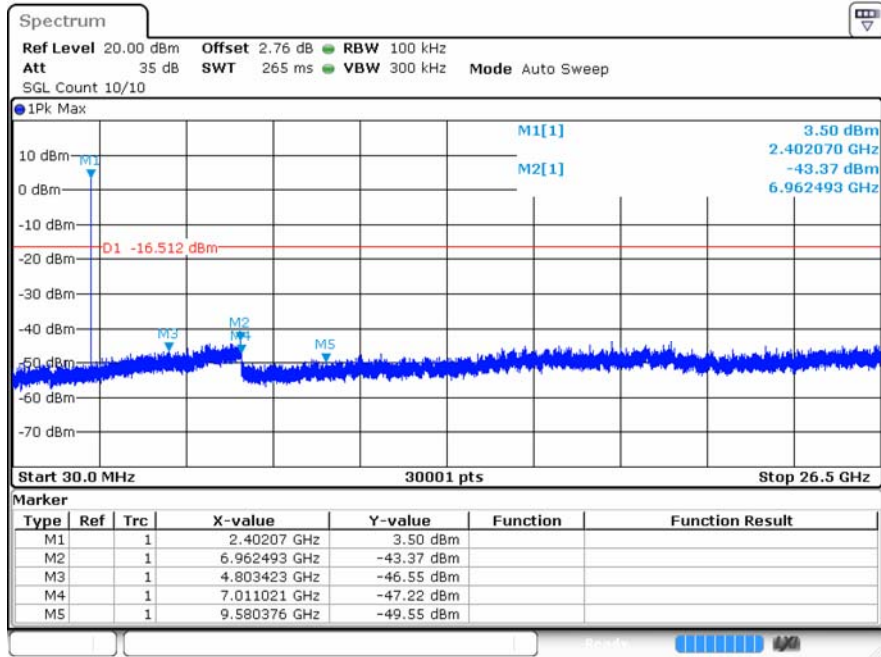


$\pi/4$ DQPSK\_LCH\_Graphs

Pref

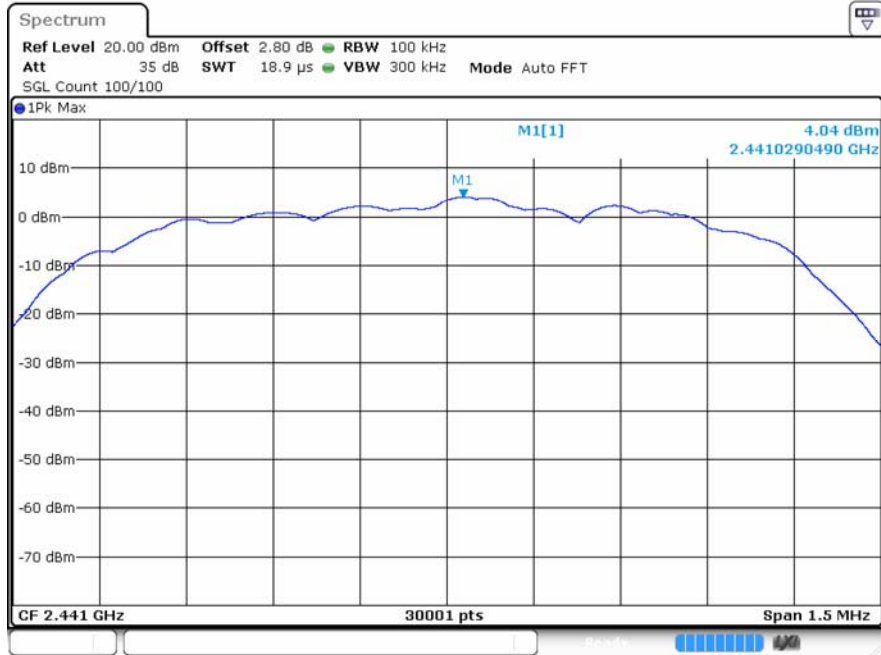


Puw

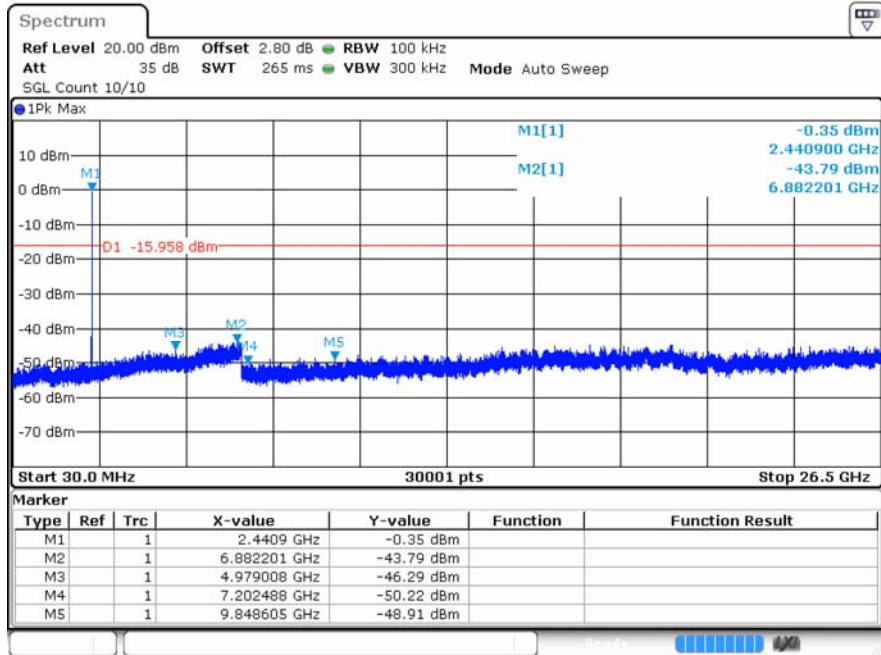


$\pi/4$ DQPSK\_MCH\_Graphs

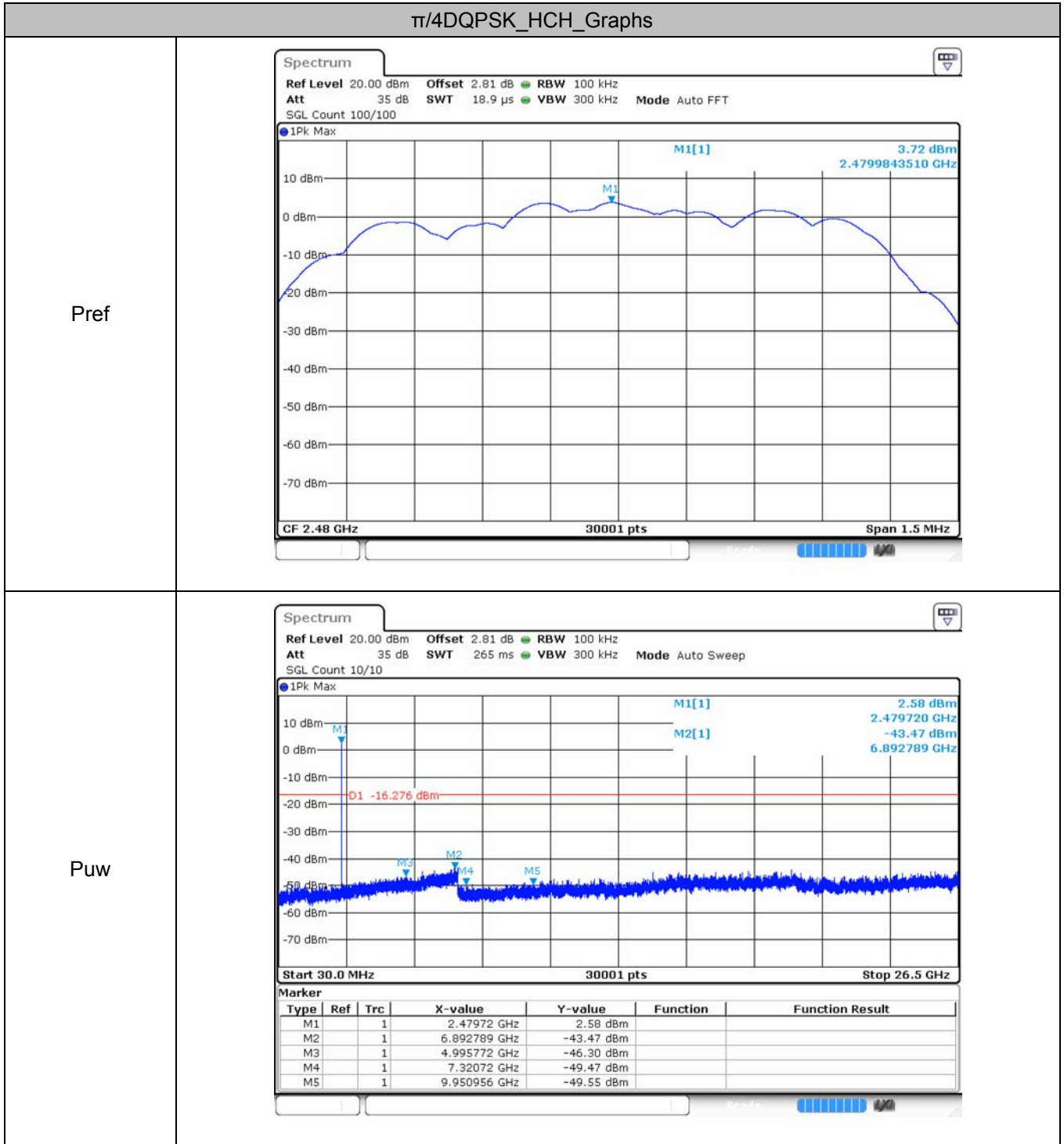
Pref



Puw

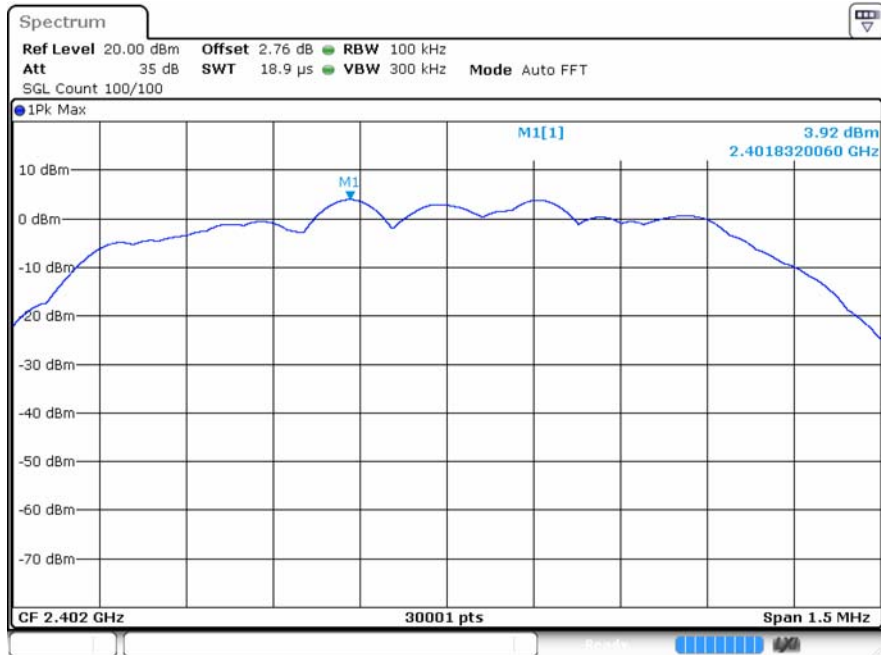




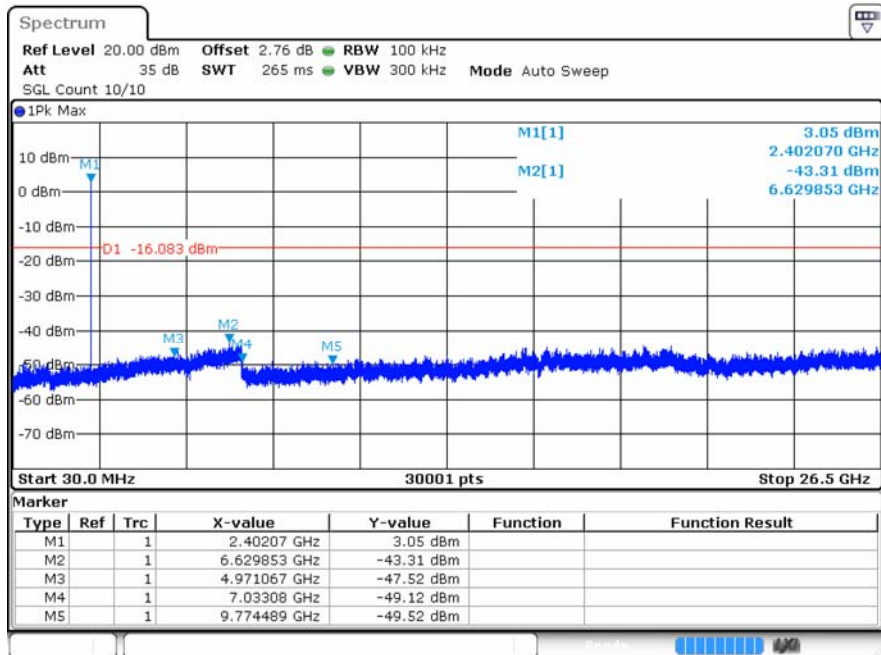


8DPSK\_LCH\_Graphs

Pref

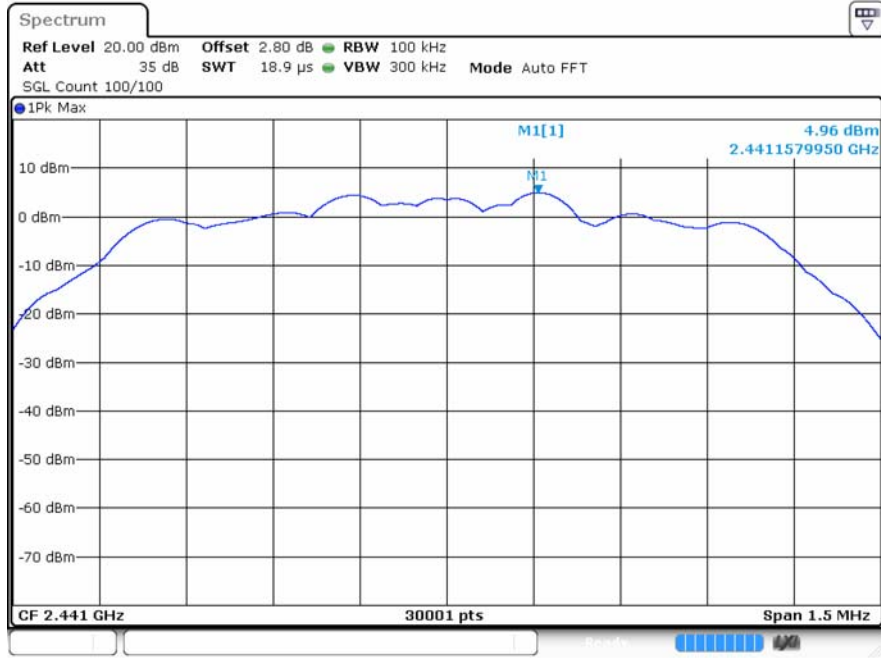


Puw

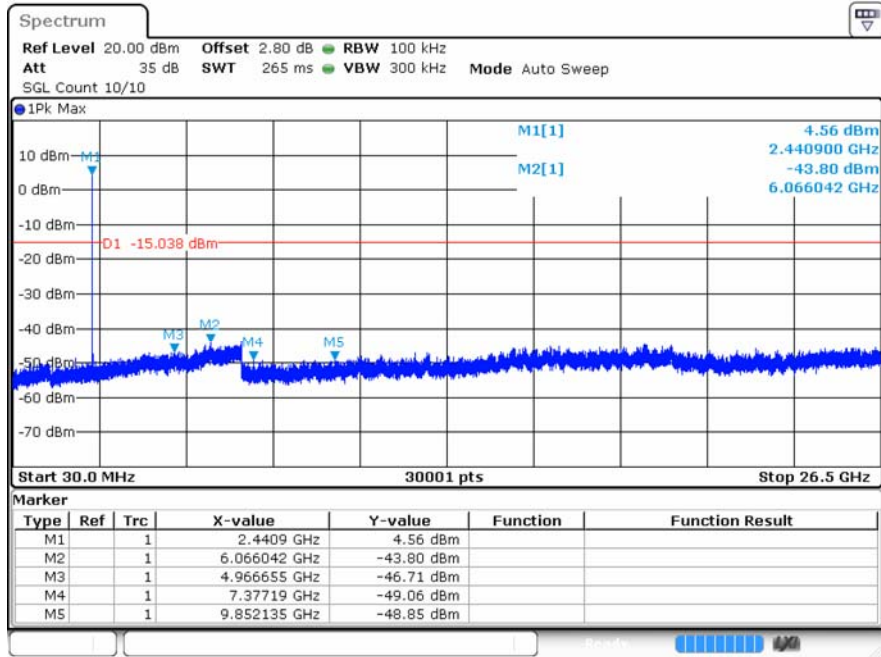


8DPSK\_MCH\_Graphs

Pref

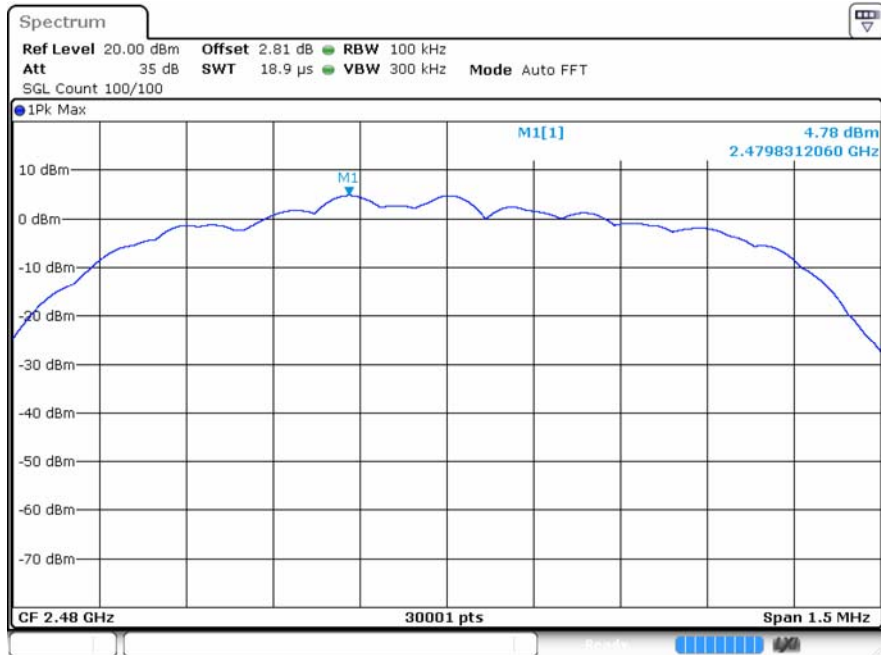


Puw

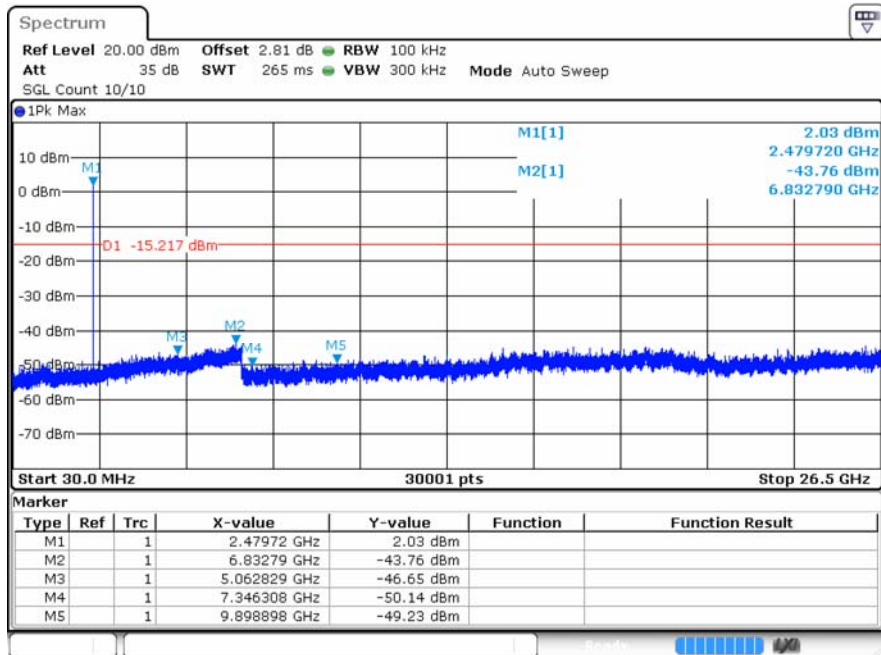


8DPSK\_HCH\_Graphs

Pref



Puw

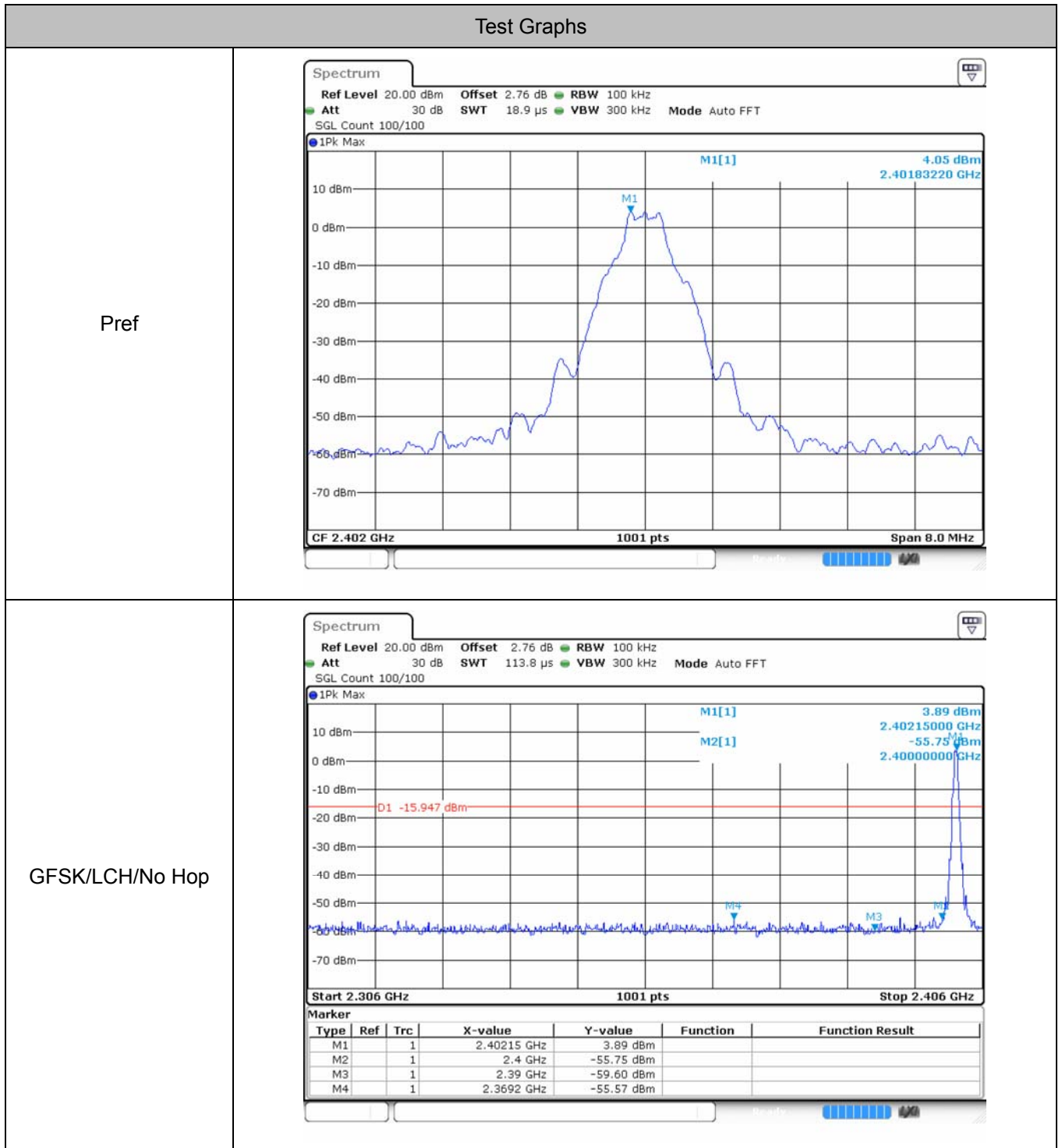


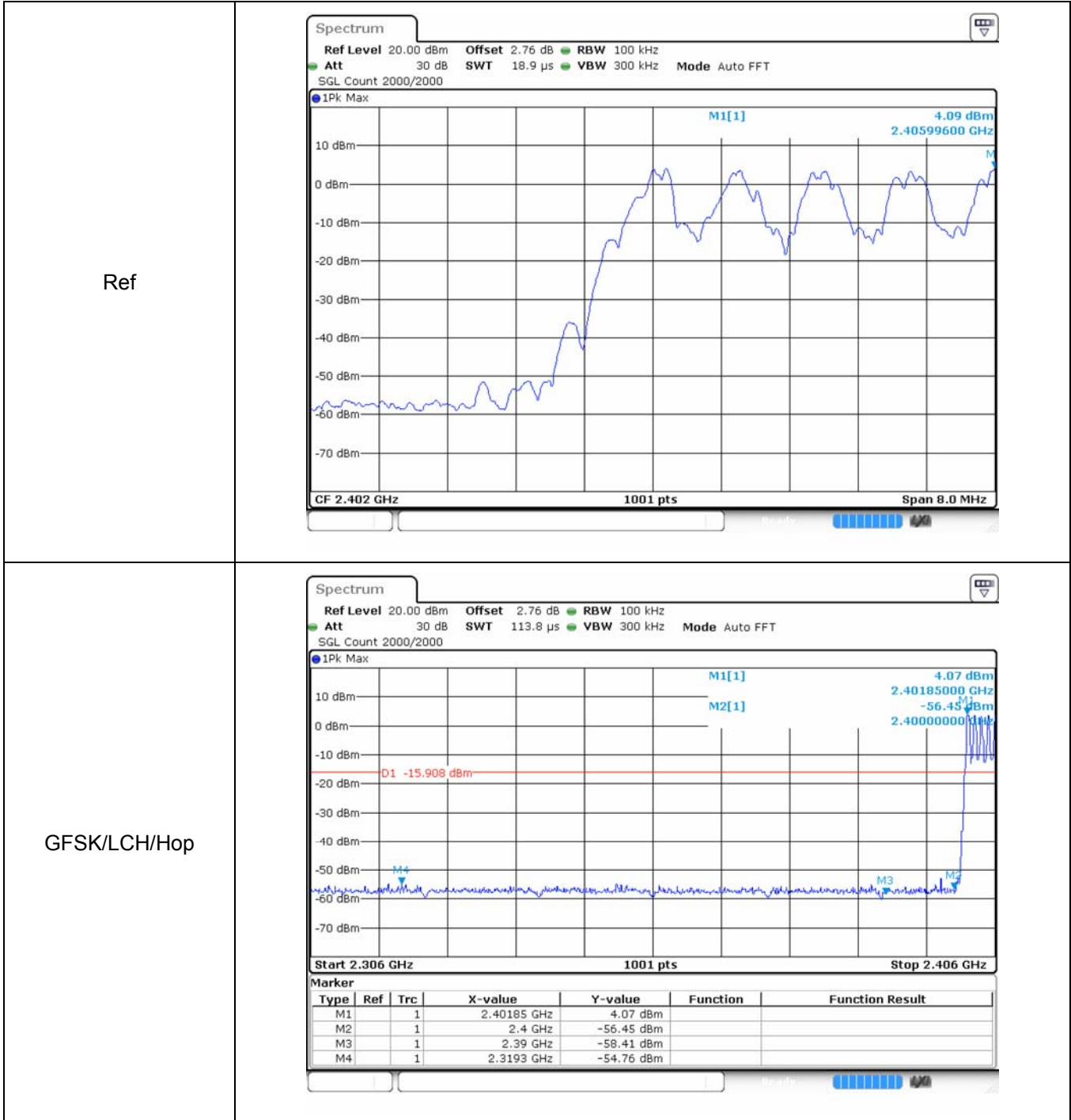
## 8 Band-edge for RF Conducted Emissions

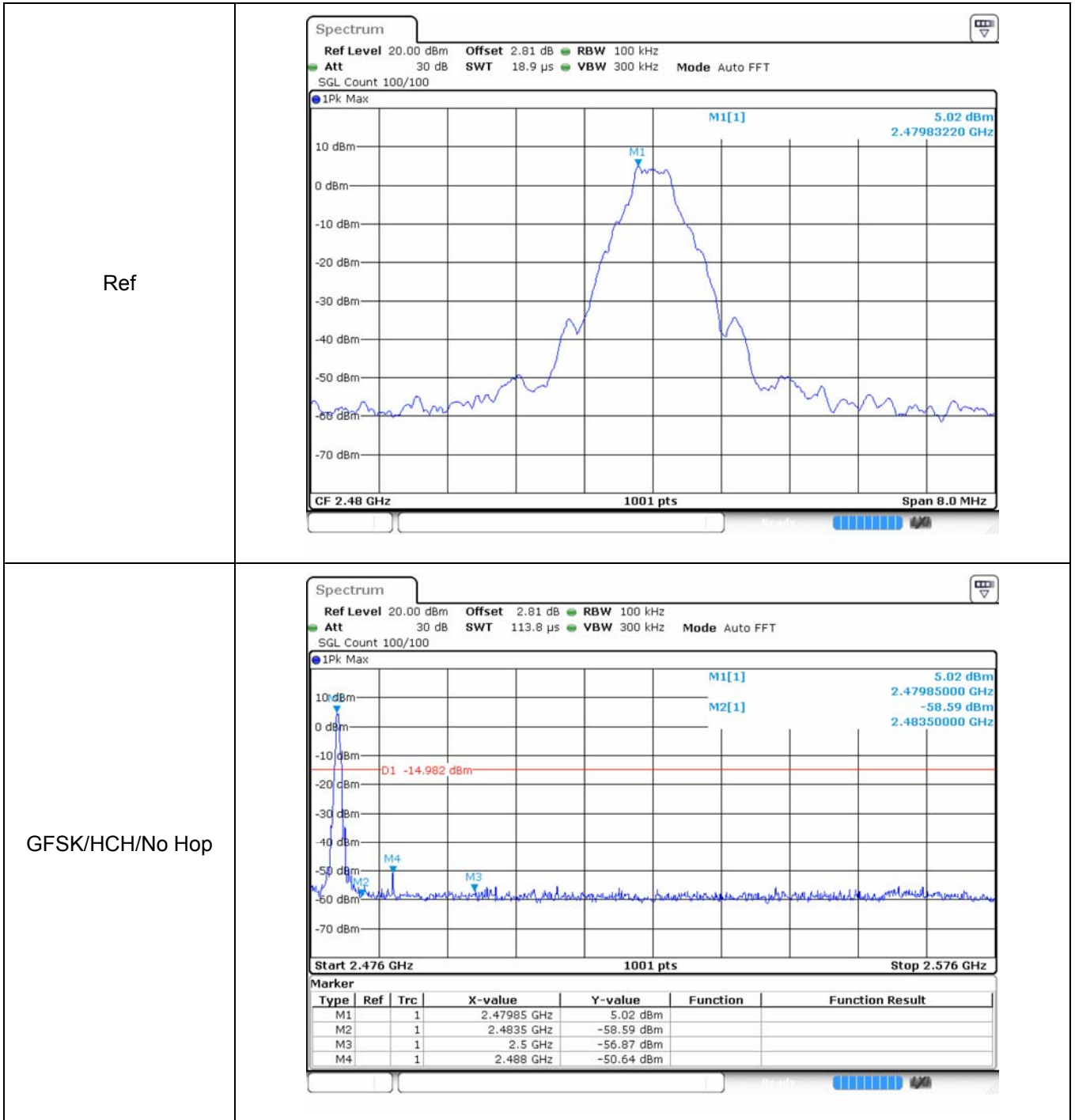
### 8.1 Test Result

Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-59.62	-20	Pass
			On	-58.84	-20	Pass
	HCH	2480	Off	-55.65	-20	Pass
			On	-59.36	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-58.19	-20	Pass
			On	-58.93	-20	Pass
	HCH	2480	Off	-56.31	-20	Pass
			On	-59.76	-20	Pass
8DPSK	LCH	2402	Off	-59.14	-20	Pass
			On	-58.62	-20	Pass
	HCH	2480	Off	-56.21	-20	Pass
			On	-58.93	-20	Pass

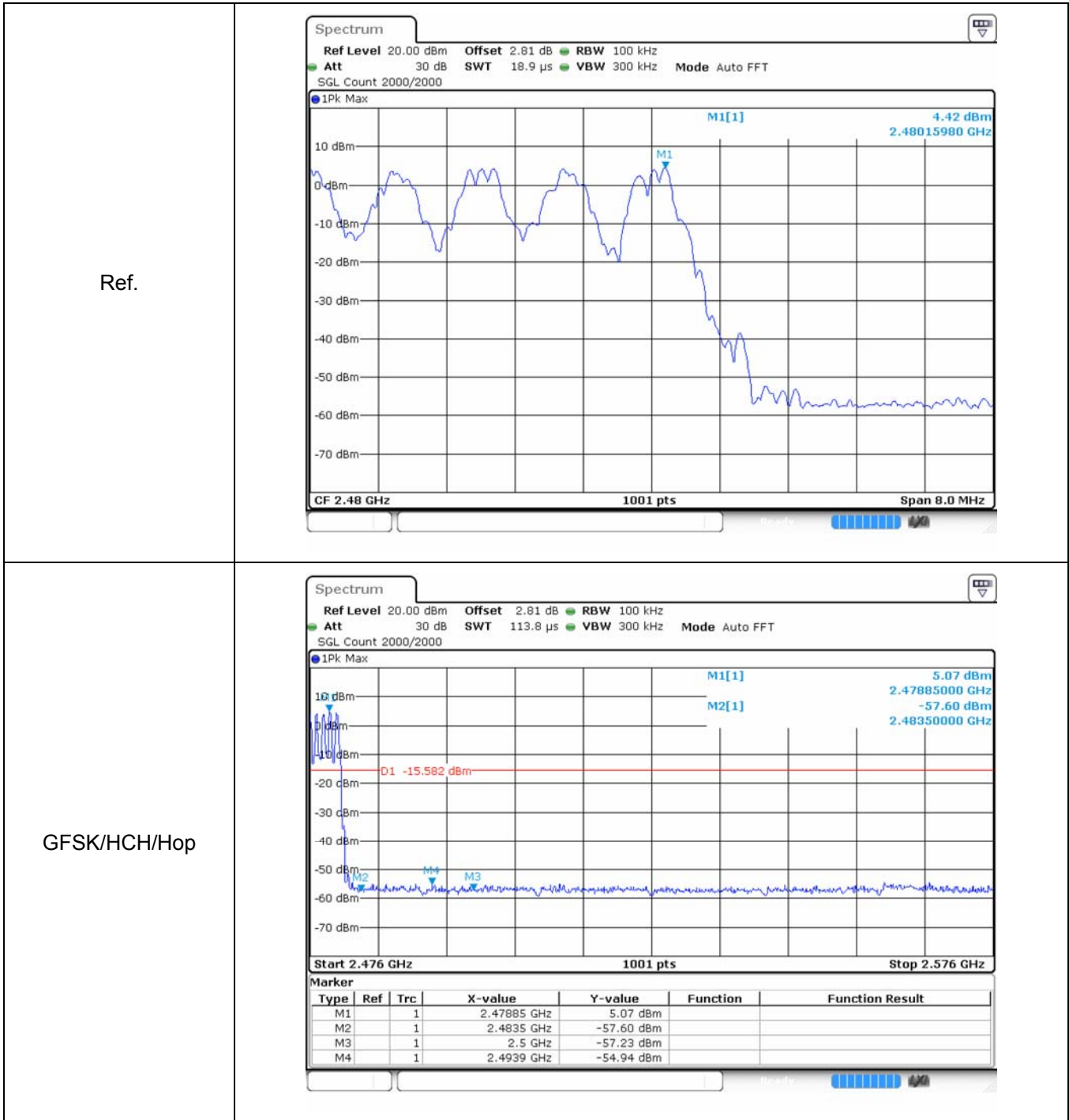
## 8.2 Test Graphs

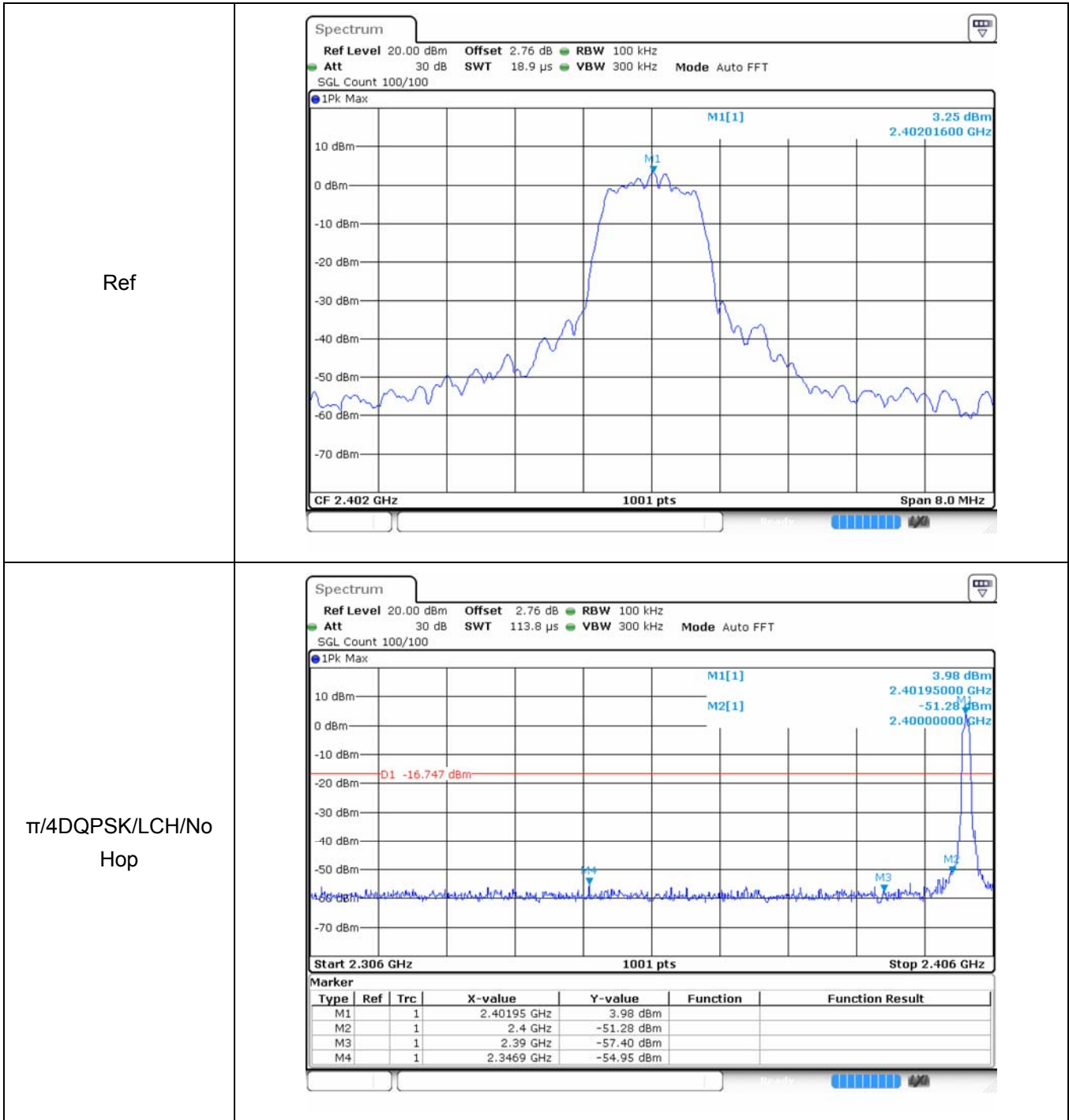


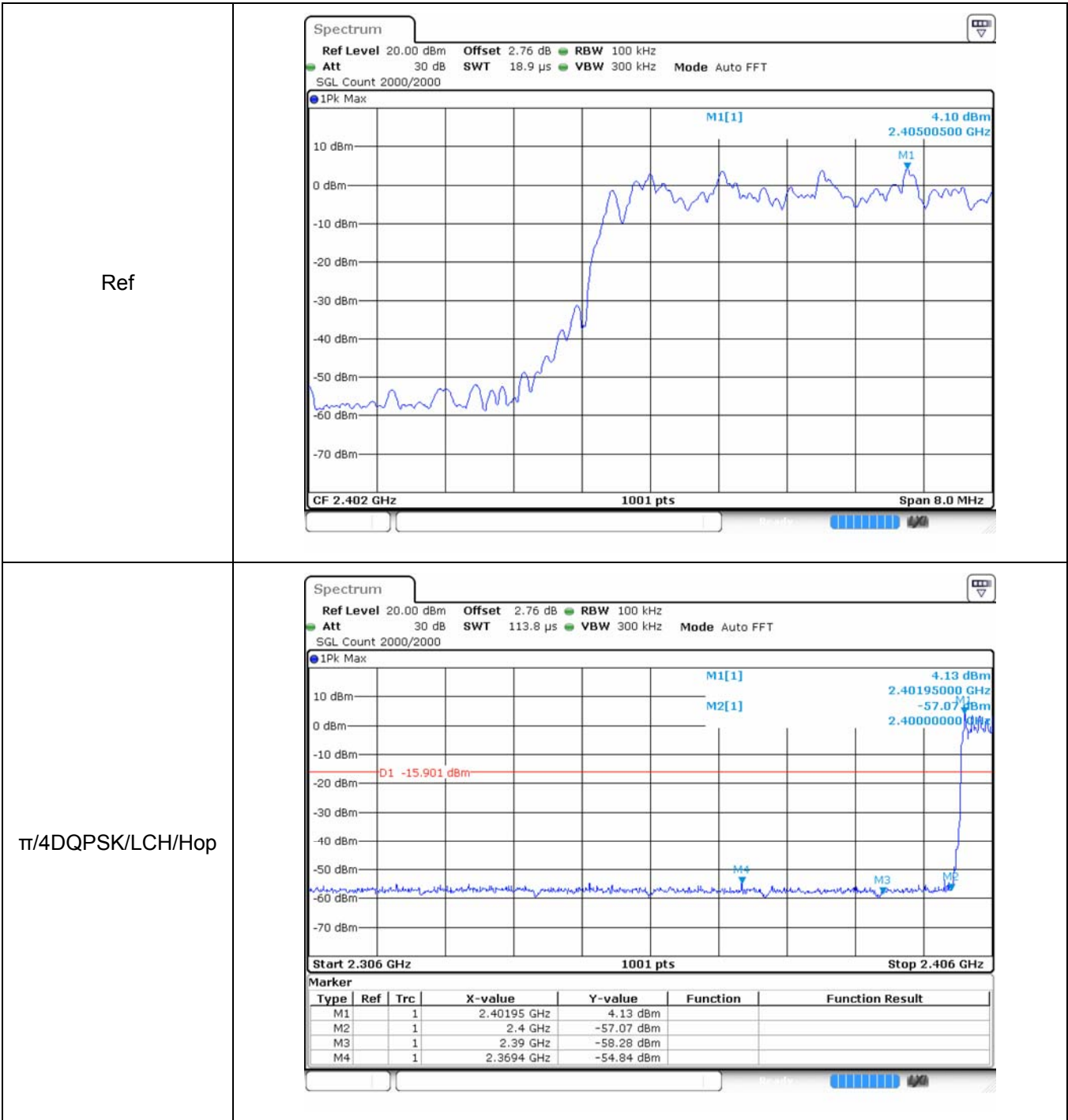


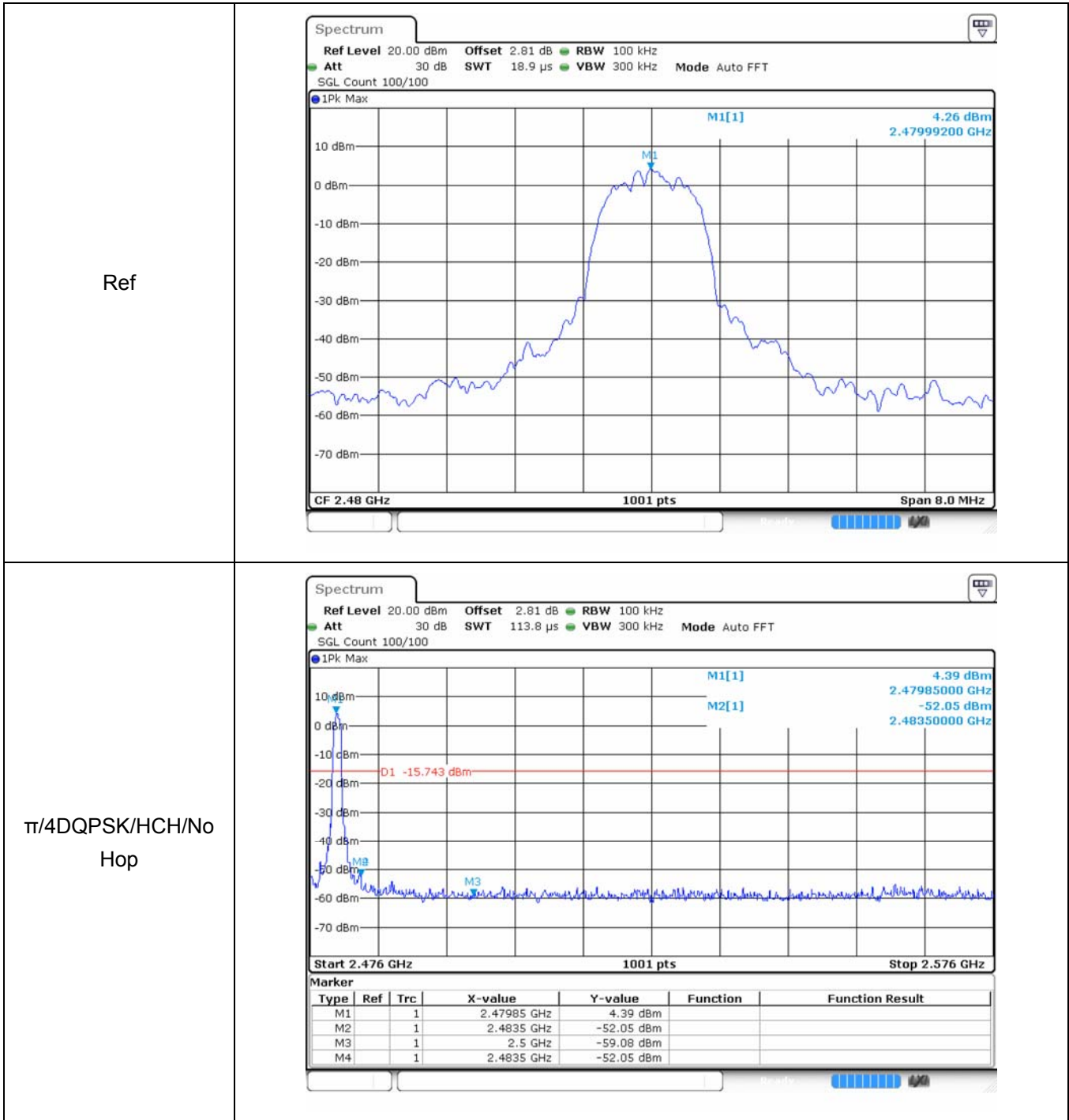


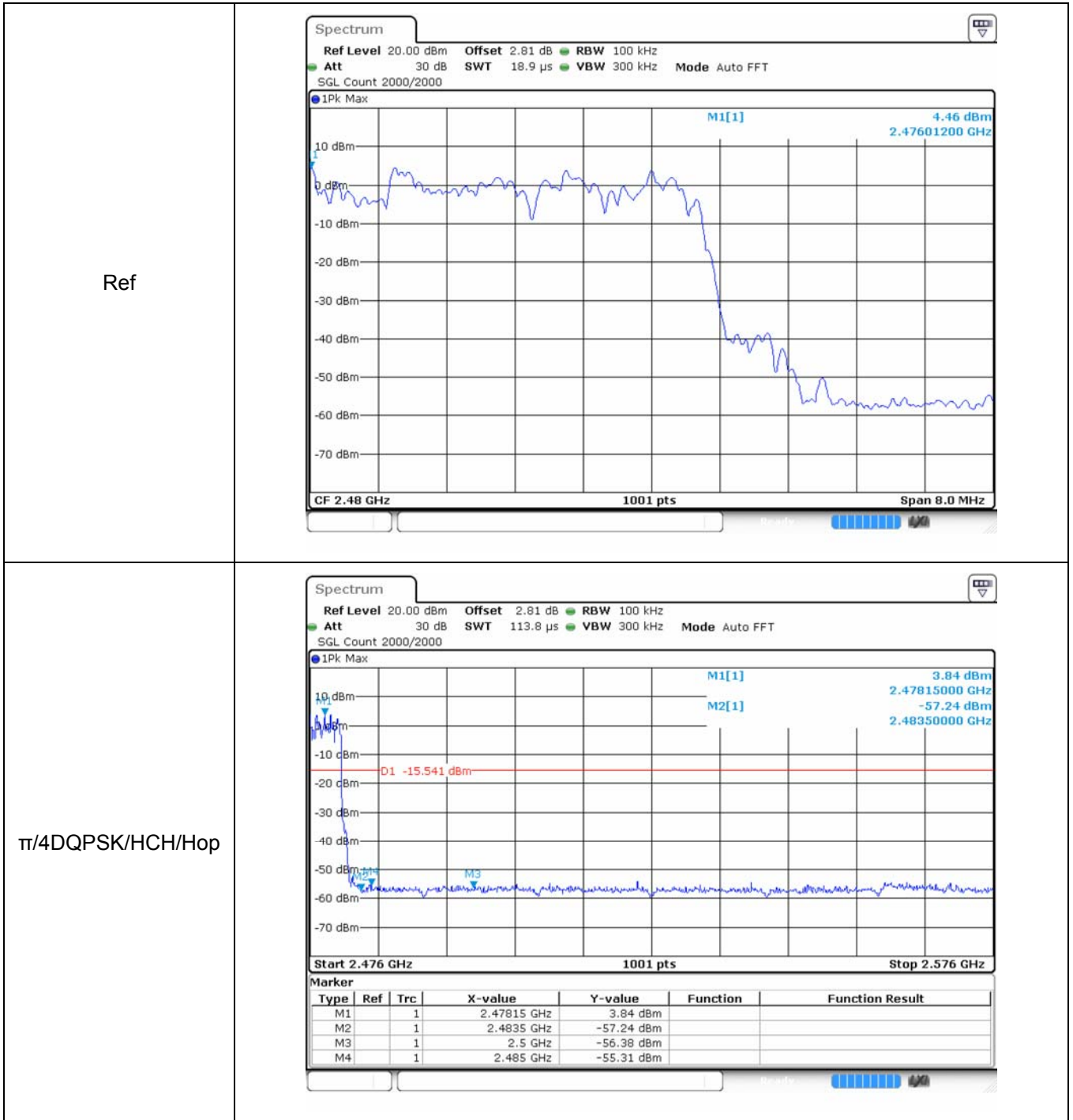


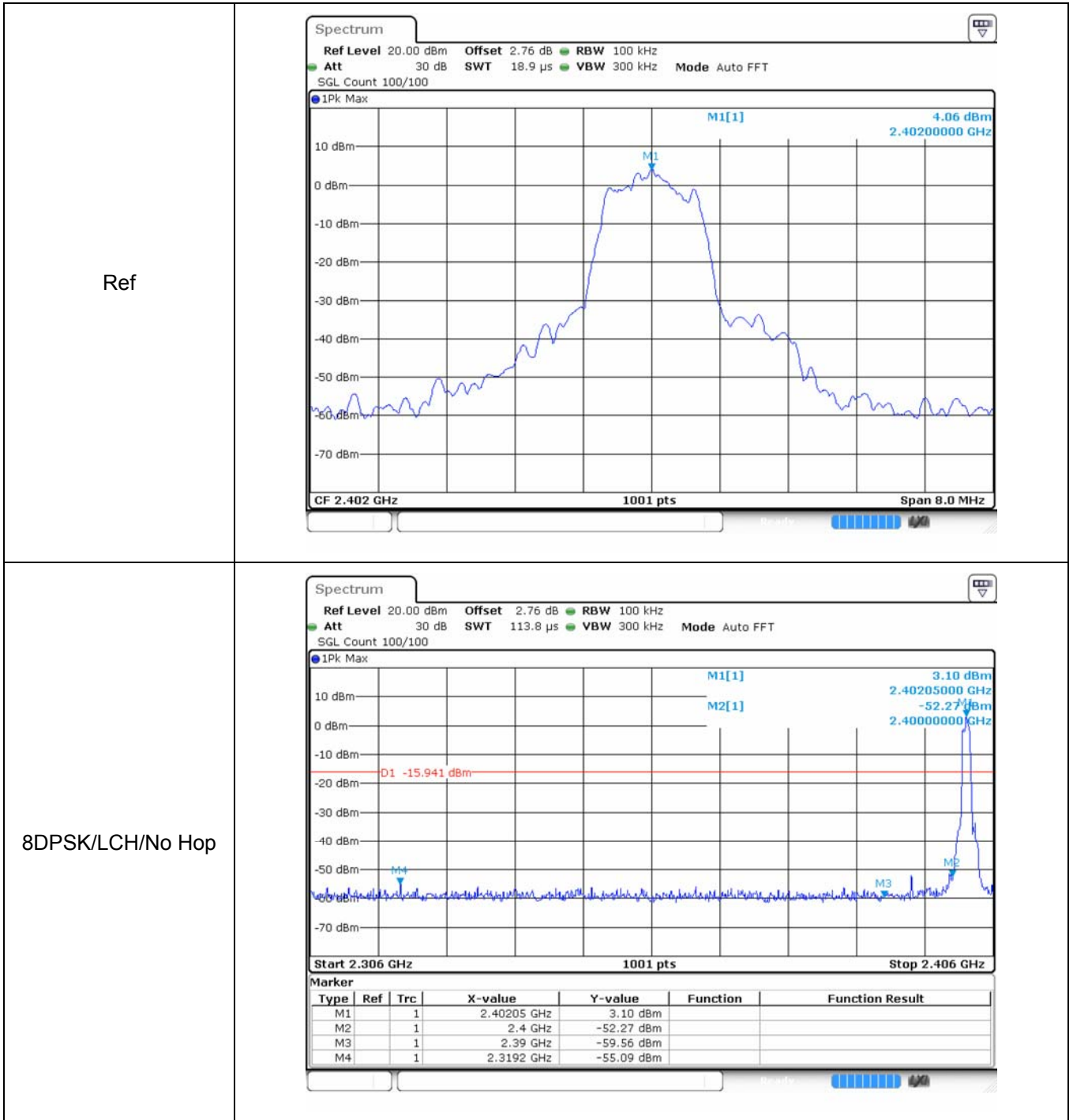


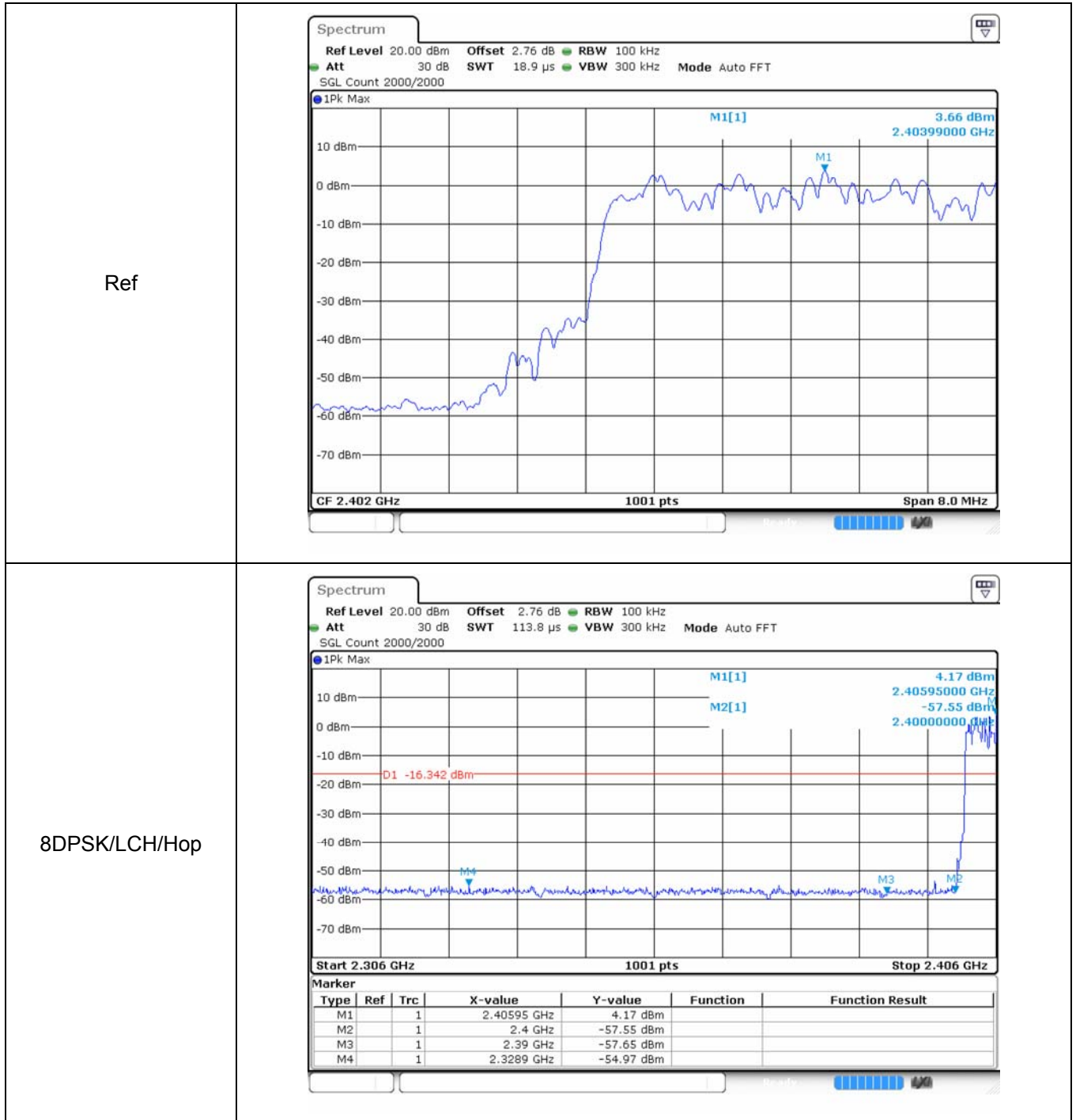




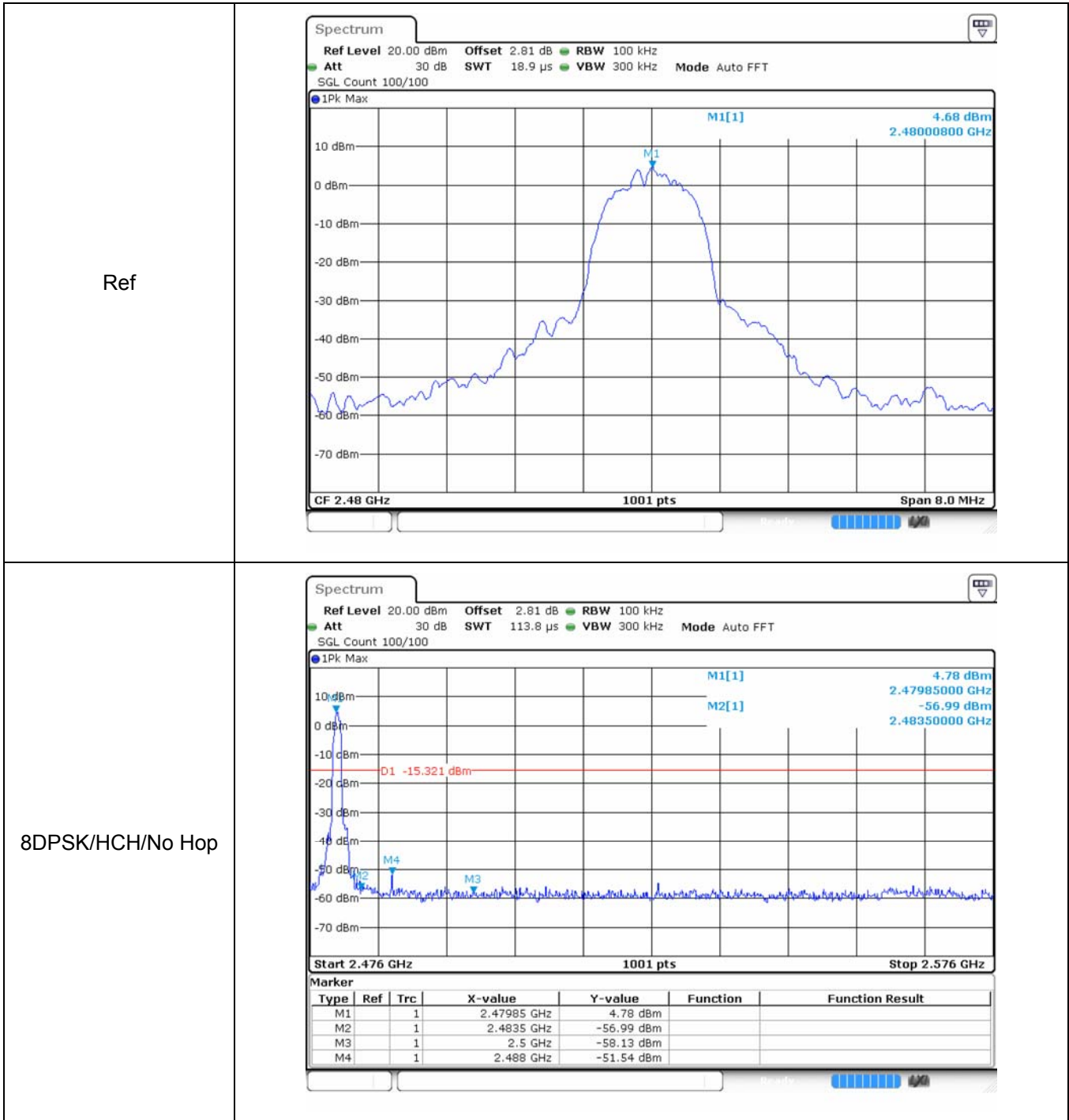




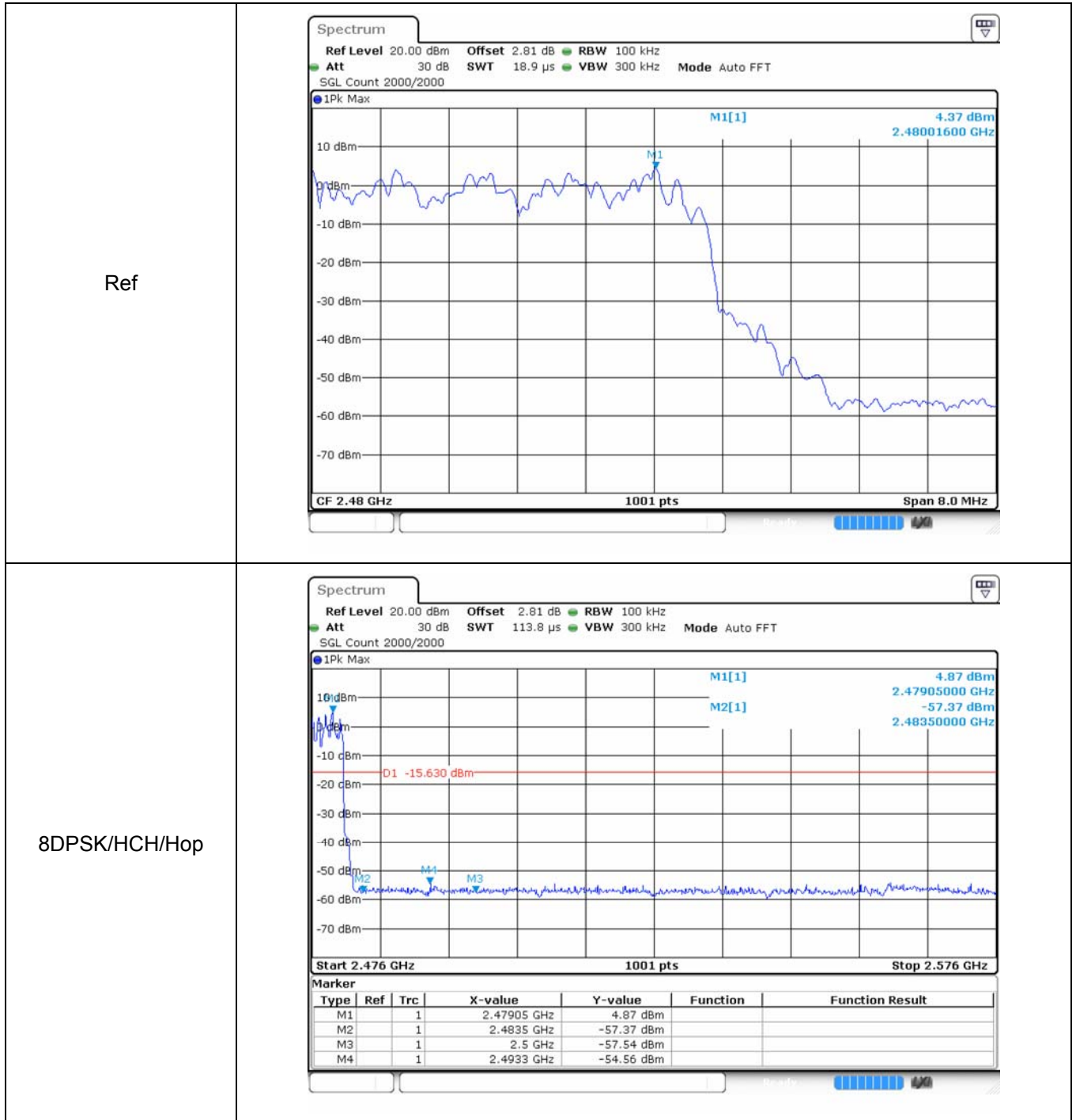












## 9 Restrict-band band-edge measurements

### 9.1 Test Result

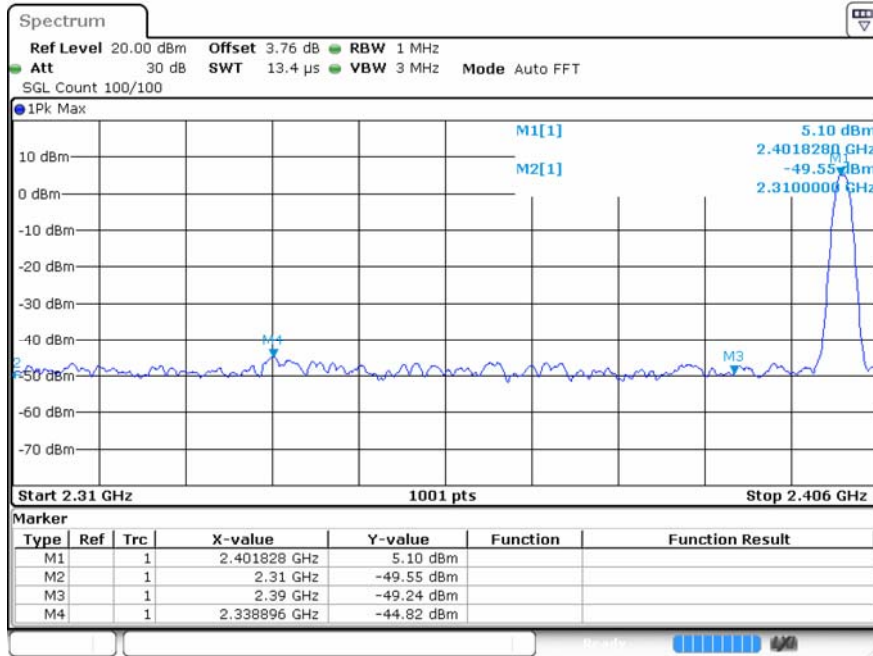
Test Mode	Hopping	Freq.	Power [dBm]	Gain	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-49.54	2	47.72	PEAK	74	Pass
	Off	2310.0	-57.01	2	40.25	AV	54	Pass
	Off	2338.896	-44.81	2	52.45	PEAK	74	Pass
	Off	2338.128	-54.79	2	42.47	AV	54	Pass
	Off	2390.0	-49.23	2	48.03	PEAK	74	Pass
	Off	2390.0	-56.69	2	40.57	AV	54	Pass
	Off	2483.5	-44.88	2	52.38	PEAK	74	Pass
	Off	2483.5	-55.23	2	42.03	AV	54	Pass
	Off	2484.064	-44.39	2	52.87	PEAK	74	Pass
	Off	2485.192	-55.12	2	42.14	AV	54	Pass
	Off	2500.0	-48.91	2	48.35	PEAK	74	Pass
	Off	2500.0	-56.65	2	40.61	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-48.56	2	48.7	PEAK	74	Pass
	Off	2310.0	-57.3	2	39.96	AV	54	Pass
	Off	2338.224	-43.97	2	53.29	PEAK	74	Pass
	Off	2338.992	-54.75	2	42.51	AV	54	Pass
	Off	2390.0	-47.71	2	49.55	PEAK	74	Pass
	Off	2390.0	-56.71	2	40.55	AV	54	Pass
	Off	2483.5	-46.35	2	50.91	PEAK	74	Pass
	Off	2483.5	-51.83	2	45.43	AV	54	Pass
	Off	2497.576	-44.03	2	53.23	PEAK	74	Pass
	Off	2483.512	-51.83	2	45.43	AV	54	Pass
	Off	2500.0	-48.1	2	49.16	PEAK	74	Pass
	Off	2500.0	-56.81	2	40.45	AV	54	Pass
8DPSK	Off	2310.0	-48.88	2	48.38	PEAK	74	Pass
	Off	2310.0	-56.73	2	40.53	AV	54	Pass
	Off	2353.488	-45.79	2	51.47	PEAK	74	Pass
	Off	2339.952	-54.77	2	42.49	AV	54	Pass



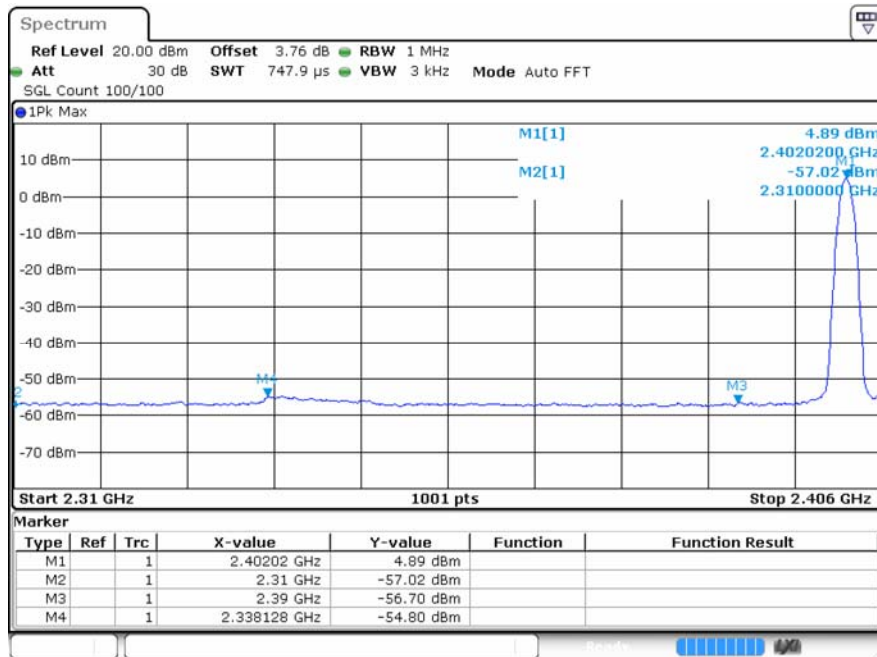
Off	2390.0	-49.42	2	47.84	PEAK	74	Pass
Off	2390.0	-56.66	2	40.6	AV	54	Pass
Off	2483.5	-45.34	2	51.92	PEAK	74	Pass
Off	2483.5	-53.3	2	43.96	AV	54	Pass
Off	2486.104	-44.83	2	52.43	PEAK	74	Pass
Off	2483.8	-53.27	2	43.99	AV	54	Pass
Off	2500.0	-49.63	2	47.63	PEAK	74	Pass
Off	2500.0	-56.01	2	41.25	AV	54	Pass

## 9.2 Test Graphs

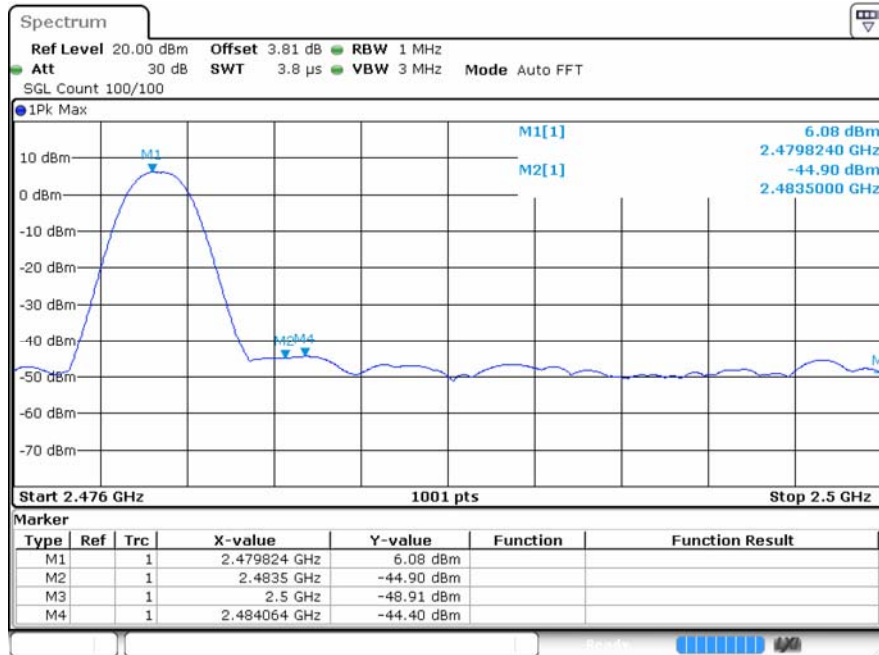
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_PEAK (Low Channel)



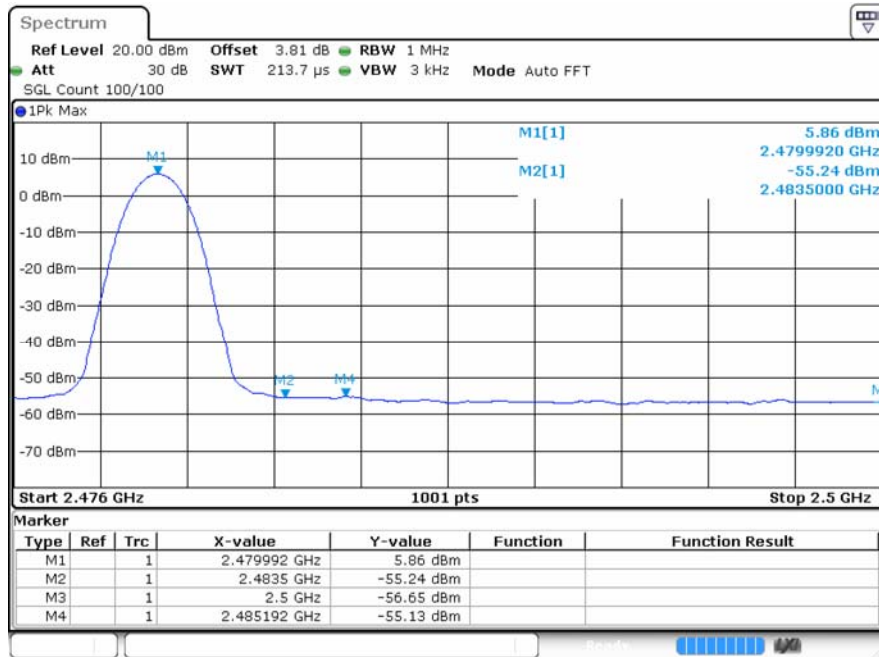
Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (Low Channel)



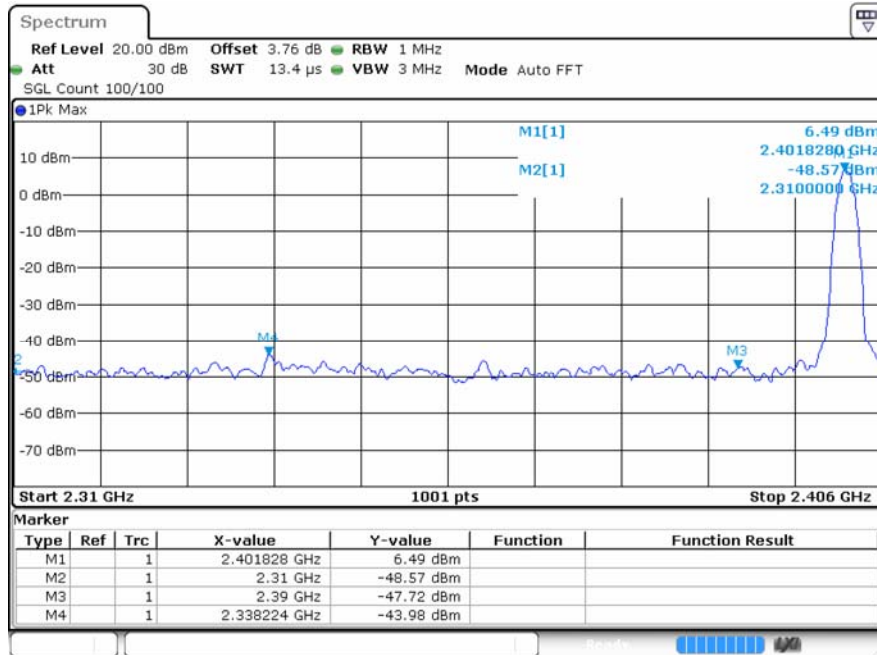
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



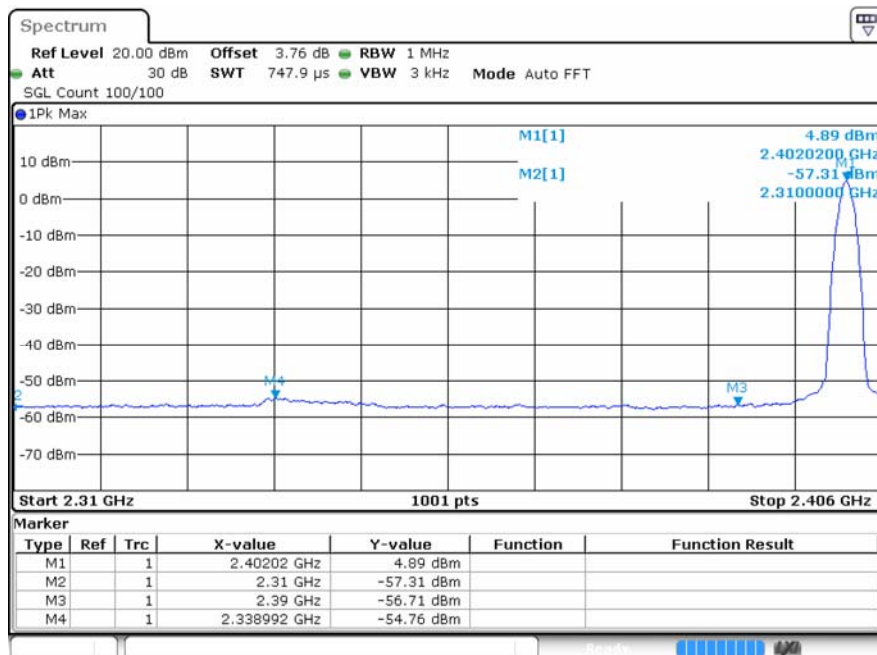
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



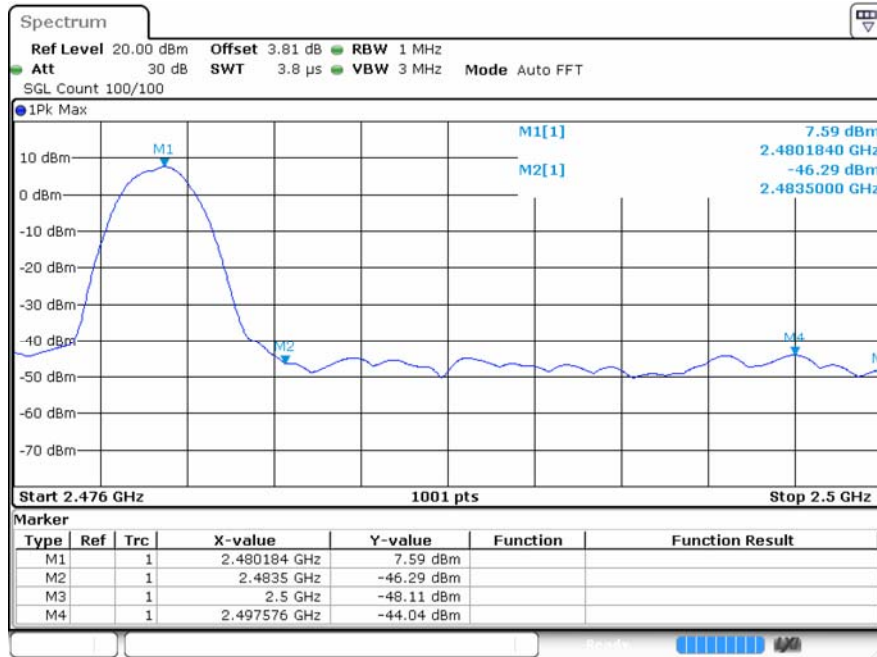
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)



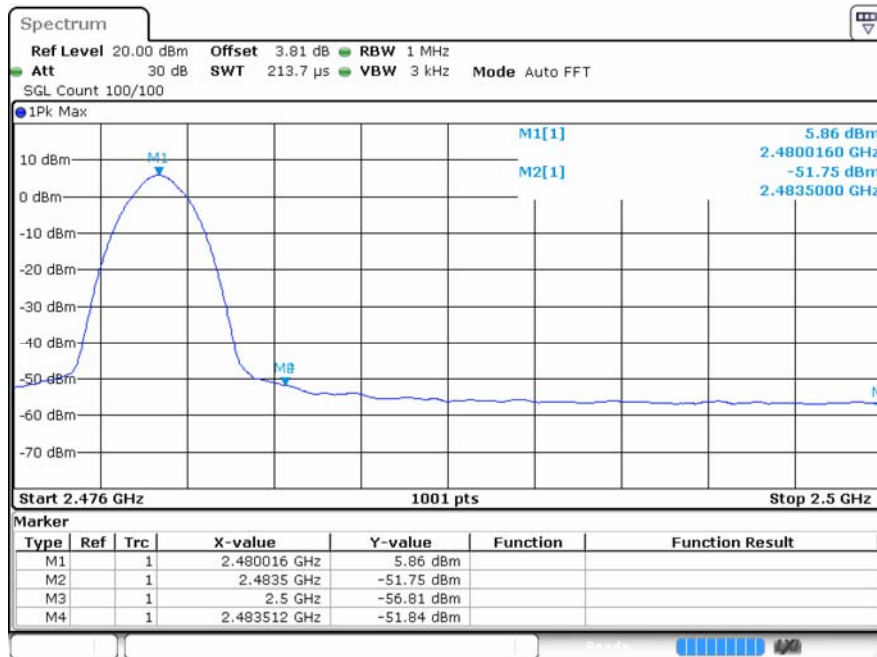
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)



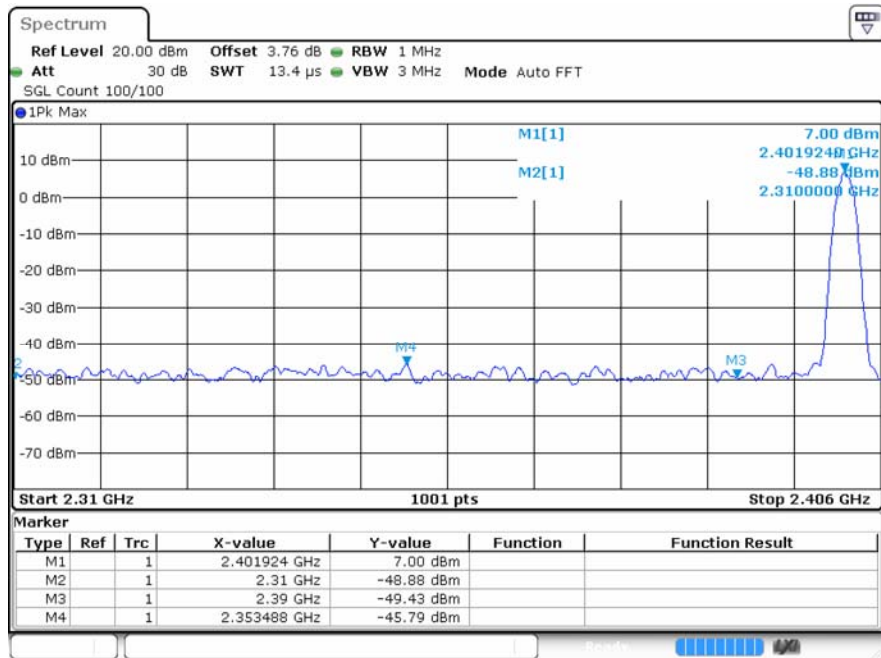
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)

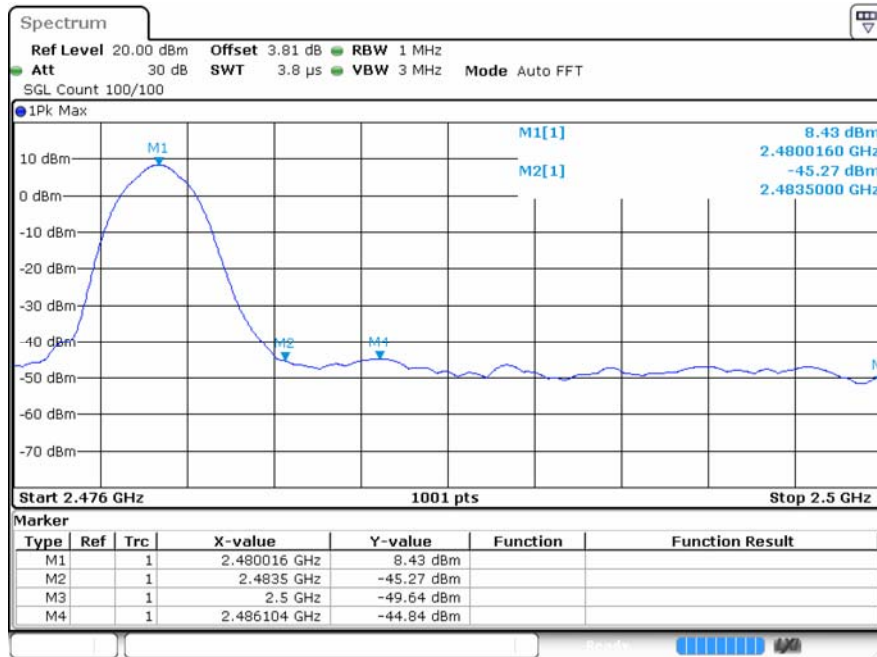


Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)

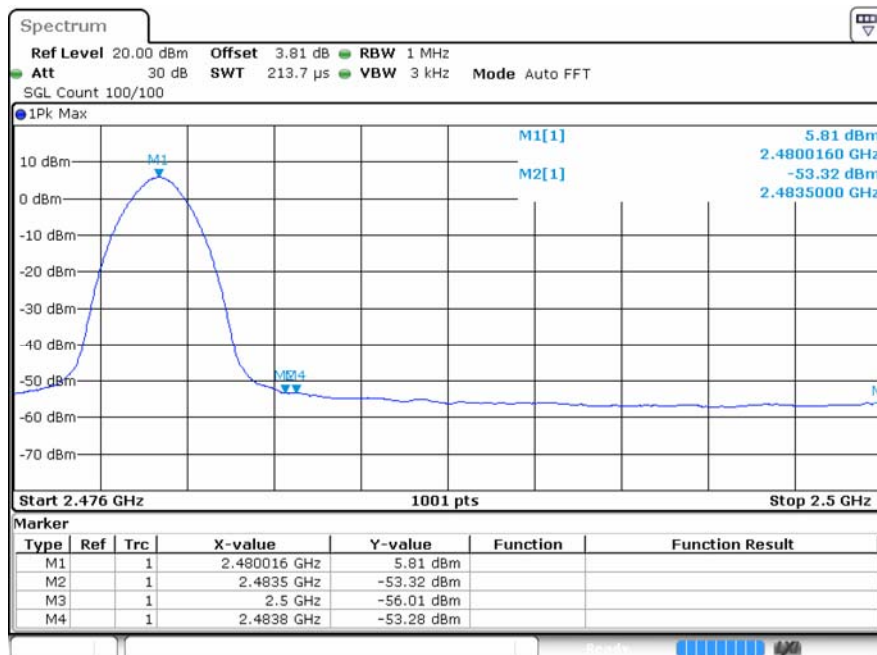




Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (High Channel)



Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (High Channel)



---The End---