

## Appendix A

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

Product Name: Ev charger

Trade Mark: CEBEA

Test Model: CEBEA-CDZ-48A-1

#### Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	52.4%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen



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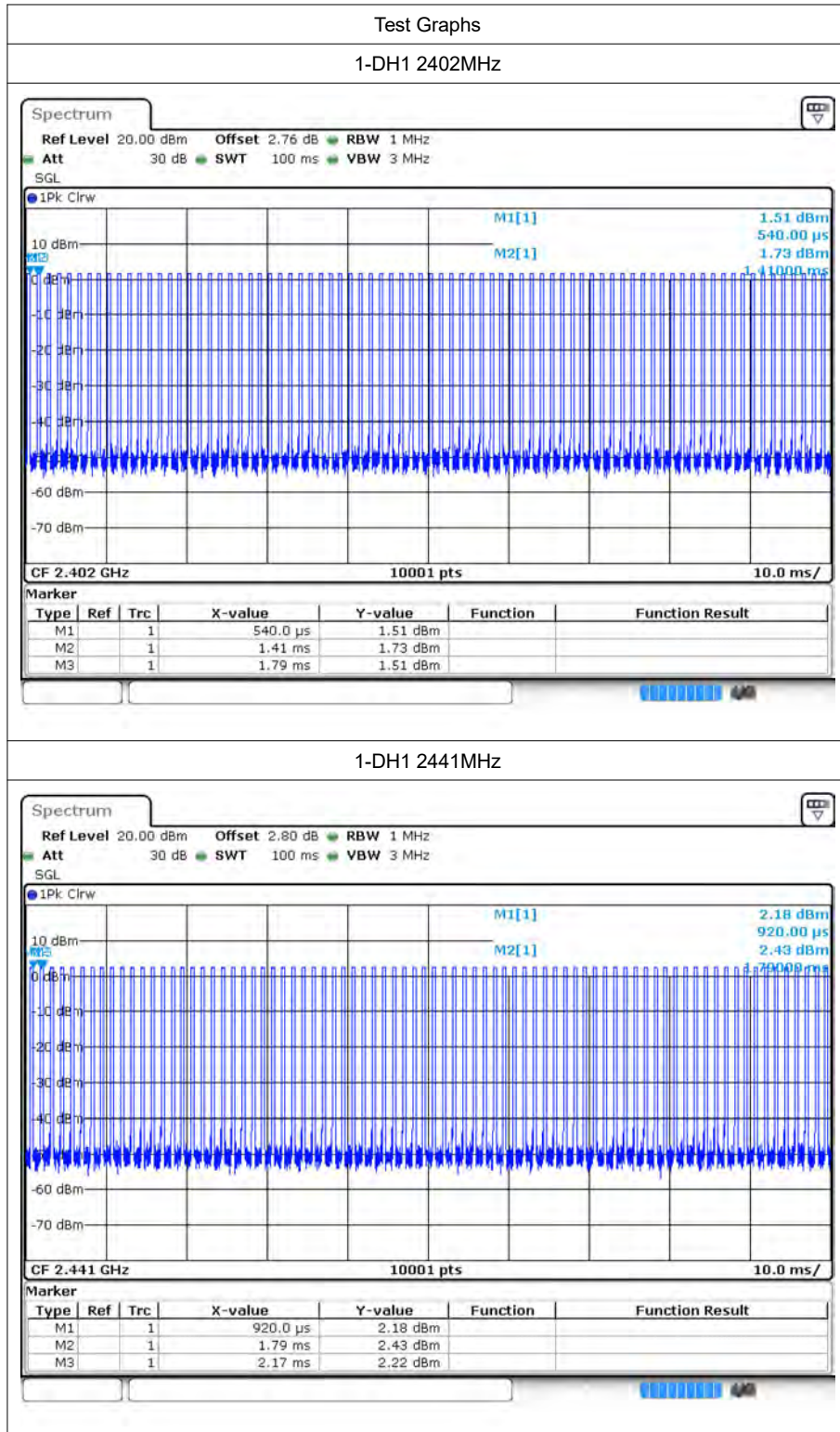
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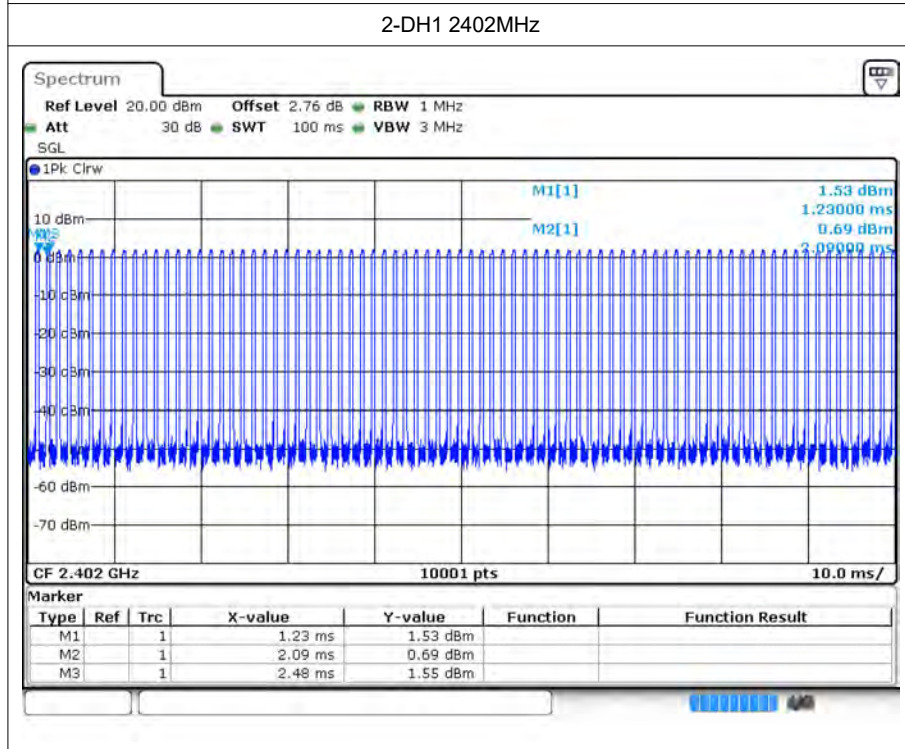
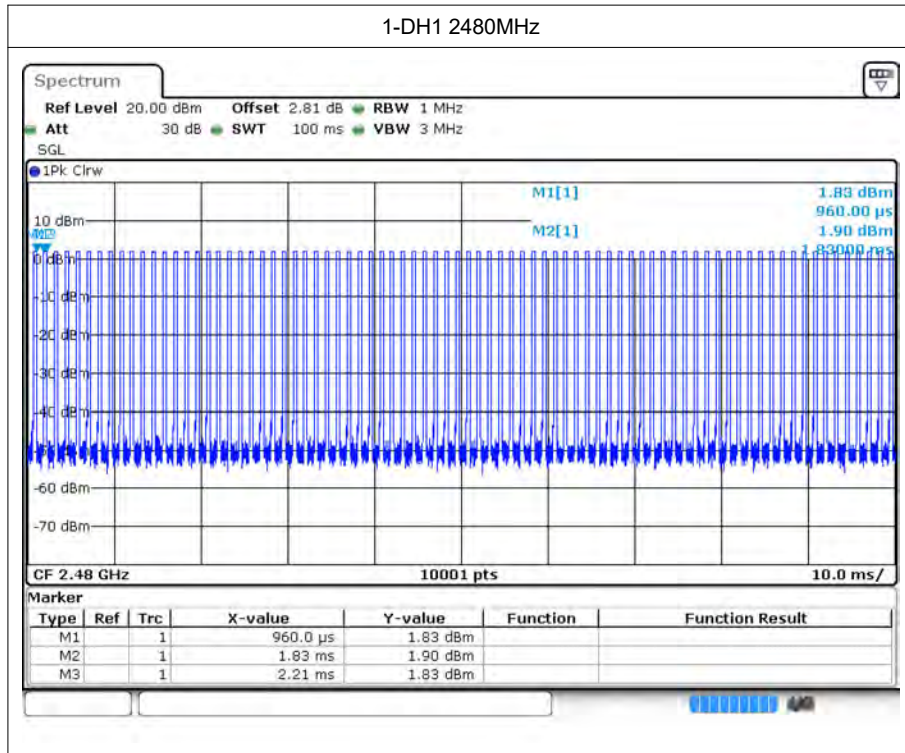
# 1 Duty Cycle

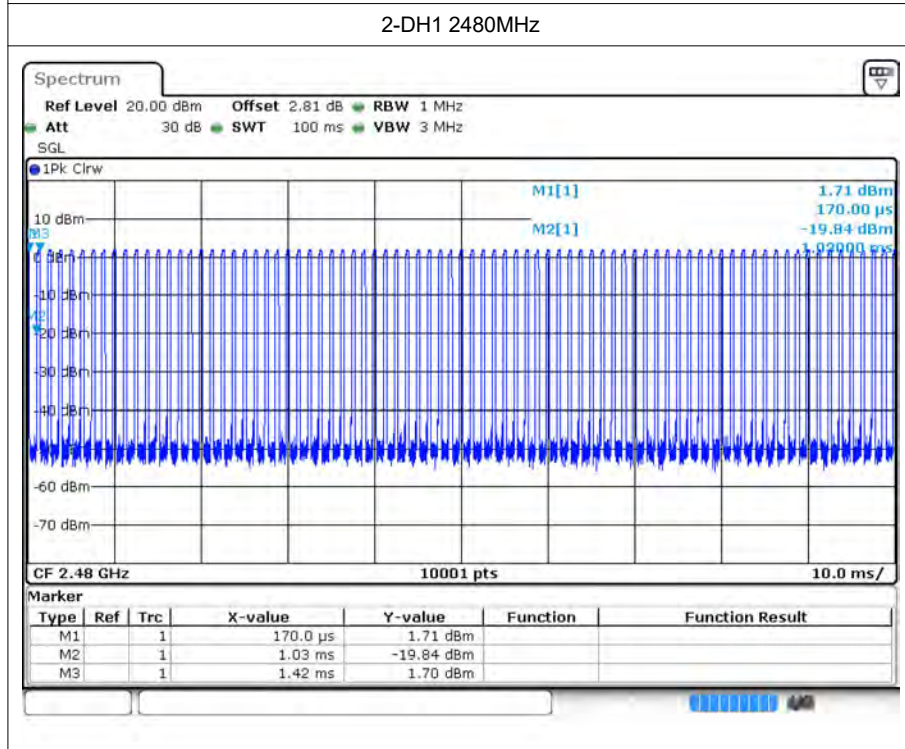
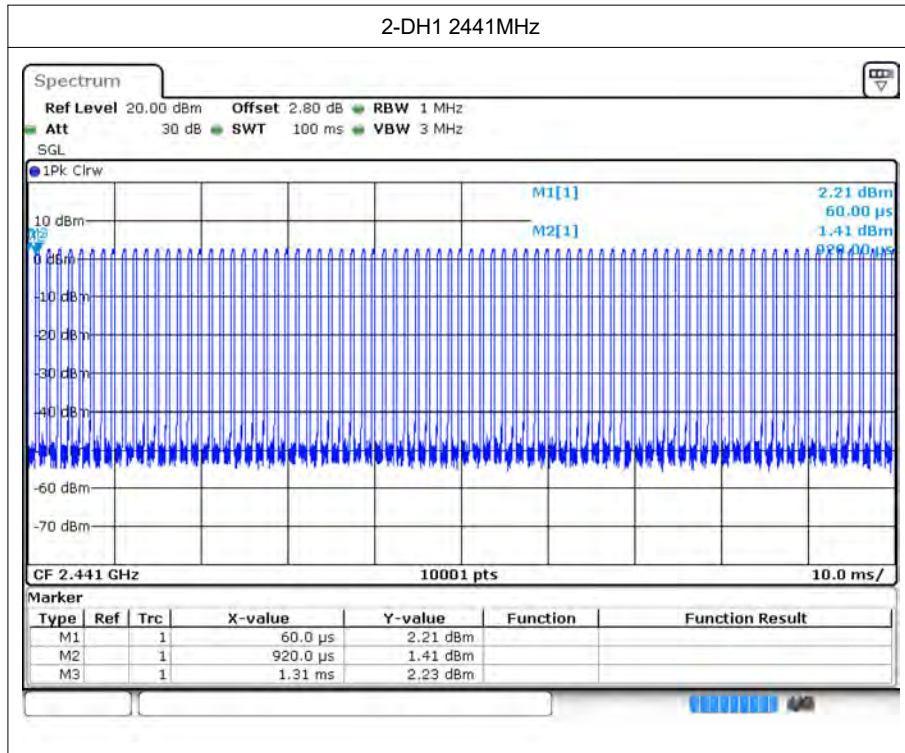
## 1.1 Test Result

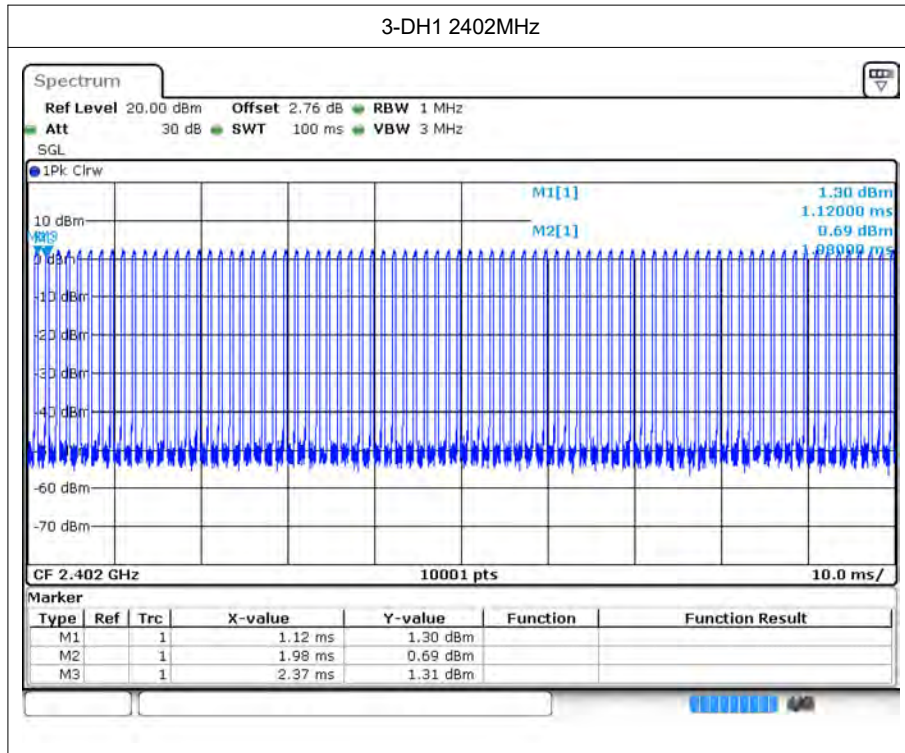
Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)	Duty Cycle Factor (dB)
1-DH1	2402	31.2	2.63	5.06
1-DH1	2441	31.2	2.63	5.06
1-DH1	2480	31.2	2.63	5.06
2-DH1	2402	32	2.56	4.95
2-DH1	2441	32.01	2.56	4.95
2-DH1	2480	31.96	2.56	4.95
3-DH1	2402	32	2.56	4.95
3-DH1	2441	32	2.56	4.95
3-DH1	2480	32.12	2.56	4.93

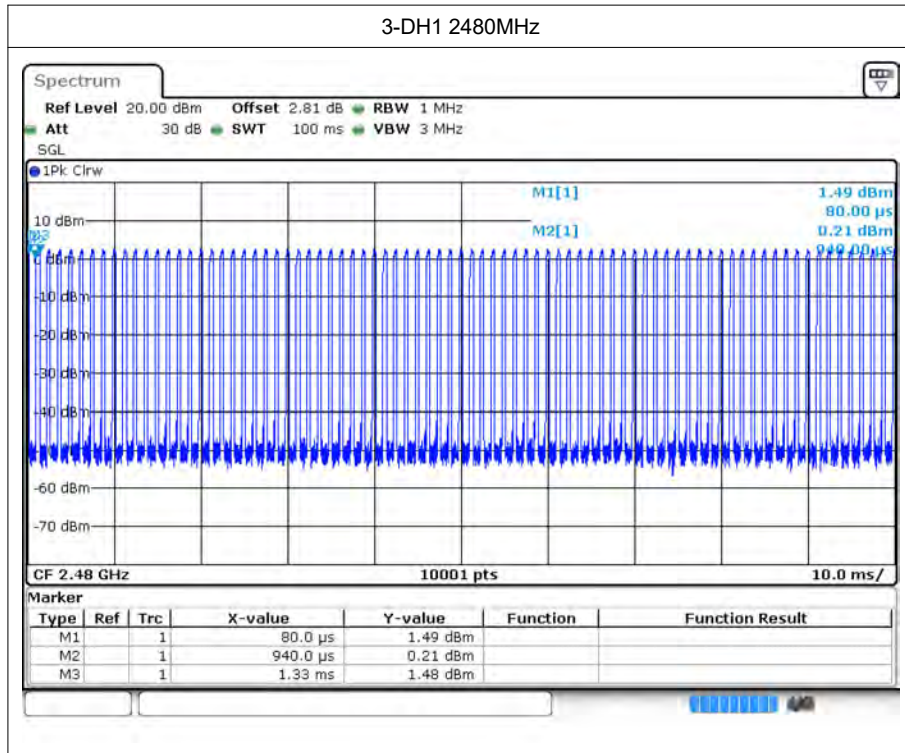
## 1.2 Test Graphs











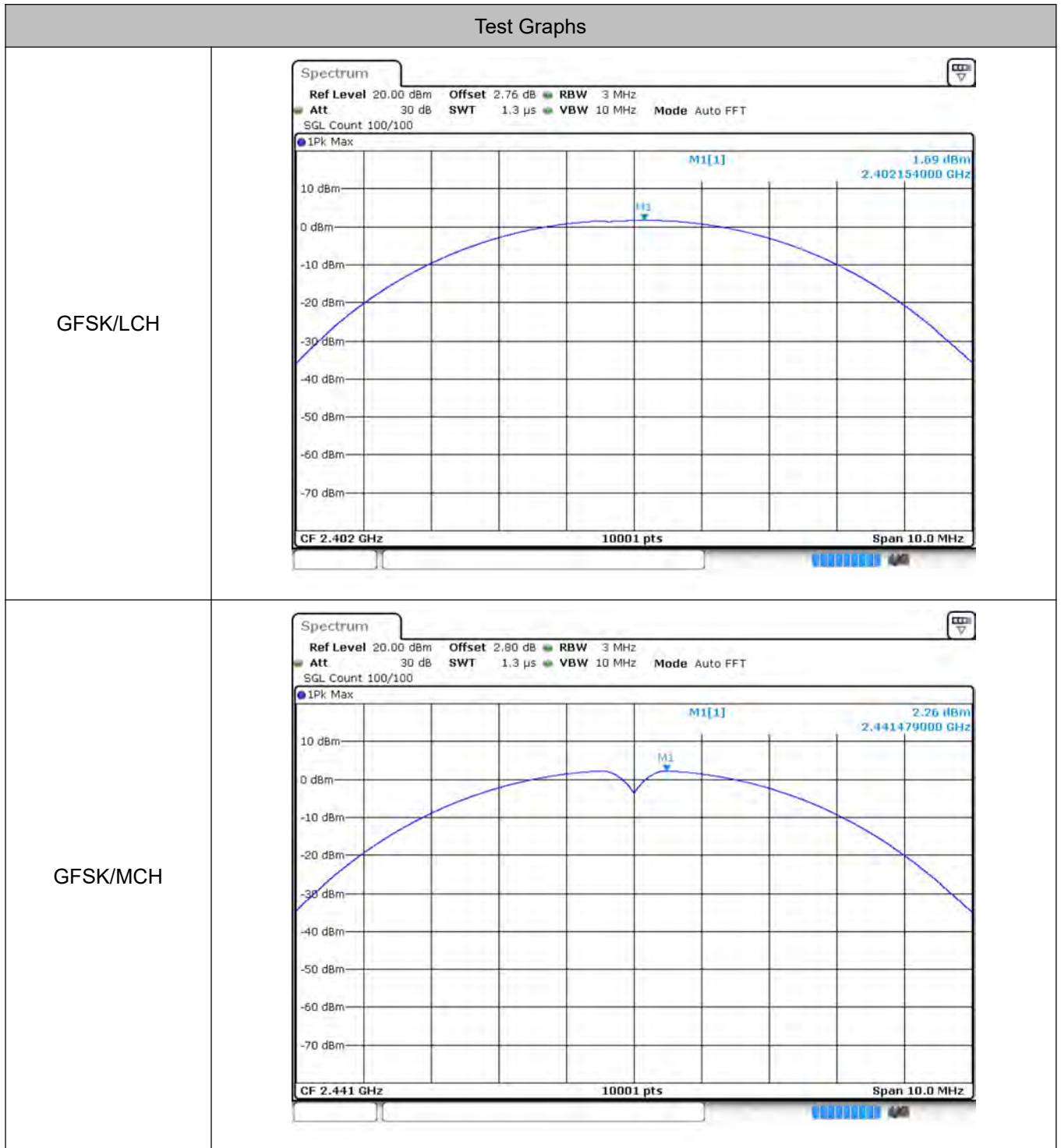


## 2 Maximum Conducted Peak Output Power

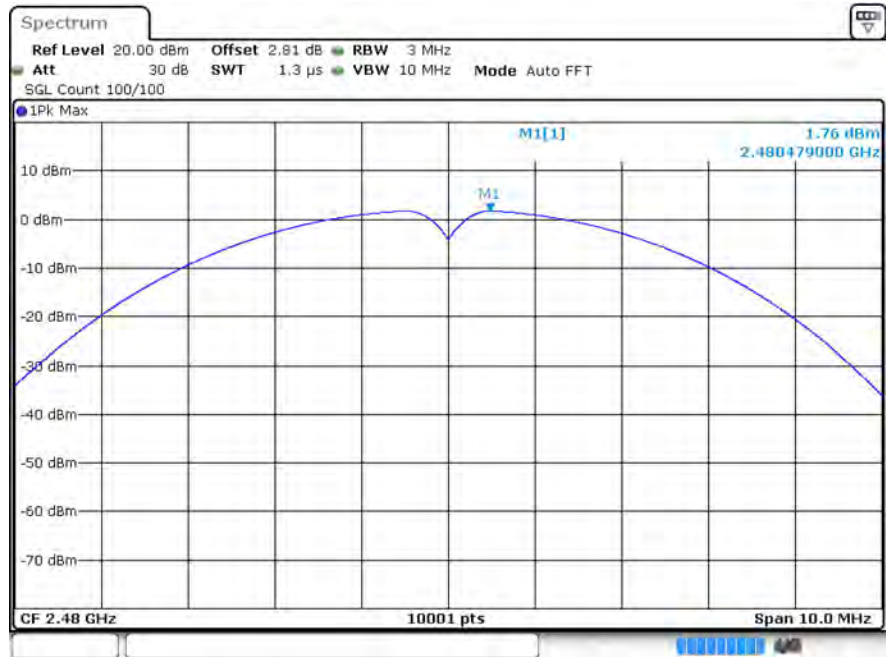
### 2.1 Test Result

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	1.69	21	Pass
	MCH	2.26	21	Pass
	HCH	1.76	21	Pass
$\pi/4$ DQPSK	LCH	2.8	21	Pass
	MCH	3.45	21	Pass
	HCH	2.78	21	Pass
8DPSK	LCH	2.83	21	Pass
	MCH	3.28	21	Pass
	HCH	2.62	21	Pass

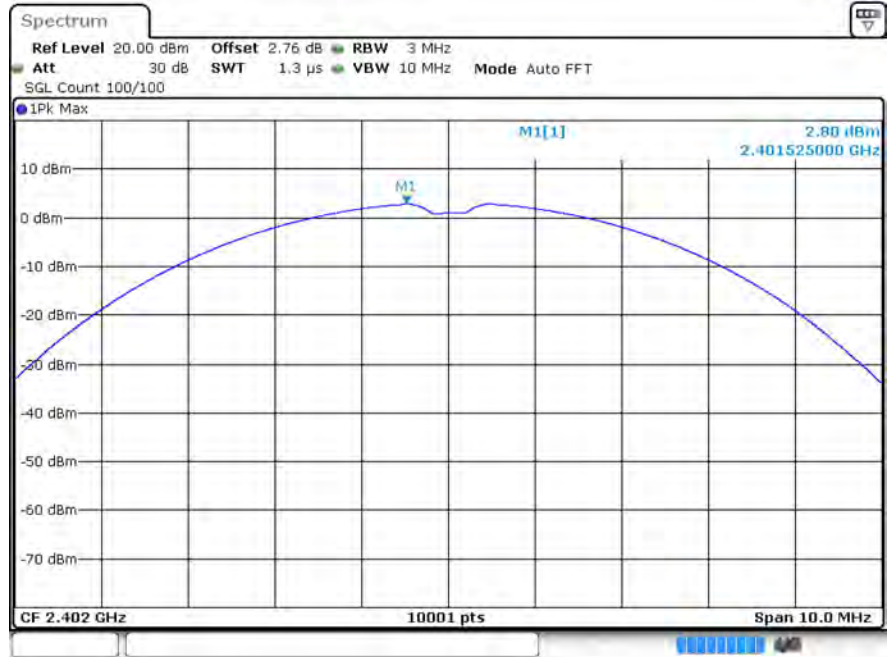
## 2.2 Test Graphs



GFSK/HCH



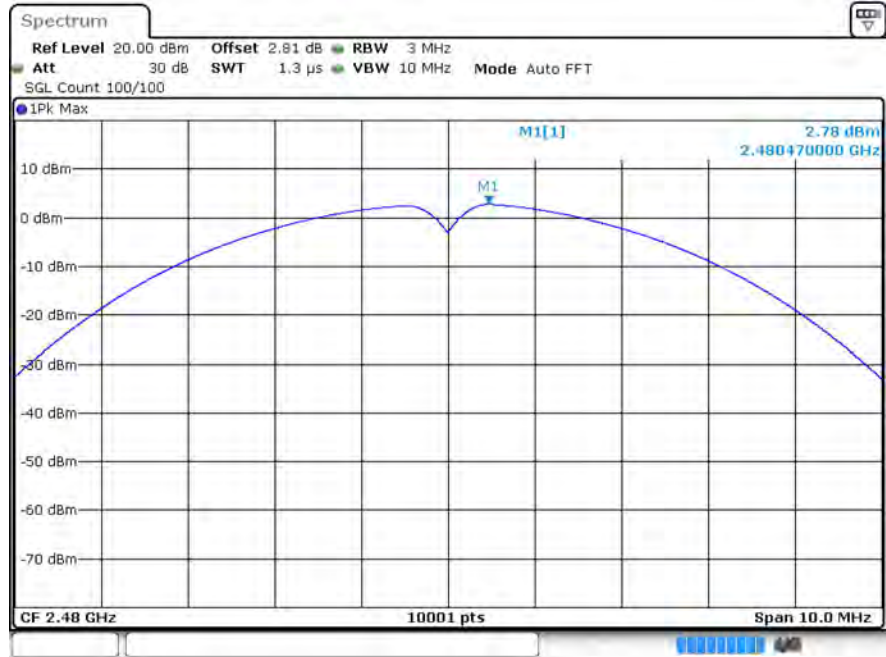
$\pi$ /4DQPSK/LCH

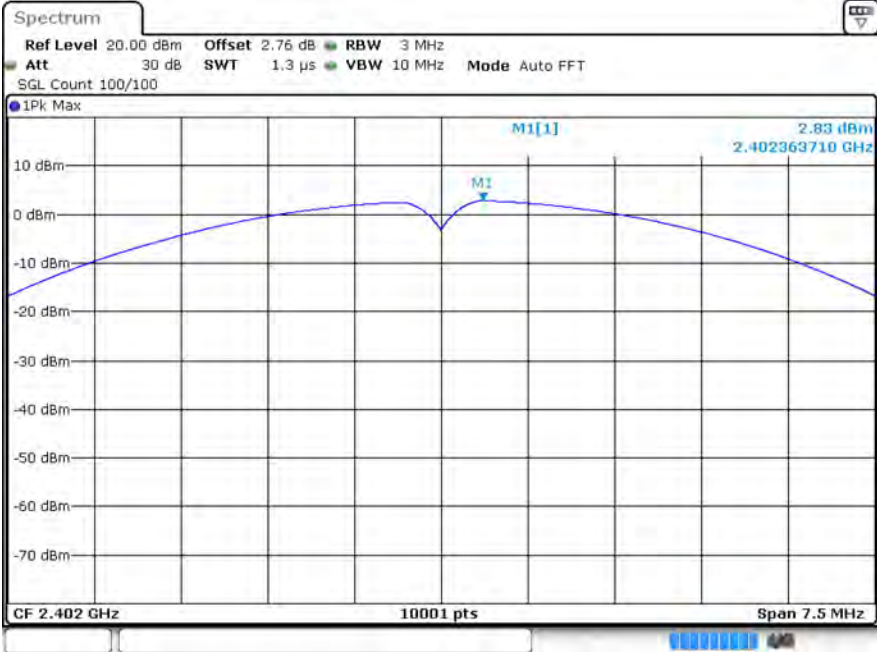
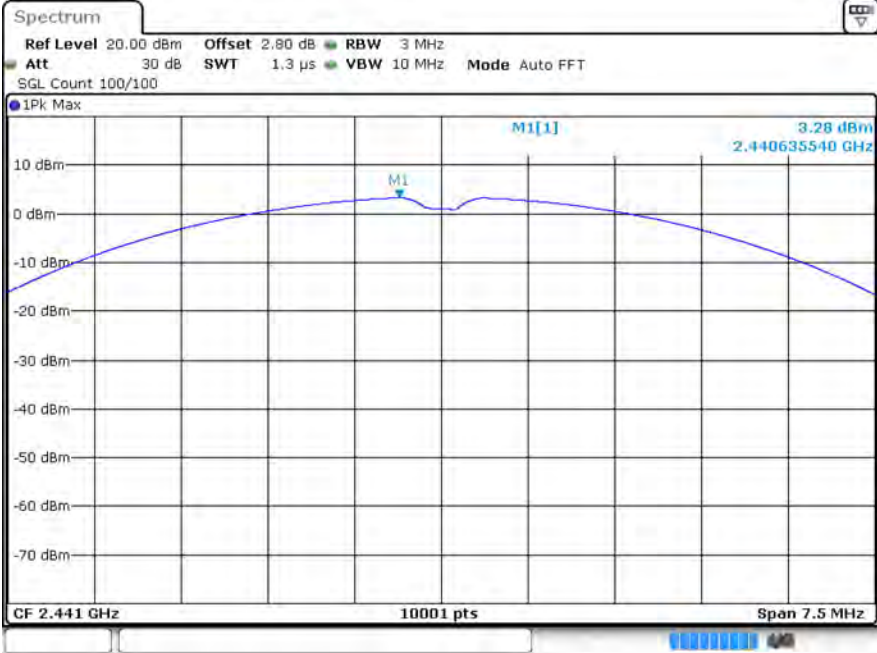


$\pi/4$ DQPSK/MCH



$\pi/4$ DQPSK/HCH



<p>8DPSK/LCH</p>	 <p><b>Spectrum</b>          Ref Level 20.00 dBm Offset 2.76 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] 2.83 dBm          2.402363710 GHz          CF 2.402 GHz 10001 pts Span 7.5 MHz</p>
<p>8DPSK/MCH</p>	 <p><b>Spectrum</b>          Ref Level 20.00 dBm Offset 2.80 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] 3.28 dBm          2.440635540 GHz          CF 2.441 GHz 10001 pts Span 7.5 MHz</p>

8DPSK/HCH

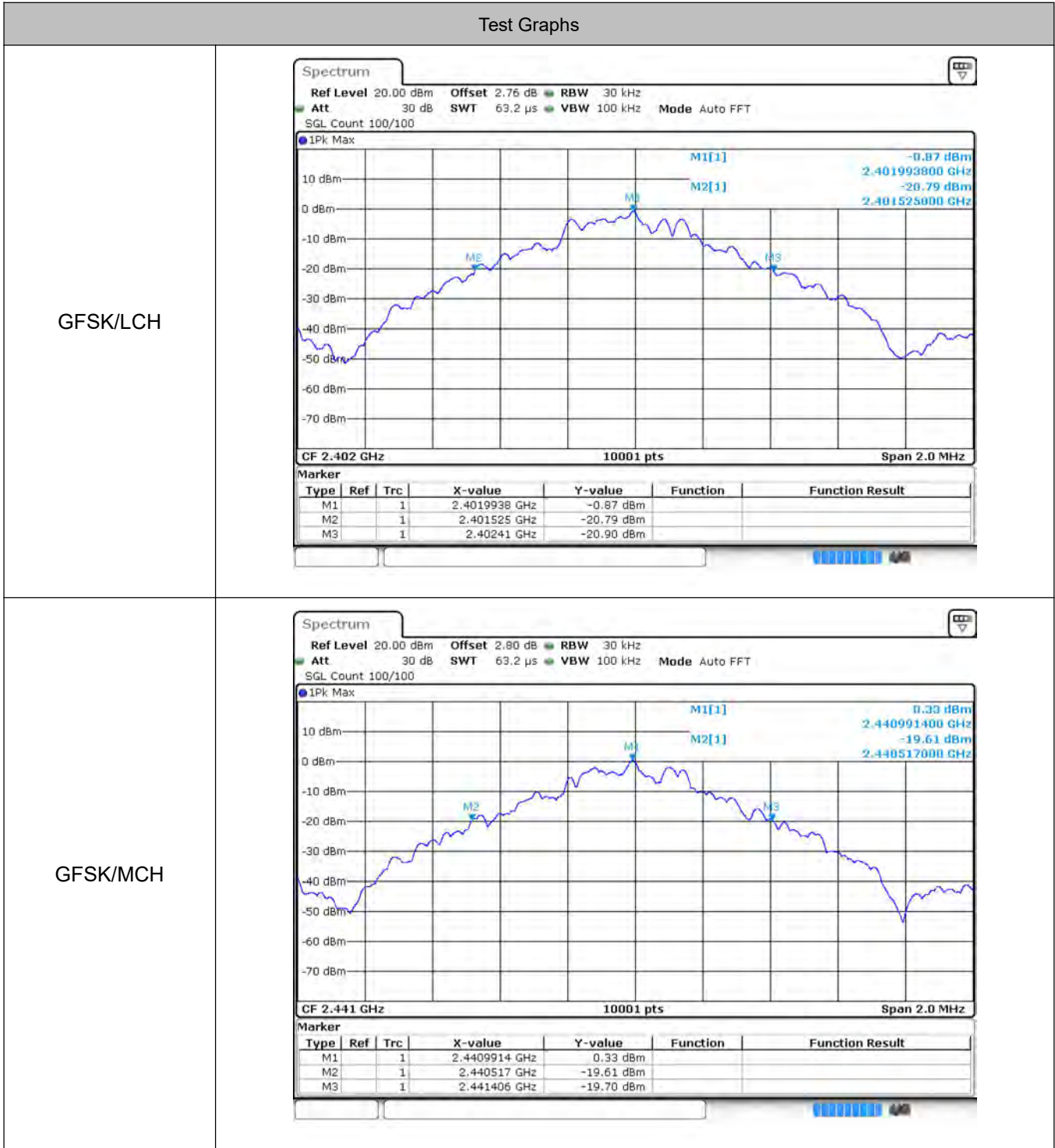


### 3 20dB Bandwidth

#### 3.1 Test Result

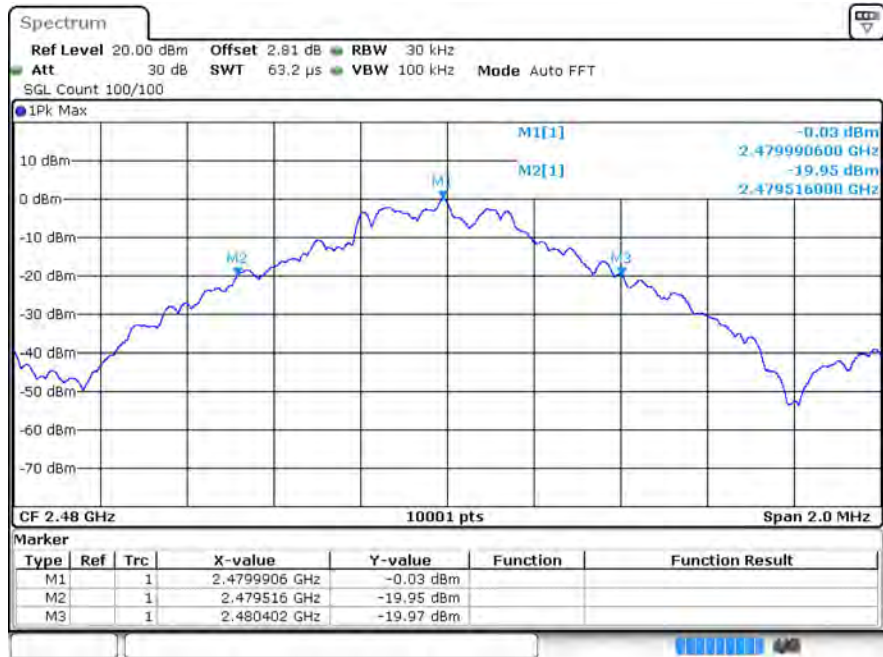
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.885	Not Specified	Pass
	MCH	0.889	Not Specified	Pass
	HCH	0.887	Not Specified	Pass
$\pi/4$ DQPSK	LCH	1.395	Not Specified	Pass
	MCH	1.46	Not Specified	Pass
	HCH	1.425	Not Specified	Pass
8DPSK	LCH	1.445	Not Specified	Pass
	MCH	1.446	Not Specified	Pass
	HCH	1.429	Not Specified	Pass

### 3.2 Test Graphs

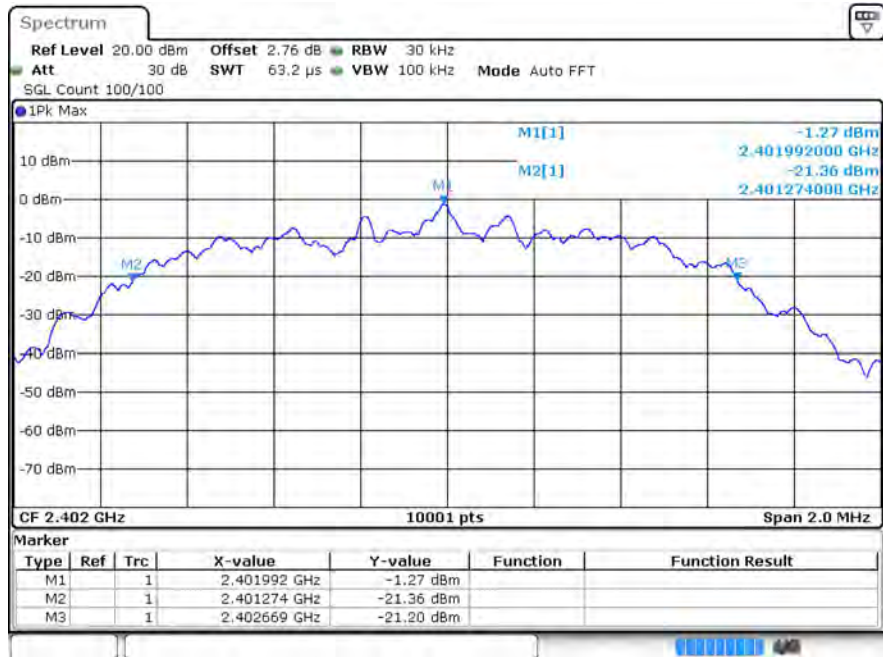




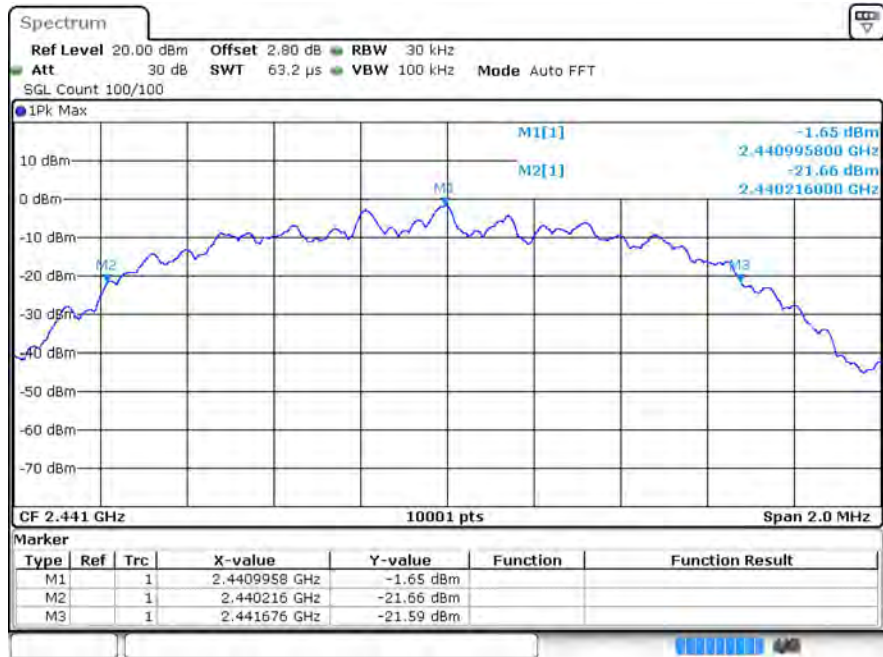
GFSK/HCH



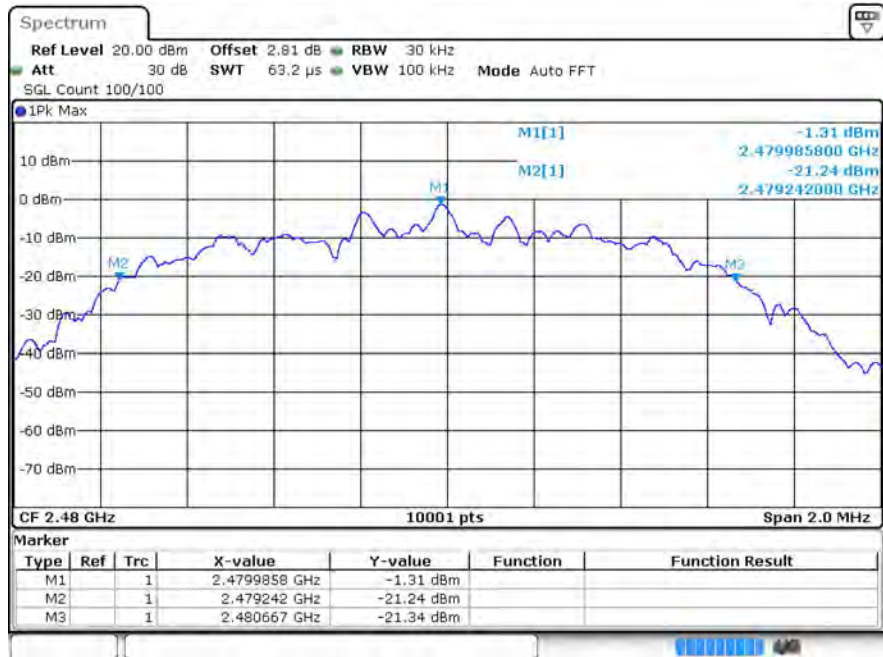
$\pi/4$ DQPSK/LCH



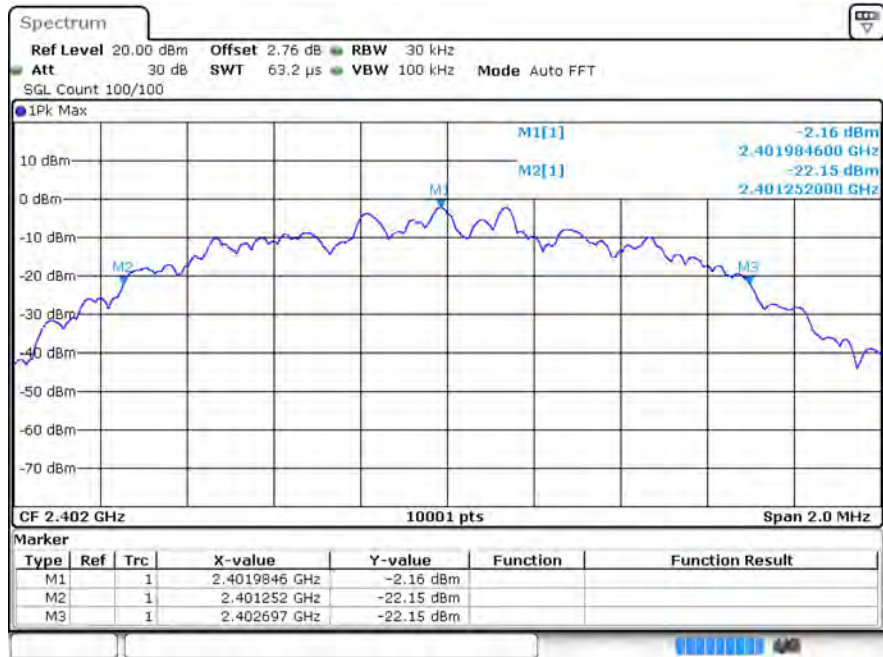
$\pi/4$ DQPSK/MCH



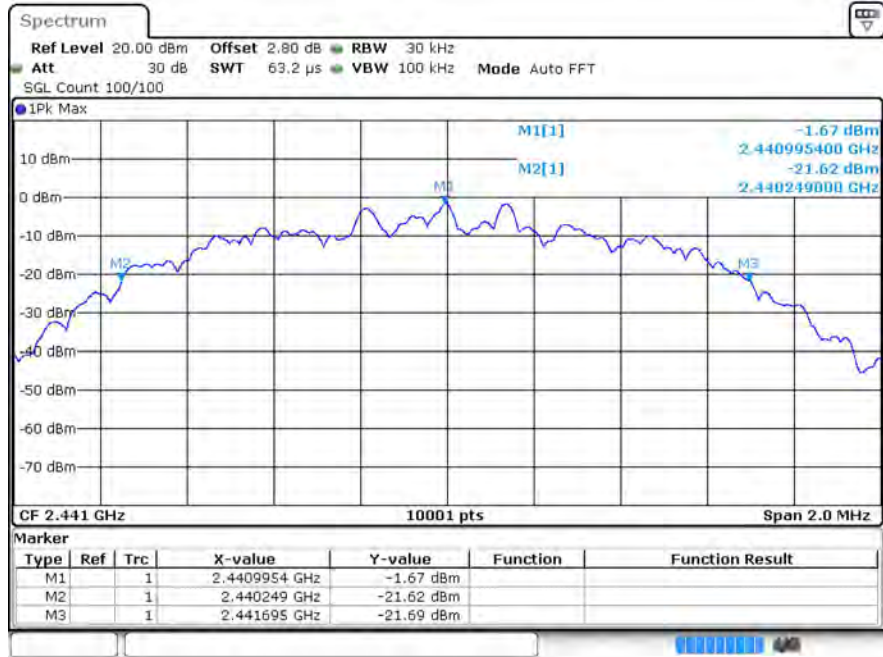
$\pi/4$ DQPSK/HCH



8DPSK/LCH

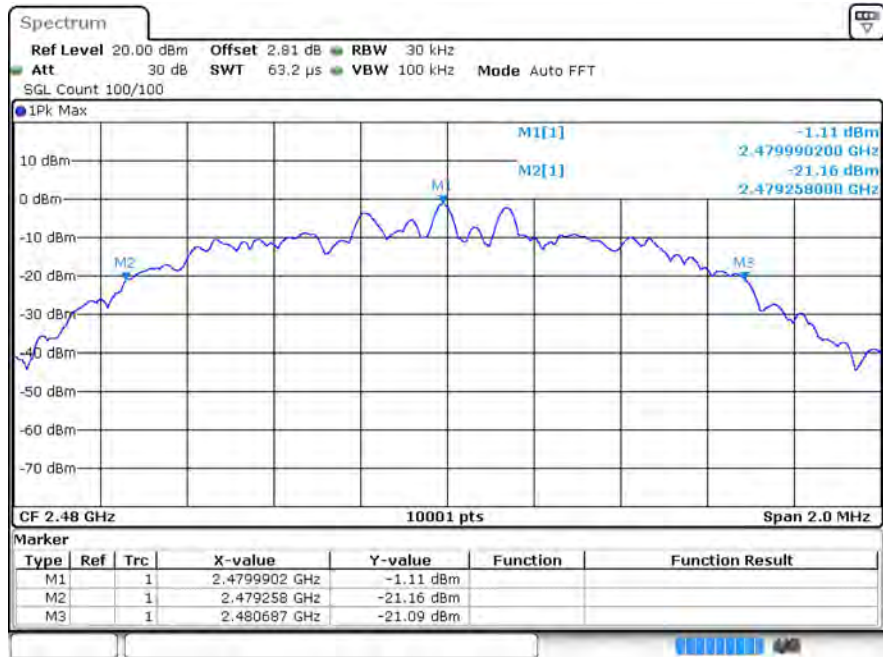


8DPSK/MCH





8DPSK/HCH



## 4 Carrier Frequency Separation

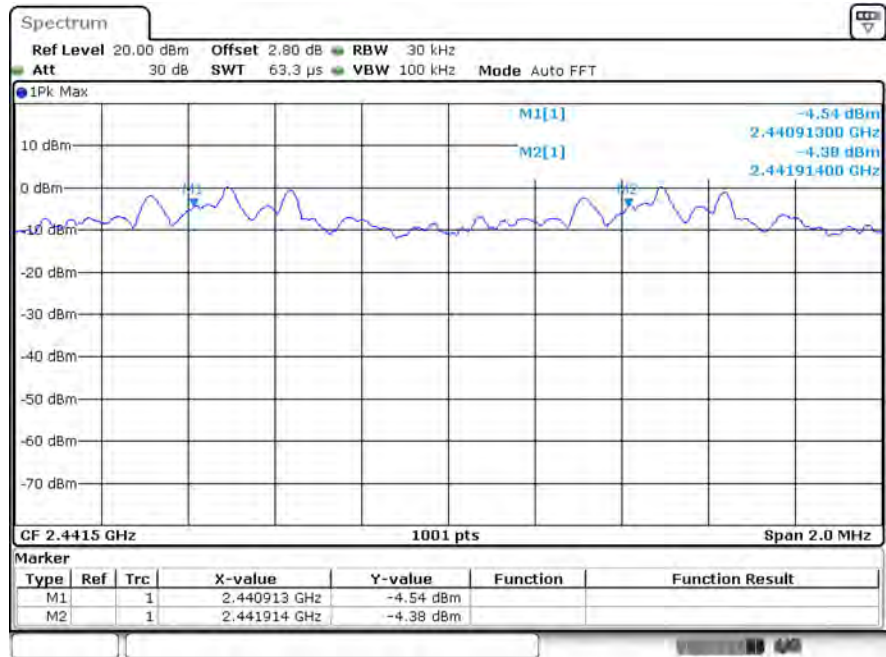
### 4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.998	0.593	Pass
$\pi/4$ DQPSK	MCH	0.98	0.973	Pass
8DPSK	MCH	1.001	0.964	Pass

## 4.2 Test Graphs



8DPSK/MCH



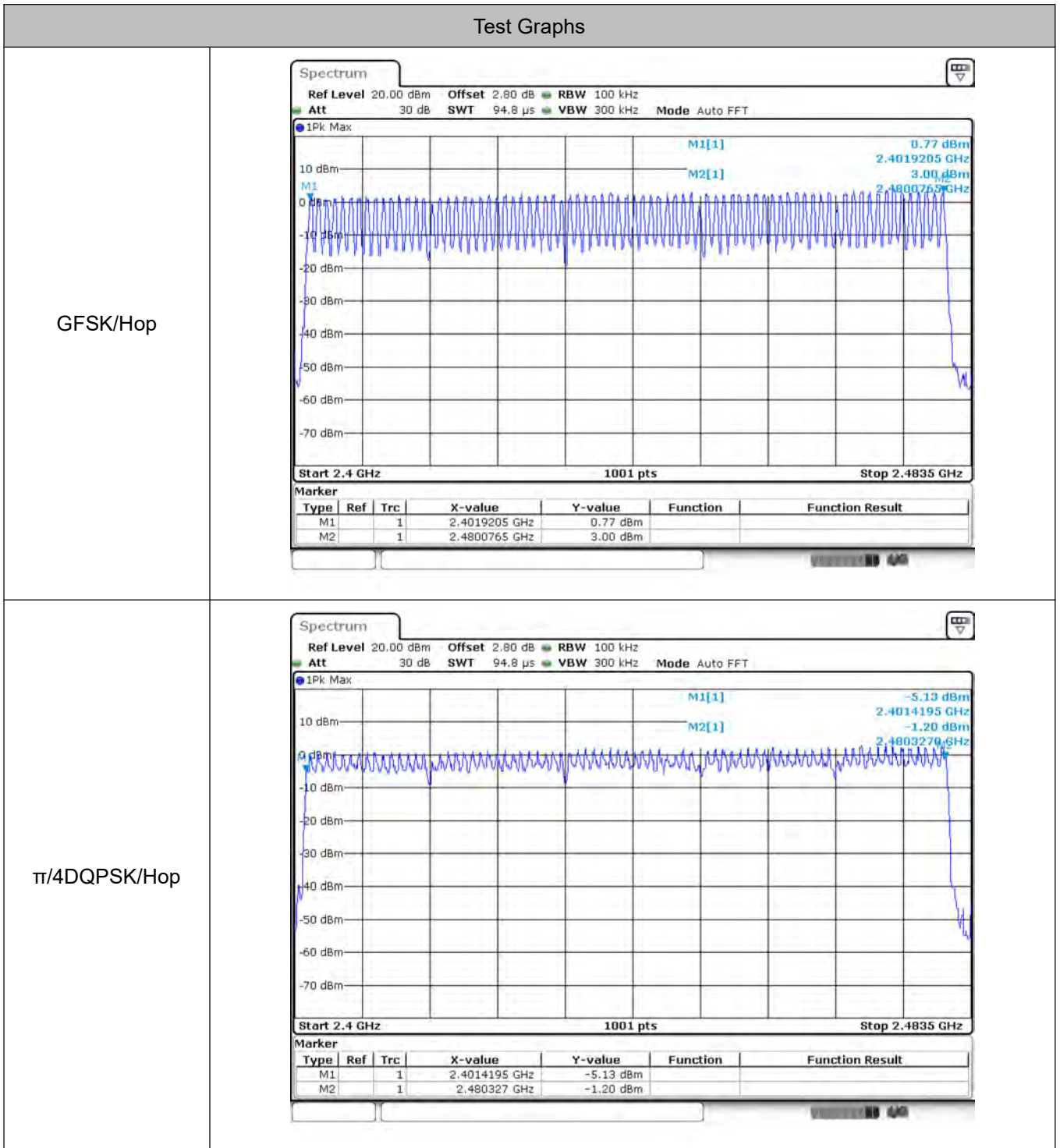
## 5 Hopping Channel Number

### 5.1 Test Result

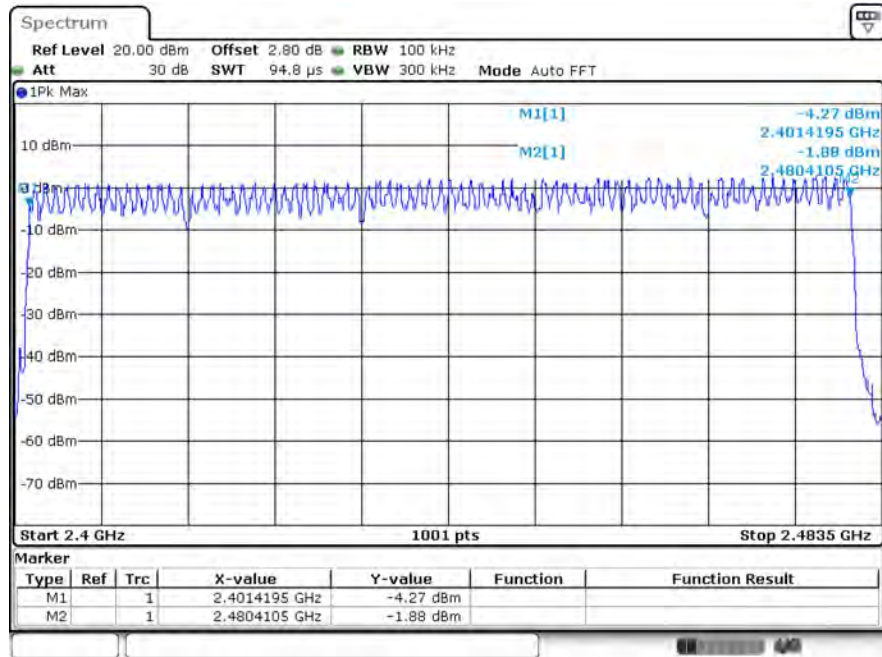
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	$\geq 15$	PASS
$\pi/4$ DQPSK	Hop	79	$\geq 15$	PASS
8DPSK	Hop	79	$\geq 15$	PASS



## 5.2 Test Graphs



8DPSK/Hop

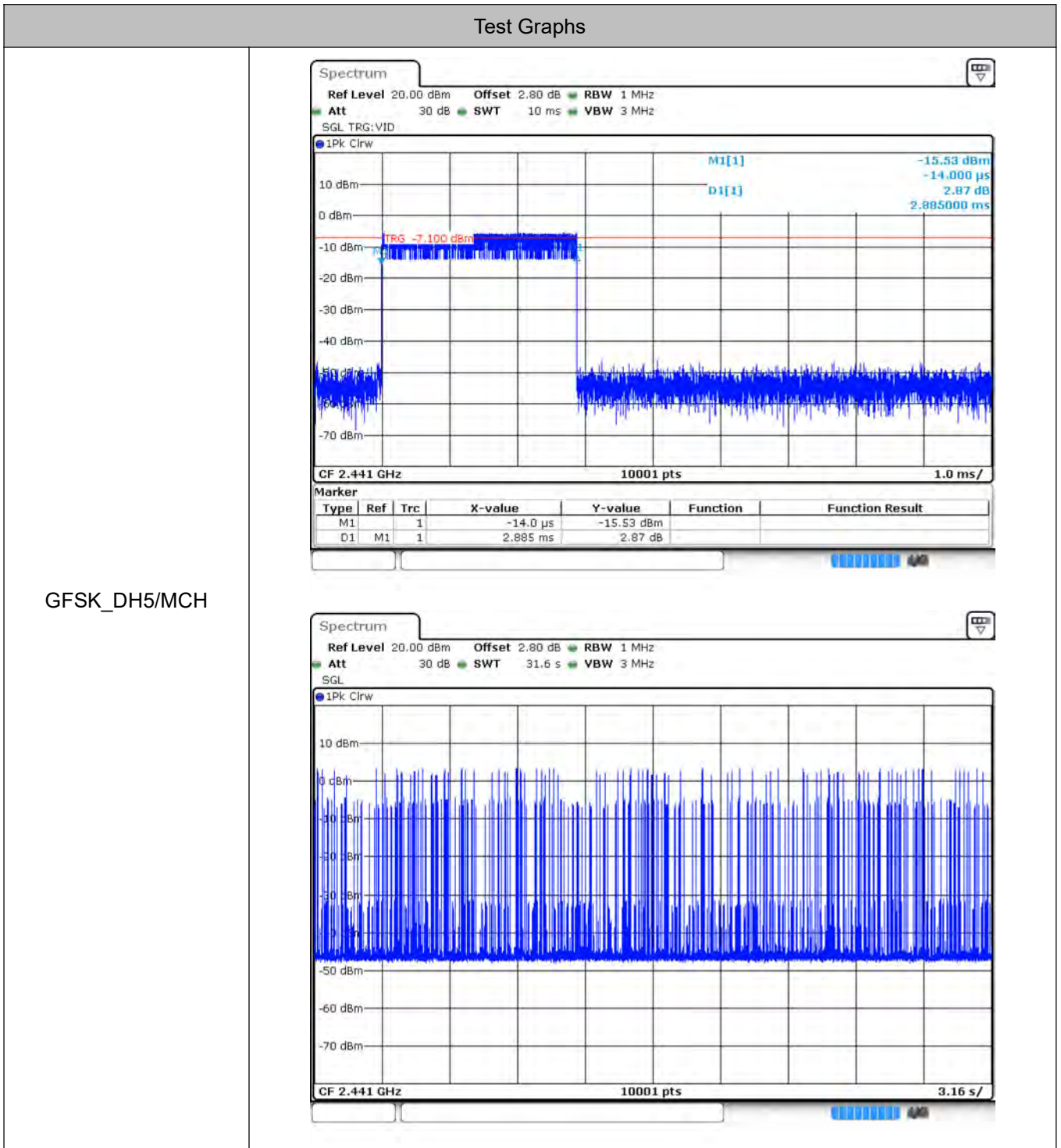


## 6 Dwell Time

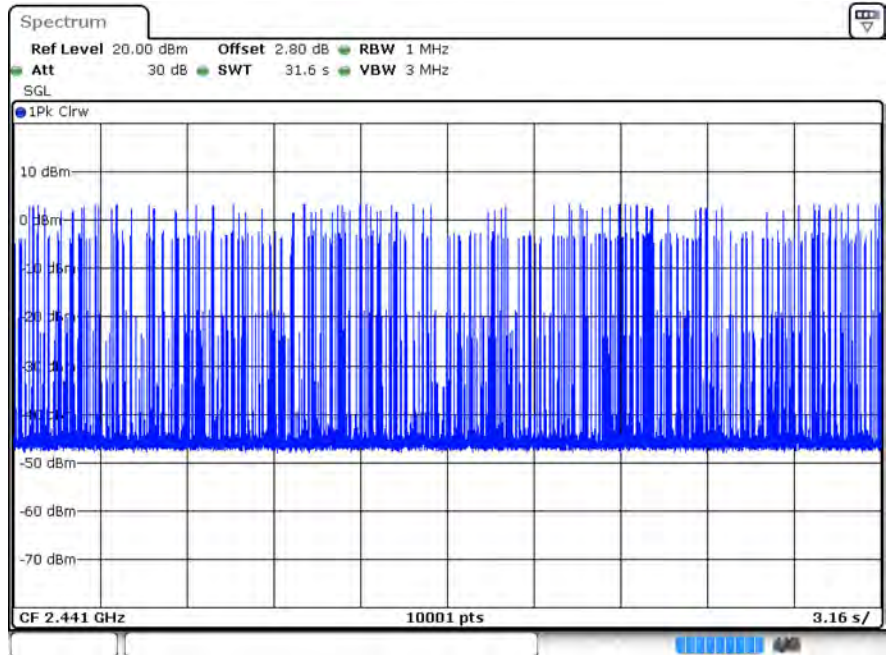
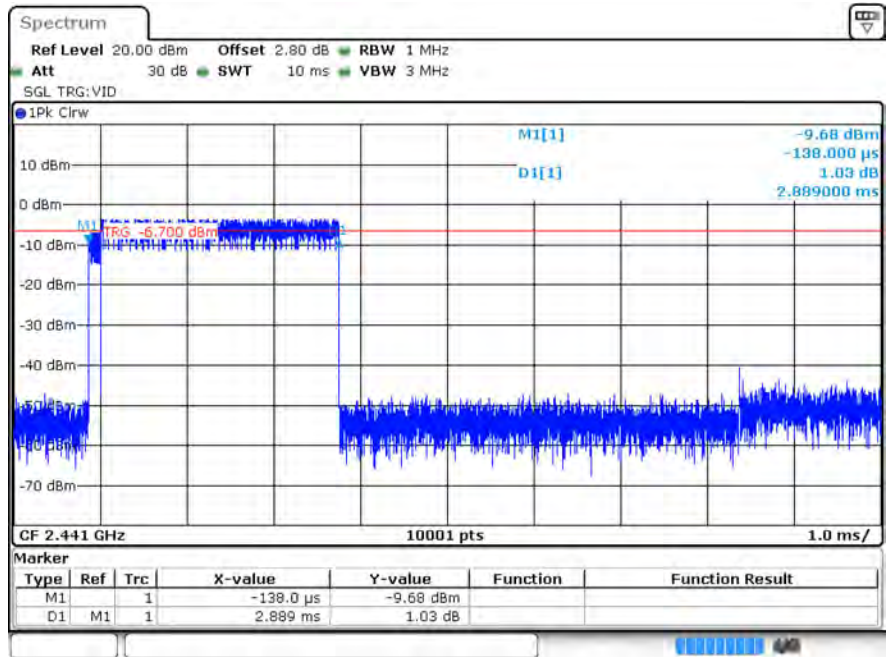
### 6.1 Test Result

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.885	101	291.385	0.4	Pass
$\pi/4$ DQPSK	2DH5	MCH	2.889	98	283.122	0.4	Pass
8DPSK	3DH5	MCH	2.891	118	341.138	0.4	Pass

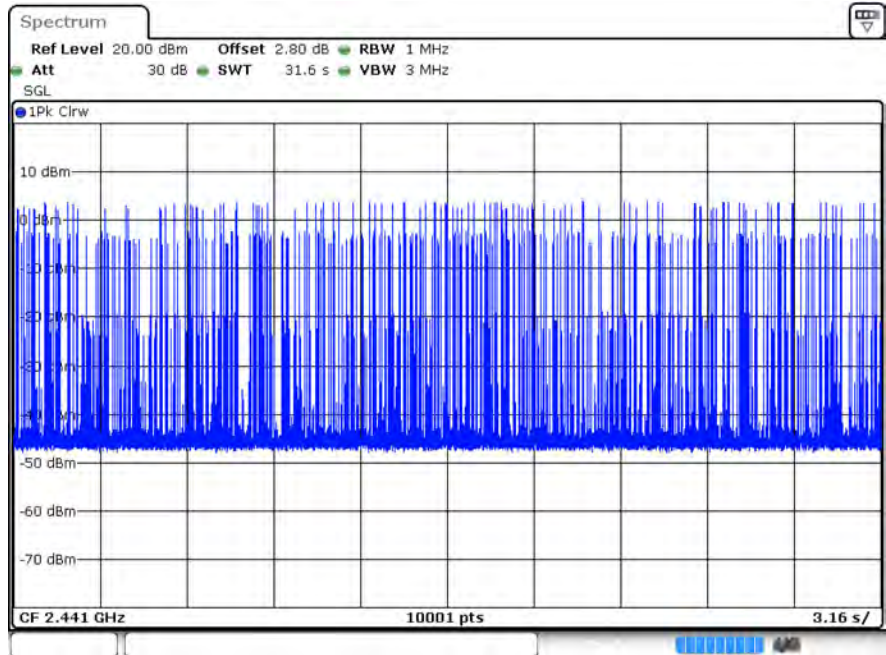
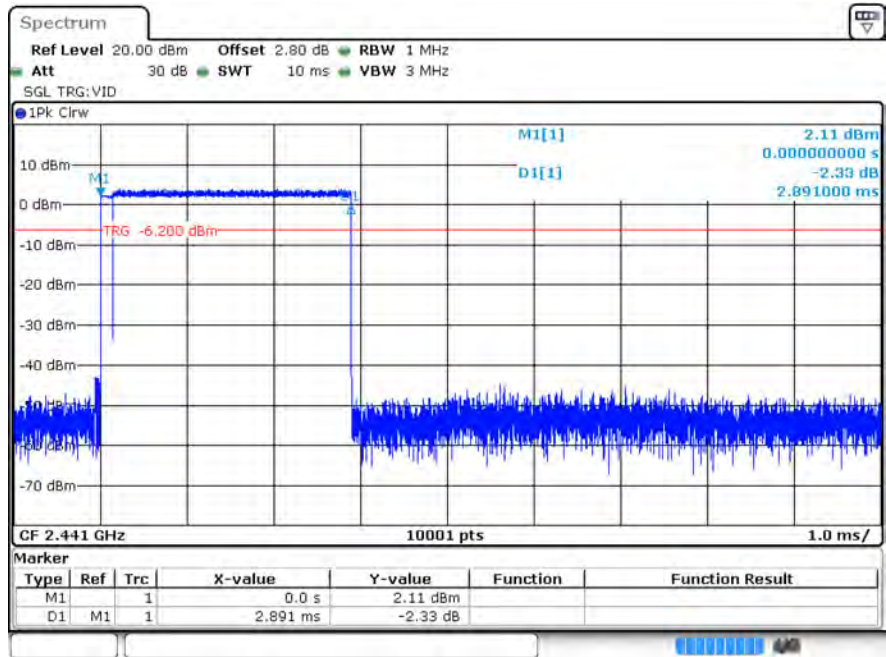
## 6.2 Test Graphs



$\pi/4$ 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	-43.23	-20	Pass
	MCH	-43.9	-20	Pass
	HCH	-42.5	-20	Pass
$\pi/4$ DQPSK	LCH	-41.67	-20	Pass
	MCH	-42.33	-20	Pass
	HCH	-41.51	-20	Pass
8DPSK	LCH	-41.19	-20	Pass
	MCH	-41.26	-20	Pass
	HCH	-42.7	-20	Pass

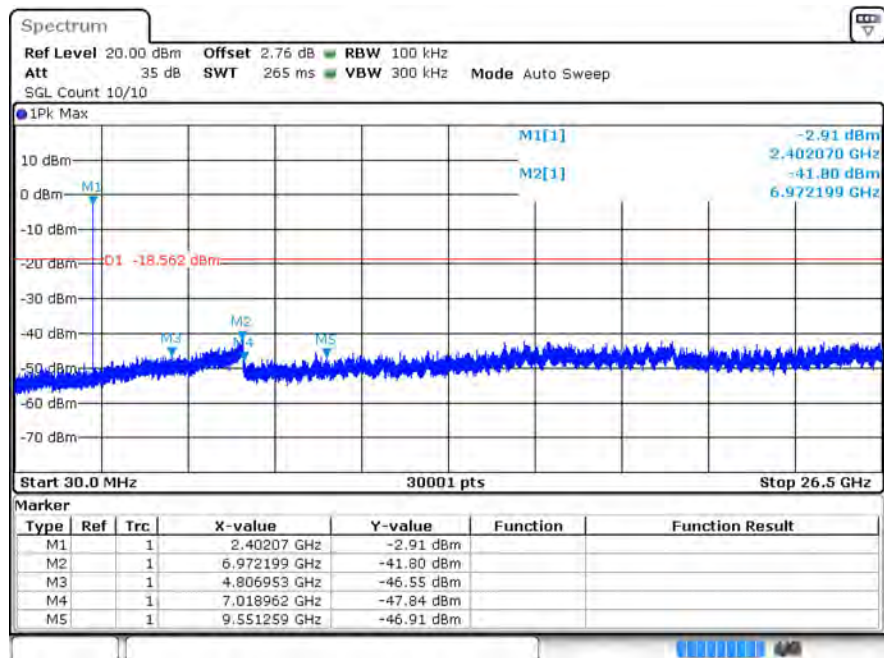
## 7.2 Test Graphs

GFSK\_LCH\_Graphs

Pref



Puw



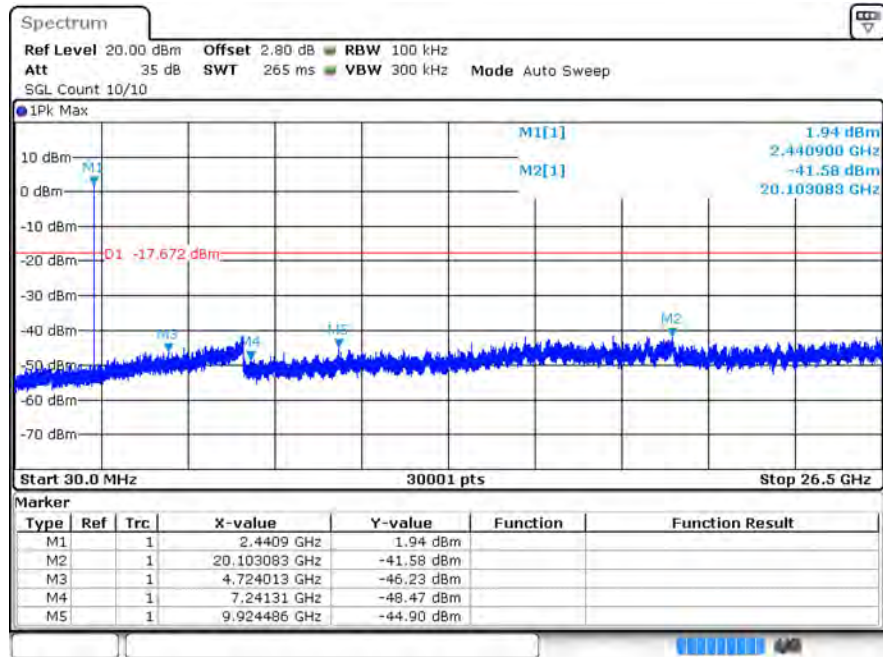


GFSK\_MCH\_Graphs

Pref



Puw

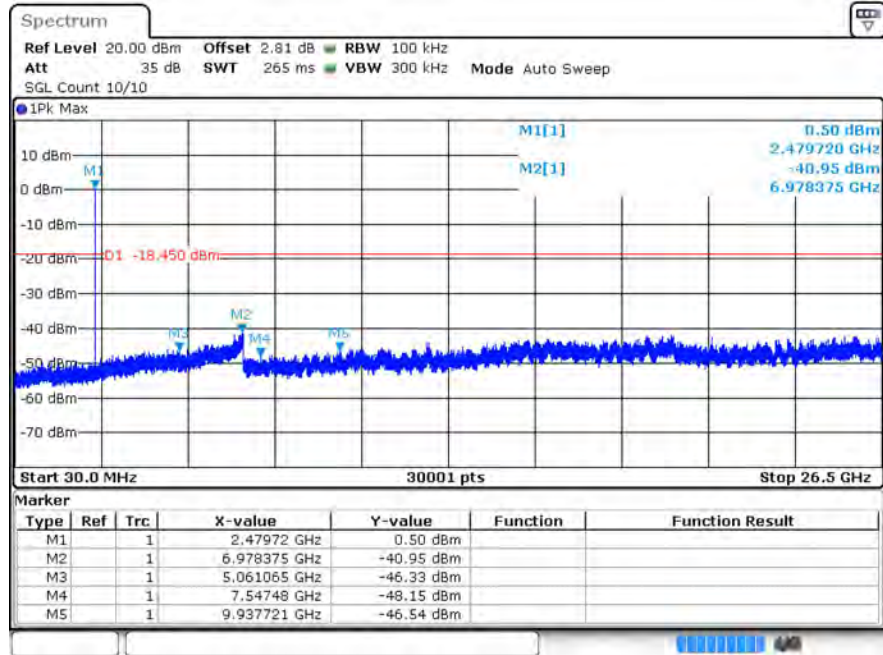


GFSK\_HCH\_Graphs

Pref

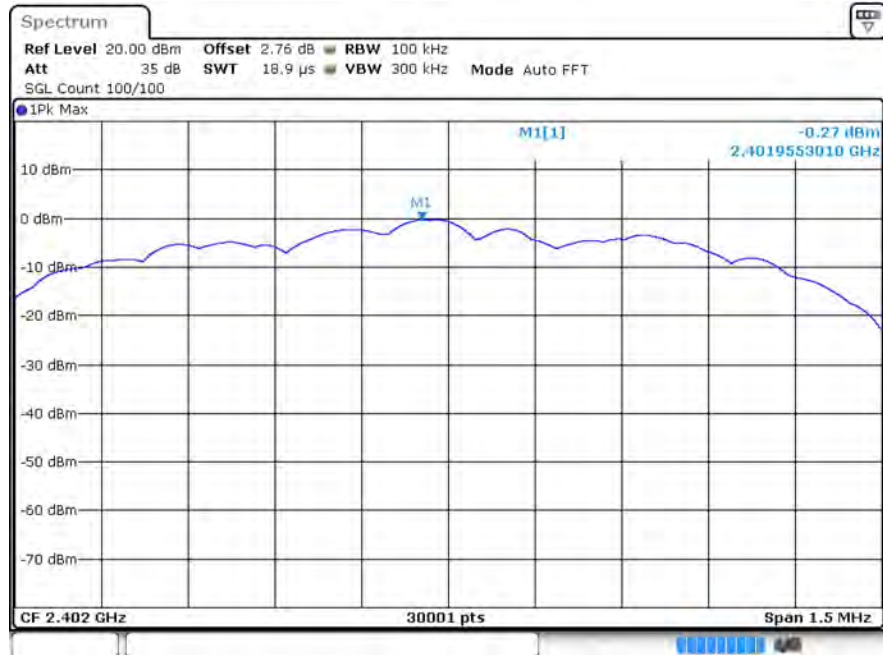


Puw

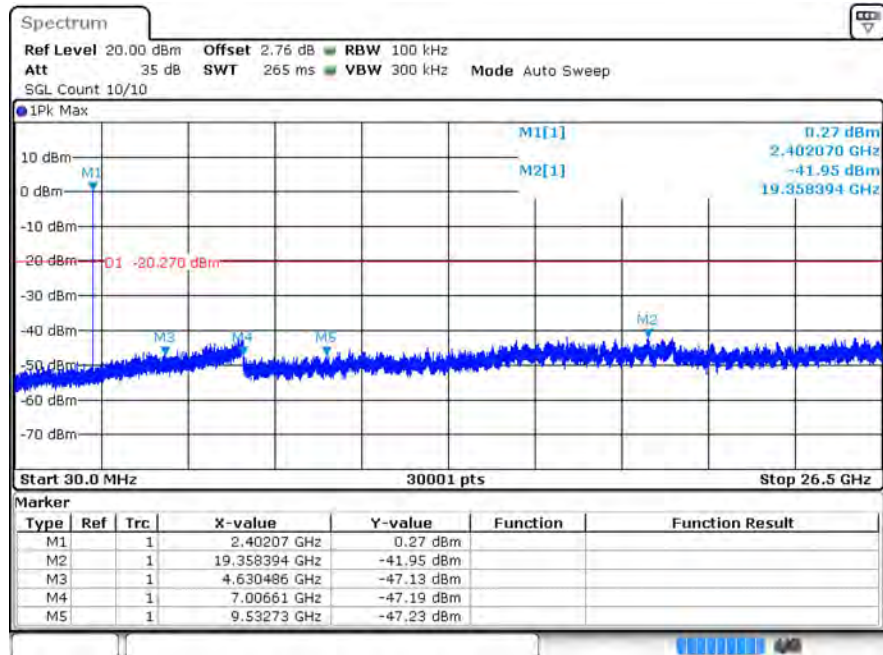


$\pi/4$ DQPSK\_LCH\_Graphs

Pref



Puw

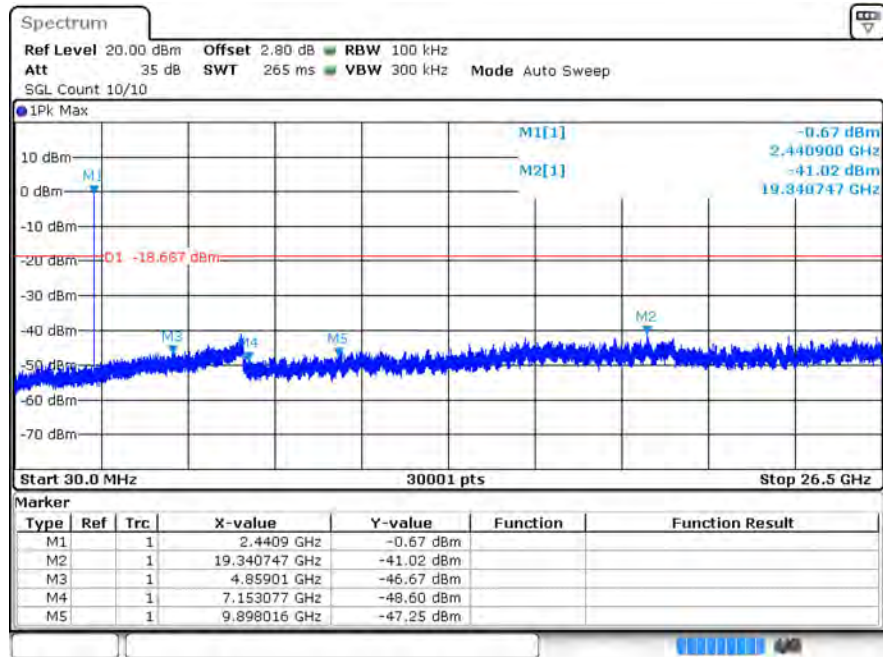


$\pi/4$ DQPSK\_MCH\_Graphs

Pref

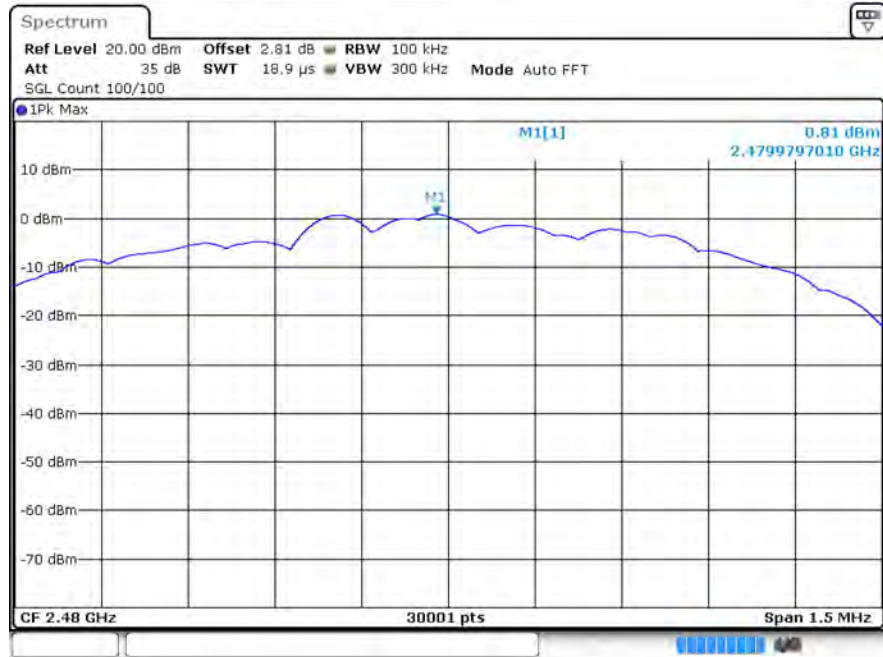


Puw

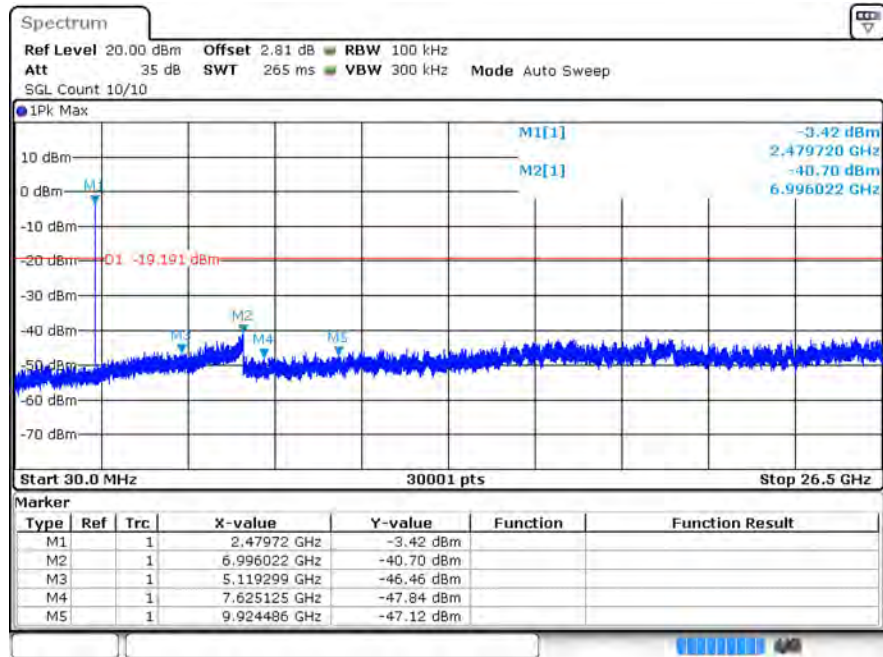


$\pi/4$ DQPSK\_HCH\_Graphs

Pref

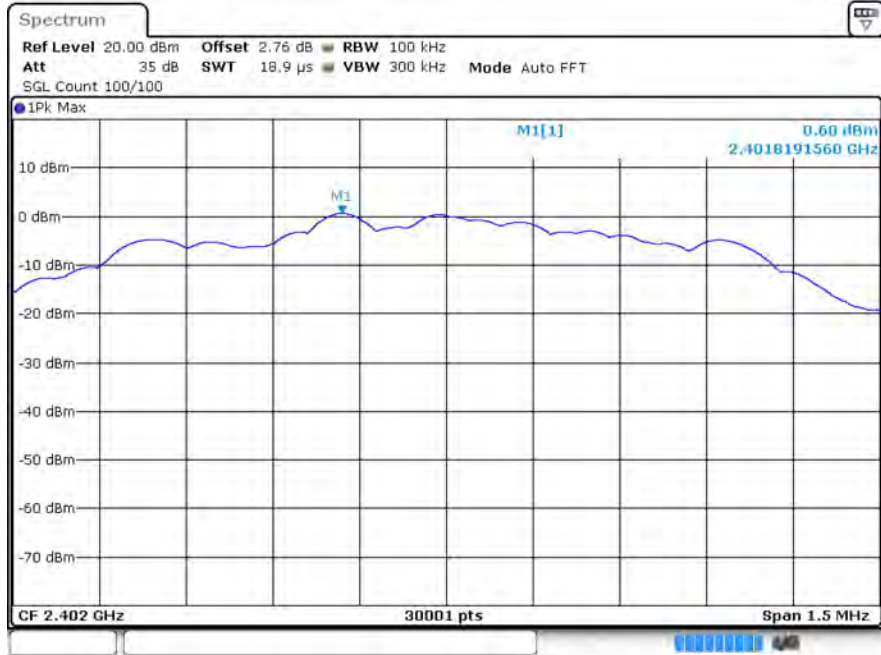


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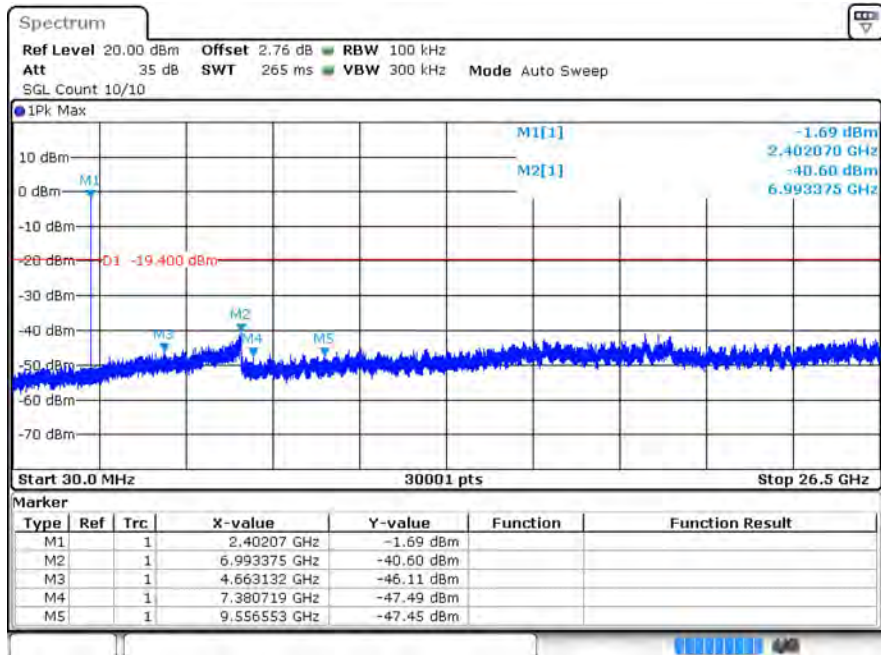


8DPSK\_LCH\_Graphs

Pref

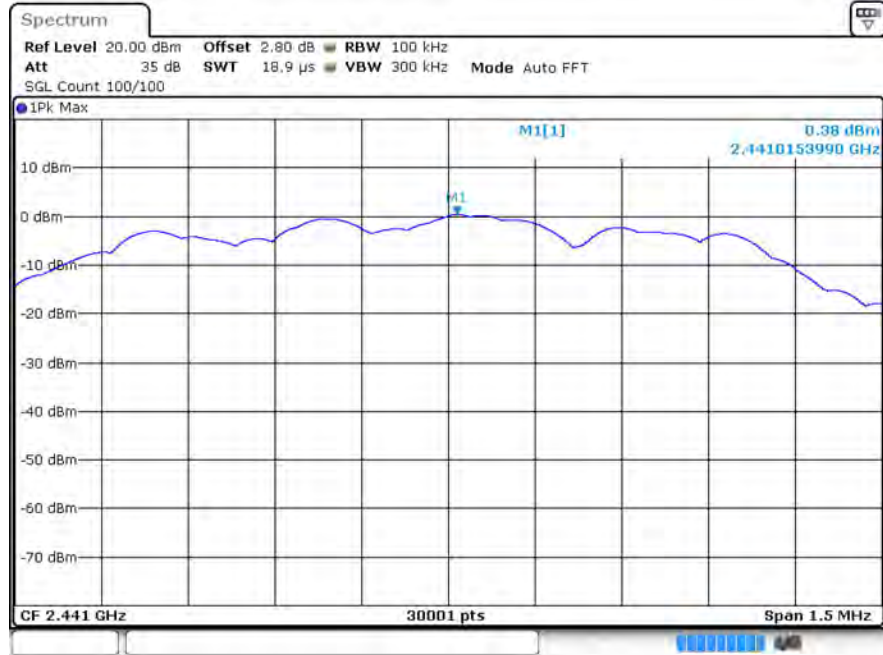


Puw

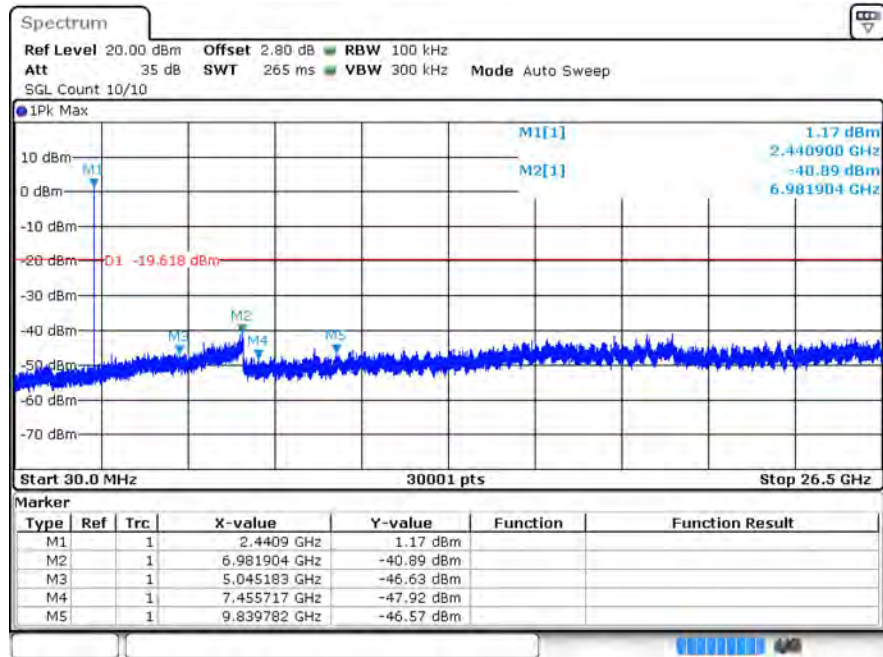


8DPSK\_MCH\_Graphs

Pref

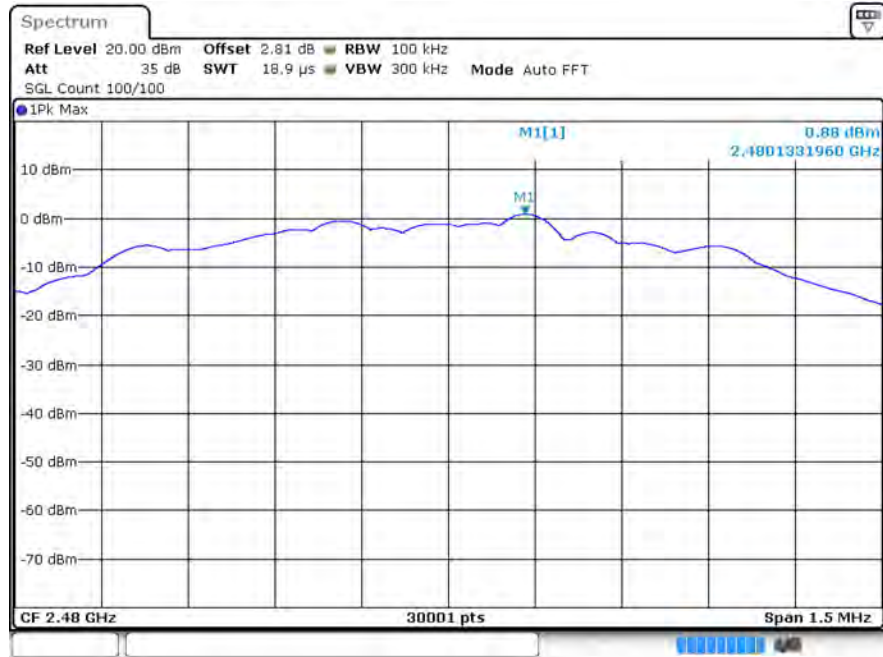


Puw

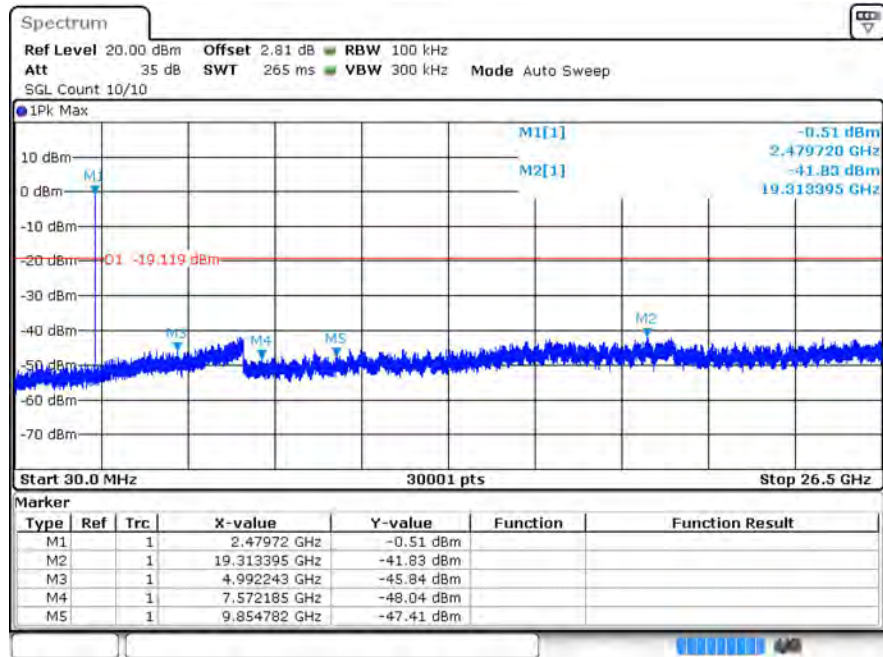


8DPSK\_HCH\_Graphs

Pref



Puw



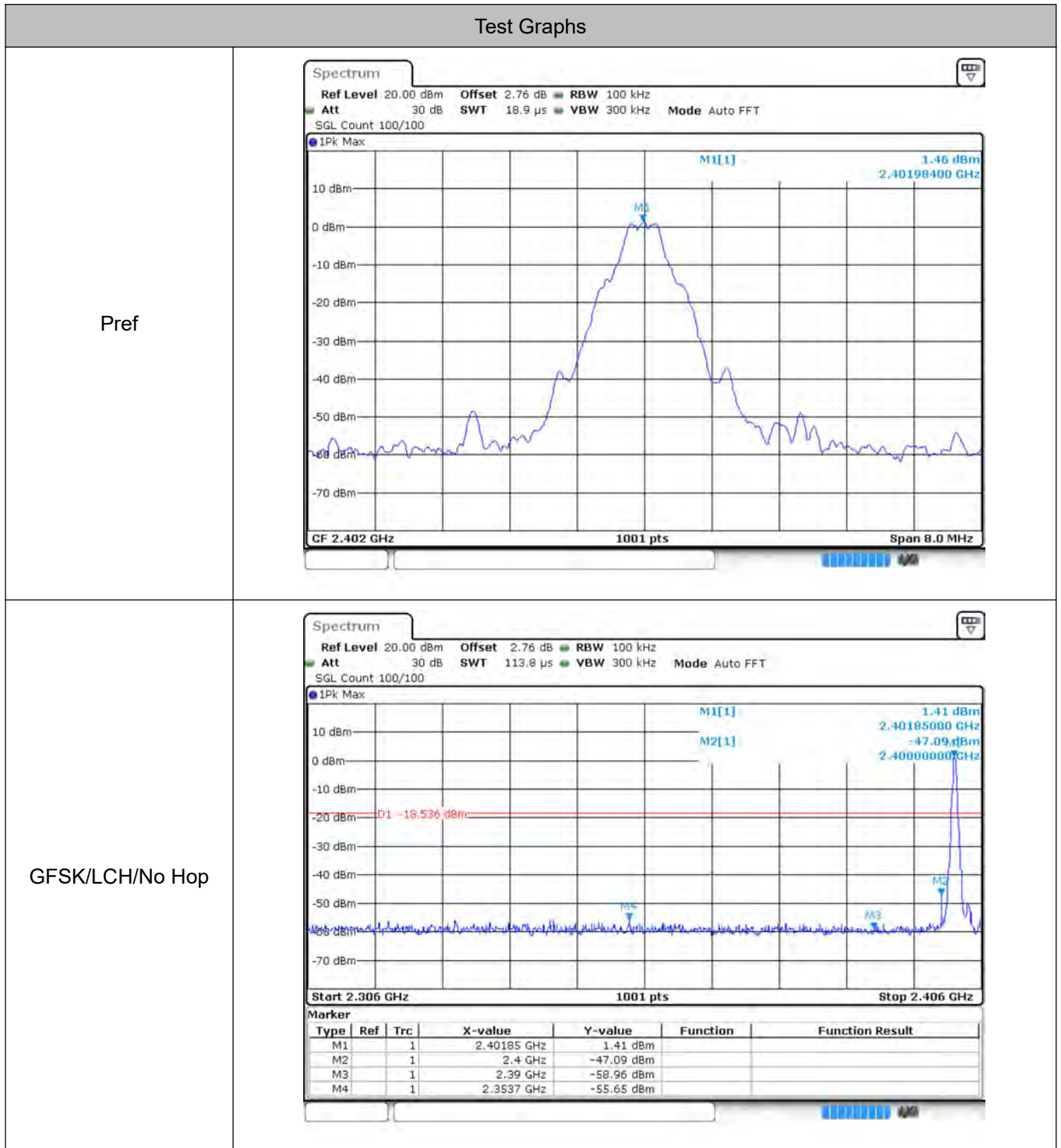


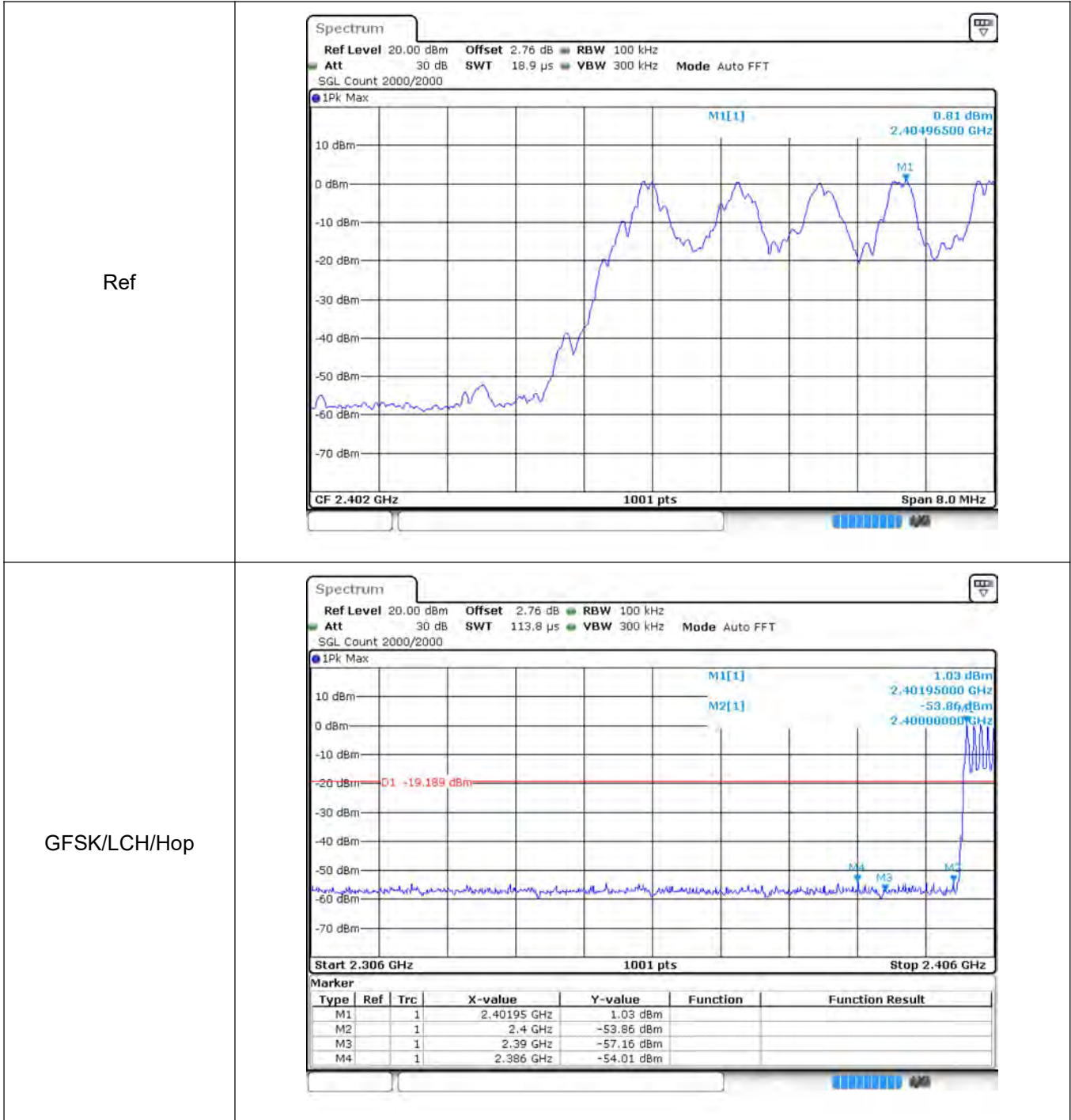
## 8 Band-edge for RF Conducted Emissions

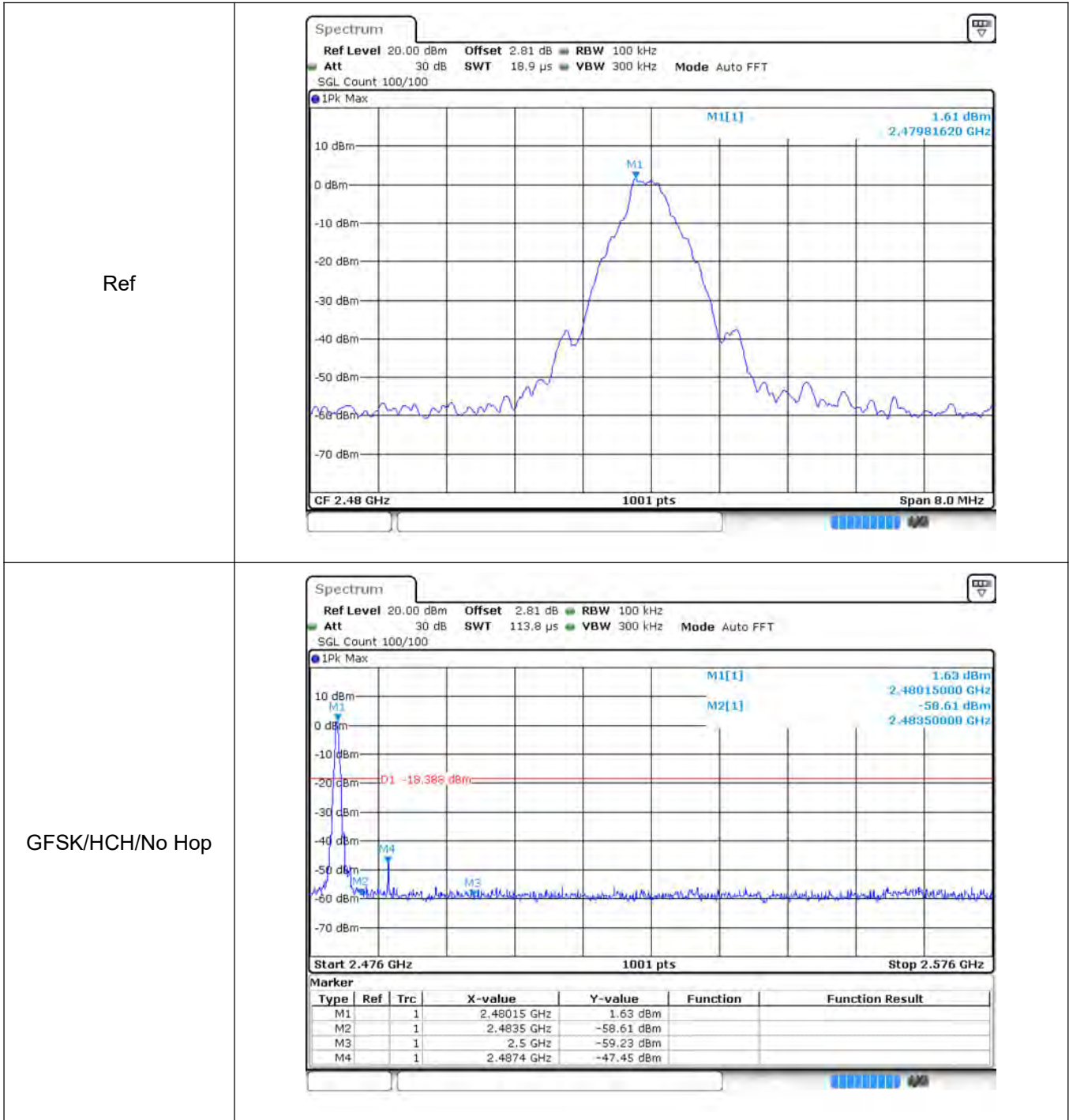
### 8.1 Test Result

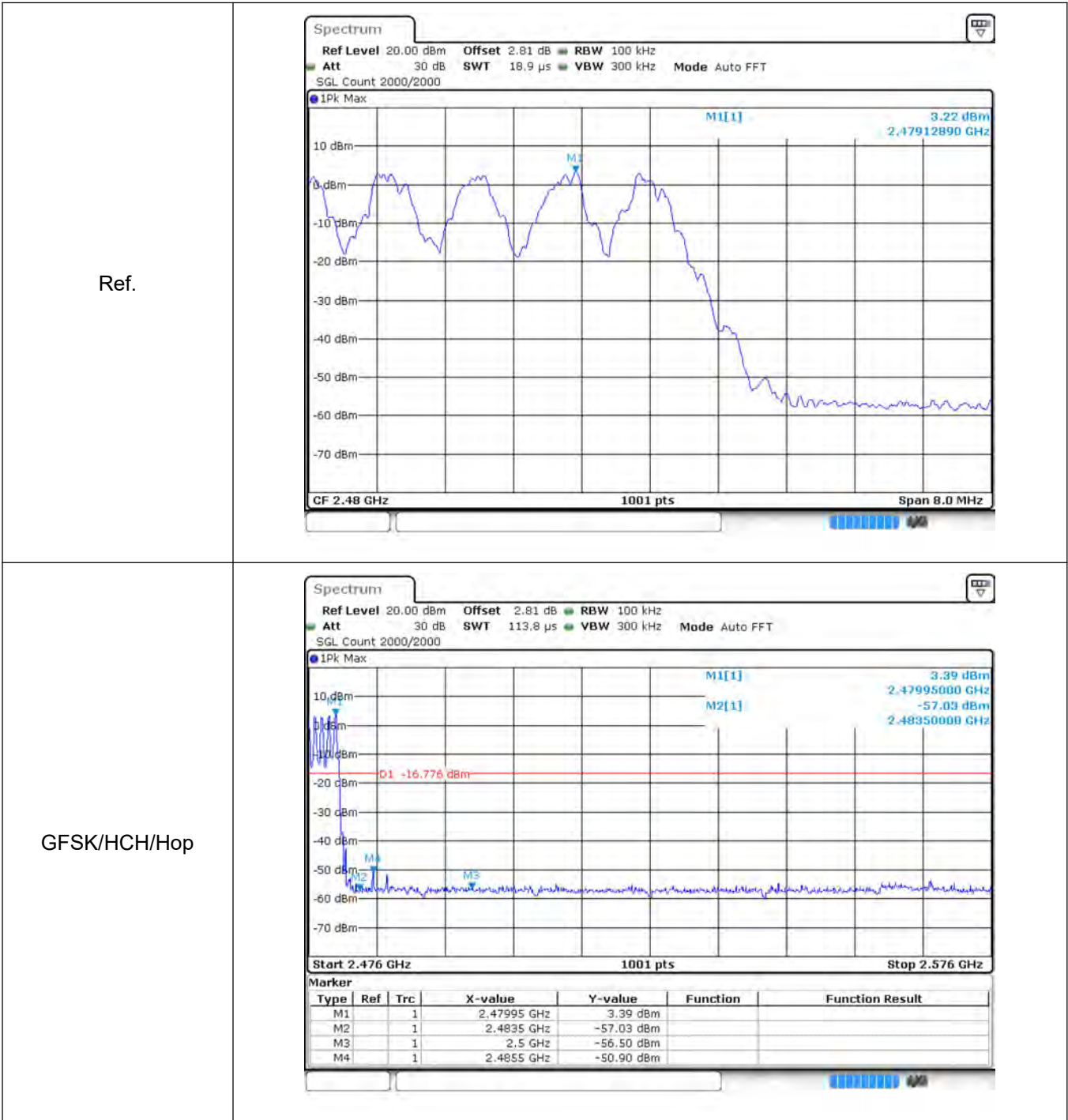
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-57.11	-20	Pass
			On	-54.82	-20	Pass
	HCH	2480	Off	-49.06	-20	Pass
			On	-54.12	-20	Pass
$\pi/4$ DQPSK	LCH	2402	Off	-55.99	-20	Pass
			On	-55.71	-20	Pass
	HCH	2480	Off	-50.09	-20	Pass
			On	-48.15	-20	Pass
8DPSK	LCH	2402	Off	-56.58	-20	Pass
			On	-54.44	-20	Pass
	HCH	2480	Off	-51.26	-20	Pass
			On	-48.6	-20	Pass

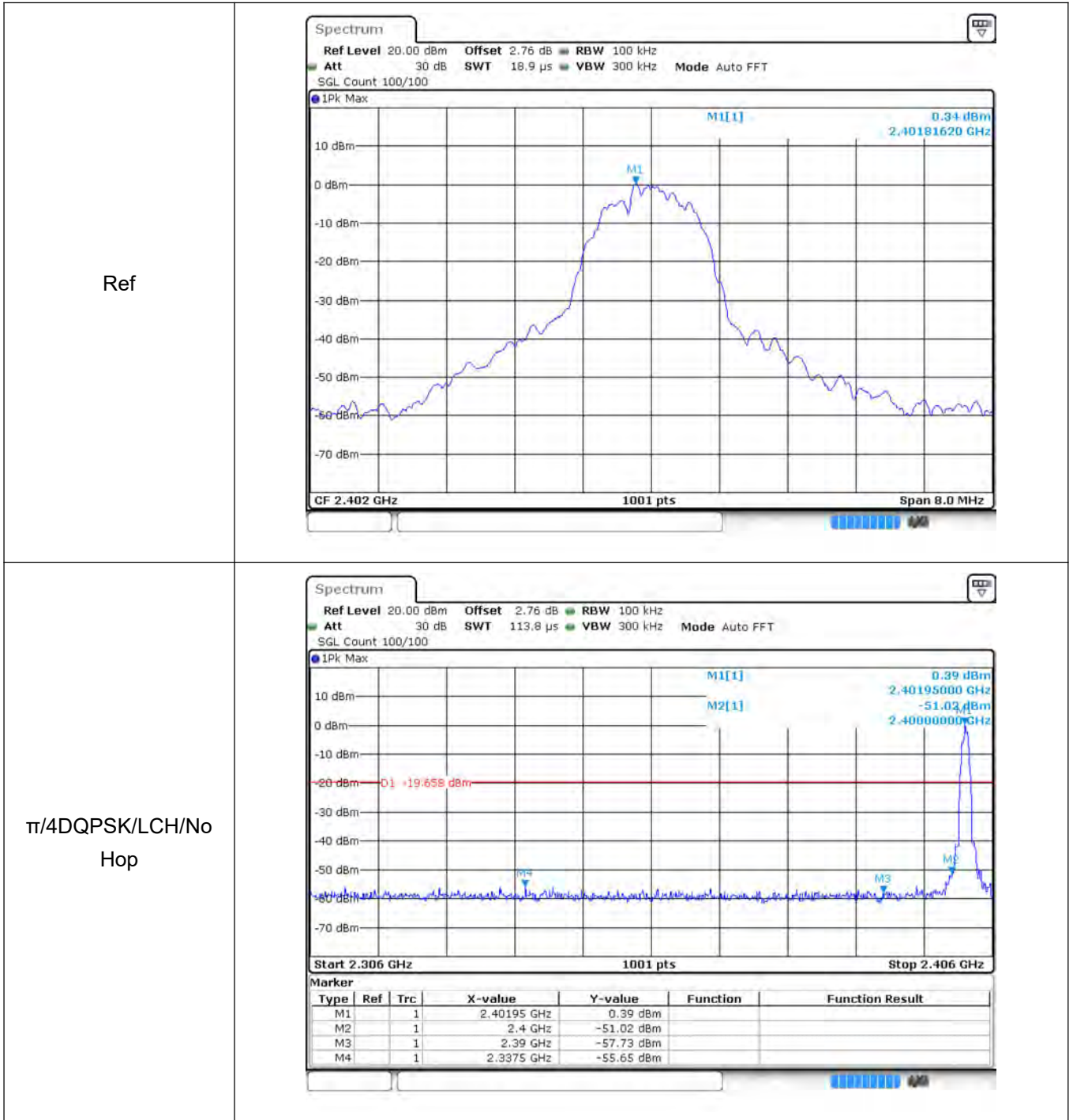
## 8.2 Test Graphs

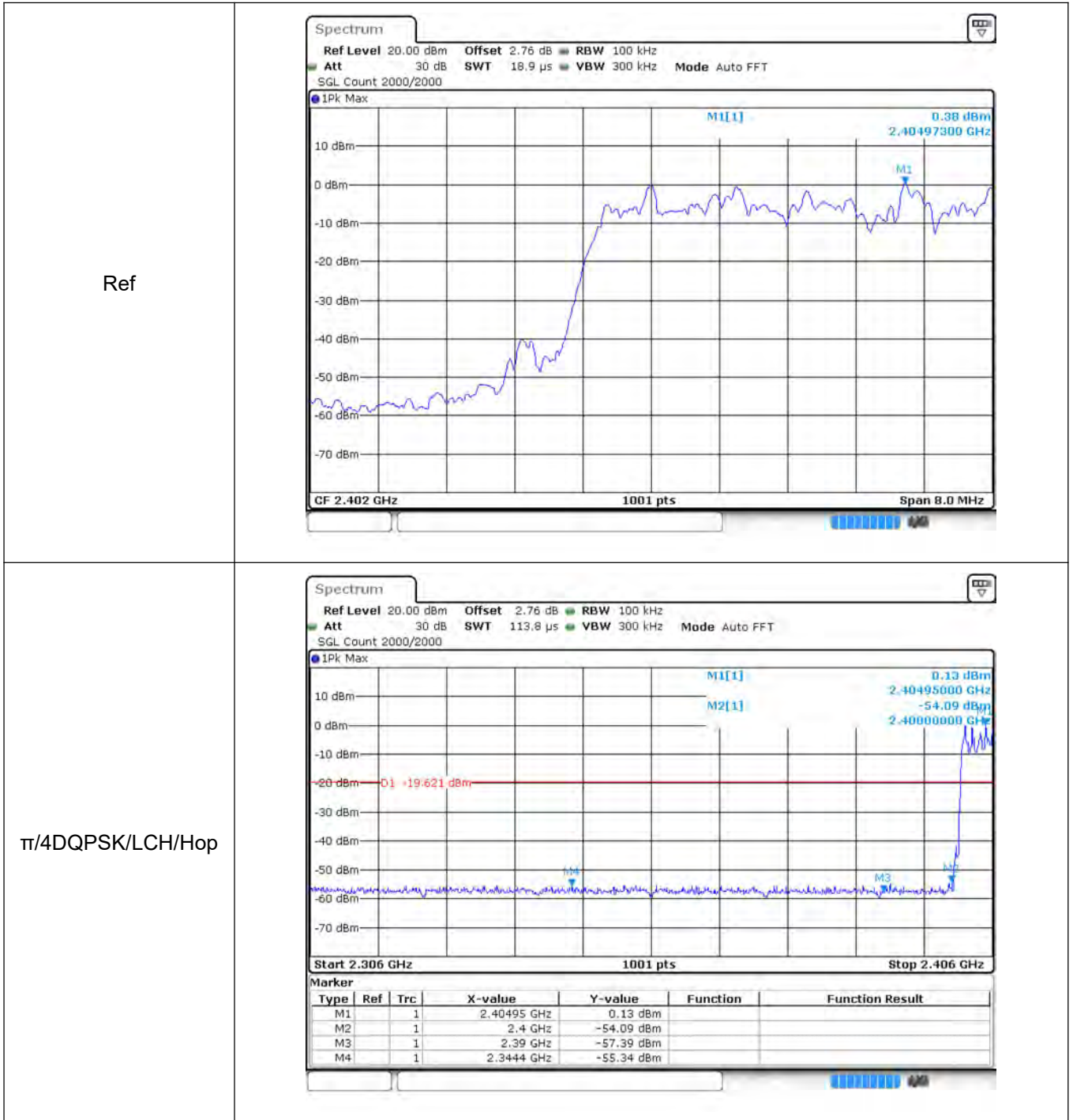


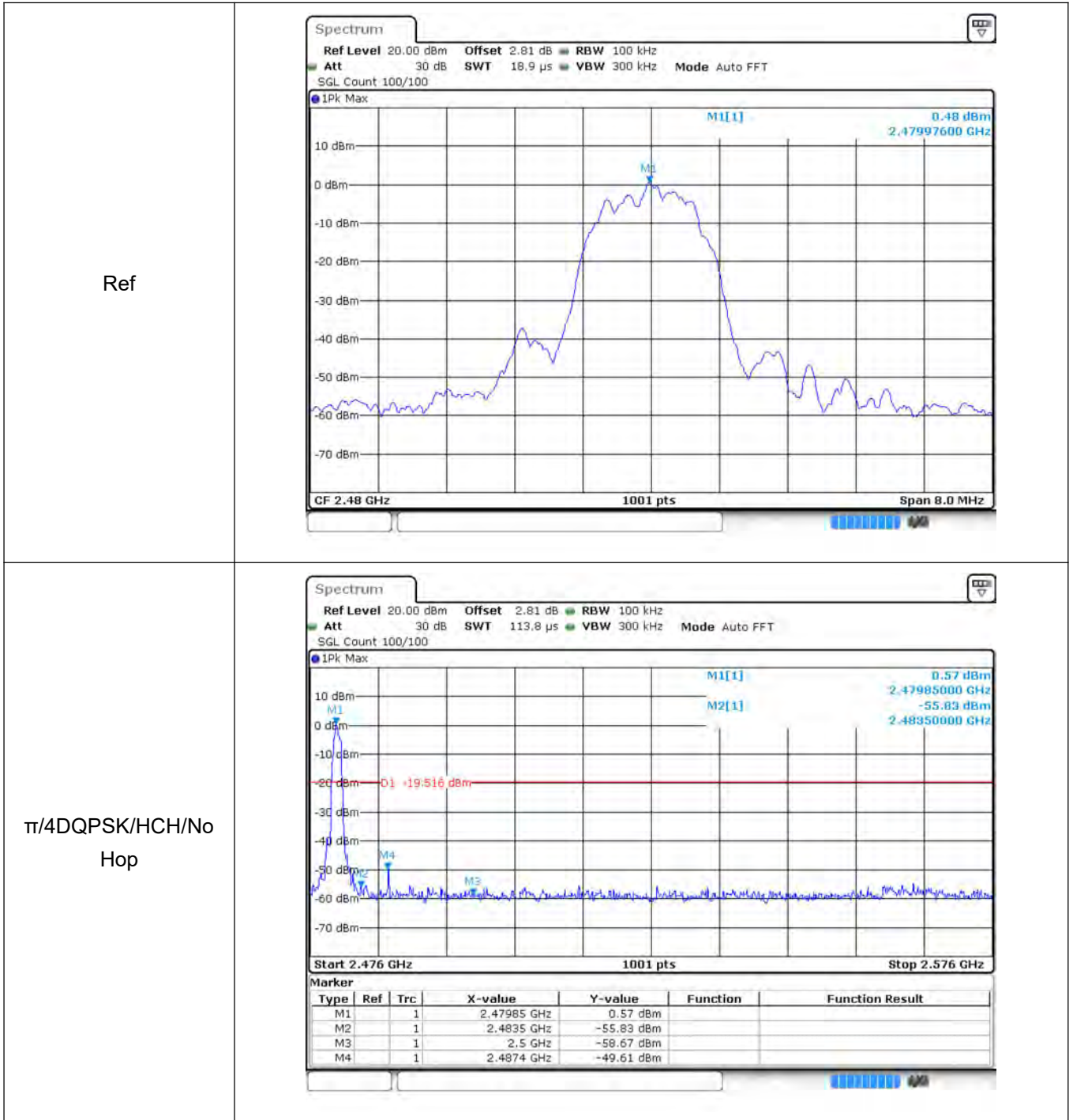




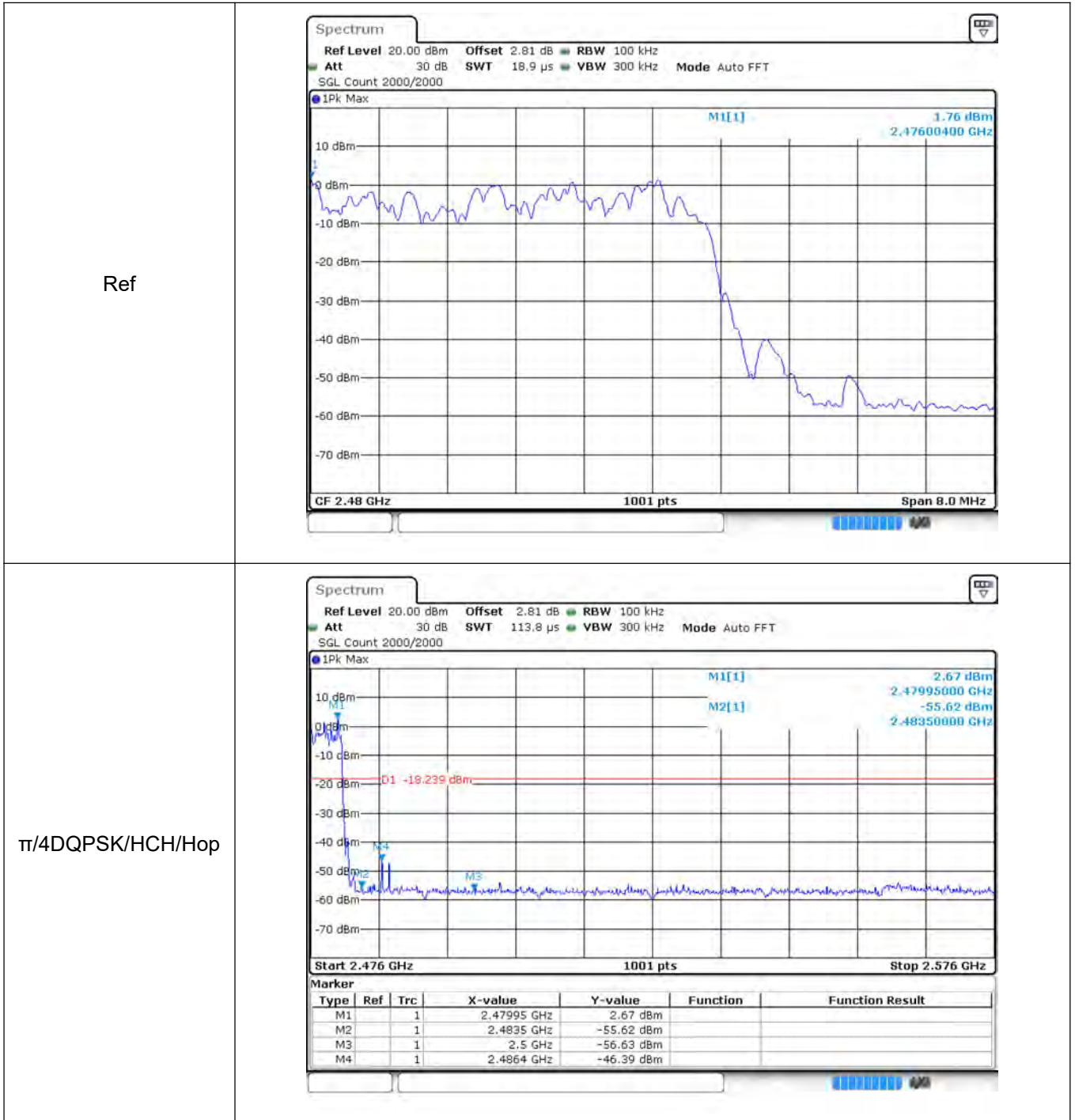


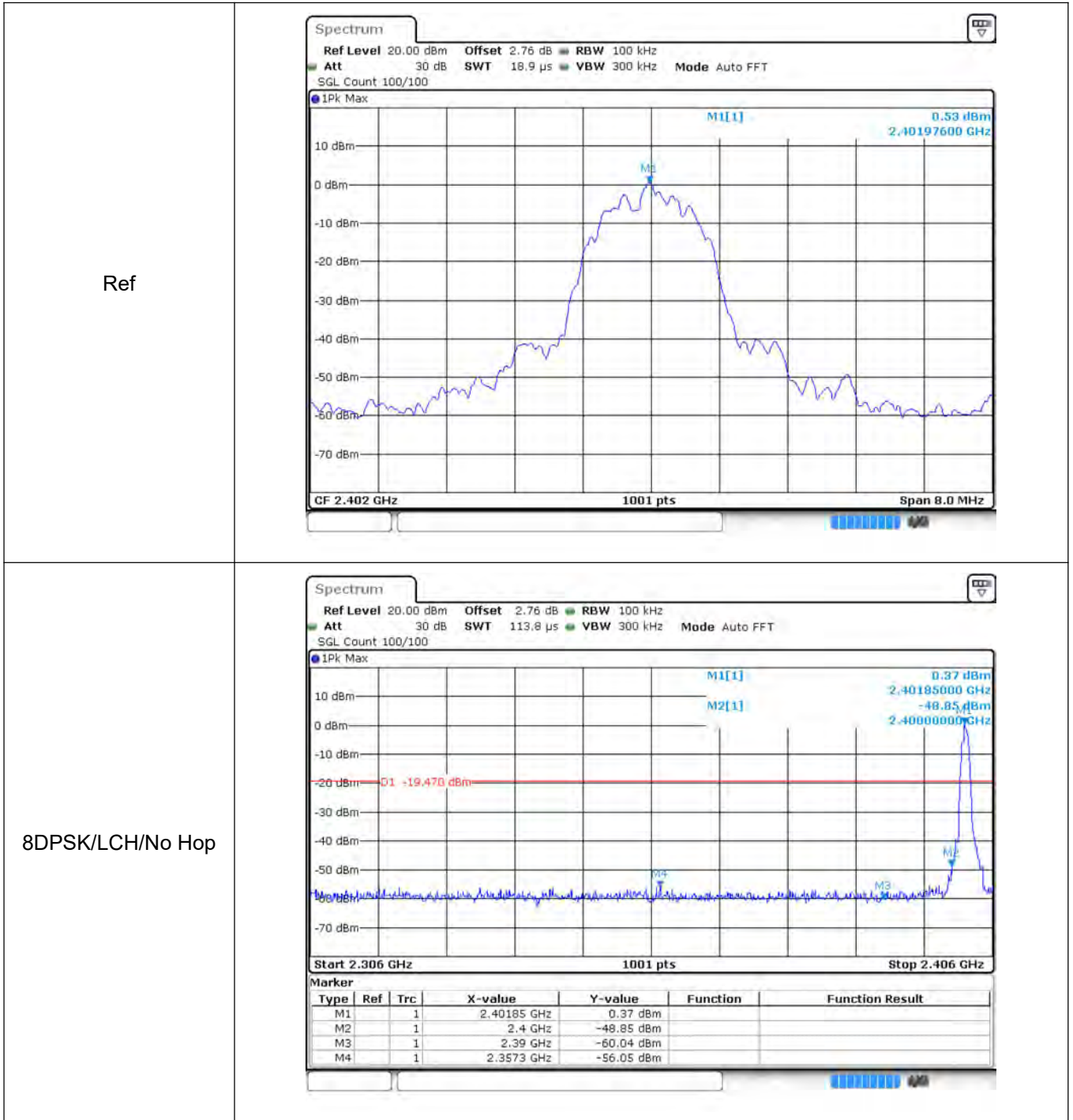


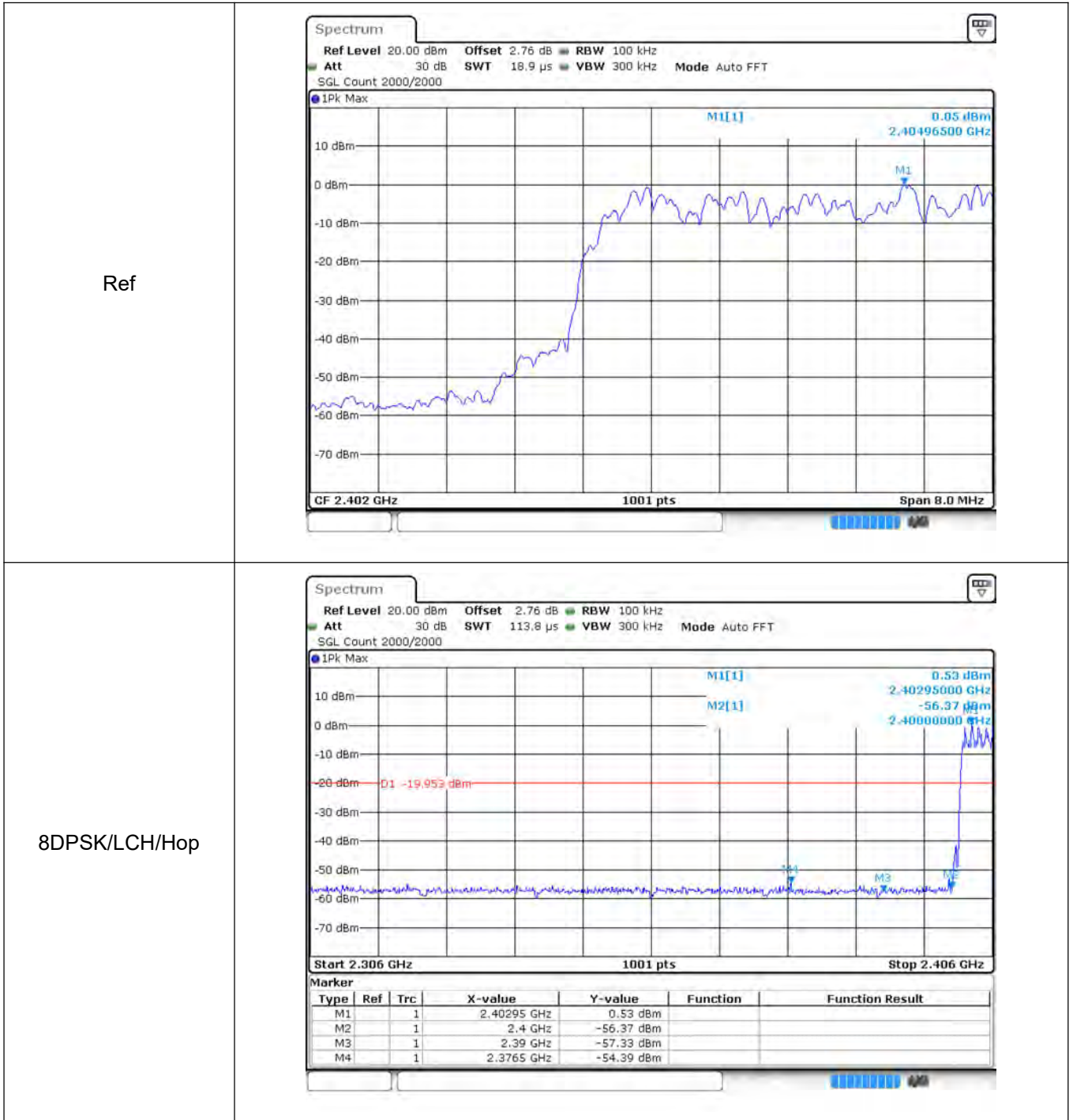


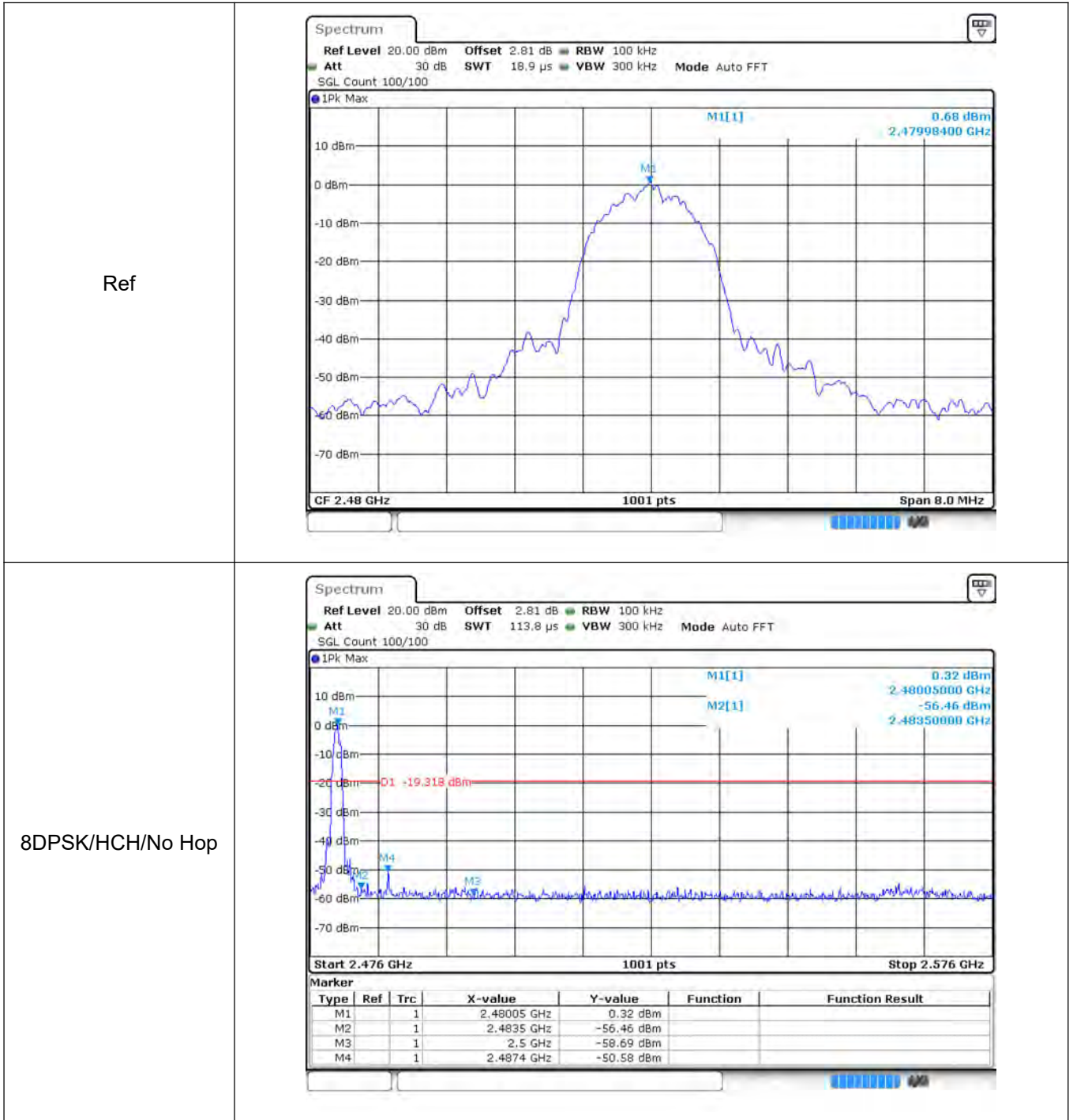


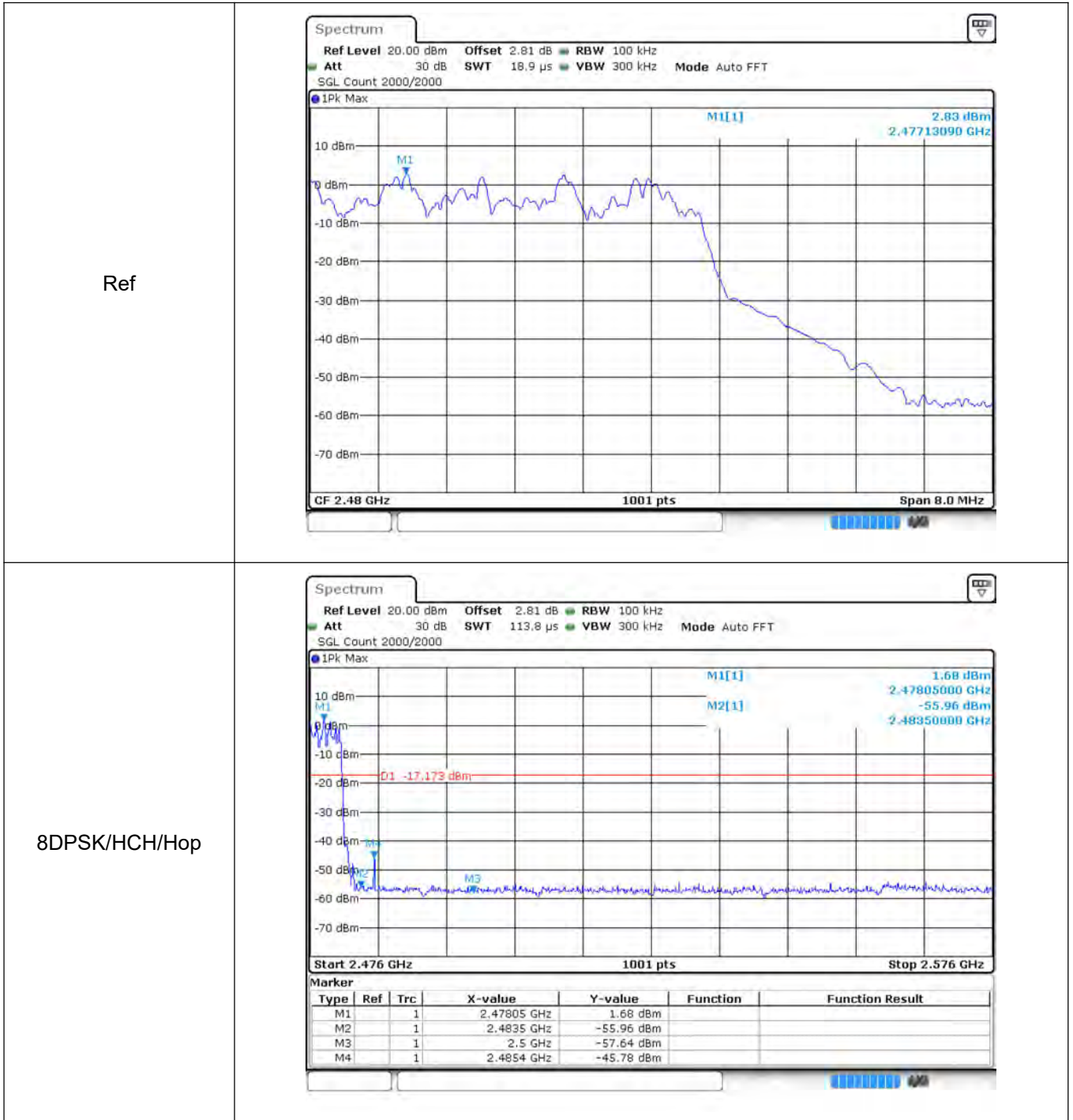












## 9 Restrict-band band-edge measurements

### 9.1 Test Result

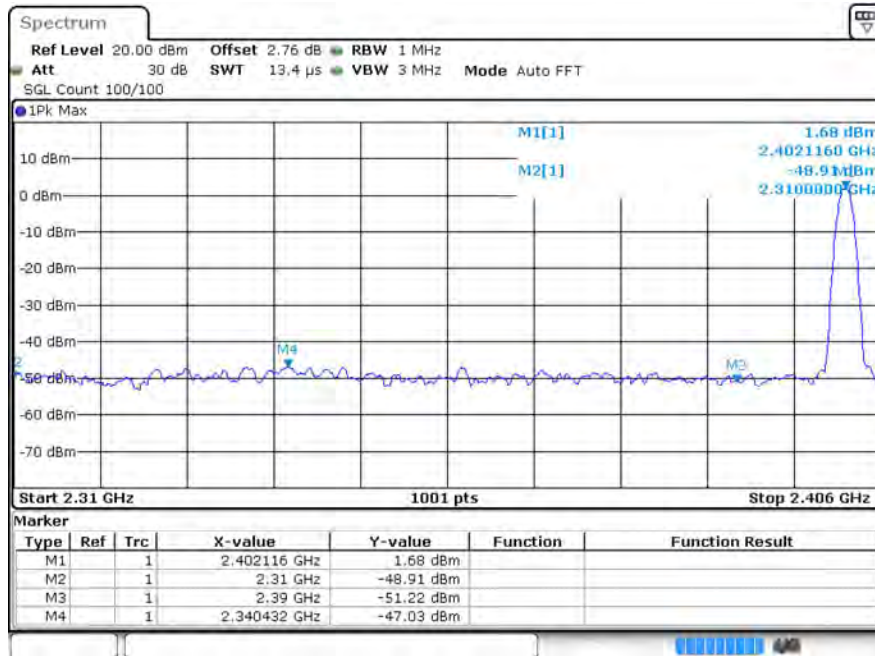
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Duty Cycle Factor (dB)	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.91	2	--	48.35	PEAK	74	Pass
	Off	2310.0	-57.84	2	5.06	44.48	AV	54	Pass
	Off	2340.432	-47.02	2	--	50.24	PEAK	74	Pass
	Off	2342.064	-55.69	2	5.06	46.63	AV	54	Pass
	Off	2390.0	-51.21	2	--	46.05	PEAK	74	Pass
	Off	2390.0	-58.21	2	5.06	44.11	AV	54	Pass
	Off	2483.5	-49.29	2	--	47.97	PEAK	74	Pass
	Off	2483.5	-56.41	2	5.06	45.91	AV	54	Pass
	Off	2487.352	-43.82	2	--	53.44	PEAK	74	Pass
	Off	2483.512	-56.41	2	5.06	45.91	AV	54	Pass
	Off	2500.0	-49.48	2	--	47.78	PEAK	74	Pass
	Off	2500.0	-57.69	2	5.06	44.63	AV	54	Pass
$\pi/4$ DQPSK	Off	2310.0	-49.45	2	--	47.81	PEAK	74	Pass
	Off	2310.0	-57.91	2	4.95	44.30	AV	54	Pass
	Off	2339.568	-46.89	2	--	50.37	PEAK	74	Pass
	Off	2342.256	-55.5	2	4.95	46.71	AV	54	Pass
	Off	2390.0	-48.9	2	--	48.36	PEAK	74	Pass
	Off	2390.0	-57.09	2	4.95	45.12	AV	54	Pass
	Off	2483.5	-46.11	2	--	51.15	PEAK	74	Pass
	Off	2483.5	-55.7	2	4.95	46.51	AV	54	Pass
	Off	2483.512	-46.11	2	--	51.15	PEAK	74	Pass
	Off	2483.512	-55.7	2	4.95	46.51	AV	54	Pass
	Off	2500.0	-49.74	2	--	47.52	PEAK	74	Pass
	Off	2500.0	-57.55	2	4.95	44.66	AV	54	Pass
8DPSK	Off	2310.0	-49.84	2	--	47.42	PEAK	74	Pass
	Off	2310.0	-57.95	2	4.95	44.26	AV	54	Pass
	Off	2347.536	-46.66	2	--	50.60	PEAK	74	Pass
	Off	2342.064	-55.75	2	4.95	46.46	AV	54	Pass



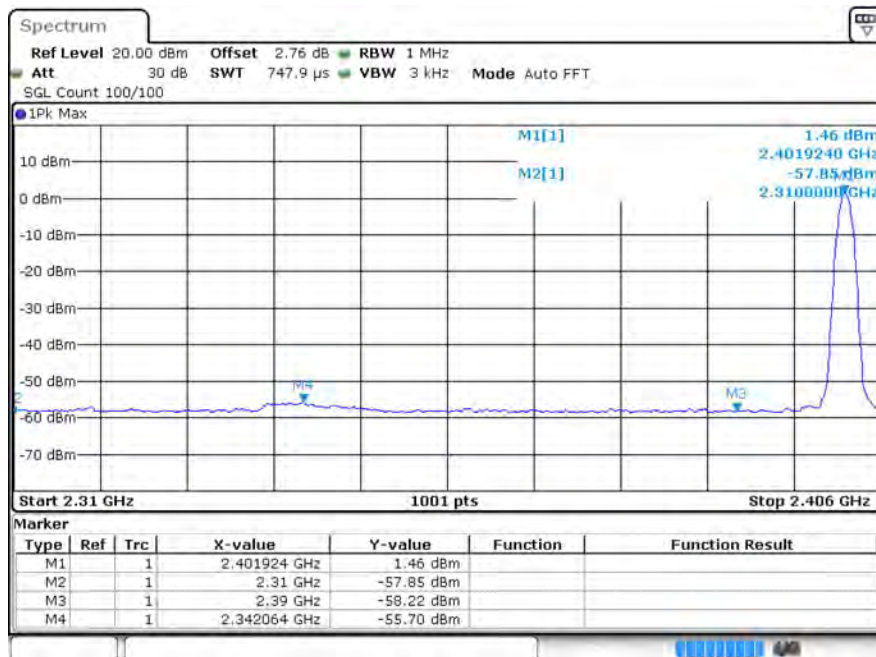
Off	2390.0	-50.1	2	--	47.16	PEAK	74	Pass
Off	2390.0	-57.46	2	4.95	44.75	AV	54	Pass
Off	2483.5	-46.5	2	--	50.76	PEAK	74	Pass
Off	2483.5	-55.54	2	4.93	46.65	AV	54	Pass
Off	2483.512	-46.5	2	--	50.76	PEAK	74	Pass
Off	2484.448	-55.1	2	4.93	47.09	AV	54	Pass
Off	2500.0	-50.23	2	--	47.03	PEAK	74	Pass
Off	2500.0	-57.72	2	4.93	44.47	AV	54	Pass

## 9.2 Test Graphs

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

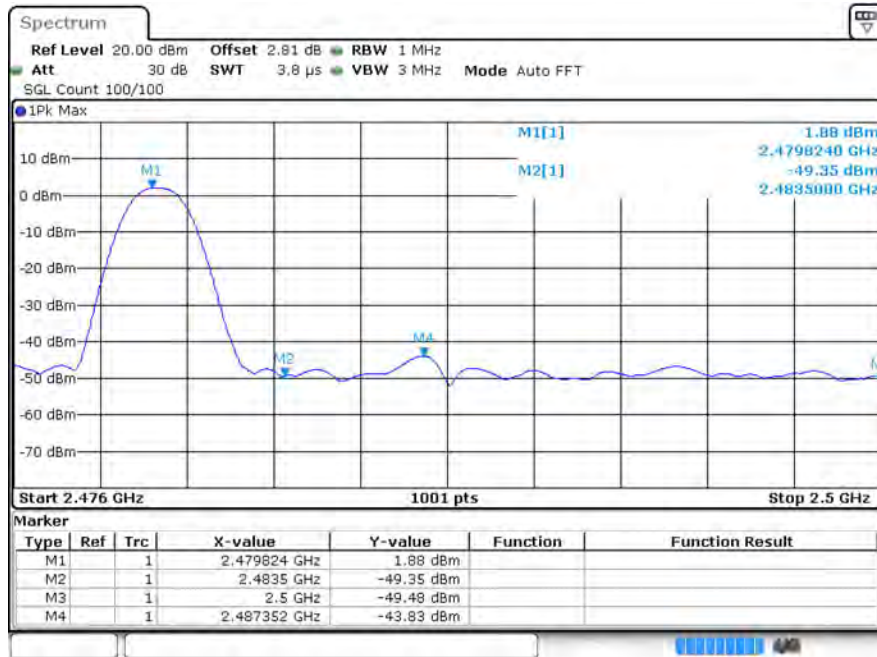


Restrict-band band-edge measurements\_Hopping Off\_ GFSK\_Average (Low Channel)

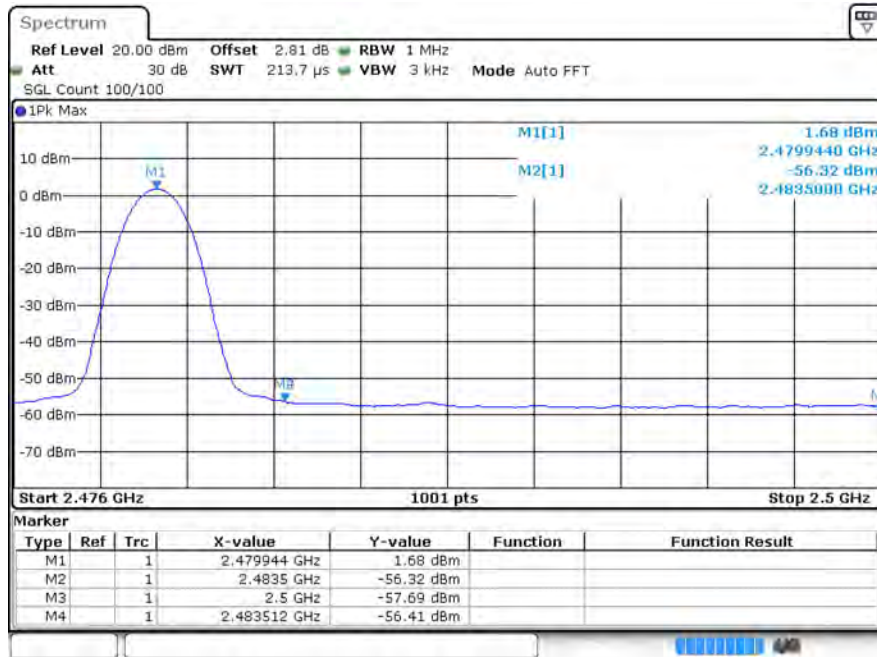




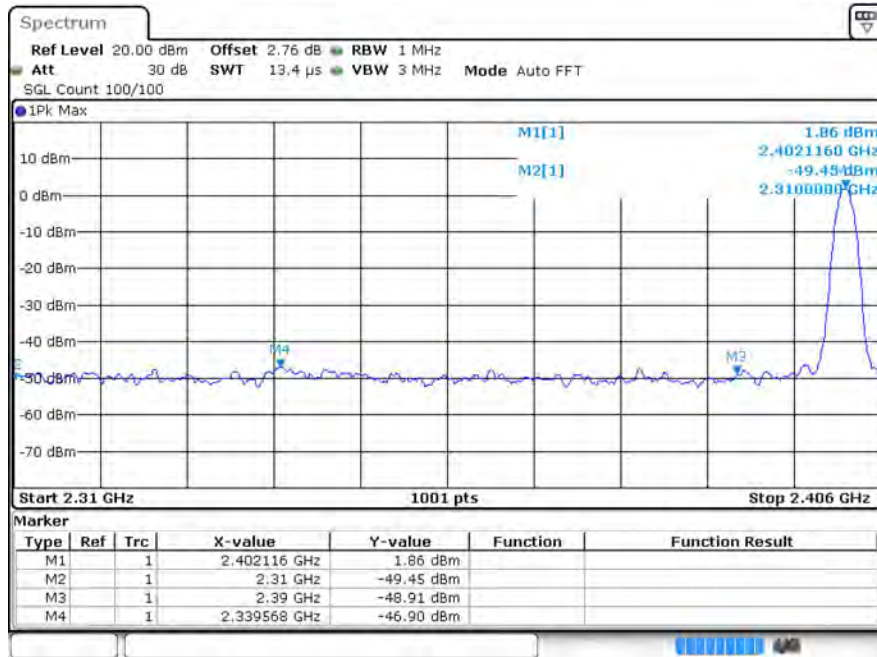
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



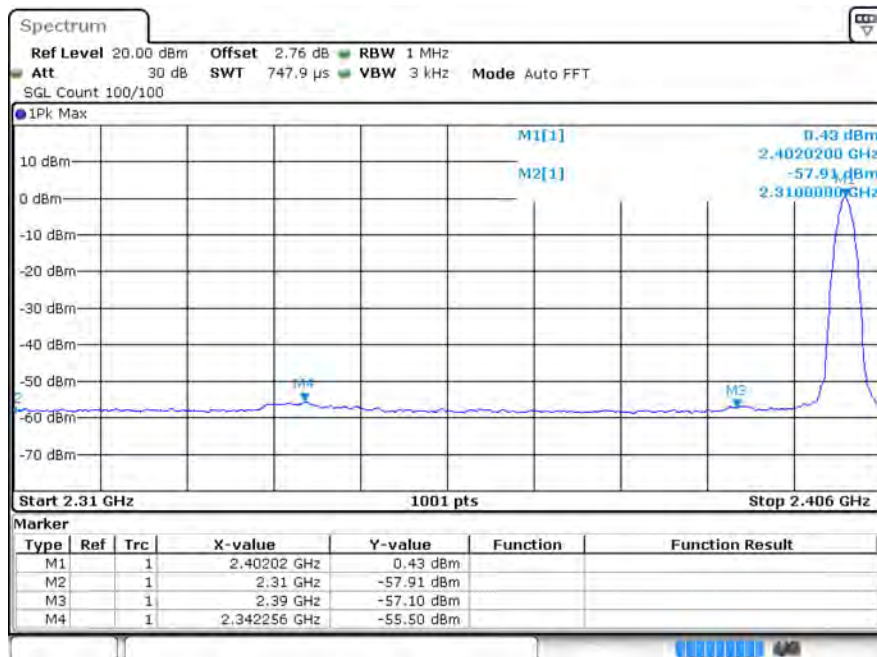
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



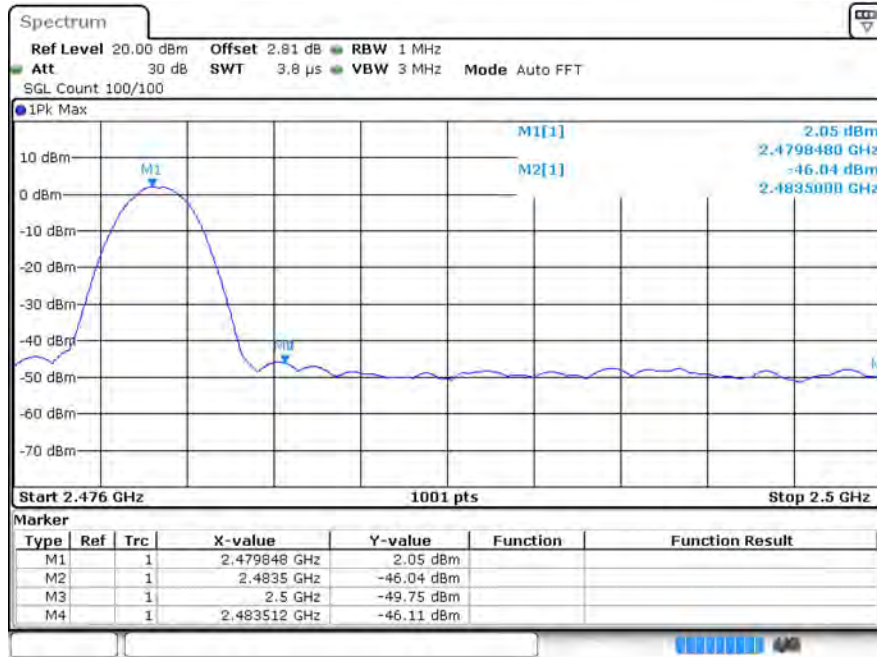
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (Low Channel)



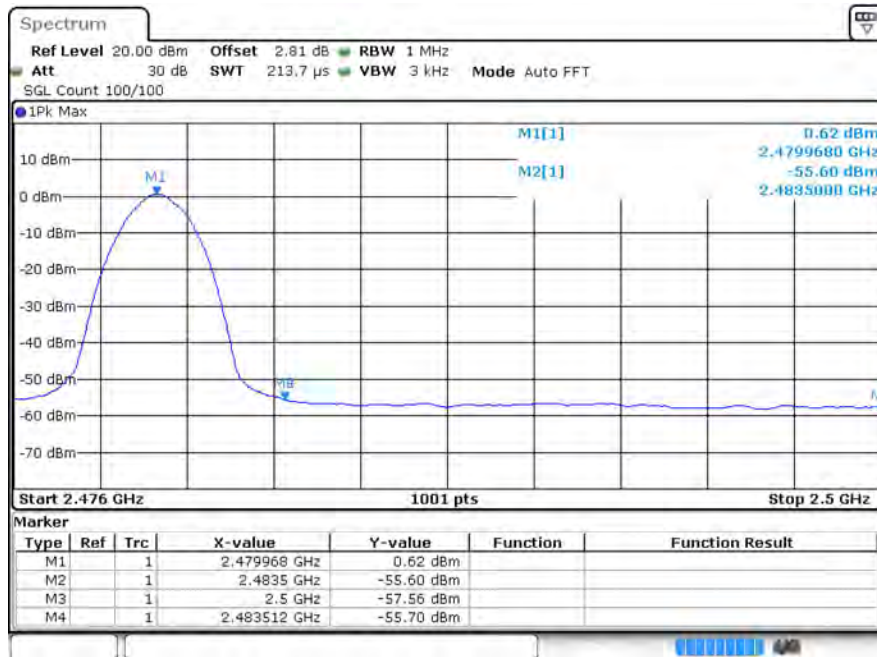
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (Low Channel)



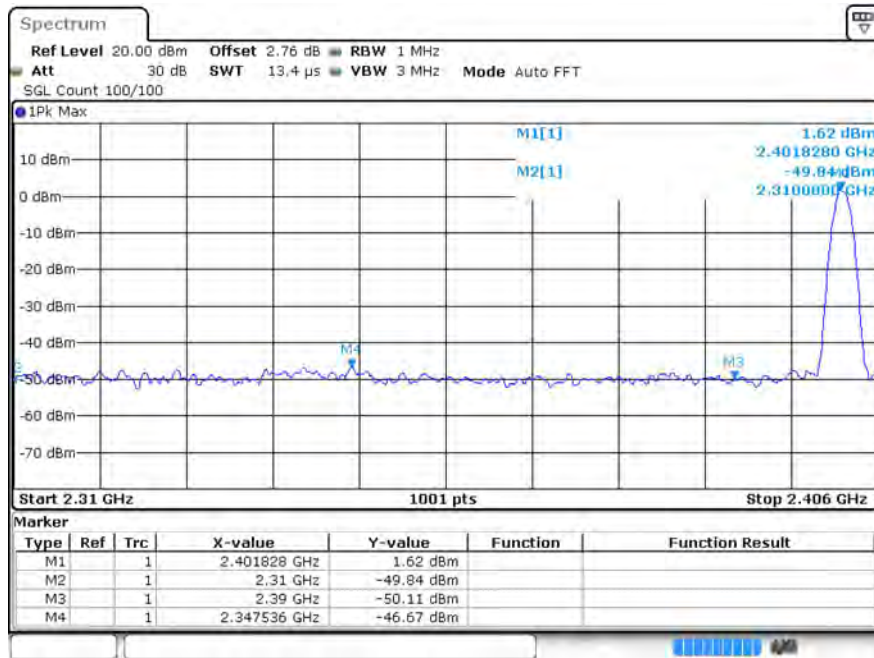
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_PEAK (High Channel)



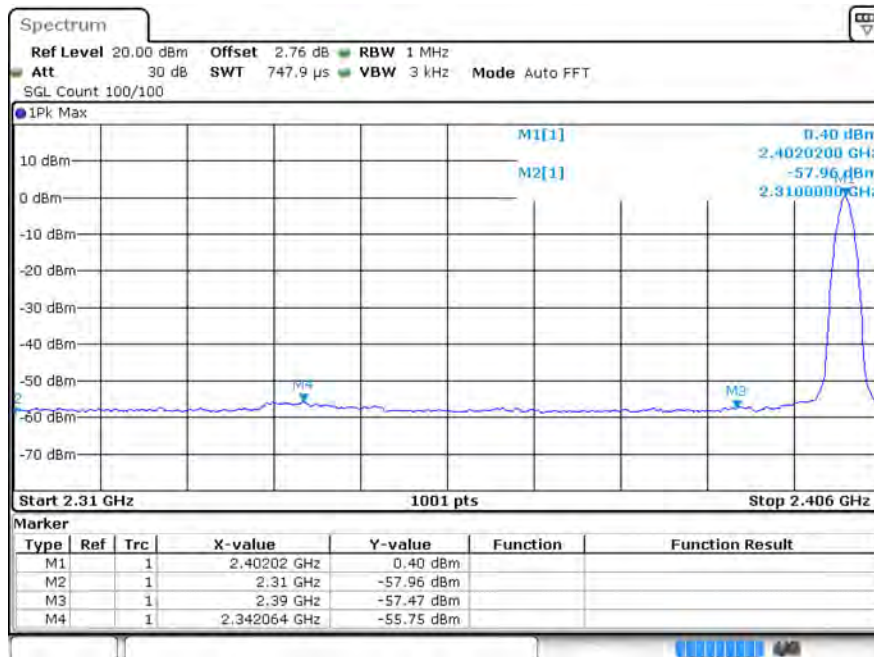
Restrict-band band-edge measurements\_Hopping Off\_π/4-DQPSK\_Average (High Channel)



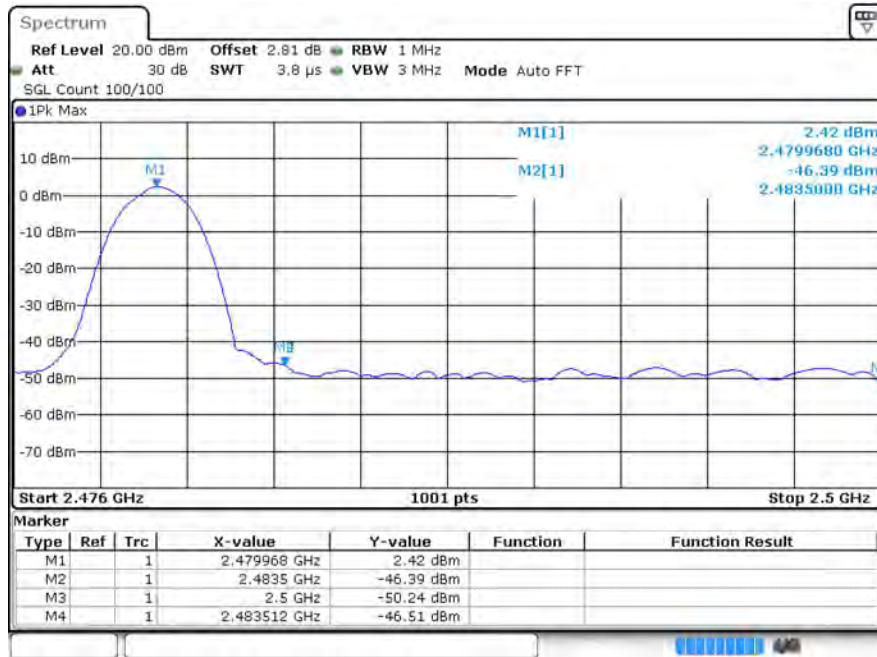
Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



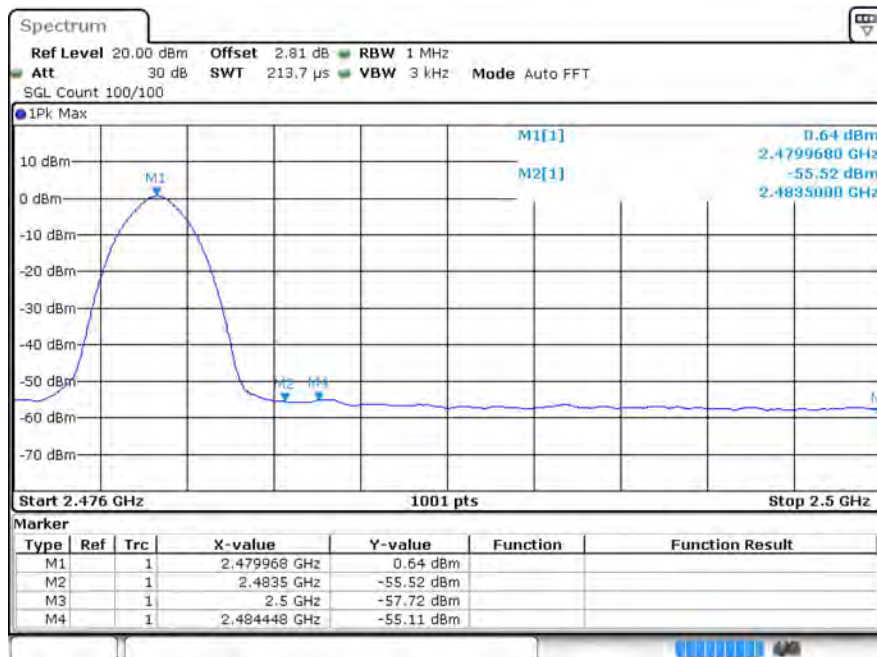
Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)



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



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



---The End---