Appendix A

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

Product Name: Smart Desktop Terminal

Trade Mark:

Test Model: T70

Environmental Conditions

Temperature:	25.5℃
Relative Humidity:	52.4%
ATM Pressure:	101Kpa
Test Engineer:	Simba Huang
Supervised by:	Seal Chen

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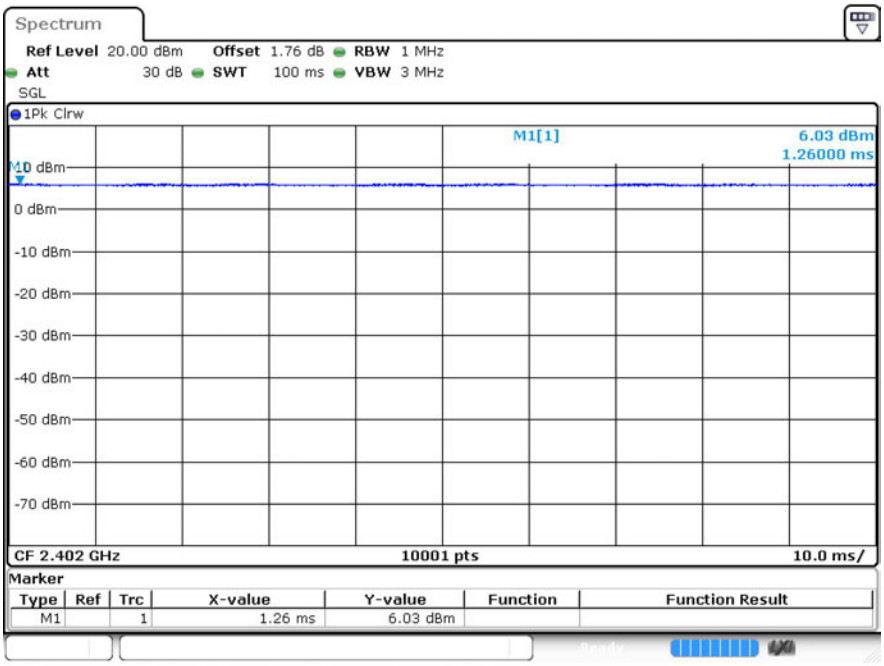
1 Duty Cycle

1.1 Test Result

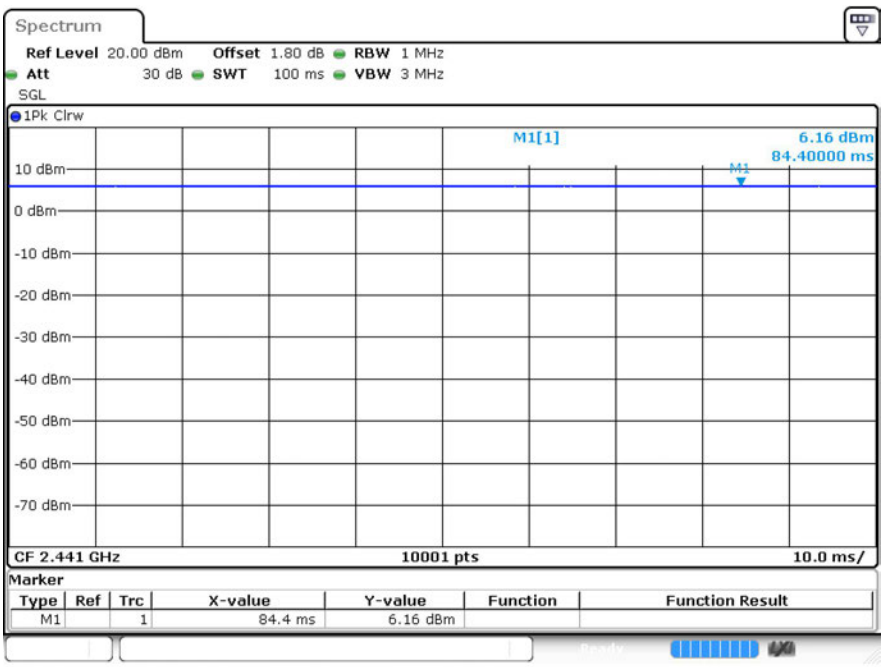
Mode	Frequency (MHz)	Duty Cycle (%)	1/T (kHz)
1-DH1	2402	100	0
1-DH1	2441	100	0
1-DH1	2480	100	0
2-DH1	2402	100	0
2-DH1	2441	100	0
2-DH1	2480	100	0
3-DH1	2402	100	0
3-DH1	2441	100	0
3-DH1	2480	100	0

1.2 Test Graphs

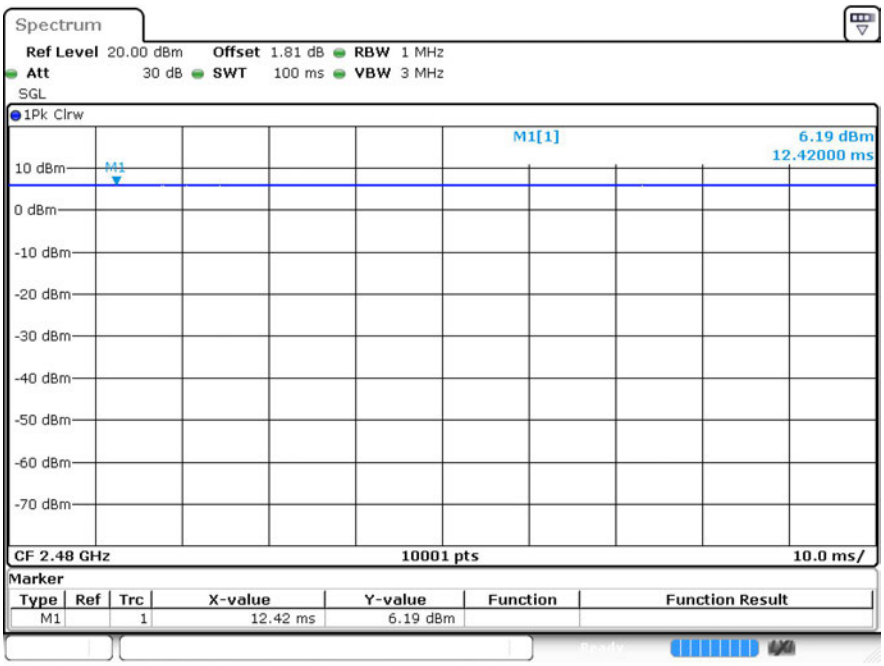
Test Graphs
1-DH1 2402MHz



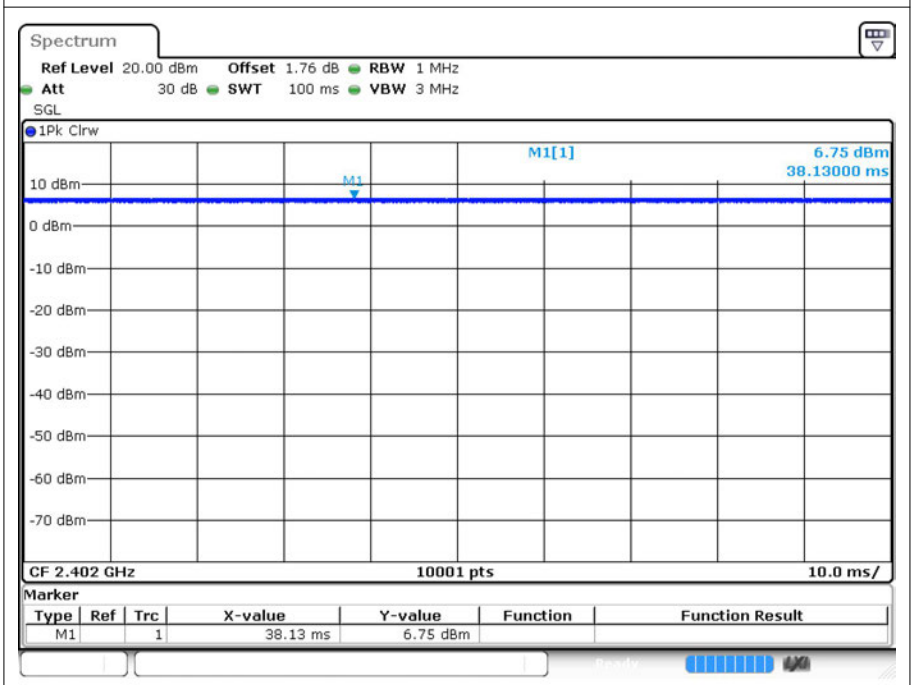
1-DH1 2441MHz



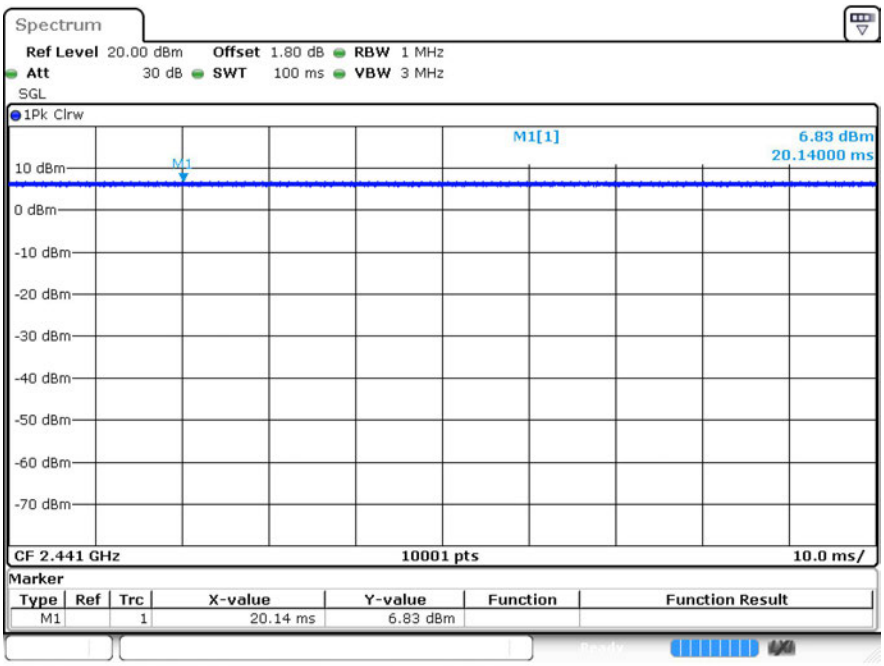
1-DH1 2480MHz



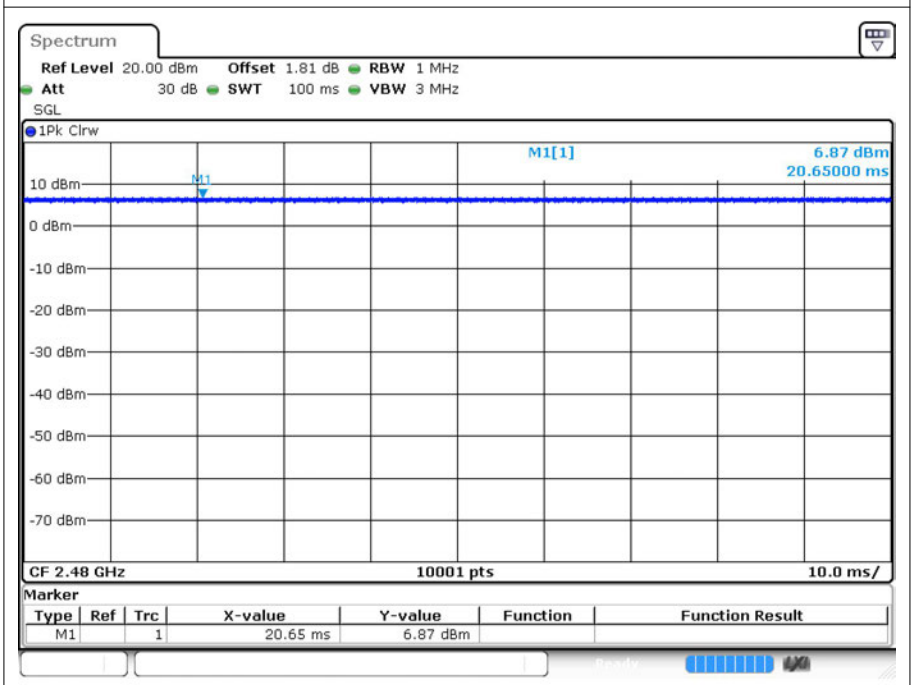
2-DH1 2402MHz



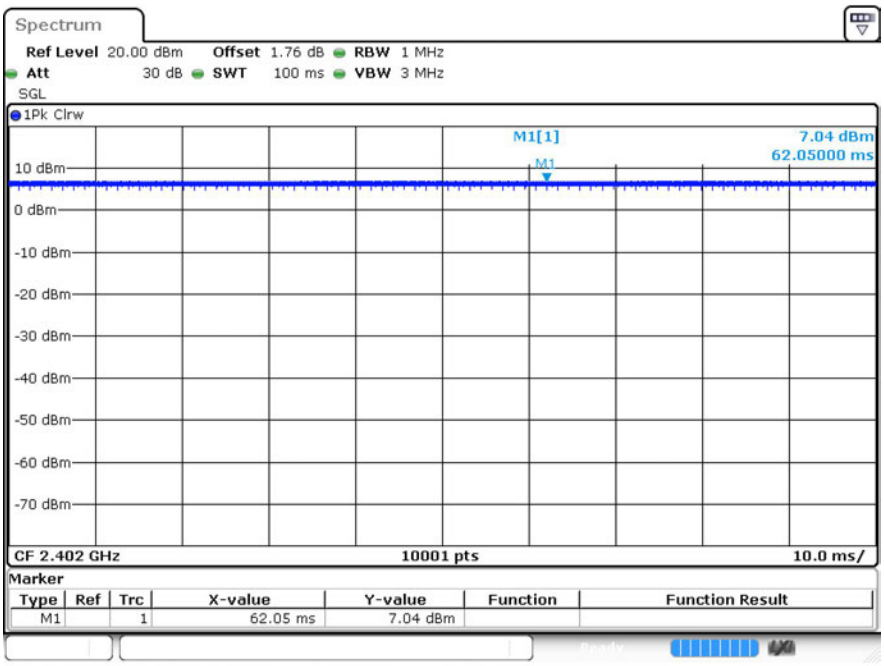
2-DH1 2441MHz



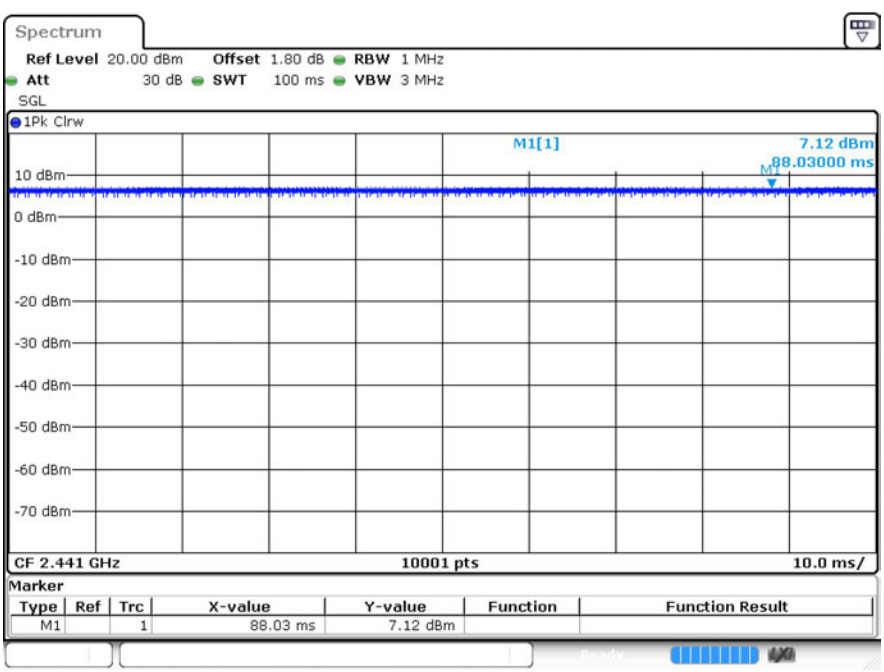
2-DH1 2480MHz



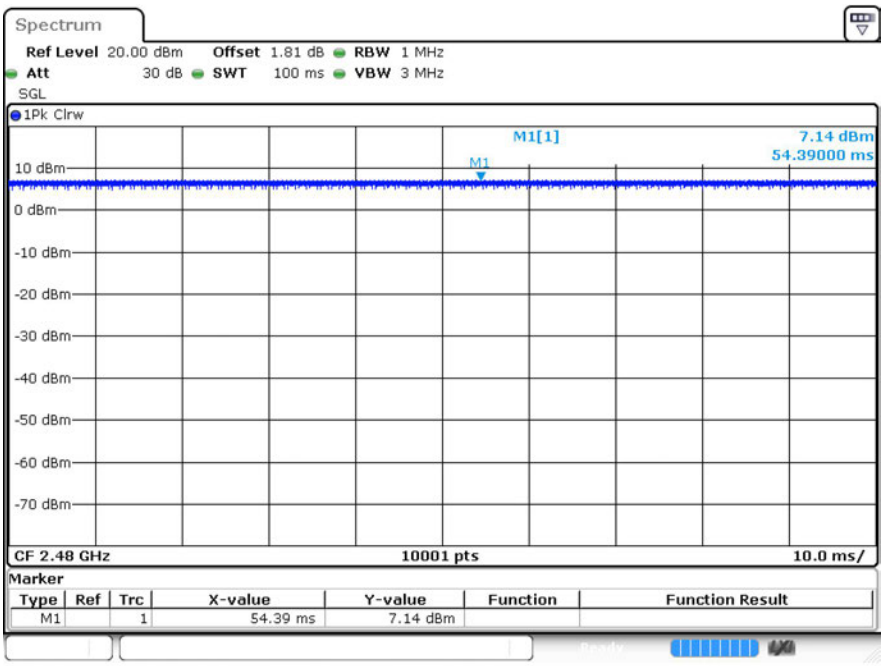
3-DH1 2402MHz



3-DH1 2441MHz



3-DH1 2480MHz

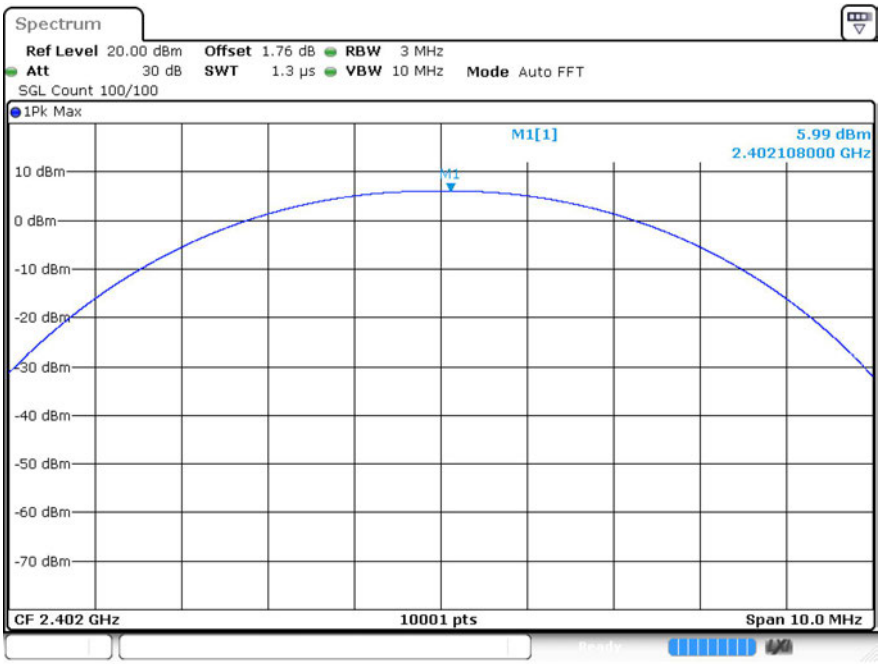
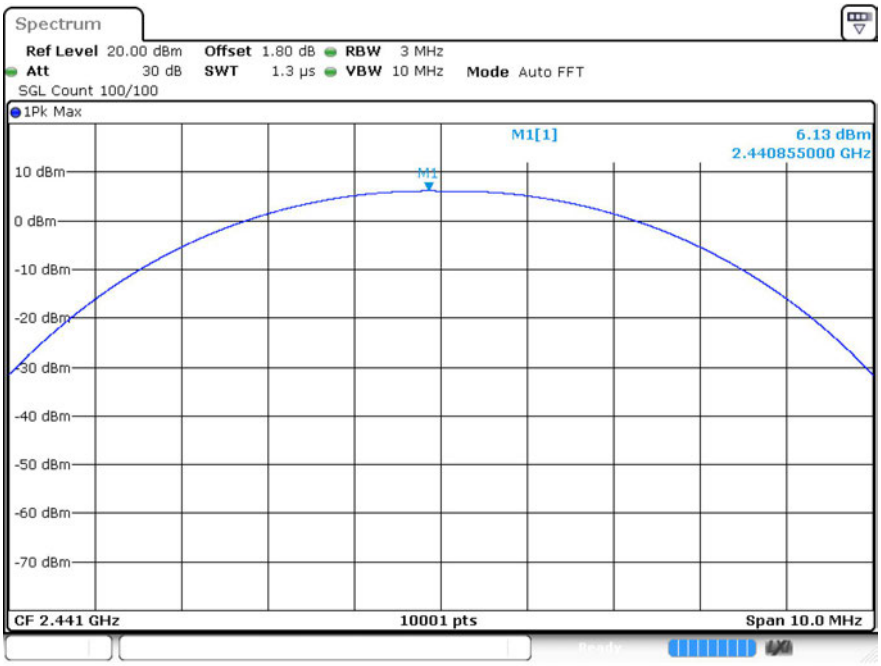


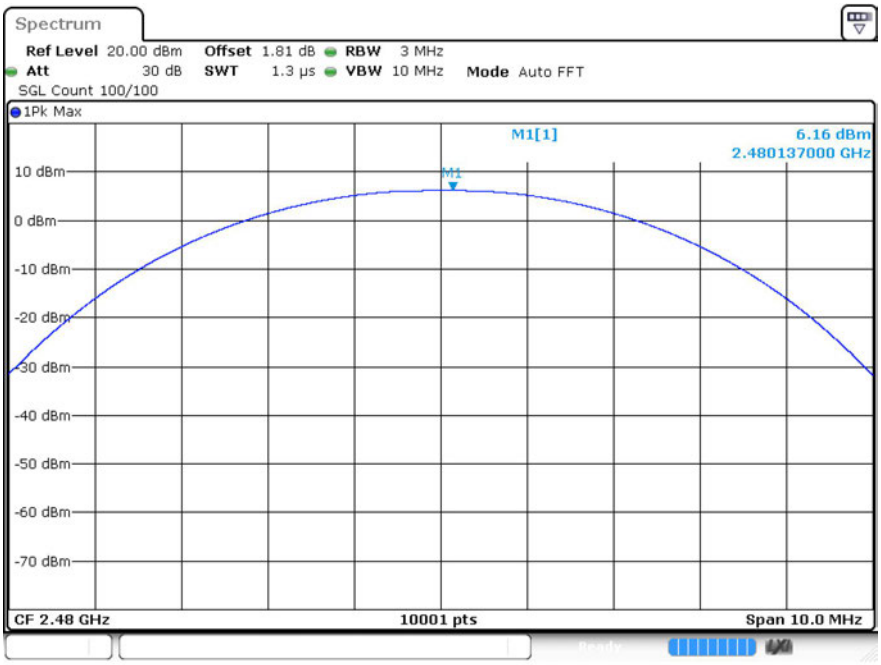
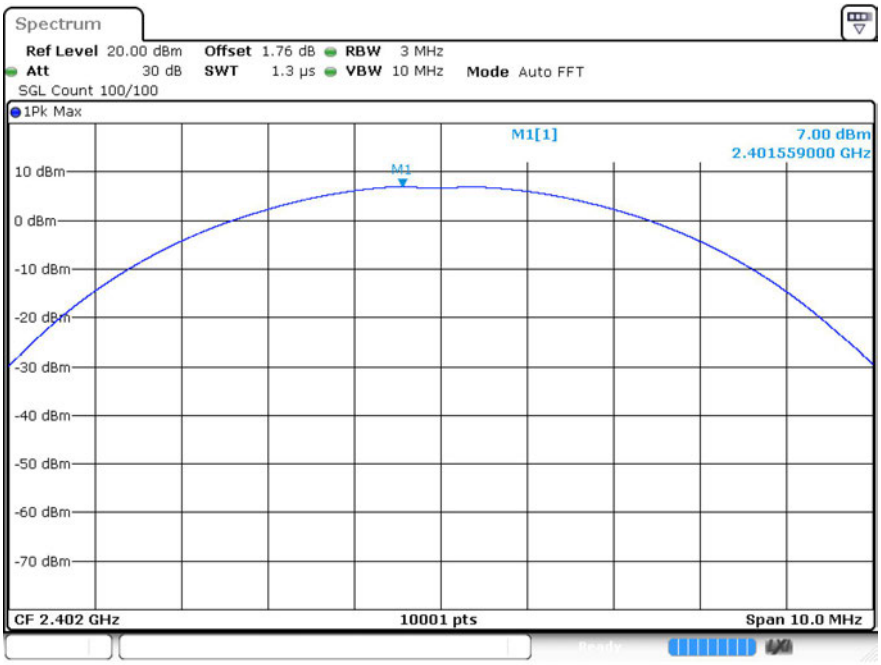
2 Maximum Conducted Peak Output Power

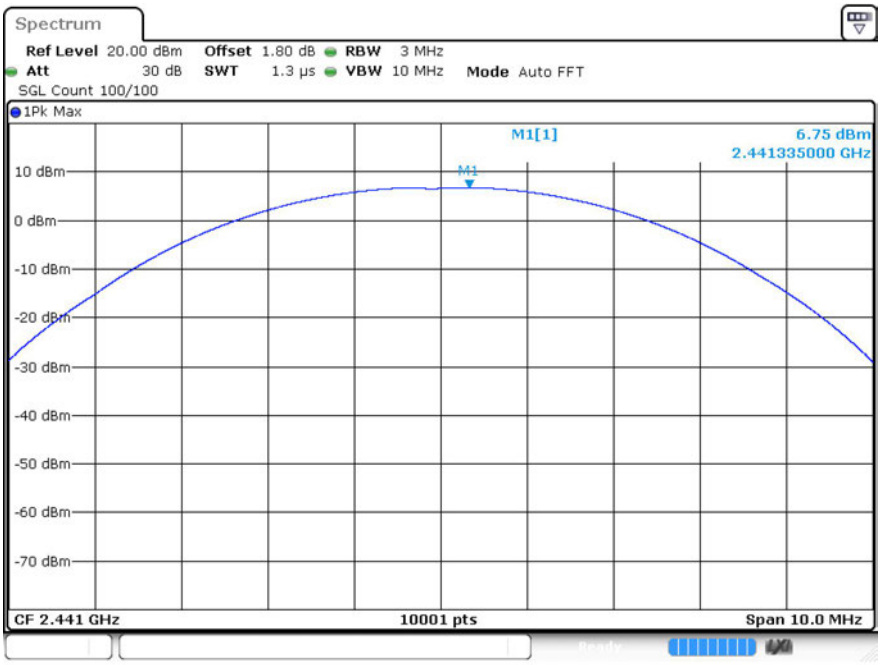
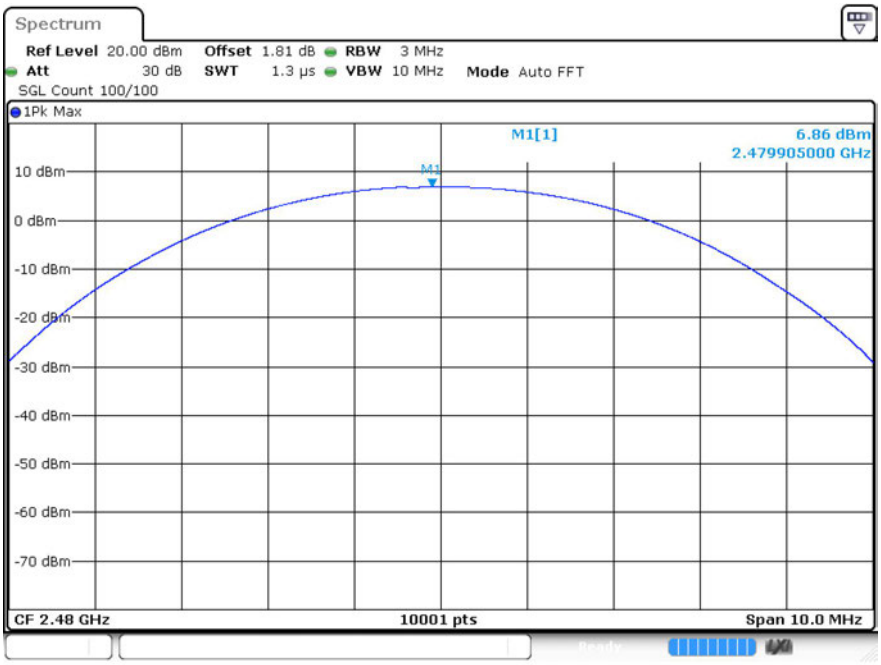
2.1 Test Result

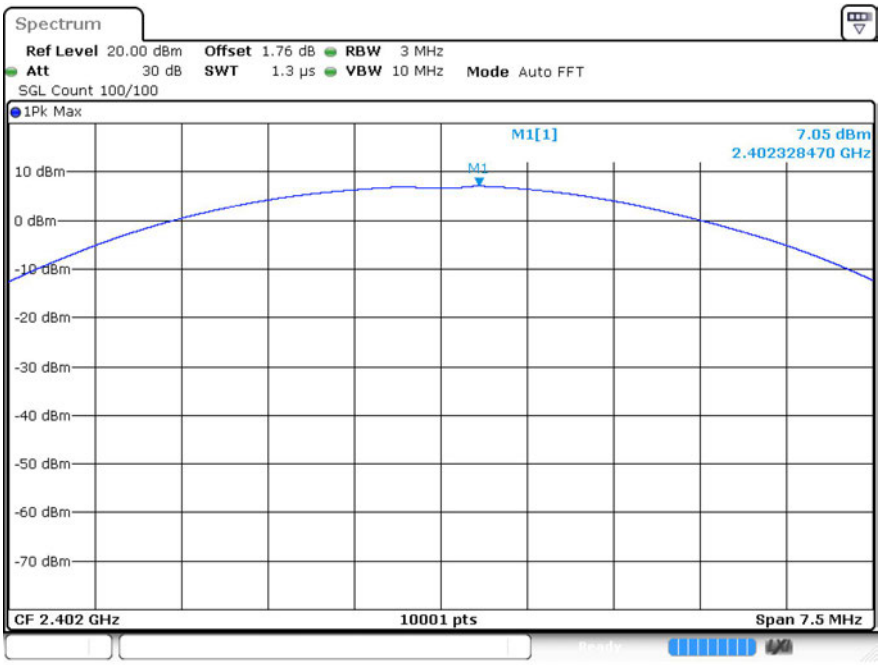
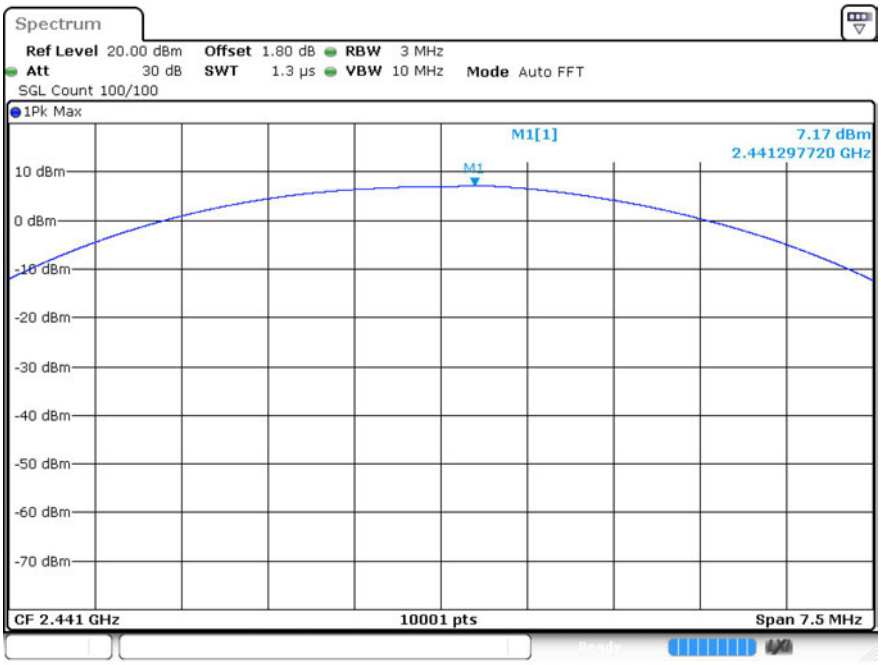
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	5.99	21	Pass
	MCH	6.13	21	Pass
	HCH	6.16	21	Pass
π/4DQPSK	LCH	7	21	Pass
	MCH	6.75	21	Pass
	HCH	6.86	21	Pass
8DPSK	LCH	7.05	21	Pass
	MCH	7.17	21	Pass
	HCH	7.37	21	Pass

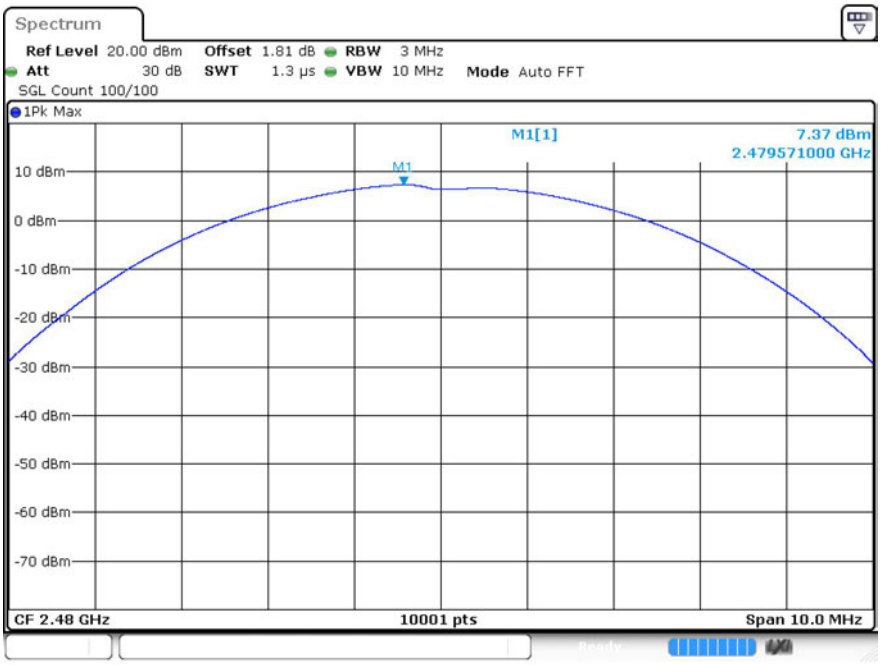
2.2 Test Graphs

Test Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

π/4DQPSK/MCH	
π/4DQPSK/HCH	

8DPSK/LCH	
8DPSK/MCH	

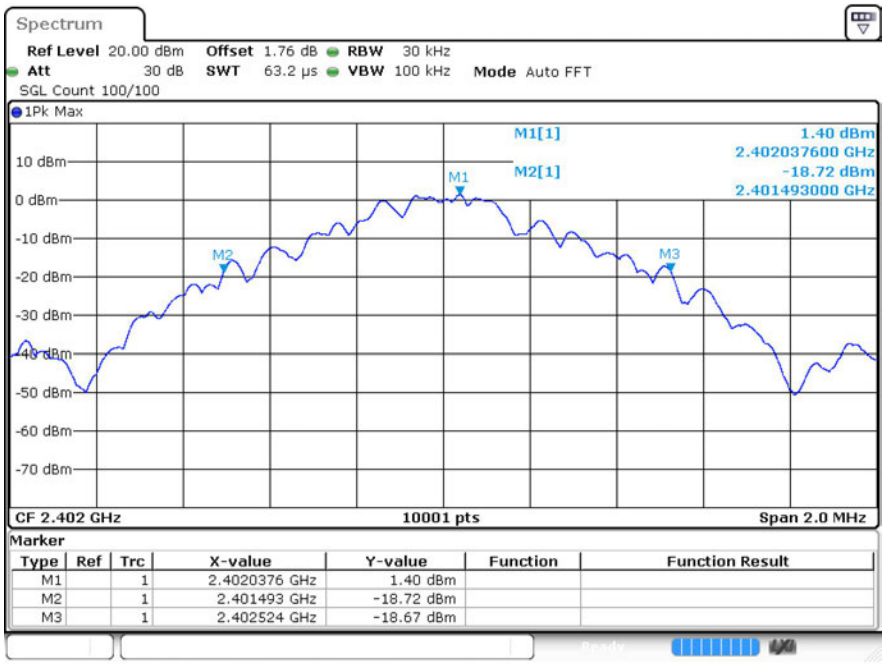
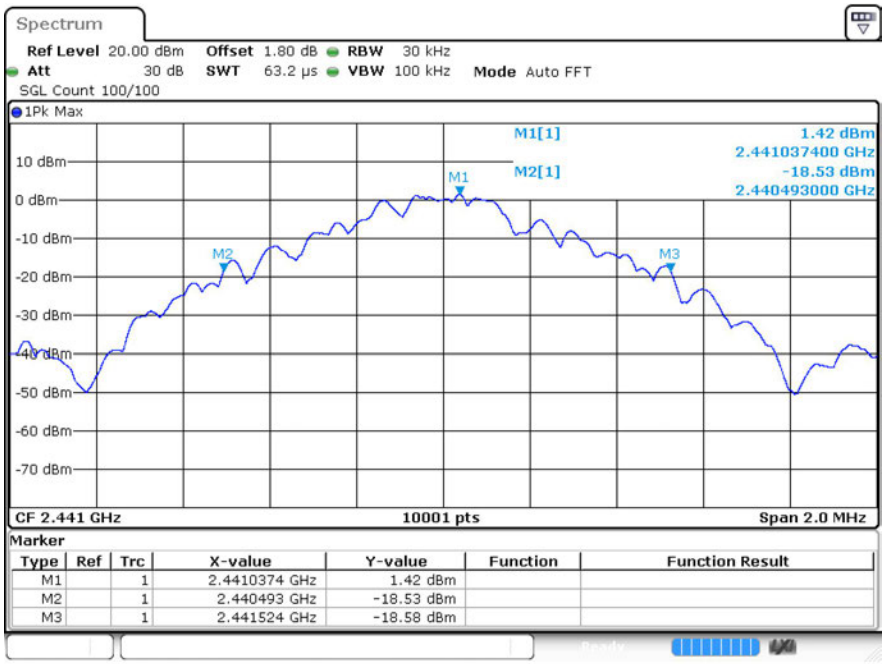
8DPSK/HCH	 Spectrum Ref Level 20.00 dBm Offset 1.81 dB RBW 3 MHz Att 30 dB SWT 1.3 µs VBW 10 MHz Mode Auto FFT SGL Count 100/100 1Pk Max M1[1] 7.37 dBm 2.479571000 GHz M1 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.48 GHz 10001 pts Span 10.0 MHz

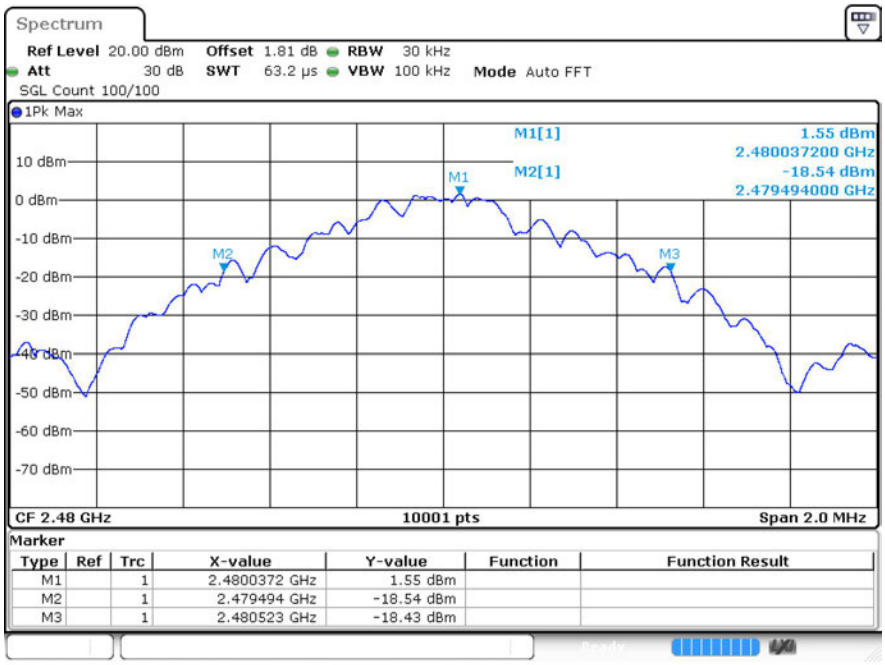
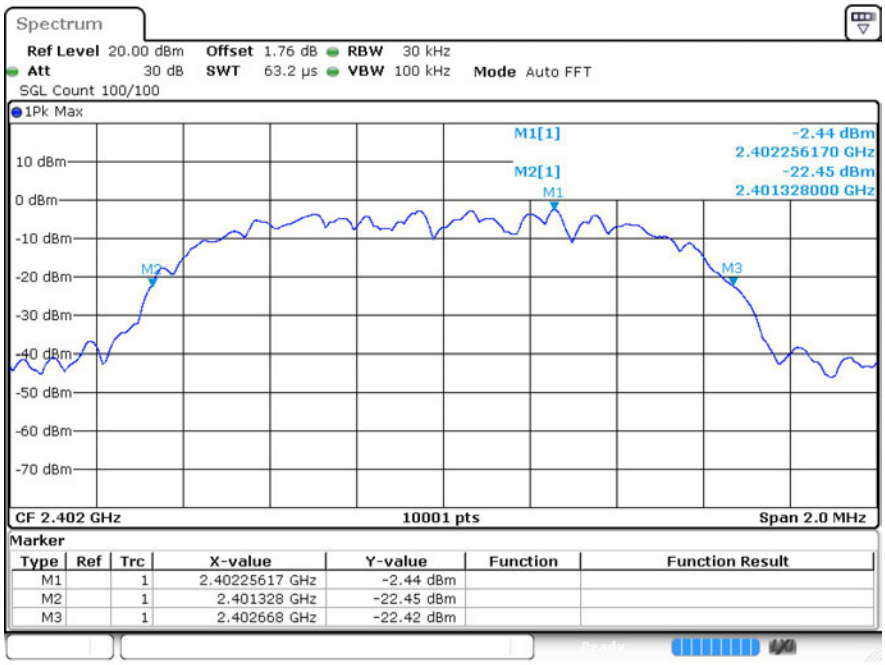
3 20dB Bandwidth

3.1 Test Result

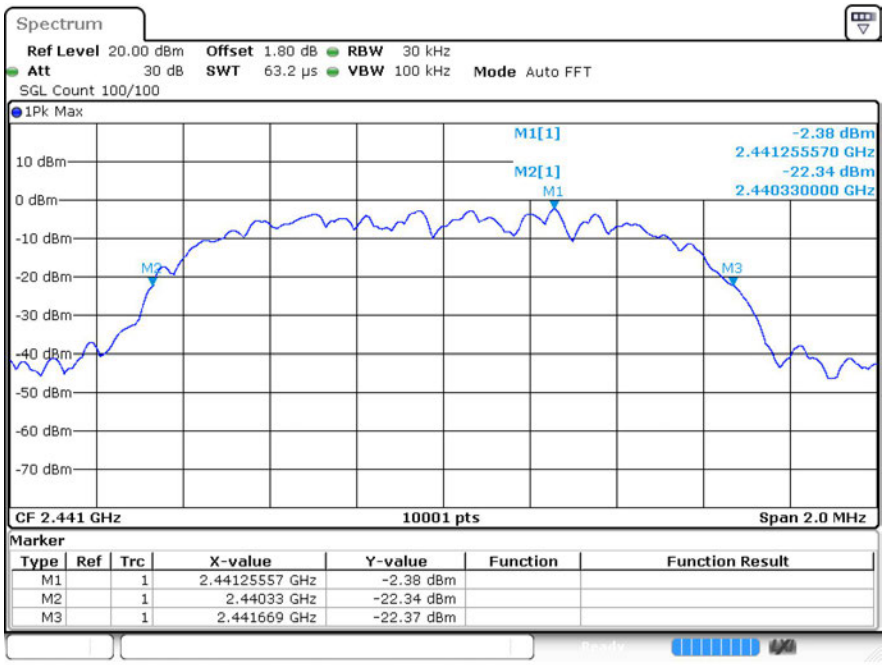
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.03	Not Specified	Pass
	MCH	1.031	Not Specified	Pass
	HCH	1.029	Not Specified	Pass
π/4DQPSK	LCH	1.34	Not Specified	Pass
	MCH	1.339	Not Specified	Pass
	HCH	1.335	Not Specified	Pass
8DPSK	LCH	1.287	Not Specified	Pass
	MCH	1.285	Not Specified	Pass
	HCH	1.286	Not Specified	Pass

3.2 Test Graphs

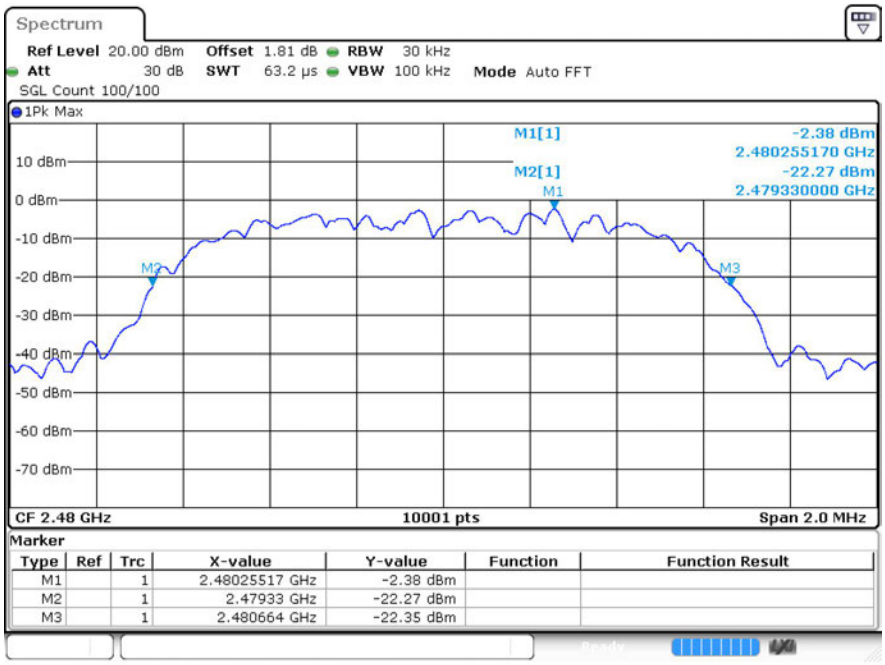
Test Graphs	
GFSK/LCH	
GFSK/MCH	

GFSK/HCH	
π/4DQPSK/LCH	

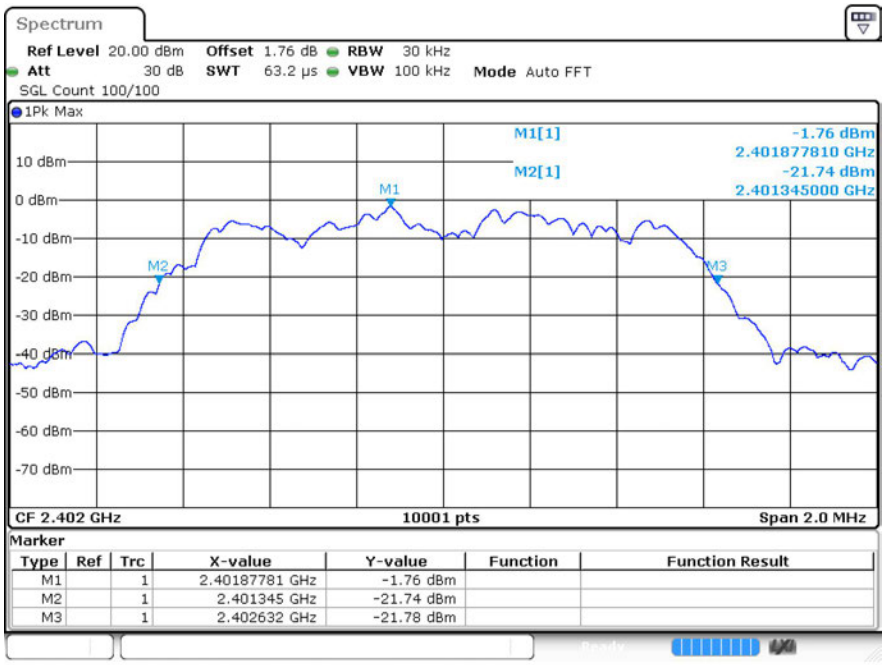
π/4DQPSK/MCH



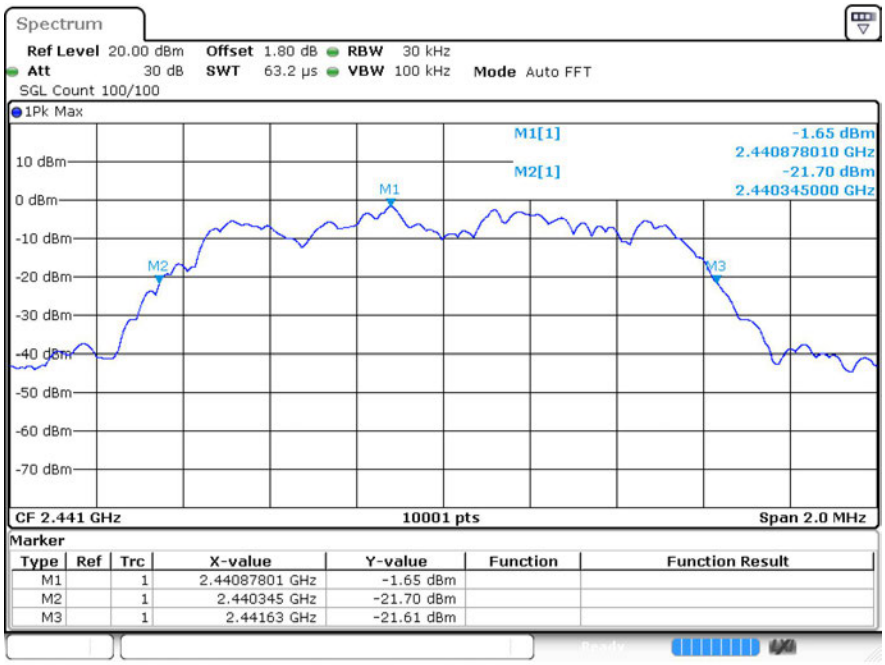
π/4DQPSK/HCH

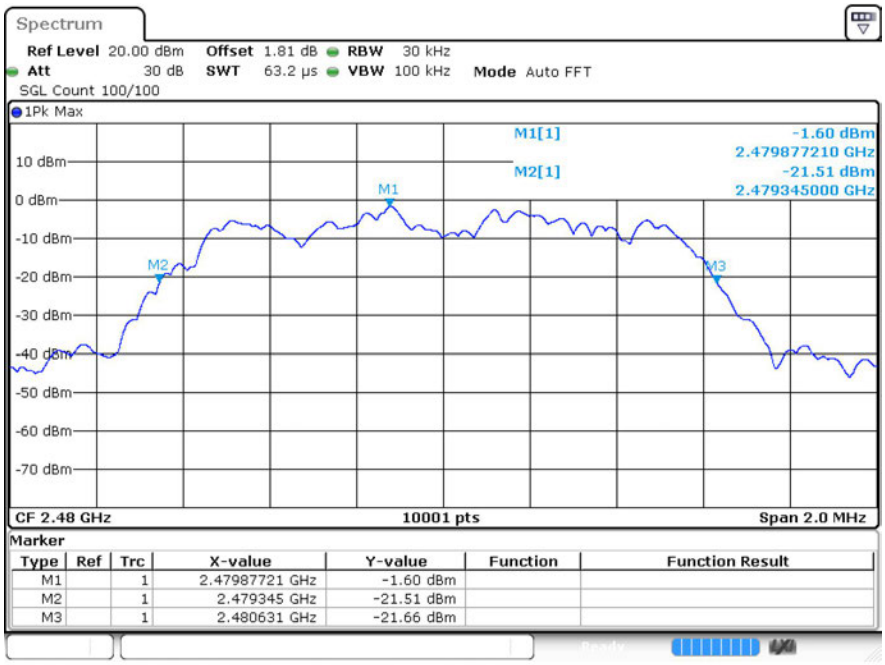


8DPSK/LCH



8DPSK/MCH



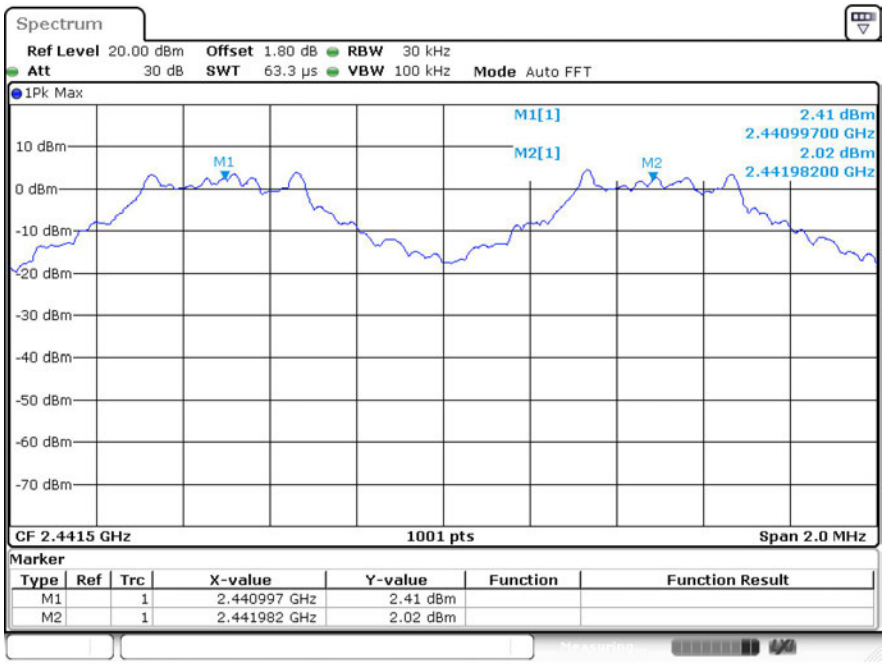
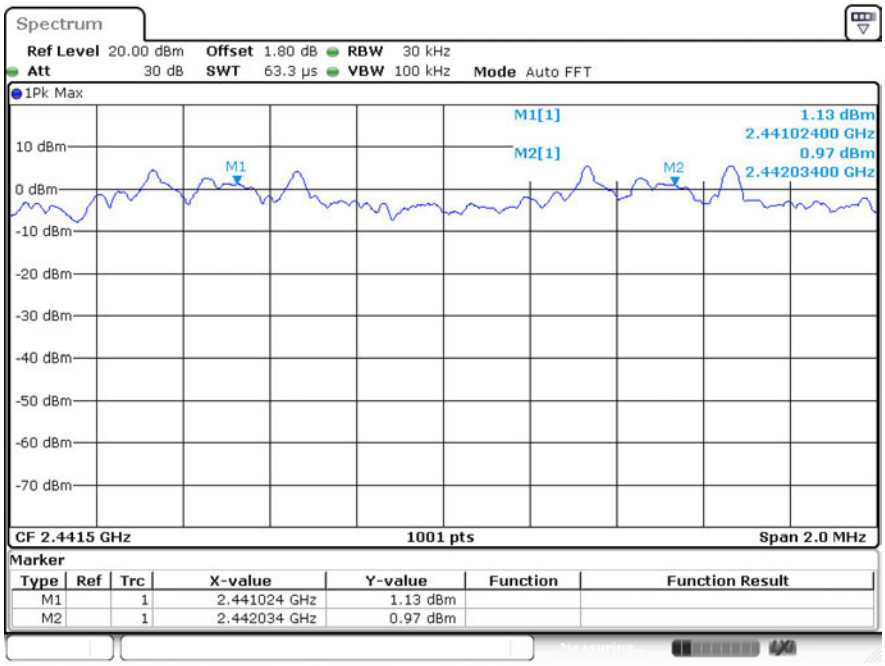
8DPSK/HCH	 Spectrum Ref Level 20.00 dBm Offset 1.81 dB RBW 30 kHz Att 30 dB SWT 63.2 µs VBW 100 kHz Mode Auto FFT SGL Count 100/100 1Pk Max M1[1] -1.60 dBm 2.479877210 GHz M2[1] -21.51 dBm 2.479345000 GHz 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1 M2 M3 CF 2.48 GHz 10001 pts Span 2.0 MHz Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.47987721 GHz -1.60 dBm M2 1 2.479345 GHz -21.51 dBm M3 1 2.480631 GHz -21.66 dBm

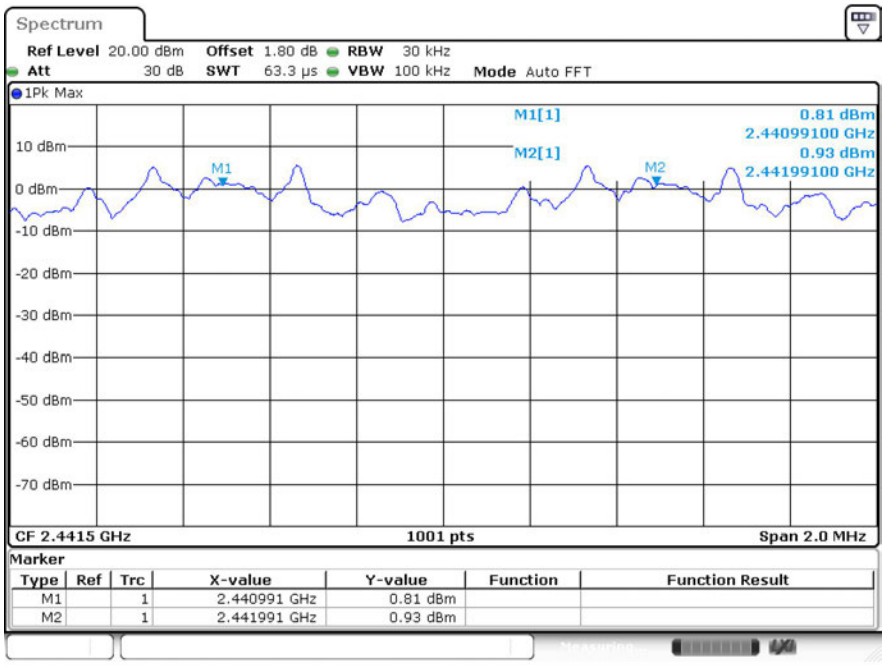
4 Carrier Frequency Separation

4.1 Test Result

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	MCH	0.985	0.687	Pass
π/4DQPSK	MCH	1.01	0.893	Pass
8DPSK	MCH	1	0.857	Pass

4.2 Test Graphs

Test Graphs	
GFSK/MCH	
π/4DQPSK/MCH	

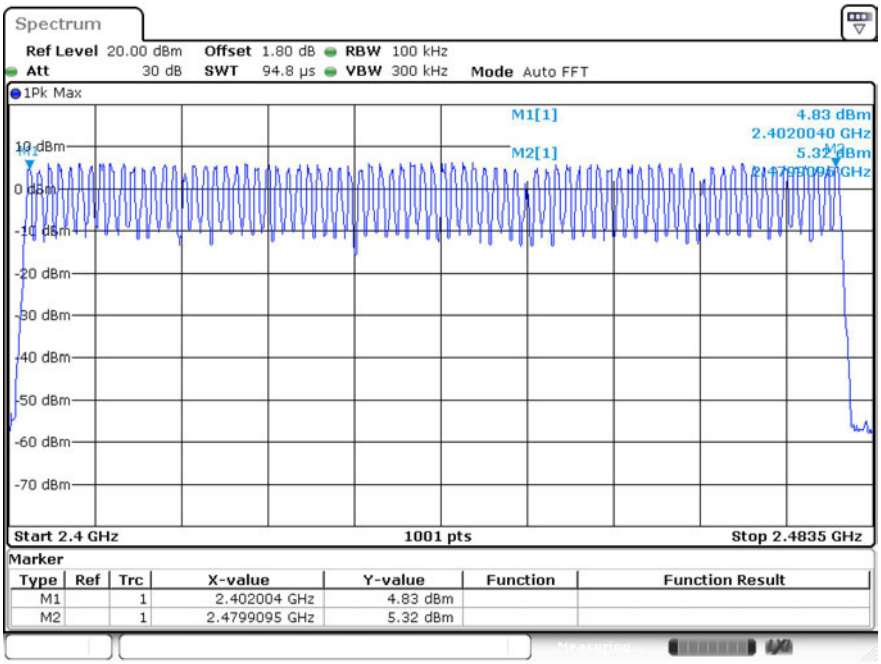
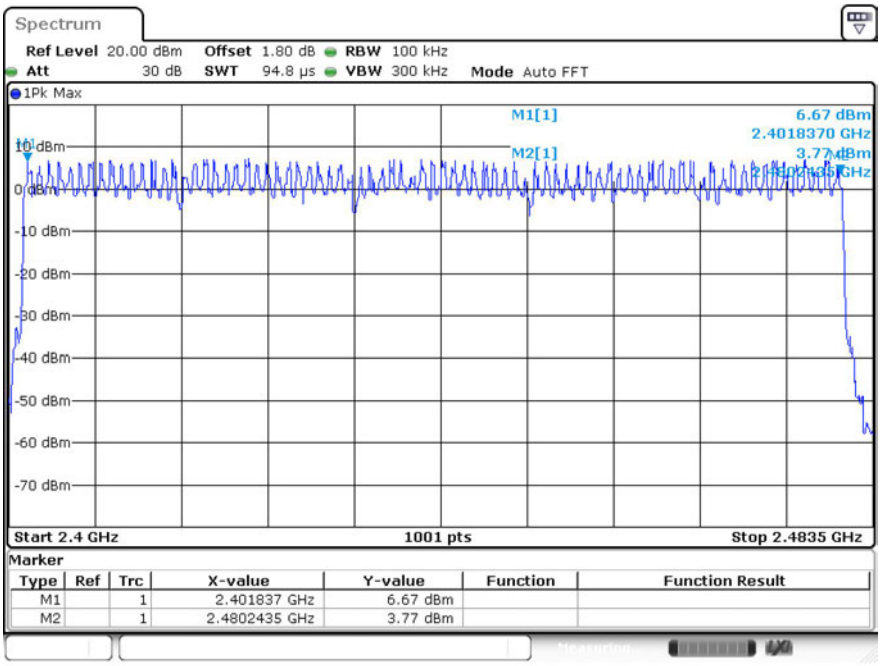
8DPSK/MCH	 Spectrum Ref Level 20.00 dBm Offset 1.80 dB RBW 30 kHz Att 30 dB SWT 63.3 µs VBW 100 kHz Mode Auto FFT 1Pk Max M1[1] 0.81 dBm 2.44099100 GHz M2[1] 0.93 dBm 2.44199100 GHz M1 M2 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.4415 GHz 1001 pts Span 2.0 MHz Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.440991 GHz 0.81 dBm M2 1 2.441991 GHz 0.93 dBm

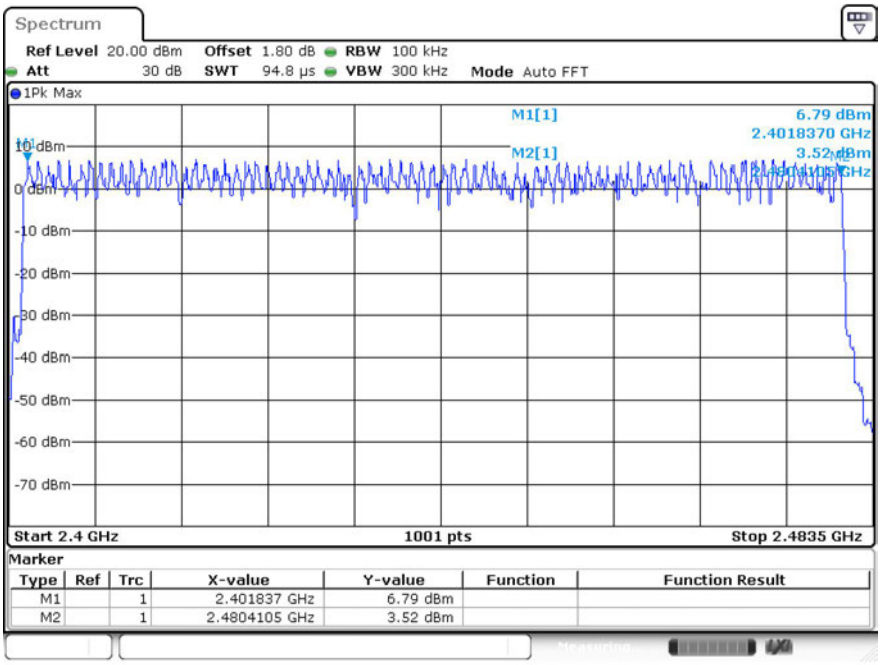
5 Hopping Channel Number

5.1 Test Result

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

5.2 Test Graphs

Test Graphs	
GFSK/Hop	
π/4DQPSK/Hop	

8DPSK/Hop	

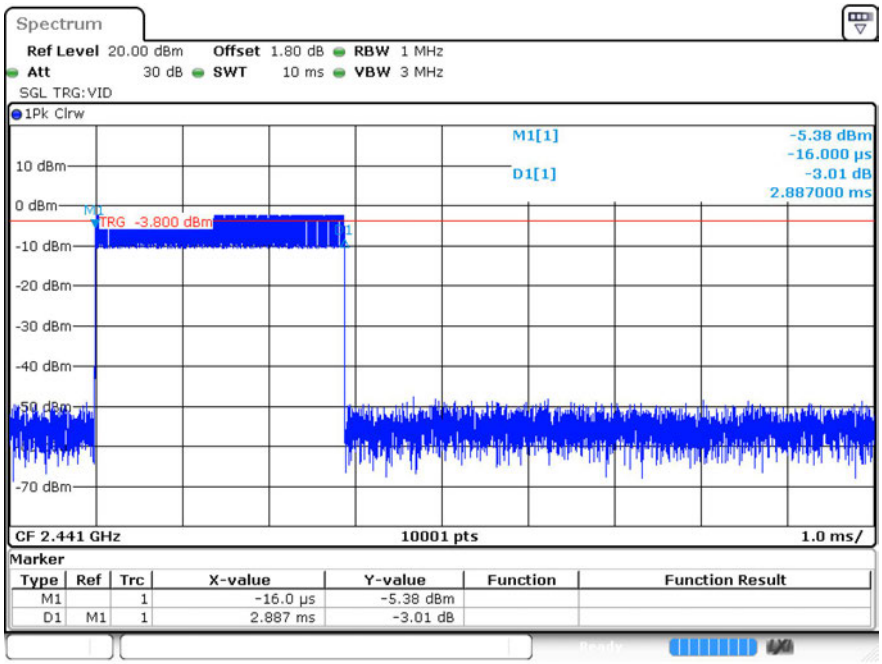
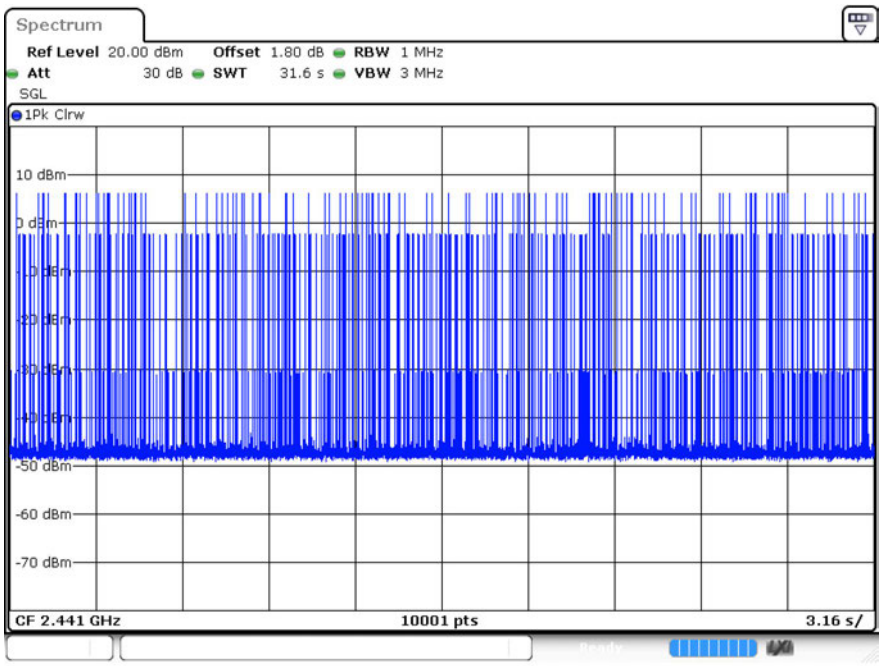
Spectrum
Ref Level 20.00 dBm Offset 1.80 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk Max
M1[1] 6.79 dBm 2.4018370 GHz
M2[1] 3.52 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
Start 2.4 GHz 1001 pts Stop 2.4835 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.401837 GHz 6.79 dBm
M2 1 2.4804105 GHz 3.52 dBm

6 Dwell Time

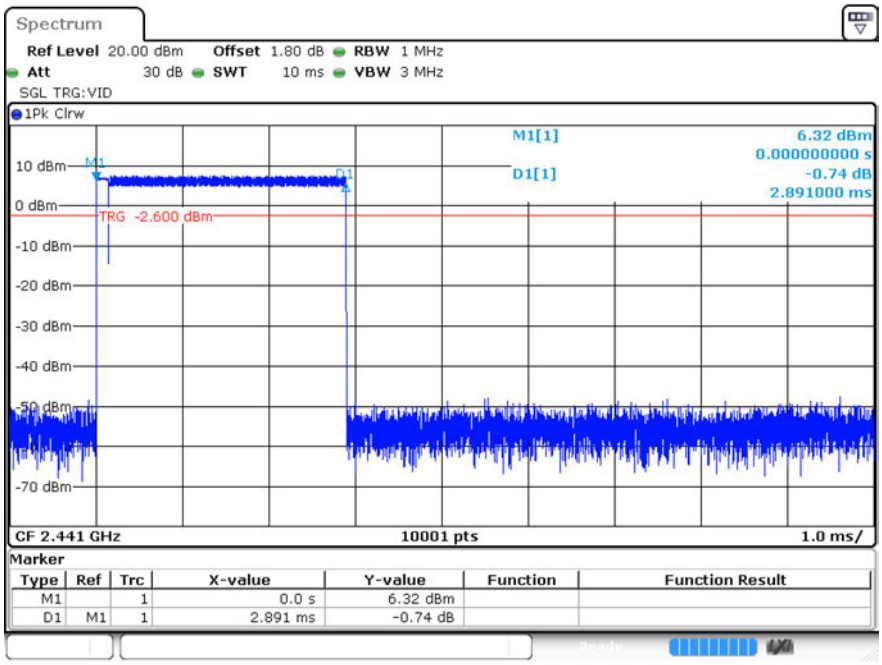
6.1 Test Result

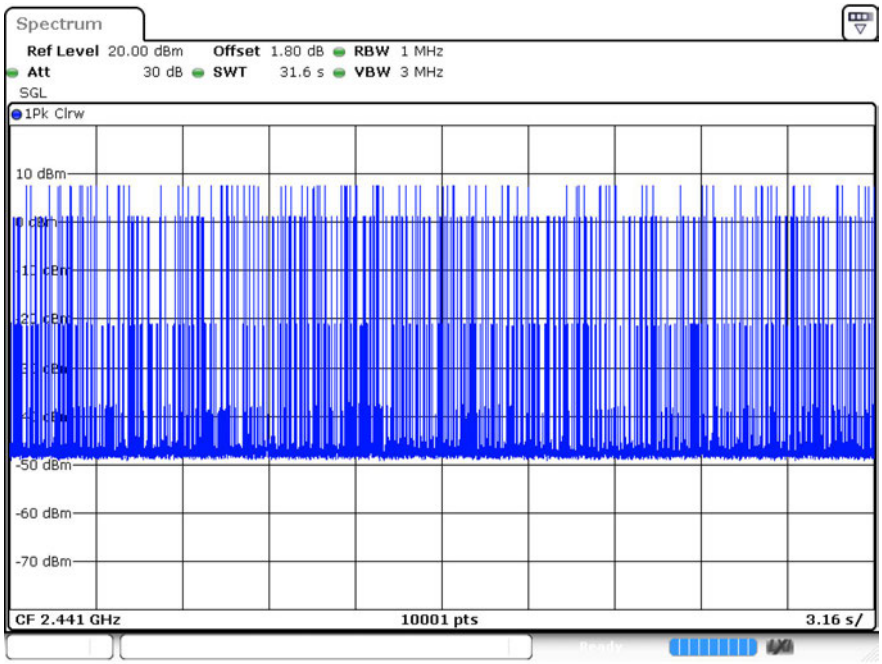
Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[ms]	Limit [s]	Verdict
GFSK	DH5	MCH	2.887	118	340.666	0.4	Pass
π/4DQPSK	2DH5	MCH	2.891	108	312.228	0.4	Pass
8DPSK	3DH5	MCH	2.893	108	312.444	0.4	Pass

6.2 Test Graphs

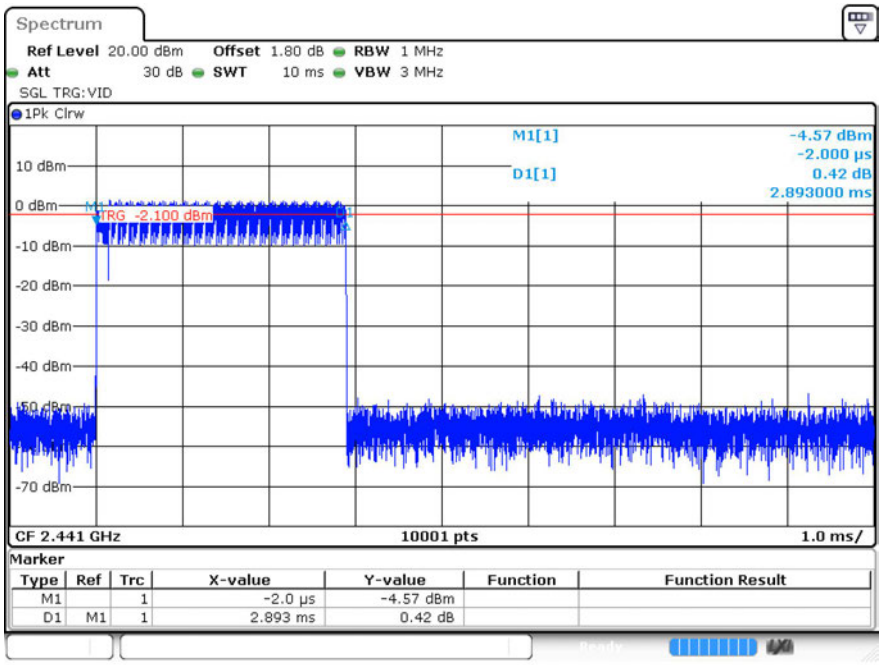
Test Graphs	
GFSK_DH5/MCH	 

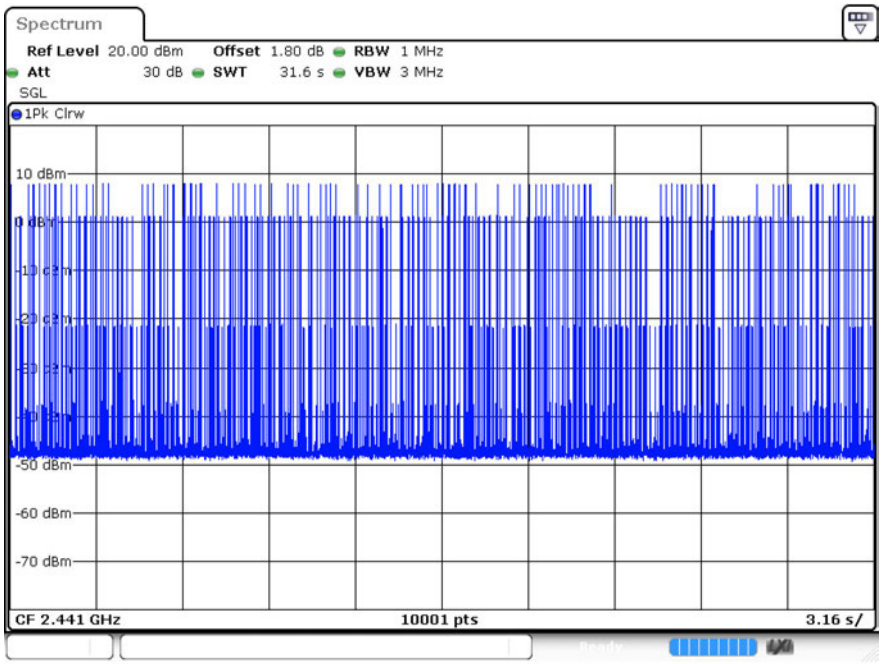
π/4DQPSK
_2DH5/MCH





8DPSK _3DH5/MCH



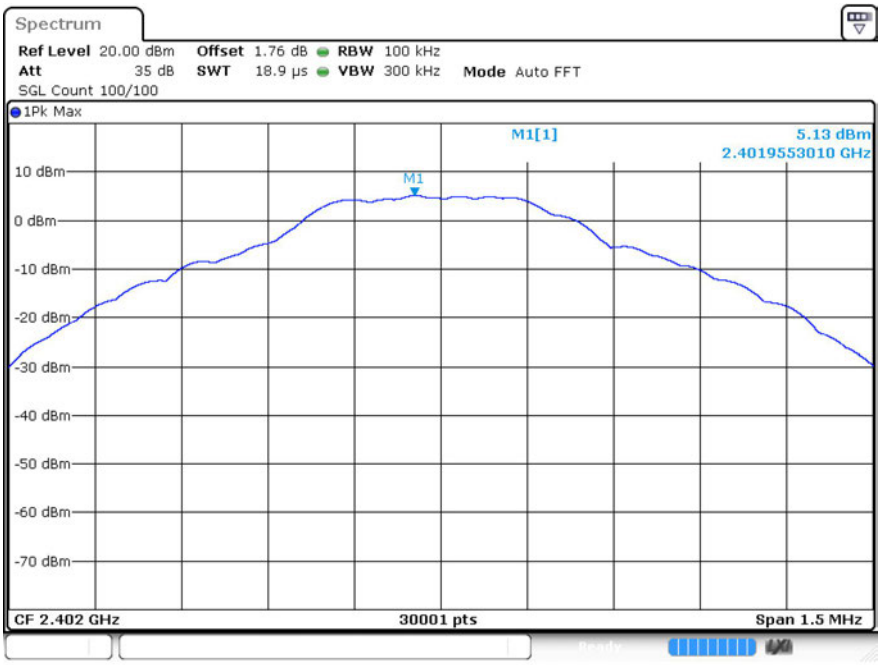
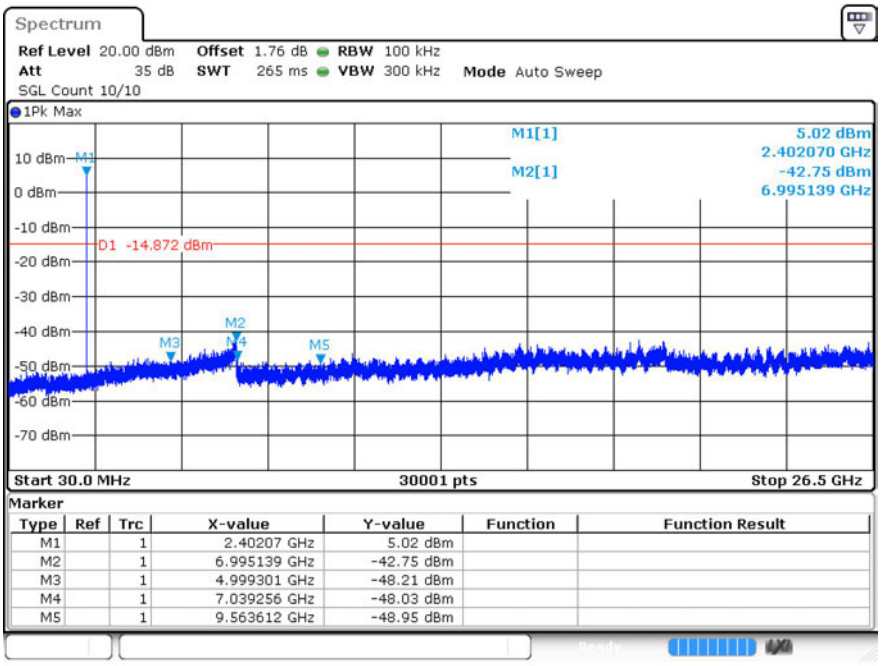


7 RF Conducted Spurious Emissions

7.1 Test Result

Mode	Channel	Max. Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	-47.87	-20	Pass
	MCH	-47.97	-20	Pass
	HCH	-47.84	-20	Pass
π/4DQPSK	LCH	-43.76	-20	Pass
	MCH	-43.02	-20	Pass
	HCH	-46.06	-20	Pass
8DPSK	LCH	-45.35	-20	Pass
	MCH	-45.28	-20	Pass
	HCH	-44.77	-20	Pass

7.2 Test Graphs

GFSK_LCH_Graphs	
Pref	
Puw	

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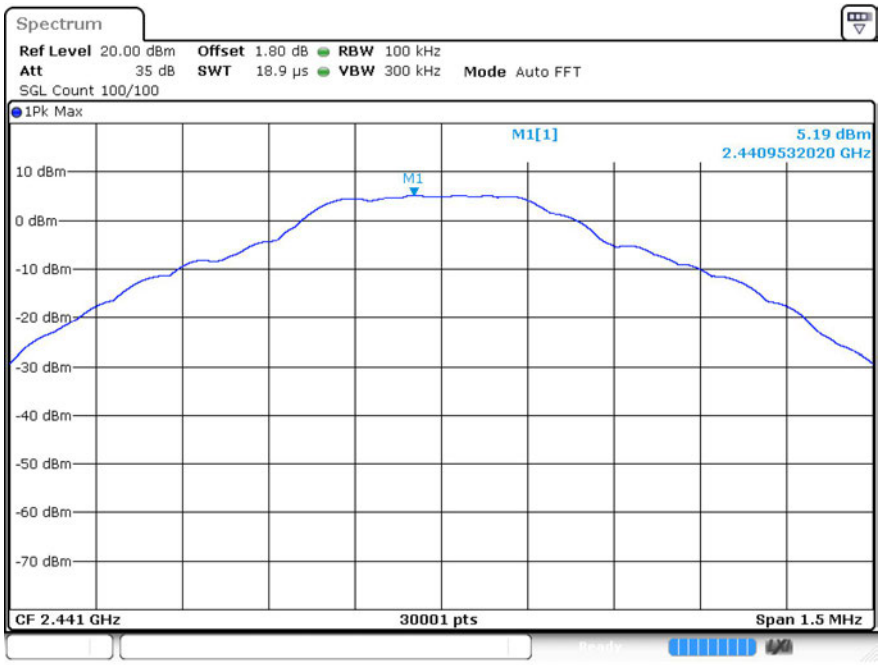
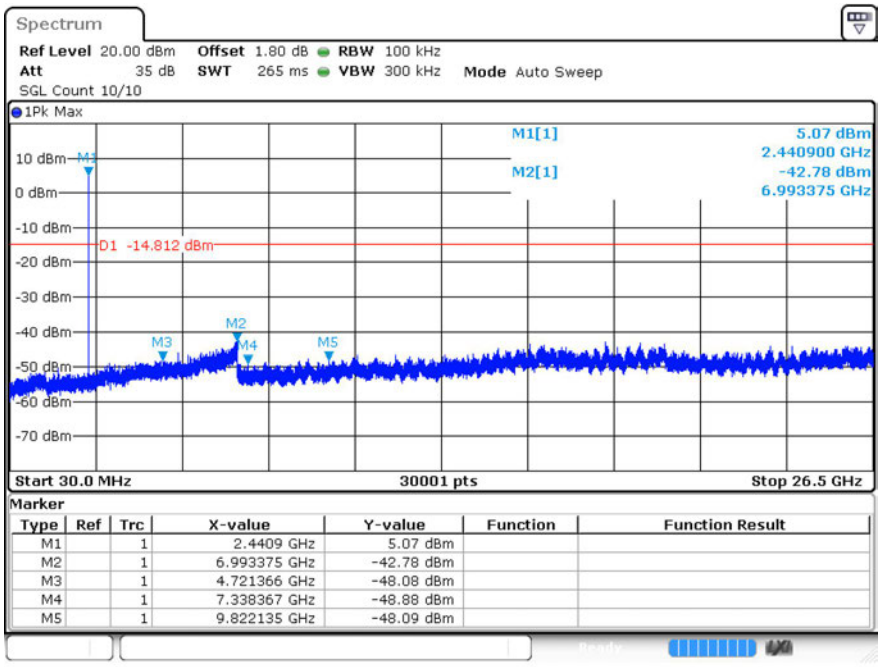
Pref	
Puw	

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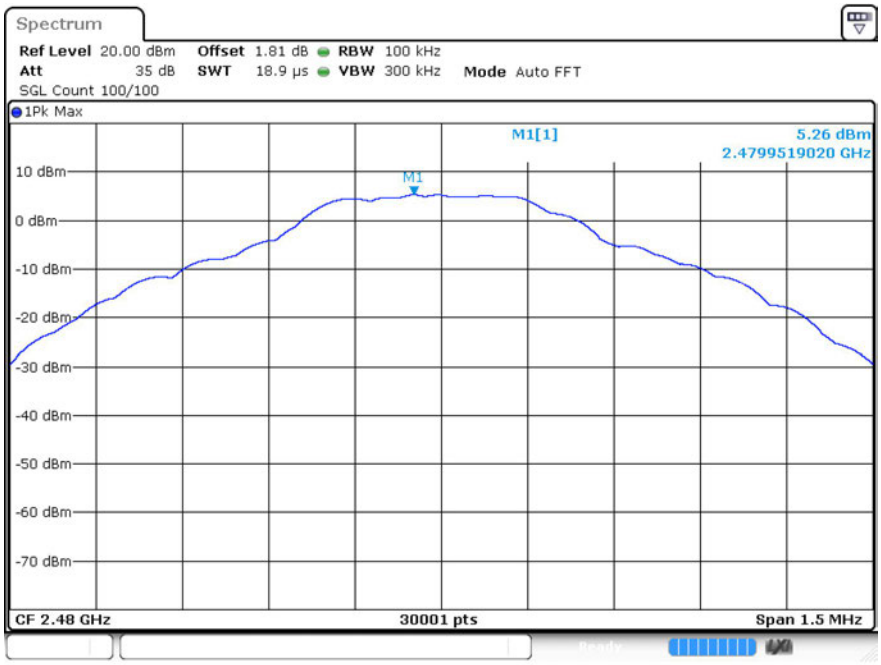
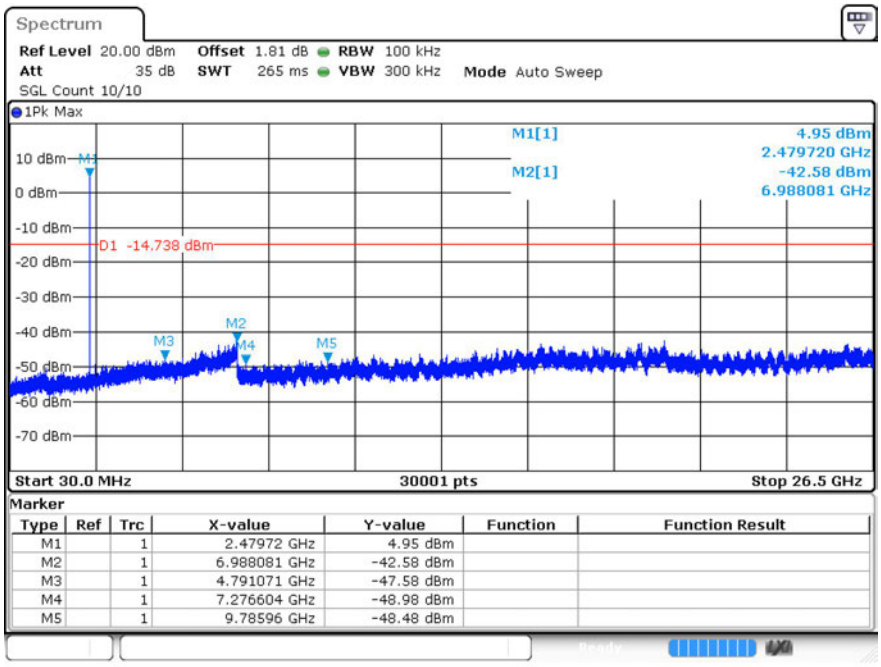
Pref	
Puw	

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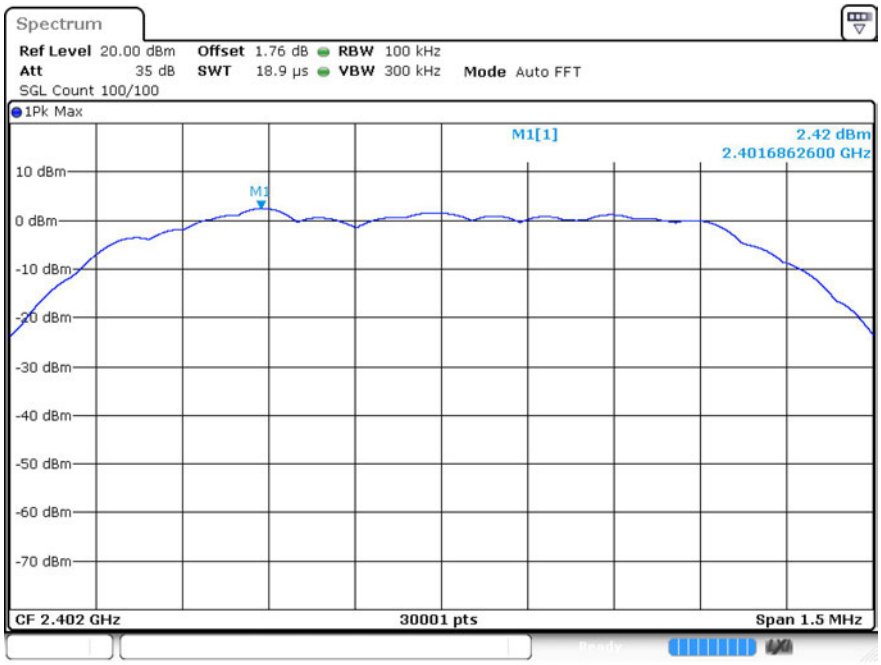
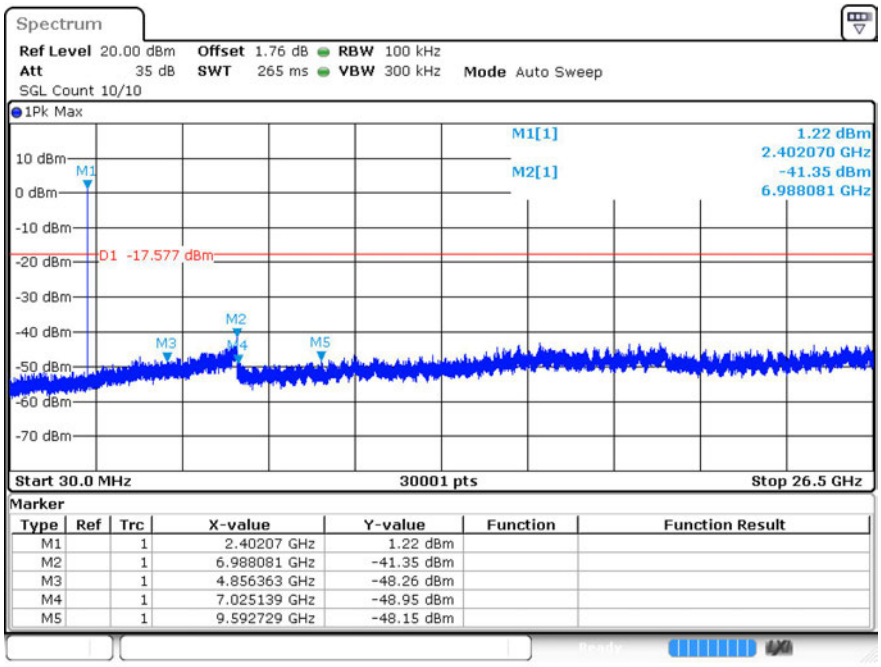
Pref	
Puw	

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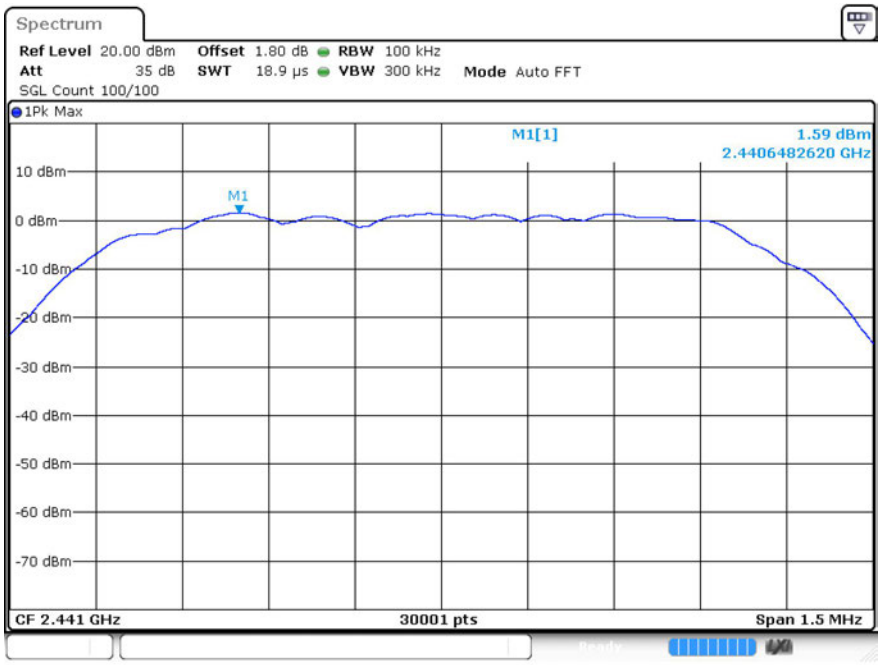
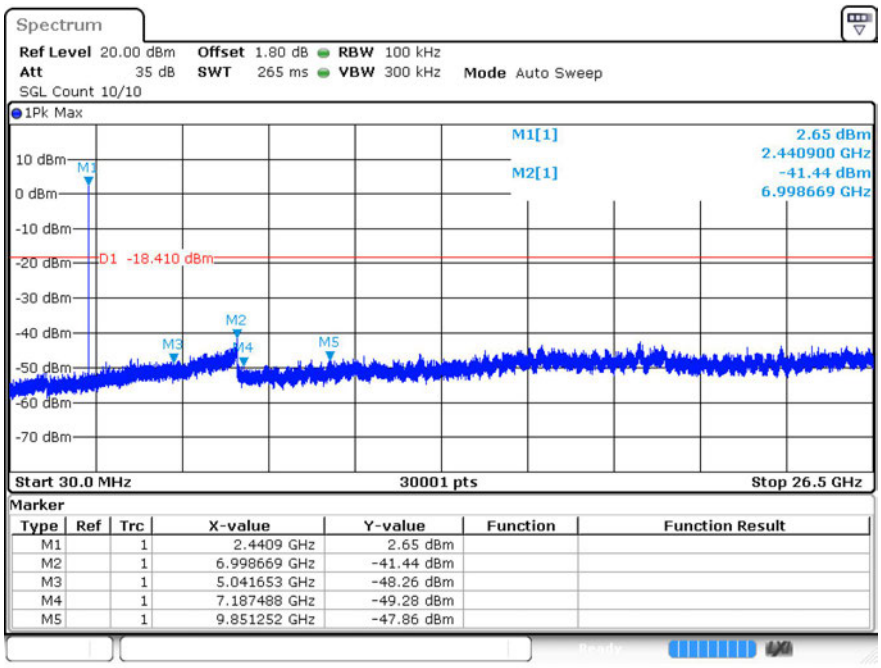
Pref	
Puw	

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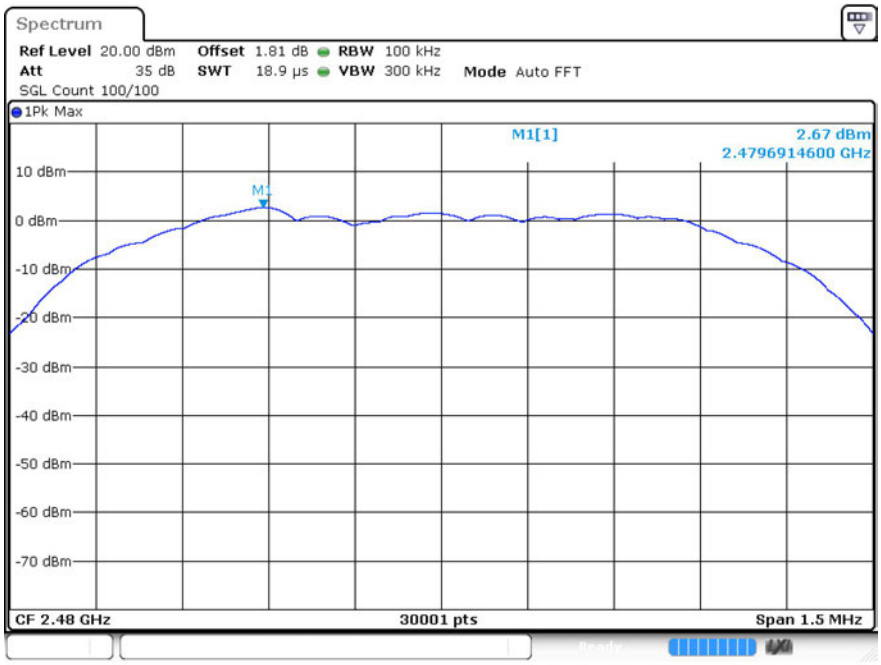
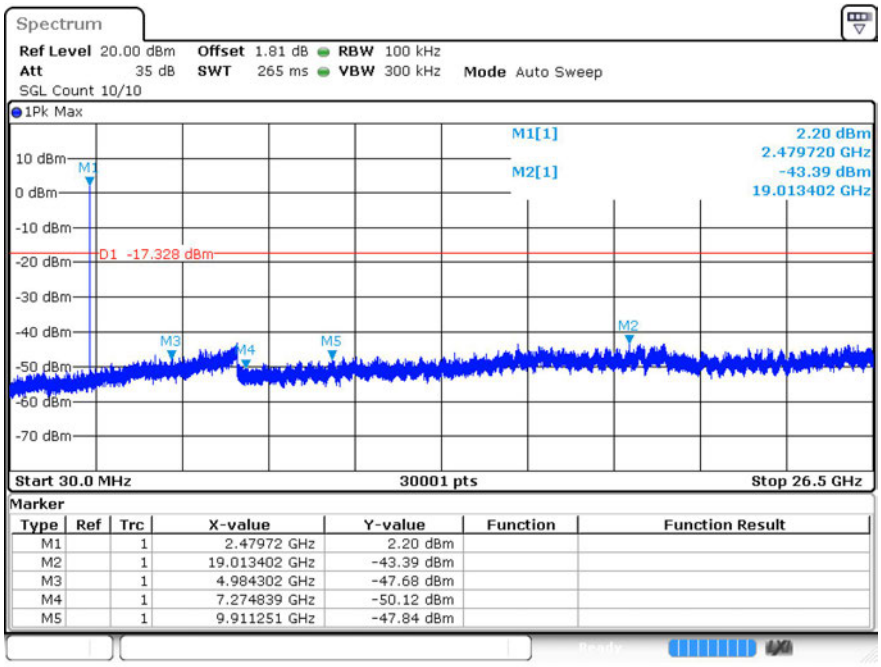
Pref	
Puw	

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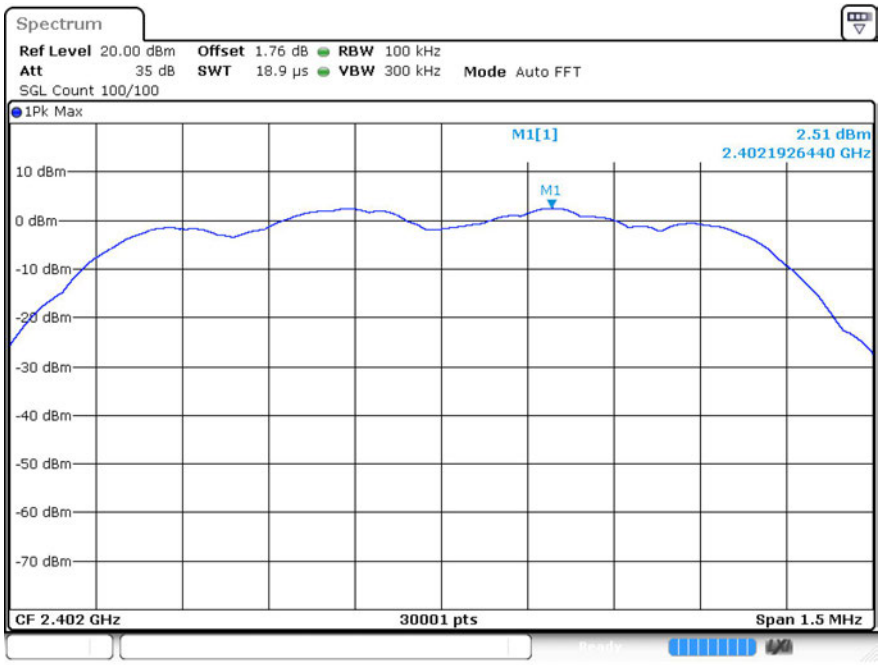
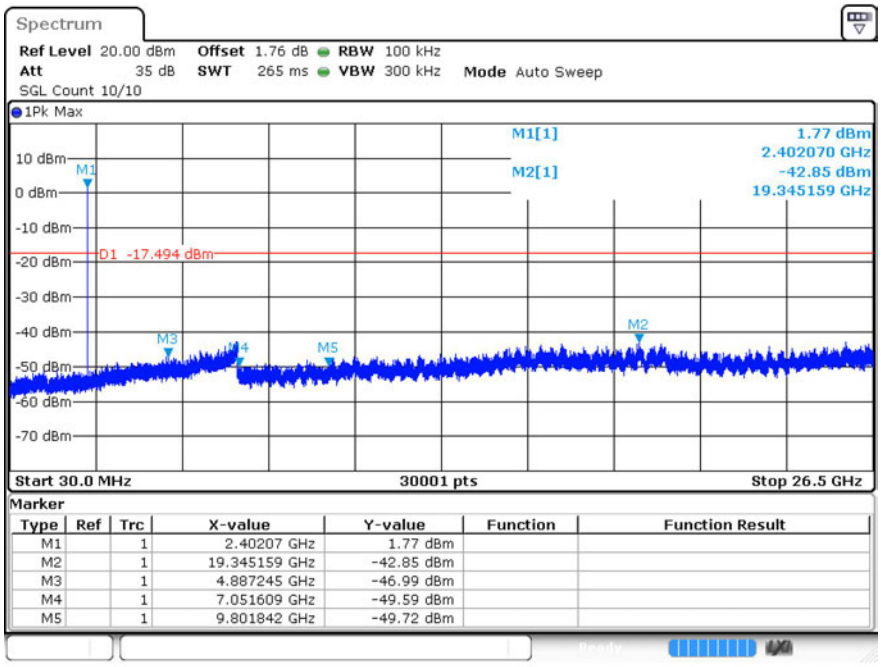
Pref	
Puw	

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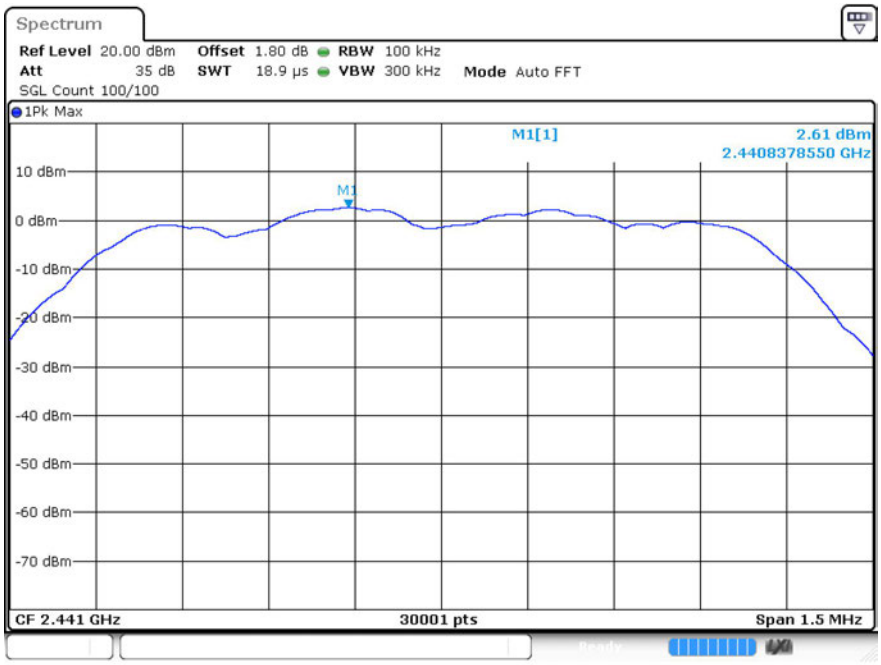
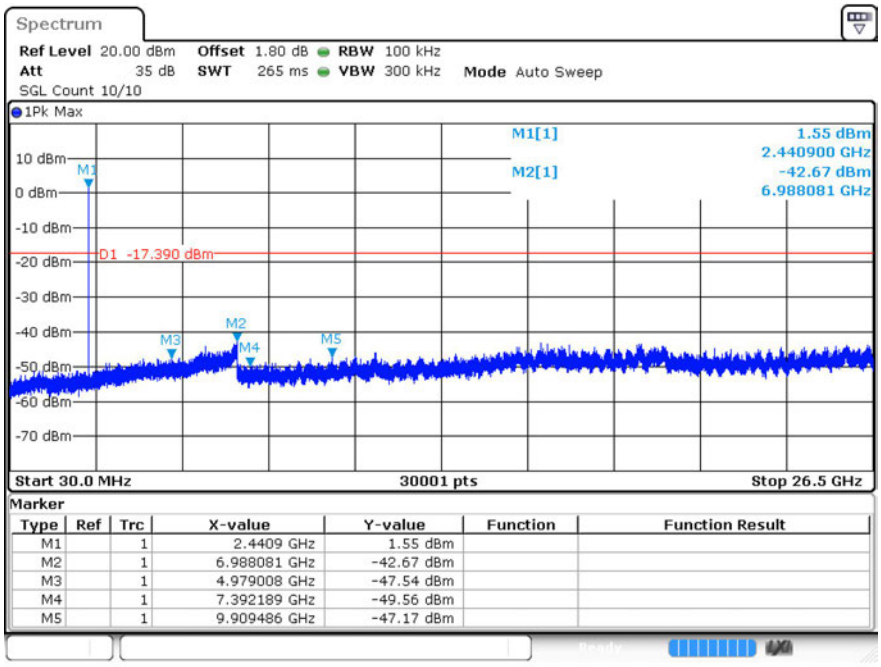
Pref	
Puw	

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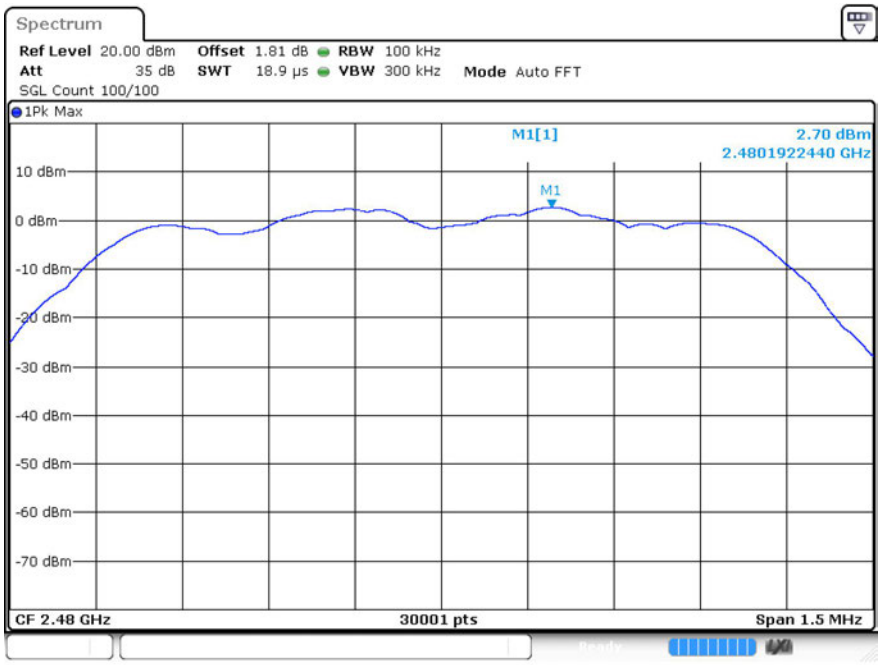
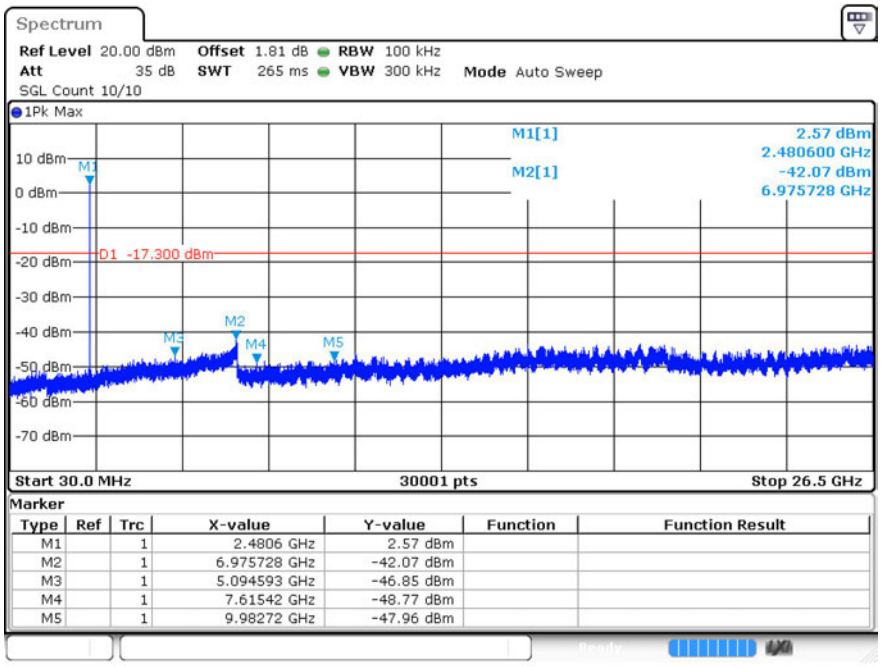
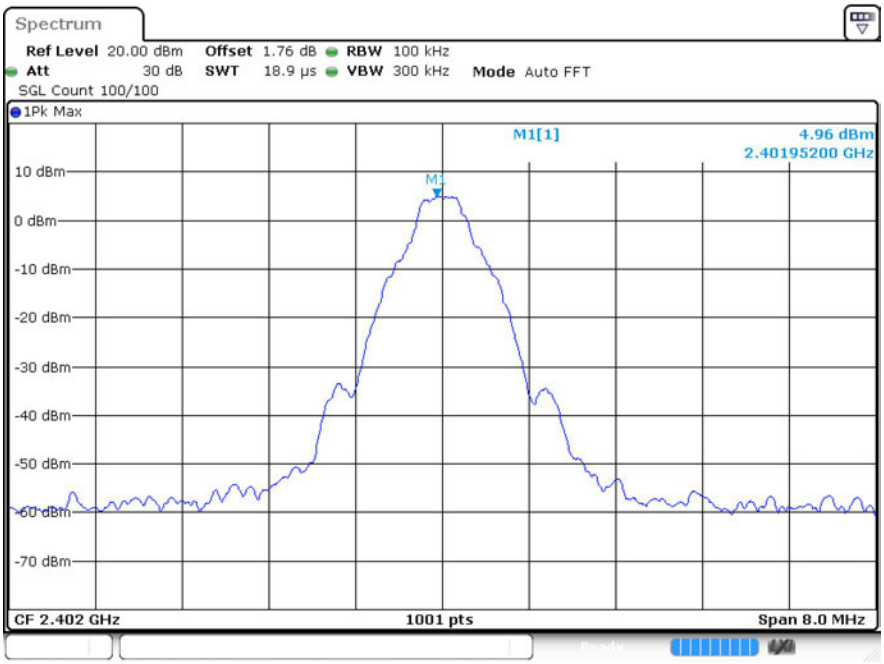
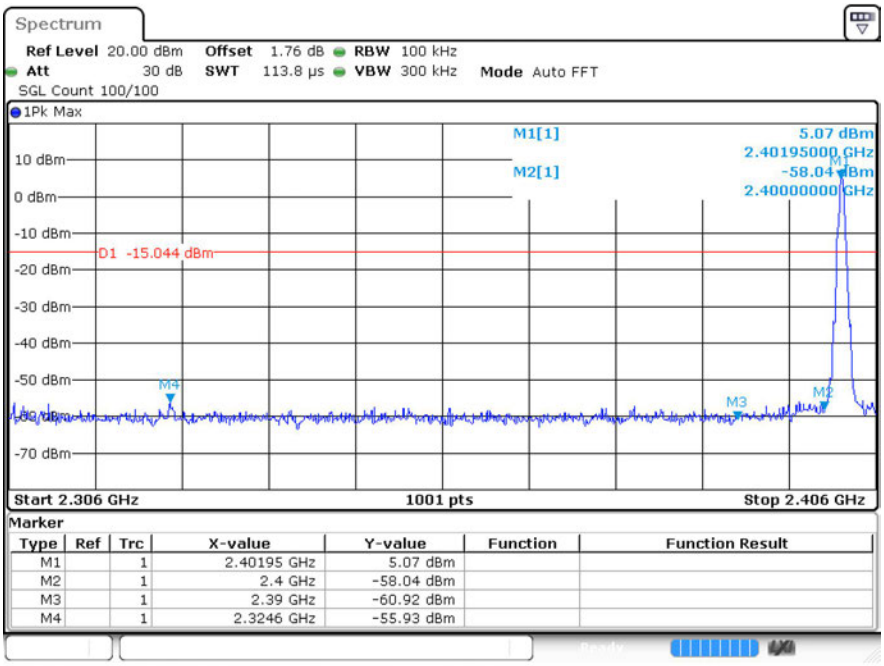
Pref	
Puw	

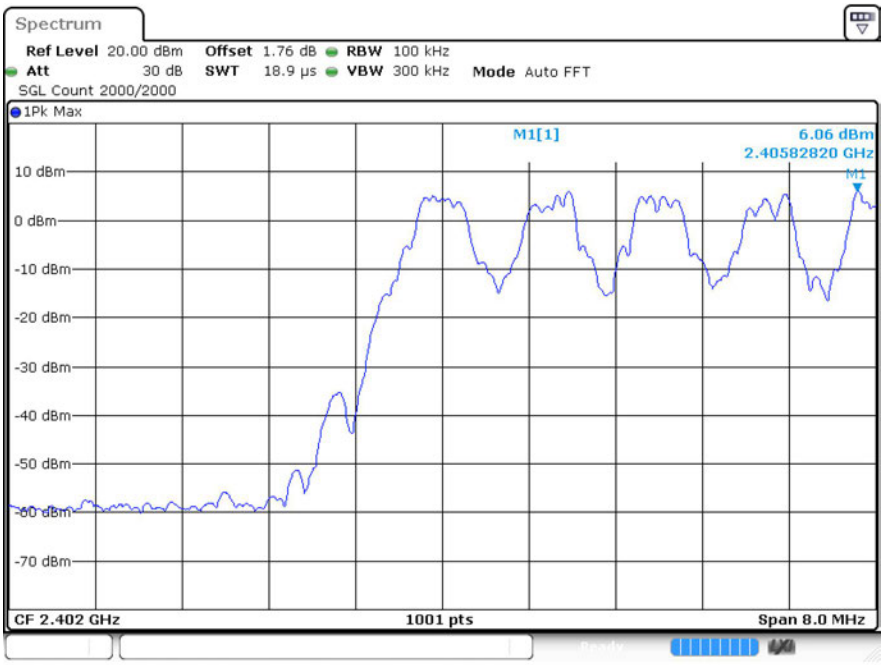
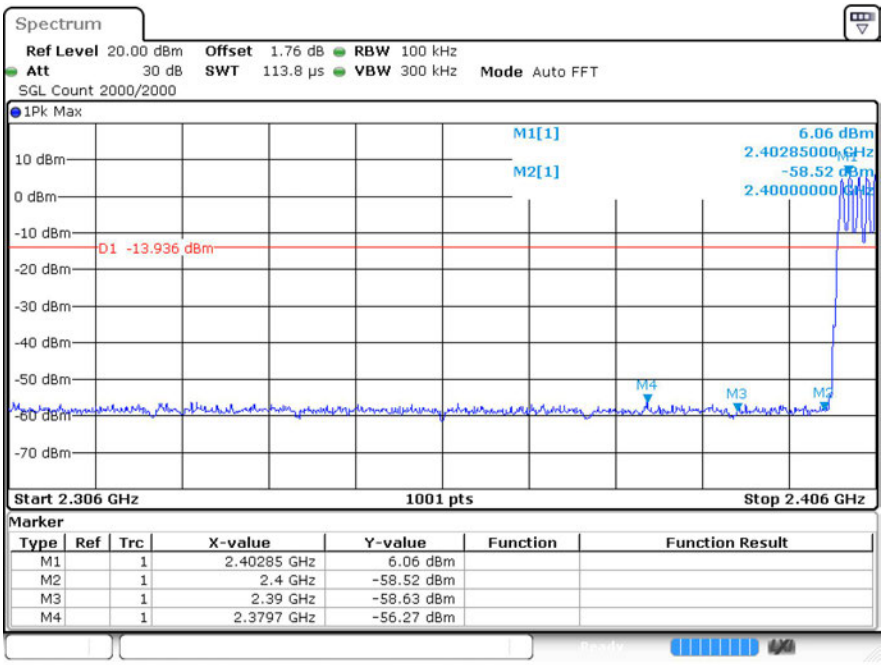
8 Band-edge for RF Conducted Emissions

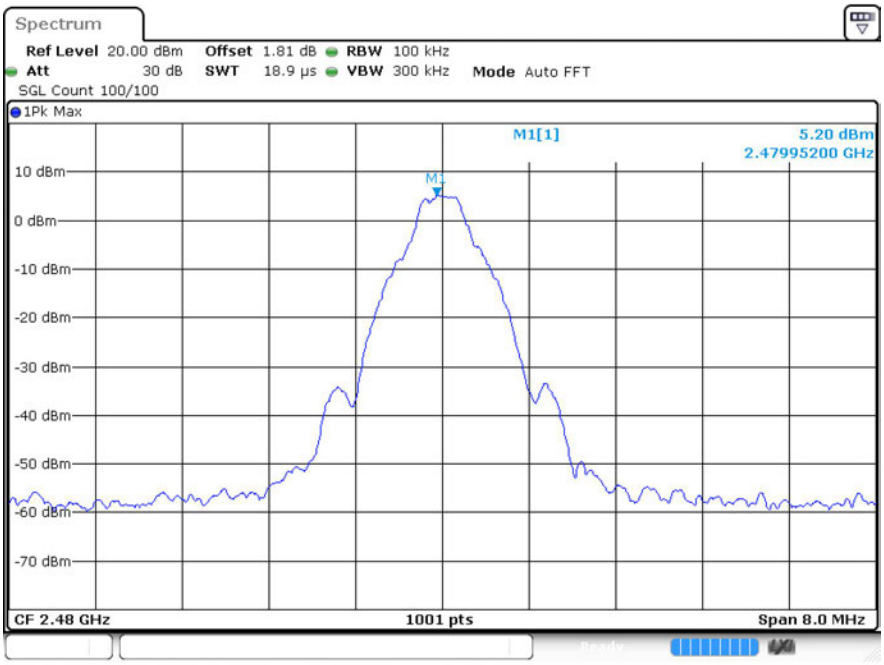
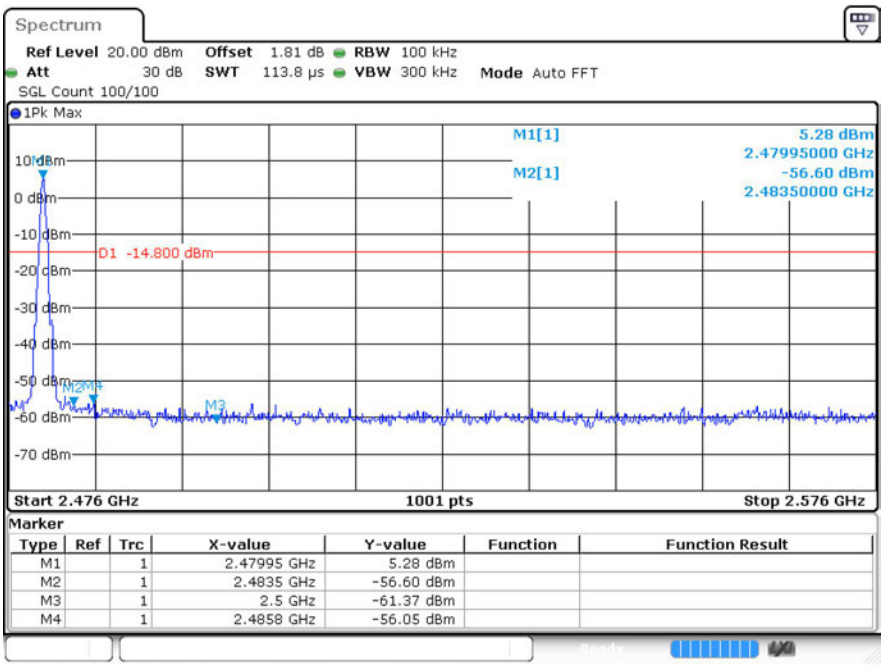
8.1 Test Result

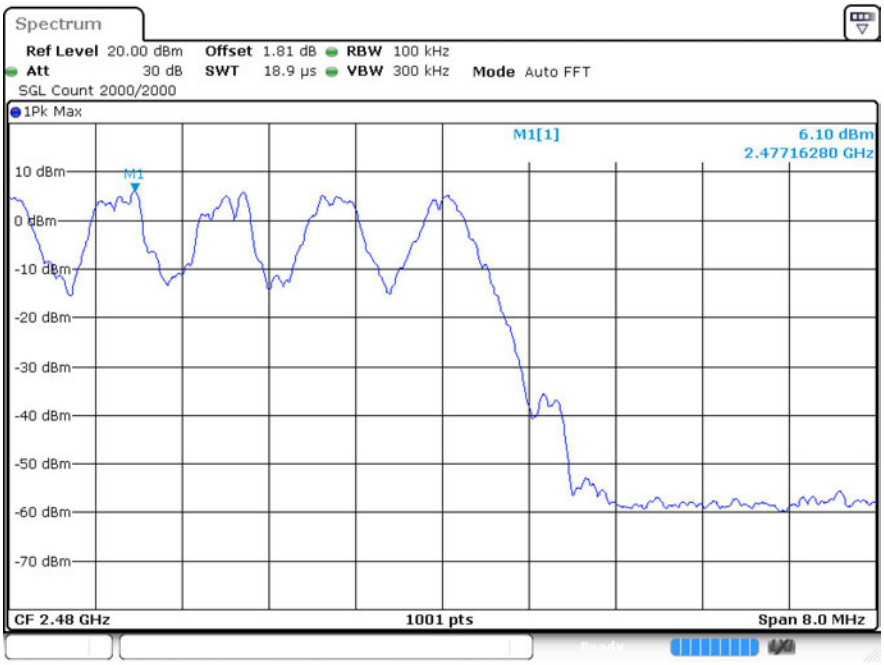
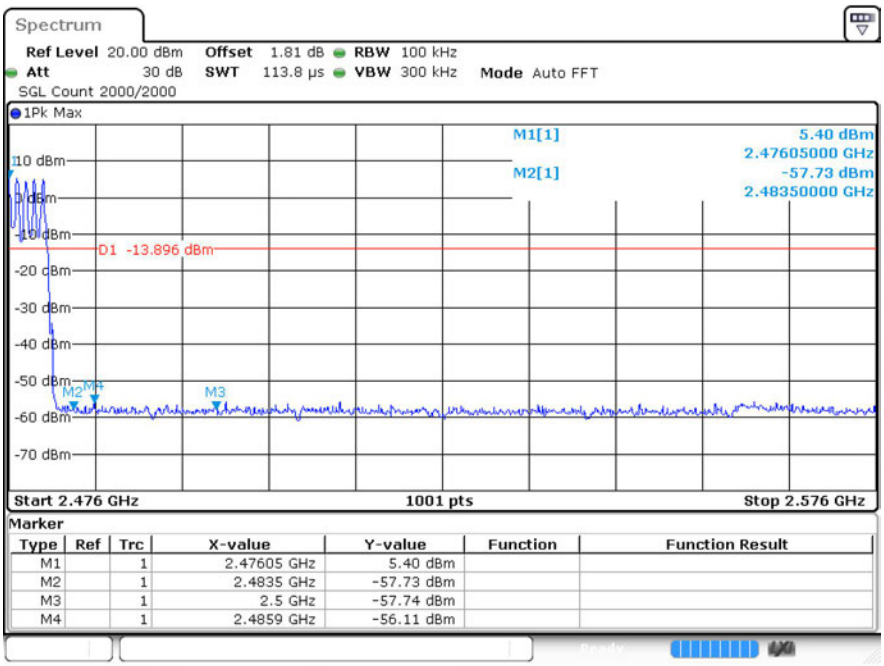
Mode	Channel	Carrier Frequency [MHz]	Frequency Hopping	Max Spurious Level [dBc]	Limit [dBc]	Verdict
GFSK	LCH	2402	Off	-60.88	-20	Pass
			On	-62.33	-20	Pass
	HCH	2480	Off	-61.25	-20	Pass
			On	-62.21	-20	Pass
π/4DQPSK	LCH	2402	Off	-59.85	-20	Pass
			On	-62.08	-20	Pass
	HCH	2480	Off	-58.85	-20	Pass
			On	-63.1	-20	Pass
8DPSK	LCH	2402	Off	-59.69	-20	Pass
			On	-62.99	-20	Pass
	HCH	2480	Off	-56.54	-20	Pass
			On	-62.23	-20	Pass

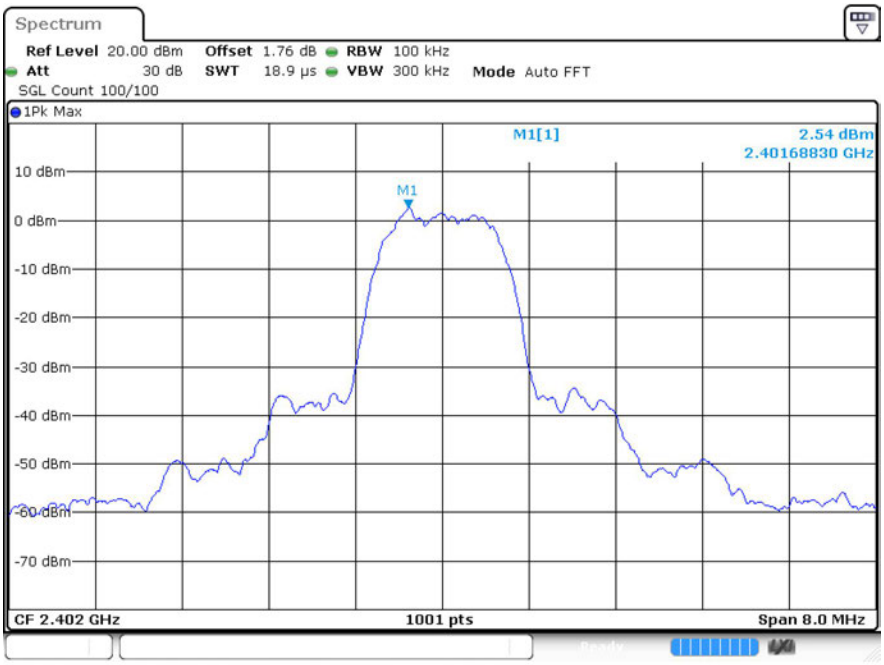
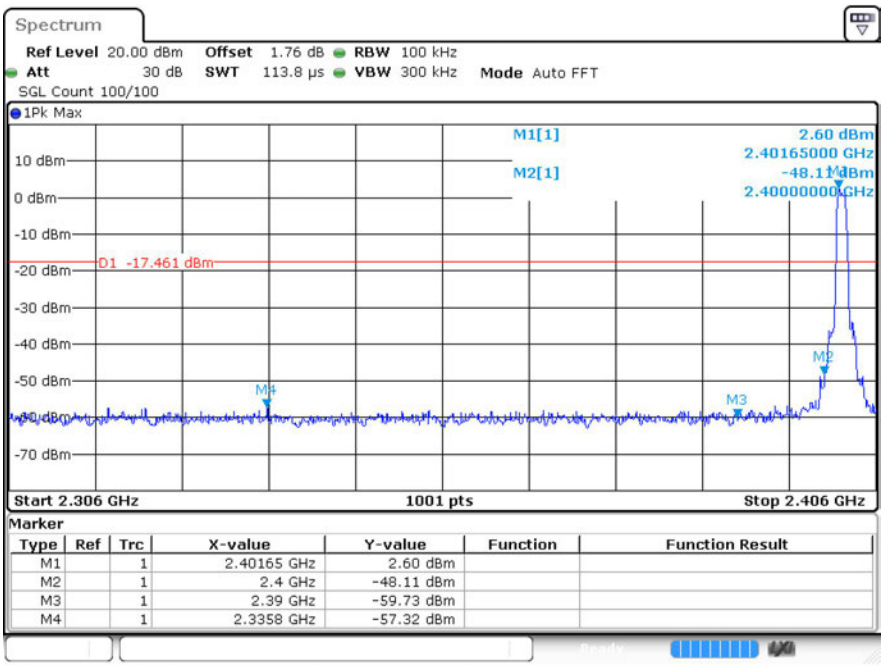
8.2 Test Graphs

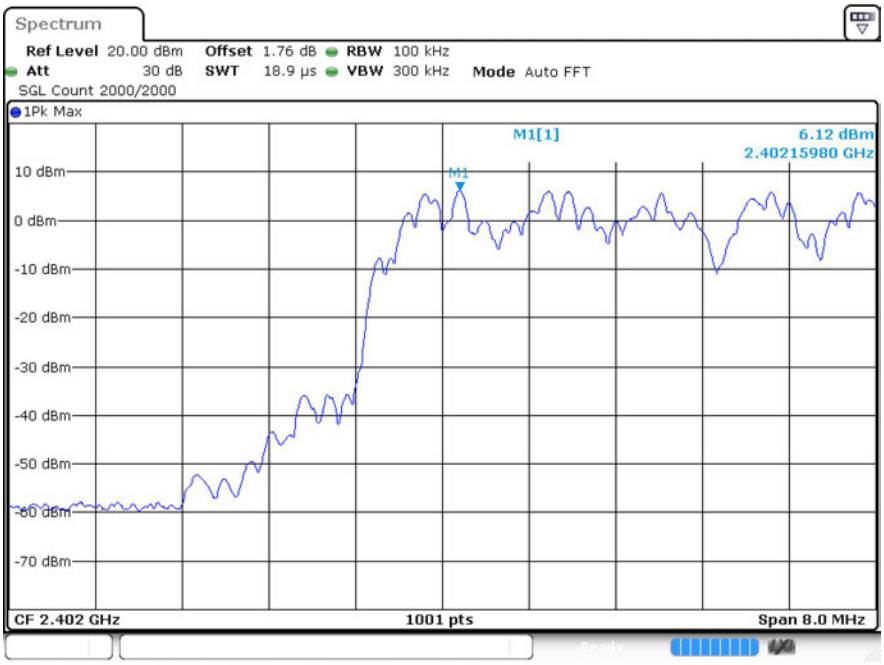
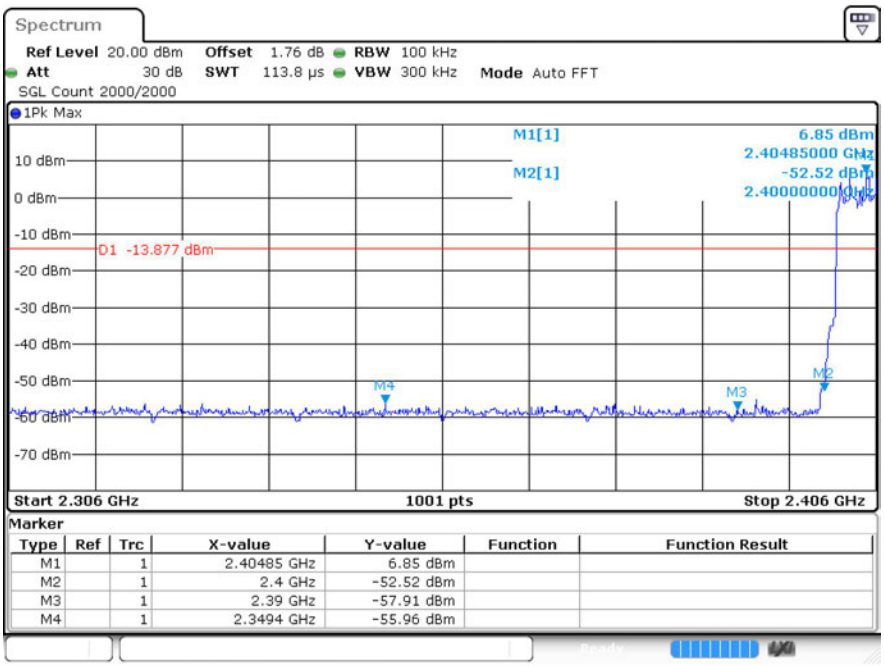
Test Graphs	
Pref	
GFSK/LCH/No Hop	

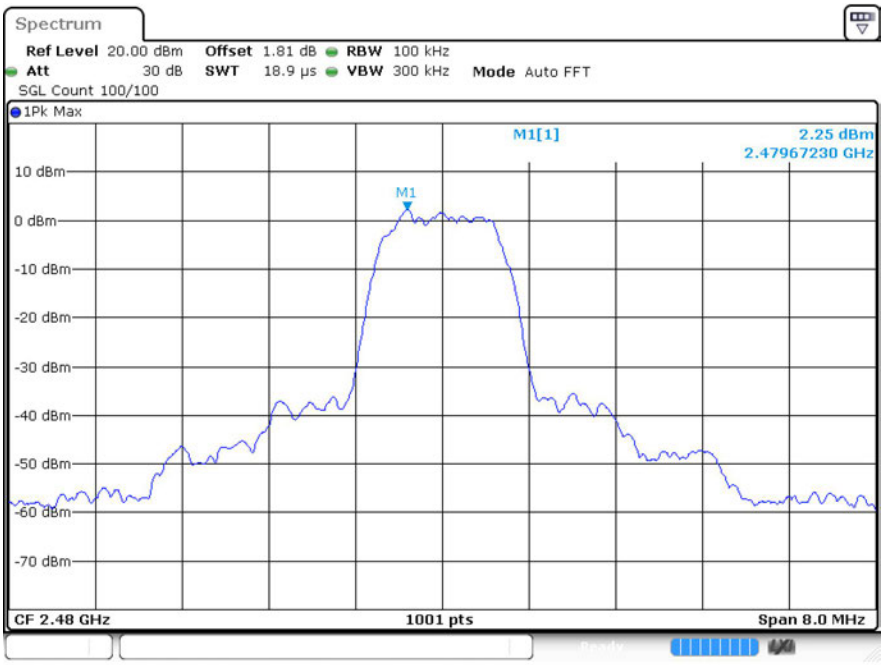
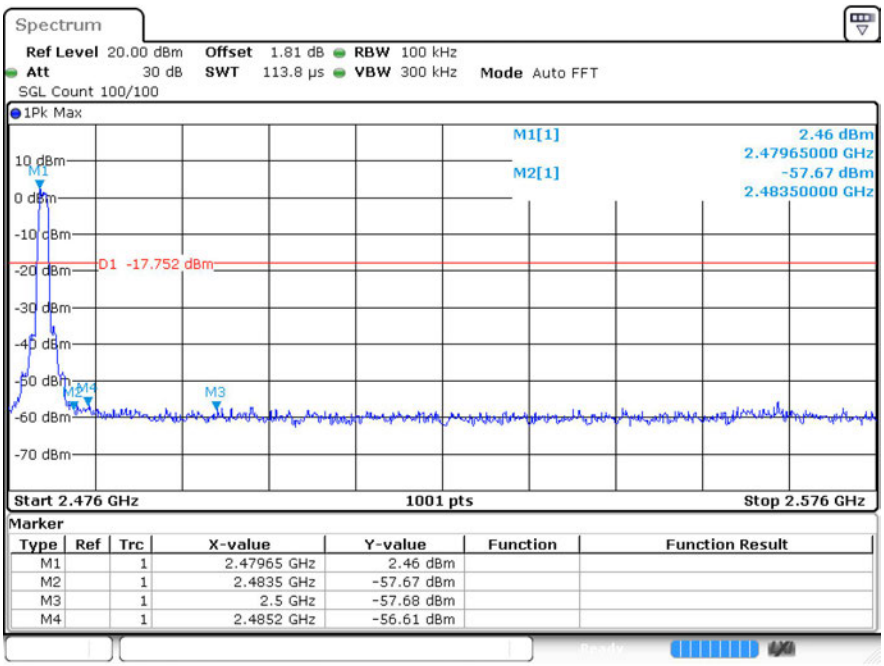
Ref	
GFSK/LCH/Hop	

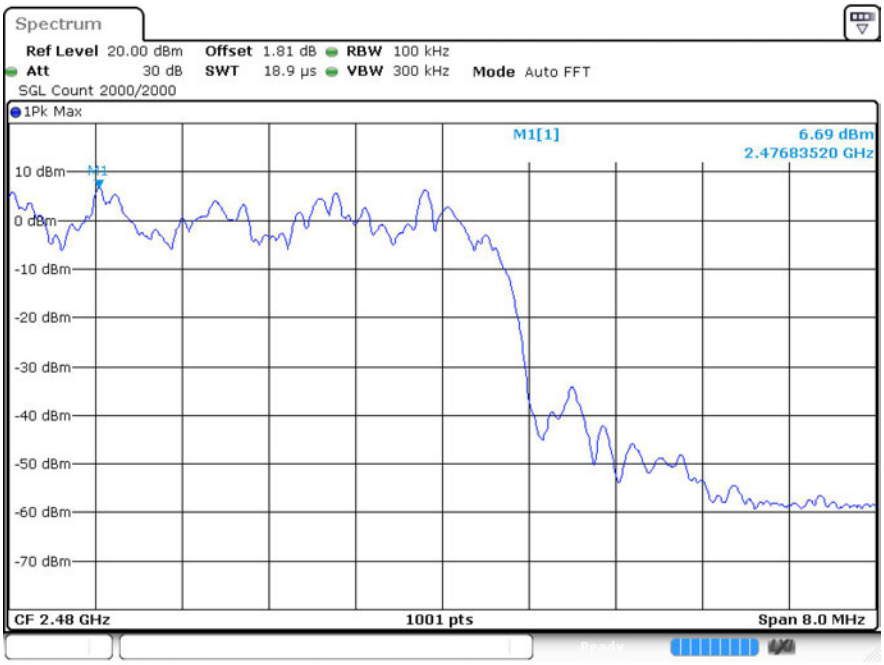
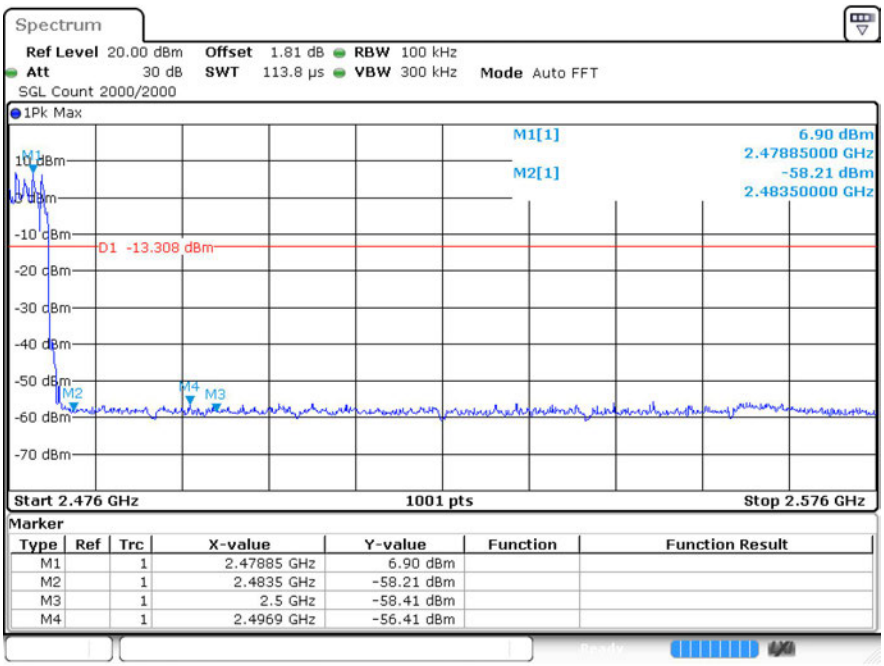
Ref	
GFSK/HCH/No Hop	

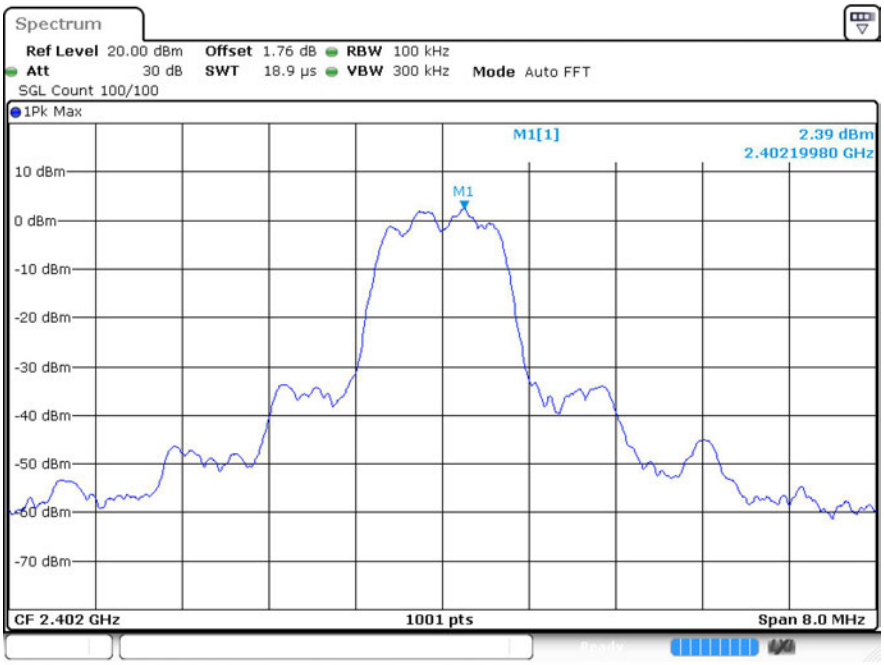
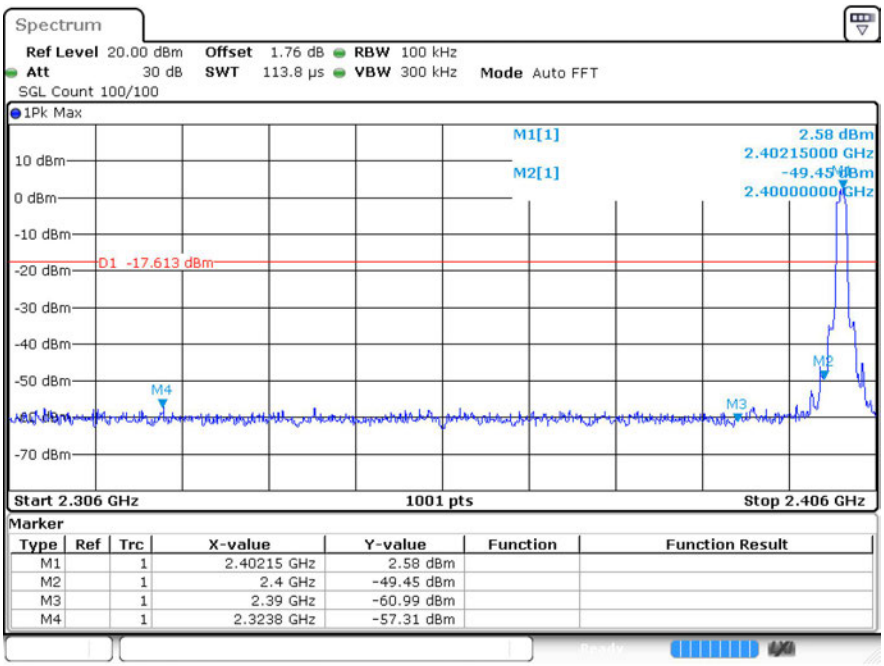
Ref.	
GFSK/HCH/Hop	

Ref	
π/4DQPSK/LCH/No Hop	 Marker Type | Ref | Trc | X-value | Y-value | Function | Function Result M1 | | 1 | 2.40165 GHz | 2.60 dBm | | M2 | | 1 | 2.4 GHz | -48.11 dBm | | M3 | | 1 | 2.39 GHz | -59.73 dBm | | M4 | | 1 | 2.3358 GHz | -57.32 dBm | |

Ref	
π/4DQPSK/LCH/Hop	

Ref	
π/4DQPSK/HCH/No Hop	

Ref	
π/4DQPSK/HCH/Hop	

Ref	
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