

Appendix A

Report No.:	CISRR240422134
FCC ID:	2BF28-KS01
Product Name:	KS01 lavalier microphone
Model No.:	KS01
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

1) Conducted Peak Output Power

Test Result

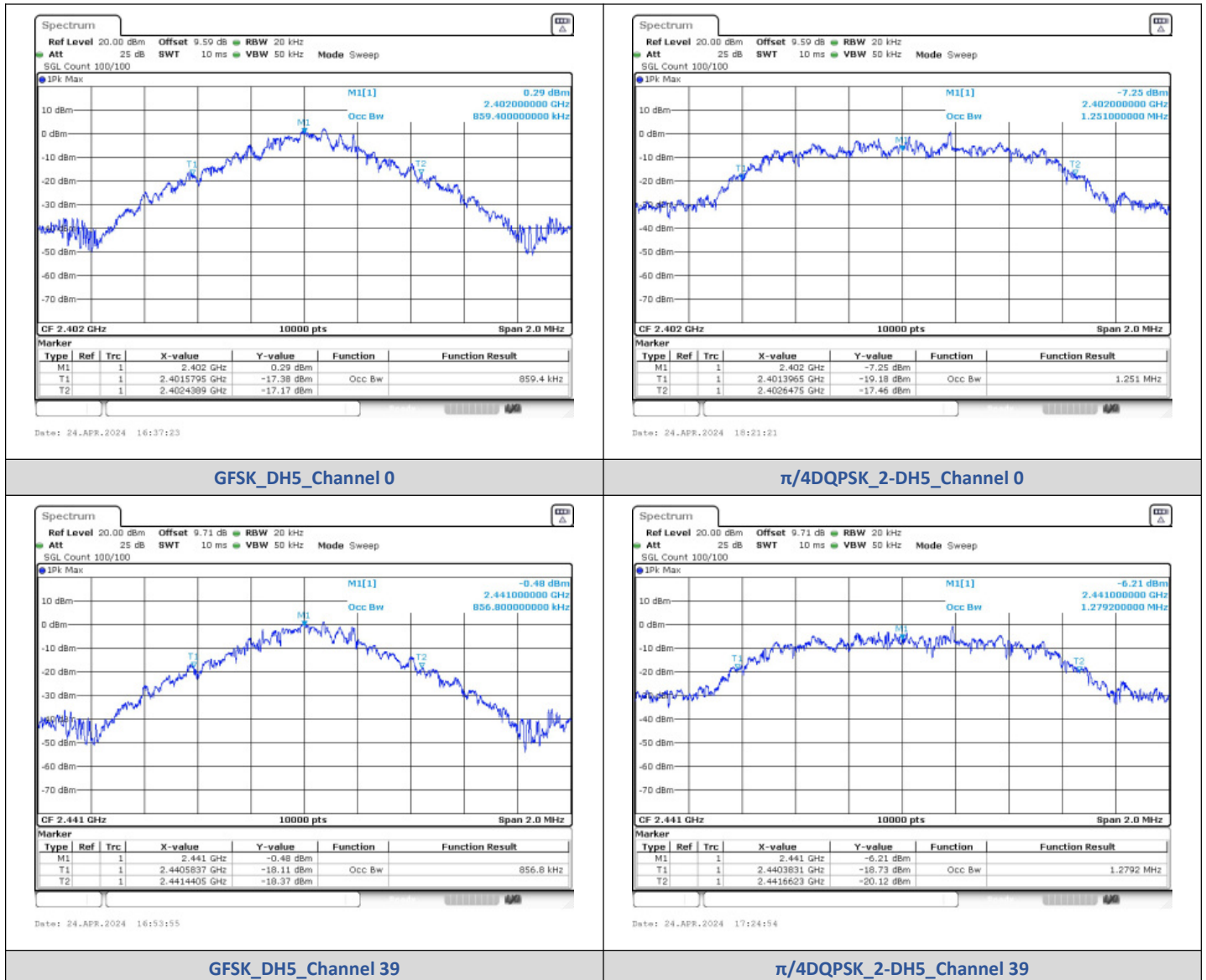
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	5.750	3.758	30	PASS
		39	4.881	3.077		PASS
		78	6.141	4.113		PASS
$\pi/4$ DQPSK	2-DH5	0	6.106	4.080	20.97	PASS
		39	5.240	3.342		PASS
		78	6.564	4.533		PASS
8DPSK	3-DH5	0	6.181	4.151		PASS
		39	5.194	3.306		PASS
		78	6.589	4.560		PASS

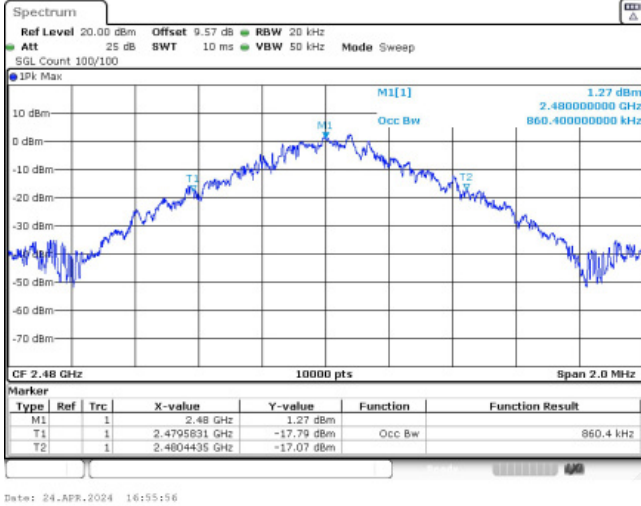
2) 99% Bandwidth

Test Result

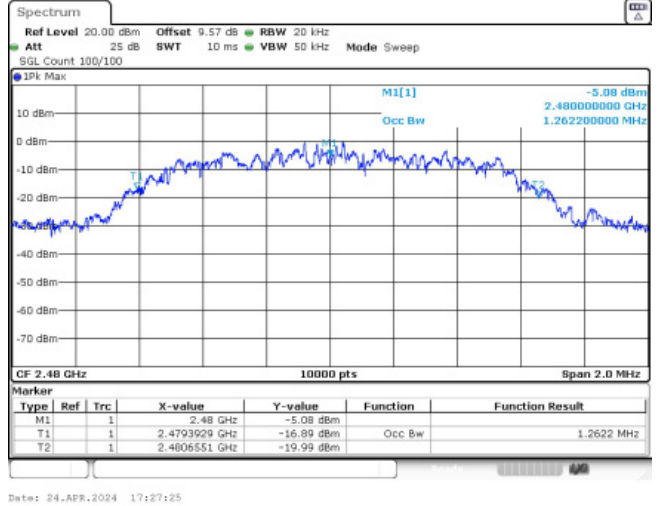
Modulation	Channel	99% BW (MHz)
GFSK	0	0.85940
	39	0.85680
	78	0.86040
$\pi/4$ DQPSK	0	1.2510
	39	1.2790
	78	1.2620
8DPSK	0	1.2470
	39	1.2620
	78	1.2520

Test Graphs

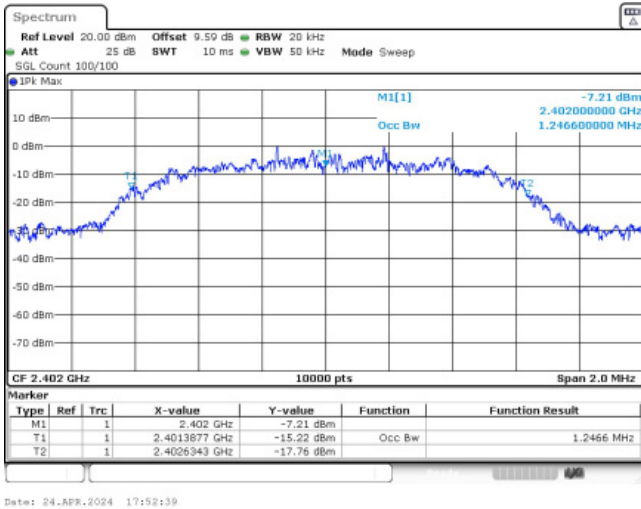




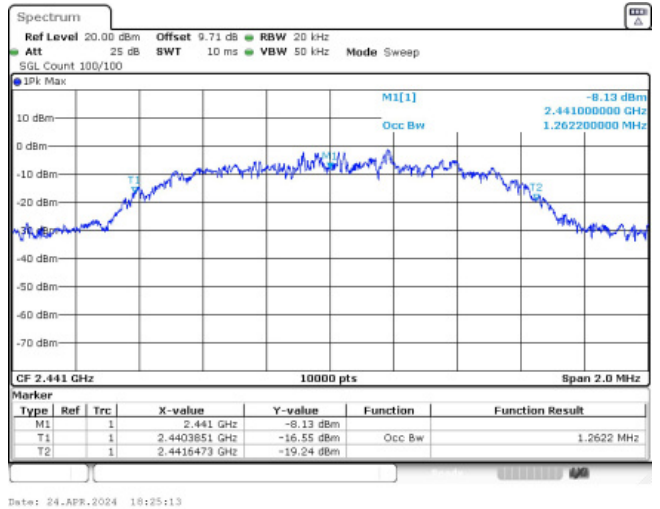
GFSK_DH5_Channel 78



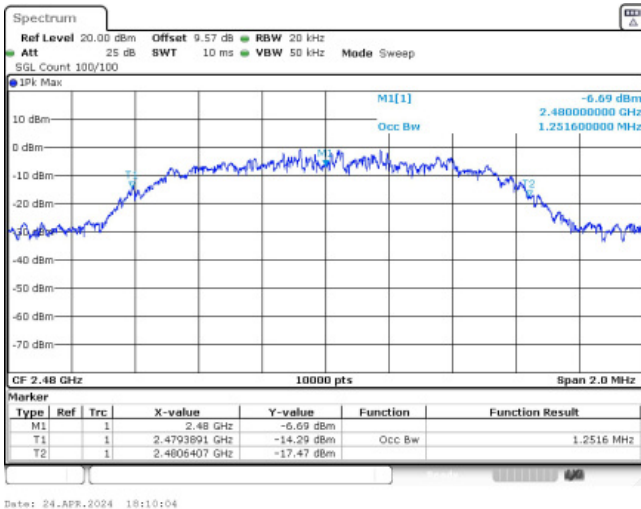
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



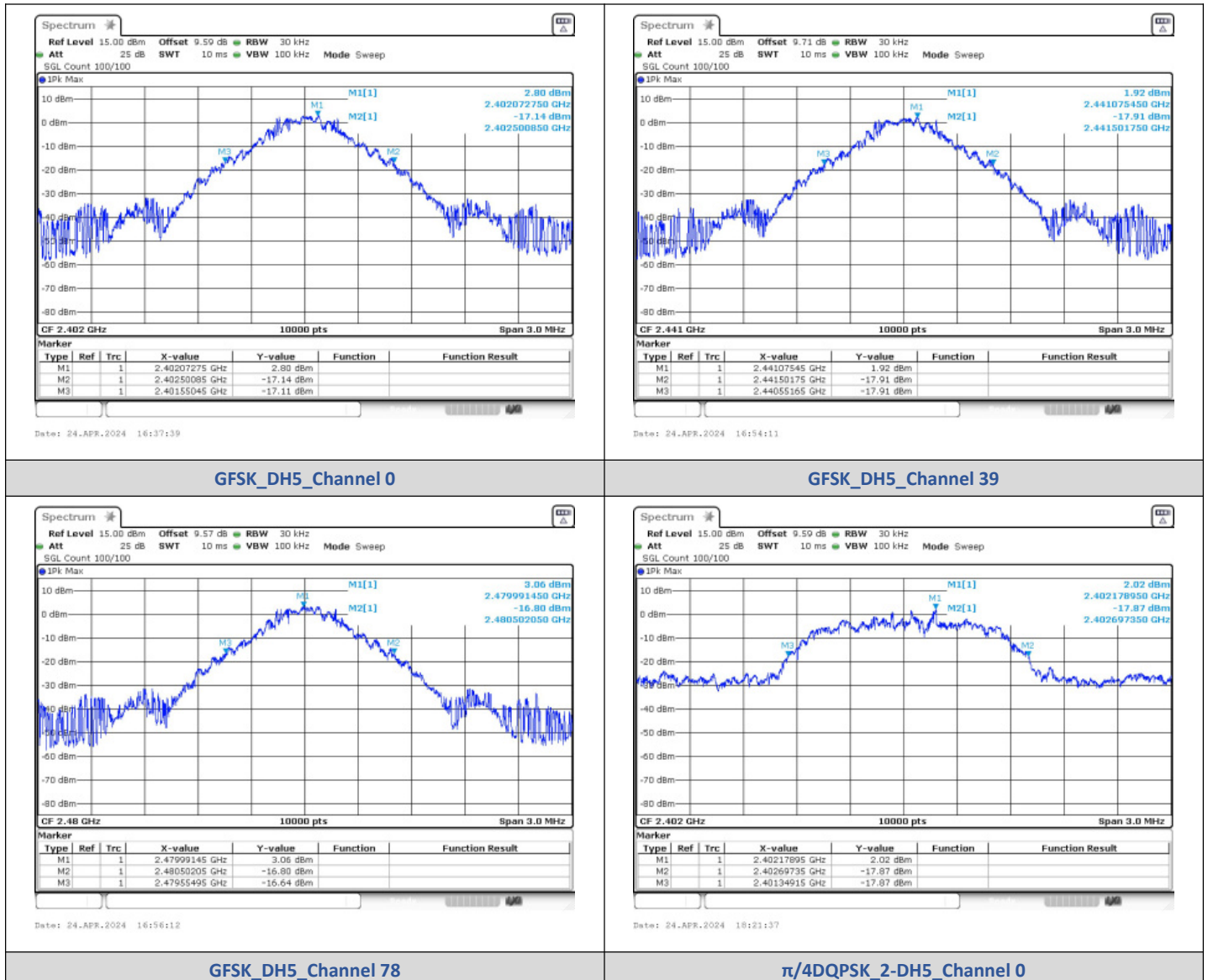
8DPSK_3-DH5_Channel 78

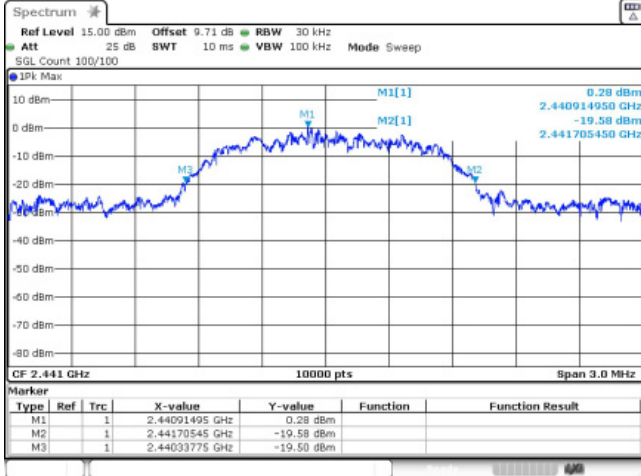
3) 20dB Bandwidth

Test Result

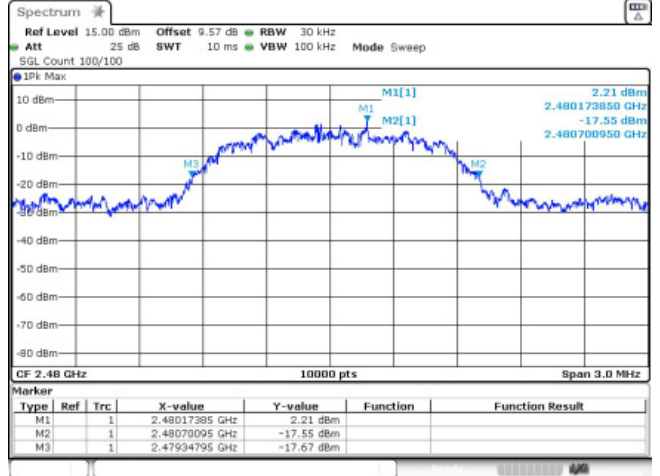
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9500
	39	2441 MHz	0.9500
	78	2480 MHz	0.9500
$\pi/4$ DQPSK	0	2402 MHz	1.350
	39	2441 MHz	1.370
	78	2480 MHz	1.350
8DPSK	0	2402 MHz	1.340
	39	2441 MHz	1.340
	78	2480 MHz	1.340

Test Graphs





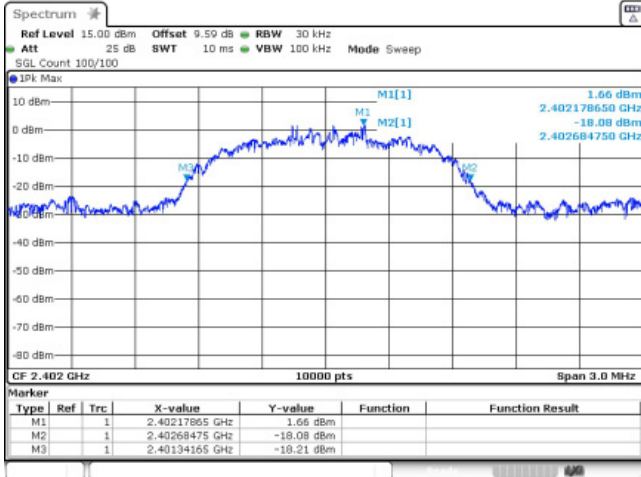
Date: 24.APR.2024 17:25:09



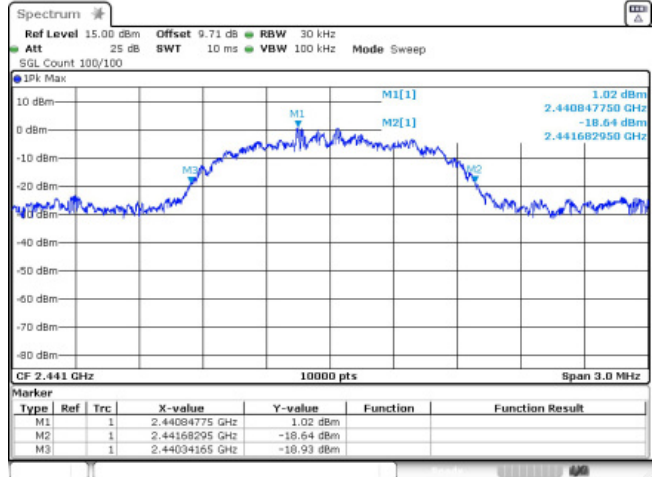
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$\pi/4$ DQPSK_2-DH5_Channel 39

$\pi/4$ DQPSK_2-DH5_Channel 78



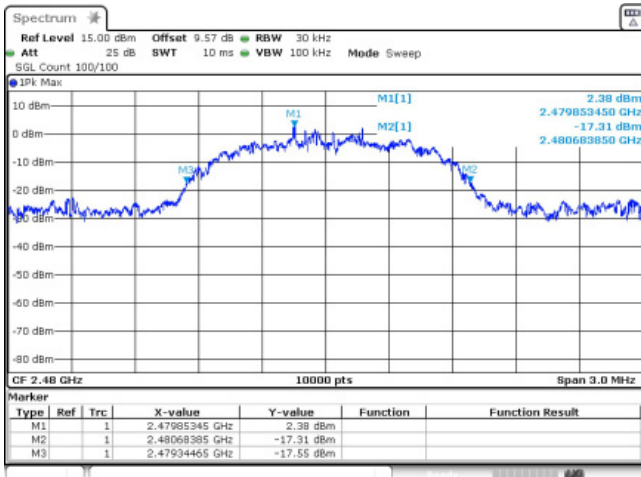
Date: 24.APR.2024 17:52:55



Date: 24.APR.2024 18:25:29

8DPSK_3-DH5_Channel 0

8DPSK_3-DH5_Channel 39



Date: 24.APR.2024 18:10:20

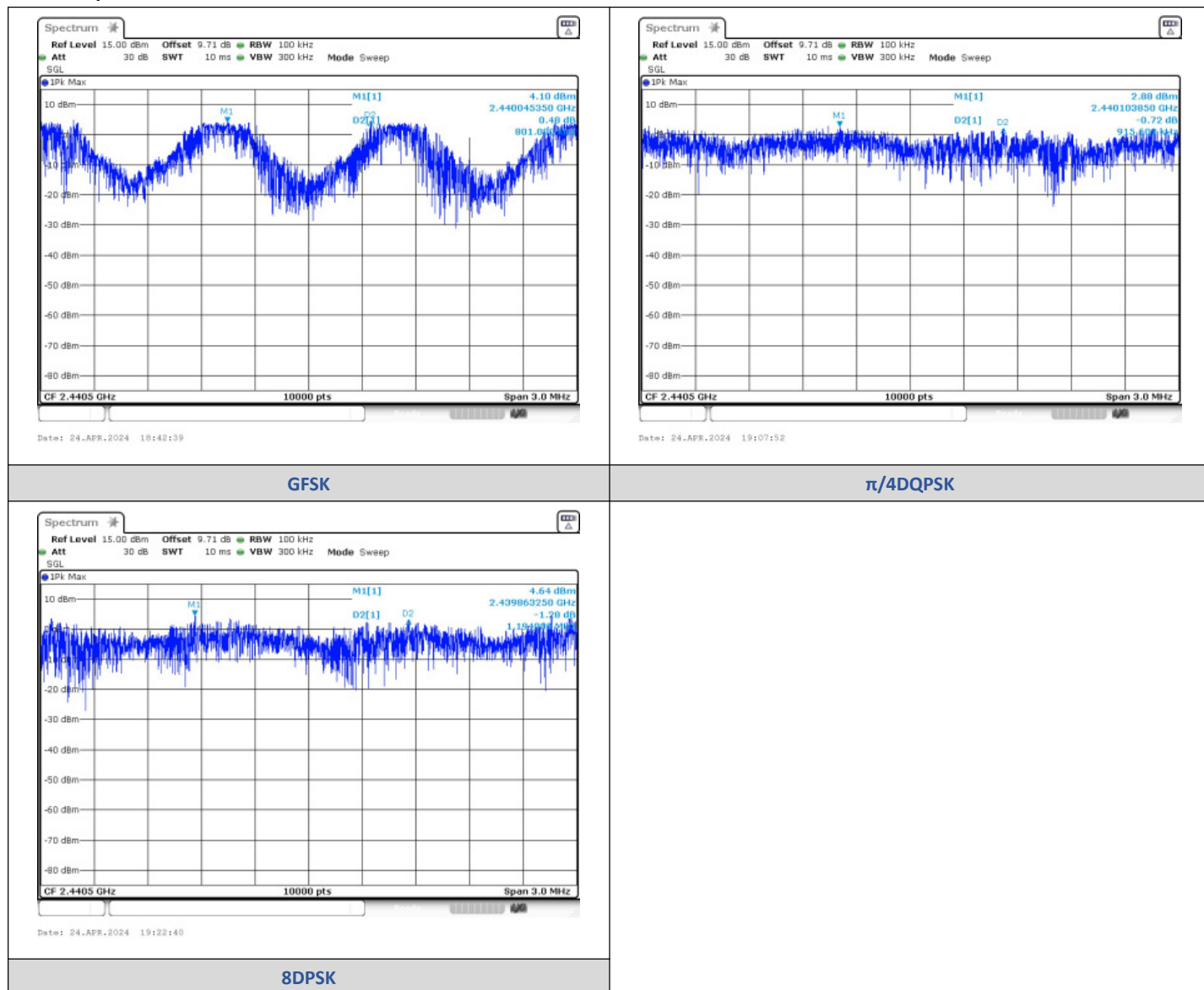
8DPSK_3-DH5_Channel 78

4) Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2440.0453	2440.8463	0.8010	0.633	PASS
$\pi/4$ DQPSK	2-DH5	2440.1038	2441.0194	0.9156	0.9	PASS
8DPSK	3-DH5	2439.8632	2441.0572	1.1940	0.893	PASS

Test Graphs



5) Conducted Out Of Band Emission

Test Result

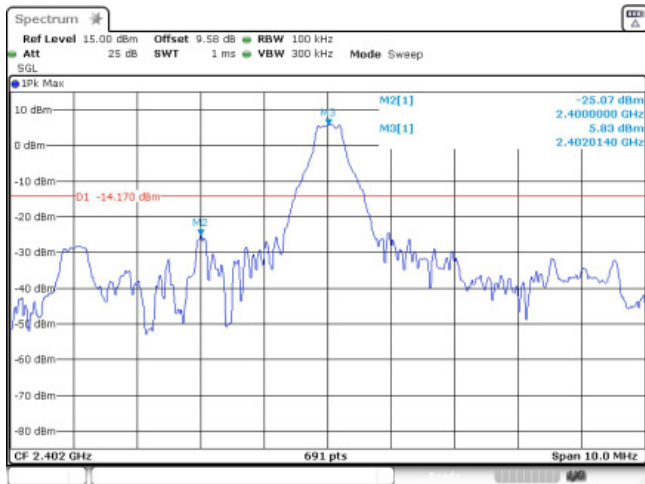
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-25.074	-14.17	-10.904	PASS
			7206.79	-25.902	-14.17	-11.732	PASS
		39	7322.49	-22.560	-15.23	-7.330	PASS
		78	2483.50	-32.598	-13.98	-18.618	PASS
			4960.33	-39.562	-13.98	-25.582	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-27.977	-14.48	-13.497	PASS
			7205.96	-23.917	-14.48	-9.437	PASS
		39	7323.32	-23.826	-17.07	-6.756	PASS
		78	2483.50	-33.099	-13.9	-19.199	PASS
			7439.85	-26.859	-13.9	-12.959	PASS
8DPSK	3-DH5	0	2400.00	-29.142	-14.72	-14.422	PASS
			2398.18	-28.782	-14.72	-14.062	PASS
			7206.00	-25.772	-14.72	-11.052	PASS
		39	7322.49	-27.407	-15.75	-11.657	PASS
		78	2483.50	-32.552	-14.58	-17.972	PASS
			7440.68	-25.837	-14.58	-11.257	PASS

Hopping

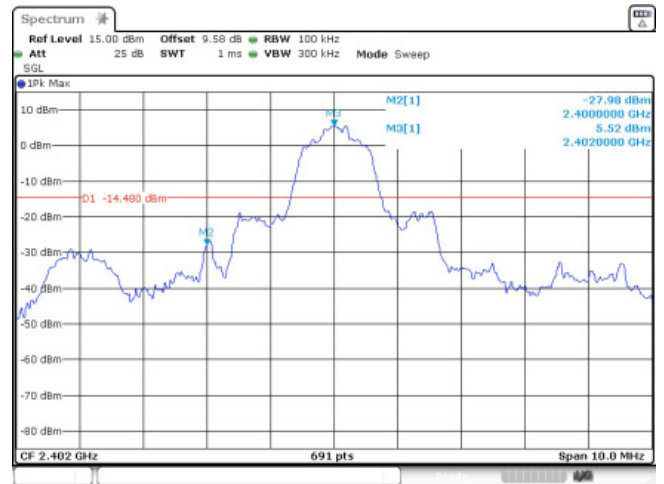
Hopping								
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result	
GFSK	DH5	Hopping	2400.00	-27.266	-14.47	-12.796	PASS	
			2483.50	-33.341	-14.21	-19.131	PASS	
			2397.97	-29.129	-14.42	-14.709	PASS	
			2400.00	-29.537	-14.42	-15.117	PASS	
			2483.50	-33.854	-14.12	-19.734	PASS	
$\pi/4$ DQPSK	2-DH5		2397.86	-28.960	-14.4	-14.560	PASS	
			2400.00	-29.304	-14.4	-14.904	PASS	
			2483.50	-35.452	-15.18	-20.272	PASS	
			2398.18	-29.641	-15.01	-14.631	PASS	
			2400.00	-29.644	-15.01	-14.634	PASS	
8DPSK	3-DH5		2483.50	-35.994	-16.81	-19.184	PASS	
			2400.00	-29.289	-15.14	-14.149	PASS	
			2483.50	-38.077	-15.54	-22.537	PASS	
			2398.87	-29.500	-15.19	-14.310	PASS	
			2400.00	-29.770	-15.19	-14.580	PASS	
				2483.50	-37.538	-14.05	-23.488	PASS

Test Graphs



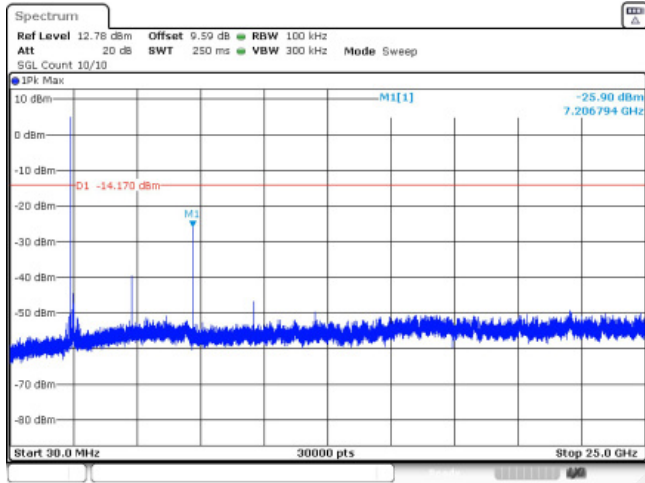
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Out Of Band Emission
GFSK_DH5_Channel 0



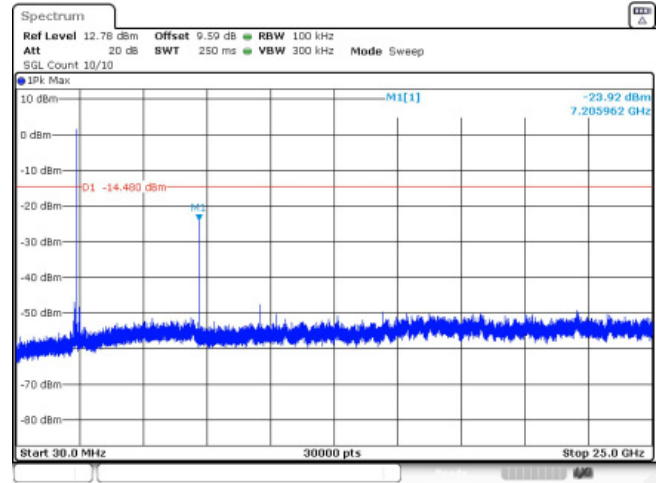
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Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0



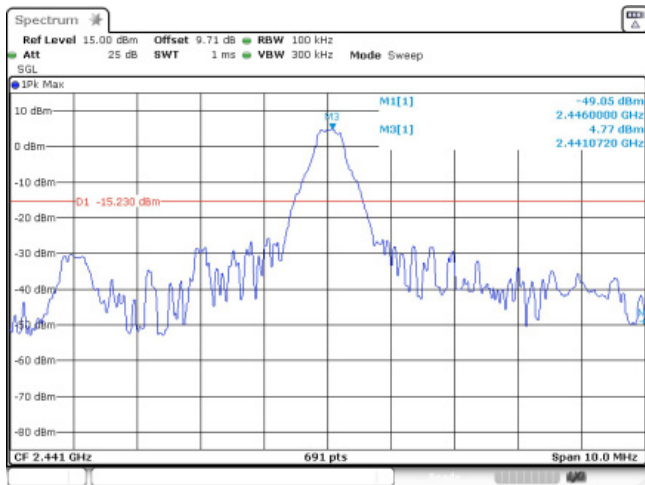
Date: 24.APR.2024 16:38:33

Spurious Emission
GFSK_DH5_Channel 0



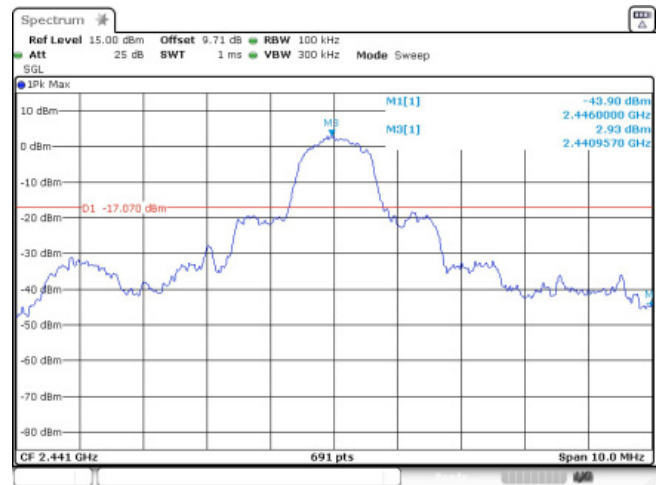
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Spurious Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0



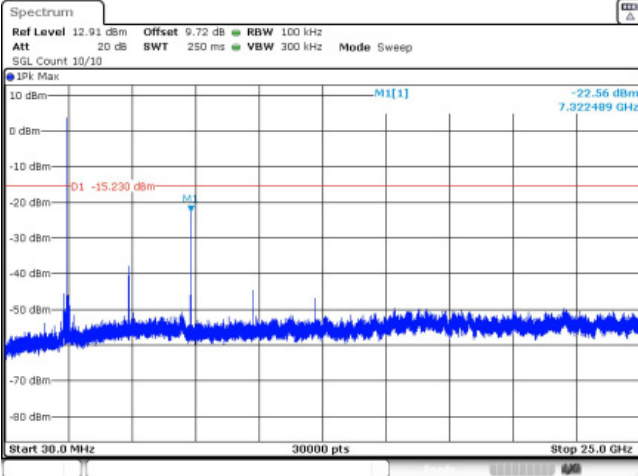
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Out Of Band Emission
GFSK_DH5_Channel 39



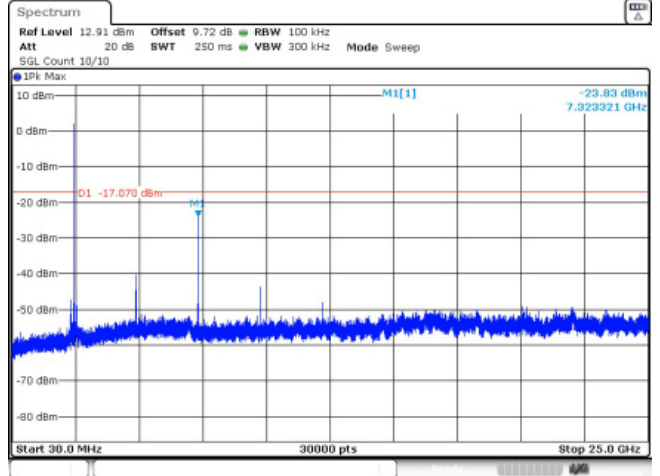
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Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



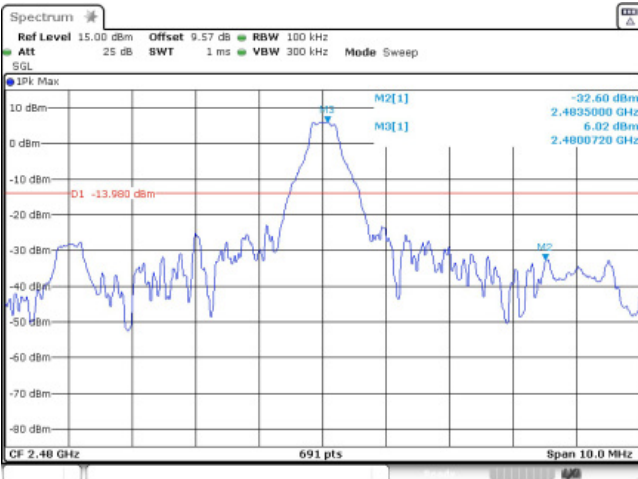
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Spurious Emissions
GFSK_DH5_Channel 39



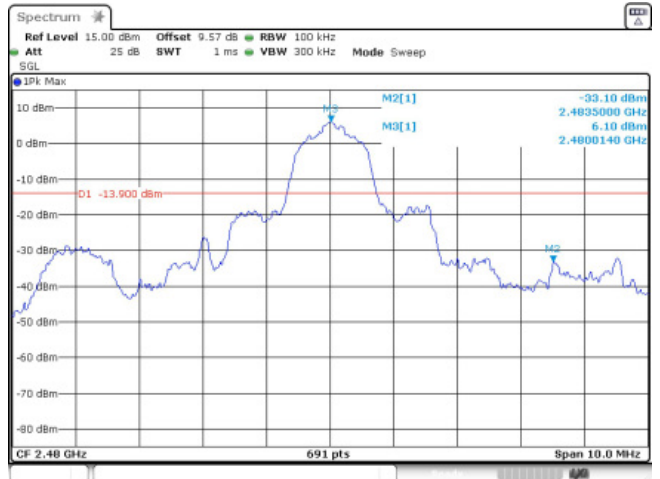
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Spurious Emissions
 $\pi/4$ QPSK_2-DH5_Channel 39



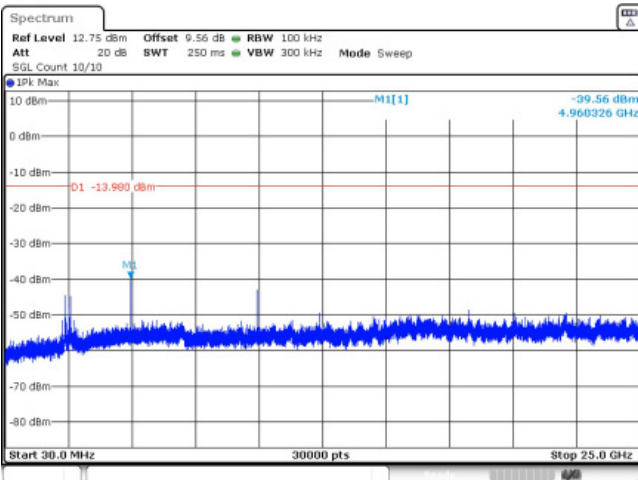
Date: 24.APR.2024 16:56:42

Out Of Band Emission
GFSK_DH5_Channel 78



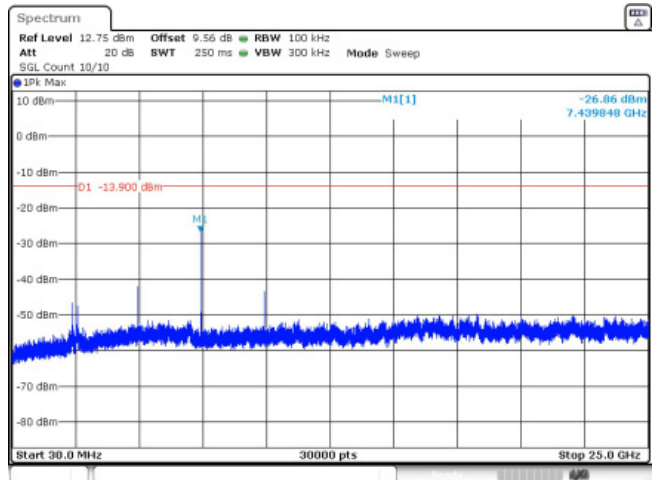
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Out Of Band Emission
 $\pi/4$ QPSK_2-DH5_Channel 78



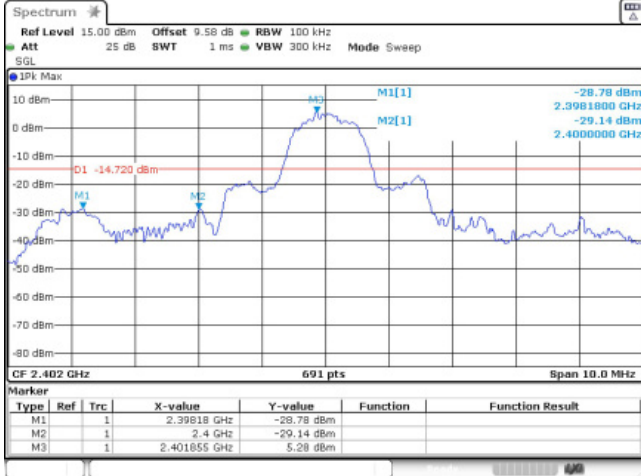
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Spurious Emission
GFSK_DH5_Channel 78



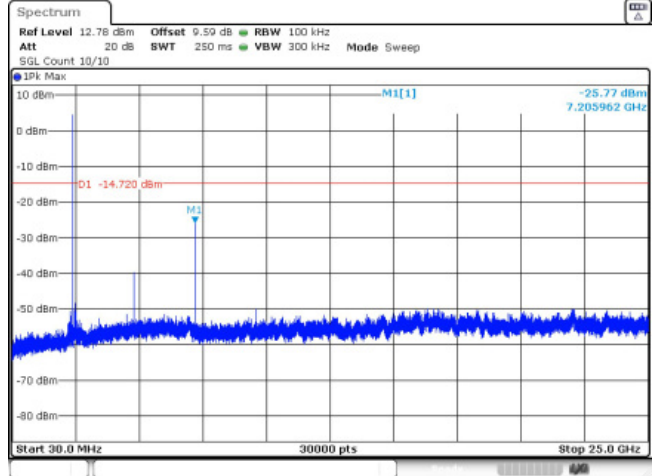
Date: 24.APR.2024 17:28:33

Spurious Emission
 $\pi/4$ QPSK_2-DH5_Channel 78



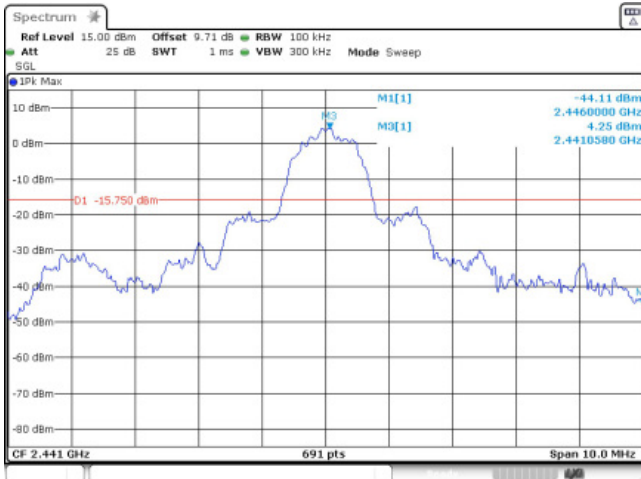
Date: 24.APR.2024 17:53:25

Out Of Band Emission
8DPSK_3-DH5_Channel 0



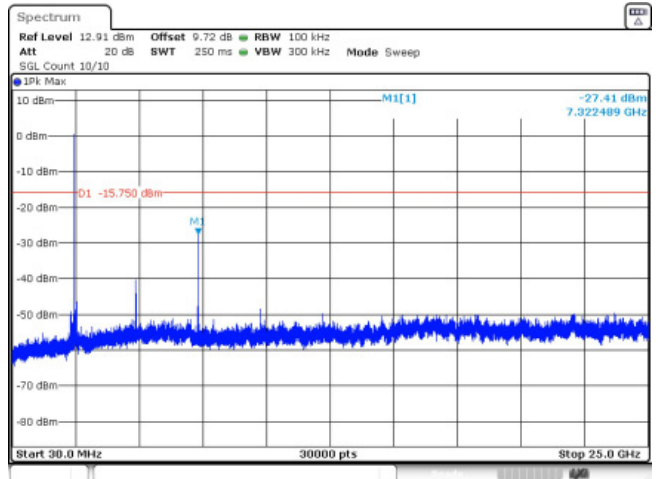
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Spurious Emission
8DPSK_3-DH5_Channel 0



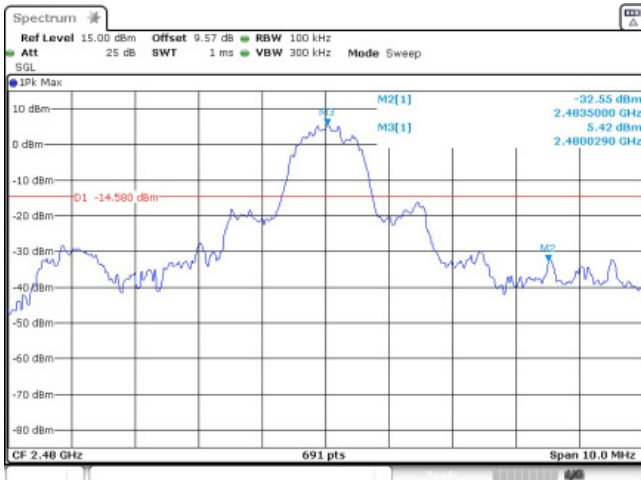
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Out Of Band Emission
8DPSK_3-DH5_Channel 39



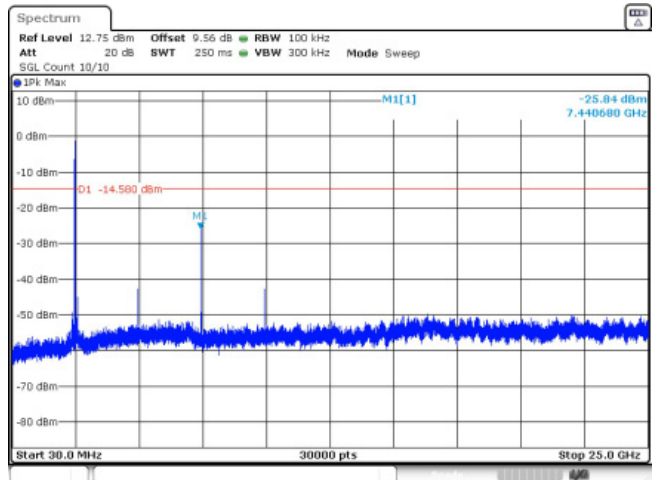
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Spurious Emissions
8DPSK_3-DH5_Channel 39



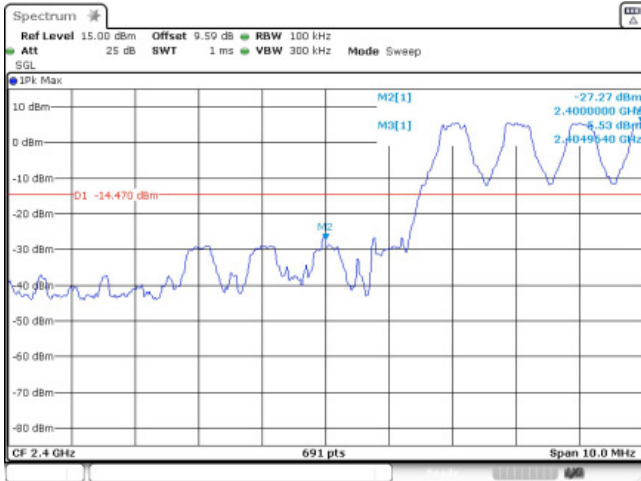
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Out Of Band Emission
8DPSK_3-DH5_Channel 78



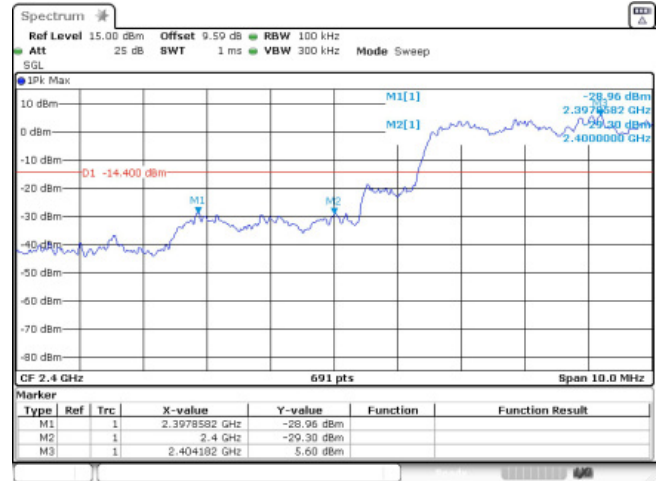
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Spurious Emission
8DPSK_3-DH5_Channel 78



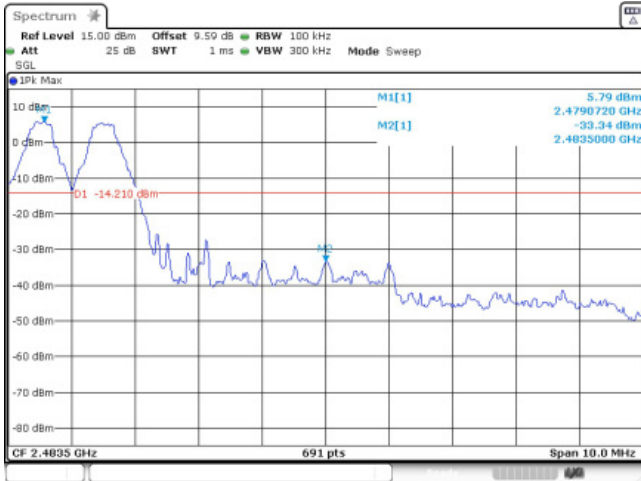
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Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



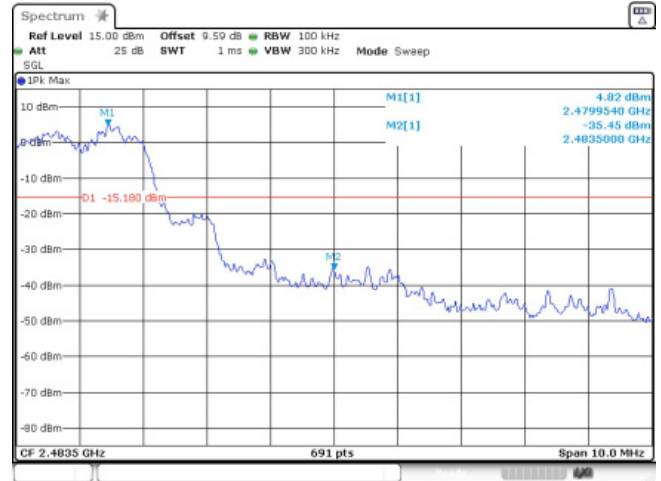
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Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



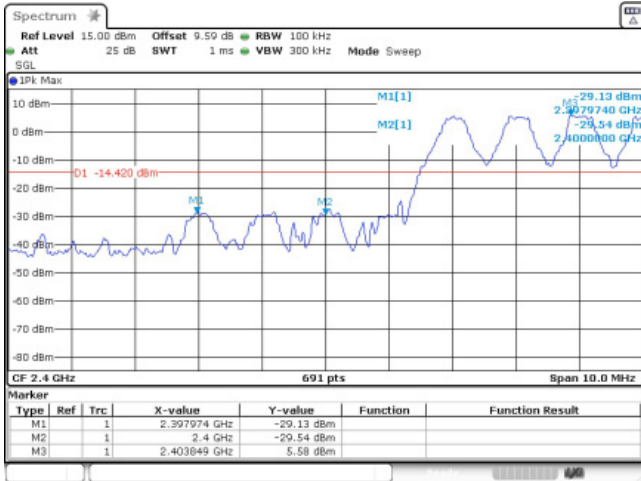
Date: 24.APR.2024 18:56:23

Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



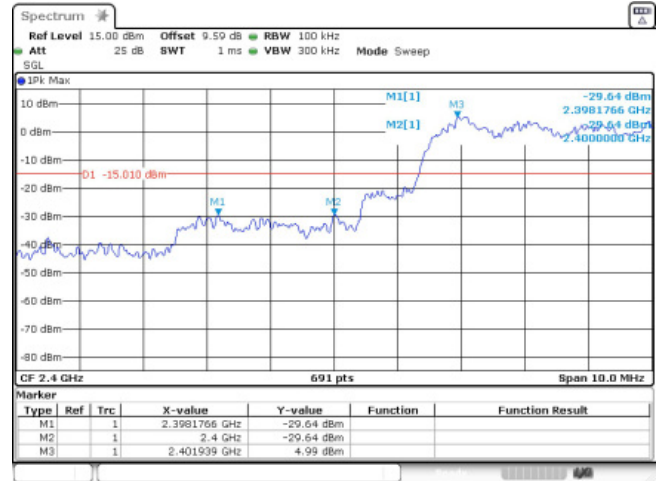
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Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



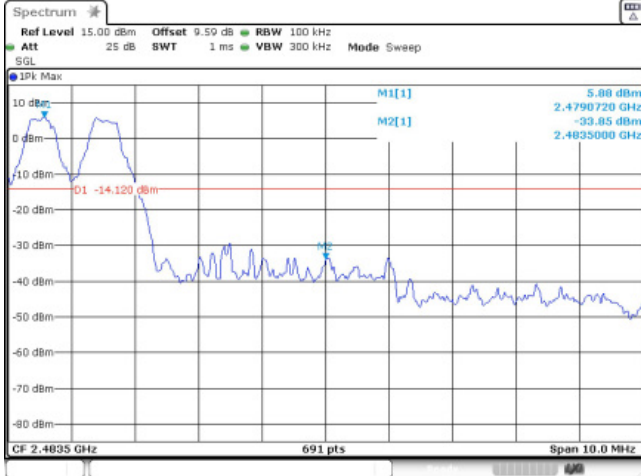
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Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



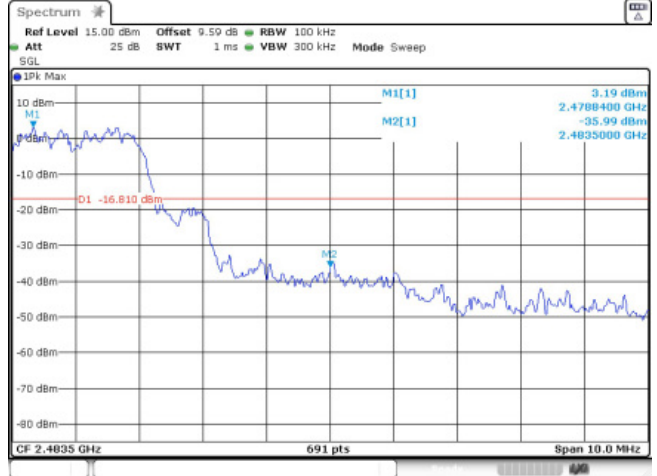
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Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



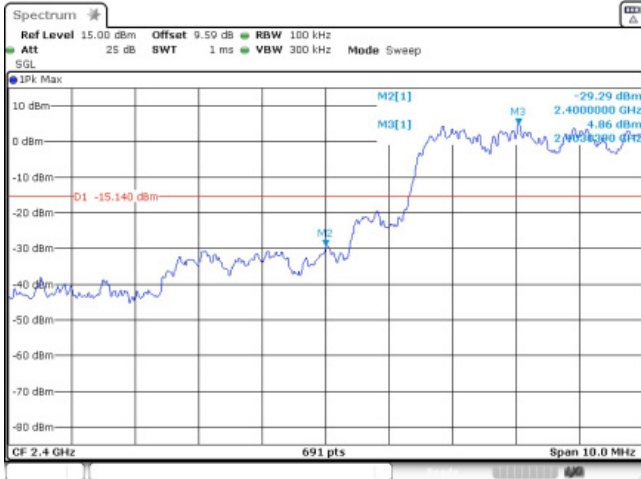
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Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



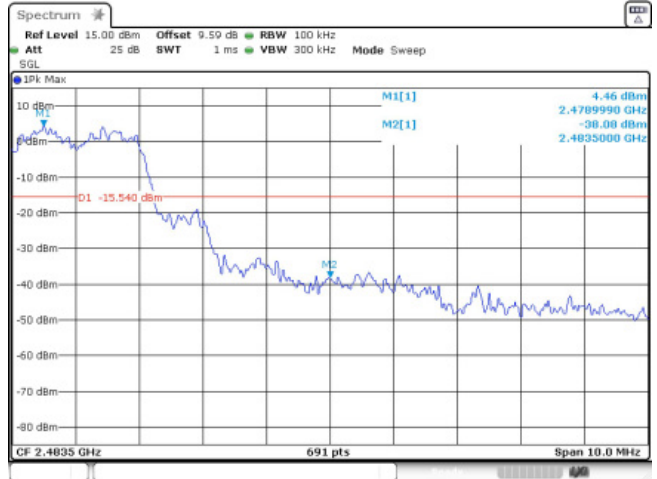
Date: 24.APR.2024 19:21:41

Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



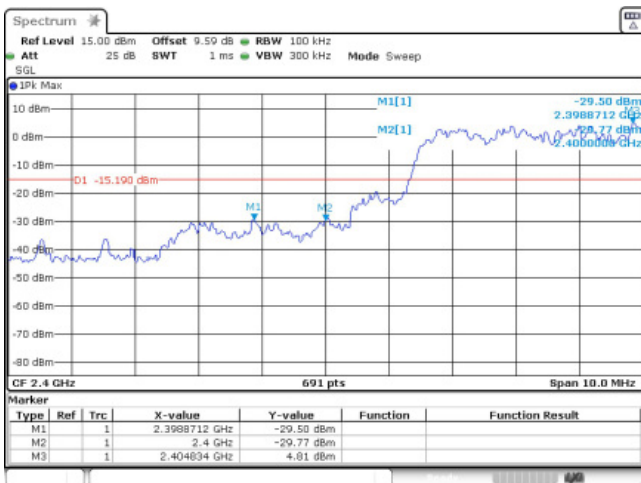
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Out Of Band Emission(Left)
8DPSK_3-DH5_Channel Hopping

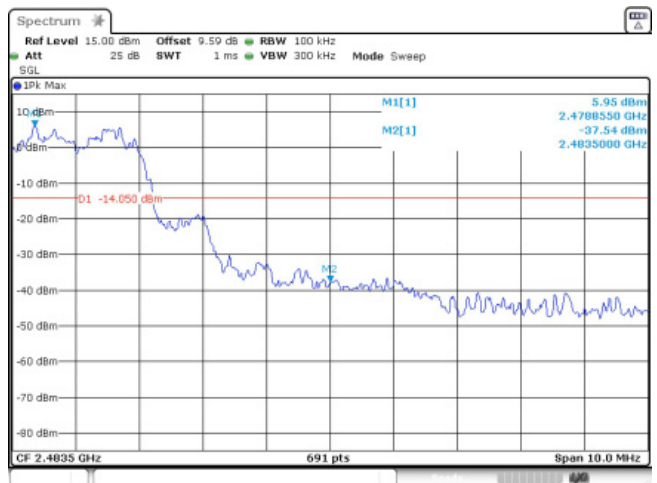


Date: 24.APR.2024 19:29:40

Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping



Out Of Band Emission(Left)
8DPSK_3-DH5_Channel Hopping



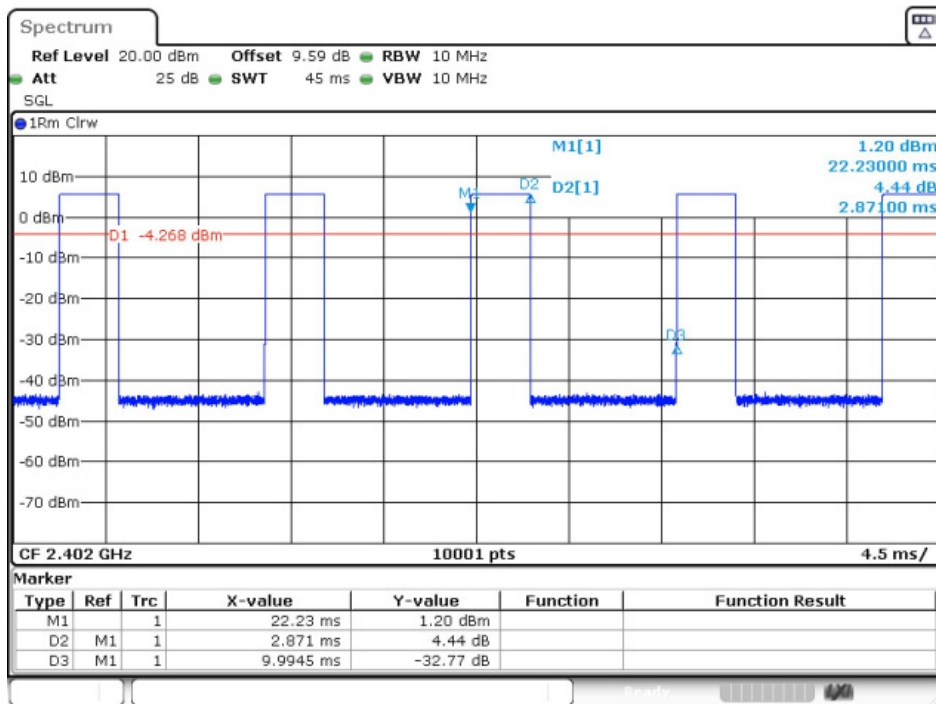
Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping

6) Duty Cycle

Test Result

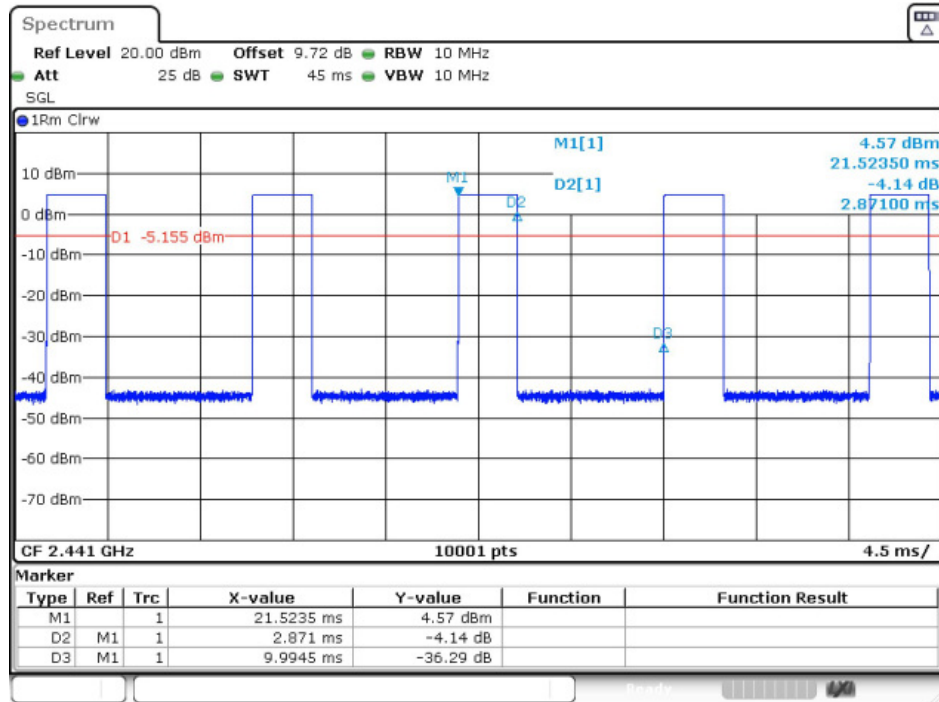
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.871	9.994	28.73	0.2873	5.4166	0.35
		39	2.871	9.994	28.73	0.2873	5.4166	0.35
		78	2.871	9.995	28.73	0.2873	5.4166	0.35
$\pi/4$ DQPSK	2-DH5	0	2.875	9.995	28.77	0.2877	5.4106	0.35
		39	2.875	9.994	28.77	0.2877	5.4106	0.35
		78	2.875	9.995	28.77	0.2877	5.4106	0.35
8DPSK	3-DH5	0	2.889	9.997	28.90	0.2890	5.391	0.35
		39	2.889	9.995	28.91	0.2891	5.3895	0.35
		78	2.889	9.994	28.91	0.2891	5.3895	0.35

Test Graphs



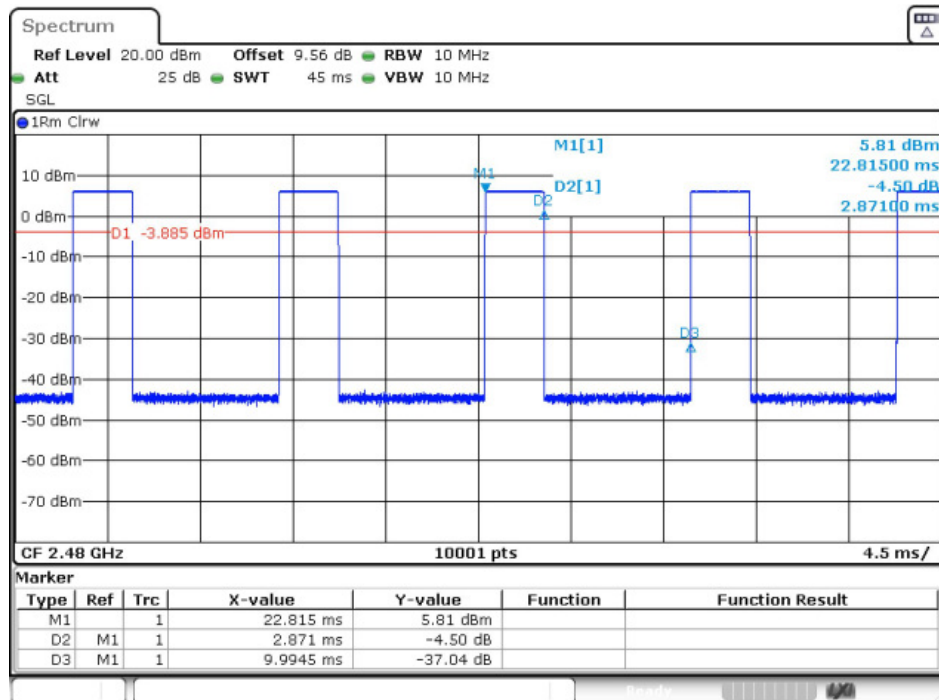
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GFSK(DH5)_Channel 0



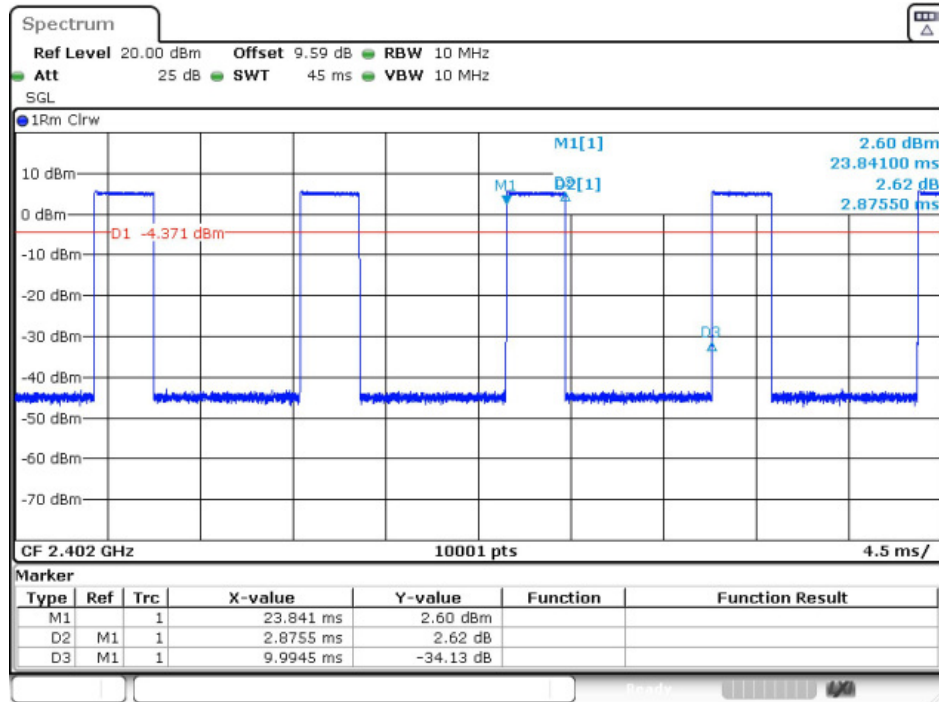
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GFSK(DH5)_Channel 39



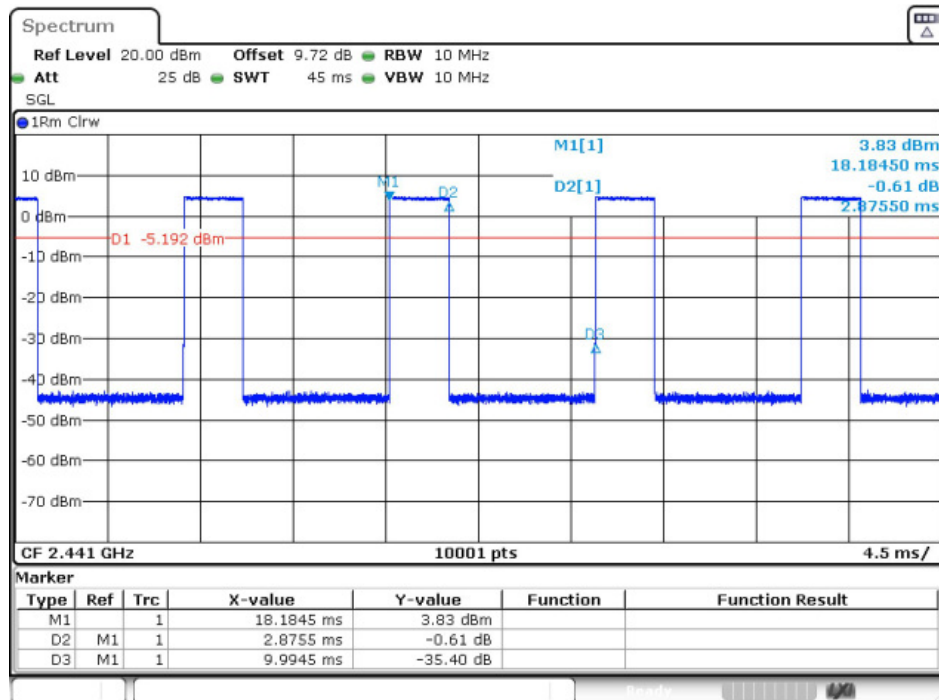
Date: 24.APR.2024 16:55:42

GFSK(DH5)_Channel 78



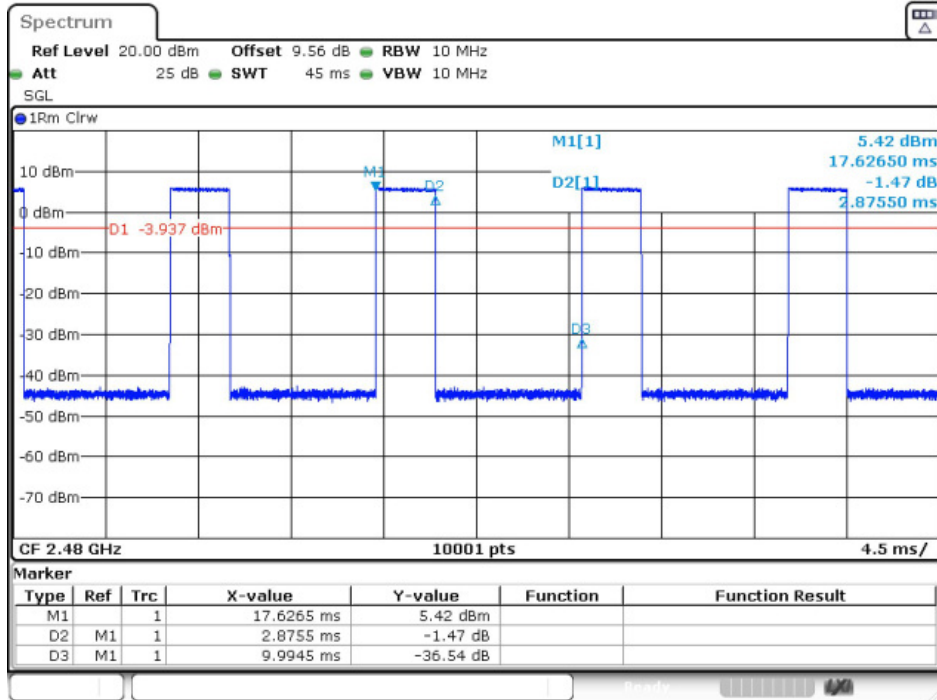
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$\pi/4$ QPSK(2-DH5)_Channel 0



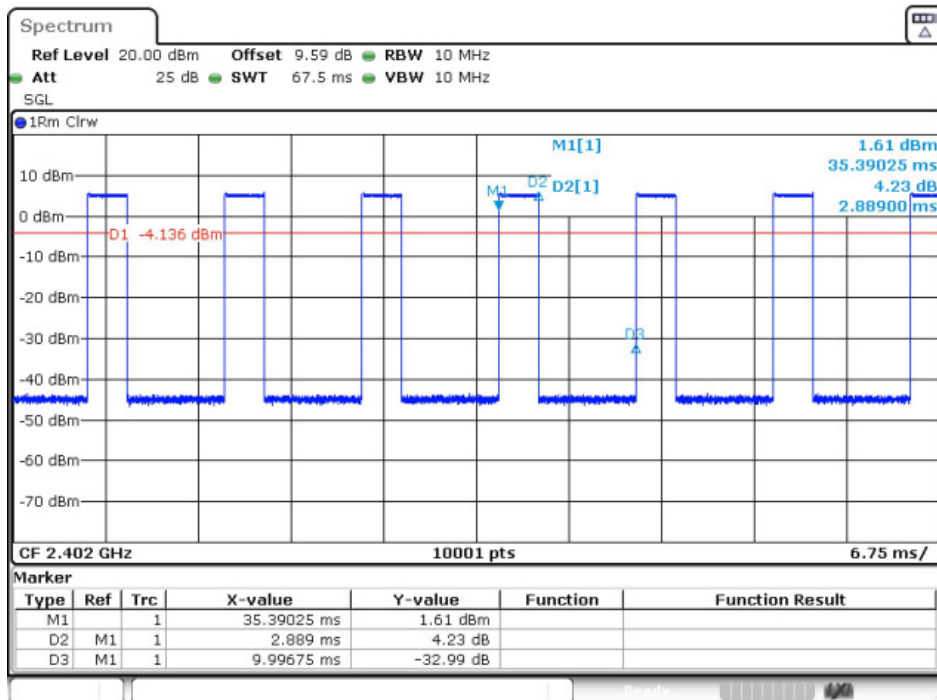
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$\pi/4$ QPSK(2-DH5)_Channel 39



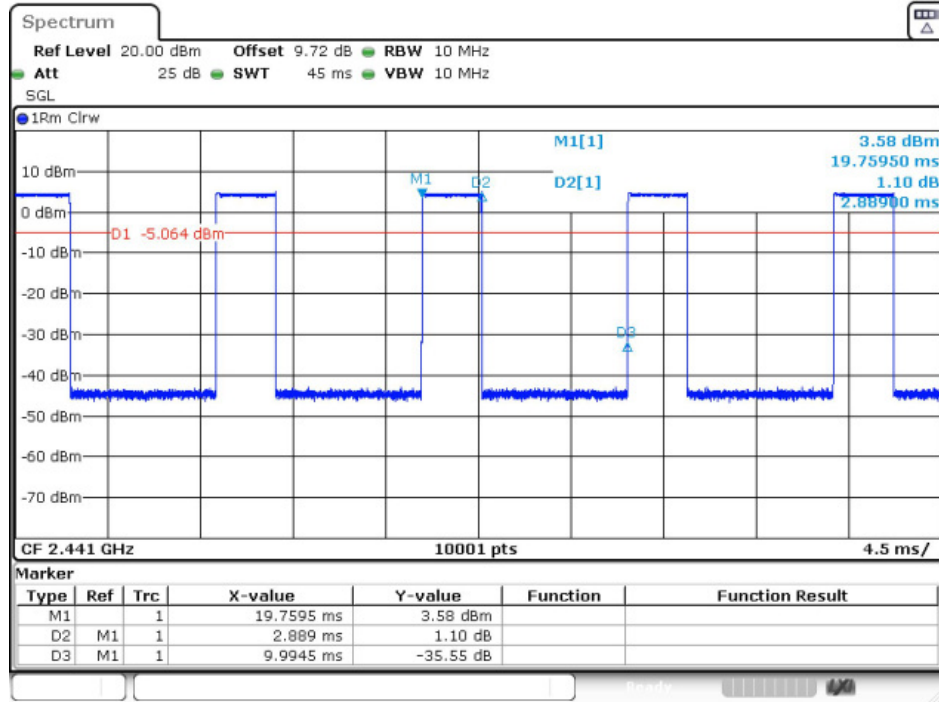
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$\pi/4$ DQPSK(2-DH5)_Channel 78



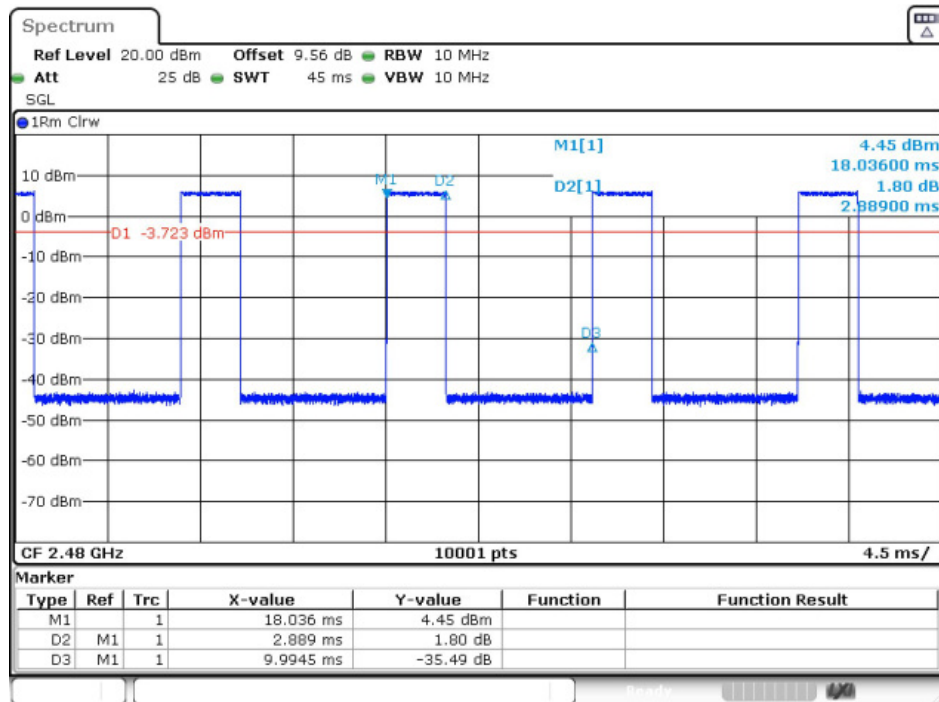
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8DPSK(3-DH5)_Channel 0



Date: 24.APR.2024 18:24:59

8DPSK(3-DH5)_Channel 39



Date: 24.APR.2024 18:09:50

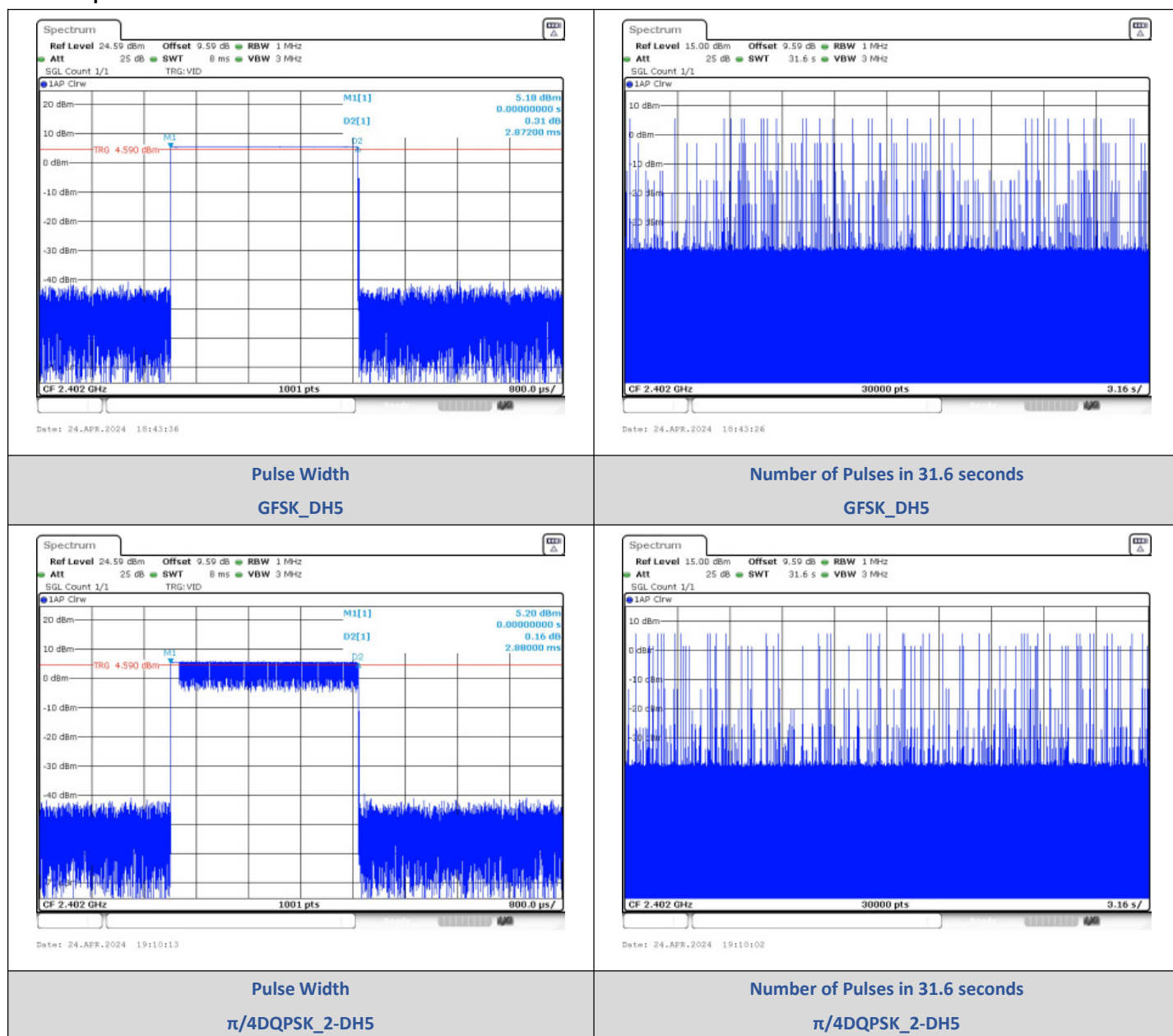
8DPSK(3-DH5)_Channel 78

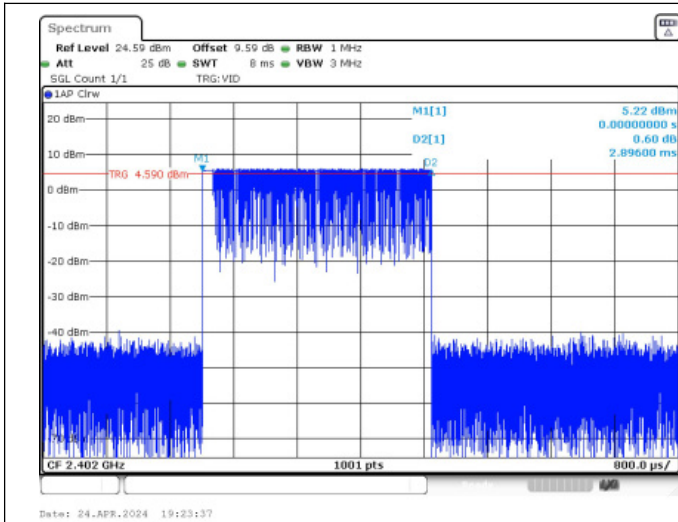
7) Dwell Time

Test Result

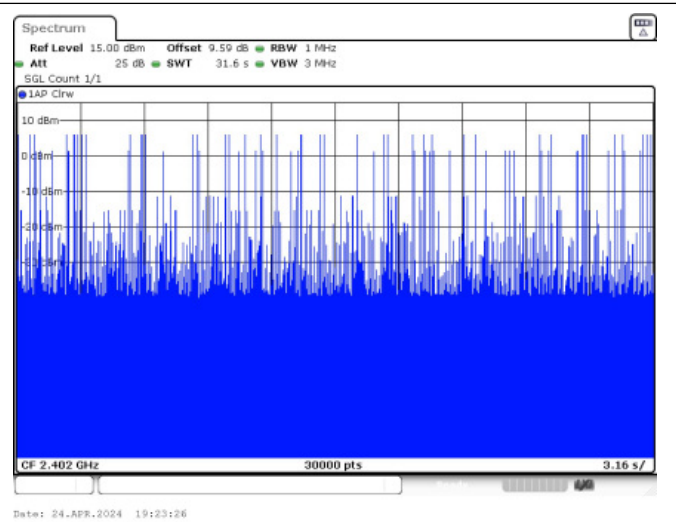
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.872	34	97.65	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.880	41	118.08		PASS
8DPSK	3-DH5		2.896	42	121.63		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



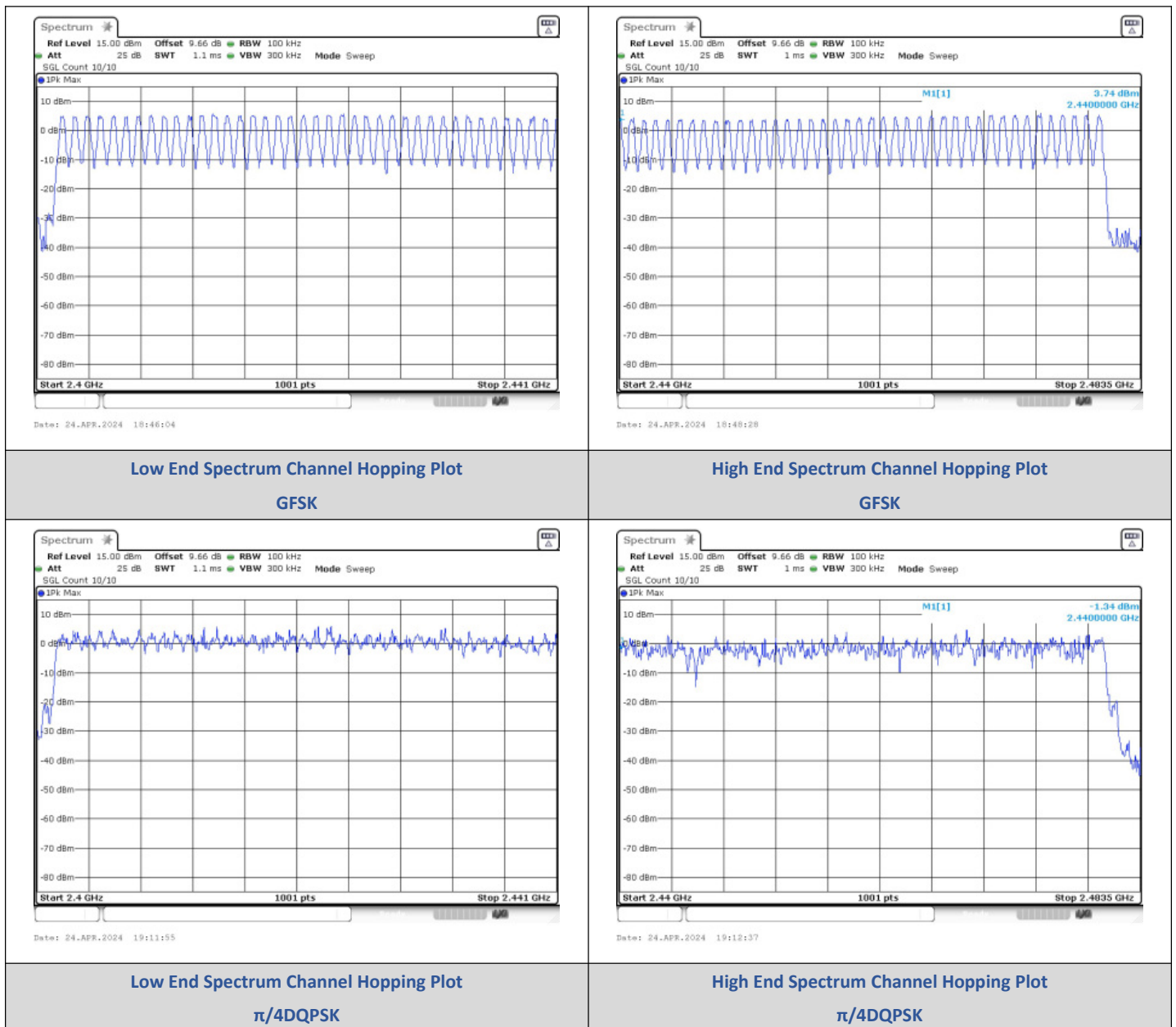
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

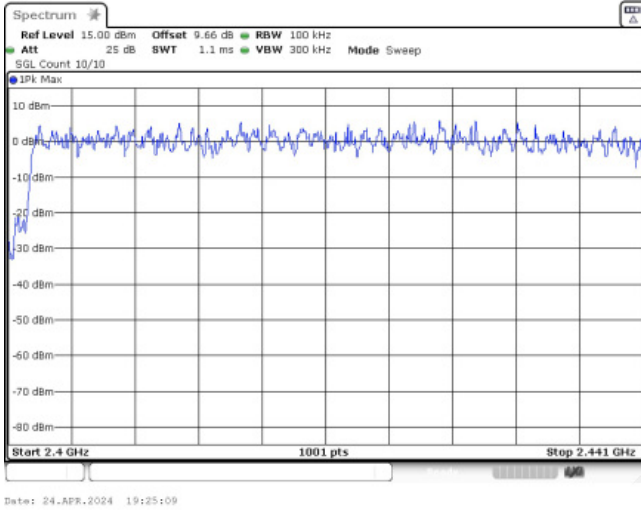
8) Number Of Hopping Channel

Test Result

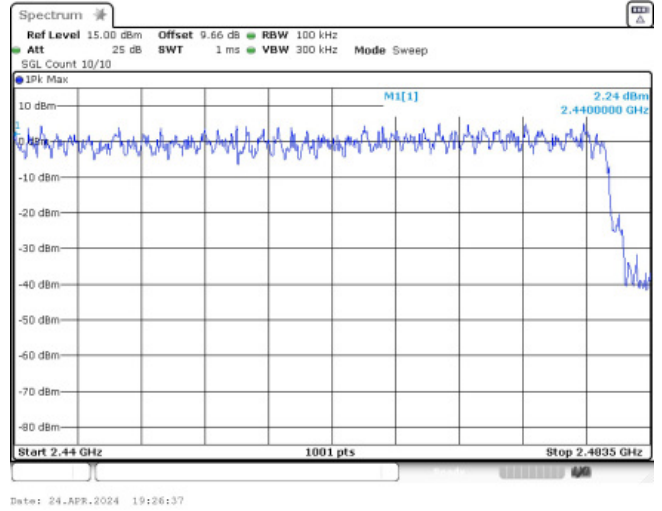
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



High End Spectrum Channel Hopping Plot
8DPSK