

Appendix A

Report No.:	CISRR240108027
FCC ID:	2BEN6-F-SL001A
Product Name:	wireless headset
Model No.:	F-SL001A
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

1) Conducted Peak Output Power

Test Result

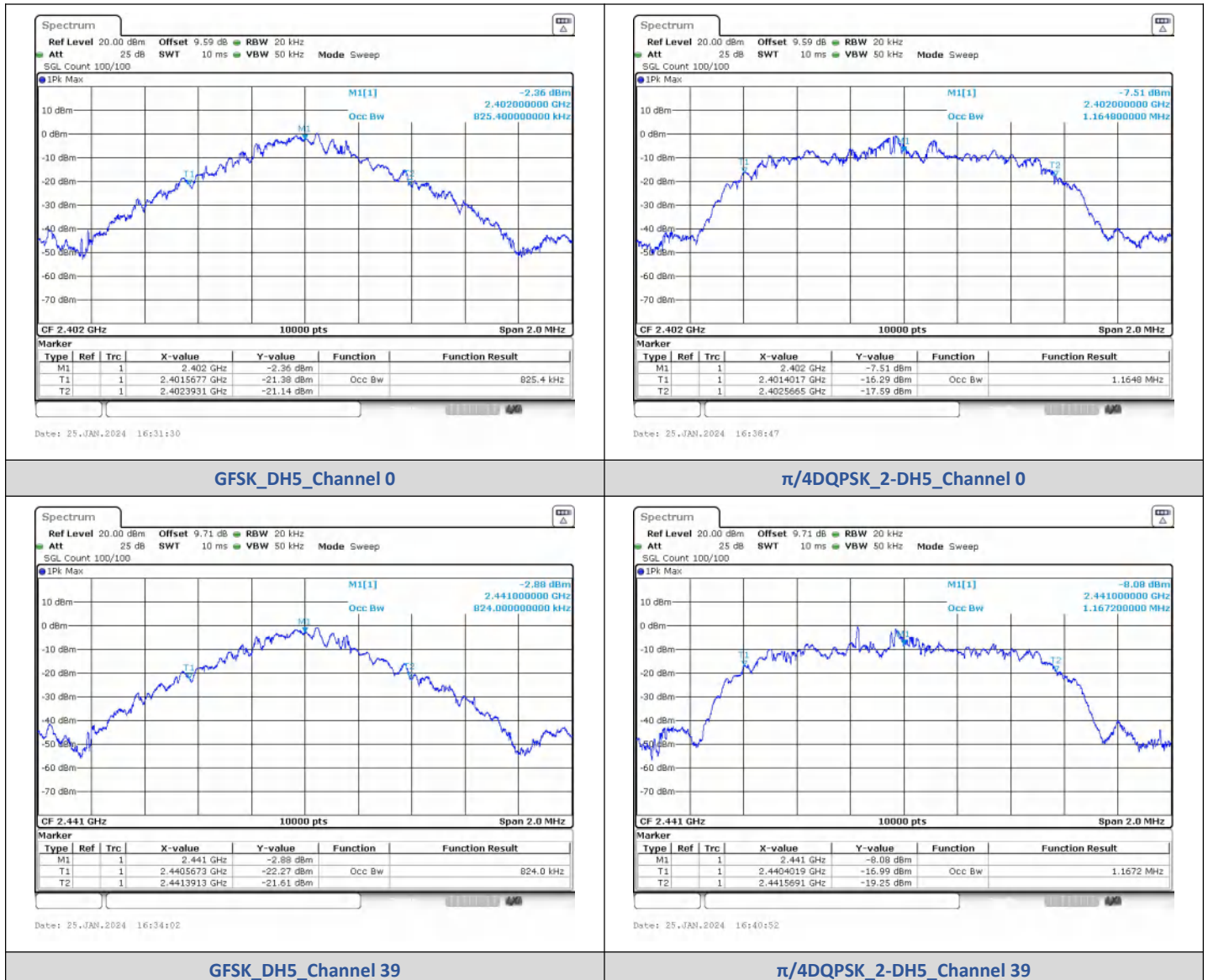
Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	3.791	2.394	30	PASS
		39	3.002	1.996		PASS
		78	2.555	1.801		PASS
$\pi/4$ DQPSK	2-DH5	0	4.410	2.761	20.97	PASS
		39	3.735	2.363		PASS
		78	3.245	2.111		PASS
8DPSK	3-DH5	0	4.956	3.130		PASS
		39	4.242	2.656		PASS
		78	3.782	2.389		PASS

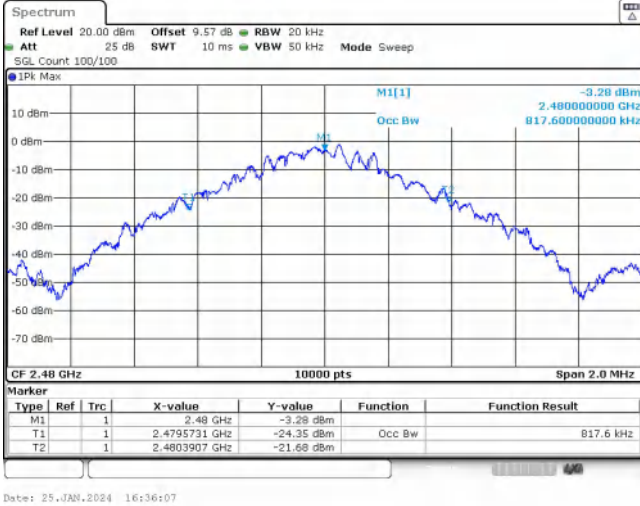
2) 99% Bandwidth

Test Result

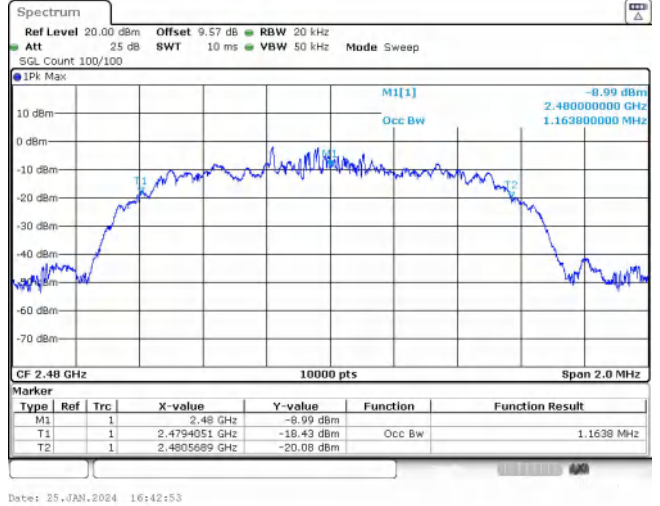
Modulation	Channel	99% BW (MHz)
GFSK	0	0.82540
	39	0.82400
	78	0.81760
$\pi/4$ DQPSK	0	1.1650
	39	1.1670
	78	1.1640
8DPSK	0	1.1810
	39	1.1710
	78	1.1700

Test Graphs

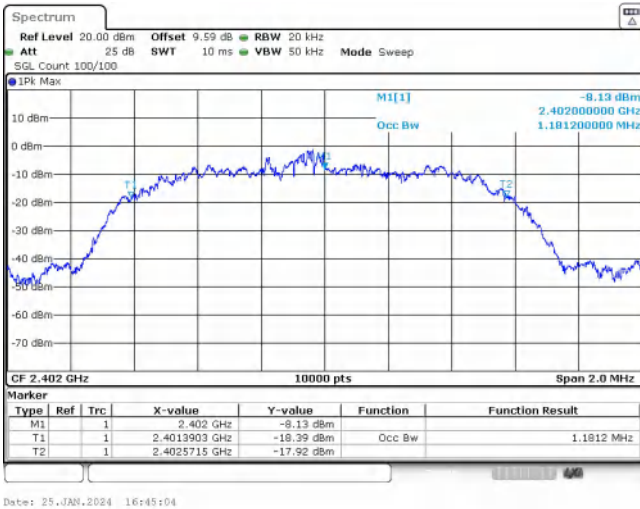




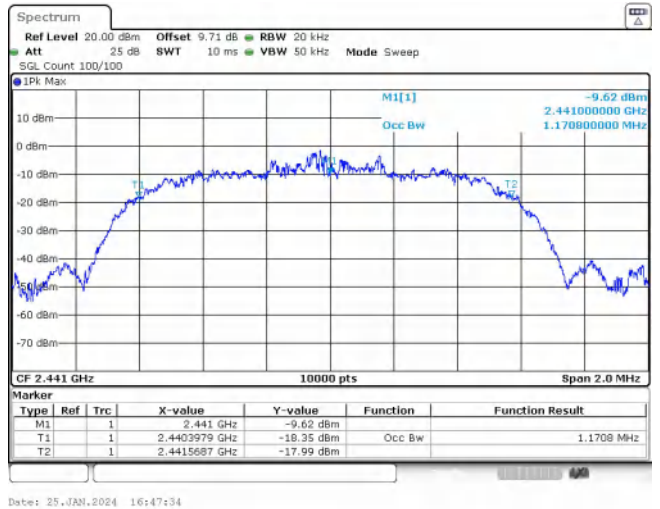
GFSK_DH5_Channel 78



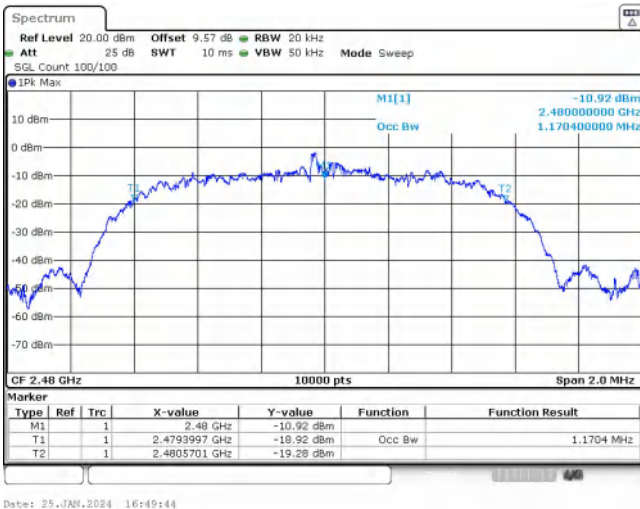
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



8DPSK_3-DH5_Channel 78

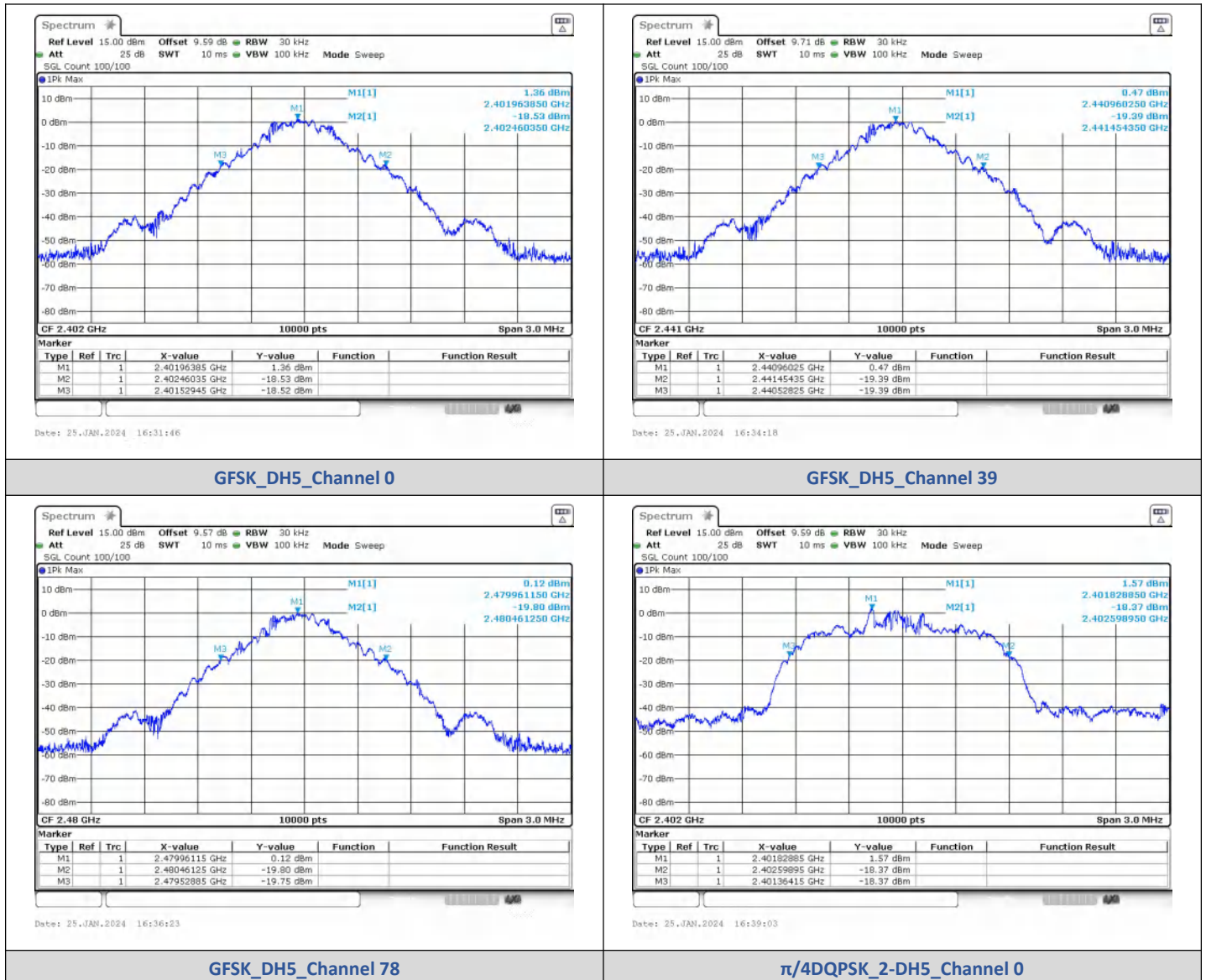
Void

3) 20dB Bandwidth

Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9300
	39	2441 MHz	0.9200
	78	2480 MHz	0.9300
$\pi/4$ DQPSK	0	2402 MHz	1.240
	39	2441 MHz	1.230
	78	2480 MHz	1.240
8DPSK	0	2402 MHz	1.260
	39	2441 MHz	1.260
	78	2480 MHz	1.250

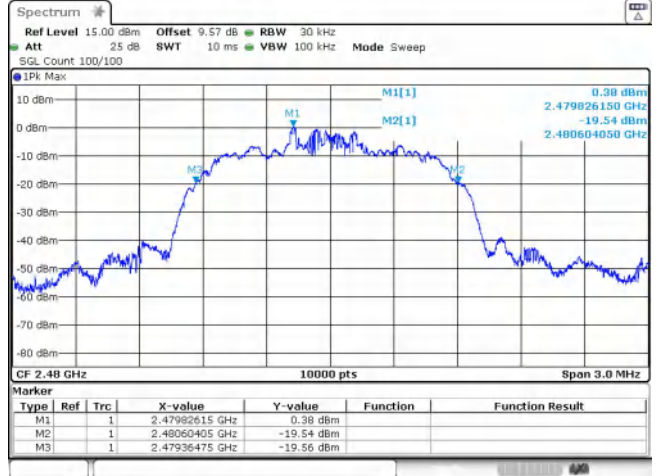
Test Graphs





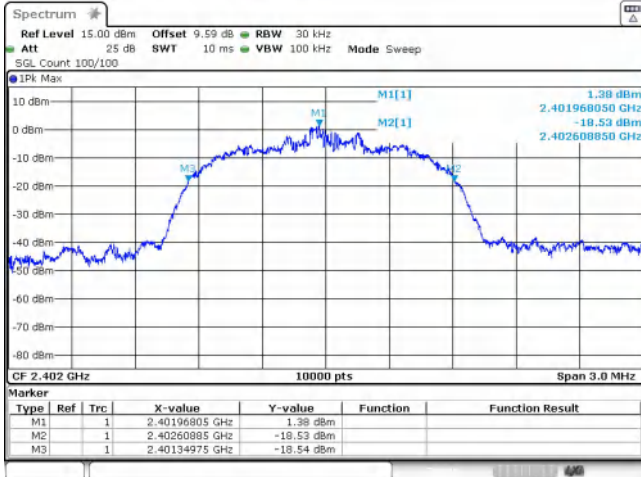
Date: 25.JAN.2024 16:41:08

$\pi/4$ DQPSK_2-DH5_Channel 39



Date: 25.JAN.2024 16:43:09

$\pi/4$ DQPSK_2-DH5_Channel 78



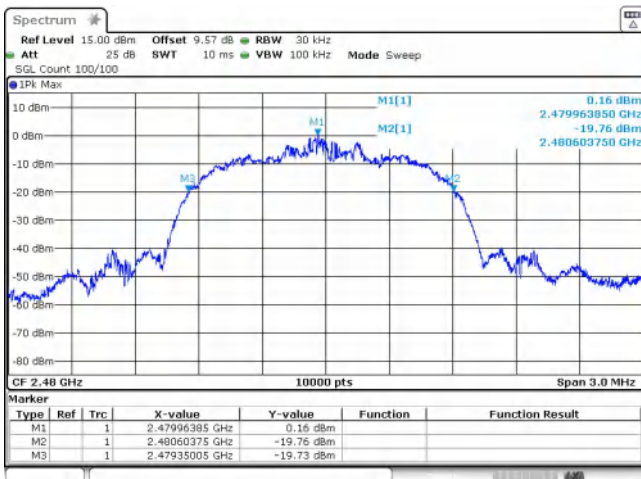
Date: 25.JAN.2024 16:45:20

8DPSK_3-DH5_Channel 0



Date: 25.JAN.2024 16:47:56

8DPSK_3-DH5_Channel 39



Date: 25.JAN.2024 16:50:00

8DPSK_3-DH5_Channel 78

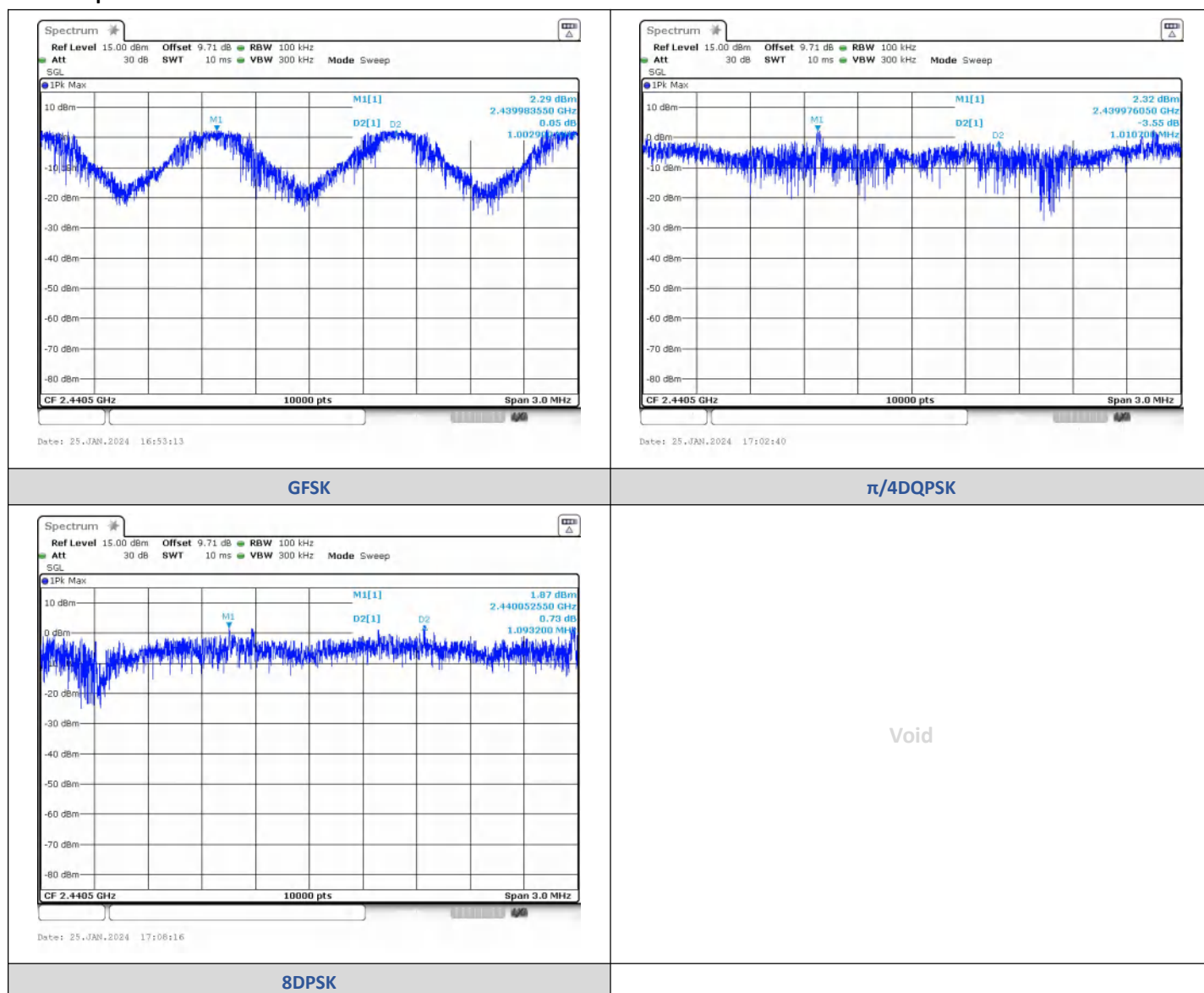
Void

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	2439.9835	2440.9864	1.0029	0.62	PASS
$\pi/4$ DQPSK	2-DH5	2439.9761	2440.9868	1.0107	0.827	PASS
8DPSK	3-DH5	2440.0525	2441.1458	1.0932	0.84	PASS

Test Graphs



5) Conducted Out Of Band Emission

Test Result

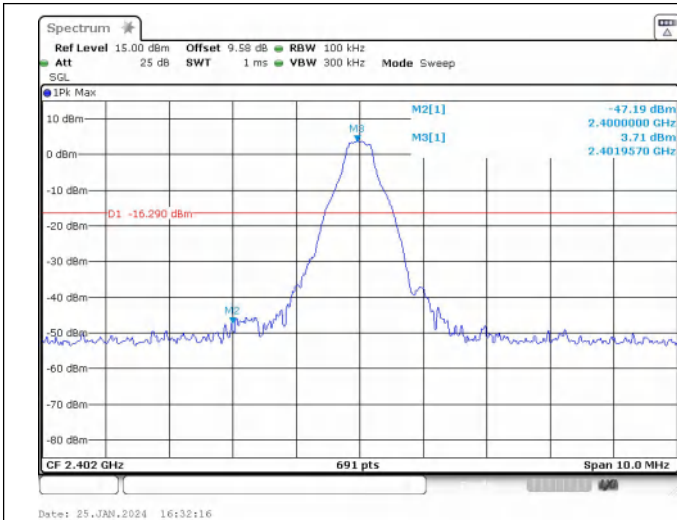
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-47.193	-16.29	-30.903	PASS
			7205.13	-44.070	-16.29	-27.780	PASS
		39	4882.09	-47.929	-17.21	-30.719	PASS
		78	2483.50	-52.532	-17.52	-35.012	PASS
			4959.49	-47.656	-17.52	-30.136	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-50.219	-16.49	-33.729	PASS
			7205.13	-40.630	-16.49	-24.140	PASS
		39	9763.72	-48.372	-17.09	-31.282	PASS
		78	2483.50	-52.728	-18.02	-34.709	PASS
			9920.20	-49.381	-18.02	-31.361	PASS
8DPSK	3-DH5	0	2400.00	-48.147	-16.41	-31.737	PASS
			9608.08	-47.162	-16.41	-30.752	PASS
		39	9763.72	-48.444	-17.28	-31.164	PASS
		78	2483.50	-52.624	-17.84	-34.784	PASS
			4960.33	-45.639	-17.84	-27.799	PASS

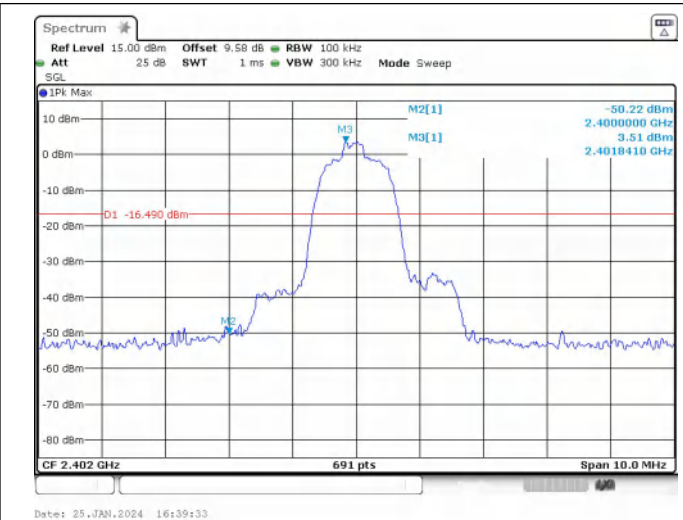
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2398.94	-47.297	-16.67	-30.627	PASS
			2400.00	-47.793	-16.67	-31.123	PASS
			2483.50	-52.062	-17.89	-34.172	PASS
			2395.04	-46.861	-16.51	-30.351	PASS
			2400.00	-49.425	-16.51	-32.915	PASS
			2483.50	-52.931	-17.81	-35.121	PASS
$\pi/4$ DQPSK	2-DH5		2396.82	-49.300	-17.17	-32.130	PASS
			2400.00	-49.471	-17.17	-32.301	PASS
			2483.50	-51.329	-18.29	-33.039	PASS
			2397.57	-49.749	-16.42	-33.329	PASS
			2400.00	-50.713	-16.42	-34.293	PASS
			2483.50	-52.171	-18.08	-34.091	PASS
8DPSK	3-DH5		2396.86	-47.719	-16.67	-31.049	PASS
			2400.00	-51.101	-16.67	-34.431	PASS
			2483.50	-51.842	-18.38	-33.462	PASS
			2397.00	-48.007	-19.79	-28.217	PASS
			2400.00	-52.868	-19.79	-33.078	PASS
			2483.50	-53.074	-18.25	-34.824	PASS

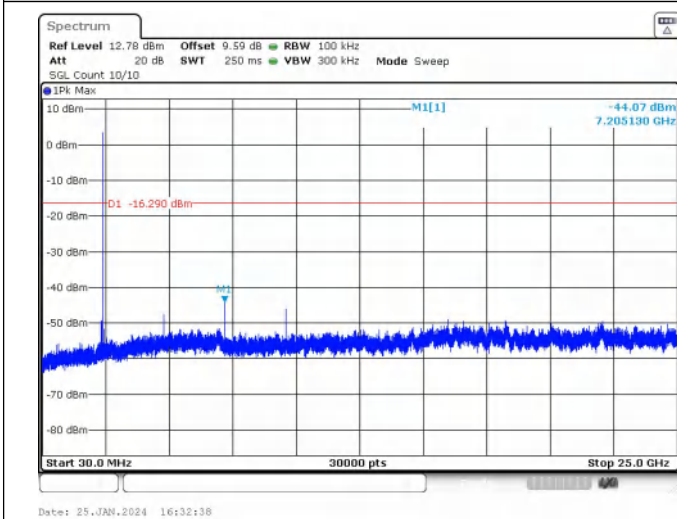
Test Graphs



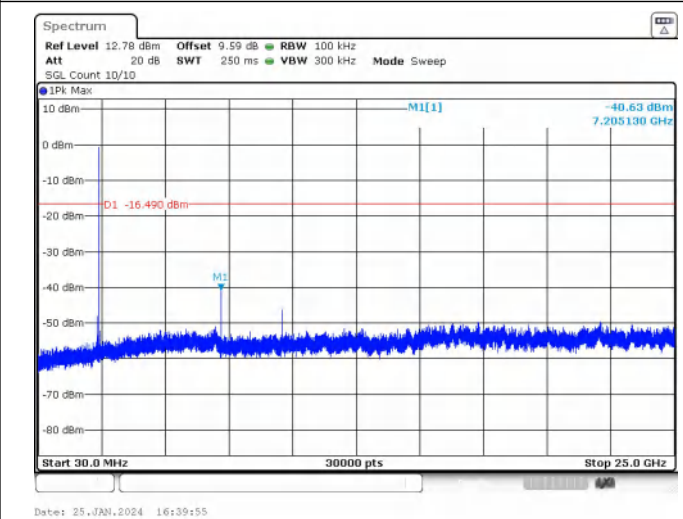
Out Of Band Emission
GFSK_DH5_Channel 0



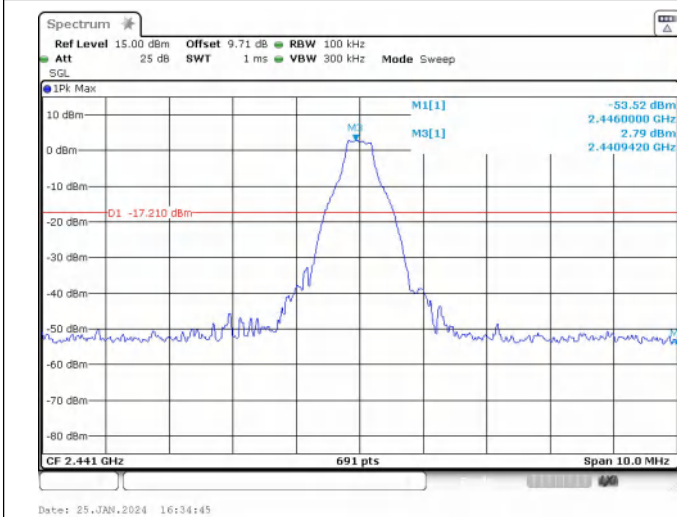
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 0



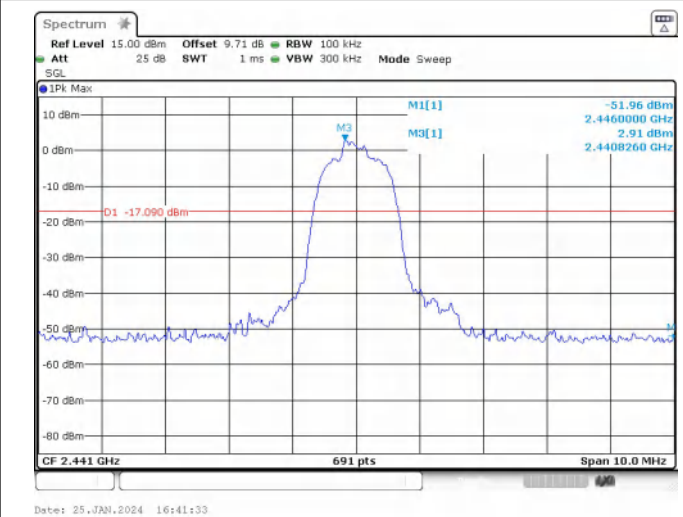
Spurious Emission
GFSK_DH5_Channel 0



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

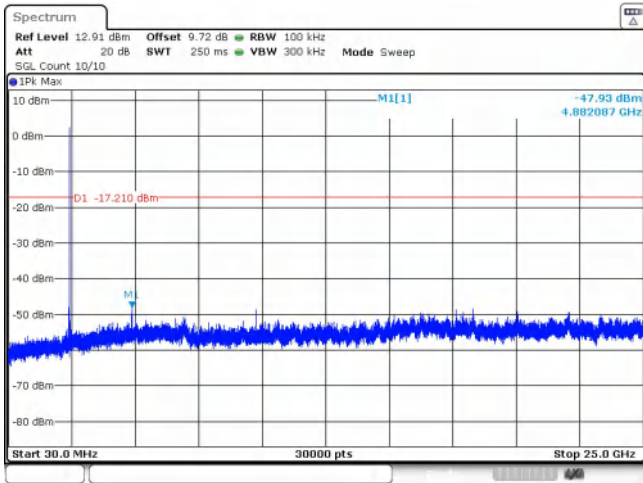


Out Of Band Emission



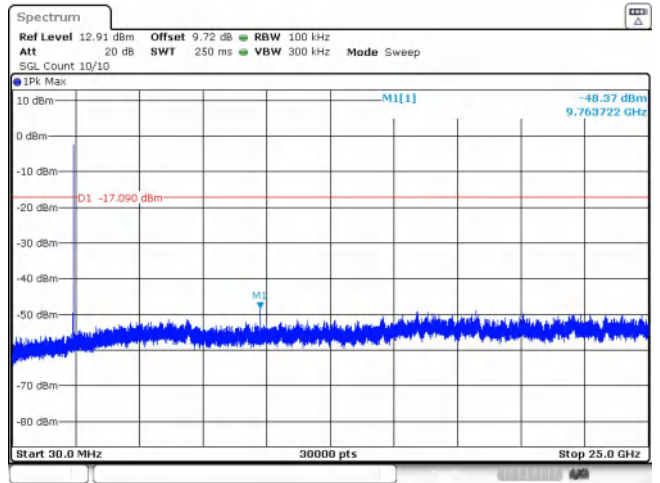
Out Of Band Emission

GFSK_DH5_Channel 39



Date: 25.JAN.2024 16:35:07

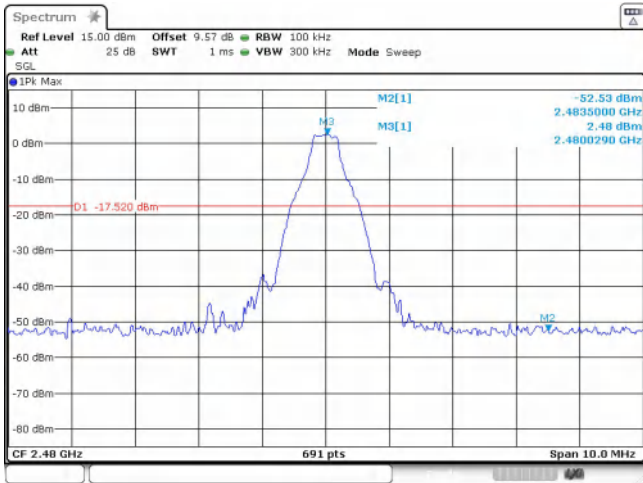
$\pi/4$ DQPSK_2-DH5_Channel 39



Date: 25.JAN.2024 16:41:55

Spurious Emissions

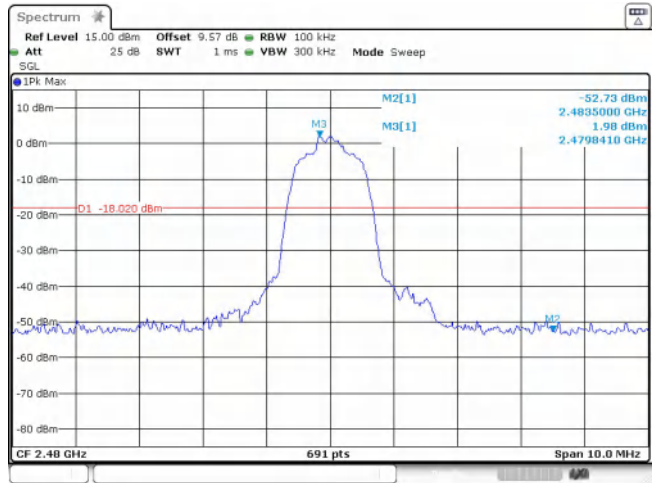
GFSK_DH5_Channel 39



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Spurious Emissions

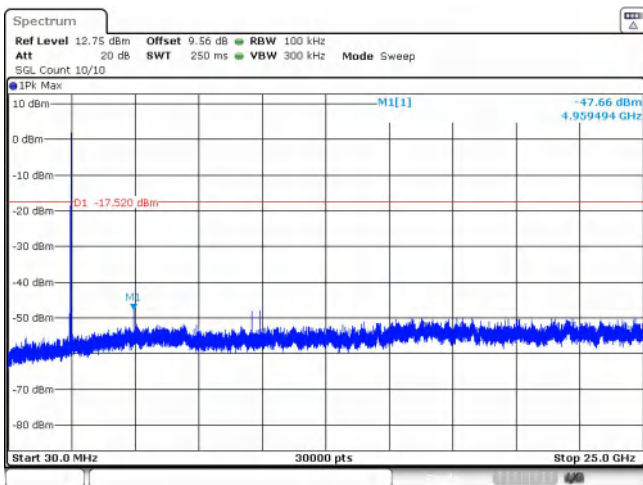
$\pi/4$ DQPSK_2-DH5_Channel 39



Date: 25.JAN.2024 16:43:39

Out Of Band Emission

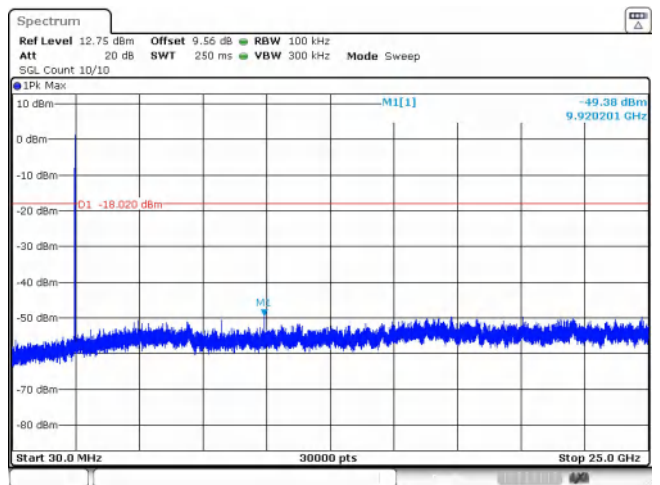
GFSK_DH5_Channel 78



Date: 25.JAN.2024 16:37:16

Out Of Band Emission

$\pi/4$ DQPSK_2-DH5_Channel 78



Date: 25.JAN.2024 16:44:01

Spurious Emission

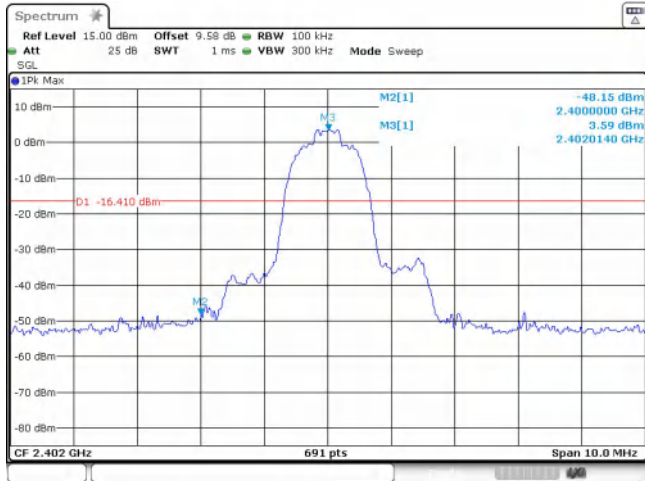
GFSK_DH5_Channel 78



Spurious Emission

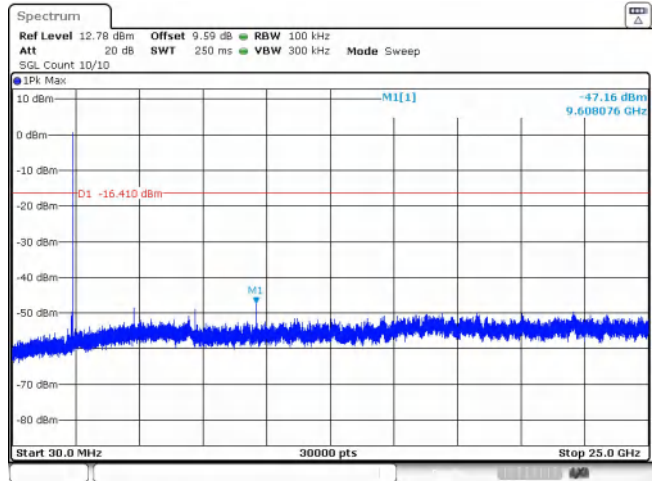
$\pi/4$ DQPSK_2-DH5_Channel 78





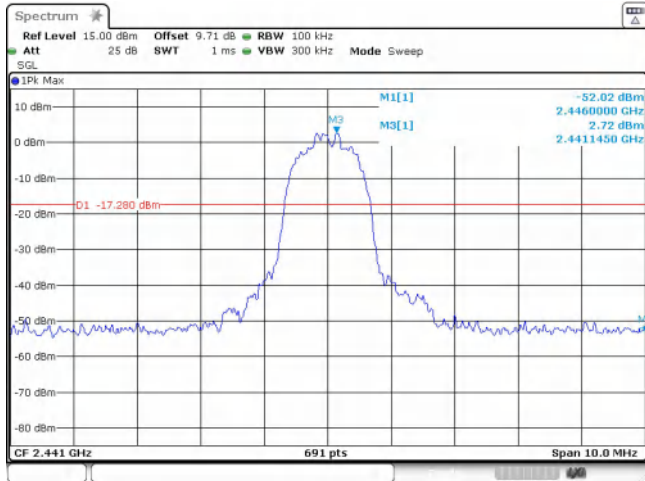
Date: 25.JAN.2024 16:45:51

Out Of Band Emission
8DPSK_3-DH5_Channel 0



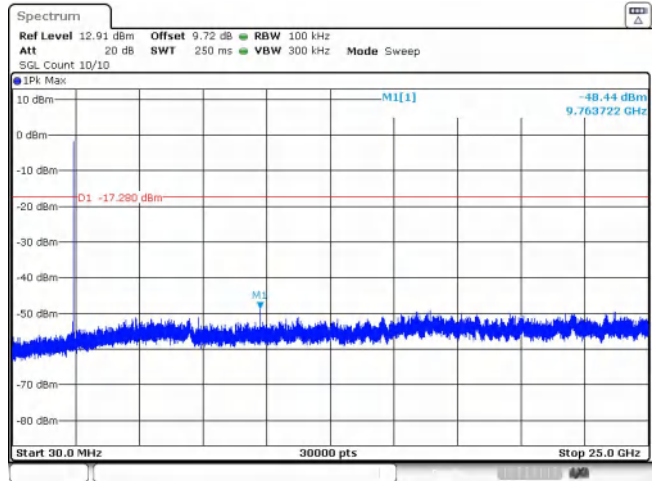
Date: 25.JAN.2024 16:46:13

Spurious Emission
8DPSK_3-DH5_Channel 0



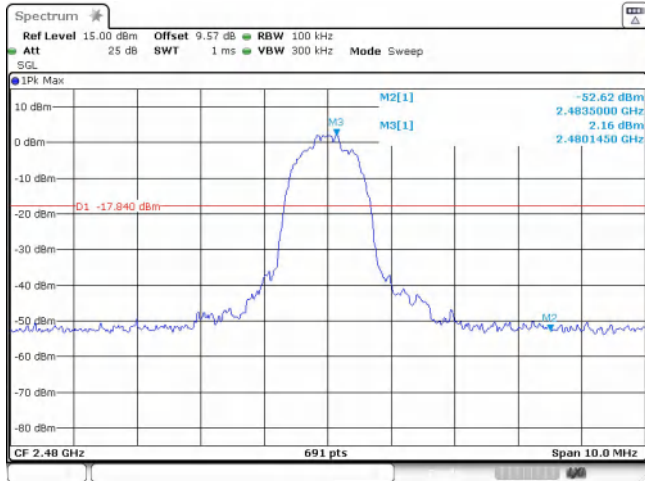
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Out Of Band Emission
8DPSK_3-DH5_Channel 39



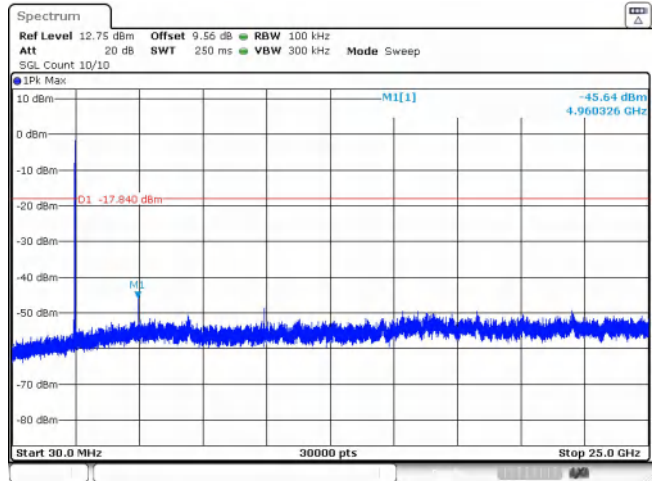
Date: 25.JAN.2024 16:46:48

Spurious Emissions
8DPSK_3-DH5_Channel 39



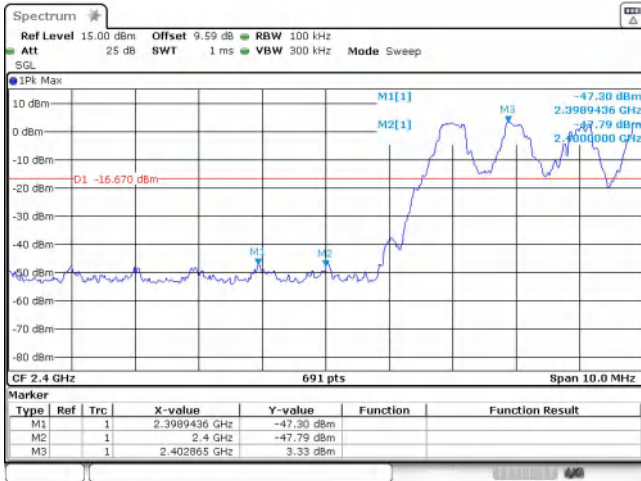
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Out Of Band Emission
8DPSK_3-DH5_Channel 78



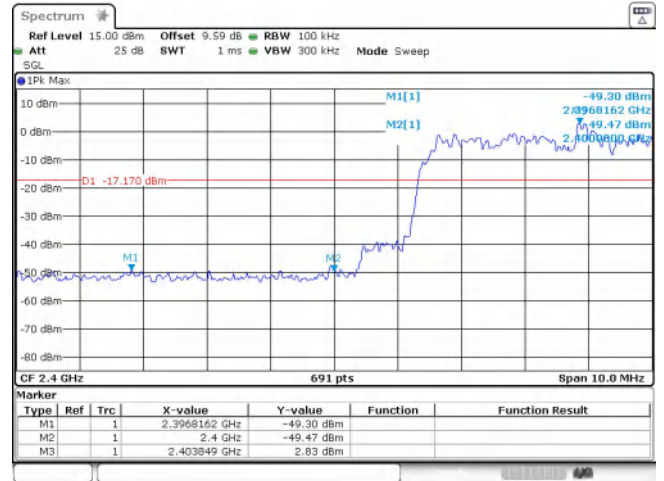
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Spurious Emission
8DPSK_3-DH5_Channel 78



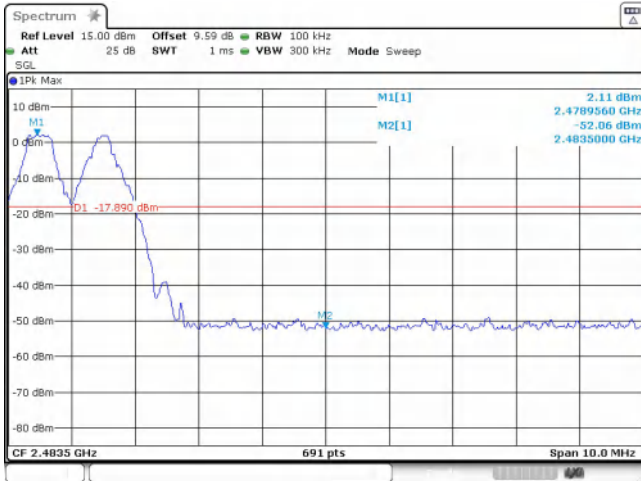
Date: 25.JAN.2024 16:56:31

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



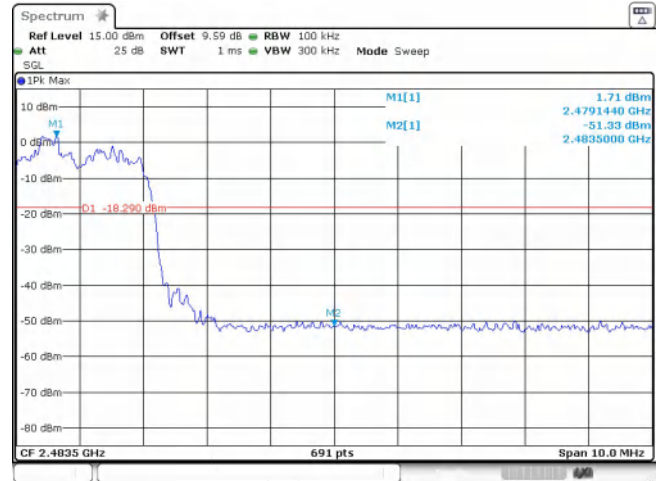
Date: 25.JAN.2024 17:05:04

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



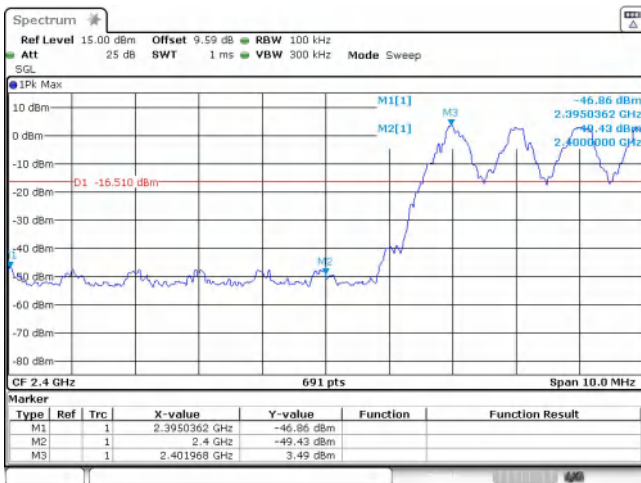
Date: 25.JAN.2024 16:57:07

Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



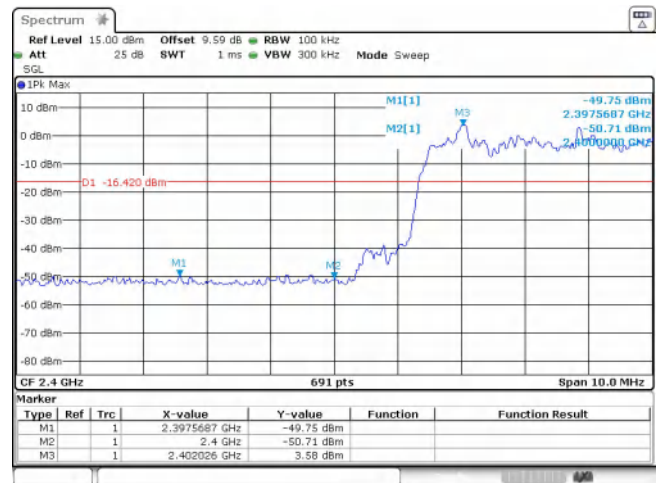
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Out Of Band Emission(Right)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



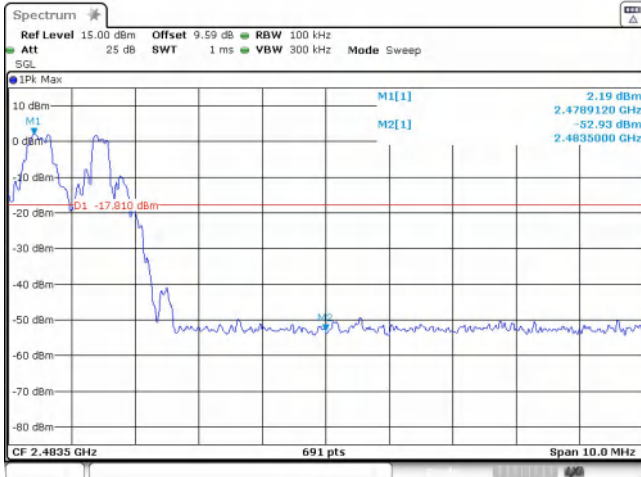
Date: 25.JAN.2024 16:58:03

Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



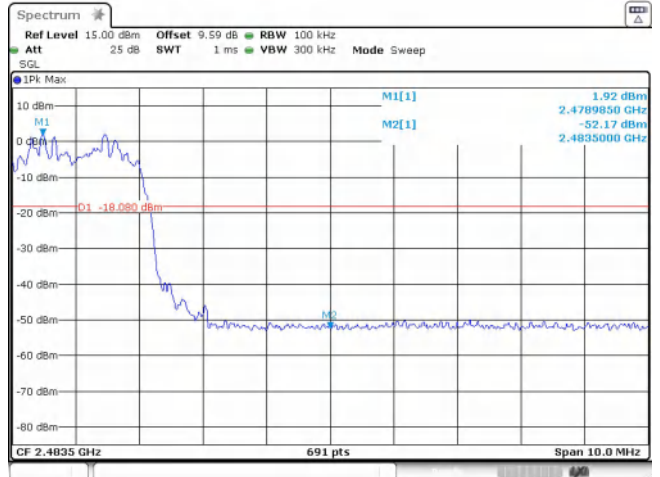
Date: 25.JAN.2024 17:06:43

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



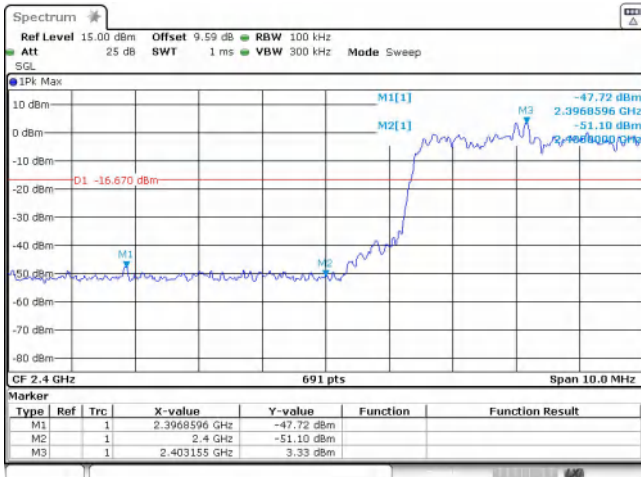
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Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



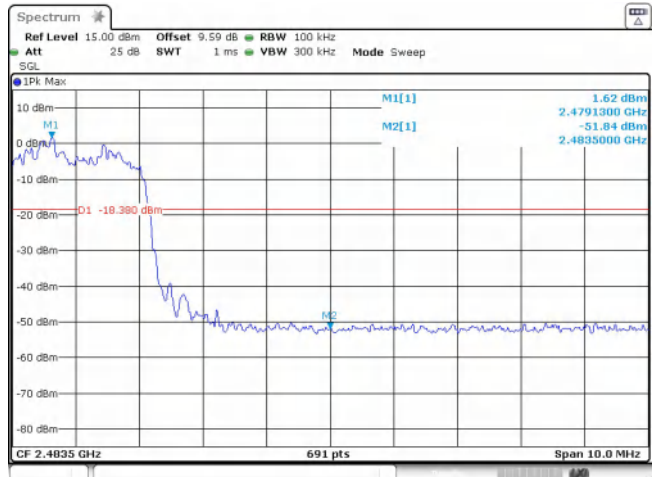
Date: 25.JAN.2024 17:07:08

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



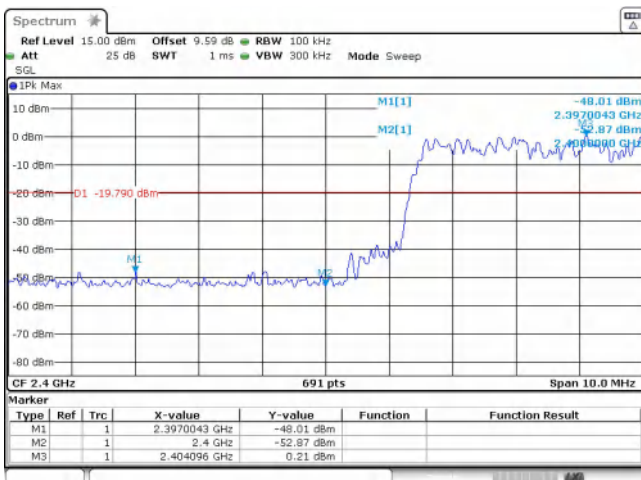
Date: 25.JAN.2024 17:11:07

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



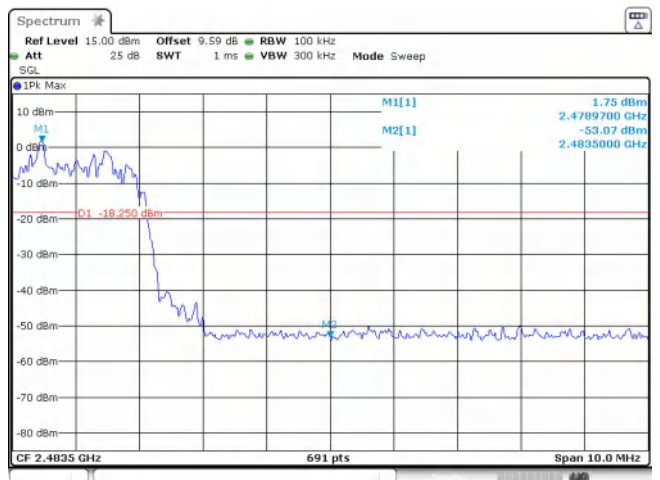
Date: 25.JAN.2024 17:11:30

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



Date: 25.JAN.2024 17:12:41

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



Date: 25.JAN.2024 17:12:58

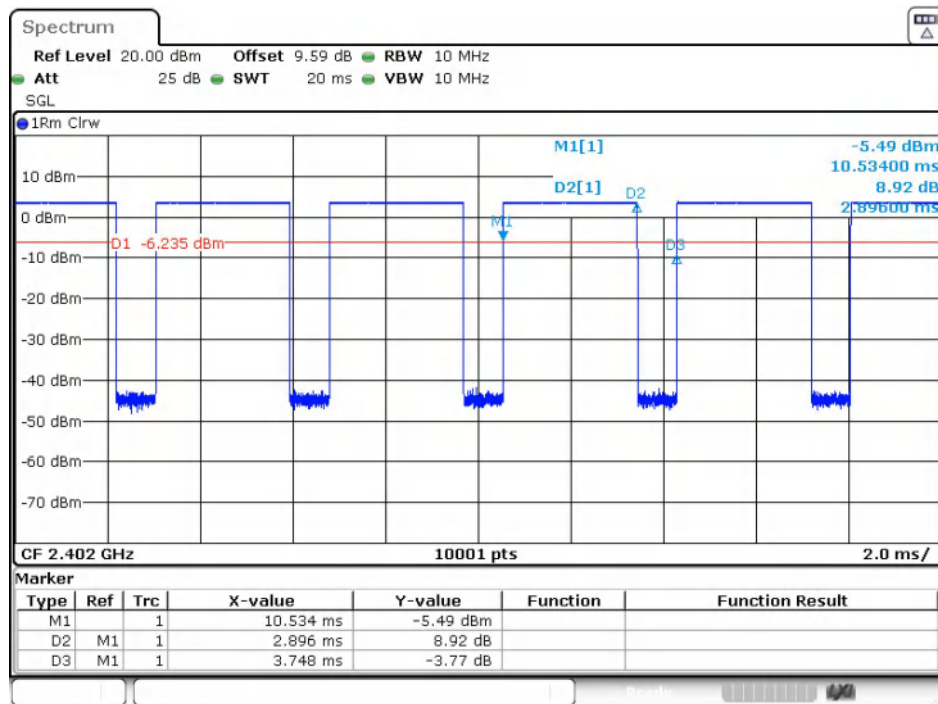
Out Of Band Emission(Right)
8DPSK_3-DH5_Channel Hopping

6) Duty Cycle

Test Result

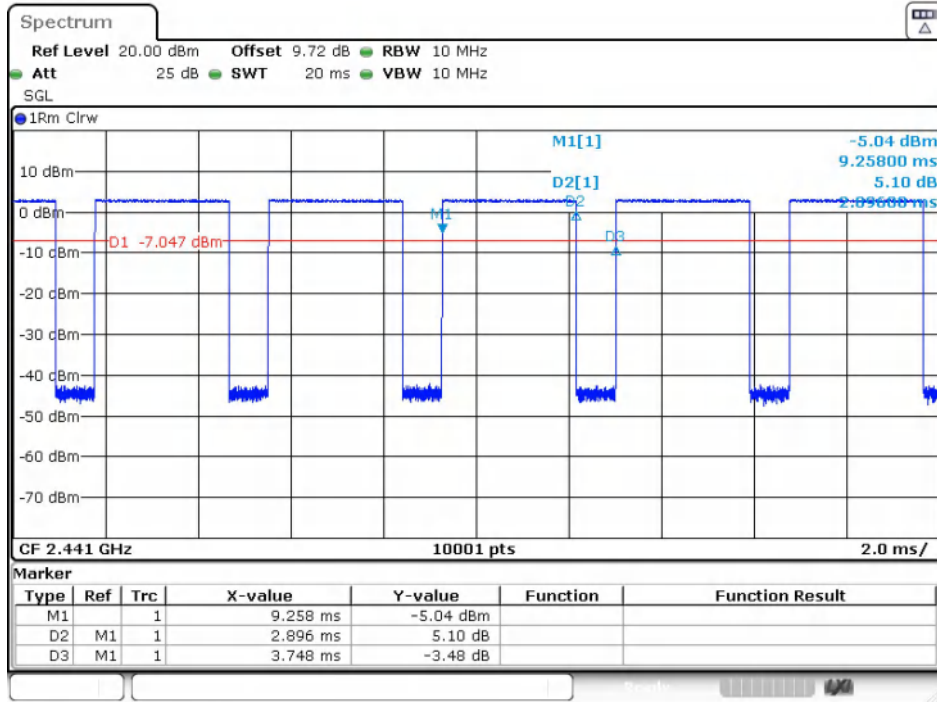
Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.896	3.748	77.27	0.7727	1.1199	0.35
		39	2.896	3.748	77.27	0.7727	1.1199	0.35
		78	2.896	3.748	77.27	0.7727	1.1199	0.35
$\pi/4$ DQPSK	2-DH5	0	2.902	3.748	77.43	0.7743	1.1109	0.34
		39	2.902	3.748	77.43	0.7743	1.1109	0.34
		78	2.902	3.748	77.43	0.7743	1.1109	0.34
8DPSK	3-DH5	0	2.906	3.748	77.53	0.7753	1.1053	0.34
		39	2.904	3.748	77.48	0.7748	1.1081	0.34
		78	2.906	3.748	77.53	0.7753	1.1053	0.34

Test Graphs



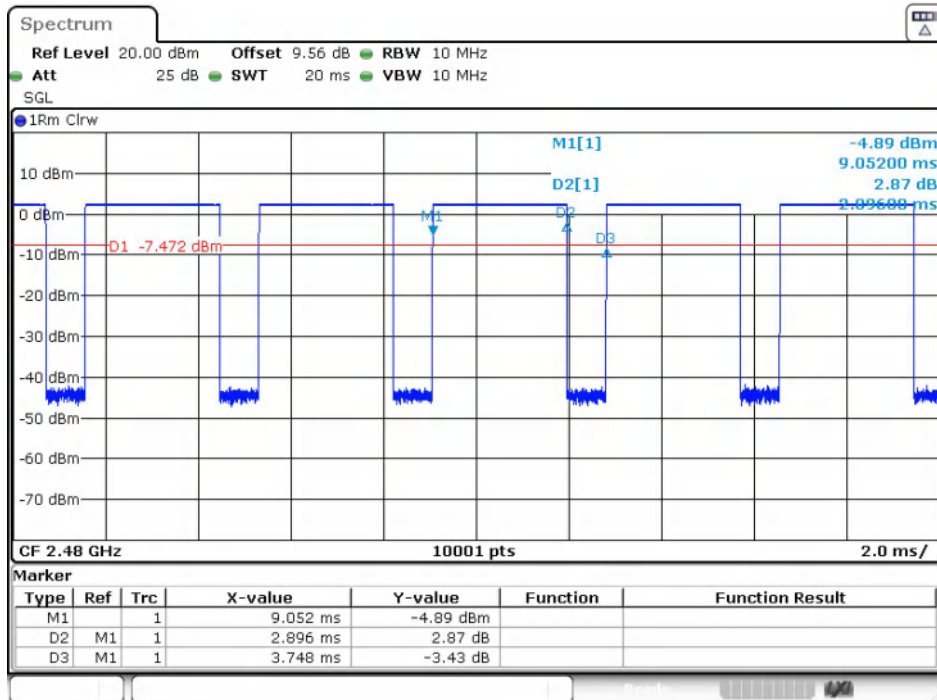
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GFSK(DH5)_Channel 0



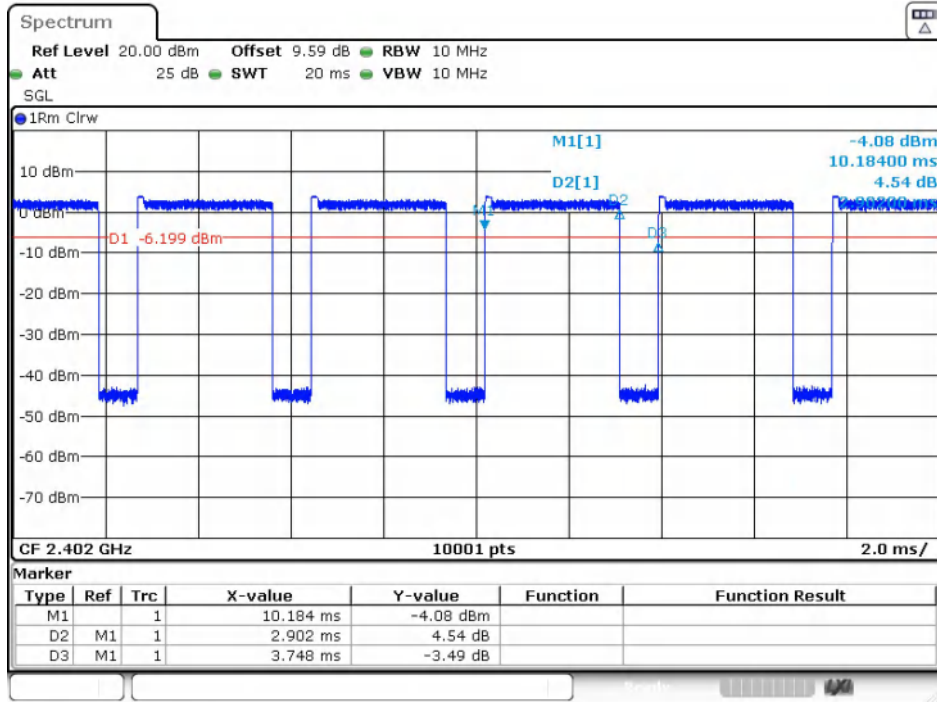
Date: 25.JAN.2024 16:33:48

GFSK(DH5)_Channel 39



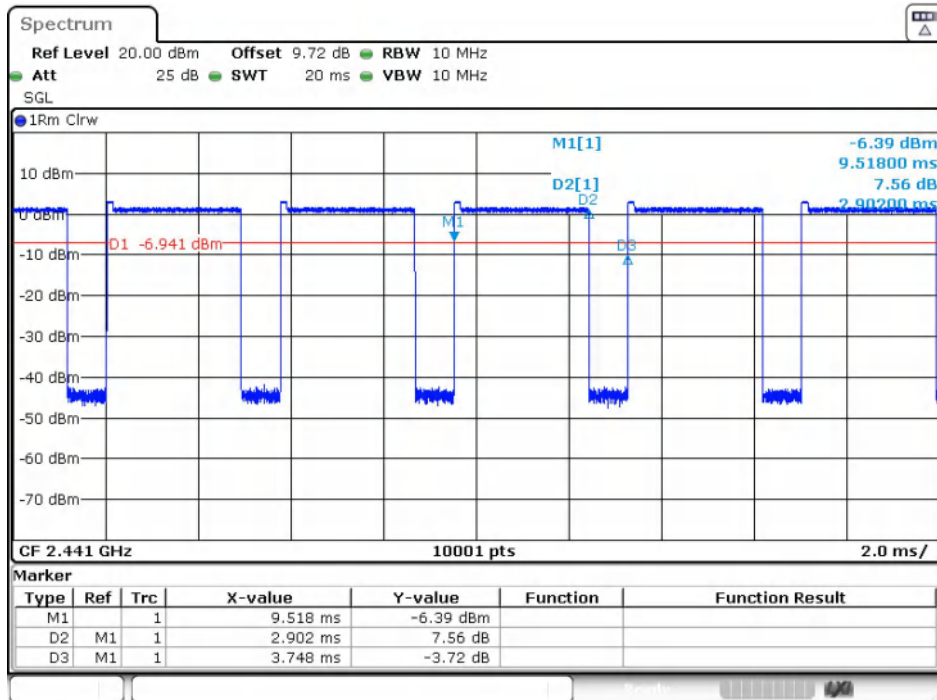
Date: 25.JAN.2024 16:35:53

GFSK(DH5)_Channel 78



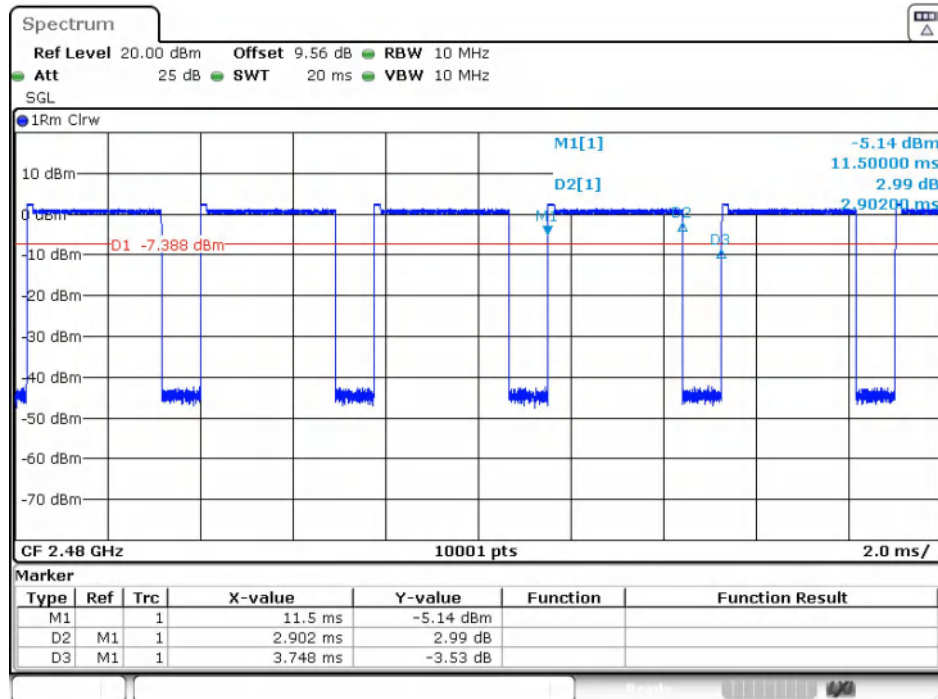
Date: 25.JAN.2024 16:38:33

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



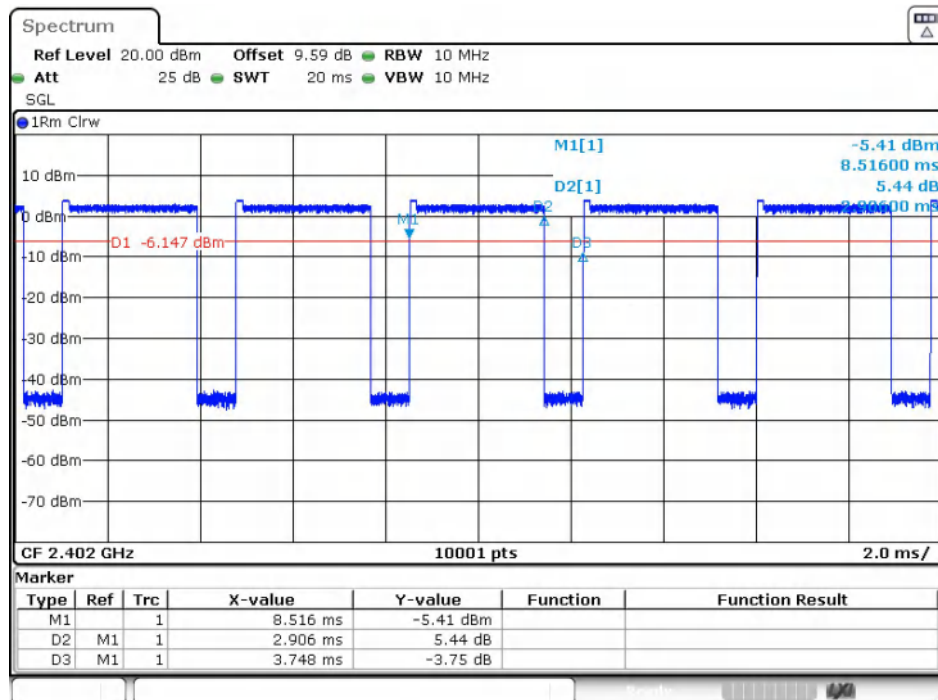
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$\pi/4$ DQPSK(2-DH5)_Channel 39



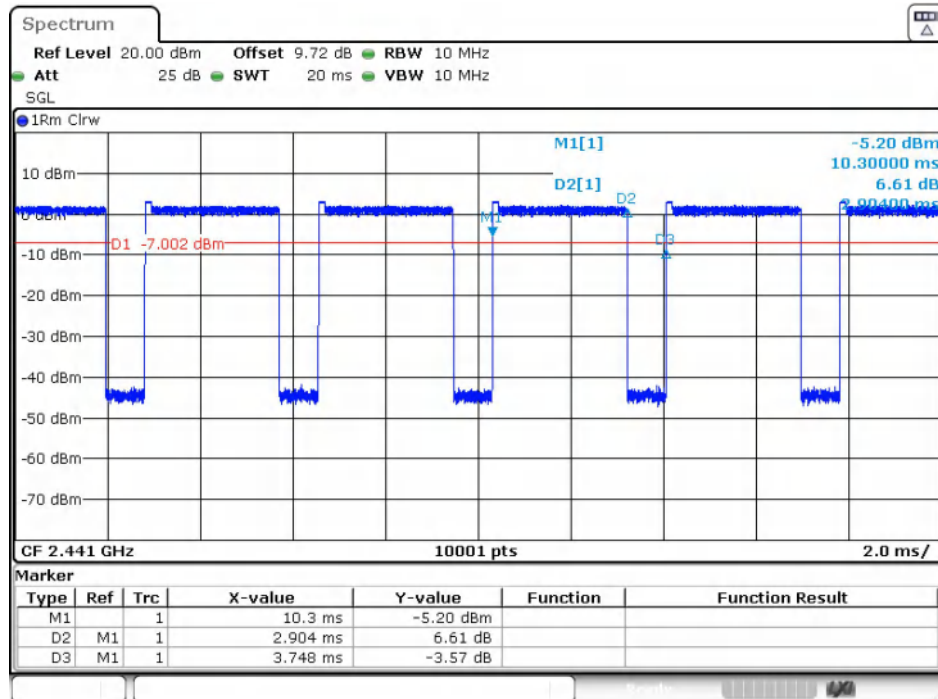
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$\pi/4$ DQPSK(2-DH5)_Channel 78



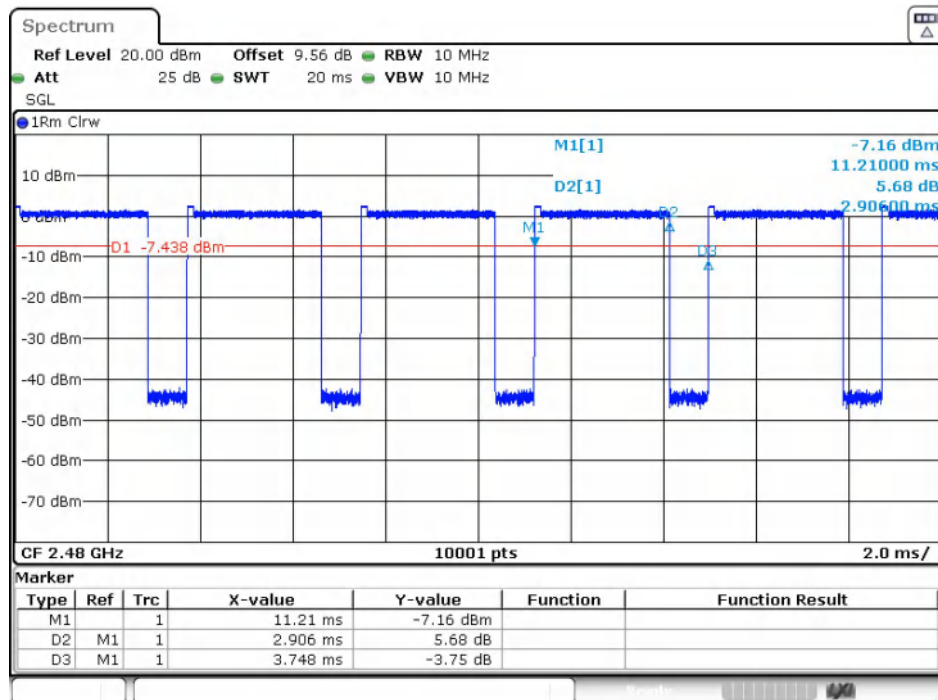
Date: 25.JAN.2024 16:44:50

8DPSK(3-DH5)_Channel 0



Date: 25.JAN.2024 16:47:20

8DPSK(3-DH5)_Channel 39



Date: 25.JAN.2024 16:49:30

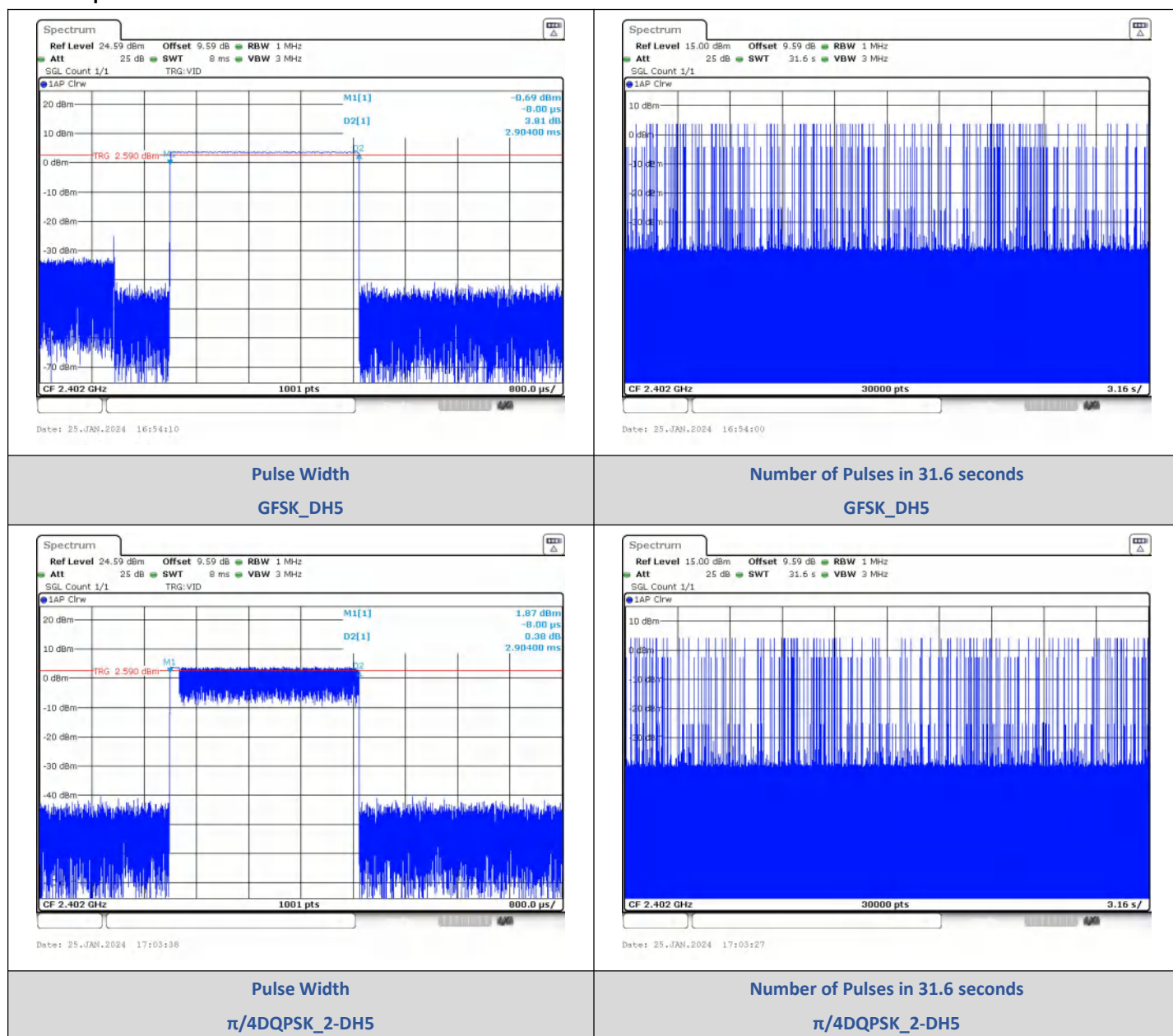
8DPSK(3-DH5)_Channel 78

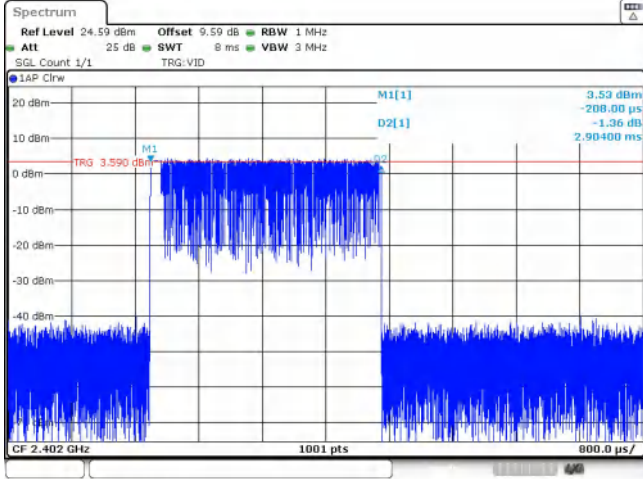
7) Dwell Time

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)	2.904	112	325.25	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.904	112	325.25		PASS
8DPSK	3-DH5		2.904	127	368.81		PASS

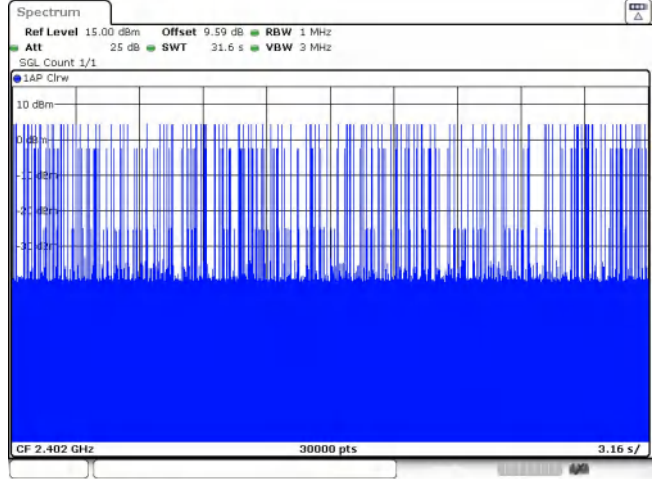
Test Graphs





Date: 25.JAN.2024 17:09:14

Pulse Width
8DPSK_3-DH5



Date: 25.JAN.2024 17:09:03

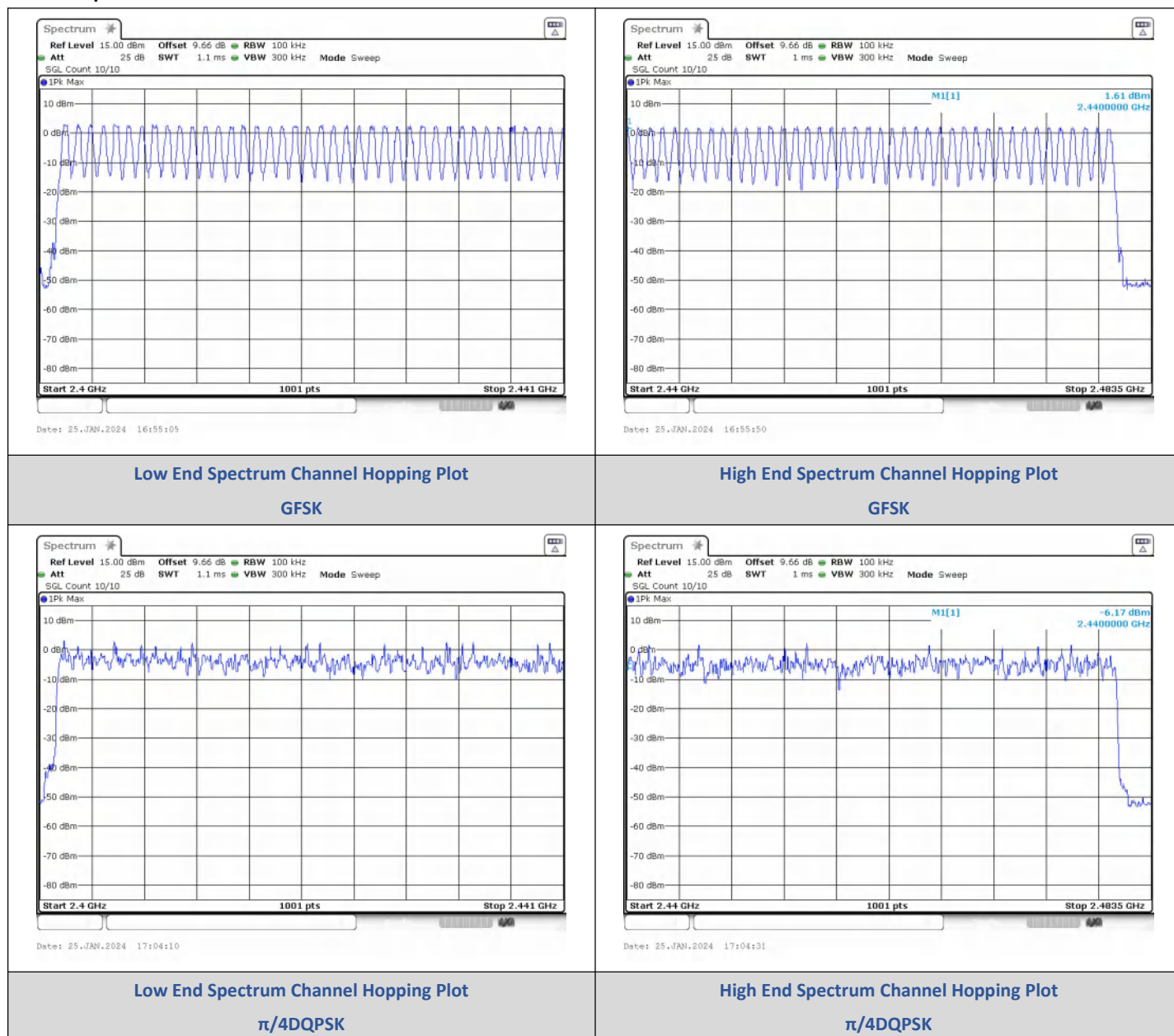
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

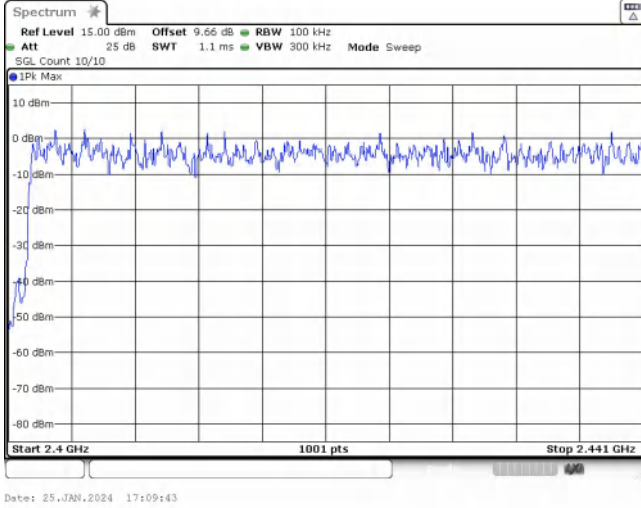
8) Number Of Hopping Channel

Test Result

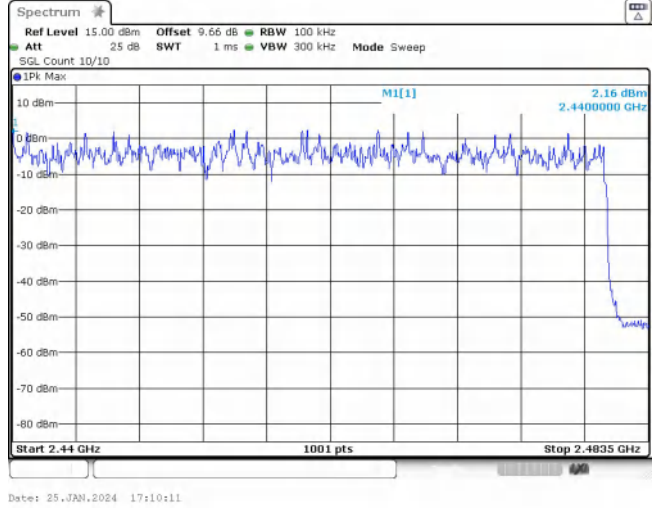
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



High End Spectrum Channel Hopping Plot
8DPSK