

Appendix A

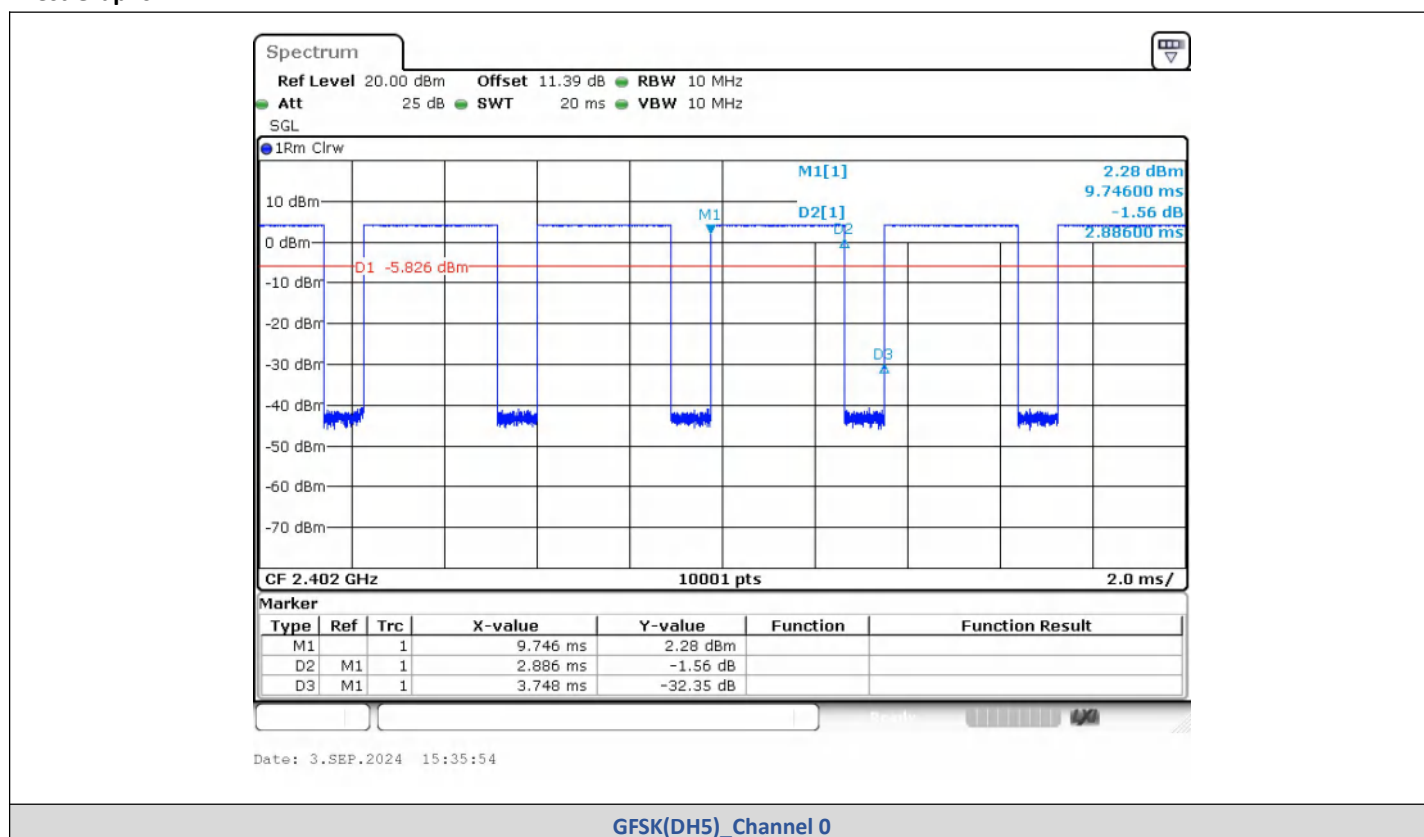
Report No.:	CISRR24082214901
FCC ID:	2A3VP-Q42
Product Name:	Wireless Gaming Controller
Model No.:	Q42
Test Engineer:	Jimmy Huang
Supervised by:	Rory Huang

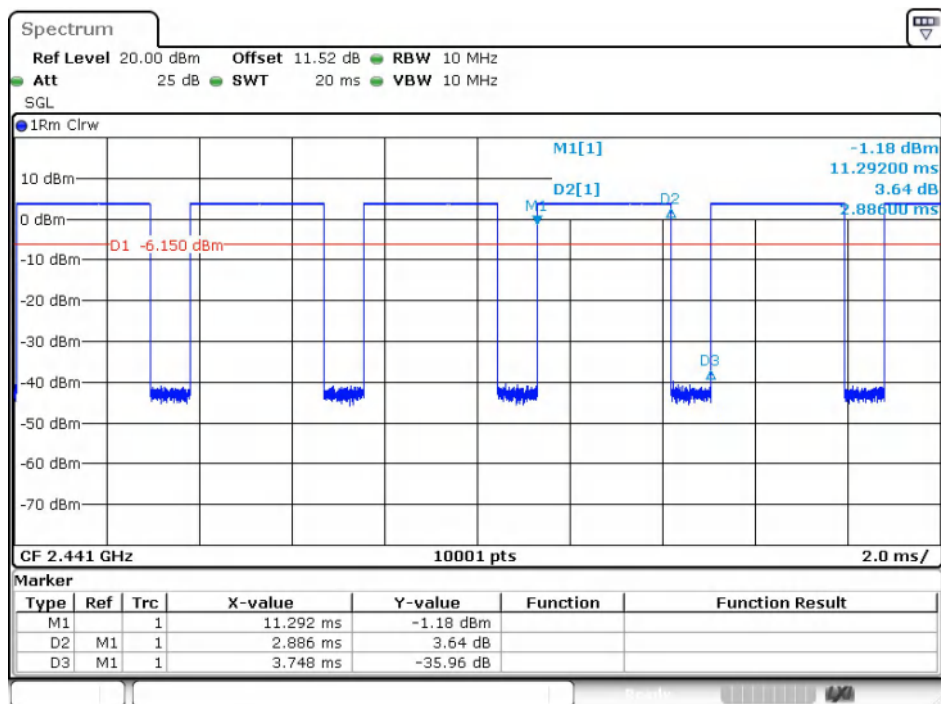
1) Duty Cycle

Test Result

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.35
		39	2.886	3.748	77.00	0.7700	1.1351	0.35
		78	2.886	3.748	77.00	0.7700	1.1351	0.35
$\pi/4$ DQPSK	2-DH5	0	2.890	3.748	77.11	0.7711	1.1289	0.35
		39	2.890	3.748	77.11	0.7711	1.1289	0.35
		78	2.892	3.748	77.16	0.7716	1.1261	0.35
8DPSK	3-DH5	0	2.892	3.748	77.16	0.7716	1.1261	0.35
		39	2.892	3.748	77.16	0.7716	1.1261	0.35
		78	2.894	3.748	77.21	0.7721	1.1233	0.35

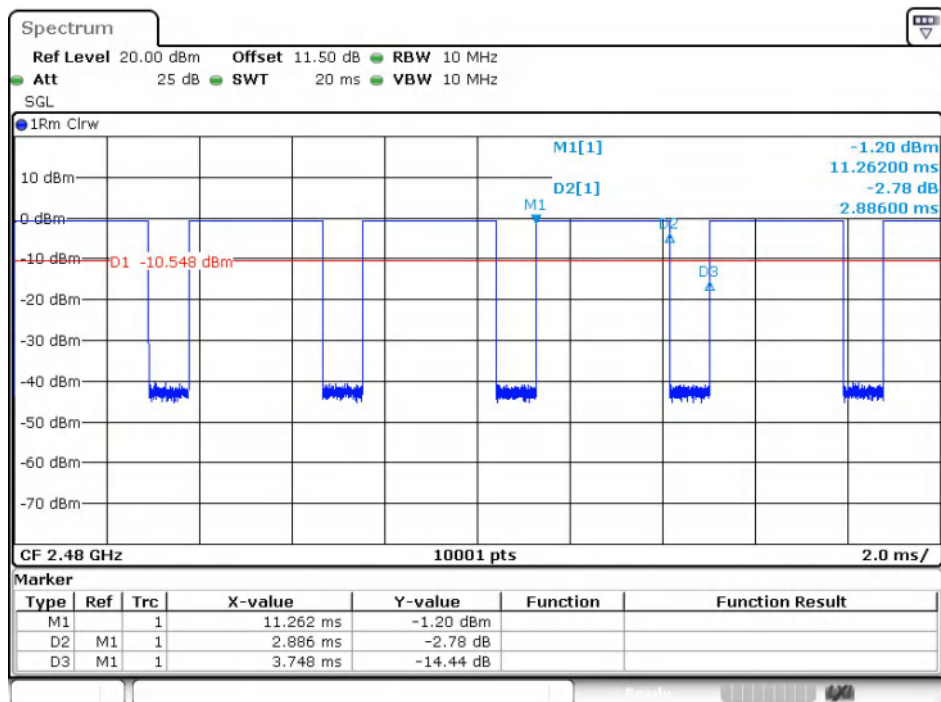
Test Graphs





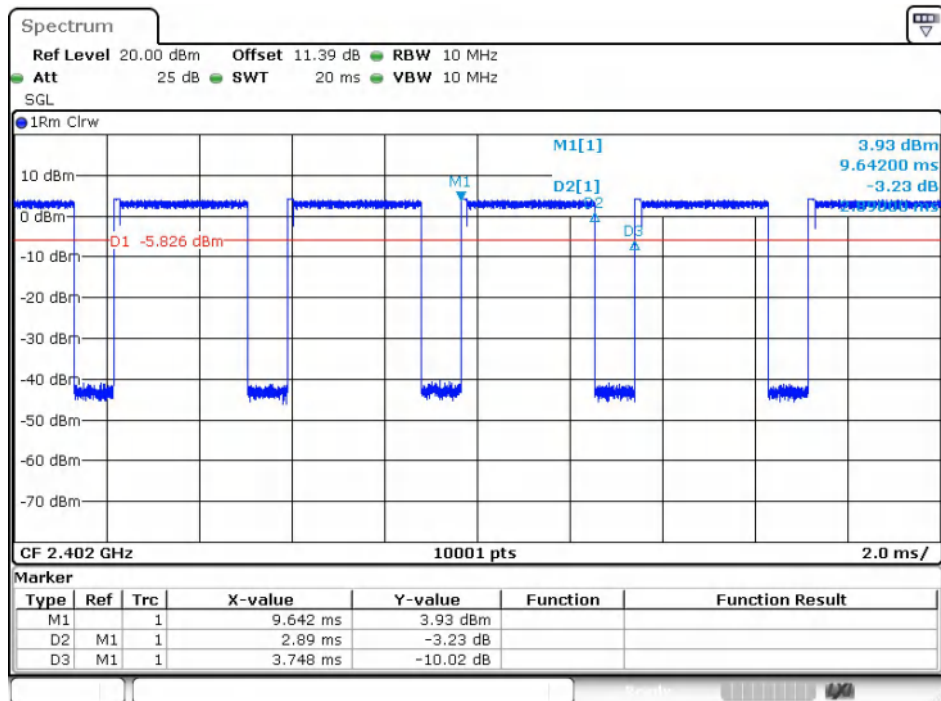
Date: 3.SEP.2024 15:52:49

GFSK(DH5)_Channel 39



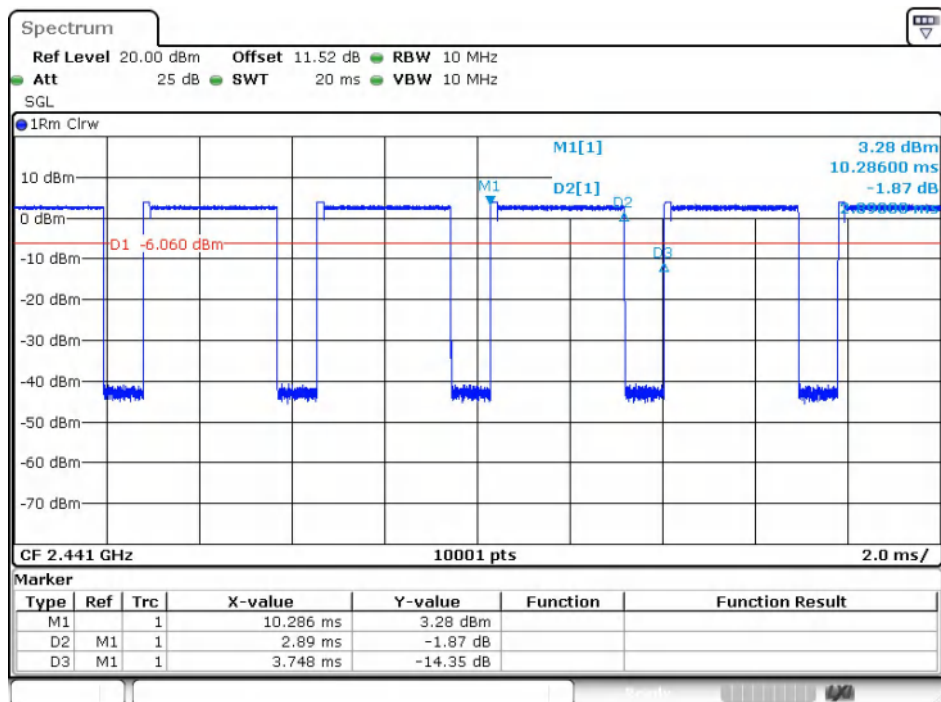
Date: 3.SEP.2024 17:20:24

GFSK(DH5)_Channel 78



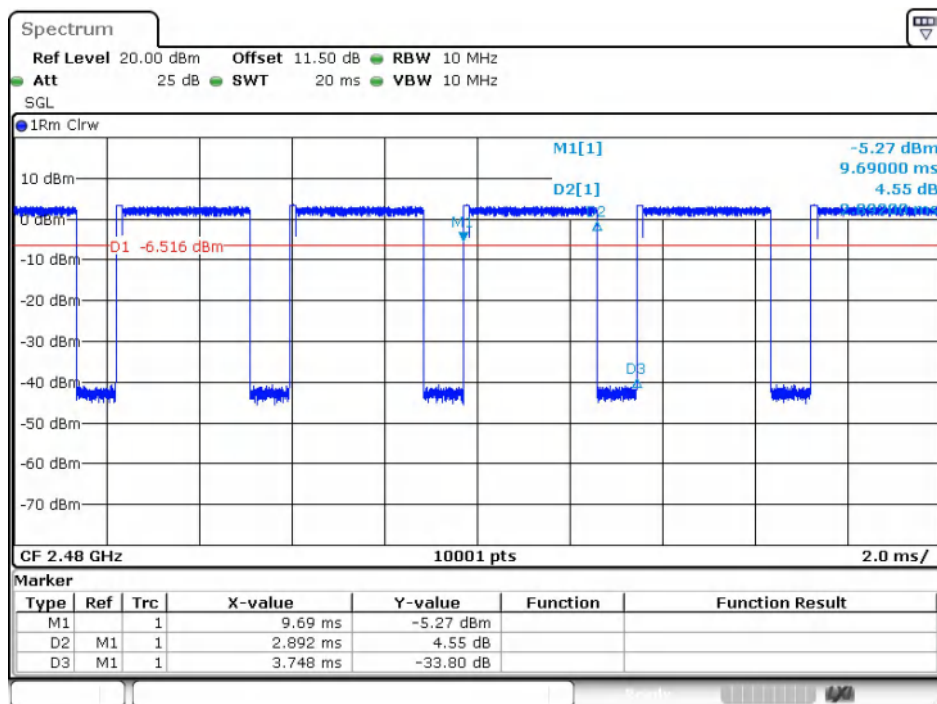
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$\pi/4$ DQPSK(2-DH5)_Channel 0



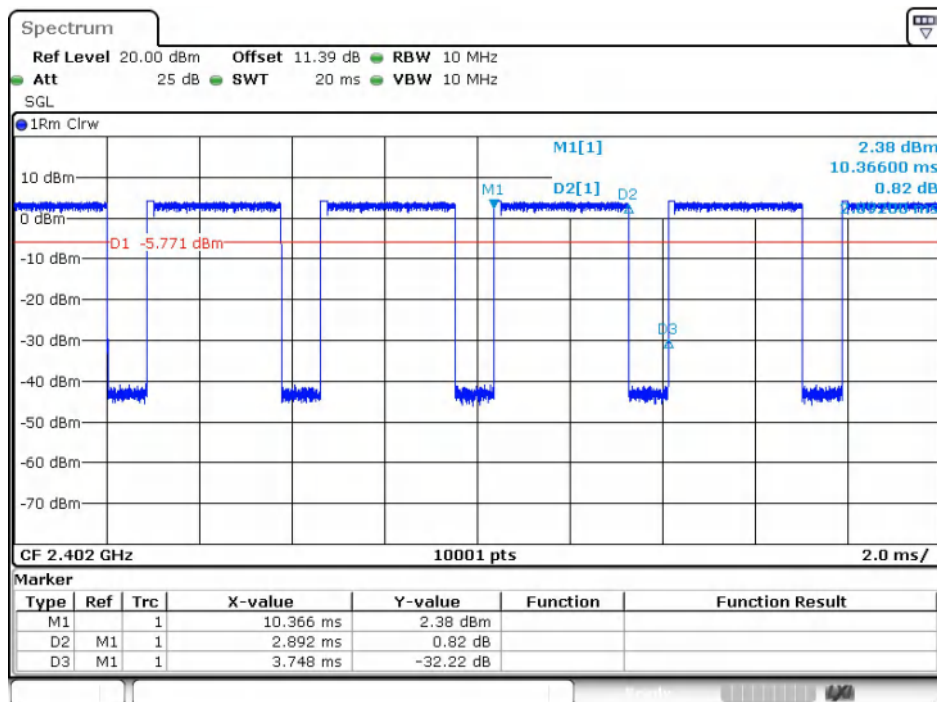
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$\pi/4$ DQPSK(2-DH5)_Channel 39



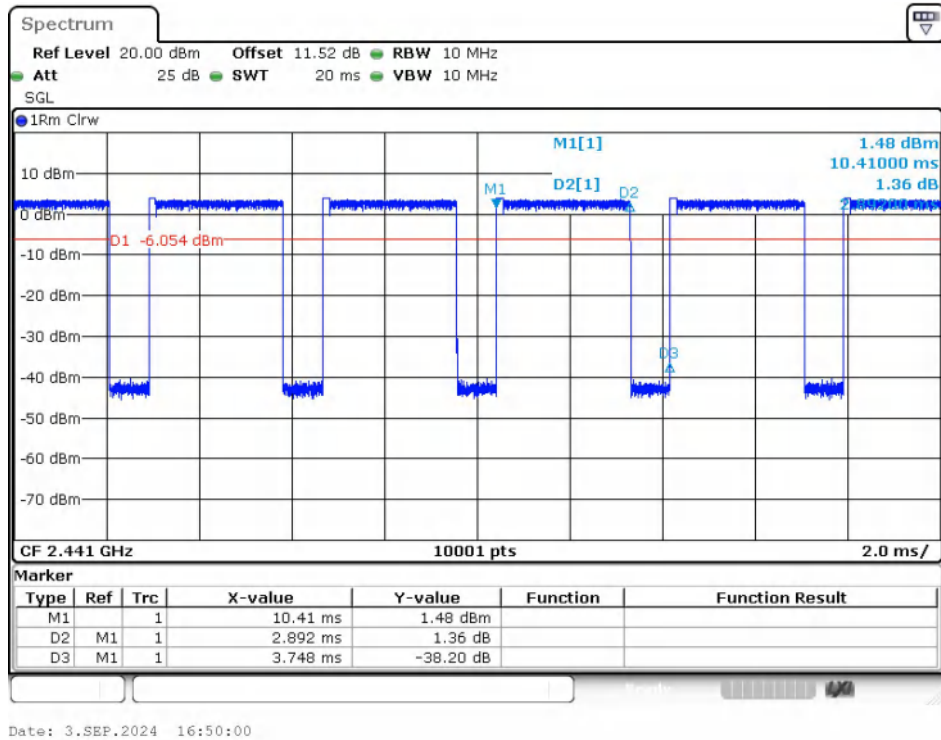
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$\pi/4$ DQPSK(2-DH5)_Channel 78

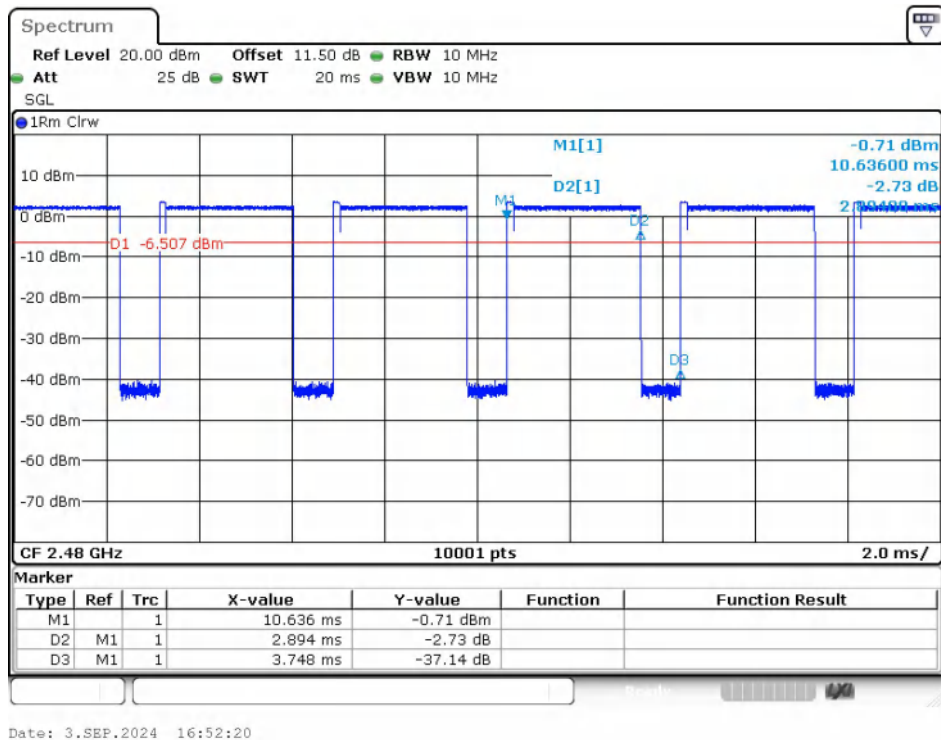


Date: 3.SEP.2024 16:41:25

8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



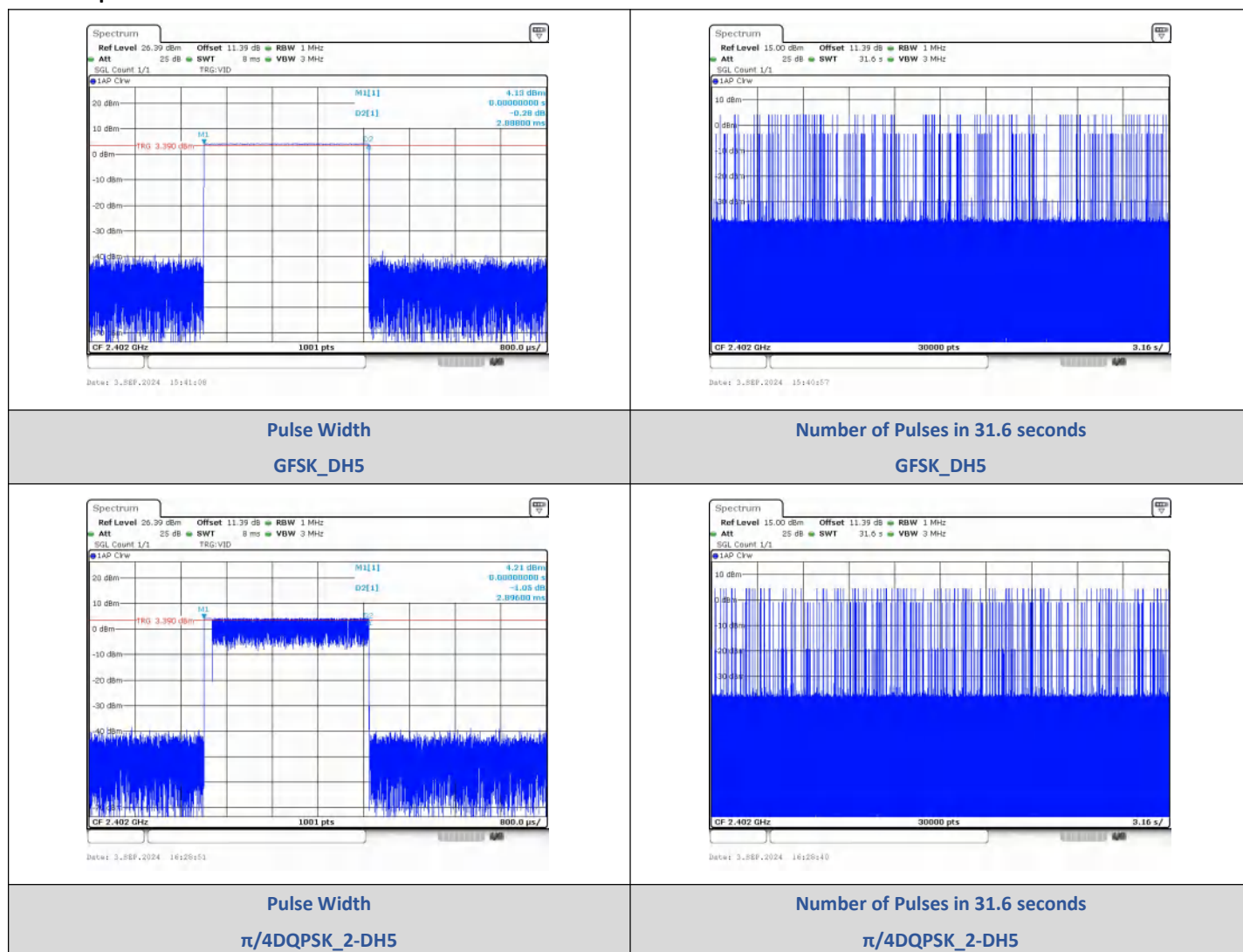
8DPSK(3-DH5)_Channel 78

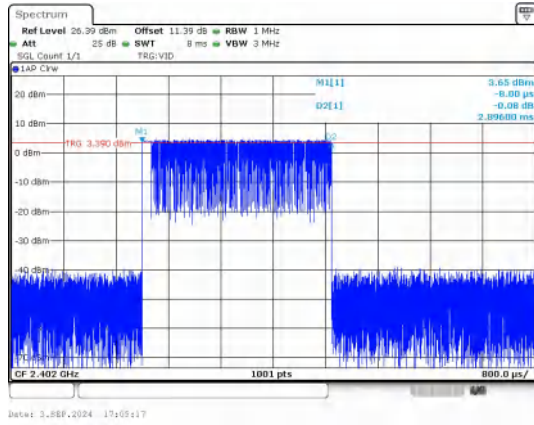
2) Dwell Time

Test Result

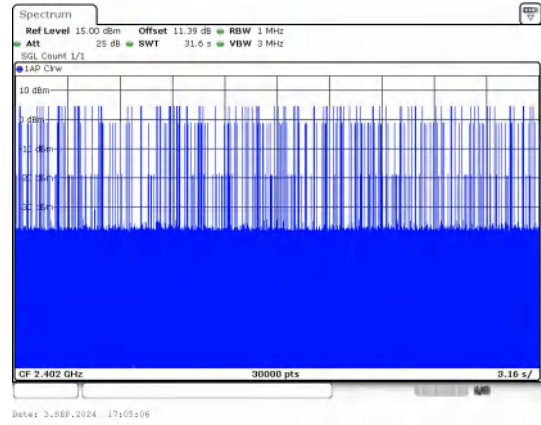
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.888	105	303.24	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.896	109	315.66		PASS
8DPSK	3-DH5		2.896	99	286.7		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



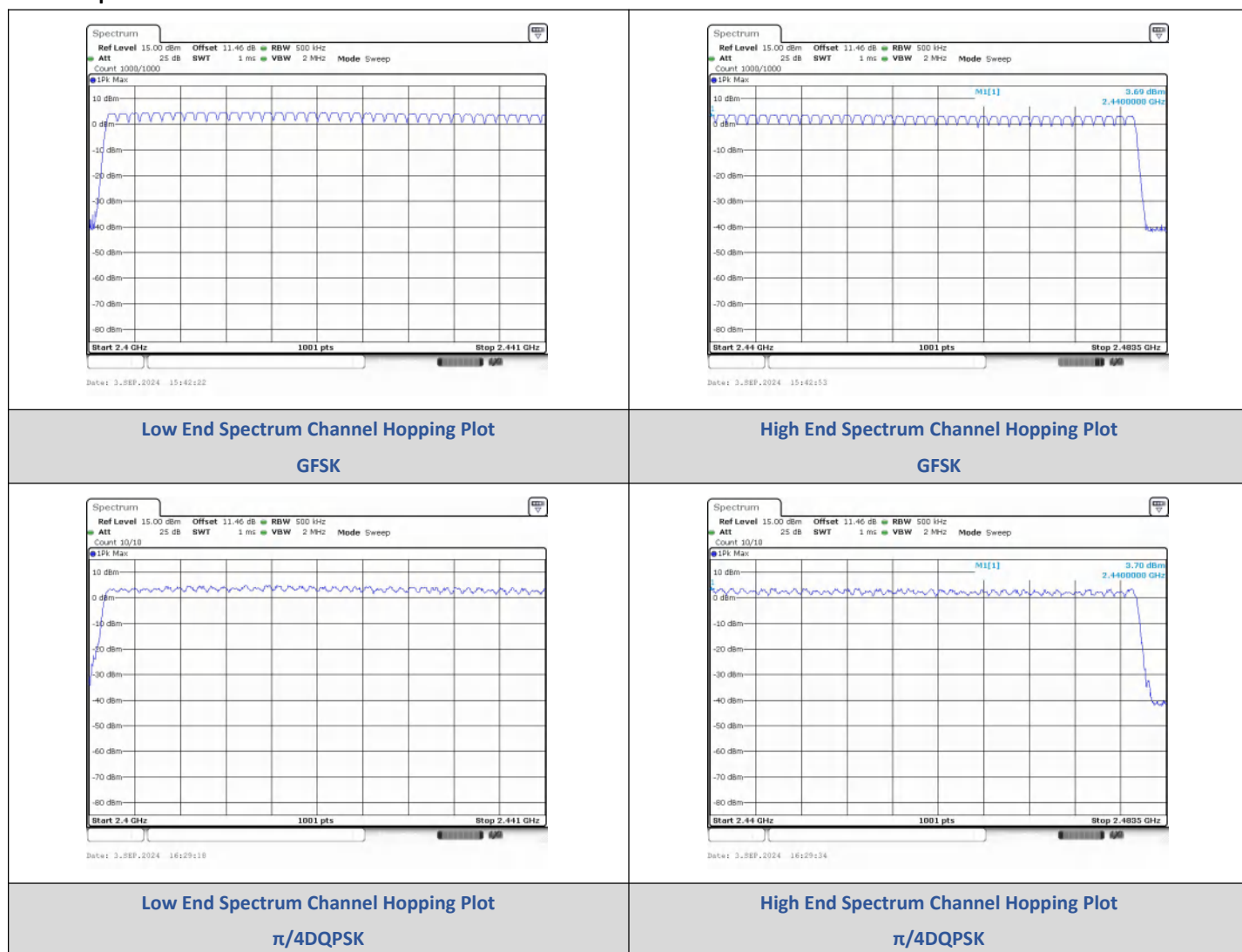
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

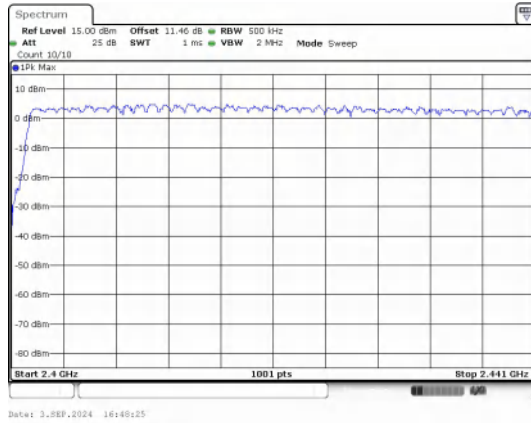
3) Number Of Hopping Channel

Test Result

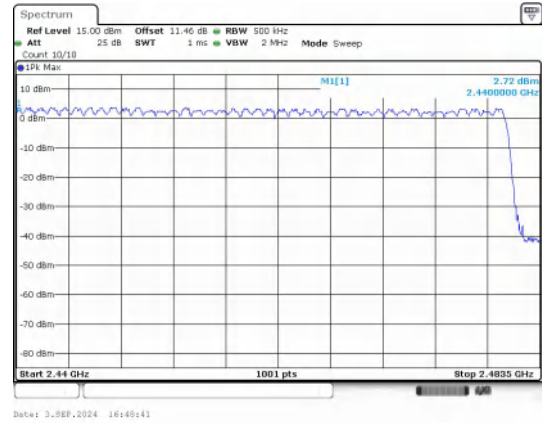
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



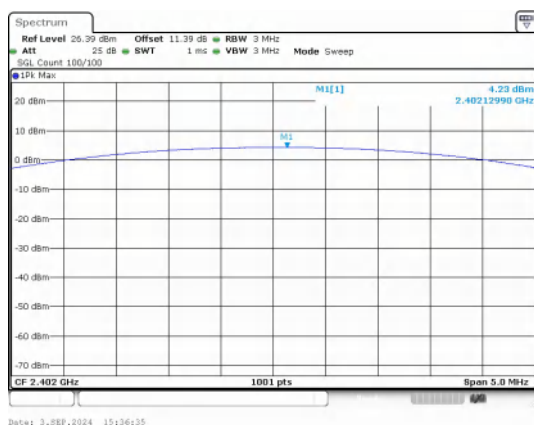
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Peak Output Power

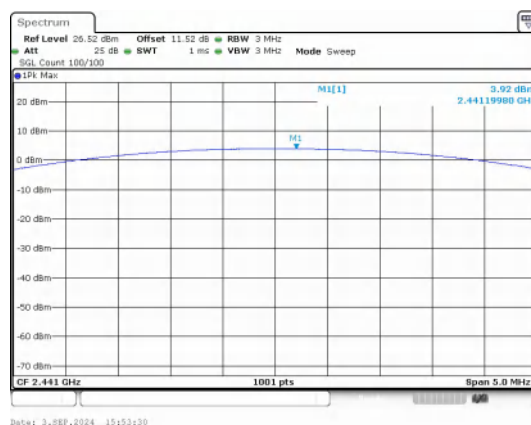
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	4.23	2.65	≤30	PASS
		39	3.92	2.47		PASS
		78	3.40	2.19		PASS
$\pi/4$ DQPSK	2-DH5	0	4.74	2.98	≤20.97	PASS
		39	4.60	2.88		PASS
		78	4.20	2.63		PASS
8DPSK	3-DH5	0	4.94	3.12		PASS
		39	0.83	1.21		PASS
		78	0.34	1.08		PASS

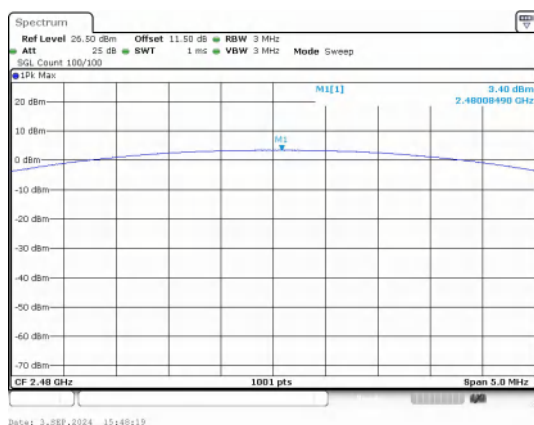
Test Graphs



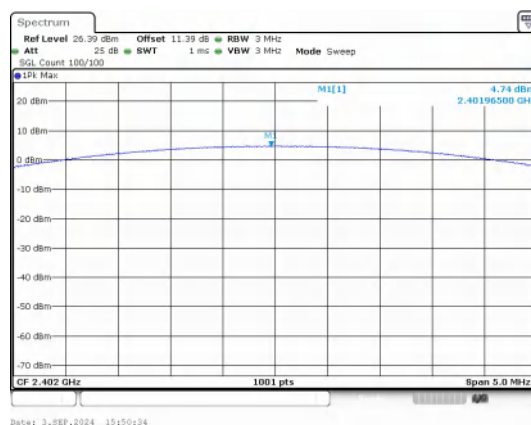
Peak Output Power
GFSK_Channel 0



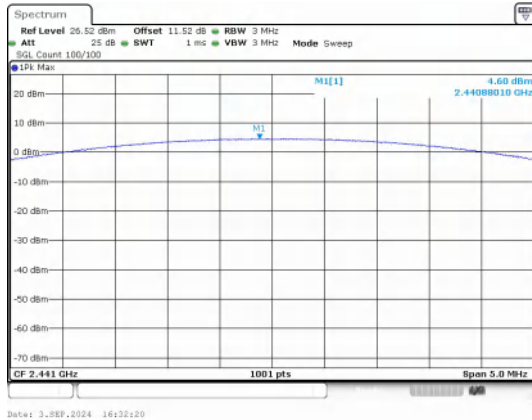
Peak Output Power
GFSK_Channel 39



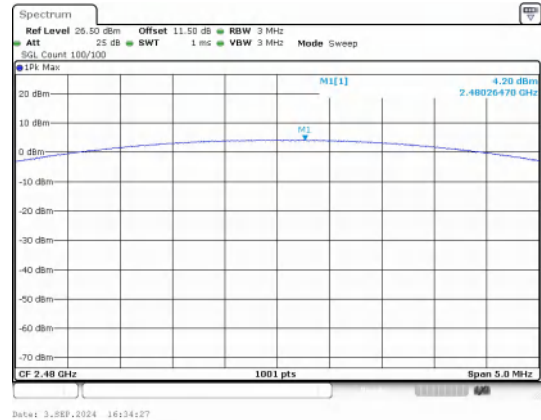
Peak Output Power
GFSK_Channel 78



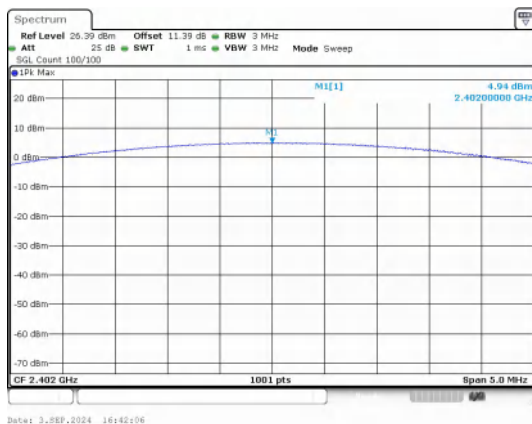
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



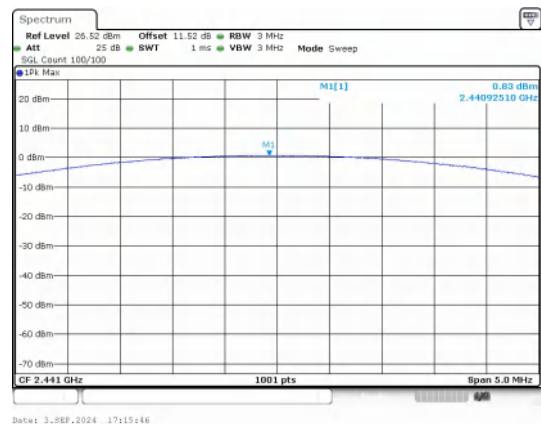
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



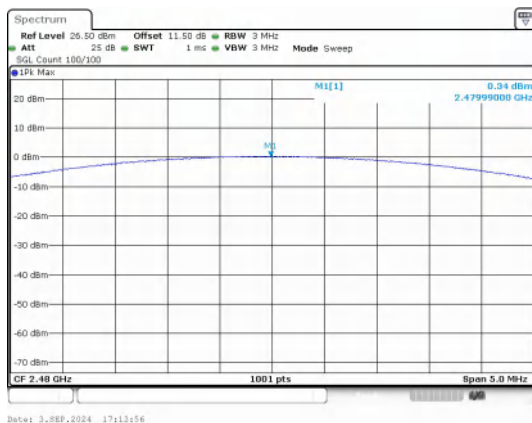
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



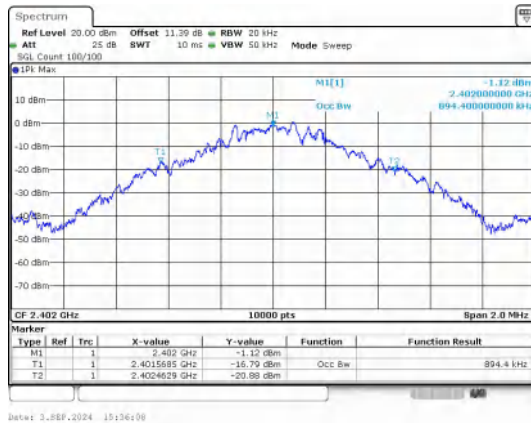
Peak Output Power
8DPSK_Channel 78

5) 99% Bandwidth

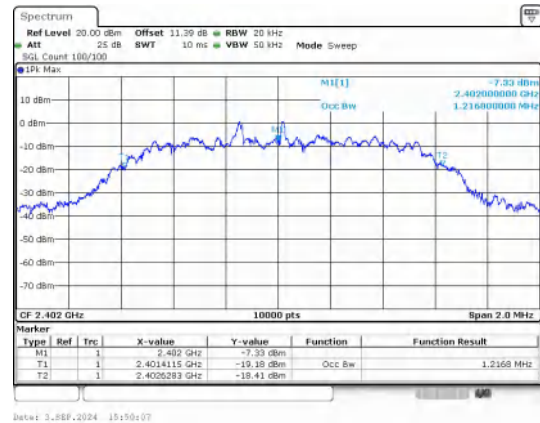
Test Result

Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.89440
	39	2441	0.90740
	78	2480	0.89660
$\pi/4$ DQPSK	0	2402	1.2168
	39	2441	1.1994
	78	2480	1.1970
8DPSK	0	2402	1.2254
	39	2441	1.2184
	78	2480	1.2148

Test Graphs

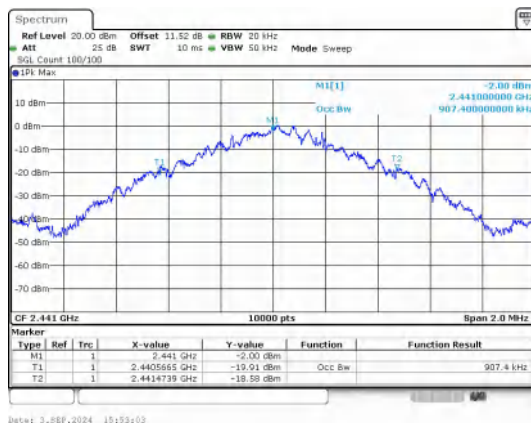


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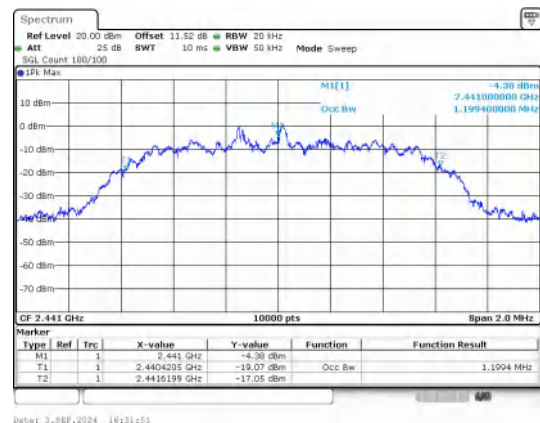


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GFSK_DH5_Channel 0

 $\pi/4$ DQPSK_2-DH5_Channel 0


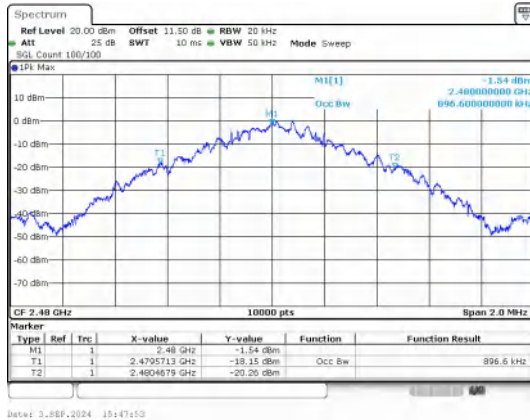
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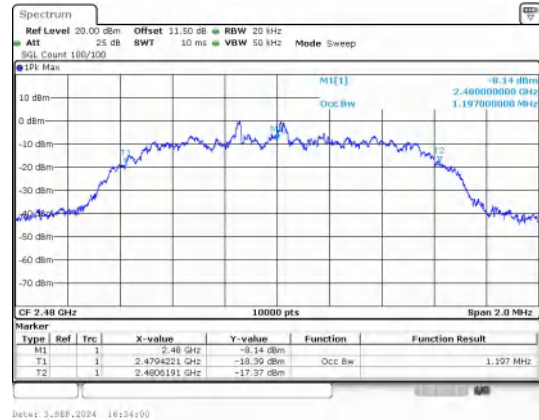
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GFSK_DH5_Channel 39

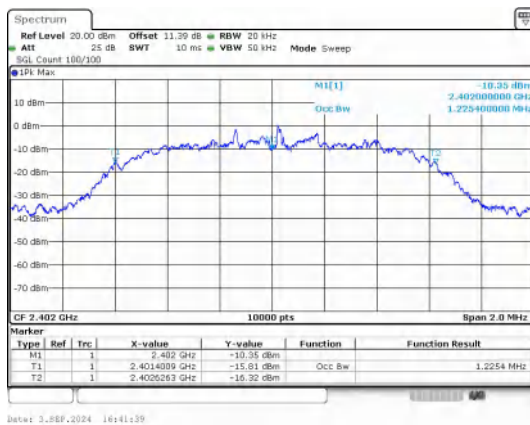
 $\pi/4$ DQPSK_2-DH5_Channel 39



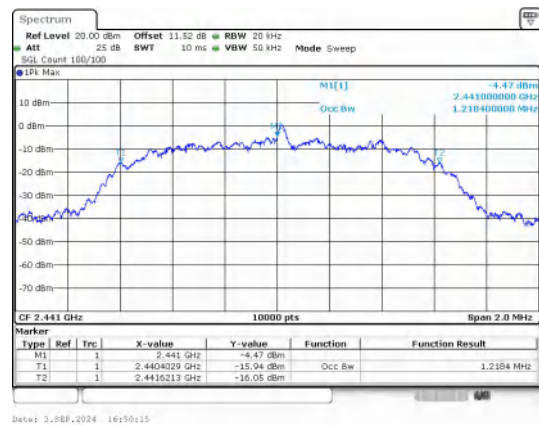
GFSK_DH5_Channel 78



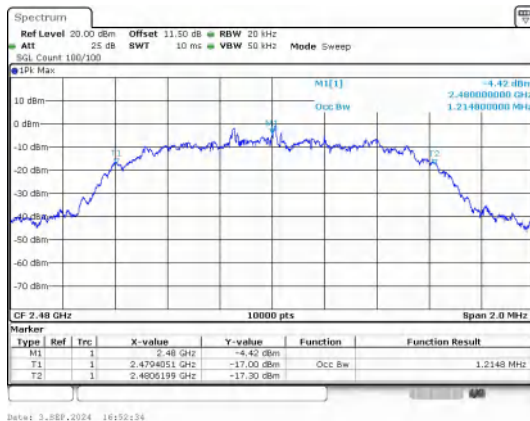
$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



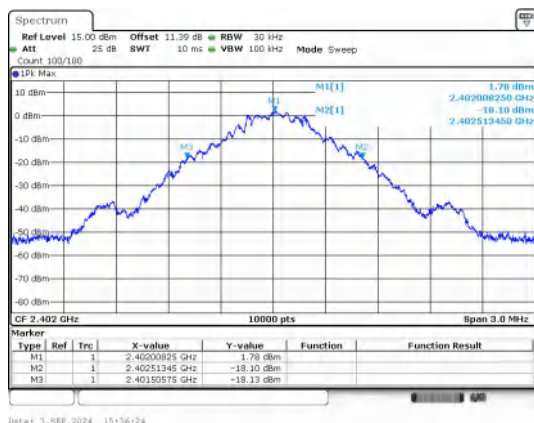
8DPSK_3-DH5_Channel 78

6) 20dB Bandwidth

Test Result

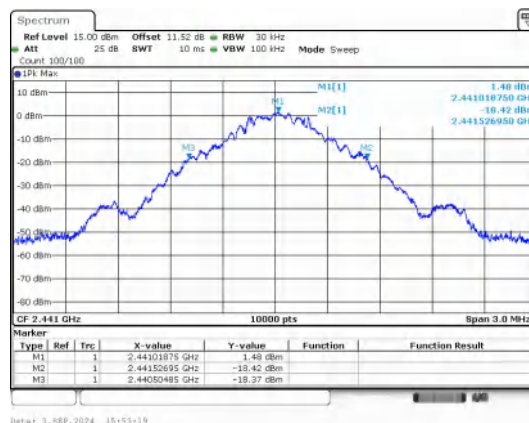
Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	1.000
	39	2441 MHz	1.030
	78	2480 MHz	0.9900
$\pi/4$ DQPSK	0	2402 MHz	1.310
	39	2441 MHz	1.320
	78	2480 MHz	1.320
8DPSK	0	2402 MHz	1.290
	39	2441 MHz	1.290
	78	2480 MHz	1.300

Test Graphs



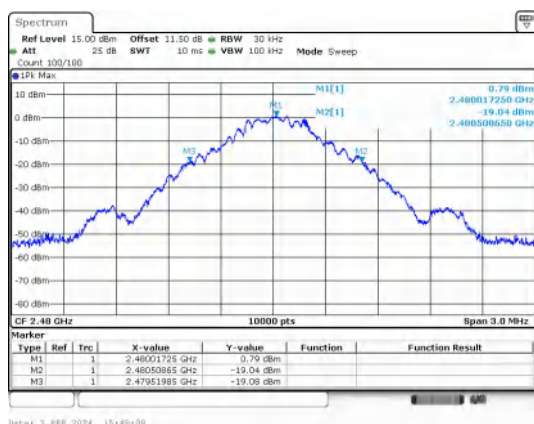
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GFSK_DH5_Channel 0



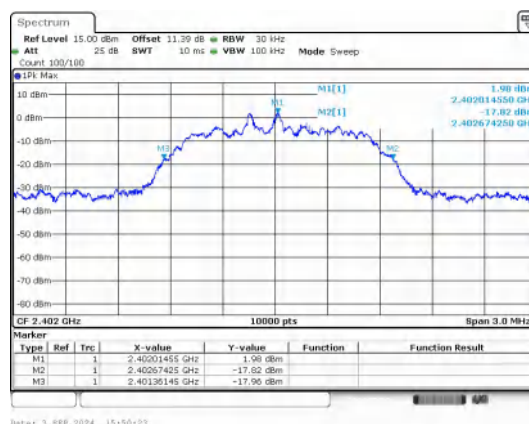
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GFSK_DH5_Channel 39



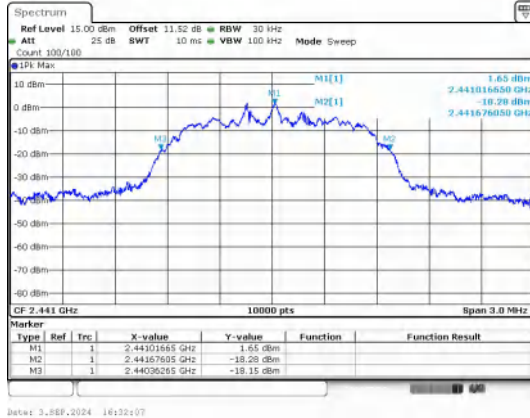
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GFSK_DH5_Channel 78

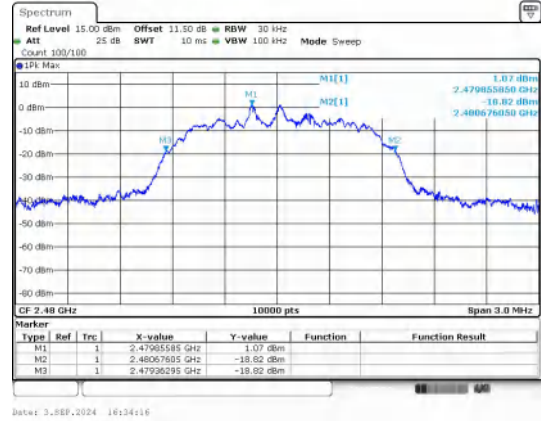


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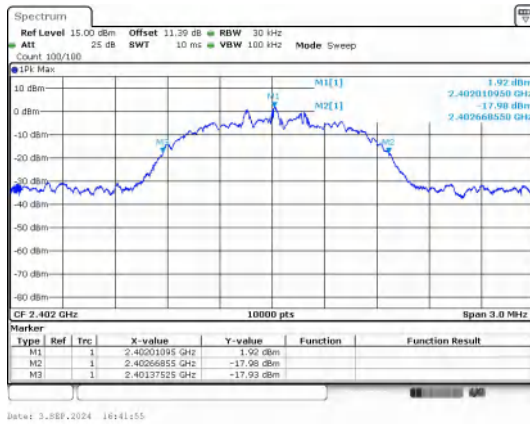
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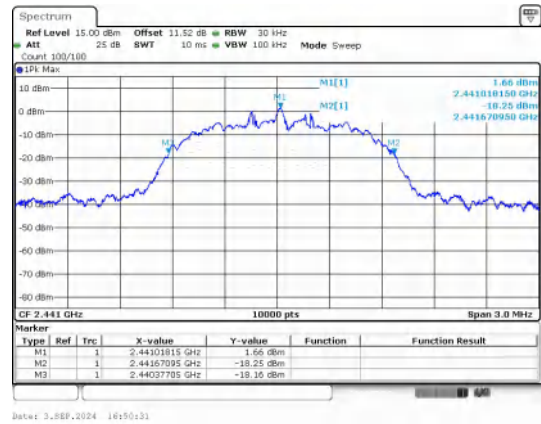
$\pi/4$ DQPSK_2-DH5_Channel 39



$\pi/4$ DQPSK_2-DH5_Channel 78



8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



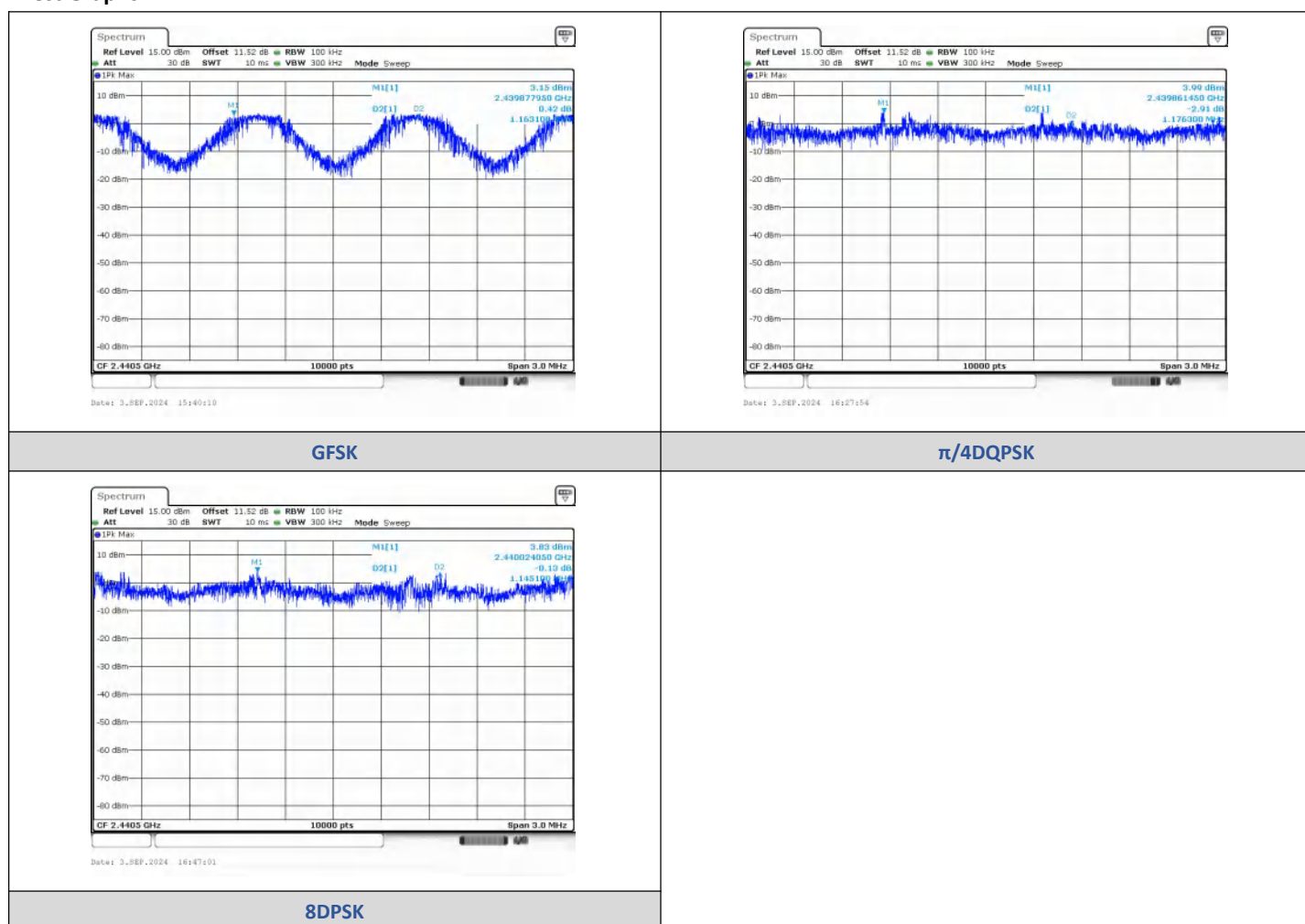
8DPSK_3-DH5_Channel 78

7) Carrier Frequencies Separation

Test Result

Modulation	Packet	Left Center frequency (MHz)	Right Center frequency (MHz)	Hopping Frequency Separation (MHz)	Limit (MHz)	Result
GFSK	DH5	2439.878	2441.041	1.1631	1.030	PASS
$\pi/4$ DQPSK	2-DH5	2439.8614	2441.0377	1.1763	0.873	PASS
8DPSK	3-DH5	2440.024	2441.1692	1.1451	0.86	PASS

Test Graphs



8) Conducted Out Of Band Emission

Test Result

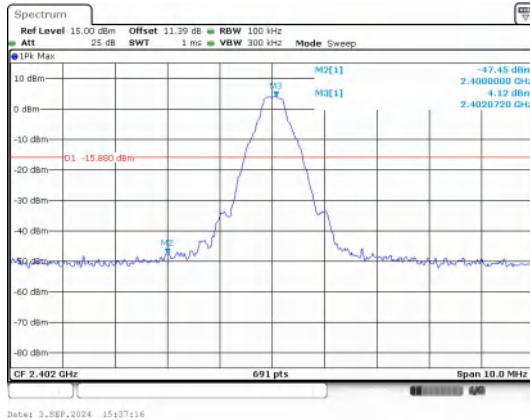
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-47.450	-15.88	-31.570	PASS
			7205.96	-38.782	-15.88	-22.902	PASS
		39	9764.55	-39.593	-16.23	-23.363	PASS
		78	2483.50	-50.656	-16.72	-33.936	PASS
			9920.20	-38.673	-16.72	-21.953	PASS
$\pi/4$ DQPSK	2-DH5	0	2400.00	-44.418	-16.11	-28.308	PASS
			7205.96	-41.096	-16.11	-24.986	PASS
		39	9763.72	-40.353	-16.13	-24.223	PASS
		78	2483.50	-50.788	-16.64	-34.148	PASS
			9920.20	-38.609	-16.64	-21.969	PASS
8DPSK	3-DH5	0	2400.00	-45.501	-15.81	-29.691	PASS
			7205.96	-42.941	-15.81	-27.131	PASS
		39	7323.32	-39.583	-19.79	-19.793	PASS
		78	2483.50	-49.019	-20.52	-28.499	PASS
			7439.85	-43.781	-20.52	-23.261	PASS

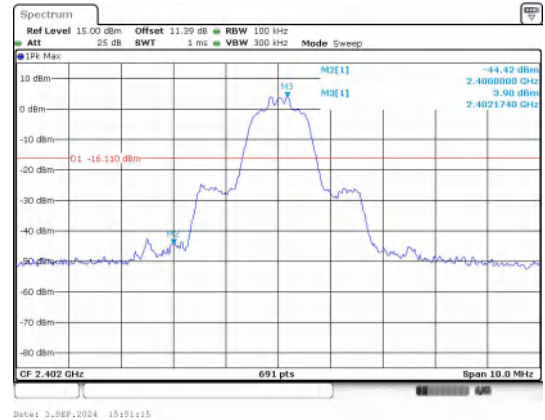
Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2395.79	-48.977	-16.14	-32.837	PASS
			2400.00	-50.036	-16.14	-33.896	PASS
			2483.50	-49.410	-16.78	-32.630	PASS
$\pi/4$ DQPSK	2-DH5		2397.57	-48.497	-16.76	-31.737	PASS
			2400.00	-49.301	-16.76	-32.541	PASS
			2483.50	-50.007	-17.13	-32.877	PASS
8DPSK	3-DH5		2397.48	-48.293	-18.52	-29.773	PASS
			2400.00	-50.450	-18.52	-31.930	PASS
			2483.50	-50.149	-18.07	-32.079	PASS

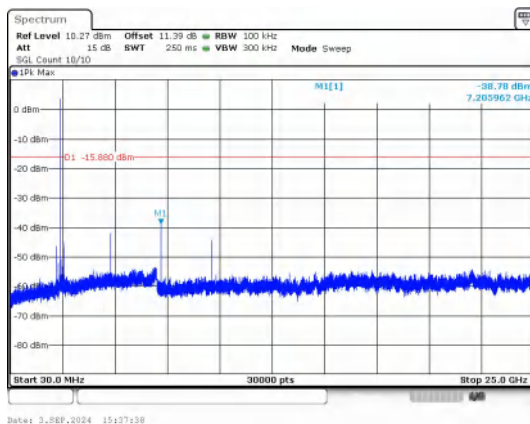
Test Graphs



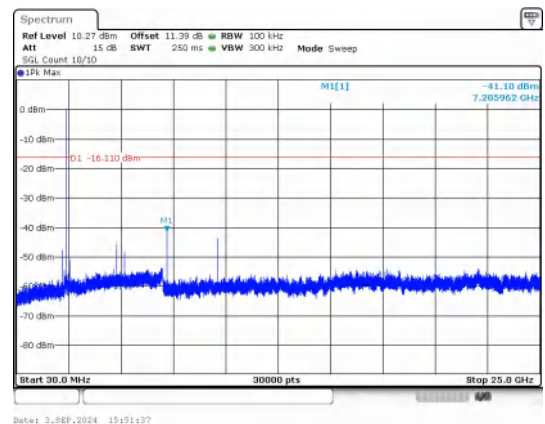
Out Of Band Emission
GFSK_DH5_Channel 0



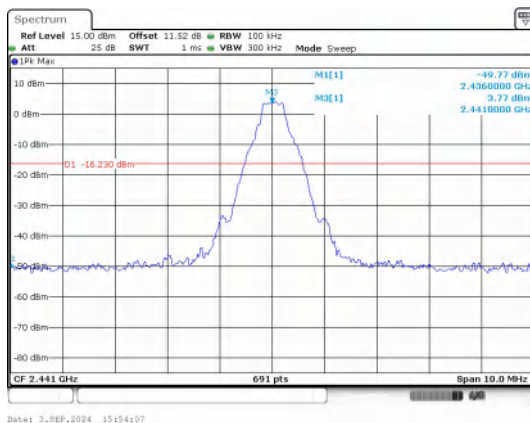
Out Of Band Emission
 $\pi/4$ QPSK_2-DH5_Channel 0



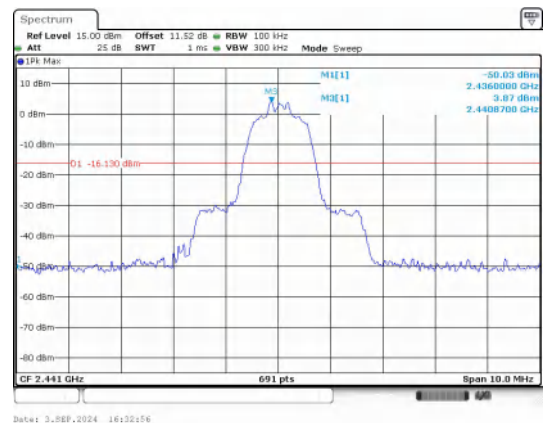
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



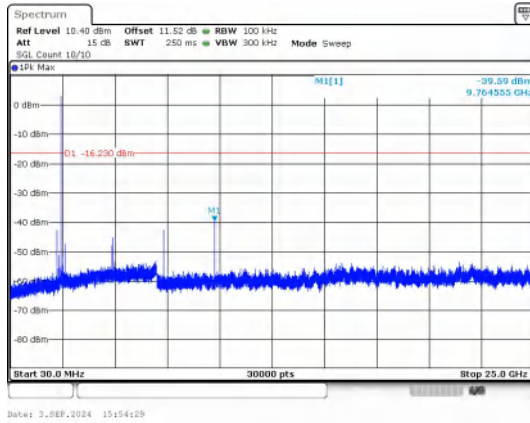
30.0 MHz - 25000.0 MHz
 $\pi/4$ QPSK_2-DH5_Channel 0



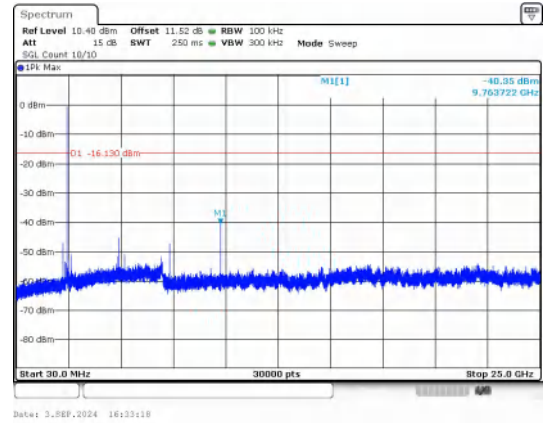
Out Of Band Emission
GFSK_DH5_Channel 39



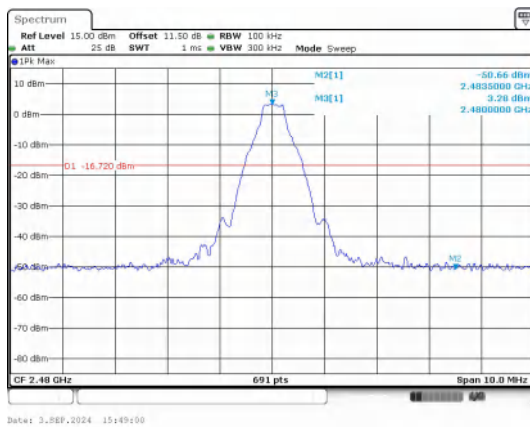
Out Of Band Emission
 $\pi/4$ QPSK_2-DH5_Channel 39



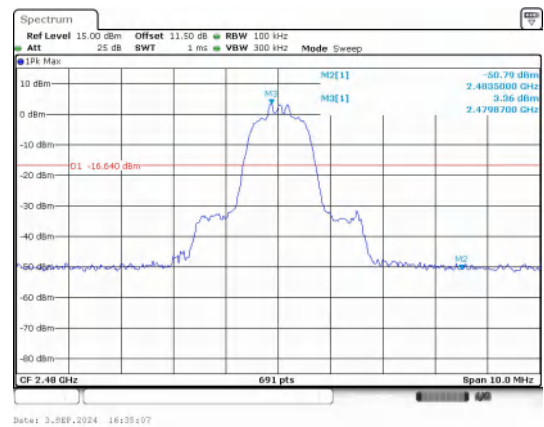
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



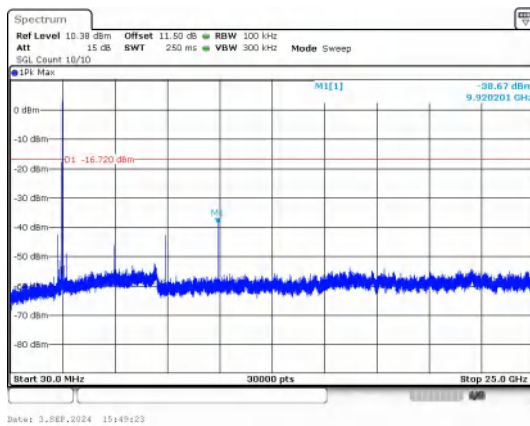
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



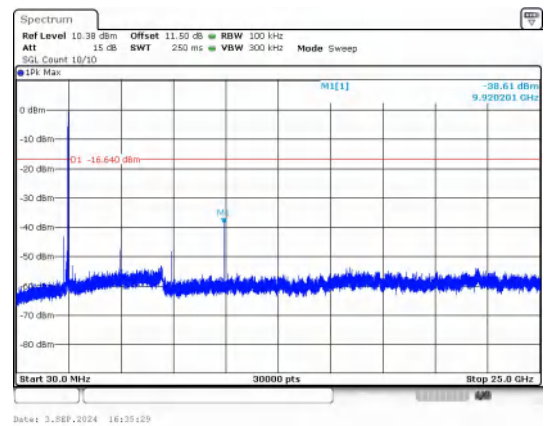
Out Of Band Emission
GFSK_DH5_Channel 78



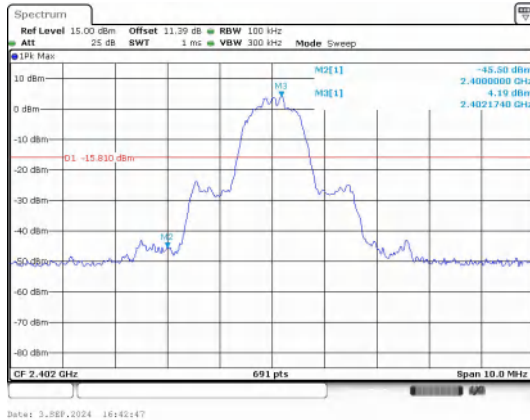
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



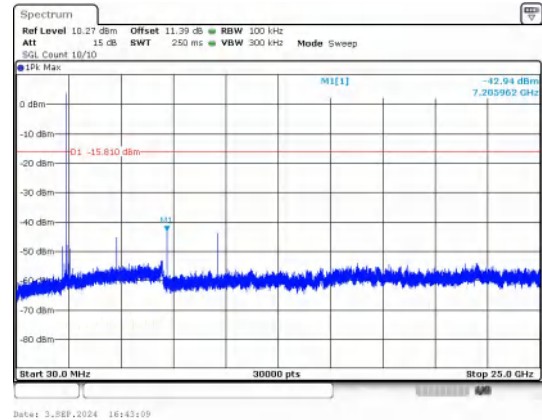
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



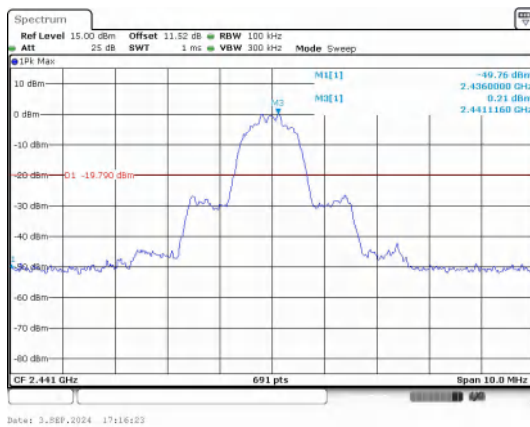
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



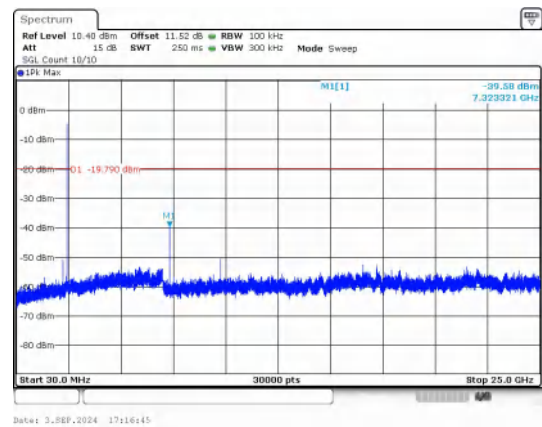
Out Of Band Emission
8DPSK_3-DH5_Channel 0



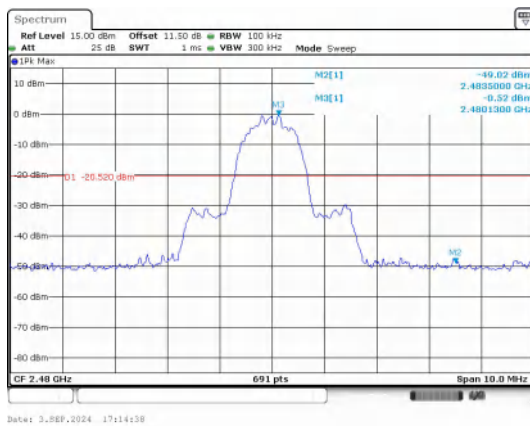
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



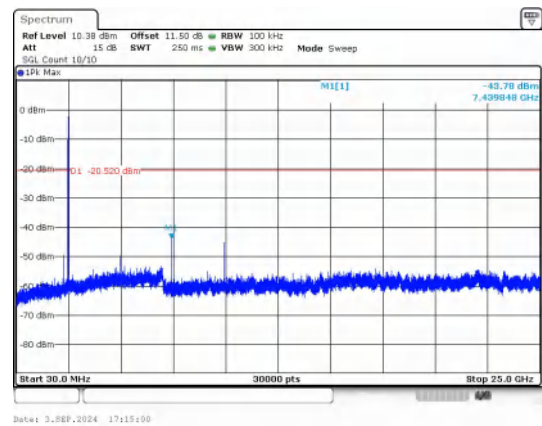
Out Of Band Emission
8DPSK_3-DH5_Channel 39



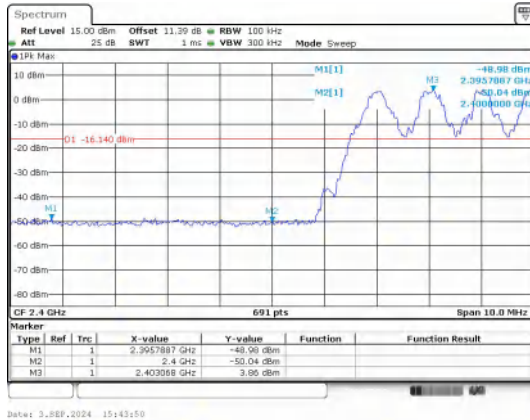
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



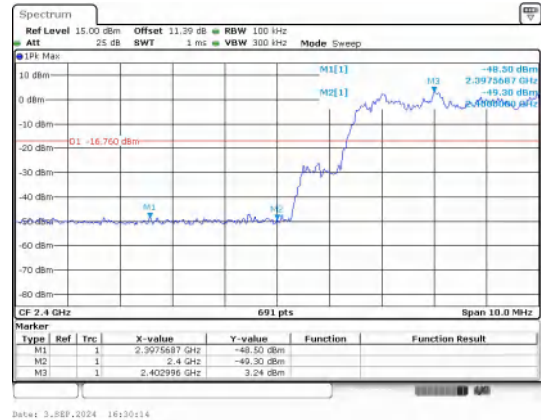
Out Of Band Emission
8DPSK_3-DH5_Channel 78



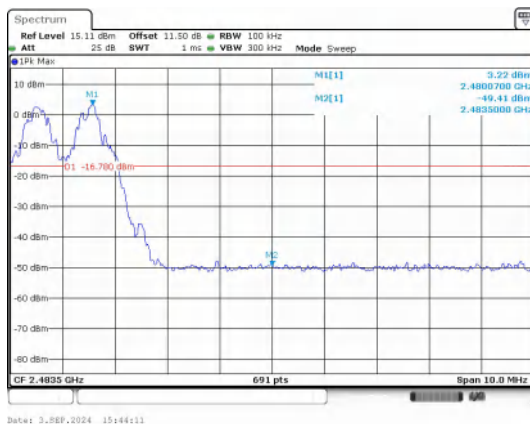
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



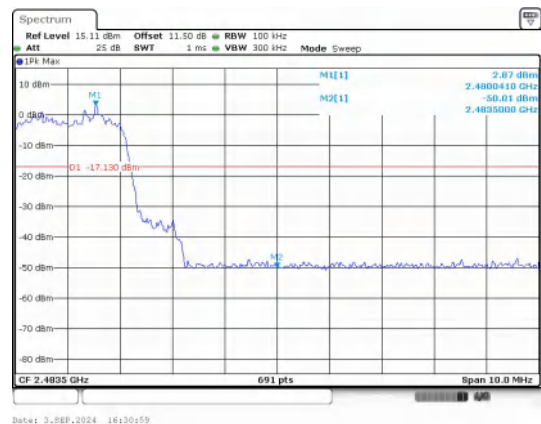
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



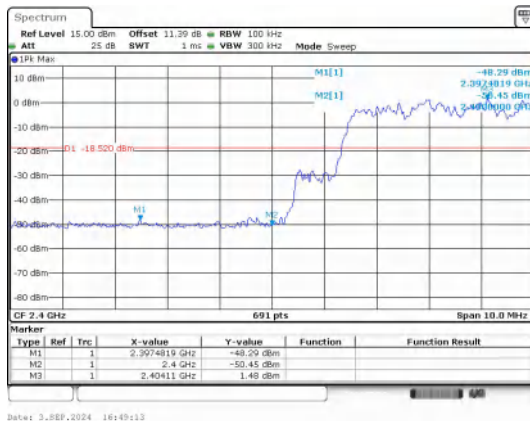
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



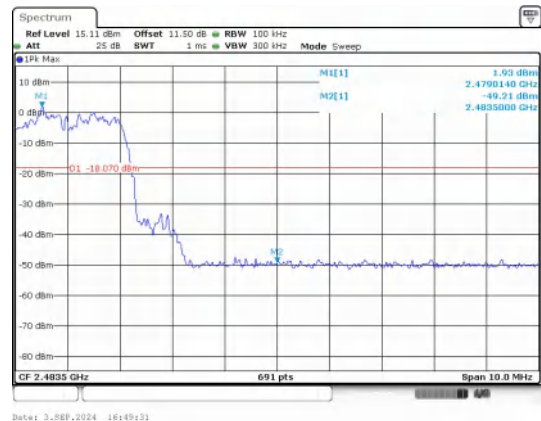
Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



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



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



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