

Appendix

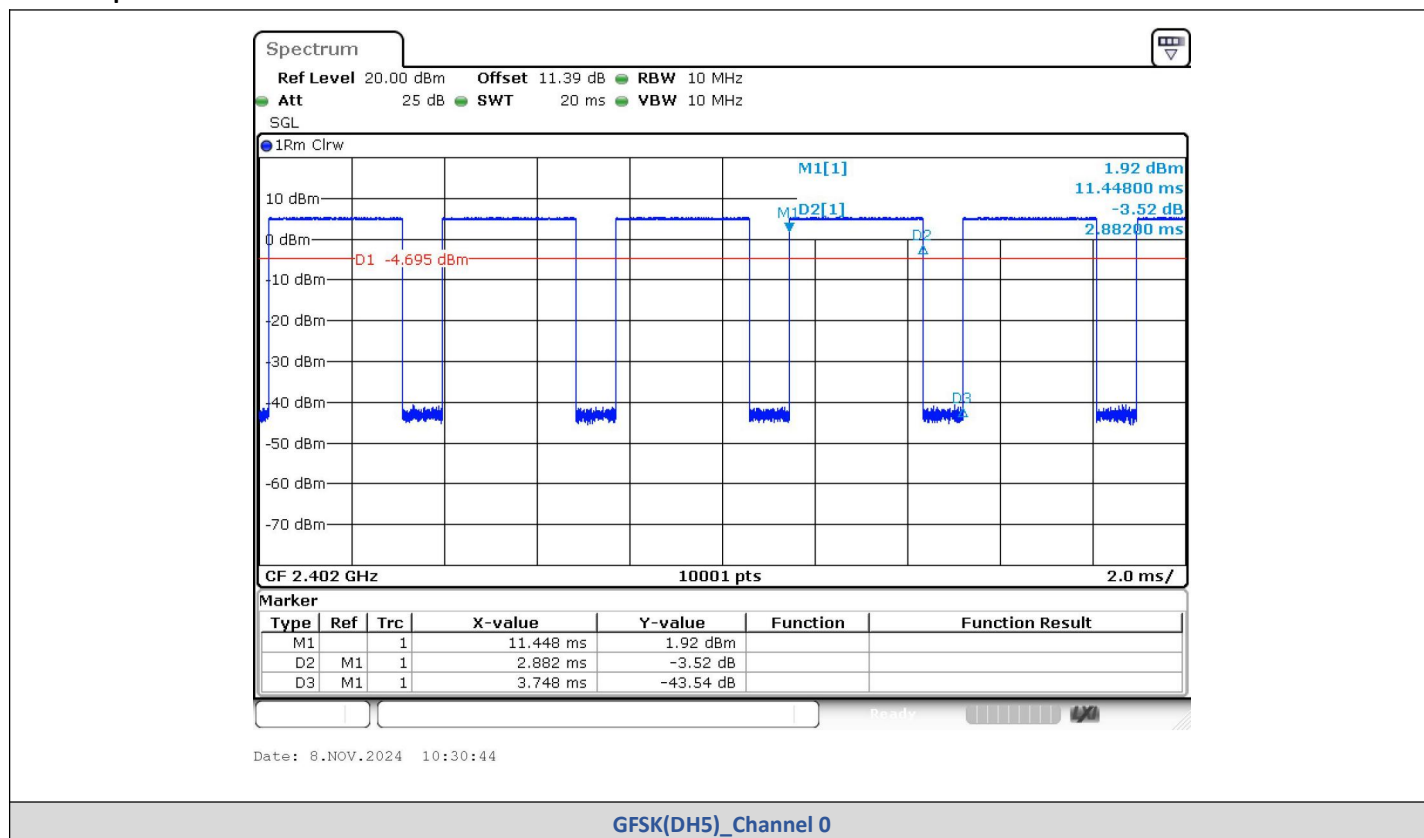
Report No.:	CISRR24110705205
FCC ID:	2A3VP-Q38
Product Name:	Wireless Gaming Controller
Model No.:	Q38
Test Engineer:	Lucas Huang
Supervised by:	Rory Huang

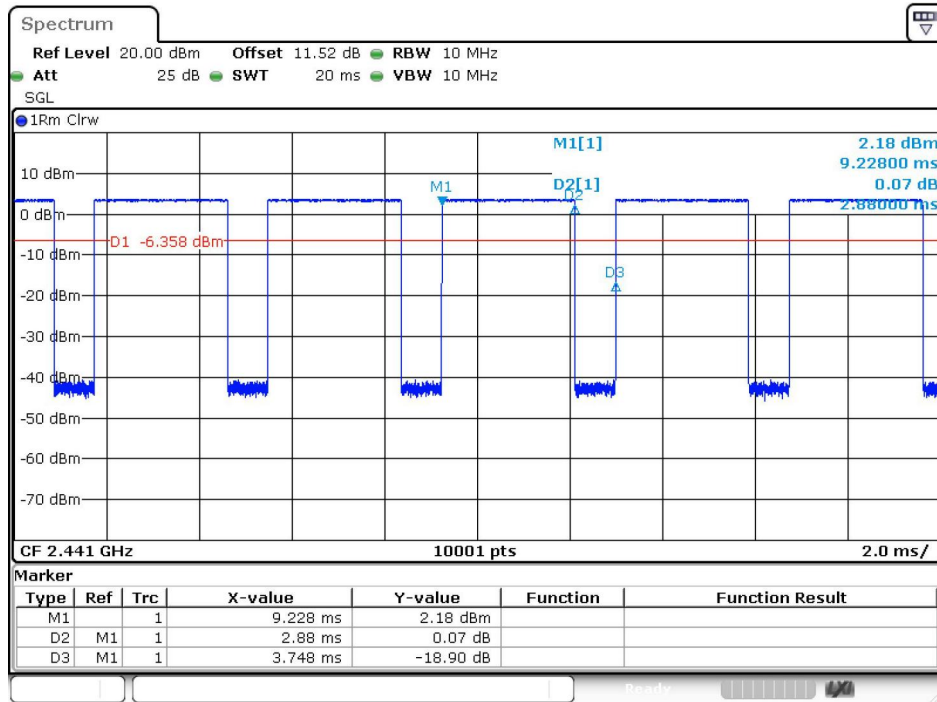
1) Duty Cycle

Test Result

Modulation	Packets	Channel	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle (linear)	Duty Cycle Factor (dB)	1/T
GFSK	DH5	0	2.882	3.748	76.89	0.7689	1.1413	0.3470
		39	2.880	3.748	76.84	0.7684	1.1441	0.3472
		78	2.880	3.748	76.84	0.7684	1.1441	0.3472
$\pi/4$ DQPSK	2-DH5	0	2.886	3.748	77.00	0.7700	1.1351	0.3465
		39	2.886	3.748	77.00	0.7700	1.1351	0.3465
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465
8DPSK	3-DH5	0	2.888	3.748	77.05	0.7705	1.1323	0.3463
		39	2.888	3.748	77.05	0.7705	1.1323	0.3463
		78	2.886	3.748	77.00	0.7700	1.1351	0.3465

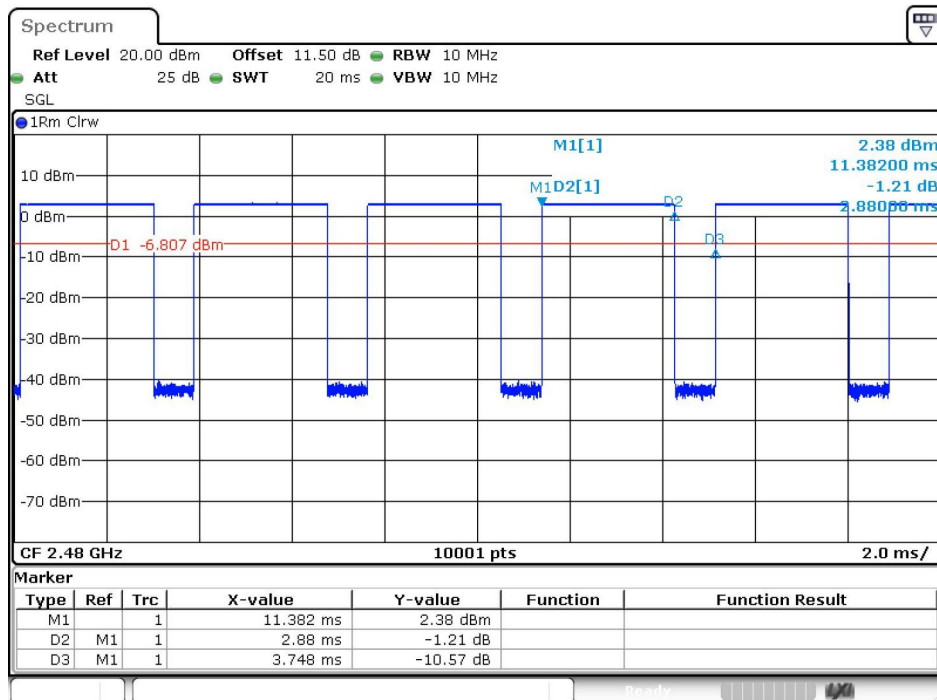
Test Graphs





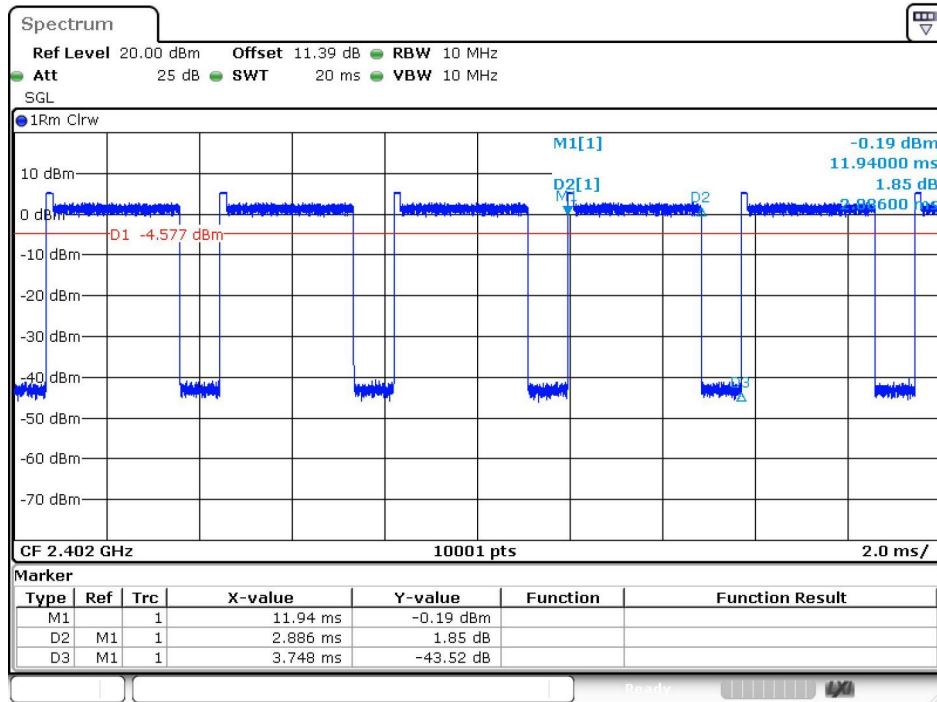
Date: 8.NOV.2024 11:01:49

GFSK(DH5)_Channel 39



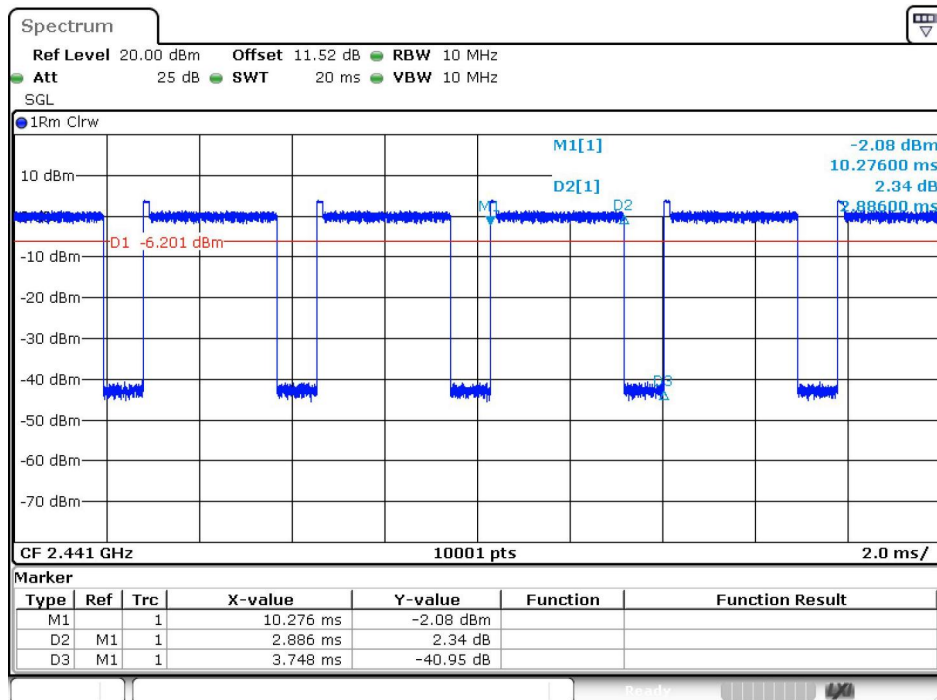
Date: 8.NOV.2024 13:12:58

GFSK(DH5)_Channel 78



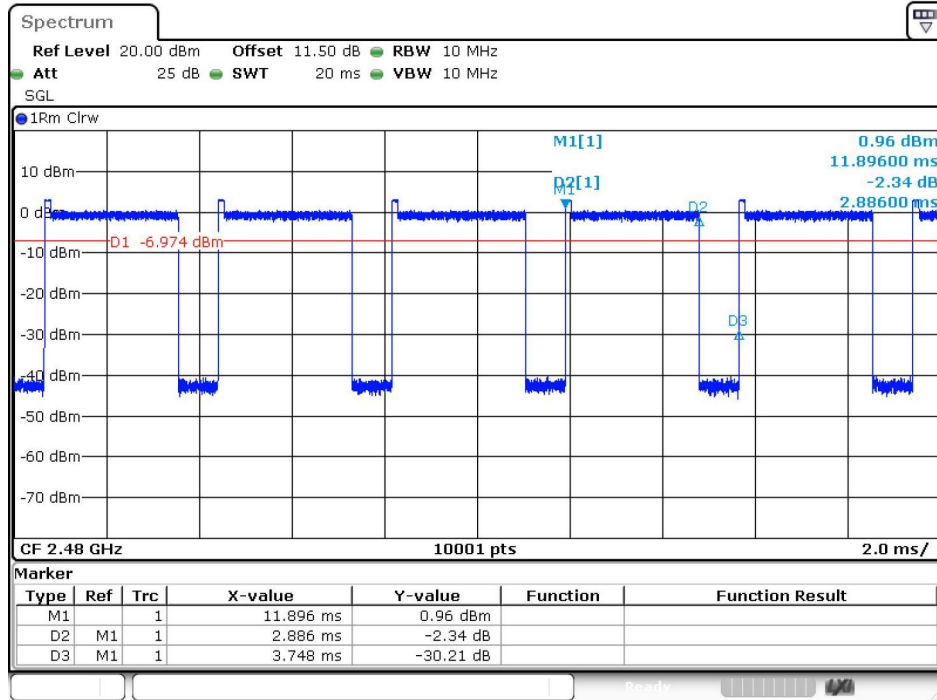
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$\pi/4$ DQPSK(2-DH5)_Channel 0



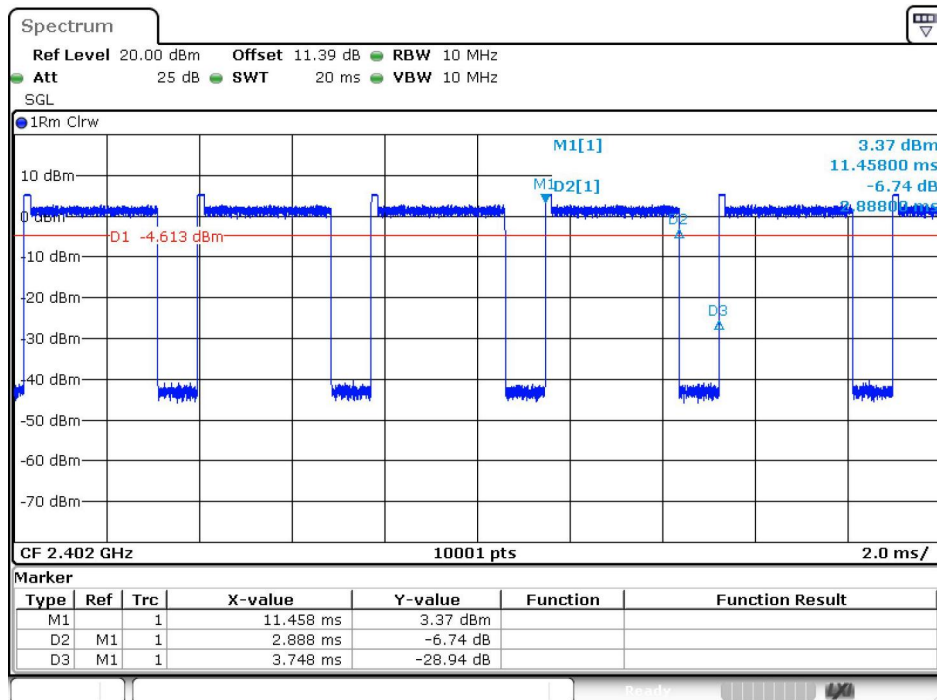
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$\pi/4$ DQPSK(2-DH5)_Channel 39



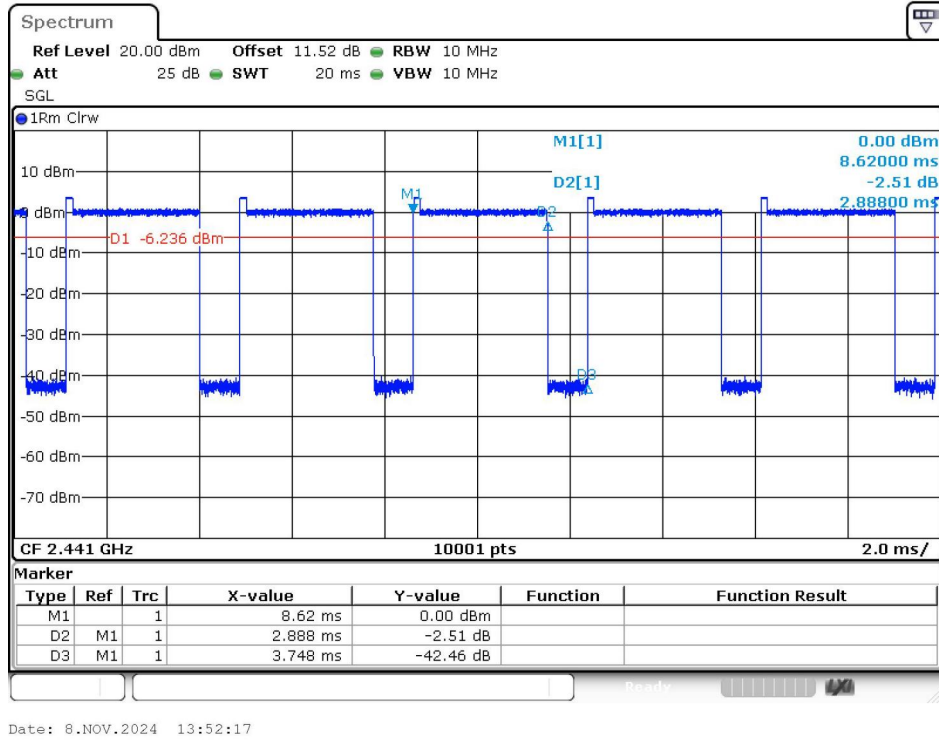
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$\pi/4$ DQPSK(2-DH5)_Channel 78

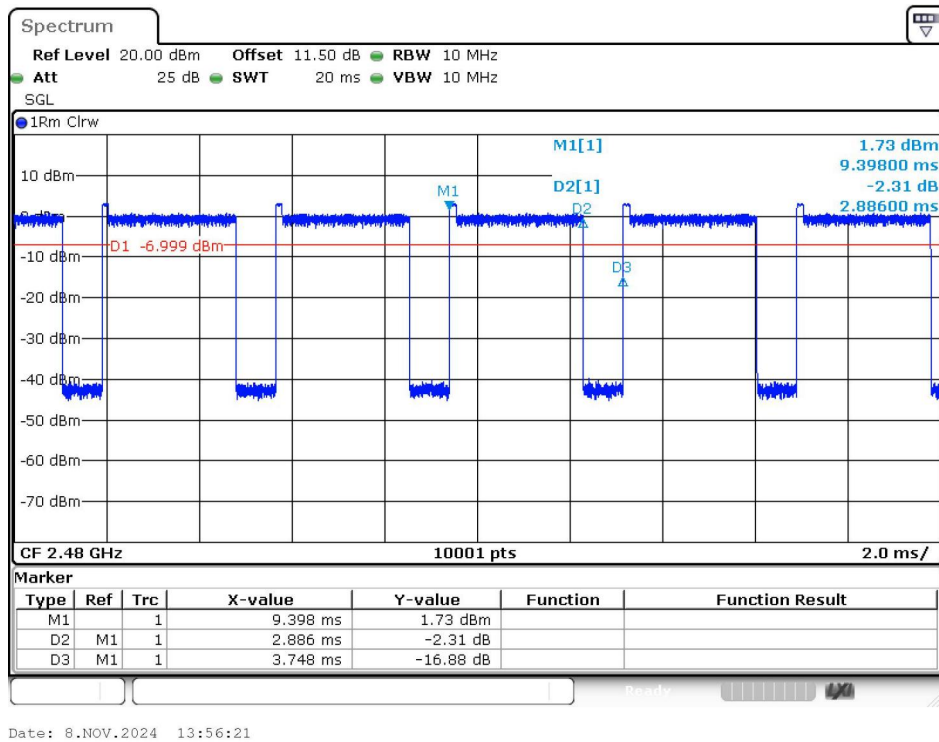


Date: 8.NOV.2024 13:27:10

8DPSK(3-DH5)_Channel 0



8DPSK(3-DH5)_Channel 39



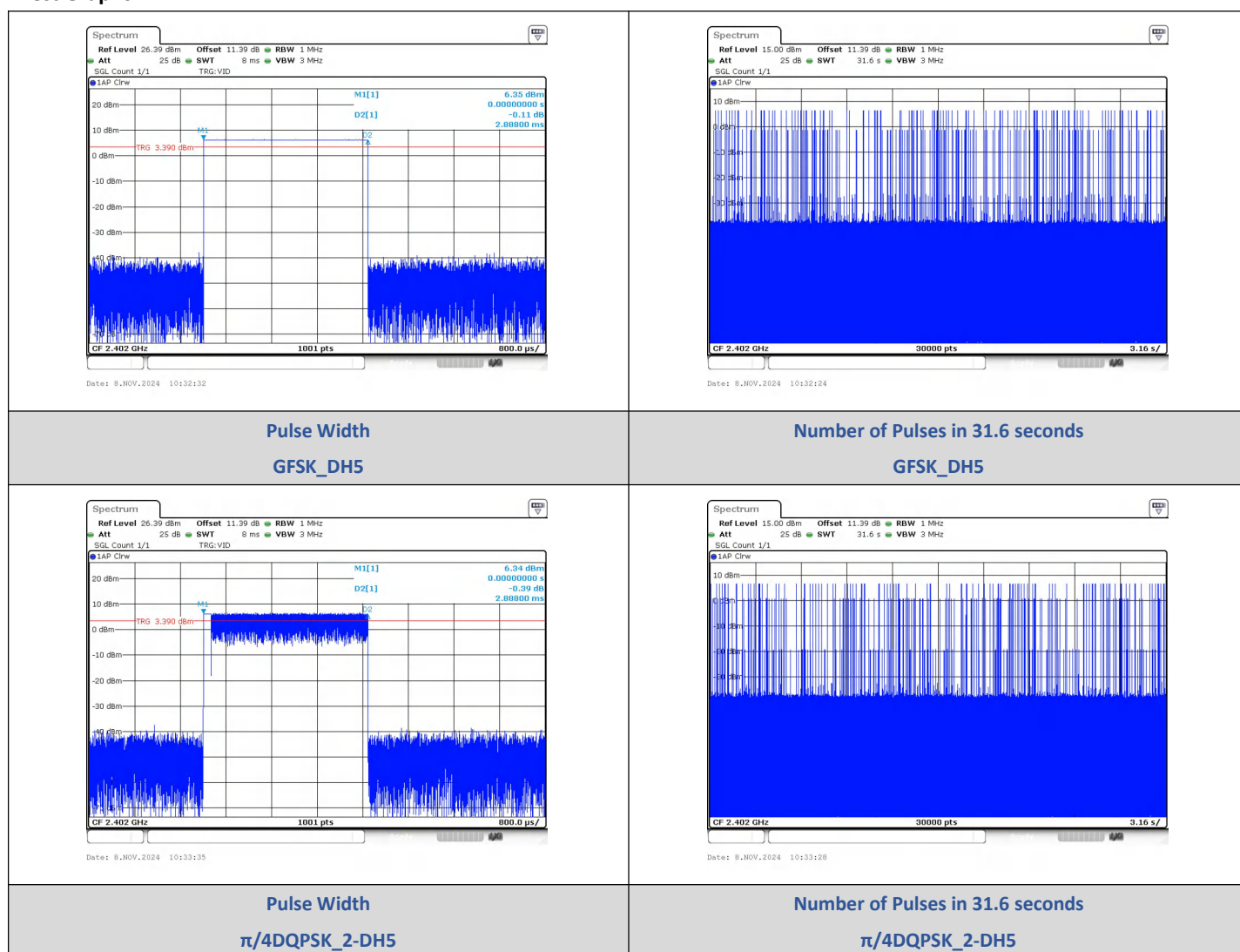
8DPSK(3-DH5)_Channel 78

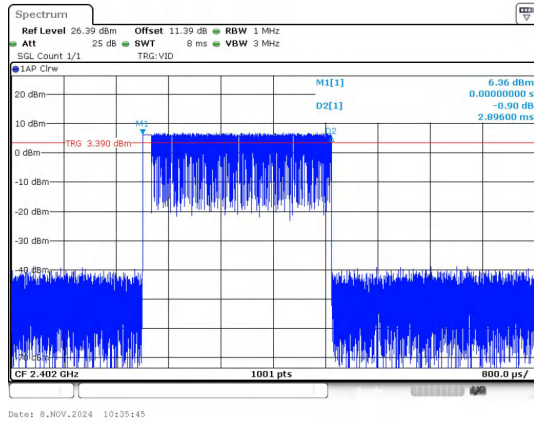
2) Dwell Time

Test Result

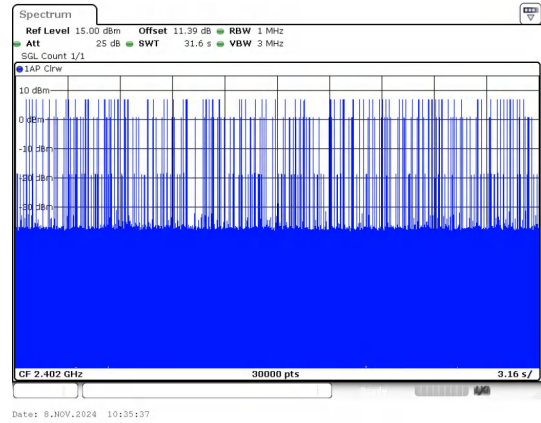
Modulation	Packet	Channel	Pulse Width (ms)	Number of Pulses in 31.6 seconds	Dwell Time (ms)	Limit (ms)	Result
GFSK	DH5	CH0 (2402MHz)	2.888	114	329.23	< 400	PASS
$\pi/4$ DQPSK	2-DH5		2.888	114	329.23		PASS
8DPSK	3-DH5		2.896	103	298.29		PASS

Test Graphs





Pulse Width
8DPSK_3-DH5



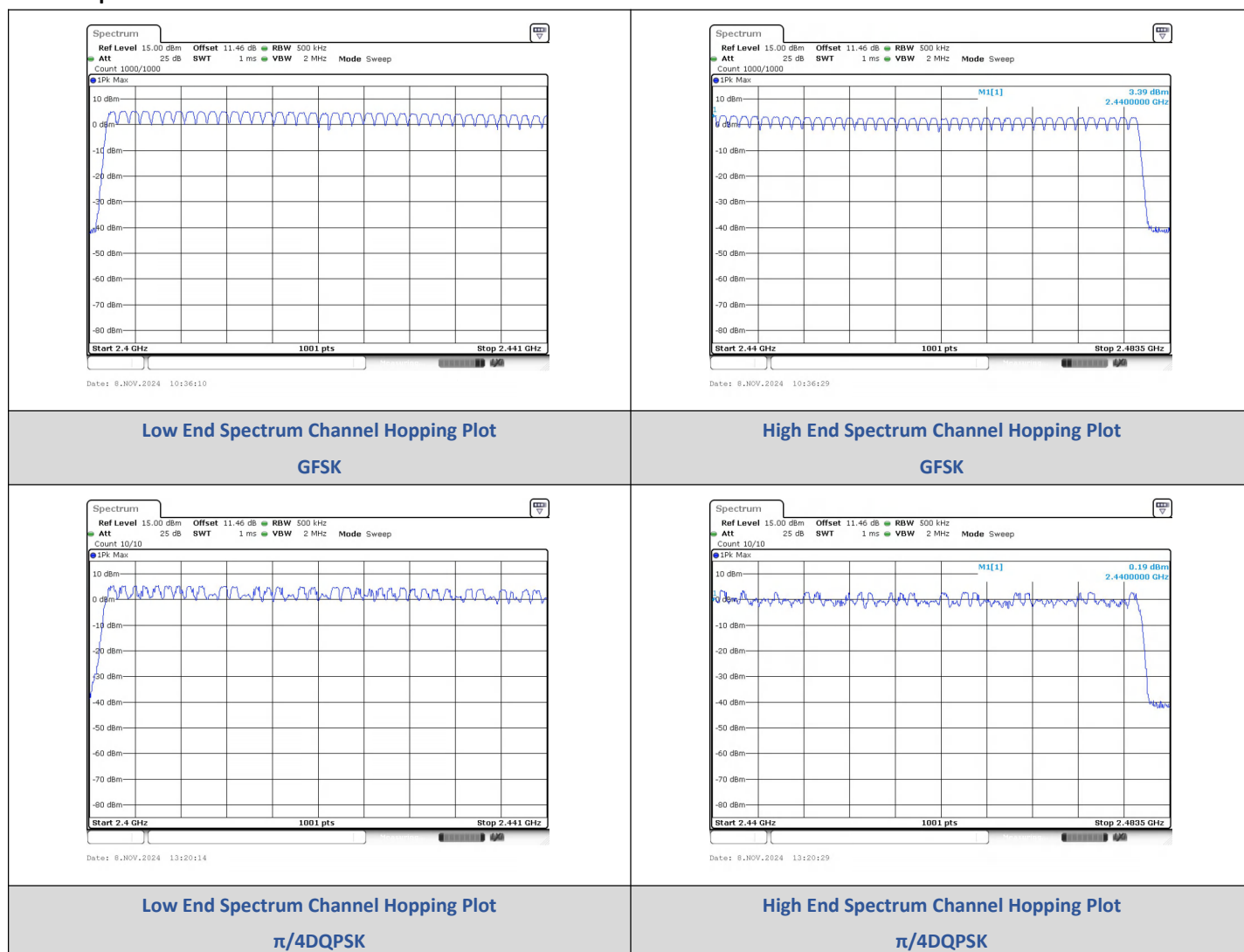
Number of Pulses in 31.6 seconds
8DPSK_3-DH5

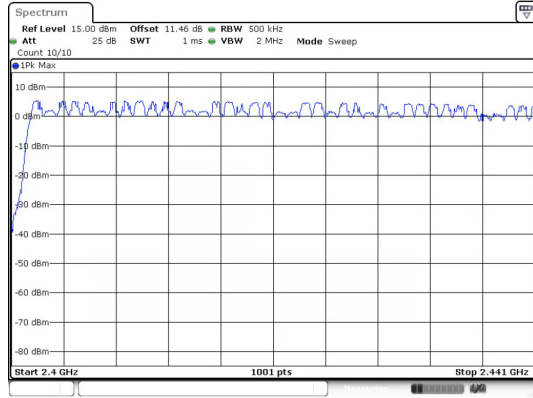
3) Number Of Hopping Channel

Test Result

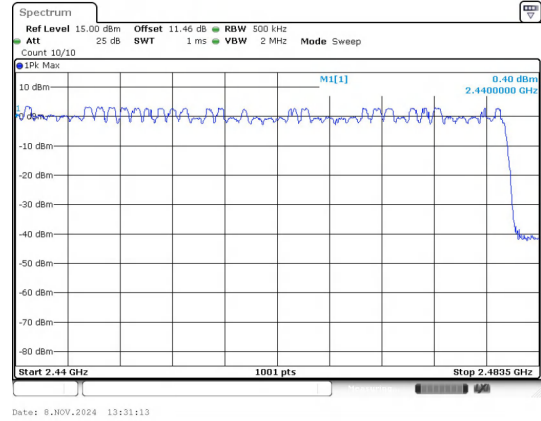
Modulation	Packet	Number of Hopping Channel	Limit	Result
GFSK	DH5	79	15	PASS
$\pi/4$ DQPSK	2-DH5	79	15	PASS
8DPSK	3-DH5	79	15	PASS

Test Graphs





Low End Spectrum Channel Hopping Plot
8DPSK



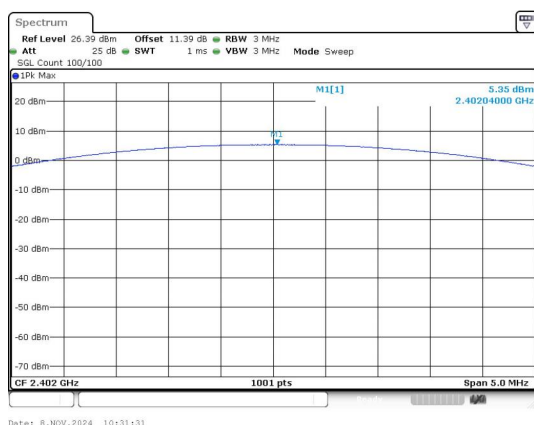
High End Spectrum Channel Hopping Plot
8DPSK

4) Conducted Peak Output Power

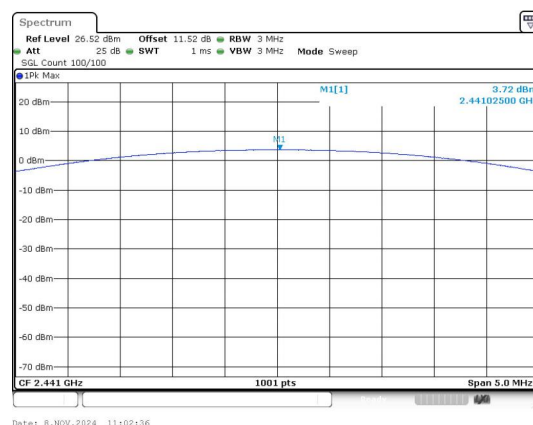
Test Result

Modulation	Packet Type	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Limit (dBm)	Result
GFSK	DH5	0	5.35	3.43	≤30	PASS
		39	3.72	2.36		PASS
		78	3.23	2.10		PASS
$\pi/4$ DQPSK	2-DH5	0	5.46	3.52	≤20.97	PASS
		39	3.84	2.42		PASS
		78	3.07	2.03		PASS
8DPSK	3-DH5	0	5.45	3.51		PASS
		39	3.78	2.39		PASS
		78	3.08	2.03		PASS

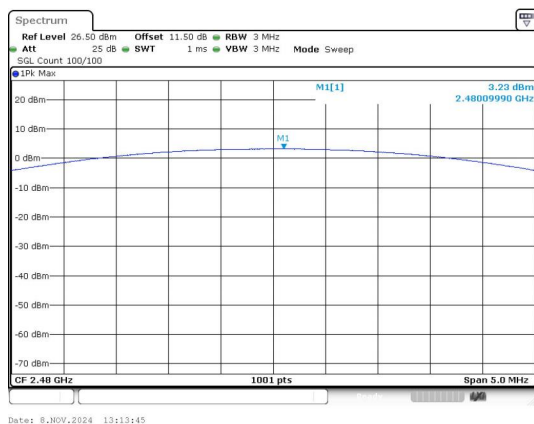
Test Graphs



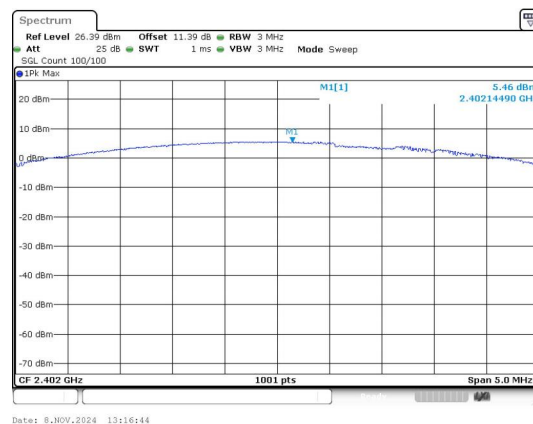
Peak Output Power
GFSK_Channel 0



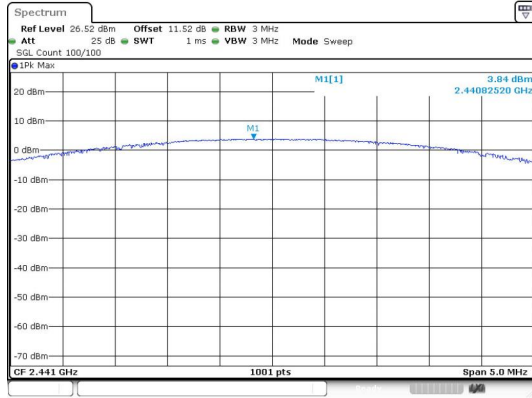
Peak Output Power
GFSK_Channel 39



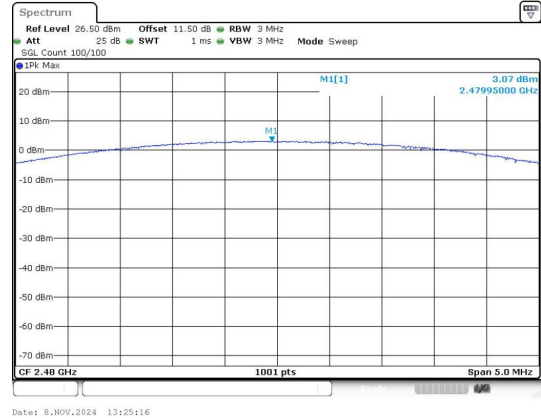
Peak Output Power
GFSK_Channel 78



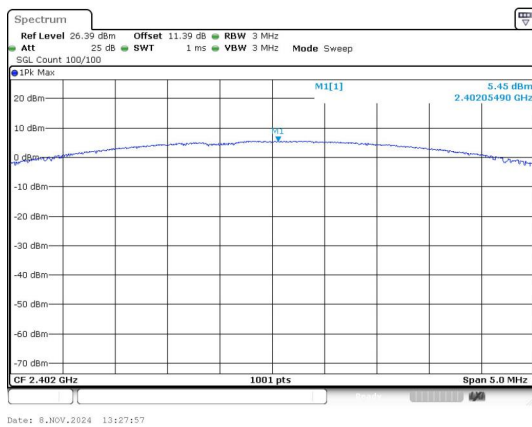
Peak Output Power
 $\pi/4$ DQPSK_Channel 0



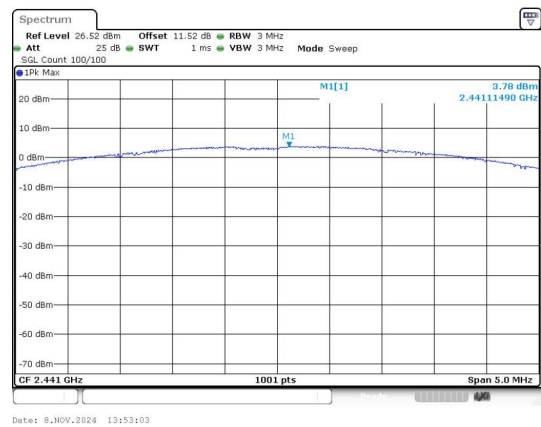
Peak Output Power
 $\pi/4$ DQPSK_Channel 39



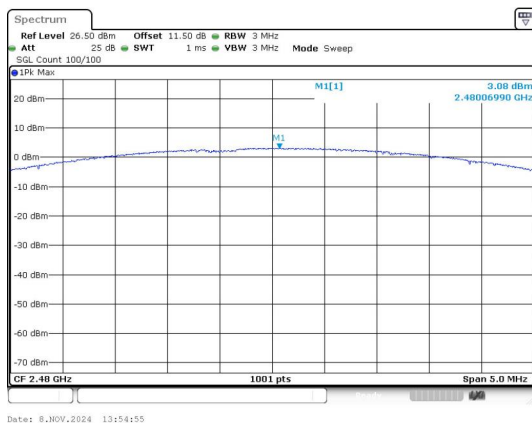
Peak Output Power
 $\pi/4$ DQPSK_Channel 78



Peak Output Power
8DPSK_Channel 0



Peak Output Power
8DPSK_Channel 39



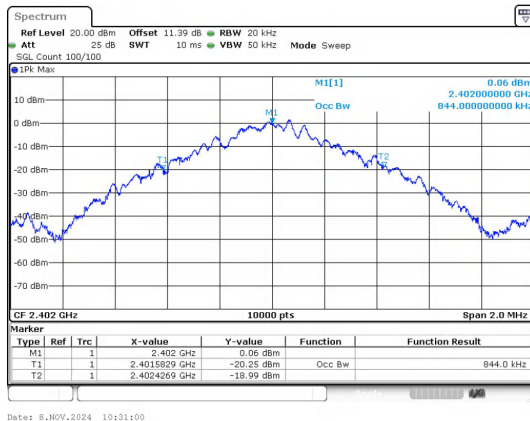
Peak Output Power
8DPSK_Channel 78

5) 99% Bandwidth

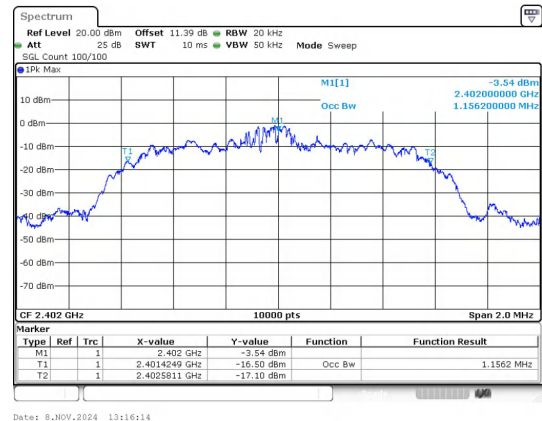
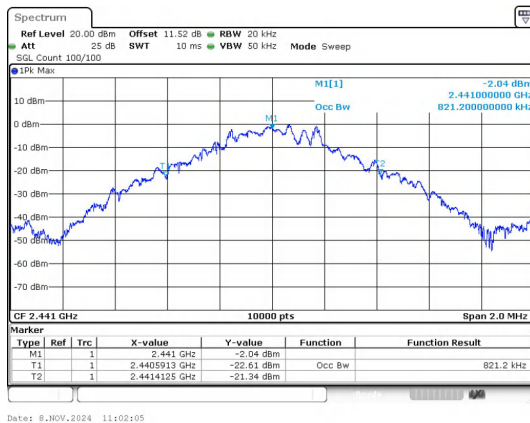
Test Result

Modulation	Channel	Center Frequency (MHz)	99% BW (MHz)
GFSK	0	2402	0.84400
	39	2441	0.82120
	78	2480	0.82460
$\pi/4$ DQPSK	0	2402	1.1562
	39	2441	1.1574
	78	2480	1.1572
8DPSK	0	2402	1.1680
	39	2441	1.1558
	78	2480	1.1586

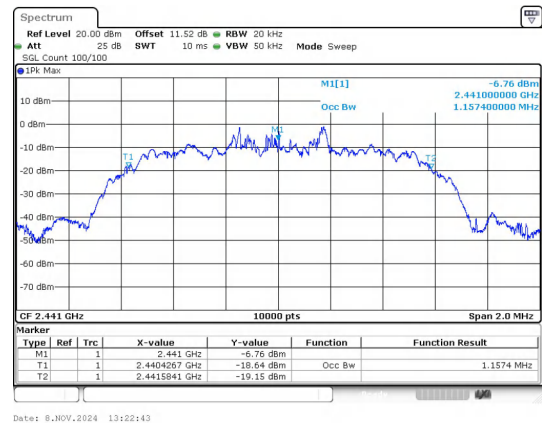
Test Graphs

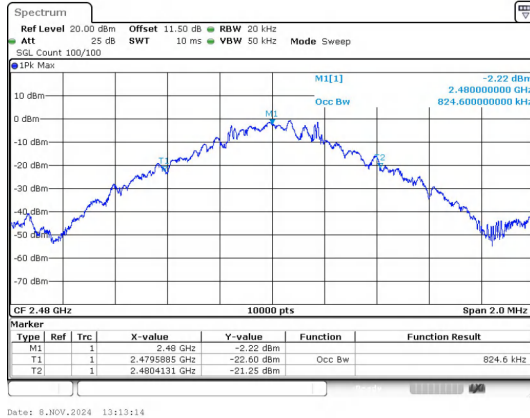


GFSK_DH5_Channel 0

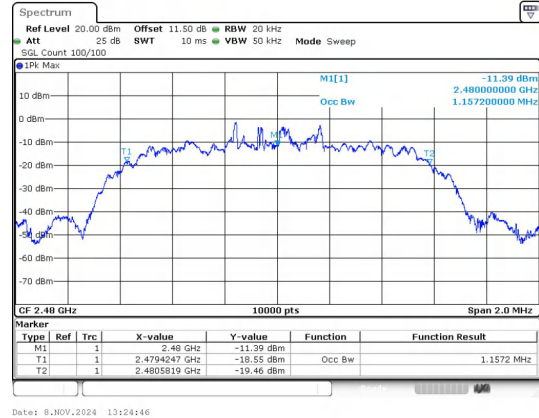

 $\pi/4$ DQPSK_2-DH5_Channel 0


GFSK_DH5_Channel 39

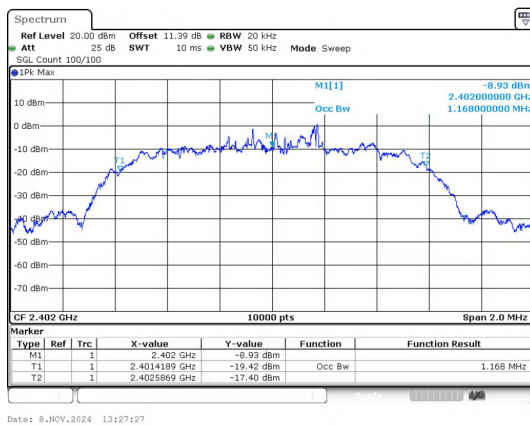

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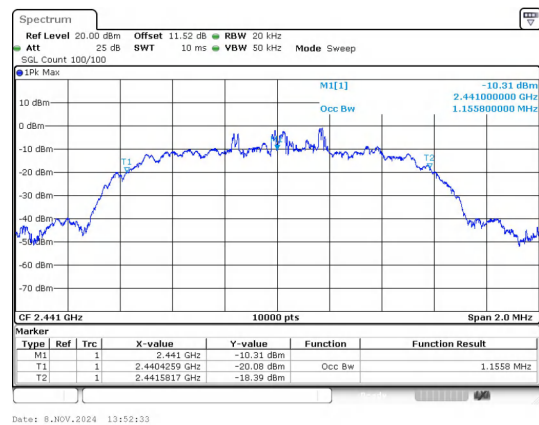
GFSK_DH5_Channel 78



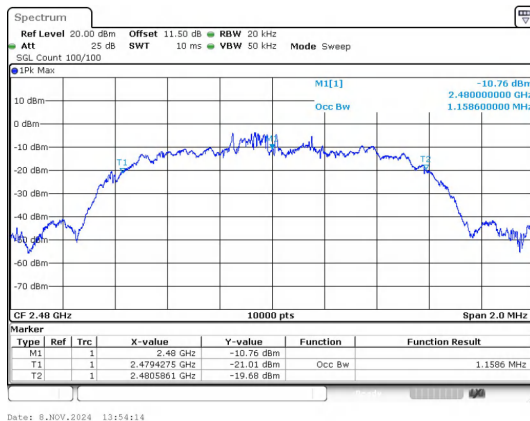
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8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



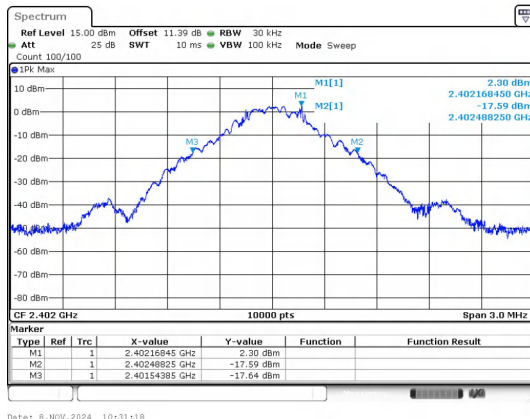
8DPSK_3-DH5_Channel 78

6) 20dB Bandwidth

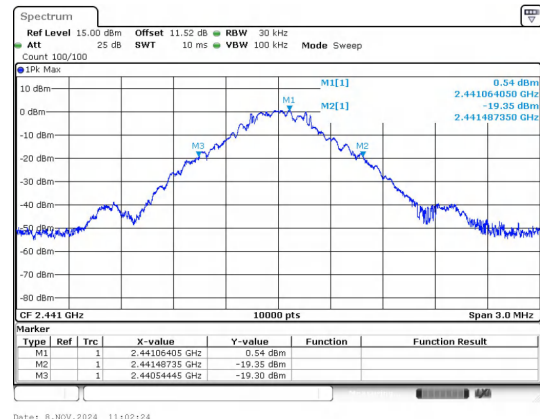
Test Result

Modulation	Channel	Center Frequency (MHz)	20 dB Bandwidth (MHz)
GFSK	0	2402 MHz	0.9500
	39	2441 MHz	0.9500
	78	2480 MHz	0.9400
$\pi/4$ DQPSK	0	2402 MHz	1.200
	39	2441 MHz	1.190
	78	2480 MHz	1.210
8DPSK	0	2402 MHz	1.230
	39	2441 MHz	1.250
	78	2480 MHz	1.240

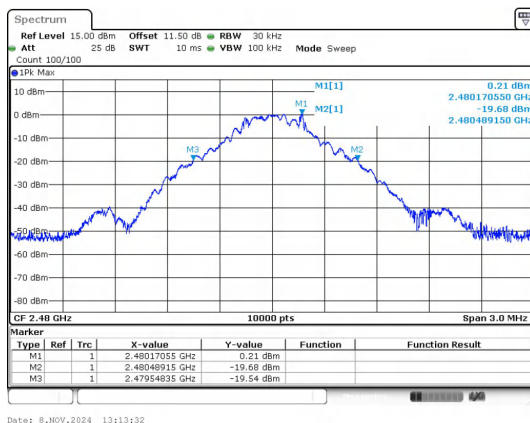
Test Graphs



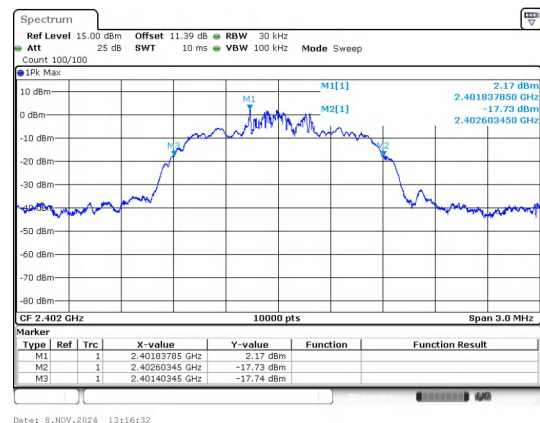
GFSK_DH5_Channel 0



GFSK_DH5_Channel 39



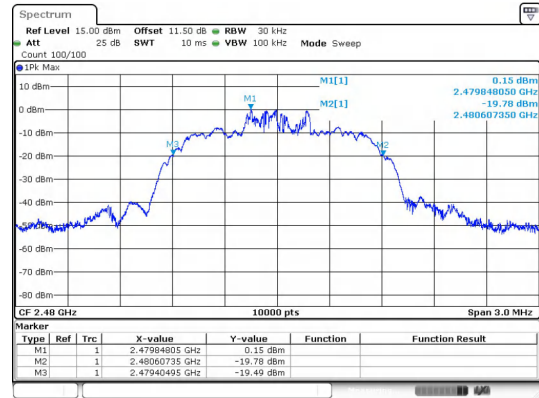
GFSK_DH5_Channel 78



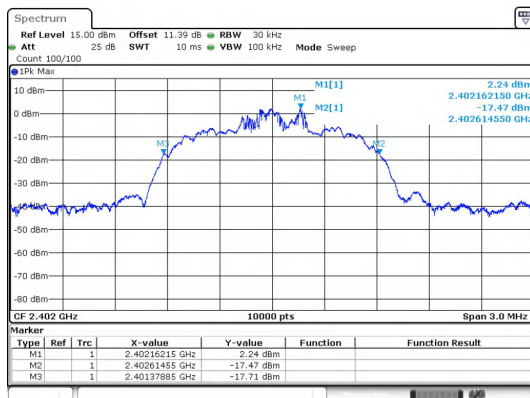
$\pi/4$ DQPSK_2-DH5_Channel 0



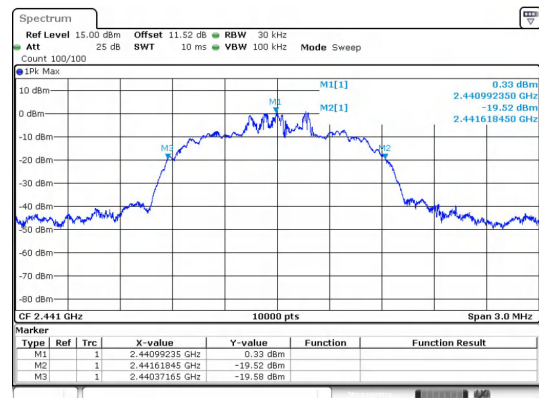
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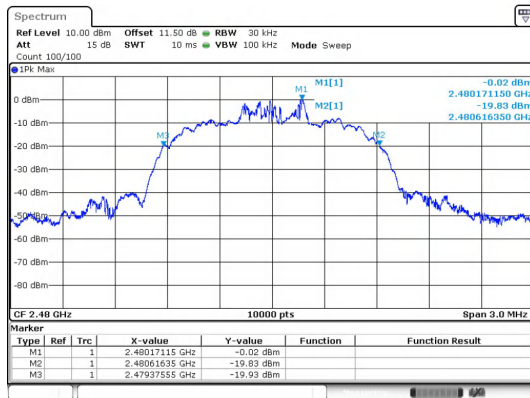
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8DPSK_3-DH5_Channel 0



8DPSK_3-DH5_Channel 39



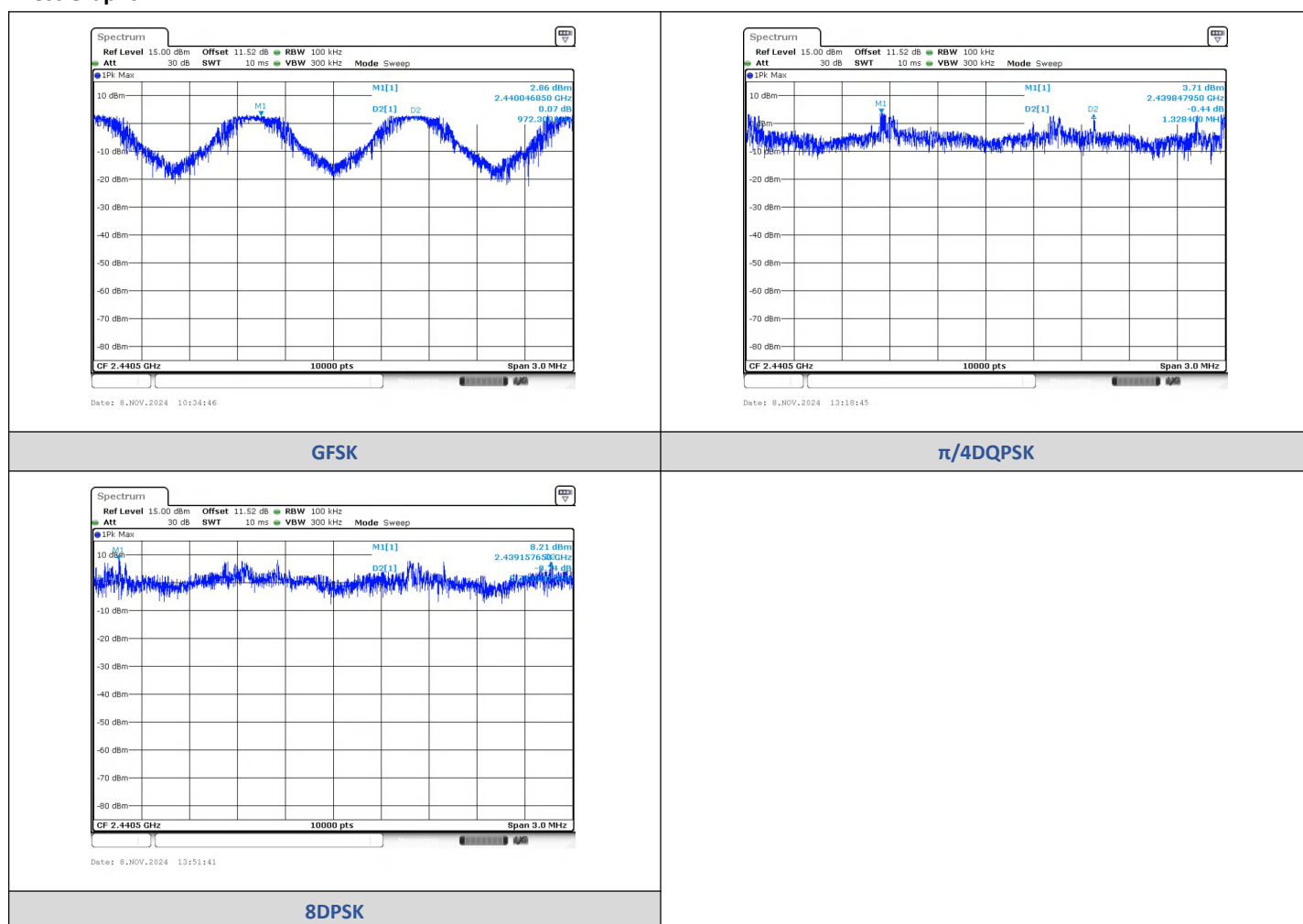
8DPSK_3-DH5_Channel 78

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	2440.0469	2441.0192	0.9723	0.95	PASS
$\pi/4$ DQPSK	2-DH5	2439.8479	2441.1764	1.3284	0.8	PASS
8DPSK	3-DH5	2439.1577	2441.8616	2.7039	2.0	PASS

Test Graphs



8) Conducted Out Of Band Emission

Test Result

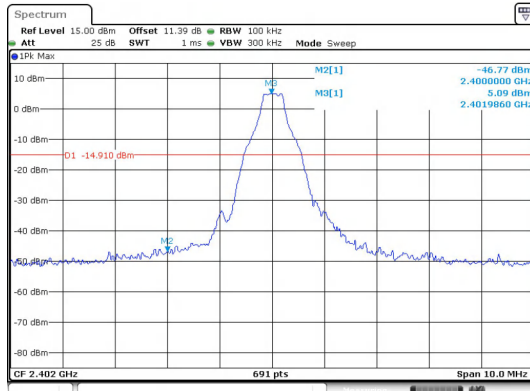
Non-Hopping

Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	0	2400.00	-46.770	-14.91	-31.860	PASS
			4803.85	-43.437	-14.91	-28.527	PASS
		39	4882.09	-46.268	-16.58	-29.688	PASS
		78	120.31	-47.540	-17.05	-30.490	PASS
			2483.50	-49.440	-17.05	-32.390	PASS
$\pi/4$ DQPSK	2-DH5	0	120.31	-46.755	-14.55	-32.205	PASS
			2400.00	-46.240	-14.55	-31.690	PASS
		39	120.31	-47.287	-16.21	-31.077	PASS
		78	120.31	-46.960	-17.29	-29.670	PASS
			2483.50	-49.760	-17.29	-32.470	PASS
8DPSK	3-DH5	0	120.31	-47.381	-14.74	-32.641	PASS
			2400.00	-45.440	-14.74	-30.700	PASS
		39	120.31	-47.416	-16.71	-30.706	PASS
		78	120.31	-46.988	-17.25	-29.738	PASS
			2483.50	-49.050	-17.25	-31.800	PASS

Hopping

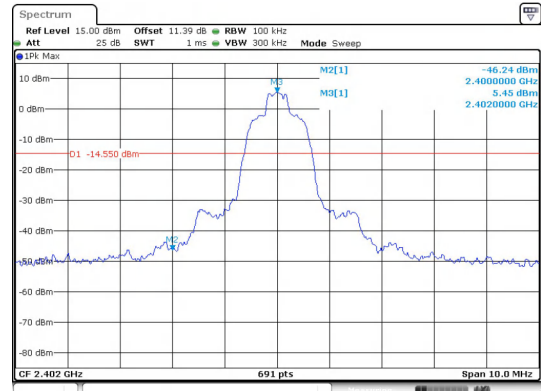
Modulation	Packet	Channel	OOB Emission Frequency (MHz)	OOB Emission Level (dBm)	Limit (dBm)	Over Limit (dB)	Result
GFSK	DH5	Hopping	2395.95	-48.301	-14.81	-33.491	PASS
			2400.00	-48.380	-14.81	-33.570	PASS
			2483.50	-51.240	-17.98	-33.260	PASS
π/4DQPSK	2-DH5		2400.00	-48.480	-15.29	-33.190	PASS
			2483.50	-51.100	-18.87	-32.230	PASS
8DPSK	3-DH5		2396.16	-48.333	-15.18	-33.153	PASS
			2400.00	-48.430	-15.18	-33.250	PASS
			2483.50	-50.090	-22.58	-27.510	PASS

Test Graphs



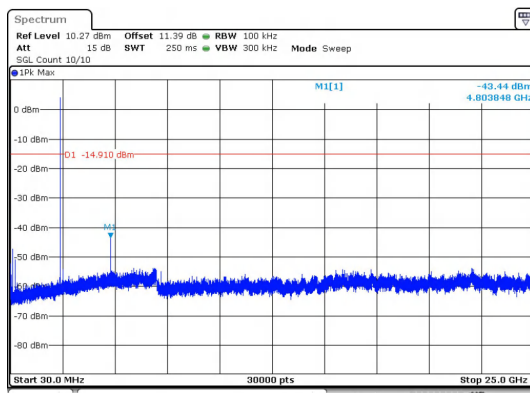
Date: 8.NOV.2024 10:31:52

Out Of Band Emission
GFSK_DH5_Channel 0



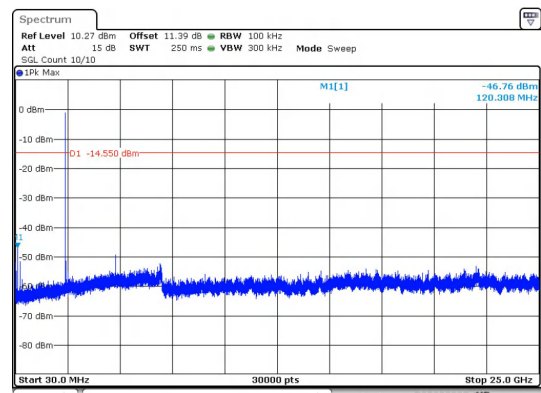
Date: 8.NOV.2024 13:59:31

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



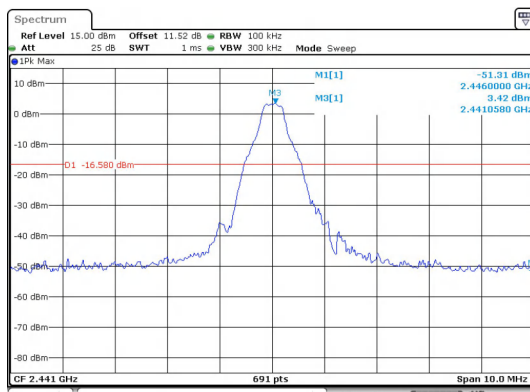
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30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 0



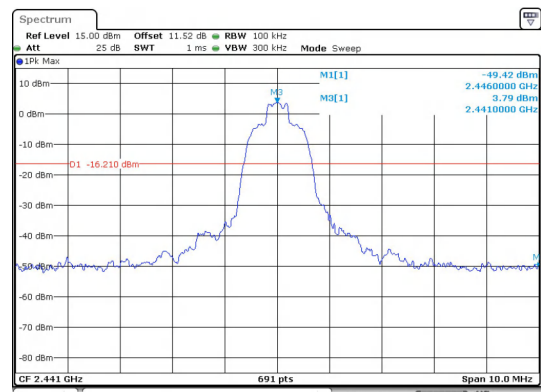
Date: 8.NOV.2024 13:59:54

30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 0



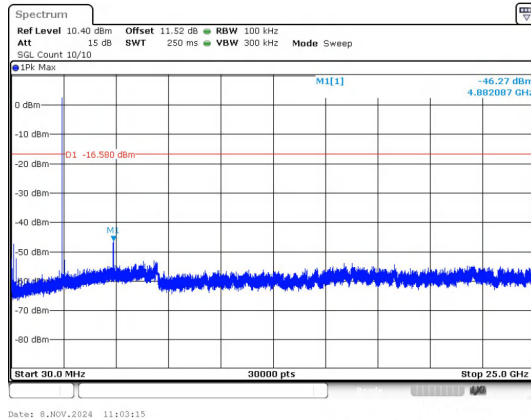
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Out Of Band Emission
GFSK_DH5_Channel 39

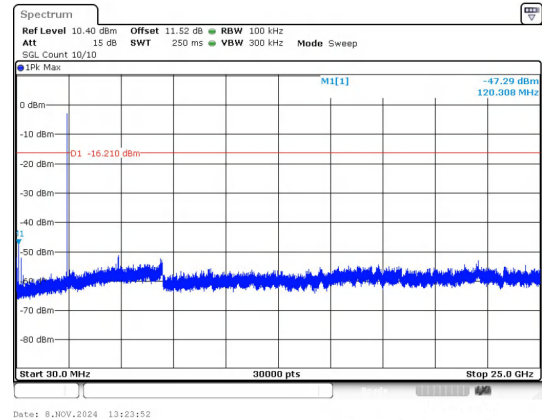


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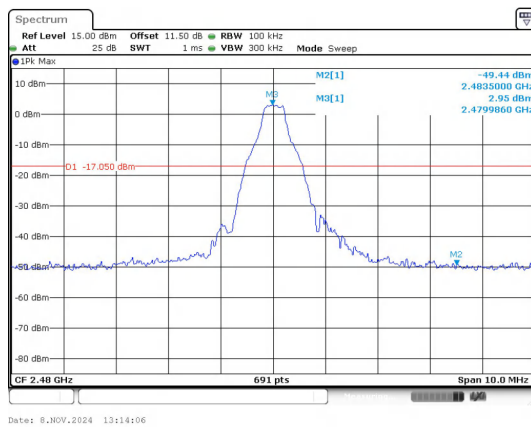
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 39



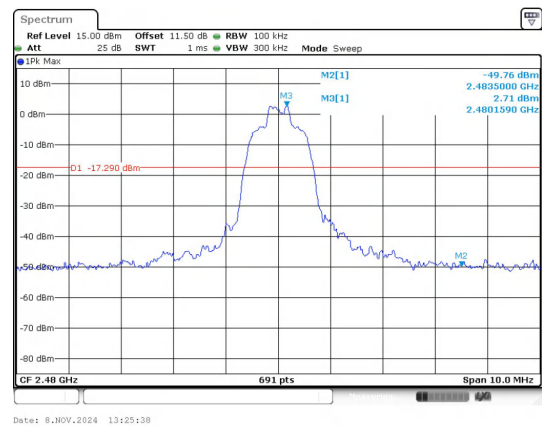
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 39



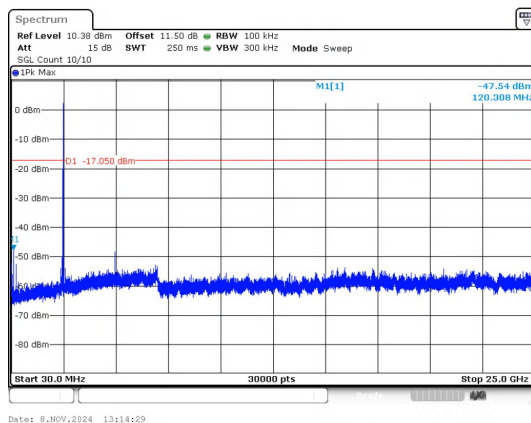
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 39



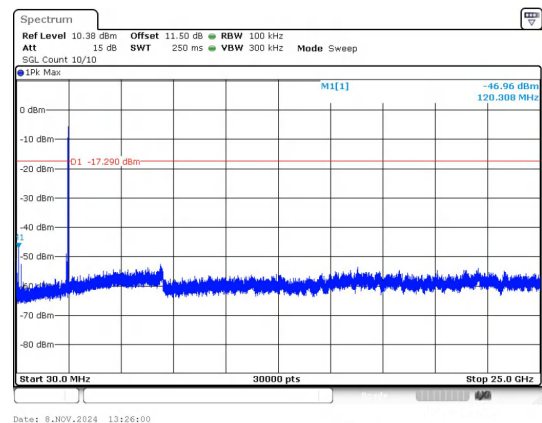
Out Of Band Emission
GFSK_DH5_Channel 78



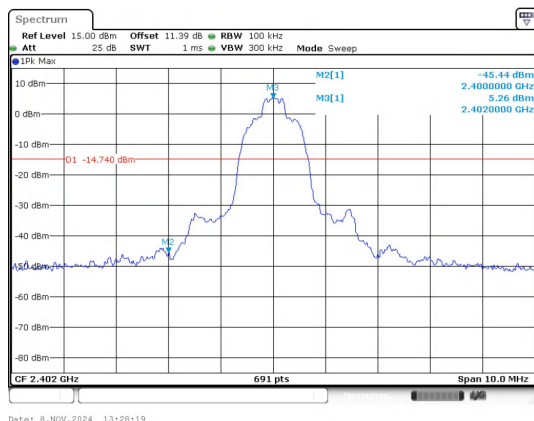
Out Of Band Emission
 $\pi/4$ DQPSK_2-DH5_Channel 78



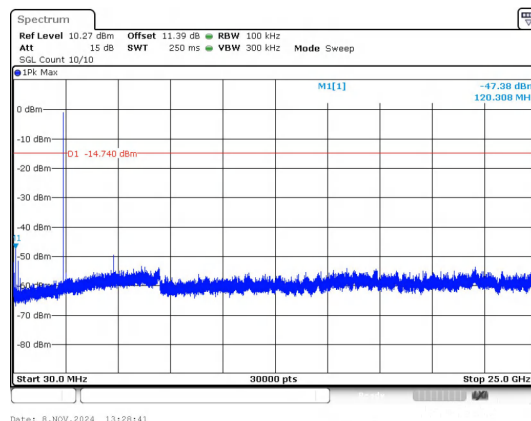
30.0 MHz - 25000.0 MHz
GFSK_DH5_Channel 78



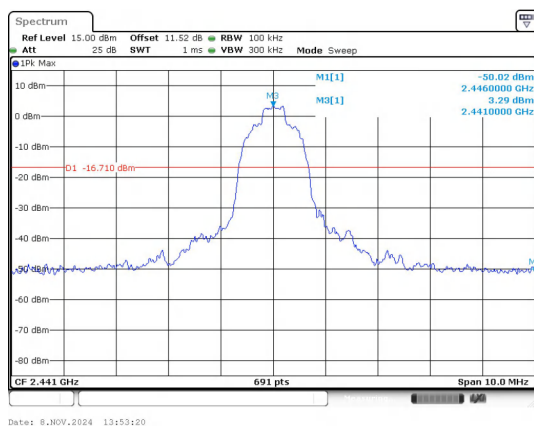
30.0 MHz - 25000.0 MHz
 $\pi/4$ DQPSK_2-DH5_Channel 78



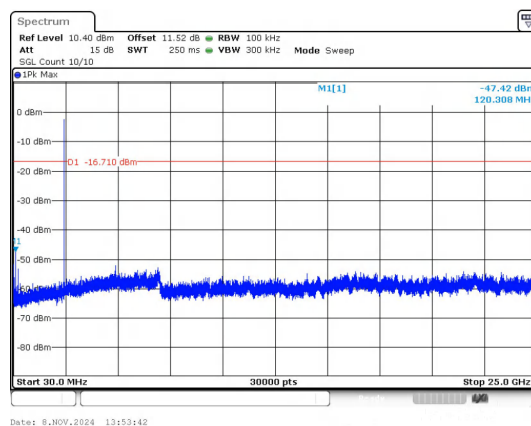
Out Of Band Emission
8DPSK_3-DH5_Channel 0



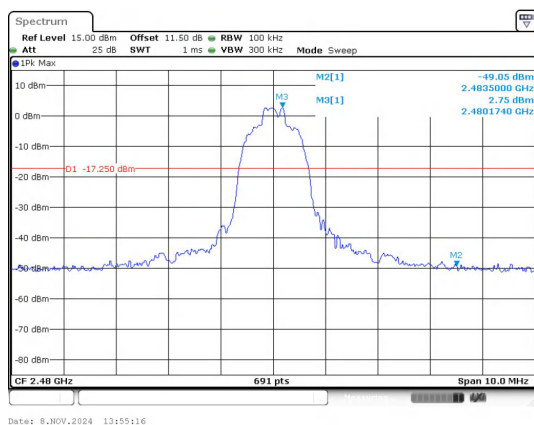
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 0



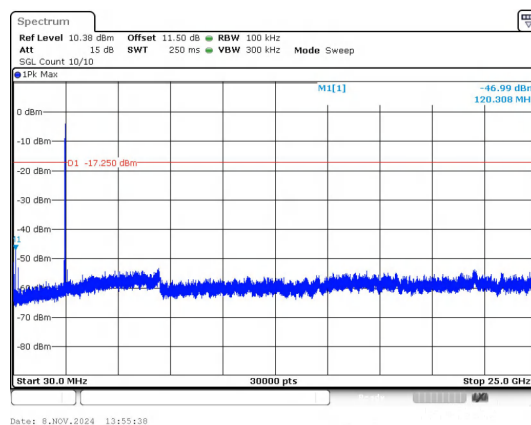
Out Of Band Emission
8DPSK_3-DH5_Channel 39



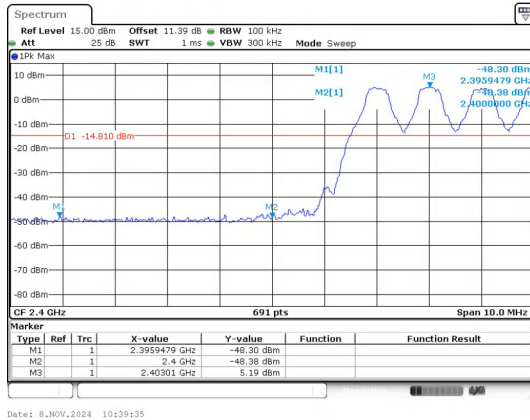
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 39



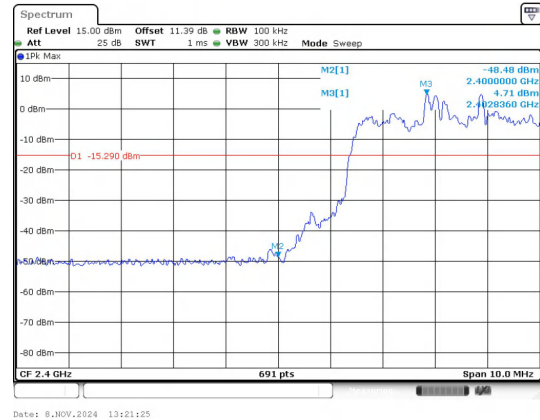
Out Of Band Emission
8DPSK_3-DH5_Channel 78



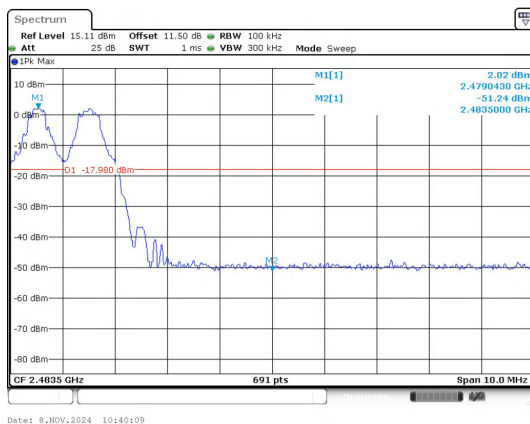
30.0 MHz - 25000.0 MHz
8DPSK_3-DH5_Channel 78



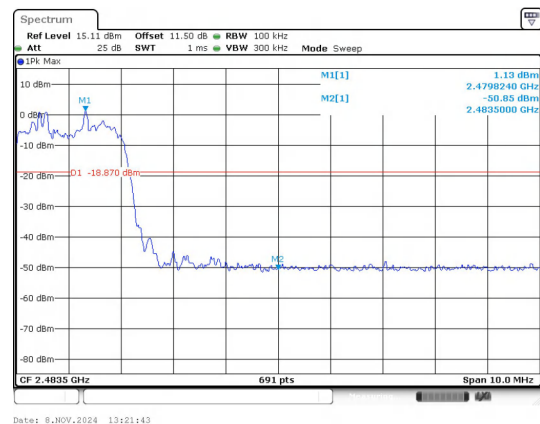
Out Of Band Emission(Left)
GFSK_DH5_Channel Hopping



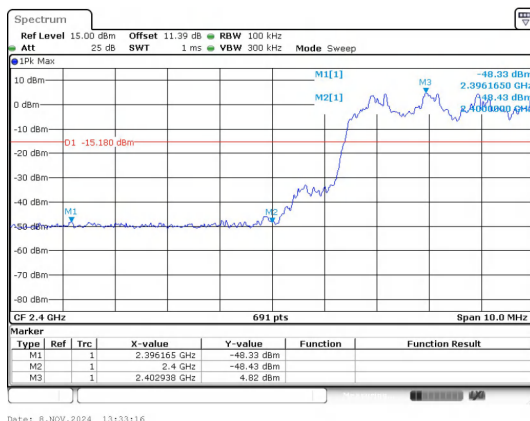
Out Of Band Emission(Left)
 $\pi/4$ DQPSK_2-DH5_Channel Hopping



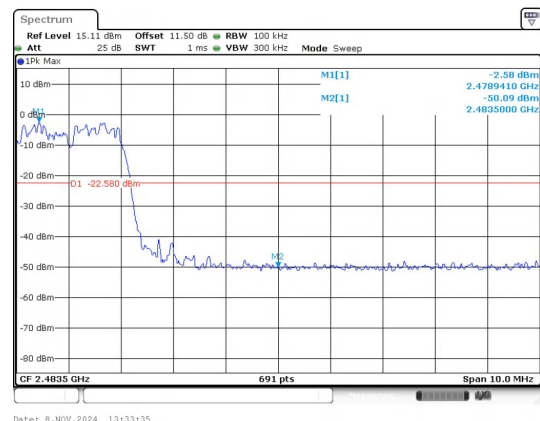
Out Of Band Emission(Right)
GFSK_DH5_Channel Hopping



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

-----The End-----